

REVISION

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1 TERM - COMMUNICATIONS SOFTWARE BETWEEN PC AND EQUIPMENT

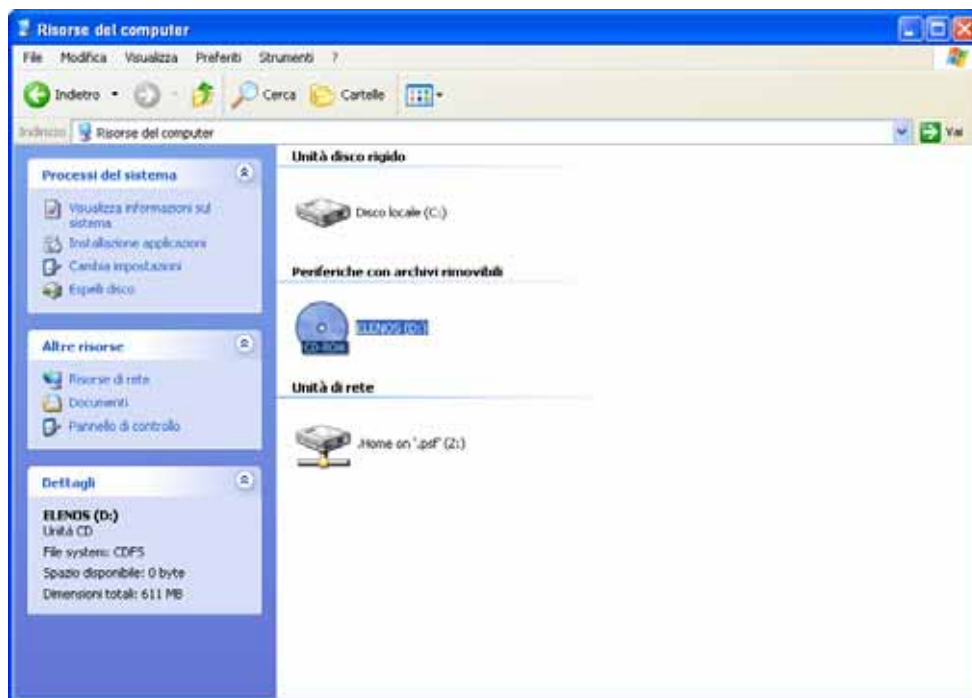
1.1 *Description of TERM software*

This software has been created to replace normal terminal programmes such as Hyperterminal. It offers the following improvements with respect to said normal terminal programmes:

- Station management. A list of stations containing phone numbers and station configuration.
- Simply press the CALL key to select a station to connect to. The rest of the connection procedure shall be performed by the programme.
- Select the interrogation module using the keys or the list without having to type the address as with terminal programmes. This procedure is however also available.
- GSM management with the possibility of performing antenna pointing.
- Initialisation of GSM model to be entered in the Elenos equipment.

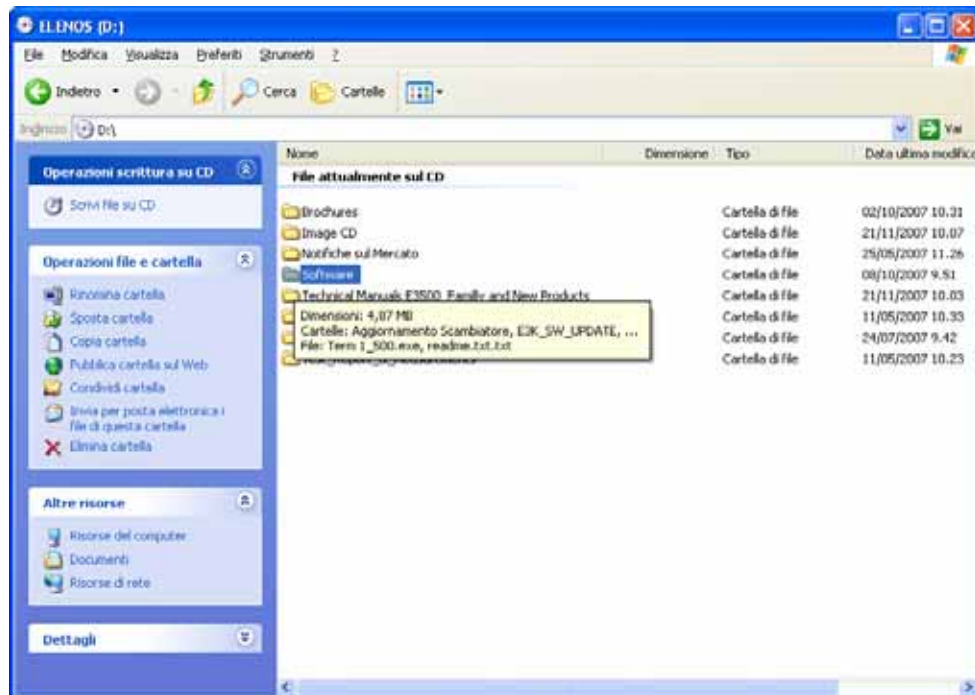
1.2 *TERM Software Installation*

Enter the "ELENOS Technical Manuals And Catalogues" CD in the computer and click on the CD icon to open its folder

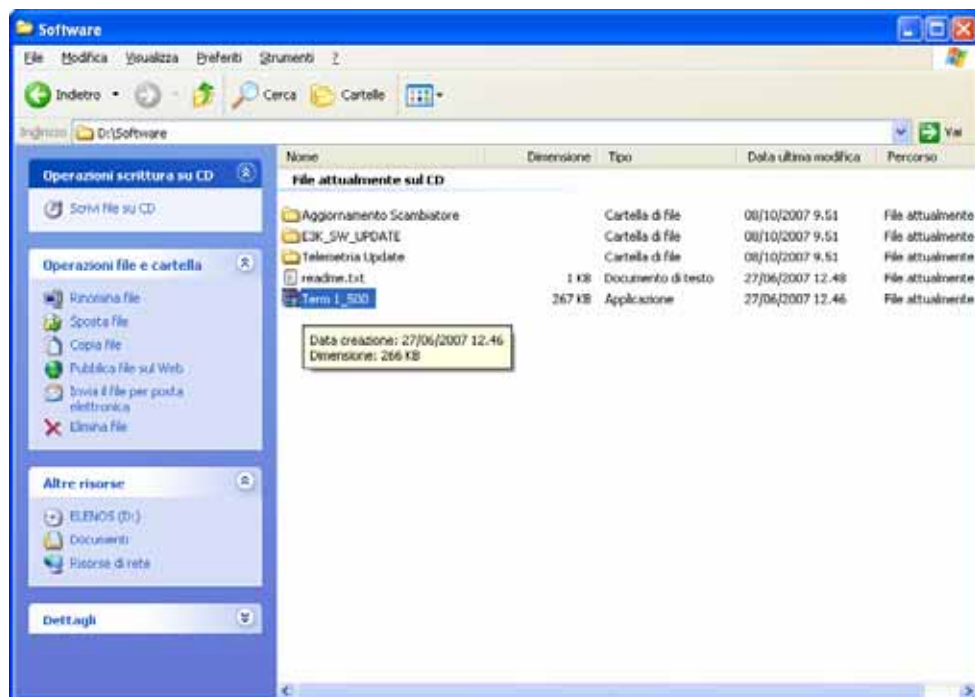


Open the "Software" folder

TELEMETRY Use and maintenance manual



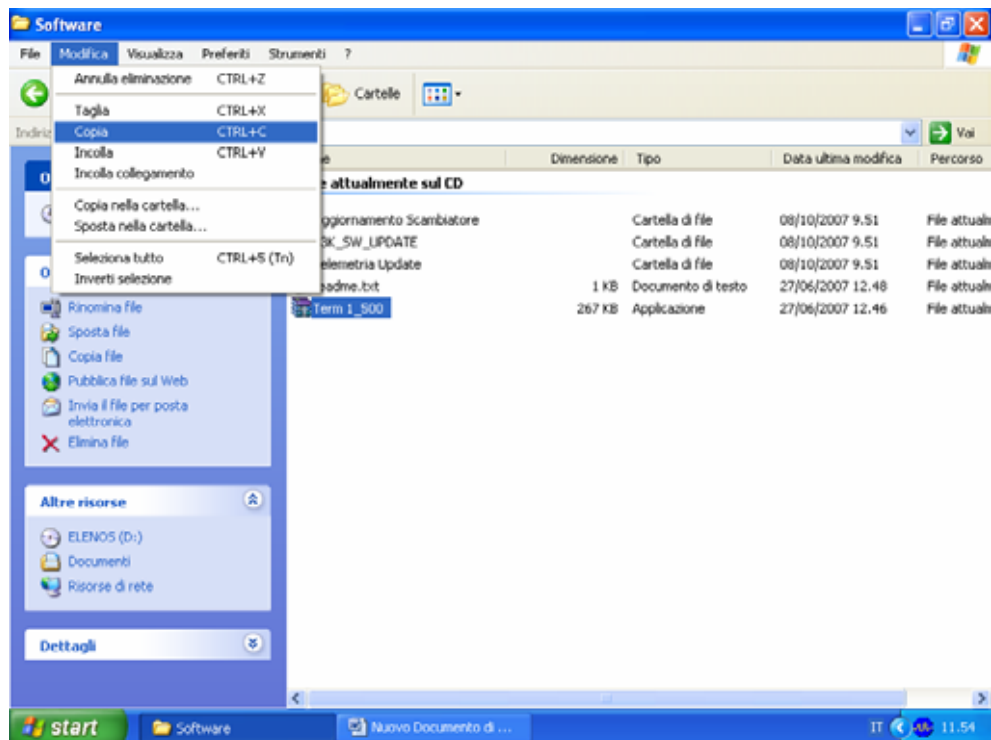
The file self-extracting Term_1_500.exe is found inside the "Software" folder (Attention: software release may evolve).
Select the file.



Select the "Copy" command from the "Modify" menu

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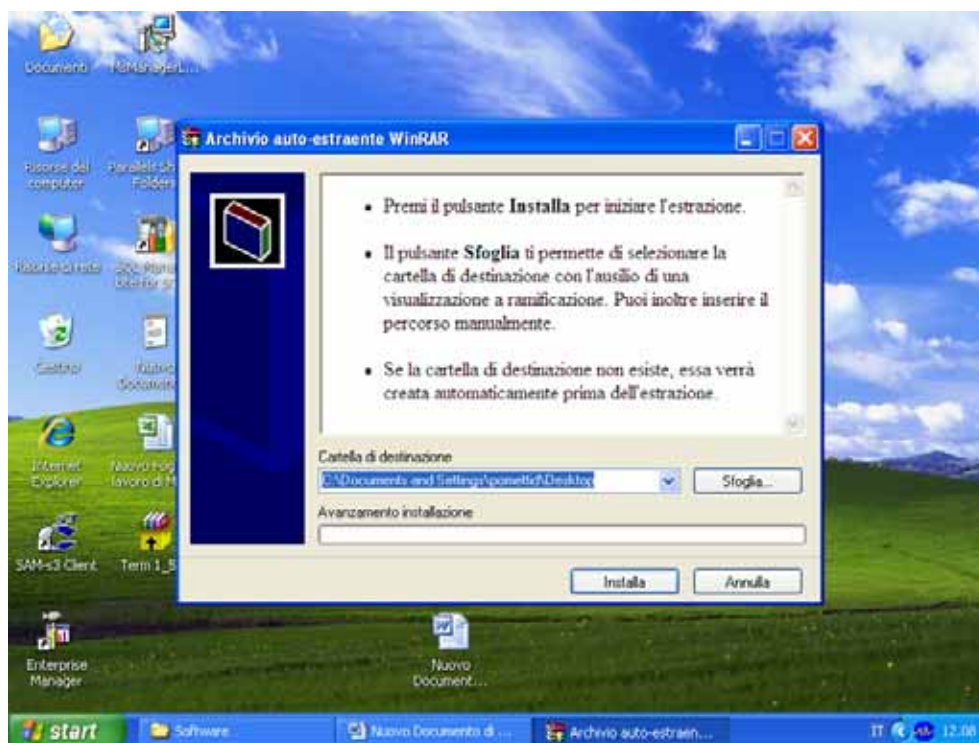
Close the file, right-click with the mouse on the desktop and select the "Paste" command



At this point the copy of the "Term_1_500.exe" programme will appear on the desktop



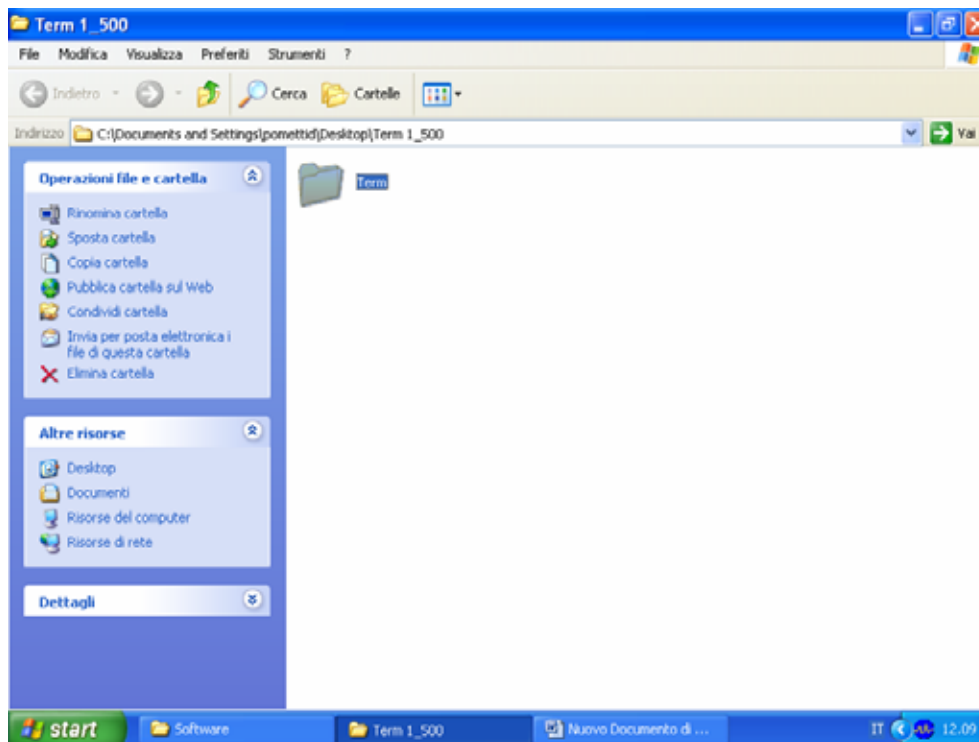
Double click on the self-extracting programme "Term_1_500.exe". A window with the figure below will open, click on the "Install" key



The folder "Term" will be created on the desktop. Open this folder

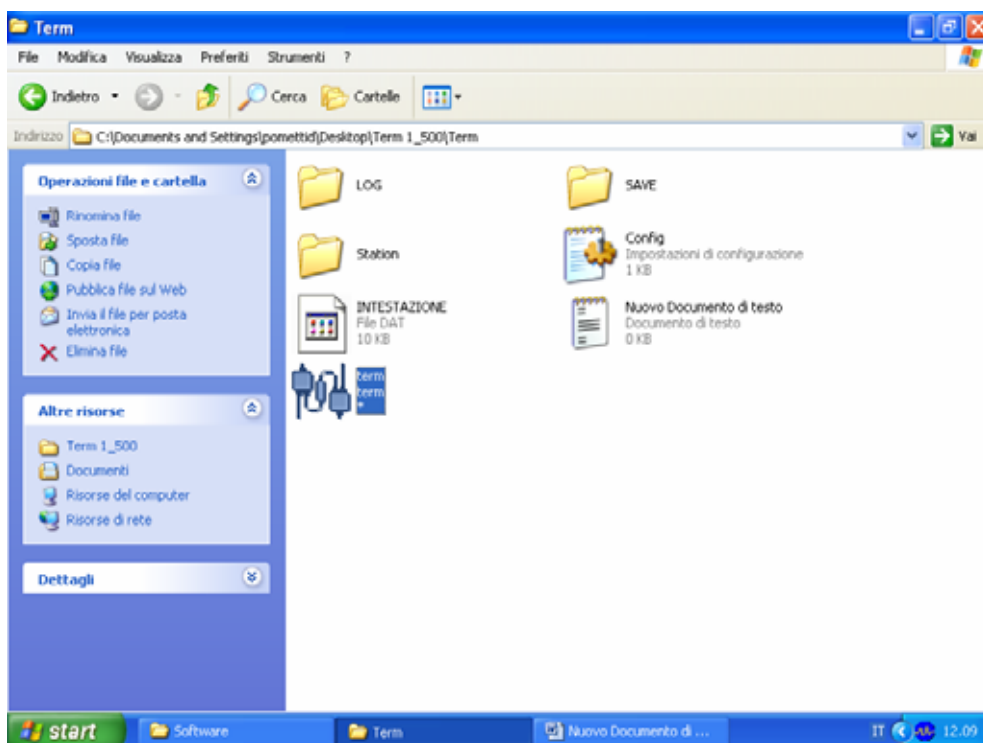


Inside you will find a folder entitled "Term." Open this folder

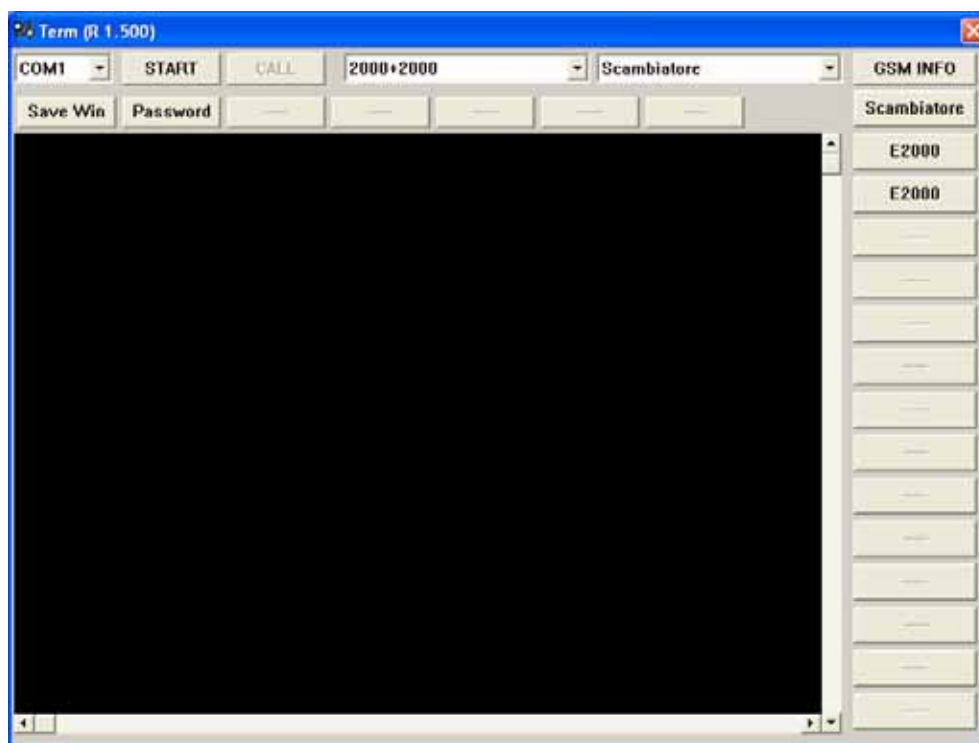


Inside you will find the Term programme. Click on the programme icon.

TELEMETRY Use and maintenance manual

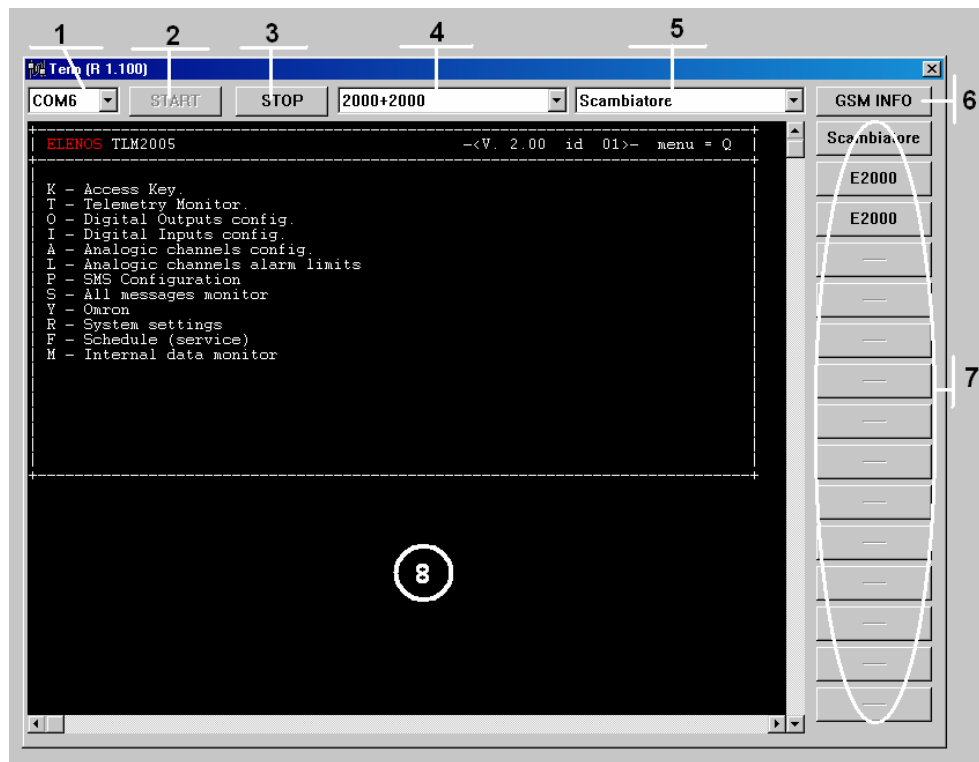


The Term software will open.



1.2.1 Description of Term.exe Main Window

The main window will appear as seen below.



1. Communication port selector.
2. START key. Open the serial and, if the selected station (4) has a modem, continue with the automatic call.
3. STOP key. Close the serial connection and, if the station selected has a modem, perform Hang up.
4. Select the station. The list of modules (5) and keys (7) will be updated when the station is changed. If the new station selected has a modem connection will be performed automatically. If the previously selected station was connected via modem, hang up will also be performed before the new connection.
5. Select the station. Select a module and the connection procedure to connect to it with, sending the address. This performs practically the same function as the keys (7). The difference is that all the station modules are contained in the list while the keys are only the first 15 station modules.
6. GSM information management key. Allows the user to enter into the second software window, described below, utilised for diagnosis and GSM initialisation.
7. Module selection keys. Allows the user to select the module to take information from, as with the modules (5) list
8. Terminal window in which telemetry pages are displayed.

Once connected to a selected module, the main window (8) displays the various telemetry windows and accepts pressed keys to enter into different menus. As you can see from the image, the first window pre-presents the list of submenus which can be selected by pressing one of the letters to the left of the description.

1.2.2 Programme Aspect

The software is structured as follows:

Term.Exe Main programme

Config.Ini General configuration file of Term.exe

Station Directory containing all Ini station files.

LOG Directory containing the file log if enabled in Config.INI.

1.2.3 A closer look at the INI files.

INI files are structured in sections and keys. For example, the config.ini is presented as follows:

[SERIAL_PORT] ← Serial Port Settings (Section)

Com=5 ← Communication port number (Key)

Settings="9600 n 8 1" ← Baud rate values, parity, number of bit stop bits

ExtLine="" ← Characters in case of switchboard. Typically "0"

[GENERAL] ← Section of configuration window (do not modify)

Station=0

WinWidth=800

WinHeight=600

FontName="Courier"

FontWidth=8

FontHeight=8

WinTextWidth=81

WinTextHeight=40

WinTextMemWidth=100

WinTextMemHeight=200

TotStationButtn=15

[GSM_INIT] ← GSM initialisation Parameters Section

CMD00="AT&F"

CMD01="AT+CSQ"

CMD02="AT+IPR=9600"

CMD03="ATV0"

CMD04="ATE0"

CMD05="ATQ0"

CMD06="ATX0"

CMD07="ATS0=1"

CMD08="AT+CMGF=1"

CMD09="AT+CNMI=1,1,0,0,1"

CMD10="AT&D0"

CMD11="AT&S0"

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CMD12="AT+SPEAKER=1"
CMD13="AT+CREG=1"
CMD14="AT&W"
CMD15="AT+CPBW=1"

CMD16="AT+CPBW=2"
CMD17="AT+CPBW=1,"
CMD18="AT+CPBW=2,"

[KEYBOARD] ← Definition of terminal special keys.

KeyUp="27,91,65"
KeyDown="27,91,66"
KeyLeft="27,91,68"
KeyRight="27,91,67"
KeyEnter="13"

[DOWNLOAD_PARAM] ← LOG enabling section

Enable=0 ← Enable/Disable log (1/0)
Name="None"
Serial="None"
Order="None"

[STATION] ← Station list section

ST00000=2000+2000.ini
ST00001=5000+1000.ini
ST00002=5000+5000.ini
ST00003=default.ini

....

.....

The STATION list is automatically created by the programme at each re-start by reading the INI files present in the Station directory.

The format of INI station files found inside the STATION directory is:

[CONFIG] ← General configuration section

Name="5000+5000" ← Station name which also appears in the ListBox
Modem=0 ← Modem Presence/Absence. (1/0)
Init="ATDT" ← Text to send to the modem for calls (always ATDT)
Dial=" +393927874" ← Phone number to call if a modem is present

[MODULE] ← Station modules configuration section

Tot=3 ← Total number of modules
ModName000="Scambiatore" ← Name of first module appearing in the Listbox
ModCmd000="21I01" ← Command to be sent in order to direct module
ModName001="E5000" ← Second name as it appears in the Listbox
ModCmd001="21I02" ← Command to be sent in order to direct module
ModNamennn="E5000" ← Name nnn module as it appears in the Listbox

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ModCmdnnn="21I03" ← Command to be sent in order to direct module

Each station must be composed of the preceding lines and the generated INI file must be contained within the Station directory.

2 TELEMETRY INSTALLATION (QUICK START)

The steps for telemetry installation are as follows:

- 1) Test the SIM to be installed in the telemetry utilising two cell phones
- 2) Unlock the PIN of the SIM to be installed in the telemetry
- 3) Insert the SIM in the telemetry GSM modem
- 4) Insert the F2 fuse (disconnected during manufacture to prevent battery discharge)
- 5) Install TERM communications software on the PC
- 6) Identify the communication port of your PC (COM1, COM2, etc.)
- 7) Set the TERM communication port
- 8) Connect the telemetry to the transmitter with the DB9 pin to pin cable
- 9) Continue with telemetry communications enabling procedure by pressing the key for connection with the telemetry (equivalent of typing 21i01) and set the new phone number
- 10) Set equipment connected remotely to the telemetry
- 11) Continue with communications enabling procedure with equipment connected to the telemetry by pressing the menu keys corresponding to each module (equivalent to pressing 21i00, 21i10 etc.) and programme phone numbers
- 12) Programme configuration (Menu R of the Telemetry): ETG100/151, ETG300, ETG500, ETG1000, E3000
- 13) Connect the PC to the telemetry modem connector and continue procedure to verify GSM antenna pointing
- 14) Disconnect the cable from the telemetry and wait a few seconds
- 15) Generate an alarm and verify correct SMS receipt
- 16) Attempt remote connection with the PC via a modem

2.1 *Components necessary for installation*

The components necessary for telemetry installation are as follows:

- 1) Telemetry Equipment
- 2) Connection cable between the telemetry and equipment
- 3) Connection cable between the telemetry and PC.
- 4) SIM to be inserted into the telemetry modem
- 5) PC To programme phone numbers and configuration
- 6) Modem to be connected to the PC which was utilised previously to test remote connection
- 7) The PC must have an RS232 serial port. If this is not present, use an USB-RS232 adapter
- 8) Your cell phone.
- 9) A second cell phone to test telemetry SIM

2.2 *Problems which may be experienced during installation*

Check that all above-mentioned procedures have been followed before terminating installation. Experience has shown us that whenever telemetry operation problems arise, the cause can be related to improper procedure followed for one of these points. The most common problems experienced include:

- 1) No response to SMS: the SIM is locked, the PIN has not been removed.
- 2) The GSM modem does not have a good signal level or is too disturbed.

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- 3) No messages, telemetry or equipment are sent: the phone number has not been entered.
- 4) No MAINS SMS or those relative to external alarms (RX1, RX2 etc.) are sent: no phone number has been entered in the telemetry.
- 5) MAINS message not sent: The battery is discharged, no fuse F2 has been entered
- 6) No equipment alarm messages are sent because no phone number has been entered in the equipment.
- 7) No -3dB alarm messages or those relative to the equipment are sent: The DB9 pin to pin RS485 communications cable between telemetry and equipment is not connected
- 8) SMS messages are not sent: the communications cable between the telemetries and the PC were not connected and therefore the communications port between telemetry and modem is busy with connection with the PC.

Note:

Keep in mind that when the telemetry has a PC connected, this uses the same serial port which it uses to communicate with the modem, therefore when the PC is connected, the GSM Modem cannot operate and SMS cannot be sent or received. The PC cable must be disconnected to send and receive messages.

When the PC cable is connected to the CPU connector and the TERM programme is activated, the green LED located under the connector switches on.

2.3 Alarm Inputs

Default telemetry inputs are configured as follows:

Inp1: RX1

Inp2: RX2

Inp3: PRESSURISER

Inp4: UPS

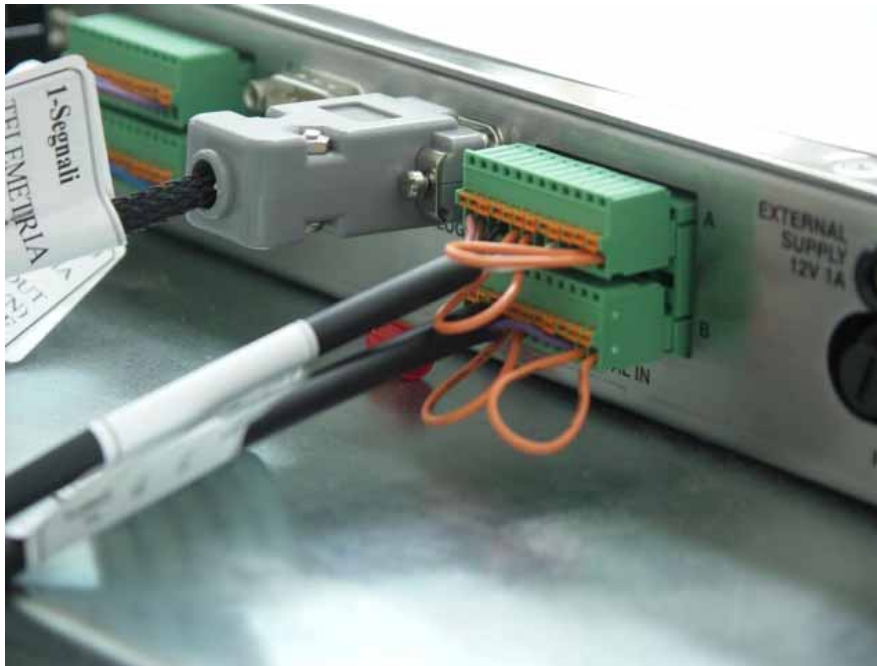
Inp5: PORT

Inp6: AUX1

Inp7: AUX2

Inp8: AUX3

These inputs can later be re-configured on the basis of user needs.



2.4 GSM LED Function.

When the telemetry is switched on, the LED switches off for a short period and then it begins to flash. This indicates that the modem is initialising. The LED switches off when this has been completed.

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2.5 *SIM function verification*

Enter the SIM in the test cell phone.

Switch on the phone and deactivate the SIM PIN.

Switch off and switch back on the phone to ensure that the PIN is not requested upon start-up.

Send an SMS message to your phone.

Respond to the message and verify its successful arrival.

Memorise the SIM phone number of the telemetry in your cell phone.

Enter the SIM in the telemetry GSM modem.

2.6 *SMS message list*

- E3000/2000/3500

STBY,OFF,ON,PWR XXXX, RES, STS

- ETG3500/2000

STBY,OFF,ON,PWR XXXX,RES, STS, STS1

- E7000/10000/15000/30000

STBY,ON,OFF,PWR XXXXX,RES,STS,EXC1,EXC2

3 ACTIVATION PROCEDURE FOR CONNECTION TO EQUIPMENT FROM THE TERM

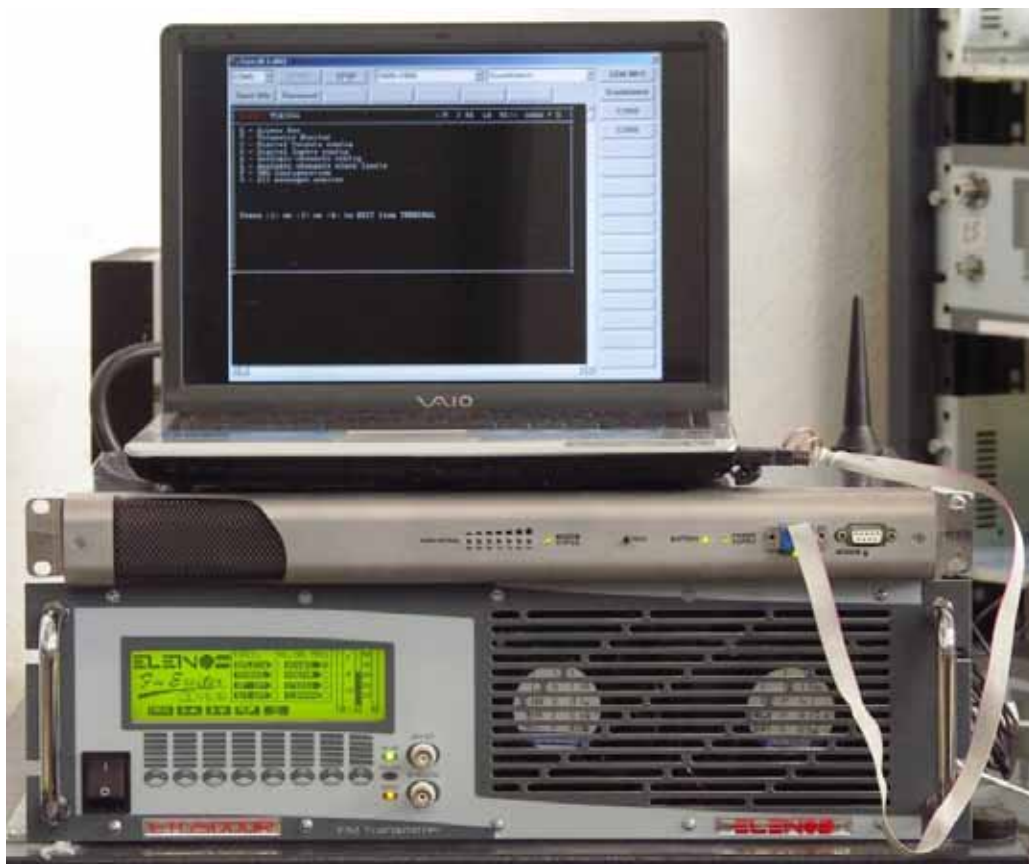
3.1 *Connection from the PC to the Telemetry*

To programme phone numbers and select the transmitter type, connect the telemetry to the PC as indicated in the figure.

Launch the TERM programme.

With the TERM programme, select the COM port and press the "START" key. Verify that the LED located under the CPU connector switches on and that it "Modem Status" LED flashes.

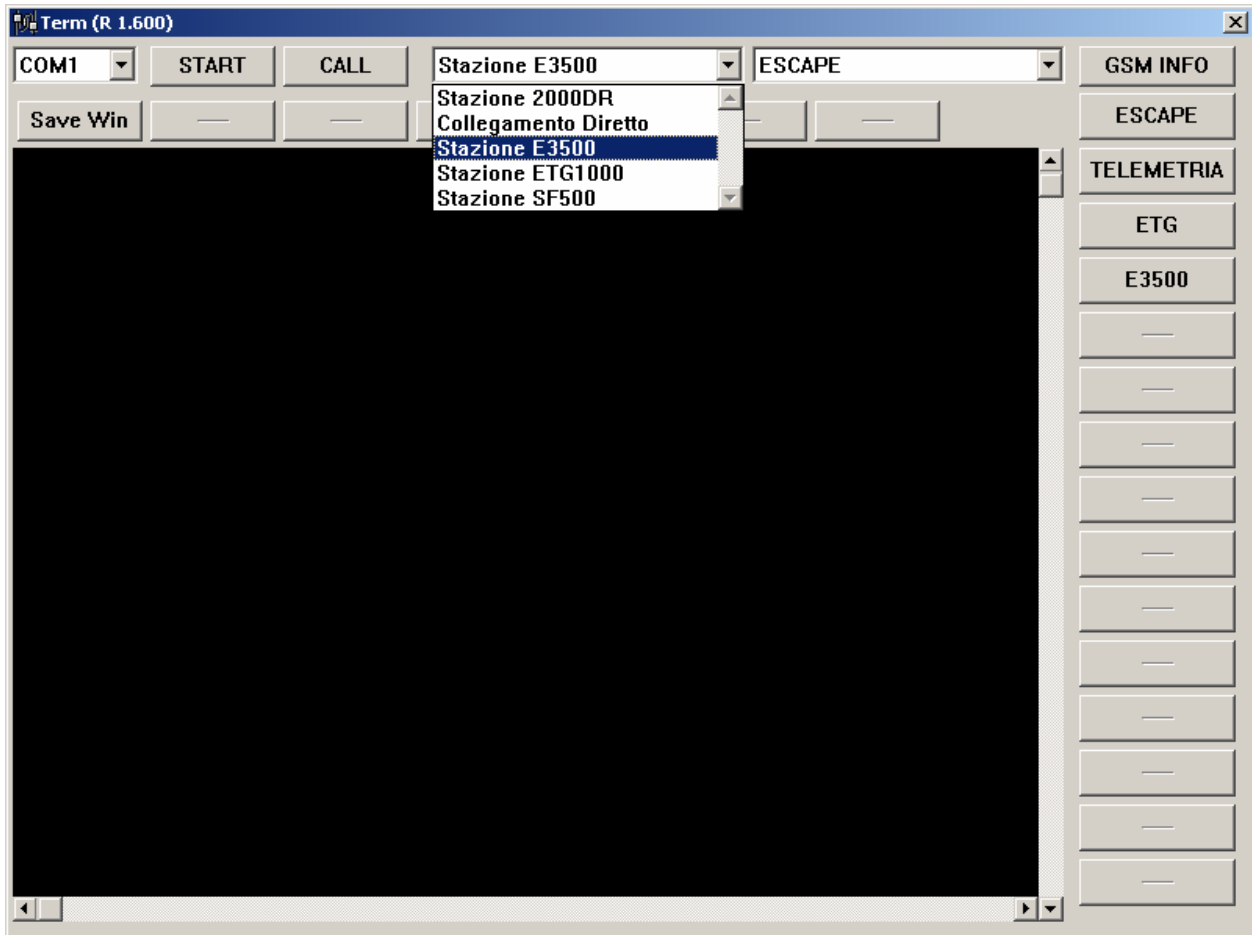
Press the TELEMETRY key. The telemetry main menu will appear on the screen.



3.2 CONNECTION ON SITE

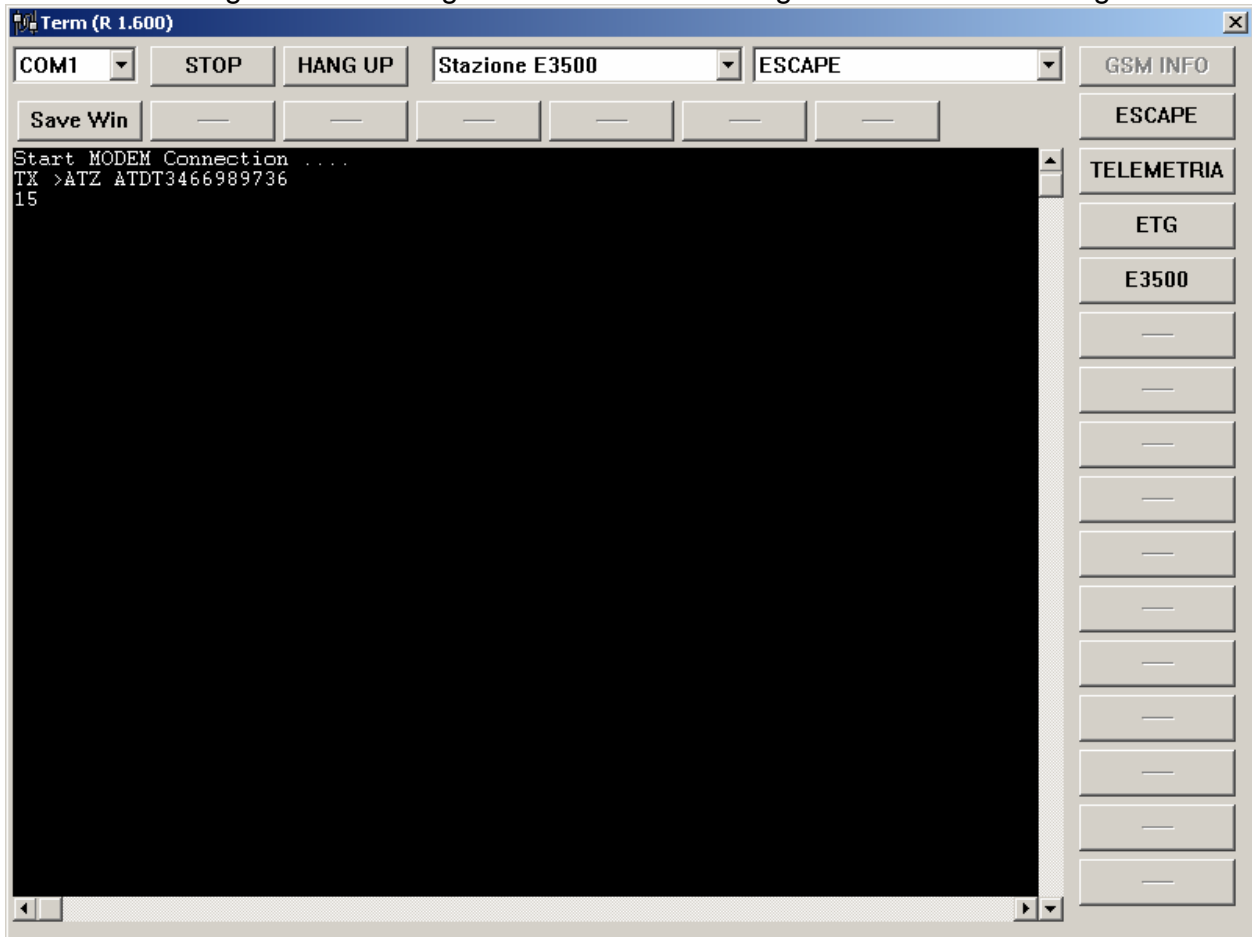
Proceed as follows to select a site and place a call:

3.2.1 Selecting the site from the menu



3.2.2 Pressing the CALL key to place a call

Modules can begin to be interrogated when the modem gives the CONNECT signal.



3.3 MODULE SELECTION

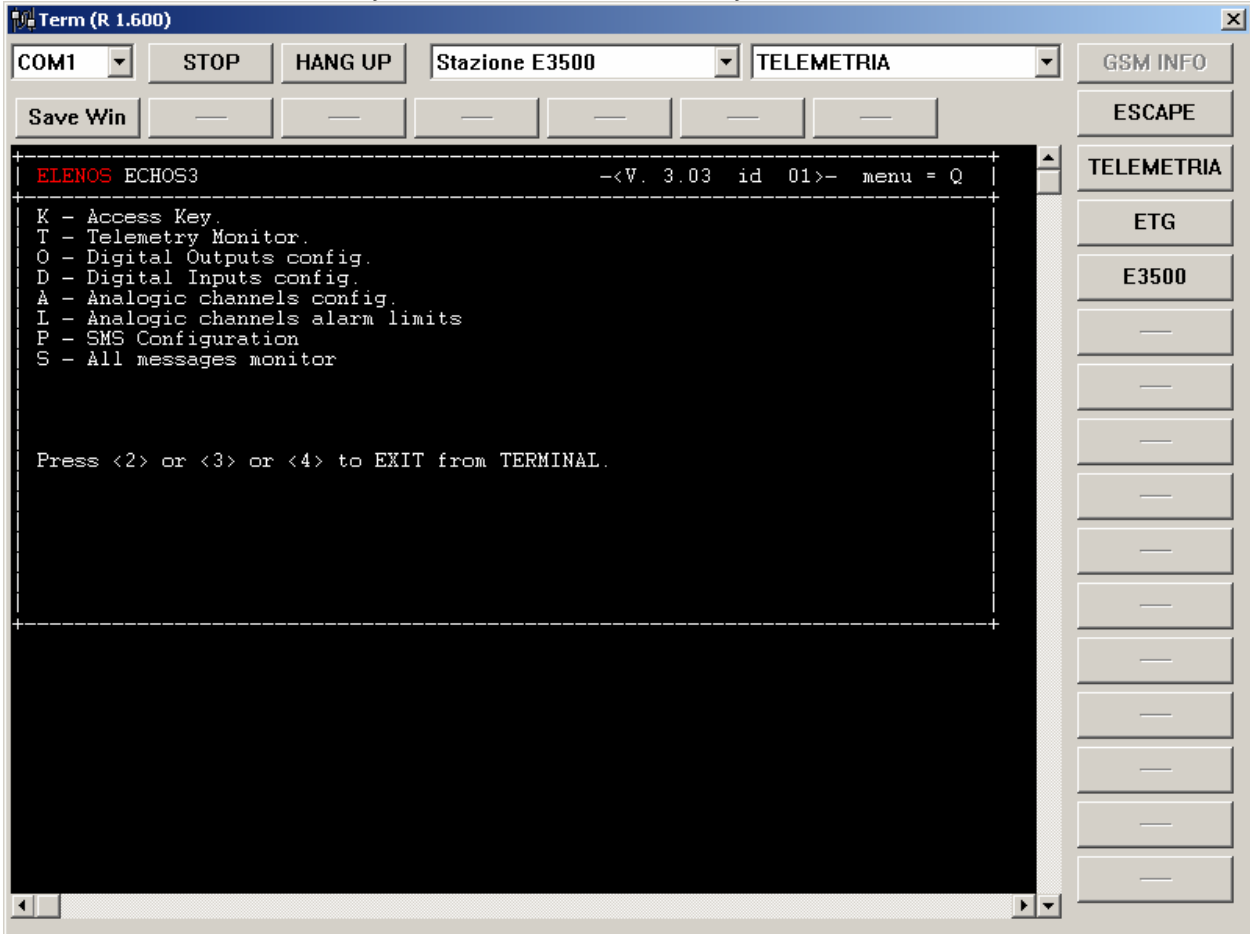
Keys corresponding to each module or system logic address are found on each single site. Once connected with the site either directly or via modem, keys with modules present on the site will appear to the right of the TERM window. These keys activate macros which sends a sequence of characters necessary for connection to the module, for example: "21I00" to connect to the transmitter or "21i10" to connect to the ETG, etc.

It is always possible to type the connection character sequence directly on the TERM control line without using the keys.

Typical selection windows for choosing different site modules are shown below.

3.3.1 SELECTING A TELEMETRY MODULE

Press the TELEMETRY key to enter into the telemetry main menu.



From the telemetry main menu it is possible to navigate through different menus to see the status of inputs and outputs or to set alarms or phone numbers.

The most used menus for consulting telemetry status are the "T" Telemetry Monitor and the "S" All Messages Monitor menus.

T “Telemetry Monitor” Menu

A status summary of telemetry inputs and outputs can be seen in this menu.

COM4 STOP HANG UP Stazione E3500 TELEMETRIA GSM INFO

Save Win

ELENOS ECHOS3 -<V. 3.03 id 01>- menu = Q

STATUS:====> 00 CORRECT WORKING

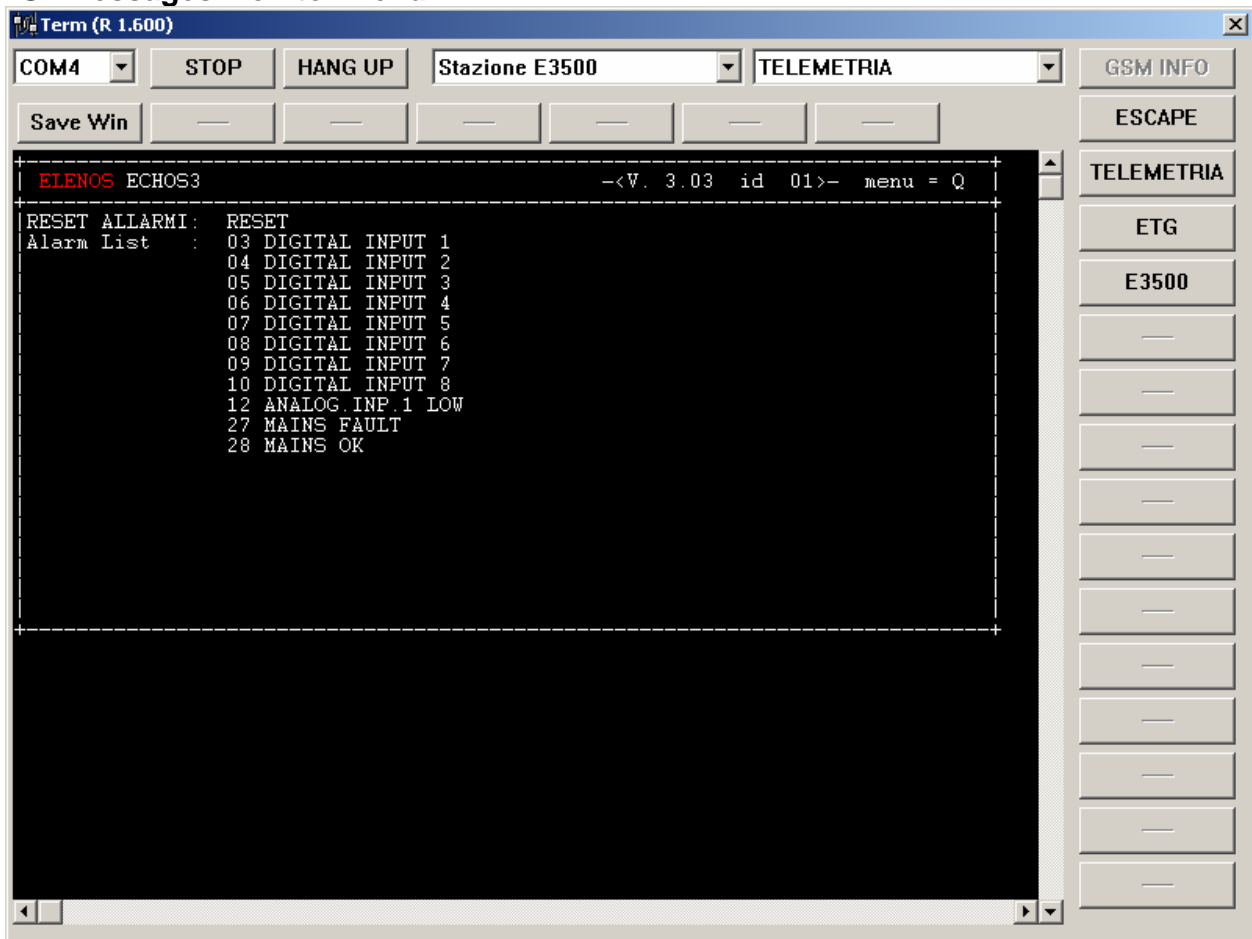
ANALOG INPUT:			DIGITAL INPUT:		DIGITAL OUTPUT:	
Name	Value	M.U.	Name	Status	Name	Status
AI1: FWD	0.00	W	DI1: RX1	-----	DO1: INTLK	-----
AI2: RFL	0.00	W	DI2: RX2	-----	DO2: ON	-----
AI3: AIN.2	0.00	V	DI3: PRESS	-----	DO3: OFF	-----
AI4: AIN.3	0.00	V	DI4: UPS	-----	DO4: RESET	-----
AI5: AIN.4	0.00	V	DI5: DOOR	-----	DO5: DOU.4	-----
AI6: AIN.5	0.00	V	DI6: AUX1	-----	DO6: DOU.5	-----
AI7: AIN.6	0.00	V	DI7: AUX2	-----	DO7: DOU.6	-----
AI8: AIN.7	0.00	V	DI8: AUX3	-----	DO8: DOU.7	-----

TELEMETRIA

ETG

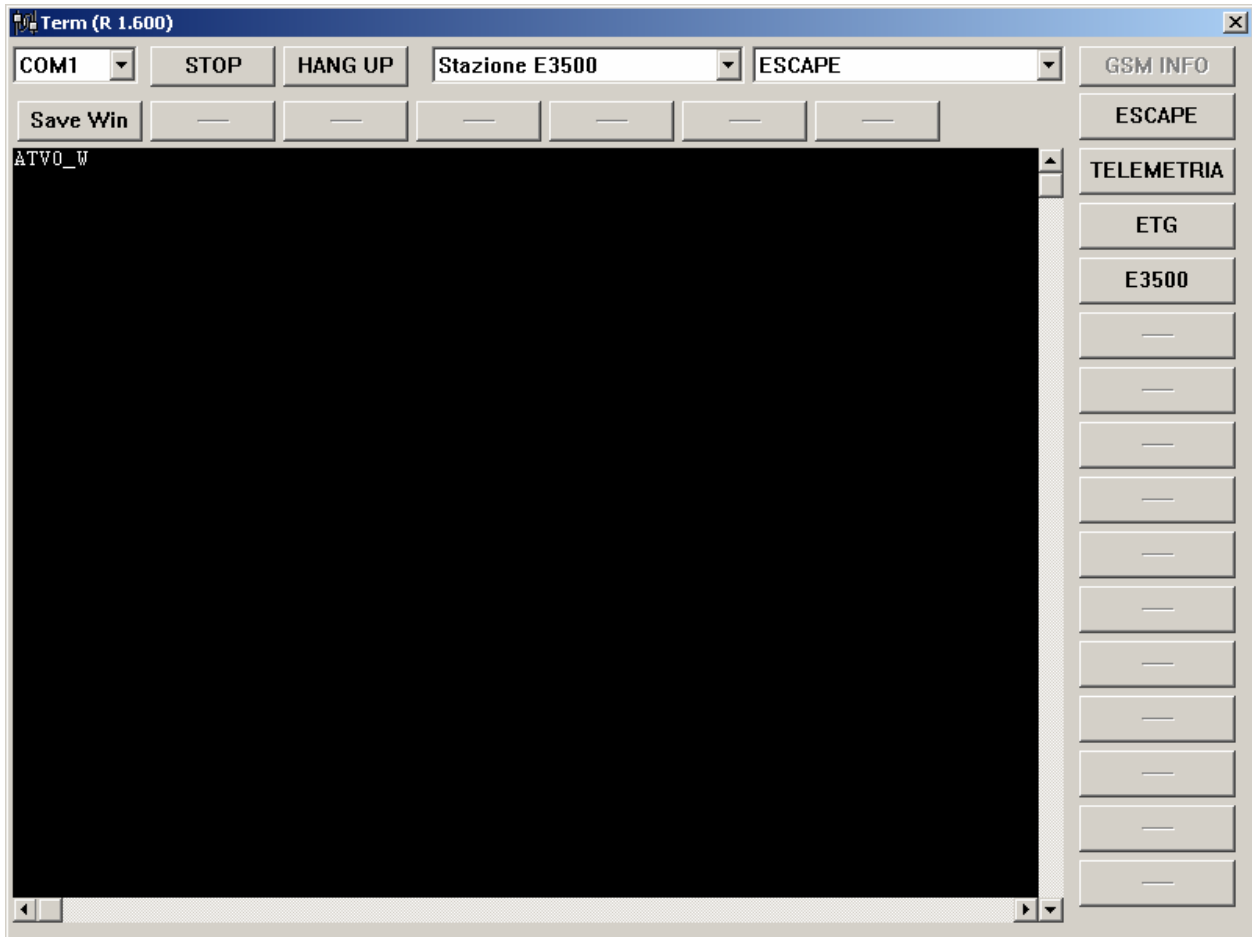
E3500

“S” Messages Monitor Menu



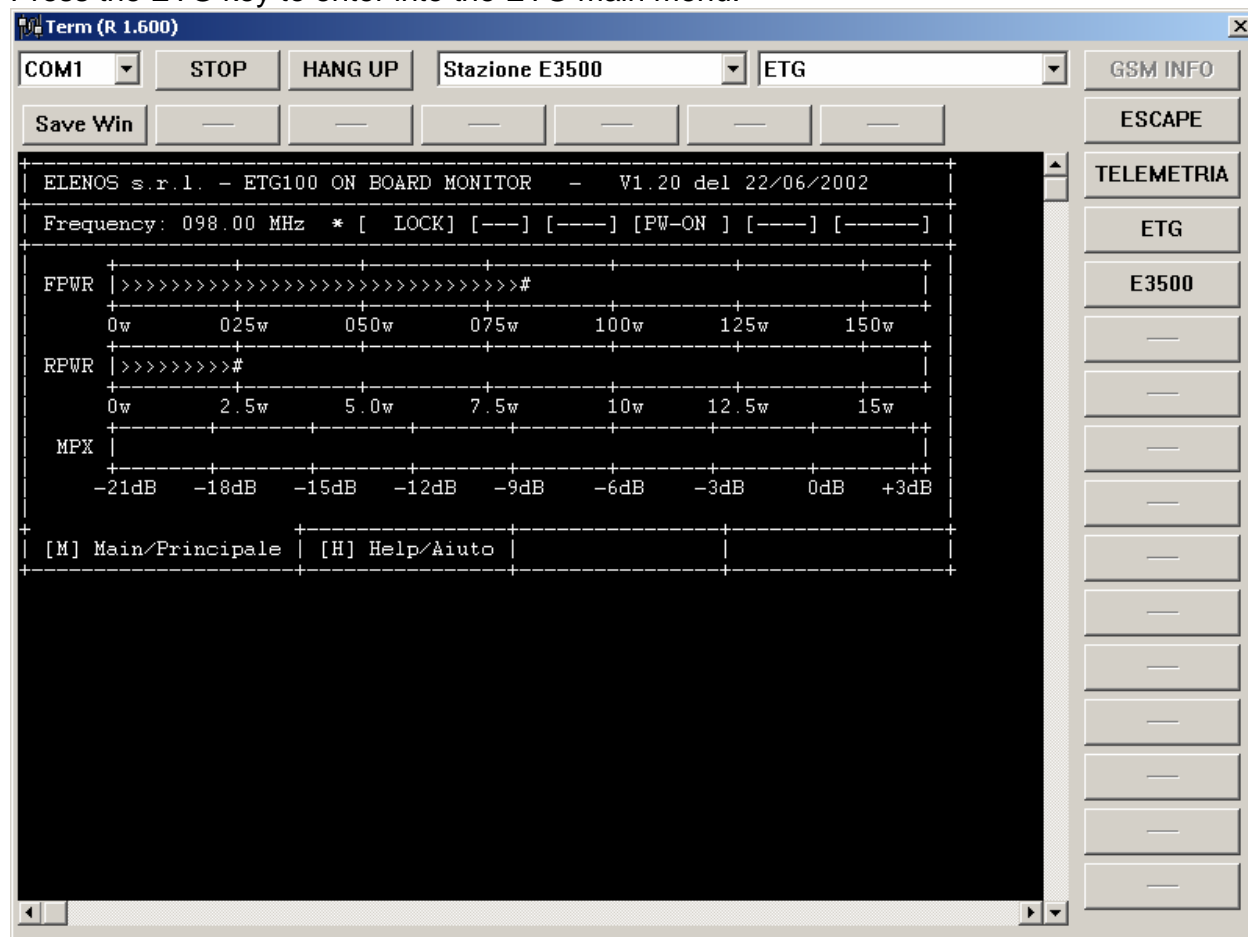
Disconnect from the Telemetry with the ESCAPE key

To exit from the telemetry before entering into another menu or before HANG UP, press the ESCAPE key and wait for the message ATVO_W. This message indicates that the TELEMETRY has been disconnected and that the system has returned to transparent mode. Other modules can now be interrogated.



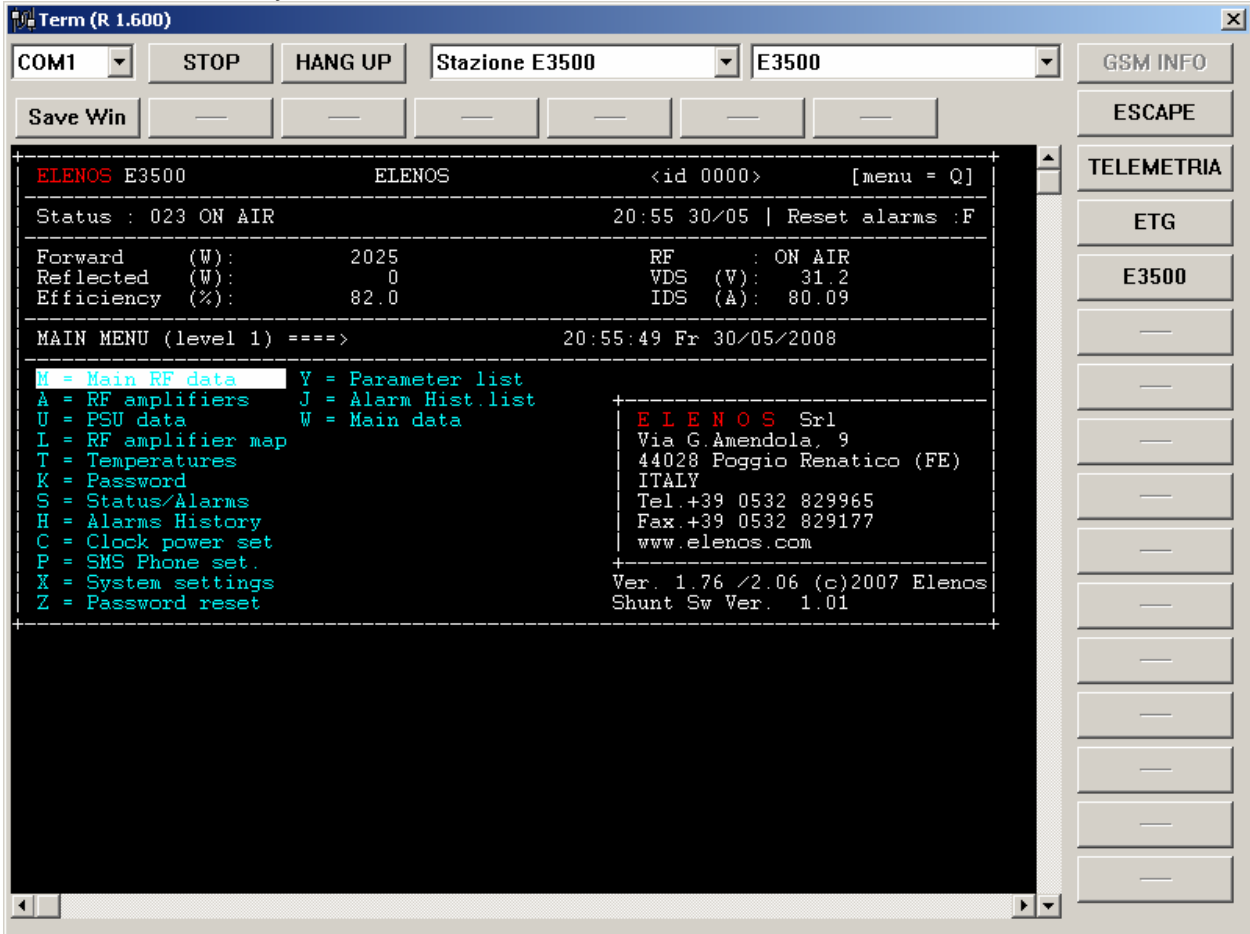
3.3.2 SELECTING THE ETG MODULE

Press the ETG key to enter into the ETG main menu.



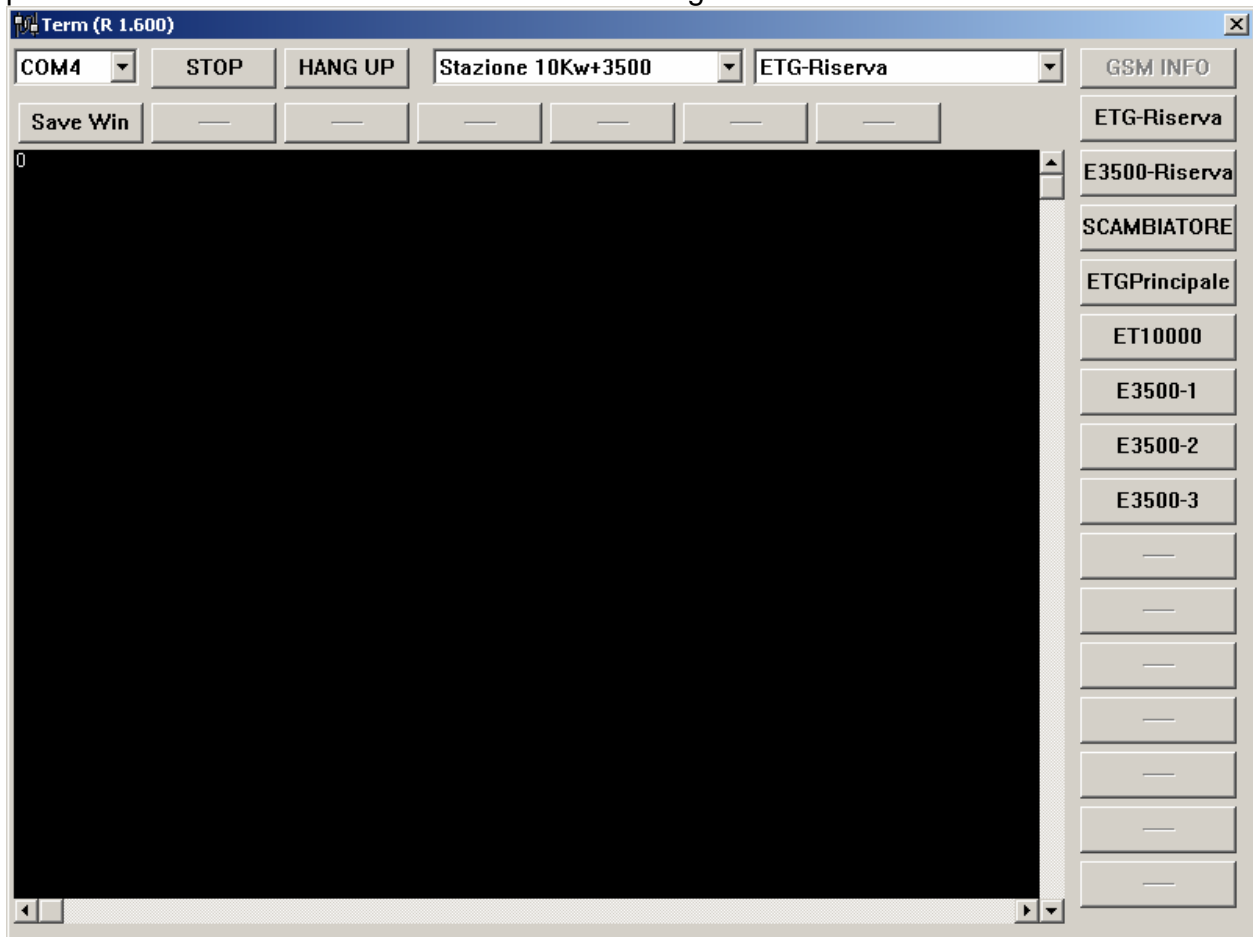
3.3.3 SELECTING THE E3500 MODULE

Press the E3500 key to enter into the E3500 main menu.



3.3.4 EXAMPLE OF OTHER SITE CONFIGURATIONS

An example of a site with an E10K+3.5K system composed of a 10KW transmitter with a passive reserve of 3.5KW is shown in the following screenshot.



3.4 PROCEDURE FOR ENTERING PHONE NUMBERS AND SMS PROGRAMMING

Once you have been connected on site, either directly or via modem, the first thing to do is to set the phone numbers to which the system will send alarms via SMS messages.

For ETG, SF, HF systems or single telemetries, programme the phone numbers in the telemetry memory.

For E3500 systems or components of the same family and E2000DR or E5000K systems, also programme phone numbers in the transmitter memory.

The telemetry uses these phone numbers to send all external alarms or a Mains alarm.

The transmitter uses the phone numbers to send -3dB or exciter exchange alarms or other alarms managed by the internal telemetry.

Operations to perform to programme phone numbers are as follows:

Enable the type of phone used (i.e. GSM) and set controls which can be carried out in the SMS MESSAGE USE string.

Set the type of transmitter connected to the telemetry.

Verify that SMS CENTER phone number and signal level are present.

The first field to be configured is "ID STRING" which during production is set as "ELENOS". This must be set with a string identifying the equipment and/or the site (maximum 10 alphanumeric characters).

The next field to set is the "PHONE N. x" which must contain the phone number to be contacted. These numbers will be enabled to send and receive SMS messages.

ATTENTION

Enter phone numbers (leaving no empty spaces at the beginning) in the international format (i.e. +393371234567) and programme access privileges for each number.

"ENABLE THIS ACCOUNT" globally enables (TRUE) the transmission and receipt of SMS alarms from the telemetry.

"ENABLE STATUS REQUEST" enables (TRUE) the possibility of requesting status via SMS.

"ENABLE COMMAND EXECUTE" enables (TRUE) the possibility of carrying out controls sent via SMS.

"ENABLE GLOBAL ECHO RX" provides for sending any control echoes made by other users (TRUE).

"ENABLE DIG. SMS" provides for sending messages in ASCII hexadecimal format without descriptions (TRUE).

Once configuration has been completed, enable the SMS ENABLE field, setting it at TRUE.

The system will ignore any SMS received from phone numbers not entered in the list or entered but disabled in the "ENABLE THIS ACCOUNT" field.

3.5 Description of parameter modifications and video screen change for "Telemetry", "Scambio 1+1", "E2000", "E3000", "E5000".

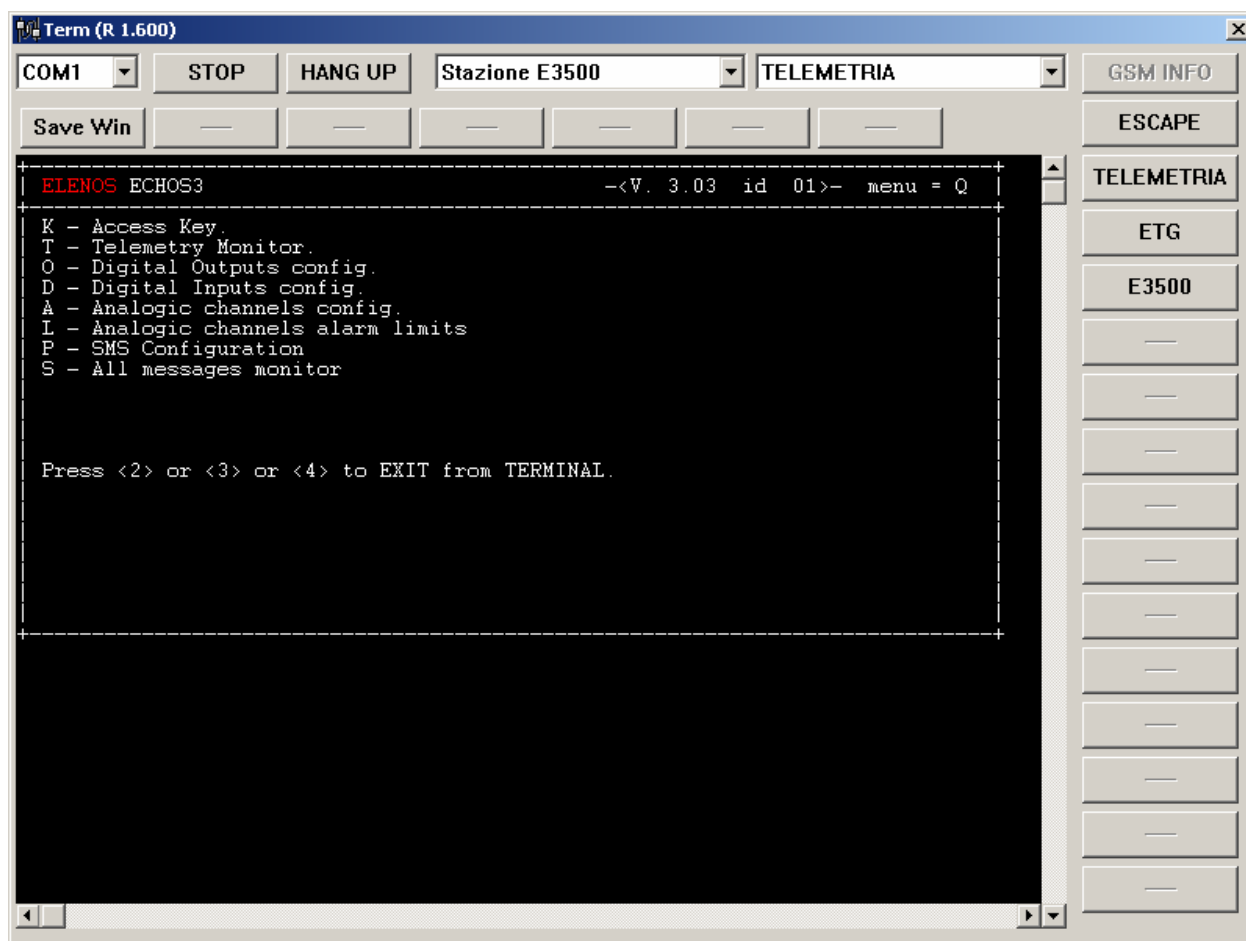
1. Enter the password to modify parameters:
2. Type the letter "K" in the main menu.
3. Press Enter.

4. Type the password with the numerical keys directly in the telemetry.
5. Select the first digit of the password via the cursor keys (arrows) in the other equipment. Selection is visible with the white background and blue text of the highlighted characters or parameters. 2. Then press the "Enter" key to modify the character. This can be verified by the change in colour of the text of the highlighted character which goes from blue to red.
6. Press the arrow keys up and down to set the desired number.
7. Once entering has been completed, press the "Enter" key to close modifications.
8. Move to the next password character by pressing the right cursor key, then modify the selection.
9. Repeat the procedure described in point 2, then press the "Enter" key for all password digits.
10. Once entry has been completed, exit from the screen and return to the main menu via the "Q" key.
11. It is now possible to modify parameters present in the various screens.

3.6 *Programming phone numbers in the Telemetry*

This is the main menu screen which appears after having pressed the TELEMETRY key or typing "21i01".

First press "K" from this menu to set the password, then select R to configure the transmitter type to be connected and then select "P" to set the phone numbers enabled for sending and receiving SMS.



Type the letter "K" in the main menu to enter into the "Access Key (PASSWORD)" menu.

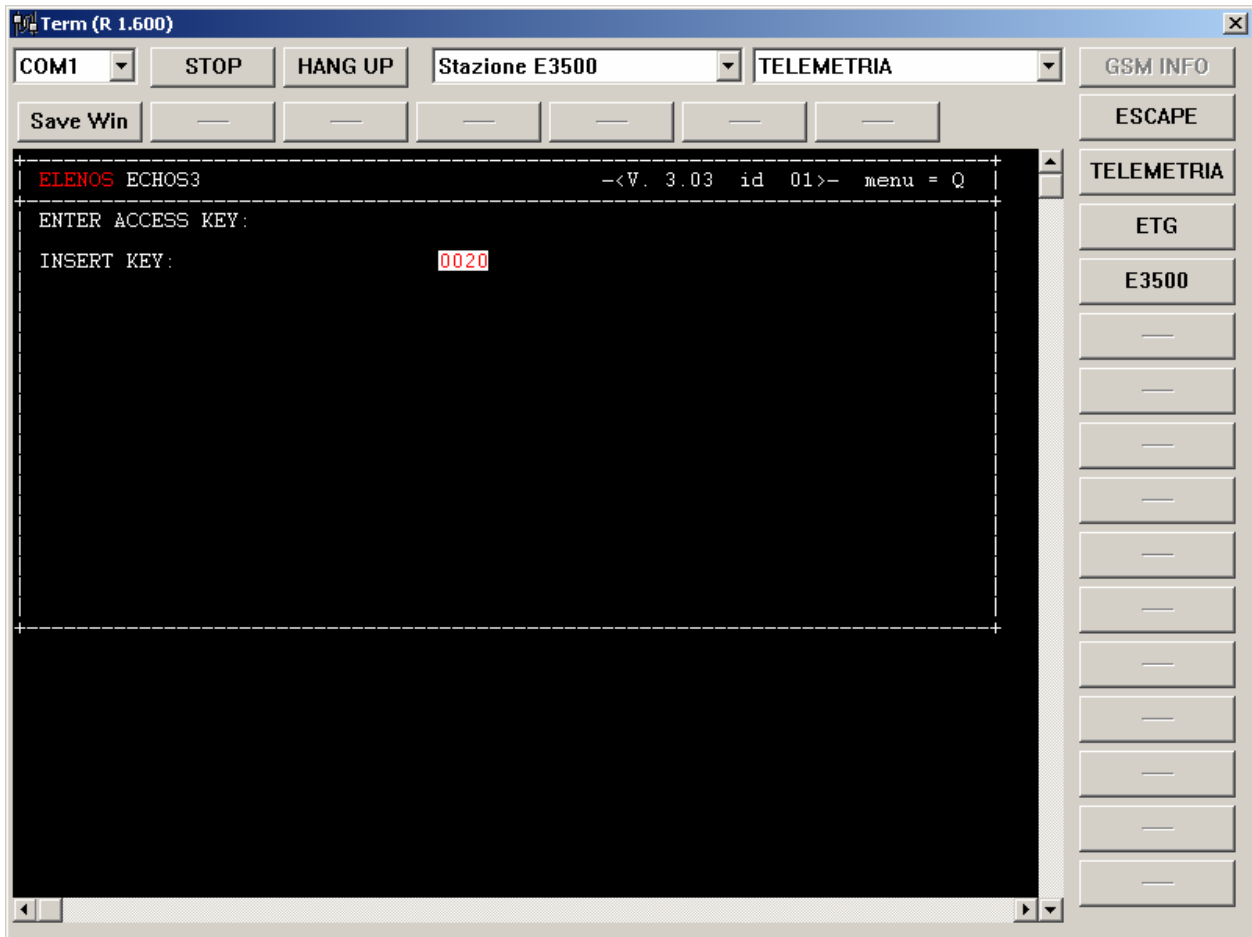
Press the ENTER key on the PC keyboard to enter into edition mode. The characters which were blue will become red which means that the system has gone into entry mode.



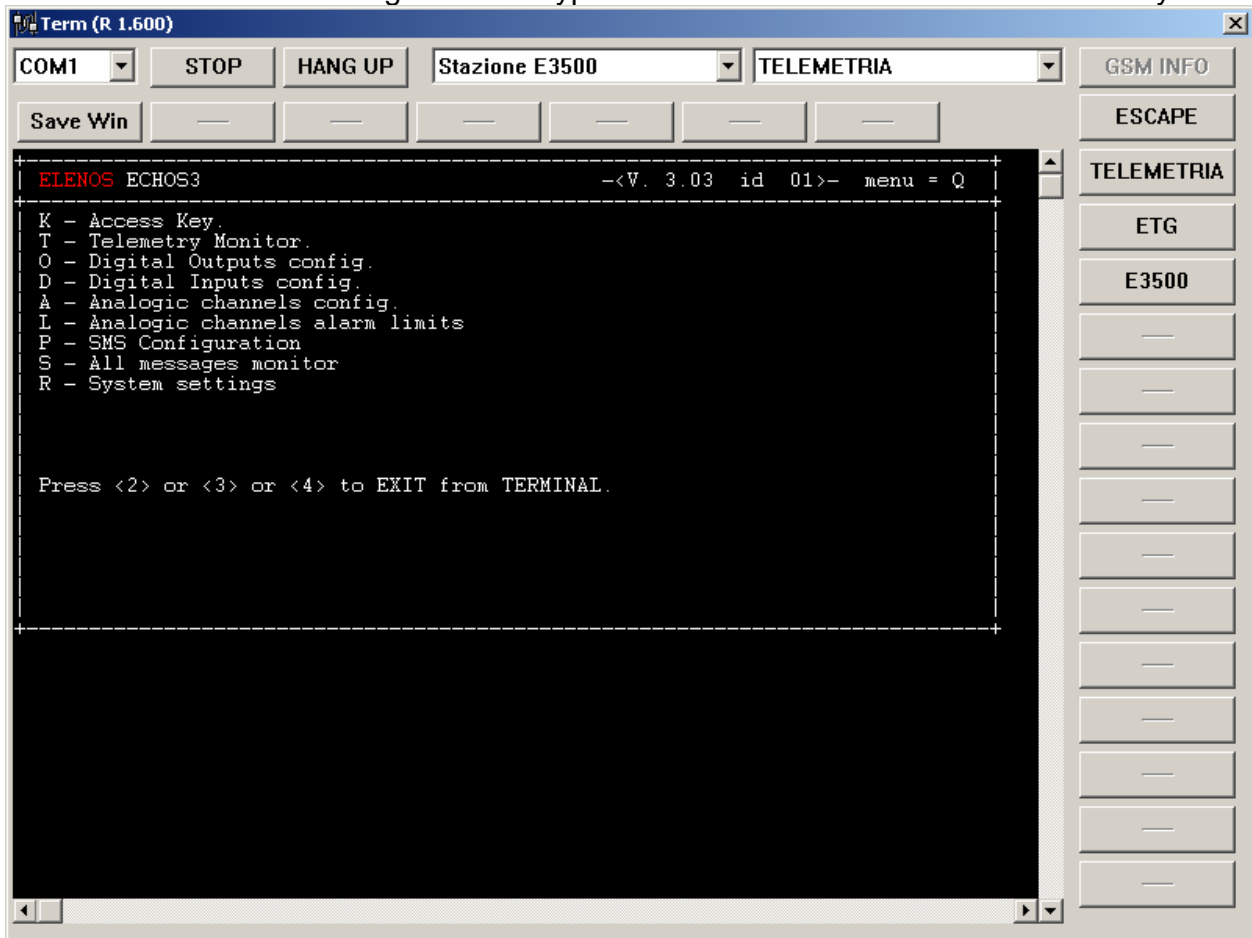
Enter the password set by the factory at 0020 or, if it has been changed, type in the new password.

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Press ENTER to confirm the password and return to the main menu. An "R" System Settings message, which was not present before the password was entered, will now appear on the main menu.

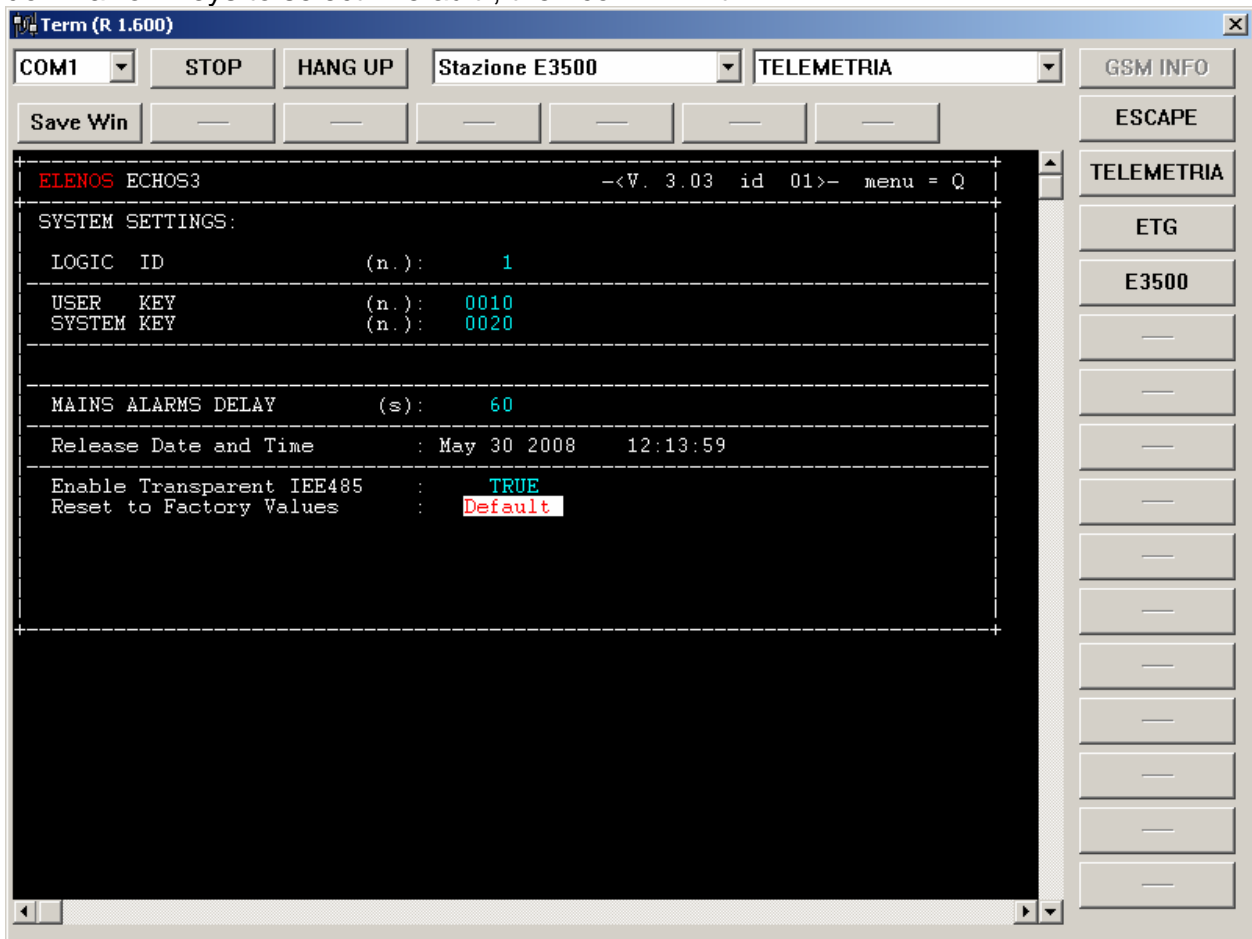


Choose the R menu heading to set the type of transmitter connected to the telemetry.



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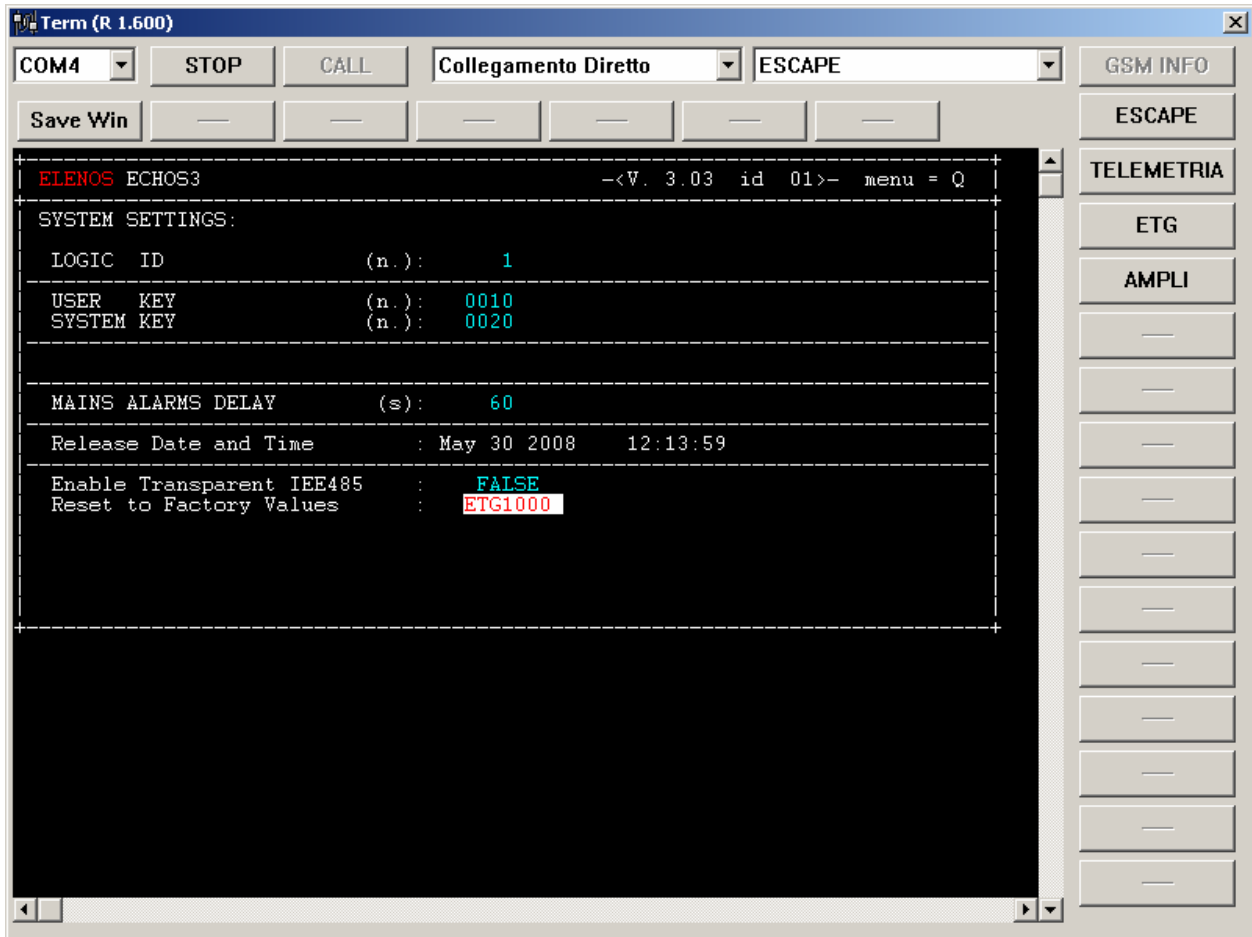
Move the cursor to "Reset to Factory Values" heading, press ENTER and use the up and down arrow keys to select "Default", then confirm with ENTER.



Configuring different types of transmitters

It is possible to select configuration of different types of transmitters from the "Rest to Factory Values" heading in this menu. An example of an ETG1000 selection is shown in the screenshot below. Other possible configurations include:

EGTG30, ETG150, ETG300, ETG500, ETG1000, SF500, HF1000. Choose the DEFAULT configuration for all transmitters in the E3500 family, E2000DR or E5000K.



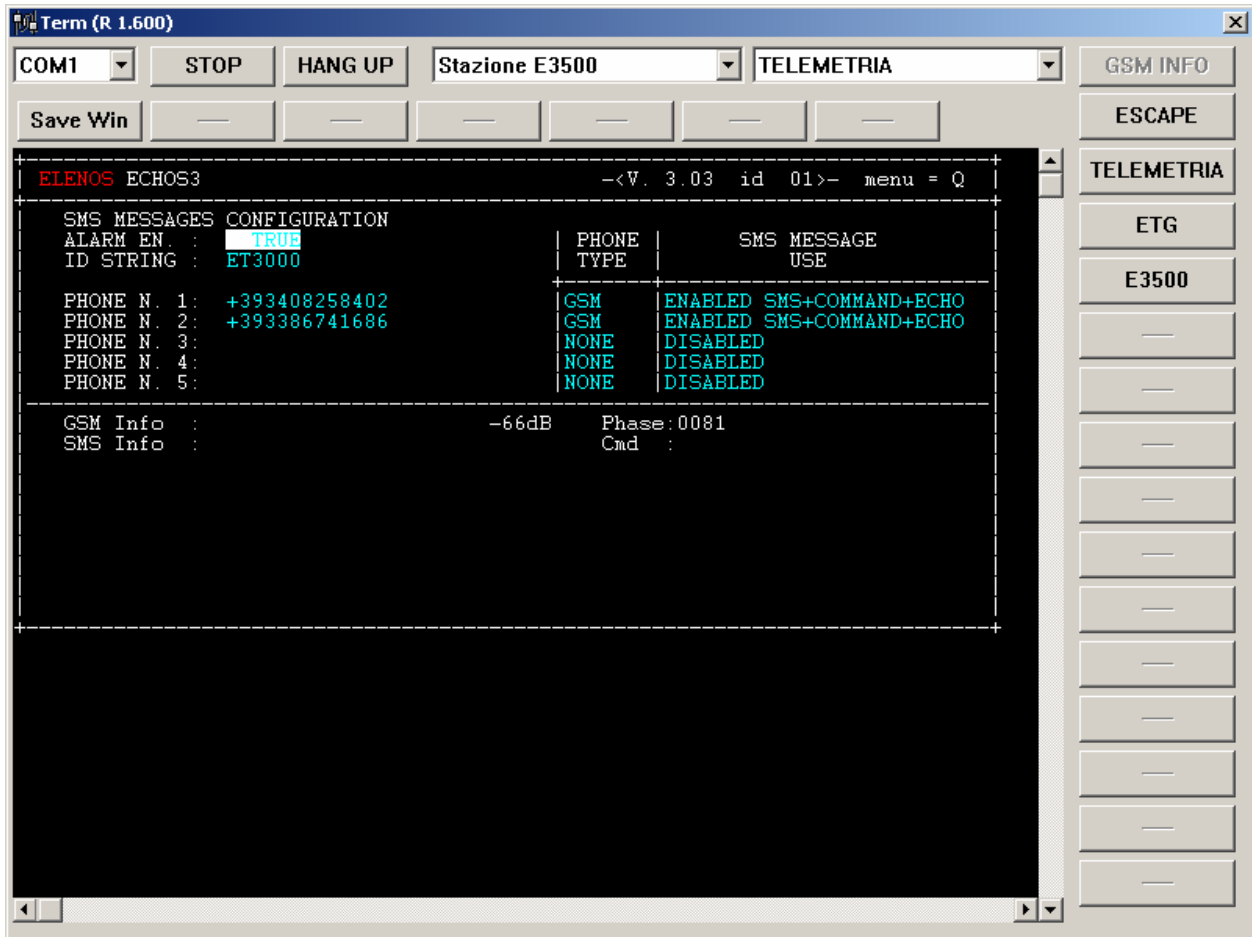
Press Q to return to the main menu.

Select the SMS Configuration menu heading by pressing the P key.

Within this menu, set:

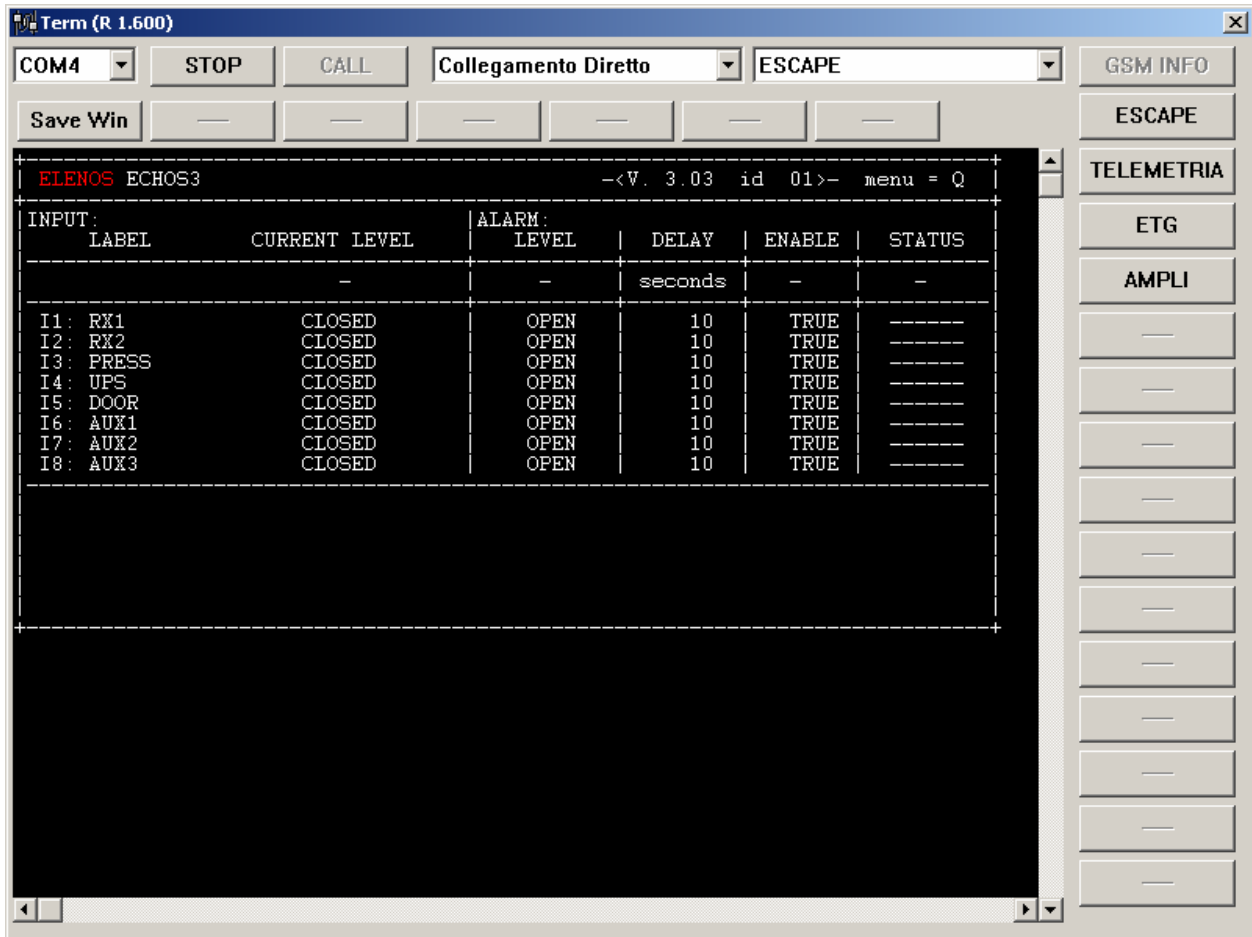
ALARM_EN.= TRUE

Enter the name of the site in the "ID STRING" string



Programming Digital Inputs

The TELEMETRY is reset during production with the following digital input programming. Programming of these inputs can be changed if necessary but remember that the TELEMETRY resets default values whenever transmitter configuration is changed with the menu heading Reset to Factory Values.

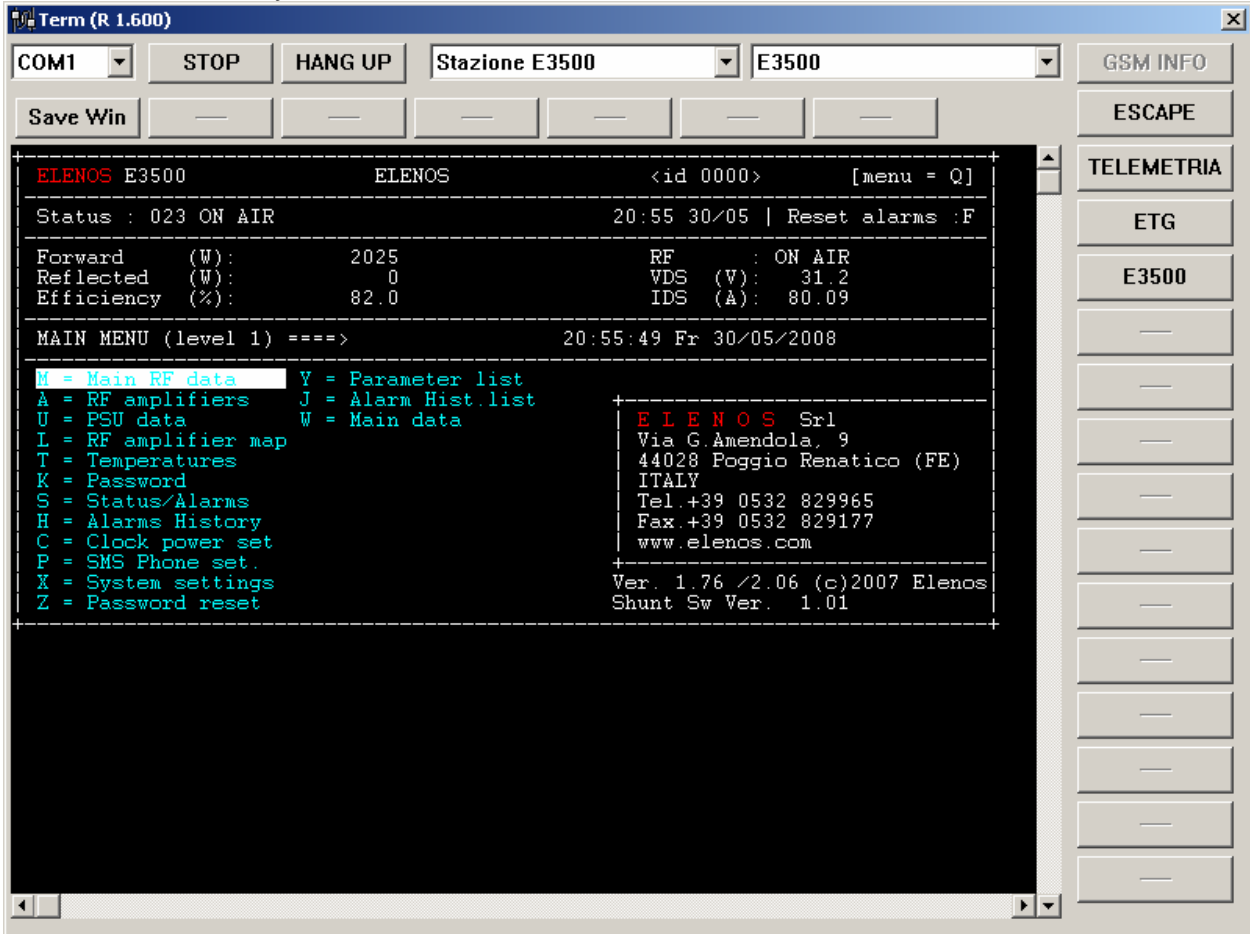


Once all parameters have been set, press q to return to the main menu and press the ESCAPE key to exit from telemetry.

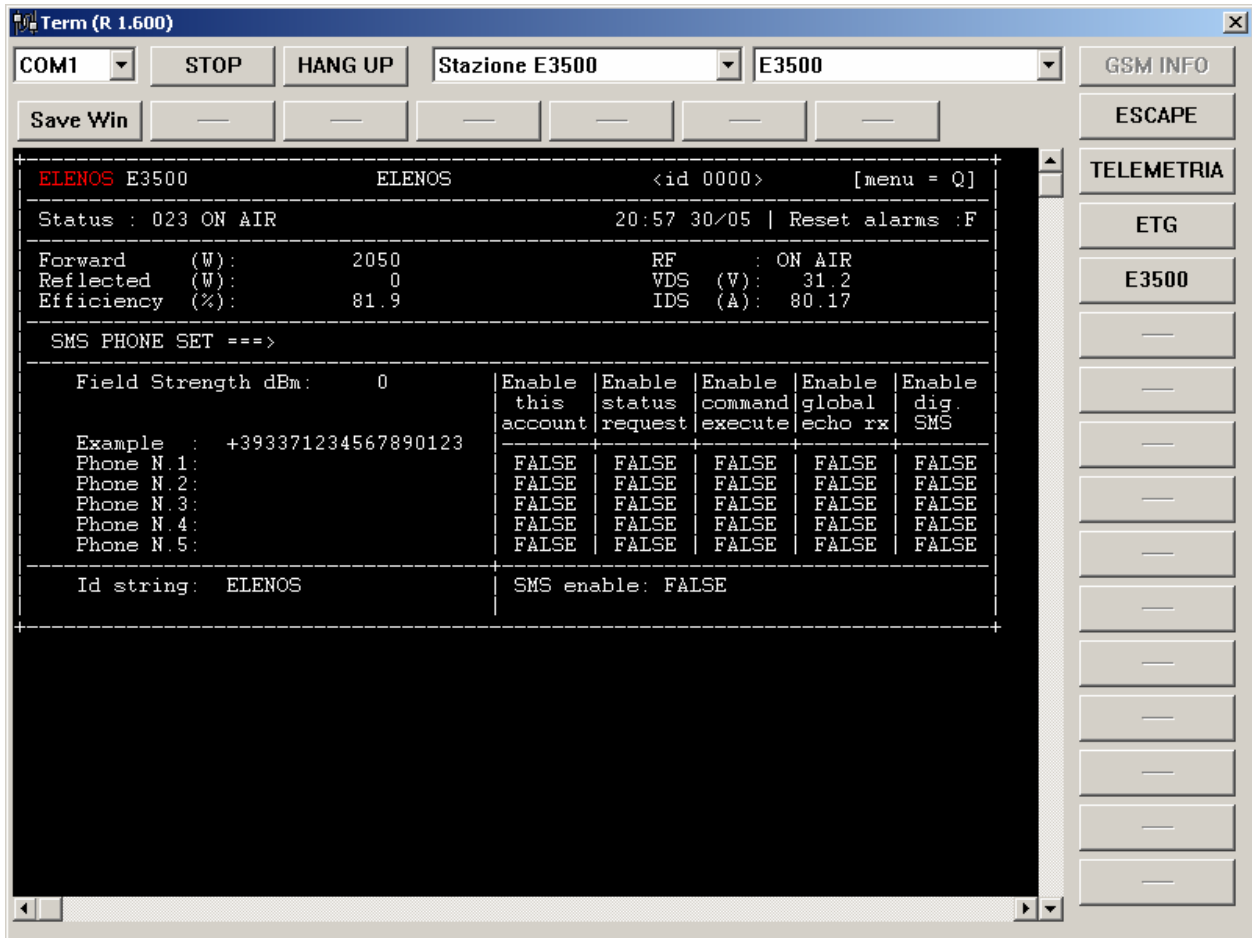
Press ESCAPE to exit from the telemetry main menu.

3.6.1 Entering phone numbers in the E3500 or Family transmitters

Press the E3500 key to enter into the E3500 main menu.



Select the SMS Configuration menu heading by pressing the P key.



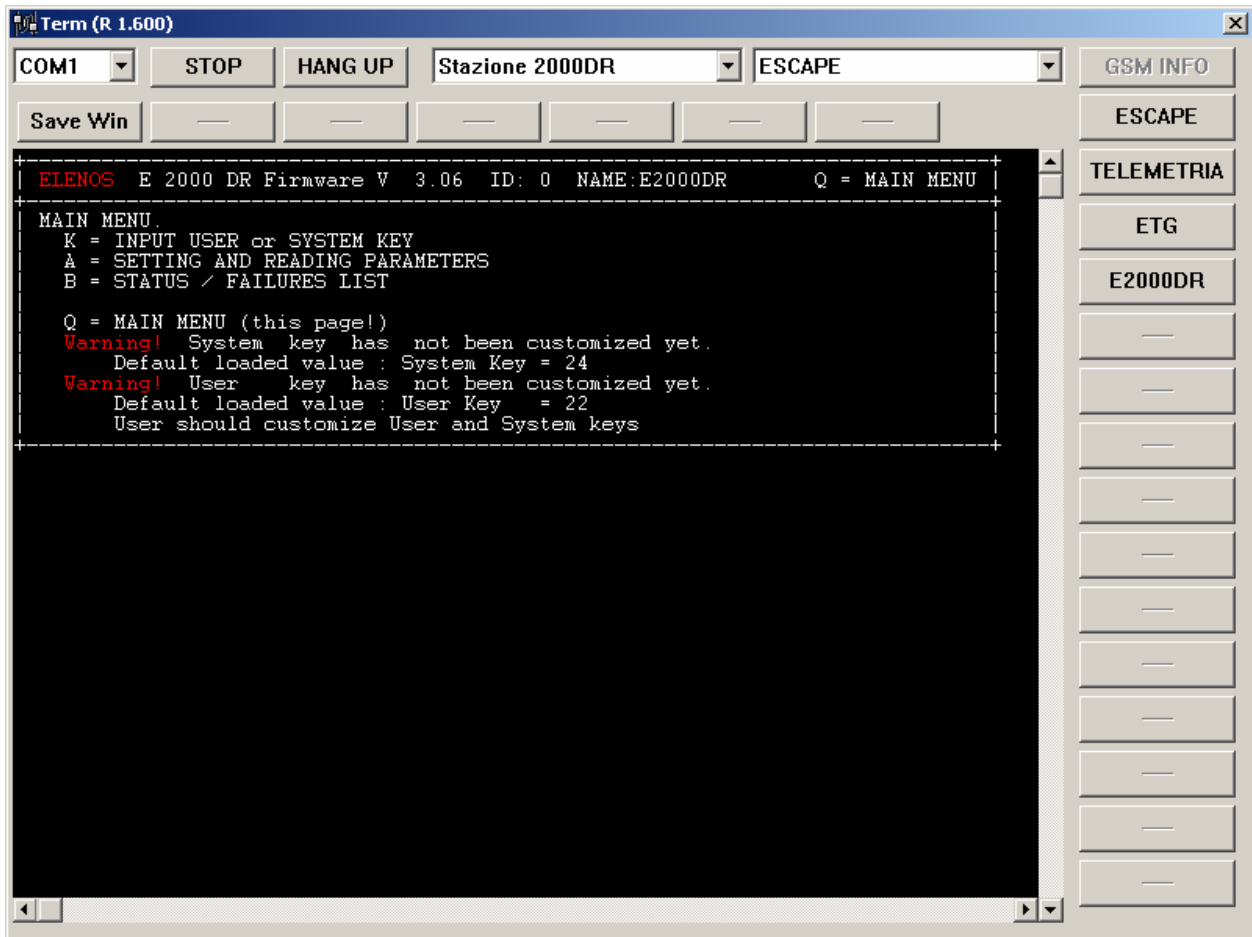
The programming procedure is now complete.

3.6.2 Entering phone numbers in the E2000DR or E5000K transmitters

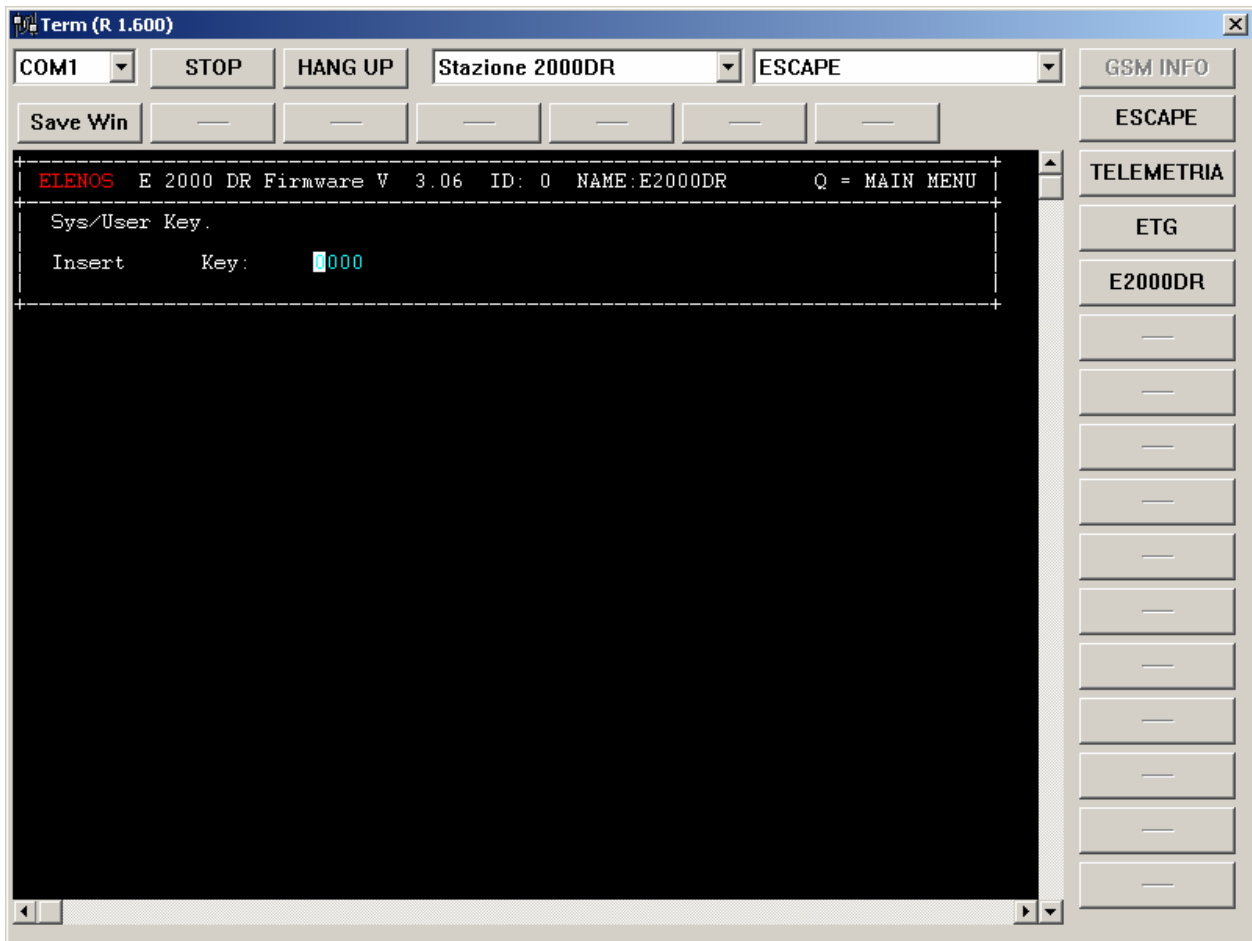
To programme phone numbers of the E2000DR or E5000K transmitter memory, connect with the transmitter following the procedure for direct or modem connection. Once connected, connect with the E2000DR or E5000K modules pressing the corresponding key or by typing connection character sequence "21100".

Transmitter E2000DR or E5000k main screen

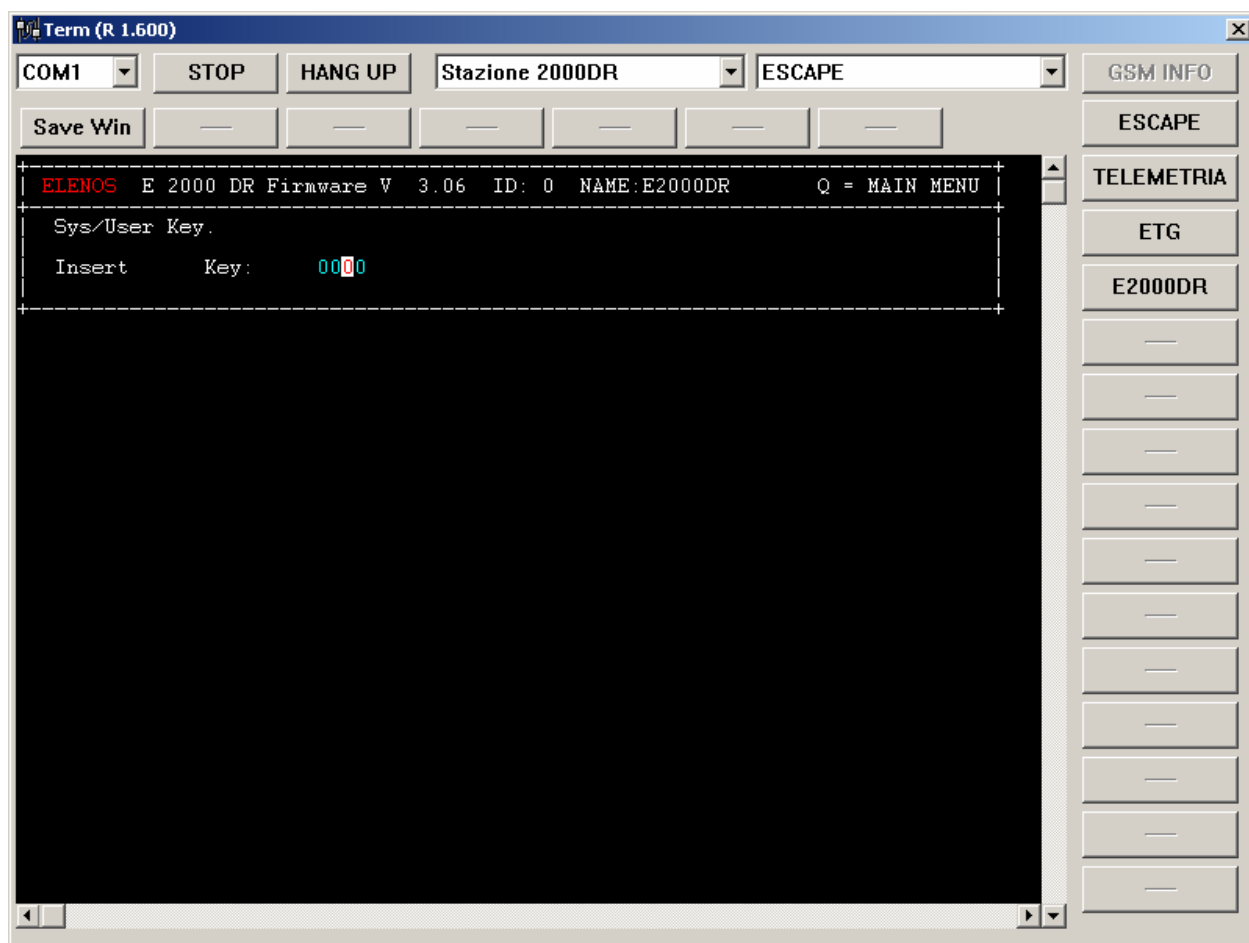
To programme phone numbers of the E2000DR or E5000K transmitter memory, connect with the transmitter following the procedure for direct or modem connection. Once connected, connect with the E2000DR or E5000K modules pressing the corresponding key or by typing connection character sequence "21100".



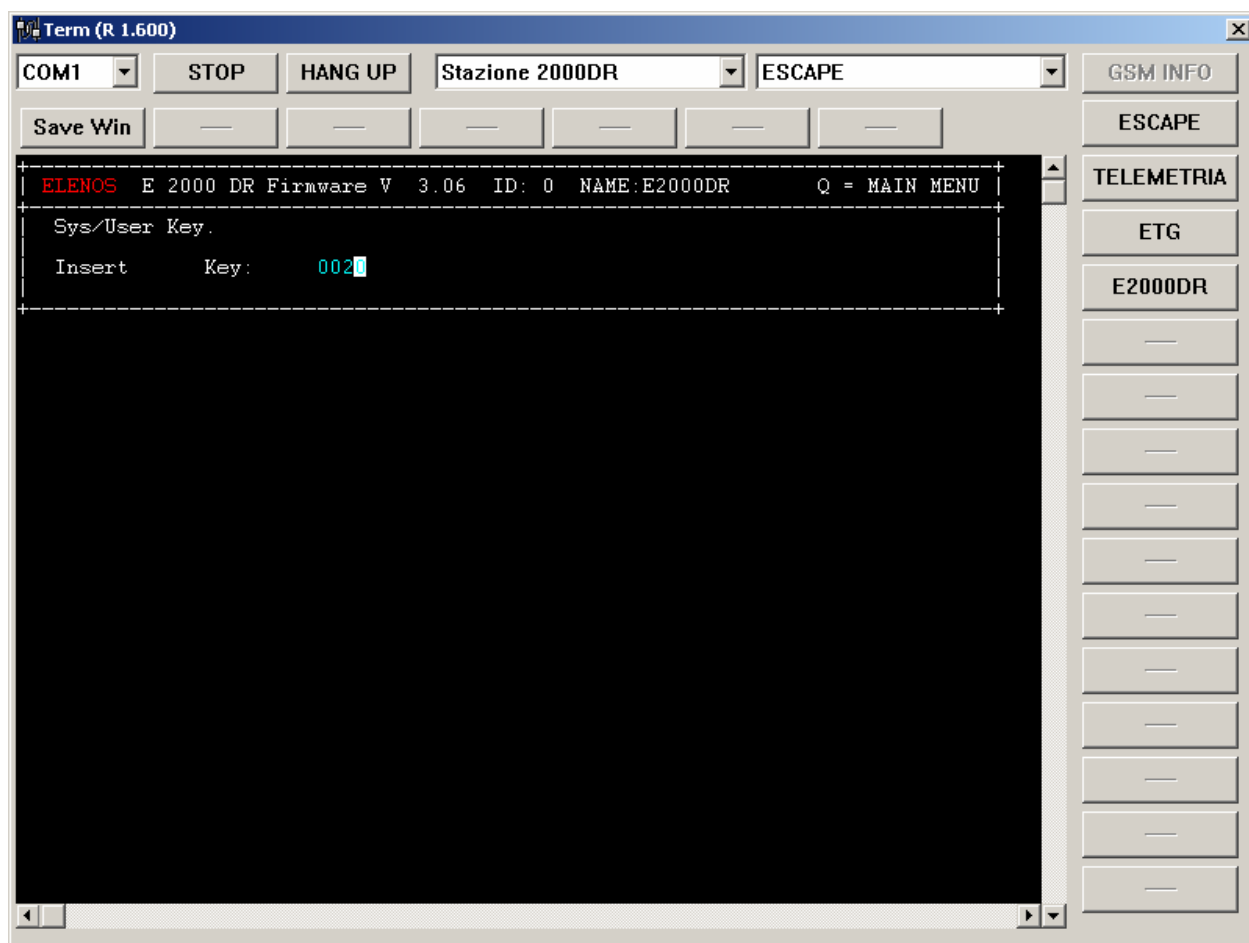
Enter the K menu to enter the password.



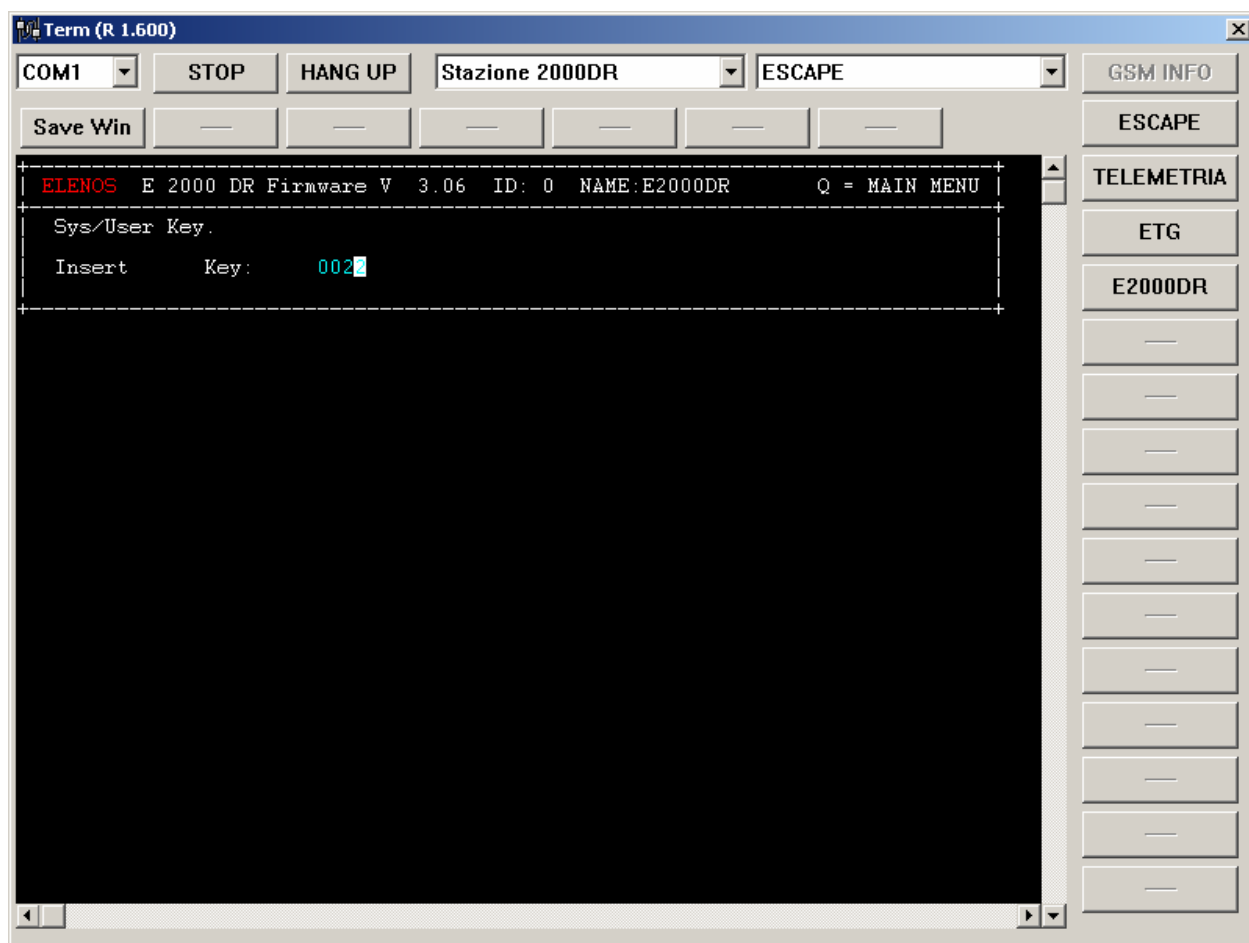
Use the arrow keys to move over the digits, select the digit you would like to change with the ENTER key. The digit will become red.



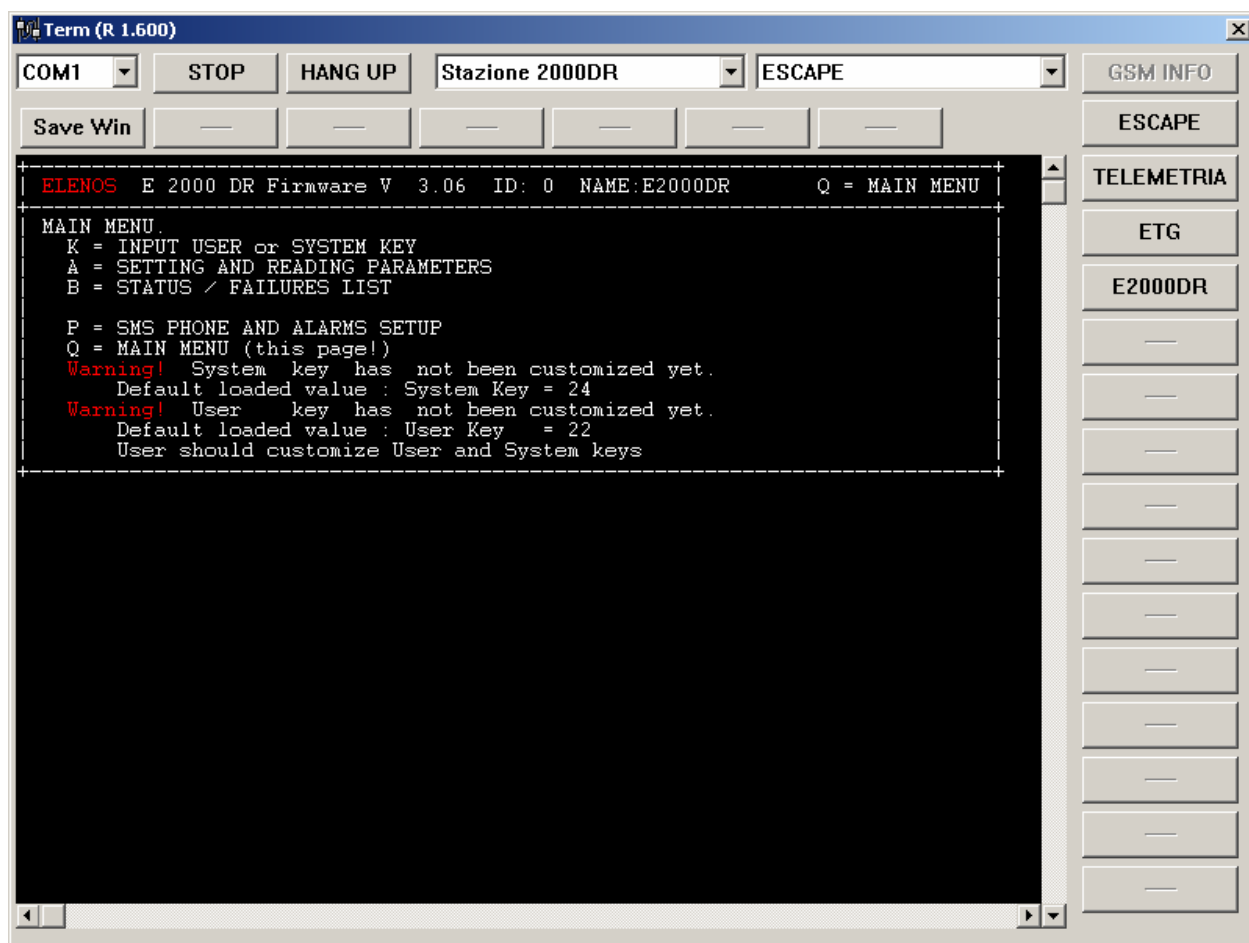
Move the UP and DOWN arrows to select the desired value and confirm with ENTER.



The default password for the E2000DR is 22 or 24.



Press Q to return to the main menu.



Programming phone numbers and enabling alarms.

Term (R 1.600)

COM1 STOP HANG UP Stazione 2000DR ESCAPE

Save Win

GSM INFO

ESCAPE

TELEMETRIA

ETG

E2000DR

ELENOS E 2000 DR Firmware V 3.06 ID: 0 NAME: E2000DR Q = MAIN MENU

SMS CONFIGURATION	Enable this account	Enable status request	Enable command execute	Enable global echo rx
Example : +393371234567890123	TRUE	TRUE	TRUE	TRUE
Phone N. 1: +393408258402	TRUE	TRUE	TRUE	TRUE
Phone N. 2: +393386741686	FALSE	FALSE	FALSE	FALSE
Phone N. 3:	FALSE	FALSE	FALSE	FALSE
Phone N. 4:	FALSE	FALSE	FALSE	FALSE
Phone N. 5:	FALSE	FALSE	FALSE	FALSE

PWR-UP ALARM: TRUE

-3dB ALARM: TRUE

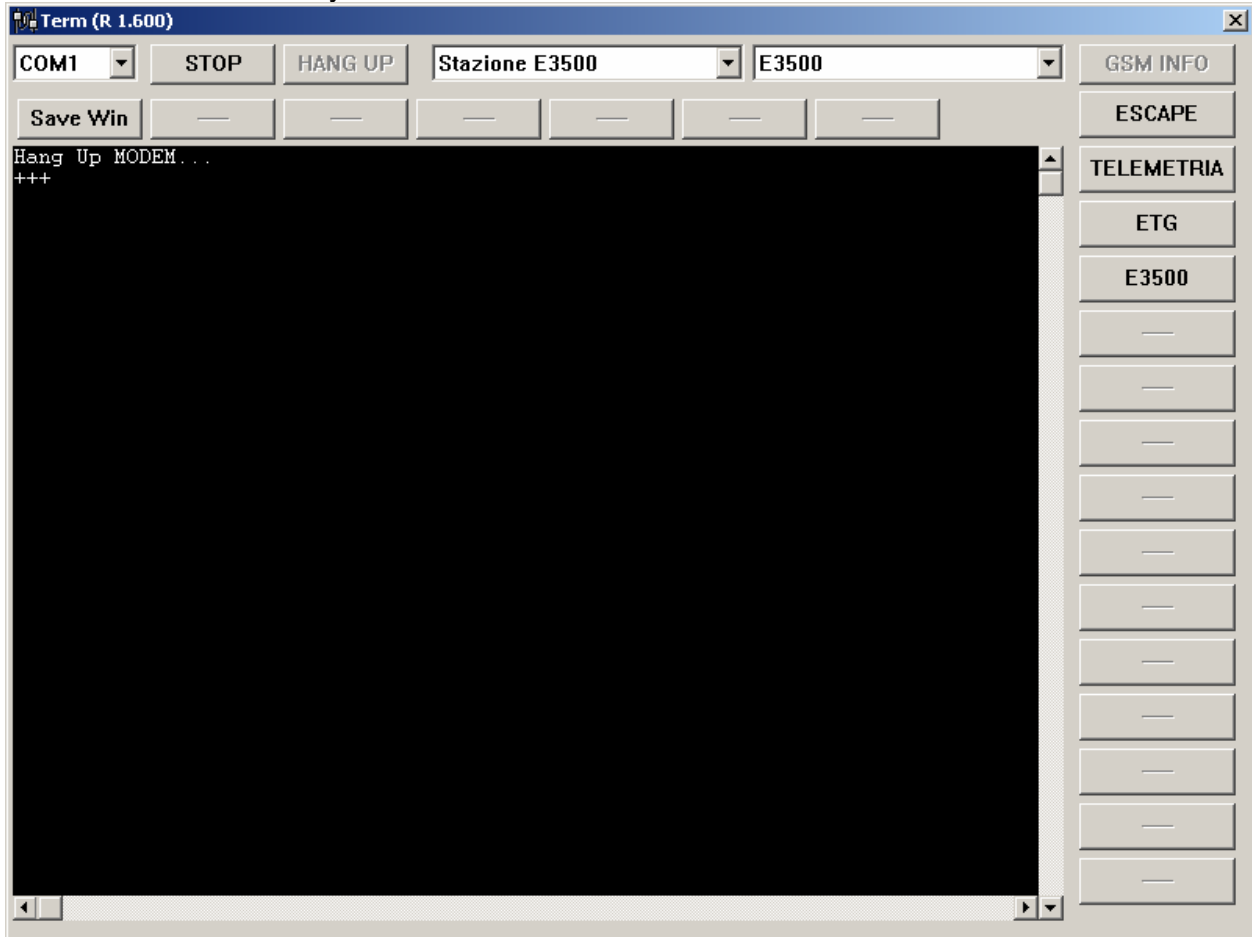
ID STRING: E2000DR

COMMAND EXAMPLE: on, PWR 1800, res
Sets PA on air at 1800W output and resets the alarm counter.
Commands must be separated by commas.
A space must be inserted between PWR and the value required.
Commands are case insensitive.

Commands: PWR 1234 - set out pwr
ON - on air
STBY - stand-by
RES - reset alarms
STS - status request

3.7 DISCONNECTING FROM A SITE

Press the HANG UP key to disconnect.



The system is now ready to re-connect to a site.

3.8 Completing telemetry programming procedure and passing to normal functioning mode

Proceed as follows if telemetry programming is performed with a direct connection:

- 1) Disconnect connector cable from the front panel called "CPU".
- 2) Press the reset key on the rear panel and verify that the "Modem Status" LED on the front panel reacts as follows:
- 3) As soon as the reset key is released, the LED will remain off for approximately 15 seconds. During this time, the microprocessor carries out internal initialisation functions.
- 4) After this period of time, the LED will begin to flash rapidly for approximately 15 seconds. During this time, the microprocessor is performing GSM Modem initialisation.
- 5) The LED will remain fixed on.
- 6) The LED flashes every time the telemetry must send a message.

The telemetry is now configured to function with the ETG family transmitter.

Test system functionality sending a "TSTS" and an "STS" sms

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