



# Radio Spectrum Processor 1



The SDR-play RSP1 is a powerful wideband full featured SDR which covers the RF spectrum from 10 kHz to 2 GHz. All it needs is a PC and an antenna to provide excellent communications receiver functionality. Combined with the power of readily available SDR receiver software (including 'SDRuno' supplied by SDRplay) you can monitor up to 10 MHz of spectrum at a time. An open API allows developers to create new demodulators or applications around the platform.

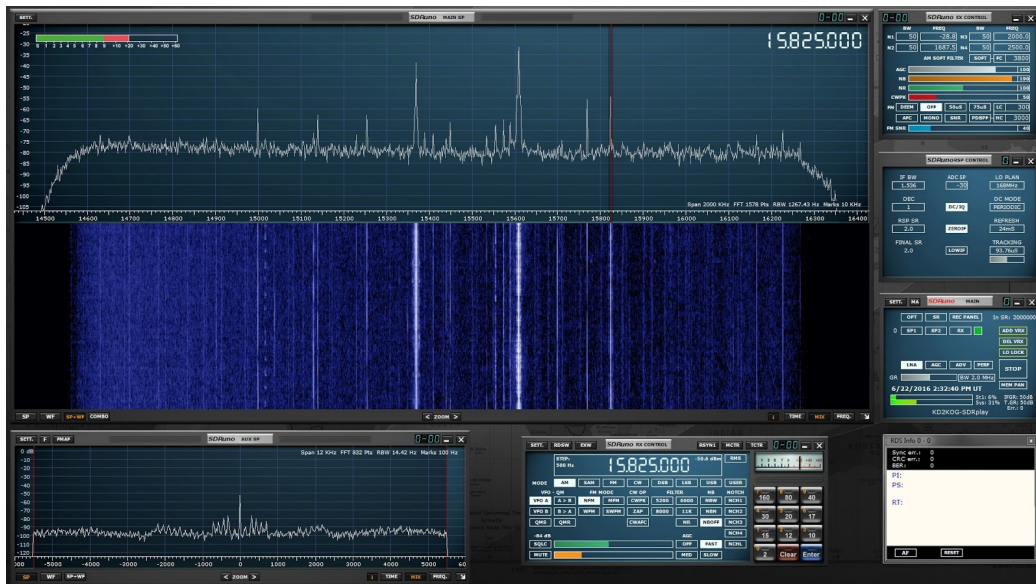
## KEY BENEFITS

- Ideal for portable operation
- No need for an up-converter
- Ideal for monitoring of ISM/ IoT/ Telemetry bands <2 GHz
- Covers all frequencies from experimental LF through HF, VHF and UHF
- Works with all the popular SDR software (including HDSDR, SDR Console, Cubic SDR and SDRuno)
- Compatible with existing open source radio software
- ExtIO based plugin available
- Compatible with Mirics Radio & TV software
- Software upgradeable for future standards
- Strong and growing software support network
- API provided to allow demodulator or application development
- Multiplatform support including Windows, Linux, Mac, Android and Raspberry Pi 2/3

KEY FEATURES	RSP1	RSP2	RSP2pro
Continuous coverage from 10 kHz to 2 GHz (RSP2 & RSP2pro from 1 kHz )	✓	✓	✓
Up to 10 MHz visible bandwidth	✓	✓	✓
Powers over the USB cable with a simple type B socket	✓	✓	✓
12-bit ADC silicon technology (not another 8 bit dongle!)	✓	✓	✓
8 built in front-end pre-selection filters	✓		
10 high-selectivity, built in front-end preselection filters		✓	✓
Software selectable (On/Off) Low Noise Preamplifier	✓		
Software selectable multi-level Low Noise Preamplifier		✓	✓
SDRuno—World Class SDR software	✓	✓	✓
Open API for new apps development	✓	✓	✓
Single SMA antenna socket	✓		
2 x SMA Software Selectable Antenna Inputs		✓	✓
1 x High Impedance Input for long wire antennas		✓	✓
Software selectable MW /FM notch filters		✓	✓
Highly stable 0.5PPM TCXO trimmable to 0.01PPM		✓	✓
24MHz Reference clock input / output connections		✓	✓
4.7V Bias-T (Port B only)		✓	✓
Robust and strong plastic case	✓	✓	
RF shielding layer inside case		✓	
Rugged metal case			✓

## SPECIFICATIONS

- |  |  |   |  |
|--|--|---|--|
| <p><b>General</b></p> <ul style="list-style-type: none"> <li>• Weight 110g</li> <li>• Size: 95mm x 80mm x 30mm</li> <li>• Low Current: 120 – 175 mA</li> </ul> <p><b>Connectivity</b></p> <ul style="list-style-type: none"> <li>• Single 50Ω RF connector (SMA)</li> <li>• USB 2.0 (high speed) type B socket</li> </ul> <p><b>Frequency Range</b></p> <ul style="list-style-type: none"> <li>• Continuous coverage 10kHz – 2GHz</li> <li>• Frequency Tolerance: 10ppm (max)</li> </ul> <p><b>ADC Characteristics</b></p> <ul style="list-style-type: none"> <li>• Sample frequency 2MSPS – 10.66MSPS</li> <li>• 12 bit native ADC</li> <li>• 10.4 ENOB</li> <li>• 60dB SNR</li> <li>• 67dB SFDR</li> </ul> | <p><b>IF Modes</b></p> <ul style="list-style-type: none"> <li>• Zero IF, All IF bandwidths</li> <li>• Low IF, IF bandwidths ≤ 1.536MHz</li> </ul> <p><b>IF Bandwidths (3dB)</b></p> <ul style="list-style-type: none"> <li>• 200kHz</li> <li>• 300kHz</li> <li>• 600kHz</li> <li>• 1.536MHz</li> <li>• 5.0 MHz</li> <li>• 6.0 MHz</li> <li>• 7.0 MHz</li> <li>• 8.0 MHz</li> </ul> | <p><b>Typical Noise Figures</b></p> <ul style="list-style-type: none"> <li>• 12.5dB @ 3MHz</li> <li>• 12.0dB @ 10MHz</li> <li>• 11.5dB @ 20MHz</li> <li>• 12.0dB @ 40MHz</li> <li>• 4.5dB @ 100MHz</li> <li>• 4.5dB @ 200MHz</li> <li>• 5.0dB @ 360MHz</li> <li>• 3.5dB @ 600MHz</li> <li>• 3.5dB @ 1300MHz</li> <li>• 4.0dB @ 1800MHz</li> </ul> | <p><b>Front End Filtering</b><br/>Automatically configured front end filtering</p> <p><b>Low Pass</b><br/>12MHz</p> <p><b>Band Pass</b></p> <ul style="list-style-type: none"> <li>• 12 – 30MHz</li> <li>• 30 – 60MHz</li> <li>• 60 – 120MHz</li> <li>• 120 – 250MHz</li> <li>• 250 – 420MHz</li> <li>• 420 – 1000MHz</li> </ul> <p><b>High Pass</b></p> <ul style="list-style-type: none"> <li>• 1000MHz</li> </ul> |
|--|--|---|--|



## SDRuno FEATURES

- Multiple 'Virtual Receivers' which allow for simultaneous reception and demodulation of different types of signals within the same receiver bandwidth.
- A selectivity filter with an ultimate rejection greater than 140 dB.
- A unique distortion-free double stage AGC with fully adjustable parameters.
- Multiple notch filters with BW adjustable down to 1 Hz, Notch Lock feature.
- A unique synchronous AM mode with selectable/adjustable sidebands, dedicated PLL input filter, and selectable PLL time constants.
- SNR (stereo noise reduction), featuring a proprietary noise reduction algorithm for stereo broadcast.
- AFC for FM signals.
- Calibration for receiver frequency errors. Multiple virtual receiver support
- Class leading audio quality
- Calibrated S meter and power measurements
- RDS support with "DX Mode" for low signal environment
- Active Noise cancelling
- CAT and Omnirig control
- SSB/AM and Synchronous AM modes
- WBFM and NFM with AFC