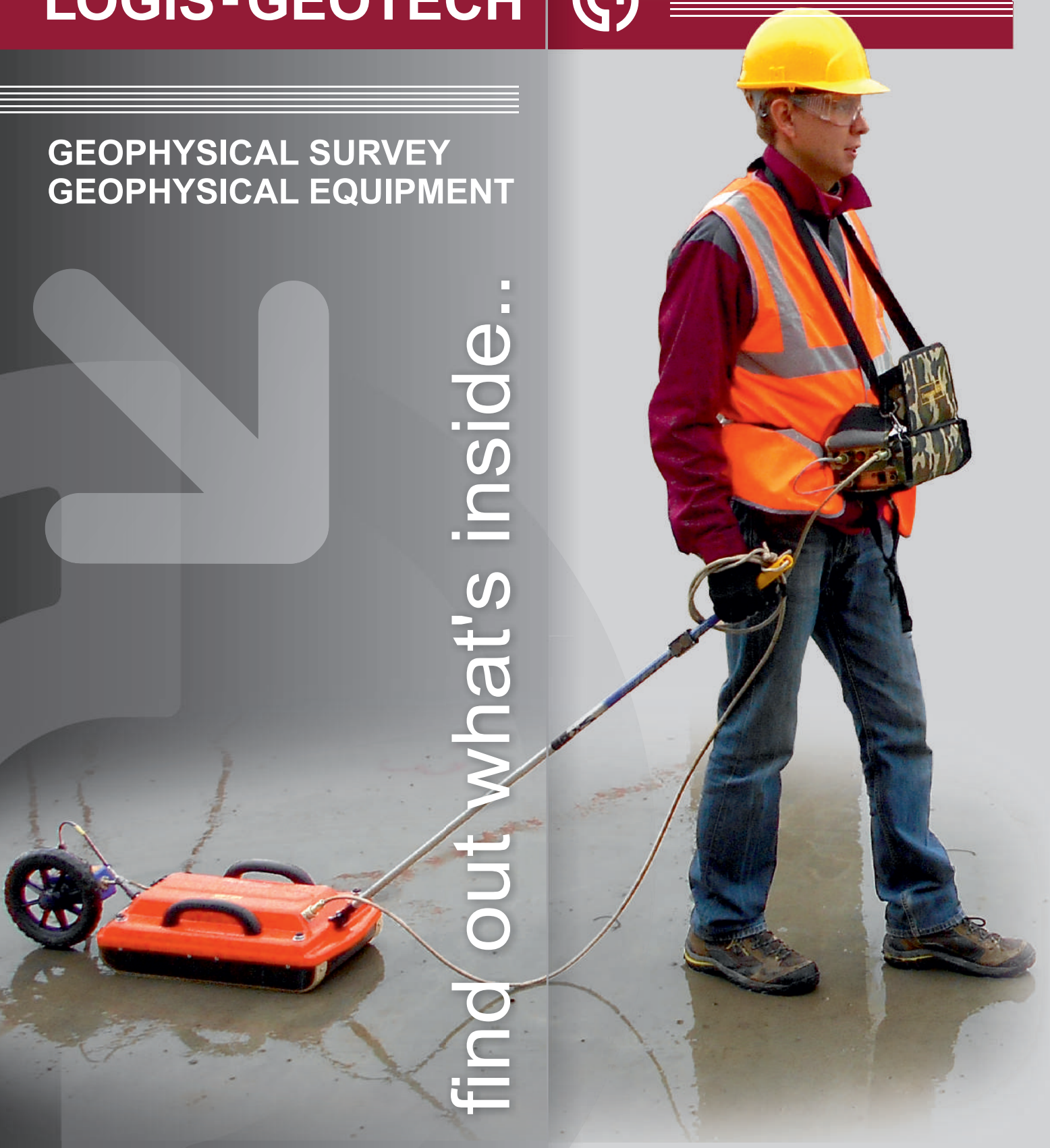
LOGIS-GEOTECH

GEOPHYSICAL SURVEY
GEOPHYSICAL EQUIPMENT

find out what's inside..



GROUND PENETRATING RADAR OKO

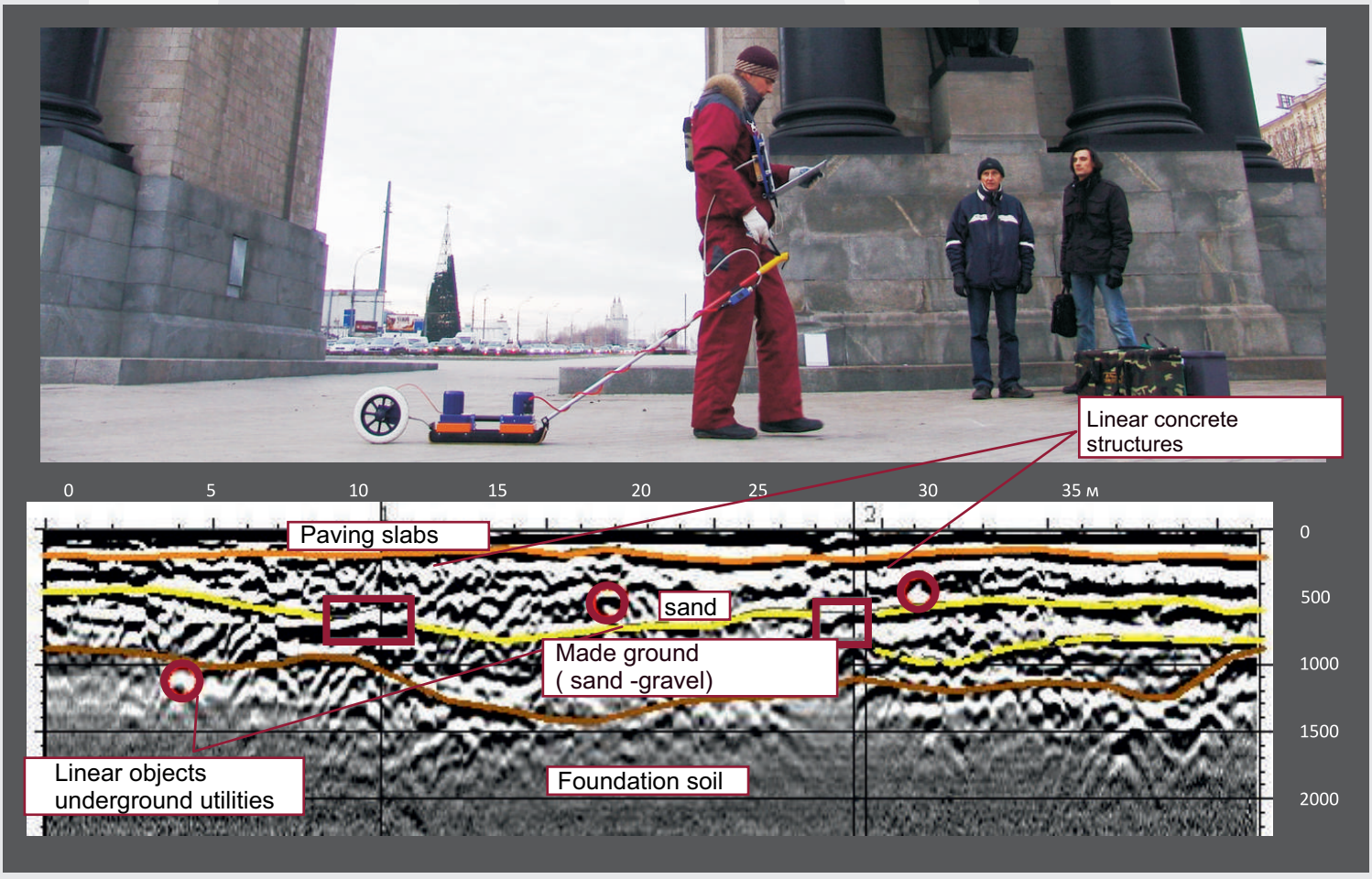
GROUND PENETRATING RADAR OKO - 2

Ground Penetrating Radar OKO-2 is a portable, lightweight and inexpensive system designed for non-destructive environmental monitoring. The system includes a control unit or a control processing unit and antennas with frequencies from 50 to 2500 MHz.

All of these antennas are interchangeable, compatible with the control unit or control processing unit, with a variety of different applications.

Features

- High accuracy of GPR data
- Compatible with all antennas
- Removable rechargeable batteries
- Rugged and weather resistant
- GPS integration
- Several languages option (Russian, English, Chinese)
- Synchronization of GPR sounding and videorecording
- Advanced multi-frequency system



GROUND PENETRATING RADAR OKO - 2

Control unit

It was designed to operate with laptop

Control processing unit

The Control Processing Unit was designed especially to operate in unfavorable weather conditions (temperature -20 …+50°C).

ANTENNAS

Antennas covers frequencies from 50 MHz for deep geological surveying to up to 2500 MHz for high-resolution investigations. Using low-frequency antennas, one can increase the depth of sounding; If high resolution scanning of the near surface section is required, though, it is advisable to use high-frequency antennas. A combination of antennas with different frequencies yields best results.

GPR Antennas

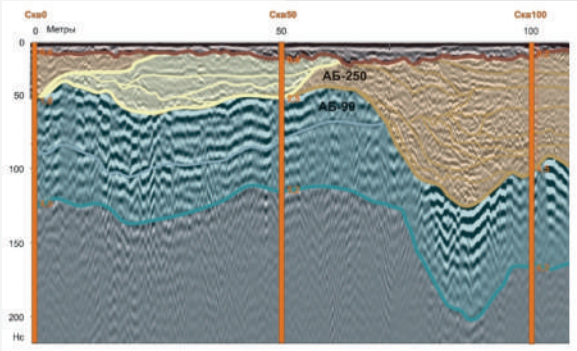
Antenna	Central Frequency (MHz)	Maximum depth of penetration (m)	Resolution (m)
ABDL-Triton	100 or 50	14 or 18	0,5 or 1,5
AB-90	90	16	0,5
AB-150M	150	12	0,35
AB-250M	250	8	0,25
AB-400M	400	5	0,15
AB-400R (horn)	400	3	0,15
AB-700M	700	3	0,1
AB-1000R (horn)	1000	1,5	0,04
AB-1200 (1200U)	1200	1,5	0,05
AB-1700(1700U)	1700	1	0,03
AB-1700R (horn)	1700	0,8	0,03
AB-2000R (horn)	2000	0,6	0,02
AB-2500R (horn)	2500	0,4	0,015
AB-150/400	150 and 400	12 and 5	0,35 and 0,15
AB-250/700	250 and 700	8 and 3	0,25 and 0,1

SHIELDED ANTENNAS

For efficient work in conditions of existing air jamming (i.e. buildings, construction, power transmission lines, etc.), a set of antennas with shielded screen receivers and transmitters, protecting against the potentially harmful effect from the top semi-sphere, are available.

AB-90 Antenna

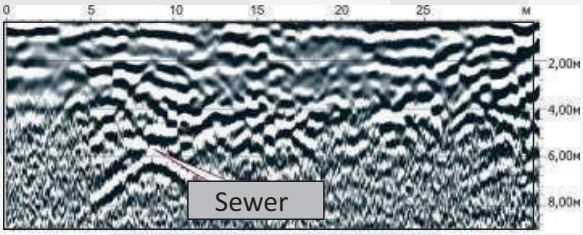
Main frequency	90 MHz
Depth of scanning	16-18 m
Resolution capability	0,5 m
Overall dimensions	220x100x27 cm
Weight	37 kg
Power consumption	7 W



GPR cross-section (AB-250 – top and AB-90)

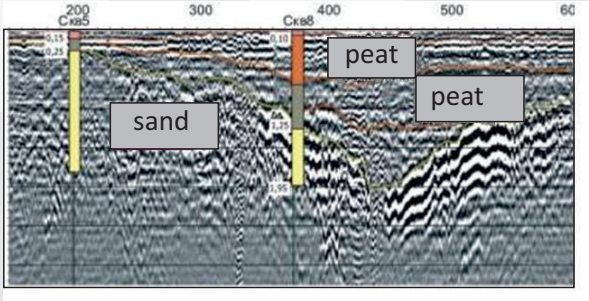
AB-150M Antenna

Main frequency	150 MHz
Depth of scanning	12 m
Resolution capability	0,35 m
Overall dimensions	85x62x18 cm
Weight	16,2 kg
Power consumption	5,8 W



AB-250M Antenna

Main frequency	250 MHz
Depth of scanning	8 m
Resolution capability	0,25 m
Overall dimensions	74x46x19 cm
Weight	9 kg
Power consumption	6 W

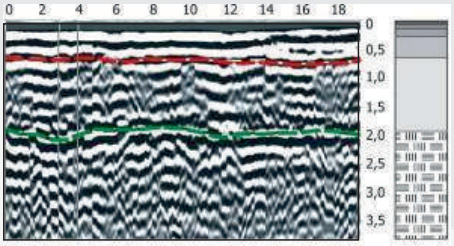


Demountable construction of the antenna AB-90 allows for the implementation of working techniques on a variable basis with ground penetrating radar construction (fiber-optic cable needed). These antennas contain an exchangeable wheel.

SHIELDED ANTENNAS

АВ-400М Antenna

Main frequency	400 MHz
Depth of scanning	5m
Resolution capability	0,15 m
Overall dimensions	52x29x16
Weight	5,5 kg
Power consumption	6 W

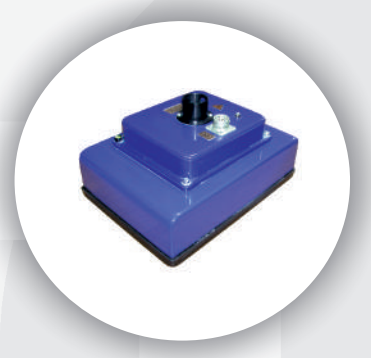


Asphalt
Broken stone (black)
Broken stone

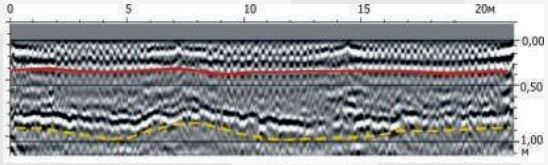
Sand

Soil

АВ-700М Antenna



Main frequency	700 MHz
Depth of scanning	3m
Resolution capability	0,1 m
Overall dimensions	23x17x11 cm
Weight	2,2 kg
Power consumption	3,6 W

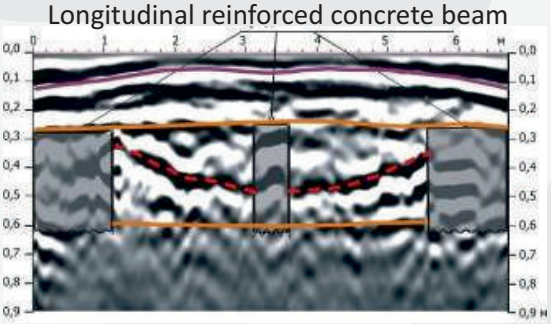


GPR cross-section of runway

АБ-1200 Antenna

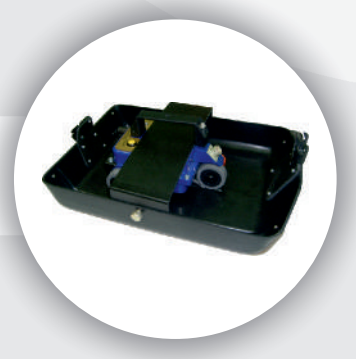
Main frequency	1200 MHz
Depth of scanning	1,5 m
Resolution capability	0,05 m
Overall dimensions	22x18x12 cm
Weight	0,8 kg
Power consumption	3 W
Built-in odometer.	

Longitudinal reinforced concrete beam



GPR cross-section in the central part of bridge

АВ-1200U Antenna

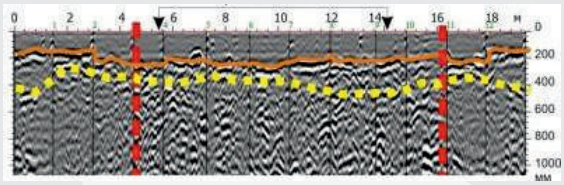


Main frequency	1200 MHz
Depth of scanning	1,5 m
Resolution capability	0,05 m
Overall dimensions	43x30x14 cm
Weight	2,3 kg
Power consumption	3 W
Removable monoski. Designed according to the scheme without optical coupling. Operation is possible with built-in and external odometer.	

SHIELDED ANTENNAS

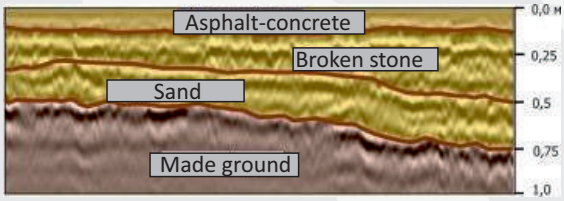
AB-1700 Antenna

Main frequency	1700 MHz
Depth of scanning	1m
Resolution capability	0,03 m
Overall dimensions	22x18x12 cm
Weight	0,8 kg
Power consumption	3W
Built-in odometer.	



AB-1700U Antenna

Main frequency	1700 MHz
Depth of scanning	1 m
Resolution capability	0,03 m
Overall dimensions (with monoski)	43x30x14 cm
Weight (with monoski)	2,3 kg
Power consumption	3 W
Removable monoski. Designed according to the scheme without optical coupling. Operation is possible both with built-inand external odometer.	



DUAL -FREQUENCY ANTENNAS

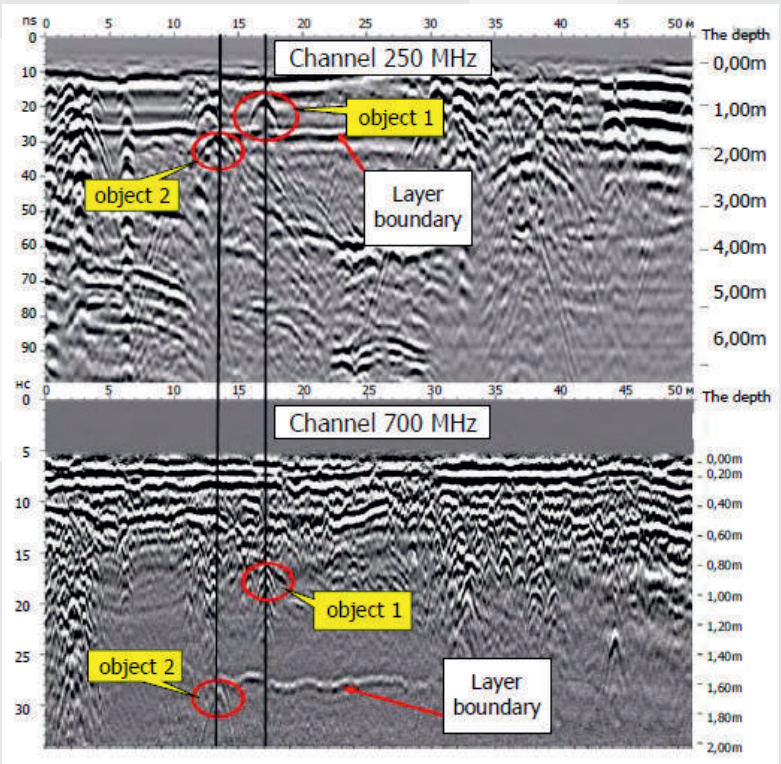
The integrated multi-frequency GPR OKO-2 is designed for automated location of objects at different depths, simultaneously and in real time. This GPR combines a control unit and two antennas with the different frequencies.

AB-150/400 Dual - frequency Antenna

Main frequency	150 and 400 MHz
Depth of scanning	12 and 5 m
Resolution capability	0,35 and 0, 15 m
Overall dimensions	85x62x18 cm
Weight	14,7 kg
Power consumption	11 W

AB-250/700 Dual-frequency Antenna

Main frequency	250 and 700 MHz
Depth of scanning	8 and 3m
Resolution capability	0.25 and 0.1 m
Overall dimensions	74x46x19 cm
Weight	9 kg
Power consumption	8 W

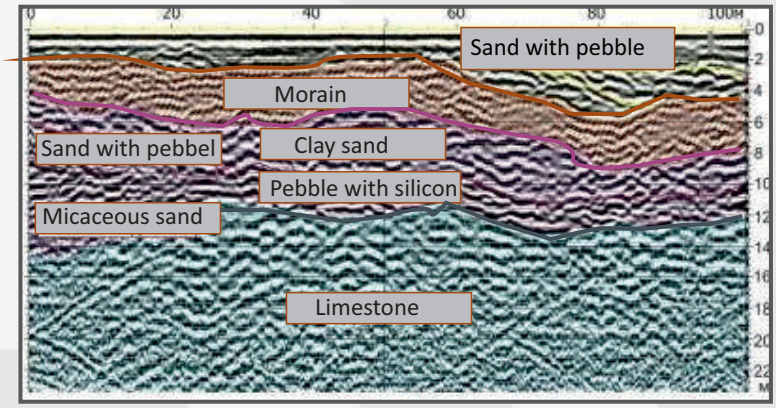


UNSHIELDED ANTENNAS

Antenna ABDL - Triton is an unshielded antenna with an optical coupling. The receiving and transmitting units are supplied with power from separate power supply units, but to transfer the signal of the transmitter start pulse from the receiving unit to the transmitting one, an optical cable is used. This antenna integrates transmitter, receiver and power supply units into one semi-flexible hose.
Antenna ABDL- Triton is designed according to a given scheme with optical coupling. It also features a linear folded, encapsulated option as well as offering the possibility of working under water and off road.

Antenna ABDL Triton

Main frequency	50 or100 MHz
Depth of scanning	14 or 18 m
Resolution capability	0,5 up or 1,5 m
Total length	3,2 or 4,7 m
Weight	6 or 8 kg
Power consumption	6,8 W



HORN ANTENNAS

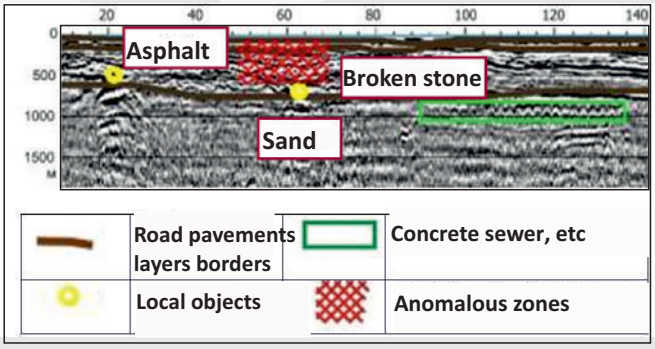
Horn antennas are ideal for tasks associated with the high-speed GPR surveying of elongated objects such as motorways and railways, which require ground lift-off GPR location.
If standard antennas are used in these circumstances, it may lead to large signal losses and, as a result, low quality of data. To perform these tasks successfully, we have created a range of horn antennas. The horn construction greatly minimizes potential losses and offers GPR location surveying with remarkable lift-off from the ground. In addition, ground lift-off surveying significantly limits the influence of a direct signal from receiver to transmitter and allows for proper investigation of near-surface layers in detail.

AB-400R Antenna

Main frequency	400 MHz
Depth of scanning	3m
Resolution capability	0,1 m
Overall dimensions	72x57x36 cm
Weight	9 kg
Power consumption	6 W

AB-1000R Antenna

Main frequency	1000 MHz
Depth of scanning	1,5m
Resolution capability	0,04m
Overall dimensions	63x20x51cm
Weight	7,3 kg
Power consumption	3 W



All-in-one GPR SYSTEM

The All-in-one GPR system is a GPR solution that combines the antenna and the control unit into one enclosure.

This new generation of GPR offers a quick and efficient way to prepare a GPR for inspection. The All-in-one GPR system is connected with a laptop via Ethernet cable. Its low-cost GPR solutions are delivered with all necessary accessories, such as an odometer, a power supply unit, a charger and cables.

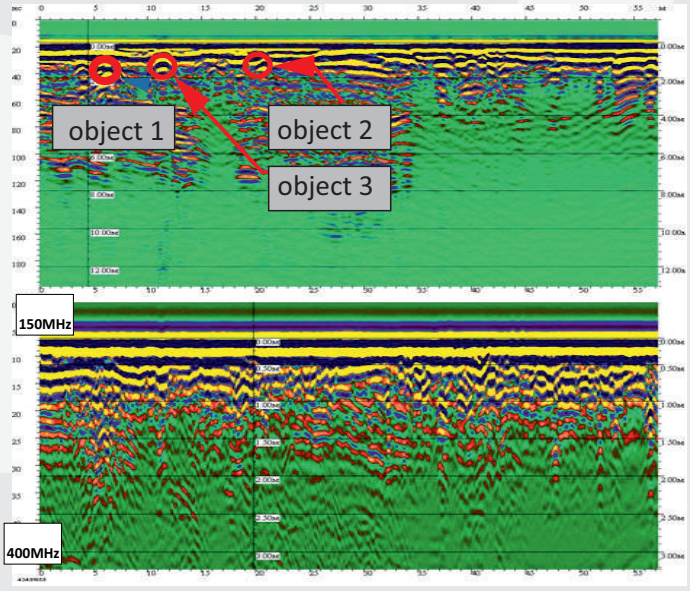
Our uniquely designed collapsible cart (for some models) makes detection easy and convenient.

AB - 400 GPR SYSTEM

Main frequency	400 MHz
Depth of scanning	5m
Resolution capability	0,15 m
Overall dimensions	50x29x14 (cm)
Weight	5,5 kg
Power consumption	6 Watt

AB-150/400 GPR SYSTEM

Main frequency	150 and 400 MHz
Depth of scanning	12 and 5 m
Resolution capability	0,35 and 0, 15 m
Overall dimensions	82x43x13 (cm)
Weight	14,7 kg
Power consumption	11 Watt



AB-250/700 GPR SYSTEM

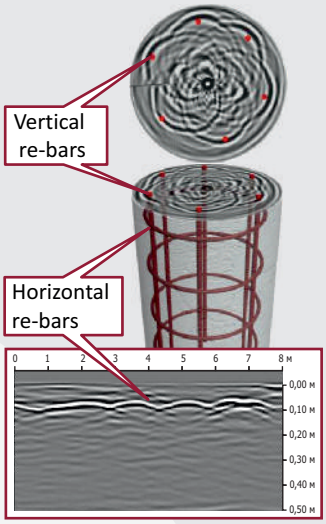
Main frequency	250 and 700 MHz
Depth of scanning	8 and 3m
Resolution capability	0.25 and 0.1 m
Overall dimensions	74x45x19 (cm)
Weight	37 kg
Power consumption	8 Watt

CONSTRUCTIONSCAN

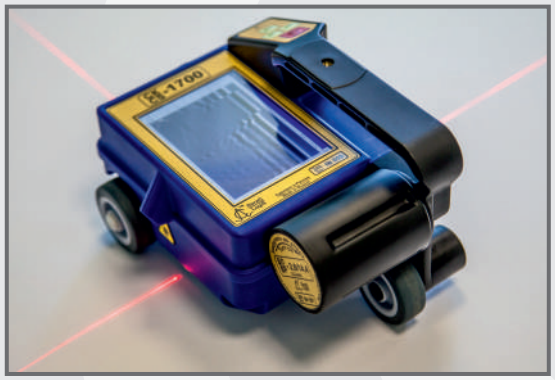
The ConstructionScan is a portable all-in-one GPR solution designed for the automated localizing of defects in a wide variety of wood, brick and reinforced concrete structures, in depths up to 0,6 and 1m, in real time.

APPLICATION

- Detection and location of different defects in reinforced concrete (cells, cavities, foreign inclusions, cracks and layering)
- Determination of reinforcement specification size, occurrence depth and degree of corrosion
- Detection of buried wiring, cables and communications lines
- Detection of plastic and metal pipelines
- Detection of heterogeneities, anomalies and other buried in solid environment (which wood, brick, reinforced concrete, building constructions, soil, etc)
- Discovering of ventilation and communication channels
- Detection of shelters and covered-up holes



ConstructionScan CS-1700



SPECIFICATIONS

Penetration depth	not less than 1m
Resolution	not less than 3 cm
Minimum diameter of detected semiconductor	0.3 mm
Rate of penetration	not less than 1m/sec
Antenna central frequency	1700 Mhz
Weight	1,5 kg
Dimensions	22x17x14 cm
Languages	English, Russian,Chinese
Temperature range	-20° +50°C
Running time	4 hours

ConstructionScan CS-2500

SPECIFICATIONS

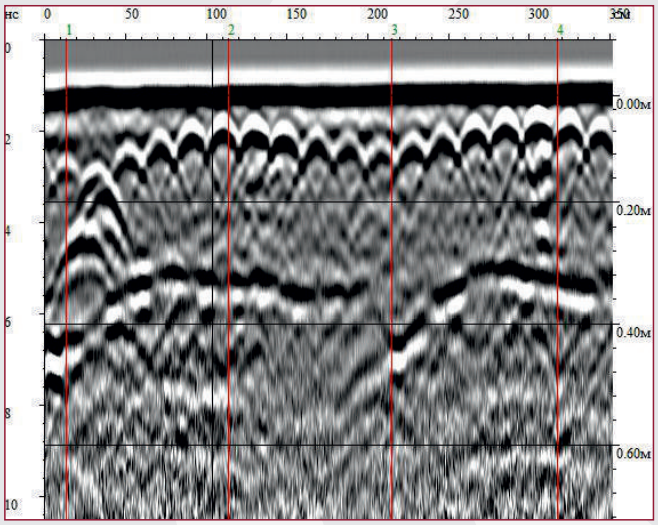
Penetration depth	not less than 0.6 m
Resolution	not less than 2 cm
Minimum diameter of detected semiconductor	0.2 mm
Rate of penetration	not less than 1m/sec
Antenna central frequency	2500 Mhz
Weight	1,5 kg
Dimensions	22x17x14 cm
Languages	English, Russian,Chinese
Temperature range	-20° +50°C
Running time	4 hours

CONSTRUCTIONSCAN

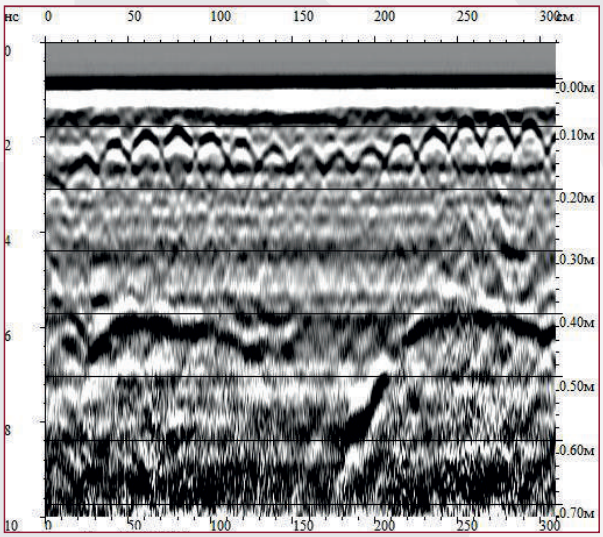
FEATURES

- All-in-one GPR system
- Colour 5” TFT display
- Laser indicators of movement
- Built-in USB interface
- Wheels with odometer
- Quickly-detachable 15V battery
- Built-in odometer
- Internal 2 GB Flash memory card
- 4 hours running time

CS-1700



CS-2500

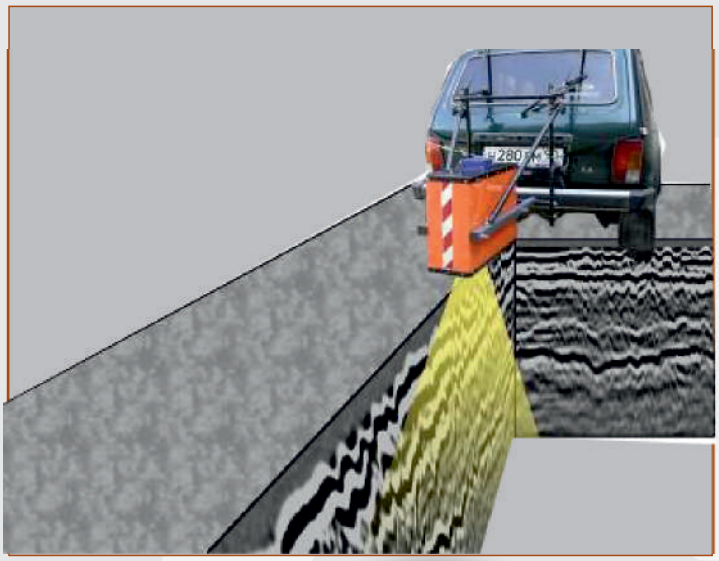


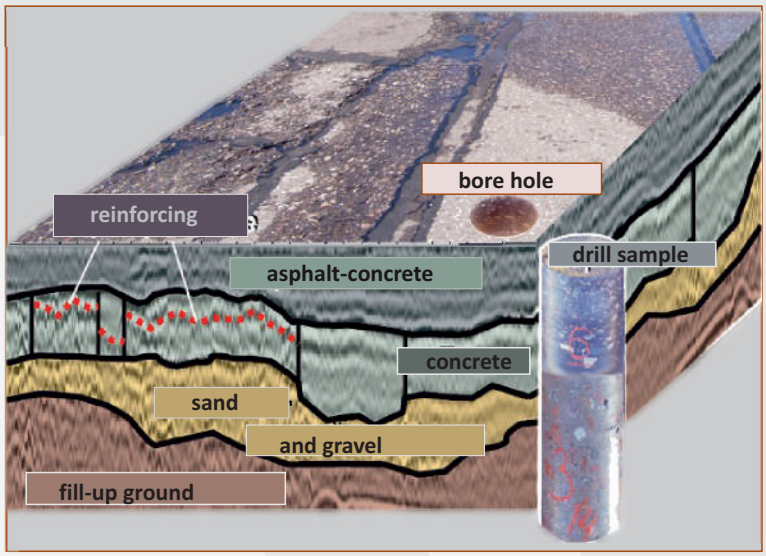
CS-2500 gives more detailed image of the structure.

The control processing unit provides processing, displaying and saving of all scanning results.
The CS accumulates information in its internal 2 GB Flash memory card and transfers it
to a PC via a USB interface. There is a special marking rug with a bar code for precision 3D scanning of objects.

GPR SYSTEM FOR HIGH-SPEED HIGHWAY MONITORING

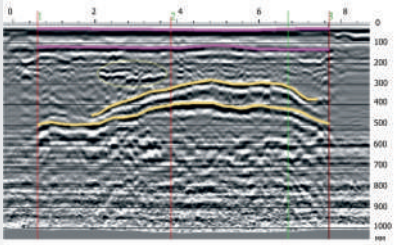
The AB-1700R and AB-2000R are designed for the detailed examination of pavement layer thickness.
The antenna is fixed to a vehicle using an antenna bracket.





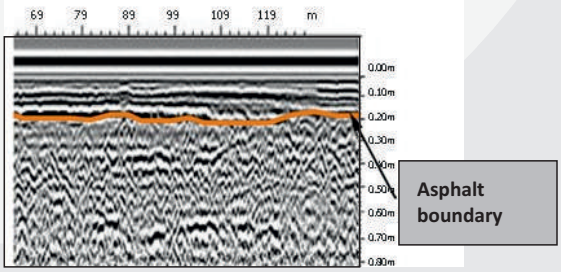
AB-1700R Antenna

Main frequency	1700 MHz
Depth of scanning	0,8m
Resolution capability	0,03m
Overall dimensions	43x30x33 (cm)
Weight	1 kg
Power consumption	3 Watt



AB-2000R Antenna

Main frequency	2000 MHz
Depth of scanning	0,6 m
Resolution capability	0,02 m
Overall dimensions	32x30x16 cm
Weight	1,7 kg
Power consumption	3W



AB-2500R Antenna

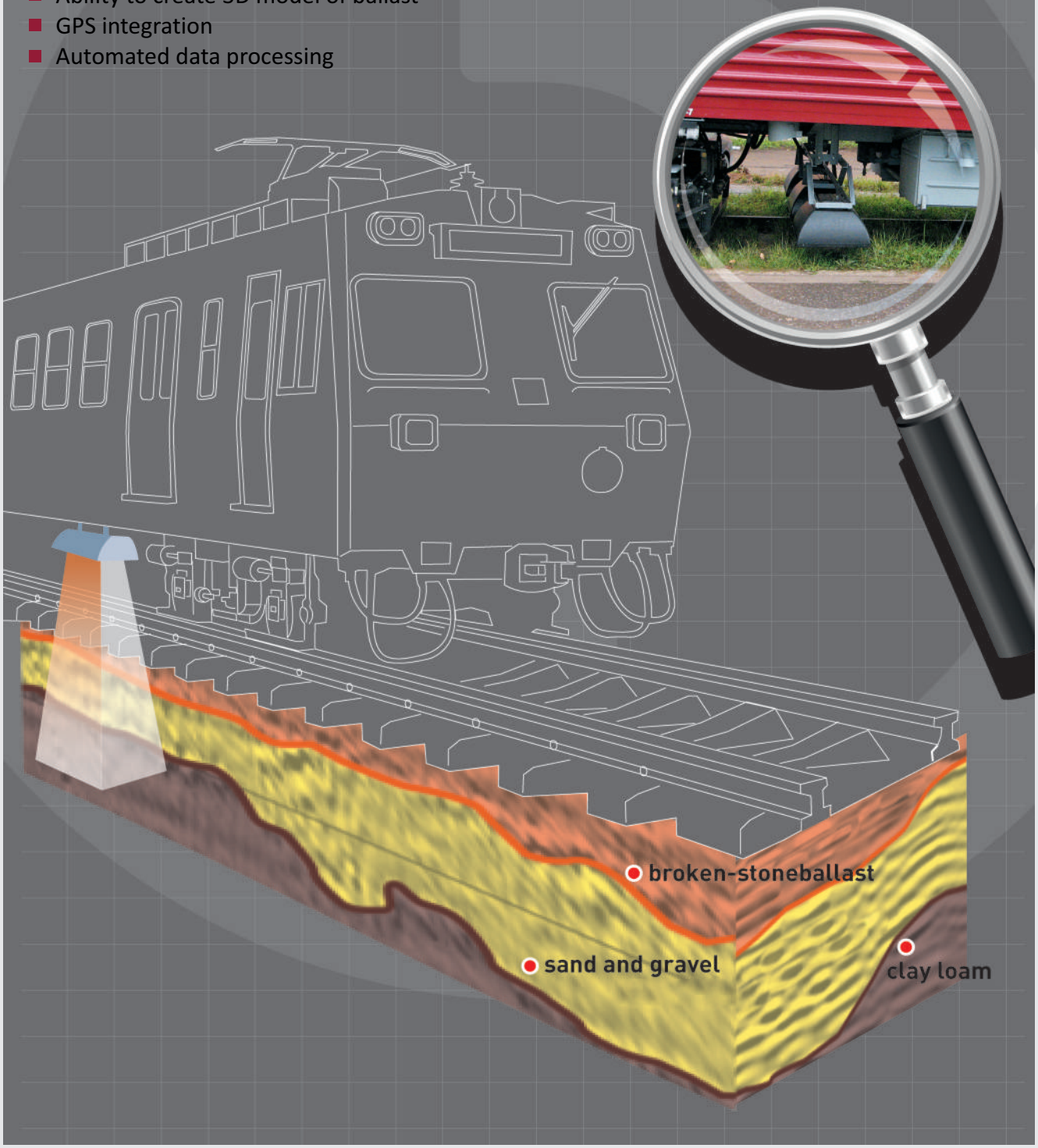
Main frequency	2500 MHz
Depth of scanning	0,4 m
Resolution capability	0,015 m
Overall dimensions	32x30x16 cm
Weight	1,7 kg
Power consumption	3W

MULTICHANNEL GPR COMPLEX FOR RAILWAY EVALUATION

High-speed multichannel GPR complex (survey speed: up to 120 km/hour).

FEATURES

- High speed multi-channel control unit
- Number of channels: Up to six profiles simultaneously
- Wide variety of antenna frequencies: from 150MHz up to 2500 MHz
- Rapid maximum survey speed: Up to 120 km/h
- Deep detection depth: Up to 8m
- Ability to create 3D model of ballast
- GPS integration
- Automated data processing



MULTICHANNEL GPR COMPLEX

SPECIFICATIONS

- Antennas
  - AB-400RS (400 MHz central frequency)
  - AB-1000RS (1000 MHz central frequency)
  - AB-1700RS (1700 MHz central frequency)
  - AB-2000RS (2000 MHz central freguency)
  - AB-150S (150 MHz central frequency)
  - AB-250S (250 MHz central freguecy)
- The maximum depth of detection
  - AB-400RS - 2,5 m,
  - AB-1000RS - 1,5 m,
  - AB-1700RS - 0,7 m
  - AB-2000RS - 0,8 m
  - AB-150S - 8m
  - AB-250S - 7m
- Scan rate for each channel 300 scan/sec (512 samples per scan)
- High repetition frequency up to 400 kHz
- Power supply 12-15V
- Resolution 0,03-0,35 m
- Maximum scan length unlimited
- Operating temperature -30°C up to +50°C
- Environmental IP65

ADVANTAGES

- Accumulation of GPR information for monitoring and predicting of defects development and changes of ballast section
- Formation of GPR information on ballast section conditions for railway maintenance and repair planning
- Assessment of performed work quality concerning the ballast section's current condition, railway repair and geoweb application

types of multichannel GPR	Q-ty of channels	Type of antenna	Maximum speed of scanning	
Three channel GPR	1-3	AB-400RC AB-1000Rc AB-1700RC AB-150C	120 km/hour	on a track-testing car or in any other special vehicle
Six channel GPR	1-6	AB-400RC AB-1000RC AB-1700RC AB-150C	120 km/hour	on a track-testing car or in any other special vehicle

MULTICHANNEL GPR COMPLEX

Three-channel GPR complex (survey speed: up to 8 km/hour)

FEATURES

- Three-channel control unit
- Number of channels: up to three profiles simultaneously
- Wide variety of antenna frequencies: from 150 MHz to 2500 MHz
- Survey speed: up to 8 km/hour
- Ability to create 3D model of ballast
- GPS integration
- Automated data processing

APPLICATION

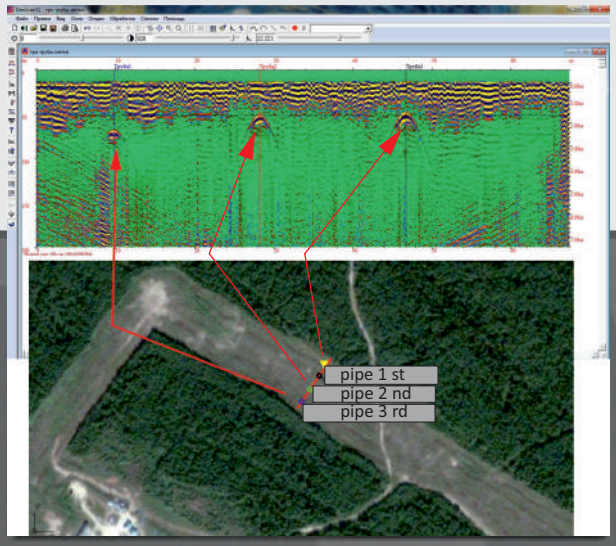
- Determination of the railway embankment width and structure content
- Allocation of subsidence in the ballast and natural bed layers
- Determination of the natural bed
- Mapping underground pipelines crossing railway embankment
- Control of conformation of railway embankment structure to the project documentation

GPR SYSTEM FOR UTILITY MAPPING

This GPR system is designed to locate the depth and position of utilities such as pipes, cables, reservoirs and drainage systems in a variety of soils at different depths. The Utility Mapping software allows its user to display all information on Google Earth.

The systems combines:

- Touch-screen control unit;
- Dual frequency antenna
- Removable Wheels with two integrated odometers;
- GPS-receiver;
- Lightweight rugged trolley;
- Power supply unit.



Features

Dual-frequency antenna (250 and 700 MHz) for deep and shallow survey in single scan;

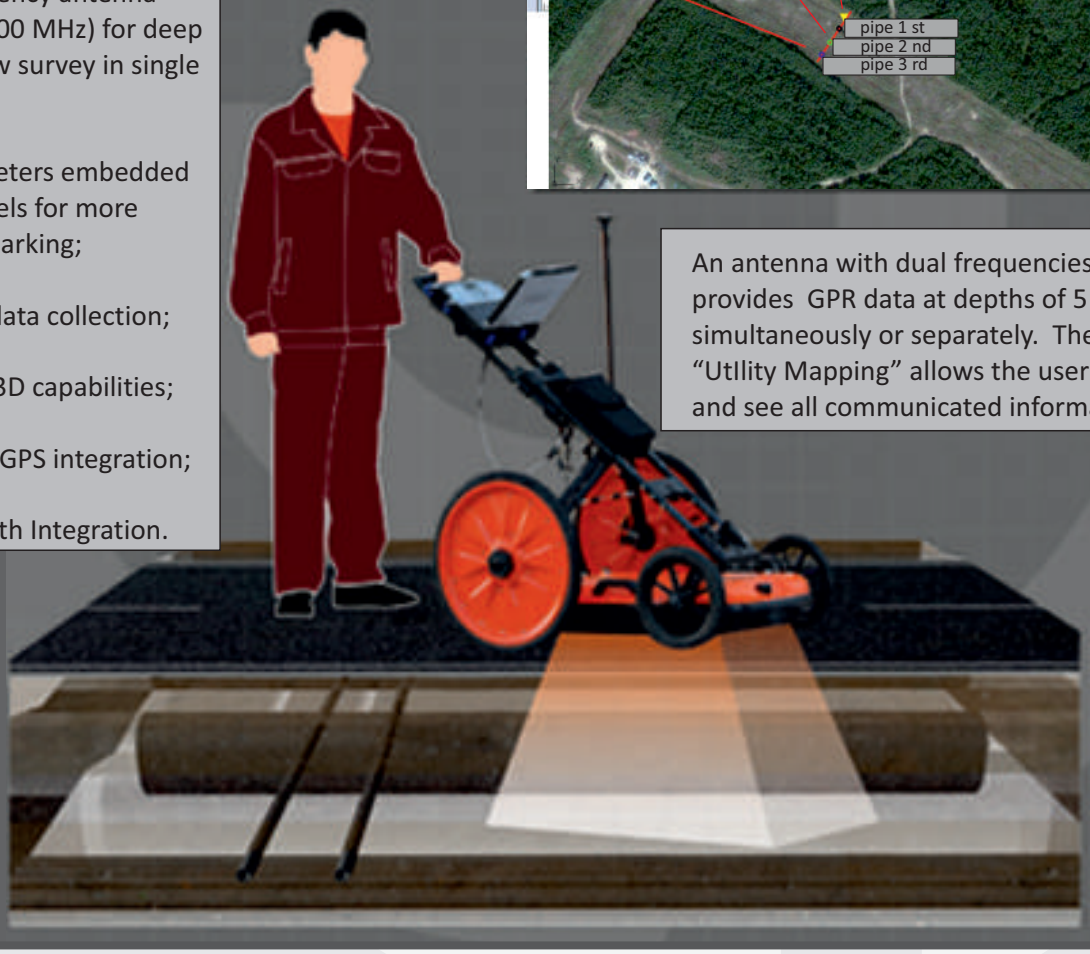
Two odometers embedded in the wheels for more accurate marking;

Real time data collection;

Enhanced 3D capabilities;

Automatic GPS integration;

Google Earth Integration.



An antenna with dual frequencies of 250 and 700 Mhz provides GPR data at depths of 5 and 8 meters simultaneously or separately. The special software “Utllity Mapping” allows the user to visualize 3D data, and see all communicated information on Google Earth.

Utllity Mapping is a turnkey GPR solution for detection of buried utilities. The systems consists of a touch-screen control unit, dual-frequency antenna (250 and 700 Mhz), GPS-receiver, and two odometers built into the wheels of trolley. By using data collected from the odometers and GPS-receiver simultaneously, the user can locate and mark utilities accurately and quickly.

SOFTWARE

The Software «GeoScan32» is designed to visualize data during scanning, locate objects, interpret results and create a 3D model of the collected data.

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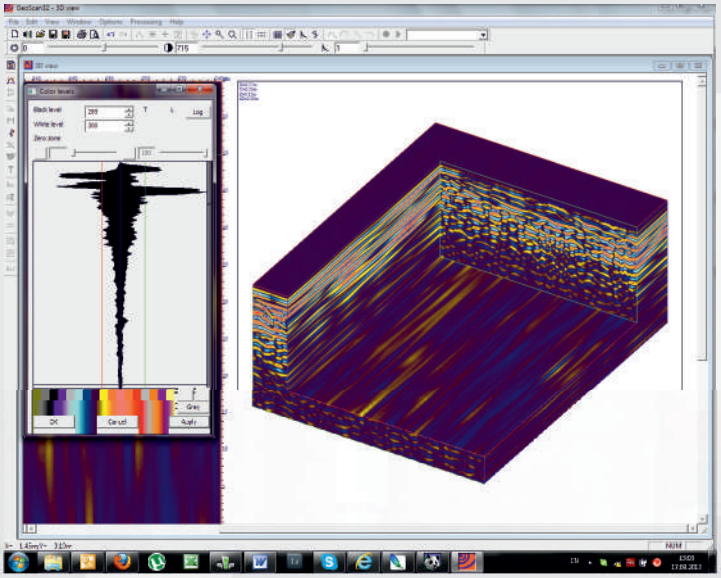


Program functions include:

- continuous data accumulation on shifting and steps;
- data visualization during surveying;
- interactive determination of layers' speed and occurrence depth of local objects during
- data processing;
- layer-by-layer treatment;
- aerial survey data processing;
- relief is taken into consideration;
- possibility to build 3D data models.

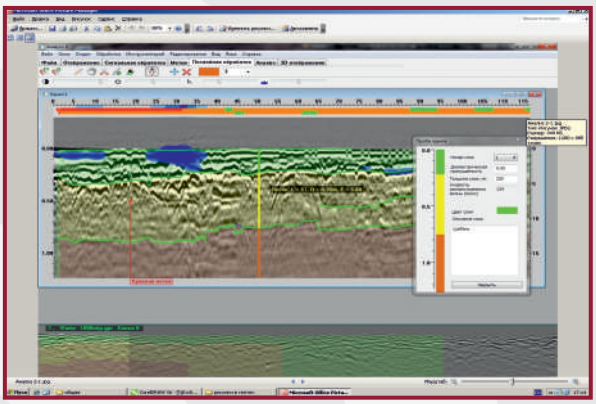
The Data video recorder is a software and hardware system which provides an operator already working with “OKO-2” an opportunity to add video records and photo records to GPR information which reflect the scanning surroundings by means of a WEB-camera.

SOFTWARE «ANALYZE»

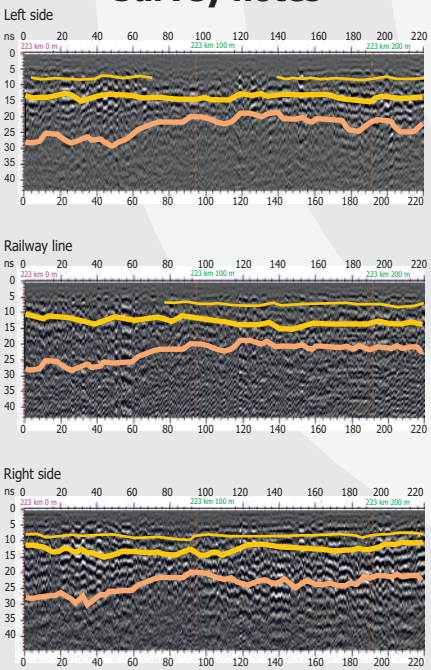
Used for automatic processing of GPR date, the module "Analize"
allows for the easy viewing of two or three dimensional images of ballast at any point in the survey (after the detection of structural layers).

Its applications include:

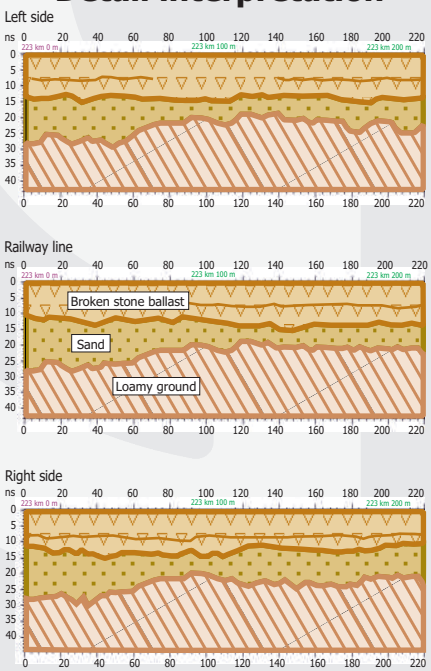
- data visualization during the survey;
- processing in real time;
- automation of GPR data processing;
- data saving in an easily compatible format with professional geophysical programs.



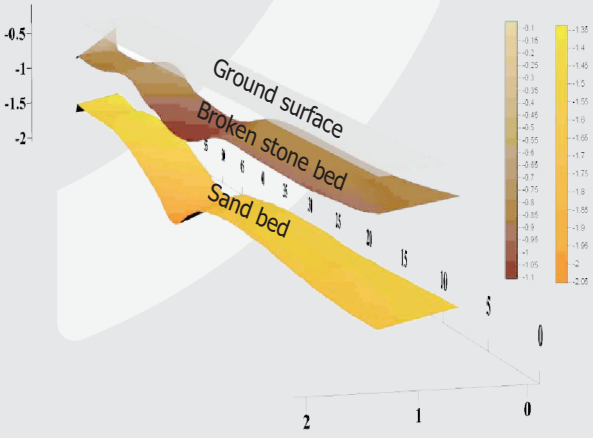
Survey notes



Detail interpretation



3D model of railway ballast section



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