

# Icom CI-V Interface Guide

**First of all, thank you for purchasing my Icom CI-V interface cable. Hopefully, this guide will allow you to get your PC connected to your Icom Radio with the minimum of effort. Your Interface comes with a 30 Day No Questions Satisfaction Guarantee and full 12 Month warrantee against material failure.**

**Please note:** Although I have never had any interface damage a Radio or associated Computer, you use this item entirely at your own risk. I will not be responsible for any damage caused to your equipment through use of this product. You should always follow the manufacturer's instructions when connecting items to your equipment.

To use this cable you will need a PC with a standard RS-232 9-pin serial port and suitable control software. If your PC does not have an RS-232 port, the interface works well in conjunction with USB to RS-232 converters. I do not sell these but they are readily available from Computer outlets or Ebay.

The interface connects directly between the 9-Pin RS-232 port of your PC and the 3.5mm CI-V jack of your radio.

## This unit is compatible with the following Icom Equipment

IC-275 ++	IC-703	IC-706 (all) ++	IC-707 ++	IC-718 ++	IC-725 ++	IC-726 ++	IC-728 ++
IC-729 ++	IC-735 ++	IC-736 ++	IC-737 ++	IC-738 ++	IC-7000	IC-7400	IC-746
IC-746Pro	IC-756 ++	IC-756Pro	IC-756Pro II	IC-756Pro III	IC-761 ++	IC-765 ++	IC-775 ++
IC-775 DSP ++	IC-78 ++	IC-7800	IC-781 ++	IC-820 ++	IC-821 ++	IC-910 ++	IC-970 ++
IC-R10	IC-R20 *	IC-R7000	IC-R7100	IC-R72	IC-R75	IC-R8500	IC-R9000
IC-375 ++	IC-575 ++						

\*The interface will work with the IC-R20 if you change the 3.5mm mono jack to a 3.5mm stereo jack with the data wire to the ring rather than the tip.

++ These Radios do not allow for PTT/CW control via the CI-V command set. You will need to add an additional PTT/CW cable to the interface to allow PTT function. (See Instructions later on how to do this)

## Software

There is plenty of suitable software available on The Net, some being free and others paid for. The most popular software seems to be:

- Ham Radio Deluxe                      Download from <http://hrd.ham-radio.ch/>
- TRX-Manager                              Download from <http://www.trx-manager.com/>
- MixW                                         Download from <http://www.mixw.net/>
- N1MM                                         Download from <http://pages.cthome.net/n1mm/>

## Here is a simple guide to ensure you get your interface up and running 1<sup>st</sup> time.

- Although the interface is designed to minimize any damage to your radio and PC and I have never had a reported problem, I suggest that you turn your PC and radio off when first connecting the PC to the CI-V port on your radio.
- If your PC has an RS-232 port, ensure it has been turned on in the BIOS
- You may run into connection problems if you have another application running that also needs to access your serial port. Ensure these applications are closed when using this interface.
- Ensure the CI-V address of your radio is set to the default to begin with otherwise your chosen software will not communicate with your radio. Refer to your radio's manual on how to do this.
- The interface is designed to work at all baud rates supported by your radio. For best performance, I suggest you use the highest speed available.
- When configuring your software of choice, ensure that the option to provide interface power via the "DTR" signal is selected.

- Ensure your software of choice is set for the correct Com Port, Radio Manufacturer/Type and that the Baud Rate matches that pre-configured on your radio. (If you are having problems, some software allows you to “Auto Detect” the Com Port and Baud Rate settings and so it will do the searching for you)

## Adding a PTT Keying Cable

### Why do we need it?

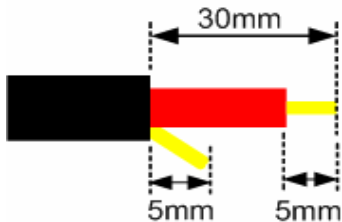
Some earlier Icom Radio's do not allow for PTT Keying in the CI-V control command set. These radio's require hardware keying and this is achieved by utilizing the “RTS” line on the RS-232 port as a PTT keying signal. Software such as Ham Radio Deluxe allows you to control the RTS line for this purpose. You have purchased a version of my interface without the PTT keying cable as standard, do not worry as the PCB is already populated with the components ready for you to add your own cable.

### Preparation

You will need a suitable length of single core screened cable (7mm diameter maximum), some soldering skills and the correct connector to plug into your Icom Radio. This may take the form of a standard Mic connector or the correct DIN Accessory connector for the back panel of your radio. Also, have your radio instruction manual handy as you may need to refer to pin numbers on the accessory sockets later.

### Connection to the CI-V PCB Interface

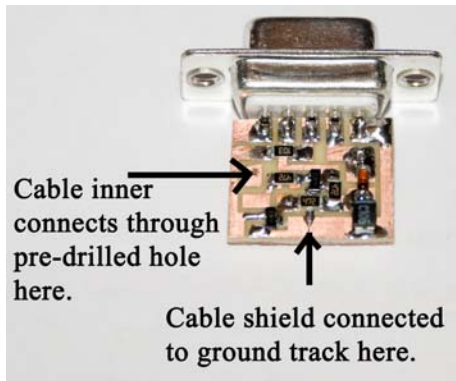
Take your length of screened cable and remove about 30mm of the outer and make a short tail of the shield (no more than 5mm), and tin with solder. Then bare about 5mm of the inner and again tin with solder.



Disconnect your CI-V interface from your PC/Radio and gently prize open the D Type cover by lifting the locking tab on the side of the cover. (Make a note of which way round the interface sat in the shell). Undo the 2 cable clamp screws and gently remove the interface from the shell and look at the reverse side of the PCB (the photo below shows a PCB without any cable connections).

On your interface, you will see the shield of the existing data screened cable made off to the edge of the PCB on a ground track. You need to solder the 5mm shield tail of your new PTT cable next to the existing data cable onto the same ground track.

It is a little tight so you may wish to reposition where the existing data cable earth tail connects to this track. Once the shield is made off, push the inner of your new PTT cable through the pre-drilled hole as indicated in the photo and then solder to the track on the opposite side of the PCB.



You can now put the PCB back into the shell. Firstly, make sure that you have not shorted your new shield connection to adjacent tracks. (I told you to make it no more than 5mm for a reason!!) When you are happy that you have made off the connections neatly, put the PCB back into the shell ensuring it goes back in the same orientation as it came out. If you put it in upside down you will put undue strain on the cables when you do the cable clamp back up. You will now have an interface with 2 cable hanging out of the back.

## Connecting the new cable to your radio

Your next decision is how to interface your new cable you the PTT line of your radio. The best way to do this is via the accessory socket on the back of your Icom Radio but you may choose to use the Microphone connector on the front of the radio. You will of course need to buy the correct plug to connect your new PTT cable to your radio and many Ham/Electronics outlets will stock these. Most Icom radio's use a standard 8 pin Din connector but there are a few that use the 13 pin Din connector such as the IC-706, IC-718 and IC-78.

Generally, you want to find the "Send" pin on the accessory socket. On Icom Radios, the radio will transmit when the "Send" pin is grounded (This is what the additional circuitry on the interface does via the RTS Signal).

You will need to refer to your particular radio's instruction manual for actual pin connections but a quick guide to some common radios is in the table below.

Radio	Connector on radio	Cable Inner Conductor to "Send" line on pin number	Cable Shield Conductor connected to "Ground" on pin number
IC-718	Accessory Socket	3	2
IC-706	Accessory Socket	3 (HF/50MHZ), 7 (144 MHz)	2
IC-756	Accessory 1 Socket	3	2
IC-775	Accessory 1 Socket	3	2
IC-781	Accessory 1 Socket	3	2

As you can see, Icom has tried to keep to a common pin scheme on their accessory sockets but please refer to your own manual beforehand.

Once you have decided which pin numbers are needed and which socket you are using, carefully make off the end of the PTT cable to the correct pins on the accessory plug you have purchased. Please double check that you have not shorted any pins out and that you have indeed wired to the correct pins.

Now you have the PTT wired between the CI-V interface and your radio, all you need to do is configure your preferred Rig Control Software to activate the PTT line when you push the "On Screen" PTT button or the software keys the Radio for you. Here are a couple of examples of set-up on Ham Radio Deluxe and MixW.

- **For Ham Radio Deluxe**, Hit F8 which will bring up the program options screen. From here you can select the “COM Port TX” tab. Select the RTS button in the “COM Port Pin” section and hit apply and OK out.
- **For MixW**, under the Configuration Menu, select the TRCVR CAT/PTT Submenu. In here is a “PTT& CAT Interface” box with a “Details” button. When you hit the “Details” button, you can set “RTS” to control PTT in a drop down box.

For any other software, just find the section in the configuration where it allows you to control PTT of your radio via the RTS line of the RS232 port.

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