Project No：/
Date：2018.04.10
Rev： 1.0

Product Specification

Customer name：_____

Model： BG01-T -V1.1

B&T P/N:_____

Spec.： BG01-T-G1B -V1.1 GPS SoC Module Board

Sealed by corporation:

Compilation	Verify	Approval
yangxiaofei	dengyuxing	Sky-xu

Sealed by customer：

Check	Verify	Approval

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SPECIFICATION

BG01-T

BG01-T V1.1

Version: V1.0

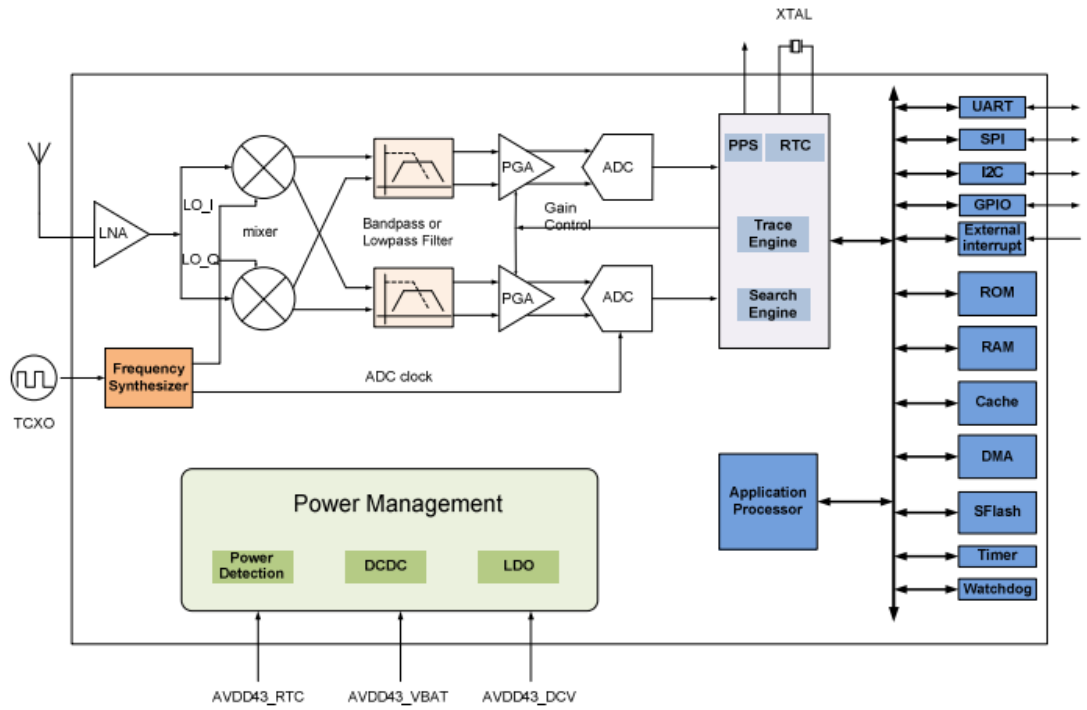
Change History of Revision

Revision	Date	Contents of Revision Change	Compilation	Verify
1.0	2018.04.10	Iinitial release	yangxiaofei	dengyuxing

1. General Description

The BG01-T-G1B_V1.1 is a highly integrated GNSS SOC module, Main chip is GK9501,That is ahigh-integration Multi-GNSS SoC that supports GPS with low power consumption. It integrates DC/DC,LDO, LNA, RF receiver, baseband, 32-bit RISC CPU, RAM, Flash, RTC and PMU,providing kinds of interfaces like UART, I2C, SPI and GPIO, supporting crystal and TCXO input. It also provides battery backed-up memory and a real-time clock to accelerate acquisition and reduce the TTFF(Time to First Fix). GK9501 also supports multiple ways of connecting to other peripherals, such as UART, I2C, SPI or GPIO.

2. Block Diagram



3. BG02 Electrical Specifications

Category	Test Item	Typical	Unit
TTFF [Condition 1]	Cold Start	27.5	s
	Warm Start	<1	s
	Re-Acquisition	<1	s
	A-GNSS	<10	s
Sensitivity [Condition 2]	Cold Start	-148	dBm
	Warm Start	-162	dBm
	Re-Acquisition	-164	dBm
	Tracking	-166	dBm
Accuracy [Condition 3]	Horizontal position accuracy	2.5	m
	Altitude position accuracy	3.5	m
	Velocity accuracy	0.1	m/s
	Accuracy of Timepulse signal	30	ns
Power [Condition 4]	Acquisition Current@3.3v	30	mA
	Tracking Current@3.3v	20	mA
Operating Temperature		-40℃-85℃	℃
Storage Temperature		-65℃-150℃	℃
Humidity		5%-95%	

Note：Above test result based on GPS/BEIDO mode

[Condition 1]: The number of received satellite is more than six and signal of all those satellites is -130dBm. Test 10 times to take the average value and positioning accuracy is less than 10 meters

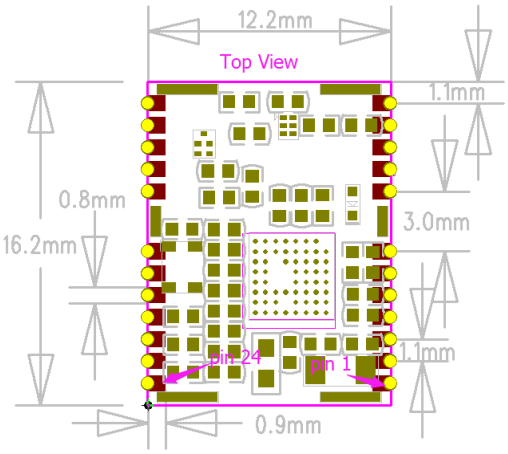
[Condition 2]: External LNA noise figure 0.8 and the number of received satellite is more than six. If in five minutes continuous lock the received signal strength is the test value

[Condition 3]: Wide and no blocking environment, continuous 24 hours test, 50%CEP

[Condition 4]: The number of received satellite is more than six and signal of all those satellites is -130dBm.

4. BG02 Package Dimensions & Pin definition

4.1 Package Dimensions

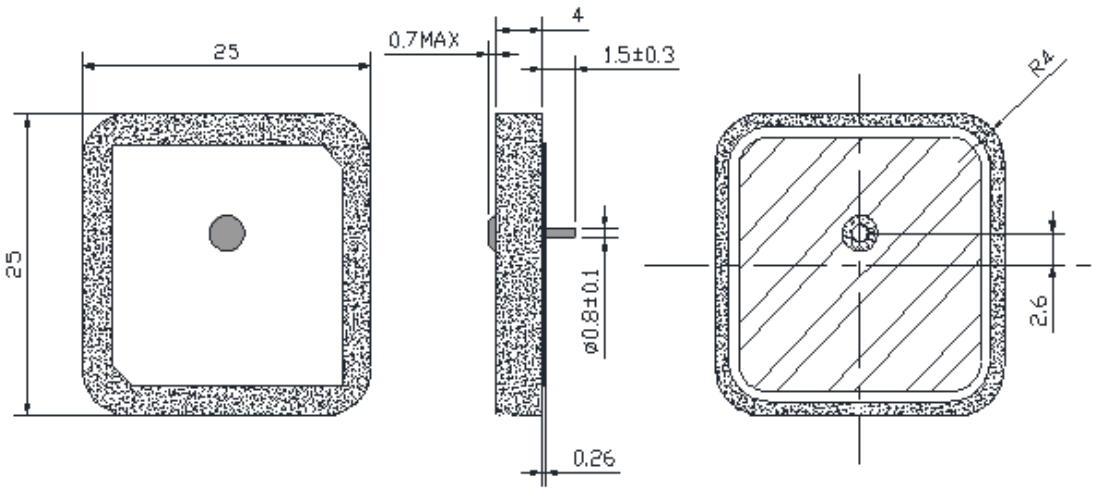


4.2 Pin Definition

Pin No.	Definition	Description
1	NC	No connect
2	NC	No connect
3	1PPS	Time pulse signal
4	NC	No connect
5	NC	No connect
6	NC	No connect
7	NC	No connect
8	NC	No connect
9	VCCRF	Output power for RF
10	GND	Ground
11	RF_IN	GNSS signal input
12	GND	Ground
13	GND	Ground
14	NC	No connect
15	NC	No connect
16	NC	No connect
17	NC	No connect
18	NC	No connect
19	NC	No connect
20	TXD	UART serial data output
21	RXD	UART serial data input
22	VBKP	Backup power supply for internal RTC
23	VCC	3.3V input
24	GND	Ground

5. Antenna Package Dimensions & Electrical Specifications

5.1 Antenna Dimensions

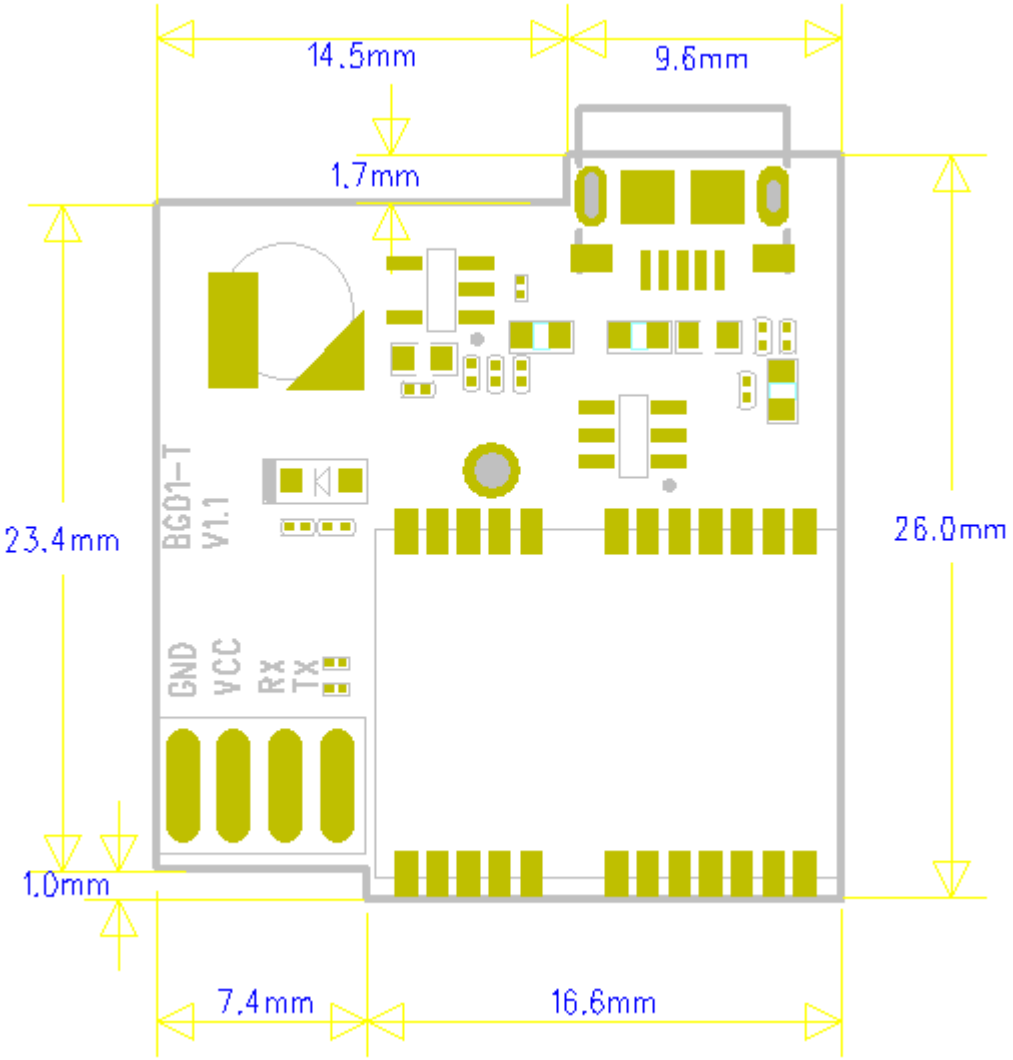


5.2 Antenna Electrical Specifications

Item	Specifications	Post Environmental Tolerance
Range of Receiving Frequency	GPS:1575.42	±2.5
Center Frequency (Mhz) (with YBAT02 GND Plane)	1590	±2.0
Band With (Mhz) (Return loss ≤-10dB)	≥5	——
V.S.W.R(in Center Frequency)	≤1.5	——
Gain(Zenith) (dBi typ)	2 dB typical	——
Axial Ratio	5 dB max	——
Polarization	Right-Handed Circular	——
Im edance（Ω）	50	——
Frequency Temperature Coefficient （ppm/℃）	0±10	——

6. Test board Package Dimensions & pin Definition

6.1 Test board Package Dimensions



6.2 Test board pin Definition

Pin No.	Definition	Description
1	GND	Ground
1	VCC	DC 3.6-5.5V
2	RXD	UART serial data input
3	TXD	UART serial data output