DATASHEET

Trimble EMPOWER

EM100 GNSS MODULE

Professional Grade GNSS Performance in the Hand

Add the Trimble® EM100 module to your Ranger 7 to get integrated sub-meter positioning in the field. With support for a range of different correction sources, built in antenna, and support for external antennas the EM100 GNSS module has everything you need to turn your Ranger 7 into an accurate data collection device.

Multiple Constellation Support Provides Global Reach

The EM100 supports multiple GNSS constellations, including GPS, GLONASS, Galileo ,QZSS and BeiDou, to provide a truly global GNSS solution. The EM100 receiver includes the ability to utilize SBAS, Trimble ViewPoint™ RTX or VRS correction sources to suit location and business requirements.

The Trimble ViewPoint RTX² service provides global sub-meter accuracy, using WiFi or cellular where coverage is available, or over satellite L-band for support even in the most remote locations.

Through support of all this technology the EM100 GNSS module provides accurate GNSS information almost anywhere on earth.

Application Integration Options

Positions generated from the EM100 are provided to location services, enabling accurate positioning for any application aware application. Developers requiring richer position data along with tighter integration have a choice of APIs including Trimble GNSS Direct and TPSDK

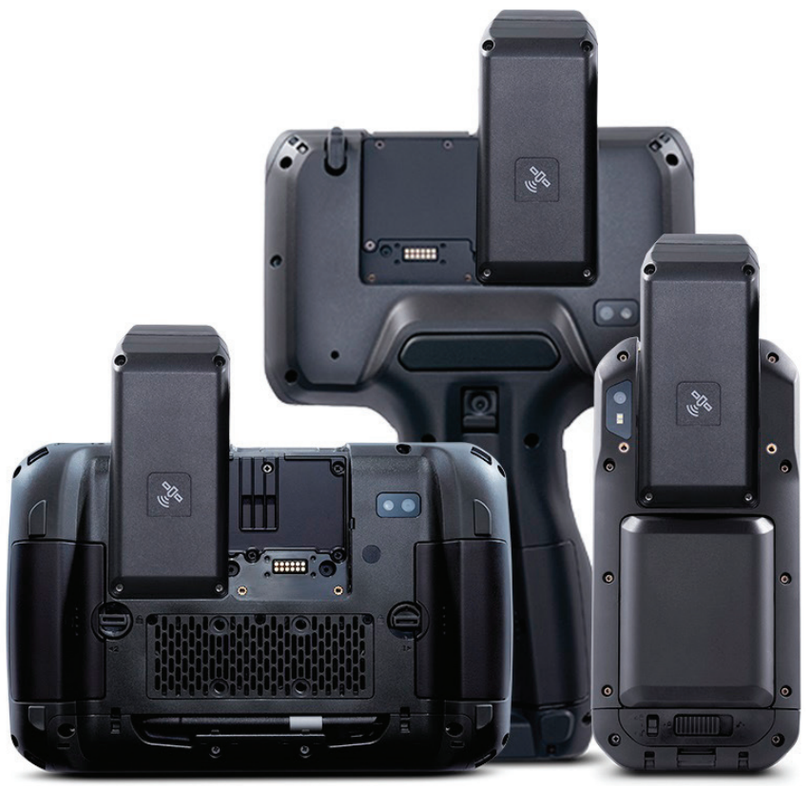
A Fully Integrated GNSS Solution

Unlike many other solutions on the market the Trimble EMPOWER compatible EM100 GNSS module enables a fully integrated user experience. From the rugged 'all in one' device feel to the tightly integrated software, users will realise the benefits of an external GNSS receiver without the need to carry extra equipment.

Key Features

- **Powerful:** High-sensitivity GNSS Receiver with on-board processing of all positioning data
- **Compact:** Integrated antenna
- **Accurate:** Sub-meter real time accuracy from a range of correction sources
- **Global:** Support for Trimble ViewPoint RTX™ for global sub-meter positioning
- **Extensible:** External antenna connector to support a wide range of workflow needs

TRIMBLE EMPOWER ENABLED



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GNSS

Module	Trimble Maxwell 6
Sensor type	L1/G1 GNSS receiver
Internal antenna	Yes, helical antenna
External antenna	SMB Female, 3.4V DC, 150 mA 50 Ohms
Constellations	GPS L1 C/A GLONASS L1 C/A (aka G1C) SBAS L1 C/A (WAAS, EGNOS, MSAS, GAGAN, SDCM[1]) Galileo E1 BeiDou B1 QZSS L1 C/A & L1-SAIF
Raw data output	Yes
Channels	44-channel, parallel tracking
Correction sources	SBAS L1 C/A, LUCH (SDCM[1]), Internet (NTRIP, RAW), ViewPoint RTX[2] (L Band, IP), QZSS L1 SAIF
SBAS	WAAS, EGNOS, MSAS, GAGAN, SBAS ranging
Real time correction protocols	CMR, CMR+, Encrypted CMR+, CMRx, RTCM 2.x DGPS, RTCM 3.2, RTX
Receiver Protocols	DCOL (RT 27 & GSOF), NMEA 0183 (Version 4.10) (Legacy version support 3.01)
Update rate	1 – 10 Hz user configurable
Time to first fix	45 s typically
Reacquisition	< 2 s
Maximum speed	1,850 kph / 1,150 mph / 999 knots
Maximum altitude	9,000 m (29,520 ft)

ACCURACY[3]

SBAS	1 m
VRS (Now) H-Star	75 cm
VRS / DGNSS	75 cm
RTX - ViewPoint	50 cm

ENVIRONMENTAL SPECIFICATIONS

Independently tested IEC ratings:

Water/Dust ingress	IP65, IP67 (IEC 60529)

Meets or exceeds the following standards based on MIL-STD-810G test ratings:

Operating temperature	–30 °C to +60 °C (-22 °F to +140 °F)
Storage temperature	–40 °C to +70 °C (–22 °F to +158 °F)
Drop-shock	1.2 meters (Method 516.5 Procedure IV)
Heavy vibration	Method 514.5 Procedure I Category 24
Humid environment operation	95% RH (MIL-STD-810G Method 507.6)
High altitude operation	30,000 ft (MIL-STD-810G Method 500.5)
High altitude transport	40,000 ft (MIL-STD-810G Method 500.5)
Solar exposure	MIL-STD-810G, Method 505.5, Procedure II

PHYSICAL DIMENSIONS

Size (L x W x H)	132 mm (5.2") x 56 mm (2.2") x 60 mm (2.3")
Weight	143 g (5 oz)

COMPLIANCE

- FCC, IC, CE, RCM, and RoHS

IN THE BOX

- Trimble EM100 GNSS Module
- Quick-start guide

OPTIONAL ACCESSORIES

- External antenna

DEVELOPER RESOURCES

- Trimble EMPOWER Developer Program: Including access to generic Microsoft® Windows® 10 SDK assets and resources, GNSS Direct SDK for access to rich GNSS configuration and data.

1 When available.
2 Trimble ViewPoint RTX service provides global sub-meter accuracy using IP cellular where coverage is available, or over satellite L-band, so remote location work is not a problem.
3 GNSS accuracy may be affected by environmental conditions including multipath, obstructions, satellite geometry and atmospheric conditions. Specified accuracy assumes open-sky conditions.

Contact your local dealer today

TRIMBLE INC
P.O. Box 947
Corvallis, OR 97339
USA
541-750-9200 Phone
empower.trimble.com