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 form 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.

Web UI

It is able to view position status, configurate 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/L1C/L2P/L2C BDS: B1/B2 GLONASS: L1CA/L2CA/L2P GALILEO[1]: E1, E5b QZSS: L1CA/L1C/L2C IRNSS[1]: L5 SBAS[2]: L1/L5
Channels	555
Signal Reacquisition	< 1 sec
Cold Start	< 60 sec
Warm Start	< 30 sec
Hot Start	< 19 sec
Initialization Reliability	> 99.9%
Update Rate	20 Hz standard
Operation System	Linux
Internal Memory	8 GB
External Memory	Support SD card up to 32GB

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
1PPS	20 ns
Heading	0.08° @2 m baseline 0.05° @4 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 1.5 m drop on concrete floor
Humidity	Up to 100%
Indicators	Heading, radio, cellular, WIFI, Bluetooth, satellite, power
Certificate	CE

1. Galileo is optional.

2. BAS supports WAAS, EGNOS, GAGAN, SDCM, MSAS.

3. The maximum rate depends on the GNSS registration.