

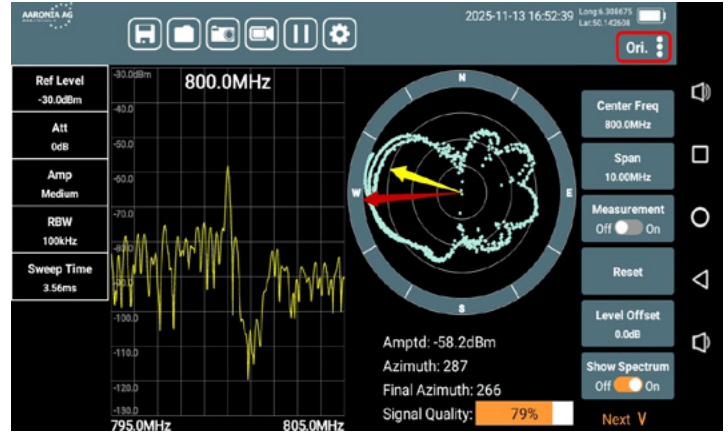
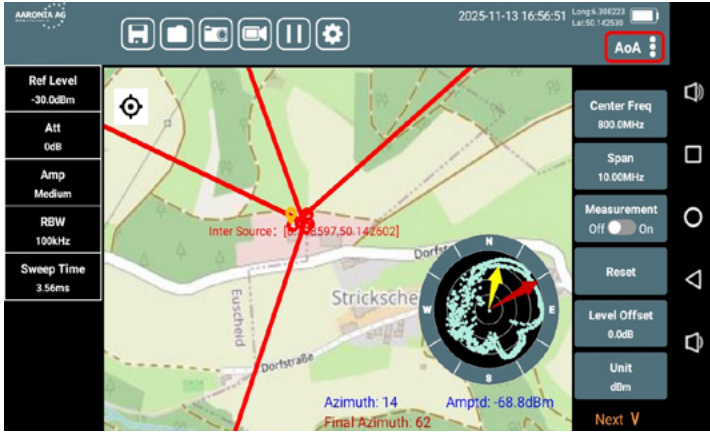
◀◀ SPECTRAN® V4-DF

— HANDHELD RF DIRECTION FINDER —



TECHNICAL DATASHEET

Aaronia SPECTRAN V4-DF Handheld RF Direction Finder



System Introduction

- ▶ Spectrum analysis includes Channel Power, Adjacent Channel Leakage Ratio (ACLR), Occupied Bandwidth (OBW), NdB Bandwidth, Spectrogram, DPS Field Strength measurement
- ▶ Built-in compass and GPS for directional finding and positioning
- ▶ USB-C interface, SDK with APIs and remote control (optional)
- ▶ Interference hunting with angle-of-arrival signal locating and tone approaching search ▶ Outdoor signal coverage mapping and spectrum clear
- ▶ Screen recording and playback
- ▶ Sensitivity -160dBm/Hz (amplifier on)
- ▶ IF bandwidth 20MHz
- ▶ Battery runtime approx. 3 hours, weight approx. 900 g;
- ▶ Equipped with car charger for outdoor emergency battery charging.

Spectrum Analysis and Spectrogram

With the spectrum analysis and spectrogram, users can more easily visualize interference signals and identify/capture frequency bands where the narrow band signals are present.

Channel Power, Occupied Bandwidth, Adjacent Channel Leakage Ratio

Channel Power: measure the channel power of any userdefined spectral bandwidth.

Occupied Bandwidth: measure occupied bandwidth.

Adjacent Channel Leakage Ratio: measure the signal channel bandwidth up to 99% of its power.

Orientation

Orientation measurement allows users to easily point in the direction of interference signal. The direction finding instrument should be held in horizontal state, and the internal electronic compass of the instrument should be calibrated after 1 week of rotation, and then the direction finding work should be carried out.

Turn on the direction finding switch, turn around for 2 or 3 turns, about 6 seconds per turn, and turn off the direction finding switch at the end. The direction finding radar chart pops up on the interface, showing the blue antenna direction Angle and the red interference recognition Angle respectively.

Digital Persistence Signal

Persistence testing separates the desired signal transmission from underlying low-level inference signals with supreme clarity, and no service interruptions at any point.

NdB Bandwidth

NdB Bandwidth is the resolution bandwidth of the measuring instrument, which is represented in a log scale. For example, if the NdB bandwidth is set to -3dB, the level difference between two points is 3dB lower than the maximum value.

Tone Approaching Search

Using a directional antenna and built-in audible tone function, users can efficiently detect interference sources based on the audible tone increasing in frequency and level, thus identifying quickly the interfering signals received indoor and outdoor.

Coverage Mapping and Spectrum Clear

By using the internal GPS module and electronic map, the equipment can perform outdoor coverage mapping measurement and the spectrum clear.

Field Strength

Connect the omnidirectional antenna with instrument, select the "field strength" measurement function, and set the frequency of the test field strength. After the instrument automatically compensates the antenna factor AF, the spatial field strength of the frequency is displayed on the spectrum interface (dB μ V/m).

Technical Specifications

Frequency Range	▶ 9kHz to 6GHz Resolution: 1Hz
IF Bandwidth	▶ 20MHz
Frequency Accuracy	▶ ± 1 ppm
Power Level	▶ DANL ~ +20dBm
Attenuator Range	▶ 0 to 50dB (1dBstep)
Amplifier	▶ ≥ 30 dB
Maximum Safety Level	▶ +20dBm (Amplifier: off)
Display the average noise level (DANL) @1GHz	▶ -160 dBm/Hz (High sensitivity mode)
Third order interception point	▶ +14dBm (typical)
Phase Noise	▶ -100 dBc/Hz@1GHz offset 100kHz
Display Screen	▶ 5.5" 1280x720
Operating System	▶ Android
USB	▶ USB Type-C
GNSS & Compass	▶ Built-in
Battery	▶ Lithium 7.2V / 3.3Ah / 23.76 Wh
Operating Time	▶ Approx. 1.5 hours
Operating Temperature	▶ -5°C to +50°C
Dimensions	▶ 603x265x153mm
Weight	▶ Approx. 1000g

Interference Localization

The source of interference signal can easily be located by using directional antenna, and the E80 built-in GPS, electronic compass, electronic map, and the angle-of-arrival (AOA) triangulation.

- In order to search for interference, first of all, the test point must be selected, the instrument is used for surround measurement, and then the direction line area with large field intensity value is selected, and the AI intelligent direction line aggregation algorithm can quickly complete the search for interference sources.
- Develop the interference detection path: around the suspected interference signal area, select several test points 1, 2, and 3..... When the direction finding is done, several red confirmation angular lines will be generated on the map.
- Automatic positioning software: the AI will automatically analyze the reliability of the interference confirmation Angle of each test point, exclude large deviation from the confirmation direction Angle, converge most of the high reliability direction Angle, and finally automatically form an adaptive interference convergence area (diameter of about 200-1000 meters).
- Users can delete test point data with low reliability to improve the reliability of interference aggregation algorithm positioning.

Directional Loop Antenna #1

Frequency Range ▶ 20MHz to 250MHz

Front-to-Back Ratio ▶ 16dB

VSWR ▶ <2.5

Polarization ▶ Horizontal & Vertical

Weight ▶ Approx. 300g

Directional Loop Antenna #2

Frequency Range ▶ 200MHz to 500MHz

Front-to-Back Ratio ▶ 16dB

VSWR ▶ <2.5

Polarization ▶ Horizontal & Vertical

Weight ▶ Approx. 300g

LogPer Antenna

Frequency Range ▶ 500MHz to 6GHz

Front-to-Back Ratio ▶ 16dB

VSWR ▶ <2.5

Polarization ▶ Horizontal & Vertical

Weight ▶ Approx. 300g



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