Geographic Information System (GIS)

Rev. A

Your Projects We Managed

Through 30+ years, Allis Communications has been specializing in Geographic Information System (GIS) development using Real-time Kinematic (RTK) technology. It's designed in a total solution including 4G LTE Wireless Gateway (MG740) embedded with GNSS Receiver inside, high performance GNSS Antenna (MBA20) and precise RTK software. Besides, the 4G LTE Wireless Gateway is featured with 4G LTE, WiFi 802.11.b/g/n, Serial-to-LAN port, WAN port, Micro SD Card or power USB as storage. The user-friendly WEB GUI is easier for setting as Master/ AP/ Client mode, FTP, FOTA, COTA, serial-to-WiFi (UDP/ TCP), free DDNS, DHCP server on LAN, WDS/WISP, PPPOE, IPSEC/ VPN security, manual/or periodical setting for the power or light on/off via GPIO relays. RTK software is comprehensive design supporting N-trip, TCP/IP server/Client mode and serial port. Output data has POSITION result, RAW data to RINEX.
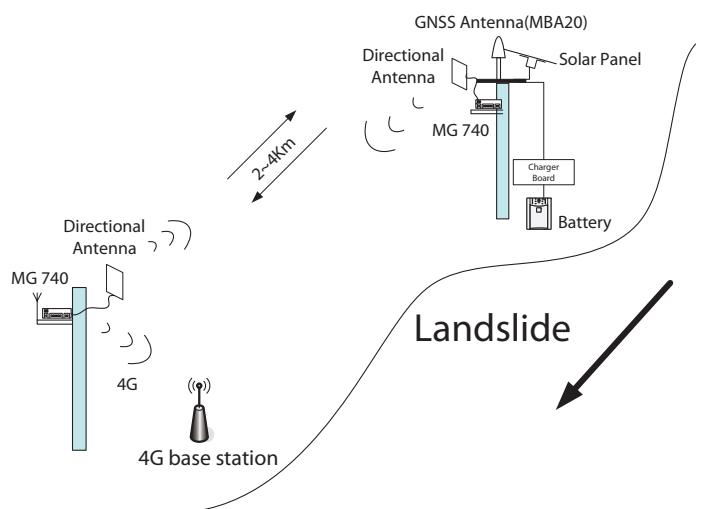
FEATURE & BENEFITS

- 184-channel, GPS L1C/A, GLO L1OF, GAL E1B/C, BDS B1I, QZSS L1C/A L1S L5, SBAS L1C/ASupport DGPS, WAAS, EGNOS, MSAS (GPS, Galileo, BDS, GLONASS, QZSS)
- Centimeter accuracy Integrated 4G LTE modem
- Data storage (64 GB memory card)
- USB storage
- Static Carrier Phase: 5mm+/-1ppm
- Dynamic Carrier Phase ： 10mm+/-1ppm
- Robust ALL-IN-ONE design with Cellular, WiFi, GNSS and RTK Algorism
- Comprehensive protocols support
- Remote management function
- User-friendly GUI
- Compact & light chassis design
- Wide operating temperature from -20 to +65º C
- Cost-effective solution
- Customization orientation

GNSS RTK APPLICATIONS

- **Automotive automatic navigation**
- **Bridge monitoring**
- **Building monitoring**
- **Position surveying**
- **Landslide monitoring**
- **Geographical survey**
- **Precision positioning**
- **RTK surveying**
- **GNSS monitor station**
- **Machine auto-steering**
- **Service development and testing**

GNSS Antenna(MBA20)
Directional Antenna
Solar Panel
MG 740
Charger Board
Battery
2~4Km
Directional Antenna
MG 740
Landslide
4G
4G base station

HARDWARE INTRODUCTIONS

CPU/Module

Core	MIPS24KEc,580MHz
RAM	1G bit DDR2 RAM
Flash Memory	128M Bit Flash
Wireless	802.11 b/g/n
Antenna	2T2R
Linux OS	Linux 2.6.3

Cellular

GSM Module	4G LTE
Frequency	Band 1/Band2 --5.76/7.2 Mbps Band 13 --25/62 Mbps Band7/20 --50/100 Mbps

Connector

Ethernet Port	2 ports (LAN and WAN)
Serial Port	3 Ports
TFlash/Micro SD	1
USB Port	1
SIM Card	1
WiFi Antenna	2
Cellular Antenna	1
GPIO/Relay	2(Relay Normal Open)

Power

Power In		12V (7V ~36V)
Power consumption	MAX	Max : 4W (4G full run)
	Typical	With 4G Cellular : 2.8W Without 4G Cellular: 2W

GNSS

Receiver type	184-channel, GPS L1C/A, GLO L1OF, GAL E1B/C, BDS B1I, QZSS L1C/A L1S L5, SBAS L1C/ASupport DGPS, WAAS, EGNOS, MSAS
update rate	0.05s (20Hz) 1s ～ 60s
Accuracy	Static: 5mm±1ppm(H) 1cm±2ppm(V) Dynamic：10mm±1ppm(H) 3cm±5ppm(V)
Sensitivity	Tracking -167 dBm
Protocols	NMEA, UBX binary, RTCM v. 3.4, SPARTN v. 2.0.1
Serial setting	115200 Baud, 8 bits, no parity bit