

BM980 TECHNICAL FEATURES

RECEIVER DUAL ANTENNA

|                            |                                   |
|----------------------------|-----------------------------------|
| Satellite signals tracked  | GPS: L1 C/A, L2P, L2C, L5         |
|                            | GLONASS: L1 C/A, L2P, L2C, L3     |
|                            | BEIDOU: B1, B2, B3, ACEBOC        |
|                            | GALILEO: E1, E5a, E5b, E6, ALTBOC |
|                            | QZSS: L1, L2, L5                  |
| PPP                        | B2b PPP, HAS                      |
| Channels                   | 1408                              |
| Position Rate              | Up to 20 Hz                       |
| Signal Reacquisition       | < 1 s                             |
| RTK Signal Initialization  | Typically < 10 s                  |
| Hot Start                  | Typically < 15 s                  |
| Initialization Reliability | > 99.9 %                          |
| Internal Memory            | 8 GB                              |
| OS                         | Linux                             |
| Display                    | 1.45" TFT LCD, 240 x 320 pixels   |
| Tilt Sensor                | IMU                               |

POSITIONING<sup>1</sup>

STATIC GNSS SURVEYING

|                                   |                      |
|-----------------------------------|----------------------|
| High Precision Static Horizontal  | 2.5 mm + 0.1 ppm RMS |
| High Precision Static Vertical    | 3.5 mm + 0.4 ppm RMS |
| Static and Fast Static Horizontal | 3 mm + 0.5 ppm RMS   |
| Static and Fast Static Vertical   | 5 mm + 0.5 ppm RMS   |

CODE DIFFERENTIAL POSITIONING

|          |            |
|----------|------------|
| Accuracy | 0.40 m RMS |
|----------|------------|

SBAS POSITIONING<sup>2</sup>

|          |            |
|----------|------------|
| Accuracy | 0.60 m RMS |
|----------|------------|

REAL TIME KINEMATIC (< 30 Km) – NETWORK RTK<sup>3</sup>

|                      |                    |
|----------------------|--------------------|
| Fixed RTK Horizontal | 8 mm + 1 ppm RMS   |
| Fixed RTK Vertical   | 15 mm + 1 ppm RMS  |
| Speed accuracy       | <0.03m/s RMS       |
| Heading accuracy     | 1 m baseline: 0.2° |

INTEGRATED GNSS ANTENNA

High accuracy multi-constellation antenna, zero phase center, with internal multipath suppression

INTERNAL RADIO 2-5 WATT

|                 |   |
|-----------------|---|
| Type            | Tx - Rx   |
| Frequency Range | 410 - 470 MHz   |
| Channel Spacing | 12.5 KHz / 25 KHz   |
| Range           | 5 Km in urban environment<br>Up to 15 Km with optimal conditions <sup>4</sup> |

INTERNAL MODEM

|      |  |
|------|--|
| Band | LTE FDD:<br>B1/B2/B3/B4/B5/B7/B8/B12/<br>B13/B18/B19/B20/B25/B26/B28<br>LTE TDD: B38/B39/B40/B41<br>UMTS: B1/B2/B4/B5/B6/B8/B19<br>GSM: B2/B3/B5/B8<br>Nano SIM card |
|------|--|

COMMUNICATION

|                    |  |
|--------------------|--|
| I/O Connectors     | Lemo connects the external power supply and external radio<br>Type-C, for receiver power supply and data transfer<br>GNSS port for second antenna    |
| Bluetooth          | 2.1 + EDR, V5.0  |
| Wi-Fi              | 802.11 b/g/n   |
| Web UI             | To upgrade the software, manage the status and settings, data download, etc. via Smartphone, tablet or other electronic device with Wi-Fi capability |
| Reference Outputs  | RTCM2.3, RTCM3.0, RTCM3.2 MSM, CMR, CMR+, DGPS   |
| Navigation Outputs | NMEA 0183  |
| Heading            | Supported with second antenna  |

POWER SUPPLY

|              |   |
|--------------|---|
| Battery      | Internal rechargeable<br>7.2 V – 13600 mAh                                  |
| Voltage      | 9 to 28 V DC external power input with over-voltage protection (5-pin Lemo) |
| Working Time | Up to 15 hours  |
| Charge Time  | Typically 4 hours   |

PHYSICAL SPECIFICATION

|                       |  |
|-----------------------|--|
| Dimensions            | Ø 151 mm x 92 mm   |
| Weight                | 1.5 Kg   |
| Operating Temperature | -40°C to 65°C (-40°F to 149°F)   |
| Storage Temperature   | -40°C to 80°C (-40°F to 176°F)   |
| Waterproof/Dustproof  | IP67   |
| Shock Resistance      | Designed to endure to a 2 m pole drop on hardwood floor with no damage |
| Vibration             | Vibration resistant  |



1. Accuracy and reliability are generally subject to satellite geometry (DOPs), multipath, atmospheric conditions, and obstructions. In static mode, they are subject even to occupation times: the longer the baseline, the longer the occupation time must be.  
2. It depends on the SBAS system's performance.  
3. Network RTK precision depends on the network's performance and is referenced to the closest physical base station.  
4. Varies with the operating environment and with electromagnetic pollution

Illustrations, descriptions and technical specifications are not binding and may change

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BM980 GNSS Receiver

Up To 5W Output

