

RIDGE

GNSS SYSTEM

RUGGED, INTEGRATED, DYNAMIC GNSS ENCLOSURE



High Precision: 1cm RTK to 1.5m SINGLE



Multi-frequency and constellation



Robust and rugged enclosure

RIDGE (Rugged Integrated Dynamic GNSS Enclosure) is a compact, rugged enclosure containing a high quality GNSS receiver offering a cost effective and flexible solution to your requirements. RIDGE provides the latest technology for precise positioning and velocities.

ROBUST POSITIONING

RIDGE features a multi-frequency and multi-constellation GNSS engine that provides maximum position availability.

SCALABLE PRECISION PERFORMANCE

RIDGE can provide a single position to 1.5m accuracy or be upgraded to use correction services and achieve positions as precise as 1cm (RTK). RIDGE is well suited to operate as an RTK base station or a rover and can be configured to output GNSS heading.

OEM VERSATILITY

RIDGE can be adapted to meet bespoke requirements and applications in a short timescale. Inbuilt firmware enables modification to support custom data formats.

BUILT FOR RUGGED ENVIRONMENTS

RIDGE has been qualification tested against a strict set of standards to ensure that the system can operate in harsh environments. The compact, rugged enclosure is MIL-STD qualified with respect to EMC, shock, vibration and environmental standards. A full list is found on the back of the data sheet.

INTERFERENCE PROTECTION

GNSS receiver provides advanced detection and filtering protection against interference, jamming, and spoofing.

CONNECTIVITY

RIDGE model provides RS422/232 and PPS.





RIDGE SPECIFICATIONS

PERFORMANCE¹

Horizontal Position Accuracy (RMS)

Single Point L1	1.5m
Single Point L1/L2	1.2m
SBAS ²	0.6m
DGPS	0.4m
PPP	2.5cm
RTK	1cm + 1ppm
RTK Initialisation Time	<10 sec
Time Accuracy ⁵	20 ns RMS
Velocity Accuracy	0.03 m/s RMS - 0.05 m/s RMS
Velocity ⁶	515 m/s
Vibration	Up to 20G (sustained tracking)

Channel Configuration

Up to 555 Channels⁷
 GPS L1, L2, L2c, L5, SBAS L1, L5, GLONASS L1, L2, L2c, QZSS L1, L2, L5 GALILEO E1,E5a, E5b, E6' AltBOC, BEIDOU B1, B2, B3, NavIC L5, L-Band

Data Rates (Measurements and Positions)

Up to 100Hz

Time to First Fix

Cold Start ⁸	<40 sec
Hot Start ⁹	<20 sec

Signal Reacquisition

L1	0.5 sec (typical)
L2 & L5	1.0 sec (typical)
RTK position reacquisition ¹¹	5-8 sec

1-Typical values. Performance specifications subject to GPS system characteristics, US DOD operational degradation, ionospheric and tropospheric conditions, satellite geometry, baseline length, multipath effects and the presence of intentional or unintentional interference sources. Independent tests performed at FSL office using L1L2 GPS+GLO showed improved performance figures than the stated typical values.

2-SBAS includes WAAS, EGNOS and MSAS type systems, GPS only.

3-95% confidence level.

4-Accuracy obtained using a baseline length of 2 to 4 metres.

5-Time accuracy does not include biases due to RF or antenna delay.

6-Export licensing restrictions apply to remove velocity limit.

7-Dependant on receiver model installed. Signals listed can be enabled in multiple combinations, e.g. GPS L1 only, GPS L1L2, Galileo E1, E5, all signals enabled etc.

8-Typical value. No almanac or ephemeris and no approximate position or time.

10-Typical value. Almanac and recent ephemeris saved and approximate position and time entered.

11-GPS L1/L2, GLONASS L1/L2

PHYSICAL AND ELECTRICAL

Dimensions	140mm x 94.5mm x 62mm
Weight	<1kg
Input voltage	+9 to +36 VDC
Power consumption	<3W ¹¹ typical
Antenna LNA Power Output	
Output voltage	+5 VDC
Maximum current	100 mA
Communication Ports	
2x RS422	
1x RS232	
1x Ethernet	
1x PPS (differential)	

FEATURES AND MOUNTING

- 4 x M6 for plate mounting (standard)
- Field-upgradeable firmware
- PAC multipath mitigating technology
- Differential GPS positioning
- Differential correction support for RTCM 2.1, 2.3, 3.0, 3.1, CMR, CMR+ and RTCA Interference (Jamming and Spoofing) Detection and Mitigation

ENVIRONMENTAL

Temperature	
Operating	-40°C to +70°C
Storage	-55°C to +85°C

Regulatory:

EMC	European CE, 89/ EEC EN 55022 Class B, EN50082-1
EMC	MIL-STD-461H (Ground, Army), FCC Class A
Immersion	IEC 60529 IPX7
Humidity	MIL-STD 810H
Salt Spray	MIL-STD 810H
Sand and Dust	MIL-STD 810H
Fluids Susceptibility	MIL-STD-810H
Vibration	MIL-STD 810H
Shock	MIL-STD 810H
Electrostatic Discharge (ESD)	IEC 61000-4-2 level 2 (± 4 KV)
Compliance	RoHS, WEEE



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