

Ring Tones

Call	Meaning	Tone
Internal call (Factory settings, see section 5.8, page 42)	Incoming call. Is valid for external calls as well by default	
External call (Only when different ring tones are set, see section 5.8, page 42)	Incoming external call.	
Callback on busy (Only when different ring tones are set, see section 5.8, page 42)	Signals that the called busy party is free again when callback on busy is active. Lift receiver – the connection is made.	
Do-not-disturb (Block against incoming calls)	Incoming calls are rejected. Telephone will not ring (section 4.7.1).	

Signal Tones

Signal tone	Meaning	Tone
Dial tone	Please dial!	
Dial tone	A call forwarding I 'unconditional' or a block against incoming calls is active. Please dial!	
Dial tone 400 Hz	Continuous dial tone (like outside line). Necessary for some modems or fax machines	
Outside line dial tone	You are in the public net. Please dial!	
Ring tone	The called extension is free and is being called.	
Busy tone and Error tone	The dialed extension or the lines are busy or cannot be reached.	
On-hold tone	The connection is on hold. <i>Otherwise:</i>	
Confirmation tone & Call waiting tone	The entered command was carried out. During a current telephone conversation, a further caller is trying to reach you.	
Ready tone for remote administration	Enter a new command!	

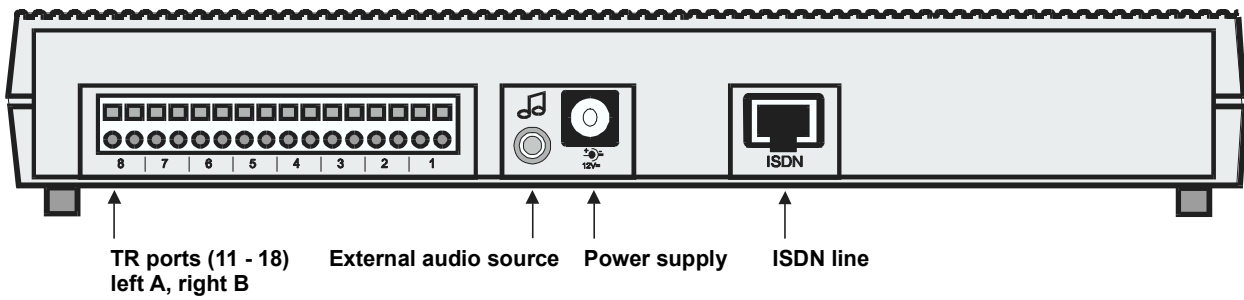
All terminal devices support the signal tones mentioned above.

Technical Data

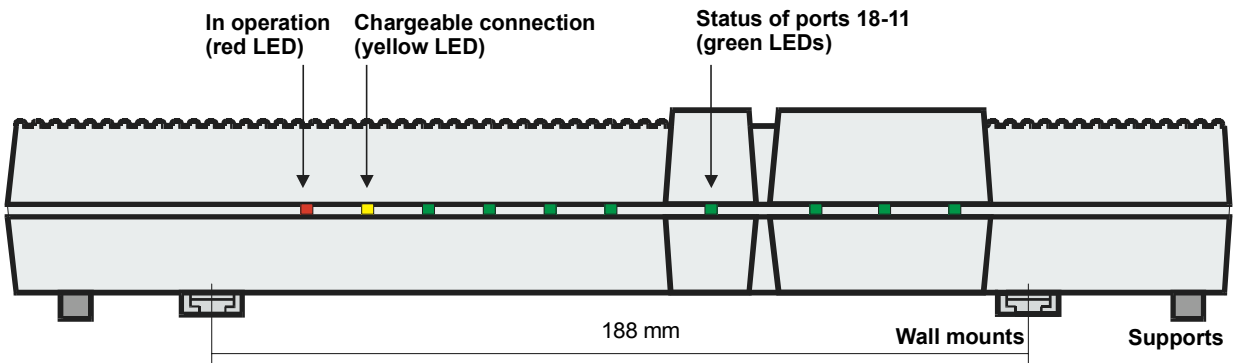
	Means: short tone – pause – short tone
	Means: long tone – pause – long tone

External power supply	12 Volt, 12 Watts
Radio interference suppression	complies with CE0188X
Dimension: length x width x height [mm]	138x278x51
D-channel protocol	DSS1 in P-to-MP and P-to-P configuration
Maximum number of terminal devices per TR port	3
Maximum length of cable to terminal devices	50 m

TELES.iPBX 8TR Box – Rear View: Ports, Sockets



TELES.iPBX 8TR Box – Front View: LED Display



LED Display: Functions

LED	Display	Meaning
Operation	Red	The TELES.iPBX 8TR Box is ready for operation
Chargeable connection	Yellow	The active connection is chargeable. (This LED lights up only when your ISDN line transmits advice of charges during the call.)
Download Call list	Yellow blinking	The Call list memory is full. No more data on chargeable calls can be recorded. (You need the ISDN device manager from TELES.OnlinePowerPack in order to download the data.)
Status LED 1 st B channel	Green	The 1 st B channel is busy
Status LED 2 nd B channel	Green	The 2 nd B channel is busy

R	Function		Digits	Description	P	F
X	Advice of charges	on off	*Π031port# *Π030port#	port contains the port's number [11..18]. Activate generating of advice of charges using the 031command and deactivate using the 030command.	41	off
X	Block against incoming calls	on off	*Π191port# *Π190port#	port contains the port's number [11..18]. After entering the commands no calls are accepted at the port (also known as 'do-not-disturb').	29	off
X	Blocks	on off	*Π1block port# *Π10port#	block contains the preset block [1..6]: 1 = '0'; 2 = '00'; 3 = '000'; 4 = '00190'; 5 = '00180'; 6 = '001'.	30	-
X	Blocks freely configured	on off	*Π1block port no# *Π10port#	block contains the block [7 or 8]. port contains the port's number [11..18]. no contains the number to be blocked	31	empty
X	Blocks exemptions	on off	*Π852index port dest#	Up to 4 prefixes or numbers can be exempted from blocks. index contains the number of the exemption [0..3]. port contains the port's number [11..18]. destination contains the prefixes or number.	32	empty
	Call forwarding I (unconditional)	on off	*41destination# *41#	Incoming calls should be transferred unconditionally. destination = destination call number with outside line access if necessary. Is valid for current port.	22	off
	Call forwarding II (no reply)	on off	*42destination# *42#	Incoming calls are forwarded when not answered within 20 sec. destination = destination call number with outside line access if necessary. Is valid for current port.	23	off
	Call forwarding III (when busy)	on off	*43destination# *43#	Incoming calls are forwarded when the port is busy. destination = destination call number with outside line access if necessary. Is valid for current port.	24	off
	Call forwarding follow-me	on off	*441port# *440port#	Call forwarding unconditional is switched on <i>by the call forwarding destination</i> : from the specified port to the current port (follow-me).	25	-
X	Call forwarding I unconditional for port	on off	*46port destination# *46port#	Call forwarding with entry of the port <i>and</i> the call forwarding destination. Special for remote administration. port contains the number of the transferring port [11..18]. destination = destination call number with outside line access.	26	off
	Call forwarding I-III by local exchange	on	*48*MSN*type service destination #	MSN = call number for which call should be forwarded. Type: 0= CF unconditional, 1=CF when busy, 2= CF no reply i.e. after approx. 15 - 20 sec depending on exchange. Service: 0=all services, 1=voice - fax-G3- and modem services, 4=fax-G4 and 7=ISDN data services with 64 kbps. Destination = destination number <i>without</i> outside line access. To deactivate call forwarding: destination = empty.	20	-
X	Call list	on off	*Π8401# *Π8400#	Switches the Call list on and off. You can read out the list only using the device manager from TELES.OnlinePowerPack.	45	off
X	Call number of port	set delete MSN delete all	*Π041portMSN# *Π040MSN# *Π0400#	port contains the port's number [11..18], MSN the appropriate call number. MSN stands for the own call number that is deleted. All call numbers are deleted when no MSN is entered.	9	empty
X	Call number for remote administration		*Π0410portMSN#	port is the port for remote administration. MSN stands for the call number of the port. This port is not available for other connections during remote administration via the public net.	51	empty
	Call number restriction		#destination	Call number transmission is suppressed: Own call number does not appear on the called party's device.	13	-
X	Call waiting	on off	*Π061port# *Π060port#	Permit call waiting for specified port Suppress call waiting for specified port	39	on
	Callback when busy	set delete line delete port	*8# *861# *862#	Callback on busy activated, hang up receiver. Once the called party is free, your telephone will ring. Answer. Callback on busy settings for all devices attached to the ISDN line are deleted. Callback on busy settings for all devices attached to the port are deleted.	12	-
X	Charge account	on off	*Π01port unit# *Π01port#	port contains the port's number [11..18]. unit contains the number of available charge units. If zero units are entered, the charge account is deleted.	32	off
	Comfortable call transfer		***ID#	Special TELES-ISDN feature: transfer to other TELES.ISDN terminal devices on the same ISDN line. If the called device ID does not exist, hang up. Your telephone rings again and you can continue the call.	17	-
X	Device ID		*Π09ID#	Only necessary when you operate <i>several</i> TELES.ISDN devices on the same ISDN line.	48	1

R	Function	Digits	Description	P	F
X	Dial tone 400 Hz default	* Π 032port# * Π 033port#	Necessary for some fax machines or modems: constant 400 Hz dial tone.	42	default
X	Direct call on off	* Π 199port dest# * Π 199port#	port contains the port's number [11..18]. dest contains the destination call number that should be dialed immediately when the receiver is lifted.	34	off
	Disconnect	**	Disconnects the current connection when another connection is on hold.	13	-
X	Distribution incoming calls on off	*45port distr# *45#	port contains the number of the port for which incoming calls should be distributed. distr contains up to eight call forwarding destinations. The last number can be an external number.	27	off
X	Drop port on off	*47port time# *470#	Serves to accept calls that cannot be assigned to a specific port. Time setting is valid only for point-to-point lines to accept incompletely dialed calls. If port 0 is set then the drop port is deactivated.	47	1
	ISDN line configuration P-to-MP P-to-P	* Π 081# * Π 080#	081 sets the box for point-to-multipoint line. 080 sets the box for point-to-point line.	36	PMP
X	Music On-hold tone	* Π 071# * Π 070#	Select between music from attached audio source or standard on-hold tone to be played for calls on hold	46	On- hold
X	Night service	* Π 9type#	Preset night service type for distributing incoming calls.	28	0
	PBX commands	0#	When the TELES.iPBX 8TR Box is attached to a PBX: In order to send commands to the attached system dial outside line access and then #. All further commands are valid for the system, e.g. *#.	50	-
	Pickup - global	*5#	Pickup an incoming call from any port.	18	-
	Pickup - port	*5port#	Pickup an incoming call from a certain port.	18	-
X	PIN	* Π old00 Π new * Π new#	Π old is the old PIN and Π new the new PIN. The new PIN is entered twice.	35	empty
X	Ring tone differentiation on off	* Π 035port# * Π 034port#	Different ring tones for incoming internal and external calls. Some answering machines, fax machines or modems recognize only the internal ring tone. In this case, leave the option switched off.	42	off
X	Routing through different network carriers	* Π 830*0 *type*NoB*NoC#	To establish a connection through alternative network carrier set routing method and number area to be routed: For type select 1=Direct Line Access or 2=automatic dialing of the network carrier. NoB = outside line access and call number area of the connections to be routed. NoC = outside line access and either access number of the dial-in node or carrier access, *, identification code respectively.	53	off
X	Routing exception	* Π 831*0*No#	Call number that should not be dialed through alternative network carriers. Lift exception: * Π 832*0*No#	56	-
X	Routing delete	* Π 833*0#	Establishing a connection through an alternative network carrier is deactivated.	56	-
X	Routing alternative on off	* Π 834*0*1# * Π 834*0*0#	Establishing an alternative routing through the public telephone network when the alternative network carrier is congested (i.e. busy).	57	on
X	Service indicator	* Π 051port service#	port contains the port's number [11..18], service the service ID for outgoing calls (1= analog telephony; 2 = ISDN telephony; 3 = fax G2 and G3; 4 = answering machine).	38	1
X	Speed dial	*3speed dest#	speed contains the speed dial number [800..899] and dest the complete telephone number of the destination.	37	empty
	Three-party conference	*#	The held connection is joined as third party to the current connection.	16	-
	Time	*79hhmm#	The value hhmm contains the time to which the internal clock of the TELES.iPBX 8TR Box is set.	44	-
	Wake-up call set delete	*71hhmm# *70#	The value hhmm contains the hour [00..23] and minute [00..59] when a wake-up call should be sent to the current port.	43	off

Column headers: R - can be controlled by remote administration; P - see specified page; F - Factory settings

Π PIN is optional (see section 5.1, page 35)

TELES.iPBX 8TR Box

Version 2.0

User's manual

τΑ
BERLIN

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Pictograms

Pictogram	Meaning
Y	Lift receiver
Δ	Put down receiver
K	Three-party conference
N	Enter telephone, call, port number or other combination of digits
0....9	Enter digits
Π	Enter five-digit PIN (optional)
⊕	Confirmation or OK tone
*	Star key
#	Pound key

TELES.iPBX 8TR Box

iPBX stands for intelligent **P**rivate **B**ranch **E**Xchange. The **TELES.iPBX 8TR Box** features eight TR ports for connecting analog terminal devices to ISDN. You can make use of the advantages offered by ISDN without having to give up your conventional analog devices. And that's not all: The small box provides all the important features of a large PBX.

The TELES.iPBX 8TR Box is a **TELES.Family member**. Thanks to the patented TELES-Family concept that opens unique possibilities for the combination with other TELES-ISDN devices this box offers further smart solutions with even more power and comfort.

1 Features

- ISDN PBX for point-to-point or point-to-multipoint lines.
- The TELES.iPBX 8TR Box is suited for all analog terminal devices (telephones, faxes, answering machines, etc.). Three devices can be attached to each port, making the operation of up to 24 terminal device possible.
- Eight analog terminal devices can be run simultaneously. Up to two simultaneous connections to the public network are possible.
- Several boxes or further ISDN terminal devices, e.g. a PC/ISDN adapter, can be attached to an ISDN point-to-multipoint line.
- All functions are set by a telephone that supports touch-tone dialing - but much simpler via PC when connected to a PC with a TELES.ISDN board and TELES.OnlinePowerPack (see following page and section 8, page 58).
- The box supports the ISDN protocol DSS1 and is therefore suited for Euro-ISDN ports.
- You can set your own call numbers for any port. Up to 10 multiple subscriber numbers (MSN) can be programmed.
- Operation and active connections shown by LEDs.
- Cost-free internal connections between terminal devices attached to the box.
- Holding and transferring using the R key between internal and external parties.
- Comfortable call transfer – a special feature that is only offered by TELES: you can profit from using further TELES.ISDN devices besides the

TELES.iPBX 8TR Box on the same ISDN line such as the ISDN telephone TELES.FON. You can transfer calls then, for example, at no cost to or from one telephone on the box to the TELES.FON. When using other manufacturers' devices, this is only possible by complicated parking and then retrieving from the other extension.

- Three-party conference – simultaneous telephoning among three parties.
- Callback on busy – connection is established once the desired party is no longer busy.
- Call forwarding – whether the ISDN line supports it or not. You can set a port of the box or an external extension as destination.
- Incoming calls can be distributed among the ports by night services or by the 'distribute incoming calls' function.
- The selection of different telephone companies for economical telephoning can be simplified using the TELES.iPBX 8TR Box by storing your favorite network carrier. Furthermore, the box supports "Direct Line Access with Subaddressing". A connection is established to a dial-in node that can determine a lower priced connection rate. In both cases, you can determine which connections should be handled by this carrier.
- To display the charge on analog terminal devices the TELES.iPBX 8TR Box supports the metering pulse (16 kHz) per charge unit.
- Using charge accounts for the ports, you keep control over your telephone bills. If the charge account is depleted a block is activated.
- Besides that, you can set different block types in order to prevent expensive connections. Emergency numbers can always be dialed of course.
- Using direct call, a connection to a stored telephone number is automatically established when the receiver is lifted – simplest handling for small children who cannot dial a number yet.
- Do-not-disturb: By setting a block against incoming calls, you avoid interruptions by calls. You can work in peace.
- As you conduct a telephone conversation, the call waiting beep announces a further incoming call. You can switch this function on and off as needed.
- By setting the wake-up call function, you can have the telephone ring at a pre-set time.
- Play on-hold music from an external audio source for held connections.

- External and internal calls or Callback on busy can be identified by different ring tones
- You can store up to 100 centrally stored speed dial numbers for frequently called parties.
- A PIN for all important functions protects your box against unauthorized changes of settings.
- Some functions can be controlled by remote administration. You can, for example, switch a call forwarding remotely. This way you are always reachable when away and will miss no call.

TELES.Family Concept: Patent solution for even more convenience

- An additional TELES.BRI board with appropriate software, the all-in-one-ISDN/Multimedia TELES.OnlinePowerPack, provides even more convenience. You can easily program almost all functions of the TELES.iPBX 8TR Box from the monitor. Numerous further functions are available, for example, comprehensive statistics with connections and charge meter and call number identification for incoming calls. This is only possible though for *point-to-multipoint line* where several terminal devices can be attached. If you have a point-to-point line then you can attach only one ISDN device to it.
- You can enjoy all the benefits of PC-integrated telephony: electronic phone-book, convenient automatic dialing by mouse click, integrated answering machine.
- The TELES.OnlinePowerPack is a suite of over 20 ISDN communications applications. It contains programs and interfaces for Internet access, file transfer, fax for Windows programs, videoconferences, application sharing, modem emulation including V.34, follow-me service by the electronic secretary, etc.

2 Package Contents

- TELES.iPBX 8TR Box
- 12 Volt external power source
- Cable with RJ-45 plugs for the ISDN line
- User's manual



TELES.iPBX 8TR Box

3 Installation

This chapter describes how to attach and configure your the TELES.iPBX 8TR Box. The following basic steps are necessary for the installation:

1. Attach power source (section 3.1.1).
2. Connect the analog terminal devices to the TR ports (section 3.1.2).
3. Connect TELES.iPBX 8TR Box to ISDN (section 3.1.3).
4. Only for point-to-point line: change line type from the point-to-multipoint factory setting to point-to-point (section 5.2)

Once you've taken these steps the box is operable and you can start making calls right away. All incoming calls will ring at port 11 (drop port) though. Continue then with the following settings:

5. Assign the call numbers of your ISDN line (MSN) to the individual ports (section 3.2.2).
6. Check if you can hold and transfer with the attached telephones. Adapt the R key's flash time if necessary (section 3.2.1)

Now you can accept calls at the individual ports, and hold and transfer them. The correct telephone number is transmitted. Next, you can adapt the TELES.iPBX 8TR Box to special needs (e.g. different ring tones for internal and external calls, PIN setting, external audio source, etc.).

3.1 Attaching TELES.iPBX 8TR Box

A figure of the box can be found inside the cover of this manual. It shows the positions of all the sockets.

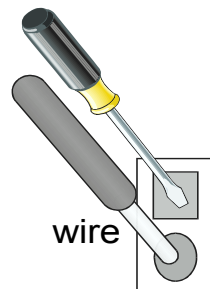
3.1.1 Attaching Power Supply

Attach the power supply to the TELES.iPBX 8TR Box first and then plug it in a 220V/230V electric outlet.

The TELES.iPBX 8TR Box conducts a self-test. This can be seen by the blinking of the LEDs. The test takes a few seconds. Following the error free procedure, only the red power LED remains lit.

3.1.2 Attaching Analog Terminal Devices

Attach the terminal devices to the TR ports on the box's rear side. Clips in the ports hold the wires of the cables. The figure shows how to use a screwdriver to attach the wires.



- 1) Press a screwdriver into the upper slot.
- 2) Press the wire into the round opening.
- 3) Pull out the screwdriver.

In case the cable of your terminal device has four wires, refer to the device's documentation in order to find out which wires are the active ones.

Lift the receiver and check if the LED for that port lights up. You should also hear the dial tone. You can attach a maximum of three terminal devices to each TR port.

The cable from the TR port to the terminal device should not be more than 50 meters long.

3.1.3 Attaching to ISDN

Attach the TELES.iPBX 8TR Box to the ISDN socket (NT) using the ISDN cable included (wide RJ-45 plugs at each end). If you use a point-to-multipoint line, you can attach several ISDN terminal devices.

Note: Your TELES.iPBX 8TR Box is now ready for operation. If this is not the case, please check the notes in section 5.2 page 36.

3.2 Setting TELES.iPBX 8TR Box

The TELES.iPBX 8TR Box is set via a DTMF/“touch tone”- telephone (DTMF = Dual Tone Multi Frequency) attached to any port of the box. Refer to user’s manual of your telephone how to change the dialing method if necessary. As an alternative, you can also use the device to query the answering machine remotely.

The * and #-keys: Both keys have to exist on the telephone. All commands start with * and end with #.

Confirmation tone: As soon as you’ve entered a command and the function was activated, you hear two short consecutive tones (see manual cover).

Error tone: If the function could not be activated or you’ve pressed the wrong key, you will hear the busy signal – the error tone (see manual cover).

Remote administration: Remote administration is not possible until the dial-in call number for remote access has been set (section 6, page 51).

PC-integrated control: Besides using a telephone for configuration, you can also make settings using a user-friendly Windows software. All you need is an ISDN board for your PC – e.g. a TELES.BRI board with the TELES.OnlinePowerPack application suite. This board should be attached to the same ISDN line as the TELES.iPBX 8TR Box (see section 8, page 58). This is only possible on point-to-multipoint lines.

3.2.1 Hookflash Time of the R key

As in any PBX, the hold, the transfer as well as the hold and alternate functions are also initiated in the TELES.iPBX 8TR Box by a signal that is sent to the box when you press the R key on the telephone.

Attached analog telephones must feature such a key. The key is also known as signal or hookflash key.

P The hookflash time of the TELES.iPBX 8TR Box is **90 - 300 ms**. Please adjust the key to hookflash for the specified time according to the telephone’s manual. The usual “ground” setting on older telephones is not supported. The functions mentioned above will not work if there is a deviation.

3.2.2 Port Numbers

To make a call from one extension of the TELES.iPBX 8TR Box to another, all you need to do is dial the port number.

Port numbers frequently also have to be entered when setting functions, e.g. when you set call forwarding, make a block or change the ring tones for individual ports, etc.

The box's eight ports are numbered as following:

<i>Extension</i>	<i>Internal port number</i>
1	11
2	12
3	13
4	14
5	15
6	16
7	17
8	18

3.2.3 Call Numbers (MSN) of Ports

Note: By default, no call number is set. All calls for your ISDN line's telephone numbers will arrive therefore on port 1; the so-called drop port (section 5.13, page 47)

If you assign a unique call number to each TR port, only the attached device will answer calls sent to that number. You will find the call numbers available for your ISDN line in the documents provided by your ISDN carrier. For point-to-multipoint lines, you may receive **three or more MSNs** (depending on country and carrier). These MSNs (= Multiple Subscriber Numbers) are your complete call numbers without prefixes. Up to **10 MSNs** are programmable in the box.

Assign a call number to a TR port:

Y Lift the receiver. You hear the dial tone.
***** Press the star key.
Π Enter the PIN. By default, no PIN is set. If no PIN is set, you do not need to enter anything.
041 Enter the digits 041.
N Enter the port number: e.g. 11 for the first port 1, 12 for second port, 13 for the third port, etc. (see above)
N Enter the appropriate MSN.
Press the pound key.
Δ Listen for the confirmation tone. Put the receiver down.

Example: You have been assigned, for example, the MSNs 39928312, 39928313 and 39928314. Port 11 should be reached by the first MSN, i.e. the call number 39928312.

***(Π) 041 11 39928312#**

Note: You may enter each MSN only **once**. Would you like to have several ports accept calls for one MSN use the distribute calls function (section 4.6.1 or 9.2).

Delete: **Single MSN on the port: *(Π)040 MSN#.**

All MSNs of the box: *(Π)0400#

4 Operation

This section describes how to operate terminal devices, usually telephones, on the TELES.iPBX 8TR Box. In order to handle your telephone effectively, you'll need your telephone's user manual as well.

4.1 Introduction

Undoubtedly, you are already familiar with telephone systems (PBXs) and know that you can conduct conversations within the PBX and call into the public net via the outside line access. You probably also know that you can transfer calls within a PBX and can switch back and forth between different parties (hold and alternate).

However, the TELES.iPBX 8TR Box also offers a series of further useful functions that will enhance your daily handling of the telephone:

- From your own phone you can pick up calls to other extensions – no need to run to the appropriate telephone anymore.
- During a conversation, you can hear if a further party is trying to reach you (call waiting). You can accept the new connection and then hold and alternate between both calls.
- You can forward calls directed to your extension to another telephone when you're away from your desk.
- You can switch off your telephone when you do not want to be disturbed (block against incoming calls).
- ... and much more.

4.2 Telephoning

4.2.1 Internal Calls

As soon as you lift the receiver, you can dial the port's number of the desired extension. The ports have the numbers 11 to 18.

Λ Instead of lifting the receiver, you can use the loudspeaker function that is available on many phones.

To phone within the box:

Y Lift the receiver. Listen for the dial tone.

N Dial the port number (11 – 18).

4.2.2 External Calls

In order to make a call into the public network, press the outside line access number first. The outside line access for the TELES.iPBX 8TR Box is **0**.

Y Lift the receiver. Listen for the dial tone.

0 Enter the outside line access 0. You hear the dial tone of the public network.

N Dial the call number.

Note: If no B channel is free or the TELES.iPBX 8TR Box is not attached to the ISDN, you'll hear a busy signal after dialing the 0.

4.2.3 Callback on Busy

The callback on busy function can be activated when the party you are just calling is busy. As soon as the called party is free again, you will receive a signal from the local exchange – your telephone rings. You only need to lift the receiver then and the connection to the called party is established.

Note: Your ISDN line and the remote party have to be able to support the *Callback on busy* supplementary service.

Initiate a callback on busy:

Y Lift the receiver and hear the dial tone.
N Dial a party in the public net. It is busy.
* Press the star key.
8 Enter the digit 8.
Press the pound key.
Ⓟ Instead of the busy signal, you now hear the confirmation tone.
Δ Put the receiver down. Wait till ...
A ... you hear the ring tone for callback on busy. Now the remote party is free. Your telephone rings for about 20 seconds.
Y Lift the receiver. If the remote party is free, you hear the ring tone until the called party answers. Should they be busy again in the meantime, callback on busy will remain active.

Deactivate callback on busy for current port

Y Lift the receiver and hear the dial tone.
* Press the star key.
862 Enter the digits 862.
Press the pound key. Listen for the confirmation tone. All callbacks on busy set for the port are deleted.

Deactivate callback on busy for whole ISDN line

Y Lift the receiver and hear the dial tone.
* Press the star key.
861 Enter the digits 861.
Press the pound key. Listen for the confirmation tone. All callbacks when busy are deleted – no matter for which telephone it was activated.

4.2.4 Telephoning with Speed Dial Numbers

Frequently used and long call numbers can be stored as speed dial numbers that can be quickly dialed from any port:

- Y Lift the receiver and hear the dial tone.
- N Enter the speed dial number. The TELES.iPBX 8TR Box makes the connection.
- Note:** Up to 100 speed dial numbers are possible. Refer to section 5.3 on assigning speed dial numbers.

4.2.5 Calling Line Identification Restriction (CLIR)

Should you wish that your call number does not appear on the display of the called party's device, you can deactivate the caller ID typical in ISDN:

- Y Lift the receiver and hear the dial tone.
- # Press the pound key.
- 0 Dial the outside line access.
- N Dial the desired call number next. Your call number does not appear on the display of the called party's device.
- Note:** Your ISDN line has to support calling line identification restriction on request.

4.2.6 Disconnect

You have a connection on hold and would like to end only the active connection. Using disconnect you end **only** the active connection and continue with the held connection. A 'normal' connection cannot be terminated with disconnect.

- Γ You are conducting a conversation and have a further connection on hold.
- ** Press the star key twice. The current conversation is ended. You speak with the party that had been on hold.

4.3 Transfer Calls and Conferences

4.3.1 Transfer

By pressing the R key, you can transfer a current conversation to a third party. It makes no difference if it is an internal or external party.

- Γ You conduct a call.
- P Press the R key. You hear the dial tone.
- N Dial the desired telephone number (external) or the desired port number (internal).
- Δ Once the call is accepted put down the receiver.

See also section 4.3.4, Comfortable Call Transfer, page 17.

Note: Transfer is also possible without announcing the call to the third party, i.e. hanging up as soon as the third party's telephone starts ringing. The held party hears the ring tone as if he were calling directly.

4.3.2 Hold and Alternate

Hold and alternate means switching back and forth between two connections. You converse alternately with two parties. It makes no difference if they are internal or external parties.

You can easily interrupt the current conversation and establish a second connection to another party – a so-called hold for enquiry. The first party is on hold and cannot listen in to the second conversation. Instead, they hear the on-hold tone or the music played from the audio source.

In case the third party does not answer the call, switch back to the first conversation using the R key. Otherwise, you can disconnect the connection with **. In this case, you are connected with the previous party as well. Should you hang up, both parties are connected with each other.

- Γ You conduct a call.
- P Press the R key. You hear the dial tone.
- N Dial the number of the second party.
- Γ You talk to the 2nd party, while your first party is on hold.
- P By pressing the R key, you can switch back and forth freely between both parties.
- ** When you would like to disconnect the active call, press the star key twice. You are then connected to the held party.

Example: You are speaking with a party and would like to put them on hold while you contact an **external** party with the number 54 54 54.

Γ P 0545454

Example: You are speaking with a party and would like to put them on hold while you contact an **internal** party on port 13.

Γ P 13

4.3.3 Three-Party Conference

A three-party conference is the simultaneous connection among three parties.

Set up connections to two parties using **hold and alternate** (see page 15) or **accept waiting call** (see page 19). As soon as one connection exists and the other is on hold, activate the conference:

K **To activate three-party conference:**

***#** Press the star and then the pound key. All three parties can hear and speak with each other.

K **To end three-party conference:**

P When you press the R key, the three-party conference is ended. You are back in the initial condition: one party is on hold while you are connected the other party.
The conference also ends when any party hangs up.

Note: Both parties for the three-party conference can be external parties. The TELES.iPBX 8TR Box allows only **one** three-party conference.

The conference is conducted by the box. This means that you can hold a three-party conference whether or not your ISDN line provides this as a supplementary service.

4.3.4 Comfortable Call Transfer

When you operate further TELES-ISDN devices on your ISDN point-to-multipoint line besides the TELES.iPBX 8TR Box, you can profit from a special patented procedure developed by TELES for call transfer: direct transfer of calls to further TELES.ISDN terminal devices connected to the *same ISDN line*. When using devices from other manufacturers, call transfer is only indirectly possible by parking the call and retrieving it from another extension.

Prerequisite is that the devices are from TELES and each device has its own device ID (see section 5.14, page 48). In order to transfer connections to other **ports** of the **box** use the R key instead (section 4.3.1, page 14).

Transfer a call *from the box* to another TELES.ISDN terminal device:

- Γ You conduct a call.
- *** Press the star key three times.
- N Enter the device ID of the device to which the connection should be transferred.
- # Press the pound key.
- ⊖ You hear the OK-tone.
- Δ Put the receiver down. The other TELES.ISDN terminal device rings.

Note: If there is no terminal device with the specified ID attached to the ISDN line, your telephone rings again and you can retrieve the call. If the called party does not accept the call, you cannot retrieve the connection though.

Transfer call from a different TELES.ISDN terminal device *to the box*:

You can read how to activate the function in the device's manual. A single key is sufficient, for example, on the TELES.FON. This is how you can dial a port of the box directly: for port 1 dial the box's device ID. For the 2nd port enter the device ID's number plus 1, for the 3rd port add 2, etc.

Example: Say the box's device ID is set on 5. For port 11 you would simply dial 5, for port 12 dial 6, for port 13 dial 7, and so on.

Note: Comfortable call transfers cannot be made by or to ports 17 + 18. Additionally device IDs are limited to the numbers 1 through 8. This means that other higher number ports of the box may not be accessible if the device ID is set high as well.

For further details, read section 5.14 Change Device ID, page 48, concerning the assignment and reservation of device IDs for the box's ports.

4.4 Picking up Calls

4.4.1 Picking up Calls from a Certain Port

A telephone rings on another port. You can retrieve the call directly from your desk:

- Y Lift the receiver. You hear the dial tone.
- * Press the star key.
- 5 Enter the digit 5.
- N Enter the number of the port that is ringing.
- # Press the pound key. You are connected with the caller.

Note: Retrieving a call is even possible when e.g. the answering machine at this port has already reacted. Prerequisite for that though is that the port with the answering machine is set to the service indicator *4 answering machine* (see section 5.4.).

4.4.2 Picking up Calls from Any Port

You can also retrieve an incoming call without entering the port number. This is especially useful when you are not sure which phone the ringing is coming from.

- Y Lift the receiver. You hear the dial tone.
- * Press the star key.
- 5 Enter the digit 5.
- # Press the pound key. You are connected with the caller.

Note: You cannot determine which call you accept when several ports are ringing simultaneously.
You can also accept waiting calls using this command.

4.4.3 Accept Waiting Calls

The call waiting tone is a signal tone that can be heard in the receiver announcing that a further caller is trying to reach you during a current call.

The basic setting for the TELES.iPBX 8TR Box is **call waiting permitted**. The function can be freely switched on and off for any individual port (see section 5.6, page 40).

When you hear the call waiting signal, you have two options to accept this call:

- 1) You end the current conversation by hanging up. Your telephone will ring then so you can answer the call.
- 2) You put the current conversation on hold with P and answer the incoming call with *5#. In order to hold and alternate between both calls press P again.

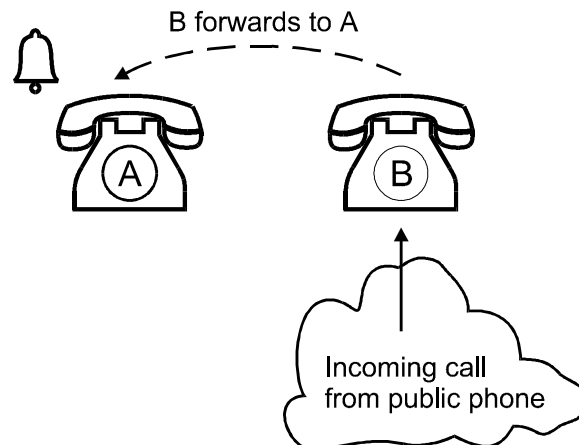
Note: When you hold and alternate between two parties or find yourself on hold you also hear the call waiting tone. As soon as you hang up the receiver, the previous connection ends and the waiting call is answered.

The call waiting tone can always be heard by both parties. External calls can only be accepted by the parties that were actually called.

You can switch off call waiting (section 5.6).

4.5 Call Forwarding

Should an extension (port) be unreachable for some reason you can switch a call forwarding to another extension. The call forwarding destination may be an internal extension or an external party.



There are several types of call forwarding. These can be optionally switched by your box or by the local exchange.

Call forwarding by the box (valid per port)

- call forwarding unconditional (I) section 4.5.1
- call forwarding no reply (II) section 4.5.2
- call forwarding on busy (III) section 4.5.3
- combination of call forwarding II and III section 4.5.4
- follow-me call forwarding unconditional section 4.5.5
- call forwarding unconditional for certain port section 4.5.6

Call forwarding by the box is independent of whether or not the ISDN line supports the call forwarding service.

Call forwarding by the local exchange (valid for individual call numbers)

This method of call forwarding is activated for your ISDN line's call numbers by the local exchange's switchboard. Which type of call forwarding – if at all – the ISDN line supports, depends on the services the ISDN carrier offers.

- | | |
|---|---|
| Y | Lift the receiver. You hear the dial tone. |
| 0 | Enter the digit 0 for outside line access. |
| # | Press the pound key. The local exchange is ready to accept commands. |
| N | Enter the command, call number, destination, etc. according to the instructions given by your local exchange. |

The advantage of call forwarding by the exchange is that the outside lines of the TELES.iPBX 8TR Box are not blocked when call forwarding is active.

Which method of call forwarding is the right one?

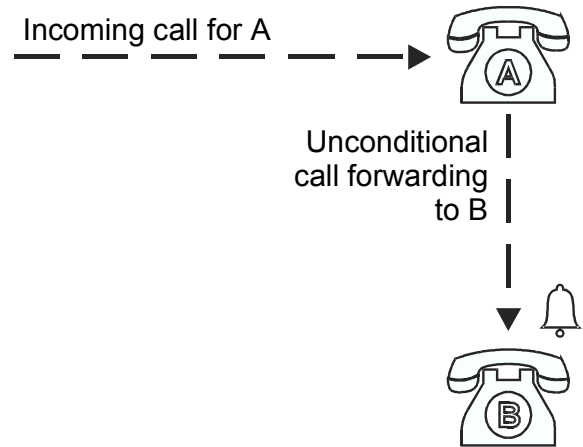
This is primarily a question of costs. For call forwarding from one port to the other, you shouldn't "bother" the exchange's switchboard. For local calls, it is also preferable to choose call forwarding through the box. Long-distance calls can be more economical though, when forwarded by the switchboard.

This is only a rule of thumb. An in-depth study of the rate structure would be necessary – this holds true even more so the way the telecommunications market is constantly changing and more and more carriers offer different services.

4.5.1 Call Forwarding I (unconditional) by Box for Current Port

Call forwarding I is an **unconditional** call forwarding. The called terminal device does not ring because the call is transferred **immediately**.

Activate call forwarding I for a telephone that is not busy or when you do not want to be disturbed by calls. All calls go straight to B when a call forwarding I for A to B is switched on.



- Y Lift the telephone receiver *at the port for which call forwarding should be valid*. You hear the dial tone.
- * Press the star key.
- 41 Enter the digits 41.
- N Enter the call number for the call forwarding destination as you would when dialing from the box – this means beginning **with outside line access** for numbers in the public net.
- # Press the pound key. Listen for the confirmation tone.

Example: You would like to switch a call forwarding unconditional from the current port to port 13.

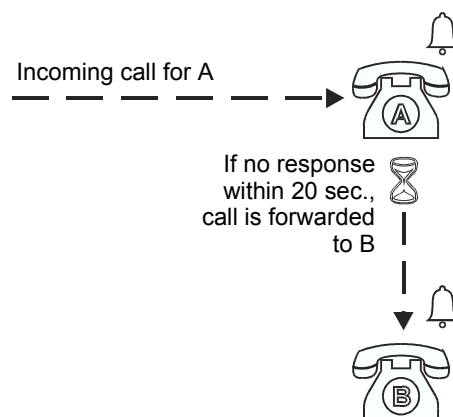
*** 41 13#**

Note: When you set a block against incoming calls (section 4.7.1, page 29) unconditional call forwarding is switched off.

Delete: In order to delete call forwarding enter the same key combination without destination call number.

4.5.2 Call Forwarding II (no reply) by Box for Current Port

If the call is not answered **within 20 seconds**, the call is forwarded. You have this much time to pick up the call on the called phone.



- Y** Lift the telephone receiver *at the port for which call forwarding should be valid*. You hear the dial tone.
- *** Press the star key.
- 42** Enter the digits 42.
- N** Enter the call number for the call forwarding destination as you would when dialing from the box – this means **beginning with outside line access** for numbers in the public net.
- #** Press the pound key. Listen for the confirmation tone.

Example: You would like to switch a call forwarding no reply from the current port to port 13.

*** 42 13#**

Delete: In order to delete call forwarding enter the same key combination without destination call number.

4.5.3 Call Forwarding III (on busy) by Box for Current Port

The call is forwarded when the called party is **busy**.

- Y Lift the telephone receiver *at the port for which call forwarding should be valid*. You hear the dial tone.
- * Press the star key.
- 43 Enter the digits 43.
- N Enter the call number for the call forwarding destination as you would when dialing from the box – this means beginning **with outside line access** for numbers in the public net.

- # Press the pound key.

Example: Set a call forwarding III (on busy) to port 13.

*** 43 13#**

Note: Call waiting (section 5.6) and call forwarding on busy should not be set simultaneously. When both functions are active simultaneously, you will hear call waiting when a second call arrives. When a third call arrives, it will be transferred. Switch call waiting off therefore before activating call forwarding III.

Delete: In order to delete call forwarding enter the same key combination without destination call number.

4.5.4 Call Forwarding II + III (no reply/on busy) for Current Port

You can switch both call forwardings (II and III) together for an extension. The incoming call is forwarded either if it is not accepted within **20 seconds** or if the port is **busy**.

Activate call forwarding II and the call forwarding III after each other for the appropriate port (section 4.5.2 and section 4.5.3).

4.5.5 Follow-me Call Forwarding by Box

The call forwarding I (unconditional) can also be **set from the call forwarding destination**: Without having to leave your desk you can redirect calls that are intended for any port right to your own port.

Likewise, you can redirect all calls intended for your own extension to any other port.

Because this is an unconditional call forwarding, the telephone does not ring at the transferring port.

Activate follow-me call forwarding:

- Y *At the **destination** port*, lift the telephone receiver. You hear the dial tone.
- * Press the star key.
- 441 Enter the digits 441.
- N Enter the number of the port for which you would like to activate the call forwarding.
- # Press the pound key. Listen for the confirmation tone.
- Δ Put the receiver down.

Deactivate follow-me call forwarding:

- Y Lift the receiver *of any extension*. You hear the dial tone.
- * Press the star key.
- 440 Enter the digits 440.
- N Enter the number of the port for which you would like to switch off call forwarding.
- # Press the pound key. Listen for the confirmation tone.
- Δ Put the receiver down.

4.5.6 Unconditional Call Forwarding by Box for Certain Port

This call forwarding is intended for remote administration. It is comparable to call forwarding I (section 4.5.1). The difference is that you enter the **number of the forwarding port** as well as the **call forwarding destination**.

Please note that call forwarding into the public network can be cheaper when done by the local exchange (sections 4.5)

- Y Lift the receiver. You hear the dial tone.
- * Press the star key.
- 46 Enter the digits 46.
- N Enter the port number for which you would like to activate the call forwarding.
- N Enter the call number for the call forwarding destination as you would when dialing from the box – this means beginning **with outside line access** for numbers in the public net.

- # Press the pound key. Listen for the confirmation tone.

Example: Set a call forwarding for port 12 to the external destination 343434.

*** 46 12 0 343434#**

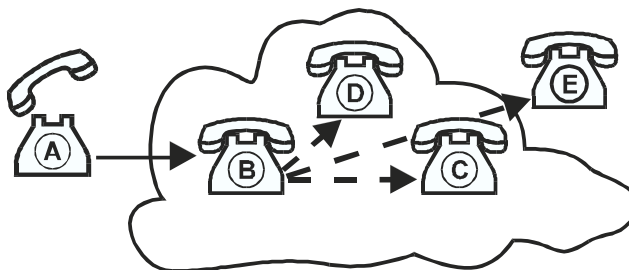
Delete: In order to delete call forwarding, simply enter the same key combination without destination call number.

4.6 Call Distribution

4.6.1 Distribute Incoming Calls

Calls coming in for one port can be forwarded to several other ports simultaneously – that is “distributed”. Some examples:

- The called terminal device does not ring, but **all others** do.
- When you include all eight ports in the distribution list, **all terminal devices** ring during an incoming call.
- You can also add one **external number** to the distribution list (up to seven internal + one external). Enter the external number **last** following the port numbers. Don't forget the outside line access.



Calls intended for extension B are distributed to C, D, and E.

The calls are distributed in the same fashion as with call forwarding I (unconditional). The party that accepts the call first makes the connection. The ‘distribute incoming calls’ function can be activated only once within the box. Call forwardings to ports that are entered in the distribution list are only effective when the appropriate port is directly called.

- Y** Lift the receiver. You hear the dial tone.
- *** Press the star key.
- 45** Enter the digits 45.
- N** Enter the *port* number for which you want to activate call distribution.
- N** Enter as *distribution list* the port numbers including lastly if necessary the external telephone number to which the calls should be distributed.
- #** Press the pound key. Listen for the confirmation tone.
- Example:** Calls aimed at port 13 are forwarded to port 11 and 12. Port 13 does not ring, but for that, port 11 and 12 ring simultaneously.
- *45 13 11 12#**
- Delete:** Enter ***45#** to switch off distribute calls.

4.6.2 Night Service

Night service is a form of call distribution (see above) that handles incoming calls once activated. Eight types of night services (according to the table) are programmed in your TELES.iPBX 8TR Box. Changes of the night services are not possible. The night services can be activated by any port.

Night service	Configuration
0	Basic configuration (no night service)
1	When a call arrives at one of the 8 ports only port 11 rings.
2	Ports 11 and 12 ring simultaneously when a call arrives at port 11 or 12.
3	Ports 11-13 ring simultaneously when a call arrives at ports 11-13.
4	Ports 11-14 ring simultaneously when a call arrives at ports 11-14.
5	Ports 11-15 ring simultaneously when a call arrives at ports 11-15.
6	Ports 11-16 ring simultaneously when a call arrives at ports 11-16.
7	Ports 11-17 ring simultaneously when a call arrives at ports 11-17.
8	All terminal devices ring simultaneously when a call arrives at any of the 8 ports.

- Y Lift the receiver. You hear the dial tone.
- * Press the star key.
- Π Enter the PIN if necessary.
- 9 Enter the digit 9.
- N Select the night service type.
- # Press the pound key. Listen for the confirmation tone.

Example: You want night service type 1.

***(Π) 9 1 #**

Note: Other call forwarding types (I, II, III, etc.) are only active in the basic configuration.

Delete: Lift the night service by selecting the basic configuration.

***(Π) 9 0 #**

4.7 Blocks

4.7.1 Block against Incoming Calls

The block against incoming calls is also known as ‘**do-not-disturb**’. The terminal device, for which such a block is active, cannot be called any more. Make use of this function when you do not want to be interrupted by calls. You can block any of the TELES.iPBX 8TR Box’s ports individually against incoming calls.

Activate the block against incoming calls:

Y	Lift the receiver. You hear the dial tone.
*	Press the star key.
Π	Enter the PIN if necessary.
191	Enter the digits 191.
N	Select the port number.
#	Press the pound key. Listen for the confirmation tone.

Example: Block port 13 against incoming calls: ***(Π)191 13#**

Lift the block again:

Y	Lift the receiver. You hear the dial tone.
*	Press the star key.
Π	Enter the PIN if necessary.
190	Enter the digits 190.
N	Select the port number for which you would like to lift the block.
#	Press the pound key. Listen for the confirmation tone.

Example: Free port 13 for incoming calls: ***(Π)190 13#**

Note: By setting call forwarding I, (unconditional) blocks against incoming calls are lifted.

4.7.2 Outside Line Access and Preset Blocked Numbers

By setting a block, you can prevent certain numbers or digits from being dialed. The blocks always affect the specified port. For example, you can block the outside line access (0) for a port. Calls to the public network cannot be made any more from the appropriate extension.

The blocks 0 to 6 are preset in the TELES.iPBX 8TR Box:

Block	Content
0	Basic configuration (no block)
1	'0' = outside line access is blocked, only internal calls are possible
2	'00' = "long-distance" calls are blocked
3	'000' = "international" calls are blocked
4	'0019' = block for 0190 numbers
5	'0018' = block for 0180 numbers
6	'001' = block for other service numbers, cellular phone networks, access numbers for network carrier

The following **emergency numbers** are exempted: call numbers that begin with 011 (e.g. 0110 and 0112) can always be dialed.

The 0190 and 0180 numbers are German service numbers.

- Y Lift the receiver. You hear the dial tone.
- * Press the star key.
- Π Enter the PIN if necessary.
- 1 Enter the number 1.
- N Select the block type.
- N Select the port for which the block should be activated.
- # Press the pound key. Listen for the confirmation tone.

Example: You set block 2 ('00') for port 3. No terminal devices attached to this port can make connections outside the local area; i.e. no long-distance calls would be possible.

***(Π) 1 2 3 #**

Delete: In order to lift a block enter **0** for basic configuration. So that port 3 can call into the local area again enter:

***(Π) 1 0 3 #**

4.7.3 Assign Blocked Numbers

The blocks 7 and 8 are not configured. They can be assigned to your choice of digits. In opposition to blocks 1 through 6, they cannot be activated as preconfigured blocks. You have to enter the number to be blocked every time you renew the block.

- Y Lift the receiver. You hear the dial tone.
- * Press the star key.
- Π Enter the PIN if necessary.
- 1 Enter the digit 1.
- N Select the type of block, either 7 or 8.
- N Select the port for which the block should be activated.
- N Enter the number that you would like to block for the appropriate port.
- # Press the pound key. Listen for the confirmation tone.

Example: Set block 7 for port 3. The block contains the prefix 0033 including outside line access.

***(Π) 1 7 3 00033#**

Note: When you have set a freely configured block for two ports and then change the blocked call number at one port, the change is valid for the other port as well.

4.7.4 Exempt blocked numbers

You can exempt up to four prefixes or individual call numbers from blocks set otherwise (Index 0 ... 3).

- Y Lift the receiver. You hear the dial tone.
- * Press the star key.
- Π Enter the PIN if necessary.
- 852 Enter the digits 852.
- N Assign an index number from 0 to 3 for each number combination.
- N Select the port for which the exemption is valid.
- N Enter the number incl. the outside line access that you would like to exempt for the appropriate port.
- # Press the pound key. Listen for the confirmation tone.

Example: A block for international connection is set on index 0 for port 13. Calls to France (country code 0033) should be possible anyway:

***(Π) 852 0 13 00033 #**

Delete: In order to block the exempted number again, enter the same key combination without the exemption number.

***(Π) 852 0 13 #**

Note: When you have set an exemption for two ports and then change the exempted call number at one port, the change is valid for the other port as well.

4.7.5 Charge Account

You can set a charge account for any port of the TELES.iPBX 8TR Box. You can telephone from a port with activated charge account until all charge units are consumed. Once the charge account is depleted, the appropriate port will be blocked for external connections. The block remains in force until you set a new charge account. Call numbers that begin with 011 (e.g. emergency numbers 0110 and 0112) can always be dialed.

Y	Lift the receiver. You hear the dial tone.
*	Press the star key.
Π	Enter the PIN if necessary.
01	Enter the digits 01.
N	Select the port for which the charge account should be valid.
N	Enter the number of charge units that you would like to provide for the charge account.
#	Press the pound key. Listen for the confirmation tone.

Example: A charge account with 50 units is set for port 12.

***(Π) 01 12 50#**

Delete: Deactivate the charge account by entering no charge unit.

***(Π) 01 12 #**

Note: Prerequisite for a charge account is that your ISDN line transmits advice of charges according to the ETS 300 182 standard. The box identifies charges only in unit format, i.e. not in currency format. Whether or not this standard is supported by your ISDN line varies from country to country.

In ISDN, there are two types of advice of charges: A) charges during the call (AOC-D) and B) charges at the end of the call (AOC-E). If advice of charges are transmitted to your extension only at the end of the call (B), the charge account may be overdrawn during the last call. When using advice of charges during the call (A), the call is terminated as soon as the charge account is depleted.

When activating and deactivating the charge account any blocks for outgoing calls (outside line block) for this port are lifted.

4.7.6 Direct Call

When the direct call function is activated the TELES.iPBX 8TR Box dials a previously stored number immediately when the receiver is lifted. No further keys need to be pressed.

This setting works like an intercom. It is suitable for children that cannot dial numbers or can be used for telephones in visitor or conference rooms. Please note that the only number that can be dialed is the direct call number stored for the attached telephone.

Direct call can also be used as an **automatic outside line access**. For that you would simply set a direct call to the outside line access number 0.

Y	Lift the receiver. You hear the dial tone.
*	Press the star key.
Π	Enter the PIN if necessary.
199	Enter the digits 199.
N	Select the number of the port for which the direct call should be activated.
N	Dial the destination for the direct call e.g. the other port's number or a complete external call number.
#	Press the pound key. Listen for the confirmation tone.

Example: Set a direct call for extension 13 to port 14.

***(Π) 199 13 14#**

Delete: Note that the * and # keys to **control the TELES.iPBX 8TR Box are not available** on a port while direct call is activated. Deactivate the direct call function from an extension at which no direct call is set. Enter the digits for the appropriate port therefore **without a destination call number**.

Note: A direct call can be set for no more than seven ports. This avoids blocking all further functions of the TELES.iPBX 8TR Box.

5 Further Settings

5.1 PIN

The PIN or code number is *optional*. No PIN is preset at delivery. However, it is recommended to set a PIN in order to protect the TELES.iPBX 8TR Box from unauthorized usage.

Once it is set, the PIN is required for many functions and settings (see command overview inside the cover).

Note: Remember the newly programmed PIN well. When the PIN is lost or forgotten, send the device back to the manufacturer. The old PIN and all settings are deleted. This repair will cost you a fee. Read the service notices in section 9.5, page 70.

Set PIN:

Y Lift the receiver. You hear the dial tone.
 * Press the star key.
 Π In case it already exists, enter the **old** PIN.
 00 Enter the digits 00.
 N Enter the **new** PIN. Up to 5 digits is possible.
 * Press the star key.
 N Repeat the entry of your **new** PIN.
 # Press the pound key.
 Δ Listen for the confirmation tone. Put the receiver down.

Example: Change the PIN from 5678 to 1234:

***5678 00 1234 * 1234 #**

Delete: Delete the PIN using the same combination, but without entering a new PIN.

Delete: * Π **00** #

5.2 ISDN Port Configuration

The TELES.iPBX 8TR Box is suited for point-to-multipoint line (also known as S/T interface) as well as for point-to-point line.

The factory setting is point-to-multipoint line because this ISDN interface type is most common in private homes and home-offices. In this case, no changes are necessary.

5.2.1 Reset to Point-to-Point Line

- Y Lift the receiver. You hear the dial tone.
 - * Press the star key.
 - Π Enter the PIN if necessary.
 - 080 Enter the digits 080. The TELES.iPBX 8TR Box is reset from point-to-multipoint to point-to-point line.
 - # Press the pound key.
 - Δ Listen for the confirmation tone. Put the receiver down.
- A running light through all LEDs shows that the box is configuring for point-to-point line. When only the red LED is lit the box is ready for operation. Should problems with the outside line access arise, briefly interrupt the power supply.

5.2.2 Reset to Point-to-Multipoint Line

- Y Lift the receiver. You hear the dial tone.
 - * Press the star key.
 - Π Enter the PIN if necessary.
 - 081 Enter the digits 081. The TELES.iPBX 8TR Box is reset from point-to-point to point-to-multipoint line.
 - # Press the pound key.
 - Δ Listen for the confirmation tone. Put the receiver down.
- A running light through all LEDs shows that the box is configuring for point-to-multipoint line. When only the red LED is lit the box is ready for operation. Should problems with the outside line access arise, briefly interrupt the power supply.

5.3 Speed Dial

You can set up to one hundred speed dial numbers that are available for all ports. The value range for speed dial numbers begins with 800 and ends with 899.

The speed dial number always has **three digits**. The associated number may contain **up to 18 digits**. Enter the **outside line access 0** for external telephone numbers.

- | | |
|---|---|
| Y | Lift the receiver. You hear the dial tone. |
| * | Press the star key. |
| 3 | Enter the digit 3. |
| N | Enter the speed dial number that you would like to program.
(Three digits ranging from 800 to 899) |
| N | Dial the call number that you would like assign to the speed dial number. |
| # | Press the pound key. Listen for the confirmation tone. |

Example: Assign the speed dial number 802 to the call number 393939.
The leading 0 is the outside line access.

***3 802 0 393939 #**

5.4 Service Indicator for Outgoing Calls / Answering Machine

The TELES.iPBX 8TR Box and attached terminal devices accept calls with all telephony/fax G3 service indicators. Outgoing calls use the service indicator ‘telephony analog’. Thus, it should be possible to establish connections to most common terminal devices.

Problems can arise for some fax machines attached to PBXs when they can accept calls only with the fax group 3 service indicator. In this case, you can adapt the service indicator of the fax machine’s port.

Type	Meaning
1	Telephony analog
2	ISDN telephony
3	Fax group 2 and 3
4	Answering machine

- Y Lift the receiver. You hear the dial tone.
- * Press the star key.
- Π Enter the PIN if necessary.
- 051 Enter the digits 051.
- N Select the port for which you would like to change the service indicator for outgoing calls.
- N Enter the number of the service indicator that you would like to set.
- # Press the pound key. Listen for the confirmation tone.
- Δ Put the receiver down.

Example: Set service indicator type 3 ‘Fax group 2 and 3’ for port 12.

***(Π) 051 12 3#**

5.4.1 Special Settings for Answering Machine

Type 4 “answering machine” (see table above) is not a service according to ISDN definitions. It is an extra feature that can be switched on in addition to other service – e.g. for combination machines (telephone, answering machine and fax in one device).

When you attach an answering machine, it is recommended that the service indicator 4 be set for the appropriate port. This guarantees that the answering machine reliably switches off. Beyond that, you can pick up calls from this port (section 4.4 page 18) although the answering machine has already reacted.

To deactivate the option, simply select option 1 (analog telephony).

5.5 Dial Tone

The standard dial tone of the box is an intermittent tone (see table inside front cover). Some types of modems and fax machines require a **continuous dial tone** of 400 Hz (same as outside line dial tone). You can tell this for modems, when you don't get a dial tone when establishing a connection. Fax machines cannot establish a connection or react as if they were not attached to the line. Changing the dial tone at the appropriate port may solve the problem.

Set the dial tone to 400 Hz:

- Y Lift the receiver. You hear the standard dial tone.
- * Press the star key.
- Π Enter the PIN if necessary.
- 032 Enter the digits 032.
- N Select the port to which your modem or respectively fax machine is attached.
- # Press the pound key. Listen for the confirmation tone.
- Δ Put the receiver down.

Set the dial tone back to standard:

- Y Lift the receiver. You hear the continuous 400 Hz dial tone.
- * Press the star key.
- Π Enter the PIN if necessary.
- 033 Enter the digits 033.
- N Select the port to which your modem or respectively fax machine is attached.
- # Press the pound key. Listen for the confirmation tone.
- Δ Put the receiver down.

Note: You do not need to change the dial tone when you can make use of the following alternatives:

Modems: Use the **AT X3** command when dialing. This means that the modem does not wait for the dial tone when establishing a connection.

Fax machines: Read the device's manual on how to adapt the machine to PBXs. It is often possible to set the device to check the dial tone after getting the outside line access.

5.6 Activating Call Waiting

When a further party tries to reach you during a conversation, you will hear the call waiting tone (see section 4.4.3, page 19).

By default, **call waiting is permitted**. You can switch the function on or off as you wish for each port.

Activate call waiting

Y	Lift the receiver. You hear the dial tone.
*	Press the star key.
Π	Enter the PIN if necessary.
061	Enter the digits 061.
N	Enter the port number for which you would like to activate call waiting.
#	Press the pound key. Listen for the confirmation tone. Call waiting is now activated.
Δ	Put the receiver down.

Deactivate call waiting

Y	Lift the receiver. You hear the dial tone.
*	Press the star key.
Π	Enter the PIN if necessary.
060	Enter the digits 060.
N	Enter the port number for which you would like to deactivate call waiting.
#	Press the pound key. Listen for the confirmation tone. Call waiting is now deactivated.
Δ	Put the receiver down.

Note: When you set a **call forwarding III (on busy)** you will also deactivate call waiting for the appropriate port (section 4.5.3).

5.7 Advice of Charges

Advice of charges is not activated by default for the following reasons:

- The ISDN line should be capable of supporting *advice of charges during the call* (AOC-D). Note that this service is *not* provided by all line types (see advice of charges in the Glossary).
- Analog terminal devices usually do not support charge display or may cause an error because of advice of charges signals (e.g. modems).

When your ISDN line permits advice of charges, you have to therefore activate the function in the TELES.iPBX 8TR Box so that you can actually make use of it. You can easily switch it on or off for each port – as needed for the attached terminal device. See also the notes on the limitations of advice of charges in section 4.7.5 Charge Account on page 33.

Activate advice of charges

Y	Lift the receiver. You hear the dial tone.
*	Press the star key.
Π	Enter the PIN if necessary.
031	Enter the digits 031.
N	Select the port for which you would like to activate the advice of charges.
#	Press the pound key. Listen for the confirmation tone.
Δ	Put the receiver down.

Example: Set advice of charges for port 12:

***(Π) 031 12#**

Deactivate advice of charges

Y	Lift the receiver. You hear the dial tone.
*	Press the star key.
Π	Enter the PIN if necessary.
030	Enter the digits 030.
N	Enter the number of the port for which you would like to deactivate advice of charges.
#	Press the pound key. Listen for the confirmation tone.
Δ	Put the receiver down.

5.8 Different Ring Tones

You can configure different ring tones to easily recognize incoming **internal or external** calls or **callback on busy** calls (see inside cover for tone sequences).

The different ring tone function is not activated by default because some answering machines, fax machines, etc. recognize only the ring signal for internal calls.

Activate different ring tones:

Y	Lift the receiver. You hear the dial tone.
*	Press the star key.
Π	Enter the PIN if necessary.
035	Enter the digits 035.
N	Select the port for which you would like to set different ring tones.
#	Press the pound key. Listen for the confirmation tone. Internal and external calls now have different ring tones.
Δ	Put the receiver down.

Deactivate different ring tones:

Y	Lift the receiver. You hear the dial tone.
*	Press the star key.
Π	Enter the PIN if necessary.
034	Enter the digits 034.
N	Select the port for which you would like to remove different of ring tones.
#	Press the pound key. Listen for the confirmation tone. The internal ring tone is valid now for internal as well as external calls.
Δ	Put the receiver down.

Example: You switch off the special ring tone for external calls for port 12.

***(Π) 034 12#**

5.9 Wake-up Call

The wake-up call function lets the telephone ring at a preset time. The telephone works like an alarm clock. When you answer the call you hear the on-hold tone.

Should you be telephoning at the time of the wake-up call, the alarm is repeated one minute following the end of the call. The wake-up call function ignores any call forwarding set for the telephone.

Activate wake-up call:

- Y Lift the receiver. You hear the dial tone.
- * Press the star key.
- 71 Enter the digits 71.
- N Enter the time in hhmm (h = hour, m = minute) format.
- # Press the pound key. Listen for the confirmation tone.

Example: Set an alarm for nineteen-thirty (i.e. 7:30 p.m.).

***71 1930#**

Deactivate wake-up call:

- Y Lift the receiver. You hear the dial tone.
- * Press the star key.
- 70 Enter the digits 70.
- # Press the pound key. Listen for the confirmation tone.

5.10 Set Internal Clock

As usual for ISDN, the system time of the TELES.iPBX 8TR Box is updated by the local exchange.

In case you employ the box only internally, you can adjust the clock freely. As soon as you attach the box to ISDN again, the time is updated during the next connection to the outside line.

Reset internal clock

- Y Lift the receiver. You hear the dial tone.
- * Press the star key.
- 79 Enter the digits 79.
- N Enter the time in hhmm (h = hour, m = minute) format.
- # Press the pound key. Listen for the confirmation tone

5.11 Activate Call List

The TELES.iPBX 8TR Box is capable of recording statistics on all outgoing connections. The detailed call record contains date and time of when the connections were established, connection charges, destination call number, type of call and port from which the call was made.

This service can only be used when your ISDN line features advice of charges during (AOC-D) or at the end of calls (AOC-E). Due to technical reasons, deviations can occur for comfortable call transfer between displayed and actually invoiced charges. See also the notes on the limitations of advice of charges in section 4.7.5 Charge Account on page 33.

You'll need the PC-ISDN communications suite *TELES.OnlinePowerPack* (as of version 6.0i) to view this call list. The ISDN device manager program included displays all statistics. Prerequisite is that you have a *point-to-multipoint line* and that you've installed a *TELES.ISDN adapter* along with the box (see section 8, page 58).

Activate call list:

- Y Lift the receiver. You hear the dial tone.
- * Press the star key.
- Π Enter the PIN if necessary.
- 8401 Enter the digits 8401.
- # Press the pound key. Listen for the confirmation tone.

Deactivate Call list:

- Y Lift the receiver. You hear the dial tone.
- * Press the star key.
- Π Enter the PIN if necessary.
- 8400 Enter the digits 8400.
- # Press the pound key. Listen for the confirmation tone.

Note: The memory in the TELES.iPBX 8TR Box is limited. That is why only up to 60 connections can be recorded. All following data is ignored. The yellow charge LED blinks when the memory is almost full. After you've read out the data, you can delete the memory.

5.12 On-hold Music and Audio Source

5.12.1 Attach Audio Source

You can attach an external audio source to the TELES.iPBX 8TR Box so that on-hold music can be played for a held connection (e.g. during hold and alternate and during transfer).

Plug in e.g. a CD player, a recorder or a radio to the socket (3.5 mm jack) on the rear side of the box.

5.12.2 On-hold Tone or Music

By default the box's on-hold tone is active (see inside cover). When an audio source is attached, you can substitute the on-hold tone by on-hold music. Use the 071 and 070 commands to select the option.

Note: Should a further connection be held on the other port at the same time, then the box transmits the *on-hold tone* to the *second* held party instead of on-hold music.

Activate on-hold music:

Y Lift the receiver. You hear the dial tone.
* Press the star key.
Π Enter the PIN if necessary.
071 Enter the digits 071. From now on, the first external caller that is put on hold hears your on-hold music.
Press the pound key. Listen for the confirmation tone.

Activate on-hold tone:

Y Lift the receiver. You hear the dial tone.
* Press the star key.
Π Enter the PIN if necessary.
070 Enter the digits 070. The audio source's on-hold music is deactivated. The box's on-hold tone is valid again.
Press the pound key. Listen for the confirmation tone.

5.13 Drop Port

The so-called “drop port” serves to accept calls that cannot be sent to any certain port. Port 11 is intended for this by default. Viewed technically, this process is nothing more than a call forwarding that is necessary for the following cases:

- **On point-to-point and point-to-multipoint line:** The called telephone number belongs to your ISDN line – but has not been assigned to one of the ports. All incoming calls to this number are transferred **immediately** to the drop port.
- **On point-to-point line,** calls can also be accepted when the caller has not dialed the call number completely. When, for example, a call couldn't be passed on because of a missing extension number within a preset time (e.g. set at 15 seconds) it is also forwarded to the drop port.

Set drop port:

Y	Lift the receiver. You hear the dial tone.
*	Press the star key.
47	Enter the digits 47.
N	Select the port to which calls should be “dropped.”
N	<i>Only for point-to-point line:</i> Set additionally after how many seconds calls with incomplete call numbers should be dropped. The time has to be less than 21 seconds because the caller otherwise receives a busy signal.
#	Press the pound key. Listen for the confirmation tone.
Δ	Put the receiver down.

Example: Port 13 is set as drop port. The example applies to point-to-multipoint as well as point-to-point lines.

***47 13 #**

Example: For your point-to-point line, port 13 should be used as drop port. You set a waiting time of 15 sec. for the dialing to be actually ended (e.g. still waiting for transmission of the extension number). If the call number is not completed within 15 sec. port 13 will ring.

***47 13 15#**

Delete: The drop port function is deactivated using the digits ***47 0#**.

5.14 Change Device ID

Device IDs are only necessary when you operate several TELES devices together on a common ISDN line and use special functions that the TELES.Family patent offers: comfortable call transfer, programming and telephoning through TELES.OnlinePowerPack. When you've attached *only one* device – that is only your TELES.iPBX 8TR Box – on the ISDN line and do not use these features then the device ID is without meaning. Changes on your part are not necessary then.

The device ID is a single digit number. The numbers 1 to 8 are available. The factory settings give each device the ID 1.

Setting a device ID:

Y	Lift the receiver. You hear the dial tone.
*	Press the star key.
Π	Enter the PIN if necessary.
09	Enter the digits 09.
N	Enter the device ID.
#	Press the pound key. Listen for the confirmation tone.
Δ	Put the receiver down.

Example: You would like to assign the device ID 2 to the TELES.iPBX 8TR Box.

***(Π) 09 2#**

For comfortable call transfer to TELES-ISDN devices on the same ISDN line, the box's device ID always connects to port 1. For any further port enter the device ID's number, add to it the port number and then subtract 1.

Example: Say the box's device ID is set on 3. For port 1 you would simply dial 3, for port 2 dial 4 (i.e. $3+2-1=4$), for port 3 dial 5 (i.e. $3+3-1=5$), etc.

You do not have to set these additional device IDs yourself, but only keep them reserved to avoid assigning them to other devices.

The highest device ID you ought to assign is the ID 3 so that you have enough IDs for all the ports. Ports 17 and 18 cannot be use for comfortable call transfer.

5.15 Factory Settings

At delivery, the TELES.iPBX 8TR Box has the following default settings:

- No MSNs assigned, drop port = port 11. All incoming calls arrive only at port 11.
- Different ring tones not active – i.e. same ring tone for internal and external calls and callback on busy.
- The on-hold tone is active for held connections.
- TELES.iPBX 8TR Box is set for point-to-multipoint lines.
- Charge counter set to 0.
- No charge account.
- Call list off.
- Advice of charges off.
- No PIN.
- Device ID = 1
- No dial-in number for remote configuration.
- No speed dial numbers.
- Call waiting permitted.
- No call forwarding, no call distribution, no night service, no blocks activated.

Note: Resetting has no influence on call forwardings that are activated by the local exchange (see section 4.5, page 20) The PIN you've set remains untouched when resetting to default.

You can delete all settings you've made and return the TELES.iPBX to its factory settings by entering the following:

- | | |
|-----|--|
| Y | Lift the receiver. You hear the dial tone. |
| * | Press the star key. |
| Π | Enter the PIN if necessary. |
| 037 | Enter the digits 037. |
| # | Press the pound key. Listen for the confirmation tone. |
| Δ | Put the receiver down. |

5.16 Commands for the PBX or Exchange Switchboard

You need to observe the following instructions only if

- your TELES.iPBX 8TR Box is attached (subordinate) to a PBX or if
- you would like to switch functions through your local exchange switchboard.

When your TELES.iPBX 8TR Box is attached to another **PBX** all functions are of course still valid that are described here in this manual. However, in case you would like to access PBX functions directly, all entries have to be forwarded from the TELES.iPBX 8TR Box into the PBX's net.

The same is valid for functions such as call forwarding that you can control through your **exchange switchboard**. Find out which other supplementary services your telephone company offers and how they can be activated in the switchboard.

In any case, dial the outside line access of the TELES.iPBX 8TR Box first and then press the pound key. The commands that are entered then, go straight to your PBX or to the local exchange; nothing is valid for the TELES.iPBX 8TR Box.

Y	Lift the receiver. You hear the dial tone.
0	Enter the outside line access 0.
#	Press the pound key.
N	Enter digits for functions or commands that the PBX or switchboard understand.

6 Remote Administration

You can control the TELES.iPBX 8TR Box out of the public net using a telephone that has touch-tone dialing (DTMF tones). This lets you set, for example, a call forwarding while on the road. You will always remain reachable by phone then, no matter where you are.

All functions that you can set by remote administration are marked with an X in column R of the function list (see inside cover).

6.1 Dial-in Number for Remote Administration

To dial in by telephone out of the public net you have to set one of the telephone numbers of your ISDN line for remote administration. This number can be called from parties that are permitted to configure the TELES.iPBX 8TR Box remotely.

Set dial-in number:

Y	Lift the receiver. You hear the dial tone.
*	Press the star key.
Π	Enter the PIN if necessary.
0410	Enter the digits 0410.
N	Enter the port's number that is reserved for remote administration.
N	Dial the call number (MSN) that you would like to reserve for remote administration.
#	Press the pound key. Listen for the confirmation tone.

Example: Set remote administration for port 14 with the call number 353535.

***(Π) 0410 14 353535#**

Note: While remote configuration is being carried out, no other functions can be used on the port reserved for that. This also counts for telephoning.

6.2 Example for Remote Administration

You can set several functions via remote configuration. Wait a moment after every command till you hear the ready tone. Then you can send the next command.

Example: You set an unconditional call forwarding (I) within the box from port 11 to the call number 001 38 38 38

- Y Lift the receiver. You hear the dial tone.
- N Dial telephone number for the remote administration.
- Ⓜ You hear the ready tone.
- * Press the star key.
- 46 Enter the digits 46.
- N Select port number 11.
- N Dial the destination call number 001 38 38 38.
- # Press the pound key.
- Ⓜ You hear the ready tone for remote administration.
- Δ Put the receiver down.

7 Phoning through different Telecommunication Carriers

Everyone is looking for ways to spend less on telephone calls. Due to the recent deregulation of telecommunications in many countries, several further telecommunication carriers are offering their services. Frequently, connections outside the local area, i.e. long-distance calls, can be more economical when “rerouted” through an alternative carrier.

You can determine which connections you would like to route over low-cost carriers: long-distance calls, international calls, and connections into the cellular net. Incidentally you can also assign the outside line access and thus all external calls to a certain carrier.

Price comparisons will have to be made though. Take into consideration different rate tables, zones, periods, etc., special rebates, amount of communication, access conditions and so on.

7.1 Routing Methods

No settings are necessary on the TELES.iPBX 8TR Box for the **Call by Call** or **preselection** methods used by different telephone companies or carriers (see Glossary).

The TELES.iPBX 8TR Box offers two further conveniences for cost-effective telephoning:

- **Automatic dialing through preferred network carrier**, simplifying the Call by Call method (section 7.1.1, page 54).
- **Direct Line Access with Subaddressing** – the direct automatic dialing of a network carrier’s dial-in node that, for example, determines the most economical connection rate (section 7.1.2, page 54).

7.1.1 Automatic Dialing of a Telecommunication Carrier

Using this method, you can program the number of your preferred telecommunication carrier. You can assign a certain set of digits to determine which connections this carrier should process. Enter prefixes, parts of prefixes or whole telephone numbers.

The process functions as follows: As you dial a pre-programmed number, e.g. area code, the TELES.iPBX 8TR Box identifies it and automatically inserts the carrier access prefix and the actual carrier ID code. This information along with the rest of the telephone number is sent on the D channel to establish the call in the carrier's network.

Example: You dial 0 030 585858.
The box recognizes the area code 030 as a prefix to be routed, so instead it sends:
0 1680 030 585858

This method is also suitable when you have not committed yourself by contract for the preselect method, that is for one certain network carrier, but also would not like to constantly dial the network carrier's number before each individual long-distance call.

7.1.2 Direct Line Access with Subaddressing

In other words: your TELES.iPBX 8TR Box calls a router directly and transmits the dialed call number as subaddress via the ISDN D channel. The router establishes the connection to the dialed party.

The router's access number and the digits for the connection to be routed are pre-programmed with this method as well. In daily use everything is done as usual: you dial only the desired call number – the box takes care that the call number is transmitted along with the router's access number.

The router ought to be one of the dial-in systems from TELES that support the feature subaddressing, e.g. the TELES.iSWITCH. These powerful systems are employed as corporate switchboards or as dial-in nodes with network carriers. You can therefore also use this method to dial into the net of certain carriers.

7.2 Set Routing

- Y Lift the receiver. You hear the dial tone.
- * Press the star key.
- Π Enter the PIN if necessary.
- 830↓ Enter the digits 830.
- * Press the star key.
- 0 Enter the digit 0.
- * Press the star key.
- 1 or 2 Select the routing method. Enter:
1 for Direct Line Access with Subaddressing *or*
2 for automatic dialing of the network carrier.
- * Press the star key.
- N Enter: outside line access number 0, then number range for which the routing should be valid. Your entry is, for example, 00 for all long-distance calls or 000 for all international calls.
- * Press the star key.
- N Enter: outside line access number 0, then *either*
- | | |
|----------------------------|---|
| Direct Line Access: | Automatic network carrier dialing: |
| the dial-in number | the carrier access prefix,
* <i>and</i>
the Carrier Identification Code |
- # Press the pound key.
- Δ Listen for the confirmation tone. Put the receiver down.

Example: You would like to process all international calls through the network carrier with the access code 1680:

***(Π) 830*0*2*000*016*80#**

7.3 Deactivate Routing

Y	Lift the receiver. You hear the dial tone.
*	Press the star key.
Π	Enter the PIN if necessary.
833↓	Enter the digits 833.
*	Press the star key.
0	Enter the digit 0.
#	Press the pound key.
Δ	Listen for the confirmation tone. Put the receiver down.

7.4 Exempt Call Numbers from Routing

Up to **50** prefix numbers can be exempted from routing. This is makes sense e.g. for

- prefixes in regions with low tariffs,
- toll-free service-numbers or local rate service-numbers.

Note: The carriers' prefixes are *never routed by the box* and don't have to be additionally exempted from routing. You can therefore – e.g. should the line be busy – try to establish a connection via Call by Call through another carrier at any time.

Exempt certain prefixes from routing:

Y	Lift the receiver. You hear the dial tone.
*	Press the star key.
Π	Enter the PIN if necessary.
831↓	Enter the digits 831.
*	Press the star key.
0	Enter the digit 0.
*	Press the star key.
N	Enter: outside line access number, then numbers area that you want to exempt from routing.
#	Press the pound key.
Δ	Listen for the confirmation tone. Put the receiver down.

Delete entered call number:

Y	Lift the receiver. You hear the dial tone.
---	--

*	Press the star key.
Π	Enter the PIN if necessary.
832↓	Enter the digits 832.
*	Press the star key.
0	Enter the digit 0.
*	Press the star key.
N	Enter: outside line access number 0 and then the numbers area that had been exempted from routing.
#	Press the pound key.
Δ	Listen for the confirmation tone. Put the receiver down.

7.5 Alternative Routing

Calling the network carrier you've preset might not work every time of course. In case the line is busy, the box can tell the difference if only the called party is busy or if the network carrier is congested. In the first case you receive a busy signal and can redial again as usual.

Should the network carrier be *congested* (i.e. busy) or when you have set an *invalid* network carrier code, the TELES.iPBX 8TR Box can nevertheless establish the desired connection through your regular telephone company – usually the local public company.

Of course, you may determine if alternative routing should automatically take place or not. The function can be switched on and off.

Activate alternative routing: (factory setting)

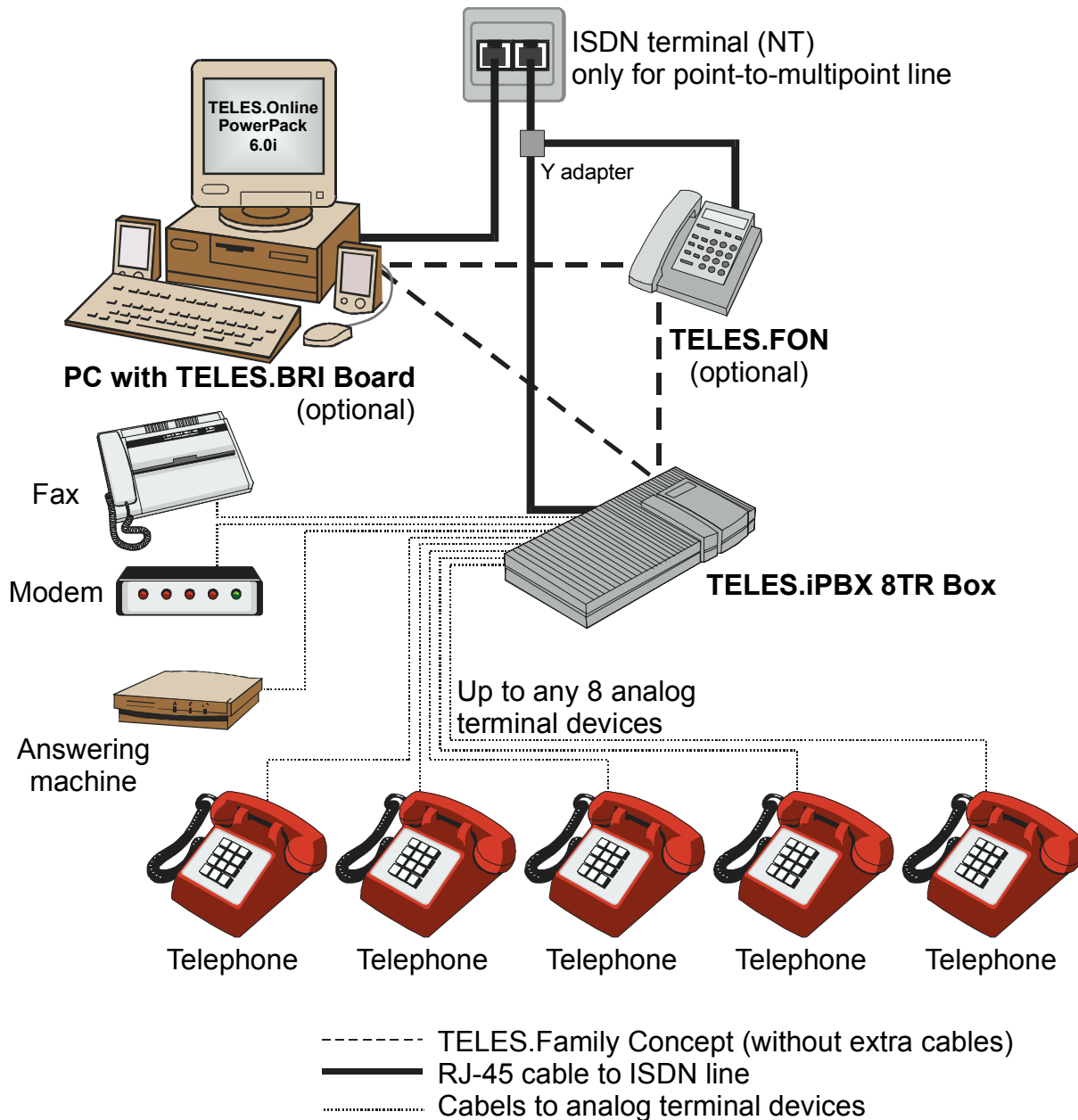
***(Π)834*0*1#**

Deactivate alternative routing:

***(Π)834*0*0#**

8 PC Integration with TELES.OnlinePowerPack

ISDN opens new dimensions for integrating telephony with computers. PC supported telephony is also quite simple using your TELES.iPBX 8TR Box. All you need is an ISDN board for your PC – e.g. a TELES.BRI board that also comes with the appropriate software. The only prerequisite is that you attach this board to the same ISDN line as your TELES.iPBX 8TR Box.



Scenario, for example, for offices, small companies or household PBXs

Using the TELES.OnlinePowerPack all-in-one ISDN/Multimedia applications suite included with the ISDN board, you can take full advantage of ISDN:

- The MCC program handles the dialing.
- The integrated answering machine records incoming messages. You can pick up a call in progress or call back later from the call back list (as of Version 6.0i).
- The ISDN device manager from TELES.OnlinePowerPack eases programming of many TELES.iPBX 8TR Box functions: you can program and manage almost all functions more comfortably by using the PC rather than the telephone.
- Furthermore, the ISDN device manager offers comprehensive statistics. It registers all incoming and outgoing calls for each port and records the charges of outgoing connections.

This is possible thanks to a concept developed by TELES: the TELES.Family concept. It unites the TELES terminal devices to complete, PC integrated communication systems for the office and for home.

TELES.BRI boards and TELES.OnlinePowerPack are available in computer stores or directly from TELES.

9 Appendix

9.1 User Contract

The TELES.iPBX 8TR Box contains computer programs that are protected by copyright law. Illegal use of these programs may result in civil and criminal penalties. The accompanying user manual and the hardware supplied with the program are also protected by copyright law. As sole owner of these products, TELES reserves all proprietary rights of use.

Warranty / Liability

1. The Seller gives the Buyer the guarantee to remedy a defect of the TELES.iPBX 8TR Box within 6 years after delivery or, if this is impossible, make a substitution free of charge. This warranty is terminated if the Buyer or any third party has modified or attempted to repair the hardware or software. The liability of the Seller does not cover damages due to natural wear and tear, improper handling or operating errors.
2. The Buyer shall inform the Seller in writing within 14 days of acquisition about apparent defects and return the faulty merchandise to the Seller.
3. Software defects can be repaired only if they can be reproduced. The Seller shall remedy only such software defects that substantially affect the promised use.
4. If the repairs or substitutions mentioned above in section 1 are not carried out or are impossible, the Buyer is entitled, at his option, to rescission or abatement.
5. The foregoing paragraphs are the sole and exclusive provisions regarding the warranty. They do not preclude, however, quality guarantees that protect the Buyer against risk of consequential damages.
6. In no event shall the Seller be liable for consequential damages unless resulting from malicious faults or negligence. The Seller shall not be liable for damages caused by vicarious agents. The Seller is only responsible for damages covered by the manufacturer's liability insurance. Product liability claims regulated by the pertinent national product liability laws remain unaffected by these terms.
7. Legal venue for all obligations and liabilities arising out of this agreement shall be the head office of the Seller.

9.2 Sample Configurations

9.2.1 Connection Example

Starting point: point-to-multipoint line with 3 MSN
 5 analog telephones
 1 analog fax machine
 1 modem
 1 analog answering machine

Box configuration: port 11: 1st MSN (telephone)
 port 12: 2nd MSN (telephone)
 port 13: 3rd MSN (telephone)
 port 14: 4th MSN (telephone)
 port 15: 5th MSN (telephone)
 port 16: 6th MSN (fax)
 port 17: 7th MSN (modem)
 port 18: answering machine

For ports 11, 12, 13, 14 and 15 you set call forwarding II (no reply) to the answering machine on port 18 – and no calls will be missed anymore.

9.2.2 Several Ports for one MSN

Port 11 and 12 should be reachable through one MSN and port 13 and 14 through another MSN:

For port 11 and 12, you can activate **night service 2** (section 4.6.2, page 28). All incoming calls on port 11 ring will also ring on the port 12 telephone.

***9 2#**

There is no preconfigured night service for the second case. However, you can use the **call distribution** function (section 4.6.1, page 27). Distribute therefore the calls for port 13 to port 13 and port 14.

***45 13 13 14#**

Note: Prerequisite for both configurations is that the first MSN has been set to port 11 and the second MSN to port 13.

9.2.3 Automatic Outside Line Access

Automatic outside line access is wanted for port 13. This way you can dial a number into public net without first pressing 0 for outside line access.

Set a **direct call** for port 13 to the outside line access:

***199 13 0#**

Note: The function makes future use of the * and # keys impossible. You cannot change any settings at a port with activated direct call.

9.3 Troubleshooting

You can often solve minor problems during operation of the TELES.iPBX 8TR Box by yourself. Before you contact the TELES hotline (see section 9.5.1, page 71), you should try to solve your problem according to the following examples.

Problem: You do not hear a dial tone on your terminal device (e.g. telephone).

Cause: Your telephone is not properly attached.

Solution 1: Check the connection between telephone and box.

Solution 2: Is the red “power on” LED lit? Attach the power supply.

Solution 3: Check your terminal device.

Problem: No connection can be established or connections are interrupted when you use the hold for enquiry, the transfer or the hold and alternate functions.

Cause: The R key of the telephone is either set on “ground” or a wrong hookflash time.

Solution: Set the R key according to the telephone’s manual to a hookflash time between 90 and 300 ms (see section 3.2.1, page 7).

Problem: The party you’ve called has hung up. However, you do not hear the busy signal.

Cause: Once the remote party ended the connection, you hear nothing for 10 seconds till the busy signal comes. This process is necessary for the TELES.iPBX 8TR Box so that all answering machines can identify the end of the connection.

Problem: You can telephone internally, but don’t get a connection to the public net.

Solution 1: Check that your box is properly connected to your ISDN terminal.

Solution 2: Make sure that your ISDN line is configured to DSS1.

Solution 3: Have you set the correct line type, i.e. point-to-multipoint or point-to-point? See section 5.2.

Problem: Connections into the public net are possible, but incoming calls do not arrive at the desired port.

Cause: A wrong number was programmed as own call number. The call arrives at the drop port (port 1).

Solution: Delete the set call numbers using ***(PIN)0400#**. Reenter the own call numbers (MSN) using the ***(PIN) 041 port N#** function according to the documents provided by your telephone company.

9.4 Glossary

Term	Explanation
Automatic dial	↑ Direct call
Automatic outside line access	↑ Direct call
B channel	<i>Bearer Channel</i> . An ISDN channel for user data (i.e. voice, when making a telephone call) allowing up to 64kbps. The Basic Rate Interface (BRI) consists of two such channels.
Baby call	↑ Direct call.
Block	Certain call numbers or number sequences can be blocked. A block for "00", for example, means that all call numbers that begin with 00 cannot be dialed anymore. This means that no long-distance calls are possible.
BRI	<i>Basic Rate Interface</i> – Standard interface for ISDN. It consists of two B channels – the outside lines for transmission – and one D channel for control. Available as point-to-multipoint or point-to-point line.
BZT	Bundesamt für Zulassungen in der Telekommunikation – Federal Office for Authorizations in Telecommunications
Call by Call	↑ Carrier Selection
Call differentiation	↑ Ring tone
Call distribution	Call distribution ensures that incoming ISDN calls are forwarded to appropriate terminal devices. You can redirect incoming calls for one port to the other ports using the night service or distribute calls function.
Call forwarding (CF)	Incoming connections can be transferred to other extensions. Variations: CF 1 unconditional, CF 2 no reply, CF 3 when busy, CF follow-me. CF 1-3 selectively by box or switchboard.
Call list	The accumulated charges for outgoing connections for each extension. These can be evaluated by attaching a TELES.BRI adapter to the ISDN line (point-to-multipoint connection) and using the ISDN device manager program from TELES.OnlinePowerPack to transfer to and view data on the computer.
Call numbers block	↑ Blocks
Call pick-up	↑ Pick-up
Call waiting	A third party attempts to make a connection to one of two connected parties. The called party hears a call waiting tone and can disconnect the other party or put them on hold to accept the waiting call. Call waiting tone can be prevented. This is recommended e.g. for fax machines so that the tone does not interrupt the data transmission or when call forwarding on busy is activated.
Callback on busy <i>also:</i> CCBS (Completion of calls to busy subscribers)	If the party you call happens to be busy, you can activate an automatic call back. As soon as the party ends their call, your own telephone will ring. When you yourself lift the receiver, the connection is automatically established. The local exchange and the terminals of both parties have to support this service.
Caller ID.	↑ CLI, CLIP, CLIR
CAPI	<i>Common ISDN Application Programming Interface</i> . The software interface between your ISDN device and PC. Two versions are available at present: CAPI 1.1 and CAPI 2.0. TELES offers two versions: DOS-CAPI and VxD CAPI (32bit for MS-Windows).
Carrier access code	A 4 or 6 (or more)-digit prefix before the actual call number. It is made up of the carrier access prefix and the carrier identification code (see below). If a dialed call number begins with such a carrier access code, a connection is made by the local exchange to the appropriate network carrier. Once a connection is established there, the call is switched back into the public network.

Term	Explanation
Carrier access prefix	A 2 or 3-digit prefix before the actual call number to inform the local exchange that the connection is to be routed over an alternative provider. It is the first part of the carrier access code (see above). The number is needed when dialing in to the networks of this carrier.
Carrier Identification Code(CIC)	A 2 or 3-digit prefix before the actual call number to identify a carrier in the telephone business (telecommunications, telephone companies, network carriers). It is the second part of carrier access code (see above). The number is needed when dialing in to the networks of this carrier.
Carrier Selection	Selection of the network carriers using a code (↑ Carrier Identification Code) before the actual call number. The connection is made by the exchange to the appropriate network carrier. You can register yourself permanently with a network carrier or decide each time you dial a call number (Call by Call). For the Call-by-Call method, you can configure the automatic calling through your preferred network carrier in the TELES.iPBX 8TR Box.
CCBS	↑ Callback on busy
CFB	Call Forwarding on Busy ↑ Call forwarding
CFNR	Call Forwarding No Reply ↑ Call forwarding
CFU	Call Forwarding Unconditional ↑ Call forwarding
Charge account or Charge limit	You can set charge accounts for certain extensions. This allows the user to conduct calls until the given amount of charge units are consumed. Emergency numbers can still be dialed after depleting the charge account.
Charge display	The charges for the current conversation are shown on the telephone's display. For that the TELES.iPBX 8TR Box converts the advice of charges information that it receives from ISDN during the connection into charge pulses that are used by analog terminal devices to display the charge.
Charge evaluation	The TELES.iPBX 8TR Box records data on all telephone calls and charges. To evaluate them you need a TELES.ISDN adapter with the TELES.ISDN device manager attached to the same ISDN line.
Charge pulses	↑ Charge display
CIC	↑ Carrier Identification Code
CLI or CLIP	Call Line Identification Presentation – Transmission of the caller's telephone number "caller ID" to the called party The call number of calls to the TELES.iPBX 8TR Box can only be displayed using TELES.OnlinePowerPack.
CLIR	Call Line Identification Restriction – The transmission of the caller ID to the called party is suppressed. Press # before dialing the outside line access and the call number for the case-by-case call line identification restriction
Comfortable call transfer	By means of the TELES.Family Patent the transfer of calls from a port of the TELES.iPBX 8TR Box to further TELES-ISDN devices on your ISDN point-to-multipoint line. The device ID of the destination terminal device is necessary.
Conferences	Multiple connection with three parties. All persons partaking in the connection can telephone with each other.
D channel	An ISDN channel which controls information for the connection setup and tear down of B channels etc. between terminal and switching center and/or the ISDN net.
D channel protocol	Protocol for ISDN signaling. In the US, the common protocols are: AT&T, Northern Telecom and Siemens. In Europe, the DSS1 protocol is standard.
Detailed call record	↑ Call list
Dial through	The point-to-point connection is intended especially for attaching ISDN PBXs. You receive a trunk number to which the extension number is added. This way the caller can dial through directly to the extension. ↑ point-to-point connection
Direct call	Automatic connection setup when a line is opened, i.e. when the receiver is lifted a preset number is dialed. Sometimes known as "baby call".

Term	Explanation
Direct Line Access with Subaddressing	Least Cost Routing method in which the dial-in node of the network carriers is called and the destination call number is transmitted via the subaddress of the ISDN. This method supported by the TELES.iPBX 8TR Box requires a TELES.iSWITCH dial-in system at network carrier. As soon as the called party answers the call, the chargeable connection is established.
Do-not-disturb	The telephone does not ring so that you are not bothered.
Drop port	Serves to pick up calls that cannot be sent to any port for the following cases: <i>On the point-to-multipoint line / point-to-point line:</i> When the called number belongs to your ISDN line, but hasn't been assigned to a port. <i>On the point-to-point line:</i> When the called number is incomplete, e.g. without extension.
DSS1	The European standard protocol (Euro-ISDN or ETS). You can only use terminal devices on ISDN line that were designed for this protocol.
DTMF	<i>Dual Tone Multi Frequency</i> Also known as touch-tone dialing. Signals to control telephony applications (i.e. VoiceMail). If the connection to a telephony application exists then DTMF tones are made by the phone and transmitted via the B channel. Not all terminals support DTMF. On some terminals, DTMF must be activated explicitly. The method is significantly faster than pulse dialing.
Extension	Port with an appropriate number on the TELES.iPBX 8TR Box. The terminal device, e.g. a telephone is attached here. It is reached by an internal call number; the extension number.
External call	Chargeable connection between a party of the public telephone network and a party in the iPBX
Flash key	↑ R key
Follow me	When, for example, you are working at another a telephone other than your usual one, you can have calls intended for your own telephone redirected to the one you are at.
Hold for enquiry	When you conduct a telephone conversation you can put it on hold in order talk with another person on another telephone, i.e. make an enquiry. The held party cannot listen in to that call. Next, you can return to your previous party.
Hold and alternate	Switch back and forth between two telephone calls by pressing the R key. The other party is temporarily put on hold. The two parties have no connection with each other – they just hear the on-hold tone or on-hold music.
Hotline function	↑ Direct call.
Internal call	Connection setup from one party of the iPBX to another party of the iPBX. It is free – causes no charges
ISDN adapter	Hardware (board or box) to connect the PC to ISDN.
ISDN line	Also known as BRI bus, S/T interface, ISDN point-to-multipoint line etc. It is the network terminal or ISDN port supplied by the network carrier/telephone company. Several terminal devices can be attached to the S/T interface (e.g. ISDN telephones, ISDN adapter for computers, etc.)
ISDN service features	ISDN provides many service features that in some cases you have to order and pay for separately. ↑ ISDN
ISDN	<i>Integrated Service Digital Network.</i> The digital telephone network for transmitting voice, text, images and data at high speeds and quality. ISDN offers special conveniences such as caller ID, hold for enquiry/hold and alternate, three-party conference, call forwarding, call waiting, callback on busy, advice of charges during and at end of the call, etc.
Jack	A female connector, i.e. socket, for plugs such as the RJ-11 or the RJ-45.
Least Cost Routing	Establishing a connection through a network carrier or exchange service with low tariffs. ↑ Direct Line Access with Subaddressing ↑ Carrier Selection.
LED	Light Emitting Diode – e.g. little lights on the front of TELES boxes or boards.

Term	Explanation
MSN	<i>Multiple Subscriber Number.</i> In the DSS1 protocol of Euro-ISDN, a subscriber is provided several numbers (MSNs) which he can freely assign to his terminal devices.
Network carrier	↑ Carrier Selection
Night service	For a determined period, a specific call forwarding configuration for the iPBX system is set (for instance other telephones or answering machines). ↑ Call distribution
NT	<i>Network Terminator.</i> Port of the ISDN net on your premises provided by the telephone company. Attach the ISDN line cable of your ISDN telephone system, e.g. of your TELES.iPBX 8TR Box or ISDN telephone to the NT.
On-hold music	On-hold music is played by the TELES.iPBX 8TR Box to let held callers know that the connection is still active during hold for enquiries and transfers. Attach cassette or CD players to play your own on-hold music or company information. The alternative is to play the on-hold tone.
Outside line	Telephone line into the public network. Realized in ISDN by the BRI lines. Two B channels (outside lines), for example, to the exchange are available per box.
PBX	<i>Private Branch Exchange</i> – An internal, private or corporate telecommunications switching system with exchange switchboards and terminal devices. The i from iPBX stands for intelligent..
Pick up	Incoming calls for other telephones can be answered by your own telephone
PIN	<i>Personal Identification Number.</i> Special numerical code which functions as a password.
Point-to-multipoint line	↑ ISDN line
Point-to-point line	The ISDN line access is usually available from telephone companies in two variations: as point-to-point and point-to-multipoint line. The point-to-point connection is intended especially for attaching an ISDN PBX. You receive a trunk number and a call numbers block with the numbers of the extensions. This way the caller can dial through to the extension directly.
Port	Local TR interface/socket on the TELES.iPBX 8TR Box provided for the attaching analog terminal devices.
Preselection	Automatic calling of a preferred network carrier by the TELES.iPBX 8TR Box. ↑ Carrier Selection.
Pulse dialing	Pulse dialing method stands for the transmission of dial information by loop interruption pulse ("clicks" in the receiver). Older procedure for transmitting telephone numbers – also known as rotary dialing.
Redial	The last number dialed is stored in the telephone and can be dialed again by pressing a key. This feature has to exist in the terminal device; it does not depend on the box.
Remote administration	The possibility to change different settings of the TELES.iPBX 8TR Box from any outside telephone using dial tones.
Ring tone	To make a differentiation between internal and external calls your TELES.iPBX 8TR Box provides different call or ring rhythms respectively. This helps you identify internal or external calls by the ring tone of the telephone.
RJ-11	Port and matching plug for attaching analog terminal devices. Commonly used small, rectangular, transparent plastic plug with four contact pins; 10mm x 6mm.
RJ-45	Port and matching plug that is mostly used for attaching ISDN terminal devices to the ISDN NT. The plug is similar to the RJ-11-plug but is wider.
R key	The R key (also known as flash key) is a function key on your telephone. It is usually marked by a dot or an "R". The R key lets you carry out different functions e.g. holding and transferring. Telephones that use the pulse dialing method do not have this key.

Term	Explanation
Service indicator	On a point-to-multipoint connection attached telephones, ISDN fax machines and ISDN PC adapters can be identified by the service indicator. This makes sure that no telephone, for example, can "call" an ISDN adapter
Speed dial	Short telephone numbers. Can be set for physical extension numbers (= internal telephone numbers) and external telephone numbers. Serves to simplify dialing frequently used and/or long telephone numbers.
ST Interface	The port of the ISDN NT and all the cables attached to it. ↑ ISDN line
Suffix dialing	Entering further numbers after the connection to the called terminal device has been established. These are transmitted as DTMF tones to the terminal device. This lets you, for example, control answering machines.
Suppress caller ID.	↑ CLIR
TELES.Online-PowerPack	All-in-one ISDN/Multimedia applications suite, including convenient functions for the TELES.iPBX-Box such as easy programming of the box via PC, extensive charge statistics, PC integrated telephony. An ISDN adapter for the PC is necessary to run the programs with the box.
Three-party conference	↑ Conference
Time from the exchange	The current time is transmitted via ISDN to the TELES.iPBX 8TR Box. You can set the box's time only when the box is used in a stand-alone environment. The time is necessary, e.g. for the wake-up call.
Touch tone dialing	↑ DTMF
TR adapter	Device for attaching analog devices (telephone, answering machine etc.) to the ISDN line.
TR port	<i>Tip&Ring</i> . This is an analog port that allows you to connect your non-ISDN devices (telephone, modem, fax G3 etc.) to ISDN via the S/T interface. The port can either be an external device or be integrated into the ISDN device itself. On TELES hardware the TR ports are sometimes labeled 'AB'.
TR ports, international norm	The inner wires of the RJ-11plugs are used. Terminal devices that are manufactured for the international market have this assignment.
Transfer	You pass an existing connection on to another destination.
Trunk number	↑ Point-to-point connection
Unannounced transfer	Transfer without talking to the destination party first to announce the call, i.e. without waiting if the receiver is lifted. ↑ transfer
Wake-up call	In order to be reminded of a certain appointment, you can have the box "ring" you at a set time.

9.5 Customer Service

The TELES Hotline is available Monday through Friday from 8.30 a.m. to 6 p.m.

TELES AG Dovestrasse 2–4 10587 Berlin GERMANY	Phone: +49 (30) 399 28 033 Fax: +49 (30) 399 28 01 Support Server: +49 30 399 28 007 World Wide Web: http://www.teles.de
TELES France SARL Continental Square 4 Place de Londres F-95727 Roissy FRANCE	Phone: +33 (1) 418453 00 Fax: +33 (1) 418453 01 Support Server: 01 418453 02
TELES Italia SRL Via die Platani 6 I-20020 Arese (MI) ITALY	Phone: +39 (2) 93777 100 Fax: +39 (2) 93777 101 Support Server: 02 93777 777
TELES Benelux BV De Lasso 70 NL-2371 GZ Roelofarendsveen THE NETHERLANDS	International Sales Phone: +31 (71) 332 0900 Local Support Phone: +31 (71) 332 0902 Fax: +31 (71) 331 7174 Support Server: +31 (71) 331 3909 World Wide Web: http://www.teles.nl

Round-the-clock service is available from your national TELES Support Server (see number listed above), allowing you to download updates, product information, tips and manuals. To access the support server you will need a TELES.ISDN adapter and TELES.OnlinePowerPack software. The SUPPORT Server cannot be accessed on Friday from 8:30 a.m. to 9:30 a.m. due to maintenance.

Return Material Authorization (RMA)

Resent goods are accepted only if a RMA (=Return Material Authorization) number is attached to these. TELES assigns such a number on (written) request after evaluation of the validity of the return. Goods must be packed appropriately.

Cost compensation option for hardware checking

TELES may ask for compensation of hardware checks, if e.g. a hardware check has been ordered but no error could be found. In this case, TELES may bill for the costs (labor etc.) that occur while checking the hardware.

9.5.1 Checklist for Hotline Contacts

If problems occur during operation, check the items listed below. Then contact the TELES Hotline for assistance.

Series number of your TELES.iPBX 8TR Box _____

You can find the series number on the box's rear side below the bar code.

ISDN Line Configuration

- o Euro-ISDN (DSS1)
- o point-to-multipoint line
- o point-to-point line
- o first call number:
- o second call number:
- o third call number:

Only if connected to PBX:

- Euro-ISDN (DSS1)
- VN-3
- CT-1
- Point-to-multipoint
- Point-to-point
- How to get outside line

Which terminal devices are attached to the TELES.iPBX 8TR Box?

- | | | |
|--|-------|---------------|
| <input type="checkbox"/> analog telephone | type: | manufacturer: |
| <input type="checkbox"/> fax | type: | manufacturer: |
| <input type="checkbox"/> answering machine | type: | manufacturer: |
| <input type="checkbox"/> modem | type: | manufacturer: |

- ✓ Number of devices concurrently used on the BRI _____
- ✓ Can the two B channels simultaneously be assigned to the same service / to different services _____
(To check this feature: Use TELES.FIX to set up a communication to your own access).

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