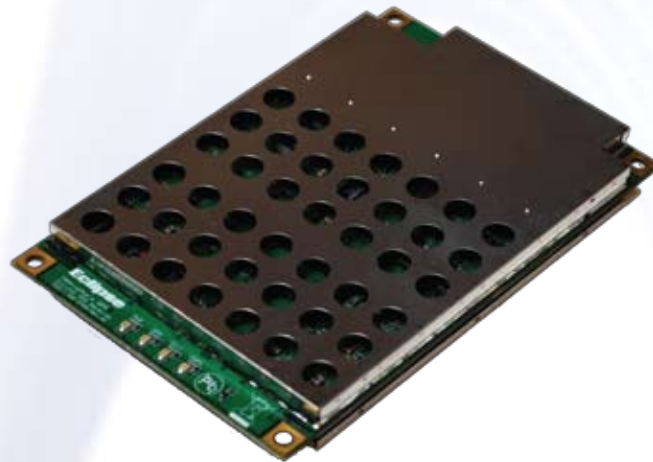


Eclipse OEM Board

Dual-Frequency GPS Module



Eclipse

Develop precise applications with superior performance and versatility of Hemisphere GPS' Eclipse OEM board. Eclipse receiver technology delivers reliable dual-frequency GPS solutions through Hemisphere GPS' exclusive techniques for reducing code measurement noise and mitigating multipath signals. Eclipse fits a wide range of applications with support for a variety of differential GPS solutions including RTK, OmniSTAR® (HP and XP) and SBAS (WAAS, EGNOS, etc.). Integration is simplified with Eclipse multiple serial and USB ports and upgradeable firmware for establishing the desired configuration and quick access to new features.

Key Eclipse Advantages

- Affordable L1/L2 GPS solution with update rates of up to 20Hz
- High-precision positioning in RTK, OmniSTAR HP/XP and SBAS/DGPS modes
- Integrated L-band tracking powers down when not in use
- OmniSTAR subscriber access permits remote activation via satellite uplink
- COAST™ stability during temporary differential signal outage
- Raw GPS data output available

Eclipse OEM Board

GPS Sensor Specifications

Receiver Type:	L1 & L2 RTK with carrier phase	
Channels:	12 L1CA GPS	12 L2P GPS
	12 L1P GPS	3 SBAS or 3 additional L1CA GPS
Update Rate:	10 Hz standard, 20 Hz available	
Cold Start Time:	<60 s	
Warm Start Time 1:	30 s (valid ephemeris)	
Warm Start Time 2:	30 s (almanac and RTC)	
Hot Start Time:	10 s typical (valid ephemeris and RTC)	
Reacquisition:	<1 s	
Differential Options:	SBAS, Autonomous, External RTCM, RTK, OmniSTAR (HP/XP)	

Horizontal Accuracy

	RMS (67%)	2DRMS (95%)
RTK: ^{1,2}	10 mm + 1 ppm	20 mm + 2 ppm
OmniSTAR HP: ^{1,3}	0.1 m	0.2 m
SBAS (WAAS): ¹	0.3 m	0.6 m
Autonomous, no SA: ¹	1.2 m	2.5 m

L-Band Specifications

Channels:	Single channel
Frequency Range:	1530 to 1560 MHz
Satellite Selection:	Manual or Automatic (based on location)
Start Up and Satellite	
Reacquisition Time:	15 seconds typical

Communications

Serial Ports:	3 full duplex 3.3V CMOS
Baud Rates:	4800 - 115200
USB Ports:	1 Communications, 1 Flash Drive data storage
Correction I/O	
Protocol:	Hemisphere GPS proprietary, RTCM v2.3 (DGPS), RTCM v3 (RTK), CMR, CMR+
Data I/O Protocol:	NMEA 0183, Hemisphere GPS binary
Timing Output:	1 PPS (HCMOS, active high, rising edge sync, 10 kΩ, 10 pF load)
Event Marker Input:	HCMOS, active low, falling edge sync, 10 kΩ

Environmental

Operating Temperature:	-30°C to +70°C (-25°F to +165°F)
Storage Temperature:	-40°C to +85°C (-40°F to +185°F)
Humidity:	95% non-condensing

Power

Input Voltage:	3.3VDC +/- 3%
Power Consumption:	<2.9W nominal
Current Consumption:	875 mA nominal
Antenna Voltage Input:	15VDC maximum
Antenna Short Circuit Protection:	Yes
Antenna Gain Input Range:	10 to 40 dB
Antenna Input Impedance:	50 Ω

Mechanical

Dimensions:	109.2 L x 71.1 W x 16.0 H mm (4.3 L x 2.79 W x 0.63 H in)
Weight:	<68 g (<2.4 oz)
Status Indication (LED):	Power, GPS lock, differential lock, and DGPS position
Power/Data Connector:	70-pin male header, 0.05" pitch
Antenna Connector:	MCX, female, straight

¹ Depends on multipath environment, number of satellites in view, satellite geometry and ionospheric activity.

² Depends also on baseline length.

³ Requires a subscription from OmniSTAR.

Note: The Eclipse receiver technology is not designed or modified to use the GPSY-Code

Authorized Distributor: