

A31G314

Starter Kit

STK-A31G314-MMN-A

Starter Kit H/W Manual

Version 1.05

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1 Introduction of starter kit board

Figure 1 shows a starter kit board of A31G314MMN. In Table 1, you can see main features of the starter kit board.

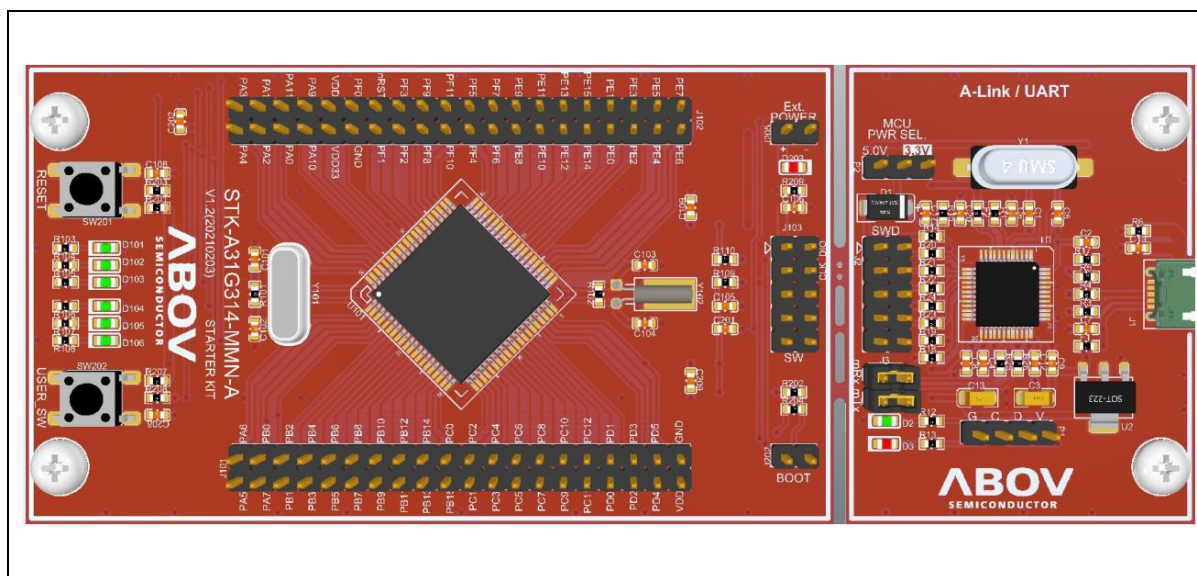


Figure 1. Starter Kit Board

Table 1. Main Features of Starter Kit Board

Main feature	Specifications	Remark
MCU	A31G314MMN	ARM CORTEX-M0+
Operating clock	8 MHz	Crystal Main
ROM	128 KB flash ROM	Code
RAM	16 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

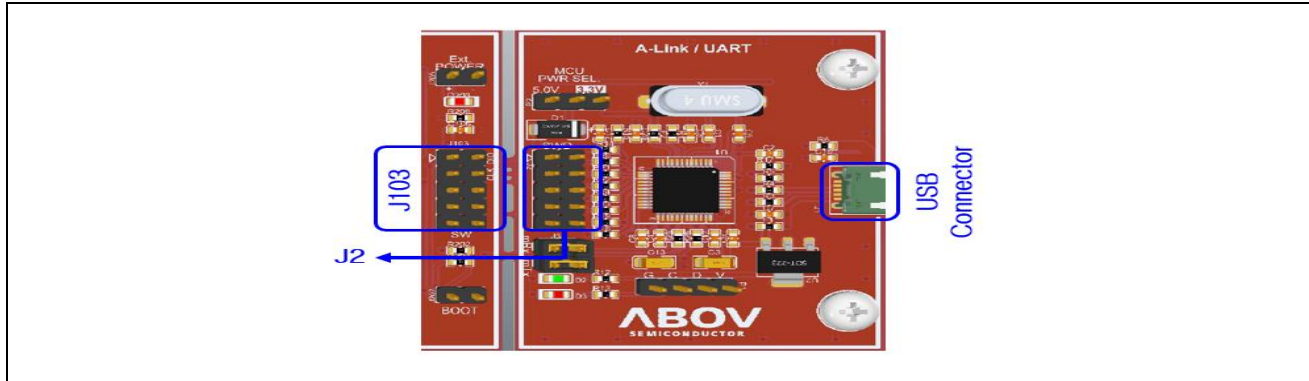


Figure 2. A-Link Section

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

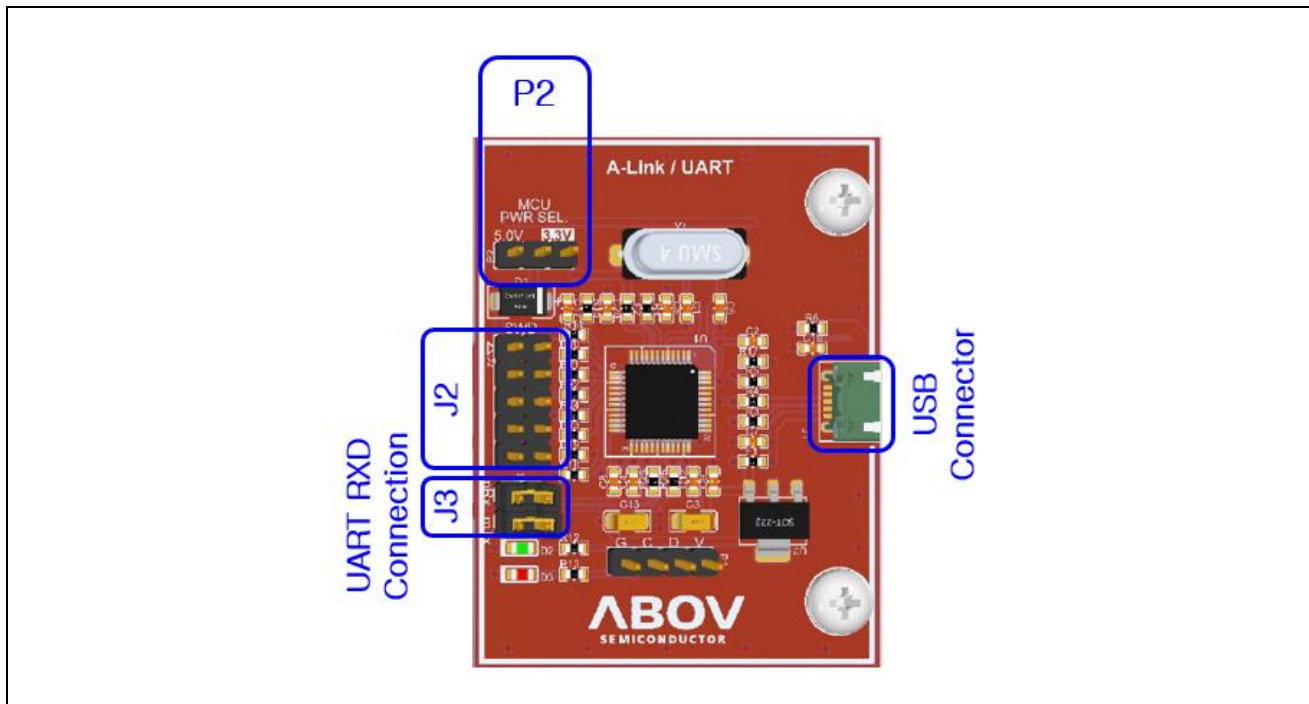


Figure 3. Power, USB to UART Section

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

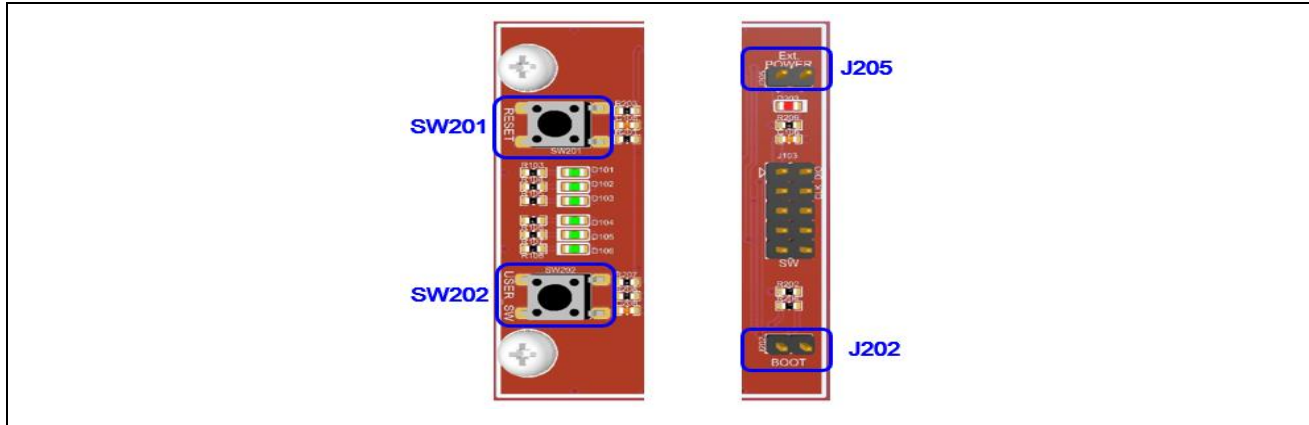
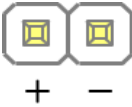


Figure 4. Power, Boot mode and Switch

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
SW202	PF6

3.2 LED display (D101 – D106)

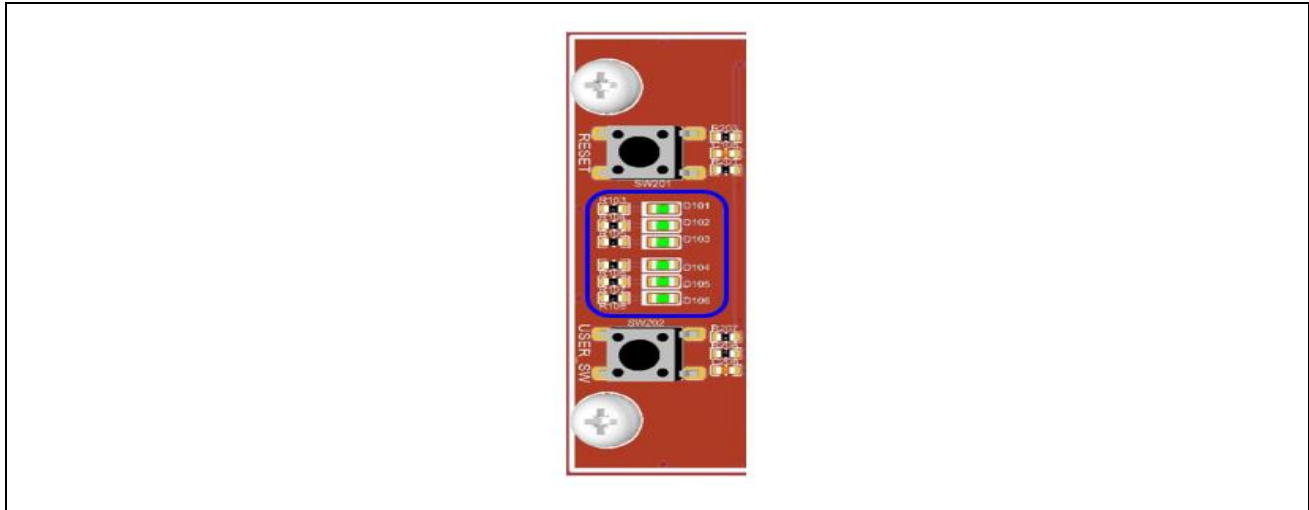


Figure 5. LED Display

3.2.1 LED schematic

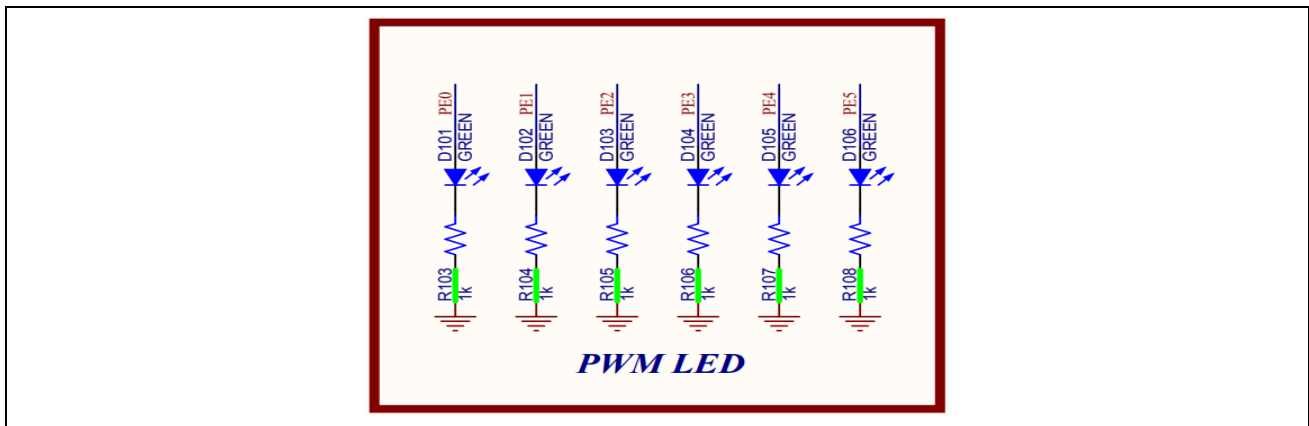


Figure 6. LED Schematic

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

Pin color legend

 VDD	 PC
 GND	 PD
 PA	 PE
 PB	 PF

CN1

1	ISEG4/CP1A/AN5/ T12C/T12O/PA5	ISEG3/CREF1/DAO/ AN6/SEG43/PA6	2
3	ISEG2/CREF0/ DAVREF/AN7/ SEG42/PA7F	CS8/ISEG1/ICOM26/ AN8/MOSI10/TXD10/ SEG41/PB0	4
5	CS9/ISEG0/ICOM25/ AN9/MISO10/ RXD10/SEG40/PB1	CS10/ICOM24/AN10/ SCK10/SEG39/PB2	6
7	ICOM23/BOOT/ SS10/SEG38/PB3	ICOM22/SWCLK/ TXD0/SEG37/PB4	8
9	ICOM21/SWDIO/ RXD0/SEG36/PB5	ICOM20/TXD1 /SEG35/PB6	10
11	ICOM19/RXD1/ SEG34/PB7	CS11/T15C/T15O/ EC16/SEG33/PB8	12
13	CS12/T16C/T16O/ EC15/SEG32/PB9	CS13/EC15/T16C/ T16O/SEG31/PB10	14
15	CS14/EC16/T15C/ T15O/SEG30/PB11	CS15/SEG29/PB12	16
17	CS16/SEG28/PB13	CS17/SEG27/PB14	18
19	CS18/SEG26/PB15	CS19/ICOM18/T20C/ T20O/SEG25/PC0	20
21	PC1/SEG24/T21O/ T21C/ICOM17/CS20	PC2/SEG23/EC20/ ICOM16/CS21	22
23	PC3/SEG22/EC21/ ICOM15/CS22	PC4/SEG21/ ICOM14/CS23	24
25	PC5/SEG20/SDA2	PC6/SEG19/SCL2	26
27	PC7/SEG18	PC8/SEG17	28
29	PC9/SEG16	PC10/SEG15	30
31	PC11/SEG14/EC10	PC12/SEG13/EC11	32
33	PD0/SEG12/ SCL0/ICOM13	PD1/SEG11/ SDA0/ICOM12	34
35	PD2/SEG10/TXD11/ MOSI11/ICOM11	PD3/SEG9/RXD11/ MISO11/ICOM10	36
37	PD4/SEG8/ SCK11/ICOM9	PD5/SEG7/ SS11/ICOM8	38
39	VDD	GND	40

CN2

80	CS7/ISEG5/ CP1B/AN4/PA4	CS6/ISEG6/ CP1C/AN3/PA3	79
78	CS5/ISEG7/ CP0/AVREF/AN2/ EC12/PA2	CS4/ISEG8/USBDP/ AN1/SCL1/PA1	77
76	CS3/ISEG9/ USBDM/AN0/ SDA1/PA0	CS2/AN14/PA11	75
74	CS1/AN13/PA10	CS0/AN12/PA9	73
72	VDD33	VDD	71
70	VSS	ISEG10/(SCL1)/ XOUT/PF0	69
68	(SDA1)/XIN/PF1	nRESET	67
66	(TXD1)/SXIN/PF2	(RXD1)/SXOUT/PF3	65
64	EC13/PF8	EC14/PF9	63
62	T13C/T13O/PF10	T14C/T14O/PF11	61
60	PF4/CLKO/R-SET	PF5/BLNK/INT*	59
58	PF6/EC30/(SCL0)*	PF7/T30C/(SDA0)*	57
56	PE8/TXD13/ MOSI13/VLC0	PE9/RXD13/ MISO13/VLC1	55
54	PE10/SCK13/ VLC2	PE11/SS13/VLC3	53
52	PE12/TXD12/ MOSI12	PE13/RXD12/ MISO12	51
50	PF2/SXIN	PE15/SS12/SEG6	49
48	PE0/COM0/ PWM30AA/ICOM0	PE1/COM1/ PWM30AB/ICOM1	47
46	PE2/COM2/ PWM30BA/ICOM2	PE3/COM3/SEG0/ PWM30BB/ICOM3	45
44	PE4/COM4/SEG1/ PWM30CA/ICOM4	PE5/COM5/SEG2/ PWM30CB/ICOM5	43
42	PE6/COM6/SEG3/ T10O/T10C/ICOM6	PE7/COM7/SEG4/ T11O/T11C/ICOM7	41

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.
21.12.17	1.02	Updated Figure 1, Figure 2, Figure 3, Figure 7 by STK-A31G314-MMN-A V1.2 schematic.
22.02.09	1.03	Revised Document Updated Table 1 (Crystal 16MHz → 8MHz), Table 3
23.01.19	1.04	Revised the font of this document
24.12.02	1.05	Updated the disclaimer.

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