Hidden camera detector
SEL SP-101 ARCAM

SEL SP-101 ARCAM is designed to remotely detect hidden alive video cameras irrespective of the way they record or transmit video information and irrespective of the means of concealment.

ARCAM can detect wired and wireless cameras as well; it is able to detect intrinsic spurious emanations of a camera.

The principle of operation is based on the analysis of certain parts of electromagnetic spectrum. In this manner it detects the emanating signals characteristic exclusively of miniature video cameras. The USB connection to a computer permits updating of the database of the then known video cameras.

The alarm signal of the detector can be visual (on the built-in LCD display), acoustic, vibrating or combined.

Specifications

Average detection range	1 - 15 m
Average detection time	from 1 up to 10 s
Max detection time	not more than 30 s
Antenna	cylinder broadband
LCD display	colour
Screen size	62 mm
Non-stop operating time	no less than 6 hours
Charging time	not more than 2 hours
Dimensions	60 x 125 x 30 mm
Mass	0.2 kg
Operational temperature	from -10 up to + 40°C

Non-linear junction detector LORNET-36

The non-linear junction detector "LORNET-36" is the irreplaceable device for carrying out of operational and search activities in premises with high density of subjects containing electronic devices and also for search of small-sized electronic devices (1 x 2 cm). The device is also effective at long distances from the subjects wich is very good for analysis of suspicious subjects within safe distance.

New frequency non-overlaping with cellular phones: 3580-3620 MHz

Features

- Thanks to high frequency of probing signal and effectively implemented narrow diagram of antenna directivity "LORNET - 36" is considerably better than all domestic and foreign non-linear detectors in range of detection, selection and accuracy of spatial localization of semi-conductor elements.
- Usage of SHF range allows detection of semi-conductor elements hidden by various materials (p-n junctions can be detected through the cracks, unearthed shields, through reflection from smooth surfaces, SIM-card is detected from 1 meter distance etc.).
- Narrow beam of directivity diagram and presence of the laser pointer allows carrying out of spatial selection of various semi-conductor elements with split-hair accuracy which is an extremely important characteristic of the analysis of suspicious subjects within safe distance.
- Automatic and manual changes of capacity of probing signal in pulse mode.
- Usage of the newest technologies and materials, ergonomics.
- Convenient bodies of indication and management, simple in work, light weight.
- Electromagnetic influence on the operator is essentially lowered.
- Wireless head-phones.

Specifications

Type of probing signal	pulse
Probing signal frequency	3580-3620 MHz
Receiver frequency at 2nd harmonics	7160-7240 MHz
Receiver frequency at 3rd harmonics	10740-10860 MHz
Antenna gain factor at 1st harmonics	20 dB
Antenna gain factor at 2nd harmonics	24 dB
Capacity (pulse ratio) of pulse signal	20 W (160)
Energy potential (capacity of probing signal taking into account antenna gain factor)	2000 W
Sensitivity at 2nd and 3rd harmonics (without antenna gain)	minus 110 dBm
Dynamic range	More than 40 dB
Angle of antenna directivity diagram (at 1st//2nd//3rd harmonics)	16 //8//4 grade
Laser lightning of the center of directivity diagram	yes
Time of work from built-in accumulator at maximum capacity of probing signal	3 hours
Dimensions: at working conditions at transportable conditions	 47.7 x 30.3 x 22.7cm 30.3x30.3x23 cm
Weight	1.4 kg

Non-linear junction detector LORNET

Non-linear junction detector Lornet is designed to detect various kinds of electronic devices containing semiconductor elements.

Such as eavesdropping devices, microphone amplifiers, audio-recording devices, remote control devices etc., both in switched-on and switched-off modes.

Distinctive features

- Light weight (less than 1 kg).
- The unique antenna (only 18 mm thick) allows the hard-to-reach places to be investigated.
- Minimum output power (1 W in continuous mode and 15 W in pulse mode).
- Automatic frequency selection allows operation in complex electromagnetic environment.
- Possibility to choose either continuous or pulse radiation mode.
- Wireless headphones for audio information.

Specifications

Radiation mode	continuous, pulse
Power of pulse/continuous signal	15 / 1 W
Sensitivity	not worse than -130 dBm
Signal frequency	880-906 MHz
Dynamic range	not less than 80 dB
Battery life	not less than 2 hours
Dimensions	40 x 15 x 6.5 (in transport bag)/ 135 x 15 x 3.2 cm
Weight	less than 1 kg

Non-linear junction detector
LORNET-24

Lornet-24 is an unique non-linear junction detector that is notable for its compact size, ergonomic design and weight.

The dimensions are as small as 39x10 x 4 cm; the weight is less than 700 g. Owing to its thinnest antenna (only 18 mm thick) it can be used for the hard-to-search places. Lornet is highly competitive with most popular models of non-linear junction detectors. It can operate in continuous and pulse mode as well, having a variable power output. Automatic frequency selection allows operation in complex electromagnetic environment. Its power output is harmless to operator's health. Operation at higher frequencies makes it in some cases more efficient than detectors with standard frequencies but with greater power output. The delivery set includes wireless headphones.

Specifications

Radiation mode	continuous, pulse
Power of pulse/continuous signal	10 / 1 W
Sensitivity	not worse than -108 dBm
Signal frequency	2400 - 2483 MHz
Dynamic range	not less than 80 dB
Battery life	not less than 3 hours in pulse mode and 1 hour in continuous mode
Dimensions	23x10x5,5 (in transport bag) / 39x10x4 cm
Weight	less than 700 g

Hand-held compact non-linear junction detector
BUKLET-2

This small-sized nonlinear device is intended for detection of transceiving and radioelectronic facilities including cellular telephone SIM Cards, dictaphones, etc. only econd harmonics. Range of coverage – from 10 cm to several meters (depending on the device type detected).

Specifications

Type of signal	impulse, continious
Effective transmitting output	0,5 W
Receivers sensivity	150 dB/W
Transmitter operating frequency	2400 MHz
Free channel selection	automatic
Power flux density in the scanning area vector	not more than 200 μW/cm^2
Dynamic range	80 dB
Transmitting and receiving antennaes	circular polarized
Working time in impulse mode	about 2,5 hours
Working time in continious mode	not less than 2 hours
Automatic discharging control indication	
Charging time	2 hours
Weight	not more than 350 grams
Dimensions	220 x 90 x 90(30) mm
Battery	Li-Ion accumulator
Operating temperature	from -10 to +40°C

Non-linear junction detector
LUX

Non-linear junction detector "LUX" is designed to detect various kinds of electronic devices containing semiconductor elements.

Elements such as eavesdropping devices, audio-recording device and remote control devices etc., both in switched-on and switched-off modes.

"20 K" mode allows listening to low-frequency signal of a working electronic device (tape recorder, radio transmitter, microphone amplifier).

Distinctive features

- Single-body construction consists of antenna unit and an extending arm where receivers, transmitter and processing unit are placed.
- Possibility to connect headphones.
- Non-linear junction simulator is included in delivery set.
- Small size, ergonomic design, weight is low as 1.3 kg make the detector capable for work in hard-to-reach places.
- Adjustable power output and sensitivity.

Specifications

Transmitter:	
Operation mode	pulse
Fundamental frequency	915 MHz
Tuning step size	200 kHz
Max output power in pulse	16 ± 1 dB
Min output power in pulse	1.6 dB
Receiver	
2nd and 3rd harmonics	
True sensitivity of each reciever at signal/noise=6 dB	136 dB/W
Dynamic range of receivers	not less than 30 dB
Manual gain control of receivers	in 4 steps, (10 ± 1) dB in each step
Antennas	
Quantity	3 antennas integrated in one unit
3 dB beamwidth of transmitiing and receiving antennas	not more than 90
Power level of side and back lobes of transmitiing and receiving antennas	not more than 10% from major lobe level
Polarization	ellipticity is not more than 1.5
Transmitting and receiving antennas have coaxial patterns	
Deflection of major beam maximums	not more than 5°

Non-linear Junction Detector (NLJD)
NR-μ

NR-μ is designed to detect covert electronic devices containing semiconducting components.

The device allows inspection of light constructional elements of buildings, furniture etc. (in the office area) and detection of covert surveillance devices (radio microphones, microphone amplifiers, tape and digital recorders etc.) in different operational modes: in a transmission mode, switched-off or in stand-by mode (for remote controlled devices).

Distinctive features

- The lightweight body and built-in cable system between the antenna and transceiver make the device compact and easy to use.
- The advanced technology within the detector, combines the advantages of both pulse and continuous wave based NLJDs.
- The extra antenna head LED display shows the received signal strength for both 2-nd and 3-rd harmonics.
- Frequency adjustment polite high IMC features.
- Telescope rod is highly effective for inspection of building constructions and furniture.

Operational principle

Modern electronic devices usually contain semiconducting components (diodes, transistors, computer chips etc.) These components react to a high frequency signal transmitted by non-linear junction detectors (NLJD), reradiating the energy back on doubled and tripled frequencies of the flooding signal.

This effect allows effective detection of electronics devices in office areas, inside walls, furniture etc.

Specifications

TRANSMITTER	
Frequency	848 MHz
Power	peak pulse 2 W [+33 dBm]
Sweep mode	(average continuous 0,4 W [+26 dBm])
Signal's curve extraction mode (20K)	average continuous 2 W [+33dBm]
Control range of output power	10 dB (step 5 dB)
Modulation sweep mode	amplitude - pulse (duty cycle 5)
Signal's curve extraction mode (20K)	CW
RECEIVERS	
Frequencies	1 696 MHz/2 544 MHz
Sensitivity (with digital processing)	not less than -162 dB/W [-132 dBm] (at S/N ratio - 6 dB)
Attenuator levels	(at S/N ratio - 6 dB) -10, -20, -30, -40 dB
ANTENNA	
Polarization	circular
Ellipticity ratio	not less than 0,75
Gain of transmitting antenna	not less than +6 dB
Gain of receiving antenna	not less than +8 dB
Main lobe angle	no more than 40°
Back lobe level	no more than -15 dB

OUTPUT	
Audio	tone (400 Hz)
Display	2x16-dot LED scale (resolution 2,5 dB)
Dynamic range of the display	40 dB
Displayed data on the control panel	• level of 2-nd harmonic
	• level of 3-rd harmonic
	• receivers' attenuator status
	• output power status
	• headphone connection status (2-nd or 3-rd harmonics' outputs)
	• 20K mode status
Displayed data on the antenna head	• level of 2-nd harmonics
	• level of 3-rd harmonics
TEST TARGET	
Detection range in open space (in mode with maximum transmitter output power and maximum sensitivity of receivers)	not less than 0,4 m
The location accuracy of the test (in mode with minimum transmitter output power and minimum sensitivity of receiver)	no worse than 0,1 m

Multifunctional countersurveillance instruments

ST 033P

The ST 033P multifunctional countersurveillance instrument is intended for implementation of arrangements for detection and localization of special technical means (STM) used for secret acquisition of information, for revealing of natural and artificially created channels for leakage of information as well as for monitoring of information protection quality.
The instrument consists of the Main Control and Indication Unit and a set of Transducers and is capable of operating in the following modes:

- HF detector/frequency meter, with the identification of GSM and DECT signals;
- conducting line analyser;
- infrared detector
- low frequency magnetic field detector;
- vibration transducer;
- acoustic transducer.
- low frequency differential amplifier.

The information is displayed on a liquid crystal screen with adjustable backlighting.

The instrument is controlled with the aid of a 16-key film keyboard. Sound output is available via headphones or speaker. The instrument allows to process the received low frequency signals in either oscilloscopic mode, or spectrum analyser mode with a digital representation of data. Its non-volatile memory can store up to 99 screen images. On the screen help can be displayed, available in both Russian and English.

Specifications

Radio frequency detector-frequency meter	
Operating frequency range, MHz	30-2500
Sensitivity at input, mV	<1 (30MHz-1000MHz) <4 (1000MHz-1800MHz) <8 (1800MHz-2000MHz)
Dynamic range, dB	60
Frequency meter sensitivity, mV	<15
Frequency measurements accuracy, MHz	± 0.01
Conductive wire lines scanning analyzer	
Scanning range, MHz	0.01-15
Sensitivity for signal/noise ratio 10 dB, mV	<0.5
Scanning increment, kHz	5(1)
Scanning speed, kHz/s	50-1500
Band width, kHz	10
Selectivity as per neighboring channel, dB	30
Detection modes	AM, FM
Allowable mains voltage, V	600
Infrared radiation detector	
Spectral range, nm	770-1000
Threshold sensitivity, $W/Hz^{1/2}$	10^{-13}
Angle of sight, grad	30
Band width of detection, MHz	3
Low frequency magnetic fields detector	
Frequency range, kHz	0.3-10
Threshold sensitivity, $A/(m*Hz^2)$	10^{-5}
Low frequency differential amplifier	
Gain, dB	22±1
Input voltage noise, mcV	<2
Dynamic range, dB	>70
Input impedance, kOhm	>200
CMRR, dB	75
Operating frequency range, Hz	200-8000
Maximum input voltage, V	<70

Vibro-acoustic converter	
Frequency range, kHz	0.3-6
Sensitivity, $V*s^2/m$	1
Intrinsic noise within the band of 0.3-3 kHz, uV	50
Acoustic converter	
Frequency range, kHz	0.3-8
Sensitivity, mV/Pa	>5
Oscilloscope and spectrum analyzer	
Band width, kHz	22
Sensitivity at the input, mV	<10
Metering error, % (of the upper limit)	1
Oscillogram output speed, s	0.2
Spectrogram output speed, s	0.3
Power	
Power supply (DC), V	6(4 batteries, AA type)/220
Maximum consumed current, mA	300
Consumed current in operating mode, mA	150
Dimensions and weight	
The principal control, processing and indication unit: overall dimensions, mm	180x97x47
The principal control, processing and indication unit: weight, kg	0.8
Complete set: overall dimensions, mm	350x310x160
Complete set: weight, kg	not exceeding 5

** Optional item to be ordered separately.*

RF Detector (BUG Detector)
ST 107

The ST 107 RF Detector (BUG Detector) is designed to detect and locate the sources of electromagnetic radiation from surveillance devices (eavesdropping devices), such as:

- radio microphones (Bugs);
- telephone transmitters;
- radio-stethoscopes;
- hidden wireless video cameras;
- radio beacons;
- tracking devices;
- unauthorized use of GSM and DECT cellular phones;
- unauthorized use of Bluetooth and 802.11 (WLAN, WiFi) devices.

ST 107 Detector of a field differs from **ST 007** additional opportunities:

- the Additional frequency range of 2.5-7 GHz (together with the SHF antenna);
- threshold level and accuracy of measurement of a frequency meter is raised;
- identification BLUETOOTH is improved;
- identification of a signal 802.1g and base DECT is added;
- USB port;
- Built in Li-Pol accumulator.

The ST 107 utilizes the principles of wideband detection of electric fields. The **ST 107** operates in three main modes: **Search, Monitoring, Log view.**

Search Mode

This mode is intended for detecting sources of electromagnetic radiation.

In this mode, the ST 107 receives radio signals, detects them, and outputs them to the built-in display and as an audio signal to the earphones and the built-in speaker. The level of the signal is indicated on two 32-segment level meters on the display.

Adjacent segments light up to indicate the average value of the level of the detected signal, while a single lit up segment shows its peak value.

The ST 107 can measure current frequency values of the radio signal and determine its most stable value (for signals with a constant carrier frequency).

The ST 107 also displays the detection of GSM, DECT, Bluetooth, and 802.11g (WLAN, WiFi) signals.

Monitoring Mode

The Monitoring mode is intended for detecting sources of electromagnetic radiation and storing data in NVRAM. The maximum number of events that can be stored in NVRAM is 4,096. The events can be viewed when the detector is in the Log View mode.

The Monitoring mode has an extended range of alarm signals, which can be triggered if the signal passes a certain level or frequency threshold, or if a certain type of signal is detected (GSM, DECT, Bluetooth, 802.11). It is possible for the user to schedule the ST 107 to turn on and off.

This mode has two basic operations:

- user controlled operation the ST 107 is placed so that it is visible to the user. This is useful for detecting devices for the unauthorized obtaining of information among the visitors of an office, for example. Autonomous operation;
- the ST 107 is placed in an area where the use of eavesdropping devices is suspected, and the electromagnetic environment will be monitored during a pre-programmed period without user interference.

ST 107 PC Software intended to:

- **display real-time data and the resuts of operation of the ST 107;**
- **load and display textual and graphical information of the operation of the device in Monitoring Mode (Event Log);**
- **operate the device remotely from the PC.**

Specifications

Frequency range, MHz	50-7000
Frequency range 1, MHz	50-2500
Frequency range 2, MHz	2500-7000
Frequency range 1	
Threshold Input sensitivity, dBm	-75 (50MHz) -70 (1500MHz) -50 (2500MHz)
Display dynamic range, db	55 (50-2000MHz) 40 (2000-2500MHz)
Frequency meter sensitivity, dBm	-35 (500MHz) -40 (1500MHz) -20 (2500MHz)
Frequency measurement error,%	0.005
Low-pass filter cutoff frequency, MHz	750
Frequency range 2	
Threshold Input sensitivity, W/cm^2	(2-9)* 10^{-10}
Dynamic range, db	45
Power supply, V: internal Li pol battery external power supply/charger	3.6V 5
Current consumption, mA	<80
Dimensions Prime Unit (without antennas), mm	85x53x19
Dimension SHF antenna	D= 16, L=72
Weight Prime Unit (without antennas), kg	0.15

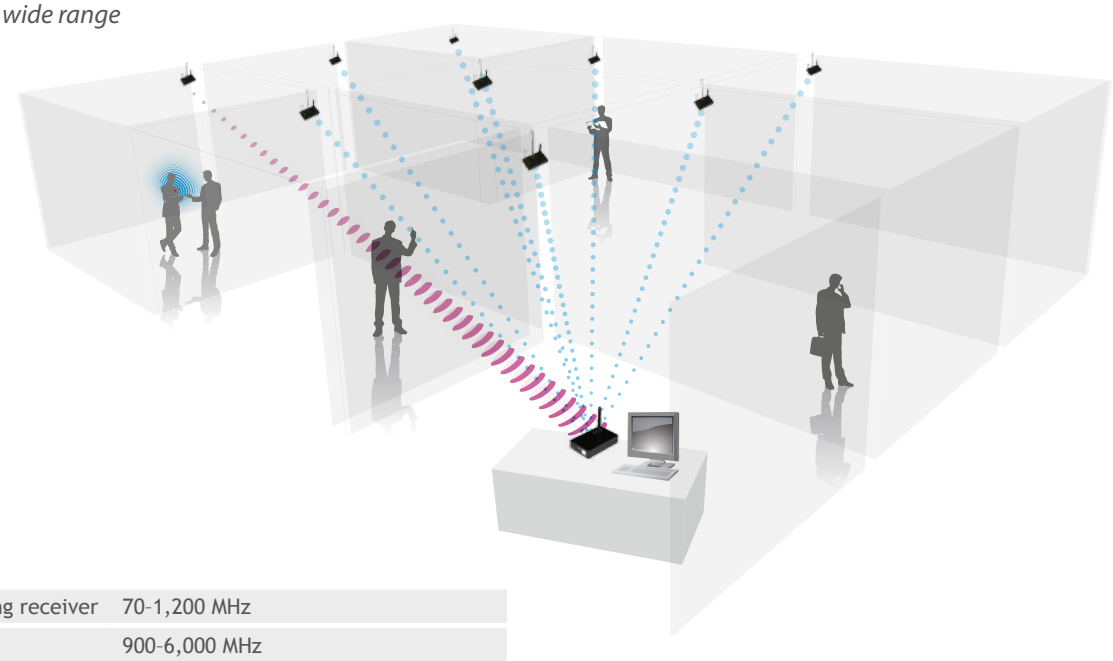
The Multi-Zonal Remote Radiomonitoring System ST 052

The Multi-Zonal Remote Radiomonitoring System ST 052 is designed to detect the sources of electromagnetic radiation from devices intended for the unauthorized obtaining of information (eavesdropping devices).

The ST 052 comprises remote modules (hereafter, "M") that are placed in locations where the use of unauthorized radio transmission devices is suspected. A single M covers a local zone* and monitors the electromagnetic situation within in.
The receiver of M consists of two blocks: a high-speed scanning receiver with a frequency range of 70–1,200 MHz and a wideband field detector with a frequency range of 900–6,000 MHz.
Via a radio channel, data from M is transmitted to a base transceiver station connected to a PC.
The range of stable radio exchange of the ST 052 is up to 100** meters in buildings and up to 1,000 meters in open areas.
The maximum number of simultaneously operating Ms is 32. The specialized software allows for controlling the system and displays information from M on a computer monitor.
The following information can be displayed: alarm signal, signal level, data transfer protocols (GSM, DECT, Bluethooth, WLAN) and spectrogram (with a frequency range of 70–1,200 MHz).
In addition, the system logs the events to a log file.

**A local zone is space limited by the sensitivity of the scanning receiver and field detector of M and interference in the zone of monitoring.*

***This number may vary in a wide range depending on the structure of the building, interference, and transmission frequency.*



Specifications

Remote station (up to 32)

Frequency range of the scanning receiver	70-1,200 MHz
Field detector	900-6,000 MHz
Sensitivity at the input	70-1,200 MHz
70-1,200 MHz	<0.1 mV
900-6,000 MHz	<3 mV
Power supply	3.6 V (Li-Ion rechargeable battery) 220 V (power adapter)
Current consumption: - standby mode - operation	 0.1 mA 30 mA
Dimensions	85 x 53 x 21 mm (3.3 x 2 x 0.8 inches)

Base station

Dimensions	120 x 80 x 32 mm (4.7 x 3.1 x 1.3 inches)
Radiomodem: Frequency Maximum output power Receiver sensitivity	 433/868/915 MHz 12 dBm -113 dBm

Selective Detector of Digital Transmitters
ST 062

The ST 062 is intended for detecting and identifying standard cellular transmitters and wireless data transmitters.

Standard	Devices
• GSM 900/1800 • UMTS (3G) • WI FI • Bluetooth	• GSM and 3G cellular phones and modems • WiFi and wireless video cameras operating at a frequency of 2.4 GHz • Bluetooth hand-free sets

The ST 062 also displays the Base Stations power signal strength and data exchange intensity.

By the principle of its operation, the ST 062 is a digitally controlled direct-conversion receiver with a color OLED display.

To detect signals, the ST 062 scans a series of frequency ranges of the known transmission standards. The user can set up the detection threshold and the number of desired frequency bands.

Automatic Mode

In Automatic mode, the ST 062 detects signals above the selected threshold and saves them in the **Events Log**.

The bottom line of the screen displays abbreviated symbols for the digital data transmissions modes selected by the user.

The ST 062 can be scheduled to operate completely autonomously.

Manual Mode

Displays signal strength, time diagram and base station tower levels. This mode is intended for the detection of:

- The location of mobile devices.
- Threshold levels for use in Automatic Mode.

Log View Mode

In this mode, you can view the events registered by the ST 062 during Automatic Mode. The following data is displayed:

- Time of event.
- Duration of event.
- Type of event.
- Signal strength.

The ST 062 can hold 30 banks of up to 999 events each.

Additional Features

- Built-in Relay (terminals on the external port). Extends the functionality of the ST 062 to remotely switch jammers and additional indicators "ON" and "OFF".
- External port for connecting additional antenna amplifiers.
- Original software allows you to:
  - view real-time graphs of the operation of the ST 062 or view the events collected during Automatic Mode on a computer display;
  - create a database of logged events;
  - operate the device directly from a computer via a USB port.

Specifications

Frequency ranges	890-960 MHz 1710-1900 MHz 1940-2144 MHz 2400-2600 MHz	
Display dynamic ranges	**890-915 MHz** **1710-1900 MHz** **1940-2144 MHz** **2400-2600 MHz**	-75 +10 dBm -70 +10 dBm -80 +10 dBm -70 +10 dBm
Threshold range	60 dB	
Attenuation of out-of-range signals	greater than 50 dB	
Built-in Li-Polymer recharge-able battery	3.6 V	
Display	color OLED, 160 x 128 pixels	
Maximum current	0.3 A	
Dimensions	90 x 54 x 21 mm (3.5 x 2.1 x 0.8 in.)	

Selective high-speed search receiver
SEL SP-81R ORACUL

Designed for a prompt detection and localization of radio transmitting overhearing devices - wireless microphones and video cameras, telephone retransmitters, radio stethoscopes, etc.

SEL SP-81R is a high-speed superheterodyne receiver with a low intermediate frequency and a frequency synthesizer.

Oracul has two reception paths that provides a high speed of scanning and recognition.

The receiver can be delivered together with the microwave spectrum converter SEL SC-10500 built-in a disk-cone antenna which is designed to extend frequency range of radio receivers up 10.5 GHz.

Specifications

Frequency range	50-3500 MHz
Full scan cycle duration	1.5 s
Dynamic range	50 dB
Bandwidth	10 MHz
Sensitivity	70 mV/m
Recognition of digital signals	GSM900/1800, UMTS (3G), CDMA450, DECT, Bluetooth, Wi-Fi
Battery life (depending on the working mode)	4-12 hours
Overall dimensions (without antenna)	65 x 60 x 30 mm
Mass	0.15 kg

RF detector – frequency meter
SEL SP-71R RAKSA

The device is designed to detect and locate in a near zone most surveillance devices using radio frequencies between 50 MHz and 3.3 GHz

The device provides detection of:

- cellular phones of GSM900/1800, UMTS(3G), CDMA450 standards;
- DECT phones;
- Bluetooth and Wi-Fi devices;
- wireless video cameras;
- radio transmitters with analogue modulation (AM, FM, PM);
- radio transmitters with digital modulation and continuous carrier (FSK, PSK, etc.);
- radio transmitters with wideband modulation up to 10 MHz bandwidth.

Features

- selective reception of radio signals;
- detection of wideband and digital signals;
- signals listening;
- metering of signals' frequency and level;
- an alert log;
- silent alert signal (vibration mode);
- no external antenna.

Specifications

Frequency range	50-3300 MHz
Typical sensitivity	70 mV/m
Dynamic range	50 dB
Pass bandwidth	10 MHz
Battery life in a watchdog mode	4-12 h
Battery life while in other working modes	3 h
Display	OLED 128 x 64
Overall dimensions	77 x 43 x 18 mm
Mass	35 g

Active protection system for electric circuit and ground
SEL SP-44

The device is a technical mean of active protection of information.

The SEL SP-44 prevents from information leakage through the power-supply (220 V) and ground lines providing a masking noise there. It also suppresses wiretaps which are using these lines as a data-transmitting channel.

Specifications

Noise frequency range	0.01 - 300 MHz
Lines protected	power supply, ground
Spectral-noise density (at 50 Ohm load relatively 1 μV/ √ kHz) in the frequency bands, not less than	
0.01 - 1 MHz	90 dB
1 - 10 MHz	70 dB
10 - 100 MHz	50 dB
100 - 300 MHz	35 dB
Noise level adjustment range in the frequency bands, not less than	
0.01 - 0.5 MHz	20 dB
5 - 300 MHz	12 dB
Quantity of independent noise signal channels [1]	2
Noise quality factor	not less than 0,9
Leakage current through ground line	not more than 1 mA
Noise actuation control	manual, remote, RS-485
Operation conditions	
operating temperature range	from 0 up to+50 °C
relative humidity at + 25 °C	up to 85%
atmospheric pressure	750 ± 40 mm Hg
Power supply	
AC mains	220 V ± 10% 50 Hz
power consumption	not more than 12 W
Mass-volume	
dimensions	172 x 172 x 42 mm
weight	not more than 1.5 kg

[1] *for phase-to-ground and zero-to-ground circuits*

Vibroacoustic noise system
SEL SP-55

The system is used for room security to prevent information leakage via acoustic and vibroacoustic channels.

Information leaks out of a room by means of vibrations, which are created in walls, windows or pipes by acoustic signals circulating in any room, and may be intercepted by intruder.

Thus the system provides active protection from:

- microwave systems, including laser microphones, used for interception of audio information through glass of windows;
- stethoscope /contact microphones, used for interception of audio information through solid structures (walls, ceilings, floors, window openings and glass), gas and water piping;
- wireless and cable-microphones and devices of magnetic recording, installed in wall cavities, above false ceilings, ventilation channels, etc.

The system might contain:

- digital vibroacoustic noise generator SEL SP-55/2 (2 channels), SEL SP-55/4 (4 channels);
- electromagnetic vibro-transducers SEL SP-55/V (universal), SEL SP-55/VG (for windows);
- acoustic radiators - passive acoustic speakers (8 Ohm).

Vibro-transducers, connected to the generator, are fixed on building structures (walls, windows, heating pipes) with special fastening units. When the generator is turned on, they create a noise signal in walls, windows and pipes, which prevent eavesdropping in the room. Acoustic radiators (speakers), which are also connected to the generator, are used, as a rule, for protection of air pipes and empty spaces in armstrong ceilings.

Each generator SEL SP-55/2 or SEL SP-55/4 has:

- microprocessor and RAM, LCD display, sound and visual indication;
- each channel has equal and independent structure:
  - noise former (generator);
  - 5-band equalizer (in octave strips);
  - class “D” target amplifier, which is providing high reliability and stability of parameters;
  - short circuit and overload protection.

The system provides:

- protection against eavesdropping through the elements of buildings;
- optimal parameters of acoustic and vibroacoustic noise for any channel by setting them up by octave strips, using the microprocessor and 5-band equalizer;
- storing in RAM all acoustic and vibroacoustic noise pre-set parameters for each channel;
- automatic self-diagnostics system, which will inform the operator about all errors with sound and light alarm;
- management by the voice activation system (VOX system) or by wire remote control init.

Specifications

Acoustic and vibroacoustic noise signals	
Frequency range	100 - 5600 Hz
Rated ouptut power (at linear amplitude-frequency characteristic) per channels at 4 Ohm load	2.5 W
Noise level adjustment range in each octave band of equalizer over each channel	not less than 5 dB
Design characteristics	
Quantity of channels (SEL SP - 55/2)	2
Quantity of channels (SEL SP - 55/4)	4
Quantity of vibroacoustic transducers per channel	from 1 to 12
Vibroacoustic transducers SEL SP-55/VG	for protection of glass surfaces
-- type	electomagnetic
-- resistance	8 Ohm
Duration of continuous running	not less than 8 hours
Start-up period	no more than 10 s
Operation conditions	
Operating temperature range	25 ± 10 °C
Relative humidity at + 25 °C	no more than 80 %
Atmospheric pressure	740 ± 40 mm Hg
Power supply	
From mains	220 V + 10% -1 5% / 50 ± 1 Hz
From emergency power supply	12 V± 5% / 2 A
Volume-mass characteristics	
Generators SEL SP - 55/2, SEL SP - 55/4:	
- weight	not more than 1500 g
- dimensions	no more than 180 x 180 x 45 mm
Vibroacoustic transducers SEL SP - 55/VG:	
- weight	no more than 100 g
- dimensions	no more than ø 43x17 mm

Cellular signal suppressor
ST 202 UDAV-M

The Device ST-202 UDAV is intended as a means of protecting confidentiality during negotiations, by impeding the operation of mobile telephones and obstructing certain digital communications channels (Wi-Fi, Bluetooth, WiMax).

Features

- ST 202 operates inconspicuously for the visitors and does not impede the use of mobile communication appliances outside its coverage area;
- suppression levels can be adjusted separately on each channel;
- suppression in non-suspect channels can be switched off by setting their power levels to minimum;
- ST 062 detector of mobile digital communications devices can be used to activate ST 202 unit upon detection of irradiation in one of the channels;
- ST 202 can be activated remotely via remote control port, or with the aid of an infrared remote control unit;
- ST 202 is equipped with an automatic cooler system;
- a wide range of power supply voltage (12-18V) can be used;
- unlimited operation time when powered from 220V mains;
- ST 202 stores all settings in its non-volatile memory, so one does not have to go through the setting up routine every time the Device is activated.

Operation in combination with ST-062

In this mode the Device is to be connected to ST 062 detector of mobile digital communication devices, by way of a standard audio cable with 3.5 mm jacks.

Upon detection of digital signals (DECT, GSM, BLUETOOTH, WIFI, 3G, etc.) by ST 062, the Device becomes active for 1 minute. Within 30 sec of deactivation ST 202 returns to detector-controlled mode.

Specifications

Number of independent channels	10
Maximum power output, Wt	
CDMA450	0.8
GSM900	1.8 per channel (2 channels)
GSM1800, DECT	1.8 per channel (2 channels)
3G	1.5 per channel (2 channels)
3G low	1.5
WI-FI, Bluetooth	1
WiMax (4G)	1
Type of antennae	integrated dedicated-band
Operation time	unlimited
Power supply	100...240V / 50...60Hz via adapter (12-18 V, 90Wt)
Power consumption from 220V mains, Wt	not exceeding 90
dimensions, mm	260 x 180 x 65
Weight (without power unit), kg	0.8

Portable radio noise generator SHTORA-4

Shtora-4 is a radio noise generator which provides:

- concealment of informative emanating spurious transmissions of computers and peripheral devices;
- suppression of receivers used for radio remote control.

Shtora-4 is a powerful wideband generator creating electromagnectic interference within the range of 0.01 to 2500 MHz with the integral output power of up to 35 W.

The generator is made in the metal body which is camouflaged in a bag.

Specifications

Frequency range	0.1 - 2500 MHz
Integral output power	35 W
Spectral density of the electric component of electromagnetic noise field emitted by telescopic antennas at the distance of 5 m (relative to 1 μV/(m x √ kHz)), not less than:	
0.1-30 MHz	55 dB
30-100 MHz	45 dB
100-650 MHz	55 dB
650-850 MHz	45 dB
850-1000 MHz	25 dB
1000 - 2500 MHz	20 dB
Power supply	from 220 V AC, 50 Hz network
	from 12 V DC (in a car)
Consumption power	not more than 100 W
Operation mode establishment time	not more than 10 s
Dimensions of the metal case	220 x 135 x 35 mm
Weight	not more than 4 kg

Multi-purpose protection device SEL SP-113 BLOCKADE

The SEL SP-113 multi-purpose protection device provides concealment of informative emanating spurious transmissions of computer devices as well as crosstalks induced on power and earth circuits.

A small size of the unit and the availability of two telescopic antennas enables the user to quickly and easily mount the device, without the need to lay loop antennas along the perimeter of a room.

Specifications

RF jammer operation range	from 300 MHz
Noise frequency range made in cable lines	up to 300 MHz
Entropic factor of noise quality	not worse than 0.8
Power supply	220 V /50 Hz via AC adapter 12 V / 1.5 A
Working temperature range	from +10 up to +35 °C
Relative air humidity at 25 °C	up to 80 %
Overall dimensions (without antennas)	150 x 65 x 50 mm
Weight	not more than 0.5 kg

Anti-terrorism Equipment

Cellular jammer
SEL SP-162 BATOG

The device is designed to prevent cellular communication in designated areas.

Based on advanced cellular jamming technology, the jammer transmits RF signal which blocks the communication between the mobile phone and the cellular base stations, thus paralyzing the operation of cell phones. This neutralizes the threat of being tapped with the help of cell phones, prevents illicit telephone conversations and provides a silent work environment in a given area. Moreover, mobile phone jammer provides an easy to operate solution against the universal threat of using cellular phones as bomb's triggers.

The basic version of SEL SP-162 Batog is able to block cellular networks of CDMA-450, GSM-900, GSM-1800 and UMTS standards. Upon customer's request the jammer can be manufactured with 4 bands of any other cellular standards.

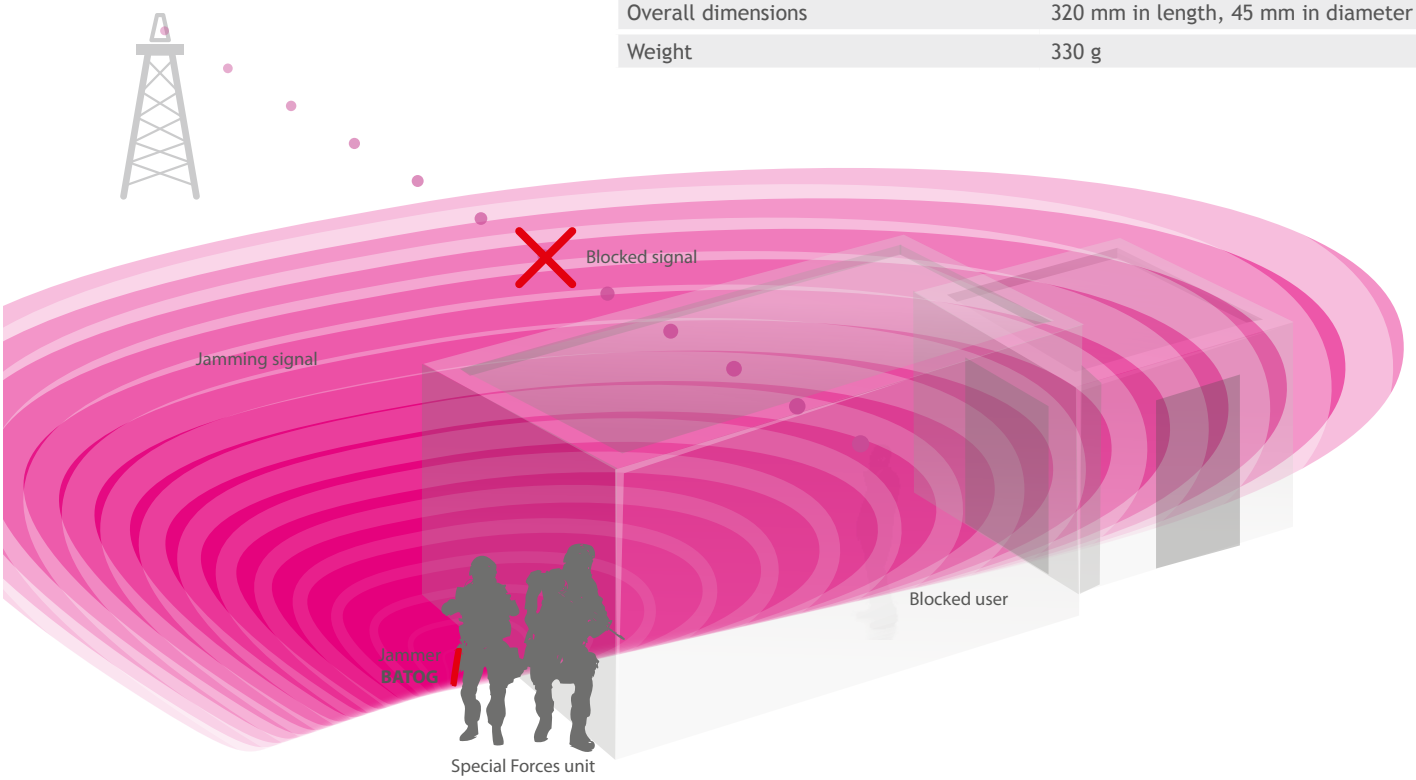
Distinctive features

- The device can block all bands simultaneously or only some of them, which are required at the moment.
- Independent power control in each of 4 bands (3 dB in a step).
- Unique embodiment.
- Easy to use.

Specifications

Band № 1 (CDMA-450 standard)	463 - 467 MHz
Band № 2 (GSM-900 standard)	935 - 960 MHz
Band № 3 (GSM-1800 standard)	1805 - 1880 MHz
Band № 4 (UMTS (3G) standard)	2100 - 2170 MHz

Max output power: - bands № 1, № 2 - band № 3 - band № 4	 not less than 700 mW not less than 500 mW not less than 300 mW
Power supply	3.7 V Li-Ion rechargeable battery
Battery life: - at max output power in each of 4 bands - at min output power in each of 4 bands	 not less than 4.5 hours not less than 13 hours
Overall dimensions	320 mm in length, 45 mm in diameter
Weight	330 g



Explosive vapour detector
PILOT-M

Timely detection of explosives, explosive objects and revealing of explosion organizers has great significance for prevention of acts of terrorism. It can be done by checking clothes, hands and things of a suspect. If there are any elements of explosives, they would be detected. All explosives detecting operations may be easily realized using portable explosive vapor detector "PILOT-M". It has unique specifications and can detect both vapors and track quantity of explosives indoors and at any means of transport (cars, planes, rail-way and ships). Detection is ensured by taking air samples from inner space of inspected objects and their subsequent analysis. Remote trier with grid thickener (part of delivery set) allows to take samples in dusty and smoky areas. Moreover, there is a method of taking samples by special napkins, which are later warmed up in a sample heater, which also is included in the delivery set.

PILOT-M allows to detect track quantities of explosives based upon TNT, NG, EGDN, PENT (PETN), RDX, HMX, Tetril, cellulose nitrocompound gunpowders, including ones on their base: SEMTEX (plastic and elastic explosives on RDX & PENT base or their medley), B-type compositions (ТГ-20, ТГ-40, ТГ-60, МС, ТГАФ)*, C-type mix (C1, C2, C3, C4, ПВВ-4, ПВВ-5А, ПВВ-7, ПВВ-12М, ЭВВ-11, ЭВВ-32 and etc.)*, Н-6, НВХ, Minol-2, Amatol, Primacord, Primasheet, Tetritol, Tritonal, Cordit N, A-IX-1, A-IX-2, A-IX-20, explosives of Octols & Ocfols families and some other substances.
The device construction and analysis algorithms provide high selectivity and noise immunity.
*- explosives of Russian origin.

PILOT-M in contrast to analog equipment doesn't contain a radioactive source and is absolutely safe for the operator and the environment. Therefore, there are no limitations of purchasing, keeping, transportation and utilization of the device. Main parts and its design are protected by four patents on development and one patent on industrial sample.
Special software allows to compare registered spectrums to typical spectrums of pure and mixed explosives and allows sending of information to a remote PC.

Specifications

Sensitivity threshold (TNT sample) at 20 ± 2 °C, not worse than, g/cm^3	10^{-13}
Response time, sec	1
Maximum distance between VD nozzle and examined object, mm	30
Alarm indication	Visual and audible
Dimentions, mm	300 x 180 x 90
VD mass (incl. battery), kg	2
Power source	DC 6V rechargeable battery

Portable X-ray inspection system NORKA

NORKA has a wide range of applications: customs, law enforcement, airport security and other areas.

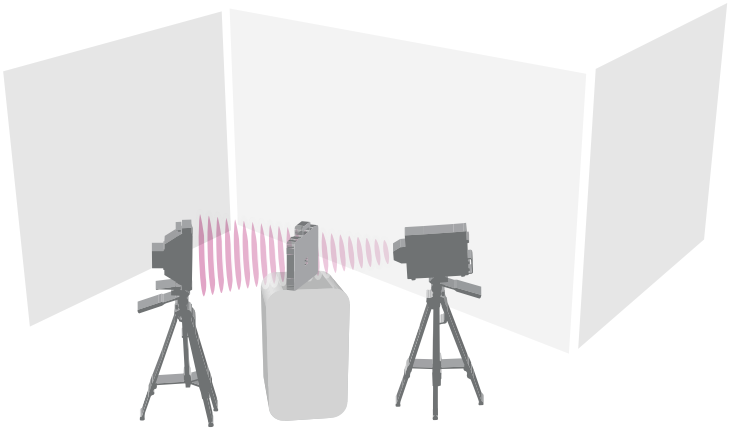
There is a wide range of jammer types:

- Inspection of mail, parcels and small articles
- Detection of weapons, bombs, wires and explosive devices in various packaging
- Detection of concealed eavesdropping devices in furniture, office equipment, etc.
- Non-destructive testing and evaluation

The NORKA X-ray system is easy to use, reliable and completely safe in operation. It provides excellent detecting capability with no harmful effects to its users or service personnel.

System layout

- "BU-4" control unit based on an industrial microprocessor and 12" TFT LCD with touch screen;
- "SKB-3D" digital camera unit (1280x1024, 14-bit);
- Interchangeable X-ray converter viewing area: 300x400 mm (standard) with converter unit support. Interchangeable converters (190x250 and 410x550 mm) are available on request;
- Specially designed "RE-160" and "RE-120" minifocus X-ray digital generators, "RE-150MN" microfocus and any X-ray unit from the RAP series (constant potential with the voltage up to 300kV);
- Focusing device (optional for microfocus X-ray units);
- Set of connecting cables;
- PC mouse & keyboard (optional);
- USB flash drive (optional);
- Rechargeable battery & charging device;
- User manual;
- Set of transport bags or transport case.



Specifications

X -RAY UNIT	RE-160	RE-120	RE-150MN	RAP 220-5
Operation mode	5-25 second exposures in single energy mode			
Max. X-ray tube voltage, kV	160	120	150	220
Focal spot size, μm	800	600	80	2000
Resolution (copper wire), μm	80	60	40	80
Total penetration (Al equivalent), mm	120	65	80	200
Total penetration (Fe equivalent), mm	40	24	20	60

X-RAY IMAGE CONVERTER	
Camera unit	Digital - SKB-3D 1280x1024, 14 bit
Interchangeable converter - screening area, mm	"PR-4" - 190x250 "PR-5" - 300x400 (standard) "PR-6" - 410x550
CONTROL UNIT	**"BU-4"**
Display	12" colour TFT touch screen display
Battery life	2 hours, or 60 X-ray image acquisitions
Through-put	60 pictures per hour
Operating temperature	- 20°C to +50°C (-4°F to +122°F)
Relative humidity	90% (35oC / 95oF)
Weight, kg*	less than 29

**Standard system configuration (NORKA with RE-150MN)*

Series of jammers
PERSEY

Devices intended to block (jam) operation of radio controlled fuses at wide range of frequencies.

Product characteristics can be changed to meet individual requirements of the customer.

There is a wide range of jammer types:

- installed in vehicles;
- portable in attache-case without external areals and other decamouflaging signs;
- stationary to cover big areas like stadiums;
- battery or mains operated;
- with possibility to jam GPS frequencies.

PERSEY-11
PERSEY-12
PERSEY-13

PERSEY-20

PERSEY-21

PERSEY-41 GPS

PERSEY-31 MK

PERSEY-30

Specifications

Product	Type	Frequencies, MHz	Radius, m	Power
PERSEY-11	Portable in attache-case. Without extractable emitting aerials	GSM 900/1800	40	Battery, 220V
PERSEY-12	Portable in attache-case. Have external antennas to use in vehicle	20…500	40	Battery, 12 V
PERSEY-13	Portable in attache-case. Have external antennas to use in vehicle	2000…2700	100	Battery, 12 V
PERSEY-20	Vehicle mounted	20…500	60	12 V
PERSEY-21	Vehicle mounted	20…2000	60	12 V
PERSEY-22	Vehicle mounted	20…2700	60	12 V
PERSEY-23	Vehicle mounted	20…6000	60	12 V
PERSEY-24	Vehicle mounted	GSM 900/1800	150	12 V
PERSEY-25	Vehicle mounted	130…180 425…475	100-300	12 V
PERSEY-30	Stationary	20…500, 20…2000 20…2700, 20…6000	60	220 V
PERSEY-31 MK	Stationary	20…6000	220	220 V
PERSEY-41 GPS Jammer	Portable in attache-case	GPS frequencies	1000	Battery