

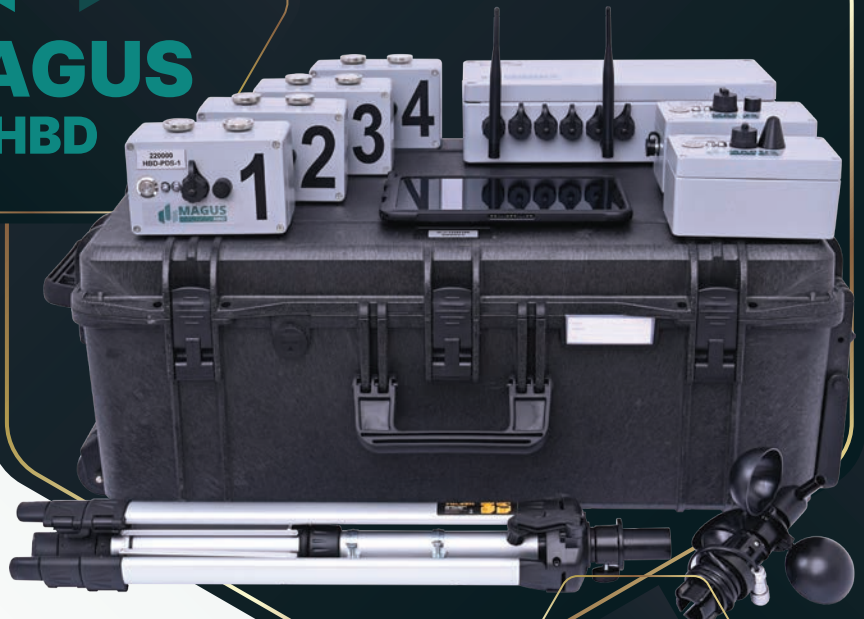


MAGUS HBD

MAGUS

HUMAN BEING DETECTION SYSTEM

Magus HBD is a system for the detection of humans hidden inside various types of vehicles or containers, and its use is intended for missions aimed at preventing and combating illegal immigration and related cross-border criminality. The system can operate independently as a standalone solution or integrated in a Command & Control system.



Human Being Detection Sensor

Ground Vibration Detection Sensor

Figure 1 – Human Being Detection Sensors and Ground Vibration Detection Sensors



HOW IT WORKS

MAGUS HBD detects and processes the vibrations generated by the human body. These vibrations are transferred to the vehicle / container and are detected by high sensitivity sensors.

The system consists of human being detection sensors attached by magnetic contact to the chassis of the vehicle / container. Additional sensors are placed on the ground in order to detect the ground vibrations and cross reference them to the signals from the human being detection sensors (**Fig. 1 - Human Being Detection Sensor and Ground Vibration Detection Sensor**). The sensors transform vibrations into electrical signals that are then transmitted wirelessly to the processing unit (**Fig. 2 - Connection diagram of the components of MAGUS HBD including the Processing Unit (PU), Sensors etc.**). With the help of a software application using a complex algorithm, the acquired signals from the sensors are then processed and analysed.



APPLICATIONS

- Border crossing points;
- Penitentiaries;
- Military units;
- River and seaports;
- Road checkpoints for vehicles;
- Critical Infrastructure.



OPERATIONAL FEATURES

MAGUS HBD Human Being Detection Sensor Features:

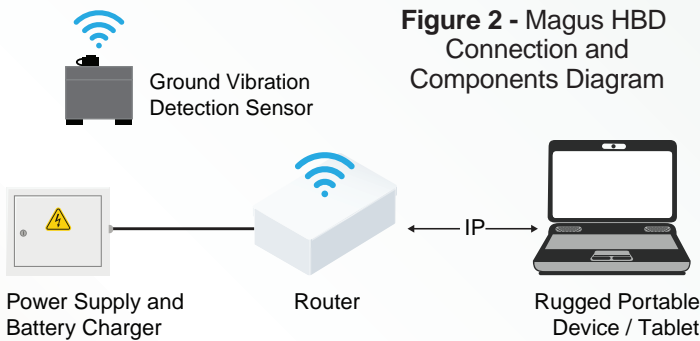
- Magnets for easy mounting on the vehicle /container;
- No additional devices are necessary for attaching the sensors to the vehicle;
- Wireless communication with the processing unit;
- 24hrs+ battery life;
- Sensor status displayed in the user interface (wireless signal strength, battery level, correct positioning);
- Enclosure with anti-tampering features.

MAGUS HBD Ground Sensor Features:

- No additional devices are necessary for sensor operation;
- Wireless communication to the processing unit;
- 24hrs+ battery life;
- Sensor status displayed in the user interface (wireless signal strength, battery level);
- Enclosure with anti-tampering detection.

MAGUS HBD Wind Speed Sensor Features:

- No additional devices are necessary for sensor operation;
- Wireless communication with the processing unit;
- 24hrs+ battery life;
- Sensor status displayed in the user interface; (wind speed, wireless signal strength, battery level)
- Enclosure with anti-tampering detection.



The software application provides a user-friendly web-based interface where the results of the scanning process are displayed. The software application generates consolidated reports, provides seamless configuration and user data management. Additionally, the operator is notified by sound and visual alarms in the case of an event (detected person, forgetting a sensor attached to a moving vehicle, environmental interference, etc.).



Fig. 3 - User Interface.



MAGUS HBD Processing Unit Features:

- In order to maximize accuracy and keep the rate of false alarms at a minimum, data from all the sensors is fused inside of the processing unit powered by AI (Artificial Intelligence);
- Wireless communication with all of the system components;
- Communication encryption standard AES128 for communication with all of the system components.
- Enclosure with anti-tampering detection;
- Easy integration of additional components.



MAGUS HBD PROVIDES

- Detection of hidden persons inside vehicles /containers;
- Visual and audible alerts for the operator on the following test results: detected person, empty vehicle, test cancellation, forgetting a sensor attached to a vehicle moving away and environmental interference;
- Test results of the inspected vehicle / container are displayed, stored, and analysed on a portable rugged device;
- Low rate of false alarms and better accuracy of the test results by correlating data from people detection sensors attached to the vehicle, ground vibration sensors, wind sensors, AI. All this is powered by our software;
- Options for sensitivity adjustment of the detection system according to the type of the vehicle /containers;
- MAGUS HBD has 4 selectable levels of sensitivity for the vehicle types: CAR, VAN, TRUCK, HEAVY-TRUCK;
- Encrypted communication between the sensors and the portable rugged devices;
- MAGUS HBD integration into MAGUS Command and Control (MAGUS CC) - a C2 application, which can integrate other systems and third-party applications (data bases, etc.);
- Secure access to the software application with different types of roles / access levels (operator, administrator, supervisor).



MAGUS HBD COMPONENTS

- Human being detection sensors (minimum 2 sensors and up to 6 sensors + 1 spare);
- Ground vibration detection sensors (minimum 1 sensor up to 2 sensors + 1 spare);
- Wind speed sensor;
- MAGUS HBD processing unit;
- Portable rugged device (tablet);
- Magus HBD software application;
- Battery charger for the wireless sensors and for the processing unit;
- Transportation and storage case.



TECHNICAL SPECIFICATIONS

- Wireless vehicle and ground sensors with a maximum range of 50m in conditions of direct visibility;
- AES-128 communication encryption standard for wireless components;
- Rugged mobile device meeting military grade standards MIL-STD-810 and IP65;
- MAGUS HBD software application:
 - Lifetime license;
 - Test result - maximum 90 seconds;
 - False negative alarms: max. 10%;
 - False positive alarms: max. 10%.
- The software application is available in English or customised in a language requested by the customer
- Sensor weight – max. 2Kg;
- All wireless sensors are powered by batteries with at least 24 hours of battery life;
- The battery charger is provided with the possibility of connecting more than 8 sensors simultaneously;
- Human Being detection sensors are provided with magnets, for easy attachment to the vehicle;
- Operating temperature of the Magus HBD system:
 - 20 to +50 degrees Celsius;
- MAGUS HBD system environmental protection: IP65;
- Dimensions & weight (W x H x L): 810x586x388 mm.



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MAGUS HBD Case content