OEM-1

Topcon positioning technology allows integrators to take full advantage of state-of-the-art GPS and GPS+GLONASS signal processing. With position update rates of up to 100 Hz and simultaneous centimeter level RTK positioning and heading determination, the OEM-1 is the best solution for many challenging, high dynamic tracking and positioning applications.

Diverse, flexible communication capability (Serial, USB, CAN) allows flexibility in design while minimizing time-to-market. The OEM-1 is also electrically and mechanically compatible with other 60x100 mm OEM boards, allowing a quick and easy retrofit to a superior Topcon positioning engine.

- Simultaneous RTK positioning and heading determination at industry leading 100 Hz data rate
- Reliable, “all in view” L1/L2 GPS/GLONASS and SBAS tracking
- Diverse set of interfaces available through a single connector for effective data exchange

** L = antenna separation in meters*

Tracking	
Channels	72 Universal Tracking Channels
Signals Tracked	GPS: L1, L2, L2C GLONASS: L1, L2 SBAS: WAAS/MSAS/EGNOS
Antenna Type	External. Dual antenna input for heading determination through Topcon VISOR™ technology
Accuracy (RMS)	
RTK	H: 10 mm + 1.0 ppm; V: 15 mm + 1.0 ppm
Static	H: 3 mm + 0.5 ppm; V: 4 mm + 1.0 ppm
DGPS (RTCM)	H: 0.4 m, V: 0.6 m (CEP)
SBAS	H: 1.0 m, V: 1.5 m (CEP)
Heading	0.1°/L*
Inclination	0.1°/L*
Velocity	0.02 m/sec (CEP)
Time	25 nsec (CEP)
Communication Interfaces	
RS232	1x port up to 460.8 kbps
LVTTL UART	2x ports up to 921.6 kbps
USB 1.1 (Device)	1x port up to 12 mbps
CAN	2x ports (without transceivers), NMEA2000 compliant
Input/Output Strobes/Signals PPS (Pulse Per Second Output) EVENT (Input Mark) Radar Output Conversion for Radar Output	 5 ns resolution, ≤30 ns pulse-to-pulse precision, LVTTL, configurable polarity and period 5 ns resolution, TTL, programmable active edge Square waveform with a 50% duty cycle 94 Hz/m/s, +/- 1 Hz tolerance
Antenna Connectors	2x MMCX female straight through hole, 50 Ω impedance
Data and Memory	
Internal Memory	None
Data Update/Output Rate	1-100 Hz
Real Time Data Output	Proprietary TPS format, RTCM SC104 ver 2.x, 3.0 and 3.1, CMR/CMR+ (public version), NMEA 0183 and BINEX
Heading Determination	Yes
Environmental	
Temperature	Operating: 30°C to 85°C; Storage: -40°C to 85°C
Vibration	4g Sine Vibe (SAEJ1211); 7.7g Random Vibe (MIL-STD 810F)
Humidity	95%, non-condensing
Shock	30 g (IEC 68-2-27)
Power	
Voltage	3.3 (+5/-3)% VDC
Voltage Ripple	150 mV p-p max
Power Consumption	1.8 W typical, 2.5 W max RF Input/LNA Power Output
RF Input Frequencies (MHz)	GPS: 1575.42 (L1), 1227.60 (L2) GLONASS: 1598.06-1609.31 (L1), 1242.94 - 1251.69 (L2)
LNA Power	4.75 to 5.10 VDC at 0 - 70 mA
Physical	
Dimensions (w x d x h)	60 x 100 x 13 mm
Weight	≤60 g
Mounting	6x M3 mounting holes
User Interface Connectors	Two row 24 pin main header; Two row 50 pin expansion

For more information:
topconpositioning.com/oem-1

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