



All-in-one, plug-and-play networked receiver

Product Description

The nRSP-ST is a truly “plug and play” integrated, networked general coverage receiver which combines a receiver, a host computer and a whole lot more all in one box. Apply power and connect to the internet and the nRSP-ST can be accessible from anywhere.

The receiver comprises a full-featured 14-bit software defined radio. It offers up to 10MHz of spectrum visibility anywhere between 1kHz and 2GHz. The nRSP-ST is ideal as a stand-alone device with remote connections made accessible via its Ethernet or WiFi interfaces. The unit supports a choice of three data transport modes to suit the available network bandwidth of LAN or WAN connectivity. It is ideal for use in a low noise location or where connections to large outdoor antennas are feasible. Large IQ files can readily be stored on a local storage device. SDRplay provides free companion SDRconnect™ client SDR software for Windows, MacOS and Linux platforms, and the nRSP-ST provides a built-in web-server for remote access from any web browsing capable device, including Android/iOS tablets and phones.

Features

- A truly “plug and play” remote access 14 bit general coverage SDR radio receiver
- Covers all frequencies from 1kHz through VLF, LF, MF, HF, VHF, UHF and L-band to 2GHz
- Use locally via the USB interface, or connect to the internet (ethernet or Wi-Fi) and the nRSP-ST can be accessed from anywhere with a choice of connectivity modes
- Receive, monitor and record up to 10MHz of spectrum at a time.
- Software selectable choice of 3 antenna ports
- External clock input for synchronisation purposes, or connection to GPS reference clock for extra frequency accuracy
- Choice of 3 SDRconnect™ data connectivity mode options to ensure optimised remote access
- Supports multiple client connections with a simultaneous mixture of connection modes
- Choice of 2 remote access options – use SDRconnect™ remote client, or the built-in web-server for access from any web browsing capable device, including Android/iOS tablets and phones
- The ability to record IQ and audio files to a NAS (network attached storage) device if available

General

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|---------------------------|----------------------------------|
| Product Name | nRSP-ST |
| Product Dimensions | 200mm x 105mm x 40mm |
| Weight | 800g |
| Frequency Coverage | 1kHz to 2GHz Continuous coverage |
| Ambient Temperature | 25°C |
| Useable Temperature Range | -10°C to +60°C |
| Environmental | Indoor Use |

Power

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| Typical Current Consumption | |
| USB Connection | 490mA |
| Ethernet Connection | 600mA |
| WiFi Connection | 500mA |
| Power Supply Requirements | |
| Input Voltage Range | 90V AC to 264V AC |
| Input Frequency Range | 47Hz to 63Hz |
| Output Voltage Rating | +5.1V DC |
| Output Current Max | 3A Max |
| Output Power Max | 15.3W |
| Supplied Power Supply | Mutlicomp MP001636 |
| Power Supply Connector | USB C |

Note: PoE (Power over Ethernet) is not provided. An external device would be needed (e.g. a low noise, “Type C Port PoE Splitter Gigabit 5V/2.4A, PoE to USB-C 5V/2.4A Output, 1000Mbps Gigabit Ethernet Compliant”)

Antenna Connections

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|--------------------------------|------------------------------------|
| Antenna A Frequency Coverage | 1kHz to 2GHz Continuous coverage |
| Antenna A Impedance/ Connector | 50Ω SMA |
| Antenna B Frequency Coverage | 1kHz to 2GHz Continuous coverage |
| Antenna B Impedance/ Connector | 50Ω SMA |
| Antenna B Bias-T specification | 4.7V, 100mA maximum current |
| Antenna C Frequency Coverage | 1kHz to 200MHz Continuous coverage |
| Antenna C Impedance/ Connector | 50Ω BNC |
| Unselected port isolation | 40dB |

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| Receiver | Maximum Input Power continuous | 0dBm | |
| | Maximum Input Power burst | +10dBm | |
| | Noise Figure | 19dB @ 300kHz | 18dB @ 2MHz 17dB @ 12MHz |
| | | 15dB @ 25MHz | 15dB @ 40MHz 2.6dB @ 100MHz |
| | | 2.1dB @ 200MHz | 6.0dB @ 340MHz 3.1dB @ 660MHz |
| | | 4.4dB @ 1500MHz | 5.0dB @ 1800MHz |
| | | Band Filtering | 500kHz (low pass) 2MHz (low pass) |
| | | 2-12MHz 2-30MHz 30-60MHz | |
| | | 60-120MHz 120-250MHz 250-300MHz | |
| | | 300-380MHz 380-420MHz 420-1000MHz | |
| | 1GHz (high pass) | | |
| Notch Filters | Selectable MW, FM and DAB Notch Filters | | |
| ADC Characteristics | 14-bit native ADC (2 – 6.048 MSPS) | | |
| | 12-bit (6.048 - 8.064 MSPS) | | |
| | 10-bit (8.064 - 9.216 MSPS) | | |
| | 8-bit (> 9.216 MSPS) | | |

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| Receiver Reference | Receiver Reference Frequency | 24MHz |
| | Reference Stability | 0.5ppm -30°C to +85°C |
| | External Reference Connector | MCX |
| | External Reference Frequency | 24MHz Sine/Square |
| | External Reference Level | 1V Pk-Pk Min, 3.3V Pk-Pk Max |
| | External Reference features | Auto-detect will switch to the external reference on power up if clock source present |

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| Compute Engine | Processor | 64bit Quad Core SoC 1.5GHz |
| | Memory | 2GB LPDDR4-3200 SDRAM 8GB eMMC Storage |
| | Modular Compliance | https://pip.raspberrypi.com/categories/635-compliance |

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| Connectivity | Direct connection | USB 2.0 compliant USB interface |
| | Ethernet connection | Gigabit Ethernet IEEE 1588-2008 compliant Detection and correction of swapped ports MDI crossover, pair skew + pair polarity correction |
| | WiFi | 2.4GHz and 5.0GHz IEEE 802.11b/g/n/ac wireless |
| | Connectivity compliance | Modular compliance certified https://pip.raspberrypi.com/categories/635-compliance |

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| Connectivity Modes | USB | High Bandwidth 10MHz connection |
| | Ethernet and Wi-Fi | Full IQ Mode |
| | | Remote access for high bandwidth networks. Full functionality as in USB Mode |
| | | IQ Lite Mode |
| | Remote access for lower bandwidth networks For applications requiring <192kHz demodulated signal, while still giving up to 10MHz spectrum visibility | |
| | Compact (Audio + spectrum) Mode | |
| | Remote access for low bandwidth networks enables full demodulation of AM/FM/CW/SSB audio, while still giving up to 10MHz spectrum visibility | |

Connections

