

Qualcomm Dragonwing-Based Solutions

James Chen / Intelligent Peripheral Appliance Div. / JAN 2026

Innodisk Group Product

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Retail Intelligence

Surveillance
Intelligence

Enterprise & Building
Intelligence

Industrial Automation
Intelligence

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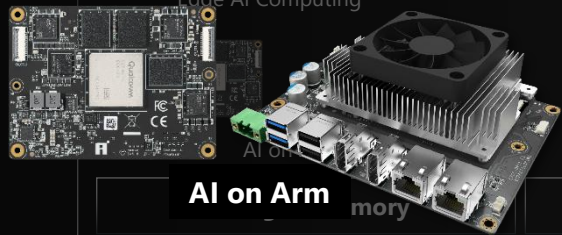
Hardware Platform

Edge Computing



Edge AI Computing

Edge AI Server



AI on Arm



AI Accelerator

Industrial Communication



PCIe / SATA

DDR3 / DDR4 / DDR5

CAN Bus / LAN / Serial I/O Module

Camera Sensing



USB2.0 / MIPI / GMSL / MIPI-Over-TypeC

Air Sensing



Air Detector / Module

Software Platform



iVIT - AI Model Training & Inference Utility

- No Code AI Model Benchmark
- Performance Verification



iCAP - Cloud Administration Platform

- Intelligent platform management
- AI model deploy and management

iSeries Software Utility

iSMART
Monitor SSD
& DRAM
Status

iTracker
Keep Track
of Portable
Storage

iOPAL
Turn-Key for
Key Security
Features

iRAID
Reliable
RAID Status
Monitor and
Management

BSP Porting

Driver
Integration

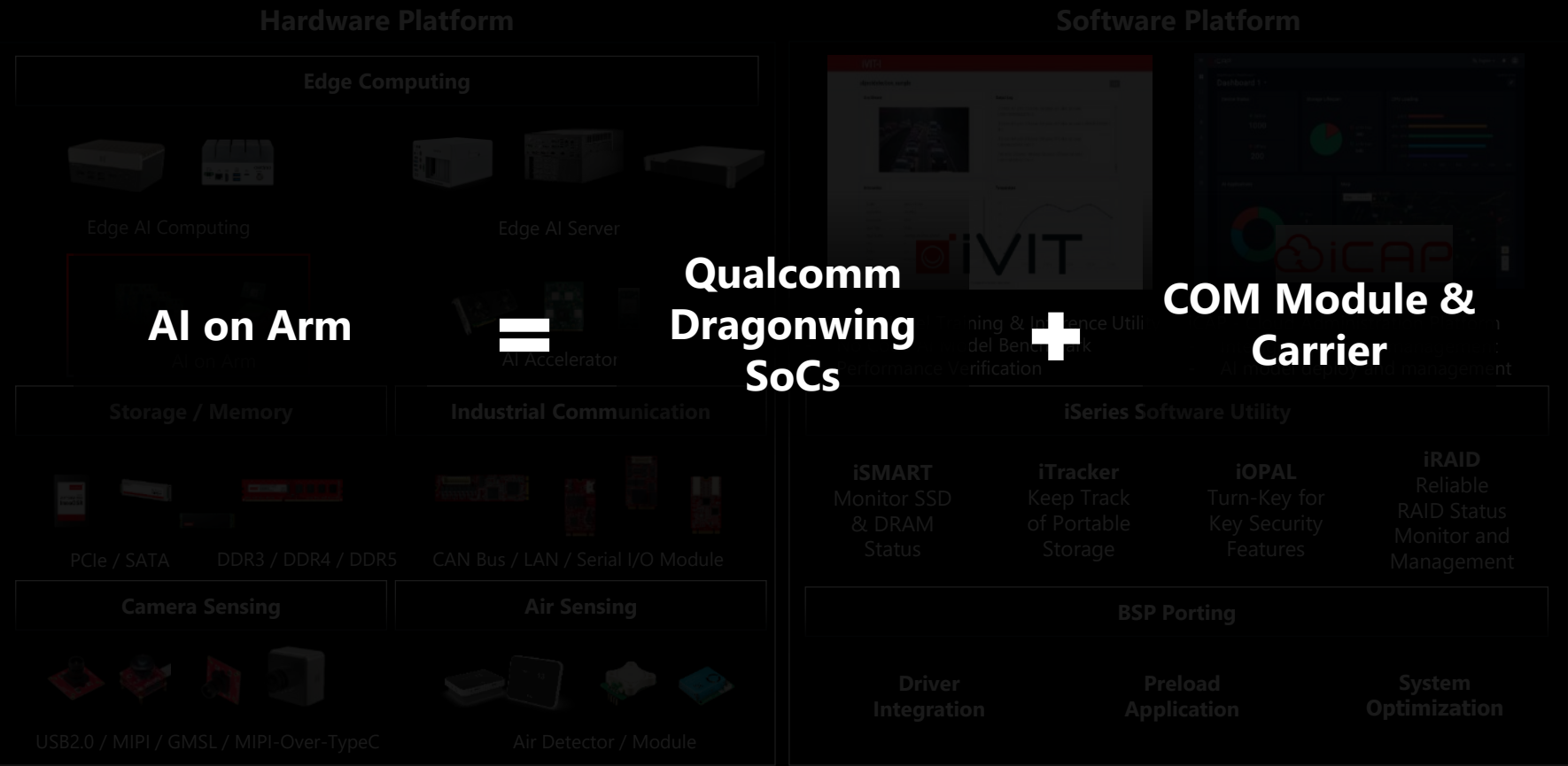
Preload
Application

System
Optimization

Innodisk Group Product

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- Retail Intelligence
- Surveillance Intelligence
- Enterprise & Building Intelligence
- Industrial Automation Intelligence
- ...



Qualcomm Dragonwing

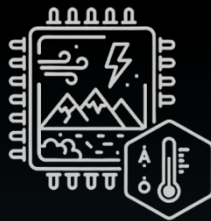


Why Do We Need Industrial AI on Arm Solutions?



High Power Requirement

Cost: Delivers high performance, but at the cost of high power consumption and heat, making it impractical for edge inference and battery-powered AI use cases.



Not Stable in Harsh Environments

Cost: The key trade-off is not component cost, but total cost of ownership. Industrial-grade ICs reduce failure risk, maintenance costs, and system downtime over long-term deployment, while consumer-grade ICs do not.



Challenge of Longevity

Cost: Fast-paced chipset iterations drive repeated redesign and revalidation, adding hidden costs in both hardware and software development.



Sub-brand that focusing on Industrial & Embedded IoT

**Low Power
Consumption**
($<30\text{W}$)

Durability
Wide Temperature

Longevity (~2038)

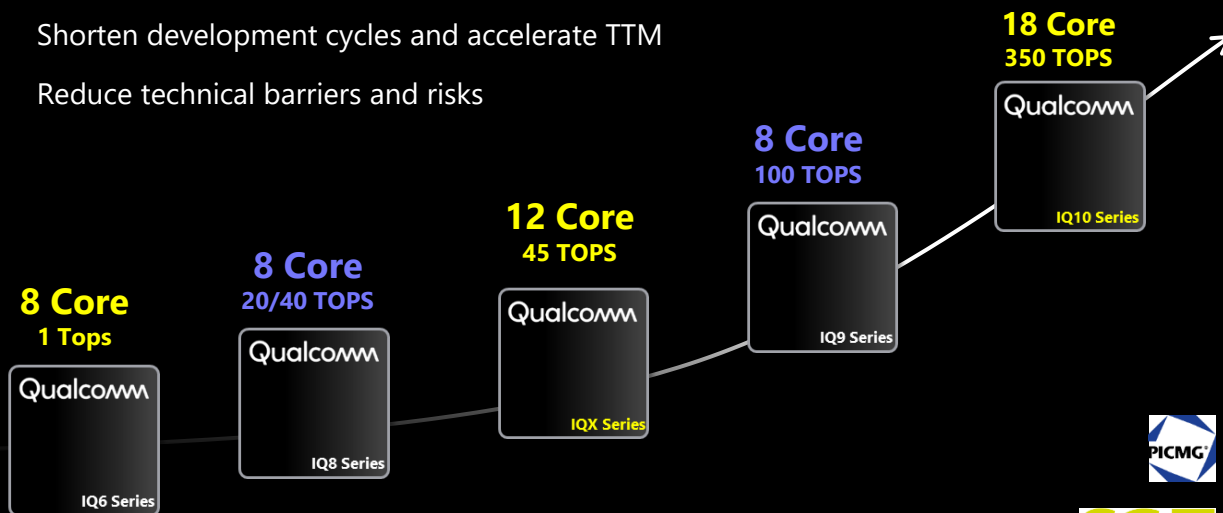
2026 Product Portfolio Overview

Dragonwing IC Coverage

- Focused on industrial applications
- Entry → Mainstream → High Performance

COM Modules Design

- Shorten development cycles and accelerate TTM
- Reduce technical barriers and risks



- COM-HPC (Mini)



- SMARC (82 x 50mm)



Qualcomm Dragonwing Product Roadmap

COM



EXMP-Q911
COM-HPC Mini Module by
IQ-9075
100TOPS



ES Sample 26" APR
MP 26" JUL



EXMP-Q801
COM-HPC Mini Module by
IQ-8275
20 ~ 40TOPS



ES Sample 26" MAY
MP 26" OCT



EXMP-QX11
COM-HPC Mini Module by
IQ-X
45TOPS



ES Sample 26" SEP



Starter Kit



EXEC-Q911 Starter Kit
IQ-9075 COM HPC Mini Module +
3.5" Carrier

ES Sample 26" APR
MP 26" JUL

EXEC-Q801 Starter Kit
IQ-8275 COM HPC Mini Module +
3.5" Carrier

ES Sample 26" MAY
MP 26" OCT

EXEC-QX11 Starter Kit
IQ-X COM HPC Mini Module + 3.5"
Carrier

ES Sample 26" SEP

Edge AI Box



EXOC-Q911
(APEX-A100)
Edge AI Box by
IQ-9075
100TOPS

ES Sample 26" APR
MP 26" JUL



EXFC-Q911
Edge AI Box with 8
GMSL by **IQ-9075**
100TOPS

ES Sample 26" APR



EXNE-Q911
AI NVR by
IQ-9075
100TOPS

ES Sample 26" May



EXOC-Q801
Edge AI Box by
IQ-8275
20 ~ 40TOPS

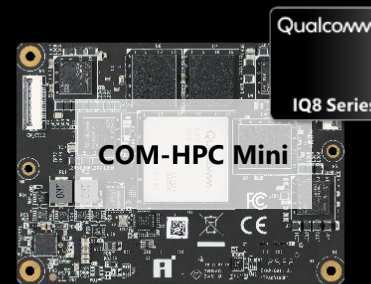
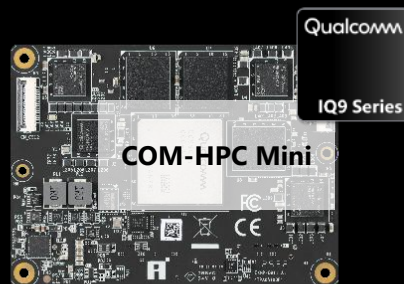
ES Sample 26" MAY
MP 26" OCT



EXDU-QX11
High Performance IPC
by **IQ-X**
45TOPS

ES Sample 26" SEP

Preliminary

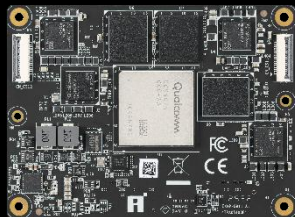


EXMP-Q911

EXMP-Q801

Chipset	IQ-9075	IQ-8275
CPU	8 Kryo™ Gen 6 up to 2.36 GHz	8 Kryo™ Gen 6 up to 2.35 GHz
AI Performance	100 TOPS (Dense)/ 200 TOPS (Sparse)	20~40 TOPS (Dense)/ 40~80 TOPS (Sparse)
Memory / Storage	128GB UFS / 36GB LPDDR5X	128GB UFS / 24GB LPDDR5X
Display	2 x DP1.2 / 1 x eDP	2 x DP1.4
LAN	2 x 2.5GbE	2 x 2.5GbE
PCIe	1x PCIe Gen4 x2, 1x PCIe Gen4 x4	1x PCIe Gen4x4, 1x PCIe Gen3x2, 1x PCIe Gen3x1
MIPI CSI2	2x MIPI-CSI2 4 lanes (on Module)	2x MIPI-CSI2 4 lanes (on Module)
OS	Linux Yocto, Ubuntu	
Operatin Temp. (Ta)	-40°C to +85°C	-40°C to +85°C

Innodisk Edge AI Solutions Powered by Qualcomm Dragonwing



COM Module

COM-HPC Mini

- IQ-9075
- IQ-8275



Starter Kit : COM + Carrier

Starter Kit (IQ-9075)

Starter Kit (IQ-8275)



Edge AI Box (APEX-A100)

Fanless BOX (IQ-9075)

Fanless BOX (IQ-8275)

System Product Highlight



Vision-Centric Systems

- ✓ **GMSL-based Edge AI System**
- ✓ Multi-camera, long cable, industrial grade
- ✓ Compatible with IQ9/IQ8
- ✓ Vertical :
 - Robotics
 - Transportation
 - Smart manufacturing



AI NVR Platform

- ✓ **Video analytics platform supporting QIP**
- ✓ Supports software RAID 5
- ✓ Compatible with IQ9/IQ8
- ✓ Multi-ch. Camera support
- ✓ Stable long-term operation
- ✓ Cost and power efficiency advantages



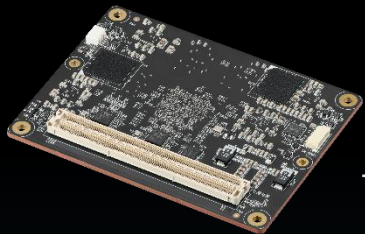
High Performance IPC

- ✓ High Performance IPC based on **IQ-X + IO Expander**(Dragonbridge)
- ✓ Supports all IQ-X SIP SKUs ideally
- ✓ Designed for harsh environments
- ✓ Delivers excellent performance with outstanding power efficiency

Product Features

EXMP-Q911 : IQ9 COM HPC Mini Module

EXMP-Q911: A Ready-to-Use SOM for Edge AI Development

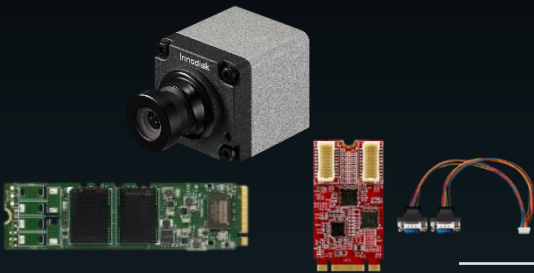


Fast Development

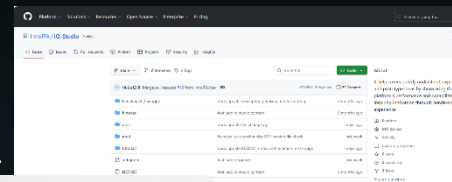
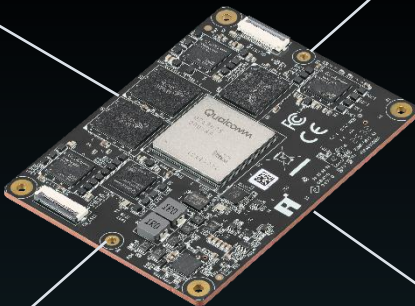
- COM-HPC Mini
- Qualcomm Reference Design



Ready Starter-kit



Peripheral Expansion Ecosystem



Software Platform: IQ Studio & AI Hub

A complete hardware and software ecosystem, an end-to-end Edge AI solution that accelerates your product time to market.

Rich I/O and Expansion Signal – EXMP-Q911

Expansion	1 x PCIe Gen 4 x4
	1 x PCIe Gen 4 x2
MIPI	2 x 4-lane MIPI CSI-2 (22pin)
Ethernet	2 x 2.5 GbE LAN
Display	2 x DP1.2, 1 x eDP
Audio	1 x I ² S for Headphone / AMP
USB	2 x USB 3.2 Gen 2 x1 (10Gbps)
	4 x USB 2.0
I/O Interfaces	2 x UART (1 with CTS / RTS)
	1 x COM (RS232 / 422 / 485, on module)
	1 x SPI (General SPI)
	1 x CAN FD
	4 x I ² C (1 x on module, 3.3V)
	12 x GPIO



Starter Kit designed specifically for **COM-HPC Mini Module**



**IQ-9075 Starter Kit : EXEC-Q911
COM-HPC Mini + Carrier + Cooler**

-40°C to +85°C



**IQ-9075 Edge System : APEX-A100
Fan-less Design**

-40°C to +70°C

Yolo v10 (INT8)
Avg. FPS: 13

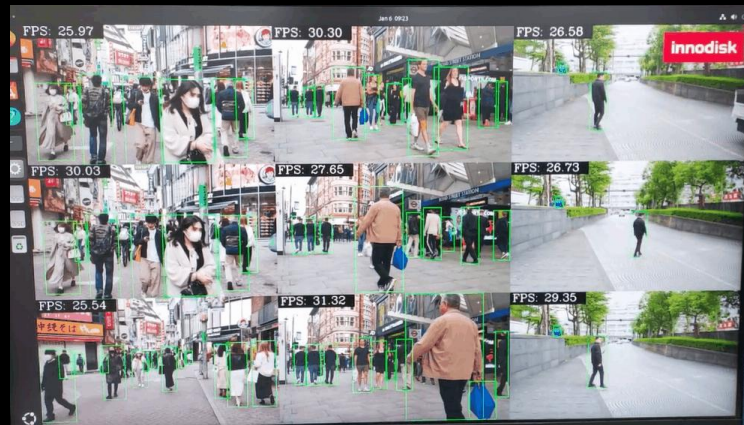


123% Up



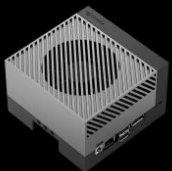
Qualcomm

Yolo v10 (INT8)
Avg. FPS: 29



Jetpack(Ubuntu)
9-Ch Streaming Object Detection

QLI 1.6 (Ubuntu)
9-Ch Streaming Object Detection



Jetson AGX Orin 32GB

32GB LPDDR5 Memory
64GB eMMC
8* A78AE up to 2.2 GHz

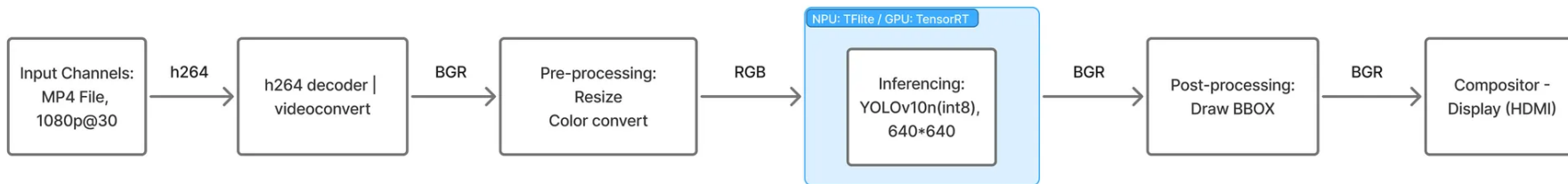


Qualcomm IQ-9075

36GB LPDDR5 Memory
128GB UFS
8* Kryo Gen 6 up to 2.36 GHz

Compared to other vendors, the IQ-9075 delivers superior inference performance in **multi-channel and multi-AI model scenarios**.

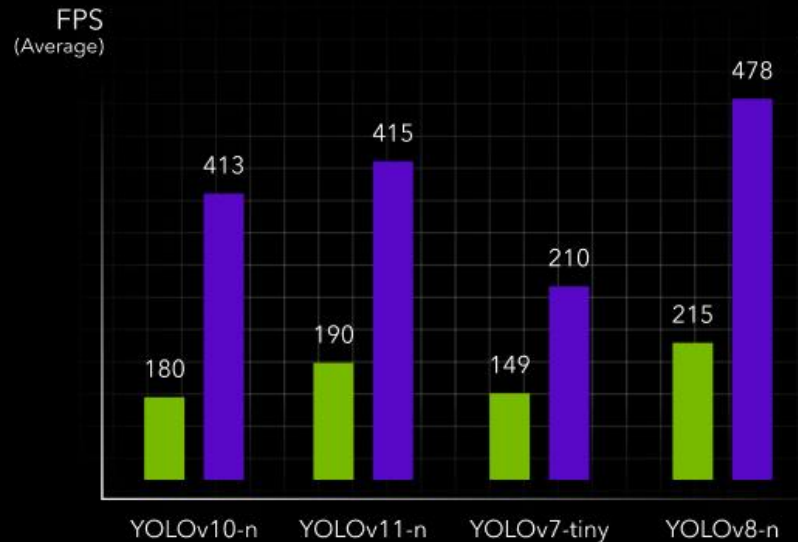
SoC: IQ9075 (Based on QLi1.6 + ubuntu 2025/10/30 image) / AGX ORIN 64GB (Jetpack 6.2)



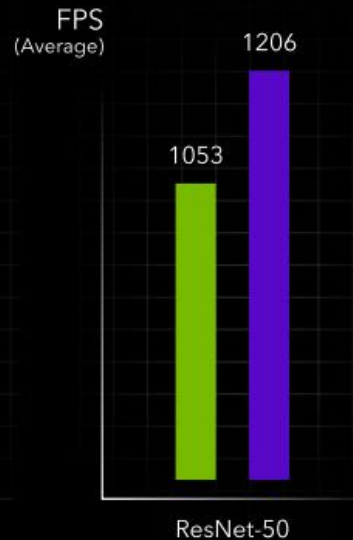
Platform	Memory	CPU Cores	Mode	Input FPS	Resolution	Channels	Output FPS	Performance
NVIDIA AGX Orin	32GB	8	MAXN	30	1080p	9	13	
						16	7	
						23	4.5	
Qualcomm IQ-9075M	36GB	8	High Performance	30	1080p	9	29	+123%
						16	15	+114%
						23	9	+100%

Computer Vision Inference Performance Across Platform

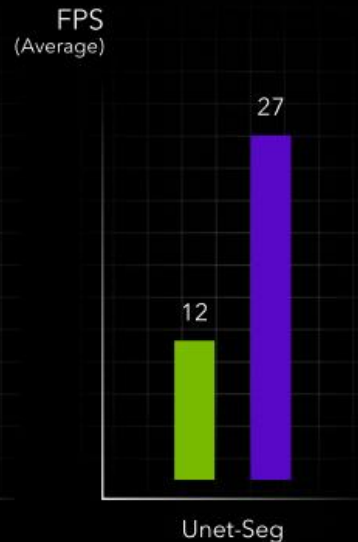
OBJECT DETECTION



CLASSIFICATION



SEGMENTATION



■ Other Solution ■ Qualcomm Solution

Note:

1. Both solutions are configured with power consumption below the 30W standard
2. The **other solution** is set to Mode_30W. The **Qualcomm solution** is set to http_performance_mode:
3. Input resolution: YOLO Series - 640×640; UNet-Seg - 640×1280; ResNet-50 - 224×224

Accelerate Time-to-Market

Flexibility, Visualization, and Customization

Professional AI Software Team



- Provides a variety of **AI PoCs** and assists customers in addressing challenges related to **AI model conversion or quantization**.

Experienced AI Peripheral Team



- Focused on **IO expansion** and **camera development**, offering customers a diverse selection of camera& IQ modules.
- Additionally, the team provides **customized** tailored to specific application environments.

BSP Support



- **BSP support** with software customization services, allowing users to simplify **compatibility testing processes**, reduce costs, and focus more on end-application development, thereby shortening time-to-market.

Wide Temperature Modules



- **A series of industrial grade modules** designed to help users quickly adapt to different product configurations, meeting the needs of small-batch, diverse projects in industrial applications.

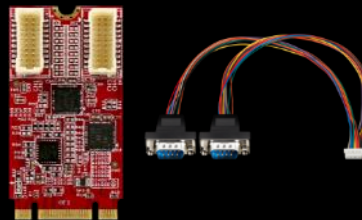
Available Industrial Grade (Wide Temp.) Modules

Flexible Peripheral Expansion: Leveraging Innodisk expansion modules, customized I/O port configurations can be tailored to meet the unique needs of various applications.



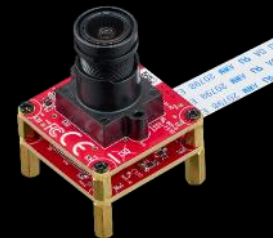
Flash / DRAM

Innodisk provides various M.2 storage options. These options include different form factors, storage capacities, and wide temperature ranges for various applications.



Embedded Peripheral

Several embedded peripheral options offer flexibility. These modules come with features like Network, Serial, and CAN bus, all with a wide temperature range.



Camera Module

Innodisk provides various camera options. These options include different resolutions, lens types, and interface standards such as MIPI CSI-2, GMSL and USB.

Flexible Peripheral Expansion For Various Vertical Markets

Applications



Humanoid
Robot



Transportation



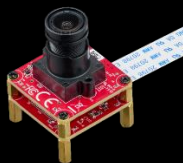
Industrial
Automation

Innodisk AI
Peripheral
Module

NVMe SSD
DRAM



MIPI CSI-2
Camera Module



2MP/8MP/13MP

GMSL2 Camera
Module



2MP/8MP/13MP

LAN Module



1G/2.5G/10GbE
1 ~ 4 Ports

Serial Module



RS232/422/485
1 ~ 4 Ports

CAN Bus / CAN
FD Module



J1939/CAN Open
1 ~ 4 ports

Storage

Vision

Communication

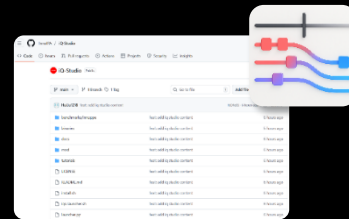
AI Box &
Platform

Qualcomm Dragonwing



Software Value: Meet the Innodisk IQ-Studio

Comprehensive software toolchain support, covering initial validation, PoC demo development, stress testing, production testing, and even device management



<https://github.com/InnoIPA/iQ-Studio>

Boot up Q911

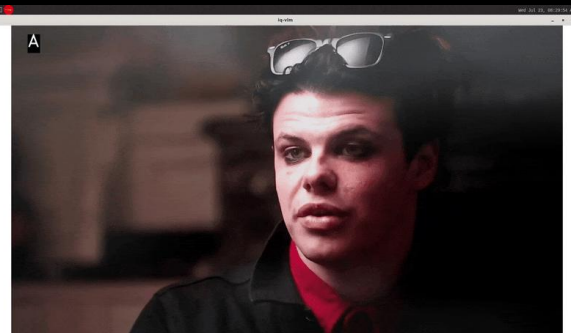
The Q911 platform ships with the system image pre-loaded on the UFS storage. To get started, simply connect the power supply and press the power button.



Quick Start Guide

- ✓ Helps customers quickly bring up the system and become familiar with system operation

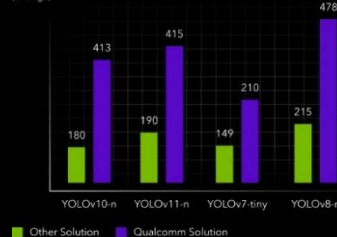
Well-integrated PoC Demo



- ✓ Provide customers with various PoC demos, including multi-channel object detection and VLM, to inspire application ideas and opportunities

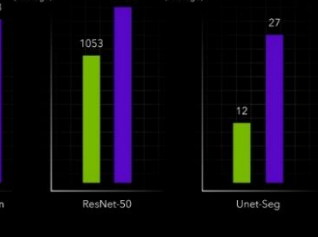
OBJECT DETECTION

FPS (Average)



CLASSIFICATION

FPS (Average)



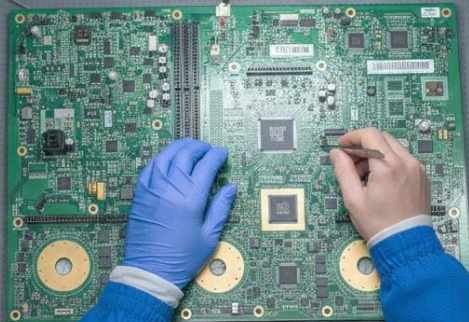
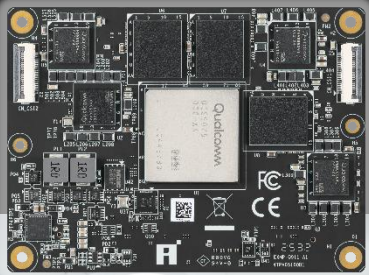
Testing Utility

- ✓ Provide testing tools to enable customers to perform performance testing, stress testing, or integrate them into production test programs

Case Sharing



Qualcomm Edge AI



Customer: Smart factory



Product: EXMP-Q911

Qualcomm Dragonwing IQ-9075



Application:

- PCB Assembling SOP Check
- AI NVR

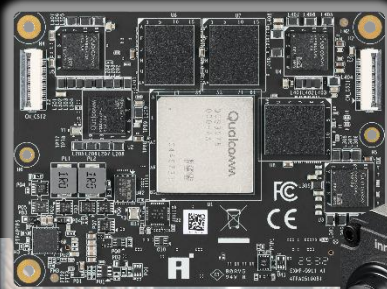


Selling Point:

The Qualcomm Edge AI NVR delivers high AI performance, enabling real-time error interception for fully automated SOP enforcement. Its fanless, compact design allows effortless deployment at every workstation while supporting multi-channel FHD AI analytics on a single device. Therefore, it becomes a significantly more cost-effective alternative to traditional GPU-based IPCs and reduces rework and QC costs, making SOP intelligence scalable and reliable across the entire production line.



Qualcomm Edge AI



Customer: Smart factory



Product: EXMP-Q911

Qualcomm Dragonwing IQ-9075 + GMSL Camera



Application:

- Smart factory real-time AGV/AMR



Selling Point:

Qualcomm Edge AI empowers AGV/AMR systems with high-performance, low-power on-device intelligence, enabling real-time obstacle detection, path planning, and navigation without cloud dependency. Its fanless, compact, and industrial-grade vibration-resistant design fits seamlessly into mobile robots with strict thermal, battery, and mechanical constraints, while supporting multi-sensor fusion across cameras. This delivers safer, faster, and more accurate autonomous movement—at a fraction of the cost of traditional GPU-based solutions.



Qualcomm Edge AI



Customer: Smart City



Product: EXMP-Q911

Qualcomm Dragonwing IQ-9075 + 9ch/32ch IP Camera



Application:

- Smart City
- VMS System



Selling Point:

Designed for smart city traffic enforcement, our Edge AI platform delivers scalable multi-camera analytics—supporting 9-channel 1080P AI inference at 29 FPS, and scaling up to 32-channel 720P analytics at ~5 FPS per stream, all under 30W.

Summary

NV Jetson vs. Qualcomm COM-HPC Mini Comparison

- Compared with the AGX Orin 32GB, the IQ9 COM-HPC Mini Module offers larger memory capacity, better storage options, longer product longevity, and better AI (CV) performance at the same power level.

Model Name	Jetson Orin NX 8GB	EXMP-Q801 (IQ-8275)	Jetson Orin NX 16GB	EXMP-Q911 (IQ-9075)	Jetson AGX Orin 32GB	Jetson AGX Orin 64GB
Memory	8GB LPDDR5	24GB LPDDR5	16GB LPDDR5	36GB LPDDR5	32GB LPDDR5	64GB LPDDR5
Storage	N/A	128GB UFS	N/A	128GB UFS	64GB eMMC 5.1	64GB eMMC 5.1
CPU	6* A78AE up to 2 GHz	8 Kryo Gen 6 up to 2.35 GHz	8* A78AE up to 2 GHz	8 Kryo Gen 6 up to 2.36 GHz	8* A78AE up to 2.2 GHz	12* A78AE up to 2.2 GHz
GPU	Ampere GPU · 1024 CUDA / 32 Tensor	Adreno 623	Ampere GPU · 1024 CUDA / 32 Tensor	Adreno 663	Ampere GPU · 2048 CUDA / 64 Tensor	Ampere GPU · 2048 CUDA / 64 Tensor
AI Performance	70 TOPS(Sparse)\ 35 TOPS(Dense)	80 TOPS (Sparse)\ 40 TOPS (Dense)	100 TOPS(Sparse)\ 50 TOPS(Dense)	200 TOPS (Sparse)\ 100 TOPS (Dense)	200 TOPS(Sparse)\ 100 TOPS(Dense)	275 TOPS(Sparse)\ 138 TOPS(Dense)
Power Consumption (TDP)	10W / 15W / 20W	TBD	10W / 15W / 20W	30W<	15-40W	15-60W
Longevity	2032	2038	2032	2038	2032	2032

Product Highlight : Key Benefits



Efficiency

100 TOPS

<30W power consumption



Low Latency

97 FPS Avg.

10-ch Yolo Inference
(29 fps End to end)



Longevity

To 2038

SoC Long-term support



Cost-Effective

Single device supporting
multiple video inputs

Reduce total hardware cost



Rapid Development

COM-HPC Mini Module
IQ Studio Software Support



Flexibility

MIPI & GMSL Support
CAN Bus & Serial Card

innodisk

ARCHITECT INTELLIGENCE