

GRAVITY

GT-2A AIRBORNE GRAVIMETER

Earth's gravitational field is not uniform; the denser the rock, the greater the gravitational field. As a result, very precise measurements can detect critical variations in rock density. Geotech has flown more than one million line-kilometres measuring minute gravitational field differences.





FEATURES

- Increased sensitivity
- Wider dynamic range
- More precise measurements
- Reliable performance in high turbulence
- High productivity
- Aircraft-independent operations
- Fully automated recording
- In-field Quality Control
- In-field production of preliminary free-air gravity maps

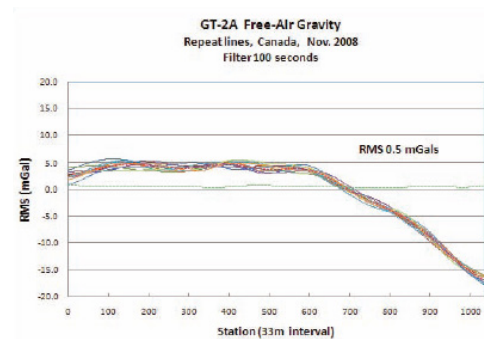
BENEFITS

The GT-2A is fully modern in its mechanical and electronic design and implementation. The vertical gravity sensing unit is highly linear and has virtually no cross-coupling, which allows data to be collected during periods of high turbulence, changes in flight direction, or turns between lines. Shorter lead-ins improve survey efficiency and reduce cost.

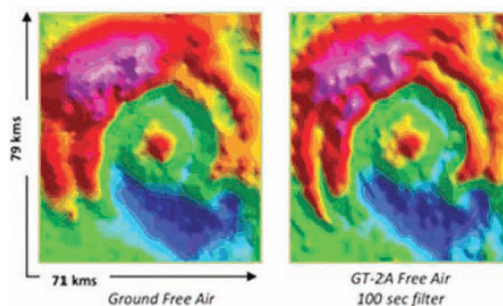
Filters depending on aircraft speed and flight conditions provide spatial resolution ranging from 1.2 kms to 3.5 kms.

Dual dynamic ranges provide high precision data in calm to turbulent flying conditions. Data is acquired through short periods of saturation in extreme turbulence by the automatic application of reduced order Kalman filters, enabling platform misalignment to be computed and hence controlled. The axial gravity sensing element is highly linear, has a 100 Hz bandwidth, and effectively zero cross-coupling. The automatic calibration program computes accelerometer scale factor and errors in perpendicularity between the accelerometer-sensitive axis and the platform surface.

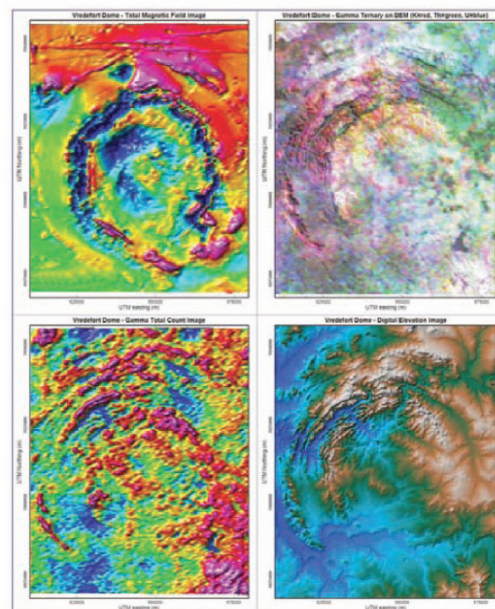
| | |
|---|---|
| Range | 9.75 to 9.85 m/sec ² |
| Drift (corrected) | <0.01 mGals |
| Error in gravity anomaly estimation (RMS) static mode up to 12 hours on bench | 0.6 mGals (+/-1 LSD*) |
| Error in gravity anomaly estimation (RMS) survey mode | 0.01 Hz cut-off: 0.6 mGals (+/- LSD*) |
| Attitude limits | Roll: ±45° Pitch: ±45° |
| Operating temperature | +5°C to +50°C |
| Power | Operating: 150 W at 27 Vdc Standby: 50 W at 27 Vdc |
| Dimensions | Console: 400 x 400 x 600 mm Base: 600 x 300 mm |
| Service life | 30,000 hours |
| *Least significant digit | |



Repeat lines flown with the GT-2A in November 2008 in Ontario, Canada with RMS accuracy = 0.5 mGals.



Fixed-wing survey over the Vredefort Dome SW of Johannesburg: NS lines spaced 1 km; left image is ground data courtesy of the Geoscience Council of South Africa (upward continued to survey altitude); right image is the GT-2A data (data provided by Canadian Micro Gravity). The accuracy for the survey was 0.6 mGals RMS.



Magnetic and Radiometric data acquired with the GT-2A gravity data during the March 2009; top left = Total Magnetic Intensity; top right = Total count; bottom right = DEM (data provided by Canadian Mirco Gravity).