

A31L222

Starter Kit

STK-A31L222-FR2N-A

Starter Kit H/W Manual

Version 1.10

Contents

1	Introduction of starter kit board	4
2	A-link part	5
2.1	A-link section	5
2.1.1	USB connector (micro USB type B)	5
2.1.2	J103 (Box Header): SWD Connector on MCU Board	5
2.1.3	J2 (Box Header): SWD Connector on A-Link Board	5
2.2	Power, USB to UART section	6
2.2.1	P2: MCU Power Selector	6
2.2.2	J3: USB to UART connection	6
3	Device part	7
3.1	Power, Boot mode selector and switch	7
3.1.1	J205: external power (not used)	7
3.1.2	J202: mode select (boot/normal) pins	7
3.1.3	SW201, SW202: switch	7
3.2	LED display (D101 – D104)	8
3.2.1	LED schematic	8
3.2.2	LED pin assignment	8
3.3	Pin assignment	9
	Revision history	10

List of figures

Figure 1. Starter Kit Board	4
Figure 2. A-Link Section	5
Figure 3. Power, USB to UART Section	6
Figure 4. Power, Boot mode and Switch	7
Figure 5. LED Display	8
Figure 6. LED Schematic	8
Figure 7. Pin Assignment	9

List of tables

Table 1. Main Features of Starter Kit Board	4
Table 2. SWD Pin Description on MCU Board	5
Table 3. A-Link SWD Pin Description	5
Table 4. P2 MCU Power Selector	6
Table 5. USB to UART Description	6
Table 6. J205 Description and Connection	7
Table 7. J202 Boot Mode Selector	7
Table 8. SW201, SW202 Description and Function	7
Table 9. LED Pin Description	8

1 Introduction of starter kit board

Figure 1 shows a starter kit board of A31L222-FR2N-A. In Table 1, you can see main features of the starter kit board.

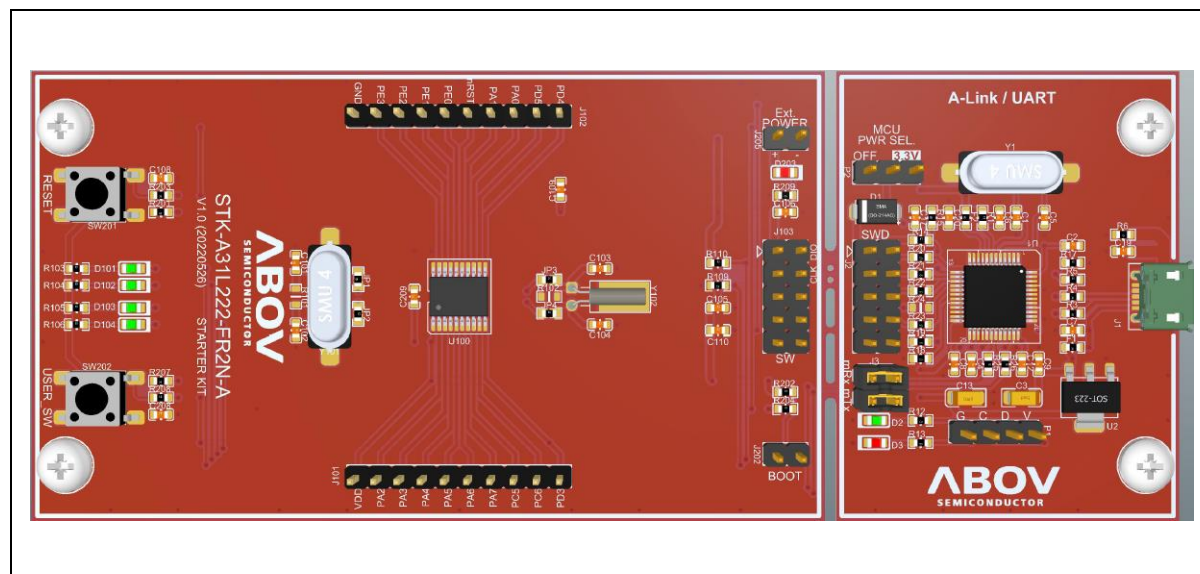


Figure 1. Starter Kit Board

Table 1. Main Features of Starter Kit Board

Main feature	Specifications	Remark
MCU	A31L222	ARM CORTEX-M0+
Operating clock	16MHz	Crystal Main
ROM	32KB	Code Flash
RAM	4KB	
Communication Port	USB 2.0	Mini 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

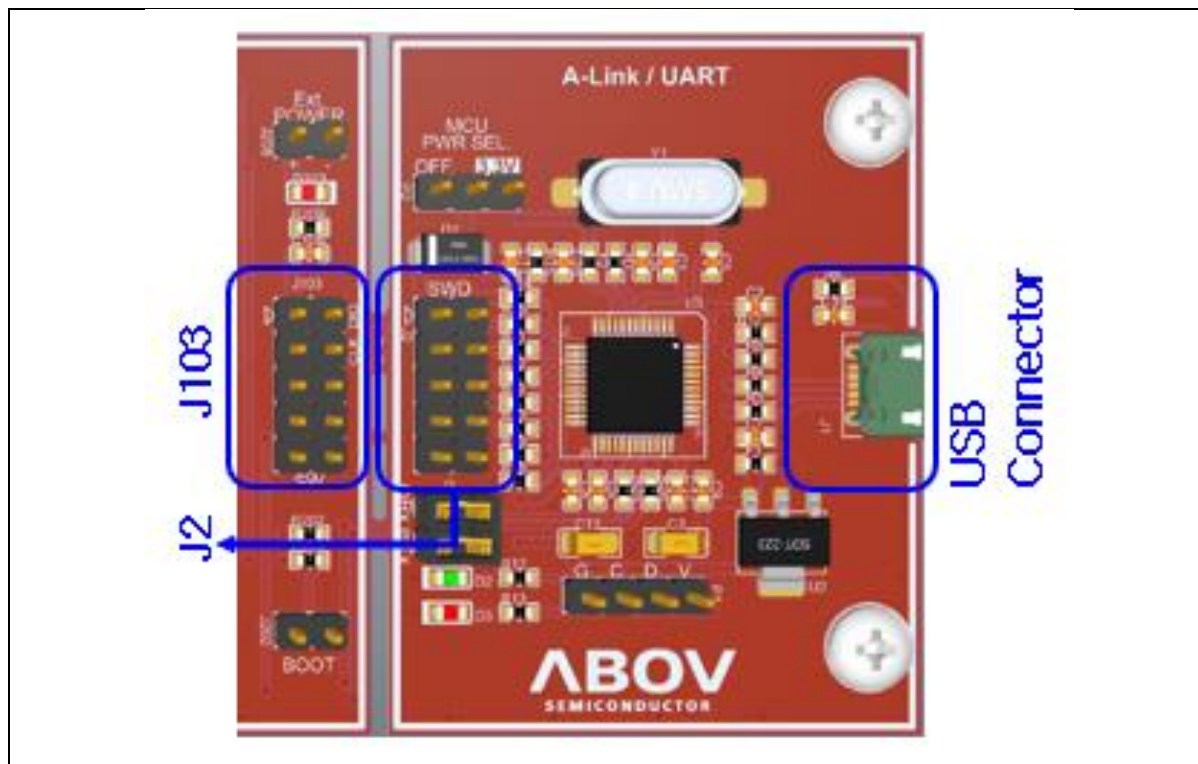


Figure 2. A-Link Section

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/TMS
GND	3	4	SWCLK/TCK
GND	5	6	SWO/TDO
NC	7	8	NC/TDI
GND	9	10	nRESET

2.2 Power, USB to UART section

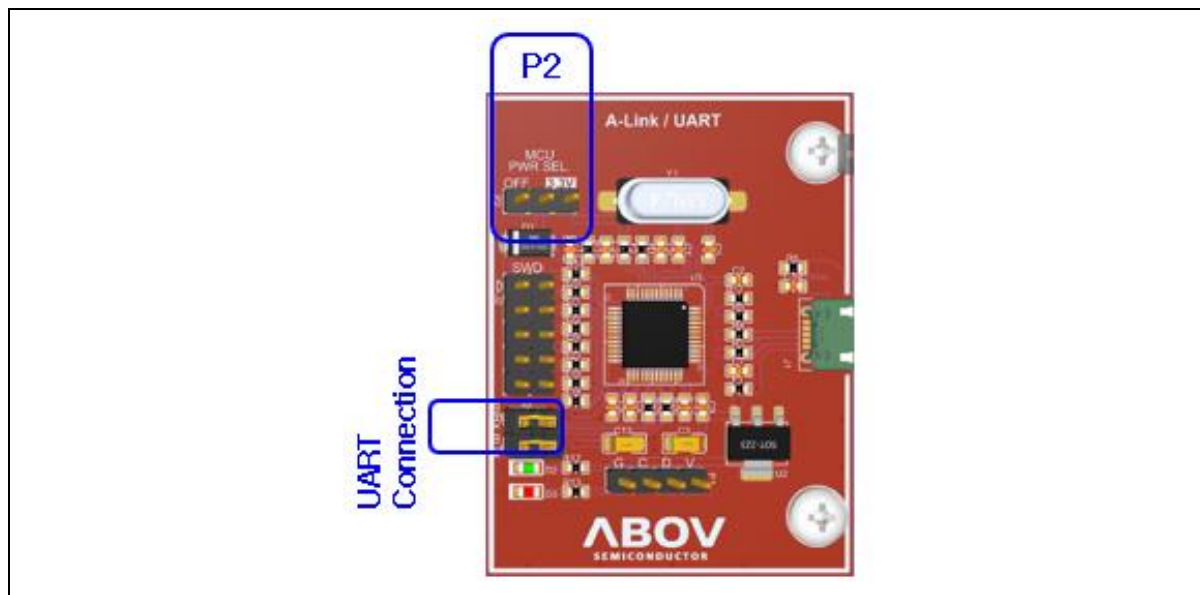


Figure 3. Power, USB to UART Section

2.2.1 P2: MCU Power Selector

Table 4. P2 MCU Power Selector

P2	VDD
	Off (Don't use it)
	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

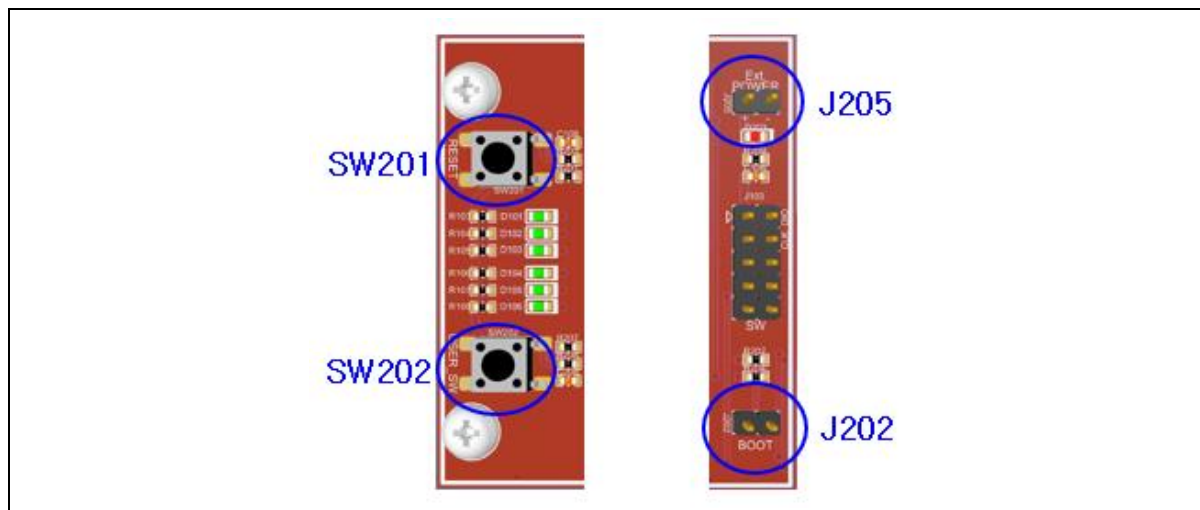
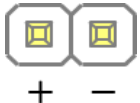


Figure 4. Power, Boot mode and Switch

3.1.1 J205: external power (not used)

Table 6. J205 Description and Connection

J205	Pin name	Connection
	VDD	+3.3 ~ 3.6V
	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	PD3

3.2 LED display (D101 – D104)

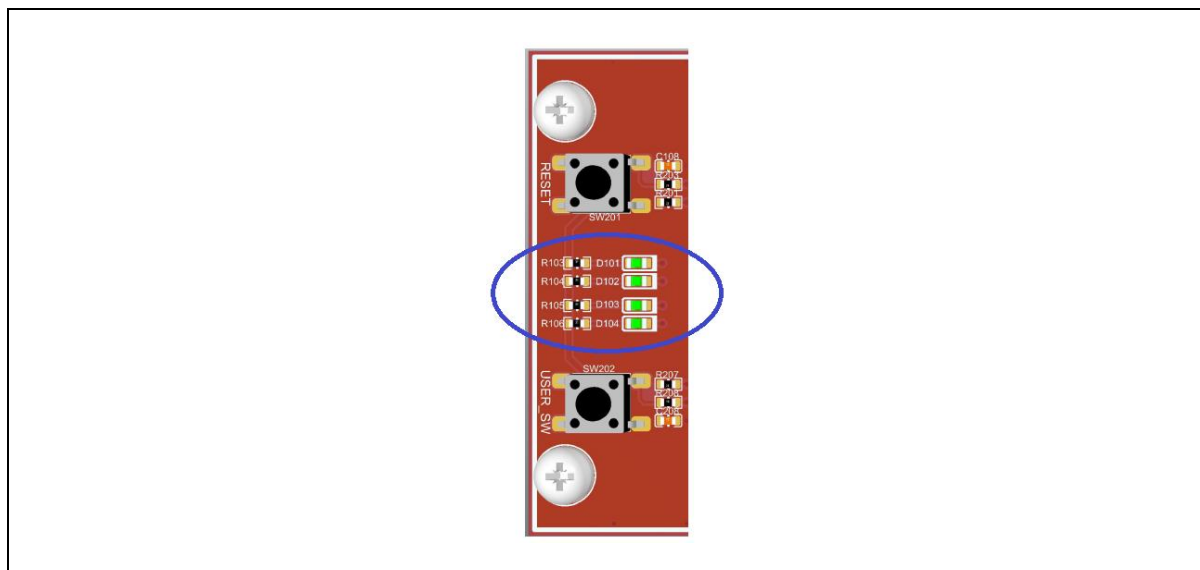


Figure 5. LED Display

3.2.1 LED schematic

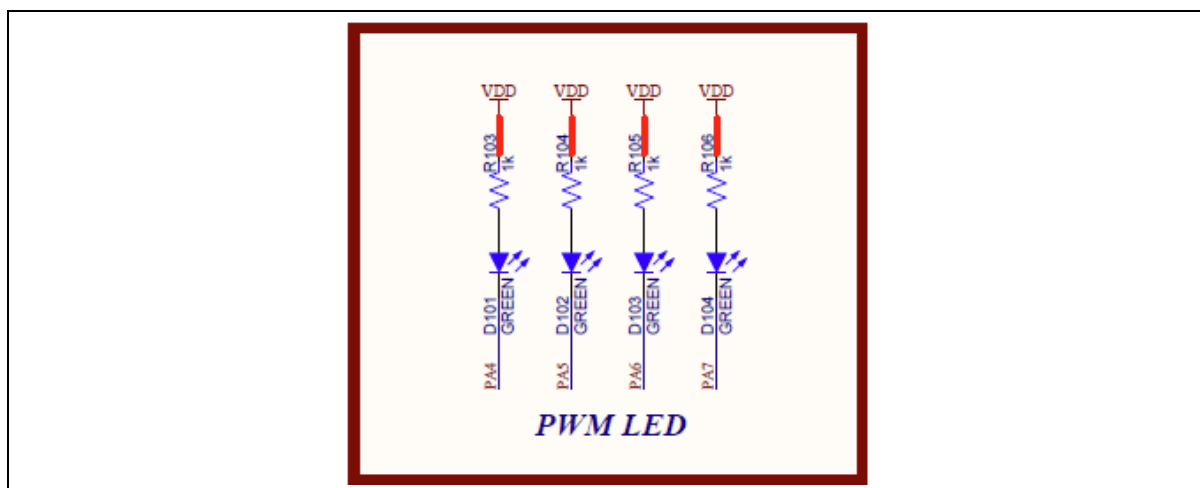


Figure 6. LED Schematic

3.2.2 LED pin assignment

Table 9. LED Pin Description

LED name	PORT
D101	PA4
D102	PA5
D103	PA6
D104	PA7

3.3 Pin assignment

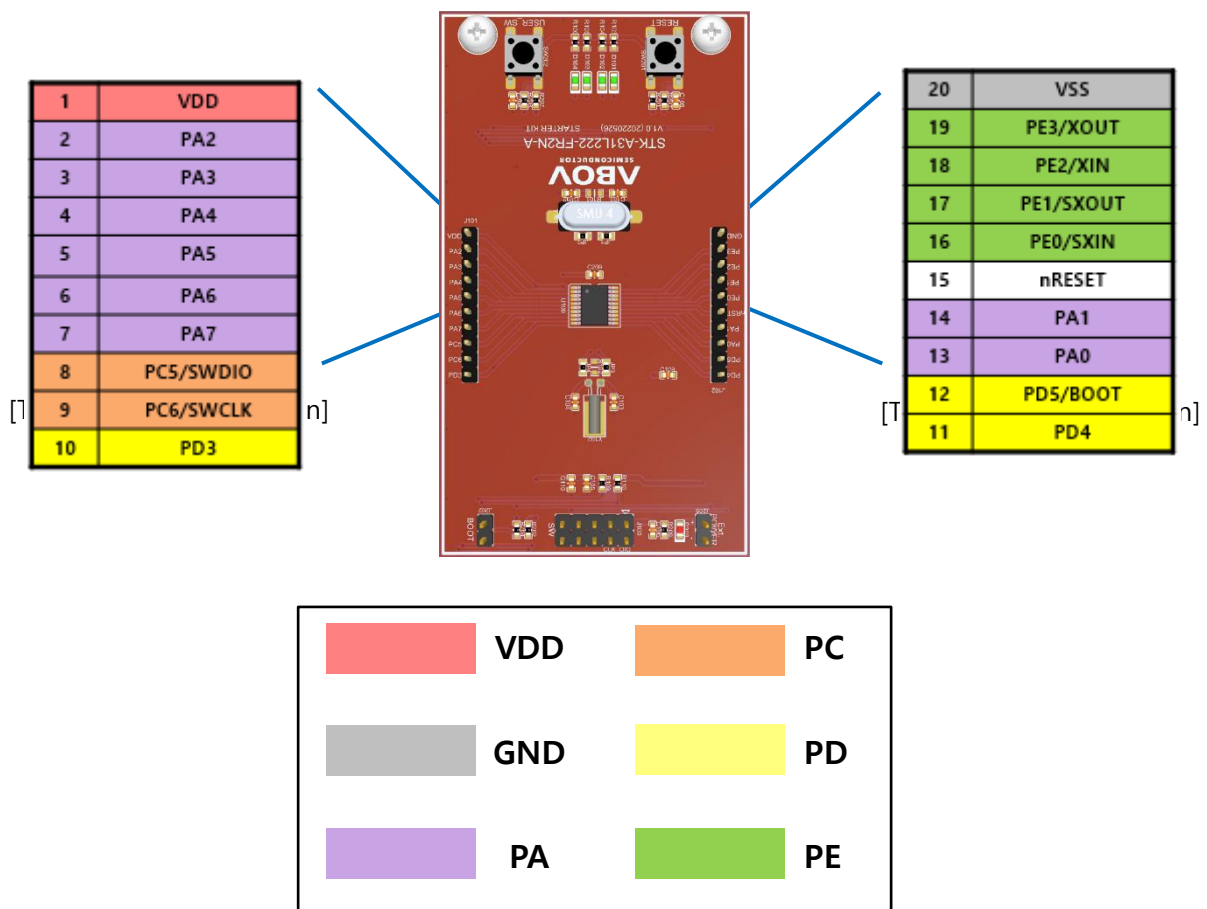


Figure 7. Pin Assignment

Revision history

Date	Version	Description
22.10.28	1.00	Document created
24.12.02	1.10	Updated the disclaimer.

Korea**Regional Office, Seoul
R&D, Marketing & Sales**

8th Fl., 330, Yeongdong-daero,
Gangnam-gu, Seoul,
06177, Korea

Tel: +82-2-2193-2200

Fax: +82-2-508-6903

www.abovsemi.com

HQ, Ochang**R&D, QA, and Test Center**

37, Gangni 1-gil, Ochang-eup,
Cheongwon-gun,
Chungcheongbuk-do,
28126, Korea

Tel: +82-43-219-5200

Fax: +82-43-217-3534

<https://www.abovsemi.com/en/main.php>

Domestic Sales Manager

Tel: +82-2-2193-2206

Fax: +82-2-508-6903

Email: sales_kr@abov.co.kr

Global Sales Manager

Tel: +82-2-2193-2281

Fax: +82-2-508-6903

Email: sales_gl@abov.co.kr

China Sales Manager

Tel: +86-755-8287-2205

Fax: +86-755-8287-2204

Email: sales_cn@abov.co.kr

ABOV Disclaimer**IMPORTANT NOTICE – PLEASE READ CAREFULLY**

ABOV Semiconductor (“ABOV”) reserves the right to make changes, corrections, enhancements, modifications, and improvements to ABOV products and/or to this document at any time without notice. **ABOV DOES NOT GIVE WARRANTIES AS TO THE ACCURACY OR COMPLETENESS OF THE INFORMATION INCLUDED HEREIN.** Purchasers should obtain the latest relevant information of ABOV products before placing orders. Purchasers are entirely responsible for the choice, selection, and use of ABOV products and ABOV assumes no liability for application assistance or the design of purchasers’ products. **NO LICENSE, EXPRESS OR IMPLIED, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY ABOV HEREIN. ABOV DISCLAIMS ALL EXPRESS AND IMPLIED WARRANTIES AND SHALL NOT BE RESPONSIBLE OR LIABLE FOR ANY INJURES OR DAMAGES RELATED TO USE OF ABOV PRODUCTS IN SUCH UNAUTHORIZED APPLICATIONS.** ABOV and the ABOV logo are trademarks of ABOV. For additional information about ABOV trademarks, please refer to https://www.abov.co.kr/en/about/corporate_identity.php. All other product or service names are the property of their respective owners. Information in this document supersedes and replaces the information previously supplied in any former versions of this document.

© 2021 ABOV Semiconductor – All rights reserved