

GPS ||| MOSAIC X5

KEY FEATURES

- Small size, big performance
- All-in-view satellite tracking: multi-constellation, multi-frequency
- Best-in-class RTK performance
- OSNMA Support
- Industry-leading ultra-low power consumption



GNSS technology	448 hardware channels for simultaneous tracking of all visible supported satellite signals: • GPS : L1C/A, L1PY, L2C, L2P, L5 • GLONASS : L1CA, L2CA, L2P, L3 CDMA • Beidou : B1I, B1C, B2a, B2b, B2I, B3 • Galileo : E1, E5a, E5b, E5 AltBoc, E6 • QZSS: L1C/A, L1 C/B, L2C, L5 • Navic: L5 • SBAS: Egnos, WAAS, GAGAN, MSAS, SDCM [L1, L5] • On module L-band
Septentrio's patented GNSS+ technologies	AIM+ Premium industry leading anti-jamming, anti-spoofing interference monitoring & mitigation technology IONO+ advanced scintillation mitigation APME+ a posteriori multipath estimator for code and phase multipath mitigation LOCK+ superior tracking robustness under heavy mechanical shocks or vibrations RAIM+ receiver autonomous integrity monitoring

PERFORMANCE		
RTK PERFORMANCE		
[open sky conditions, RMS levels, baseline <40km]		
Horizontal Accuracy	0.6 + 0.5 ppm	
Vertical Accuracy	1 cm + 1 ppm	
Initialization time	7s	
OTHER POSITIONING MODES ACCURACY		
[Open sky conditions, RMS levels]		
	Horizontal	Vertical
Standalone	1.2 m	1.9 m
SBAS	0.6 m	0.8 m
DGNSS	0.4 m	0.7 m
VELOCITY ACCURACY		
[Open sky conditions, RMS Levels]	3 cm/s	
MAXIMUM UPDATE RATE		
Position	100 Hz	
Measurements only	100 Hz	
LATENCY (99.9%)	<10 ms	
TIME PRECISION		
xPPS out (Incl. software compensation of sawtooth effect)	5 ns	
Event Accuracy	< 20 ns	
TIME TO FIRST FIX		
Cold Start	< 45 s	
Warm Start	< 20 s	
Re-acquisition	1 s	
TRACKING PERFORMANCE (C/NO THRESHOLD)		
Tracking	20 dB-Hz	
Acquisition	33 dB-Hz	
FIRMWARE	Free product lifetime upgrades	

FEATURES	
PROTOCOLS	Septentrio Binary Format (SBF) NMEA 0183, v2.3, v3.03, V4.0 RINEX v2.x, v3.x RTCM v2.x, v3.x (MSM included) CMR v2.0 (out/in), CMR+ (input only)
INTERFACES	2 UART (LVTTTL, up to 4 Mbps) USB device (2.0, HS) PPSO User configurable LEDs
PHYSICAL AND ENVIRONMENTAL	
PACKAGE	
Size	48x50x4 mm / 1.89x1.96x0.16 in
Weight	18.31 g / 0.65 oz
ELECTRICAL	
Antenna connection	SMA
Antenna pre amplification range	15–50 dB
Antenna bias voltage	3.0–5.5 V
	Build-in current limit (150 mA)
Input voltage	3.3 VDC
Power Consumption	0.6 W typ / 1.1 W max
ENVIRONMENTAL	
Operating temp	–40 to 85° C , –40 to 185° F
Storage temp	–55 to 85° C , –67 to 185° F
Humidity	5% – 95% (non-condensing)
Vibration (chip only)	MIL-STD-810G
Certification	RoHS, WEEE, CE, FCC

