



Tixi Super Modem AT

Tixi Message Modem AT

User Manual

Version 2.1

Product	Office Line	Industry Line
Tixi Super Modem AT		
Tixi Super Modem AT V.90	SM03-CTS SM03-BB	SM03-KA5
Tixi Super Modem AT ISDN	SD03-BB	SD03-KA5
Tixi Message Modem AT		
Tixi Message Modem AT V.90	EM20-BB	EM20-KA5
Tixi Message Modem AT ISDN	ED20-BB	ED20-KA5
Tixi Message Modem AT ISDN & Fax	EF20-BB	EF20-KA5

The Tixi Super Modem AT and the Tixi Message Modem AT
are part of the Tixi Message Modems product range.
This manual describes both Tixi modems
because they differ only with regard to a small number of functions.

© 2007 Tixi.Com GmbH

Editorial deadline: July 2007

This manual is protected by copyright. This manual must not be redistributed or duplicated without the express written permission of the publisher. This also applies to photocopies, microfilms, translations as well as storage and processing by electronic means.

The corporate and brand names used in this manual are the registered trademarks of the relevant companies even where this is not explicitly indicated.

Contents

1	Overview of Tixi Message Modems	3
1.1	What makes Tixi Modems so special?	3
1.2	Brief Overview of Tixi Automatic Modems	4
1.3	Modem Variants: Housing and Power Supply	5
1.4	Tixi Message Modem Features	5
2.1	Configuring your Modem from a PC	6
2.2	Activating Message Mode on your Modem	6
2.3	Using your Tixi Modem on a Controller	6
2.4	Using Super Modems and Message Modems with Conrad C-Control I + II	7
2.5	Test 1: Sending a Fax	7
2.6	Test 2: Sending an Express E-Mail	7
2.7	Test 3: Reading Received Express E-Mails	8
2.8	Sending an SMS Message	8
2.9	Getting Started with TACO - The Tixi AT console	8
2.10	Using your Tixi Modem as a PC Modem	8
3	Sending and Receiving SMS Messages	9
3.1	Mobile SMS or PSTN SMS?	9
3.2	Sending SMS Messages to a Mobile Phone Network	9
3.3	Receiving and Sending SMS Messages via a PSTN	9
4	Tixi Message Mode	12
4.1	Sending a Message	12
4.2	Information About Tixi AT Commands	12
4.3	Feedback When Sending Messages	13
5	Tixi Message Commands	14
5.1	Overview of the Commands	14
5.2	AT+T Send – Sending SMS, E-Mail, Fax and Express E-Mail Messages	15
5.3	AT+T - Displaying Received Messages	19
5.4	AT+T Delete - Deleting a Stored Message	20
5.5	AT+T Read - Reading a Stored Message	20
5.6	AT+T Answer - Setting the Response Procedure	21
5.7	AT+T Time – Setting the System Time	22
5.8	AT+T Echo - Switching the Echo On or Off	22
5.9	AT+T Verbose - Switching Comprehensive Responses On or Off	23
5.10	AT+T MSN – Setting the MSN in ISDN T/As	23
5.11	AT+T Mode – Activating Modem Mode or Message Mode	24
5.12	AT+T Help - Showing a Command Overview	24
5.13	AT+T Erase - Resetting Your Tixi AT Modem	24
5.14	AT+T Redial	24
5.15	AT+T RedialDelay	25
5.16	AT+ T Speaker - Adjusting the Modem Speaker Volume	25
5.17	AT+T DialRules – Dial method, Dial tone detection	25
5.18	AT+T Format – Data format	26
6	RS 232 Transparent Mode (TransMode)	27
6.1	TransMode Command	27
6.2	TransMode Login Command	28
7	TACO - The Tixi AT Console	29
7.1	Getting Started	29
7.2	User Interface	29
	Appendix A: LEDs	31
	Appendix B: Product & Included Accessories	32
	Appendix C: Tixi Modem Type Designations	33
	Appendix D: Warranty and Technical Support	33
	Appendix E: Express E-Mail Diagram	34

1 Overview of Tixi Message Modems

1.1 What makes Tixi Modems so special?

The *Tixi Message Modem AT* family of products provides innovative and intelligent communication devices which allow you to send and receive messages using a simple command. What's more you don't even need a PC to do this. You can send the following types of messages depending on the type of Tixi modem you are using:

SMS	Send SMS messages on PSTN and mobile networks
Fax	Send texts and data as fax messages
E-mail	Send e-mails via the Internet
Express E-Mail¹	Send e-mails via a telephone line without logging on to the Internet.

Sending ONE Message to ONE Recipient using ONE Command

Thanks to the Tixi AT Modem you do not need to be a communications expert to send and receive messages and data. You don't even need to know about communication protocols because Tixi modems already have the latest message protocols built in so that they can automatically manage the communication process.

Just like a fax machine you only enter the destination address and the text (or the data), and the Tixi AT Modem takes care of the rest. This is possible using the following simple commands:

Command	Parameter	Text or Data
AT+T Send = "EMail;	To: Taskforce@Firm.com"	Tank 17, Building 5 is empty!
AT+T Send = "Express;	To: Service+49-30-12345678"	Furnace in Building 6 is down!
AT+T Send = "SMS;	To: 0177-3456678"	Temperature in cold-storage too high!
AT+T Send = "Fax;	To: 0891-98745561"	Malfunction in Fan 17!

Once the message has been sent, Tixi issues a delivery receipt to confirm that the message or data was sent.

If you ever forget what a particular command looks like, simply use the HELP command:

AT+T HELP

Tixi AT Modems are compact communication computers featuring integrated memory and built-in modems and they can be used to send and receive data and e-mails at anytime day or night.

Tixi AT Modems provide an exciting new range of industrial communication capabilities. With Tixi AT Modems you can easily upgrade your control unit (PLC) to include remote operation functionality. When a specified event occurs (such as interference, status) the PLC controller sends the corresponding commands to the Tixi AT Modem, which then automatically sends the e-mails, faxes, SMS or Express E-Mails.

Tixi Super Modem AT and Tixi Message Modem AT

The Tixi Super Modem AT is a cost-effective entry-level modem which has less memory and functions than the Tixi Message Modem AT.

You can upgrade the Tixi Super Modem AT at a later stage by installing a memory module (2 MB: SX02). For more information, see Section 1.2

All units in the Tixi Message Modem AT product family will be referred to below as Tixi AT Modems or Tixi Message Modems.

Analog and ISDN modems

All Tixi modems are available in either analog and ISDN variants. A GSM model will be available soon. Both the analog and ISDN models work in exactly the same way and they use the same commands.

1.2 Brief Overview of Tixi Automatic Modems

1.2.1 Tixi Super Modem AT

The Tixi Super Modem AT is the basic entry-level modem. Depending on the functionality, this modem has between 50...100 kb of RAM and can be used to send and receive SMS messages and Express E-Mails. This Tixi modem can be fitted with a 2-MB flash memory card which stores data even in the event of a power failure. This provides support for Internet e-mail and - in the case of the SM03 version with an analog modem - faxes as well.

1.2.2 Tixi Message Modem AT

The Tixi Message Modem AT is the next member of the Tixi Message Modem family. With a 2-MB flash memory fitted as standard to store data even in the event of a power failure, this modem can be used to send and receive SMS messages, Express E-Mails and Internet e-mail. The EM20 and EF20 versions can also send fax messages.

All models in this series can be upgraded with up to 8 MB of flash memory.

Conrad C-Control I+II

TxMessage program modules are available free of charge for the C-Control I + II control units.

1.2.3 Tixi Alarm Modem

Tixi Alarm Modems are equipped as standard with 2-MB flash memory but this can be expanded up to 66 MB. These modems are not described in this manual, although we will give a short overview.

Alarm or Fault Detector

In contrast to Tixi Message Modems, Tixi Alarm Modems operate completely automatically. Messages (fax, SMS, pager, e-mail, Express E-Mail) can be sent via optional I/O ports or through control units connected directly to the modem. This means that in addition to using texts as templates for messages, the texts can also contain values from I/O ports or values such as those from the connected control unit. When an alarm occurs, the Tixi Alarm Modem reads the current values built into the text and then sends the message.

Analog and ISDN models with either internal or external GSM modems (such as Siemens TC35 or M20) are available from Tixi.com.

Remote Operation

Incoming messages can trigger switching commands to output ports or in the PLC and then either notify or record the status of the Tixi modem and the connected devices. Switching commands, sent via SMS for example, can contain a password. A message can be generated and sent automatically to notify you whether or not the command was executed successfully.

Remote Dial-In (TransMode)

Using the Remote Dial-In mode and the appropriate password, you can configure Tixi Alarm Modems remotely. It is also possible for a Tixi Alarm Modem to dial-in to a controller even if the controller hasn't been programmed to do so.

Data Logger

All events and variables can be stored with a time and date stamp and sent via e-mail at specific times. The logged data can be read remotely using the modem.

I/O Cards with 8 – 24 I/O ports, RS 232, RS 422/485

A variety of I/O cards are available with a) a second RS 232 (male) or b) with RS 232 (male) and RS 422/485. A card has either 8 ports: 5 inputs and 3 outputs, or 24 ports: 16 inputs and 8 outputs. Special models with 24 input or 24 output ports are also available.

Tixi Alarm Modems and PLC Systems

A number of Tixi Alarm Modems are available which directly support standard PLC systems such as:

Tixi AL Alarm Modem for **Mitsubishi ALPHA AL2**

Tixi EZ Alarm Modem for **Moeller EASY 400/600/800**

Tixi SB Alarm Modem for **Saia Burgess PCD and PCS**

Tixi S72 Alarm Modem for **Siemens Simatic S7-200/300** models

¹ With *Express E-Mail* you can send e-mails to a recipient directly through a telephone line bypassing the Internet. See the diagram "Tixi Communication Ways" in Appendix E. An Internet provider is not necessary in order to send Express E-Mail.

Tixi Alarm Modems communicate with these PLC systems using their respective protocols to ensure that you don't have to install any additional programs, drivers or functional blocks on the PLC systems. Tixi can read and write all important variables or ports of the PLC.

TxAlarm program modules are available free of charge for the **Conrad C-Control I + II** control units.

1.3 Modem Variants: Housing and Power Supply



Office Line (Type: CTS)
9 V AC with 230 V power supply
(country-specific)



Office Line (Type: BB)
12 V AC with 230 V power supply
(country-specific)



Industry Line (Type: KA5)
Screw terminal: 12 – 24 V DC

1.4 Tixi Message Modem Features

Type	SMS		Fax	E-mail	Express	Memory	
	mobile	PSTN				E-mail	Basic Memory
Tixi Super Modems							
SM03 Tixi Super Modem AT V.90	●	●	● 1)	● 1)	●	50...100 kB	2 MB
SD03 Tixi Super Modem AT ISDN	●			● 1)	●	50...100 kB	2 MB
Tixi Message Modems							
EM20 Tixi Message Modem AT V.90	●	●	●	●	●	2 MB	8 MB
ED20 Tixi Message Modem AT ISDN	●			●	●	2 MB	8 MB
EF20 ²⁾ Tixi Message Modem AT ISDN & Fax	●	●	●	●	●	2 MB	8 MB

1) This function is only available with a 2-MB memory upgrade (SX02).

2) With real-time clock (RTC) and lithium battery to safeguard the clock time during power failures.

Express E-Mail: With *Express E-Mail* you can send e-mails to a recipient directly through a telephone line and without logging on to the Internet. See also the diagram "Tixi Communication Ways" in the Appendix. An Internet provider is not necessary in order to send Express E-Mail. In order to send Express E-Mail, the recipient must have a Tixi-compatible modem.

SMS Mobile All Tixi AT Modems can send SMS via the mobile phone network. Mobile network operators currently have no plans to allow SMS messages to be received on a PSTN using this method.

SMS by PC A special service provided by Deutsche Telekom which makes it possible to receive and send SMS using the PSTN. This feature is supported by all analog Tixi modems (SM, EM, JM) and all Tixi ISDN modems with fax function (EF, JF).

Memory: In the Tixi Super Modem AT, data in basic memory (50 – 100kB) is not secure in the event of a power failure (SRAM). The basic memory (2 MB) used in the Tixi Message Modem and Tixi Alarm Modem is flash memory which protects data in the event of a power failure. All memory upgrades are flash memory and store the data even during power failures.

2 Getting Started

2.1 Configuring your Modem from a PC

As a rule, your Tixi modem needs to be tested and configured using a PC.

To do this, simply connect the Tixi modem to a serial interface on your PC using the cable included with your modem. Use the enclosed telephone or ISDN cable to connect the Tixi modem to the telephone network. Now connect the modem's power supply. If you are using an SM03-CTS, turn on the modem using the power switch on the right of the modem.

To test the Tixi modem you can use any standard terminal program (115200, 8N1) or **TACO**, the Tixi AT console (see below).

2.2 Activating Message Mode on your Modem

When you switch on your Tixi modem for the first time, it automatically enters **Modem Mode**.

A flashing red LED indicator on the modem indicates that the modem is on Modem Mode. When your Tixi modem is in this mode, you can use it as a normal AT Modem to do things like surf the web or send faxes from your PC.

The Tixi modem must be in **Message Mode** in order to recognise the various **Tixi message commands**:

- | | |
|-------------------------------------|---|
| 1. AT+T Mode = "MessageMode" | This command activates Message Mode.
The Modem Mode LED goes out. |
| AT+T Mode = "ModemMode" | Message mode remains active until
the Modem Mode is reactivated using this command. |

Use the following commands to test your modem:

2. **AT+T Echo="on"** – Activates the echo function which displays any commands you enter on the PC monitor.
3. **AT+T Verbose="on"** - Switches on comprehensive replies that give more information about the actions of the modem than just "OK" or "Error".
4. **AT+T Time="YYYY/MM/DD,hh:mm:ss,+0100"** – Sets the clock time in the Tixi modem that is used, for example, to give the time and the date in fax headers.

You can experiment by entering the Message Modem commands manually using the terminal program or TACO. The Tixi modem can then be connected to the control unit.

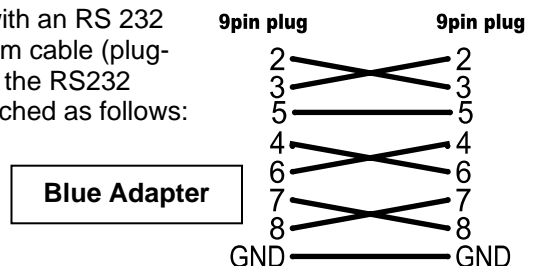
2.3 Using your Tixi Modem on a Controller

Tixi modem – null modem cable – controller

IMPORTANT! The RS232 cable (1:1-cable) supplied with your modem is only suitable for connecting your Tixi modem to a PC.

Null Modem Cables

To connect your Tixi Super Modem AT or Tixi Message Modem AT with an RS 232 socket to a control unit which has an RS 232 socket, use a null modem cable (plug-plug). Use a Blue Adapter (obtainable via your stockist) together with the RS232 modem cable to create a null modem cable. The Blue Adapter is switched as follows:



2.4 Using Super Modems and Message Modems with Conrad C-Control I + II

Tixi.com offers free sample programs (TxMessage function) and a manual for both of these control units. (See the enclosed CD.) You can use these programs to configure and control your Tixi modem.

2.5 Test 1: Sending a Fax

You can send faxes using the EM20, EF20 and SM03 with 2-MB memory card (SX02).

1. First, set the **general parameters** for all message types:

```
AT+T Send = "ALL; DialPrefix:nnn; ModemName:Name; ModemNumber:Number"
```

Replace the phrases written in italics with the values applicable to your connection:

<i>nnn</i>	External call prefix of the connection (optional)
<i>Name</i>	Enter a name for your Tixi modem here.
<i>Number</i>	The telephone number where the Tixi modem is operating.

2. To **send** the first **message**, use the command:

```
AT+T Send = "Fax; Dial: number"
```

Number Number of the recipient, including area code (if necessary).

3. **Enter the text** of the message.

After you send the **AT+T Send...** command to the Tixi modem, a prompt (>) appears. Type your message at this prompt. The message text must not contain umlauts.

The first line is the subject or header while the subsequent lines contain the text of your message. Close each line by pressing ENTER.

When you have finished entering your text and are ready to send the message, press <CTRL>+<Z> on a new line.

Doing this enters the text for all message types.

If "ERROR" appears at the prompt, there is an error in the syntax of the command. If this happens, check all entries after AT+T and correct them.

4. **Watch your Tixi AT Modem.**

The **Mail-Out LED** lights up when an outgoing message has been created.

The green **Line LED** flashes while the modem is establishing a connection and stays on as soon as the connection is made. The message is then sent.

This LED goes out when the connection is closed (the telephone handset is put down).

5. **Message Report:**

When a message has been sent, your Tixi AT Modem issues a report (in the terminal program, for example).

2.6 Test 2: Sending an Express E-Mail

To send and receive an Express E-Mail, the person you want to send the message to must have a Tixi-compatible modem.

To do a one-off response test, you can use the following Express E-Mail address at Tixi.com:

Tixi-Reply+49-30-40608-555

1. Use the command **AT+T Send = "ALL..."**(see above) just once at the beginning.
2. Send the Express E-Mail message using the command:

```
AT+T Send = "Express; Dial: call number; To: recipient; From: sender"
```

<i>Number</i>	Number of the recipient, including area code (if necessary).
<i>Recipient</i>	Express E-Mail address of the recipient (for example, <i>Fritz+49-89-9876543</i>)
<i>Sender</i>	Your Express E-Mail address (for example, <i>Hans+49-30-12345678</i>)

3. **Enter the text** of your message and proceed as described when sending a fax (see above).

2.7 Test 3: Reading Received Express E-Mails

Wait a moment until the message is sent. The Tixi mail system at Tixi.Com GmbH will receive your message and automatically send back a response to the sender address (this takes approx. 3-6 minutes). This allows you to check whether your Tixi modem is correctly connected and configured.

The green **Line** LED indicates that your Tixi modem is receiving a message. Once the message has been stored in memory, the red **Process** LED (or Mail-in LED) lights up. To read this message, do the following:

1. Send the **List** command:

AT+T List = "ALL" This displays a list messages stored in your modem.

The lines of this list begin with `+T List= ID number...`
- note the number which appears after the "=" symbol,
this is the ID number of the message.

2. Use the **Read** command to read this message:

AT+T Read = ID

Replace *ID* with the ID number of the message you want to read (step 1).
The message is then output by your Tixi modem (for example, to the terminal program).

3. If you no longer need the message, delete it using the **Delete** command:

AT+T Delete=ID

You will see that the message has been deleted from the memory of the Tixi modem because the red **Process** (or **Mail-in** LED) is no longer lit. If it is still lit, there are still other messages in the memory. You can display these using the **LIST** command.

2.8 Sending an SMS Message

Sending an SMS message is just as easy and is described in Section 5.2.3.

2.9 Getting Started with TACO - The Tixi AT console

To your Tixi modem even easier to use, Tixi.Com has developed a program called TACO - the Tixi AT console. This tool lets you configure and use your Tixi modem quickly and easily and without having to study pages of documentation. (some Tixi modems include a version of TACO on CD). For more information on installing and using TACO, please refer to Section 7.

2.10 Using your Tixi Modem as a PC Modem

If you want to use your Tixi AT Modem as a "normal" modem or ISDN-TA running under Windows, install the modem driver contained on the CD which came with your modem. The installation process is described in the Tixi AT Modem manual which is also contained on the CD-ROM. This also contains a description of the standard Hayes AT commands used by your Tixi AT Modem. This manual, however, is intended for advanced applications and is not necessary for normal operation of your modem.

3 Sending and Receiving SMS Messages

3.1 Mobile SMS or PSTN SMS?

There are two ways of sending SMS messages from a PSTN²:

- **SMS messages** sent to a **mobile recipient** (for example, a mobile phone or GSM modem)
- **SMS messages** sent to a special type of recipient in a **PSTN**

Receiving SMS messages on a PSTN is only possible under certain conditions

- **Receiver with the SMS by PC function**
for example, several DECT telephones, some telecom equipment, Tixi modems
- **Registration with a PSTN SMS Service Centre** (see below)

3.2 Sending SMS Messages to a Mobile Phone Network

If you want to send an SMS message to a mobile phone user or GSM modem, you must specify the relevant SMS Service Centre:

Germany:

D1 0171-2521002 (analog), 0171-2521001 (ISDN)

D2 0172-2278025 (analog), 0172-2278010 (ISDN)

E-plus 0177-1167

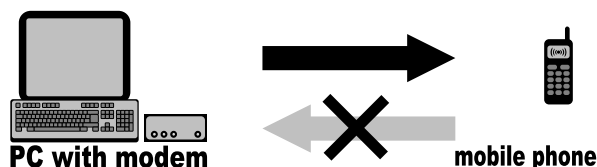
Austria:

A1 0900-664914 (analog)

Switzerland:

NatelD 079-4998990 (UCP)

SMS via mobile gateway



These mobile radio SMS service centers (SMSC) work **only in ONE direction: PSTN → mobile network.**

Using this procedure, the SMS message is only issued by a sender modem or PC in the SMS Service Centre and then the connection ends.

As the Service Centre does not know who issued the SMS message, it is not possible to notify the sender if and when the SMS has been received by the recipient.

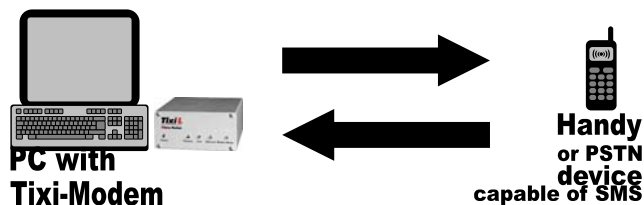
It is not possible to send an SMS message from a mobile network to a PSTN via these SMS Service Centres.

(The SMS is converted into a voice message instead of being transmitted as text.)

3.3 Receiving and Sending SMS Messages via a PSTN

At present, only Deutsche Telekom and the special service provider AnnyWay provide SMS messaging to and from a PSTN using Deutsche Telekom telephone lines.

SMS via PSTN gateways



Use the numbers of these SMSCs to send and receive SMS messages via a PSTN:

Deutsche Telekom AG: 0193010

AnnyWay: 09003266900

Make sure you enter the correct address format for the recipient of the message. The address consists of the area code, directly followed by the telephone number. Note that the area code must be preceded by "0" (zero).

To make sure that the SMS message arrives as text message, the user and recipient must use the same SMSC. Otherwise, the SMS message will be converted into a voice message.

² PSTN: analog and ISDN telephone network

SMS by PC is a relatively new service to be provided by Deutsche Telekom. Alterations and upgrades to this service are to be expected. For the latest information on this subject, visit <http://www.sms-im-festnetz.de>.

At present, it is only possible to use the full range of SMS features provided by the Tixi AT Modem family with telephone lines which are connected to the national network by Deutsche Telekom AG.

If you receive a telephone bill which is not issued by Deutsche Telekom AG, please ask your telephone company about the services it provides to support SMS messaging on PSTN.

3.3.1 Receiving SMS Messages via PSTN

To receive SMS messages via a PSTN, the CLIP service must be activated on your telephone line and supported by an intermediate telecom system or an ISDN telephone system. For more information, please contact your telephone service provider or telephone system supplier.

If your telephone line or equipment is not installed correctly, all incoming SMS messages will be converted to voice messages.

3.3.1.1 Receiving SMS Messages via the Deutsche Telekom Network

To make sure that SMS messages are transmitted as text messages instead of being converted to voice messages, the relevant function must be activated on your line. To do this, simply send an SMS message with the word **ANMELD** to the number 8888. To cancel the function, simply send an SMS message with the word **ABMELD** to the same number.

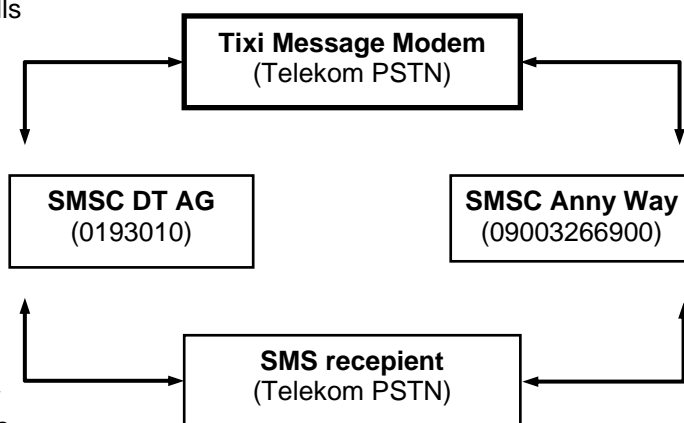
3.3.1.2 Receiving SMS Messages via AnnyWay

If you want to receive SMS messages via this provider, you must first send an SMS message from this line. This activates the function to allow you to receive SMS messages in text form. If you want to cancel this function, simply send an SMS message to AnnyWay at 2547 (with the word: CLIP).

3.3.2 Detailed Description of SMS Messaging via a PSTN

To be able to use SMS messaging on a PSTN, you will need to do the following:

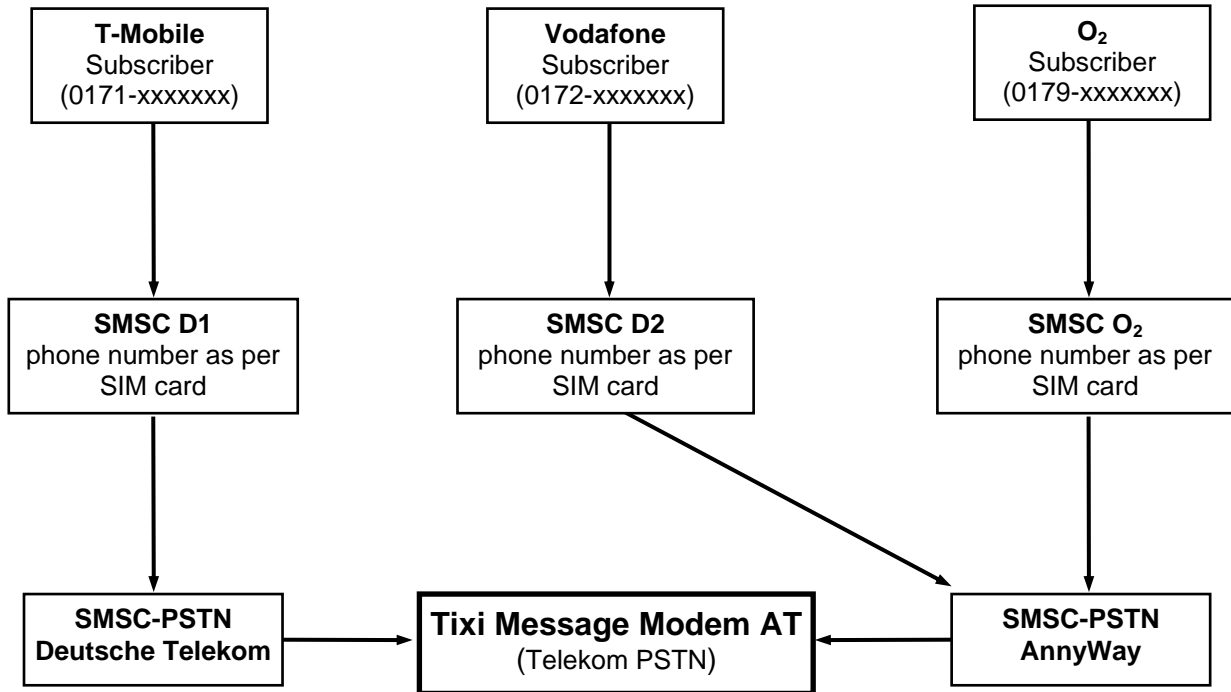
1. Activate own number sending for all outgoing calls (CLIR activated)
2. Activate caller ID for all incoming calls (CLIP activated)
3. The PSTN line must be registered with the SMSC³ as being SMS-compatible.
4. Make sure your telephone equipment is SMS-compatible.
4. Make sure your the telephone service provider
5. offers the "SMS by PC" service. Messages can be sent via both SMSCs. In order to make sure you always receive SMS messages in text form, you should configure the device for receiving messages from *both* SMSCs.



The messages are sent via the SMSC gateways of the respective mobile network operators.

³ SMSC: SMS Service Centre

Receipt of SMS



SMS messages from the D1 mobile network are received on a PSTN via the Deutsche Telekom AG SMS Service Centre, while messages from the D2 and O2 networks are received via the Anny Way SMS Service Centre.

4 Tixi Message Mode

Before you can send a message using Tixi message commands, you must first activate the Tixi Message Mode. See Section 2 (**AT+T Mode = "MessageMode"**).

4.1 Sending a Message

The basic structure of the send command is always the same, regardless of which message type or Tixi modem you are using:

```
AT+T Send = "message type; Parameter"
```

At present, you can send the following types of message:

SMS	Send an SMS message
Fax	Send text as fax
Express	Send Express E-Mail
EMail	Send Internet e-mail
POP3	Get Internet e-mail

The parameters contain the necessary specifications such as the addresses of sender and, if necessary, recipient, Internet access data or the call number of the SMS service centre.

The command to send an SMS will look something like this:

```
AT+T Send = "SMS; To: 017312345678; ServiceCentreNumber: 0193010"
```

The maximum command length is 200 characters. Longer commands have to be split into pieces.

When you enter the send command, the Tixi modem displays a prompt (>), where you can enter the text of the message. If you are sending an SMS message, the 160 characters which can be contained in a single message are displayed on a single line. The message text must not contain umlauts.

To send the message, use the ENTER key to start a new line and then press <CTRL>+<Z> to mark the end of the text entry.

For a Message Modem with 2MB memory the maximum text length is 700KB.

4.2 Information About Tixi AT Commands

The special AT commands for the Message Mode can also be used as "normal" Hayes AT commands. You can display the configured values as well as a list of the possible parameters for each of these commands. The syntax is the same for each command.

4.2.1 Displaying Configured Values: "?"

For a quick overview of which parameters are already "filled" with values, send the command followed by a question mark.

To display the already configured parameter for the command, enter the following:

```
AT+T Command?
```

4.2.2 Displaying a List of Parameters: „=?“

If you are not sure which parameters to use for a specific command, or what syntax to use, the parameter query command will assist you.

Send the relevant command followed by "=?".

To display the possible parameters for the command, enter the following:

```
AT+T Command=?
```

This displays a list of all parameters that are applicable to the specific command.

You can do this any time you want to check whether you have entered the values in full and to see if any are still missing.

4.3 Feedback When Sending Messages

4.3.1 Reports After Sending Each Message

A report is generated after a send command has been sent to your Tixi modem and the message has been successfully sent. This report contains the most important data about the message transmission.

If you set `AT+T Verbose="Off"`, only brief messages are displayed (`OK` or `error`).

If you set `AT+T Verbose="On"`, the reports contain comprehensive information about the transmission of messages.

These reports contain the following format:

<code>+T Send: sending message</code>	
<code>* StartTime: beginning</code>	Time the transmission started
<code>* EndTime: end</code>	Time the transmission ended
<code>* Connect: speed</code>	Connection report of the modem
<code>OK</code>	OK response of the modem

Additional information may be given depending on the message type.

The comprehensive reports are important if you need to test the connections and to quickly find the cause of any errors that occur.

4.3.2 Express E-Mail

Additional information after sending an Express E-Mail:

<code>* RemoteBoxName: BoxName</code>	Name of the recipient's Tixi mailbox ⁴
<code>* RemoteBoxNumber: number</code>	The recipient's Tixi mailbox number
<code>* RemoteBoxSerial: series#</code>	Serial number of the recipients Tixi mailbox

4.3.3 Fax

Additional information after sending a fax message:

<code>* FaxIdentify: ID</code>	Station ID of the receiving fax machine
<code>* Pages: pages</code>	Number of transmitted pages
<code>* Baudrate: speed</code>	Transmission speed

4.3.4 SMS

Additional information after sending an SMS message:

<code>* SMSC Time: Time</code>	The time stamp of the service centre sent via the SMS.
--------------------------------	--

4.3.5 Sending Internet E-Mail

No additional information is provided when you send Internet e-mail.

4.3.6 Retrieving Internet E-Mail

Additional information after retrieving Internet e-mail (POP3):

<code>* DetectedMails: number1</code>	Number of messages detected in the mailbox
<code>* DetectedSize: size1</code>	Size of detected messages
<code>* ReceivedMails: number2</code>	Number of received messages
<code>* ReceivedSize: size2</code>	Size of messages received

⁴ **Tixi-Mail Box:** A Tixi-compatible modem with memory (2 MB – 36 MB) that is operated on a PC and sends and receives e-mails and Express E-Mails without having to switch on a PC. (see also the diagram "Tixi Communication Ways" in Appendix E). Tixi mailboxes communicate with all current e-mail programs (such as Outlook, Outlook Express, SMTP/POP3 programs) but not with AOL.

5 Tixi Message Commands

In **Message Mode**, you can send this extended command to your Tixi AT Modem. If you use this command in **Modem Mode**, an error will occur.

5.1 Overview of the Commands

Sending messages

<code>AT+T Send="All; ..."</code>	sets general send parameters
<code>AT+T Send="SMS; ..."</code>	sends an SMS message (depending on device)
<code>AT+T Send="Fax; ..."</code>	sends a fax (depending on device)
<code>AT+T Send="EMail; ..."</code>	sends an Internet e-mail
<code>AT+T Send="POP3; ..."</code>	retrieves Internet e-mail from provider
<code>AT+T Send="Express; ..."</code>	sends an Express E-Mail

Control and Configuration

<code>AT+T Send?</code>	displays the current configuration
<code>AT+T List</code>	displays a list of the messages received
<code>AT+T Read</code>	displays received messages
<code>AT+T Delete</code>	deletes received messages
<code>AT+T Time</code>	sets the system time <code>Time?</code> displays the system time
<code>AT+T Echo</code>	switches the local echo on or off
<code>AT+T Verbose</code>	switches comprehensive feedback on or off
<code>AT+T MSN</code>	sets the MSN of ISDN devices
<code>AT+T Speaker</code>	sets the sound level of the modem speaker
<code>AT+T Answer</code>	switches the call receipt on or off
<code>AT+T Erase</code>	resets your Tixi AT Modem (factory default)
<code>AT+T Redial</code>	sets the number of redials attempts (default=0)
<code>AT+T RedialDelay</code>	defines the delay time between redial attempts (default=90)
<code>AT+T DialRules</code>	defines dial method and dialtone detection
<code>AT+T Mode</code>	switches between modem mode and Message Mode
<code>AT+T Help</code>	displays an overview of the extended commands
<code>AT+T Format</code>	defines data format on serial interface

Remote Dial-In and the Tixi Data Router

`AT+T Send="TransMode; ."` Remote dial-in to a Tixi modem and transparent mode via the RS 232 connection to the connected control unit, see Section 0.

Explanation of the AT+T Commands on the Following Pages:

<code>AT+T Send = "All;..."</code>	Command in short form
<code>AT+T Send = "ALL;"</code>	Syntax of the command with all parameters
Text	Description of the command
	Parameters with explanations
	Example

5.2 AT+T Send – Sending SMS, E-Mail, Fax and Express E-Mail Messages

5.2.1 Setting General Tixi Modem Parameters

AT+T Send="All;..."

```
AT+T Send="ALL; DialPrefix:nnn; ModemName:Name; ModemNumber:number End:char"
```

This command sets the parameters that are common to all types of messages; no message is sent.

No message text can be entered after this command!

nnn: Getting an Outside Line Prefix

If you are using your Tixi AT Modem on a system where a prefix is needed to get an outside line, enter it here.

Enter characters which can be dialed (0-9,*,#, comma) only.

If no prefix is needed to get an outside line, you can leave out this parameter.

Name: When sending fax messages, this name is used in the **header** of the fax sent and as **Tixi box name** when sending Express E-Mails. A maximum of 16 alphanumeric characters is allowed.

Number: Number of the **telephone line** to which your Tixi modem is connected. This number must be entered in international format: **+49-30-1234567**. This number is used in the headers of fax messages and is listed as the sender for Express E-Mails.

Char: Defines the character that closes the message and starts sending. (default: <STRG>+<Z>)

Example:

Enter the external call prefix "0", the Tixi modem name "Tixi.Com GmbH" and the telephone number "+44-20-1234567":

```
AT+T Send = "All; DialPrefix:0; ModemName: Tixi.Com GmbH;
ModemNumber: +44-20-1234567"
```

5.2.2 Sending a Fax

AT+T Send="Fax;..."

```
AT+T Send="Fax; Dial: number"
```

```
>SubjectText
```

```
>MessageText line#1
```

```
>MessageText line#n
```

```
><CTRL>+<Z>
```

This command sends a text message as fax or sets the parameters.

When you have closed the command line with <CR/LF>, your Tixi AT Modem displays a prompt (>) where you can specify the subject line you want in your e-mail. The message text is entered in subsequent lines. To close this message, press the keys <CTRL>+<Z>.

If you skip the message text, the parameters are saved for later use until replaced by new parameters.

Number: The recipients fax number. Enter characters which can be dialed (0-9,*,#, comma) only.

SubjectText: This is the first line of the message text. It forms the subject line of the fax message.

MessageText line#1...n: Other lines of the message text. Each line is entered at the prompt character displayed by the modem and closed by <CR/LF>. During sending the modem does an automatic line break after 75 characters by itself. The message text must not contain umlauts.

Example:

```
AT+T Send="Fax; Dial: 40578747"  
>Hello Paul  
>This is the important message sent by fax.  
>  
>See you.  
><CTRL>+<Z>
```

Short modem reply: OK

5.2.3 Sending an SMS Message

AT+T Send="SMS;..."

```
AT+T Send="SMS; To: recipient; ServiceCentreNumber: SCNumber; Type: Protocol"  
>MessageText  
><CTRL>+<Z>
```

This command sends an SMS message or sets the parameters. When you close the command line by pressing <ENTER> (<CR/LF>), your Tixi modem displays a prompt (>) where you enter the message text on one line. To end and send the message, press <ENTER> and then <CTRL>+<Z>.

If you skip the message text, the parameters are saved for later use until replaced by new parameters.

SCNumber: The relevant SMS service centre number. This parameter must also be set when receiving SMS messages because incoming SMS calls are recognized using this number. Enter characters which can be dialled (0-9, *, #, comma) only.

Recipient: Number of person receiving the SMS message – in most cases a mobile phone number.

Protocol: Protocol of the relevant SMS service centre. Valid values are:
D1_TAP Sending SMS via D1-SMSC (for example, D1 mobile phone)
D2_UCP Sending SMS via D2-SMSC (for example, D2 mobile phone)
Mobilkom_A_TAP Sending SMS via Mobilcom Austria (A1)
PSTN Sending SMS Messages via PSTN-SMSC
(for example: (to PSTN terminals or mobile phones)

If not indicated otherwise, the protocol supported by the host of the recipient call number is automatically used. (Germany only)

MessageText: At the prompt, enter the SMS text and finish by pressing <CR/LF>. A maximum of 160 characters may be used for the text of an SMS, including <CR/LF>. Enter the SMS text as consecutive text in one line. The message text must not contain umlauts. (The <CR/LF> character is created by pressing the ENTER key)

Example:

a) The send command configures all necessary parameters and an SMS message is sent:

```
AT+T Send="SMS; To:071365776; ServiceCentreNumber:0193010"  
>The message text follows here.  
><CTRL>+<Z>
```

Comprehensive modem reply:

```
+T Send: sending message  
* StartTime: 2001/10/30,09:42:13  
* EndTime: 2001/10/30,09:42:26  
* SMSC Time: 2001/10/30,09:42:48  
OK
```

b) The send command uses the configured parameters (incl. receiver number) and an SMS message is sent:

```
AT+T Send="SMS;"  
>The message text follows here.  
><CTRL>+<Z>
```

Short modem reply: OK

Note: The phone numbers of the SMS service centre are listed in Section 3.

5.2.4 Sending an Express E-Mail

AT+T Send="Express;..."

```
AT+T Send="Express; To: Recipient; Dial: Number;From: Sender"  
>Subject  
>MessageText line#1  
>MessageText line#n  
><CTRL>+<Z>
```

This command sends an Express E-Mail or sets the parameters.

When you have closed the command line with <CR/LF>, your Tixi AT Modem displays a prompt (>) where you can specify the subject line you want in your e-mail. The actual message text is entered in the subsequent lines. To close this message, press <CTRL>+<Z>.

If you skip the message text, the parameters are saved for later use until replaced by new parameters.

Number: This is the number that must be dialled to select the recipient (for example, a Tixi mailbox⁵ or a Tixi Super Modem).
Enter the number exactly as it is to be dialled, including all country or area codes.
Leave out the external call prefix that was indicated in the general parameters.

Recipient: Express E-Mail address of the recipient, for example, PAUL+49-30-1234567.
This is inserted in the To: field in the head of the Express E-Mail.

Sender: Express E-Mail address of the sender, for example, OTTO+49-30-7654321.
This is inserted in the From: field in the header of the Express E-Mail.

Subject: Subject line of the message.
This is always generated from the first line that is entered after the prompt.

MessageText line#n: Other lines of the message text.
Each line is entered at the prompt displayed by the Tixi modem and closed by <CR/LF>.
During sending the modem does an automatic line break after 75 characters by itself. The message text must not contain umlauts.

Example:

The send command configures all necessary parameters and sends an Express E-Mail:

```
AT+T Send="Express; Dial: 1234567; From: JOHN+44-20-7654321;  
To: PAUL+44-20-1234567"  
>Hello Paul,  
>The fan in room 123 in house 12 is not working.  
>  
>Regards, John.  
><CTRL>+<Z>
```

Short modem reply:

```
OK
```

⁵ **Tixi-Mail Box:** A Tixi modem with 2 MB – 66 MB memory that functions as an “e-mail answering machine” for a PC. A Tixi mailbox can receive and send e-mails even if the PC is switched off. E-mails are processed in a standard e-mail program such as Outlook (POP3 and SMTP).

5.2.5 Sending Internet E-Mail (SMTP)

AT+T Send="Email;..."

```
AT+T Send="Email; To: Recipient; Dial: Number; From: Sender; Flags:flag;
      Username:SMTP-Username; Password:SMTP-Password;
      PPPUser: User; PPPPassword: Password; SMTPMailServer: SMTPServer";
>Subject
>MessageText line#1
>MessageText line#n
><CTRL>+<Z>
```

This command sends an Internet e-mail or sets the parameters.

After closing the command line using <CR/LF>, your Tixi modem displays a prompt (>) where you can specify the subject line.

The actual message text is entered in the subsequent lines.

To close this message, press <CTRL>+<Z>.

If you skip the message text, the parameters are saved for later use until replaced by new parameters.

Number: Access number of the Internet provider.
Enter characters which can be dialed (0-9,*,#, comma) only.

Sender: Internal e-mail address of the message sender, for example, paul@company.com.
This address is used for the From: field of the outgoing message.

Recipient: Internet e-mail address of the message recipient, recipient otto@provider.net. This address is used for the To: field of the outgoing message.

Flag Enter "Pbs" here if POP-before-SMTP is to be used.
(otherwise you can omit the parameter.)
Enter "ESMTP" here if SMTP authentication is to be used. In that case you have to enter additional SMTP-Username and SMTP-Password.

SMTP-Username: SMTP user name for ESMTP.

SMTP-Password: SMTP password for ESMTP.

User: PPP user name to dial into the Internet provider.

Password: PPP password.

SMTPServer: Name or address of the SMTP server that is to send the message, for example, mail.provider.com.

Subject: Subject line of the e-mail.
This is always generated from the first line that is entered after the prompt.

MessageText line#1...n: Other lines of the e-mail text.
Each line is entered at the prompt character displayed by the modem and closed by <ENTER>. The message text must not contain umlauts.

Example:

An Internet e-mail is sent:

```
AT+T Send="EMail; Dial: 0191011; From: RT343@T-Online.de;
      To: TaskForce@Tixi.Com;
      PPPUser: 00012345678445566; PPPPassword: Rose;
      SMTPMailServer: mailto.t-online.de"

>Hello Paul,
>This is the important message sent by e-mail.
><CTRL>+<Z>
```

Short modem reply:

OK

5.2.6 Retrieving Internet E-Mail (POP3)

AT+T Send="POP3;..."

```
AT+T Send="POP3; Dial: Number; PPPUser: ISP user; PPPPassword: ISP-PW; Flags: Flag;
        Username: Mailbox; Password: MailPW; POP3MailServer: POP3server"
>START
><CTRL>+<Z>
```

This command tests the specified mailbox (POP3) and starts retrieving email, if necessary. Each fully downloaded message is deleted from the POP3 server.

If e-mails are stored in the memory of your Tixi modem, the red Process/Mail-in LED on the modem lights up.

IMPORTANT! Because this is a send command, a prompt also appears here after you enter the command.

To start retrieving e-mail, press ENTER followed by CTRL+Z.

If you press ESC the parameters are saved but no POP3 query will be executed.

Number:	Access number of the Internet provider. Enter characters which can be dialed (0-9, *, #, comma) only.
ISP user:	PPP user name to dial into the Internet provider.
ISP-PW:	PPP password.
Flag:	If you indicate "DontDelete", the messages will not be deleted by the server after they are retrieved. "Delete" will delete them after retrieval.
Mailbox:	User name of the mailbox (POP3) for registering on the mail server.
MailPW:	Mailbox password.
POP3server:	Host name or IP address of the POP3 mail server that holds the message, for example, <code>mail.provider.com</code> .

Example: The mailbox `Smith` (password: `John`) is retrieved from the mail server `mail.provider.com`.

For PPP login, the user name `JSmith` and password `Petsname` are used:

```
AT+T Send = "POP3; Dial: 2345678; PPPUser: JSmith; PPPPassword: Petsname;
        Username: Smith; Password: John;
        POP3MailServer: mail.provider.com"
```

```
><CTRL>+<Z>
```

Modem reply: OK

* DetectedMails:	<i>Number1</i>	Number of messages detected in the mailbox
* DetectedSize:	<i>Size1</i>	Size of detected messages
* ReceivedMails:	<i>Number2</i>	Number of received messages
* ReceivedSize:	<i>Size2</i>	Size of messages received

Since the configuration parameters are only necessary when you first configuration and are optional after this, you can start continuous mail retrieval with the following short command:

```
AT+T Send = "POP3"
>START
><CTRL>+<Z>
```

5.3 AT+T - Displaying Received Messages

AT+T List = "type"

Displays a list of all received messages of the indicated message type.

Type:	The type of the messages to be displayed. The following types are supported:
ALL	All messages
SMS	SMS (mobile and PSTN).
Express	Express E-Mail.
EMail	Internet e-mail.

Response:

```
+Tlist=Entry#1, type#1, time#1
+Tlist=Entry#2, type#2, time#2
...
+Tlist=Entry#n,type#n,time#n
OK
```

Entry#n: Number of the entry.
The corresponding message can be referenced with this number to read it out or delete it.

Type#n: Message type of the nth entry in the list.

Time#n: time stamp of the corresponding message. It is generated by the Tixi AT Modem when the message has been received completely.

Example:

AT+T ="ALL" Show all received messages.

Modem reply:

```
+T List=11,SMS,2001/10/7,12:05:55
+T List=12,SMS,2001/10/7,12:10:16
+T List=21,Express,2001/10/7,12:22:27
OK
```

AT+T ="SMS" All received SMS messages are shown.

Modem reply:

```
+T List=11,SMS,2001/10/7,12:05:55
+T List=12,SMS,2001/10/7,12:10:16
OK
```

5.4 AT+T Delete - Deleting a Stored Message

AT+T Delete=Number..

Deletes the message with the indicated number from the memory of your Tixi AT Modem.

Number: Number of the message to be deleted.
This number can be determined through the **List** command. To delete the first stored message (that is the oldest), enter a 0 (zero) as the number.

Example: A message with the number 11 will be deleted:

```
AT+T Delete=11
```

Modem reply: OK

5.5 AT+T Read - Reading a Stored Message

AT+T Read=Number..

Lists the message with the indicated ID from the memory of the Tixi AT Modem.
The message is not deleted and can be read as often as you want.

Number: Number of the message to be read.
This number can be determined using the **List** command.
To read the first stored message (the is the oldest), enter a 0 (zero).

Response:

Short response (AT+T Verbose="Off"):

```
+T Read= number, type, time
*message
OK
```

Comprehensive response (AT+T Verbose="On"):

```
+T Read: Number, type, time
"ParameterList"
*message
OK
```

Message: Text of the message.
Each text line of the stored message begins with *

ParameterList: Additional Parameters – depending on message type.

Number: Number of the message to be read.

Type: SMS, Express E-Mail or Internet e-mail

Time: Time stamp of the message
is set after successful receipt from the Tixi AT Modem.

Example: An SMS message with the number 11 is read out:

```
AT+T Read = 11
```

Modem reply:

```
+T Read: 11, SMS, 2001/10/07,12:05:55
"From:071346768422; TimeStamp:2001/10/07,12:05:37"
*That is a message from Hans!
OK
```

5.6 AT+T Answer - Setting the Response Procedure

AT+T Answer="OnOff"

Switches the modem's call answering on or off. (Necessary to receive Messages.)

OnOff:

on Call answering on (default)
off Call answering off

Example: Switch off the call answering:

```
AT+T Answer="Off"
```

Modem reply: OK

AT+T Answer?

Displays the active answer setting. (no parameters)

```
AT+T Answer?
```

Modem reply:

```
+T Answer: "On"
OK
```

5.7 AT+T Time – Setting the System Time

AT+T Time="time"

Sets the system time for your Tixi modem which is used for internal time stamp, *date* fields for SMTP messages and fax headers.

The internal system time must be set for all Tixi modems:

- after initial connection
- after time changes (normal/summer time)
- when using in other countries/time zones
- in devices which do not have battery-buffered RTC (real-time clock) after they have been disconnected from the power supply.

Check the time from the controlling application as needed and set, if necessary.

Time: Format of the system time to be set:

YYYY/MM/DD, hh:mm:ss, time zone

YYYY: year (1980...2036)

MM: month (01...12)

DD: day (01..31)

hh: hour (00..23)

mm: minutes (00...59)

ss: seconds (00...59)

Time zone: Time zone in which the Tixi modem is located.

The value gives the difference from GMT with this syntax: +/-**HHMM** (for example, +0100 for CET).

Example: The system time of the Tixi AT Modem is set at 24.1.2003, 12:16:00 CET:

```
AT+T Time="2003/01/24, 12:16:00, +0100"
```

Modem reply: OK

Reading the Current System Time:

AT+T Time?

Displays the system time of the Tixi AT Modem.

Example: AT+T Time?

Modem reply:

```
+T Time: 2003/1/24,12:17:00,+0100  
OK
```

5.8 AT+T Echo - Switching the Echo On or Off

AT+T Echo="OnOff"

Switches the echo for keyboard input on or off.

OnOff:	On	Echo switched on (default)
	Off	Echo switched off

Example: AT+T Echo="On"

Modem reply: OK

AT+T Echo?

Displays the active echo setting. (no parameters)

AT+T Echo?

Modem reply:

```
+T Echo: "On"  
OK
```

5.9 AT+T Verbose - Switching Comprehensive Responses On or Off

AT+T Verbose="OnOff"

Switches the comprehensive responses of the Tixi modems on or off.

OnOff:	On	Switch on comprehensive responses (default)
	off	Switch off comprehensive responses

Example: AT+T Verbose="On"

Modem reply: OK

AT+T Verbose?

Displays the active response setting. (no parameters)

AT+T Echo?

Modem reply:

+T Verbose: "On"

OK

5.10 AT+T MSN – Setting the MSN in ISDN T/As

AT+T MSN="MSN"

Sets the MSN of the Tixi AT Modem (only in the case of ISDN devices).

This command is not used for analog devices.

MSN:

- *** Answers all calls, provided call answering is turned on (**default**), see Section 5.6
- nnn** The MSN to which the device should respond. Calls for all other numbers are not accepted.

Example: Sets the MSN to 12:

AT+T MSN="12"

Modem reply: OK

Sets the default MSN:

AT+T MSN="*"

Modem reply: OK

AT+T MSN?

Displays the configured MSN. (no parameters)

AT+T Echo?

Modem reply:

+T MSN: "*"

OK

5.11 AT+T Mode – Activating Modem Mode or Message Mode

AT+T Mode="Mode"

Sets the operating mode of the Tixi modem.

ModemMode: Tixi modem works like a "normal" modem or an ISDN-TA.
The standard Hayes AT commands are applicable.
The Tixi Message commands are not applicable.
The red Modem Mode LED lights up.

MessageMode: The automatic functions of the Tixi AT Modem are activated and effective.
This mode must be activated,
otherwise the message commands described here may not be used!
The standard Hayes AT commands are not applicable.
The Modem Mode LED is switched off.

Other modes for other Tixi modem products: **TiXMLMode**, **TixiMode** (Modem Mode LED off)

Mode: **ModemMode** (default)
 MessageMode

Example: **AT+T = "MessageMode"** activates Message Mode.

Modem reply: OK (the *Modem Mode* LED turns off)

Use also: **AT+T Mode?** shows the current mode
 and **AT+T Mode=?** shows the possible modes

5.12 AT+T Help - Showing a Command Overview

AT+T Help

Gives an overview of the instruction set of the Tixi Message Modem.
In this way you can access the most important information at any time when working with the Tixi modem even when the manual is not available. (no parameters)

5.13 AT+T Erase - Resetting Your Tixi AT Modem

AT+T Erase

Use this command to reset your Tixi modem. The modem is reset, all user-defined settings are deleted and the device is returned to its factory default settings.

5.14 AT+T Redial

AT+T Redial

Sets the number of automatic redial attempts.

Redials 0...9 (default=0)

Example: **AT+T Redial="3"**

Modem reply: OK

AT+T Redial?

Displays the configured number of automatic redials. (no parameters)

AT+T Redial?

Modem reply:

+T Redial:"3"

OK

5.15 AT+T RedialDelay

AT+T RedialDelay

Sets the time to wait between redial attempts.

Delay 60..600 (default=90)

Example: AT+T RedialDelay="120"

Modem reply: OK

AT+T RedialDelay?

Displays the time to wait between redials. (no parameters)

AT+T RedialDelay?

Modem reply:

+T RedialDelay:"60"

OK

5.16 AT+ T Speaker - Adjusting the Modem Speaker Volume

AT+T Speaker="Volume"

Sets the volume level of the modem speaker.

This command only applies to analog Tixi modems (SM03, EM20) and the EF20.

Volume:

Off	switches the speaker off
Min	low volume level (default)
Middle	middle volume level
Max	maximum volume level

Example: AT+T Speaker="Middle"

Modem reply: OK

AT+T Speaker?

Displays the speaker settings. (no parameters)

AT+T Speaker?

Modem reply:

+T Speaker: "Off"

OK

5.17 AT+T DialRules – Dial method, Dial tone detection

AT+T DialRules="DialMethod,DialTone"

Defines dial method and dial tone detection rules.

DialMethod:

Tone: Tone dialing (MFV) (default)

Pulse: Pulse dialing IWV

DialTone:

NoWaitForDialTone: device doesn't wait for a dial tone (ATX3)

WaitForDialTone : device does wait for a dial tone (ATX4)

Example: AT+T DialRules="Tone,NoWaitForDialTone"

Modem answers: OK

AT+T DialRules?

Shows settings of dial method and dial tone detection.

AT+T DialRules?

Modem answers:

+T DialRules: "Tone,NoWaitForDialTone"
OK

5.18 AT+T Format – Data format

AT+T Format="Dataformat "

Defines data format on serial port.

Dataformat DatabitsParityStopbits

Databits : 8
 7
Parity : N (none)
 E (even)
 O (odd)
Stopbit : 1
 2

Beispiel: AT+T Format="8E1"

Modem answers: OK

AT+T Format?

Shows active data format.

AT+T Format?

Modem answers:

8E1

6 RS 232 Transparent Mode (TransMode)

The TransMode allows the remote control of a control unit (PLC) or another RS-232 device via a Tixi modem as if you were sitting near the device and connected locally via RS 232.

All commands that you can give to this device via the local RS 232 interface can also be issued via TransMode from any telephone connection or via GSM modem.

Dial-in access can be password-protected.

An application of the TransMode command, for example, would be the control and configuration of a technical system that is connected to the Tixi Message Modem AT via an RS232 interface.

To use the TransMode, do the following:

1. Configure the Tixi Message Modem AT using the TransMode command.
2. Connect your Tixi modem to the device you want to control remotely.
To do this you will need a null modem cable (usually plug-plug), for example, the "Blue Adapter".
3. Test the remote dial-in with a Tixi modem or another modem using a terminal program (dial-in of the Tixi Message Modem).
4. The Login command for the selected Tixi Message Modem must be entered **within 5 seconds** of the modem connecting (see Section 6.2).
The RS 232 is then connected to both modems.
5. Control your remote device.
All data that you send from the PC to the local modem is transmitted over the telephone line to the Tixi Message Modem AT and from this modem to the connected device via RS 232.
You can operate it as if you were directly sitting in front of it.
6. Close the connection by
 - hanging up by the caller modem
 - optional timeout in the Tixi modem
when no more data is coming (default: 75 seconds)

Time delays during modem transmissions

A remote connection and data conversion in both modems lead to delays in the runtime of data from PC to the control unit in comparison to a direct local connection via an RS 232 cable. Some configuration programs for control units expect a response within a few milliseconds. Errors can occur in these programs. Ask the manufacturer of these programs and control units how the timeout for the communication with the control unit can be increased to, for example, 500 ms.

6.1 TransMode Command

AT+T SEND="TransMode; ..."

AT+T SEND="TransMode; Enabled:Enabled;Password: Password; Format: Format; Handshake:Handshake; Keep:timeout; Baudrate: RS232Speed; Com:Port"

Switches the RS 232 to a connected device during dial-in from the outside so that the device can be controlled remotely.

Enabled	Sets the TransMode to active (On) or inactive (Off).
Password	Access password This protects your Tixi Message Modem AT from unauthorized dial-in and thus protects the connected control unit from being used by unauthorized persons. When no password is indicated (default: empty) and AT+T Answer="On", anything can be selected.
Format	Data format of the RS232 interface. Notation: DatabitsParityStopbits. Default: 8N1.
Handshake	Handshake protocol for the RS 232. Values: None, RTSCTS, XONXOFF, SUCOM SUCOM applies to the Moeller EASY 400, 600 and 800 PLC.

Timeout	Idle timeout Sets how long the connection remains available after which no more data is transmitted. The default value is 75 seconds. A value of 0 switches this function off, that is, the Tixi modem will not end the connection even if no more data is coming.
RS232Speed	Data speed on the RS 232 between the Tixi Message Modem AT and device connected to it. Default value: 115,200 Baud.
Port	Remote interface to connect to.

Example: The Tixi AT Modem is configured for the TransMode:

```
AT+T SEND="TransMode; Password:sesam; Format:8N1; Handshake:None; Keep:20; Baudrate:9600; Enabled:On; Com:MB"
```

When a call is being received, the Tixi modem connects the RS 232 to the connected device. All data is now transmitted in both directions as if the devices were directly connected.

6.2 TransMode Login Command

To use the TransMode of the Tixi Message Modem AT, these prerequisites must be met:

1. The Tixi Message Modem AT must be connected to a working telephone connection. That means you must be able to call it. (check first using a telephone)
2. Call answering on the Tixi modem must be activated (AT+T Answer="On").
3. The Tixi Message Modem AT must first be configured using the TransMode command.

To connect via a modem dial-up connection and connect the Tixi Message Modem AT to the peripherals linked to it, first dial into the Tixi Message Modem AT. Use a Tixi modem or any other modem for this purpose.

Send the login command for the TransMode command

*at the latest **five seconds** after **CONNECTING**.*

There are two possibilities for the login command:

a) Login without parameters

[password]	login with password
[]	Login without password

b) Login with password and parameters

```
[Password; Format: Format; Handshake:Handshake; Keep:timeout; Baudrate: RS232Speed]
```

(For a description of the parameters, see Section 6.1)

The configuration of the Message Modem should be done locally during set-up, tested and only then approved for remote dial-in.

The remote modification of the parameters overwrites the previously configured – and tested - parameters. The remote modification of the parameters should only be used if it is absolutely necessary. It can also be used to exclude possible local modifications.

7 TACO - The Tixi AT Console

7.1 Getting Started

The Tixi AT Console lets you configure and use your Tixi Message Modem and Tixi Super Modem quickly and easily. You can quickly learn all the necessary parameters here, make simple adjustments, save these settings on the hard disk and transfer them to the Tixi modem.

You don't need to worry about the syntax of the commands because the console generates automatically ensures it is correct. You only need to enter the phone numbers, message texts, among other things, and data.

To get an impression of the Tixi AT Console, follow this guide to send a test fax from the Tixi AT Modem.

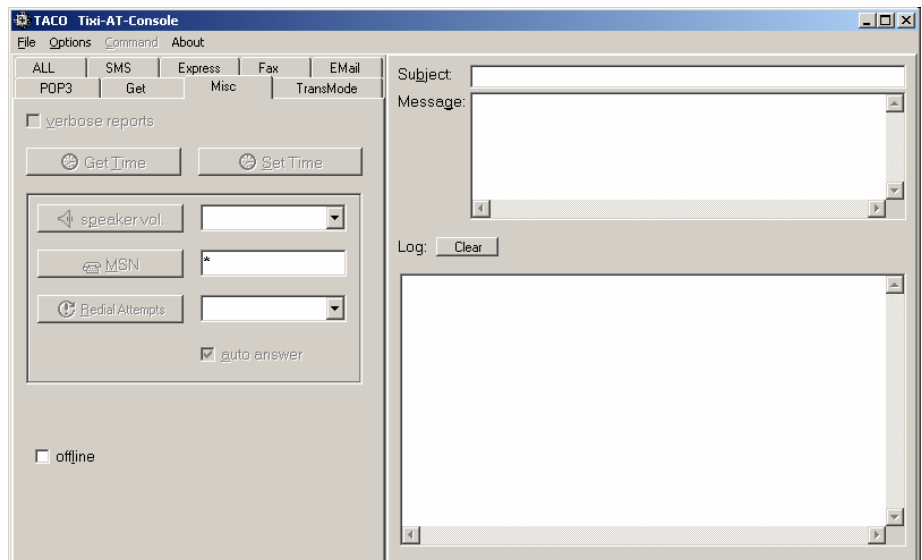
1. Connect the Tixi AT Modem.
2. Install the Tixi AT Console TACO.
3. Start TACO.
If the error report *No response from modem* appears, the Tixi AT Modem is not connected to COM2. In the [Options] > [RS232 Setup] menu, select the COM port of your PC the Tixi AT Modem is connected to.
4. Click on the [ALL] tab. Under [DialPrefix] enter an external call prefix, if needed; otherwise leave the field empty. Under [ModemName] enter your station ID and under [ModemNumber] the call number of the connection used.
On the [ALL] tab, click on the [Send] button to save these specifications in the Tixi modem.
5. Change the [Fax] tab.
Under [Dial] enter the recipient's number (if necessary, with area code).
6. In the right hand side of the window, enter a subject and the message in the fields [Subject] and [Message].
On the [Fax] tab, click on the [Send] button.
7. The command is transmitted to the Tixi modem and immediately implemented.

7.2 User Interface

The Tixi AT Console interface is divided into in two parts: To the left you will find the tabs for each message type from which you can specify the necessary send parameters. To the right you can enter the subject and text of your message. This section also contains the log window along with the replies and status information of the Tixi AT Modem.

7.2.1 Log Window

All responses from the Tixi AT Modem are shown here. On the [Misc] tab, use the switch [verbose report] to obtain comprehensive reports. You can delete the content of the window at any time using the button [Clear].



7.2.2 Menu Bar

You will find several additional options here:

- File > Save As -** saves the current configuration on the hard disk
- File > Load From -** loads a previously stored configuration from the hard disk
- File > Exit** exits the program

Option > RS232 Setup -	Configures the serial interface
Option > Load Parameters from Modem	Reads all parameters from your Tixi AT Modem
Option > Store Parameters to Modem	Transfers all parameters to your Tixi AT Modem
Command -	Entry field for any commands to your Tixi modem
Help -	This window displays information such as the product version number and so on

7.2.3 Tabs with Send Parameters

The parameters for the `Send` command as described in Section 5.2 are located on the entry fields on the tabs. The [Send] button on the bottom right transmits the given parameters of the current register card to your Tixi AT Modem.

If no subject or text for the message is indicated on the right side, only the parameters are set; otherwise, a message is generated and sent using the respective parameters. All of the functions for processing messages received are located on the Get tab.

Here is a short overview of the various tabs and the parameters to be specified on them:

ALL - general parameters for all or several types of messages

DialPrefix -	external line prefix
ModemName -	Modem name for Express E-Mail and for headers of outgoing fax messages
ModemNumber -	call number of the line being used

SMS - Parameters for sending SMS messages

ServiceCentreNumber -	call number of the SMS service centre
To -	the recipient's number

Express - Parameters for sending Express E-Mails

Dial -	the remote number – if necessary, with area code with “0” (zero) as prefix.
To -	Express E-Mail address of the recipient
From -	Express E-Mail address of the sender

Fax - Parameters for Sending Fax Messages

Dial -	the remote number – if necessary, with area code with “0” (zero) as prefix.
---------------	---

E-mail - Parameters for Sending Internet E-Mail

Dial -	number of the ISP dial-up node
To -	e-mail address of the recipient
From -	e-mail address of the sender
PPPUser -	user name for PPP login on provider's server
PPPPassword -	keyword for PPP login on provider's server
SMTPMailServer -	mail server for outgoing messages

Get - show received messages in log window

[Get Message] -	lists received messages along with their ID numbers
[Message ...] -	ID number of the message to which one of the following actions refers:
[Read Message] -	reads the message indicated under [Message] and displays it
[Delete Message] -	deletes the message indicated under [Message]

Misc - other parameters

[verbose report] -	activates the output of comprehensive feedback
[Get Time] -	displays the device's system time and displays it in the log window
[Set Time] -	dialog to set the system time in the Tixi modem

TransMode - Parameters for the TransMode

[Com]	Defines the COM-Port where the PLC is attached to (With TMM always MB).
[Baudrate]	Baudrate of PLC attached to TMM.
[DataBitsParityStopBits]	Dataformat. Default 8N1.
[Handshake]	Handshake-Protocol between TMM and PLC.
[Keep]	Time to disconnect after idle state. "0" disables automatic disconnection.
[Password]	Enter the password to authenticate at the remote modem.
[Enabled]	Enables the TransMode. Otherwise parameters will be saved only.

Appendix A: LEDs

The LEDs on the Tixi Message Modem AT and Tixi Super Modem AT are identical, only the Tixi Super Modem AT SM03-CTS (yellow plastic rippled casing) has different LEDs.

SM03-CTS	All others	Meaning
Power		Lights up when the Tixi modem is operational and flashes in the event of a serious error
RD	-	Lights up when data is received via the RS 232 interface
TD	-	Lights up when data is sent via the RS 232 interface
V.90	-	Lights up when there is a 56k/V.90 connection
Mail in	Process	Lights up when the Tixi modem is processing signals or when messages have come in and are still stored
Line		Flashes when a connection is made and stays lit as soon as the connection is established
Mail out		Lights up, while there are still messages to be sent in the memory ; flashes while rebooting
Modem Mode		Lights up as soon as the Tixi Message Modem is in modem mode

Appendix B: Product & Included Accessories

All Tixi AT Modems come with a manual, CD-ROM with software and cables.

Modem Type	Cable
Office Line Tixi modem	with 230 V power supply (EU)
SM03-CTS Tixi Super Modem AT V.90	1 EU plug power supply (230V ~ on 9V ~) 1 telephone cable (TAE on RJ12) 1 RS232 cable (9/25-pin socket for 25-pin socket)
SM03-BB Tixi Super Modem AT V.90 EM20-BB Tixi Message Modem AT V.90	1 EU plug power supply (230V ~ on 12V ~) 1 telephone cable (TAE on RJ12) 1 RS232 cables (9-pin socket for 9-pin plug)
SD03-BB Tixi Super Modem AT ISDN ED20-BB Tixi Message Modem AT ISDN EF20-BB Tixi Message Modem AT ISDN&Fax	1 EU plug power supply (230V ~ on 12V ~) 1 ISDN cable (RJ45 on RJ45) 1 RS232 cable (9-pin socket for 9-pin plug)
Industry Line Tixi Modems	with 12 – 24 V DC screw terminal
SM03-KA5 Tixi Super Modem AT V.90 EM20-KA5 Tixi Message Modem AT V.90	1 telephone cable (TAE on RJ12) 1 RS232 cable (9-pin socket for 9-pin plug)
SD03-KA5 Tixi Super Modem AT ISDN ED20-KA5 Tixi Message Modem AT ISDN EF20-KA5 Tixi Message Modem AT ISDN&Fax	1 ISDN cable (RJ45 on RJ45) 1 RS232 cable (9-pin socket for 9-pin plug)

Blue Adapter

This adapter can be reordered from your dealer if necessary.

Appendix C: Tixi Modem Type Designations

Modem Type		Modem type	
S	Super modem AT	M	Analog Modem (56k / V.90)
E	Message Modem AT	D	Digital modem (ISDN TA)
J	Alarm Modem	F	ISDN-TA with Fax Modem
		G	GSM modem (GPRS optional)

Power Supply		Case	
B	Socket 12 V AC, 230 V plug power supply	B	TMB housing Aluminium shaft case
C	Socket 9 V AC, 230 V plug power supply	TS	Tixi Super Modem case
K	Screw terminals, 12 – 24 V DC	A5	Aluminium box case A50, H = 50mm
		A8	Aluminium box case A80, H = 80mm

Country codes for power components, modems, telephone cable			
D	Germany	US	U.S.A.
UK	United Kingdom	CH	Switzerland
EU	Europe	F	France

Appendix D: Warranty and Technical Support

Warranty

This device was made and tested according to the most modern methods. The manufacturer guarantees the product for a period of two years from the day of sale, subject to the following conditions:

All defects will be rectified free of charge within the warranty period. Complaints and claims must be made as soon they are discovered. Merchants are required to give notice of defects within seven days.

When claims are submitted, the manufacturer reserves the right to make improvements to defective parts or to replace or exchange the device. Exchanged parts become the property of the manufacturer. The warranty period for exchanged parts ends with the warranty period for the entire device.

The manufacturer is entitled, as part of the guarantee, to make technical modifications (e.g. firmware updates) in order to adapt the device to current technical standards. The buyer bears no additional costs if this is the case. There is no legal claim in this regard.

The warranty claim shall become null and void where the buyer or a third party infringes the warranty agreement. Damage caused as a result of improper handling or operation, incorrect installation or storage, improper connection or installation as well as an act of God or other external factors shall not be covered by this warranty. No claims will be entertained where the device shows signs of mechanical damage of any type.

The laws of the Federal Republic of Germany shall apply.

Technical Support

If problems arise during the operation of the Tixi AT Modem, please contact the your dealer's technical support hotline. Please have the following information ready before you call:

- A description of the fault. The error needs to be reproduced before it can be rectified.
The version number of the Tixi AT Modem firmware - you can find this activating Modem Mode on your Tixi modem and using the AT+I1 from terminal program.
- The type of telephone line (provider, service features, telecom equipment fax machine, modem, telecom equipment.).
- Details of the place you want to connect to – (Type: fax machine, modem, telephone system, software).

Appendix E: Express E-Mail Diagram

Tixi Communication Ways

E-Mail via the **Internet**

Express E-Mail directly via Phone Lines

