Kofax Communication Server

TCOSS Configuration Manual

Version: 10.2.0

© 2018 Kofax. All rights reserved.
Kofax is a trademark of Kofax, Inc., registered in the U.S. and/or other countries. All other trademarks are the property of their respective owners. No part of this publication may be reproduced, stored, or transmitted in any form without the prior written permission of Kofax.

TABLE OF CONTENTS

1 OVERVIEW 8

1.1 TCOSS Manuals 8

1.2 Release Update 8

1.3 Release Downgrade 12

1.4 Changes Between Model/x5 and Model/1xx,2XX 13

2 INSTALLATION OF TCOSS 14

2.1 General 14
2.1.1 Prerequisites 14
2.1.1.1 Network Requirements 14
2.1.1.2 Hard Disk 14
2.1.1.3 Link Adapter Cards 15
2.1.2 Installation of Windows 15
2.1.3 TCOSS and MAKETCOSS Installation 15
2.1.3.1 KCS Setup 15
2.1.3.2 First Installation of TCOSS 17
2.1.3.3 Release Update 18
2.1.3.4 Configuration 18
2.1.3.5 TC Transport Interface (TCTI) Configuration 18
2.1.4 Activating TCOSS 20
2.1.5 Error Logging and TCOSS Supervision 20
2.1.6 Network interruptions to LS1 and FoIP 21
2.1.7 TCOSS Specific Registry Entry 22
2.1.7.1 Sub-Key Drive0 26
2.1.7.2 Sub Key DocumentClass 28
2.1.7.3 Sub-Key LINK 29
2.1.7.4 Sub-Key LINK/003 29
2.1.7.5 Sub-Key LINK/LANxxx 30
2.1.7.6 Sub-Key Security 30
2.1.8 Copying KCS File Structure with TCDisk 34

2.2 Model 165/22x 35
2.2.1 Installation of Windows 35
2.2.2 TCOSS 36
2.2.3 Status Box, Status Agent 37
2.2.4 Network Protocols for Control Channels (TCRPC) 38
2.2.4.1.1 Configuration of Control Channel for Tandem Servers 38
2.2.5 Queue Length Log Agent & NT Performance Counters 39
2.2.5.1 TCOSS Release Downgrade 40

2.3 Auto Start of Windows Applications 40
2.3.1 Registry Entries Used by TCSRV 40
2.3.2 User Accounts 42
2.3.3 System Attendant TC90/91/95 42

2.4 Auto Activation of TCSRV 43

3 CONFIG PROGRAM (WCONFIG) 44

3.1 Overview 44

3.2 Configuration with PC 44

3.3 Installation of MAKETCOSS for Windows 45
3.3.1 WCONFIG.INI 46
3.3.2 Folders and Naming Conventions 46
3.3.3 Creating a New Installation Folder 47
3.3.4 Get Configuration 47
3.3.5 Release Update 48
3.3.5.1 Updating an Existing MT/DOS Configuration 48
3.3.6 User Files and Masks 49
3.3.7 Installing Configuration Local 49
3.3.8 Installing Configuration via Net 50
3.3.8.1 How to Transfer User Files? 50

3.4 Working with MAKETCOSS for Windows 50
3.4.1 WCONFIG 51
3.4.1.1 Main Menu 51
3.4.1.2 Software Hardware Allocation 51
3.4.1.2.1 Bulk Channel Creation/Deletion 52
3.4.1.3 Slave Numbering Scheme 53
3.4.1.3.1 Chaining of Model 202 54
3.4.1.4 TC20 Interfaces Numbering Scheme 55
3.4.1.5 BranchBox Configuration 56
3.4.1.5.1 Model 202-LAN (TS15) Installation and Configuration 58
3.4.1.5.1.1 Configuration in WConfig 58
3.4.1.5.2 Changing Lanlink Number of Existing Channels 60
3.4.1.6 Handling of Lost Connections Between Interface and TCOSS Server 61
3.4.1.7 Copy Configuration 61
3.4.1.8 Standard Configurations 62
3.4.1.9 Line Editor 62
3.4.1.10 Configuration of Channels 63
3.4.1.11 Configuring Asynchronous Channels 63
3.4.1.12 Restrictions for Numbering of Channels 64
3.4.1.13 Memory Requirement Analysis 65
3.4.2 CTC 66
3.4.2.1 Copy to Local TCfW Folder Example 66
3.4.2.2 Copy via Network Example 66

4 CONFIG FILES 68

4.1 Setup of Config Files 68

4.2 Common Config Parameters (SYSCONF) 69

4.3 Config Parameters of the Application Module (TAM) 79

4.4 Config Parameters at Activation Channel 88

4.5 Config Parameters of the Asynchronous Module (UAS) 88
4.5.1 Handshake – V.24 Cables 97
4.5.1.1.1 Pin Assignment, V.24 Reference Model 97
4.5.1.2 Software Handshake (XON/XOFF) 98
4.5.1.2.1 How It Works 98
4.5.1.2.2 Configuration 98
4.5.1.2.3 SW Handshake Cable 98
4.5.1.3 Hardware Handshake 99
4.5.1.3.1 How It Should Work 99
4.5.1.3.2 Hardware Handshake with UAS on TS0C/0D 99
4.5.1.3.3 Configuration 99

4.5.1.3.4 HW Handshake Cable....100
4.5.1.3.5 HW Handshake with Modem Connection....101

4.6 Config Parameters of the Telex Module (UTX)....102
4.6.1 Configuring Telex Code Conversions....110
4.6.2 Configuration Example for Spain....111

4.7 Inbound Telex Distribution with Loopback Telex Adapter....112
4.7.1 Required Configuration Changes....112
4.7.1.1 Telex Channel Configuration on the Media Server (Special Config Lines):....112
4.7.1.2 Registry Settings on the Media Server....113
4.7.1.3 Telex Channel Configuration on the Storage Server(s):....113
4.7.2 Additional Files and Services for Inbound Configuration....113
4.7.2.1 Create the +MAIL5V/ATX99 on the Media Server....113
4.7.2.2 Create the TXI Service on the Media Server and Also on Each of the Storage Servers....113
4.7.2.3 Create the Sender Service TLXLOOP on the Media Server and Also on the Storage Servers....114
4.7.2.4 Configure the rr99 Telex Inbound Routing on the Media Server....114
4.7.2.5 Configure the Telex Inbound Routing on the Storage Servers....114
4.7.2.6 Configure Inactive TXI Addresses for the Users on the Storage Server....115
4.7.2.7 Create a Cover for Sending Telex Messages with Variable Answerback (Storage Server)....115
4.7.3 Testing the Configuration....115
4.7.3.1 Check the Received Message in the Inbox of the Receiver....116
4.7.4 Appendix....117

4.8 Config Parameters of the Transputer Fax Module (UTF)....121
4.8.1 LS1 DTMF Receiver Configuration....137
4.8.2 Setup of TCOSS Fax Pages....138
4.8.2.1 Overview about Page Definition....138
4.8.2.2 Transputer Fax ISDN Fax LAN Laser Printer and Laser Printer Page Setup....139
4.8.2.2.1 Layout....139
4.8.2.2.2 Restrictions....140

4.9 Config Parameters of the ISDN Fax Module (UIF)....142
4.9.1 Troubleshooting....151
4.9.1.1 Alcatel 4400 PABX....152
4.9.1.2 Siemens HiCom 300 via 1TR6....152
4.9.2 Special ISDN Issues....153
4.9.2.1 Support Internal Number Type for Outgoing Calls....153

4.10 Config Parameters of Fax over IP Module (UFI)....153

4.11 Config Parameters of the Laser Printer Module (ULL)....158

4.12 Config Parameters of the Character Recognition Module (OCR) (NOT SUPPORTED)....160

4.13 Config Parameters of the Client Server Module (UC0)....161

5 STANDARD CONFIGURATION....162

5.1 Default Configuration after Initial Installation....162
5.1.1 Hardware/Software Assignment....162
5.1.2 Services....163
5.1.3 Users....163
5.1.4 System Account Policy File (+MAIL5V/App99)....164
5.1.5 Routing Directory (+MAIL5V/Arr99)....164
5.1.6 Default Number Series (+MAIL5V/Att99)....165
5.1.7 Standard Time Zone Definitions (+MAIL5V/Atz99)....165

5.2 Common Parameters (SYSCONF)....172

5.3 Configuration for the Asynchronous Module (UAS) 174
5.3.1 PC Standard Configuration 178
5.3.2 TS72 Standard Configuration (Non-Transparent Mode) 179
5.3.3 TS72 Standard Configuration (Transparent Mode) 180
5.3.4 TS73 Standard Configuration (Transparent Mode) 181

5.4 Configuration for the Telex Module (UTX) 183

5.5 Configuration for the Transputer Fax Module (UTF) 187
5.5.1 Standard Configuration 187
5.5.2 Country Specific Changes 193
5.5.2.1 Overview 193
5.5.2.1.1 General Parameters 193
5.5.2.1.2 Call Retries 193
5.5.2.1.3 Dial Parameter 193
5.5.2.2 Changes for Switzerland 194
5.5.2.3 Changes for Austria 194
5.5.2.4 Changes for Germany 194
5.5.2.5 Changes for U. K. 194
5.5.2.6 Changes for Hungary 195
5.5.2.7 Changes for Netherlands 195
5.5.2.8 Changes for Sweden 195
5.5.2.9 Changes for Denmark 195
5.5.2.10 Changes for Finland 195
5.5.2.11 Changes for Spain 195
5.5.2.12 Changes for Italy 196
5.5.2.13 Changes for Belgium 196
5.5.2.14 Changes for U. S. A. 196
5.5.2.15 Changes for Russia 196
5.5.2.16 Changes for France 196
5.5.2.17 Changes for Japan 196
5.5.2.18 Changes for Malaysia 196
5.5.2.19 Changes for Australia 196
5.5.3 Tips for Configuring the UTF Module 198
5.5.3.1 Dial Tone Detection 198
5.5.3.2 Busy and Ring Tone Detection 198
5.5.3.3 Rings for an Incoming Call 198
5.5.4 E&M Standard Configuration 199
5.5.4.1 E&M Timing Specifications 200
5.5.4.1.1 Seizure Acknowledgement Protocol 200
5.5.4.1.2 Delay Dial/Wink Start or Bell DID Protocol 200
5.5.4.1.3 Immediate Start Protocol 201
5.5.4.1.4 Sending with KCS to PABX 201
5.5.4.1.5 Receiving with KCS from PABX 202
5.5.5 Tips for Configuring the E&M Channels 202
5.5.5.1 DID Together with DTMF 202
5.5.5.2 Check of the E-Signal 202
5.5.6 Tips How to Configure Code Pages for the FAX Module 203
5.5.6.1 Adapting Code Pages to Country-Specific Characters 203
5.5.6.1.1 Basics 203
5.5.6.1.2 How to Change a Character 203
5.5.6.1.3 Example 203
5.5.6.1.4 Tables 204

5.6 Configuration for the ISDN Fax Module (UIF) 205

5.7 Configuration for Fax over IP Module (UFI) 211

5.8 Configuration for ULL 216

5.9 Configuration for the Client Server Module (UC0) 219

6 TRACE POSSIBILITIES 220

6.1 General 220

6.2 Configuration of Traces on TCOSS Nodes 222
6.2.1 Compatibility, Update Hints 225
6.2.2 Additional Hints for ASP Systems 225
6.2.3 Trace Performance Considerations 226

6.3 FAX Traces 226
6.3.1 Modem Trace 227
6.3.2 ISDN Trace 227
6.3.3 T.38 and CAPI Trace 227
6.3.4 E&M Trace 227
6.3.5 Binary Trace for Specific Originators 228

6.4 Examples 228
6.4.1 ISDN Trace 228
6.4.2 ISDN, Modem and Binary Trace 229

7 INDEX AND REFERENCES 230

7.1 Registry Overview 230

7.2 Subject Index 233

7.3 Referred Documents 236

1 OVERVIEW

Important! The Kofax Communication Server and its components formerly used the name TOPCALL. Some screen shots and texts in this manual may still use the former name.

1.1 TCOSS MANUALS

The following TCOSS manuals are available.

TCOSS System Manual
System Overview. Basic functionality.

TCOSS Configuration Manual (this document)
Configuration parameters of all modules (channel types) and the system.

TCOSS TAM Manual (formerly 2 Manuals: DotDot- and Directories-Manual)
Description of the “..”-interface commands and TCOSS directory structure.

TCOSS ISDN Manual
Description of the ISDN configuration and operation.

TCOSS ASP Manual
Installation guide for Application Service Providers.

Line Server Model 305 (LS1) Manual
Manual of the KCS Model 305 Line Server (LS1).

TC/FoIP Manual
Manual of the KCS T.38 Fax over IP with H.323 CAPI Driver Integration.

1.2 RELEASE UPDATE

General hints:

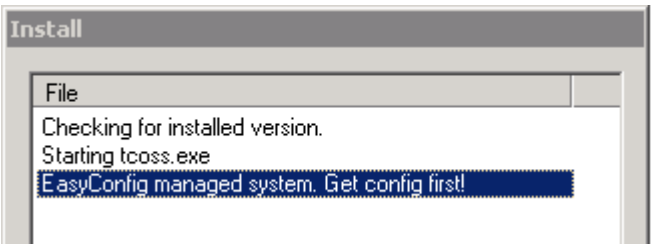
- A configuration downgrade is not supported. It is recommended to back up the current configuration before update.
- If TCOSS is updated select both TCOSS and MAKETCOSS during Setup!

Update from TCOSS 8.6.0.xx (KCS 10.1.1) or TCOSS 8.9.0 (KCS 10.2)

TCTI transport mode “native” is not supported anymore since KCS 10.2. RPC is always used after update even if RPC mode is set in the configuration.

Update from TCOSS 7.96.xx (KCS 10.1.0) or lower

Installation of the new release will fail as shown below if bit 4 (value 0x10) in position 4 in line 13 of the current common configuration file (+TECH/ASYSCONFCCCC) is set:



In such a case it is recommended to delete file “+TECH/ASYSCONFCCCC” with one the following options:

- Delete the file in the system folder with TCfW
- Delete the file with TCUAS channel using the command
  “..2E,R=+TECH/ASYSCONFCCCC”
- If TCOSS is not running you can delete the file by entering
  “tcdel +TECH/ASYSCONFCCCC”
  in directory C:\TCOSS\SYSTEM.

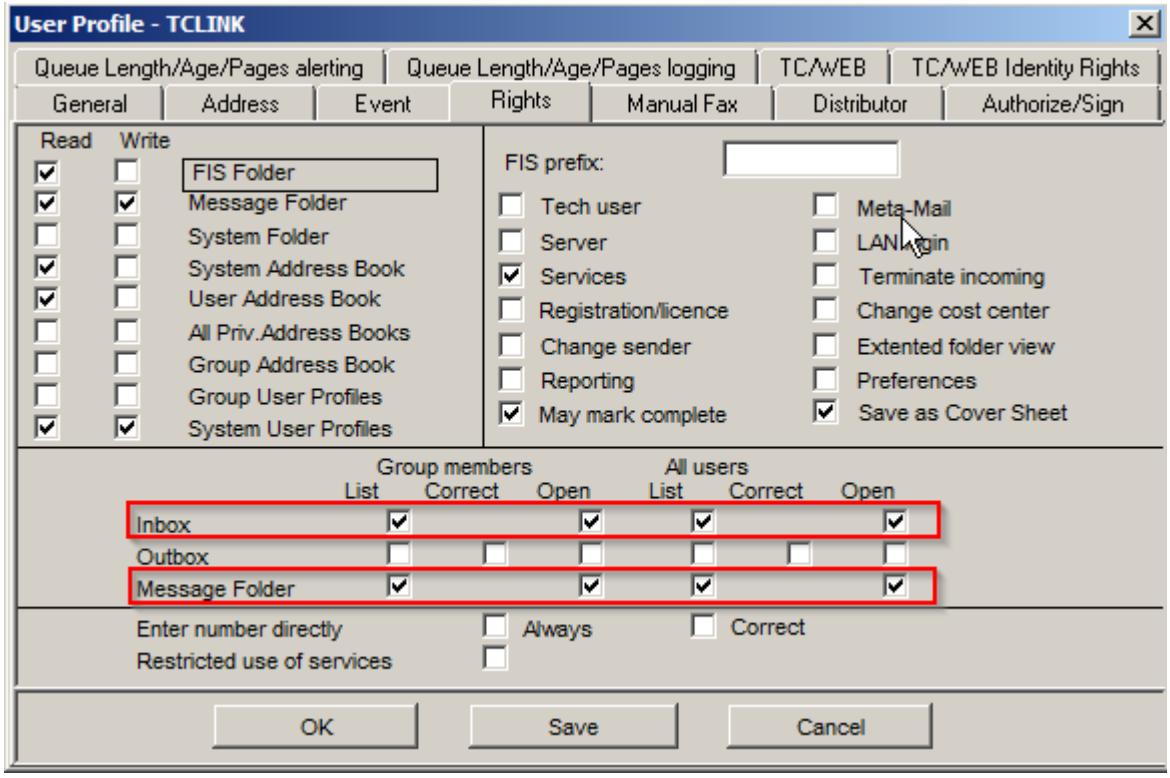
Note: After you have deleted the common configuration file, you must install a configuration with WCONFIG otherwise TCOSS will fail to start.

(See bug 971772 for details)

Additional hints for update from TCOSS 7.95.xx (KCS 10.0.1) or lower

The following configuration changes are required if you want to increase the TCOSS security level after update:

- Add the Message Folder read/write and Inbox permissions to the login users used by TC/LINK-xx as shown in the screen shot below:



See description of registry value SecurityLevel in chapter 2.1.7 for more details.

Additional notes for update from TCOSS 7.94.xx (KCS 10.0.0) or lower

TCOSS 7.95.xx (KCS 10.0.1) includes security improvements that can be controlled by the new registry value SecurityLevel.

By default, insecure features are still allowed for compatibility reasons, but event log entries (ID range: 16100 - 16199) are generated if any such feature is actually used. Administrators should use these event log entries to improve the configuration, so that the security level can be increased after all compatibility issues are fixed.

The following configuration improvements are expected:

- If you are using TCTECH as it was installed with prior releases, the “LAN Login” right should be removed.
- Migrate clients that uses LAN login with as a domain user and the depreciated short user ID option (must be enabled with registry value “Common/UseOldUserID=1”) to use the user’s principal name.

Additional notes for update from TCOSS 7.84.xx (KCS 8.1) or lower

When you update to 7.85.00 or later and configure a channel beyond the first 360 channels, the channel number of this channel is in the range ‘0A’ ..’0Z’, ‘1A’ …’1Z’, …, ‘9A’ …’9Z’, ‘AA’ ...’AZ’, ‘BA’

…’BZ’, ..., ‘OA’ ...’OZ’ and it may be identical to an existing user. Please make sure that user IDs and channel numbers do not overlap and remove the user if necessary.

See TCOSS Configuration Manual from KCS 10.0 for additional update hints of TCOSS release before KCS 8.0.

1.3 RELEASE DOWNGRADE

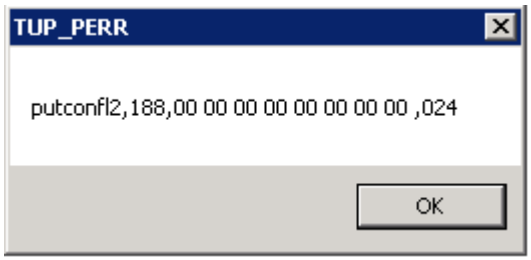
A release downgrade is only recommended immediate after a release upgrade if you get serious problems with the new release that cannot be solved. As a general rules features that have been added with a new release are no more available after downgrade. Additional hints can be found below.

Downgrade to TCOSS 8.6.0.xx (KCS 10.1.1)

No special actions are required.

Additional notes for downgrade to release 7.96.xx (KCS 10.1) or older

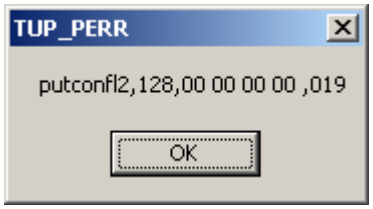
If downgrade TCOSS, you will get the following message boxes when WCONFIG readd the current installed version during installation.



Both messages can be ignored.

Additional notes for downgrade to release 7.94.xx (KCS 10.0) or older

If you want to downgrade TCOSS, you will get the following error message during installation of the old release:



This error can be avoided by deleting the common configuration file (+TECH/ASYSCONFCCCC) before installation of the old release with WCONFIG.

You can choose one of the following methods to delete file “+TECH/ASYSCONFCCCC”

- Delete the file in the system folder with TCfW
- Delete the file with TCUAS channel using the command
  “..2E,R=+TECH/ASYSCONFCCCC”
- If TCOSS is not running you can delete the file by entering
  “tcdel +TECH/ASYSCONFCCCC”
  in directory C:\TCOSS\SYSTEM.

Note: After you have deleted the common configuration file, you must install a configuration with WCONFIG otherwise TCOSS will fail to start.

(See bug 551344 for details)

Additional notes for downgrade to release 7.91.xx (KCS 9.2) or older
Downgrade to KCS 9.2 or older is not supported if TCOSS was running with a Unicode configuration. Note that Unicode support is not used by default. It must be explicitly enabled in position 4 of SYCONF line 21.

1.4 CHANGES BETWEEN MODEL/X5 AND MODEL/1XX,2XX

*) Direct links to KCS via FASTLINK (UCF) or Asynchronous (UCA) are not supported. These clients must be connected via network protocol (TCP/IP or NETBIOS) to KCS. Remote services can be performed by installation of a RAS server in the network.

*) Since routing functionality is integrated into TCOSS, an extra LCU and the UCL (User module for client server link via transputer link) are not supported anymore. The routing function is implemented in the TCTI32.DLL, which is directly used by TCOSS. A client/server connection requires only UC0 channels. The actual type of link connection must be set within `C:\TCOSS\SYSTEM\TOPCALL1.INI` (see TCTI Configuration Manual).

*) **Network protocol IPX/SPX with native transport is not supported!** The supported protocols are TCP/IP and NETBIOS with native transport. One of these or both can be used for client connections and least cost routing networks.
With RPC transport IPX/SPX, TCP/IP and NETBIOS are supported!

*) If a fatal error occurs during boot time, the system does not start blinking with the green LED. Instead an event log entry in the application event log is made.

*) The messages on the LCD are initialized at the moment when the slave TS0d is booted. Before the confusing message “Cannot boot from local disk or Slv” is shown.

*) If TCOSS is stopped manually, all slaves remain in their current state. This means, the green LED on the slave remains on even if TCOSS is stopped.

*) The UAS module at the model 1xx master is almost fully compatible to the UAS at the slave, with respect to configuration and functionality. However, there are a few minor differences:

- Multiplexer and FAX selection is not supported
- Pause characters are not supported. Pause characters are treated as normal characters.
- Script language does not support control of handshake lines such as DTR.
  Setting the corresponding variables has no effect. Reading the variables results in random values.
- different semantics for COM (SIO) port specification in configuration line 52 (see chapter 4.5)
- SIO write register 5 is unused, configuration line 54 has to be 00

The UAS configuration on the slave remains unchanged.

2 INSTALLATION OF TCOSS

2.1 GENERAL

2.1.1 Prerequisites

Please refer to *Platform System Manual* for information about supported hardware and software.

2.1.1.1 Network Requirements

- For monitoring with TCMON32 the network protocols NETBIOS or TCP/IP are required.
- For server models/22x (or 165) TCP/IP is required on the network connection between primary and secondary master.
- If SNMP is used TCP/IP is required.

KCS supports to following TCTI protocols:

transport	TCP/IP	NETBIOS	IPX/SPX
native	√	√	Not supported!
RPC	√	√	√

It is possible to use more than one LAN cards for TCTI. Refer to TCTI Configuration Manual for more details.

2.1.1.2 Hard Disk

The following hard disk requirements are valid:

- The minimum size of partition C: is 10 GB; or more, if required by the operating system.
- The size of the partition for the KCS file structure must be at least 100 MB for a minimal configuration.
  Note: To successfully upgrade to a model 1xx without losing data the TCOSS partition (drive D:) must be at least as large as the hard disk for the previous model! The required disk size can be checked with TCDISK (use drive information menu item).
- It is not allowed to compress the KCS file structure. File compression is supported for backup purposes only! This means that the compressed file is not accessed by TCOSS.

Note: If a compressed file is changed, the required disk space for this file may be changed even if the size of the file is not changed. If there is no free disk space available, this means that a write access may fail.

The sum of both drive sizes represents the total hard disk size.

2.1.1.3 Link Adapter Cards

There may be only one old TP80 V1.x adapter card in a mod. 1xx. This TP80 must be jumpered to occupy base address 0x150.
If more than one link is required, the link adapter cards must occupy a contiguous address range from 0x140 to 0x17F. This is possible only if TP80 V2.x adapter cards are used.

By default link 0 and link 1 have swapped base addresses. This allows existing hardware with one TP80 V1.x to access its slave as slave 1 (see the description of Registry entries).

Link NR	Base Address	Slave NR
0	0x150	1
1	0x140	2
2	0x160	3
3	0x170	4

A TC9x (System Attendant) may be connected to any TP80 V2.x (for TC90) or to any printer port (for TC91, the port cannot be used for printing).

2.1.2 Installation of Windows

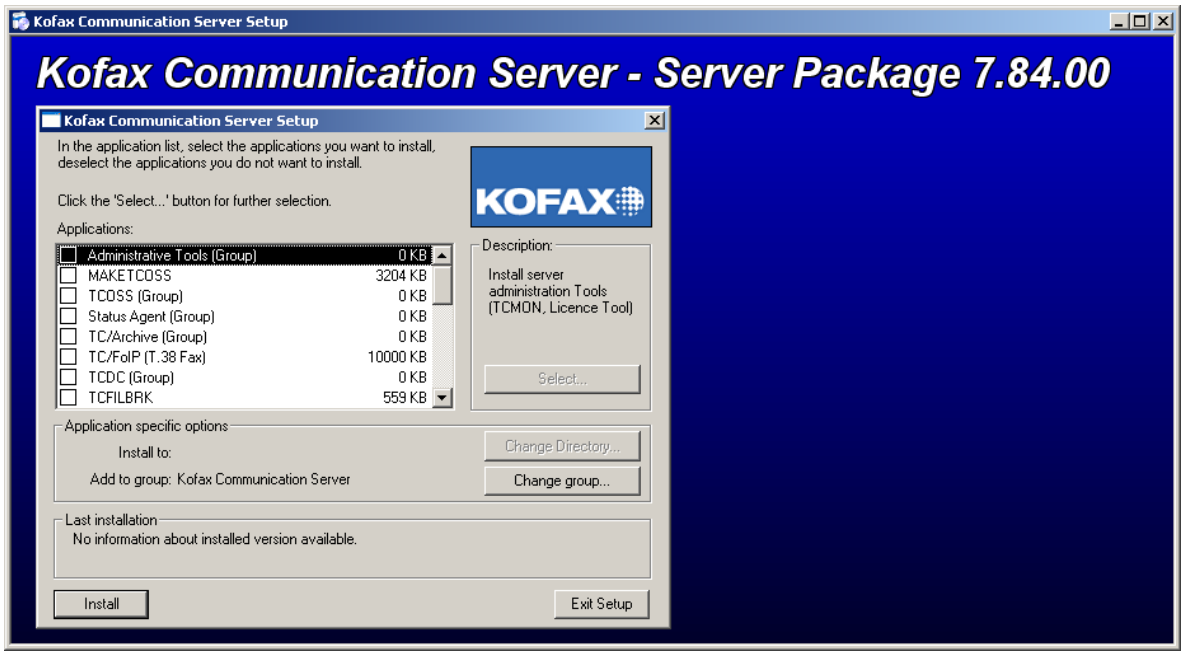
Please refer to the operating system documentation for information about installing Windows.

2.1.3 TCOSS and MAKETCOSS Installation

2.1.3.1 KCS Setup

KCS setup contains the server application TCOSS, the configuration program MakeTCOSS, the Status Agent (TC/STATUS) and additional server components (e.g. TCFILBRK (file API / Break messages) and TCLANPRT (LAN Print), TC/ARCHIVE, …)

To install the KCS, download the zip file and extract the content to a local drive. Start the installation by launching the setup.exe.



- *Option TCOSS* allows to initialize Windows for use with TCOSS on it. When this option is enabled, you will be asked for the KCS Model to be installed, for the TCTI configuration of the server (TCOSS), the file name and location of the KCS File Structure and whether want to format it or not.
- Option **TCOSS and MAKETCOSS** is required both for **Release update** and **initial installation**.
- **WITH OPTION MAKETCOSS (WITHOUT TCOSS), ONLY CONFIGURATION CHANGES ARE POSSIBLE!**
- **INSTALLATION PROCEDURE FOR TANDEM SERVER IS DESCRIBED IN CHAPTER 2.2.**
- Refer to appropriate manuals for installation of other server applications.

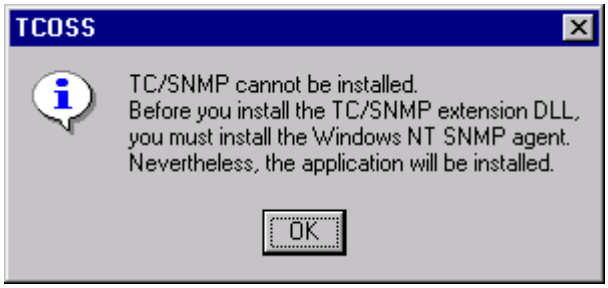
During the setup procedure you will be asked for the client's (MakeTCOSS) and the server's (TCOSS) network protocol settings. Note: A local client (MakeTCOSS) can connect to the started TCOSS only via a network protocol. No other local connection is possible. If TCOSS is not running, MakeTCOSS may install and get the configuration files directly from the TCOSS partition (`Install/Get Configuration Local`).

The Windows computer name of the KCS server should be a valid NETBIOS name for all client PC platforms! (No longer than 15 characters, no blanks and special characters for most client platforms, very old implementations may restrict the length to even fewer characters.)

It is recommended to set the OwnNetbiosName in the server TOPCALL1.ini to the same value as the Computer name.

If the KCS server's NetBIOS name is not a valid NetBIOS name for the client, the client will not be able to connect especially if the new RPC transport is used. The valid NetBIOS names are different on different platforms thus the most restrictive definition (see above) should be used.

If you want to use SNMP Maintenance, take care that Windows SNMP agent is installed before the KCS setup is started. Otherwise, you will get a message box as shown below.



If you do not want to use SNMP, this message box can be ignored.

Details about SNMP are described in the KCS SNMP Manual [6].

Note: Recent KCS releases use the new directory *C:\topcall\shared* for all KCS specific shared files. These files were formerly located in *C:\tcoss\system* and *C:\tcoss\tclink*.

Setup automatically deletes shared files from *C:\tcoss\system* and *C:\tcoss\tclink* and defines a (system) path to *C:\topcall\shared*. Due to these changes some things have to be kept in mind.

- A system reboot is mandatory after update from KCS 7.20.00 or lower.
- Using old link and server applications (that do not use the shared directory) together with newer KCS applications is not recommended!

Processes started via TCSRV are not starting if their user account is not valid (wrong userID or password)! With prior releases the process started with the system account in that case!

Example:
TC/LINK-FI (1.08.xx) is installed on the KCS server with a wrong password. The old version of TCSRV starts TC/LINK-FI with its own user account as defined in the control panel for TCSRV (Note: It is recommended to use the system account for TCSRV).

After TCOSS update, the new TCSRV is installed. This causes that TC/LINK-FI fails to start.

=> Reinstall the link in order to enter the correct user ID, domain and password.

2.1.3.2 First Installation of TCOSS

To install TCOSS you must be logged in as a user with Administrator privileges.

Install both TCOSS and MAKETCOSS from the KCS setup as described above.

When installing TCOSS, the setups asks you for the filename and location of the KCS File Structure (contains all TCOSS files; default “C:\TCOSS\Data\KCS File Structure.tcoss”) and if you want to format it. You have to select *yes* for initial install. TCDISK will be started for configuration of the KCS File structure. Enter the values (directory size, directory entries, folder sizes, ...) as appropriate. The calculated default size suggested by TCDISK will be 50% percent of the free disk space on the selected drive minus 50 MB.

After the setup program finishes you have to reboot Windows in order to activate all changes to the system. Rebooting the system does not automatically start TCOSS or any other modules.

2.1.3.3 Release Update

- Install TCOSS and MAKETCOSS.
- Update the configuration as described in chapter 3.3.5.
- Install the configure and program files
- Reboot the system.

Additional notes for Tandem Servers (model/165,22x):

The procedure described above applies to the primary master only. MAKETCOSS is **not required** on the secondary master. All files required for update of the secondary server are installed by setup program! See chapter 2.2.2 for more details.

2.1.3.4 Configuration

If the option `MakeTCOSS` was enabled during setup a program item `Wconfig` was created in the KCS program group. Start this local copy of the configuration program to configure TCOSS.

The main menu shows two new options `Get configuration local` and `Install configuration local`. These new options allow you to access the TCOSS file system directly without TCOSS being started. If TCOSS is started these options do not work

2.1.3.5 TC Transport Interface (TCTI) Configuration

TCTI supports two types of transport mechanisms. The *native* transport represents the mechanism used in the past and is provided for compatibility reasons. It may be discontinued in one of the future releases.

Note: The *native* transport supports only the network protocols NETBIOS and TCP/IP. Any other protocols such as IPX/SPX are **not** supported.

The new *RPC* transport is must be used for new installations. It is recommended to migrate older installations to *RPC*. The new transport supports the protocols NETBIOS, TCP/IP, IPX/SPX and LOCAL (for clients running locally on a Model 1xx server).

All setup options have appropriately changed TCTI parameters.

The configuration program (WCONFIG) supports both transport types (*RPC* is recommended). The setup-program asks for the appropriate parameters.

Note: When collecting messages from the TCOSS server, TC/ARCHIVE acts like a normal client application. Hence, it uses the same configuration file for its client functions like other client applications

The server (TCOSS) uses two different configurations. Configuration 0 (refer to Registry value *TCTIIniFile*) is used for *native* transport by default. Configuration 1 (refer to Registry value *TCTIIniFile2*) is used for *RPC* transport by default. All UC0 channels within TCOSS may be configured to use either configuration 0 (*native*) or configuration 1 (*RPC*).

The server reads its configurations from the file <*TCOSS-systemdirectory*>*topcall1.ini.*

For compatibility reasons, if a TCOSS installation prior to 7.03.00 gets updated to release 7.04.00 all UC0 channels are set to configuration 0. All new UC0 channels have configuration 1 by default. The TCTI configuration of an UC0 channel can be change via config line 5.
ULL and UASTCTI channel always use configuration 1 (*RPC*).

The TC/ARCHIVE server application reads the TCTI configuration for its server part from the file <*TCOSS-systemdirectory*>*topcall1.ini* and section *TCTI_ARC* (can be changed in the registry).

The table below lists the INI-files and sections containing the TCTI configuration for different modules. For most modules there is a registry value to change the default.
Note: Changing the default INI-file or section for TCLANPRT or TCFILBRK using the registry value listed below, does affect TCTI parameters only! Any standard parameters remain in the default file and section.

Module	**INI File**	**Section**	**Registry Value**
WCONFIG	<Windows>\topcall1.ini	TCTI	
TCLANPRT	<Windows>\topcall1.ini	TCLANPRT	TCLANPRT\TCTIIniFile
TCFILBRK	<Windows>\topcall1.ini	TCFILBRK	TCFILBRK\TCTIIniFile
UC0 (cnfl. 5 = ‘0’)	<TCOSS-Sys>\topcall1.ini	TCTI	TCOSS\TCTIIniFile
UC0 (cnfl. 5 = ‘1’)	<TCOSS-Sys>\topcall1.ini	TCTI_RPC	TCOSS\TCTIIniFile2
ULL, UASTCTI	<TCOSS-Sys>\topcall1.ini	TCTI_RPC	TCOSS\TCTIIniFile2
TC/ARCHIVE	<TCOSS-Sys>\topcall1.ini	TCTI_ARC	TCARCH\TCTIIniFile

Registry values are relative to HKEY_LOCAL_MACHINE\Software\TOPCALL.

Refer to the TCTI release description for a more detailed configuration description.

Note: Do not change any settings manually unless absolutely necessary. The setup program of future releases may not recognize any manual changes.

Note: If IPX/SPX is used with TCOSS the service “SAP Agent” must be installed via Control panel – network ...

2.1.4 Activating TCOSS

For testing purposes, TCOSS may be activated manually. When activated manually, TCOSS displays any trace information within the current command window (if tracing and output to screen is enabled for TCOSS, see *Registry*).

Enter the following command to start TCOSS:

```
TCOSS /N
```

To stop TCOSS simply press ^C.

For productive use, TCOSS must be started via Service TCSRV to ensure automatic reboot after power failure. This service is installed by the setup program but is passive after installation. It must be activated using the control panel. See chapter 2.2.4 for more details.

TCOSS command line parameters:

/n	...	normal operation
/m:<sec.server>	...	Model 165 Primary Server mode, <sec. server> is the workstation name of the secondary server
/s:<prim.server>	...	<prim. server> is the workstation name of the primary server
/t	...	TOS Server mode (must not be used)
/i	...	installation mode (see below)
/k	...	(must not be used)
/tcp:<TCP path>	...	enables TCP for Mod. 165 data link and specifies path
/tcsrv:{on|off}	...	for debugging (must not be used)

The TCOSS installation mode (option /i) is used during initial installation to install system files on the file structure. It may be used later by advanced administrators (when TCOSS is not running) to perform the following restore operations:

- TCTECH user is re-installed with its default password (that must be changed at the time of first login) and permissions. All changes in the user profile of TCTECH will be overwritten without warning!
- The following files are created with its default content, if they do not exist:
  - File +MAIL5V/Arr99 (routing number directory)
  - File +MAIL5V/App99 (System account policy directory)

2.1.5 Error Logging and TCOSS Supervision

- Severe system errors are always written to the system’s application log. This log can be viewed by Windows event viewer. From the Log menu select Application to display all KCS events and more.
- By means of Registry settings trace options can be set for TCOSS. See chapter 6.
- To check if TCOSS is started use TCMON32. See KCS Monitor Manual [6].

2.1.6 Network interruptions to LS1 and FoIP

The network connection between TCOSS and LS1/FoIP delivers real-time fax data and is therefore subject to some realtime requirements as defined in the LS1 and FoIP manual. By default, single network interrupts of up to 2s are handled without significant impact to fax communication and a single interrupts of up to 10s is supported without node restart.

An enhanced network down time of up to 90s may be configured by using the registry values (type REG_DWORD) shown:

Registry value	default	Enhanced time-out
HKLM\System\CurrentControlSet\Services\Tcpip\Parameters\TcpMaxDataRetransmissions	5	9
HKLM\Software\TOPCALL\TCOSS\trpLinkInactivityTimeout	40	240
HKLM\Software\TOPCALL\TCOSS\trpLinkResyncTimeout	30	180
Supported network interrupts	10s	90s

Notes:

- The value TcpMaxDataRetransmissions increases the retry duration of Windows TCP/IP stack. A modification of this value requires a Windows restart. It will also increase the TCP/IP data packet retry behavior for other applications on the same machine.
- The enhanced time-out configuration will improve the availability in most cases but it may also add the risk that some issues related to large network delays are exposed that would be recovered by a node reload in the current implementation.
- The active fax transmission may always be affected even by much shorter interruptions of about 2s. This behavior will not be improved by this configuration.
- Recovery time for some other error case may be increased when using the enhanced time-out configuration.
- The enhanced time-out configuration will be ignored by connections to Model 202 (Telex branch-box)

2.1.7 TCOSS Specific Registry Entry

Key

`HKEY_LOCAL_MACHINE\Software\TOPCALL\TCOSS`

Values

CompatibilityFlags REG_DWORD

This value may be used to disable some features or changes that unexpectedly break backward compatibility with older versions. None-default values may be used only if requested by technical support team.

Default … 0

PriorityClass REG_SZ

Runtime priority class of process.

Default … High

RPCServer REG_DWORD boolean value

Specifies if TCOSS includes the server-side of a KCS specific RPC mechanism and if this RPC server is working. The supervisor service - as the client - calls different functions within TCOSS using this mechanism. One of these functions is used to determine if TCOSS is started properly and to restart it if necessary.

Default … 1

SboxBaseAddress REG_DWORD

Address of COM port connected to TS85.

Default … 2f8h (COM2)

TCTIIniFile REG_SZ path/filename

Specifies a fully qualified filename for the initialization file of TCOSS' native TCTI interface.

Default ... <RootDir>\System\TOPCALL1.INI

TCTIIniFile2 REG_SZ path/filename[section]

Specifies a fully qualified filename for the initialization file of TCOSS' RPC TCTI interface.

Default ... <RootDir>\System\TOPCALL1.INI[TCTI_RPC]

TmoWaitForMaster REG_DWORD

Time in seconds to wait for primary master.

Default … 100

TmoWaitForSlave REG_DWORD

Time in seconds to wait for secondary master.

Default … 90

TmoWaitForSlaveFast REG_DWORD

Time in seconds to wait for secondary master between boot operation of other nodes. This value may be lower than **TmoWaitForSlave** in order the speed up the boot operation of nodes if the primary master starts without secondary master.

Default … 20

EnablePerformanceCounters REG_DWORD boolean value

Enables counter for Windows Performance Monitor.

Default … 0

MapLink3ToTCRPC REG_DWORD boolean value

Set to 0 if mod/165,22x with optical lin 3 is required.

Default … 0 for model/21x, 1 for model/22x

TerminationCause REG_SZ error string

This value is written by TCOSS. It represents the last PERROR occurred. Changing this value has no effect. It automatically gets deleted at TCOSS startup.

tmoWaitForMaster REG_DWORD boolean value

The registry value can be used to set the time the secondary master waits for the primary master to become available, before it starts standalone. The time is specified in seconds. The registry value is located at the secondary master (Model/22x).
Care: This value is not checked for plausibility. Invalid values may lead to erratic behavior.

Default …. 100
Max…….. 2000000 (=23 days)

Min…… 10

There is no way to interrupt the secondary master waiting for the primary master, and forcing it into standalone mode. The secondary master can only be forced into standalone mode by changing the timeout and restarting it.

tmoWaitForSlave REG_DWORD integer value

The registry value can be used to set the time the primary master waits to start up with the secondary master. Since TCOSS 7.33.00 the default was increased from 30 seconds to 90 seconds, which avoids a desynchronized condition if the secondary master and the status agent should fail (e.g. due to power failure).

Default …. 90

For older releases it is recommended to set the time-out to 90 seconds by adding the registry value described above.

trpLinkInactivityTimeout REG_DWORD integer value

This value defines the maximum overdue time (in seconds), when any remote node (e.g. LS1 or FoIP) expects a haertbeat message from the master. If this time-out expires, the remote node assumes that the connection to its master is lost and it enters a reset state (e.g. all active fax calls are closed).

Default …. 40

trpLinkResyncTimeout REG_DWORD integer value

This value defines the maximum duration (in seconds) while TCOSS and a remote node (e.g. LS1 or FoIP) tries to recovery their network connection. This value is ingored for connections to model 202 (Telex Branch-Box).

Default …. 30

Note that this recovery procedure is also aborted (before this time-out expires) if the TCP/IP connection to the remote side is lost. This happens if the connection is closed by the remote side or after some retries. The number of retries (and indirectly the period) can by changed by the registry value HKLM\System\CurrentControlSet\Services\Tcpip\Parameters\TcpMaxDataRetransmissions [REG_DWORD]. Some typical values are shown below:

TcpMaxDataRetransmissions	Retry duration	Close connection after
3	5s	7s
5 (default)	9s	18s
6	18s	40s
7	43s	81s
8	70s	115s

9	130s	195s

See http://technet.microsoft.com/en-us/network/bb545475.aspx for more details.

NetworkPackageSize REG_DWORD integer value

The data transfer via TCP/IP on the dedicated LAN between primary and secondary master has been optimized by adapting to the network package size.

A value of 0 or 1 would disable the optimization. Usually it is not necessary to enter this registry key.

Default …. 1460
Max…….. 2048
Min…… 0

SecurityLevel REG_DWORD integer value

Several security improvements are added with KCS 10.0.1. These improvements are implemented as compatible as possible with previous releases but there is always a certain compatibility risk with the improved security. This value should be used as a simple slider between highest compatibly (lowest level) and highest security (highest level). The following levels are currently defined:

Level	Description	Remarks
10	New security features are not used. If any feature that would be denied with level 40 is used, no compatibility event log entries are created.	Most compatible with KCS 10.0 but does not provide any security improvements.
20	New security features are supported. Insecure features are allowed but a compatibility event log entry will be created to inform about potential compatibility issues.	Default for upgrades from prior releases.
40	New security features are supported and insecure features are denied.	Default for new installations
60	Like level 40 but additionally enforces security features introduced with KCS 10.1.	Not used by default.

Remarks:

- This registry value will be created by KCS setup with level 20 or 40 depending on the user's choice whether the TCOSS file structure should be formatted of not. If the value already exists, it remains unchanged.
- If the user change these values while TCOSS is running, the new values are automatically used without a need to restart TCOSS, after a delay of about 1 minute.
- For more advanced security settings, the security level defines the defaults settings in the following table, as described for sub-key security:

Values	Level 10	Level 20	Level 40	Level 60
DeniedAuthentications	0x60	0x00	0x06	0x06
DeniedAuthenticationsPreview	0x00	0x06	0x00	0x00
RightsCheck	0x00	0x00	0x11	0x31
RightsCheckPreview	0x00	0x31	0x20	0x00
DeniedSessions	0x02	0x00	0x00	0x01
DeniedSessionsLog	0x00	0x00	0x01	0x01

SecurityLogging `REG_DWORD` `integer value`

This registry value defines the type of data logged in case of successful or failed security checks. It does not have any functional impact and available in addition to the following logging features:

- Audit logs as described in Common Configuration Files (SYSCONFCCCC) line 21.
- Compatibility warnings as described by registry value SecurityLevel.

Value	Description
0x00	Security logging is disabled.
0x01	Generates a trace if any function is blocked due to security checks.
0x02	A missing right after login (described by registry value Security\RightsCheck) causes a Level 2 System error message, such as compatibility warnings. Denied logins are handled similar to value 0x01. This means that they do not generate an event log and TCOSS error message, but such errors may already be logged by the audit log feature.
0x11 or 0x12	Similar to 0x01 / 0x02, but there is also a trace line for succeeded security checks. Note that these values may produce a huge amount of trace data, therefore, it should be only used for troubleshooting.

Default value: 1

2.1.7.1 Sub-Key Drive0

Drive0 is the TCOSS working drive. The settings within this sub-key determine what drive or TCOSS' file system is actually accessed.

`HKEY_LOCAL_MACHINE\Software\TOPCALL\TCOSS\Drive0`

Values

FileName `REG_SZ` fully qualified path and filename

This value must be a valid Windows file name which TCOSS can use internally in WIN32 calls to access a file. This file contains the entire file structure and represents a virtual drive for TCOSS. The structure is compatible to the physical SCSI drives used with KCS models below 1xx.

Default (for single TCOSS instance) … C:\TCOSS\Data\KCS File Structure.tcoss

TargetId `REG_DWORD` ID of SCSI hard disk device

If `FileName` is an empty string, the SCSI device with the specified ID at port `ScsiPort` is used as TCOSS drive. TCOSS accesses this disk in a sector wise manner exactly like KCS models 1xx do. Hence, existing TCOSS SCSI disks may be connected. Windows treats such disks as RAW (no file system, not partitioned). Do not access such disk space with Windows DiskManager.

Either `TargetId` or `ScsiPort` must be specified and `FileName` must be an empty string to enable access to a physical drive.

Default … 0

RemoteDiskAccessTimeout `REG_DWORD` Remote disk access time-out in seconds

The remote disk access time-out is used during tandem operation for all write operations to the disk on the secondary master. If it expires, then the secondary master process will be restarted and the primary master continues without fault tolerant disk operation in order to minimize impact to real-time critical operations (like fax reception or transmission). Tandem operation is usually re-established after the secondary master is restarted.

Default … 5

RemoteDiskQueryTimeout `REG_DWORD` Remote disk query time-out in seconds

This time-out is used to the monitor opening operation of the TCOSS file structure on the secondary master.

Default … 10

ScsiPort `REG_DWORD` SCSI Adapter Number

Specifies the SCSI adapter where the TCOSS disk with `TargetId` is connected to. Refer to `TargetId` for a detailed description.

Default … 0

DirCacheSize `REG_DWORD` Directory cache size in kB

Specifies the size of the directory cache pool in kB.

Default … 2048

DocCacheSize REG_DWORD Document cache size in kB

Specifies the size of the document cache pool in kB.
Default … 40960

DatabaseCacheSize REG_DWORD Database cache size in kB

Specifies the size of the database cache pool in kB.

Default … 5120

CacheAweEnable REG_DWORD AWE cache option enable

Specifies whether the three cache pools (directory, document, and database cache) are located in conventional memory (value = 0) or in AWE memory (value = 1). AWE or “Address Windowing Extensions” is a set of Windows extensions that allow a 32-bit application to quickly manipulate physical memory more than 4GB.

Default … 0

Note: The values Dir-, Doc-, and DatabaseCacheSize have to be changed on Model 23x configurations. See Model 23x in TCOSS System Manual [2] for further information.

2.1.7.2 Sub Key DocumentClass

An additional Document Class Flag (XVOICE) has been defined. This flag is set by TCOSS if the document to be stored or posted contains a voice attachment. An attachment is detected as voice attachment if it has a binary content and if its (MIME-) type is part of the list defined by registry. If the attachment type is not set, the file name is taken instead. Alternative contents are not considered.

The wildcard ‘*’ may be used in the configured list, in the formats “start*” (match beginning of string), “*end” (match end of string), “*part* (match part of string at any position) of “*” (match always). For example *.doc” will filter all file names with “*.doc” extension. All compares are case insensitive. Trailing blanks are ignored in the actual MIME type or file name of an attachment, but not in the registry settings.

Voice	MULTI_STRINGD	Mime-Type and file extension
Setup default	audio/wav *.wav *.tcs	

- The document class will be defined upon posting or saving documents. If the configuration is changed, the document class of existing documents is not updated.

- Binary attachments of files stored/posted with prior releases are handled as binary attachment.
- Changes of the registry key described above are accepted after restart of TCOSS only!

2.1.7.3 Sub-Key LINK

TCOSS is a distributed system that may consist of multiple nodes that communicate via Topcall Routing Protocol (TRP) with the current system master. These connections are called “TRP-Link” in the context of this manual. These must not be considered as TC/Link-xx applications. The settings within the following sub-key are valid for all TRP-Links.

`HKEY_LOCAL_MACHINE\Software\TOPCALL\TCOSS\LINK`

Note: The following additional TRP-Link configuration values can be found in the TCOSS main key described above: trpLinkInactivityTimeout, trpLinkResyncTimeout.

Values

`EncryptionFlags` `REG_DWORD` TRP-Link encryption mode

The following values are supported, where 2 is the default:
0 ... do not use encryption
2 ... use AES-256 encryption, if supported by remote side. Else, an event log entry (ID 16110) is generated and none-encrypted mode is used.
3 ... force AES-256 encryption. If the remote node does not support AES-256 encryption, startup of this node will fail with an event log entry (ID 16111.)

This configuration value is used for all TRP-Links that does not have a link specific EncryptionFlags value in their TRP-Link specific sub-key.

Following table provides detailed description of all flags:

Flag	Description
0x01	Force encryption. It may be used in addition to flag 0x02 in order to prevent a fallback to none-encrypted mode, if encryption is not supported by remote side.
0x02	Use AES-256 encryption.
Other	All other flags are reserved for future encryption modes and options.

Notes:
- Encryption does not have any impact on network and CPU requirements.
- Encryption is supported by TCOSS, LS1 and FoIP from KCS 10.1.
- The Telex branch box (model 202) does not support encryption.

2.1.7.4 Sub-Key LINK/003

This key defines the properties of the Link connection between primary and secondary master with a fault tolerant system.

HKEY_LOCAL_MACHINE\Software\TOPCALL\TCOSS\LINK\003

Values

EncryptionFlags REG_DWORD TRP-Link encryption mode

Defines the TRP-Link encryption flags as described by registry value TCOSS\LINK\EncryptionFlags which also defines the default value.

2.1.7.5 Sub-Key LINK/LANxxx

This key is used to define the properties of the Link connection between TCOSS master and LS1 or FoIP where xxx must be replaced by the Lan-link number (for example, 001 for L.1 and so forth.)

HKEY_LOCAL_MACHINE\Software\TOPCALL\TCOSS\LINK\LANxxx

Values

EncryptionFlags REG_DWORD TRP-Link encryption mode

Defines the TRP-Link encryption flags as described by registry value TCOSS\LINK\EncryptionFlags which also defines the default value.

For more detailed configuration values, see chapter 3.4.1.5 BranchBox Configuration.

2.1.7.6 Sub-Key Security

Basic security settings should be done with values SecurityLevel as described above.

This sub key defines advanced setting for experienced users. If you change these settings while TCOSS is running, the values are automatically used without need to restart TCOSS after a delay of about 1 minute.

HKEY_LOCAL_MACHINE\Software\TOPCALL\TCOSS\Security

Values

EncryptNumericalPassword REG_DWORD encryption mode

A user's numerical password, which is used by fax commands and voice mail, is visible in an ASCII backup of the user profiles and in the TCOSS system file "Auu99", unless it's encrypted by the server. This feature has to be switched on with a registry setting:

0 ... no action on voice password: passed on unchanged, encrypted or plain text
1 ... encrypt voice password unless already encrypted

Default … 0 (no encryption, compatible to previous releases)

Password encryption requires TC/VMail 3.01.01 (from KCS release 7.49.02) or higher.

Note on release downgrade: After the numerical password encryption has been activated a release downgrade of TCOSS or TC/VMail requires a restore of user profiles with unencrypted numerical passwords. It is therefore recommended to back up user profiles before switching on the password encryption.

DeniedAuthentications REG_DWORD Disabled login authentication modes

It can be used to disable any combination from the following possible authentication methods:

Flag	Description	Remarks
0x01	Native (UserId/Password) login with a KCS user	This is the standard KCS user login.
0x02	Active directory LAN login with clients (before KCS 10.0.1). The KCS user name must match with the user's principal name (for example, "user@mydomain.com").	This option should be enabled only for compatibility reasons, if active directory login is required with old clients.
0x04	LAN Login with no domain user. The KCS user name must match with the SAM-Compatible-Name excluding the domain part (for example, "localuser" for user "mydomain\localuser").	This option should be allowed only if LAN ID login is required for none domain users.
0x20	Improved active directory LAN login. Like mode 0x02, but the client user is checked by impersonation of the domain user at the server.	Supported from KCS 10.0.1. This method works only if TCOSS is running on a computer that is added to a trusted domain.
0x40	Improved LAN login with local (none-domain) user. Like mode 0x04, but the client user is checked by impersonation of the local user at the server.	Supported from KCS 10.0.1. This works only if there is a windows user with the same name and password as used on the client exists on the KCS server. In other words, authentication works like access to a file share on a remote computer with none-domain user.

Default: see registry value SecurityLevel

Notes:

- It is not required to run TCOSS with a specific user account in order use any authentication method.
- Mode 0x04 is also used if the depreciated short user ID option (must be enabled on client with registry value "Common/UseOldUserID=1") is used with a domain user.

DeniedAuthenticationsPreview REG_DWORD

Combination of flags as defined for value DeniedAuthentications. If a specific authentication method is not denied but its flag is set in this value, each successful login with this method generates an event log entry. This value should be used to detect possible compatibility problems before any depreciated authentication method will be disabled by DeniedAuthentications.

DeniedSessions REG_DWORD Disabled TCSI session token

This value can be used to disable one of the following TCSI session token formats.

Flag	Description	Remarks
0x01	Disable old (64bit) session token	64 bit session tokens may be allowed for compatibility with clients before KCS 10.1
0x02	Disable enhanced (128 bit) session token.	128 bit session tokens are supported from KCS 10.1. They improve protection against any session hijack and also prevent replay attacks.

Default: see registry value SecurityLevel

The behavior dependent on the client version and valid configurations is shown in the table below:

client	DeniedSessions Flags		DeniedSessionsLog Flags	Session token length	Event Log Id	Remark
	0x2	0x1	0x1			
New	☐	-	-	128 bits	No	Recommended option
	☑	☐	☐	64 bits	No	Force fallback to old token length
	☑	☐	☑	64 bits	16108	
Old	-	☐	☐	64 bits	No	Allow login with old clients
	-	☐	☑	64 bits	16108	
	-	☑	☐	n/a	No	Deny login with old client
	-	☑	☑	n/a	16109	

Notes:

- A “-” means that the value is not relevant.
- An “old” client is a client KCS 10.0.1 or older version (in particular any TCSI32.dll version older than 2.81.02.)

DeniedSessionsLog REG_DWORD TCSI session token event logs

This value can be used to generate an event log entry if old clients (before KCS 10.1) access the server.

Flag	Description	Remarks
0x01	Generate an event log if an old client (wants to) access the server	A warning event log entry with ID 16108 is generated during login with an old client if 64 bit session tokens are allowed by configuration value DeniedSessions. An error event log entry with ID 16109 is generated if login with an old client is denied because flag 0x01 is set in configuration value DeniedSessions.

Default: see registry value SecurityLevel

RightsCheck REG_DWORD Enable server based rights check

Defines individual flags to enable additional rights that are not used by default up to KCS 10.0. Each flag improves the security but there is also a minor risk to get compatiblity issues due to more strict rights checks.

Flag	Description	Remarks
0x01	Enable rights checks for all application	This flag activates the server based rights check for TCfW, TCARCHIVE[1] and all TC/LINK proccesses. The rights check for all other applications (TFC application, IpPrinter, TWS, KCC, and TC/Web) licenses is always enabled.
0x02	Enable rigths checks for rich client (TCfW)	Rights are allways by TCfW on the client side but this server based check provides additional security. This flag is not relevant if flag 0x01 is set.
0x10	Deny native login (with KCS user / password) for users with LAN login permission.	Should be used to prevent a security risk if users with the LAN Login permission are using insecure KCS passwords (for example, if the password is created using directory synchronization). **If you activate this flag it is no more possible to use the same user-id both with LAN login and native login.** This means that the LAN login right must be used from all users that want to use native login. If user TCTECH was installed before KCS 10.0.1, it was created with the LAN login right. This rights should be removed (either via users administration or reinstallation with “TCOSS /i”) in order to support this flag.

[1] Flag 0x01 enables the TCOSS rights check for the archivation of messages from TCOSS by TCARCHIVE. The security checks for search/open of messages in TCARCHIVE by any client is not influenced by the flag.

0x20	Check queue with open for transfer operation.	Additional security check if a queue is polled. Introduced with KCS 10.1.

RightsCheckPreview REG_DWORD

Combination of flags as defined for value RightsCheck. If any flag is active, an event log entry will be created if an operation was allowed that would be denied if the corresponding check in RightsCheck were enabled. This value should be used to detect possible compatibility problems before additional right checks are enabled by RightsCheck.

2.1.8 Copying KCS File Structure with TCDisk

KCS file structure can be copied as any other file on Windows operating systems. However, TCDisk provides additional options while copying, e.g. modifying the total size of the file structure.

Before copying, prepare the following registry entries. The TCDisk program needs them to recognize the source and destination disks (partitions).

```
Subkey:HKEY_LOCAL_MACHINE\SOFTWARE\TOPCALL\TCOSS\Drive1
Value:FileName  Type: REG_SZ  Data:D:\TCOSS File Structure

Subkey:HKEY_LOCAL_MACHINE\SOFTWARE\TOPCALL\TCOSS\Drive0
Value:FileName  Type: REG_SZ  Data:F:\TCOSS File Structure
```

Make sure that the destination file (e.g. F:\TCOSS File Structure) does not exist.

Continue with the following steps:

- Start TCDisk form the Kofax Communication Server program group.
- Select option “3) Disk Copy”.
- Select the source disk. Since the second file does not exist only one disk should be selectable.
- Select the target disk. Only one disk should be selectable.
- Choose the copy mode. If your destination disk is very small you may save disk space by using the second copy mode. This mode does not copy short-term archive entries. But, typically you will use the first copy mode that copies all data.
- Exit TCDisk after the copy operation is completed.
- Delete one of the registry values Drive0 or Drive1 from the Windows Registry.

Note: For older KCS releases (up to KCS 8.1 / TC/SP 7.84.00) use different registry keys:

```
HKEY_LOCAL_MACHINE\SOFTWARE\TOPCALL\TOOLS\Drive0
HKEY_LOCAL_MACHINE\SOFTWARE\TOPCALL\TOOLS\Drive1
```

2.2 MODEL 165/22X

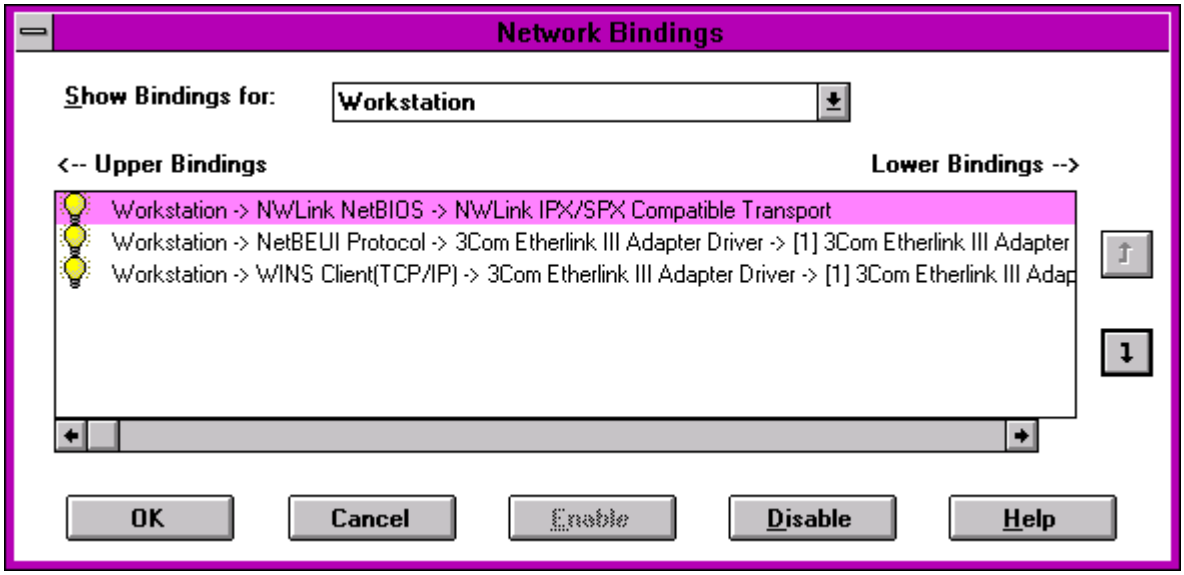
2.2.1 Installation of Windows

The Model 165 uses a network connection between both servers with either NetBIOS via IPX (NwlnkNb) or TCP/IP as transport protocol. Install all protocols **before** you running KCS setup.

When using NetBIOS, the order of the network bindings determines which underlying protocol Windows uses. In order to ensure IPX (NwlnkNb) is used, the binding must be checked and rearranged if necessary.
The protocol *NWLink NetBIOS* must always be first in the network search order.

To verify and change the network bindings:

1. Open *Network* from the *Control Panel*.
2. From the *Network Settings* window open *Bindings*.
3. Select *Workstation* from the upper list box
4. Move the binding with *NWLink NetBIOS* to the topmost position using the arrow buttons on the right
5. Select *Server* from the upper list box and move the binding *NWLink NetBIOS* to the topmost position.
6. Select *NetBIOS Interface* from the upper list box and move the binding with *NWLink NetBIOS* to the topmost position.



This also applies if there is a second network adapter card for a dedicated LAN connection between both servers. The entry with *NWLink NetBIOS* bound to the dedicated LAN adapter must always be at the topmost position in the list of bindings.

To ensure this it might be necessary to rearrange the order of the adapters bound to *NWLink IPX/SPX Compatible Transport* as well.

Note: In some cases it is possible that changing the order of the adapters bound to Nwlink has not the desired effect or disables *NWLink NetBIOS* at all. In this case removing all adapters and reinstalling the network adapters with the dedicated link adapter first helps in most cases (reboot between each step).

For TCP/IP there is nothing special to take care of. Do not use DHCP for the adapters connecting both Model 165 servers. To install TCOSS you have to know the IP addresses of both. If there is a dedicated network link installed its sufficient to know the IP addresses of these adapters.

At startup, TCOSS on the primary server measures the time a packet takes to be sent to the secondary server and back again. This value is written to the trace file (if the trace level is non-zero) as message '*x ms link roundtrip time!*'. Typical values are below 5ms (may vary slightly). A dramatic higher value indicates a wrong binding.

To offer maximum performance the LAN connection between both servers must provide a bandwidth of at least 500kB/sec and a link roundtrip time below 5ms. If bandwidth is less (remaining bandwidth is LAN is used for other purposes) high message throughput cannot be guaranteed.

Care: In Ethernet networks, you cannot necessarily deduce the amount of free bandwidth from the percentage of network utilization (measured with e.g. a network analyzer). E.g. a network utilization of 50% in 10Mbps Ethernet network does mean there's 500kB/s free bandwidth!
In fact, 50% network load is the maximum most Ethernet networks can achieve. The maximum possible network load heavily depends on the number of workstations in a network segment. The more workstations try to access the network the higher the probability of network collisions (refer to appropriate Ethernet - CSMA/CD documentation).

2.2.2 TCOSS

Both Model 155/21x servers of a Model 165/22x system must be installed separately using the setup-program.

To install KCS or to update the release, both servers must be shut down by stopping the service TCSRV on both servers.

Note: Generally, to stop the entire Model 165 system it is not enough just to stop the primary server (either by stopping TCSRV or the process TCOSS). In this case the secondary server stops and restarts as standalone server, as if there were a primary server failure!
Always stop the primary server and then the secondary server if you want to shutdown the entire system.

Select the option *TCOSS* in the setup program to install the server. The option *MAKETCOSS* must be additionally selected for the primary server.

TCOSS must be configured on the primary server only. The secondary server gets automatically updated after system startup. In general, if possible it is best to change the configuration while TCOSS is active but in case of initial installation or release update this is not possible.

If the TCOSS configuration is installed both on the primary and on the secondary master (via install configuration local) this causes a desynchronized condition!

For proper operation of the Model 165 it is important that one server is installed as **primary server** and the other as **secondary server**! In addition be sure to use the correct workstation name for the **other** server.

The setup program asks for the type of protocol used for the data link connection between both servers. If you select *TCP/IP* you have to additionally enter the TCP/IP path to the other server.
In a single LAN environment the TCP/IP path simply is the IP address of the other server to connect to in dotted notation. If there is an additional dedicated LAN you have to enter both the IP address of the other server at the dedicated LAN and your own IP address at the dedicated LAN separated by a slash character '/'.

Syntax: <destination IP address>/<own IP address>
Example: 193.81.166.77/193.81.166.76

The server configuration for TCTI must be stored appropriately on both the primary server and the secondary server. Normally only the primary server's TCTI configuration is used. The secondary server's TCTI configuration is used in case the primary server fails and the secondary server is started standalone. Since both servers have different TCTI path's the clients connected to a Model 22x (applies to TC/LINK, TCLANPRT, TCFILBRK as well) should use TCTI's alternate path feature (refer to TCTI Configuration Manual)

Similar to Model 65 installations take care that the size of the *KCS file structure* on the secondary server is not less than the one used on the primary server. Note that the behavior of TCDISK has been changed with release 7.05.00. TCDISK of release 7.04.00 uses the complete partition and the current version of TCDISK uses multiples of 1MByte as size of the *KCS file structure* during format. This is very important to know for an upgrade from a Model 155 to a Model 165.

If a Model 155 that has been initially installed with TCOSS 7.04.00 or older will be upgraded to a Model 165 the D-partition of the secondary master must be at least 1Mbyte bigger as that used on the primary master! If a Model 165 will be completely new installed, both masters can use the same D-partition size.

2.2.3 Status Box, Status Agent

It is possible to use a Status Agent or the TS85 status box to avoid a possible desynchronized condition.

If the primary and secondary master are located at different locations, the Status Agent should be installed near to the primary master in order to minimize the risk to loose the connection to the primary master.

Consider the following behaviour if the registry value RunWithoutStatusAgent=0 (this is default value) and the System is running in normal state (i.e. both disks are mirrored): If the connection to the secondary master is lost (for any reason) and the primary master cant access the status agent, the primary master stops in order to avoid a possible desynchronisation state!

Status Agent:

With the status agent it is possible to install for instance both servers in different buildings within a company area. The distance between both primary and secondary server is only restricted by the used LAN connection in that case. See KCS Model/2xx Manual [4] for more details.

The status agent (TC/STATUS) has to run on an independent computer. It must not run on the primary or secondary master. Otherwise, desynchronized condition could not be prevented in all cases of single errors!

Status Box (TS85):

By default the status box is connected to COM2 (COM1 is reserved for the mouse). This port cannot be used for other purposes.

The Model 165/22x does not work with a status box release below TS85.0b! The TS85.0b has a slightly modified hardware than the TS85.0a (shipped with Model 65). A Model 65 can use a TS85.0b with TCOSS releases above 7.04.00 only.

The status box requires a set of serial cables with male/female connectors (different to Model 65). In addition the standard Model 155s must be modified to support the status box!

An upgrade kit is available.

2.2.4 Network Protocols for Control Channels (TCRPC)

In a tandem environment (Model 22x), both master servers communicate with each other via two different network connections.

One connection is the data link that can be either TCP/IP or NETBEUI (Named Pipes).

The other is the control connection that always used Named Pipes in previous releases. Now, this kind of connection can use TCP/IP as well. This allows to operate a Model 22x in a non-NetBIOS network environment.

The same kind of communication is used between TCMON32.exe and the KCS supervisor.

See KCS Monitor Manual [7] and KCS Model/2xx Manual [4] for more details.

2.2.4.1.1 Configuration of Control Channel for Tandem Servers

The command-line options for TCOSS were slightly changed to allow to specify additional options.

As with previous releases, the TCP/IP path for the data link connection is specified using the switch

```
/TCP:<TCP/IP path>
```

at the TCOSS command line.

This path additionally is the default path for the control connection between the master servers.

To override this default specify the new switch

```
/TCP1:<TCP/IP path>
```

Note: If the data link uses TCP/IP by specifying */TCP:* it is not possible to use Named pipes for the control connection.

If <TCP/IP path> is not specified at the */TCP1:* switch, TCOSS reads the value from the registry.

HKEY_LOCAL_MACHINE\Software\TOPCALL\TCOSS\TCPLinkPath1 = REG_SZ

The control connection is used between one master's TCOSS and the other master's TCSRV. The appropriate protocol type for the corresponding TCSRV is set automatically during setup.

For TCP/IP: (default new installations)

HKEY_LOCAL_MACHINE\Software\TOPCALL\Boot\TCRPCServerMode1 = REG_DWORD = 1

For Named Pipes (Default): (for update)

HKEY_LOCAL_MACHINE\Software\TOPCALL\Boot\TCRPCServerMode1 = REG_DWORD = 3

2.2.5 Queue Length Log Agent & NT Performance Counters

A queue length log agent writes log entries in regular intervals to the short term archive to be later processed by TC/Report. NT performance counters allow a live view of TCOSS queue lengths.

All messages waiting to be sent immediately and messages waiting for a retry after a failed send attempt are counted for the total queue length. Not counted are messages with a specific send time, if this time has not yet passed. Also not counted are messages that are currently being sent, messages already routed to another node (state "at next node") and messages in state "Inactive – Problems" (not sent, no more send attempts).

The queue length log agent and the creation of NT performance counters is controlled by setting a log agent entry in the queue's user profile, e.g. for user "F" to monitor the fax sending queue.

The following parameters may be set for a log agent:

- Performance counter name
- Log interval in seconds: A value of zero activates an NT performance counter, any non-zero value activates the queue length log agent plus an NT performance counter. The value itself sets the log interval in seconds; the actual log interval is rounded up to multiples of the alert check interval set in the system configuration.
- Priority filter, restricting the queue length counting to messages of a given priority. This means it is possible to have e.g. counters for the queue lengths of each priority level.

The NT performance counters use the following setup:

- Performance counter object: "TCOSS queues" (or "TCOSSn queues" in an ASP environment)
- Performance counter instance: empty
- Performance counter name: as defined in log agent entry
- The Queue Length performance Counters are not supported via SNMP.

A TCOSS system config position, introduced with TCOSS 7.46.10, controls the alert check cycle (before fixed 1 minute), which is also the update interval for the queue length performance counters and log agent entries.

System configuration, line 18, 3rd position: queue length check cycle in seconds

01 ...FF: check cycle 01 ...255 seconds
00: program default check cycle 60 seconds
default value = 00: queue length check cycle 60 seconds

The maximum number of alerts and log agents handled by TCOSS is 10.000.

Restriction: The total number of TCOSS alerts is limited, this limit also restricts the number of queue length log agents and NT performance counters. The alert scan interval set in the system configuration limits the resolution of the log interval.

Note on short term archive size: The queue length log entries are stored in the TCOSS short term archive together with message send attempts occupying archive file space. The size of the short term archive should be increased if necessary. Calculate with an internal size of 150 Bytes for a queue length log entry containing one counter with a descriptive string of 16 Bytes, for each additional counter logged at the same time add 28 Bytes plus the length of the name string.

Default user profiles “F” and “X” for the fax and telex channel groups with default queue length monitoring will be created automatically for new TCOSS installations. The field names for the queue length log agent and the NT performance counter will be “Fax Messages” and “Telex Messages” respectively. The log interval will be set to 10 minutes.

With the default setting of the fax and telex queue length agents about 30 KB of the short term archive file space is used per day for the log entries.

2.2.5.1 TCOSS Release Downgrade

If a TCOSS release downgrade (to a release lower 7.46.10) is done after user-defined log-entries (e.g. queue length log entries) have been written, these entries will appear in the out-box of the log user (“QUEUELEN” for queue length log entries) and in the in-box of user “++++++++”. All fields of these entries, except recipient, originator and archiving time, will be empty in the case of strings or have default values in the case of integer fields.

2.3 AUTO START OF WINDOWS APPLICATIONS

The supervisor service (TCSRV) is responsible for automatically starting and stopping TCOSS processes and modules. This service was installed by the setup program but is passive after installation. Its operation is full controlled by registry keys and the control panel (Service).

It starts all applications listed in the value Startup of his registry key

```
HKEY_LOCAL_MACHINE\Software\TOPCALL\Boot.
```

2.3.1 Registry Entries Used by TCSRV

Key: HKEY_LOCAL_MACHINE\Software\TOPCALL\Boot.

Startup	REG_MULTI_SZ	process names

Contains the names of all processes to be started at Windows startup. The names specified are used as key for the actual values for each process.
e.g. `HKEY_LOCAL_MACHINE\Software\TOPCALL\<ProcessName>`

RootDir `REG_SZ` root directory of TCOSS
The root directory of TCOSS where all other directories are relative to. This string must be a fully qualified path!
Default … "C:\TCOSS"

EnableBoot `REG_DWORD` zero or nonzero value
At Windows startup TCSRV does not try to start the processes specified with `Startup` if this value is zero. During normal operation this value is non-zero.
Default … 0

Key: HKEY_LOCAL_MACHINE\Software\TOPCALL\<ProcessName>

CommandLine `type REG_SZ`
Complete command line to be used in a call to CreateProcess(). If no full path or a relative path is given, the current directory is always `<RootDir>\System`. This value is used by the supervisor service to start TCOSS. This value is mandatory and has no default.

UserId `type REG_SZ`
Start the application using the specified user account. If this value is not present, the application is started using the user account of TCSRV.

Password `type REG_SZ`
Required if value UserId is used to specify a password. This value is optional.

DependOn `type REG_MULTI_SZ`
Can be used to ensure a proper start-up sequence. Starting of the application will delay if all three conditions listed below are true:
1. The specified application name is not the own application.
2. The specified application name is in the list specified by **Startup** value.
3. The specified application is not running.

Example:

The common part of all registry key (`HKEY_LOCAL_MACHINE\Software\TOPCALL`) is not shown in this example.

Registry values:

Boot\Startup	=TCOSS TCLANPRT TCFILBRK
TCOSS\CommandLine	= TCOSS /n
TCLANPRT\CommandLine	= TCLANPRT
TCFILBRK\CommandLine	= TCFILBRK -g05 -eC:\API
TCFILBRK\UserId	= DEMOTC
TCFILBRK\Password	= ABCD

- TCSRV executes C:\TCOSS\SYSTEM\TCOSS /n
  This program will be started with user account for TCSRV. Since default value of key DependOn is TCOSS, the applications TCFILBRK and TCLANPRT are waiting until TCOSS is running.
- TCSRV executes C:\TCOSS\SYSTEM\TCLANPRT (using TCSRV user account)
- TCSRV executes C:\TCOSS\SYSTEM\TCFILBRK -g05 -eC:\API (using DEMOTC user account)

2.3.2 User Accounts

As mentioned above applications started via TCSRV can use the user account of TCSRV (default) or any other user account. The TCSRV can be started with system account (default) or any other user account.

If you want to access a file server (e.g. Novel), the specified user must exist both on the local machine and on the file server with the same password!

Application	required account
TCOSS	System account or Administrator User
TCLANPRT	any user account with the appropriate printer setup and rights *)
TCFILBRK	any user account with the appropriate file access rights

Note:
If TCLANPRT is used for printing on Netware printer, the printer settings for banner and notifications are always taken from the current interactive logged-in user.
If no user has logged in (e.g. after system boot) the following default settings are used:

print banner: yes
notify when printed yes
This is known error of Windows NT 3.51 and Windows NT 4.0. You can make a workaround by using the auto login of Windows NT.

2.3.3 System Attendant TC90/91/95

The System Attendant can be connected to any KCS mod./1xx via TP80.2x (TC90/95) or via printer port (TC91 or TC92+TC90/95). It will be controlled by TCSRV and can reset the system, if a fatal system hung up within TCSRV occurs. Furthermore it has a built in unique CPU number that required for Licensing.

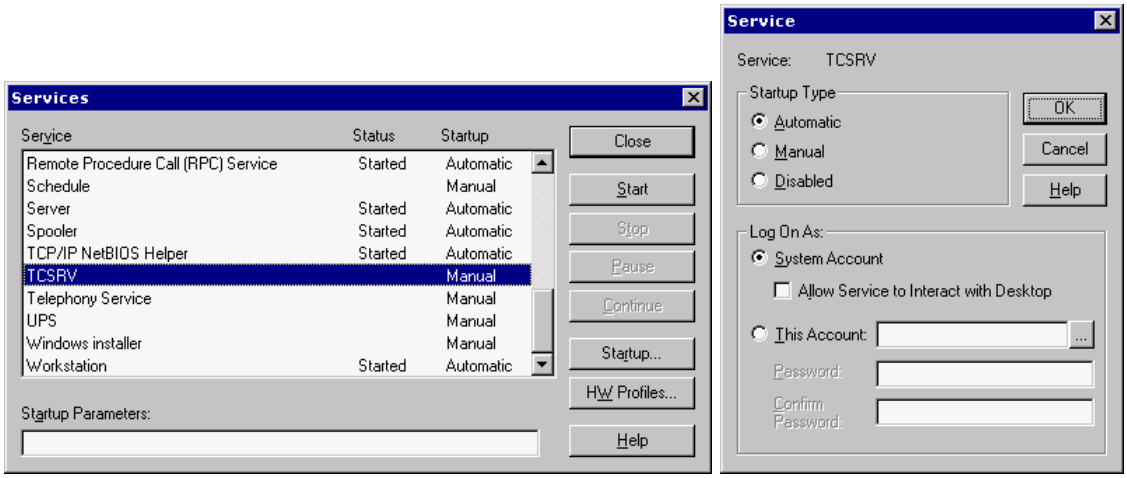
Notes

- The watch dog must be disabled during installation (Press button during PowerOn Reset).
- If TCSRV is stopped the watch-dog time-out will be set to 3.8 hours.

Since CPU number function is part of the system attendant it is mandatory for TCOSS! If no TC90/91/95 could be found, TCOSS does not start!

2.4 AUTO ACTIVATION OF TCSRV

- To enable or disable automatic TCOSS start after power on use the control panel for services.



To stop or restart all processes started by the service, the service itself has to be stopped or started.

Note: If the supervisor service controls multiple processes (TCOSS, TCLANPRT, TCFILBRK, TC/LINK,..), all of them are stopped or started together with the service.

If processes are started by the supervisor service they do NOT interact with the user interface. Hence, there is no trace output to screen and no input from keyboard or mouse.

3 CONFIG PROGRAM (WCONFIG)

3.1 OVERVIEW

The config parameters control many functions of the TCOSS system. These system parameters are permanent once they are determined at the generation of a specific system of the client. In order to change the config-parameters the system has to be “re configured”.

The config parameters are listed in so called config files and are loaded only once at the start of the system. Therefore, modifications of the config-files become effective only after a restart of the system.

The config files are not visible to the user, they do not appear in the contents listing and can be modified only with the config-program.

The config parameters can be divided into three groups:

- Parameters which apply to the whole system.
- Parameters which apply to one channel and affect TAM.
- Parameters which apply to one channel and affect the user module.

There are two different possibilities with different levels of complexity for configuring a system:

- Configuration by using a menu controlled help program (config program), and
- Configuration by direct modification of the config-files (with a line editor also contained in the config program).

The first method is much simpler. It enables you to set the most important parameters so you can configure different “standard systems”.

The second method can be used for “special systems”; however, it should be applied only by a software specialist.

3.2 CONFIGURATION WITH PC

With the MAKETCOSS for Windows software it is possible to create and maintain configurations and to create TCOSS - disks on an IBM-PC or 100% compatible. Up to three 3,5” / 1,44MB (use HD - floppies) are required to install the operating system.

The concept of MAKETCOSS is that images of TCOSS-floppies for all customer installations are kept on this PC or even directly at the customer. This makes it unnecessary to store a lot of master disks. You can perform configurations or release updates on such an image. Utilities to transfer this image to or from TCOSS-floppies are included in MAKETCOSS.

NOTE: The images on your hard disk contain no information about send orders!

Features of the MAKETCOSS for Windows software:

- The Config program runs under MS-Windows and supports direct installation of new TCOSS releases via the TCSI-network interface.
- Multiple program disks are supported for installation via floppy disk.
- The configuration can be downloaded to KCS or uploaded from KCS via TCSI interface during operation. Downloaded config files (via TCSI) can be viewed with TCfW.

- A configuration report can be generated.
- Envelopes with all kind of TCSI objects can be transferred via floppy disks now. There is restriction for the used file and folder name.
- Reading of the configuration from a floppy (former GETTCOS) is possible within the config program.

3.3 INSTALLATION OF MAKETCOSS FOR WINDOWS

MAKETCOS must be installed with the KCS setup.

- Start setup.exe.
- Select the applications you want to install. You want “MAKETCOSS”.
- Change the application directory if required (supported for MAKETCOSS only).
- Click “Install”.
- Follow the instructions of the setup program.

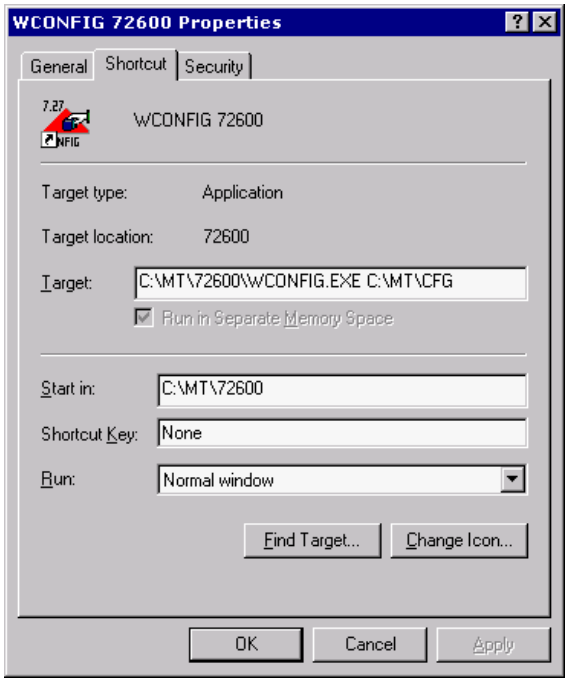
If a model/1xx or 2xx is installed or updated, you additionally have to select TCOSS during setup.

It installs the new MAKETCOSS for Windows release to the hard disk of your system. After the first installation of MAKETCOSS you will find a C:\MT directory. It is intended that all information about customer installations as well as information about new TCOSS releases are stored there (e.g.: the C:\MT\60500 sub directory contains all information about release 6.05.00).

If you have already installed a previous MAKETCOSS for Windows release only a new sub directory (e.g.: \70102) will be created.

Start your Windows and add the WConfig.exe file to a group on your windows desktop. If you use some installations very often you can create a special icon for configuration of this installation by copying the WConfig.exe icon (hold the CTRL-Key and drag the icon with your mouse) then edit the command line in that way that you specify an installation directory after the program name. Change the name of the program icon to distinguish between different installations. The working directory definition will not be used.

<u>Example:</u>



3.3.1 WCONFIG.INI

This file must be located in your windows directory. If it does not exist it is created with default values. It contains the following information's:

Setup of the WCONFIG:INI file:

```
[]
TCOSFLOPPY=TCSI/A:/A:
TEMPDIR=C:\WINDOWS\TEMP\
BACKUPDIR=C:\MT\BACKUP
TOPCALL=TCSI/YourServername/YourServerpath
```

TCOSFLOPPY	defines the used floppy drive for working with TCOS floppy disks.
TEMPDIR	defines a directory for temporary stored files.
BACKUPDIR	defines a directory where the TCSI (TC Client Server Interface) stores some backup files and the
TOPCALL	defines the default KCS for installing a new configuration/release via the TCSI-network interface. The *YourServername* field will be ignored. *YourServerpath* specifies the path to KCS in the same way is PATH variable in the SERVER1 section of TOPCALL1.ini (e.g. “NETBIOS,KCS”). Restriction: This syntax do not allow to specify a path with link type “IPX/SPX” or “TCP/IP” as default path.

3.3.2 Folders and Naming Conventions

Within the config program TCSI folders are denoted in the following way:

```
TCSI/<name of the server>/<path to the server>/<foldername>
e.g.: TCSI/CONFIG/c:\mt\maier/PRIVAT
```

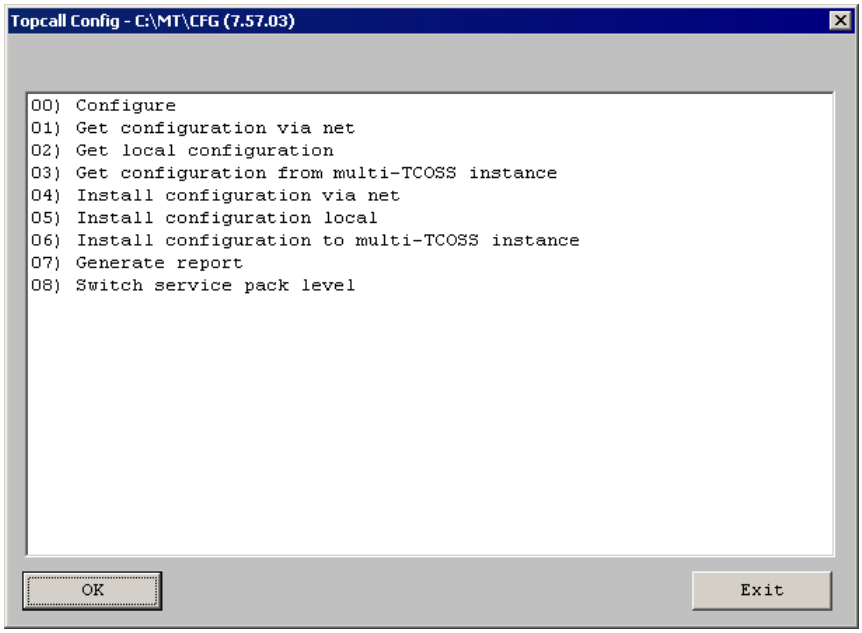
If just a DOS path is given e.g.: “c:\mt\maier folder” +TECH is used by default, and it is assumed that the name of the server is equal to the name of the last subdirectory in uppercase letters and with none alphanumeric characters substituted by underlines (e.g. c:\mt\abc$d33 will contain the server ABC_D33.

3.3.3 Creating a New Installation Folder

When you use the WCONFIG program with a folder or subdirectory which does not exist, it asks you if it should create a new one. It uses the TCfW directory NEW which is located in the same directory which contains your WConfig.exe as a default.

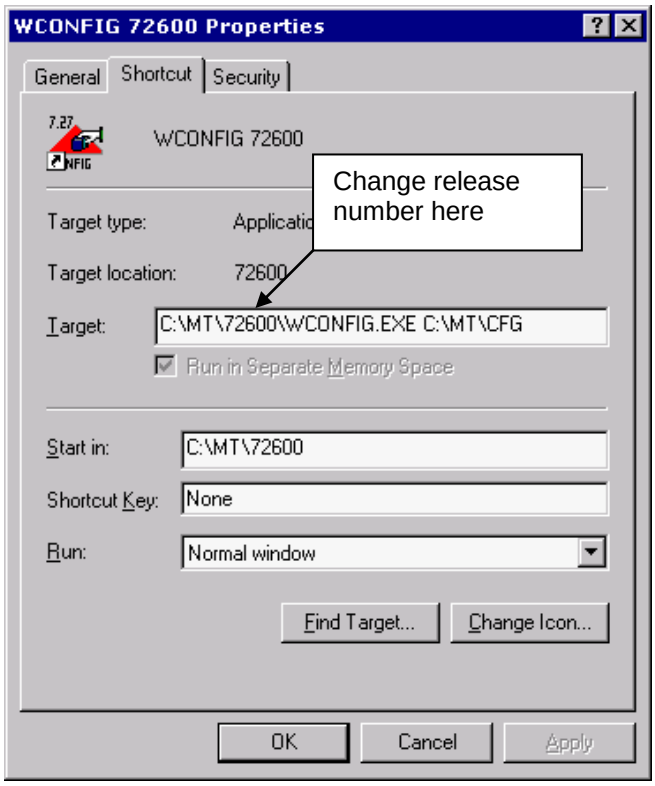
3.3.4 Get Configuration

You can get the configuration direct from KCS via TCSI by choosing menu item “01) get configuration via net” from the main menu.



3.3.5 Release Update

A release update of an existing MT/WIN installation on hard disk is performed by changing the path to WConfig.exe as shown below. During the next start of WConfig.exe it compares its own release with the release number defined in file “+TECH\ASYSCONFCCCC” of the used installation folder and updates the configuration if required.



A configuration downgrade will not be supported. It is recommended to back up the current configuration before update. During KCS setup both MAKETCOSS and TCOSS must be selected!

3.3.5.1 Updating an Existing MT/DOS Configuration

An existing MT/DOS installation (release 6.00 to 6.03) can be updated by reading the configuration from an installation disk or direct from KCS (via TCSI).

How to update existing configurations on the hard disk:

- Create a installation disk from the old version with e.g. “make -fuc a” (programs are not required)
- Create a new installation with MT/WIN.
- Read the configuration from floppy with menu item “get configuration from floppy”.
- If required user files can be copied from floppy to the installation folder with TCfW. (requires KCS Client Applications 2.00.06 or higher)

How to update existing System via TCSI:

- Create a new installation with MT/WIN.
- Read the configuration from KCS with menu item “get configuration via net”.
- If required user files can be copied from floppy to the installation folder with TCfW.

3.3.6 User Files and Masks

The installation directory of a MT/WIN configuration has the same format as a local TCfW folder. To view or modify this files with TCfW you have to:

- Select the dialogue box “create / add folder” and specify the installation directory. Then you get an additional entry in the folder menu. (folder name = directory name)
- Open this folder and clear the selection criteria for the User ID.

In the folder “+TECH” (shown as User ID) you will find all configuration files. You can view or print these files with TCfW. It is possible but **not** recommended to change it with TCfW (except “+TECH/ALOADERTABLE” for trace purposes).

Note: If a bad config file will be installed, KCS may stop with an internal error message!

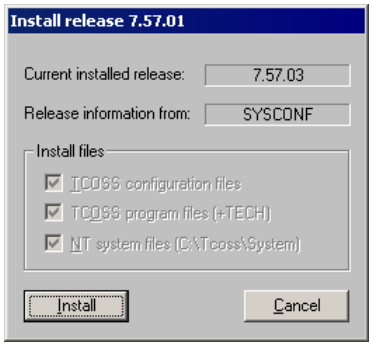
In the folder “+MAIL5V” you will find user files and masks. These files can be handled with TCfW. New files can only be created with TCfW release 1.08 or higher.

Restriction:

1.) Do not create files with User ID “+TECH” or “+USER”

3.3.7 Installing Configuration Local

The main menu of the WCONFIG program contains the line “05) Install configuration local”. If you select this line, you will get the following dialog box.



If the installed release matches with the release of WConfig, you can select which files to install. If the releases are different, you always have to install all files.

3.3.8 Installing Configuration via Net

The main menu of the WCONFIG program contains the line “04) Install configuration via net”. The WCONFIG program may prompts you for KCS path, user name and password. This user must have write permission to the system folder.

If login is successful you will get the same dialog box as described above for *Install configuration local*. You can select if you want to copy the configuration or both configuration and program files. But, Windows NT files are never copied. This means that release update must be done with 02) Install Configuration Local!

Note: Windows program files (located in C:\tcoss\system) are not copied if Install configuration via net is selected!

If configuration changes are installed via net, the down time of the TCOSS server for configuration changes will be reduced!

If there are no changes both in the common configuration parameters (SYSCONFCCCC) and in the hard/software assignment, the effected channel and nodes can be reloaded by TCMON. In that case the system is available without interruption during configuration changes. Refer to KCS Monitor Manual [7] for further details.

3.3.8.1 How to Transfer User Files?

In addition to the config-files stored in the TCSI Folder for that installation other files can be stored there (e.g. use TCfW to create a file MYFILE in folder: FIS, in the DOS directory C:\MT\TESTX).
The user Files are all files stored in Folders other than +TECH and +MAIL5V and all files in the folder +MAIL5V with less than 12 characters.

These files may be installed as follows:

- Copy these files with menu item “Write User Files to disk” to an existing configuration disk.
- Install the user files a KCS with “Initial install to hard disk, delete all files on hard disk” or “Copy file(s) to hard disk. This can be done manual or with an auto install script.

User files on a floppy disk can be copied to a configuration folder with TCfW if the new TCSI, TOS and IP06 DLLs are used (provided with KCS Client Applications 2.00.06 or this TCOS release).

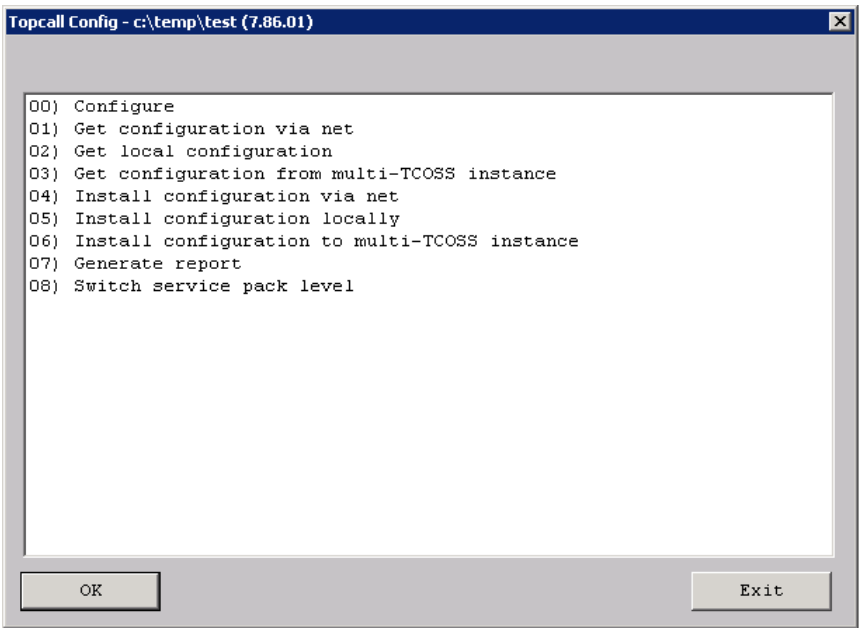
3.4 WORKING WITH MAKETCOSS FOR WINDOWS

You can work with an installation by using one of the following programs.

WCONFIG	starts the config program under MS-Windows
CTC	copies files between from/to TCfW Folder format.

3.4.1 WCONFIG

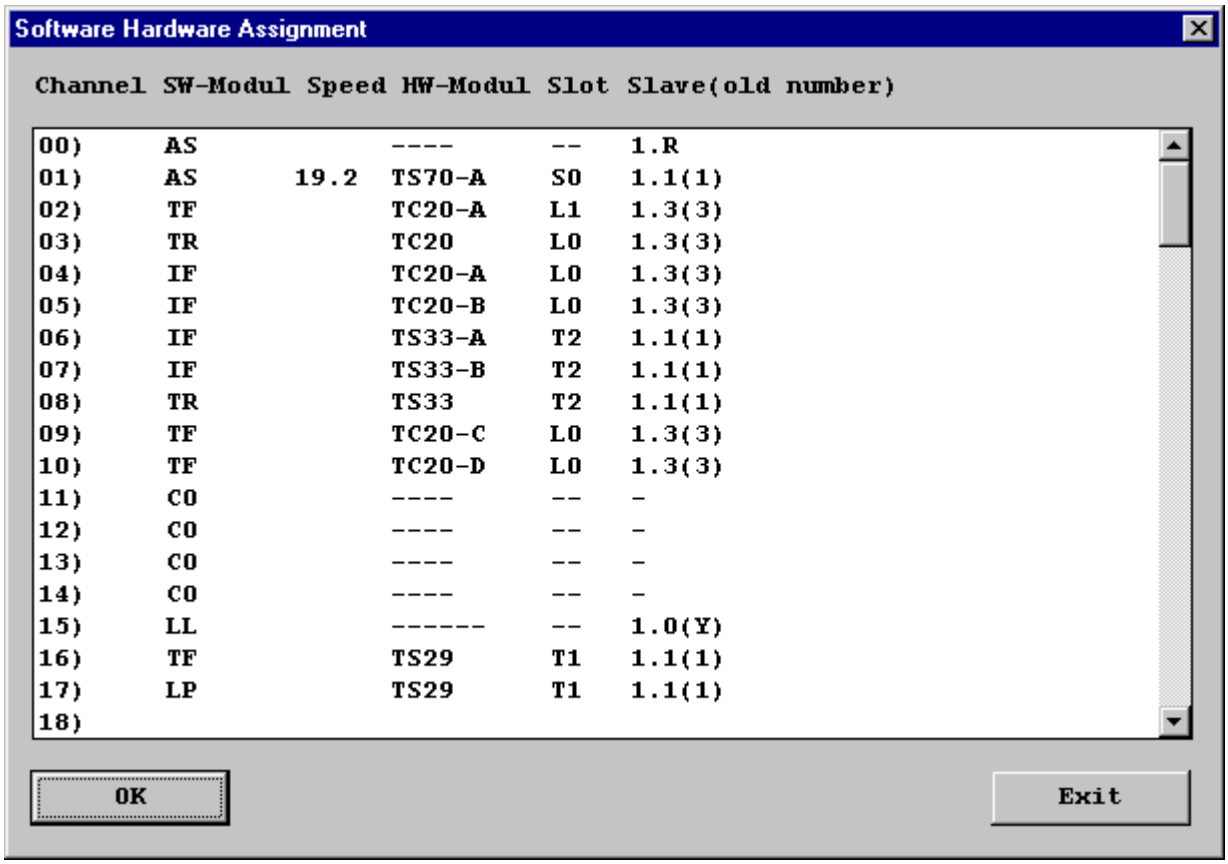
3.4.1.1 Main Menu



3.4.1.2 Software Hardware Allocation

The arrangement between the channel number, software module, hardware module, slot, speed and slave is indicated in menu branch 00):

The picture below shows an example:

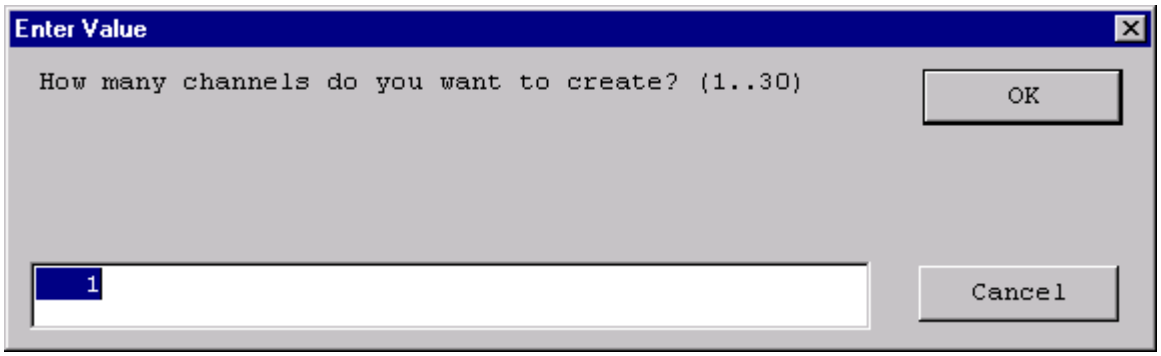


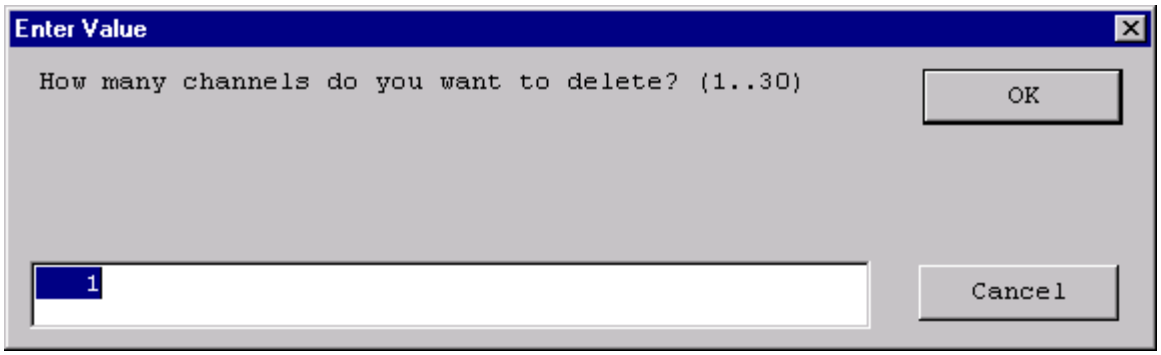
Careful: Modifying an existing configuration by assigning a software module to a channel erases the existing configuration (even when the software module is the same one as before).

Caution: For proper working of TCOSS at least one non-client server channel (UC0) is required. Otherwise all send orders will stay in state of waiting.

3.4.1.2.1 Bulk Channel Creation/Deletion

When you create or delete channels using the software hardware assignment, type how many channels to create or delete:





The following semantics apply:

- These windows appear for creation or deletion of all types of channels. They are not limited to specific channel types.
- The default number in the window is always set to 1 even if you entered a different number in a prior operation. Valid numbers to be entered range from 1 to 30.
- There must be enough consecutive free rows to create all channels. Nothing will be created if this is not the case.

  This limitation does not apply to the delete operation. Delete just erases all channels in the specified area.
- When you create more than one channel at once using this dialog, all these channels will have exactly the same configuration.
- The first channel is **not** automatically set as the reference channel. If you want to configure a set of channels with a reference channel, first create the reference channel and then a number of channels at once with the specified reference channel.

3.4.1.3 Slave Numbering Scheme

Slaves numbers are denoted as `<m>.<s>` where <m> represents the number of the master server and can be one of the following:

0 ... prim. server in normal system or **standalone** secondary server if prim. server fails
1 ... prim. server
2 ... sec. Server
L ... (See chapter “BranchBox configuration” for details)

<s> represents the number of the slave and can be 1 to 4, T or 0. The slave number 1 represents the first possible slave (Model 15 Line Server) connected to the link with the lowest possible number (link 0 for Model 1xx, link1 for Model xx). Higher slave numbers mean higher link numbers.
The special slave number T denotes a TCTI connection of a channel and not a link connection.
A channel with slave number 0 runs on the master server and not on a slave.

Note, that only a restricted amount of combinations of <m> and <s> are valid e.g.:

0.T	only valid configuration with m = 0 and s = T
1.4	s = 4 is valid only for a Model 155 (with m = 1)
2.<s>	valid only for a Model 165 or a Model 65
<m>.0	valid for UAS only
L.1	References a LanLink configured with the number 001

For further model specific restrictions refer to the description of the models in the KCS Model/2xx Manual [4].

Note: For a Model 65/12 (a system with 2 TS0D boards) the 2 boxes are numbered ‘1.1’ and ‘1.2’, although they are a kind of primary/secondary master. This is to make the upgrade of the model easier and follows the rule that TS0D boards are always slaves.

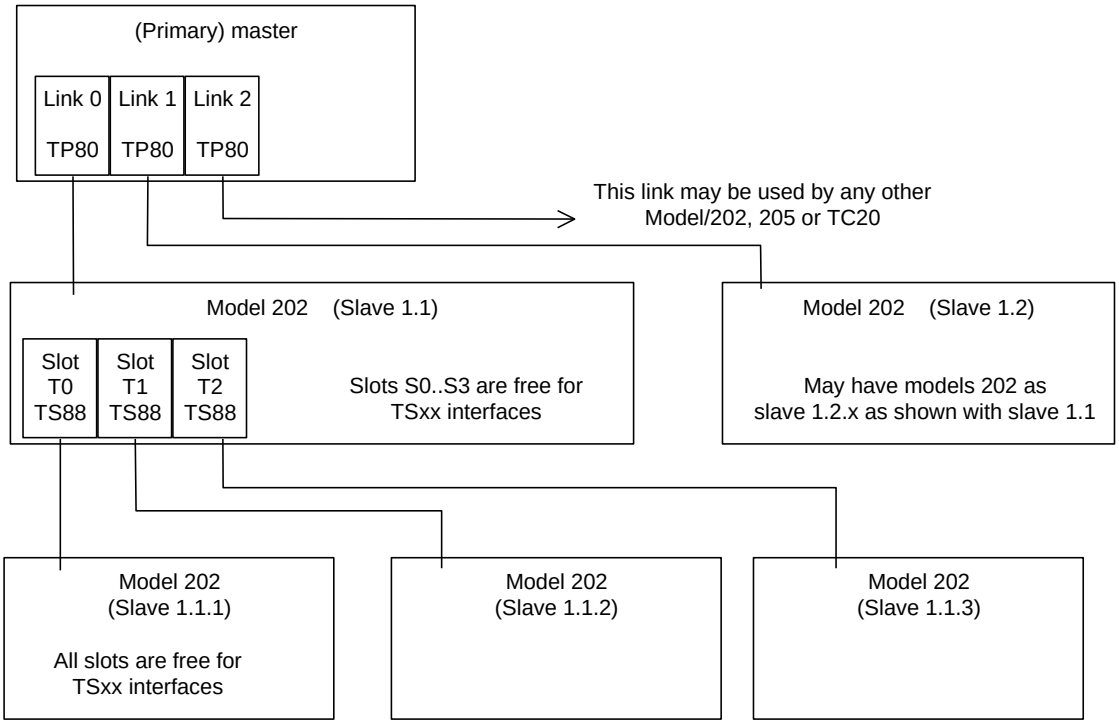
For slaves connected to master 1 (numbers ‘1.<s>’), the leading master specifier (‘1.’) is optional and can be omitted e.g. ‘2’ is equal to ‘1.2’.
If only ‘T’ is specified the number is substituted to ‘0.T’.

The slave number 0 is used for the UAS module only which runs on a master server and connects to one of its COM ports. The configuration of this UAS module (COM port number, ...) applies to only one specific master server, hence, only 1 or 2 should be specified as master server. With 0 the channel normally runs on the primary server and would switch to the standalone secondary server if the primary server fails. In this case the proper configuration for the primary master may be inappropriate on the secondary server and lead to unwanted results.

On the other hand, channels not bound to any special hardware (e.g. UASTCTI or UC0) may run on any master server (<m> = 0). In case the primary server fails, these channels switch to the standalone secondary server.
Note: With a Model 165 or Model 65 the clients must use the alternate path feature of TCTI, because the path to the server changes after the primary server fails. This applies to TCLANPRT, TC/LINK, ... as well.

3.4.1.3.1 Chaining of Model 202

To increase the maximum number of Model 202 line servers additional models 202 can be connected to a model 202 via TS88 interface as shown below.



Sub-slaves are numbered using a path notation:

x.y.z where:
- x is the master number (1=primary master, 2=secondary master)
- y is link used number (1=Link 0, 2=Link 1, ...)
- z is the used T-Slot number of the TS86 interface that connects the sub-slave with the slave. (1=T0, 2=T1, 3=T2)

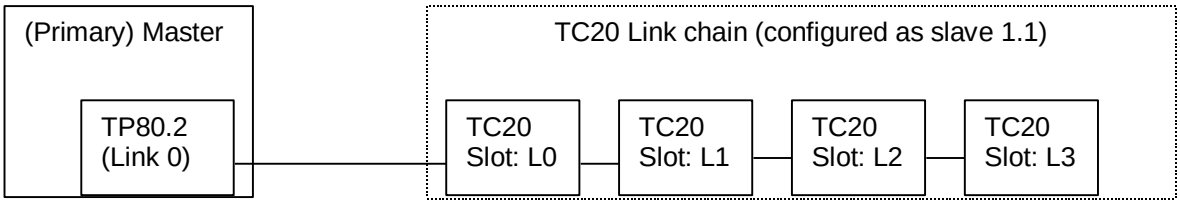
With the architecture shown above a theoretical limit of 24 models 202 (with a maximum of 150 S-Slot interfaces) can be used with model 22x. But, the maximum number of channels and licenses restricts this value to 176.

Each configured sub-slave occupies a T-Slot in the corresponding parent slave. All other slots in the parent slave can be used for interfaces. Even T-Slot interfaces are possible if the corresponding link chain is not used for a sub-slave. T-Slot interfaces in Sub-slaves are not supported.

3.4.1.4 TC20 Interfaces Numbering Scheme

The TC20 must be connected to a TP80.2 interface via transputer link cable. Up to five TC20 interfaces can be connected in a chain using only one TP80 interface. The interfaces are referenced as “L-Slots” depending on their position within the link chain as shown in the example below. Since any TC20 chain replaces a whole KCS slave (TS0D) the link chain is labeled with the notation as used for slaves.

Example:



The interface modules (TC3x) which are put on each TC20 interface are not explicitly configured. You just have to choose the appropriate software module (UTF or UIF).

Hardware	Supported fax software module
TC31 (E&M interface)	UTF with E&M configuration
TC32 (analogue interface)	UTF with a/b configuration
TC33 (ISDN interface)	UIF

Since one TC20 supports up to two TC3x modules there are 4 channels that can be used in the hardware/software assignment.

Hardware	Location
TC20-A	First channel on first module
TC20-B	Second channel on first module
TC20-C	First channel on second module
TC20-D	Second channel on second module

All other modules (ULL, UAS) can be used on TC20 in the same way as with TS29/32/33.

3.4.1.5 BranchBox Configuration

A BranchBox is basically a line server where the optical link connection TP80/TC81 to TC81 is replaced by an Ethernet network connection. Therefore, one or more TC15 interfaces will be installed in the BranchBox.

A permanent TCP connection between TCOSS and the TC15s of a BranchBox has to be available. TC15 is acting as a TCP server; TCOSS connects as a TCP client to TC15. If there are any routers, gateways, firewalls etc. they have to be configured accordingly.

A minimum network-performance of the TCP-connection must be guaranteed. The maximum one time 'Round Trip Time' of the connection between TCOSS and TC15 must not exceed 1000 msec at any time. The available bandwidth must be at least 30kBits/s for each configured channel (e.g. 60kBit/s for 2 channels).

Available LAN performance can be assessed using KCS tcpMeter (see BranchBox Product Description) before installation. For simple tests, ping can be used to get a first impression.

To connect a BranchBox the following actions are necessary in TCOSS:

1. With WCONFIG configure the modems located in the BranchBox as usual (UTF or UIF SW-Modules), but with a separate Lan - Link number for each TC15 (L.1…L.176).

2. Create the following registry keys to give TCOSS the possibility to access the BranchBox(es) via network (create them in primary **and** secondary server of a Tandem System):

Key

```
HKEY_LOCAL_MACHINE\Software\TOPCALL\TCOSS\LINK\LAN001 (=L.1)
HKEY_LOCAL_MACHINE\Software\TOPCALL\TCOSS\LINK\LAN012 (=L.12)
HKEY_LOCAL_MACHINE\Software\TOPCALL\TCOSS\LINK\LAN023 (=L.23)
HKEY_LOCAL_MACHINE\Software\TOPCALL\TCOSS\LINK\LAN176 (=L.176)
```

Value

IPtoConnect REG_SZ

IP Address of BranchBox (xxx.xxx.xxx.xxx).

Value

PorttoConnect REG_DWORD

IP Port of BranchBox.

Default: 0x1388 (=5000)

Value

Password REG_SZ

Each BranchBox has a password to verify if the user has a right to send to it. Type the password here. After the first run of TCOSS it will be encrypted.

No default.

Value

Priority REG_DWORD

Priority level to connect to TC15. Set to 2 for primary server of a Tandem System. (Priority of TC15tool is always 0). A BranchBox always accepts a connection attempt with a higher priority than the current. Only the first connection attempt with the same priority setting will be accepted.

Default … 1 for secondary server and single server, 2 for primary server of Tandem System.

Value

MaxBootBandwidth REG_DWORD

Defines the maximum bandwidth in bytes per second that is used during loading program code (TC20.rsc file) to branch box. If this value is set to 0, the boot bandwidth is unlimited. If the bandwidth limit is used the value must be between 100 (100Bytes/s) and 1000000 (1MByte/s).

Usually you do not need to specify this registry value. Change only in case of troubles to boot a BranchBox to e.g. 6000.

Default … 0 to not limit boot bandwidth.

Value
TxOptimization REG_DWORD

Defines how TCOSS optimizes the transmission of data on the TCP/IP connection. The following three values are supported since TCOSS 7.85.03:

“0” …. Use Nagle’s algorithm which tries to avoid small network packets. Take care that this mode may cause addition transmission delays.
“1” …. Transmit the data without delay whenever the sending queue gets empty. This mode provides the same performance as mode 2, but avoids series of very small network packets. It is the default mode.
“2” …. Transmit all data packets without delay.

Remark: TCOSS 7.85.02 or older do always use mode 2.

Default … 1

Tandem Systems: Branch Box registry keys have to be configured in primary and secondary server of Tandem Systems with a higher priority level at the primary server. Thus during normal operation and in case of a desync condition a BranchBox will connect to the primary server. Only in case that the primary server cannot connect to the BranchBox the connection of the secondary server will be accepted by the BranchBox.
WAN connections to LS1: If you want to use many channels over a WAN connection you should check the TCP/IP window size of your system with the following registry value:

Key: HKLM\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters\
Value: TcpWindowSize
Type: REG_DWORD

It is recommended to set this value to 0xfaf0 if the turn-around trip time exceeds 40ms. See Microsoft knowledge base article 224829 (http://support.microsoft.com/kb/224829/en-us) for more details about this value.

3.4.1.5.1 Model 202-LAN (TS15) Installation and Configuration

A TS15 is basically a line server where the optical link connection TP80/TC81 to TC81 is replaced by an Ethernet Network connection. It is comparable to a usual BranchBox with the difference, that only TS interfaces for Telex or Asynchronous lines (TS20, TS22, TS70, etc.) can be configured.

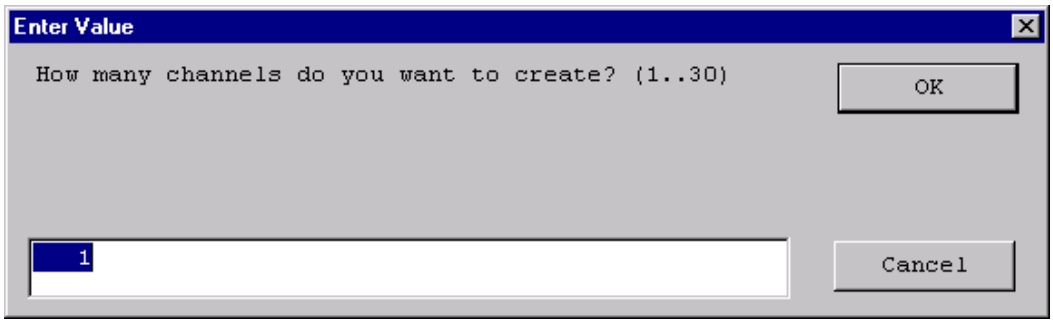
3.4.1.5.1.1 Configuration in WConfig

With WCONFIG configure the channels located in the TS interfaces as usual (UTX or UAS SW-Modules), but with a separate Lan - Link number for each TS15 (L.1…L.176).

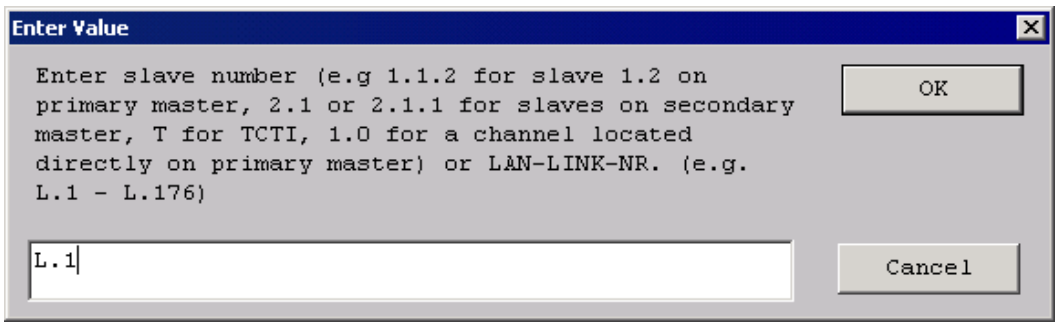
Important: There is a new dialog in WConfig where you can enter a Remote Control Type for UIF, UTX and UTF modules. For BranchBox or TS15 Support enter 00. All other values are for ASP Support.

If you have a TS15 in the LAN with the IP address in the registry key LAN001 then you can refer to this TS15 as L.1 in TCOSS and WConfig. If you have a TS20 in the TS15 L.1, you create a Telex channel like this.

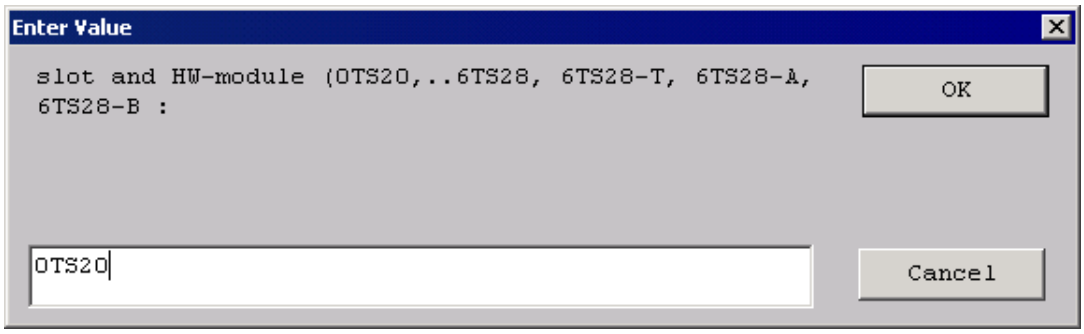
Enter the Software – Hardware assignment, select an empty channel number and then choose TX.



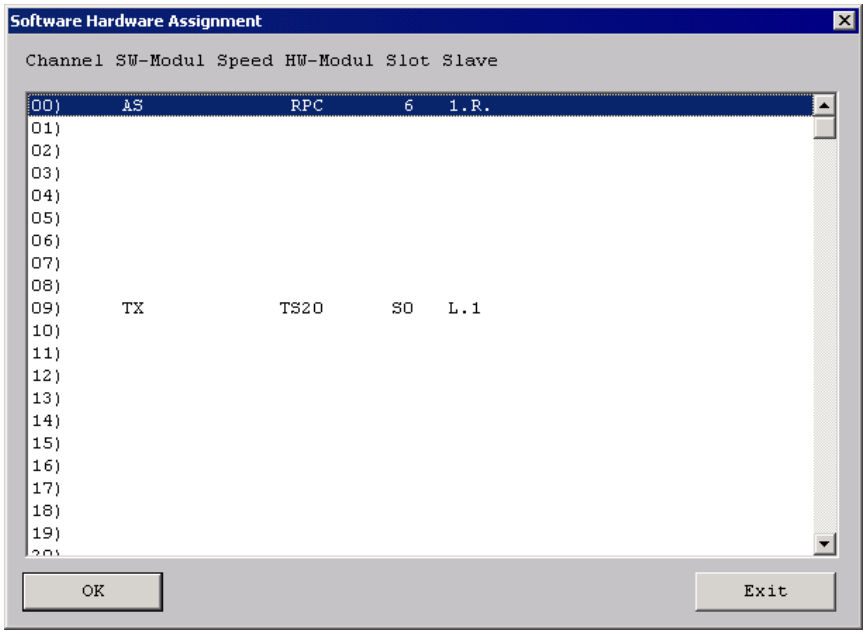
Enter the number of channels to be created (see chapter Software Hardware Allocation – Bulk Channel Creation/Deletion for details).



Enter the Lanlink associated to your TS15 (i.e. L.1).

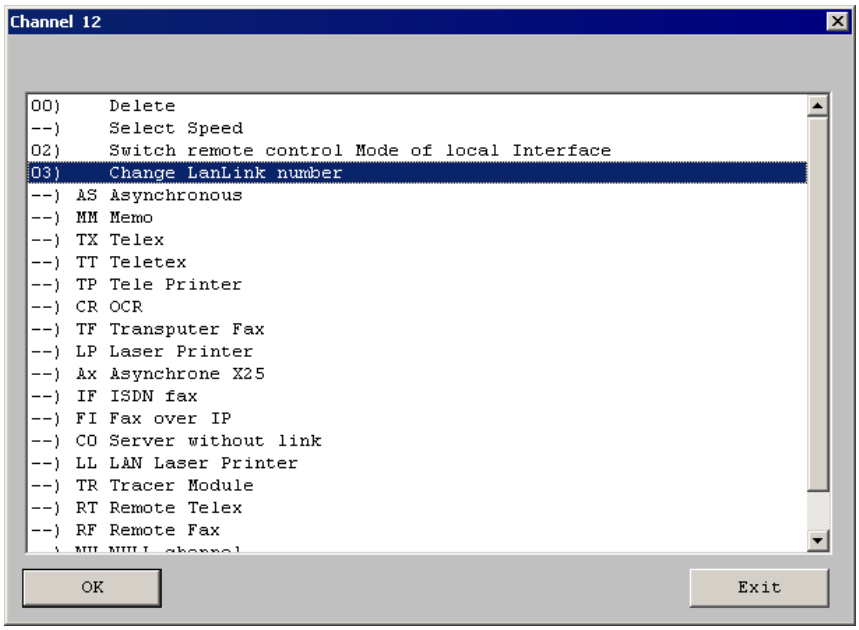


Then enter the type of hardware (TS20) and the slot where it is located (0).You will get a TS20 interface configured on an L-path.



3.4.1.5.2 Changing Lanlink Number of Existing Channels

You can change the Lanlink number of existing channels configured on L-paths. To do this enter the Software – Hardware assignment and select the channel you want to change (OK or double-click). You will see this menu.



When you select *03) Change LanLink number* you will be prompted for the new number.

Further documents:
BranchBox Product description, TC15 Hardware documentation, Model 305 LineServer Manual.

3.4.1.6 Handling of Lost Connections Between Interface and TCOSS Server

If the interface detects that the connection to its master is not available, it falls into an error state that initializes its hardware as described below:

1.) Layer 1 (and above) of BRI and PRI are deactivated
2.) Analog fax lines goes on-hook
3.) E&M lines goes inactive (like power-off)

The detection uses keep-alive messages that were send from the TCOSS master to each Interface in a regular interval (registry value `trpKeepAliveInterval`). If any interface does not receive a keep-alive message within an specified time(registry value `trpKeepAliveTimeout`), it expects that the connection to its master is missing and falls into an error state.

The keep-alive parameters can be changed with the following registry values:

Value
`trpKeepAliveInterval` REG_DWORD

Time between Keep Alive Messages in seconds. If this value is set to 0, no keep alive messages are send

Default: 0x1e (=30s)

Value
`trpKeepAliveTimeout` REG_DWORD

This is the maximum time between consecutive keep-alive frames. If this time is exceeded at any interface, the appropriate interface falls into an error state. The difference between `trpKeepAliveInterval` and `trpKeepAliveTimeout` defines the maximum excepted delay between keep-alive frames from the master to any interface. If the a interface is disconnected it may take up to `trpKeepAliveTimeout` seconds until this problem is detected.

Default: 0x64 (=100s)

3.4.1.7 Copy Configuration

If you want to expand your system with an additional interface and you have used such an interface previously, you can use this feature to the configuration of the existing channel to the new one.

Assign a hardware channel to the new interface using the 'Software-Hardware assignment'.

Select now the copy configuration item from the main menu.

Now you must specify a channel you want to copy from and the channel you want to copy to.

Note: It is not possible to use the 'copy configuration' item between incompatible modules.

3.4.1.8 Standard Configurations

In some menus standard configurations exist (e.g. for TS 72 or TC/PC).

If you call up a 'standard configuration' and you are not configuring from a new installation delete that channel first and create it new in the menu software-hardware allocation.

This will make sure that the 'device standard configuration' is based on the overall standard configuration of that channel.

3.4.1.9 Line Editor

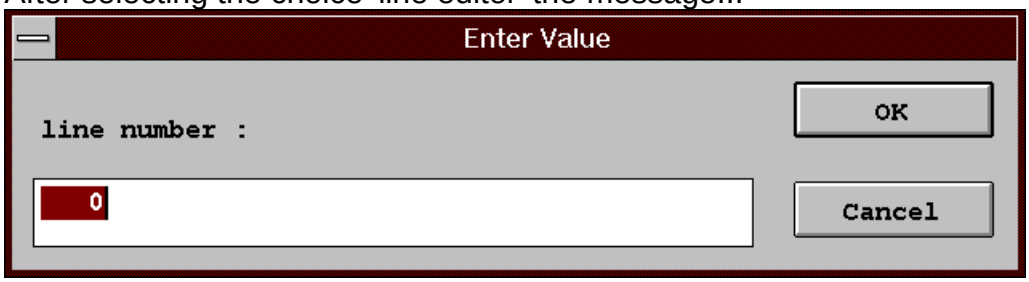
Each sub menu for module configuration and the menu for system configuration contain the choice “line editor”. With this you can edit the config-files line by line.

The line editor in the menu “operating system, system parameters” is used to select the file “A:SYSCONFCCC”; the line editor in the sub menus for module configuration is used to select the files “A:TAMCONFxxC” (xx - channel number and reference are set automatically).

The behavior of the **line editor** in conjunction with the **all channels** feature has been changed. Only the positions which are changed in the line editor will be changed on all other channels. **Attention**: This may lead to the following, possibly unwanted effect:

Note: If a line in one channel contains e.g. “:AA” and in another e.g. “:BB” and the line in the first channel is changed to “:1A” the line in the second channel is only changed to “:1B”.

After selecting the choice 'line editor' the message...



...appears on the screen. Select a line by entering the line number (1...3 positions). The line is then displayed on the screen.

The line can now be retyped. If the new line is shorter than the original one, the last positions remain unchanged (e.g. return only = no change). Lines being too long are automatically shortened. The line may be entered with ASCII (first character ') or hex format (first character :).

Example: The inputs '0, and :30 , are equivalent.

If you do not want to change the left-hand positions in a line you can pass over with the arrow keys.

Click Cancel to exit the line edit mode.

Note: If the line editor has been reached via choices 5..9 of the main menu (all telex channels), all corresponding TAMCONF files are edited simultaneously.

In this case it is not possible to change channel specific config parameters (SIO addresses, line 51 of telex module configuration, line 52 of asynchronous module configuration). (To change these parameters call up the line editor via choice 3 (single channel) of the main menu). In addition, all config-files of the corresponding channels are newly created; this means specially configured files are lost.

3.4.1.10 Configuration of Channels

The menu branches 3) - 11) enable you to configure the channels; the most important values for the respective config-file are requested with menu control. Exiting a menu branch automatically creates the corresponding config-file(s).

When selecting items ***"all xxxxx channels"*** in the main menu the module with the lowest channel number is configured as in single channel mode. Values entered are set in all modules of the same type. Items for which no value is entered remain unchanged, i.e. those may be set to different values. (Only the setting of the first channel is shown).

3.4.1.11 Configuring Asynchronous Channels

The maximum speed of an asynchronous channel can be configured in the software/hardware assignment menu. One of the following speeds can be selected:

- 1,2kbaud
- 2,4kbaud
- 4,8kbaud
- 9,6kbaud
- 19,2kbaud
- 38,4kbaud

Note: It is possible to configure a maximum speed of 60kbaud on a TS0C/TS0D main board.
The config program does not allow any configuration with a maximum speed over 60kbaud.

Example of a configuration:

1 AS channel with 19,2kbaud
3 AS channels with 9,6kbaud
2 AS channels with 4,8kbaud

Tip: For optimum performance of the system, the configured speed should be the same as the jumper settings on the TS70. If the configured speed is too low, an internal error may occur.

Various standard code tables are provided which allow a conversion to the following national ASCII character sets:

- USA
- Austria / FRG
- Switzerland (IBM)
- Switzerland (Olivetti)

In addition, it is also possible to select a 1-to-1 table so that no conversion is carried out.

The indicated selection applies to the output code table as well as the input code table.

Below you will find an overview of the conversions given in the standard code tables. For this purpose we have diagrammed the allocation between national the different by ASCII code characters in the TCOSS code. This allocation is unambiguous; in other words it applies to the input as well as to the output.

All characters not shown below are converted in all standard output code tables as follows:

TCOSS - code	ASCII - code

Hex 00 - 1F	are not used in the TCOSS-code, cause no output
20 - 7F	no conversion
80 - FF	cause the output of a '.' (hex 2E)

The standard input tables are set up so that the 8th bit of the read-in character is not relevant (2 identical partial tables within the area 00-7F and 80-FF). The conversion of the characters within the area 00-1F or 80-8F serves to control the conversion of the character stream to TCOSS-lines.

ASCII-code control char.	TCOSS control char.	designation
Hex 08, 88	Hex 0F	destructive backspace
0D, 8D	12	LF2
7F, FF	0F	destructive backspace

Allocation of national ASCII characters to TCOSS characters with standard code tables

ASCII Code	TCOSS Codes							
	USA		Austria Germany		Switzerland (IBM)		Switzerland (Olivetti)	
	Hex	Char.	Hex	Char.	Hex	Char.	Hex	Char.
23	23	#	23	#	9C	£	9C	£
40	40	@	C1	§	C1	§	87	ç
5B	5B	[	8E	Ä	85	à	85	à
5C	5C	\	99	Ö	87	ç	82	é
5D	5D	]	9A	Ü	8A	è	8A	è
7B	7B	{	84	ä	84	ä	84	ä
7C	7C	:	94	ö	94	ö	94	ö
7D	7D	}	81	ü	81	ü	81	ü
7E	7E	~	E1	ß	82	é	7E	~

3.4.1.12 Restrictions for Numbering of Channels

- The channel number of a teletex printer has to be greater than the channel number(s) of the teletex channel(s) which are connected to the same TS24 (TS25) interface.
- The Transputer slot number of a transputer link adapter (laser printer, fast asynchronous link) must be one of the last three configured transputer slots. This restriction is only valid during configuration.
  e.g.: order of configuring channels is important

  TF T0
  TF T1
  TF T2
  TF T3
  TF T4
  LP can only be connected to T2, T3 or T4

  TF T0
  LP T0

TF T1
AS T1
TF T2
TF T3 (is no more possible (LP in T0!)

- The number of transputer link adapters is limited to three (3) units.

3.4.1.13 Memory Requirement Analysis

A memory requirement analysis is performed during exiting the CONFIG program. All transputer based hardware modules (T-Slot cards, e.g.: TS80, TS0D or TS0C) which occupy by the software more than a limited memory capacity will be displayed (including the memory requirement).

These limits are set for the memory test to the following values:

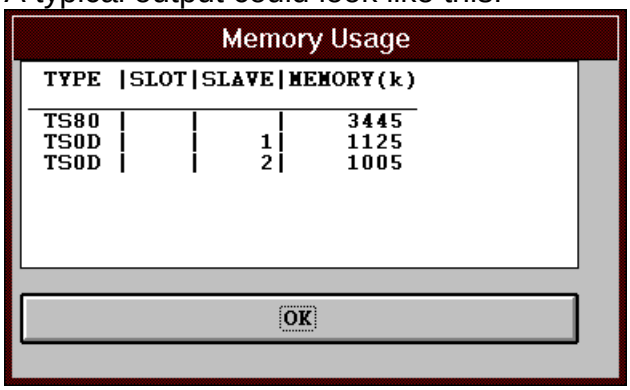
TS0D/0C	800k
TS29	970k
TS80	1600k
TS82	3880k

Pay attention to the fact that displaying of a module is only a warning because the hardware memory on board is larger than the value used for the memory test.

If the displayed required memory is or larger than the memory on board you must reduce the number of channels configured for this slave or slot or upgrade the RAM.

NOTE: The memory calculation done by MT/WIN is designed to give a rough value about the needed memory. Installations should be configured with a minimum reserved memory of about 100k. This is useful to avoid problems occurred by an inaccurate calculation or after an update if the new release needs more memory!

A typical output could look like this:



Note: TS0D will be displayed although a TS0C will be used.

Remark: Add to the value of TS0D memory requirement 70 Kbytes for each loaded script program.

Example: Output of memory requirements analysis:

TYPE	SLOT	SLAVE	MEMORY (k)
TS0D		1	3950

This means that memory of 3950 Kbytes will be occupied. This warning is displayed because the value is larger than the test value (800 Kbytes). No correction need to be done because a TS0D has a 4MB RAM on board (=4096 Kbytes). The shown value should not exceed 3950 Kbytes!

In case you configured one asynchronous channel to load a script program add 70 Kbytes to the displayed the memory requirements what results in 4020 Kbytes memory. In this case you must change your configuration.

Tip: The most efficient way to save RAM is to keep the configured number of mail entries (send orders) and number of files as less as possible.

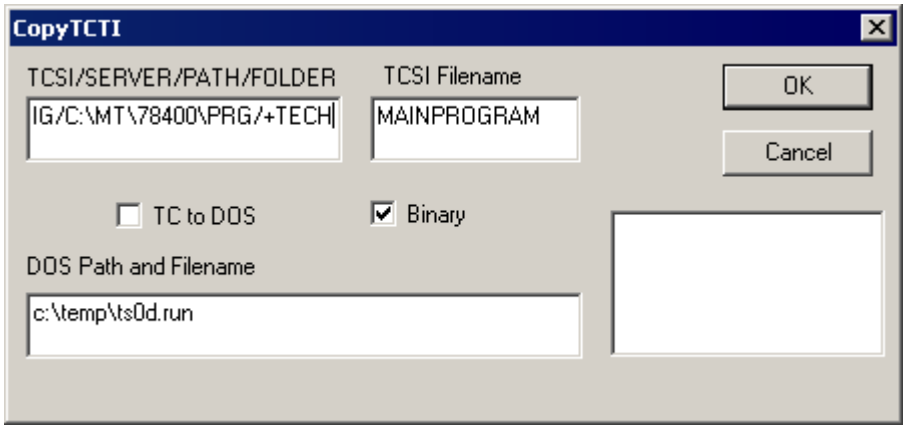
3.4.2 CTC

If CTC is started with parameter "!", (e.g. "*C:\mt\70809\ctc.exe!*") a windows opens. With this window single files can be copied

1. to or from a local TCfW folder or
2. direct to or from KCS via network

3.4.2.1 Copy to Local TCfW Folder Example

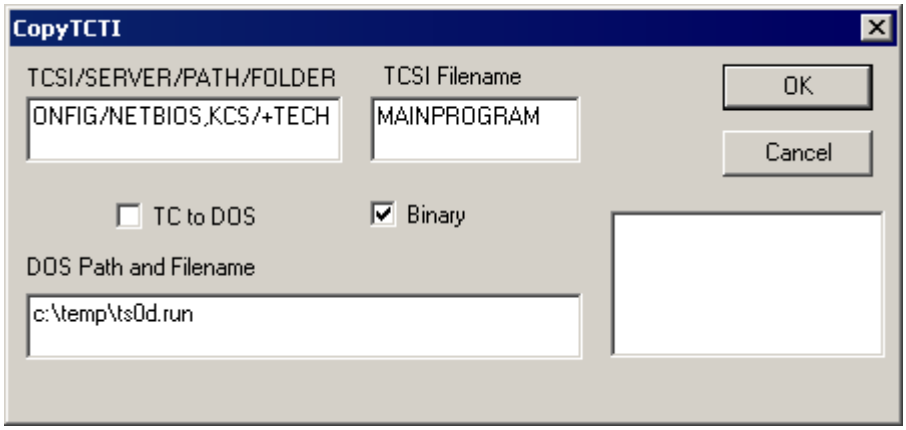
A new TS0d.RUN file should be copied into the program folder of Maketcoss 7.08.09. Assume that the file is located in C:\temp.



- The field TCSI/SERVER/PATH/FOLDER must be changed to: TCSI/CONFIG/c:\MT\70809\prg/+TECH
- The field TCSI Filename contains the filename without first character (drive letter). The first character is always "A".
- Do not forget do select binary, if you want to copy program files. Text mode supports only pure ASCII text (e.g. Configuration files). Images or all other ++ control lines are not supported.
- If TC to DOS is selected, the file is copied from the local TCfW folder to the specified file name (C:\temp\ts0d.run in the example above).
- You can use WConfig (install local, select *configuration and program files*) to copy the new file to KCS.

3.4.2.2 Copy via Network Example

A new TS0d.RUN file should be direct copied to KCS via network. Assume that the file is located in C:\temp.



- The field TCSI/SERVER/PATH/FOLDER must be changed to:
  TCSI/CONFIG/NETBIOS,KCS/+TECH
- TCTI protocols and transport types are taken from TOPCALL1.ini in the windows directory.
- If only one protocol is defined in TOPCALL1.ini, the protocol (e.g. NETBIOS,) is optional.
- If TCP/IP or IPX/SPX protocol is required, you have to define only this protocol in TOPCALL1.ini and specify the path without protocol name.
  e.g.: TCSI/CONFIG/KCS/+TECH
  (Reason: “/” is used as delimiter between path and folder name => it must be part of the path)
- User “CTC” with password “CTC” must exist on KCS.

4 CONFIG FILES

4.1 SETUP OF CONFIG FILES

A config file consists of a sequence of config-lines. Every config-line defines a config parameter; one config parameter can consist of several config-positions. A config position is the smallest unit and is either an ASCII character or a binary value between 0 and 255 represented in hexadecimal notation.

Setup of a config line

The 1st character contains the format information:

' line in the ASCII format
e.g. `'X01AB,`
every character defines a config-position

: line in hex format
e.g. `:01 02 03 1F,`
two characters are transformed into a byte which defines the config-position; they have to be separated by a blank

closed with **','** following text is ignored, can be used as comment.

Special line

'TUM' all subsequent lines are config lines for the user module of the channel, all preceding lines for TAM

Below you will find a detailed description of all config parameters. For each parameter, we have indicated the line number in the config-file where it has to be set, its number of config positions, its meaning and its possible values.

4.2 COMMON CONFIG PARAMETERS (SYSCONF)

Config line	No. of positions	Meaning
1	0	reserved
2	5	receiver for automatic log file printout
3	1	erasability of the send order for the log file printout '0' = send order created with 'automatic log file printout' cannot be erased '1' = all send orders for log files printout can be erased
4	1	outgoing fax number conversion options ‘0, = never remove any digit ‘1, = remove digit ‘0’ in special cases (default; compatible to TCOSS 7.47.06 and lower) If the “remove digit zero in special cases” option is enabled, the digit zero is removed if it is found immediately after an opening parenthesis, if there are digits before this opening parenthesis and if the closing parenthesis is not at the very end of the number string.
5	24	TCOSS Version number e.g.: 'Version 7.96.13’ The version will be changed by WCONFIG. It is used as TCOSS Version info in e.g. TCMON and +STATUS
6	1	acceptance of the command '..CMDON', Log all send attempts if recipient user does not exist

value	acceptance of the command '..CMDON'	Log all send attempts if recipient user does not exist
‘0’	no	yes
‘1’	yes	yes
‘2’	no	no (compatible with TCOSS < 7.41.00)
‘3’	yes	no (compatible with TCOSS < 7.41.00)

7	1	own node ‘A,..’Z, and ‘0,..’9, = own node for all channels (overrides setting in channel configuration) ‘ , (space) = take node setting from channel configuration ‘A, node ‘A’= default

Config line	No. of positions	Meaning	
8	2	1.pos	number of days for cyclical erasure of log files
		00	= no cyclical log file erasure
		01	= keep only log files of the current day
		02...FF	= keep log files for 2.....255 days
		2.pos.	advanced end of chain detection in short-term archive
		01(=def.)	= no
		03	= yes

Advanced end of chain detection:

If the last entry of a chain is found, the system continues the search operation with the standard algorithm. This is slower but guarantees that all existing entries are found even if their chained list does not exist. (workaround for error #4262) If a matching older entry is found, all further entries are again searched with the optimized chained list.

Note: If this feature is enabled, the short-term archive does always have to search from the oldest entry in the users out-box until the oldest entry in the whole short-term archive. This means, when opening the out-box of users with less entries, you may get several times the message box “Continue Search” after the last archived entry.

Note: The description above is applicable to selection with field “to” of all terminated messages in in-box too.

9	2	drive and reference for system error messages	
		1. pos:	partition drive for error messages (A or B)
		2. pos:	reference for error messages (number series A to Z)
10	4	Description of configuration tool, TCOSS model and codepage	
		1. pos:	Shows which tool is used to manage TCOSS configuration 0D = WConfig 1D = EasyConfig Note: Only the first digit is relevant (0/1).
		2. pos:	TCOSS model 05 for model 125 or 145 06 for model 155 or 21x (default) 07 for model 165 or 22x or 32x
		3. & 4. pos	00 00 … TCOSS 0 (default; western European languages) 00 01 … TCOSS 1 (eastern European languages) 03 A4 … Japanese (decimal 932) 04 E3 … Russian (decimal 1251) 03 A8 … Chinese (decimal 936) It is recommended to use code pages 0 or 1 whenever possible for a

language. Using Windows code pages other than those listed is possible.
This code page applies to all TCSI fields except text in text blocks (Text blocks without code page information are always threaded as TCOSS 0 or TCOSS 1 according to the channel configuration).

Config line	No. of positions	Meaning
11	5	UCR memory file format e.g.: '500 , it contains the release of the first release that uses this format
12	4	Reserved, **do not edit this line**. It was used in old TCOSS versions to calculate disk space. This functionality is not used anymore.

Config line	No. of positions	Meaning		
13	16	Permanent store capacities (16-bit unsigned values, MSB = most significant byte = first)		
		pos 1,2	maximum number of mail entries / 1000 entries	
			00 00	Automatically set to 5% of entries of Mail area, minimum 3000, maximum 50 000 entries
			00 01 .. 07 D0	1000 .. 2 000 000 entries default 00 00 = auto-set
		pos 3,4	size of log file (short-term archive)	
			00 00	Automatically set size to: 5MByte + 4% of Mail area, (Size is limited to 2047MByte)
			00 01 .. 0F A0	Size in Mbyte
		pos 5,6	maximum number of user entries / 1000 entries	
			00 00	Automatically set to number of entries of user area where 50% of entries above 100000 are considered.
			00 01 .. 00 FA	1000 .. 250 000 user entries default 00 00 = auto-set
		pos 7,8	maximum number of address book entries / 1000	
			00 00	Automatically set to max. number of user entries plus 10%
			00 01 .. 0F A0	1000 .. 4 000 000 entries default 00 00 = auto-set
		pos 9,10	maximum number of registrations / 1000	
			00 00	Automatically set to max. number of user entries plus 2000 or disk space in GB * 5000, but not more than 500000, whatever is larger
			00 05 .. 40 00	5000 .. 16 384 000 entries default 00 00 = auto-set
		pos 11..16	Reserved	

Note: If value 00 00 = auto-set is used in any of these positions, any change of the disk partitioning with the TC/Disk tool may result in automatic changes to the maximum number of mail entries, users or address book entries. This may cause problems if the maximum numbers are decreased below the actually used numbers and TCOSS may fail to start-up.

Config line	No. of positions	Meaning
14	40	Possible TCSI releases which are allowed to communicate with KCS. A “+” in front of a release number means that all higher versions/releases are supported (e.g. 1.04.02 +1.05.00)
15	40	Possible TCfW releases which are allowed to communicate with KCS. A “+” in front of a release number means that all higher versions/releases are supported (e.g. +1.08.03)
16	1	Separation character between node and userID in KCS address. 00 = node of KCS address not included (default) e.g. 2D = node included, node and user ID separated by “-” Model: ts_tc_node + sep. char. + ts_tc_userid + “:” Example: “TCA-Schmid:”
17	1	Document converter level flags 00 = no document conversion (default) 04 = digital signature insertion 08 = root XML detection
18	8	pos 1 year with 2 or 4 digits in Log File Header 00 year with 2 digits in log file header (as with previous releases, standard configuration) 01 year with 4digits in log file header pos 2 cost center table format 00 10 positions cost center (compatible to versions before TCOSS 7.40.00) 01 42 positions cost center (last 30 pos. unused, filled with spaces)

Note: this position is not automatically changed from 00 to 01, if a release update from a version previous to TCOSS 7.40.00 to TCOSS 7.40.00 or higher is done, but it is 01 by default on new installations with TCOSS 7.40.00 or higher.

pos 3 queue monitoring check cycle
- 01 ...FF check cycle 01 ...255 seconds
- 00 program default check cycle 60 seconds

pos 4 flags for subject / group filter in mail folder
- 00 subject of received messages suppressed in mail folder (compatible to versions before TCOSS 7.46.10); strict filtering and rights check on groups
- 01 subject of received messages always visible
- 02 add wildcard to group filter in mail folder, e.g. filtering on “group1” works like “group1*”
- 04 extend list rights to all subgroups e.g. rights to "group1" allow access to "group1*"

		pos 5-8	reserved	
19	8	pos 1	dial-by-name flags	
			00	use program default (selects full name only, default)
			01	take full name for dial-by-name search
			02	take recipient ID for dial-by-name search
			03	take both full name and recipient ID for dial-by-name search
		pos 2	write log entries for TC/MA	
			00	no (default)
			01	write SUBMIT log entries
			02	write ACTION log entries
			03	write SUBMIT and ACTION log entries
		pos 3	cost center option flags (hex values, to be added up)	
			00	no (default)
			01	set cost center from recipient’s user profile as default
			02	set cost center from recipient’s user profile as first choice
			04	suppress cost center default from subject field
			08	suppress cost center default from document reference
			10	do not set cost center of in-events
		pos 4	least cost routing options	
			00	LCR messages not archived on exit node (default)
			01	archive LCR messages on exit node (set this option in the exit node TCOSS configuration)
		pos 5-8	reserved	

Config line	No. of positions	Meaning
20	8	default mapping of mail entry custom fields from message header pos 1 default mapping of custom field 1, default 00 = no pos 2 default mapping of custom field 2, default 00 = no pos 3 default mapping of custom field 3, default 00 = no pos 4 default mapping of custom field 4, default 00 = no pos 5-8 reserved

The following hexadecimal values may be used on any of the 4 positions:

value	default mapping of custom field to	parent object	child ID
00	no default mapping	-	-
01	originator recipient ID	originator	TS_RECP_ID
02	originator company	originator	TS_COMPANY
03	originator department	originator	TS_DEPTM
04	originator full name	originator	TS_FULLNAME
05	originator salutation	originator	TS_SALUTE
06	originator free text	originator	TS_FREETEXT
07	originator correlation 1	originator	TS_CORREL_1
08	originator correlation 2	originator	TS_CORREL_2
09	originator correlation 3	originator	TS_CORREL_3
0A	originator correlation 4	originator	TS_CORREL_4
0B	originator correlation 5	originator	TS_CORREL_5
0C	originator correlation 6	originator	TS_CORREL_6
21	recipient ID	recipient	TS_RECP_ID
22	recipient company	recipient	TS_COMPANY
23	recipient department	recipient	TS_DEPTM
24	recipient full name	recipient	TS_FULLNAME
25	recipient salutation	recipient	TS_SALUTE
26	recipient free text	recipient	TS_FREETEXT
27	recipient correlation 1	recipient	TS_CORREL_1
28	recipient correlation 2	recipient	TS_CORREL_2
29	recipient correlation 3	recipient	TS_CORREL_3
2A	recipient correlation 4	recipient	TS_CORREL_4
2B	recipient correlation 5	recipient	TS_CORREL_5
2C	recipient correlation 6	recipient	TS_CORREL_6

Identical default mapping of two or more custom fields is not supported, i.e. all non-zero values may not be used more than once in all four positions of system configuration line 20. (It makes no sense anyway to fill several custom fields with the same value).

Config line	No. of positions	Meaning	
21	8	pos 1	mail auditing flags (hex values, to be added up)
			00 no auditing (default)
			01 open message
			02 update mail entry, e.g. reactivate, change priority, mark read
			04 terminate mail entry, e.g. cancel, reject
			08 mark mail entry completed
			10 resubmit message, e.g. correct, distribute
			20 update job, e.g. reactivate, change priority
			40 terminate job, e.g. cancel
			80 mark job completed
		pos 2	login and user auditing flags (hex values, to be added up)
			00 no auditing (default)
			01 successful login
			02 failed login
			04 logout by user
			10 create user profile
			20 delete user profile
			40 change rights settings in user profile
			80 change password / account locked
		pos 3	short term archive, user and adress book auditing flags (hex values, to be added up)
			00 no auditing (default)
			01 open message
			02 annotate short term archive entry
			04 audit changes in user and group address books
			08 audit changes in the system address book
			10 audit recipient fields on user profile creation
			20 audit user recipient fields on change
			40 audit user events of a specific category if this category changed (depriciated option)
			80 audit user events of all categories if events of any category changed (depriciated option)
			C0 audit all user events with any user profile rights or events change (depriciated option)
		pos 4	Unicode
			00 no
			01 Yes

pos 5 Advanced user profile/address book audit options (hex values, to be added up)

- 01 include old values (with suffix "_OLD") for all changed fields
- 02 audit deleted details (user profile, events, user recipient, private address book – according to positions 2 and 3) when a user is deleted. If this bit is not set a USER_DELETE entry with the deleted user ID (without additional details) is created.
- 10 Advanced user events audit.
  This option is recommended to track changes of events in the user profile. If also depends on basic user profile auditing configuration in pos. 2 but it can be used independand from to older depriciated event log audit level in bits 6 and 7 of position 3.

pos 6 Distribution list recipient audit level

- 00 None: Ignore all changes in the DL recipients
- 01 Compact: Changes in the DL recipients are indicated by the CHANGED_FIELDS flag "RecipientList". Details about the added/removed recipients are not added.
- 02 Single: Changes in the DL recipients are indicated by the CHANGED_FIELDS flag "RecipientList" a list of added/removed recipients using "AddRecip" / "RemRecip" fields. All recipients are represented by owning user name + "/" + recipient ID. E.g: "Adam/Bob" refers to recipient Bob from adams address book. If changes exceeds the available log entry space additional changes are silently ignored. Under typical conditions, each audit log may contain up to about 50 recipient changes with an average recipient length of 50 bytes. The actual limit is variable and mainly depends on the average recipient length.
- 03 Multi: Like level 2 but large distribution list changes are split into multiple audit logs with the same cumulated result. It guarantees that all changes are logged but generates many audit logs if you are working with huge distribution lists.

pos 7-8 Reserved

Config line	No. of positions	Meaning	
22	8	pos 1&2	Maximum age of short-term archive entries 00 00 storage duration is limited by size of short-term archive (position pos 3&4 in line 13) only (default) 00 01 hide all short-term archives 00 02 … 7F FF hide short-term archive if they are older than 1.. 32766 hours.
		pos 3&4	Maximum age of short-term archive messages 00 00 storage duration is limited by size of available size of TCOSS file structure only (default) 00 01 All short-term archive messages are hidden 00 02 … 7F FF Hide short-term archive messages if they are older than 1..32766 hours. 80 01 … FF FF like 0001..7FFF, but in addition the hidden messages are permanently removed.
		pos 5-8	reserved
23	-		Comment
24	8	pos 1-8	reserved
25	8	pos 1-8	reserved

4.3 CONFIG PARAMETERS OF THE APPLICATION MODULE (TAM)

Config line	No. of positions	Meaning
1	1	initial state for sending '0' = closed (as after ..WAIT) '1' = active (as after ..CONT) '2' = query '3' = client server channel
2	26	1.pos.: main channel group 2..26.pos: additional channel groups, left to right unused positions set to spaces, channel group (blank, 'A'..'Z', '+') 'A' = channel belongs to channel group 'A' '+' = allowed with Client Server Channel only => defines channel as transfer module ' ' = channel belongs to no group
Note:	You must not have a user, with the same name as configured for the channel group. Otherwise, sending to this channel group will not work!	
3	3	1. pos.: = channel type 'X' = telex channel 'T' = teletex channel (not supported) 'F' = FAX channel ' ' = others 2. pos.: channel capabilities

value	control lines	rendering	binary	image	text
’0’	no	no	no	no	no
‘1’	no	no	no	no	yes
‘2’	no	no	no	yes	no
‘3’	no	no	no	yes	yes
‘4’	no	no	yes	no	no
‘5’	no	no	yes	no	yes
‘6’	no	no	yes	yes	no
‘7’	no	no	yes	yes	yes
‘@	no	yes	no	no	no
‘A’	no	yes	no	no	yes
‘B’	no	yes	no	yes	no
‘C’	no	yes	no	yes	yes
‘D’	no	yes	yes	no	no
‘E’	no	yes	yes	no	yes
‘F’	no	yes	yes	yes	no
‘G’	no	yes	yes	yes	yes
’p’	yes	no	no	no	no
‘q’	yes	no	no	no	yes
‘r’	yes	no	no	yes	no
‘s’	yes	no	no	yes	yes
‘t’	yes	no	yes	no	no
‘u’	yes	no	yes	no	yes
‘v’	yes	no	yes	yes	no
‘w’	yes	no	yes	yes	yes
‘”	yes	yes	no	no	no
‘a’	yes	yes	no	no	yes
‘b’	yes	yes	no	yes	no
‘c’	yes	yes	no	yes	yes
‘d’	yes	yes	yes	no	no
‘e’	yes	yes	yes	no	yes
‘f’	yes	yes	yes	yes	no
‘g’	yes	yes	yes	yes	yes

The control lines “++HLN” , “++HLB” and “++TXT” are only sent on control line capability

3rd pos.	reception state	
	'0'	= disable reception
	'1'	= enable reception (default)

Config line	No. of positions	Meaning
4	1	channel language '1' = German '2' = English
5	1	TCTI transport (default: ‘0’) '0' = Native (use [TCTI] section in TOPCALL1.ini) '1' = RPC (use [TCTI_RPC] section in TOPCALL1.ini)
6	24	comment line for Line statistics overview in TCfW / local answerback for teletex (not supported). With Transfer module (line 1 = '3' and line 2 = '+') it defines the 2nd character of polled queues for up to 24 remote nodes. A comment may be included separated by a space from the node list (e.g. “ABC transfer module”)
7	1	default value for NODES parameter with ..SEND ('A'-'Z', '0'-'9')
8	1	length of cost center designation :00 , = no cost center accounting :01.. 0C = 1 to 12 characters cost center designation Every KKxx (xx represents the current month) starts with 12 characters of cost center. Due to this fact it's possible to define different length of cost center designations for each channel
9	1	Cost center offset (number of leading characters having no significance) in the reference …..'0' - '9'
10	1	number series for numbering the documents during sending ('A'..'Z') 'A'= number series A
11	1	locking of send commands to equal numbers '1, = locked '0, = not locked
12	4	Sending time mapped to low priority ´ , = Low priority mapping not used (default) e.g. ´2200, = If send orders on this channel are created without Priority parameter and TIME=2200, they will be set to low priority. The sending time will be set to the lowest tariff according to kk99

Config line	No. of positions	Meaning
13	1	interval between send attempts ('1' .. 'T')

$$\text{time} = \frac{(9 - \text{new status})^2 * (\text{ASC(config value)} - 48)}{9}$$

config value		ASCII value		time interval
'1'	=	49	=	0 .. 7 minutes
'9'	=	57	=	1 .. 64 minutes
'B'	=	66	=	2 ..128 minutes
'K'	=	75	=	3 ..192 minutes
'T'	=	84	=	4 .. 256 minutes

14	2	1.pos.:	send test intervals of 0,1 sec..
		bits 0-6	The interval of send tests can be set to values between 1 and 127 (Bits0- 6).
			01 .. 1F Send test interval in minutes (01 .. 31 minutes)
			20 .. 7F Send test interval in seconds (3.2 ..12.7 seconds)
		bit 7	Bit 7 = 0 next send test is immediate
			Bit 7 = 1 next send test after the configured interval (1 ..31 minutes, 3.2 .. 12.7 seconds)
		2.pos.:	“time overdue” value in minutes for additional channel groups
			00..FF =0 ..255 minutes “time overdue” value (0 = no time overdue for additional channel groups)
15	2	default channel for ..C,..S,..L	
		' '	= no default channel, if no channel indicated commands will lead to examination of text
		others:	no examination possible
16	3	1. digit:	log file designation for transmission
		possible values:(' ',0..9,A..Z)	
		'A'	= enter sending procedures into log file 'A'
		' '	= enter sending procedures into no log file
		2. digit:	
		possible values: A, S	
		A	= enter all send attempts into log file
		S	= enter only successfully executed send attempts
		3. digit	log file for examined text (used for FIS documents with session reversal)
		Possible values: ‘ ‘, 0..9, A..Z	
		'A'	= enter examined text into log file 'A'
		' '	= enter examined text into no log file (default)

Config line	No. of positions	Meaning

17	2	1.pos.: drive designation for 'sending log file'('A','B') 2.pos.: number series for “pages sent counter” value range: ('A'..'Z'), space = no counting
18	0	comment
19	1	drive designation for back-received doc. ('A', 'B')
20	2	1.pos.: number series for automatic generation of references for back received documents value range: ('A'..'Z') 2.pos.: first character of references for back received documents value range: ('A' .. 'Z' and '0' .. '9')
21	5	receiver for automatic send printout ' ' = no automatic send printout otherwise =5-position receiver (channel or abbr. no.)
22	1	erasability of first send order created for

	autom. send printout	active acknowledgement
'0'	no	no
'1'	yes	no
'2`	no	yes
'3`	yes	yes

23	0	comment
24	1	automatic distribution '0' = no automatic distribution '1' = distribute received documents '2' = distribute received and back-received documents
25	1	drive designation for received documents 'A', 'B'
26	2	1.pos.: number series for automatic generation of references for received documents value range: ('A'..'Z') 2.pos.: first character of references for received documents value range: ('A' .. 'Z' and '0' .. '9')
27	5	receiver for automatic reception printout ' ' = no automatic reception printout otherwise = 5-position receiver (channel or abbr. no.)

Config line	**No. of positions**	**Meaning**

28 1 erasability of first send order created for

	autom. rec printout	active distribution
'0'	no	no
'1'	yes	no
'2`	no	yes
'3`	yes	yes

29 1 designation of log file for reception activities (' ',0..9,A..Z)

'A' = enter reception activities in log file 'A'
' ' = do not enter reception activities

30 2 1.pos.: drive designation for 'reception log file' ('A','B')
2.pos.: number series for “pages received counter”
value range: ('A'..'Z'), space = no counting

31 0 comment

32 1 TAM/TUM trace level

‘0’ = no trace (default)
‘1’ = minimum trace (only commands/response no text lines)
‘2’ = standard trace (commands/responses, truncated text lines, recommended)
‘3’ = enhanced trace (as ‘2’ but do not truncate text lines and additional receiver ready trace)
‘4’ = full trace (includes empty commands and polls, may be very big!)
‘5’ = full hex trace

The trace output is written into the standard TCOSS trace file (e.g. C:\tcoss\trace\tcoss0.trc). It does not depend on trace level configured in the registry.

In most cases the standard trace is appropriate. The truncated lines are useful to reduce the trace data created by TCI image blocks. These blocks are usually using the max. possible line length of 254 characters.

33 1 TCI code output line length

:00 .. FF default value F8 = 248 characters
Take care that some channels (e.g. MEMO) do not support lines longer than 69 characters. Therefore change this line to value :45

Config line	No. of positions	Meaning
34	2	Maximum number of pages for outbound messages. If this limit is exceeded the send order is terminated with error code “SZ”. :00 00 Maximum number of pages is not limited. :00 01 Maximum number of pages is limited to 1 .. 65535. .. (Default is 03 E7 = 999 pages). :FF FF
35	1	printout of CF non-delivery notifications '0' = no printout of CF non-delivery notifications '1' = automatic printout of CF non-delivery notifications if address of automatic reception printout is configured
36	1	limit for maximum number of chained messages 00 = no limit 01 = no chaining 02 .. FF = max. 2 ..255 messages can be sent in one chain
37	24	reserved
38	2	1.pos: reference with 8 or 10 digits in the log files :08, 8 digits :0A, 10 digits (default) 2.pos: type of log file entries 00 write 1st line, fee includes all previous send attempts 80 write 1st line, fee of current send attempt only 01 write 2nd line 02 write 3rd line 04 write 4th line (alternative format of 2nd line) 08 write 5th line (alternative format of 3rd line) 10 write 6th line You can select the set-up of journals by adding the corresponding config values (default value is 03)
39	1	how many document lines should be checked for automatic distribution :00, = no line to be checked : 01 .. FE =1 to 254 lines to be checked :FF, = all lines of document to be checked
40	2	drive for masks and reference of default mask 1.digit: A = drive A B = drive B 2.digit: A to Z for default mask +A to +Z blank = no default mask

Config line	No. of positions	Meaning
41	5	1.digit: erase send orders

value	unsuccessful	successful sending
'0,	no	no
'1,	no	yes
'2,	yes	no
'3,	yes	yes

2.digit: generate active acknowledgements

value	unsuccessful	successful sending
'0,	no	no
'1,	no	yes
'2,	yes	no
'3,	yes	yes

3.digit: erase document if 1. character of reference is a figure (only for SEND command)

value	unsuccessful	successful sending
'0,	no	no
'1,	no	yes
'2,	yes	no
'3,	yes	yes

4.digit: generation of archive entries

value	unsuccessful	successful sending
'0,	no	no
'1,	no	yes
'2,	yes	no
'3,	yes	yes

5.digit: generation of backreception send order

value	unsuccessful	successful sending
'0,	no	no
'1,	no	yes
'2,	yes	no
'3,	yes	yes

Config line	No. of positions	Meaning
42	24	default originator, output channel for active acknowledgements (channel number or channel group). It has no fixed format and can be set to any valid number. If the * character is found it is replaced by the author field of the document (contains the answerback with UTX, UTF, UIF) `FAX$* default value for UTF and UIF `TLX$* default value for UTX ´xx:+Y default for all other channels (xx = channel number ´Z: +Z default value for MEMO NOTE: FAX$* means that service FAX is used. If this service does not exist, send orders using the default originator are not excepted. So take care that all services are defined in the directory of services in TCfW
43	9	new send status after unsuccessful send attempt for BREAK=1 '87654321, '-'for send status to be skipped
44	9	same as 43 but for BREAK=2
45	9	same as 43 but for BREAK=3
46	9	same as 43 but for BREAK=4
47	9	same as 43 but for BREAK=5
48	3	latest delivery time for high, normal, low priority 00 latest delivery time infinite, no timeout supervision (compatible with previous releases) 01 ..FF latest delivery time in hours (1 ..255), relative to intended send time standard configuration: ’00 00 00, = no default latest delivery time (infinite)

Config line	No. of positions	Meaning
49	3	Remote channel parameters (ASP) 1.pos: remote connection type 00 local 01 remote user module (value used on storage server) 02 remote application module (value used on media server) 2.pos: dedicated / shared remote channel 00 shared 01 dedicated 3.pos: reserved for future extensions, set to 00
50	0	comment (default TUM)

4.4 CONFIG PARAMETERS AT ACTIVATION CHANNEL

The hidden TCOSS channel with the configuration file “ATAMCONFACTC” is used for

- activation of send orders (deferred sending, processing of events set in user profile)
- update of send orders with delivery notifications (incl. state changes done by links)
- latest delivery timeout supervision
- generation of system error messages

4.5 CONFIG PARAMETERS OF THE ASYNCHRONOUS MODULE (UAS)

Config line	No. of positions	Meaning
1-51		see *Configuration Parameters for the Transputer Application Module (TAM)*
51	0	comment
52	2	channel allocation **UAS on TS0C/0D**: The allocation “logical” channel <<-->> hardware channel is carried out by indicating the corresponding SIO-port addresses 1. pos.: data port address 2. pos.: status port address

UAS on Windows Master: communication port

1st pos	2nd pos.	used communication port
01	00	standard UAS via COM 1

02	00	standard UAS via COM 2
FE	FF	UAS via RPC using TCP/IP (for maintenance only)
FF	FF	UAS via RPC using named pipe (for maint. only)

Config line	**No. of positions**	**Meaning**
53	12	baud rate, data format. **UAS on TS0C/0D**: The 12 bytes indicated here are sent to the SIO status port at the start of the system **UAS on Windows Master**: (default values are underlined) 1. pos.: baud rate 00 - 11 75, 134, 150, 300, 600, 1200, 1800, 2400, 4800, 7200, 9600, 14400, <u>19200</u>, 38400, 57600 115200, 128000, 256000 2. pos.: number of bits per character 00 - 04 5, 7, 6, <u>8</u>, 4 3. pos.: parity 00 - 03 <u>no</u>, odd, mark, even 4. pos number of stop bits 00 - 02 1, 1.5, <u>2</u> 5. pos.: TX hardware flow control 00 - 03 <u>disabled</u>, CTS, DSR, CTS+DSR 6. pos.: RX hardware flow control Bits 0,1: 00-02 DTR inactive, <u>DTR active</u> DTR handshake Bits 2,3 00-03 RTS inactive, <u>RTS active</u>, RTS handshake, RTS toggle Bit 7: 00-01 <u>ignore DSR for reception</u> ignore characters while DSR is inactive 7. - 12. pos.: unused, has to be 00

Config line	No. of positions	Meaning
54	1	SIO write register 5 you have to indicate the value for WR5 here (has to be 00 for an UAS on Windows NT Master)
55	0	comment
56	1	automatic EOT '0' = without automatic EOT '1' = with automatic EOT '2, = wait for e.g. 100 OK, then generate appropriate EOT according to config line 125 '3' = same as 2, but EOT command without parameter AUTHOR for sending of active acknowledgements
57	1	multiplexer and FAX selection '0' = no selection '1' = multiplexer selection (not supported for UAS on Windows master)
58	1	headline '0' = no headline '1' = insert headline with document reference

Config line	No. of positions	Meaning
59	9	kind of acknowledgements 1. pos.: acknowledgement 100 – 199 ..... 9. digit: acknowledgement 900 - 999 per position: 0 = corresponding acknowledgement group is sent 1 = bell is sent once 3 = bell is sent 3 times 8 = corresponding acknowledgement group is stored and sent after break control character

9 = corresponding acknowledgement group is not sent

60 3 1. pos.: suppress form feed at output
Here you can enter the code of the character to be suppressed at its first occurrence in a document; the code refers to the status after all conversions.
Hex FF = suppress no character

2. pos.: Here you can enter the HEX code for 10ms pause. Default “pause-character” for 10ms is 01H, FF HEX = no pause

3. pos.: Here you can enter the HEX code for 100ms pause. Default “pause-character” for 100ms is 04H, FF HEX = no pause
Note: Pause characters are not supported for UAS on Windows master

61 1 line division at the output

'0' = lines of excess length are cut off
'1' = lines of excess length are divided
'2' = lines of excess length are neither cut off nor divided

62 2 XON/XOFF
1. pos.: XOFF-code, not converted

2. pos.: XON-code, not converted
For operation without XON/XOFF protocol, both positions have to be configured with hex 00. In configurations with 7 data bits the 8th bits of the XON/XOFF characters represent the parity bits and have to be set accordingly (equal to the parity bit or 1 in case of no parity).

63 1 XON/XOFF status: start sending
00 = start sending only if partner sends XON
01 = start sending immediately

Config line	No. of positions	Meaning
64	11	start-string This is any code string sent automatically at the beginning of a document 1. pos.: number of chars. to be sent (hex) rest: 10-character string
65	11	end-string This is any code string sent automatically at the end of a document 1.digit: number of the chars. to be sent (hex) rest: 10 -character string
66	0	comment
67	21	replacement sequence for LF0 1. pos.: no. of valid chars. in sequence (hex), FF = suppress lines with LF0 rest: = replacement sequence for LF0
68	21	replacement sequence for LF1 1. pos.: no. of valid chars. in sequence (hex), FF = suppress lines with LF1 rest: = replacement sequence for LF1
69	21	replacement sequence for LF2 1. pos.: no. of valid char. in sequence (hex), FF = suppress lines with LF2 rest: = replacement sequence for LF2
70	21	replacement sequence for LF3 1. pos.: no. of valid char. in sequence (hex), FF = suppress lines with LF3 rest: = replacement sequence for LF3
71	0	comment
72	21	replacement sequence for BS0 1. pos.: no. of valid char. in sequence (hex), FF = suppress lines with BS0 rest: = replacement sequence for BS0
73	21	replacement sequence for BS1 1. pos.: no. of valid char. in sequence (hex), FF = suppress lines with BS1 rest: = replacement sequence for BS1

Config line	No. of positions	Meaning
74	21	replacement sequence for BS2 1. pos.: no. of valid char. in sequence (hex), FF = suppress lines with BS2 rest: = replacement sequence for BS2
75	21	replacement sequence for BS3 1. pos.: no. of valid char. in sequence (hex), FF = suppress lines with BS3 rest: = replacement sequence for BS3
76	0	comment
77	21	replacement sequence for A4H 1. pos.: no. of valid char. in sequence (hex), = suppress lines with A4H FF = replacement sequence for A4H rest:
78	21	replacement sequence for A4Q 1. pos.: no. of valid char. in sequence (hex), FF = suppress lines with A4Q rest: = replacement sequence for A4Q
79	21	replacement sequence for BDH 1. pos.: no. of valid char. in sequence (hex), FF = suppress lines with BDH rest: = replacement sequence for BDH
80	21	replacement sequence for BDQ 1. pos.: no. of valid char. in sequence (hex), = suppress lines with BDQ FF = replacement sequence for BDQ rest:
81	0	comment
82	4	reserve
83	0	comment

Config line	No. of positions	Meaning
84	16	output code table characters 00 to 0F
85	16	output code table characters 10 to 1F
86	16	output code table characters 20 to 2F
87	16	output code table characters 30 to 3F
88	16	output code table characters 40 to 4F
89	16	output code table characters 50 to 5F
90	16	output code table characters 60 to 6F
91	16	output code table characters 70 to 7F
92	16	output code table characters 80 to 8F
93	16	output code table characters 90 to 9F
94	16	output code table characters A0 to AF
95	16	output code table characters B0 to BF
96	16	output code table characters C0 to CF
97	16	output code table characters D0 to DF
98	16	output code table characters E0 to EF
99	16	output code table characters F0 to FF
100	0	comment
101	14	reserved
102	2	1.pos.: acceptation of internal commands '2' not accepted '3' accepted 2.pos.: EOT command during sending via the asynchronous channel '0' no EOT command during sending possible '1' EOT command during sending possible (default)

Config line	No. of positions	Meaning
103	1	auto-LF '0' = automatic insertion of LF after CR (connected device is without auto-LF) '1' = no automatic insertion of LF (connected device is with auto-LF)
104	0	comment
105	16	input code table characters 00 to 0F
106	16	input code table characters 10 to 1F
107	16	input code table characters 20 to 2F
108	16	input code table characters 30 to 3F
109	16	input code table characters 40 to 4F
110	16	Input-code-table characters 50 to 5F
111	16	Input-code-table characters 60 to 6F
112	16	input code table characters 70 to 7F
113	16	input code table characters 80 to 8F
114	16	input code table characters 90 to 9F
115	16	input code table characters A0 to AF
116	16	input code table characters B0 to BF
117	16	input code table characters C0 to CF
118	16	input code table characters D0 to DF
119	16	input code table characters E0 to EF
120	16	input code table characters F0 to FF
121	1	time-out :00 , ...no time-out :01,to :FF, ...time-out 1-255 s

Config line	No. of positions	Meaning
122	1	automatic reception '0' = without automatic reception '1' = with automatic reception
123	1	call collision '0' = ignored, sending has priority '1' = check input buffer before sending '2' = check input buffer and STX-ETX before sending with priority '3' = same as 2 but without priority
124	2	characters for STX/ETX (00 = without STX/ETX)
125	9	break code / acknowledgement group allocation 1. pos.: break code for acknowledgements 100 – 199 9. pos.: break code for acknowledgements 900 – 999 possible values: 0 - 6
126	1	back reception on / off '0' = without back reception '1' = with back reception
127	7	string-byte conversion during input of characters 1. pos replacement character (byte) for the configured string 2.-7.pos. string to be replaced (unused positions filled with 00Hex)
128	12	script program to be loaded automatically during system booting 'blank' = no script program is loaded, standard functionality 'script file name' the specified script program is loaded. A drive specification and lower case letter reference are possible (e.g. 'SFILE1', 'A:SFILE1', 'B:sfile2').
129	1	manual loading of script program with command ..SEND '0' = disabled (a script file is treated as ordinary file and is not compiled). '1' = enabled (any currently running program is cancelled by a new script file and the compiler tries to translate it)
130-135	-	reserved

4.5.1 Handshake – V.24 Cables

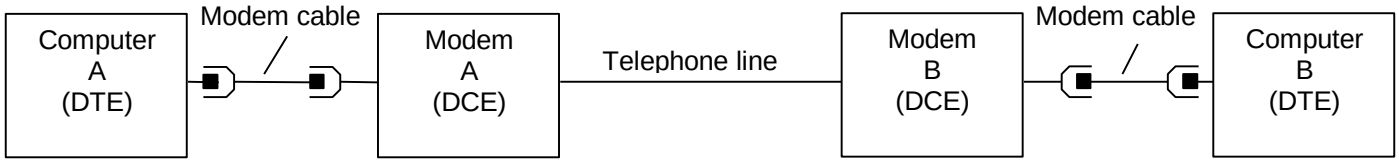
This chapter gives basic information about SW and HW handshake with the UAS channel. The different handshake methods are described with the required cables and how they are configured.

The hardware handshake functions are controlled by config lines 53 and 54. The software handshake is used if XON/XOFF characters are defined in config line 62. It is not supported to use both hard- and software handshake on the same port at the same time.

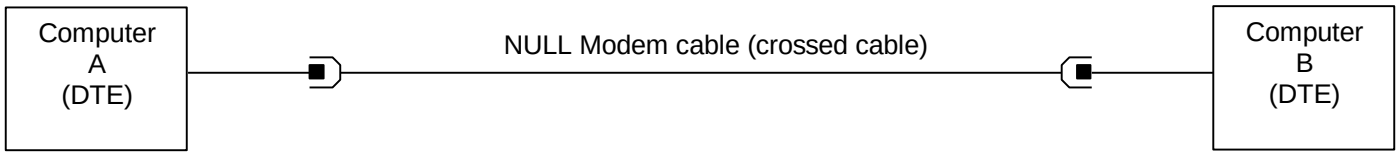
4.5.1.1.1 Pin Assignment, V.24 Reference Model

The serial V.24 interface was primary designed to connect to computers via modem. Of course, you can also use it to connect two computers together without modem connection.

Connecting two Computers via Modem



Direct Connection between two Computers



The computer is usually referred as DTE (data terminal equipment) and the modem is referred as DCE (data circuit equipment). Usually, the DTE has male and the DCE a female connector.

KCS following pin connection are defined.

		pin number		
Signal	data flow	DB25	DB9	description
GND		7	5	Signal ground
TXD	DTE → DCE	2	3	data transmitted from DTE
RXD	DTE ← DCE	3	2	data receive by DTE
RTS	DTE → DCE	4	7	**R**equest **T**o **S**end (DTE requests data, DTE is ready)
CTS	DTE ← DCE	5	8	**C**lear **T**o **S**end (other DTE is ready for data)
DSR	DTE ← DCE	6	6	**D**ata **S**et **R**eady (Modem is in off hook state)
DCD	DTE ← DCE	8	1	**D**ata **C**arrier **D**etect (Modem received carrier)
DTR	DTE → DCE	20	4	**D**ata **T**erminal **R**eady (Tells to modem to go to off-hook state)
CI	DTE ← DCE	22	9	**C**all **I**ndicator (Modem has detecting ring signal)

Note that serial ports on TS0d do not exactly fit into this schema. It has the DTE pin assignment and DCE connector!

4.5.1.2 Software Handshake (XON/XOFF)

4.5.1.2.1 How It Works

If two devices are connected via software handshake only Transmit Data and Receive Data lines are required. Data flow is controlled by sending XO/XOFF characters. Any side can send a XOFF character to indicate that it is not ready to receive further data (except XON/XOFF characters of cause). If any station will be ready again, it sends XON.

XON/XOFF handshake is used on most console based applications (MS-DOS command line) to stop output with Ctrl-S (=XOFF).

The following XON/XOFF characters have to be used:

	hex – code	Control Code
XON	0x11	Ctrl-S
XOFF	0x13	Ctrl-Q

4.5.1.2.2 Configuration

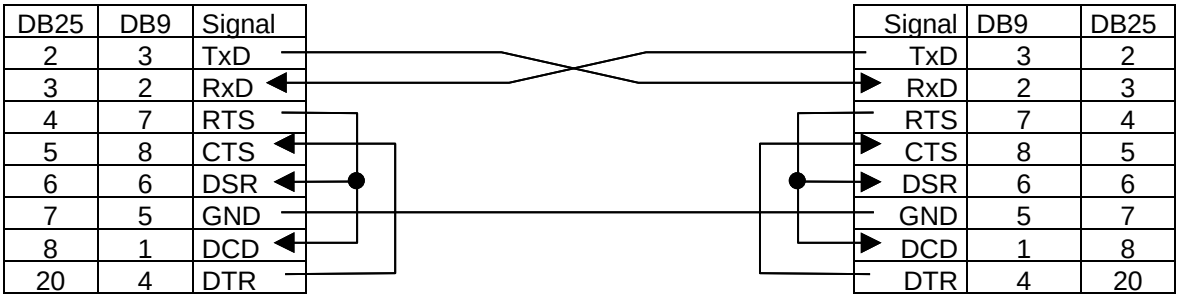
XON/XOFF is default after adding a new UAS channel in the hardware/software assignment.

UAS on TS0C/0D:
It is recommended to use the menu item 01) V.24 parameters, protocol to switch SW and HW handshake.

UAS on Windows NT Master:
1. Set TX hardware flow control to disable. (pos. 5 of config line 53 = 00)
2. Set RX hardware flow control to DTR, RTS active, ignore DSR. (pos. 6 of conf. line 53 = 05)
3. Configure XON/XOFF characters (e.g. config line 62 = :91 92). The values for XON/XOFF are not used. It is just checked if they are not equal 00. XON/XOFF characters are always created by Windows NT with the codes shown above.

4.5.1.2.3 SW Handshake Cable

If you want to connect 2 Computers with SW handshake you can either use the cable described below or a cable described in the next chapter for HW handshake.



Note: Both connections between RTS, DSR, DCD and connections between DTR and CTS are optional! They are not used with Software handshake.

You will need a female plug on the cable when connecting to a PC-COM port. You will need a male plug on the cable when connecting to an asynchronous port on TC0C/0D. The pin assignment is always the same.

4.5.1.3 Hardware Handshake

4.5.1.3.1 How It Should Work

The hardware handshake usually controls data flow with RTS and CTS lines.
RTS is activated if the own Computer is ready to receive data from the other Computer.
CTS (=RTS of other Computer) indicates that the other Computer is ready to receive data.

All other control lines (DSR, DCD, DTR, CI) should be used for modem control.

To make it little bit more complicate there are some different mutations in use.
1. DTR (or DTR and RTS) may be used instead of RTS to indicate the own receiver status.
2. DSR or DSR+CTS may be used instead of CTS to control the transmitter output.

The COM port used with the UAS on Windows NT Master supports the hardware handshake with all mutations described below. The UAS on TS0C/0C supports only a mutation as described below.

4.5.1.3.2 Hardware Handshake with UAS on TS0C/0D

If configured for hardware handshake, the serial port on TS0C/0D behaves as described below:
1. Transmitter data is controlled by CTS (or CTS + DSR depending if jumper settings JA3, JB3 on TS70 are changed)
2. Receiver will be disable if DCD is inactive.
3. If the receiver buffer gets full, DTR will be deactivated.
4. RTS is always active.

This means that UAS on TS0C/0D uses the DTR instead of RTS to control the data flow!

4.5.1.3.3 Configuration

UAS on TS0C/0D:
It is recommended to use the menu item 01) V.24 parameters, protocol to switch SW and HW handshake.

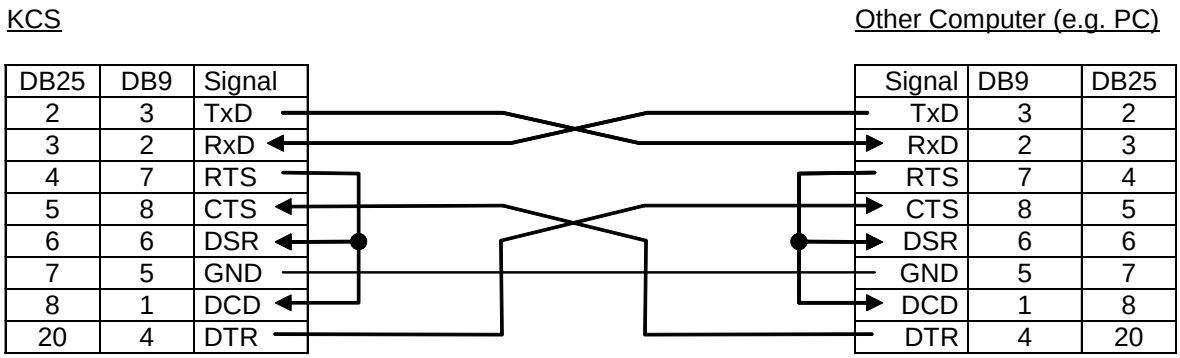
UAS on Windows NT Master:
1. Set TX hardware flow control to CTS. (pos. 5 of config line 53 = 01)
2. Set RX hardware flow control to DTR, RTS handshake, ignore DSR. (pos. 6 of conf. line 53 = 0A). These settings are recommended because they will support both RTS and DTR hardware handshake cables.
3. Delete the XON/XOFF characters by changing config line 62 to :00 00.

4.5.1.3.4 HW Handshake Cable

This section describes two different HW handshake cables. Depending on the used receive data flow (RTS or DTR) these cables are called RTS or DTR hardware handshake cable. Which cable do you need (or may have a special cable with DTR handshake on KCS side and RTS handshake on PC side) depends on the other application!

DTR Hardware handshake cable:

If you want to connect KCS with Hardware handshake to any Computer (e.g. PC with TC/PC) you should use the DTR hardware handshake cable:

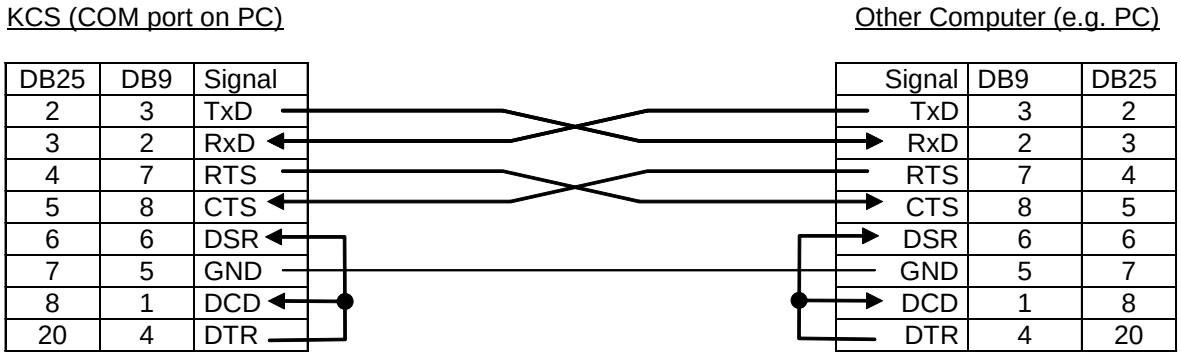


This cable can be used both with the UAS on TS0C/0D and the UAS on Windows NT.

You will need a female plug on the cable when connecting to a PC-COM port. You will need a male plug on the cable when connecting to an asynchronous port on TC0C/0D. The pin assignment is always the same.

RTS Hardware handshake cable:

This cable is supported by UAS on Windows NT only. It is a standard hardware handshake cable. Data flow is controlled by RTS/CTS.



You will need a female plug on both sides.

4.5.1.3.5 HW Handshake with Modem Connection

If you want to use a modem connection between both computers a direct connection between KCS and Modem should be used.

KCS (COM port on PC) | Modem

DB25	DB9	Signal	Signal	DB9	DB25
2	3	TxD →	→ TxD	3	2
3	2	RxD ←	← RxD	2	3
4	7	RTS →	→ RTS	7	4
5	8	CTS ←	← CTS	8	5
6	6	DSR ←	← DSR	6	6
7	5	GND —	— GND	5	7
8	1	DCD ←	← DCD	1	8
20	4	DTR →	→ DTR	4	20
22	9	CI ←	← CI	9	22

You will need a female plug on KCS side and a male plug on Modem side.

4.6 CONFIG PARAMETERS OF THE TELEX MODULE (UTX)

Config line	No. of positions	Meaning
1-51		see *Configuration Parameters for the Transputer Application Module (TAM)*
51	4	SIO port addresses. Are set automatically by SW-HW- assignment. Do not change them with the line editor! (shown values are for operation with telex machine) plug position addresses (hex) S0 14 16 15 17 S1 3C 3E 3D 3F S2 38 3A 39 3B S3 34 36 35 37 S4 30 32 31 33 S5 10 12 11 13 S6 20 22 21 23
52	1	telex interface 00 = TS20, TS22, TS26, TS28 with tele printer 01 = TS21 with tele printer 02 = TS20, TS22, TS26, TS28 without teleprint
53	1	telex reception on/off 00 = off 01 = on
54	2	telex back reception on/off 1.pos 00 = off 01 = normal (all send attempts with positive answer back check are back-received) 02 = extended (all send attempts are back received, including unsuccessful ones) 2.pos 00 = back received characters not underlined 01 = back received characters underlined (does not work in combination with overprint characters)
55	1	answer back verification after transmission 00 = no 01 = yes

Config line	No. of positions	Meaning
56	1	type of telex exchange 'A' = type 'A' exchange (similar to CCITT U.1 type A) 'B' = type 'B' exchange (similar to CCITT U.1 type B, selection with number plate) 'C' = type 'C' exchange (like B, but selection with telex characters) 'M' leased line
57	1	maximum waiting time for call confirmation 00 - FF =0..255 seconds
58	1	maximum waiting time for proceed to select or call connected signal 00 - FF 0..255 seconds
59	10	busy signal without disconnection If such a service signal exists (in the case of automatic call retries done by the exchange) it is possible to set either the service signal “occ end of retry” or “occ auto retry”, depending whether the automatic retries are desired or not. “Wild cards” (apostrophes) can be used; the positions with apostrophes are not relevant for the comparison of the service signal. If less than 10 positions are set, the remaining ones have to be filled with zeros (hex 00)
60	1	duration of break signal :00 to :FF break 0...25.5 sec. for TS 20, 22 or 26 :FF send break until reception of clear confirmation :00 to :FE for TS 28
61	1	character for recognizing call collision only with exchange type 'A'
62	1	“possible duplicate message” in the telex head 1.pos. 'possible duplicate message' 00 = no 01 = yes, if necessary 2.pos 'stored message' or 'ci' 00 = no 01 ='stored message' 02 ='ci' 3.pos. date / time 00 = no = 01 yes 4.pos. current number 00 = no 01 = yes

Config line	No. of positions	Meaning
63	4	character set, ‘CI', subscriber absent, reception time out. This flags can be combined by adding the hex values 1.pos Switching the Greek characters for reception and back reception on/off 00 = Greek characters off 01 = Greek characters on 02 = Received characters upper case 04 = back-received letters lower case 10 = skip additional line before distant answer-back in received telex 2.pos. return 'CI' 00 = no 01 = yes, KCS can automatically return the service signal `ci' (conversation impossible) on receipt of 3 or more bell signals (comb. no 10 in figure case) 3.pos apply `subscriber absent' cond. if the system fill-up degree exceeds 90% 00 = no 01 = yes, (use for TS26 only) 4.pos. reception time-out 00 = no time-out (incoming calls not cleared) 01..FF = time-out in 10 sec. units (incoming call cleared)
64	1	break code for service signal 'der' (is also used for the signals in config lines 71 and 72 '1,.....'5,
65	12	chaining parameters 1. pos. chaining on/off 00 = chaining disabled 01 = chaining enabled, ‘G’ switch will be evaluated 2. pos answerback exchange at beginning of chained message 00 = no 01 = yes 3. pos. answerback exchange at end of message if a chained message follows 00 = no 01 = yes pos. 4 – 12 separation string between chained messages, unused positions filled with 00 e.g. 4E 4E 4E 4E 3C 3E 00 00 00 = “NNNN”, carriage return, line feed

Config line	No. of positions	Meaning		
66	1	length of character string for end of text		
			01 - 06	= length of character string
			00	= no character string for recognizing end of text. Text end only at disconnection or break signal
67	6	character string for text end when receiving telexes, valid length defined by line 66, remaining positions filled with any characters (or blanks)		
68	2	minimum length of an incoming telex, intermediate storage internal		
		1.pos	minimum length of an incoming telex	
			00..C8	=0 ..200 characters
		2.pos.	intermediate storage interval	
			00	= no intermediate storing
			01..FF	=1..255 seconds interval of intermediate storage
69	1	maximum number of incoming characters		
			:00 ,..:FE	call cleared if more than 0 .. 254 characters are received in one sequence (less than 1 second delay between characters)
			:FF	call not cleared because of incoming signals
70	20	local telex answer back for activation without tele printer		
		set-up of the telex answer back:		
	1 position	_	=	letter shift
	1 position	<	=	carriage return
	1 position	>	=	line feed
	1 position	^	=	figure shift
	6 positions		=	call number
	1 position	_	=	letter shift
	1 position		=	space
	5-7positions		=	abbreviated name, space, country designation (capital letters)
	1-3positions	_	=	letter shift (for a total of 20 filled positions).
71	10	10-position 'der' service signal without disconnection		
72	15	same as 71 (see explanation of this config line)		

Config line	No. of positions	Meaning
73	4	delay times (x = config value) 1.pos.: break detection 01 ..FF = 132.5 ..6482.5 ms (+- 12.5 ms) for TS20, 22 or 26 (time in ms = x*25 +107.5) 01 ..23 for TS 28 2.pos.: non-break detection 01 ..FF = 22.5 ..6372.5 ms (+- 12.5 ms) (time in ms = x*25 - 2.5) 3.pos. delay after break 00 ..FF =0 ..6375 ms (time in ms = x*25) 4.pos. delay after non-break 00 ..F =0 ..6375 ms (time in ms = x*25)

Config line	No. of positions	Meaning
74	12	reserved
75	2	answer back verification (only for dialing stage 0) 1. pos: after reception of the character configured here the system will call the other subscriber's answer back and clear the connection within 4 sec. if the received answer back is not the excepted one. 2. pos.: possible values: 0 - 9 0 = no automatic replacement of expected answer back 1 - 9 = if a one-character answer back has been entered the last 1 - 9 pos. of the telex number will be used for answer back verification
76,89, 102,115 128	1	character in receiver for this stage (is not used for stage 0
77,90 103, 116 129	1	verification for further selection stage starting from position..... 00 = off, no further selection stages 01..FF = verification for further selection stage begins at position1..255 in telex number
78,91, 104, 117 130	10	proceed to select signal (pts) “Wild cards” can be used, the positions with inverted commas (Hex 27) do not influence the comparison. If fewer than 10 positions are configured the remaining ones must be filled with zeros (hex 00)
79,92, 105, 118, 131	1	delay after reception of pts 00..FF = 0..255 seconds delay
80, 93, 106, 119, 132	1	selection termination character (only for selection with telex char.'s) hex 00 = off, no char. after selection digits
81, 94, 107, 120, 133	1	no selection termination character if the telex number is terminated with this character (for suppressing the selection termination character for special protocols)

Config line	No. of positions	Meaning
82, 95, 108, 121 134	1	maximum waiting period for answer back 00..FF = 0..255 seconds
83, 96, 109, 122, 135	1	request answer back after 00..FF = 0..255 seconds The answer back is requested after the configured waiting period if it has not been correctly received before
84, 97, 110, 123, 136	1	call connected signal 00 = connected signal can be missing before answer back 01 = connected signal always comes before answer back
85, 98, 111, 124, 137	1	answer back exchange 00 = no 01 = yes 02 = yes, answer back exchange at the end of the transmission in reverse order
86, 99, 112, 125, 138	5	disconnection string If fewer than 5 positions are configured the remaining ones must be filled with zeros (hex 00)
87, 100 113, 126, 139	1	delay between disconnection string and break signal (1 hex number) 00..FF = 0..255 seconds delay
88, 101 114, 127	0	comment
140	1	variable answer back on/off '0' = sending without variable answer back (default) '1' = sending with variable answer back '2' = incoming with variable answer back '3' = sending + incoming with variable answer back

Config line	No. of positions	Meaning
141	1	international network access number '0'..'9' = defines the first digit of the selection number for international calls and is also used for the decision whether a call is international or national by comparing it with the first digit of the actual selection number ' ' = all calls are considered as being national
142-147	20	General part for telex TCOSS-code to TCOSS-string output conversion table
148-149	20	National part for telex TCOSS-code to TCOSS-string output conversion table
150-151	20	International part for telex TCOSS-code to TCOSS-string output conversion table
152-155	20	Input TCOSS-string to TCOSS code conversion table for received national characters
156-175	24	Variable answerbacks on incoming calls Setup: `xxxxaaaaaaaaaaaaaaaaaaaa` `xxxx` 4 positions extension number `aaaaaaaaaaaa` 20 positions answerback Example: 256?_<>^111388-256_ TCA 2???_<>^111388-2??_ TCINT
176	4	prefix for inbound routing (unused positions filled with blanks) ‘ ‘ do not use inbound distribution ‘.TX’ inbound distribution via NN99 ‘TXI$’ inbound routing via rr99 Note: ‘.TX’ and ‘TXI$’ prefixes are only examples
177	1	max. length of sub-address, max. 5 is possible 0 – inbound routing via rr99 and TX99 features switched off
178	21	reserved

4.6.1 Configuring Telex Code Conversions

Config lines 142 - 147 contain a variable number of entries with variable length. Each entry consists of:

- TCOSS-code (which is to be replaced) in the first position of the entry
- Replacement string which starts at the second position of the entry (with variable length, maximum 32 characters)
- Each entry can be continued on the next line.
- Entries are separated from each other by a 00HEX value.
- The last entry has to end with a 00HEX value. The unused positions behind the last entry must be filled with 00HEX values.

Config line 148 - 149 and config line 150 - 151 have the same structure as described above.

Config lines 152 - 153 contain a variable number of entries with variable length. Each entry consists of:

- Input string (which has to be replaced) starting at the first position of the entry (with variable length, maximum 32 characters).
- Replacement TCOSS-code which starts immediately behind the last position of the input string.
- Each entry can be continued on the next line.
- Entries are separated from each other by a 00HEX value.
- The last entry has to end with a 00HEX value. The unused positions behind the last entry must be filled with 00HEX values.

Config line 154 - 155 have the same structure as described above.

You will find a configuration example for Spain in the next chapter!

4.6.2 Configuration Example for Spain

Consider a possible configuration for Spain where ITA no.2 national combinations 6,7 and 8 in figure case are assigned to the characters %, H and Ñ. For the appropriate TCOSS-codes refer to TCOSS code page 0.

General part of the output TCOSS-code to TCOSS-string conversion table should be:

“$”	converted to	“DLRS”
“@”	converted to	“AT”

National part of the output TCOSS-code to TCOSS-string conversion table should be:

“%”	converted to	“{“
“ñ”	converted to	“}”
“Ñ”	converted to	“}”

International part of the output TCOSS-code to TCOSS string conversion table should be:

“%”	converted to	“0/0”
“ñ”	converted to	“N”
“Ñ”	converted to	“N”

Input conversion table for reception should be:

“{“	converted to	“%”
“|”	converted to	“h”
“}”	converted to	“ñ”

Input conversion table for back reception should be:

“{“	converted to	“%”
“|”	converted to	“H”
“}”	converted to	“Ñ”

The corresponding config lines should have the following set-up:

```
142: 24 44 4C 52 53 00 40 41 54 00 00 00 00 00 00 00 00 00 00 00
143: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
144: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
145: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
146: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
147: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

148: 25 7B 00 A4 7D 00 A5 7D 00 00 00 00 00 00 00 00 00 00 00 00
149: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

150: 25 30 2F 30 00 A4 4E 00 A5 4E 00 00 00 00 00 00 00 00 00 00
151: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

152: 7B 25 00 7C 68 00 7D A4 00 00 00 00 00 00 00 00 00 00 00 00
153: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

154: 7B 25 00 7C 48 00 7D A5 00 00 00 00 00 00 00 00 00 00 00 00
155: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

4.7 INBOUND TELEX DISTRIBUTION WITH LOOPBACK TELEX ADAPTER

This chapter describes a test environment that is useful the test text inbound distribution with a loop back telex adapter in an ASP environment.

4.7.1 Required Configuration Changes

4.7.1.1 Telex Channel Configuration on the Media Server (Special Config Lines):

Config line 2 = Y	Channel group Y used for the Telex Loopback service. This is specific to our environment, normally the channel group is X:. The channel group should be set to Y for the sending channel of one loopback adapter and it should be set to an empty string for the receiving channel of the loopback adapter.
Config line 42	The default originator should be modified to the service TLXLOOP created in one of the next steps (as we use already the service TLX for the public Telex connection), so the line should contain: TLXLOOP$*
Config line 56 = T	This is a special type of telex exchange for sending subaddressing digits on a telex loopback adapter
Config line 73, pos.4 = 50	This is the “delay after nonbreak”. It must be different than 0 to enable reception of subaddressing digits. Recommended value according to manual is 28 hex (1 second delay), which caused problems (subaddressing digits were not recognized correctly) in our environment, therefore this value has been increased to 50 hex (2 seconds delay).
Config line 83 = 05	Request answer back after 5 seconds. This config line is important for sending. Normally the PTT requests the answerback of the distant receiver automatically. Only if the sending KCS does not receive the distant answerback within this timeout configured here, it will send a “Who are you” (#) signal to the receiver. Normally this value is set to 2D, which is 45 seconds. As we have no PTT in the loopback environment, KCS must always request the distant answerback. By setting this config line to 05 we make the waiting time for the sender shorter (5 sec instead of 45 sec)
Config line 140=03	Variable answerbacks switched on for sending and receiving
Config line 176=TXI$	Inbound prefix for creating the Telex inbound send order (similar to FXI$ in config line 235 of the FAX module
Config line 177=03	Max. length of inbound subaddressing digits, here I configured to 3 the value should be between 1..5

The complete TAMCONF file is listed at the end of this chapter.

Do not forget to switch the channel via HW/SW assignment to a remote TAM configuration.

When switching to remote channel, configure a “shared channel” and set the LineID to e.g. “TELEX GROUP”

4.7.1.2 Registry Settings on the Media Server

Within the registry of the Media Server create a new subkey with the line ID configured in step 1.
HKLM\SOFTWARE\TOPCALL\TCOSS\RemoteChannels\TELEX GROUP

Then create new registry values within this subkey:

CustomerList	(REG_MULTI_SZ)	(All)
ListPriority	(REG_DWORD)	0

4.7.1.3 Telex Channel Configuration on the Storage Server(s):

Configure a Remote Telex channel, set the config line 2 (channel group) to the same value as configured for the telex channel on the media Server. This is Y in our case.

Additionally also modify the default originator (config line 42) to the service TLXLOOP created in one of the next steps: TLXLOOP$*

4.7.2 Additional Files and Services for Inbound Configuration

4.7.2.1 Create the +MAIL5V/ATX99 on the Media Server

The TX99 is the configuration file for responding with variable answerbacks on receiving telex messages. It is checked by the TUM of the Telex module to respond with the correct answerback in case of receiving telex messages.

In our case the TX99 file is configured for 2 variable answerbacks (sample):

```
165,165 KM TCINT A
130,130 SB TCINT A
```

Meaning: If an incoming telex with subaddressing digits 165 are received the given answerback is:
165 KM TCINT A

4.7.2.2 Create the TXI Service on the Media Server and Also on Each of the Storage Servers

The TXI Service is used by the Telex channel to create the inbound send order (see config line 177). According to the documentation the service should be configured as follows:

Service name:		TXI
Service abilities:	R	(restricted text)
Service prefix:		X:TXI

4.7.2.3 Create the Sender Service TLXLOOP on the Media Server and Also on the Storage Servers

Service name:		TLXLOOP
Service abilities:	R	(restricted text)
Service prefix:		Y:

4.7.2.4 Configure the rr99 Telex Inbound Routing on the Media Server

The inbound routing is similar to the inbound routing of FAX, again the customer ID's (in our case the customer ID's are SUPPORT1, SUPPORT2,...) must be added to a routable channel number. The important lines are marked bold:

```
**SENDMODES
**NORMALIZE
**ROUTE
,,FAX inbound routing to storage server
FXI:1~,FXI:SUPPORT1
FXI:2~,FXI:SUPPORT2
FXI:3~,FXI:SUPPORT3
FXI:4~,FXI:SUPPORT4
FXI:5~,FXI:SUPPORT5
FXI:6~,FXI:SUPPORT6
FXI:~,invalid
,,Telex inbound routing to storage server
X:TXI1~,X:SUPPORT1
X:TXI2~,X:SUPPORT2
X:TXI3~,X:SUPPORT3
X:TXI4~,X:SUPPORT4
X:TXI5~,X:SUPPORT5
X:TXI6~,X:SUPPORT6
X:TXI~,invalid
**NODES
**INBOUND
,,the normal inbound routing is now disabled
,,FXI:~,,                fax inbound routing to TCOSS user
,,FXI:~,DIST:FXI~,       default fax inbound receiver
,,X:TXI~,,
```

4.7.2.5 Configure the Telex Inbound Routing on the Storage Servers

Again the important lines are marked bold

```
**SENDMODES
**NORMALIZE
**ROUTE
**NODES
**INBOUND
FXI:~,,                fax inbound routing to TCOSS user
FXI:~,invalid,         reject FAX if no valid user
```

```
,,FXI:~,DIST:FXI~,        default fax inbound receiver
X:TXI~,,                 telex inbound routing to TCOSS user
X:TXI~,DIST:TXI~         default telex inbound receiver
```

4.7.2.6 Configure Inactive TXI Addresses for the Users on the Storage Server

In our case the TXI Address has to be defined on the Storage Server SUPPORT1. The address must be 3 digits long and must start with a 1 (otherwise it is not routed by the media server to the storage Server SUPPORT1).

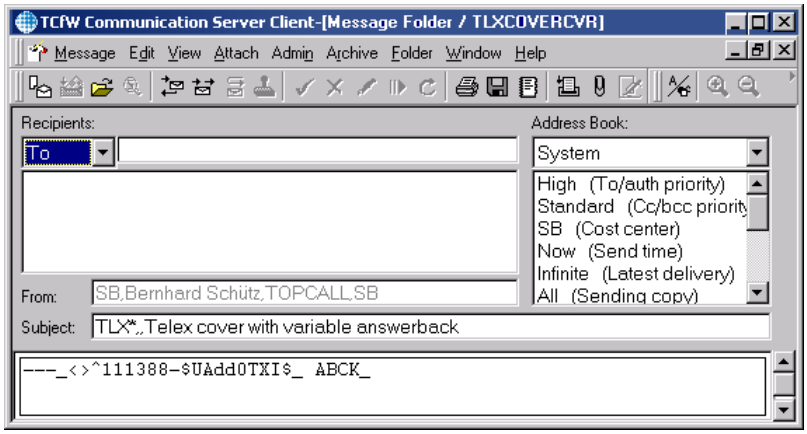
Active	No	Service	Number:
X	1	TOPCALL	SB,
	2	FXI	130,
	3	TXI	130,

Active	No	Service	Number:
X	1	TOPCALL	KM,
	2	TXI	165,

4.7.2.7 Create a Cover for Sending Telex Messages with Variable Answerback (Storage Server)

The variable answerback line must be the first line in the cover. It has to start with 3 hyphens --- and afterwards the answerback of the sender in the same format as configured in config line 70 of the telex channel. Here we use the TXI Address of the user ($UAdd0TXI$) as variable part.

The ^ character is the so called figure shift character and must be used before entering digits.
The _ character is the so called letter shift character and must be used before entering characters.

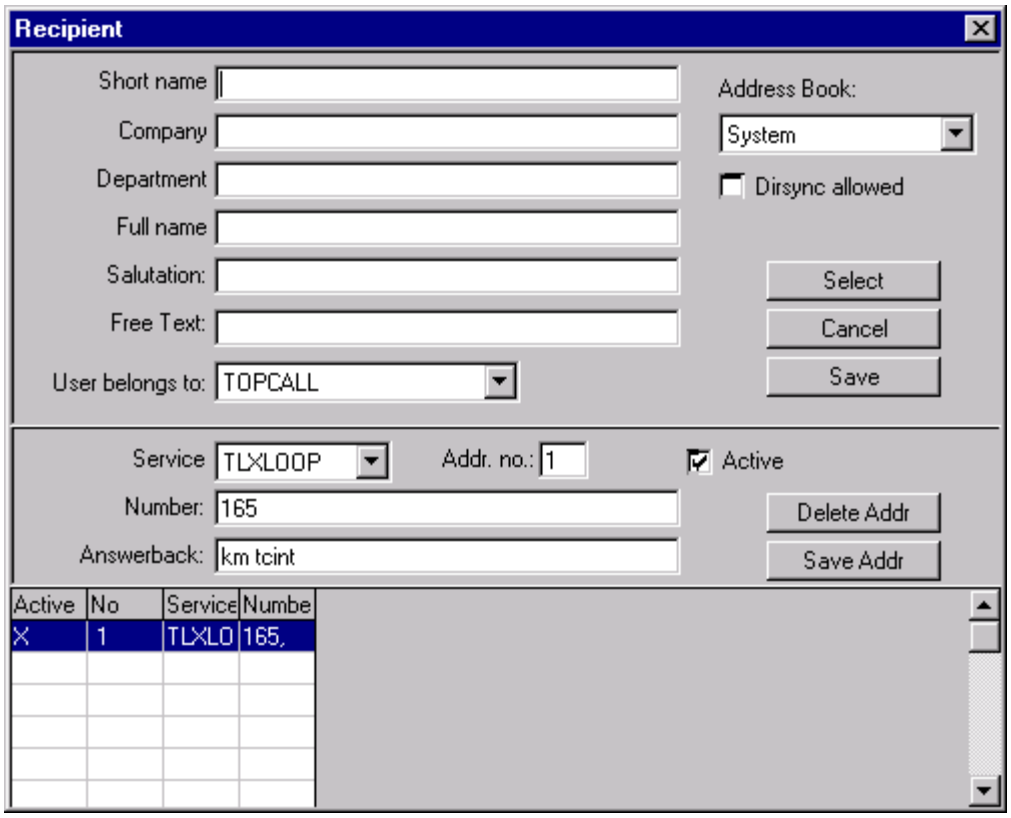


4.7.3 Testing the Configuration

Log on with a user to the storage Server (SB in my case). Create a new message in TCFW and select the Telex Cover created in the previous step.

Address the message to Service TLXLOOP and number 165. The answerback should be that one (or parts of it) as it is configured for this receiver in the TX99 file. Then send the message.

Take care that in case of using a Telex loop connection the message must be addressed to the subaddressing digits only, there is no “main number”.



4.7.3.1 Check the Received Message in the Inbox of the Receiver

The message above should be routed to the user KM located on TCOSS Server SUPPORT1.

The message should look like:

```
010621 2055
#
165 KM TCINT A
111388-130 abck

stored message
010621/2054 nr. 0009

this is a test message for inbound routing of telex on asp systems
#
165 KM TCINT A
111388-130 abck
```

Line 1 contains the date and time of sending
Line 2 is the “Who are you” character # sent by the sender for requesting the answerback of the receiver
Line 3 contains the answerback of the receiver as configured in the TX99 of the media server
Line 4 contains the answerback of the sender as it was set by using the Telex cover
Line 5 is empty
Line 6 and 7 is the fixed message header as it is sent by the KCS Telex module.
Line 8 is empty again
Line 9 contains the body of the message as entered by the sender
Line 10 contains again the “Who are you” requesting the answerback of the receiver

Line 11 contains the answerback of the receiver
Line 12 contains the answerback of the sender

The From: of the message should contain the TLXLOOP Service:

From: Y,,TLXLOOP,111388

4.7.4 Appendix

TAMCONF File for the Telex channel configuration on the media server

```
'1,  001
'Y                        ,  002
'X10,  003
'2,  004
'1,  005
'666666 TCINT    TS26A   ,  006
'A,  007
:00 ,008
'0,  009
'I,  010
'0,  011
'    ,  012
'9,  013
:32 00 ,014
'  ,  015
'JS ,  016
'A ,  017
,    018
'A,  019
'RT,  020
'.TXBR,  021
'0,  022
,    023
'1,  024
'A,  025
'TT,  026
'.TXIN,  027
'0,  028
'I,  029
'A ,  030
,    031
'0,  032
:FE ,033
'ST,  034
'0,  035
:00 ,036
'TELEX GROUP             ,  037
:08 00 ,038
:0F ,039
'A ,  040
'10110,  041
'TLXLOOP$*               ,  042
'876543210,  043
'--------0,  044
'--------0,  045
'--------0,  046
'--------0,  047
:00 00 00 ,048
:02 00 00 ,049
```

```
TUM
:34 36 34 36 ,051
:02 ,052
:01 ,053
:02 00 ,054
:01 ,055
'T,  056
:14 ,057
:5A ,058
:4F 43 43 20 20 41 55 54 4F 20 ,059
:14 ,060
'#,  061
:01 01 01 01 ,062
:00 00 00 00 ,063
'3,  064
:01 01 00 4E 4E 4E 4E 3C 3E 00 00 00 ,065
:00 ,066
'      ,  067
:34 1E ,068
:FF ,069
'_<>^666666_ TCINT___,  070
:44 45 52 20 20 41 55 54 4F 20 ,071
:4E 50 20 52 41 44 41 55 53 20 ,072
:0C 05 00 50 ,073
:00 00 00 00 00 00 00 00 00 00 00 00 ,074
';0,  075
:20 ,076
:04 ,077
:00 00 00 00 00 00 00 00 00 00 ,078
:01 ,079
:2B ,080
:2D ,081
:36 ,082
:05 ,083
:00 ,084
:01 ,085
:00 00 00 00 00 ,086
:00 ,087
,    088
:47 ,089
:00 ,090
:47 41 00 00 00 00 00 00 00 00 ,091
:00 ,092
:2B ,093
:2D ,094
:36 ,095
:2D ,096
:01 ,097
:01 ,098
:2E 2E 2E 2E 00 ,099
:05 ,100
,    101
:2D ,102
:00 ,103
:00 00 00 00 00 00 00 00 00 00 ,104
:00 ,105
:00 ,106
:2D ,107
:00 ,108
:00 ,109
:00 ,110
:00 ,111
:00 00 00 00 00 ,112
:00 ,113
,    114
```

```
:42 ,115
:01 ,116
:47 41 00 00 00 00 00 00 00 00 ,117
:00 ,118
:2B ,119
:2F ,120
:00 ,121
:00 ,122
:00 ,123
:00 ,124
:2B 2B 2B 2B 00 ,125
:3C ,126
,    127
:54 ,128
:00 ,129
:00 00 00 00 00 00 00 00 00 00 ,130
:00 ,131
:00 ,132
:2D ,133
:36 ,134
:2D ,135
:00 ,136
:01 ,137
:2B 2B 2B 2B 00 ,138
:3C ,139
'3,  140
' ,  141
:23 3F 00 2A 3F 00 24 44 4C 52 53 00 25 4F 2F 4F 00 40 41 54 ,142
:00 81 55 45 00 84 41 45 00 8E 41 45 00 94 4F 45 00 99 4F 45 ,143
:00 9A 55 45 00 E1 53 53 00 22 27 27 00 26 2B 00 5C 2F 00 5B ,144
:28 00 5D 29 00 7E 2D 00 60 3F 00 90 45 00 00 00 00 00 00 00 ,145
:00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,146
:00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,147
:00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,148
:00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,149
:00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,150
:00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,151
:7B 46 00 7C 47 00 7D 48 00 00 00 00 00 00 00 00 00 00 00 00 ,152
:00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,153
:7B 46 00 7C 47 00 7D 48 00 00 00 00 00 00 00 00 00 00 00 00 ,154
:00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,155
'                        ,  156
'                        ,  157
'                        ,  158
'                        ,  159
'                        ,  160
'                        ,  161
'                        ,  162
'                        ,  163
'                        ,  164
'                        ,  165
'                        ,  166
'                        ,  167
'                        ,  168
'                        ,  169
'                        ,  170
'                        ,  171
'                        ,  172
'                        ,  173
'                        ,  174
'                        ,  175
'TXI$,  176
:03 ,177
'                    ,  178
```

4.8 CONFIG PARAMETERS OF THE TRANSPUTER FAX MODULE (UTF)

Config line	No. of positions	Meaning
1-51		see *Configuration Parameters for the Transputer Application Module (TAM)*
51	16	own answer back, left justified, unused positions filled with space. This text will be entered in the header line
52	20	own telephone number with country code. This number will be sent as answer back to the distant telefax
53	1	back reception '0, = no back reception '1, = back reception without graphics and forms (graphics will appear as “++FX2” and “++TXT” line only in the back received document, forms will be suppressed '2, = back reception with graphics but without forms (forms will be suppressed completely). '3, = back reception as full graphics. If this mode is activated, every page will be received back as a graphics block containing all transmitted data (header lines, top margin, bottom margin, text, graphics and forms). ‘4, back reception as full graphics without leading page break. This mode is the same as mode 3 with the exception that the first page does not start with an ++A4H page break **Restriction:** The feature is not supported by UTF/UIF/ULL on TSxx interfaces
54	0	comment
55	4	Send options 1 pos.: error correction mode “N” Send without error correction mode “E” Send with ECM if supported by distant station 2 pos.: maximum transmission speed “0” 2400 bps (V.27ter) “1” 4800 bps (V.27ter) “2” 7200 bps (V.29) “3” 9600 bps (V.29) “9” 14400 bps (V.17) (default) “N” 33600 bps (V.34) (FoIP only) 3 pos.: coding “0” standard one dimensional coding (MH) “2” two dimensional coding (MR) “6” T.6 coding (MMR)

4 pos.: use two dimensional coding for sending without ECM
“0” no (=default)
“2” yes

56 1 retransmission mode
’0, = standard: retransmit the whole document (default)
’1, = enhanced: retransmit first and all non-confirmed pages

57 1 '0, = do not send a break page
'1, = send a break page after transmission has been interrupted

58 1 expansion of last page to full length specified in page format

59 0 comment

60 1 dialing
'0, = pulse dialing international
'1, = DTMF dialing
'2' = pulse dialing for Sweden

61 1 short circuit time before 1st dial pulse
00....FF = 0....2,55s

62 1 duration of dial pulse or DTMF tone
00....09 =0…90ms (10ms steps)
0A....FF =10…255ms (1ms steps, not available for TSxx interfaces)

63 2 for pulse dialing:
1.pos. delay between dialing pulses
00…09 0…90ms (10ms steps)
0A…FF 10…255ms (1ms steps, not available for TSxx interfaces)
2.pos not used
for DTMF - dialing (assumed transm. level of -6dBm):
1.pos level of the lower frequency signal
00..7F 64 = -8dBm (standard value)
level in dBm = -8dBm +20*lg (x / 100)
2.pos level of the higher frequency signal
00..7F = -6dBm (standard value)
64
level in dBm = -6dBm +20*lg (x / 100)

64 1 delay between digits
00....FF = 0....2,55s

65 1 delay after last dial digit
00....FF = 0....2,55s

66	1	DC/DC converter control			
			00..07	=1*a + 2*b + 4*c	
			a	converter on in standby mode (0/1)	
			b	converter on for sending (0/1)	
			c	converter on for local printout (0/1)	
67	1	ringing time for local printout			
			00....FF	= 0....25,5s	
68	1	delay between ring attempts			
			00....FF	= 0....25,5s	
69	1	number of ring attempts			
			00....FF	=0....255	
70	0	comment			
71	2	1.pos.	max. waiting time for identification of called station		
			00..FF	=0..255s (used during sending, default 50s)	
		2.pos	DCS time-out		
			00..FF	=0..255s (used during reception, def. 50s)	
72	3	delay before consecutive transmissions / before new page / before page header			
73	3	T.30 in message time-outs			
		pos. 1	00..FF	0..25,5s	time-out for receiving a response (used during sending only; default = 3s)
		pos. 2	00..FF	0..25,5s	time-out for receiving a command (used during reception only; default = 7s)
		pos. 3	00..FF	0..255s	receiver not ready time-out (used during sending with ECM, default=60s)
		maximum frame length			
74	1		0..FF	= 0..25,5s (default = 4sec.)	
75	1	minimum carrier loss time			
			0..FF	= 0..2,55s (default = 200msec)	
76	1	length of HDLC preamble			
			0..FF	= 0..25,5s (default = 1sec.)	
77	1	length of transmiitted TCF			
			0..1F	= 0..3,1s (default = 1,5sec.)	
78	1	CNG tone interval			
			0..FF	= 0..25,5s (default = 3,5sec.)	

79	1	length of CNG tone		
			0..FF	= 0..25,5s (default = 0,5 sec.)
80	1	receiver threshold		
			00	=-43dBm
			01	=-46dBm
81	1	transmit echo protector tone (default = 26 HEX)		
			value	= 2*a + 4*b + 8*c + 10*d + 20*e (hex values)
			a	= echo protector tone with V.27, 2400 bps (0/1)
			b	= echo protector tone with V.27, 4800 bps (0/1)
			c	= echo protector tone with V.29, 7200 bps (0/1)
			d	= echo protector tone with V.29, 9600 bps (0/1)
			e	= echo protector tone with V.17/33, 4800 - 14400 bps (0/1)
82..83	0	comment		
84..103	20x11	reserved for state machine		
104	0	comment		
105..119	15x17	reserved		
120...124		reserved for state machine		
125	0	comment		
126..128	3x16	reserved		
129	1	dial and busy tone detector threshold		
			06..7F	= -53.6dBm ... -5.2dBm
			threshold	= -56dBm + n * 0.4 dBm (n = config value)
130	0	comment		
131	40	automatic prefix for internal sending possible values:		
			'0'..'9'	dial digits
			'A'..'Z'	dial stages unused positions filled with spaces
132	40	automatic prefix for external sending possible values:		
			'0'..'9'	dial digits
			'A'..'Z'	dial stages unused positions filled with spaces
133	1	internal sending identifier		

internal sending if selection number begins with that character
' ' no internal sending

Configurations of lines 131 to 133 supported via WConfig menus.

Config line	direct	PBX with dial tone	PBY without dial tone
131	`	`PP	`PP
132	`A	`PP0A	`PP0Q
133	` ,	`I,	`I,

134 4 1.pos.: 'busy' counter (XU or IU)
00 counter not used
01..FF end value 1..255
2.pos.: 'no answer' counter (XF or IF)
00 counter not used
01..FF end value 1..255
3.pos 'no dial tone' counter (XJ of IJ)
00 counter not used
01..FF end value 1..255
4.pos.: 'no telefax answered' counter (XL)
00 counter not used
01..FF end value 1..255

135 4 output power for .. (default = 64)
pos. 1 59 .. 70 CNG-tone
pos. 2 59 .. 70 V.21 mod. (frames between pages)
pos. 3 59 .. 70 V.27 mod. (2400 and 4800 bps)
pos. 4 59 .. 70 V.17/29/33 mod. (7200 to 14400 bps)

Note: This config line should only be used to correct level deviations between different modulations or to fine adjust the whole output level (range: +/- 1dBm).

136 9 page layout for A4 upright size (see set-up of pages)

137 9 page layout for A4 broadside (see set-up of pages)

138 9 page layout for Basic Service upright (see set-up of pages)

139 9 page layout for Basic Service broadside (see set-up of pages)

Config line	No. of positions	Meaning
140	4	Page layout parameters 1.pos.: top margin of header line and header line logo (0.1mm units) 00..FF, default = 28HEX (4mm) 2.pos.: left margin of header line (1mm units) 00..FF default = 11HEX (17mm) 3.pos.: top margin for graphics and forms (0.1mm units) 00..FF default = 00HEX (no top margin) 4.pos.: left margin of KCS header line logo (1mm units) 00..FF default = 82HEX (130mm), 00HEX = no logo
141	0	commen t
142	1	Header line type (default: 13) 00 Old header line format, use large font (12 cpi, 6.11lpi) 01 Use small font for header line (17cpi, 8.15lpi) 02,03 like 00,01 but header line will be printed bold 10-13 like 00-03 but header line can be modified (see variable header line option)
143	3	reception config pos. 1 reception mode 00 no reception 01 with ECM (=default) 02 without ECM pos. 2 maximum bit rate for reception, option flags 00 2400 bps 01 4800 bps 02 9600 bps 04 14400 bps (V.17, default) 05 33600 bps (V.34; FoIP only) The value may be combined with the following option flags: 10 Do not decrease speed after bad page 20 Continue after end-of-retransmission (EOR) 40 Ignore bad data during none-ECM training 80 Ignore bad data during ECM training pos. 3 show transmission parameters in author field 00 no (default) 01 yes (special meaning , see below!)

Note:

If position 3 of config line 143 is set to ‘01’, positions 21 to 23 of the author field will be used to show the operation mode parameters both for sending and reception as shown below:

Position 21	Send Mode
“N”	normal resolution, without error correction
“E”	normal resolution, with error correction
“n”	fine resolution, without error correction
“e”	fine resolution, with error correction

Position 22		Transmission speed (of last page)	
“0”	2400 bps (V.27ter)	“5”	14400 bps (V.33)
“1”	4800 bps (V.27ter)	“6”	7200 bps (V.17)
“2”	7200 bps (V.29)	“7”	9600 bps (V.17)
“3”	9600 bps (V.29)	“8”	12000 bps (V.17)
“4”	12000 bps (V.33)	“9”	14400 bps (V.17)

Position 23	Coding
“0”	standard one dimensional coding
“2”	two dimensional coding (according to T.4)
“6”	T.6 coding

NOTE: If the reference in the log file is configured to 10 characters, positions 22 and 23 will be truncated in the log file entry. The “show transmission parameters” must not be used if fax security mode 2 (identify called station be TSI frame) is required

Config line	No. of positions	Meaning		
144	8	max. noise for ...		
		pos. 1	00..FF	V.27 with 2400 bps (default = 7F)
		pos. 2	00..FF	V.27 with 4800 bps (default = 0A)
		pos. 3	00..FF	V.29 with 7200 bps (default = 05)
		pos. 4	00..FF	V.29 with 9600 bps (default = 03)
		pos. 5	00..FF	V.33 with 12000 bps (default = 04)
		pos. 6	00..FF	V.33 with 14400 bps (default = 02)
		pos. 7	00..FF	V.17 with 7200 bps (default = 10)
		pos. 8	00..FF	V.17 with 9600 bps (default = 09)
		pos. 9	00..FF	V.17 with 12000 bps (default = 04)
		pos. 10	00..FF	V.17 with 14400 bps (default = 02)
145	4	limit 1:	if this limit is reached, transmission speed will be decreased before the next page will be received	
		limit 2:	if this limit is exceeded, the received page will be rejected and the following pages will be received with a lower transmission speed	
		1.pos	max. number for consecutive bad lines for limit 1 00..FF =0..255 lines	
		2.pos.	max. ratio of bad to received lines for limit 1 00..FF =0..25,5 percent	
		3.pos.	max. number of consecutive bad lines for limit 2	

			00..FF =0..255 lines
		4.pos	max. ratio of bad to received lines for limit 2 00..FF =0..25,5 percent
146	1	0 / 1	reception with standard / standard and fine resolution
147	1	0, 1 or 2	variable date format 0 date format: 92-02-24 1 date format: 24-FEB-1992 2 date format: FEB-24-1992
148-179	16	Eight 2-byte internal FAX codes for TCOSS code 00H to FFH	
180	18	configuration of DTMF detector (these values are just offsets added to the modem chips default values). 1. pos. and 2. pos. min. on-time per tone 3. pos. and 4. pos. min. off-time per tone 5. pos. and 6. pos. min. cycle time 7. pos. and 8. pos. max. drop out time per tone 9. pos. and 10. pos. max. speech energy 11. pos. and 12. pos. max. freq. deviation for low freq. group 13. pos. and 14. pos max. freq. deviation for high freq. group 15. pos. and 16. pos max. negative twist 16. pos. and 17. pos max. positive twist	
181..230	7	reserved for state machine for controlling the connection assignment	
231-234	4	Tracer possibility	
235	14	prefix for inbound and userID command pos 1..4: inbound prefix (unused positions filled with blanks) ´ ´ do not use inbound distribution ´.FX´ inbound distribution via NN99 e.g. ´FXI$´ distribution via number normalization pos 5 reserved pos 6..9: prefix for fax commands (used with 8xxxx command) ´+ ´ get userID and password from uu99 e.g. ´FXI$´ userID and password is taken from user profile pos 10 reserved pos 11..14: prefix for originator, if caller Id is available ‘ ‘ always use the TSI as originator (prefix is configured in config line 42) e.g. ‘FAX$’ if available, use caller Id as originator of inbound messages	

236	1	max. length of inbound DID number		
237	3	router function settings for DID or DDI:		
		1.pos.	00	= password not required
			01	= password required
		2.pos.	00	= TSI need not match
			01	= TSI must match
		3.pos.	00	= number need not match
			01	= number must match
238	14	the same like 235 but for DTMF		
239	1	the same like 236 but for DTMF		
240	3	the same like 237 but for DTMF		
241	8	max. length of received page		
		pos. 1 and 2	reserved	
		pos. 3 and 4	maximum length of empty line that will be removed from bottom of page (256*pos3+pos4)*1mm/3.85 Default: 00 78 = 120(dec) = 31.2mm (Note: When using TC/CCD this value should be changed to 0)	
		5.pos. and 6.	values for length of page	
			00 00	unlimited page length
			00 01 to 3F FF	page length = (256*pos5+pos6) * 1mm/3.85 , standard value: 04 C0 (=315.84mm)
		7.pos. and 8	reserved	
242	4	tracer configuration		
		1.pos.	hex dump reception	
			00	= normal reception
			01	= received docs are stored as hex dump
		2.pos.	DID state machine trace	
			00	= no DID state machine trace
			01	= DID state machine trace
			02	= run in fax test mode (direct function calls)
		3.pos.	signal state machine trace	
			00	= no signal state machine trace
			01	= low trace
			02	= high trace
		4.pos.	fax modem trace	
			00	= no fax modem trace
			01	= …
			02	= …
			03	= recommend for fax communication

		problems
	04	= …
	05	= …
	06	= full fax modem trace
5.pos	binary trace primary datapump	
6.pos.	binary trace secondary datapump	
7.pos.	DSP performance counter trace	

Note:
Binary- and LS1 performance counter trace parameters (pos. 5, 6 and 7) do only apply for UTF (TC26) or UIF (TC23 or TC24) modules configured on an LS1. For TC20 and other hardware, these parameters have no effect. See Line Server Model 305 (LS1) Manual [16] for details.

	8..12.pos	reserved
243-246	65	definition of the FAX default header line

If you want to use vowel mutations in the header line, you have to:

- Enter the normal characters as normal;
- for vowel mutations type the character using ALT and the keys from the numeric keypad.

The important thing is, that you type the hex code of this character with a leading 0 (also typed in at numeric keypad) to switch to ANSI-codepage, e.g.

ALT - 0132	for ä
ALT - 0148	for ö
ALT - 0129	for ü
ALT - 0142	for Ä
ALT - 0153	for Ö
ALT - 0154	for Ü

Note that the line editor display does not show the right character at this time!

247-248		comment
249, 250		not used
251	4	reserved

Config line	No. of positions	Meaning
252, 253	1	not used
254-283	40	number conversion table: Unused config lines must be set to blanks. Default: all lines set to blanks Format: <number type> + <search string> + ´=´ + <replace string> <number type> ´1´ line is valid for DID numbers only ´2´ line is valid for DTMF numbers only ´3´ line is valid for DID or DTMF numbers ´4´ assigns a CSI on incoming calls ´8´ line is valid for all sending number ´@´ converts received caller ID before it is used as originator or for originator based routing ‘A’ Redirecting number conversion Rule ‘C’ Outgoing caller ID (Calling Party Number) conversion Rule ‘L’ Used for loop detection with call rerouting numbers <search string> It may contain ´?´ or ´~´ as wildcard characters <replace string> May be any character sequence If it starts with “T” followed by a decimal digit, an additional prompt will for DMTF will be used Examples: ‘11??=80073???0’ “1xx” delivers text “xx” (session rev.) ‘32~*=~’ convert “2345*” => “2345” ‘4~=+31 123~’ CSI prefix +31 123 for inb. calls ‘1100=T20’ DTMF prompt after DID input “100” ‘800~=00~#’ append “#” with int. numbers Refer to TCOSS System manual [2] for more details
284	1	reserved
285	2	reserved
286	8	reserved
287	16	reserved
288		comment

289 16 parameters for the Incoming call ring detector in the **LS1 TC26 module**

pos. 1 ring detector full wave mode disabled/enabled
- 00 full wave mode disabled (default)
- 01 full wave mode enabled

pos. 2 Ring validation disabled/enabled
- 00 ring validation disabled
- 01 ring validation enabled (default)

pos. 3 reserved (set to 00)

pos. 4 ringer impedance
- 00 maximum (high) ringer impedance (default)
- 01 synthesized ringer impedance to satisfy a max. ringer impedance in countries like Poland, South Africa, and Slovenia

pos. 5 ring detector threshold, defines the minimum and maximum level of acceptable ring signal. Signals below the lower level do not generate a ring detection, but the signals above the upper level are guaranteed to generate a ring detection
- 01 13.5 Vrms<=RingLevel<=16.5Vrms (default)
- 02 19.35 Vrms<=RingLevel<=23.65Vrms
- 03 reserved
- 04 40.5 Vrms<=RingLevel<=49.5Vrms

pos. 6 minimum ringer frequency
- 19 sets the minimum ringer tone frequency to 10Hz computed according to the formula: Pos5 >= 1/(2 x Fmin x 2ms), where Fmin is the min. ringer freq. in Hertz

pos. 7 maximum ringer frequency
- 16 sets the maximum ringer tone frequency to 83Hz, computed according to the formula: Pos6 >= Pos5 - 1/(2 x Fmax x 2ms), where Fmax is the max. ringer freq. in Herz Additionally relation Pos6 <= Pos5 must apply

pos. 8 minimum ring duration
sets the amount of time the ring frequency must be within tolerances set by upper positions 5 and 6 to be classified as a valid ring signal, following values are possible:
- 00 Ring confirmation time 100ms
- 01 Ring confirmation time 150ms
- 02 Ring confirmation time 200ms (default)
- 03 Ring confirmation time 256ms
- 04 Ring confirmation time 384ms
- 05 Ring confirmation time 512ms
- 06 Ring confirmation time 640ms
- 07 Ring confirmation time 1024ms

pos. 9 ring timeout (minimum pause between two subsequent rings)
sets the point when a ring signal is determined to be over after the most

recent ring threshold crossing. In other words, it sets the minimum pause between to subsequent ring signals:

00 reserved
01 Ring confirmation time 128ms
02 Ring confirmation time 256ms
03 Ring confirmation time 384ms (default)
04 Ring confirmation time 512ms
05 Ring confirmation time 640ms
……
0F Ring confirmation time 1920ms

pos. 10 ring delay sets the amount of time between when a the ring signal is validated and when a valid ring signal is indicated. If the ring delay expires before the ring timeout
(Position 8 above), a valid ring is indicated:

00 0ms
01 Ring confirmation time 256ms (default)
02 Ring confirmation time 256ms
03 Ring confirmation time 384ms
04 Ring confirmation time 512ms
05 Ring confirmation time 640ms
……
0F Ring confirmation time 1920ms

pos. 11 to 16 reserved (set to 00)

290 comment

291 16 Analogue telephone line parameters for the **LS1 TC26 module**

pos. 1 off-hook AC impedance selection

00 600 Ohm (USA, Japan)
02 270 Ohm + (750 Ohm || 150nF) (TBR21, Europe) (default)
03 220 Ohm + (820 Ohm || 120nF) Australia
05 320 Ohm + (1050 Ohm || 230nF) United Kingdom

pos. 2 transmitter gain/attenuation control
The four LSB bits set (bits 0-3) the gain/attenuation level in 1dB steps, in the range +12/-15 dB
The 4th bit selects the gain or attenuation mode:

4th bit = 0 Gain
4th bit = 1 Attenuation

00 0dB gain applied to the transmit path
01 1dB gain applied to the transmit path
….
08 8dB gain applied to the transmit path (default)
…..
0C 12dB gain applied to the transmit path
…..
11 -1dB attenuation applied to the transmit path
…..
1F -15dB attenuation applied to the transmit path

pos. 3 receiver gain/attenuation control

The four LSB bits set (bits 0-3) the gain/attenuation level in 1dB steps, in the range +12/-15 dB

The 4th bit selects the gain or attenuation mode:

4th bit = 0	Gain
4th bit = 1	Attenuation
00	0dB gain applied to the receiver path
01	1dB gain applied to the receiver path ….
08	8dB gain applied to the receiver path (default) …..
0C	12dB gain applied to the receiver path ….
11	-1dB attenuation applied to the receiver path …..
1F	-15dB attenuation applied to the receiver path …..

pos. 4 current limiting disabled/enabled

00	current limiting disabled
01	current limiting enabled. This setting limits loop current to a maximum of 60mA (per the TBR21 standard) (default)

pos. 5 DC Impedance

00	50 Ohm DC impedance (default)
01	800 Ohm DC impedance

pos. 6 minimum operational loop current

Adjusts the minimum loop current at which the TC26 can operate:

00	10mA (default)
01	12mA
02	14mA
03	16mA

pos. 7 TIP/RING voltage adjust

Adjusts the voltage on the line-side of the TC26, which affects the TIP/RING voltage on the line:

00	3.1V
01	3.2V
02	3.35V
03	3.5V (default)

pos. 8 on-hook speed

Adjusts how quickly line loop current equals zero (mA) after the TC26 has changed the state from Off-Hook to On-Hook:

00	less than 0.5ms (default)
04	3ms +- 10%
0B	26ms +- 10% (Australia)

pos. 9 activate auto-calibration of the A/D converter

Chooses the method to be used for the calibration of the TC26 A/D converter (analog to digital converter used for digitalization of the analogue telephone signals).

This calibration is necessary to adjust the A/D circuitry to the exact line present at the time of going off-hook conditions.

The manual A/D calibration is the preferred method to be used

00	manual A/D calibration is being used (default)

01		auto-A/D calibration is being used

pos. 10 to 16 reserved (set to 00)

292-294		comment
295	8	reserved
296	8	<u>Log Entry Filtering</u>

pos. 1 type filter for logging entries of incoming calls

Bit value

01	0 …	type “Fax In” entries disabled (default)
	1 …	type “Fax In” entries possible
02	0 …	type “Fax Routing” entries disabled (default)
	1 …	type “Fax Routing” entries possible
04	0 …	type “Fax Scan” entries disabled (default)
	1 …	type “Fax Scan” entries possible
08	0 …	type “Fax Command” entries disabled (default)
	1 …	type “Fax Command” entries possible
10	0 …	type “Fax Command (SR)” entries disabled (default)
	1 …	type “Fax Command (SR)” entries possible
20	0 …	type “FIS Command” entries disabled (default)
	1 …	type “FIS Command” entries possible
40	0 …	type “FIS Command (SR)” entries disabled (default)
	1 …	type “FIS Command (SR)” entries possible
80	0 …	type “Voice In” entries disabled (default)
	1 …	type “Voice In” entries possible

pos. 2 type filter logging entries for outgoing calls

Bit value

01	0 …	type “Fax Out” entries disabled (default)
	1 …	type “Fax Out” entries possible
02	0 …	type “Voice Out” entries disabled (default)
	1 …	type “Voice Out” entries possible
04	reserved	
08	reserved	
10	reserved	
20	reserved	
40	reserved	
80	reserved	

pos. 3 result value filter for logging entries

Bit value

01	0 …	result “Error” entries disabled (default)
	1 …	result “Error” entries possible
02	0 …	result “No Fax” entries disabled (default)
	1 …	result “No Fax” entries possible
04	0 …	result “Ok” entries disabled (default)
	1 …	result “Ok” entries possible
08	0 …	result “Ok (Tx)” entries disabled (default)
	1 …	result “Ok (Tx)” entries possible
10	0 …	result “Ok (Rx)” entries disabled (default)
	1 …	result “Ok (Rx)” entries possible

20 reserved
40 reserved
80 reserved

pos. 4 to 8 reserved (set to 00)

297 6 reserved

298 16 Call progress detector parameters for the **LS1 TC26 module**

pos. 1 call progress tones detector relative sensitivity expressed in percent of the total signal energy, according to the formula:
Sensitivity=(CallProgressTonesEnergy*100)/TotalSignalEnergy
46 corresponds with sensitivity 70% (default)
If the call progress tone energy lies below this relative sensitivity,
the call progress tone will be not recognized.

pos. 2 call progress tones detector minimum energy level in the range from -10dBm to -35dBm
23 corresponds with minimum level -35dBm (default)
If the call progress tone energy lies below this level, the signal is considered being pure noise and thus call progress tone will be not recognized.

pos. 3 block size for the call progress tones analysis in milliseconds, three values are possible: 10ms, 20ms, and 30ms
14 corresponds with block size 20ms (default)

pos. 4 reserved

pos. 5 to 8 2 CED fax tone detector coefficients that deploy a notch or band-pass filter in order to detect the frequency range of the CED tone
Each coefficient is an integer value occupying 2 byte positions, the MSB byte the first
The default configuration deploys the notch filter in the frequency range2100Hz (±5%) that detects the CED tone being generated by the terminating fax machine during an outgoing fax call.
This setting activates the detection of the CED fax tone being generated by the terminating fax machine during an outgoing fax call.

pos. 9 to 16 Coefficients for echo cancellation with LS1 TC26 module.

299 16 Call progress detector parameters for the **LS1 TC26 module**

pos 1 to 16 8 call progress tone detector coefficients that deploy a band-pass filter in order to detect the frequency range of the call progress tone
Each coefficient is an integer value occupying 2 byte positions, the MSB byte the first.
The default configuration deploys the band-pass filter in

the frequency range 340Hz–500Hz according to the international standard ITU E.180/Q.35, which states that the accepted frequency for the dial, busy and ringing tones should be not less than 340Hz and not more than 500Hz

4.8.1 LS1 DTMF Receiver Configuration

Since TCOSS 7.47.06 the DTMF receive for LS1 has been improved on order to solve errors 9437 and 9512. Since this release it is also possible to modify some parameters of the DTMF receiver. Therefore configuration line 180 is used. But, note that the description of this line is valid for LS1 only. For TC20/TSxx based fax cards, the meaning remains unchanged. It is used for the DTMF receiver on those cards is already described in the TCOSS configuration manual.

As a general rule value 0 indicates that a hard-coded default should be used. These hard coded defaults may be improved in future releases. Therefore it is strongly recommended to contact Kofax if you are having problems with the default configuration.

Configuration line 180 (pos 1-10 / 11-18)	Description
`:00 00 00 00 00 00 00 00 00 00` `00 00 00 00 00 00 EB E0,`	New default since TOCSS 7.47.06. This configuration is good tradeoff between DTMF detection and speech insensitivity. Note that errors 9437 and 9512 are solved with this configuration only!
`:00 00 00 00 01 68 01 4C 4E 20` `4B 78 00 00 00 0F 02 6C,`	DMTF detector is using parameters as with TCOSS releases up to 7.47.05. This configuration is recommended if you have problems with DTMF detection after an update to 7.47.06 or higher.
`:00 00 00 00 00 00 00 00 27 10` `00 00 00 00 00 00 00 00,`	This configuration is recommended if detection of some digit fails. As a side effect speech insensitivity is reduced with this configuration.
`:00 00 00 00 00 00 00 00 75 30` `00 00 00 00 00 00 00 00,`	This configuration improves the speed insensitivity but decreases DTMF detection. It is recommended if DTMF digits are detected within speech.

Note: If the value in positions 17/18 is higher than 0x7FFF, the built in default is used instead. This ensures that the UIF default value (0xEBE0), which makes sense for TC20 only will be ignored.

4.8.2 Setup of TCOSS Fax Pages

4.8.2.1 Overview about Page Definition

The page layout can be configured with the following config lines:

Transputer fax module, ISDN FAX module	136 to 139
Laser printer module, LAN laser printer module	131 to 134

Each line has 9 positions indicating hexadecimal values.

Pos	Meaning	Unit	Min	Max
1	Font		00	11
2	top margin	PH	00	FF
3	bottom margin	PH	2D	FF
4	left margin	PW	37	FF
5	line pitch vertical (3)	PH	(4)	FF
6	character pitch horizontal	PW	(5)	FF
7	lines per page	lines	01	FF
8	length of BS-line	characters	01	6E
9	BS/LF offset	characters	00	05
PH	Pixel height (1/3.85 millimeters)			
PW	Pixel width (215/1728 millimeters)			
(3)	The line pitch must be an even value.			
(4)	The minimum line pitch is 0C with font 0 and 10 with font 1			
(5)	The minimum character pitch is 0C with font 0 and 10 with font 1			

Note: One of the following fonts may be selected for each page format:

Font (hex.)	Character height (dec.)	Character width (dec.)	Description
00	12*PH = 3.12mm	12*PW = 1.49mm	Font 0 portrait
01	16*PH = 4.16mm	16*PW = 1.99mm	Font 1 portrait
10	25*PW = 3.11mm	6*PH = 1.56mm	Font 0 landscape
11	33*PW = 4.11mm	8*PH = 2.08mm	Font 1 landscape

PH Pixel height (1/3.85 millimeters)
PW Pixel width (215/1728 millimeters)

Hints for configuration:
Positions 5 and 6 can be calculated as follows:

Pos5 = 97.8 / <lines per inch>
Pos6 = 204 / <characters per inch

The maximum pixels per line must not exceed 1673:

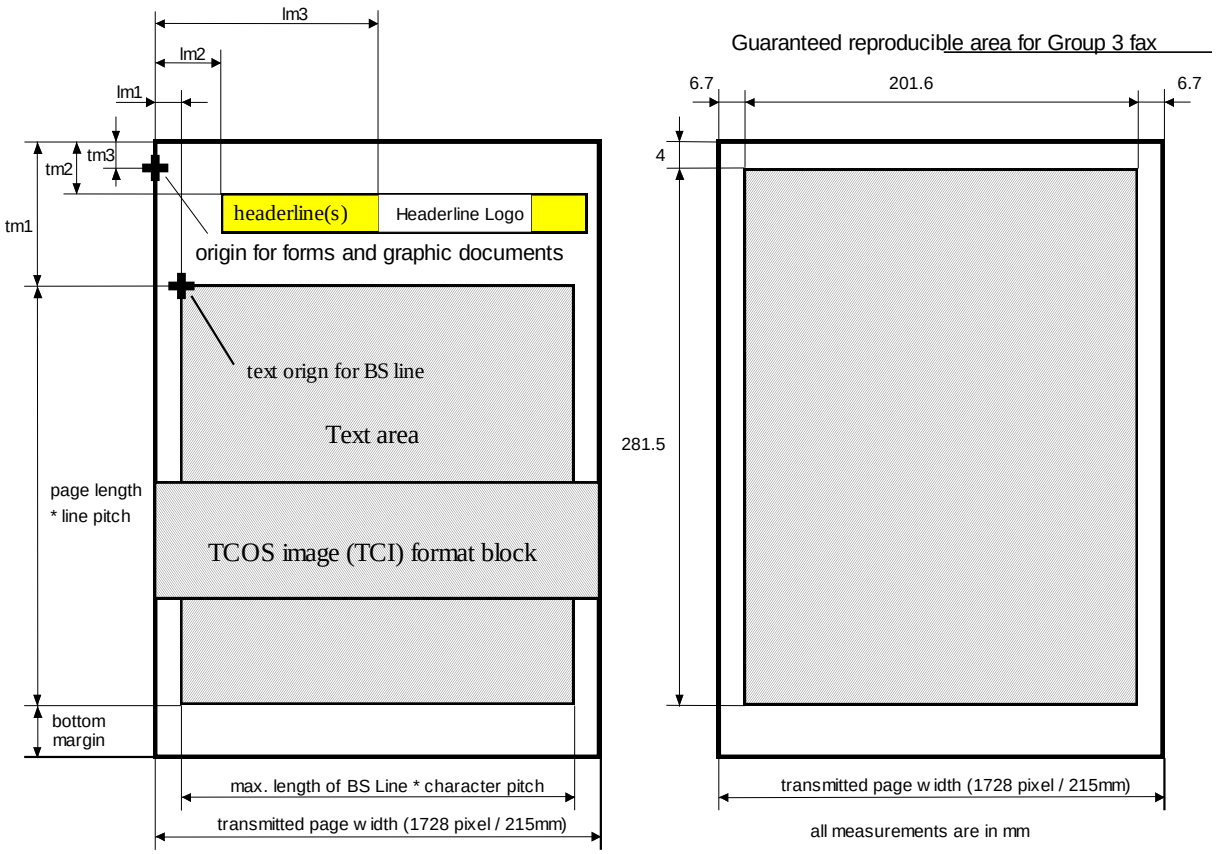
Pos4 + Pos6 * Pos8 <=
1673

The page length must not exceed the ISO A4 paper size:

Pos2 + Pos3 + Pos5 * Pos7 <= 1143 (UFX and ULL)
Pos2 + Pos3 + Pos5 * (Pos7+1) <= 1123 (UTF)

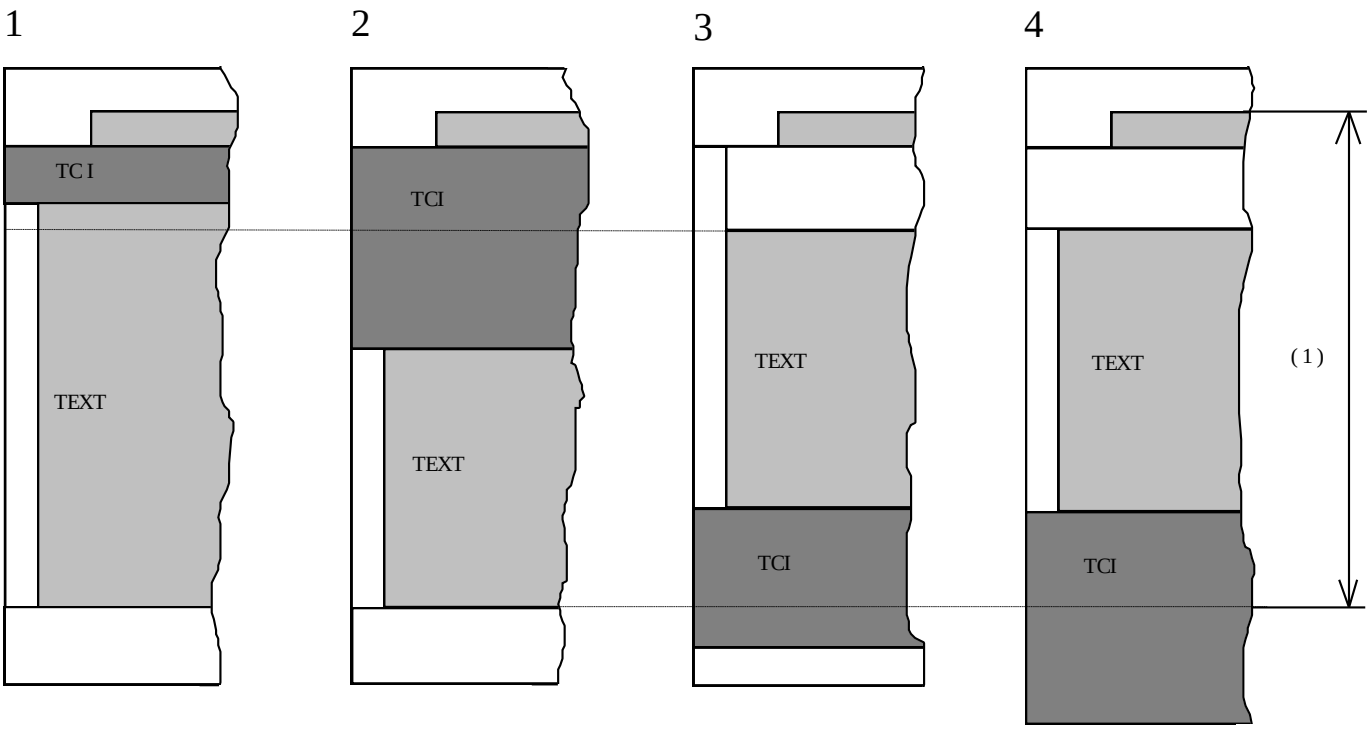
4.8.2.2 Transputer Fax ISDN Fax LAN Laser Printer and Laser Printer Page Setup

4.8.2.2.1 Layout



Note: According to CCITT recommendation T.4, all information outside the guaranteed reproducible area may not be printed out by the receiving fax machine! To get this reproducible area also with ULL, it increases all top margins by 2.7mm.

4.8.2.2.2 Restrictions



(1) : REQUIRED PAGE LENGTH

Overview about possible configurations:

ref.	config line(s) UTF,UIF	ULL	pos.	Unit	standard value	description
tm1	136-139	131-134	2	1/3.85mm	-	top text margin of current page layout
lm1	136-139	131-134	4	0.124mm	-	left text margin of current page layout (can be changed with ++TXT line)
tm2	140	135	1	0.1mm	4mm	top margin of header line and header line logo
lm2	140	135	2	1mm	17mm	left margin of header line
tm3	140	135	3	0.1mm	0mm	top margin for graphics and forms
lm3	140	135	4	1mm	130mm	left margin of header line logo

The top margin of all standard page layouts is set to the following values.

Page format	standard value
A4H	4E(h) = 20.26mm
A4Q	2A(h) = 10.9mm
BDH	2A(h) = 10.9mm
BDQ	24(h) = 9.35mm

- Image pages (starting with an image block at begin of document or after form feed line) starts at top margin tm3 (standard value = 0mm). There is no auto page break for this first image on the page even if the configured page length will be exceeded.
- Text pages and pages after an automatic page break starts at top margin tm1 (see chapter layout).
- If the maximum configured page length will be reached during sending, empty lines at the end of the image are suppressed automatically in order to do need exceed the configured page length. This means that if images with a white bottom margin are too long, it's bottom margin will decreased to match the configured page length. Up the last none empty line within the block nothing will be suppressed.
- Page breaks are inserted within the image blocks to make sure that no oversized pages are transmitted. The Fax module does not insert page breaks within character lines. Page breaks are only inserted when an empty image line is detected. Scanning for empty lines starts at the for the Fax module configured bottom margin. If no empty image lines are detected 3 mm before the end of page is reached, a page break is forced. Empty lines due to underlining or other formatting could result in unwanted page breaks.
- The header line is placed on a configurable position on every page as an overlay. This means it can be mixed with printed text or graphics. If a new header line will be created during sending, all existing header lines in the document (if it is a back received document) are removed. The header line is not part of the text!
- Text, following this TCI block will be located directly after the TCI block, also if the TCI block is shorter than the top margin (see figure 1).
- TCI blocks are always starting on the very left vertical paper position (no left margin).
- If a text block reaches the bottom margin a new page will start automatically (see figure 1,2).
- If a TCI block reaches the bottom margin no new page will be started. Only the length of the bottom margin will be reduced by the length of the exceeding TCI block (see figure 3).
- If the "over length" of a TCI block is greater than the bottom margin, the transmitted page length will be increased.

4.9 CONFIG PARAMETERS OF THE ISDN FAX MODULE (UIF)

Since config lines 51 to 248 have the same meaning both for UTF and UIF they are described only in the UTF part of the config manual.

Config line	No. of positions	Meaning
1-51		see *Configuration Parameters for the Transputer Application Module (TAM)*
51-248		see *Configuration Parameters for the Transputer Fax Module (UTF)*
249	2 ASCII	reference channel ‘ ‘ do not refer to any other channel ‘00’ .. ‘B9’ channel number of reference channel
250	5	type of connections pos. 1 connection type 00 point to point 01 point to multi-point (=default) pos. 2 layer 3 protocol 00 EURO-ISDN or Q.931 protocol 01 1TR6 protocol 02 AT&T protocol for 4ESS switch type 03 QSIG protocol pos. 3 TEI assignment procedure 00 for point to point 01..3F non automatic TEI value FF automatic TEI assignment used (for PtMP) – default pos. 4 ISDN Line type 00 Basic rate ISDN connection (=default) 01 Primary rate E1 ISDN connection 02 Primary rate T1 ISDN connection pos. 5 Coding standard 00 A-law coding (used in Europe) 01 u-law coding (used in USA, Japan)

Config line	No. of positions	Meaning
251	6	Service identification (1TR6) or Higher/Lower Layer Comp. (EURO-ISDN) A sequence of up to 6 different call setup parameters can be configured. Unused positions must be set to FF. Each of these 6 positions represents an 8 bit value.

Default value: 00 FF FF FF FF FF.

bits	EURO-ISDN	1TR6
0..5	used HLC code 00=no HLC 01=telephone 04=fax Group 3	used Service Indicator 00=fax group 3 12=telephone 22=fax group 3
6	used BC/LLC code 0=3.1kHz analog 1=speech	unused must be 0
7	retry with next position upon info code 300 (user alerted, but call has not been answered) 0=no 1=yes	

252 1 <u>DDI/MSN mode</u>

‘0’ no DDI/MSN
‘1’ MSN supplementary service
‘2’ DDI supplementary service

253 1 <u>currency units scaling</u>

‘0’ report value in 1/1000 currency units
‘1’ report value in 1/100 currency units
‘2’ report value in 1/10 currency units
‘3’ report value in currency units
‘4’ report value in 10 currency units
‘5’ report value in 100 currency units
‘6’ report value in 1000 currency units

Config line	No. of positions	Meaning
254-283	40	number conversion table. If MSN supplementary is used, KCS answers the call only if the received MSN number matches with any search string. Unused config lines must be set to blanks. Default: all lines set to blanks Format: <number type> + <search string> + ´=´ + <replace string> <number type> ´1´ applies to received DID/DDI/MSN numbers ´2´ applies to DTMF input ´3´ applies to received DID/DDI/MSN numbers and DTMF input. Is equivalent to ‘1’ + ‘2’ ´4´ conversion of DID/DDI/MSN numbers to fax CSI(called station identification) ´8´ applies to all outgoing fax & voice numbers ´@´ applies to calling party number (incoming calls) ‘A’ applies to redirecting number (incoming calls) ‘C’ applies to calling party number (outgoing calls) ‘L’ applies to call rerouting number (loop detection with outgoing calls) <search string> It may contain ´?´ or ´~´ as wildcard characters. <replace string> May be any character sequence If the replacement string starts with a T, an additional DTMF prompt will be generated. If the replace string contains a % character, this character is replaced by the FAX Calling Party number If the replace string starts with a V, the message is treated as Voice message and the remaining number part is used as “called number” (only with Line Server possible) Examples: ‘11??=80073???0’ “1xx” delivers text “xx” (session rev.) ‘32~00=~’ convert “234500” => “345” ‘1100=T20’ DTMF prompt after DID input “100” Refer to TCOSS system manual [2] for more details
284	1	call request time-out in seconds 00 .. FF 0 .. 255 seconds (default = 60 seconds)

Config line	No. of positions	Meaning		
285	2	DDI length and time-out		
		pos 1	00 .. FF	DDI time-out in seconds, time to wait for the next DDI digit. (default = 5s)
		pos 2	00 .. FF	max. count of DDI digits, only the configured count of digits is awaited. (default = 16)
286	8	protocol deviations		
		pos. 1		call reference length
			01	1 byte call reference length (=default)
			02	2 byte call reference length (has to be used for primary rate)
		pos. 2		channel information element format
			00	short channel identifier information element format(using channel number coding). To be used for EuroISDN BRI (default)
			01	long channel identifier information element format(using channel number coding) to be used for EuroISDN PRI, AT&T 4ESS PRI, NI2 PRI, QSIG BRI and PRI. (but may work also for Japanese INS-Net 1500 (PRI)
			02	long channel identifier information element format(using slot map coding) to be used for Japanese INS-Net 1500 (PRI) if 01 does not work
		pos. 3		outgoing B channel negotiation method
			00	any channel (=default, dedicated **ONLY** for basic rate interface except ECMA Q.SIG protocol)
			01	exclusive (for primary rate interface)
			02	preferred (for primary rate interface) Note: Please see “Allocating B-channels”
		pos. 4		call collision handling
			00	A-side (=default, TC34 starts choosing B-channel for outgoing calls from the lower end – B1, B2, …)
			01	B-side (TC34 starts choosing B-channels from upper end (e.g. B30, B29, …) Note: Please see “Allocating B-channels”
		pos. 5	**Bit value**	
			01	use sending complete indicator in outgoing setup
			0 …	yes (=default, informs the network that the dialed number is complete)
			1 …	no (even though KCS inserts always the complete dialed number into the setup message, some ISDN networks do not support this indicator(currently AT&T and ISDN in Japan).
			02	reserved

	04		reserved
	08		reserved
	10		reserved
	20		reserved
	40		reserved
	80		routing of incoming calls
		0…	circular incoming call distribution via reception enabled channels (default)
		1…	route calls to the idle channel with the lowest TCOSS channel number
pos. 6			numbering plan identification used for outgoing calls
	00		ISDN/Telephony numbering plan (ITU recommendation E.164/E.163)
	01		unknown numbering plan (no knowledge of the numbering plan) ‘unknown’ should be used in Japan
pos. 7			AT&T service used for outgoing calls **(NOTE: AT&T protocol only!)**
	00		no specific service used for the call on the call-by-call basis, must be provisioned for the whole T1 trunk
	01		SDN service (Software Defined Network)
	02		Reserved
	03		MEGACOM service
	04		Reserved
	05		Reserved
	06		Reserved
	07		Long Distance Service
pos. 8	**Bit value**		
	01		General redirecting number on / off (do not activate concurrent with redirecting number for voice calls, line 295 pos. 3)
(bit 0)	0 …		redirecting number disabled (default), compatible to versions previous to TCOSS 7.40.00
	1 …		redirecting number enabled: if available with an incoming call, used for inbound routing instead of DDI if not, fully compatible to previous releases (use DDI for inbound routing)
	06		used QSIG protocol variant (only relevant for QSIG configuration on Line Server Model 305 [LS1], ignored for other configurations)
(bit 1)	0 …		ISO/ECMA QSIG (default)
	1 …		ETSI QSIG
(bit 2)	0		Reserved
	08		B-channel numbering scheme (only relevant for QSIG configuration on E1 lines, ignored for other configurations)
(bit 3)	0 …		B-channel numbering scheme using logical channel number (default)
	1 …		B-channel numbering scheme using E1 timeslot number

Config line	No. of positions	Meaning		
287	16	Layer 3 parameters		
		pos. 1 to 4	Allocating B-channels. Bitwise map of B-channels being used For details, please see Advanced Configuration: Allocating B-channels.	
			00 00 00 00	Default setting, switches “full” E1/T1 line (with 30 /23 channels)
		pos. 5		timer T302 (in sec. units)
			00 or 0F	sets default value for Euro-ISDN and 1TR6 not used with AT&T protocol
		pos. 6		timer T303 (in sec. units)
			00 or 04	sets default value for Euro-ISDN and 1TR6
			04	AT&T protocol
		pos. 7		timer T305 (in sec. units)
			00 or 1E	sets default value for Euro-ISDN and 1TR6
			04	AT&T protocol
		pos. 8		timer T308 (in sec. units)
			00 or 04	sets default value for Euro-ISDN and 1TR6
			04	AT&T protocol
		pos. 9		timer T313 (in sec. units)
			00 or 04	sets default value for Euro-ISDN and 1TR6
			04	AT&T protocol
		pos.10		timer T317 (in sec. units)
			00 or 0A	sets default value for Euro-ISDN and 1TR6
			01	AT&T protocol
		pos. 11 to 14		Not used
		pos. 15 to 16		PBX model
			00 00	default (all PBXs except those listed below)
			00 01	Alcatel OmniPCX 4400 R6.x
288		comment		
289	16	Layer 2 configuration		
		pos. 1		layer 2 side
			00	user side (=default)
			01	network side
		pos. 2		window size k
			00 or 01	k=1, for basic rate (if set to 00, ISDN stack defaults to 01)

			07	k=7, for primary rate
		pos. 3		parameter N200 (retransmission counter)
			00 or 03	sets default value for all protocol variants
		pos. 4		parameter N202 (retransmission counter)
			00 or 03	sets default value for all protocol variants
		pos. 5		timer T200 (in 100ms units)
			00 or 0A	sets default value for all protocol variants
		pos.6		timer T202 (in 100ms units)
			00 or 0A	sets default value for all protocol variants
		pos.7		timer T203 (in 100ms units)
			00 or 64	sets default value for Euro-ISDN and 1TR6
			96	sets default value for AT&T protocol

Config line	**No. of positions**	**Meaning**
290		<u>comment</u>
291	16	<u>Layer 1 configuration **(used with TC34 only)**</u>

pos. 1			clock mode
	00		E1/T1: slave mode (=default, TE)
	01		E1/T1: master mode (NT)
pos. 2	operation mode		
	Bit value		
	01	0 …	E1: CRC4 framing T1: ESF framing (extended superframe)
		1 …	E1: double frame T1: SF framing (superframe, D4)
	02		T1: enable performance report message (PRM)
		0 …	handling according to AT&T TR54016
		1 …	T1: disable TR54016 PRMs
	04	0 …	T1: disable one-second PRMs according to ANSI T1.403
		1 …	T1: enable ANSI T1.403 PRMs
	08	0 …	T1: B8ZS line coding
		1 …	T1: AMI with ZCS line coding
pos. 3 to 6			T1 transmit pulse shape (quarters of full wave)
	00		default value for 0 – 35m line length
	else		output level in app. 150 mVpeak steps (max. 31)
pos. 7			not used; do not modify
pos. 8			Reference clock source priority
	00		Do never use this line as reference clock. This

		setting is recommended for Line Server Primary rate Loop tests (one TC24 interconnected with a crossed cable to simulate 2 PRI lines)
	01	This line may be used as reference clock if the Layer 1 is active and configured as “clock slave”
	02	same as value 01 but prefer this line as reference clock even if any other line with priority 1 is currently used as reference clock. This is used for Line Server test environments with 1 PRI (TC24 loop connection) and 1 BRI (TC23). The BRI interface MUST have priority 2 in this scenario!
Pos.9	Supervision of BRI/PRI line status	
	3C –	the value of layer 1 supervision timer in seconds, default hex 3C (60 seconds).
	00 -	layer 1 supervision is deactivated (may only be necessary for some ISDN approvals in order not to confuse the ISDN testing equipment)
Pos.10	phase deviation select (PDS) - used with BRI only	
		Since TOCSS 7.63.01 the value of the PDS bit is both configurable and its default value has been changed to lower the phase jitter on the BRI line. (See error 11711)
	00	(correspond with the new PDS value, which is used since TCOSS 7.63.01)
	01	(use the same setting as before TCOSS 7.63.01)
11 to 16	reserved (set to 00)	

Note: For all currently supported basic access protocols, these lines are automatically changed by the config program according to the configured protocol (menu general parameters). In this case they should not be changed manually.

For primary rate interfaces, manual configuration changes are necessary.

292-294 comment

Config line	No. of positions	Meaning
295	8	<u>ISDN Supplementary Services and Automatic Fax Detection</u> (only relevant for QSIG protocol running on KCS Line Server Model 305 [LS1]) pos. 1 outgoing voice calls 00 disabled 01 enabled (default) pos. 2 using configured PABX prefix for outgoing voice calls 00 Do not use the configured PABX prefix for outgoing voice calls 01 Use the configured PABX prefix for outgoing voice calls **Remark**: The prefix refers to “automatic prefix for external sending” in fax config line 132. pos. 3 redirecting number for voice calls (do not activate concurrent with general redirecting number feature, line 286 pos. 8 bit 0) 00 disabled 01 enabled (default) 02 reserved 04 the Original Redirecting number for outgoing VOICE calls enabled 80 (KCS FoIP only) suppress redirecting number (number of the party that has diverted the call is not evaluated) pos. 4 automatic fax detection 00 disabled (default) else time in seconds TCOSS tries to detect an incoming fax after the call has been answered pos. 5 call transfer 1 00 call transfer via PBX disabled (=tromboning, default) 01 call transfer by join “into ringing” (preferred CT variant) 02 call transfer by join “into connected” pos. 6 call transfer 2 00 call transfer without call hold 01 put the 1st call on hold prior to the CT pos. 7 to 8 reserved (set to 00)
296	8	see *Config Parameters of the Transputer Fax Module (UTF)*
297	6	ISDN HLC definition; see TCOSS ISDN manual
298	16	reserved
299	16	reserved

4.9.1 Troubleshooting

It is possible that some special fax machines cannot be reached with UIF (e.g. info codes 17, 31, 63, 88, or 111 may occur with EURO-ISDN) but sending with an analogue fax machine is possible. The problem is caused by incorrect settings of the higher layer compatibility (HLC, used with EURO-ISDN) or service identification (SI, used with 1TR6) at the receiver side!

It can be solved by call retries with different services. Therefore config line 251 uses 5 additional hex positions. The first position specifies the service for the first call request. If it fails with an info code between 0 and 127 immediate retries are made with the service code configured in positions 2 to 6. These retries are very fast (normally within 1 second) and not visible for the user (send state will not be changed, no journal entry, ..). Retries are stopped if a position contains FF, the connection could be established or an error with info code higher than 127 occurs.

If a call request terminates without any response (INFO code 300), it may be necessary to make a service retry with another service code. Since service codes are using only 7 data bits, bit 7 is used to define if retries are made in case of INFO 300.

NOTE: If a retry with INFO 300 is activated, the ringing time of destinations that do not answer the call (e.g. telephone without user) will be multiplied (configuration depend by 2,3,4,5 or 6).

Configuration for 1TR6

	config line 251	Used SI for all call requests
default value	:00 FF FF FF FF FF,	1. SI = a/b service fax group 3
recommended value if you could not sent to all fax machines	:00 12 FF FF FF FF,	1. SI = a/b service fax group 3 2. SI = analogue telephone

Note: Service code 00 is the same as service code 22 (a/b service fax group 3). Calls without service codes are not possible with 1TR6.

Configuration for EURO-ISDN (and ECMA Q.Sig)

	config line 251	Used HLC for all call requests
default value	`:00 FF FF FF FF FF,`	1. no HLC is used
recommended value if you could not sent to all fax machines	`:04 00 01 FF FF FF,`	1. HLC = fax group 3 2. no HLC is used 3. HLC = telephone
recommended if bearer capability speech is required	`:40 FF FF FF FF FF,`	1. no HLC, use speech BC/LLC
recommended if all send attempts to specif number leads to XL and default value for 251 is not possible. [3)]	`:00 84 01 FF FF FF,`	1. No HLC is used 2. HLC = fax group 3 (retry with INFO 300) 3. HLC = telephone
recommended if bearer capability speech is required	`:40 FF FF FF FF FF,`	1. no HLC, use speech BC/LLC
recommended for tests only to find out the working HLCs	`:84 80 81 C4 C0 C1,`	1. HLC = fax group 3 2. no HLC is used 3. HLC = telephone 4. HLC = fax group 3, BC/LLC=speech 5. no HLC, BC/LLC=speech 6. HLC = telephone, BC/LLC=speech

Notes:

- Service code 00 is used to suppress the HLC info element. According to recommendations such calls should be answered from every apparatus at the distant side that may be compatible (e.g. telephone, fax, modems, ..). In some countries (e.g. Switzerland) calls without HLC are not accepted by the local exchange!
- Bearer and Lower Layer capability speech must be handled with care. It should only be used as last resort, if problems cannot be solved. By definitions, speech calls may be compressed with compression algorithm that do not support fax communication.
- When sending to specific numbers via ISDN, it is possible that always error XL appears. When sending to this number via analog line (e.g. TS32) it's ok. This behavior is in most cases reproducible at the customer and sometimes at KCS too!

  A possible reason for this behavior can be that the receiver FAX is incompatible or wrong configured for receiving faxes from a KCS system.

  We made several tests to these specific receiver fax numbers and finally found a working configuration. Default setting of line 251 is :84 00 81..... which means KCS sends an identification "fax group 3" at the beginning which is not correctly detected by the receiver fax. By specifying this line to :00 84 81, which means "no HLC is sent from KCS", sending is possible without problems. Please note also that this is NOT a KCS problem, it is a receiver fax problem (e.g. wrong configured)!

  Take care that this setting is now used for all faxes which are sent via this ISDN line. Possible solution can be to configure just one ISDN channel with this configuration modification and to create a rr99 file which routes all send commands for these numbers via the configured ISDN channel.

4.9.1.1 Alcatel 4400 PABX

Overlap sending can be configured by changing position 5 in config line 286 to 01. This is required for required for ALCATEL 4400 PABX. It is not recommended to use it for other installations.

4.9.1.2 Siemens HiCom 300 via 1TR6

Important information for all ISDN HICOM 300 connections with 1TR6 protocol and Release 3.5 on HICOM

Following problems with the connection to HICOM 300 via ISDN and 1TR6 protocol might occur if release 3.5 on HICOM is used:

- hang up of B channel and
- problems with cost accounting

Following patches has to be installed or configured by the Siemens technician. In this case, HICOM 300 with release 3.5 acts like release 3.4. A release 3.6 for ´old´ HICOM systems and a release 2.0 for HICOM 300 E systems should be available from April on. It should contain the cost accounting and the EDDS1 should work properly then.

Solution for B channel hang up with
VK 5358 Patch PS 10 G 63
K 5358 Patch PS 10 G 73

Solution for cost accounting with
VK 5590 Patch PS 10 K19

4.9.2 Special ISDN Issues

4.9.2.1 Support Internal Number Type for Outgoing Calls

If any UIF channel is not configured for PABX and the destination number is starting with “I” (switch for internal numbers) the number will be sent as internal PABX extension. Note that this feature has been implemented to ease configuration of UIF. In general

4.10 CONFIG PARAMETERS OF FAX OVER IP MODULE (UFI)

UFI is derived from UIF. All positions not noted here have the same meaning and defaults as for UIF. For details on T.38 Fax over IP with UFI channels refer to the *TC/FoIP Manual [17]*.

Config line	No. of positions	Meaning
55		reserved
57		reserved
60-130		reserved
135		reserved
143	3	reception configuration 1.pos. see *Config Parameters of the Transputer Fax Module (UTF)* 2.pos reserved 3.pos reserved
144-146		reserved
180-230		reserved
241		reserved

Config line	No. of positions	Meaning		
242	7	tracer configuration		
		1.pos		T.38 master trace level
			00	= no T.38 trace
			01	= less T.38 trace (may be activated on up to 30 channels)
			02	= medium T.38 trace (recommended for trouble shooting on some few channels)
			03 or more	high T.38 trace (only recommended for intensive trouble shooting on one channel)
		2.pos.		T.38 general trace level
			00	= trace errors/warnings and PCLI assign/removal only
			01	= like 00 + additional information about the number and callerId for outgoing calls
			02 or more	like 01 + additional information about the number conversions
		3.pos.		level for CAPI message trace
			00	= trace CAPI Message only if they contains any error information
			01	= like 00 + all CAPI messages (excluding CAPI_DATA_B3) is single trace line
			02	= like 00 + all CAPI messages (including CAPI_DATA_B3) is single trace line
			03 or more	trace all CAPI message with a detailed description of their parameters. Each CAPI message will lead to multiple trace lines
		4.pos.		state changes trace level
			00	= do not trace any state changes in the internal state machine
			01	= trace only some major state changes (about 3 lines per document)
			02	= trace more state changes
			03	= trace all state changes except during data reception/transmission and idle state
			04	= trace all state changes except during data reception/transmission
			05 or more	trace all state changes

Config line	No. of positions	Meaning		
		5.pos.		event trace level
			00 or 01	= do not trace any state machine events
			02 or 03	= trace all events except DATA_B3 CAPI events
			04 or more	trace all events
		6.pos		action trace level
			00	= trace only actions that are called due to unexpected error conditions. (State Table error handling)
			01	=00 + one action at begin of transmission or reception
			02	=01 + more details
			03	=02 + one action call for each transmitted pixel line
			04 or more	all actions (=03 + one action call for each received pixel line and idle polls)
		7.pos		reserved

Note: T.38 specific traces consist of a master trace level and some detailed trace levels. The master trace level will be mapped to different detailed trace levels as shown in the table below.

Detailed Trace Setting	Master Trace Level			
	0	1	2	3
Level for general trace	0	1	2	7
Level for CAPI Message trace	0	1	2	2
State changes trace level	0	0	1	5
Event trace level	0	0	1	5
Action trace level	0	0	1	5

Each detailed trace level has its own configuration position. If the value in this position is zero, then a trace level according to that table above is used, otherwise the trace level from the corresponding configuration position is used. Unless there is any very special situation to trace, it is recommended to activate traces with the master trace level only.

Config line	No. of positions	Meaning		
250-251		reserved		
252	1	MSN/DDI mode		
			'0'	Accept all calls, no not use the received called party number (default).
			'1'	MSN Config: Accept calls if the called party number matches with any entry in the number conversion table (number type “1”). The converted called party number is then used as received number for e.g. inbound distribution. This functionality is like an UIF with MSN configuration
			'2'	DDI Config: Accept all calls and use the (converted) called party number as received number for e.g. inbound distribution. This functionality is like an UIF with DDI with the exception that overlapped received digits (this means additional digits after the incoming call has been signaled) will be ignored
253		reserved		
284	1			call request time-out in seconds
			00 .. FF	0 .. 255 seconds (default = 60 seconds)
285-290		reserved		
291	16			Configuration for FoIP v3 (for TC/FoIP v2 / CAPI configuration, refer to *TC/FoIP Technical Manual*)
		pos.1-8		reserved
		pos. 9		call peer mask for outgoing calls (default = 00)
			00, FF	all call peer are available
			01	first call peer
			02	second call peer
			04	third call peer
			08	fourth call peer
			10	fifth call peer
			20	sixth call peer
			40	seventh call peer
			80	eighth call peer

		any combination	allows to configure which call peers are available for outgoing calls
	pos. 10		call peer mask for incoming calls (default = 00)
		00, FF	incoming calls from all call peers are accepted
		01	first call peer
		02	second call peer
		04	third call peer
		08	fourth call peer
		10	fifth call peer
		20	sixth call peer
		40	seventh call peer
		80	eighth call peer
		any combination	allows to configure which call peers are used for incoming calls
	pos. 11		enable variable gateway IP for outgoing calls
		00	Gateway IP is always taken from the Call-peer configuration (default)
		01	Variable gateway IP may be specified in the number field
	pos. 12		failover strategy for outgoing calls
		00	use the first available call peer (default for updates)
		01	use current call peer until it fails
		02	load balance (round robin) between all call peers (default for new channels)
292-299	reserved		
all other positions		see *Config Parameters of the ISDN Fax Module (UIF)*	

4.11 CONFIG PARAMETERS OF THE LASER PRINTER MODULE (ULL)

Config line	No. of positions	Meaning
51	16	own answer back, left justified, unused positions filled with space. This text will be entered in the header line
52	20	TSI field of laser printer header line
53-83	-	not used
84	11	number parameter - printer resolution - send option 60..100 default = 90 - printed page has 90 percent the size of the original document)
85-103	-	not used
104	0	comment
105-109	5x17	Initializing sequence for the laser printer 1.pos.: length of init sequence (hex) 2. - 17. pos.: init sequence in hex (16 positions)
110-128	-	not used
129	4	1.pos.: ? 2.pos.: ? 3.pos.: Module failure counter(01 is recommended for multiple TCLANPRT modules) 4.pos.: ?
130	-	not used
131	9	page layout for A4 upright size (see set-up of pages)
132	9	page layout for A4 broadside (see set-up of pages)
133	9	page layout for Basic Service upright (see set-up of pages)
134	9	page layout for Basic Service broadside (see set-up of pages)

Config line	No. of positions	Meaning
135	4	Page layout parameters
		1.pos.: top margin of header line and header line logo (0.1mm units) 00..FF default = 28HEX (4mm)
		2.pos.: left margin of header line (1mm units) 00..FF default = 11HEX (17mm)
		3.pos.: top margin for graphics and forms (0.1mm units) 00..FF default = 00HEX (no top margin)
		4.pos.: left margin of KCS header line logo (1mm units) 00..FF default = 82HEX (130mm), 00HEX = no logo
136	1	not used
137	1	Header line type 00 Old header line format, use large font (12 cpi, 6.11lpi) 01 Use small font for header line (17cpi, 8.15lpi) 02,03 like 00,01 but header line will be printed bold 10-13 like 00-03 but header line can be modified (see variable header line option)
138 - 141	-	not used
142	1	0, 1 or 2 variable date format 0 date format: 92-02-24 1 date format: 24-FEB-1992 2 date format: FEB-24-1992
143-174	16	Eight 2-byte internal FAX codes for TCOSS code 00H to FFH
175-178	4	Tracer possibility
179-182	65	definition of the default header line

4.12 CONFIG PARAMETERS OF THE CHARACTER RECOGNITION MODULE (OCR) (NOT SUPPORTED)

Config line	No. of positions	Meaning
51	1	Form mode :00 = Form mode off, skip to page mode immediately :01..FD = read 1 to 253 pages in form mode, then go to page mode. :FE = read in form mode until a page that is not a form mode is found (less than 4 fields), then go to page mode :FF = read all pages in form mode, never go to page mode
52	1	Page Mode :00 = do not read in page mode, stop reading :01..FE = read 1 to 254 pages in page mode :FF = read the rest of the pages in page mode
53	1	Author field of back reception :00 = author reference to original file + header line :01 = author only as read from header line
54	1	reserved
55	1	reserved
56	2	confidence threshold and difference for alpha fields 1.pos = confidence threshold between 0...100 2.pos. = confidence difference between 0...100
57	2	confidence threshold and difference for numeric fields 1.pos = confidence threshold between 0...100 2.pos. = confidence difference between 0...100
58	2	confidence threshold and difference for alphanumeric fields 1.pos. = confidence threshold between 0...100 2.pos. = confidence difference between 0...100

4.13 CONFIG PARAMETERS OF THE CLIENT SERVER MODULE (UC0)

There are no parameters for this module.

5 STANDARD CONFIGURATION

5.1 DEFAULT CONFIGURATION AFTER INITIAL INSTALLATION

The default configuration can be used on a model/155/21x without modifications.
There are no slaves and interfaces required.
But at least a TP80 and a TC90/95 is required to have a valid CPU number!
The License Tool TC/LT is required to enter License keys.

It supports the following features:

1. TCOSS can be accessed via TCSI (RPC transport).
2. Channel 00 is configured for maintenance with TCUAS.

5.1.1 Hardware/Software Assignment

Channel	SW module	HW Module	Slot	Slave
00	AS	----	--	0.R
B0	C0	----	--	-
B1	C0	----	--	-
B2	C0	----	--	-
B3	C0	----	--	-
B4	C0	----	--	-
B5	C0	----	--	-
B6	C0	----	--	-
B7	C0	----	--	-
B8	C0	----	--	-
B9	C0	----	--	-

TCUAS Tool

Channel 00 is accessible via TCUAS.exe (located in C:\tcoss\system). It is a tool dedicated for KCS technicians only. TCUAS.exe is no official KCS product (no maintenance, no errors will be corrected, no manual exists).

Command line:

```
TCUAS.EXE 00 KCS < Input.txt  > Output.txt
```

Parameters:

`00`	Channel number of UAS module on TCOSS server, usually 00
`KCS`	Name of the TCOSS server or "." for local machine (Note: TCUAS does not use TCTI and therefore no TCTI paths are used.
`< Input.txt`	Take input from a text file
`> Output.txt`	Write output to a text file (output is also written to console window

	in any case)

Additional Hint:

If you create a shortcut, e.g. on your desktop with a pipe in the command line the piping will only work correctly if you run the Cmd.exe within the shortcut:

```
"C:\WINNT\system32\CMD.EXE /C C:\Tcoss\System\tcuas.exe 00 KCS > c:\temp\tcuasout.txt"
```

5.1.2 Services

Service	Description	Document class	prefix	address type
FAX	Fax	RTI	F:	Fax
FREE	Free format	RTIB		Free format
FXI	Fax inbound	RTI	FXI:	Fax
SCAN	Scanner	RTI		TOPCALL
TLX	Telex	R	X:	Telex
TOPCALL	TOPCALL Users	RTIB		TOPCALL

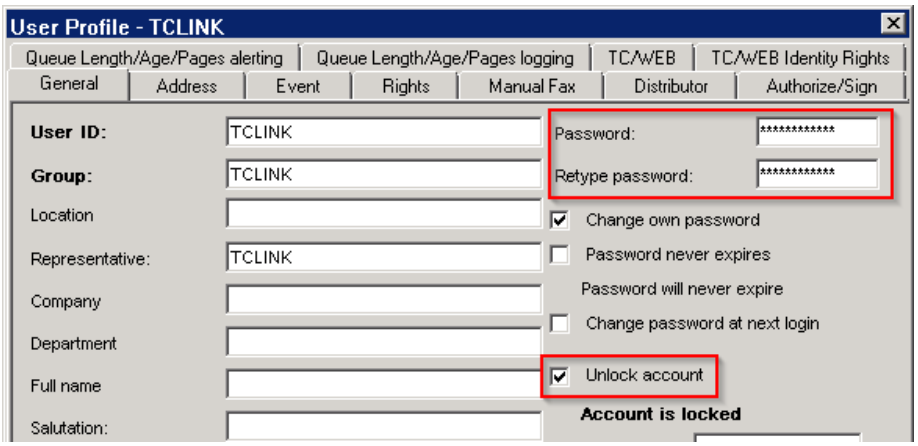
5.1.3 Users

User ID	TCTECH	+ENVELOP	DIST	TCLINK
Default Password[1)]	TCTECH [1)]	invalid [2)]	invalid [2)]	invalid [2)]
Rights	all	no	[3)]	no
Address Service	no [4)]	SCAN	TOPCALL	TOPCALL
Address number	no	+ENVELOP	DIST	TCLINK
Default Template	no	no	no	TCLINK/DEFTEMP

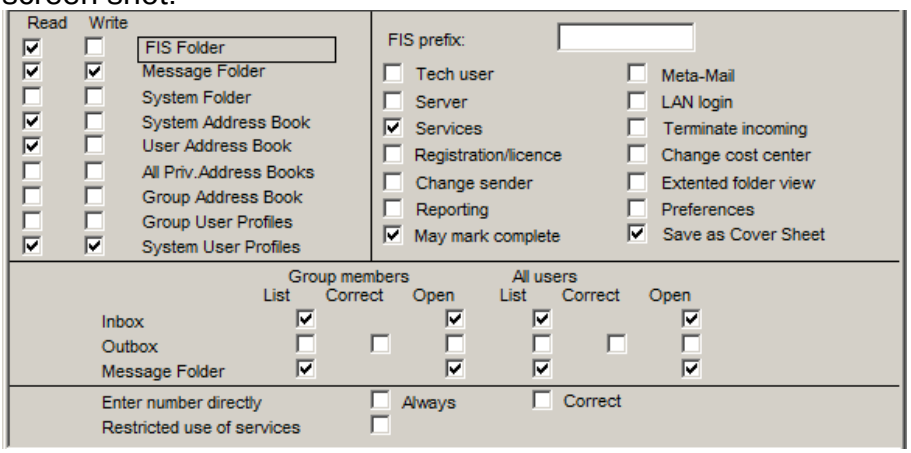
Notes:

1) The TCTECH user will be created with a default password "TCTECH". This password must be changed at first login.
2) The users +ENVELOP, DIST and TCLINK are created as disabled accounts with invalid passwords. Disabled accounts can be used as originator or recipient but you cannot login using these users. If you want to login with one of these accounts (which is typically required for the TCLINK user), these must be enabled using the following steps:
    1. Open the KCS user administration with any client (Topcall for Windows or TC/Web) with a user who has permissions to modify other user profiles (for example, TCTECH).
    2. Open the desired user profile to change.
    3. Assign a password.
    4. Unlock the account by checking the corresponding check box.
    5. Save changes.

Refer to the following screen to enable a user using Topcall for Windows. Relavant fields are highlighted.



3) The DIST user has a minimum set of rights that are required for distributor operation.
   Rights setting: read system and group address book, open in- and out-box of group members
   Distributor setting: Queue name is DIST, print and terminate is enabled.
4) The TCLINK user has appropriate rights for TCLINK operation as shown in the following screen shot:



5.1.4 System Account Policy File (+MAIL5V/App99)

```
Password expires after 0 days
Account lockout after 0 bad logon attempts
Minimum password length 0 characters
History holds last 0 passwords
```

5.1.5 Routing Directory (+MAIL5V/Arr99)

```
**SENDMODES
**NORMALIZE
**ROUTE
**NODES
**INBOUND
FXI:~,,                fax inbound routing to TCOSS User
FXI:~,DIST:FaxDID~,    default fax inbound receiver
```

5.1.6 Default Number Series (+MAIL5V/Att99)

series	current	from	to	cycle
A	0002	0000	9999	0100
B	0000	0000	9999	0100
C	0000	0000	9999	0100
D	0000	0000	9999	0100
E	0000	0000	9999	0100
F	0000	0000	9999	1000
G	0000	0000	9999	0100
H	001	001	999	100
I	0000	0000	9999	0100
J	002	002	999	100
K	0000	0000	9999	0100
L	0000	0000	9999	0100
M	0000	0000	9999	0100
N	0000	0000	9999	0100
O	0000	0000	9999	0100
P	0000	0000	9999	0100
Q	0000	0000	9999	0100
R	0000	0000	9999	1000
S	0000	0000	9999	0100
T	0000	0000	9999	0100
U	0000	0000	9999	0100
V	0000	0000	9999	0100
W	0000	0000	9999	0100
X	0000	0000	9999	0100
Y	0000	0000	9999	0100
Z	0000	0000	9999	0100

5.1.7 Standard Time Zone Definitions (+MAIL5V/Atz99)

```
**TIMEZONE,NAME=AKST/AKDT
Comment: Alaska Standard Time / Alaska Daylight Time
Add to UTC: -09:00
Daylight Saving times:
1997-04-06 02:00 - 1997-10-26 02:00
1998-04-05 02:00 - 1998-10-25 02:00
1999-04-04 02:00 - 1999-10-31 02:00
2000-04-02 02:00 - 2000-10-29 02:00
2001-04-01 02:00 - 2001-10-28 02:00
2002-04-07 02:00 - 2002-10-27 02:00
2003-04-06 02:00 - 2003-10-26 02:00
2004-04-04 02:00 - 2004-10-31 02:00
2005-04-03 02:00 - 2005-10-30 02:00
2006-04-02 02:00 - 2006-10-29 02:00
2007-03-11 02:00 - 2007-11-04 02:00
2008-03-09 02:00 - 2008-11-02 02:00
2009-03-08 02:00 - 2009-11-01 02:00
2010-03-14 02:00 - 2010-11-07 02:00
2011-03-13 02:00 - 2011-11-06 02:00
2012-03-11 02:00 - 2012-11-04 02:00
```

```
2013-03-10 02:00 - 2013-11-03 02:00
2014-03-09 02:00 - 2014-11-02 02:00
2015-03-08 02:00 - 2015-11-01 02:00
2016-03-13 02:00 - 2016-11-06 02:00
2017-03-12 02:00 - 2017-11-05 02:00
2018-03-11 02:00 - 2018-11-04 02:00
2019-03-10 02:00 - 2019-11-03 02:00
2020-03-08 02:00 - 2020-11-01 02:00
2021-03-14 02:00 - 2021-11-07 02:00
2022-03-13 02:00 - 2022-11-06 02:00
2023-03-12 02:00 - 2023-11-05 02:00
2024-03-10 02:00 - 2024-11-03 02:00
2025-03-09 02:00 - 2025-11-02 02:00
2026-03-08 02:00 - 2026-11-01 02:00
2027-03-14 02:00 - 2027-11-07 02:00
2028-03-12 02:00 - 2028-11-05 02:00
2029-03-11 02:00 - 2029-11-04 02:00

**TIMEZONE,NAME=PST/PDT
Comment: Pacific Standard Time / Pacific Daylight Time
Add to UTC: -08:00
Daylight Saving times:
1997-04-06 02:00 - 1997-10-26 02:00
1998-04-05 02:00 - 1998-10-25 02:00
1999-04-04 02:00 - 1999-10-31 02:00
2000-04-02 02:00 - 2000-10-29 02:00
2001-04-01 02:00 - 2001-10-28 02:00
2002-04-07 02:00 - 2002-10-27 02:00
2003-04-06 02:00 - 2003-10-26 02:00
2004-04-04 02:00 - 2004-10-31 02:00
2005-04-03 02:00 - 2005-10-30 02:00
2006-04-02 02:00 - 2006-10-29 02:00
2007-03-11 02:00 - 2007-11-04 02:00
2008-03-09 02:00 - 2008-11-02 02:00
2009-03-08 02:00 - 2009-11-01 02:00
2010-03-14 02:00 - 2010-11-07 02:00
2011-03-13 02:00 - 2011-11-06 02:00
2012-03-11 02:00 - 2012-11-04 02:00
2013-03-10 02:00 - 2013-11-03 02:00
2014-03-09 02:00 - 2014-11-02 02:00
2015-03-08 02:00 - 2015-11-01 02:00
2016-03-13 02:00 - 2016-11-06 02:00
2017-03-12 02:00 - 2017-11-05 02:00
2018-03-11 02:00 - 2018-11-04 02:00
2019-03-10 02:00 - 2019-11-03 02:00
2020-03-08 02:00 - 2020-11-01 02:00
2021-03-14 02:00 - 2021-11-07 02:00
2022-03-13 02:00 - 2022-11-06 02:00
2023-03-12 02:00 - 2023-11-05 02:00
2024-03-10 02:00 - 2024-11-03 02:00
2025-03-09 02:00 - 2025-11-02 02:00
2026-03-08 02:00 - 2026-11-01 02:00
2027-03-14 02:00 - 2027-11-07 02:00
2028-03-12 02:00 - 2028-11-05 02:00
2029-03-11 02:00 - 2029-11-04 02:00

**TIMEZONE,NAME=MST/MDT
Comment: Mountain Standard Time / Mountain Daylight Time
Add to UTC: -07:00
Daylight Saving times:
1997-04-06 02:00 - 1997-10-26 02:00
1998-04-05 02:00 - 1998-10-25 02:00
1999-04-04 02:00 - 1999-10-31 02:00
2000-04-02 02:00 - 2000-10-29 02:00
2001-04-01 02:00 - 2001-10-28 02:00
```

```
2002-04-07 02:00 - 2002-10-27 02:00
2003-04-06 02:00 - 2003-10-26 02:00
2004-04-04 02:00 - 2004-10-31 02:00
2005-04-03 02:00 - 2005-10-30 02:00
2006-04-02 02:00 - 2006-10-29 02:00
2007-03-11 02:00 - 2007-11-04 02:00
2008-03-09 02:00 - 2008-11-02 02:00
2009-03-08 02:00 - 2009-11-01 02:00
2010-03-14 02:00 - 2010-11-07 02:00
2011-03-13 02:00 - 2011-11-06 02:00
2012-03-11 02:00 - 2012-11-04 02:00
2013-03-10 02:00 - 2013-11-03 02:00
2014-03-09 02:00 - 2014-11-02 02:00
2015-03-08 02:00 - 2015-11-01 02:00
2016-03-13 02:00 - 2016-11-06 02:00
2017-03-12 02:00 - 2017-11-05 02:00
2018-03-11 02:00 - 2018-11-04 02:00
2019-03-10 02:00 - 2019-11-03 02:00
2020-03-08 02:00 - 2020-11-01 02:00
2021-03-14 02:00 - 2021-11-07 02:00
2022-03-13 02:00 - 2022-11-06 02:00
2023-03-12 02:00 - 2023-11-05 02:00
2024-03-10 02:00 - 2024-11-03 02:00
2025-03-09 02:00 - 2025-11-02 02:00
2026-03-08 02:00 - 2026-11-01 02:00
2027-03-14 02:00 - 2027-11-07 02:00
2028-03-12 02:00 - 2028-11-05 02:00
2029-03-11 02:00 - 2029-11-04 02:00

**TIMEZONE,NAME=CST/CDT
Comment: Central Standard Time / Central Daylight Time
Add to UTC: -06:00
Daylight Saving times:
1997-04-06 02:00 - 1997-10-26 02:00
1998-04-05 02:00 - 1998-10-25 02:00
1999-04-04 02:00 - 1999-10-31 02:00
2000-04-02 02:00 - 2000-10-29 02:00
2001-04-01 02:00 - 2001-10-28 02:00
2002-04-07 02:00 - 2002-10-27 02:00
2003-04-06 02:00 - 2003-10-26 02:00
2004-04-04 02:00 - 2004-10-31 02:00
2005-04-03 02:00 - 2005-10-30 02:00
2006-04-02 02:00 - 2006-10-29 02:00
2007-03-11 02:00 - 2007-11-04 02:00
2008-03-09 02:00 - 2008-11-02 02:00
2009-03-08 02:00 - 2009-11-01 02:00
2010-03-14 02:00 - 2010-11-07 02:00
2011-03-13 02:00 - 2011-11-06 02:00
2012-03-11 02:00 - 2012-11-04 02:00
2013-03-10 02:00 - 2013-11-03 02:00
2014-03-09 02:00 - 2014-11-02 02:00
2015-03-08 02:00 - 2015-11-01 02:00
2016-03-13 02:00 - 2016-11-06 02:00
2017-03-12 02:00 - 2017-11-05 02:00
2018-03-11 02:00 - 2018-11-04 02:00
2019-03-10 02:00 - 2019-11-03 02:00
2020-03-08 02:00 - 2020-11-01 02:00
2021-03-14 02:00 - 2021-11-07 02:00
2022-03-13 02:00 - 2022-11-06 02:00
2023-03-12 02:00 - 2023-11-05 02:00
2024-03-10 02:00 - 2024-11-03 02:00
2025-03-09 02:00 - 2025-11-02 02:00
2026-03-08 02:00 - 2026-11-01 02:00
2027-03-14 02:00 - 2027-11-07 02:00
2028-03-12 02:00 - 2028-11-05 02:00
```

```
2029-03-11 02:00 - 2029-11-04 02:00

**TIMEZONE,NAME=EST/EDT
Comment: Eastern Standard Time / Eastern Daylight Time
Add to UTC: -05:00
Daylight Saving times:
1997-04-06 02:00 - 1997-10-26 02:00
1998-04-05 02:00 - 1998-10-25 02:00
1999-04-04 02:00 - 1999-10-31 02:00
2000-04-02 02:00 - 2000-10-29 02:00
2001-04-01 02:00 - 2001-10-28 02:00
2002-04-07 02:00 - 2002-10-27 02:00
2003-04-06 02:00 - 2003-10-26 02:00
2004-04-04 02:00 - 2004-10-31 02:00
2005-04-03 02:00 - 2005-10-30 02:00
2006-04-02 02:00 - 2006-10-29 02:00
2007-03-11 02:00 - 2007-11-04 02:00
2008-03-09 02:00 - 2008-11-02 02:00
2009-03-08 02:00 - 2009-11-01 02:00
2010-03-14 02:00 - 2010-11-07 02:00
2011-03-13 02:00 - 2011-11-06 02:00
2012-03-11 02:00 - 2012-11-04 02:00
2013-03-10 02:00 - 2013-11-03 02:00
2014-03-09 02:00 - 2014-11-02 02:00
2015-03-08 02:00 - 2015-11-01 02:00
2016-03-13 02:00 - 2016-11-06 02:00
2017-03-12 02:00 - 2017-11-05 02:00
2018-03-11 02:00 - 2018-11-04 02:00
2019-03-10 02:00 - 2019-11-03 02:00
2020-03-08 02:00 - 2020-11-01 02:00
2021-03-14 02:00 - 2021-11-07 02:00
2022-03-13 02:00 - 2022-11-06 02:00
2023-03-12 02:00 - 2023-11-05 02:00
2024-03-10 02:00 - 2024-11-03 02:00
2025-03-09 02:00 - 2025-11-02 02:00
2026-03-08 02:00 - 2026-11-01 02:00
2027-03-14 02:00 - 2027-11-07 02:00
2028-03-12 02:00 - 2028-11-05 02:00
2029-03-11 02:00 - 2029-11-04 02:00

**TIMEZONE,NAME=AST/ADT
Comment: Atlantic Standard Time / Atlantic Daylight Time
Add to UTC: -04:00
Daylight Saving times:
1997-04-06 02:00 - 1997-10-26 02:00
1998-04-05 02:00 - 1998-10-25 02:00
1999-04-04 02:00 - 1999-10-31 02:00
2000-04-02 02:00 - 2000-10-29 02:00
2001-04-01 02:00 - 2001-10-28 02:00
2002-04-07 02:00 - 2002-10-27 02:00
2003-04-06 02:00 - 2003-10-26 02:00
2004-04-04 02:00 - 2004-10-31 02:00
2005-04-03 02:00 - 2005-10-30 02:00
2006-04-02 02:00 - 2006-10-29 02:00
2007-03-11 02:00 - 2007-11-04 02:00
2008-03-09 02:00 - 2008-11-02 02:00
2009-03-08 02:00 - 2009-11-01 02:00
2010-03-14 02:00 - 2010-11-07 02:00
2011-03-13 02:00 - 2011-11-06 02:00
2012-03-11 02:00 - 2012-11-04 02:00
2013-03-10 02:00 - 2013-11-03 02:00
2014-03-09 02:00 - 2014-11-02 02:00
2015-03-08 02:00 - 2015-11-01 02:00
2016-03-13 02:00 - 2016-11-06 02:00
2017-03-12 02:00 - 2017-11-05 02:00
```

```
2018-03-11 02:00 - 2018-11-04 02:00
2019-03-10 02:00 - 2019-11-03 02:00
2020-03-08 02:00 - 2020-11-01 02:00
2021-03-14 02:00 - 2021-11-07 02:00
2022-03-13 02:00 - 2022-11-06 02:00
2023-03-12 02:00 - 2023-11-05 02:00
2024-03-10 02:00 - 2024-11-03 02:00
2025-03-09 02:00 - 2025-11-02 02:00
2026-03-08 02:00 - 2026-11-01 02:00
2027-03-14 02:00 - 2027-11-07 02:00
2028-03-12 02:00 - 2028-11-05 02:00
2029-03-11 02:00 - 2029-11-04 02:00

**TIMEZONE,NAME=UTC
Comment: Coordinated Universal Time
Add to UTC: +00:00

**TIMEZONE,NAME=WET/WEST
Comment: Western European Time / Western European Summer Time
Add to UTC: +00:00
Daylight Saving times:
1997-03-30 01:00 - 1997-10-26 02:00
1998-03-29 01:00 - 1998-10-25 02:00
1999-03-28 01:00 - 1999-10-31 02:00
2000-03-26 01:00 - 2000-10-29 02:00
2001-03-25 01:00 - 2001-10-28 02:00
2002-03-31 01:00 - 2002-10-27 02:00
2003-03-30 01:00 - 2003-10-26 02:00
2004-03-28 01:00 - 2004-10-31 02:00
2005-03-27 01:00 - 2005-10-30 02:00
2006-03-26 01:00 - 2006-10-29 02:00
2007-03-25 01:00 - 2007-10-28 02:00
2008-03-30 01:00 - 2008-10-26 02:00
2009-03-29 01:00 - 2009-10-25 02:00
2010-03-28 01:00 - 2010-10-31 02:00
2011-03-27 01:00 - 2011-10-30 02:00
2012-03-25 01:00 - 2012-10-28 02:00
2013-03-31 01:00 - 2013-10-27 02:00
2014-03-30 01:00 - 2014-10-26 02:00
2015-03-29 01:00 - 2015-10-25 02:00
2016-03-27 01:00 - 2016-10-30 02:00
2017-03-26 01:00 - 2017-10-29 02:00
2018-03-25 01:00 - 2018-10-28 02:00
2019-03-31 01:00 - 2019-10-27 02:00
2020-03-29 01:00 - 2020-10-25 02:00
2021-03-28 01:00 - 2021-10-31 02:00
2022-03-27 01:00 - 2022-10-30 02:00
2023-03-26 01:00 - 2023-10-29 02:00
2024-03-31 01:00 - 2024-10-27 02:00
2025-03-30 01:00 - 2025-10-26 02:00
2026-03-29 01:00 - 2026-10-25 02:00
2027-03-28 01:00 - 2027-10-31 02:00
2028-03-26 01:00 - 2028-10-29 02:00
2029-03-25 01:00 - 2029-10-28 02:00

**TIMEZONE,NAME=CET/CEST
Comment: Central European Time / Central European Summer Time
Add to UTC: +01:00
Daylight Saving times:
1997-03-30 02:00 - 1997-10-26 03:00
1998-03-29 02:00 - 1998-10-25 03:00
1999-03-28 02:00 - 1999-10-31 03:00
2000-03-26 02:00 - 2000-10-29 03:00
2001-03-25 02:00 - 2001-10-28 03:00
2002-03-31 02:00 - 2002-10-27 03:00
```

```
2003-03-30 02:00 - 2003-10-26 03:00
2004-03-28 02:00 - 2004-10-31 03:00
2005-03-27 02:00 - 2005-10-30 03:00
2006-03-26 02:00 - 2006-10-29 03:00
2007-03-25 02:00 - 2007-10-28 03:00
2008-03-30 02:00 - 2008-10-26 03:00
2009-03-29 02:00 - 2009-10-25 03:00
2010-03-28 02:00 - 2010-10-31 03:00
2011-03-27 02:00 - 2011-10-30 03:00
2012-03-25 02:00 - 2012-10-28 03:00
2013-03-31 02:00 - 2013-10-27 03:00
2014-03-30 02:00 - 2014-10-26 03:00
2015-03-29 02:00 - 2015-10-25 03:00
2016-03-27 02:00 - 2016-10-30 03:00
2017-03-26 02:00 - 2017-10-29 03:00
2018-03-25 02:00 - 2018-10-28 03:00
2019-03-31 02:00 - 2019-10-27 03:00
2020-03-29 02:00 - 2020-10-25 03:00
2021-03-28 02:00 - 2021-10-31 03:00
2022-03-27 02:00 - 2022-10-30 03:00
2023-03-26 02:00 - 2023-10-29 03:00
2024-03-31 02:00 - 2024-10-27 03:00
2025-03-30 02:00 - 2025-10-26 03:00
2026-03-29 02:00 - 2026-10-25 03:00
2027-03-28 02:00 - 2027-10-31 03:00
2028-03-26 02:00 - 2028-10-29 03:00
2029-03-25 02:00 - 2029-10-28 03:00

**TIMEZONE,NAME=EET/EEST
Comment: Eastern European Time / Eastern European Summer Time
Add to UTC: +02:00
Daylight Saving times:
1997-03-30 03:00 - 1997-10-26 04:00
1998-03-29 03:00 - 1998-10-25 04:00
1999-03-28 03:00 - 1999-10-31 04:00
2000-03-26 03:00 - 2000-10-29 04:00
2001-03-25 03:00 - 2001-10-28 04:00
2002-03-31 03:00 - 2002-10-27 04:00
2003-03-30 03:00 - 2003-10-26 04:00
2004-03-28 03:00 - 2004-10-31 04:00
2005-03-27 03:00 - 2005-10-30 04:00
2006-03-26 03:00 - 2006-10-29 04:00
2007-03-25 03:00 - 2007-10-28 04:00
2008-03-30 03:00 - 2008-10-26 04:00
2009-03-29 03:00 - 2009-10-25 04:00
2010-03-28 03:00 - 2010-10-31 04:00
2011-03-27 03:00 - 2011-10-30 04:00
2012-03-25 03:00 - 2012-10-28 04:00
2013-03-31 03:00 - 2013-10-27 04:00
2014-03-30 03:00 - 2014-10-26 04:00
2015-03-29 03:00 - 2015-10-25 04:00
2016-03-27 03:00 - 2016-10-30 04:00
2017-03-26 03:00 - 2017-10-29 04:00
2018-03-25 03:00 - 2018-10-28 04:00
2019-03-31 03:00 - 2019-10-27 04:00
2020-03-29 03:00 - 2020-10-25 04:00
2021-03-28 03:00 - 2021-10-31 04:00
2022-03-27 03:00 - 2022-10-30 04:00
2023-03-26 03:00 - 2023-10-29 04:00
2024-03-31 03:00 - 2024-10-27 04:00
2025-03-30 03:00 - 2025-10-26 04:00
2026-03-29 03:00 - 2026-10-25 04:00
2027-03-28 03:00 - 2027-10-31 04:00
2028-03-26 03:00 - 2028-10-29 04:00
2029-03-25 03:00 - 2029-10-28 04:00
```

```
**TIMEZONE,NAME=Z
Comment: Zulu Time Zone
Add to UTC: +00:00

**TIMEZONE,NAME=Y
Comment: Yankee Time Zone
Add to UTC: -12:00

**TIMEZONE,NAME=X
Comment: X-ray Time Zone
Add to UTC: -11:00

**TIMEZONE,NAME=W
Comment: Whiskey Time Zone
Add to UTC: -10:00

**TIMEZONE,NAME=V
Comment: Victor Time Zone
Add to UTC: -09:00

**TIMEZONE,NAME=U
Comment: Uniform Time Zone
Add to UTC: -08:00

**TIMEZONE,NAME=T
Comment: Tango Time Zone
Add to UTC: -07:00

**TIMEZONE,NAME=S
Comment: Sierra Time Zone
Add to UTC: -06:00

**TIMEZONE,NAME=R
Comment: Romeo Time Zone
Add to UTC: -05:00

**TIMEZONE,NAME=Q
Comment: Quebec Time Zone
Add to UTC: -04:00

**TIMEZONE,NAME=P
Comment: Papa Time Zone
Add to UTC: -03:00

**TIMEZONE,NAME=O
Comment: Oscar Time Zone
Add to UTC: -02:00

**TIMEZONE,NAME=N
Comment: November Time Zone
Add to UTC: -01:00

**TIMEZONE,NAME=A
Comment: Alpha Time Zone
Add to UTC: +01:00

**TIMEZONE,NAME=B
Comment: Bravo Time Zone
Add to UTC: +02:00

**TIMEZONE,NAME=C
Comment: Charlie Time Zone
Add to UTC: +03:00
```

```
**TIMEZONE,NAME=D
Comment: Delta Time Zone
Add to UTC: +04:00

**TIMEZONE,NAME=E
Comment: Echo Time Zone
Add to UTC: +05:00

**TIMEZONE,NAME=F
Comment: Foxtrot Time Zone
Add to UTC: +06:00

**TIMEZONE,NAME=G
Comment: Golf Time Zone
Add to UTC: +07:00

**TIMEZONE,NAME=H
Comment: Hotel Time Zone
Add to UTC: +08:00

**TIMEZONE,NAME=I
Comment: India Time Zone
Add to UTC: +09:00

**TIMEZONE,NAME=K
Comment: Kilo Time Zone
Add to UTC: +10:00

**TIMEZONE,NAME=L
Comment: Lima Time Zone
Add to UTC: +11:00

**TIMEZONE,NAME=M
Comment: Mike Time Zone
Add to UTC: +12:00

**TIMEZONE,NAME=$TZ$
Comment: Variable for Dirsync
Add to UTC: +00:00
```

5.2 COMMON PARAMETERS (SYSCONF)

01 ,	
02 '.JOUR,	addressee for autom. printout of log files
03 '0,	printout of log file can't be deleted
04 '1,	remove digit ‘0’ in special cases
05 'x.yy.zz ,	release number
06 '1,	acceptance of ..cmdon (0,1)
07 'A,	system files kept on drive A
08 :00 01 ,	no cyclical log file erasure, fast SCSI speed
09 'AE,	drive, reference for system errors
10 :0D 06 00 00 ,	main board type, KCS model
11 '5.06 ,	UCR memory file format
12 :00 96 00 23 ,	hard disk capacity, maximum number of files
13 :00 03 00 00 00 03 00 07 ,	hard disk settings

14 '+1.05.14	,allowed TCSI releases
15 '+1.08.03	,allowed TCfW releases
16 :00,	Node separation character
17 :00,	document converter level
18 :00 01 00 00 ,	log file-year, cost center, subject visible
19 :00 00 00 00 ,	
20 :00 00 00 00 ,	
21 :00 00 00 00 ,	
22 :00 00 00 00 ,	

5.3 CONFIGURATION FOR THE ASYNCHRONOUS MODULE (UAS)

Except for the SIO-port-addresses, the configuration of these channels is identical. Channel 0 is used here as an example (port A for standard and PC, port B for TS72 and TS73 standards).

```
01      '1            initial state (0,1,2)
02      ',            channel groups (' ',A..Z)
03      '31,          channel type (' ',F,X,T), channel capabilities
04      '2,           language (1,2)
05      '0,           CORR default (0,1)
06      ',            line status comment
07      'A,           NODES default (A..Z)
08      :00,          number of characters for cost accounting
09      '0,           offset in reference for cost accounting
10      'A,           number series for send commands (A..Z)
11      '0,           locking of send commands
12      ',            sending time mapped to low priority
13      '9,           interval between call retries (1..T)
14      :32 00        send test timer value in 0.1 sec. (pos. 1)
15      ',            default channel for ..C, ..S, ..L
16      'S,           log file of trans. mess. (' ',0..9,A..Z), all/succ. only
17      'B,           drive for log file of trans. mess., page sent counter
18      ',            BACK RECEPTION
19      'A,           drive for back received mess
20      'RT,          number series (A..Z), 1st char. for ref. (0..9,A..Z)
21      ',            address for autom. printout of back received mess
22      '0,           auto. send print. and active ackn. can't be deleted
23      ,             RECEPTION
24      '1,           automatic distribution (0,1,2)
25      'A,           drive for received mess
26      'TT,          number series (A..Z), 1st char. for ref. (0..9,A..Z)
27      ',            address for autom. printout of received mess
28      '0,           autom. recept. printout and distrib. can't be deleted
29      ',            log file of received mess. (' ',0..9,A..Z)
30      'A,           drive for log file of rec. mess. (A,B), page rec.
                      counter
31      ,             TEST
32      '0,           reserved
33      :F8           TCI code output line length
34      :03 E7,       Maximum number of pages = 999
35      '0,           automatic printout of CF non-delivery notifications
36      :00           reserved
37      :08 00,       reserved
38                    reference with 8 characters in log file, entry mode
39      :0F,          lines checked for automatic distribution
40      'A,           drive for masks, default mask
41      '10110,       termination
42      '00:+Y,       output channel, mask for active acknowledg
43      '87654321-,   new send status for BREAK = 1
44      '87654321-,   new send status for BREAK = 2
45      '-------1-,   new send status for BREAK = 3
46      '-------10,   new send status for BREAK = 4
47      '-------10,   new send status for BREAK = 5
```

```
48      :00 00 00,    ASP parameters
49      :00 00 00,    ASP parameters
50                    TUM
51      ,             SIO VALUES
52      :14 16 ,      data port, status port
53                    :18 18 10 04 4C 01 00 03 41 05 AA 00 ,
54      :AA,
55      ,
56      '1,           automatic EOT
57      '0,           MUX and fax selection (0,1,2)
58      '1,           head line (0,1)
59      '133333333,   response group print mode (0..9)
60      :FF 01 04 ,   suppress char, HEX code 10ms pause, HEX 100ms pause
61      '1,           line division (0,1,2)
62      :93 91 ,      XOFF/XON
63      :01 ,         start state for XON/XOFF transm. (00,01)
64      :00 00 00 00 00 00 00 00 00 00 00,   start string
65      :01 0D 00 00 00 00 00 00 00 00 00 ,  end string
66      ,             REPLACEMENT STRINGS FOR LFx
67      :FF 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ,0
68      :01 0D 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ,1
69      :01 0D 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ,2
70      :01 0D 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ,3
71      ,             REPLACEMENT STRINGS FOR BSx
72      :FF 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ,0
73      :01 0D 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ,1
74      :01 0D 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ,2
75      :01 0D 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ,3
76      ,             REPLACEMENT STRINGS FOR A4H, A4Q, BDH, BDQ
77      :01 0D 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ,
78      :01 0D 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ,
79      :01 0D 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ,
80      :01 0D 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ,
81      ,
82      :00 00 00 00,  reserved
83      ,              OUTPUT CODE TABLE
84      :FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF    ,
85      :FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF    ,
86      :20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F    ,
87      :30 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F    ,
88      :40 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F    ,
89      :50 51 52 53 54 55 56 57 58 59 5A 5B 5C 5D 5E 5F    ,
90      :60 61 62 63 64 65 66 67 68 69 6A 6B 6C 6D 6E 6F    ,
91      :70 71 72 73 74 75 76 77 78 79 7A 7B 7C 7D 7E 7F    ,
92      :2E 7D 2E 2E 7B 2E 2E 2E 2E 2E 2E 2E 2E 2E 5B 2E    ,
93      :2E 2E 2E 2E 7C 2E 2E 2E 2E 5C 5D 2E 2E 2E 2E 2E    ,
94      :2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E    ,
95      :2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E    ,
96      :2E 40 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E    ,
97      :2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E    ,
98      :2E 7E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E    ,
99      :2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E 2E    ,
100     ,
101     ',             reserved
102     '21,           internal commands (0,1), EOT command for sending (0,1)
103     '1,            auto-LF (0,1)
```

```
104     ,               INPUT CODE TABLE
105     :FF FF FF FF FF FF FF FF 0F FF FF FF FF 12 FF FF    ,
106     :FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF    ,
107     :20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F    ,
108     :30 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F    ,
109     :C1 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F    ,
110     :50 51 52 53 54 55 56 57 58 59 5A 8E 99 9A 5E 5F    ,
111     :60 61 62 63 64 65 66 67 68 69 6A 6B 6C 6D 6E 6F    ,
112     :70 71 72 73 74 75 76 77 78 79 7A 84 94 81 E1 0F    ,
113     :FF FF FF FF FF FF FF FF 0F FF FF FF FF 12 FF FF    ,
114     :FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF    ,
115     :20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F    ,
116     :30 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F    ,
117     :C1 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F    ,
118     :50 51 52 53 54 55 56 57 58 59 5A 8E 99 9A 5E 5F    ,
119     :60 61 62 63 64 65 66 67 68 69 6A 6B 6C 6D 6E 6F    ,
120     :70 71 72 73 74 75 76 77 78 79 7A 84 94 81 E1 0F    ,
121     :00,            timeout
122     '0,             automatic reception (0,1)
123     '0,             detect call collision (0..3)
124     :00 00,         STX, ETX
125     '012555555,
126     '0,             without back reception
127     :00 00 00 00 00 00 00 ,    no string-byte conversion
128     ',              no script program
129     '0,             no manual loading of script program
130     :07,            reserved
131     ',              reserved
132     :07,            reserved
133     :00,            reserved
134     :00,            reserved
135     :02,            reserved
```

5.3.1 PC Standard Configuration

Note:	Only config lines with different entries are described here. The rest of the lines are identical to the asynchronous standard configuration.

```
01    '2,              initial state (0,1,2)
40    'AA,             drive for masks, default mask
50                     TUM
56    '0,              automatic EOT
59    '999999999,      response group print mode (0..9)
61    '2,              line division (0,1,2)
62    :00 00,          XOFF/XON
83    ,                OUTPUT CODE TABLE
84    :00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F   ,
85    :10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F   ,
86    :20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F   ,
87    :30 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F   ,
88    :40 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F   ,
89    :50 51 52 53 54 55 56 57 58 59 5A 5B 5C 5D 5E 5F   ,
90    :60 61 62 63 64 65 66 67 68 69 6A 6B 6C 6D 6E 6F   ,
91    :70 71 72 73 74 75 76 77 78 79 7A 7B 7C 7D 7E 7F   ,
92    :80 81 82 83 84 85 86 87 88 89 8A 8B 8C 8D 8E 8F   ,
93    :90 91 92 93 94 95 96 97 98 99 9A 9B 9C 9D 9E 9F   ,
94    :A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 AA AB AC AD AE AF   ,
95    :B0 B1 B2 B3 B4 B5 B6 B7 B8 B9 BA BB BC BD BE BF   ,
96    :C0 C1 C2 C3 C4 C5 C6 C7 C8 C9 CA CB CC CD CE CF   ,
97    :D0 D1 D2 D3 D4 D5 D6 D7 D8 D9 DA DB DC DD DE DF   ,
98    :E0 E1 E2 E3 E4 E5 E6 E7 E8 E9 EA EB EC ED EE EF   ,
99    :F0 F1 F2 F3 F4 F5 F6 F7 F8 F9 FA FB FC FD FE FF   ,
103   '0,              auto-LF (0,1)
104   ,                INPUT CODE TABLE
105   :FF FF FF FF FF FF FF FF 0F FF FF FF FF 12 FF FF   ,
106   :FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF   ,
107   :20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F   ,
108   :30 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F   ,
109   :40 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F   ,
110   :50 51 52 53 54 55 56 57 58 59 5A 5B 5C 5D 5E 5F   ,
111   :60 61 62 63 64 65 66 67 68 69 6A 6B 6C 6D 6E 6F   ,
112   :70 71 72 73 74 75 76 77 78 79 7A 7B 7C 7D 7E 0F   ,
113   :80 81 82 83 84 85 86 87 88 89 8A 8B 8C 8D 8E 8F   ,
114   :90 91 92 93 94 95 96 97 98 99 9A 9B 9C 9D 9E 9F   ,
115   :A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 AA AB AC AD AE AF   ,
116   :B0 B1 B2 B3 B4 B5 B6 B7 B8 B9 BA BB BC BD BE BF   ,
117   :C0 C1 C2 C3 C4 C5 C6 C7 C8 C9 CA CB CC CD CE CF   ,
118   :D0 D1 D2 D3 D4 D5 D6 D7 D8 D9 DA DB DC DD DE DF   ,
119   :E0 E1 E2 E3 E4 E5 E6 E7 E8 E9 EA EB EC ED EE EF   ,
120   :F0 F1 F2 F3 F4 F5 F6 F7 F8 F9 FA FB FC FD FE FF   ,
124   :02 03 ,         STX, ETX
```

5.3.2 TS72 Standard Configuration (Non-Transparent Mode)

Note: Only config lines with different entries are described here. The rest of the lines are identical to the asynchronous standard configuration.

```
01    '2,                initial state (0,1,2)
40    'AA,               drive for masks, default mask
41    '33310,            termination
50                       TUM
52    :15 17,            data port, status port
53    :18 18 18 04 4C 01 E0 03 E1 05 EA 10
54    :EA ,
56    '0,                automatic EOT
59    '999999999,        response group print mode (0..9)
61    '2,                line division (0,1,2)
62    :00 00 ,           XOFF/XON
83    ,                  OUTPUT CODE TABLE
84    :00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F   ,
85    :10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F   ,
86    :20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F   ,
87    :30 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F   ,
88    :40 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F   ,
89    :50 51 52 53 54 55 56 57 58 59 5A 5B 5C 5D 5E 5F   ,
90    :60 61 62 63 64 65 66 67 68 69 6A 6B 6C 6D 6E 6F   ,
91    :70 71 72 73 74 75 76 77 78 79 7A 7B 7C 7D 7E 7F   ,
92    :80 81 82 83 84 85 86 87 88 89 8A 8B 8C 8D 8E 8F   ,
93    :90 91 92 93 94 95 96 97 98 99 9A 9B 9C 9D 9E 9F   ,
94    :A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 AA AB AC AD AE AF   ,
95    :B0 B1 B2 B3 B4 B5 B6 B7 B8 B9 BA BB BC BD BE BF   ,
96    :C0 C1 C2 C3 C4 C5 C6 C7 C8 C9 CA CB CC CD CE CF   ,
97    :D0 D1 D2 D3 D4 D5 D6 D7 D8 D9 DA DB DC DD DE DF   ,
98    :E0 E1 E2 E3 E4 E5 E6 E7 E8 E9 EA EB EC ED EE EF   ,
99    :F0 F1 F2 F3 F4 F5 F6 F7 F8 F9 FA FB FC FD FE FF   ,
104   ,                  INPUT CODE TABLE
105   :00 01 02 03 04 05 06 07 08 09 0A 0B 0C 12 0E 0F   ,
106   :10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F   ,
107   :20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F   ,
108   :30 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F   ,
109   :40 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F   ,
110   :50 51 52 53 54 55 56 57 58 59 5A 5B 5C 5D 5E 5F   ,
111   :60 61 62 63 64 65 66 67 68 69 6A 6B 6C 6D 6E 6F   ,
112   :70 71 72 73 74 75 76 77 78 79 7A 7B 7C 7D 7E 7F   ,
113   :80 81 82 83 84 85 86 87 88 89 8A 8B 8C 8D 8E 8F   ,
114   :90 91 92 93 94 95 96 97 98 99 9A 9B 9C 9D 9E 9F   ,
115   :A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 AA AB AC AD AE AF   ,
116   :B0 B1 B2 B3 B4 B5 B6 B7 B8 B9 BA BB BC BD BE BF   ,
117   :C0 C1 C2 C3 C4 C5 C6 C7 C8 C9 CA CB CC CD CE CF   ,
118   :D0 D1 D2 D3 D4 D5 D6 D7 D8 D9 DA DB DC DD DE DF   ,
119   :E0 E1 E2 E3 E4 E5 E6 E7 E8 E9 EA EB EC ED EE EF   ,
120   :F0 F1 F2 F3 F4 F5 F6 F7 F8 F9 FA FB FC FD FE FF   ,
124   :02 03,            STX, ETX
```

5.3.3 TS72 Standard Configuration (Transparent Mode)

Note: Only config lines with different entries are described here. The rest of the lines are identical to the asynchronous standard configuration

```
01   '2,            initial state (0,1,2)
40   'AA,           drive for masks, default mask
41   '33310,        termination
50                  TUM
52   :15 17 ,       data port, status port
53   :18 18 18 04 4C 01 E0 03 E1 05 EA 10                ,
54   :EA,
56   '0,            automatic EOT
59   '999999999,    response group print mode (0..9)
61   '2,            line division (0,1,2)
62   :00 00 ,       XOFF/XON
83   ,              OUTPUT CODE TABLE
84   :40 40 40 40 40 60 60 60 60 60 60 60 60 40 40 40    ,
85   :40 40 40 40 40 40 40 40 60 60 60 60 60 60 60 60    ,
86   :40 4F 7F 7B 5B 6C 50 7D 4D 5D 5C 4E 6B 60 4B 61    ,
87   :F0 F1 F2 F3 F4 F5 F6 F7 F8 F9 7A 5E 4C 7E 6E 6F    ,
88   :7C C1 C2 C3 C4 C5 C6 C7 C8 C9 D1 D2 D3 D4 D5 D6    ,
89   :D7 D8 D9 E2 E3 E4 E5 E6 E7 E8 E9 4A E0 5A 5F 6D    ,
90   :79 81 82 83 84 85 86 87 88 89 91 92 93 94 95 96    ,
91   :97 98 99 A2 A3 A4 A5 A6 A7 A8 A9 C0 BB D0 A1 60    ,
92   :68 DC 51 42 43 44 47 48 52 53 54 57 56 58 63 67    ,
93   :71 9C 9E CB CC CD DB DD DF EC FC B0 B1 B2 60 60    ,
94   :45 55 CE DE 49 69 9A 9B AB 60 BA B8 B7 AA 8A 8B    ,
95   :60 60 BE 60 60 60 60 60 BD BD 90 9D 60 7F 60 60    ,
96   :60 B5 AC 60 C8 BF 60 D3 D3 FA 60 60 AE E3 D5 95    ,
97   :92 9F 84 8C 88 60 60 93 93 70 60 B9 8E A3 95 60    ,
98   :60 59 60 60 60 60 A0 60 60 60 60 60 60 80 60 60    ,
99   :60 8F 60 60 60 60 E1 60 90 60 60 60 60 EA 60 40    ,
104  ,              INPUT CODE TABLE
105  :20 20 20 20 20 20 20 20 20 20 20 20 20 12 20 20    ,
106  :20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20    ,
107  :20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20    ,
108  :20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20    ,
109  :20 20 83 84 85 A0 61 86 87 A4 5B 2E 3C 28 2B 21    ,
110  :26 82 88 89 8A A1 8C 8B 8D E1 5D 24 2A 29 3B 5E    ,
111  :2D 2F 41 8E 41 41 41 8F 80 A5 7C 2C 25 5F 3E 3F    ,
112  :D9 90 45 45 45 49 49 49 49 60 3A 23 40 27 3D 22    ,
113  :ED 61 62 63 64 65 66 67 68 69 AE AF D3 79 DC F1    ,
114  :F8 6A 6B 6C 6D 6E 6F 70 71 72 A6 A7 91 BB 92 D1    ,
115  :E6 7E 73 74 75 76 77 78 79 7A AD A8 C2 59 CC 2D    ,
116  :9B 9C 9D 2D 2D C1 2D AC AB DB AA 7C 2D B8 B2 C5    ,
117  :7B 41 42 43 44 45 46 47 48 49 2D 93 94 95 A2 6F    ,
118  :7D 4A 4B 4C 4D 4E 4F 50 51 52 2D 96 81 97 A3 98    ,
119  :5C F6 53 54 55 56 57 58 59 5A 2D 4F 99 4F 4F 4F    ,
120  :30 31 32 33 34 35 36 37 38 39 2D 55 9A 55 55 2D    ,
124  :02 03,        STX, ETX
```

5.3.4 TS73 Standard Configuration (Transparent Mode)

Note: Only config lines with different entries are described here. The rest of the lines are identical to the asynchronous standard configuration

```
01    '2,           initial state (0,1,2)
40    'AA,          drive for masks, default mask
41    '33310,       termination
50                  TUM
52    :15 17,       data port, status port
53    :18 18 18 04 4C 01 E0 03 E1 05 EA 00 ,
54    :EA,
56    '0,           automatic EOT
59    '999999999,   response group print mode (0..9)
61    '2,           line division (0,1,2)
62    :00 00,       XOFF/XON
65    :01 F2 00 00 00 00 00 00 00 00 00   end string
66    ,             REPLACEMENT STRINGS FOR LFx
67    :FF 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ,0
68    :01 F2 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ,1
69    :01 F2 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ,2
70    :01 F2 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ,3
71    ,             REPLACEMENT STRINGS FOR BSx
72    :FF 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ,0
73    :01 F2 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ,1
74    :01 F2 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ,2
75    :01 F2 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ,3
76    ,             REPLACEMENT STRINGS FOR A4H, A4Q, BDH, BDQ
77    :01 F2 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ,
78    :01 F2 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ,
79    :01 F2 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ,
80    :01 F2 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
83    ,             OUTPUT CODE TABLE
84    :10 10 10 10 10 31 31 31 31 31 31 31 31 10 10 10    ,
85    :10 10 10 10 10 10 10 10 31 31 31 31 31 31 31 31    ,
86    :10 19 13 2C 1A 2E 30 12 0D 0C BF 35 33 31 32 14    ,
87    :20 21 22 23 24 25 26 27 28 29 34 BE 09 11 08 18    ,
88    :2D A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 AA AB AC AD AE    ,
89    :AF B0 B1 B2 B3 B4 B5 B6 B7 B8 B9 0A 15 0B 3A 2F    ,
90    :3D 80 81 82 83 84 85 86 87 88 89 8A 8B 8C 8D 8E    ,
91    :8F 90 91 92 93 94 95 96 97 98 99 0F 16 0E 3B 31    ,
92    :BD 54 5B 55 50 40 9C 4F 56 51 41 52 57 42 70 BC    ,
93    :7B 9A BA 58 53 43 59 44 47 73 74 1B 1C 1D 1E 10    ,
94    :5A 5C 5D 5E 5F 7F 31 31 31 31 36 31 31 31 31 31    ,
95    :31 31 3E 31 31 37 31 31 3C 3C 38 3F 32 13 31 31    ,
96    :31 2B A3 31 A7 97 31 AB AB 31 31 31 31 B3 AD 8D    ,
97    :8A 1F 83 31 87 31 31 8B 8B 9B 31 31 31 93 8D 31    ,
98    :31 2A 31 31 31 31 31 31 31 31 31 31 31 BB 31 31    ,
99    :31 31 31 31 31 31 31 31 38 31 31 31 31 31 31 31    ,
```

```
104   ,                    INPUT CODE TABLE
105   :FF FF FF FF FF FF FF FF 3E 3C 5B 5D 29 28 7D 7B    ,
106   :20 3D 27 22 2F 5C 7C 7C 3F 21 24 9B 9C 9D 9E D1    ,
107   :30 31 32 33 34 35 36 37 38 39 E1 C1 23 40 25 5F    ,
108   :26 2D 2E 2C 3A 2B AA B5 BA BF 5E 7E B8 60 B2 BB    ,
109   :85 8A 8D 95 97 61 6F 79 85 8A 82 8D 95 97 81 87    ,
110   :84 89 8B 94 81 83 88 8C 93 96 A0 82 A1 A2 A3 A4    ,
111   :41 45 49 4F 55 41 4F 59 41 45 45 49 4F 55 59 43    ,
112   :8E 45 49 99 9A 41 45 49 4F 55 41 45 49 4F 55 A5    ,
113   :61 62 63 64 65 66 67 68 69 6A 6B 6C 6D 6E 6F 70    ,
114   :71 72 73 74 75 76 77 78 79 7A 91 D9 86 87 FF FF    ,
115   :41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F 50    ,
116   :51 52 53 54 55 56 57 58 59 5A 92 ED 8F 80 3B 2A    ,
117   :FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
118   :FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
119   :FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
120   :FF FF 12 FF FF FF FF FF FF FF FF FF FF FF FF FF
124   :F0 F1,            STX, ETX
```

5.4 CONFIGURATION FOR THE TELEX MODULE (UTX)

```
01   '1,          initial state (0,1,2)
02   'X,          channel groups (' ',A..Z)
03   'X11,        channel type (' ',F,X,T), channel capability
04   '2,          language (1,2)
05   '1,          CORR default (0,1)
06   ',           line status comment
07   'A,          NODES default (A..Z)
08   :00,         number of characters for cost accounting
09   '0,          offset in reference for cost accounting
10   'I,          number series for send commands (A..Z)
11   '0,          locking of send commands
12   ',           sending time mapped to low priority
13   '9,          interval between call retries (1..T)
14   :32 00,      send test timer value in 0.1 sec. (pos. 1)
15   ',           default channel for ..C, ..S, ..L
16   'JS,         log file of trans. mess. (' ',0..9,A..Z), all/success. only
17   'A ,         drive for log file of trans. mess. (A,B), page sent counter
18   ,            BACK RECEPTION
19   'A,          drive for back received mess
20   'RT,         number series (A..Z), 1st char. for reference (0..9,A..Z)
21   ',           address for autom. printout of back received mess
22   '0,          auto. send print. and active acknowledge. can't be deleted
23   ,            RECEPTION
24   '0,          automatic distribution (0,1,2)
25   'A,          drive for received mess
26   'TT,         number series (A..Z), 1st char. for reference (0..9,A..Z)
27   ',           address for autom. printout of received mess
28   '0,          autom. recept. printout and distribution can't be deleted
29   'I,          log file of received mess. (' ',0..9,A..Z)
30   'A ,         drive for log file of rec. mess. (A,B), page rec. counter
31   ,            TEST
32   '0,          reserved
33   :FE,         TCI code output line length
34   :03 E7,      Maximum number of pages = 999
35   '0,          automatic printout of CF non-delivery notifications
36   :00,         reserved
37   ',           reserved
38   :08 00 ,     reference with 8 characters in log file, entry mode
39   :0F,         lines checked for automatic distribution
40   'A ,         drive for masks, default mask
41   '10110,      termination
42   'TLX$*,      output channel for active acknowledgements
43   '87654321-   ,new send status for BREAK = 1
44   '87654321-   ,new send status for BREAK = 2
45   '-------1-   ,new send status for BREAK = 3
46   '-------10   ,new send status for BREAK = 4
47   '-------10   ,new send status for BREAK = 5
48   :00 00 00,   ASP parameters
49   :00 00 00,   ASP parameters
```

```
50                      TUM
51   :10 12 11 13       SIO addresses
52   :00,               telex interface (00,01,02)
53   :00,               telex reception (00,01)
54   :00 00,            back reception (00,01,02), underlined (00,01)
55   :00,               answerback verification after transm.(00,01)
56   'A,                type of telex exchange (A,B,C,M)
57   :14,               max. waiting time for call confirmation (sec.)
58   :5A,               max. waiting time for pts or call connected (sec.)
59   'OCC AUTO,         busy signal, no break(OCC AUTO )
60   :14,               duration of break signal (0.1 sec.)
61   '#,                character for call collision recognition
62   :01 01 01 01,      telex header
63   :00 00 00 00,      character set
64   '3,                break code for 'der'
65   :01 01 00 4E 4E 4E 4E 3C 3E 00 00 00    chaining enabled, a/b exch. at
                                             beginning of chained msg.,
                                             “NNNN” between chained msgs
66   :00,               length of text end string
67   ',                 text end string
68   :34 1E,            min. length of inc. tx, temp. storage interval
69   :FF,               max. number of incoming characters
70   '_<>^111111_ TEST____,   answerback
71   'DER  AUTO,
72   'NP RADUAS,
73   :0C 05 00 00,      break and non-break detection delay
74   :00 00 00 00 00 00 00 00 00 00 00 00    reserved
75   ';0,                 answerback check stage
76   :20,                 =========  stage 0  =========
77   :04,                 check for next stage (position in telex number)
78   :00 00 00 00 00 00 00 00 00 00          proceed to select string
79   :01,                 delay after reception of pts
80   :2B,                 selection termination character
81   :2D,                 no selection termination character
82   :36,                 maximum waiting time for answerback (sec.)
83   :2D,                 requesting answerback after (sec.)
84   :00,                 call connected signal
85   :01,                 answerback exchange (00,01,02)
86   :00 00 00 00 00,     disconnection string
87   :00,                 delay between disconnection string and break signal
88   ,                    =========  stage 1  =========
89   :47,                 character in receiver for stage 1
90   :00,
91   :47 41 00 00 00 00 00 00 00 00,
92   :00,
93   :2B,
94   :2D,
95   :36,
96   :2D,
97   :01,
98   :01,
99   :2E 2E 2E 2E 00,
100  :05,
```

```
101  ,                  =========  stage 2  =========
102  :2D,               character in receiver for stage 2
103  :00,
104  :00 00 00 00 00 00 00 00 00 00,
105  :00,
106  :00,
107  :2D,
108  :00,
109  :00,
110  :00,
111  :00,
112  :00 00 00 00 00,
113  :00,
114  ,                  =========  stage 3  =========
115  :42                character in receiver for stage 3
116  :01
117  :47 41 00 00 00 00 00 00 00 00,
118  :00,
119  :2B,
120  :2F,
121  :00,
122  :00,
123  :00,
124  :00,
125  :2B 2B 2B 2B 00,
126  :3C,
127  ,                  =========  stage 4  =========
128  :54,               character in receiver for stage 4
129  :00,
130  :00 00 00 00 00 00 00 00 00 00,
131  :00,
132  :00,
133  :2D,
134  :36,
135  :2D,
136  :00,
137  :01,
138  :2B 2B 2B 2B 00,
139  :3C,
140  '0,                variable answerback (0,1,2,3)
141  ',                 international network access number
```

```
142   :23 3F 00 2A 3F 00 24 44 4C 52 53 00 25 4F 2F 4F 00 40 41 54 ,
143   :00 81 55 45 00 84 41 45 00 8E 41 45 00 94 4F 45 00 99 4F 45 ,
144   :00 9A 55 45 00 E1 53 53 00 22 27 27 00 26 2B 00 5C 2F 00 5B ,
145   :28 00 5D 29 00 7E 2D 00 60 3F 00 90 45 00 00 00 00 00 00 00 ,
146   :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
147   :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
148   :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
149   :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
150   :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
151   :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
152   :7B 46 00 7C 47 00 7D 48 00 00 00 00 00 00 00 00 00 00 00 00 ,
153   :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
154   :7B 46 00 7C 47 00 7D 48 00 00 00 00 00 00 00 00 00 00 00 00 ,
155   :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
156   ',     Variable answerbacks on incoming calls
157   ',     Variable answerbacks on incoming calls
158   ',     Variable answerbacks on incoming calls
159   ',     Variable answerbacks on incoming calls
160   ',     Variable answerbacks on incoming calls
161   ',     Variable answerbacks on incoming calls
162   ',     Variable answerbacks on incoming calls
163   ',     Variable answerbacks on incoming calls
164   ',     Variable answerbacks on incoming calls
165   ',     Variable answerbacks on incoming calls
166   ',     Variable answerbacks on incoming calls
167   ',     Variable answerbacks on incoming calls
168   ',     Variable answerbacks on incoming calls
169   ',     Variable answerbacks on incoming calls
170   ',     Variable answerbacks on incoming calls
171   ',     Variable answerbacks on incoming calls
172   ',     Variable answerbacks on incoming calls
173   ',     Variable answerbacks on incoming calls
174   ',     Variable answerbacks on incoming calls
175   ',     Variable answerbacks on incoming calls
176   :00,
178   ',
```

5.5 CONFIGURATION FOR THE TRANSPUTER FAX MODULE (UTF)

5.5.1 Standard Configuration

```
01      '1,          initial state (0,1,2)
02      'F,          channel groups (' ',A..Z)
03      'FC1,        channel type (' ',F,X,T), channel capability
04      '2,          language (1,2)
05      '0,          CORR default (0,1)
06      ',           line status comment
07      'A,          NODES default (A..Z)
08      :00,         number of characters for cost accounting
09      '0,          offset in reference for cost accounting
10      'H,          number series for send commands (A..Z)
11      '1,          locking of send commands
12      ',           sending time mapped to low priority
13      '9,          interval between call retries (1..T)
14      :FF 00,      send test timer value in 0.1 sec. (pos. 1)
15      ',           default channel for ..C, ..S, ..L
16      'JA,         Log file of trans. mess. (' ',0..9,A..Z), all/success.
                     only
17      'A ,         drive for log file of trans. mess. (A,B), page sent
                     counter
18      ',           BACK RECEPTION
19      'A,          drive for back received mess
20      'RT,         number series (A..Z), 1st char. for reference
                     (0..9,A..Z)
21      'FOUT,       address for autom. printout of back received mess
22      '0,          auto. send print. and active acknowledge. can't be
                     deleted
23      ',           RECEPTION
24      '0,          automatic distribution (0,1,2)
25      'A,          drive for received mess
26      'FT,         number series (A..Z), 1st char. for reference
                     (0..9,A..Z)
27      'FIN,        address for autom. printout of received mess
28      '0,          autom. recept. printout and distribution can't be
                     deleted
29      'I,          log file of received mess. (' ',0..9,A..Z)
30      'A ,         drive for log file of rec. mess. (A,B), page rec.
                     counter
31      ',           TEST
32      '0,          reserved
33      :FE,         TCI code output line length
34      :03 E7,      Maximum number of pages = 999
35      '0,          automatic printout of CF non-delivery notifications
36      :00,         reserved
37      ',           reserved
38      :08 00,      reference with 8 characters in log file, entry mode
39      :0F,         lines checked for automatic distribution
40      'A ,         drive for masks, default mask
41      '10110,      termination
```

```
42      'FAX$*,       output channel with mask for active acknowledge
43      '87654321-,   new send status for BREAK = 1
44      '876543210,   new send status for BREAK = 2
45      '-------10,   new send status for BREAK = 3
46      '-------10,   new send status for BREAK = 4
47      '-------10,   new send status for BREAK = 5
48      :00 00 00,      ASP parameters
49      :00 00 00,      ASP parameters
50                      TUM
51      'TEST,          answerback
52      '+11 111        fax number
        111111,
53      '3,             full image backreception
54      ,               Transmission style / speed
55      'E960,          9600 / 14400 bps, ECM, no 2dim.
56      '0,             retransmission mode
57      '0,             send break page
58      '0,             expansion of last page to specified format
59      ,               Dial parameters
60      '1,             dialing (pulse/dtmf/sweden)
61      :05,            delay before first dial pulse
62      :08,            length of dial pulse
63      :64 64,         delay between dial pulses
64      :08,            delay between digits
65      :05,            delay after last dial pulse
66      :04,            DC/DC converter
67      :0A,            Ring on time
68      :28,            Ring off time
69      :05,            Ring retries
70      ,               FACSIMILE procedure
71      :32 32,         timeout for receiving valid identification / DCS
                        timeout
72      :07 14 00,      Del. V29/V21, CFR/Page, FF-Seq.
73      :1E 46 3C,      wait 3s/7s for response/command, ECM timeout
74      :28,            max. frame length 4s
75      :14,            min. carrier lost time 200ms
76      :0A,            1s HDLC-preamble
77      :0F,            1.5s training sequence
78      :23,            3.5s CNG-tone pause
79      :05,            0.5s CNG-tone
80      :00,            receiver threshold = -43dBm
81      :26,            EPT with V.27 and V.17/V.33
82      ,               =========  signal detection  =========
83      ,               STATE machine
84      'A2-4a3+,       ´A´ dial tone detector
85      'a2-4b3+,
86      'b2-4c3+,
87      'c2-4+3+,
88      'W1-5+,         'W' wait for any tone
89      'P0+,           'P' 1s pause
90      'Q1+,           'Q' 4s pause
91      'Z7-8zB=6=,     'Z' ring/busy detection
92      'z7-9+A*B=6=,
93      'CE-3+A+,       'C' Callback ring-back Signal
94      'DE-Dd,         'D' wait for call-back
95      'dE-C+,
96      'BH-3+,         'B' Check CB prompt
```

```
97      ',
98      'EE-F+,         'E' wait 35s for ear
99      'FH-G+,         'F' wait 12s for ear pulse
100     'IH-GJ,         'I' wait 12s for 1st pulse of digit
101     'JI-J+,         'J' wait 4 next pulse of digit
102     'fH-C+,         'R' Ring indication
103     'RH-Df,
104     ,               =========  EVENTS  =========
```

	Chnl.	tonmin	tonmax	toffmin	toffmax	Tmin	Tmax	ton/T min	Ton/T max	
105	:00	00 64	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	0
106	:00	01 90	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	1
107	:00	07 08	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	2
108	:01	00 50	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	3
109	:81	00 07	00 4B	00 0A	00 5F	00 19	00 8C	00 00	00 43,	4
110	:01	00 14	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	5
111	:00	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	6
112	:06	01 90	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	7
113	:01	00 02	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	8
114	:81	00 08	00 50	00 08	00 42	00 00	00 00	00 00	00 00,	9
115	:81	00 05	00 00	00 64	00 00	00 00	00 00	00 00	00 00,	A
116	:07	00 08	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	B
117	:84	00 00	00 00	00 5A	00 00	00 00	00 00	00 00	00 00,	C
118	:84	00 00	00 00	00 5A	02 58	00 00	00 00	00 00	00 00,	D
119	:00	0D AC	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	E
120	:05	00 01	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	F
121	:85	00 01	00 00	00 01	00 00	00 00	00 00	00 00	00 00,	G
122	:00	04 B0	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	H
123	:06	00 14	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	I
124	:45	00 01	00 00	00 02	00 00	00 00	00 00	00 00	00 00,	J

```
     ,
125
126  :02 00 72 74 C7 5C 02 EE 72 74
     C7 5C 00 44 7F BA,
127  :00 00 00 00 00 00 00 00 00 00
     00 00 00 00 00 00,
128  :0F A0 2A F8 D0 64 0F A0 2A F8
     D0 64 00 22 7F DC,
129  :21,                            receiver threshold
130  ,
131  '                     ,         automatic prefix for internal
                                     sending
132  'A                    ,
133  ' ,
134  :00 00 00 00,                   do not use a failure counter
135  :64 64 64 64,                   Output power = J6
136  :01 4E 78 37 10 11 3B 5F 05,    A4H
137  :11 2A 2D A0 21 08 2E 84 05,    A4Q
138  :00 2A 38 37 0C 0C 57 86 05,    BDH
139  :10 24 2D A0 19 06 3D B1 05,    BDQ
140  :28 11 00 82 ,                  page settings, header line
                                     margin, Kofax-logo
141  ,
142  :13,                            header line settings
143  :01 04 00,                      Rec. On/Off; bit rate; unused
144  :7F 0A 05 03 04 02 10 09 04 02, max. noise levels
145  :02 05 10 78,                   page acceptability limits
```

```
146  '1,                                  Rec. with/without fine mode
147  '0,                                  Date format
148  :00 00 00 01 00 02 00 03 00 04 00 05 00 06 00 07 ,      fax code
149  :00 08 00 09 00 0A 00 0B 00 0C 00 0D 00 0E 00 0F ,      fax code
150  :00 10 00 11 00 12 00 13 00 14 00 15 00 16 00 17 ,      fax code
151  :00 18 00 19 00 1A 00 1B 00 1C 00 1D 00 1E 00 1F ,      fax code
152  :00 20 00 21 00 22 00 23 00 24 00 25 00 26 00 27 ,      fax code
153  :00 28 00 29 00 2A 00 2B 00 2C 00 2D 00 2E 00 2F ,      fax code
154  :00 30 00 31 00 32 00 33 00 34 00 35 00 36 00 37 ,      fax code
155  :00 38 00 39 00 3A 00 3B 00 3C 00 3D 00 3E 00 3F ,      fax code
156  :00 40 00 41 00 42 00 43 00 44 00 45 00 46 00 47 ,      fax code
157  :00 48 00 49 00 4A 00 4B 00 4C 00 4D 00 4E 00 4F ,      fax code
158  :00 50 00 51 00 52 00 53 00 54 00 55 00 56 00 57 ,      fax code
159  :00 58 00 59 00 5A 00 5B 00 5C 00 5D 00 5E 00 5F ,      fax code
160  :00 60 00 61 00 62 00 63 00 64 00 65 00 66 00 67 ,      fax code
161  :00 68 00 69 00 6A 00 6B 00 6C 00 6D 00 6E 00 6F ,      fax code
162  :00 70 00 71 00 72 00 73 00 74 00 75 00 76 00 77 ,      fax code
163  :00 78 00 79 00 7A 00 7B 00 7C 00 7D 00 7E 00 7F ,      fax code
164  :5C 43 20 75 04 65 18 61 20 61 10 61 44 61 5C 63 ,      fax code
165  :18 65 20 65 10 65 20 8B 18 8B 10 8B 24 8E 48 8F ,      fax code
166  :08 90 00 91 00 92 18 6F 20 6F 10 6F 18 75 10 75 ,      fax code
167  :20 79 28 99 2C 9A 00 9B 00 9C 00 9D 00 9E 00 9F ,      fax code
168  :04 61 04 8B 04 6F 04 75 30 6E 30 A5 00 A6 00 A7 ,      fax code
169  :00 A8 00 A9 00 AA 00 AB 00 AC 00 AD 00 AE 00 AF ,      fax code
170  :00 B0 00 B1 80 00 00 B3 00 B4 84 00 88 00 8C 00 ,      fax code
171  :90 00 94 00 98 00 9C 00 A0 00 A4 00 A8 00 AC 00 ,      fax code
172  :00 C0 00 C1 00 C2 00 C3 00 C4 00 C5 00 C6 00 C7 ,      fax code
173  :00 C8 00 C9 00 CA 00 CB 00 CC 00 CD 00 CE 00 CF ,      fax code
174  :00 D0 00 D1 00 D2 00 D3 00 D4 00 D5 00 D6 00 D7 ,      fax code
175  :00 D8 00 D9 00 DA 00 DB 00 DC 00 DD 00 DE 00 DF ,      fax code
176  :00 E0 00 E1 00 E2 00 E3 00 E4 00 E5 00 E6 00 E7 ,      fax code
177  :00 E8 00 E9 00 EA 00 EB 00 EC 00 ED 00 EE 00 EF ,      fax code
178  :00 F0 00 F1 00 F2 00 F3 00 F4 00 F5 00 F6 00 F7 ,      fax code
179  :00 F8 00 F9 00 FA 00 FB 00 FC 00 FD 00 FE 00 FF ,      fax code
180  :00 00 00 00 00 00 00 00 00 00 00 00 00 00 D8 00 EB E0,
181  :03 00 00 14 01 31 31,   (00)    =====  DID Statemachine  =====
182  :02 00 00 13 13 31 31,   (01)
183  :01 00 00 15 15 31 31,   (02)    ->Call-Ind
184  :0B 00 00 14 14 31 31,   (03)    ->Disc-Ind
185  :00 00 00 00 00 00 00,   (04)
186  :0F 00 32 16 16 16 16,   (05)
187  :09 00 00 05 05 31 31,   (06)    ->Conn-Conf
188  :0F 00 C8 08 08 31 31,   (07)    ->Conn-Ind (Line without DTMF)
     :08 83 E8 08 08 08 08,           line if DTMF input is configured
189  :0A 00 00 06 16 31 31,   (08)
190  :0D 00 42 0D 0A 31 31,   (09)    ->Conn-ConfCB
191  :07 00 00 16 06 16 31,   (0A)
192  :0B 00 20 0C 0C 31 31,   (0B)
193  :01 00 00 07 07 31 31,   (0C)
194  :06 00 00 0E 0B 31 31,   (0D)
195  :13 00 20 16 16 31 31,   (0E)
196  :00 00 00 00 00 00 00,   (0F)
197  :00 00 00 00 00 00 00,   (10)
198  :00 00 00 00 00 00 00,   (11)
199  :00 00 00 00 00 00 00,   (12)
200  :04 00 00 1D 23 31 31,   (13)    ->Conn-Req (normal ab with callback)
201  :06 00 00 2B 2A 31 31,   (14)    ->Idle-Req
```

```
202  :0D 00 52 03 1B 31 31,   (15)    ->Call-Rsp
203  :0C 00 01 28 28 28 31,   (16)    ->Disc-Req
204  :00 00 00 00 00 00 00,       (17)
205  :00 00 00 00 00 00 00,       (18)
206  :00 00 00 00 00 00 00,       (19)
207  :00 00 00 00 00 00 00,       (1A)
208  :0C 00 02 03 07 03 31,       (1B)    Receive part
209  :00 00 00 00 00 00 00,       (1C)
210  :0C 00 02 24 1E 24 31,       (1D)    Transmit part
211  :07 00 00 1F 06 16 31,       (1E)
212  :0D 00 43 26 20 31 31,       (1F)
213  :0C 00 01 21 21 21 31,       (20)
214  :0D 00 44 25 22 31 31,       (21)
215  :0C 00 02 24 09 24 31,       (22)
216  :0C 00 04 24 06 24 31,       (23)
217  :13 00 01 03 03 31 31,       (24)
218  :13 00 03 03 03 31 31,       (25)
219  :13 00 03 16 16 31 31,       (26)
220  :00 00 00 00 00 00 00,       (27)
221  :0F 00 C8 03 03 31 31,       (28)    disconnect part
222  :00 00 00 00 00 00 00,       (29)
223  :0C 00 08 2B 00 02 31,       (2A)    idle part
224  :0C 00 01 00 00 00 31,       (2B)
225  :00 00 00 00 00 00 00,       (2C)
226  :00 00 00 00 00 00 00,       (2D)
227  :00 00 00 00 00 00 00,       (2E)
228  :00 00 00 00 00 00 00,       (2F)
229  :0F 00 00 F1 F0 F0 F0,       (30)    IsConnReq
230  :00 00 31 00 00 00 00,       (31)
231  :00 00 00 00,                        FXC tracer
232  :00 00 00 00,                        FXC tracer
233  :00 00 00 00,                        FXC tracer
234  :00 00 00 00,                        FXC tracer
235  ´FXI$ FXI$ FAX$,                     inbound/user/originator prefix for
                                          DID
236  :10,                                 max. length of DID inbound Number
237  :01 01 01,                           pw, TSI, number match required
238  ´FXI$ FXI$ FAX$,                     inbound/user/originator prefix for
                                          DTMF
239  :10,                                 max. length of DID inbound Number
240  :01 01 01,                           pw, TSI, number match required
241  :00 00 00 78 04 C0 00 10,            received page layout
242  :00 00 00 00 00 00 00 00 00 00 00 00,        hex-, DID-, Sign-, Modem-,
                                                  Binary- and LS1 perf.
                                                  counter Trace
243  'To:%C_________________% From:%A_________________ % Fax:%T_________,
244  '________%          at:%D%  Doc:%N%  Page:%P%/%Q%                  ,
245  '                                                                  ,
246  '                                                                  ,
247  ,
248  ,
249  ',
250  :01 00 FF 00 00,                     250
251  :00 FF FF FF FF FF
252  '0,
253  '0,
254  ',                                   254-283 number conversion table
```

```
255  ',
256  ',
257  ',
258  ',
259  ',

259  ',
260  ',
261  ',
262  ',
263  ',
264  ',
265  ',
266  ',
267  ',
268  ',
269  ',
270  ',
271  ',
272  ',
273  ',
274  ',
275  ',
276  '8*~=00~,                        276-283 default conversion
277  '80~=0~,                         rules for international
278  '8I~=I~,                         /national/internal/unknown
279  '8~=~,                           (number types)
280  '@TI~=*~,
281  '@TN~=0~,
282  '@TS~=~,
283  '@~=~,
284  :1E,
285  :05 10,
286  :01 00 00 00 00 00 00 00,
287  :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00,
288  ,
289  :00 01 00 00 00 19 16 02 03 01 00 00 00 00 00 00,
290  :02 08 08 01 00 00 03 00 00 00 00 00 00 00 00 00,
291  ,
292  ,
293  ,
294  ,
295  :01 00 01 00 00 00 00 00,
296  :00 00 00 00 00 00 00 00,
297  :01 FF FF FF FF FF,
298  :46 23 14 00 08 34 00 00 00 00 00 00 00 00 00 00,
299  :01 63 01 90 01 BD 01 EA 00 00 00 00 00 00 00 00,
```

The default value, for UTF running on TC20, of config lines 126 to 128 is shown below:

```
config line 126 :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00,
config line 127 :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00,
config line 128 :00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00,
```

With this configuration, the modem default filter is used for dial-, ring- and busy detection. Since this filter detects tones between 200 and 850 Hz, it will work in all countries.

5.5.2 Country Specific Changes

This chapter describes the changes made (compared with the general standard configured), if a country specific standard configured is selected via menu. This description can be used both for UTF and UIF.

5.5.2.1 Overview

5.5.2.1.1 General Parameters

line	description	general	ES	I	GB
4	channel language	´1,	´0,	-	-
16	send journal	´JA,	´2S,	-	-
40	default mask	´A ,	´AF,	-	-
51	own answer back	´TEST	blanks	-	-
52	own tel. number	´+11 111..	blanks	-	-
58	fill last page ´0´/´1´	´0,	´1,	´1,	-
147	date format	´0,	-	-	´2,

5.5.2.1.2 Call Retries

General Call retries

config line	general	Austria	Germany	GB, S	NL
44	876543210	876543210	8765----0	8765----0	876543210
45	-------10	------210	-------10	8765----0	-7-5-3-10
46	-------10	------210	-------10	8765----0	-7-5-3-10
47	-------10	------210	-------10	8765----0	-7-5-3-10

Failure counter

line	general	Austria
134	:00 00 00 00,	:0A 0A 0A 03,

5.5.2.1.3 Dial Parameter

Pulse dialing parameter

line	description	general	GB, H	Sw	ES	I
60	dial mode	´0,	´0,	´2,	´0,	´0,
62	duration of pulse	:06,	:07,	:06,	:06,	:06,

	[10ms]					
63	pos1: pause between pulses[10ms] pos2: unused	:04 64,	:03 64,	:04 64,	:04 64,	:05 64,
64	delay between digits [10ms]	:5A	:5A,	:5A	:AA,	:60,

DTMF dialing parameter

```
config line 60 (dial mode) = ´1,
config line 62 (duration of pulse) = :08, (80 ms)
```

line	description	general	D	GB	S,RSA	NL
62	duration of pulse [10ms]	:08,	:0A,	:08,	:08,	:08,
63	pos1: P_{low} = 20lg(x)+J6-42dBm pos1: P_{high} = 20lg(x)+J6-40dBm	:64 64,	:4E 4E	:6F 58	:59 59	:38 38
64	delay between digits [10ms]	:08	:18	:09	:08	:08

5.5.2.2 Changes for Switzerland

There are no changes required for Switzerland.

5.5.2.3 Changes for Austria

```
line  45    ´------210,                 call retries
line  46    ´------210,
line  47    ´------210,
line 134    :0A 0A 0A 03,               user failure counter
```

5.5.2.4 Changes for Germany

```
line  44    ´8765----0,                 call retries
line  62    :0A ,                       100ms DTMF pulse length
line  63    :4E 4E ,                    DTMF level
line  64    :18,                        240ms DTMF pulse pause
line  80    :01,                        -46dBm receiver threshold
line 129    :16,                        -47dBm Signal detection threshold
```

5.5.2.5 Changes for U. K.

```
line  44    '8765----0,                 call retries
line  45    '8765----0,
line  46,   '8765----0,
line  47    '8765----0,
line  63    :6F 58 ,                    DTMF level
line  64    :09 ,                       90ms delay between DTMF digits
line 126    :02 00 73 00 C7 A0 02 EE 73 00 C7 A0 00 44 7F BA ,
line 135    :3F 3F 3F 3F ,              Sending power
```

```
line 147    '2,                          date format
line 291    :05 08 00 01 00 00 03 04 00 00 00 00 00 00 00 00,   impedances
```

5.5.2.6 Changes for Hungary

```
line  84    'A2-3+3+    ,
line  88    'W2-5+4+    ,
line 107,   :00 0C 80 00 00 00 00 00 00 00 00 00 00 00 00 00 00
line 109    :03 00 16 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
line 129    :3C ,
```

5.5.2.7 Changes for Netherlands

```
line  45    '-7-5-3-10,                                          045
line  46    '-7-5-3-10,                                          046
line  47,   '-7-5-3-10,                                          047
line  63    :38 38 ,                                             063
line  126   :10 00 3D 00 00 00 06 00 72 74 C7 5C 00 44 7F BA,    126
line  129   :42                                                  129
```

5.5.2.8 Changes for Sweden

```
line  44    '8765----0,
line  45    '8765----0,
line  46,   '8765----0,
line  47    '8765----0,
line  63    :59 59 ,
line  86    'b2-4+3+    ,
line 109    :01 00 1E 00 00 00 00 00 07 00 00 00 00 00 00 00 00,
line 129    :3C ,
```

5.5.2.9 Changes for Denmark

```
line  80    :01                                                  080
line  108   :01 00 82 00 00 00 00 00 00 00 00 00 00 00 00 00 00,  108
line  126   :02 00 73 00 C7 A0 02 EE 73 00 C7 A0 00 44 7F BA,     126
line  129   :3C,                                                 129
```

5.5.2.10 Changes for Finland

```
line 126    :02 00 73 00 C7 A0 02 EE 73 00 C7 A0 00 44 7F BA ,    126
```

5.5.2.11 Changes for Spain

```
line  16    '2S,
line  21    ',
line  40    'AF,
line  51    ',
line  52    ',
line  58    '1,
line  80    :01 ,
line  86    'b2-4+3+    ,
line 109    :01 00 1E 00 00 00 00 00 07 00 00 00 00 00 00 00 00,
```

5.5.2.12 Changes for Italy

```
line  58    '1,
line  84    'A8+        ,
```

5.5.2.13 Changes for Belgium

```
line  80    :01,
```

5.5.2.14 Changes for U. S. A.

```
line 134    :00 00 05 00 ,
line 291    :00 08 00 00 00 00 03 00 00 00 00 00 00 00 00 00,   impedances
```

5.5.2.15 Changes for Russia

```
line  63   :59 59,
line  84   'A2-3+,
line  85   'X4-8a,
line  86   'a4-5+,
line 109   :00 2E E0 00 00 00 00 00 00 00 00 00 00 00 00 00 00,
line 291   :00 08 00 00 00 00 03 00 00 00 00 00 00 00 00 00,      impedances
```

5.5.2.16 Changes for France

```
line  44    '8765----0,
line  71    :82 28 ,
line  85    'a2-5+3+    ,
line  91    'Z7-8zB=6=  ,
line  92    'z7-9+A*B=6=,
line 106    :00 00 C8 00 00 00 00 00 00 00 00 00 00 00 00 00 00,
line 107    :00 03 E8 00 00 00 00 00 00 00 00 00 00 00 00 00 00,
line 018    :01 00 82 00 00 00 00 00 00 00 00 00 00 00 00 00 00,
line 109    :81 00 50 00 00 00 00 00 07 00 00 00 00 00 00 00 00,
line 111    :02 00 32 00 00 00 00 00 00 00 00 00 00 00 00 00 00,
line 126    :02 00 73 00 C7 A0 05 DC 73 00 C7 A0 00 44 7F BA,
line 127    :01 98 1A 4A C0 C4 01 98 17 5A C0 C4 00 44 7F BA,
line 129    :0C ,
line 134    :00 00 00 85,
line 143    :01 14 00,
```

5.5.2.17 Changes for Japan

```
line 291    :00 08 00 00 00 01 01 00 00 00 00 00 00 00 00 00 ,    impedances
```

5.5.2.18 Changes for Malaysia

```
line 291    :00 08 00 00 00 01 01 00 00 00 00 00 00 00 00 00 ,    impedances
```

5.5.2.19 Changes for Australia

```
line 291    :03 08 00 00 00 01 01 0B 00 00 00 00 00 00 00 00,     impedances
```

5.5.3 Tips for Configuring the UTF Module

5.5.3.1 Dial Tone Detection

Note: The standard values of line 84 is suitable for many countries. If you face problems with dial tone detection, set the following value:
line 84 'A1+ ,
With this value dial tone detection is switched off! KCS starts dialing 4 seconds after entering the off-hook state

5.5.3.2 Busy and Ring Tone Detection

Note: The busy and ring tone detection can be disabled by changing line 91 to:
line 91 ´Z7-B= ,

5.5.3.3 Rings for an Incoming Call

The number of rings for an incoming call (for TS2X/3Y) can be configured as shown below.

config line	connect line 900ms after 2nd ring (=default)	connect line 900ms after the first ring	connect line during the first ring
102	´fH-C+ ,	not used	not used
103	´RH-Df ,	´R**H-C+** ,	´R**H-C+** ,
117	:84 00 00 00 00 00 5A ..	:84 00 00 00 00 00 5A ..	:**00** 00 00 00 00 00 **00** ..

5.5.4 E&M Standard Configuration

Note: Only config lines with different entries are described here. The rest of the lines are identical to the UTF standard configuration

```
66   :7F,     DC/DC                          Converter always on
200  :0C 00 10 1D 22 1D 1D,       (13)      Conn-Req
201  :06 00 10 00 2A 31 31,       (14)      Idle-Req
202  :11 00 00 31 18 31 31,       (15)      Call-Rsp
203  :0C 00 4m 27 27 27 31,       (16)      Disc-Req
204  :00 00 00 00 00 00 00,       (18)      Receive part
205  :0F cc cc 19 19 19 31,       (19)
206  :dd dd dd 1A 1A 1A 31,       (1A)
207  :08 43 E8 1B 1B 1B 31,                 => with Pulse dialing
     :08 C3 E8 1B 1B 1B 31,                 => with DTMF dialing
208  :0C 00 2m 1C 1C 1C 31,       (1B)
209  :0C 00 1m 16 07 31 31,       (1C)
210  :11 00 00 1E 1E 1E 31        (1D)      Transmite part
211  :0C 00 2m 1F 1F 1F 31,       (1E)
212  :aa aa aa 23 20 23 23,       (1F)
213  :07 00 02 16 21 16 31,       (20)
214  :bb bb bb 24 06 24 23,       (21)
215  :13 00 20 03 03 03 31,       (22)
216  :13 00 03 16 16 16 31,       (23)
217  :13 00 15 16 16 16 31,       (24)
218  :00 00 00 00 00 00 00,
219  :00 00 00 00 00 00 00,
220  :0C 00 10 28 27 28 31,       (27)      disconnect part
221  :0F 00 32 29 29 29 31,       (28)
222  :11 00 01 03 03 03 31,       (29)
223  :0C 00 10 00 02 31 31,       (2A)      idle part
224  :00 00 00 00 00 00 00,
225  :00 00 00 00 00 00 00,
226  :00 00 00 00 00 00 00,
227  :00 00 00 00 00 00 00,
228  :00 00 00 00 00 00 00,
229  :0C 00 1m F1 F0 F0 F0,       (30)      IsConnReq
230  :00 00 31 00 00 00 00,       (31)
```

function	ref.	Seizure acknowledge	Delay dial / Wink start	Immediate Start	BELL DID
Protocol (send example)	M=ye. E=gr. LED	Mouth Ear	Mouth Ear	Mouth Ear	Mouth Ear
check before dial	aa aa aa	Wait for Ear (“E”) 0D 00 45	Wait for falling edge of ear (“F”) 0D 00 46	nothing 0F 00 00	Wait for falling edge of ear (“F”) 0D 00 46
Answer check	bb bb bb	delay 1s 0F 00 64	Wait for Ear (“E”) 0D 00 45	Wait for Ear (“E”) 0D 00 45	Wait for Ear (“E”) 0D 00 45
call ack. delay	cc cc cc	120ms 0F 00 0C	120ms 0F 00 0C	no delay 0F 00 00	120ms 0F 00 0C
call ack. signal	dd dd dd	Set Mouth 0C 00 20	Wink (200ms) 0C 16 20	nothing 0F 00 00	Wink (200ms) 0C 16 21
Mouth wire	m	0 = AQV	0 = AQV	0 = AQV	1 = Blockrel.

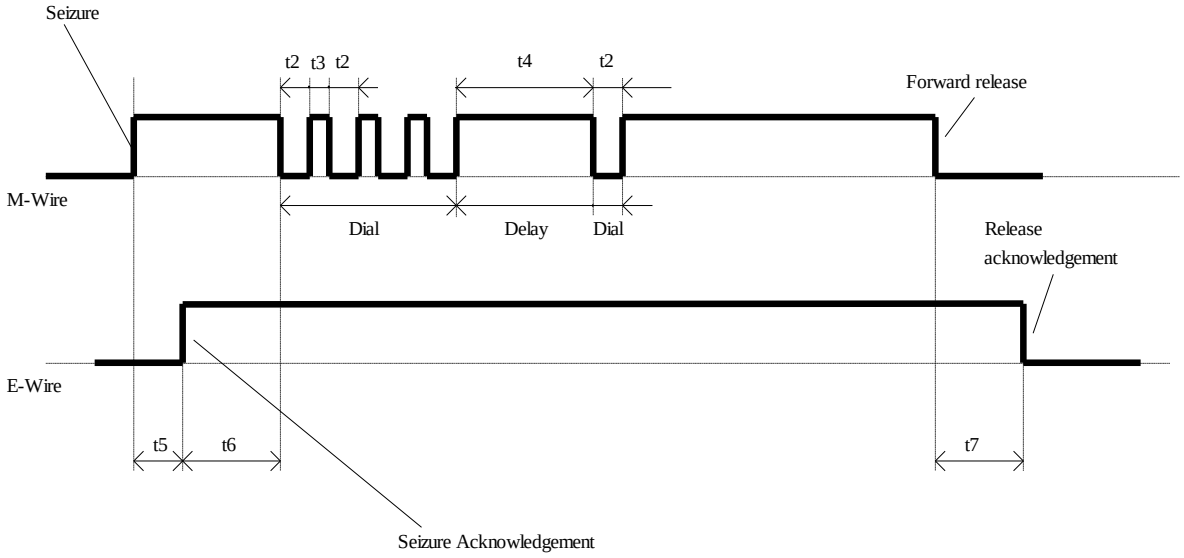
5.5.4.1 E&M Timing Specifications

This chapter gives detailed timing information about the supported E&M protocols. Each protocol is explained with a timing diagram which is valid when using pulse dialing. The relevant timing values are explained in a separate chapter both for sending and reception. Times created by KCS are shown with there nominal value. All times created by the PABX must be within a specified range. In this case both minimum and maximum values are specified.

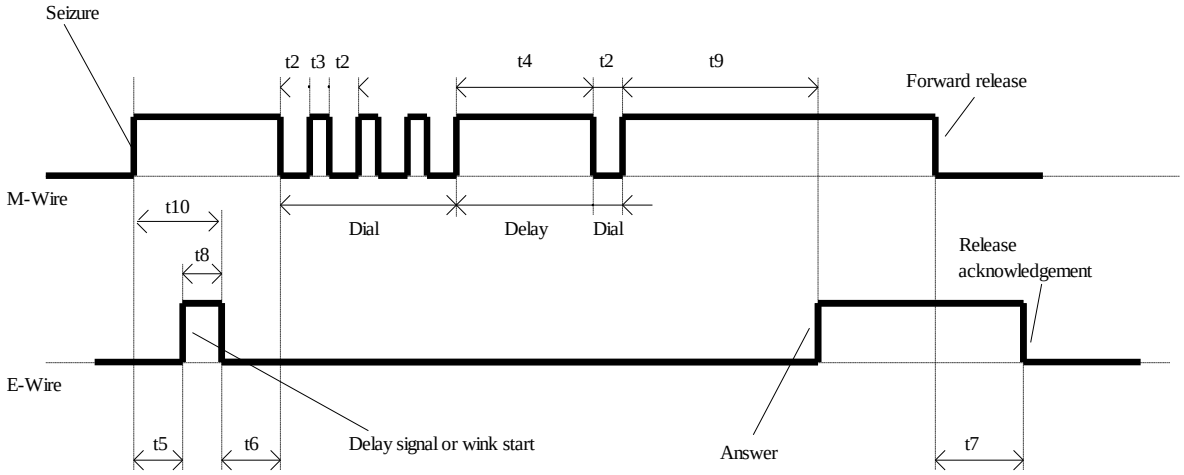
Note that DTMF digits are sent via speech path (a, b wires) and not with E&M-wires!
The timing is basically the same as with pulse dialing with the following exceptions

1) T2 is used as time of the DTMF pulse.
2) T3 does not exist.

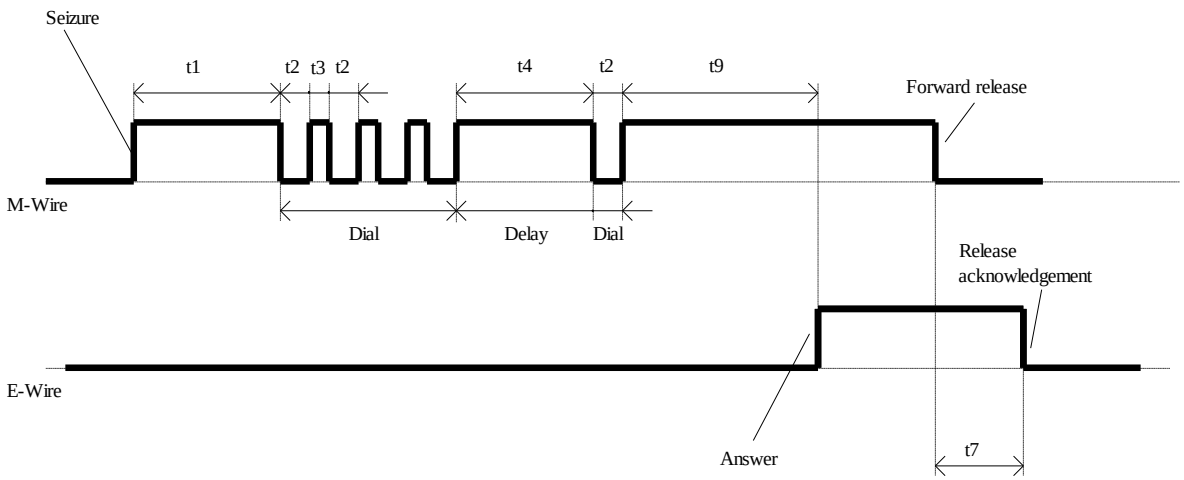
5.5.4.1.1 Seizure Acknowledgement Protocol



5.5.4.1.2 Delay Dial/Wink Start or Bell DID Protocol



5.5.4.1.3 Immediate Start Protocol



5.5.4.1.4 Sending with KCS to PABX

ref.	description	formula [1)]	default value
t1	delay between seizure and 1st DID digit	Conf[212][2,3] * 10ms + t6	2050ms
t2	duration of dial pulse or DTMF digit	Conf[62][1] * 10ms	60ms
t3	delay between dialing pulses or DTMF digits	Conf[63][1] * 10ms	40ms
t4	delay between digits	Conf[64][1] * 10ms	900ms
t5(min)	min. delay between seizure and wink signal	cannot be configured	0ms
t5(max)	max. delay between seizure and ackn. signal (time between seizure in wink is not checked)	Conf[119][2,3] * 10ms	35s
t6	delay before dial	Conf[61][1] * 10ms + 2s [3)]	2050ms
t7	time between forward release and release acknowledge	cant be configured. Time is not checked by TCOSS.	
	time between backward release and release acknowledge	cant be configured	<1min [2)]
t8(min)	min. length of wink signal	Conf[121][2,3] * 10ms + 10ms	20ms
t8(max)	max. length of wink signal	not checked	
t10(max)	max. delay between Seizure and falling edge of wink	Conf[122][2,3] * 10ms	12s

The expression “Conf[line][pos]” refers to config positions as shown in the example below:

1) Conf[62][1] position 1 of config line 62
   Conf[119][2,3] positions 2 and 3 (where pos. 2 is MSB and pos. 3 is LSB) of config line 119
2) Backward release will be detected within 3.5s during call establishing phase (before KCS has detected the fax prompt of the receiver). After the fax prompt has been detected, the ear line is not sample anymore. This means that backward release is detected only after fax protocol fails with an time-out error (e.g. error XT). This may usually take up to 1 minute. If fax transmission is successfully, both sender and receiver disconnects the line approximately at the same time
3) The 2s delay in t6 is produced by the pause characters “P” at the begin of config lines 132 and 133

5.5.4.1.5 Receiving with KCS from PABX

ref.	description	formula	default value
t1(min)	min. delay between seizure and 1st DID digit	cannot be configured	500ms [1)]
t1(max)	max. delay between seizure and 1st DID digit	=t9	5s
t2(min)	min. duration of dial pulse	Conf[124][6,7] * 10ms + 20ms	40ms
	min. duration of DTMF tone	Conf[180][1,2] * 139us + 40ms	40ms
t2(max)	max. duration of dial pulse	Conf[123][2,3] * 10ms	200ms
	max. duration of DTMF tone	=t9	5s
t3(min)	min. delay between dialing pulses	Conf[124][2,3] * 10ms + 10ms	20ms
t3(max)	max. delay between dialing pulses	Conf[123][2,3] * 10ms	200ms
t4(min)	min. delay between digits	Conf[123][2,3] * 10ms + 10ms	210ms
	min. pause between DTMF tones	Conf[180][3,4] * 139us + 40ms	40ms
t4(max)	max. delay between digits or DTMF tones	=t9	5s
t5	delay between seizure and acknowledge or wink signal	Conf[205][2,3] * 10ms ... Conf[205][2,3] * 10ms + 500ms	120ms .. 620ms [1)]
t6(min)	min. delay before dial	cannot be configured	0ms
t6(max)	max. delay before dial	=t9	5s
t7	time between backward release and release acknowledge	cannot be configured. Time is not checked by TCOSS.	
	time between forward release and release acknowledge	cannot be configured	<6s [3)]
t8	length of wink signal	Conf[206][2,3] * 10ms	200ms
t9	delay between last dialed digit and answer signal	“DID reception time-out” as configured in general parameters mene of wconfig. [2)]	5s

1) The ear line is sampled every 500ms in the idle state. This means that time t5 has an additional delay between 0 and 500ms. Furthermore, the reception of the first digit with immediate start protocol, cannot be guaranteed within the first 500ms after the Ear signal is activated.

2) Time T9 is reduced to 20ms, if a complete number is detected by the incoming number conversion table.

3) Forward release will be detected within 5s during call establishing phase (before KCS has detected the fax prompt of the receiver). After the fax prompt has been detected, the ear line is not sample anymore. This means that backward release is detected only after fax protocol fails with an time-out error (e.g. error XY). This will usually take 6 seconds. If fax reception is successfully, both sender and receiver disconnects the line approximately at the same time.

5.5.5 Tips for Configuring the E&M Channels

5.5.5.1 DID Together with DTMF

It is possible to use DID and DTMF configuration at the same time with one channel. Therefore the DTMF time-out in the general parameters menu of config program must be set.

5.5.5.2 Check of the E-Signal

KCS recognizes when the PABX releases the E&M line by resetting the E-signal. The ear signal of the TS2Z will be checked while KCS is waiting for a valid frame from the other station.

Config line 229 is used with **all DID plans** to detect a line disconnect. It's standard value is set as follows:

type of connection	config line 229	meaning
normal connection	`0F 00 00 F1 F0 F0 F0`	no line disconnect detection
DID plan 2,3 and 4	`0C 00 10 F1 F0 F0 F0`	check Ear signal
Bell DID	`0C 00 11 F1 F0 F0 F0`	check Ear signal
ISDN	`12 00 05 F1 F0 F0 F0`	check disconnect from ISDN D-channel

5.5.6 Tips How to Configure Code Pages for the FAX Module

5.5.6.1 Adapting Code Pages to Country-Specific Characters

To create new characters with TCOSS code page follow this instruction:

5.5.6.1.1 Basics

TCOSS characters are created by taking the incoming character code to point to a 16bit table in TCOSS Config file (lines 148-179 for UTF [analogue and E&M Transputerfax] and lines 143-174 for ULL [Line Printer]).

This table is created by combining a 10Bit number for the standard character and a 6Bit number for the diacritical mark (see tables 1 and 2). These two images are overlaid for the actual character image.

Diacritical mark Bits 0-5						Character Bits 0-9										
5	4	3	2	1	0	9	8		7	6	5	4	3	2	1	0
High Byte (lower address)								Low Byte (higher address)								

5.5.6.1.2 How to Change a Character

To find the appropriate code for the new character use the character Tables below.

Add the values of the selected character and the diacritical code and write this value to the calculated config position. By putting both values together in one 16Bit value (shift diacritical mark value to highest 6 Bit results by multiplying with 4).

Then put diacritical mark value to the lower byte and character value to the higher byte.

The new table will be available after saving it and rebooting TCOSS.

5.5.6.1.3 Example

Create character "Ã" as image for code 0xC3 (dec. 195) for UTF.

From tables below you find that “Ã” can be created by an overlay of characters “A” (0x41) and “˜” (0x0C). To bring 0x0C to the upper 6 Bit position multiply it by 4 (4 x 12 = 48 = 0x30). So you have to insert 0x3041 to the appropriate location in the TCOSS Config file.

Find the location of the character. Each config line holds codes for 8 characters. For UTF the table starts with config line 148. For code 0xC3 the appropriate config line is 195 / 8 = 24 + 148 = 172, Bytes 7 and 8 (excess of division *2 +1). Change these to 0x30 and 0x41. Now save this configuration.

After restarting TCOSS the new code page will be active and ready for testing.

5.5.6.1.4 Tables

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0x					α	β	γ	δ	ε	ζ	η	θ				
1									ν	ξ	ο	ρ	σ	τ	υ	φ
2		!	"	#	$	%	&	'	(	)	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	x
8	C	G	Ą	L	I	L	O	R	S	T	Z	ı	t	1	A	A
9	E	æ	Æ	Y	D	d				0	U	¢	£	¥	₨	ƒ
A						N	a̲	o̲	¿	⌐	¬	½	¼	¡	«	»
B	ς	€		ψ	ω											
C	π	$	Ð	ı	Ħ	x	IJ	L·	Ł		³	Œ	и	Þ	₮	Ŋ	ʼn
D	κ	¤	đ	ð	ħ	ı	ij	l·	ł	ø	œ	¾	þ	ŧ	ŋ	A
E	B	β	Γ	Δ	E	Z	μ	H	Θ	I	Ω	K	Λ	Ø	M	N
F	Ξ	±	O	Π	P	Σ	÷	T	°	Y	Φ	X	Ψ	²	λ	

Table 1 – Standard Character set

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0x		´	´	´	`	`	^	^	¨	¨	"	"	ˇ	ˇ	ˇ	ˇ
1	″	°	°	˙	˙	¯	¯	¸	¸	¸	ˊ	ˊ				
2	´	¯	˘	˙	¨	¨	°	¸	˙	˝	˛	ˇ				
3																

Table 2 – Diacritical marks

5.6 CONFIGURATION FOR THE ISDN FAX MODULE (UIF)

```
01  '1,           initial state (0,1,2)
02  'F,           channel groups (' ',A..Z)
03  'FC1,         channel type (' ',F,X,T), channel capability
04  '2,           language (1,2)
05  '0,           CORR default (0,1)
06  ',            line status comment
07  'A,           NODES default (A..Z)
08  :00,          number of characters for cost accounting
09  '0,           offset in reference for cost accounting
10  'H,           number series for send commands (A..Z)
11  '1,           locking of send commands
12  ',            sending time mapped to low priority
13  '9,           interval between call retries (1..T)
14  :FF 00,       send test timer value in 0.1 sec. (pos. 1)
15  ',            default channel for ..C, ..S, ..L
16  'JA,          Log file of trans. mess. (' ',0..9,A..Z), all/success. only
17  'A ,          drive for log file of trans. mess. (A,B), page sent counter
18  ,             BACK RECEPTION
19  'A,           drive for back received mess
20  'RT,          number series (A..Z), 1st char. for reference (0..9,A..Z)
21  'FOUT,        address for autom. printout of back received mess
22  '0,           auto. send print. and active acknowledge. can't be deleted
23  ,             RECEPTION
24  '0,           automatic distribution (0,1,2)
25  'A,           drive for received mess
26  'FT,          number series (A..Z), 1st char. for reference (0..9,A..Z)
27  'FIN,         address for autom. printout of received mess
28  '0,           autom. recept. printout and distribution can't be deleted
29  'I,           Log file of received mess. (' ',0..9,A..Z)
30  'A,           drive for log file of rec. mess. (A,B), page rec. counter
31  ,             TEST
32  '0,           reserved
33  :FE,          TCI code output line length
34  :03 E7,       Maximum number of pages = 999
35  '0,           automatic printout of CF non-delivery notifications
36  :00,          reserved
37  ',            reserved
38  :08 00        reference with 8 characters in log file, entry mode
39  :0F           lines checked for automatic distribution
40  'A ,          drive for masks, default mask
41  '10110,       termination
42  'FAX$*        output channel with mask for active acknowledge
43  '87654321-,   new send status for BREAK = 1
44  '876543210,   new send status for BREAK = 2
45  '-------10,   new send status for BREAK = 3
46  '-------10,   new send status for BREAK = 4
47  '-------10,   new send status for BREAK = 5
48  :00 00 00,    ASP parameters
49  :00 00 00,    ASP parameters
```

```
50                          TUM
51    'TEST,                answerback
52    '+11 111 111111,      fax number
53    '3,                   full image backreception
54    ,                     Transmission style / speed
55    'E960,                9600 / 14400 bps, ECM, no 2dim.
56    '0,                   retransmission mode
57    '0,                   send break page
58    '0,                   expansion of last page to specified format
59    ,                     Dial parameters (used with Callback switch only)
60    '1,                   dialing (pulse/dtmf/sweden)
61    :05,                  delay before first dial pulse
62    :08,                  length of dial pulse
63    :64 64,               delay between dial pulses
64    :08,                  delay between digits
65    :05,                  delay after last dial pulse
66    :04 ,                 not used for ISDN
67    :0A ,                 not used for ISDN
68    :28 ,                 not used for ISDN
69    :05 ,                 not used for ISDN
70    ,                     FACSIMILE procedure
71    :32 32,               timeout for receiving valid identification / DCS
                            timeout
72    :07 14 00,            Del. V29/V21, CFR/Page, FF-Seq.
73    :1E 46 3C,            wait 3s/7s for response/command, ECM timeout
74    :28,                  max. frame length 4s
75    :14,                  min. carrier lost time 200ms
76    :0A,                  1s HDLC-preamble
77    :0F,                  1.5s training sequence
78    :23,                  3.5s CNG-tone pause
79    :05,                  0.5s CNG-tone
80    :00,                  receiver threshold = -43dBm
81    :26,                  EPT with V.27 and V.17/V.33
82    ,                     =========  signal detection  =========
83    ,                     STATE machine
84    'A2-4a3+    ,         ´A´ dial tone detector
85    'a2-4b3+    ,
86    'b2-4c3+    ,
87    'c2-4-3+    ,
88    'W1-5+      ,         'W' wait for any tone
89    'P0+        ,         'P' 1s pause
90    'Q1+        ,         'Q' 4s pause
91    'Z7-8zB=    ,         'Z' ring/busy detection
92    'z7-9+A*B=  ,
93    'CE-3+A+    ,         'C' Callback ring-back Signal
94    'DE-Dd      ,         'D' wait for call-back
95    'dE-C+      ,
96    'BH-3+      ,         'B' Check CB prompt
97    '           ,
98    'EE-F+      ,         'E' wait 35s for ear
99    'FH-G+      ,         'F' wait 12s for ear pulse
100   'IH-GJ      ,         'I' wait 12s for 1st pulse of digit
101   'JI-J+      ,         'J' wait 4 next pulse of digit
102   'fH-C+      ,
103   'RH-Df      ,         'R' Ring indication
104   ,                     =========  EVENTS  =========
```

	Chnl.	tonmin	tonmax	toffmin	toffmax	Tmin	Tmax	ton/T min	Ton/T max	
105	:00	00 64	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	0
106	:00	01 90	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	1
107	:00	07 08	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	2
108	:01	00 50	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	3
109	:81	00 07	00 4B	00 0A	00 5F	00 19	00 8C	00 00	00 43,	4
110	:01	00 14	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	5
111	:00	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	6
112	:06	01 2C	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	7
113	:01	00 02	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	8
114	:81	00 08	00 50	00 08	00 42	00 00	00 00	00 00	00 00,	9
115	:81	00 05	00 00	00 64	00 00	00 00	00 00	00 00	00 00,	A
116	:07	00 08	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	B
117	:84	00 00	00 00	00 5A	00 00	00 00	00 00	00 00	00 00,	C
118	:84	00 00	00 00	00 5A	02 58	00 00	00 00	00 00	00 00,	D
119	:00	0D AC	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	E
120	:05	00 01	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	F
121	:85	00 01	00 00	00 01	00 00	00 00	00 00	00 00	00 00,	G
122	:00	04 B0	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	H
123	:06	00 14	00 00	00 00	00 00	00 00	00 00	00 00	00 00,	I
124	:45	00 01	00 00	00 02	00 00	00 00	00 00	00 00	00 00,	J

```
125  ,
126  :02 00 72 74 C7 5C 02 EE 72 74
     C7 5C 00 44 7F BA,
127  :00 00 00 00 00 00 00 00 00 00
     00 00 00 00 00 00,
128  :0F A0 2A F8 D0 64 0F A0 2A F8
     D0 64 00 22 7F DC,
129  :21 ,
130  ,
131  '                        ,          automatic prefix for internal
                                         sending
132  'A                       ,
133  ' ,
134  :00 00 00 00,                       do not use a failure counter
135  :64 64 64 64,                       Output power = J6
136  :01 4E 78 37 10 11 3B 5F 05,        A4H
137  :11 2A 2D A0 21 08 2E 84 05,        A4Q
138  :00 2A 38 37 0C 0C 57 86 05,        BDH
139  :10 24 2D A0 19 06 3D B1 05,        BDQ
140  :28 11 00 82 ,                      page settings, header line
                                         margin, Kofax-logo
141  ,
142  :13,                                header line settings
143  :01 04 00,                          Rec. On/Off; bit rate; unused
144  :7F 0A 05 03 04 02 10 09 04 02,     max. noise levels
145  :02 05 10 78,                       page acceptability limits
146  '1,                                 Rec. with/without fine mode
147  ´0,                                 Date format
```

```
148  :00 00 00 01 00 02 00 03 00 04 00 05 00 06 00 07,          fax code
149  :00 08 00 09 00 0A 00 0B 00 0C 00 0D 00 0E 00 0F,          fax code
150  :00 10 00 11 00 12 00 13 00 14 00 15 00 16 00 17,          fax code
151  :00 18 00 19 00 1A 00 1B 00 1C 00 1D 00 1E 00 1F,          fax code
152  :00 20 00 21 00 22 00 23 00 24 00 25 00 26 00 27,          fax code
153  :00 28 00 29 00 2A 00 2B 00 2C 00 2D 00 2E 00 2F,          fax code
154  :00 30 00 31 00 32 00 33 00 34 00 35 00 36 00 37,          fax code
155  :00 38 00 39 00 3A 00 3B 00 3C 00 3D 00 3E 00 3F,          fax code
156  :00 40 00 41 00 42 00 43 00 44 00 45 00 46 00 47,          fax code
157  :00 48 00 49 00 4A 00 4B 00 4C 00 4D 00 4E 00 4F,          fax code
158  :00 50 00 51 00 52 00 53 00 54 00 55 00 56 00 57,          fax code
159  :00 58 00 59 00 5A 00 5B 00 5C 00 5D 00 5E 00 5F,          fax code
160  :00 60 00 61 00 62 00 63 00 64 00 65 00 66 00 67,          fax code
161  :00 68 00 69 00 6A 00 6B 00 6C 00 6D 00 6E 00 6F,          fax code
162  :00 70 00 71 00 72 00 73 00 74 00 75 00 76 00 77,          fax code
163  :00 78 00 79 00 7A 00 7B 00 7C 00 7D 00 7E 00 7F,          fax code
164  :5C 43 20 75 04 65 18 61 20 61 10 61 44 61 5C 63,          fax code
165  :18 65 20 65 10 65 20 8B 18 8B 10 8B 24 8E 48 8F,          fax code
166  :08 90 00 91 00 92 18 6F 20 6F 10 6F 18 75 10 75,          fax code
167  :20 79 28 99 2C 9A 00 9B 00 9C 00 9D 00 9E 00 9F,          fax code
168  :04 61 04 8B 04 6F 04 75 30 6E 30 A5 00 A6 00 A7,          fax code
169  :00 A8 00 A9 00 AA 00 AB 00 AC 00 AD 00 AE 00 AF,          fax code
170  :00 B0 00 B1 80 00 00 B3 00 B4 84 00 88 00 8C 00,          fax code
171  :90 00 94 00 98 00 9C 00 A0 00 A4 00 A8 00 AC 00,          fax code
172  :00 C0 00 C1 00 C2 00 C3 00 C4 00 C5 00 C6 00 C7,          fax code
173  :00 C8 00 C9 00 CA 00 CB 00 CC 00 CD 00 CE 00 CF,          fax code
174  :00 D0 00 D1 00 D2 00 D3 00 D4 00 D5 00 D6 00 D7,          fax code
175  :00 D8 00 D9 00 DA 00 DB 00 DC 00 DD 00 DE 00 DF,          fax code
176  :00 E0 00 E1 00 E2 00 E3 00 E4 00 E5 00 E6 00 E7,          fax code
177  :00 E8 00 E9 00 EA 00 EB 00 EC 00 ED 00 EE 00 EF,          fax code
178  :00 F0 00 F1 00 F2 00 F3 00 F4 00 F5 00 F6 00 F7,          fax code
179  :00 F8 00 F9 00 FA 00 FB 00 FC 00 FD 00 FE 00 FF,          fax code
180  :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 EB E0
181  :03 00 00 14 01 31 31,        (00)  =====  ISDN Statemachine  =====
182  :02 00 00 13 13 31 31,        (01)
183  :01 00 00 15 15 31 31,        (02)  ->Call-Ind
184  :0B 00 00 14 14 31 31,        (03)  ->Disc-Ind
185  :00 00 00 00 00 00 00,        (04)
186  :0F 00 32 16 16 16 16,        (05)
187  :09 00 00 05 05 31 31,        (06)  ->Conn-Conf
188  :0F 00 C8 08 08 31 31,        (07)  ->Conn-Ind (Line without DTMF)
     :08 83 E8 08 08 08 08,              line if DTMF input is configured
189  :0A 00 00 06 16 31 31,        (08)
190  :0D 00 42 0D 0A 31 31,        (09)  ->Conn-ConfCB
191  :07 00 00 16 06 16 31,        (0A)
192  :0B 00 20 0C 0C 31 31,        (0B)
193  :01 00 00 07 07 31 31,        (0C)
194  :06 00 00 0E 0B 31 31,        (0D)
195  :13 00 20 16 16 31 31,        (0E)
196  :00 00 00 00 00 00 00,        (0F)
197  :00 00 00 00 00 00 00 ,       (10)
198  :00 00 00 00 00 00 00 ,       (11)
199  :00 00 00 00 00 00 00 ,       (12)
200  :12 00 02 1D 06 21 31 ,       (13)  ->Conn-Req
201  :12 00 01 00 02 31 31 ,       (14)  ->Idle-Req
202  :12 00 03 03 07 31 31 ,       (15)  ->Call-Rsp
```

```
203  :12 00 04 03 03 03 31 ,       (16)  ->Disc-Req

   203  :12 00 04 03 03 03 31 ,       (16)  ->Disc-Req
   204  :00 00 00 00 00 00 00,       (17)
   205  :00 00 00 00 00 00 00,       (18)
   206  :00 00 00 00 00 00 00,       (19)
   207  :00 00 00 00 00 00 00,       (1A)
   208  :00 00 00 00 00 00 00,       (1B)
   209  :00 00 00 00 00 00 00,       (1C)
   210  :0F 00 64 1E 1E 1E 31,       (1D)
   211  :12 00 04 1F 1F 1F 31,       (1E)
   212  :12 23 01 22 20 31 31,       (1F)
   213  :12 00 03 22 09 21 31,       (20)
   214  :12 00 04 03 03 03 31,       (21)
   215  :13 00 03 03 03 03 31,       (22)
   216  :00 00 00 00 00 00 00,       (23)
   217  :00 00 00 00 00 00 00,       (24)
   218  :00 00 00 00 00 00 00,       (25)
   219  :00 00 00 00 00 00 00,       (26)
   220  :00 00 00 00 00 00 00,       (27)
   221  :00 00 00 00 00 00 00,       (28)
   222  :00 00 00 00 00 00 00,       (29)
   223  :00 00 00 00 00 00 00,       (2A)
   224  :00 00 00 00 00 00 00,       (2B)
   225  :00 00 00 00 00 00 00,       (2C)
   226  :00 00 00 00 00 00 00,       (2D)
   227  :00 00 00 00 00 00 00,       (2E)
   228  :00 00 00 00 00 00 00,       (2F)
   229  :12 00 05 F1 F0 F0 F0,       (30)
   230  :00 00 00 00 00 00 00,       (31)
   231  :00 00 00 00 ,                     FXC tracer
   232  :00 00 00 00 ,                     FXC tracer
   233  :00 00 00 00 ,                     FXC tracer
   234  :00 00 00 00 ,                     FXC tracer
   235  ´FXI$ FXI$ FAX$,                   inbound/user/originator prefix for
                                           DID
   236  :10,                               max. length of DID inbound Number
   237  :01 01 01,                         pw, TSI, number match required
   238  ´FXI$ FXI$ FAX$,                   inbound/user/originator prefix for
                                           DTMF
   239  :10,                               max. length of DID inbound Number
   240  :01 01 01,                         pw, TSI, number match required
   241  :00 00 00 78 04 C0 00 10,   received   page layout
   242  :00 00 00 00 00 00 00 00 00 00 00 00,    hex-, DID-, Sign-, Modem-,
                                                 Binary- and LS1 perf. counter
                                                 Trace
   243  'To:%C_________________% From:%A_________________% Fax:%T_________,
   244  '________%          at:%D%  Doc:%N%  Page:%P%/%Q%                 ,
   245  '                                                                 ,
   246  '                                                                 ,
   247  ,
   248  ,
   249  '  ,ISDN reference channel
   250  :01 00 FF 00 00,            250
   251  :00 FF FF FF FF FF,
   252  '0,
   253  '0,
```

```
254   ',                          254-283 number conversion table
255   ',
256   ',
257   ',
258   ',
259   ',
260   ',
261   ',
262   ',
263   ',
264   ',
265   ',
266   ',
267   ',
268   ',
269   ',
270   ',
271   ',
272   ',
273   ',
274   ',
275   ',
276   '8*~=TI~,                   (276-283 default conversion)
277   '80~=0~                     rules for international
278   '8I~=I~,                    /national/internal/unknown
279   '8~=~,                      (number types
280   '@TI~=*~,
281   '@TN~=0~,
282   '@TS~=~,
283   '@~=~,
284   :3C,
285   :05 10,
286   :01 00 00 00 00 00 00 00
287   ,
288   :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00,
289   :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00,
290   ,
291   :00 00 00 00 00 00 00 01 3C 00 00 00 00 00 00 00,
292   ,
293   ,
294   ,
295   :01 00 01 00 00 00 00 00,
296   :00 00 00 00 00 00 00 00,
297   :01 FF FF FF FF FF,
298   :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00,
299   :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00,
```

The default value, for UIF running on TC20, of config lines 126 to 128 is shown below:

```
config line 126    :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00,
config line 127    :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00,
config line 128    :00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00,
```

These lines are used for tone detector filters. Note that these are not required for ISDN. The lines have been changed for compatibility with UTF.

5.7 CONFIGURATION FOR FAX OVER IP MODULE (UFI)

```
1    '1,
2    'F                          ,
3    'FC1,
4    '2,
5    '0,
6    '                         ,
7    'A,
8    :00 ,
9    '0,
10   'H,
11   '1,
12   '    ,
13   '9,
14   :FF 00,
15   '  ,
16   'JA ,
17   'A ,
18   ,
19   'A,
20   'RT,
21   '.FOUT,
22   '0,
23   ,
24   '0,
25   'A,
26   'FT,
27   '.FIN ,
28   '0,
29   'I,
30   'A ,
31   ,
32   '0,
33   :FE ,
34   :03 E7,
35   '0,
36   :00 ,
37   '                         ,
38   :08 00,
39   :0F ,
40   'A ,
41   '10110,
42   'FAX$*                    ,
43   '87654321-,
44   '876543210,
45   '-------10,
46   '-------10,
47   '-------10,
48   :00 00 00,
49   :00 00 00,
50   TUM
51   'TEST            ,
52   '+11 111 111111      ,
53   '3,
```

```
54   ,
55   'E960,
56   '0,
57    '0,
58    '0,
59    ,
60    '1,
61    :05 ,
62    :08 ,
63    :64 64 ,
64    :08 ,
65    :05 ,
66    :04 ,
67    :0A ,
68    :28 ,
69    :05 ,
70    ,
71    :32 32 ,
72    :07 14 00 ,
73    :1E 46 3C ,
74    :1E ,
75    :14 ,
76    :0A ,
77    :0F ,
78    :23 ,
79    :05 ,
80    :00 ,
81    :26 ,
82    ,
83    ,
84    'A2-4a3+    ,
85    'a2-4b3+    ,
86    'b2-4c3+    ,
87    'c2-4-3+    ,
88    'W1-5+      ,
89    'P0+        ,
90    'Q1+        ,
91    'Z7-8zB=    ,
92    'z7-9+A*B=  ,
93    'CE-3+A+    ,
94    'DE-Dd      ,
95    'dE-C+      ,
96    'BH-3+      ,
97    '           ,
98    'EE-F+      ,
99    'FH-G+      ,
100   'IH-GJ      ,
101   'JI-J+      ,
102   'fH-C+      ,
103   'RH-Df      ,
104   ,
105   :00 00 64 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
106   :00 01 90 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
107   :00 07 08 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
108   :01 00 50 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
109   :81 00 07 00 4B 00 0A 00 5F 00 19 00 8C 00 00 00 43 ,
110   :01 00 14 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
```

```
 111   :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
 112   :06 01 2C 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
 113   :01 00 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
 114   :81 00 08 00 50 00 08 00 42 00 00 00 00 00 00 00 00 ,
 115   :81 00 05 00 00 00 64 00 00 00 00 00 00 00 00 00 00 ,
 116   :07 00 08 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
 117   :84 00 00 00 00 00 5A 00 00 00 00 00 00 00 00 00 00,
,
118   :84 00 00 00 00 00 5A 02 58 00 00 00 00 00 00 00 00 ,
119   :00 0D AC 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
120   :05 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
121   :85 00 01 00 00 00 01 00 00 00 00 00 00 00 00 00 00 ,
122   :00 04 B0 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
123   :06 00 14 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ,
124   :45 00 01 00 00 00 02 00 00 00 00 00 00 00 00 00 00 ,
125   ,
126   :02 00 72 74 C7 5C 02 EE 72 74 C7 5C 00 44 7F BA,
127   :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00,
128   :0F A0 2A F8 D0 64 0F A0 2A F8 D0 64 00 22 7F DC,
129   :21 ,
130   ,
131   '                                          ,
132   'A                                         ,
133   ' ,
134   :00 00 00 00 ,
135   :64 64 64 64 ,
136   :01 4E 78 37 10 11 3B 5F 05 ,
137   :11 2A 2D A0 21 08 2E 84 05 ,
138   :00 2A 38 37 0C 0C 57 86 05 ,
139   :10 24 2D A0 19 06 3D B1 05 ,
140   :28 11 00 82 ,
141   ,
142   :13 ,
143   :01 04 00 ,
144   :7F 0A 05 03 04 02 10 09 04 02,
145   :02 05 10 78,
146   '1,
147   '0,
148   :00 00 00 01 00 02 00 03 00 04 00 05 00 06 00 07 ,
149   :00 08 00 09 00 0A 00 0B 00 0C 00 0D 00 0E 00 0F ,
150   :00 10 00 11 00 12 00 13 00 14 00 15 00 16 00 17 ,
151   :00 18 00 19 00 1A 00 1B 00 1C 00 1D 00 1E 00 1F ,
152   :00 20 00 21 00 22 00 23 00 24 00 25 00 26 00 27 ,
153   :00 28 00 29 00 2A 00 2B 00 2C 00 2D 00 2E 00 2F ,
154   :00 30 00 31 00 32 00 33 00 34 00 35 00 36 00 37 ,
155   :00 38 00 39 00 3A 00 3B 00 3C 00 3D 00 3E 00 3F ,
156   :00 40 00 41 00 42 00 43 00 44 00 45 00 46 00 47 ,
157   :00 48 00 49 00 4A 00 4B 00 4C 00 4D 00 4E 00 4F ,
158   :00 50 00 51 00 52 00 53 00 54 00 55 00 56 00 57 ,
159   :00 58 00 59 00 5A 00 5B 00 5C 00 5D 00 5E 00 5F ,
160   :00 60 00 61 00 62 00 63 00 64 00 65 00 66 00 67 ,
161   :00 68 00 69 00 6A 00 6B 00 6C 00 6D 00 6E 00 6F ,
162   :00 70 00 71 00 72 00 73 00 74 00 75 00 76 00 77 ,
163   :00 78 00 79 00 7A 00 7B 00 7C 00 7D 00 7E 00 7F ,
164   :5C 43 20 75 04 65 18 61 20 61 10 61 44 61 5C 63 ,
165   :18 65 20 65 10 65 20 8B 18 8B 10 8B 24 8E 48 8F ,
166   :08 90 00 91 00 92 18 6F 20 6F 10 6F 18 75 10 75 ,
```

```
167  :20 79 28 99 2C 9A 00 9B 00 9C 00 9D 00 9E 00 9F ,
168  :04 61 04 8B 04 6F 04 75 30 6E 30 A5 00 A6 00 A7 ,
169  :00 A8 00 A9 00 AA 00 AB 00 AC 00 AD 00 AE 00 AF ,
170  :00 B0 00 B1 80 00 00 B3 00 B4 84 00 88 00 8C 00 ,
171  :90 00 94 00 98 00 9C 00 A0 00 A4 00 A8 00 AC 00 ,
172  :00 C0 00 C1 00 C2 00 C3 00 C4 00 C5 00 C6 00 C7 ,
173  :00 C8 00 C9 00 CA 00 CB 00 CC 00 CD 00 CE 00 CF ,
174  :00 D0 00 D1 00 D2 00 D3 00 D4 00 D5 00 D6 00 D7 ,
175  :00 D8 00 D9 00 DA 00 DB 00 DC 00 DD 00 DE 00 DF ,
176  :00 E0 00 E1 00 E2 00 E3 00 E4 00 E5 00 E6 00 E7 ,
177  :00 E8 00 E9 00 EA 00 EB 00 EC 00 ED 00 EE 00 EF ,
178  :00 F0 00 F1 00 F2 00 F3 00 F4 00 F5 00 F6 00 F7 ,
179  :00 F8 00 F9 00 FA 00 FB 00 FC 00 FD 00 FE 00 FF ,
180  :00 00 00 00 00 00 00 00 00 00 00 00 00 00 D8 00 EB E0 ,
181  :03 00 00 14 01 31 31,              181 (00)   ->Idle-Conf
182  :02 00 00 13 13 31 31,              182 (01)
183  :01 00 00 15 15 31 31,              183 (02)   ->Call-Ind
184  :0B 00 00 14 14 31 31,              184 (03)   ->Disc-Ind
185  :00 00 00 00 00 00 00,              185 (04)
186  :00 00 00 00 00 00 00,              186 (05)
187  :09 00 00 16 16 31 31,              187 (06)   ->Conn-Conf
188  :0F 00 C8 08 08 31 31,              188 (07)   ->Conn-Ind (Line without
                                                    DTMF)
189  :0A 00 00 06 16 31 31,              189 (08)
190  :0D 00 42 0D 0A 31 31,              190 (09)   ->Conn-ConfCB
191  :07 00 00 16 06 16 31,              191 (0A)
192  :0B 00 20 0C 0C 31 31,              192 (0B)
193  :01 00 00 07 07 31 31,              193 (0C)
194  :06 00 00 0E 0B 31 31,              194 (0D)
195  :13 00 20 16 16 31 31,              195 (0E)
196  :00 00 00 00 00 00 00,              196 (0F)
197  :00 00 00 00 00 00 00,              197 (10)
198  :00 00 00 00 00 00 00,              198 (11)
199  :00 00 00 00 00 00 00,              199 (12)
200  :12 00 02 1D 06 21 03,              200 (13)   ->Conn-Req
201  :12 00 01 00 02 31 31,              201 (14)   ->Idle-Req
202  :12 00 03 03 07 31 31,              202 (15)   ->Call-Rsp
203  :12 00 04 03 03 03 31,              203 (16)   ->Disc-Req
204  :00 00 00 00 00 00 00,              204 (17)
205  :00 00 00 00 00 00 00,              205 (18)
206  :00 00 00 00 00 00 00,              206 (19)
207  :00 00 00 00 00 00 00,              207 (1A)
208  :00 00 00 00 00 00 00,              208 (1B)
209  :00 00 00 00 00 00 00,              209 (1C)
210  :0F 00 64 1E 1E 1E 31,              210 (1D)
211  :12 00 04 1F 1F 1F 31,              211 (1E)
212  :12 23 01 22 20 31 31,              212 (1F)
213  :12 00 03 22 09 21 31,              213 (20)
214  :12 00 04 03 03 03 31,              214 (21)
215  :13 00 03 03 03 03 31,              215 (22)
216  :00 00 00 00 00 00 00,              216 (23)
217  :00 00 00 00 00 00 00,              217 (24)
218  :00 00 00 00 00 00 00,              218 (25)
219  :00 00 00 00 00 00 00,              219 (26)
220  :00 00 00 00 00 00 00,              220 (27)
221  :00 00 00 00 00 00 00,              221 (28)
222  :00 00 00 00 00 00 00,              222 (29)
```

```
223  :00 00 00 00 00 00 00,              223 (2A)
224  :00 00 00 00 00 00 00,              224 (2B)
225  :00 00 00 00 00 00 00,              225 (2C)
226  :00 00 00 00 00 00 00,              226 (2D)
227  :00 00 00 00 00 00 00,              227 (2E)
228  :00 00 00 00 00 00 00,              228 (2F)
229  :12 00 05 F1 F0 F0 F0,               229 (30)
230  :00 00 00 00 00 00 00,              230 (31)
231  :00 00 00 00,
232  :00 00 00 00,
233  :00 00 00 00,
234  :00 00 00 00,
235  'FXI$ FXI$ FAX$,
236  :10,
237  :01 01 01,
238  'FXI$ FXI$ FAX$,
239  :10,
240  :01 01 01,
241  :00 00 00 78 04 C0 00 10,
242  :00 00 00 00 00 00 00 00 00 00 00 00,            242
243  'To:%C_________________% From:%A_________________% Fax:%T_________,
244  '________%           at:%D%  Doc:%N%  Page:%P%/%Q%                ,
245  '                                                                 ,   245
246  '                                                                 ,
247  ,
248  '  ,
249  ,
250  :01 00 FF 00 00,                                        250
251  :00 FF FF FF FF FF,
252  '0,
253  '0,
254  ',
255  ',                                                      255
256  ',
257  ',
258  ',
259  ',
260  ',                                                      260
261  ',
262  ',
263  ',
264  ',
265  ',                                                      265
266  ',
267  ',
268  ',
269  ',
270  ',                                                      270
271  ',
272  ',
273  ',
274  ',
275  ',                                                      275
276  '8*~=TI~                                  ,
277  '80~=0~                                   ,
278  '8I~=I~                                   ,
279  '8~=~                                     ,
```

```
280  '@TI~=*~                                    ,          280
281  '@TN~=0~                                    ,
282  '@TS~=~                                     ,
283  '@~=~                                       ,
284  :3C ,
285  :05 10                                                 285
286  :01 00 00 00 00 00 00 00,
287  :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00,
288  ,
289  :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00,
290  ,
291  :00 00 00 00 00 00 00 01 00 00 00 00 00 00 00 00,    291
292  ,
293  ,
294  ,
295  :01 00 01 00 00 00 00 00,                             295
296  :00 00 00 00 00 00 00 00,                             296
297  :01 FF FF FF FF FF,                                   297
298  :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00,     298
299  :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00,     299
```

5.8 CONFIGURATION FOR ULL

Note: Only config lines which are used by the ULL module are described here. The rest of the lines are marked as not used!

```
01   '1,         initial state (0,1,2)
02   ',          channel groups (' ',A..Z)
03   'C1,        channel type (' ',F,X,T), channel capability
04   '2,         language (1,2)
05   '0,         CORR default (0,1)
06   ',          Line status comment
07   'A,         NODES default (A..Z)
08   :00,        number of characters for cost accounting
09   '0,         offset in reference for cost accounting
10   'H,         number series for send commands (A..Z)
11   '0,         locking of send commands
12   ',          sending time mapped to low priority
13   '9,         interval between call retries (1..T)
14   :32 00,     send test timwer value in 0.1 sec
15   ',          default channel for ..C, ..S, ..L
16   'JA,        log file of trans. mess. (' ',0..9,A..Z), all/success. only
17   'A ,        drive for log file of trans. mess. (A,B), page sent counter
18   ,           BACK RECEPTION
19   'A,         drive for back received mess
20   'RT,        number series (A..Z), 1st char. for reference (0..9,A..Z)
21   ',          address for automatic printout of back received mess
22   '0,         auto. send print. and active acknowledge. can't be deleted
23   ,           RECEPTION
24   '0,         automatic distribution (0,1,2)
25   'A,         drive for received mess
26   'FT,        number series (A..Z), 1st char. for reference (0..9,A..Z)
27   ',          address for autom. printout of received mess
28   '0,         autom. recept. printout and distribution can't be deleted
29   'I,         log file of received mess. (' ',0..9,A..Z)
```

```
30    'A ,        drive for log file of rec. mess. (A,B), page rec. counter
31    ,           TEST
32    '0,         reserved
33    :FE,        TCI code output line length
34    :03 E7,     Maximum number of pages = 999
35    '0,         automatic printout of CF non-delivery notifications
36    :00,        reserved
37    ',          reserved
38    :08 00,     reference with 8 characters in log file, entry mode
39    :0F         lines checked for automatic distribution
40    'A ,        drive for masks, default mask
41    '10110,     termination
42    ',          output channel with mask for active acknowledgements
43    '876------,           new send status for BREAK = 1
44    '8--------,           new send status for BREAK = 2
45    '8--------,           new send status for BREAK = 3
46    '8--------,           new send status for BREAK = 4
47    '--------0,           new send status for BREAK = 5
48    :00 00 00,            ASP parameters
49    :00 00 00,            ASP parameters
50                          TUM
51    'Kofax plc.,          answerback
52    'F090,                TSI field for laser printer module
53-83                       not used

84       '90,    Laser printer module, default number parameter
85-104   ,       not used
105      :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00,       printer
106      :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00,       init
107      :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00,       sequences
108      :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00,       from 105
109      :00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00,       up to 109
110-130    ,     not used
131      :01 4E 78 37 10 11 3B 5F 05,     page layout A4H
132      :11 2A 2D A0 21 08 2E 84 05,     page layout A4Q
133      :00 2A 38 37 0C 0C 57 86 05,     page layout BDH
134      :10 24 2D A0 19 06 3D B1 05,     page layout BDQ
135      :28 11 00 82,                    page default settings, header line
                                          margin, Kofax-logo
136      ,
137      :13,                header line type
138-141   not used
142      '0,                 date format
143      :00 00 00 01 00 02 00 03 00 04 00 05 00 06 00 07,          fax code
144      :00 08 00 09 00 0A 00 0B 00 0C 00 0D 00 0E 00 0F,          fax code
145      :00 10 00 11 00 12 00 13 00 14 00 15 00 16 00 17,          fax code
146      :00 18 00 19 00 1A 00 1B 00 1C 00 1D 00 1E 00 1F,          fax code
147      :00 20 00 21 00 22 00 23 00 24 00 25 00 26 00 27,          fax code
148      :00 28 00 29 00 2A 00 2B 00 2C 00 2D 00 2E 00 2F,          fax code
149      :00 30 00 31 00 32 00 33 00 34 00 35 00 36 00 37,          fax code
150      :00 38 00 39 00 3A 00 3B 00 3C 00 3D 00 3E 00 3F,          fax code
151      :00 40 00 41 00 42 00 43 00 44 00 45 00 46 00 47,          fax code
152      :00 48 00 49 00 4A 00 4B 00 4C 00 4D 00 4E 00 4F,          fax code
153      :00 50 00 51 00 52 00 53 00 54 00 55 00 56 00 57,          fax code
154      :00 58 00 59 00 5A 00 5B 00 5C 00 5D 00 5E 00 5F,          fax code
155      :00 60 00 61 00 62 00 63 00 64 00 65 00 66 00 67,          fax code
156      :00 68 00 69 00 6A 00 6B 00 6C 00 6D 00 6E 00 6F,          fax code
```

```
157     :00 70 00 71 00 72 00 73 00 74 00 75 00 76 00 77,          fax code
158     :00 78 00 79 00 7A 00 7B 00 7C 00 7D 00 7E 00 7F,          fax code
159     :5C 43 20 75 04 65 18 61 20 61 10 61 44 61 5C 63,          fax code
160     :18 65 20 65 10 65 20 8B 18 8B 10 8B 24 8E 48 8F,          fax code
161     :08 90 00 91 00 92 18 6F 20 6F 10 6F 18 75 10 75,          fax code
162     :20 79 28 99 2C 9A 00 9B 00 9C 00 9D 00 9E 00 9F,          fax code
163     :04 61 04 8B 04 6F 04 75 30 6E 30 A5 00 A6 00 A7,          fax code
164     :00 A8 00 A9 00 AA 00 AB 00 AC 00 AD 00 AE 00 AF,          fax code
165     :00 B0 00 B1 80 00 00 B3 00 B4 84 00 88 00 8C 00,          fax code
166     :90 00 94 00 98 00 9C 00 A0 00 A4 00 A8 00 AC 00,          fax code
167     :00 C0 00 C1 00 C2 00 C3 00 C4 00 C5 00 C6 00 C7,          fax code
168     :00 C8 00 C9 00 CA 00 CB 00 CC 00 CD 00 CE 00 CF,          fax code
169     :00 D0 00 D1 00 D2 00 D3 00 D4 00 D5 00 D6 00 D7,          fax code
170     :00 D8 00 D9 00 DA 00 DB 00 DC 00 DD 00 DE 00 DF,          fax code
171     :00 E0 00 E1 00 E2 00 E3 00 E4 00 E5 00 E6 00 E7,          fax code
172     :00 E8 00 E9 00 EA 00 EB 00 EC 00 ED 00 EE 00 EF,          fax code
173     :00 F0 00 F1 00 F2 00 F3 00 F4 00 F5 00 F6 00 F7,          fax code
174     :00 F8 00 F9 00 FA 00 FB 00 FC 00 FD 00 FE 00 FF,          fax code
175     :00 00 00 00,
176     :00 00 00 00,
177     :00 00 00 00,
178     :00 00 00 00,
179     'To:%C_________________% From:%A_________________% Fax:%T_________,
180     '________%          at:%D%  Doc:%N%  Page:%P%                   ,
181     ',
182     ',
```

5.9 CONFIGURATION FOR THE CLIENT SERVER MODULE (UC0)

```
01   '3,         initial state (0,1,2)
02   ',          channel groups (' ',A..Z)
03   '11,        channel type (' ',F,X,T), channel capability
04   '2,         language (1,2)
05   '1,         CORR default (0,1)
06   ',          Line status comment
07   'A,         NODES default (A..Z)
08   :00,        number of characters for cost accounting
09   '0,         offset in reference for cost accounting
10   'A,         number series for send commands (A..Z)
11   '0,         locking of send commands
12   ',          sending time mapped to low priority
13   '9,         interval between call retries (1..T)
14   :32 00,     send test timer value in 0.1 sec. (pos. 1)
15   ',          default channel for ..C, ..S, ..L
16   ' S         log file of trans. mess. (' ',0..9,A..Z), all/success. only
17   'B ,        drive for log file of trans. mess. (A,B), page sent counter
18   ,           BACK RECEPTION
19   'A,         drive for back received mess
20   'RT,        number series (A..Z), 1st char. for reference (0..9,A..Z)
21   ',          address for autom. printout of back received mess
22   '0,         auto. send print. and active acknowledge. can't be deleted
23   ,           RECEPTION
24   '1,         automatic distribution (0,1,2)
25   'A,         drive for received mess
26   'TT,        number series (A..Z), 1st char. for reference (0..9,A..Z)
27   ',          address for autom. printout of received mess
28   '0,         autom. recept. printout and distribution can't be deleted
29   ',          log file of received mess. (' ',0..9,A..Z)
30   'B ,        drive for log file of rec. mess. (A,B), page rec. counter
31   ,           TEST
32   '0,         reserved
33   :FE,        TCI code output line length
34   :03 E7,     Maximum number of pages = 999
35   '0,         automatic printout of CF non-delivery notifications
36   :00,        reserved
37   ',          reserved
38   :08 00      reference with 8 characters in log file, entry mode
39   :0F         lines checked for automatic distribution
40   'A ,        drive for masks, default mask
41   '10110,     termination
42   ',          output channel with mask for active acknowl
43   '87654321-,   new send status for BREAK = 1
44   '87654321-,   new send status for BREAK = 2
45   '-------1-,   new send status for BREAK = 3
46   '-------10,   new send status for BREAK = 4
47   '--------0,   new send status for BREAK = 5
48   :00 00 00,    ASP parameters
49   :00 00 00,    ASP parameters
```

6 TRACE POSSIBILITIES

6.1 GENERAL

A trace can be activated for every process.

`HKEY_LOCAL_MACHINE\Software\TOPCALL\<processname>`

Values

`TraceLevel` `REG_DWORD` binary value

Binary value specifying different trace options for the specified process. The value represents the sum of bit-values each enabling certain trace options. Possible bit values are:

apply to process	bit value (hex)	trace information
all processes	0x01	trace not-filtered information and errors (default if any other bit is set)
	0x10000000	less info TCRPC trace
	0x20000000	trace TCRPC calls
	0x40000000	full stream IO trace (not recommended)
	0x80000000	full procedure IO trace (not recommended)
TCOSS	0x02	TUP start/stop
	0x04	TAMIO calls
	0x08	display status and usage of all channels and semaphores when TCOSS terminates
	0x10	trace all calls from external TC-RPC clients
	0x20	TCTI connect and disconnect trace
	0x40	Model/165/22x start-up trace
	0x80	LCD Info trace
	0x100	LAN-Link function calls (huge output!)
	0x200	Trace each disk read/write access
	0x400	Reserverd
	0x800	Status Agent trace
	0x1000	LAN-link error trace
	0x4000	Remote channels connection trace (ASP)
	0x8000	Dump process token at start
	0x20000	Denied access due to missing rights to

		server objects
	0x80000	Alerting and queue log performance info
	0x100000	Mail system updates
	0x200000	Login trace

The recommended TCOSS trace level for most cases is 0x1083.

TraceFile `REG_SZ` trace file/path

Fully qualified path to trace file or path relative to `<RootDir>\Trace`. The actual trace file name is the name specified here (or the default) extended with a number. The number is added before the period ('.') of the extension(e.g. 'TCOSS0.TRC'). The number increments by one every time the maximum file size is reached (see below). In this case the current file gets closed and a new file with the new name is created. If the file exists it gets truncated. When the maximum file number is reached (see below) the current file number is set to zero.

Default … <RootDir>\Trace\<ProcessName><number>.trc

MaxTraceFileSize `REG_DWORD` max. size of a file in kB

Specifies the maximum size of a single trace file for a process. Trace data gets added to the current file until the file size reaches the max. value. In this case the current file gets closed and a new one gets opened.

Default ... 128

MaxTraceFiles `REG_DWORD` max. number of a files

Specifies the maximum number of trace files generated for one process. The generated trace files are numbered from 0 to *MaxTraceFiles*-1. This value only restricts the number of trace files (i.e. the amount of trace data) kept on disk and not the total number of files generated while the process is active. When the max. trace file number is reached, the next file generated gets number 0.

Default ... 2

TraceToScreen `REG_DWORD` boolean value

Enables or disables output of trace information to screen. If this value is non-zero trace information is displayed on the screen. Not that all processes that have been started via TCSRV do have a console window. Processes without a console window will ignore this value. (Hint: To attach console windows to TCSRV and all its processes set the option *Allow Interaction with Desktop* for the service TCSRV using the control panel/services)

Default … 1

TraceToFile `REG_DWORD` boolean value

Enables or disables output of trace information to files. If this value is non-zero trace information is written to files as described above.

Default … 1

AppendTrace REG_DWORD current file number or zero

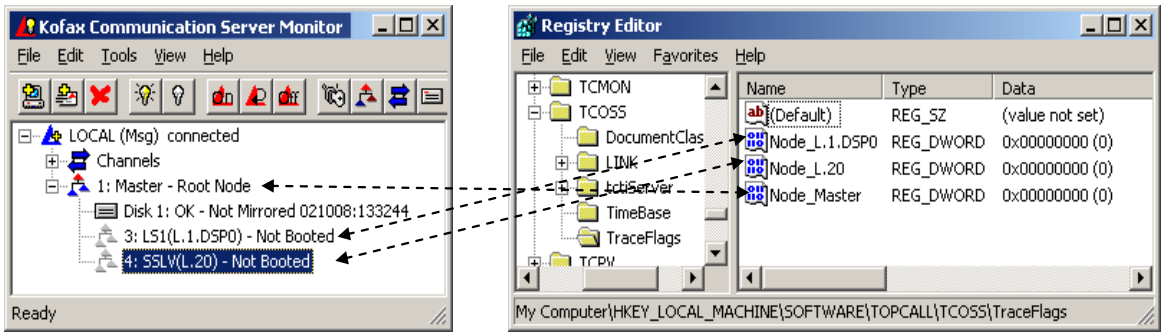
If this value is zero, the corresponding process starts writing trace files at trace file number 0. Any previously stored data gets deleted before the first line of new trace data is written to the file.
If this value is non-zero, the corresponding process starts writing trace files at trace file number *AppendTrace*-1. But, the previously stored trace data is preserved. Any new data gets appended to the current file until it reaches *MaxFileSize*.
Specifying 0 or 1 is equal, but in the first case the trace file gets truncated when the process starts.
If this value is non-zero, it automatically changes during run-time to store the number of current trace file.

Default … 0

6.2 CONFIGURATION OF TRACES ON TCOSS NODES

The Tracer channels within WCONFIG (which were used before TCOSS 7.62.00) are not used anymore. They can be removed without losing trace capability. (Future versions of WCONFIG may do this).

The new registry key *HKLM\Software\TOPCALL\TCOSS\TraceFlags* is used for configuration of individual trace flags for each TCOSS node. This key is read from current TCOSS Master. The registry values *Node_xxx* (type REG_DWORD) are used, where *xxxx* describes the node. If these values do not exist they are created (with 0 as default) whenever TCOSS restarts (in a tandem system you will get it on the secondary master only if it as running stand alone). An example is given in the screen shots below:



The registry values get a name according to the following rules

- The current master get the name “Node_Master”

- In a tandem system the secondary master gets the registry value “Node_SecMaster” on the primary master. If the secondary master is starting stand-alone it uses the registry value “Node_Master” on the secondary master. Since these values are only used to enable traces it is typically not required to keep it up to date on the secondary master.
- All other nodes use a name with the prefix “Node_” followed by the node location as it is shown within the TCMON message server. E.g. “LS1(L.1.DSP0)” uses the registry value “Node_L.1.DSP0”.

The trace values are read upon TCOSS restart or node reboot. They are then updated every 5 minutes. Whenever the trace flags are changed, the node responds with a trace line as shown in the example below to confirm that the modification is accepted.

```
12:42:17.390 (1290/ed8) [Tcoss] N3/T04 5.99=Traceflags changed from 0x0 to 0x2
```

“N3” means that this trace was created by node 3. Use TCMON Message server to get the actual name of the node (e.g. “3: LS1(L.1.DSP0)” means that node 3 has the name “LS1(L.1.DSP0)”).

The value itself is defined as a set of trace flags. Each flag can be set/cleared to individually enable/disable traces. A description of the flags is shown below:

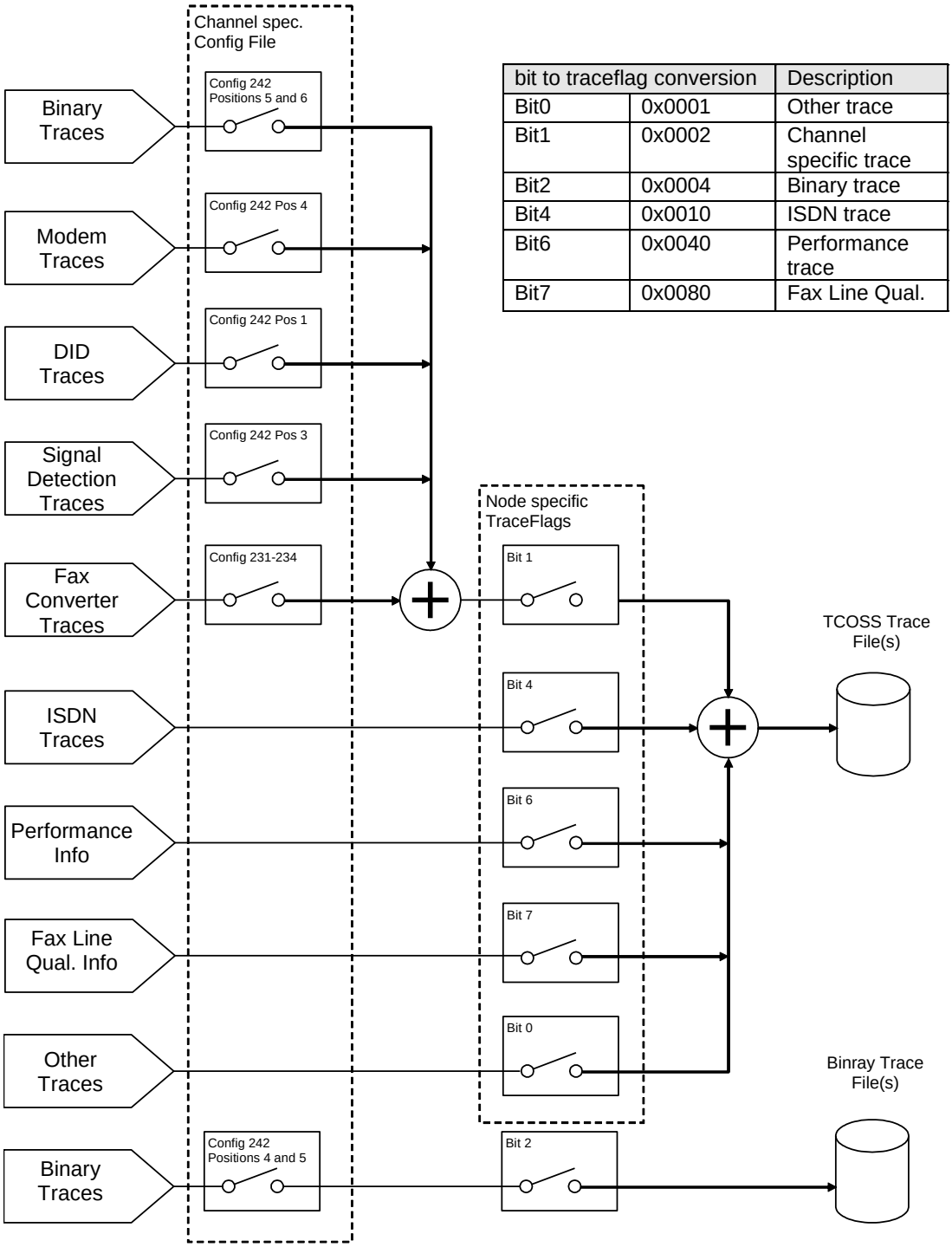
Trace Flag	Description
0x00000001	general not further categorized traces
0x00000002	Traces that can be configured in the TUM part of the channel configuration. These traces are: Modem Trace, Fxc Traces, DID State Machine Trace, Signal detection traces.
0x00000004	Enable binary traces on LS1
0x00000010	Trace ISDN signaling and number conversions.
0x00000040	Output CPU performance info (once every minute).
0x00000080	Fax line quality trace (info about bad received lines, ECM retransmissions)
0x80000000	Block the current thread if the trace buffer gets full. If this flag is set no trace output gets lost, but the timing of the channels may be affected due to trace.

All other flags are reserved for future use. They are currently ignored.

<u>Note:</u>
The ISDN Trace (flag 0x10) has been reduced to the minimum trace output that is required for understanding the signaling. Some redundant or less important trace output that was generated as “ISDN” trace with releases before 7.62.00 is no more part of trace switch 0x10. If you want to see the ISDN trace as it was with prior releases, you have to add the flag 0x01 by e. g. setting the trace flags value to 0x11.

The primary reason for excluding some information from the ISDN trace is that the ISDN trace, as it was before TCOSS 7.62.00 may produces too much output when it was activated on a primary rate ISDN line with many active channels.

An overview about the trace switches for each node is shown below:



bit to traceflag conversion		Description
Bit0	0x0001	Other trace
Bit1	0x0002	Channel specific trace
Bit2	0x0004	Binary trace
Bit4	0x0010	ISDN trace
Bit6	0x0040	Performance trace
Bit7	0x0080	Fax Line Qual.

The “+” symbol means that traces from different sources are added together.

Notes

- When using TC/FOIP the trace flags affect the Fax Converter Traces only. Other traces (e.g. CAPI Trace) are always created if they are configured in the UFI channel configuration (as with prior releases).

- When using ULL the trace flags affect the Fax Converter Traces only.
- If you use a line server with multiple DSPs there is an individual trace flag for each DSP. E. g. If you want to get a modem trace from a channel that is configured on DSP 1, you must enable the appropriate trace flag. ISDN traces are always created on DSP 0.
- For PRI with TC20 the ISDN trace is created on the TC20 interface where the TC34 interface is installed.
- The ISDN Trace Flag (0x10) contains only the mandatory information that is exchanged on the D-Channel. Even this information is less that an ISDN Trace as described in prior releases (before TCOSS 7.62.00) it should be enough for trouble-shooting. If you want to have the full ISDN Trace output you should add the Flags 0x1 (for general traces). But take care that this amount of trace may lead the side effects if it is activated on DSP 0 with many channels (e.g. 30 channel E1 line).

6.2.1 Compatibility, Update Hints

After update to 7.62.00 the configured tracer channels (in the WCONFIG HW/SW assignment) are not used anymore. If you need these traces you have to manually change the appropriate registry value in the registry key *HKLM\Software\Topcall\tcoss\TraceFlags* as described under *Configuration of Traces on TCOSS Nodes*.

If you use module updates, you can get a version mix between new and old modules. In that case you may get a mix between old and new functionality. The behavior is described in the table below by specifying the "*TraceFlags"* value according to the new version that would lead to the same trace.

WCONFIG	Trace Channel configured	TC22.bin or TC20.	TCOSS.exe	TraceFlags value
Old	no	regardless	regardless	0x0000
Old	yes	Old	regardless	0x00FF
Old	yes	New / LS1V2	Old	0x0000
Old	yes	New / LS1V2	New	read from registry
New	regardless	Old	regardless	0x00FF
New	regardless	New / LS1V2	Old	0x0000
New	regardless	New / LS1V2	New	read from registry

Note: LS1V2 is handle like a new TC22.bin

6.2.2 Additional Hints for ASP Systems

- When using an ASP system, the trace flags are read from a registry key according to the TCOSS instance (e.g. *HKLM\Software\Topcall\tcoss01\TraceFlags).*
- Channel specific traces (e.g. Modem, ...) have to be configured on the media server channels (both for shared and dedicated lines).

6.2.3 Trace Performance Considerations

If you are using traces on a TCOSS node (e.g. Line server model 305) the complete trace output is sent on the TCP/IP connection between the TCOSS master and this node in addition to all other real-time sensitive communication on this connection. Especially if you have restricted available network bandwidth or long turn-around trip times, traces should be enabled very carefully.

In order to minimize the trace impact, all traces are sent via buffer to the TCOSS master. Whenever this buffer fills up more than 66 percent, the actual number of free lines are added to the trace. This information indicates that the amount of generated trace exceeds the amount of trace which can be transferred to the master. An example is shown below:

```
15/18:42:17.374 (900/ee0) N3/T150 580599=26:MOD sound 1100, 50
15/18:42:17.531 (900/ee0) N3/T138 580689(84lines free)=17:MOD-Rx ok(07) = tPPS-tEOP 2F000100
15/18:42:17.671 (900/ee0) N3/T138 580729(83lines free)=17:MOD NoSig Received
```

Since TCOSS 7.85.02 trace data is discarded if the trace buffer gets full. This minimizes the influence due to traces but may cause incomplete traces. If trace lines are discarded, an additional entry with x lines skipped is added. The value x indicates how many traces lines have been removed. An example is shown below:

```
15/18:43:02.249 (900/ee0) N3/T1E 591258(11lines free)=24:MOD rx_start1 1 0 0
15/18:43:02.359 (900/ee0) N3/T0C 591348(12lines free)=30:MOD tx_start1 1 0 0
15/18:43:02.484 (900/ee0) N3/T00 594299(13lines free)=85 lines skipped, current_free=20
15/18:43:02.609 (900/ee0) N3/T52 594299(14lines free)=37:MOD tx_start1 1 0 0
15/18:43:02.718 (900/ee0) N3/T1E 594429(15lines free)=24:MOD-Tx ok(03) = rRNR
```

If the trace flag 0x80000000 is set, the trace buffer behaves as with prior releases. This means that the program blocks until the trace buffer is not full. This avoids that trace information gets lost, but it may have impact on the real-time behavior of channels which may cause communication errors.

6.3 FAX TRACES

If you do traces with sending to the own interface card, please take care that the trace writes information from both channels (sending and reception) into its file and sometimes it is hard to find the error by the developer by that much information. If you want to trace outgoing calls, send one document (maybe set one channel to wait) and as soon as the error appears, copy the trace file to another file name to prevent mixed information.

6.3.1 Modem Trace

This kind of traces should be used if the connection with the other fax machine could be established, but fax transmission or reception failed. This is case if:
1. Outgoing calls are aborted with a error codes: XM, XN, XO, XP, XQ, XS, XT, XG
2. Incoming calls with error codes: XV, XW, XY, XZ

Install the Trace Tup and change the following lines in the UTF or UIF configuration:

config line 232: `:02 02 02 02,`
config line 242: `:00 00 00 03,`

If you have trouble with tone detection (e.g. you get error code XL instead of XJ, XU or XF) you should change config line 242 as shown below:

config line 242: `00 00 00 02 03,`

6.3.2 ISDN Trace

This kind of traces should be used if the connection with the other fax machine could not be established. This is case if:
1. Outgoing calls are aborted with a error code that starts with “I”. (e.g., IP, IU, ...)
2. You do not get a fax prompt, if you try to dial the ISDN channel with a telephone.

If you do not have other problems, you can install the Trace Tup without additional configuration changes in the UIF module.

6.3.3 T.38 and CAPI Trace

T.38 and CAPI traces are used to troubleshoot UFI channels. The traces are activated in line 242 pos. 1 to 6 of UFI channels. Refer to chapter *Config Parameters of the T.38 Fax over IP Module (UFI)* or the *TC/FoIP Manual [17]* for details.

6.3.4 E&M Trace

This kind of traces should be used if the connection with the other fax machine could not be established via E&M line. This is case if:
1. Outgoing calls are aborted with a error codes: XH, XF, XL, XJ, XU
2. You do not get a fax prompt, if you try to dial the KCS E&M line with a Telephone.
3. The dialed in digits (DDI) are wrong or missing.

Install the Trace Tup and change the following lines in the UTF configuration:

config line 232: `:02 02 02 02,`
config line 242: `:00 01 01 03,`

6.3.5 Binary Trace for Specific Originators

If there are some fax related problems, then the binary trace (refer to Line Server Model 305 Manual) provides the most valuable information. On the other hand, the binary trace should not be enabled on many channels because the available bandwidth (for trace data) between TCOSS and LS1 is restricted.

Thus if you e. g. have a none reproducible reception problem on an PRI ISDN line (with many channels) it is recommended to selectively activate the binary trace depending on the DDI/MSN number or caller ID. An example is shown below:

Activation:
Set *TraceFlags* to 0x04.
Take care that the received number or the caller ID of incoming fax calls that should be traced are converted to a number that ends with “<T>“. The string “<T>“ is detected is option to activate the binary trace, if it is not already enabled by positions 5 and 6 of configuration line 242. In any case the “<T>“ switch will be removed from the converted number before the number is used for e.g. inbound routing.

An example number conversion table is shown below:

```
line 256  '183=83<T>                                  ,  257
line 257  '@~41=~41<T>                                ,  258
```

Line 256 activates the binary trace for all incoming fax calls with DDI/MSN/DID number 83.
Line 257 activates the binary trace for all incoming fax calls where the callerID ends with 41.

Deactivation:
Set *TraceFlags* to 0. Optionally the modification in the number conversion table should be changed back.

6.4 EXAMPLES

This chapter gives you some examples of frequently used trace settings.

6.4.1 ISDN Trace

Activation:
Set TraceFlags to 0x10. No TCOSS Restart or configuration change is required.

Deactivation:
Set TraceFlags to 0. No TCOSS Restart or configuration change is required.

6.4.2 ISDN, Modem and Binary Trace

Activation:
Set *TraceFlags* to 0x96.
Change the following configuration lines on all UIF modules, where you want to have a Modem and Binary trace.

Config line 232 :02 02 02 02,
Config line 242 :00 00 00 03 0F 03 ..,

A node reboot is required.

Deactivation:
Set *TraceFlags* to 0. Optionally the configuration lines 232 and 242 can be changed back to zeros.

Hint:
If modem traces are configured in configuration lines 232 and 242 but disabled by trace flags, additional performance will be required on the DSP (even there is no trace output). Even this overhead is very less (with the values shown above); it is not recommended to enable the modem traces always by default.

7 INDEX AND REFERENCES

7.1 REGISTRY OVERVIEW

value	type	default	short description

Key=HKEY_LOCAL_MACHINE\Software\TOPCALL**<ProcessName>** [1)]

Commandline	string	tcoss /n	Commandline used by TCSRV
DependOn	multi-string	TCOSS	start this process after..
UserId	string	empty	User account when started via TCSRV
Password	string	empty	Password (required if user account is spec.)
Domain	string	empty	Domain of user account
LogonType	string	Service	Type of how the process gets logged on to the system

Key=HKEY_LOCAL_MACHINE\Software\TOPCALL**<ProcessName>** [2)]

TraceLevel	integer	0	Trace level for TCSRV trace
TraceFile	string	<ProcessName>.TRC	Trace file name (rel. to <RootDir>\trace)
TraceToScreen	boolean	1	Enables output of trace information to screen
TraceToFile	boolean	1	Enables output of trace information to file
MaxTraceFiles	integer	2	max. number of stored trace files
MaxTraceFileSize	integer	128	max size of one trace file in kB
AppendTrace	integer	0	Trace file counter / Append switch

Key=HKEY_LOCAL_MACHINE\Software\TOPCALL**Boot**

Startup	multi-string	empty	list of keys of appl. to be started by TCSRV
RootDir	string	C:\TCOSS	root directory of TCOSS
EnableBoot	boolean	1	must be non-zero for auto boot by TCSRV
Active	integer		Set to 1 if TCSRV is running, else deleted

Key=HKEY_LOCAL_MACHINE\Software\TOPCALL**TCOSS**

RPCServer	boolean	1	Enable remote procedure calls
TCTIIniFile	string	<RootDir>\system\topcall1.ini	TCTI ini file name
TerminationCause	string		Is written by TCOSS in case of error abort.
tmoWaitForSlave	integer	90	Timeout until Primary Master starts up with secondary Master
StartInactivityWarningTmo	integer	600	Timeout until a warning is issued on TCOSS inactivity. 0 disables the watchdog.
StartInactivityErrorTmo	integer	1800	Timeout until TCOSS will be restarted by TCSRV.
trpKeepAliveInterval	integer	30	Interval in seconds between sending of “keep alive” messages to interfaces. 0 deactivates it.
trpKeepAliveTimeout	integer	100	Time in seconds until interface falls in error state, if no more “keep alive” messages are received from master.
NetworkPackageSize	integer	1460	Packet size on LAN connection between primary and secondary master on a Model 22x. See TCOSS specific registry entry for

			details.

Key=HKEY_LOCAL_MACHINE\Software\TOPCALL**TCOSS** (continued)

TimeBase	string	Local	“Local” – TCOSS uses servers local time “UTC” – TCOSS uses UTC
TimeOffsetMinutes	string		Offset which is added to UTC / local time to calculate TCOSS time (decimal numeric expression with optional leading sign).

Key=HKEY_LOCAL_MACHINE\Software\TOPCALL**TCOSS\Drive0**

FileName	string	C:\TCOSS\Data\KCS File Structure.tcoss	full path and name of TCOSS file.
TargetId	integer	0	used if FileName is empty.
ScsiPort	integer	0	used if FileName is empty.
DirCacheSize	integer	2048	Directory cache size in kB
DocCacheSize	integer	40960	Document cache size in kB
DataBaseCacheSize	integer	5120	Database cache size in kB
CacheAweEnable	integer	0	Cache AWE (Address Windowing Extensions) enable (1 = enabled)

Key=HKEY_LOCAL_MACHINE\Software\TOPCALL**TCOSS\LINK\LAN<LanLinkNumber>** [3)]

AutoUpdate	integer	1	If not zero, then program files on LS1 are automatically kept up-to-date. This registry is reserved for development purposes and should not be changed.
IPtoConnect	string		IP address of the BranchBox
MaxBootBandwidth	integer	0	Max. bandwidth for booting BranchBox
Password	string		Password for connection to BranchBox
PorttoConnect	integer	5000	IP port of the BranchBox
Priority	integer	1 for sec. or single 2 for prim. of tandem	Priority level for connection
TxOptimization	integer	1	Defines how TCOSS optimizes the transmission of data on the TCP/IP connection.
Type	integer	2 = LANLINK; used for branchboxes and LS1 (registry key TCOSS\LINK**LANxxx**) 0 = TRANSPUTERLINK; used for legacy TP80 hardware (registry key TCOSS\LINK**LNKxxx**)	Type of link

Key=HKEY_LOCAL_MACHINE\Software\TOPCALL**TCOSS\Security**

EncryptNumericalPassword	Boolean	0	Enable encryption of numerical voice passwords in user profiles

Key=HKEY_LOCAL_MACHINE\Software\TOPCALL**TCOSS\TraceFlags**
Contains trace flags for each remote node (e.g. DSPs on LS1) of the system and the master node. See chapter *Enable Traces on LS1 without TCOSS Restart* for details.

Key=HKEY_LOCAL_MACHINE\Software**Hardware**

Link0BaseAddress	integer	140h	set to 150h by SETUP (do not change)
Link1BaseAddress	integer	150h	set to 140h by SETUP (do not change)
Link2BaseAddress	integer	160h	(do not change)
Link3BaseAddress	integer	170h	(do not change)

Key=HKEY_LOCAL_MACHINE\Software**DocumentClass**
See TCOSS specific registry entry for details.

1) Valid Process names: All processes controlled by TCSRV
2) Valid Process names: All processes including BOOT for TCSRV.
3) Refer to chapter *BranchBox configuration* for details

7.2 SUBJECT INDEX

—A—

Activating TCOSS 20
Alcatel 4400 PABX 152
Application module
  Config parameters 79
ASCII characters national 64
Asynchronous module
  Config parameters 88
  Standard configuration 172
Auto Login 42
Auto start of WindowsNT Applications 40

—B—

Busy tone detection 196

—C—

Channel numbers
  Restrictions 64
Character recognition module
  Config parameters 160
Checking the E-signal 200
Client server modules
  Standard configuration 217
Client Server modules
  Config parameters 161
CNF user 50
Command
  Overview 50
Commandline 20
Common config parameters 69
Config line 68
Config parameter
  Character recognition module 160
  Client Server modules 161
Config parameter
  Application module 79
  Asynchronous module 88
  Common 69
  ISDN fax module 142, 153
  Laser printer module 158
  Telex module 102
  Transputer fax module 121
Config parameters
  Lan laser printer 158
Configuration
  Asynchronous channels 63
  Copying 61
  Editor 62
  Example for spain 111
  Of channels 63
  Program 44
  Telex code conversions 110
  With the PC 44
Configuration standards
  Overview 162
  SYSCONF 170
  UAS PC standard 176
  UAS standard 172
  UAS TS72 non-transparent mode 177
  UAS TS72 transparent mode 178
  UAS TS73 transparent mode 179
  UC0 217
  UIF standard 203
  ULL 214
  UTF E&M seizure acknowledgement mode 197
  UTF standard 185
  UTX 181
Configuration update 48
Country specific standard settings 191
Creating a new installation folder 47

—D—

Default Configuration 162
Dial tone detection
  modify of 196
  switch off 196
DID
  check of the E-sinal 200
DID together with DTMF 200
Disabling the busy tone 196
Disabling the ring tone 196
DTMF dialling parameter 192

—E—

E&M
  DID together with DTMF 200
  Seizure acknowledgement standard configuration ... 197
E&M channels
  tips for configuration 200
E&M Timing 198
End string 92

—F—

Failure counter 191
Fax page definition 138
First installation of Model 1xx 16
Folders and naming convention 46

—G—

Get configuration 47

—H—

Hint
  2919 151
  2948 52
  2951 15
  2978 130
  3521 224
  3619 19
  3677 13
  3919 79
  3935 151
  3975 ..... 18, 36

4076 152
4203 15
4301 13
4328 38

—I—

Input code table 95
Installation
MAKETCOSS for Windows 45
Installation folder
Creation of 47
Installation of Windows 14
Installing local 49
ISDN fax module
Config parameters 142, 153
Standard configuration 203
ISDN fax page
Layout 139
Restrictions 140

—L—

LAn laser printer module
Config parameters 158
LAN Laser printer module
Standard configuration 214
LAN Laser printer page
Layout 139
Restrictions 140
Laser printer module
Config parameters 158
Standard configuration 214
Laser printer page
Layout 139
Restrictions 140
Layout
ISDN fax page 139
LAN Laser printer page 139
Laser printer page 139
Transputer fax page 139
Line editor 62
log agent 39

—M—

Main menu 51
MAKETCOSS for Windows
Installation 45
Overview 44
Memory requirement analysis
CONFIG 65
Model 1xx 13
MT/WIN
CNF user 50
Creating a new installation folder 47
Folders and naming conventions 46
Get configuration 47
Installation of 45
Installing via TCSI 50
main menu 51
Overview 44
PC-configuration 44
Update an existing configuration 48
User files and masks 49
WCONFIG.INI 46
working with 50

—N—

number series 165

—O—

OCR
Config parameters 160
Output code table 93

—P—

Page definition 138
PC configuration (MAKETCOSS for Windows) 44
PC standard configuration (UAS) 176
Puls dialling parameter 191

—Q—

Queue length 39

—R—

Registry
TCOSS 22
TCSRV 40
Registry
Traces 218
Registry
Overview 228
Restrictions
ISDN fax page 140
LAN Laser printer page 140
Laser printer page 140
Numbering of channels 64
Transputer fax page 140
Ring tone detection 196
Rings for an incoming call 196
routing directory 164, 165
rr99 ..... 164, 165

—S—

services 163
Setup
ISDN fax page 139
LAN Laser printer page 139
Laser printer page 139
Transputer fax page 139
Siemens HiCom 300 152
Software hardware assignment 51, 162
Spanish telex code conversion (example) 111
Special line 68
Standard configs
call retries 191
dial parameter 191
general parameters 191
Standard configuration 162
Start string 92
STX/ETX 96
SYSCONF standard configuration 170
System Attendant 43

—T—

TAM/TUM Trace 84
TC90/91 43
TCSRV 40
TCSRV
  Activation 43
TCTI 18
Telex module
  Answerback 105
  Code conversions 110
  Config parameters 102
  Standard configuration 181
Tips for configuring the E&M channels 200
Tips for configuring the UTF module 196
Trace
  TAM/TUM interface 84
Trace possibilities 218
Transputer fax module
  Config parameters 121
  Standard configuration 185
Transputer fax page
  Layout 139
  Restrictions 140
TS72
  Non-transparent mode standard configuration 177
  Transparent mode standard configuration 178
TS73 transparent mode standard configuration 179
tt99 165

—U—

UAS
  Config parameters 88
  PC standard configuration 176
  Standard configuration 172
  TS72 non-transparent mode standard configuration 177
  TS72 transparent mode standard configuration 178
  TS73 transparent mode standard configuration 179
UC0
  Config parameters 161
UCA
  Config parameters 161
UCL
  Config parameters 161
UCS
  Config parameters 161
UIF
  Config parameters 142, 153
  Country specific changes 191
  Standard configuration 203
ULL
  Config parameters 158
  Standard configuration 214
Update from model/xx to model/1xx 17
Updating an existing configuration 48
user 163
User accounts 42
User files and masks 49
UTF
  Config parameters 121
  Country specific changes 191
  E&M seizure acknowledgement standard configuration 197
  Standard configuration 185
UTF module
  Tips for configuration 196
UTX
  Config parameters 102
  Standard configuration 181

—W—

WCONFIG.INI 46
Windows
  Installation 14
Windows NT
  Auto Login 42
Working with MAKETCOSS 50

—X—

XON/XOFF 91

7.3 REFERRED DOCUMENTS

The following documents are referenced within this manual.

Ref.	Description	Filename
[1]	TCOSS Configuration Manual	TCOSS_CNF.pdf
[2]	TCOSS System Manual	TCOSS_SYS.pdf
[3]	KCS Model/2xx Manual	MODEL2XX_xyyzz_MAN.pdf
[4]	TCLANPRT Manual	TCLANPRT_xyyzz_TECH.pdf
[5]	KCS SNMP Manual	SNMP_xyyzz_MAN.pdf SNMP_INTEGRATION_xyyzz.pdf
[6]	KCS Monitor Manual (TCMON)	TCMON_USER.pdf
[7]	KCS Supervisor Service (TCSRV) Manual	TCSRV_MAN.pdf
[8]	KCS Client Applications Administration Manual	TCCP_ADMIN.pdf
[9]	KCS Model/22x Extension Manual	22X_xyyzz_MAN.pdf
[10]	TCOSS TAM Manual	TCOSS_TAM.pdf
[11]	TCOSS ISDN Manual	TCOSS_ISDN.pdf
[12]	TCOSS ASP Manual	TCOSS_ASP.pdf
[13]	Line Server Model 305 (LS1) Manual	LS1_xyyzz_MAN.pdf
[14]	TC/FoIP Manual	TCFOIP_xyyzz_TECH.pdf