Aixcel_Mini_Drive_Board_User_Startup_Guide

V1.0　2022.12

1、Preparation:

Hardware Preparation:

①：Aixcel_Mini_Drive_Board

②：Computer or Laptop

③：USB-to-UART bridge module(eg: CP2102、CH340)

④：USB-to-485 bridge module

⑤：USB-to-CAN bridge module

⑥：Oscilloscope(eg: RIGOL DS1102Z-E)

Software Preparation:

①：Aixcel_Mini_Drive_Board_HW_Check:

https://github.com/AixcelStudio/Aixcel_Mini_Drive_Board_HW_Check

②：SerialTool V1.4.0Alpha:

https://github.com/gztss/SerialTool

③：USB-to-CAN supporting software

Tips:

The Aixcel_Mini_Drive_Board's HW-Check-Firmware is built in before delivery, if user has wiped or rewrite the MCU's flash, user also could download the HW-Check-Firmware's source code from the following link:
https://github.com/AixcelStudio/Aixcel_Mini_Drive_Board_HW_Check

2、Get SN from 485 Interface:

A : Connect Aixcel_Mini_Drive_Board's 485 Interface to computer through USB-to-485 bridge module;

B : Send 2 bytes "A5 5A"(HEX Format) from computer side(by SerialTool V1.4.0Alpha, Baudrate : 115200bps, 8n1), Aixcel_Mini_Drive_Board will return 16 bytes SN (HEX Format), which is like:

Computer Send : A5 5A
Computer Recv : 41 54 44 01 C9 79 59 03 00 40 94 74 13 07 8C 07

3、Loopback Test on CAN Interface:

A : Connect Aixcel_Mini_Drive_Board's CAN Interface to computer through USB-to-CAN bridge module;

B : Send any CAN frame from computer side, Aixcel_Mini_Drive_Board will return the same CAN frame, which is like:

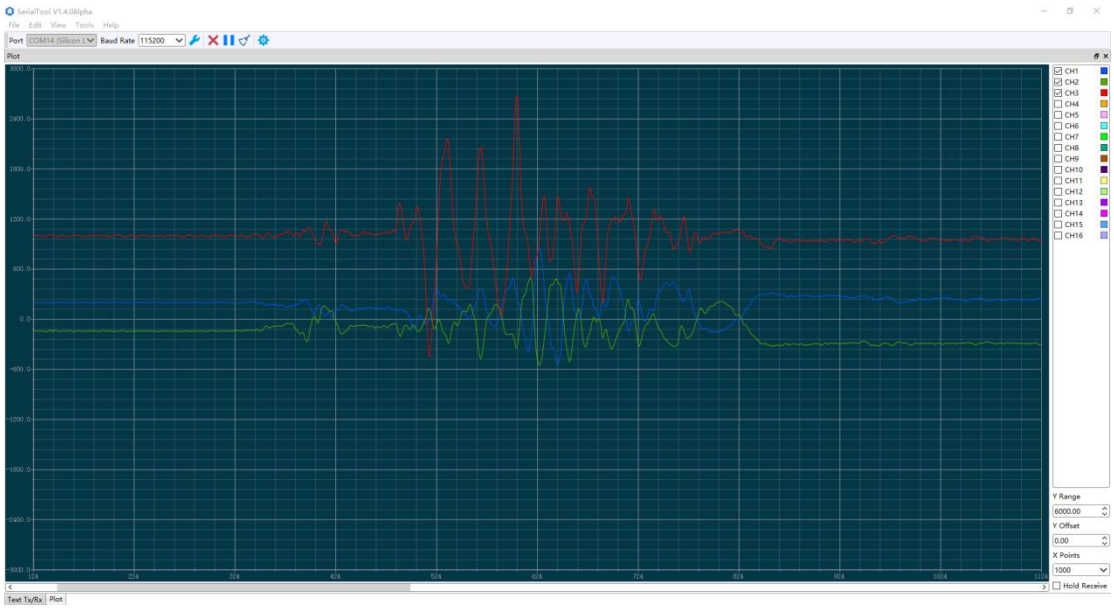
	ID	Len	Data							
Computer Send :	101	08	11	22	33	44	55	66	77	88
Computer Recv :	101	08	11	22	33	44	55	66	77	88

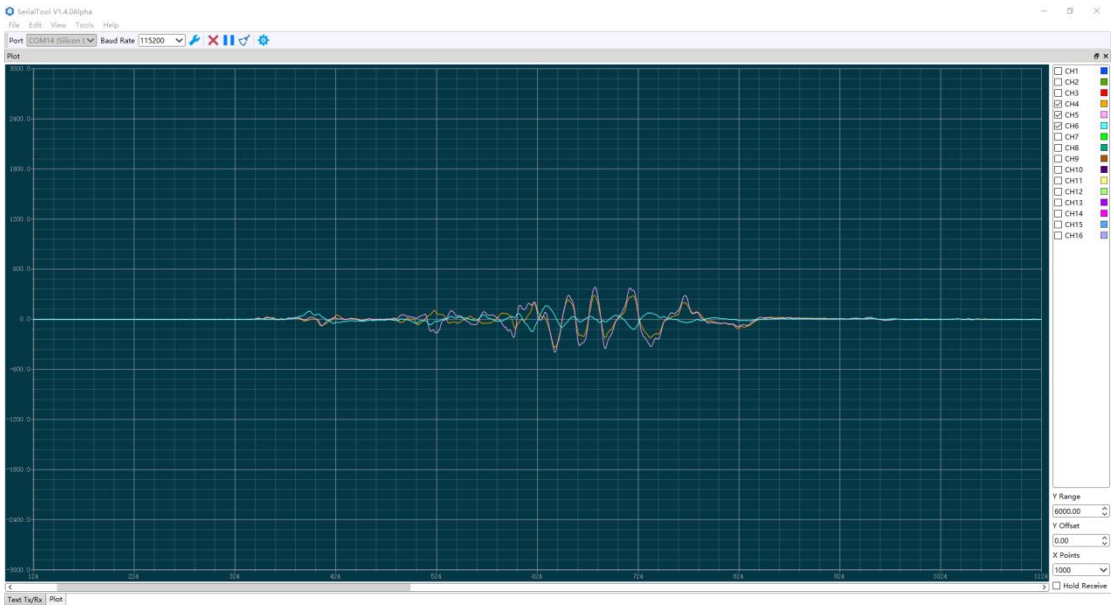
	ID	Len	Data							
Computer Send :	18FF1001	08	11	22	33	44	55	66	77	88
Computer Recv :	18FF1001	08	11	22	33	44	55	66	77	88

4、View IMU’s Wave from UART Interface:

A : Connect Aixcel_Mini_Drive_Board’s UART Interface to computer through USB-to-UART bridge module;

B : Send 2 bytes “AA 55”(HEX Format) from computer side(by SerialTool V1.4.0Alpha, Baudrate : 115200bps, 8n1), Aixcel_Mini_Drive_Board will return the IMU’s real-time data, wave could display on SerialTool V1.4.0Alpha’s Plot, which is like:





C : Send 2 bytes “AA 55”(HEX Format) again to stop data output;

5、Loopback Test on WiFi Interface:

A : Let computer's wireless adaptor connect to Aixcel_Mini_Drive_Board's ESP32_C3 module, which SSID is : Aixcel_Tiny_Recon_System_C3, Password is : 12345678;

B : Open SerialTool V1.4.0Alpha,
"Tools"-> "Options" -> "Port Type" -> "TCP/UDP"-> "OK",
"Protocal : TCP Client" "IP : 192.168.4.1" "Port : 3333"

C : Send any bytes from computer side, Aixcel_Mini_Drive_Board will return the same bytes, which is like:

Computer Send :	AA	BB	CC	DD	EE	FF
Computer Recv :	AA	BB	CC	DD	EE	FF

6、Loopback Test on USB_VCP:

A : Connect Aixcel_Mini_Drive_Board's USB Interface to computer through USB-to-XH2.54-4P Wire;

B : Open Artery Virtual COM Port by SerialTool V1.4.0Alpha(or other serial tools), Baudrate : ≤3Mbps;

C : Send any bytes from computer side, Aixcel_Mini_Drive_Board will return the same bytes, which is like:

Computer Send :	11	22	33	44	55	66	77	88
Computer Recv :	11	22	33	44	55	66	77	88

7、SPI-Flash Check:

Please reference the HW-Check-Firmware’s source code;

8、Barometer Sensor Check:

Please reference the HW-Check-Firmware’s source code;

9、GPIO Check:

A : When Aixcel_Mini_Drive_Board power-up, TIO1/TIO2/AIO1/AIO2 signal pin will constantly output 800KHz 50% PWM, use oscilloscope could have a quick look;

B : When Aixcel_Mini_Drive_Board power-up, EMG/BKP/PWR signal pin will constantly toggle high level and low level which period is 500ms, use oscilloscope could have a quick look;

10、Buzzer Check:

When Aixcel_Mini_Drive_Board power-up, Buzzer will beep three times, The interval is 1200ms;