

# Jupiter<sup>3</sup>

## ULTRA SMALL RECEIVER MODULE

### Jupiter<sup>3</sup> Ultra Small Receiver Module

The Jupiter<sup>3</sup> is Navman's smallest form-factor module and is the basis of Navman's next generation GPS receiver solutions. The Jupiter<sup>3</sup>, based on SiRF's GSC3f/LPx chipset, offers low power and high sensitivity at a competitive price.

The Jupiter<sup>3</sup> is designed with low cost in mind, enabling products that have existing voltage regulation, real time clock and supervisory circuit functions. The Jupiter<sup>3</sup> integrates select key components including TCXO, LNA and SAW filter. Offering customers the flexibility in external BoM component selection.

Offering the same software messaging as the current Jupiter xLP products, Jupiter<sup>3</sup> enables a risk free upgrade path for any customer currently using Jupiter-based products.

*cont'd.*

## FEATURES

- 20-channel GPS receiver with 200,000 effective correlators
- Ultra low power, 11.5mA\*
- High sensitivity, -159dBm
- Assisted GPS supported (SiRF InstantFix and Ephemeris Push)
- SBAS supported (WAAS, EGNOS and MSAS)
- Power saving modes supported



\*2.75V, ATP 1Hz 200ms On Time RMC message only at 57600 baud

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## SPECIFICATIONS

### Receiver architecture

- 20-channel, 200 000 effective correlators, L1 1575.42 MHz
- C/A code (1.023 MHz chip rate)
- code-plus-carrier tracking (carrier-aided tracking)
- velocity, up to 500 m/s
- acceleration, up to 4 G

### Tracking capability

- 20 satellites simultaneously

### Accuracy

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

### Acquisition performance

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

### Antenna input

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

### Datums

- supports selection of datum, default: WGS-84

### Environmental

- operating temperature: -40°C to +85°C
- humidity: up to 95% non-condensing
- altitude: -305 m to 18 000 m

### Compliance

- Automotive Standard TS16949
- EMC: FCC – Part 15, class B
- EN: 55022, class B
- RoHS

### Physical

- dimensions: 11 x 11 x 2.2 mm
- weight: < 4 g

### On-board filtering

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

### Data interfaces

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

### Electrical

- input power range: 2.75 to 3.0VDC
- battery backup current: 5 to 6µA (typ) for 1.1 to 1.3 VDC

Mode	Power consumption	
	@ 2.75 V	@ 2.85 V
average sustained power (after 1st solution)	< 74 mW	< 77 mW

### Connectors

- data/power/RF through surface mount pads

### Related documents

- J3 Data sheet
- J3 Designers notes
- J3 Userguide for Development Kit

### Ordering information

SKU#: J3,0000,00,3.5.

## MODULE ARCHITECTURE

