

Portable Interference Source Detector RDF-G25



User Manual

Passport



1. General Provisions

This user manual applies to the Portable Interference Source Detector in mobile communication networks **RDF-G25** and is intended for studying its operating principle and operation rules.

The Portable Interference Source Detector "RDF-G25" is capable of:

1. Detecting the presence of interference:

- Indicates that there is an external signal in the required channel UL|DL (2G/3G/4G/5G) interfering with the base station or subscribers.

2. Measuring the interference signal level:

- Displays level, bandwidth, dynamics over time (symbolic graph with 40 gradations; linear graph; polar graph).

3. Localizing the source in space:

- With a directional antenna and direction-finding mode, it allows determining the source direction by level and direction.
- You can walk around the territory and, by changing the level (symbolic graph; linear graph; polar graph), find exactly where the jammer or noisy transmitter is located.

4. Working with maps and coordinates:

- Integration with a smartphone via Bluetooth and special software: binding measurements to coordinates, saving a "heat map" of interference levels.
- Convenient for field trips: walk around the area — then see where the maximum is.

5. Fixing and saving measurements:

- Logging of levels, spectra, threshold exceeding events.
- Export to file/computer for reporting: "at such a place, at such a time, there was such interference".

6. Comparing with the network "norm":

- During repeated visits, you can compare the current situation with reference or old measurements: interference appeared, intensified, or disappeared.

7. Distinguishing accidental and intentional interference (within reasonable limits):

- By the type of signal (solid fill/narrow lines/impulses), time of appearance, and frequency stability, a conclusion can be made: is it faulty equipment, industrial noise, or a communication jammer.

8. Working "on the go":

- Portable format: battery power, strap/backpack, lightweight directional antenna, so that the engineer can walk around the area for hours searching for the interference source.

Attention! Skertronix LLC constantly improves its products, so changes may be made to the design that are not reflected in this version of the manual. You can always find the current instruction on the manufacturer's website.

Before starting work, carefully study this manual. Self-disassembly of the device and use of non-standard accessories are prohibited. Warranty service is provided by the manufacturer only if the manual, filled passport, and intact factory seals are present. The warranty is void in case of mechanical damage, ingress of liquids, dirt, or foreign objects, as well as during operation in aggressive environments or violation of usage rules.

2. Package Contents

Item Name	Quantity	Note
1. RDF-G25 Device	1 pc.	-
2. LowBand Antenna	1 pc.	-
3. HighBand Antenna	1 pc.	-
4. WideBand Antenna	1 pc.	-
5. Charger	1 pc.	-
6. Headphones	1 pc.	-
7. USB-A – USB-C Cable	1 pc.	-
8. Bag for RDF-G25	1 pc.	-
9. Strap for antenna attachment	1 pc.	-

3. Main Technical Specifications

- **Extended battery life:** from 4.5 hours.
- **Extended dynamic range:** 130 dB
- **Radio path sensitivity:**
 - 2G: -106 dBm
 - 4G: -92 dBm
- **Support for standard bands GSM, UMTS, and LTE:** described further in section 7.
- **Dimensions:** 101.8 × 69.7 × 20.5 mm
- **Weight:** 220 g

Antenna Specifications

LowBand antenna (250×160 mm):

- Frequency band: 750 – 900 MHz
- Center frequency: 825 MHz
- Bandwidth: 150 MHz
- VSWR: < 2
- Gain: 5 dBi
- Impedance: 50 Ohm
- Polarization: Linear, vertical
- Beamwidth (HPBW): 120°

HighBand antenna (200×110 mm):

- Frequency band: 1700 – 2600 MHz
- Center frequency: 2150 MHz
- Bandwidth: 900 MHz
- VSWR: < 2
- Gain: 5 dBi
- Impedance: 50 Ohm
- Polarization: Linear, vertical
- Beamwidth (HPBW): 120°

WideBand antenna (160×160 mm):

- Frequency band: 750 – 2600 MHz
- Center frequency: 1675 MHz
- Bandwidth: 1850 MHz
- VSWR: < 2
- Gain: 2 dBi
- Impedance: 50 Ohm
- Polarization: Linear, vertical
- Beamwidth (HPBW): 120°

Attention: all the above antenna characteristics are guaranteed only when they are installed on the human body.

4. Structural Elements of the Device (Fig. 1)



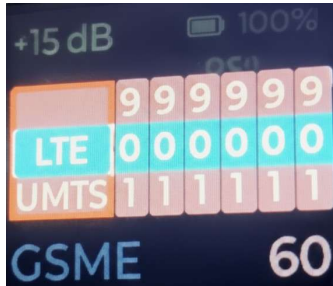
Fig. 1

1. **OLED Display:** Used to display current information.
2. **SD Card Slot.**
3. **SPEAKER Button (Speaker / Cancel):**
 - In normal mode: Volume switching (cyclic: Off -> Low -> Medium -> High).
 - In settings menu: Close menu without saving ("Cancel").
4. **UP Button:**
 - In settings menu: Navigate up or increase value.
5. **DOWN Button:**
 - In settings menu: Navigate down or decrease value.
6. **BLE Button (Bluetooth):**
 - In normal mode: Turn Bluetooth module on or off.
7. **SETTING Button:**
 - Opens the settings menu.
8. **POWER Button (Short press):**
 - Performs "Next" / "Enter" function.
 - Press to move cursor (focus) between fields (e.g., switch from RAT selection to Channel selection).
9. **USB-C Port:** Used for battery charging and firmware updates.
10. **Antenna Input Selection Button:** Repeated press switches display mode (Graph / Polar).
11. **Audio Jack (3.5 mm):** For connecting a wired headset.
12. **SMA RF Connectors:** For connecting antennas.

5. Operating Procedure

Entering Settings Mode

- Press the **SETTING** button.
- A semi-transparent settings window (black background) will appear on the screen.



Navigation and Changing Values

In this mode, button controls change:

- **UP and DOWN Buttons:** Used to change the value of the currently selected field.
 - If the cursor is on the **RAT** (Network Type) field: press UP/DOWN to scroll through standards (e.g., GSM, LTE, etc.).
 - If the cursor is on the **Channel** (Frequency) field: press UP/DOWN to change frequency/channel number.

Confirmation and Saving

- Press **POWER** (short press) until the focus moves to the confirmation button.
- Press **POWER** again to activate.
- The system will check if the selected channel is valid for the standard.
 - **If valid:** Settings are applied, saved to memory, and the window closes.
 - **If error:** Settings are not applied, and focus may move to the next element (or stay in the menu).

Cancel (Exit without Saving)

- If you want to exit without applying changes, press the **SPEAKER** button. The settings window will close.

6. Signal Source Search Instructions

6.1 Preparation and Setup

Place the RDF-G25 detector and receiving antenna in a position ensuring unobstructed reception. To achieve maximum sensitivity, point the antenna towards the suspected location of the interference source.

6.2 Direction Finding

Smoothly rotate the device in the horizontal plane (left and right). During the scanning process, be guided by one of the indicators:

- **Visual:** Maximum signal level value on the display.
- **Audible:** Highest volume of the sound signal in the headphones.

6.3 Result Fixation

The point at which the peak signal level is recorded indicates the exact direction to the radiation source (see Fig. 11).



Fig. 11

7. Supported Channels

Standard	Band	Channels
5G NR	n1	422000 – 434000
	n3	363500 – 376500
	n7	524000 – 538000
	n20	164602 – 169600
	n28	152600 – 164600
LTE (4G)	Band 1	0 – 599
	Band 2	600 – 1199
	Band 3	1200 – 1949
	Band 4	1950 – 2399
	Band 5	2400 – 2649
	Band 6	2650 – 2749
	Band 7	2750 – 3449
	Band 8	3450 – 3799
	Band 20	6150 – 6449
	Band 28	9210 – 9659
IoT / Ext	-	228301 – 229375
GSM / 2G	GSM-E 900	0 – 124
	GSM-E Ext	975 – 1023
	DCS 1800	512 – 885
	GSM 850	128 – 251
	PCS 1900	512 – 810
UMTS (3G)	B1, B2, B3, B4	-
	B5, B8, B19, B20	-

8. Manufacturer's Warranty

The manufacturer guarantees the correct operation of **RDF-G25** for **12 months** from the date of sale. The warranty is valid only if the rules of operation, storage, and transportation described in this manual are observed.

Warranty Confirmation Conditions

- The manual must have a mark (stamp) with the date of sale.
- The failure must not be a result of violating the device usage rules.

Free Repair Procedure

If the device fails during the warranty period, the supplier undertakes to:


1. **Repair the malfunction free of charge.**
2. Analyze the cause of the defect and take measures to eliminate it in future product batches.

Actions Upon Detecting a Defect

To carry out repairs, the consumer must send the **RDF-G25** device to the manufacturer/supplier, attaching:

- **Cover letter** with a detailed description of the reason for the claim (complaint).
- **Original of this user manual** with the sale mark.

Device Passport

Manufacturer and Seller	Skertronix LLC 
Device Model	RDF-G25
Serial Number	_____
Equipment	Device, 3 antennas, Charger, Cable, Headphones, Bag, Strap
Stamp (Manufacturer's Seal)	

9. Working with the Mobile Application

1. Setup & Connection

Before starting work, make sure to turn on Bluetooth on your hardware device, and enable Bluetooth and GPS on your mobile phone.

Connect: Tap the red circle icon (top right) to pair with your Bluetooth device.

Status: Once connected, the device name, MAC address, and battery level will appear.

2. Main Interface

Top Panel (Network & GPS): Tap the left side (ARFCN area) to select the network type and enter the ARFCN manually. Your current coordinates and GPS accuracy are displayed below the device name.

Radar (Center):

Blue Outline (Pattern): Visualizes signal strength (0-32) across different directions as you rotate.

Orange Arc: Automatically points toward the strongest recorded signal.

Antenna Values: Displays real-time data for all 4 antennas (Front, Back, Left, Right).

Signal Scale: Horizontal bar below the radar showing the instant signal level (-120 to +46).

3. Bottom Controls

Sound (Speaker Icon): Toggle alert modes: OFF, TONE (continuous), BEEP (intermittent), or VOICE+BEEP.

Eraser (Clear Max): Resets all accumulated radar history and clears the linear graphs. Use this when moving to a new search spot.

MAP / COMPASS Toggle: Switch between the standard Radar view and OpenStreetMap.

Map Mode: Calculates estimated distance and draws colored circles to pinpoint the target's probable location (red marker).

Line Chart: Real-time graph at the very bottom tracking the power history of all 4 antennas.

4. Quick Start: Target Search Workflow

Connect to the device and enter the target ARFCN.

Rotate 360° in place to let the radar draw the signal "petals".

Move in the direction of the orange arc (maximum signal).

Tap the Eraser to reset measurements whenever you change your position significantly.