

GPR Loza-M

Technical Description

Purpose of the device

Geophysical georadar complex "Loza-M", is a ground penetrating radar system (GPR), designed to search for in the subsurface environment, the local sites of natural and anthropogenic origin, as well as to determine the boundaries of geological layers, forming a contrast to each other on the dielectric constant and conductivity of the area.

The operating principles of GPR are based on the emission of ultra-wideband electromagnetic pulses and record their reflections on the interfaces between layers of soil, or objects.

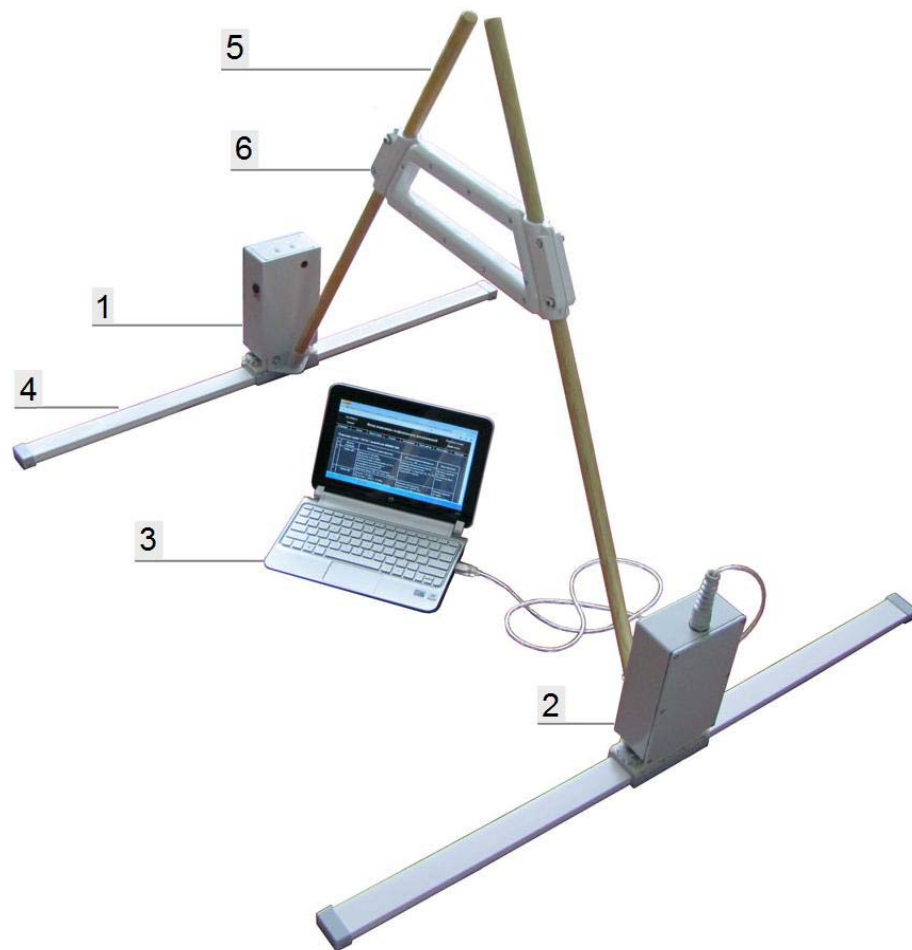
GPR can be used on different types of soils.

The composition of the device

Table 1

Indication No.	Name	Designation	Number of	Note
1	Transmitter Block BPrd-3	VNRA.468179.002	1	
2	Receiver unit BDP-3	VNRA.464339.002	1	
3	Software for laptop *	VNRA.468514.001	1	
4	Antenna (1 m)	VNRA.464629.001	2	
5	Rod	VNRA.301563.002	2	for fixing BPrd-3 and BDP-3
6	Handle	VNRA.301521.001	1	bracket to connect with each other
7	Charging device	VNRA.436431.001	1	

* Laptop not included.



Loza-M Geordar system

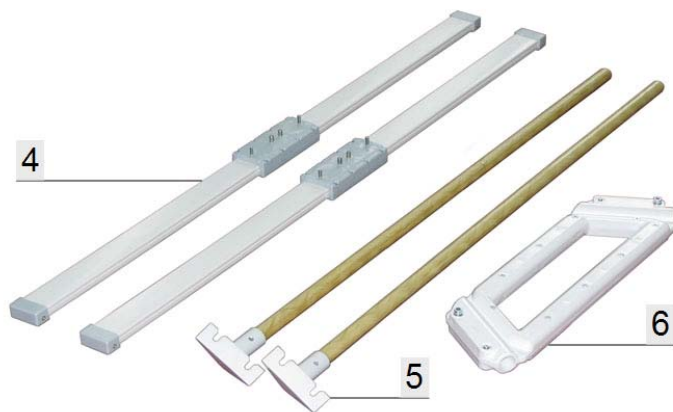
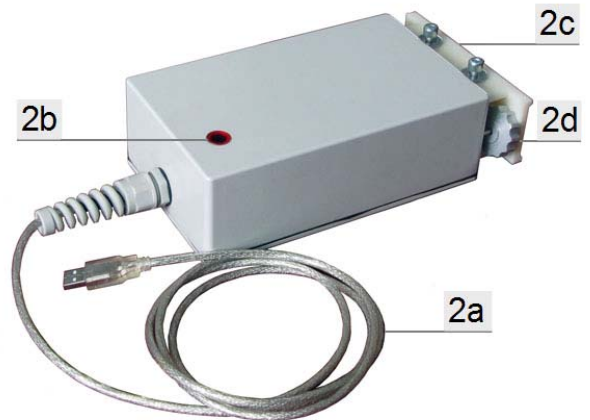
1) Transmitter unit BPrd - 3

- a. ON LED
- b. Power connector
- c. Connector for antenna
- d. Transmitter to the receiver synchronization
- e. Connector nuts
- f. OFF LED



2) Receiver unit BDP - 3

- a. The cord connecting the computer
- b. The sensor synchronization with the transmitter unit
- c. Connector for antenna
- d. Connector nuts



4)Antenna Kit, 5) Brackets, 6) handle.



7)Charging device , 8)and hex wrench.

Technical characteristics

1. The device Loza-M includes a transmitter unit BPrd-3, a block of the receiver BDP-3 with adjustable antennas on them. As a control and display unit using a laptop (laptop is not included).
2. The device Loza-M is designed for operation in ambient temperatures from -5°C to $+40^{\circ}\text{C}$, and a relative humidity of 90% at a temperature of $+25^{\circ}\text{C}$.
BPrd-3 and BDP-3 are splash proof.
3. BPrd-3 power is built-in rechargeable battery (battery acid), 12.6 V, 1.3 Ah capacity.
4. BDP-3 power is from the laptop via USB cable (power consumption of less than 200 mA).
5. LOZA-M provides the management of the BPR-3, and have ability to display and preserve the recorded information.
6. The main technical characteristics of the LOZA -M are shown in Table 2.

Table 2

Frequency range	at least 50-300 MHz
Resolution	1 ns
Receiver sensitivity	no worse than 500 mV
The amplitude of the probe pulse	$5500 \pm 825\text{ V}$
Duration of registered implementations	512 ns
Current consumption	not more than 200 mA
The period of automatic start-up	1,2,4 s
The frequency of the pulses of the transmitter	$1000 \pm 200\text{ Hz}$
Communication with PC	via USB
Dimensions BPrd and BDP (mm)	not more than $230 * 120 * 65$
Operating temperature	-5 to $+40^{\circ}\text{C}$
Weight; BPrd + BDP assembly	not more than 3.5 kg