Aixcel_Mini_Power_Board_User_Startup_Guide

V1.0   2022.12

1、Preparation:

Hardware Preparation:

①：Aixcel_Mini_Power_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：Universal Meter(eg: FLUKE 15B+)

⑦：24V Li-Battery and Charger

Software Preparation:

①：Aixcel_Mini_Power_Board_HW_Check:

https://github.com/AixcelStudio/Aixcel_Mini_Power_Board_HW_Check

②：SerialTool V1.4.0Alpha:

https://github.com/gztss/SerialTool

③：USB-to-CAN supporting software

Tips:

The Aixcel_Mini_Power_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_Power_Board_HW_Check

2、Get SN from 485 Interface:

A : Connect Aixcel_Mini_Power_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_Power_Board will return 16 bytes SN (HEX Format), which is like:

Computer Send : A5 5A
Computer Recv : 41 54 50 01 C9 79 59 03 00 40 94 74 13 07 B8 07

3、Loopback Test on CAN Interface:

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

B : Send any CAN frame from computer side, Aixcel_Mini_Power_Board will return the same CAN frame, which is like:
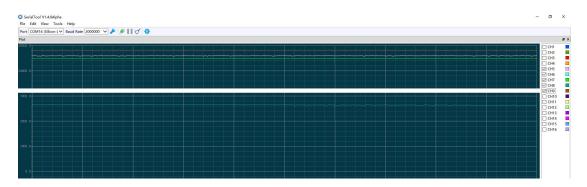
	ID	Len	Data							
Computer Send :	101	08	11	22	33	44	55	66	77	88
Computer Recv :	101	08	11	22	33	44	55	66	77	88

	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 Voltage/Current Wave from UART Interface:

A : Connect Aixcel_Mini_Power_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_Power_Board will return the voltage and current's real-time data, wave could display on SerialTool V1.4.0Alpha's Plot, which is like:

CH1 : U_PWR_I_Val
CH2 : M_PWR_I_Val
CH3 : U_PWR_V_Val
CH4 : M_PWR_V_Val
CH5 : BAT_OUT_V_Val
CH6 : BAT_OUT_I_Val
CH7 : BAT_CHG_V_Val
CH8 : BAT_CHG_I_Val
CH9 : INPUT_CHG_V_Val
CH10 : VCC_5V_I_Val

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

5、 SPI-Flash Check:

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

6、 M117B Check:

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

7、 SW Check:

Connect the Li-Battery to Aixcel_Mini_Power_Board's "BAT_PWR" and "BAT_CHG", short-out "PWR_SW" connector's No.2 pin and No.3 pin, hold 2.5S to turn on the board, while board has turn on, short-out "PWR_SW" connector's No.2 pin and No.3 pin, hold 2.5S to turn off the board;

8、 Charge Check:

Connect the Li-Battery to Aixcel_Mini_Power_Board's "BAT_PWR" and "BAT_CHG", connect charger to Aixcel_Mini_Power_Board's "DOCK_CHG" or "WIRE_CHG", observe the charge voltage and current;

9、 Discharge Check:

Connect the Li-Battery to Aixcel_Mini_Power_Board's "BAT_PWR" and "BAT_CHG", connect payload equipment to Aixcel_Mini_Power_Board's "U_PWR" or "M_PWR", observe the discharge voltage and current;