

**INTRODUCING
THE ALL NEW
1203!**

Meet the all
new
RF detector

**iPROTECT
1203**



Features

New functions

- Increased 16-segment bargraph indicator
- Physical attenuator -20 dB
- Highly sensitive to real signals without being affected by weak background radio waves
- No sensitivity loss at battery discharge
- Increased sensitivity to high-frequency signals
- One joystick-style control for all functions (attenuator on/off, vibrating on/off, power on/off)
- Low power indication

Other features

- Frequency range 50MHz-6GHz
- Is able to detect modern communications, including the GSM, 3G, 4G (LTE), Bluetooth and Wi-Fi 2.44 and 5 GHz
- Vibrating indicator
- High-quality detection scheme with professional RF isolation
- Reliable and tested device for different sweeping tasks
- Detect both analogue and digital transmissions
- Allows the operator to locate the source
- Vibrating signal for concealed indication of a high RF level and testing the hardly accessible places
- Durable duralumin case
- Powered by 2 AAA batteries
- Battery resource up to 10 hour

Specification

Frequency range	50MHz-6GHz
Attenuator	-20 dB
Controls	Attenuator on/off, vibrating on/off, power on/off
Indicators	1) 16-segment bargraph; 2) Vibrating 3) Battery state (3 colors)
Battery resource	Up to 10 hours
Dimensions	125 x 62 x 17 mm

Theory of counter surveillance

According to the way of broadcasting, RF bugging devices can be divided as follows:

- FM / AM audio and video transmitters
- Digital transmitters with continuous carrier
- Digital transmitters with storage, compression and short-time transmission
- Spread-spectrum transmitters
- Hopping transmitters (frequently changing frequency)
- Transmitters using the DVB (digital television) standard
- Transmitters using the GSM standard (GSM baby, GSM spy phone, etc)
- Audio/Video transmitters using the 3G and 4G standards
- Audio/Video transmitters using the Wi-Fi/Bluetooth/DECT protocol
- Other transmitters using the standard communication or broadcasting protocols for sending the information outside the premise (for example, smartphone with special software or voice recorder with Wi-Fi access function, etc.)

According to the sort of transmitted information RF bugging devices can be divided into the following types:

- room or body-carried audio/video transmitters
- telephone line transmitters, which start transmission when the receiver is picked up
- universal room/phone line transmitters, which work depending on the phone's receiver state (on/off-hook) and transmit both room acoustics and phone conversations
- vehicle audio/video transmitters (often with high power)
- GPS car trackers (receive GPS coordinates and then transmit them via GSM/GPRS/EDGE/3G/4G, typically periodical or delayed transmission). Additional function can be audio/video transmission from within the car

What is an RF detector?

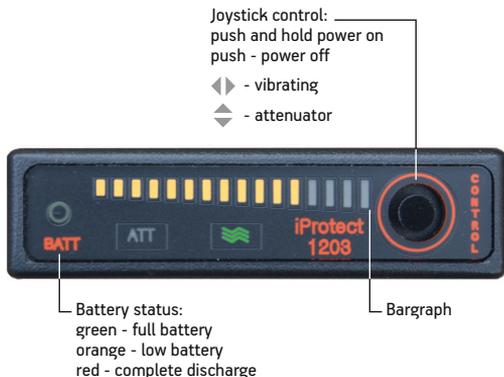
An RF detector is a device which can show the general RF level in a current part of a premises. The sweeping procedure is performed by inspecting (probing) all the places in the premises with the RF detector while watching the RF level. If there is a source of radio waves (legal or illegal), the RF detector will show an increased level on its bargraph indicator.

The operator can find the physical location of the highest RF level by moving the detector in different directions in order to locate the transmitter. Examples of legal transmitters are: DECT telephones or their base stations, Wi-Fi routers, Wi-Fi devices, working mobile phones (GSM, 3G, 4G, etc.), wireless video cameras, child surveillance systems, etc. Illegal devices, i.e. bugs can be: hidden video cameras, hidden GSM/3G/Wi-Fi transmitters, VHF/UHF transmitters, microwave transmitters, etc. The task of an RF detector is to show the operator all the RF sources. Then the operator is able to study all the sources and as such find any illegal transmitters if they exist.

Parts description

Designed for simplicity, the iProtect 1203 contains powerful high-sensitive elements in its circuitry, allowing the operator to conduct countersurveillance sweeping at a highly professional level. The advantage of RF detectors is their wide frequency coverage and their ability to show radio waves right near the source and therefore show the location of the transmitter. The iProtect 1203 solves this task in the best possible way, accurately eliminating the background noises and indicating real signals. With the help of the 1203 the operator can track all RF sources and is therefore able to find the bugging device if there is one present. The schematic of the 1203 takes into consideration the character of the high-frequency signals to be received not so well as of the radio waves in lower ranges, like FM broadcasting or analogue TV. Therefore the iProtect 1203 has two separate channels of pre-amplification, with a higher amplification coefficient for signals above 1500 MHz. As a result the general frequency characteristic is smoother.

Front panel



The iProtect 1203 has a 16-segment bargraph indicator which allows the operator to see the slightest changes in level and as such accurately find the area with the strongest signal for location.

When it is necessary to decrease the sensitivity, typically during the location process, the operator can use the attenuator function. The iProtect 1203 has a 'physical' (as in professional communications) RF attenuator of a level up to -20dB.

The vibrating indicator allows the user to 'feel' the increased level without actually watching the bargraph. That is convenient during the process of inspecting hard to access places like gaps under/behind furniture and construction. The attenuator, the vibration mode and the power state are selected by the joystick-style control.

When the battery becomes low, the power indicator changes its color from green to orange. When the battery is about to discharge completely, the power indicator becomes red. The device is powered by 2 AAA batteries. The resource time is up to 10 hours.

Sweeping

Sweeping in the premises

Before starting sweeping, you should perform some preparations. Firstly, it is necessary to consider the time of the sweep and the situation. Since there are lots of devices that are remotely controlled (particularly GSM/3G/Wi-Fi/etc), it is recommended to carry out a sweep during working hours in real situations, when the eavesdropper most wants to listen and at presence of sound in the room. It may be necessary to arrange a fictitious meeting

Start with the attenuator turned off. Enter the room while holding the iProtect 1203 and start probing the objects and surfaces with its antenna. Since some types of transmitters have extremely low power, it is recommended to carry out inspection at a distance not less than 10-20 cm to the object. Move along the room in a selected direction – clockwise or counter clockwise and probe all the items/surfaces/gaps, etc. Pay special attentions to the places where the electricity is present, so that the potential bugging device can be powered from. Do not forget about the objects situated in the middle of the room. Open the wardrobes, cabinets, etc. Since the bugging device can be everywhere, test the ceiling (opening tiles of necessary) and the floor. Use the ladder if necessary.





The target zone (area around the working table in the checked room) is the most important since the sound there is the clearest. Therefore inspect it as much careful as possible.

An increased RF level on the bargraph and the vibration are signs of radio waves, which can be produced both by a normal device like Wi-Fi router or a real bugging device, for example by FM VHF transmitter.

The task of operator is to find the place with the maximum RF level and such to trace the transmitter. If it is impossible to find the strongest place and the signal is similar everywhere (for example near a window), it may be an external interference. In modern cities there are lot of interferences like communication base stations or broadcasting.

Interferences may also get into your room from the adjacent premises. It can be Wi-Fi routers, DECT base stations, conversations in the neighbor flats/offices or a VHF/UHF communications from a taxi car standing near your building.

If the RF level is strong, the bargraph may show full level. The attenuator function will be useful in this case. Turn it on and continue searching for the place with the maximum level. After finishing it and returning to the normal sweep do not forget to turn off the attenuator back.

After finding out the place with a strong RF level go to a physical inspection. Disassemble the object and try to find the transmitter. Before making decision learn the object, maybe producing of the RF waves is its normal function (like the Wi-Fi router).

Do not stop the sweeping even if a bugging device is found. Some other, better hidden, bugging devices may be still there.

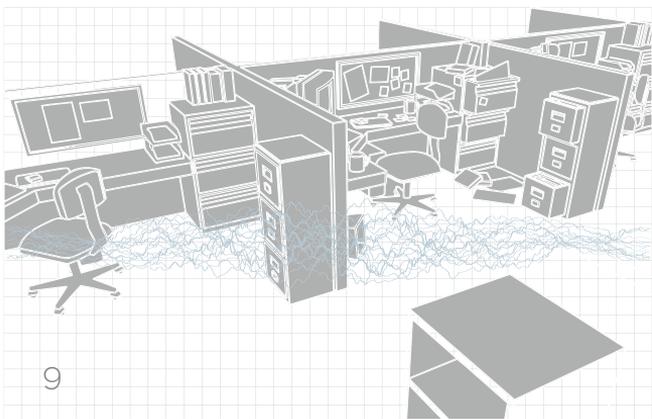


Checking landline telephones and lines

Telephone bugs may be installed anywhere a phone line lays. It may be within the phone set, the phone outlet connecting box or cable. Most telephone bugs activate only when the receiver is off-hook. Therefore sweeping of landline phone lines is carried out only when the receiver is in this state.

Start checking from the phone set. Place the iProtect 1203's antenna near the set and lift the receiver. Watch for an increase of RF level. If you are testing a wireless phone, you will see a strong radio field on the display, as the phone uses radio communication between the receiver and its base. That is the normal but such situation makes it difficult to check the wireless phone for a presence of bug inside it. Disassembling and inspecting the schematic of the telephone for a presence of 'not proprietary' parts or 'modification signs' could be a solution in this case.

Move the antenna along the phone line while keeping it off-hook. Check all the outlets and communication boxes. If you have an assistant, ask him to lift the receiver and then hang it up repeatedly. If you see that the RF level changes when the line is activated and deactivated, this is a sign of a bug's presence. Try to locate the place where the RF level is highest and then perform a physical search.



Inspecting people

There are many types of body-carried transmitters. They may broadcast conversations and (or) video signals. To test a person, carry the iProtect 1203 in a pocket with power turned on. Approach the person while sensing the vibration of the detector. If it starts vibrating, it means that the person is carrying a transmitting device. Mind the detection distance of the device. Some weak signals such as Bluetooth can be detected at a distance of 10 cm only. Another way is to place iProtect 1203' antenna under the table closely to the place where people will sit (will be necessary to make an RF extension cable for antenna). Watch the RF level on bargraph when a person is sitting or during the meeting. An increased level may be a sign of a transmitting bug. If a mobile phone is ringing or somebody is talking by mobile phone it is normal for the device to show an increased level.

Inspecting vehicles

There are a number of bugs and trackers which can be installed in a car. Firstly, make sweeping inside the vehicle similarly to the procedure in the premises. Then repeat the procedure probing your car from outside, above and under. Keep the engine started.

The GPS trackers (and also 3G/4G trackers) accumulate the route and send the data periodically, with a pre-programmed interval, more frequently when the car is moving. Therefore it is necessary to detect the transmissions while the car is moving and during quite a long period of time. Because of these reasons the detecting device must be very sensitive to detect the RF waves from a car interior during the movement while the transmitter is situated somewhere outside the car. That is why we recommend applying more sensitive Protect 1207i, which suits better for finding the GPS trackers.

Detecting distance

VHF/UHF transmitter 5mW	50-100 cm
AC powered audio transmitter	50-100 cm
Baby watch 2.4 Ghz	50 cm
Wireless camera (hidden) 50 mW	50 cm – 1 meter
GSM transmitter (Baby monitor) / GSM telephone	30-100 cm
Bluetooth	10-30 cm
Wi-Fi router	50-100 cm
Wi-Fi transmitter	30-100 cm
3G transmitter / telephone	20-60 cm
4G (LTE) telephone	20-60 cm

