

RB2929S4

Ultra High Sensitivity SiRF StarIV GSD4e
GPS Module with Miniature Dimension

Documentation History

Revision	Description	Date	Remark
V0.1	RB2929S4 Release	Jul 2011	
V1.0	Drawing and 1pps, boot pin change	Sep 2011	
V1.01	Modify the pin definition. Ordering code.	Mar 2011	

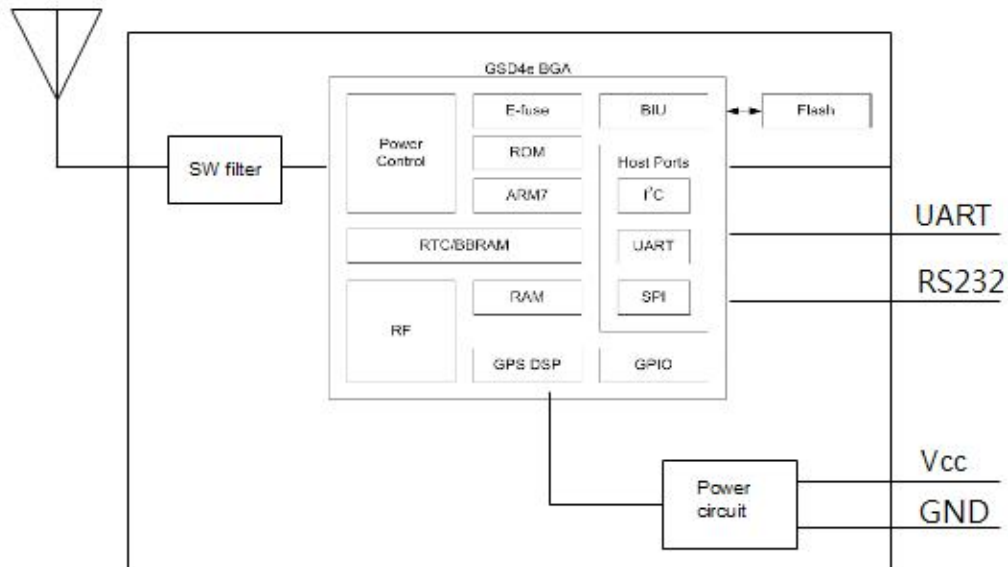
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Features

- ✓ 48 channel SiRF StarIV GSD4e positioning engine.
- ✓ Ultra high sensitivity to -163 dBm.
- ✓ SBAS (WAAS, MSAS, and EGNOS) support.
- ✓ Supports UART and RS232 interface.
- ✓ LED indicate location fix.
- ✓ Ultra low power consumption. <10mW required for TricklePower™ mode
- ✓ Active Jammer Remover: Removes in-band jammers up to 80 dB-Hz; Tracks up to 8 CW jammers
- ✓ Ultra miniature 29 x 29 mm dimension
- ✓ Operating temperature range: -40 to 85°C
- ✓ RoHS compliant (lead-free)

Block diagram



Technical Specifications

1. Electrical

Characteristics

1.1 Chip set	SiRF StarIV GSD4e	
1.2 General	Frequency	L1, 1575.42MHz
	Channels, C/A code	48, 1.023 MHz chip rate, 8192 time/frequency search windows
1.3 Accuracy	Position	3 meters CEP
	Time	200 msec (1 PPS)
1.4 DGPS Accuracy	Position	2.5 meters CEP
1.5 Acquisition Rate	Reacquisition	< 1 sec, typical
	Cold start	32 sec, typical
	Cold start (CGEE*)	Under 15 sec
	Hot start	1 sec, typical
1.6 Sensitivity	Tracking	-163dBm (with external LNA)
	Navigation	-160dBm (With external LNA)
	Autonomous Acquisition	-148dBm (With external LNA)
1.7 Dynamic Condition	Altitude	18,288 meters (60,000 Feet) max.
	Velocity	515 meters /sec (1000 Knots) max.
1.8 Power	Main Power	3.3V-5V VDC typical
	Supply current (Tracking)	45 mA (AVG)
	Supply current (Navigation)	42 mA (AVG)
	OFF mode	40 uA
1.9 Serial Port	Electrical interface	UART, RS232
	Protocols	NMEA0183 v3.0
	Baud Rate	4800, 9600(default)

2. Environmental Characteristics

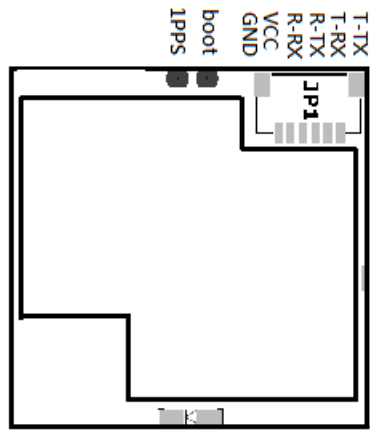
2.1 Temperature	Operating range	- 40 °C to + 85 °C
2.2 Mechanical dimensions	L x W x H	29.0 x 29.0 x 7.5 mm
2.3 Interface	I/O connector	RS232 and UART

*CGEE: Client Generated Extended Ephemeris

3 Antenna

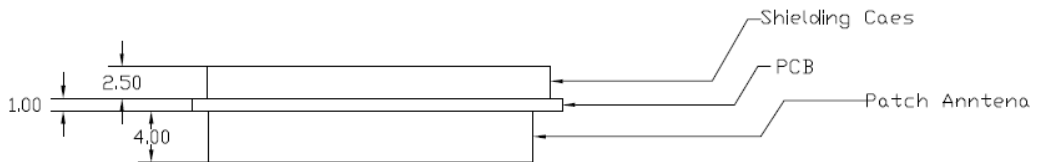
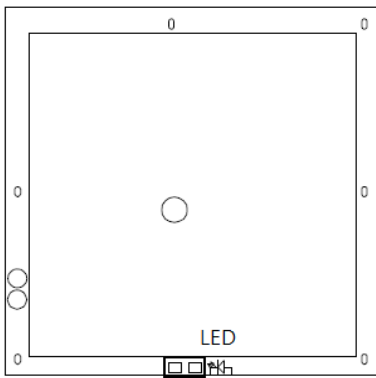
Parameter	Specification
3.1 Antenna type	Passive antenna

Dimension



PIN definition

- 1 T-TX
- 2 T-RX
- 3 R-TX
- 4 R-RX
- 5 VCC
- 6 GND



Pin Definition

Pin#	Name	Type	Description
1	UART TX	Output	RS232 TX Output
2	UART RX	Input	RS232 RX Input
3	RS232 TX	Output	UART TX output.(Option)
4	RS232 RX	Input	UART RX Input (1.8~3.5V) (Option)
5	Vcc	PWR	DC power input 3.3V (3.3V~5V)
6	GND	GND	Ground

Output NMEA Messages

NMEA-0183 V3.0 Output Messages

NMEA Sentence	Description
GGA (default)	Global Positioning System Fixed Data
GLL	Geographic Position - Latitude/Longitude
GSA (default)	GNSS DOP and Active Satellites
GSV (default)	GNSS Satellites in View
RMC (default)	Recommended Minimum Specific GNSS data
VTG	Course Over Ground and Ground Speed
ZDA	Time and Date

Ordering code

RB2929S4- X X
a b

Defaultl ordering code: RB2929S4-T1

a. output interface:

T: TTL output interface

R: RS232 output interface

b. Baud Rate setting:

1 : 4800 bps; GGA(1),GSA(1),RMC(1),**GSV(5)**

2 : 9600 bps; GGA(1),GSA(1),RMC(1),GSV(1)

3 : 19200 bps;GGA(1),GSA(1),RMC(1),GSV(1)

4 : 38400 bps;GGA(1),GSA(1),RMC(1),GSV(1)

5 : 57600 bps;GGA(1),GSA(1),RMC(1),GSV(1)

6 : 115200 bpsGGA(1),GSA(1),RMC(1),GSV(1)

ps.

RMC(1) means output \$GPRMC once per second.

GSV(5) means output \$GPGSV once every 5 seconds.

If your request ordering code not show above, Please contact us.
We have to make a specified ordering code for you.