

SU82929P

Ultra High Sensitivity Ublox 8
GPS Module with Miniature Dimension
Support GPS, QZSS, GLONASS, BeiDou

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Documentation History

Revision	Description	Date	Remark
V0.1	SU82929P Release	Jun 2014	

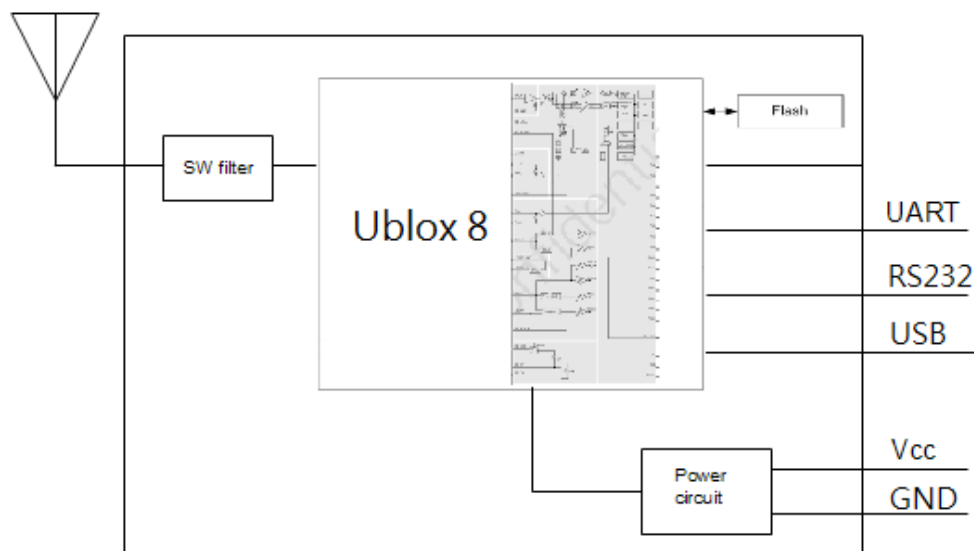
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Features

- ✓ 72 channel Ublox 8 positioning engine.
- ✓ Ultra high sensitivity to -167 dBm.
- ✓ Support maximum 10Hz Update rate
- ✓ GPS L1C/A, SBAS L1C/A, QZSS L1C/A and Galileo E1B/support.
- ✓ Supports GPS/QZSS L1 C/A, GLONASS L10F, BeiDou B1 SBAS L1 C/A: WAAS, EGNOS.
- ✓ Supports UART, USB and RS232 interface.
- ✓ LED indicate location fix.
- ✓ Ultra low power consumption.
- ✓ Ultra miniature 29 x 29 mm dimension with SMT pad package
- ✓ Operating temperature range: -40 to 85°C
- ✓ RoHS compliant (lead-free)

Block diagram



Technical Specifications

1. Electrical

Characteristics

1.1 Chip set	Ublox 8	
1.2 General	Frequency	L1, 1575.42MHz
	Channels, C/A code	56, 1.023 MHz chip rate, 8192 time/frequency search windows
1.3 Accuracy	Position	2.5 meters Autonomous
1.4 DGPS Accuracy	Position	2.0 meters SBAS
1.5 Acquisition Rate	Reacquisition	
	Cold start	26 sec,
	Aided start	2 sec
	Hot start	1 sec
1.6 Sensitivity	Tracking and Navigation	-167dBm
	Reacquisition	-160dBm
	Cold start	-148dBm
	Hot start	-156dBm
1.7 Dynamic Condition	Altitude	50,000 meters
	Velocity	500 meters /sec
1.8 Power	Main Power	3.3 VDC typical
	Supply current (Tracking)	40 mA (AVG)
	Supply current (Navigation)	37 mA (AVG)
1.9 Serial Port	Electrical interface	UART, USB
		RS232
	Protocols	NMEA0183 v2.3, Compatible with 3.0
	Baud Rate	4800, 9600(default)

2. Environmental Characteristics

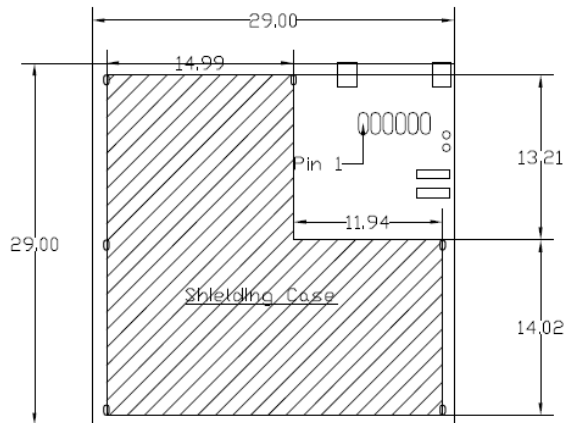
2.1 Temperature	Operating range	- 40 °C to + 85 °C
2.2 Mechanical dimensions	L x W x H	29.0 x 29.0 x 7.5 mm
2.3 Interface	I/O connector	RS232, UART and USB

*CGEE: Client Generated Extended Ephemeris

3 Antenna

Parameter	Specification
3.1 Antenna type	Passive antenna

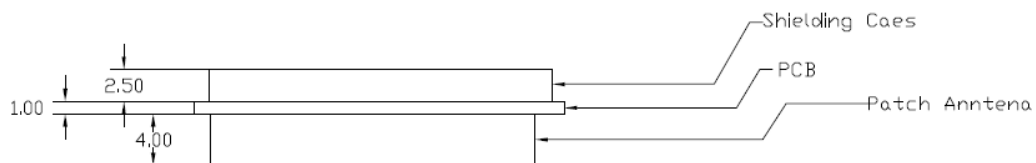
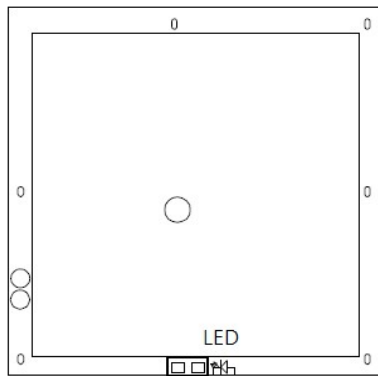
Dimension



Pin Assignment

1. GND
2. Vcc
3. RS232 RX
4. RS232 TX
5. UART RX
6. UART TX

Unit : mm



Pin Definition

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

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

Labeling information

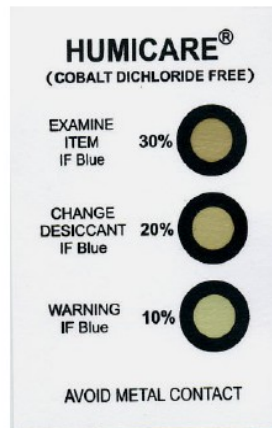
The Labeling of GPS modules includes product information. The location of the product type number and serial number are show in the figure.

Product type number
Serial number



Humidity Card

The dry bag provide an MSD label describing the handling requirement to prevent humidity intake. JEDEC J-STD-033B specifications require that MSD sensitive device be packaged together with a Humidity indicator Card and desiccant to absorb humidity. If no moisture has been absorbed, the three field in the HIC indicate blue color.



The calculated shelf life for dry packed SMD packages is a minimum of 12 months from the bag seal date, when stored in a non-condensing atmospheric environment of <40°C/90% RH.

The parts must be processed and soldered within the time specified for the MSL level 3 168 hours. If this time is exceeded, or the humidity indicator card in the sealed package indicates that they have been exposed to moisture, the devices need to be pre-baked before the reflow solder process.

Ordering code

SU82929P- X X X
a b c

Defaultl ordering code: S4F2929P-11

a. Baud Rate setting:

1 : 4800 bps;

2 : 9600 bps;

b. Output NMEA setting:

1 : RMC(1), GGA(1), GSA(1), GSV(5)

2 : RMC(1), GGA(1), GSA(1), GSV(1), VTG(1)

3 : RMC(1), GGA(1)

c. Type

G: GPS + Glonass

B: GPS + BeiDou

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.