

IC-7300 Settings for Winlink ARDOP or VARA TNC

by SA7SKY 2018-03-27 16:30z

PC Preparations

Download and install USB driver from ICOM Japan

https://www.icom.co.jp/world/support/download/firm/IC-7600/usb1_20/

Latest Update 2017-10-05 Ver 1.20

Installation as *administrator*

Do not connect IC-7300 with USB before the end of the drivers installation !

Connect the IC-7300 to the PC via USB cable.

The driver will be automatically installed.



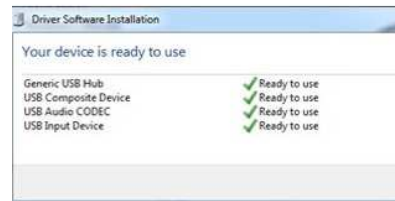
If you click on the USB icon, you will see the progress for the *USB Audio CODEC*.

Notice: The radio itself has a USB hub on which a USB↔COM port and a USB Generic audio board are connected. When you connect the radio to the PC, the drivers will be installed.

The COM port driver is delivered by the ICOM and the Audio board driver is contained in a Windows update.

It will take some time to install the generic USB Audio driver but be patience.

Also, a driver for the USB Hub will be automatically installed.



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Download and install the RMS Client Software

<https://www.winlink.org/ClientSoftware>

Follow the instructions for RMS setup.

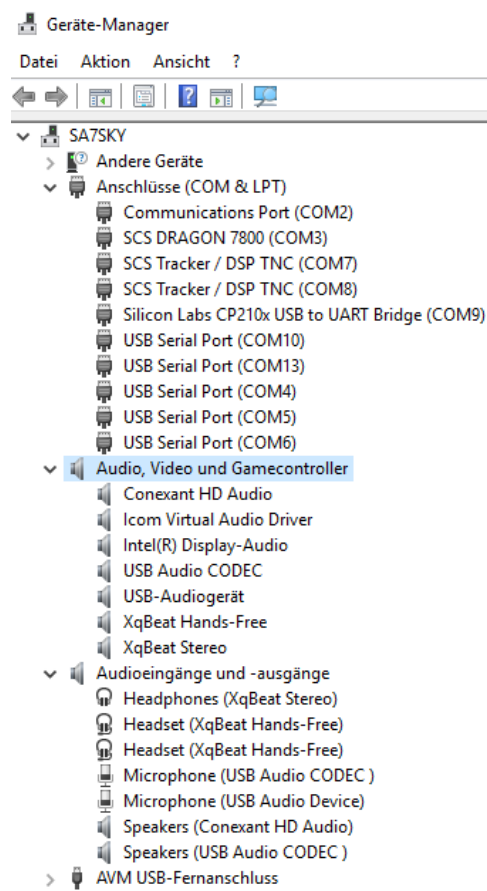
Explanation of Winlink system under:

https://www.winlink.org/sites/default/files/wl2k_faq_20150314.pdf

Explanation of TELNET RMS Express setup under:

<http://www.la3f.no/faste/digi/winlink/ExpressTutorial1130a.pdf>

Check *DEVICE MANAGER* for the COM port and the USB Audio board



On the PC, the USB⇌COM is identified as *COM9*, essential for setting the Winlink. Check the USB Audio board.

IC-7300 Settings

RF Power	50	(50% of maximum possible for PA protection)
DATA MOD	USB	in settings / USB-D selection in the display
ACC MOD	50%	level: 50% (default)
DATA MOD	50%	level: 50% (default)
USB MOD	50%	level: 50% (default)
USB Serial Function	CI-V	
CIV Baud Rate	Auto	
CIV Address	94h	do not change yours
RF/SQL Control	RF+SQL	open squelch
AGC	Fast	

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Optional settings if Channel enabled filter control is desired (recommended)

See [Radio Configuration](#) and [Channel Configuration](#)

Set the mode to USB-D and set filter 2 to a width of 2400 Hz centred on 1500 Hz. The Middle filter will be auto selected for Wide channels.

From the USB-D mode set filter 3 on the radio to 600 Hz or wider centred on 1500 Hz. This will be used for 500 and 200 Hz modes and provides some room for frequency offsets yet minimizes adjacent channel interference.

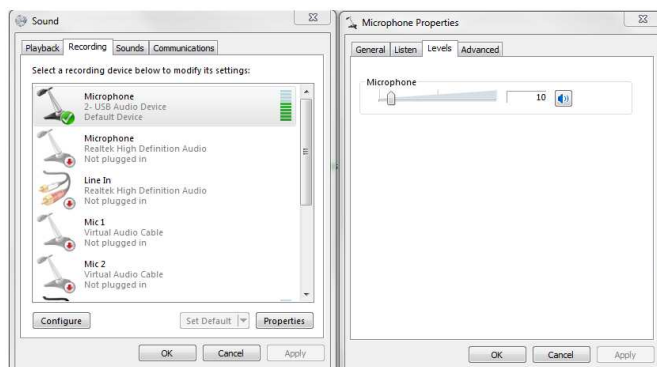
Most other settings can be left as default or adjusted if desired.

USB Recording Level Setup

The input level to the ARDOP Win TNC must be set properly to keep the sound card values from exceeding the dynamic range. This can be done in the *Windows mixer* for the *sound card microphone* that represents the audio out of the above radios. In Windows 7 the procedure is this: Click the Windows Drop down control menu and select Control Panel. On the Control panel select Sound and select the Recording Tab and highlight the USB Audio Device representing the 7200's USB sound card.

Click Properties on the Recording menu to bring up the Microphone Properties to the right below. On the Levels tab adjust the slider value to insure the input to the ARDOP Win Sound card (receive level bar graph) stays in the green. Above half scale is preferred. In the test setup this was about 10 on the microphone level. Click OK on both forms to save the values. Note it is possible the names reported for the sound device may vary from those below.

Other Windows versions will be somewhat different but the same basic approach should work. If a sudden change in levels is observed check this level setting as sometimes updates of the OS can reset the levels.



USB Playback Level Setup

The built-in sound card will also usually show up in the Playback devices level settings. Sometime (usually after an OS update) the OS resets these levels to 50% and this can cause problems. It has also been reported that OS emulator programs like Parallels for the Mac may reset the level to 50% on initialization. The level can be viewed/changed in Windows. The Win 7 procedure is: On the Control Panel select Sound. Select the Playback tab and highlight the USB audio device representing the Radios built in USB sound card. Click properties and on the Playback menu tab and select Level tab. Normally set the level to 100%. There are essentially three level controls "in series" that set the transmit drive level: The ARDOP Win TNC drive level, the Windows mixer volume level as set in the OS and the USB LVL as set from the radio's menu.

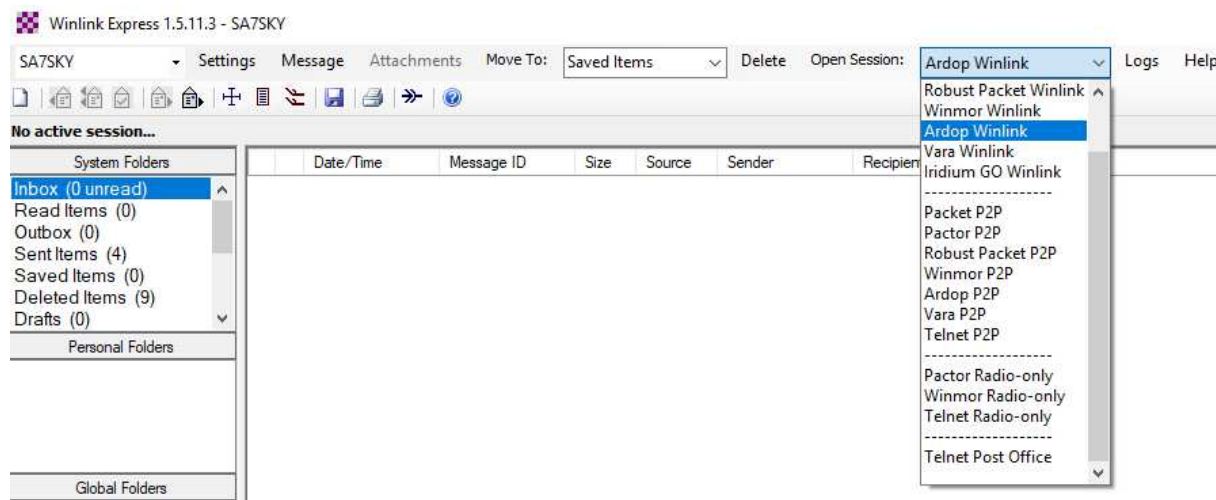
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Setup ARDOP & VARA within Winlink

Winlink Express Properties: Check lower righthand Box for beta versions.

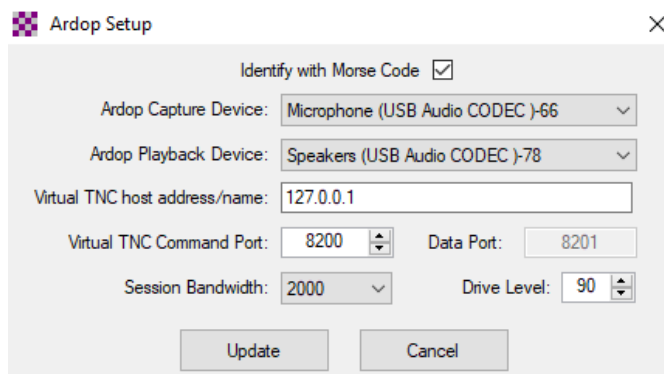
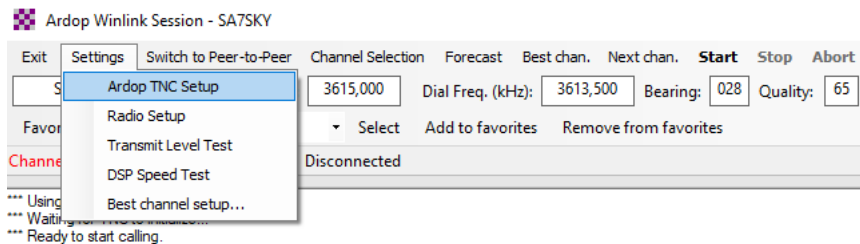
Automatically install field-test (beta) versions of Winlink Express



Select *ARDOP Winlink* or *VARA Winlink* and then *Open Session*

Two more windows will open. One is the *ARDOP Sound Card TNC* and the second one is the *ARDOP Winlink session*

Select *ARDOP TNC Setup*

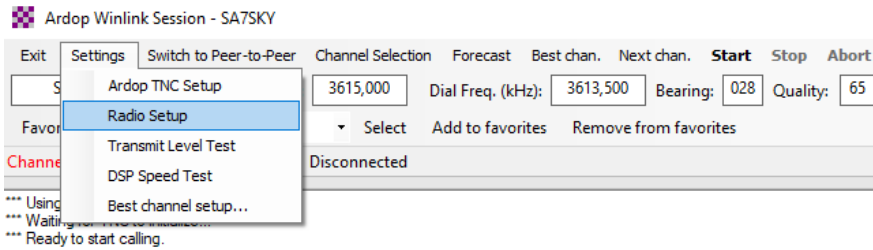


Search on the combo box for some *USB Codec* and select it for Capture device (*input to PC*) and Playback Device (*Output to Radio*)

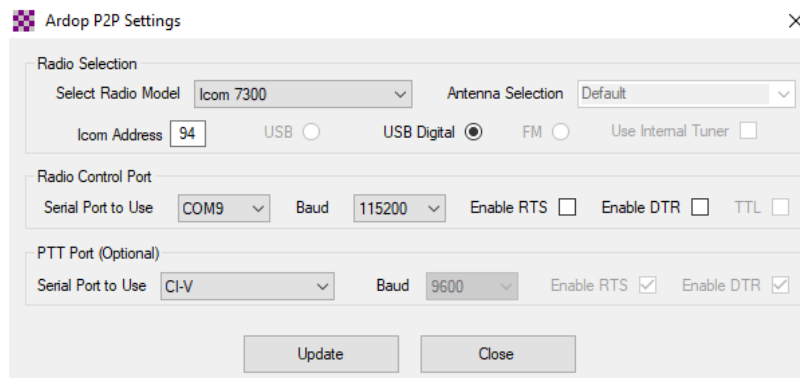
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Select *Radio Setup*



Make the setup just like in the picture below



Select *UPDATE*, the **ARDOP Winlink** will restart briefly.

NOTICE: Each ICOM radio has a default CI-V address (ICOM Address). In this particular case, the address is 94 but others might be 80 (The address is in HEX format)

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ARDOP Setting

ARDOP Win Virtual TNC Ver.1.0.2.5

ARDOP_Win Virtual TNC Ver: 1.0.2.5

File Graphics Send Abort Logs Help

Rcv Level: [Progress Bar] Offset: 0.9 Hz @ -16dB State: **DISC**

Rcv Frame: [Text Field]
Xmt Frame: [Text Field]

4FSK Quality: 53 -1200 **CF: 1.5 KHz** +1200 Host: **TCPIP on port 8200,8201**

ARDOP Win TNC Setup

Host Interface

These host interface parameters are normally set in the command line when the Host launches the ARDOP Win TNC.

Enable Secure Login Password: [Text Field]

TCP/IP TCP Address: [127.0.0.1] TCPIP Port#: [8200]

Serial COM Port: [Dropdown] Baud: [0]

BlueTooth Pairing: [Dropdown]

TNC Parameters

Most of these TNC parameters are normally set by the host program but may be viewed/initialized here for development and testing.

Call Sign: [SA7SKY]

Enable CW ID Start TNC Minimized Enable TNC debug logging Enable Command Trace Accumulate Stats

Graphics Options: Waterfall Spectrum Disable

Sound Card Capture Device: [Microphone (USB Audio CODEC)]

Sound Card Playback Device: [Speakers (USB Audio CODEC)]

FEC Frame Type: [4PSK.500.100] FEC Repeats: [2] FECid Protocol Mode: [ARQ]

ARQ Bandwidth: [2000MAX] ARQ Connect Request Repeats: [10] ARQ Timeout (sec): [60]

Drive Level: (0-100) [90] Squelch(1=10) [5] BusyDet(1=10) [5] Tuning Range +/- Hz [100] Leader Length (ms): [160] Trailer Length (ms): [0]

Enable Optional TNC Radio Control Reduce CPU loading

[Abandon edits/Close] [Save to ini File]

Radio Settings

Radio Selection - *Note: Not all radio control features (Filter, Antenna, and Tuner) enabled in this revision*

Select Radio Model [Icom 7300] ARDOP Bandwidth Hz: [2000]
0 disables filter control.

Icom Address [94] USB USB Digital FM

Antenna Selection [0] Use Internal Tuner Use Radio's Internal Sound Card

Radio Control Port

Serial Port to Use [COM9] Baud [115200] Enable RTS Enable DTR

PTT Control

PTT Mode/ComPort [CAT PTT] PTT using RTS PTT using DTR

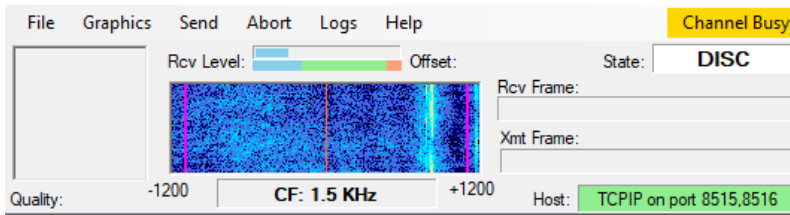
Enable TNC Control of Radio or PTT [Abandon Edits/Close] [Save to ini File]

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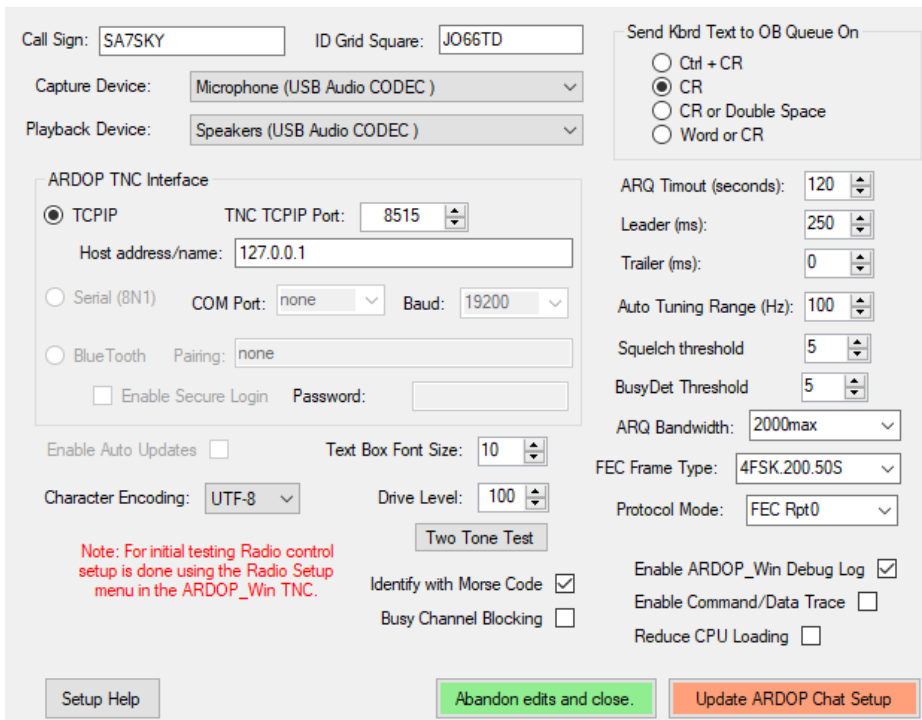
ARDOP Chat Setting

ARDOP_Win Virtual TNC Ver: 1.0.2.5

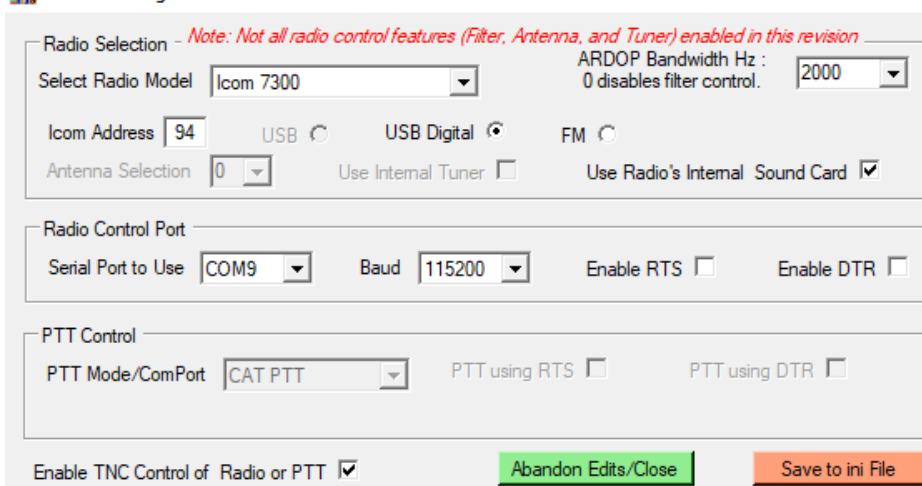


ARDOP Win TNC Setup is automatically loaded from ARDOP (general) settings

ARDOP Chat Setup



Radio Settings

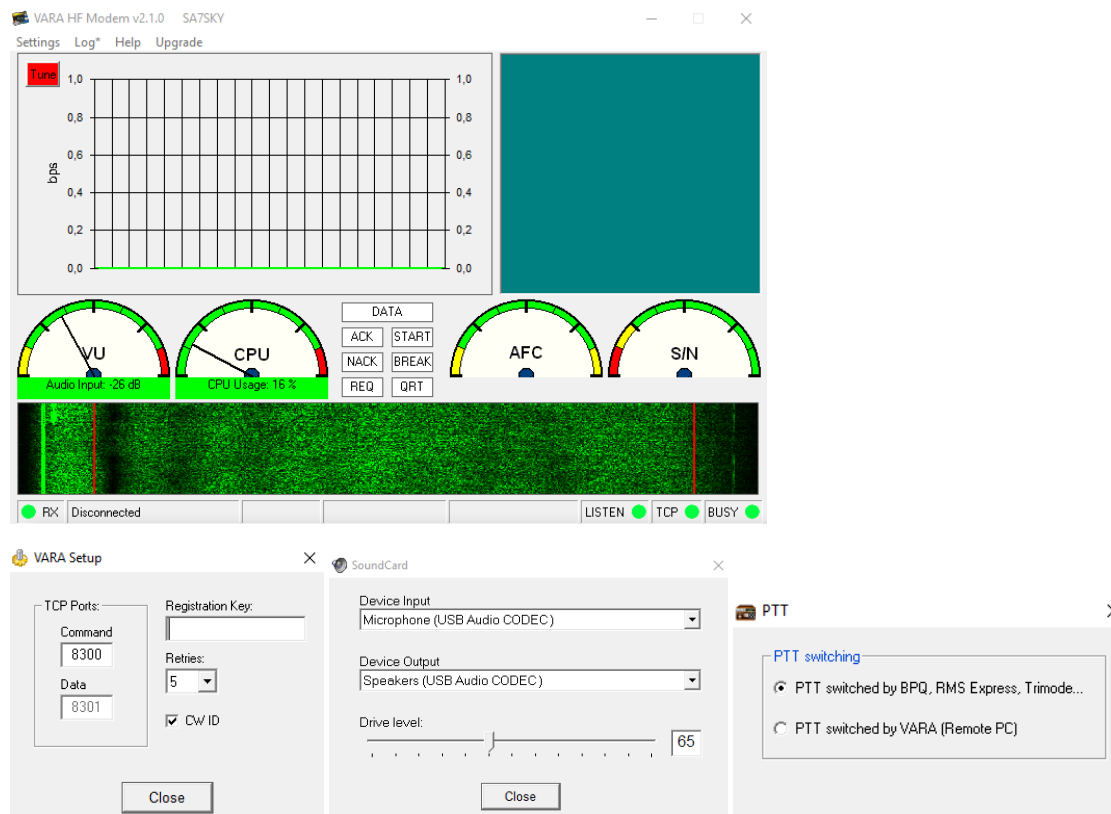


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VARA Setup

VARA HF Modem Ver. 2. 1.0



Alpha 2.2 / RMS Simple Terminal / P4config Terminal / PAXON

After usage of the settings above the following PACTOR applications might not operate:

Alpha 2.2

RMS Simple Terminal

P4conf Terminal

PAXON still operates promptly

It has been observed that the P4dragon's configuration has been changed to minimum values such as Callsign.

To regain functions open **P4conf** tab **Parameters** and **reload the latest proper working configuration** and (re-)write it into the modem.