

Manuals+

[Q & A](#) | [Deep Search](#) | [Upload](#)

manuals.plus /

› [NooElec](#) /

› [Nooelec NESDR SMARt SDR v5 Instruction Manual](#)

NooElec NESDR SMARt SDR

Nooelec NESDR SMARt SDR v5 Instruction Manual

Model: NESDR SMARt SDR | Brand: NooElec

1. INTRODUCTION

The Nooelec NESDR SMARt SDR v5 is a premium Software Defined Radio designed to transform your computer, phone, or tablet into a versatile radio scanner and ham radio receiver. This device is capable of receiving nearly all RF signals across a broad frequency spectrum.

Key features of the NESDR SMARt SDR v5 include:

- Wide frequency capability: 100kHz to 1.75GHz.
- Up to 3.2MHz of instantaneous bandwidth.
- Improved HF SNR by up to 15dB and VHF & UHF SNR by up to 6dB compared to RTL-SDR v3.
- Enhanced tuning accuracy, improved by an average of 4x.
- Equipped with a 0.5PPM ultra-low phase noise TCXO for frequency stability.
- Features an integrated custom heatsink and a high-quality black brushed aluminum enclosure.
- SMA antenna input for reliable connections.
- Compact form factor allowing multiple units to be used side-by-side.

2. SETUP GUIDE

This section outlines the steps to set up your NESDR SMARt SDR for first use.

2.1 Package Contents

Ensure all components are present in your package:

- NESDR SMARt SDR in black brushed aluminum enclosure

2.2 System Requirements

The NESDR SMARt SDR v5 is compatible with a variety of operating systems:

- Windows
- Mac OS

- Linux
- Android

A standard USB port is required for connection. For Android devices, an On-The-Go (OTG) adapter may be necessary.

2.3 Initial Connection

1. Connect a suitable antenna to the Female SMA input on the NESDR SMARt SDR.
2. Insert the USB connector of the SDR into an available USB port on your computer, phone, or tablet.
3. Allow your operating system to detect the new hardware. Driver installation may be required, which is often handled automatically by modern operating systems or through specific SDR software.



Image: Front view of the NESDR SMARt SDR, showing the USB connector on one end and the SMA antenna input on the other. The device is black with 'NESDR SMARt' and 'nooelec' branding.



Image: Rear view of the NESDR SMARt SDR, displaying regulatory markings such as RoHS compliant, FC, CE, and the version number 'v5'.

3. OPERATING INSTRUCTIONS

The NESDR SMARt SDR v5 transforms your device into a versatile radio receiver. Operation primarily involves using compatible Software Defined Radio (SDR) applications.

3.1 Software Installation

Before operation, install a suitable SDR software application. Popular options include SDR# (Windows), GQRX (Linux/Mac), SDR Touch (Android), or others available for your operating system. Refer to the software's documentation for specific installation and driver setup instructions.

3.2 Frequency Range and Capabilities

The NESDR SMARt SDR v5 operates across a wide frequency range:

- **Frequency Capability:** 100kHz to 1.75GHz

- **Instantaneous Bandwidth:** Up to 3.2MHz
- **HF Reception (below 25MHz):** Achieved through direct sampling. Requires a suitable antenna for optimal performance.

This device can be used for receiving a broad spectrum of signals, including but not limited to:

- Broadcast AM/FM radio
- Shortwave radio
- CB radio
- Public security radio
- Air traffic control (ATC)
- ACARS (Aircraft Communications Addressing and Reporting System)
- ADS-B (Automatic Dependent Surveillance–Broadcast for aircraft tracking)
- AIS (Automatic Identification System for ship tracking)
- POCSAG (Pagers)
- NOAA and GOES weather satellites (for weather images)
- Weather balloons and radiosondes
- DAB radio
- DVB-T video
- Inmarsat and Iridium satellite communications

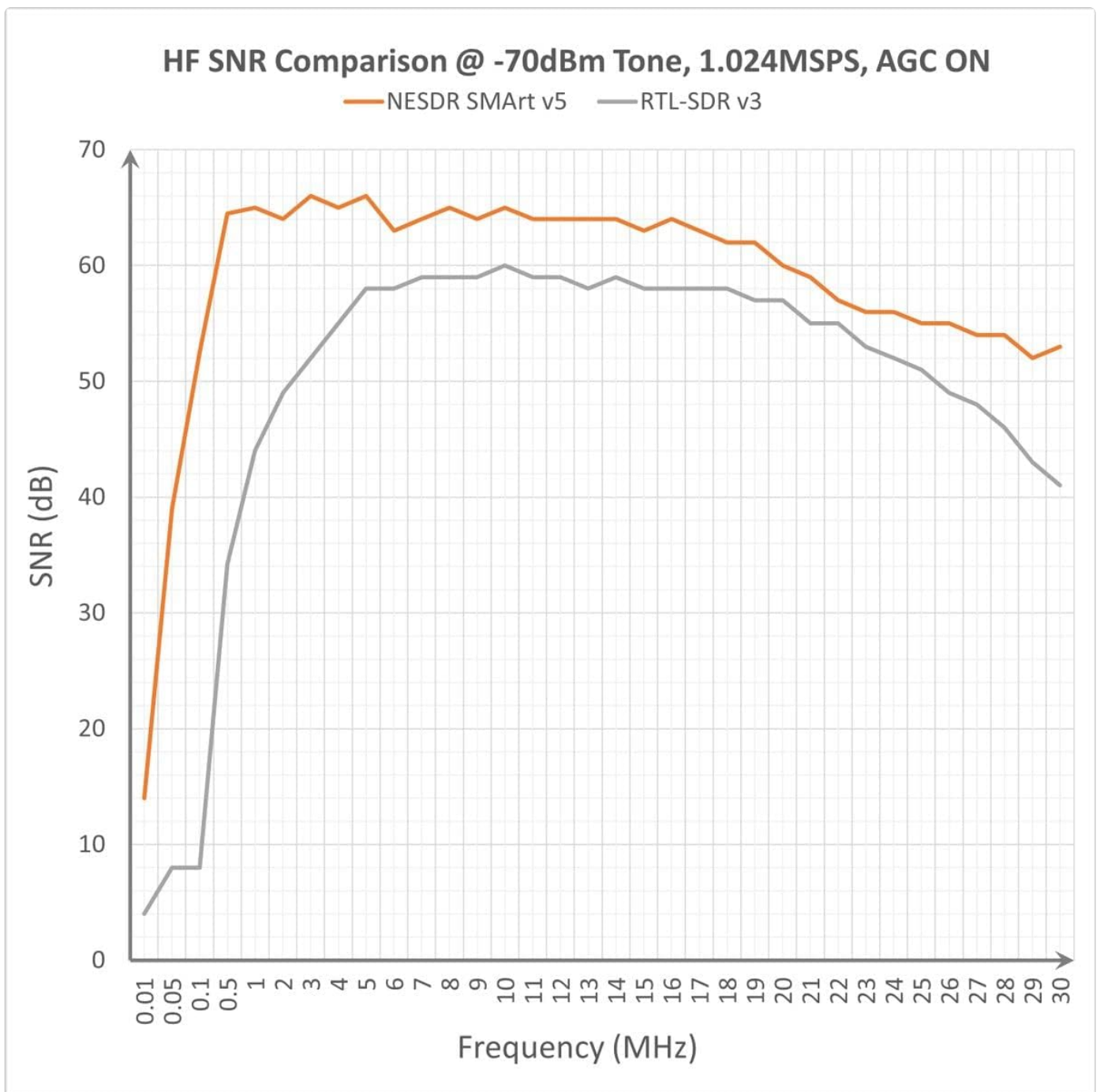


Image: Graph comparing HF Signal-to-Noise Ratio (SNR) of NESDR SMArt v5 against RTL-SDR v3. The graph illustrates the improved SNR for the v5 model, particularly in the lower frequency ranges, indicating better reception performance.

3.3 Antenna Considerations

The choice of antenna significantly impacts reception quality. For optimal HF reception below 25MHz, a dedicated HF antenna is recommended. For DIY long wire or dipole antennas, a [Balun One Nine](#) (sold separately) can be used to facilitate connection.

For enhanced HF performance, consider using an upconverter like the [Ham It Up](#) (sold separately).

4. MAINTENANCE

The NESDR SMArt SDR v5 is designed for durability and requires minimal maintenance to ensure long-term performance.

- **Cleaning:** Use a soft, dry cloth to clean the aluminum enclosure. Avoid liquid cleaners, solvents, or abrasive materials, as these can damage the finish or internal components.
- **Storage:** Store the device in a cool, dry place away from direct sunlight, excessive humidity, and extreme

temperatures.

- **Handling:** Always handle the device by its body. Avoid applying excessive force to the USB connector or SMA input, which could lead to damage.
- **Heat:** The device features an integrated custom heatsink. It is normal for the unit to become warm during extended operation. Ensure adequate airflow around the device to facilitate heat dissipation.

5. TROUBLESHOOTING

If you encounter issues with your NESDR SMArt SDR, consider the following common solutions:

- **Device Not Detected:**
 - Try a different USB port on your computer or device.
 - Ensure necessary drivers are installed for your specific SDR software.
 - For Android devices, verify OTG compatibility and ensure the OTG adapter is functioning correctly. Some mobile devices may require a powered USB hub if the SDR's power draw exceeds the port's capability.
- **Poor Reception:**
 - Check the antenna connection. Ensure it is securely fastened to the SMA input.
 - Verify that the antenna used is appropriate for the specific frequency range you are attempting to receive.
 - Move the SDR away from potential sources of electromagnetic interference (e.g., computers, monitors, power supplies, Wi-Fi routers).
 - Adjust gain settings within your SDR software. Excessive gain can sometimes lead to signal distortion.
- **Software Crashes/Freezes:**
 - Ensure your SDR software is updated to the latest version.
 - Check for conflicts with other USB devices or software running concurrently on your system.
 - Restart your computer or device to clear any temporary software glitches.

For further assistance, refer to the [Nooelec support portal](#), which provides extensive resources and troubleshooting guides.

6. SPECIFICATIONS

Detailed technical specifications for the NESDR SMArt SDR v5:

Category	Specification
Model	NESDR SMArt SDR
Demodulator/USB IC	RTL2832U
Tuner IC	R820T2/R860
Frequency Range	100kHz - 1.75GHz
Instantaneous Bandwidth	Up to 3.2MHz
TCXO Stability	0.5PPM (max)
Antenna Input	Female SMA

Category	Specification
Enclosure Material	Black brushed aluminum
Dimensions	3.54 x 0.39 x 0.39 inches
Weight	1.06 ounces
Compatible Devices	Laptop, Desktop, Tablet, Smartphone
Connectivity	USB

For a full datasheet with additional technical details, please visit: nooelec.com/datasheets/100701

7. WARRANTY AND SUPPORT

Nooelec is committed to providing high-quality products and comprehensive customer support.

- **Product Warranty:** The NESDR SMARt SDR v5 comes with a full 2-year product warranty from the date of purchase. This warranty covers defects in materials and workmanship under normal use.
- **Support Portal:** For technical assistance, frequently asked questions (FAQs), driver downloads, and additional resources, please visit the official Nooelec support portal: <https://support.noelec.com>. The support team is available to assist with any inquiries or issues you may encounter.

