Enabling an Intelligent Planet
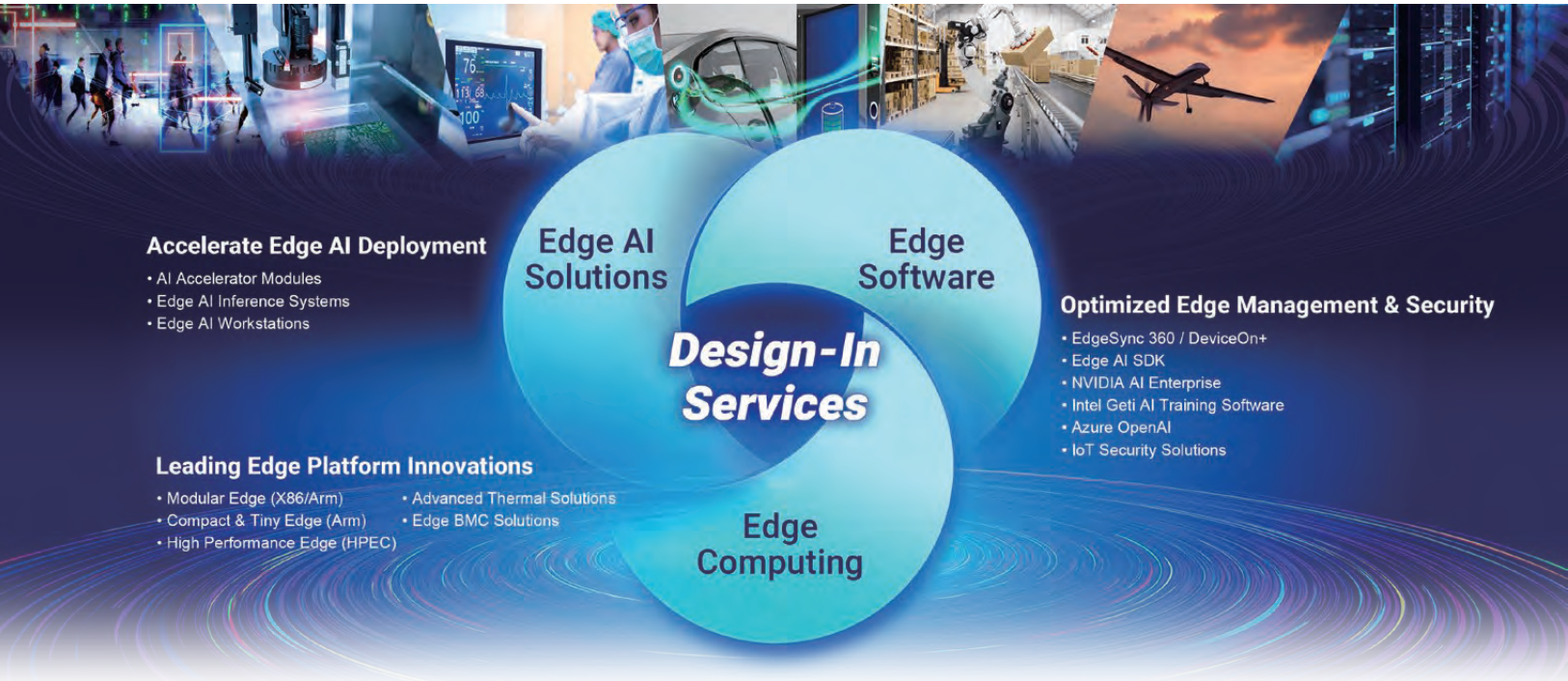
Embedded IoT Solutions

ADVANTECH

Enabling an Intelligent Planet

www.advantech.com

About Embedded IoT

Shaping the Future of Edge Computing and Emerging Business

From the very beginning, Advantech has been at the forefront of innovation in embedded technologies. Our commitment is to provide our customers with access to the most cutting-edge solutions available. As a leading brand in the embedded market, Advantech plays a central role in connecting the entire ecosystem. We collaborate with partners to deliver a range of edge computing platforms, edge AI and edge software, enhancing the efficiency of application deployments. Additionally, we offer extensive and seamlessly integrated solutions, with a focus on customer-centric embedded design-in services to facilitate the global implementation of diverse AIoT applications. We continually adjust our strategies to align with technological trends and the evolving demands for edge solutions.

Accelerate Edge AI Deployment
- AI Accelerator Modules
- Edge AI Inference Systems
- Edge AI Workstations

Edge AI Solutions

Edge Software

Design-In Services

Optimized Edge Management & Security
- EdgeSync 360 / DeviceOn+
- Edge AI SDK
- NVIDIA AI Enterprise
- Intel Geti AI Training Software
- Azure OpenAI
- IoT Security Solutions

Leading Edge Platform Innovations
- Modular Edge (X86/Arm)
- Compact & Tiny Edge (Arm)
- High Performance Edge (HPEC)
- Advanced Thermal Solutions
- Edge BMC Solutions

Edge Computing

intel · NVIDIA · AMD · NXP · MEDIATEK · arm · Qualcomm · HAILO · AXELERA · Microsoft · Trellix · CANONICAL · Acronis

Establishing a Value-Add Business Model

Advantech is committed to customizing its designs to meet the distinct requirements of various industries. This approach has bolstered Advantech's expertise in areas such as heat management, aesthetic design, and I/O integration. Through collaborations with leading global semiconductor manufacturers such as Intel, NVIDIA, Arm, NXP, AMD, Qualcomm, and MediaTek, Advantech has solidified its position in the field of edge computing. With integrated edge AI technology and deepening ties with Microsoft—a provider of global cloud platforms—and Azure Open AI, Advantech also offers Edge AI SDK, DeviceOn, and IoT Security for industry-specific needs, all of which contribute to the company's value-add business model.

Grabbing AIoT Emerging Business Opportunities

Drawing upon four decades of product innovation, Advantech is strategically positioning itself for the future. The company is aligning product innovation and marketing to address the specific needs of vertical industries, integrating 5G, AI, and cloud technologies into its new offerings. While maintaining a strong presence in established sectors such as medical and automation, Advantech is also expanding into emerging domains like green energy, EV infrastructure, robotics, and AMR. This initiative is aimed at accelerating the global deployment of AIoT applications.

Embedded Design-In Services

Bridging Technology for AIoT Opportunities

Advantech recognizes that customers face unique challenges in adopting emerging technologies into their solutions. We specialize in transforming a range of new technologies into diverse platforms and domain-focused solutions tailored to address the unique needs of our customers. Our comprehensive service model provides a one-stop solution for integrating embedded boards, systems, software, displays, and peripherals. This approach utilizes customer-centric design-in services to accelerate AI and IoT deployment. By collaborating with reliable and experienced embedded professionals, solution providers can anticipate a streamlined process, reducing the time and resources typically required for system integration.

Leading Embedded Technologies

Advantech, as a pioneer and leader in the embedded market, has continuously innovated in the development of embedded technologies from day one, ensuring that our customers have access to the most advanced solutions on the market. We provides full scale x86 and Arm-based computing platforms covering various form-factors from MicroATX, mini-ITX, 3.5" SBC, Pico-ITX, to COM-HPC , COM Express, Qseven, SAMRC, OSM (Open Standard Module) modules. Advantech continuously engages in research and development with association and partners to provide innovative form factors, such as COM-HPC by PICMG for high performance computing at edge and solder-on module, OSM by SGET with miniature embedded technology, ensuring future adaptability.

Multiple Peripheral Module Integration Services

Advantech provides a full range of modules for design-in services, including I/O extension, AI acceleration modules, SSD, memory, and wireless module solutions. With multiple peripheral modules and integration services, customers can rapidly implement their solutions.

AIoT Software, Distribution & Services

Harnessing substantial expertise in embedded and edge computing, Advantech features a dedicated global software solutions team. This team not only provides a range of services, covering Embedded BIOS, OS, software APIs, and utilities but also furnishes comprehensive solutions for AIoT device management, Edge AI, IoT security software and cloud services. By leveraging these seamlessly integrated hardware and software services, embedded developers can streamline design efforts, reduce project complexity, and expedite product development.

Edge AI Software

NVIDIA® NVIDIA AI Enterprise (NVAIE)

NVIDIA AI Enterprise (NVAIE)			
Overview	**End-to-End Software Platform & Enterprise Support for Production AI** NVIDIA AI Enterprise (NVAIE) is an end-to-end, cloud native software platform that accelerates the data science pipeline and streamlines development and deployment of production-grade AI applications, including generative AI, computer vision, speech AI, and more. Enterprises that run their businesses on AI rely on the security, support, and stability provided by NVIDIA AI Enterprise to improve productivity of AI teams, reduce total cost of AI infrastructure, and ensure a smooth transition from pilot to production.		
Benefits	• Improves productivity and lowers costs with accelerated computing. • Frees teams to build innovative AI solutions with enterprise-grade security, reliability, and support. • Is cloud-native and certified to run anywhere and on current and prior GPU generations. • Speeds time to production with AI workflows and pretrained models.		
Features	• Data Preparation: Speed data processing time up to 5X while reducing operational costs by 4X. • Model Training: Create custom, accurate models in hours, instead of months. • Optimized for Inference: Accelerate up to 8X LLM inference performance and up to 40X inference performance over CPU-only platforms. • Deploy at Scale: Simplify and optimize the deployment of AI models at scale and in production. • Enterprise Support: Access to NVIDIA AI experts with service-level agreements (SLAs).		
System Requirements	• NVIDIA-Certified Systems including servers, workstations, and edge systems. (https://www.nvidia.com/en-us/data-center/data-center-gpus/qualified-system-catalog/) • Ubuntu 20.04 LTS or 22.04 LTS (Server/Desktop editions)		
License Type w/ Support Services	Subscription, 1-year term	Subscription, 3-year term	Subscription, 5-year term	Perpetual License + 5-year support services
Support Options	Business Standard (Included)		Business Critical (Optional Upgrade/Add-on)	
	SLA: 9 x 5 Business Days		SLA: 24 x 7	
	• Services: Issue resolution, bug fixes, software updates, maintenance • Support Channels: Phone, portal, email			

intel® GeTi™ On-premises Computer Vision AI Training Software

Intel® Geti™			
Overview	Intel's new software platform enables the building of computer vision models in a fraction of the time and with less data. The platform eases laborious data labeling, model training, and optimization tasks across the AI model development process, empowering teams to produce custom AI models at scale.		
Features	• Smart Annotations: Expedite data annotation and easily segment images with professional drawing features like a pencil, polygon tool, ora OpenCV GrabCut. • Interactive Model Training: Get started annotating data with as little as 20-30 images; then let active learning help you teach the model as it learns. • Multiple Computer Vision Tasks: Create models for AI tasks including classification, object detection, semantic segmentation, or anomaly detection. • Task Chaining: Train your model into a multistep, smart application by chaining two or more tasks, without the need to write additional code. • Production-Ready Models: Output deep learning models in TensorFlow or PyTorch formats or as an optimized model for the OpenVINO™ toolkit to run on Intel® architecture CPUs, GPUs and VPUs. • REST APIs and SDK: REST APIs and the software development kit (SDK) enable users to push data directly into the platform and pull trained models directly into their deployment pipelines.		
System Requirements	**On-Premise HW Installation:** • CPU for workstations: Intel® Core™ i7, Intel® Core™ i9, or Intel® Xeon® scalable processors capable of running 20 concurrent threads (K3s) or 48 concurrent threads (K8s). • GPU: Min. one NVIDIA GPU with min. 16GB of memory (e.g. RTX 4080, RTX 3090, RTX 6000, RTX 8000, Tesla A100, Tesla V100, Tesla P100, or Tesla T4). • Memory: Min. 64GB RAM (128GB recommended) per GPU • Disk Space: Min. 1TB (2TB recommended) available space on the root partition • OS: Ubuntu 20.04 LTS or Ubuntu 22.04 LTS **Cloud Deployment:** • The Intel® Geti™ platform needs a static IP address to work and cloud providers offer different means to ensure that. • VM Type: g5.8xlarge (AWS), Standard_NC24s_v3 (Azure) • CPU for cloud deployment: CPUs capable of running min. 24 concurrent threads for K3s or min. 48 concurrent threads for K8s • Disk Space: Min. 500GB (1TB recommended) available space on the root partition • OS: Ubuntu 20.04 LTS or Ubuntu 22.04 LTS		
License Types	**Starter, Annual License:** • 1 Name User • 1 Instance • Recommended for POC • Basic Support Recommended HW ssold separately by Advantech: • ARK-7060, 20 CPU threads for K3S, 64GB RAM: RAM / 1TB SSD • 1 x RTX 4000 GPU with 16GB RAM • Built-in DeviceOn • Built-in Edge AI SDK	**Professional, Annual License:** • Team collaboration • 3 Named users for small teams • 2 Concurrent model trainings • 1 Instance • Recommended for small teams • Basic Support Recommended HW sold separately by Advantech: • ARK-510, 20 CPU threads for K3S, 64GB RAM: RAM / 1TB SSD • 2 x RTX 4000 GPU with 16GB RAM • Built-in DeviceOn • Built-in Edge AI SDK	**Professional, Annual License:** • Team collaboration • 3 Named users • Up to 4 medium-sized model trainings • 1 Instance • Recommended for medium-sized teams • Basic support	**30-day Free Trial Term License:** • Proof of value • Incur no cost for using the software and generating models • Enables unlimited usage

Embedded Single Board Computers

3.5" MI/O-Compact and 4" EPIC

NEW   **NEW**   **NEW**

Model Name			MIO-4370	MIO-5377	MIO-5376	MIO-5375
Form Factor			4" MIO SBC	3.5" MIO SBC	3.5" MIO SBC	3.5" SBC w/MIO Extension
Processor System	CPU		i9-14900T/i9-13900TE/i9-12900TE/i7-14700T/ i7-13700TE/i7-12700TE/i5-14500T/i5-13500TE/ i5-12500TE/i3-14100T/i3-13100TE/i3-12100TE	i7-1370PE/i7-1370PRE/i7-1365UE/i7-1365URE/ i7-1270PE/i7-1265UE/i5-1345UE/i5-1245UE/ i3-1315UE/i3-1215UE/U300E	AMD Ryzen R2314/ *2514	i7-1185GRE/ i7-1185G7E/ i5-1145G7E/ i3-1115G4E
	# of Cores		4 ~ 24	1P+4E ~ 6P+8E	4	4 ~ 8
	# of Threads		8 ~ 32	6 ~ 20	4 ~ 8	4 ~ 8
	Max. Turbo Frequency		4.0GHz ~ 5.5GHz	4.3GHz ~ 4.8GHz	3.5GHz ~ 3.7GHz	3.90GHz ~ 4.40GHz
	Base Frequency		1.0GHz ~ 2.1GHz	1.0GHz ~ 1.9GHz	2.1GHz	1.50GHz ~ 3.0GHz
	Last Level Cache (LLC)		12MB ~ 36MB	8MB ~ 24MB	4MB	4MB ~ 12MB
	CPU TDP (Watts)		35W	15W/ 28W	15W	15W/ 28W
	BIOS		AMI UEFI 256Mb	AMI UEFI 256Mb	AMI UEFI 256Mb	AMI EFI 256Mb
Memory	Technology		DDR5-4800 MHz	DDR5-4800 MHz	DDR4-2667MHz	DDR4-3200MHz
	Max. Capacity		32GB	64GB	32GB	64GB
	# of Channels		1	2	2	2
	# of Sockets		1	2	2	2
	ECC Support		Support by PCH SKU	Support by CPU SKU	-	Support by CPU SKU
Graphics	Chipset		Integrated GFx	Integrated GFx	Integrated GFx	Integrated GFx
	Controller		Intel® UHD Graphics 770/730	Intel Iris Xe Graphics/Intel® UHD Graphics for 13th Gen Intel®Processors	AMD Radeon RX Vega 8	Intel® UHD Graphics 630
	3D Accelerator		DX12, OGL4.5, OCL3.0	DX12.1, OGL4.6, OCL3.0	DX12, OGL	DX12.1, OGL4.6, OCL2.0
	VGA		-	-	-	-
	LFP	LVDS	-	48-bit, 1920 x 1200 @ 60Hz	48-bit, 1920 x 1200 @ 60Hz	48-bit, 1920 x 1200 @ 60Hz
		eDP	eDP1.4b 5120 x 3200@60Hz, 24bpp	-	-	Opt. eDP1.4 3840 x 2160@60Hz, 30bpp 4096 x 2304@60Hz, 24bpp
	HDMI1		HDMI1.2, 1920 x 1200@60Hz, 24bpp	HDMI 2.0b, up to 4096 x 2160 @60Hz, 24bpp	HDMI 2.0, 4096 x 2160@60Hz, 24bpp	HDMI1.4, 4096 x 2304@30Hz, 24bpp
	HDMI2		HDMI1.2, 1920 x 1200@60Hz, 24bpp	-	-	-
	DisplayPort 1		-	DP1.4a, up to 4096 x 2160@60Hz, 36bpp	DP1.4/ DP++, 4096 x 2160 x 36bpp@60Hz, 36bpp	HDMI2.0, 4096 x 2304@60Hz, 24bpp
	# of Display Pipelines (Multi-Display)		3	4	3	4
I/O	Ethernet	LAN1	i225	i219	i226	i219
		LAN2	i225	i226	i226	i210
		LAN3	-	-	i226	-
	SATA	# of Ports	-	1	1	1, option to M.2 M-Key
		Speed	-	Gen3 (6.0Gb/s)	Gen3 (6.0Gb/s)	Gen3 (6.0Gb/s)
	USB	Type-C	-	1x USB 4 (20 ~ 40 Gbps, USB 3.2, Display & PCIe) + 1x USB 3.2 (10 Gbps w/DP Alt. Mode)	-	1x USB 3.2 (10 Gbps w/DP Alt. Mode)
		USB 3.1	4 (10 Gbps)	4 (10 Gbps)	2 (10 Gbps)	4 (10 Gbps)
		USB 3.0	-	-	2 (Internal)	-
		USB 2.0	2 (Internal)	2 (Internal)	2 (Internal)	2 (Internal)
	UART	RS-232/ 422/485	2	2	2	2
		RS-232	-	2	2 (4-wire)	2 (4-wire)
	Serial Bus	I2C Bus	1	3	1	1
		SMBus	(I2C Opt. to Smbus)	(1x I2C Opt. to Smbus)	(I2C Opt. to Smbus)	(I2C Opt. to Smbus)
		CANBus	1	2	1	1
	Audio	CODEC	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S
	GPIO (DIO)		8-bit	8-bit	8-bit	8-bit
Storage	mSATA		-	-	-	-
	eMMC		-	-	-	-
Expansion	M.2 E-Key 2230		1 (PCIe x1, USB 2.0)	1 (PCIe x1, USB 2.0)	1 (PCIe x1, USB 2.0)	1 (PCIe x1, USB 2.0)
	M.2 B-Key 2242		-			
	M.2 B-Key 3042		Optional (PCIex1, USB 2.0) w/bracket	1 (PCIe x1, USB 2.0, SATA)	Optional (USB 3.2, USB 2.0, PCIe x1)	1 (USB 2.0)
	M.2 B-Key 3052		Optional (PCIex1, USB 2.0) w/bracket	Optional (PCIe x1, USB 2.0, SATA)	1 (USB3.2, USB 2.0, PCIe x1)	-
	M.2 M-Key 2242		-	-	-	-
	M.2 B-Key 2280		-	-	-	-
	M.2 M-Key 2280		2 (PCIe Gen.4 x4), 1x Opt. to B-Key	1 (PCIe Gen.4 x4)	1 (PCIe Gen.3 x4, SATA)	1 (PCIe Gen.4 x4, optional w/SATA)
	Mini-PCIe		-	-	-	-
Others	TPM		TPM 2.0 / fTPM by SKU	TPM 2.0	TPM 2.0	TPM 2.0
	Fan		1 x SMART Fan, 4-wire	1 x SMART Fan, 4-wire	1 x SMART Fan, 4-wire	1 x SMART Fan, 4-wire
	Watchdog Timer		65536 Levels, Minutes or Seconds	65536 Levels, Minutes or Seconds	65536 Levels, Minutes or Seconds	65536 Levels, Minutes or Seconds
Power	Power Type		AT, ATX	AT, ATX	AT, ATX	AT, ATX
	Power Supply Voltage		12V	12~24V	12V~24V	12V~24V
	Connector		ATX 2x2p 180D, Optional 90D	ATX 2x2p 90D, Optional 180D, DC-Jack	1x2p Pheonix connector	ATX 2x2p 90D, Optional 180D, DC-Jack
	Power Management		ACPI	ACPI	ACPI	ACPI
Thermal	Fan or Fanless		Active (Fan Base)	Active (Fan Base)/ Passive (Fan-less)	Active (Fan Base)/ Passive (Fan-less)	Active (Fan Base)/ Passive (Fan-less)
Environment	Operating Temperature (air flow 0.7 m/sec)		0 ~ 60°C	0 ~ 60°C; Extend: -40 ~ 85°C	0 ~ 60°C	0 ~ 60°C; Extend: -40 ~ 85°C
	Storage Temperature		-40~85°C	-40~85°C	-40~85°C	-40~85°C
	Relative Humidity (Operating)		40°C @ 95% RH Non-Condensing	40°C @ 95% RH Non-Condensing	40°C @ 95% RH Non-Condensing	40°C @ 95% RH Non-Condensing
	Relative Humidity (Storage)		-40 ~ 85°C and 60°C @ 95% RH Non-Condensing	-40 ~ 85°C and 60°C @ 95% RH Non-Condensing	-40 ~ 85°C and 60°C @ 95% RH Non-Condensing	-40 ~ 85°C and 60°C @ 95% RH Non-Condensing
Mechanical	Dimensions (W x H x D)		165 x 114 mm	146 x 102 mm	146 x 102 mm	146 x 102 mm
Certification	EMC		CE/FCC Class B	CE/FCC Class B	CE/FCC Class B	CE/FCC Class B

Note: "-" : means Not Applicable (N/A)

Arm-Based Computing Platforms

Computer-on-Modules

NEW   NEW   NEW

Model Name		ROM-5780	ROM-5820	ROM-5880	ROM-6881
Form Factor		SMARC V2.1	SMARC 2.1	SMARC 2.1	SMARC2.1
NPU		-	Neural Network accelerator	Integrated NPU 1 Tops	Up to 6.0 Tops
Compatible Careeier Board		ROM-DB5901-SWA2 SOM-DB2510-R0A1	SOM-DB2510-R0A1	SOM-DB2510-R0A1	SOM-DB2510-R0A1
Processor System	CPU	Rockchip Arm RK3399 Cortex-A72 1.8 GHz	NXP i.MX95 Cortex-A55 Six core (up to 2.0GHz)	RK3568 4 x Arm Cortex A55, Up to 2.0 GHz	Rockchip RK3588 Cortex-A76, A55 Octa-Core,up to 2.4 GHz
Memory	Technology	LPDDR4 3732 MT/s	LPDDR5 6400MT/s	LPDDR4 4266MT/s	LPDDR4 3733 MT/s
	Capacity	On-board LPDDR4 2 GB/4 GB	On-board 8GB LPDDR5	On-board LPDDR4 2/4 GB	On-board LPDDR4 4 GB
	Flash	16 GB/32 GB eMMC NAND Flash for O.S. and 8 MB SPI NOR Flash for board information	16GB eMMC NAND Flash	16/32 GB eMMC NAND Flash for O.S	32GB eMMC NAND Flash for OS and boot loader
Graphics	LVDS	1 x Single Channel 24-bits LVDS(Default) or 1 x Dual Channel 24-bits LVDS (Shared with eDP, by BOM Option)	1 x Dual channel LVDS	1 x LVDS (default)	1 x single channel LVDS (default) or 1 x dual channel LVDS, up to 1920 x 1200 (BOM option)
	MIPI-DSI	1 x 4-lane MIPI DSI, up to 1920 x 1080 at 60Hz (Shared with 4-lane MIPI-CSI, by S/W Configuration)	1 x 4 lane MIPI-DSI (Optional)	1 x 4 lane MIPI-DSI (Share LVDS port)	1 x MIPI-DSI (BOM option, shared with LVDS0)
	eDP	1 x eDP 1.3	-	1 x eDP1.3 up to 2560x1600@60Hz (Share with LVDS, by bom option)	1 x eDP
	HDMI	3840 x 2160@60Hz	-	1 x HDMI2.0, up to 3840 x 2160@60Hz	1 x HDMI2.1
	Parallel RGB	-	-	-	-
	VGA	-	-	-	-
	DP	-	-	-	1 x DP1.4
	Graphics Engine	Mali-T860MP4 GPU, supports OpenGL ES1.1/2.0/3.0, OpenCL1.2, DirectX 11.1	2D/3D Graphic Acceleration supporting2D/3D Graphic Acceleration supporting	3D Graphics Engine Mali-G52	Arm Mali-G610 MP4 GPU, h igh-performance OpenGL ES 1.1, 2.0 and 3.2, OpenCL 2.2, Vulkan 1.2, etc.
	H/W Video Codec	Decoder: H.265 (up to 4Kx2K@60fps), H.264, H.263, VC-1, VP9, VP8, MVC, MPEG-1/2/4 Encoder: H.264 up to HP@ level4.1, MVC and VP8	Decoder: H.264/ H.265, 4K@30fps Encoder: H.264/ H.265, 4K@30fps	Decoder: H.264 /H.265 /VP9 (4K@60fps) Encoder: H.264 /H.265 (2K@60fps)	Decoder: Decoder: H.265/ VP9 (8K@60fps), H.264 (8K@30fps), H.263,VC-1, VP8, MVC, AV1, MPEG-4/2/1 Encoder: H.264/ H.265 8K@30fps, parallel encoder for multichannel, lower resolution
Ethernet	Chipset	1 x Rockchip RK3399 Integrated RGMII	1 x NXP i.MX95 integrated USXGMII, 2 x NXP i.MX95 integrated RGMII	2 x YT8531	2 x Rockchip RK3588 Integrated RGMII
	Speed	10/100/1000 Mbps	1 x 10 GbE, 2 x 10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
RTC		Yes	Yes	Yes	Yes
WatchDog Timer		1~6553s, default 60s, power on/off 1s	Yes	HW watchdog by MCU	HW watchdog by MCU. 1~6527s, default 60s, power on/off 1s
TPM		TPM2.0 (ST33HTPH2E32AHC2) (BOM Option)	TPM 2.0	-	-
I/O	PCIe	1 x PCIe 2.0 x1	2 x PCIe 3.0	2 x PCIe 3.0 x1, 1 x PCIe 2.0 x1 (shared with SATA, by BOM option)	4 x PCIe 3.0, 1 lane
	SATA	1 x SATA II	-	1 x SATA3.0(default) (shared with PCIE2.0, by BOM option)	1 x SATA 3.0
	USB	2 x USB3.2 Gen1 by 1, 3 x USB 2.0 Host, 1 x USB 2.0 OTG	1 x USB3.2 Gen1 by 1, 4 x USB 2.0, 1 x USB 2.0 OTG	1 x USB 3.0, 2 x USB 2.0, 1 x USB 3.0 OTG	2 x USB 3.0 signal, 3 x USB 2.0, 1 x USB 2.0 OTG
	Audio	2 x I2S	2 x I2S	1 x I2S	1 x I2S
	SPDIF	-	-	-	-
	SDIO	1	1	1	1
	Serial Port	3 UART (2 x 2-wire, one share with debug console by jumper selection, 1 x 4-wire with H/W flow control)	2 x 4-wire UART 2 x 2-wire UART	2 x 4-wire UART 2 x 2-wire UART	1 x 2-wire UART for debugging 1 x 2-wire UART 2 x 4-wire UART
	SPI	1	2	1	2
	CAN	-	2 x CAN2.0	2 x CAN2.0	2 x CAN2.0
	GPIO	12	14	14	12
	I2C	5	5	5	5
	Camera Input	1 x 4-lane MIPI CSI-2 1 x 2-lane MIPI CSI-2	1 x 4-lane MIPI CSI	1 x 4-lane MIPI CSI	2 x MIPI CSI (1 x 2 lane, 1 x 4 lane) 2 x MIPI CSI by FCC CONN on board (4 lane)
	System Bus	-	-	-	-
	Touch	-	-	-	-
	Keypad	-	-	-	-
Power	Power Supply Voltage	4.75~5.25V	Fixed 5V DC source	4.75~5.25V	4.75 V ~ 5.25 V DC source
	Power Consumption	8.52W (Max)	TBD	4.57W	8.32W @ 5V (Max), 1.34W @ 5V (Idle)
Environment	Operational Temperature	0 ~ 60 °C/ -20 ~ 85 °C	0 ~ 60 °C/ -40 ~ 85 °C	0 ~ 60 °C/ -40 ~ 85 °C	0°C ~ 60°C / -40°C ~ 85°C
	Operating Humidity	5% ~ 95% Relative Humidity, non-condensing	5 ~ 95% relative humidity, non-condensing	5 ~ 95% relative humidity, non-condensing	5 ~ 95% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	82 x 50 mm	82 x 50 mm	82 x 50 mm	82 x 80 mm
Operating System		Debian Linux, Android	Yocto Linux	Linux Debian 10, Android 12	Linux, Debian 11, Android 13
Certifications		CE/FCC Class B	CE/FCC Class B	CE/UKCA/FCC Class B	CE/UKCA/FCC Class B

Note: "-" : means Not Applicable (N/A)
*LVDS & MIPI-DSI are shared interface
** Quad Core SKU support LVDS by default
** Dual/Core SKU support MIPI-DSI by default

Arm-Based Computing Platforms

UIO40-Express I/O Expansion Boards

UIO-4030

1 x RS-485
1 x RS-232
4 x DI & 4 x DO

Specifications

General

USB	–
RS-232	1 x 2-wire RS-232
RS-485	1 x RS-485
GPIO	4 x DI, 4 x DO(2.5~24V)
CAN Bus	–
GbE	–
Dimension	146 x 31 x 22 mm

Environment

Weight	180g
Operating Humidity	5% ~ 95% relative humidity, non-condensing
Operating Temperature	-40 ~ 85 °C
Storage Temperature	-40 ~ 85 °C and 60 °C @ 95% RH Non-Condensing

Ordering Information

P/N	Description
UIO-4030	UIO-4030, 1 x RS232, 4 x DI, 4 x DO, 1 x RS-485

UIO-4032

1 x GbE
2 x USB2.0
2 x RS-232

Specifications

General

USB	2 x USB 2.0
RS-232	2 x 2-wire RS-232
RS-485	–
GPIO	–
CAN Bus	–
GbE	1 x GbE
Dimension	146 x 31 x 22 mm

Environment

Weight	200g
Operating Humidity	5% ~ 95% relative humidity, non-condensing
Operating Temperature	-40 ~ 85 °C
Storage Temperature	-40 ~ 85 °C and 60 °C @ 95% RH Non-Condensing

Ordering Information

P/N	Description
UIO-4032	UIO-4032, 1 x GbE, 2 x USB, 2 x RS-232

UIO-4031

NEW

4 x RS-485
2 x RS-232
4 x DI & 4 x DO
2 x CAN FD

Specifications

General

USB	–
RS-232	2 x 2-wire non-isolated RS232
RS-485	4 x 2-wire non-isolated RS485
GPIO	4 x non-isolated DI and 4 x non-isolated DO
CAN Bus	2 x non-isolated CAN FD
GbE	–-
Dimension	146 x 31 x 22 mm

Environment

Weight	TBD
Operating Humidity	5% ~ 95% relative humidity, non-condensing
Operating Temperature	-40 ~ 85 °C
Storage Temperature	-40 ~ 85 °C

Ordering Information

P/N	Description
UIO-4031	UIO-4031, 2 x RS232, 4 x RS-485, 2 x CAN FD, 4 x DI, 4 x DO

UIO-4034

1 x CAN bus
2 x RS-232

Specifications

General

USB	–
RS-232	2 x 2-wire RS-232
RS-485	–
GPIO	–
CAN Bus	1 x CAN bus 2.0B, 1 Mbps
GbE	–
Dimension	146 x 31 x 22 mm

Environment

Weight	180g
Operating Humidity	5% ~ 95% relative humidity, non-condensing
Operating Temperature	-40 ~ 85 °C
Storage Temperature	-40 ~ 85 °C and 60 °C @ 95% RH Non-Condensing

Ordering Information

P/N	Description
UIO-4034	UIO-4034, 1 x CAN, 2 x RS-232

Compatible Main Boards

Part No.	Description
RSB-3430XD-PXA1E*	RSB-3430 NXP i.MX6 Series 2.5" UIO Main Board
RSB-3720XX-XCA1E*	RSB-3720 NXP i.MX8M Plus Series 2.5" UIO Main Board
RSB-3710XX-XXA1E*	RSB-3710 Rockchip RK3399 Series 2.5" UIO Main Board

*X indicates different configurations, please refer to each main board's datasheet for complete P/N to order.

Edge AI Solutions

Edge AI Inference Systems

Model	AIR-030	AIR-150	AIR-310
CPU/Platform	NVIDIA Jetson AGX Orin 32G/64G	13th Gen Intel® Core™ i3/i5 processor	14th Gen Intel® Core™ i3/i5/i7/i9 processor
AI Performance	up to 275 TOPS	Bundled with Hailo-8 AI module, up to 26 TOPS	Compatible with Intel Arc A370M/Quadro® A2000, up to 60W
Memory — Technology	LPDDR5	DDR5 5200 MHz	DDR5 5600MHz
Memory — Max. Capacity	32GB/64GB	Up to 64 GB	Up to 64 GB
Memory — Socket	on board	2x 262 pin SO-DIMM	2 x 262-pin SO-DIMM
Display	1 x HDMI 2.0, 3840 x 2160@60Hz	2x HDMI 2.0, 4096x2160@60Hz	1 x HDMI 2.0, 4096x2160@60Hz 1 x DP 1.4, 4096x2160@60Hz
Ethernet — Speed/Controller	3 x 2.5GbE, Intel I225-LM	1x GbE, Intel I219-LM 1 x 2.5 GbE, Intel I226-LM	1 x GbE, Intel I219-LM 2 x 2.5 GbE, Intel I226-LM
Ethernet — Wake on LAN	Yes (suspend only)	Yes	Yes
Ethernet — PoE	LAN1 & 2 optional, by adding MIOe-PSE	-	-
I/O Ports — USB 3.0 / USB 2.0	4 x USB 3.2 2 x USB 2.0 (internal)	3 x USB 3.2 1 x USB 2.0	4 x USB 3.2
I/O Ports — USB Type C	1	-	-
I/O Ports — OTG USB	1 x Micro USB (for system recovery only)	-	-
I/O Ports — COM	4 x RS232/422/485	2 x RS-232/422/485 1 x RS-485	2 x RS232/422/485
I/O Ports — DIO	16-bit	8-bit	16-bit
I/O Ports — CANBus	2	2	2
I/O Ports — Audio	Line-out	Line-out/Mic-in (switch)	Line-out/Mic-in (switch)
Storage — eMMC	64GB	-	-
Storage — 2.5" SATA	-	-	1
Storage — M.2	1 x M.2 B-Key 2280/3052 (PCIe x2, USB 3.0)	1 x M.2 M-Key 2280 (PCIe Gen4 x4, SATA)	1 x M.2 M-Key 2280 (PCIe Gen3 x4, SATA)
Storage — mSATA	-	-	-
Storage — SATA Slim		1 x SATA Slim	
Storage — SD Card	1 x SD 3.0 slot	-	-
Expansion — M.2	1 x M.2 E-Key 2230	1 x M.2 E-Key 2230 1 x M.2 B-Key 3042 (default w/ Hailo module)	1 x M.2 E-Key 2230
Expansion — PCI Express	1 x PCIe x16 (Optional, signal: PCIe x 8)	-	-
Expansion — SIM Socket	1	-	-
Expansion — GPU Card	-	-	1 x MXM3.1 Type A up to 60W
Expansion — MIPI	2	-	-
Others — Trusted Platform Module	on-board TPM 2.0	on-board TPM 2.0	on-board TPM 2.0
Others — IPMI	-	-	-
Power — Power Input	9-36V	12-24V	12-24V
Power — Power Type	ATX/AT mode, ATX default	ATX/AT mode, ATX default	ATX/AT mode, ATX default
Operating System	Built-in Linux Ubuntu 20.04 (JetPack 5.1.2)	Windows 11/10 IoT/Ubuntu 22.04	Windows 11/10 IoT/Ubuntu 22.04
Operating temp. (with 0.7 m/s air flow)	-10~60°C (MODE_50W)	-20~60°C	0~55°C (w/o MXM GPU) 0~50°C (w/ MXM GPU)
Weight (kg)	3.63	1.3	2.4
Dimensions (W x H x D)	200 x 220 x 74 mm	156 x 112 x 60 mm	215 x 220 x 55 mm

Note: "-" : means Not Applicable (N/A)

Industrial Display Solutions

IDK-1000 Indoor LCD Kits

	IDK-1105	IDK-1106	IDK-1107W		IDK-1110W		IDK-1110	
Size	5.7"	6.5"	7"		10.1"		10.4"	
Resolution	640 x 480, VGA	640 x 480, VGA	800 x 480, WVGA	1024 x 600, WVGA	1024 x 600, WSVGA	1280 x 800, WXGA	800 x 600, SVGA	1024 x 768, XGA
Brightness (cd/m²)	500	800	500	500	500	500	400	500
Viewing Angle (H/V°)	140/100	160/140	178/178	178/178	140/120	170/170	160/130	176/176
Contrast Ratio	250:1	600:1	800:1	800:1	500:1	800:1	700:1	1000:1
Touchscreen	4-Wire Resistive	4-Wire Resistive	5-Wire Resistive and P-cap	P-cap	4-Wire Resistive	P-cap	4-Wire Resistive	4-Wire Resistive and P-cap
Signal Interface	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS
Backlight Life (hrs)	30,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Durability (touches)	1 million	1 million	1 million	No limit	1 million	No limit	1 million	1 million
Operating Temperature	-20 ~ 70°C	-10 ~ 60°C	-5 ~ 60°C	-20 ~ 70°C	-5 ~ 60°C	-20 ~ 65°C	-10 ~ 60°C	-10 ~ 60°C

	IDK-1112	IDK-1115	IDK-1115WP	IDK-1121W	
Size	12.1"	15"	15.6"	21.5"	
Resolution	1024 x 768, XGA	1024 x 768, XGA	1920 x 1080, FHD	1920 x 1080, FHD	1920 x 1080, FHD
Brightness (cd/m²)	500	500	450	300	250
Viewing Angle (H/V°)	178/178	178/178	170/170	178/178	178/178
Contrast Ratio	1000:1	2500:1	800:1	5000:1	1000:1
Touchscreen	5-Wire Resistive and P-cap	5-Wire Resistive and P-cap	P-cap	5-Wire Resistive	P-cap
Signal Interface	LVDS	LVDS	2 Channel LVDS	2 Channel LVDS	2 Channel LVDS
Backlight Life (hrs)	30,000	70,000	50,000	50,000	30,000
Durability (touches)	10 / No limit	10 / No limit	No limit	10 million	No limit
Operating Temperature	-20 ~ 70°C	-20 ~ 70°C	-20 ~ 70°C	0 ~ 60°C	0 ~ 50°C

IDK-2000 Outdoor LCD Kits

	IDK-2107	IDK-2108	IDK-2110W	IDK-2110		IDK-2115	IDK-2115W	IDK-2121W
Size	7"	8.4"	10.1"	10.4"		15"	15.6"	21.5"
Resolution	1024x600 WSVGA	800 x 600 SVGA	1280x800 WXGA	800 x 600 SVGA	1024 x 768 XGA	1024 x 768 XGA	1920 x 1080 FHD	1920 x 1080 FHD
Brightness (cd/m²)	1000	1200	1500	1200	1000	1200	1200	1200
Viewing Angle (H/V°)	170/170	160/140	170/170	160/130	176/176	178/178	170/170	178/178
Contrast Ratio	800:1	600:1	800:1	500:1	1000:1	2500:1	800:1	5000:1
Touchscreen	P-CAP	4-Wire Resistive	P-CAP	4-Wire Resistive	P-CAP	5-Wire Resistive	PCAP	P-CAP
Signal Interface	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	2 Channel LVDS	2 Channel LVDS
Backlight Life (hrs)	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Durability (touches)	No limit	1 million	No limit	1 million	No limit	10 million	No limit	No limit
Operating Temperature	-20 ~ 70°C	-20 ~ 70°C	-20 ~ 70°C	-10 ~ 60°C	-20 ~ 70°C	-20 ~ 70°C	0 ~ 55°C	0 ~ 60°C

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