Tx-Control2

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Management Program for Devices of TRANSRADIO SenderSysteme Berlin AG

After manual selection of a family of devices the program auto detects the actual connected or selected device. Active communication is possible only if a device if properly connected to the selected interface. Actually, supported interfaces are the asynchronous serial port (RS-232), TCP/IP network connections and connection over modem.

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1 Connecting a device

The device which should be controlled must be connected to the PC at serial port with a serial cross cable (null modem) or via a TCP/IP network connection. On external modem connection is the PC with a serial cable with the modem connected. This modem and respectively the internal modem is connected with telephone network. The device is connected over a serial cable with a external modem, which is over an telephone cable connected with the telephone network.

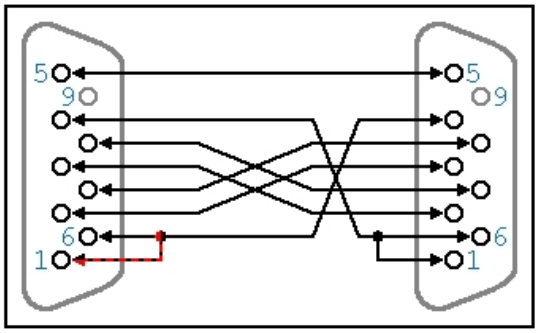
1.1 Serial RS-232 connection

Most of TRANSRADIO devices have two serial ports: the service and the remote port. Tx-Control2 can be used on both of these ports. Dependent on the control mode (local or remote) changes could only be made either at the service or the remote port. Some settings are only available at the service port.

The used COM-Port should have the following configuration:

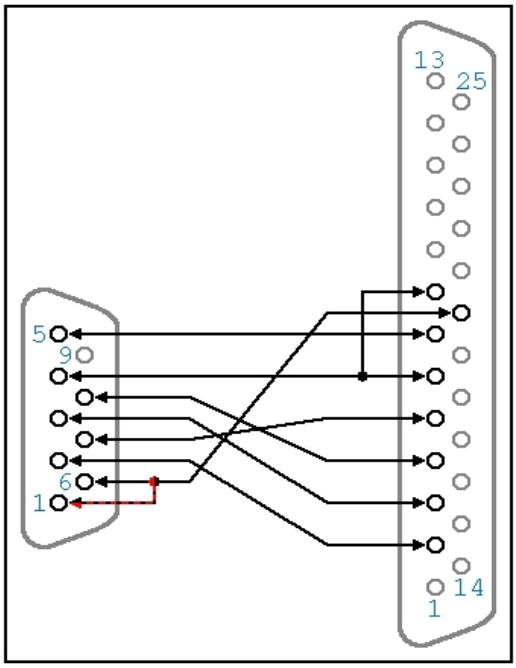
- baud rate: 9600 baud
- 7 data bits
- 1 stop bit
- odd parity

The wiring of the serial cross cable should be like this:

device  **computer**

or

device / computer



computer / device

IMPORTANT! For devices belonging to the families T327x, ZBG 7456 and T328x which are manufactured before 01/2005 the connection between pin 1 and 6 on the side of the device must not be there. If there is a connection between these two pins the device will not respond!

1.2 TCP/IP network connection

To use a TCP/IP network connection two conditions have to be met:

- The device must have a network interface. For some devices this a done by a special card (e.g. T327x, T328x, ZBG 7456) for others by a special add-on device (e.g TRAM, SV3256).
- The computer which is used to run Tx-Control2 must have a valid bidirectional network connection to the device. Depending on the network topology this could be simply a network cross cable. But it is not reduced to that. All valid TCP/IP connections could be used, e.g. a dial-up connection to an ISDN router which is connected with a VPN tunnel to a cable modem which has a connection to the station and with that to the desired device – to mention a more complex example.

To control a device it is important to know it's IP address and port number. Without these figures it is not possible to get in touch with the device. There is a sticker on the the network interface which shows the IP preassigned by TELEFUNKEN.

The default port number is **29999**.

These setting can be changed and must match the surrounding network infrastructure.

1.3 Connection over modem

An external modem will be connected with a serial cable to one of the serial ports of a device. Most of TRANSRADIO devices have two serial ports: the service and the remote port. Tx-Control2 can be used on both of these ports. Dependent on the control mode (local or remote) changes could only be made either at the service or the remote port. Some settings are only available at the service port.

The modem will be connected with the provided telephone cable to the telephone network. The control PC is also connected with a telephone cable over an external or internal modem with the telephone network. The external modem will be connected with the provided serial cable with the PC.

Requirement for a successful dial-up between PC an device via modem over the telephone network is the right configuration of the modem (Auto Answer Mode, baud rate: 9600 baud). With a terminal program (for example HyperTerminal) you can configure an external modem over AT commands. The AT commands are dependent from the manufacturer. For example her a tested and recommended command sequence for the modem configuration for a U.S.Robotics 56K Faxmodem:

AT command	comment
AT E1	// modem displays keyboard commands
ATS0=1	// auto answer mode
ATS1=2	// 2 * „ring“
ATL1	// low volume
AT&N6	// set connected speed 9600 bps
AT&W0	// saving
AT&W1	// saving

In the program additional settings are to be made. In two selection boxes you can first select the modem to use (selection between different “line devices”) and second you can select the modem speaker volume. Then is to enter the telephone number to achieve the modem on the device. The “Modem connection time” is a waiting time in which the connection should be definitely build-on. This time depends from the telephone network. This waiting time is adjustable in the interval from 18 to 120 seconds. By clicking the button “Default Configuration” you get the setting window of the elected modem. This window depends from the modem producer. The following settings should be done there (commendation): detach after idle of 2 minutes, break dialing after 30 seconds, baud rate: 9600 baud, 7 data bits, odd parity, 1 stop bit.

2 Operation modes of Tx-Control2

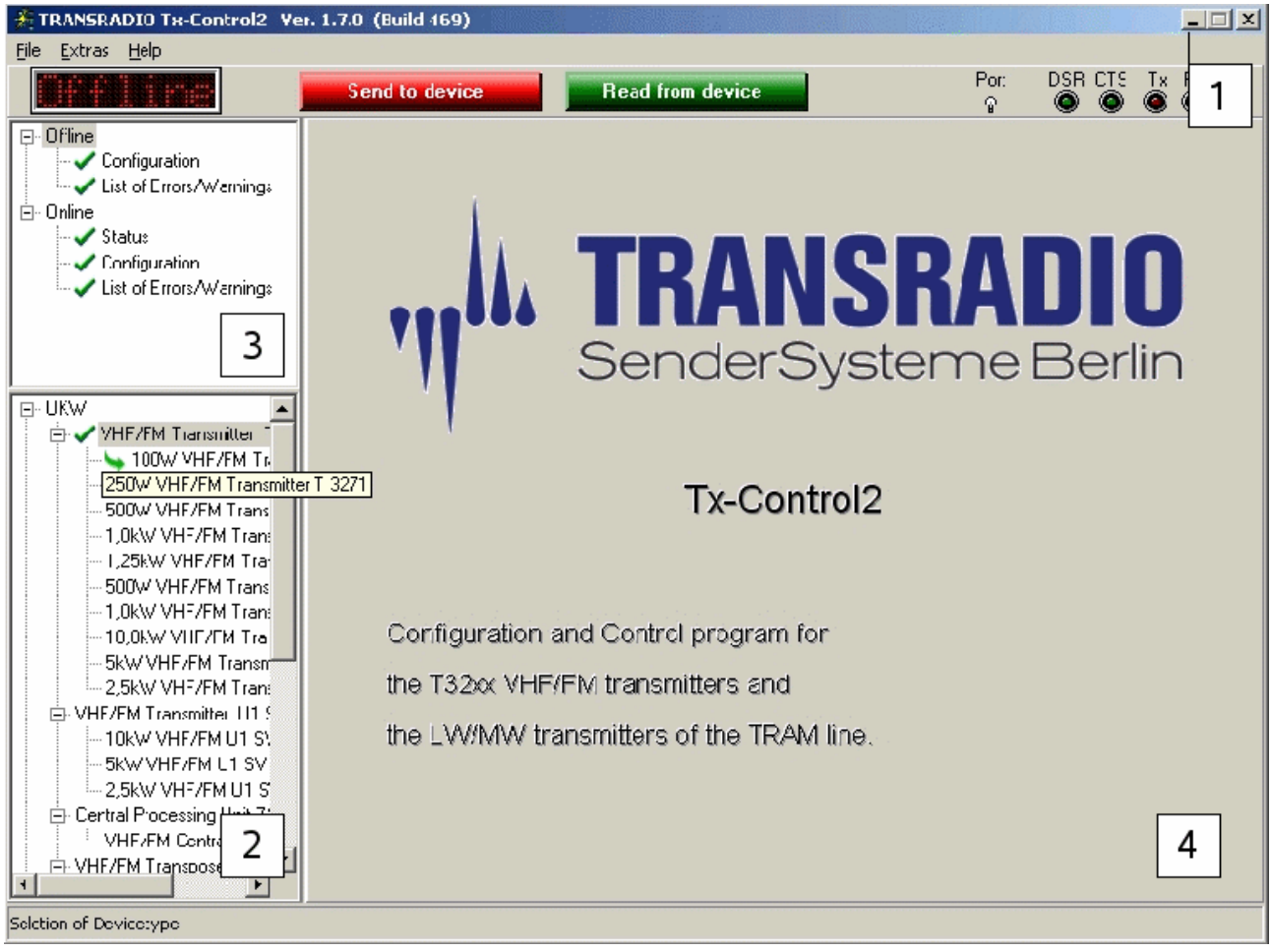
Two operation modes are scheduled for the program

Offline You be able to preparing and storing working data for a device. Previously stored working data of a device you can accepting, modifying and again storing. A communication channel must not available in this operation mode.

Online A complete remote control of the selected device is possible. This mode is simply meaningful if the communication channel to the device is available, for example a serial data connection.

3 Window structure of Tx-Control2

The program window is structured in 4 areas:



In the **head area (1)** under the window title and the menu line are add on informations displayed. Here is the operation mode displayed. In the operation mode 'Offline' it gives 2 buttons which allows a data transfer from the PC to a connected device and reverse.

In the **area left bottom (2)** are the device families and devices listed in a tree structure which are supported from the program. The device families are here selectable.

In the **area left top (3)** are in a tree structure data classes visible, which are available for a selected device. The availability to the data classes is symbolic displayed. The data classes for the online mode and the offline mode are displayed separated. At selection of a data class it changes the right area of the program window.

The **right window area (4)** displays the data of the selected data class. In the online mode are this the setting values of the connected device. It is possible to change setting values directly. In the offline mode changes of the data have only local affect. The data can stored in a file. The display of the data can occur in several selectable ranges.

4 Menu structure

The menu line of the program shows 3 entries.

‚File' This menu includes common basic functions, for example the leaving of the program, the loading of stored data sets or the saving of device data and error lists. Also it is possible to establish a protocol with current measured values.

‚Extras' In this menu is it possible to configure program options, for example the communication parameter or the language of the user interface.

‚Help' The help menu is calling the help function. Also pressing the key F1 in any program context enabled the access to the help function.

5 Applications of Tx-Control2

5.1 Remote control of a device

The remote control is only possible, if a device is connected and the communication parameter configuration is correct adjusted.

To remote control is a online data class to select. The data of the selected class are displayed in the right window area.

With the TAB-key or the mouse is the changing data field to select. The changing of the data occur – dependent from selected setting value – over a selection in a list or over manual input.

Selection of a list: After selection is occurred the selected value is transmitted to the device and will to be active there.

Manual input: When leaving the input window the entered value will be checked and if the input is correct the value will be transmitted to the device.

It is possible, that the connected device certain settings are not accepting because other settings this are blocking. In this case will be after a short time the original setting displayed again.

5.2 Monitoring of error and warning messages

The presentation of events – error or warning messages – occurs as time sorted list. The time base is the system time of the PC if the connected device don't transmit a time information.

Optional can only the active events displayed. The event list entries are listed in a database and the information is also available in offline mode.

If required the event lists can be deleted. If a device is connected, then the lists are rebuild.

The deleted entries can be archived in the program in the menu 'Extras|Options'.

5.3 Data management – Configuration of devices

The transfer of complete data sets occurs in the offline mode by operating the upload or download function in the head area. The progress of the storing procedure is displayed graphically.

‚Read from device': With this function are all operating data read out from the device and can used in the program. After reading the data can be over the file menu archived in a file.

'Send to device': This function write the actual program data into the connected device. With this function is it for example possible a device to configure for a certain purpose.

This complete device configuration can be loaded or stored in the corresponding menu point in the file-menu. So it is for example possible to archive configurations or to put a preselected configuration into a backup device.

5.4 Logging current measured data

To log all current measured data a function from the file – menu used. This function creates a TAB-separated text list. Also from a stored device configuration can in offline mode create a measured data log. The generated TAB-separated list is good to read in as CSV-file in MS Excel or an other spreadsheet and to process the data.