

QCIOT-ICM42670POCZ

ICM-42670-P 3-Axis Gyroscope and 3-Axis Accelerometer Pmod™ Daughter Card

Description

The QCIOT-ICM42670POCZ development board provides a quick way to add a 3-axis gyroscope and 3-axis accelerometer to your target application. The standard hardware interface allows for rapid prototyping with any evaluation kit or microcontroller board equipped with a Pmod expansion capability, while software building blocks reduce the coding development time. Dual Type 6A Pmod connectors allow pass-through I²C signals for daisy-chained solutions.

The on-board ICM-42670-P features stable readings and low noise in rough environments while also providing low power modes and wake-up triggers. This combination enables custom solutions that can accommodate both low power and high reliability.

Features

- ICM-42670-P High Performance 6-Axis MotionTracking™ IMU
 - High reliability vs. temperature, shock, bending, and vibration
 - Low power sleep mode (3.5μA for IC)
 - Interrupt supports wake-on-motion
 - APEX Motion Processing provides detection of common triggers, including tilt, freefall, low gravity, and significant motion
- Standardized Type 6A Pmod connector supports I²C Extended interface
- Optional pull-ups for I²C lines

Board Contents

- QCIOT-ICM42670POCZ Board

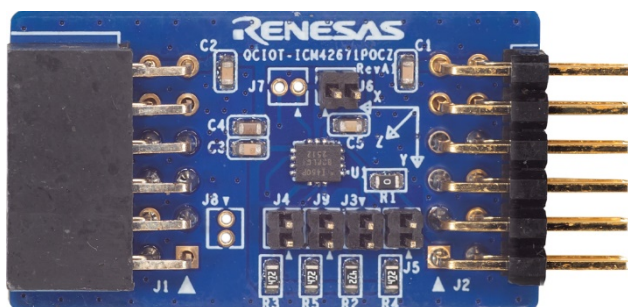


Figure 1. QCIOT-ICM42670POCZ Board Image

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1. Functional Description

The QCIOT-ICM42670POCZ functions as a sensor building block to create a custom system solution. It can be used individually in conjunction with a host MCU board or with a combination of other sensors using the Pmod Type 6A interface. In addition, utilizing the board within the Renesas 365 and QuickConnect ecosystems allows for rapid software development.

1.1 Setup and Configuration

The QCIOT-ICM42670POCZ runs on 1.71V to 3.6V supplied by the host MCU board. The board features five jumpers for controlling the circuit that are described in [Table 1](#).

Table 1. Jumper Map

Jumper #	Description	Jumper On	Jumper Off
J3	Sets the I ² C address	I2C Addr = 1101000	I2C Addr = 1101001 (Default)
J4, J9	I ² C pull-up resistors (4.7k)	Connects the pull-up resistors	No pull-up resistors (Default)
J5	Interrupt pull-up resistor (4.7k)	Connects the pull-up resistor	No pull-up resistor (Default)
J6	FSYNC connection	Disable FSYNC (Default)	Connect FSYNC to an external clock

Note: For more information on the device operation, see the [ICM-42670-P Datasheet](#).

2. Board Design

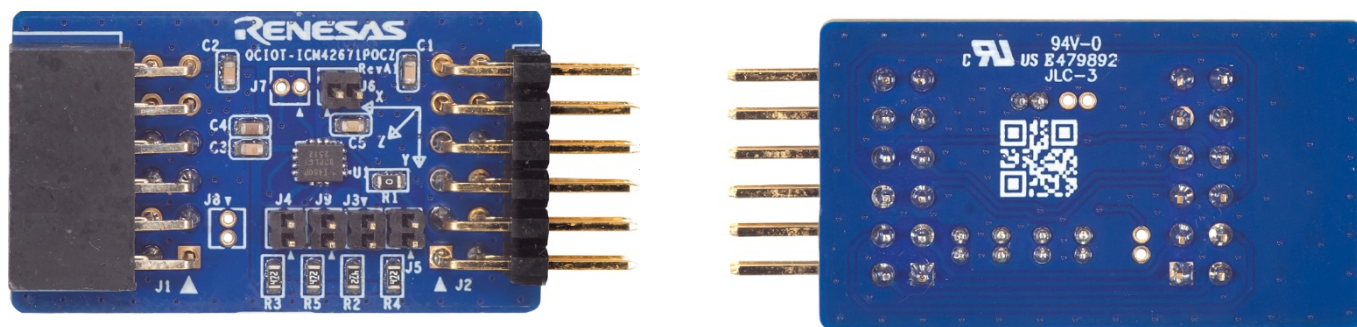
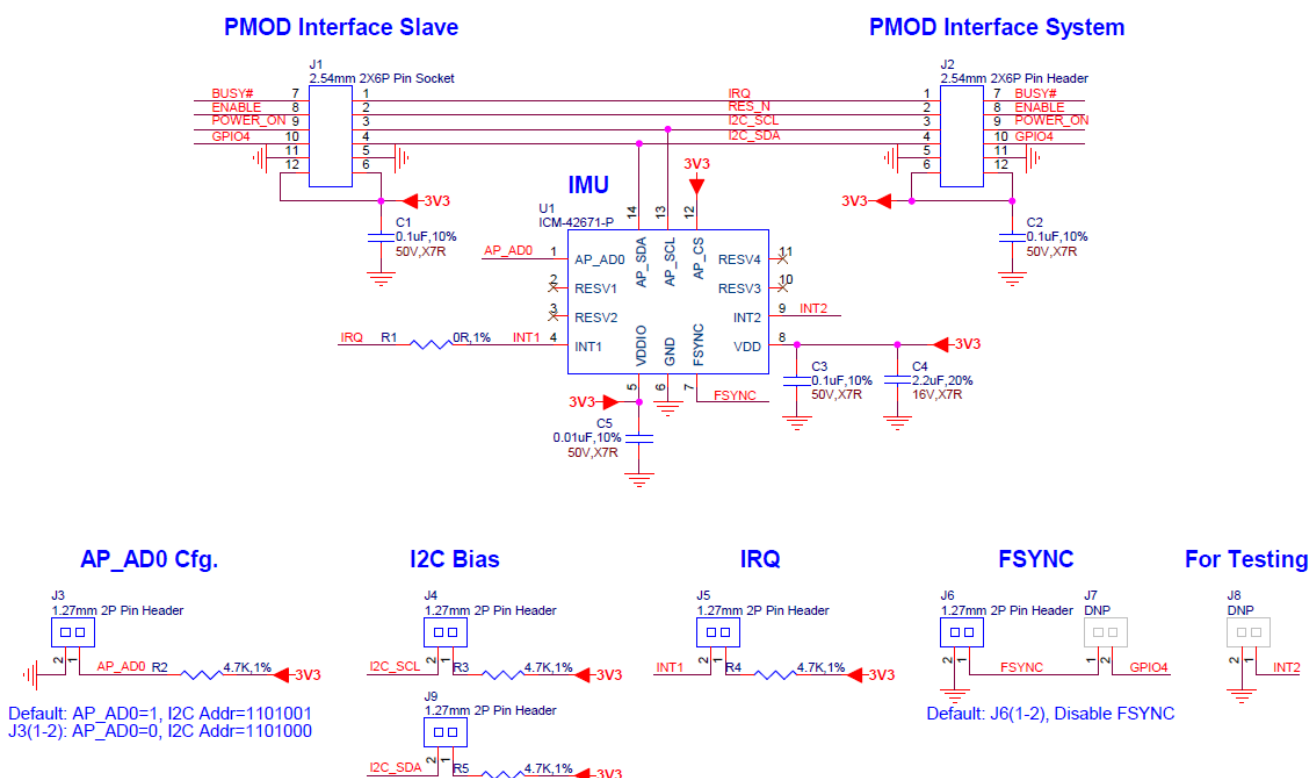


Figure 2. QCIOT-ICM42670POCZ Development Board (Top and Bottom)

2.1 Schematic Diagrams



2.2 Bill of Materials

Qty	Reference Designator	Description	Manufacturer	Manufacturer Part Number
3	C1, C2, C3	CAP, SMD, 0603, 0.1μF, 50V, 10%, X7R, ROHS	YAGEO	CC0603KRX7R9BB104
1	C4	CAP, SMD, 0603, 2.2μF, 16V, 10%, X5R, ROHS	YAGEO	CC0603KRX5R7BB225
1	C5	CAP, SMD, 0603, 0.01μF, 50V, 10%, X7R, ROHS	YAGEO	CC0603KRX7R9BB103
1	J1	2.54mm 2×6P Pin Socket	CJT	A2541HWR-2x6P
1	J2	2.54mm 2×6P Pin Header	CJT	A2541WR-2x6P
5	J3, J4, J5, J6, J9	1.27mm 2P Pin Header	XKB	X1321WV-2x01J-C30D23
1	R1	RES, SMD, 0603, 0Ω, 50V, 1/10W, 1%, ROHS	YAGEO	RC0603FR-070RL
4	R2, R3, R4, R5	RES, SMD, 0603, 4.7kΩ, 75V, 1/10W, 1%, ROHS	YAGEO	RC0603FR-074K7L
1	U1	6-Axis IMU LGA50P250x300x76-14N	TDK	ICM-42670-P

2.3 Board Layout

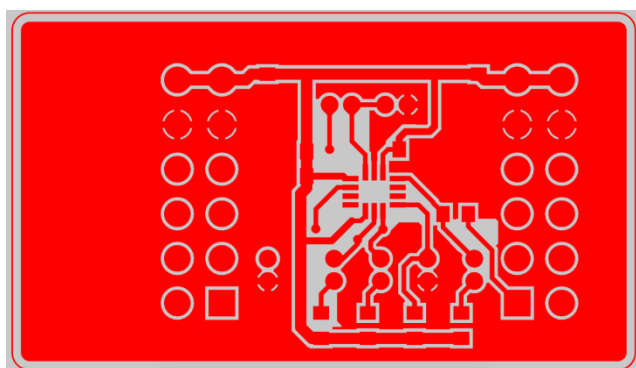


Figure 3. Top Layer

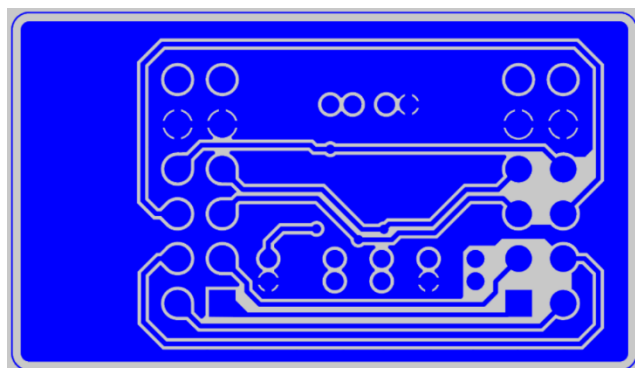


Figure 4. Bottom Layer

3. Ordering Information

Part Number	Description
QCIOT-ICM42670POCZ	ICM-42670-P 6-Axis Gyroscope and Accelerometer Pmod™ Daughter Card

4. Revision History

Revision	Date	Description
1.00	Oct 1, 2026	Initial release.

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