A31G213

Starter Kit
STK-A31G213-CL2N-A

Starter Kit H/W Manual

Version 1.04

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1 Introduction of starter kit board

Figure 1 shows a starter kit board of A31G213CL2N. In Table 1, you can see main features of the starter kit board.

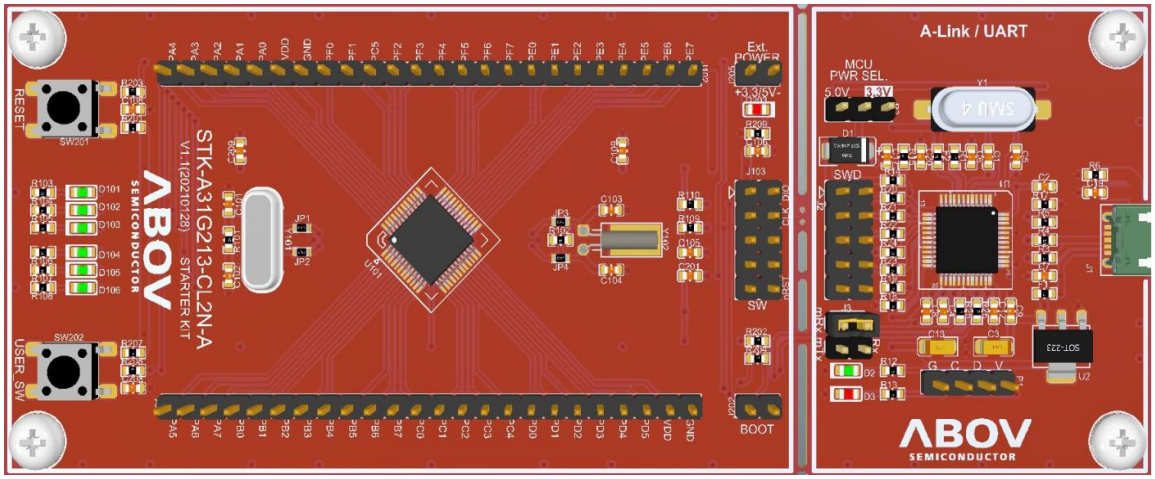


Figure 1. Starter Kit Board

Table 1. Main Features of Starter Kit Board

Main feature	Specifications	Remark
MCU	A31G213CL2N	ARM CORTEX-M0+
Operating clock	8 MHz	Crystal Main
ROM	64 KB flash ROM	Code
RAM	6 KB	
Communication Port	USB 2.0	Micro USB Type B 5-pin
Debugging Port	SWD	10-pin Connector
Input Buttons	1 reset & 1 event input	TACT switch

2 A-link part

In this chapter, A-link part of the starter kit board is introduced.

2.1 A-link section

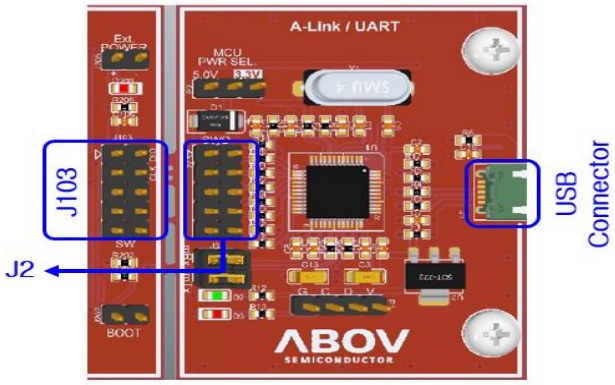


Figure 2. A-Link Section

2.1.1 USB connector (micro USB type B)

- PC USB interface (Debug Keil, IAR ..)
- CMSIS-DAP (Debug)
- COM Port

2.1.2 J103 (Box Header): SWD Connector on MCU Board

Table 2. SWD Pin Description on MCU Board

V-Sense	1	2	SWDIO
GND	3	4	SWCLK
GND	5	6	NC
NC	7	8	NC
GND	9	10	nRESET

2.1.3 J2 (Box Header): SWD Connector on A-Link Board

Table 3. A-Link SWD Pin Description

V-Sense	1	2	SWDIO
GND	3	4	SWCLK
GND	5	6	NC
NC	7	8	NC
GND	9	10	nRESET

2.2 Power, USB to UART section

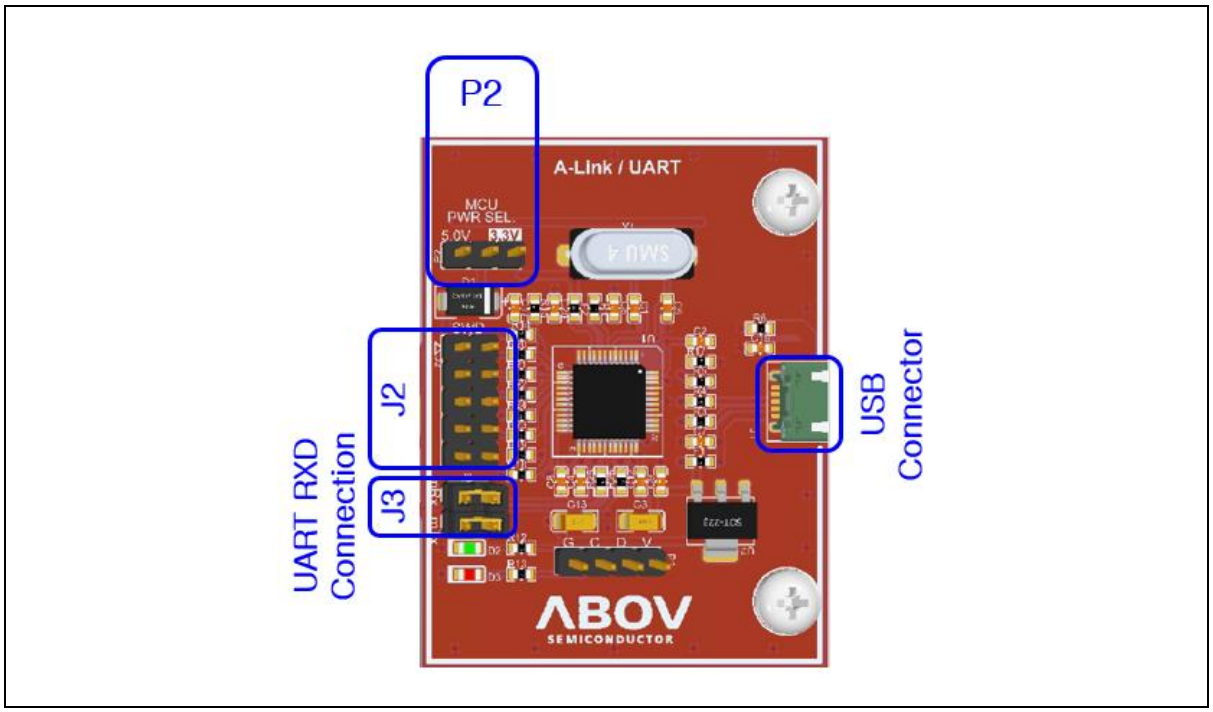


Figure 3. Power, USB to UART Section

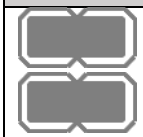
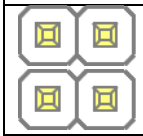
2.2.1 P2: MCU Power Selector

Table 4. P2 MCU Power Selector

P2	VDD
	5.0V
	3.3V
	External Power

2.2.2 J3: USB to UART connection

Table 5. USB to UART Description

J3	Pin	Connection
	Short	(mRX) MCU RXD ← PC TXD (mTX) MCU TXD → PC RXD
	Open	(mRx) MCU RXD Open (mTx) MCU TXD Open

3 Device part

In this chapter, power, a boot mode selector and switches of the starter kit board are introduced.

3.1 Power, Boot mode selector and switch

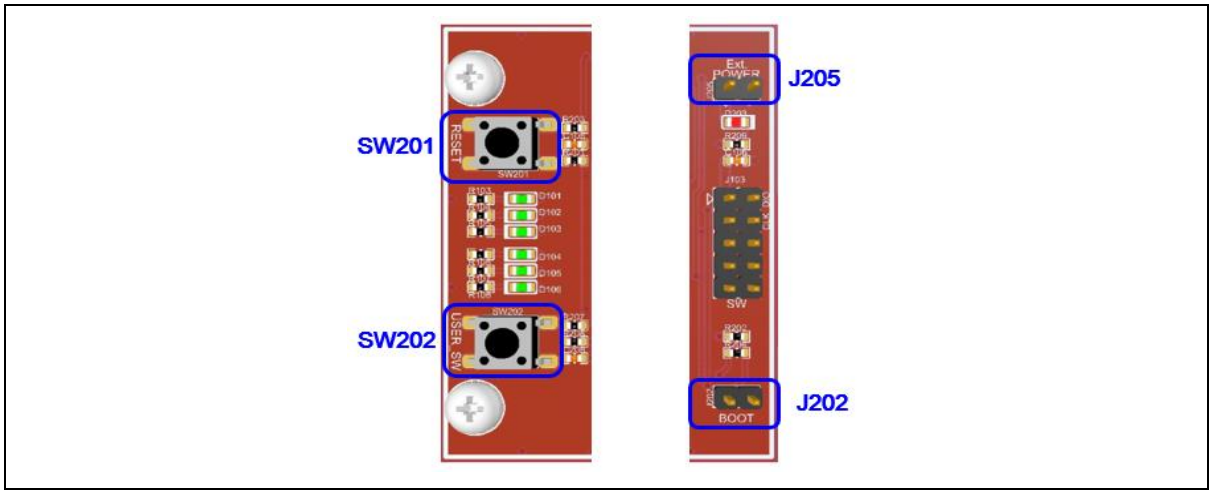


Figure 4. Power, Boot mode and Switch

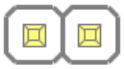
3.1.1 J205: external power (not used)

Table 6. J205 Description and Connection

J205	Pin name	Connection
	VDD	+3.3 ~ 5.0V
	GND	0V

3.1.2 J202: mode select (boot/normal) pins

Table 7. J202 Boot Mode Selector

J202	Pin name	Connection
	Short	Boot mode
	Open	Normal mode

3.1.3 SW201, SW202: switch

Table 8. SW201, SW202 Description and Function

Switch	Function
SW201	nRESET/PC5
SW202	PF6

3.2 LED display (D101 – D106)

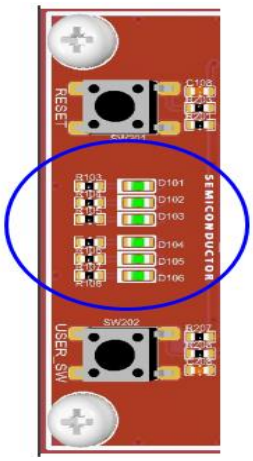


Figure 5. LED Display

3.2.1 LED schematic

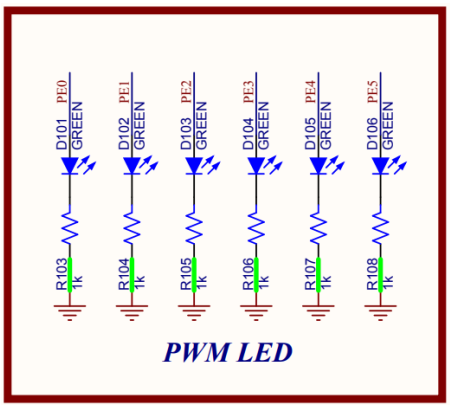


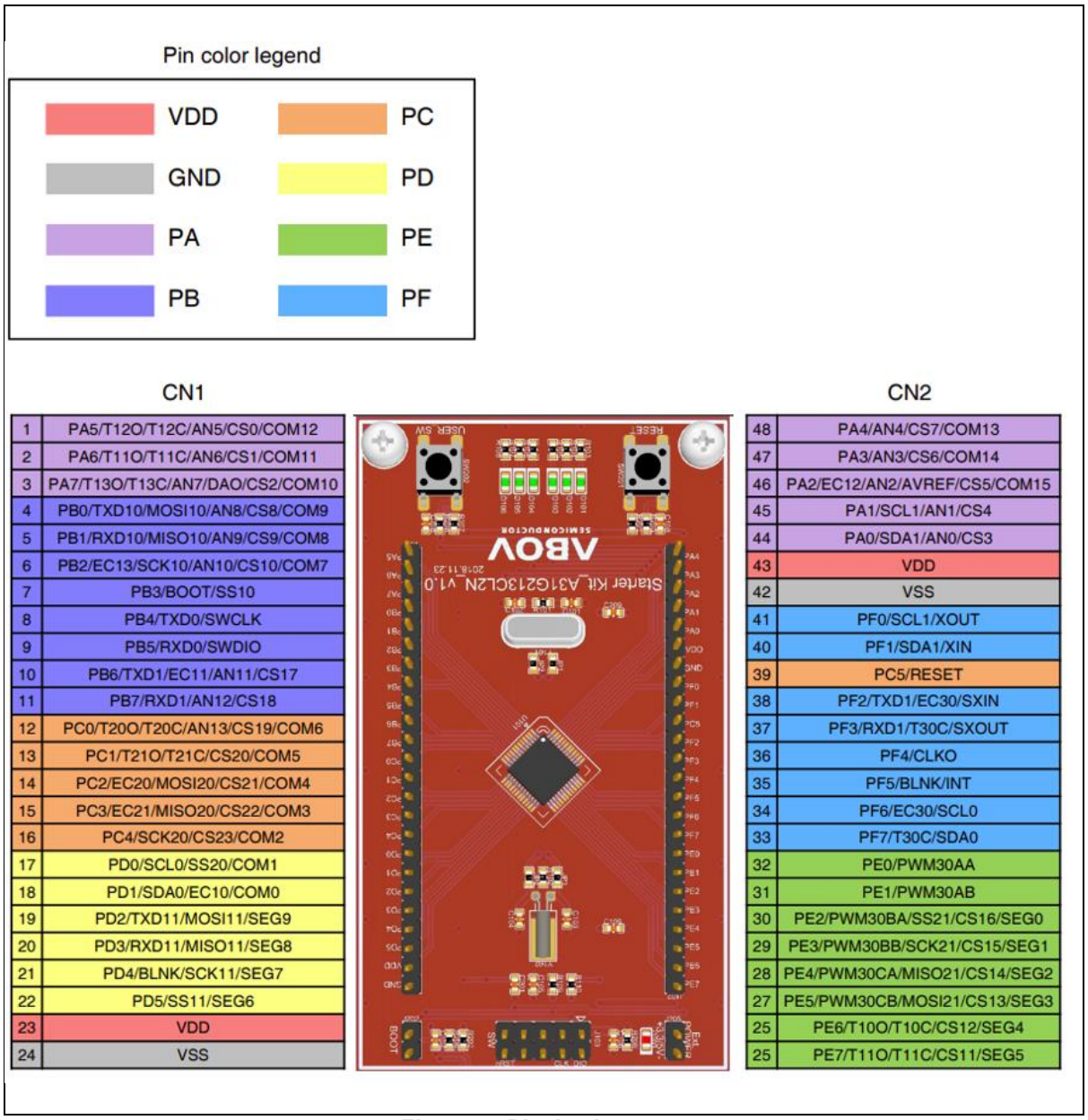
Figure 6. LED Schematic

3.2.2 LED pin assignment

Table 9. LED Pin Description

LED name	PORT
D101	PE0
D102	PE1
D103	PE2
D104	PE3
D105	PE4
D106	PE5

3.3 Pin assignment



CN1

1	PA5/T12O/T12C/AN5/CS0/COM12
2	PA6/T11O/T11C/AN6/CS1/COM11
3	PA7/T13O/T13C/AN7/DAO/CS2/COM10
4	PB0/TXD10/MOSI10/AN8/CS8/COM9
5	PB1/RXD10/MISO10/AN9/CS9/COM8
6	PB2/EC13/SCK10/AN10/CS10/COM7
7	PB3/BOOT/SS10
8	PB4/TXD0/SWCLK
9	PB5/RXD0/SWDIO
10	PB6/TXD1/EC11/AN11/CS17
11	PB7/RXD1/AN12/CS18
12	PC0/T20O/T20C/AN13/CS19/COM6
13	PC1/T21O/T21C/CS20/COM5
14	PC2/EC20/MOSI20/CS21/COM4
15	PC3/EC21/MISO20/CS22/COM3
16	PC4/SCK20/CS23/COM2
17	PD0/SCL0/SS20/COM1
18	PD1/SDA0/EC10/COM0
19	PD2/TXD11/MOSI11/SEG9
20	PD3/RXD11/MISO11/SEG8
21	PD4/BLNK/SCK11/SEG7
22	PD5/SS11/SEG6
23	VDD
24	VSS

CN2

48	PA4/AN4/CS7/COM13
47	PA3/AN3/CS6/COM14
46	PA2/EC12/AN2/AVREF/CS5/COM15
45	PA1/SCL1/AN1/CS4
44	PA0/SDA1/AN0/CS3
43	VDD
42	VSS
41	PF0/SCL1/XOUT
40	PF1/SDA1/XIN
39	PC5/RESET
38	PF2/TXD1/EC30/SXIN
37	PF3/RXD1/T30C/SXOUT
36	PF4/CLKO
35	PF5/BLNK/INT
34	PF6/EC30/SCL0
33	PF7/T30C/SDA0
32	PE0/PWM30AA
31	PE1/PWM30AB
30	PE2/PWM30BA/SS21/CS16/SEG0
29	PE3/PWM30BB/SCK21/CS15/SEG1
28	PE4/PWM30CA/MISO21/CS14/SEG2
27	PE5/PWM30CB/MOSI21/CS13/SEG3
25	PE6/T10O/T10C/CS12/SEG4
25	PE7/T11O/T11C/CS11/SEG5

Figure 7. Pin Assignment

Revision history

Date	Version	Description
20.03.31	1.00	Document created
21.01.28	1.01	Updated Starter Kit figures. Modified item name to match STK with a PCB silk.
22.02.10	1.02	Revised Document Updated Table 1, Figure 1, Figure 2, Figure 3, Figure 4
22.11.22	1.03	Revised the font of this document
24.12.02	1.04	Updated the disclaimer.

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