# Kiwisdrs

Some notes on the operation of the kiwisdr at Ironstone Range (most of this is applicable to other kiwisdrs).

The Ironstone Range site has gained favour from listeners all around the world not to mention suburbanites battling with power line, solar panel and industrial noise. There is a small delay in receiving the signal on your computer due in part to network latency and some as a result of processing on the kiwisdr - you need to allow for this when operating in a net. It does however provide you with a means of monitoring your own transmission strength and audio quality. **NB** keep the mic away from the speakers so that you don't get strange sounding feedback. In a QSO you will need to hit the computer audio mute button so that you don't hear your own voice - see the note on Catsync below.

To connect to the kiwisdr click on this link http://sdr.ironstonerange.com:8073/ and this will take you to the first kiwisdr at this location and if fully occupied it will automatically redirect you to the next available unit http://sdr.ironstonerange.com:8074/ . An additional unit is being readied and this will provide an additional 4 channels making a total of 12 different channels.

Please put your callsign in the field at the top RHS of the startup screen so that it is easier to see where the users are coming from.
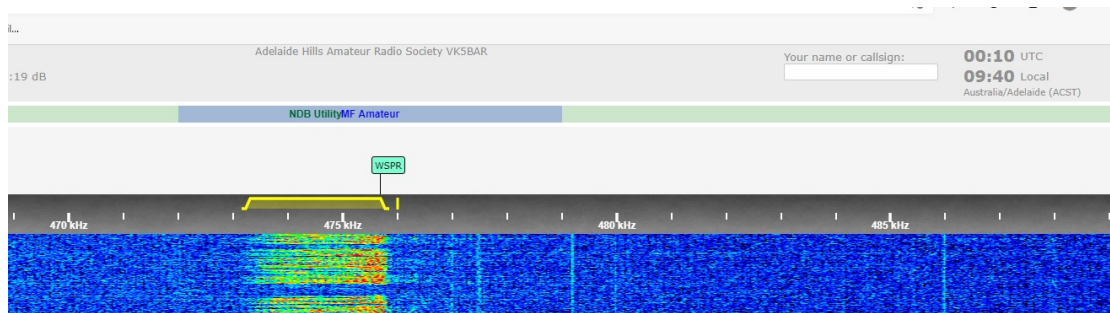
The first thing I do is click on the Spec button to show the relative signal strengths of all of the signals and I find this somewhat easier to interpret than the strength indication colours of the waterfall. I also click the Pk button that places a high watermark on the spectrum chart useful to compare signal strengths especially on a net. There is also an S meter at the bottom of the grey panel.
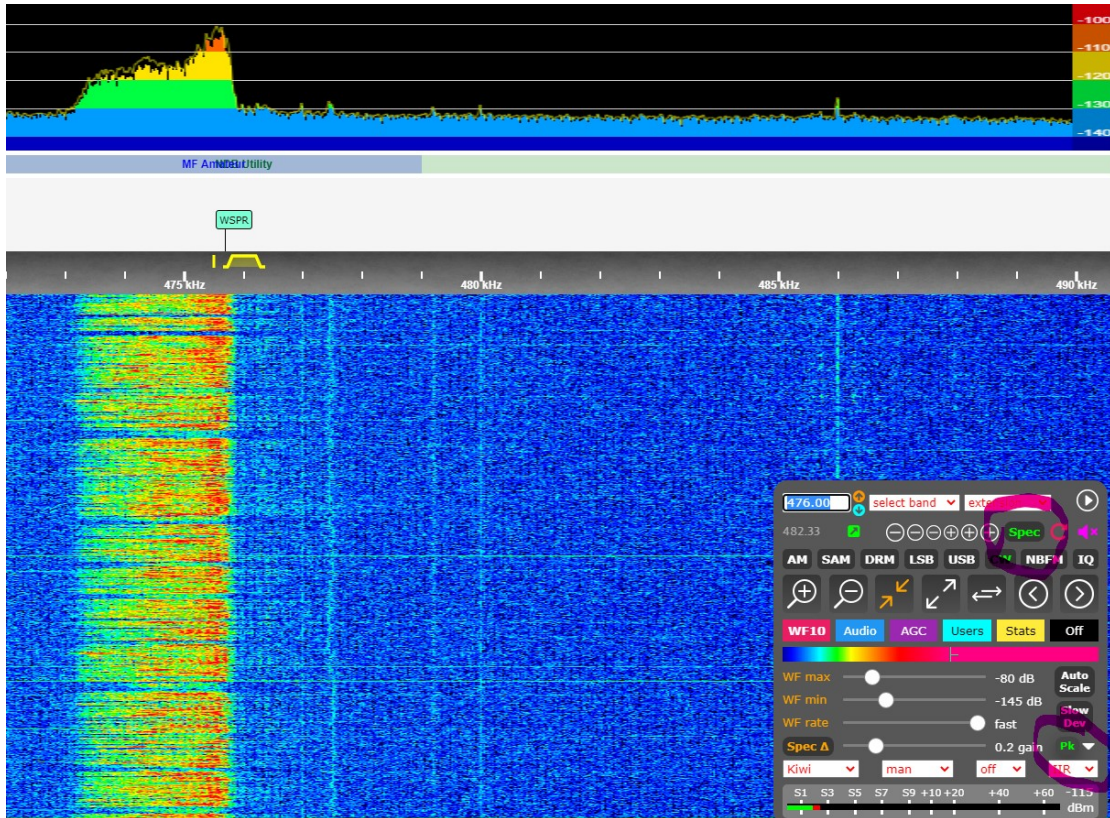
I normally get started by typing the frequency in kHz into the frequency field at the top LHS of the grey box or choosing a band from the select band field - note the US bands are shown first but go down the list to find other bands. Then select the mode from the buttons

clicking on a mode button again will cycle through the other options for that band e.g. another click on AM goes to AMN for narrow AM - note that this is equivalent to pressing the "A" key. Other letters work as well "L" for LSB and "L" for LSN or narrow LSB.
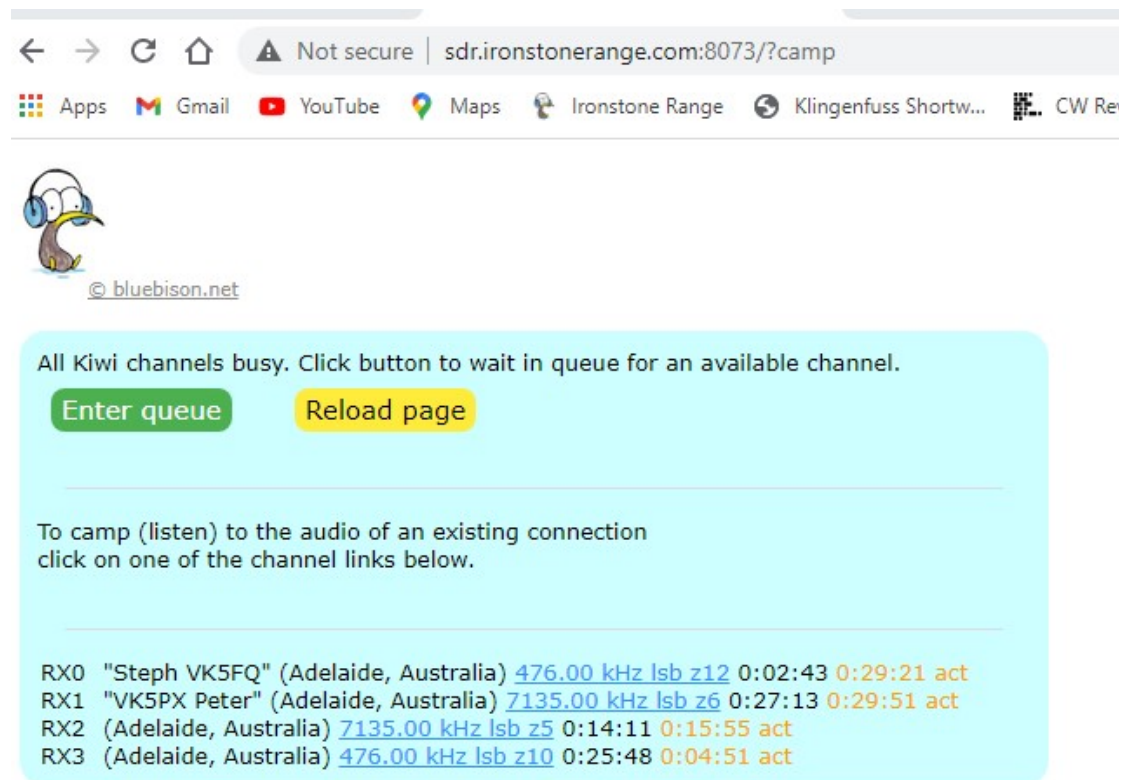

Sometimes when exploring different parts of the spectrum I like to click on weaker signals that barely appear in the waterfall. Most transmitters have reasonably accurate VFOs and operators generally operate on a whole number frequency e.g. 476.0kHz not 476.2kHz. To select whole number frequencies press and hold the shift key when you click on a waterfall. Note that this is not always the case on "Boat Anchor" nets where VFOs provide an approximate frequency.

Depending on the view and the amount of spectrum visible the - - - + + + buttons will allow you to move up and down by different amounts to better tune a signal.

Camping

The newly installed software provides an additional 4 listening connections per channel called campers that allow the camper to listen to an already established session. This is especially useful for nets where one person can setup the initial call just before the commencement of the net. Subsequent listeners can then camp on these established sessions by entering http://sdr.ironstonerange.com:8073/?camp - **NB** this screen will be displayed automatically when all slots are full.

Up to 4 campers can listen on each of the existing sessions - you only need to click on the required session and you are presented with the following screen. As mentioned this is useful for nets where you don't need to occupy all of the 4 initial slots just to listen to the net. I listen to the WIA broadcast on 476kHz on Sunday mornings and I see that Steph has already established a session on 476kHz LSB so I just click on this and all I need to do is adjust the volume level. You will notice that VK5PX is also monitoring his output on 7135kHz and the good reception afforded by this location means that he can easily hear remote listeners on the callbacks.

All Kiwi channels busy. Click button to wait in queue for an available channel.

Enter queue   Reload page

To camp (listen) to the audio of an existing connection click on one of the channel links below.

Camping on RX0   Stop   Volume ────────○──────── 🔊

S1 S3 S5 S7 S9 +10 +20   +40   +60   -85
                                            dBm

RX0 "Steph VK5FQ" (Adelaide, Australia) 476.00 kHz lsb z12 0:03:20 0:28:44 act   1 camper
RX1 "VK5PX Peter" (Adelaide, Australia) 7135.00 kHz lsb z6 0:27:50 0:29:24 act
RX2 (Adelaide, Australia) 7135.00 kHz lsb z5 0:14:48 0:15:18 act
RX3 (Adelaide, Australia) 476.00 kHz lsb z10 0:26:25 0:04:14 act

It is also possible to queue up for the SDR by clicking on the Enter queue button so that you get the next available slot.

Remember pressing "H" when in a kiwisdr session will provide you with useful information in the help screen.

Keys	Function
g =	select frequency entry field
j i LR-arrow-keys	frequency step down/up, add shift or alt/ctrl for faster shift plus alt/ctrl to step to next/prev DX label
t T UD-arrow-keys	scroll frequency memory list
b B	scroll band menu
e E	scroll extension menu
a A d l u c f q	toggle modes: AM SAM DRM LSB USB CW NBFM IQ add alt/ctrl to toggle backwards (e.g. SAM modes)
p P	passband narrow/widen
r	toggle audio recording
z Z	zoom in/out, add alt/ctrl for max in/out
< >	waterfall page down/up
w W	waterfall min dB slider -/+ 1 dB, add alt/ctrl for -/+ 10 dB
S	waterfall auto-scale
s D	spectrum on/off toggle, slow device mode
v V m space	volume less/more, mute
o	toggle between option bar "off" and "stats" mode, others selected by related shortcut key
!	toggle aperture manual/auto menu
@	DX label filter
x y	toggle visibility of control panels, top bar
esc	close/cancel action
? h	toggle this help list
	Windows, Linux: use alt, not ctrl
	Mac: use ctrl or alt

Catsync

For those who possess a computer connected transceiver but are plagued by QRM or unable to erect suitable receive antennas it might be useful to look at Catsync software https://catsyncsdr.wordpress.com/ . For a modest 10 Euro it automatically mutes your computer speakers when the PTT is pressed and synchronises the screen frequency with the VFO on your radio and vice versa. You can download a trial version that only allows synching for a couple of minutes. This combination permits you to listen to weak signals received at Ironstone Range and then respond to them from your own transceiver using your local small footprint antenna e.g. a 5BTV or a vertical connected to a AH4 tuner. Several Ironstone Range users regularly participate in nets using this software and claim that it works well with other participants readily managing the small delays attributable to SDR use.