A-MUX 32P

DOCUMENTATION

CONTENTS

1. General description
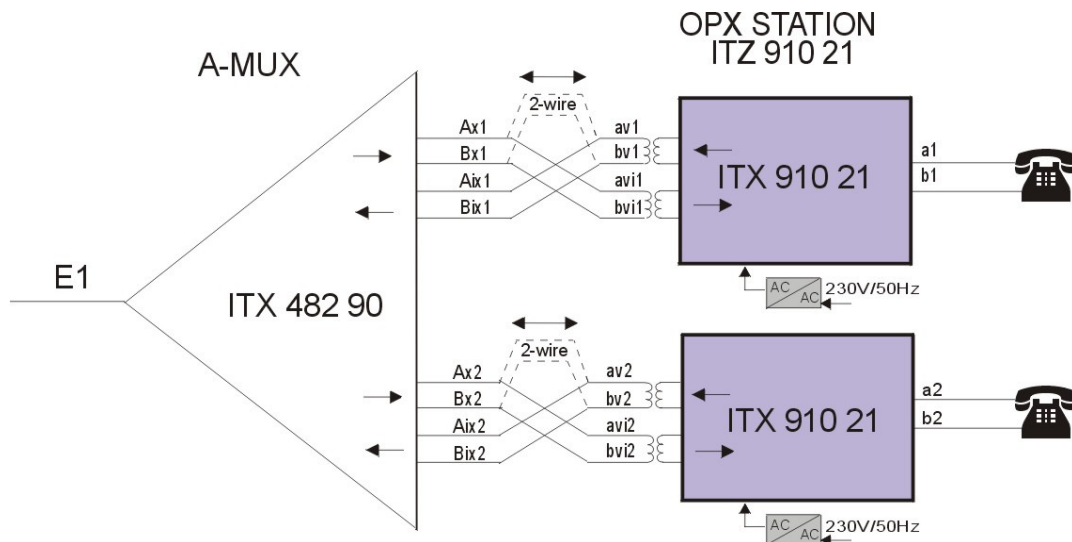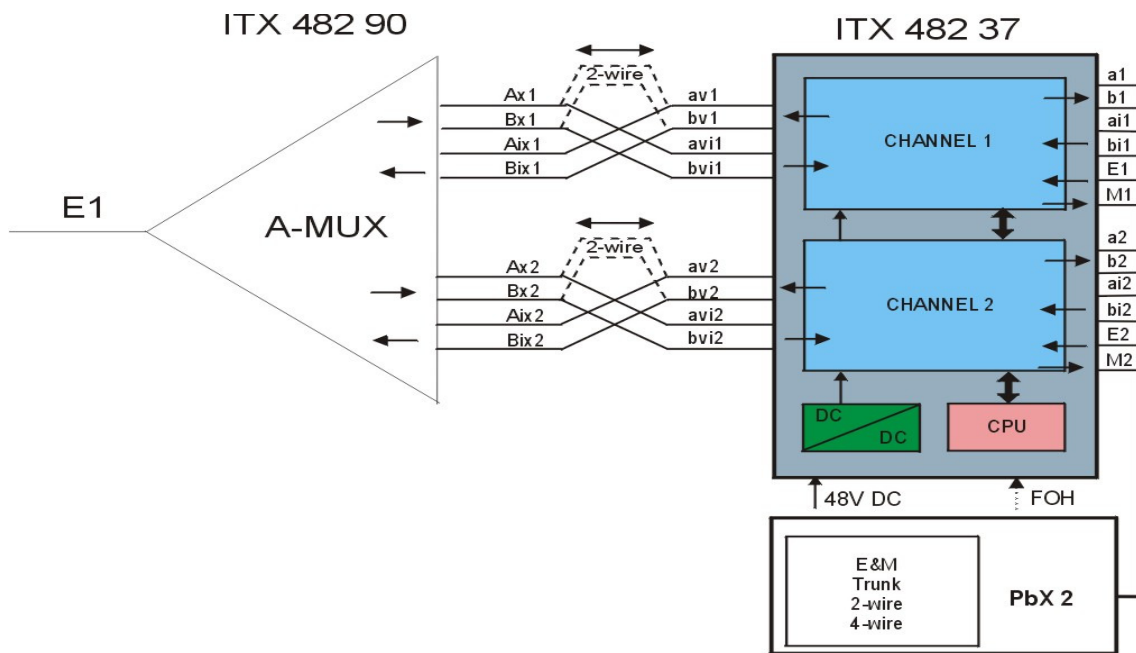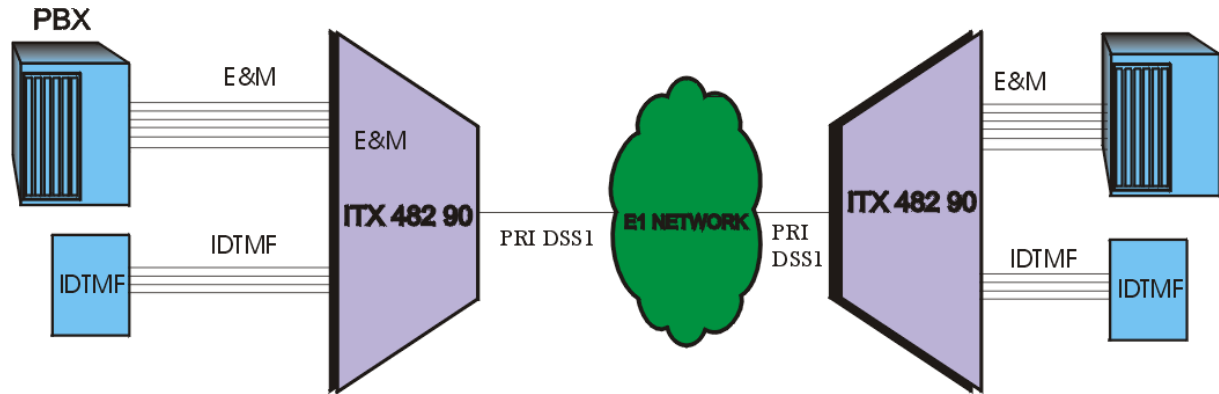
Name: A-MUX 32P

Type nomenclature: **ITX 482 90, ITX 482 90.1, ITX 482 90.2**
ITX 482 91, ITX 482 91.1, ITX 482 91.2
ITX 412 18, ITX 432 01, ITX 432 02, ITX 432 03

Manufacturer: INOTESKA, s.r.o., Podtureň - Roveň 221, 033 01Liptovský Hrádok

Placement: Supervised areas

Dimensions: 43.5 x 237 x 220 mm (h x w x d)

Operational conditions: 0° C to 40° C, 20% to 75% relative atmospheric humidity

Storage: -10° C to 60° C, 20% to 75% relative atmospheric humidity

   A-MUX 32P enables to merge max.:

- 32 analog interfaces FXS
- 16 analog interfaces E&M
- 16 analog interfaces IDTMF
- 16 analog interfaces DDI 3W
- 8 analog interfaces FXO
- 8 analog interfaces LB
- 2 interfaces X.21
- 2 interfaces RS 485

Basic parameters:

   - signalling ISDN DSS1

   - E1 framed n x 64 kbps (n = 1 to 31 timeslots)

   - E1 120 Ohm

   - Ethernet 10/100 BT interface on multiplexer main card

   - Interface V.24 for multiplexer configuration from connected PC

   - Multiplexer synchronization from E1 G.703 or from synchronous interface

   - Power supply DC 48 V

Modules :

Following modules can be added to A-MUX:

- **Module FXS,** max. 8 pcs   **ITP 182 22 –** quad

- **Module FXO,** max. 8 pcs   **ITP 182 23 –** dual

- **Module DDI 3-wire,** max. 8 pcs   **ITP 182 24 –** dual

- **Module IDTMF,** max. 8 pcs   **ITP 182 25 –** quad

- **Module E&M,** max. 8pcs   **ITP 182 26 –** dual

- **Module LB,** max. 8 pcs   **ITP 182 27 –** dual

- **Module D X.21 DCE/DTE,** max. 2 pcs   **ITP 136 52.1 –** dual

2. Applications

3. A- MUX specifications

	X.21	UDI	RS 485	E1	Rack / Stand alone	Ethernet	MUX	Conference
ITX 482 90	-	-	-	√	Stand alone	√	√	-
ITX 482 90.1	√	-	-	√	Stand alone	√	√	-
ITX 482 90.2	-	√	-	√	Stand alone	√	√	-
ITX 482 91	-	-	-	√	Stand alone	√	√	√
ITX 482 91.1	√	-	-	√	Stand alone	√	√	√
ITX 482 91.2	-	√	-	√	Stand alone	√	√	√
ITX 412 18	-	-	-	√	Rack	√	√	-
ITX 432 01	√	-	-	√	Rack	√	√	-
ITX 432 02	-	√		√	Rack	√	√	-
ITX 432 03	-	-	√	√	Rack	√	√	-
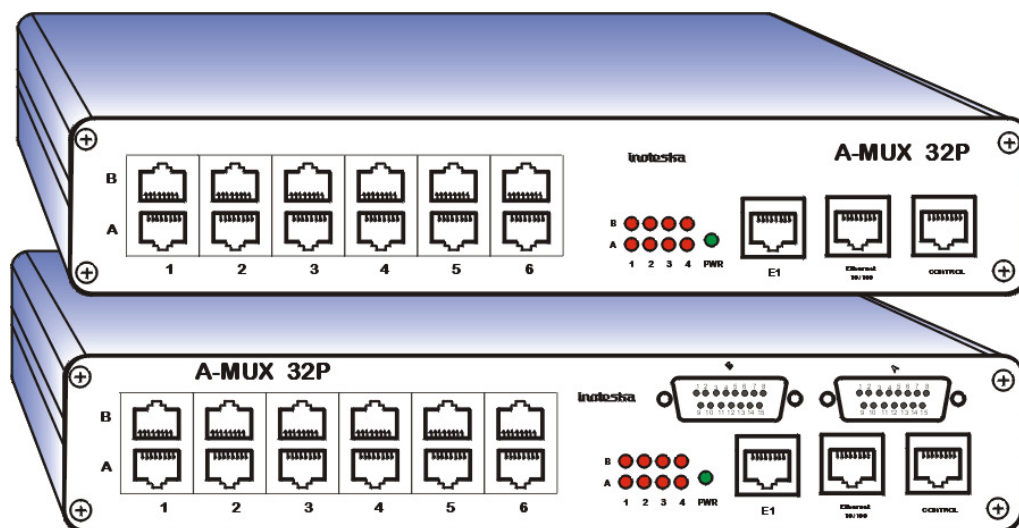
MUX – enables to merge analog or data interfaces to E1
Conference - up to 4 subscribers

Signification of LED diodes on the front panel:

STAT A - H - signalizes the seizure status of analog interfaces
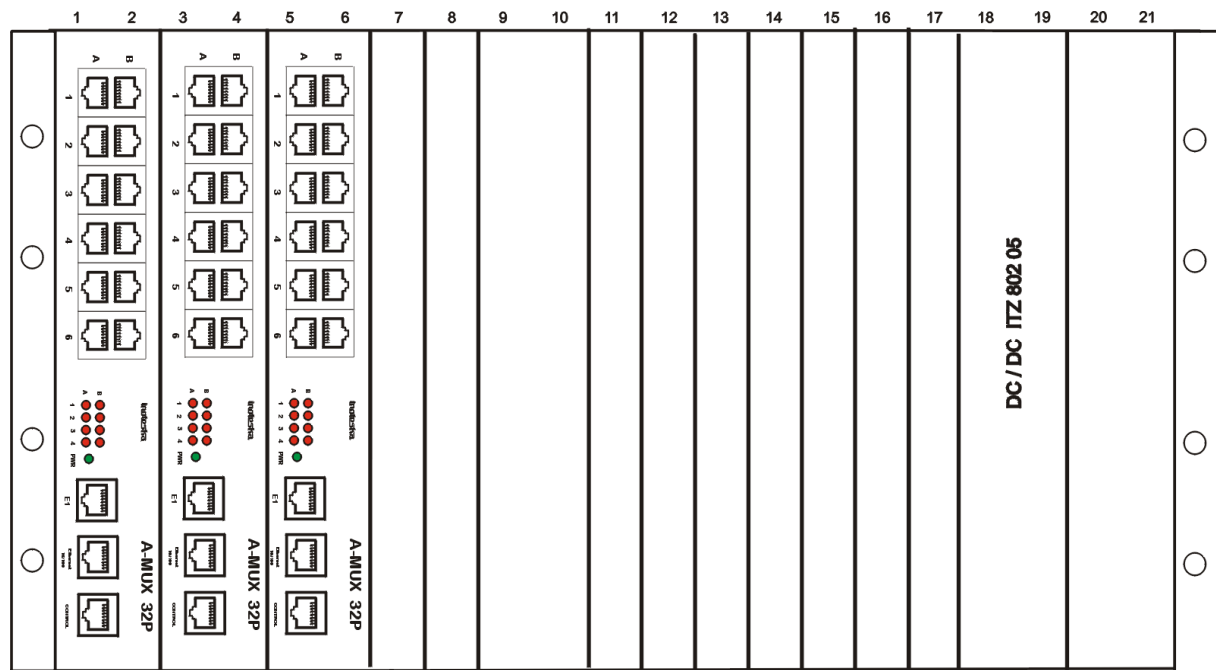
ERR   - ON –   E1 interface not connected – loss of signal
SIG   - ON – signalling error – no datalink connection

Signification of LED diode on the back panel:

PWR   ITX 482 90.x power supply

RACK 6U:

Device can be supplied in following rack versions and power suuply according to the table below:

	ITZ 802 01	ITZ 802 03	ITZ 802 05	ITZ 802 07	ITZ 802 09	ITZ 802 10	ITP 222 01	ITP 222 02	ITP 222 04	ITP 222 05	ITP 222 06
ITX 422 29	√	√	-	√	√	√	√	√	-	-	√
ITX 422 43	√	√	-	√	√	√	√	√	√	-	√
ITX 422 18	-	-	√	√	√	√	-	-	-	√	√
ITX 432 01	-	-	√	√	√	√	-	-	-	√	√
ITX 432 02	-	-	√	√	√	√	-	-	-	√	√
ITX 432 03	-	-	√	√	√	√	-	-	-	√	√

* **-** ITZ 802 05 can be embedded to both power supply positions in the rack. This can be used for back up of rack power supply.
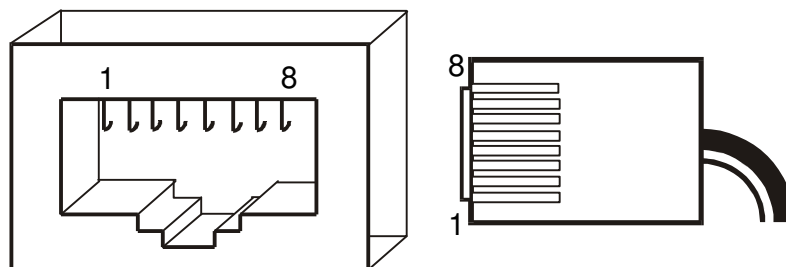
4. Connectors of E1 and Ethernet interface
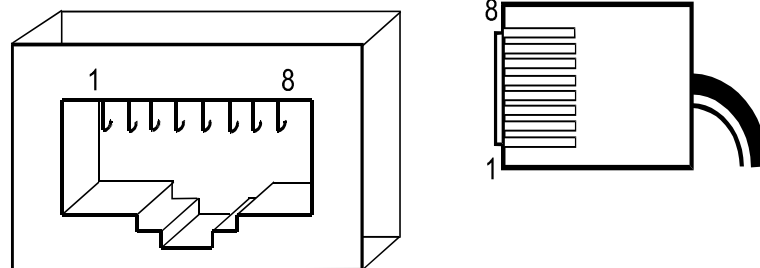
E1 interface - connector RJ 45

1 – input pin to device   ------- RX -
2 – input pin to device   ------- RX+
3 –
4 – output pin from device   ------- TX -
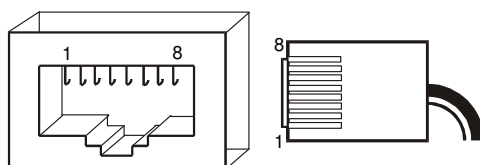5 – output pin from device   ------- TX+
6 –
7 –
8 –

Ethernet 10/100 BT

RJ 45
1 – Transmit from device   Tx +
2 – Transmit from device   Tx -
3 – Receive to device   Rx+
4 –
5 –
6 – Receive to device   Rx-
7 –
8 –

5. Connectors of analog interfaces

Connectors RJ 45		CONNECTOR RJ 45 for ITP 182 25 – IDTMF								MODULE
		1	2	3	4	5	6	7	8	
1	A	a11	b11	a12	a13	b13	b12	a14	b14	IDTMF
	B	a21	b21	a22	a23	b23	b22	a24	b24	IDTMF
2	A	a31	b31	a32	a33	b332	b32	a34	b34	IDTMF
	B	a41	b41	a42	a43	b43	b42	a44	b44	IDTMF
3	A	a51	b51	a52	a53	b53	b52	a54	b54	IDTMF
	B	a61	b61	a62	a63	b63	b62	a64	b642	IDTMF
4	A	a71	b71	a72	a73	b73	b72	a74	b74	IDTMF
	B	a81	b81	a82	a83	b83	b82	a84	b84	IDTMF
5	A	-	-	-	-	-	-	-	-	
	B	-	-	-	-	-	-	-	-	
6	A	-	-	-	-	-	-	-	-	
	B	-	-	-	-	-	-	-	-	

Note: a, b – input and output audio wires to/from device (2-wire)
Identification: a32 – a wire, 3rd module

Connectors RJ 45		CONNECTOR RJ 45 for ITP 182 21 – E&M								MODULE
		1	2	3	4	5	6	7	8	
1	A	A11	B11	AI11	A12	B12	BI11	AI12	BI12	E&M
	B	A21	B21	AI21	A22	B22	BI21	AI22	BI22	E&M
2	A	A31	B31	AI31	A32	B32	BI31	AI32	BI32	E&M
	B	A41	B41	AI41	A42	B42	BI41	AI42	BI42	E&M
3	A	A51	B51	AI51	A52	B52	BI51	AI52	BI52	E&M
	B	A61	B61	AI61	A62	B62	BI61	AI62	BI62	E&M
4	A	A71	B71	AI71	A72	B72	BI71	AI72	BI72	E&M
	B	A81	B81	AI81	A82	B82	BI81	AI82	BI82	E&M
5	A	E11	M11	E12	M12	E21	M21	E22	M22	
	B	E31	M31	E32	M32	E41	M41	E42	M42	
6	A	E51	M51	E52	M52	E61	M61	E62	M62	
	B	E71	M71	E72	M72	E81	M81	E82	M82	

A, B   – input/output audio wires from/to ITX 482 90 (2-wire)

Connectors RJ 45		CONNECTOR RJ 45 for ITP 182 22 – FXS								
		1	2	3	4	5	6	7	8	MODULE
1	A	A11	B11	A12	A13	B13	B12	A14	B14	FXS
	B	A21	B21	A22	A23	B23	B22	A24	B24	FXS
2	A	A31	B31	A32	A33	B33	B32	A34	B34	FXS
	B	A41	B41	A42	A43	B43	B42	A44	B44	FXS
3	A	A51	B51	A52	A53	B53	B52	A54	B54	FXS
	B	A61	B61	A62	A63	B63	B62	A64	B64	FXS
4	A	A71	B71	A72	A73	B73	B72	A74	B74	FXS
	B	A81	B81	A82	A83	B83	B82	A84	B84	FXS
5	A	-	-	-	-	-	-	-	-	
	B	-	-	-	-	-	-	-	-	
6	A	-	-	-	-	-	-	-	-	
	B	-	-	-	-	-	-	-	-	

A, B – input/output audio wires from/to ITX 482 90 (2-wire)

Connectors RJ 45		CONNECTOR RJ 45 for ITP 182 24 – 3W								
		1	2	3	4	5	6	7	8	MODULE
1	A	A11	B11	C11	A13	B13	-	C12	-	3W
	B	A21	B21	C21	A23	B23	-	C22	-	3W
2	A	A31	B31	C31	A33	B33	-	C32	-	3W
	B	A41	B41	C41	A43	B43	-	C42	-	3W
3	A	A51	B51	C51	A53	B53	-	C52	-	3W
	B	A61	B61	C61	A63	B63	-	C62	-	3W
4	A	A71	B71	C71	A73	B73	-	C72	-	3W
	B	A81	B81	C81	A83	B83	-	C82	-	3W
5	A	-	-	-	-	-	-	-	-	
	B	-	-	-	-	-	-	-	-	
6	A	-	-	-	-	-	-	-	-	
	B	-	-	-	-	-	-	-	-	

A, B – input/output audio wires from/to ITX 482 90 (2-wire)

6. Modules FXS, FXO, IDTMF, E&M, LB

It is possible to embed max. 8 modules.

ITP 182 25 can be used only together with devices **ITZ 910 21, ITX 422 37, ITX 422 43,** two-wire is used for connection. Four-wire can not be used.

Note:

It is possible to determine the HW position for each module, if necessary.

Module jumpers:

ITP 182 20 Module IDTMF
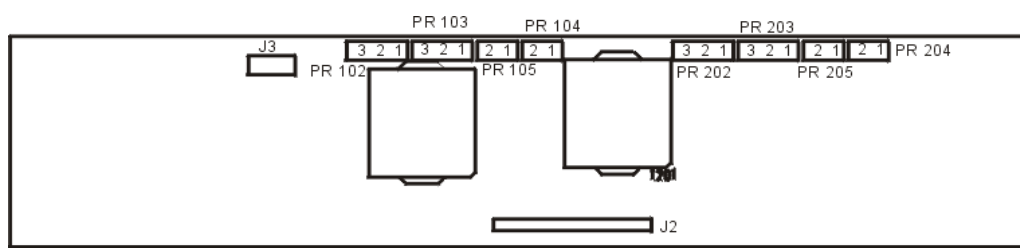
1. Trunk	2-wire	4-wire
PR 102	2-3	1-2
PR 103	2-3	1-2
PR 104	1-2	not connected
PR 105	1-2	not connected
PR 202	2-3	1-2
PR 203	2-3	1-2
PR 203	1-2	not connected
PR 205	1-2	not connected

ITP 135 17 Power supply module
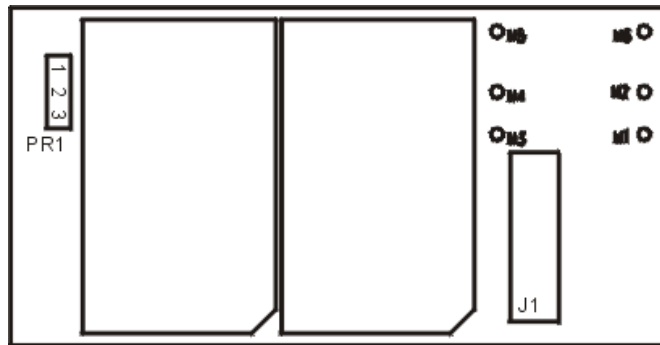
HW jumpers

PR1   1 - 2   for power supply voltage -48 V
       2 - 3   for power supply voltage -60 V

WARNING:
If power supply voltage is higher than 48V, the jumper must be 2 - 3!

7. Module X.21

ITP 136 20

X.21
2 1 PR 22
2 1 PR 21
2 1 PR 20
J2

J1
X.21
2 1 PR 10
2 1 PR 11
2 1 PR 12

DCE

TB	9	1
CB	10	2 TA
RB	11	3 CA
IB	12	4 RA
SB	13	5 IA
	14	6 SA
	15	7
		8 GND

FEMALE
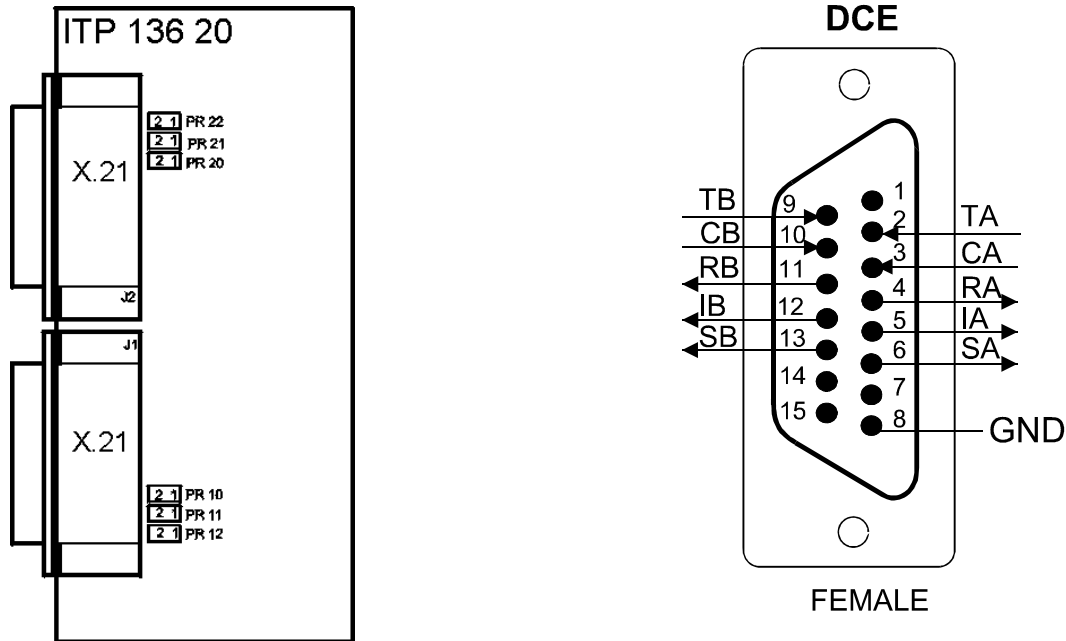
Module with dual X.21 DCE interface n x 64 kbps

 n = 1, 2, 3, to 31 timeslots

Connector X.21   D15F

RA – Receive A   IA – Indication A
RB – Receive B   IB – Indication B
TA – Transmit A   SA – Signal Timing A
TB – Transmit B   SB – Signal Timing B
CA – Control A
CB – Control B

Interface DTE is determined by cable:
ITK 522 07 X.21 DCE – extension cable
ITK 522 19 X.21 DTE – cable reduction

Cable ITK 522 07 – extension cable for X.21 DCE

Cannon D15M
+ shield

L
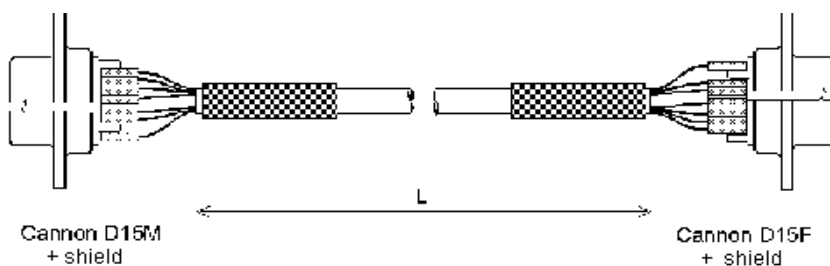
Cannon D15F
+ shield

CANNON - D15 M	Signal	Pairing	Colour designation of the wires	Signal	Cannon - D15 F
1	-		-	-	1
2	TXA		White (Orange)	TXA	2
3	CSA		White (Green)	CSA	3
4	RXA		White (Blue)	RXA	4
5	RCA		White (Brown)	RCA	5
6	TCA		White (Gray)	TCA	6
7					7
8	-		-	-	8
9	TXB		Orange (White)	TXB	9
10	SCB		Green (White)	SCB	10
11	RXB		Blue (White)	RXB	11
12	RCB		Brown (White)	RCB	12
13	TCB		Gray (White)	TCB	13
14	-		-	-	-
15	-		-	-	-
cover	-	-	shield	-	cover

Paired wires

Supplied cables have standard length of 1m. Different lengths are available upon request.

Cable ITK 522 19 – reduction for X.21 DTE

Cannon D15M
+ shield
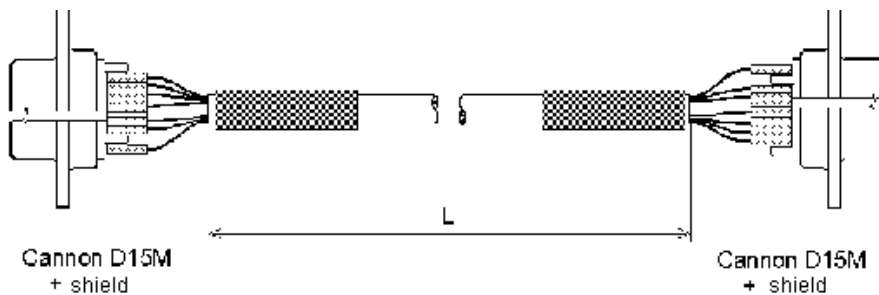
Cannon D15M
+ shield

CANNON D15 M	Signal	Pairing	Colour designation of the wires	Signal	Cannon D15 M
1	-		-	-	1
2	TXA		White (Orange)	TXA	4
3	CSA		White (Green)	CSA	5
4	RXA		White (Blue)	RXA	2
5	RCA		White (Brown)	RCA	3
6	TCA		White (Gray)	TCA	7
7	RTCA		White (Red)	RTCA	6
8	GND		Yellow	GND	8
9	TXB		Orange	TXB	11
10	SCB		Green	SCB	12
11	RXB		Blue	RXB	9
12	RCB		Brown	RCB	10
13	TCB		Gray	TCB	14
14	RTCB		Red	RTCB	13
15	-		-	-	-
cover	-		shield	-	cover

- Paired wires

Supplied cables have standard length of 1m. Different lengths can be specified in the order.

Cable Termination

TI – **T**ermination **I**mpedance

	TI 150 Ω	**TI** > 6 kΩ		**TI** 150 Ω	**TI** > 6 kΩ	
PR 20	1-2	n.c.	PR 10	1-2	n.c.	**R**
PR 21	1-2.	n.c.	PR 11	1-2	n.c.	**I**
PR 22	1-2	n.c.	PR 12	1-2	n.c.	**S**

R – Data **R**eceive
S – **S**ynchronisation Receive
 I – Control signal

8. Interface RS 485
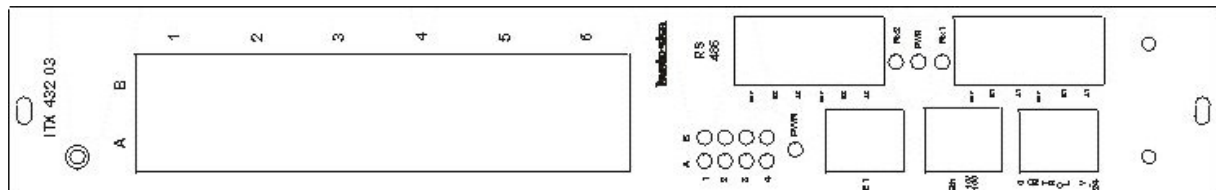
Module ITP 137 21 2xRS 485 enables to transmit through one channel asynchronous data with Baud Rate 110 to 19200 Bd.

1. channell A1, B1
2. channell A2, B2
A is +
B is -

GND is galvanically separated from device power supply.

9. Technical parameters

Interface E1 G.703:   connector RJ 45

                            framed G.704   PCM 30, PCM 31

Signalling: PRI   DSS 1

Line code: HDB 3

Impedance: 120 Ohm

Analog interface: connectors RJ 45

Signalling: FXS, E&M, FXO, LB, IDTMF

Impedance: 600 Ohm

Interface X.21:   connector 15 pin D15 F

Synchronization:

                            - from G.703
                            - internally timed

Power supply: - DC 48 V

Max. input:

   Desktop version: max. 10VA
   Rack version: as per rack building-up

Dimensions: 237 x 220 x 43.5 mm (h x w x d) – desktop version

                            19", 6 U , 250 mm – rack version

Weight: 2 kg – desktop version

                            5 kg – rack version (empty)

10. Installing configuration SW

Management software
Management SW and this documentation is supplied together with the device on the attached CD.

 Installing:
1. Insert CD.
2. Run setupxx.exe. Program operates under Windows '2000 or higher.
3. Proceed according to the instructions.

Running management SW:
　　　Run M8290Axx.exe

After running the management software a password prompt will be displayed. The default set password is ***inoteska***. After typing the right password and pressing OK, the settings´ window will appear.
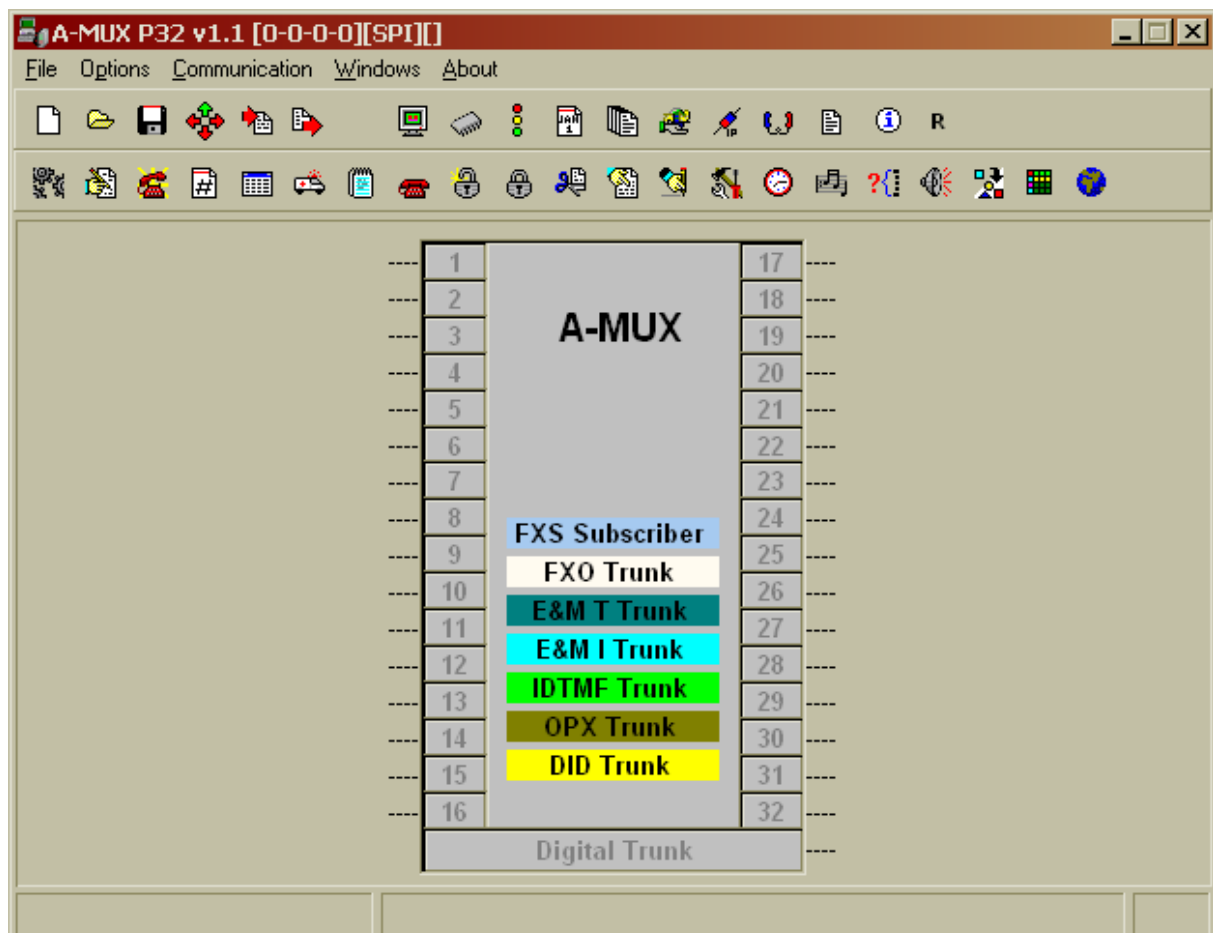
11. Settings

Run M8290Axx.exe
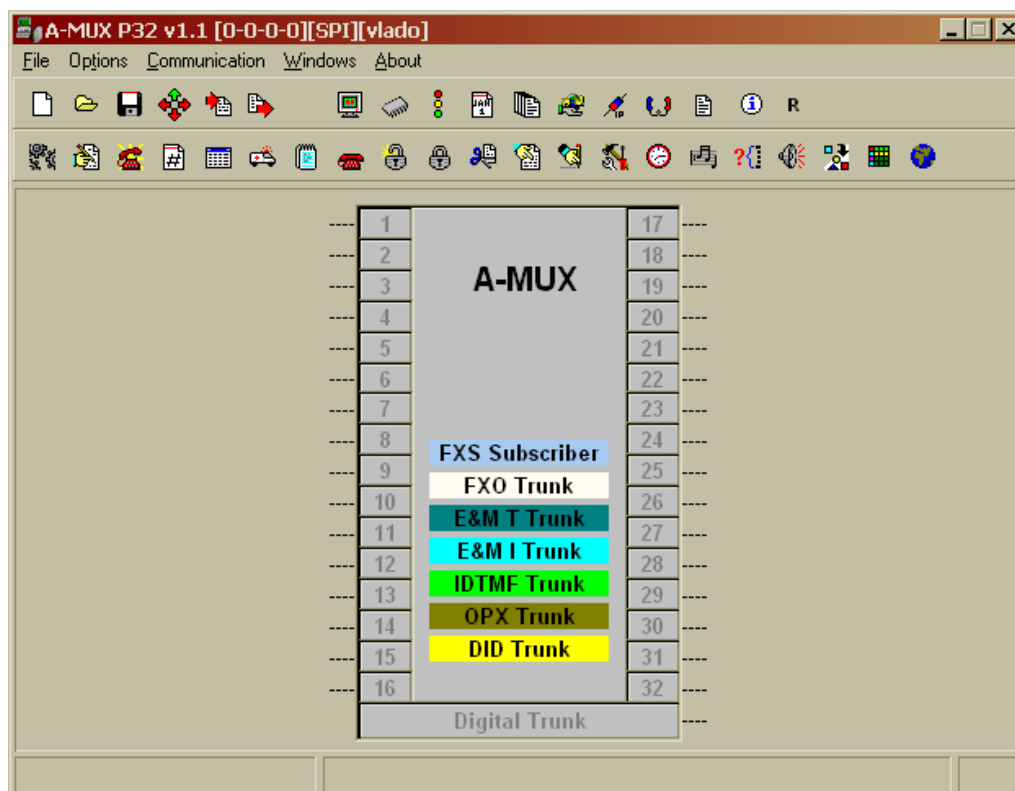
COMMUNICATION

Speed button **Setting of communication** enables to set communication parameters.
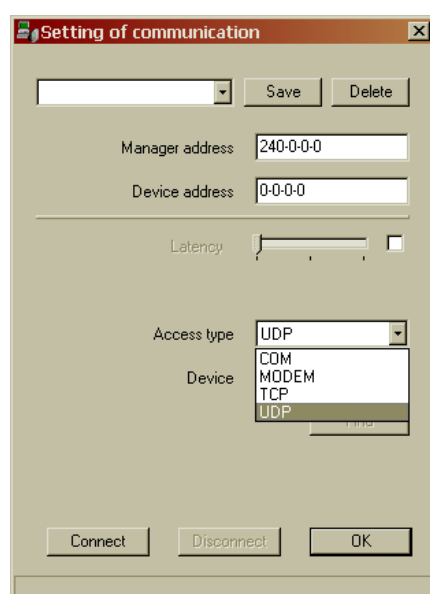
1) Set **Access type** – COM, MODEM, TCP, UDP

UDP - SW will find all devices connected in the network
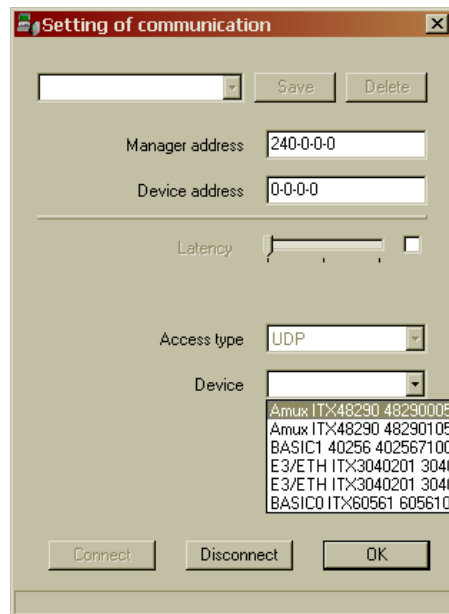
2) Choose the device and click **Connect** – if device is connected, there is **Connected** message displayed.

Access type UDP – conditions for use:

If device is connected in network:

- Device must be in the same local network as PC
- Network must transmit *broadcast*
- PC has to always have IP address assigned.

If device is connected locally to PC:

- Arbitrary IP address must be assigned to PC. (DHCP must be OFF and static address must be set, e.g. 192.168.1.2)
- PC must have transmit/receive of *broadcast* packets
- PC must have UDP port 3864 enabled

In case of error, please check:

- System power source
- Device address **0-0-0-0** – local connection (device address can be changed (**Communication – Remote control & IP/Ethernet setting**): first number from interval 0 - 239, other three numbers from interval 0-255)

- Manager address 251-1-1-1 (first number from interval 240 –254, other three numbers from interval 0-255)
- Password correctness
- Serial port connection – crossed cable for Ethernet interface
- Cable between A-MUX and PC
- Settings of serial port in the connected PC
- Baud Rate between A-MUX and PC – 115 200 Bd. In case communication is done via another Inoteska device, Baud Rate is set as for the device next to A-MUX.

Default settings
If necessary, the configuration can be returned to the factory default by loading the file *'default.dat'* file.

Connection via modem
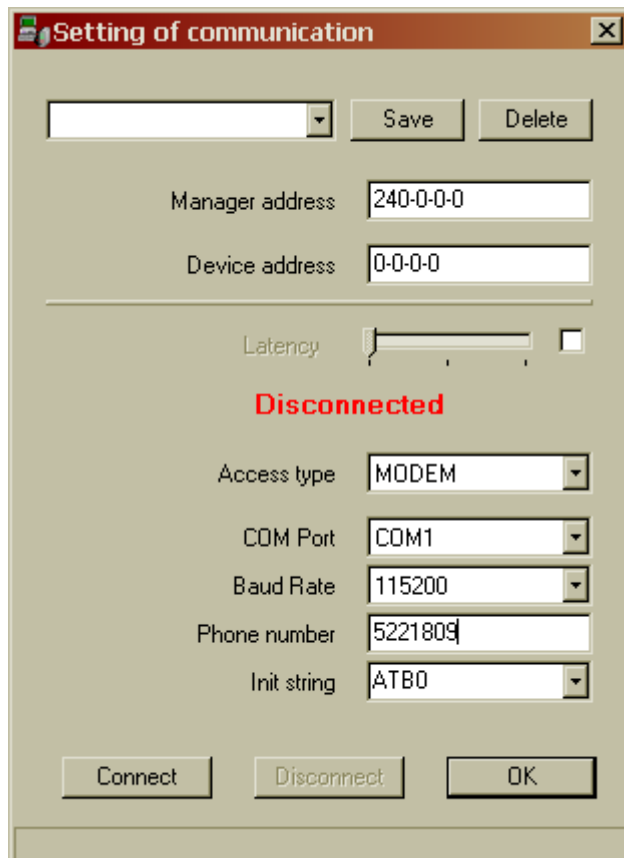
Click **Connect** if all parameters for communication are set. The connection with modem is initialized.

Remote control & IP/Ethernet setting

DEVICE IDENTIFICATION - serial number and HW assemblies

CHANGE OF DEVICE PASSWORD
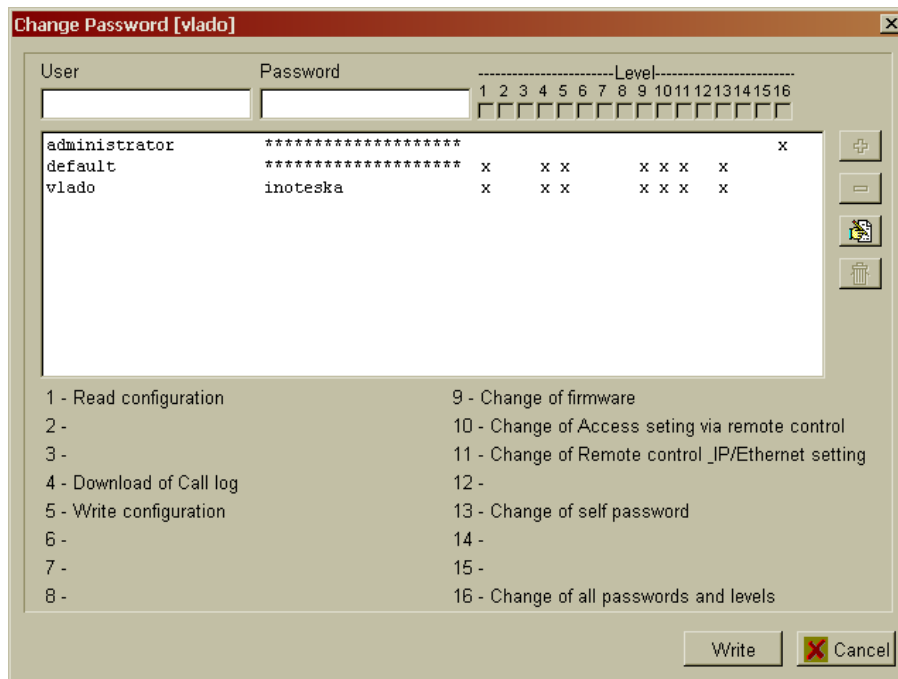
12.   Configuring the device

Before setting subscribers´ numbers and service numbers, it is efficient to have clear and rational numbering plan prepared before.

Parameters
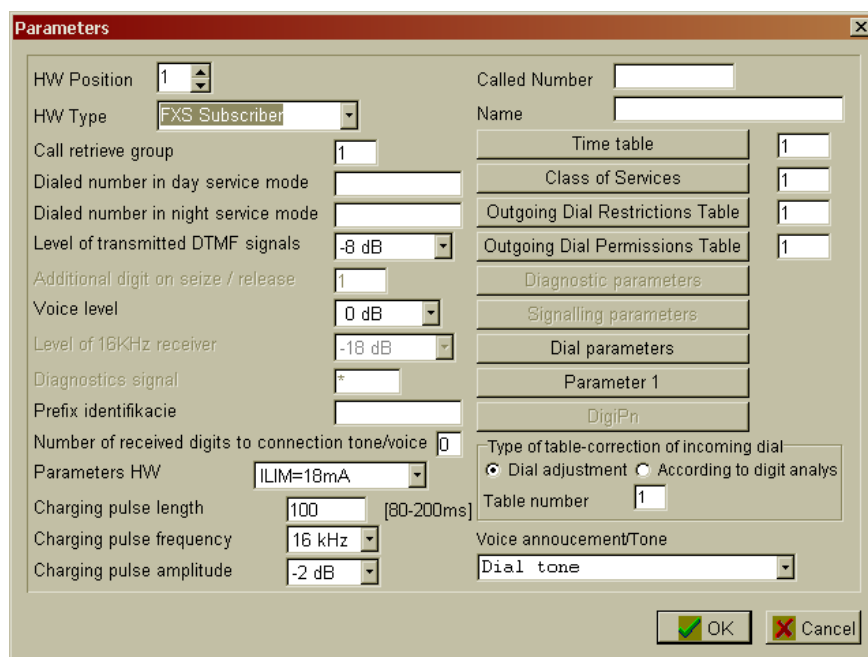
Type of module for each HW position is set in the table:

- Not set (position is not occupied)
- FXS subscriber
- FXO trunk
- E&M T trunk - continuous signalling
- E&M trunk – pulse signalling
- IDTMF trunk – IDTMF signalling, communication with ITX 482 43 a ITX 482 37
- OPX trunk – off-premise extension trunk, connected to ITZ 910 21
- Inductive Trunk – against ITX 482 43
- Trunk DID – 3-wire

Subscriber numbers

For setting the FXS subscriber called number and name, following window is displayed.

Digital Trunk settings

CRC 4 – In case incoming line uses CRC multiframe.

Identification – In case the PBX connected to E1 transmits only the extension number in the identification, the identification can be extended to customer's complete number. For example PBX transmits only extension number 111, A-Mux can add 02 555 4444 to it.

Type of Signalling –type of signalling used for E1.

- ISDN - ISDN DSS1/Q signalling
- K+MFC-R2

Configuration PRA – Used for ISDN PRA line configuration
NT – device simulates network termination
TE – device simulates ISDN exchange

Signalling timeslot – determines the position of signalling timeslot

Timeslot Seizure – A side seizes from channel 1 upwards, B side from channel 31 downwards (ISDN PRA only)

Dial transmission:
Consecutive dial – device does not wait for the end of dial, but transmits the dial simultaneously (at the time the customer dials the destination number)
Dial in SETUP – For DSS1 the complete dial is transmitted in the DSS1 signalling.

12.2 Call groups

Subscribers can be categorized according to their function or physical placement (office, workshop, ...).

 Example:
1. group - headquarters (2001, 2002, 2003)
2. group - workshops (2004, 2005 , 2006, 2007)
3. group - secretariat (2008, 2009, 2010)
4. group – fireroom, reception (2011, 2012)

Group type Cyclic – if group type is not set as cyclic, when calling to group , free subscriber is being found from the first one in the group. If group type is cyclic, system is searching from first subscriber in the group when first calling, from second subscriber when second calling, ... – cyclic round.

Choose the subscriber in **"Free HW positions"** – mark it with cursor and click on **"Add".** In case of change, choose the subscriber in „**Occupied HW positions**" and click on **"Remove".** Then subscriber will be moved to **"Free HW positions".**

Group numbers

For set groups, set also numbers for :
- normal calls
- serial calls
- general calls

12.3 Outgoing Dial Permissions and Restrictions Table

System enables the restriction of outgoing calls. That means it is possible to set dial permissions and restrictions for each subscriber. It can be restricted to call national numbers, but can be permitted to call certain national numbers (employees can not use the telephone for private purposes, but in case of emergency they can call the supervisor). Permission has higher priority than restriction.

12.4 Trunk Groups

The trunks are formed to the groups. Each group has its permissions. Subscribers have permitted/restricted access to the trunks with defined parameters.
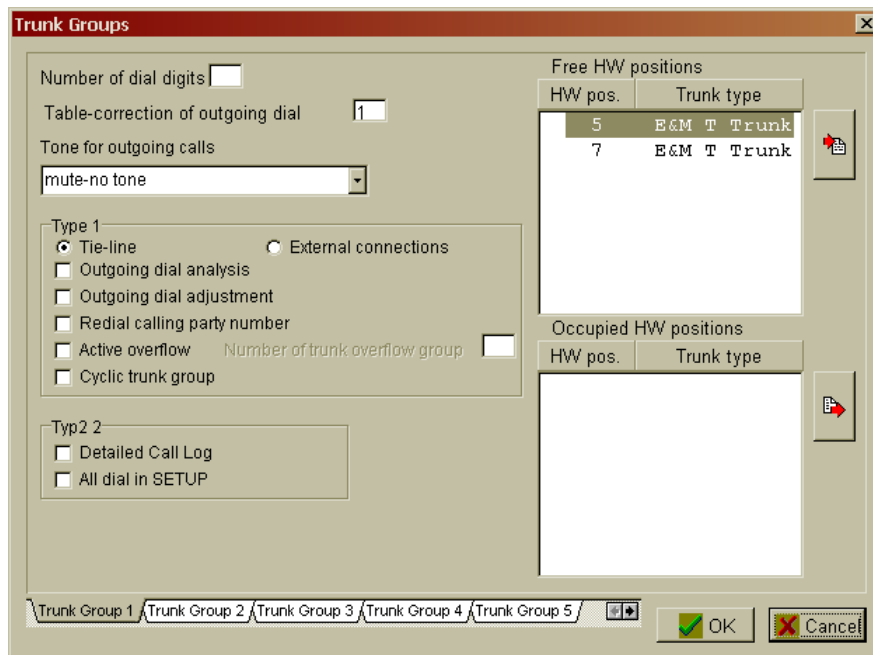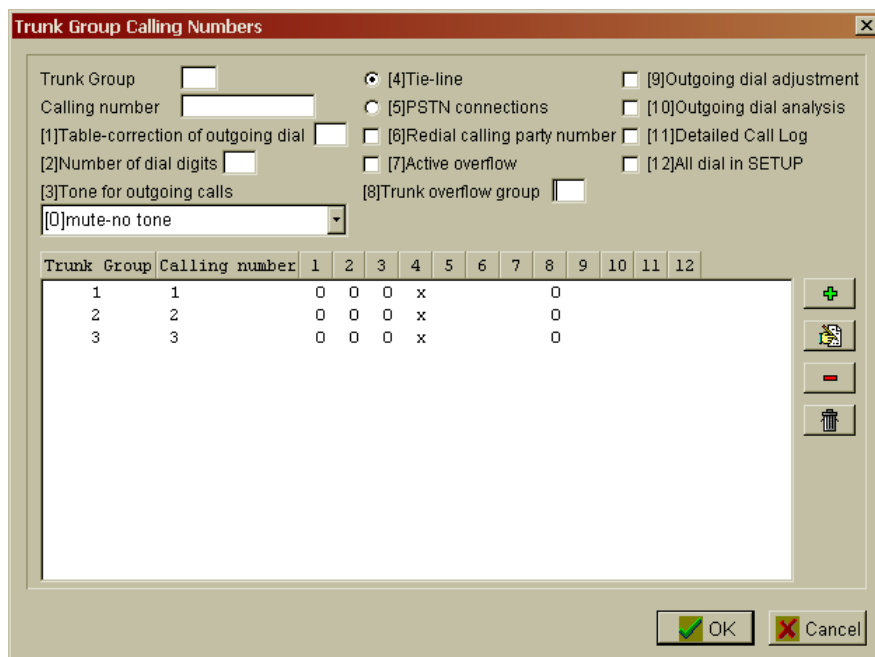

The groups can be formed only of the same type trunks.
It is possible to make up to 16 trunk groups.
When setting, all trunks are displayed in **"Free HW positions".** By clicking on the button on the right side, trunks are added to the groups.
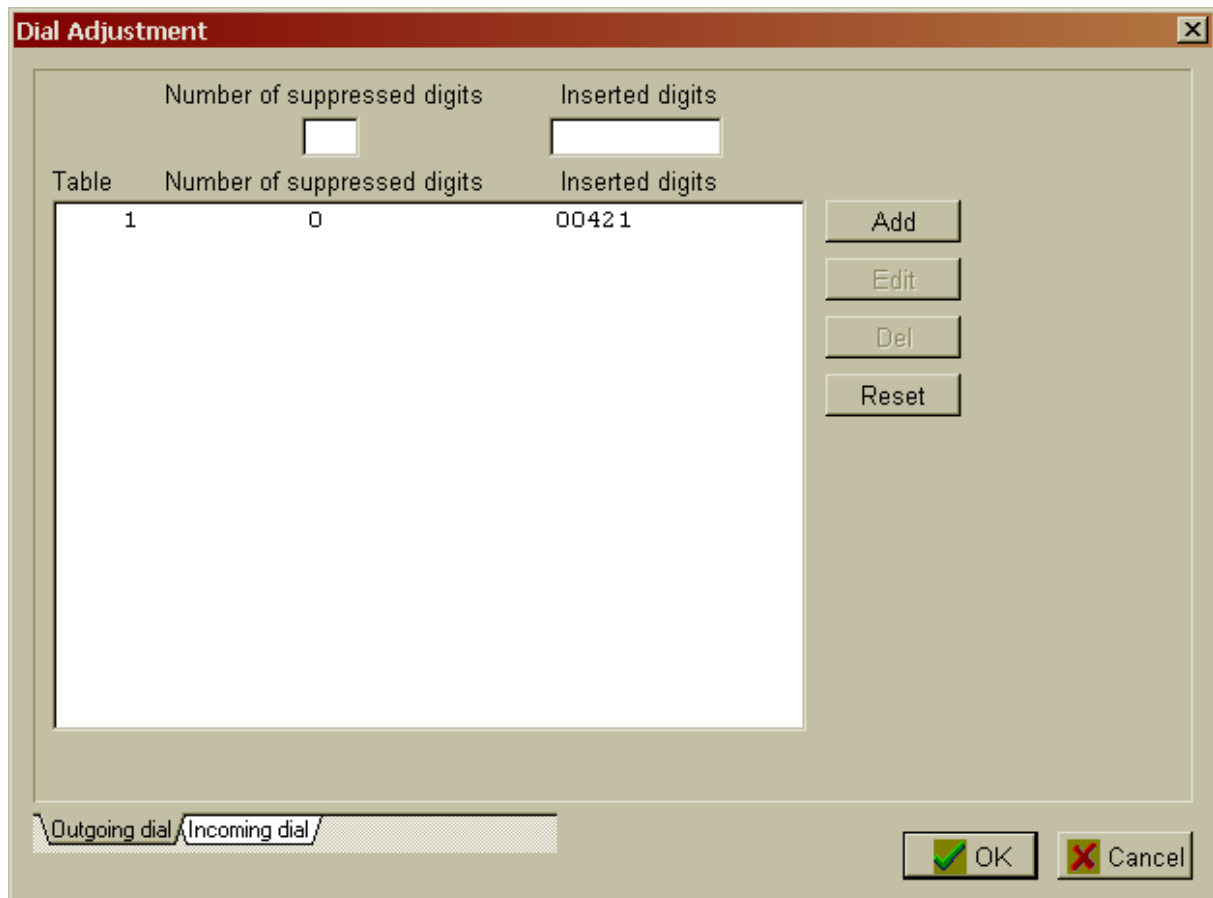Specific characteristics can be set for individual trunks.(Type 1)

12.5 Dial adjustment

Table number 1 to 16
It is possible to suppress the defined number of digits (and if necessary to substitute them with another numbers´ combination) for outgoing as well as incoming call.

Dial Adjustment   ☒

	Number of suppressed digits	Inserted digits	
	[ ]	[ ]	

Table	Number of suppressed digits	Inserted digits	
1	0	00421	Add
			Edit
			Del
			Reset

Outgoing dial / Incoming dial /   ✓ OK   ✗ Cancel

12.6 Dial adjustment according to dial analysis

Digits received by system are analyzed. When incoming/outgoing dial analysis is activated, system will suppress or substitute the coming digit.
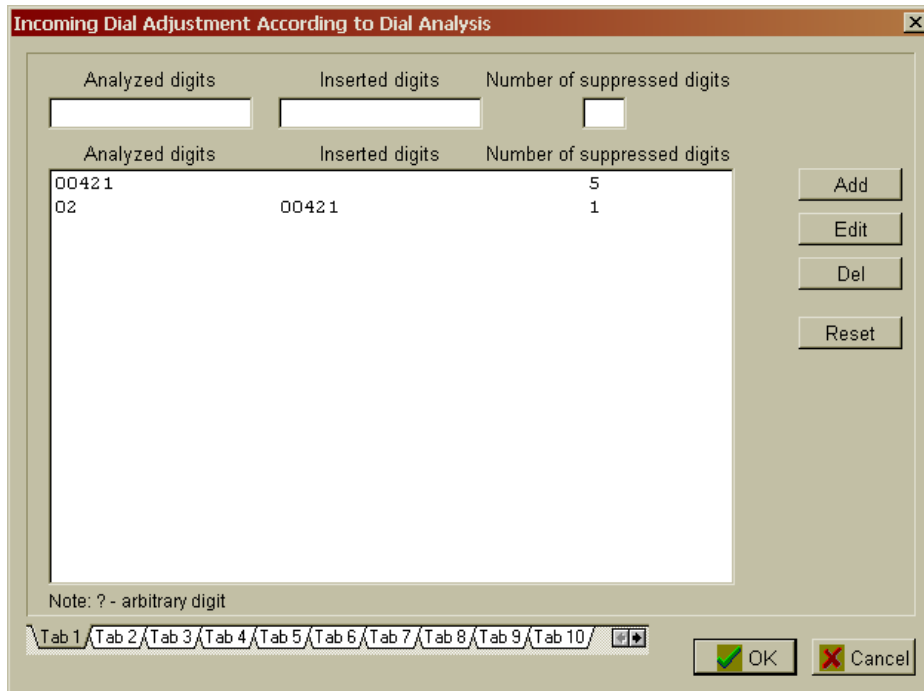
12.7   Voice announcement parameters

It is possible to connect voice announcement to the trunk groups.
Editing the voice announcement – System parameters – 2.Page - "Voice announcement parameters".
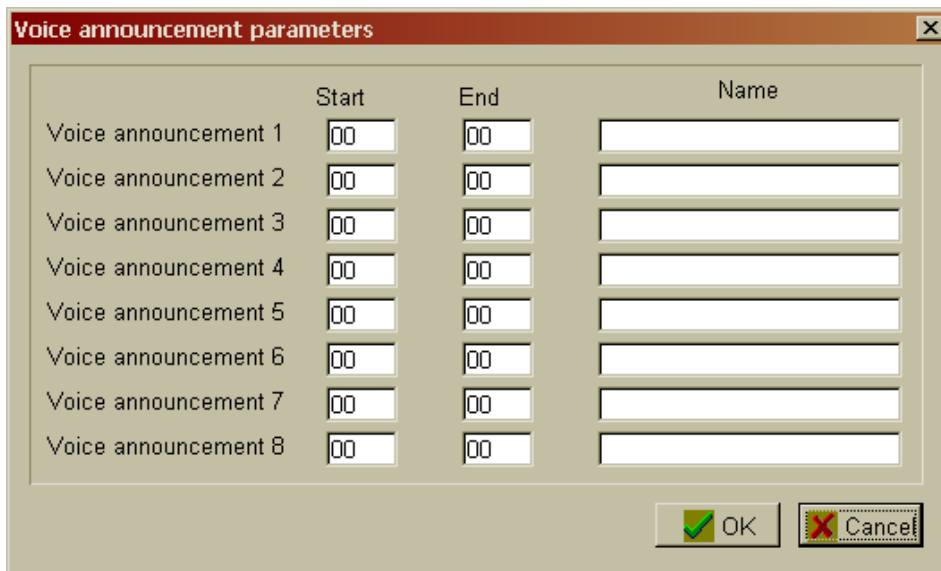

12.8 Trunk group calling numbers

Example:
4 trunk groups are defined – 2 FXO trunks and 2 E&M trunks. Access to the each trunks is defined in Class of services. By setting the codes 9, 10, 11, 12 we will ensure that we will access certain trunk by calling its code.

E&M trunks - in **"Parameters"** buttons for setting diagnostic and signalling parameters are displayed.

According to the characteristics of device, to which A-MUX will be connected, activate following options:
• Seize acknowledge
• Pulse seize acknowledge
• Release acknowledge
• Pulse backward release
• Continuous backward release
• Wait for dialtone
• Evaluate busy tone as release
• Send/detect connect
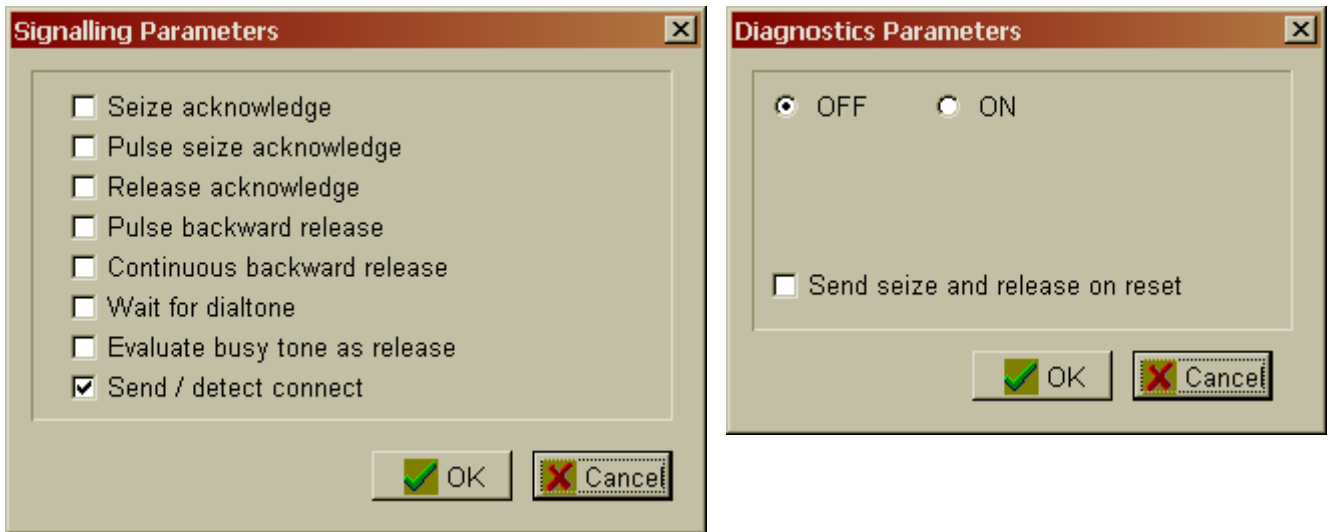
12.9 Day/night service mode
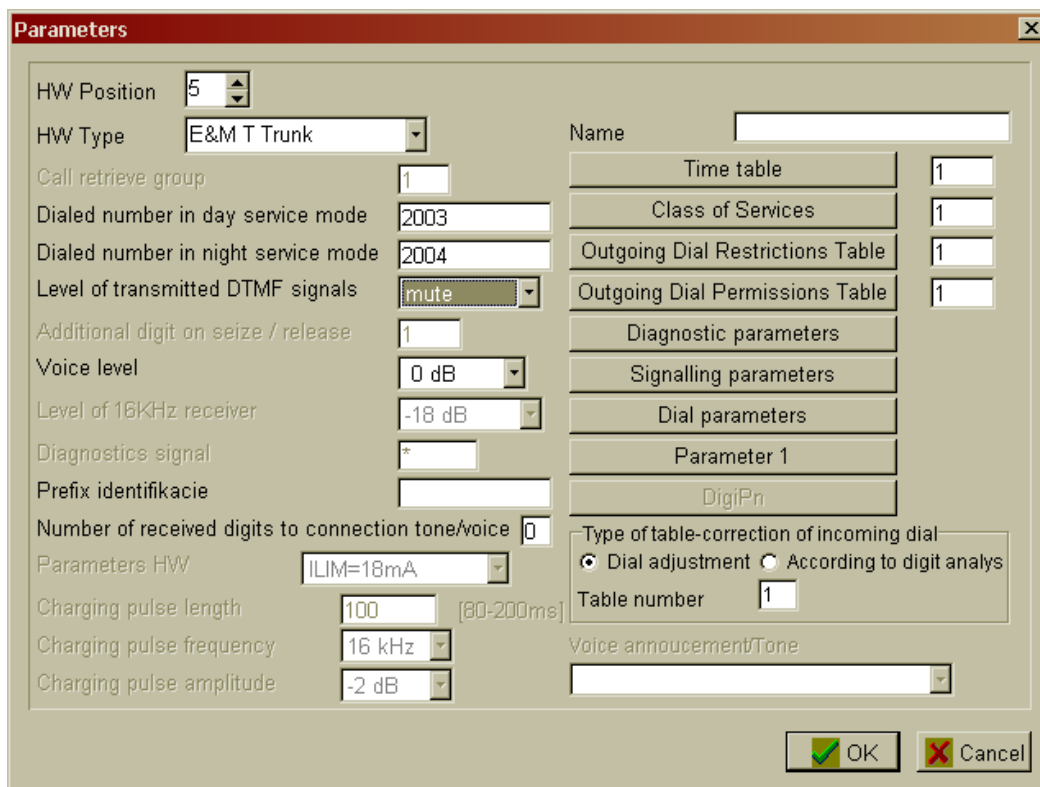
Incoming call in day/night service mode is routed to the subscriber or group.
(Example: 2003 – day service mode, 2004 – night service mode).

12.10 Class of Services

Class of Services

Access to
- ☑ Trunk Group 1
- ☑ Trunk Group 2
- ☑ Trunk Group 3
- ☐ Trunk Group 4
- ☐ Trunk Group 5
- ☐ Trunk Group 6
- ☐ Trunk Group 7
- ☐ Trunk Group 8
- ☐ Trunk Group 9
- ☐ Trunk Group 10
- ☐ Trunk Group 11
- ☐ Trunk Group 12
- ☐ Trunk Group 13
- ☐ Trunk Group 14
- ☐ Trunk Group 15
- ☐ Trunk Group 16

Allowed Overflow of
- ☐ Trunk Group 1
- ☐ Trunk Group 2
- ☐ Trunk Group 3
- ☐ Trunk Group 4
- ☐ Trunk Group 5
- ☐ Trunk Group 6
- ☐ Trunk Group 7
- ☐ Trunk Group 8
- ☐ Trunk Group 9
- ☐ Trunk Group 10
- ☐ Trunk Group 11
- ☐ Trunk Group 12
- ☐ Trunk Group 13
- ☐ Trunk Group 14
- ☐ Trunk Group 15
- ☐ Trunk Group 16

Special Access to
- ○ Trunk Group 1
- ○ Trunk Group 2
- ○ Trunk Group 3
- ○ Trunk Group 4
- ○ Trunk Group 5
- ○ Trunk Group 6
- ○ Trunk Group 7
- ○ Trunk Group 8

Reset

\1.page /2.page /

\Class 1 /Class 2 /Class 3 /Class 4 /Class 5 /Class 6 /Class 7 /Class 8 /Class 9 /

✓ OK   ✗ Cancel

Class of Services

- ☐ Contact Supervision
- ☐ Hotline, Passive subscriber extension
- ☐ Direct access to special trunk group on off-hook
- ☐ Activate call forwarding
- ☐ Interception protection
- ☐ Enable blocking of calls
- ☐ Enable service and diagnostics functions
- ☐ Enable trunk direct access
- ☐ Disable trunk seize if another trunk is on hold
- ☐ Disable callback after holding a trunk and consequtive on-hook
- ☐ Disable callback after holding a subscriber and consequtive on-hook
- ☐ Disable transfer of outgoing call to PSTN
- ☐ Non-working numbers route to special trunk group

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\Class 1 /Class 2 /Class 3 /Class 4 /Class 5 /Class 6 /Class 7 /Class 8 /Class 9 /

✓ OK   ✗ Cancel

- System enables to categorize all subscribers according to their work position to the 16 groups. That means they have access to all trunks. If one is busy, they have access also to another. Production workers can only have access to the one trunk to PSTN, if this is busy, they get busy tone. Reception employee can only dial through E&M trunk. This group doesn´t have access to FXO trunk.
- Active call forwarding means that if all one trunk is busy and an overflow for subscriber number (in Class of services) is permitted, subscriber will be connected to another trunk group.

Class of services is assigned in „Parameters" window.
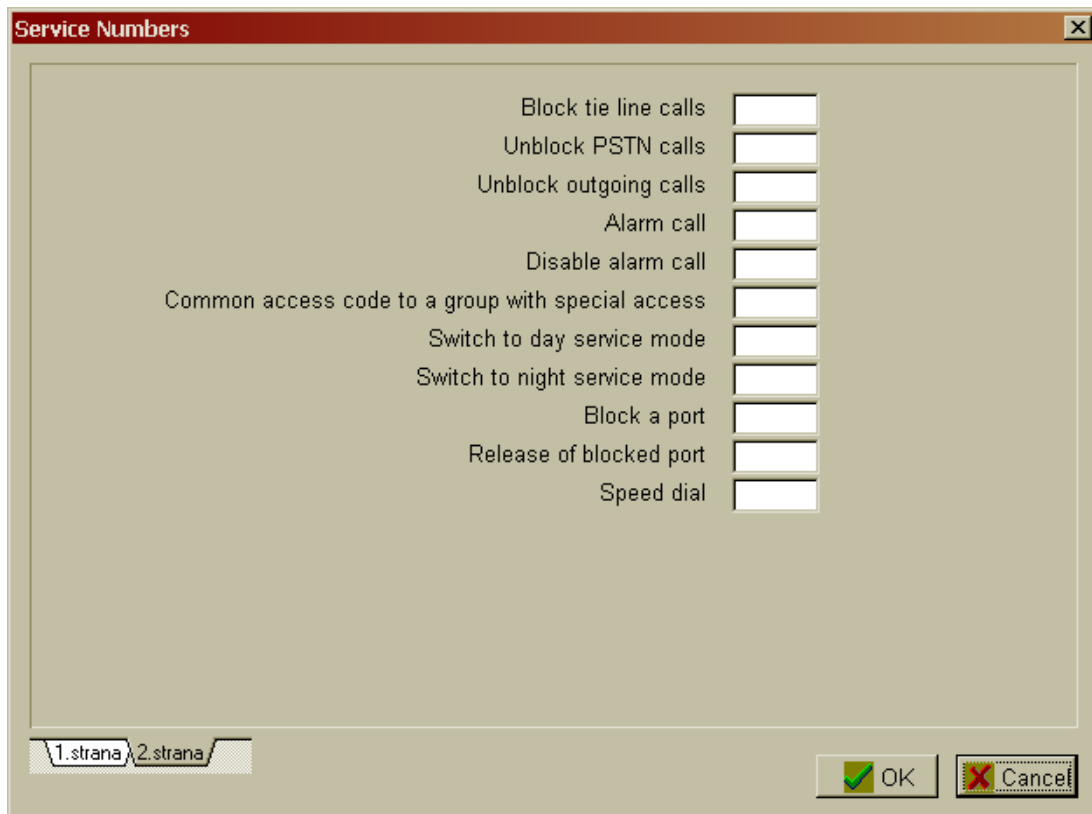Click on OK to save the settings.

12.11 Service numbers

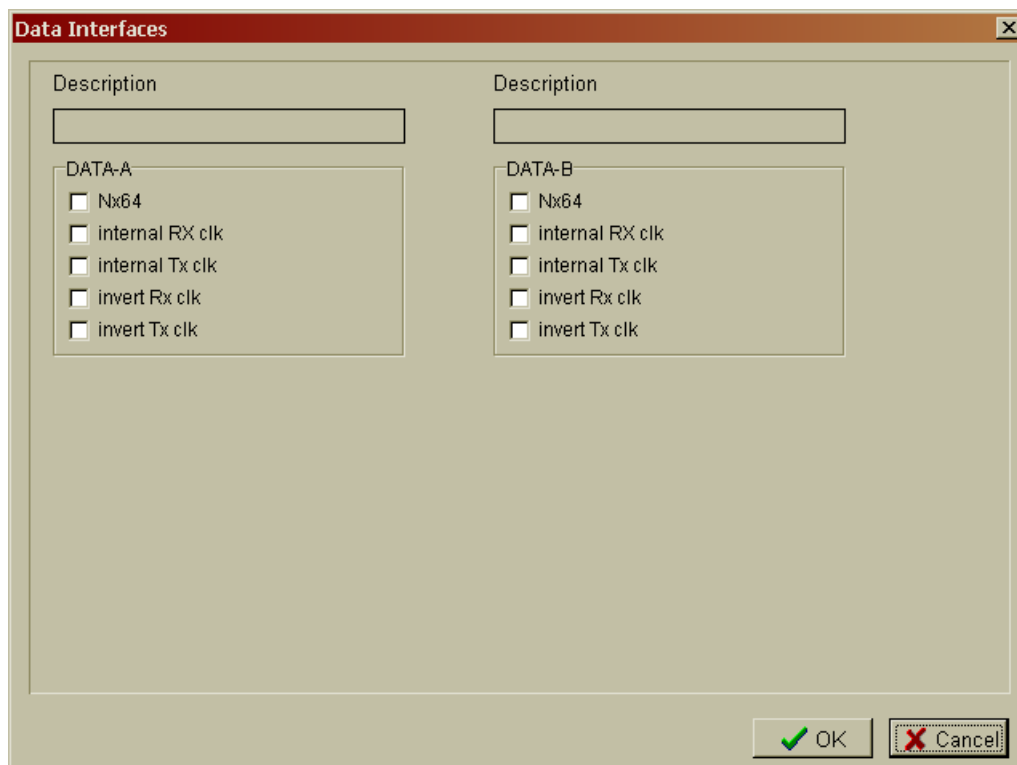Service numbers are set according to the numbering plan.

Service Numbers

Block tie line calls	
Unblock PSTN calls	
Unblock outgoing calls	
Alarm call	
Disable alarm call	
Common access code to a group with special access	
Switch to day service mode	
Switch to night service mode	
Block a port	
Release of blocked port	
Speed dial	

1. strana \ 2. strana

✔ OK   ✘ Cancel

13. Data interfaces

Data Interfaces

Description

Description

DATA-A
- ☐ Nx64
- ☐ internal RX clk
- ☐ internal Tx clk
- ☐ invert Rx clk
- ☐ invert Tx clk

DATA-B
- ☐ Nx64
- ☐ internal RX clk
- ☐ internal Tx clk
- ☐ invert Rx clk
- ☐ invert Tx clk
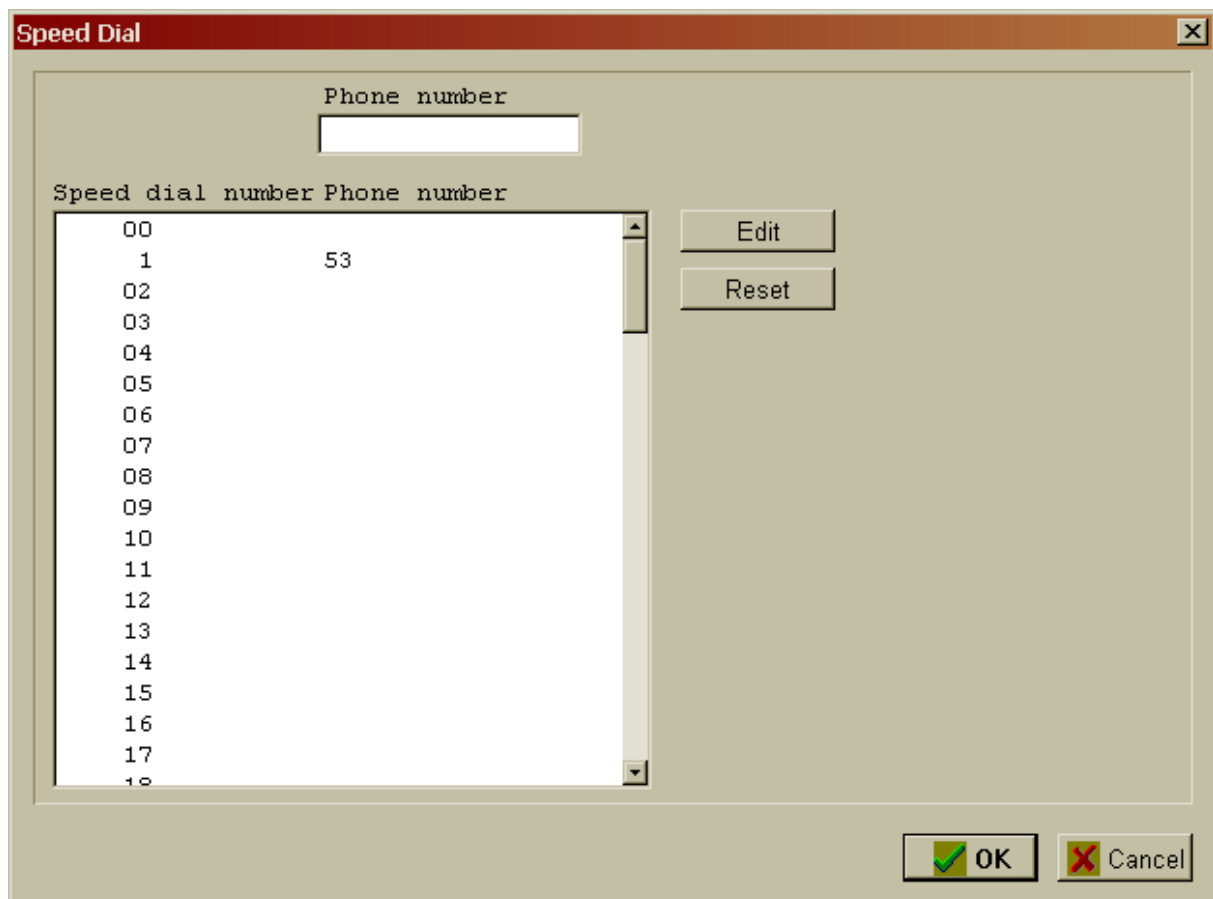
✔ OK   ✘ Cancel

14. Parameters

Optional:

Dial parameters

„**Disable reception of dial during a call**" is set by default.

Speed dial

System enables to save up to 99 most frequently called numbers.

Example: Three of top managers often call to their partner in Czech Republic. To make it more simple his direct number is set and managers only remember a code of customer (01 to 99).

Note:
When setting a full number it is necessary to set also a code to the trunks to PSTN (9 and 10).

15. Service settings

15.1 System parameters

15.2 Time Table

System allows the setting of 16 optional time tables. Table 1 is default and recommended.

Time Table

DTMF tone length	100	[ms]
DTMF interdigit pause	100	[ms]
Seize length	100	[ms]
Pulse length	60	[ms]
Pause length	40	[ms]
Seize acknowledge length	100	[ms]
Interdigit pause length	800	[ms]
Connect length	100	[ms]
Release length	600	[ms]
Backward release length	600	[ms]
Length of pulse for pulse release	50	[ms]
Pulse release pause	50	[ms]
Seize acknowledge time	100	[ms]

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Tab 1 / Tab 2 / Tab 3 / Tab 4 / Tab 5 / Tab 6 / Tab 7 / Tab 8 / Tab 9 / Tab 10 / Tab 11 /

Load   Save   OK   Cancel

Time Table

Block time after release	1000	[ms]
Release acknowledge time	100	[ms]
Maximum seize length	400	[ms]
Seize acknowledge / Dial tone timeout	6000	[ms]
Maximum release length	1400	[ms]
Minimum release length	450	[ms]
Release complete timeout	1400	[ms]
Maximum time between 2 ringings	7000	[ms]
Minimum valid ringing time	200	[ms]
Blocking time after release for incoming PSTN calls	7000	[ms]
Minimum valid time of the evaluated tone	150	[ms]
Interval length for tone evaluation	4	[s]
Minimum number of tones per interval for evaluation of valid busy tone	5	

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Tab 1 / Tab 2 / Tab 3 / Tab 4 / Tab 5 / Tab 6 / Tab 7 / Tab 8 / Tab 9 / Tab 10 / Tab 11 /

Load   Save   OK   Cancel

Time Table

Length of suppressed flash tones	20	[ms]
Pulse dial evaluation time	200	[ms]
Charging pulse evaluation time	100	[ms]
Time for TX of first digit after seize	1000	[ms]
Length of disgnostics interval	30	[s]
Number of bad diagnostics intervals before error generation	3	
Tone length at diagnostics error	1	[s]
Pause length at diagnostics error	2	[s]
Pause length at dial transmission	500	[ms]
Maximum flash time	800	[ms]
First digit local dial timeout	20	[s]
Local dial timeout	20	[s]
First digit outgoing dial timeout	20	[s]

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Tab 1 \Tab 2 \Tab 3 \Tab 4 \Tab 5 \Tab 6 \Tab 7 \Tab 8 \Tab 9 \Tab 10 \Tab 11 /

Load   Save   OK   Cancel

Time Table

Outgoing dial timeout	20	[s]
Block time of reception of dial during a call	1	[s]
Repeated notice - subscriber not answering	20	[s]
Repeated notice - hold	20	[s]
Repeated notice - parking	40	[s]
Time for switching to lock out state	30	[s]
Time for forwarding - subscriber not answering	20	[s]
Maximal time for ringing	300	[s]
Time for switching to call wait state	10	[s]
Maximal call wait time	40	[s]
Maximal callback time	20	[s]
Serial ring time	15	[s]

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Tab 1 \Tab 2 \Tab 3 \Tab 4 \Tab 5 \Tab 6 \Tab 7 \Tab 8 \Tab 9 \Tab 10 \Tab 11 /
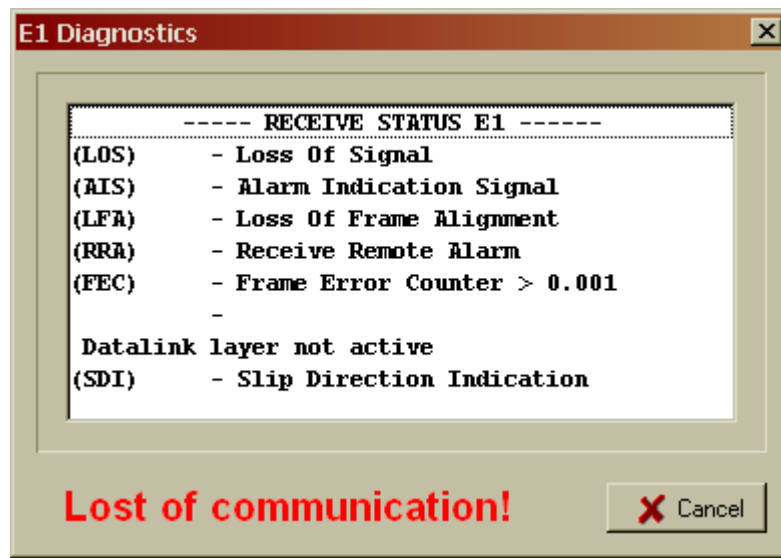
Load   Save   OK   Cancel

15.3 Tone Table

Following tables contain standardly used tones in the telecommunication networks. In case customers wants the own ones to be set, he´ll change these table settings.

16. E1 Diagnostics

```
E1 Diagnostics                                    [×]

      ----- RECEIVE STATUS E1 ------
 (LOS)     - Loss Of Signal
 (AIS)     - Alarm Indication Signal
 (LFA)     - Loss Of Frame Alignment
 (RRA)     - Receive Remote Alarm
 (FEC)     - Frame Error Counter > 0.001
           -
  Datalink layer not active
 (SDI)     - Slip Direction Indication


 Lost of communication!          [ X Cancel ]
```
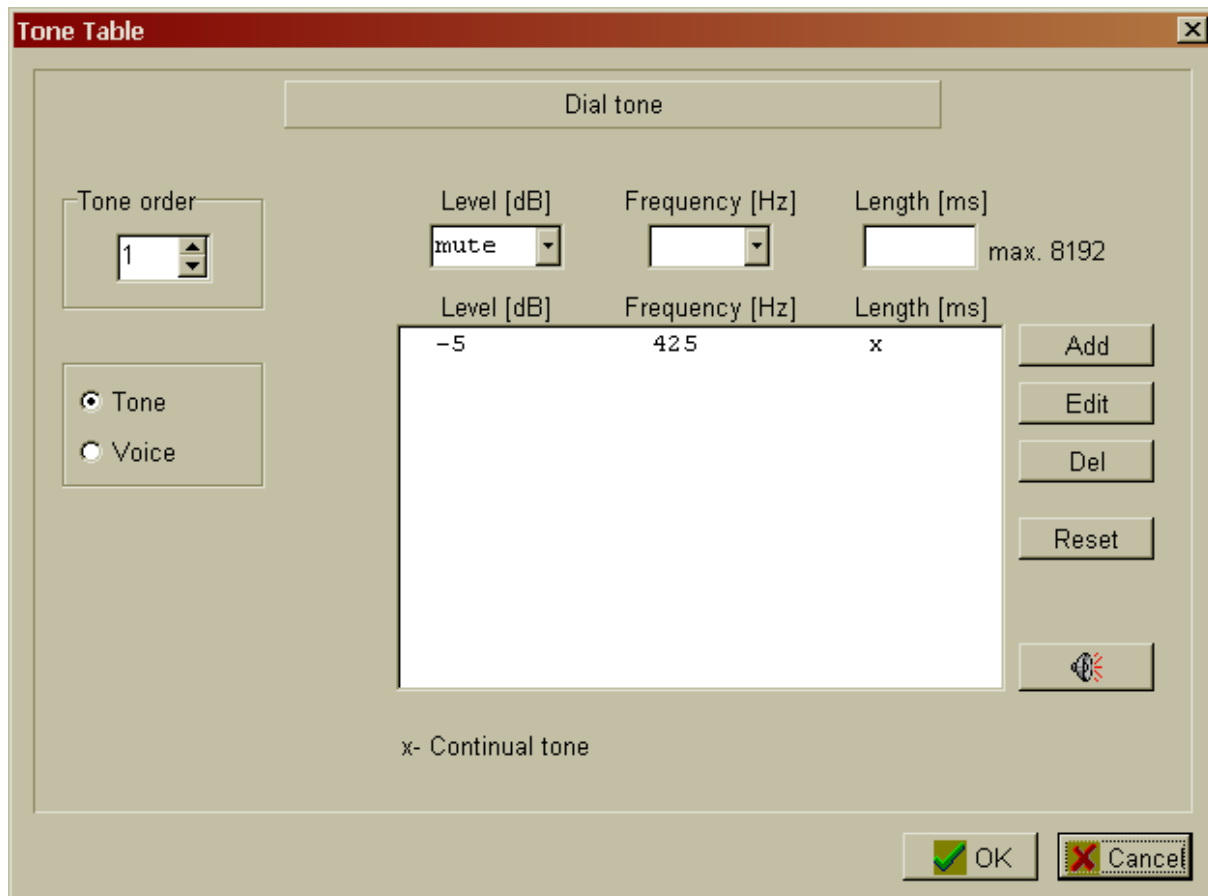
Loss of Signal LOS – Loss of signal on link level - E1 interface not connected

Alarm Indication Signal AIS – Transmitted signal is constant with data value Log1

Loss of Frame Alignment LFA – Indicates synchronisation error in 0th channel

Receive Remote Alarm RRA – Indicates remote device alarm

Frame Error Counter FEC – Indicates error rate $> 10^{-3}$

Receive Timeslot 16 Loss of Signal TS16LOS – Receive timeslot 16 does not contain signalling

Datalink layer not active – Link layer error – ISDN DSS1 signalling only

Slip Detection Indicator SDI – Indicates positive slip if the device clock has higher frequency than the clock signal received, and negative slip if it has lower frequency