



## GSM-19T v7.0 Proton Precession

Magnetometer /  
Gradiometer /  
VLF system



### Key technologies include:

**The new v7.0 system is the industry's latest innovation in proton precession design - with many new technologies that deliver significant benefits for geophysical applications.**

- \* Data export in standard XYZ (i.e. line-oriented) format for easy use in standard commercial software programs
- \* Programmable export format for full control over output
- \* GPS elevation values provide input for geophysical modeling
- \* <1.5m standard GPS for high resolution surveying
- \* Enhanced GPS positioning resolution
- \* Multisensor capability of advanced surveys to resolve target geometry
- \* Picket marking/annotation for capturing related surveying information on-the-go
- \* And all of these technologies come complete with the most attractive prices and warranty in the business!

# MAGNETOMETERS

For earth science survey groups who require a complete solution for end-to-end magnetic data acquisition at an affordable price, the QuickTracker™ (GSM-19T) proton precession family is the proven choice - for even the most challenging environments.

From robust field units to efficient survey modes to fast data downloading, QuickTracker is carefully designed to deliver the maximum value in a proton precession system.

The GSM-19T also provides numerous technologies that differentiate it from other systems. For example, it is the only proton precession system with integrated GPS (optional) for high-sensitivity, accurately-positioned ground surveys.

With other v7.0 upgrades, the GSM-19T Proton Precision system also leads in sensitivity, memory, base station technology and other key areas.

## Designed from the Ground Up

Leading the list of advances is rover unit which features a 25% increase in sensitivity -- reflecting new processing algorithms and implementation of the latest RISC microprocessors.

In addition, v7.0 standard memory is 16 Mbytes (expandable to 32 Mbytes) which translates into 838,860 readings of line / station data or more than 2,796,202 readings for base station units.

The new memory capacity sets an industry standard, but more importantly, it means that operators can now handle even the largest surveys with ease.

Another important innovation is its unique programmable base station which you can enable via either a field unit or a Personal Computer as follows:

Daily scheduling (define working hours and minutes each day). This mode provides economy of memory and battery usage on a daily basis.

Flexible scheduling (up to 30 on / off periods). Simply define a series of intervals and the base station will turn itself on as you need. This mode provides the greatest flexibility for longer surveys where leaving your base station running increases efficiency.

Immediate start. This mode is the traditional mode of starting a base station unit and leaving it until the operator can return to turn off the unit.

## Survey Planning & Efficiency

One of the traditional challenges in ground magnetometer / gradiometer surveys is ensuring that surveys are designed and implemented as effectively as possible.

This v7.0 proton precession system, includes additional capabilities, such as the Walking Mag option that enables the operator to sample while walking. Though there is some increase in noise, many users find this is balanced by improved field productivity. Having nearly continuous data on survey lines also helps increase the accuracy of interpretations.

Another innovation is GPS way point pre-programming. Now you can define a complete survey in the office on your Personal Computer and download this information directly to a rover unit via RS-232. Then, the operator simply performs the survey using the points as their survey guide -- with a resulting decrease in errors and more rapid survey completion.

## Survey Operations

QuickTracker also helps the operator on a daily basis while performing surveys. A key feature is the easy-to-read LCD data display in graphical (or text) format along with a signal quality indicator to determine when readings need to be repeated.

And, although v7.0 proton precession unit is very tolerant to gradients, it also provides a warning indicator so that the operator can monitor data quality continuously. Other features operators appreciate include easy-to-use line and station incrementing -- as well as end-of-line indicators.

## Fast Data Transfer

Another traditional area in which time is lost in surveys is in data transfer. The v7.0 addressed this in several ways:

**Data download is tripled to 115 KBaud (fastest rate possible with RS-232).**

**PC-based data reduction is now possible using an upgraded data transfer software version.**

## GPS & Other Software

Terraplus recently became the first supplier to provide a fully integrated GPS option for its line of proton precession products. Along with metre to sub-metre positioning options, the new processing functionality enables users to take advantage of the benefits of GPS.

## GPS Capabilities

- Pre-programming of way points.
- Post-processing of GPS data. DGPS option enables transfer of GPS data for post-processing and merging via 3rd party software.
- Precise time synchronization of field and base station units. This capability is particularly important for working in noisy magnetic conditions and provides the highest accuracy possible.
- In addition to the software provided, Terraplus is also pleased to offer a variety of data analysis and processing software from 3rd party developers.

## Operating Modes

<b>Manual:</b>	Coordinates, time, date and reading stored automatically at minimum 3 readings per second interval.
<b>Base Station:</b>	Time, date and reading stored at 3 to 60 second intervals.
<b>Remote Control:</b>	Optional remote control using RS-232 interface.
<b>Input / Output:</b>	RS-232 or analog (optional) output using 6-pin weatherproof connector.

## Storage - 16Mbytes (# of Readings)

<b>Mobile:</b>	833,860
<b>Base Station:</b>	2,796,202
<b>Gradiometer:</b>	699,050
<b>Walking Mag:</b>	1,677,721

## Standard Components

GSM-19T console, Data transfer software, batteries, harness, charger, sensor with cable, RS-232 cable, staff, instruction manual and shipping case.

## Optional VLF

<b>Frequency Range:</b>	Up to 3 stations between 15 to 30.0 kHz
<b>Parameters:</b>	Vertical in-phase and out-of-phase components as % of total field. 2 relative components of the horizontal field.
<b>Resolution:</b>	0.1% of total field

## Ongoing Maintenance and Support

As a potential user of a GSM-19T system -- the industry's end-to-end magnetometer / gradiometer solution -- you should also know that we stand by our technologies, products and services.

## Specifications

### Performance

<b>Sensitivity:</b>	< 0.1 nT @ 1Hz
<b>Resolution:</b>	0.01 nT
<b>Absolute Accuracy:</b>	1 nT (+/-0.5 nT)
<b>Dynamic Range:</b>	20,000 to 120,000 nT
<b>Gradient Tolerance:</b>	Over 7000 nT/m
<b>Sampling Rate:</b>	1 reading per second up to 60 sec
<b>Operating Temperature:</b>	-40C to +60C

## Dimensions

<b>Console:</b>	223 x 69 x 240mm
<b>Sensor:</b>	170 x 71mm diameter cylinder

## Weights

<b>Console:</b>	2.1 kg
<b>Sensor and Staff Assembly:</b>	2.2 kg