GPCore Hiper™

36 Channel-GPS L1/L2C/GLONASS L1 Receiver for Ground Vehicles with Military Standards

Evaluated, Field-tested and Operated in Military Ground Vehicle Systems



Features

GPCore Hiper[™], is a multi-mode GNSS receiver developed for operations in special environment. This trustworthy product has fulfilled the demands of military battle ground vehicles and passed environmental & EMI tests. Operation is possible by receiving 36 satellite signals from 3 types, GPS L1/L2C/GLONASS L1, or selectively by assigning satellite signals.



Hardware

LCore-M[™], is the 36 channel correlation chip which is developed by Navcours own technology. GPCore Hiper[™], used this Lcore-MTM considering military weapons system operations and environmental conditions produced with the CMOS process and ceramic package applying selective MIL-STD-883E military environmental standards. RF/IF Chip which included LNA, AGC, PLL, VCO execute a stable 2-level down conversion and provide digital IF signals (quantized 1.5bit) to the correlation chip. We adopted the TI DSP(TMS320C 6416T) for stable processing of 36 channel satellite signals. To support for navigation information and data output, GPCore Hiper[™], has two UARTs, interface for RS-232 & RS-422 and generate 1PPS(TTL) output for synchronization with external systems.

Software

GNSS receiver navigation software based TI's BIOS support realtime 36-channel acquisition and tracking. From core algorithm to input/output was to execute various signal processing algorithms

Applications

GPCore Hiper[™], can be applied not only for military ground vehicles but also for aircrafts and missiles in high mobility environments with user selective software for specific application.



Data & Power Cable





GPCore Hiper[™]

Features

- · 36 Channel GPS L1/L2C/GLONASS L1
- · Data rate : 1Hz ~ 10Hz
- 1PPS : 100nsec(1o)
- · I/O Port : RS-232 & RS-422
- Recommended Applications
- Tank/Armored Vehicle
 - Shipboard

Accuracy

- Horizontal Position: 10m(CEP)
- \cdot Vertical Position : 10m(PE)
- · Velocity : 0.2m/s (rms)

Environmental Specification

Dynamics

- · Speed : 850m/s(typical)
- Acceleration : 20g(typical)

TTFF

- Reacquisition : 2 sec.(typical)
- Warm Start : 45 sec.(typical)
- Cold Start : 90 sec.(typical)

Physical

- Size : 160x80x60mm
- · Weight : 1.2kg
- Input voltage : 9~36VDC

Item		Specification
Temperature ¹)		-40 ~ +85℃
Humidity ¹)		94°±4%
Salt Fog ¹)		Salinity 5%, PH 6.5~7.5, 48Hours
Vibration ¹)	X-axis	5~25Hz : \pm 1g, 25~31Hz : 0.762mm D.A, 31~500Hz : \pm 1.5g
	Y-axis	5~500Hz : ±1g
	Z-axis	5~25Hz:±1g, 25~44Hz:0.762mm D.A, 44~500Hz:±3g
Shock ¹)	Fundamental	X-axis: 100g, 1.0msec,
	Firing	X-axis: 100g, 1.0msec, Y Z - axis: 70g, 1.0msec
	Buffeting	XYZ-axis: 200g, 1.0msec
EMI ²)		CE102, CE106, RE102, CS101, CS103, CS104, CS115, CS116, RS103

1) MIL-STD-810F, 2) MIL-STD-461E

Options

- · Output upgrade(up to 10Hz)
- Dynamic features upgrade
- Customized performance upgrades on speed, acceleration, & higher degree specs possible on weapon system operations required conditions
- \cdot Output information addition
 - *Ephemeris
 - *Raw measurement
- Protocol change(user defined)



Accuracy

- Standard
- \cdot Cable addition
- Antenna addition