SDRplay Radio Spectrum Processor 2

The RSP2 is a powerful wideband full-featured SDR which covers all frequencies from 1 kHz up to 2 GHz. This enhanced version of the popular RSP1 provides three software selectable antenna inputs, & new stability and clocking features ideally suited to industrial, scientific & educational applications. Combined with the power of SDRuno receiver software this versatile receiver can monitor up to 10 MHz of spectrum at a time. The RSP2 is available in two versions—the standard RSP2 is housed in an RF shielded robust plastic case and the RSP2pro is enclosed in a rugged black painted steel case for industrial users.

APPLICATIONS

• **Amateur**	• **Industrial**	• **Educational/Scientific**
• General Coverage RX	• Surveillance	• Spectrum Analyser
• Panadapter	• EMI/EMC Monitoring	• RF Power Measurement
• Trunked Radio	• ADS-B	• Radio Astronomy
• SSTV, HFFAX and Packet Radio	• Remote broadcast monitoring	• Passive Radar
• Digital Voice	• Multi– standard b/cast RX	• Weather Satellite
• Satellite Comms	• RF surveying	• Ionosonde
• Antenna Design	• IoT projects	• Smart Tuning projects

KEY BENEFITS

- Low power consumption, Ideal for portable operation
- Covers all frequencies from experimental LF through to L-Band
- Supports simultaneous HF and VHF antenna combinations
- Includes world class SDRUno SDR software
- Support for other popular SDR packages (including HDSDR, SDR Console, Cubic SDR and GNU Radio) will follow
- Ability to synchronise multiple RSPs
- Software upgradeable for future standards
- Strong and growing software support network
- API provided for demodulator or application development
- Multiplatform support including Linux, Mac, Android and Raspberry Pi 2/3 will follow
- Up to 16 individual receive channels in any 10MHz slice of spectrum using SDRuno
- Calibrated S meter and power measurements with SDRuno

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			✓

November 2016 v1.1q

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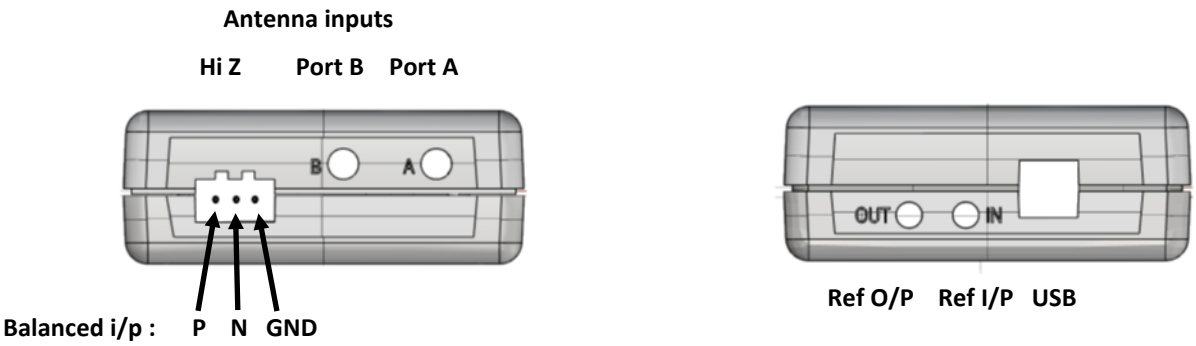
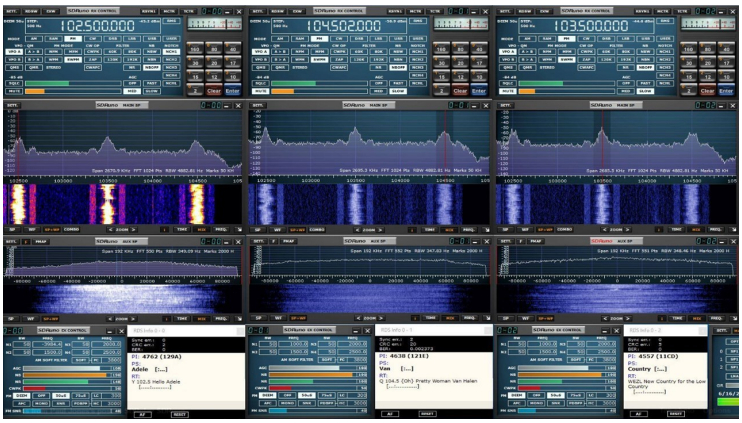
CONNECTIONS



SDRuno FEATURES



- 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
- RF Notch Filtering
- CAT and Omnirig control
- SSB/AM and Synchronous AM modes
- WBFM and NFM with AFC

SPECIFICATIONS

General

- RSP2 Weight: 112g
- RSP2pro Weight: 296g
- RSP2 Size: 98mm x 86mm x 32mm
- RSP2pro Size: 99mm x 87mm x 33mm
- Low current: 170mA typical (excl Bias T)

Connectivity

USB
- USB 2.0 (high speed) type B socket

Port A Characteristics
- 1.5 MHz – 2 GHz operation
- 40 dB RF gain control
- 50 Ω input impedance
- SMA Female connector

Port B Characteristics
- 1.5 MHz – 2 GHz operation
- 40 dB RF gain control
- 50 Ω input impedance
- SMA Female connector
- Selectable 4.7V DC out (see Bias T)

High Z port Characteristics
- 1 kHz – 30 MHz operation
- 18 dB RF gain control
- 1kΩ input impedance (balanced)
- Pluggable screw connector (CTB9208/3 plug supplied)

Reference clock I/O
- MCX Female connector

IF Modes

- Zero IF, All IF bandwidths
- Low IF, IF bandwidths ≤ 1.536MHz

IF Bandwidths

- 200kHz, 300kHz, 600kHz, 1.536MHz
- 5.0 MHz, 6.0 MHz, 7.0 MHz, 8.0 MHz

Bias T

- Software selectable 4.7V @ 100mA output voltage on Port B.

Reference

- High Stability 0.5PPM TCXO
- In-field trimmable to 0.01ppm.
- 24MHz Reference in/out connections

ADC Characteristics

- Sample frequency up to 10.66MSPS
- 12 bit native ADC
- 10.4 ENOB
- 60dB SNR
- 67dB SFDR

NF (max RF gain)

- 8dB @ 3MHz
- 2.0dB @ 10MHz
- 1.6dB @ 20MHz
- 1.5dB @ 40MHz
- 1.5dB @ 100MHz
- 1.9dB @ 200MHz
- 5.0dB @ 360MHz
- 2.5dB @ 600MHz
- 3.5dB @ 1300MHz
- 4.0dB @ 1800MHz

IIP3 (min LNA gain)

- +15dBm @ 3MHz

Front End Filtering (Ports A and B)

(automatically configured)

Low Pass
- 12MHz

Band Pass
- 12 – 30MHz
- 30 – 60MHz
- 60 – 120MHz
- 120 – 250MHz
- 250 – 300MHz
- 300 – 380MHz
- 380 – 420MHz
- 420 – 1000MHz

High Pass
- 1000MHz

Notch Filters
- FM Filter
>60dB 80 – 100MHz
- MW Filter
>30dB 680 – 1550 kHz

Front End Filtering (High Z port)

Low Pass
- 30MHz