

RB2929S

Ultra High Sensitivity SiRF StarIII 7989
GPS Module with Patch Antenna

Documentation History

Revision	Description	Date	Remark
V0.1	RB2929S release	Mar 2009	
V1.0	NMEA Update	Jul 2009	
V1.1	Connector Update	Sep 2009	

Content

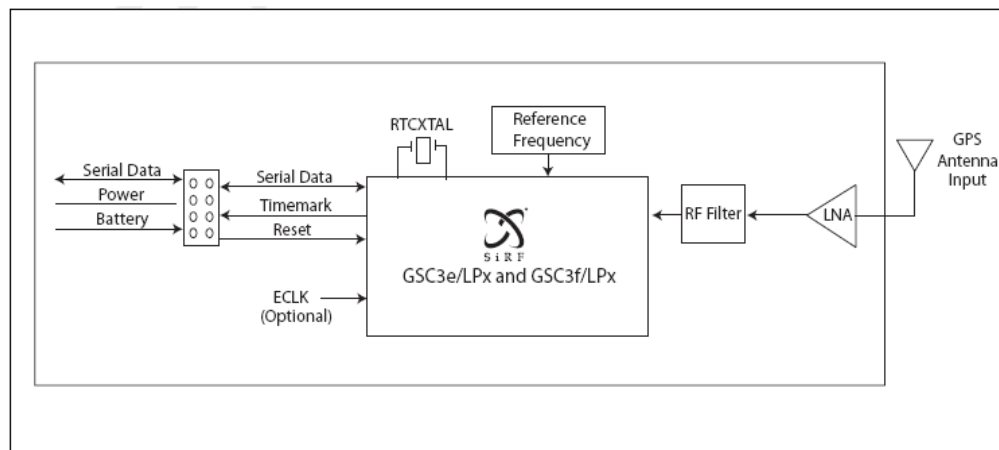
Features.....	4
Block diagram.....	4
Technical Specifications	4
Pin Definition.....	6
Output NMEA Messages	8

RB2929S

Features

- ✓ 20 channel SiRF StarIII7989 positioning engine
- ✓ Ultra high sensitivity to -159 dBm
- ✓ SBAS (WAAS, MSAS, and EGNOS) support
- ✓ Supports Power saving modes
- ✓ Build in backup battery
- ✓ Support UART and RS232 ports
- ✓ Ultra low power consumption 60mW
- ✓ Ultra miniature 29X 29 mm dimension.
- ✓ Operating temperature range: -30 to 85°C
- ✓ RoHS compliant (lead-free)

Block diagram



RB2929S GPS module

Technical Specifications

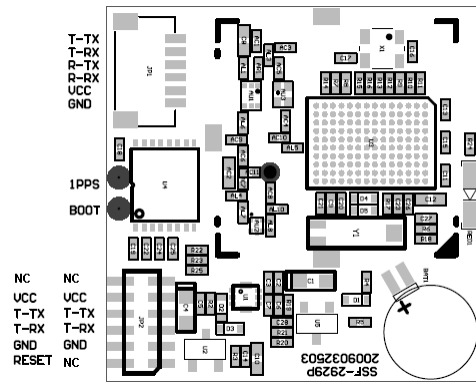
1. Electrical Characteristics

1.1 Chipset	SiRF StarIII GSC3eLP	
1.2 General	Frequency	L1, 1575.42MHz
	Channels, C/A code	20 1.023 MHz chip rate, 8192 time/frequency search windows
1.3 Accuracy	Position	5 meters CEP
	Time	50 nanosecond rms (1 PPS)
1.4 DGPS Accuracy	Position	2.0 meters CEP
1.5 Acquisition Rate	Reacquisition	< 1 sec, typical
	Cold start	35 sec, typical
	Warm start	35 sec, typical
	Hot start	1 sec, typical
1.6 Sensitivity	Tracking	-159dBm
	Acquisition/Reacquisition	-155dBm
	Cold start	-144dBm
1.7 Dynamic Condition	Altitude	18,000 meters (60,000 Feet) max.
	Velocity	515 meters /sec (1000 Knots) max.
1.8 Power	Main Power	3.3 VDC typical
	Supply current	40 mA
	Backup power	1.4 ~ 5V
1.9 Serial Port	Electrical interface	UART, RS232
	Protocols	NMEA0183 v3.0

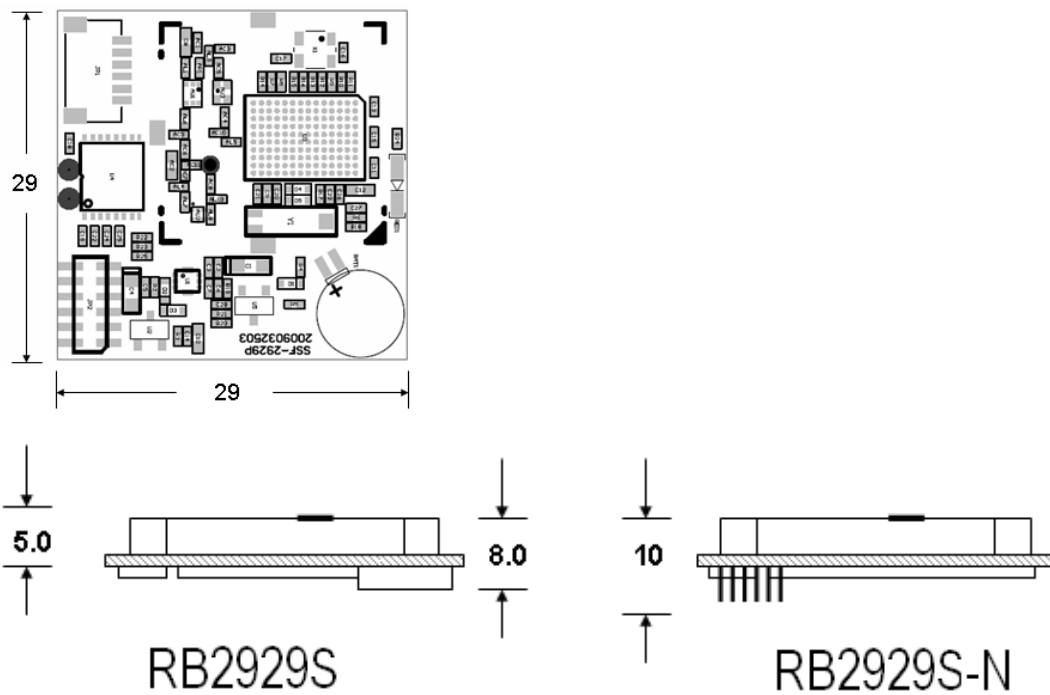
2. Environmental Characteristics

2.1 Temperature	Operating range	- 30 °C to + 85 °C
2.3 Interface	I/O connector	6 pin pitch 1.0mm connector (RB2929S) 12 pin pitch 1.27mm (RB2929S-N)

PIN assignment



Dimension



Side View

Unit: mm

Pin Definition**RB2929S JP1 (CSI-1182-061R from CSTCONN - www.cstconn.com)**

Pin#	Name	Type	Description
1	T-TX	Output	UART TXD output
2	T-RX	Input	UART RX input
3	R-TX	Output	RS232 TX
4	R-RX	Input	RS232 RX
5	Vcc	PWR	DC power input 3.3 – 5V
6	GND	PWR	Ground

1*6 Pitch 1.0mm**RB2929S-N JP2 (CPA-2001-1230 from CSTCONN - www.cstconn.com)**

Pin#	Name	Type	Description
1,12	NC		
2,11	Vcc	PWR	DC power input 3.3 – 5V
3,10	T-TX	Output	UART TX output
4,9	T-RX	Input	UART RXD input
5,8	GND	PWR	Ground
6	Reset	Input	
7	NC		

Boot: High Boot from Flash, Low Boot from serial port**1pps:** Time plus**2*6 Pitch 1.27mm**

Output NMEA Messages

NMEA-0183 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

The detail information please refers to RBXXXX series GPS module NMEA protocol reference manual.