

Hornet Family

GPS/GNSS Modules with Integrated Antenna



Reduce design risks by using a GNSS receiver with integrated antenna

In 2006 OriginGPS introduced the world's first GPS receiver module with integrated antenna based on its patented technology, which enabled automatic pick-and-place assembly and reflow soldering on a host PCB as if it were a SMT component. This new approach offered better performance, a much smaller footprint, and most importantly, minimized design risks, associated with the integration between antennas and GPS receivers, dramatically decreasing time to market.

OriginGPS' new-generation antenna modules, the Hornet family, takes the patented technology a giant step forward, reducing its size by 65%, while offering 4x greater sensitivity, and the ability to use multi-constellations (GPS and GLONASS simultaneously, Galileo and Beidou readiness) with SBAS, QZSS and other regional overlay systems to achieve continuous tracking of all satellites in view. Hornet is designed to support ultra-compact applications such as trackers, wearable devices, digital cameras and automobile applications.

Optimized receiver and antenna combination

Hornet offers an optimized receiver and antenna combination with unconditional frequency stability, improved noise immunity, higher sensitivity, and enhanced SNR (Signal to Noise) levels. The optimized combination not only decreases the footprint, but also minimizes design risks and reduces time to market.

World's smallest form factor

Measuring only 10x10x3.8mm and weighing 1.6 gr., the Nano Hornet is the world's smallest fully integrated GPS module with integrated antenna. Despite its small size and weight, the Micro Hornet integrates a patch antenna element, LNA, SAW filter, TCXO, RTC crystal, RF shield and Power Management Unit with SiRFStarIV™ GPS processor.

Outstanding performance and sensitivity

The Hornet module offers superior sensitivity and outstanding performance, achieving rapid time to first fix (TTFF) in less than 1sec., accuracy of approximately 1m, and tracking sensitivity down to -163dBm.

Low power consumption

Hornet's architecture can detect changes in context, temperature, and satellite signals by maintaining and opportunistically updating its internal fine time, frequency, and ephemeris data, thereby achieving a state of near continuous availability, while consuming mere microwatts of battery power.

Overcomes challenging and marginal conditions

The Hornet family features OriginGPS' proprietary Noise-Free Zone System™ technology for high sensitivity and noise immunity even under marginal signal conditions, commonly found in urban canyons, under dense foliage or when the receiver's position in space rapidly changes.

Straightforward design

Designed to commit versatile and simple integration features for high volume cost sensitive applications, Hornet offers a complete SiP (System-in-Package) with extremely small SMT (Surface Mount Technology) footprint. OriginGPS enables the shortest TTM (Time to Market) with minimal design risks. Just connect the power supply on a single layer PCB.

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Basic Information

Actual size:



	Nano Hornet	Micro Hornet	Multi Micro Hornet	Multi Micro Hornet	Multi SISO* Hornet
Ordering Code	ORG1411	ORG1410	ORG1510-R	ORG1510-MK	ORG4502
Dimensions	10mm x 10mm	10mm x 10mm	10mm x 10mm	10mm x 10mm	28.0mm x 18.5mm
Height	3.8mm	5.8mm	5.9mm	6.1mm	7mm
Weight	1.6gr	2.5gr	2.5gr	2.4gr	7.9gr
Frequency Band	GPS	GPS	GPS + GLONASS	GPS + GLONASS + Beidou, Galileo ready	GPS + GLONASS
Sensitivity (Tracking)	-163dBm	-163dBm	-164dBm	-165dBm	-164dBm
Power Consumption	<15mW	<15mW	<15mW	<15mW	<15mW
Accuracy	<2.5m	<2.5m	<1.5m	<2.5m	<1.5m
TTF (Hot Start)	<1sec	<1sec	<1sec	<1sec	<1sec
Interface	UART/SPI/I ² C	UART/SPI/I ² C	UART/SPI/I ² C	UART	UART/SPI/I ² C
Protocol	NMEA/OSP	NMEA/OSP	NMEA/OSP	NMEA	NMEA/OSP
A-GPS	✓	✓	✓	✓	✓
Interference Detector and Remover	✓	✓	✓	✓	✓
Operating Temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
GNSS Processor	SiRFStarIV™	SiRFStarIV™	SiRFStarV™	MT3333	SiRFStarV™
EMC Compliance	FCC, CE, VCCI	FCC, CE, VCCI	FCC, CE, VCCI	FCC, CE, VCCI	FCC, CE, VCCI
RoHS Compliance	RoHS II	RoHS II	RoHS II	RoHS II	RoHS II

* Snap In Snap Out

About OriginGPS

OriginGPS is a world leading designer, manufacturer and supplier of miniaturized GNSS modules, antenna modules and antenna solutions. OriginGPS introduces unparalleled sensitivity and

noise immunity by incorporating its proprietary Noise Free Zone technology for faster position fix and navigation stability even under challenging satellite signal conditions.

For our entire portfolio visit www.origingps.com or contact marketing@origingps.com