Bug detector BugHunter™ micro mk-01

Operating manual INTK.411153.008 RE

This operating manual is to get you acquainted with construction, rules of operation (intended usage, technical maintenance and repair, storage and transportation) of the bug detector **BugHunter micro mk-01** (hereafter referred to as the Product).

The product is a portable device, intended to detect near field radio transmitters such as wireless “bugs”, wireless microphones, wireless spy cams, portable radio sets, working cellphones, cellular signal killers and suppressors, etc.

Warning!

Read carefully this manual in order to provide continuous, successful and safe operation of the purchased product.

Follow the rules, restrictions and instructions contained in this manual to increase the lifespan of the device and to use it more effectively.

The manufacturer's warranty will become invalid prematurely, if the user of the equipment does not follow the storage and transportation instructions. Warranty shall be void if operation, storage and transportation regulations are violated.

Warning!

After storing the product in a cold place or transporting it in wintertime the device should be kept at room temperature for two hours before operating.

Warning!

Please request to perform functional testing before purchase. Check the delivery set according to 1.3 article of this manual. Ensure the warranty card is signed, dated and stamped.

1 Specification and operation

1.1 Application area

1.1.1 This device allows users to exercise run-time control over the signal strength ranging from 10 to 3000 MHz and can be used to detect transmitting devices, such as “bugs”, wireless microphones, wireless spy cams, portable radio sets, working cellphones, cellular signal killers and suppressors, etc., within the area nearby.

1.1.2 Device is intended to be used at the temperature ranging from -10 to +40°C, the relative moisture below 98% at +25°C, and at the atmospheric pressure of 84-106,7 kPa.

1.2 Technical features

1.2.1 The Picture 1 illustrates the physical configuration of the Product.

Pic. 1 – Physical configuration

1.2.2 The table below gives information on the Product’s technical features.

Table 1

Description	Value
Dimensions, mm, not more than	60x45x6
Weight with batteries, kg, max	0,025
DC supply voltage (disk lithium battery CR2032), V	3,0
Current consumption, mA, max	30
Working frequency range, MHz	from 10 to 3000
Sensitivity, mV / m, min	50
Dynamic range, dB, min	70
Detection range of a radio transmitter with the power of 5 mW, under a quiet radio background, m, min	5

1.3 Device components

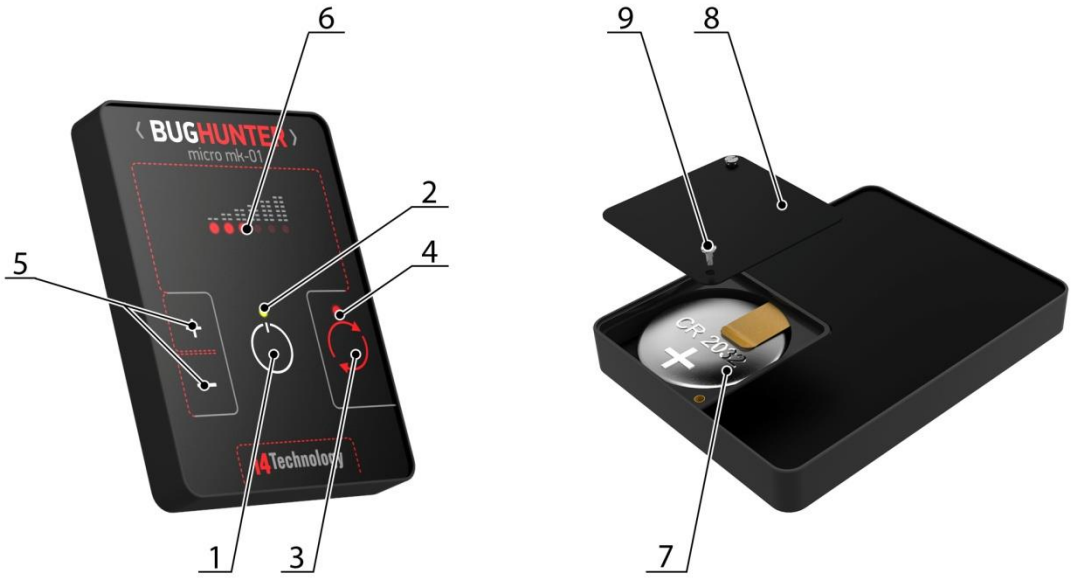
The table below gives information on components of the product and the delivery set.

Table 2

№	Description	Quantity	Note
1	**Bug detector BugHunter™ micro mk-01** TR 4224-002-64062607-2011	1	
2	Disk lithium battery CR2032	1	pre-installed
3	Shipping box	1	
4	User manual INTK.411153.008 RE	1	

1.4 Construction and operating

1.4.1 The Product is a portable device with a self-contained power supply. Picture 2 illustrates the Product's internal design and the scheme of its main parts.



Pic. 2 – Main parts scheme

The Product consists of an ABS plastic case with pre-installed circuit modules covered with a protective and decorative film. The faceplate of the Product is made as keyboard with buttons and LEDs.

There are the following controls and indicators on the faceplate:

- ON/OFF - item 1;
- power indicator - item 2;
- mode selection button - item 3;
- mode indicator - item 4;
- sensitivity adjustment button - item 5;
- indicating scale of incoming signal level - item 6.

The Product is equipped with a battery compartment (item 7) with cover (item 8). The battery compartment is covered by screws (item 9).

1.4.2 The device runs under a built-in microcontroller with pre-installed software. The Product displays on the indicating scale the peak value of incoming radio signal strength according to the adjusted range of sensitivity while operating.

1.4.3 The device is powered by a 3V lithium battery of CR2032 type. How to install the battery into the case you can see in the Picture 2.

2 Correct use

2.1 Usage limitations.

2.1.1 Keep the battery compartment and the power contacts clean.

2.1.2 Change the discharged battery in time.

2.2 Pre-starting procedure.

To prepare the Product for working you should:

– loosen the screws and remove the battery compartment's cover (item 8, Pic. 2), using a small screwdriver, toothpick or other small, rigid object if needed;

– install the battery respecting polarity (Pic.3);

– place back the battery compartment's cover and tighten the screws.

2.3 Operating.

2.3.1 Switching ON/OFF.

To switch the Product on press the button  and keep it pressed for 2 seconds. When you do, the Product will start self-diagnosing; while self-diagnosing sounds will be played and LEDs of indicating scale will flash one at a time. After self-diagnosing the sensitivity of the Product will be adjusted automatically, and the Product starts constantly measuring the electromagnetic field level.

The power indicator lights constantly, if the battery charge level is well, and it flashes on and off, if the battery charge level is 50% and less.

To switch the Product off press the button  and keep it pressed for 2 seconds (as well as switching on).

2.3.2 Operating modes.

The Product operates in two modes - “search” mode and “search with sound feedback” mode. To switch between modes press  button. The power indicator lights constantly in the “search” mode and flashes on and off while operating in the “search with sound feedback” mode.

2.3.3 Sensitivity adjustment.

To increase the sensitivity press  button gradually. If you are pressing and keeping pressed (not less than 2 sec) the  button, the maximum level of sensitivity will be set.

To decrease the sensitivity press  button gradually. If you are pressing and keeping pressed (not less than 3 sec) the  button, the sensitivity will be adjusted to the level of radio background.

2.3.4 Battery charge level control.

If the Product is switched off, briefly press the  button, and the battery charge level will be displayed on the indicating scale for a short time:

- the whole indicating scale is displayed – the battery charge level is 100%;
- no LEDs lights– the battery is almost completely discharged;
- 1 LED - 15% of maximum battery charge level, 2 LEDs - 30% of maximum battery charge level, and every next lighting LED gives +15% to the actual battery charge level.

2.3.5 Practical recommendations on using the Product:

- Before starting the search, switch off all radio-emitting devices if possible (Wi-Fi, smartphones, tablets, computers and other household and office equipment). It simplifies the search by eliminating the excess noise, and makes it possible to use higher sensitivity while searching.
- Turn the device on. The device automatically adjusts the sensitivity level and starts displaying the actual value of signal strength on the indicating scale when you turn it on.
- Begin to walk around a room, holding the device at the distance of 0,3 – 0,5 meters from the researched surface. If a maximum signal strength level is displayed on the indicating scale, decrease the sensitivity by pressing  button and get on with searching for “bugs”. Repeat these actions until the site, where the evident maximum level of emission is, is located.
- Another search method: after automatic sensitivity adjustment you can decrease the sensitivity by one-two levels. Then search the supposed “bugs” locations from a distance of at most 0,2 meters. If the signal maximum appears, reduce the sensitivity further and search the location from the closer distance (5.. 10 cm) to find the location of the signal source more accurately. This method is suitable for rooms with a high ambient electromagnetic emission.
- Carefully inspect for the presence of wireless “bugs” the site, where the maximum emission strength was found, the sensitivity level can be adjusted manually at that by pressing  (increasing) button and  (decreasing) button.
- The locations where eavesdropping devices and hidden cameras are usually placed are: cavities and

chinks in plinths and walls, behind radiators, remote places on wardrobes and curtain-rods, cavities of suspended ceiling, ventilating shafts, furniture elements, household equipment, flowers, car dashboards and seats, etc.

- Use the "search with sound feedback" mode if needed, especially if you search in remote places where it's difficult to control the indicating scale. If you hear the indicative whizz, it means a radio bug or another transmitter is located close to you.

- If all or a part of LEDs flash on and off rapidly, it means a digital (impulse) transmitter may operate; and, instead, If LEDs light constantly, an analog transmitter operates nearby.

3 Maintenance

The maintenance includes changing the battery if it's out of service and keeping the surface clean by removing the dirt if needed.

4 Troubleshooting

Typical problems and remedies are specified in the Table 3.

Table 3

Failure	**Cause**	**Remedy**
The device is turned on, but there is no sound and indicating scale doesn't light	Battery is completely discharged	Replace the battery
	Device failed	Take the device to service center

5 Package and transportation

Every Product delivery set (see Table 2) is packaged in an individual corrugated fiberboard box. The moving of contents of the box is not allowed. The packaged products are put into cargo corrugated containers according to the GOST 22637.

Packaged products can be transported by train or by trucks in covered trucks or containers or by air transport in pressurized modules.

While transporting the packaged products should be protected from the direct impact of atmospheric condensation and insolation.

Transportation terms and conditions:

- environment temperature: from -50 to 50°C;
- relative humidity: below 95 % at 25°C temperature;
- atmospheric pressure: from 84 to 107 kPa (from 630 to 800 millimeters of mercury);
- shock acceleration peak values below 147 m/s^2 (15 g), with duration 10-15 ms.

The requirements specified on the package warning labels must be strictly observed during loading and transportation.

6 Acceptance certificate

Bug detector BugHunter™ micro mk-01

Serial number_____

Date of manufacture_____

It is manufactured and accepted according to the valid technological documents and considered

exploitable.

QC stamp _____

7 7 Manufacturer’s warranty

7.1 Manufacturer warrants that the Product satisfies the requirements of the TR 4224-002-64062607-2011 under observance of operation, storage and transportation regulations indicated on the exploitative documents.

7.2 The service life of the Product is not less than 5 years (when operating for 4 hours per day).

7.3 Warranty period is 12 months from the date of sale. If the sale date and the vendor’s stamp are absent in the warranty card, the warranty period will be calculated from the date of manufacture.

7.4 The consumer may choose to return or repair the Product failed within the warranty period, at the expense of a vendor (manufacturer or a provider of complete services).

7.5 This warranty shall be void if

- warranty period is over;
- operation, storage and transportation regulations are violated;
- the product put into service failed due to mechanical defects;
- the seal is broken.

7.6 When the warranty period ends, the maintenance of the Product will be provided at the expense of a Consumer.

8 Certification details

8.1 The product meets the requirements of the Technical regulations of the Customs Union TRCU 020/2011 "Electromagnetic compatibility of technical means". Declaration of conformance EEU № RU Д-RU.МЛ.66.В.02237. Period of validity is up to and including 06.04.2022.

8.2 The requirements of the Technical regulations of the Customs Union TRCU 004/2011 "On safety of low voltage equipment" do not apply to the product (section 1, article 1 TRCU 004/2011).

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