



SIGMA

OEM GNSS Heading Board



Key Features

- All GNSS Constellations
- Cell & Radio
- NTRIP Server / Caster
- GNSS Heading & IMU
- Ethernet, USB, Serial
- Wi-Fi & Bluetooth
- CAN, Event, 1PPS
- External Frequency I/O

SIGMA is a versatile receiver designed for multiple applications that require RTK, with options for GNSS Heading and roll / pitch from a MEMS IMU.

With an internal battery, 2 power inputs, and all typical I/O, SIGMA readily serves multiple GNSS configurations.

Featuring integrated cell and radio communications, SIGMA may be a Reference Station, with NTRIP Caster and Server functions to transmit RTCM corrections via TCP or NTRIP.

Number of Channels	874					
GNSS Constellations	GPS	L1 C/A, L1C (P+D), P1, P2, L2C (L+M), L5 (I+Q)				
	GLONASS	L1 C/A, P1, P2, L2C, L3 (I+Q)				
	Galileo	E1 (B+C), E5A (I+Q), E5B (I+Q), AltBOC, E6 (B+C)				
	BeiDou	B1, B1-2, B1C (P+D), B5A (I+Q), B2, B5B (I+Q), B3				
	QZSS	L1 C/A, L1C(P+D), TMBOC , L2C(L+M), L5(I+Q), L6, L1S, L1Sb, L5S				
	SBAS	L1, L5				
	NavIC	L1 (P+D), L5, S-Band				
	L-Band	1525-1560 Mhz				
GNSS Accuracy (RMS)		Horizontal (m)		Vertical (m)		
	Autonomous (Stand alone)	1.000		1.500		
	SBAS	0.500		0.850		
	DGPS	0.250		0.500		
	JStar (PPP)	0.025		0.050		
	RTK	0.008 + 1 ppm		0.015 + 1 ppm		
	Network RTK	0.008 + 0.5 ppm		0.015 + 0.5 ppm		
	Static / Fast Static	0.003 + 0.1 ppm		0.004 + 0.4 ppm		
Heading	< 0.09 deg (2m baseline)					
GNSS+INS Accuracy (RMS)	Outage (s)	Position Mode	Position Accuracy		Attitude Accuracy	
			Horizontal (m)	Vertical (m)	Heading (deg)	Pitch/Roll (deg)
	0	Stand Alone	<1	<1.5	<0.09	0.04
		RTK	0.008	0.015	2m baseline	
	10	Stand Alone	<1.5	<1.8	<0.20	0.07
		RTK	0.2	0.3		
Time to First Fix	Cold / Warm Start	< 35 s / < 5 s				
	Reacquisition	< 1 s				
	RTK Initialization	2 to 6 s				
Output Rate	Position / Measurements	3S: Up to 200 Hz DMI: Up to 100 Hz				
	Attitude	DMI: Up to 100 Hz				
Cell	4G LTE	LTE-FDD, LTE-TDD, DC-HSPA+, HSPA+, HSPA, UMTS (SMA)				
Radio	UHF Radio Modem	1W TPO / 2 W EIRP, 406-470MHz UHF transceiver (SMA)				
	UHF FH915 (optional)	1W TPO / 2 W EIRP 902-928/ 868-870 MHz ISM transceiver (RP-SMA)				
Memory	Non-removable	Up to 64 GB				
Status/Interface	LEDs / Keys	2 Buttons: Power & Function				
		7 LEDs: Power, Status, Recording, Radio, Cellular, Wi-Fi, Bluetooth				

SIGMA Family Nomenclature

SIGMA-3S: single antenna model

SIGMA- DMI: dual antenna model with integrated MEMS IMU

GNSS performance is dependent on signal quality, satellite geometry, ionospheric and tropospheric conditions, baseline length, multipath effects and RF interference. Specifications may be changed without notice.

Communication	Ethernet	Full-duplex 10BASE-T/100BASE-TX (7-pin ODU)
	Wi-Fi	5GHz and 2.4GHz, 802.11 a/b/g/n/ac (R-SMA)
	Bluetooth	v5.1, Dual-Mode (R-SMA)
	USB	High-speed USB 2.0 (480 Mbps) dual-role port (5-pin ODU)
	Serial	2 x RS232 up to 460.8 kbps (7-pin ODU)
	Serial/CAN	1 x RS232 / RS422 / CAN 2.0 with +12 VDC, 250 mA max (M12, 8 pin)
	1PPS	2 x 1PPS (BNC)
	Event Marker	2 x Event Marker (BNC)
	External Frequency I/O	5/10/20 MHz (BNC)
	GNSS Antenna	+5 VDC, 0.2 A max (TNC) 3S: 1 antenna DMI: 2 antennas
Power	Input	2 ports, 5-pin ODU, 4.5-40 VDC
	Power Consumption	4.5 W, Typical
Physical & Environmental	Operating / Storage Temps	-40°C to +70° C / -40°C to +85°C
	Humidity	95%
	Shock	MIL-STD-810H (Method 516.8)
	Vibration	MIL-STD-810H (Method 514.8)
	Dimensions	3S/DI: 109 x 35 x 141 mm 3SW/DIW: 132 x 61 x 150 mm
	Weight	3S/DI: 0.42 kg 3SW/DIW: 0.75 kg

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