

# SIGMA

## Multi-Purpose GNSS Receiver



### 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.

<b>Tracking</b>	Total Channels	874				
	GPS	L1 C/A, L1C, P1, P2, L2C, L5				
	GLONASS	L1 C/A, P1, P2, L2 C/A, L3				
	Galileo	E1, E5, E5A, E5B, E6				
	BeiDou	B1, B1C, B2B, B2, B2A, B3				
	QZSS	L1C C/A, L1C, L2C, L5, L6, L1S, L1Sb, L5S				
	SBAS	L1, L5				
	NavIC	L1, L5, S-Band				
	L-Band	1525-1560 Mhz				
<b>Performance</b>		<b>Horizontal (m)</b>		<b>Vertical (m)</b>		
	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)				
<b>GNSS+INS Accuracy (RMS)</b>	<b>Outage (s)</b>	<b>Position Mode</b>	<b>Position Accuracy</b>		<b>Attitude Accuracy</b>	
			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		
<b>Time to First Fix</b>	Cold / Warm Start	< 35 s / < 5 s				
	Reacquisition	< 1 s				
	RTK Initialization	2 to 6 s				
<b>Output Rate</b>	Position / Measurements	<b>3S:</b> Up to 200 Hz <b>DMI:</b> Up to 100 Hz				
	Attitude	<b>DMI:</b> Up to 100 Hz				
<b>Storage</b>	Internal Memory	Up to 64 GB				
<b>Status/Interface</b>	Keys	Power & Function				
	LEDs	7 LEDs: Power, Status, Recording, Radio, Cellular, Wi-Fi, Bluetooth				
<b>Wireless I/O</b>	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)				
	Cellular	4G LTE: LTE-FDD, LTE-TDD, DC-HSPA+, HSPA+, HSPA, UMTS (SMA)				
	UHF	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)				

#### 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.

<b>Wired I/O</b>	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) <b>3S:</b> 1 antenna <b>DMI:</b> 2 antennas
<b>Power</b>	Input	2 ports, 5-pin ODU, +10 - +30 VDC
	Internal Battery	Rechargeable Li-Ion Battery, 42500 mWh (nom.)
	Operation Time	18 hours
<b>Physical</b>	Dimensions	212 x 132 x 62 mm
	Weight	1.5 kg
<b>Environmental</b>	Operating Temperature	-40°C to +65° C
	Storage Temperature	-40°C to +85°C
	Humidity	100%
	Ingress Protection	IP68
	Shock & Vibration	MIL-STD-810H (Method 516.8) / MIL-STD-810H (Method 514.8)

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