

GroundVue 3 Data Sheet

The Groundvue 3 Ground Penetrating Radar (GPR) system manufactured by Utsi Electronics is designed specifically as a near surface geophysics tool. The Groundvue 3 is perfectly suited to civil and structural engineering, environmental and archaeological applications.

The Groundvue 3 (GV3) can operate a wide choice of bistatic antenna from 6GHz, 4GHz, 1.5GHz, 1GHz, 400MHz and 250MHz central frequencies. The GV3 can be supplied as a single channel or 8 channel system; enabling the operator to optimise their data acquisition procedure by recording either; multiple transects or multiple antenna with a range of frequencies.



GroundVue 3 8 channel GPR controller configured with 6 1GHz antenna.

The GV3 system can be mounted onto a trolley for utility detection or engineering projects. Alternatively the system can be mounted to the underside of a vehicle for road inspection surveys.

The high pulse repetition frequency coupled with unique stacking functions permit each channel to be recorded simultaneously without cross talk. The record length for each channel is fully independent permitting the operator to have complete control over data acquisition. The system is highly modular and can be adapted to any GPR application.

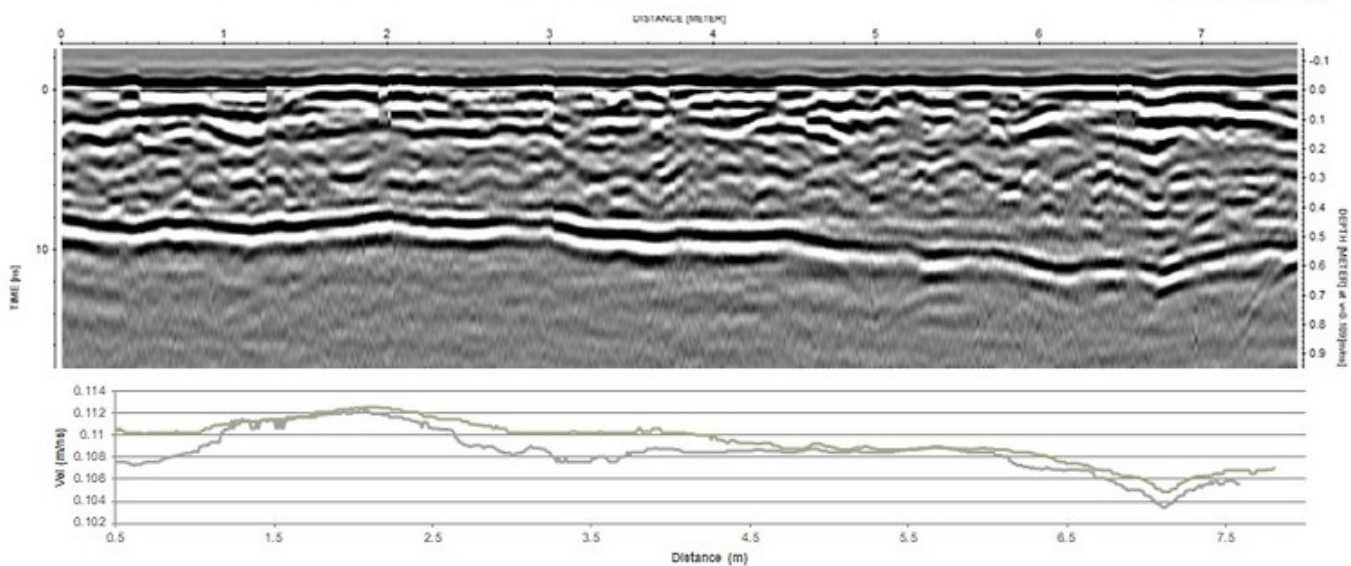
The intuitive user interface and versatile display tools help an operator to quickly and easily analyse data in the field and implement quality control measures.

Unique to the Groundvue3:

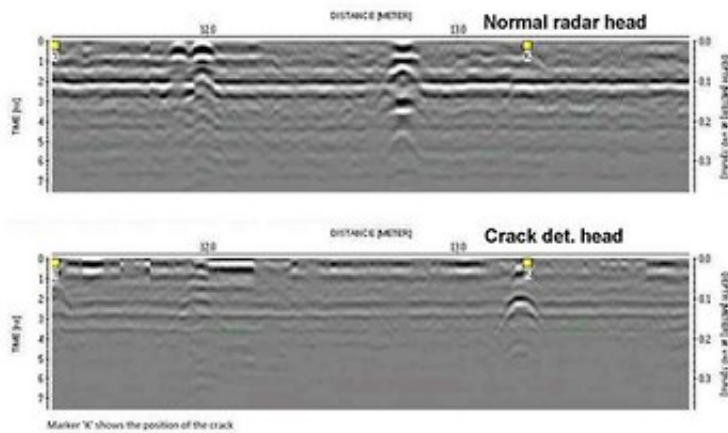
Automatic Velocity Calibration (AVC)

The GV3 simultaneously triggers up to 8 channels, without cross channel interference. Using multiple receivers (with differing offsets) connected to a single transmitter, continuous comparative data is created. Through tracing coincident layers from each dataset it is possible to calculate transmission velocity for the full length of the data collected, the whole processes has been automated in ReflexW. The data can then be used to identify anomalous areas prior to data processing and interpretation. The method is proving particularly effective for accessing the number of cracks along road surfaces by inferring subsurface moisture distribution; the theory being cracks retain or allow more moisture to be present under the road course.

GPR velocity mapping – Dipping Duct



Crack Depth detection Head (CDH)



The crack depth detector head is an adapted bistatic antenna. The geometry of the 1.5GHz or 3GHz transducer pair is specifically designed to enhance responses from vertically orientated anomalies like cracks, whilst being relatively unresponsive to horizontal strata. As a result the antenna is typically deployed alongside a standard 1.5GHz bistatic antenna, or the 4GHz horn antenna, as part of a GroundVue3 multi-channel array. Through pairing the CDH with a standard antenna it is possible to clearly differentiate between features during data acquisition and mark them accordingly.

GroundVue data can be processed in a multitude of third party software packages including; RelfewW, GPR SLICE, GPRSoft or RoadDoctor.

The Latest version of the GroundVue data acquisition software can be accessed from this link - [GroundVue Software](#).

Technical Specifications

Available Antenna:	6GHz, 4GHz, 1.5GHz, 400MHz, 250MHz and Crack Detection Head.
Number of Channels:	1 or 8
Record Length:	10 to 160ns (20 to 320ns Version Available on request).
Samples Per Record:	255 or 512
Data Format:	Utsi Electronics: .hrd RADAN: .dzt SEGY: .sgy
Dynamic Range:	133dB
Data Bits:	16 ADC
Trace Interval:	1 to 256cm to free running.
Scan Rate:	Up to 1600Hz when operating a single channel (200 scans per second when operating all 8 channels).
Stacking:	Automatic (determined by selected scan rate).

Pulse Repetition frequency:	Up to 2.5MHz.
Frequency Response:	125MHz to 8GHz.
Data Logger:	Laptop PC or tablet running Windows XP to 10.
Data Transfer:	Via Wired or wireless network (TCP IP protocol).
GPS:	Enabled, requires NMEA GGA sentence.
Power Supplied:	Internal Li Ion battery for up to 7 hours operation. Or external 12V battery.

Gallery



Cart with GV3_8 multi-channel controller and 400MHz GPR antenna



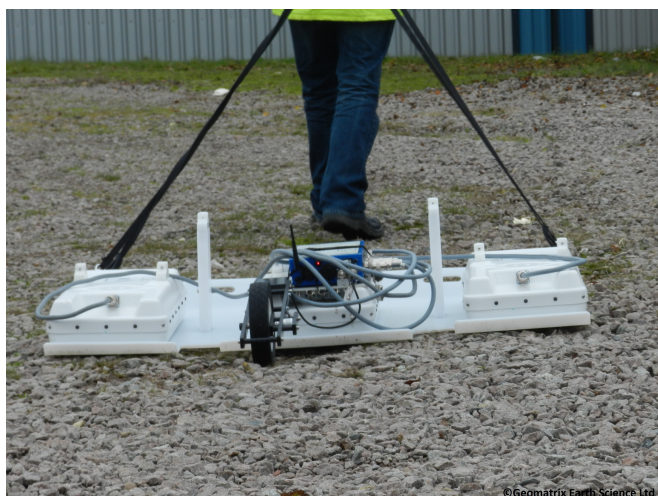
Close-up of 400MHz antenna mounted onto the 4 wheel cart



GroundVue 3_8 channel controller.



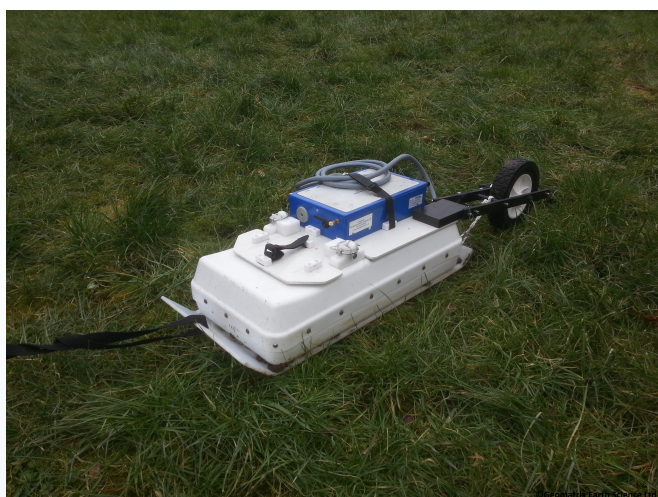
Windows rugged tablet records data via wireless network



GroundVue 3 with 3x400MHz antenna



Matt towing the GroundVue3 400MHz array.



GroundVue 3 mounted on 400MHz antenna and trailing odometer wheel.



GV3 with 4GHz antenna and hand cart.



4GHz antenna with external receiver for Transillumination measurements