# Mobile Detection System

RSS
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RSS Mobile Detection System

### Central Evaluation Workplace (CVP)

- Power supply:
  - Internal batteries: 2 x 7 Ah
  - External power: 12–15 V DC
  - External power supply: 230 V AC
- Consumption:
  - Max. 200 mA (stand-by)
  - Transmission: 2 A (for max. 0.5 sec)
- Operating temperature: 0 to +40 °C
- Dimensions: 490 x 400 x 200 mm
- Display: 4 x 40 characters, backlit
- Interfaces: RS 232, USB

### Radio System

- Frequency bands:
  VHF 136–174 MHz
  UHF 403–470 MHz
- Channel Spacing: 12.5 (20/25) kHz
- HF power: 1–25 W
  (depending on the project)

### Detector Module (SMD)

- Power supply:
  - Internal accumulator: 24 Ah
  - External power: 12–15 V DC
  - External power supply: 230 V AC

  Consumption:
  - Max. 150 mA (stand-by) + consumption of detectors
  - Transmission: 1.5 A (for max. 0.5 sec)
- Inputs and outputs:
  - 5 double balanced inputs for detectors
  - 2 potential-free programmable outputs
- Dimensions: 406 x 330 x 152 mm
  (height with the aerial: 402 mm)
- Operating temperature: -30 to +55 °C
- Environmental Protection: IP 55

### Radio System

- Frequency bands:
  VHF 136–174 MHz
  UHF 403–470 MHz
- Channel Spacing: 12.5 (20/25) kHz
- HF power: 1–5 W (depending on the project)

### Mobile Detection System

The RSS mobile detection system is designed for the electronic protection of buildings, areas and locations in accordance with the highest security requirements.

The system is certified together with the RGS radio guard system for use in civilian as well as military locations and it complies with requirements for security level 3 (medium to high risk) in accordance to standard ČSN EN 50131-1. In addition it is certified for the protection of confidential data up to and including the security classification "Secret" as specified by the Czech National Security Authority.

### Basic System Description

The system consists of the central evaluation workstation (CVP), detector modules (SMD) and general security detectors. SMD modules are located in the area that is to be monitored and communicate via radio with the CVP. Successful radio communication between the CVP and individual SMD modules is verified by both units and ensured through a dedicated protected radio channel in the VHF or UHF band. Professional Motorola radio stations are used for communication. The range of radio communication in the area where the RSS system is to be used will depend on the antennae system used, the transmission output level and the local topography. Detectors that protect zones are connected to SMD modules by the use of cables.

The RSS system is designed for operational deployment in the field. System components are contained within robust PELI transport boxes, which comply with NATO standards. Thus the system is able to work under extreme climatic conditions and is well protected against being damaged during transport and handling. Built-in batteries allow the system to work without a mains power supply.

### Central Evaluation Workstation (CVP)

The central evaluation workstation controls and continuously monitors the status of the whole system. Up to 128 SMD modules can be integrated in one system. To ensure easy control and visualization of security incidents the workstation is equipped with a notebook computer and control operating software that displays the condition of the system on a graphic display that allows control of the system easily and intuitively. The workstation (including the operating software) is identical to that which is used by the control and protection system for guards (RGS system). Through the operating software the CVP controls both systems (RSS & RGS) at the same time and it enables their simultaneous operation in one radio network.

The CVP continuously monitors the operational status of individual modules, external and internal detectors and the status of batteries. The radio communication link security is continuously verified – the level of signal from individual SMD modules and detection of disturbance of the radio channel used. If there is a security incident, a technical defect or specific system event, an alarm is triggered. All events in the system are recorded in the system log of the hardware part of the CVP having a capacity of approx. 10,000 events. The events continue to be stored even when the batteries are exhausted. Standard connectors allow connection of any external antenna or antennae system.

The power supply of the workstation can be selected as necessary – 230 V AC through an external supply and rechargeable source, or 12 V DC from external batteries or the 12 volt DC supply system of a vehicle. Integrated batteries within the CVP can also be used for completely autonomous operation of the workstation, including powering the notebook.

### Detector Module (SMD)

External detectors are connected to a detector module that is positioned within the secure area. The detectors are supplied with power from the SMD modules. Alarm information is evaluated in the SMD module and it is transmitted to by radio connection to the CVP, where it is processed.

Each module is equipped with five double balanced inputs so that all common types of security detectors can be connected. If necessary, it is possible to connect other types of sensor (e.g. flooding level sensors). In addition, each module is equipped with two programmable outputs that can control other external systems (e.g. a spotlight or siren). As a special option it is possible to connect proximity identification card readers (one per module) that will allow authorized persons with a valid card to switch detection of protected zones on and off, without the necessity to communicate with the operator of the central evaluation workplace. As with other events these events are also displayed on the screen of the CVP and are stored in the system log automatically. All connectors on the module are equipped with weatherproof covers.

To ensure the security of the module itself, each SMD module is equipped with an internal seismic detector with two sensitivity levels; e.g. to detect steps of a coming intruder, or the passing of a vehicle in the vicinity, or any handling of the module. Unauthorized opening of a module is signalled with a tamper contact. With the built-in microphone it is also possible to monitor sounds around the module, which can be used both for the purpose of monitoring the situation of SMD operation in the field and in close proximity to its installation.

When positioned in the field, a module is usually supplied from an internal battery that can be easily replaced without using tools. Depending on the situation it is also possible to use mains supply (from an external source), external batteries or a vehicle connection.

### Detectors

The RSS system is supplied with various types of proven and certified external detectors that are suitable for most required applications. These detectors are designed for harsh outdoor environments and have sufficient RF immunity in an environment with active radio operation, including operation of radio transmitters.

- RSS – IFR150XT
  The passive infra-red barrier uses the principle of temperature difference of a moving object and background with stable temperature with the guaranteed range of 150 m. The detector is equipped with simple optics for easy setting up.
- RSS-SDI77XL-A-HS
  The dual detector with microprocessor control uses a combination of passive infra-red and microwave detection and it can be used to secure an area with the dimensions of approx. 22 x 15 m. The detector is equipped with an anti-masking security function in the PIR and MW part, is resistant to flight of birds and is amongst the most reliable detectors of its kind.
- RSS – RaSS
  The detection cable with the length of 200 m responds to pressure and vibrations caused by an intruder. It is used e.g. as a walkway sensor or it is attached with cable ties to fencing where it detects attempts to climb or cut. The detection cable is supplied wound on a reel, which facilitates handling and transport.

As standard the detectors are supplied in black colour with the required cabling for connection to a SMD module. For the installation of IR barriers and dual sensors a robust and stable folding stand is supplied with all elements for quick and stable installation of detectors.

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## Transport Box with Standard Accessories

- Spare battery
- Detector, RSS-SDI77XL-A-HS
- Detectors, RSS-IFR150XT
- Supply and recharging source
- Cables for connection of detectors

## Recommended Detectors

**RSS-IFR150XT**
- Power supply: 6–24 V DC
- Consumption: max. 30 mA at 12 V
- Secured area: line up to 150 m
- Dimensions: 132 x 120 x 318 mm
- Operation temperature: -25 to +55 °C

**RSS-SDI77XL-A-HS**
- Power supply: 8.5–20 V DC
- Consumption: max. 175 mA at 12 V
- Secured area: approx. 22 x 15 m
- Dimensions: 152 x 108 x 235 mm
- Operation temperature: -34 to +54 °C

**RSS-RaSS**
- Power supply: 8–24 V DC
- Consumption: max. 20 mA at 12 V
- Security: detection seismic cable, 200 m
- Dimensions: 280 x 216 x 365 mm
- Operation temperature: -40 to +85 °C


Example of System Topology

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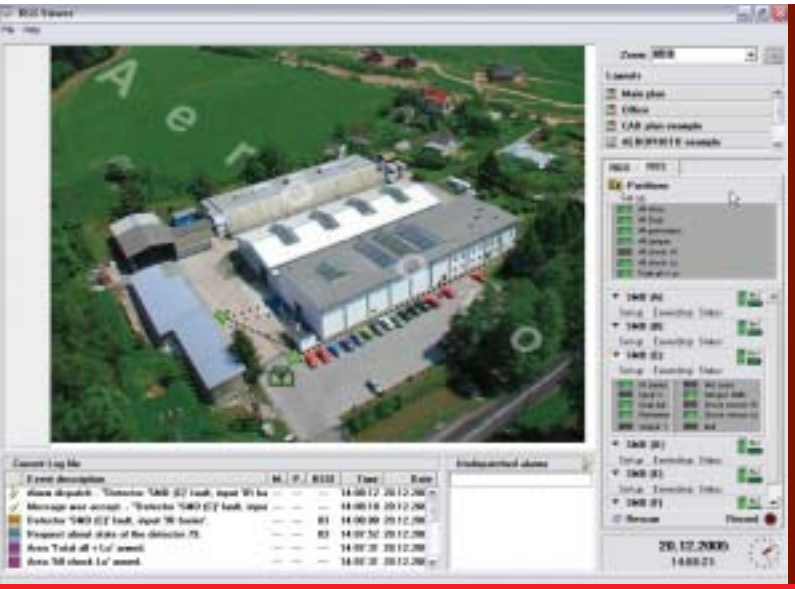

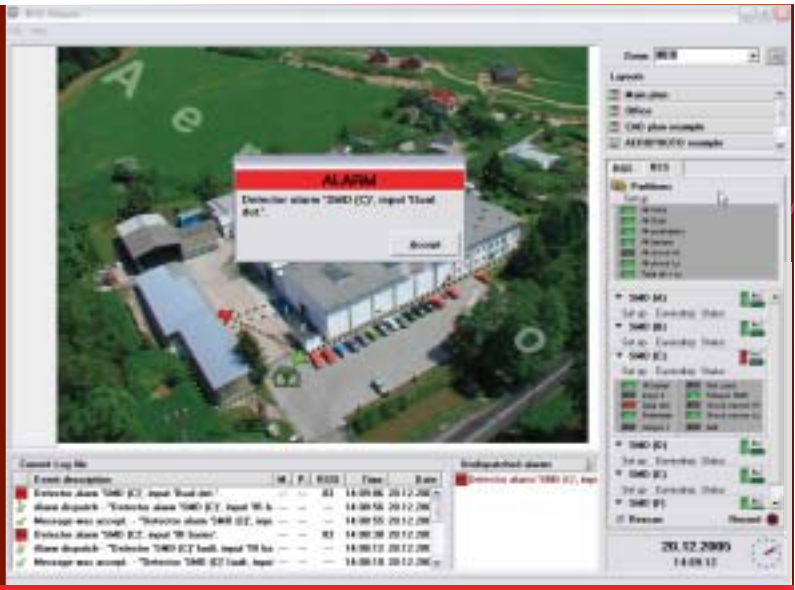


## Software

The operating software allows easy monitoring and control of the whole RSS system and consists of two separate programs:

**a) Planner Design Program**

The program is used to set the parameters of the system and to create the visualization graphic plans. By dragging symbols to the background plan with the mouse it is easy to locate graphic symbols of system components (detectors, SMD modules, etc.) and mark protected zones. The background plan may consist of a building ground plan, an air photograph or photograph of a building. The program supports the import of maps and objects in the BMP and WMF (easy import directly from CAD programs) formats.

**b) Monitoring and Control program**

When a visualization graphic plan has been configured in the Planner program, the whole system is monitored and controlled through the RgsView program. It is possible to activate and deactivate protection of areas or bypass detectors simply and intuitively. The program graphically displays detectors and areas secured by them as well as their basic status (active, inactive, intrusion and failure). A security incident in a protected area or tampering with the protection of a module is indicated in an alarm window with acoustic signalling and with the corresponding graphic symbol in the background plan. Operational problems such as a low voltage battery, technical failure of a detector, loss of radio signal or disturbance of the operating frequency are indicated in a similar way. All security incidents are displayed in a separate window to be handled by the operator. In the visualization plan it is possible to display several background plans, but only one at any time. Depending on the location of the intrusion the system will only display the relevant photograph or drawing. Background plans and objects can be smoothly zoomed IN and OUT and displayed according to the operators current needs. All events on the system, together with the time of their occurrence are recorded in the event log, which allows the operator to find the desired event with the use of filters, to export data to a file, to print data, etc.





## Advantages of the system

- Easy to transport and quick to commission
- Professional, tough & durable portable design
- Guarantee of reliable operation in virtually any environment
- Allows buildings to be secured as well as large areas
- Easy installation of detectors in the field
- Ergonomic graphic display of alarms and failures
- Automatic log of all system events and status (including voice communication)
- Allows connection of various detector types
- Configuration and system administration by trained user personnel
- Battery or mains operation
- Czech manufacturer with extensive experience in the security industry

## Product Certification

Ministry of Defense of the Czech Republic, Information Development Agency – Testing plant of technical means of guarding

- The equipment meets the requirements for use in Czech Army buildings
- The equipment fulfils the requirements for security level 3, medium to high risk

Czech National Security Authority

- A technical tool for use to protect confidential data, up to and including degree of security classification „Secret“

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LLOYD'S REGISTER QUALITY ASSURANCE ISO9001

LLOYD'S REGISTER QUALITY ASSURANCE ISO14001