Instructions Manual (UK)

ISDN Telephone System

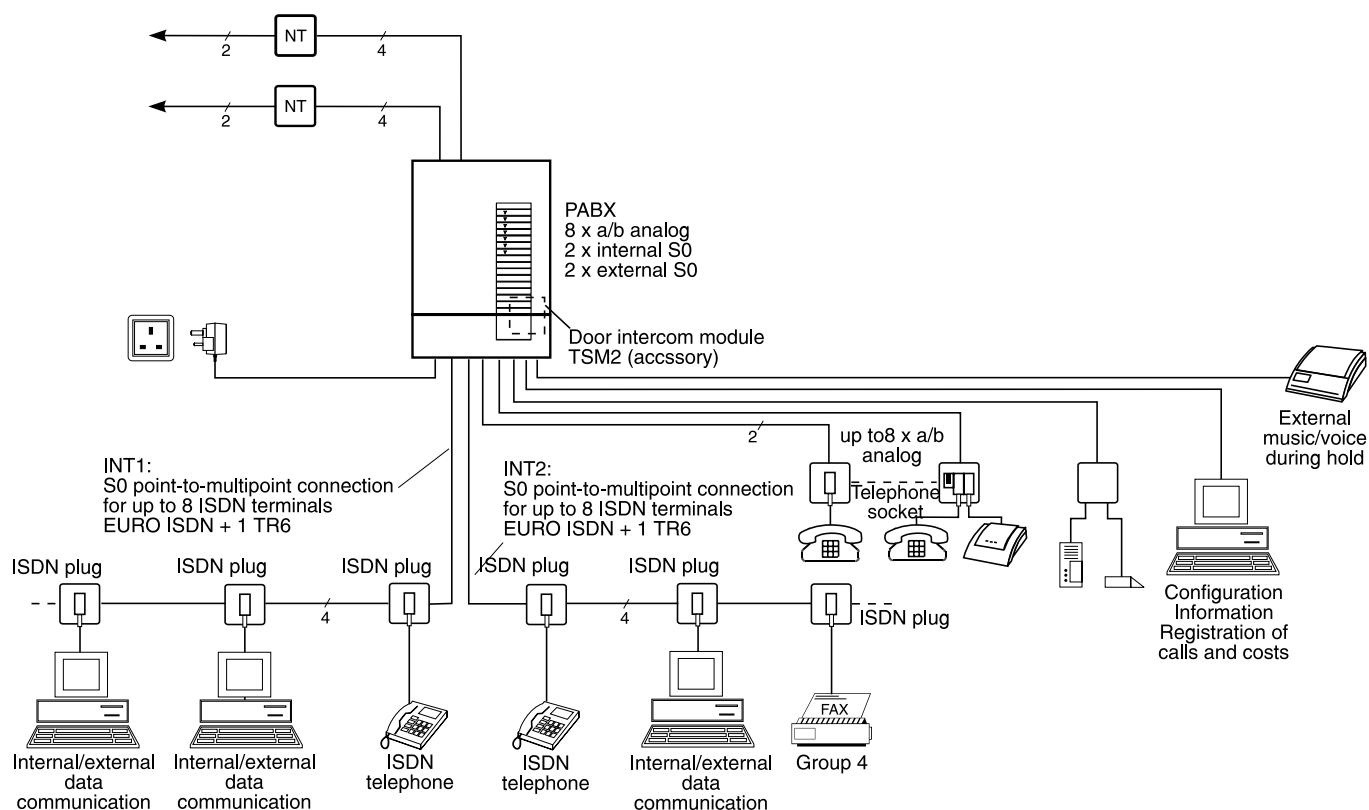**tiptel 411**
tiptel 811
tiptel 812
tiptel 822
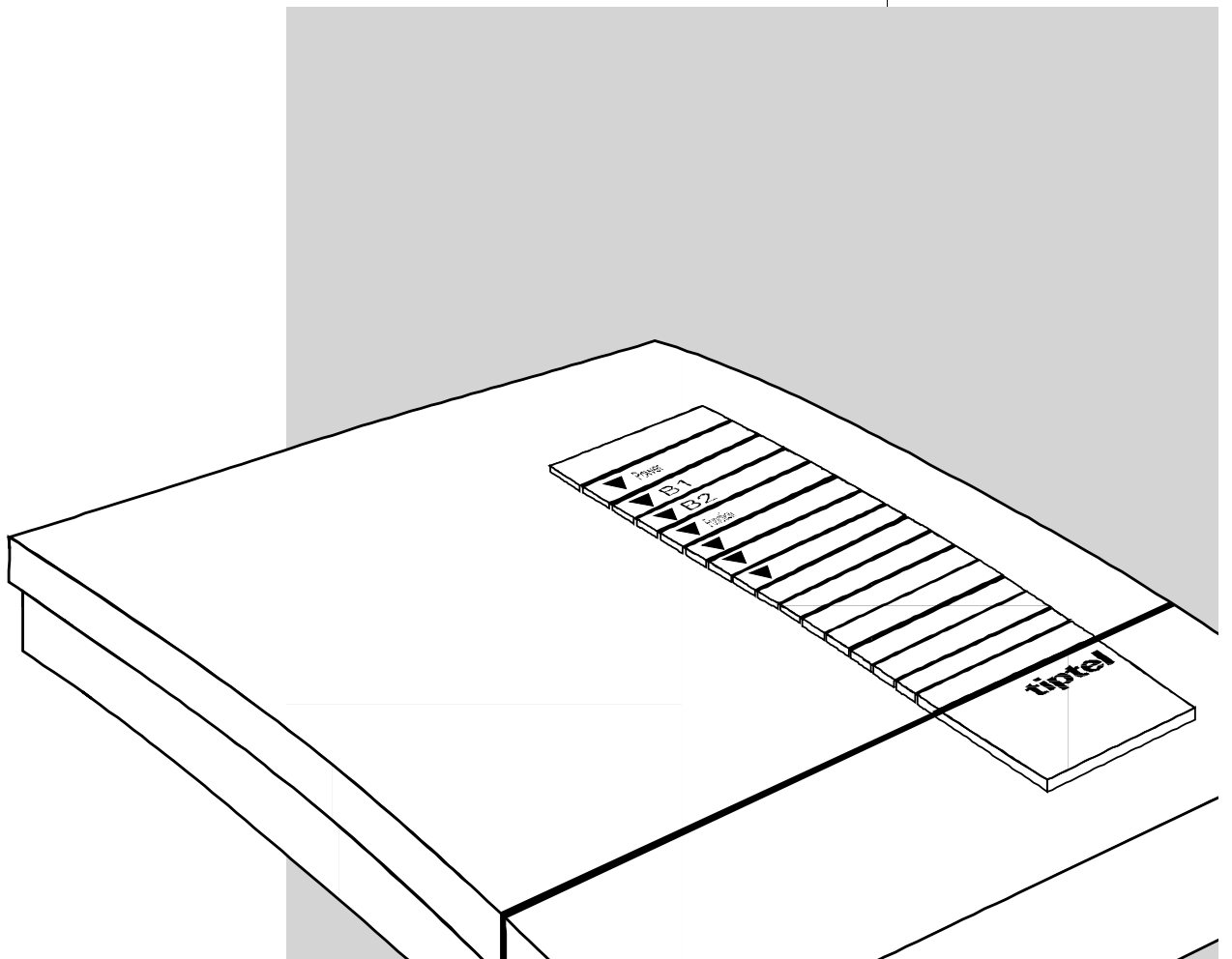
tiptel

Illustration (822)

Scope of supply

The scope of supply comprises:

● PABX
● AC adapter
● ISDN connecting cable
● PC connecting cable
● Material to mount the system (2 screws, 2 dowels)
● Operating instructions
● Floppy disk with IBM compatible PC software

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General information

Power failure

● The PABX cannot be operated during a power failure. An uninterruptable power supply (UPS) unit is available as an accessory. If this unit is installed, it grants you several hours of operation even in the case of a power failure.

Ecological information

● During normal use, you will not have any contact to substances damaging to your health (e. g. electrolyte capacitors).
● The synthetic material and plastics used for manufacturing this device exclusively consist of partially recycled granules.
● Our packaging materials do not consist of plastics but of partially recycled cardboard and paper.

Cleaning and maintenance

● The PABX is maintenance-free.
● Clean the housing surface with a soft slightly moist cloth or use an anti-static cloth.
● Never use a dry cloth (electric static could lead to an electronic defect).
● Do not use abrasive liquids or chemicals to clean the device.

First steps

Prerequisites

In the following, we assume that the installation and initial operation of the PABX was done professionally and that the terminal equipment (telephones, fax devices etc.) were connected to the internal analogue a/b ports and the ISDN ports INT1/INT2. In the case of questions or uncertainties, please see the chapters "Installation" and "Initial operation".

Point-to-multipoint connection configuration

Programming multiple subscriber numbers and assign them to individual extensions, "switchboard function"

10 MSNs can be managed at each external point-to-multipoint connection port. Each of these MSNs can be assigned to internal a/b telephone numbers or to internal ISDN telephone numbers. The "switchboard function" allows you to determine a target extension for non-deliverable calls.

The configuration of a point-to-multipoint connection is effected in four steps:

I.   Programming the provided multiple subscriber numbers (MSN).
II. Assigning the MSNs to the internal a/b and ISDN telephone numbers.
III. If the MSNs are linked with the internal ISDN telephone numbers in step II, this would require the entry of the corresponding internal ISDN telephone numbers at the ISDN terminal equipment (as MSN).
IV. Assigning internal extension number for the "switchboard function".

Step I: Programming the multiple subscriber numbers.
Please take the function codes for programming the MSNs 1-10 at ports LINE1 and LINE2 from the following table.

Program multiple subscriber numbers										
	MSN 1	MSN 2	MSN 3	MSN 4	MSN 5	MSN 6	MSN 7	MSN 8	MSN 9	MSN10
LINE1	6531 MSN	6532 MSN	6533 MSN	6534 MSN	6535 MSN	6536 MSN	6537 MSN	6538 MSN	6539 MSN	6530 MSN
LINE2	6631 MSN	6632 MSN	6633 MSN	6634 MSN	6635 MSN	6636 MSN	6637 MSN	6638 MSN	6639 MSN	6630 MSN
MSN = Multiple subscriber number for the point-to-multipoint connection provided by the local telecommunications company.										

Example:
At port LINE1, the PABX is connected to a point-to-multipoint connection. The local telecommuncations company provides the three MSNs 4711, 4712 and 4713. These three MSNs shall be assigned to the PABX's LINE1 port.
Under the PABX connection cover, you will find a switch that allows to change to the programming mode. Please switch from "Function" to "Progr.".

First steps

1. **Pick up extension 21's handset and dial the program code number** `19999` **.**

   You hear the "day programming tone".

2. **Dial code number** `6531` **to start the entry of the first MSN for the SO port LINE1 as point-to-multipoint connection.**

   Programming of the first MSN initiated.

3. **Dial** `4711` **(first MSN).**

   First MSN programmed.

4. **Replace extension's 21 handset.**

   Entry of the first MSN complete.

5. **For confirmation, pick up extension 21's handset again after 1 second.**

   You hear the confirmation tone followed by the programming tone.

6. **Dial code number** `6532` **to start the entry of the second MSN for the SO port LINE1.**

   Programming of the second MSN initiated.

7. **Dial** `4712` **(second MSN).**

   Second MSN programmed.

8. **Replace extension's 21 handset.**

   Entry of the second MSN complete.

9. **For confirmation, pick up extension 21's handset again after 1 second.**

   You hear the confirmation tone followed by the programming tone.

10. **Dial code number** `6533` **to start the entry of the third MSN for the SO port LINE1.**

    Programming of the third MSN initiated.

11. **Dial** `4713` **.**

    Third MSN stored.

12. **Repeat step 4 and 5.**

    Entry of the third MSN complete (confirmation tone).

13. **Replace the handset.**

    The process to store MSNs in the PABX is complete. The following table contains

Now, your PABX stored 1st MSN = 4711
                        2nd MSN = 4712
                        3rd MSN = 4713

If you want to store further MSNs, please repeat the procedure.

Step II: The programmed MSNs are assigned to a/b telephone numbers and ISDN telephone numbers (extension numbers) within the PABX.

Table of internal extension numbers:

Port	Internal extension numbers
a/b extensions	21 – 28 (tiptel 411: 21 - 24)
S0 port INT 1	30 – 39
S0 port INT 2	40 – 49

First steps

The following table contains all code numbers of the LINE1/LINE2 ports by which the multiple subscriber numbers can be assigned to the internal extensions.

Assignment of MSN to an internal extension number for SO port LINE1/2 (tiptel 411: a/b telephone numbers 21-24											
	Code no. SO LINE1	Code no. SO LINE2	Internal a/b telephone number (up to 8)								Internal ISDN telephone numbers (up to 2)
MSN 1	6731	6831	21	22	23	24	25	26	27	28	30..39, 40..49
MSN 2	6732	6832	21	22	23	24	25	26	27	28	30..39, 40..49
MSN 3	6733	6833	21	22	23	24	25	26	27	28	30..39, 40..49
MSN 4	6734	6834	21	22	23	24	25	26	27	28	30..39, 40..49
MSN 5	6735	6835	21	22	23	24	25	26	27	28	30..39, 40..49
MSN 6	6736	6836	21	22	23	24	25	26	27	28	30..39, 40..49
MSN 7	6737	6837	21	22	23	24	25	26	27	28	30..39, 40..49
MSN 8	6738	6838	21	22	23	24	25	26	27	28	30..39, 40..49
MSN 9	6739	6839	21	22	23	24	25	26	27	28	30..39, 40..49
MSN 10	6730	6830	21	22	23	24	25	26	27	28	30..39, 40..49

Up to eight internal a/b telephone numbers (tiptel 411: up to four, 21...24) and two internal ISDN telephone numbers can be assigned per MSN.

Example:
It is assumed that an incoming external call under telephone number 4712 (second MSN) shall call extensions 22, 27, 36 and 41.

The second MSN for the SO port LINE1 is now assigned to the internal extension numbers 22, 27, 36 and 41.

1. **Pick up extension 21's handset and dial the program code number** 19999**.**

   You hear the day programming tone.

2. **Dial the program code** 6732 **to assign the second MSN for the S0 port LINE1.**

   The assignment of the second MSN for the SO port LINE1 for internal a/b extensions and ISDN extensions is initiated.

3. **Enter the internal extension numbers 22, 27, 36 and 41.**

   Internal extension numbers 22, 27, 36 and 41 assigned.

4. **Replace extension's 21 handset.**

   Assignment of the internal telephone numbers complete.

5. **For confirmation, pick up extension 21's handset again after 1 second.**

   You hear the confirmation tone followed by the programming tone.

6. **Replace the handset.**

   Assignment of the MSN to internal extension numbers is complete.

First steps

Step III: Assignment of internal ISDN extensions to connected ISDN terminal equipment
The earlier programmed extension number 36 now has to be assigned to one or more ISDN terminal equipment units at port INT1. This means that this internal extension, i. e. 36 also has to be programmed for the corresponding ISDN terminal equipment as MSN. As the operation and programming for individual ISDN terminal equipment differs, please read the operating instruction supplied by the vendor of your ISDN telephone. The same procedure is valid for the ISDN terminal equipment at port INT2. Here, the internal extension number 41 is assigned to the corresponding terminal equipment.
If there is an incoming call for extension 4712, all telephones connected to port INT1/INT2 where the assigned extensions are 36 and 41 will ring. Terminal equipment with a different internal extension number will not react.

Erase multiple subscriber number
Stored MSNs are erased by activating the programming mode at extension 21, entering the programming code 19999 followed by the function code for the entry of the corresponding MSN. Afterwards, extension 21's handset has to be replaced (no MSN entry).

Step IV: Assign internal extension number for the "switchboard function".
This assignment will be effective for port LINE1 and port LINE2. In the case of a point-to-point connection, the assignment of the "global call" (see "Configuration at a point-to-point connection") is changed. At a point-to-multipoint connection, the switchboard is called whenever an incoming call cannot be transferred.

Example:
Internal extension 23 shall take over the "switchboard function".

1. **Pick up extension 21's handset and dial program code number** `19999`.		*You hear the day programming tone.*
2. **Dial program code number** `801` **for the day mode or** `802` **for the night mode.**		*You hear the corresponding programming tone, either night or day.*
3. **Dial program code number** `51` **for the switchboard / global call programming.**		*The programming of the global call (point-to-point connection) or the switchboard function (point-to-multipoint connection) is initiated.*
4. **Enter the desired internal extension numbers, here it is** `23`.		*The internal extension number is stored.*
5. **Replace extension's 21 handset.**		*Entry of the internal extension number is complete.*
6. **For confirmation, pick up extension 21's handset again after 1 second.**		*You hear the confirmation tone followed by the corresponding programming tone.*
7. **Replace the handset.**		*The programming is complete.*

First steps

Point-to-point connection configuration

Enter subscriber number for the point-to-point connection and DDIs. Assignment to individual extensions and assignment of global call.

Remark: The abbreviation DDI stands for direct dialling in, i. e. for a one or two-digit extension number at a point-to-point connection which is added to the subscriber number for the point-to-point connection in order to address a specific extension selectively. For each point-to-point connection, a subscriber number for the point-to-point connection of up to 16 digits, 16 one or two-digit direct dialling numbers as well as four additional telephone numbers can be programmed. Up to 8 internal a/b extension numbers as well as up to two internal ISDN telephone numbers of the internal SO ports can be assigned to each individual direct dialling number and each of the four additional telephone numbers. By the "global call" you can determine which extension shall be addressed when dialling the direct dialling number "0" (switchboard). This internal extension number may be within the ranges from 21...28, 30...39, 40...49.

The global call feature can be programmed separately for the day and the night mode. Extension 21 is the factory pre-set number as long as you did not assign an extension number for the global call.

The point-to-point connection configuration is effected in four steps:
I.   Storing the subscriber number for the point-to-point connection.
II. Entering the direct dialling numbers (DDIs) provided by the local telecommunications network operator.
III. Assignment of extension numbers to the internal a/b and ISDN telephone numbers.
IV. If direct dialling numbers shall be linked to internal ISDN telephone numbers in step III, the entry of the corresponding internal ISDN telephone number is necessary at the ISDN terminals (as MSNs).
V. Assign internal extension number for the global call.

Step I: Entering the subscriber number for the point-to-point connection

Store subscriber number for the point-to-point connection SO port LINE1	
Function code	6500N

Store subscriber number for the point-to-point connection SO port LINE2	
Function code	6600N

N = subscriber number for the point-to-point connection

N = subscriber number for the point-to-point connection

Example:
The PABX's LINE2 port is connected at a point-to-point connection. The subscriber number for the point-to-point connection, here 4321 as well as three direct dialling numbers 20, 21 and 54 are at disposal. You can select the programming mode of the PABX by a switch which is located beneath the connection cover. Please switch the program switch from position "Function" to "Prog".

1. **Pick up extension 21's handset and dial the program code number** `19999`. — *You hear the day programming tone.*

2. **Dial the program code** `6600` **in order to start entering the subscriber number for the SO LINE2 port as point-to-point connection.** — *Programming of the subscriber number for the point-to-point connection at LINE2 is initiated.*

3. **Enter subscriber number** `4321` .

Subscriber number stored.

4. **Replace extension's 21 handset.**

Subscriber number for the point-to-point connection for LINE2 stored.

5. **For confirmation, pick up extension 21's handset again after 1 second.**

You hear the confirmation tone followed by the programming tone.

6. **Replace the handset.**

Programming of the subscriber number for the point-to-point connection finished.

The entry of the subscriber number for a point-to-point connection at SO port LINE1 is done in the same way. Here, you have to dial the function code number 6500 followed by the subscriber number for the point-to-point connection.

Step II: Entering the direct dialling numbers provided by the local telecommunications network operator.

The following tables contain the function codes for the entry of the DDI numbers 1 - 16.

Store direct dialling number for SO port LINE1	
	Function code + DDI
DDI 1	6501DDI
DDI 2	6502DDI
DDI 3	6503DDI
DDI 4	6504DDI
DDI 5	6505DDI
DDI 6	6506DDI
DDI 7	6507DDI
DDI 8	6508DDI
DDI 9	6509DDI
DDI 10	6510DDI
DDI 11	6511DDI
DDI 12	6512DDI
DDI 13	6513DDI
DDI 14	6514DDI
DDI 15	6515DDI
DDI 16	6516DDI

DDI = direct dial in numbers

Store direct dialling number for SO port LINE2	
	Function code + DDI
DDI 1	6601DDI
DDI 2	6602DDI
DDI 3	6603DDI
DDI 4	6604DDI
DDI 5	6605DDI
DDI 6	6606DDI
DDI 7	6607DDI
DDI 8	6608DDI
DDI 9	6609DDI
DDI 10	6610DDI
DDI 11	6611DDI
DDI 12	6612DDI
DDI 13	6613DDI
DDI 14	6614DDI
DDI 15	6615DDI
DDI 16	6616DDI

DDI = direct dial in numbers

Example: The direct dialling numbers 20, 21 and 45 are stored.

1. **Pick up extension 21's handset and dial the program code number** `19999` .

You hear the day programming tone.

2. **Dial the program code 6601 in order to start entering the first direct dialling number for the SO port LINE2 as point-to-point connection.**

The programming of the first direct dialling number for SO port LINE2 as point-to-point connection is initiated.

3.	Enter direct dialling number 20.	*First direct dialling number stored.*
4.	Replace extension's 21 handset.	*Entry of the first direct dialling number complete.*
5.	For confirmation, pick up extension 21's handset again after 1 second.	*You hear the confirmation tone followed by the programming tone.*
6.	Dial the program code 6602 in order to start entering the second direct dialling number for the SO port LINE2.	*The programming of the second direct dialling number for SO port LINE2 is initiated.*
7.	Enter direct dialling number 21.	*Second direct dialling number stored.*
8.	Replace extension's 21 handset.	*Entry of the second direct dialling number complete.*
9.	For confirmation, pick up extension 21's handset again after 1 second.	*You hear the confirmation tone followed by the programming tone.*
10.	Dial the program code 6603 in order to start entering the third direct dialling number for the SO port LINE2.	*The programming of the third direct dialling number for SO port LINE2 is initiated.*
11.	Enter direct dialling number 45.	*Third direct dialling number stored.*
12.	Replace extension's 21 handset.	*Entry of the third direct dialling number complete.*
13.	For confirmation, pick up extension 21's handset again after 1 second.	*You hear the confirmation tone followed by the programming tone.*
14.	Replace extension's 21 handset.	*The programming of the direct dialling numbers is complete.*

If you intend to enter more direct dialling numbers for SO port LINE2, just follow the above procedure using further direct dialling numbers and the function codes from the tables hereinafter. The direct dialling numbers for SO port LINE1 can be entered in the same way.

Using the four additional telephone numbers
In addition to the 16 direct dialling numbers, you have the option to enter four additional telephone numbers per point-to-point connection. Here complete telephone numbers have to be stored, independent from the stored subscriber number for the point-to-point connection or the direct dialling numbers.

Remark:
If you have more than 16 direct dialling numbers at one point-to-point connection, you can use the four additional telephone numbers as additional direct dialling numbers. As telephone numbers, enter the subscriber number for the point-to-point connection (without area code) followed by the direct dialling number. The following tables show the necessary function code numbers.

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Store additional telephone numbers for SO port LINE1	
	Function code
1st additional number	6517ANO
2nd additional number	6518ANO
3rd additional number	6519ANO
4th additional number	6520ANO

ANO = additional number,
16 digits as a maximum

Store additional telephone numbers for SO port LINE2	
	Function code
1st additional number	6617ANO
2nd additional number	6618ANO
3rd additional number	6619ANO
4th additional number	6620ANO

ANO = additional number,
16 digits as a maximum

Step III: The stored direct dialling numbers and additional telephone numbers are assigned to the internal a/b and ISDN telephone numbers.

The internal a/b extensions are addressed via the internal extension numbers 21...28 (tiptel 411: 21...24). The extensions at the internal SO port INT1 are addressed via the internal ISDN numbers 30..39. The extensions at the internal SO port INT2 (only tiptel 812/822) are addressed via the ISDN numbers 40...49.

Port	Internal telephone number
a/b extensions	21-28 (tiptel 411: 21...24)
SO port INT1	30-39
SO port INT2	40-49

The following tables show all code numbers of the ports LINE1/LINE2 by which the direct dialling numbers and additional telephone numbers can be assigned to the internal telephone numbers.
Up to eight internal a/b telephone numbers (tiptel 411: four) as well as two internal ISDN telephone numbers can be assigned per direct dialling number or additional telephone number. Those do not necessarily need to be at the same internal SO port (except for tiptel 411/811).

Assignment of DDIs for the SO port LINE1/2 to the internal extension numbers (tiptel 411: a/b telephone numbers 21-24												
	Code no. SO LINE1	Code no. SO LINE2	Internal a/b telephone number (up to 8)								Internal ISDN telephone numbers (up to 2)
DDI 1	6701	6801	21	22	23	24	25	26	27	28	30..39,40..49
DDI 2	6702	6802	21	22	23	24	25	26	27	28	30..39,40..49
DDI 3	6703	6803	21	22	23	24	25	26	27	28	30..39,40..49
DDI 4	6704	6804	21	22	23	24	25	26	27	28	30..39,40..49
DDI 5	6705	6805	21	22	23	24	25	26	27	28	30..39,40..49
DDI 6	6706	6806	21	22	23	24	25	26	27	28	30..39,40..49
DDI 7	6707	6807	21	22	23	24	25	26	27	28	30..39,40..49
DDI 8	6708	6808	21	22	23	24	25	26	27	28	30..39,40..49
DDI 9	6709	6809	21	22	23	24	25	26	27	28	30..39,40..49
DDI 10	6710	6810	21	22	23	24	25	26	27	28	30..39,40..49
DDI 11	6711	6811	21	22	23	24	25	26	27	28	30..39,40..49
DDI 12	6712	6812	21	22	23	24	25	26	27	28	30..39,40..49
DDI 13	6713	6813	21	22	23	24	25	26	27	28	30..39,40..49
DDI 14	6714	6814	21	22	23	24	25	26	27	28	30..39,40..49
DDI 15	6715	6815	21	22	23	24	25	26	27	28	30..39,40..49
DDI 16	6716	6816	21	22	23	24	25	26	27	28	30..39,40..49

First steps

Assignment of additional numbers for the SO port LINE1/2 to the internal extension numbers (tiptel 411: a/b telephone numbers 21-24											
	Code no. SO LINE1	Code no. SO LINE2	Internal a/b telephone number (up to 8)								Internal ISDN telephone nos. (up to 2)
1st additional number	6717	6817	21	22	23	24	25	26	27	28	30..39,40..49
2nd additional number	6718	6818	21	22	23	24	25	26	27	28	30..39,40..49
3rd additional number	6719	6819	21	22	23	24	25	26	27	28	30..39,40..49
4th additional number	6720	6820	21	22	23	24	25	26	27	28	30..39,40..49

Example: An incoming external call under telephone number 4321-21 (DDI 2) shall call the internal numbers 25, 26, 32 and 42. The connection is at SO port LINE2.

1. **Pick up extension 21's handset and dial the program code number** `19999`**.**

    You hear the day programming tone.

2. **Dial the program code** `6802` **in order to start the assignment of the second DDI for the SO port LINE2.**

    The assignment of the second direct dialling number at SO port LINE2 for internal a/b and ISDN extensions is initiated.

3. **Enter the internal telephone numbers 25, 27, 32 and 42.**

    Internal extension numbers 25, 27, 32 and 42 assigned.

4. **Replace extension's 21 handset.**

    Assignment of internal extension numbers complete.

5. **For confirmation, pick up extension 21's handset again after 1 second.**

    You hear the confirmation tone followed by the programming tone.

6. **Replace the handset.**

    The assignment of the direct dialling numbers to internal extensions is complete.

Now, the second direct dialling number for the SO port LINE2 is assigned to the internal telephone numbers 25, 27, 32 and 42. The assignment of the first and third direct dialling number to the internal extensions is done in the same way as described above.

Step IV: Entering the internal ISDN extension numbers at the connected ISDN terminals
The stored internal ISDN telephone number 32 has to be assigned to one or more ISDN terminals at port INT1, i. e. this internal number has to be entered at the ISDN terminal directly (as MSN). For details, please consult the operating instruction of the corresponding ISDN terminal. The same procedure has to be applied with the ISDN terminals at port INT2. Here, the internal ISDN telephone number 42 is entered at the corresponding terminals. If there is an incoming call under telephone number 4321-21, all telephones at port INT1/INT2 where the internal ISDN telephone number 32 or 42 was assigned will ring. Terminals with another internal extension number will not react.

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Step V: Assign internal extension number for the global call function

The assignment will be effective for port LINE1 as well as for port LINE2. If a point-to-multipoint connection exists in addition, the "switchboard assignment" will be changed (see "Point-to-multipoint connection configuration"). At a point-to-point connection, the programmed internal telephone number corresponds to the Global Call which is effected when using the direct dialling number "0".

Example: The internal a/b extension 25 shall be addressed via the direct dialling number 0.

1. **Pick up extension 21's handset and dial program code number** $\boxed{19999}$.	*You hear the day programming tone.*
2. **Dial program code number** $\boxed{801}$ **for the day mode or** $\boxed{802}$ **for the night mode.**	*The programming of the global call (point-to-point connection) or the switchboard function (point-to-multipoint connection) is initiated.*
3. **Dial program code number 51 for the global call / switchboard programming.**	*The internal target extension number is stored.*
4. **Enter the desired internal extension numbers, here it is** $\boxed{25}$.	*Entry of the internal target extension number is complete.*
5. **Replace extension's 21 handset.**	*You hear the confirmation tone followed by the corresponding programming tone.*
6. **For confirmation, pick up extension 21's handset again after 1 second.**	The programming is complete.
7. **Replace the handset.**	

Erase direct dialling numbers and additional telephone numbers

Stored direct dialling numbers and additional telephone numbers can be erased by entering the program code number 19999 followed by the function code for the entry of the corresponding direct dialling number. Afterwards, the handset has to be replaced (no MSN entry).

Call forwarding to switchboard - on busy extension

You can decide individually, whether an incoming call for an extension shall be forwarded to the switchboard if that target extension is busy.

Call forwarding to switchboard authorised	541N
Call forwarding to switchboard not authorised	542N

N = internal extension number (21...28, 30...39, 40...49)

First steps

1. **Switch the programming switch to "Progr." and dial the program code number 19999 at extension 21.**

   You hear the day programming tone.

2. **Dial code number 54132 to authorise that an incoming call is forwarded to the switchboard in the case that extension 32 should be busy.**

   You hear the confirmation tone followed by the programming tone.

3. **Conduct further settings if desired or quit the programming mode by replacing extension 21's handset and switching the programming switch to position "Function".**

Internal calls

Internal dialling

Example: Extension 25 wants to call extension 22.

1. **Pick up extension 25's handset.**

   You hear the dialling tone.

2. **Dial extension 22.**

   Extension 22 rings. You hear a ringing tone. If the selected extension is busy, you will hear the busy tone.

3. **Extension 22 answers and the conversation can begin.**

4. **End conversation and replace the handset.**

Incoming internal call

The extension rings with the internal call ringing signal.

1. **Pick up the handset.**

2. **Hold conversation.**

3. **End conversation and replace the handset.**

Automatic internal call-back

If you are trying to reach an extension and it is busy, the PABX will automatically call you back as soon as the handset of the busy extension is replaced.
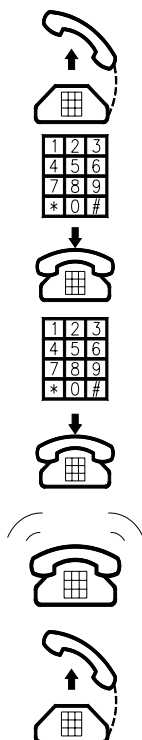
Example:
Extension 25 wants to call extension 22 but this extension is busy. Extension 25 is called back automatically.

Internal calls

1.	**Pick up extension 25's handset.**	*You hear the dialling tone.*
2.	**Dial internal extension 22.**	*Extension 22 is busy. You hear the busy tone.*
3.	**Replace extension 25's handset.**	*You hear the confirmation tone*
4.	**Pick up extension 25's handset.**	*The automatic call-back is programmed.*
5.	**Dial code number 79 and target extension number 22.**	*Extension 22 rings. You hear the ringing tone.*
6.	**Replace extension 25's handset.**	
7.	**Extension 22 ends conversation by replacing the handset. The telephone at extension 25 rings.**	
8.	**Pick up extension 25's handset.**	
9.	**Extension 22 answers and the conversation can begin.**	

Remark:

This function is only possible within the PABX. Only one automatic call-back can be used per extension at a time.

External calls

Access to public exchange and dialling

Example: Extension 21 wants to make an external call to the telephone number 42 45 02.
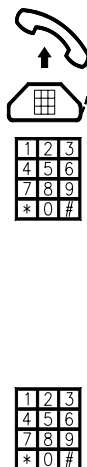
1.	**Pick up extension 21's handset.**	*You hear the PABX dialling tone.*
2.	**Dial code number 0.**	*You hear the telephone network dialling tone. The PABX automatically occupies an available B channel. If both B channels are occupied or if your extension is not authorised to access the public telephone network, you will hear the busy tone.*
3.	**Dial target telephone number, e. g. 42 45 02.**	*After dialling the target telephone number you will hear the ringing tone or the busy tone. Your telephone number will be transferred (CLIP). This function can be restricted (see "Configuration").*

External calls

4. **When the selected party picks up, hold conversation.**

The conversation begins. The telephone number and the incurring costs are allocated to the programmed cost centre.

5. **End conversation and replace the handset.**

Remark: The calling line identification presentation and restriction feature can only be used if your ISDN connection provides this feature.

Special access to public exchange

Specific access to public exchange

The main purpose of this function is the preparation of a three-party conference call with external parties. As the three-party conference is only supported by point-to-multipoint connections, you have the opportunity to select the specific PABX LINE port at the point-to-multipoint connection if the other LINE port is only connected at a point-to-point connection.

Please dial the following numbers instead of "0" for access to the public exchange:

941   **Access to the public exchange via the first external port (LINE1).**
942   **Access to the public exchange via the second external port (LINE2).**
951N **Access to the public exchange via the first external port with specified calling line identification presentation.**
952N **Access to the public exchange via the second external port with specified calling line identification presentation.**

N = 1 ... 9, 0 for MSN 1 ... 9, 10
Here, the desired MSN is transferred.
In the case of a point-to-point connection, the internal extension number is transferred and the procedure is the same as when dialling "0".

Remark: If no corresponding B channel is available, you hear the busy tone. Your point-to-multipoint connection has to support the three-party conference feature.

Access to public exchange with selection of cost centre, restriction of calling line identification presentation and bearer capability transfer
A special access to public exchange is possible if a telephone conversation shall be held without using the cost centre data programmed for the specific extension but a different cost centre. In these cases it is possible to either have a calling line identification presentation or to restrict this function. In addition, the public exchange access with bearer capability "3.1 kHz audio, fax group 2/3" for analogue telephones and a cost centre indication is foreseen. By this, it is possible to exclude incompatible distant subscribers, such as e. g. ISDN telephones and group 4 fax devices generally from establishing a call.

	CLIP	CLIR	Audio, Fax Gr. 2/3
Cost centre 1	911	921	931
Cost centre 2	912	922	932
Cost centre 3	913	923	933

External calls

Example: Extension 23 would like to make a call with bearer capability "Audio, Fax Gr. 2/3" over cost centre 3.

1. **Pick up extension 23's handset.**   *You hear the PABX dialling tone.*

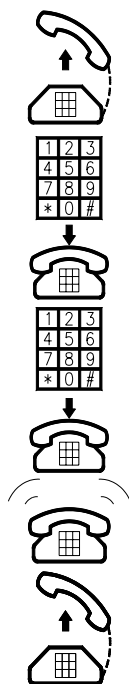2. **Dial code number for special access to the public exchange, here** 933 **for cost centre 3.**   *You hear the public exchange ringing tone.*

Reserve access to the public exchange

If after dialling the code number for the access to the public exchange, both B channels are occupied, you have the possibility of reserving the first available B channel. Your extension will ring as soon as one of the B channels is available again. After picking up the handset the earlier entered target telephone number is redialled automatically.

Example: You want to call the target telephone number 654321.

1. **Pick up handset.**   *You hear the PABX dialling tone *.*

2. **Dial code number for the access to the public exchange, e. g.** 0 **.**   *You hear the busy tone. All external B channels are busy.*

3. **Replace handset.**   *You hear the PABX dialling tone.*

4. **For the reservation of a B channel dial code number** 90 **and the external target number** 654321 **.**

5. **Replace handset.**

6. **An external B channel becomes available. The telephone rings.**

7. **Pick up handset.**   *The target telephone number of the external party, i. e. 654321 is dialled automatically.*

*Remark:
If both of the B channels of the internal S0 port your ISDN telephone is connected to are busy, you will have a corresponding signalling depending on your specific telephone. An access reservation to the public exchange is not possible in that case.

External calls

Incoming external call

The telephone rings with the external ringing signal.

1. Pick up handset.

2. Hold conversation.

3. End conversation, replace handset.

Holding an external call to make inquiries (PABX internal)

An external call can be placed on hold. This hold functions allows you to make inquiries in the room or by calling another internal extension. Your telephone partner cannot hear the inquiry while on hold. Instead, he will hear music.

Remarks:

● The hold function depends on the dialling mode of your telephone.

● The hold function can only be used when a call has already been established.

● If the handset is replaced during hold, the telephone will ring after 45 seconds to remind you that there is still a call on hold. If you do not resume the telephone conversation, the call will be disconnected afterwards.

You are holding an external call.

1. **Pulse dialling telephone: Select code number** 1.

   Tone dialling telephone: Press the RECALL key.

   The external call is placed on hold. You hear the PABX dialling tone. Make your inquiry in the room or make an internal call. An inquiry to the door intercom can be finished by dialling 7.

2. **To retrieve the external call:**

   Pulse dialling telephone: Dial code number 1.

   Tone dialling telephone: Press the RECALL key

   The extension is reconnected to the external call.

Remark:
If you do not hear the PABX dialling tone after having placed the call on hold, all internal channels are busy. In this case, you are not able to make an internal inquiry call.

ISDN telephones:
As the operation of ISDN telephones by different vendors is not always the same, please see the corresponding ISDN telephone operating instruction as a reference

External calls

Two-line operation with hold (external calls/PABX internal)

If there is a second incoming external call while you are already holding a conversation with an external party, a call waiting signal is heard (see also "Call waiting / analogue telephones" and "Call waiting / ISDN telephones" in chapter "Configuration via telephone"). In such cases you have the possibility to place the first external call on hold and to answer the second incoming call.

Pulse dialling telephone (analogue)

1. **Dial code number ⬚1⬚ and code number ⬚0⬚ afterwards.**

    The first external call is placed on hold after dialling the code number 1. After dialling the code number 0, the second external call is connected.

2. **Redial code number ⬚1⬚ and code number ⬚0⬚ to reconnect the external conversation on hold.**

    The connection to the first external call is re-established. The second external call is placed on hold.

Tone dialling telephone (analogue)

1. **Press RECALL key and code number ⬚0⬚ afterwards.**

    The first external call is placed on hold after pressing the RECALL key. The connection to the second external call is established after dialling the code number 0.

2. **Press the RECALL key and code number ⬚0⬚ again to reconnect the external conversation on hold.**

    The connection to the first external call is re-established. The second external call is placed on hold.

ISDN telephones:

As the operation of ISDN telephones by different vendors is not always the same, please see the corresponding ISDN telephone operating instruction as a reference.

External calls

Three-party conference (PABX internal)

If you have an external 2-line operation with hold, you can also have a three-party conference with the external parties.

Example: Extension 22 is switching between 2 external calls and now wants to hold a three-party conference with the connected callers. An analogue tone dialling telephone is used.

A first external call is on hold. Extension 22 has a conversation with the second external caller.

1. **Press RECALL button.**   *Both external calls are on hold.*

2. **Dial code number 8 to initiate the 2-line operation.**   *Extension 22 has a 2-line operation with the two external callers.*

3. **One of the external parties replaces the handset.**   *Extension 22 can continue the conversation with the other external party.*

Remarks:
The telephone conversation ends when the internal party replaces the handset during a 2-line operation with hold.
If one of the external callers replaces the handset, the connection to the other external caller remains established. If you use a pulse dialling tone, you have to dial the code number 1 instead of pressing the RECALL button. As the operation of ISDN telephones by different vendors is not always the same, please see the corresponding ISDN telephone operating instruction as a reference.

Three-party conference with hold (external calls/ISDN feature)

Prerequisites: A point-to-multipoint connection placing the features "three-party conference" (3PTY) and "2-line operation with hold" (HOLD) at disposal is used. The advantage of such a type of connection is that only one B channel is occupied as the functions "three-party conference" and "2-line operation with hold" are operated within the telephone network. This feature is only available in the case of two outgoing external calls.

Example:
The PABX's LINE1 port is connected at a point-to-multipoint connection. You wish to use the functions "2-line operation with hold" or "three-party conference" (all telephones).

1. **Pick up handset.**   *You hear the PABX dialling tone.*

2. **Dial code number 941 to have a definite selection for port 1 (see "Special access to the public exchange")**   *You hear the public exchange dialling tone. The PABX occupies a B channel at the point-to-multipoint connection.*

3. **Dial target telephone number, e. g. 424502.**   *After dialling the target telephone number you hear a ringing tone or a busy tone.*

4.	**If the called external party lifts the receiver you can start the conversation. During this conversation you decide to make a further external party join.**	*Hold conversation.*
5.	**Place the conversation on hold: Tone dialling telephone: press RECALL button.**	*The call is placed on hold within the PABX.*
	Pulse dialling telephone: dial code number 1.	
	ISDN telephone: follow the corresponding operating instructions.	
6.	**Establish the connection to the second external party. Dial code number 99.**	*The first connection is placed on hold within the telephone network. The external party first hears an announcement and afterwards the public exchange dialling tone.*
7.	**Dial second target telephone number, e. g 786153.**	*After dialling the target telephone number a ringing tone or a busy tone is heard.*
8.	**The second external party picks up the handset. Hold conversation.**	*Conversation starts. Only one B channel is occupied.*
9a.	**You want to switch between the two external calls while placing one of them on hold: Tone dialling telephone: press RECALL button and dial code number 0 afterwards.**	*The connection with the party placed on hold within the telephone network is now switched. The second party is placed on hold within the telephone network and hears an announcement.*
	Pulse dialling telephone: dial code number 1 and code number 0 afterwards.	
	ISDN telephone: follow the corresponding operating instructions.	
or		
9b.	**You want to initiate the conference call: Tone dialling telephone: press RECALL button and dial code number 8 afterwards.**	*The connection with the party placed on hold within the telephone network is now switched and the three-party conference can begin.*
	Pulse dialling telephone: dial code number 1 and code number 8 afterwards.	

External calls

ISDN telephone: follow the corresponding operating instructions for a three-party conference.

10. **End conversation and replace the handset.**

Three-party conference call ends.

Remark:

The party initiating the conference call has a master function. If the party initiating the call replaces the handset, the conference call ends. If one of the two external parties replaces the handset, the connection to the second external party remains switched.

ISDN telephones:

As the operation of ISDN telephones by different vendors is not always the same, please see the corresponding ISDN telephone operating instruction as a reference.

Ending 2-line operation with hold (external calls)

a)

1. **Replace handset.**

The existing external call is ended. To remind you that a second external call is on hold, the telephone will ring for 45 seconds.

2. **Pick up handset.**

The connection to the second external party is established. If the call is not answered within 45 seconds, the PABX will disconnect the line.

b)

Pulse dialling telephone: dial code numbers 1 **and** 7.

The external call is placed on hold after dialling code number 1. *It will be ended by dialling code number* 7. *You hear the busy tone.*

Tone dialling telephone: press RECALL button and code number 7.

The call is placed on hold after dialling the RECALL button. It will be ended by dialling code number 7. *You hear the busy tone.*

Press RECALL button again or dial code number 1 **respectively.**

The connection to the second external call is established.

ISDN telephones:

As the operation of ISDN telephones by different vendors is not always the same, please see the corresponding ISDN telephone operating instruction as a reference.

External calls

Manual call transfer to internal extensions

External calls can be transferred to other internal extensions.

Note: The manual call transfer procedure depends on the dialling mode of your analogue telephone and on the operating of your ISDN telephone. If you use a tone dialling telephone you have to press the RECALL button. If you use a pulse dialling telephone you have to dial code number 1.

Example: Extension 22 holds an external call and wants to transfer it to extension 28. An analogue telephone with tone dialling method is used

1. **Press extension 22's RECALL button. (ISDN telephone: place party on hold).**

   The external call is placed on hold. The PABX dialling tone is heard.

2. **Dial extension number 28.**

   Extension 28 rings. The ringing tone is heard. If extension 28 is busy you hear the busy tone. In this case you can retrieve the external call by pressing the RECALL button again to inform the external party that the call cannot be transferred. ISDN telephone: retrieve external party according to the instructions described in the operating instructions.

3. **Extension 28 answers the call. Hold conversation.**

   Inform extension 28 that an external call shall be transferred.

4. **Replace extension 22's handset.**

5. **Extension 28 is connected with the external caller.**

Remark 1: You do not need to wait until the selected extension is picked up. After dialling the internal extension number just replace the handset when you hear the idle tone. If the call is not answered within 45 seconds, your telephone will ring again. If you do not hear a dialling tone after having placed the external party on hold, this means that currently all internal lines are busy. In this case, the call cannot be transferred.

Remark 2: The PABX also supports the ECT function (explicit call transfer) for the case that ISDN telephones are used. Further information on using the ECT function can be taken from the operating instructions supplied with your ISDN telephone.

Remark 3: If the call forwarding according to the normal procedure should not be possible using an ISDN telephone, dial 1 before dialling the target extension number. Example: If you want to transfer a call to extension 45, just dial 1 45.

Remark 4: If you use special ISDN telephones (e. g. tiptel 195), the PABX can manage up to 4 calls placed on hold and one active call. Application: By this, it is possible to transfer a second incoming call and to resume the first call afterwards.

External calls

Remark:

Now, external calls can also be transferred as paging or collective calls. In order to do this, dial the paging call code number 71 - 75 or just dial 76 for a collective call instead of an extension number. The connection will be established with the party answering the call first.

Remark:

The call transfer as paging or collective call is not possible if you are currently in the status "external two-line operation with hold". You can end the currently held conversation by dialling code number 7.

Call transfer to external subscriber numbers

External calls can be transferred to external subscriber numbers.

Example:

The person at extension 22 is holding an external telephone conversation and wants to transfer the call to the external subscriber number 424502. An analogue telephone with tone dialling method is used.

1.	**Press extension 22's RECALL button. (ISDN telephone: place party on hold).**	*The external call is placed on hold. The calling external party listens to the PABX's music-on-hold.*
2.	**Contact the external target subscriber: Dial 98 for an exchange line.**	*You hear the exchange dialling tone.*
3.	**Dial the external target subscriber number 424502 .**	*The external target subscriber is called. The call can be interrupted by pressing the RECALL button (ISDN users: enquiry call/two-line operation with hold according to the operating instructions).*
4.	**External subscriber 424502 answers the call.**	*Inform the external target subscriber that an external call shall be transferred.*
5.	**Replace extension 22's handset.**	*The external parties are connected via the PABX.*
6.	**The transferred call will be disconnected when one of the two external parties replaces the handset.**	*The contact partner hears the exchange busy tone.*

Remark:

Here, the remarks for manual call transfers to internal extensions are also valid.

Attention:

The PABX owner has to bear the telephone charges for the connection to the second external party. Two B channels are occupied by this function. It is not possible to disconnect the transferred call from the PABX. A disconnection of such a connection can be forced by unplugging the AC adapter or the ISDN connecting line.

External calls

Automatic call-back on busy (CCBS)

Some telecommunications network operators provide the function "automatic call-back on busy" (completion of call to busy subscriber).

By this feature, the connection to a called busy external subscriber will be established as soon as the external target party will end the conversation and replace the handset. The caller needs to activate the automatic call-back in order to execute this function. The caller's telephone will ring as soon as the external target party replaces the handset. When the caller picks up the handset, the dialling procedure will be initiated automatically. The caller will hear the calling tone and the automatic call-back is completed by this. A conversation can be held when the external target subscriber answers the call.

Example :

The calling party can activate the automatic call-back within 20 seconds after hearing the busy tone. The call-back function remains in the network for 45 seconds as a maximum and will be erased afterwards. At a point-to-multipoint connection, 3 automatic call-backs can be activated per MSN as a maximum. Two automatic call-backs can be monitored passively per MSN as a maximum. In total, the PABX can manage 10 automatic call-backs per point-to-multipoint and point-to-point connection.

Activating the automatic call-back (analogue telephones)

The function can only be activated when using a tone dialling telephone.

1.	**The called external subscriber is busy.**	*You hear the PABX internal busy tone. When you hear the busy tone, you will have 20 seconds time to activate the automatic call-back.*
2.	**Press the # button to activate the automatic call-back.**	*The internal busy tone is terminated.*
3.	**Dial 1.**	*You will hear a positive confirmation tone after a short time. The automatic call-back is activated. Should you hear a further busy tone, the function cannot be executed.*
4.	**Replace the handset.**	*The automatic call-back will be stored for 45 seconds as a maximum (see example).*
5.	**The external target subscriber replaces the handset.**	*The telephone rings.*
6.	**Pick-up the handset.**	*The external target subscriber is called. You hear the calling tone through the handset.*
7.	**The external target subscriber answers the call.**	*Start the conversation.*

Activating the automatic call-back for ISDN telephones

Details can be taken from the operating instructions supplied with your ISDN telephone.

External calls

Malicious call identification (MCID) with a/b extensions

The ISDN feature supported by a range of ISDN telephones can also be placed at disposal for a/b extensions connected to the PABX. But, MCID is an ISDN feature and must be supported by your ISDN connection.

The function can be executed by pressing the button combination RECALL # 2 during an existing call. Then, the call will be registered within the exchange office.

Example:
You receive an external call for extension 25 and want to have this call registered within the exchange office.

1. **Pick-up extension 25's handset.** *You are connected to the calling party.*

2. **Press the RECALL button.** *The external call is placed on hold. The PABX dialling tone is heard.*

3. **Press the button combination** ⟦# 2⟧ **in order to have the call registered.** *The call is registered within the exchange office.*

4. **Replace the handset.** *The call is disconnected.*

Keypad

The programming of telecommunication network operators' exchange office features is possible from ISDN and a/b extensions.
Allowed characters are 0, 1...9, *, #.

Keypad at a point-to-multipoint connection

In the case of a special access to the public exchange, the target SO port and the target MSN for outgoing calls can be indicated.

Access to the public exchange via SO port LINE1	9610N
Access to the public exchange via SO port LINE2	9620N

N = MSN (1...9,0)

Example:
From extension 23, you want to set up a telephone network option via the keypad function for the 5th MSN of the SO port LINE2.

1. **Pick up extension 23's handset.** *You hear the internal dialling tone.*

2. **Dial code number** ⟦96205⟧ **to get an exchange line via SO port LINE2 with the 5th MSN and to change over to the keypad mode.** *You are in the keypad mode and now have the option to program a function for the SO port LINE2 and the 5th MSN.*

3. **Program a function for the 5th MSN, e. g. by the button combination `#21*33146#`.**

4. **Replace the handset.**

The desired function is programmed within the exchange office.

The programming is complete.

Keypad at a point-to-point connection

In the case of a special access to the public exchange, the target SO port and the target direct dialling number for outgoing calls can be indicated.

| Access to the public exchange via SO port LINE1 | 961NN |
| Access to the public exchange via SO port LINE2 | 962NN |

NN= direct dialling number (01...16)

Index of one of the four additional telephone numbers (17...20)

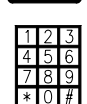00 for programming not related to the direct dialling

Example:
From extension 23, you want to set up an exchange office feature via the keypad function for the 2nd direct dialling number of the SO port LINE1.
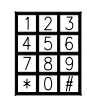
1. **Pick up extension 23's handset.**

You hear the internal dialling tone.

2. **Dial code number `96102` to get an exchange line via SO port LINE1 with the 2nd direct dialling number and to change over to the keypad mode.**

You are in the keypad mode and now have the option to program a function for the SO port LINE1 and the 2nd direct dialling number.

3. **Program a function for the 2nd direct dialling number, e. g. by the button combination `#21*33146#`.**

The desired function is programmed within the exchange office.

4. **Replace the handset.**

The programming is complete.

Remark:
Regarding the usage of the four additional telephone numbers as additional direct dialling numbers, please contact your local telecommunications network operator

Feature functions

Pager call (analogue telephones only)

You also have the possibility of paging individual people via the PABX. An individual pager signal (ringing tone)* can be assigned to each person. After dialling the pager call code number, all analogue telephones ring with their individual pager signal. If the desired party recognises his individual pager call signal he can pick up any telephone's handset and is immediately connected to the calling party.

Important: A pager call can only be made within the range of analogue extensions 21 to 28.

<u>**Table of pager call signals**</u>

Pager call code	Pager call signal
71	
72	
73	
74	
75	

<u>**Activate the pager**</u>

1. **Pick-up handset.**   *You hear the PABX dialling code*

2. **Dial pager call code number, e. g. 72 .**   *The telephones ring with their individual pager signals. You hear the same signal from your handset.*

3. **The targeted party recognises his pager signal and picks up a receiver.**   *The connection is established.*

Collective call (analogue telephones only)

The PABX offers you the option to call all extensions at the same time. The ringing signal of a collective call is the same as for external calls.

Note: A collective call is only possible within the range of analogue extensions 21 to 28.

1. **Pick up handset.**   *You hear the PABX dialling tone.*

2. **Dial code number for collective call, i. e. 76 .**   *The telephones ring with the same ringing signal as for external calls. You hear a ringing tone.*

3. **The handset of an extension is picked up.**   *The connection is established.*

* Remark: Please note that telephones with electronic call signalling (feature phones and cordless phones) may distort the ringing signal.

Feature functions

Emergency call (only analogue telephones)

If you want to inform all parties connected to the PABX about an emergency event, you can dial the call code. All extensions will ring with the call ringing signal ⎍⎍⎍⎍ ... (signal without interruption).
This can be an indication for an agreed reaction (e. g. company meeting etc.).
Remark: A call is only possible within the range of analogue extensions 21 to 28.

1. **Pick up handset.**

2. **Dial code number for call, i. e. 77 .**

3. **The handset of an extension is picked up.**

You hear the PABX dialling tone.

The telephones ring with the ringing signal for emergency calls*. You hear the same signal from your handset.

The connection is established.

If no extension is picked up and if the initiating party replaces the handset, the call is ended.
* Remark: Please note that telephones with electronic call signalling (feature phones and cordless phones) may distort the ringing signal.

Call pick-up

Another telephone is ringing and you want to retrieve the incoming call on your extension.

1. **Pick up handset.**

2. **Dial code number 70 .**

You hear the PABX dialling tone.

The connection with the caller is established.

Call pick-up from a specific extension

The PABX offers you the possibility of programming an analogue extension as a special terminal equipment connection. Incoming calls for this specific terminal equipment can be retrieved. If for example a telephone answering machine is connected to the terminal unit connection and if it receives an incoming call and started to answer it, you will be able to retrieve this call on your own extension. The connection to the answering machine is interrupted in this case.

Example: Extension 33 wants to retrieve a call from the answering machine connected to the special terminal equipment extension 27.

1. **Pick up extension 33's handset.**

2. **Dial code number 78 to retrieve the call from the special terminal equipment unit.**

You hear the PABX dialling tone.

The call is retrieved and the connection with the caller is established.

Remark: The factory pre-set does not include a programmed special terminal equipment connection. Thus you will have to program this function for an analogue extension prior to using this feature (see chapter: "Configuration via telephone").

Feature functions

Internal conference call

When users within the range of extensions 21 to 28 hold a telephone conversation, a third internal party can join. It is not possible to define the door intercom as a third party.

Example: Extensions 25 and 22 hold a conversation and want to initiate a three-party conference with extension 24. An analogue tone dialling telephone is used.

1. **Press extension 25's RECALL button.**	*The internal call is placed on hold. You hear the PABX dialling tone.*
2. **Dial extension number** 24 .	*Extension 24 rings. You hear the ringing tone. If the line is busy or if the call is not answered, you can resume the first telephone conversation by pressing the RECALL button.*
3. **Extension number 24 answers the call.**	*The three-party conference is activated and the conference call can start.*

Remark: If you use a pulse dialling telephone, you have to dial code number 1 instead of pressing the RECALL button.

Conference call with one external party

When a user within the range of extensions 21 to 28 has an external telephone call, a third internal party can join.
Example: Extensions 22 holds a telephone conversation with an external party and wants to initiate a three-party conference with internal extension 28. Extension 24 uses an analogue tone dialling telephone. An analogue tone dialling telephone is used.

1. **Press extension 22's RECALL button.**	*The external call is placed on hold. You hear the PABX dialling tone.*
2. **Dial extension number** 28 .	*Extension 28 rings. You hear the ringing tone.*
3. **Extension number 28 answers the call. Hold conversation.**	*Inform extension 28 that a conference call shall be established.*
4. **Dial code number** 8 **to initiate the conference call.**	*Extensions 22 and 28 have a conference call with an external party.*
5. **Extension 28 replaces the handset.**	*Extension 22 can continue the conversation with the external party.*

Remark:
The code number 8 to initiate a conference call is also valid for analogue pulse dialling telephones. You just have to dial code number 1 instead of pressing the RECALL button. (The party initiating the conference call has a master function. If this party replaces the handset, the conference call ends.)

Feature functions

Room monitoring

Room monitoring offers you the option of an acoustic monitoring of the area around a telephone. You need to place an analogue telephone in the room to be monitored, pick-up the handset and place it next to the phone. Then, dial the code number for the room monitoring function. For better quality, you should have the handset placed towards the direction of the area to be monitored. Afterwards, you can call the monitoring telephone from any analogue extension within the PABX to listen to what is happening in its surroundings.

Remark:
The room monitoring function can only be used within the range of analogue extensions 21 to 28.

Prepare room monitoring

Example: Room monitoring at extension 22.

1. **Pick up extension 22's handset.**   *You hear the PABX dialling tone.*

2. **Dial room monitoring code number**   *You hear the confirmation tone.*
   86 .

3. **Place the handset near the tele-**   *The room monitoring is prepared.*
   phone towards the direction of the
   area to be monitored.

To monitor the room

1. **Pick up handset.**   *You hear the PABX dialling tone.*

2. **Dial extension of the telephone**   *The connection is established. The*
   used for room monitoring, here   *sounds in the room that is monitored can*
   22 .   *be heard through the handset.*

3. **Replace handset.**   *The connection is interrupted.*

The room monitoring function is deactivated by replacing the handset of the telephone used for room monitoring, here 22

Feature functions

Do not disturb function

Any extension can be programmed in a way that the telephone does not ring if there is an incoming call (do not disturb position).

Activate do not disturb function

1. **Pick-up handset.**

   You hear the PABX dialling tone.

2. **Activate do not disturb function by dialling the code number** 81.

   The activation of the do not disturb function is indicated by the fast dialling tone of the PABX.

3. **Replace handset.**

   The extension will not ring in the case of incoming calls (external calls, internal calls, pager calls, door intercom calls). The calling party hears the normal ringing tone.

Deactivate do not disturb function

1. **Pick-up handset.**

   You hear the fast PABX dialling tone indicating the activated do not disturb function.

2. **Deactivate do not disturb function by dialling the code number** 80.

   You hear the PABX dialling tone.

3. **Replace handset.**

   Now your telephone will ring again when there are incoming calls.

Remark: By dialling the code number to deactivate the do not disturb function, the call diversion function is deactivated at the same time.

Call diversion (internal and external)

The PABX offers you the function to divert an incoming call to another extension.
Activate call diversion / Example for internal call diversion: Extension 24 wants to divert incoming calls to extension 32.

1. **Pick up extension 24's handset**

   You hear the PABX dialling tone.

2. **Dial code number** 82 **for call diversion.**

3. **Dial the desired new target extension number for you incoming calls, here** 32.

4. **Replace extension 24's handset.**

   All incoming calls for your extension are diverted to the entered target telephone number 32. In order to remind you of the activated call diversion function, the fast PABX dialling tone is heard when you pick up the handset of your own extension.

Feature functions

Example for external call diversion:
Extension 24 wants to divert incoming calls to the external telephone number 428678.

1. **Pick up extension 24's handset**   *You hear the PABX dialling tone.*

2. **Dial code number** 82 **for call diversion.**

3. **Dial code number** 0 **to indicate an external call diversion and the desired new target telephone number for you incoming calls, here** 428678 **.**

4. **Replace extension 24's handset.**   *All incoming calls for your extension are diverted to the entered external target telephone number. In order to remind you of the activated call diversion function, the fast PABX dialling tone is heard when you pick up the handset of your own extension*

Remark: If the target number for the call diversion is an internal analogue telephone, the individual ringing signals (e. g. external ringing signal, door intercom ringing signal) of the diverted telephone are also transferred.

Deactivate call diversion (internal and external)

Deactivate call diversion

Example: Extension 24 wants to deactivate the programmed call diversion.

1. **Pick up extension 24's handset.**   *You hear the fast PABX dialling when you pick up the handset of your own extension in order to remind you of the existing call diversion function.*

2. **Dial code number** 80 **.**   *You hear the confirmation tone.*

3. **Replace extension 24's handset.**   *The call diversion function is deactivated.*

Dialling the code number to deactivate the call diversion deactivates the do not disturb function at the same time.

Feature functions

Call forwarding (ISDN feature)

If you have an ISDN connection you have the option to have an external call forwarding as far as this functionality is made available by the local network operator. You can forward incoming calls to any desired external party – world-wide. Here three different types of call forwarding are distinguished:

Unconditional call forwarding: Any incoming call is directly forwarded to the programmed subscriber number.

Call forwarding on "no answer": If an incoming call is not answered within 15 seconds, it will be forwarded to the programmed subscriber number.

Call forwarding on "busy":   Incoming calls are forwarded to the programmed subscriber number if the called party is busy.

The call forwarding function can be programmed separately for each multiple subscriber number (MSN) of the PABX. Currently a point-to-point connection can be forwarded as a whole. The following telephone services can be forwarded for point-to-point connections and point-to-multipoint connections:
- speech
- audio 3k1Hz
- telephony 3k1Hz

Important:

- When you use the call forwarding function, please be aware that you have to bear the costs incurring for the connection from your telephone to the target subscriber number programmed. The calling party only has to bear the costs incurring for the connection up to your original extension.
- The PABX does not have a cost registration for the call charges incurring during call forwarding.
- If you want to reset the entire PABX, you have to deactivate the call forwarding function by the programming switch and dialling code number 10100 at extension 21.

|		
Unconditional call forwarding	831 PM	P = 1 : S0 port LINE1
Call forwarding on "busy"	832 PM	P = 2 : S0 port LINE2
Call forwarding on "no answer"	833 PM	Point-to-multipoint connection, M = 1 ... 9,0 for MSN 1 ... MSN 10
Deactivate call forwarding	834 PM	Point-to-point connection M = 1 (fixed)

Feature functions

Call forwarding

Activate call forwarding
Example for an unconditional call forwarding at a point-to-multipoint connection:
You want to forward MSN 1 at S0 port LINE 1 to the target telephone number 02102/428678.

1. **Pick up handset of the internal analogue telephone.** — *You hear the PABX dialling tone.*

2. **Dial code number 83111 .** — *Activate unconditional call forwarding for MSN1 at S0 port LINE1.*

3. **Dial target telephone number 02102428678 .**

4. **Replace extension 26's handset.** — *The call forwarding is established by the exchange office.*
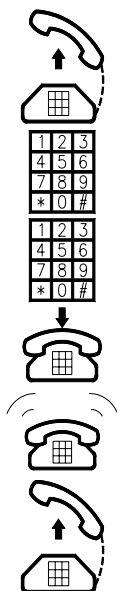
5. **Extension 26 rings.** — *You will be called back after a short time.*

6. **Pick up extension 26's handset.** — *A confirmation tone is heard if the programming was successful.*
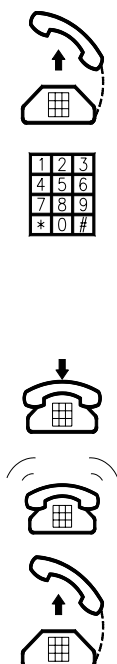
Example for call forwarding on "no answer" at a point-to-point connection:
In the case of a point-to-point connection it is not possible to have calls for an individual extension forwarded. The call forwarding can only be activated for the entire point-to-point connection.

Prerequisite:
No multiple subscriber numbers are programmed at the port of the point-to-point connection. Extension 39 wants to establish a call forwarding on "no answer" to the target telephone number 02102/428678 for the point-to-point connection at S0 port LINE2.

1. **Pick up extension 39's handset.** — *You hear the PABX dialling tone.*

2. **Dial code number 83321 .** — *Activate call forwarding on "no answer".*

3. **Dial target telephone number 02102428678 .**

4. **Replace extension 39's handset.** — *The call forwarding is established by the exchange office.*

5. **Extension 39 rings.** — *You will be called back after a short time.*

6. **Pick up extension 39's handset.** — *A confirmation tone is heard if the programming was successful.*

Feature functions
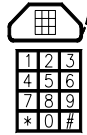
Deactivate call forwarding

Example: Deactivate unconditional call forwarding for MSN1 at S0 port LINE1 at extension 32.

1. **Pick up extension 32's handset.** *You hear the PABX dialling tone.*

2. **Dial code number ⟨83411⟩.** *Deactivate call forwarding.*

3. **Replace extension 32's handset.**

4. **Extension 39 rings.** *You will be called back after a short time.*

5. **Pick up extension 39's handset.** *A confirmation tone is heard if the programming was successful.*

Memory dialling

The PABX provides an memory dialling directory where you can store frequently used telephone numbers. You can store up to 100 telephone numbers of external parties with a maximum of 20 digits each. The numbers can easily be accessed by all persons authorised to use this directory. Instead of entering the original telephone number just dial the code number, i. e. the corresponding memory dialling code in the range from 600 to 699.
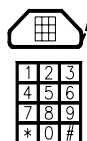
Example:
Extension 21 wants to call an external subscriber with the telephone number 0123-45678. This telephone number is stored in the system's memory dialling directory and the assigned memory dialling number is 681 (see "Configuration via telephone").

1. **Pick up extension 21's handset.** *You hear the PABX dialling tone.*

2. **Dial memory dialling code, here ⟨681⟩.** *The PABX occupies an available B channel and dials the number 0123-45678. You hear the ringing signal.*

3. **Start conversation when the called external subscriber answers the call.**

4. **End conversation. Replace extension 21's handset.**

Remark:
If you use the memory dialling, you do not need to dial "0" for the access to the public exchange.

Feature functions

Door intercom

A door intercom can also be connected to the PABX. This would replace the analogue extension 8 and an additional printed circuit board must be installed in the PABX.

Door signalling
When the intercom's door bell button is pressed, the connected analogue telephones will ring with the door signal tone as far as this feature is activated.

Answering the door intercom
You will be connected to the door intercom by dialling code number 5. You can now start a conversation which will end when you replace the handset of your telephone.

Door opener
During your conversation via the door intercom, you can activate the door opener. Just dial code number 61.

Sound test

Your PABX uses different tone dialling signals in order to indicate specific operations. You can have a sound test of these specific tone dialling signals via extension 21.

Code number	Signal
1701	Day mode programming tone
1702	Night mode programming tone
1703	Confirmation tone
1704	Error tone

The PABX allows you to play a PABX internal melody while a waiting external party is placed on hold. As an alternative, you can provide music by external sources – via the audio input. The sources could be e. g. a digital announcement manager (e. g. tiptel 560) or a CD player.

You can play back the activated melody by dialling code number 1705 at extension 21.

Day and night mode

Once you have programmed the features, they are retained in the case of a power failure. The choice between day and night mode allows you to store two different configurations and to use them when required, e. g. one configuration for the night mode and the other for the day mode.

The following parameters can be programmed:
External ringing signals, access to public exchange, restricted numbers, memory dialling, door signalling, direct connection of the door intercom, authorisation to activate the door intercom, cost centre, Global call (in the case of a point-to-point connection and switchboard function in the case of a point-to-multipoint connection).

Feature functions

Switching between day and night mode for all extensions

Switching between day and night mode for all extensions can only be done from extension 21.
A password is required for this transaction. Also the day or night mode for the switchboard function (point-to-multipoint connection) or the Global Call function (point-to-point connection) can only be switched from extension 21.

1. **Pick up extension 21's handset.**   *You hear the PABX dialling tone.*

2. **Select code number from the table below, e. g. 1802 for the night mode.**

3. **Dial 4-digit password necessary to activate the function, e. g. 2453.**   *You hear the confirmation tone. If the password entered is incorrect, you hear the error tone and the function is aborted. In the factory pre-set, the password is 1111.*

4. **Replace extension 21's handset.**   *The PABX now has the features programmed for the night mode.*

Day mode for all extensions	1801 VVVV
Night mode for all extensions	1802 VVVV
Day mode for Global Call/switchboard	1803 VVVV
Night mode for Global Call/switchboard	1804 VVVV

(VVVV = password for activation)

Switching between day and night mode for one extension

Every authorised user can also switch between the day and night mode for his own extension exclusively.

1. **Pick up extension for which the mode shall be switched.**   *You hear the PABX dialling tone.*

   You hear the confirmation tone. If the extension is not authorised to change the operation mode, you hear the error tone and the function is aborted.

2. **Select code number from the table below, e. g. 851 for the day mode.**

3. **Replace handset.**   *The PABX now has the features programmed for the day mode.*

| Day mode for one extension | 851 |
| Night mode for one extension | 852 |

Configuration via PC (RS232C)

You can also configure your PABX via an IBM compatible PC. In addition, the software offers the following options:

- Reading out and evaluating telephone costs. During operation the PABX stores up to 1,000 call data records.
- Memory dialling directory with telephone number and address.
- Overview of all PABX parameters.
- Saving the configuration on hard disk or floppy disk.
- Print output (programmed parameters, telephone costs, memory dialling directory.

A software version for MS-Windows 3.1® and Windows 95® is included in the scope of supply.

System requirements for the versions under MS-Windows 3.1x® and Windows 95®.

- IBM compatible PC as of 80226.
- At least 4 MB RAM
- Disk drive 3.5"/1.44 MB
- At least 1 serial COM interface, 9-pin (RS232 or V.24).
- Parallel interface for printer.
- MS DOS version 5.0 or higher.
- MS Windows version 3.1 or higher (installation of Win32s required) or MS Windows 95.
- At least 3 MB free disk space on the hard disk. For installation with Win32s at least 5.5 MB free disk space on hard disk.

Software installation for MS-Windows 3.1x® and Windows 95®

The configuration software of your PABX was especially developed for the operation of the operating system Microsoft Windows 95. All normal Windows 95 features, e. g. file names of more than 8 digits are at disposal.

Nevertheless, you can also run the software under Microsoft Windows 3.1 and 3.11 if you install a driver for 32bit applications before installing the configuration software. This driver is included in the scope of supply of your PABX. It is called Win32s and is installed from 2 floppy disks. You can run a test by inserting the configuration software installation disk and starting the setup program. Setup is able to identify the configuration and asks you to install the Win32s software if this is not available on your computer.

® MS-Windows is a registered trademark of the Microsoft Corporation.

Configuration via PC (RS232)

Starting the installation routine setup.exe from the disk "configuration software for Windows"

For MS-Windows 95:

1. **Start Windows 95. Exit all other running applications.**

   You are in the Windows 95 Desktop.

2. **Insert disk "configuration software for Windows".**

3. **Select the option "execute" from the start menu. Now enter A:\SETUP.EXE (ok button) in the displayed command line.**

   The installation routine is now started.

For MS-Windows 3.1 or 3.11:

1. **Start Windows 3.1 or 3.11. Exit all other running applications.**

   You are in the Windows Program Manager.

2. **Insert disk "configuration software for Windows".**

3. **Select the FILE menu in the Program Manager.**

4. **Activate the option "execute". Now enter A:\SETUP.EXE (ok button) in the displayed command line.**

   The installation routine is now started.

Remark:

The program SETUP.EXE on the disk "configuration software for Windows" first checks on which platform it shall be installed.

If Windows **3.1 without Win32s** is found, SETUP asks you to install Win32s and the installation is interrupted.

Configuration via PC (RS232C)

The installation procedure for Win32s is as follows:

1. **Insert the first Win32s disk (disk1).**
2. **Select the FILE menu from the Program Manager.**
3. **Click on "EXECUTE". Enter A:\SETUP.EXE in the displayed command line (ok button).**
4. **Follow the instructions of the setup program and insert disk 2 when requested.**

After completing the installation you can run 32 bit software under Windows 3.1x. You can now install the configuration software for your PABX as described above.

If the installation shall be done under Windows 3.1x with Win32s, the program will be installed in a freely definable directory - with the required 16 bit service DLLs and the 32 bit Universal-Thunk DLLs.

If Windows 95 is identified as platform, the installation is done in a freely definable directory – with the required 32 bit Service DLLs.

The following options can be chosen during the setup:

- **Language:** Select the desired language.

- **Country version:** Select the target country for your PABX.

- **COM port:** Select the serial interface via which your PABX is connected with the PC.

- **Currency:** Select the desired currency for telephone costs.

- **Costs per unit:** Costs for the unit in the selected currency.

Enter the desired options on the screen and click on the "ok button" afterwards to confirm the selection. The selected options are stored in an INI file in the Windows directory.
The setup program generates a Windows Program Group. Start the configuration software by a double-click on the ICON in the Program Group!
Further details can be taken from the interactive help function and the README file which can be found in the same Program group.

Operational hints

Functions in the case of a power failure

You cannot make telephone calls in the case of a power failure or if the device is unplugged. All settings, features and memory dialling numbers remain stored and will be available as soon as the power supply is restored. The stored charging data will be retained for at least 48 hours.

Configuration via telephone

The PABX features can be adapted to the user requirements. The configuration can either be done via telephone extension 21 or via a PC. The programmed parameters are retained in the case of a power failure. The factory pre-set can be identified by the grey background pattern in the corresponding tables.
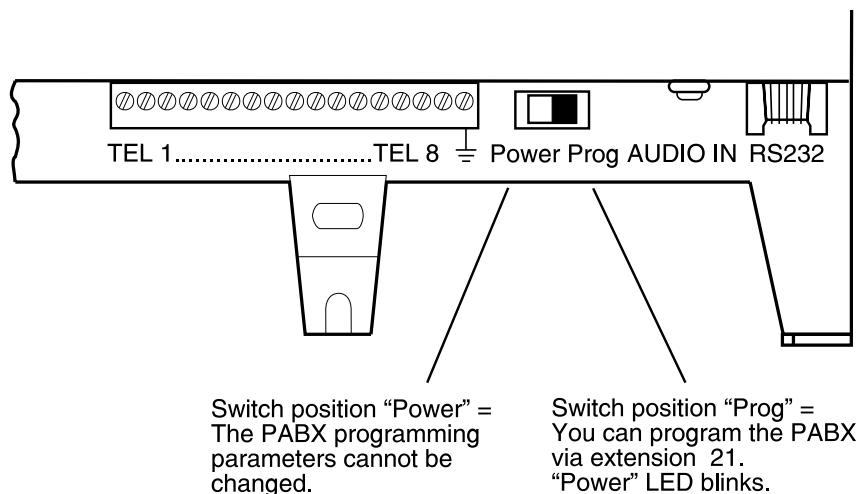
Practical programming tips

- The programming is only possible if the programming switch within the PABX is switched to the programming position "Prog". The Power LED blinks to indicate this status.
- An overview of possible programming parameters can be taken from the "Table of programming parameters" on pages 63 and 64.
- You can have a sound test of the tones that are heard while programming the device via extension 21 (see "Feature functions, Sound test").
- Some PABX features can be programmed separately for the day mode or the night mode. For this purpose the day programming mode (access via 801) and the night programming mode (access via 802) are available. While programming via extension 21 you can switch between these programming modes and set the desired parameters. The corresponding day or night programming tone is heard.
- Extension 21's handset has to be replaced for about 1 second after each programming step. When you pick up the handset again, a confirmation tone is heard and you can start the next programming step.
- If no entry is made for about 30 seconds, the programming mode is automatically interrupted. The busy tone is heard.
- **After finishing the programming you have to switch the programming switch to the "Function" position. This protects you against unintentional changes in the settings.** The power LED then remains lit in order to indicate that you are protected against unintentional modifications.
- After finishing the programming the data are stored. This takes approximately 5 seconds. During this time, no dialling tones can be heard at extensions 21 and 28. A power failure during this time would entail a loss of data.

Configuration via telephone

Access to the programming mode

The settings can only be made or changed from extension 21. In addition the programming switch within the PABX has to be in the position "Prog". You do not have access to the programming mode if the programming switch is in the position "Power". The programming switch is located beneath the PABX connection cover, to the right of the telephone connection clamp.

TEL 1..............................TEL 8   Power Prog AUDIO IN RS232

Switch position "Power" =
The PABX programming
parameters cannot be
changed.

Switch position "Prog" =
You can program the PABX
via extension 21.
"Power" LED blinks.

1. **Open the PABX connection cover.**

2. **Switch programming switch to position "Prog"**

   The LED "Power" blinks.

3. **Lift extension 21's handset.**

   You hear the PABX dialling tone.

4. **Dial programming code number 19999 .**

   You are now in the day programming mode. You hear the day programming tone.

5. **Dial the desired programming codes corresponding to the descriptions in the following chapters.**

   A confirmation tone is heard after each configuration step. If the entry is incorrect or not possible you hear an error tone. After that you will hear the day programming tone again.

6. **Replace extension 21's handset.**

   The configuration is concluded.

7. **Switch programming switch to position "Power".**

   The LED "Power" remains lit. The PABX configuration is protected against unintentional modifications.

8. **Close PABX connection cover.**

Configuration via telephone

Changing the password for registration of costs and activation

The PABX works with different passwords. The activation password is required to change between day and night mode. It prevents unauthorised users from changing the settings. The factory pre-set for this password is 1111. You will need the cost registration password in order to read out telephone cost information. The factory pre-set for this password is 2222. You can change each of these four digit passwords as desired.

Example: The activation password 1111 shall be changed to 2468.

1. **Switch programming switch to position "Prog". Dial program code Number** `19999` **at extension 21.**

   You hear the day programming tone.

2. **Select program code according to the table below, e. g. 63 in order to change the activation password.**

   Programming of the activation password initiated.

3. **Dial old password** `1111` **.**

4. **Dial new password** `2468` **.**

5. **Redial new password for confirmation.**

6. **Replace extension 21's handset.**

   Password entry finished.

7. **For confirmation pick up extension 21's handset after 1 second.**

   You hear the confirmation tone followed by the programming tone. You are still in the programming mode. In the case of errors during your entry you will hear the error tone. Repeat entry as of point 2.

8. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Change cost registration password	62
Change activation password	63

Configuration via telephone

Setting the system time

The system time is used for the registration of costs and is set via extension 21.

Example: You want to set 08th May 1996, 09:58 hrs as system time.

1. **Switch programming switch to position "Prog". Dial program code number** $\boxed{19999}$ **at extension 21.**

    You hear the day programming tone.

2. **Dial code number** $\boxed{60}$ **for system time setting.**

    Programming of the system time is initiated.

3. **Dial system time:** $\boxed{08\ 05\ 96\ 09\ 58}$.

4. **Replace extension 21's handset.**

    The new system time is programmed.

5. **For confirmation pick up extension 21's handset after 1 second.**

    You hear the confirmation tone followed by the programming tone. You are still in the programming mode.

6. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

As for entering the system time, you have to stick to the following format:
DD MM YY hh mm = 10 digits (after entry of the code number).

The meaning is as follows:

DD = day = [01 ... 31   hh = hour = [00 ... 23]   MM = month = [01 ... 12

mm = minute = [00 ...] 59   YY = year = [00 ... 99]

Access authorisation for external lines

There are three different types of authorisations:

1. Unrestricted authorisation:
   You can receive and make external calls.
   The telephone network access is on.
   The external ringing signal is on.

2. Partially restricted authorisation:
   You can receive external calls but do not have the option to make external calls. If you dial the telephone network access code number 0, you will hear a busy tone.
   The telephone network access is off.
   The external ringing signal is on.

Configuration via telephone

3. No authorisation:
You can neither receive nor make external calls.
The telephone network access is off.
The external ringing signal is off.

Remark:
In the factory pre-set all extensions have unrestricted authorisations. An external call transfer to partially restricted extensions or extensions with no authorisations is possible.

Access to public exchange

The authorisation to access the public exchange, authorises the user to make external calls.

1.	**Switch programming switch to position "Prog". Dial program code number** `19999` **at extension 21.**	*You hear the day programming tone.*
2.	**Dial 801 for the day mode or** `802` **for the night mode**	*You hear the corresponding programming tone – day or night.*
3.	**Select code number from the table, e. g.** `2432`, **in order to switch off the access to the public exchange for extension 23.**	*You hear the confirmation tone followed by the programming tone.*
4.	**Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**	

Access to public exchange on	23N	N = Number of the target extension (21 ... 28, 30...
Access to public exchange off	24N	39, 40 ... 49).

Automatic access to the public exchange

An automatic access to the public exchange can be set for all analogue extensions. You will hear the external dialling tone after picking up the handset. This function is practical for e. g. fax machines.

1.	**Switch programming switch to position "Prog". Dial program code number** `19999` **at extension 21.**	*You hear the day programming tone.*
2.	**Select code number from the table, e. g.** `30327` **to set the automatic access to the public exchange for extension 27.**	*You hear the confirmation tone followed by the programming tone.*

Configuration via telephone

3. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Function".**

Automatic access to the public exchange ON	303N
Automatic access to the public exchange OFF	304N

N = internal telephone number (21...28, 30...39, 40...49)

Remark: If all external B channels are occupied, you will hear the busy tone after picking up the handset. Internal calls from a/b extensions can be made by dialling the * button before the extension number. As regards ISDN extensions, this is possible if no dialling data are sent for 10 seconds. Then, you will hear the internal dialling tone.

Authorisation to access the public exchange for tiptel 822

You can program the authorisation to access the public exchange separately for each telephone number.

The following table shows the required code numbers.

Access to the public exchange LINE1	325N
Access to the public exchange LINE2	326N
Access to the public exchange variable	327N

N = internal telephone number (21...28, 30...39, 40...49)

Example:
The access to the public exchange from extension 25 shall only be authorised via SO port LINE2.

1. **Switch the programming switch to position "Prog". Dial program code number 19999 at extension 21.** *You hear the day programming tone.*

2. **Dial code number 32625 to authorise the access to the public exchange via SO port LINE2 for extension 25.** *Access to the public exchange via LINE2 activated for extension 25.*

3. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".** *You hear the confirmation tone followed by the programming tone.*

If the access to the public exchange for extension 25 was restricted earlier by the configuration "no authorisation to access the public exchange", the above setting will have no effect. Then, extension 25 cannot occupy an exchange line, neither via SO port LINE1 nor via LINE2.

Configuration via telephone

External ringing signals

Incoming external calls are identified by the external ringing signal. The ringing signal can be switched on or off individually per extension.

1. Switch programming switch to position "Prog". Dial program code number $\boxed{19999}$ at extension 21.

   You hear the day programming tone.

2. Dial $\boxed{801}$ for the day mode or $\boxed{802}$ for the night mode

   You hear the corresponding programming tone – day or night.

3. Select code number from the table, e. g. $\boxed{2234}$, in order to switch off the external ringing signal for extension 34.

   You hear the confirmation tone followed by the programming tone.

4. Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Function".

External ringing signal on	21N
External ringing signal off	22N

N = Number of the target extension
(21 ... 28, 30... 39, 40 ... 49).

Remark:
As for extensions with external ringing signal off, it is possible to take over an external call by the call pick-up function or by the call transfer function.

Sequential call function

The sequential call function allows you to determine a fixed sequence of extensions to be called for incoming external calls. The sequential call function can be programmed for any MSN (at a point-to-multipoint connection) or any DDI/additional telephone number (at a point-to-point connection) instead of the assignment to internal telephone numbers of the PABX. If there is an incoming external call for one of these telephone numbers, up to 5 internal extensions are called sequentially after an interval of 15 seconds (sequential call station 1 ... 5).

Remark:
If a call diversion to an external telephone number was programmed for one of the telephones included in the sequential call function, this call diversion is routed and the sequence of the calls is stopped by this.

Configuration via telephone

Prepare sequential call function

Example: The telephones with the extensions 23 and 46 shall be included in a sequential call and ring one after another.

1. **Switch programming switch to position "Prog". Dial program code number** `19999` **at extension 21.**

    You hear the day programming tone.

2. **Dial code number** `521` **according to the table below.**

    The programming of the first sequential call station is initiated.

3. **Dial internal extension number** `46`**.**

    You hear the confirmation tone followed by the programming tone. The first sequential call station is programmed.

4. **Dial code number** `522` **according to the table below**

    The programming of the second sequential call station is initiated.

5. **Dial internal extension number** `23`**.**

    You hear the confirmation tone followed by the programming tone. The second sequential call station is programmed.

6. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Function".**

1st sequential call station	521 IN1
2nd sequential call station	522 IN2
3rd sequential call station	523 IN3
4th sequential call station	524 IN4
5th sequential call station	525 IN5

IN1 ... IN5 = internal extension numbers:
21 ... 28, 30 ... 49

Assigning sequential call function

Assigning the sequential call function to a multiple subscriber number
A sequential call function can be assigned to each MSN. But this can only be applied instead of an assignment to an internal telephone number.

Assignment of MSNs to the special function "sequential call"									
MSN 1	MSN 2	MSN 3	MSN 4	MSN 5	MSN 6	MSN 7	MSN 8	MSN 9	MSN 10
LINE1 673120	673220	673320	673420	673520	673620	673720	673820	673920	673020
LINE2 683120	683220	683320	683420	683520	683620	683720	683820	683920	683020

Configuration via telephone

Example:
The sequential call function shall be assigned to the MSN 3 of SO port LINE1.

1. **Pick up extension 21's handset and dial the program code number** 19999.

   You hear the day programming tone.

2. **Dial code number** 673320 **to assign the special function "sequential call" to MSN 3.**

   MSN 3 of SO port LINE1 is assigned for the sequential call function.

3. **Replace extension 21's handset.**

   The special function "sequential call" is assigned.

4. **For confirmation, pick up extension 21's handset again after 1 second.**

   You hear the confirmation tone followed by the programming tone.

5. **Replace extension 21's handset.**

   Assignment of the MSN to the sequential call function is complete.

In order to have a proper function, the sequential call has to be configured. For related information, please read chapter "Prepare sequential call function"!

Assigning the sequential call function to a DDI or additional telephone number

A sequential call function can be assigned to each DDI or additional telephone number. But this can only be applied instead of a link to an internal telephone number.

Assignment of DDIs to the special function "sequential call"		
	SO port LINE1	SO port LINE2
DDI 1	670120	680120
DDI 2	670220	680220
DDI 3	670320	680320
DDI 4	670420	680420
DDI 5	670520	680520
DDI 6	670620	680620
DDI 7	670720	680720
DDI 8	670820	680820
DDI 9	670920	680920
DDI 10	671020	681020
DDI 11	671120	681120
DDI 12	671220	681220
DDI 13	671320	681320
DDI 14	671420	681420
DDI 15	671520	681520
DDI 16	671620	681620

Configuration via telephone

Assignment of additional telephone numbers to the special function "sequential call"		
	SO port LINE1	SO port LINE2
1st additional telephone number	671720	681720
2nd additional telephone number	671820	681820
3rd additional telephone number	671920	681920
4th additional telephone number	672020	682020

Example:
The sequential call function shall be assigned to the 3rd stored DDI.

1. **Pick up extension 21's handset and dial the program code number** 19999.

    You hear the day programming tone.

    The third DDI of the SO port LINE2 is assigned for the sequential call function.

2. **Dial code number** 680320 **to assign the special function "sequential call" to the third stored DDI at SO port LINE2.**

    The special function "sequential call" is assigned.

    You hear the confirmation tone followed by the programming tone.

3. **Replace extension 21's handset.**

    Assignment of the DDI to the sequential call function is complete.

4. **For confirmation, pick up extension 21's handset again after 1 second.**

5. **Replace extension 21's handset.**

In order to have a proper function, the sequential call has to be configured. For related information, please read chapter "Prepare sequential call function"!

Configuration via telephone

Program restricted numbers

With the PABX you have the possibility to restrict outgoing trunk calls (beginning with "0"), international calls (beginning with "00") as well as up to 5 individually defined restricted numbers for each extension separately.

1. **Switch programming switch to position "Prog". Dial program code number** $\boxed{19999}$ **at extension 21.**

   You hear the day programming tone.

2. **Dial** $\boxed{801}$ **for the day mode or** $\boxed{802}$ **for the night mode**

   You hear the corresponding programming tone – day or night.

3. **Select code number from the table, e. g.** $\boxed{2847}$ **, in order to program extension 47 as restricted number for international calls.**

   You hear the confirmation tone followed by the programming tone.

4. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Function".**

Trunk calls allowed (0..)	25N
Trunk calls blocked	26N
International calls allowed (00..)	27N
International calls blocked	28N
Restricted numbers allowed	29N
Restricted numbers blocked	20N

N = Number of the target extension (21 ... 28, 30... 39, 40 ... 49).

Remark: If no restricted numbers were programmed, an error tone is heard after programming "restricted number allowed" or "restricted number blocked".

Configuration via telephone

Program restricted numbers (erase restricted numbers)

The PABX allows to enter a list of restricted numbers comprising up to 5 telephone numbers.

Example: Telephone numbers beginning with 0190... shall be included in the list of restricted numbers.

1. **Switch programming switch to position "Prog". Dial program code number** 19999 **at extension 21.**

   You hear the day programming tone.

2. **Select code number from the table, e. g.** 641 **, in order to select the first restricted number**

3. **Dial telephone number to be restricted, e. g.** 0190 **.**

   Do not enter any further telephone number if you intend to erase the restricted number. Continue as described under point 4.

4. **Replace extension 21's handset.**

   Restricted number is either programmed or erased.

5. **For confirmation pick up extension 21's handset after 1 second.**

   You hear the confirmation tone followed by the programming tone. You are still in the programming mode.

6. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Restricted number	
1	641
2	642
3	643
4	644
5	645

Remark:
- The restricted number programming has to be effected in order to activate the restriction.
- Restricted numbers are entered without the code number for access to the public exchange.

Configuration via telephone

Collective and pager call

The authorisation to activate or receive collective calls or pager calls can be set individually for each analogue extension.

Note: This function is only possible within the range of the analogue extensions 21 ... 28.

1. **Switch programming switch to position "Prog". Dial program code number** `19999` **at extension 21.**

   You hear the day programming tone.

2. **Select code number from the table, e. g.** `32422`**, in order to suppress pager calls or allow at extension 22.**

   You hear the confirmation tone followed by the programming tone.

3. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Authorised to activate collective/emergency calls	311N
Restricted from activating collective/emergency calls	312N
Authorised to receive collective/emergency calls	313N
Restricted from receiving collective/emergency calls	314N
Authorised to activate pager calls	321N
Restricted from activating pager calls	322N
Authorised to receive pager calls	323N
Restricted from receiving pager calls	324N

N = Number of the target extension (21 ... 28, 30... 39, 40 ... 49).

Configuration via telephone

Authorisation to activate call diversion

The authorisation for a call diversion function can be assigned or restricted individually for any extension. The call diversion is only possible within the range of internal extensions.

1. **Switch programming switch to position "Prog". Dial program code number** ☐19999☐ **at extension 21.**

   You hear the day programming tone.

2. **Dial code number according to the table, e. g.** ☐33225☐ **, in order to restrict extension 25 from programming a call diversion.**

   You hear the confirmation tone followed by the programming tone.

3. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Call diversion authorised	331N
Call diversion restricted	332N

N = Number of the target extension (21 ... 28, 30... 39, 40 ... 49).

Authorisation to activate the call forwarding

The authorisation for an external call forwarding function within the ISDN network can be assigned or restricted for any extension. The call diversion is only possible within the range of internal extensions.

1. **Switch programming switch to position "Prog". Dial program code number** ☐19999☐ **at extension 21.**

   You hear the day programming tone.

2. **Dial code number according to the table, e. g.** ☐33430☐ **, in order to restrict extension 30 from programming a call forwarding.**

   You hear the confirmation tone followed by the programming tone.

3. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Function".**

Call transfer authorised	333N
Call transfer restricted	334N

N = Number of the target extension (21 ... 28, 30... 39, 40 ... 49).

Configuration via telephone

Charge pulse

If connected analog telephones can evaluate charging information it is also possible to set a charge pulse for the analogue equipment. Then, the telephones display the charging information transferred by the exchange office. This function is only available within the range of the analogue extensions 21 ... 28.

1. **Switch programming switch to position "Prog". Dial program code number** $\boxed{19999}$ **at extension 21.**

   You hear the day programming tone.

2. **Dial code number according to the table, e. g.** $\boxed{33721}$ **, in order to activate the charge pulse for extension 21.**

   You hear the confirmation tone followed by the programming tone.

3. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Telephone unit pulse on	337N
Telephone unit pulse off	338N

N = Number of the target extension (21 ... 28, 30... 39, 40 ... 49).

Remark: Your ISDN connection has to provide telephone unit pulse data during the telephone conversation in order to be able to use this feature.

Enter charging information - N/A

If charging information for incurred communication costs for external calls are not provided as charge pulse but as amounts, you can apply a charge factor in order to derive the corresponding number of charge pulses. The charge pulses can then be used to display the communication costs at your analog telephones (see also charge pulse).

1. **Switch programming switch to position "Prog". Dial program code number** $\boxed{19999}$ **at extension 21.**

   You hear the day programming tone.

2. **Dial code number** $\boxed{68}$ **and the charge factor, e. g. 12 for 12 pfennigs**

   Charge factor allocated.

3. **Replace extension 21's handset.**

   Entry finished.

Please note: Advise of charge is not yet availabel in UK and will be subject to provisions from your network provider.

Configuration via telephone

4. **For confirmation pick up extension 21's handset after 1 second.**

   You hear the confirmation tone followed by the programming tone. You are still in the programming mode.

5. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Authorisation to activate the do not disturb function

The authorisation to activate the do not disturb function can be individually assigned or restricted for any extension.

1. **Switch programming switch to position "Prog". Dial program code number 19999 at extension 21.**

   You hear the day programming tone.

2. **Dial code number according to the table, e. g. 34122, in order to activate the do not disturb function for extension 22.**

   You hear the confirmation tone followed by the programming tone.

3. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Do not disturb function authorised	341N
Do not disturb function restricted	342N

N = Number of the target extension (21 ... 28, 30... 39, 40 ... 49).

Configuration via telephone

Authorisation to pick up calls

The authorisation to pick up calls or to pick up calls from the point-to-point connection can be individually assigned or restricted for any extension.

1. **Switch programming switch to position "Prog". Dial program code number** 19999 **at extension 21.**

    You hear the day programming tone.

2. **Dial code number according to the table, e. g.** 35242 **, in order to restrict extension 42 from picking up calls.**

    You hear the confirmation tone followed by the programming tone.

3. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Pick up of calls authorised	351N
Pick up of calls restricted	352N

N = Number of the target extension (21 ... 28, 30... 39, 40 ... 49).

Authorisation to switch between day and night mode

A switch between the programming parameters for the night mode and the parameters of the day mode can be individually made for any extension. The authorisation to switch between the day and night mode can be assigned or restricted for any individual extension.

1. **Switch programming switch to position "Prog". Dial program code number** 19999 **at extension 21.**

    You hear the day programming tone.

2. **Dial code number according to the table, e. g.** 36234 **, in order to restrict extension 42 from switching between day and night mode.**

    You hear the confirmation tone followed by the programming tone.

3. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Switch between day and night mode authorised	361N
Switch between day and night mode restricted	362N

N = Number of the target extension (21 ... 28, 30... 39, 40 ... 49).

Configuration via telephone

Authorisation to activate the room monitoring function

The authorisation to activate the room monitoring function can be set on or off separately for each analogue extension. If you try to monitor a room from an extension that is not authorised to execute this function, you will hear the busy tone.

Remark: The room monitoring function is only possible within the range of analogue extensions 21 ... 28.

1. **Switch programming switch to position "Prog". Dial program code number** 19999 **at extension 21.**

   You hear the day programming tone.

2. **Dial code number according to the table, e. g.** 37226 **, in order to restrict extension 26 from the option to monitor a room.**

   You hear the confirmation tone followed by the programming tone.

3. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Room monitoring authorised	371N
Room monitoring restricted	372N

N = Number of the target extension (21 ... 28).

Calling line identification presentation (outgoing external calls)

One of the ISDN features is the transfer and presentation of your own telephone number when you make an external call. This feature can be activated or deactivated for any analogue extension. As for ISDN telephones, this feature can be activated or deactivated at the terminal equipment itself.

Example: The telephone number of extension 22 shall not be transferred and presented during external calls (CLIR).

1. **Switch programming switch to position "Prog". Dial program code number** 19999 **at extension 21.**

   You hear the day programming tone.

2. **Dial code number according to the table, e. g.** 30222 **, in order to restrict calling line identification presentation for extension 22.**

   You hear the confirmation tone followed by the programming tone.

3. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Calling line identification presentation (CLIP)	301N
Calling line identification restriction (CLIR)	302N

N = Number of the target extension (21 ... 28).

Remark: This feature must be made available by your ISDN network.

Configuration via telephone

Call waiting / analogue telephones

You will hear a call waiting tone during holding an internal or external conversation when a third party - either at the door intercom or an external caller - wants to reach you although your extension is busy. If you hold an external conversation, the signal is only heard once. If you hold an internal conversation the call waiting tone corresponds to the external call signal or the door intercom signal. You can set this feature on or off for each individual a/b connection.
Example: Call waiting tone shall be set off at extension 24.

1. **Switch programming switch to position "Prog". Dial program code number 19999 at extension 21.**

   You hear the day programming tone.

2. **Dial code number according to the table, e. g. 38224, in order to restrict the call waiting tone for extension 24.**

   You hear the confirmation tone followed by the programming tone.

3. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Call waiting tone on (a/b)	381N
Call waiting tone off (a/b)	382N

N = Number of the target extension (21 ... 28).

Call waiting / ISDN telephones

As for ISDN telephones, this feature can be activated or deactivated at the terminal equipment itself. The call waiting signal (optical, acoustic or via display) depends on the individual ISDN telephone.

Special terminal equipment connection

You have the option to use an analogue port of the PABX to connect special terminal equipment, e. g. an answering machine. You can pick up incoming external calls for this extension at any time by dialling code number 78, for example if somebody is leaving a message on the answering machine.

1. **Switch programming switch to position "Prog". Dial program code number 19999 at extension 21.**

   You hear the day programming tone.

2. **Dial code number according to the table, e. g. 33527, in order to set extension 27 as a terminal equipment connection.**

   You hear the confirmation tone followed by the programming tone.

a/b connection	21	22	23	24	25	26	27	28
Special terminal equipment connection on	33521	33522	33523	33524	33525	33526	33527	33528
Special terminal equipment connection off	33621	33622	33623	33624	33625	33626	33627	33628

Configuration via telephone

Special terminal equipment connection

1. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Remark: If you set a new special terminal equipment connection, the old one will automatically be erased. Only one extension can be set as a special terminal equipment connection at a time.

Multiport connection for combination equipment, fax, modem

The analogue extensions can be configured as telephone or combination equipment connections. For a multiport connection, the following parameters will be set:

- Call waiting signal will be restricted.
- Collective and emergency calls will not be received.
- Pager calls will not be received.
- The door intercom signal will not be received.
- For outgoing external calls, the bearer capability "3.1 kHz Audio" will be sent.

These settings will be made for the day and the night mode at the same time.
Example: Extension 26 is configured as fax connection.

1. **Switch programming switch to position "Prog". Dial program code number 19999 at extension 21.**

   You hear the day programming tone.

2. **Dial code number according to the table, e. g. 30526, in order to set extension 26 as a fax connection.**

   You hear the confirmation tone followed by the programming tone.

3. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

a/b connection	21	22	23	24	25	26	27	27
Multiport (combined terminal equipment connection, fax and modem)	30521	30522	30523	30524	30525	30526	30527	30528
Single port (telephone)	30621	30622	30623	30624	30625	30626	30627	30628

Configuration via telephone

Music on hold

An external party can listen to music while on hold. The music can either be the PABX internal music or music from an external source, e. g. the tiptel 560 digital announcement manager or a CD player which is played via the audio input jack. You can also turn the music off.

Example: To switch off "Music on hold".

1. **Switch programming switch to position "Prog". Dial program code number** 19999 **at extension 21.**

   You hear the day programming tone.

2. **Dial code number according to the table, e. g.** 713 **, in order to switch off music on hold.**

   You hear the confirmation tone followed by the programming tone.

3. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Internal music on hold on	711
External music via audio input on	712
Music on hold off	713

Remark: The internal music produced by the PABX is free from musical copyright charges. If you play external music this may incur musical copyright charges.

Memory dialling

The PABX provides a memory dialling option to store a maximum of 100 external telephone numbers. The code number for the access to the public exchange must not be entered when storing the numbers. All authorised PABX parties can access the stored telephone numbers within the range of abbreviated numbers 600 to 699.

Storing (erasing) memory dialling numbers

A telephone number to be stored in the memory dialling directory may have a maximum of 20 digits.

Configuration via telephone

Example: The external telephone number 0123-7654 shall be assigned to the memory dialling number 642.

1. **Switch programming switch to position "Prog". Dial program code number 19999 at extension 21.**

   You hear the day programming tone.

2. **Dial code number 61.**

   The programming of the memory dialling number is initiated.

3. **Dial memory dialling number, e. g. 642 .**

   The memory dialling number 642 is selected.

4. **Dial external telephone number, e. g. 01237654 .**

   If you intend to erase the memory dialling number, do not enter a telephone number and continue as described under point 5.

5. **Replace extension 21's handset.**

   Telephone number entry completed.

6. **For confirmation pick up extension 21's handset after 1 second.**

   You hear the confirmation tone followed by the programming tone. You are still in the programming mode.

7. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Remark: The memory dialling numbers are entered without the code number for the access to the public exchange.

Authorisation to access the memory dialling directory

The authorisation to access the memory dialling directory can be set individually for each extension.

Example: Restrict authorisation to access the memory dialling directory for extension 45.

1. **Switch programming switch to position "Prog". Dial program code number 19999 at extension 21.**

   You hear the day programming tone.

2. **Dial code number 801 for the day mode or 802 for the night mode.**

   You hear the corresponding programming tone – day or night.

3. **Dial number according to the table, e. g. 39245 , in order to restrict the access to the memory dialling directory for extension 45.**

   You hear the confirmation tone followed by the programming tone.

Access to memory dialling directory on	391N
Access to memory dialling directory off	392N

N = Number of the target extension (21 ... 28, 30... 39, 40 ... 49).

Configuration via telephone

Authorisation to access the memory dialling directory

4. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Function".**

Cost centres

Your PABX stores data on calls and charging information. For better cost management, three cost centres are at disposal for each extension. The pre-set cost centre is valid when accessing the public exchange by dialling 0.

Having three cost centres at disposal would allow you to select different cost centres for individual calls. In this way, you could allocate costs for e. g. private or business-related calls.

Example: Assign cost centre 2 to extension 23.

1. **Switch programming switch to position "Prog". Dial program code number 19999 at extension 21.**

   You hear the day programming tone.

2. **Dial code number 801 for the day mode or 802 for the night mode.**

   You hear the corresponding programming tone – day or night.

3. **Dial code number according to the table, e. g. 30823, in order to allocate cost centre 2 to extension 23.**

   You hear the confirmation tone followed by the programming tone.

4. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Cost centre 1	307N
Cost centre 2	308N
Cost centre 3	309N

N = Number of the target extension (21 ... 28, 30... 39, 40 ... 49).

Note: If an outgoing external call is forwarded to an internal extension, the incurring costs will be allocated to the extension which made the call and not to the party the call was forwarded to.

Please note: Advise of charge is not yet available in UK and will be subject to provisions from your network provider.

Configuration via telephone

Resetting an extension

Each PABX user can reset his extension personally. The following features are subject to the reset:
- Do not disturb function is deactivated.
- A programmed call forwarding function is erased.
- The day mode is activated.

1. **Pick-up the handset of the extension to be reset.**

    You hear the PABX dialling tone.

2. **Dial code number** 899.

    You hear the confirmation tone.

3. **Replace the handset.**
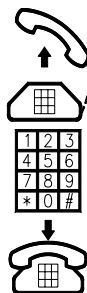
    The above features for this specific extension are reset to the factory pre-set.

Resetting the PABX

All extensions can be reset to the factory pre-set by dialling the corresponding code number at extension 21. In addition you can choose whether the restricted number directory, the MSN and the DDI numbers should also be individually reset.

Note:
- If calls to an extension are being forwarded via the network it will not be included in this reset. You must reset this function separately prior to resetting the entire PABX to the factory pre-set by dialling 10100.
- The programming switch has to be in the position "Prog".

1. **Pick-up extension 21's handset.**

    You hear the PABX dialling tone.

    You hear the confirmation tone.

2. **Select and dial reset code number from the table, e. g.** 10100 **in order to reset all features including the restricted numbers, MSN and DDI numbers.**

3. **Replace the handset.**

    The PABX is now in the factory pre-set (see "Factory pre-set").

| Reset the PABX except for restricted numbers, MSN and DDI | 10000 |
| Reset the PABX including numbers, MSN and DDI | 10100 |

Configuration via telephone

Resetting the charging information and the memory dialling directory

You have the option to reset all stored charging information and the current memory dialling directory via extension 21.

Remark: The programming switch has to be in position "Prog".

1. **Pick-up extension 21's handset.** *You hear the PABX dialling tone.*

2. **Dial reset code number** 10910 **or** 10920 **according to the table below.** *You hear the confirmation tone.*

3. **Replace the handset.** *All telephone numbers stored in the memory dialling directory and/or all charging data are deleted.*

Reset the memory dialling directory	10910
Reset the charging data memory	10920

Door intercom signal

The PABX linked with the intercom adapter can indicate and signal that the door intercom button has been pressed. If the door intercom button is pressed while you are holding an external or internal telephone conversation, you will hear the call waiting signal as far as this feature was not deactivated. This signalling can be switched on or off individually for each extension. As for ISDN telephones there is a call-1 and call-2 function. You can assign call-1 function to the ISDN telephones that shall ring when the door intercom is pressed and emits the first signal. You can assign call-2 function to the ISDN telephones that shall ring when the door intercom is pressed for the second time. Every second door intercom signal switches between call 1 and call 2. For all telephones, the door intercom signal can be set individually for the day or night mode.

Example: Switch off door intercom signal for extension 23, switch on door intercom signal for extension 31 (call-1) and extension 46 (call 2)

1. **Switch programming switch to position "Prog". Dial program code number** 19999 **at extension 21.** *You hear the day programming tone.*

2. **Dial code number** 801 **for the day mode or** 802 **for the night mode.** *You hear the corresponding programming tone – day or night.*

3. **Dial code number according to the table, e. g.** 4223 **, in order to switch off door intercom signal for extension 23. Dial code numbers** 4131 **and** 4746 **in order to set call-1 function for extension 31 and call-2 function for extension 46.** *You hear the confirmation tone followed by the programming tone.*

4. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**
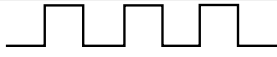
Door intercom signal a/b on	41a/bN
Door intercom signal a/b off	42a/bN
Door intercom signal ISDN call-1 on	41IN
Door intercom signal ISDN call-1off	42IN
Door intercom signal ISDN call-2 on	47IN
Door intercom signal ISDN call-2 off	48IN

a/b N = 21 ... 27, IN = 30 ... 49

Select door intercom signal

Three different door intercom signals are available and can be assigned individually

1. **Switch programming switch to position "Prog". Dial program code number 19999 at extension 21.**

   You hear the day programming tone.

2. **Dial code number according to the table, e. g. 452. You hear the confirmation tone followed by the programming tone.**

3. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Code	Door intercom signal
451	
452	
453	

Configuration via telephone

Authorisation to activate the door intercom

The door intercom and the door opener can be activated from each extension of the PABX if the intercom adapter is connected to the printed circuit board.
The authorisation to activate the door intercom can be programmed separately for each extension.
Example: Restrict authorisation to activate door intercom for extension 23.

1. **Switch programming switch to position "Prog". Dial program code number** 19999 **at extension 21.**

   You hear the day programming tone.

2. **Dial code number 801 for the day mode or** 802 **for the night mode.**

   You hear the corresponding programming tone – day or night.

3. **Dial code number according to the table, e. g.** 4023**, in order to restrict authorisation to activate the door intercom for extension 23.**

   You hear the confirmation tone followed by the programming tone.

4. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Door intercom authorisation on	49N
Door intercom authorisation off	40N

N = Number of the target extension (21 ... 28, 30... 39, 40 ... 49).

Door opener duration and response

The door opener duration can be set within a range from 1 to 9 seconds. The factory pre-set is 3 seconds. After dialling code number 61, the door opener will be activated for the programmed time.

1. **Switch programming switch to position "Prog". Dial program code number** 19999 **at extension 21.**

   You hear the day programming tone.

2. **Dial code number according to the table, e. g.** 465**, in order to select a duration of 5 seconds.**

   You hear the confirmation tone followed by the programming tone.

3. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Duration in sec.	1 sec.	2 sec.	3 sec.	4 sec.	5 sec.	6 sec.	7 sec.	8 sec.	9 sec.
code number	461	462	463	464	465	466	467	468	469

Configuration via telephone

Direct connection, automatic door intercom response

When the doorbell is pressed, the authorised telephones ring with the door intercom signal. If an extension with the direct connection function is picked up, the extension in question is directly connected with the door intercom. In that case it is not necessary to dial code number 5 in order to establish a connection with the door intercom. If you connect a telephone answering machine to the extension with the direct connection function, you may also record and play back messages for visitors. The external ringing signal for this specific extension must be switched off so that external calls will not be answered by this door intercom answering machine.

Remark: The direct connection is always switched on at the ports INT1/INT2. You can only switch the direct connection on or off at analogue extensions.

1. **Switch programming switch to position "Prog". Dial program code number 19999 at extension 21.**

    You hear the day programming tone.

2. **Dial code number 801 for the day mode or 802 for the night mode.**

    You hear the corresponding programming tone – day or night.

3. **Dial code number according to the table, e. g. 4324, in order to activate the direct connection for extension 24.**

    You hear the confirmation tone followed by the programming tone.

4. **Continue programming or exit the programming mode by replacing extension 21's handset and switching the programming switch to position "Power".**

Direct connection on	43N
Direct connection off	44N

N = Number of the target extension (21 ... 28, 30... 39, 40 ... 49).

Door intercom call diversion

The feature "door intercom diversion" can be activated by a direct connection of the door intercom together with a call diversion for this extension. After the door intercom button has been pressed, a selected telephone number is called and a connection is established after the handset is picked up. This allows you to communicate through the door intercom from any external or internal extension. You can end conversations via the door intercom by dialling code number 7. In addition you can activate the door opener by dialling code number 61 if the door intercom authorisation is activated for the extension that initiated the call diversion. In this specific mode, the functions introduced by code number 7 and 61 can only by used with tone dialling telephones - which is due to the established external conversation.
As for pulse dialling telephones and also tone dialling telephones, an established conversation through the door intercom can be ended by replacing the handset.

Example: Prepare door intercom call diversion from extension 26 to an external telephone with the number 0123-45678.

Configuration via telephone

Door intercom call diversion

1. **Switch door intercom signal on for extension 26. In the factory pre-set, the door intercom signal is already switched on. (The programming switch has to be in the position "Prog"; dial code numbers 19999 and 4126 at extension 21.)**

   You hear the confirmation tone followed by the programming tone.

2. **Switch direct connection of door intercom on for extension 26. (Dial code number 4326 at extension 21, replace extension 21's handset, programming switch has to be in the position "Prog".)**

   You hear the confirmation tone followed by the programming tone.

3. **Program call diversion at extension 26 (dial code number 820 and target telephone number 01234567 at extension 26).**

Remark: In order to grant the correct operation of this function, the specific extension must not be used to make calls after programming.

Remote maintenance

The PABX can be maintained remotely. If you intend to have a remote maintenance done, call the customer service via extension 21. After speaking to the customer service staff, you can release the remote maintenance. This allows the customer service technicians to read the current programming parameters of your PABX and to modify them if required.

1. **Pick-up extension 21's handset.**

   You hear the PABX dialling tone.

2. **Call customer service (e. g. tiptel customer service or the customer service of the company that installed your PABX).**

   You speak to the customer service.

3. **Press FLASH button at extension 21**
   or
   dial 1 in the case that extension 21 is a pulse dialling telephone.

   You hear the PABX dialling tone.

4. **Dial code number 63333.**

   Wait until all numbers have been dialled! Afterwards, you are reconnected to the customer service.

5. **Replace extension 21's handset.**

   The programming parameters of your PABX are transferred to the customer service.

Configuration via telephone

6. Extension 21 rings.

A call-back is made established automatically after the data transfer is completed.

7. Pick up extension 21's handset.

You are reconnected to the customer service.

Parameters modified by the customer service can also be transferred to your PABX.

Table of programming parameters for ISDN terminal equipment

	Feature / Telephone number									
day	Access to the public exchange									
	Automatic access to the public exchange									
	External ringing signal									
	Trunk calls restricted									
	International calls restricted									
	Restricted numbers restricted									
	Memory dialling authorised									
	Cost centre for general access to the public exchange									
	Door intercom signal									
	Authorisation to activate the door intercom									
	Direct connection of the door intercom									
night	Access to the public exchange									
	Automatic access to the public exchange									
	External ringing signal									
	Trunk calls restricted									
	International calls restricted									
	Restricted numbers restricted									
	Memory dialling authorised									
	Cost centre for general access to the public exchange									
	Door intercom signal									✕
	Authorisation to activate the door intercom									✕
	Direct connection of the door intercom									✕
	Do not disturb function authorised									
	Call pick-up authorised									
	Switch between day and night mode authorised									
	Call waiting signal authorised									
	Call diversion authorised									
	Call forwarding authorised									
	Calling line identification presentation authorised									
	Music on hold	internal/external/off								
	door intercom signal	number of ringing signals =								
	Door intercom duration	x seconds								

Table of programming parameters for ISDN terminal equipment

	Extension / Telephone number / Feature	Tel.1 21	Tel.2 22	Tel 3 23	Tel4 24	Tel.5 25	Tel.6 26	Tel.7 27	Tel.8 28
day	Access to the public exchange								
	Automatic access to the public exchange								
	External ringing signal								
	Trunk calls restricted								
	International calls restricted								
	Restricted numbers restricted								
	Memory dialling authorised								
	Cost centre for general access to the public exchange								
	Door intercom signal								✕
	Authorisation to activate the door intercom								✕
	Direct connection of the door intercom								✕
night	Access to the public exchange								
	Automatic access to the public exchange								
	External ringing signal								
	Trunk calls restricted								
	International calls restricted								
	Restricted numbers restricted								
	Memory dialling authorised								
	Cost centre for general access to the public exchange								
	Door intercom signal								✕
	Authorisation to activate the door intercom								✕
	Direct connection of the door intercom								✕
	Make collective/urgency calls								
	Receive collective/urgency calls								
	Make pager call								
	Receive pager call								
	Do not disturb function authorised								
	Call pick-up authorised								
	Switch between day and night mode authorised								
	Room monitoring authorised								
	Call waiting signal authorised								
	Call diversion authorised								
	Call forwarding authorised								
	Calling line identification presentation authorised								
	Connection of terminal equipment								
	Multipoint connection for combination equipment, fax, modem								
	Charge pulse								

Factory pre-set

The factory pre-set programming is as follows:

- No multiple subscriber numbers or subscriber numbers for point-to-point connection stored Extension 21 rings when there is an external call (switchboard).
- All extensions are authorised to access the public exchange.
- Calling line identification presentation for external calls activated.
- Restricted numbers not active.
- No restricted numbers stored.
- Call waiting active.
- Internal music on hold on.
- All analogue extensions set to bearer capability "speech" for telephone operation.
- All analogue extensions are authorised to make collective and emergency calls.
- All analogue extensions are authorised to make pager calls.
- All analogue extensions can receive collective and emergency calls.
- All analogue extensions can receive pager calls.
- All extensions authorised for call diversion.
- All extensions authorised for call forwarding (ISDN).
- All extensions authorised to use the do not disturb function.
- All extensions authorised for call retrieval (pick-up).
- All analogue extensions authorised to use the room monitoring function.
- All extensions authorised to switch between day and night mode.
- Day mode active.
- Charge pulse to all analog extensions switched off.
- Cost centre 1 assigned to all extensions for external calls.
- Password to read out charging information: 2222.
- Password to activate specific settings: 1111.

If a door intercom is connected:

- All extensions will ring when the door intercom button is pressed.
- All analogue extensions will ring with 5 short ringing tones to indicate the door intercom signal.
- All extensions are authorised to activate the door intercom.
- The standard door intercom duration is 3 seconds.
- Direct connection to the door intercom off.

These parameters can be set by dialling code number 10100 at extension 21 as far as the PABX programming switch is in the position "Prog". Stored memory dialling numbers will not be affected by this reset. For individual programming parameters, reset options and further details see chapter "Configuration via telephone".

Wall mounting

The PABX is to be mounted in a short distance to the NTBA. The scope of supply comprises 2 dowels and 2 screws by which easy wall mounting is possible.

1. On a vertical line, place two marks with a distance of 24 cm on the wall.
2. Drill two 6 mm holes into the wall and plug the holes with the dowels. Be careful not to drill into an electrical supply network.
3. Screw in the upper screw. The screw head must have a distance of about 5 mm from the wall.
4. Hook the PABX into the upper screw hole.
5. Remove the terminal connection cover.
6. Screw the lower screw in the connection area.
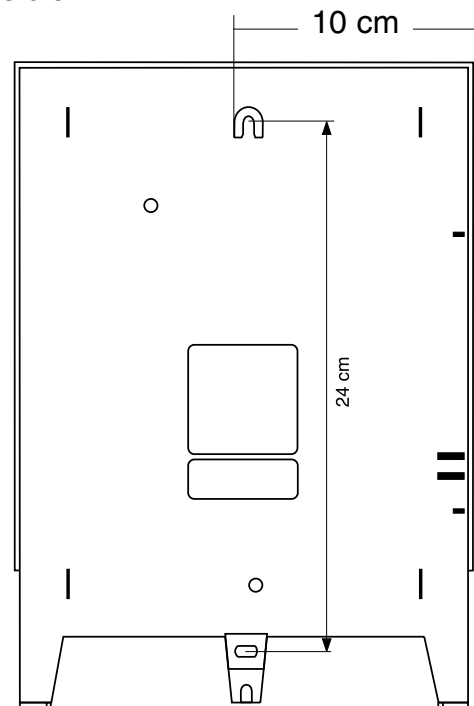
The PABX must not be used in an inappropriate environment. Avoid:

● an installation outdoors
● humid or damp rooms
● rooms with danger of explosions
● exposure to direct sunlight
● ambient temperatures of less than 0°C or more than 40°C
● strong vibrations
● dusty environments

Installation

General information concerning the installation and operation

The following table shows the features of the PABX and the options for the connection. Please see the connection diagram prior to installing the PABX and taking it into operation. By this plan you will easily identify the individual connection ports which are located below the PABX connection cover. In addition you will have a practical description about how to install the complete PABX including the connection of analogue and digital terminal equipment.

Installation

	S0 bus LINE1	S0 bus LINE2	S0 bus INT1	S0 bus INT2	a/b 21-24	a/b 25-28	TSM2 accessory	RS 232	AUDIO IN
tiptel 411	X	-	X	-	X	-	X	X	X
tiptel 811	X	-	X	-	X	X	X	X	X
tiptel 812	X	-	X	X	X	X	X	X	X
tiptel 822	X	X	X	X	X	X	X	X	X

X = available / - = not available

With each of the LINE ports, the PABX can be operated either at the EURO ISDN point-to-multipoint connection or at the EURO ISDN point-to-point connection. The PABX automatically identifies whether the LINE port is connected to a point-to-multipoint connection or a point-to-point connection. The internal S0 busses INT1 and INT2 are used for point-to-multipoint connections.

	LINE1	LINE2	INT1	NT2
Point-to-multipoint connection (PMP)/ point-to-point connection (PP)	PMP or PM, automatic identification	PMP or PM, automatic identification	PMP	PMP

The advantage of internal ISDN busses is the option to connect digital terminal equipment internally. Thus you can have internal calls between analog and digital parties that involve no charges. You can connect standard terminal equipment such as e. g. telephones, cordless phones, answering machines, fax machines as well as modems for data transfer to the 8 analogue a/b ports.

The door intercom TSM2 mentioned in the above table is available as an accessory. If you connect the door intercom TSM2 this replaces the a/b port 28 (if existing).

The RS232 jack can be used to connect a PC in order to configure the PABX, to store data and to export charging information.

External music for the music on hold function can be made available via AUDIO IN.

Installation of required equipment

You do not need special permission by the telecommunications company to install the PABX tiptel 411 / tiptel 811 / tiptel 812 and to take it into operation as these devices have approval already. You can just connect the device at your telephone wall socket provided by your telecommunications company. As the PABX tiptel 822 has 2 external S0 ports (LINE1/LINE2), there is no general permission available. The installation of this device must only completed by a qualified person.

Please consider the following points:

- A second installation of the device shall only be made on the same premises where it was installed initially.
- Technical modifications at the PABX are not allowed. Only equipment carrying a BABT approval can be connected

Installation

- The PABX is designated for the use at S0 basis connections using the EURO ISDN DSS1 protocol. If you connect the device to other ports this may lead to disturbances and a trouble-free operation cannot be granted.
- **You may only connect terminal equipment to the PABX or the door intercom that fulfils the safety standard EN 60950 or a corresponding safety standard.**
- All installations must be done professionally.
- Ask a professional electrician to conduct the installation work at the 230 V network. VDE 0100 is to be considered.
- Please take care that the cables do not lead to any danger of stumbling.
- Avoid folding, pushing and pressing of the cables.
- In the case of malfunction, unplug the AC adapter as well as the S0 connection cables at the NTBA.

After wall mounting, remove the terminal connection cover to attempt into operation. Read the cabling instructions carefully to assure a trouble-free and reliable operation of your PABX.

UNPLUG the AC adapter before taking out the connections described here after. When using the AUDIO IN or RS232 connections you are connecting the PABX's earth connection with the potential equalisation rails of the house installation.

After installation of all required connections, close the terminal connection cover and connect the supplied S0 connecting cable to the NTBA. If you finished these steps, plug the AC adapter into the 230 V power outlet.

Connecting LINE1/2 to a EURO ISDN point-to-multipoint connection

A point-to-multipoint connection allows you to connect several ISDN terminal equipment units to one S0 bus by using individual ISDN plugs. (In Germany these ISDN telephone plugs are known as IAE. The UK term is RJ-45).

Per connected LINE port, the PABX makes up two of eight possible terminal equipment units at a EURO ISDN basis access. If one of the PABX's LINE ports is connected to a point-to-multipoint connection, you can connect up to 6 further terminal equipment units – apart from the PABX.

Ensure that the maximal supply current for the S0 bus (4.5 W) is not exceeded as it feeds all terminal equipment units without an own power supply system. If the PABX is the only unit connected to the network termination basic access, the network termination basic access does not require a 230 V supply voltage. In order to obtain the correct operation, the S0 bus has to be terminated at both ends. 100 ohms transmitting resistance (with at least 0.25 W) have to be used between the sending and the receiving wires – for the network termination basic access as well as for the last ISDN plugs. As for the PABX itself, no further preparatory configurations are necessary.

Installation

Connecting LINE1/2 to a EURO ISDN point-to-point connection

In this case, one of the PABX's LINE ports is connected to the NTBA and the PABX is the only terminal equipment unit connected to the NTBA. The NTBA does not need power supply from the 230 V network.

Apart from the terminating resistance within the NTBA, 100 ohms terminating resistance have to be used at the port (LINE1/LINE2) at which the PABX is connected to the point-to-point connection.

Please take the following steps:

● Remove the PABX terminal connection cover.
● Remove the Phillips screw and remove the upper housing.

There are jumper fields above the LINE1/LINE2 jacks. If the PABX's LINE1 port shall be connected to a EURO ISDN point-to-point connection, switch jumper JP 100 and JP 101.

If the PABX's LINE2 port shall be connected to a EURO ISDN point-to-point connection, switch jumper JP 102 and JP 103.

Preparing the connection of ISDN terminal equipment units to the internal S0 ports INT1/INT2

You can connect up to 8 terminal equipment units as a maximum (ISDN telephones, ISDN PCs) at up to 12 ISDN plugs at the internal S0 busses INT1/INT2.

The connection diagram on page 73 gives you two practical examples:

● the short passive bus (8 terminal equipment units in a regular distance over 150 m).
● the extended passive bus (terminal equipment units over 35 m at the end of a line that is 500 m long).

These two variants are principally also valid for the depicted point-to-multipoint connection to the NTBA at which the PABX is connected to the LINE2 port as an example.

Terminate the sending and receiving wires of the internal S0 busses with terminating resistance of 100 ohms at each of the last ISDN plugs. For the remaining S0 busses within the PABX, the termination is already effected by the jumpers JP 200/JP 201or JP 202/FP 203.

Please consider the information about the length of the lines regarding the two connection types as well as the information about the length of the cables from the ISDN plug to the ISDN terminal equipment.

Installation

Preparing the connection of analogue terminal equipment units to the a/b ports 21-28

The connection of analogue terminal equipment to the analogue telephone jacks has to be done as shown in the diagram. The a/b connection clamps have to be connected to the analogue telephone jacks. You can only connect 1 analogue telephone jack to each a/b port. The distance between a/b port and the terminal equipment depends on the diameter of the used telephone cables.

Diameter of the cable	Maximum distance between a/b port and terminal equipment
0.4 mm	200 m
0.6 mm	450 m
0.8 mm	800 m

If you use a telephone with an earth button, you must not connect the earth wire.

Connection of the door intercom TSM2 (accessory)

The door intercom, the door opener and the doorbell are connected via the additional printed circuit board. The additional printed circuit board has to be placed in the corresponding slot. For details please see the operating instructions for the door intercom TSM2.

Power supply and functional test

For a functional test, please connect a telephone, e. g. an analogue telephone to the a/b port 21.

Plug the AC adapter in the 230 V power outlet. To show that the PABX is in operation the "Power" LED lights up. After a few seconds the "Function" LED lights up to show that the ISDN connection is in operation.

When you pick-up the receiver you will hear the dialling tone of the PABX, i. e. an uninterrupted dialling tone. When dialling "0" you will hear the public exchange dialling tone. In order to indicate which B channel is occupied, the corresponding LED "B1" or "B2" (tiptel 411, tiptel

Initial operation

Analogue telephones

Analogue telephones with either pulse or tone dialling can be connected to your PABX. The corresponding dialling mode will be automatically identified by the PABX.

If you do not use a PC for the configuration, an analogue telephone must be installed at the a/b port 21 as all PABX features are configured via this extension. As the configuration options are quite complex, we recommend to use a PC to configure the PABX. This ensures an easy handling and management and you can also store the data. In addition all settings can be viewed at the same time. For further details, please also see the paragraph "Connecting a PC for configuration" on page 72.

If you connect telephones supporting charging information display to your PABX, the PABX grants that the advice of charge pulse is transferred. In this case, the exchange has to transfer the incurring charges during the conversation (AOCD*, advice of charge during the call). The costs in question will then be displayed in the telephone display.

In addition, please take the following points into consideration:

● For some telephones, the EARTH button does not have any function related to the PABX. (Please see also paragraph "Preparing the connection of analogue terminal equipment units to the a/b ports 21-28".)
● For tone dialling telephones, a Recall button is required for the inquiry and hold function.

Note:
If an external call is on hold, the costs of the call in the display of the telephone will not be counted. Thus, the displayed costs do not correspond to the costs that actually incurred for the call. But, the PABX-internal registration of costs is not affected by this and will store the correct costs – including the charges for the time the call was placed on hold. A registration of costs will take place if the exchange office transfers the charges at the end of the conversation (AOCE).

If you intend to program external telephone numbers to be stored in the memory dialling directory or assign them to the corresponding keys for memory dialling, you also have to enter the code number for the access to the public exchange, e. g. "0".

Cordless telephones are fully supported.

Only telephones carrying approval from BABT should be connected to the PABX. Make sure that your equipment has the corresponding signs or seals and the approval number.

Initial operation

Connecting other analogue telecommunications equipment

You may connect other analogue telecommunications equipment such as answering machines, fax machines, automatic dialling units, modems etc. at the analogue extensions 21 to 28. In this case, your telephone socket has to provide more than 1 jack. The above devices have to be plugged into the corresponding jack. Moreover, the PABX offers you the option to configure individual extensions for the operation of such terminal equipment. Two different types of pre-sets are at disposal:

Special terminal equipment connection:

Having a special terminal equipment connection, you can pick-up (retrieve) incoming calls from another extension. This is useful if you want to connect an answering machine. It is then only necessary to configure one connection.

Combination equipment, fax machines, modems:

By a combination equipment connection you can program the connection of combination equipment, fax machines or modems. At the same time, the following quite useful settings are made in order to grant a good operability:
● Call waiting function is restricted.
● Collective and emergency calls are not received.
● Pager calls are not received.
● The door intercom signal is turned off.

For further details concerning the above configuration, please see the chapter "Configuration via telephone".

Connecting ISDN terminal equipment

The internal S0 ports INT1 and INT2 are used for point-to-multipoint connections. You can connect up to 8 ISDN terminal equipment units supporting the EURO ISDN protocol. Please consider the maximum supply current of 4.5 watts per internal port for the connection of ISDN terminal equipment units without an independent power supply.

Connecting a PC for configuration

The configuration of the PABX can also be done via PC. In addition, the software found in the scope of supply allows you to read out and print the data about communications costs stored in the PABX. For the connection of your PC, use the serial interface RS 232 or the V.24 interface and the serial connection cable which can also be found in the scope of supply. Put the corresponding end of the cable in the "RS 232" jack of your PABX and plug the other end in the "COM1" or "COM2" port of your IBM compatible PC. If your PC only provides a 25-pin COM port, use a corresponding adapter. Should the length of the serial cable not be sufficient, you can use a 9-pin D-Sub extension cable (1:1). If you use standard cables, we recommend not to exceed a cable length of 16 m.

Audio input

The PABX audio input allows you to play back music or voice information to external callers placed on hold. External sources, e. g. an announcement manager (tiptel 560) or a CD player can be connected via a 3.5 mm jack plug.

Connection diagram

Technical data

ISDN connection
S0 basis access
(EURO ISDN)   Protocol DSS1 (EURO ISDN) point-to-point and/or
                               point-to-multipoint connection

BABT approval numbers   D128 247H

Internal S0 ports
Operating mode   Protocols DSS1 and 1 TR6 point-to-multipoint connection
Power feeding   40V + 5% - 15 %, max. 4.5W

Line circuits (analogue)
Supply voltage   24V-
Supply current   25 mA + 10%
Call voltage   52 V +/- 10%, 50 Hz
Frequency of the signal tone   440 Hz
Charge pulse: 16 kHz
Reach of wires
0,4 mm diameter   200 m
0,6 mm diameter   450 m
0,8 mm diameter   800 m

Dialling mode (analogue)   pulse dialling or tone dialling mode
Power supply
Voltage   230 diameter + 6% / - 10%, 50 Hz
Maximal power consumption   36.4 VA

Serial interface
Standard   RS 232, V. 24
Transfer rate   9600 Baud

Audio input
Feed point impedance   > 30 kW
Input voltage   max. 2 Veff
Connection   3.5 mm jack plug

Dimensions
L x W x H (measured in mm)   302 x 213 x 52
Weight   2,1 kg (including AC adapter)
Housing material   ABS
Length of main circuit cable   1.5 m
Length of S0 connection cable 3 m
Length of serial connection
cable   3 m

Temperature range
Operation   0°C up to + 40°C
Storage   - 20C up to + 70C

Troubleshooting

Description of the problem:	Possible solution:
● You do not hear a dialling tone after having picked up the handset.	
- Power failure	Check whether the power outlet supplies electricity (e. g. by plugging in another device)
- AC adapter is not plugged in	Plug in AC adapter
- Defective telephone plug	Check the telephone connection, check installation
- Defective telephone	Check telephone at another connection
- Trouble with the PABX programming	Unplug and AC adapter and re-plug again afterwards, set factory pre-set on.
● You do not receive internal calls.	
- Do not disturb function activated (fast dialling tone can be heard).	Deactivate do not disturb function
- Call diversion function activated (fast dialling tone can be heard).	Deactivate call diversion
- AC adapter is not plugged in.	Plug in AC adapter
- Defective telephone plug	Check the telephone connection, check installation
- Defective telephone	Check telephone at another connection
- Trouble with the PABX programming	Unplug AC adapter and re-plug again afterwards, set factory pre-set on.
● You do not receive external calls.	
- Same reasons as for "no internal calls"	Same solutions as for "no internal call"
- S0 connection cable not plugged in.	Re-plug the S0 connection cable.
- Access to the public exchange not activated	Program authorisation for the access to the public exchange
- Call forwarding function activated (special dialling tone can be heard after dialling the code number to access the public exchange).	Deactivate call forwarding function

Please forward further questions to your distributor who might also initiate a remote maintenance.

Glossary

AOCD (advice of charge during call):	Advice of charge during the call and at the end of the call. EURO ISDN feature.
AOCE (advice of charge at the end of the call):	Advice of charge at the end of the call. EURO ISDN feature.
B channel:	An S0 basic access connection includes 2 B channels which serve as channel for voice and data transfer.
Bearer capability:	ISDN transfers the bearer capabilities of the caller (e. g. "speech" with telephones). A connection can only be established if the two bearer capabilities are the same.
Call diversion:	Within the PABX, Incoming calls can be diverted to an internal or an external extension. (PABX feature).
Call forwarding:	Within the exchange office, calls can be forwarded to another extension. EURO ISDN feature.
CCBS (completion of call to busy extension):	Automatic call-back on busy extension. EURO ISDN feature.
Charge pulse:	Signal that analogue terminal equipment can translate into a display of communication costs.
CFB (call forwarding on busy):	An incoming call is forwarded if the target extension is busy. EURO ISDN feature.
CFNR (call forwarding on no reply):	An incoming call is forwarded if the target extension did not reply. If a call is not answered within 15 seconds, it is forwarded to a programmed extension. EURO ISDN feature.
CFU (call forwarding unconditional):	Call forwarding is permanently active. EURO ISDN feature.
CLIP (calling line identification presentation):	Transmission of the caller's telephone number to the called party. EURO ISDN feature.
CLIR (calling line identification restriction):	Restriction of the transmission of the caller's telephone number to the called party. EURO ISDN feature.
D channel:	Control channel of the S0 basic access. Via the D channel, control information are exchanged between the exchange office and the terminal equipment.
DDI (direct dialling in):	Direct dialling in to each extension with the point-to-point connection.
DSS1 protocol:	The protocol DSS1 is used for the exchange of information between the exchange office and the terminal equipment.
ECT (explicit call transfer):	Internal call transfer (in-house). EURO ISDN feature.

Glossary

EURO ISDN:	The European ISDN standard (integrated services digital net work). By the ISDN service integration it is possible to transfer various information (voice, data) over the network.
Flash button:	Generates a short interruption in the electrical current in order to initiate a special function, e. g. the hold feature to make inquiries.
Global call/switchboard function:	Incoming calls with the extension "0" (point-to-point connection). With a global call, specific telephones that are pre-programmed can be called, e. g. the exchange office.
RJ45 ISDN connection:	The ISDN terminal equipment units can be connected to the RJ45 plugs (ISDN plugs). At a point-to-multipoint connection, up to 12 ISDN plugs can be connected.
MCID:	Malicious call identification. EURO ISDN feature.
Multiple subscriber number:	For a basic access in a point-to-multipoint connection, up to 10 extension numbers can be assigned variably. The number assignment to the specific terminal equipment has to be programmed by the user.
Multiport:	PABX port for connecting combination equipment, fax machines or modems. Bearer capability "3.1 kHz Audio" is transmitted for outgoing calls (a/b transfer).
NT (Network Termination):	Network termination where the connection cable of the network ends and the house installation begins.
NTBA:	Network termination for the basic access.
Point-to-multipoint connection:	The point-to-multipoint connection allows the parallel connection of up to eight ISDN terminal equipment units at one S0 bus.
Point-to-point connection:	The point-to-point connection allows the connection of the PABX to the S0 basic connection.
Pulse dialling:	When using the pulse dialling mode, short interruptions of the power supply are generated by the analogue terminal equipment.
S0 basic access:	The S0 basic access contains two B channels (user channels) and one D channel (control channel).
Special terminal equipment connection:	You can receive calls from special terminal equipment connections e. g. if an answering machine has already received a call which you want to answer personally.
Tone dialling:	When using the tone dialling mode, the terminal equipment generates 2 tones of a different frequency. The tone dialling mode is quicker and not so prone to disturbances as is the pulse dialling mode. It is also used e. g. for remote inter-rogation of an answering machine.

Overview of the tone and ringing signals

Internal dialling tone	— ⎯⎯ — ⎯⎯ — ⎯⎯ ‥‥
Fat internal dialling tone	─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ‥‥
Internal busy tone	— — — — — — — — — — — — — ‥‥
Call-back ringing tone	⎯⎯⎯ ⎯⎯⎯ ⎯⎯⎯ ‥‥
Confirmation tone	⎯⎯⎯⎯⎯⎯⎯
Error tone	— — — — — — — — — — — — — —
Doorbell	See page 67
Pager call	See page 55
Collective call	— ⎯⎯ — ⎯⎯ — ⎯⎯ ‥‥
Emergency call	— — — — — — — — — — — ‥‥
Day mode tone	— — — — — — — — — — — ‥‥
Night mode tone	⎯⎯ ⎯⎯ ⎯⎯ ⎯⎯ ⎯⎯ ⎯⎯ ‥‥
Internal ringing signal	— — — — — —
External ringing signal	⎯⎯ ⎯⎯ ⎯⎯

Overview of functions and code digits

Code	Function	Page
0	Access to the public exchange	16
21... 28	Extension 21 ... 28 (analog)	
30 ... 39	Extension 30 ... 39 (S0 port INT1)	
40 ... 49	Extension 40 ... 49 (S0 port INT2, only tiptel 822)	
5	Door intercom	38
61	Door opener (only when connection is established)	38
600 ... 699	Memory dialling	37
70	Pick-up call	30
71 ... 75	Pager call 1 – 5	29
76	Collective call	29
77	Emergency call	30
78	Pick-up call from special terminal equipment connection	30
79XX	Automatic call-back	15
80	Do not disturb off	33
80	Call diversion off (internal and external)	34
81	Do not disturb on (internal and external)	33
8221 ... 8228	Internal call diversion on	33
820 R...	External call diversion off	34
831 LMR	Unconditional call forwarding on (ISDN)	35
832 LMR	Call forwarding on busy (ISDN) on	35
833 LMR	Call forwarding on no answer (ISDN) on	35
834 LM	Call forwarding (ISDN) off	37
851	Day mode for individual extension	39
852	Night mode for individual extension	39
86	Room monitoring	32
899	Reset for an individual extension	66
90R...	Reserve access to the public exchange	18
93 K	Special access to the public exchange for manual dialling	17
93 K	Special access to the public exchange for dialling with bearer capability "audio"	17
941	Access to the public exchange via the first external LINE1 port	17
942	Access to the public exchange via the second external LINE2 port	17
951N	Access to the public exchange via the first external port with CLIP function	17
952N	Access to the public exchange via the second external port with CLIP function	17
9610M	Access to the public exchange at a point-to-multipoint connection , SO LINE1 in the keypad mode	27
9620M	Access to the public exchange at a point-to-multipoint connection , SO LINE2 in the keypad mode	27
961WW	Access to the public exchange at a point-to-point connection , SO LINE1 in the keypad mode	28
962WW	Access to the public exchange at a point-to-point connection , SO LINE2 in the keypad mode	28

Code numbers for functions during existing calls

Code	Function	Page
1	Hold function/inquiry (for pulse dialling)	19
RECALL	Hold function/inquiry (for tone dialling)	19
1 + 0	2-line operation with hold (for pulse dialling)	20
RECALL + 0	2-line operation with hold (for tone dialling)	20
1 + 8	Initiate conference call (for pulse dialling)	21
RECALL + 8	Initiate conference call (for tone dialling)	21
1 + 7	End call (for pulse dialling)	23
RECALL + 7	End call (for tone dialling)	23
1 + 63333	Initiate remote maintenance (for pulse dialling)	71
RECALL + 63333	Initiate remote maintenance (for tone dialling)	71

Overview of functions and code digits

Overview of functions and code digits

Overview of functions and code digits

Code	Function programming (only at extension 1)	Page
H 10000	Reset to factory pre-set	.66
H 10100	Reset to factory pre-set with restricted numbers and MSN/DDI	.66
H 10910	Reset memory dialling numbers	.67
H 10920	Reset call memory	.67
1701	Sound test for day programming mode	.38
1702	Sound test for night programming mode	.38
1703	Sound test for confirmation tone	.38
1704	Sound test for error tone	.38
1705	Sound test for music on hold	.38
180139 VVVV	Day mode	.39
1802 V39VVV	Night mode	.39
1803 VVVV	Day mode for switchboard (Global call)	.39
1804 VVVV	Night mode for switchboard (Global call)	.39
P	= programming switch to "Prog" and programming code 19999	
a/b N	= end digit a/b ports (1 ... 8)	
H	= programming switch to "Prog"	
AAAA	= old password	
GGGG	= password for registration of costs	
VVVV	= activation password	
D	= internal extension	
Ü	= Calling line identification (1 = on, 2 = off)	
K	= cost centre (1 ... 3)	
WWW	= memory dialling (600 ... 699)	
L	= S0 port (1 = LINE1, 2 = LINE2)	
M	= multiple subscriber number (1 ... 9, 0)	
S	= restricted number (1 ... 5)	
R...	= external telephone number	
NN	= internal extension (21 ...28, 30 ... 39, 40 ... 49)	
iN	= internal extension (21 ...28, 30 ... 39)	
aa	= internal extension 22 ... 28	
bb	= amount	
Y	= door intercom signal (1 ... 3)	
Z	= response duration of the door opener in seconds (1 ... 9)	
B	= different targets 1 = a/b port 2 and 3 = INT1 and INT2	
NN...	= sequence of internal extension numbers (21...28, 30...49)	
DD	= direct dialling number (0...99)	
TT	= direct dialling index (17...20)	
VV	= additional telephone number index (17...20)	
WW	= direct dialling or additional telephone number index (00..20)	

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