funkwerk))

enterprise communications

elmeg T240

Operating Instructions

elmeg T240

English

Declaration of conformity and CE marks

This device meets the requirements of the following EC directive R&TTE 6/3/EG:

»Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity«.

You can also request this EC declaration of conformity at the following Internet URL: http://www.funkwerk-ec.com.
The declaration of conformity is provided on the next-to-last page of this operating manual.

The waste container symbol with the "X" through it on the device indicates that the device must be disposed of separately from normal domestic waste at an appropriate waste disposal facility at the end of its useful service life. You will find additional information on an individual returning of the old appliances under www.funkwerk-ec.com.

Índice

PABX Description

The PABX is an ISDN telecommunications system for operation at an ISDN access (point-to-point or point-to-multipoint connection) using the Euro-ISDN protocol (DSS1). Analog terminal devices can be connected via integrated jacks. Fixed cabling using terminals is also possible for analog connections. Two analog ports are routed out via a common RJ45 jack. Assignment of internal phone numbers is freely configurable between 00... 99. Calling using analog terminal devices should be conducted using the DTMF method and these devices should be equipped with a Flash key. Analog terminal devices that use pulse dialing can not be used for functions or codes.
All terminal devices connected to the system must be »TC Terminals Guideline« or »R&TTE Guideline« approved.

The PABX system also provides all of the functions necessary for high-speed Internet access for a single PC, or for complete LANs via ISDN.Here the firewall integrated into the PABX system, together with the NAT (network address translation) function, provides the necessary security; the functions DHCP server and DNS proxy ensure that the scope of configuration, both for your PABX system and your PC, is kept to a minimum.

Internet access for all of the PCs connected to the PABX system is provided via one single connection (SUA - single user account); only one set of access data is required from your Internet service providers (ISP).

Loss of power

The PABX system is not operable on loss of power (230 V mains voltage).

Cleaning

You can clean your PABX without any difficulties. Use a slightly moistened cloth or an anti-static cloth for this. Do not use any solvents! Never use a dry cloth; electrostatic charges could damage the electronics in the system. Always ensure, however, that no moisture penetrates into your PABX, as this could result is damage to the PABX.

Safety notes

Important notes for using the PABX system

- Unauthorized opening of the PABX and improper repairs may result in risk of injury for the user.

> Attention: Unplug the 230 V AC plug-in power supply before removing the enclosure cover of the PABX and working on the cable terminal bay. Replace the top on the PABX before plugging the power connector back in.

> Plug the plug-in power supply unit into the 230 V ~ socket so that the connecting cord to the PABX system points downward.

- Do not expose the inside of the PABX or the plug-in power supply to any liquids. This would pose a risk of electrical shock and can also destroy the devices.

- You should not connect or disconnect any lines during thunderstorms.

- Only terminals with SELV and/or which comply with ETS 300047 may be connected to the PABX system. This regulation is fulfilled when approved terminal devices are used as intended.

- The distance between the plug-in power supply unit and the PABX and to the ISDN connection should not exceed 1. 5 meters so that standard connecting lines can be used.

- The PABX is operated with 230 V AC using the plug-in power supply unit. Please ensure that the electrical outlet (grounding outlet) for the PABX (and for additional devices where required) is installed such that it is freely accessible at all times and that it is installed by a qualified electrician to prevent any risks of personal or material injury/damage! Where at all possible, provide a separate power circuit for the 230 V connection of your PABX system, This protects your PABX from short-circuits that may occur in other in-house equipment.

- We recommend installing an overload protection to protect your PABX against surge that can sometimes occur during thunderstorms. For further information please contact your local electrician.

- To prevent mutual interference, do not install your PABX system in the immediate vicinity of electronic devices such as stereo equipment, electronic office equipment or microwave units.
  Avoid installing your PABX near sources of excessive heat, e.g. radiators or in rooms with excessive humidity. The ambient temperature at the location where the system is operated must be between 5 to 40° C.

Supported Features

The following ISDN features are supported by the PABX system at the exchange of the network service provider; some of these may have to be applied for at your service provider.

- HOLD: Hold / Broker's call

- ECT: Call switching

- 3PTY: Three-party conference call

- CD: Call deflection (forwarding of calls)

- PR: Partial Rerouting. Individual call forwarding for terminals at a Point-to-point connection

- CCLIP / LIR: Activation/Deactivation of caller ID to party being called.

- COLP / COLR: Activation/Deactivation of called party ID to caller.

- AOCD: Transmission of charge costs during a call.

- AOCE: Transmission of costs of call at end of call.

- AOCS: Transfer of tariff information during the calling phase, for example for pay phones.

- CCBS: Completion of call to busy subscriber, as soon as subscriber is available.

- CCNR: Call-back to available subscriber as soon as that party has lifted and replaced the handset.

- MCID: Malicious caller ID (tracing).

- CFB / CFU / CFNR: Call forwarding.

- UUS1: Transmission of user-defined text messages.

- SUB: Extended addressing for a terminal device.

- X.31: Support for packet data (V-25) on the D-channel, for example for electronic cashiers.

- MWI: New messages available.

- SMS in the fixed-line network.

Please note that some of the features described in these operating manual must be applied for at your service provider.

Display / LEDs

Power   Ready for operation indicator.

          Green lit: When the PABX is ready for operation.

          Green flashing: When 480 data records have been saved in the charges memory of the PABX

ISDN / POTS   ISDN port ready for operation module POTS mounted

          Green flashing: One B-channel busy or an existing connection through the POTS-module.

          Green flickering: Two B-channels busy.

B1   Shows the busy-state for the external ISDN-connection:

          Green lit: The first B-channel remains busy.

B1   Shows the busy-state for the external ISDN-connection:

          Green lit: The first B-channel remains busy.

USB   Indicates the status / activities on the USB port.

          Not lit: The USB port of the PABX system is not ready for operation at the connected PC (not logged in, or not recognized), or when the PC/USB port is in the suspended mode.

          Green lit: The USB port of the PABX system is ready for operation at the connected PC (USB driver active). PC applications that run via the USB connection can be started.

          Green flickering: Data is being exchanged via the USB port. e.g.CAPI application programs, CTI applications or new software download into PABX system.

All LEDs lit

New firmware not properly identified by the PABX. Please repeat the operation.

All LEDs flashing

New firmware being downloaded into the PABX. Do not remove the plug-in power supply unit for the PABX system during this phase, as it can result in data being lost in the PABX.

Symbols

Please note: different terminal devices will not necessarily have the same dial tones, ringing signals or procedures for use.

Symbols used

☎	Lift up the handset, activate hands free calling, or start initializing selection.
♩	This symbol indicates the call status.
☎	Replace the handset of your phone in the carriage, or the telephone is idle.
🔊	Indicates signaling at a terminal device, for example your phone rings.
⌨	You can dial the desired number.
1...**0** **✳** **#**	Dial a specified code, number or character.
0...**9** **✳**	Dial a code or a character.
R	Prompts you to press the flash key (signal key).
⁚	Indicates that an acknowledgement signal can be heard in the handset.
✳	Indicates a conference call.
⚠	This symbol indicates that a configuration is required. Enter »Start configuration« before entering any codes (see Page 40).

Acoustic signals

The following tones describe signaling for the PABX when using analog telephones.

Internal dial tone (421 Hz)

You will hear this dial tone after lifting the handset for »calling external parties with line access digit«. This signal indicates that you can dial a number. After 40 seconds this signal changes to the busy signal; hang up the handset and then lift it up again. You will then hear again the internal dial tone.

Busy tone (421Hz)
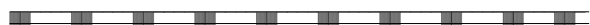
You will hear this signal, when the called external or internal extension is busy.

Positive acknowledgement signal (mixed tone 421Hz und 320 Hz)
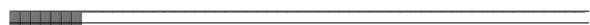
The positive acknowledgement signal indicates that your input has been accepted.

Negative acknowledgement signal (mixed tone 421 Hz and 320 Hz)
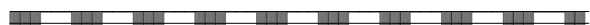
Wenn you diesen Ton hören, ist die gewählte function nicht nutzbar, das Feature nicht eingerichtet oder gelöscht.

Internal ringing signal (421 Hz)

This signal indicates that the telephone of the external or internal extension is ringing.

Special dial tone (421 Hz and 316 Hz mixed)

This signal indicates that your phone has been set for call rerouting.

External dial tone (425 Hz)

A continuous signal that you hear when you have engaged the external ISDN connection.

Call waiting tone (421 Hz)
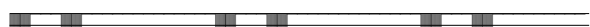
Call waiting tone. This tone signals that an external party is calling you during an ongoing call. The call waiting signal is sounded for a maximum of 30 seconds.

Time intervals of the signals in seconds

1   2   3   4   5

Calling cycles

The figures below show the duration of the calling cycles when using analog telephones.

Internal call, Internal call-back, internal recall

Internal call: You are called either directly, or in an inquiry call by an internal user.

Internal call-back: You are called automatically when the party you attempted to call hangs up the handset for his/her phone.

Interner Repeat call:: You initiate an inquiry call, but replace the handset before dialing. The first call that is on hold is signaled at your terminal device by call-back for 3 minutes. If your telephone has been configured for calling line identification (CLIP), this alarm call will be displayed just like a normal external call.

Internal call, internal call-back, internal recall with CLIP

CLIP: If your analog telephone has been configured for calling line identification (CLIP), it will be called with this signal.

External call, external call-back, external recall

External call: You are called by an external party.

External call-back: You are called automatically when the party you attempted to call hangs up the handset for his/her phone.

Externer Repeat call: You initiate an inquiry call, but replace the handset before dialing. The first call that is on hold is signaled at your terminal device by call-back for 3 minutes.

External call, External call-back, external recall, call with CLIP
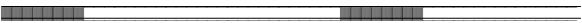
CLIP: If your analog telephone has been configured for calling line identification (CLIP), it will be called with this signal.

Time intervals of the signals in seconds

1   2   3   4   5

Making Calls

Some terminal devices use their own special procedures for the functions described in the following. Refer to the operating instructions for the terminal device being used for detailed information.

Only telephone connections, i. e. calls between subscribers, are presented in the following usage procedures as examples. For analog telephones, these functions are only described for tone dialing terminal devices equipped with a flash key. The tones and signals described below are heard when using analog telephones. at analogen telephone directory, die your Acoustic signals selbst erzeugen, können die Acoustic signals abweichend sein. Other information may also be shown in the display of these telephones.

Direct exchange line access

The individual users of the PABX can configure activation of direct exchange line access or dialing calls using a prefix digit. When direct exchange line access is activated, you will be switched immediately to the external ISDN connection when you lift the handset and will then hear the dial tone for the exchange. You can then begin dialing the external number at once.
If you deactivate direct exchange line access you must dial a prefix (LAD) when you make an external call. You will hear the internal dial tone when you lift up your handset.

> If your phone is set for »Automatic line access« you must first press the ✱ key when you lift the handset ☎ before beginning any internal call procedures. The symbol ☎ , as shown in the example below, is highlighted in color for the corresponding performance feature.

☎	▦	♪
Lift up handset	Making internal calls	Conduct your call

Calls

Accepting calls

«▷»	☎	♪	☎
Telephone rings	Lift up handset	Conversation	Replace handset

Pick-up of the call (Pick up)

An external call is signaled at a different in-house telephone.
You can now create different pick-up groups of subscribers for whom pick-up (accepting) of calls is possible. A call can only be accepted by subscribers/terminal devices of the same pick-up group. Assignment of subscribers to pick-up groups can be made regardless of the settings for the Day/Night team call assignments.

> However, picking up a call is possible only within the pick-up group to which your terminal device has been assigned via PC configuration. in der Default setting sind alle Endgeräte der Pick up Gruppe 00 zugeordnet, so dass alle Rufe of jedem Telephone herangeholt werden können.

A telephone near you begins ringing. You would like to accept the call at your own phone.

☎	✱ 0	♪
Lift up handset	Accept call	Conversation

Call pick-up from answering machine

Calls that are signaled at the answering machine (answering machine has not yet switched on) can be accepted within the defined group using the feature »Picking up a call«. If the answering machine has already accepted the connection you can also take this call from your telephone.

⬆	#️⃣ 0️⃣	📞
Lift up handset	Take call / conversation from the answering machine	Conversation

Making internal calls

All phone calls, fax transmissions or data transmissions that take place between internal analog devices are internal connections. for which no charges are billed.

If a connection is set up between internal terminal devices and the terminal devices connected to the external ISDN point-to-multipoint connection (to which your PABX system is also connected), this is considered as being an external connection for which charges are billed.

Making internal calls without »Direct exchange line access«

⬆	⌨	📢	📞
Lift up handset	internal number	Subscriber is called	Conversation

Making internal calls with »Direct exchange line access«

If you are making an internal call, or initiating a function, such as accepting a call, lift the handset and press the asterisk key – you can then dial an internal number.
If you hear the busy signal when you lift the handset (external ISDN connection busy) press the asterisk key again and you will hear the internal dial tone.

⬆	✳️	⌨	📢	📞
Lift up handset		Dial internal extension number	Subscriber is called	Conversation
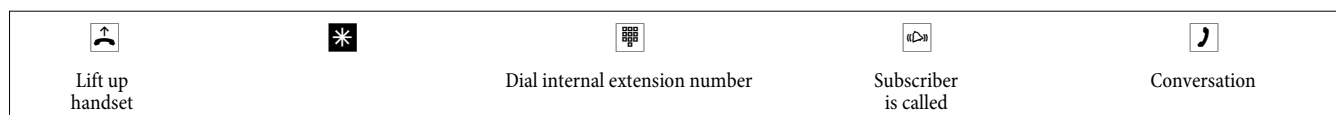
Announcement

Would you like to call your co-workers to a meeting, or invite your family out to eat? You could call each separate person to do this, or you can use the message function. With this function, you need to make only one call to reach all of the telephones that are authorized for messages, without the called parties having to lift up the handsets of their phones.
You can enable or inhibit the message function for each internal user (see page 8). A notice signal is issued at the beginning of the message.

Refer to the operating instructions for your telephones whether the phones support the message feature.

Making an announcement

⬆	✳️ 5️⃣ 4️⃣ 0️⃣	⌨	📶	📞
Lift up handset		Internal- or Team-Call number	Ack. signal	Announcement
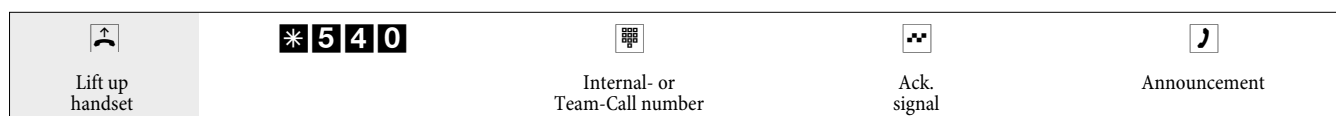
Enabling / inhibiting announcements

You can enable or inhibit the sending of messages to your telephone. If you have disabled messages being sent to your phone, the caller that is attempting to send a message to you will hear the busy signal.

Enabling / Inhibiting announcements at telephones

⬆	✳️ / #️⃣	5️⃣ 9️⃣ 1️⃣	📶	⬇
Lift up handset	Enable announcements / Inhibit announcements		Ack. signal	Replace handset

Making outside calls

You PABX is equipped with an external ISDN connection and optionally with an external analog port (POTS-module). You can set up two external connections via the two B channels for this ISDN port, and one external connection via the external analog port. These connections may also be to two different parties simultaneously. For example, you can call an external business partner while simultaneously transferring data from your PC to a different business partner. When you initiate an external call via your PABX, the system automatically transmits your number and the service ID (for the terminal device, such as phone or fax). This ensures that only a terminal having the same ID code is called at the subscriber being called (phone calls phone, fax group 4 calls fax group 4).

If a terminal connection is configured for a multi-functional device in the PABX, external calls are signaled with the ID »Analog telephony«, »ISDN telephony« and »Fax device« at the terminal device. Here, when you initiate an external call, the service ID code »Analog telephony« is transmitted.

It is not necessarily required that all telephones / terminal devices be available for making calls throughout the world. It is sometimes even more advantageous when some telephones are authorized for local calls only (phone bills also more transparent).

The exchange authorization function exists to control and monitor this. An individual authorization for outgoing calls (external) can be assigned in PC configuration for each PABX user. This authorization is broken down into 5 different categories.

The user

- has unrestricted line access authorization.

- has call authorization for national (long-distance) calls.

- has call authorization for local calls.

- region (regional numbers).

- can be reached for incoming calls, but can only make internal calls.

- is authorized for internal calls only.

The individual users of the PABX can configure activation of direct exchange line access or dialing calls using a prefix digit. When direct exchange line access is activated, you will be switched immediately to the external ISDN connection when you lift the handset and will then hear the dial tone for the exchange. You can then begin dialing the external number at once.

Making outside calls at automatic exchange line access

You wish to make a call to an external party.

Lift up handset. Dial tone for the exchange	External number	Subscriber is called	External call
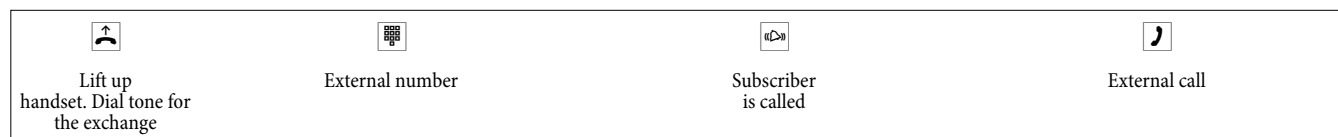
Making external calls with prefix code

You wish to make a call to an external party.

Lift up handset	Dial line access digit	Dial external number	Subscriber is called	External call
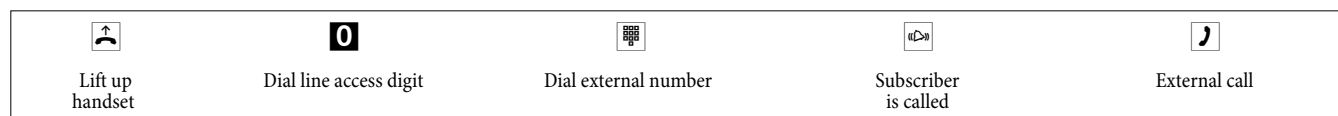
If you hear the busy signal after dialing the first 0 your telephone either does not have authorization for making external calls, or the external ISDN connection is busy.

Trunk group (routing discrimination)

You can only use this performance feature when you are using more than one external port (only with POTS module). In the default setting, the external ISDN port is used first after dialing the line access digit. If this port is occupied, the external analog port is selected automatically. In the Configurator you can define which trunk group is to be used first when 2 trunk groups have been configured (ISDN and POTS).

Call waiting

Enable / Inhibit Call Waiting for a Further Call

Using the function »Call waiting« you can be called by other parties while conducting an ongoing call. When a second callers calls up you will hear the call waiting signal in your handset and can then decide whether you want to continue your call with the current caller, or whether you want to take the waiting caller right away.

Call waiting for external calls is possible with analog telephones. If call waiting occurs during an ongoing call with an analog phone and you ignore the call waiting signal, it will be de-activated after around 30 seconds. You can also disable call waiting with analog telephones so that no call waiting signals are given during your calls.

Enable / inhibit call waiting

☎	✱ / #	5 8	∿	☎
Lift up handset	enable / inhibit	Dial this code	Ack. signal	Replace handset

Automatic completion of call

This function can only be used by telephones that permit suffix dialing! Automatic call completions from an inquiry call are not possible.

Automatic completion of call to busy subscriber

Let's assume that you must urgently contact a business partner or an internal extension. When you call their number you always get a busy signal however. If you were to be provided with a message that the subscriber you are attempting to call has ended his/her call, this would increase your chances of reaching that party considerably.
»Recall to busy subscriber« allows you to call the extension as soon as the other subscriber hangs up his or her telephone. Your telephone will then ring. When you then lift your handset, a connection is set up automatically to that party.

An internal »Completion of call to busy subscriber« is deleted automatically after 30 minutes. The external »Completion of call to busy subscriber« is deleted after a period defined by the exchange (around 45 minutes). You can also manually delete this function before this period expires.

Automatic completion of calls on no reply

Let's assume that you must urgently contact a business partner or an internal extension. When you call their number you always get a ringing signal, but the party is not near the phone or does not answer. If supported by your network provider, you can use the function »Completion of calls on no reply« to reach the party immediately when he/she ends a call, or lifts and then replaces his/her handset. Your telephone will then ring. When you then lift your handset, a connection is set up automatically to that party.

Programming an automatic »Completion of Call on No Answer« for analog phones

🔊	✱ 4 0	∿	☎
Internal or external subscriber is busy or does not answer		Ack. signal	Replace handset

When the subscriber that was called hangs up his/her handset your telephone will ring.
When you lift up your handset the subscriber for which completion of call is active is called. If the party answers you can conduct your call.

Deleting automatic completion of call for analog phones

Analog telephones use this procedure for canceling:

- Internal and external completion of call to busy subscriber.

- Internal completion of calls on no reply.

An external »Completion of calls on no reply« is canceled by the exchange after the defined time period expires.

⤒	**#40**	⚬⚬	⤓
Lift up handset	Call-backs delete	Ack. signal	Replace handset

Calling several telephones (team call)

You can place a call to all the members of a team using the assigned number (group call).

A distinction is made between thee types of team call variants, »Team call simultaneous«, »Team call linear«, »Team call rotating« and »Teamcall adding«.

- Team call simultaneous:
  All assigned terminal devices are called simultaneously. If a telephone is busy call waiting can be initiated.

- Team call linear:
  All assigned terminal devices are called one after the other (as entered in the PC configuration); If one telephone is busy, the next available one is called.
  The call is signaled for around 15 seconds at each terminal. You can set this time to between 1 and 99 seconds however during PC configuration.

- Team call rotating:
  This type of team call is a special variant of the linear team call. After all of the terminal devices of a team have been called the call is signaled again at the first terminal device. The call is signaled until either the caller hangs up, or until the call is terminated by the exchange (after around 2 minutes).

- Team call adding:
  The terminal devices are called in the order that they have been entered in the subscriber list in PC configuration. Each terminal device that has already been called will continue to be called until all of the devices that are entered have been called. Using PC configuration you can define when the next terminal device is to be called each time.

> If you have set linear or rotating team call for a team, the members of this team can not forward calls when the call is being signaled (call deflection).

Defining Your Own Number for the Next Call

Let's assume that For example, if you want to make a business call from home, late at night, you can define your business telephone number as the MSN for this business call.
The advantage is that the connection and its cost are recorded under the selected MSN and your business partner can see that it is you calling.

Before you begin to make an external call you can define which number is to be transmitted to the exchange and to the party you are calling. This MSN must first be assigned to an index during PC configuration (see External numbers). When you then also dial this index, the assigned MSN is transmitted to the party being called. The charge for this call at your network service provider is then billed to this MSN.

You wish to set up a connection with an external party and have a certain number transmitted along with the call.

⤒	**#81**	⚏	⚏	«▷»	♪
Lift up handset		Select Index for the MSN			Conversation

Temporarily suppressing transmission of your own number

If you do not wish to have your number displayed to the party being called before he/she lifts up the handset, you can suppress the transmission of your MSN specifically for that call.

This feature must be applied for at your network service provider.

Transmission of the caller's own number is suppressed using the following procedure with analog terminal devices.

⤒	✳ 5 9 4	▦	«▷»	♪
Lift up handset		Call number		Conversation

Noting an external ISDN connection

You can use for each terminal device an »automatic call back« (subscriber free) or note »an external ISDN connection«. The last entered feature will be active. The performance feature entered previously will be canceled.

You want to call an outside party but the external ISDN connection is busy. With this procedure, you can note an external ISDN connection. As soon as this ISDN connection is again available, your telephone rings and you can make your call. All current »reservations« are automatically deleted at midnight (0: 00). This function can only be used by telephones that permit suffix dialing.

You wish to call an external party. The external ISDN connection is busy. You hear the busy signal.

♪	✳ 4 0	⤓	«▷»	⤒
You hear the busy signal		Replace handset.	Called subscriber is again available.	

Dial the number of the external party you wish to call.

Canceling »Noting an external ISDN connection

⤒	# 4 1	⌁	⤓
Lift up handset		Ack. signal	Replace handset.

Speed dialing from the telephone directory

The PABX system is equipped with an integrated telephone directory in which you can make up to 500 entries, each with up to a 24-digit number and up to a 20-character name (text).

> With analog telephones, the codes 000...499 alow you to

Authorization for dialing from the telephone directory

The authorization level for dialing from the telephone directory can be set individually for each subscriber. There are three different authorization levels:

- Subscriber is not authorized to dial numbers listed in the telephone directory.

- Subscriber may dial only those telephone directory listings that match his or her specified call authorization.

- Subscriber may dial all telephone directory listings.

An analog subscriber with no telephone directory authorization hears the busy signal.

Configuration of the telephone directory is performed using the telephone directory program on the WIN-Tools CD-ROM. You can create or edit telephone directory entries using this software.

> When you download new firmware versions for your PABX system, all of the telephone directory data is deleted. Therefore, save all of your telephone directory data to your PC prior to loading new firmware.

Reading/loading the telephone directory

The contents of the telephone directory can be exported, and also loaded, via a connected PC (USB, ISDN connection). You can have the service center export the directory of your PABX in a remote access link and then upload it again when the firmware download is completed.

Speed dialing from the telephone directory

Every number in the PABX telephone directory is assigned to a speed dialing index (000...299). You can dial this speed dialing index in place of the long number. The speed dialing memory is integrated into the PABX telephone directory. Observe the information provided in PC configuration.

⬏ Lift up handset	✱ #	▦ Speed dialing index	«📢» Subscriber is called	🎵 Conversation

Direct dial-in

Say you are away from home. However, somebody at home should be able to reach you quickly and easily by telephone if needed (for example children or elderly relative). Since you have already configured the function »Direct call« for one or more of your phones, you need to lift the handset of one of these phones. After five seconds without any numbers being dialed the PABX will automatically dial the defined direct call number.
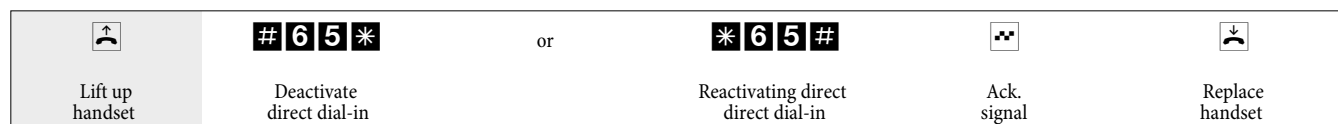
You can enter the number yourself of the party that is to be called prior to calling. The PABX system recognizes by the length of the number whether you have entered an internal or external number. You therefore do not need to input a prefix code for external numbers. To change an already entered direct call number, just enter the new one without deleting the old number. You can also perform the following settings using PC configuration.

Preparing and activating a direct call with set numbers

⬏ Lift up handset	✱ 6 5	▦ Call number	#	◞ Ack. signal	⬎ Replace handset

Now, when you lift up your handset the direct call number will be dialed after five seconds.

Activating direct dial-in

⬏ Lift up handset	# 6 5 ✱ Deactivate direct dial-in	or	✱ 6 5 # Reactivating direct direct dial-in	◞ Ack. signal	⬎ Replace handset

The numbers stored in the PABX for direct calls are retained even when the direct call function is deactivated.

Deleting a direct dial-in number

⬏ Lift up handset	# 6 5 # Direct dial-in delete	◞ Ack. signal	⬎ Replace handset

The stored direct dial-in number is deleted.

Voice announcement

You can use an analog port of your PABX for an intercom function by configuring this port for voice announcements. This enables you make voice announcements for example into a waiting room via an internal telephone.

A voice announcement extension can be reached by internal extensions only.

⌃ Lift up handset	⌗ Dial the internal number of the voice announ- cement extension	♪ Voice announcement	⌄ Terminate voice announcement

Room monitoring

You can monitor a room acoustically from a telephone in your PABX system, or from an external telephone. To do this, the telephone in the room to be monitored must be enabled for room monitoring with the correct code and the handset removed from the holder, or hands-free calling must be activated. If you hang up the handset of the phone in the room being monitored, or if you deactivate hands-free calling, room monitoring is ended and the feature is deactivated again.
This feature can not be used in conjunction with inquiry call, call forwarding or team call functions.

Room monitoring is deactivated after each PC configuration of the pabx and must subsequently be enabled and con-figured once again.

Enabling room monitoring for an internal telephone

⌃ Lift up handset	✳ 5 9 3	⚟ Ack. signal	Do not replace handset / Do not deactivate hands-free calling

Room monitoring from an internal telephone

⌃ Lift up handset	⌗ Dial the number of the telephone to be used for room monitoring	Room monitoring is activated

Room monitoring of external telephone directory

Mit dieser function is carried out eine Room monitoring from an external telephone .
To carry out room monitoring from an external location dial the number (MSN or direct dial-in number) to which the PABX system service number is assigned. The service number (internal virtual subscriber) is assigned to this MSN in the PABX. You must then enter a 6-digit PIN. The PABX then checks your authorization for executing room monitoring from an external phone based on this PIN 2.
In the initial state (when delivered), the internal number 55 is entered as the service number. This number can not be used for team calls.
Please note that you must first allocate a multiple subscriber number (MSN) or direct dial-in number to this service number during PC con-figuration.

Room monitoring is protected by a 6-digit PIN 2 and can be activated by entering this PIN 2.

In the initial state, this PIN 2 is set to 0 0 0 0 0 0 . To ensure adequate security you must change this 6-digit PIN 2 and enable remote access to the PABX if you wish to use this feature.

You are at an external telephone.

Lift up the handset of the phone from which you wish to conduct room monitoring and dial the MSN or direct dial-in number to which the service number for the PABX is assigned.

If remote access has been enabled and is possible at this time you will hear the special dial tone of your PABX.
Set your phone to tone dialing, or use a DTMF manual transmitter.

⌗ Enter PIN 2	⚟ Ack. signal	⌗ Dial the number of the telephone to be used for room monitoring	⚟ Ack. signal	Room monitoring is activated

To end room monitoring, hang up the handset of the external telephone.

Tracing (Malicious call identification)

You must apply for this feature to your service provider. You will then be informed of further procedures there. If you dial the appropriate code during a call, or after the caller has ended a call (you will hear the busy signal from the exchange) the caller's number is saved at the exchange.

Attention: Only hang up the handset after you have entered the code for tracing the caller and hear the positive acknowledgement signal.

♪	✳51	⁓	☓
Ongoing call, or caller hangs up		Ack. signal	Replace handset

Allocating Project Numbers

Mit Help der Project numbers ist es Ihnen possible, For example. for invoicing telephone calls for specific customers. If you have initiated calls yourself you can save the data for call duration and costs for this customer under the project number. If you are called by a customer, you can store the call data for this particular customer.

A project is activated by entering a code and a project number consisting of up to 6 digits. If you have exported call data records using the charge manager software on the CD, you can, for example, sort, filter or compile these data records according to project numbers.

Assigning a project number for a call you initiate

☝	✳50	▦	#	⁓	▦
Lift up handset		Enter project number (max. 6 - place)		Ack. signal	Dial call number

Project number for an external call

You are conducting a call and wish to register it for a project.

♪	R	✳50	▦	#	⁓	R	♪
Conversation			Enter project number (max. 6 - place)		Ack. signal		Continue call

Keypad function (»Net direct«)

Only recently you purchased the most modern telephone on the market. Since then, however, new features have been added to the public network which you are not able to use just by pushing a button.

Ask your network service provider about this and get the corresponding codes from them (for example activating inhibits at the exchange office). Use of this feature must be enables for a user defined in configuration in the section »Internal user« on the tab »Features«. If the feature »Direct exchange line access« is activated you will only be able to use the keypad function if you press the * button first and then dial 0 after you lift the handset.

The keypad functions can only be used by terminal devices to which an MSN has been assigned during configuration and for which this feature has been applied for at the exchange.

Initiating the keypad function

☝	0	✳ or #	▦	☓
Lift up handset	Dial line access digit	Initiate keypad function	Enter codes	Replace handset.

Multifunctional device

If an analog terminal device connection for the PABX has been configured as a »Multi-function port« for multi-function devices, all calls will come in, regardless of their service function. With exchange line acquisition using a code the service IDs for »analog telephony«, »fax group 3« or »ISDN telephony« can be transmitted, regardless of the configuration for the analog connection. The service ID »analog telephony« is transmitted when you dial a 0.

Example:
You are unable to reach a fax machine of group 3 that is operated with the service ID at a remote ISDN PABX system. By dialing the appropriate code, your PABX transmits the service ID »fax group 3«. The remote PABX system recognizes the service and connects you to the fax machine.

You would like to make an external connection to a certain service.

⬆	✳7️⃣7️⃣3️⃣	⌗	《▷》
Lift up handset	»Fax group 3«	Dial external number	

Never Out of Touch

Call forwarding

Using the function »Call forwarding«, the PABX provides you with a means for remaining accessible, even if you leave your desk or phone. This is achieved by the system automatically forwarding calls to another internal or external number. During PC configuration for the PABX you can specify for each internal extension whether this feature is to be executed within your PABX system or in the exchange.

Call forwarding by the PABX

The PABX connects the calling party with the internal or external subscriber that you have specified. The B channel of the ISDN connection is used for an external call, depending on your particular configuration.

Call forwarding can also be made to a team number.

Call forwarding in the exchange

- You can use this option at the network service provider if you have activated these services for your connection. Contact your network service provider for more information.

- The exchange connects calling parties with the external number that you have specified. Internal call forwarding is activated by the PABX within the PABX.

- At a point-to-multipoint connection all calls are forwarded for the MSN that is called. Other terminal devices of the PABX to which the same MSN has been assigned are not called (partial rerouting).

If call forwarding has been configured but is not carried out by the exchange (because this feature was not applied for) calls will automatically be forwarded by the PABX.

There are three different variants of call forwarding:

- Call forwarding immediately:
  The call is forwarded immediately to the defined number.

- Call forwarding on no answer: Der Call wird after 15 Seconds (abhängig of der Setting in the PABX or der Vermittlungsstelle) weitergeschaltet (Partial Rerouting).

- Call forwarding on busy:
  The call is forwarded only if the destination telephone is busy.

Ongoing call forwarding calls also be overwritten by a new call forwarding. Other call forwarding variants may also be activated simultaneously. For example. Call forwarding per time, zur Call number 12345 und Call forwarding at Besetzt, zur Call number 45677.

Activating call forwarding

Using this procedure, all calls will be forwarded to the MSN to which the terminal device initiating the function is assigned, even if several terminal devices are assigned to this MSN.

> The PABX recognizes automatically by the length of the number whether call forwarding is to be made to an internal or external subscriber. This is why the destination number for call forwarding to an external subscriber is always input without the line access digit (LAD).

⬆ Lift up handset	✳	🄶🄱 / 🄶🄲 / 🄶🄳 Permanent call forwarding / Call forwarding on no reply / Call forwarding on busy	▦ Destination number for call forwarding	#	⌁ Ack. signal	⬇ Replace handset

Deactivating call forwarding

⬆ Lift up handset	#	🄶🄱 / 🄶🄲 / 🄶🄳 Permanent call forwarding / Call forwarding on no reply / Call forwarding on busy	⌁ Ack. signal	⬇ Replace handset

Call forwarding in Teams

Certain conditions apply to subscribers that are assigned to a team for call forwarding:

- Each subscriber can initiate call forwarding from his/her internal number to a different subscriber (regardless of the team that subscriber is assigned to).

- Call forwarding from one team member to a team number is not possible. If call forwarding is initiated from one team number to the team number for a different team, the function will not be active and the user initiating the call forwarding function is called.

Follow me (programming a call forwarding from another telephone)

If you are at a different location, and not at your phone, you have the possibility of having calls made to your phone while you are away forwarded to a telephone near or at your current location (Follow me). You can also forward calls from other phones to your phone. When you lift up the handset of your phone a special dial tone will remind you that you have call forwarding currently activated.

Programming an internal call forwarding (internal Follow me)

⬆ Lift up handset	✳🄶🄴	▦ Internal number whose calls are to be forwarded	#	⌁ Ack. signal	⬇ Replace handset.

Call will then be forwarded to the specified telephone.

Deactivating Follow me (internal or external Follow me)

⬆ Lift up handset	#🄶🄴	▦ Internal number for which call forwarding is to be canceled	#	⌁ Ack. signal	⬇ Replace handset.

Setting up/deactivatin call forwarding from an external location (external Follow me)

For the weekend you have rerouted the fax number of your office to your private fax machine at home. Let's say you're on the way to the office, which takes around 30 minutes, and would now like to also receive fax messages that are addressed to your office.
You then cancel the »Follow me - external« function at home and when you arrive at the office your fax messages will be waiting on you – exactly where you need them.
You can use this function to configure or cancel call forwarding to any destinations.

To configure call forwarding, dial (from an external location) the multiple subscriber number (MSN) to which to the Service number (internal, virtual subscriber) has been assigned. In the initial state, the number 55 is entered as the service number.

Remote access must be enabled during configuration. The PABX uses the PIN to check the authorization for call forwarding from an external location 2.

Please note that you must first allocate a service number to this multiple extension number (MSN) number during PC configuration. The factory setting of the 6-digit authorization PIN 2 is 000000. You must change the PIN2 in the PC configuration, as otherwise you will not be allowed access to the PABX system.

You are located at an external telephone.

Heben you den Handset of your Telefons ab und wählen you die Mehrfachrufnummer (MSN), der die interne Service number for the PABX zugeordnet ist.

If remote activation of call forwarding has been enabled you will hear the special dial tone for your PABX system.
Set your phone to tone dialing, or use a DTMF manual transmitter.

Setting up call forwarding from an external location
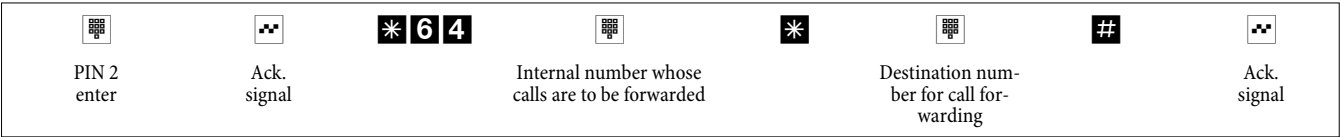
⊞	⌁	✳ 6 4	⊞	✳	⊞	#	⌁
PIN 2 enter	Ack. signal		Internal number whose calls are to be forwarded		Destination number for call forwarding		Ack. signal

You will then hear the positive acknowledgement signal for about 1 second; the connection is then terminated and you will hear the busy signal.
Replace the handset.

Canceling call forwarding from an external location (canceling Follow me from an external location)

⊞	⌁	# 6 4	⊞	#	⌁	☎
PIN 2 enter	Ack. signal		Internal number for which call forwarding is to be canceled		Ack. signal	Replace handset.
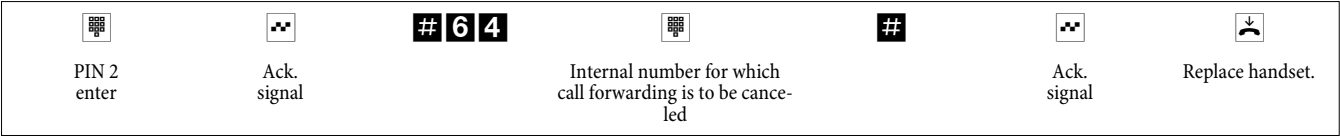
After you cancel call forwarding (positive acknowledgement signal), the connection is terminated and you will hear the busy signal.

Monitoring costs

Call data records

The PABX can store up to 500 call data records. This data is not lost in the event of a loss of power.

The PABX generates a call data record for every external call. The call data records contain detailed information about the call. For example: Date and time, duration of the call, number of the called party, number of the calling party, type of connection, communication costs and possible project numbers.

In the default state, all external calls that you initiate are stored. Incoming calls can be logged in two different ways.

- Only incoming calls with a certain project number are stored.

- All incoming calls are stored.

Please note that only the network service provider is authorized for binding connection/call cost logging.

Analog terminal devices

With your PABX system it is possible to transmit the charge rate information as metering pulses via the analog ports with appropriately equipped terminal devices. In the initial state transmission of the 12 or 16 kHz charge pulse is deactivated. On account of the technology used in ISDN for the connection/call cost transfer, connection/call costs may continue to be transmitted even after the connection has been terminated. With all of the analog terminal devices available on the market, it may not always be possible for the charge pulse transmitted by

your PABX system at the conclusion of a connection to be received properly by the terminal device you are using. Please observe the instructions in the operating manual for your terminal device.
The transmit pulse frequency can be set during PC configuration to 12kHz or 16kHz.

Charge counter

The PABX manages a charge counter for each internal user on the basis of the transmitted charge rate information. The counter logs the costs of all calls. You can use the PABX menu or the charge logger program to display the counter for an internal user. You can also reset the counters.

Transmission of communication costs by the network service provider

To display call/connection costs at internal terminal devices of the PABX either during or at the end of the call and to manage the charge counter you have to apply for the rate information transfer to be activated by your network service provider. There are two ways to transfer the cost of calls:

- Transfer of rate information in units.
  These units are then converted to a currency value using a defined factor. The currency must be specified previously in the PABX however.

- Transfer of the currency value.
  No conversion required in the PABX.

Ask your network provider which method is used to transmit your charge rate data. Make sure your connected terminal devices support the method that is used. The PABX supports both these transmission types.

> If your network service provider has made this rate information display during calls available on your ISDN connection then the PABX terminal devices can display this information.

Call account (charge limitation, pocket money account)

A call charge account can be programmed for each internal user. The charge rate amounts available to that particular user are defined in this account. If the user uses up his/her allotted units he/she can then only make internal calls. If this limit is reached during an ongoing call, the call can be completed. The user can make external calls again when the number of units on his/her account is increased or the counter is deleted.

Notes

Please note that user's charge account must be activated and transmission of the rate information must be applied for at your network service provider in order to utilize this feature. If you make a call using a different provider which does not transfer the charge rate information, the call account function will be ineffective.

Before you enter the amount for the call cost account you must clear the charge counter for the internal number of the account holder. You can then set up the call account.

> For configuration information using the telephone please refer to page 42.

Least Cost Routing (LCR)

The built-in Least Cost Routing feature lets you make calls via an alternative carrier or service provider. When this performance feature is activated the PABX system attempts to set up the most reasonably priced or optimum connection for that time. The optimum connection may not always be the most reasonably priced however.

Diverse information must be available for selecting the best price and reasonably priced service provider for a call:

- To where is the call being placed?

- Time of the call?

The charge rate data for the LCR function can be downloaded from the Internet site www.telefonsparbuch.de. Funkwerk Enterprise Communications GmbH is not liable for, nor can it guarantee the up-to-dateness, completeness and correctness/freedom from error of the rate tables.

Normally, you are connected with your network service provider when you lift the handset of your phone and dial the line access digit

(default: 0). The built-in Least Cost Routing feature lets you make calls via an alternative carrier or service provider.

In its initial state, no LCR procedure is activated in your PABX. You can configure the various LCR procedures using a PC and the WIN-Tools CD supplied with the system.

Please note that there are some providers whose services must be applied for. Some of these providers automatically set up a connection to enroll unregistered customers. If you terminate such a connection during dialing and then subsequently attempt to set up this link again, this may result in errors during calling (communication will not be established). In this case it will be necessary to deactivate the provider concerned in the LCR professional on the WIN-Tools CD and to update the date records in the PABX.

LCR Professional features

- Configuration of up to 20 providers including provider name and prefix. Setting options for individual routing behaviour (default, trunk, MSN)

- Up to 50 zones with a maximum of 200 entries each (prefix, phone numbers, subscribers) can be configured.

- You can configure a GSM gateway as provider. The trunk code for the port is dialed for connections at the external ISDN port of the PABX system as the »Provider prefix«. When connected to one of the pabx's analog port, the internal extension number of the pabx is dialed.

- Three different fallback stages can be set.

- The rate tables are configured for Monday through Friday, Saturday and Sunday for the zones that have been configured.

- Preconfiguration and download of rate tables from the Internet (www.telefonsparbuch.de).

- Importing and saving the rate tables and transferring them to your PABX system.

Important notice for using the LCR procedure

- Users can be inhibited from using this feature in PC configuration.

- The rate information is not logged completely in the call data records of the PABX when using the LCR procedure, as this information is not furnished by all service providers.

- When call forwarding is activated you should enter the network service provider as the main provider to ensure a high degree of accessibility.

- Call forwarding in the exchange, or automatic call-back to an external party will always be executed via the main network service provider.

☒   When you lift the handset you will hear a special dial tone in all country variants except DE and AT.

Operation

You can activate/de-activate the LCR procedure using either the »Professional Configurator«, or a code sequence on the telephone.

Activating the LCR procedure

☏ ✗	✳✳	••	0 0 0 0	••	7 8 1 2	••
Lift up handset		Ack. signal	Enter PIN (0000 = default setting)	Ack. signal	Code	Ack. signal

Deactivating the LCR procedure

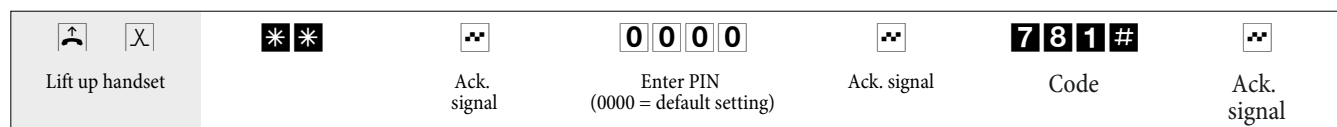| ☏ ✗	✳✳	••	0 0 0 0	••	7 8 1 #	••
Lift up handset		Ack. signal	Enter PIN (0000 = default setting)	Ack. signal	Code	Ack. signal
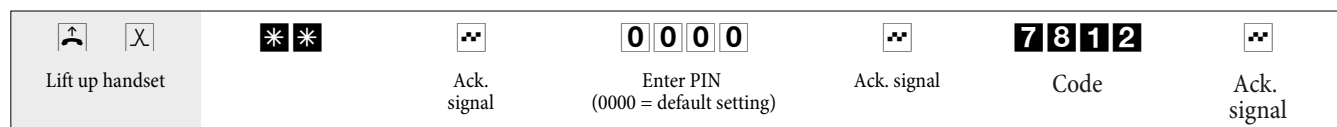
Block dialing (Austria)

Using block dialing (prepared dialing) you can first input a number completely at a terminal device to put it into the buffer memory in the PABX system. You can then initiate dialing of the complete number. Some network service providers require block dialing to enable direct dialing to a certain terminal device. Block dialling is also possible for internal communications.

☏	Lift up the handset of your phone. You will hear the internal dial tone.
✳ 5 5	Dial this code.
0	Dial this code **0**.
▦	Dial the number you wish to call.
#	Begin dialing by pressing the key **#**. Only now is the call transferred to the exchange.
	You will hear the ringing signal in your handset. The external party is being called. The party being called lifts up the handset of his/her phone.
♪	Conduct your call.
☏	End the call by hanging up your handset.

PABX Settings

Activating and deactivating call signaling for analog terminal devices

You can activate/deactivate the ringing of your analog terminal devices for internal, external or all calls. You will still have use of all of the other functions for the terminal device. When the caller places a call he/she will hear the ringing signal. When you lift up the handset during a call (you can not hear the call) you will be connected with the caller.

Deactivating call signaling for analog terminal devices(Inhibiting calls ON)

⬆ Lift up handset	✳5️⃣7️⃣	0️⃣ / 1️⃣ / 2️⃣ all calls / only external calls / only internal calls	〰 Ack. signal	⬇ Replace handset

Activating call signaling for analog terminal devices(Inhibiting calls OFF)

⬆ Lift up handset	#️⃣5️⃣7️⃣0️⃣	〰 Ack. signal	⬇ Replace handset

Teams

Teams are groups of persons who work together to achieve a set goal. Normally, this means that all of the members of a team can be reached at a common number for external and internal calls. In the PABX this means that a number can be specifically assigned to each team of telephones / terminal devices, allowing all team members to be reached at all times for external and internal calls.

In PC configuration you can assign up to eight internal numbers or one number for external call forwarding to each of the 10 possible teams. These teams can, in turn, be allocated to the external MSN. A team number can be specified in PC configuration for the team for internal team calls.

Wird of einem external Subscriber die Mehrfachrufnummer (MSN) or of einem internen Subscriber die Team-Call number selected, werden alle zugeordneten Endgeräte gerufen. You can enter various terminal devices (e.g. telephone, fax group 4) for the teams; the calls are signaled in accordance with their specific service ID.

> Teams can also be called during an ongoing inquiry call or on call forwarding. It is also possible to forward a call to a team.

Incoming call for a busy team member (»Busy on Busy«)

If a member of a team is making a call you can decide whether further calls are to be signaled for this team (PC configuration setting). If the function »Busy on busy« has been configured for this team any further callers making calls to this team will receive the »busy« signal.

Enabling / Inhibiting a member's phone within a team

Let's assume you are leaving the phone range and wish to disable your telephone for call signaling.
You can disable your telephone for call signaling in a team or in all teams and enable it later.Enabling or inhibiting is always conducted simultaneously in the day/ night team call allocation. If your phone is disabled in a team no further team calls will be signaled at your phone.

If all team members' phones are disabled in the day/night team call allocation, the calls for this team will be signaled at the terminal devices of Team 00. The caller will hear a busy signal if no terminal device has been enables for call signaling in Team 00 either. in der Default setting sind im Team 00 die internen Numbers 10.11 und 20 in der Team-Call allocation Day und Night eingetragen und freigegeben.

> The specific internal number must be assigned to the corresponding team to enable or inhibit a telephone within a team.

Enabling / Inhibiting subscribers within a team (log-in, log-off)

⬆	✳ / #	9 4 3	⊞	⊡	⬇
Lift up handset	Enable/Inhibit subscribers	Team number (00...09)		Ack. signal	Replace handset

Enable / inhibit member(s) in all teams (log-in, log-off)

⬆	✳ / #	9 4 3 ✳	⊡	⬇
Lift up handset	Enable/Inhibit subscribers		Ack. signal	Replace handset

Switching team call day/night assignments (call distribution)

The Day/Night team call assignment defines which internal telephones should ring when an external call comes in. Die Team-Call allocation Day und Night ist eine Table, in der die ankommenden Rufe internen Teilnehmern zugeordnet werden.

Let's say you wish to reroute important business calls to your (home) office to an answering machine after hours so that you will not be disturbed at home.
In PC configuration you can assign two different call distribution options (team call assignment day/night) to each team. Call forwarding to an external subscriber is also possible for day/night team call assignments, allowing you to always be reached by important callers, for example. You then only need to switch the team call assignment option from day to night and call will be signaled where you need them to be.

> You can switch over the day/night team call mode at any time during the day or night. This switchover can be performed by any user with the proper privileges (default setting: no subscriber).

Switching all call modes

You can switch over all team call modes simultaneously. This switchover can be performed by any user with the proper privileges.

Team-Call allocation Day und Night für alle Teams schalten

⬆	✳ 9 3 ✳	or	# 9 3 ✳	⊡	⬇
Lift up handset	call modes »Day«		call modes »Night«	Ack. signal	Replace handset.

Switching team call assignments (day and night) for one team

⬆	✳ 9 3	or	# 9 3	⊞	⊡	⬇
Lift up handset	Call mode »Day«		Call mode »Night«	Team number (00...09)	Ack. signal	Replace handset

Features without user action

SMS (short messages)

SMS (Short Message Service) allows you to send/receive text messages to/from other SMS-compatible telephones in the fixed-line network or to/from cell phones.
The information for a new SMS is shown in the display of the corresponding terminal device after this information has been transferred. Depending on the terminal device being used, preset or self-generated short messages can be transmitted. Short messages are input using the key block of the telephone. A short message is restricted to 160 characters. Additional costs are charged when an SMS is transmitted.

Sending/Receiving of SMS messages is only possible:

- If you have applied for this feature for your USB port (by calling the SMS center of your service provider and completing the application procedure).

- If the number for the SMS center for your service provider is stored in the PABX.

- When the caller's (sender's) number is also transferred and this number displayed at the receiving party.

- Essentially, you can authorize all terminal devices for SMS.

- Within a team call assignment configuration you can only assign one telephone (analog or ISDN) with SMS authorization in order that the SMSs reach that specific phone.

- You can only assign one outgoing number (MSN) to an SMS-authorized telephone. Assignment is made in PC configuration in the section »Internal subscriber« under the tab »Phone number«.Log-in at the SMS center and receiving of the SMSs are then made using this number.

- If you enter an SMS-authorized telephone in the team call allocation (in the section »External numbers«) in several teams with different MSNs, the SMS will only be received at the telephone with the number entered as the outgoing number.

Contact your service provider to find out what the costs are for sending/receiving SMS.

Information from the ISDN network (MWI)

The MWI feature allows your service provider to inform you if new messages for you are actually available. For example, if you have a new e-mail message in your mailbox or on the server of your Internet provider, MWI will notify you. Terminal devices that support this feature can display or signal this information. MWI information is transferred transparently by the PABX to the terminal devices.

You must apply for this ISDN connection feature at your service provider. You will then be informed of all available services there.

Automatic changeover of authorization for external calls

Do you need to revoke or grant authorization privileges of certain subscribers / terminal devices of the PABX for making external calls? You can specify separately for each telephone / terminal device whether the authorization privileges for making external calls are to be revoked or granted for a certain time defined in the calendar. After the authorization privileges have been changed automatically, the user concerned will not be able to place any external calls.

No operating actions are required for this function. In PC configuration you can mark (specify) the user for which call authorization is to be changed. The calendar used to determine when changeover is to take place can be set in PC configuration.

Emergency calls using terminal devices provided for this purpose, or emergency numbers, are exempt from this authorization privilege change.

Calendar

You have a set routine and are either in the office or at home at certain times during the day. But let's say that you want to take your calls in the hobby room on Sundays.
You can set a calendar in the call distribution for each team. The two team call modes Day and Night will then be switched automatically ba-

sed on the data in the calendar.

For example, let's say you wish to change the authorization privileges for a certain user for after business hours.

When configuring your PABX you can specify separately for each user whether that user's authorization for external calls is to be changed over automatically. Changeover is performed in accordance with the data in the assigned calendar.can program two separate calendars for the PABX using your PC. It is also possible to change over have changeover between a day and night call mode performed automatically at a time you specify. Different day/night changeover times can be selected for each day of the week. A calendar consists of four switching times, which, in turn, can be specifically assigned to the individual days of the week.

> When a calendar is assigned, this overrides any manual changeover made for these modes in the day/night team call assignment list.

Example:

Week day	Calendar 1							
	Switching time 1		Switching time 2		Switching time 3		Switching time 4	
	Day	Night	Day	Night	Day	Night	Day	Night
Monday	09:30			18:00	18:45			24:00
Friday		14:00	Inactive		Inactive		23:00	
Saturday	09:00		Inactive		Inactive			23:00

Protection of data link

You are in the middle of sending out several fax messages. The feature »Call waiting« is configured at the connection for your fax machine. If you receive a call at a different fax device at the same time, data transfer will be interfered with, or even disrupted completely by the call waiting signal.

»Call waiting« is suppressed at the analog port for fax devices to ensure correct data exchange at all times and to prevent any possible interference signal.

You can define certain types of terminal devices for analog ports in PC Configuration. As soon as you specify a different type of connection than »Telephone«, e. g.»,Modem« or »fax group 3«, the call waiting function will be deactivated for that connection.

Emergency call priority

For »Emergencies«: The »Emergency call« function.

Let's assume that an emergency occurs and you must urgently call the police, fire department or another emergency number. And to make matters worse, both external B channels of the ISDN connection are busy.

you haben jedoch Ihrer PABX die Numbers communicated, die im Notfall erreichbar sein müssen. If you dial one of these emergency call numbers the number is recognized by the PABX and a B channel "freed" automatically by the PABX for an emergency call.

You can enter up to six (6) emergency numbers during PC configuration. Emergency numbers unterliegen keiner konfigurierten Line access authorization or Dial ranges.

For the function »Making calls with direct exchange line access« the external ISDN connection is taken and calling is permitted. If the external B channels are busy, a B channel is freed (released) and the parties conducting their call on that channel will hear a busy signal. An emergency call already in progress is not interrupted.

For the function »Making calls without direct exchange line access« the internal connection is busy and internal calls can be made. You must dial a »0« before making an external call. If all of the external B channels are busy, one B channel is disconnected and the parties conducting their call on that channel will hear a busy signal. An emergency call already in progress is not interrupted.

Dial ranges

During configuration you can define restrictions for placing external calls for certain terminal devices.

Dialing regions are not activated in the default settings. In PC configuration you can assign each terminal device individually to call control.

The numbers listed in the Restricted Numbers table (in the Section »Restricted Numbers«) can not be dialed using the analog terminal devices included in the associated dialing region. For example, the entry of the number »0190« in the list would prevent calls being made to costly service providers.
The entries in the unrestricted numbers table (in the Section »Unrestricted numbers«) can cancel a portion of the restrictions imposed on numbers in call restriction. For example, if B. der Eintrag »0190123456« in der Freiwerk-Tabelle eingetragen wird, kann diese Rufnummer gewählt werden, auch wenn über das Sperrwerk alle »0190«-Rufnummern gesperrt sind.
If two identical numbers (identical sequence of digits and same number of digits) are entered as both barred and restricted, then these numbers can not be dialed.

If the prefix number for a different network service provider is dialed from a number that is inhibited by the dialing region, that dialing region is not active.

> Subscribers without authorization for external calls can obtain the authorization to make external calls to these numbers.

Another possible setting option is the regional numbers. The users can not make any domestic long-distance or international calls. Ten (10) exception numbers can be configured for this call authorization for making national calls. A special number can consist of a complete phone number or parts of a number (for example the first few digits).

Time acceptance

You can activate or deactive the time acceptance function from the ISDN network. This feature is required, in case the ISDN network does not transmit the time correctly. In the event of a loss of power, all stored contents (program and application data) are retained in the PABX without any changes. The internal clock for the PABX system is updated automatically during the next external call (if configured). Activation of accepting the updated time is set via PC configuration.

Conducting calls with several subscribers

While you are conducting a call you can

- call a further party (inquiry call).

- accept a second call during an ongoing call (call waiting).

- transfer a call.

- Transfer in the network (ECT).

- connect a waiting caller.

- conduct two calls at once while switching between the calls (broker's call).

- talk to two parties simultaneously (three-party conference call).

If you wish to utilize these functions at an external point-to-multipoint connection, you must apply for them. Ask your network service provider for details.

> The following sequences and codes apply to the use of analog telephones.

Inquiry call

You can call another party at any time during an ongoing call.

🎵	You are conducting a call. You would like to call another party.
R	Press the R key. You will hear the internal dial tone.
⌨	If you wish to speak to an external party, dial 0 first. If you hear a busy signal after dialing 0, either your telephone does not have proper authorization for an external call, or the line is busy.
⌨	Dial the number of the party you wish to call. You will hear the ringing signal in your handset. The party will be called. The party being called lifts up the handset of his/her phone.
🎵	Conduct your call.

or

R 1	With analog terminal devices you must first dial the code R 1 the current call is then canceled and you are re-connected with the first party.
🎵	Continue with your call.

Call waiting

During an ongoing call you can accept, or refuse, a waiting call at any time.

> Call waiting is possible, however, for internal and external calls to analog telephones.

Conversation accept (in Room inquiry gehen)

🎵	You are conducting a call. A second party calls you. You hear the call waiting signal.
R 2	Dial this code.

♪ You will be connected with the waiting party. Your first call is put on hold (see »Inquiry call«). Refer also to »Broker's calls« or »

Refusing a call

♪ You are conducting a call.
A second party calls you.
You hear the call waiting signal.

R 0 Dial the code for refusing the waiting call. The caller will then hear the busy signal.

Accepting a call, Three-party conference call« for further information.

You can also accept a waiting call by hanging up the handset and ending the first call. When then lift up the handset again you will be connected with the caller who was previously waiting.

Transfer calls

Transferring calls internally without advance notice

You can transfer calls when you dial the number of the internal party and then hang up the handset. The internal party is then called and can take the call when he/she lifts the handset.

♪ You are conducting an external call.

R Press the R key.
You will hear the internal dial tone.

▦ Dial the number of the internal party to whom you wish to transfer the call.

You will hear the ringing signal in your handset.
The party will be called.

If you hear the busy signal press the R key again to retrieve the call that is on hold.

☎ Replace the handset. The party will be called. The party being called lifts up the handset and conducts the external call. If the called party does not lift up his/her handset you will be called back at your telephone after appr. 30 seconds.

Transferring calls with advance notice

You wish to transfer an internal or external call to another internal party and speak with that party beforehand.

♪ You are conducting an internal or external call. You wish to transfer the call to another party.

R Press the R key. You will hear the internal dial tone.

If you hear the busy signal, press the R key again to retrieve the call.

▦ Dial the number of the party you wish to call.
You will hear the ringing signal in your handset.
The party will be called.
The party being called lifts up the handset of his/her phone.

♪ Conduct this internal call.
Tell your internal partner that you wish to transfer the call currently on hold to him/her.

☎ Replace the handset.

The other internal party can then continue with the call.

Connecting (ECT)

During an ongoing call, you have the option of accepting a further call, or of initiating a second call yourself. The first party is put on hold during the inquiry call. You can then connect both parties with one another and you will be disconnected (from that call).

In the Professional Configurator you can define for each subscriber separately whether an external party is to be put on hold in the PABX or in the exchange.

Transfer within the PABX

The feature »Hold in the PABX« must be configured.

The two external callers will be connected via the PABX. Your PABX is not available for other external calls while an external, transferred call is in progress.

Transfer in the exchange

The feature »Hold in the exchange« must be configured.

The two external callers will be connected in the exchange. Your PABX remains fully available (for two connections) while the transferred call is in progress.

You can only utilize this function if the feature »ECT« has been activated for your ISDN connection. Ask your network service provider for details.

Connecting

♪	You are conducting a call with party 1. A further call is signaled, for example by call waiting.
R 2	Dial this code. Party 2 answers; you can speak with Party 2 and Party 1 is put on hold.
R 4	You would like to connect the two parties with one another. Dial this code.
	The two parties are then connected. The charges for the connection are billed to the party who established the connection.

Broker`s call

The broker's call feature allows you to switch back and forth between internal or external callers. The party that is on hold will hear the music on hold (when programmed). With analog telephones you can switch between two callers. You can terminate each specific call. During system configuration you can define whether the callers are to be put on hold in your PABX or in the exchange.

You are conducting a call and wish to speak to a further party, without the first caller being able to hear your conversation with the second caller.

R	Press the R key. You will hear the internal dial tone.
▦	If you wish to speak to an external party, dial 0 first. Dial the number of the party you wish to call. You will hear the ringing signal in your handset. The party will be called. The party being called lifts up the handset of his/her phone.
♪	You are conducting the call. The first call is put on hold.
R 2	Dial this code to return to your first caller; the second party is put on hold. You can then use this code to switch back and forth between the two callers.

or

R 0	You can end the call that is on hold. Dial this code.

or

R 1	You can end the current call. Dial this code.

- If you switch back and forth between an internal caller and an external party (broker's call) and then hang up your handset, your call is terminated and the two callers will be connected with one another!

- If you switch back and forth between two external parties (broker's call) and then hang up your handset, the current call is terminated and the caller on hold will call you by way of the »Call-back« function.

- If, during a broker's call, you press the Recall flash button and then dial 4, the two external parties are connected with one another and your call with both of the external parties is terminated. The charges for the call that you initiated will be billed to you.

Three-party conference call

You can make three-party conference calls with external and internal callers.

To conduct a three-party conference call in the exchange with two external callers the feature »Hold in exchange« must be specified during configuration. Only one B channel of the ISDN connection is busy with two external callers.

The feature »Hold in PABX« must be configured to conduct a three-party conference call in the PABX with external or internal caller. Both B channels of the ISDN connection are used when making a three-party conference call with two external parties.

You can also include a caller from »call waiting« or »on hold« in an ongoing call.

Initiate a three-party conference call

|	
📞	You are conducting a call with one party and wish to include a further party in the call.
Ⓡ	Press the R key. You will hear the internal dial tone.
	If you wish to speak to an external party, dial 0 first.
⌨	Dial the number of the party you wish to call. You will hear the ringing signal in your handset. The party will be called. The party being called lifts up the handset of his/her phone.
📞	You would like to include this party in the first call.
Ⓡ③	Dial this code.
✳	Conduct your three-party conference call.

You would now like to exclude the party that you first brought into the conference call from further conversation. This caller then remains on hold in an inquiry call.

Ⓡ②	Dial this code.
📞	You can then continue your call with the second party. The first party is on hold.

> The conference is ended when you hang up your handset. A party included in the conference call can hang up at any time and the party which initiated the call can then continue the conference with the remaining callers.
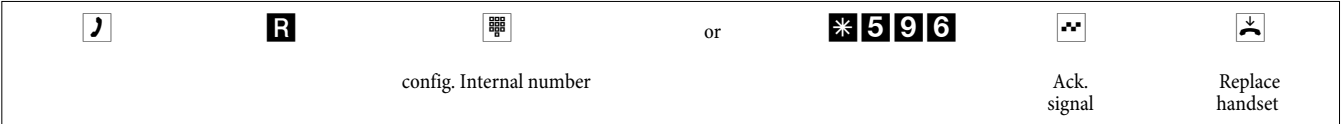
System parked inquiry

You are talking on the telephone and would like to route this call to a colleague. However, you are unsure about your colleague's current location. Use the »system parked inquiry« feature to keep the caller within the PABX waiting loop. You can now use your telephone for an announcement or message signaling to your colleague that he or she has a waiting inquiry call. The numeric code of the system parked inquiry allows the colleague to accept the call from any telephone.

The system parked inquiry is initiated with the inquiry call feature. The called subscriber uses the inquiry call feature to dial the default numeric code (✳⑤⑨⑥) or one of 4 configurable numeric codes from the internal telephone number plan. If the dialed extension is not already being used for a different system parked inquiry, the subscriber will hear a positive acknowledgement signal and hangs up the telephone. If the negative acknowledgement signal is heard, the subscriber cancels the enquiry call and repeats the process for another internal extension released for the system parked enquiry. During system parked inquiry, the external subscriber will be put on hold by the system and will
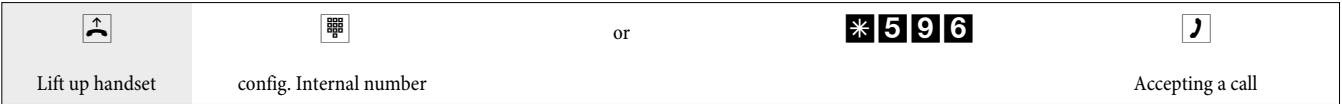
hear music on hold (when programmed). The telephone is now available for other uses, for example an announcement or message. If the call within the waiting loop is not accepted by a subscriber within a specified time, the initiating subscriber receives a call-back or a call-waiting signal.

The system parked inquiry is possible only from within an external or internal connection. Only one inquiry call is possible for each code. If an internal number is already being used for »System parked inquiry« you must search for an unused internal number. Only subscribers with at least an »incoming receive only authorization« can accept a call from the system parked inquiry loop of an external waiting / on hold caller; all other subscribers hear a busy signal.

Initiating a system parked inquiry

☎	**R**	▦	or	✳ 5 9 6	⠶	☎
		config. Internal number			Ack. signal	Replace handset

Accepting a system parked inquiry

☎	▦	or	✳ 5 9 6	☎
Lift up handset	config. Internal number			Accepting a call

Installation

Installation of the PABX

Before beginning the installation check the package to ensure that all items are included.

Contents:

- 1 PABX unit

- Plug-in power supply unit

- 1 ISDN connection cable (3 meters)

- 1 USB connection cable (3 meters)

- 1 set of operating instructions

- 1 drilling template

- 1 CD-ROM for configuration, drivers and software, documentation in pdf-format

- 1 enclosed package containing: 3 dowels and 3 screws.

Installation sequence

This section gives you step-by-step instructions on how to install your PABX. It is important that you adhere to the installation sequence given here.

- Select an installation location that is a maximum of 1. 5 meters away from a 230 V AC outlet and the network termination (ISDN connection) of the service provider.

- To prevent mutual interference, do not install your PABX system in the immediate vicinity of electronic devices such as stereo equipment, electronic office equipment or microwave units.
  Avoid installing your PABX near sources of excessive heat, e.g. radiators or in rooms with excessive humidity.
  The ambient temperature must be between 5 and 40°C.

- Having identified the appropriate location, place the drilling template on the selected mounting location and ensure that it is perfectly perpendicular. Take care to keep the spaces as specified on the drilling template.

- Mark the drilling points on the wall using the drilling template.

- Ensure that all the contact surfaces have firm contact with the wall. Ensure that there are no power lines, cables, etc. located at or under the marked drilling holes.

- Drill the three mounting holes at the marked positions. When using anchoring studs, use a 6 mm masonry drill to drill the holes and put in the dowels.

- Screw two of the screws into the two top dowels in the wall such that there is a gap of about 5 mm between the head of the screw and the wall.

  Attention! You may be electrostatically charged. To ensure that you have no electrostatic charge, touch a conducting object connected to»ground« (e. g. water pipe) before you open the PABX system
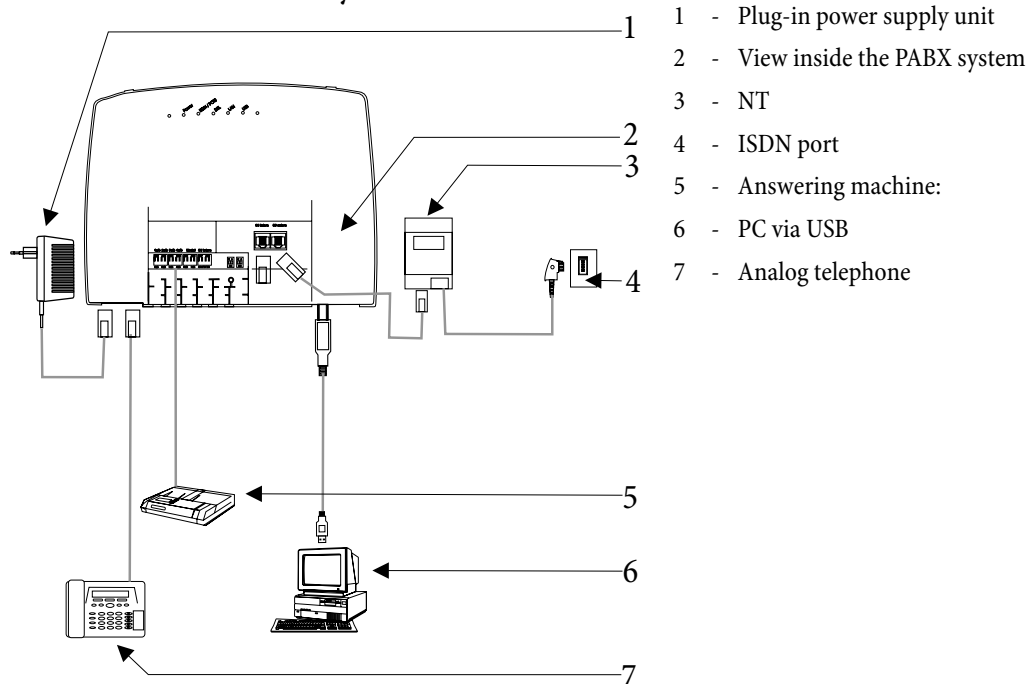
.
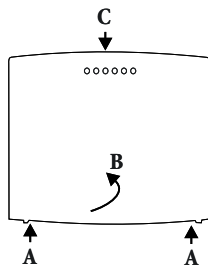
Opening the PABX: »C« is the front of the PABX system. Pull the two plastic springs marked »A« outward until the cover is released. Lift off the cover carefully toward the rear. It can then be easily lifted off. The terminal panel is then visible under the enclosure cover.

- Hang the PABX on the screws by inserting the screw heads into the rear panel mounting holes.

- After this, screw the third screw in tightly at the marked position to secure the PABX on the wall.

- Install the connecting jacks for the analog terminal devices. Then connect the PABX system to the jacks.

- Plug the terminal device connectors into the jacks.

- If you wish to configure your PABX system yourself via the PC, you can do this via the USB port on the PABX, or at the internal ISDN connection.
  To configure the system via the PC port, connect the PABX system PC port to the USB port on your computer using the PC connecting cord provided with the system.

- Close the enclosure. To close the PABX, insert the catches (on the back of the bottom of the enclosure) into the openings in the PABX enclosure cover. Press down on the cover at the front until it catches.

- Connect port »S0: EXT« to the network termination unit via the ISDN connecting cord.

The mains plug for the network termination unit does not have to be plugged in to operate the PABX.
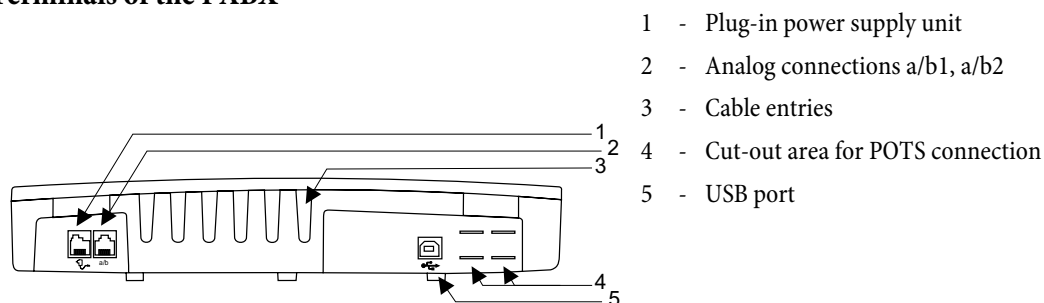
- You can now use your telephone system.

Connections to the PABX system

1 - Plug-in power supply unit
2 - View inside the PABX system
3 - NT
4 - ISDN port
5 - Answering machine:
6 - PC via USB
7 - Analog telephone

View inside the PABX system

1 - S0-External-Connection RJ45

2 - Not equipped

3 - Switch for the terminating resistors external

4 - LEDs

5 - a/b7,a/b8 Analog connections (module)

6 - a/b5,a/b6 Analog connections

7 - a/b3,a/b4 Analog connections

8 - a/b1,a/b2 Analog connections

Terminals of the PABX

1 - Plug-in power supply unit

2 - Analog connections a/b1, a/b2

3 - Cable entries

4 - Cut-out area for POTS connection

5 - USB port

Analog connections

Only analog terminal devices with frequency dialing (DTMF dialing) should be connected to the analog ports. The recall flash button must execute the flash function. The functions described in the operating and configuration instructions can be used without any restrictions with these terminal devices.

> Flash duration detection can be set by PC configuration.

The PABX is equipped with two types of internal connections:

- Four connections a/b1...a/b4 for hard-wiring of outlets.
  After you have plugged a terminal device into the RJ12 jack of the PABX, you may not use the associated fixed connection a/b1 and a/b2.

- Two analog terminal devices can be connected using RJ12 connectors at the RJ12 jack.

Assignment of the RJ12 jack

6 5 4 3 2 1	1 - a2 - Sbcr2
	2 - nc
	3 - a1 - Sbcr1
	4 - b1 - Sbcr1
	5 - nc
	6 - b2 - Sbcr2
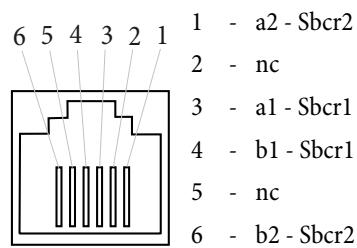
USB/PC interface

The USB port is used for linking a PC to the PABX system.

> The USB port of the PABX functions as a USB network card. This allows you to perform PC configuration of the ISDN router the same way as for Ethernet installation

Use the USB connecting cord supplied with the system for this.If you use a different USB connecting cord ensure that the distance between the PABX and the PC does not exceed five meters, depending on the type of USB connecting cord you are using.

The PABX system USB port is ready for operation at the PC connected to the system when the LED »USB« lights up and stays lit. PC applications that run via the USB connection can be started. The LED will blink when the USB driver is active at the PC connected to the system and data is being exchanged via the USB port.

Modules

1 - Fastening screw for the module

2 - Connecting cable to the modules

3 - Modul elmeg M2 a/b or module elmeg M2 POTS

4 - Fastening screw for the module

5 - External analog connection for the module POTS
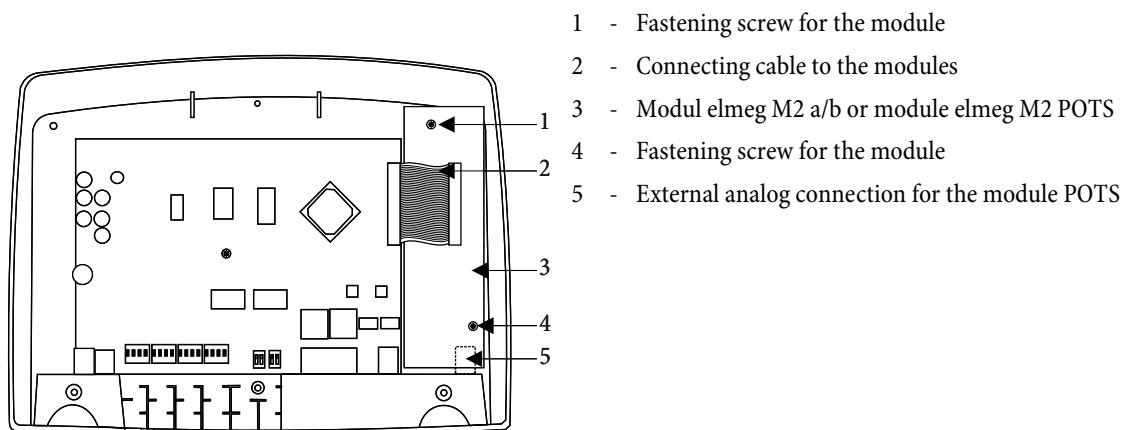
Module installation

The modules have already been taken into account for the PABX system. If a module is installed prior to initial commissioning, the numbers are automatically assigned to the connections.

Verschiedene Modules können für die TK-Anlagen genutzt werden. You should first make a backup copy of all pabx data and then reset the system to default state (code » 999«. Switch the system off, then mount the modules. Restart the system.

> Disconnect the PABX from all analog, door terminal and ISDN connections. Attention! You may be electrostatically charged. To ensure that you have no electrostatic charge, touch a conducting object connected to»ground« (e. g. water pipe) before you open the PABX system.

Please observe that only one module can be inserted into each available PABX slot:

Slot 2 = Module elmeg M 1 POTS or module elmeg M 2 a/b.

Installation of the module elmeg M 1 POTS

1 - Fixing holes

2 - Connector

3 - Fixing holes

4 - External POTS-Connection

5 - Functional ground plug

6 - Anschlussstecker für die Funktionserde
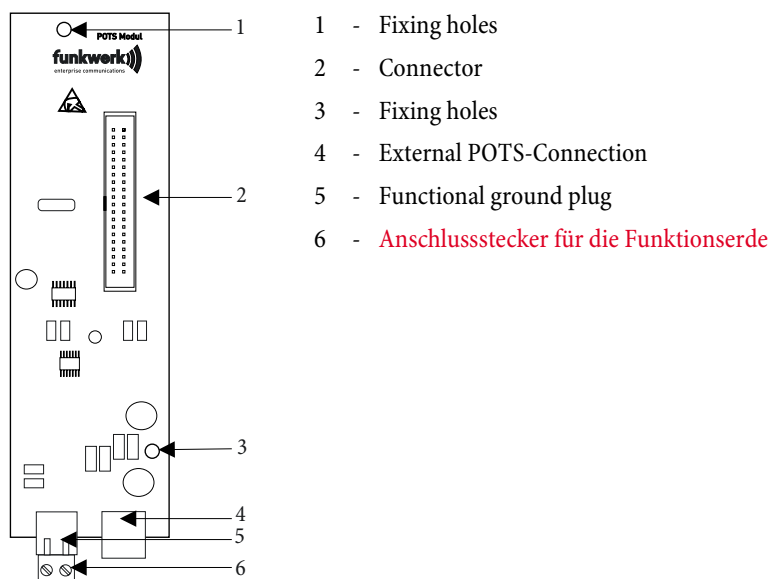
Connection to the PABX system is made using the ribbon cable provided with the system. The external analog port and connection of the functional ground is made using the ports on the module. The marked cut-out areas in the PABX housing must be removed for this. As fine

overload protection is integrated into the elmeg M 1 POTS module, function grounding must be connected! The analog port can also be connected via terminals a/b5 / a/b6 to ports la and lb.

External POTS Connection

6 5 4 3 2 1

1	-	nc
2	-	nc
3	-	External connecting lead La
4	-	External connecting lead Lb
5	-	nc
6	-	nc
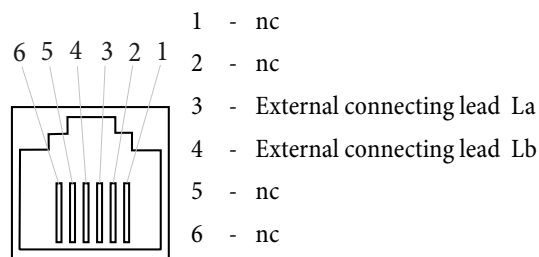
Ports La and Lb are electrically isolated from the PABX system circuit.

Functional ground

As the elmeg M 1 POTS module is equipped with a functional ground connection, there should be a »ground line« (water line, heating system line or grounding circuit connection for the building wiring system) near the installation location of the module. This connection is required for use of the module POTS. The connection to the PABX must be made with a connecting lead of at least 2.5 mm^2 . The function grounding connection can be plugged in to the module. Both functional ground connections are connected together.

> If you use terminal devices that are linked with the PABX system via USB or RS232, you must install the functional grounding, as otherwise »hum loops« may be produced.

Installation of the module elmeg M 2 a/b

1	-	Fixing holes
2	-	Connector
3	-	Fixing holes
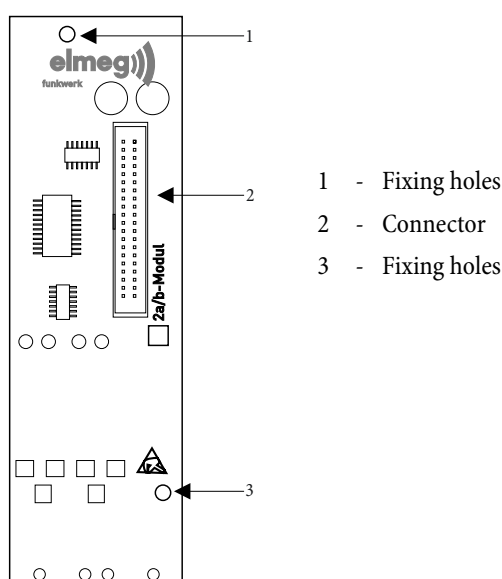
Connection to the PABX system is made using the ribbon cable provided with the system. The two analog subscribers are connected at jacks a/b5 and a/b6 on the PABX system.

Commissioning the phone part

Phone number plan

When you start up your PABX for the first time a number of settings are already pre-configured (default settings). This includes the internal numbers. This means that you can place calls immediately after switching on your PABX.

Internrufnummern:

- The internal numbers 10…13 are provided for analog ports, numbers 30…39 for CAPI and numbers 40…43 for DSL.

- Internal service number: The internal number 55 has been assigned as the service number. The Service number allows a PC to access your PABX system.

- External service number: An MSN or, with a point-to-point access, a direct dial-in number is assigned to the internal service number 55 during PC configuration. This »external service number« is the only access possible for configuring »Follow me« and »Room monitoring« from an outside location.

- Team 00: In the initial state the numbers 10, 11 and 20 are entered and enabled for Team 00 in the day/night call allocation.

Default setting

- The external ISDN connection is set to point-to-multipoint access.

- The four-digit PIN1 (password) is set to **0 0 0 0**　**2 5 5**

- The six-digit PIN2 (password) is set to **0 0 0 0 0 0**　**2 5 5**

- Assignment of an external ISDN connection is made by entering **0**.

- The switchable call mode for Team 00 is set to »Day mode«.

- The group call is set for »simultaneous«.

- The switching privilege for teams is configured for no terminal device.

- All users are in Pick-up group 00.

- Accepting (pick-up) of a call is possible for all terminal devices.

- All subscribers can use the telephone directory.

- No terminal device authorized for SMS reception.

- The analog connections are configured for telephones that use DTMF dialing and a flash key (200 ms).

- The active terminal devices are authorized for international calls.

- The dial range is not configured.

- The number of the caller is displayed (caller ID).

- The B number is transmitted to the caller.

- Call waiting for a/b terminal devices has not been configured.

- No entries in telephone directory.

- Music on hold (MOH):: Melody 1 is played.

- No time or date is stored.

- The charge rate counters are set to 0.

- Up to 500 call data records can be stored for the terminal devices.

- The numbers in the call data records are shown in full length.

- Call data records for incoming calls are stored only when a project number has been assigned.

- Analog charge rate transmission is deactivated.

- Analog number transmission is activated.

- The keypad function for the external ISDN connection is not enabled for terminal devices.

- The meter pulse frequency is set to 16 kHz.

- Remote access can be initiated from any terminal device.

- Remote switching authorization (External follow me) is deactivated.

- The switchover times are set as follows in the calendar for all days of the week:
  Switching Night / Day: 8:00 PM
  Switching Day / Night: 4:00 PM

- A calendar has not been assigned to the team options.

- LCR is not active.

- Call charge logging is de-activated for all subscribers.

- Initial setting for router, please refer to page 50.

Initial startup (telephone operation)

Install your PABX as described in the section »Installation »«.

Make all necessary connections, including the 230 V AC mains power supply.

> When you switch on the 230 VAC power supply you may not interrupt the supply of power during the initialization phase of the PABX (20 seconds!)

In its initial state, the PABX will signal an external call at the analog terminal devices and at the ISDN terminal device that has the number.

You must then assign the numbers (MSN and direct dial-in) to the terminal devices via PC configuration to ensure that the other connected telephones and terminal devices can all be reached by external parties.

If your PABX system is set for use at a point-to-point connection it is crucial that you enter your local area code in the Section »Dialing region« in PC Configuration. Only after doing this can you take advantage of features such as »Call forwarding« (Partial Rerouting) and »Automatic Call-back«.

Your PABX is equipped with an internal »Phone number plan« (see page 38) that can be edited. The internal numbers (or MSN extensions) have default settings in the PABX's initial state. You can change these internal numbers as you require through configuration with the PC.

Your PABX supports the flash function for analog telephones. Therefore, never just briefly replace the handset or press the button in the cradle briefly with your hand, as the PABX would take this as a flash signal instead of hanging up.
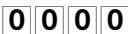
Configuration using a telephone

Enter Start configuration at a telephone

Various settings are protected by PIN1 in the PABXIn the default state, this PIN 1 is set to 0000. After you begin configuration you can set the features for your system using the codes described here. The telephone being used for programmeming can not be reached while the system is being configured.
You will hear the positive acknowledgement signal once you successfully conclude configuration for a setting. You can then move on to configure the next setting. If you wait for more than 40 seconds between one entry and another, the PABX will terminate configuration and you will hear the busy signal. All input made up to that point which was concluded with a positive acknowledgement signal will be saved when you hang up the handset. Saving is performed for 10 seconds after you hang up the handset. During this period it is important that you do not begin a new configuration of the system, and that power is not interrupted to the system.

The following procedure must be performed one time at the beginning of configuration:

⬆ Lift up handset	✳ ✳	Ack. signal	0 0 0 0 Enter PIN 1	Ack. signal

This symbol indicates that a configuration is required. Be sure to complete the »Initial programming« before entering codes.

You can set the following features:

- Setting the date and the time (see page 42)

- Cancel settings (see page 42)

- Enable or inhibit remote access (see page 42)

- Charge / Setting up call accounts (see page 19, 42)

- Activate/ de-activate LCR (see page 44)

- Changing PIN 1 or PIN 2 (see page 40)

PIN 1 / PIN 2

You can prevent misuse of your PABX by other parties by implementing various security functions. Your PABX settings can be protected using your 4-digit PIN1 (code number). Access by external parties (remote access) is protected using your 6-digit PIN2.

PIN 1 (4-digit): Security precaution against misuse of your PABX by other parties.

PIN1 is a 4-digit code number that is required when you wish to protect your system settings against unauthorized access.

PIN 2 (6-digit): Security for settings made from external telephones

For the settings:

- Call forwarding (Follow me) from external location
- Room monitoring from external location

prevent unauthorized parties from using your PABX. Only after you enter this 6-digit PIN2 are you allowed to utilize functions in your PABX that can be activated/deactivated from external telephones.

> Remote access using this 6-digit PIN2 is only possible when this PIN2 has been changed individually, i. e. it is no longer in its initial setting of 000000.

Changing PIN 1 / PIN 2

Begin the configuration procedure (see page 40).

⚠911	or	912	▦	▦	⌁
Change PIN 1 (4-place)		Change PIN 2 (6-place)	enter new PIN	enter new PIN	Ack. signal

Write down your PIN and keep it in a safe place, because if you forget or lose your PIN 1 you will no longer have access for configuring the PABX. Note: If you do forget your PIN 1, call the service center of your dealer. They can reset your PIN 1 to its initial setting.

Setting up cost monitoring

Clearing the charge counters for one or all of the users

⚠850	▦ or ✱	⌁
Code	internal number (für einen) or * für alle internen Subscriber	Ack. signal

Setting up / delete call accounts

Input this parameter with 3 places after the decimal point. For example:
Amount: 100 Euro   Enter: 100 000
Amount: 3.50 Euro   Enter: 3 500

⚠830	▦	▦	#	⌁
Code	internal number	Amount max. 6 - place		Ack. signal

Deleting call accounts

⚠830	▦	#	⌁
Code	internal number		Ack. signal

Wenn you das Deleting call accounts, ist externes Making Calls mit dem terminals Not available.

Charge limitation On/ Off

⚠ **8 9 0**	⊞	✳ / #	⸬
Code	internal number	Activate / Deactivate	Ack. signal

Setting the date and the time

If your service provider does not transmit date and time data, you can enter the date and time manually.

⚠ **9 8**	0 1 ... 1 2	0 1 ... 3 1	0 0 ... 9 9	0 0 ... 2 3	0 0 ... 5 9	⸬
pm set	Month	Day	Year	Hours	Minutes	Ack. signal

Enable / inhibit remote access

With your PABX you have the option of using the functions

- Call forwarding - Follow me

- Room monitoring

from an external location. You can specify the required authorization for remote access to your PABX.

Enable / inhibit the remote access authorization

⚠ **7 8 0**	✳ / #	⸬
Code	Enable / inhibit remote access	Ack. signal

Restoring settings (Reset of the PABX system)

You can use the Reset option for your PABX to return the system to a defined initial state. This may be necessary if you wish to cancel configurations you no longer require or want, or to re-program the PABX.

Resetting settings to initial state

⚠ **9 9 9**	⸬	☏
Code	Ack. signal	Replace handset.

An automatic system reset then ensues. All system and user settings will be returned to their initial state (as-delivered state).

Resetting the features for one internal subscriber or for all

You can cancel the performance features configured for the PABX system for one or all subscribers (for example, call forwarding, completion of call to busy subscriber and direct call).

⚠ **9 0 0**	⊞ or ✳	⸬
	internal number or * for all internal extensions	Ack. signal

Configuration by the specialized dealer

Remote access

You can also have your PABX configured by the service center at a certified dealer's. Call the service center, get their advice and tell them how you wish to have your system configured. The dealer's service center can then configure your PABX system remotely from their office. Your dealer can provide you with the number for the service center.

You can then either set up a remote access link to the service center yourself, or enable your PABX for dial-in by the service center. The dealer's service center only has access to data on your PABX when the system is enables for remote access.

The following procedure describes remote access from analog terminal devices.

You call the service center from an analog telephone, for example, at connection 1 (internal number 10), or from a telephone at connection 2 (internal number 11). You are connected with the service technician who then explains the further procedure to you. When requested by the technician you push the Recall flash button. You will hear the internal dial tone.

♪	Ⓡ	✳ 7 9 2	▦	#	⁓	♪
Call to service center			Number for the service center		Ack. signal	Continue call

You are then re-connected with the service technician and can continue your call.

The service technician can then load data from your PABX and conduct the configuration based on your request and needs.

- The service technician can not, however, view or edit your password, but your system may be reset to its initial status (0000) however.

- The service technician then loads the edited data back into your PABX and ends the data transfer.

This remote access link to the service center involves two connections that are charged to you.

Remote access with call to the dealer's service center

You call up the service center. You are then connected with a service technician who explains the further procedure to you. You then hang up the handset and initiate the remote access procedure as follows:

☏	✳ 7 9 2	▦	#
Lift up handset		Number for the service center	

You will hear the internal music on hold once a connection to the service center has been established.

When the data have been transferred the service center will terminate the connection.
You hear the busy signal. Replace the handset.

The connection is terminated immediately if you hang up the handset during an ongoing connection to the service center.

Enable the PABX for dial-in by the service center

You can enable your PABX for dial-in by the service center. The service technician can then perform a remote configuration for your system. Enabling for remote access lasts for around 30 minutes.

☏	✳ 7 8 2	⁓	☏
Lift up handset		Ack. signal	Replace handset

The PABX system is now enabled for dial-in by the service center.

It is now possible for the service technician to dial in to your PABX, to read out (export) your configuration data, to edit this data and to transfer the data back into the PABX.

No further data links can be established when your PABX has been released for dial-in by the service center.

If you wish to cancel enabling for remote access, proceed as described in »described in »Inhibiting remote access« .

Continuous enabling of PABX for dial-in by service center

You can also have your PABX system enabled continuously for dial-in by the service center. You can only set up this release function using the WIN-Tools Professional Configurator. To activate this function you must define at least one number (max. 3 numbers) that is authorized for dial-in into the PABX.

Ending an active, incoming remote access connection

You can terminate a connection set up by the service center using the following procedure.

☎ Lift up handset	# 7 9 2	⌁ Ack. signal	☎ Replace the handset

Inhibit remote access

☎ Lift up handset	# 7 9 9	⌁ Ack. signal	☎ Replace the handset

An existing connection to a service center is not terminated.

PABX and PC

A CD containing the Windows configuration program and other software and drivers is included in the PABX package.

Contents CD-ROM

In these operating instructions we would like to give you a brief summary of the software included in the scope of supply for the system. The software programs themselves are not described in these instructions. Should any questions or problems arise while you are using the programs you can use the online Help function for assistance. All programs are equipped with a comprehensive online Help function.

Programs for configuring the PABX

Professional Configurator:

The settings for the individual features of your PABX are made in the PABX configuration. You can configure your external MSN and assign these numbers to individual, internal users, or to a team consisting of several users (members). You can also assign a name for each individual, internal user and configure the various features separately (such as authorization privileges, exchange line access, cost logging, etc.), or you can apply the settings of one user to those for a different user. Configuration is also used to define the calendar, numbers for call control (unrestricted numbers, restricted numbers) and emergency or direct calls. You can also make general settings for the PABX, for call data logging or for remote access to the PABX system.

Charge Manager:

You can use the charge manager program for logging connection data for reading out or clearing call data records stored in the PABX and user-specific counters. The call data records that are read out can be evaluated using various sorting and filtering functions, or exported for processing in other programs.
For example: Sorting functions allow you to compile data records according to internal users, project numbers or numbers that are dialed/transferred. The filtering functions can be used to display data records containing individual properties. You can set these filtering functions to fit your specific needs.

Telephone Directory Manager:

The PABX system is equipped with an integrated telephone directory. in which you can store up to 500 numbers, with their associated names. You can dial these speed dialing numbers with analog phones using the codes 000...499. The name for the entry in the telephone directory is not displayed on the phone. You can access the PABX telephone directory with all phones connected with the system. Entries are added to the directory using the Telephone Directory Manager on the CD. The import/export function of the telephone directory manager allows imported or exported data to be edited and processed in other programs.

ControlCenter:

The Control Center monitors the activities of the router for establishing and severing a connection. It indicates for instance: the provider used for the current connection, the type of connection (ISDN or DSL), the IP address, the duration, the port, the up- or downloaded data volume. You can also terminate an ongoing connection or establish a new one.

Download Manager:

You can use this program to load new system software into your PABX system via a PC. This is possible using the integrated USB port of your PABX.

TAPI-Configurator:

Using TAPI Configuration you can adapt the TAPI driver for a program that uses that driver.You can also check which MSN is assigned to which terminal device, define new line names and can set the dialing parameters.
First configure the PABX. Then, you must configure the TAPI interface. Use the program »TAPI Configuration« in the start menu.

LCR Professional

Both provider and routing tables can be prepared and edited individually using this new LCR procedure. This LCR procedure can be configured using the Web-based PC program« supplied with the system.

You can activate/de-activate the LCR procedure using either the »Professional Configurator«, or a code sequence on the telephone.

Application programs

Adobe Acrobat Reader:
Program for viewing and printing PDF documents.

Drivers

USB driver (Universal Serial Bus):
Recognition and control of the phone after connecting to the USB port of the PC. The USB driver is installed as a virtual network card that uses the TCP/IP protocol.

TAPI in the LAN:

Für Ihr Network wird Ihnen ein Programm »TAPI in the LAN« mitgeliefert. This software can be installed on any PC in the network. This gives you the possibility of running your TAPI application from a central location via an USB interface, i. e. the PABX system. Please note that software used for the TAPI application may require certain license agreements with the software manufacturer. The program »TAPI in LAN« does not require a license to run.

CAPI in LAN:

The package includes a program called »CAPI for LANs« for use in your network. This software can be installed on any PC in the network. This gives you the possibility of running your CAPI application from a central location via an USB interface, i. e. the PABX system. Please note that software used for the CAPI application may require certain license agreements with the software manufacturer. The program »CAPI in LAN« does not require a license to run.

Installation instruction for Windows 98

If you have Windows 98 installed on your PC you must observe the following installation instructions for the USB driver. Keep the original Microsoft Windows 98 CD handy.

Initial Installation

Connect your PC to the USB port of the PABX system via the USB cable and switch on both devices. Insert the elmeg CD supplied with the system. The Windows 98 hardware assistant is then started.

Installing the driver:

- A »Composite USB device« is then recognized.
- Click »Next«
- Select »Search for the best driver for your device. (Recommended)« and then click »Next«
- Select »CD-ROM drive« and then click »Next«
- Select »Updated driver (recommended)«.
- Select »elmeg USB Remote NDIS Network Device« and click »Next«
- to the installieren des USB Treibers Click »Next« nochmals .
- Press the »Finish« button

When the installation has been performed correctly, the following entry will appear in the device manager under the list of network cards:»elmeg Txxx USB Remote NDIS Network Device«.

Removing the default driver

If you have not installed the elmeg USB driver, the standard driver for »Composite USB device« will be installed by Windows. This is indicated by an entry in the device manager under »Universal serial bus controller«. You must first remove this standard driver before you install the new elmeg USB driver as explained under »Installation«.

- Removing the driver.

- Open the »Device manager«.

- Remove the entry »Composite device« under »Universal serial bus controller«.

- Remove the entry »elmeg« under »Other components«.

- Then unplug the USB connector from the device and plug it in again. The device is recognized anew.

- Install the new driver.

CAPI driver (Common ISDN Application Programming Interface):
Interfacing of the pabx to programs that provide data communication services.

Important note for installation of the CAPI driver

The CAPI driver is not required for accessing the Internet.

Before installing the new drivers be sure to remove any existing CAPI drivers in your system (such as the drivers for an installed ISDN card), as Windows only supports one installed CAPI.
Refer to the operating instructions for the device concerned, or for the operating system, for details on removing drivers.

You can also use other programs that access the CAPI drivers for the PABX system. Refer to the operating instructions for the software packages concerned for detailed information.

In some special circumstances it may be necessary to also physically remove the ISDN card from the PC in addition to removing the drivers.

TAPI driver (Telephony Application Programming Interface)
Interfacing to programs that provide computer-aided telephony.
For g. Windows dialing assistant.

Special drivers must be installed if you wish to use the configuration software via the USB port of your PABX.

Installing the Programs from the CD ROM

PC requirements:

- IBM or 100% compatible PC

- Pentium or comparable processor, min. 233 MHz clock rate

- min. 64 MB RAM

- VGA graphics adapter, approx. 65,000 colors, a resolution of at least 1024x768 pixels.

- CD ROM drive

- Free USB-port

- Windows 98 / ME /XP / 2000 operating system

- Min. 130 MB free hard disk space for installation

Installation instructions:

- Start up your PC.

- Insert the CD ROM supplied with the system in the CD ROM drive of your PC.

- Wait a moment until the program starts automatically. If the autostart option is not activated in your PC you can start the file »setup. exe« directly from the main directory of the CD using Windows Explorer (double click on the file), or using the option »Run« in the Windows start menu.

When the file is started the welcome screen of the CD is displayed.

Configuration with a PC

- Connecting you den USB port Ihrer PABX mit dem USB port of your PC through die mitgelieferte 1 USB connecting cord.
  Configuration of the PABX through the USB port requires a Windows operating systems that supports USB.
  (as of 08/2002: Windows 98 / ME / XP/ 2000).

Professional Configurator

Using this program you can configure the features for your PABX as you require. The configuration of the PABX system also allows you to first read out the configuration of the system that you performed using the »Web Configurator«. You can then complete these settings step by step and import them into the PABX. You should also store your configuration on your PC.

Description of the router functions

The PABX system provides all functions required for high-performance Internet access for individual PC via ISDN. A firewall integrated into the PABX, together with NAT (network address translation) provides the necessary security, while the DHCP server and DNS proxy functions ensure that configuration effort is kept to a minimum, both for the PABX system and for your PCs.

Internet access for all of the PCs connected to the PABX system is provided via one single connection (SUA - single user account); only one set of access data is required from your Internet service providers (ISP). You can configure more than one ISP.

System Requirements for Windows

System requirements:

- IBM or 100% compatible PC
- Pentium or comparable processor, min. 233 MHz clock rate
- min. 64 MB RAM
- VGA graphics adapter, approx. 65,000 colors, a resolution of at least 1024x800 pixels.
- CD ROM drive
- Free USB-port
- Windows 98 / ME /XP / 2000 operating system
- Min. 130 MB free hard disk space for installation

Initial Commissioning and Minimum Configuration

You can connect a PC to the PABX system via USB.

Once you have linked your PC to the PABX system you must select an ISP and, where required. And before you know it you're surfing the Internet.

Connecting a PC via USB

At present, only Microsoft Windows operating systems are supported for connection of a PC to the PABX system via the USB port.

Connect your PC to the PABX system using the USB cable supplied with the PABX system. When both devices (PABX and PC) are switched on, the PC will recognize the linked PABX system and installation of a device driver is then started. Then, just follow the instructions shown on the screen.

When you have successfully completed the connection and configuration the LED marked »USB« on the PABX system lights up; when data is being exchanged via the USB port this LED will flicker in the rhythm of data exchange.

The USB driver supplied with the system (RNDIS) is located in the device manager of the Windows control panel as a virtual network adapter. Communication between the PABX system and the PC connected via USB is effected via the TCP-IP protocol.

Please keep the WIN-Tools CD for the PABX system handy when installing the device driver.

Configuring the PCs

IP addresses

After you connect a PC IP addresses must be assigned. When doing this you must ensure that the IP addresses assigned to the PCs and the PABX systems are in the same IP network. This also applies when you wish to use common resources within a LAN with several PCs (for example, enabled directories, network drives, network printers). All PCs located within the network require an IP address.

In its initial status the PABX is configured with the IP address 192. 168. 1. 250 and the DHCP server integrated into the PABX is activated, meaning that any PCs that are connected must be set to receive their IP address automatically. This mode is recommended to dispense with the complicated, manual configuration of the IP addresses for the PC that would otherwise be required.

> If you are already using a network and whish to use the PABX as the DHCP server you may have to transfer other parameters via DHCP to the PC.

> Only change these parameters if your existing network explicitly demands this. Arbitrarily changed parameters may result in a complete loss of all network functions.

You can configure the following parameters:

Default TTL

If you can not reach certain sites in the Internet (a »ping« is answered with the message »destination unreachable«) it may be meaningful to increase the »TTL« parameter (default is 64) and specify that all PCs configured via DHCP to be re-assigned configuration from the DHCP server (or simply restart your PC).

DHCP lease time

The lease time is the time (in seconds) for which a LAN client receives an assigned IP address before that address is fetched and returned to the DHCP server address pool. A LAN client can extend the lease time automatically.

Default gateway

You should enter 0.0.0.0 (place holder for the PABX system IP address) as the »default gateway« if Internet access it to be provided via the PABX system.

Domain suffixes

The parameters »Domain Names« and »DNS Server« should only be configured when you operated a DNS server within the LAN.

Netbios Name Servers

The »Netbios Nameserver« parameter is used for the name definition for Windows PCs when you use a WINS server in the LAN. This parameter should only be configured when you operate a WINS server in the LAN.

Time Servers

The parameter »Time Servers« is used for announcing the IP address for the »Time leasee« when your PCs direct (Windows XP, Linux) the NTP (Network Time Protocol).

DNS Servers

DNS queries from computers in the LAN are normally forwarded to one or more external DNS servers by the DNS proxy. The addresses for the external DNS servers can be obtained dynamically, or can be permanently configured in the router. Addresses can be input at three DNS servers to reduce online time.

DHCP server and IP addressing

PCs can be provided with a major portion of the configuration required for LAN and Internet access via the DHCP (Dynamic Host Configuration Protocol). The DHCP server integrated into the PABX is capable of supplying corresponding configurations to up to 100 PCs (clients). IP addresses are dynamically allocated to the clients. The DHCP server task of the PABX system is activated in the initial status of the PABX.

You can configure the integrated DHCP server under »Network address allocation«.

You can configure the first IP address assigned by the DHCP server. The required number of IP addresses is assigned to the PCs (DHCP clients) in ascending order. There are always 11 additional IP addresses reserved for DHCP servers for PCs integrated into the LAN via Bluetooth (see Page) or RAS (see Page 54). If the integrated DHCP server is activated the 11 IP addresses which come after the configured DHCP address range are used for RAS clients.
When the DHCP servers are de-activated the 11 IP addresses that come after the set DHCP start address will be used for RAS clients.

If you select a configuration in which some PC receive their IP addresses via DHCP, while others use set (manually configured) IP addresses, the following criteria must be fulfilled:

- All IP addresses must belong to the same IP network, meaning that the network part of the IP address (and with it, the netmask) must be identical. Example:

- IP address for the PABX: 192.168.1.250

- Ip-netmask of the PABX: 255.255.255.0

- Network part of the IP addresses: 192. 168. 1. xxx

- First usable IP address:192.168.1.1

- (netmask: 255.255.255.0)

- Last usable IP address: 192.168.1.254

- (netmask: 255.255.255.0)

- First IP-address via DHCP: 192.168.1.50 (as per configuration)

- Last IP address through DHCP: 192. 168. 1. 69 (by configuration)

- Number of IP addresses by DHCP: 20

- IP addresses for Bluetooth and RAS per DHCP (11 reserved)
  first IP-address: 192.168.1.70
  last IP-address: 192.168.1.80

- One IP address may not be used by more than one client at any time; with regard to the example given above this means that the IP addresses 192.168.1.2 to 192.168.1.49 and 192.168.1.70 to 192.169.1.249 and 192.168.1.251 to 192.169.1.254 can be used for PCs which have manually configured IP addresses.

The configurable parameters for the DHCP server that you can select using the button »Advanced« allow you the option of also using the DHCP server in the existing LAN environment.

Configuration of the Internet Service providers (ISP)

An Internet Service Provider provides you with an »entrance portal« to the Internet. A distinction is made between ISPs with whom you have a contract (for example T-Online) and Internet-by-call providers that bill you through your phone bill (for example Freenet).

The type of access is independent of the tariff charges; this can be based on actual time, volume or be a flat rate.

You can set up a connection to the Internet with your PABX system as follows:

- Dial-up connections via ISDN (using PPP protocol, with one or two ISDN B channels, i. e. at 64 kBit/s or 128 kBit/s). These types of connections require access data with the number to be dialed, the user name and password and, in some cases, other information such as the IP address of the name server and any information about the data compression method that is used (VJH).

Internet-by-Call

The Professional Configurator of the PABX system contains a list of Internet-by-call ISPs from which you can select a provider. The advantage here is that you can set up an Internet connection immediately without first having to agree to a contract. (The requisite access data are already contained in the configuration software for the Internet-by-call ISPs that are listed). You can change this configuration when you decide to conclude a contract with a provider for example (at present required for all DSL providers).

- Fallback configuration for several ISPs »Internet always works«.

- You can configure more than one IPS in your PABX system.

- You are using a provider that is not always available (some Internet-by-call providers have very reasonable rates, but their access nodes are overloaded due to heavy traffic during peak times). Here you can simply configure several Internet-by-call providers. The PABX system will automatically attempt to set up a connection with one of the configured ISPs.

You can easily change the order of the ISPs with which the Internet connection is to be set up (»Fallback order« down / up). You can also set the number of attempts and intervals between these attempts at setting up an Internet connection for each ISP that has been configured. When the waiting period between the attempts expires and when the configured number of actual attempts is reached and no connection has been established, the next ISP in the list is selected.

Connection to the Internet is always set up automatically by the PABX system when a data packet is to be sent to the Internet. This occurs automatically when you enter http: //www. elmeg. de in your browser for example.

Billing of the costs is made through the telephone bill from your network provider.

Discontinuing an Internet connection

- Click on the symbol for the »ControlCenter« in the task bar and select »Terminate connection to provider«.

- After a set time (which can be defined), during which there is no data traffic to the Internet, the connection is terminated automatically. You can activate/de-activate this function in the configuration.

If you set the parameter »Terminate on inactivity« too high, this may result in considerable costs for time-based charges.

If you have a flat rate charge with your ISP you can set the parameter »Terminate on inactivity« to. In this case the Internet connection will not be disconnected automatically by the PABX system, but re-connected when required (l. B: after disconnection by the ISP). If you have configured several ISPs, make sure that you make this setting for the correct ISP entry in the ISP list!

Using a Fallback

Let's assume you have a DSL connection with the Deutschen Telekom AG (German Telecom) and have selected T-Online as your ISP.

You have configured three ISPs:

- 1. Internet access through ISDN (XXXX). The PABX system will use an ISDN dial-up connection (and the PPP protocol). Enter the same access data (mark the ISP in the list, field »Edit«, field »Access data for T-Online«).

- 2. Internet access through ISDN (YYYY). The PABX system will use an ISDN dial-up connection (and the PPP protocol). Enter the same access data (mark the ISP in the list, field »Edit«, field »Access data for T-Online«).

- 3. Internet access using an Internet-by-call provider. The PABX system will use an ISDN dial-up connection (and the PPP protocol). When you select an Internet-by-call provider from the defined list, the corresponding parameters are already configured (»Access data«, »Number«).

You can set the intervals between the attempts using the parameter »Time between attempts« in the configuration item Network Internet. You can set the number of attempts and the interval between these attempts separately for each ISP that has been configured.

After that, the PABX system will use the next ISP configured in the list for attempting to set up a connection.

If the connection is disrupted and an attempt is to be made later to re-establish the connection, this cycle is restarted beginning with the first entry in the list.

Firewall

When you use NAT, the PCs connected to the PABX are well protected against attacks from the Internet.

If you wish to have additional security you can also use the integrated package Filter Firewall. A firewall acts as a logical wall for data packets between the Internet and the LAN which has »holes« for certain packets (firewall rules, also known as filters), allowing these packets to pass through the wall. In the initial status the firewall is configured such that all data can pass through that are sent in the direction of the Internet.

An exception to this rule is the »Netbios filter: This filter prevents the forwarding of Netbios name queries from Windows PCs to the Internet. As the names of the Windows PCs within the LAN are not known in the Internet, it is not meaningful to establish an Internet connection for forwarding the name query (this could result in considerable costs, as these name queries occur frequently, meaning that the Internet connection would practically never be terminated).

The filters are described by rules whose configuration requires expert knowledge about the TCP/IP protocol family. The firewall of your PABX system can be easily configured using a Filter Wizard in which you need to indicate (in plain text) whether you wish to allow defined applications access to the Internet.

To start the Filter Wizard in the configuration item »Network filters« click the button »Filter Wizard«. The following mask is then displayed after a warning that starting the Filter Wizard will delete all filters that have been configured up to this time:
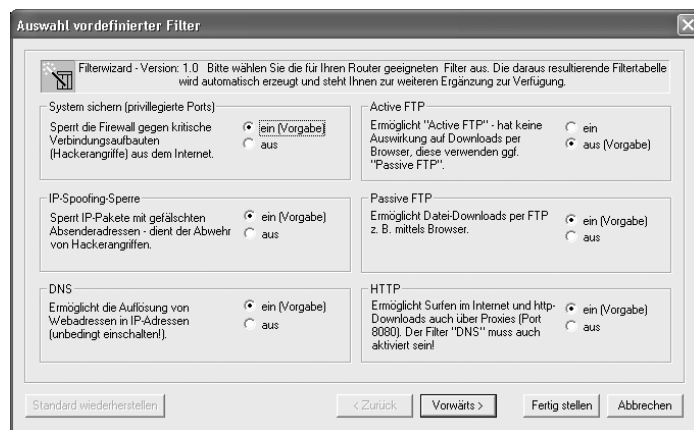
The Filter Wizard can be restarted at any time to load a modified (edited) configuration into the PABX system. Click the button »Send configuration data« to transfer and activate the filters. After the data is sent the new configuration is activated in the PABX system and any ongoing Internet connection is terminated.

The connection is re-established however as soon as a data packet must be routed to the Internet which the firewall lets pass in accordance with its configuration.

Notes:

Note that when you click the button Send, the entire configuration for the PABX system will be overwritten. It is strongly recommended to read out the configuration for the PABX system and storing it in a file prior to changing the filter configuration.

We recommend following the instructions given by the Filter Wizard, unless you establish that one of the applications you are using can not set up a connection to the Internet. In this case, please check whether the Filter Wizard has a corresponding filter available. Elmeg regularly generates an updated database for the Filter Wizard, which is available at the www. elmeg.de Web site.

Please note that all filters that are generated with the Filter Wizard are based on packets being discarded, with the exception of those for which an appropriate rule exists. The more filters you configure for the PABX system, the more computing time is required for processing of these filters. This could slightly reduce the maximum achievable data throughput rate for the PABX system in some cases.

Information on manual configuration of firewall filter rules is given in the online Help function and in the documentation located on the CD.

Costs for Internet Connections

The PABX can store up to 500 call data records. This data is not lost in the event of a loss of power.

The PABX system also generates a call date record for connections made by the router. The call data records contain detailed information about the call. For example: Date and time, duration of the call, number of the called party, number of the calling party, type of connection, communication costs and possible project numbers.

> Please note that only the network service provider is authorized for binding connection/call cost logging.
>
> You should use a virus scanner on all LAN clients to protect your personal data. Use of this type of software is indispensable for safeguarding personal data.

Dial-in into the LAN (RAS)

Using the Remote Access Server (RAS) a field representative, for example, can call into the local network from an external location and then via the local network access the Internet. Access from an external location is also possible via an ISDN connection.
External access is provided with user-name and password protection. If the call is made from an external location only, the phone number can also be monitored as an added protection feature. Access can be enabled for up to 8 users. A Windows enable (access to computer, files or printers) and Internet enable can also be configured for each user.

> Note that this access portal is not protected by a firewall!

A PC that dials into the local network via RAS is automatically assigned an IP address by the integrated DHCP server.

Appendix

Troubleshooting

Not every fault or malfunction is an actual PABX system error. Check your installation configuration with the aid of the following section.

Fault Description	Possible Cause	Fault Remedy
No dial tone after lifting handset.	PABX not connected to power supply properly.	Check 230 V AC outlet (for example by plugging in a lamp)
	Plug-in power supply unit / power plug not plugged in properly	Check connection between PABX and 230 V AC outlet.
	Terminal device defective.	Replace terminal device / Check terminal device at other connection
	Telephone connection faulted, Faulty installation	Check PABX / jack connections
	PABX settings faulted, Ambiguous programming of PABX system	Unplug and plug the plug-in power supply unit back in. Reset the PABX to initial state.
No internal calls are received.	Station guarding (do not disturb) is active.	Deactivate station guarding (do not disturb).
	Call forwarding to another number activated (special dial tone in handset).	Cancel call forwarding.
No external calls are received.	Same causes and remedies possible as for »No incoming internal calls«.	
	PABX not connected correctly to the network termination unit of your network service provider.	Check the connection between the PABX and network termination unit.
	MSN is not entered or assigned correctly in the PABX.	Check the PC configuration for the PABX.
Note: Check to ensure that ISDN connection is functioning correctly, and that this connection has been enabled by your network service provider. Please contact your service provider.		
No outgoing, external calls possible.	No authorization for external connections.	Check the user settings in the PC configuration for the PABX.
No outgoing, external calls possible.	Call charge limit reached (Allowance account).	Check the user settings in the PC configuration for the PABX. Increase cost limit, or reset the sum counter
	External numbers classified as restricted numbers for call control.	Check the settings for call control in the PC configuration for the PABX
No external connections possible to some remote terminals.	External numbers are restricted by the dial range feature.	Check the settings for call control in the PC configuration for the PABX
Room inquiry not possible during an external call.	The telephone's flash key is not properly configured.	Check the setting of your telephone's flash key. »Flash key«, flash interval 80-120 ms. Attention: Inquiry calls are not possible with pulse dialing telephones.
If the PABX is connected at the USB port of the PC and recognized by the PC the USB LED on the PABX will light up. If not, the USB ports of the PC are not activated / faulty, or the drivers for the PABX are not installed.		
No connections can be established via the PABX's USB-port.	The same causes and remedies are possible as described for the previous problems (no internal/external connections possible).	
	The USB ports of the PC are not activated or are defective.	In the system control panel (folder »System« - »Device manager«) check whether the USB ports of your PC have been activated.
	PABX drivers not properly loaded.	In the system control panel (folder »System« - »Device manager«) check whether the PABX has been installed correctly. A question mark in front of the entry for the PABX indicates incorrectly installed / loaded drivers. Plug the USB connector for the PABX system back into the PC or restart your PC.

Fault Description	Possible Cause	Fault Remedy
No automatic call-backs possible.	No pabx number has been entered with a point-to-point access.	While configuring your pabx system with the PC, make this entry under External Numbers.
Invoicing for your Charge Manager is set too high or too low by one fixed factor.	Transfer of the currency amount is set for your ISDN connection instead of transfer of tariff data.	Apply for the procedure you wish to have, or change the tariff unit factor in the Charge Manager and in the Professional Configurator (see also Page).

Technical specifications

PABX:

Dimensions W x H x D:	260 x 192 x 40 mm
Weight, approximately:	0.7 kg without plug-in power supply
Temperature range:	5° C... 40° C
Mains voltage:	230 V~

Rated power consumption

	approx. 8 VA
Maximum power consumption:	25 VA
Frequency:	50 Hz
Protection class:	II
Connection cord length:	approx. 2 meters

ISDN connections:

Length of ISDN connection cord:	approx. 3 meters
External ISDN connection:	Protocol DSS1, Point-to-multipoint connection Protocol DSS1, Point-to-point connection
ISDN cable lengths with 0. 6 mm wire diameter:	Short passive bus: max. length of 120 meters

Analog ports:

Supply (PABX):	symmetrical, 60 mA at 25 ohms
Max. length of telephone connection cables when using installation-grade cable:	0.4 mm wire diameter = 200 m 0.6 mm wire diameter = 350 m
Dialing method:	Multi-frequency calling method Pulse dialing (limited function)
Mark duration:	> 40 ms and <100 ms
Space duration:	80 ms
Ringing voltage:	U eff. appr. 35 V~
Ringing frequency:	50 Hz ± 8%
adjustable flash interval:	100ms bis 1000ms in 100ms Schritten (default state 200ms)

USB port:

USB cord length:	approx. 3 meters
Terminal:	Self powered terminal
Speed rating:	Full Speed

Índice remissivo

Brief description of functions

Pick-up of the call

⌁ ✳ 0 ♪   Pick-up of the call

Making internal calls

⌁ ⌨ ♪   Making internal calls
⌁ ✳ ⌨ ♪   Internal calls with automatic line acquisition

Making outside calls

⌁ 0 ⌨ ♪   Making outside calls
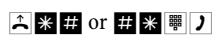⌁ ⌨ ♪   Outside calls with automatic line acquisition

⌁ # 8 1 0 ... 9 ⌨ ♪   Sending MSN to remote parties
                                 0 ... 9 MSN-Index

Temporarily suppressing transmission of your own number (CLIR)

⌁ ✳ 5 9 4 ⌨ ♪   Temporarily suppressing transmission of your own number (CLIR)

Dialing phone numbers from the phone directory

⌁ ✳ # or # ✳ ⌨ ♪   Dialing a phone number via the speed dialing key of the PABX's phone directory

Forwarding a call (connecting)

♪ R ⌨ ♪ ⌁   Forwarding an internal call with prior notice

♪ R ⌨ ⌁   Forwarding an internal call without prior notice

♪ R ⌨ ♪   Room inquiry

♪ R ♪   Terminating a room inquiry with analog terminals

♪ R 4 ⌁   Connecting external callers

Broker`s call

♪ R ⌨ ♪   Broker's call (room inquiry)

♪ R 2 ♪   Broker's calls between different callers

Completion of call on busy

⌁ ⌨ ✳ 4 0 ∿ ⌁   Requesting automatic call-back

⌁ # 4 0 ∿ ⌁   Canceling automatic call-back

Three-party conference call

♪ R ⌨ ♪   Room inquiry

♪ R 3 ✵   Three-party conference call

✵ R 2   Returning to Broker's call

Call waiting

♪ R 2 ♪   Accepting a waiting call. The call put on hold remains

♪ ⌁ ⌁ ♪   Accepting a waiting call The call put on hold is terminated

♪ R 0   Refusing a waiting call

Announcement

`☎ * 5 4 0 ⌨ ♪`　　　　　Announcement to a party

Call modes

`☎ * 9 * ∿ ☎`　　　　　Activating all day call modes

`☎ # 9 * ∿ ☎`　　　　　Activating all night call modes

Call modes for teams

`☎ * 9 4 3 0 0 … 0 9 ∿ ☎`　　　　　Enabling a member's phone within a team

`☎ # 9 4 3 0 0 … 0 9 ∿ ☎`　　　　　Inhibiting a member's phone within a team

`☎ * 9 3 * ∿ ☎`　　　　　Activating day team call assignment for all teams

`☎ # 9 3 * ∿ ☎`　　　　　Activating night team call assignment for all teams

Call forwarding

`☎ * 6 1 ⌨ # ∿ ☎`　　　　　Call forwarding »immediately«

`☎ * 6 2 ⌨ # ∿ ☎`　　　　　Activating call forwarding »delayed«

`☎ * 6 3 ⌨ # ∿ ☎`　　　　　Activating call forwarding »on busy«

`☎ # 6 1 ∿ ☎`　　　　　Canceling »immediate« call forwarding

`☎ # 6 2 ∿ ☎`　　　　　Canceling »delayed« call forwarding

`☎ # 6 3 ∿ ☎`　　　　　Canceling call forwarding »on busy«

Follow me

`☎ * 6 4 ⌨ # ∿ ☎`　　　　　Configuring internal Follow me

`☎ # 6 4 ⌨ # ∿ ☎`　　　　　Canceling internal Follow me

Room monitoring

`☎ * 5 9 3 ∿`　　　　　Enable room monitoring

`☎ ⌨ ♪`　　　　　Room monitoring from internal terminals

Inhibiting calls

`☎ * 5 7 0 ∿ ☎`　　　　　Inhibiting internal and outside calls

`☎ * 5 7 1 ∿ ☎`　　　　　Inhibiting outside calls

`☎ * 5 7 2 ∿ ☎`　　　　　Inhibiting internal calls

`☎ # 5 7 0 ∿ ☎`　　　　　Re-enabling all calls

Tracing

`♪ * 5 1 ∿ ☎`　　　　　Tracing

Project numbers

`☎ * 5 0 ⌨ # ∿ ⌨ ♪`　　　　　Enter project number

`↩ ☎ ♪ R * 5 0`
`⌨ # ∿ R ♪`　　　　　Project number for an external call

Answering machine:

⌷#0♪   Pick-up of a call from the answering machine

Multifunctional device

⌷✳773⌨♪   Multifunctional device: Telefax group 3

Keypad functions

⌷08✳   R#9⌨   Initiating keypad functions
                                              For a description of the features please refer to then network operator's documentation.

System parked inquiry

♪R⌨   ♪   R   ✳596✳ system parked inquiry

⌷⌨   ♪   R   ✳596 ting a system parked inquiry

Konformitätserklärung gemäß dem Gesetz über Funkanlagen und Telekommunikationsendeinrichtungen (FTEG) und der Richtlinie 1999/5/EG (R&TTE)

Declaration of Conformity appropriate to the law of radio and telecom terminal equipment (FTEG) and Directive 1999/5/EC (R&TTE)

Déclaration de conformité selon la loi sur les équipements hertziens et les équipements terminaux de télécommunication (FTEG) et la directive 1999/5/CE (R&TTE)

Hersteller /Verantwortliche Person: ***Funkwerk Enterprise Communications GmbH***
Kommunikationstechnik
Manufacturer / responsible person :
Fabricant / personne responsable :

erklärt, dass die Produkte Type: ***elmeg T240 inkl. Module***
declares that the products :
déclare que les type de produits :

Telekommunikations(Tk-)endeinrichtung *TK-Anlage zum Anschluss an das EURO-ISDN*
telecommunications terminal equipment *(DSS1-Protokoll, S0-Schnittstelle, Mehrgeräte-/Anlagenanschluss)*
Équipement de terminal de télécommunication

Verwendungszweck, intended purpose, Le but poursuivi

bei bestimmungsgemäßer Verwendung den grundlegenden Anforderungen des § 3 und den übrigen einschlägigen Bestimmungen des FTEG (Artikel 3 der R&TTE) entspricht.
complies with the appropriate essential requirements of the FTEG (Article 3 of the R&TTE) and the other relevant provisions, when used for its intended purpose.
est conforme aux exigences fondamentales du paragraphe 3 du FTEG (article 3 du R&TTE) et des autres clauses s'y rapportant.

Gesundheit und Sicherheit gemäß § 3 (1) 1. (Artikel 3 (1) a))
Health and Safety requirements contained in § 3 (1) 1. (Article 3 (1) a))
Santé et sécurité conformes au paragraphe 3 (1) 1 (Article 3 (1) a))

harmonisierte Normen ... ***EN60950-1:2001*** (NSR 73/23/EWG & 93/68/EWG)
harmonised standards ... (LVD 73/23/EC & 93/68/EC)
Normes harmonisées ... (Directive Basse Tension 73/23/CE & 93/68/CE)

Schutzanforderungen in Bezug auf die elektromagn. Verträglichkeit § 3 (1) 2, Artikel 3 (1) b))
Protection requirements with respect to electromagn. compatibility § 3 (1) 2, (Article 3 (1) b))
Exigences des protection concernant la comparibilité électromagnétique, paragraphe 3 (1) 2, article 3 (1) b))

harmonisierte Normen ... *EN 55024* **(1998)** (EMV-RL 89/336/EWG)
harmonised standards ... *EN 55022* **(1998)** (EMCD 89/336/EC)
Normes harmonisées ... (Directive EMC 89/336/CE)

Anschrift **Funkwerk Enterprise Communications GmbH**
address **Werderstr. 45**
Adresse **D-31224 Peine**

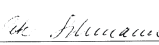fon: **+49 5171 909-0**
fax: **+49 5171 909-333**
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_____
W. Schumann

Peine, 01.07.2005 **Dipl.-Ing. Peter Schumann, Konformitätsbeauftragter**
Ort, Datum Name und Unterschrift
Place & date of issue Name and signature
Lieu et date Nom et signature