Introduction

The A31C122 Starter Kit makes it easy to develop applications when using the A31C122KYN general-purpose microcontroller with Cortex®-M0+ 32-bit core. The A31C122 Starter Kit includes everything needed for both beginners and experienced users to get started quickly.

Based on the A31C122KYN, this A31C122 Starter Kit contains the A-Link2 interface – the ABOV CMSIS-DAP debugger tool, LEDs, push buttons and a type-C USB connector. Specialized function boards can be connected to the extension header connectors.

The A31C122 Starter Kit comes with the ABOV software libraries and examples available with the reference software package.

Figure 1. Configuration of Starter Kit Board

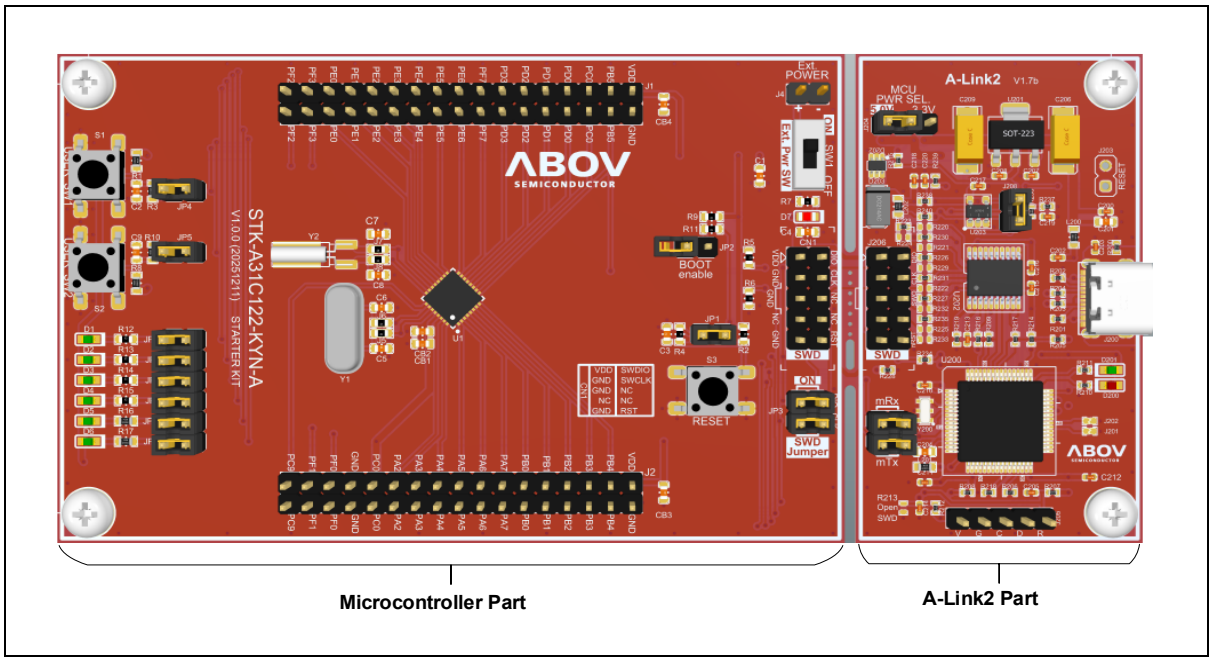

Table 1. Main Features of Starter Kit Board

Main Feature	Specifications	Remark
Microcontroller	A31C122KYN	Arm Cortex-M0+
Operating clock	Internal 32 MHz Internal 40 kHz External 8 MHz External 32.768 kHz	IOSC32 (HSI) RINGOSC (LSI) MXOSC (HSE) SXOSC (LSE)
Flash ROM	32 KB	Code
SRAM	6 KB	
Host Interface	USB 2.0	USB Type C
Debugging Port	SWD	10-pin connector
Input Buttons	Reset, GPIO	TACT switch

Reference Document

The following documents are available on www.abovsemi.com.

- A31C1xx User's Manual
- A31C12x Datasheet

For more information about technical materials, see StarterKit-A31C122KYN.

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1. Ordering Information

To order the starter kit board product of microcontrollers, refer to Table 2.

Additional information about starter kit board, visit ABOV website (www.abovsemi.com).

Table 2. Ordering Information

Order Code	Board Name	Target Microcontroller
StarterKit-A31C122KYN	STK-A31C122-KYN-A	A31C122KYN

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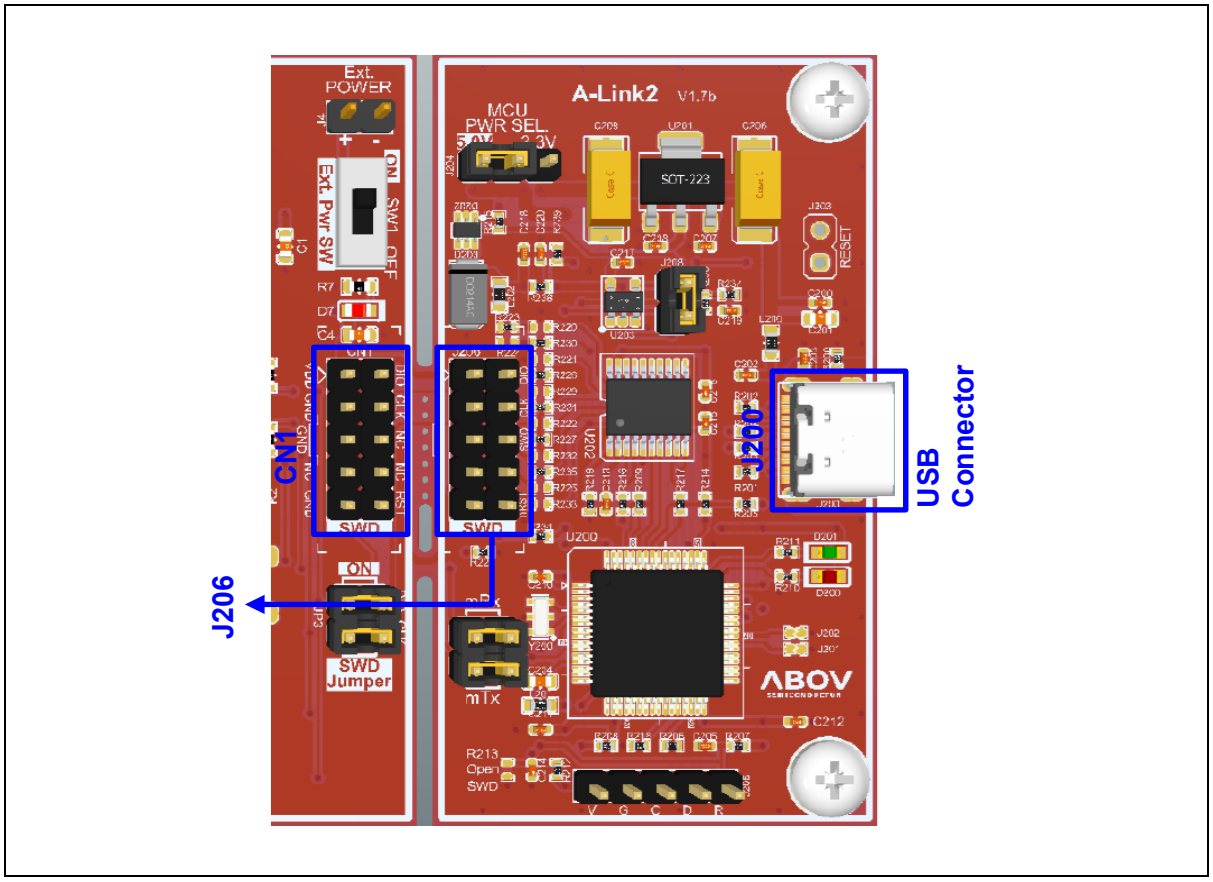
2. Hardware Configuration: A-Link2 Part

In this chapter, the A-Link2 part of the starter kit board is described.

2.1 A-Link2 Part

Figure 2. A-Link2 Part of Starter Kit



2.1.1 J200: USB Type C Pin Connector

- Power supply by USB connector from host computer
- A-Link CMSIS-DAP compatible debugger
- USB-to-UART serial port

2.1.2 CN1: SWD Connector on Microcontroller Part

Table 3. SWD Connector Pin Description on Microcontroller Part (CN1)

Pin Name	Pin Number	Pin Number	Pin Name
VDD	1	2	SWDIO
GND	3	4	SWCLK
GND	5	6	N.C.
N.C.	7	8	N.C.
GND	9	10	nRESET

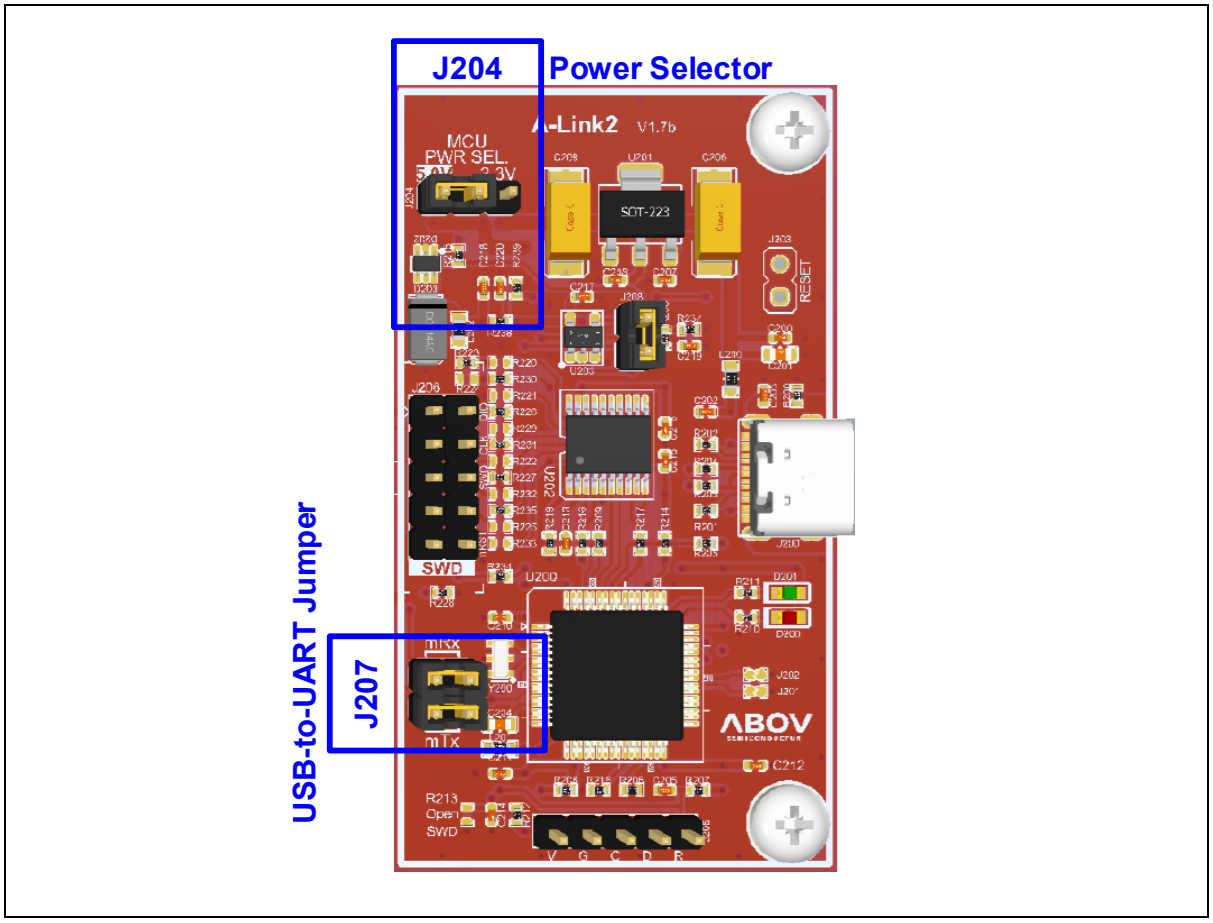
2.1.3 J206: SWD Connector on A-Link2 Part

Table 4. SWD Connector Pin Description on A-Link2 Part (J206)

Pin Name	Pin Number	Pin Number	Pin Name
V-Sense	1	2	SWDIO
GND	3	4	SWCLK
GND	5	6	N.C.
N.C.	7	8	N.C.
GND	9	10	nRESET

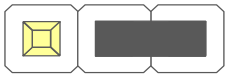
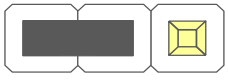
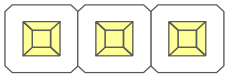
2.2 Power Selector and USB-to-UART Jumpers

Figure 3. Power Selector and USB-to-UART Jumpers on A-Link2 Part



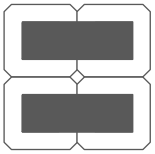
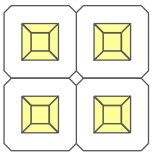
2.2.1 J204: Microcontroller Power Selector

Table 5. Microcontroller Power Selector on A-Link2 Part (J204)

J204	VDD
	Use 3.3 V power supply by USB connector (J204).
	Use 5.0 V power supply by USB connector (J204).
	Use external power supply to microcontroller (J4). See to section 3.1.1

2.2.2 J207: USB-to-UART Jumpers

Table 6. USB-to-UART Jumpers on A-Link2 Board (J207)

J207	Pin	Description
	Short	PB1/RXD10 pin is connected to the host TXD signal. PB0/TXD10 pin is connected to the host RXD signal.
	Open	PB1/RXD10 pin is not connected with the host. PB0/TXD10 pin is not connected with the host.

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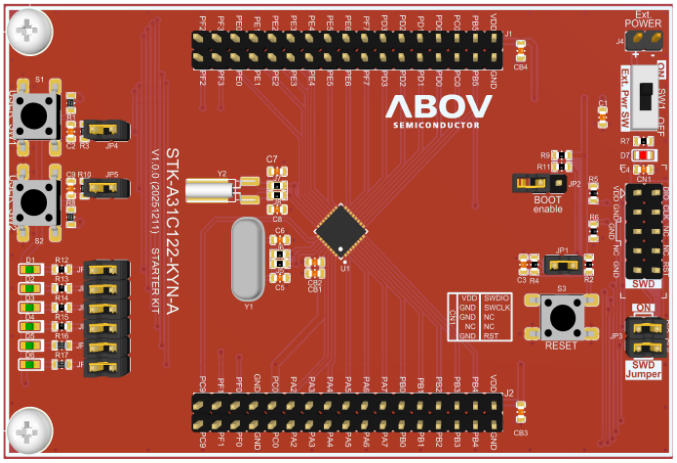
3. Hardware Configuration: Microcontroller Part

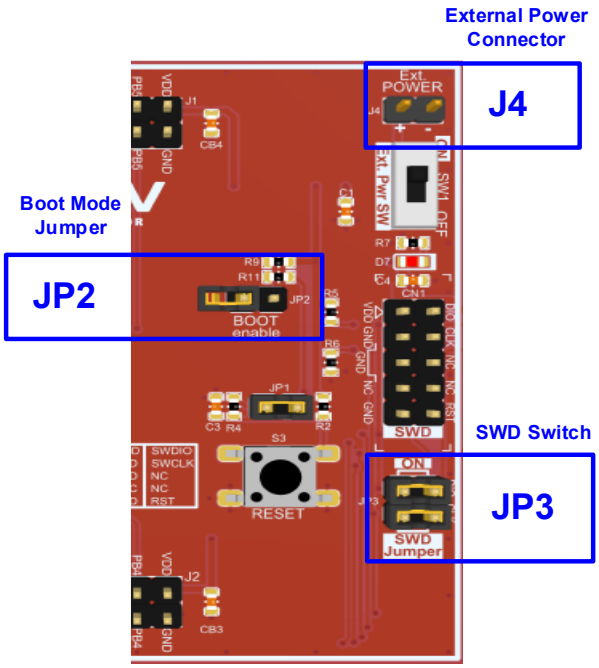
Chapter 3 describes the power, BOOT mode selector and switches, and LEDs on the starter kit board.

Figure 4. Microcontroller Part of Starter Kit Board



3.1 External Power Connector and BOOT Mode Jumper

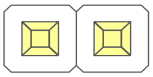
Figure 5. External Power Connector (J4) and BOOT Mode Jumper (JP2)



3.1.1 J4: External Power Connector

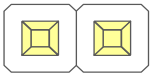
If the USB connector (J200) is not used for power supply, the J4 pin can be used to supply external power to the microcontroller board.

Table 7. Pin Description of Power Supply Connector (J4)

J4	Pin Name	Description
 + -	VDD	1.8 to 5.5 V
	GND	0 V

3.1.2 JP2: BOOT Mode Jumper

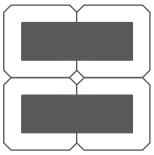
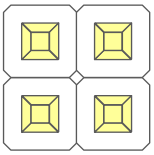
Table 8. Pin Description of BOOT Mode Jumper (JP2)

JP2	Connection State	Description
	Short	BOOT mode
	Open	Normal mode

3.1.3 JP3: SWD Connection Jumper

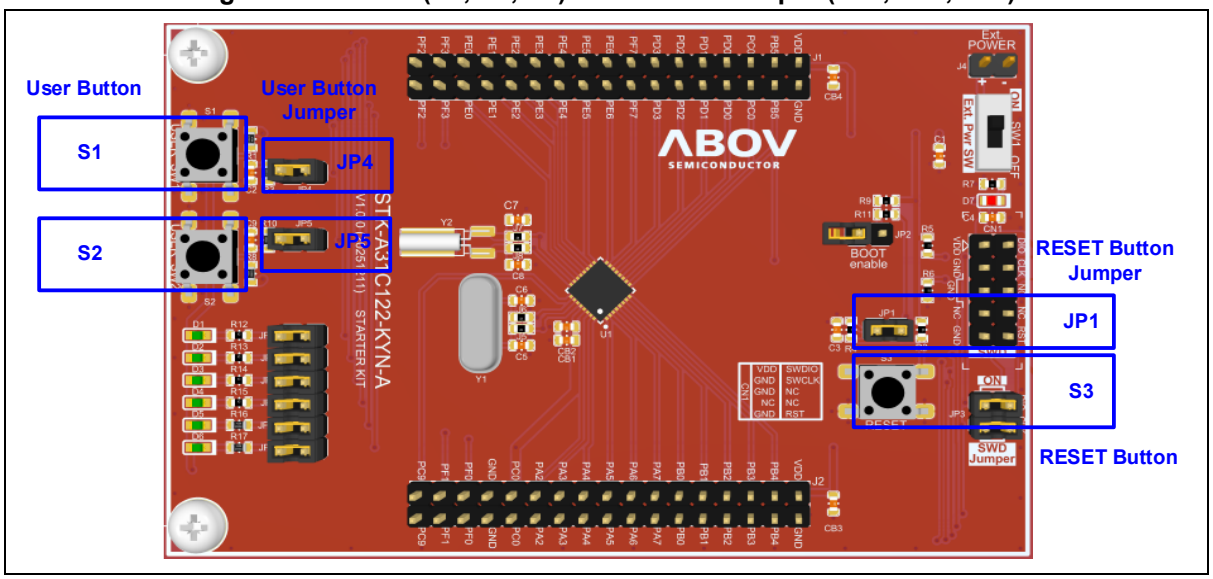
The SWLCK and SWDIO pins are SWD (Serial Wire Debug) signals for clock and data respectively and are used as debug interfaces.

Table 9. Usage of SWD Switch

JP3 State	ON	JP3 State	OFF
	SWCLK/SWDIO pins are connected to A-Link2.		SWDLK/SWDIO pins are disconnected from A-Link2.

3.2 nRESET and GPIO Buttons

Figure 6. Buttons (S1, S2, S3) and Button Jumper (JP1, JP4, JP5)



3.2.1 S1, S2, S3, JP1, JP4, JP5: Buttons and Button Jumpers

Table 10. Description of Buttons (S1, S2, S3)

Button	Function	Connection Pin
S1	External GPIO Button	PD0 connected with JP4
S2	External GPIO Button	PD1 connected with JP5
S3	External Reset Button	nRESET/PC9 connected with JP1

Table 11. Pin Description of GPIO Button Jumper (JP4)

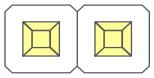
JP4	Connection Status	Description
	Short	Connected to PD0 pin.
	Open	Not connected to S1.

Table 12. Pin Description of GPIO Button Jumper (JP5)

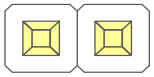
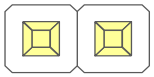
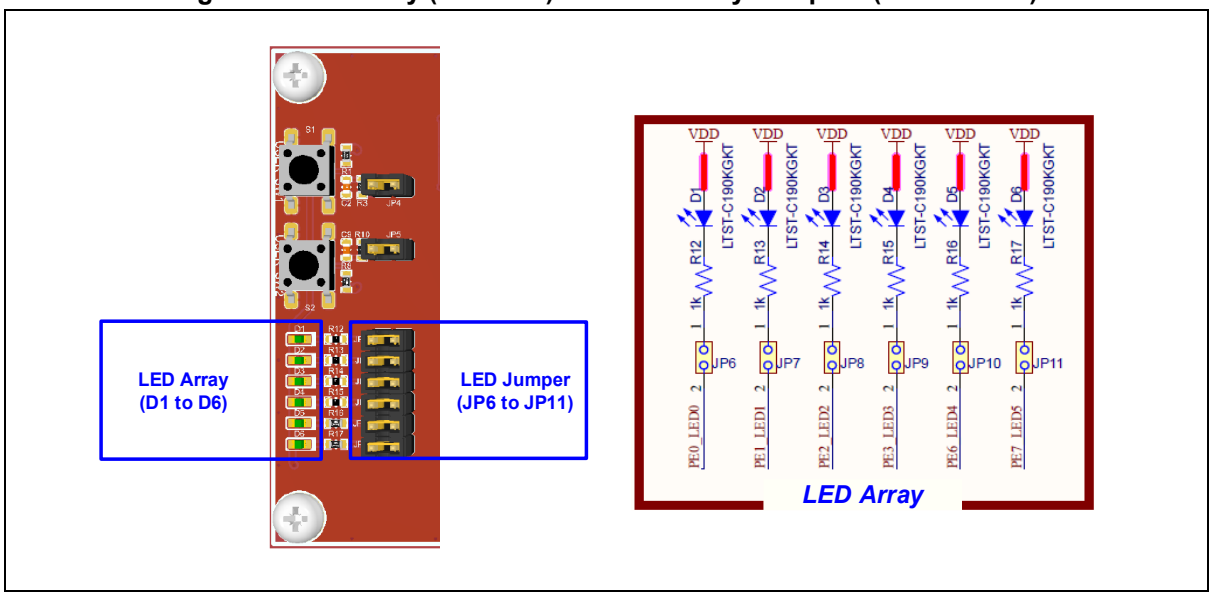
JP5	Connection Status	Description
	Short	Connected to PD1 pin.
	Open	Not connected to S2.

Table 13. Pin Description of Reset Button Jumber (JP1)

JP1	Connection Status	Description
	Short	RESET button is connected to nRESET/PC9 pin.
	Open	Not connected to S3.

3.3 LED Array and LED Array Jumpers

Figure 7. LED Array (D1 to D6) and LED Array Jumpers (JP6 to JP11)



3.3.1 LED Array Pin Assignment

Table 14. LED Array Pin Description (D1 to D6)

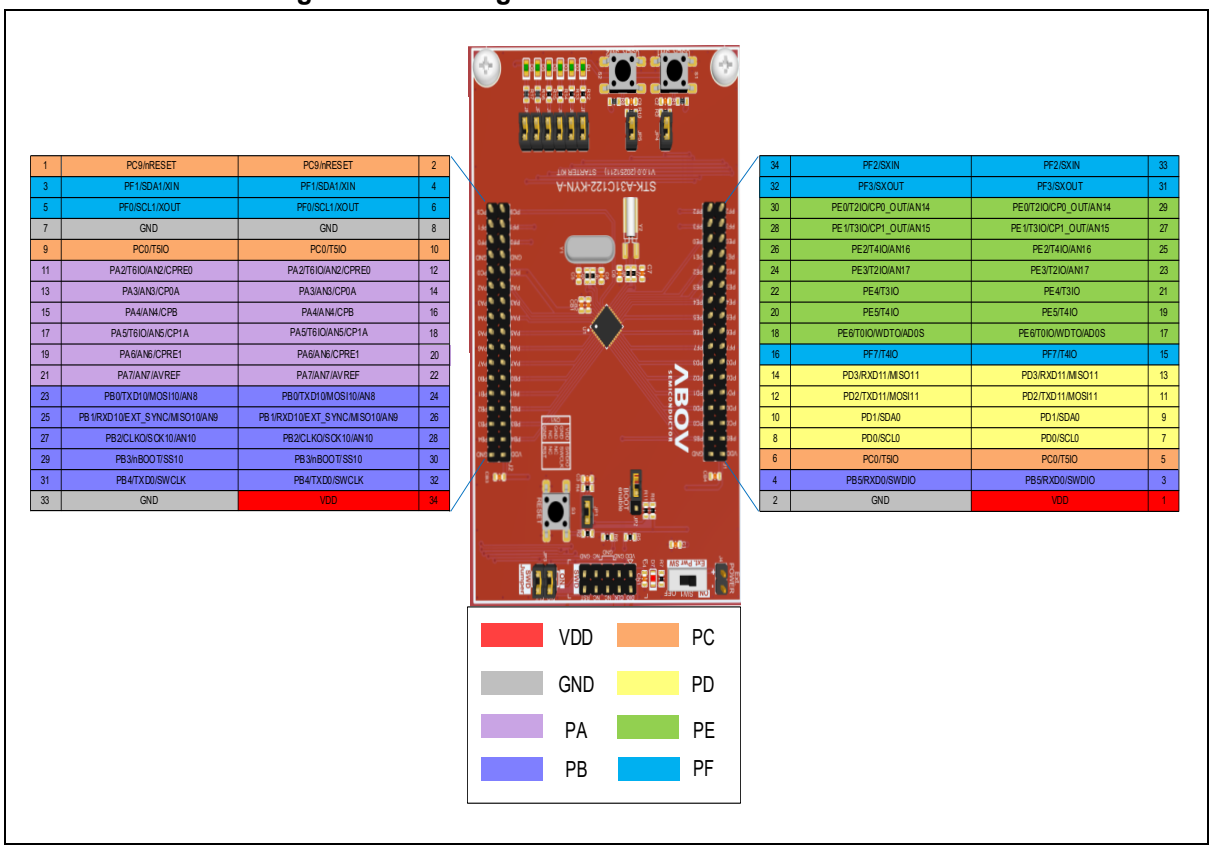
LED Name	LED Connection	Connected Pin
D1	JP6	PE0
D2	JP7	PE1
D3	JP8	PE2
D4	JP9	PE3
D5	JP10	PE6
D6	JP11	PE7

Table 15. Usage of LED Jumper (JP6 to JP11)

JP6 to JP11	Connection Status	Description
	Short	Use LED
	Open	Not use LED

3.4 Pin Assignment

Figure 8. Pin Assignment of Starter Kit-A31C122KYN



Revision History

Revision	Date	Notes
1.00	Feb. 03, 2026	Initial release

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