

# EK-AI6108L-S User Guide



**AcSiP Technology Corp.**

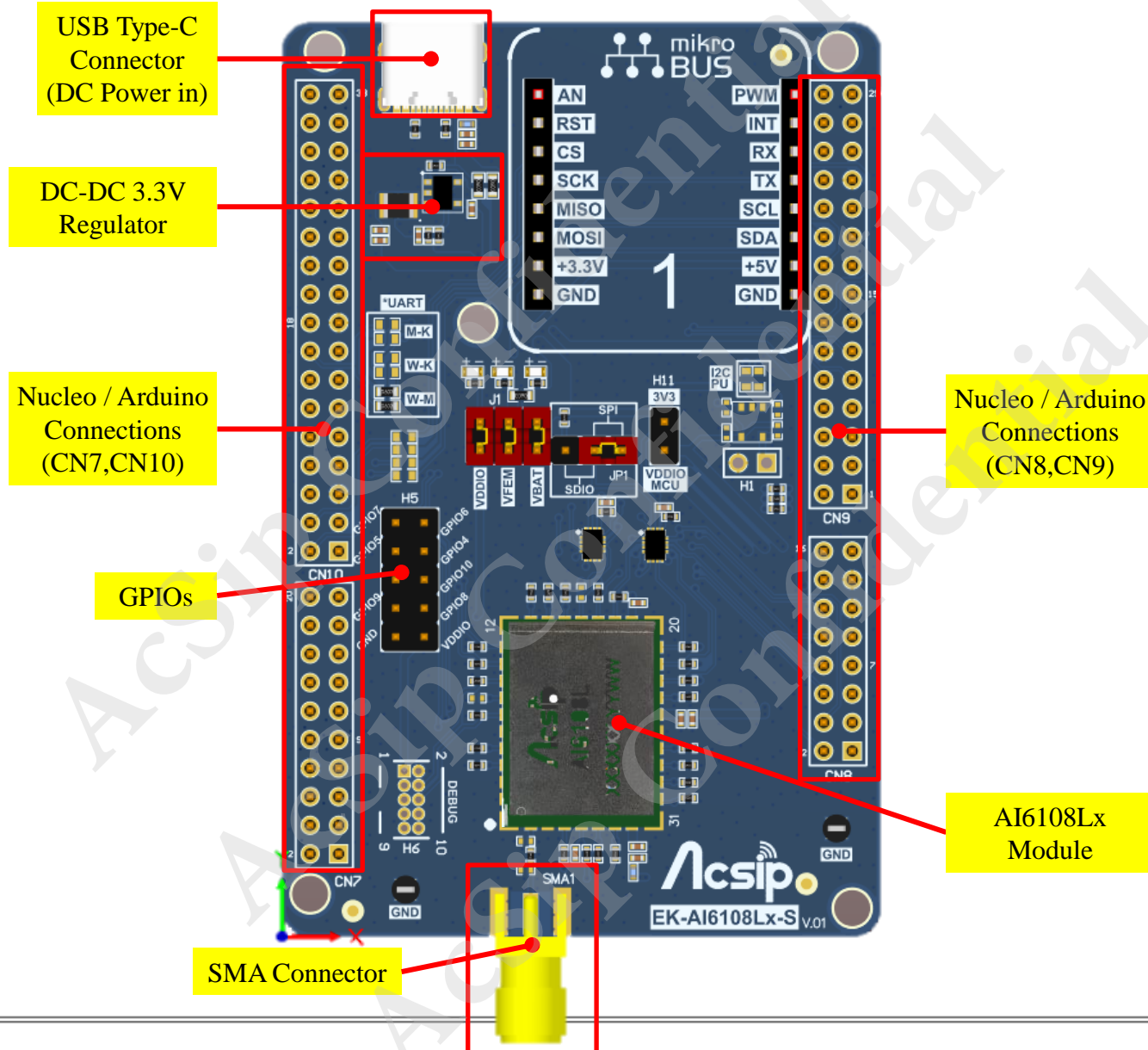
[www.acsip.com.tw](http://www.acsip.com.tw)

Doc No : 912-17002

Ver. : B

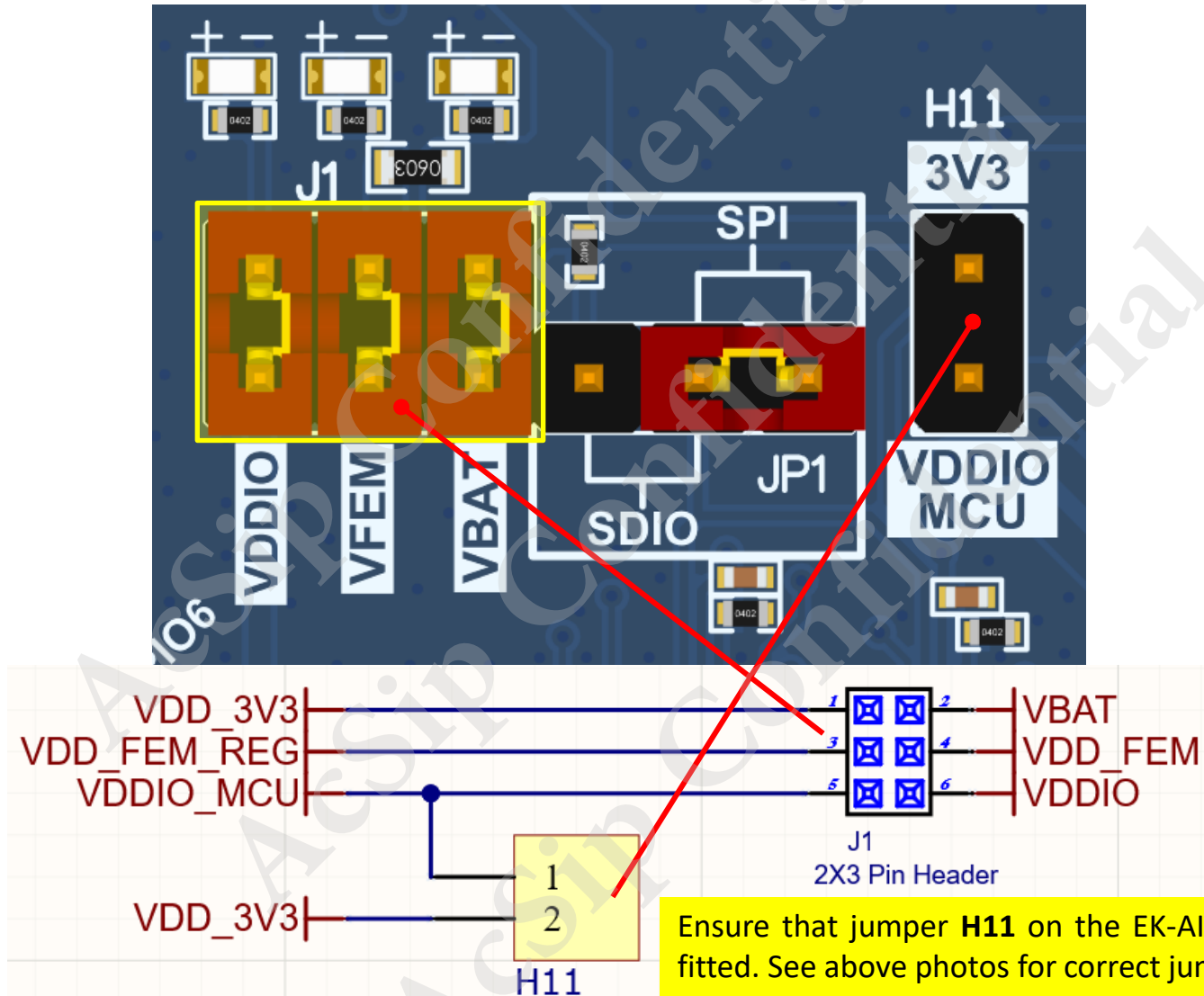
Date: 2024/10/15

# Functional Description

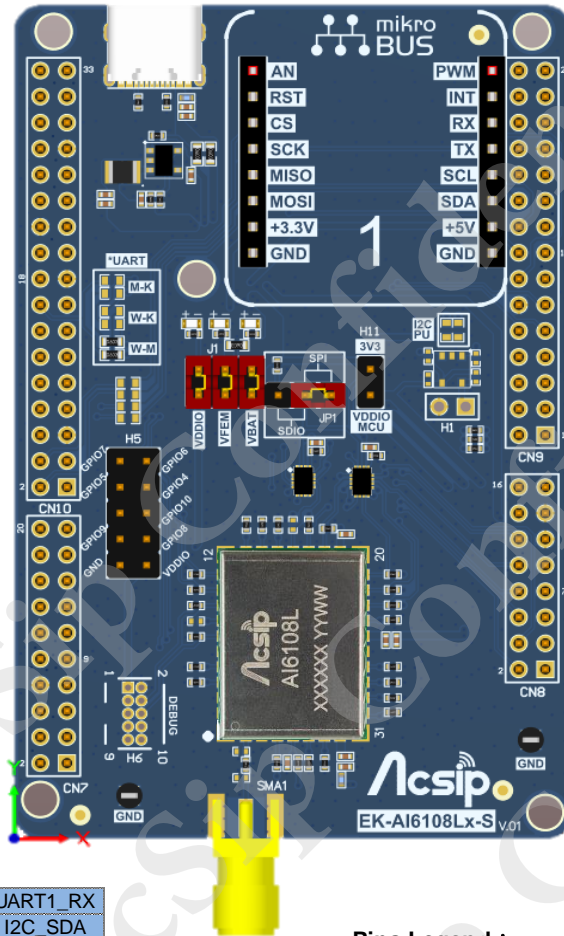


# DC Power Jumper

Jumper Settings vs. Schematic



# Pinout Diagram



|      |    |
|------|----|
| 34   | 33 |
| 32   | 31 |
| 30   | 29 |
| 28   | 27 |
| 26   | 25 |
| 24   | 23 |
| 22   | 21 |
| 20   | 19 |
| 18   | 17 |
| 16   | 15 |
| 14   | 13 |
| 12   | 11 |
| 10   | 9  |
| 8    | 7  |
| 6    | 5  |
| 4    | 3  |
| 2    | 1  |
| CN10 |    |
| 20   | 19 |
| 18   | 17 |
| 16   | 15 |
| 14   | 13 |
| 12   | 11 |
| 10   | 9  |
| 8    | 7  |
| 6    | 5  |
| 4    | 3  |
| 2    | 1  |
| CN7  |    |

|          |       |
|----------|-------|
| UART1_TX | GPIO7 |
| UART1_RX | GPIO6 |

|          |          |
|----------|----------|
| SPI_CS   | SDIO_D3  |
| SPI_MOSI | SDIO_CMD |
| SPI_MISO | SDIO_D0  |
| SPI_SCK  | SDIO_CLK |
| GND      |          |

|          |       |
|----------|-------|
| UART1_TX | GPIO7 |
| I2C_SCL  | GPIO5 |
| GPIO9    |       |
| GND      |       |

|    |   |
|----|---|
| H5 |   |
| 10 | 9 |
| 8  | 7 |
| 6  | 5 |
| 4  | 3 |
| 2  | 1 |

|        |          |
|--------|----------|
| GPIO6  | UART1_RX |
| GPIO4  | I2C_SDA  |
| GPIO10 |          |
| GPIO8  |          |
| VDDIO  |          |

## Pins Legend :

|                     |
|---------------------|
| Module Pin Name     |
| POWER               |
| GND                 |
| SDIO Interface Pins |
| SPI Interface Pins  |
| Control Pins        |
| *Serial Pins        |

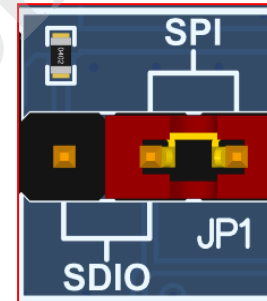
\*Pending software support

|     |    |
|-----|----|
| 30  | 29 |
| 28  | 27 |
| 26  | 25 |
| 24  | 23 |
| 22  | 21 |
| 20  | 19 |
| 18  | 17 |
| 16  | 15 |
| 14  | 13 |
| 12  | 11 |
| 10  | 9  |
| 8   | 7  |
| 6   | 5  |
| 4   | 3  |
| 2   | 1  |
| CN9 |    |
| 16  | 15 |
| 14  | 13 |
| 12  | 11 |
| 10  | 9  |
| 8   | 7  |
| 6   | 5  |
| 4   | 3  |
| 2   | 1  |
| CN8 |    |

|         |         |
|---------|---------|
| SDIO_D2 |         |
| SDIO_D1 | SPI_INT |
| GPIO1   |         |
| BUSY    | BUSY    |
| WAKE    | WAKE    |
| RESET_N | RESET_N |

|           |
|-----------|
| GND       |
| GND       |
| VDD5V_MCU |
| VDDIO_MCU |

## JP1: Interface switch jumper setting

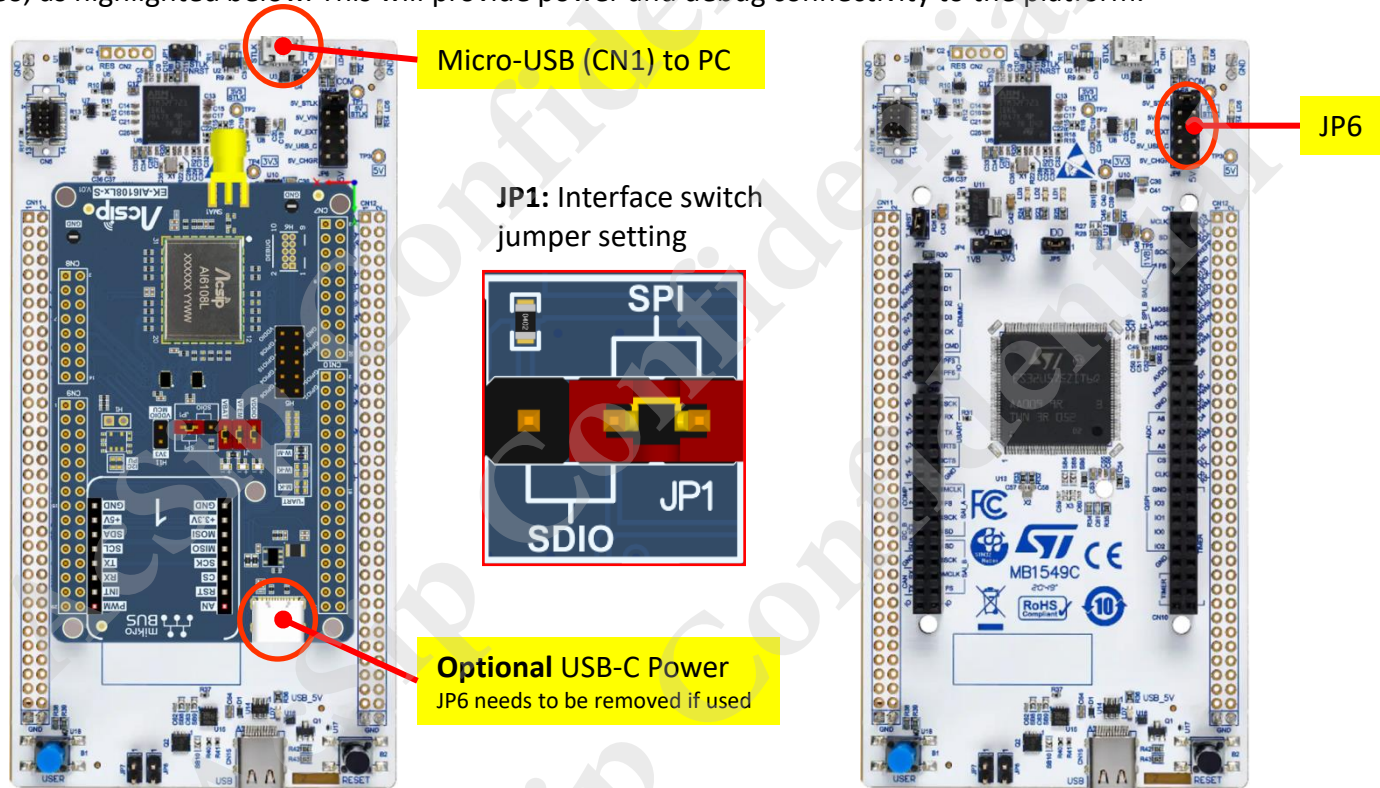


| Module Pin Name | SDIO     | SPI      |
|-----------------|----------|----------|
| SDIO_CMD        | SDIO_CMD | SPI_MOSI |
| SDIO_CLK        | SDIO_CLK | SPI_SCK  |
| SDIO_D3         | SDIO_D3  | SPI_CS   |
| SDIO_D2         | SDIO_D2  |          |
| SDIO_D1         | SDIO_D1  | SPI_INT  |
| SDIO_D0         | SDIO_D0  | SPI_MISO |

# Reference Platforms

## STM32 NUCLEO-U575ZI-Q

- This uses the [STM32 NUCLEO-U575ZI-Q](#) as the host MCU development board.
- The two boards connect together as shown in the photo below. This is connected to the PC by the micro-USB connector **CN1** on the Nucleo, as highlighted below. This will provide power and debug connectivity to the platform.



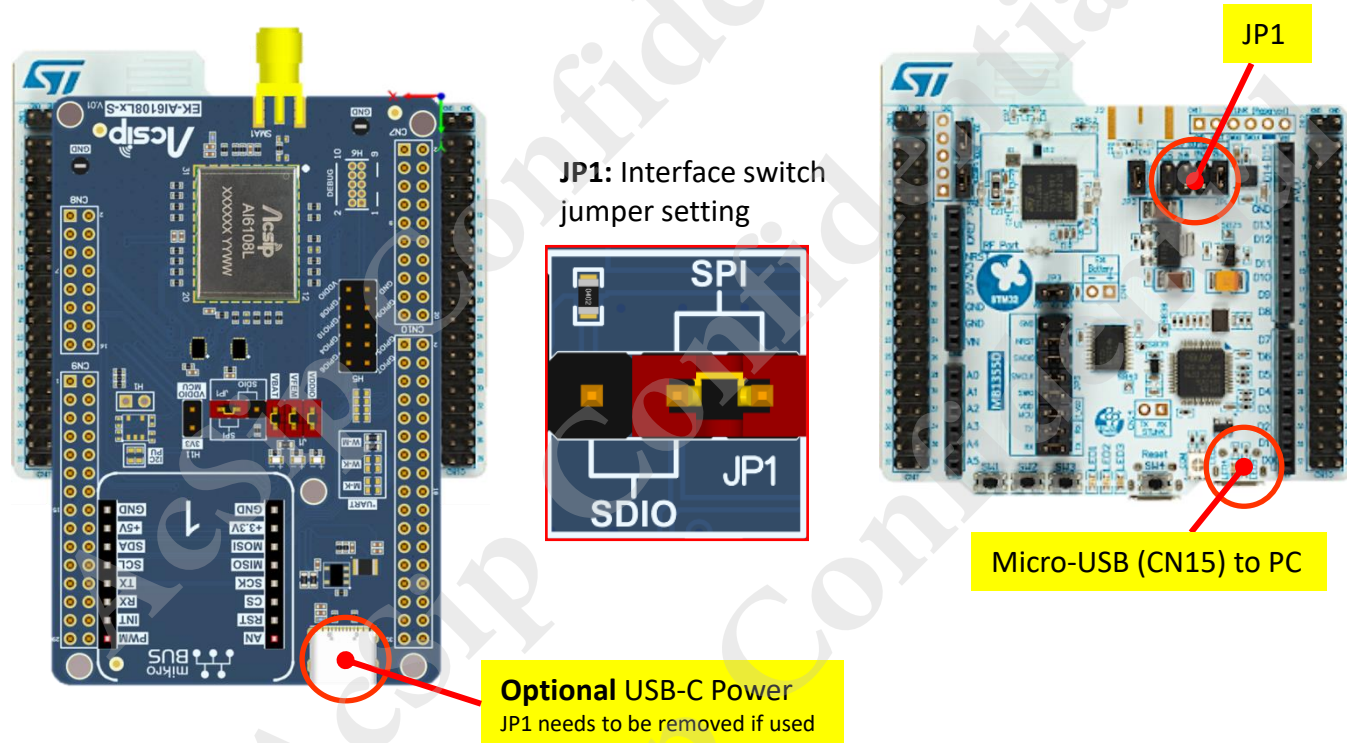
**Optionally** power can be supplied via the USB-C connector on the EK-AI6108Lx-S instead. In most cases this should not be necessary, but may be necessary if the USB port is not able to supply sufficient power. Note that if power is supplied via the USB-C connector then **JP6** on the Nucleo must be removed. The Nucleo must still be connected to the PC via micro-USB connector **CN1** in order to use the debug interface.



# Reference Platforms

## STM32 NUCLEO-WB55RG

- This uses the [STM32 NUCLEO-WB55RG](#) as the host MCU development board.
- The two boards connect together as shown in the photo below. This is connected to the PC by the micro-USB connector **CN15** on the Nucleo, as highlighted below. This will provide power and debug connectivity to the platform.

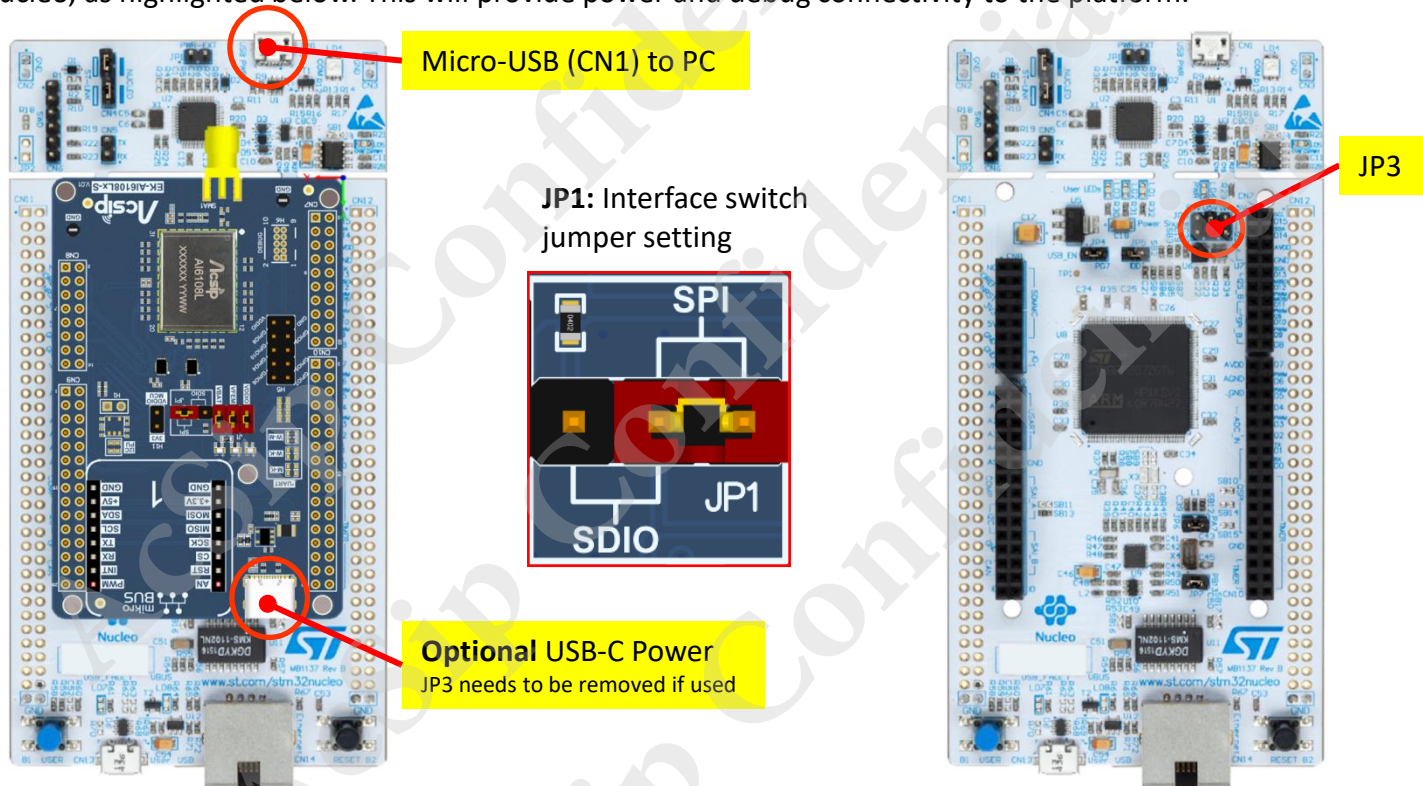


**Optionally** power can be supplied via the USB-C connector on the EK-AI6108Lx-S instead. In most cases this should not be necessary, but may be necessary if the USB port is not able to supply sufficient power. Note that if power is supplied via the USB-C connector then **JP1** on the Nucleo must be removed. The Nucleo must still be connected to the PC via micro-USB connector **CN15** in order to use the debug interface.

# Reference Platforms

## STM32 NUCLEO-F429ZI

- This uses the [STM32 NUCLEO-F429ZI](#) as the host MCU development board..
- The two boards connect together as shown in the photo below. This is connected to the PC by the micro-USB connector **CN1** on the Nucleo, as highlighted below. This will provide power and debug connectivity to the platform.



**Optionally** power can be supplied via the USB-C connector on the EK-AI6108Lx-S instead. In most cases this should not be necessary, but may be necessary if the USB port is not able to supply sufficient power. Note that if power is supplied via the USB-C connector then **JP3** on the Nucleo must be removed. The Nucleo must still be connected to the PC via micro-USB connector **CN1** in order to use the debug interface.

# Reference Platforms

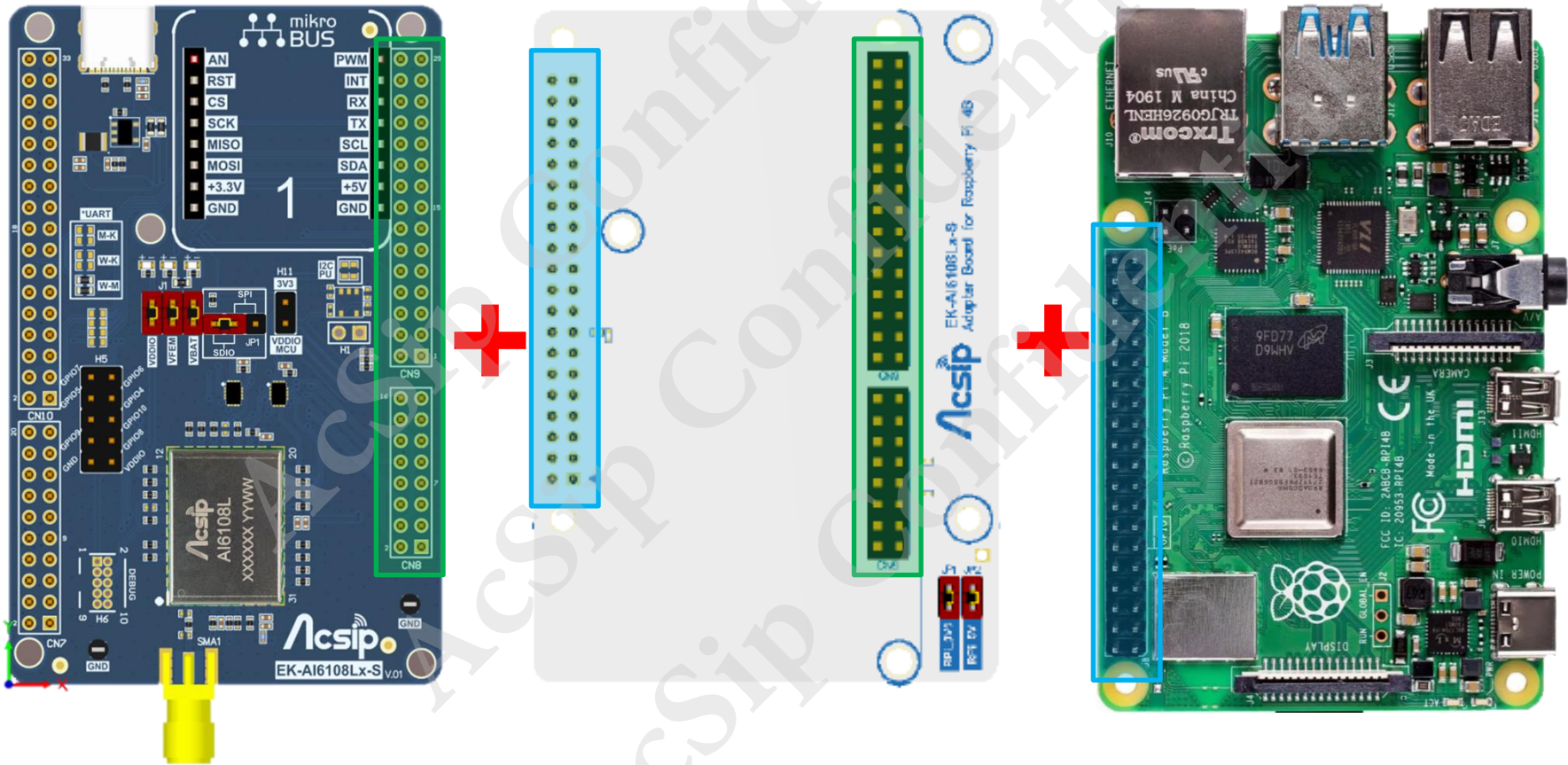
## Raspberry Pi 4B

EK-AI6108Lx-S needs to be connected to the Raspberry Pi 4B through an adapter board, as shown in the image below.

EK-AI6108Lx-S

Adapter Board

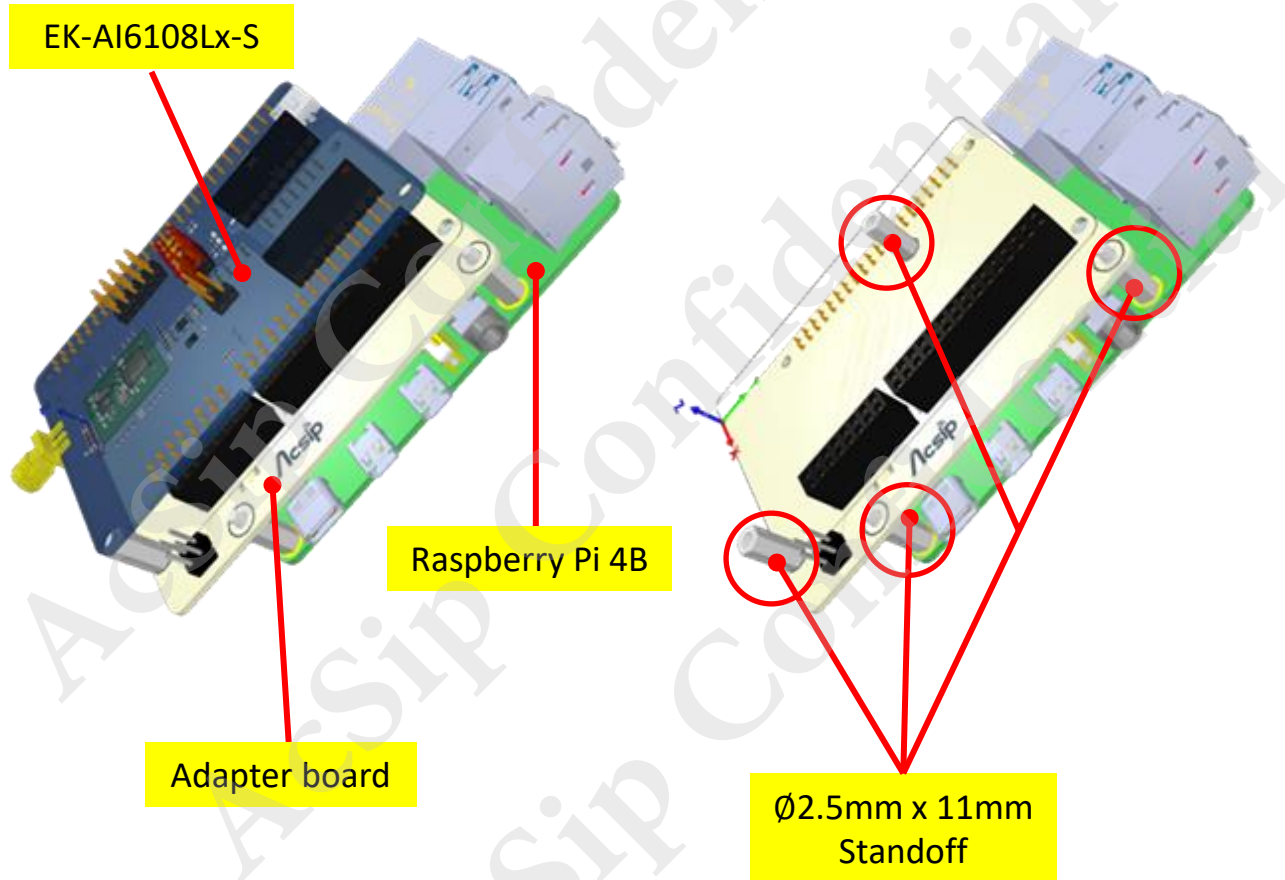
Raspberry Pi 4B





# Reference Platforms

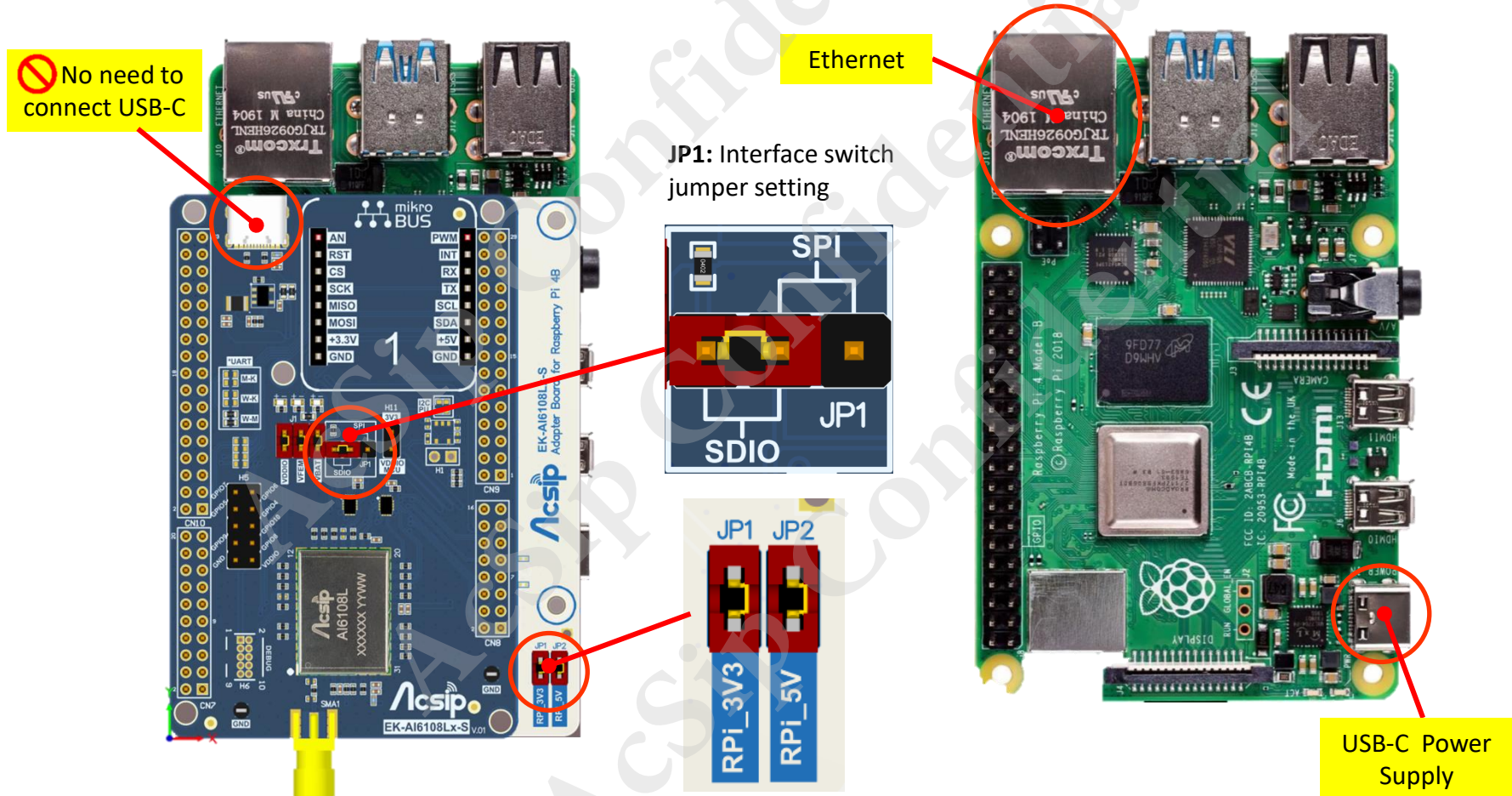
## Raspberry Pi 4B



# Reference Platforms

## Raspberry Pi 4B

- This uses the Raspberry Pi 4 as the host development board.
- Connect the RJ45 Ethernet cable to the Ethernet port.
- Once power is applied, it should take the device around 60 seconds to boot up and be operational.



# Antenna Specifications

**ARISTOTLE**  
ENTERPRISES INC.

## Specifications

### RFA-08-C58-U-B70

#### Specifications

|                 |                  |
|-----------------|------------------|
| Frequency range | 863 –928 MHz     |
| Peak gain       | 1.6dBi           |
| Average gain    | 0.8dBi           |
| VSWR            | 2.5 : 1 Max.     |
| Polarization    | Linear, vertical |
| Impedance       | 50 $\Omega$      |
| Connector       | SMA PLUG         |

#### Environment & Mechanical Characteristics

|             |                 |
|-------------|-----------------|
| Temperature | - 10°C to +55°C |
| Humidity    | 95% @ 25°C      |

