

Embedded Systems

Our Durable Embedded Systems for Your Industrial-grade Applications



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We utilize the latest computer technology to develop true industrial computers, providing high reliability, good scalability, and long product life cycle support. Our system family is able to satisfy a variety of intelligent solutions such as: IoT, Industry 4.0, transportation, digital healthcare, and smart energy.



Embedded Systems Overview

Ultra Compact Fanless PC



EC90A-GH



EC90A-AL

11th Gen Intel® Core™ Processor	P7
EC70A-TGU	
7th/6th Gen Intel® Core™ Processor	P7-9, P16
EC70A-KU, EC70A-SU, EC70B-SU, EB100-KU	
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Intel® Atom® Processors X Series	P11
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Intel Atom® Processor E3900	P10, P13, P15
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NXP i.MX 8M Mini	P14
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Embedded Fanless PC



EC543-CS

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Intel Atom® Processor E3800	P23-24
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AI Inference/Training System



EC100-XXN

NVIDIA® Jetson Xavier™ NX	P27
EC100-XXN, EC102-XXN	
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6th Gen Intel® Core™ Processor	P30
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RM840-PR810	

Mini-ITX/ATX System & Chassis



ST102-CS

12th/10th Gen Intel® Core™ / Intel Atom® X Series Processor	P33
WM120-CMS, WM343-CMS, WM120-EHL, WM343-ADS	
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Application-Specific System



VC900-M8M

10th/9th/8th Gen Intel® Core™ Processor	P42-44
RC300-CS, VC300-CS, VC500-CMS, VC500-CMS-MXM	
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Intel Atom® Processor E3800/E3900	P45
VC230-AL, VC230-BT, ECX700-AL	
NXP i.MX8M	P46
VC900-M8M	

Rugged Design

- Industrial-rated components with high MTBF over 100,000 hours
- Extended operating temperatures
- High ESD protection for I/O ports
- Comprehensive signal integrity measurement
- Wide range power design
- 100% Japan-made solid capacitor
- Power hot plug protection for DC-in type SBC and Industrial Motherboards



Software Support

- Embedded BIOS and OS customization services
- Ubuntu IoT Hardware Certification Partner Program
- Multiple Android, Linux distribution support
- DFI developing embedded API
(Hardware monitor, SMBus, I²C, Brightness Control, GPIO, Watchdog)
- Remote management utility (DFI RemoGuard with Innoage SSD)

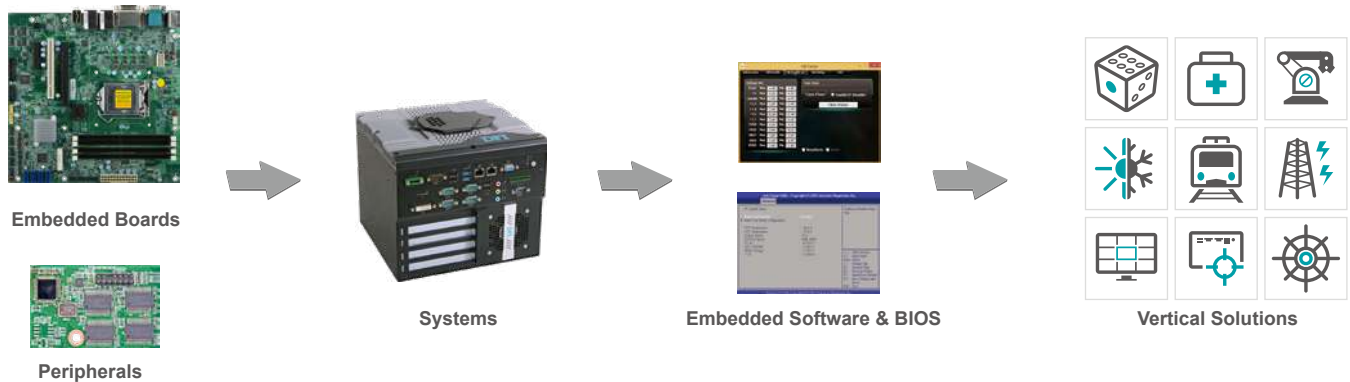


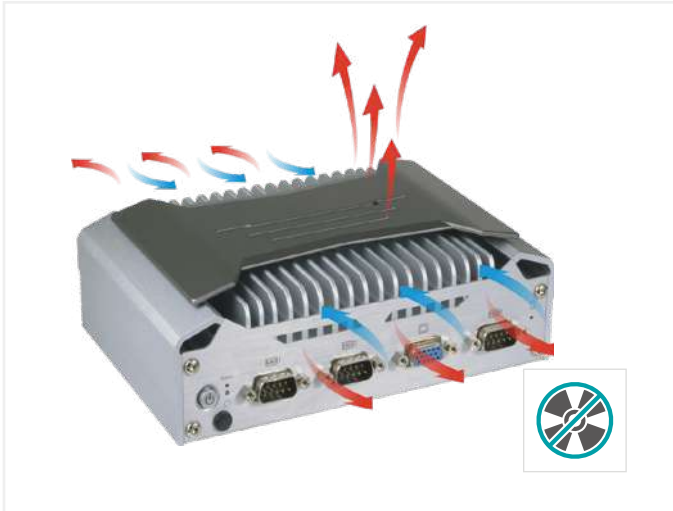
Embedded Total Solution

- Express customization service: 30 days (NRE cost: based on project)
- Strict revision control
- Long product life cycle support
- High volume OEM/ODM production capabilities



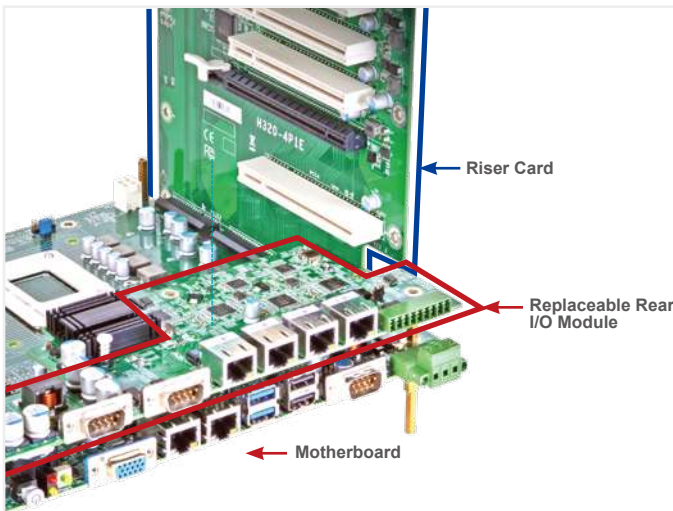
We Provide a Total Solution Designed for Your Embedded Applications





Small and Lightweight, but Powerful

- Equipped with up to date Intel® Core™ and AMD Ryzen™ Processors with reliable memory design
- Optimized low profile thermal solution to improve system durability and reliability
- With ruggedized construction, the system survives a wide operating temperature range
- Various types of compact designed system, smallest dimension up to 110 x 80mm x 60mm (W x H x D)



Ultra-Flexible and Time-Effective Design

- Innovative modular concept designed to meet OEM requirements
- Replaceable I/O modules to provide I/O variations targeting industrial automation applications
- Multiple expansion configuration via different riser cards to offer flexibility to satisfy dedicated demands



Various Form-Factor Configurable Systems

- Full range of standard industrial motherboards like Mini-ITX, ATX, microATX
- Multiple rack-mount, wall-mount chassis Options
- Designed for fast and easy implementation with minimal setup in a cost-effective manner
- Provides the configurable Options with well-integrated hardware and software to boost applications

Ultra Compact Fanless PC

Low Power & Compact Solutions



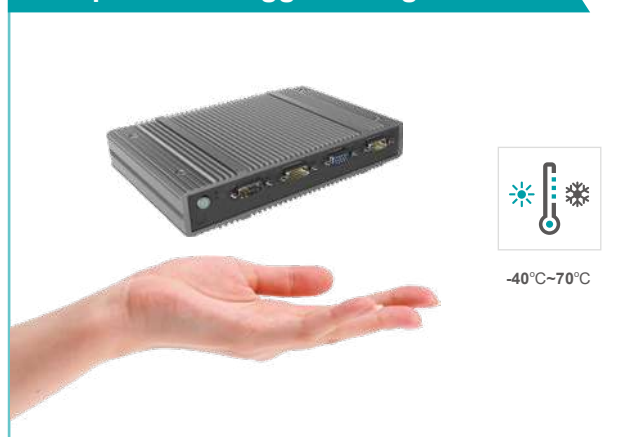
Features

Our industrial compact embedded systems, powered by 11th/7th/6th Gen Intel® Core™ ULV processors and/or Intel Atom® processors, deliver extremely low power consumption for efficient fanless thermal solution in an ultra-small size. The systems are also equipped with extensive I/O interfaces and have efficient wireless connectivity to the cloud. Fanless & Compact Embedded Systems are ideal for a wide range of industrial applications such as factory automation, IoT gateways, and smart healthcare.

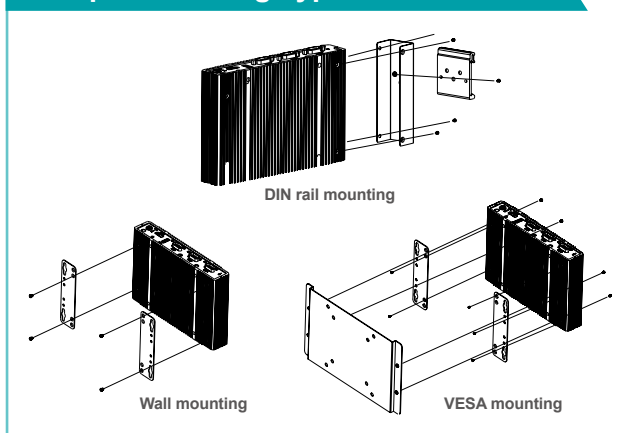
Excellent Thermal Dissipation Design



Compact and Rugged Design



Multiple Mounting Type



Rich Wireless Connectivity



11th/7th/6th Gen Intel Core Processor



Model Name		EC70A-TGU	EC70A-SU
Platform		ULT	ULT
System	Processor	11th Intel® Core™ Gen Processor	7th/6th Gen Intel® Core™ U Processor
	Socket	FCBGA1449	BGA 1356
	Max. Speed	1.1~3.0GHz	2.3~2.6GHz
	CPU TDP	15W	15W
	Cache	4/6/8/12M	3/4M
	Chipset	-	-
	BIOS	AMI SPI 256Mbit	Insyde SPI 128Mbit
Memory	Technology	Dual Channel DDR4	Dual Channel DDR4 2133MHz
	Max. Capacity	40GB(8GB memory onboard + 32GB memory DIMM)	4/8GB
	Socket	Memory Onboard, 1 SODIMM	Memory Onboard
Storage		1 M.2 2280 (PCIe x4)	1x 2.5" SATA 3.0 Drive Bay, 1 mSATA-mini (via half mPCIe)
Expansion	PCIe, PCI	-	-
	Mini PCIe, M.2	1 M.2 3042/3052 B (USB 3.2), 1 M.2 2230 E (PCIe/USB2.0), 1 M.2 2280 M (PCIe x4)	1 full mPCIe, 1 half mPCIe
Audio	Audio Codec	Realtek ALC888	Realtek ALC888
Ethernet	Controller	(SKU1) 1 Intel® I225IT, 1 Intel® I210IT (SKU2) 1 Intel® I225IT, 2 Intel® I210IT (SKU3) 1 Intel® I225IT, 2 Intel® I210IT, 1 Microchip LAN7500i	1 Intel® I210, 1 Intel® I219
LED	Indicators	Power, HDD LED	Power, HDD LED
I/O	Ethernet (GbE)	(SKU1) 1 x 2.5GbE + 1 x 1GbE (SKU2) 1 x 2.5GbE + 2 x 1GbE (SKU3) 1 x 2.5GbE + 3 x 1GbE	2 x 1GbE
	Serial	2 RS-232/422/485, 2 RS-232	2 RS-232/422/485, 2 RS-232
	USB	(SKU1) 4 x USB 3.2 Gen2(10Gbps) + 2 x USB 3.2 Gen1(5Gbps) (SKU2) 2 x USB 3.2 Gen2(10Gbps) + 2 x USB 3.2 Gen1(5Gbps) (SKU3) 2 x USB 3.2 Gen2(10Gbps)	4 USB 3.2
	Display	1 VGA, 2 HDMI	1 VGA, 1 HDMI/DP (DP upon request)
	DIO	8-bit DIO via DB-9 port (share with COM3)	8-bit DIO via DB-9 port
	Buttons	Power, Reset Button	Power, Reset Button
	Wi-Fi Antenna	6 Holes	3 Holes
	Audio	--	Mic-in, Line-out
Power		9~36V DC-in	15~36V DC-in
Cooling		Fanless	Fanless
OS Support		Win 10	Win7, WES 7, Win8.1, WE8S, Win10
Mechanism	Construction	Metal + Aluminum	Aluminum + Metal Aluminum
	Mounting	Wall/VESA/DIN Rail Mount	Wall/VESA/Din Rail Mount
	Dimensions	181.6 x 57 x 118.4mm (W x H x D)	181.6 x 57 x 118.4mm (W x H x D)
Environment	Operating Temp.	-20°C~60°C	-20°C~60°C

7th/6th Gen Intel Core Processor



Model Name		EC70A-KU
Platform		ULT
System	Processor	7th Gen Intel® Core™ U Processor
	Socket	BGA 1356
	Max. Speed	2.4~3.9GHz
	CPU TDP	15W
	Cache	3/4M
	Chipset	-
	BIOS	Insyde SPI 128Mbit
Memory	Technology	Dual Channel DDR4 2133MHz
	Max. Capacity	4/8GB
	Socket	Memory Onboard
Storage		1x 2.5" SATA 3.0 Drive Bay, 1 mSATA-mini (via half mPCIe), 1 M.2 SSD (via 2280)
Expansion	PCIe, PCI	-
	Mini PCIe, M.2	1 full mPCIe, 1 half mPCIe, 1 M.2 2280 (SATA)
Audio	Audio Codec	Realtek ALC888
Ethernet	Controller	1 Intel® I210, 1 Intel® I219
LED	Indicators	Status, HDD LED
I/O	Ethernet (GbE)	2 x 1GbE
	Serial	2 RS-232/422/485, 4 RS-232
	USB	4 USB 3.2, 4 USB 2.0
	Display	1 VGA, 1 HDMI/DP (auto detection), 1 HDMI
	DIO	8-bit DIO via DB-9 port
	Buttons	Power, Reset Button
	Wi-Fi Antenna	3 Holes
	Audio	Mic-in, Line-out
Power		15~36V DC-in
Cooling		Fanless
OS Support		Win10, Win10 IoT Enterprise
Mechanism	Construction	Aluminum + Metal Aluminum
	Mounting	Wall/VESA Mount
	Dimensions	181.6 x 67 x 118.4mm (W x H x D)
Environment	Operating Temp.	-20°C~60°C

7th/6th Gen Intel Core Processor



Model Name		EC70B-SU
Platform		ULT
System	Processor	7th/6th Gen Intel® Core™ U Processor
	Socket	BGA 1356
	Max. Speed	2.3~2.6GHz
	CPU TDP	15W
	Cache	3/4M
	Chipset	-
	BIOS	Insyde SPI 128Mbit
Memory	Technology	Dual Channel DDR4 2133MHz
	Max. Capacity	4/8GB
	Socket	Memory Onboard
Storage		1 mSATA-mini (via half mPCIe), 1 M.2 SSD (via 2280)/CFast Slot (CFast slot upon request)
Expansion	PCIe, PCI	-
	Mini PCIe, M.2	1 full mPCIe, 1 half mPCIe 1 M.2 2280 (SATA)
Audio	Audio Codec	Realtek ALC888
Ethernet	Controller	1 Intel® I210, 1 Intel® I219, 2 Intel® I210 for PoE
LED	Indicators	Power, HDD LED
I/O	Ethernet (GbE)	2 x 1GbE + 2 x PoE
	Serial	2 RS-232/422/485, 4 RS-232
	USB	6 USB 3.2
	Display	1 VGA/DP (DP upon request), 1 HDMI/DP (DP upon request)
	DIO	8-bit DIO via DB-9 port
	Buttons	Power, Reset Button
	Wi-Fi Antenna	3 Holes
	Audio	Mic-in, Line-out
Power		15~36V DC-in
Cooling		Fanless
OS Support		Win7, WES 7, Win8.1, WE8S, Win10
Mechanism	Construction	Aluminum + Metal Aluminum
	Mounting	Wall/VESA/Din Rail Mount
	Dimensions	184 x 82 x 118.4mm (W x H x D)
Environment	Operating Temp.	-20°C~60°C



Model Name		EC90A-GH	EC90A-AL
Platform		AMD	Atom
System	Processor	AMD® Ryzen™ R1000 Embedded Processors	Intel Atom® Processor E3900
	Socket	BGA type	BGA 1296
	Max. Speed	2.6~3.5GHz	1.3~1.8GHz
	CPU TDP	up to 12W	6.5/9W
	Cache	1M	2M
	Chipset	-	Insyde SPI 128Mbit
	BIOS	AMI SPI 64bit	Dual Channel LPDDR4 2400MHz
Memory	Technology	Single DDR4 2400MHz	2/4GB
	Max. Capacity	up to 8GB	Memory Onboard
	Socket	Memory onboard	16GB/32GB/64GB eMMC
Storage		eMMC up to 16/32/64/128GB	1 full mPCIe socket
Expansion	PCIe, PCI	-	-
	Mini PCIe, M.2	1 mPCIe (PCIe signal)	-
	SIM, micro SD	-	2 Intel® I210
Audio	Audio Codec	-	Power, HDD LED
Ethernet	Controller	1 x Intel® I211 or 1 x Intel® I210(Optional)	2
LED	Indicators	Power status	1 RS-232/422/485
I/O	Ethernet (GbE)	1	1 USB 2.0, 2 USB 3.2
	Serial	2 RS232 (Optional, via extended module)	1 Mini-DP
	USB	1 USB 3.2 Gen2 type C	8-bit DIO via DB-9 port
	Display	2 Micro HDMI 1.4	Power, Reset Button
	DIO	8-bit DIO	2 Holes
	SMBus	1 SMBus	-
	Buttons	Power, Reset Button	12V DC-in
	Wi-Fi Antenna	2 Holes (LTE or WiFi , Optional, via module)	Fanless
	Audio	-	Windows 10 IoT, Linux, Linux Yocto
Power		12V DC-in	Sheet Metal
Cooling		Fanless	Wall/Din Rail Mount
OS Support		Windows 10 IoT Enterprise 64-bit, Linux	127 x 42 x 80.4mm (W x H x D)
Mechanism	Construction	Aluminum + Metal	-20°C~60°C
	Mounting	Wall Mount	Wall/VESA Mount
	Dimensions	110 x 80mm x 60mm (W x H x D)	115 x 48.7 x 111mm (W x H x D)
Environment	Operating Temp.	-20°C to 45°C	-20°C~40°C



Model Name		ED700-EHL
Platform		Desktop
System	Processor	Intel® Atom® Processors X Series
	Socket	BGA 1493
	Max. Speed	1GHz~3GHz
	CPU TDP	4.5/6/6.5/6.6/9/10/12W
	Cache	-
	Chipset	-
	BIOS	AMI SPI 256Mbit (supports UEFI boot only)
Memory	Technology	Dual Channel DDR4 3200MHz
	Max. Capacity	The system supports a combined maximum memory size of 8GB total
	Socket	2GB/4GB/8GB Memory onboard + one 204-pin SO-DIMM
Storage		Internal: 1 x M.2 2280 (SATA/PCIe x4) eMMC:eMMC 16GB/32GB/64GB 1 x M.2 2230 (USB/PCIe) 1 x M.2 3042/3052 (USB 3.2/PCIe) with dual SIM
Expansion		
Audio	Audio Codec	ALC262
Ethernet	Controller	3 x Intel® Ethernet Controller I210/I211 GigE LAN 1 x Intel® Ethernet Network Connection i225 supports 2.5GigE LAN
LED	Indicators	1 x Power LED 1 x HDD LED, 1 x WiFi LED, 1 x 4G/5G LED, 4 x COM LED, 12 x DIO LED (isolated port)
I/O	Ethernet (GbE)	3 x GbE RJ45 (among 1 is co-lay with 2 x USB 3.2) 1 x 2.5GbE TSN RJ45, 1 x Intel OOB or Remoguard SSD
	Serial	4 x RS232
	USB	Bottom: 2 x USB 2.0 (by request) Front: 4 x USB 3.2 (among 2 is co-lay with GbE LAN)
	Display	1 x VGA
	DIO	12-bit isolated DIO 8-bit DIO (jumper switch to COM)
	Buttons	-
	Wi-Fi Antenna	Top: 4 x antenna opening for 4G/5G/GPS Front: 2 x antenna opening for WiFi
	Audio	-
Power		Type: Wide range 9~36V RTC Battery: RTC battery CR2032, Connector: 2-pole terminal block 2-pin
Cooling		Fanless
OS Support		Windows 10 IoT Enterprise 64 Bit Ubuntu 20.04
Mechanism	Construction	Aluminum + Metal
	Mounting	DIN rail mount
	Dimensions	--
Environment	Operating Temp.	-20 to 60°C -40 to 70°C



Model Name		EC700-BT	EC700-BT3054	EC700-BT6051/6061
Platform		Atom		
System	Processor	Intel Atom® Processor E3800		
	Socket	BGA 1170		
	Max. Speed	1.33~2.41GHz	1.91~2.41GHz	
	CPU TDP	4.3/6/10W	10W	
	Cache	1/2M	2M	
	Chipset	-	-	-
	BIOS	AMI SPI 64Mbit		
Memory	Technology	Single Channel DDR3L 1066/1333MHz		Single Channel DDR3L1333MHz
	Max. Capacity	2/4GB		4GB
	Socket	ECC/non-ECC Memory Onboard	Memory Onboard	ECC/non-ECC Memory Onboard
Storage		1x 2.5" SATA 2.0 Drive Bay, 1 mSATA (via full mPCIe socket), eMMC Onboard (Opt.), microSD (Opt.)	1x 2.5" SATA 2.0 Drive Bay, 1 mSATA (via full mPCIe socket), eMMC Onboard (Opt.), microSD	1 x 2.5" SATA 2.0 Drive Bay 4GB/8GB/16GB/32GB eMMC Onboard (Opt.)
Expansion	PCIe, PCI	-	-	-
	Mini PCIe, M.2	2 full mPCIe, 1 half mPCIe	2 full mPCIe	1 Full mPCIe (PCIe/USB/3G/GPRS) 1 Full mPCIe (SATA) 1 Half mPCIe (PCIe/USB/LPC)
	SIM	-	-	1
Ethernet	Controller	2 Intel® I210	4 Intel® I210	2 Intel® I210
LED	Indicators	Status, HDD LED		
I/O	Ethernet (GbE)	2	4	2
	Serial	4 RS-232/422/485	3 RS-232/422/485	4 RS-232/422/485, 2 RS-232
	USB	4 USB 2.0, 1 USB 3.2	4 USB 2.0, 1 USB 3.2	1 USB 3.2, 4/5 USB 2.0
	Display	1 HDMI + 1 VGA or 1 DVI-I	1 VGA or 1 DVI-I	1 VGA + 1 HDMI
	DIO	8-bit DIO via DB-9 port		
	Buttons	Power, Reset Button		
	Wi-Fi Antenna	3 Holes		
Power		9~36V DC-in		
Cooling		Fanless		
OS Support		Win7, WES 7, Win8, WE8S, Win8.1, Win10	Win7, WES 7, Win8.1, WE8S, Win10, Linux	Win7, WES7, Win8.1, WE8S, Win10
Mechanism	Construction	Aluminum + Metal Aluminum		
	Mounting	Wall/VESA/Din Rail Mount		Wall/VESA mount
	Dimensions	180 x 33 x 121.2mm (W x H x D)		180 x 46.7 x 121.2mm (W x H x D)
Environment	Operating Temp.	E3845/E3825: -20°C~60°C (SSD/mSATA), 0°C~50°C (HDD) J1900/N2807: 0°C~60°C (SSD/mSATA), 0°C~50°C (HDD)		E3845: -20°C~60°C (SSD/mSATA), J1900: 0°C~60°C (SSD/mSATA) HDD: 0°C~50°C



Model Name		EC700-AL
Platform		Atom
System	Processor	Intel Atom® Processor E3900
	Socket	BGA 1296
	Max. Speed	1.1~2.5GHz
	CPU TDP	6/9/10/12W
	Cache	2M
	BIOS	AMI SPI 128Mbit
Memory	Technology	Dual Channel DDR3L 1866MHz
	Max. Capacity	2/4/8GB
	Socket	Memory Onboard, 1 SODIMM
Storage		EMMC Supports (Optional), 1x 2.5" SATA 3.0 SSD, 1 mSATA (via full mPCIe)
	Mini PCIe, M.2	2 full mPCIe, 1 M.2 2230 (PCIe/USB 2.0)
	SIM, microSD	1 micro-SIM
Audio	Audio Codec	Realtek ALC262
Ethernet	Controller	2/3/4 Intel® I210
LED	Indicators	Power, Status LED
I/O	Ethernet (GbE)	2/3/4
	Serial	4 RS-232/422/485
	USB	2/4 USB 3.2
	Display	1 DP/VGA, 1 DP/HDMI combo (auto detect)
	DIO	8-bit DIO (available upon request)
	Buttons	Power, Reset Button
	Wi-Fi Antenna	3 Holes
	Audio	(Optional) cable from on board pin header
Power		9~36V DC-in
Cooling		Fanless
OS Support		Win10 IoT Enterprise, Win7, Linux
Mechanism	Construction	Aluminum + Metal
	Mounting	Wall/VESA/Din Rail Mount
	Dimensions	180 x 33 x 121.2mm (W x H x D)
Environment	Operating Temp.	-20°C~60°C, E3930: -40°C~70°C



Model Name		EC900-8MM	EC910-8MM	EC900-FS6
Platform		ARM		ARM
System	Processor	i.MX Mini applications processors		NXP i.MX6 Series Processor
	Socket	BGA type		21x21 BGA
	Max. Speed	1.6/1.8Ghz		1.0GHz
	CPU TDP	-		-
	Cache	-		-
	Chipset	-		-
	BIOS	-		-
Memory	Technology	LPDDR4 die size		Single Channel DDR3L 1600MHz
	Max. Capacity	Default 1GB up to 8GB		1/2/4GB
	Socket	Memory Onboard		Memory Onboard
Storage		eMMC 8GB/16GB MLC (up to 64GB) Micro-SD Card Socket		4MB NOR Flash, 8GB/16GB eMMC
Expansion		1 x M.2, E key 2230, 1 x M.2, B key 3042/2242, 1 x Nano SIM slot		1 half mPCIe socket, 1 micro SD
Audio	Audio Codec	-		-
Ethernet	Controller	-		-
LED	Indicators	Status LED		Status LED
I/O	Ethernet (GbE)	2 GbE		2 GbE
	Serial	1 RS-485, 1 RS-422	1 RS-485, 1 RS-422, 2 RS232	External: 1 RS-485, 1 RS-422, 1 UART
	USB	2 x USB 2.0		External: 2 USB 2.0 Internal: 1 USB 2.0, 1 OTG USB
	Display	1 HDMI		1 HDMI
	DIO	4-bit DIO		4-bit DIO
	Buttons	1 x Power reset button		-
	Wi-Fi Antenna	2 Holes	5 Holes	2 Holes
	Audio	-		-
Power		9~36V DC-in		9~36V DC-in
Cooling		Fanless		Fanless
OS Support		Yocto 3.3, Kernel 5.10.72 Debian 11, Kernel 5.10.72 no x-window		Yocto, Android
Mechanism	Construction	Sheet Metal		Sheet Metal
	Mounting	Din-rail Mount		Din Rail Mount
	Dimensions	145 x 34 x 96mm (W x H x D)	145 x 40 x 96mm (W x H x D)	145 x 34 x 96.4mm (W x H x D)
Environment	Operating Temp.		-20°C~60°C (standard), -40°C~70°C (wide-temp)	-20°C~60°C (standard), -40°C~70°C (wide-temp)



Model Name		EC800-AL
Platform		Atom
System	Processor	Intel Atom® Processor E3900
	Socket	BGA 1296
	Max. Speed	1.1~2.5GHz
	CPU TDP	6/9/12W
	Cache	2M
	BIOS	Insyde SPI 128Mbit
Memory	Technology	Dual Channel LPDDR4 2400MHz
	Max. Capacity	2/4/8GB
	Socket	Memory Onboard
Storage		1 mSATA (via full mPCIe socket), 1 M.2 SSD (via 2242)
Expansion		1 full mPCIe, 1 M.2 2230 (PCIe/USB), 1 M.2 2242 (SATA/PCIe x2)
Audio	Audio Codec	Realtek ALC262
Ethernet	Controller	2 Intel® I210
LED	Indicators	Power, HDD LED
I/O	Ethernet (GbE)	2
	Serial	2 RS-232/422/485
	USB	2 USB 2.0, 2 USB 3.2
	Display	1 VGA/DVI-D, 2 Mini-DP/Micro-HDMI
	DIO	8-bit DIO via DB-9 port
	Buttons	Power Button
	Wi-Fi Antenna	2 Holes
	Audio	Line-out, Mic-in
Power		9~36V DC-in
Cooling		Fanless
OS Support		Windows 10 IoT, Linux, Linux Yocto
Mechanism	Construction	Aluminum
	Mounting	Wall/VESA/Din Rail Mount
	Dimensions	161 x 35.1 x 108.2mm (W x H x D)
Environment	Operating Temp.	E3950/N4200: -20°C~60°C, -40°C~60°C (Opt.), E3940/E3930: -20°C~60°C, -40°C~70°C (Opt.)



Model Name		EB100-KU
Platform		ULT
System	Processor	7th/6th Gen Intel® Core™ U Processor
	Socket	BGA 1356
	Max. Speed	2.3~3.9GHz
	CPU TDP	15W
	Cache	3/4M
	Chipset	-
	BIOS	Insyde SPI 128Mbit
Memory	Technology	Dual Channel DDR4 1866/2133MHz
	Max. Capacity	32GB
	Socket	2 SODIMM
Storage		1 x 2.5" SATA 3.0 Drive Bay, 1 M.2 SSD (via 2280)
Expansion	PCIe, PCI	-
	Mini PCIe, M.2	1 half mPCIe, 1 M.2 2280 (PCIe x4/SATA)
	SIM, micro SD	-
Audio	Audio Codec	-
Ethernet	Controller	1 Intel® I210, 1 Intel® I219
LED	Indicators	Power, Storage LED
I/O	Ethernet (GbE)	2
	Serial	-
	USB	4 USB 3.2, 2 USB 2.0
	Display	2 HDMI
	DIO	-
	SMBus	-
	Buttons	Power, Reset Button
	Wi-Fi Antenna	2 Holes
Audio	Line-out, Mic-in	
Power		12V DC-in
Cooling		Fanless
OS Support		Win10 IoT Enterprise
Mechanism	Construction	Aluminum + Metal
	Mounting	Wall/VESA Mount
	Dimensions	115 x 48.7 x 111mm (W x H x D)
Environment	Operating Temp.	-20°C~40°C

Embedded Fanless PC

Advanced Computing Solutions



Features

DFI's performance embedded PC series is based on the powerful 9th/8th/7th/6th Gen Intel® Core™ Desktop platform with advanced graphics and computing performance, which are available in solid designs and expansibility. Their high flexibility and reliability will fulfill your various I/O requirements and deliver high computing performance in industry environments.

Desktop Platforms

9th/8th/7th/6th Gen Intel® Core™ Processor



High-Performance CPU

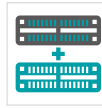


Customization & Scalability

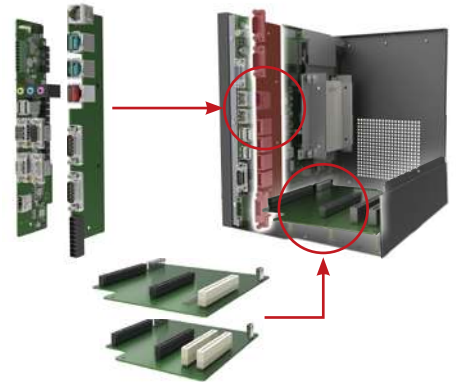
We accept custom-made I/O board on a MOQ basis



Customized I/O Board



Multiple Expansions



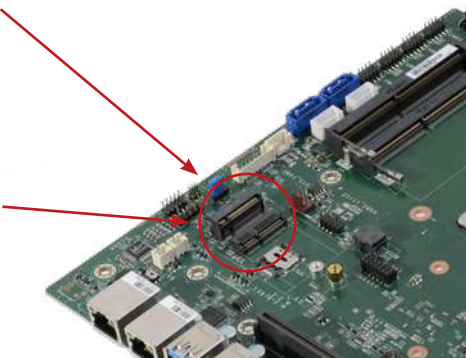
5G & Wifi 6 Module



5G



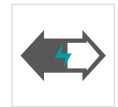
Wifi 6



Rugged Design



Wide-Temperature



Wide-Voltage

12th Gen Intel Core Processor



Model Name		EC500-ADS	EC510-ADS/EC511-ADS	EC543-ADS	
Platform		Desktop	Desktop	Desktop	
System	Processor	12th Gen Intel® Core™ Processor	12th Gen Intel® Core™ Processor	12th Gen Intel® Core™ Processor	
	Socket	FCLGA1700	FCLGA1700	FCLGA1700	
	Max. Speed	1.1GHz~4.6GHz	1.1GHz~4.6GHz	1.1GHz~4.6GHz	
	CPU TDP	35W	35W	35W	
	Cache	4/6/12/18/25/30M	4/6/12/18/25/30M	4/6/12/18/25/30M	
	Chipset	H610E/Q670E/R680E	Q670E	Q670E	
BIOS		AMI SPI 128Mbit	AMI SPI 128Mbit	AMI SPI 128Mbit	
Memory	Technology	Dual Channel DDR4 3200MHz	Dual Channel DDR4 3200MHz	Dual Channel DDR4 3200MHz	
	Max. Capacity	64GB	64GB	64GB	
	Socket	2 SODIMM	2 SODIMM	2 SODIMM	
Storage		2 x 2.5" SATA 3.0 Drive Bays, 1 M.2 2280 (only Q670E/R680E)	2 x 2.5" SATA 3.0 Drive Bays, 1 M.2 2280	2 x 2.5" SATA 3.0 Drive Bays, 1 M.2 2280	
Expansion	PCIe, PCI	Q670E/R680E: 1 M.2 2230 (PCIe/USB 2.0) 1 M.2 2280 (PCIe x4/SATA) 1 M.2 3052/3042 B key (PCIe/USB 3.2)	H610E: 1 M.2 2230 (PCIe/USB 2.0) 1 M.2 3052/3042 B key (PCIe)	1 M.2 2230 (PCIe/USB 2.0) 1 M.2 2280 (PCIe x4/SATA) 1 M.2 3052/3042 B key (PCIe/USB 3.2)	
		Audio Codec		Realtek ALC888	Realtek ALC888
Ethernet	Controller	1 Intel® I225, 1 Intel® I219	Realtek ALC888 EC51x-ADS6861 1 Intel® I225, 1 Intel® I219	Realtek ALC888 EC543-ADS6861 1 Intel® I225, 1 Intel® I219	
		LED		Power, Storage, Status LED	Power, Storage, Status LED
I/O	Ethernet (GbE)	2 GbE	EC51x-ADS6861: 1 x 2.5GbE + 1 x 1GbE EC51x-ADS62GA6E: 1 x 2.5GbE + 1 x 1GbE + 4 x PoE EC51x-ADS62GA6: 1 x 2.5GbE + 5 x 1GbE EC51x-ADSAGE4E: 1 x 2.5GbE + 1 x 1GbE + 2 x PoE EC51x-ADSAGE4: 1 x 2.5GbE + 3 x 1GbE	EC543-ADS6861: 1 x 2.5GbE + 1 x 1GbE EC543-ADS62GA6E: 1 x 2.5GbE + 1 x 1GbE + 4 x PoE EC543-ADS62GA6: 1 x 2.5GbE + 5 x 1GbE EC543-ADSAGE4E: 1 x 2.5GbE + 1 x 1GbE + 2 PoE EC543-ADSAGE4: 1 x 2.5GbE + 3 x 1GbE	
		Serial	4 RS-232/422/485, 2 RS-232	EC51x-ADS6861/62GA6E/62GA6 4 RS-232/422/485, 2 RS-232 EC51x-ADSAGE4E/AGE4 8 RS-232/422/485, 2 RS-232	EC543-ADS6881/62GA6E/62GA6 4 RS-232/422/485, 2 RS-232 EC543-ADSAGE4E/AGE4 8 RS-232/422/485, 2 RS-232
		USB	4 USB 3.2, 2 USB 2.0	EC51x-ADS6881 4 USB 3.2, 4 USB 2.0 EC51x-ADS62GA6E/62GA6 6 USB 3.2, 4 USB 2.0 EC51x-ADSAGE4E/AGE4 10 USB 3.2, 4 USB 2.0	EC543-ADS6881 4 USB 3.2, 4 USB 2.0 EC543-ADS62GA6E/62GA6 6 USB 3.2, 4 USB 2.0 EC543-ADSAGE4E/AGE4 10 USB 3.2, 4 USB 2.0
		Display	1 VGA, 2 DP++/HDMI (auto detection)	1 VGA, 2 DP++/HDMI (auto detection)	1 VGA, 2 DP++/HDMI (auto detection)
	DIO	8bits	EC51x-ADS6881 8bits EC51x-ADS62GA6E/62GA6 32bits EC51x-ADSAGE4E/AGE4 16bit	EC543-ADS6881 8bits EC543-ADS62GA6E/62GA6 32bits EC543-ADSAGE4E/AGE4 16bit	
	Buttons	Power, Reset	Power, Reset	Power, Reset	
	Wi-Fi Antenna	5 Holes	5 Holes	5 Holes	
Audio	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out		
Power	9~36V DC-in	9~36V DC-in	9~36V DC-in		
Cooling	Fanless	Fanless	Fanless		
OS Support	Win10 IoT Enterprise 2021 LTSC	Win10 IoT Enterprise 2021 LTSC	Win10 IoT Enterprise 2021 LTSC		
Mechanism	Construction	Metal + Aluminum	Metal + Aluminum	Metal + Aluminum	
	Mounting	Wall Mount	Wall Mount	Wall Mount	
	Dimensions	255.3 x 85 x 224mm	255.3 x 124.6 x 224mm	255.3 x 195 x 224mm	
Environment	Operating Temp.	-20°C~70°C	-20°C~60°C	-20°C~60°C	

9th/8th Gen Intel Core Processor



Model Name		EC500-CS	EC510/EC511-CS	EC543-CS
Platform		Desktop	Desktop	Desktop
System	Processor	9th/8th Gen Intel® Core™ Processor	9th/8th Gen Intel® Core™ Processor	9th/8th Gen Intel® Core™ Processor
	Socket	LGA 1151	LGA 1151	LGA 1151
	Max. Speed	1.8~4.0GHz	1.8~4.0GHz	1.8~4.0GHz
	CPU TDP	35W	35W	35W
	Cache	2/4/6/9/12M	2/4/6/9/12M	2/4/6/9/12M
	Chipset	Intel® H310/Q370/C246	Intel® H310/Q370	Intel® Q370
	BIOS	AMI SPI 128Mbit	AMI SPI 128Mbit	AMI SPI 128Mbit
GPU / AI Accelerator Card Support		MXM 3.1 Type A/B/C: RTX2080, RTX2070	Intel® movidius™ AI accelerator card (Optional) (EC511)	Intel® movidius™ AI accelerator card (Optional)
Memory	Technology	Dual Channel DDR4 2666/2400MHz	Dual Channel DDR4 2666/2400MHz	Dual Channel DDR4 2666/2400MHz
	Max. Capacity	64GB	64GB	64GB
	Socket	2 SODIMM (C246 supports ECC)	2 SODIMM (C246 supports ECC)	2 SODIMM (C246 supports ECC)
Storage		2 x 2.5" SATA 3.0 Drive Bays, 1 M.2 2280	2 x 2.5" SATA 3.0 Drive Bays, 1 M.2 2280	2 x 2.5" SATA 3.0 Drive Bays, 1 M.2 2280
Expansion	PCIe, PCI	-	1 PCI or 1 PCIe	1 PCI, 3 PCIe
	Mini PCIe, M.2	1 M.2 2230 (PCIe/USB 2.0), 1 M.2 2280 (PCIe x4/SATA) (only Q370/C246 support PCIe x4), 1 M.2 3052 B key (Q370/C246 support PCIe/USB 3.2, H310 support PCIe)	1 M.2 2230 (PCIe/USB 2.0), 1 M.2 2280 (PCIe x4/SATA) (only Q370/C246 support PCIe x4), 1 M.2 3052 B key (Q370/C246 support PCIe/USB 3.2, H310 support PCIe)	1 M.2 2230 (PCIe/USB 2.0), 1 M.2 2280 (PCIe x4/SATA) (only Q370/C246 support PCIe x4), 1 M.2 3052 B key (Q370/C246 support PCIe/USB 3.2, H310 support PCIe)
Audio	Audio Codec	Realtek ALC888	Realtek ALC888	Realtek ALC888
Ethernet	Controller	1 Intel® I210, 1 Intel® I219	1 Intel® I210, 1 Intel® I219	1 Intel® I210, 1 Intel® I219
LED	Indicators	Power, Storage, Status LED	Power, Storage, Status LED	Power, Storage, Status LED
I/O	GbE, POE	2 GbE	2 GbE + 4 PoE or 6 GbE	2 GbE + 4 PoE or 6 GbE
	Serial	4 RS-232/422/485, 2 RS-232	4 RS-232/422/485, 2 RS-232 (Q370) or 7 RS-232/422/485, 2 RS-232 (H310)	up to 7 RS-232/422/485, 2 RS-232
	USB	4 USB 3.2, 2 USB 2.0	4 USB 2.0, 4 USB 3.2 (Q370) or 2 USB 2.0, 8 USB 3.2 (H310)	4 USB 2.0, 4 USB 3.2 (Q370) or 2 USB 2.0, 8 USB 3.2 (H310)
	Display	1 VGA, 2 DP++/HDMI (auto detection)	1 VGA, 2 DP++/HDMI (auto detection)	1 VGA, 2 DP++/HDMI (auto detection)
	Audio	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out
	DIO	8bits	8bits (EC51x-CS98A1) or 16bits (EC51x-CS6G86E/6G86)	8bits (EC543-CS98A1) or 16bits (EC543-CS6G86E/6G86)
	Buttons	Power, Reset	Power, Reset	Power, Reset
	Antenna	4 Holes	4 Holes	4 Holes
Power		9~36V DC-in	9~36V DC-in	9~36V DC-in
Cooling		Fanless	Fanless	Fanless
OS Support		Win10 IoT Enterprise	Win10 IoT Enterprise	Win10 IoT Enterprise
Mechanism	Construction	Metal + Aluminum	Metal + Aluminum	Metal + Aluminum
	Mounting	Wall Mount	Wall Mount	Wall Mount
	Dimensions	255.3 x 85 x 224mm	255.3 x 124.6 x 224mm	255.3 x 195 x 224mm
Environment	Operating Temp.	-20°C~70°C	-20°C~60°C	-20°C~60°C

7th Gen Intel Core Processor



Model Name		EC500-KH	EC510/EC511-KH	EC531/EC532-KH
Platform		Mobile		
System	Processor	7th Gen Intel® Core™ Processor		
	Socket	BGA 1440		
	Max. Speed	2.1~4.2GHz		
	CPU TDP	25/45W		
	Cache	3/6/8M		
	Chipset	Intel® CM238/QM175 Chipset		
	BIOS	Insyde SPI 128Mbit		
GPU / AI Accelerator Card Support		-	Intel® movidius™ AI accelerator card (Optional) (EC511)	Intel® movidius™ AI accelerator card (Optional)
Memory	Technology	Dual Channel DDR4 2400MHz		
	Max. Capacity	32GB		
	Socket	2 SODIMM (CM238 supports ECC)		
Storage		1 x 2.5" SATA 3.0 Drive Bay (RAID), 1 CFast, 1 M.2 SSD (via 2280)	2 x 2.5" SATA 3.0 Drive Bay, 1 M.2 SSD (via 2280)	2 x 2.5" SATA 3.0 Drive Bay, 1 M.2 SSD (via 2280)
Expansion	PCIe, PCI	-	1 PCI (EC510), 1 PCIe x16 (EC511)	-
	Mini PCIe, M.2	2 full mPCIe socket, 1 M.2 2280 (PCIe x4/SATA)		
	SIM	1 Micro-SIM		
Audio	Audio Codec	Realtek ALC262		
Ethernet	Controller	1 Intel® I211, 1 Intel® I219	4 Intel® I210, 1 Intel® I211, 1 Intel® I219	1 Intel® I211, 1 Intel® I219
LED	Indicators	Power, Storage, Status LED		
I/O	Ethernet (GbE)	2	6	2
	Serial	4 RS-232/422/485	5 RS-232/422/485	8 RS-232/422/485
	USB	4 USB 3.2, 2 USB 2.0	4 USB 3.2, 2 USB 2.0	8 USB 3.2, 2 USB 2.0
	Display	1 VGA, 1 HDMI/DVI (DVI-D signal), 1 HDMI/DP		
	Audio	(Optional via cable from on board pin header)	(Optional via cable from on board pin header)	Mic-in, Line-out
	DIO	-	16-bit DIO	8-bit DIO
	Buttons	Reset, Power Button		
	Wi-Fi Antenna	3 Holes	4 Holes	3 Holes
Power		9~36V DC-in		
Cooling		Fanless		
OS Support		Win10 IoT Enterprise, Linux		
Mechanism	Construction	Metal + Aluminum		
	Mounting	Wall Mount		
	Dimensions	235 x 63.2 x 222mm (W x H x D)	235 x 102.5 x 221.2mm (W x H x D)	235 x 153.8 x 222.1mm (W x H x D)
Environment	Operating Temp.	0°C~50°C (HDD), -20°C~60°C (SSD), -40°C~70°C (Optional)		

7th/6th Gen Intel Core Processor



Model Name		EC500-SD	EC510/EC511-SD	EC531/EC532-SD
Platform		Desktop		
System	Processor	7th/6th Gen Intel® Core™ Processor		
	Socket	LGA 1151		
	Max. Speed	2.3~3.4GHz		
	CPU TDP	35W		
	Cache	4/6/8M		
	Chipset	Intel® Q170 Chipset		
	BIOS	Insyde SPI 128Mbit		
GPU / AI Accelerator Card Support		-	Intel® movidius™ AI accelerator card (Optional) (EC511)	Intel® movidius™ AI accelerator card (Optional)
Memory	Technology	Dual Channel DDR4 1866/2133MHz		
	Max. Capacity	32GB		
	Socket	2 SODIMM		
Storage		1 x 2.5" SATA 3.0 Drive Bay, 1 mSATA-mini (via half mPCIe socket), 1 CFast	2 x 2.5" SATA 3.0 Drive Bay (RAID 0/1), 1 mSATA-mini (via half mPCIe socket)	
Expansion	PCIe, PCI	-	1 PCI (EC510) 1 PCIe x16 (EC511)	2 PCI + 1 PCIe x16 (EC531) 1 PCI + 2 PCIe x16 (EC532)
	Mini PCIe, M.2	1 full mPCIe socket, 1 half mPCIe socket		
Audio	Audio Codec	Realtek ALC888		
Ethernet	Controller	1 Intel® I211, 1 Intel® I219	1 Intel® I211, 4 Intel® I210, 1 Intel® I219	1 Intel® I211, 1 Intel® I219
LED	Indicators	Power, HDD LED		
I/O	Ethernet (GbE)	2	2 GbE + 4 PoE or 6 GbE	2
	Serial	4 RS-232/422/485	3 RS-232/422/485	6 RS-232/422/485
	USB	2 USB 2.0, 4 USB 3.2	4 USB 3.2	8 USB 3.2
	Display	1 VGA, 1 DVI (DVI-D signal), 1 HDMI/DP		
	Audio	Mic-in, Line-out		
	DIO	-	16-bit DIO	8-bit DIO
	Buttons	Reset, Power Button		
	Wi-Fi Antenna	2 Holes	4 Holes	3 Holes
Power		9~36V DC-in		
Cooling		Fanless		
OS Support		Win7, Win8.1, Win10		
Mechanism	Construction	Aluminum + SGCC		
	Mounting	Wall Mount		
	Dimensions	235 x 63.2 x 222mm (W x H x D)	235 x 102.5 x 222mm (W x H x D)	235 x 153.8 x 222mm (W x H x D)
Environment	Operating Temp.	0°C~50°C		



Model Name		ES220-CS	ES220F-CS
Platform		Desktop	
System	Processor	9th/8th Gen Intel® Core™ i3/i5/i7 Processor	
	Socket	LGA 1151	
	Max. Speed	2.9GHz~4GHz	
	CPU TDP	35W	
	Cache	2/4/6/9/12M	
	Chipset	C246/Q370/H310	
	BIOS	Insyde SPI 128Mbit	
Memory	Technology	Dual Channel DDR4 2666MHz (ECC : C246 only)	
	Max. Capacity	64GB	
	Socket	2 x 260-pin SODIMM up to 64GB	
Storage		2 x 2.5" SATA bay (Optional) support RAID 0/1	
Expansion		1 x M.2 2280 M key (PCIe x4/SATA 3.0) 1 x M.2 2230 E key (PCIe x1/USB2.0), WiFi	
Audio	Audio Codec	-	
Ethernet	Controller	2 x Intel® I219/I210IT (10/100/1000Mbps) (Support Intel® iAMT)	
LED	Indicators	1 x Power LED 1 x HDD LED	
I/O	Ethernet (GbE)	2 x GbE (RJ-45)	
	Serial	2 x RS232/RS422/RS485 (DB9) or 1 x RS232/RS422/RS485 (DB9)(COM1) + 1 x 8bit DIO (DB9)	
	USB	Front: 4 x USB 3.2 (type A) Rear: 2 x USB 2.0 (type A)	
	Display	2 x HDMI 2.0	
	DIO	-	
	Buttons	1 x Power button 1 x Reset button	
	Wi-Fi antenna	2 x Opening Antenna Hole (WiFi)	
	Audio	-	
Power		Type: 12V DC-in jack lockable External power brick RTC Battery: CR2032 Coin Cell Supply: AC Power 100-250V, 50/60Hz	
Cooling		Active Fan	Fanless
OS Support		Windows 10 IoT Enterprise 2019 LTSC + RS5 Windows 10 Professional	
Mechanism	Construction	Aluminum + Metal	
	Mounting	Wall mount VESA mount 75x75/10x10cm (Optional)	
	Dimensions	175 x 48.5 x 120mm (1 x m.2 SSD) or 175 x 73.5 x 120mm (1 x m.2 + 2x 2.5"SSD)	175 x 69.4 x 120mm (1 Storage: 1 x M.2 SSD) 175 x 90.4 x 120mm (3 Storage: 1 x M.2 SSD + 2 x 2.5" bay)
Environment	Operating Temp.	-5° ~ 45° C	CPU power output config. via BIOS: TDP 35W : -5° to 45° C cTPU 15W : -20° to 60° C



Model Name		EC200-BTA881	EC200-BTAG60	EC200-BT6060
Platform		Atom		
System	Processor	Intel Atom® Processor E3800		
	Socket	BGA 1170		
	Max. Speed	1.91GHz		
	TDP	10W		
	Cache	2M		
	Chipset	-		
	BIOS	AMI SPI 64Mbit		
Memory	Technology	Dual Channel DDR3L 1333MHz		
	Max. Capacity	8GB		
	Socket	2 SODIMM		
Storage		2x 2.5" SATA 2.0 Drive Bay, 1 mSATA (via full mPCIe socket)		
Expansion	PCIe, PCI	-		
	Mini PCIe, M.2	1 full mPCIe socket		
	SIM	-		
Audio	Audio Codec	Realtek ALC888		
Ethernet	Controller	2 Intel® I210		
LED	Indicators	Power, HDD, Alert LED		
I/O	Ethernet (GbE)	2		
	Serial	8 RS-232/422/485, 2 RS-232	8 RS-232/422/485, 2 RS-232	4 RS-232/422/485, 2 RS-232
	USB	7 USB 2.0, 1 USB 3.2	5 USB 2.0, 1 USB 3.2	
	Display	1 VGA, 1 DVI-D	1 VGA	
	Audio	1 Speaker-out		
	DIO	8-bit DIO	16-bit DIO	-
	Buttons	Power, Reset Button		
	Wi-Fi Antenna	2 Holes		
Power		9~36V DC-in		
Cooling		Fanless		
OS Support		Win7, WES7, Win8.1, WE8S, Win10		
Mechanism	Construction	Aluminum + SGCC		
	Mounting	Wall/VESA Mount		
	Dimensions	275 x 59 x 203mm (W x H x D)		
Environment	Operating Temp.	0°C~55°C/0°C~50°C		



Model Name		EC220/EC221-BTA881	EC220/EC221-BTAG60	EC220/EC221-BT6060
Platform		Atom		
System	Processor	Intel Atom® Processor E3800		
	Socket	BGA 1170		
	Max. Speed	1.91GHz		
	CPU TDP	10W		
	Cache	2M		
	Chipset	-		
	BIOS	AMI SPI 64Mbit		
Memory	Technology	Dual Channel DDR3L 1333MHz		
	Max. Capacity	8GB		
	Socket	2 SODIMM		
Storage		2x 2.5" SATA 2.0 Drive Bay, 1 mSATA (via full mPCIe socket)		
Expansion	PCIe, PCI	2 PCI (EC220)/1 PCI + 1 PCIe x16 (EC221)		
	Mini PCIe, M.2	1 full mPCIe socket		
	SIM	-		
Audio	Audio Codec	Realtek ALC888		
Ethernet	Controller	2 Intel® I210		
LED	Indicators	Power, HDD, Alert LED		
I/O	Ethernet (GbE)	2		
	Serial	8 RS-232/422/485, 2 RS-232	8 RS-232/422/485, 2 RS-232	4 RS-232/422/485, 2 RS-232
	USB	7 USB 2.0, 1 USB 3.2	5 USB 2.0, 1 USB 3.2	
	Display	1 VGA, 1 DVI-D	1 VGA	
	Audio	1 Speaker-out		
	DIO	8-bit DIO	16-bit DIO	-
	Buttons	Power, Reset Button		
	Wi-Fi Antenna	2 Holes		
Power		9~36V DC-in		
Cooling		Fanless		
OS Support		Win7, WES7, Win8.1, WE8S, Win10		
Mechanism	Construction	Aluminum + SGCC		
	Mounting	Wall/VESA Mount		
	Dimensions	275 x 114 x 203mm (W x H x D)		
Environment	Operating Temp.	0°C~55°C/0°C~50°C		

AI Inference/Training System

GPU & High Performance CPU



DFI Product x PEG

With a dedicated graphics card installed, the system enjoys maximum performance in both graphics and AI computing. Discrete graphics cards typically have more than an adequate number of cores and a higher bandwidth, as well as a large amount of video memory to handle both large-scale deep learning and high-intensity AI operations. To match the performance of the discrete graphics card, the powerful CPU is nothing but the must for I/O expandability and general-purpose applications.



RM641-CS

Automation and Flaw Analysis



DFI Product x MXM

Powers the same performance as its discrete counterpart, the MXM module allows more flexibility in layout, from size, weight to heat dissipation, achieves a more compact system. Systems with MXM module also enjoys the possibility of future upgrades and has no worries about the overall solution layout.

Supported MXM-compliant module: NVIDIA



EC300-CS

Driver Assistance



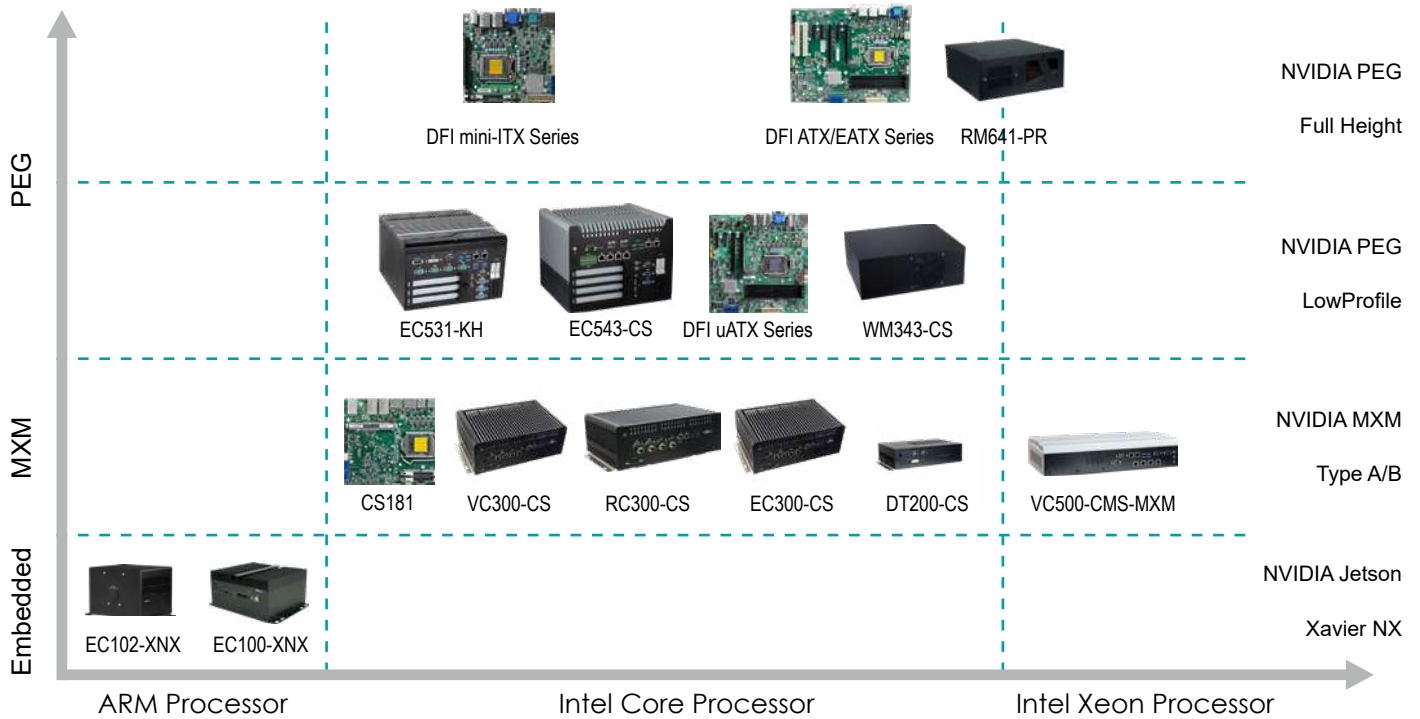
DFI Product x Jetson

As a one-stop AI software and hardware solution, NVIDIA Jetson's high performance and energy efficiency make it easier for terminal devices to deploy edge-AI. No worries about how to implement Jetson modules in applications, DFI system products match perfectly in terms of mechanism, heat dissipation, and I/O.

Currently available: NVIDIA® Jetson Xavier™ NX module



Automated Optical Inspection



NVIDIA Jetson AI-Enabled Compact Systems



Model Name		EC100-XNX	EC102-XNX
Platform		NVIDIA® Jetson Xavier™ NX	
System	Processor	6-core NVIDIA Carmel ARM®v8.2 64-bit CPU 6MB L2 + 4MB L3	
	Max. Speed	1.9GHz	
	CPU TDP	10/15W	
GPU / AI Accelerator Card Support		384-core NVIDIA Volta™ GPU with 48 Tensor Cores	
Memory	Technology	LPDDR4 x 51.2GB/s	
	Max. Capacity	8 GB	
	Socket	Soldered on module	
Storage		16GB e.MMC v5.1 on module	Based on micro SD
Expansion	SIM, microSD	-	1 micro SD
	UART, I2C, GPIOs	1 UART, 2 I2C, 9 GPIOs	
LED	Indicators	Power, Recovery	
I/O	GbE, PoE	1 GbE, 8 PoE	1 GbE
	Serial	Internal onboard 20-pin header	
	USB	1 USB 2.0 (Micro-B), 2 USB 3.2 (Type A)	
	Display	1 HDMI 2.0	
	Buttons	Power, Recovery	
Power		54V/2.78A	12V/5A
Cooling		Fanless	Heat sink with fan
OS Support		Linux Ubuntu	
Mechanism	Construction	Metal + Aluminum	
	Mounting	Wall Mount	
	Dimensions	190 x 80 x 175mm	91.4 x 70 x 76.6mm
Environment	Operating Temp.	0°C ~ 60°C	

9th/8th Gen Intel Core Processor with MXM slot



Model Name		DT200-CS
Platform		Desktop
System	Processor	9th/8th Gen Intel® Core™ i3/i5/i7 Processor
	Socket	LGA 1151 Socket
	Max. Speed	3.1GHz~4.6GHz
	CPU TDP	35/54/58/65W
	Cache	6~12MB
	Chipset	H310/Q370
	BIOS	AMI SPI 128Mbit (supports UEFI/Legacy mode)
GPU / AI Accelerator Card Support		-
Memory	Technology	DDR4 2400/2666MHz
	Max. Capacity	up to 64GB
	Socket	2 SODIMM
Storage		Internal: 1 x M.2 M key supports 2242/2280 slot (PCIe Gen3 x4/SATA) External: 1 x SATA III connector with 1 x 2.5" SSD tray
Expansion		1 x M.2 M key supports 2242/2280 slot (PCIe Gen3 x4/SATA) 1 x M.2 B key supports 3052 slot (PCIe x1/USB 3.2 Gen1), 1 x M.2 E key supports 2230 slot (PCIe x1/USB2.0), 1x type A/B MXM 3.0 slot
Audio	Audio Codec	5.1 CH Audio Codec: Realtek ALC888S-VD2-GR
Ethernet	Controller	1 x Intel® I219LM/ I219V, 3 x Intel® I211AT
LED	Indicators	1 x PWD LED 1 x HDD LED
I/O	Ethernet (GbE)	4 x GbE
	Serial	2 x RS232
	USB	Front: 6 x USB2.0 Rear: 4 x USB 3.2 Gen2
	Display	1 x DP++/HDMI (auto-detection) 4 x DP (from MXM)
	DIO	-
	Buttons	1 x Power button
	Antenna	6 antenna holes
	Audio	1 x Line-out 1 x Mic-in
Power		19V DC-in (mini-DIN)
Cooling		Fan
OS Support		Windows 10 IoT Enterprise 64-bit, Linux
Mechanism	Construction	Aluminum
	Mounting	Wall mount (mounting brackets and screws)
	Dimensions	320 x 220 x 87mm (not include wall mount bracket)
Environment	Operating Temp.	0 to 55°C

9th/8th Gen Intel Core Processor with MXM slot



Model Name		EC300-CS
Platform		Desktop
System	Processor	9th/8th Gen Intel® Core™ Processor
	Socket	LGA 1151
	Max. Speed	1.8~2.4GHz
	CPU TDP	35/65W
	Cache	6/9/12
	Chipset	Intel® Q370
	BIOS	AMI SPI 128Mbit
GPU / AI Accelerator Card Support		MXM 3.1 Type A/B: P1000, RTX3000
Memory	Technology	Dual Channel DDR4 2666/2400MHz
	Max. Capacity	64GB
	Socket	2 SODIMM
Storage		4 Swappable 2.5" 7mm SSD Storage Bays
Expansion		1 Half mPCIe, 2 Full mPCIe, 1 M.2 3042/3052, 1 M.2 2280
Audio	Audio Codec	Realtek ALC888
Ethernet	Controller	5 Intel® I210, 1 Intel® I219
LED	Indicators	Power, Storage, POE LED
I/O	Ethernet (GbE)	2 GbE, 4 POE
	Serial	2 RS-232/422/485 (DB9), 2 RS-232/422/485 onboard
	USB	4 USB 3.2, 2 USB 2.0
	Display	1 VGA, 1 HDMI, 1 DP++
	DIO	1 DB-9 8 bit isolated DI, 1 DB-9 8 bit isolated DO
	Buttons	Power, Reset
	Antenna	7 holes
	Audio	1 x Line-out 1 x Mic-in
Power		12VDC
Cooling		Fanless
OS Support		Windows 10 IoT Enterprise, Linux Ubuntu
Mechanism	Construction	Metal + Aluminum
	Mounting	Wall Mount
	Dimensions	340.5 x 132 x 223mm
Environment	Operating Temp.	-25° ~ 55° C or -25° ~ 70° C

9th/8th/6th Gen Intel Core Processor



Model Name		RM641-SD	RM641-CS
Platform		Rackmount Box IPC	Rackmount Box IPC
System	Processor	6th Generation Intel® Core™ Processors	9th/8th Generation Intel® Core™ /Pentium®/Celeron® Processors
	Socket	LGA 1151 Socket	LGA 1151
	Max. Speed	2.4GHz~3.7GHz	2.9GHz~4.7GHz
	TDP	35/47/65W	35/54/65/71/80/95W
	Cache	3/4/6/8M	2/4/6/8/9/12M
	Chipset	Intel® Q170 Chipset	Intel® C246 Chipset
	BIOS	Insyde SPI 128Mbit	AMI SPI 128Mbit
Memory	Technology	Dual Channel DDR4 1866/2133MHz	Dual Channel DDR4 2400/2666MHz (ECC/non ECC)
	Max. Capacity	64GB	128GB
	Socket	4 x 288-pin UDIMM	4 x 288-pin UDIMM
Storage		3 x 5.25" Optical Drive Bays (Front Accessible) 1 x 3.5"/2.5" SATA 3.0 Drive Bay (Front Accessible)	3 x 5.25" Optical drive bays (Front Accessible) 1 x 3.5" SATA 3.0 drive bay (Front Accessible)
Expansion		2 x PCIe x16 (1 x16 or 2 x8 signal) (Gen 3) 2 x PCIe x4 (Gen 3) 3 x PCI	1 x PCIe x16 (Gen 3) (x8/x8 signals as Opt., MOQ required) 3 x PCIe x4 (Gen 3) 2 x PCI 1 x Mini PCIe (PCIe/mSATA, share w/SATA conn. as Opt./USB2.0) 1 x M.2 2242/2280 M key (PCIe x4 NVMe, Intel Optane memory support)
Audio	Audio Codec	Realtek ALC888S-VD2-GR	Realtek ALC887 (ALC888 as Opt.)
Ethernet	Controller	1 x Intel® I210AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM PCIe with iAMT11.0 (10/100/1000Mbps) (only Core i7/i5 supports iAMT)	1 x Intel® I211AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM PCIe with iAMT12.0 (10/100/1000Mbps) (only Xeon/Core i7/i5 supports iAMT)
LED	Indicators	1 x Power LED 1 x HDD LED	1 x Power LED 1 x HDD LED
I/O	Ethernet (GbE)	2 x GbE (RJ-45)	2 x GbE (RJ-45)
	Serial	1 x RS-232/422/485 (RS-232 w/ power) (DB-9)	1 x RS-232/422/485 (RS-232 w/ power) (DB-9)
	USB	Front: 2 x USB 2.0 Rear: 4x USB 3.2 2x USB 2.0	Front: 2 x USB 2.0 Rear: 4x USB 3.2 Gen1 2x USB 2.0
	Display	1 x VGA 1 x DVI-I (DVI-D signal) 1 x HDMI	1 x VGA 2 x DP++
	DIO	-	-
	Buttons	1 x Power Switch 1 x Reset Switch	1 x Power Switch 1 x Reset Switch
	Wi-Fi Antenna	-	-
	Audio	1 x Line-in (available upon request) 1 x Line-out 1 x Mic-in	1 x Line-out 1 x Mic-in
Power		ATX PS/2 Power Supply 500W AC Power Input : 90~264V	ATX PS/2 Power Supply 500W AC Power Input : 90~264V
Cooling		2 x 92cm System Fan with Quick Access Filter	2 x 92cm System Fan with Quick Access Filter
OS Support		Windows 7 (WES7) 32/64-bit Windows 8.1 (64-bit) Windows 10 IoT Enterprise 64-bit Debian 8 (with VESA graphic driver) CentOS 7 (with VESA graphic driver) Linux	Windows 10 IoT Enterprise 64-bit Linux
Mechanism	Construction	SECC	SECC
	Mounting	Flexible Hold Down Bar	Flexible Hold Down Bar
	Dimensions	483mm x 177mm x 451mm	483mm x 177mm x 451mm
Environment	Operating Temp.	0 to 45°C	0 to 45°C

1st/2nd Gen Intel Xeon Scalable Family



Model Name		RM840-PR810	
Platform		Rackmount Box IPC	
System	Processor	1st/2nd Gen Intel® Xeon® Scalable Family	
	Socket	LGA 3647	
	Max. Speed	3.0GHz~3.9GHz	
	TDP	70/85/105/125/150W	
	Cache	11/13.75/16.5/19.25/22/24.75/27.5/30.25/35.75M	
	Chipset	Intel® C622 Chipset	
	BIOS	Insyde SPI 256Mbit	
Memory	Technology	12 Channel DDR4 2133/2400/2666/2933 MHZ	
	Max. Capacity	384GB	
	Socket	12 x 288-pin RDIMM	
Storage		External 2x 5.25" (Option change 1x 2.5" by covert bracket) External 1x 3.5" (Default: 2.5" SAS/SATA HDD & SSD Mobile Rack for External 3.5" Drive Bay)	
Expansion		4 x PCIe x16 (Gen 3) 1 x PCIe x8 (Gen 3) 1 x PCI 1 M.2 M key2280 (PCIe Gen3 x4 NVMe/SATA) 1 x BMC Module slot for SEM2500/2510 (IPMI) 1 x 100GbE slot (x4 + x8) for EXT-100GbE proprietary module	
Audio	Audio Codec	Realtek ALC887	
Ethernet	Controller	2 x Intel® I210AT (10/100/1000Mbps), 1 x Intel x557-AT2 (10GbE)	
LED	Indicators	1 x Power LED 1 x HDD LED	
I/O	Ethernet (GbE)	2 x GbE (RJ-45) 2 x 10 GbE x557-AT2 IPMI 2.0: 1 share w/ i210AT (Opt.)	
	Serial	1 x RS-232 (DB-9)	
	USB	Front:	--
		Rear:	4x USB 3.2 Gen1 2x USB 2.0 stack (Opt.w/ RJ45+USB2.0 stack) 1 x VGA (Opt.)
	Display	1 x VGA (Opt.)	
	DIO	-	
	Buttons	1 x Power Switch 1 x Reset Switch	
	Wi-Fi Antenna	-	
Audio	1 x Line-out 1 x Mic-in		
Power		ATX PS/2 Power Supply 650W AC Power Input : 90~264V	
Cooling		2x (90mm = 51CFM ea.) Fans & 2x (60mm = 23.5CFM ea.) Fans (Optional)	
OS Support		Windows 10 IoT Enterprise 64-bit Linux	
Mechanism	Construction	SECC	
	Mounting	Flexible Hold Down Bar	
	Dimensions	483mm x 177mm x 510mm	
Environment	Operating Temp.	0 to 45°C	

Mini-ITX/ATX System & Chassis

Scalable & Flexible Solutions



Features

Our IPC systems are comprising of industrial chassis and our latest Intel®/AMD® platform-based embedded boards (ATX, microATX, Mini-ITX) which provide various selections from our embedded computing portfolio with the benefits of customization flexibility.

With high integration, wide compatibility, and outstanding product longevity, the IPC systems are the ideal solutions for a wide range of embedded applications.

WM120-CMS



ST102 for Mini-ITX



WM343 for microATX



RM641 for ATX



12th/10th Gen Intel Core Processors



Contact sales representative for availability. Contact sales representative for availability.

Model Name		WM120-CMS	WM343-CMS	WM120-EHL	WM343-ADS
Platform		Wallmount Box IPC	Wallmount Box IPC	Wallmount Box IPC	Wallmount Box IPC
System	Processor	10th Gen Intel® Core™ Processors	10th Gen Intel® Core™ Processors	Intel Atom® X Series Processors	12th Generation Intel® Core™ Processors
	Socket	LGA 1200	LGA 1200	BGA 1493	LGA 1700
	Max. Speed	3.0~4.5GHz	3.0~4.8GHz	1.8GHz~2GHz	2.4GHz~5.0GHz
	TDP	35/58/65W	35/58/65/80/125W	10/12W	35/46/60/65/125W
	Cache	2/4/6/12/16/20M	2/4/6/12/16/20M	1.5M	4/6/12/18/25/30M
	Chipset	Intel® Q470E	Intel® W480E/Q470E Chipset	-	Intel® R680E/Q670E Chipset
	BIOS	AMI SPI 128Mbit	AMI SPI 128Mbit	AMI SPI 256Mbit (supports UEFI boot only)	AMI SPI 256Mbit
Memory	Technology	Dual Channel DDR4 2400/2666/2933 MHz	Dual Channel DDR4 2400/2666/2933 MHz	Dual channel DDR4 up to 3200MHz (in-band ECC support in embedded/ industrial SKU)	Dual Channel DDR4 3200 MHz (ECC support: R680E only)
	Max. Capacity	128GB	128GB	32GB	128GB
	Socket	Four 288-pin Non-ECC UDIMM up to 128GB	Q470E: Four 288-pin Non-ECC UDIMM up to 128GB H420E: Two 288-pin Non-ECC UDIMM up to 64GB	2 x 260-pin SO-DIMM	4 x 288-pin UDIMM
Storage	1 x 2.5" SATA 3.0 SSD 1 x M.2 2280 M Key (PCIe x4/ SATA) (support NVMe and Intel® Optane memory)	1 x 5.25" bay for ODD, or change to internal 2x 2.5" bay 1 x 3.5" bay, or change to 1x 2.5" bay, can access externally	1 x 2.5" SATA 3.0 SSD 1 x M.2 2280 M Key (PCIe x4/ SATA) (support NVMe and Intel® Optane memory)	1 x 5.25" bay for ODD, or change to internal 2x 2.5" bay 1 x 3.5" bay, or change to 1x 2.5" bay, can access externally	
Expansion		1 PCIe x16 (Gen 3) (x8 single) 1 M.2 2230 E key (PCIe/USB 2.0/ Intel CNVi support) for WiFi6 Note: 65W CPU config. does not support expansion card. 35W CPU config. supports one expansion card via riser card 1 M.2 2280 M key (PCIe x4 Gen3 NVMe/SATA/Intel Optane Memory support) for SSD 1 M.2 3042/3052 B key (PCIe/USB 3.2) for 4G LTE/5G with SIM holder	1 x PCIe x16 (Gen 3) 1 x PCIe x4 (Gen 3) 2 x PCI Q470E: 1 x M.2 2242/2260/2280 M key (PCIe Gen3 x4 NVMe/SATA/Intel® Optane Memory and intel RST support) 1 x M.2 2230 E key (USB 2.0/PCIe)	1 x PCIe x4 (PCIe x2 signal) 1 x M.2 2242/2280/3052 B Key (PCIe x1/SATA/USB2.0) 1 x M.2 2230 E Key (PCIe x1/USB2.0) 1 x Nano SIM socket (connected to M.2 B key)	1 x PCIe x16 (Gen 5) 2 x PCIe x4 (Gen 4) 1 x PCIe x4 (Gen 3) (R680E: x4 signal; Q670E: x1 signal) 1 x M.2 2230 E key (PCIe/USB 2.0/Intel CNVi support) (Discrete Wifi 6E support) (PCIe x4 Gen3 NVMe/Intel Optane Memory support)
	Audio Codec	Realtek ALC888	Realtek ALC888	Realtek ALC888	Realtek ALC888
Ethernet	Controller	1 x Intel® I219LM PHY with iAMT12 and vPro (10/100/1000Mbps) (Core i7/i5 supports iAMT) 1 x Intel® I211AT PCIe (10/100/1000Mbps)	1 x Intel® I211AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM PHY with iAMT12.0 (10/100/1000Mbps) (Q470E: Core i9/ i7/i5 supports iAMT)	-40~85°C: 2 x Intel® GPY215/I225IT (10/100/1000/2500Mbps) or -5~65°C: 2 x Intel® GPY211/I225LM (10/100/1000/2500Mbps)	2 x Intel® I225LM PCIe (10M/100M/1000Mbps/2.5G) (only Xeon, Core i9/i7/i5 support iAMT) 2 x Intel® x550-AT2 (10 GBASE-T/1 GbE/100 Mbps)
LED	Indicators	1 x Power LED 1 x HDD LED 1 x LAN LED	1 x Power LED 1 x HDD LED	1 x Power LED 1 x HDD LED 1 x LAN LED	1 x Power LED 1 x HDD LED
I/O	Ethernet (GbE)	2 x GbE (RJ-45)	2 x GbE (RJ-45)	2 x GbE (RJ-45)	2 x 2.5GbE (RJ-45) 2 x 10GbE (RJ-45)
	Serial	-	1 x RS-232/422/485 (RS-232 w/ power) (DB-9)	2 x RS-232/422/485 (RS-232 w/ power) (2.0mm pitch) 4 x RS-232 (2.0mm pitch)	2 x RS-232/422/485 (RS-232 w/ power) (2.54mm pitch)
	USB	Rear: 6 USB 3.2 Gen 2 2 USB 3.2 Gen 1 4 USB 3.2 Gen 1	Rear: 2 USB 3.2 (Q470E: Gen2; H420E: Gen1) 2 USB 3.2 Gen1 (Q470E: Option up to 6 x USB 3.2 Gen1) 2 USB 2.0	Rear: 2 x USB 3.2 Gen2 2 x USB 3.2 Gen1	Rear: 4 x USB 3.2 Gen 2 4 x USB 3.2 Gen 1
	Display	2 DP++ (1 x DP to HDMI adapter)	1 x VGA 1 x DP++ 1 x HDMI	1 x HDMI /DP++ (Opt., MOQ required) 1 x DP++ /VGA (Opt., MOQ required)	1 x VGA 2 x DP++ 1 x HDMI 2.0a
	DIO	-	1 x 16-bit DIO	1 x 8-bit DIO	1 x 8-bit DIO
	Buttons	1 x Power button 1 x Reset button	1 x Power Button	1 x Power button 1 x Reset button	1 x Power button 1 x Reset button
	Wi-Fi Antenna	--	--	--	--
	Audio	Onboard Pin Header	1 x Line-out 1 x Mic-in 1 x Line-in (Opt., MOQ required)	1 x Line-out	1 x Line-out 1 x Mic-in 1 x Line-in (Opt. by request, MOQ required)
Power	Nominal 24V DC-in (range : 15 to 36VDC) 1 x 8cm System Fan, with replaceable air filter	250W/350W (Default) / 500W FLEX ATX 1 x 12cm System Fan, with Optional air filter	Single 12V +/-10% DC (EHL171) Wide Range 9~36V (EHL173) 1 x 8cm System Fan, with replaceable air filter	250W/350W (Default) / 500W FLEX ATX 1 x 12cm System Fan, with Optional air filter	
OS Support	Win10 IoT Enterprise, Linux	Win10 IoT Enterprise, Linux	Win10 IoT Enterprise, Linux	Win10 IoT Enterprise, Linux	
Mechanism	Construction	Sheet Metal	Sheet Metal	Sheet Metal	Sheet Metal
	Mounting	Wall Mount	Wall Mount	Wall Mount	Wall Mount
Environment	Dimensions	224 x 88 x 206mm (W x H x D)	349 x 140.2 x 290.9mm (W x H x D)	224 x 88 x 206mm (W x H x D)	349 x 140.2 x 290.9mm (W x H x D)
	Operating Temp.	-5°C to 45°C	0°C to 45°C	-5°C to 45°C	0°C to 45°C

6th Gen Intel Core Processor



Model Name		WM343-SD331	WM343-SD330
Platform		Wallmount Box IPC	Wallmount Box IPC
System	Processor	6th Gen Intel® Core™ Processor	6th Gen Intel® Core™ Processor
	Socket	LGA 1151	LGA 1151
	Max. Speed	2.3~4.0GHz	2.3~4.0GHz
	CPU TDP	35/65/80W	35/65W
	Cache	2/3/4/6/8M	2/3/4/6/8M
	Chipset	Intel® C236/Q170 Chipset	Intel® Q170/H110 Chipset
	BIOS	Insyde SPI 128Mbit	Insyde SPI 128Mbit
Memory	Technology	Dual Channel DDR4 1866/2133MHz	Dual Channel DDR4 1866/2133MHz
	Max. Capacity	64GB	64GB (Q170), 32GB (H110)
	Socket	4 ECC DIMM (C236), 4 DIMM (Q170)	4 DIMM (Q170), 2 DIMM (H110)
Storage		1x 3.5"/2.5" SATA 3.0 1x 2.5" SATA 3.0 (Opt.) 1x 5.25" Optical Drive Bay (Opt.)	1x 3.5"/2.5" SATA 3.0 1x 2.5" SATA 3.0 (Opt.) 1x 5.25" Optical Drive Bay (Opt.)
Expansion	PCIe, PCI	2 PCIe x16, 2 PCIe x4	1 PCIe x16, 1 PCIe x4, 2 PCI
	Mini PCIe, M.2	-	1 full mPCIe socket (Q170)
Audio	Audio Codec	Realtek ALC888	Realtek ALC888
Ethernet	Controller	1 Intel® I210, 1 Intel® I219	1 Intel® I210, 1 Intel® I219
LED	Indicators	Power, HDD LED	Power, HDD LED
I/O	Ethernet (GbE)	2	2
	Serial	1 RS-232/422/485, 5 RS-232	1 RS-232/422/485, 5 RS-232
	USB	2 USB 2.0, 4 USB 3.2	2 USB 2.0, 4 USB 3.2
	Display	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++
	Audio	Mic-in, Line-out, Line-in (Opt.)	Mic-in, Line-out, Line-in (Opt.)
	PS/2	1	1
	Buttons	Power Button	Power Button
Power		Flex ATX 150W/250W/350W/400W	Flex ATX 150W/250W/350W/400W
Cooling		Fan	Fan
OS Support		Win7, WES7, Win8.1, Win10 IoT Enterprise, Debian, CentOS, Linux	Win7, WES7, Win8.1, Win10 IoT Enterprise, Debian, CentOS, Linux
Mechanism	Construction	Sheet Metal	Sheet Metal
	Mounting	Wall Mount	Wall Mount
	Dimensions	349 x 140.2 x 290.9mm (W x H x D)	349 x 140.2 x 290.9mm (W x H x D)
Environment	Operating Temp.	0°C~45°C	0°C~45°C

7th Gen Intel Core Processor



Model Name		WM343-KD331	WM343-KD330	WM342-KD331	WM342-KD330
Platform		Wallmount Box IPC	Wallmount Box IPC	Wallmount Box IPC	Wallmount Box IPC
System	Processor	7th Gen Intel® Core™ Processor	7th Gen Intel® Core™ Processor	7th Gen Intel® Core™ Processor	7th Gen Intel® Core™ Processor
	Socket	LGA 1151	LGA 1151	LGA 1151	LGA 1151
	Max. Speed	3.4~4.5GHz	3.4~4.5GHz	3.4~4.5GHz	3.4~4.5GHz
	CPU TDP	65/80W	65W	65/80/91W	65/91W
	Cache	3/6/8M	3/6/8M	3/6/8M	3/6/8M
	Chipset	Intel® C236/Q170 Chipset	Intel® Q170/H110 Chipset	Intel® C236/Q170 Chipset	Intel® Q170/H110 Chipset
	BIOS	Insyde SPI 128Mbit	Insyde SPI 128Mbit	Insyde SPI 128Mbit	Insyde SPI 128Mbit
Memory	Technology	Dual Channel DDR4 2133/2400 MHz	Dual Channel DDR4 2133/2400 MHz	Dual Channel DDR4 2133/2400 MHz	Dual Channel DDR4 2133/2400 MHz
	Max. Capacity	64GB	64GB (Q170), 32GB (H110)	64GB	64GB (Q170), 32GB (H110)
	Socket	4 ECC DIMM (C236), 4 DIMM (Q170)	4 DIMM (Q170), 2 DIMM (H110)	4 ECC DIMM (C236), 4 DIMM (Q170)	4 DIMM (Q170), 2 DIMM (H110)
Storage		1 or 2x 3.5"/2.5" SATA 3.0 Drive Bays (1x 3.5" SATA drive bay, by default), 1x 5.25" Optical Drive Bay	1 or 2x 3.5"/2.5" SATA 3.0 Drive Bays (1x 3.5" SATA drive bay, by default), 1x 5.25" Optical Drive Bay	2x 2.5" SATA 3.0 Drive Bays (1x 2.5" SATA drive bay, by default)	2x 2.5" SATA 3.0 Drive Bays (1x 2.5" SATA drive bay, by default)
Expansion	PCIe, PCI	2 PCIe x16, 2 PCIe x4	1 PCIe x16, 1 PCIe x4, 1 PCI	1 PCIe x16, 1 PCIe x4	1 PCIe x16, 1 PCI
	Mini PCIe, M.2	1 M.2 2280 (SATA/PCIe x2)	1 full mPCIe socket (Q170)	-	-
Audio	Audio Codec	Realtek ALC888	Realtek ALC888	Realtek ALC888	Realtek ALC888
Ethernet	Controller	3 Intel® I211, 1 Intel® I219	1 Intel® I211, 1 Intel® I219	3 Intel® I211, 1 Intel® I219	1 Intel® I211, 1 Intel® I219
LED	Indicators	Power, Storage LED	Power, Storage LED	Power, Storage LED	Power, Storage LED
I/O	Ethernet (GbE)	4	2	4	2
	Serial	1 RS-232/422/485 (RS-232 w/power)	1 RS-232/422/485 (RS-232 w/power)	1 RS-232/422/485 (RS-232 w/power)	1 RS-232/422/485 (RS-232 w/power)
	USB	2 USB 2.0, 4 USB 3.2	2 USB 2.0, 4 USB 3.2	2 USB 2.0, 4 USB 3.2	2 USB 2.0, 4 USB 3.2
	Display	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++
	Audio	Line-out, Mic-in	Line-out, Line-in	Line-out, Mic-in	Line-out, Mic-in
	PS/2	1	1	1	1
	Buttons	Power, Reset Button	Power, Reset Button	Power, Reset Button	Power, Reset Button
Power		Flex ATX 150W/250W/350W/400W/500W	Flex ATX 150W/250W/350W/400W/500W	Flex ATX 150W/250W/350W/400W/500W	Flex ATX 150W/250W/350W/400W/500W
Cooling		Fan	Fan	Fan	Fan
OS Support		Win10, Linux	Win10, Linux	Win10 IoT Enterprise	Win10 IoT Enterprise
Mechanism	Construction	Sheet Metal	Sheet Metal	Sheet Metal	Sheet Metal
	Mounting	Wall Mount	Wall Mount	Wall Mount	Wall Mount
	Dimensions	349 x 140.2 x 290.9mm (W x H x D)	349 x 140.2 x 290.9mm (W x H x D)	306.6 x 132.1 x 301.9mm (W x H x D)	306.6 x 132.1 x 301.9mm (W x H x D)
Environment	Operating Temp.	0°C~45°C	0°C~45°C	0°C~45°C	0°C~45°C

9th/8th Gen Intel Core Processor



Model Name		WM343-CS330	WM343-CS331	WM343-CS332	WM343-CS350
Platform		Wallmount Box IPC			
System	Processor	9th/8th Gen Intel® Core™ Processors			
	Socket	LGA 1151			
	Max. Speed	2.9~5.0GHz			
	CPU TDP	35/54/58/65/71/80/95W			
	Cache	2/4/6/8/9/12/16M			
	Chipset	Intel® H310/Q370	Intel® Q370/C246		
	BIOS	AMI SPI 128Mbit			
Memory	Technology	Dual Channel DDR4 2400/2666 MHz			
	Max. Capacity	64GB (H310), 128GB (Q370)	128GB		
	Socket	4 DIMM	4 DIMM, support ECC (C246)		
Storage		1 x 5.25" bay for ODD, or change to internal 2x 2.5" bay 1 x 3.5" bay, or change to 1x 2.5" bay, can access externally			
Expansion	PCIe, PCI	1 PCIe x16, 1 PCIe x4, 2 PCI	2 PCIe x16 (1 x16 or 2 x8), 2 PCIe x4	1 PCIe x16, 2 PCIe x4, 1 PCI	2 PCIe x16 (1 x16 or 2 x8), 2 PCIe x4
	Mini PCIe, M.2	1 full mPCIe (Q370)	1 mPCIe, 1 M.2 2242/2260/2280 (PCIe x4 NVMe)	1 M.2 2242/2280 (PCIe x4 NVMe/Intel Optane Memory) 1 M.2 2230 (PCIe x1/USB2.0)	1 M.2 2242/2260/2280(PCIe x4 NVMe), 1 M.2 2230 (PCIe x1/ USB2.0/Intel CNVi)
Audio	Audio Codec	Realtek ALC888		Realtek ALC262-VC2	Realtek ALC888
Ethernet	Controller	1 Intel® I211, 2 Intel® I219	1 Intel® I211, 1 Intel® I219	3 Intel® I211, 1 Intel® I219	1 Intel® I211, 1 Intel® I219
LED	Indicators	Power, Storage LED			
I/O	Ethernet (GbE)	3	2	4	2
	Serial	1 RS-232/422/485 (RS-232 w/ power)			
	USB	(C246/Q370) 2 USB 3.2 Gen 2, 2 USB 3.2 Gen 1, 2 USB 2.0 (H310) 4 USB 3.2 Gen 1, 2 USB 2.0			
	Display	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++			
	Audio	Line-out, Mic-in, (Optional) Line-in			
	PS/2	1 PS/2 mini-din			1 PS/2 mini-din (Q370)
	Buttons	Power, Reset Button			
Power		Flex ATX 150W/250W/350W/400W/500W			
Cooling		Fan			
OS Support		Win10 IoT Enterprise, Linux			
Mechanism	Construction	Sheet Metal			
	Mounting	Wall Mount			
	Dimensions	349 x 140.2 x 290.9mm (W x H x D)			
Environment	Operating Temp.	0°C~45°C			

9th/8th/7th/6th Gen Intel Core Processor



Model Name		ST102-CS	ST102-SD
Platform		Desktop with Tower Stand	Desktop with Tower Stand
System	Processor	8th/9th Generation Intel® Core™ Processors	6th/7th Generation Intel® Core™ Processors
	Socket	LGA 1151	LGA 1151
	Max. Speed	2.9~4.0GHz	2.3~3.8GHz
	TDP	35W	35W
	Cache	2/4/6/9/12M	2/3/4/6/8M
	Chipset	Intel® H310/Q370 Chipset	Intel® H110 Chipset
	BIOS	AMI SPI 128Mbit	AMI SPI 64Mbit
Memory	Technology	Dual Channel DDR4 2666MHz	Dual Channel DDR4 1866/2133/2400MHz
	Max. Capacity	32GB	32GB
	Socket	Two 260-pin SO-DIMM	Two 260-pin SO-DIMM
Storage		1 x 2.5" SATA 3.0 Drive Bay 1 x Slim ODD Bay (Optional)	1 x 2.5" SATA 3.0 Drive Bay 1 x Slim ODD Bay (Optional)
Expansion		1 x Full-Size mini PCIe for mSATA 1 x m.2 2280 mKey (PCIe x 4/SATA) Support NVme and Intel Optane memory 1 x m.2 2230 Ekey (USB/PCIe)	1 x PCIe x4 (Gen 2) 1 x Full-size mSATA (USB/SATA) 1 x Half-size Mini PCIe (USB/PCIe)
Audio	Audio Codec	Realtek ALC888S-VD2-GR	Realtek ALC888S-VD2-GR
Ethernet	Controller	1 x Intel® I210AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM PCIe with iAMT11.0 (10/100/1000Mbps)	1 x Intel® I210AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM PCIe with iAMT11.0 (10/100/1000Mbps)
LED	Indicators	1 x Power LED 1 x HDD LED	1 x Power LED 1 x HDD LED
I/O	Ethernet (GbE)	2 x GbE (RJ-45)	2 x GbE (RJ-45)
	Serial	--	--
	USB	4 x USB 3.2 (Rear) 2 x USB 2.0 (Front)	4 x USB 3.2 (Rear) 2 x USB 2.0 (Front)
	Display	2 x DP++ 1 x HDMI	1 x DVI-I (DVI-D signal) 1 x HDMI/DP (DP available upon request)
	DIO	--	--
	Buttons	1 x Power Button	1 x Power Button
	Wi-Fi Antenna	2 x Antenna Opening	2 x Antenna Opening
	Audio	1 x Line-out (via cable to external interface from on board pin-header), 1 x Mic-in (via cable to external interface from on board pin-header)	1 x Line-out (via cable to external interface from on board pin-header) 1 x Mic-in (via cable to external interface from on board pin-header)
Power		12V DC-In Jack	12V DC-In Jack
Cooling		1 x System Fan 1 x CPU Fan	1 x System Fan 1 x CPU Fan
OS Support		Windows 10 IoT Enterprise	Windows 10 IoT Enterprise
Mechanism	Construction	Metal chassis + Aluminum front bezel Kensington lock	Metal chassis + Aluminum front bezel Kensington lock
	Mounting	Foot Stand	Foot Stand
	Dimensions	219mm x 75.15mm x 229.7mm (without of stand holder)	219mm x 75.15mm x 229.7mm (without of stand holder)
Environment	Operating Temp.	-5 to 55°C The configuration with i3 CPU throttles may occur	0 to 40°C

7th/6th Gen Intel Core Processor & AMD



Model Name		DT122-SD	DT122-GH
Platform		Desktop	Desktop
System	Processor	6th/7th Generation Intel® Core™ Processors	AMD® Ryzen™ Embedded V1000/R1000 series
	Socket	LGA 1151	Onboard
	Max. Speed	2.3~3.4GHz	2.3~3.35GHz
	TDP	35W	12~54W
	Cache	2/3/6/8M	1/2M
	Chipset	Intel® Q170 Chipset / Intel® H110 Chipset	--
	BIOS	Insyde SPI 128Mbit	AMI BIOS 64Mbit
Memory	Technology	Dual Channel DDR4 1866/2133MHz	Dual Channel DDR4 3200MHz
	Max. Capacity	32GB	32GB
	Socket	Two 260-pin SO-DIMM	Two 260-pin SO-DIMM
Storage		1 x 3.5" or 2 x 2.5" SATA 3.0 Drive Bay (1 x 2.5" by default) 1 x Slim ODD Bay (available upon request)	1 x 3.5" or 2 x 2.5" SATA 3.0 Drive Bay (1 x 2.5" by default) 1 x Slim ODD Bay (available upon request)
Expansion		1 x PCIe x16 (Gen 3) or 1 x PCI (through Optional riser card) Q170: 1 x Half-size Mini PCIe (mSATA/PCIe, PCIe by default) H110: 1 x Full-size Mini PCIe (mSATA/PCIe, PCIe by default)	1 x PCIe x16 (x8 signal with V1000 series, x4 signal with R1000 series) 1 x M.2 2280 M Key (x4 signal with V1000 series, x2 signal with R1000 series) (support 2242 by BOM Opt.)
Audio	Audio Codec	Realtek ALC888S-VD2-GR	Realtek ALC888S-VD2-GR
Ethernet	Controller	Q170: 1 x Intel® I210AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM PCIe with iAMT 11.0 (10/100/1000Mbps) (only Core i7/i5 supports iAMT) H110: 1 x Intel® I211AT PCIe (10/100/1000Mbps) 1 x Intel® I219V PCIe (10/100/1000Mbps)	2 x Realtek RTL8111HN-CG (10/100/1000Mbps)
LED	Indicators	1 x Power LED 1 x HDD LED	1 x Power LED 1 x HDD LED
I/O	Ethernet (GbE)	2 x GbE (RJ-45)	2 x GbE (RJ-45)
	Serial	1 x RS-232 (DB-9)	1 x RS-232/422/485 (DB-9) 1 x RS-232 (DB-9)
	USB	4 x USB 3.2 2 x USB 2.0	2 x USB 3.2 2 x USB 2.0
	Display	1 x VGA 1 x DVI-I (DVI-D signal) 1 x DP++	4 x DP++ (V1000 series) 3 x DP++ (R1000 series)
	DIO	--	--
	Buttons	1 x Power Switch 1 x Reset Switch	1 x Power Switch 1 x Reset Switch
	Wi-Fi Antenna	2 x antenna opening	2 x antenna opening
	Audio	1 x Line-in (available upon request) 1 x Line-out 1 x Mic-in	1 x Mic-in 1 x Line-in 1 x Line-out
Power		Flex ATX 250W (150W/350W/400W available upon request) DC-in External Power Adapter (available upon request)	12V DC-In Jack
Cooling		1 x System Fan 1 x CPU Fan	1 x System Fan 1 x CPU Fan
OS Support		Windows 10 IoT Enterprise	Windows 10 IoT Enterprise
Mechanism	Construction	Front Bezel aluminum + Chassis Sheet Metal	Front Bezel aluminum + Chassis Sheet Metal
	Mounting	Wall Mount (Type A or Type B)	Wall Mount (Type A or Type B)
	Dimensions	300mm x 73.6mm x 218mm	300mm x 73.6mm x 218mm
Environment	Operating Temp.	0 to 45°C	0 to 60°C

Application-Specific System

Application-Oriented Solutions



In-Vehicle

In-vehicle system delivers efficient computing power, rich I/O, and sufficient expansion interfaces, allowing accessible data collection from numbers of vehicle sensors via wired or wireless connectivity and analyzing the data for real-time feedback to drivers and the control center. With rugged designs, the system can operate effectively and stably under critical conditions, including rugged terrains or other outdoor environments. It suits IoT devices controller of bus, truck, or taxi.

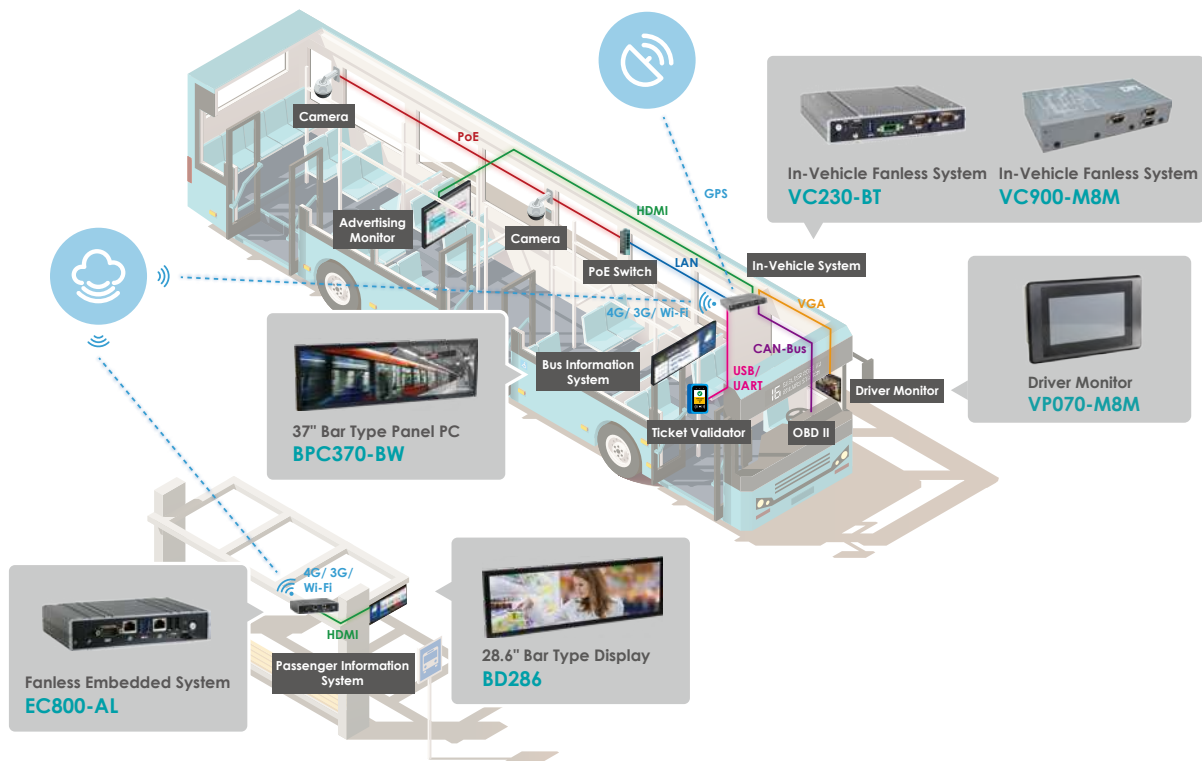
CAN-Bus Interface Support



In-Vehicle Power Protector



In-Vehicle Power Protector



Gaming

We provide complete gaming demo program, API library, sample code, and detailed user guides to help quickly integrate various functions. Based on our service and expertise, game developers are able to focus on their core value to develop the games.

With hardware functions of exclusive smart meter and gaming I/O, it's easy to upgrade the security control of the system to the highest level to match the policy of operators. Based on the complete eco-system, DFI offers one-stop solution to fully customize every part in the machine, and is able to reduce the cost to a reasonable level.

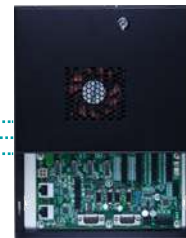
Gaming I/O and Intrusion Detection



Intrusion Detection



4 Display Ports Support 4K @ 60Hz



4 Displays

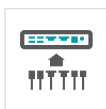
Medical Computing

Medical equipment needs to output accurate results and keeps in stable operation, with peripheral equipment connected in various interfaces through clean signals not interfering with each other. Therefore, strict certification standards are necessary for the selection of machines.

DFI's MD711-SU is a high-performance fanless embedded Box IPC designed to work with medical equipment. This medical PC is equipped with 4kV isolated I/O ports and specialized heat dissipation technology with easy-to-clean design and silent operation. The ideal medical applications for this system covers nursing carts, operating rooms, healthcare information systems, and medical OEM equipment integration to ensure the best patient care.

Certifications: CE, FCC, RoHS, IEC 60601-1-2:2014, EN 60601-1-2:2015, ISO 14971:2007

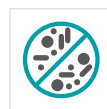
4KV Isolated I/O Ports



Isolated I/O



Medical-Grade Antibacterial Finish



Antibacterial finish



Ultra Ruggedized

Featuring the IP66 white enclosure and wide-temperature from -40 to 70° C, our ultra-ruggedized system can operate as the edge computer outdoor 24/7 without any shelter. The smart vent design can easily drain off water automatically to remain dry inside the system.

Our system also delivers versatile water-proof I/O including external SIM slot, high-gain antenna, combo port, and selective display ports (HDMI/VGA) were also delivered to help integrator meet the demand for various applications. It's an ideal candidate as outdoor IoT edge computing in the critical environment.

IP66 Enclosure Withstand Water and Dust



IP66 Grade



Outdoor IoT Edge Computing



Outdoor Application





Model Name		RC300-CS
Platform		Desktop
System	Processor	9th/8th Gen Intel® Core™ Processors
	Socket	LGA 1151
	Max. Speed	1.8~2.4GHz
	CPU TDP	35W
	Cache	9/12M
	Chipset	Intel® Q370
	BIOS	AMI SPI 128Mbit
GPU / AI Accelerator Card Support		MXM 3.1 Type A/B: P1000, RTX3000
Memory	Technology	Dual Channel DDR4 2666/2400MHz
	Max. Capacity	64GB
	Socket	2 SODIMM
Storage		4/2 Swappable 2.5" 7mm SSD Storage Bays
Expansion	PCIe, PCI	-
	Mini PCIe, M.2	1 Half-Size mPCIe, 2 Full-Size mPCIe, 1 M.2 3042/3052, 1 M.2 2280
	SIM	2
Ethernet	Controller	5 Intel® I210, 1 Intel® I219
LED	Indicators	Power, Storage, PoE
I/O	GbE, PoE	2 RJ45 GbE, 4 M12 X-coded PoE
	Serial	2 RS-232/422/485 (DB-9), 2 RS-232/422/485 (pin headers)
	USB	4 USB 3.2, 2 USB 2.0
	Display	1 VGA, 1 HDMI, 1 DP++
	Audio	Mic-in, Line-out
	DIO	2 x 8-bits DIO (Isolated) (DB-15)
	Buttons	Power, Reset
	Antenna	7
Power		77~137.5VDC or 9~36VDC
Cooling		Fanless
OS Support		Windows 10 IoT Enterprise, Linux Ubuntu
Mechanism	Construction	Metal + Aluminum
	Mounting	Wall Mount
	Dimensions	340.5 x 132 x 223mm
Environment	Operating Temp.	-25° ~ 55° C or -25° ~ 70° C

10th Gen Intel Core In-vehicle System



Model Name		VC500-CMS	VC500-CMS-MXM
Platform		Desktop	Desktop
System	Processor	10th Gen Intel® Core™ i3/i5/i7 Processors	10th Gen Intel® Core™ i3/i5/i7 Processors
	Socket	LGA 1200 Socket	LGA 1200 Socket
	Max. Speed	4.5GHz	4.5GHz
	TDP	35W	35W
	Cache	6/12/16/20M	6/12/16/20M
	Chipset	Q470E/ W480E/H420E	Q470E/ W480E/H420E
	BIOS	AMI SPI 266Mbit	AMI SPI 266Mbit
Memory	Technology	Dual Channel DDR4 2933/2666/2400/2133 SDRAM ECC supported for Xeon-1270TE/W480E	Dual Channel DDR4 2933/2666/2400/2133 SDRAM ECC supported for Xeon-1270TE/W480E
	Max. Capacity	64GB	64GB
	Socket	Dual DDR4 SODIMMs	Dual DDR4 SODIMMs
Storage		X1 M.2 2280 M Key slot, supports 2242, 2260 & 2280 devices (PCIex4 and SATA signals) X2 External Swappable 2.5" Storage Bay with Lock	X1 M.2 2280 M Key slot, supports 2242, 2260 & 2280 devices (PCIex4 and SATA signals) X2 External Swappable 2.5" Storage Bay with Lock
Expansion		One Mini PCIe slot (PCIex1 and USB 2.0 signals) One M.2 2242/2280 M Key slot (PCIe x4 and SATA signals) One M.2 2230 E Key slot (PCIe x1 and USB 2.0) One M.2 3042/3052 B key slot (PCIe x1 and USB 3.2 signals) with dual SIM support (external accessible)	One Mini PCIe slot (PCIex1 and USB 2.0 signals) One M.2 2242/2280 M Key slot (PCIe x4 and SATA signals) One M.2 2230 E Key slot (PCIe x1 and USB 2.0) One M.2 3042/3052 B key slot (PCIe x1 and USB 3.2 signals) with dual SIM support (external accessible) One Type B MXM slot for independent GPU/AI accelerator
Audio	Audio Codec	Realtek ALC888	Realtek ALC888
Ethernet	Controller	Intel® i219AT/i210IT	Intel® i219AT/i210IT
LED	Indicators	One Storage Activity LED, Flashing when storage active (red) One Power LED (green) Two User programmable LEDs	One Storage Activity LED, Flashing when storage active (red) One Power LED (green) Two User programmable LEDs
I/O	PoE/10G	4x 802.11af PoE ports at RJ45 or M12 X-coded connectors, max 15.4W (PSE side) or 2x 10G fiber ports at SFP+ cage based on Intel X710-BM2 Ethernet controller	4x 802.11af PoE ports at RJ45 or M12 X-coded connectors, max 15.4W (PSE side) or 2x 10G fiber ports at SFP+ cage based on Intel X710-BM2 Ethernet controller
	Ethernet (GbE)	2 x RJ45 GbE ports	2 x RJ45 GbE ports
	Serial	COM1/2/3/4 support BIOS selectable RS232/422/485 COM5 supports RS232 / COM6 header onboard 4x PoE ports at RJ45 (Optional M12 X-coded connectors)	COM1/2/3/4 support BIOS selectable RS232/422/485 COM5 supports RS232 / COM6 header onboard 4x PoE ports at RJ45 (Optional M12 X-coded connectors)
	USB	Four USB 3.2 type A ports (front) Four USB 3.2 type A ports (rear)	Four USB 3.2 type A ports (front) Four USB 3.2 type A ports (rear)
	Display	Up to three DP++ ports with lock hole from processor (rear) Support DP 1.4 Resolution up to 4096x2304 @60Hz	Up to three DP++ ports with lock hole from processor (rear) Support DP 1.4 Resolution up to 4096x2304 @60Hz Additional four DP ports from MXM module (front)
	DIO	Supports 8bit DI & 8 bit DO 2KV isolation X2 Isolated DIO port by 2x DB-15 female connectors	Supports 8bit DI & 8 bit DO 2KV isolation X2 Isolated DIO port by 2x DB-15 female connectors
	Buttons	One power button One reset button	One power button One reset button
	Antenna	Up to six antenna holes	Up to six antenna holes
	Audio	One Mic-in One Line-in One Line-out	One Mic-in One Line-in One Line-out
	Power		One W3 connector Supports 9~48VDC input with power ignition management
Cooling		Passive	Passive or active fan
OS Support		Windows 10 IoT Enterprise RS5 Yocto Linux Ubuntu Linux 20.04	Windows 10 IoT Enterprise RS5 Yocto Linux Ubuntu Linux 20.04
Mechanism	Construction	Aluminum+Metal	Aluminum+Metal
	Mounting	Wall mount	Wall mount
	Dimensions	235 x 87.5 x 221(WxHxD)	346 x 87.5 x 221(WxHxD)
Environment	Operating Temp.	-20°C to 70°C for 35W CPU -20°C to 60°C for 65W CPU	Up to -20°C to 70°C



Model Name		VC300-CS
Platform		Desktop
System	Processor	9th/8th Gen Intel® Core™ Processors
	Socket	LGA 1151
	Max. Speed	1.8~3.3GHz
	CPU TDP	35/65
	Cache	6/9/12
	Chipset	Intel® Q370
	BIOS	AMI SPI 128Mbit
GPU / AI Accelerator Card Support		MXM 3.1 Type A/B: P1000, RTX3000
Memory	Technology	Dual Channel DDR4 2666/2400MHz
	Max. Capacity	64GB
	Socket	2 SODIMM
Storage		2 Swappable 2.5" 7mm SSD Storage Bays
Expansion	PCIe, PCI	-
	Mini PCIe, M.2	1 Half-Size mPCIe, 2 Full-Size mPCIe, 1 M.2 3042/3052, 1 M.2 2280
	SIM	2
Ethernet	Controller	5 Intel® I210, 1 Intel® I219
LED	Indicators	Power, Storage, PoE
I/O	GbE, PoE	2 RJ45 GbE, 4 RJ45 PoE
	Serial	2 RS-232/422/485 (DB-9), 2 RS-232/422/485 (pin headers)
	USB	4 USB 3.2, 2 USB 2.0
	Display	1 VGA, 1 HDMI, 1 DP++
	Audio	Mic-in, Line-out
	DIO	2 x 8-bits DIO (Isolated) (DB-15)
	Buttons	Power, Reset
	Antenna	7
Power		9~36VDC with power ignition control
Cooling		Fan or Fanless
OS Support		Windows 10 IoT Enterprise, Linux Ubuntu
Mechanism	Construction	Metal + Aluminum
	Mounting	Wall Mount
	Dimensions	340.5 x 132 x 223mm
Environment	Operating Temp.	-25° ~ 55° C or -25° ~ 70° C

7th/6th Gen Intel Core & Atom In-Vehicle & Ruggedized Systems



Model Name		VC70B-KU	VC230-AL	VC230-BT	ECX700-AL
Platform		ULT	Atom	Atom	Atom
System	Processor	7th Gen Intel® Core™ Processor	Intel Atom® Processor E3900	Intel Atom® Processor E3800	Intel Atom® Processor E3900
	Socket	FCBGA 1356	BGA 1296	BGA 1170	BGA 1296
	Max. Speed	2.4~2.8GHz	up to 2.0GHz	1.33~1.91GHz	1.3~2.0GHz
	CPU TDP	15W	up to 12W	6/10W	6/9.5/12W
	Cache	3/4M	2M	1/2M	2M
	BIOS	Insyde SPI 128Mbit	-	AMI SPI 64Mbit	AMI SPI 128Mbit
Memory	Technology	Dual Channel DDR4 2133MHz	Single Channel DDR3 1600/1866MHz	Single Channel DDR3L 1066/1333MHz	Dual Channel DDR3L 1866MHz
	Max. Capacity	4/8GB	8GB	2/4GB	2/4/8GB, 8GB total max
	Socket	Memory Onboard	SODIMM	ECC Memory Onboard	Memory Onboard, 1 SODIMM
Storage		1 x 2.5" SATA 3.0 Drive Bay	eMMC up to 64GB, 1 mSATA-mini (via half mPCIe socket)	eMMC Onboard (Opt.) 1 mSATA (via full mPCIe socket)	Support EMMC 8G/16GB/32GB/64GB (Optional)
Expansion	Mini PCIe, M.2	1 full mPCIe socket, 1 half mPCIe socket	2 full mPCIe socket, 1 half mPCIe socket (mSATA)	1 full mPCIe socket, 1 half mPCIe socket	2 full mPCIe, 1 M.2 2230 (PCIe/ USB 2.0)
	SIM, microSD	-	3 SIM	1 SIM, 1 micro SD Card Slot (Opt.)	1 mirco SIM card slot
Audio	Audio Codec	Realtek ALC888	Realtek ALC262	-	-
Ethernet	Controller	1 Intel® I210, 1 Intel® I219	2 Intel® I210	2 Intel® I210	2 Intel® I210
LED	Indicators	Status, HDD LED	Power, HDD LED	Status, HDD LED	Power Status
I/O	Ethernet (GbE)	2	2	2	2 M12 type connector for Giga LAN
	Serial	2 RS-232/422/485, 4 RS-232	1 RS-232/422/485	3 RS-232/422/485	1 combo waterproof connector (2 RS-232, 2 CANbus protocol)
	USB	4 USB 3.2, 2 USB 2.0	2 USB 3.2, 2 USB 2.0	1 USB 3.2, 4 USB 2.0	2 Waterproof USB Type-A Connector with cover
	Display	1 HDMI, 1 VGA	1 HDMI, 1 DVI	1 HDMI, 1 VGA	1 Waterproof HDMI Connector with cover
	DIO	8-bit DIO (Opt.)	8-bit Isolated DIO up to 30V Input 4 x DI, 4 x DO	8-bit DIO via DB-9 port (Opt.)	--
	Buttons	Power, Reset Button	Reset Button	Power, Reset Button	-
	Antenna	5 Holes	4 SMA Holes, 1 FME Hole	3 Holes	2 (LTE), 2 (WiFi)
	Audio	Line-out, Mic-in	1 Speaker Out with Dual 5w Amp	-	-
Interfaces	CAN-Bus via DB-9 port (Opt.)	-	CAN-Bus via DB-9 port (Opt.)	-	
Power		9~36V DC-in with Ignition control	9~36V DC-in with Ignition control		9~36V DC-in
Cooling		Fanless	Fanless		Fanless
OS Support		Win10 IoT Enterprise, Win10, Linux	Win10, Linux	Win7, Win8.1, Win10, WES 7	Windows 10 IoT Enterprise 64-bit, Linux
Mechanism	Construction	Aluminum + Sheet Metal	Aluminum + Metal Aluminum	Aluminum + Metal Aluminum	Aluminum, IP66 waterproof
	Dimensions	184 x 82 x 118.4 mm (W x H x D)	180 x 50 x 121.2 mm (W x H x D)	180 x 33 x 121.2 mm (W x H x D)	217 x 188 x 87 mm (with wall-mount bracket)
Environment	Operating Temp.	-20°C~60°C	-40°C~70°C	-20°C~60°C	-40°C~70°C



Model Name		VC900-M8M
Platform		ARM
System	Processor	NXP i.MX8M Quad, Cortex-A53 1.3GHz (by model) NXP i.MX8M Dual, Cortex-A53 1.3GHz (by model)
Memory	Technology	Single channel LPDDR4 up to 3200 MHz
	Max. Capacity	2GB/4GB
	Socket	Memory Onboard
Storage		Internal: eMMC 5.1 16GB on board, support up to 64GB (Optional) External: Micro SD card slot
Sensor		6 axis IMU (3 Accelerometer + 3 Gyroscope)
Expansion		1 M.2 2242/3042 B Key (USB 3.1 Gen1), Nano SIM slot support 1 M.2 2230 E Key (PCIex1/USB2.0)
LED	Indicators	1 x Status LED
I/O	Ethernet (GbE)	1 x Giga LAN, RJ-45
	Serial	1 x RS-232/422/485 (COM1) 1 x RS-232(TX,RX,RTS,CTS) (COM2) 2 x RS-232(TX,RX) (COM3/COM4)
	USB	2 x USB 3.2, type A 1 x OTG, micro USB
	Display	1 x HDMI
	Buttons	1 x Power reset button
	Antenna	4 x Antenna holes for LTE 4G, WiFi and GPS
	Audio	with Amplifier to support 2W speaker (Optional) 1 x Line-out & 1 x MIC-in (internal header)
Power		Type: Wide range 9~36V with ACC/IGN function Connector: 3-pole terminal block
Cooling		Fanless
OS Support		Yocto Linux 2.5 (Default) Android 9.0 (Option)
Mechanism	Construction	Sheet Metal
	Mounting	Wall/ DIN-Rail mount
	Dimensions	200 x 120 x 45mm
Environment	Operating Temp.	-20 to 65°C



Model Name		MD711-SU
Platform		ULT
System	Processor	6th Gen Intel® Core™ Processor
	Socket	BGA 1356
	Max. Speed	2.4~2.6GHz
	CPU TDP	15W
	Cache	3/4M
	BIOS	Insyde SPI 128Mbit
Memory	Technology	Dual Channel DDR4 2133MHz
	Max. Capacity	32GB
	Socket	2 SODIMM
Storage		1x 2.5" SATA 3.0 Drive Bay, 1 M.2 SSD (via 2242)
Expansion	PCIe, PCI	1 PCIe x16
	Mini PCIe, M.2	1 full mPCIe socket, 1 M.2 2242 (SATA/PCIe x2/USB)
Audio	Audio Codec	Realtek ALC888
Ethernet	Controller	1 Intel® I210, 1 Intel® I219
LED	Indicators	Power, HDD LED
I/O	Ethernet (GbE)	2
	Serial	2 RS-232
	USB	4 USB 3.2, 2 USB 2.0
	Display	1 DP/HDMI (HDMI available upon request), 1 DVI-D
	Buttons	Power Button
	Antenna	3 Holes
	Audio	Line-out, Mic-in
	Interfaces	4kV isolated I/O ports: 2 GbE, 2 RS-232, 2 USB 2.0
Power		9~36V DC-in
Cooling		Fanless
OS Support		Win7, Win8.1, Win10, WES 7, WE8S, Linux
Mechanism	Construction	Aluminum + Metal Aluminum
	Mounting	Wall Mount
	Dimensions	182 x 97.6 x 200mm (W x H x D)
Environment	Operating Temp.	0°C~40°C (w/0.7m air flow)



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