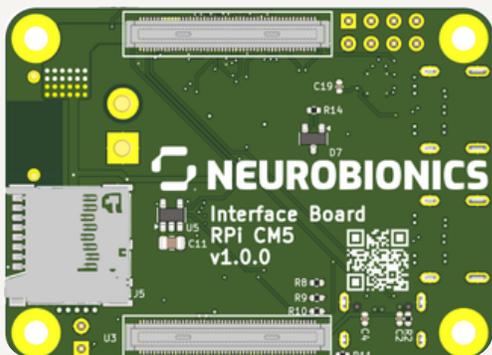


Board Version 1.0.0

RPi CM5 Interface Board

Breakout board for the Raspberry Pi Compute Module 5

The RPi CM5 Interface Board is an add-on module for the Raspberry Pi Compute Module 5 (RPi CM5) that provides plug-and-play support for sensors and actuators across a wide range of robotics applications. It is built and tested by researchers at the University of Michigan's Neurobionics Lab.



RPi Interface Illustration

Features

- Safe RPi Shutdown
- Status LEDs
- Programmable RGB LED
- IMU (Bosch BHI260AP)
- SD Card Slot
- Real-Time Clock
- Test Points

Technical Specifications

Category	Specification
Module Support	Raspberry Pi Compute Module 5 (CM5) / CM5 Lite
Input Voltage	15V – 60V (XT-30 Connector) 5V (USB-C)
Power Output	5V @ 5A (SMPS) 3.3V @ 1A (LDO)
Available Comms.	2x I2C Bus, 2x UART, 1x SPI, 1x CAN
CAN Bus	MCP2515 Controller + MCP2562 Transceiver
Sensors	Bosch BHI260AP (6-Axis IMU) on SPI0 chip select 2
Storage	MicroSD Card Slot (for CM5 Lite boot/storage)
Cooling	4-Pin Fan Connector (PWM control + tachometer)
RPi CM Connectors	2x Amphenol BergStak 0.40mm 100 pin connectors
Dimensions	55.00 mm × 40.00 mm × 14.09 mm

Mechanical Details

Mounting Holes: 4 × 2.7 mm (Standard M2.5)

Max Height (w/o CM): 14.09 mm (Top of USB-C connector to bottom pins)

Total Stack Height (w/ CM): 17.6 mm

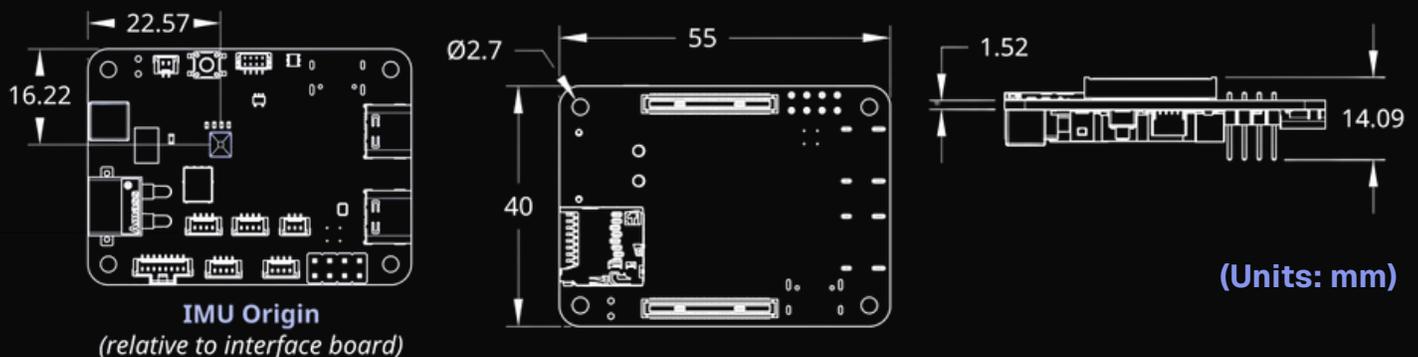
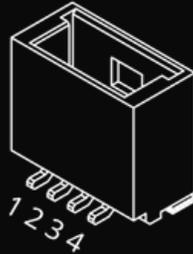


Figure 1: Mechanical Drawing & Sensor Origin

Pinout & Interfaces

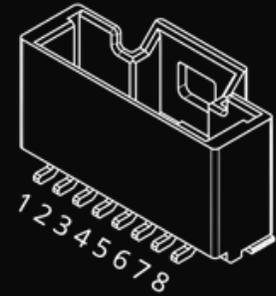
UART-1 (Molex PicoClasp, 4-Pin)

Pin	Function
1	+3.3V
2	UART1_TX
3	UART1_RX
4	GND



SPI-1 (Molex PicoClasp, 8-Pin)

Pin	Function
1	+3.3V
2	SPI1_CSn2
3	SPI1_CSn1
4	SPI1_CSn0
5	SPI1_SCLK
6	SPI1_MISO
7	SPI1_MOSI
8	GND



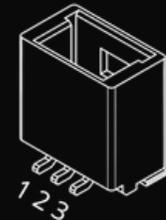
UART-2 (Molex PicoClasp, 4-Pin)

Pin	Function
1	+3.3V
2	UART2_TX
3	UART2_RX
4	GND



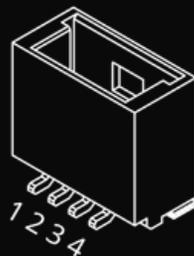
CAN Bus (Molex PicoClasp, 3-Pin)

Pin	Function
	GND
1	CAN_P
2	CAN_N
3	



I2C-2 (Molex PicoClasp, 4-Pin)

Pin	Function
1	+3.3V
2	UART2_TX
3	UART2_RX
4	GND



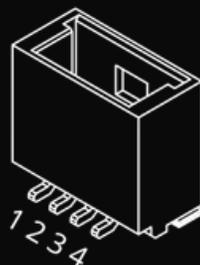
GPIO HEADERS

Pin	Function
1	GPIO_25
2	GPIO_23
3	GPIO_7
4	+3.3V
5	GPIO_27
6	GPIO_24
7	GPIO_22
8	GND



I2C-3 (Molex PicoClasp, 4-Pin)

Pin	Function
1	+3.3V
2	I2C3_SDA
3	I2C3_SCL
4	GND



Fan Port, JST 4-Pin Connector

Pin	Function
1	Tachometer
2	GND
3	PWM
4	+5V

