

Polarity TESTER BugHunter™ Professional BH-02

Introduction

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This manual introduces you to structure, rules of operation (functioning, maintenance, reparation, storage and transportation) of Polarity Tester “BugHunter™ Professional BH-02 (hereinafter - the device).

Polarity tester “BugHunter™ Mini MN-01” is designed for detecting and monitoring of transmitters in the near field (bugs, wireless microphones, hidden wireless cameras, radios, cell phones signal killer), as well as working cell phones corresponding standards GSM, DAMPS, AMPS, DECT.

The main distinguishing feature from the Polarity Tester BugHunter™ Professional BH-01

is that the Tester BH-02 possesses built-in filters that kill radio appliances sensitivity

at frequencies of cellular base stations, it simplifies the monitoring procedure of

eavesdropping devices installed in close area of cellular communication stations

Device advantages before the gadgets of similar purpose are:

1. Exact match of stated parameters.
2. Entire frequency range cover, allows "bugs" detection from 50 to 3000 MHz
3. Equally high sensitivity throughout claimed frequency range. Unique!
4. Extended dynamic range.
5. Both analog and digital wireless "bug" detection (short pulses)!
6. Automatic adjustment of background radiation levels.
7. Extended operating temperature range.
8. Design and manufacturing made in Russia using high-quality set.
9. Possible headphones connection for implicit warnings of wireless "Bugs".
10. Can operate in three modes: search, security and feedback.
11. Advanced power saving features (increased duration of work).
12. Low battery indicator.

- 13. An additional external antenna (can increase device sensitivity).
- 14. Self-diagnosis.
- 15. Possible detection of cellular phones signal killers and other radio frequencies.
- 16. Can ignore radio background, generated by base stations of cellular, while monitoring.

Attention! In order to ensure a long, successful and safe operation of the acquired device, carefully read this manual. Following the rules, restrictions and guidelines will prolong the device life and will help to use it most effectively.

Violation of storage and exploitation rules will lead to premature termination of the manufacturer’s warranty.

Attention! After storing the product in a cold place or winter transportation the device should be kept at room temperature for two hours before you turn it on.

Device description and operation

1. Technical features

Appearance of the device is shown on Picture 1.



Picture 1 – appearance of the device

Size dimensions, mm, no more than	105 x 58 x 18.5
Device Weight with batteries, kg, no more than	0.09
DC supply voltage (two batteries type AAA).....	from 2.2 to 3.2
Power consumption, W, no more than.....	0, 06
Frequency range, MHz	50-3000
Sensitivity, mV / m, not less than	50 (over entire operating frequency range except 925 MHz ... 960MHz and 1805.....1880MHz)
Dynamic range, dB, not less than....	45
Modes of operation:	search, security, feedback

Detection range of radio transmitter powered 5 mW, in a quiet radio, m, at least 5

Detection range of cell phone operating in passive mode, m, not less than: 50

The device can operate in the following climatic conditions:

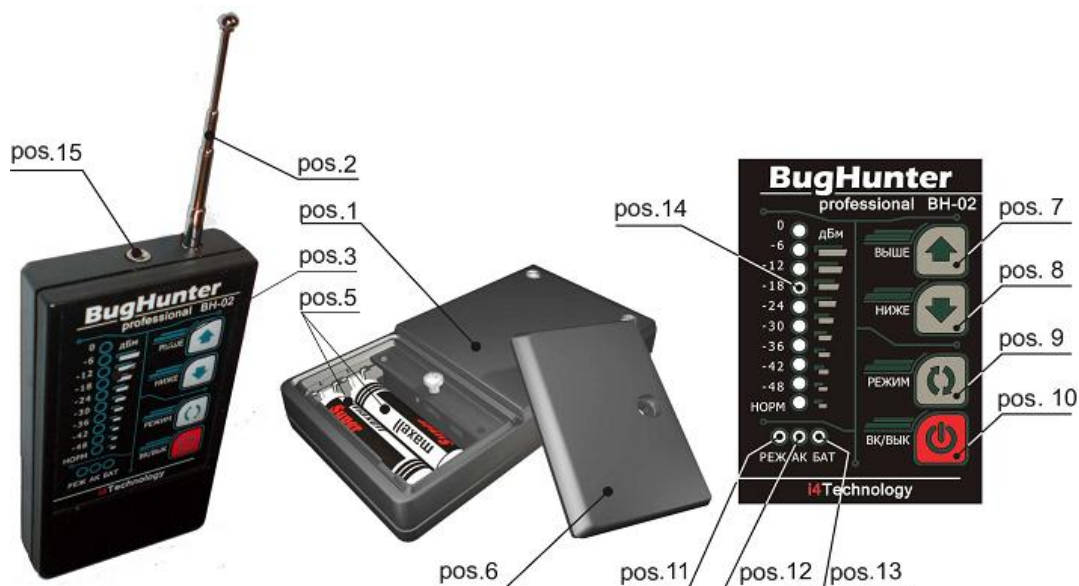
- Ambient temperature, °C from -30 to +80

- Relative humidity,% (no condensation) 10 to 85

Operations manual version: 110315RU

2. Device parts

Appearance and parts location can be seen on Picture 2.



Picture 2 – main parts location

The product consists of shockproof ABS plastic body, pos. 1, preinstalled inside:

- Microprocessor electronic module equipped with a receiving antenna (position 2);
- Membrane keyboard (position 3);
- A set of batteries (pos.5), located in a closed with lid module (pos.6).

The following controls and indicators are located on the front panel:

- Two buttons sensitivity adjustment ("UP" - position 7 "DOWN" - position 8);
- Operating modes selection button - "MODE" (position 9);
- ON / OFF button - "ON / OFF" (position 10);

- ON power indicator- "MODE" item 11;
- "Feedback" mode indicator - "AK" (position 12);
- Battery discharge indicator - "BAT" (pos.13);
- Signal strength indicator scale (pos.14).

On the end surface of the body a socket for headphones is located pos.15 (comes included).

3. Components and functioning

3.1 The device operates using the software preinstalled in card's microcontroller.

3.2. The keyboard pos. 3 has the following functions:

- Turning ON/OFF the device (press and hold the button "ON / OFF" not less than 3 seconds). When you turn on the device it performs a self-test, a beep sounds, all the LEDs light up, after the diagnostics "MODE" and "BAT" LEDs remain on, signaling that the device is ready for work .
- Serial press of "UP" button adds more sensitivity to the device, if you press and hold it (at least 3 sec.) the maximum sensitivity level is set.
- Serial pressing of "DOWN" button decreases device sensitivity, if you press and hold it (at least 3 sec.) the device automatically readjusts the surrounding radiation level.

3.3.3 Operating modes of the device are switched by pressing "MODE" button, so:

- a) When the "MODE" LED remains on - the device is in constant search of analog signal.
 - b) When the "MODE" LED is flashing - the device is in search of pulse (digital) transmitters (digital eavesdropping devices, cell phones).
 - c) When the "MODE", "AK" and "BAT" LEDs light up briefly - the device is in guard mode (signals only when new sources of signal appear). This operating mode allows to keep the device in optimal sensitivity and significantly saves battery life.
- Transferring the device to functioning modes with additional audible alarm notification can be performed by pressing "MODE" button (more than 3 seconds) and:
 - a) if LED "AK" is flashing – signal level alarm is enabled (frequency of acoustic signals depends on signal strength).
 - b) if LED "AK" is glowing - the product is set to "Feedback mode" (allows you to detect wireless microphones up to 0.5 m).
 - c) if LED "AK" is off - sound notification is disabled.

- When the device is on, then, briefly pressing "ON / OFF" button you can see level of battery charge on the LED scale:

- If full scale is displayed - battery voltage is 3 V;
- No lights, no blinking - battery voltage is 2 V;
- Each glowing LED scale - plus 0.1 volts to 2V.

4. Functioning

- 4.1 Turn on the device pressing "ON / OFF" button, then press and hold for 3 seconds "DOWN" button, the device will automatically adjust the sensitivity to the level of ambient radiation.
- 4.2 Start monitoring the room, keeping the device at 0.3-0.5 m distance from the tested surfaces. If the device displays the highest signal level (all the LED scale glow), press and hold for 3 seconds "DOWN" button. Repeat this action till you find the maximum radiation area.
- 4.3. Examine the detected place with maximum radiation for wireless “bugs”, if you want, you can manually adjust device sensitivity using "UP" (increase) and "DOWN" (decrease) buttons.
- 4.4 If during the monitoring LEDs on the device light up quickly, switch operating mode to find pulse signal.
- 4.5 In case of clear local maximum of unknown radiation the device can be switched into “Feedback mode” and if you can hear a characteristic whistle, produced by the device, it means that a wireless microphone is transmitting.
- 4.6 The guarding mode should be used when there is no unknown radiation around. It can take some (about 30 sec.) time and the device will automatically adjust the background radiation, "AK" LED makes short rapid flashes. Finally, the product passes into “Guard” mode - "MODE", "AK" and "BAT" indicators will light up for a short time. If an unknown radiation appear, the device will signal it with its alarm, when the radiation is over it goes back to guard mode.
- 4.7 Batteries (2 batteries of AAA type) are installed into the battery compartment in accordance with Picture 3. The polarity is shown at the bottom of battery compartment.



Picture 3 – Installation of batteries into the compartment

WARNING! Do not allow the improper battery installation - it could lead to product failure.

When battery has 2.5 volts of power left, LED "BAT" is flashing, if the battery is out of power (under 2 volts), LED "BAT" will disappear.

4.8 Some recommendations on how to use the device:

- Before testing the polarity, switch off any radio-emitting devices if possible (Wi-Fi, cell phone in active mode, computers and other household and office equipment). It simplifies the test by eliminating excess noise, and allows using higher sensitivity while testing.
- The most likely locations of eavesdropping device are: corners ceiling cavity, ventilating shaft, piece of furniture (wardrobe, mezzanine, etc.), behind radiators, remote places on shelves, domestic items, car panel, flowers, audio-video equipment, etc.
- If the device detects signal, it will alarm you with a sound and show it on the LED scale. The closer you are to the transmitter, more glowing LEDs you get on the scale.
- Turn on "Security" mode if you need to have constant control of the situation, *during negotiations* for example. The device keeps scanning the space in this mode. It will alarm you if any wireless "bug" or hidden transmitting cell phone appears.
- "Feedback" mode is used searching for hidden microphones (wireless "bugs"), operating in analog mode. This allows the wireless "bug" to capture the sound emitted by the device, and broadcast it. The radio signal is detected and increased by the device, so the circle closes up – and the device produces a characteristic "whistle." "Feedback" mode is the most accurate method of "bug" detection, it reduces search time.

5. Package contents

Package contents of the device can be seen in Table 1.

Table 1

№	Item name	Quantity	Notes
1	Polarity TESTER BugHunter™ Professional BH-02	1	
2	Battery type AAA	2	
3	Headphones	1	
4	Packing box	1	
5	Operations manual INTK.411153.003 RE	1	

6. Maintenance

Maintenance consists in changing old batteries, as well as keeping the outside device surface clean.

7. Package and transportation certificates

In accordance to package contents in Table 1, each device is packed into the individual corrugated cardboard box.

Moving of the item in the package is not allowed.

Packed products are fit into the shipping container - a box made of corrugated cardboard GOST 22637.

Packaged goods can be delivered by road or by rail in boxcars or containers, also in pressurized module by air.

During transportation, the items must be protected from direct precipitations and solar radiation.

Terms of transportation:

- Ambient temperature from -50 to 50 °C;
- Relative humidity up to 95% at 25 °C;
- Atmospheric pressure from 84 to 107 kPa (630 to 800 mm Hg. Art.)
- Peak shock acceleration up to 147 m/s² (15 g) during shock acceleration duration of 10-15 ms.

The requirements of warning labels should be strictly complied when loading and delivering.