inoteska

CERTIFIED MANAGEMENT SYSTEM
SKQS
ISO 9001

AUTODIALER
PRODUCT DOCUMENTATION

TABLE OF CONTENT

PRODUCT OVERVIEW
1). FEATURES

Product name: Autodialer

Model: ITX 482 03

Manufacturer:

INOTESKA, s.r.o., Priemyselná 221/6, Podtureň-Roveň, 033 01 Liptovský Hrádok, Slovakia

Placement: In supervised area

Size: 43,5 x 104 x 220 mm (HxWxD)

Environmental conditions: 0° C to 55° C, 20% to 75% relative atmospheric humidity

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

- Setup on transmission path between the PBX and the Public Exchange
- 3 x E1 interfaces (120 / 75 Ohm, RJ 45 / BNC connectors)
- Optional call routing to E1-C
- E1 interface with CAS R2 MFC signalling
- PRA ISDN DSS1 interface
- Optional change of signalling from R2 MFC to DSS1 and vice versa
- Synchronous data interfaces X.21, V35, V.36, RS 530, V.24 , 10 Base-T for DATA
- Call statistics
- E1-A/B/C interface diagnostics
- Scanning and re-routing of up to 30 voice channels to E1 - C
- 1400 re-routing conditions
- 200 barred numbers (exceptions)
- 19 spaces for carrier number and 19 spaces for user ID number
- Routing of calls, Up to 8 carriers via PSTN
- Pause length setting in seconds
- Optional pause insertion in PIN/dialed string
- Optional insertion of # or * at any position in ID number
- Real or pseudo charging (800 routing codes, 20 charging tables, real time clock)
- Dialling tone 425 Hz and 1100/1633 Hz (DTMF A-D) tone detection for real charging
- Configuration via PC with V.24 interface
- Saving of configuration to PC
- Change of configuration and firmware
- Remote configuration via internal ISDN modem, external analog modem or via TCP/IP 10/100 BaseT
- Optional dedicated selected channels for external data transfers
- Bypass connection if the device is off or out of order
- Power supply adapter AC/DC 230 V / 5 V, max. input 5 VA

2). SPECIFICATIONS

Specification	Interfaces				Characteristics		E1 connectors	
	E1-C	X.21	UDI	Eth	P	VR	RJ45	BNC
ITX 482 03.2 PVR	√	-	-	-	√	√	√	-
ITX 482 03.2 R	√	-	-	√	√	√	√	-
ITX 482 03.3 PVR	√	√	-	-	√	√	√	-
ITX 482 03.3 R	√	√	-	√	√	√	√	-
ITX 482 03.4 PVR	√	-	√	-	√	√	√	-
ITX 482 03.4 R	√	-	√	√	√	√	√	-
ITX 482 03.6 PVR	-	-	-	-	√	√	-	√
ITX 482 03.6 R	-	-	-	√	√	√	-	√
ITX 482 03.7 PVR	√	√	-	-	√	√	-	√
ITX 482 03.8 PVR	√	-	√	-	√	√	-	√

√ - Basic Configuration features, **-** - Features not possible to utilize

RJ 45 - connector for E1 interface 120 Ohm
BNC   - connector for E1 interface   75 Ohm
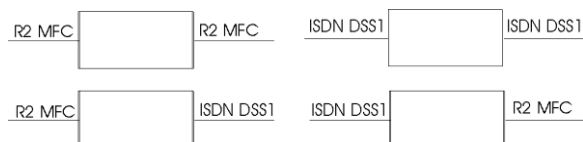**E1-C** - can be defined as PRA ISDN resp. CAS R2 MFC.
X.21 – data interface
UDI – universal data interface
Eth – interface Ethernet 10BT
P – CAS R2 MFC / PRA DSS1 signalling converter
VR – voice routing

The necessary data interface is achieved with cable reduction. Please order a cable:

ITK 522 08	Cable UDI / X.21 DCE	ITK 522 13	Cable UDI / V.36 DTE
ITK 522 09	Cable UDI / X.21 DTE	ITK 522 14	Cable UDI / V.24 DCE
ITK 522 10	Cable UDI / V.35 DCE	ITK 522 15	Cable UDI / V.24 DTE
ITK 522 11	Cable UDI / V.35 DTE	ITK 522 16	Cable UDI / RS 530 DCE
ITK 522 12	Cable UDI / V.36 DCE	ITK 522 17	Cable UDI / RS 530 DTE

Standard cable length is 1m. Different lengths are available upon request.

Warning:

For proper functioning of the device and conformation with the warranty conditions
we recommend the use of the standard cables, supplied with the device.

Note:
The necessary number of E1 interfaces is activated in accordance with the type of Autodialer.

Autodialer ITX 482 03 is fitted in a case sized 237 x 220 x 43.5 mm **(h x d x w).**
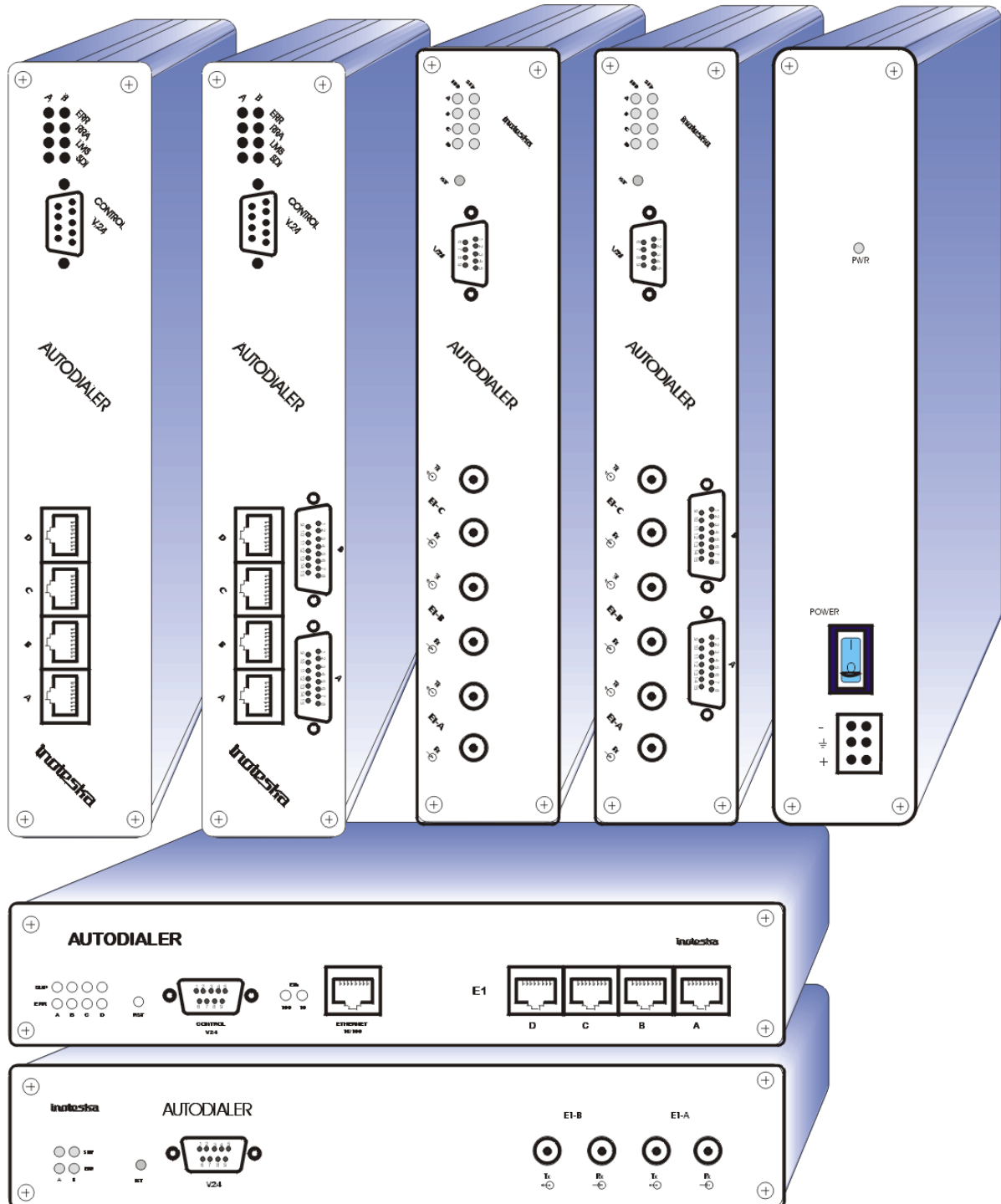
3). JUMPERS LAYOUT ON BOARD

PR1   Hardware jumper (always 1-2)
PR2   Hardware jumper (always disconnected)

Impedance switching

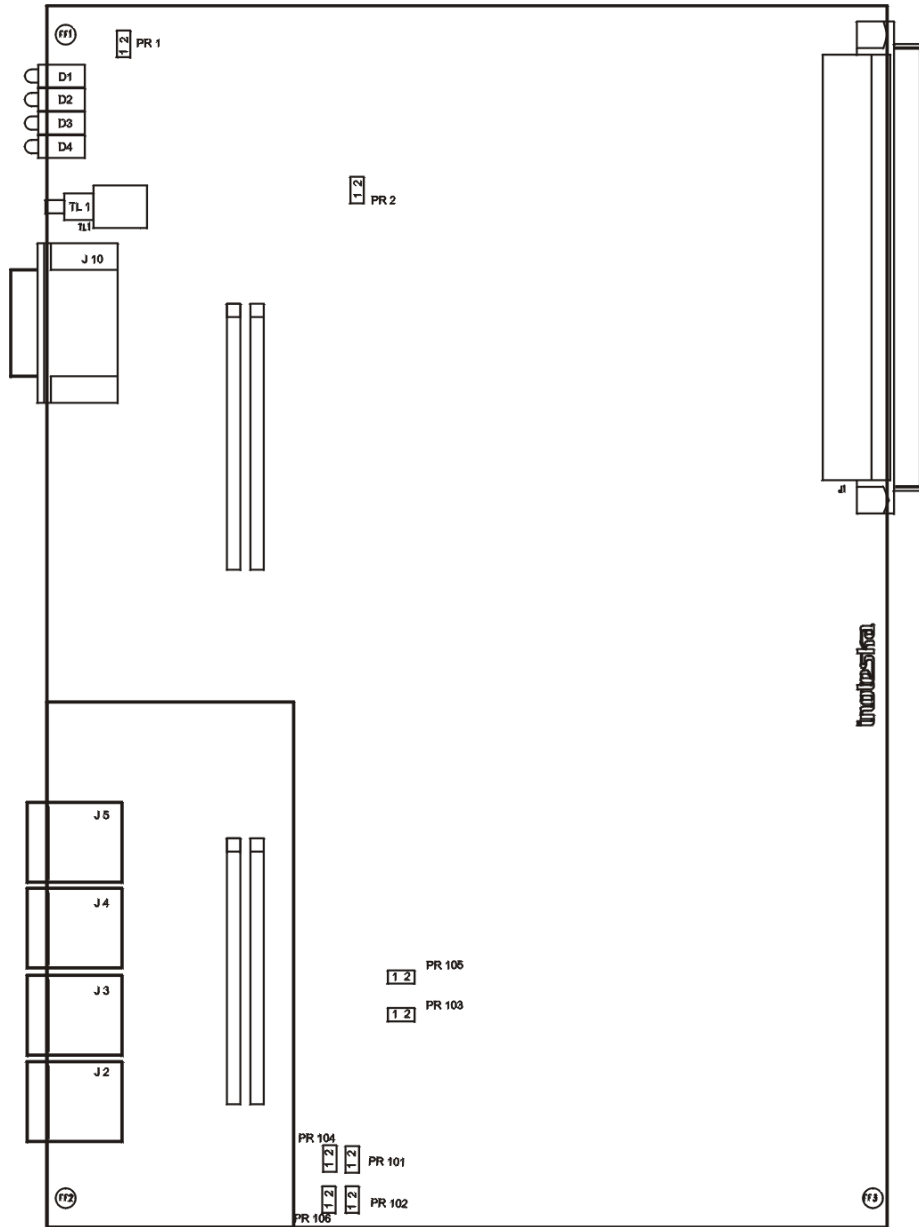|	120 Ohm	75 Ohm
--------------------------------E1- A --------------------------------		
PR 101	n.c.	1-2
PR 102	n.c.	1-2
PR 103	n.c.	1-2
--------------------------------- E1- B --------------------------------		
PR 104	n.c.	1-2
PR 105	n.c.	1-2
PR 106	n.c.	1-2
--------------------------------- E1- C --------------------------------		
PR 107	n.c.	1-2
PR 108	n.c.	1-2
PR 109	n.c.	1-2
--------------------------------- E1- D --------------------------------		
PR 110	n.c.	1-2
PR 111	n.c.	1-2
PR 112	n.c.	1-2
---		

n.c. – Jumper not connected

Warning:
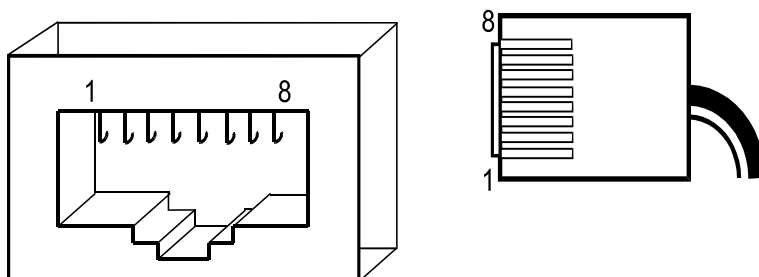
75 Ohm is non-standard output via RJ 45 connector

4). CONNECTORS DESCRIPTION
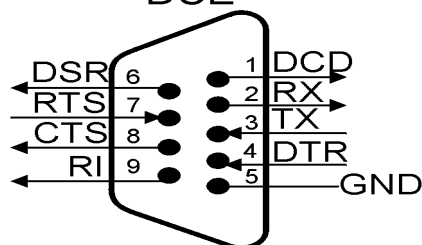
E1-A/B/C interface connectors

RJ 45 connector description

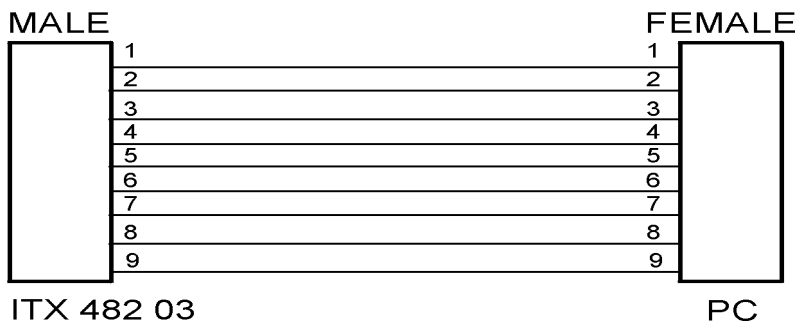|		120 Ω	75 Ω
1 – input pin to ITX 482 03	-------	RX -	RX
2 – input pin to ITX 482 03	-------	RX+	GND
3 –			
4 – output pin from ITX 482 03	-------	TX -	TX
5 – output pin from ITX 482 03	-------	TX+	GND
6 –			
7 –			
8 –			

CONTROL connector for connecting ITX 482 03 with a PC
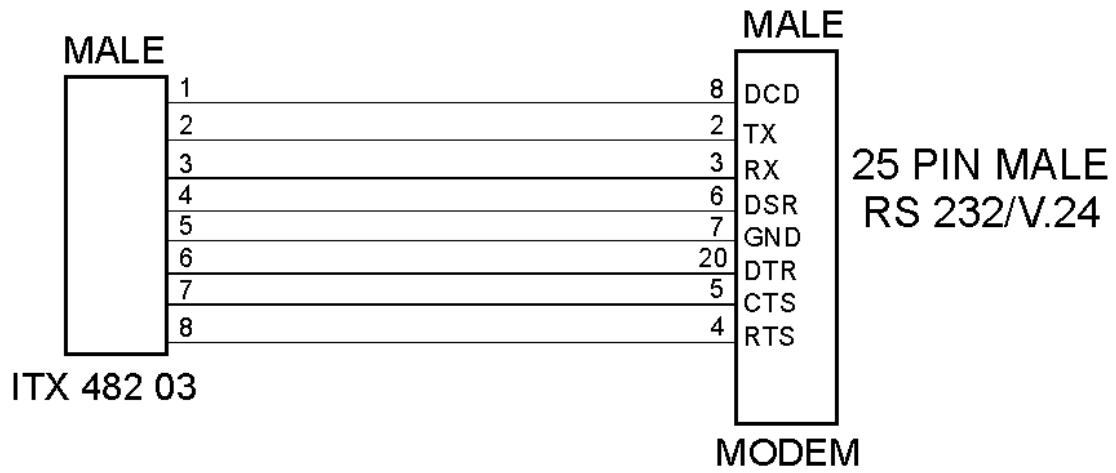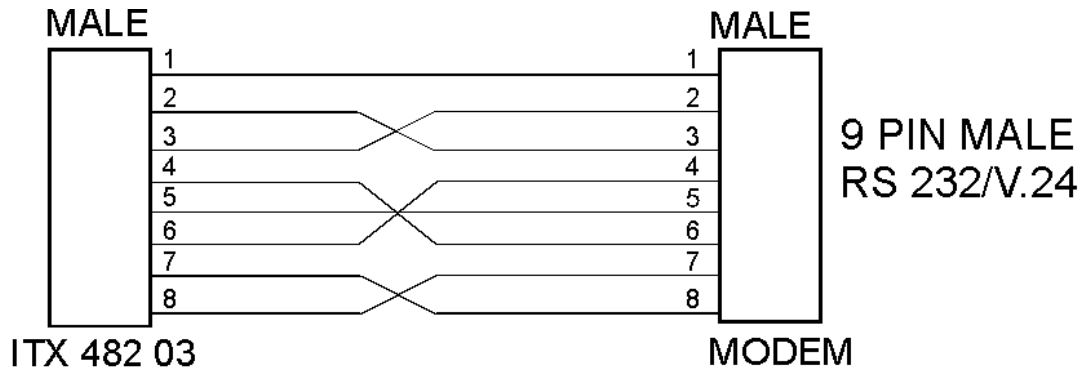

9 PIN FEMALE RS 232
DCE

Cable ITX - PC

ITX 482 03   PC

Cable description for connecting an external analog modem:
CONTROL V.24

MALE   MALE

ITX 482 03			MODEM
1			1
2			2
3			3
4			4
5			5
6			6
7			7
8			8

9 PIN MALE
RS 232/V.24

MALE

ITX 482 03		MODEM	
1		8	DCD
2		2	TX
3		3	RX
4		6	DSR
5		7	GND
6		20	DTR
7		5	CTS
8		4	RTS

25 PIN MALE
RS 232/V.24

4.1). DUAL X.21 DCE MODULE (ITP 136 20)

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

Cannon D15M
+ shield
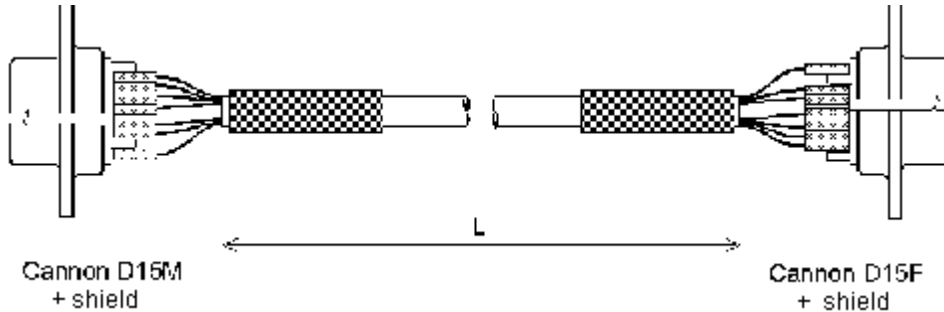
Cannon D15F
+ shield

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

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

$\updownarrow$ - 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
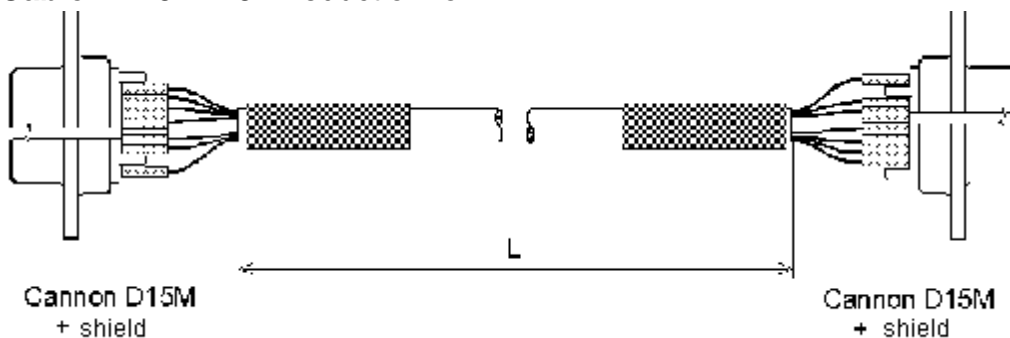
Cannon D15M
+ shield

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

$\updownarrow$ - Paired wires

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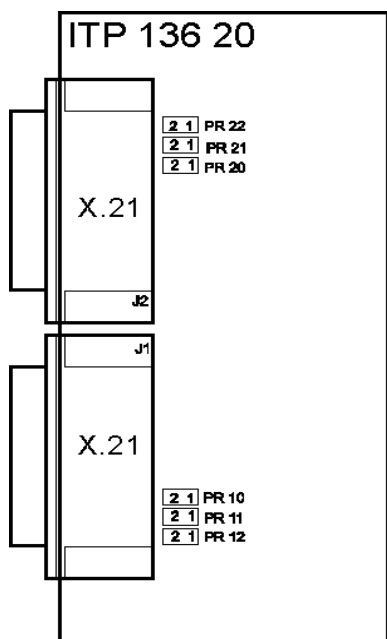
Cable Termination

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
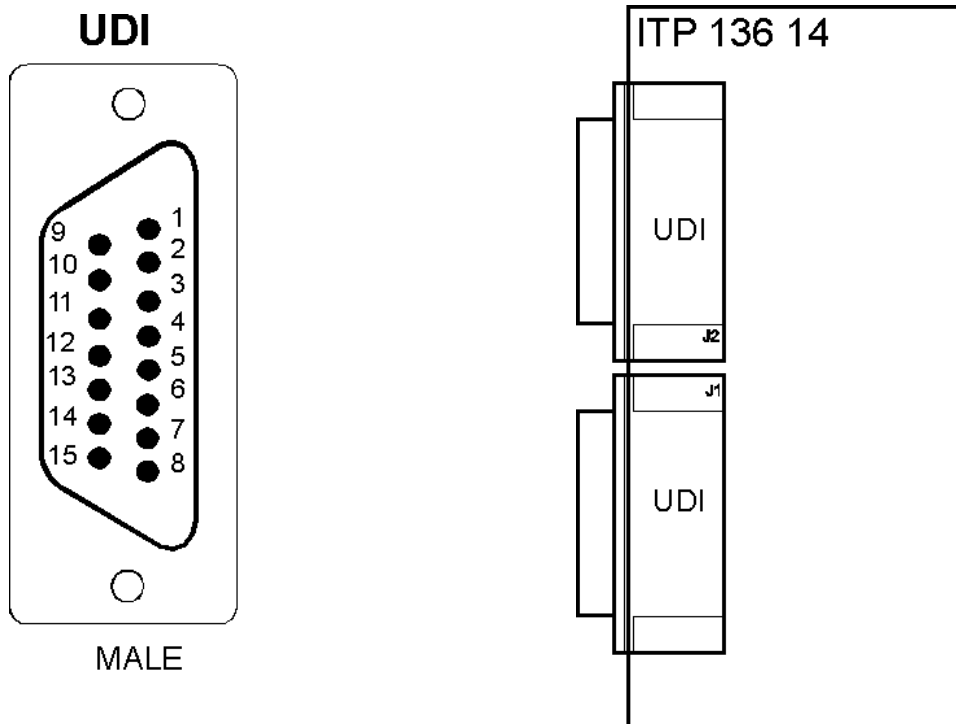
S – **S**ynchronisation Receive

I – Control signal

4.2). DUAL UDI MODULE

UDI – V.35, V.36, RS 530 V.24, X.21 (universal data interface)

- Module ITP 136 14 with dual UDI interface
- Seperate UDI interfaces are configured with the management software

Cables:

The required interface is achieved with cable reduction.

ITK 522 08   Cable UDI / X.21 DCE
ITK 522 09   Cable UDI / X.21 DTE
ITK 522 10   Cable UDI / V.35 DCE
ITK 522 11   Cable UDI / V.35 DTE
ITK 522 12   Cable UDI / V.36 DCE
ITK 522 13   Cable UDI / V.36 DTE
ITK 522 14   Cable UDI / V.24 DCE
ITK 522 15   Cable UDI / V.24 DTE
ITK 522 16   Cable UDI / RS 530 DCE
ITK 522 17   Cable UDI / RS 530 DTE

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

Warning:

For proper functioning of the device and conformation with the warranty conditions we recommend the use of the standard cables supplied with the device.

5). INSTALLATION AND SETUP

Autodialer should be placed in proximity to the PBX so that the E1-A interface is connected to the PBX , E1-B to the PSTN and E1-C (if present) to a direct E1 trunk to the carrier.
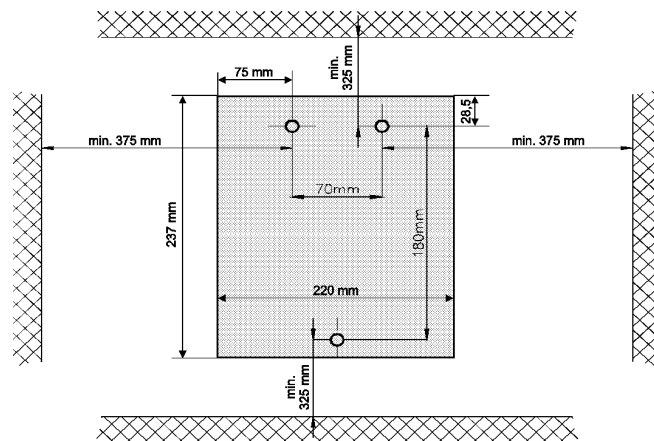Device is powered by AC/DC 230V/ 5V adapter.

Fixation method:
Autodialer comes in two installation versions:
- Wall version
- Desktop version

Wall mounting:

6). TECHNICAL PARAMETERS

G.704 interface:

Line code: HDB3

Signalling: DSS1   ISDN   PRA
            CAS   R2 MFC

Impedance: 120 Ohm (non-standard 75 Ohm via RJ 45)

X.21 interface:

Connector   15 pin D15 F

UDI interface:

Connector   15 pin D15 M

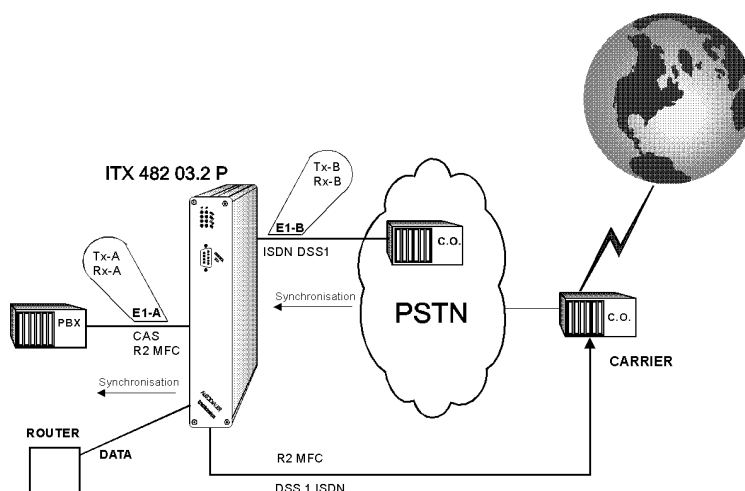**Device synchronisation – user defined:**

- to E1-B
- to E1-C

Current: 1 A

Powering: Converter 230V / 5V, 50 Hz

Maximum output: 5VA

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

Weight: 2 kg

7). AUTODIALER ITX 482 03.X PVR

Autodialer is a device that re-routes outgoing calls from the PBX to a specified carrier. It is placed between the PBX with the R2 MFC/ISDN signalling and the Public Network. Routing is made on the basis of analysing of outgoing call from the PBX signalling. If the customer matches the "trigger code" (incoming call from Autodialer's point of view), this number is re-routed to the preferred carrier, who services the call further. Telephone numbers not matching to any of the re-routing conditions are transparently passed through to the Public Network. . In case the customer doesn´t match the "Intercept command", this number is transparently passed through to the Public Network.

Moreover, autodialer enables the interconnection of network devices such as routers, multiplexers, etc. and to insert DATA to channels of E1-C interface (dedicated channel / dedicated private line) which is connected directly to the specified carrier. It is necessary to separate voice and DATA on the carrier´s side. It is possible to use the ITX 481 2x.3 or DyMUX products from INOTESKA for this purpose.

Autodialer ITX 482 03.X PVR converts MFC R2 signalling to DSS1 ISDN PRA signalling and vice versa. Autodialer can transmit:

➢ E1-A/B/C – PRA or CAS
➢ Voice and fax
➢ Metering pulses
➢ Dialling
➢ Data channels

The type of signalling on the separate interfaces is user defined and can be changed from the mangement software. Autodialer allows the connection of a router via a data interface, and transmission of the data to selected channels in E1-C.

7.1). FRONT PANEL LED DESCRIPTION

Errors indicated by separate LEDs:

E1-A red **- D7, D6, D5, D4, D3, D2, D1**   yellow **D0**
E1-B red **- D7, D6, D5, D4, D3, D2, D1**   yellow **D0**
E1-C red **- D7, D6, D5, D4, D3, D2, D1**   yellow **D0**
E1-D red **- D7, D6, D5, D4, D3, D2, D1**   yellow **D0**

D7 – Loss of Signal LOS – Loss of signal on link level - E1 interface not connected

D6 – Alarm Indication Signal AIS – Signal is constant and data contain value Log1

D5 – Loss of Frame Alignment LFA – Synchronization error in the 0-th channel

D4 – Receive Remote Alarm RRA – Remote device alarm

D3 – Frame Error Counter FEC – Indicates error rate $> 10^{-3}$

D2 – Receive Timeslot 16 Loss of Signal TS16LOS – Receive timeslot 16 does not contain signalling

D1 – Loss of Multiframe Synchronization LOMFS – CRC 4 multiframe structure error , reset will follow if two CRC multiframes are received in time interval n x 2 ms (n = 1, 2, 3 ...) – CAS signalling only

D1 – Datalink layer not active – Link layer error – ISDN DSS1 signalling only

D0 – Slip Detection Indicator SDI – Indicates positive slip if device clock has higher frequency than the clock signal received, and negative slip the frequency is lower

MANAGEMENT SOFTWARE
1). CONFIGURATION

ITX 482 03 can be configured:
- Locally, from connected PC via PC V.24 interface
- Remotely
    - Via analog modem connected locally to the device
    - Via BRA ITX 481 51 modem and utilization of Autodialer's internal modem
    - By call to internal modem with dial in subaddress

Software installation:
1. Put the CD disk into the PC (working under Windows 95 or higher).
2. Start - Run   Setup**xx**.exe, where **xx** is the software version
3. Click OK

Running the management software:
Run *M8203Axx.exe* or
Double-click shortcut on Desktop

The software version can be found in: *Main Menu – Info.*

After running the management software a password prompt will be displayed. The factory set password is *inoteska***.** After typing the right password and pressing OK, a window for communication with device will appear.

It is necessary to press the 'Identification' speed button for reading the identification of the device.

In case of error, please check:
- System power source
- Password correctness
- Device address 0-0-0-0 – local connection (this address can be changed: first number from interval 0 - 239, other three numbers from interval 0-255)
- Manager address 251-1-1-1 (this address can be changed: first number from interval 240 –254, other three numbers from interval 0-255)
- Serial port connection
- Cable between ITX 482 03 and PC
- Baud Rate between ITX and PC - 19200 Bd. In case communication is done via another Inoteska device, Baud Rate is set as for the device next to autodialer.

Factory settings
System parameters are set to their factory defaults for standard interface with R2 MFC or ISDN. If necessary, the configuration can be returned to the factory default by loading the file *'default.dat'.*

After running the management SW there is a window for communication settings displayed on the screen.
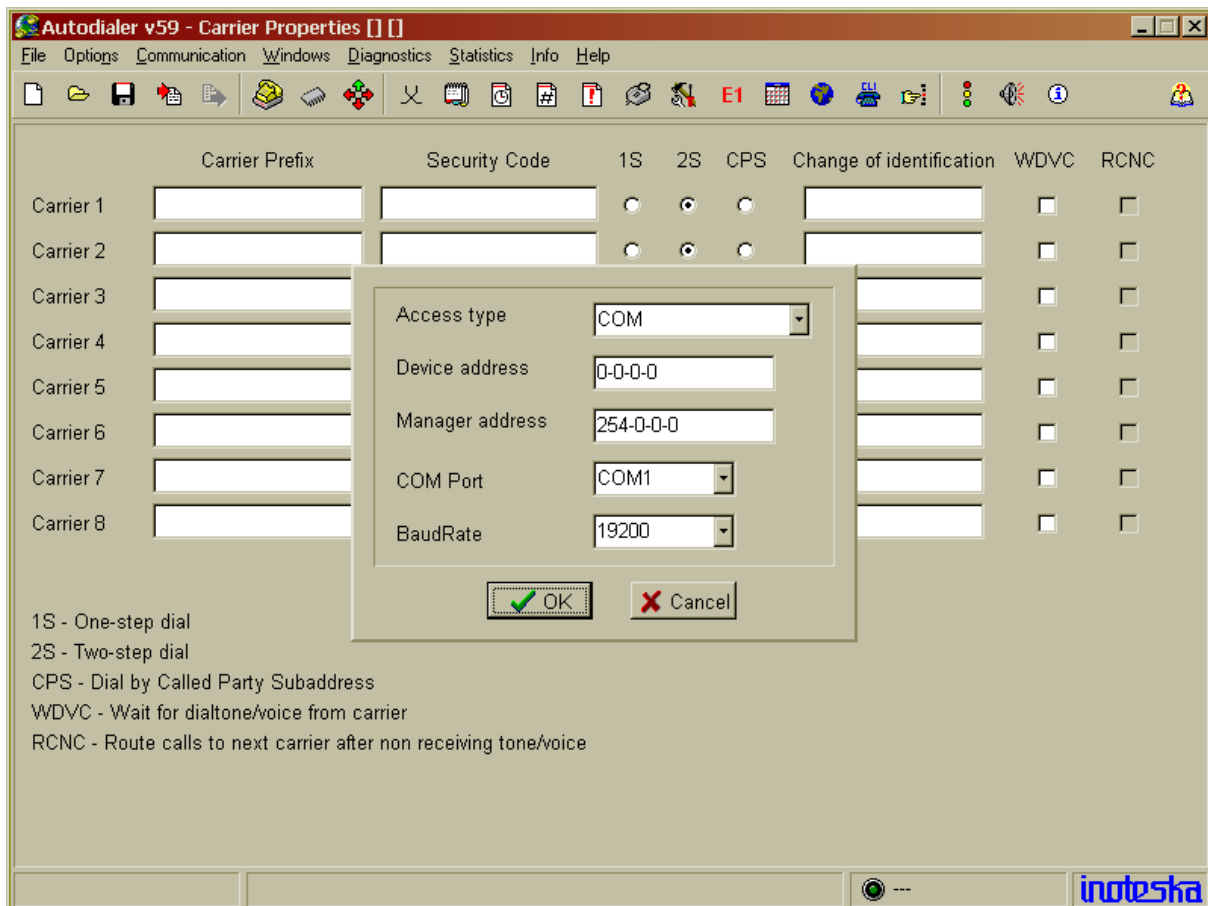
These parameters are set for the first access to device.

Access type – type of access to the device:

COM – local access to the device via device address in format X.X.X.X . This way it is also possible (if it is supported by device) to access the remote device via fixed line which connects these two devices. By setting the universal device address 0.0.0.0 – connection COM transparent

COM Transparent – transparent communication only with locally connected device

TCP/IP - remote access to the device via IP address and device address. After the connection to the device in IP network, it is possible to connect to the remote device via fixed line which connects these two devices.

TCP/IP Transparent – remote access to the device connected to IP network

Device address - 0-0-0-0 – local connection (this address can be changed: first number from interval 0 - 239, other three numbers from interval 0-255)

• Device address can be changed, if necessary in Main menu – Options – Change of device address. Usually, device address is set when starting the configuring.
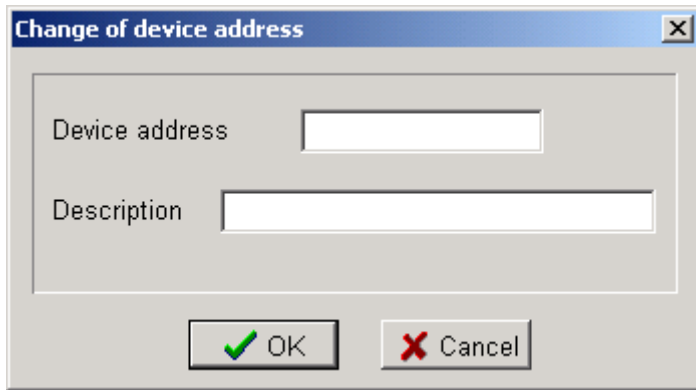
Manager address - 250-1-1-1 (this address can be changed: first number from interval 240-254, other three numbers from interval 0-255)

- address 255-x-x-x is reserved for the supervision centre

COM Port – selection of communication port

BaudRate – Baud speed between ITX 482 03 and PC, for local connection to device – 19200 Bd, for remote connection – depends on the device next to autodialer

Ethernet setting
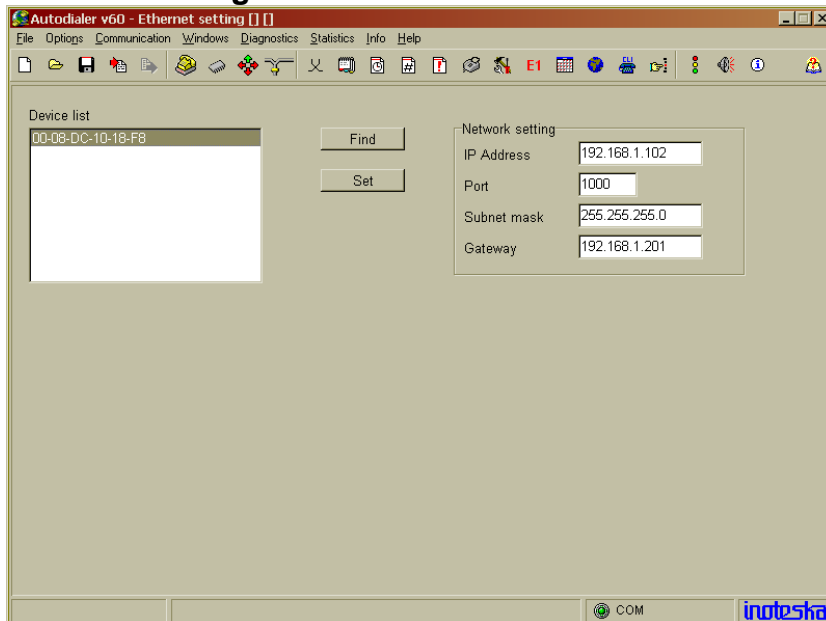
If Autodialer is connected to the ethernet network, it is enabled for remote configuration. Autodialer will log to the set IP address and parameters. Click **Find** will list all the available devices in the network with their MAC address.

All windows share the same Main menu and Speed buttons.

Main menu:

File – *Open – Save – Exit*

Options

Password	– Changes access password for ITX 482 03
	– default "***inoteska***"
Time&Date	– See chapter 'AOC '(Charging)

Change Configuration	– See chapter 'Change of Configuration'
Change of device address	– enables to change device address
Language	– English / Slovak / Czech

Communication

Read / Write	– Read/Write settings from/to ITX 482 03
Terminal	– Accessible only with Supervisor password
Programmer	– Program new firmware in ITX 482 03
Modem	– See chapter 'Remote Configuration Via Modem'
Identification	– List of activated features and device serial number
Ethernet setting	- Ethernet setting for autodialer remote configuration

Windows

See chapters 'Carrier Properties', ' Carriers table ', ´Time zones table´, 'Routing Table', 'Routing Exceptions', 'CLIP Exceptions', 'Parameters', 'Timeslot properties', 'AOC', 'E1 Settings', 'Customer Database', 'Incoming Call Redirection' ,'Data Interface', ' CLI for remote access calls', ´MFC R2 setting´, 'Synchronization', 'Assignment of timeslots for customer' for details

Diagnostics

E1 Status	– Status of E1 trunks
Listing Messages	– Signalling error diagnostics (R2 MFC)
Timeslot Status of CAS signalling	– Status of separate timeslots (R2 MFC)
Error dump	– display of errors downloaded via supervision centre
Actual timeslots status	– display of current timeslots status
Connection status	– current status of connection
Callback	– diagnostic call to carrier

Statistics

Overall statistics	– Summary call statistics
Statistics by Carriers	– Call statistics for individual carriers

Info	– Displays the version of the management software
Help	– Help on installation, configuration and support

Speed buttons:

New

Open	- Reads settings from *.dat file
Save	- Saves settings from screen to *.dat file
Read	- Reads configuration from device
Write	- Writes configuration to device
Modem	- Enables Autodialer´s remote configuration.
Programmer	- Used for loading new firmware to device
Access type	- Enables to change the access type to device, not to change device address

Carrier Properties   - Carrier settings (Prefix, Security code, Dial)

Carriers Table   - Setting of overflow up to 4 carriers when routing the calls

Time zones table   - Setting of routing options depending on time&day

Routing Table   - Re-routing conditions

Routing Exceptions   - Exceptions from routing conditions

CLIP Exceptions   - Routing exceptions according to Calling Party number

            identification

Parameters   - Device parameters

E1 Settings   - Settings for E1 interfaces

Timeslot properties   - Definition of voice timeslot categories for K-signalling

AOC   - Settings for Advice of Charge

CLI for remote access calls - Calling Party identification settings for remote access

Synchronization   - setting of synchronization order

E1 status   - status of activated E1 interfaces

Connection status   - information about connection status

Identification   - Device's serial number, date of assembly, software version
and list of activated features

Help   - Help window

1.1). CARRIER PROPERTIES
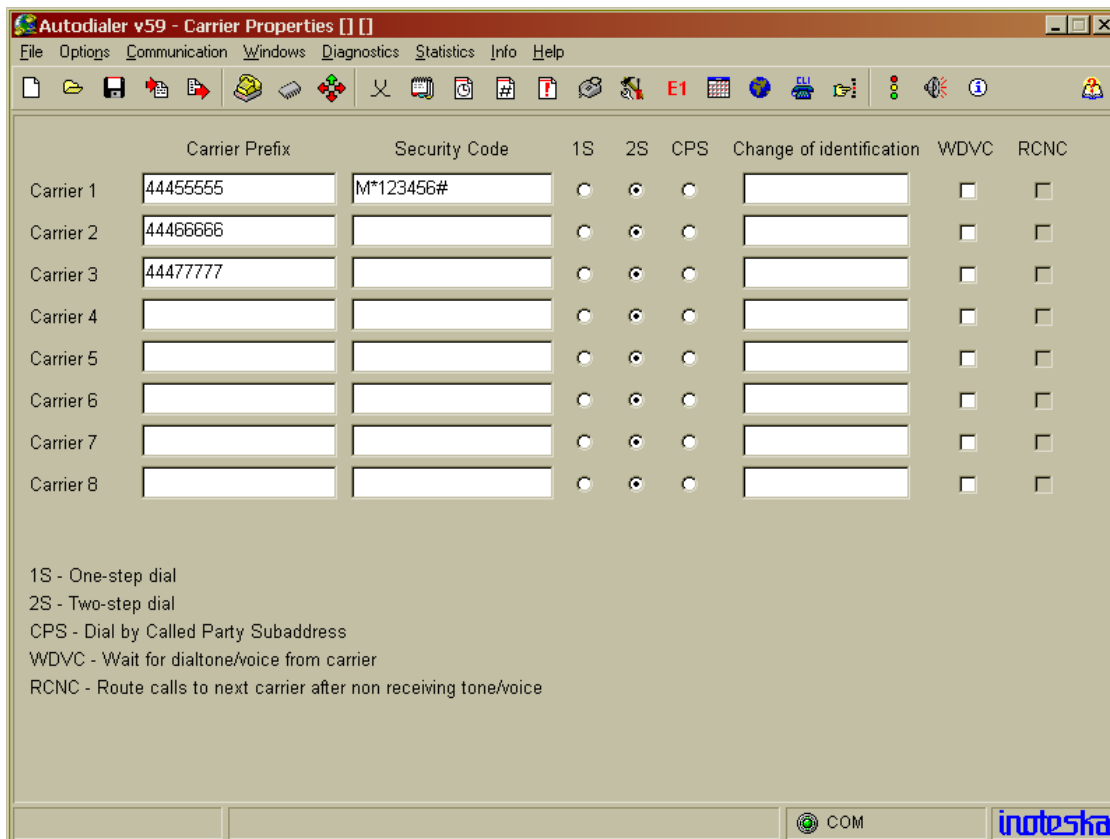
This window is used for setting of up to eight carrier numbers and their responding security codes (customer ID numbers). Incoming calls to Autodialer (E1-A) will be routed to these numbers.

Carrier Prefix - customer PIN code. It can contain no more than 19 symbols, including **#** and *****.

Security Code can contain no more than 19 symbols, including **M, #** and *.
Insertion of pause (letter **M)**, # or * is possible in the Carrier Number and the Security Code. The default pause length is 500 ms. This setting can be changed in the 'Parameters' window.

Setting the "**Change of identification**" will change the called party number to the one specified here.

Autodialer allows three types of call via carrier:

1S - One-step dial – if PSTN supports this feature, carrier's number and the destination number are transmitted in the respective signalling code as one number.
2S - Two-step dial – called party number is replaced with carrier number. On carrier's answer the security code (if set) and the destination number are transmitted in DTMF.
CPS - Called Party Subaddress - called party number is replaced with carrier number and autodialer moves the called party number to information element CALLED PARTY SUBADDRESS. Carrier´s PbX must support backward conversion – to retrieve called number from element CALLED PARTY SUBADDRESS and establish connection to the destination. If carrier´s PbX doesn´t support this conversion, it is possible to use Inoteska **Dial converter.** This type of call subaddress, when comparing to two-step dial, is more advantageous because carrier´s PbX sends "CONNECT" message only when called party

answers the call. This type of dial can be used only in ISDN network and PSTN must support the transmission of information element CALLED PARTY SUBADDRESS.
Following pictures displays the individual steps when establishing connection with dial in subaddress.

a) PBX with function of incoming dial in subaddress
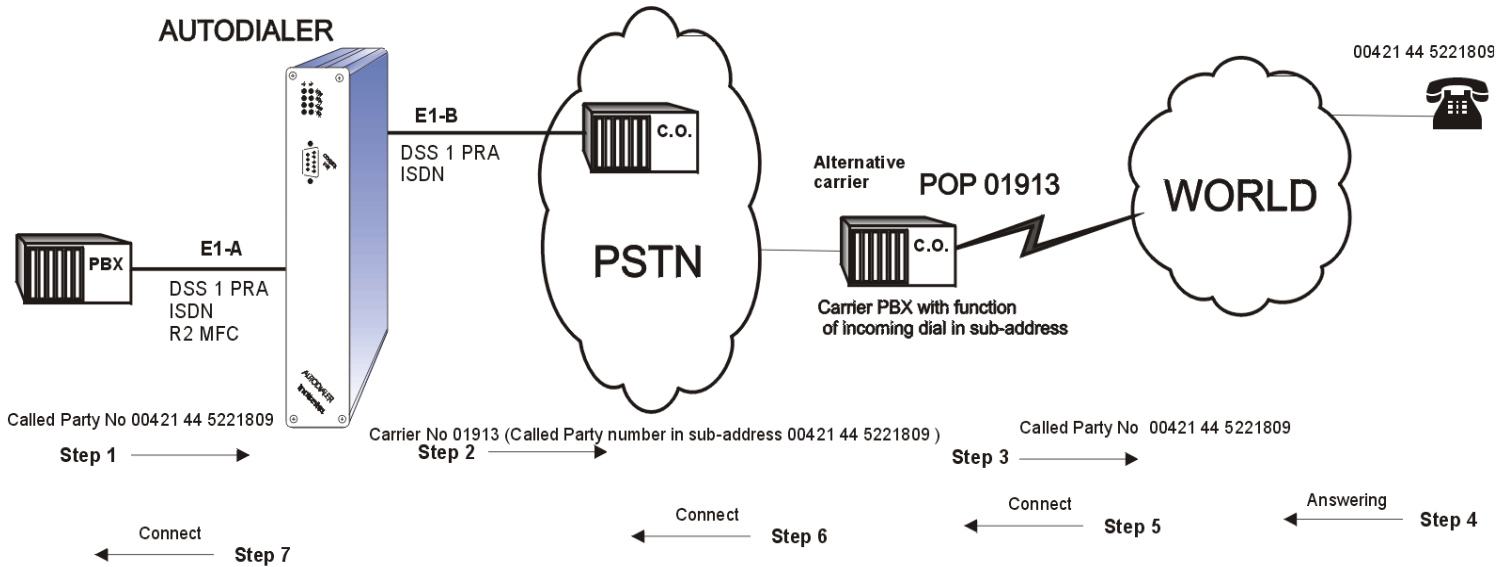
NOTE: No DTMF dial is used.

*Carrier PbX supports subaddressing (subaddress is a part of signalling message) - only by ISDN DSS1 signalling
*dialer can send Called Party Number (CPN) in subaddress
* **DTMF is not used**
* customer dials CPN, carrier No + CPN (in subaddress) is sent in signalling message. Carrier PbX receives CPN in subaddress, but doesn´t send CONNECT. It calls CPN. When CP answers, carrier PbX sends CONNECT. Then C.O. and dialer starts to generate the pulses (at the same time).
***exact real charging**

b) PbX without function of incoming dial in subaddress
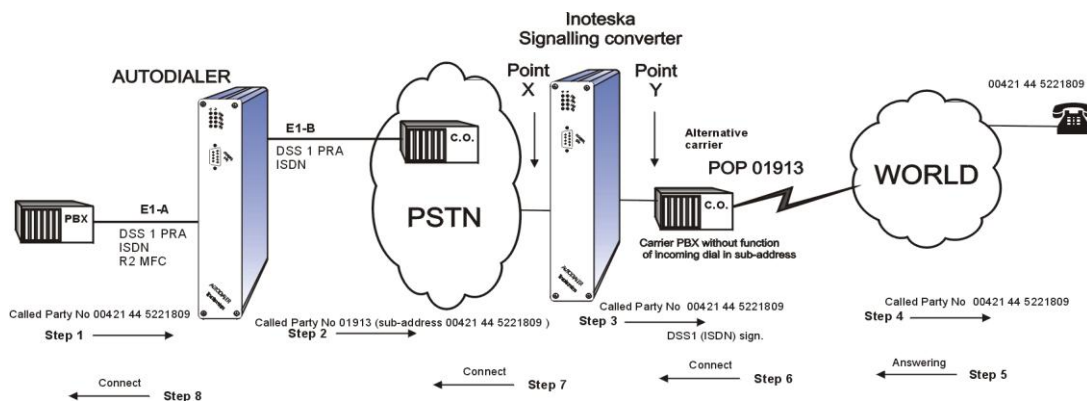
1)Subaddress comes to point X, real charging as in picture above.
2) Call is incoming to point X, but subaddress is empty, signalling converter sends the connect to PSTN and receives DTMF dial. It converters DTMF dial to signalling. This is real charging through DTMF signal sent by Converter or PbX .

Advantages - Real charging
            - it is not paid for abandoned calls
            - no tones are heard

*the same like above, but carrier PbX cannot support sending information in subaddress
*Inoteska signalling converter (like a dialer with special functions) is connected between PSTN and carrier PbX
*dialer can send CPN in subaddress

***Option1:** customer dials CPN, carrier No + CPN (in subaddress) is sent in signalling message. Signalling converter receives CPN in subaddress. Then signalling converter sends CPN (not in subaddress) in setup to carrier PbX. PbX doesn´t send CONNECT. It calls CPN. When CP answers, carrier PbX sends CONNECT. Then C.O. and dialer starts to generate the pulses (at the same time).**DTMF is not used.**
***Option2:** dialer can not send CPN in subaddress, only in DTMF. Customers dials Called Party No. (CPN), dialer sends it in DTMF. Signalling converter receives it and sends CONNECT and C.O. starts to generate pulses. Then signalling converter converts DTMF dial to signalling. After that it goes on the same way as normal.

***exact real charging**
***no tones are heard**
***it is not paid for abandoned calls**

Signaling converter has double function: it can receive the CPN in subaddress and it also can converter DTMF to signalling. Example: There are many dialers connected to network. Even if carrier PbX cannot send DTMF, Signalling converter can receive the CPN from dialers sending CPN in subaddress and also from dialers sending CPN in DTMF (in this case it converts DTMF to signalling).

1.2). ROUTING & CARRIERS & TIME ZONES TABLE

Routing table
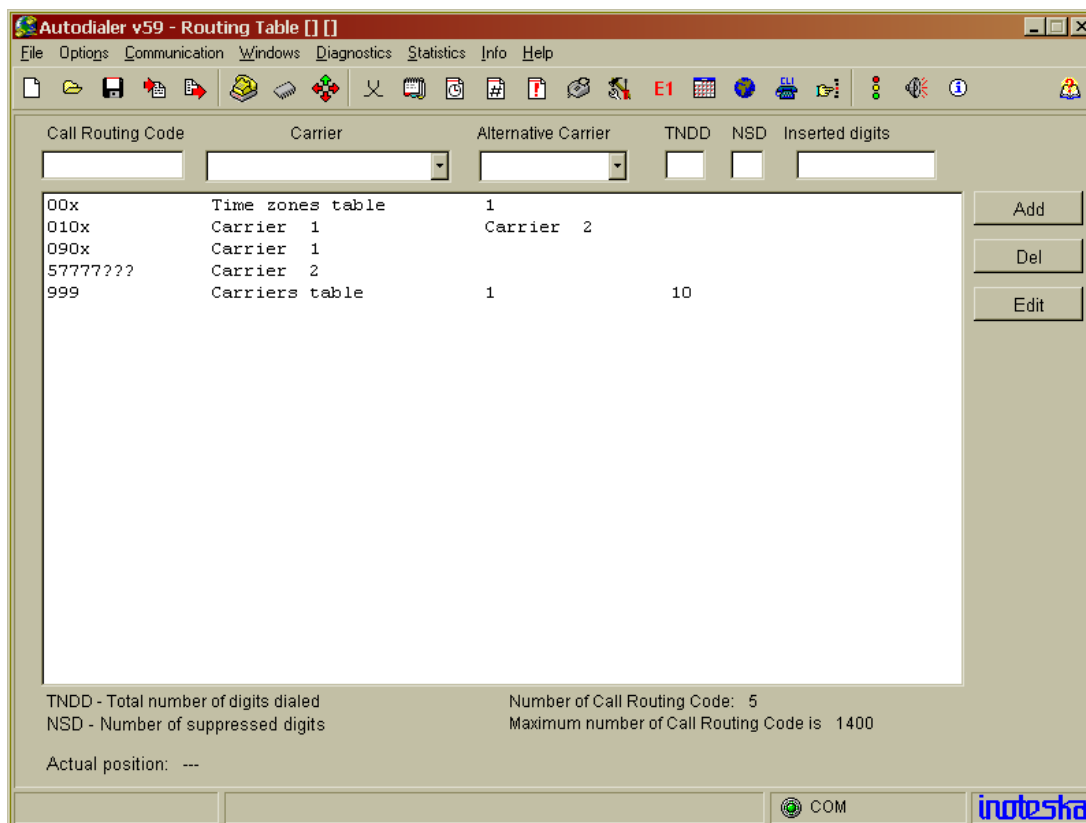
Up to 1400 conditions for call re-routing to the specified carrier can be set in this window. Calls with numbers not matching any conditions for re-routing are by-passed from E1-A to E1-B. In case customer dials international number (first two digits are ´00´) and '00' is one of routing condition, then autodialer dials the carrier number first. When carrier answers, security code and international number is dialled in DTMF dial (if two-step dial).

If routing condition corresponds to **Carrier 1** and Autodialer has E1-C installed, calls to this carrier will be routed via E1-C. Autodialer will not dial carrier number. If there is an error on E1-C or call is rejected due to other reason, autodialer will try to establish connection via PSTN.

Autodialer allows also routing of calls to mobile networks using two or more different carriers.

Call Routing Code – the calling party number is compared with this number. Except digits, it can contain the universal signs "?" or "x". "?" implies the match for arbitrary one digit. "x" implies the match for all digits it substitutes (string up to the end). Call routing code can contain max. one sign "x".

Call Routing code can contain also sign #. This sign represents the end of dial, therefore it is necessary to deactivate its meaning in Parameters window.

TNDD – Total Number of Digits Dialled - Autodialer waits only until the specified number of digits is dialled, this option overrides the default dialling timeout, and

overrides the *R2 MFC/DTMF Dial* and *Pulse Dial Interdigit Timeout* options in the 'Parameters' window. Setting TNDD allows faster establishment of connection *.

Alternative Carrier – In case the carrier number is busy or not available, the call can be rerouted to up to three other alternative carriers (if set) and make overflow. If all carriers are busy or if alternative carriers are not set and option 'Route call to PSTN if all carriers are busy' is activated in "Parameters" window, the call will be rerouted through the PSTN; otherwise the call will be rejected.

NSD – Number of Suppressed Digits **+ Inserted digits** – if it is necessary to modify the outgoing dial e.g. from 044 5221 809 to 00421 44 …, then NSD has to be set as 1 and Inserted digits 00421. One digit from the beginning is suppressed and replaced with new digits.

Carriers table

It is possible to re-route a call to up to 4 carriers. For routing the call to more alternative carriers, it is necessary to select in "**Routing table**" – carrier as "**Carriers table**" and then set "**Carriers table**" window.
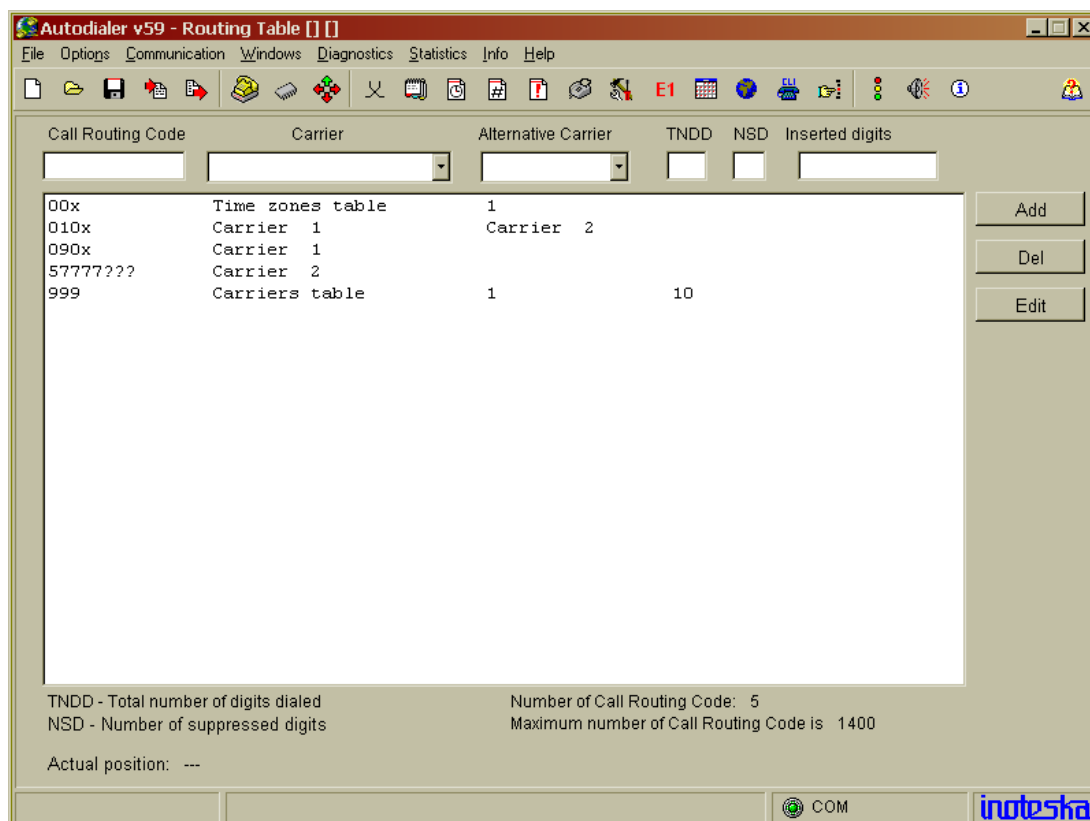
Index – number of line in **Carriers table**
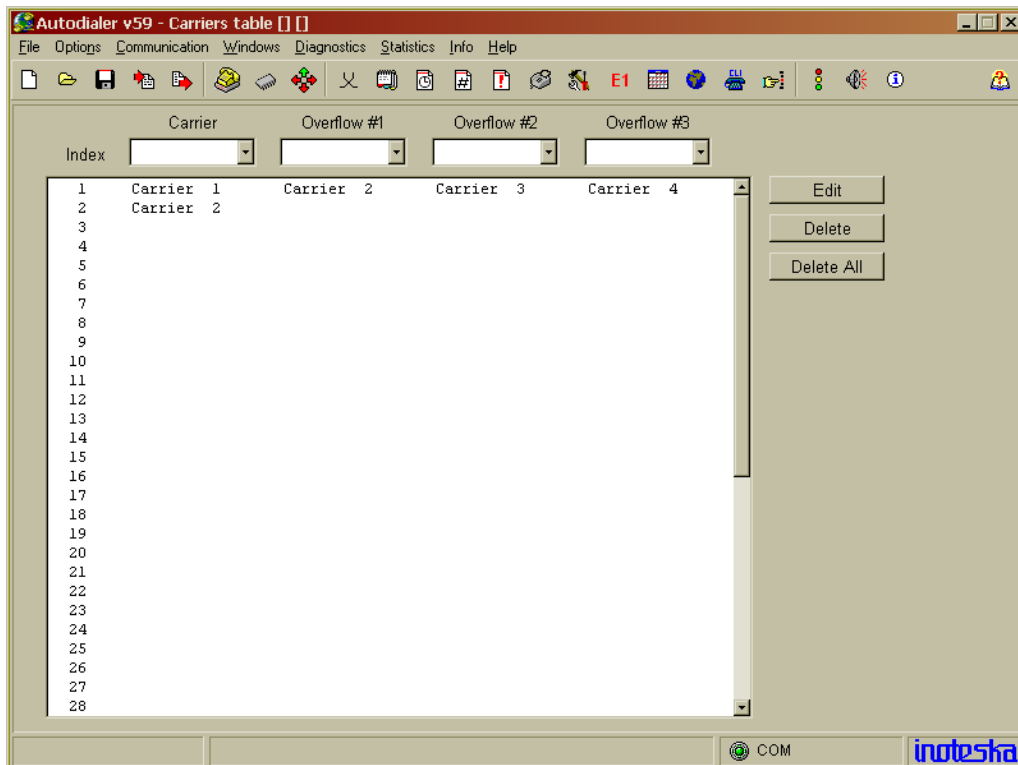
Autodialer forbids setting of equal routing conditions for different carriers.

* Do not use TNDD if the number of dialled digits is not known. Improper use can cause dialling errors!

Example:

Called party number	Call routing code	Inserted digits	Resultant called party number
123456	123x		123456
123456	x		123456
123456	x	888	888123456

Time zones table

It is possible ro re-route a call to different carriers depending on time&day.

Example:
All calls beginning 999 will be routed in accordance with Time zones table, Index1.

First set Carrier as "**Time zones table**" in **Routing table**
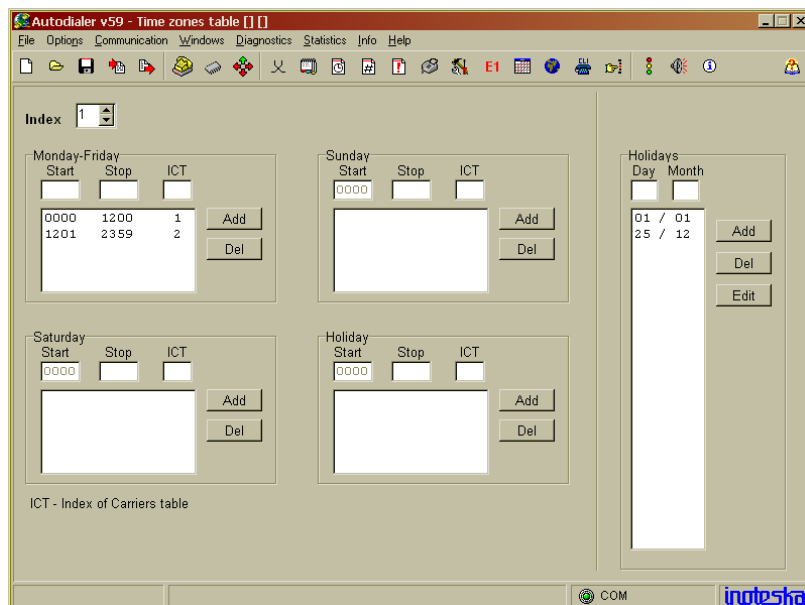
Index corresponds to Index in **Time zones table**

Then input data to **Time zones table.**

Example:
All calls during week days will be routed as following:
- from 00.00 to 05.59 – in accordance with line/index 1 in Carriers Table (ICT)
- from 06.00 to 17.59 – in accordance with line/index 2 in Carriers Table (ICT)
- from 18.00 to 23.59 – in accordance with line/index 1 in Carriers Table (ICT)

Call during weekend will be routed in accordance with line/index 1 in Carriers Table (ICT), call during holidays in accordance with line/index 2 in Carriers Table (ICT).

1.3). ROUTING EXCEPTIONS
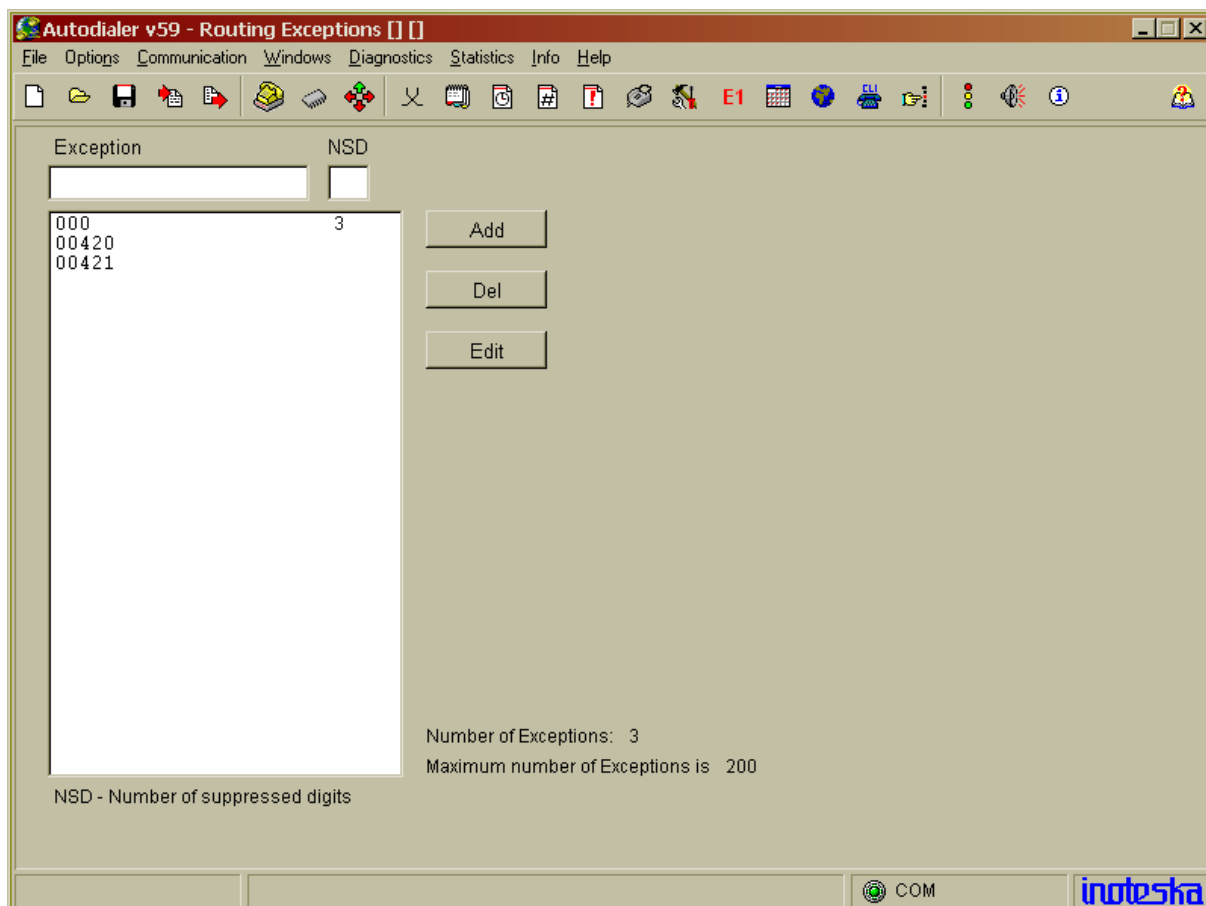
Exceptions from calls where numbers are matching routing conditions (set in Routing table) . This means that even if you have a routing condition set, calls to the excepted number (matching conditions for re-routing)
will not be routed, they will go through the PSTN.

Autodialer allows up to 200 exceptions, each with maximum of 19 digits. Except digits, it can contain the universal signs "?" or "x". "?" implies the match for arbitrary one digit. "x" implies the match for all digits it substitutes (string up to the end).

NSD – Number of Suppressed Digits. In case the customer wants to dial an international number via the PSTN by dialling an additional '0', an exception '000' should be set. The extra '0' must be suppressed so that Autodialer can dial the correct number with two zeros only (00…).

Add – adds an exception to the list
Del – deletes selected exception from the list
**Edit** – edits an exception

1.4). CLIP EXCEPTIONS
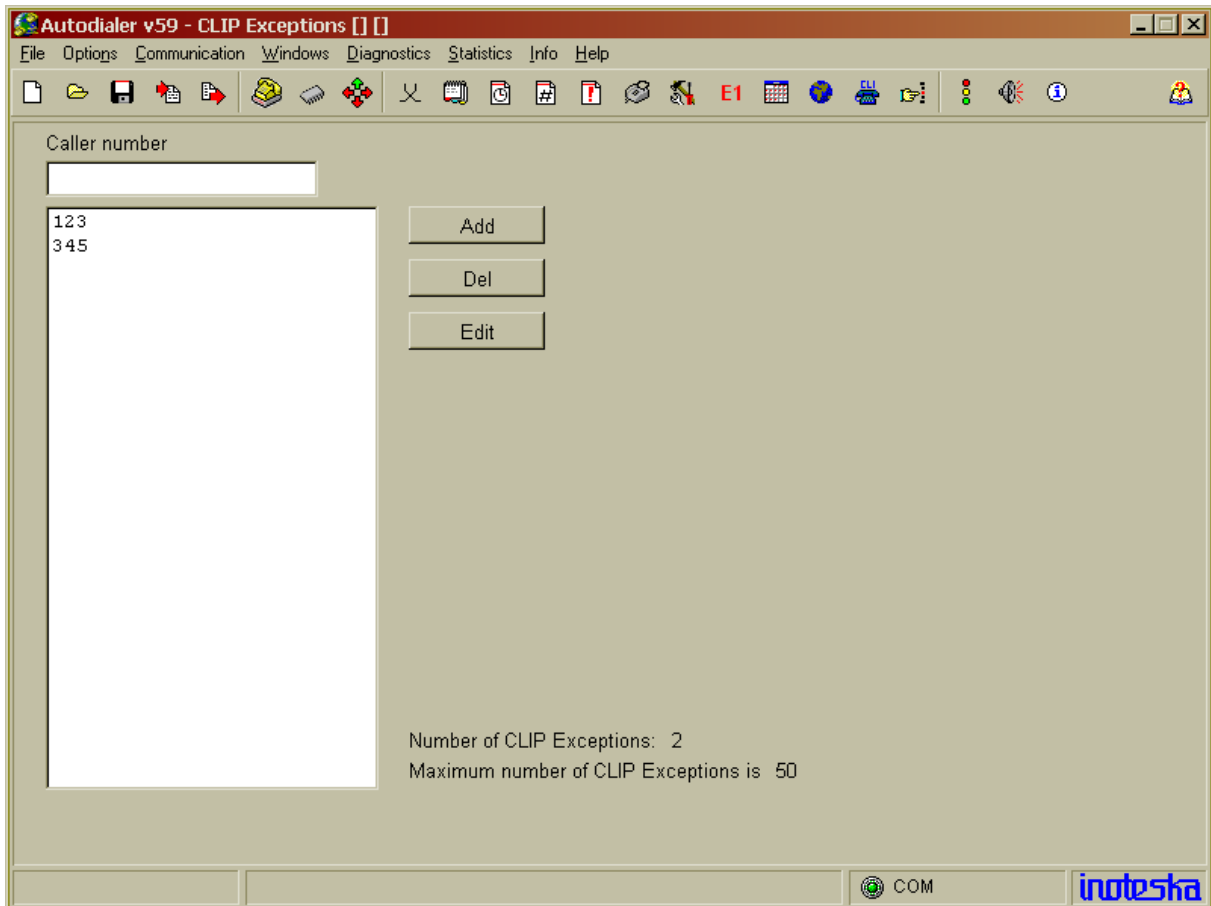
Caller identification exceptions - calls from the specified PBX extension line number will not be routed to the carrier's network, but to the PSTN.

The caller identification analysis is carried out from the end of the caller's number. If number '777' is set as an exception, then all caller numbers ending on 777 (e.g. 5555777, 666777...) **will not be routed** to the selected carrier.

Assignment of timeslots for customer
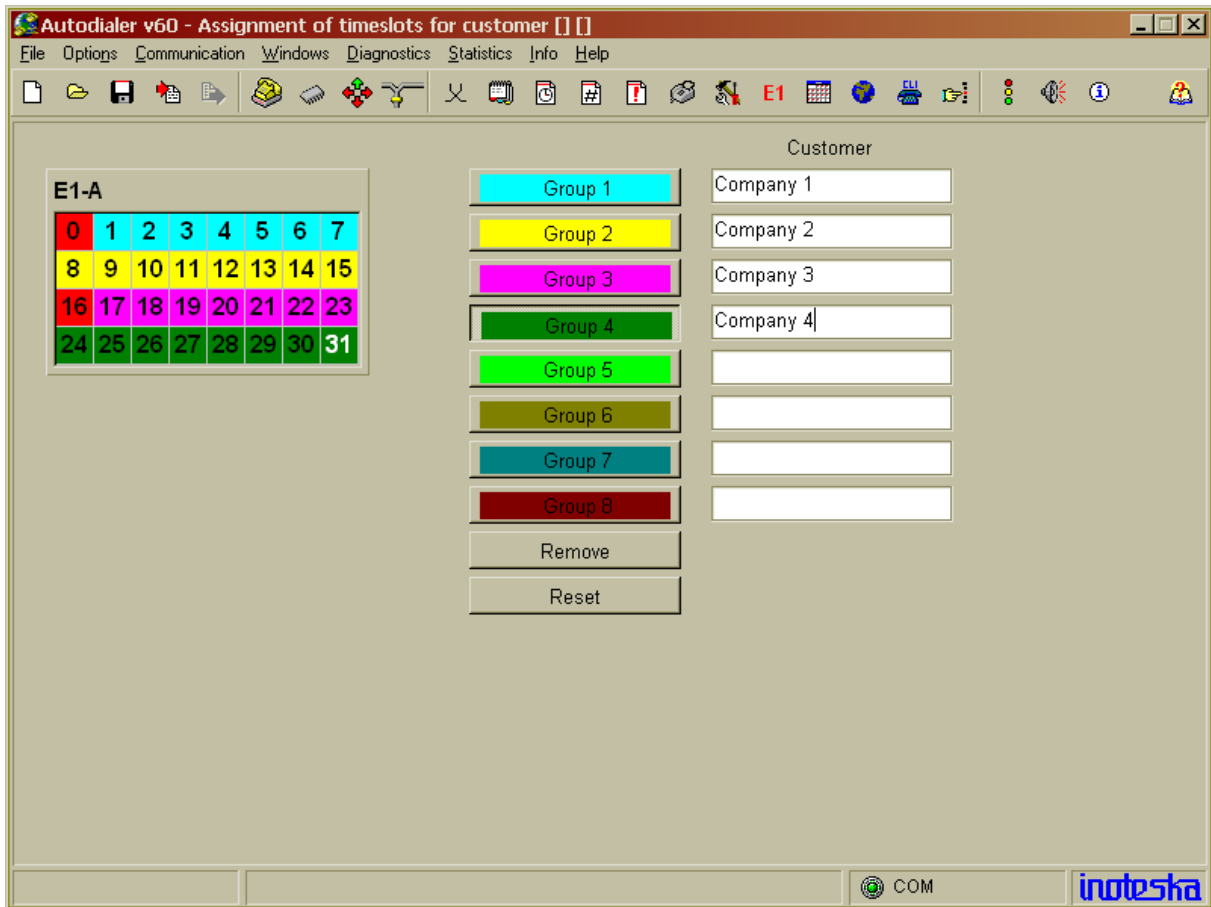
There are several customers using the same E1 and it is defined in PbX which timeslots they can use. This function enables to seize the same timeslot, or first idle from the defined group if the same one is occupied, in PSTN as it was seized in PbX. This way it is ensured that the customers are utilizing only the timeslots determined for them in PbX. ine.

1.5). PARAMETERS
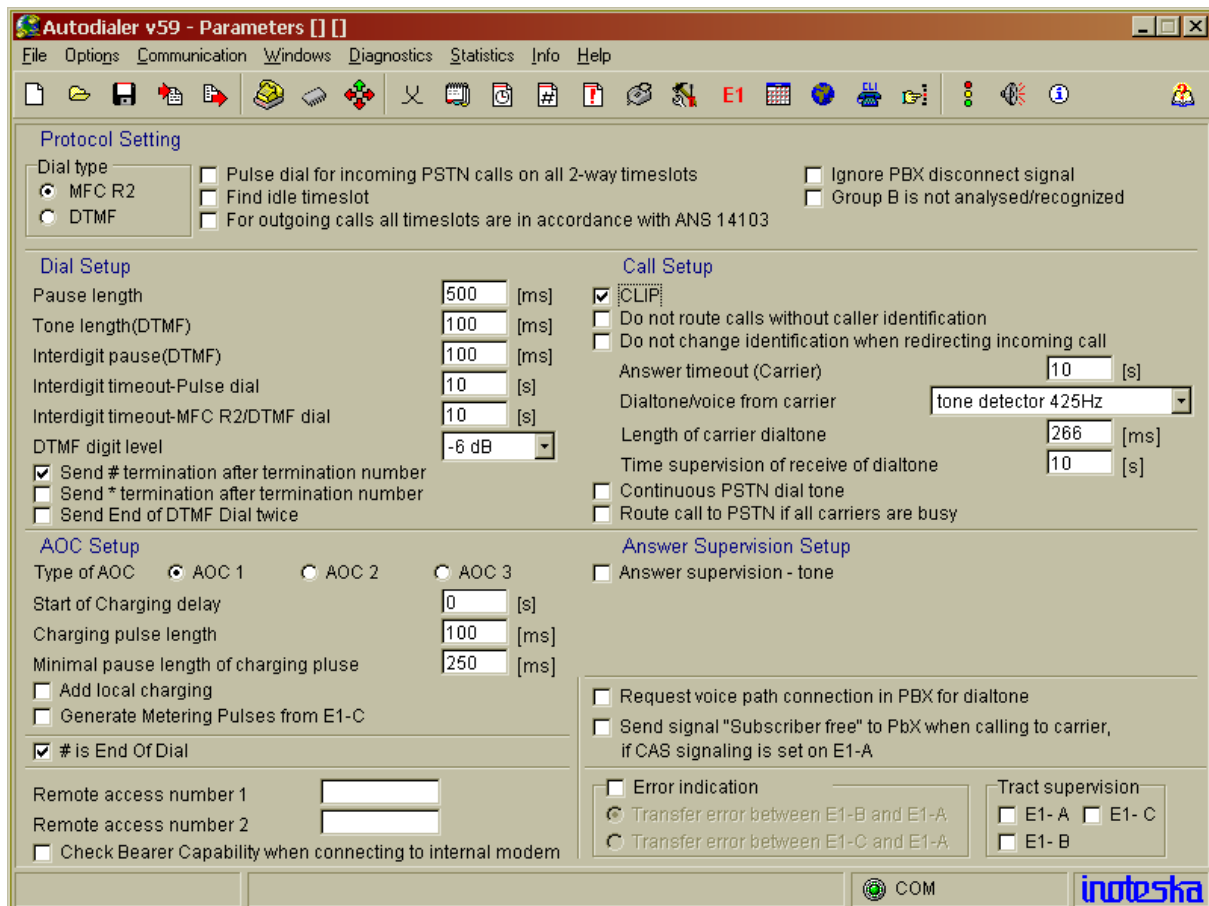
PROTOCOL SETTING:

Dial type – Type of signals used in the R2 inter-register signalling. This setting determines the dial type in the 'Timeslot properties' window

Pulse dial for incoming PSTN on all 2-way timeslots – autodialer receives only pulse dial, other (DTMF, …) is transparently transmitted – only for K signalling. <u>Remote access number can not be set.</u>

Find idle timeslot - if R2 MFC signalling is two-way, incoming call to autodialer from PBX or superior exchange occupies one timeslot. For next call to PTT or PBX autodialer seeks the first idle timeslot. This parameter is used only for specific country versions.

Send # termination after toll free number - Activation of this parameter means that the dialer transmits the mark I-15 for the dial termination in K MFC R2 signaling.

Ignore PBX disconnect signal - If this parameter is being set, autodialer ignores the CLEAR BACK (DISCONNECT) signal from PBX when incoming calls in K MFC R2 signaling.

Group B is not analysed/recognized - If this parameter is being set, the dialer doesn´t analyze the meaning of B group marks in K MFC R2 signaling, marks are transparently transmitted

Note: This setting shall not be used when converting K MFC R2 signaling to ISDN DSS1 signaling!

All timeslots by outgoing calls are in accordance with ANS 14103 standard – type of E&M signaling

DIAL SETUP:

Pause length – Sets pause length, represented in the carrier's prefix or customer's security code by the letter **M** (max. 99 999 ms).

Interdigit pause (DTMF) – Pause between DTMF digits. Default value is 100 ms

Interdigit timeout - Pulse dial – Maximum time that Autodialer waits for next digit from the current pulse dial. Example: n-th digit is dialled and Autodialer waits the specified time to run out. If time runs out and no other digit is dialled, Autodialer considers dialling as finished.

Interdigit timeout – MFC R2/DTMF dial – Maximum time Autodialer waits for next digit from the current MFC R2 dial. If time runs out and no other digit is dialled, Autodialer considers dialling as finished.

DTMF digit level – enables to change the level of transmitted DTMF digits, if necessary. Default value: –6 dB.

Send #/* termination after termination number- it is possible to end DTMF dial with mark # or *

Send End of DTMF Dial twice - # mark will be sent twice as end of dial

CALL SETUP:

CLIP – Autodialer retrieves caller's number from PBX and sends it to PSTN upon request (only if MFC R2 signalling)

Do not route calls without caller identification – for autodialers with 3 x E1. If a PBX extension line does not send it's identification (and **CLIP** is active), Autodialer will not route the call to the respective carrier, although the number dialed is subject to routing.

Do not change identification when redirecting incoming calls – if incoming calls are redirected, identification is not changed

Answer timeout (Carrier) – Time that Autodialer waits for carrier to answer, if two-step dial. If this time runs out, call is routed to alternative carrier (if set) or to PSTN, if it is enabled as "Route call to PSTN if all carriers are busy".

Tone length (DTMF) – Sets DTMF tone length. Default value is 100 ms

Wait for dial tone from carrier – After dialling carrier's number, Autodialer waits for dial tone from the carrier, and on receiving it dials customer's Security Number (if set) and destination number

Length of carrier dial tone – minimum tone length, accepted by Autodialer

Time supervision of receive of dialtone – max. time autodialer waits to receive dialtone from carrier. Default 10 s. Only if option "Wait for dialtone from carrier" is activated

Continuous PSTN dial tone - If this parameter is activated, autodialer transmitts the continuous dial tone to PbX - after the seizure by outgoing calls. If this parameter is not activated, autodialer transmitts the interrupted dial tone. This option can be chosen for ISDN as well as for K MFC R2 signaling.

Route call to PSTN if all carriers are busy - If the carrier is busy as well as alternative carriers (if set), new call is established via PSTN

 # is End Of Dial – this sign can be also set in Routing Table as Call Routing Code for call routing to carrier. If it shall be used as a Call Routing Code, then it is necessary to deactivate its function as End Of Dial in this window.

Change of cause (3-->17) - Change of IE CAUSE in DISCONNECT message coming from PbX (E1-A) from No route to destination (3) to User busy (17). This is used only in ISDN signalling.

AOC SETUP:
(only for ISDN signalling)

Type of AOC – AOC 1 – charging according to ETS 300 179 (standard charging method)
AOC 2 – charging using information element CHARGE ADVICE in codeset 5 (national versions used only in some countries)
AOC 3 – charging using information element DISPLAY according to SIEMENS

Start of charging delay – Time Autodialer waits before it starts charging (Pseudo Charging only)

Charging pulse length – length of charging pulse (only if K MFC R2 signaling)

Minimal pause length of charging pulse – default value 250 ms

Add local charging – it enables to get the exact telephone bill by real charging (price via PSTN + price from carrier). Local call charging pulses are added to the total charging .

Generate metering pulses from E1-C – if call is routed to E1-C, autodialer will send charging pulses to E1-A in accordance with set charging tables.

ANSWER SUPERVISION SETUP:

Answer supervision – tone – 1100 Hz or 1633 Hz (DTMF A,B,C,D) tone detection will start sending the charging pulses – called party has answered the call (real charging)

Length of answer supervision tone - minimum tone length, accepted by Autodialer

Send answer after receiving tone 1100 Hz – Autodialer evaluates 1100/1633 Hz tone (by two-step dial) and acknowledges PBX that the called party has answered the call. Only if option "Answer supervision – tone " is active.

Request voice path connection in PbX for dialtone – this parameter has to be active if autodialer is connected to some specific PbX and it is required to hear dialtone from PSTN and PbX doesn´t connect voice path automatically. Only for ISDN signalling.

Remote access number 1,2– Telephone numbers Autodialer's internal ISDN modem will answer to, used for remote configuration. This number should not be occupied in the PBX. **Only for PbX with DID**. RAN has to be set in the same format C.O. transmits it.
Example: PbX number is 02 444444 555. If C.O. sends only extension number 555, then set only extension number e.g. 456 as RAN (this extension is not used in PbX). If C.O. sends 02 444444 555, then set 02 444444 456 as RAN. For details, see chapter Remote Configuration Via Modem.
**Note: Do not set RAN for PbX without DID. In this case use CLI for remote access calls.**
Remote control must be enabled - see "Remote control" option in "Identification" window.

Error indication – Transparent error status transfer between E1-A and E1-B (E1-C)
Tract supervision – it is possible to set errors of which tracts have to signalised by remote control
Check Bearer Capability when connecting to the internal modem – ISDN PRA signalling parameter. If this parameter is set, internal modem accepts only calls with transmission capability set to UNRESTRICTED DIGITAL INFO. Otherwise, internal modem accepts all calls without regard to information element Bearer Capability setting. Only for ISDN signalling.

1.6). E1 SETTINGS
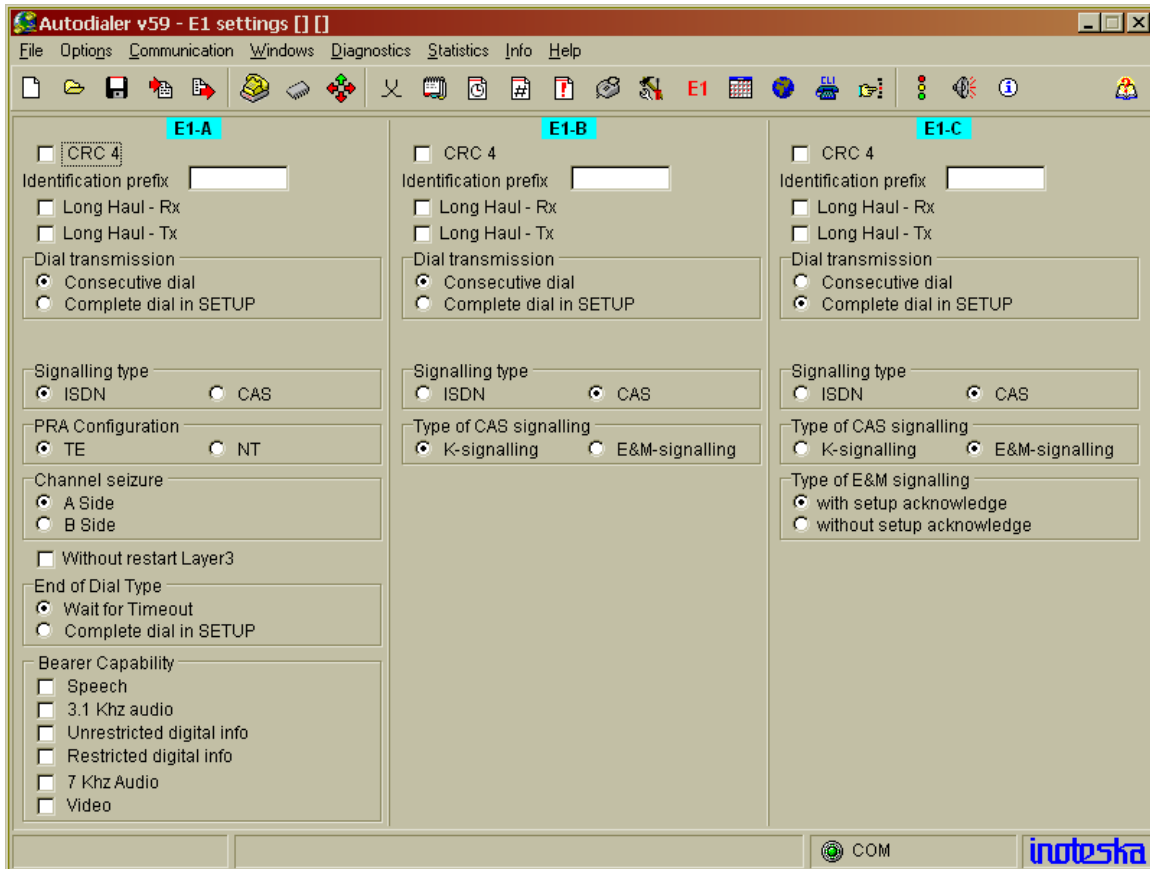
CRC 4 – In case incoming line uses CRC multiframe. CRC4 can be set for each interface.

Identification prefix – In case the PBX connected to E1-A transmits only the extension number in the identification, the identification can be extended with customer's complete number. For example PBX transmits only extension number 111, Autodialer can add 02 555 4444 to it. The identification prefix is set only for the E1 trunk from which the call is coming from, most often this is E1-A

Long haul Rx / Tx – this function enables to increase the device radius by setting the receiving more sensitive and transmitting more intense. Long haul parameter is within G.703 norm, that means it is also possible to connect a standard device to the device with long haul.

Dial transmission:

Consecutive dial – Autodialer does not wait for the end of dial, but transmits the dial simultaneously (at the time the customer dials the destination number)

Complete dial in SETUP – For DSS1 the complete dial is transmitted in the DSS1 signalling. For MFC R2 Autodialer waits for end of dial before transmission

Signalling Type –type of signalling used for E1 A/B/C, E1-A/B are user defined only for Autodialer specification **P** (converter) – CAS (R2 MFC or E&M) or ISDN. E1-C is always user defined.

Signalling types:

- CAS - K signalling (MFC R2 or DTMF – setting in "Parameters" window) or E&M signalling (with or without setup acknowledge)
- ISDN DSS1/Q signalling

For ISDN signalling, it is necessary to set:
PRA Configuration – Used for ISDN PRA line configuration
    NT – device simulates network termination – usually on line to PbX   E1A
    TE – device simulates ISDN exchange – usually on line to PSTN   E1B

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

Without restart Layer3 - parameter for ISDN signalling

End of dial type – determines the way Autodialer has to recognize end of dial. Standard setting is "Wait for timeout". Sometimes PbX is set to wait complete dial from subscriber and then seizure the timeslot to PSTN. In this case it is possible to set "Complete dial in SETUP" as end of dial type in order to eliminate double waiting for end of dial (first in PbX and then in Autodialer). This will fasten the connection establishment.
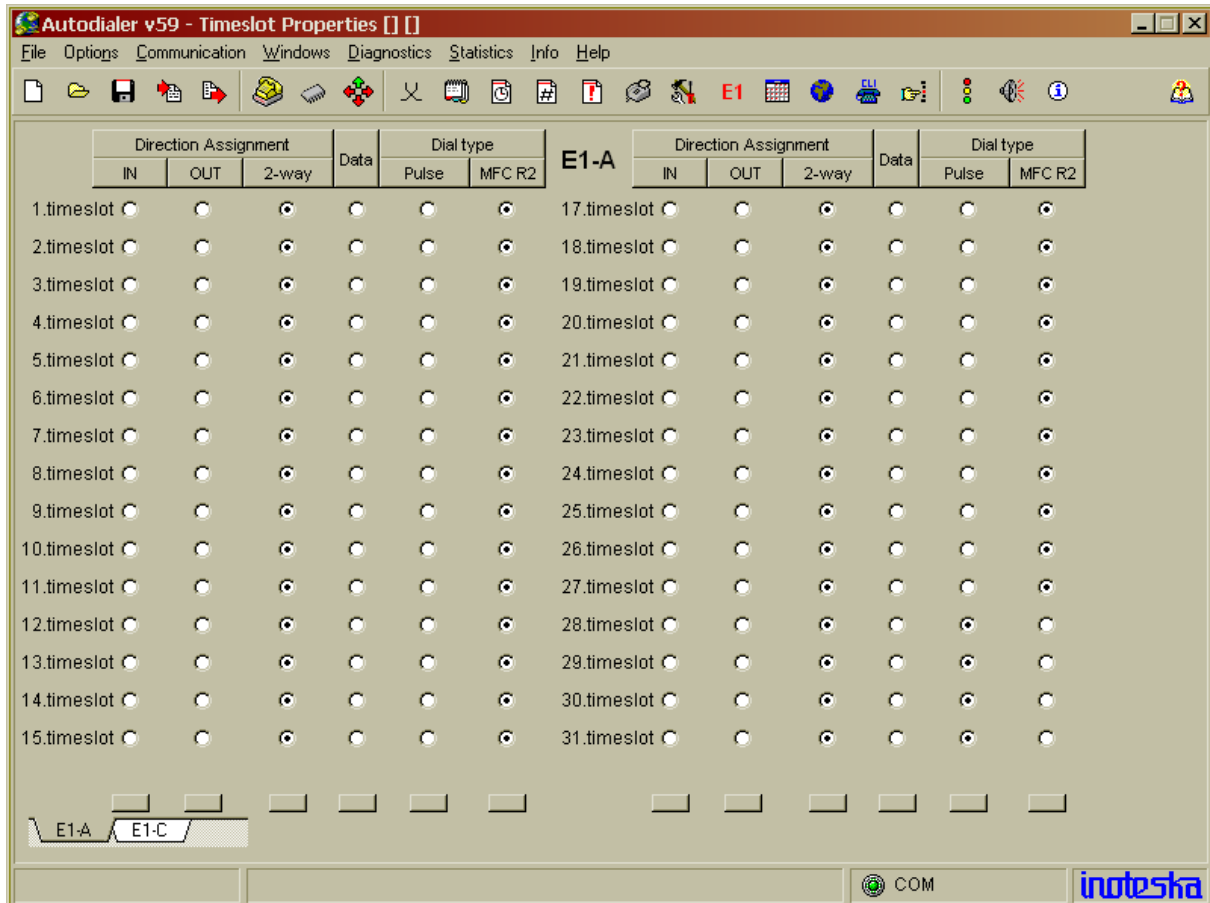
Bearer Capability – this parameter determines which calls are routed to carrier, if matching conditions set in "Routing table". E.g.: Request for connection is coming from PbX. Call has to be routed to carrier and its transmission capability is Unrestricted digital info (that means it is data transfer). If this parameter is set, connection will be established via carrier. If it is not activated, connection will be established directly via PSTN, even if the call should be routed via carrier (matching routing conditions). This enables to divert data or other connections if carrier doesn´t support the transfer of specific connection types (e.g. using compression, etc.). Type of transmitted digital information. *Speech* and *3.1 Khz audio* must be selected by default so that voice calls can be routed (ISDN PRA only)

Type of CAS signalling – K-signalling or E&M-signalling

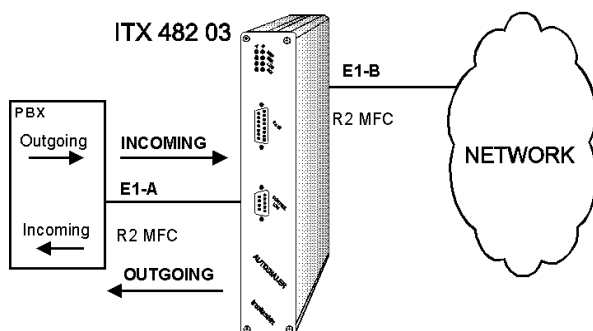**Type of E&M signaling** – with/without setup acknowledge

Signalling timeslot – determines the position of signaling timeslot in E1-C

1.7). TIMESLOT PROPERTIES

Autodialer v59 - Timeslot Properties [] []

File Options Communication Windows Diagnostics Statistics Info Help

	Direction Assignment			Data	Dial type		E1-A		Direction Assignment			Data	Dial type	
	IN	OUT	2-way		Pulse	MFC R2			IN	OUT	2-way		Pulse	MFC R2
1.timeslot	○	○	●	○	○	●		17.timeslot	○	○	●	○	○	●
2.timeslot	○	○	●	○	○	●		18.timeslot	○	○	●	○	○	●
3.timeslot	○	○	●	○	○	●		19.timeslot	○	○	●	○	○	●
4.timeslot	○	○	●	○	○	●		20.timeslot	○	○	●	○	○	●
5.timeslot	○	○	●	○	○	●		21.timeslot	○	○	●	○	○	●
6.timeslot	○	○	●	○	○	●		22.timeslot	○	○	●	○	○	●
7.timeslot	○	○	●	○	○	●		23.timeslot	○	○	●	○	○	●
8.timeslot	○	○	●	○	○	●		24.timeslot	○	○	●	○	○	●
9.timeslot	○	○	●	○	○	●		25.timeslot	○	○	●	○	○	●
10.timeslot	○	○	●	○	○	●		26.timeslot	○	○	●	○	○	●
11.timeslot	○	○	●	○	○	●		27.timeslot	○	○	●	○	○	●
12.timeslot	○	○	●	○	○	●		28.timeslot	○	○	●	○	●	○
13.timeslot	○	○	●	○	○	●		29.timeslot	○	○	●	○	●	○
14.timeslot	○	○	●	○	○	●		30.timeslot	○	○	●	○	●	○
15.timeslot	○	○	●	○	○	●		31.timeslot	○	○	●	○	●	○

E1-A / E1-C

● COM **inoteska**

This window is used for determining the timeslot directions for **R2 MFC** (or DTMF, if enabled in 'Parameters' window) signalling or timeslots dedication for data transmission for R2 MFC or ISDN PRA signalling, or when data module is present.

Incoming or outgoing direction is set for each channel for unidirectional calling always in relation to Autodialer (E1-A). This means that an outgoing channel from the PBX should be set as incoming to the Autodialer (see the picture below).

ITX 482 03

PBX
Outgoing → **INCOMING** → **E1-A** R2 MFC
Incoming ← **OUTGOING** ←

E1-B R2 MFC → NETWORK

AUTODIALER

For incoming calls from E1-C (if present), free outgoing channels to the PBX are allocated. During the call the channels to the Public Exchange are blocked.

Pulse dial or R2 MFC/DTMF dial could be set for each channel. Pressing the button under a column selects all channels in the column.

DATA – Selected channels are reserved for external data transfers. The number of data channels determines the data transmission speed. The data flow direction is set in window *'Data interface'*.
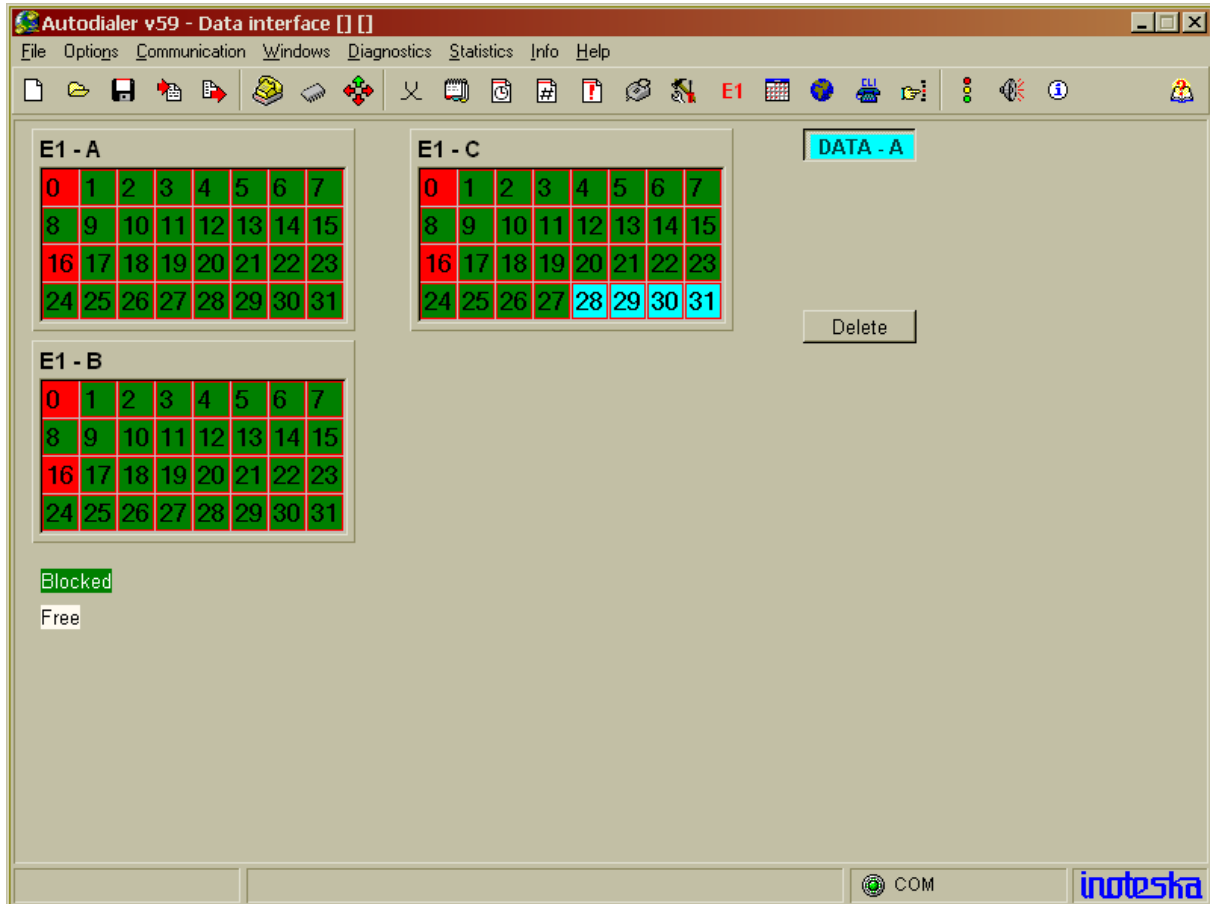
For Autodialer specifications ITX 482 03.3, ITX 482 03.4 and ITX 482 03 P it is necessary to set unidirectional CAS signalling (set incoming and outgoing channels for E1-A).

1.8). AOC

Autodialer offers two types of charging:
- **Real Charging**
- **Pseudo Charging**

Real Charging – Customer using Autodialer can check his telephone account balance, accounted on the base of the actual call length, using the standard billing software supplied with the PBX.

Pseudo Charging – Billing program generates charging pulses without information about the call status, i.e. if the called party has answered or not.
1100 / 1633 Hz answer supervision tone is not being detected and in 'Parameters' window the option '*Start of Charging Delay*' should be set – after dialling the destination number, Autodialer waits for the time specified and transmits the first charging pulse. AOC tables are identical for Real and Pseudo charging.

Real Charging:

Please check if the system clock is correct before setting the tables:
Main Menu – Options – Time and Date
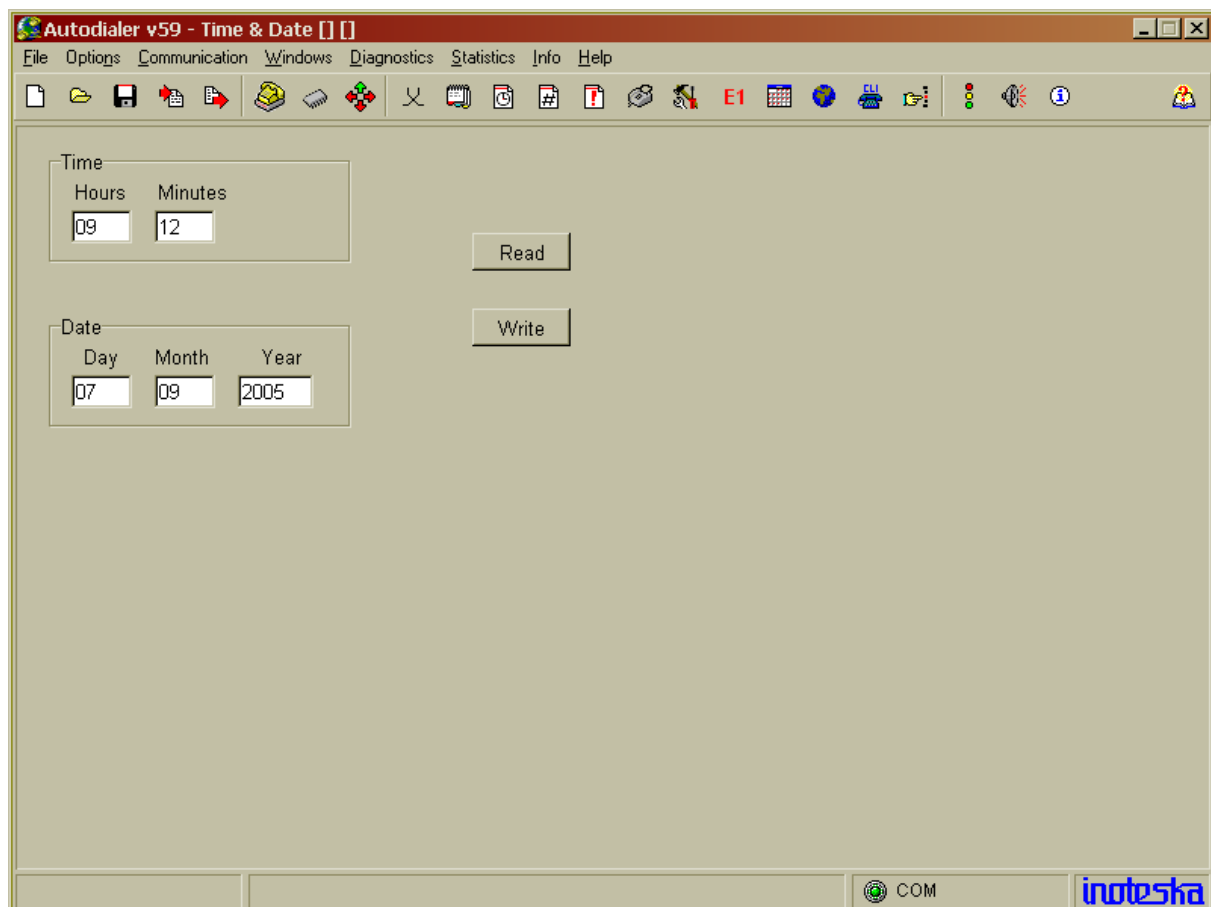
Confirm any changes made by click on the **Write** button.

AOC Tables:
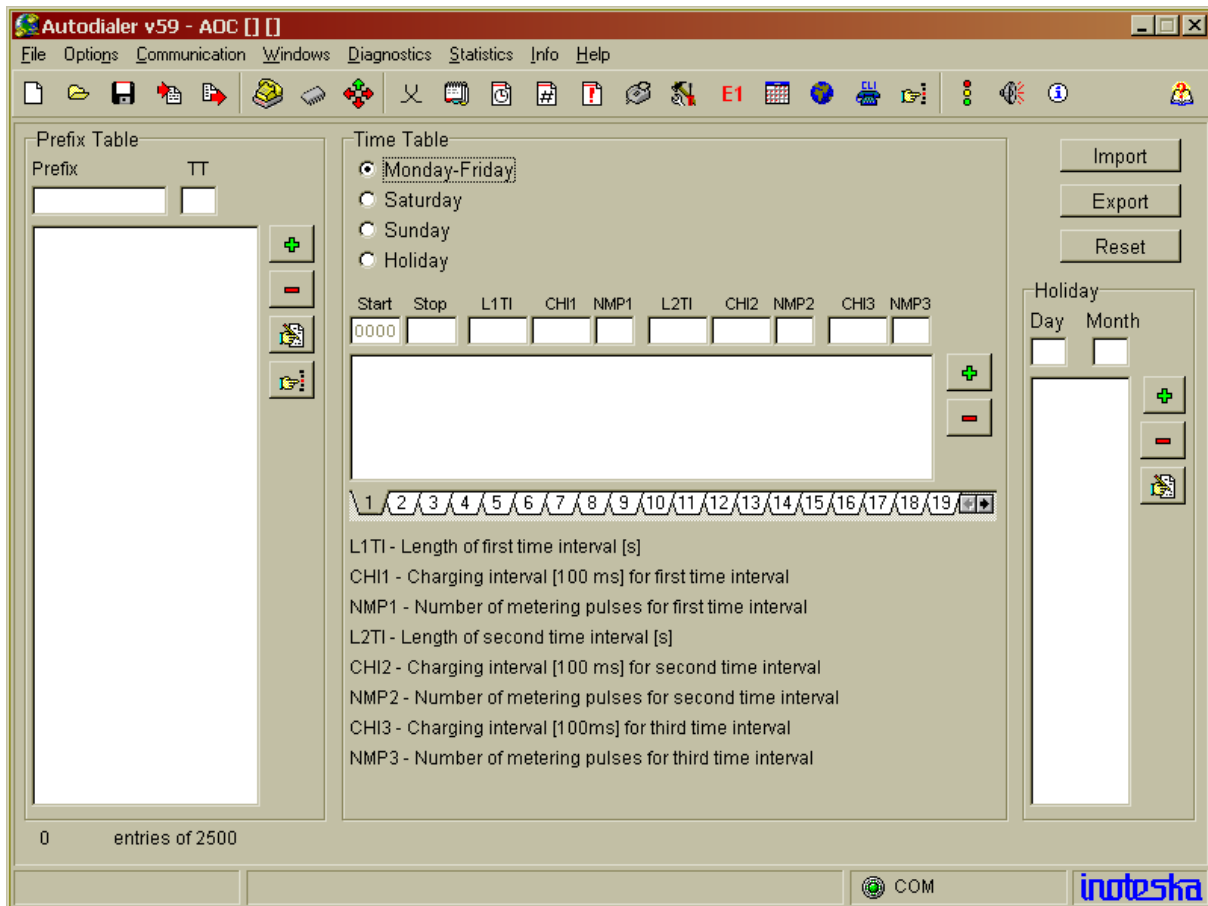
'AOC' window contains three basic tables:

➤ **Prefix Table**
➤ **Time Table**
➤ **Holidays Table**

Prefix Table – Setting the prefix and time tables. In case the number dialled is subject to re-routing and at the same time it is set in the prefix table, Autodialer assigns charging interval (time frequency of the charging pulses) in accordance with the Time Table (TT) and the system clock.

Prefix Table can contain up to 2500 prefixes.

+ - Add – Add a record
- - Delete – Remove selected record
Edit – Edit a record
Find – Find a record

TT – Time Table number – defines the time intervals and the time frequency for generation of metering pulse(s). It is possible to set 3 charging time intervals for one call. Autodialer enables to generate different number of charging pulses during each charging time interval. **Time Table** contains 50 separate tables and has five time blocks, which must begin and end before 0:00 h.

Example:

Autodialer charges the calls to numbers starting 02 ..., 03 ..., 04 ..., 05 ... .
During first 180 seconds (3 minutes) autodialer will send 1 metering pulse each 1 second. Next 10 minutes autodialer will send 1 metering pulse each 1 second. Then it will send 1 charging pulse each 2 minutes.
Note: It is not necessary to set L1TI, CHI1, NMP1, L2TI, CHI2, NMP2. They can contain 0 values. It is possible to set L1TI, NMP1, L2TI, NMP2 without setting CHI1, CHI2.

Start – Stop – time when charging starts and stops.

Holiday Table can contain up to 20 holidays.
+ - Add - Add a record
- - Delete – Remove selected record
Edit - Edits a record

AOC table setting example:

Autodialer has a routing condition set for numbers starting on 042. The carrier services the call and the called party answers. Autodialer detects 1100 Hz or 1633 Hz tone and sends the first metering pulse. Condition 042 has a corresponding Time Table (number 9) in the Prefix Table. Each Time Table is divided to 8 sub tables for the days of the week plus holiday sub table. A Time Table (numbered 9) can be assigned to any calendar day (including holidays): 9 Monday, 9 Tuesday …, 9 Sunday, 9 Holiday. The fields underneath (Start – Stop – Interval [s]) are used for setting the time blocks and the frequency of the charging intervals. If a workday is defined at the same time as a public holiday, Autodialer charges in accordance with the given holiday table.

The values set in the AOC tables can be exported to ('Export') or imported from ('Import') a *.trf file.

Reset – Reset all AOC tables

Note:

It is possible to choose if the local call charging pulses, sent from the PSTN, should be ignored or added to the charging pulses sent from the Autodialer ('Parameters' window).

1.9). CLI FOR REMOTE ACCESS CALLS
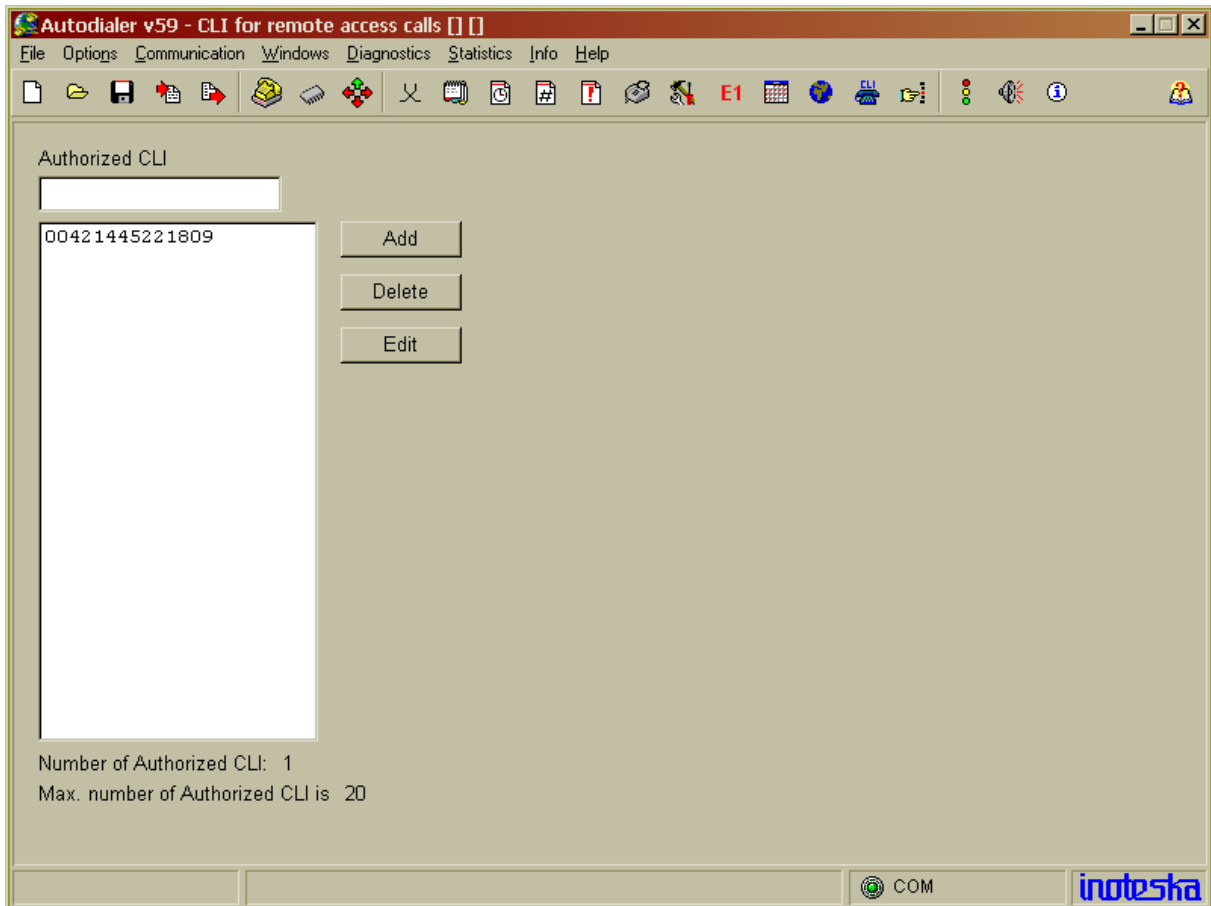
If autodialer is placed between PbX and C.O. and superior public PbX doesn´t send called party number to inferior customer PbX, then it is possible to set calling party number (number of carrier) autodialer´s internal modem will answer to.

If setting Authorized CLI numbers, do not set Remote access numbers in Parameters window.

1.10). CUSTOMER DATABASE
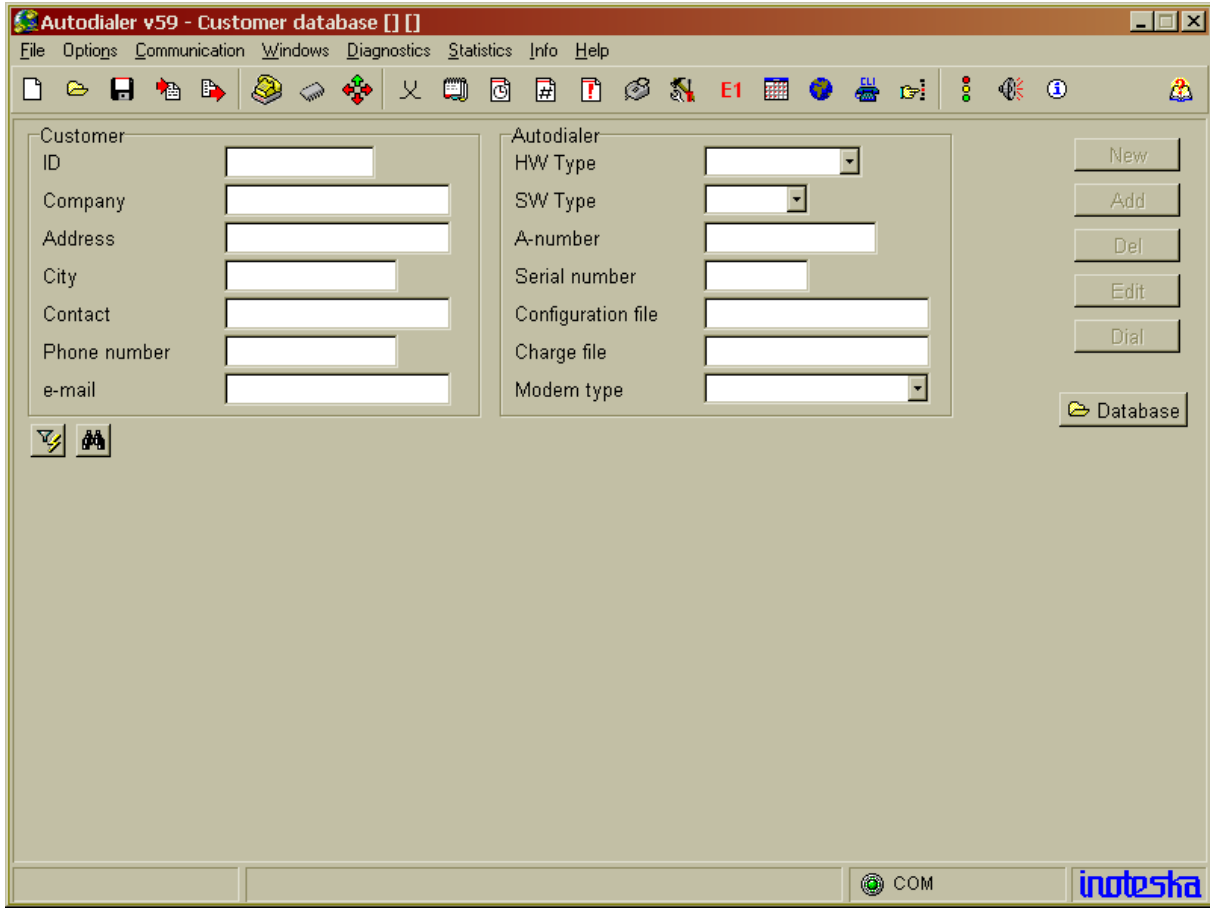
Customer Database offers easy maintanance of information about your customers, such as Autodialer type, serial number, name of loaded configuration file, name of loaded file with AOC tables etc. The database can be updated according to the requirements.

New – Create a new record

Add – Add the new record to the database (file user.mdb)

Del – Delete a record

Edit – Write any changes made to a selected record into the database

Dial – Dial the number specified in the A-number field of the respective record. This is the remote access number used for accessing and configuring Autodialer remotely. You will be automatically transferred to the '*Modem'* window and connection with the respective Autodialer will be established.

Database – Open an existing database (e.g. from the company LAN)

1.11). INCOMING CALL REDIRECTION FROM PSTN
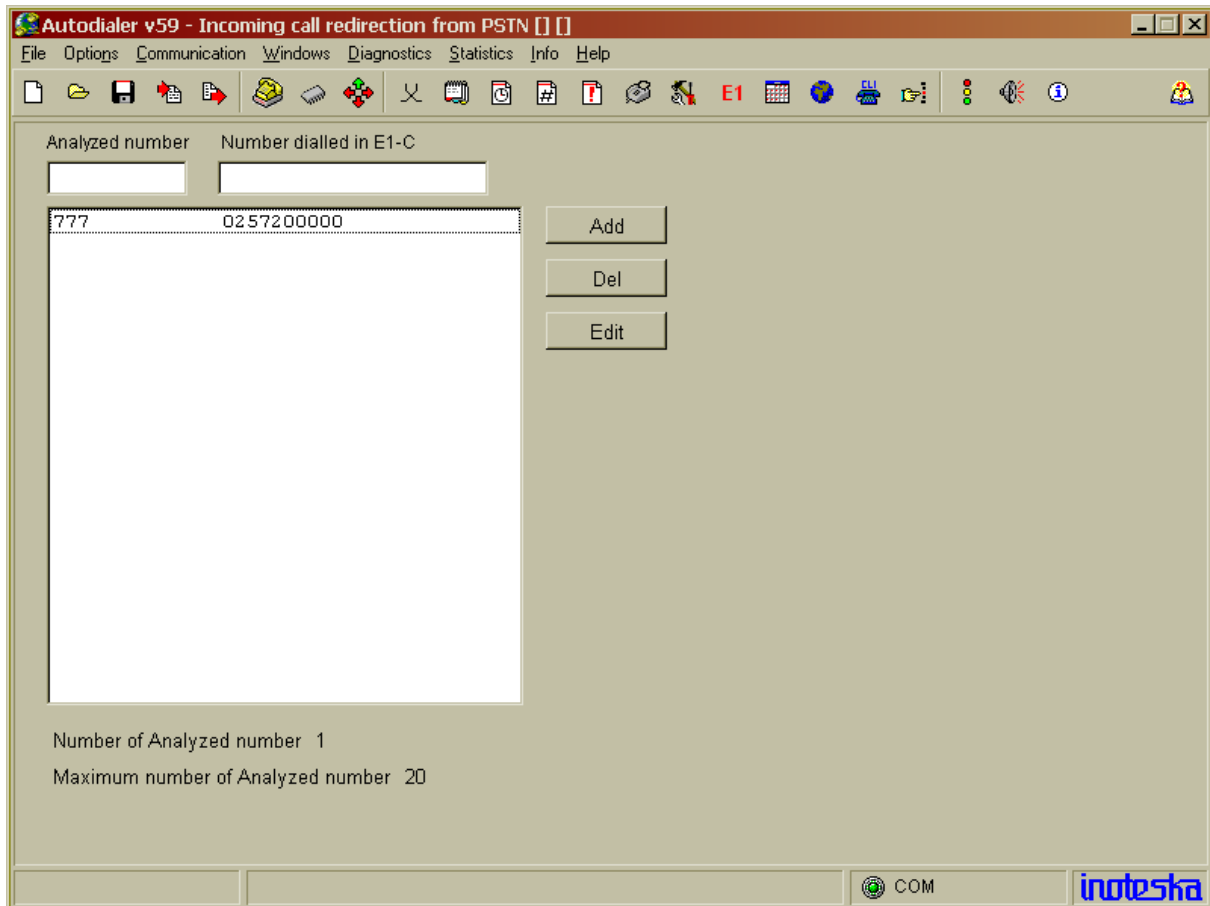
Autodialer enables to redirect the incoming call to autodialer from PTT (from E1-B) to E1-C directly to the alternative carrier. Incoming call to the selected patch of PBX is routed in autodialer to E1-C by dialling the set telephone number.

Identification of incoming call - identification of PbX extension which is set in autodialer for re-routing.

1.12). MFC R2 SETTING
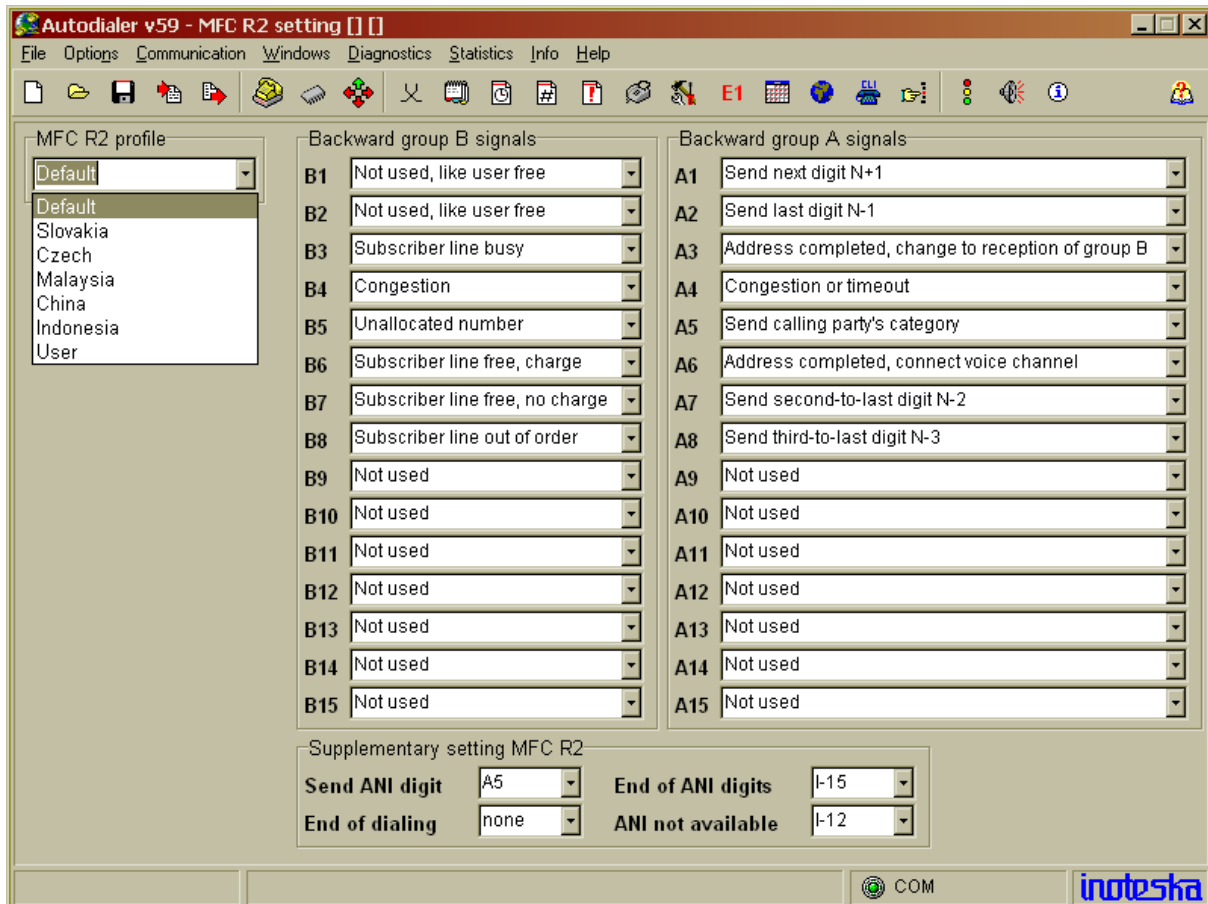
This window displays the meaning of each signal in CAS R2 MFC signalling. CAS R2 MFC signaling can be set for specific country where dialer is used – selecting from **MFC R2 profile** (e.g. Slovakia, Czech, Malaysia,…). **User MFC R2 profile** enables to set user-defined meaning of MFC R2 signal. This option is enabled only with input of correct **password**. Please contact our technical department.

Warning:

If you are not 100% sure of user MFC R2 setting, don´t carry out this process by yourself (only on your own responsibility!) and contact our technical support department.   Inexpert use can cause incorrect device function or permanent device malfunction.

1.13). SYNCHRONIZATION
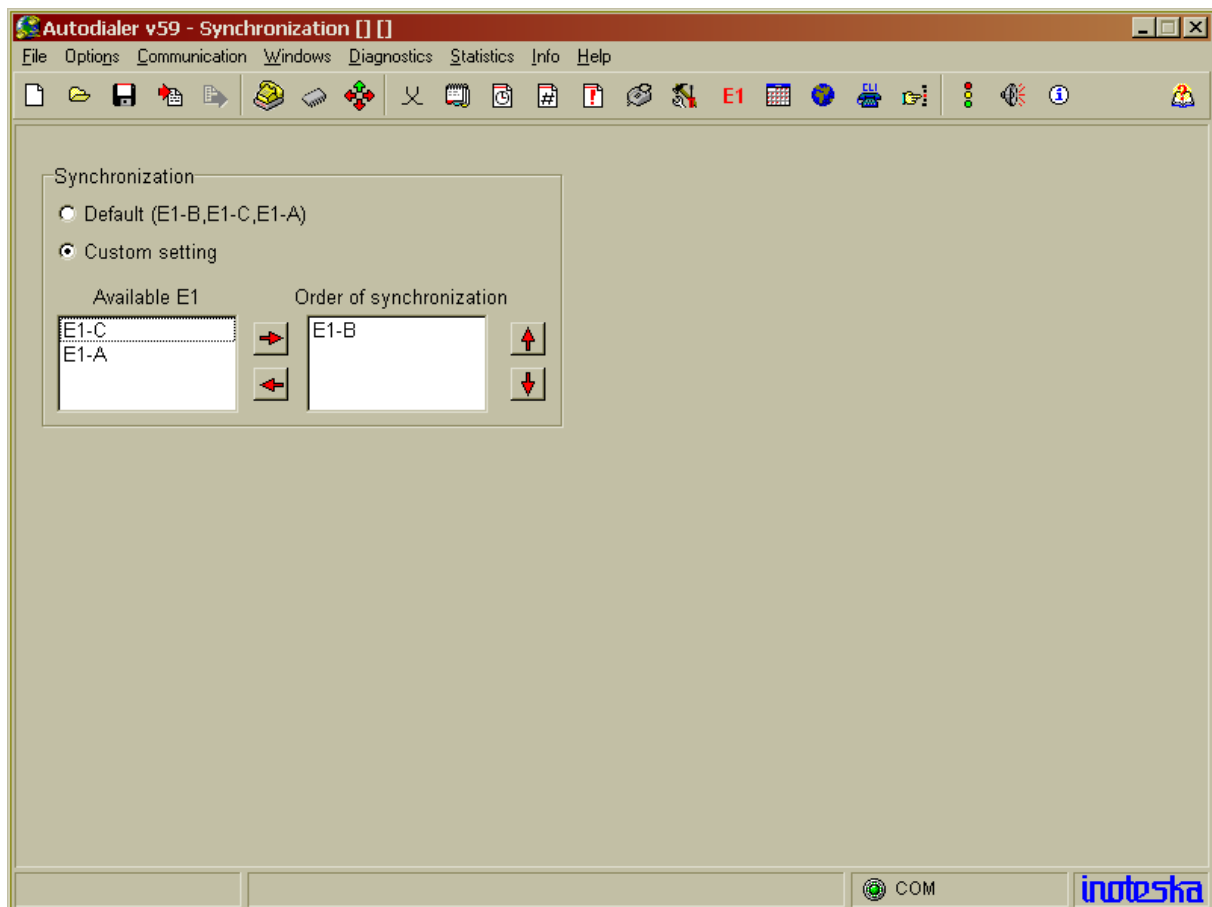
Autodialer is synchronized from E1-B by default. In case E1-B line is in status „Loss of Signal", the source of synchronization is automatically changed to E1-C.

It is possible to set the custom synchronization order or set only one source of synchronization.

1.14). IDENTIFICATION
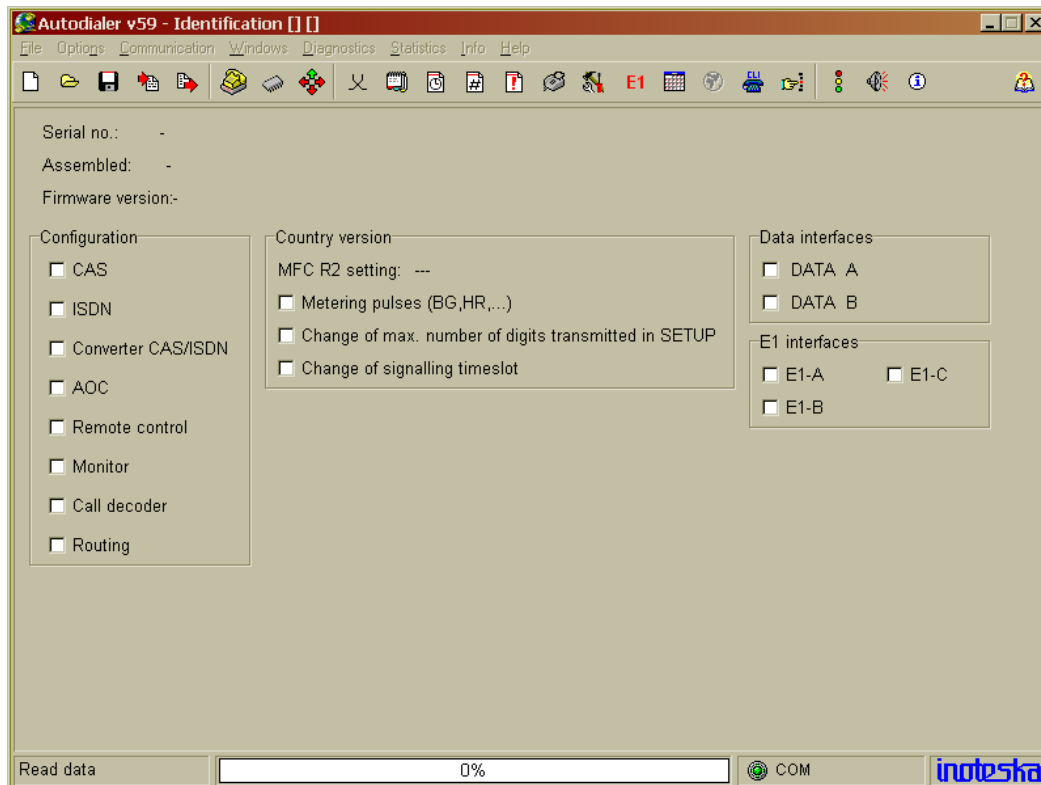
Device Serial Number, date of assembly, control software version and list of activated features.

Configuration:

One of the following three features can be active at any time:

- **CAS** – CAS R2 MFC signalling or
- **ISDN** – ISDN PRA DSS1 signalling or
- **Converter CAS/ISDN** – conversion from R2 MFC to ISDN PRA DSS1 or vice versa. At the same time Autodialer can still perform call routing, if this feature is active.

AOC – Real or pseudo charging (see chapter AOC for details)

Remote Control – Allows remote configuration via the internal ISDN modem

Monitor – Answer supervision - generator of 1100 Hz tone or 1633 Hz tone (DTMF A,B,C,D) for Real Charging

Call Decoder – Incoming call detection and management

Routing – Allows routing of calls

Country Version – Differences in the R2 MFC country implementation

Data interfaces – In specific versions of Autodialer - enabled data interfaces e.g. for connection to a router (X.21/UDI – V.35, V.36, RS 530, V.24). Transmission speed and timeslot assignment is set in window "Timeslot Properties".

E1 interfaces – activated E1 interfaces

2). DIAGNOSTICS AND STATISTICS

2.1). E1 STATUS

```
Autodialer v59 - E1 Status [] []                                      _ □ ×
File  Options  Communication  Windows  Diagnostics  Statistics  Info  Help

  ---- RECEIVE STATUS "E1-A" ------          ---- RECEIVE STATUS "E1-C" ------
(LOS)    - Loss Of Signal                  (LOS)    - Loss Of Signal
(AIS)    - Alarm Indication Signal         (AIS)    - Alarm Indication Signal
(LFA)    - Loss Of Frame Alignment         (LFA)    - Loss Of Frame Alignment
(RRA)    - Receive Remote Alarm            (RRA)    - Receive Remote Alarm
Error CRC4                                 (FEC)    - Frame Error Counter >0.001/Error CRC4
                                           (TS16LOS)- Receive Timeslot 16 Loss of Signal
Datalink layer not active                  (LOMFS)  - Loss of multiframe synchronization
(SDI)    - Slip Direction Indication       (SDI)    - Slip Direction Indication

  ---- RECEIVE STATUS "E1-B" ------
(LOS)    - Loss Of Signal
(AIS)    - Alarm Indication Signal
(LFA)    - Loss Of Frame Alignment
(RRA)    - Receive Remote Alarm
(FEC)    - Frame Error Counter >0.001/Error CRC4
(TS16LOS)- Receive Timeslot 16 Loss of Signal
(LOMFS)  - Loss of multiframe synchronization
(SDI)    - Slip Direction Indication

                Loss of communication!

                                                    ● COM          inoteska
```

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

Loss of Multiframe Synchronization LOMFS – CRC4 multiframe structure error, reset will follow if two CRC multiframes are received in time interval n x 2 ms (n = 1, 2, 3 ...) – CAS signalling only

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

2.2). LISTING MESSAGES
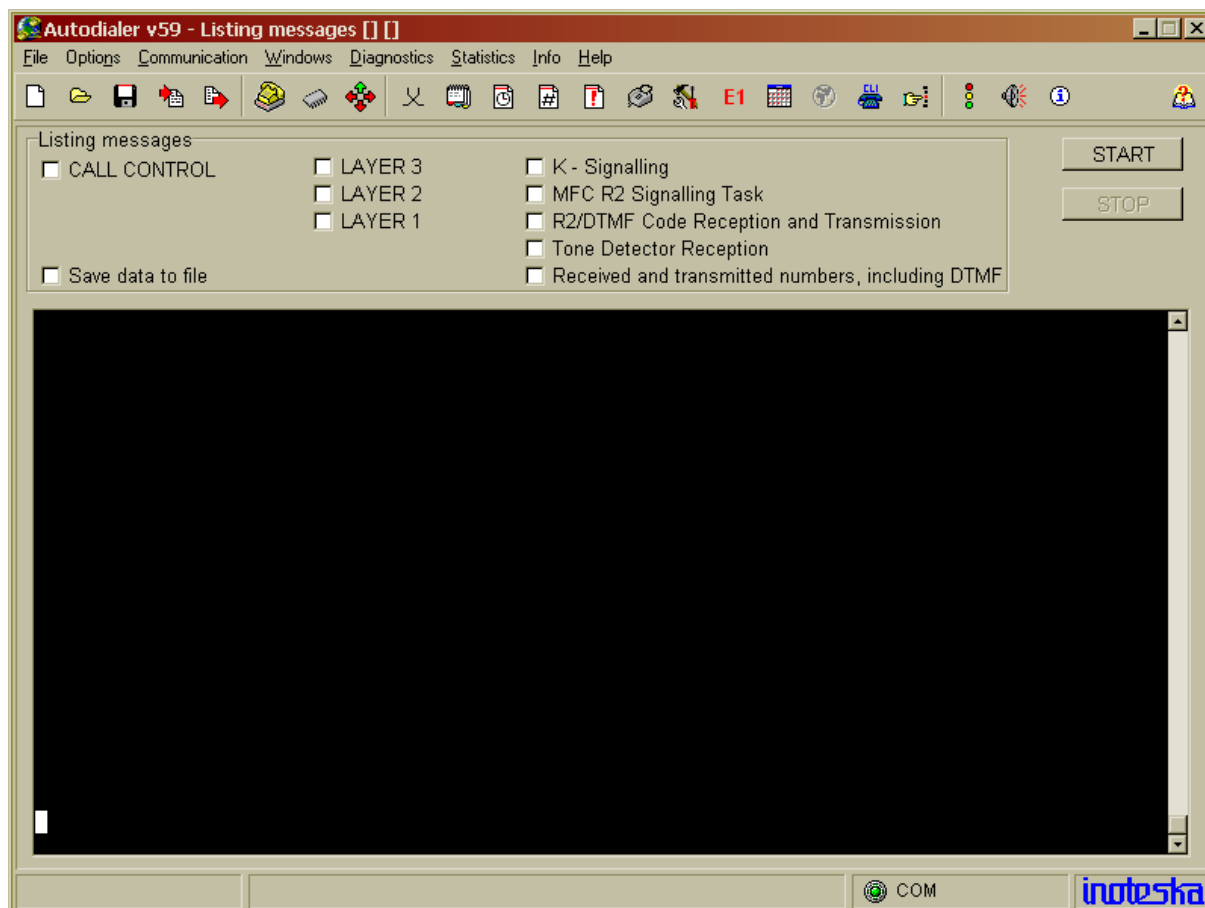
Signalling error diagnostics

Signalling messages received or transmitted by Autodialer can be saved in a text file, which should be sent to the service centre for analysis. By pressing **Start** the selected types of messages will be captured and printed on the screen, pressing **Stop** will terminate the process. A prompt to save the messages in a file will then be displayed.

To carry out the diagnostics and followed-up analysis in "**Connection status analalysis**" window by yourself, do activate only first option of "Listing messages" - **Connection status.**

We strongly recommend that you consult a technician before carrying out this process.

2.3). CONNECTION STATUS

Connection status is the most frequently used tool to display an overview of building a connection. The signalling messages of connection status are decoded to intelligible mode and the connection status is made transparent.
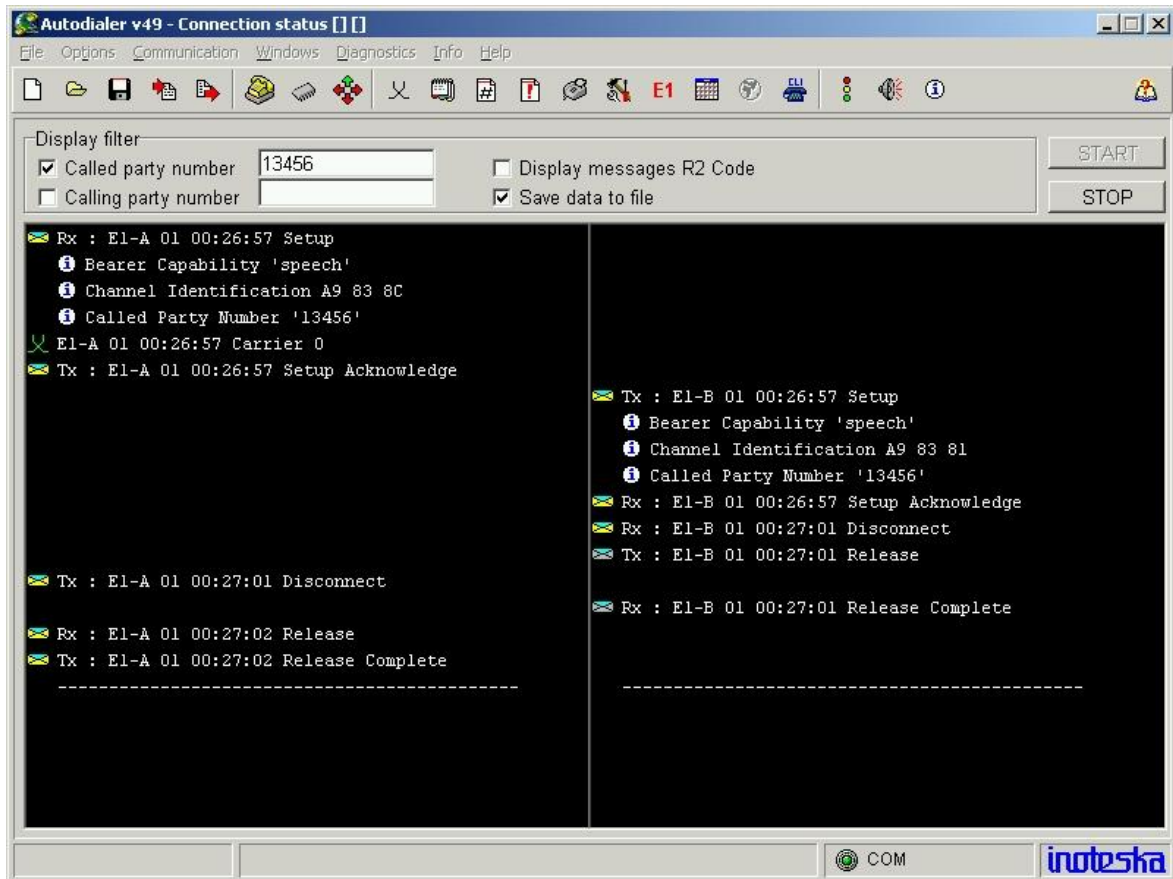
Detailed information about calls processing.

It is possible to set **display filters** according to Called or Calling party number in order to display information only about specific calls.

Left side displays received and transmitted signals in E1-A interface.
e.g.: Tx: E1-A 01 00:26:57 Setup Acknowledge
Transmitted signal Setup Acknowledge from E1- A at time 00:26:57, 01 – identification of individual call (all messages with identification "0x" indicate the same call)

Right side displays received and transmitted signals in E1-B interface. Same meaning of messages as by E1-A interface.
Click on the message icon - the more detailed listing will be displayed (e.g. Bearer Capability, Channel Identification, Called party number, …). Chain line separates the individual calls.

2.4). TIMESLOT STATUS OF CAS SIGNALING*
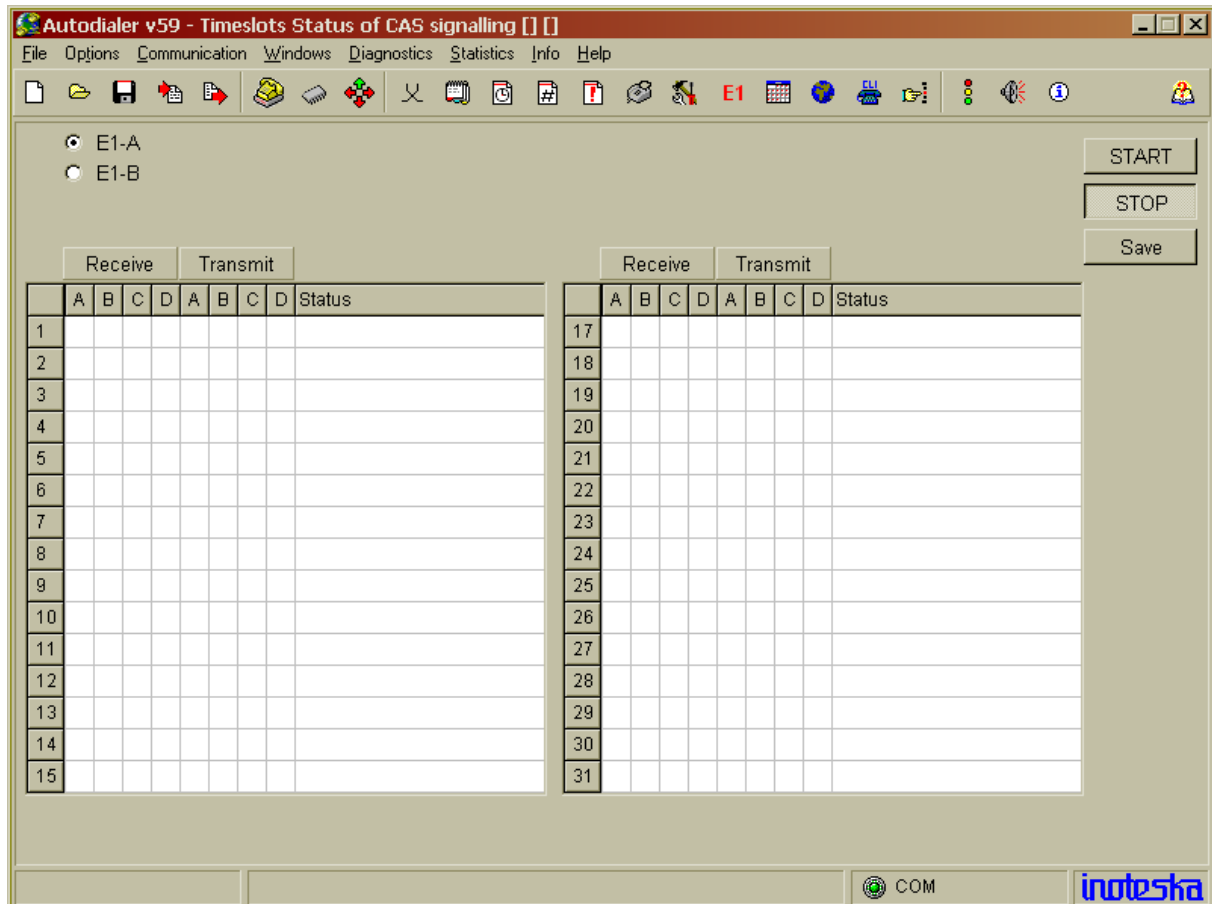
Display of the status of individual timeslots for selected E1 interface – A, B, C.

Start - autodialer starts to read the status of all timeslots cyclically

Stop - autodialer stops cyclic reading of timeslots status

Save – save the displayed information in a file.

- CAS signalling only

2.5). ACTUAL TIMESLOTS STATUS

Basic overview of E1 interface timeslots status, max. 30 calls at one time:

START – dialer starts to monitor current timeslots status
STOP – dialer stops to monitor the timeslots status
Number of busy timeslots – number of timeslots which can not be used for call connection at the moment

IN – displays E1 interface/number of dialer in-timeslot, e.g.: B/2
OUT – displays E1 interface/number of dialer out-timeslot, e.g.: A/1
IN STATUS – input status
OUT STATUS – output status
MP – number of metering pulses
DURATION – call duration
C – carrier who services a call (if blank, call is routed via PSTN or it´s incoming call)
CALLING PARTY NUMBER
CALLED PARTY NUMBER
CAUSE – cause of the call clearing (if blank, call is not cleared yet)

2.6). STATISTICS – OVERALL AND BY CARRIERS
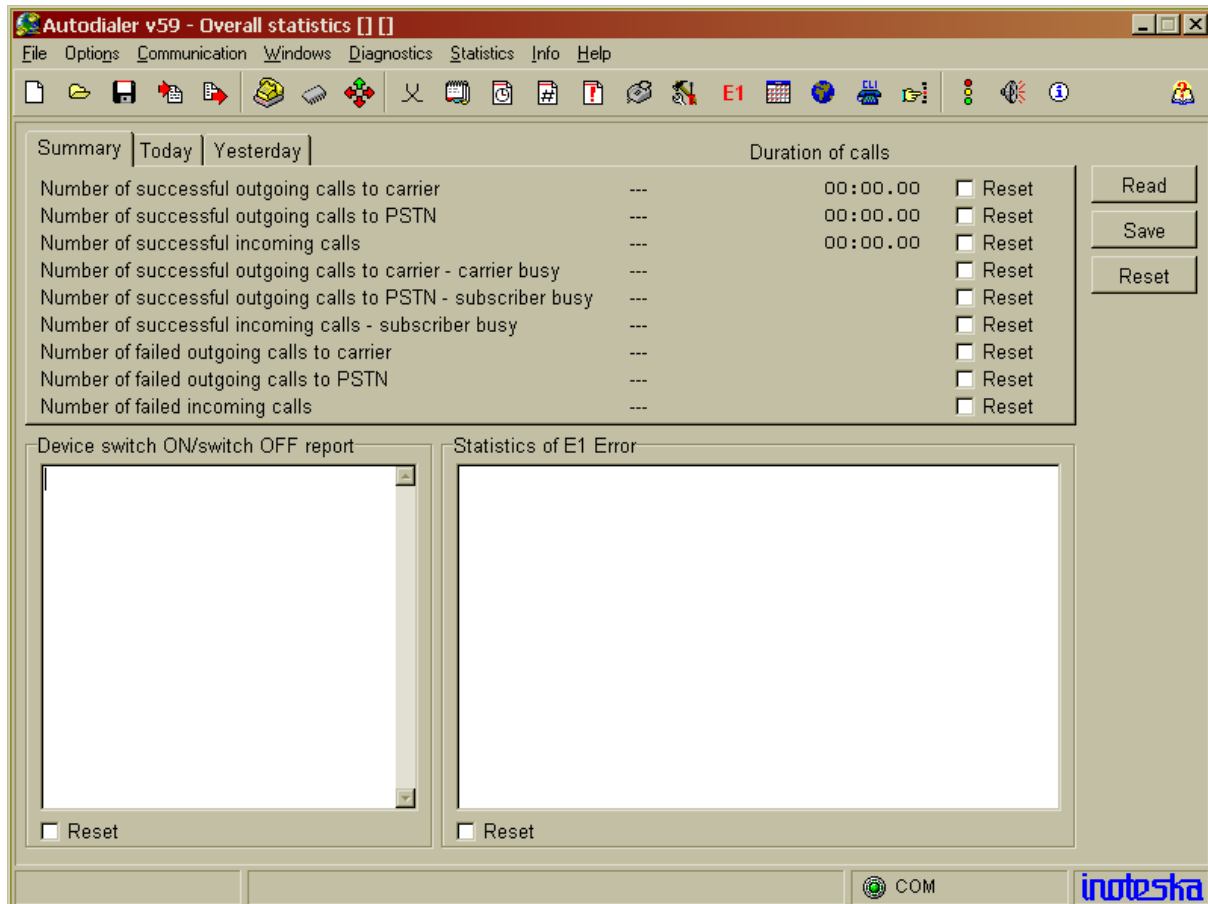
Autodialer records a statistic call overview for a period of time, power switch on / switch off report, list of last 400 errors on E1. Autodialer displays also call overview of current day (today) and last day (yesterday). If capacity is overloaded, errors will be overwritten. These statistics can not be deleted.

Read – Read data from device

Save – Save data in a file

Reset – Clear data

The summary call statistics for all carriers are displayed in "**Overall statistics**". Statistics for individual carriers are displayed in "**Statistics by carriers**".

2.7). ERROR DUMP

       Autodialer enables to download the errors history from last time they were deleted.
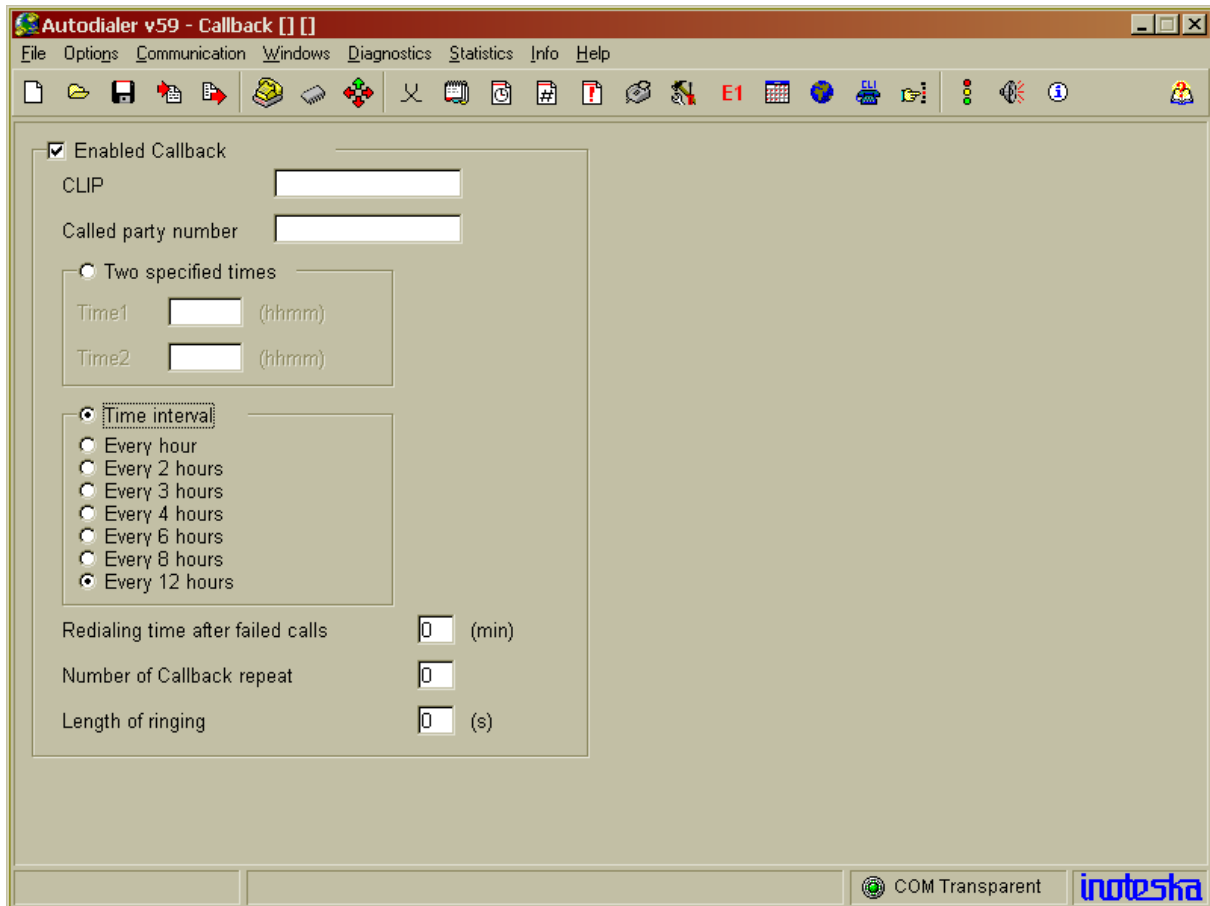
History is downloaded in format:

Start of record, Baud Rate
Error description and time when error was diagnosed in Autodialer
Time list of error downloads

2.8). CALLBACK

Callback function enables to make autodialer´s diagnostic call. Autodialer calls to the specified number at specified times or time intervals. It is possible to define the number autodialer will call to or the number the call will be made from, its identification.

3). CHANGE OF BASIC CONFIGURATION
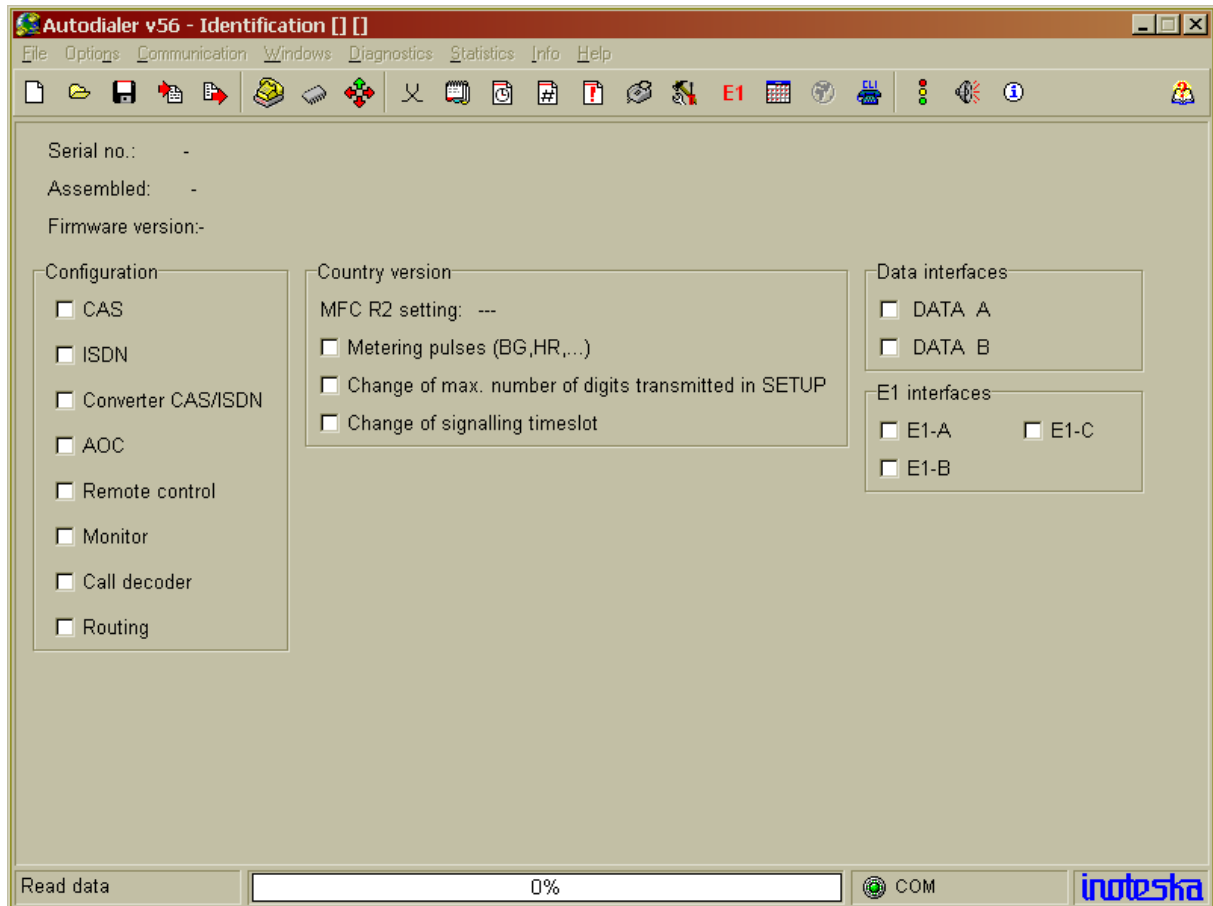
Autodialer ITX 482 03 allows to change the configuration in accordance with Table 1 (e.g. change Autodialer CAS to Autodialer ISDN, Converter CAS / ISDN).

How to order:
New configuration is ordered for the specific device. When ordering the following information is required :
➢ Serial Number ('Identification' window)
➢ Requested configuration

Changing the configuration:
1. Main Menu: *Options – Change Configuration*
2. In the displayed window click on 'Read configuration from file'
3. Write the full path (e.g. A:/ *.zkf) and select the file. Click on ´OK´
4. Wait for the configuration file to be loaded to the device
5. The new Autodialer configuration is displayed in the 'Identification' window

4). PROGRAMMING NEW FIRMWARE

Programmer – Writes the new version of the control software into Autodialer's FLASH memory.

Change of the control software can be carried out in two ways:
➢ **Locally**   – using locally connected PC via V.24 interface
➢ **Remotely** – via ISDN modem
➢

In both cases, you need to contact a service engineer who will offer you the relevant firmware for your device.

Note:
Change of control software via analog modem is considered as local change.

How to proceed:
By clicking on the **Programmer** button a dialog window is displayed, where a *.txt file (batch file) should be selected. After confirming OK, the new control software will be programmed.

CAUTION:
Interrupting the programming process can lead to permanent malfunction of the device!

NOTE:

When upgrading firmware from versions 1.0x to 2.0x it is necessary to read the initial configuration from the device first and check the settings in:
- Timeslot Properties
- AOC (and/or load new AOC tables)
and write the configuration to the device.

It is possible to use a later (newer) version of the management software with earlier (older) version of the control software. However, the new features of the later management software will not be supported by this earlier version of fimware.
We recommend that you always use the latest version of the management software available on our website http://www.inoteska.sk.