

TR-501

Datasheet



The TR-501 transceiver is a specially designed plug-in electronics for the Geoscanners MFC-1250 multifrequency antenna and the antennas from the Gekko-series.

Both the transmitter and the receiver are functional in a single TR-501 plug-in electronics providing great efficiency and low noise levels. It is the best choice for people that need to use MFC-1250, Gekko or similar types of antennas in monostatic mode. The users also have the freedom to pair TR-501 with a dedicated transmitter (VHT-501) in order to allow for bistatic mode surveys. This results in a lower priced monostatic configuration as a starting point that can easily be expanded later on.

In case of purchasing a full bistatic system it is easy to choose the monostatic or bistatic survey modes depending on the survey needs.

In addition to Geoscanners antennas, the TR-501 plug-in is fully compatible with many of the GSSI and Radarteam lower frequency solutions. Likewise, TR-501 works with all Geoscanners radar control units and is fully compatible with the GSSI radar control units





Area of Application

- Deeper geological surveys*
- Mining operation surveys *
- Water table mapping*
- Deep archeology*

*Equipping the Gekko series antennas or MFC-1250

Mechanical and Environmental Specifications

Dimensions LxWxD (mm/inches)	230x133x82 / 9.0x5.2x3.2
Weight (kg/pounds)	0.3 / 0.66
Fastening points distance (mm/inches)	123 / 4.84
Ingress Protection	IP51
Operating Temperature (°C/°F)	-10 to 40 / 14 to 104
Relative Humidity (%)	96(NC)
RoHS Compliant	Yes

Electrical and Operating Specification**

High Voltage Power Consumption (W)	0.289
Low Voltage Power Consumption (W)	0.870
TX Impulse Rise Time (ns)	1.81
TX Impulse FWHM (ns)	3.02
TX Peak Voltage (V)	+/-120
RX Aperture Time (ps)	520
RX RF Bandwidth (MHz)	962
RX RF Dynamic Range (dB)	56.53
RX Noise Figure	11.2dB

**All values measured at 50kHz PRF with a 300 Ohms load with no averaging

Geoscanners AB Antennas Using the Plug-in

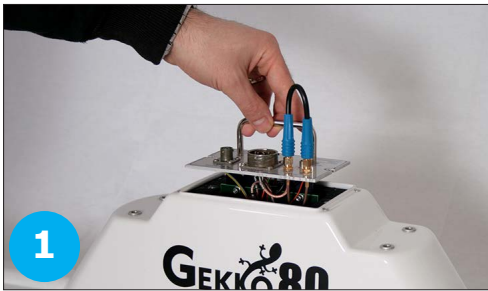
- Geoscanners AB antennas using the plug-in
- Gekko-60 - 60 MHz unshielded antenna, monostatic and bistatic configuration
- Gekko-80 - 80 MHz unshielded antenna, monostatic and bistatic configuration
- MFC-1250 – adjustable center frequency 12.5-100MHz unshielded antenna, monostatic and bistatic configuration

Accessories* and Optional Items

- VHT-501 - very high power transmitter plug-in electronics for bistatic mode
- BNSMC70x - long coax transmitter trigger cable lengths from 1.2m
- SEC-70x - antenna connector survey wheel cable, lengths from 1.2m
- SEC-101 - standard Geoscanners survey wheel cable, 1.2m

*Accessories are not included

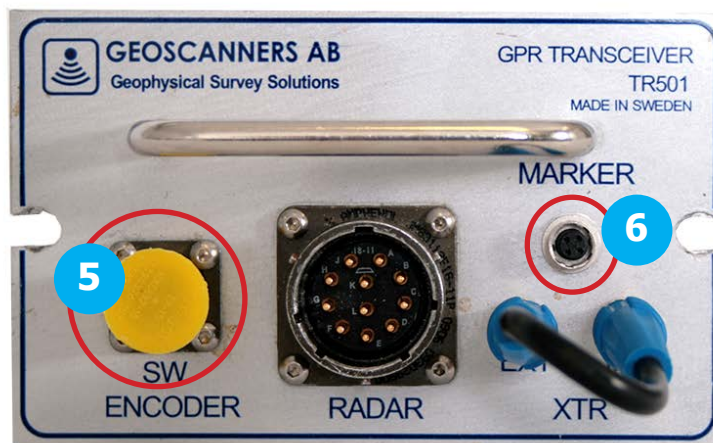
Operating Instructions



1. Insert the TR-501 plug-in electronics into the antenna slot on the antenna and secure it in place with the provided thumb screws.
2. Pay attention to the orientation of the plug-in electronics as described in the antenna's instruction manual.
3. Attach the main control cable to the plug-in electronics.

If the plug-in electronics is used in monostatic mode (only one antenna is transmitting and receiving), make sure that the short coax cable is firmly connected between the "EXT" and "INT" connectors.

4. If the plug-in electronics is used in bistatic mode (TR-501 is receiving and another transmitter in the second antenna is shooting the pulse), make sure to replace short coax cable with the proper longer coax cable connecting the "EXT" connector of TR-501 with the proper connector on the second plug-in.
5. The survey wheel can be attached directly to the Geoscanners radar control units, but it is also possible to connect the survey cable to the plug-in survey wheel connector. Please keep in mind that the survey wheel cables are different for those two connectors.
6. The user marker input is available inside the GAS acquisition software as a button and keyboard shortcut. If you are using another control unit, it is possible to connect a marker button to the connector available on the TR-501.



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