PENTAX | G3100-R1

PRECISION SATELLITE SURVEYING WITH WIRELESS COMMUNICATIONS

GPS | GLONASS

Positioning System

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FEATURES

- Single, rugged housing with all components for field survey and stake out
- State of the Art 136-channel AsteRx2e receiver with GPS and GLONASS

- Integrated satellite antenna for optimized satellite tracking
- Base or Rover configuration for standard equipment use
- Internal GSM Modem for connection to Real Time Networks
- Internal UHF Radio for RTK ready units
- Easily removable SD Card for new Data Logging
- Bluetooth on-board for a cable free controller
- Rugged field controller for efficient field survey
- Optional External Radio for greater transmission range
- Two Hot Swap Li-Ion batteries for continuous operation and intelligently switchable
- Power Supply via cable for long sessions
- Open interface protocols for various types of handheld

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POSITIONING SYSTEM

The PENTAX Positioning System G3100-R1 is a high precision satellite receiver and communication unit specifically designed for the surveying market. Integrated with state-of-the-art technology, the G3100-R1 provides surveyors high productivity, performance and flexibility.

STATE OF THE ART RECEIVER

The G3100-R1 uses the AsteRx2e GNSS engine which measures both GPS and GLONASS constellatieons for robust and accurate satellite positioning.
The advanced receiver technology includes Receiver Autonomous Integrity Monitoring Multipath Estimation and a standard output rate up to 25 Hz. The G3100-R1 combination of a GNSS receiver with a matched internal antenna provides an integrated product with optimal performance that is ready for use at turn-on.

BASE OR ROVER CONFIGURATION

With the internal radio designed into each G3100-R1, any unit may be configured as a local base station to transmit corrections for RTK surveys without any change in hardware.
For extended transmission range, external radios may be interfaced through a serial port.

MULTIPLE COMMUNICATION CHOICES

Surveyors have a choice of communication options that are all integrated into the single rugged housing. The communication options include: a GSM/GPRS modem for connecting to Real Time Reference Station networks, UHF (406-470 MHz) radio for local data transmissions, or the option to use an external radio through a serial port.

A rugged, lightweight single housing, mounted on a pole or tripod, the wireless G3100-R1 receiver works seamlessly and is recognized as the most powerful and easy-to-use field data collection software on the market. Complete with a "Ready To Go" equipement package.

HOT SWAP BATTERIES WITH FUEL GAUGES

The G3100-R1 houses two batteries that may be hot swapped for continuous operation.
The efficient G3100-R1 provides a full day's operation from the two internal rechargeable Li-Ion batteries (7.2V, 5000 mAh). Re-charging is done within a few hours with the included charger. All PENTAX batteries integrate fuel gauge technology to display current battery status.
The unit may also be powered from an external battery for extended operation.

EASILY REMOVABLE SD CARD FOR DATA LOGGING

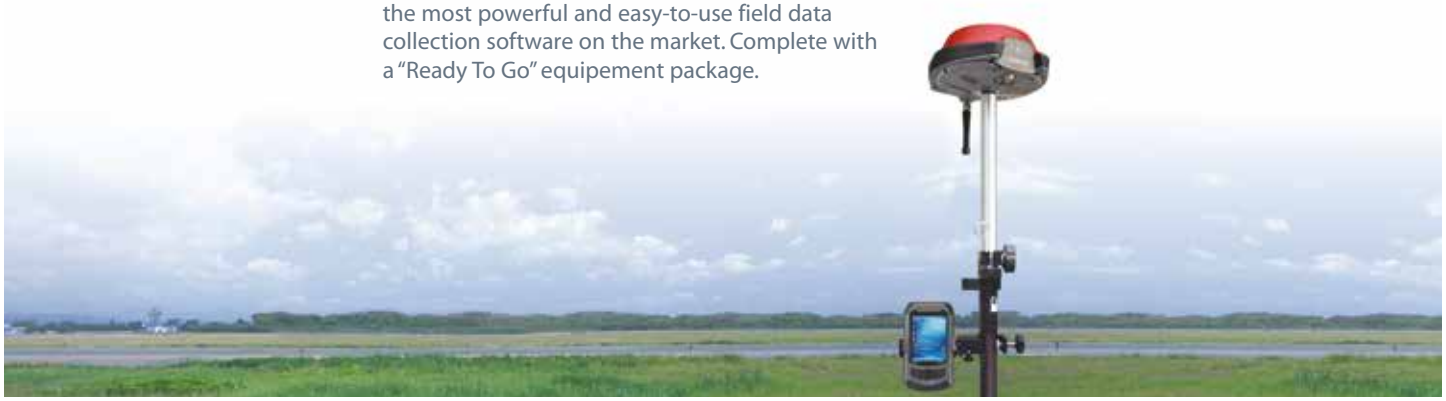
For ultra portability and data management, the G3100-R1 logs raw data onto a removable SD card that is accessed easily through a convenient door. With the G3100-R1, getting data to the PC for post processing is simply a matter of inserting the SD card into the office PC, eliminating the need for cable download and additional software.

BLUETOOTH CONTROLLER – NO CABLES INTEGRATED

Bluetooth provides cable free operation for use with a pole mounted data collection systeem with the ease of use and portability required for survey/GIS applications. Real time records are also logged on the controller and the user can do wireless transfer to a PC easily.

OPEN ARCHITECTURE

PENTAX believes in Open Architecture and the advantages that this brings to the market including the ability for users to "plug and play" and swap equipement when required, to create easy upgrade paths, and not to be "locked in" to any one supplier on the market. Due to our Architecture Philosophy, all our data interface protocols are publicly available and we are pleased to work with any suppliers to help them interface with the G3100-R1 .



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GNSS SPECIFICATIONS

The G3100-R1 features the AsteRx2e GPS/GLONASS dual frequency receiver, the latest entrant to the high precision positioning market. The AsteRx2e engine includes RAIM and provides outstanding performance for Survey and GIS applications.

Model		G3100-R1	
Channel Configuration		136 channels (dual frequency) for GPS, GLONASS and SBAS	
Single Tracked	GPS	L1-C/A, L1-P(Y), L2-P(Y) and L2C	
	GLONASS	L1-C/A, L2-C/A	
Position accuracy		HORIZONTAL	VERTICAL
	Standalone	1.3 m	1.9 m
	SBAS	0.6 m	0.8 m
	DGPS	0.5 m	0.9 m
RTK Performance	Horizontal Accuracy	1 cm + 1 ppm	
	Vertical Accuracy	2 cm + 1 ppm	
	Average Time to Work	7 sec.	
	Availability	99.99%*1 (Baseline < 20km)	
Static Performance	Horizontal Accuracy	2 mm + 0.5 ppm	
	Vertical Accuracy	5 mm + 0.5 ppm	
Ports		Lemo 5-pin, serial port for Handheld PC (RS232C)	
		Lemo 8-pin, serial port for external radio/modem	
		Lemo 4-pin for external power (+9VDC - +15VDC)	
Internal Radio Modem*2	Frequency	406-470 MHz	
	Output Power	Max. 1W	
GSM/GPRS Modem	Protcol	NTRIP	
Power	Internal Battery	2 x Li-Ion (Swappable), 2500 mAh, 7.4V	
	Current Drain	1.0 to 1.5 A nominal	
		2.75 A Peak	
	Battery Running Time	Approx. 8 hours with 2 batteries	
Weight		1.4 kgs with 2 batteries	
Dimensions		198 mm Dia. x 99 mm High	
Environmental Specifications	Operation Temperature	-20°C to +65°C	
	Storage Temperature	-40°C to +75°C	
	Shock/Drop	2 m	
Velocity Accuracy		HORIZONTAL	VERTICAL
	Standalone	2 cm/sec	4 cm/sec
Data Output		25Hz data output rate (User selectable)	
		NMEA v2.3 output format, up to 10 Hz	
		RTCM SC104 v2.2, 2.3, 3.0 or 3.1	
		CMR2.0 and CMR+	
Latency		< 20 msec	
Time to First Fix	Cold Start	< 45 sec	
	Warm Start	After power-on < 20 sec	
		Re-acquisition < 1.2 sec	
Bluetooth		Class 2	
RoHS		Compliant	
Waterproofing		IP67	
Certification		CE	
Accessories	Standard	2 x Li-Ion rechargeable battery pack	
		Battery charger	
		2 GB SD Card	
		UHF radio antenna	
	Option	Controller	
		External power cables	
		External radio/modem cable	
		Carbon Pole	

*1 GNSS precision and reliability are subject to anomalies due to multipath, obstructions, satellite geometry, and atmospheric conditions.
*2 Receiver without Internal Radio Modem connected (model name G3100-R1-N) is optionally available.

PENTAX Positioning System is dedicated to providing customers with first class positioning system products and freedom of choice. We have carefully designed high-quality products to meet the needs of today's surveyors based on the experience of many years involved in instrument design and construction. Our engineers have been involved in Survey products since the beginning of the Satellite Surveying Era. We are committed to ease of use, a low cost of ownership and flexibility to accommodate different working environments. Our close partners are carefully chosen and are committed to these values as we are.

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