Navman Jupiter 30

Surface mount 20-channel high sensitivity GPS receiver module

Navman's Jupiter 30 has been designed without compromise to give the ultimate in high sensitivity GPS performance at a very competitive price. Jupiter 30 acquires GPS position faster under low signal conditions than other available GPS engines. Tracking continues in areas of dense foliage or built-up inner city environments and even indoors down to –159 dBm.

Using the new and highly integrated GSC3 from SiRF and carefully selected key components including TCXO, LNA and Flash, the Jupiter 30 offers faster GPS acquisition, up to 10% lower power consumption, a wider operating voltage range and greater noise rejection capability than leading competitors products using a similar architecture.

Sharing the same form factor and extended software messaging as the Jupiter 20, the Jupiter 30 offers a risk free upgrade path for any customer, using an active or passive antenna.

Key Features

- ultra-high sensitivity GPS receiver
- faster times to fix under all conditions
- indoor fixes and tracking capability
- SIRFLoc multi-mode GPS support for improved fix availability
- 20 GPS channels supported
- 200,000+ effective correlators
- 0.5PPM TXCO for optimal performance
- integral LNA with low power control
- on-board Flash
- ARM 7CPU
- user selectable SBAS
- RoHS compliant
- 3V low power operation

Jupiter 30 architecture

SiRF® Powered
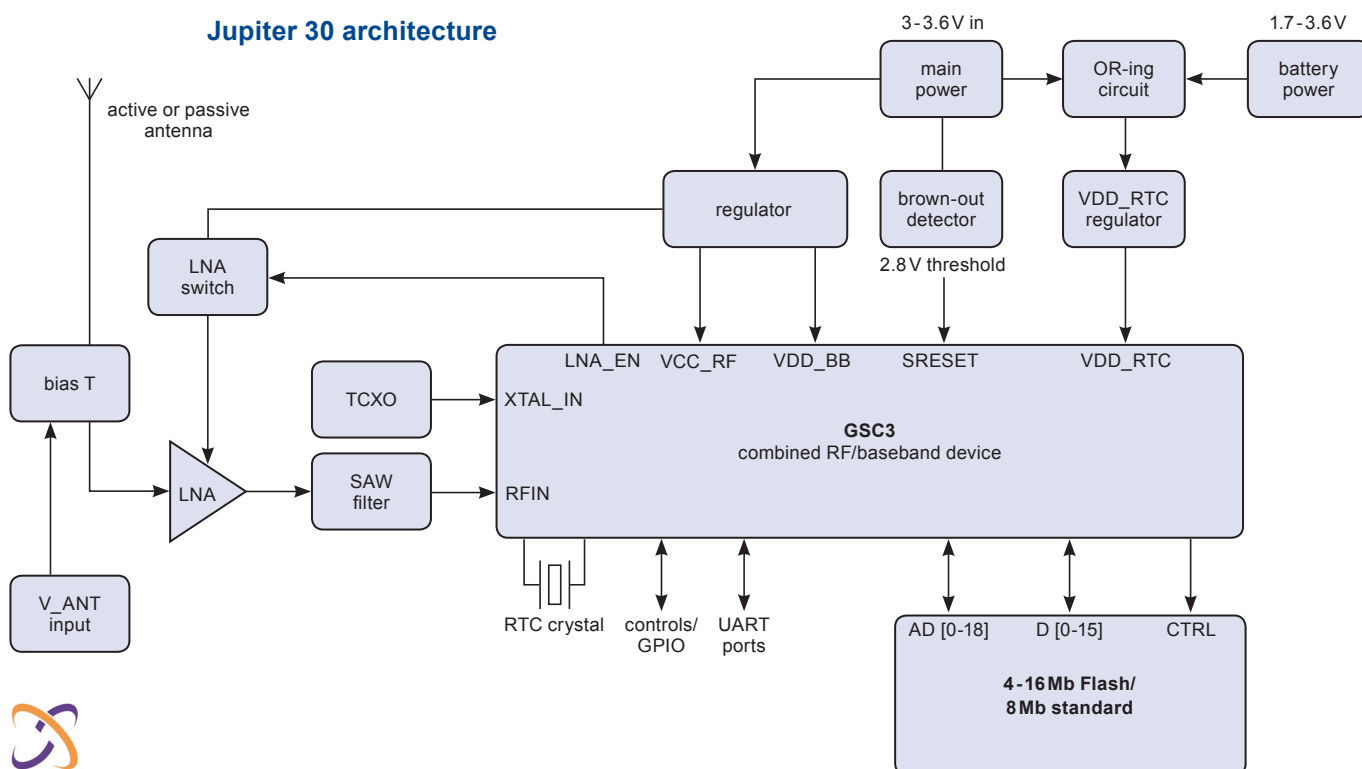
Product specifications

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 5 G

Tracking capability

- 20 satellites simultaneously

Accuracy

- horizontal accuracy: better than 5.4 m (CEP)
- PPS accuracy: typically better than 1 µs

Acquisition performance

Mode	@ –125 dBm	
	Typical	95%
hot start TTFF	500 ms	<1 s
warm start TTFF	32 s	38 s
cold start TTFF	34 s	42 s

Mode	@ –140 dBm	
	Typical	95%
hot start TTFF	<1 s	<1 s
warm start TTFF	49 s	59 s
cold start TTFF	52 s	66 s

Antenna input

- integral LNA for use with passive antenna
- active antenna powered through receiver (100 mA max at 12 VDC max)

Datums

- 5 user defined, default: WGS-84

Environmental

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

Physical

- dimensions: 25.4 x 25.4 x 3.0 mm
- weight: 4 g

On-board filtering

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

Data interfaces

- two serial ports available (1 for DGPS input)
- 6 GPIOs controlled by serial command
- 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
- SiRF binary interface: raw data

Electrical

- input power range: 3.0 to 3.6 VDC
- battery backup current: 12 µA (typ) for 1.7 to 3.3 VDC (SRAM and RTC)
- power consumption:

Mode	Power consumption	
	@ 3 V	@ 3.3 V
average sustained power (after 1st solution)	<157 mW	<174 mW
average sustained acquisition power (before 1st solution)	<202 mW	<224 mW
average initial acquisition power (1.5–2 s)	<231 mW	<257 mW

Connectors

- data/power/RF through surface mount pads

Related documents

- Data sheet LA000576
- Integrator's manual LA000577
- Evaluation kit guide LA000578

Ordering information

- AA003025-G   Jupiter 30 (standard)

Contact your local distributor or Navman OEM:

Navman OEM:
www.navman.com/oem   ind-support@navman.com