



# Rx-Modulus

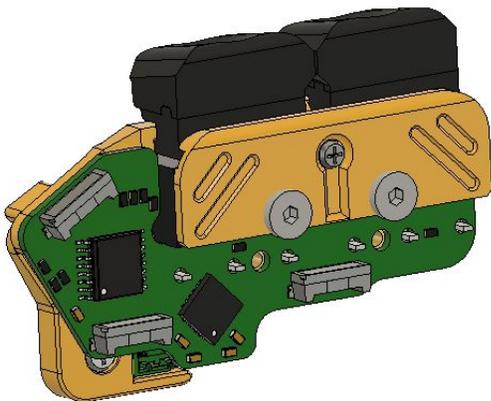
## Side Button Module Specification

October 02, 2020

### Module Overview

The Side Button Module Module allows for extra functionality to be added to any Side pack supporting module. This module adds following:

- Two Additional mechanical buttons with changeable covers
- RGB Status LEDs featuring three RGB LEDs which can be used as status alarms or decoration.



## Purpose

The purpose of this document is to describe the specification of the Side Button Module. The description will include both the electrical and mechanical connector requirements, overall electrical requirements, and application information for using the device.

The intended audience for this document is the development, test, and manufacturing engineers responsible for using and developing this module further. This specification describes the following:

- Electrical specification of the input connection and Side module connection.
- Mechanical descriptions of the input connection and Side module connection
- Mechanical descriptions of the unique features this module has.

## Overview

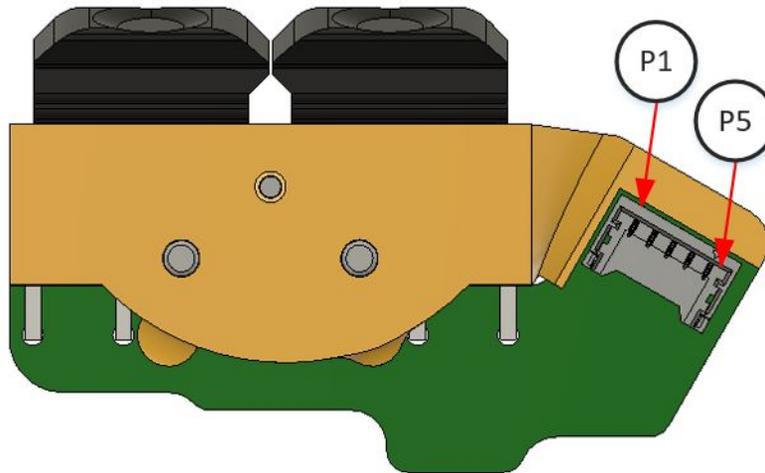
This document reviews the input structures of the Side Button Module, including the electrical and mechanical requirements.

## Module Inputs

The Side Button Module uses the standard 5 pin connector used across the RX-Modules range.

The Pinout is as follows:

Pin Number	Signal	Direction	Function	Electrical Connection
1	Power	Power Input	Module Supply	3.3V
2	SDA	Input	I2C	No Pull-Up
3	SCL	Input	I2C	No Pull-Up
4	INT	Output	Module Interrupt	Active High
5	Return	Power Return	Ground	0V



Electrical Requirements	Range	Notes
Max Input Voltage	$\leq 3.3V$	
Max Iin w/ Vin@3.3V	5-25mA LED Brightness Depended	Core Unit Features circuit breaks if over 100mA is drawn.
Interrupt HIGH Signal Level	$> 1.8V$	
Interrupt LOW Signal Level	$< 0.8V$	
I2C Clock Frequency	100kHz	Does support 400kHz

## Module I2C Commands

The I2C Address for the Side Button pack is = 0x22 and 0x34

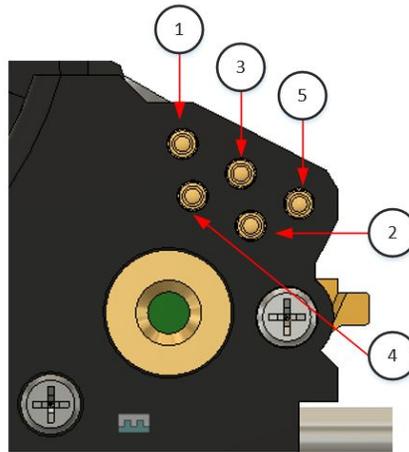
As this module contains no active microcontrollers the running and operation of this module relies on the host module which is connected. There are currently two types of control:

1. The host module runs the module, This gives basic operation of the buttons and RGB LEDs
2. The host module repeats commands sent from the code. This allows for more control over the side module.

The control type used is set on the host module on register via 0x04 bit 4.

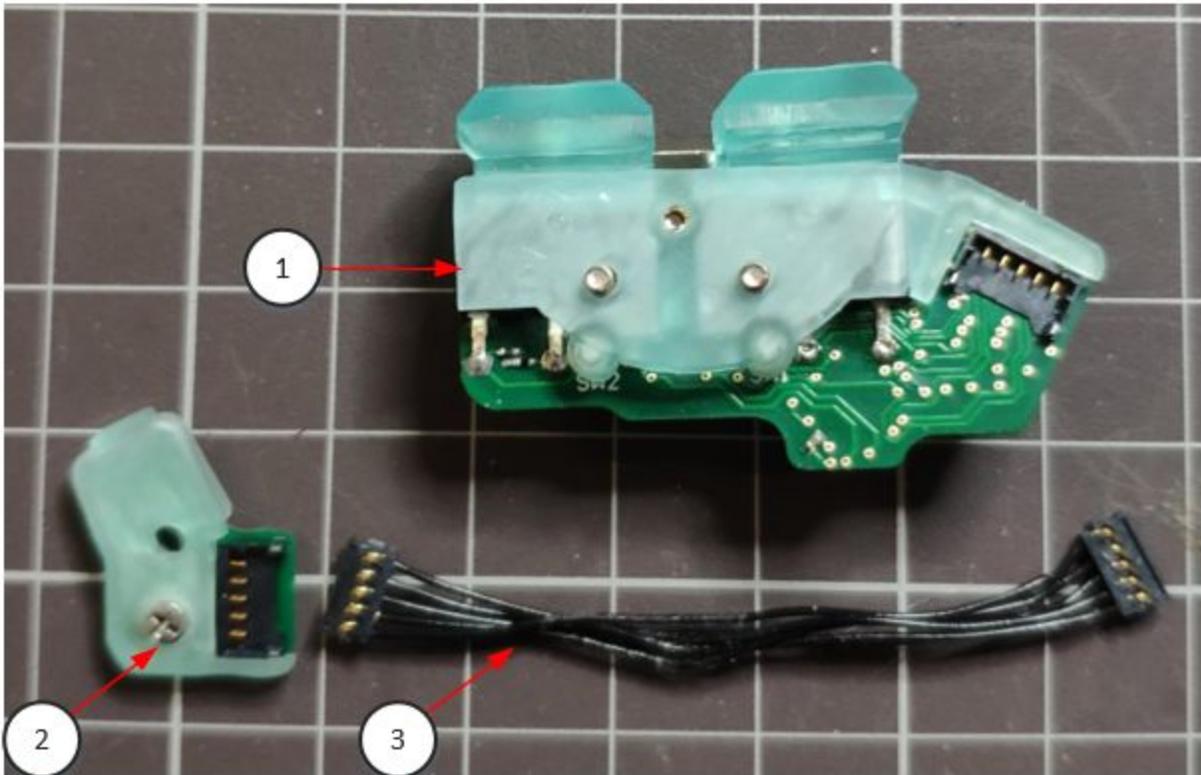
## Side Pack Connections

This module supports two side pack modules to be connected on the side of this module to increase its functionality. The following pinout is used.



Pin Number	Signal	Direction	Function	Electrical Connection
1	Power	Power Input	Module Supply	3.3V
2	SDA	Input	I2C	Pull-Up via 10k
3	SCL	Input	I2C	Pull-Up via 10k
4	INT	Output	Module Interrupt	Active High
5	Return	Power Return	Ground	0V

To make connections to this easier the Side Module Interface Base has been created to interface between the module and side pack.



To connect the Side Button Module to a chosen module the following is required:

1. Side Button Module
2. Side Module Base Connector with M2 Securing Screw
3. Pice\_EZmate 5 Way Cable 50mm Long