



MQM748 Wi-Fi 6/BT/15.4 Module Development Kit

Documentation Title	Documentation No	Revision	Classification	Status	Date
MQM748-0-50-0B Module Development Kit Product Brief		V1.0	Public	Release	Mar 26, 2025

Table of Contents

1	Overview	3
2	Package	4
3	Hardware.....	5
3.1	Block Diagram	5
3.2	Specification	5
3.3	Functional Description	6
3.3.1	Power Supply.....	6
3.3.2	Power Measurement.....	7
3.3.3	Debug	7
3.3.4	Reset and Boot.....	7
3.3.5	Headers	7
3.4	Component Layout	7
3.5	Mechanical Dimension	8

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MQM748-0-50-0B Module Development Kit Product Brief		V1.0	Public	Release	Mar 26, 2025

1 Overview

Powered by Qualcomm QCC748, MQM748 Module Development Kit ("DevKit") is purposely-designed for application software developers with developer first mindset. The DevKit exposes all QCC748 GPIO pins via MQM748 module to dual 2.54mm (0.1inch) headers to allow flexible expansion. Developers can easily add sensors and other accessories through these dual headers. The dual header is designed to have width of 25.4mm (1.0inch) to allow easy plug-in to the widely used breadboard further to facilitate prototyping development.

Module	Form Factor	Antenna
MQM748-0-50-0B	16 x 21 x 2.2 mm, 1.27 mm pitch, 44-pin, LGA	PCB Antenna

The DevKit 3-side view is shown below:

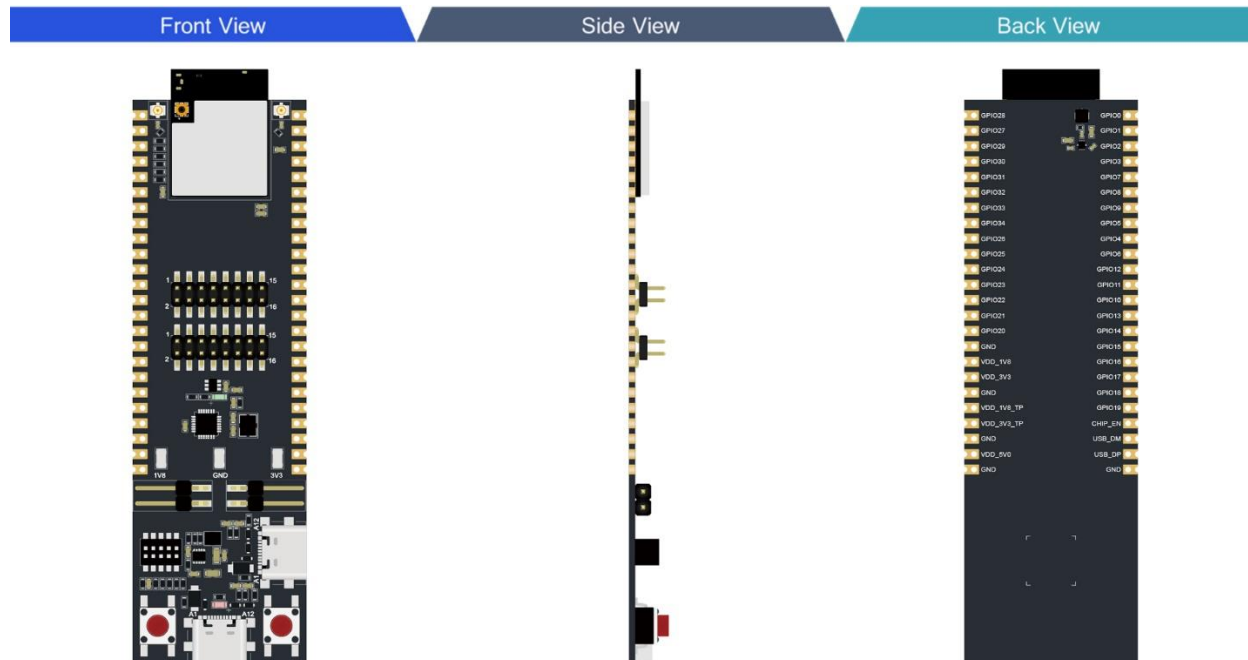


Figure 1: MQM748 Module Development Kit View

Documentation Title	Documentation No	Revision	Classification	Status	Date
MQM748-0-50-0B Module Development Kit Product Brief		V1.0	Public	Release	Mar 26, 2025

2 Package

Included with the DevKit are a pair of male and a pair of female headers to allow developers to have flexibility to mate into their expansion boards.

The DevKit package content is shown below:

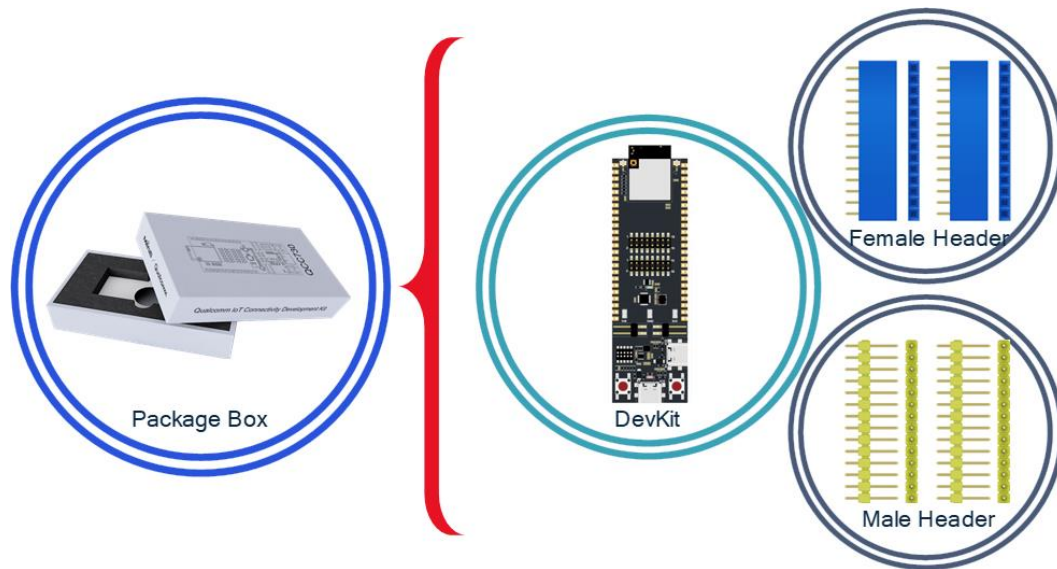


Figure 2: MQM748 Module Development Kit Package

3 Hardware

3.1 Block Diagram

The DevKit block diagram is shown below:

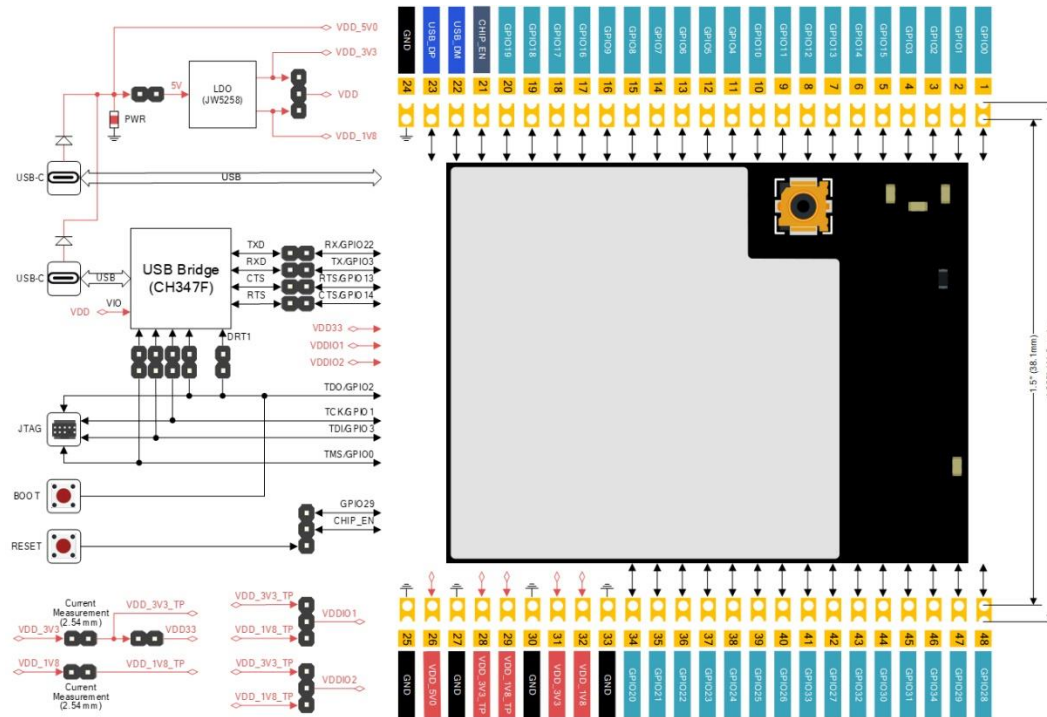


Figure 3: MQM748 Module Development Kit Block Diagram

3.2 Specification

Item	Description
CPU	QCC748 32-bit RISC-V @ 325 MHz with DSP and FPU
Memory	4MB pSRAM
Power Supply	USB-C 5V
Standards	Bluetooth 5.3

Documentation Title	Documentation No	Revision	Classification	Status	Date
MQM748-0-50-0B Module Development Kit Product Brief		V1.0	Public	Release	Mar 26, 2025

	Bluetooth Low Energy (BLE) 1x1, 2.4GHz, 802.11b/g/n/ax IEEE 802.15.4
BLE Parameters	Max Tx Power • 2Mbps: +10 dBm (typical) • 1Mbps: +10 dBm (typical) • 500kbps: +10 dBm (typical) • 125kbps: +10 dBm (typical) - Rx Sensitivity (30.8% PER, Boost Mode) • 2Mbps: -93 dBm (typical) • 1Mbps: -96 dBm (typical) • 500kbps: -100 dBm (typical) • 125kbps: -107 dBm (typical)
Wi-Fi Parameters	Max Tx Power • 1Mbps: +21 dBm (typical) • 11Mbps: +21 dBm (typical) • 54Mbps: +18 dBm (typical) • MCS0@HT20: +18 dBm (typical) • MCS9@HT20: +17 dBm (typical) - Rx Sensitivity • 1Mbps: -99 dBm (typical) • 11Mbps: -90 dBm (typical) • 54Mbps: -77 dBm (typical) • MCS0@HT20: -93 dBm (typical) • MCS9@HT20: -70 dBm (typical)
802.15.4 Parameters	Max Tx Power • 250Kbps: +20 dBm (typical)
Operating Temperature	-40°C~85°C
Storage Temperature	-40°C~135°C
Operating Humidity	10%~95%RH Non-condensation

3.3 Functional Description

3.3.1 Power Supply

Documentation Title	Documentation No	Revision	Classification	Status	Date
MQM748-0-50-0B Module Development Kit Product Brief		V1.0	Public	Release	Mar 26, 2025

The DevKit can be powered from USB-C by plugging into PC. The on-board LDO can convert USB-C 5V into 3.3V and 1.8V. The DevKit input and I/O voltage can be selected from either 3.3V or 1.8V. These 3.3V and 1.8V are also pulled to the DevKit header pins to power expansion boards attached to the DevKit.

The DevKit can also be powered from battery pack which can be plugged into the DevKit headers. The power from USB-C can be de-selected removing the jumper. The battery pack power can be supplied through VDD_3V3 and VDD_1V8 on the DevKit headers.

3.3.2 Power Measurement

MQM748 module power consumption can be measured through the on-board jumper by connecting to an external current measurement device.

3.3.3 Debug

The DevKit supports SEGGER J-Link and OpenOCD. The on-board analog switch allows to developers to choose MQM748 module JTAG to go through SEGGER J-Link or thru USB-C connected to PC. The on-board USB to UART/JTAG bridge allows both JTAG and UART populated on the PC device manager. Developers can use OpenOCD and UART simultaneously.

3.3.4 Reset and Boot

Two buttons are placed on the DevKit with one for software RESET while the other is for BOOT. The developer can choose either SW or HW reset via J4 jumper.

3.3.5 Headers

Dual standard 2.54mm (0.1inch) headers with 20-pin each side is created on the DevKit to allow developers to attach to any expansion boards of their choice.

The pin map is shown below:

3.4 Component Layout

Jumpers and button are purposely designed and defined to allow flexible configurations and operations . The DevKit component layout is illustrated below:

Documentation Title	Documentation No	Revision	Classification	Status	Date
MQM748-0-50-0B Module Development Kit Product Brief		V1.0	Public	Release	Mar 26, 2025

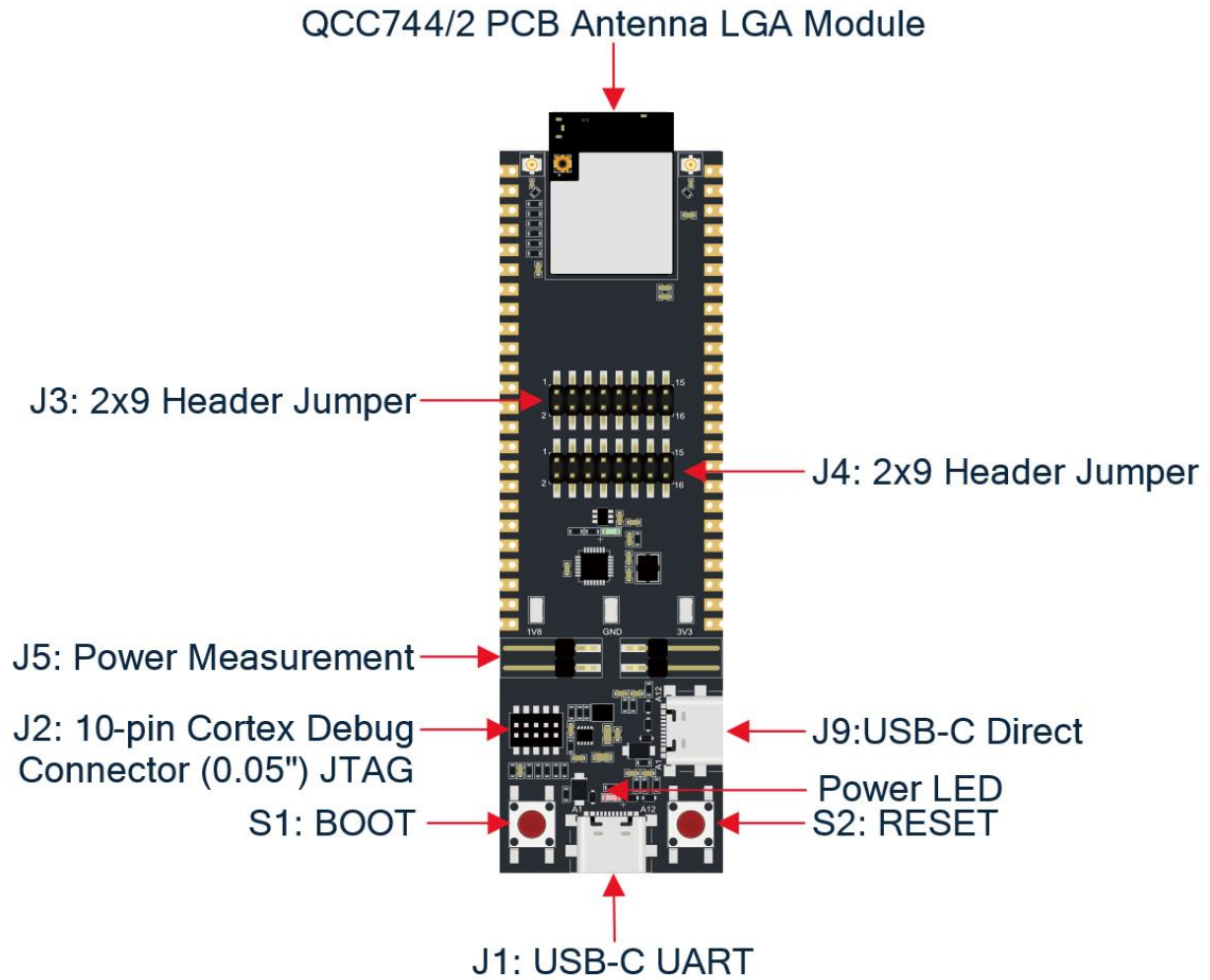


Figure 4: MQM748 Module Development Kit Component Layout

3.5 Mechanical Dimension

The DevKit mechanical dimension is shown below:

Documentation Title	Documentation No	Revision	Classification	Status	Date
MQM748-0-50-0B Module Development Kit Product Brief		V1.0	Public	Release	Mar 26, 2025

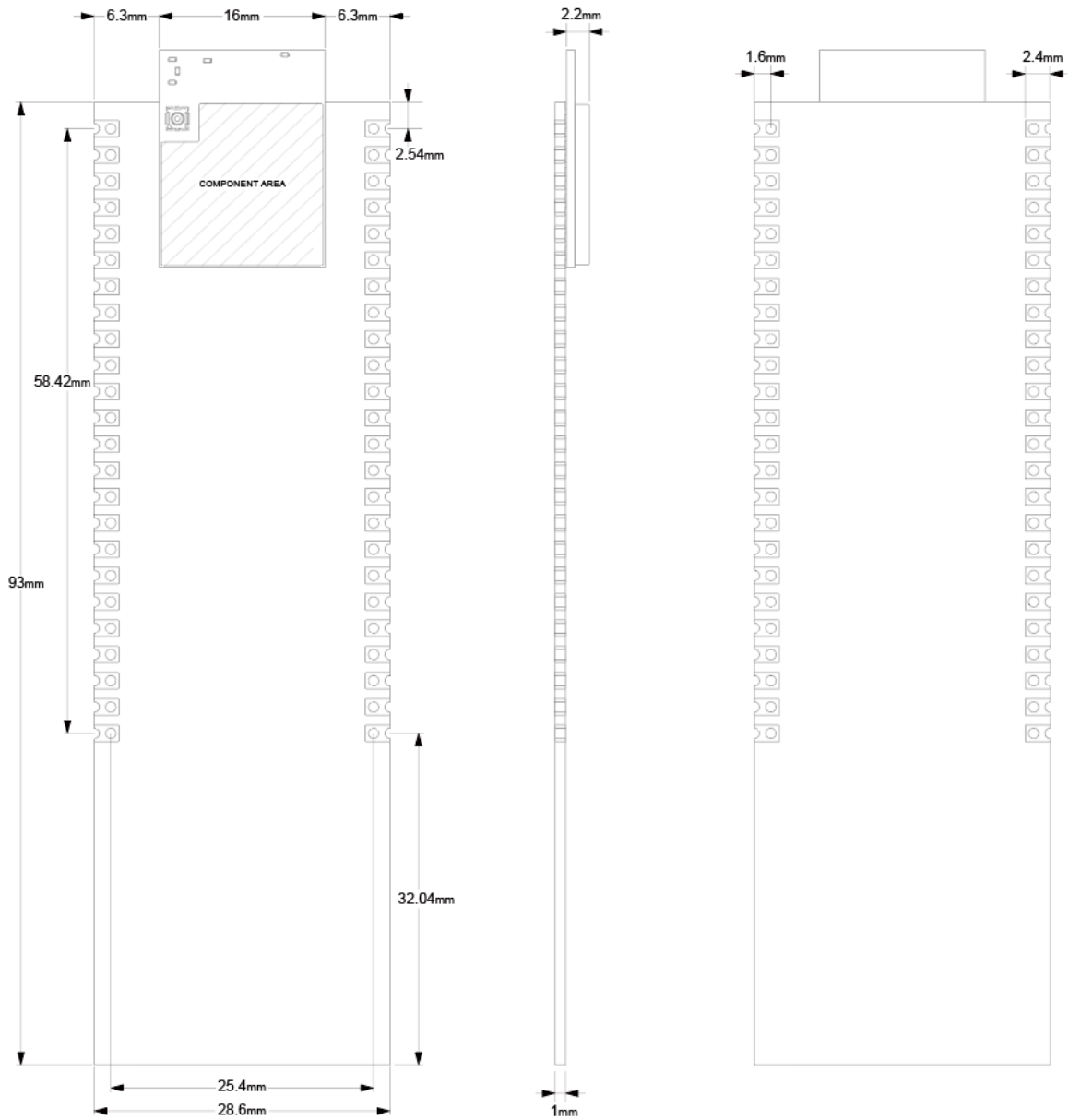


Figure 5: MQM748 Module Development Kit Dimension

Documentation Title	Documentation No	Revision	Classification	Status	Date
MQM748-0-50-0B Module Development Kit Product Brief		V1.0	Public	Release	Mar 26, 2025

Revision History

Revision	Description	Date
1.0	Initial draft	Mar 26, 2025

Documentation Title	Documentation No	Revision	Classification	Status	Date
MQM748-0-50-0B Module Development Kit Product Brief		V1.0	Public	Release	Mar 26, 2025

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