

SSF2929P

Ultra High Sensitivity SiRF StarIII 7989
GPS Module with Patch Antenna

Smart Design Technology Co., Ltd.

20F-8, No.107, Sec 1, Jhongshan Rd. Sinjhuang City,
Taipei County 242, Taiwan

Phone: +886-2-8522-7628

Fax: +886-2-8522-7784

Contact: sales@smartdesign.com.tw

Documentation History

Revision	Description	Date	Remark
V0.1	SSF1919P release	Mar 2009	
V1.0	NMEA Update	Jul 2009	
V1.1	Connector Update	Sep 2009	
V1.2	Ordering code update	Apr 2010	

Content

Features.....	5
Block diagram.....	5
Technical Specifications.....	6
Pin Definition.....	8
Output NMEA Messages.....	9
NMEA Sentence.....	9
Description.....	9
Ordering Code.....	9



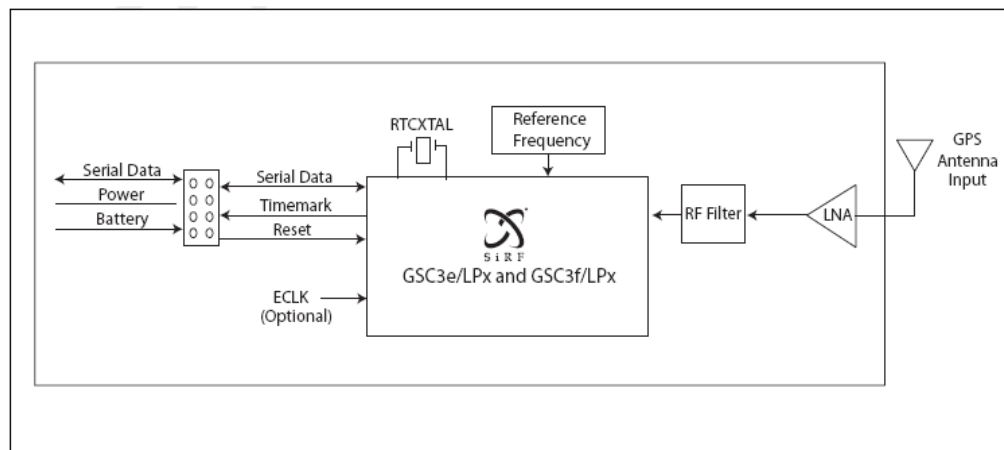
Key Module For Your Success

SSF2929P

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



SSF2929P GPS module

Technical Specifications

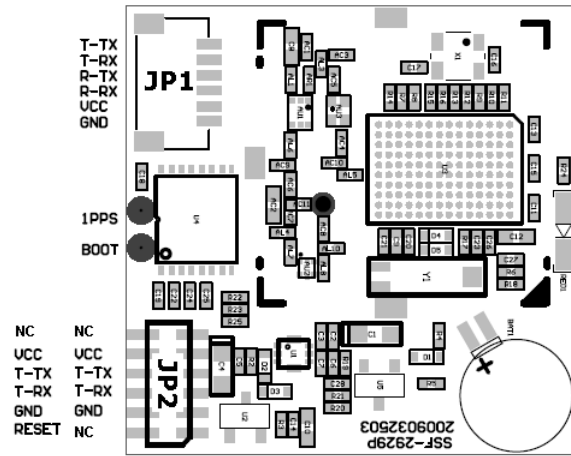
1. Electrical Characteristics

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

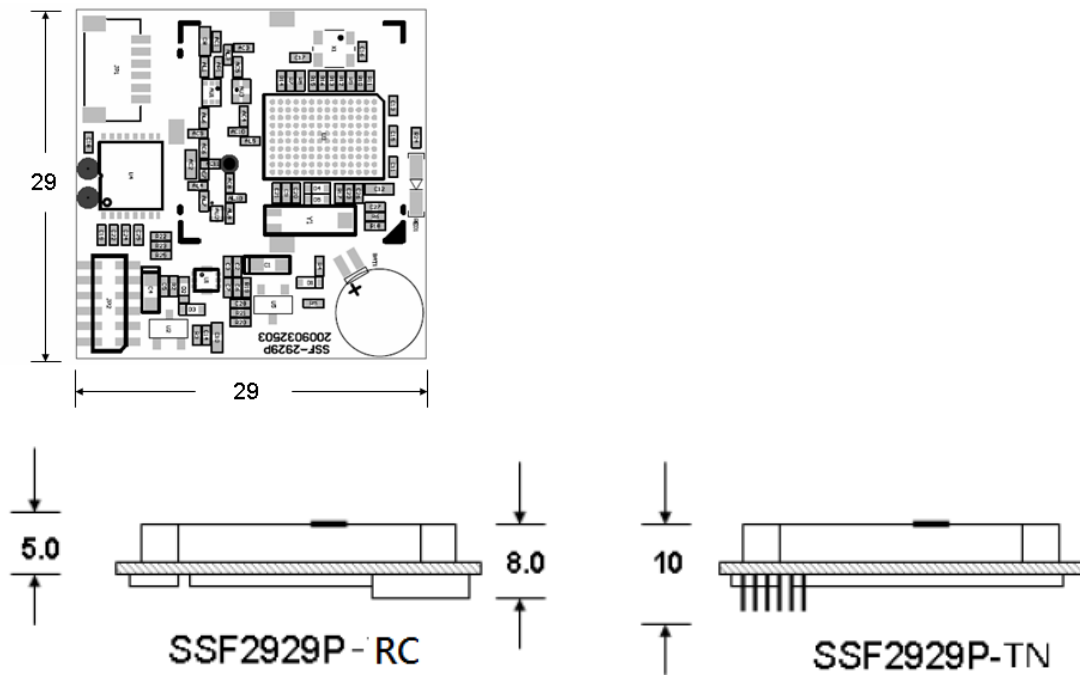
2. Environmental Characteristics

2.1 Temperature	Operating range	- 30 °C to + 85 °C
2.3 Interface	I/O connector	6 pin pitch 1.0mm connector (SSF2929P-RC) 12 pin pitch 1.27mm (SSF2929P-TN)

PIN assignment



Dimension



Pin Definition

JP1 board connector

(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

female connector for cable

(CSI-1183-0600 from CSTCONN - www.cstconn.com)



JP2 dip type board connector

(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 SSFXXXX series GPS module NMEA protocol reference manual.

Ordering Code

SSF2929 – X X
(1) (2) (3)

(1) Serial No.

(2) Output Interface : R=RS232

T=TTL

(3) Connector Type : C= JP1

N=JP2