Qualcomm Dragonwing™
IQ-9075 EVK

The Dragonwing IQ-9075 EVK is a comprehensive evaluation platform to test the industrial-grade performance of the Dragonwing IQ-9075 processor for IoT solutions.

The Dragonwing IQ-9075 EVK showcases the most common features of the Dragonwing IQ-9075 processor, which is optimized for industrial IoT and robotics applications involving heavy workloads in the most demanding environments like autonomous mobile robots (AMRs) and industrial machinery.

The Dragonwing IQ-9075 EVK consists of a mainboard, supporting key interfaces, and optional expansion mezzanine boards to support additional features. It enables developers, OEMs, and ODMs to design and test their solutions powered by the industrial-grade Dragonwing IQ-9075 processor integrated with standard interfaces and connectors, mezzanine expandability, and wireless connectivity.

Test and prototype software development and hardware designs with less effort and cost to get your product to market faster.

Related Products

The Dragonwing IQ-9075 is part of the Dragonwing IQ9 Series, powering the most demanding industrial-grade, compute-heavy, and AI-based devices in extreme temperatures.

Highlights

PERFORMANCE

Build and evaluate IoT solutions featuring heterogeneous computing. The high-performance CPU cores are capable of handling heavy workloads and offloading additional workloads like AI to the GPU and NPU.

ON-DEVICE ARTIFICIAL INTELLIGENCE

Evaluate on-device AI with a dedicated NPU that delivers up to 100 Dense TOPS of performance that runs 13Bn-parameter models and generates 12 tokens per second.

CAMERA AND COMPUTER VISION

Concurrently process 4 of the 12 supported 4K video streams in computer vision applications.

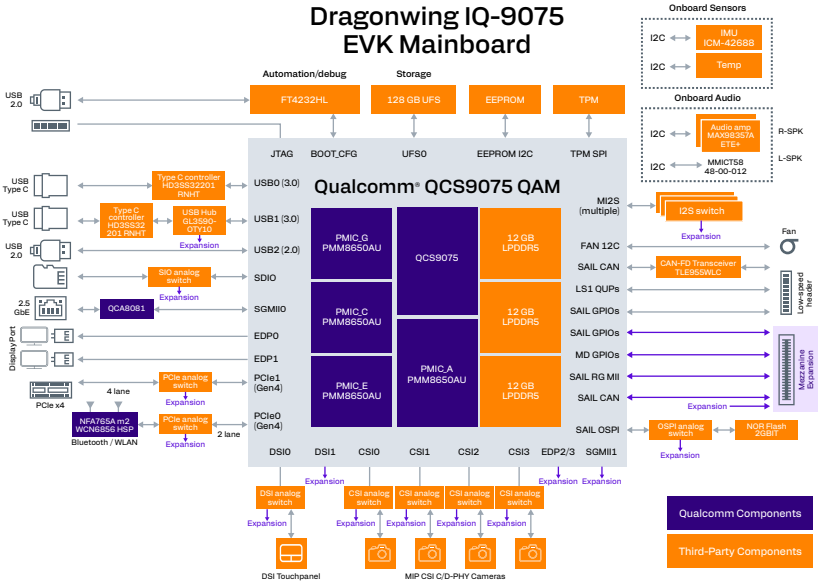
WIRELESS CONNECTIVITY

Take advantage of enhanced data transfer speed, reliability, and range between devices and peripherals using the onboard Qualcomm® NFA765A module with Wi-Fi 6E and Bluetooth® 5.3 technology.

RICH PERIPHERAL EXTENSIBILITY

Connect the Dragonwing IQ-9075 EVK to a range of peripherals through its low- and high-speed connectors, standard interfaces, and communication protocol support. Use this extensibility for a range of applications like reading sensors and sending commands to actuators.

Block Diagram



Qualcomm Dragonwing

Materials are subject to change without notice.
87-87713-1 Rev. B

Target Applications

The Dragonwing IQ-9075 EVK enables developers to evaluate the industrial-grade performance of the Dragonwing IQ-9075 processor for prototype IoT solutions, including:

- Robotics
- Autonomous Mobile Robots
- Drones
- On-Device AI
- Unmanned Aerial Vehicles (UAVs)

Features

AI Model Development and Prototyping

Create, test, and optimize AI models for compute, smart vision, language processing, and machine learning applications with the Qualcomm® AI Hub and its support for frameworks like ONNX Runtime, TensorFlow Lite, and PyTorch.

Robotics and Industrial Automation

Build proof of concepts for autonomous mobile robots, unmanned aerial vehicles, drones, industrial machinery, and agricultural robotics with real-time, on-device AI decision making and execution.

Multi-Sensor and Camera Fusion

Design multi-sensor and camera systems with real-time sensor fusion technology for surveillance, object detection, navigation, predictive maintenance, quality control, and process automation.

High-Performance Edge Computing

Facilitate the development of edge AI solutions for industrial IoT, smart cities, retail, work/site safety, smart buildings, and healthcare.

Ordering Information

Product	Part Number
Dragonwing IQ-9075 EVK	10-75699-1

Specifications

Processor	Dragonwing IQ-9075 (See more here) CPU: Octa-core (2.36 GHz) – DMIPS: Up to 227 K GPU: Qualcomm® Adreno™ 663 MH 3.0 @ 184 fps (800 MHz) Operating Systems: Linux, Ubuntu
Storage	2x 128 GB UFS, microSD card, EEPROM for MACs
PCIe/Connectivity	Wi-Fi/Bluetooth: M.2 module with connector on mainboard PCIe: 1x PCIex4 slot or expansion (switched), 1x m.2 E key (Wi-Fi) or expansion (switched)
Display	• 2x mini-DP (one with MST) • DSI flex connection (display not included)
Camera	4x MIPI CSI (C/D-PHY) flex connectors
USB	• USB Type C (host or device mode) • USB Type C (host mode) • USB 2.0 (host or device mode)
Audio	• 1x I2S mic • 2x I2S speaker amps • Additional I2S on GPIOs
Video	• Encode: up to 2x 4K60 (concurrent) or 1x 4K120 • Decode: up to 4x 4K60 (concurrent 2x 4K60) or 1x 4K240 with support for AV1, HEVC, H.264, H.265
Ethernet	RJ45 (2.5 GbE)
CAN	1x CAN-FD on LS expansion
Other I/Os on Mezzanine Connectors (1.8 V)	• 2x UART (RX/TX), 1x UART (RX/TX/CTS/RFR), 1x SAIL_UART (RX/TX) • 1x SAIL_SPI (CS0), 1x SAIL_SPI (CS0, CS1) • 5x I2C, 3x CCI_I2C, 1x SAIL_I2C • 44x SOC GPIO, 30x PMIC GPIO (After using above listed QUPs, I2S) • 6x QUP (L0/1), 3x QUP (L0-3), 1x QUP (L2/3), 1x QUP (QSPI), 1x QUP (L0-3, CS0, CS1)
TPM	ST33HTPH2x32AHE4 on mainboard
Sensors	IMU: ICM-42688
Debug/UI	FTDI
Thermal Management	CPU cooler/fan
Power	DC barrel plug (20V/160W wall adapter provided)
Size	100 x 100 x 2 mm
Operating Temperature	-20°C to 70°C
Other Parts Included in Kit	• 160W power supply (862-65274-0003) and adapter (45-82893-A6) • NFA765A Wi-Fi module with RF cables (30-55360-1200) • 65W cooler/fan and mechanical hardware • Cables: Micro USB and Type C USB cables, miniDP to DP adapter

Specifications are subject to change

To learn more visit: qualcomm.com