VDB-810DR User Guide Prepared by Johnny Approved by



(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



(4) Internal connector specification

4.1 CN1 connector

Connector size	5 Pin			
Connector type	JST-1.25mm-M-90			
Connector location	CN1			
Connector pin	Pin	Signal	Pin	Signal
definition	1	NC	2	NC
	3	NC	4	GND
	5	TIMEPULSE		
Connector map	$H^{1} \qquad FM1 FM$		FB1 FB1 FB1 FB1 FB1 FB1 FB1 FB1	CN1





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 \rightarrow View \rightarrow Messages \rightarrow UBX \rightarrow ESF \rightarrow STATUS) The complete calibration as follow.



 $\mathsf{Check} \; \mathsf{u}\text{-}\mathsf{center} \to \mathsf{View} \to \mathsf{Messages} \to \mathsf{UBX} \to \mathsf{ESF} \to \mathsf{ALG}$

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. Messages - UBX - ESF (Extens DBX DBX DAXA DUS DAX DAXA DAXA ACX (Acknowledge) DAXA DYS (Acknowledge) DYS (Acknow ----S Messages - UBX - ESF (External Sensor Fusion) - STATUS (ESF Status) 25 0687646 UEX - ESF (External Sensor Fusion) - STATUS (ESF Status) 17 : GPS Time (s) 453765.000 Version 2 Fusion Filter Mode FUSION IMU Status Filter Mode INITIALIZED Wheel tick Senior Status OF INIS Status INITIALIZED IMU mount Alignment Status INITIALIZED INUmourf Algement Status • Imit INALICEU Sensor Status Gystocope 2 • CALIBRATED Bigstocope 3 • CALIBRATED Bigstocope 7 • CALIBRATED Bigstocope 7 • CALIBRATED Acceleration 2 • CALIBRATED • Acceleration 2 • CALIBRATED • Acceleration 2 • CALIBRATED • Acceleration 2 • CALIBRATED Time Field Fault: FB 10 - INF (Information) - LIOG (Date Logger) - MGA (Multiple GNISS Assi - MON (Monitor) - NAV (Navigation) - ROM (Receiver Manager) - SEC (Security) tt t 🏦 🗙 🗐 Send 양 Poll 🛞 🗿 💷 🗊 u-blox M8/8 - COM30 9600 No file open NMEA 00:16:0 06:02:4 Ready

III. Adjust parameter

1. Open External Sensor Fusion function

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

🗅 🖬 🛎 🗸 🚳 🖪 🐰 🖬 💼	Firmware Update	Ctrl+U ឈ
	Legacy Firmware Update Dump Receiver Diagnostics u-blox 7/8/M8 Retrieve Log AssistNow Offline AssistNow Online GNSS Configuration	> >
	File transfer	
	Hotkeys	
	Preferences	

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

Messagebox	Acce	ss Tokens	KML settings
Generic	Workspace	Colors	Status Color
Serial ports			
Automatically	(dis)connect if mos	t recently used seria	l port (dis)appears
Enumerate serial	ports using Cre	ateFile	-
Maximum numbe	er of serial	255	
Power Managemer	nt		
ower Managemer ● None O Der	n t ny suspend if conne	cted C Discon	nect on suspend
Ower Managemer One C Der Orderam Ontions (nt ny suspend if conne requires restart)	cted C Discon	inect on suspend
Power Management None C Der Program Options (r	nt ny suspend if conne requires restart)	cted C Discon	nect on suspend
Power Managemer Power C Der Program Options (r -cdk	nt ny suspend if conne requires restart)	C Discon	nect on suspend
Power Managemer None C Der Program Options (r -cdk Database	nt ny suspend if conne requires restart)	cted C Discon	nect on suspend
Power Managemen None C Den Program Options (r -cdk Database	nt ny suspend if conne requires restart)	C Discon	nect on suspend
Power Managemen None O Der Program Options (r -cdk Database Maximum numbe	nt ny suspend if conne requires restart) r of epochs	C Discon	nect on suspend Sustom BDS Talker Id = 00:00:00 at 1Hz
Power Managemen None O Der Program Options (r -cdk Database Maximum numbe Receiver Informatio	nt ny suspend if conne requires restart) r of epochs		ustom BDS Talker Id
Power Managemen None C Den Program Options (n -cck Database Maximum numbe Receiver Information C Enable auto re	nt ny suspend if conne requires restart)	cted C Discon	ustom BDS Talker Id

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

2. Adjust parameter

(1) Get value when module finish the calibration

Messages - UBX - ESF (External Se 👝 🔲 🖾		
UB≍-ESF (External Sen≉	or Fusion) · ALG (IMU-m 13 s	
GPS Time [s]: 92621.0 Auto: Alignment Alignment Status Angle Singularity Nounting-Rall [deg] Nounting-Pitch [deg] Nounting-Yiaw [deg]	00 Version: 1 ● ON ● FINE ● NO ● 4.14 ● 1.16 ● 97.18	



Please uncheck the item of Automatic IMI-mount Alignment.

(3) Save data to module.

(u-center \rightarrow View \rightarrow Messages \rightarrow UBX \rightarrow CFG \rightarrow CFG)



IV. Export/Import Configuration