

# M.2 MOSAIC GNSS RECEIVER CARD



ALL-IN-VIEW GNSS Satellite tracking: multi-constellation, multi-frequency for fast convergence time

Positioning module compatible with M.2 form factor for the use in industrial PCs and development boards (e.g. Nvidia jetson)

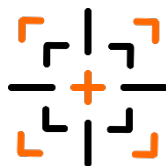
Advanced Septentrio technology inside:  
AIM+, LOCK+,  
APME+, IONO+



SCAN ME



High rate RTK solution output



Accurate position and attitude



Small form factor



Breakthrough price



Easy System Integration

## PERFORMANCE

### Accurate RTK Positioning<sup>1</sup> (1 $\sigma$ ):

Horizontal accuracy: 0.006 m + 1 ppm  
Vertical accuracy: 0.010 m + 1 ppm

### Accurate Attitude<sup>1,2</sup> (1 $\sigma$ ):

Antenna separation	Heading	Pitch/Roll
1 m	0.15°	0.25°
5 m	0.03°	0.05°

**Velocity Accuracy:** 0.03 m/s RMS

### Maximum update rate:

Measurements only:	100 Hz
Standalone, SBAS, DGPS + attitude <sup>2</sup> :	50 Hz
RTK + attitude <sup>2</sup> :	20 Hz
Latency:	< 10ms

<sup>1</sup> Depends on Environment and used GNSS-Antenna

<sup>2</sup> Only available with MOSAIC-H

## GNSS FEATURES

### GNSS Constellations:

Galileo, GPS, Glonass,  
Beidou, SBAS (Egnos, WAAS, GAGAN)

### GNSS Const. concurrent:

All

### GNSS-Bands<sup>3</sup>:

GPS: L1C/A, L1C, L1PY, L2C, L2P, L5  
GLO: L1CA, L2CA, L2P, L3  
GAL: E1, E5a, E5b, E5 AltBoc, E6  
BDS: B1I, B1C, B2a, B2I, B3  
QZSS: L1C/A, L1C, L2C, L5, L6

<sup>3</sup>With MOSAIC-X5 Chip

## Physical and Environmental

Package: Compatible with M.2 Key E  
Size: 31 x 42.8 mm  
Clearance: 4.17 mm top  
1.20 mm bottom

Antenna connector type: MMCX socket  
Antenna pre-amplification range: 15-50 dB  
Antenna bias voltage: 5 V  
Build-in current limit (150 mA)

Input voltage: 3.3 VDC +/-5%  
Power consumption: 0.6 W typ., 1.1 W max  
Environmental Operating temp.: -40 to 85° C  
Storage temp.: -55 to 85° C  
Humidity: 5% 95% (non-condensing)  
Certification: RoHS, WEEE  
Driver: from Septentrio

## 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)

## M.2 to USB-C Adapter

- M.2 key E to USB-C adapter
- Flat bottom side for easy mounting on different surfaces
- Dimension: 66 x 22.5 x 7 mm
- Compatible with all standard M.2 key E card sizes
- Screw mount for 42 mm card length. Additional mounting point for 30 mm cards
- USB Type C connector for communication via USB 2.0 and power supply

Pin header for additional signals:

Pin	Signal name
1	SDIO wake (output, 1.8 V level)
2	UART_TXD (input, 1.8 V level)
3	GLOBAL_RESET/SDIO_RESET (input, 1.8 V signaling, weak pull-up)
4	UART_RXD (output, 1.8 V signaling)
5	+3.3 V power output
6	TP_TO_MOD/UART_RTS (input, 1.8 V signaling)
7	+5.0 V power output
8	TP_FROM_MOD/UART_CTS (output, 3.3 V signaling)
9	Ground
10	PM_WAKEUP_N/UART_WAKE_N (output, 3.3 V signaling)



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