

WE PCS II

Multifunctional Counter Surveillance System



The "WE PCS II" multifunctional counter surveillance 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.

With the help of the WE PCS II instrument, one can find solution to the following monitoring-and-search tasks:

* 1. Detection and localization of radio-emitting STM.

These means primarily include the following:

- radio microphones;
- telephone re transmitters;
- radio stethoscopes;
- concealed video cameras equipped with a radio channel for transmission of information;
- technical means of the systems for spatial radio frequency irradiation within a radio band;
- technical means for transmission of a picture from PC monitor via a radio channel;
- radio-range beacons of the systems used for moving objects monitoring (e.g. people, transportation means, goods etc.);
- unauthorized operating radio stations, radiophones, and telephones with radio-extension;
- technical means for data processing, whose operation is accompanied by generation of side electromagnetic radiation (components in a PC, fax machines, photocopying machines, some types of telephones etc.).

* 2. Detection and localization of STM means operating with emission of radiation within infrared band.

These means primarily include the following:

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- STM means capable of transmitting in an infrared frequency band;
- technical means of the systems of spatial irradiation within infrared band.

* 3. Detection and localization of STM means which use conducive lines of various intended application, for transmission of information.

These means may include:

- STM means which use alternating current electric lines of the power supply network, for transmitting of the intercepted information.
- STM means which use subscriber's telephone lines, the lines of fire alarm systems and security alarm systems, for transmitting of the intercepted information.

* 4. Detection and localization of the sources of electromagnetic fields with predominance (presence) of magnetic component of the field, as well as analysis of technical means capable of converting speech information.

The number of such sources and technical means typically include the following:

- dynamic irradiators of acoustic systems (dynamic speakers);
- output transformers in audio amplifiers;
- electric motors in tape recorders and Dictaphones.

* 5. Revealing of the most vulnerable locations, from the point of view of possible generation of vibro-acoustic channels for information leakage, and assessment of efficiency of vibro-acoustic protection systems employed in various premises.

* 6. Revealing of the most vulnerable locations, from the point of view of possible generation of channels for acoustic information leakage, and assessment of efficiency of sound insulation employed in various premises.

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 analyzer;
- * 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 analyzer 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.

WE PCS II can be powered from either 4 type AA batteries, or a power unit.

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Specifications:	
Radio frequency detector-frequency meter	
Operating frequency range	30-2500 MHz
Sensitivity at input	<1 (30MHz-1000MHz) mV; <4 (1000MHz-1800MHz) mV; <8 (1800MHz-2000MHz) mV
Dynamic range	60 dB
Frequency meter sensitivity	<15 mV
Frequency measurements accuracy	± 0.01 MHz
Conductive wire lines scanning analyzer	
Scanning range	0.01-15 MHz
Sensitivity for signal/noise ratio 10 dB	<0.5 mV
Scanning increment	5(1) kHz
Scanning speed	50-1500 kHz/s
Band width	10 kHz
Selectivity as per neighboring channel	30 dB
Detection modes	AM, FM
Allowable mains voltage	600 V
Infrared radiation detector	
Spectral range	770-1000 nm
Threshold sensitivity	10^{-13} W/Hz ^{1/2}
Angle of sight	30 grad
Band width of detection	3 MHz
Low frequency magnetic fields detector	
Frequency range	0.3-10 kHz
Threshold sensitivity	10^{-5} A/(m*Hz ²)
Low frequency differential amplifier	
Gain	22±1 dB
Input voltage noise	<2 mcV
Dynamic range	>70 dB
Input impedance	>200 kOhm
CMRR	75 dB
Operating frequency range	200-8000 Hz
Maximum input voltage	<70 V
Vibro-acoustic converter	
Frequency range	0.3-6 kHz
Sensitivity	1 V*s ² /m
Intrinsic noise within the band of 0.3-3 kHz	50 uV
Frequency range	0.3-8 kHz
Sensitivity	>5 mV/Pa
Oscilloscope and spectrum analyzer	
Band width	22 kHz
Sensitivity at the input	<10 mV
Metering error	1 % of the upper limit
Oscillogram output speed	0.2 s
Spectrogram output speed	0.3 s

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Power	
Power supply (DC),	6(4 batteries, AA type)/220 V
Maximum consumed current	300 mA
Consumed current in operating mode	150 mA
Dimensions and weight	
The principal control, processing and indication unit	180x97x47 mm; 0.8 kg
The principal control, processing and indication unit	350x310x160 mm, not exceeding 5 kg

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