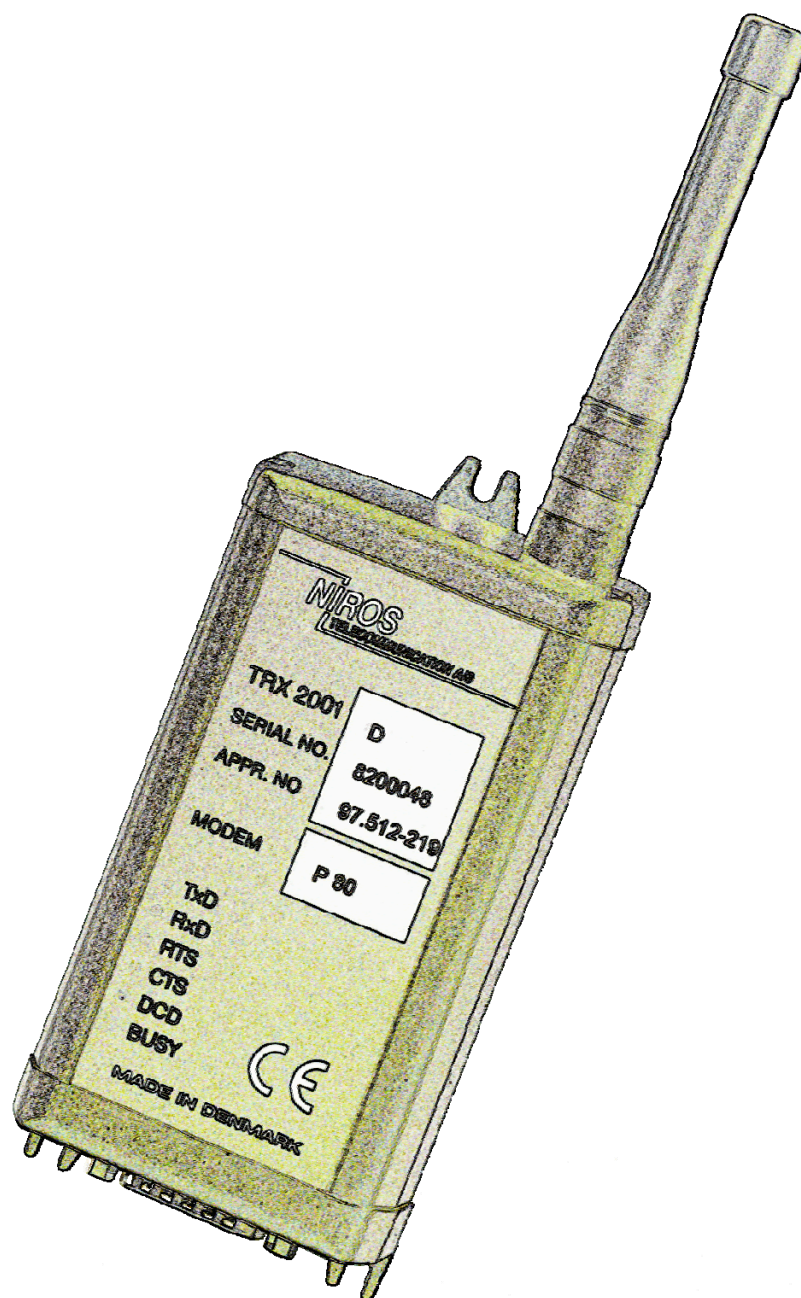


PC2001

Getting started

Version 1.00, February, 2000



NIROS

TELECOMMUNICATION A/S

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1 Introduction

This brief manual provides information on how to install the programming software for the NIROS TRX2001 series. Furthermore, it provides you with an overall description on how to configure and set-up TRX2001 modems and the RS232 interface to other units.

Note: This description covers all present TRX2001 versions (P80 – 83). Further information on specific modem settings etc. can be found in the TRX2001 application notes.

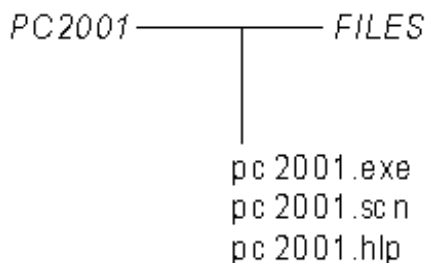
Note: By pressing F1, an on-line help function is enabled, referring to the selected menu or menu-point.

2 System requirements

- 80486 or higher based Personal Computer (PC)
- VGA or better resolution
- Installed DOS version 6.22 or later
- TRX2001 programming box including system disk and interface cable (NIROS stock no. 3082)

3 Installing the program

Copy the PC2001 file to the hard disk of your computer. The PC2001 program can be placed on your hard disk wherever convenient, as long as the files and sub-directories are configured as shown below – However the “install.bat” file on the diskette can be used:



In the example above, “PC2001” has been chosen as the directory the PC2001 files and sub-directories are placed in. However, any directory and name can be used.

Note: In the “Files” subdirectory all user-defined set-ups will be stored with a user-selected file name and the file-extension “.usr”.

4 Getting ready to program the modem

Before programming the radio, please do the following:

1. Started the program by locating and running the file “pc2001.exe” at the DOS prompt.
2. Connect the NIROS TRX2001 interface box to the radio-modem
3. Connect the interface cable to the interface box and the serial com port of your PC
4. Press the red button on the programming box and keep it pressed
5. Apply power
6. Let go of the red button when assured that the DCD LED on the data radio is turned on.

The modem is now in programming mode.

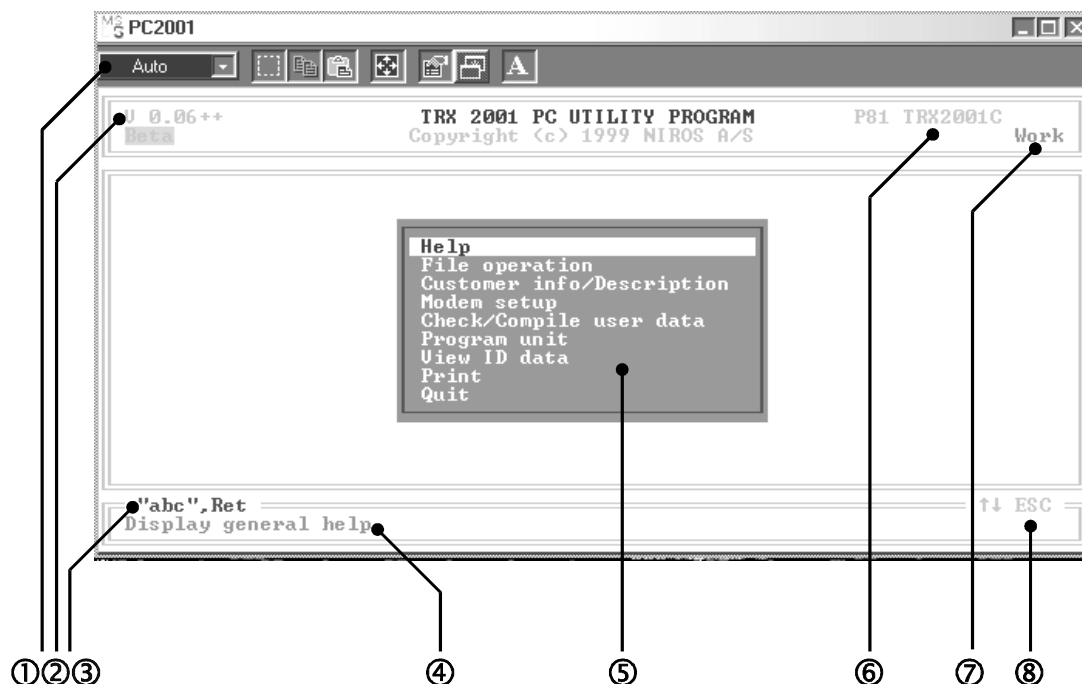
Note: The program will, by default, use the COM1 port of your PC for programming the radio. If you prefer to use the COM2 port, please run “pc2001 /com2.exe” in point 1 instead.

5 Basic use of the PC2001 program

The PC2001 program is a menu-driven software, comprising of a main menu and a number of sub-menus. The following keys are used to navigate within the program:

Keys	Description	Function
←↑→↓	arrow-keys	To move between the menu points
esc	Escape	To go one step back in the menu structure. Settings will be saved when leaving to new menu point.
↵	Return	To select menu point
tab	Tabulator	Move to next field
Del	Delete	To delete
abc..., 123...	Numeric and alphanumeric keys	To enter numbers or text

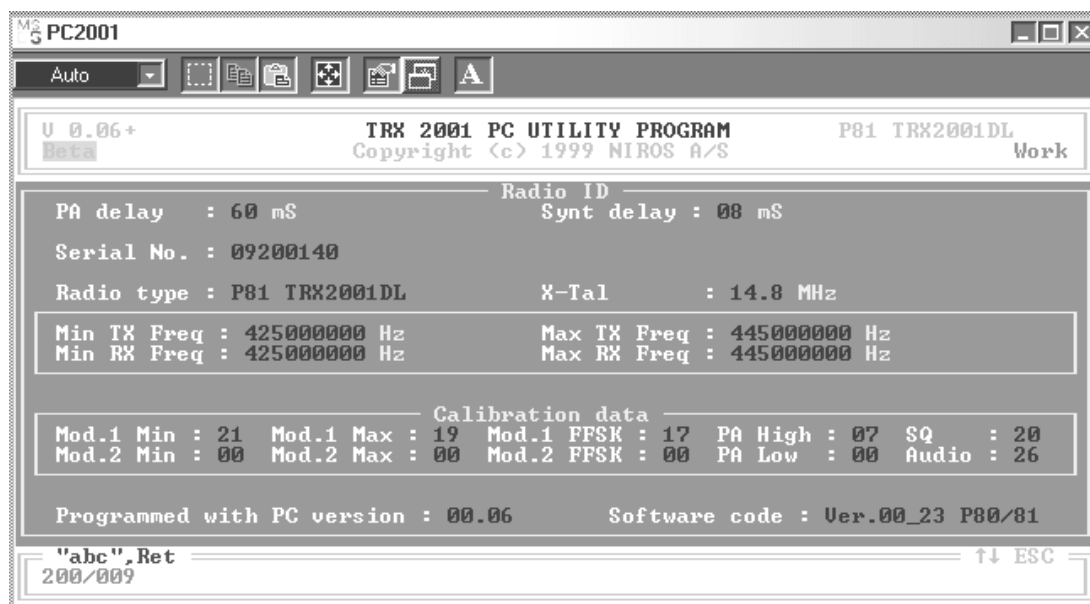
As shown below, the screen of the PC2001 is divided into several elements:



- ① Menu bar generated by Microsoft Windows (does not appear if the program is started directly in DOS)
- ② Software version of the PC2001 program
- ③ Parameters that can be used as input in the current menu
- ④ Quick-help text, changes along with the chosen menus
- ⑤ Menu, in this example the start-up main menu
- ⑥ Selected modem type (see sections 6, 8.1 & 8.2)
- ⑦ Current selected programming file ("Work" is default)
- ⑧ As ③, but indicates the navigation options

6 Initialising the programming (the "View Data" Menu)

As the PC2001 program covers all versions in the TRX2001 series, a programming procedure has to be initialised by execution of the "View ID data" menu after having connected the modem as described in section 4. Thereby, the correct programming mode according to the attached type of data radio will be entered, and a screen like the one below will appear:



This menu provides the user with a quick overview of the basic parameters of the attached data radio, including serial number, software version, and NIROS internal calibration data.

In this example, the connected data radio type is P81 TRX2001DL. "P81" stands for version P81 in the TRX2001 series, and "DL" is referring to the operating frequency band in UHF Low band (403-445 MHz). The actual 20 MHz coverage within the UHF low band is indicated by Min- and Max TX/RX frequencies.

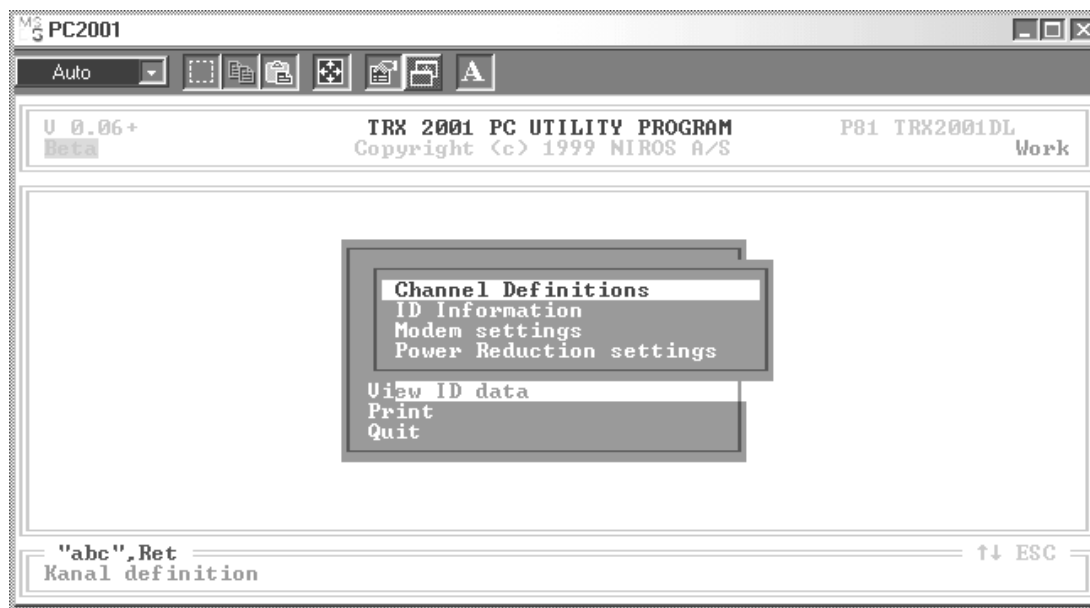
Note: A NIROS UHF data radio covers a range of appr. 20 MHz, and according to the above screen the radio in this example is factory set to operate in the range of 425-445 MHz.

Now the program is initialised and we can re-enter the main menu by pressing escape.

Note: Instead of using the "View Data" menu for starting the programming procedure, the "File operation" menu can be used, too. Please refer to section 9 for more information.

7 Setting up the modem

In the main menu, select "Modem set-up", followed by <enter>. The following submenu will now appear:



Each of these menu points will be briefly described in the following four sections (7.1 – 7.4)

7.1 Channel definitions

Depending on the chosen modem type, one channel (P80 & P82) or up to 100 channels (P81 & P83) can be entered. For all TRX2001 versions, each channel can be programmed to operate in simplex mode (both transmit and receive on the same frequency), or in semi-duplex mode (different transmit TX and RX frequencies).

Furthermore, each channel can individually be set to a specific output-power between 1W and 5W in 32 predefined steps.

7.2 ID Information

Depending on which TRX2001 version is applied, different address options are available. Please refer to the application notes for the TRX2001 version in question.

7.3 Modem settings

In this sub-menu, settings of the UART (RS232 interface) of the data radio, air transmission parameters and protocol parameters are defined, depending on the TRX2001 model in question.

Note: In this program part all parameters involving the mode of operation etc. is defined. as it would be too comprehensive in this short user's guide to list all features of the TRX2001 series, we kindly ask you to refer to the various TRX2001 application notes for details

7.4 Power reduction settings

This option is currently only available for the P81. Again, please refer to the P81 application note for further details.

8 Check/Compile user data

The "Check/Compile user data" menu will perform a first level check on entered data without checking for calibration data (frequency range, modulation etc.). For instance an error will occur if entered frequency is not dividable by reference.

9 File Operation

This menu consists of the following sub-menus (8.1 – 8.4):

9.1 Read config from disk

Enables you to retrieve already stored set-up configurations from disk by entering the file name (without typing the ".usr" extension).

9.2 List all config on disk

Provides you with a complete list of all files with the .usr-extension saved in the "Files" sub-directory of the program (as mentioned in section 3).

9.3 Write config to disk

Enables you to store the current settings (defined in the "modem settings" sub-menus) on the hard disk of your PC. As this program operates under DOS, a maximum of 8 characters can be used for naming the files (/ , \ , . * ? - are not valid characters). The extension .usr is added automatically, and the file is saved in the "Files" sub-directory of the program.

9.4 Select unit type

If you want to pre-define settings for TRX2001 modems without having a modem attached (and hence not being able to use the "View Data" procedure described earlier on these pages), this menu provides you with a list of all possible version of the TRX2001 series.

The desired version is found by scrolling through the various combinations of type,

frequency range and channel spacing by means of the arrow keys, highlighting the desired version, and selecting it pressing <enter>. Thereafter, this sub-menu is left by using the ESC-key, where after the modem settings can be defined and stored as previously explained.

Note: Not all of the listed frequency bands etc. are currently available, and other versions may be added at a later date. In the valid price list all available combinations are stated.

10 Customer info/Description

This is used for identifying customer and system configuration. The information entered here is stored along with the specific set-up in the data file (*.usr). None of this information is transferred to the modem, and it is voluntary to use this field.

11 Print

The configuration data can be printed, either with or without frames ("print all quick").

12 Quit

The program can be terminated by going to "Print" and pressing <enter> (or pressing ESC in the main-menu), followed by answering "Y" at the pop-up dialog box. Make sure you have saved all settings using the "Write conf to disk" submenu (see previous section) before terminating the program, as you will have to re-enter all parameters if you need to program more radios with the same settings.

13 Questions?

Contact your local NIROS supplier, or the manufacturer at:

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More information on the TRX2001 series and other NIROS products can be found on our web-site under www.niros.com.