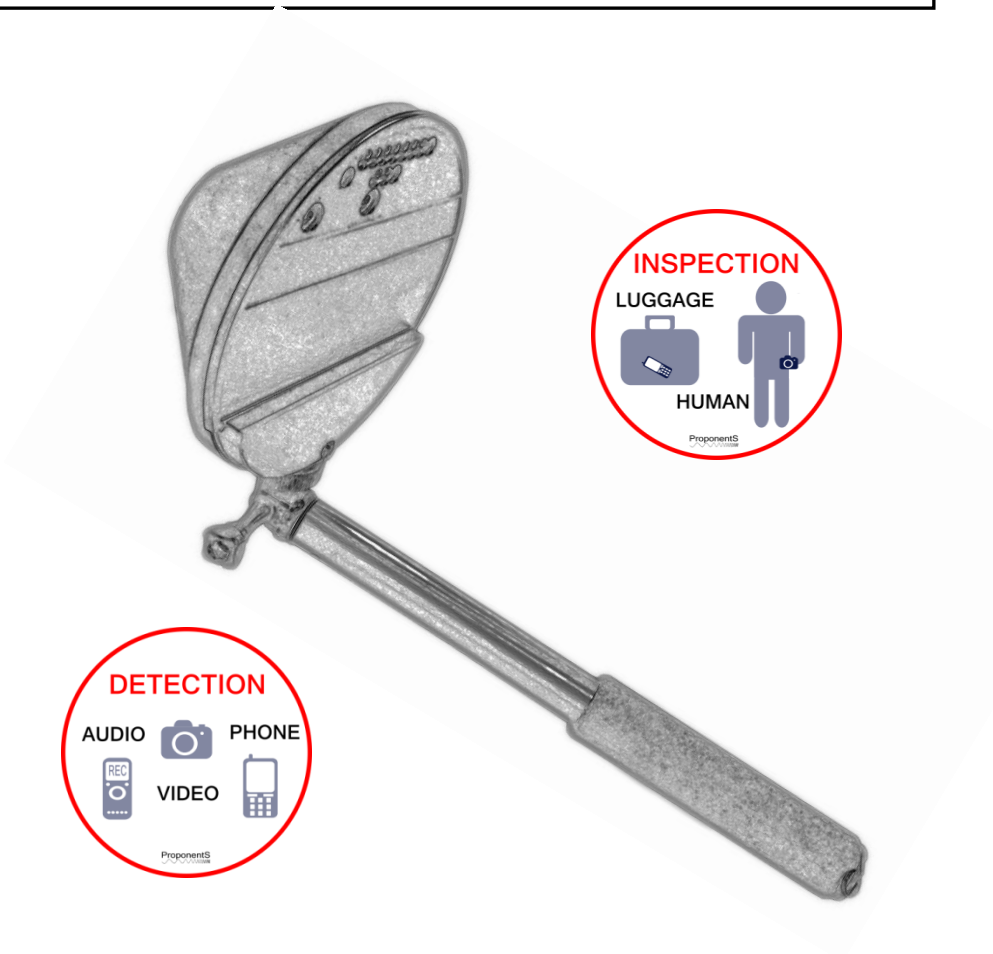
Usually, such corrosive-metal objects have mechanically unstable non-linear properties. That is, the response signal changes greatly under mechanical action (tapping, etc.) on the object. This allows the operator to distinguish them from electronic devices.

Non-linear junction detector

«EH-NLJD-simple»

Operating manual



ProponentS

Description and operation

EH-NLJD-simple device is designed to detect any electronic equipment hidden in walls, furniture, containers and person's body in or under clothes and also in hand luggage (bags, packages and etc).

Technical characteristics.

Name	Value
Range of detection: SIM card Mobile Phone	 70-100 mm 150 -250 mm
Transceiver	EIRP less then 100mW (frequency 2,4 GHz band) second harmonic signal sensitivity -135dBm
Antenna	Helical, Circularly polarized
Alarm	Visual, Sound
Power supply	2 rechargeable battery Li-ion or LiFePO4 type 14500 (AA size)
Current consumption	Less than 300 mA
Continuous operating time	Not less than 2 hours
Operating conditions: operating temperature range operating temperature limits during transportation and storage	 +5C…+40C -10C…+50C
Dimensions of the main unit (not more than)	150*150*80 mm
Weight of the product (not more than)	400g

D3 indicates the voltage level of battery. The more LEDs on, the more battery voltage. If the voltage drops below the critical one, the D2 scale will constantly burn through one LED and then the device will turn off.

To switch off the Detector, press and hold the K1 button.

The detection process is to bring closer the antenna of the device to the objects. To ensure maximum detection of faint signals, slowly move your detector sideways toward the target's suspected position at a speed of about 5 to 10 cm per second, monitoring the LED indicators (sound signals).

By moving towards Non-linear objects the number of lit LED indicators (D2) will increase.

If the object has strong non-linear properties and the level of the second harmonic signal is too high (all diodes of the D2 scale are on), you can turn on the receiver attenuator. Then it will be possible to see levels of powerful responses in order to distinguish and refine the location of such objects.

Electronic devices have many different non-linear junctions (diodes, transistors, etc.) and they are detected by the device in any state (on or completely off). But the level of response depends on many factors: the type of component, distance, covering surface and the relative position of the object and the antenna of the device.

However, apart from electronic devices, two dissimilar metals, joined or touching, and corroded metals return harmonic signals too. Such objects can lead to so-called false alarms.

Switching on and testing the EH-NLJD-simple device:

- Switch on the device by pushing the K1 button, the Power On LED indicator (D1) will light green (Fig.2). After a short initial light of all device diodes, on the D3 scale the number of LEDs corresponding to the battery voltage should light up. Point the antenna system in a direction where there are no any objects at a distance of at least 2 meters. Then LED indicator of detectors (D2) goes off (the rarely flashing of the first LED indicators D2 is acceptable).

Testing the detector:

- Slowly bring closer (up to distance of 50-20 mm) SIM card to the antenna system of the device. The closer the SIM card is the higher the level of flashing LED indicators (D2) should be, up to full brightness of all LEDs.
- By increasing the distance between the SIM card and the antenna of the device – the number of flashing LED indicators will decrease and, finally, all LED indicators turn off.

When the EH-NLJD-simple device is ON, the system will automatically install the following parameters:

- receiver addition attenuator OFF ;
- transmitter ON;
- without sound.

To Add/remove the sound, shortly press the K1 button.

To add 24dB attenuator on receiver use K2 button. Short press of the K2 button switch attenuator On or Off. If the attenuator is off (maximum receiver sensitivity), LED D1 is constantly on. If the attenuator is on, LED D1 flashes.

EH-NLJD-simple parts

The complete set of parts include:

Name	Quantity
Main unit	1
Telescopic stick	1
Batteries	2
Charger	1
Regular packing and User manual	1

Features

EH-NLJD-simple is a hand-held device in which main unit integrated the transceiver, antenna, power supply, control and indicating panel.

1) A synthesized transceiver with frequency stability. Frequency 2.4 GHz ISM band and power EIRP less then 100mW conformance with Short Range Devices standard (EN 300 440).
2) Circularly polarized transmit and receive antenna removes the risk of missing a threat due to incorrect antenna polarization.
3) The combination of high sensitivity and low transmitted power provides adequate detectability. A simple and user-friendly interface allows you to work quickly and easily analyze the results.
4) The telescopic stick is connected with a standard 1.4 inch mount and can be easy changed.
5) The use of standard batteries allows the user to easily replace them if necessary.

Construction

Structurally the construction of EH-NLJD-simple main unit consists of the following components: the internal transceiver, the compo antenna, the battery compartment, the control and indicating panel.

The appearance of the product is shown in figure1.

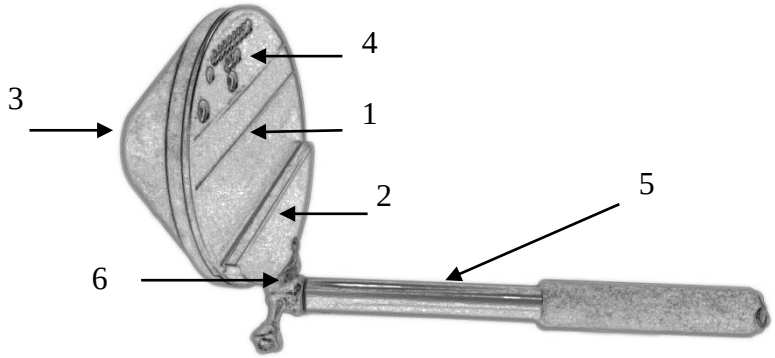


Figure 1

The internal transceiver (1), batteries cover (2), antennas (3) control panel (4) are located in main unit.

Connecting the telescopic rod (5) and the main unit through a standard 1.4 inch mount (6).

To access the batteries, unscrew the screw and remove the battery compartment cover.

EH-NLJD-simple controls are located on the face panel of the main unit.
Description of the buttons and scale are shown in figure 2.

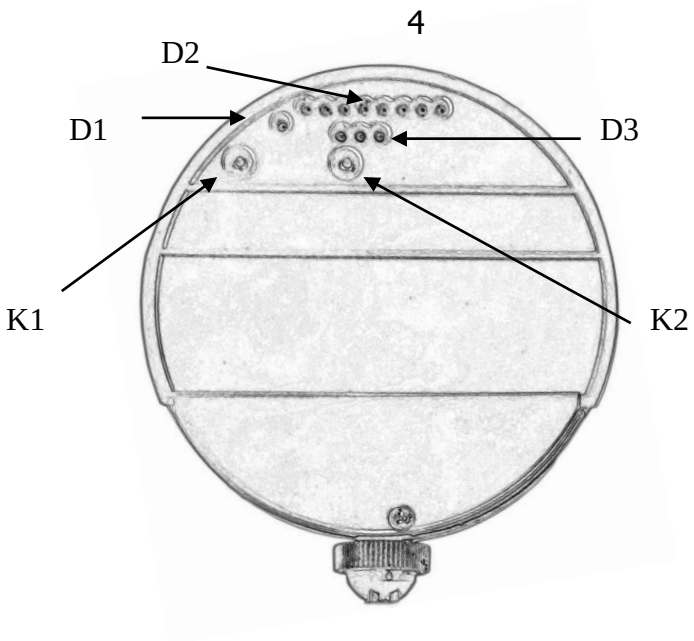


Figure 2

D1– Power On LED indicator;

D2 – LED indicators of received second harmonic signal intensity (3dB step, all scale 24dB);

D3 – LED indicators of battery voltage;

K1 – ON/OFF Power and Sound button;

K2 – Add receiver attenuator 24dB Button ;

Operation with EH-NLJD-simple

Prepare the device to work in the following order:

- Remove the device from its packaging;
- Remove the battery cover to insert two Li batteries. Make sure the positive and negative ends are facing the correct direction. Replace the battery compartment cover.