



Nooelec NESDR SMARt v4 Bundle - Premium RTL-SDR w/ Aluminum Enclosure, 0.5PPM TCXO, SMA Input & 3 Antennas. RTL2832U & R820T2-Based

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Premium RTL-SDR set, including an aluminum-enclosed SDR, re-designed antenna base, and 3 antenna masts.

Fabricated by Nooelec in the USA and Canada!

SKU: 100700

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You spoke, we listened! This premium RTL-SDR was **designed, developed and fabricated by Nooelec in the USA and Canada** in order to implement a wide array of feature requests.

SDR improvements:

The NESDR SMARt contains the same **ultra-low phase noise 0.5PPM TCXO** used in our much smaller Nano 2+ (TCXO specifications below), ensuring ultimate tuning stability in nearly any environment.

In the quest for lower noise, the power supply section was redesigned to implement an **RF-suitable voltage regulator** with under 10 μ VRMS of noise. That is at least 10x lower than other designs!

A quality shielded inductor was used in the power supply to improve EMI rejection.

The **included aluminum enclosure** ensures stray EMI stays where it belongs--away from the sensitive RF circuitry.

Lower board-level temperatures further improves the SDR noise floor.

Temperature improvements:

A **custom heatsink** is affixed to the **primary PCB with 3M thermal adhesive**, to wick heat away from the circuit board and towards the enclosure.

2 pieces of silicone thermal pad spread the rest of the heat away from the device hot spots.

Power consumption has been reduced by an average of 10mA, which means less heat is generated compared to other designs. The result is much lower board-level temperatures--increasing stability, improving sensitivity and ensuring maximum frequency range capability. The changes were first simulated, and then field-tested with a Flir E8.

Form factor improvements:

The NESDR SMART was **designed to minimize annoying USB port occlusion**. We re-designed the SDR from the ground up to ensure the SMART **can be used side by side in any USB-compliant device**, including tightly-spaced embedded devices. There is no need to remove the enclosure to run multiple SDRs beside one another!

The form factor re-design allowed us to move to the more **universal SMA antenna input**.

Antenna improvements:

The **included antenna has been redesigned with a wider base** to ensure physical stability with the included longer telescopic antenna mast

A **stronger magnet in the antenna base** facilitates a wide range of mounting options

Low-loss **RG58 feed cable** is used instead of higher-loss RG316 and RG174

Feed cable increased to 2m (6.5') for easier installations

Male SMA connector on the antenna cable for easy connectivity to the NESDR SMART and other SMA-input RF devices

Three antenna masts are now included! A telescopic mast with a variable frequency capability, a fixed frequency 433MHz (ISM) antenna mast, and a fixed frequency UHF (GSM) antenna mast

Included:

NESDR SMART SDR w/ brushed aluminum enclosure

Antenna base w/ 2m RG58 cable

Telescopic antenna mast (variable frequency)

433MHz (ISM) antenna mast (fixed frequency)

UHF antenna mast (fixed frequency)

SDR Specifications:

RTL2832U Demodulator/USB interface IC

R820T2 tuner IC

0.5PPM, ultra-low phase noise TCXO

RF-suitable voltage regulator

Shielded primary inductor

Integrated custom heatsink

Female SMA antenna input

High-quality black brushed aluminum enclosure

Through-hole direct sampling pads on PCB

SDR TCXO Specifications:

Frequency stability: 0.5PPM (max)

Phase noise @1kHz offset: -138dBc/Hz (or better)

Phase noise @10kHz: -150dBc/Hz (or better)

Phase noise @100kHz: -152dBc/Hz (or better)

Antenna Specifications:

Wide base with super-strong magnet within base for easy mounting

Low-loss RG58 feed cable

2m (6.5') cable, twice as long as most low cost SDR antennae

Heatshrink male SMA connector for direct connection to the SDR or our other SMA-connected accessories like the Ham It Up

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HF Bundle: NESDR SMarT

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