

# STM2929P

# STM2929P-T

Ultra High Sensitivity SiRF StarIII 7989  
GNS TC5000 GPS TMC Module with Path  
Antenna

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## Documentation History

<b>Revision</b>	<b>Description</b>	<b>Date</b>	<b>Remark</b>
V0.1	STM2929P release	Nov 2009	

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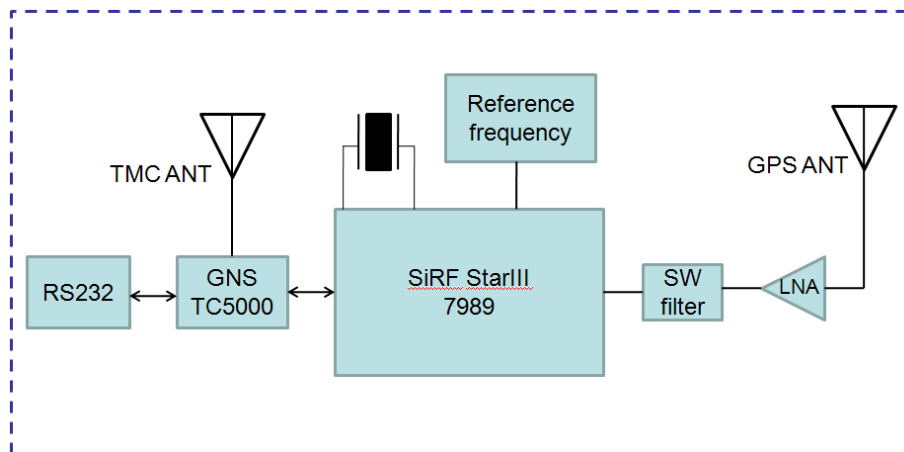
# STM2929P

## STM2929P-T

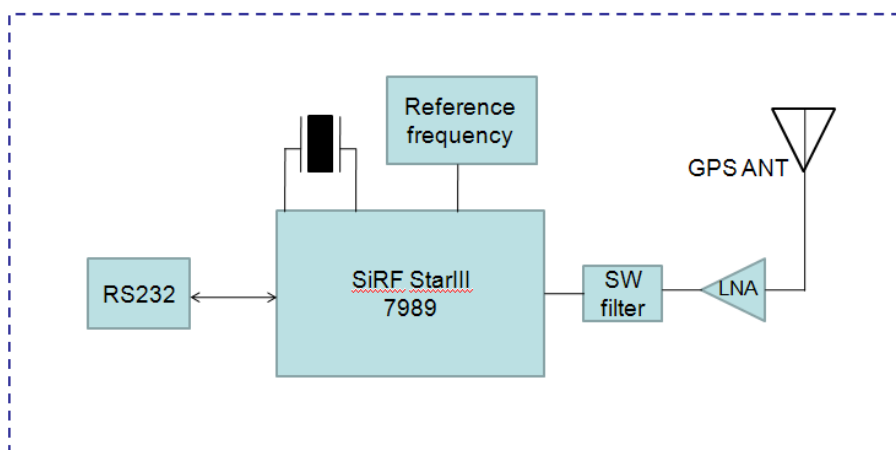
### Features

- ✓ 20 channel SiRF StarIII7989 positioning engine
- ✓ Ultra high sensitivity to -159 dBm
- ✓ SBAS (WAAS, MSAS, and EGNOS) support
- ✓ GNS TC5000 TMC chip build in( STM2929P-T).
- ✓ GNS protocol 3.0.(STM2929P-T)
- ✓ 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



STM2929P-T module



STM2929P GPS module

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# Technical Specifications

## 1. Electrical Characteristics

1.1 Chipset	SiRF StarIII GSC3eLP GNS TC5000(STM2929P-T)	
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
1.9 Serial Port	Backup power	1.4 ~ 5V
	Electrical interface	UART, RS232
	Protocols	GPS NMEA0183 v3.0 TMC GNS protocol 3.0
	Baud rate	38400bps(STM2929P-T only) 9600bps ( STM2929P default )

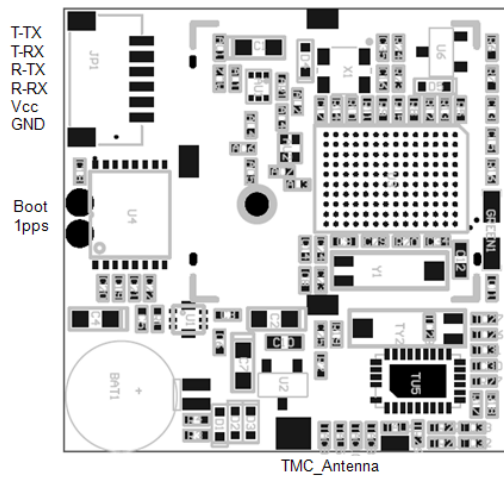
## 2. Environmental Characteristics

2.1 Temperature	Operating range	- 30 °C to + 85 °C
2.3 Interface	I/O connector	6 pin connector ( Pitch 1.0CSI-1182-061R)

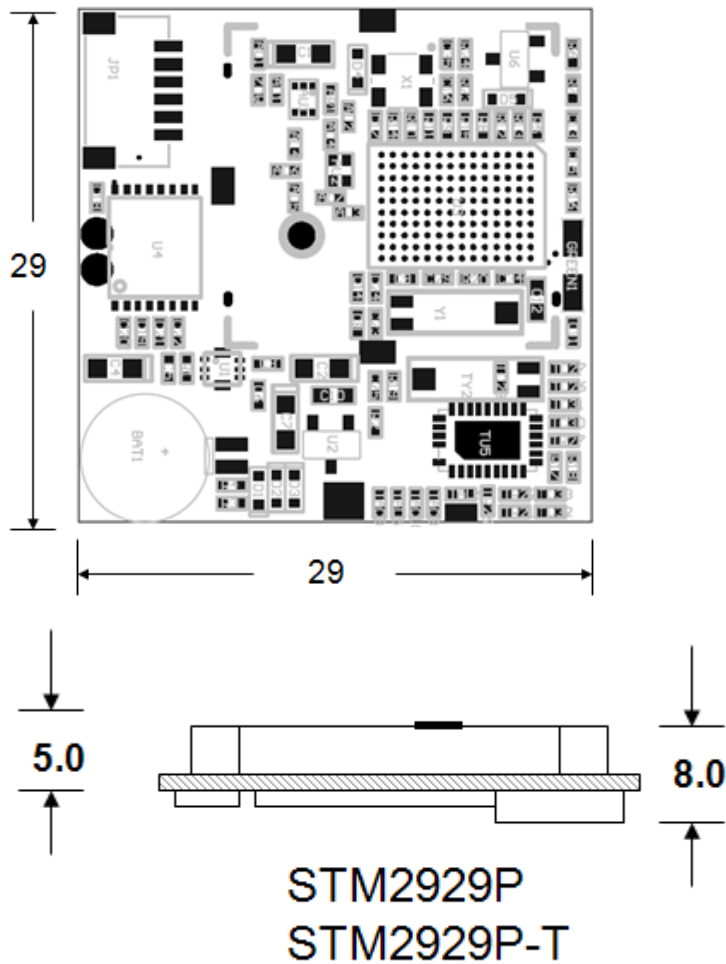
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## PIN assignment



## Dimension



Unit: mm

## Pin Definition

### JP1

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

**Boot:** High Boot from Flash, Low Boot from serial port

**1pps:** Time plus

**TMC Antenna:** TMC Antenna input

### JP1 connector information:

Please refer to CSI-1182-061R from CSTCONN [www.cstconn.com](http://www.cstconn.com)

## 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.

STM2929P: GPS module with Path antenna

STM2929P-T: TMC + GPS module with Path antenna. The baud rate only supports 38400 bps. The NMEA message combines with TMC message output.

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