

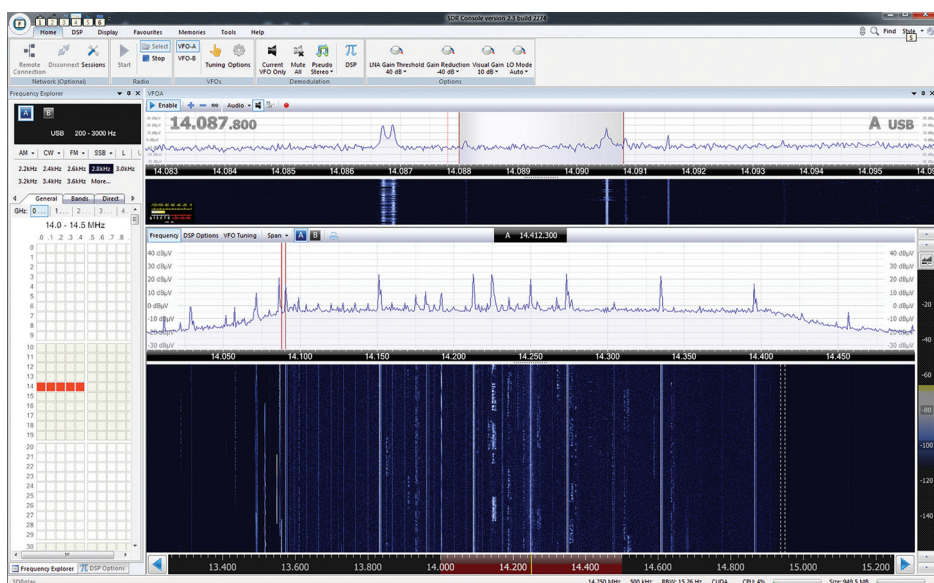
The situation with *SDR Sharp* has changed with the latest build, v1.0.0.1430 and the SDRPlay RSP plugin no longer works. However, I keep copies of downloaded files so I had a previous version (v1.0.0.1410) that I could use for the review. I've shown the SDRPlay RSP control panel from *SDR Sharp* in **Figure 4** where you can see that all the gain reduction controls are available plus the local oscillator frequency trimming.

### On the air

With continuous coverage from 100kHz through to 2GHz, the SDRPlay RSP has a myriad of uses in the shack. As a general coverage receiver it works remarkably well with a sensitivity and dynamic range that easily exceeds the popular RTL dongles. As with most wide range receivers, the band filtering is fairly broad so I had to be mindful of the effect of any strong signals in the passband. The included AGC did a good job of preventing ADC overload and was able to cope with 40m activity in the presence of very strong broadcast signals. These strong signals did cause some desensitisation but that is to be expected. Detailed specifications of the SDRPlay's chipset can be found on the SDRPlay site and its on-air performance was certainly very good. The ability to select I/Q bandwidths of up to 8MHz is particularly useful. For the HF bands I generally use narrower bandwidths as 8MHz of HF bandwidth contains far too much information to be very useful. For me, the best technique is to adjust the I/Q bandwidth to be around the same as the band segment I'm monitoring. For example, when working on 20m, I set the SDRPlay RSP to a 600kHz bandwidth. The panoramic display then gives me sight of all the 20m activity and, on a decent sized monitor, you can use the waterfall display to recognise the different types of signal, as shown in **Figure 5**.

Moving on to VHF/UHF, the wider I/Q bandwidths become extremely useful for spotting activity. With a 2MHz setting on 144MHz you can monitor the entire band. Similarly, you can see most of the 70cm band with the 8MHz I/Q setting.

One other popular use for SDRs is as a panoramic display for your main rig. For this you need an IF output from somewhere near the front end of the rig's receive section. The



**FIGURE 5:** Example of 20m activity shown by the SDRPlay RSP running in *SDR-Console*.

amount of spectrum you can observe with an SDR depends very much on the architecture of your rig. The trick is to take an IF feed before too much filtering has been applied. A Google search will reveal an assortment of techniques for extracting an IF feed from most popular rigs.

I generally prefer to operate with an SDR connected to a separate antenna and my favourite is the Wellbrook ALA1530+ Imperium loop antenna. This is a very compact antenna with excellent performance from 50kHz through to 30MHz. By using SDRPlay RSP with an external antenna I can use it as an off-air monitor of my own signal whilst also monitoring band activity. As an added bonus, all the SDR packages listed here let me record the I/Q data to disk and I often use that facility to check my signal and to keep a record of any interesting band activity.

### Bonus software

The team at SDRPlay include a couple of Mirics software packages that may be of interest. They are the *FlexTV FMDAB Player* and the Mirics *SDR Tools* software. These are intended as development/demonstration tools so no support is offered. I installed and used both of these programs. The *Flex* player worked well for me and automatically

searched out all the local DAB multiplexes and presented a simple program list so I could find and tune to stations very easily. The SDR tools software provides direct access to the configurable settings of the Mirics chipset and are only likely to be of use to those that are designing or experimenting with this chipset.

### Summary

The SDRPlay RSP is an extremely versatile and useful SDR receiver that has a multitude of uses around the shack. The performance was a good step up from the RTL dongles and the wide and variable I/Q bandwidth was a particularly useful feature. Like many SDR hardware systems, SDRPlay RSP relies on the support of third party software developers but I know that the team at SDRPlay have been working closely with the developers to ensure continuing support. The SDRPlay RSP is available direct from the SDRPlay online shop at [www.sdrplay.com](http://www.sdrplay.com) priced at £118.80 inclusive of VAT at 20%. My thanks to SDRPlay for the loan of the review model.

**Stop press:** As this article was going to print, the SDRPlay team launched a new EXTIO plugin and API for the SDRPlay. Version 1.8.0 includes an improved gain map and automatic, post tuner, DC offset correction and I/Q compensation. This almost completely eliminates the DC centre spike and reduces in-band images that can occur in the presence of strong signals. The increased IF gain control plus the facility to disable the LNA provide vital additional controls for dealing with strong signals. The new EXTIO and API are available for download from [www.sdrplay.com](http://www.sdrplay.com)

#### TABLE 1: Specification extract.

Frequency range	100kHz to 2GHz continuous
I/Q bandwidths	200kHz, 300kHz, 600kHz, 1.536MHz, 5MHz, 6MHz, 7MHz and 8MHz
ADC sample frequency	2MSPS to 10.66MSPS
Typical Noise Figure	12.0dB at 10MHz, 4.5dB at 100MHz, 3.5dB at 600MHz, 4.0dB at 1800MHz
Antenna connection	SMA 50Ω
USB	USB 2.0 type B