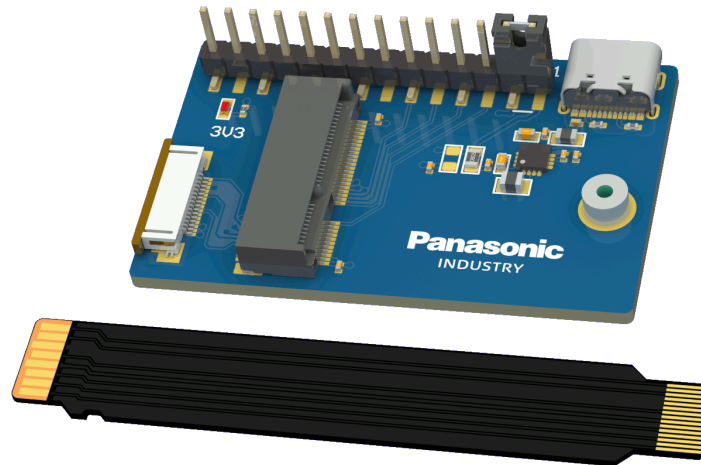


User Guide



INTRODUCTION

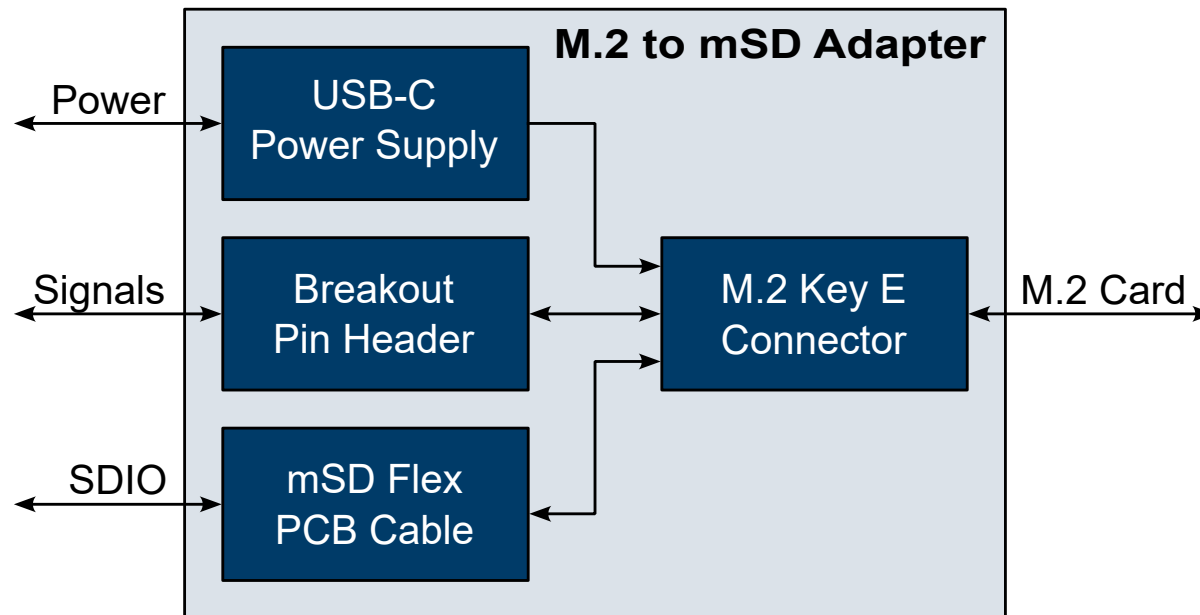
The M.2 to mSD Adapter is a compact solution that you can use for the evaluation of Panasonic's Wi-Fi M.2 Key E devices in combination with host devices with a micro SD slot.

FEATURES

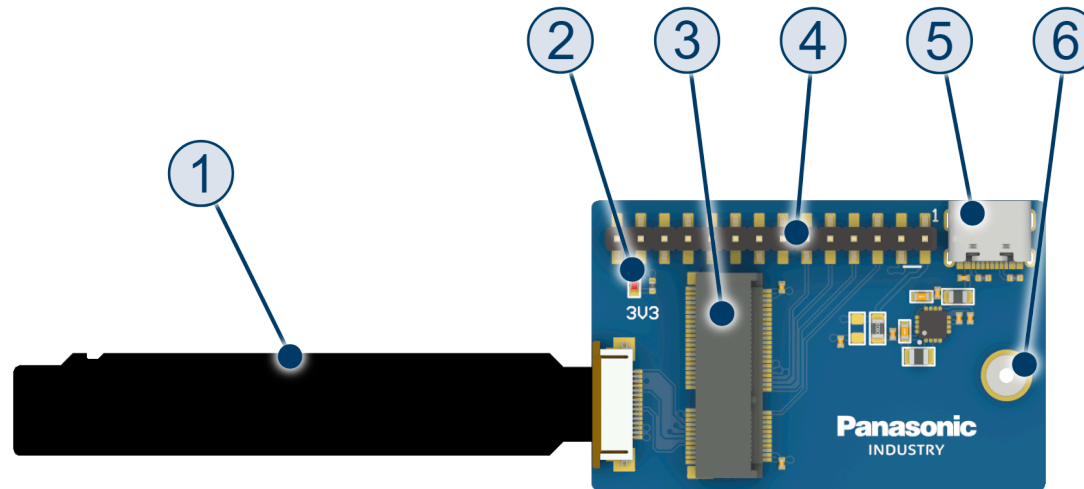
- Separate power supply over USB-C
- Access to specific M.2 interface signals

- Current consumption measurement interface
- Flexible due to mSD flex cable

BLOCK DIAGRAM



BOARD OVERVIEW



- 1 mSD flex cable**
It connects the adapter to the micro SD slot of your host system.
- 2 Power LED**
The red LED lights up when you power the device.
- 3 M.2 Key E connector**
You can mount a Panasonic Wi-Fi M.2 evaluation device here.
- 4 Breakout pin header**
Gives you the option to access several signals of the M.2 interface. Also you can do a current consumption measurement with it.
- 5 USB-C connector**
You must supply the adapter with power via this connector.

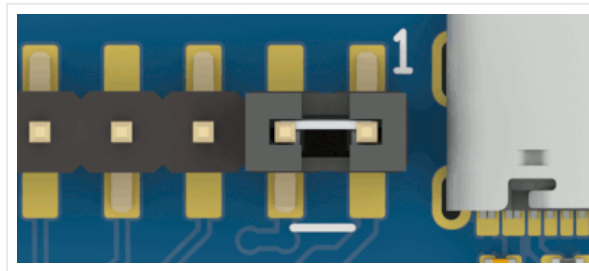
⑥ Threaded spacer

You can use a screw to secure the M.2 device with this threaded spacer.

DEFAULT JUMPER CONFIGURATION

Before using the evaluation tool again, you may need to verify or restore the default jumper configuration.

You can easily check the default jumper configuration as it is indicated by white line markings on the PCB's silkscreen.



POWER SUPPLY

Powering the adapter through the [USB-C connector](#) ⑤ is mandatory. Otherwise the adapter is entirely non-functional.

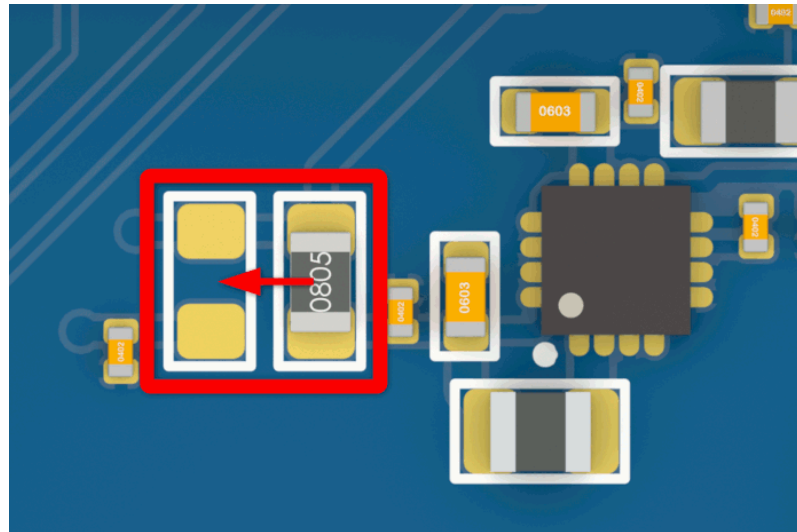
Alternative Power Supply

You also have the option to power the adapter through the mSD plug with minor modifications to the adapter PCB.

⚠ Power over mSD plug

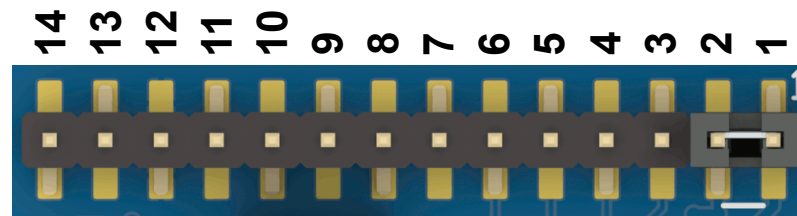
Before powering the adapter with the mSD interface, please ensure to check the current drive strength of the interface, as it may not always deliver sufficient power for a Wi-Fi module.

The following modifications are required to switch the power supply from USB-C to mSD.



BREAKOUT PIN HEADER

The [breakout pin header](#) ④ provides you access to specific signals of the M.2 connector. You may be able to use the signals depending on the M.2 device you plan to use.



The following table shows the connection between the breakout pin header (4) and the M.2 Key E connector (3).

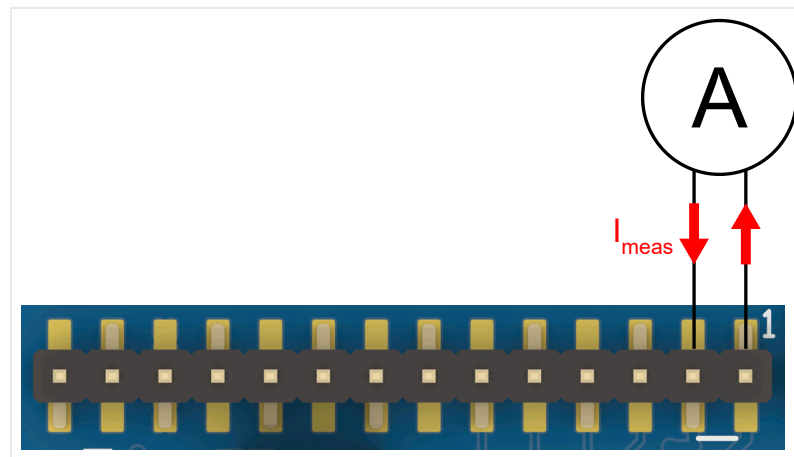
Pin header pin	M.2 Connector
1	-
2	3V3
3	UART_RXD (22)
4	UART_TXD (32)
5	UART_CTS (34)
6	UART_RTS (36)
7	VEN_DEF1 (38)
8	VEN_DEF2 (40)
9	VEN_DEF2 (42)
10	ALERT# (62)
11	RESERVED (64)

Pin header pin	M.2 Connector
12	GND and Shield
13	I2C_DATA (58)
14	I2C_CLK (60)

CURRENT CONSUMPTION MEASUREMENT

You have the option to make a current consumption measurement using pin 1 and 2 of the [breakout pin header](#) ④. You have to unplug the jumper to get access to these pins.

The following image shows how a current consumption measurement setup looks like:



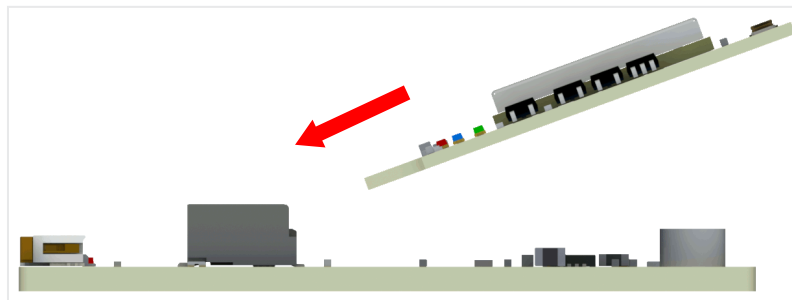
Tip

If you do not have any equipment for current consumption measurement, check out the [Power Profiler Kit II](#) from Nordic Semiconductor, which can be used both as an ammeter and source meter.

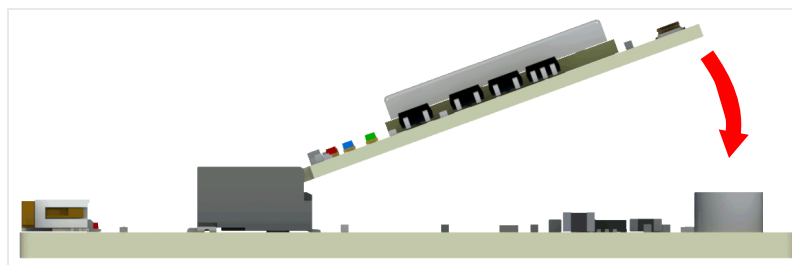
FIRST STEPS

For the minimum setup you need to do following steps:

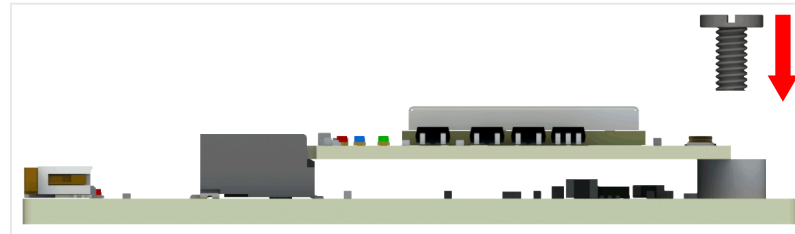
1. Insert the M.2 device into the M.2 Key E connector.



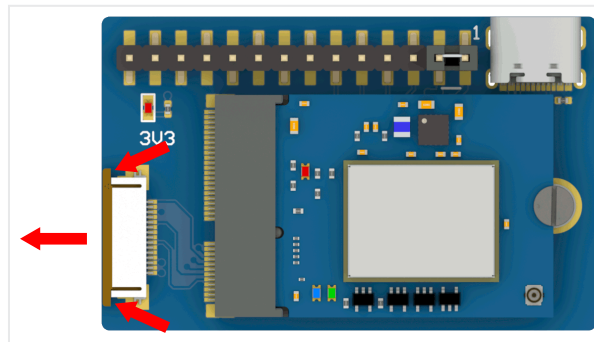
2. Press the M.2 device down until it rests against the threaded spacer.



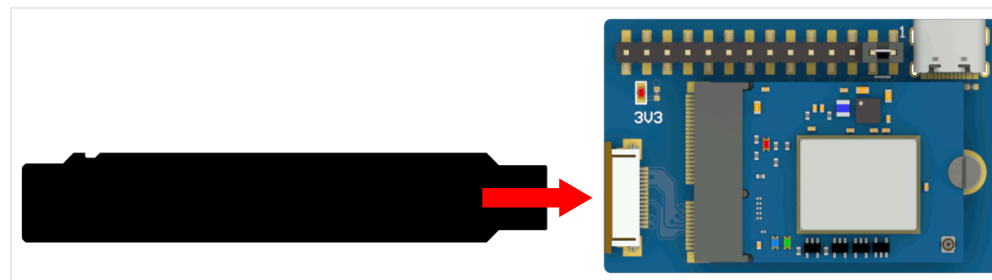
3. Fasten the M.2 device using the M2 screw.



4. Pull out the retaining clip of the flex cable connector.



5. Insert the mSD flex cable. The gold fingers must point downwards.



6. Secure the cable by pressing the retaining clip back into the connector.

7. Power the adapter through the USB-C connector.

8. Plug the mSD flex cable into the micro SD slot of your host system.

