



Jupiter-F2 Ultra Small Receiver Module

Building upon the SiRFstarIVTM architecture's high-performance and micro-power capabilities, the Jupiter-F2 incorporates innovations such as SiRFawareTM, SiRFInstantFixTM and Active Jammer Removal. The Jupiter-F2 can navigate to -160dBm and track to -163dBm, providing higher coverage, accuracy and availability. This next generation Jupiter Module consumes only 13mA in 1-Hz TricklePowerTM mode and can maintain hot-start conditions continuously in SiRFaware mode while drawing as little as 50-500μA.

The Jupiter-F2 supports A-GPS and a full range of satellite-based augmentation systems, including WAAS, EGNOS, MSAS and GAGAN.

The Jupiter-F2 is a highly integraed GPS receiver that can be used as an SMT component. Operating from a 1.8V power supply, this module combines the SiRFstarIV[™] GSD4e[™] GPS engine, TCXO, LDO, SAW filter. RTC and Flash.

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FEATURES

- 48-Channel GPS Receiver
- Ultra low power, 13mA
- Tracking Sensitivity of -163dBm
- Integrated LNA
- Active 8 Jammer Remover
- UART, SPI, I2C Interfaces and 5 GPIOs
- Assisted GPS supported
- SBAS supported (WAAS, EGNOS, MSAS and GAGAN)



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SPECIFICATIONS

Receiver architecture

- 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

• 48 track verification channels

Active Jammer Remover

- Removes in-band jammers up to 80 dB-Hz
- Tracks up to 8 CW jammers

Accuracy

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

Acquisition performance

Mode	@ −130 dBm	
	Typical	90%
Hot start TTFF	500 ms	<1s
Warm start TTFF	31 s	35 s
Cold start TTFF	33 s	35 s

Sensitivity

Acquisition: -148 dBm
Navigation: -160 dBm
Tracking: -163 dBm

Datums

supports selection of datum, default: WGS-84

Environmental

operating temperature: -40 to +85C
humidity: up to 95% non-condensing

altitude: 18 288 m (max)

Quality standards

• Automotive Standard: TS16949 (optional)

• EMC: FCC - Part 15, class B

• EN: 55022, class B

• RoHS

Physical

• dimensions: 11 x 11 x 2.3 mm

• weight: < 1 g

On-board filtering

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

Interfaces

- UART, SPI, and I2C
- 5 GPIOs
- CMOS-level (1.8 VDC)
- selectable baud rates
- selected protocols (NMEA-0183 v3.0, SiRF OSP

Connectors

· data, power and RF through surface mount pads

Electrical

• input power range: 1.75 to 1.90 VDC

Mode	Power consumption
Average sustained power (after 1st solution)	61 mW
TricklePower*	23 mW
Hibernate	<14μA

^{*} ATP ON time = 200ms, Navigation solution update rate = 1Hz, NMEA protocol = RMC only at 57600 baud.

Related documents

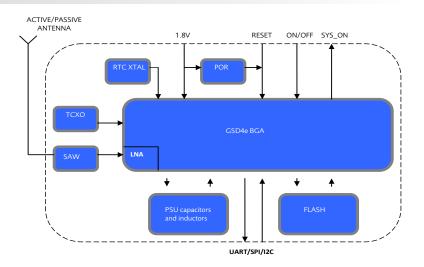
- J-F2 Data sheet
- J-F2 Integrator's manual
- J-F2 Development Kit user guide

Ordering information

• J-F2.00DK Jupiter-F2 Development Kit

Note: 0's represent latest firmware, subject to change without prior notice.

MODULE ARCHITECTURE





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