

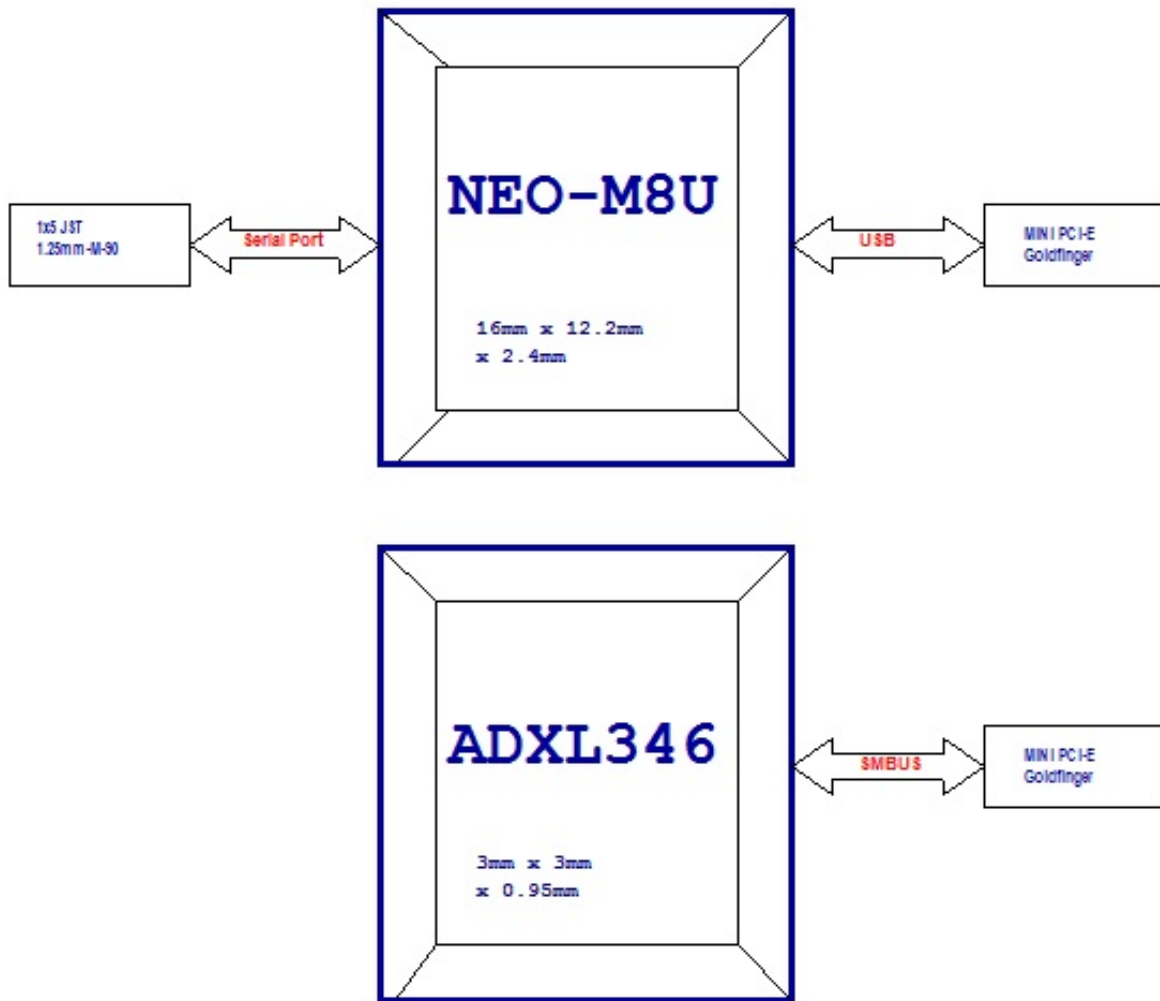
VDB-810DR

User Guide

[Redacted]	
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Approved by	

I. Engineering Specification

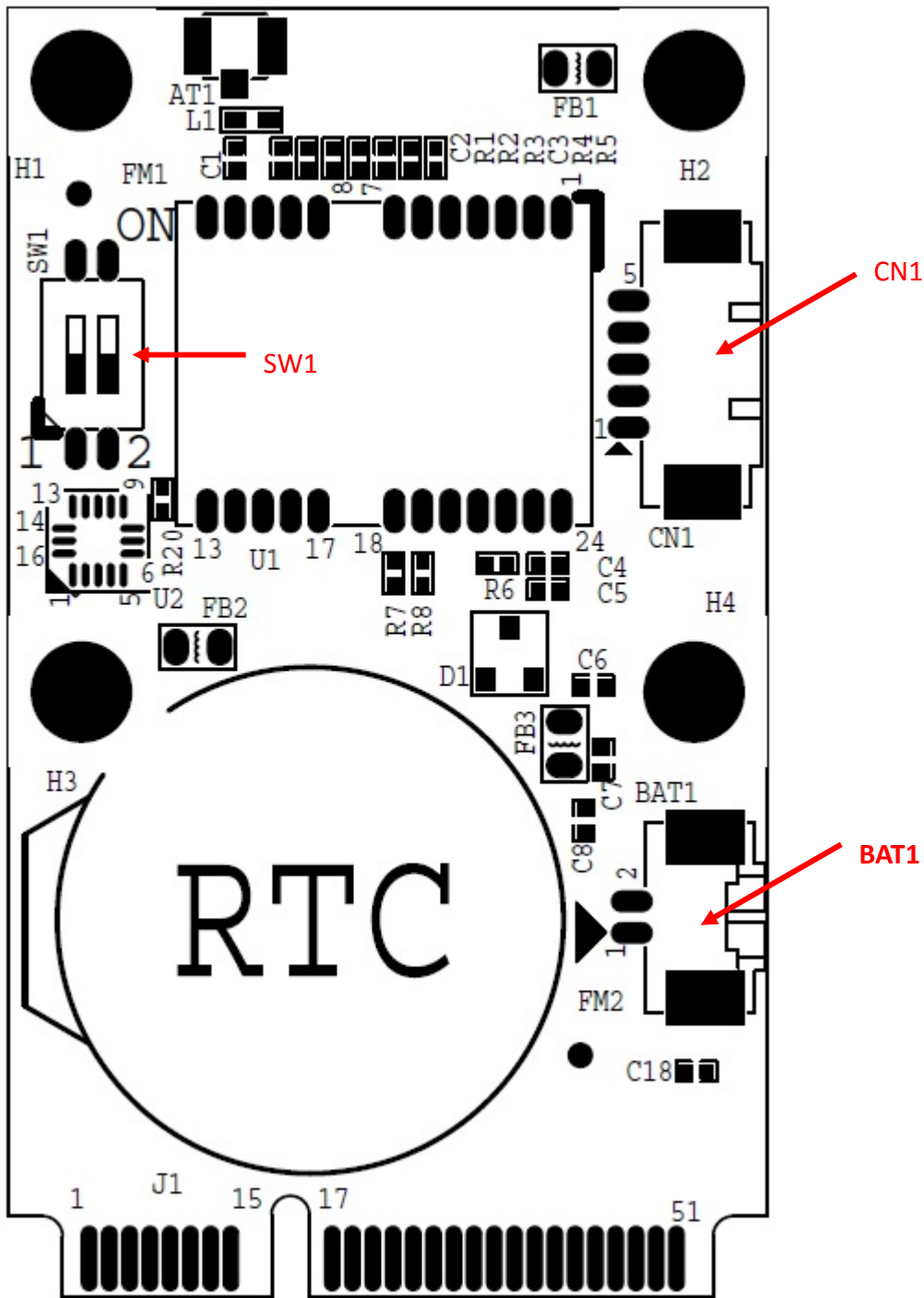
(1) Architecture



(2) Mini PCIE Pin Define

Pin	Signal	Pin	Signal
1	NC	2	3VSB
3	NC	4	GND
5	NC	6	NC
7	NC	8	NC
9	GND	10	NC
11	NC	12	NC
13	NC	14	NC
15	GND	16	NC
17	NC	18	GND
19	NC	20	NC
21	GND	22	PCIE_RST#
23	NC	24	3VSB
25	NC	26	GND
27	GND	28	NC
29	GND	30	SMBCLK
31	NC	32	SMBDAT
33	NC	34	GND
35	GND	36	USB_N
37	GND	38	USB_P
39	3VSB	40	GND
41	3VSB	42	NC
43	GND	44	NC
45	NC	46	NC
47	NC	48	NC
49	NC	50	GND
51	NC	52	3VSB

(3) All Connector Map:

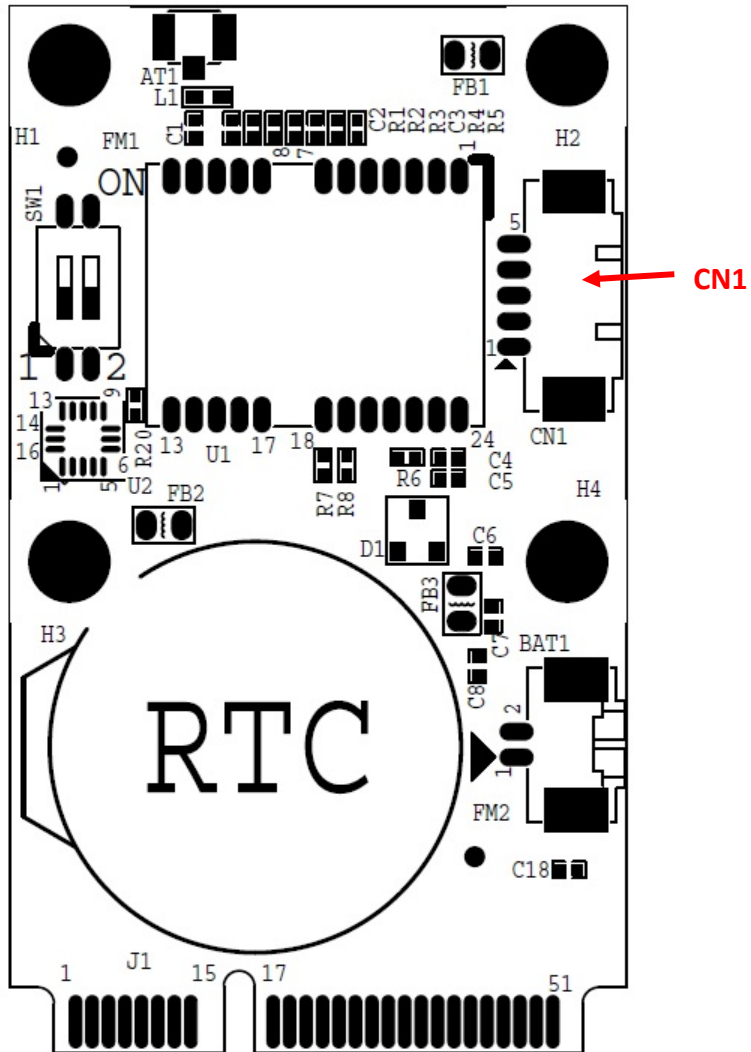


(4) Internal connector specification

4.1 CN1 connector

Connector size	5 Pin			
Connector type	JST-1.25mm-M-90			
Connector location	CN1			
Connector pin definition	Pin	Signal	Pin	Signal
	1	NC	2	NC
	3	NC	4	GND
	5	TIMEPULSE		

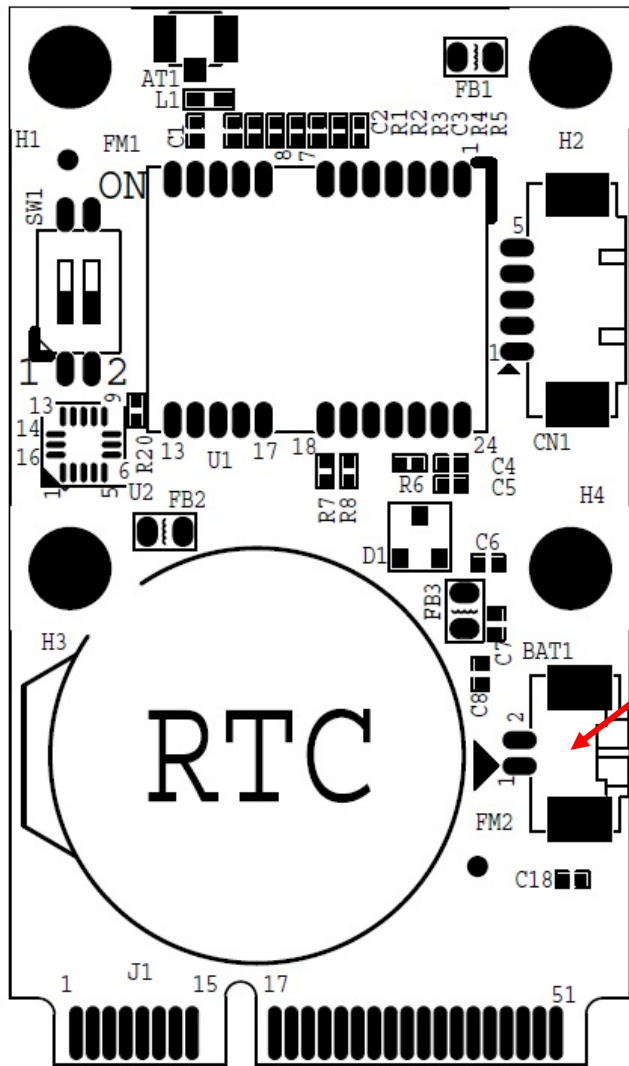
Connector map



.2 BAT1 connector

Connector size	2Pin			
Connector type	JST-1.25mm-M-90			
Connector location	BAT1			
Connector pin definition	Pin	Signal	Pin	Signal
	1	BAT3.3V	2	GND

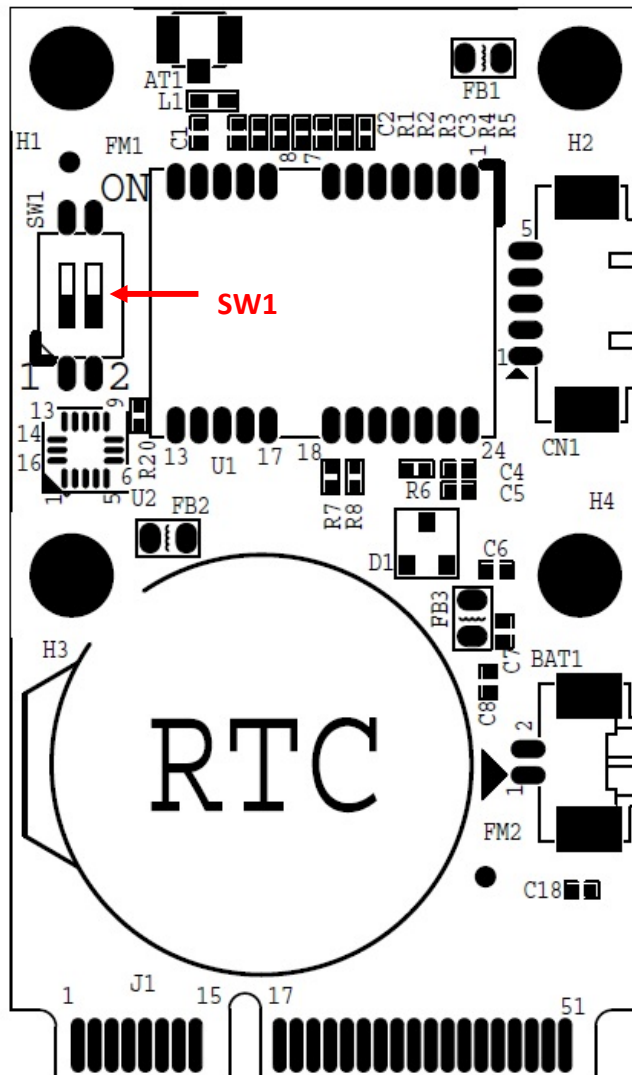
Connector map



4.3 SW1 connector

Connector size	2 Pin		
Connector type	DIP Switch		
Connector location	SW1		
Connector pin definition	SW1	Function	
	1=ON 2=ON	SM BUS Address=0x1D Write 3A	
	1=OFF 2=OFF	SM BUS Address=0x54 Write A6	

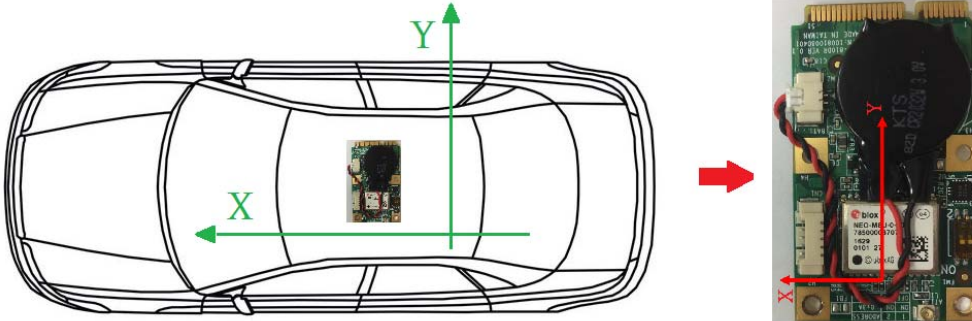
Connector map



II. Calibration

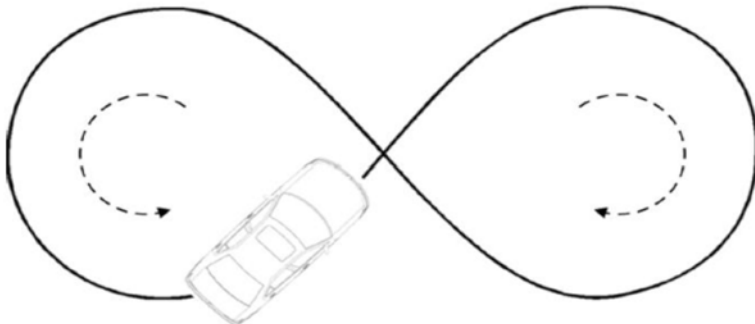
1. Environment setup

Before start, please check the position of module.



2. Calibration Drive Step

For GPS signal quality, please in the open area and drive as number 8 for the calibration. Generally, it will take about 10 minutes to complete calibration.

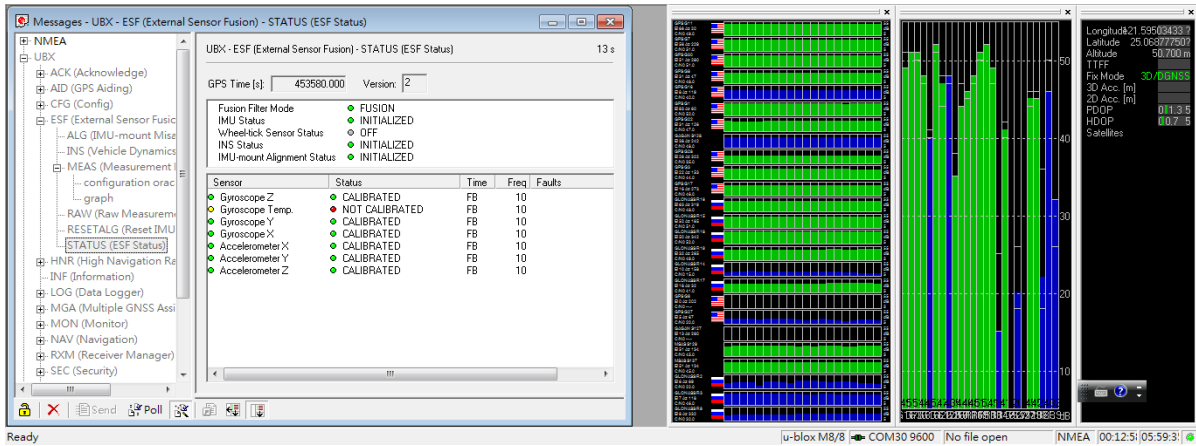


3. Calibration check

Please check the calibration situation by u-center.

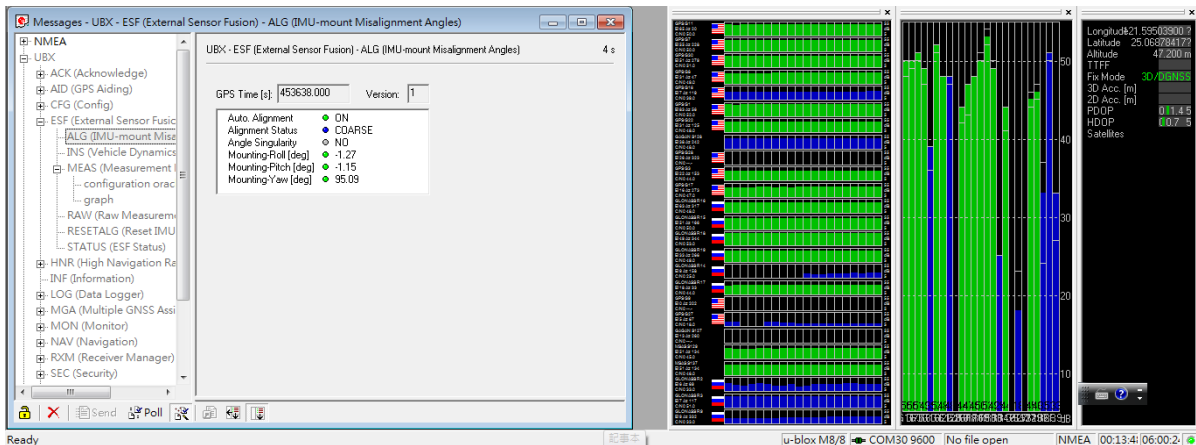
(u-center → View → Messages → UBX → ESF → STATUS)

The complete calibration as follow.



Check u-center → View → Messages → UBX → ESF → ALG

If calibration finished the Alignment Status will become FINE.



4. How to check the module going to DR mode.

If lose the signal of GPS or move antenna, the item of "Fix Mode" will automatically switch to DR.

The screenshot displays a software interface for monitoring an External Sensor Fusion (ESF) module. The main window is titled "Messages - UBX - ESF (External Sensor Fusion) - STATUS (ESF Status)".

ESF (External Sensor Fusion) - STATUS (ESF Status)

GPS Time [s]: 453765.000 Version: 2

Fusion Filter Mode: FUSION

IMU Status: INITIALIZED

Wheel lock Sensor Status: OFF

INS Status: INITIALIZED

IMU mount Alignment Status: INITIALIZED

Sensor	Status	Time	Freq	Fault
Gyroscope Z	<input checked="" type="radio"/> CALIBRATED	FB	10	
Gyroscope Temp	<input checked="" type="radio"/> NOT CALIBRATED	FB	10	
Gyroscope Y	<input checked="" type="radio"/> CALIBRATED	FB	10	
Gyroscope X	<input checked="" type="radio"/> CALIBRATED	FB	10	
Accelerometer X	<input checked="" type="radio"/> CALIBRATED	FB	10	
Accelerometer Y	<input checked="" type="radio"/> CALIBRATED	FB	10	
Accelerometer Z	<input checked="" type="radio"/> CALIBRATED	FB	10	

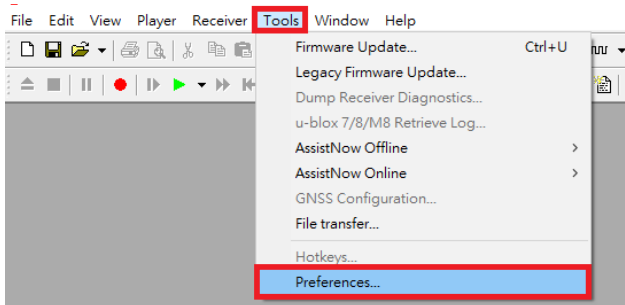
The interface also includes a data stream window on the right showing various NMEA sentences. The "Fix Mode" field is highlighted in red and shows "DR". Other fields include Longitude, Latitude, Altitude, HDOP, and PDOP.

Longitude: 21.556950000
Latitude: 20.068764677
Altitude: 45.70000
Fix Mode: DR
3D Acc: [m]
2D Acc: [m]
HDOP:
PDOP:
Satellites:

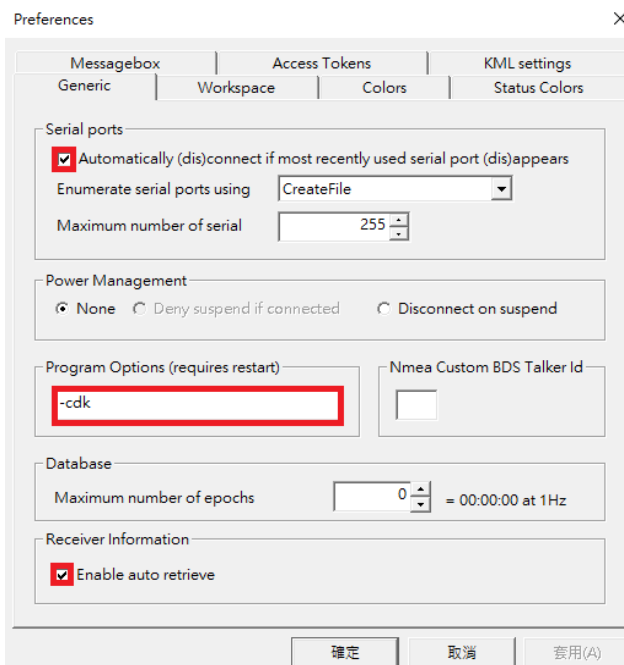
III. Adjust parameter

1. Open External Sensor Fusion function

Open u-center and click Preferences which is in Tools.



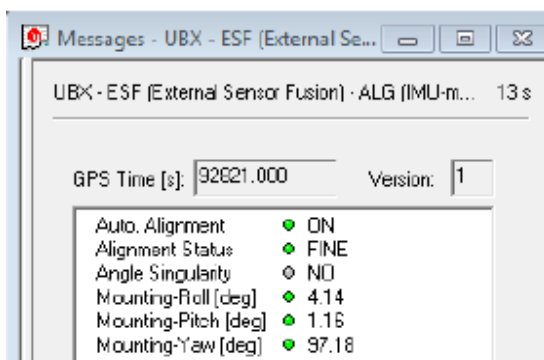
Please make sure the item has been checked like below and key-in the command “-cdk” in Program Options.



Click OK and reopen u-center when you finished the setting.

2. Adjust parameter

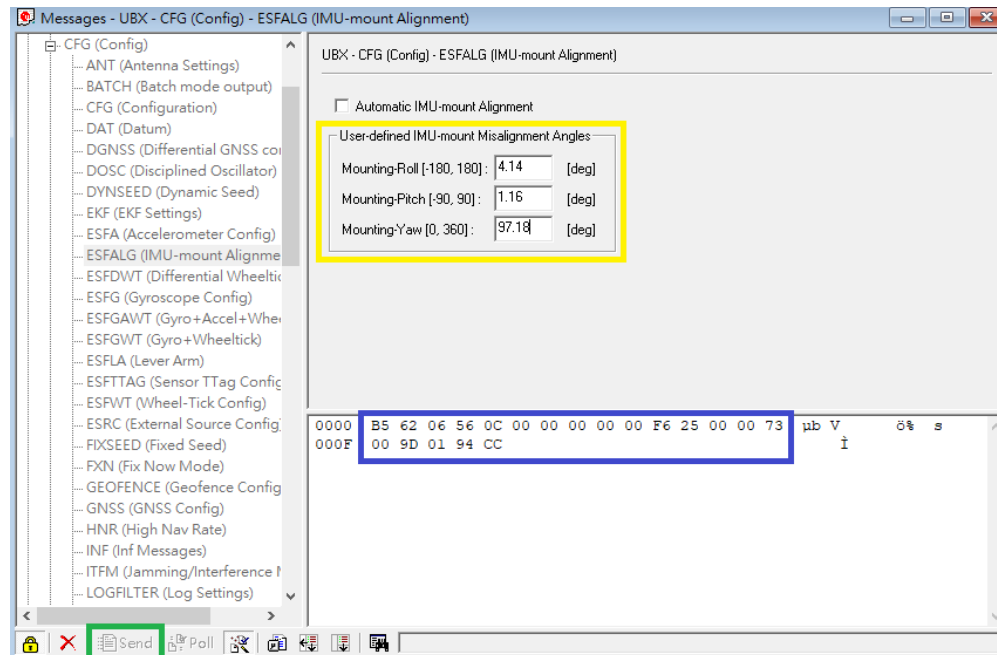
(1) Get value when module finish the calibration



(2) Modify the value.

After change the value please click “Send”.

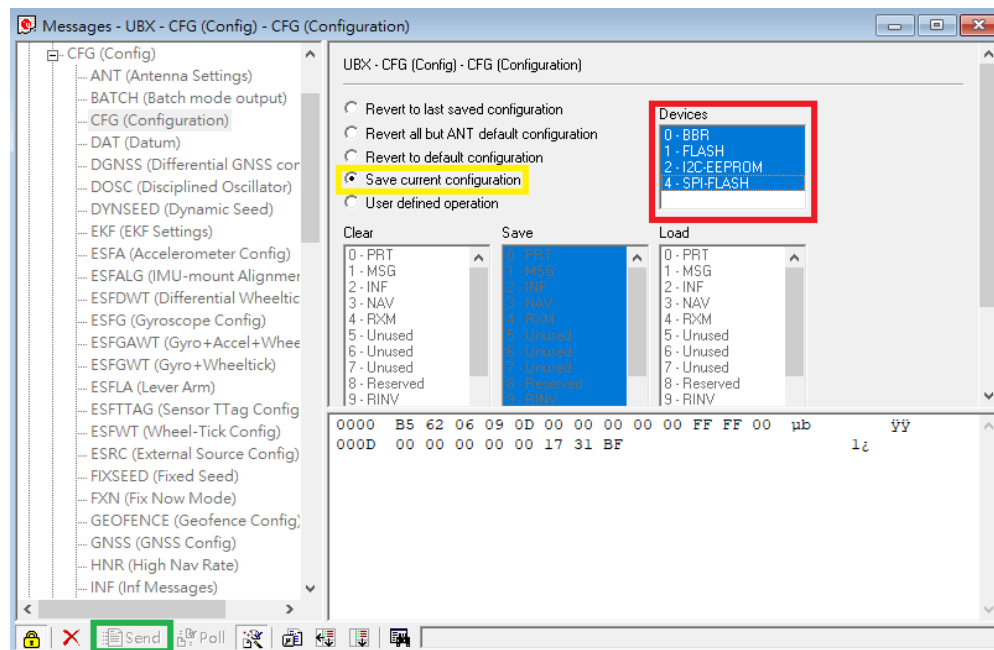
(u-center → View → Messages → UBX → CFG → ESFALG)



Please uncheck the item of **Automatic IMI-mount Alignment**.

(3) Save data to module.

(u-center → View → Messages → UBX → CFG → CFG)



IV. Export/Import Configuration

