

IC-7300 - Remote Control Software RS-BA1 from ICOM

ICOM supplies the IC-7300 with remote control software called RS-BA1 Vers2. With the help of this software, the IC-7300 can work

- 1) via a directly connected PC
- 2) over a PC from the home network and
- 3) via a PC from the Internet.

The software installations and settings required for this are described below.

1.) IC-7300 with direct connection to a PC via USB

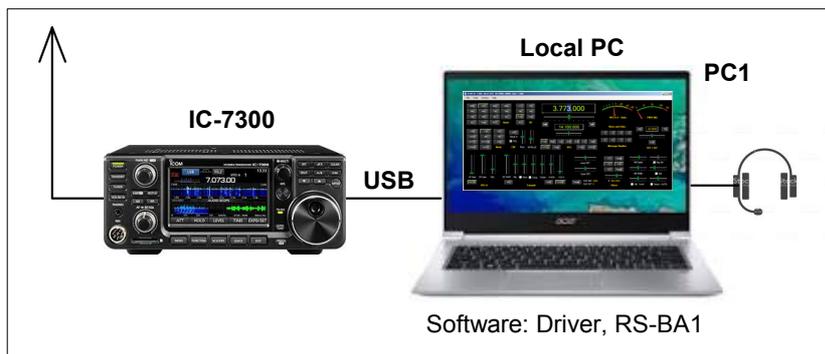


Figure 1: Setting on the IC-7300

Default Settings

On the IC-7300 under Set -> Connectors set the CI-V USB build rate to 115200 and the CI-V USB port to Unlink from (Remote).

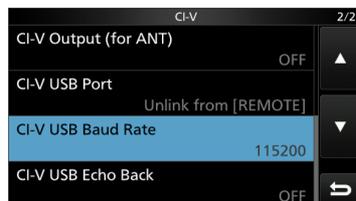


Figure 2: Setting on the IC-7300

Software installation

Install the ICOM software "Driver" and "RS-BA1" on PC1. After installation, the icons for "Icom Remote Utility" and "RS-BA1 Remote Control" appear on the PC screen (Figure 4). Only then connect the IC-7300 to the PC via a USB cable, but do not switch on the transceiver yet.

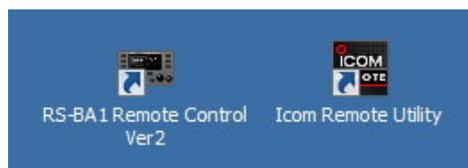


Bild 3: RS-BA1 Remote Control und Remote Utility

The USB interface of the IC-7300 is also activated when it is switched off and the driver is installed in the background. The "Remote Utility" program is used to configure the connection between the PC and the IC-7300 (client/server) and "RS-BA1" is the actual operating software.

To check whether the driver has been installed correctly, open the Device Manager -> Connections (COM & LPT) in the PC. The virtual interface was created under COM4.

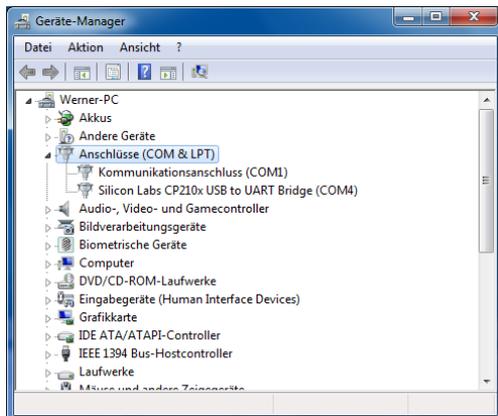


Figure 4: UART Bridge Com 4

Then start the Remote Utility program and set up the connection between the PC and the IC-7300. The name of the PC (Werner-PC) is automatically recognized and the COM ports 50001 to 50003 are defined at the same time.

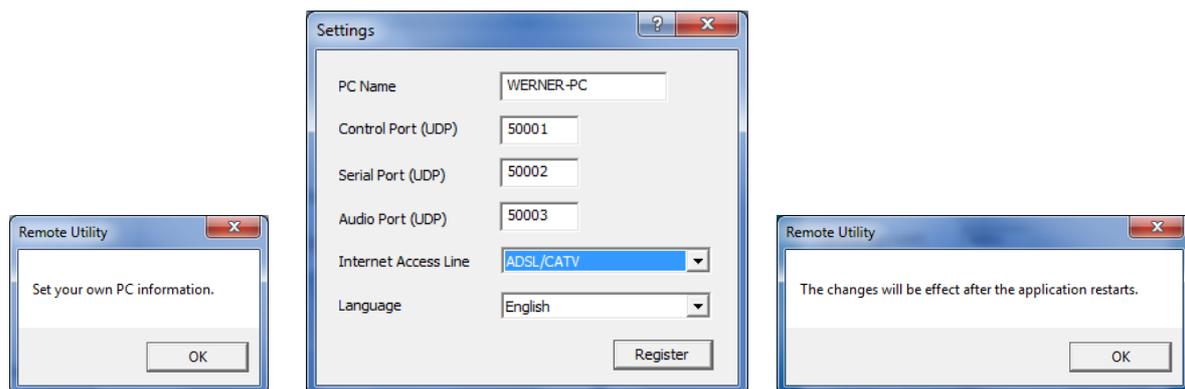


Figure 5: Settings fo local PC

After a restart, the Setup Wizard menu opens, where you can select in which form the PC should be configured, whether as "Local-PC", "Server-PC" or "Remote-PC". We select "Setup for a Local PC".

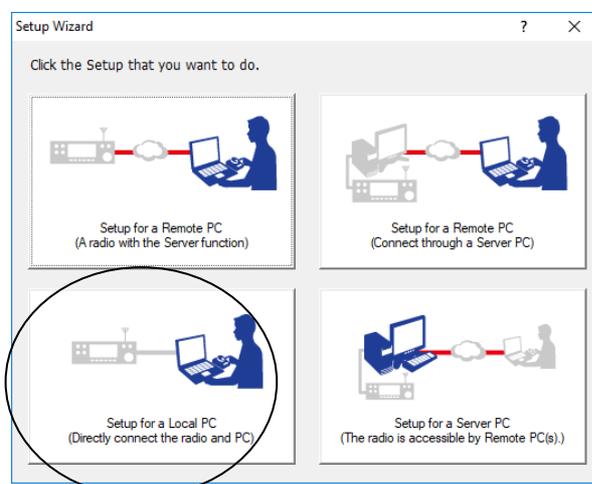


Figure 6: Setup for a local PC

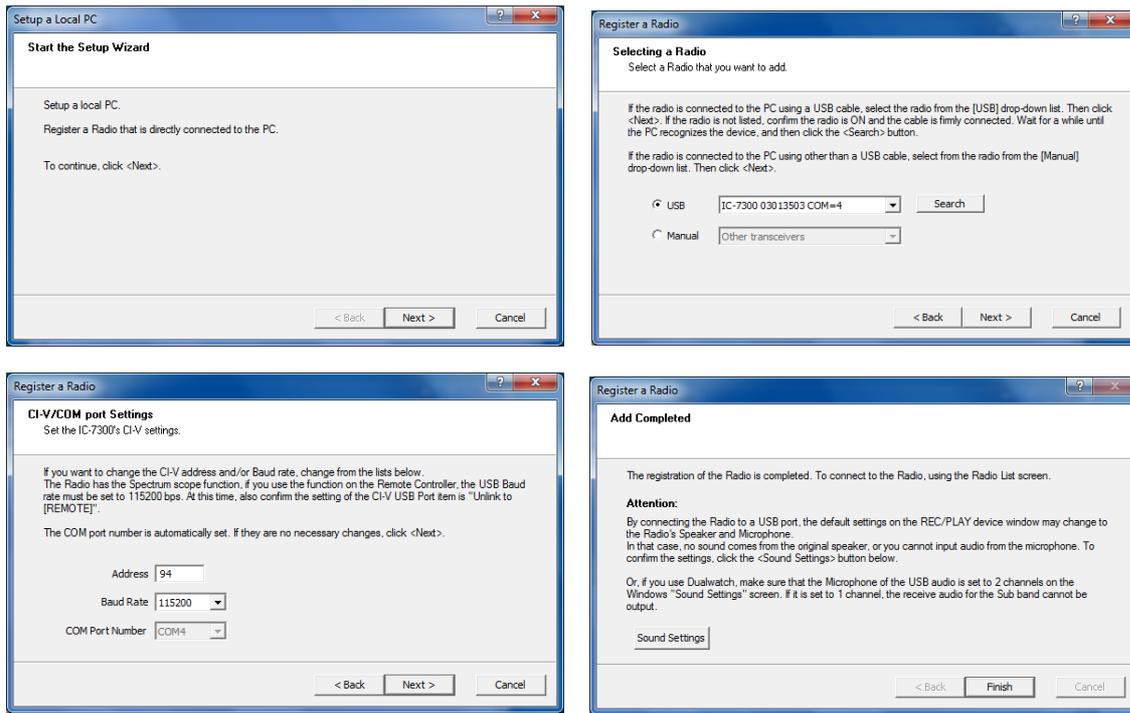


Figure 7: Setup a local PC and Register

Finally click on "Finish" and the Remote Utility program opens and displays the settings of the IC-7300 under "Radio List". After clicking on "Connect" the connection between PC1 and IC-7300 is established, this is confirmed by << Connected >> if successful.

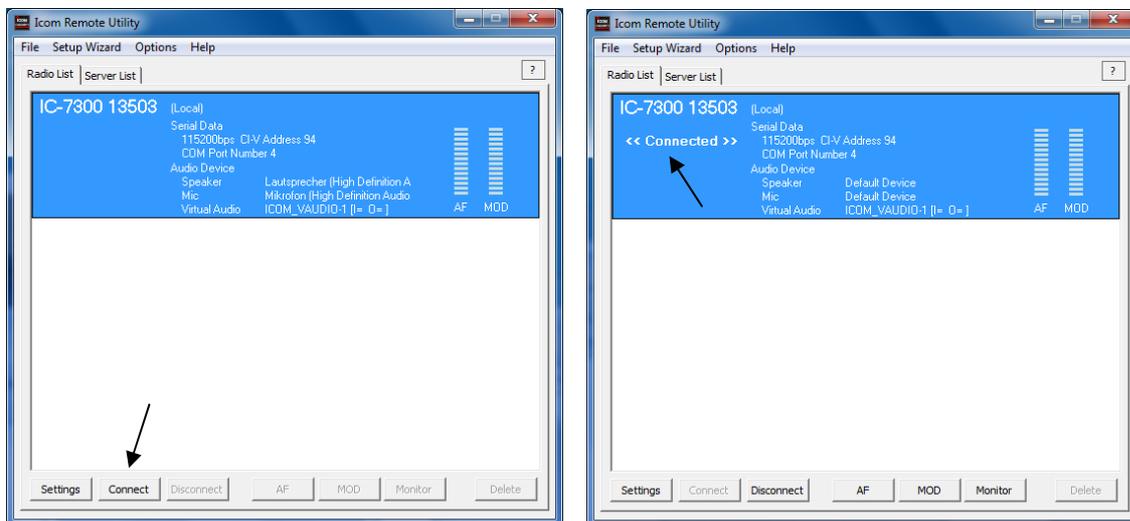


Figure 8: Clicking on "Connect" (left) connects the IC-7300 to PC1 <<Connected>> (right)

Microphone and loudspeaker

When setting the sound on the PC, make sure that the signals from the microphone and loudspeakers cross each other. Put simply, the IC-7300's speaker signal goes to the PC's microphone input and the microphone signal goes to the PC's speaker output. The audio gain must be adjusted manually (AF, Mod and Sounds). If the settings are not correct, the speaker and microphone will not work.

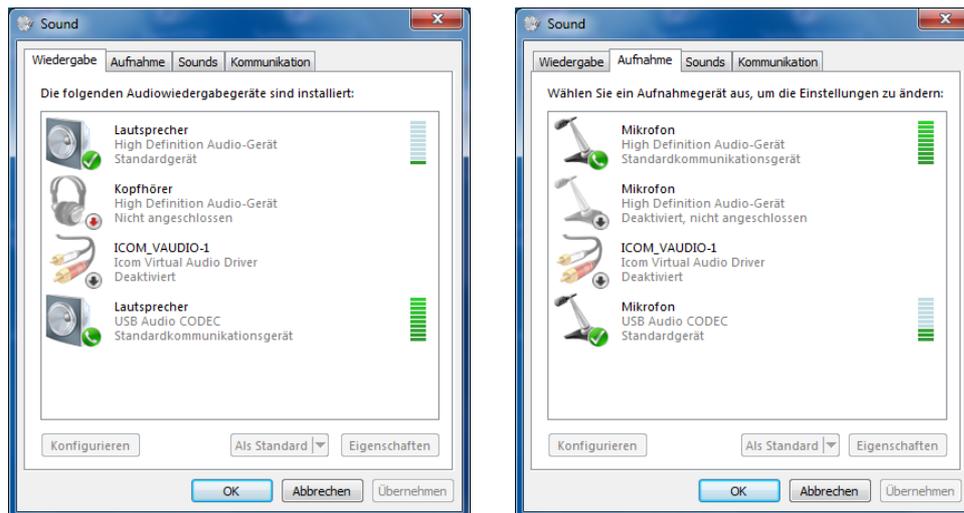


Fig.9: Settings for loudspeaker (left) and microphone (right)

After IC7-7300 and PC1 have connected, start the operating software RS-BA1 Remote Control. The IC-7300 now switches on automatically and its user interface appears on the PC (Fig. 10). The noise of the IC-7300 must now be heard in the loudspeaker and the microphone must work. If not, the audio settings must be checked again. The IC-7300 can then be remote controlled from the local PC (PC1). After pressing Exit the IC-7300 switches off remotely.



Fig. 10: Remote control of the IC-7300 via a directly connected PC (USB interface)

2.) Connecting the IC-7300 to a PC in the home network

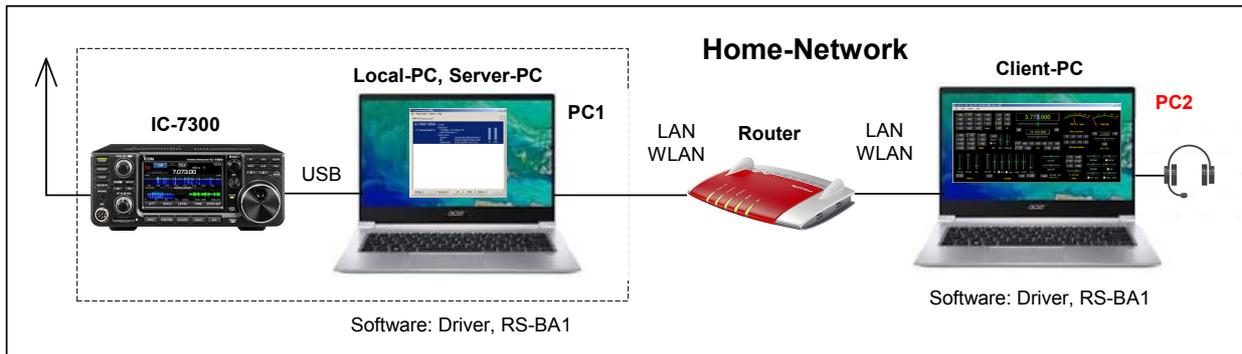


Figure 11: Connection IC-7300 with the home network

With this configuration, the IC-7300 will be connected to a PC in the home network. To do this, the local PC is first connected to the home-router via LAN/WLAN (if this has not already been done) and is given access to the home network via this connection (Fig. 11). The router automatically assigns an IP address to PC1, which we must find out. Open the router and look it up under Home -> Network, for me the IP address was: 192.168.178.37 (note the IP). In order for transfer the data and audio transmission between IC-7300 and an PC, PC1 must be converted to a "Server" and PC2 to a "Client".

Settings on the Server-PC

Start Remote Utility, open Setup Wizard and select "Setup for a Server PC" (Figure 12). In the following menus only a user name and a password have to be entered. The user ID and password must be entered for security reasons, because the signals are now fed into the network via a router. Following PC1 acts as Server-PC.

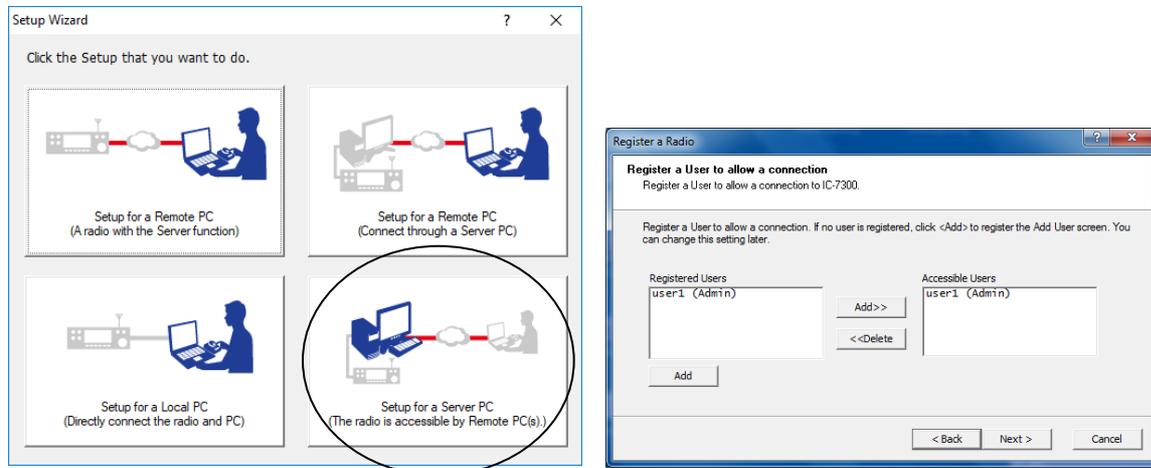


Figure 12: Setup Wizard

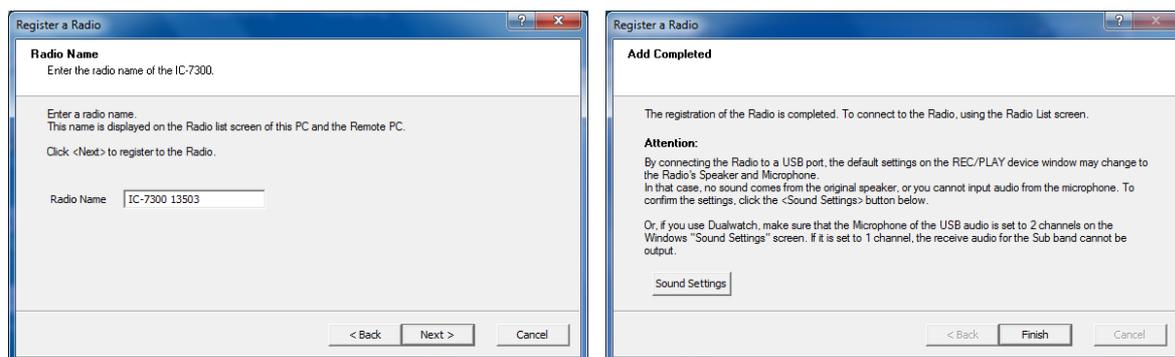


Figure 13: Settings for Server-PC (PC1)

Settings on the Client-PC

Start Remote Utility, open Setup Wizard and select "Setup for a Remote PC". In the following menu, enter the previously determined IP address of the server (e.g. 192.168.178.37), as well as a user ID and password. User Name and Password can be freely chosen.

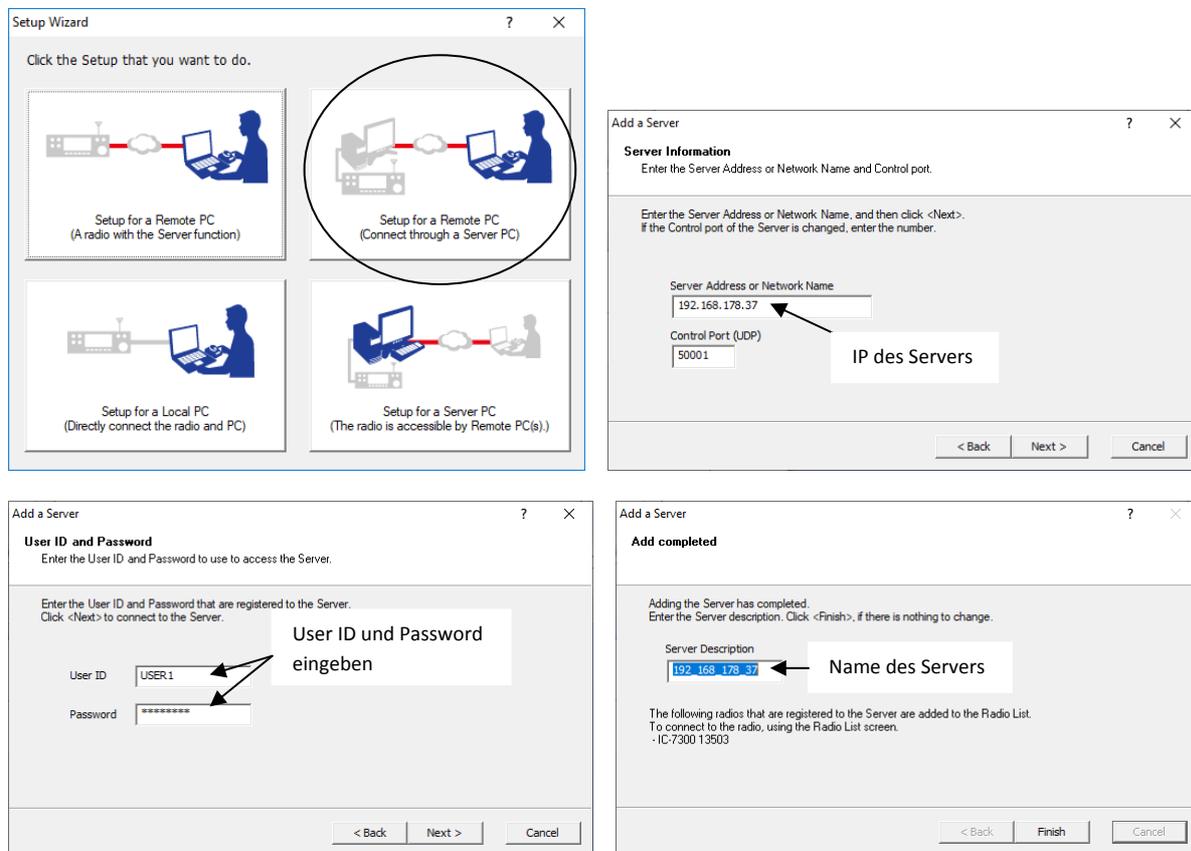


Figure 14: Setup for client PC (PC2)

After clicking on Finish, the program opens and shows "Connected" under Server List. Then go to Radio List and press Connect. The IC-7300 now connects to the client PC (PC2) and the confirmation >> Connected << appears in the menu.

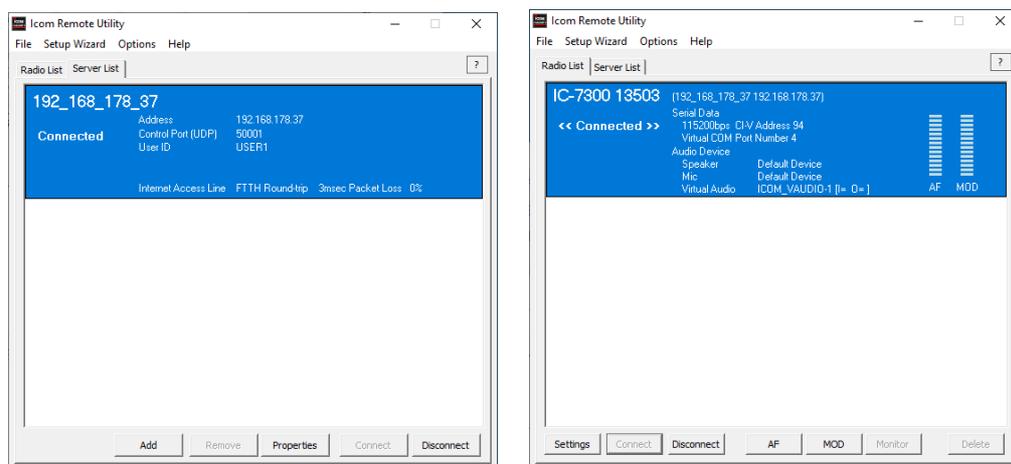
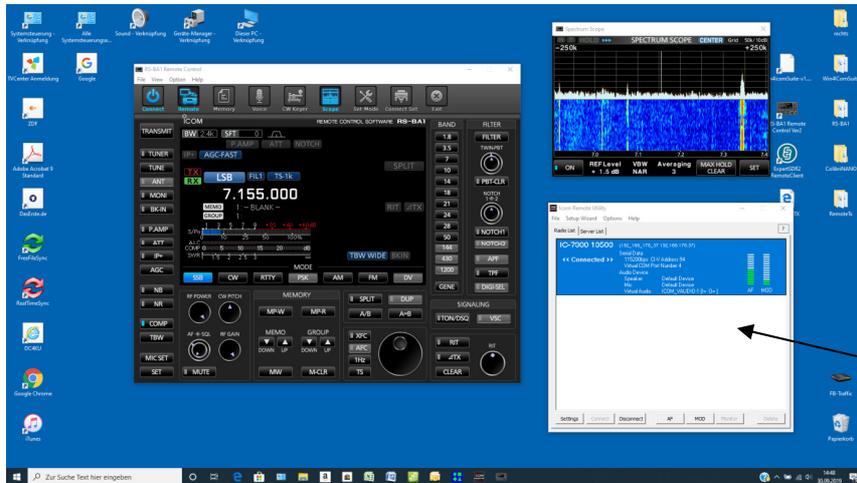


Figure 15: Radio List (left) and Server List (right), IC-7300 Connected

Then start the operating software "RS-BA Remote Control Vers.2" on the client PC and press Connect. After a few seconds the user interface of the IC-7300 appears on the screen and the IC-7300 can be remote controlled via PC2.



Remote Utility started, with a connection over the **Server-PC!** IP=192.168.178.3

Figure 16: Remote-controlled IC-7300 in the home network, ready for a QSO

Note: For the connection to work, the Remote Utility program must be open on the server PC (PC1)!

3.) Connect the IC-7300 to a PC on the Internet

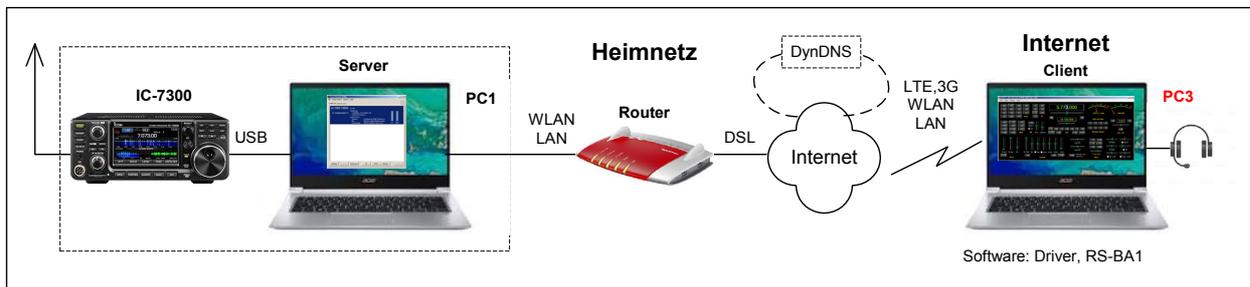


Figure 17: Connection IC-7300 to the Internet

This final setting is relatively easy and quick to make. To enable remote control of the IC-7300 from the Internet, a "port forwarding" for ports 50000 to 50003 of the Server PC (PC1) must be set in the router (Figure 19). Make sure that the protocol selected is UDP and not TCP. After the forwarding has been carried out, the "public IP address" of the router is also displayed in the menu, in the example IP=91.36.75.215 (note it!).



Figure 18: Server PC with port forwarding of 50001, 50002 and 50003

Then start Remote Utility and select "Setup for a Remote PC".

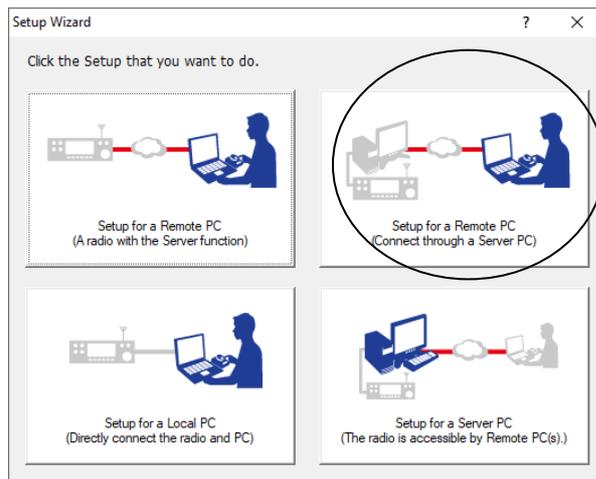


Figure 19: Setup for a Remote PC

In the following pages, only the previously noted public "public IP address of the router" must be entered.

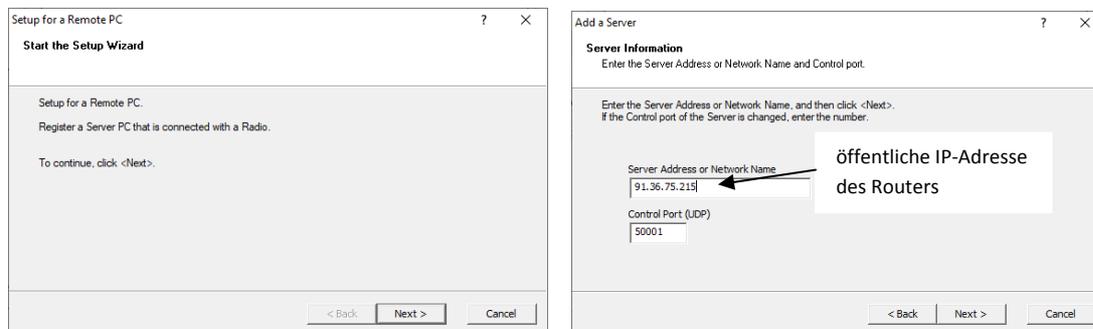


Figure 20: Entering the IP address of the router

After pressing Finish, the Remote Utility program opens and displays "Connected" under Server List. It doesn't matter if the client is in the "home network" or the "internet", the connection always works! Then go to Radio List and press Connect. The IC-7300 now connects to the server and >>Connected<< appears in the menu.

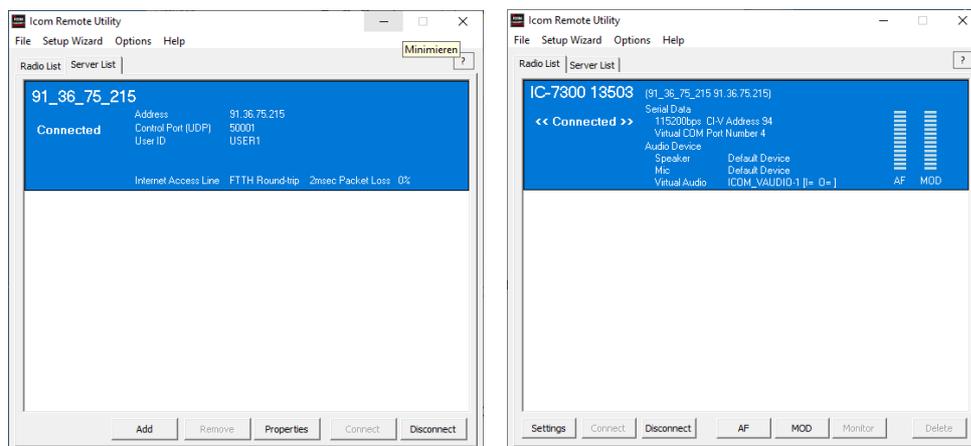


Figure 21: IC-7300 Connected

Then start RS-BA1 Vers2 and press Connect. After a few seconds the user interface of the IC-7300 opens and the transceiver can be operated from the Internet. The transfer rate is 50...70kbits and the latency times are low with a fast Internet connection.



Remote Utility started, with a connection over the Router!
IP=91.36.75.215

Fig. 22: Display of the IC-7300 via PC in the Internet

Note: For the connection to work, the Remote Utility on the server PC (PC1) must be open!

DynDNS

If you have a DynDNS-address you should use it to control the IC-7300 (2). The advantage is that an Internet address, such as *name.spdns.org*, is used instead of the router's public address. When you are working with DynDNS the signal is routed additional via a DynDNS-Server, which queries the IP of the router for each connection and only then forwards the connection. If the IP of the router has changed, this does not matter, the connection is still established.

To enter a DynDNS address in the settings, open the Setup Wizard on the client PC once again and enter the DynDNS under Server Address. After that another Server will appear, under the address of "*name.dyndns.org*" and under Radio-List <<< Connected >>>".

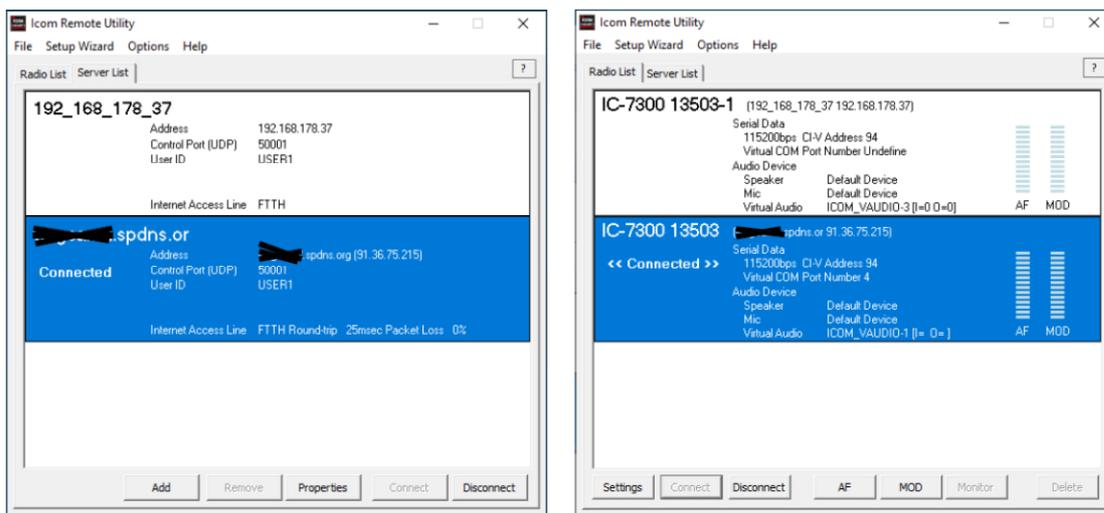


Figure 23: Additional Radio- and Server-List with DynDNS Address (blue color).

This example results in a total of four valid IP addresses which can be used to establish a connection between the PC and the IC-7300:

- Home network: With IP address of the server PC (192.168.178.37) or name of the server PC (Werner-PC)
- Internet: With IP address of the router (91.36.159.251) or DynDNS address (*name.spdns.org*)

Summary

The software RS-BA1 Remote Control Ver2 works perfectly and if you run a QSO over the PC, it is not noticed by the conversation partner, because also the latency times are very low. The Installation is a bit complicate and the software seems to be some old-fashioned, so ICOM would do well to offer a completely new designed software. The Icom software manual (1) is 94 pages long, is that necessary? For comparison: It took me a few days to install the ICOM software completely, only 2 hours to install the similar working software Win4Icom from VA2FSQ (1) and only 10 minutes to install RemoteTx from AK7MG (3).

To remote control the transceiver over the home network or the internet, the server software must always be started on the local Server-PC, otherwise there is no connection. This could be done much easier with a simple Raspberry Pi3/4, but Icom doesn't offer this. I also miss the fact that neither a tablet (iPad) nor a smartphone (iPhone) can be used as a controlling unit. RemoteTx shows how this can work.

Werner Schnorrenberg
DC4KU, dc4ku@darc.de
01.10.2019

Literature

- (1) RS-BA1 Version 2, ICOM Instruction Manual
http://www.icom.co.jp/world/support/download/manual/pdf/RS-BA1_Ver2_ENG_IM_2.pdf
- (2) Win4Icom, Remote Software for IC-7300
FUNKAMATEUR 12/2019
https://dc4ku.darc.de/IC-7300_RemoteTx.pdf
- (3) RemoteTx, Remote Software for IC-7300
FUNKAMATEUR 10/2019
https://dc4ku.darc.de/IC-7300_Win4Icom.pdf