TECTERRA GEOMATICS LAB EQUIPMENT

TECTERRA Geomatics Lab offers Alberta companies and university applied research projects access to state-of-the-art geomatics technology development equipment. The equipment is available exclusively for product development and test for commercialization purposes. The equipment is not intended for direct revenue generation, fundamental research or academic purposes. The equipment is also available for highly qualified personnel training, technology trial and demonstration as well as evaluation of new geomatics applications.

Name	Description of Device	**Application**
GNSS Simulator	GPS, GLONASS, Galileo, Inertial and WiFi simulator	- Allows for simulation of various GNSS signals - GNSS receiver & antenna design - GNSS -enabled consumer product design and testing
Optech ILRIS 3D Laser Scanner	Laser Scanner	- 3D scanning and modelling - Long range surveying - Mine planning, Civil Engineering, In-motion scanning
Australis Photogrammetry	Photogrammetry cameras and software	- 3D image based measurements and modelling - “As-built” surveys - High-precision metrology applications - Low- to moderate-accuracy measurement employing consumer digital cameras.
FLIR660 IR Camera System	Handheld, GPS enabled, Infrared camera	- Thermal camera for measuring heat loss - Insulation improvement - Heat monitoring - GPS tagging allows for spatial referencing
Lidar sensor HDL-32E	Lidar sensor	- Up to 800,000 points per second - 100m range and +/-2cm accuracy - 3D modelling and measurement
Pulse Ekko Pro GPR + software	Ground penetrating radar Multiple configurations	- Geological stratigraphy - Structure assessment - Glaciology and ice sheets
Conquest GPR + software	Ground penetrating radar Concrete imaging	- Onsite concrete imaging - Located post-tension cables - Map rebar, find voids, measure slab depth
SPIDAR GPR + software	Ground penetrating radar	- Network of GPR sensors - Collect multiple data sets of complimentary resolutions and depths
Noggin GPR + software	Ground penetrating radar	- Buried utilities - Forensics and archaeology - Military and security - Geotechnical and environmental

Equipment list updated: November 2, 2011

Name	Description of Device	Application
iGrav relative gravimeter	Gravity measurements	- Simplified superconducting gravimeter - An ultra-high-precision continuous gravity reference station - Measurement of subsidence caused by oil, gas, or water extraction
A-10 Absolute Gravimeter	Gravity measurements	- Absolute measurement of gravity values - Geophysical, earthquake & environmental monitoring - Exploration and resource management
NovAtel GNSS 750 Antenna	GNSS antenna able to receive GPS, Galileo, and GLONASS signals	- Precise surveying - Multi-system measurements - High Precision base station
NovAtel 628 GNSS Receiver	GNSS receiver capable of integration GPS, Galileo, and GLONASS signals	- Precise surveying - Multi-system measurements - High Precision base station
Re-radiating GNSS Antenna	Allows GNSS signals to be rebroadcast indoors	- Device testing - Indoor positioning
3D Colour Scanner	Handheld 3D scanner for rapid prototyping	- Scan objects of any size to create a precise and accurate 3D model - XY Accuracy of 50 microns - Resolution 0.1mm
Rapid Prototype machine and 3D Printer	3D Printer for creating rapid prototypes	- Rapid prototyping of new products - Build chamber allows creation of objects up to 8”x10”x8” - Build accuracy of up to 0.15mm
IMU-CPT	Inertial measurement system	- Precise measurement of position and orientation - Fibre optic gyros and MEMS accelerometers -
IMU-FSAS	Tactical grade inertial measurement unit	- Very precise measurement of position and orientation - Closed loop fiber optic gyros and servo accelerometers - Position, velocity and attitude solution generated at up to 200 Hz