

iprotect 1205

Ultra-Wideband
Signal Detector



iProtect 1205

Ultra-Wideband Signal Detector



Evolution of Threats

The evolution of mobile communications (4G/5G) and the widespread availability of wireless standards such as Wi-Fi and Bluetooth have led to a shift in the methods and technical solutions used for covert information gathering (surveillance devices or "bugs"). Modern mobile infrastructure provides unprecedented opportunities to transmit information in real-time over the Internet without the need for a nearby monitoring post. Furthermore, Wi-Fi and Bluetooth standards ensure high-quality transmission and a high level of stealth due to the dense saturation of these signals in modern environments.

Additionally, the mass production of electronic components and developer boards for **IoT** (Internet of Things) systems using these standards has accelerated the creation of professional-grade surveillance devices, making them easily accessible on the open market.

Signal detectors allow for the detection of any radio-frequency means of covert information gathering while simultaneously localizing radiation sources of all the types mentioned above. The **iProtect 1205** is characterized by a wide detection band and a range of auxiliary functions to speed up the pinpointing of a source's location.

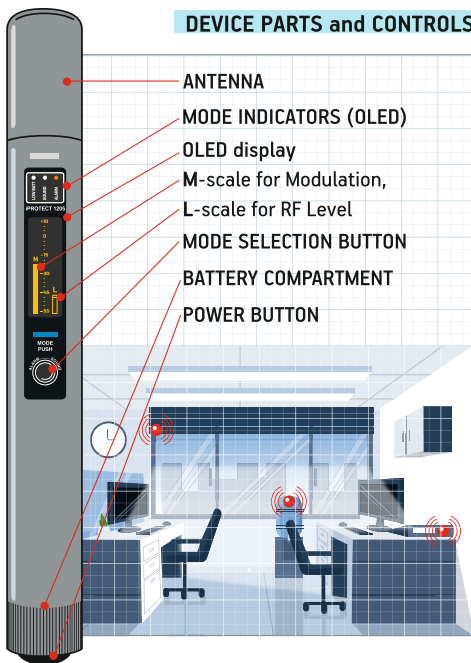
Features

- Quick and easy detection of various RF bugging devices, including VHF/UHF/SHF audio and video transmitters, mobile network transmitters (GSM, 3G, 4G, 5G), Wi-Fi/Bluetooth transmitters, as well as stationary, vehicle-mounted, and body-worn transmitters.
- Wide frequency range: 50 MHz to 15 GHz.
- Detects signals regardless of the modulation type or the nature of the information being broadcast.
- 3 Operating Modes:
 - **SILENT**: Visual level indication on the screen only.
 - **ALARM**: Audio alert combined with visual level indication.
 - **SOUND**: Demodulates the amplitude component (audio monitoring) with visual level indication.
- Dual-scale display for easier detection and localization:
 - **Modulation Level (M)**: High sensitivity for detecting signals from a greater distance.
 - **RF Level (L)**: For precise physical localization of the signal source.
- Built-in omnidirectional antenna.
- Compact, portable design with a durable duralumin enclosure.
- Powered by a single AA (LR06) battery.
- Low battery indicator.
- Battery life: 10-15 hours active use; up to 25 hours standby

SPECIFICATIONS

Frequency Range	50 MHz–15 GHz
Sensitivity	-50 dBm
Operating Modes	SILENT, ALARM, SOUND
Level Scales	Modulation Level (M), RF Level (L)
Control buttons	Power, Mode
Display	OLED 128x32
Battery life	10-15 hours active use; up to 25 hours standby
Dimensions	172 x 19 mm
Current consumption	80 – 150 mA
Power	1 battery AA (LR06)

DEVICE PARTS and CONTROLS



APPLICATION & SEARCH THEORY

Types of Surveillance Devices

Covert listening devices can be categorized by how they obtain and transmit data:

1. **Wired:** Transmit info via physical wires.
2. **Recorders:** Store data to internal memory.
3. **RF Bugs:** Radio-frequency transmitters.
4. **Hybrid:** Combinations (e.g., store-and-forward via radio or wire).
5. **Vibro-acoustic:** Contact methods (stethoscopes).
6. **Trackers:** GNSS-trackers for vehicle/cargo coordinates.

What is an RF Signal Detector?

An RF detector measures and displays the total level of radio emission in its immediate vicinity. The search is performed by "probing" objects, surfaces, and areas of a room. If a radio source is present, the detector's scale will rise. The operator localizes the source by finding the point of maximum signal strength.

Note: Many "friendly" signals (Wi-Fi routers, laptops, etc.) may exist in the area. The operator's goal is to distinguish a threat from these routine signals.

Preparation

1. **Disable all known RF sources:** Turn off Wi-Fi routers, laptops, printers, and smart home devices. Put mobile phones in Airplane Mode or turn them off completely.
2. **Create "Sound Background":** Play an audio file or music in the room. This activates voice-activated bugs and helps mask your search activities.

UNDERSTANDING the LEVEL SCALES

- **M Scale (Modulation):** Best for initial detection from a distance. It catches instantaneous changes in signal amplitude. **Note:** The M-scale may not rise proportionally to distance; it might even drop when extremely close to a transmitter.
- **L Scale (RF Level):** Best for physical localization. The level will rise steadily as you get closer to the source, reaching its peak at the exact location.

Mode Selection

- **SILENT:** Use for "stealth" sweeps where you don't want the device to make noise. You must watch the screen constantly.
- **ALARM:** The device emits a tone that changes intensity based on the RF level. Perfect for checking hard-to-reach places like ceilings or under furniture where you cannot see the screen.
- **SOUND:** Plays back the amplitude component captured at the detector's output. This is essentially what is visualized on the "M" (Modulation) scale.

Technical Note: The device does not perform full signal demodulation. Instead, it captures the audible fluctuations of the signal's amplitude. This allows the operator to hear the "rhythm" or "signature" of the transmission.

The nature of the sound depends on the type of signal being detected. With experience, an operator can identify the device type (e.g., the distinct buzzing of a GSM burst or the rapid ticking of a Wi-Fi data packet) based on these acoustic signatures. This mode allows for searching by ear, enabling the operator to focus on the physical sweep while listening for the appearance of an active signal's amplitude pattern.

Room Sweep Procedure

Warning: Detection range depends on the bug's power (typically 10 cm to 2 m).

1. Turn on the device and check the battery level.
2. Move systematically (clockwise or counter-clockwise).
3. Probe all surfaces, paying close attention to electrical wiring (bugs often tap into power lines).
4. Check the Target Zone (the area around the desk or meeting table) most thoroughly, as audio quality is highest there.
5. If a signal is found, perform a physical inspection. Do not stop searching after finding one device; there may be others.



Power & Maintenance

- **Power Button:** Located on the battery cap at the bottom.
- **Low Battery:** A red LOW BATT LED and an on-screen icon will appear.
- **Battery Replacement:** Unscrew the bottom cap. Insert a new AA battery with the positive (+) terminal facing inward.
- Use only alkaline batteries.





iProtect 1205

Ultra-Wideband
Signal Detector