

ECM001 Series

Compact Edge AI Platform

Features

- Powered by NVIDIA® Jetson Orin™ NX Super up to 157 TOPS
- 2×M.2, M Key PCIe Gen 4×2 and E Key PCIe Gen 4×1
- 1× USB3.2 Gen2
- 2× 4MIPI CSI-2 Lanes
- 2x 10/100M Ethernet (**ECM001 only**)
- 2x 1G Ethernet (**ECM001-GIGA only**)
- RS232 / UART / I2C / SPI / CAN Bus



Specifications

System	
CPU	NVIDIA Jetson Orin™ NX 16GB Super 8-Core Arm® Cortex®-A78AE v8.2 64-Bit CPU 2MB L2 + 4MB L3
GPU	1024-Core NVIDIA Ampere Architecture GPU with 32 Tensor Cores
AU Performance	NVIDIA Jetson Orin™ NX 16GB Super 157 TOPS
System Memory	NVIDIA Jetson Orin™ NX 16GB Super 16GB LPDDR5
Interface	
Storage	Supports External NVMe
Display Interface	1×Mini HDMI2.0
Ethernet	2×BM04B-GHS-TBT Connector for 10/100Mbps Ethernet (ECM001) 2×Hirose IX61G2-A-10P Connector for 1Gbps Ethernet (ECM001-GIGA) DHCP Client
Expansion Slot	M.2 1×M.2 2230 M Key PCIe Gen4×2 Slot 1×M.2 2230 E Key PCIe Gen4×1 Slot
USB	1×USB3.2 Gen2 (Type-C)
MIPI	2×4MIPI CSI-2 Lanes (KEL USL00-30L)
Peripheral Communication	1×RS232 (BM03B-GHS-TBT Connector) 1×UART (BM03B-GHS-TBT Connector) 1×I2C (SM03B-GHS-TB Connector) 1×SPI (SM03B-GHS-TB Connector) 1×CAN Bus (SM03B-GHS-TB Connector)
Misc. Features	Firmware Upgradable AutoPower (Pin Header)

Add-On Cards / SDK / Software

Video Feature	
Video Encode	AV1 (UHP) : 1×4K60 3×4K30 6×1080p60 12×1080p30 H.265 (UHP) : 1×4K60 3×4K30 6×1080p60 12×1080p30 H.264 (UHP) : 1×4K60 2×4K30 5×1080p60 11×1080p30
Video Decode	AV1 (Main Profile) : 1×8K30 2×4K60 4×4K30 9×1080p60 20×1080p30 H.265 (Main, Main10) : 1×8K30 2×4K60 4×4K30 9×1080p60 18×1080p30 H.264 (Baseline, Main, High) : 1×4K60 2×4K30 5×1080p60 11×1080p30 VP9 (Profile 0, Profile 2) : 1×4K60 3×4K30 7×1080p60 15×1080p30
SDK	
QCAP	Capture High Performance Renderer Image Snapshot Deinterlace, Alpha Blending Engine Auto Signal Detection 2D/3D Video, Audio and VANC Streams Capture
	Record Encrypt / Sync / Clone / Recording Time-Shifting / Rewind / Pre-Event / Recording Multi-Streams (3D) Recording Animation Transition Effect Video Cropping, Scaling and Alpha Blending Engine
	Stream 2D/3D Universal Stream Client 2D/3D Multi-Streams Stream Server RTSP, RTMP, HLS, SRT, TS, WebRTC. NDI-HX (*), Full NDI (*), Dante AV-H (*) Animation Transition Effect Video Cropping, Scaling and Alpha Blending Engine *Separate License Required
QDEEP	AI SDK Integrated Multiple Algorithms and Deep-Learning Models in Various Fields of Applications Face Recognition Objects Detection Objects Segment Optical Character Recognition License Plate Recognition Customizable Video AI Functions Upon Request

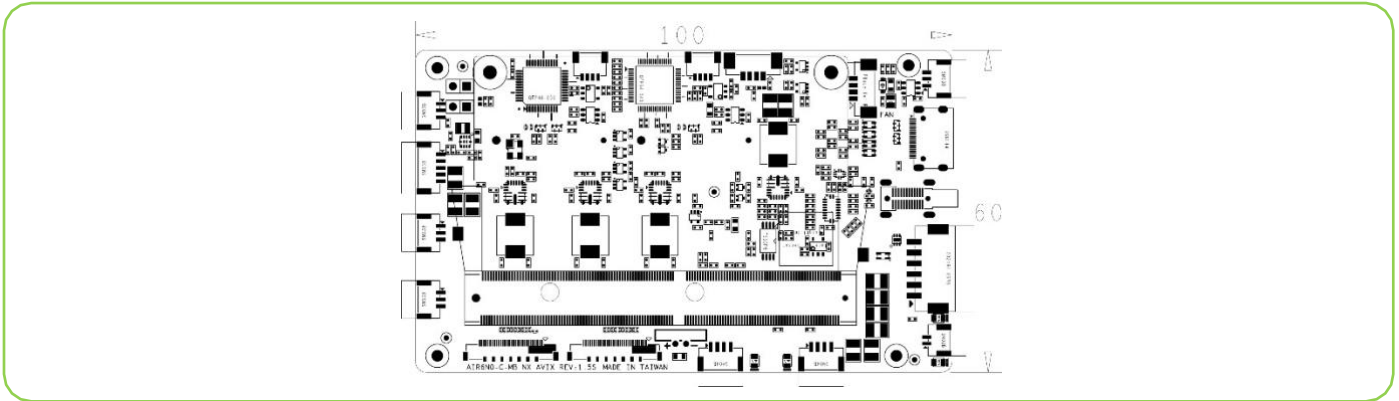
Software (Optional)		
Stream Catcher Pro	Capture	
	Auto Signal Detection	
	Deinterlace, OSD, Color Adjustment Image Snapshot	
	Animation Transform Effect for PGM	
	Record	
Xtreamer	AV1, H.26X	
	MP4, TS	
	Multi-Stream Recording	
	Schedule Recording	
	Stream	
	Multi-Streams Stream Server	
	RTSP, RTMP, HLS, SRT, TS, WebRTC., Full NDI (*), NDI-HX (*), Dante AV-H (*)	
	*Separate License Required	
	Web Based User Interface	
	Encode / Decode	
	AV1, H.26X	
	Color Format Adjust	
	444 / 422 / 420, 10Bit / 8Bit Select	
	Record	
	MP4, TS	
	Stream / Network	
	RTSP, RTMP, HLS, SRT, TS, WebRTC. NDI-HX (*), Full NDI (*), Dante AV-H (*)	
	*Separate License Required	

Environment

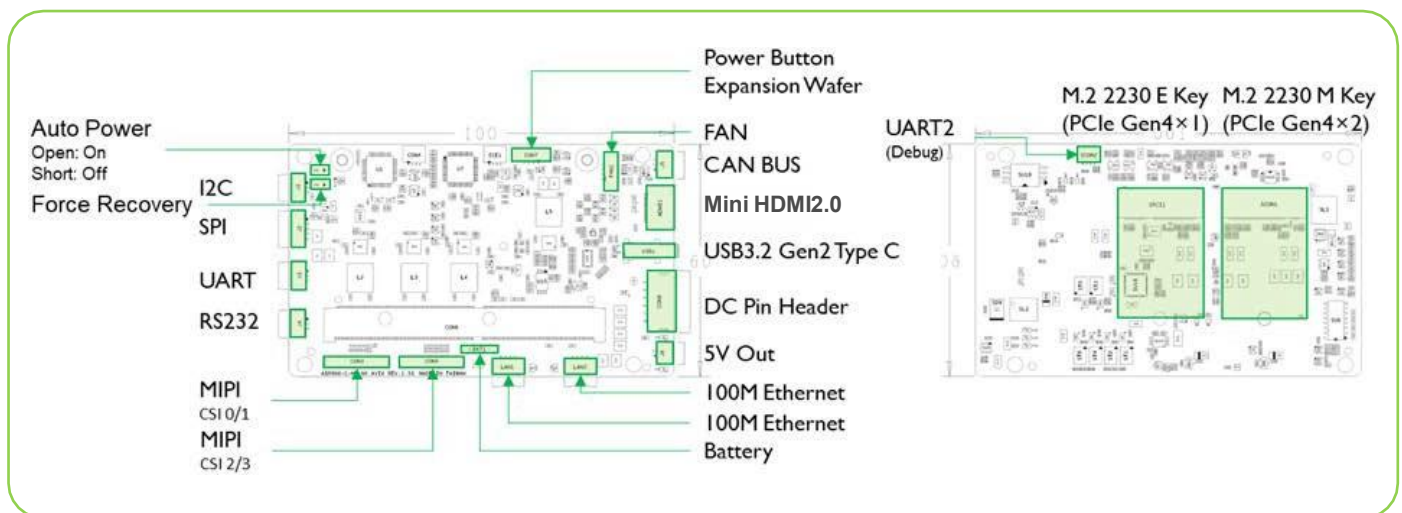
Development Environment	
OS	Ubuntu: 20.04
Kernel	5.10.104-tegra or Higher
BSP	Linux for Tegra(L4T) R35.3.1 or Higher
SDK	JetPack 5.1.1 or Higher
Environment	
Power Supply	DC input : 9~36V (Molex(2.0mm) 5024940670 6 pin Connector 3A(26AWG))
Power Output	DC output : 5V/1A (SM02B-GHS-TB)
Power Consumption	TBA
Operating Temperature	Standard Version: 0~60。 C with Airflow
Storage Temperature	-20~80° C

Mechanical

- Dimension of main Case: 100mm×60mm
- Weight: TBA



I/O Layout (ECM001)



I/O Layout (ECM001-GIGA)

