HOW TO ADD AN EXTERNAL SPECTRUM/WATERFALL DISPLAY TO THE ICOM IC-7300

by

Terry (G4CHD)

ICOM IC-7300 EXTERNAL SPECTRUM / WATERFALL DISPLAY

**The default Spectrum & Waterfall settings for the IC-7300 are quite acceptable but my preferred changes are :-**

Setting	Mine	Default
Max Hold	Off	10 sec
CENTRE Type Display	Carrier Point Centre (Abs freq)	Filter Centre
Averaging	3 sweeps	Off
Waveform type	Fill + Line	Fill
Waveform Colour (Current)	R : 0 G : 0 B : 57	R : 172 G : 191 B ; 191
Waveform Colour (Line)	R : 56 G : 24 B : 0	R ; 200 G : 200 B : 200
Waterfall Marker Auto Hide	Off	On

So

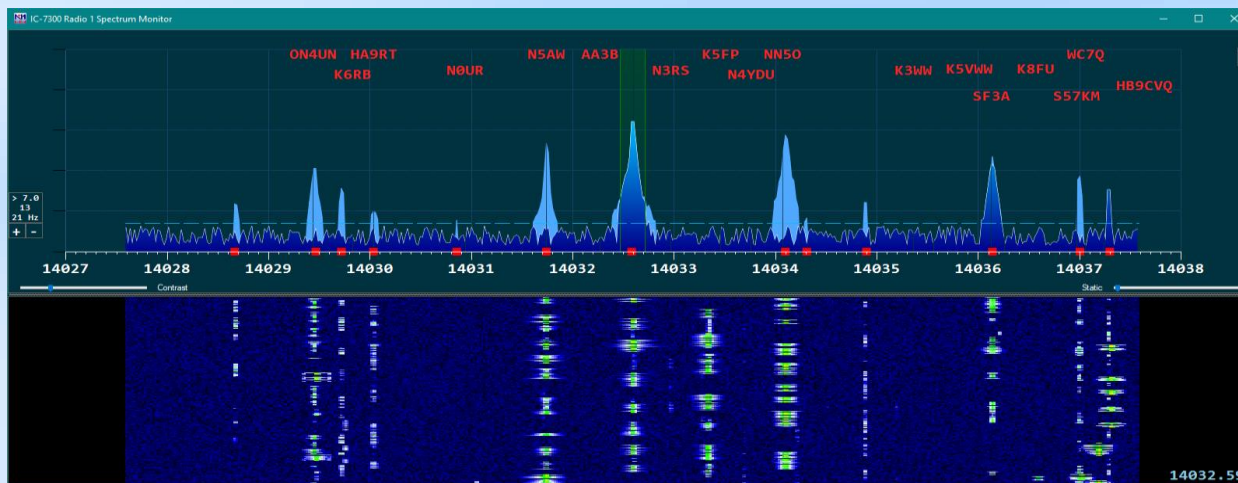**These settings were found in ZL3DW's book**

' Guide to the Icom IC-7300'
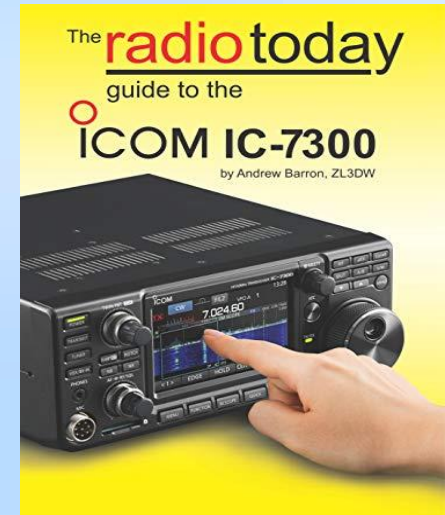
ICOM IC-7300 EXTERNAL SPECTRUM / WATERFALL DISPLAY

Although the Icom IC-7300 has a built in panoramic display
it is a bit on the small side for my elderly eyes!

Hence this talk which looks at the different ways an IC-7300 can
have an external panoramic display on eg a monitor/laptop

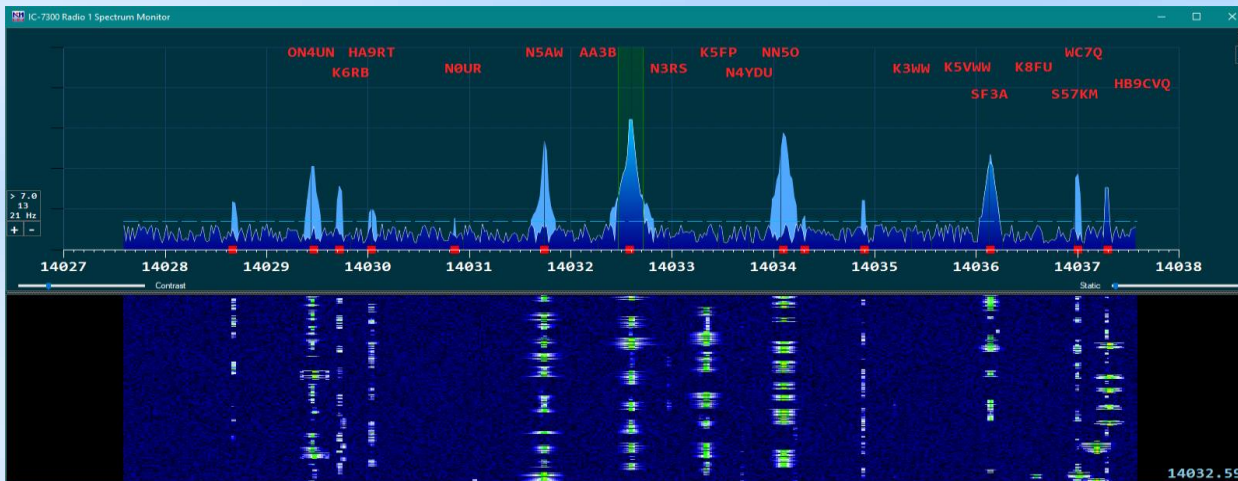# ICOM IC-7300 EXTERNAL SPECTRUM / WATERFALL DISPLAY

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So what are the advantages of a panoramic display?

It enables all the band activity to be seen at once
and
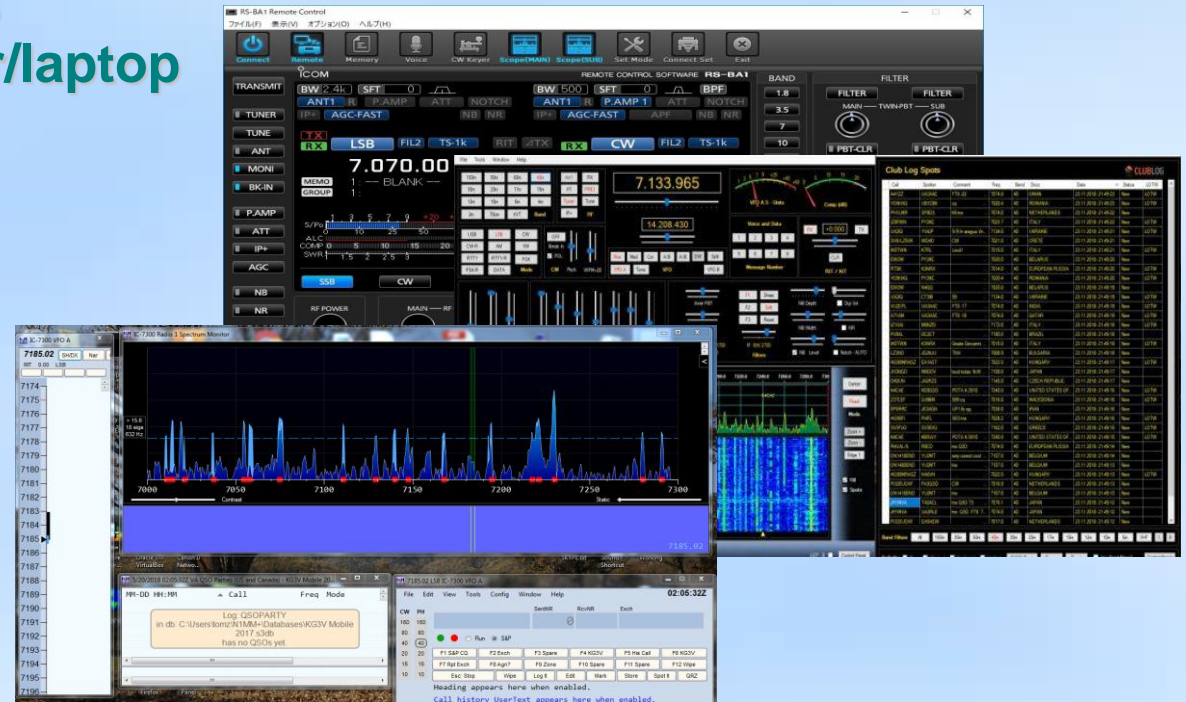enables rapid tuning to any existing or new signal

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ICOM IC-7300 EXTERNAL SPECTRUM / WATERFALL DISPLAY

THERE ARE BASICALLY TWO WAYS TO ACHIEVE A SPECTRUM & WATERFALL DISPLAY WITH THE IC-7300

1. Use a **separate SDR**
    eg SDRPlay

2. Use **suitable software** to
        mirror the IC-7300's
display on   an external monitor/laptop

eg   Icom RS-BA1 v2
      Win4Icom Suite
      N1MM logger

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ICOM IC-7300 EXTERNAL SPECTRUM / WATERFALL DISPLAY

USE SEPARATE SDR eg SDRPlay

Using this approach there is one major hurdle to overcome – namely how to switch the antenna between the output of the TX and the input of the SDR in such a way as to not damage the input to the SDR when transmitting

Unfortunately the IC-7300 does NOT have a dedicated RX out terminal

Hence an external rf sensing antenna switch is required such as the MFJ -1708B-SDR presently costing just over £100

ICOM IC-7300 EXTERNAL SPECTRUM / WATERFALL DISPLAY

MFJ-1708B-SDR

The MFJ-1708B-SDR uses a relay to switch between transmit and receive modes

When the unit senses RF or the control line is grounded by a PTT switch the relay switches the unit into transmit mode

The delay can be adjusted between 0 to 2 seconds

The MFJ-1708B-SDR requires 12 VDC

There is a version with a SMA socket for the SDR

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USING THE MFJ-1708SDR

The diagram shows how the MFJ-1708B-SDR is used to connect the IC-7300 to the antenna on TX but connect the SDRPlay to the antenna on RX

The Laptop connects to both the SDRPlay and IC-7300 via USB leads for CAT control

A free program such as Omnirig is required on the Laptop to share the USB port between the SDRuno and Log4OM logger software
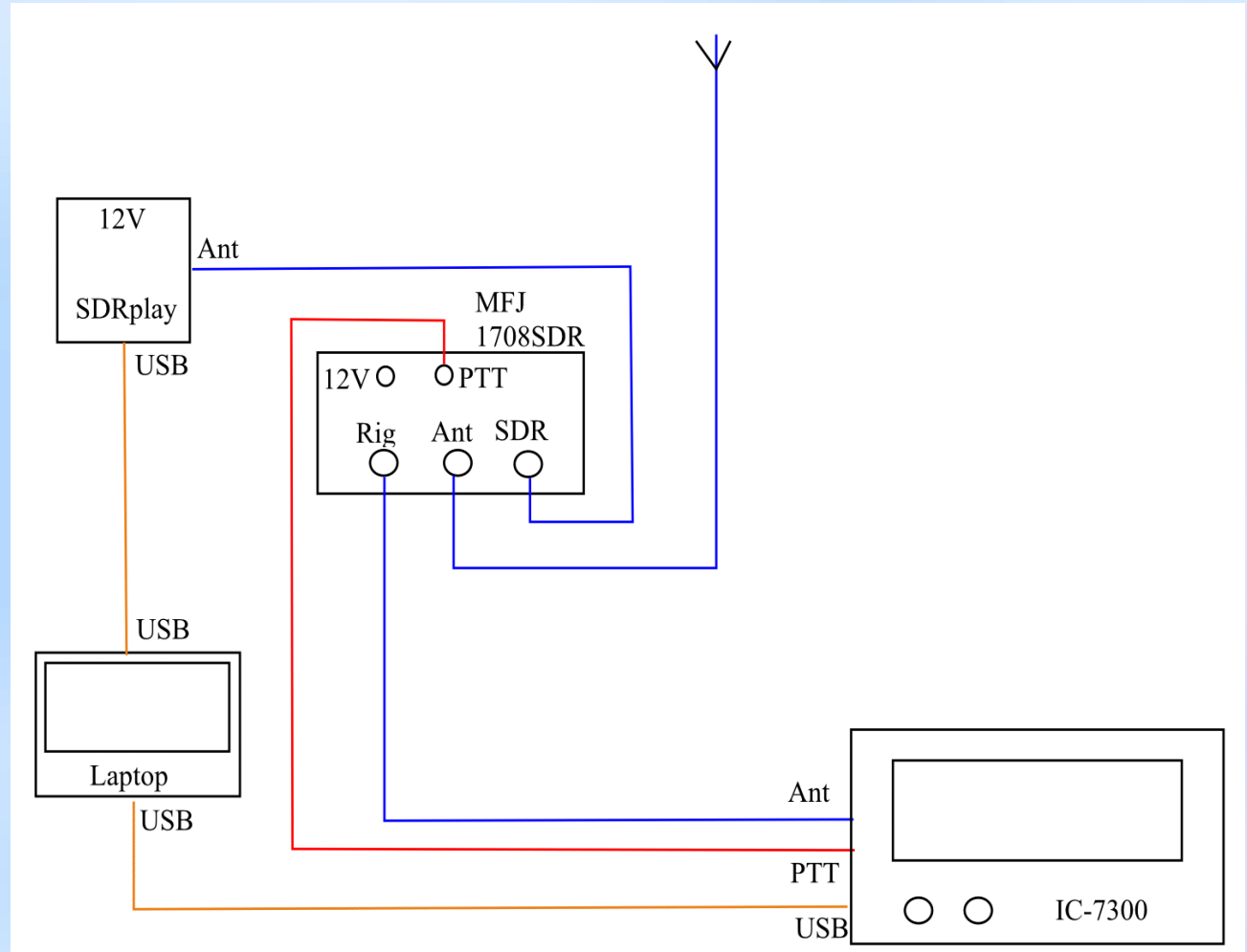
ICOM IC-7300 EXTERNAL SPECTRUM / WATERFALL DISPLAY

**ALTERNATIVE TO USING THE MFJ-1708SDR
IS THE INRAD RX7300 MODIFICATION KIT
FOR THE IC-7300**

The **INRAD RX7300** allows the user to add a receive-only antenna jack to the Icom IC-7300
This easy to install plug-in modification requires no soldering and is simple to install and easily reversible

When installed, transceiver uses the SO-239 antenna connector on transmit, and one RCA phono jack on the RX7300 for receive.
To use the transceiver in normal operation via the SO239, leave the RG-174 coax loop installed between the 2 phono sockets

RX7300 kit retails for £49.95 or £99.95 fitted

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Unfortunately this modification may prevent the use of the excellent Click2Tune by Sotabeam

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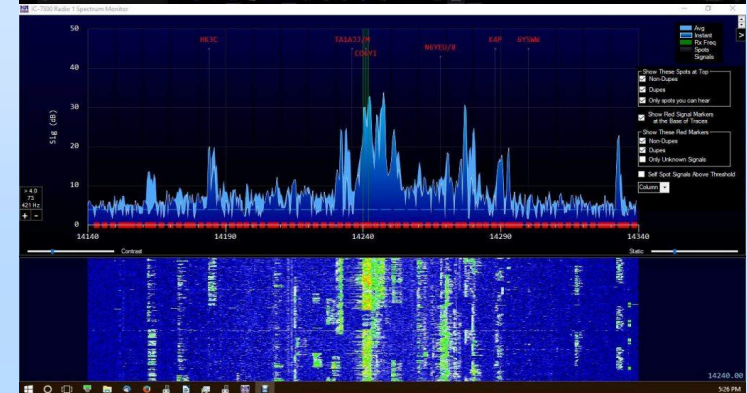
USING SOFTWARE TO MIRROR THE SPECTRUM & WATERFALL DISPLAY OF THE IC-7300

There are presently three options :-

Icom   RS-BA1 v2 cost of approx £70

Win4Icom Suite   cost approx £40 ($50)

N1MM Logger+   free and now offers a Spectrum Monitor
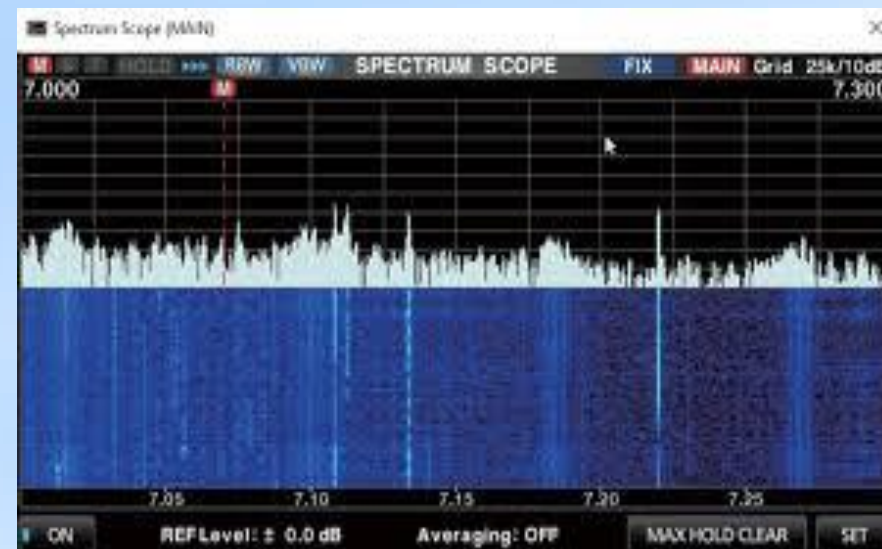
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ICOM IC-7300 EXTERNAL SPECTRUM / WATERFALL DISPLAY

USING ICOM RS-BA1 v2 TO MIRROR THE SPECTRUM & WATERFALL DISPLAY OF THE IC-7300

Icom's RS-BA1 v2 allows remote control of the IC-7300 via a USB cable

It offers remote control of the IC-7300 as well as mirroring the Spectrum & Waterfall

Cost is approx £80

Unfortunately due to my Yorkshire roots, this option will not be demonstrated !!
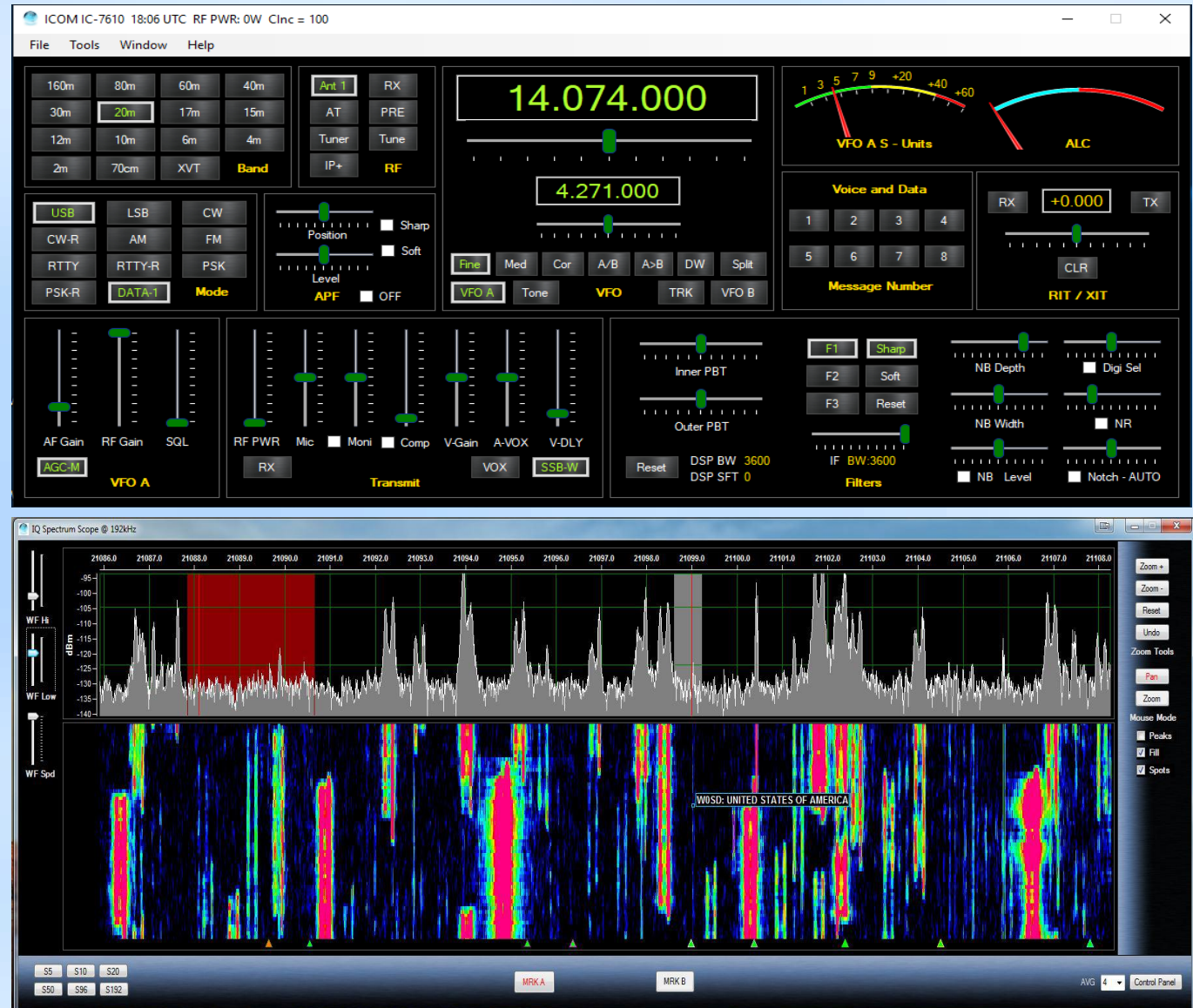
ICOM IC-7300 EXTERNAL SPECTRUM / WATERFALL DISPLAY

USING WIN4ICOM TO MIRROR THE SPECTRUM & WATERFALL DISPLAY OF THE IC-7300

Win4Icom offers a useful easy to use Control Screen for settings on the IC-7300

It also offers a separate window mirroring the Spectrum and Waterfall Display of the IC-7300

Win4Icom can interface with upto 6 programs (eg Logger32, WinLog32, N1MM, WSJT-X, WinWarbler) and enables remote operation of the radio


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ICOM IC-7300 EXTERNAL SPECTRUM / WATERFALL DISPLAY

WIN4ICOM INTERFACE TO OTHER PROGRAMS

Win4Icom requires the free program COM0COM which is a Null-Modem emulator and provides virtual 'cables' between Win4Icom and each other program
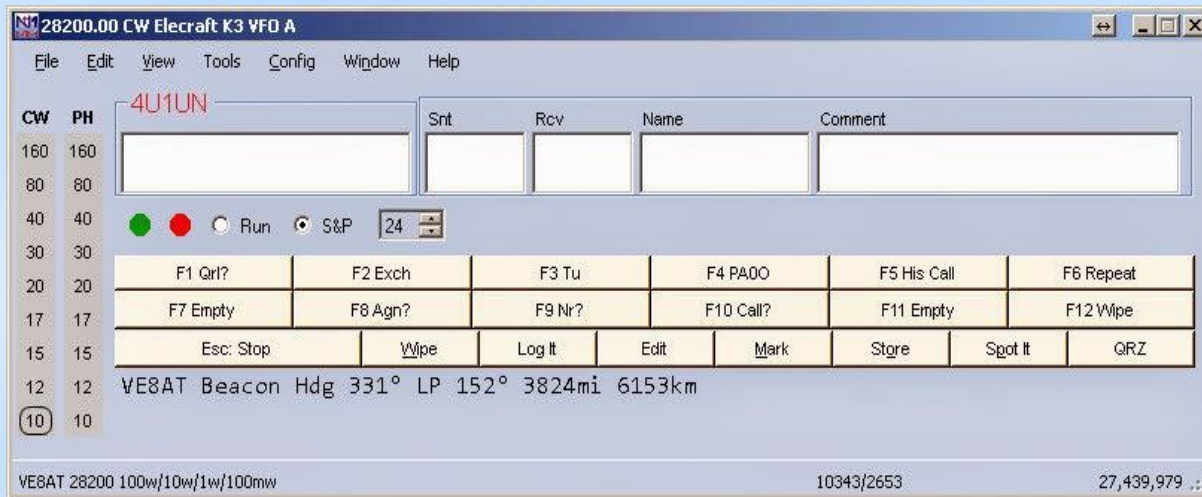
Win4Icom is connected to the higher numbered COM port and the lower numbered COM port connects to the other software eg Log4OM which in my case is via Omnirig
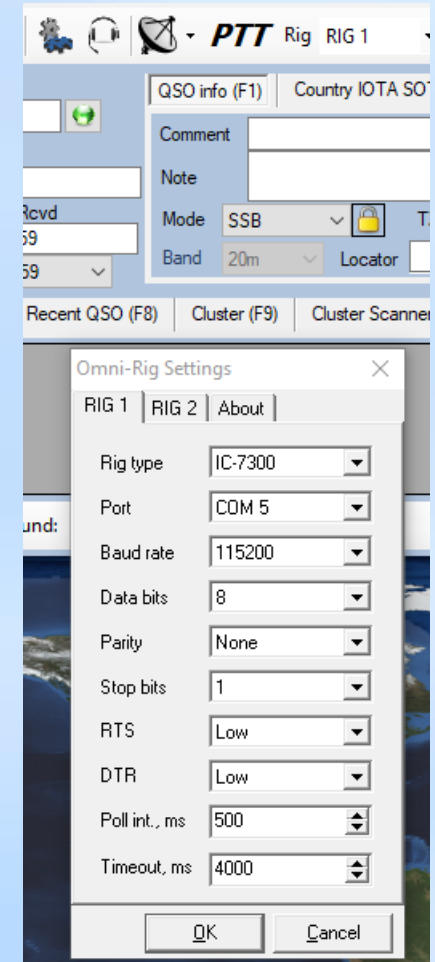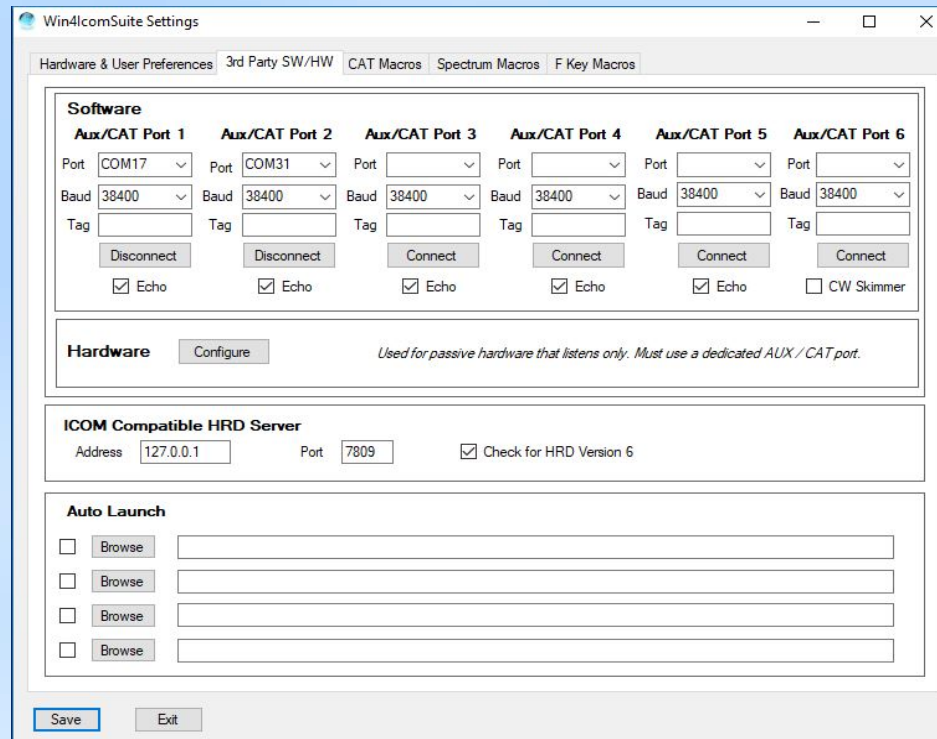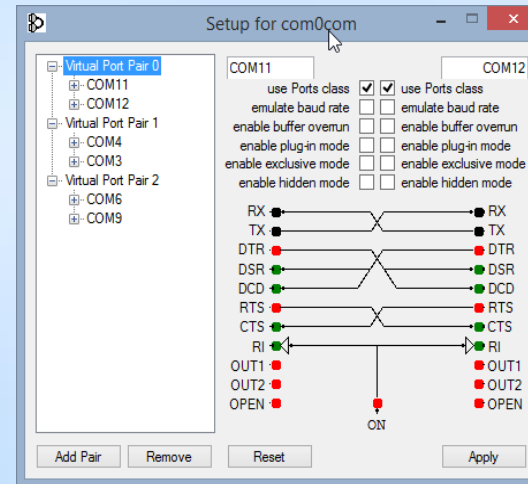
ICOM IC-7300 EXTERNAL SPECTRUM / WATERFALL DISPLAY

USING N1MM LOGGER+ TO MIRROR THE SPECTRUM & WATERFALL DISPLAY OF THE IC-7300

N1MM Logger+ is mainly a Contest Logger but can be used as a General Use Logger to record callsign, reports, name and comment
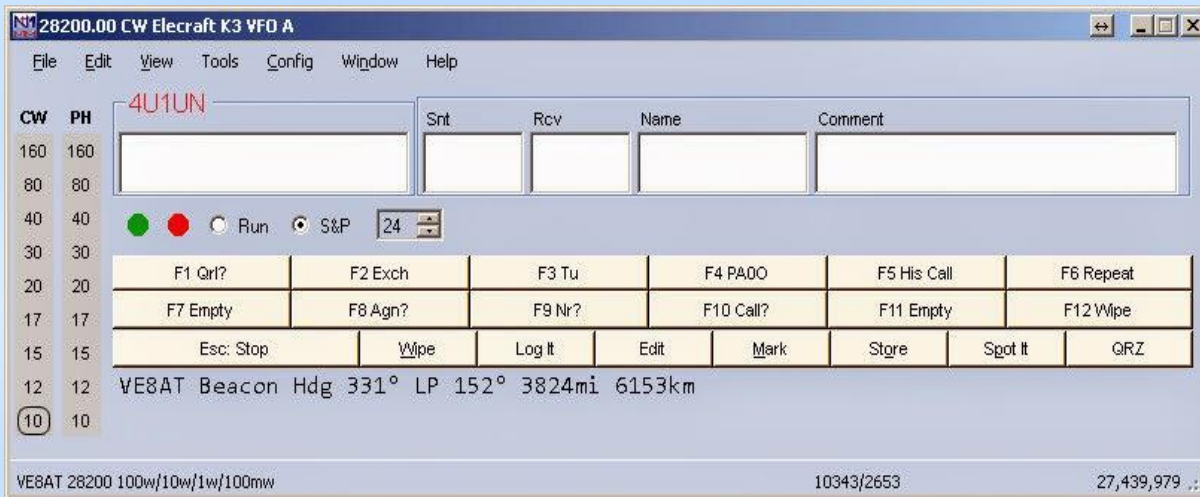

The final Log can then be exported as an ADIF file and imported into eg Log4OM where missing fields can be updated from QRZ.COM
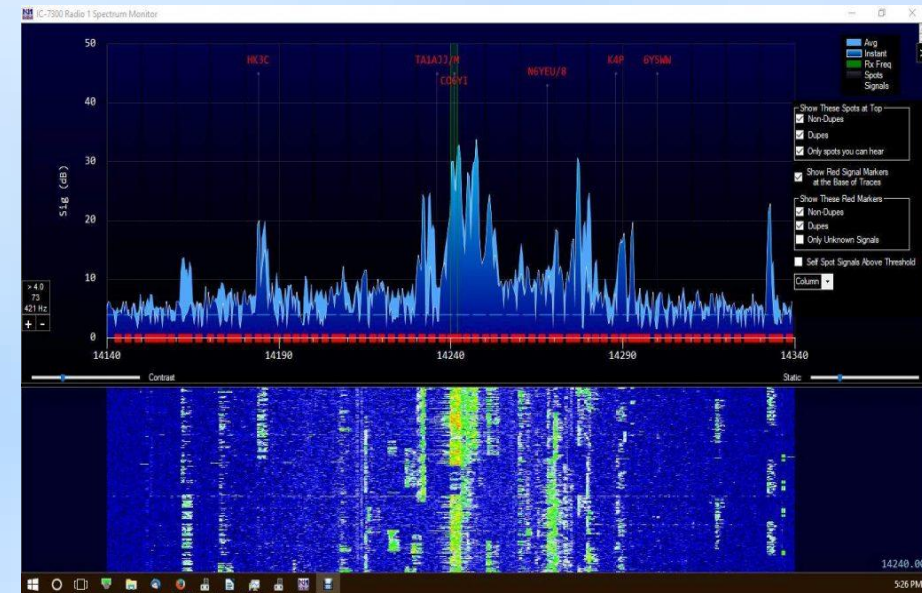
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However it also mirrors the Spectrum & Waterfall display of the IC-7300
Clicking on a signal in the waterfall tunes to the station

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ICOM IC-7300 EXTERNAL SPECTRUM / WATERFALL DISPLAY

Which is best for you is a personal choice

An external SDR such as the SDRPlay will produce a spectrum display
with a higher resolution than that mirrored from the IC-7300

N1MM Logger+ scores by being free but does not interface with Omnirig
making it difficult to run N1MM and Log4OM simultaneously
Hence the need to export an ADIF file and import it into the Logger

Win4Icom is very powerful but costs approx £40
However it does use Clublog for spotting,
interfaces with other programs and
offers remote operation of the radio over the internet

or you may just decide to use the IC-7300 as it stands!!

Hopefully you found this talk and demonstration
both interesting and entertaining

Any questions?

Terry (G4CHD)