

i4 Technology LLC.

Microphone, dictaphone and voice recorder suppressor "**BugHunter DAudio bda-2 Ultrasonic**" with five US-transducers



User manual

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This operating manual is to get you acquainted with the construction, operating rules (intended use, technical maintenance, repair process, storage and transportation) of the product - Microphone, dictaphone and voice recorder suppressor "**BugHunter DAudio bda-2 Ultrasonic**" with five US-transducers (hereafter referred to as the Product).

The device is designed to protect conversation areas from eavesdropping. Device blocks radio microphones, wired microphones, and most of professional digital voice recorders including recorders installed in mobile phones (smart phones), professional voice recorders. Ultrasonic inaudible noise signal \* as well as acoustic speech-like noise signal \*\* are used in jamming the eavesdropping devices.

*\* Ultrasonic pressure level of the operating device at a distance of 1 meter or less may exceed the maximum safety level of emission for people according to sanitary regulations, that may cause damage to your health!*

*\*\* Acoustic speech-like noise signal is reproduced through an external speaker system. The manufacturer cannot guarantee that if you use only one ultrasonic signal (or insufficient level of acoustic speech-like signal volume) all voice recorders and recording devices will be suppressed.*

Before using the device, please, carefully read the supplied User Manual.

Violation of the storage instructions and operating rules will lead to manufacturer warranty termination.

## 1. DEVICE DESCRIPTION AND OPERATION

### 1.1. Device application

It is a portable device designed to protect conversation areas from eavesdropping.

### 1.2. Device operating instructions:

- Surrounding air temperature ..... from 5 to 55°C (from 41 to 131°F)
- Relative air humidity at 25°C,..... up to 98%
- Atmospheric pressure..... from 66,6 kPa up to 106,6 kPa (from 500 mmHg up to 800 mmHg)

### 1.3. Technical specifications

1.3.1. Visual appearance of the device is shown in Figure 1.



Figure 1– Visual appearance of the device

- 1.3.2. Dimensions, no more than .....155x95x31 mm (6,1 x 3,74 x 1,22 in)
- 1.3.3. Weight of the device, no more than.....0,3 kg (0,66 lb)
- 1.3.4. Internal source of power supply (rechargeable battery) .....3,7-4,2 V
- 1.3.5. External source of power supply (charger) .....5 V
- 1.3.6. Battery current consumption, no more than ..... 0,5 A
- 1.3.7. Effective (maximum) range of suppressing eavesdropping devices, up to ..... 7 m (22,97 ft)
- 1.3.8. Effective (optimal) range of suppressing eavesdropping devices, up to..... 2 m (6,56 ft)
- 1.3.9. Sound pressure level at 1 m distance from the device, no less ..... 120 dB
- 1.3.10. Installed battery capacity .....2500 mAh

**1.4. Device components**

Device components and supplied package are shown in Table 1.

No	Description	Quantity
1	Microphone, dictaphone and voice recorder suppressor 'BugHunter DAudio bda-2 Ultrasonic with five US-transducers	1
2	External power supply source (charger) from single phase AC 50 Hz, 110/220 V	1
3	Individual packaging	1
4	User Manual	1

Table 1

## 1.5. Structure and functioning

1.5.1 The housing is constructed of high impact ABS plastic. Location of the device's main parts is shown in Figure 2.



Figure 2 – Location of the device's main parts

- 1 – ultrasonic transducers
- 2 – jack to connect an external acoustic system (linear audio output)
- 3 – power indicator
- 4 – on / off button
- 5 – power jack for an external power source (charger)
- 6 – power indicator of the external power supply source (charger)

1.5.2. The device runs under command of micro controller with embedded software.

1.5.3. Device's transducers emit special high frequency sound waves (pattern of the sound is determined by software in accordance with the specially developed algorithm) with the sound pressure reaching 120 dB at 1 m (3,28 ft) distance from the transducers. Additionally, an acoustic speech-like signal can be reproduced by connecting external acoustic active speakers (for example, a computer speaker system).

1.5.4. The device is powered by the installed battery of 18650 type or by the supplied external power source (charger).

1.5.5. The installed battery is charged by the supplied external power source (charger)

## **2. INTENDED USE**

### **2.1. Operating restrictions**

2.1.1. Ultrasonic pressure level of the operating device at a distance of 1 meter or less may exceed the maximum safety level of emission for people according to sanitary regulations, that may cause damage to your health!

2.1.2. Do not hold the running device in close proximity to a person's ears - this may cause headaches and temporary hearing loss!

2.1.3. Do not damage the ultrasonic transducers that are located behind the grid by foreign objects. Damage of the transducers may cause improper operation of the device or render it unusable!

2.1.4. Do not cover or block the ultrasonic transducers or holes in housing, cover by your hand or piece of clothes while the device is in operation!

2.1.5. Use only the supplied external power source (charger) for charging the installed battery.

2.1.6. Children must not use the device!

2.1.7. Most of the pets (dogs, cats, rodents, etc.) rather painfully react to ultrasonic waves, so please avoid the use of the device in their presence when applicable!

2.1.8. Store the device with fully charged batteries. Monitor the batteries charge level, do not let them be fully discharged! This way the batteries' lifespan will be extended.

### **2.2. Device usage**

#### **2.2.1. ON/OFF.**

In order to switch ON the device, press ON button (item 4). Then power indicator will start to flash (item 3). Turning off the Product is similar.

#### **2.2.2 Installed battery charge indication:**

– Green LED of the switch indicator (item 3) is lit constantly - device is running normally, the batteries charge is sufficient;

– LED of the switch indicator (item 3) blinks 1 time per second - device is running, you need to connect an external power supply (charger);

– LED of the switch indicator (item 3) blinks 2 times per second - batteries charge is critical, the device does not work (ultrasonic and acoustic speech-like signals are not produced), you need to urgently connect an external power supply (charger);

– LED of the switch indicator (item 3) is not lit when the device is switched ON - the battery is dead, you must charge the battery.

#### **2.2.3. Installed battery charging**

In order to charge the battery or to prevent its full discharge because of continuous running of the device, you need to insert the charger plug into the jack (item 5). Then the red LED of the power

indicator of the external power supply source (item 6) starts flashing\*. The battery is fully charged after the red LED (item 6) turns off.

*\* It may possibly take 20-40 seconds for the external power supply source indicator to start flashing at the critically low batteries charge level.*

### 2.3. Practical recommendations

2.3.1. The device should be placed so that the transducers are directed towards possible location of eavesdropping devices (voice recorders, microphone, "bugs" etc.), for example, toward the new visitors or clients. The optimal distance from the transducers to microphone of the eavesdropping device is up to 2 meters (6,56 ft). Then switch ON the device. It is recommended to connect external active speakers (for example, computer speakers) to the corresponding connector of the product to reproduce acoustic speech-like noise signal.

Implementing white noise interference is relevant to prevent from eavesdropping from the outside using directional microphones (including laser ones), as well as to suppress those models of voice recorders against which the use of ultrasonic interference alone is ineffective. You should hold conversation in a low voice but so that you hear well each other without repeating every word.

2.3.2. Do not switch on the acoustic speech-like signal when you want the device to be hidden. Note that this is somewhat reduces the effectiveness of the device (the manufacturer cannot guarantee that if you use only one ultrasonic signal the device will suppress all voice recorders).

## 3. MAINTENANCE

Maintenance requires only charging of the installed battery as well as cleaning the surface of the device.

Current repair. Troubleshooting. Typical problems and possible solutions are specified in Table 2

Problem	Possible reasons	Possible solution
When you turn on the device the power indicator (item) is not lit	Battery is discharged	Recharge the battery
	Device is defective	Take the device to the service center

Table 2

## 4. PACKAGING, STORAGE AND TRANSPORTATION

Each device is packed in individual package according to the supply package as indicated in Table 1.

Device moving in the package is not allowed. Packed devices are placed into shipping containers - a corrugated fiberboard box.

Packaged devices can be transported by vehicle or railway in covered trucks or containers, by air in pressurized compartments.

During transportation packed packages should be protected from precipitation and direct sun rays.

Transportation conditions:

- Surrounding air temperature: from -50 up to 50°C (-58 to 122°F);
- Relative humidity up to 95 % at 25°C (77°F);
- Atmospheric pressure from 84 up to 107 kPa (630 - 800 mmHg);
- Shock acceleration peak value is up to 147 m/s<sup>2</sup> (15 g), with a duration of shock acceleration 10..15 ms.

The requirements on warning signs must be strictly obeyed when loading and transporting.

## 5. MANUFACTURER WARRANTY

5.1 i4 Technology <sup>TM</sup> - Russian manufacturer of innovative electronics is distinguished by high quality and durable products. A unique multi-level quality control system is implemented at the plant.

The manufacturer uses only high-quality, expensive hardware components of world-famous vendors.

5.2 The manufacturer guarantees that the products conforms to the applied requirements under the operating, storage and transportation conditions specified in the operational documentation.

5.3 Effective device operation period — not less than 3 years.

5.4 Manufacturer warranty - 12 months from the date of purchase.

5.5 If the device fails during the warranty period, the supplier (manufacturer or companies providing maintenance services) should replace or repair it at its own expense.

5.6 Customer loses the right to obtain warranty service in the following cases: - After warranty term expiration; - Violation of the operation, transportation and storage instructions; - Mechanical damages causing device failure after the purchase; - Manufacturer seal is broken.

5.7 Repair and maintenance of the devices with an expired warranty period is covered at the customer's expense.



The manufacturer reserves the right to introduce technical modifications improving consumer properties.

Manufacturer's technical support: [www.en.i4technology.ru](http://www.en.i4technology.ru)

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Questions concerning the exchange after-sales service should be applied to the distributor that completed a sale. Distributor's contacts are specified in its warranty card.