

Introduction

The A34M420 Starter Kit makes it easy to develop applications when using the A34M420YLN high-performance microcontroller with an Arm Cortex®-M4F 32-bit core. The A34M420 Starter Kit includes the elements for beginners and experienced users to start their development.

This A34M420 Starter Kit contains an A34M420YLN in 120-LQFP package, an ABOV A-Link debugger embedded debug tool, LEDs, push buttons, and a type-C USB connector. Also, this starter kit has expansion header connectors for either user function circuits or specialized function boards.

The A34M420 Starter Kit comes with the ABOV software libraries and examples provided as a reference software package.

Figure 1. Starter Kit Board

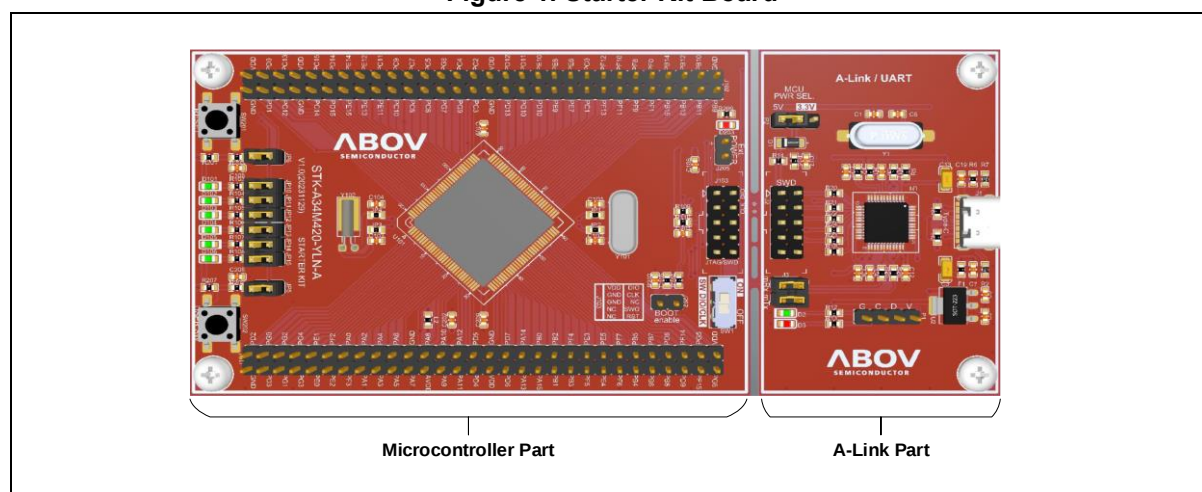


Table 1. Main Features of Starter Kit Board

Main feature		Specifications	Remark
Microcontroller		A34M420YLN	Cortex-M4F, 140 MHz, 120-LQFP
Operating Clock		PLL Internal 500 kHz Internal 32 MHz External 32.768 kHz External 8 MHz	Max 140MHz LSI HSI LSE HSE
Flash Memory	Code	1,024 KB	Dual Bank (512 KB + 512 KB)
	Data	32 KB	Data
SRAM		64 KB	SRAM
Host Interface Type		USB 2.0 FS	USB Type C
Debugging Port		SWD	10-pin connector
Input Buttons		Reset x 1, event input x 1	TACT switch

Reference Document

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

- A34M420_User's Manual
- A34M420_Datasheet

For information on A34M420 relevant technical materials, visit our official website.

List of Tables

Table 1. Main Features of Starter Kit Board	1
Table 2. Ordering Information	5
Table 3. SWD Connector Pin Description on Microcontroller Part (J103)	6
Table 4. SWD Connector Pin Description on A-Link Part (J2)	7
Table 5. Microcontroller Power Selector (P2).....	7
Table 6. USB-to-UART Connector (J3)	8
Table 7.Pin Description of External Power Connector (J205).....	10
Table 8. Usage of BOOT Jumper (J202).....	10
Table 9. Usage of SWD Switch	10
Table 10. Description of Input Buttons (SW201, SW202)	11
Table 11. Usage of User Button Jumper (J5)	11
Table 12. Usage of RESET Button Jumper (J6)	11
Table 13. LED Array Pin Description (D101 to D106)	12
Table 14. Usage of LED Array Jumpers (JP10 to JP15).....	12

List of Figures

Figure 1. Starter Kit Board	1
Figure 2. A-Link Part of Starter Kit	6
Figure 3. Power Selector and USB-to-UART Connector on A-Link Part	7
Figure 4. Microcontroller Part of Starter Kit Board	9
Figure 5. External Power Connector (J205), BOOT Mode Jumper (J202), and SWD Switch (SW1)	9
Figure 6. Buttons (SW201, SW202) and Button Jumpers (JP5, JP6)	11
Figure 7. LED Array (D101 to D106) and LED Array Jumpers (JP10 to JP15)	12
Figure 8. Pin Assignment of Starter Kit-A34M420YLN	13

1. Ordering Information

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

For more information about the starter kit board, please visit the ABOV website (www.abovsemi.com).

Table 2. Ordering Information

Order Code	Product Name	Microcontroller
StarterKit-A34M420YLN	STK-A34M420-YLN-A	A34M420YLN

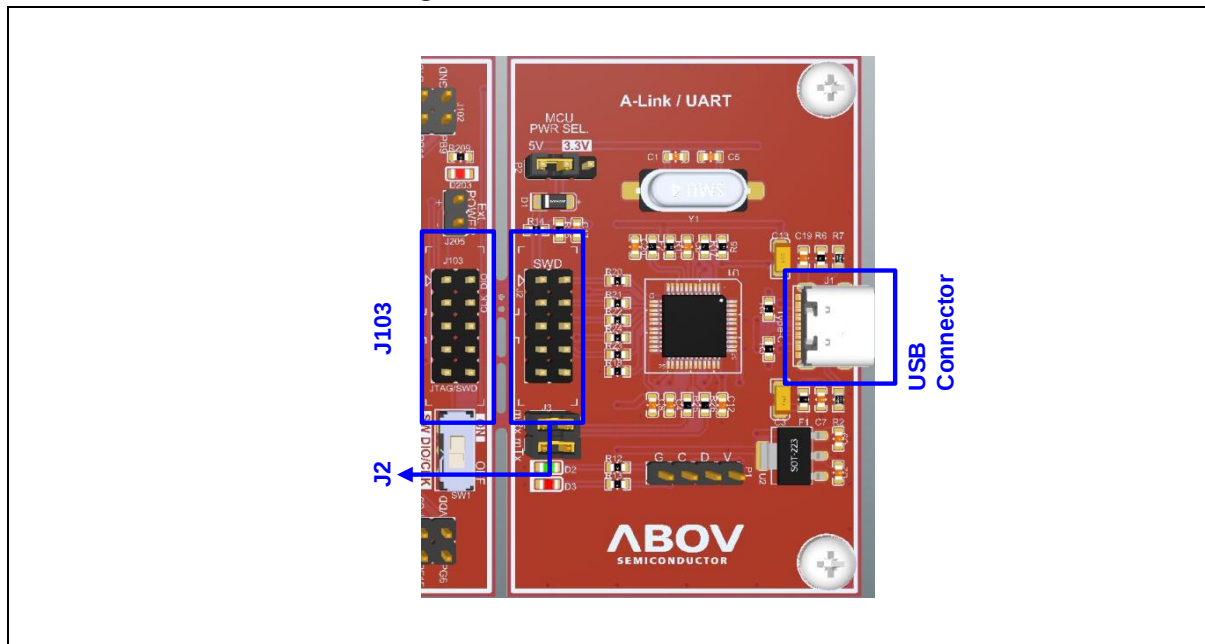
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2. Hardware Configuration: A-Link Part

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

2.1 A-Link Part

Figure 2. A-Link Part of Starter Kit



2.1.1 J1: USB Type C Connector

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

2.1.2 J103: SWD Connector on Microcontroller Part

Table 3. SWD Connector Pin Description on Microcontroller Part (J103)

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

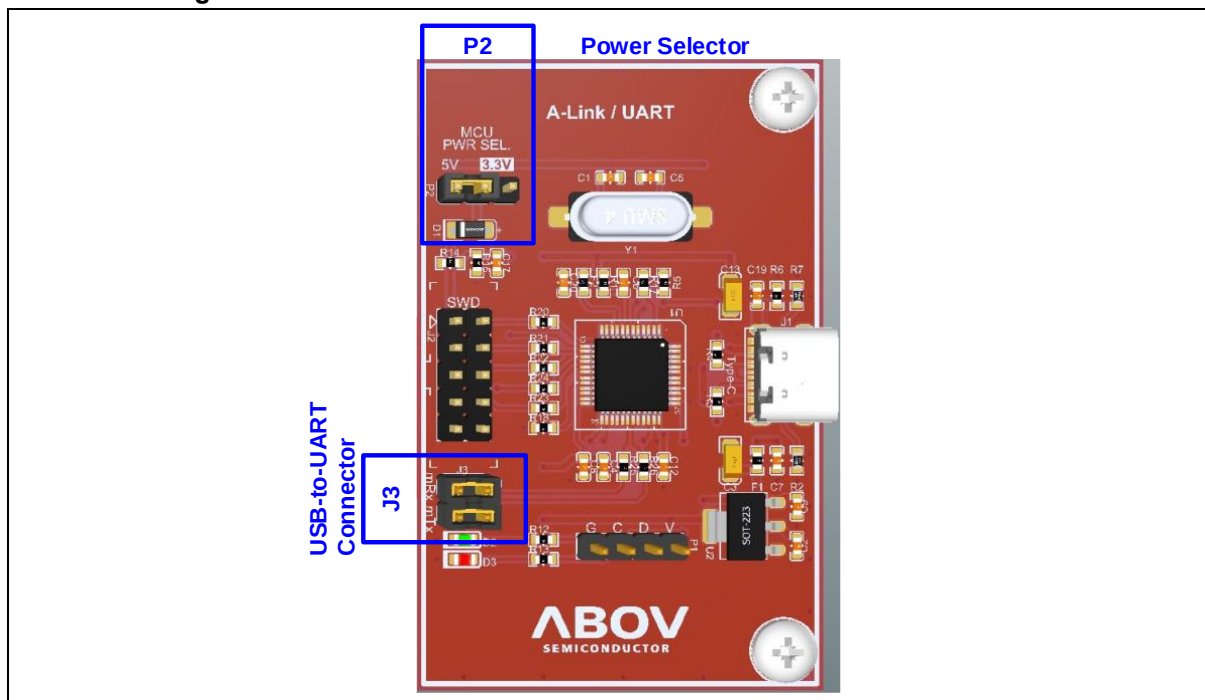
2.1.3 J2: SWD Connector on A-Link Part

Table 4. SWD Connector Pin Description on A-Link Part (J2)

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 Connector

Figure 3. Power Selector and USB-to-UART Connector on A-Link Part



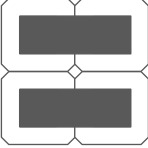
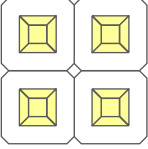
2.2.1 P2: Microcontroller Power Selector

Table 5. Microcontroller Power Selector (P2)

P2	VDD
	Use a 5.0 V power supply by USB connector (P2).
	Use a 3.3 V power supply by USB connector (P2).
	Use external power supply from microcontroller part (J205). See section 3.1.1.

2.2.2 J3: USB-to-UART Connection

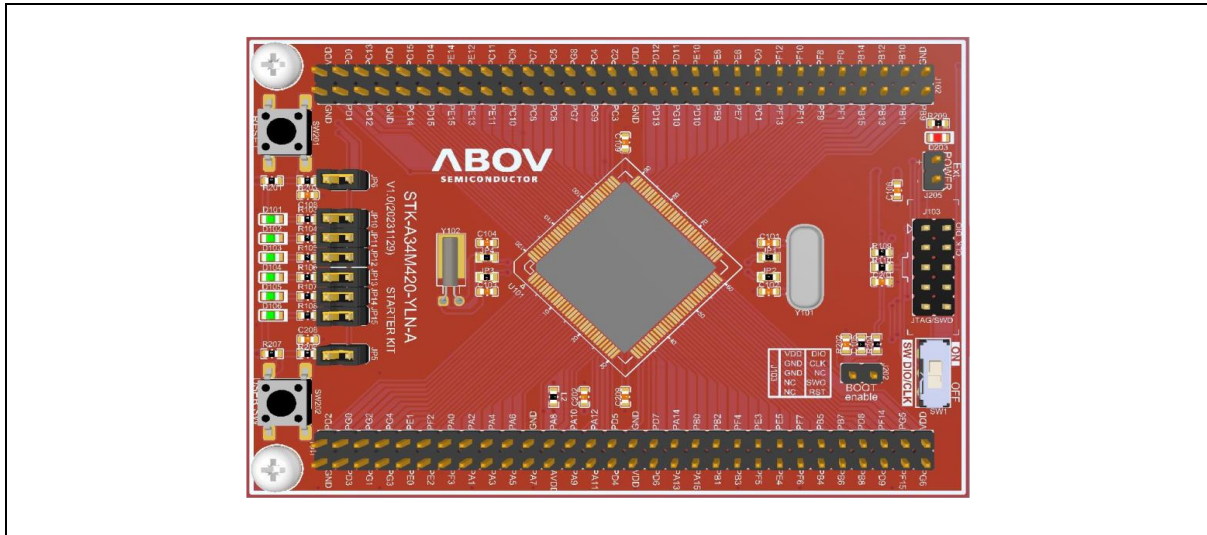
Table 6. USB-to-UART Connector (J3)

J3	Pin	Description
	Short	PC14/RXD pin is connected to the host TXD signal. PC15/TXD pin is connected to the host RXD signal.
	Open	PC14/RXD pin is not connected with the host. PC15/TXD pin is not connected with the host.

3. Hardware Configuration: Microcontroller Part

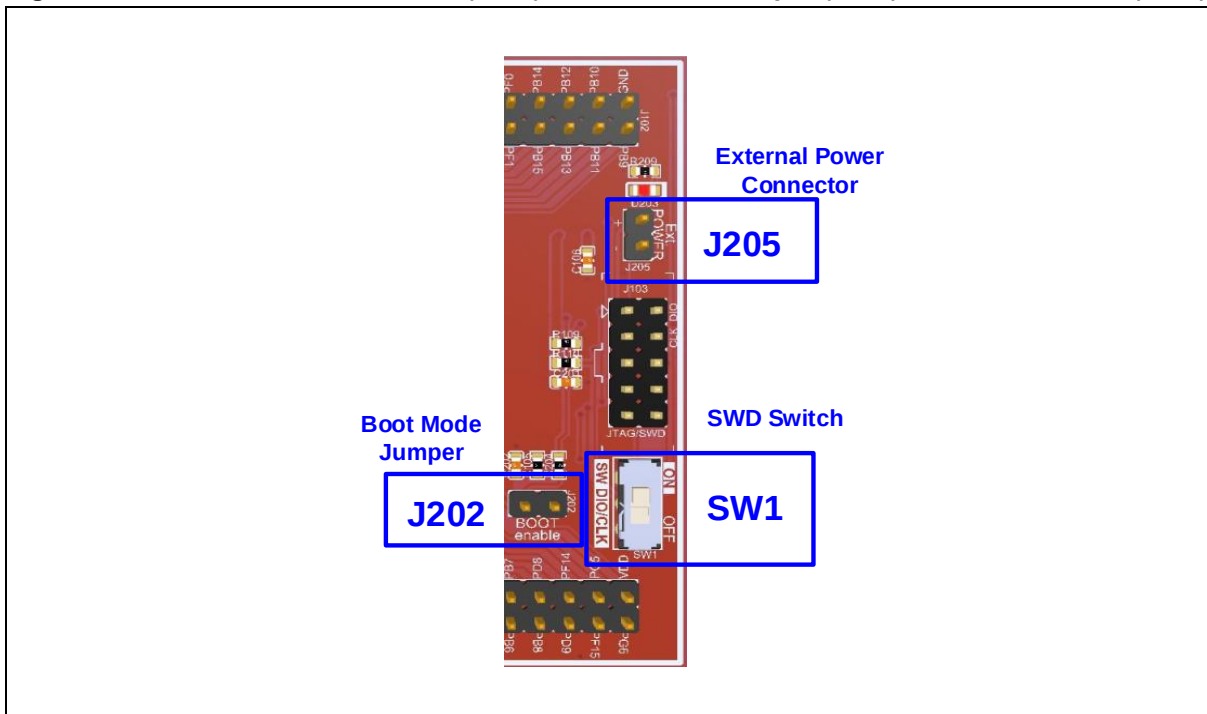
Chapter 3 describes the power, BOOT mode jumper and switches, and LEDs on the starter kit board.

Figure 4. Microcontroller Part of Starter Kit Board



3.1 External Power Connector, BOOT Mode Jumper, and SWD Switch (SW1)

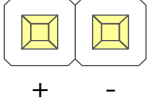
Figure 5. External Power Connector (J205), BOOT Mode Jumper (J202), and SWD Switch (SW1)



3.1.1 J205: External Power Connector

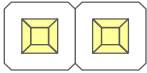
If the USB connector (J1) is not used for power supply, the J205 pin can be used to supply external power to the microcontroller part.

Table 7. Pin Description of External Power Connector (J205)

J205	Pin Name	Description
	VDD	2.5 to 5.0 V (ADC: 2.7 to 5.0 V)
	GND	0 V

3.1.2 J202: BOOT Mode Jumper

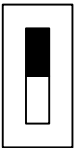
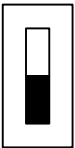
Table 8. Usage of BOOT Jumper (J202)

J202	Connection State	Description
	Short	BOOT Mode
	Open	Normal Mode

3.1.3 SW1: SWD Connection Switch

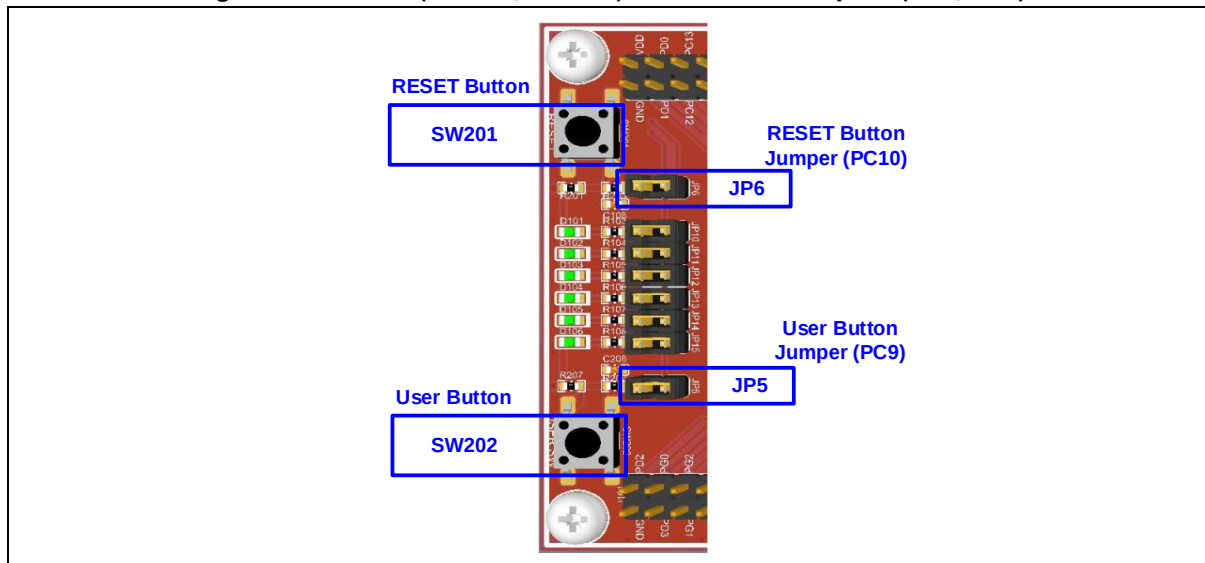
The SWCLK and SWDIO pins are SWD (Serial Wire Debug) signals for clock and data respectively and are used as debug interfaces.

Table 9. Usage of SWD Switch

SW1 State	ON	SW1 State	OFF
	SWCLK/SWDIO pins are connected to A-Link.		SWDLK/SWDIO pins are disconnected from A-Link.

3.2 nRESET Button and User Button

Figure 6. Buttons (SW201, SW202) and Button Jumpers (JP5, JP6)



3.2.1 SW201, SW202, JP5, JP6: Button and Button Jumpers

Table 10. Description of Input Buttons (SW201, SW202)

Switch	Function	Connection pin
SW201	Ext. reset input switch	nRESET/PC10 connected with JP6.
SW202	Ext. user input switch	PC9/T8IO/CLKO connected with JP5.

Table 11. Usage of User Button Jumper (J5)

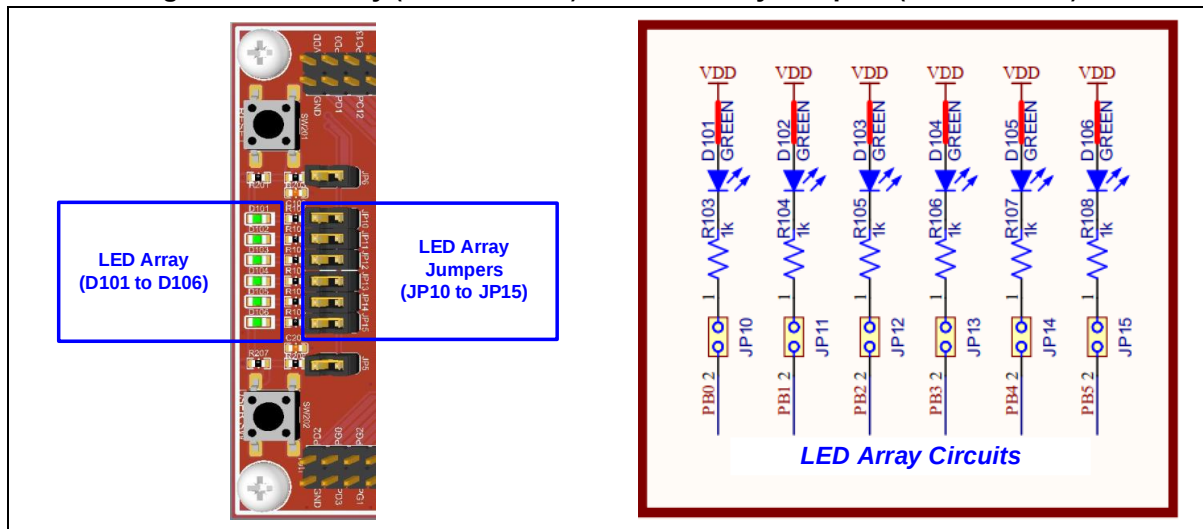
J5	Connection status	Description
	Short	Connected to PC9/T8IO/CLKO pin.
	Open	Not connected to SW202.

Table 12. Usage of RESET Button Jumper (J6)

J6	Connection status	Description
	Short	RESET button is connected to nRESET/PC10 pin.
	Open	Not connected to SW201.

3.3 LED Array

Figure 7. LED Array (D101 to D106) and LED Array Jumpers (JP10 to JP15)



3.3.1 LED Array and Jumpers

Table 13. LED Array Pin Description (D101 to D106)

LED Name	LED Jumper	Connected Pin
D101	JP10	PB0/MP0UH
D102	JP11	PB1/MP0UL
D103	JP12	PB2/MP0VH
D104	JP13	PB3/MP0VL
D105	JP14	PB4/MP0WH
D106	JP15	PB5/MP0WL

Table 14. Usage of LED Array Jumpers (JP10 to JP15)

JP10 to JP15	Connection status	Description
	Short	Use LED.
	Open	Not use LED.

3.4 Pin Assignment

Figure 8. Pin Assignment of Starter Kit-A34M420YLN

1	GND	PD2/MOSI1	2
3	PD3/MISO1	PG0/SS2	4
5	PG1/SCK2	PG2/MOSI2	6
7	PG3/MISO2	PG4	8
9	PE0	PE1/AN20	10
11	PE2/AN21	PF2/AN22	12
13	PF3/AN23	PA0/AN0	14
15	PA1/AN1	PA2/AN2	16
17	PA3/AN3	PA4/AN4/TIO0	18
19	PA5/AN5/TIO0/CAPEV	PA6/AN6/T2IO/CAPEV	20
21	PA7/AN7/T3IO/CAPEW	AGND	22
23	AVDD	PA8/AN8	24
25	PA9/AN9	PA10/AN10/RXD1/SCAPEU	26
27	PA11/AN11/TXD1/SCAPEV	PA12/AN12/SS0/SCAPEW	28
29	PD4/AN16/SCL1	PD5/AN17/SDA1	30
31	VDD	GND	32
33	PD6/AN18/TXD2	PD7/AN19/RXD2	34
35	PA13/AN13/SCK0	PA14/AN14/MOSI0/PRTINEV	36
37	PA15/AN15/MISO0/OVIN	PB0/MP0UH	38
39	PB1/MP0UL	PB2/MP0VH	40
41	PB3/MP0VL	PF4/TXD5	42
43	PF5/RXD5	PE3/SCL0	44
45	PE4/SDA0	PE5/T5IO	46
47	PF6/PRTINEW	PF7/OVIN	48
49	PB4/MP0VH/T8IO	PB5/MP0WL/T9IO	50
51	PB6/PRTINQU	PB7/OVINQU	52
53	PB8/PRTINQU/RXD3	PD8/T6O/MOTO	54
55	PD9/T7O/STBYO	PF14	56
57	PF15	PG5	58
59	PG6	VDD	60
120	GND	VDD	119
118	PD1/SXOUT/SCK1	PD0/SXIN/SS1	117
116	PC12XIN	PC13XOUT	115
114	GND	VDD	113
112	PC14/MOSI0/RXD0	PC15/MISO0/TXD0	111
110	PD15/SCK0	PD14/SS0	109
108	PE15	PE14/RXD4/T3IO	107
106	PE13/TXD4/T2IO	PE12/SDA1/T1IO	105
104	PE11/SCL1/T0IO	PC11/T9IO/hBOOT	103
102	PC10hRESET	PC9/T8IO/CLK0	101
100	PC8/T4IO/SDA0	PC7/T3IO/SCL0	99
98	PC6/T2IO/TXD1	PC5/T1IO/RXD1	97
96	PG7	PG8/RXD3	95
94	PG9/TXD3	PC4/hTRST/T0IO	93
92	PC3/TDI	PC2/TDO/SWO	91
90	GND	VDD	89
88	PD13/T3IO	PD12/T2IO	87
86	PG10	PD11/T1IO	85
84	PD10/T0IO	PE10/T9IO	83
82	PE9/T8IO	PE8/T7IO	81
80	PE7/T6IO	PE6/T5IO	79
78	PC1/TMS/SWDIO/TXD0	PC0/TCK/SWCLK/RXD0	77
76	PF13	PF12	75
74	PF11	PF10	73
72	PF9	PF8	71
70	PF1	PF0	69
68	PB15/MP1WL	PB14/MP1VH	67
66	PB13/MP1VL	PB12/MP1VH	65
64	PB11/MP1UL	PB10/MP1UH	63
62	PB9/OVIN1U/TXD3	GND	61



VDD

GND

PA

PB

PG

PC

PD

PE

PF

Revision History

Revision	Date	Notes
1.00	Jan. 30, 2024	Initial release.
1.01	Dec. 02, 2024	Updated the disclaimer.

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