GEOSCANNERS
advanced survey systems



BA-1000

BA1000 is a GPR borehole antenna for applications requiring access to the features via a nearby borehole. The cleaner signal and higher penetration, when compared to the competition, makes it an ideal complement for applications requiring borehole antennas with higher frequency operating bandwidth and therefore higher resolution. This antenna is also one of the few models available on the market compatible with the GSSI ground penetrating radars as well.

Area of applications

- Tunnelling
- Mining
- Borehole surveys in general

Mechanical specifications

Dimensions ØxL (mm/inches)	Φ38x655 / Φ1.5x25.78
Weight (kg/pounds)	1.2 / 2.64
Distance between the Tx and Rx (mm/inches)	156 / 6.14
Fastening points LxW (mm/inches)	GTP901
Ingress Protection*	IP68

***under 10 bar pressure and no more than 6 hours**

Electrical specifications

Antenna Type	Bowtie
Shield Type	Unshielded
Absorber Type	N/A
Total Load (Ohms)	292
Transmitted Pulse Amplitude (Volts)	24
Receiver Sensitivity (µVolts)	6
Antenna Bandwidth (at 10dB)	104.9p
Antenna Center frequency (MHz at 10DB BW)	750p
Survey Wheel Output Voltage (Volts)	5.01
Operating Temperature (°C / °F)	-25....+40 / 14....104

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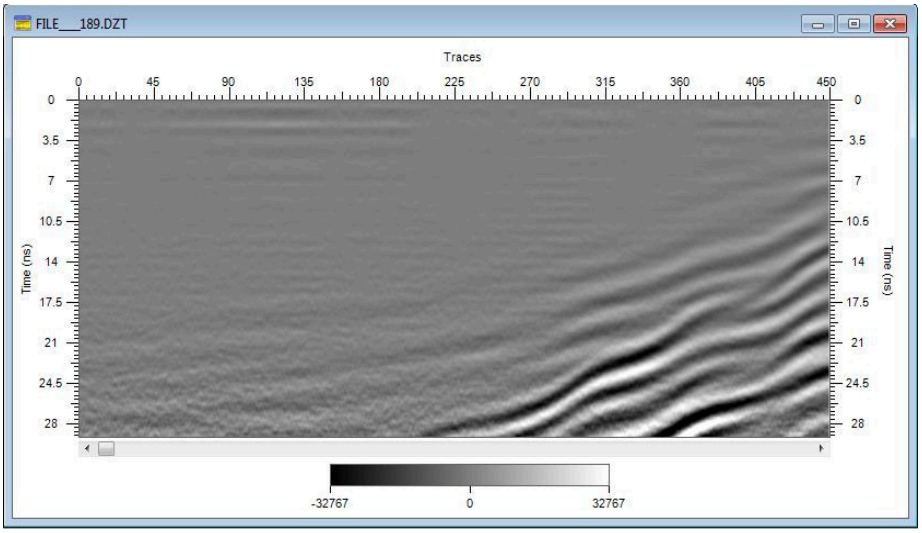
Recommended settings

Pulse repetition Frequency, PRF (kHz)	≥100
Scan Rate, Scans/Second	100
Range (ns), (depends on soil penetration)	5-30
Low Pass Filter Cut-Off Frequency (MHz)	2000
High Pass Filter Cut-Off Frequency (MHz)	500
Gain	Adjust to 75% Swing

Application Hints

When doing the borehole surveys, sometimes there is a need for higher resolution to be able to interpret smaller objects and anomalies. BA1000 is a borehole antenna with high enough frequency to provide higher details about the media and objects surrounding the borehole. Like with any other GPR antenna, the increase of the frequency, and thus the resolution, will decrease the range of penetration. All care was taken to keep the dimensions of the antenna industry friendly, which means that after you get the standard drilling tool out, you can easily push the antenna in the hole. GPR information gathered in this way will expand the information response around your borehole.

It is always important to keep in mind that the borehole antennas are unshielded and non directive. The interpretation of the GPR data collected with a borehole antenna can provide the distance to a specific object and the depth position in regard to lowering the antenna through a borehole. The true direction (azimuth) of the object on a certain radius can only be determined by doing a cross hole survey or known information from a different method. Cross hole surveys are done from multiple boreholes either with two antennas in true bistatic mode doing the tomography of the area or collecting the data about an area from more than one borehole and afterwards triangulating the objects true position from multiple data interpretations.



Multiple thin layers are easy to interpret from the data

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