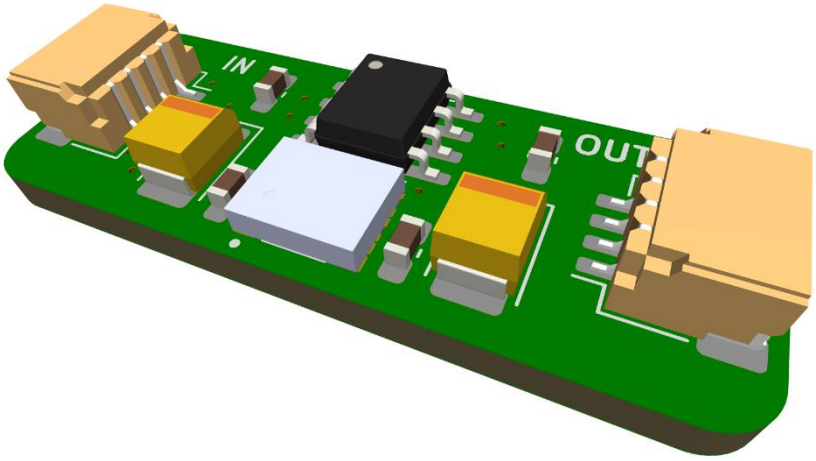
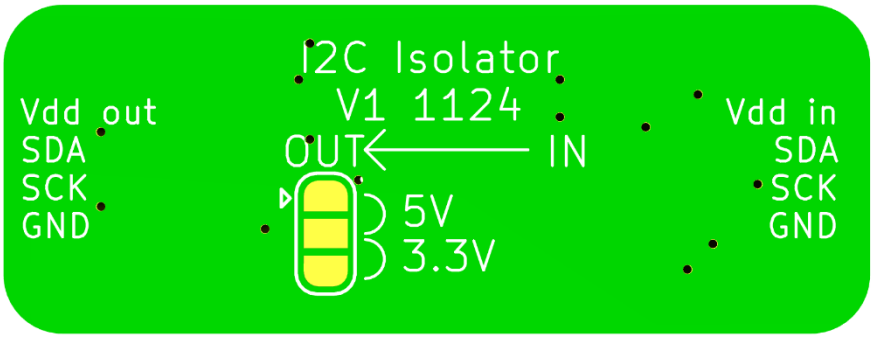
I2C isolator with isolated power and STEMMA QT compatible headers



Description

The Digital Isolator PCB includes an isolated DC/DC module to provide a selectable isolated output voltage. The output voltage can be adjusted via a solder bridge: with a 3.3V input, the output is fixed at 3.3V, while a 5V input allows for selectable output voltages.

Please ensure that the output current remains within safe limits for each voltage setting to avoid overloading the isolated power supply. Refer to Table 1 for guidance on compatible voltages and currents.



Product portfolio:

Part Number	Protocol	Connector
DII2C	I2C	JST SH 4-Pin

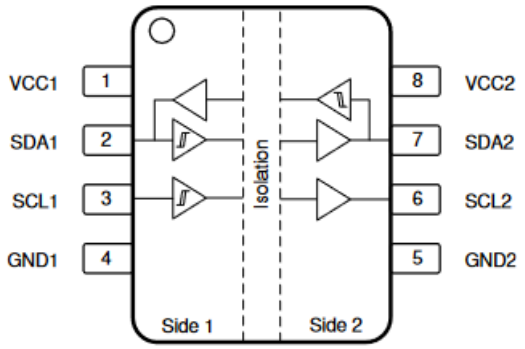
Specification Power Supply:

Chip: MIE1W0505BGLVH

Parameter	Condition	Value
Uin	DC	3.3V, 5V
Uout	Uin = 3.3V	3.3V
	Uin = 5V	Selectable 3.3V or 5V
Iout	Uin = 3.3V	75mA
	Uin = 5V	200mA
Isolating Voltage		2.5kVrms

Specification I2C Isolator:

Chip: ISO1641B
Mode: Bidirectional Data, unidirectional Clock

Parameter	Condition	Value
Uin	Primary side	3V ... 5.5V
	Secondary side	2.25V ... 5.5V
Fmax		1.7MHz
Isolating Voltage	AC voltage	450Vrms
		

Application

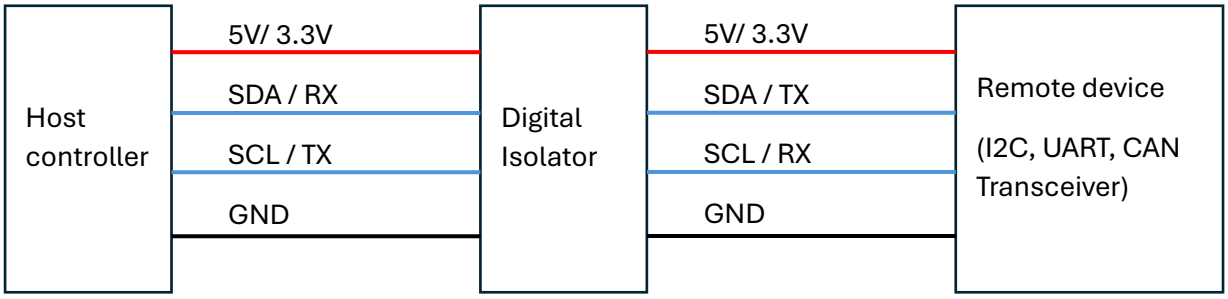
The PCB uses the ISO1641B isolator to enable isolated data transmission. Data can flow bidirectionally, while the clock signal is transmitted unidirectionally from the master device. With a 5V input, the isolator chip supports 3.3V data communication levels.

The input and output headers follow the STEMMA QT connection standard, using JST SH 4-pin connectors.

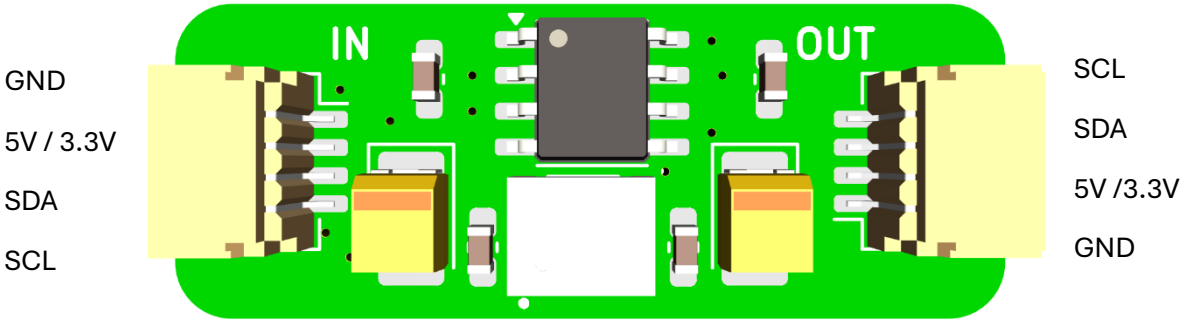
Please note, there are no pull-up resistors on the PCB; these must be added externally as needed.

Warning: Do not swap input and output. It may harm the device.

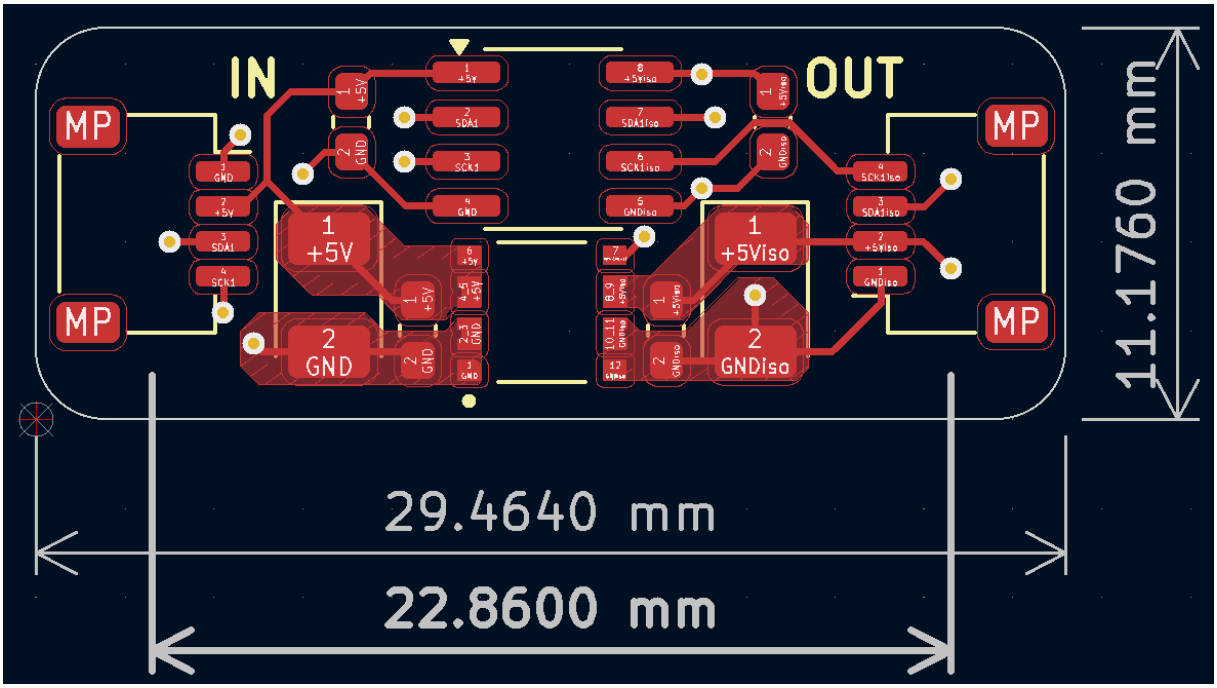
Wiring diagram



Pinout



Dimensional Drawing



Disclaimer

This product is intended for use in development only.