

# TECHNICAL SPECIFICATIONS

## GNSS Performance <sup>(1)</sup>

Channels	1608 channels
GPS	L1C/A, L2C, L2P(Y), L5
GLONASS	L1, L2, L3*
Galileo	E1,E5a,E5b,E6*
BeiDou	B1I, B2I, B3I, B1C, B2a, B2b*
OZSS	L1C/A, L1C, L2C, L5
NavIC/ IRNSS	L5
SBAS	EGNOS (L1, L5*)
PPP	B2b-PPP*, E6B-HAS*

## GNSS Accuracies <sup>(2)</sup>

Real time kinematics (RTK)	Horizontal: 8 mm + 1 ppm RMS Vertical: 15 mm + 1 ppm RMS Initialization time: < 10 s Initialization reliability: > 99.9%
Post-processing kinematics (PPK)	Horizontal: 3 mm + 1 ppm RMS Vertical: 5 mm + 1 ppm RMS
Post-processing static	Horizontal: 2.5 mm + 0.5 ppm RMS Vertical: 5 mm + 0.5 ppm RMS
Code differential	Horizontal: 0.4 m RMS Vertical: 0.8 m RMS
Autonomous	Horizontal: 1.5 m RMS Vertical: 2.5 m RMS
Positioning rate	Up to 10 Hz
Time to first fix <sup>(3)</sup>	Cold start: < 45 s Hot start: < 10 s Signal re-acquisition: < 1 s

## IMU Sensor

IMU Type	4D AUTO-IMU
IMU update rate	200Hz
IMU tilt angle	0-60°
Additional horizontal pole-tilt	Typically less than 2.5 cm within 30°

## Hardware

Size (L x W x H)	Φ 160.5 mm × 103mm (Φ 6.32 in × 4.06 in)
Weight	1.73 kg (3.81 lb)
Environment	Operating: -40 °C to +65 °C (-40 °F to +149 °F) Storage: -40 °C to +85 °C (-40 °F to +185 °F)
Humidity	100% non-condensation
Ingress protection	IP67 waterproof and dustproof, protected from temporary immersion to depth 1m
Shock	Survive a 2-meter pole drop
Front panel	2 LED 0.96" OLED Display

## Communication

Network modem	Integrated 4G modem LTE (FDD): B1, B2, B3, B4, B5, B7, B8, B20 DC - HSPA+/HSPA/HSPA/UMTS: B1, B2, B5, B8 EDGE/GPRS/GSM850/900/1800/1900MHZ
Wi-Fi	802.11 b/g/n, access point mode
Bluetooth®	v 5.0
Others	NFC
Ports	1 x 7-pin LEMO port (external power, RS -232) 1 x UHF antenna port (TNC female)
UHF radio <sup>(4)</sup>	Standard Internal Rx/Tx: 410 - 470 MHz Transmit Power: up to 5 W Protocol: EFIX,Transparent, TT450, Satel Link rate: 9600 bps / 19200 bps Range: Typical 5 km to 8 km, up to 25km with optimal conditions
Data formats	RTCM2.x, RTCM3.x, CMR input / output ECN, RINEX2.11, 3.02 NMEA 0183 output NTRIP Client, NTRIP Caster
Data storage	8 GB memory

## Electrical

Power consumption	12 W (depending on user settings)
Li-ion battery capacity	2 x 7000 mAh, 7.4 V
Operating time on internal battery <sup>(5)</sup>	UHF receive / transmit (5 W): 8 h to 12 h Static: up to 25 h
External power input	9 V DC to 28 V DC



\*All specifications are subject to change without notice.

(1) Compliant, but subject to availability of BDS ICD, GLONASS, Galileo, QZSS and IRNSS commercial service definition. GLONASS L3, Galileo E6, Galileo E6 High Accuracy Service (HAS), BDS B2b and SBAS L5 will be provided through future firmware upgrade.

(2) Accuracy and reliability are determined under open sky, free of multipaths, optimal GNSS geometry and atmospheric condition. Performances assume minimum of 5 satellites, follow up of recommended general GPS practices.

(3) Typical observed values.

(4) The use of UHF datalink may be subject to local regulations. Users must ensure that the device is not operated without the permission of the local authorities on frequencies or power output other than those specifically reserved and intended for use without required permit.

(5) Battery life is subject to operating temperature.



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## RUGGED VERSATILE GNSS BASE STATION

**5 W** Built-in UHF    **15 km** Coverage    **12 H+** Operating Time

The eBase GNSS receiver is an integrated professional GNSS base station designed to meet the specific needs of surveyors working in UHF base-rover mode.

The integrated UHF radio, low power consumption and long life eliminates the need for heavy external batteries, bulky cables, external radios and radio antennas. Compared to standard external radio modems, the eBase UHF base station offers outstanding performance with wide coverage and long operating times.

Its 5-watt FarRadio UHF module provides up to 15 km of GNSS RTK operating range in super mode\* and over 12 hours of battery life without battery changes. In addition, the eBase features real-time UHF interference self-testing technology, allowing surveyors to select the most appropriate frequency channel for use.

### INTEGRATED AND PORTABLE GNSS BASE SOLUTION

- Easy to carry, reducing overall package weight by over 70%.
- Easy to set up, get started in the field at least 3 times more efficiently.
- Integrated 5W UHF and 4G modem for multi-mode RTK corrections transmission via UHF and TCP/IP services.

### BROADER COVERAGE AND LONGER DURATION

- Low power consumption, in a typical survey operation the 5W FarRadio UHF modem can operate for over 12 hours with 15km coverage in super mode\*.
- In more challenging surveys, such as forests and suburban areas, coverage can be up to 5 km.
- In open areas coverage can reach up to 25 km.

### 1608-CHANNEL GNSS AND MULTI-CONSTELLATIONS ALGORITHMS

- Provide full GPS + GLONASS + Galileo + BeiDou + QZSS constellation tracking, even in harsh environments.
- Output standard DGNSS corrections in RTCM 3.x format for optimum performance.
- 8 GB internal memory to store GNSS raw data for post-processing or quality control.

### RUGGED DESIGN FOR UNINTERRUPTED WORK

- Designed to meet stringent IP67 standards for water and dust resistance.
- Magnesium-aluminium body for reduced weight and increased durability.
- Can withstand a 2-meter drop to a hard ground.

\*Note:  
Super mode refers to the simultaneous operation of super base and rover modes using both radio and network differential. Availability may vary by region, please kindly contact EFIX authorized dealers for details.