



Jupiter 31

20-channel GPS receiver module

The Jupiter 31 is a 20 channel GPS receiver module based on the Jupiter 21 form factor that is significantly enhanced to take advantage of the SiRFStar III architecture. The Jupiter 31 offers a substantial increase in sensitivity, faster time to fix, lower power consumption and the option of using either an active or passive antenna.

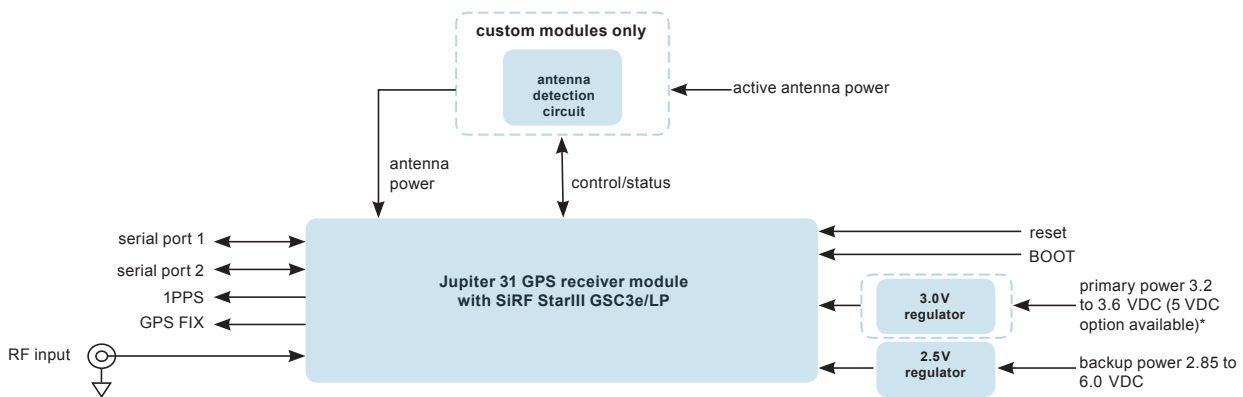
The Navman Wireless Jupiter 31 GPS receiver module has been designed for low power consumption in reduced signal areas at a very competitive price. The Jupiter 31 normally acquires GPS position under low signal conditions faster than other GPS engines. Tracking continues in areas of dense foliage or built-up inner city environments and even indoors greater than -159 dBm.

Using the new and highly integrated GSC3e/LP from SiRF and carefully selected key components including TCXO, LNA and Flash, the Jupiter 31 offers faster acquisition, a wider operating voltage range and greater noise rejection than leading competitors' products using a similar architecture.

Key Features

- popular Jupiter 21 form factor
- low power SiRFStarIII technology
- ultra-high sensitivity, with faster times to fix under most conditions
- 200,000 effective correlators allows for improved indoor fixes and tracking capability
- low power consumption and power management options to further reduce current consumption
- integral LNA with low power control
- SiRFLoc and SiRFInstantFix multimode
- 0.5 PPM TCXO for optimal performance
- user selectable SBAS (WAAS, EGNOS and MSAS) support
- environmentally friendly RoHS compliance

Module architecture



* 5 VDC input power option available. Contact your distributor or Navman Wireless for more information.

Jupiter 31

Product specifications

Receiver architecture

- 20-channel, 200000 effective correlators, L1 1575.42 MHz
- C/A code (1.023 MHz chip rate)
- code-plus-carrier tracking (carrier-aided tracking)
- velocity to 500 m/s
- acceleration to 4 G

Tracking capability

- 20 satellites simultaneously

Accuracy

- horizontal accuracy: 2.5 m (CEP), 5.5m 2dRMS
- velocity accuracy: speed <0.01 m/s; heading <0.01°

Acquisition performance

Mode	@ -125 dBm	
	Typical	90%
hot start TTFF	500ms	<1 s
warm start TTFF	31 s	36 s
cold start TTFF	33 s	38 s

Antenna input

- integral LNA for use with passive antenna
- active antenna powered through receiver (50 mA max at 12VDC max)

Datums

- supports selection of datums, default: WGS-84

Environmental

- operating temperature: -40°C to +85°C
- humidity: 95% non-condensing
- altitude: -305 m to 18000 m

Compliance

- EMC: FCC – Part 15, class B
- EN: 55022, class B

Physical

- dimensions: 40.6 x 71.1 x 10.0 mm
- weight: 25 grams

On-board filtering

- L1 -75 MHz, -30 dB
- L1 +50 MHz, -20 dB

Data interfaces

- two serial ports available
- CMOS-level (3.3VDC)
- selected NMEA-0183/SiRF binary messages: latitude, longitude, elevation, velocity, heading, time, satellite tracking status, command/control messages

- SiRF binary data interface

Electrical

- input power range*: 3.3 VDC - 0.1/ +0.3 VDC
- battery backup current: 5 to 6 µA (typ) for 2.85 to 6.0 VDC (SRAM and RTC)

* 5 VDC input power option available. Contact your distributor or Navman Wireless for more information.

Connectors

- data/power: 20-pin (2x10) on 2 mm centers
- RF: right angle or straight OSX, or right angle SMB

Related documents

- LA010811 Jupiter 31 data sheet
- LA000645 Jupiter series development kit guide

Ordering information

- AA003041-G Jupiter 31 with right angle OSX (3.3V)
- AA003042-G Jupiter 31 with straight OSX (3.3V)
- AA003043-G Jupiter 31 with right angle SMB (3.3V)
- AA003045-G Jupiter 31 with right angle OSX (5V)
- AA003046-G Jupiter 31 with straight OSX (5V)
- AA003047-G Jupiter 31 with right angle SMB (5V)

Contact your local distributor or Navman Wireless OEM:

www.navmanwireless.com/oem