

GCB-500

Datasheet



GCB-500 is a small, lightweight ground coupled GPR antenna suited for utility detection and shallow investigation surveys. GCB-500 is a fully shielded GPR antenna, making it an ideal choice for EM noisy environments.

Because of the scalability of Geoscanners products, antennas can be combined with different systems to ensure that the user has the best conditions for the planned survey. GCB-500 is no exception and can be used with different accessories, carts, control units etc. Furthermore, GCB-500 is also compatible with GSSI control units. This gives endless possibilities and allows the user to change antennas without having to purchase complete new systems.

GCB-500 is the perfect antenna choice for shallow to medium depth utility detection surveys. Depending on the conditions of the survey site, the antenna can provide penetration exceeding 2 meters, within which the main application of the antenna should be considered.

The high resolution of the data obtained by GCB-500 and low ringing allows the user to detect utilities while still on the field. This means that a quick analysis can be made right away, before even leaving the survey location. The best results are obtained by using the Geoscanners radar control units from the Akula 9000 series together with the Geoscanners post-processing software GPRSoft Standard(or Professional).





Area of Application

- Utility detection
- Shallow engineering
- Environmental applications
- Forensics
- Close to surface void detection

Mechanical and Environmental Specifications

Dimensions LxWxD (mm/inches)	320x255x150 / 12.6x9.84x5.90
Weight (kg/pounds)	1.7 / 3.75
Fastening points LxW (mm/inches)	210 x 160 / 8.26 x 6.30
Ingress Protection	IP65
Operating Temperature (°C / °F)	from -25 up to +40 / from 14 up to 104
Relative Humidity (%)	99 (NC)

Electrical Specifications

Antenna Type	Quarter Wavelength Bowtie
Shield Type	Top and Side Shield
Distance between the TX and RX (mm/inches)	95 / 3.74
Feed point impedance (Ohms)	368
Transmitted Pulse Amplitude (Volts)	100
Receiver Sensitivity (µVolts)	14
Antenna Bandwidth (at 10dB)	102%
Antenna Center frequency (MHz at 10dB BW)	500
Survey Wheel Output Voltage (Volts)	5.01

Recommended Specifications

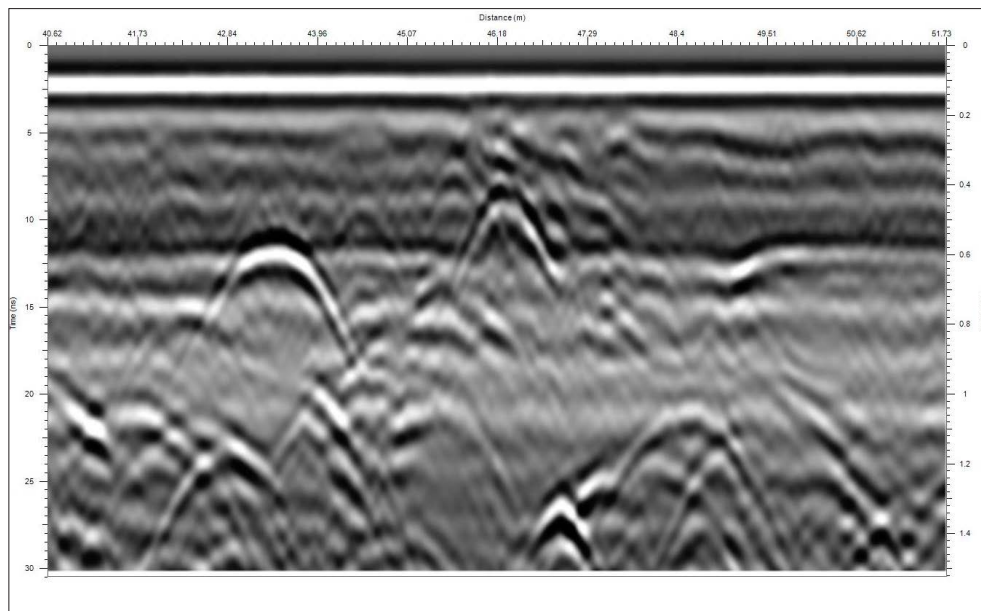
Pulse repetition Frequency, PRF (kHz)	≥100
Scan Rate, Traces/Second	100
Range (ns), (depends on soil penetration)	7-35
Low Pass Filter Cut-Off Frequency (MHz)	1000
High Pass Filter Cut-Off Frequency (MHz)	250
Gain	Adjust to 75% Swing

Accessories*

- Tray S47 antenna tray with belts
- SVC-820 4-wheel survey cart
- GSH-490 rough terrain survey trailer

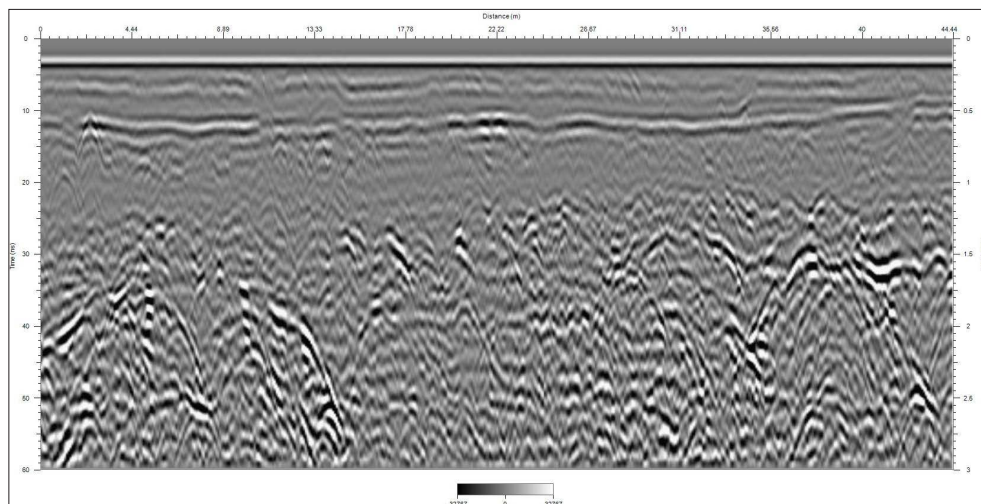
*Accessories are not included

The main aim of the GCB-500 antenna is detailed surveying in approximately the first 2 meters of depth. The collected data allows for direct interpretation and mapping of the underground targets right on field. This on-site positioning is extremely useful as it does not require the user to wait for the data to be post-processed and for the full report to be created.



1. GCB-500 surveying a sidewalk with pipes.

GCB-500 was designed to work in the time ranges up to 50ns. That being said, there are exceptional cases when the penetration is very good and deeper surveys can be done without any deterioration of the quality of the data. Because of this, it is always a good idea to run a short survey in the site of interest before running the complete survey. This will allow to identify the attainable penetration depth, find the correct filters, required gain etc.



2. Deep survey with the GCB-500, 60ns penetration in dry sand.

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