

THE PIM7500 IS A COMPACT, DUAL FREQUENCY GNSS MODULE

HIGH PRECISION GNSS, MOST COMPACT SIZE

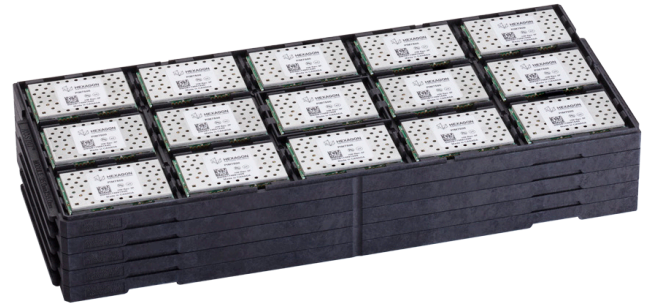
The dual frequency PIM7500 offers future ready, precise positioning for space constrained, large volume applications. This single-sided SMD package solders down directly, eliminating the need for connectors and mounting hardware.

DESIGNED WITH PERFORMANCE AND THE FUTURE IN MIND

The PIM7500 is capable of tracking GPS, GLONASS, Galileo, BeiDou and NavIC (IRNSS). The consistent and high performance positioning, along with the flexibility and upgradable features of this receiver, makes this the optimal GNSS receiver for autonomous applications.

DESIGNED FOR FLEXIBILITY

The PIM7500 is scalable to offer sub-metre to centimetre level positioning. Options include NovAtel CORRECT® with RTK or TerraStar PPP for centimetre level real-time positioning and SPAN® GNSS+INS for continuous 3D position, velocity and attitude.



BENEFITS

- Compact, lightweight form factor
- Easy to use interface simplifies integration
- Low power consumption for power constrained, high performance positioning applications

FEATURES

- Flexible positioning modes include RTK, TerraStar PPP, SBAS and single-point
- Multi-constellation signal tracking for higher availability
- Dual-frequency enables high accuracy
- Advanced interference visualization and mitigation features
- SPAN integration bridges difficult environments
- Solder down module with effective thermal mitigation features

If you require more information about our receivers, visit hexagonpositioning.com/pim7500



PERFORMANCE¹

Channel Count	
181 Channels	
Signal Tracking	
GPS ²	L1, L2, L5
GLONASS ²	L1, L2
Galileo ²	E1, E5a ² , E5b, AltBOC
BeiDou ³	B1I, B1C, B2I, B2a
QZSS ²	L1, L1C, L2C, L5
NavIC (IRNSS) ²	L5
SBAS	WAAS, EGNOS, MSAS, GAGAN, QZSS
L-Band	Up to 3 channels
Horizontal Position Accuracy (RMS)	
Single Point L1	1.5 m
Single Point L1/L2	1.2 m
SBAS ⁴	60 cm
DGPS	40 cm
TerraStar-L ⁵	40 cm
TerraStar-C PRO ⁵	2.5 cm
RTK	1 cm + 1 ppm
Initialization time	< 10 s
Initialization reliability	> 99.9%
Maximum Data Rate	
Measurements	up to 20 Hz
Position	up to 20 Hz
Time to First Fix	
Cold start ⁶	< 50 s (typical)
Hot start ⁷	< 35 s (typical)
Signal Reacquisition	
L1	< 0.5 s (typical)
L2	< 1.0 s (typical)
Time Accuracy⁸	20 ns RMS
Velocity Accuracy	< 0.055 m/s RMS

PHYSICAL AND ELECTRICAL

Dimensions	35 × 55 × 4 mm
Weight	12 g
Power	
Input Voltage	
» VDD	+1.2 VDC ±5%
» VCC	+3.3 VDC ±5%
Power Consumption	
Dual frequency GNSS	1.5 W (typ.)
Signals to Module Interfaces	
GNSS RF In	1
UART	Up to 3
USB 2.0 (Device, 12 Mbit/s) ⁹	1
SPI (Host for IMU only)	1
PPS (Timemark)	1
Event In	2
Event out	1
CAN Bus	1
External LNA power control GPIO	2
ESD	
Human body model	<±2 KV

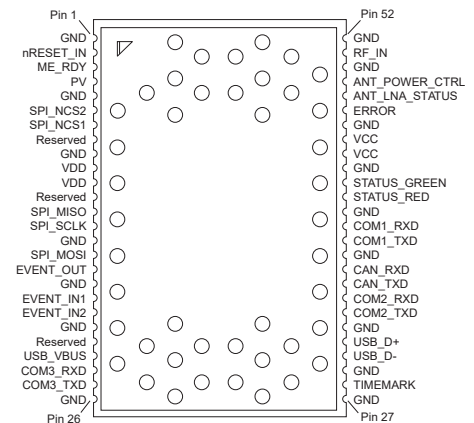
ENVIRONMENTAL

Temperature	
Operating	-40°C to +85°C
Storage	-55°C to +95°C
Humidity	95% non-condensing at 40°C
Vibration	
Random	MIL-STD-810G Method 514.7 Category 24, (7.7 g RMS)
Sinusoidal	IEC 60068-2-6 (5.0 g)

OPTIONAL ACCESSORIES

- PIM7500 Evaluation Kit

PIN-OUT DIAGRAM



FEATURES

- Field upgradeable software
- Differential GPS positioning
- Differential correction support for RTCM 2.1, 2.3, 3.0, 3.1, 3.2, 3.3, CMR, CMR+, RTCA and NOVATELX
- Navigation output support for NMEA 0183 and detailed NovAtel ASCII and binary logs
- Receiver Autonomous Integrity Monitoring (RAIM)
- Dual receiver ALIGN® heading solution
- Multipath mitigating technology
- Pulse Per Second (PPS) output
- Interference Toolkit
- SPAN IMU integration via SPI

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Version 2 Specifications subject to change without notice
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¹ Typical values. Performance specifications subject to GNSS system characteristics, Signal-In-Space (SIS) operational degradation, ionospheric and tropospheric conditions, satellite geometry, baseline length, multipath effects and the presence of intentional or unintentional interference sources.
² Software selectable; signal plan 1 includes GPS L1/L2, GLO L1/L2, BDS B1/B2, GAL E1/E5b, QZSS L1/L1C/L2C, available Q1 2018; signal plan 2 includes GPS L1/L2/L5, GLO L1, BDS B1/B2, GAL E1/E5a/E5b/AltBOC, IRNSS L5, QZSS L1/L1C/L2C/L5, available Q4 2018.
³ Designed for BeiDou Phase 2 and 3, B1 and B2 compatibility.
⁴ GPS only.
⁵ Requires subscription to TerraStar data service. Subscriptions available from NovAtel.
⁶ Typical value. No almanac or ephemerides and no approximate position or time.
⁷ Typical value. Almanac and recent ephemerides saved and approximate position and time entered.
⁸ Time accuracy does not include biases due to RF or antenna delay.
⁹ Driver available for Windows.

ABOUT HEXAGON POSITIONING INTELLIGENCE

Hexagon's Positioning Intelligence division is a global technology leader, pioneering end-to-end solutions for assured positioning for land, sea, and air. Learn more at hexagonpositioning.com.

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