

COUNTER SURVEILLANCE SYSTEMS



AGTES SERWIS

EFFECTIVENESS

PROFESSIONALISM

WARRANTY



We specialize in providing comprehensive technical and organisational solutions necessary to ensure acoustic and electromagnetic security against electronic espionage, which should be implemented in rooms intended for conversations involving a state, trade or private secret.

In our operation, we closely adhere to the relevant regulations, legal requirements and recommendations issued by state security services while also considering the level of espionage risk and the expectations of our Clients. We offer and implement the latest and most effective technologies to secure sensitive information conveyed via speech.

Providing an espionage protection system for a room involves comprehensive implementation and execution of the following security elements:

- vibroacoustic protection system
- acoustic insulation system
- electromagnetic shielding system
- separation of power and signal lines
- grounding system
- autonomous burglary and robbery alarm systems and access control systems.
- security check and deposit zone
- control measurements of electromagnetic attenuation and acoustic insulation
- provision of executive and as-built documentation.

Implementation of these security measures in a room will ensure protection of sensitive information conveyed via speech against technological espionage carried out with such eavesdropping devices as:

- miniature digital microphone and transmitter devices
- miniature digital microphone and transmitter devices
- wired and wireless microphones
- audio recorders
- stethoscopes, contact microphones
- measures involving digital mobile telephone network

DESCRIPTION OF PROTECTION SYSTEMS

Vibroacoustic Protection System

A vibroacoustic protection system secures a room against the following espionage methods:

1. Direct eavesdropping – when a conversation is directly listened to by employees or third persons through the walls, windows doors, floor or ceiling.
2. Eavesdropping performed from the outside via regular stethoscopes, electronic stethoscopes, wired microphones, contact microphones, directional microphones, laser and optical microphones.
3. Eavesdropping done via central heating pipes and ventilation ducts

A vibroacoustic protection system is made in the form of a 12VDC low-current serial electrical network which integrates PIEZO type vibroacoustic transducers and acoustic loudspeakers with a central vibroacoustic generator (SN GHP type). Vibroacoustic transducers are mounted to walls, ceilings, floors, doors, elements of heating, ventilation and air-conditioning systems in a layout that allows for obtaining a uniform vibroacoustic barrier which reduces the signal of conversation by 60dB. Acoustic loudspeakers are used to act as active acoustic attenuators in order to prevent the propagation of sounds through ventilation ducts. The SNG HP vibroacoustic generator is installed outside the room. The vibroacoustic system is activated manually via the keypad of the alarm system or wirelessly by means of a dedicated remote control.



Piezo Transducer Network Routes.



HP SNG generators in a rack

After implementation, we conduct a documented measurement of the reduction in the strength of the acoustic signal emitted from the secured room, which is made separately for each building partition surrounding the secured room. Measurement tool: Sonopan DSA-50 sound analyzer.

Acoustic insulation

Acoustic insulation is applied to all building partitions in the protected room to support the operation of the vibration-acoustic system. It consists of two insulation layers that are alternately mounted to the walls, ceiling and floor. Window and door openings are made in the form of sound locks, in which windows and doors are acoustically shielded.

Such treatment should ensure insulation of airborne sounds within the values given in the table below.

After the acoustic insulation is installed, a documented measurement of the acoustic insulation is carried out separately for each building partition surrounding the secured room.



Measuring instruments: Sonopan DSA50 digital sound analyzer, HB-160 omnidirectional sound source, HBWZ- 10 power amplifier

Frequency	250Hz	500Hz	1000Hz	2000Hz	4000Hz
Signal Level	50dB	58dB	60dB	70dB	70dB

Electromagnetic shielding

Electromagnetic shielding provides a Faraday cage and is made of conductive non-woven shielding fabric with a level of attenuation of at least 105dB. The shielding fabric is mounted to walls, ceiling and floor. Window and door are secured with electromagnetically special net.

Ventilation ducts entering the Faraday cage are secured with HoneyComb 100dB waveguides.

As a result, the electromagnetic protection provides up to 40dB of electromagnetic attenuation within the frequency range 30MHz - 10GHz on the partitions surrounding the secured room.



After the electromagnetic shielding is installed, a documented measurement of the electromagnetic attenuation is carried out separately for each building partition surrounding the secured room.

Measurement tools: RF- ANDRE spectrum analyzer, ST-121 signal generator

Separation of power and signal lines

The separation of power and signal lines entering the protected area is performed in order to prevent infiltration using wire transmission.

All power and signal lines entering the room are separated by condenser, voltage or signal filters that meet the electromagnetic attenuation requirement: - 100dB in the 150KHz-10Ghz frequency range.

The filters are installed in a two-part connecting box. The external part containing separation filters is located in a room adjacent to the secured room whereas the internal part containing an electric switchboard is located inside the secured room. Separation with voltage filters should cover: 230V AC power supply cables, power sockets, lighting, air conditioning power supply, etc. The signal filters should separate: the wires of the security alarm network, fire protection system, air conditioning control, etc.



Grounding system

An autonomous grounding system should provide a grounding impedance of maximum 5 Ohm at 100kHz. The connection point is located in an external box with separation filters, from where it is distributed into the secured room and connected to the Faraday cage.



Autonomous Burglary and Robbery Alarm Systems (ABRAS)

An Autonomous Burglary and Robbery Alarm System is designed to ensure autonomous alarming in the event of informal entry to the secured room, breaching or modification of the door, ceiling, floor and walls, and tinkering with the external box containing filters. An ABRAS system consists of the following elements: alarm control panel, seismic sensors, PIR sensors, anti-sabotage sensor, signalling device, emergency exist button etc.

Access control system

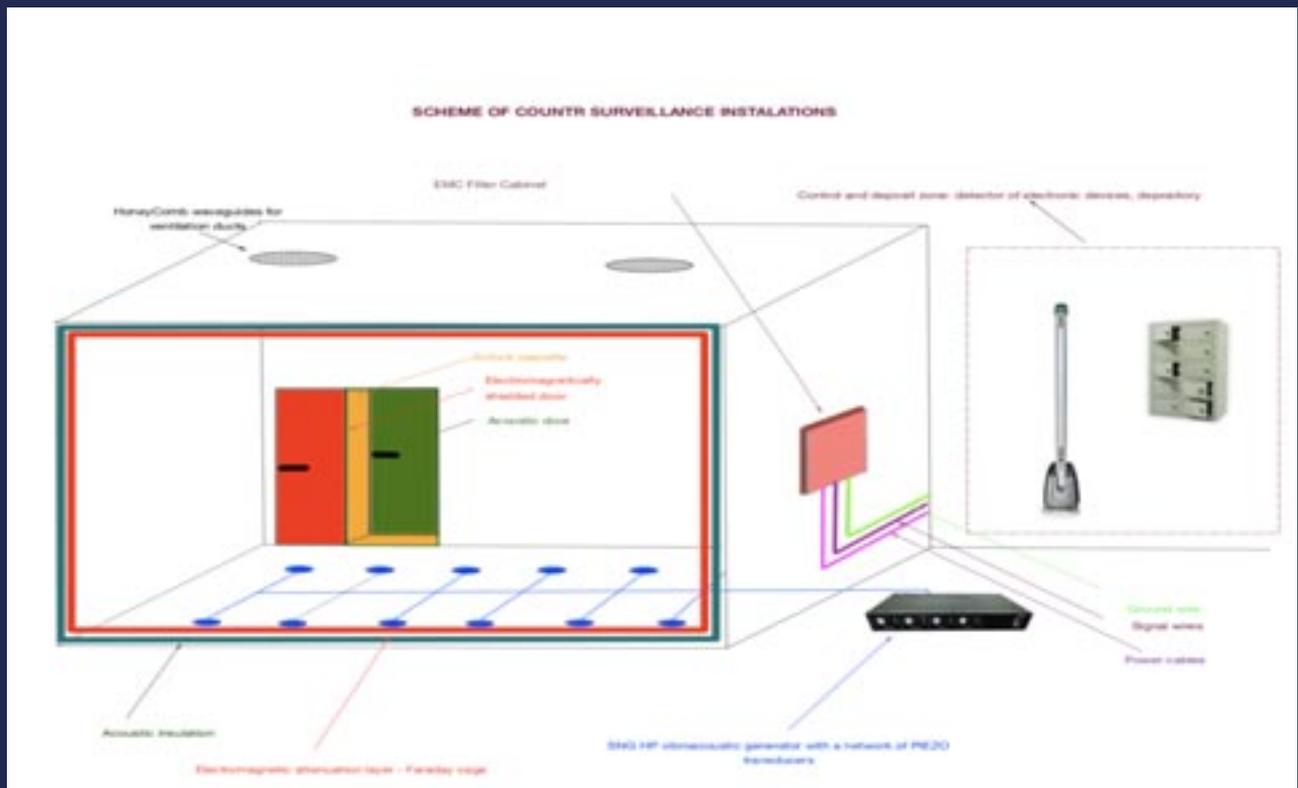
Access control system – entry to the secured room is protected with a two-way access control system utilizing identification readers linked to the electromechanical element that locks the door.

Security check and deposit zone

In order to prevent the introduction of audio recording devices into the secured conversation room, a security check and deposit zone is established and organized. The security check and deposit zone should be equipped with Cellsense Plus electronic device detector and a storage box to store unauthorized electronic devices that are not allowed in the secured room.



Scheme of Countr Surveillance Installations



OUR COMPLETED PROJECTS



Conference room, full security level



The conference room is secured with a vibroacoustic system and the Protektor AG-1 device, which prevents making audio recordings.



Construction of a vibroacoustic system,
PIEZO transducers assembly phase.



Construction of an acoustic
insulation.



Construction of an electromagnetic screen.



Installation of the acoustic-electromagnetic
floodgate.



A Conference Room secured with vibroacoustics, equipped with the Protektor AG-1 device and a mobile control and deposit zone.

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Conference rooms full protected of counter surveillance.
In the photos - acoustic and electromagnetic protected foodgates.



Safe deposit box located in front of the entrance to the protected Conference Room.



Cellsense Plus electronic device detector, mobile version - security check and deposit zone.



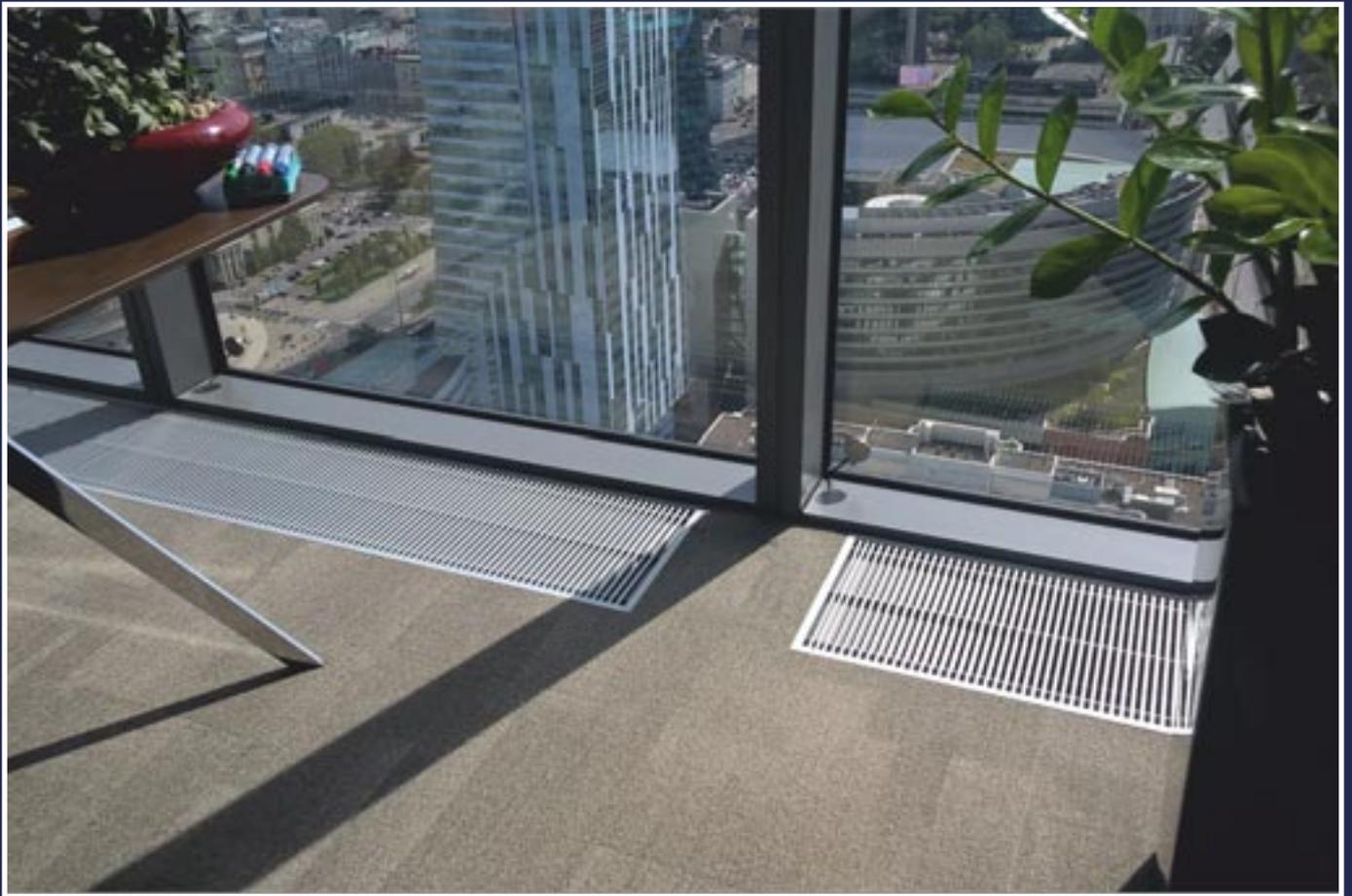
Electromagnetically shielded room, the picture shows windows with see-through electromagnetic shielding.



Conference room, vibroacoustic, acoustic and electromagnetic protection. The picture shows 4 columns of the Protoktor Longs system which prevents making any audio recordings.



Vibroacoustic protection on the windows with PIEZO transducers visible in the upper right corners of window panes.



Vibroacoustic protection on the windows with PIEZO transducers visible in the lower left corners of window panes.



Electromagnetically shielded door with a view on the Cellsense Plus detector.



Conference room - vibroacoustic system, acoustic and electromagnetic insulation.
View from the entry floodgate.

CONTROL MEASUREMENTS

Control measurement of acoustic insulation

Performed separately for each partition in the secured room with the use of:

- DSA-50 digital sound analyzer
- dodecahedral sound source with a signal level of 112 dB



Control measurement of electromagnetic attenuation

Performed separately for each partition in the secured room. The measurements are made in selected bands from the 100Hz-6GHz range for a signal equal to 45 +/-12 dB.

Measuring equipment:

- ST-121 signal generator
- ANDRE digital broadband receiver





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