

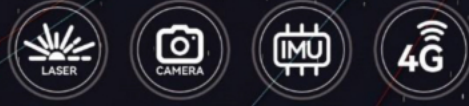
# M20L Laser GNSS Receiver

To be the Best  
GNSS Solution Provider

CE FCC IP67

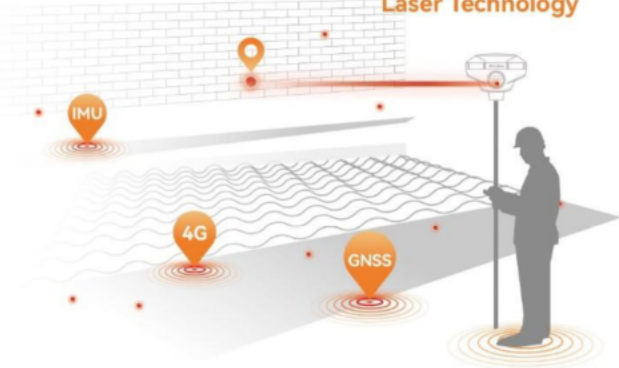
## M20L High Precision Laser GNSS RTK

Meridian M20 Laser GNSS RTK is an innovative solution that combines advanced laser technology with Camera, IMU, and 4G integration. It is calibration-free, significantly boosting operational efficiency and laser measuring makes the rodless survey improve efficiency and reduce risk factors. The M20L laser receiver provides a new way to work in challenging & impossible scenarios with high accuracy, including riverine stake-out, bridge pile surveying, elevation surveying, municipal surveying, and outdoor & indoor combination surveying.



### Latest Laser Technology

Laser technology offers unparalleled advantages in precision positioning and makes surveying work rodless and Easier. Combining cutting-edge laser technology with full constellation GNSS, IMU, and 4G integration, delivers calibration-free accuracy, significantly enhancing work efficiency and reducing potential risks.



### AR Stakeout

Visual positioning eases point finding by overlaying design files onto real scenes, enhancing stakeout efficiency. A high-performance HD camera achieves high accuracy with precise signal tracking. The 360-degree AR stakeout seamlessly switches between the handheld controller and rover, ensuring fast and accurate stakeout experiences.



### Calibration-Free Solution

Equipped with laser & 120° calibration-free IMU technology in a small body, it complements the laser's outstanding performance, extending the M20's application range to locations that traditional RTK systems cannot reach, opening up new horizons for product applications, enhancing customer satisfaction and boosting operational efficiency.



### Longer Working Distance

Equipping the MeridianLink protocol internal radio offers 15km working range and increases flexibility. By eliminating the need for an external radio, the M20L becomes more lightweight, less complex, and more portable, which can lead to increased efficiency and convenience in the field.



### Full Constellations

Supports BDS, GPS, GLONASS, Galileo, QZSS, and SBAS. Its 1408 channels offer comprehensive GNSS signal tracking capabilities.



### Technical Specification

| System                   | System   | Linux   |
|--------------------------|--|---|
| GNSS Signal <sup>®</sup> | Channel  | 1408  |
|                          | BDS  | B11, B21, B31, B1C, B2a, B2b*   |
|                          | GPS  | L1 C/A, L1C*, L2P(Y), L2C, L5   |
|                          | GLONASS  | L1, L2, L3*   |
|                          | GALILEO  | E1, E5a, E5b, E6*   |
|                          | QZSS   | L1, L2, L5, L6*   |
|                          | SBAS   | L5*   |
|                          | NavIC(IRNSS)*  | L1, L2, L5  |
|                          | L-band   | B2b PPP (Only for the Asian-Pacific Region)   |
|                          | Data Format  | CMR, CMR+, RTCM2.X, RTCM3.X   |
| Data Output              | NMEA-0183, RINEX, TXT  |   |
| Data Updating Rate       | Up to 20Hz   |   |
| Time to Recapture        | <1s  |   |
| Cold Start               | <40s   |   |
| Positioning Performance  | Single Point Positioning (RMS)   | Horizontal: 1.5m   Vertical: 3.0mm  |
|                          | DGPS (RMS)   | Horizontal: 0.4m   Vertical: 0.8mm  |
|                          | Real-Time Kinematic (RMS)  | Horizontal: ±(8mm+1x10 <sup>-6</sup> -D)<br>Vertical: ±(15mm+1x10 <sup>-6</sup> -D) |
|                          | Speed Accuracy (RMS)   | 0.03m/s   |
|                          | Static Accuracy (RMS)  | Horizontal: ±(2.5mm+0.5-6-D)<br>Vertical: ±(5mm+0.5-6-D)                            |
|                          | Time Accuracy (RMS)  | 20ns  |
|                          | Laser Accuracy (RMS)   | ±±(8mm+4mm/m)/Tilt Angle≤30°<br>≥0.03m/s  |
|                          | Speed Accuracy   | ≤2cm(Tilt Angle≤60°, Up to 120°)  |
|                          | Tilt Compensation Accuracy   | 200Hz   |
|                          | IMU Update Frequency   | V2.1+EDR/V4.0 Dual Mode<br>802.11 a/b/g/n/ac  |
| Communication            | Bluetooth  | LTE FDD: B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28                                     |
|                          | WiFi   | Static: Up to 30 hours (Typical Power Consumption)                                  |
|                          | Cellular   | WCDMA: B1/2/4/5/6/8/19  |
|                          | Storage  | GSM: B2/3/5/8<br>Up to 64GB   |
| Battery                  | Internal Radio   | Transmitting Power: 2W(37±1dBm) 1W(30±1dBm)   |
|                          | Specifications   | Frequency: 410-470MHz   |
|                          | Operating Time   | Protocol: TRIMTALK, TRIMMK3, SOUTH, TRANSEOT, SATEL, MeridianLink optional          |
| Environment              | Charging   | Air Baud Rate: 9600, 19200  |
|                          | Operating Temperature  | 7.4V, 7000mAh lithium-ion Rechargeable Battery                                      |
|                          | Storage Temperature  | RTK Rover: Up to 22 hours (Typical Power Consumption)                               |
|                          | Anti-seismic   | Static: Up to 30 hours (Typical Power Consumption)                                  |
| Data Formats             | Dust & Waterproof  | Support USB PD 15V/1.5A (Supports Quick Charging Adapter)                           |
|                          | AR Camera  | -40°C~+85°C   |
|                          | Laser Assisted Camera  | -55°C~+85°C   |
|                          | I/O Interface  | 2m Pole Drop Onto Concrete  |
| Dimensions               | IP67   |   |
| Weight                   | 500 MegaPixel, large viewing angle, supports live view stakeout        |   |
|                          | 500 MegaPixel, large viewing angle, supports laser aiming and guidance |   |
|                          | 1x USB type-C Port; 1 x SMA antenna Port;                              |   |
|                          | 1x SIM Card Slot; 1 x 5pin LEMO Port                                   |   |
|                          | 119mmx119mmx76mm   |   |
|                          | 662g   |   |

1. \*Description and Specifications are subject to change without notice.  
2. \*BDS B2b, GALILEO E6, QZSS L6, IRNSS L5 will be provided through future product upgrade.



**Meridian**  
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