L26 EVB User Guide

GNSS Module Series

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About the document

History

Revision	Date	Author	Description
1.0	2013-04-22	Ada LI	Initial

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1 Introduction

This document defines and specifies the usage of L26 EVB (Evaluation Board). You can get useful information about L26 EVB and GNSS demo tool from this document.

2 Introduction to EVB Kit

2.1. EVB Top and Bottom View

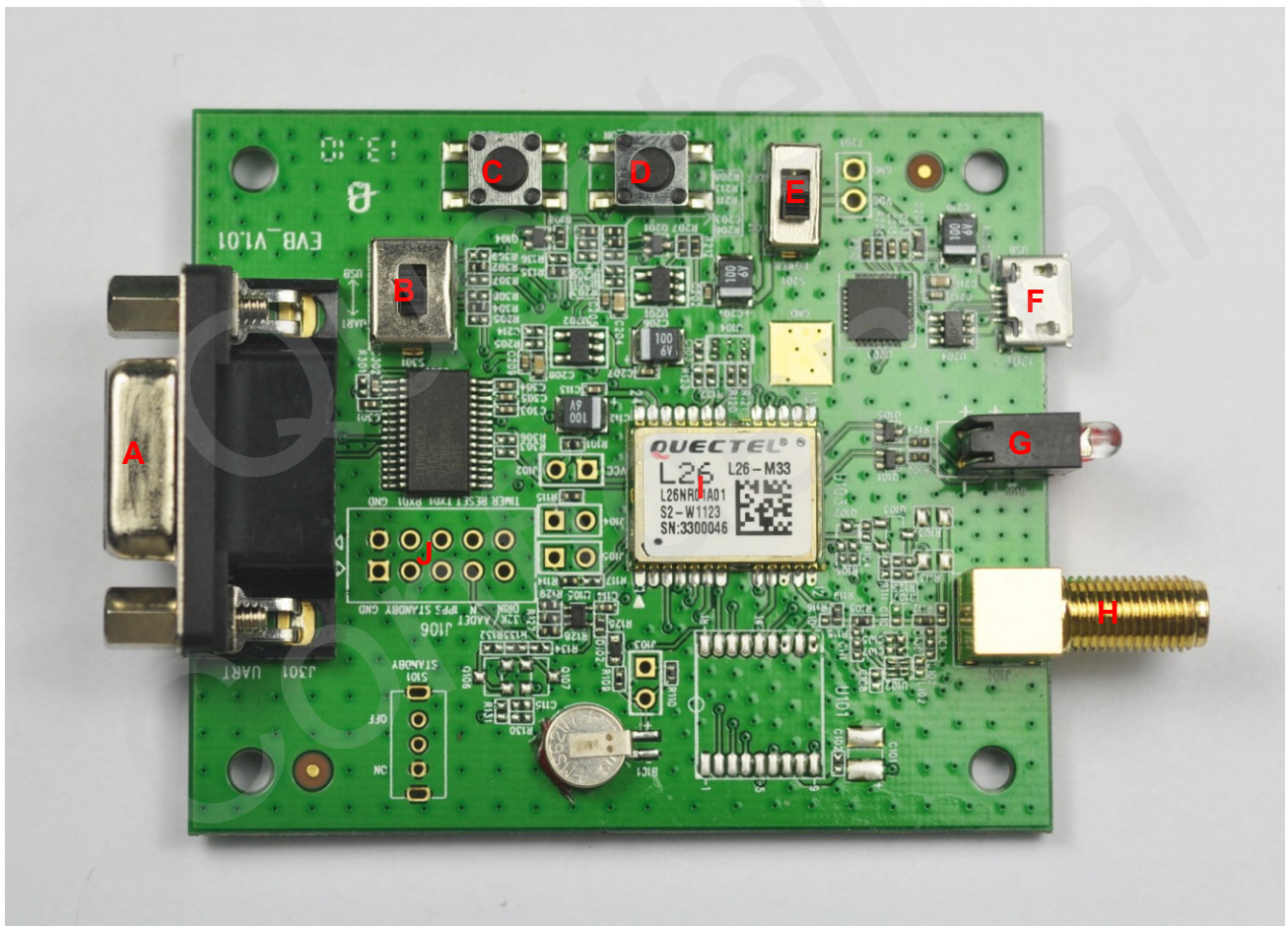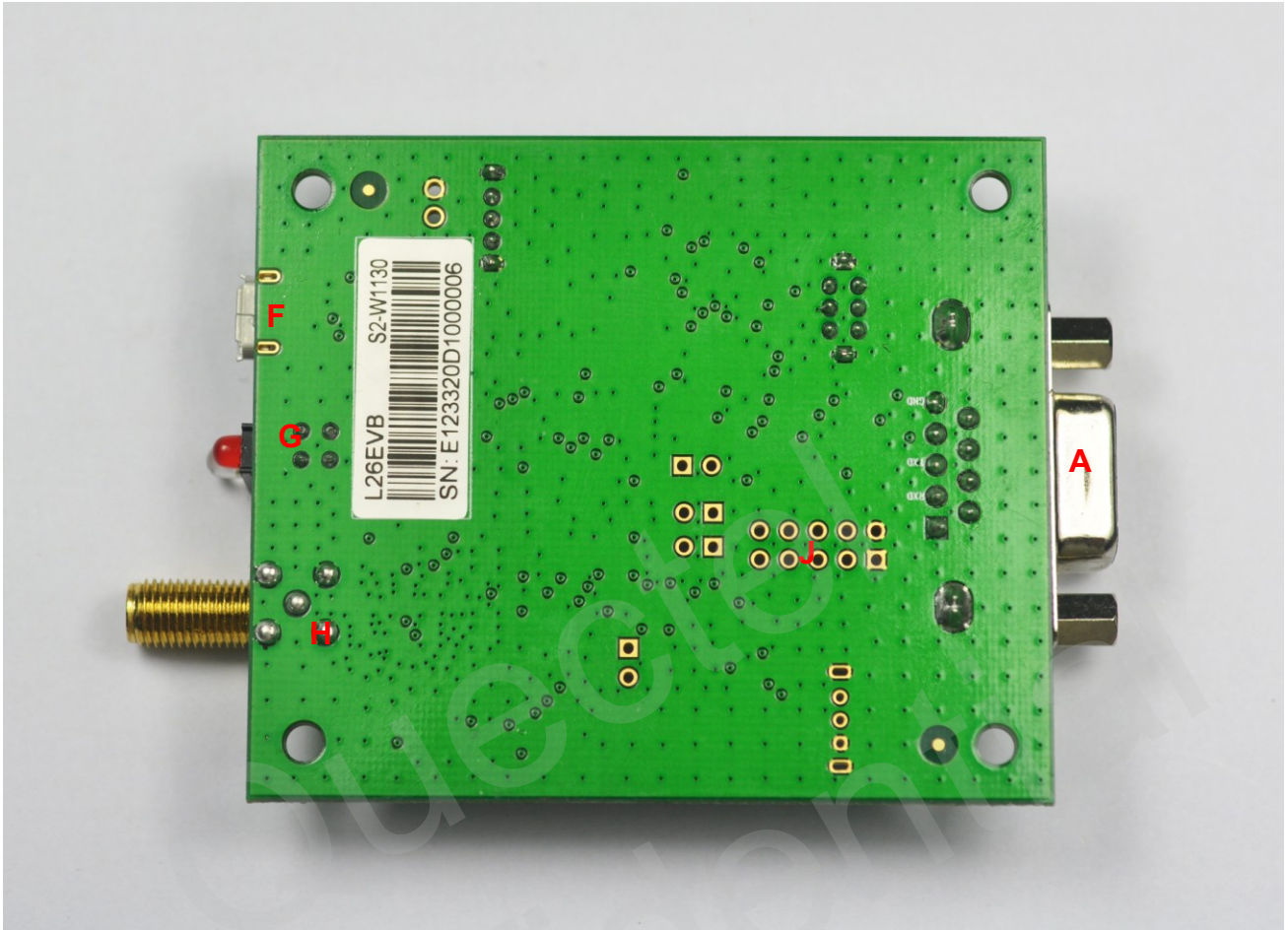**Figure 1: EVB Top View**

Figure 2: EVB Bottom View

A: UART port

B: Serial port alternation switch

C: RESET button

D: FORCE_ON button

E: POWER switch

F: Micro-USB port

G: Indication LEDs

H: Antenna interface

I: L26 Module

J: Test points

2.2. EVB Accessories

Figure 3: EVB Accessories

A: USB cable
B: GNSS active antenna (3.3V)

3 Interface Application

3.1. USB Interface
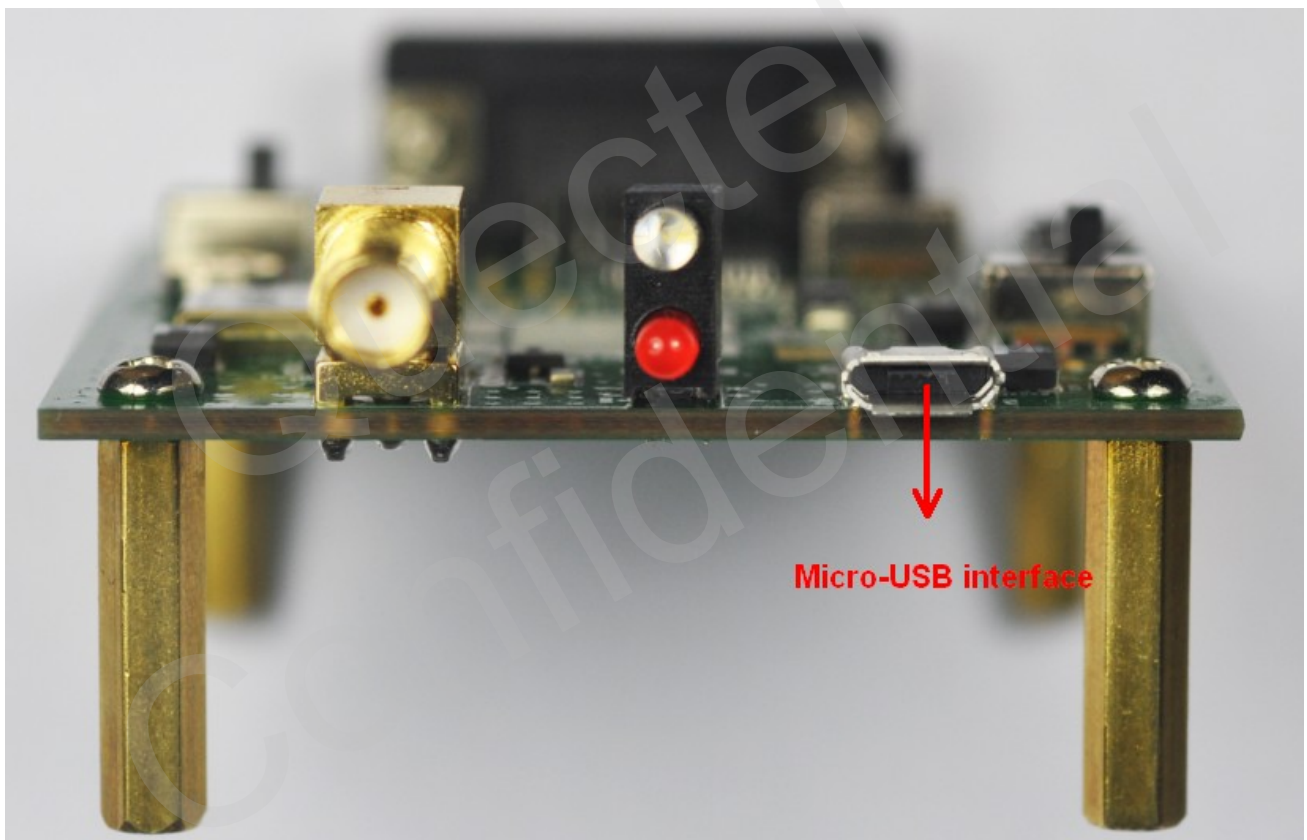
Figure 4: Micro-USB Interface

The main power is supplied via Micro-USB interface. We provide two ways for data communication: Micro-USB and UART interface which are controlled by alternation switch (S2). Both of RS232 and Micro-USB cable are necessary, if you want to use UART to output NEMA. So the easy way is to use Micro-USB cable which both supplies the power and outputs NEMA. You can makes alternation between UART port and Micro-USB interfaces via switch (S2).

3.2. UART Interface

Figure 5: **UART Interface**

Table 1: Pins of UART port

Pin	Signal	I/O	Description
2	RXD	I	Receive data
3	TXD	O	Transmit data
5	GND		GND

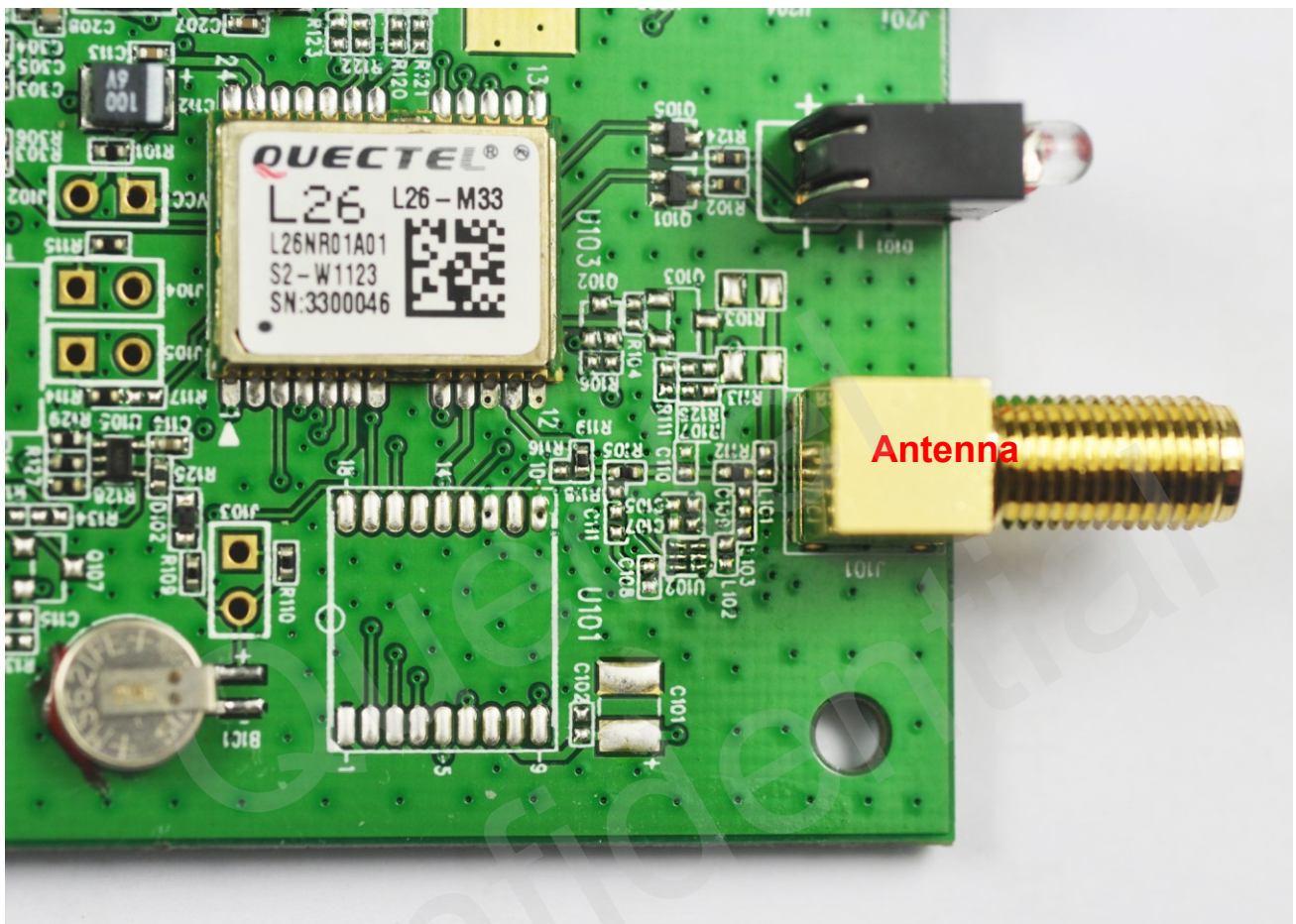## 3.3. Antenna Interface

Figure 6: Antenna Interface

3.4. Switches and Buttons
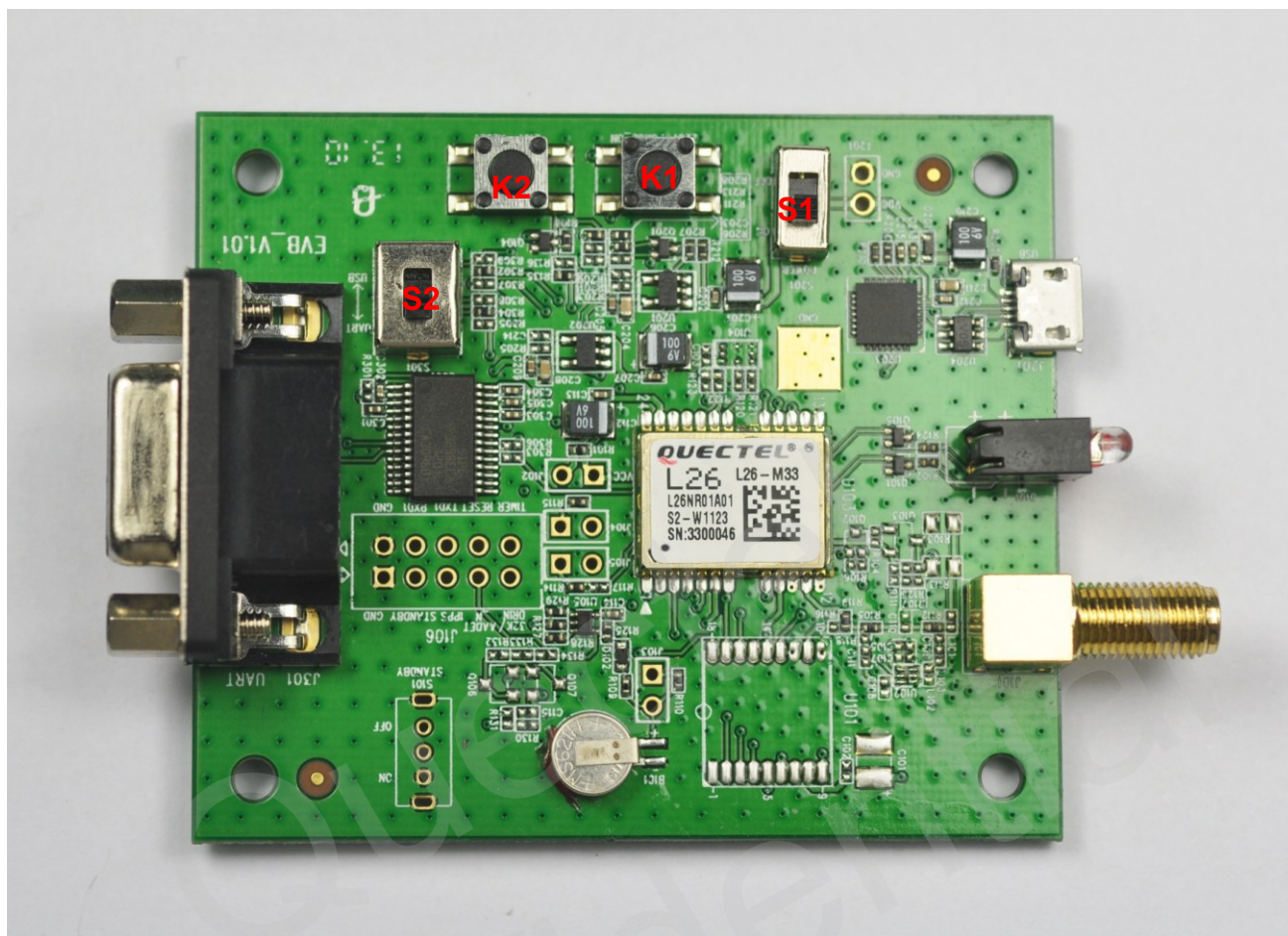
Figure 7: Switches and Buttons

Table 2: Switches and Buttons

Part	Name	I/O	Description
S1	POWER	I	Control power supply from Micro-USB.
S2	Serial port alternation switch	I	Quectel EVB supplies two communicative ways: Micro-USB and UART which are controlled by switch.
K1	FORCE_ON		Press and release the button, the module will be waked up from backup mode.
K2	RESET	I	Press and release this button, then the module will reset.

3.5. Operating Status LEDs

Figure 8: Operating Status LEDs

Table 3: Operating status LEDs

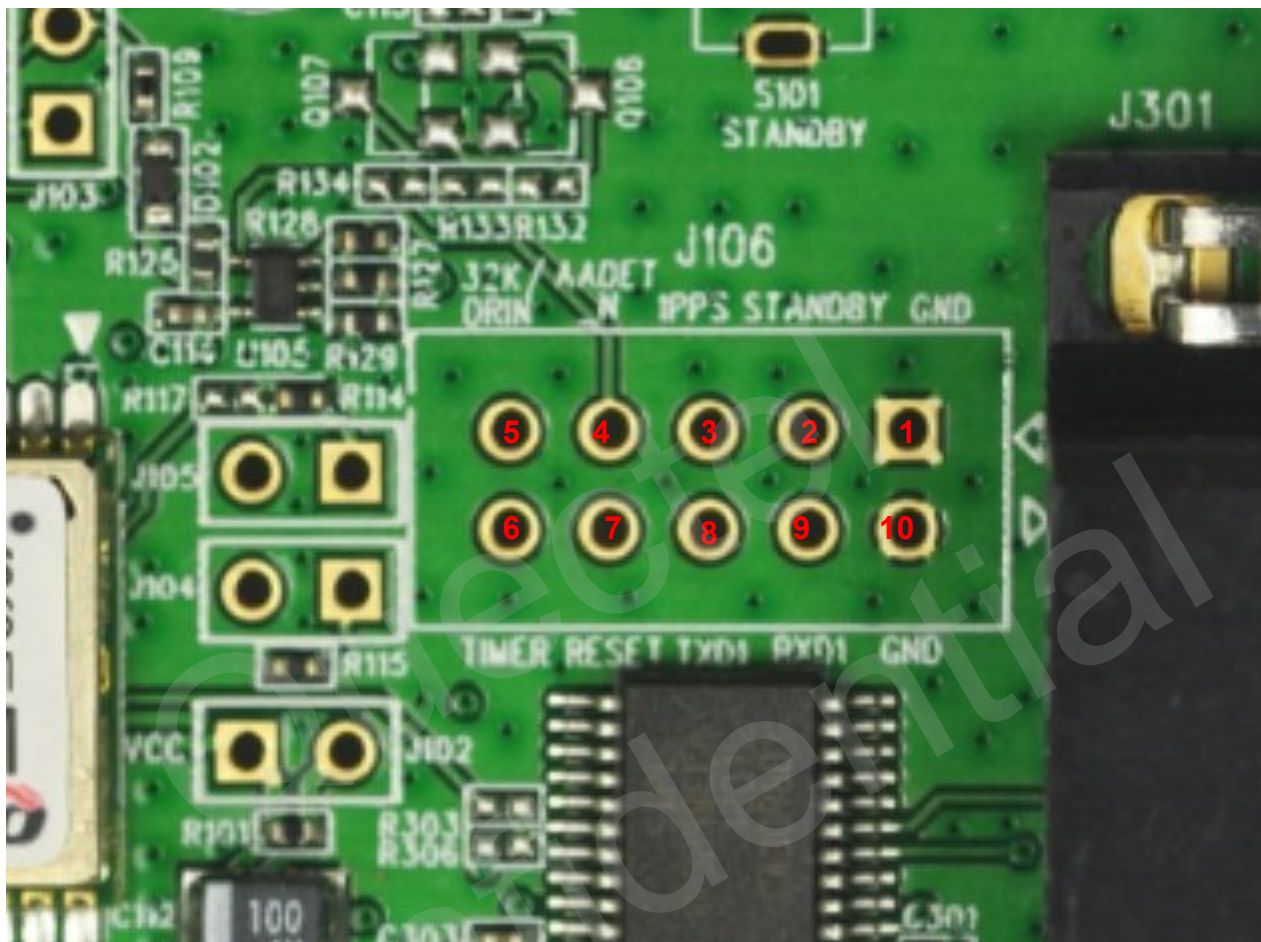| Part	Name	I/O	Description
L1	TXD1	O	Flash: turn on successfully, Micro-USB or UART1 port can output messages. Extinct: fail to turn on the module
L2	1PPS	O	Flash: fix successfully, the frequency is 1Hz Extinct: no fix

3.6. Test Points

Figure 9: Test Points J106

Table 4: Pins of J106

Pin	Signal	I/O	Description
1/10	GND		Ground
2	STANDBY		Reserved
3	1PPS	O	1 pulse per second
4	AADET_N	I	Active antenna open circuit detection
5	32K/DRIN		Reserved
6	FORCE_ON		Logic high will force module to be waked up from backup mode. Keep this pin open or pulled low

			before entering into backup mode. If unused, keep this pin open.
7	RESET	I	System reset
8	TXD1	O	Transmit data
9	RXD1	I	Receive data

4 EVB and Accessories

The EVB and its accessories are equipped as shown in Figure 10.

Figure 7: EVB and Accessory Equipments

5 Install Device Driver

Before using Micro-USB port, please install the driver of Micro-USB. Customer can login our FTP for download device driver. Overseas FTP path is /d:/FTP/OC/Overseas_Technical/Overseas_Module Official Documents/GNSS Module/Common/04 Tool Kit/ GNSS_EVB_Micro-USB_Driver_CP210x.

Domestic FTP path is /d:/FTP/CC/Domestic_Technical/Domestic_Module Official Documents/GNSS Module/Common/04 Tool Kit/ GNSS_EVB_Micro-USB_Driver_CP210x.

6 Start PowerGPS

The PowerGPS version is V2.2.0. The PowerGPS tool can help user to view the status of GPS&GLONASS receiver conveniently. When the tool is opened, the following window will be displayed:
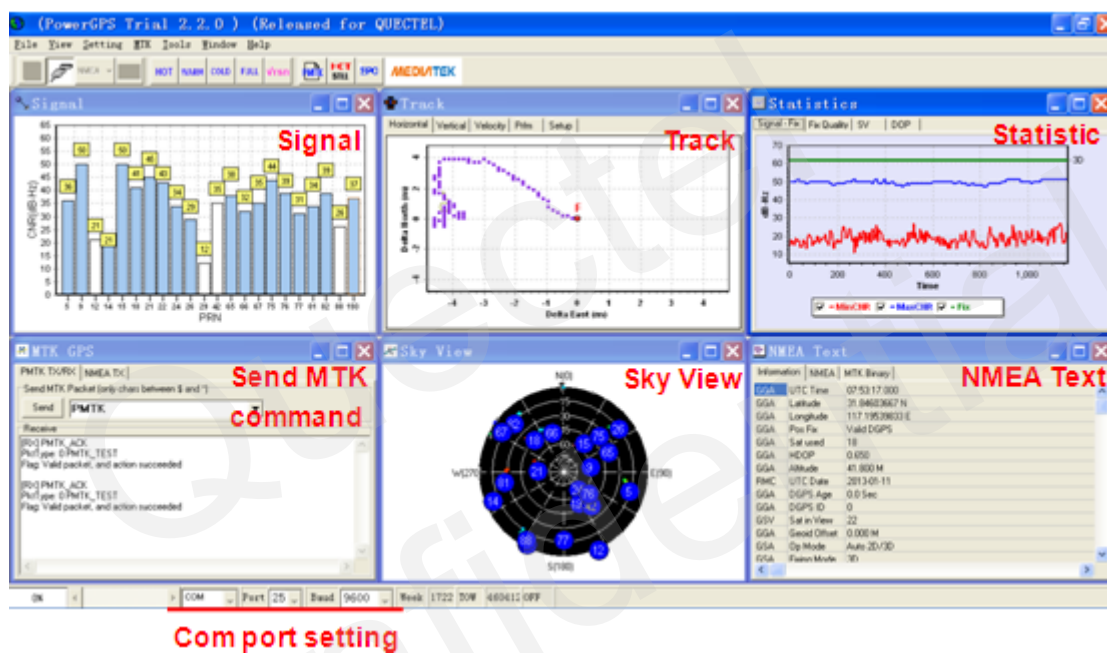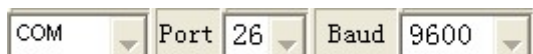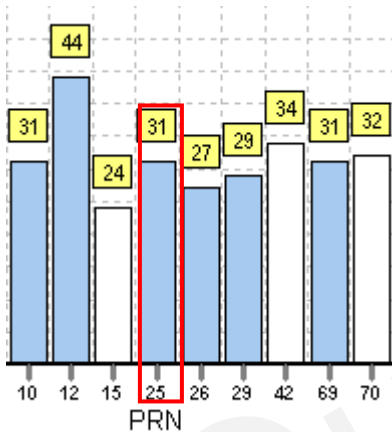

Figure 8: PowerGPS Tool

After EVB accessories are assembled, turn on the module and start up the PowerGPS. Select a correct COM port and baud rate (L26 module supports 9600bps by default), then click the button "Create Connection".
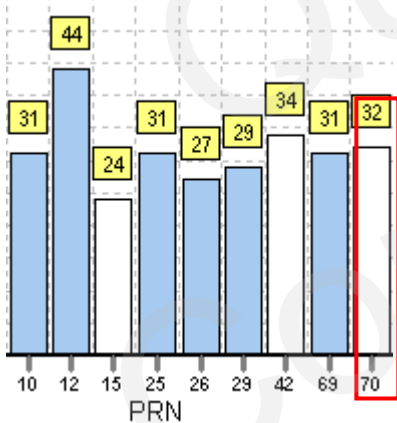

From the PowerGPS window, user can view CNR message, time, position, speed, precision and so on. Explanations are listed in Table 5.

Table 5: Explanations of PowerGPS Window

Icon	Explanation
	SV with PRN 65. If the position of SV is near to the centre of the Sky View, the elevation angle of SV is close to 90°. Dark blue means this satellite is in tracking.
	Light blue means this satellite is not in tracking.
	The CNR of PRN 25 is 31dB/Hz. Light blue column means the navigation data of this satellite is in use.
	The CNR of PRN 70 is 32dB/Hz. White column means the navigation data of this satellite is not in use. The range of GLONASS SVID is 65-96.
	UTC time Latitude degree longitude degree Positing fix Using the number of satellites Horizontal Dilution of Precision Altitude based on WGS84 Datum UTC date
	Fix type: No-Fix, 3D or 2D SPS Using satellite Position Dilution of Precision Vertical Dilution of Precision Speed of receiver

PMTK Command

You can send PMTK command by PowerGPS. The format of PMTK command is included only characters between '$' and '*', for example: PMTK869,0.
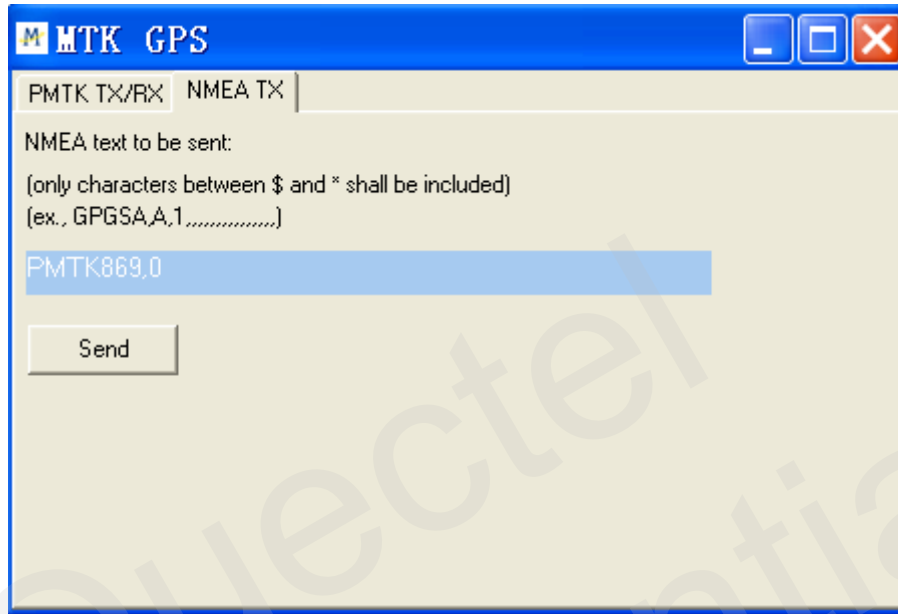

Figure 9: MTK Command

7 Appendix A Reference

Table 6: Reference

SN	Document name	Remark
[1]	L26_Hardware_Design	L26 Hardware Design
[2]	L26_Protocol_Specification	L26 Protocol Specification
[3]	L26_Reference_Design	L26 Reference Design

Table 7: Abbreviations

Abbreviation	Description
CNR	Carrier-to-Noise Ratio
GPS	Global Positioning System
GLONASS	Global Navigation Satellite System (The Russian GNSS)
GNSS	Global Navigation Satellite System
LED	Light Emitting Diode
PPS	Pulse Per Second
PRN	Pseudorandom Noise
SPS	Standard Positioning Service
SV	Satellite Vehicle
UART	Universal Asynchronous Receiver & Transmitter
UTC	Universal Time Coordinated
WGS84	World Geodetic System 1984