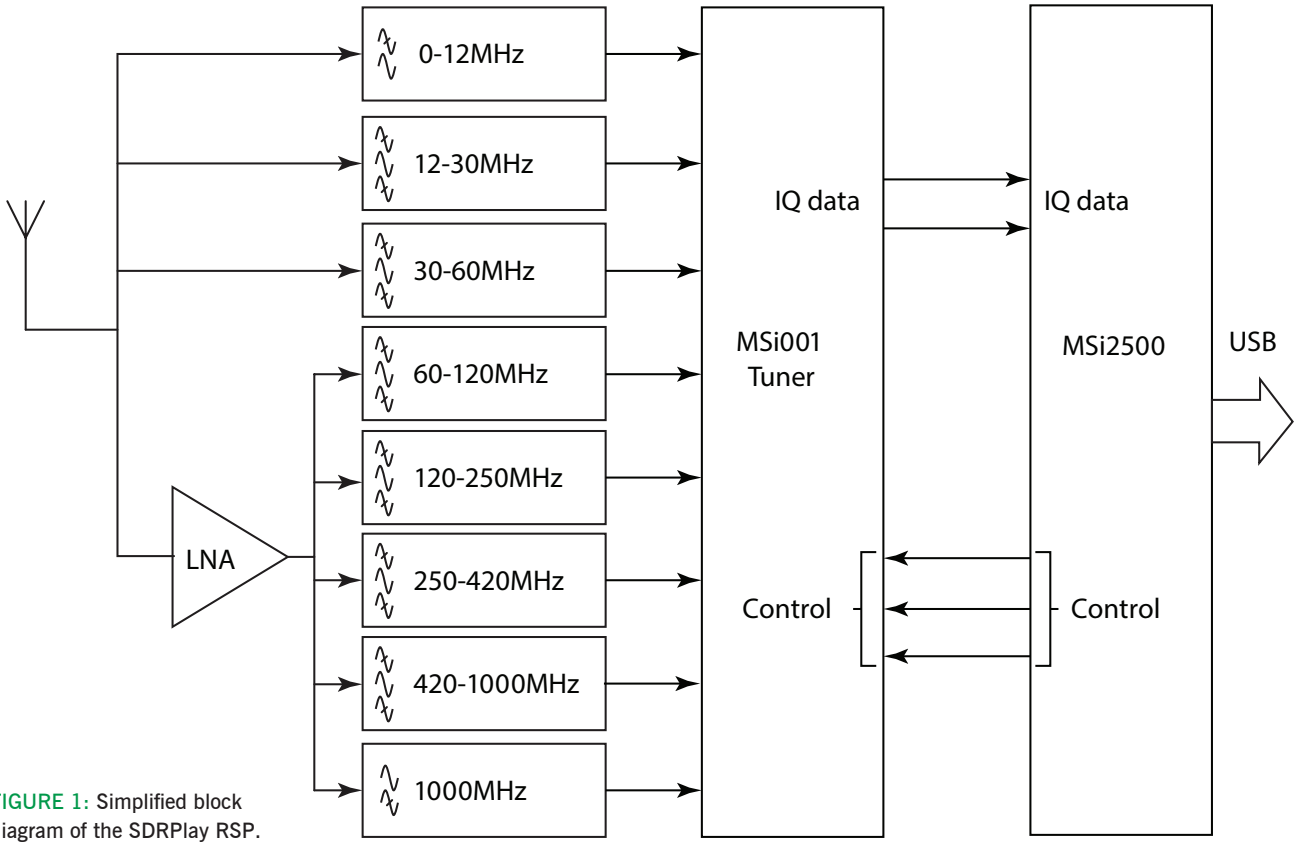

FIGURE 1: Simplified block diagram of the SDRPlay RSP.

12-30MHz and 30-60MHz). Frequencies above 60MHz are routed via a GaAs MMIC low noise amplifier (LNA) that can be set to provide up to 20dB of gain. The LNA is followed by further RF switches that route the signal to a bank of five filters for 60-120MHz, 120-250MHz, 250-420MHz, 420-1000MHz and a 1000MHz high-pass filter. These filtered bands are applied to appropriate inputs on the MSi001 tuner chip.

The analogue I/Q outputs from the tuner are applied to a Mirics MSi2500, which contains a microcontroller, clock oscillator, frequency synthesiser, USB controller, DSP processor and the all-important ADCs. The MSi2500 produces 12-bit digital I/Q samples that are passed via the on-board digital signal processor (DSP) to the USB controller for transmission to the PC. The microcontroller also manages the SPI communications link that's used to control the filter switching and a number of other receive parameters.

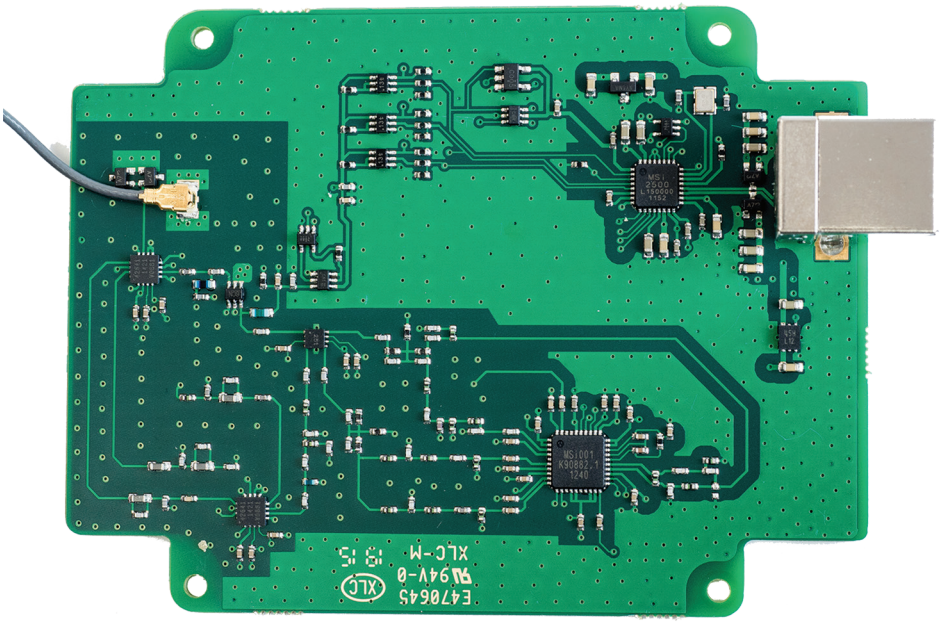

PHOTO 2: The tiny components inside the SDRPlay RSP form an extremely versatile and useful SDR receiver. On the left is the low noise amplifier; bottom right is the MSI001 SDR 'brain' and top right is the USB interface.

Receiver control interface

The SDRPlay RSP features a detailed control interface similar to that available with other SDR hardware. Although it's great to have access to the additional controls, they need to be used with care or you can compromise the receive performance. If you do lose your way, the interface has a useful Load Defaults button that will restore the factory settings.

Let's have a closer look at what's provided. I've shown a screen shot, **Figure 2**, of the control panel provided by the EXTIO DLL file used with *HDSDR* as this is the only software that provides access to all the SDRPlay's features. The first point to get to grips with is the SDRPlay RSP gain adjustments as they are all based around gain reduction. The assumption is that the receiver starts at maximum gain and gain reduction is applied to different stages in order to obtain the best

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