e-survey

M1G2

Portable Heading Solution

M1G2 is suitable for monitoring, machine control and CORS reference station. It has rich data streams such as radio, serial port, Bluetooth, WIFI and 4G network. User can use any phone or tablet to configure device easily from the powerful Web UI.

Multi-constellation and Multi-frequency
With 1100 channels of GNSS tracking, M1G2 covers multiple GNSS signals to provide stable and reliable data source.

Rich Data Interface
M1G2 supports multiple data interface such as serial port, 1PPS, event to demand various of applications. Its powerful Linux system ensures a smooth operation without any worries.

Rich Wireless Communication
M1G2 supports WIFI, Bluetooth, Ethernet, SIM card. User can send or receive data through any methods.

Suitable for Base and Rover
Its lightweight design makes it possible to set up M1G2 as rover or base station for different applications.

L-Band Atlas
Atlas is a service to provide global precision correction service over L-band satellites. With ATLAS subscription, M1G2 is able to achieve centimeter accuracy without any correction data.

Web UI
It is able to view position status, configure device, download data and update firmware from Web user interface with any phone, tablet or PC.

Smart Alert
It will alert user through email or SMS once the charger is disconnected, temperature is too high or memory storage is almost full.

Rugged Design
M1G2 main body is using aluminum alloy materials to provide strong shock and vibration resistant characteristics. IP67 certification ensures operation in various of tough environments.

Product Specification

GNSS

Satellites Tracking	GPS: L1CA/L1P/L1C/L2P/L2C/L5 BDS: B1I/B2I/B3I/B1C/B2a/B2b/ ACEBOC GLONASS: G1/G2/G3, P1/P2 GALILEO: E1/E5a/E5b/E6/ALTBOC QZSS: L1CA/L1C/L2C/L5/LEX IRNSS: L5 SBAS[1]: L1/L5 L-Band: Atlas H10/H30/Basic
Channels	1100
Signal Reacquisition	< 1 sec
Cold Start	< 60 sec
Warm Start	< 30 sec
Hot Start	< 10 sec
Initialization Reliability	> 99.9%
Update Rate	10 Hz standard, 20 Hz optional
Operation System	Linux
Internal Memory	8 GB
External Memory	Support SD card

Performance

High Precision Static	H: 2 mm + 0.1 ppm V: 3 mm + 0.4 ppm
Static/Fast Static	H: 2.5 mm + 0.1 ppm V: 3.5 mm + 0.4 ppm
RTK	H: 8 mm + 1 ppm V: 15 mm + 1 ppm
Code Differential	H: 0.3 m V: 0.6 m
SBAS	H: 0.3 m V: 0.6 m
L-Band	Atlas H10: 4 cm RMS Atlas H30: 15 cm RMS Atlas Basic: 30 cm RMS
1PPS	10 ns
Heading	0.16° @0.5 m baseline 0.08° @1.0 m baseline 0.04° @2.0 m baseline 0.02° @5.0 m baseline

Internal Modem

Support Band	Global GSM/WCDMA/LTE

Power Supply

Voltage	10~28 VDC with over-voltage protection

Internal Radio

Type	TX and RX
Frequency Range	410 ~ 470 MHz
Channel Spacing	12.5 KHz / 25 KHz
Emitting Power	1 W

Operation Range	3 ~ 5 Km typically 10 Km with optimal conditions[2]
Protocol	Satel, PCC, TrimTalk, TrimMark III, South, HiTarget

Communication

Bluetooth	BT5.0
WIFI	802.11 b/g/n, hotspot/client mode
Ethernet	Support

Port	2 x Lemo-0, 2-pin, DC in
	2 x GNSS TNC female
	1 x LTE, SMA female
	1 x UHF
	1 x Nano SIM
	1 x TF card
	1 x DB26:
	    2 x RS485
	    1 x RS232
	    1 x CAN
	    1 x Mini USB, support OTG
	    1 x 1PPS, SMA female
	    1 x Event, SMA female
	    1 x RJ45 ethernet

Baud Rate	9600 ~ 115200 bps
Web UI	Support
NMEA Output	NMEA0183, NMEA2000, Binary
Correction Data	RTCM2.X, RTCM3.X (MSM), CMR, CMR+, DGPS, BINEX, RAW
Data Recording	Support 8 recording simultaneously
Recording Format	Binary, RINEX, BINEX
Recording Interval[2]	2s, 5s, 10s, 15s, 30s, 60s 1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz
Data Stream	1 x Bluetooth 3 x Serial port 4 x NTRIP server streams 1 x NTRIP client streams 5 x Socket (TCP/UDP) streams
Smart Alert	Email and SMS alert
FTP Function	FTP server FTP client (FTP push)
NTP Server	Support
Others	DDNS, SNMPD, Firewall

Physical

Dimension	150 x 105 x 34 mm
Weight	550 g
Operating Temperature	-40℃ ~ +65℃
Storage Temperature	-45℃ ~ +80℃
Water/Dust Proof	IP67
Shock and Vibration	Survive a 1.2 m drop on concrete floor
Humidity	Up to 100%
Indicators	Heading, radio, cellular, WIFI, Bluetooth, satellite, power
Certificate	CE

1. BAS supports WAAS, EGNOS, GAGAN, SDCM, MSAS.
2. The maximum rate depends on the GNSS registration.