

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 Index

Ultra Compact Fanless PC



EC70A-ADP



EC700-ADN

Processor	Model	Index
NXP i.MX 8M Mini Processor	EC900-8MM, EC910-8MM	P9
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Qualcomm Robotics RB5 Platform: QRB5165	EC700-QRB	
12th Gen Intel® Core™ Processor	EC70A-ADP	P10
11th Gen Intel® Core™ Processor	EC70A-TGU	
7th/6th Gen Intel® Core™ Processor	EC70A-KU	P11
	EC70A-SU, EB100-KU	
AMD® Ryzen™ Embedded R1000 Series	EC90A-GH	P12
Intel® Atom® Processors X Series	EC700-ADN, ED700-EHL22I, ED700-EHL	
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Intel® Atom® Processor E3800	EC700-BT	

Embedded PC



EC500-ADS

Processor	Model	Index
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12th Gen Intel® Core™ Processor	EC500-ADS, EC510-ADS/EC511-ADS, EC543-ADS	
9th/8th Gen Intel® Core™ Processor	EC500-CS, EC510/EC511-CS, EC543-CS	P17
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7th/6th Gen Intel® Core™ Processor	EC500-KH, EC510/EC511-KH, EC531/EC532-KH	P19
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Intel® Atom® Processors X Series	EC170-EHL	P21
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AI Inference / Training System



EC180-CS

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Intel® Atom® Processors X Series (with Hailo-8 M.2 AI Acceleration Module)	EC700-ADN	P11
13th/12th Gen Intel® Core™ Processor	EC622-RPS	P25
9th/8th Gen Intel® Core™ Processor	EC180-CS, DT200-CS	
	EC300-CS, RM641-CS	P26
7th/6th Gen Intel® Core™ Processor	RM641-SD	
3rd/2nd/1st Gen Intel® Xeon® Scalable Processor Family	RM840-PR810	P27



IPC System & Chassis

Mini-ITX Stand/Desktop/ Wall Mount

ST102



Micro-ATX Wall Mount

WM343



ATX Rack Mount

RM641



EATX Rack Mount

RM840



Processor	Model	Index
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AMD® Ryzen™ Embedded V1000/R1000 Series	DT122-GH	P34
3rd Gen Intel® Xeon® Scalable Processor Family	RM645-ICX610	P35
2nd/1st Gen Intel® Xeon® Scalable Processor Family	RM620-PR611	P35
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Application-Specific System

MPC544-RPS



Processor	Model	Application	Index
13th Gen Intel® Core™ Processor	MPC544-RPS	Medical	P38
10th Gen Intel® Core™ Processor	VC500-CMS, VC500-CMS-MXM	In vehicle	
9th/8th Gen Intel® Core™ Processor	RC300-CS	Railway	P39
	VC300-CS	In vehicle	
7th Gen Intel® Core™ Processor	VC70B-KU	In vehicle	P40
6th Gen Intel® Core™ Processor	MD711-SU	Medical	
Intel® Atom® Processor E3800/E3900	VC230-AL, VC230-BT	In vehicle	
NXP i.MX8M	VC900-M8M	In vehicle	P41

Ruggedized Embedded System

ECX700-AL



Processor	Model	Index
12th Gen Intel® Core™ Processor	ECX700-ADP	P43
Intel® Atom® Processor E3900	ECX700-AL	

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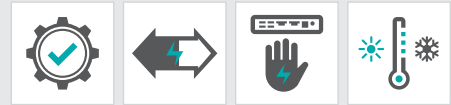
Processor	Model	Product Group	Index
13th Gen Intel® Core™ Processor	MPC544-RPS	Application-Specific System	P38
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	EC622-RPS	AI Inference/Training System	P25
12th Gen Intel® Core™ Processor	EC70A-ADP	Ultra Compact Fanless PC	P9
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	WM343-ADS	IPC System & Chassis	P30
	ECX700-ADP	Ruggedized Embedded System	P43
11th Gen Intel® Core™ Processor	EC70A-TGU	Ultra Compact Fanless PC	P9
10th Gen Intel® Core™ Processor	WM120-CMS, WM343-CMS	IPC System & Chassis	P30
	VC500-CMS, VC500-CMS-MXM	Application-Specific System	P38
9th/8th Gen Intel® Core™ Processor	EC500-CS, EC510/EC511-CS, EC543-CS	Embedded PC	P17
	ES220-CS, ES220F-CS	Embedded PC	P18
	EC180-CS, DT200-CS	AI Inference/Training System	P25
	EC300-CS, RM641-CS	AI Inference/Training System	P26
	WM343-CS330, WM343-CS331, WM343-CS332, WM343-CS350	IPC System & Chassis	P31
	ST102-CS	IPC System & Chassis	P34
	RM641-CS	IPC System & Chassis	P26
	RC300-CS, VC300-CS	Application-Specific System	P40
7th Gen Intel® Core™ Processor	EC70A-KU	Ultra Compact Fanless PC	P9
	EC500-KH, EC510/EC511-KH, EC531/EC532-KH	Embedded PC	P19
	VC70B-KU	Application-Specific System	P40
7th/6th Gen Intel® Core™ Processor	EC70A-SU, EB100-KU	Ultra Compact Fanless PC	P10
	EC500-SD, EC510/EC511-SD, EC531/EC532-SD	Embedded PC	P20
	RM641-SD	AI Inference/Training System	P26
	WM343-KD331, WM343-KD330, WM342-KD331, WM342-KD330	IPC System & Chassis	P32
	ST102-SD	IPC System & Chassis	P34
	DT122-SD	IPC System & Chassis	P34
	RM641-SD	IPC System & Chassis	P26



Processor	Model	Product Group	Index
6th Gen Intel® Core™ Processor	WM343-SD331, WM343-SD330	IPC System & Chassis	P33
	MD711-SU	Application-Specific System	P40
3rd Gen Intel® Xeon® Scalable Processor Family	RM645-ICX610	IPC System & Chassis	P35
3rd/2nd/1st Gen Intel® Xeon® Scalable Processor Family	RM840-PR810	AI Inference/Training System	P27
		IPC System & Chassis	
2nd/1st Gen Intel® Xeon® Scalable Processor Family	RM620-PR611	IPC System & Chassis	P35
Intel® Atom® Processors X Series	EC700-ADN, ED700-EHL221, ED700-EHL	Ultra Compact Fanless PC	P11
	EC170-EHL	Embedded PC	P21
Intel® Atom® Processor E3900	EP100-AL, EC90A-AL, EC800-AL	Ultra Compact Fanless PC	P12
	EC700-AL	Ultra Compact Fanless PC	P13
	VC230-AL	Application-Specific System	P40
	ECX700-AL	Ruggedized Embedded System	P43
Intel® Atom® Processor E3800	EC700-BT	Ultra Compact Fanless PC	P13
	EC220/EC221-BTA881, EC220/EC221-BTAG60, EC220/EC221-BT6060	Embedded PC	P21
	VC230-BT	Application-Specific System	P40
AMD® Ryzen™ Embedded V1000/R1000 Series	DT122-GH	IPC System & Chassis	P34
AMD® Ryzen™ Embedded R1000 Series	EC90A-GH	Ultra Compact Fanless PC	P10
NVIDIA® Jetson Xavier™ NX	EC100-XXN, EC102-XXN	AI Inference/Training System	P24
NXP i.MX 8M Mini	EC900-8MM, EC910-8MM	Ultra Compact Fanless PC	P14
NXP i.MX 8M Quad/Dual	VC900-M8M	Application-Specific System	P41
NXP i.MX 6 Series Processor	EC900-FS6	Ultra Compact Fanless PC	P14
Qualcomm Snapdragon QRB5165	EC700-QRB	Ultra Compact Fanless PC	P14

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)

ubuntu⁺

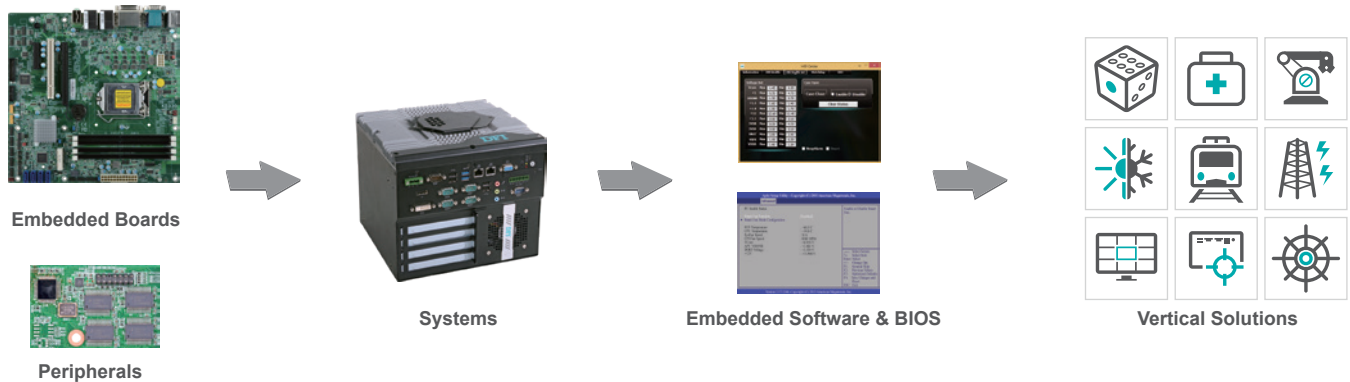


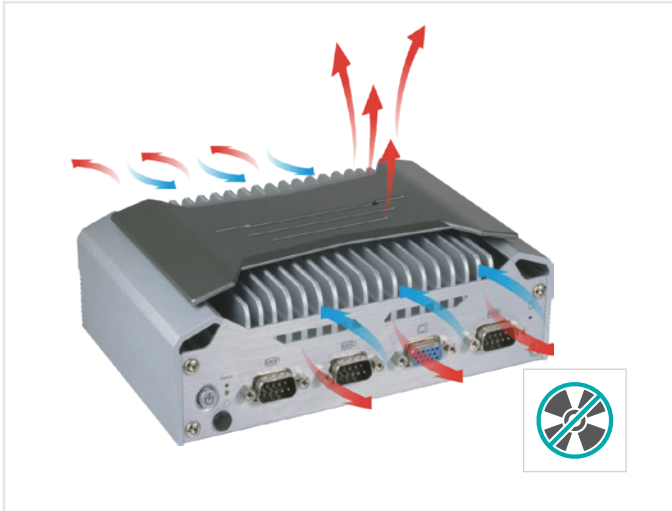
Embedded Total Solution

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



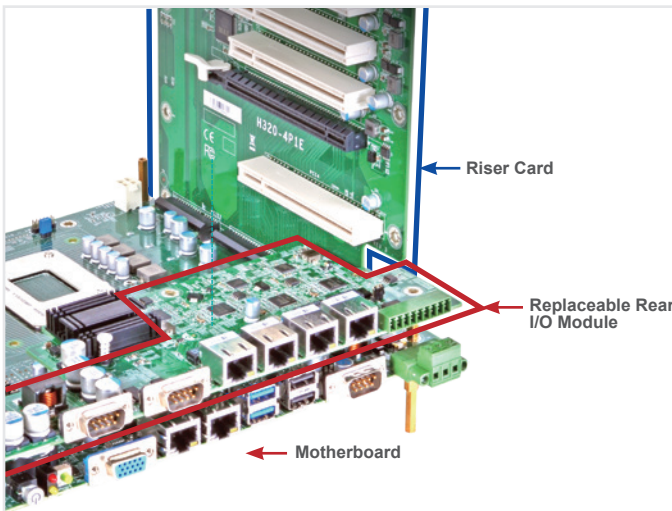
We Provide a Total Solution Designed for Your Embedded Applications





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

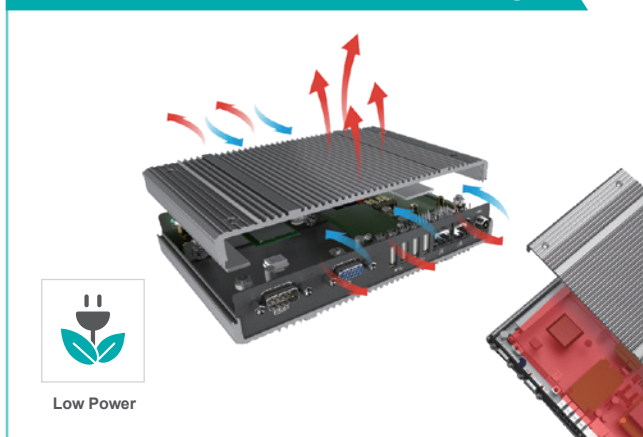
Low Power & Compact Solutions



Features

Our industrial compact embedded systems, powered by 12th/11th/7th/6th Gen IntelCore. ULV processors and/or low power Atom/ARM 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.

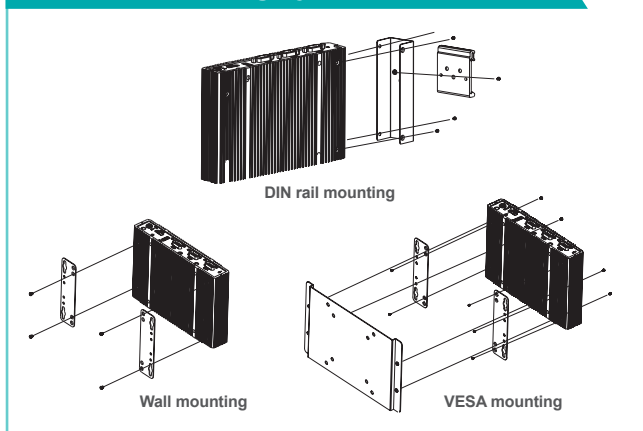
Excellent Thermal Dissipation Design



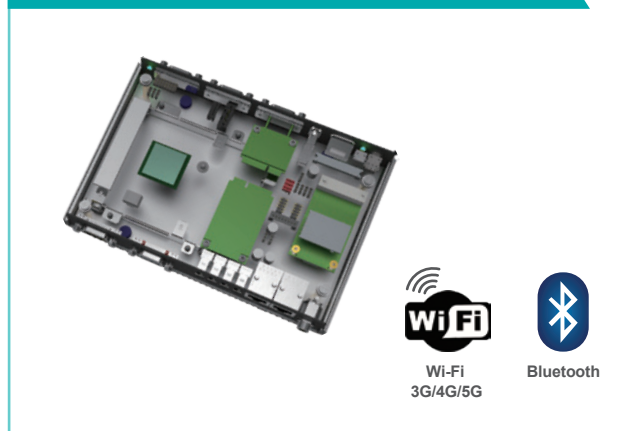
Compact and Rugged Design



Multiple Mounting Type



Rich Wireless Connectivity





Model Name		EC700-QRB	EC900-8MM	EC910-8MM	EC900-FS6
Platform		ARM	ARM		ARM
System	Processor	Qualcomm® Robotics RB5 Platform: QRB5165	i.MX 8M Mini Processor		NXP i.MX 6 Series Processor
	Socket	BGA type	BGA type		21x21 BGA
	Max. Speed	2.84GHz	1.6/1.8Ghz		1.0GHz
	CPU TDP	-	-		-
	Cache	-	-		-
	Chipset	-	-		-
	BIOS	-	-		-
Memory	Technology	POP LPDDR5	LPDDR4 die size		Single Channel DDR3L 1600MHz
	Max. Capacity	8GB	Default 1GB/4GB, up to 8GB		1/2GB
	Socket	Memory Onboard	Memory Onboard		Memory Onboard
Storage		UFS 3.1, default 128GB, Micro-SD Card	eMMC 8GB (up to 64GB), Micro-SD Card		4MB NOR Flash, 8GB/16GB eMMC, 1 micro SD
Expansion		1 M.2 B key 3052, 1 M.2 E key 2230, 1 Nano SIM slot	1 M.2 E key 2230, 1 M.2 B key 3042/2242, 1 Nano SIM		1 Full mPCIe
Audio	Audio Codec	WCD9385	-		-
Ethernet	Controller	AX88179A USB3 to GbE controller	1 Atheros Ethernet RTL8211, 1 Ethernet		1 Atheros Ethernet AR8033-AL1B, 1 Microchip USB to Ethernet LAN7500-ABZJ
LED	Indicators	Power LED	Status LED		Status LED
I/O	Ethernet (GbE)	1	2		2
	Serial	1 RS-232/422/485 (DB9)	1 RS-485, 1 RS-422	1 RS-485, 1 RS-422, 2 RS-232	1 RS-485, 1 RS-422, 1 UART
	USB	2 USB 3.2 Gen1 (Type A), 1 USB 2.0 (Type A), 1 USB 3.2 OTG (Type C), with DP 4K	2 USB 2.0		3 USB 2.0 1 OTG USB (Internal)
	Display	1 HDMI 1.4	1 HDMI		1 HDMI
	DIO	1x 8-bit DIO terminal block	4-bit DIO		4-bit DIO
	Buttons	1 Power Button	1 Power reset button		1 Power Reset Button
	Wi-Fi Antenna	6 Holes	2 Holes	6 Holes	2 Holes
	Audio	Audio Jack (Line-out/Mic-in)	-		-
Power		12V DC-in (DC Jack)	9~36V DC-in		9~36V DC-in
Cooling		Fanless	Fanless		Fanless
OS Support		Ubuntu 20.04	Yocto 3.3, Kernel 5.10.72		Yocto, Android
Mechanism	Construction	Aluminum + Metal Aluminum	Sheet Metal		Sheet Metal
	Mounting	Wall Mount	Din-rail Mount		Din Rail Mount
	Dimensions (W x H x D)	181.6 x 52 x 105.4mm	145 x 34 x 96mm	145 x 40 x 96mm	145 x 34 x 96.4mm
Environment	Operating Temp.	0°C~50°C	-5°C~60°C, -40°C~70°C (Opt.)		-20°C~60°C, -40°C~70°C

12th/11th/7th Gen Intel Core Processor



Model Name		EC70A-ADP	EC70A-TGU	EC70A-KU
Platform		ULT	ULT	ULT
System	Processor	12th Gen Intel® Core™ Processor	11th Gen Intel® Core™ Processor	7th Gen Intel® Core™ Processor
	Socket	BGA 1744	FCBGA 1449	BGA 1356
	Max. Speed	4.4~4.7GHz	3.9~4.4GHz	2.4~3.9GHz
	CPU TDP	15/28W	15W	15W
	Cache	10/12M	6/8/12M	3/4M
	Chipset	-	-	-
	BIOS	AMI SPI 256Mbit	AMI SPI 256Mbit	Insyde SPI 128Mbit
Memory	Technology	Dual Channel DDR4 3200MHz	Dual Channel DDR4	Dual Channel DDR4 2133MHz
	Max. Capacity	40GB (8GB memory onboard + 32GB memory DIMM)	40GB (8GB memory onboard + 32GB memory DIMM)	4/8GB
	Socket	Memory Onboard, 1 SODIMM	Memory Onboard, 1 SODIMM	Memory Onboard
Storage		1 M.2 2280	1 M.2 2280	1x 2.5" SATA 3.0 Drive Bay, 1 mSATA-mini, 1 M.2 2280
Expansion	PCIe, PCI	-	-	-
	Mini PCIe, M.2, SIM	1 M.2 2280 M Key, 1 M.2 3042/3052 B Key, 1 M.2 2230 E Key, 1 SIM for 4G/5G	1 M.2 3042/3052 B Key, 1 M.2 2230 E Key, 1 M.2 2280 M Key	1 Full mPCIe, 1 Half mPCIe, 1 M.2 2280
Audio	Audio Codec	Realtek ALC888	Realtek ALC888	Realtek ALC888
Ethernet	Controller	3 Intel® I225	1 Intel® I225 + 1 Intel® I210 or 1 Intel® I225 + 2 Intel® I210 or 1 Intel® I225 + 2 Intel® I210 + 1 Microchip LAN7500i	1 Intel® I210, 1 Intel® I219
LED	Indicators	Power, HDD LED	Power, HDD LED	Status, HDD LED
I/O	Ethernet (GbE)	1x 2.5GHz + 2x GbE	2 or 3 or 4	2
	Serial	2 RS-232/422/485, 1 RS-232, 1 RS-232/DIO	2 RS-232/422/485, 1 RS-232, 1 RS-232/DIO	2 RS-232/422/485, 4 RS-232
	USB	4 USB 3.2 (4 Type A or 2 Type A + 2 Type C)	2 or 4 or 6 USB 3.2 (type A)	4 USB 3.2, 4 USB 2.0
	Display	1 HDMI, 1 DP, 2 Type-C DP Alt. Mode	1 VGA, 2 HDMI	1 VGA, 1 HDMI/DP (auto detection), 1 HDMI
	DIO	8-bit DIO via DB-9 port (share with COM3)	8-bit DIO via DB-9 port (share with COM3)	8-bit DIO via DB-9 port
	Buttons	Power, Reset Button	Power, Reset Button	Power, Reset Button
	Wi-Fi Antenna	6 Holes	6 Holes	2 Holes
	Audio	Mic-in, Line-out	-	Mic-in, Line-out
Power		9~36V DC-in	9~36V DC-in	15~36V DC-in
Cooling		Fanless (optional with Fan)	Fanless	Fanless
OS Support		Win10 IoT Enterprise & Linux	Win10 IoT Enterprise & Linux	Win10 IoT Enterprise & Linux
Mechanism	Construction	Metal + Aluminum	Metal + Aluminum	Aluminum + Metal Aluminum
	Mounting	Wall/VESA/DIN Rail Mount	Wall/VESA/DIN Rail Mount	Wall/VESA Mount
	Dimensions (W x H x D)	181.6 x 57 x 118.4mm	181.6 x 57 x 118.4mm	181.6 x 67 x 118.4mm
Environment	Operating Temp.	Fanless: -20°C~60°C W/Fan: -20°C~70°C	-20°C~60°C	-20°C~60°C

7th/6th Gen Intel Core Processor & AMD Ryzen Embedded R1000 Series



Model Name		EC70A-SU	EB100-KU	EC90A-GH
Platform		ULT	ULT	AMD
System	Processor	7th/6th Gen Intel® Core™ Processor	7th/6th Gen Intel® Core™ Processor	AMD® Ryzen™ Embedded R1000 Series
	Socket	BGA 1356	BGA 1356	BGA1140
	Max. Speed	2.3~3.9GHz	2.3~3.9GHz	2.6~3.5GHz
	CPU TDP	15W	15W	up to 12W
	Cache	3/4M	2/3/4M	1M
	Chipset	-	-	-
	BIOS	Insyde SPI 128Mbit	Insyde SPI 128Mbit	AMI SPI 64bit
Memory	Technology	Dual Channel DDR4 2133MHz	Dual Channel DDR4 1866/2133MHz	Single DDR4 2400MHz
	Max. Capacity	4/8GB	32GB	up to 8GB
	Socket	Memory Onboard	2 SODIMM	Memory onboard
Storage		1x 2.5" SATA 3.0 Drive Bay, 1 mSATA-mini	1x 2.5" SATA 3.0 Drive Bay, 1 M.2 2280	eMMC up to 16/32/64/128GB
Expansion	PCIe, PCI	-	-	-
	Mini PCIe, M.2	1 Full mPCIe, 1 Half mPCIe	1 Half mPCIe, 1 M.2 2280	1 Full mPCIe
	SIM, micro SD	-	-	-
Audio	Audio Codec	Realtek ALC888	-	-
Ethernet	Controller	1 Intel® I210, 1 Intel® I219	1 Intel® I210, 1 Intel® I219	1 Intel® I211 or 1 Intel® I210(Opt.)
LED	Indicators	Power, HDD LED	Power, Storage LED	Power status
I/O	Ethernet (GbE)	2	2	1
	Serial	2 RS-232/422/485, 2 RS-232	-	Combo Port : 2 RS232 (or 8-bit DIO + 1 SMBus)
	USB	4 USB 3.2	4 USB 3.2, 2 USB 2.0	1 USB 3.2 Gen2 type C
	Display	1 VGA, 1 HDMI/DP (DP upon request)	2 HDMI	2 Micro HDMI 1.4
	DIO	8-bit DIO via DB-9 port	-	Combo Port : 8-bit DIO (or 2 RS232)
	SMBus	-	-	Combo Port : 1 SMBus(or 2 RS232)
	Buttons	Power, Reset Button	Power, Reset Button	-
	Wi-Fi Antenna	3 Holes	2 Holes	2 Holes (LTE or WiFi)
	Audio	Mic-in, Line-out	Line-out, Mic-in	-
Power		15~36V DC-in	12V DC-in	12V DC-in
Cooling		Fanless	Fanless	Fanless
OS Support		Win7, WES 7, Win8.1, WE8S, Win10	Win10 IoT Enterprise	Win10 IoT Enterprise, Ubuntu
Mechanism	Construction	Aluminum + Metal Aluminum	Aluminum + Metal	Aluminum + Metal
	Mounting	Wall/VESA/Din Rail Mount	Wall/VESA Mount	Wall/VESA Mount
	Dimensions (W x H x D)	181.6 x 57 x 118.4mm	115 x 48.7 x 111mm	112.29 x 80 x 56.20 mm
Environment	Operating Temp.	-20°C~60°C, 0°C~50°C	-20°C~40°C	-20°C~45°C



Model Name		EC700-ADN	ED700-EHL22I	ED700-EHL	
Platform		Atom		Atom	
System	Processor	Intel® Atom® Processors X Series		Intel® Atom® Processors X Series	
	Socket	BGA 1264		BGA 1493	
	Max. Speed	2.7~3.4GHz		1.8~3GHz	
	CPU TDP	6/10/12W		6.5/9/10/12W	
	Cache	6 MB Smart Cache		1.5 MB L2 Cache	
	Chipset	-		-	
	BIOS	AMI SPI 256Mbit (supports UEFI boot only)		AMI SPI 256Mbit (supports UEFI boot only)	
Memory	Technology	LPDDR5 5200MHz	Dual Channel DDR4 3200MHz		
	Max. Capacity	8GB/16GB	up to 32GB		
	Socket	Memory down	Memory onboard + 1 SO-DIMM		
Storage		eMMC 32GB/64GB, 1 Micro SD, 1 M.2 2280 B+M key, 1 M.2 2230 A+E key	1 M.2 2280, 16GB/32GB/64GB eMMC		
Expansion		1 M.2 2230 A+E key, 1 Full mPCIe, 1 M.2 2242/2280 B+M key, 1 SIM, Hailo-8 M.2 AI Acceleration Module(Opt.)	1 M.2 2230, 1 M.2 3042/3052, 2 SIM		
Audio	Audio Codec	Realtek ALC888S	Realtek ALC888		
Ethernet	Controller	2 Intel® I226, 1 Intel® I210	2 or 3 Intel® I210/I211		
LED	Indicators	Power, Storage LED	-		
I/O	Ethernet (GbE)	2x 2.5GbE, 1x GbE(Support DFI OOB)	2 or 3 GbE (Opt.), 1 2.5GbE TSN, 1 Allixon OOB Enabler (Opt.)		
	Serial	4 RS232/422/485	2 RS232/422/485, 2 Isolated COM		
	USB	3 USB 3.2 type A + 1 USB-C (4 USB 3.2 type A Opt.)	2 or 4 USB 3.2 (Opt.), 2 USB 2.0		
	Display	1 HDMI, 1 VGA	1 VGA		
	DIO	4 DI, 4 DO (via COM4)	12-bit isolated DIO+2 isolated COM 8-bit DIO (jumper switch to COM)	8-bit DIO (jumper switch to COM)	
	Buttons	Power, Reset Button	-		
	Wi-Fi Antenna	4 Holes	6 Holes (2 for WiFi, 4 for 4G/5G/GPS)		
	Audio	Line out or Mic In	-		
Power		9~36V DC-in	9~36V DC-in		
Cooling		Fanless	Fanless		
OS Support		Win11 IoT Enterprise, Linux Ubuntu 22.04	Win10 IoT Enterprise, Linux Ubuntu 20.04		
Mechanism	Construction	Aluminum + Metal	Aluminum + Metal		
	Mounting	Wall/DIN Rail/VESA Mount	Wall/DIN Rail Mount		
	Dimensions (W x H x D)	180 x 127.8 x 33 mm	72 x 172 x 118.2 mm		
Environment	Operating Temp.	0°C~60°C	0°C~60°C, -40°C~60°C (Support by Intel® Embedded Series)		



Model Name		EP100-AL	EC90A-AL	EC800-AL
Platform		Atom	Atom	Atom
System	Processor	Intel® Atom® Processor E3900	Intel® Atom® Processor E3900	Intel® Atom® Processor E3900
	Socket	BGA 1296	BGA 1296	BGA 1296
	Max. Speed	1.8GHz	1.8GHz	1.8~2.5GHz
	CPU TDP	9W	6.5/9W	6/9/12W
	Cache	2M	2M	2M
	BIOS	AMI SPI 128Mbit (supports UEFI/Legacy mode)	Insyde SPI 128Mbit (supports UEFI boot only)	Insyde SPI 128Mbit (supports UEFI boot only)
Memory	Technology	LPDDR4	Single Channel LPDDR4 2400MHz	Dual Channel LPDDR4 2400MHz
	Max. Capacity	4GB	2/4GB	2/4/8GB
	Socket	Memory Onboard	Memory Onboard	Memory Onboard
Storage		eMMC up to 64GB	16GB/32GB/64GB eMMC	1 mSATA, 1 M.2 2242
	Mini PCIe, M.2	-	1 Full mPCIe socket	1 Full mPCIe, 1 M.2 2230 E Key, 1 M.2 2242 B Key
	SIM, micro SD	-	-	-
Audio	Audio Codec	-	-	Realtek ALC262
Ethernet	Controller	1 Intel® I210	2 Intel® I210	2 Intel® I210
LED	Indicators	Power, LAN LED	Power, HDD LED	Power, HDD LED
I/O	Ethernet (GbE)	1 PoE PD 802.3af 12.95W	2	2
	Serial	-	1 RS-232/422/485	2 RS-232/422/485
	USB	2 USB 3.2, 2 USB 2.0	1 USB 2.0, 2 USB 3.2	2 USB 2.0, 2 USB 3.2
	Display	2 DP++	1 Mini DP++	1 VGA/DVI-D, 2 Mini-DP/Micro-HDMI
	DIO	-	8-bit DIO via DB-9 port	8-bit DIO via DB-9 port
	Buttons	Reset Button	Power Button	Power Button
	Wi-Fi Antenna	-	2 Holes	2 Holes
	Audio	Line out and Microphone	-	Line-out, Mic-in
Power		5V/15W	12V DC-in	9~36V DC-in
Cooling		Fanless	Fanless	Fanless
OS Support		Win10 IoT, Linux	Win10 IoT, Linux, Linux Yocto	Win10 IoT, Linux, Linux Yocto
Mechanism	Construction	Aluminum + Metal	Sheet Metal	Aluminum
	Mounting	Wall Mount	Wall/Din Rail Mount	Wall/VESA/Din Rail Mount
	Dimensions (W x H x D)	83 x 47 x 62mm	127 x 42 x 80.4mm	161 x 35.1 x 108.2mm
Environment	Operating Temp.	0°C~50°C	-20°C~60°C	-20°C~60°C, -40°C~70°C (Wide-temp sku only)



Model Name		EC700-AL	EC700-BT
Platform		Atom	Atom
System	Processor	Intel® Atom® Processor E3900	Intel® Atom® Processor E3800
	Socket	BGA 1296	BGA 1170
	Max. Speed	1.8~2.5GHz	1.33~2.41GHz
	CPU TDP	6/9/10/12W	4.3/6/10W
	Cache	2M	1/2M
	Chipset	-	-
	BIOS	AMI SPI 128Mbit (support UEFI/legacy mode)	AMI SPI 64Mbit
Memory	Technology	Dual Channel DDR3L 1866MHz	Single Channel DDR3L 1066/1333MHz
	Max. Capacity	2/4/8GB	2/4GB
	Socket	Memory Onboard, 1 SODIMM	ECC/non-ECC Memory Onboard
Storage		eMMC (Opt.), 1 x 2.5" SATA bay, 1 Full mSATA	1x 2.5" SATA 2.0 Drive Bay, 1 mSATA, eMMC Onboard (Opt.), microSD (Opt.)
Expansion	PCIe, PCI	-	-
	Mini PCIe, M.2	1 Full mPCIe, 1 M.2 2230 E Key	2 Full mPCIe, 1 Half mPCIe
	SIM	1 Nano SIM	1
Audio	Audio Codec	Realtek ALC262	-
Ethernet	Controller	2/4 Intel® I210	2 Intel® I210
LED	Indicators	Power, Status LED	Status, HDD LED
I/O	Ethernet (GbE)	2/4	2
	Serial	4 RS-232/422/485	4 RS-232/422/485
	USB	4/2 USB 3.0	4 USB 2.0, 1 USB 3.0
	Display	1 DP/VGA, 1 DP/HDMI combo (auto detect)	1 HDMI + 1 VGA or 1 DVI-I
	DIO	8-bit DIO via DB-9 port (Opt.)	8-bit DIO via DB-9 port
	Buttons	Power, Reset Button	Power, Reset Button
	Wi-Fi Antenna	3 Holes	3 Holes
	Audio	-	-
Power		9~36V DC-in	9~36V DC-in
Cooling		Fanless	Fanless
OS Support		Win10 IoT Enterprise, Win7, Linux	Win7, WES 7, Win8, WES 8, Win8.1, Win10, Linux
Mechanism	Construction	Aluminum + Metal	Aluminum + Metal Aluminum
	Mounting	Wall/VESA/Din Rail Mount	Wall/VESA/Din Rail Mount
	Dimensions (W x H x D)	180 x 33 x 127.8mm	180 x 33 x 121.2mm
Environment	Operating Temp.	-20°C~60°C, -40°C~70°C	-20°C~60°C, 0°C~50°C or 0°C~60°C, 0°C~50°C

Embedded Fanless PC

Advanced Computing Solutions



Features

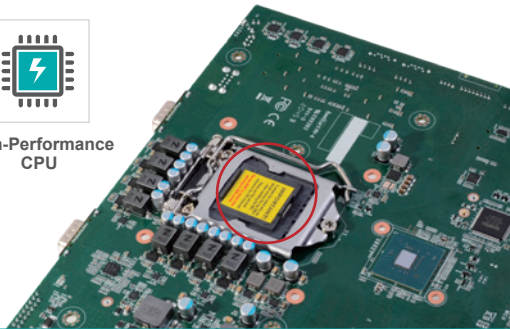
DFI's performance embedded PC series is based on the powerful 9th/8th/7th/6th Gen Intel® Core™ Desktop platform with advanced graphics and computing performance, which are available in solid designs and expansibility. Their high flexibility and reliability will fulfill your various I/O requirements and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

Desktop Platforms

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



High-Performance CPU

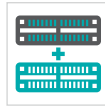


Customization & Scalability

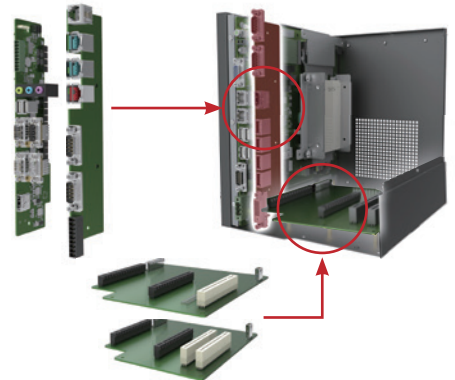
We accept custom-made I/O board on a MOQ basis



Customized I/O Board



Multiple Expansions



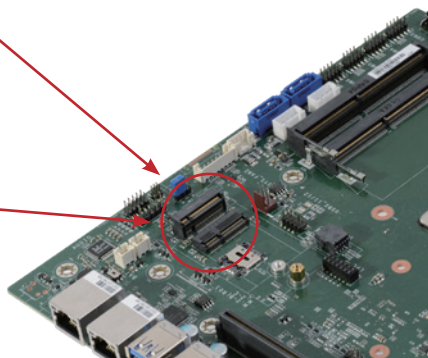
5G & Wifi 6 Module



5G



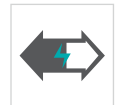
Wifi 6



Rugged Design



Wide-Temperature



Wide-Voltage

13th/12th Gen Intel Core Processor



Model Name		EC600-RPS	EC500-ADS	EC510-ADS/EC511-ADS	EC543-ADS
Platform		Desktop		Desktop	
System	Processor	13th/12th Gen Intel® Core™ Processor		12th Gen Intel® Core™ Processor	
	Socket	LGA1700		LGA1700	
	Max. Speed	3.3GHz		2.4GHz	
	CPU TDP	35W/65W		35W	
	Cache	4/6/12/18/25/30M		4/6/12/18/25/30M	
	Chipset	Intel® H610E/R680E	Intel® H610E/Q670E/R680E	Intel® Q670E	
BIOS		AMI SPI 256Mbit		AMI SPI 256Mbit	
Memory	Technology	Dual Channel DDR5 4800MHz		Dual Channel DDR4 3200MHz	
	Max. Capacity	64GB		64GB	
	Socket	2 DDR5 SODIMM		2 DDR4 SODIMM	
Storage		1 M.2 2280	2x 2.5" SATA 3.0 Drive Bays, 1 M.2 2280 (Q670E/R680E only)	2x 2.5" SATA 3.0 Drive Bays, 1 M.2 2280	
Expansion	PCIe, PCI, M.2	1 M.2 2230 E key, 1 M.2 3042/3052 B key, 1 or 2 M.2 2242/2280 M key (one for H610E, Two for R680E), 1 M.2 3042 A Key, 1 Full mPCIe, 1 SIM	1 M.2 2230 E key, 1 M.2 3042/3052 B key, 1 M.2 2280 M key (Q670E/R680E Only)	1 PCI or 1 PCIe x16, 1 M.2 2230 E key, 1 M.2 2280 M key, 1 M.2 3042/3052 B key	1 PCIe x16, 1 PCIe x4, 1 PCIe x1, 1 PCI, 1 M.2 2230 E key, 1 M.2 2280 M key, 1 M.2 3042/3052 B key
		N/A		Realtek ALC888	
Ethernet	Controller	1 Intel® i219, 3 Intel® i210, 2 Intel® i226 (R680E Only)	2 Intel® I225		
LED	Indicators	Status, HDD LED		Status, HDD LED	
I/O	Ethernet (GbE)	H610E: 4 GbE or 2 GbE + 2 PoE (Opt.) R680E: 4 GbE, 2 2.5GbE or 2 GbE, 2 2.5GbE, 2 PoE (Opt.)	2 GbE	2 GbE + 4 PoE or 2 GbE + 2 PoE or 6 GbE or 4 GbE or 2 GbE	
	Serial	2 RS-232/422/485, 4 or 8 RS232	4 RS-232/422/485, 2 RS-232	4 or 8 RS232/422/485, 2 RS232	
	USB	H610E: 3 USB 3.2 Gen2, 2 USB 2.0, 1 Type-C R680E: 5 USB 3.2 Gen2, 1 Type-C	4 USB 3.2, 2 USB 2.0	4 or 6 or 10 USB 3.2, 4 USB 2.0	
	Display	1 VGA, 1 DP++/HDMI (auto detection)	1 VGA, 2 DP++/HDMI (auto detection)		
	DIO	8bits (share with COM1 DB9 connector)	8bits	8/16/32 bits	
	Buttons	Power, Reset	Power, Reset		
	Wi-Fi Antenna	4 Holes	4 Holes	6 Holes	
	Audio	N/A	Mic-in, Line-out		
Power		9~36V DC-in		9~36V DC-in	
Cooling		Fanless (optional with Fan)		Fanless	
OS Support		Win10 IoT Enterprise, Linux(Opt.)		Win10 IoT Enterprise, Linux(Opt.)	
Mechanism	Construction	Metal + Aluminum		Metal + Aluminum	
	Mounting	Wall Mount			
	Dimensions (W x H x D)	249.5 x 85 x 223 mm	255.3 x 85 x 224 mm	255.3 x 124.6 x 224 mm	255.3 x 195 x 221.1 mm
Environment	Operating Temp.	35W CPU:-20°C~70°C 65W CPU:-20°C~50°C (for wide temperature M.2 SSD, w/ 0.7m/sec air flow)	-20°C~70°C	-20°C~60°C	

9th/8th Gen Intel Core Processor



Model Name		EC500-CS	EC510/EC511-CS	EC543-CS
Platform		Desktop		
System	Processor	9th/8th Gen Intel® Core™ Processor		
	Socket	LGA 1151		
	Max. Speed	3.1~4.0GHz		
	CPU TDP	35W		
	Cache	2/4/6/9/12M		
	Chipset	Intel® H310/Q370/C246	Intel® H310/Q370	Intel® Q370
BIOS		AMI SPI 128Mbit		
GPU / AI Accelerator Card Support		MXM 3.1 Type A/B/C: RTX2080, RTX2070	Intel® movidius™ AI accelerator card (Opt.) (EC511)	Intel® movidius™ AI accelerator card (Opt.)
Memory	Technology	Dual Channel DDR4 2666/2400MHz		
	Max. Capacity	64GB		
	Socket	2 SODIMM		
Storage		2x 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 E key, 1 M.2 2280 M key, 1 M.2 3052 B key	1 M.2 2230 E key, 1 M.2 2280 M key, 1 M.2 3042/3052 B key	
Audio	Audio Codec	Realtek ALC888		
Ethernet	Controller	1 Intel® I210, 1 Intel® I219		
LED	Indicators	Status, HDD LED		
I/O	GbE, POE	2 GbE	2 GbE + 4 PoE or 6 GbE or 2 GbE	
	Serial	4 RS-232/422/485, 2 RS-232	4 or 7 RS-232/422/485, 2 RS-232	
	USB	4 USB 3.2, 2 USB 2.0	4 USB 3.2, 4 USB 2.0 or 8 USB 3.2, 2 USB 2.0	
	Display	1 VGA, 1 or 2 DP++/HDMI (auto detection)		1 VGA, 2 DP++/HDMI (auto detection)
	Audio	Mic-in, Line-out		
	DIO	8bits	8/16 bits	
	Buttons	Power, Reset		
	Antenna	4 Holes		
Power		9~36V DC-in		
Cooling		Fanless		
OS Support		Win10 IoT Enterprise, Linux(Opt.)		
Mechanism	Construction	Metal + Aluminum		
	Mounting	Wall Mount		
	Dimensions (W x H x D)	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		



Model Name		ES220-CS	ES220F-CS
Platform		Desktop	
System	Processor	9th/8th Gen Intel® Core™ Processor	
	Socket	LGA 1151	
	Max. Speed	2.9GHz~4GHz	
	CPU TDP	35W	
	Cache	2/4/6/9/12M	
	Chipset	Intel® C246/Q370/H310	
	BIOS	Insyde SPI 128Mbit	
Memory	Technology	Dual Channel DDR4 2666MHz (C246 support ECC)	
	Max. Capacity	64GB	
	Socket	2 SODIMM	
Storage		2x 2.5" SATA bay (Opt.), 1 M.2 2280	
Expansion		1 M.2 2280 M key, 1 M.2 2230 E key, WiFi	
Audio	Audio Codec	-	
Ethernet	Controller	2 Intel® I219/I210	
LED	Indicators	Power, HDD LED	
I/O	Ethernet (GbE)	2	
	Serial	2 RS-232/422/485 or 1 RS-232/422/485 + 8-bit DIO	
	USB	4 USB 3.2, 2 USB 2.0	
	Display	2 HDMI 2.0	
	DIO	8-bit DIO	
	Buttons	Reset, Power Button	
	Wi-Fi Antenna	2 Holes	
	Audio	-	
Power		12V DC-in	
Cooling		Active Fan	Fanless
OS Support		Win10 IoT Enterprise 2019 LTSC + RS5, Win10 Professional	
Mechanism	Construction	Aluminum + Metal	
	Mounting	Wall mount / VESA mount (Opt.)	
	Dimensions (W x H x D)	175 x 48.5 x 120mm or 175 x 73.5 x 120mm	175 x 69.4 x 120mm or 175 x 90.4 x 120mm
Environment	Operating Temp.	-5°C~45°C	-5°C~45°C or -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	25/35/45W		
	Cache	3/6/8M		
	Chipset	Intel® CM238/QM175		
BIOS		Insyde SPI 128Mbit		
GPU / AI Accelerator Card Support		-	Intel® movidius™ AI accelerator card (Opt.) (EC511)	Intel® movidius™ AI accelerator card (Opt.)
Memory	Technology	Dual Channel DDR4 2400MHz		
	Max. Capacity	32GB		
	Socket	2 SODIMM (CM238 supports ECC)		
Storage		1x 2.5" SATA 3.0 Drive Bay, 1 CFast, 1 M.2 2280	2x 2.5" SATA 3.0 Drive Bay, 1 M.2 2280	
Expansion	PCIe, PCI	-	1 PCI or 1 PCIe x16	1 PCIe x16 + 2 PCI or 2 PCIe x16 + 1 PCI
	Mini PCIe, M.2	2 Full mPCIe, 1 M.2 2280 M Key	1 Full mPCIe, 1 Full/Half mPCIe, 1 M.2 2280 M key	
	SIM	2 Micro-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, Status, HDD LED	Power, HDD LED	
I/O	Ethernet (GbE)	2	6 GbE or 2 GbE + 4 PoE	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		8 USB 3.2, 2 USB 2.0
	Display	1 VGA, 1 HDMI/DVI (DVI-D signal), 1 HDMI/DP		
	Audio	Line-out, Mic-in(Opt.)		
	DIO	-	16-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 (W x H x D)	235 x 60.89 x 222mm	235 x 102.5 x 221.2mm	235 x 153.8 x 222.1mm
Environment	Operating Temp.	0°C~50°C (HDD), -20°C~60°C (SSD), -40°C~70°C (Opt.)		

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	2.7~3.8GHz		
	CPU TDP	35W		
	Cache	3/4/6/8M		
	Chipset	Intel® Q170		Intel® Q170/H110
	BIOS	Insyde SPI 128Mbit		
GPU / AI Accelerator Card Support		-	Intel® movidius™ AI accelerator card (Opt.) (EC511)	Intel® movidius™ AI accelerator card (Opt.)
Memory	Technology	Dual Channel DDR4 1866/2133MHz		
	Max. Capacity	32GB		
	Socket	2 SODIMM		
Storage		1x 2.5" SATA 3.0 Drive Bay, 1 mSATA-mini, 1 CFast	2x 2.5" SATA 3.0 Drive Bay, 1 mSATA-mini	
Expansion	PCIe, PCI	-	1 PCI or 1 PCIe x16	2 PCI + 1 PCIe x16 or 1 PCI + 2 PCIe x16
	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 (W x H x D)	235 x 63.2 x 221.2mm	235 x 102.5 x 222mm	235 x 153.8 x 222mm
Environment	Operating Temp.	0°C~50°C		



Model Name		EC170-EHL	EC220/EC221-BT	EC210-BT	EC200-BT
Platform		Atom		Atom	
System	Processor	Intel® Atom® Processors X Series		Intel® Atom® Processor E3800	
	Socket	BGA 1493		BGA 1170	
	Max. Speed	3.0GHz		1.91GHz	
	CPU TDP	6/9/10/12W		10W	
	Cache	1.5M		2M	
	Chipset	-		-	
	BIOS	AMI SPI 256Mbit (supports UEFI boot only)		AMI SPI 64Mbit	
Memory	Technology	Dual channel DDR4 up to 3200MHz		Dual Channel DDR3L 1333MHz	
	Max. Capacity	32GB		8GB	
	Socket	2 SODIMM		2 SODIMM	
Storage		1x SATA 3.0 connector for 1 x 2.5" SSD, 1 M.2 2242/2280/3052		1 or 2 x 2.5" SATA 2.0 Drive Bay, 1 mSATA (via full mPCIe)	
Expansion	PCIe, PCI	-		1 PCI	-
	Mini PCIe, M.2	1 M.2 2242/2280/3052 B Key, 1 M.2 2230 E Key		1 Full mPCIe	
	SIM	1 Nano SIM		-	
Audio	Audio Codec	Realtek ALC888		Realtek ALC888	
Ethernet	Controller	2 Intel® I225		2 Intel® I210AT	
LED	Indicators	PWD, HDD LED		Power, HDD, Alert LED	
I/O	Ethernet (GbE)	2x 2.5GHz RJ45		2	
	Serial	-		4 or 8 RS-232/422/485, 2 RS-232	
	USB	2 USB 3.2 Gen2, 2 USB 3.2 Gen1		1 USB 3.2, 5 or 7 USB 2.0	
	Display	1 HDMI, 1 DP++		1 VGA, 1 DVI-D (by model)	
	Audio	Line-out		1 Speaker-out	
	DIO	-		8-bit DIO / 16-bit DIO / 0	
	Buttons	-		Power, Reset Button	
	Wi-Fi Antenna	-		2 Holes	
Power		9~36V DC-in		9~36V DC-in	
Cooling		Fanless		Fanless	
OS Support		Win10 IoT Enterprise, Linux		Win7, WES7, Win8.1, WES8, Win10, Linux(Opt.)	
Mechanism	Construction	Aluminum + SGCC		Aluminum + SGCC	
	Mounting	Wall mount (mounting brackets and screws)		Wall/VESA mount	
	Dimensions (W x H x D)	235 x 222 x 102.5 mm (not include wall mount bracket)		275 x 114 x 203 mm	275 x 94 x 203mm
Environment	Operating Temp.	-5°C~60°C, -40°C~60°C		0°C~55°C (SSD/mSATA) 0°C~50°C (HDD) -10°C~70°C (wide-temp SSD with EC200-BT6060)	

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



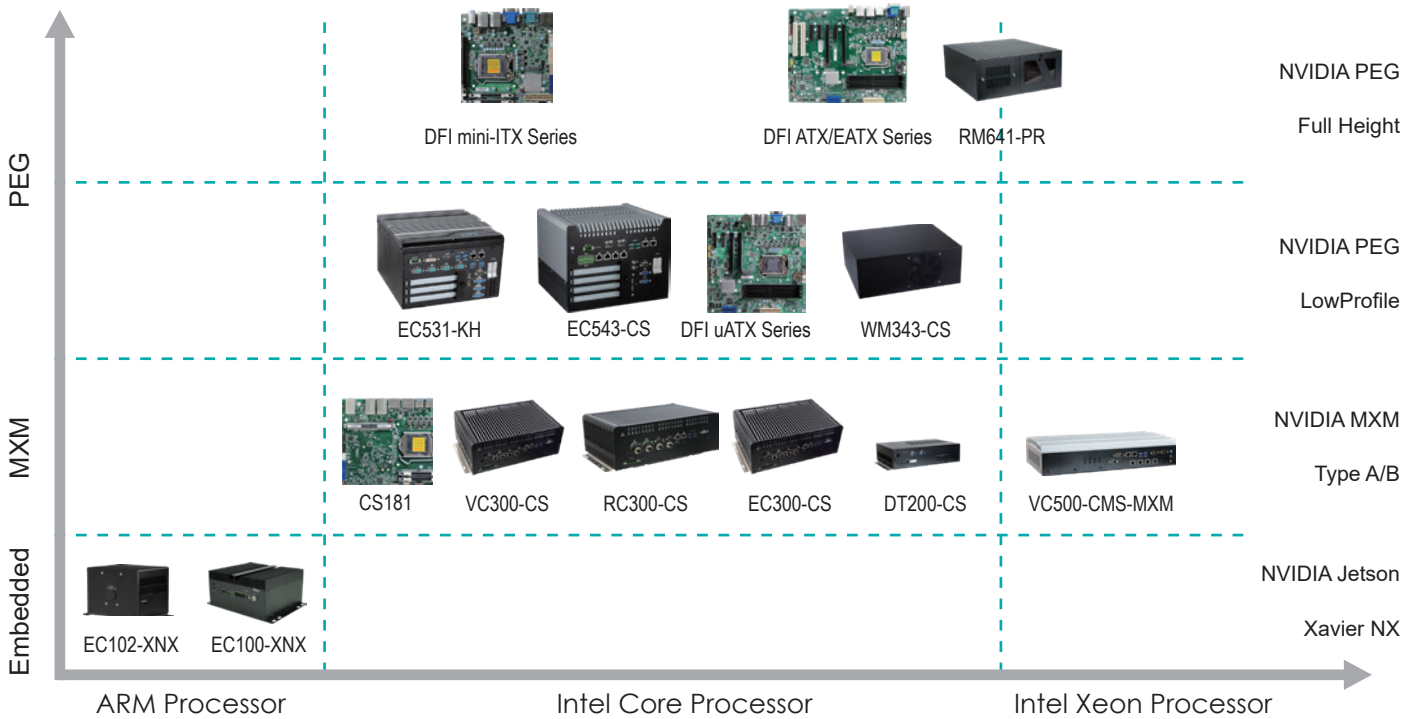
DFI Product x Jetson

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





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 (W x H x D)	190 x 80 x 175mm	91.4 x 70 x 76.6mm
Environment	Operating Temp.	0°C~60°C	

13th/12th/9th/8th Gen Intel Core Processor with MXM slot



Model Name		EC622-RPS	EC180-CS	DT200-CS
Platform		Desktop		
System	Processor	13th/12th Gen Intel® Core™ Processor	9th/8th Gen Intel® Core™ Processor	
	Socket	LGA1700	LGA 1151 Socket	
	Max. Speed	3.3G	3.1GHz~4.0GHz	3.1GHz~4.6GHz
	CPU TDP	65W / 35W	35W	
	Cache	4/6/12/18/25/30M	6~12MB	
	Chipset	Intel® R680E	Intel® H310/Q370	
	BIOS	AMI SPI 256Mbit	AMI SPI 128Mbit (supports UEFI/Legacy mode)	AMI SPI 128Mbit (supports UEFI/Legacy mode)
GPU / AI Accelerator Card Support		1 PCIe x16 slot	1 MXM 3.1 slot, Type-A/B up to 60W	1 MXM 3.1 slot, Type-A/B up to 110W
Memory	Technology	Dual Channel DDR5 4800MHz	DDR4 2400/2666MHz	
	Max. Capacity	64GB	up to 64GB	
	Socket	2 DDR5 SODIMM	2 SODIMM	
Storage		1 M.2 2242/2280	1x SATA 3.0 connector for 1 x 2.5" SSD, 1 M.2 2242/2280 (Q370)	1x SATA 3.0 connector for 1 x 2.5" SSD, 1 M.2 2242/2280
Expansion		1 M.2 2230 E key, 1 M.2 3042/3052 B key, 2 M.2 2242/2280 M key, 1 M.2 3042 A Key, 1 SIM, 1 Full mPCIe, 1 PCIe x16(PCle x16 signal), 1 PCIe x8(PCle x4 signal)	1 M.2 2242/2280 M key, 1 M.2 3052 B key, 1 M.2 2230 E key	
Audio	Audio Codec	N/A	Realtek ALC888S-VD2-GR	
Ethernet	Controller	1 Intel® i219, 3 Intel® I210, 2 Intel® i226	1 Intel® I219, 3 Intel® I210	1 Intel® I219, 3 Intel® I211
LED	Indicators	Status, HDD LED	PWD, HDD LED	
I/O	Ethernet (GbE)	4 GbE, 2 2.5GbE or 2 GbE, 2 2.5GbE, 2 PoE (Opt.)	4	
	Serial	2 RS-232/422/485, 8 RS-232	2 RS-232/422/485	2 RS-232
	USB	5 USB 3.2 Gen2, 1 Type-C	4 USB 3.2	4 USB 3.2, 6 USB 2.0
	Display	1 VGA, 1 DP+/HDMI (auto detection)	1 DP/HDMI (auto-detection), 4 DP (from MXM)	1 HDMI (auto-detection), 4 DP (from MXM)
	DIO	8bits (share with COM1 DB9 connector)	-	
	Buttons	Power, Reset	Power	
	Antenna	4 Holes	6 holes	
	Audio	N/A	Line-out, Mic-in	
Power		9~36V DC-in	19V DC-in	
Cooling		Fanless	Fanless	Fan
OS Support		Win10 IoT Enterprise, Linux(Opt.)	Win10 IoT Enterprise, Linux	
Mechanism	Construction	Metal + Aluminum	Aluminum + SGCC	
	Mounting	Wall Mount	Wall mount (mounting brackets and screws)	
	Dimensions (W x H x D)	249.5 x 85 x 223 mm	250 x 180 x 76mm (not include wall mount bracket)	320 x 220 x 87mm (not include wall mount bracket)
Environment	Operating Temp.	35W CPU: -20°C ~ 70°C 65W CPU: -20°C ~ 50°C (for wide temperature M.2 SSD, w/ 0.7m/sec air flow)	0°C~45°C	0°C~55°C

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



Model Name		EC300-CS	RM641-CS	RM641-SD
Platform		Desktop	Rackmount Box PC	
System	Processor	9th/8th Gen Intel® Core™ Processor	9th/8th Gen Intel® Core™ /Pentium®/Celeron® Processors	7th/6th Gen Intel® Core™ Processors
	Socket	LGA 1151	LGA 1151	
	Max. Speed	1.8~2.6GHz	2.9GHz~4.7GHz	2.4GHz~4.0GHz
	CPU TDP	35/65W	35/54/65/71/80/95W	35/47/65W
	Cache	9/12M	2/4/6/8/9/12M	3/4/6/8M
	Chipset	Intel® Q370	Intel® C246	Intel® Q170
	BIOS	AMI SPI 128Mbit	Insyde SPI 128Mbit	
GPU / AI Accelerator Card Support		MXM 3.1 Type A/B: P1000, RTX3000	-	
Memory	Technology	Dual Channel DDR4 2666/2400MHz	Dual Channel DDR4 2400/2666MHz (ECC/non ECC)	Dual Channel DDR4 1866/2133MHz
	Max. Capacity	64GB	128GB	64GB
	Socket	2 SODIMM	4 UDIMM	
Storage		4 Swappable 2.5" SSD Storage Bays, 1 M.2 2280	3x 5.25" Optical drive bays, 1x 3.5" SATA 3.0 drive bay	3x 5.25" Optical Drive Bays, 1x 3.5"/2.5" SATA 3.0 Drive Bay
Expansion		1 Half mPCIe, 2 Full mPCIe, 1 M.2 3042/3052 B Key, 1 M.2 2280 M Key, 2 SIM	1 PCIe x16, 3 PCIe x4, 2 PCI, 1 Mini PCIe, 1 M.2 2242/2280 M key	2 PCIe x16, 2 PCIe x4, 3 PCI
Audio	Audio Codec	Realtek ALC888	Realtek ALC887 (ALC888 as Opt.)	Realtek ALC888S-VD2-GR
Ethernet	Controller	5 Intel® I210, 1 Intel® I219	1 Intel® I211, 1 Intel® I219	
LED	Indicators	Power, Storage, POE LED	Power, HDD LED	
I/O	Ethernet (GbE)	2 GbE, 4 POE	2	
	Serial	2 RS-232/422/485 (DB9), 2 RS-232/422/485 onboard	1 RS-232/422/485	
	USB	4 USB 3.2, 2 USB 2.0	4 USB 3.2, 2 or 4 USB 2.0	
	Display	1 VGA, 1 HDMI, 1 DP++	1 VGA, 2 DP++	1 VGA, 1 DVI-I (DVI-D signal), 1 HDMI
	DIO	1 DB-9 8 bit isolated DI, 1 DB-9 8 bit isolated DO	-	
	Buttons	Power, Reset	Power, Reset	
	Antenna	7 holes	-	
Audio	Line-out, Mic-in	Line-out, Mic-in, Line-in(Opt.)		
Power		12V DC	ATX PS/2 Power Supply 500W AC Power Input : 90~264V	
Cooling		Fanless	2 x 92cm System Fan with Quick Access Filter	
OS Support		Win10 IoT Enterprise, Linux Ubuntu	Win10 IoT Enterprise, Linux	Win7/WES7, Win8.1, Win10 IoT Enterprise, Debian 8, CentOS 7, Linux
Mechanism	Construction	Metal + Aluminum	SECC	
	Mounting	Wall Mount	Flexible Hold Down Bar	
	Dimensions (W x H x D)	340.5 x 132 x 223mm	483 x 177 x 451mm	
Environment	Operating Temp.	-20°C~70°C	0°C~45°C	

2nd/1st Gen Intel Xeon Scalable Processor



Model Name		RM840-PR810
Platform		Rackmount Box PC
System	Processor	2nd/1st Gen Intel® Xeon® Scalable Processor Family
	Socket	LGA 3647
	Max. Speed	3.0~3.9GHz
	CPU 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
	BIOS	Insyde SPI 256Mbit
GPU / AI Accelerator Card Support		-
Memory	Technology	12 Channel DDR4 2133/2400/2666/2933 MHZ
	Max. Capacity	384GB
	Socket	12 RDIMM
Storage		2x 5.25" (1x 2.5"), 1x 3.5" (1x 2.5"), 1 M.2 2280
Expansion		4 PCIe x16, 1 PCIe x8, 1 x PCI, 1 M.2 2280 M key, 1 BMC Module slot for SEM2500/2510 (IPMI), 1 100GbE slot (x4 + x8) for EXT-100GbE proprietary module
Audio	Audio Codec	Realtek ALC888
Ethernet	Controller	2 Intel® I210, 1 Intel® x557-AT2
LED	Indicators	Power, HDD LED
I/O	Ethernet (GbE)	2 GbE, 2 10GbE x557-AT2, IPMI 2.0: 1 share w/ i210AT (Opt.)
	Serial	1 RS-232
	USB	4 USB 3.2, 2 USB 2.0
	Display	1 VGA (Opt.)
	DIO	-
	Buttons	Power, Reset
	Antenna	-
Audio	Line-out, Mic-in	
Power		ATX PS/2 Power Supply 650W
Cooling		2 Fans (90mm = 51CFM)
OS Support		Win 10 IoT Enterprise, Windows Server 2016&2019, Linux
Mechanism	Construction	Heavy Industrial Steel
	Mounting	Flexible Hold Down Bar
	Dimensions (W x H x D)	483 x 177 x 510mm
Environment	Operating Temp.	0°C~40°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.

Explore DFI's range of Embedded and IoT Chassis

ST102

- MB: Mini-ITX
- W/O PSU
- 1 x 2.5" storage



Stand Type

DT122

- MB: Mini-ITX
- W/ Flex ATX PSU
- 2 x 2.5" or 1 x 3.5" storage
- 1 x PCIe (Opt.)



Desktop Type

WM120

- MB: Mini-ITX
- W/ O PSU
- 1 x 2.5" storage
- 1 x PCIe (Opt.)



Wall mount Type

WM342

- MB: Micro-ATX
- W/ Flex ATX PSU
- 2 x 2.5" storage
- 2 x PCIe



Wall mount Type

WM343

- MB: Micro-ATX
- W/ Flex ATX PSU
- 1 or 2 x 2.5" / 3.5" storage
- 4 x PCIe



Wall mount Type

RM641

- MB: ATX
- W/ ATX PSU
- 7 x PCIe



Rack mount-4U Type

RM620

- MB: ATX
- Redundant PSU support
- 7 x PCIe support low profile only



Rack mount -2U Type

RM645

- MB: ATX
- Redundant PSU support
- 7 x PCIe, Full height card available



Rack mount-4U Type

RM840

- MB: ETX
- ATX PS/2
- Up to 10 x PCIe



Rack mount-4U Type

Explore DFI's range of Embedded and IoT Chassis



Model Name	ST102	DT122	WM120
Mount type	Wall mount	Wall mount	Wall mount
Dimension (mm)	219 x 75.15 x 229.7	300 x 75 x 217	224 x 88 x 206
PSU type	DC-in to MB	Flex ATX	DC-in to MB
MB form available	Mini-ITX	Mini-ITX	Mini-ITX
PCIE slots available	N/A	1 x PCIe slot (opt.)	1 x PCIe slot (opt.)
Storage support	1 x 2.5"	2 x 2.5" or 1 x 3.5"	1 x 2.5"



Model Name	WM342	WM343	RM620
Mount type	Wall mount	Wall mount	2U Rack Mount
Dimension (mm)	306.6 x 132.1 x 301.9	349 x 140.2 x 290.9	482.6 x 495.8 x 88
PSU type	Flex ATX	Flex ATX	ATX/Mini Redundant
MB form available	Mini-ITX / micro-ATX	Mini-ITX / micro-ATX	ATX
PCIE slots available	2 x PCIe slots	4 x PCIe slots	7 PCIe slots (Low-profile only)
Storage support	2 x 2.5"	1 x 2.5"/3.5"	4 x 2.5" + 2 x 3.5"



Model Name	RM641	RM645	RM840
Mount type	4U Rack Mount	4U Rack Mount	4U Rack Mount
Dimension (mm)	483 x 177 x 451	481.6 x 470.8 x 175.6	483 x 177 x 510
PSU type	ATX PS/2	ATX/Mini Redundant	ATX PS2
MB form available	ATX	ATX	ATX/ EATX
PCIE slots available	7 x PCIe slots	7 x PCIe slots	7 / 10 x PCIe slots
Storage support	1 x 3.5"	8 x 2.5"	5 x 3.5"

12th/10th Gen Intel Core Processor



Contact sales representative for availability.

Model Name		WM343-ADS	WM120-CMS	WM343-CMS
Platform		Wallmount IPC		
System	Processor	12th Gen Intel® Core™ Processor	10th Gen Intel® Core™ Processor	
	Socket	LGA 1700	LGA 1200	
	Max. Speed	2.4GHz~5.0GHz	3.0~4.5GHz	3.0~4.7GHz
	CPU TDP	35/46/60/65/125W	35/65W	35/58/65/125W
	Cache	4/6/12/18/25/30M	2/4/6/12/16/20M	
	Chipset	Intel® R680E/Q670E	Intel® Q470E	Intel® Q470E/H420E
	BIOS	AMI SPI 256Mbit	AMI SPI 128Mbit	AMI SPI 256Mbit
Memory	Technology	Dual Channel DDR4 3200 MHz (R680E supports ECC)	Dual Channel DDR4 2400/2666/2933 MHz	
	Max. Capacity	128GB	128GB	64/128GB
	Socket	4 UDIMM	2 SODIMM	2 or 4 UDIMM
Storage	1 or 2x 3.5"/2.5" SATA 3.0 drive bays, 1x 5.25" Optical drive bay, 2 M.2 2242/2260/2280	1x 2.5" SATA 3.0 SSD, 1 M.2 2280	1 or 2x 3.5"/2.5" SATA 3.0 drive bays, 1x 5.25" Optical drive bay, 1 M.2 2242/2260/2280	
Expansion	1 PCIe x16, 2 PCIe x4, 1 PCIe x4, 2 M.2 2242/2260/2280 M key, 1 M.2 2230 E key	1 PCIe x16, 1 M.2 2230 E key, 1 M.2 2280 M key, 1 M.2 3042/3052 B key, SIM	1 PCIe x16, 1 PCIe x4, 2 PCI 1 M.2 2242/2260/2280 M Key, 1 M.2 2230 E Key	
Audio	Audio Codec	Realtek ALC888		
Ethernet	Controller	1 x Intel® I226-LM PCIe, 1 x Intel® I226-V PCIe, 2 x Intel® x550-AT2	1 Intel® I219LM PHY, 1 Intel® I211AT PCIe	
LED	Indicators	Power, HDD LED		
I/O	Ethernet (GbE)	2x 2.5GbE, 2x 10GbE	2	
	Serial	2 RS-232/422/485	-	1 RS-232/422/485
	USB	4 USB 3.2 Gen 2, 4 USB 3.2 Gen 1	8 USB 3.2 Gen2, 4 USB 3.2	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 2 USB 2.0
	Display	1 VGA, 2 DP++, 1 HDMI 2.0a	2 DP++	1 VGA, 1 DP++, 1 HDMI
	DIO	8-bit DIO	-	-
	Buttons	Power, Reset		
	Wi-Fi Antenna	-		
	Audio	Line-out, Mic-in, Line-in(Opt. MOQ required)	-	Line-out, Mic-in
Power	250W/350W/500W FLEX ATX	24V DC-in / 15 to 36V DC-in	250W/500W FLEX ATX	
Cooling	1x 12cm System Fan	1x 8cm System Fan, w/ replaceable air filter	1x 12cm System Fan	
OS Support	Win10 IoT Enterprise, Linux	Win10 IoT Enterprise	Win10, Linux	
Mechanism	Construction	Sheet Metal		
	Mounting	Wall Mount		
	Dimensions (W x H x D)	349 x 140.2 x 290.9mm	224 x 88 x 206mm	349 x 140.2 x 290.9mm
Environment	Operating Temp.	0°C~45°C	-5°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 IPC			
System	Processor	9th/8th Gen Intel® Core™ Processor			
	Socket	LGA 1151			
	Max. Speed	2.9~5.0GHz			
	CPU TDP	35/54/58/65/95W	35/54/58/65/71/80/95W		
	Cache	2/4/6/9/12/16M		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	64 or 128GB			
	Socket	2 or 4 DIMM			
Storage		1 or 2x 3.5"/2.5" SATA 3.0 drive bays, 1x 5.25" Optical drive bay, 1 mSATA	1 or 2x 3.5"/2.5" SATA 3.0 Drive Bays, 1x 5.25" Optical Drive Bay, 1 mSATA, 1 M.2 2280	1 or 2x 3.5"/2.5" SATA 3.0 Drive Bays, 1x 5.25" Optical Drive Bay, 1 M.2 2280	
Expansion	PCIe, PCI	1 PCIe x16, 1 PCIe x4, 2 PCI	2 PCIe x16, 2 PCIe x4	1 PCIe x16, 2 PCIe x4, 1 PCI	2 PCIe x16, 2 PCIe x4
	Mini PCIe, M.2	1 Full mPCIe (Q370)	1 mPCIe, 1 M.2 2242/2260/2280 M Key	1 M.2 2242/2280 M Key, 1 M.2 2230 E Key	1 M.2 2242/2260/2280 M Key, 1 M.2 2230 E Key
Audio	Audio Codec	Realtek ALC888		Realtek ALC262-VC2	Realtek ALC888
Ethernet	Controller	1 Intel® I211, 2 Intel® I219	1 Intel® I211, 1 Intel® I219	1 Intel® I219, 1 Intel® I211, 2 Intel® I211(Opt., MOQ required)	1 Intel® I211, 1 Intel® I219
LED	Indicators	Power, Storage LED	Power, HDD LED		
I/O	Ethernet (GbE)	3	2	2 or 4	2
	Serial	1 RS-232/422/485			
	USB	4 USB 3.2 Gen 1, 2 USB 2.0	2 USB 3.2 Gen 2, 2 USB 3.2 Gen 1, 2 USB 2.0	4 USB 3.2 Gen 1, 2 USB 2.0	2 USB 3.2 Gen 2, 2 USB 3.2 Gen 1, 2 USB 2.0
	Display	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++	1 HDMI, 1 DVI-I (DVI-D signal), 1 DP++	1 VGA, 2 DP++	
	Audio	Line-out, Mic-in, Line-in(Opt.)			
	PS/2	1 PS/2 mini-din			
	Buttons	Power, Reset Button			
Power		250W FLEX ATX			
Cooling		1x 12cm System Fan			
OS Support		Win10, Linux			
Mechanism	Construction	Sheet Metal			
	Mounting	Wall Mount			
	Dimensions (W x H x D)	349 x 140.2 x 290.9mm			
Environment	Operating Temp.	0°C~45°C			

7th/6th Gen Intel Core Processor



Model Name		WM343-KD331	WM343-KD330	WM342-KD331	WM342-KD330
Platform		Wallmount IPC		Wallmount IPC	
System	Processor	7th/6th Gen Intel® Core™ Processor		7th/6th Gen Intel® Core™ Processor	
	Socket	LGA 1151		LGA 1151	
	Max. Speed	3.8~4.2GHz		3.8~4.5GHz	
	CPU TDP	65/80W	65W	65/80/91W	65/91W
	Cache	3/6/8M		3/6/8M	
	Chipset	Intel® C236/Q170	Intel® Q170/H110	Intel® C236/Q170	Intel® Q170/H110
	BIOS	Insyde SPI 128Mbit		Insyde SPI 128Mbit	
Memory	Technology	Dual Channel DDR4 2133/2400 MHz		Dual Channel DDR4 2133/2400 MHz	
	Max. Capacity	64GB	64GB or 32GB	64GB	64GB (Q170), 32GB (H110)
	Socket	4 DIMM (C236 Supports ECC)	2 or 4 DIMM	4 DIMM (C236 Supports ECC)	2 or 4 DIMM
Storage		1 or 2x 3.5"/2.5" SATA 3.0 Drive Bays, 1x 5.25" Optical Drive Bay	1 or 2x 3.5"/2.5" SATA 3.0 Drive Bays, 1x 5.25" Optical Drive Bay, 1 mSATA (Q170 Only)	2x 2.5" SATA 3.0 Drive Bays	
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 M Key	1 Full mPCIe (Q170 Only)	-	
Audio	Audio Codec	Realtek ALC888S-VD2-GR		Realtek ALC888S-VD2-GR	
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	
I/O	Ethernet (GbE)	4	2	4	2
	Serial	1 RS-232/422/485		1 RS-232/422/485	
	USB	4 USB 3.2, 2 USB 2.0		4 USB 3.2, 2 USB 2.0	
	Display	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, Mic-in
	PS/2	1 PS/2 mini-din		1 PS/2 mini-din	
	Buttons	Power, Reset Button		Power, Reset Button	
Power		250W/400W FLEX ATX		250W FLEX ATX	
Cooling		1 System Fan		1 System Fan	
OS Support		Win10, Linux		Win10 IoT Enterprise	
Mechanism	Construction	Sheet Metal		Sheet Metal	
	Mounting	Wall Mount		Wall Mount	
	Dimensions (W x H x D)	349 x 140.2 x 290.9mm		306.6 x 132.1 x 301.9mm	
Environment	Operating Temp.		0°C~45°C		

6th Gen Intel Core Processor



Model Name		WM343-SD331	WM343-SD330
Platform		Wallmount IPC	
System	Processor	6th Gen Intel® Core™ Processor	
	Socket	LGA 1151	
	Max. Speed	2.6~4.0GHz	
	CPU TDP	35/65/80W	35/65W
	Cache	2/3/4/6/8M	
	Chipset	Intel® C236/Q170	Intel® Q170/H110
BIOS		Insyde SPI 128Mbit	
Memory	Technology	Dual Channel DDR4 1866/2133MHz	
	Max. Capacity	64GB	32 or 64GB
	Socket	4 ECC/non-ECC DIMM	2 or 4 DIMM
Storage		1 or 2x 3.5"/2.5" SATA 3.0 Drive Bays, 1x 5.25" Optical Drive Bay	1 or 2x 3.5"/2.5" SATA 3.0 Drive Bays, 1x 5.25" Optical Drive Bay, 1 mSATA (Q170 Only)
Expansion	PCIe, PCI	2 PCIe x16, 2 PCIe x4	1 PCIe x16, 1 PCIe x4, 2 PCI
	Mini PCIe, M.2	-	1 Full mPCIe (Q170 Only)
Audio	Audio Codec	Realtek ALC888S-VD2-GR	
Ethernet	Controller	1 Intel® I210, 1 Intel® I219	
LED	Indicators	Power, HDD LED	
I/O	Ethernet (GbE)	2	
	Serial	1 RS-232/422/485	
	USB	4 USB 3.2, 2 USB 2.0	
	Display	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++	
	Audio	Mic-in, Line-out, Line-in (Opt.)	
	PS/2	1 PS/2 mini-din	
	Buttons	Power Button	
Power		250W FLEX ATX	250W FLEX ATX
Cooling		1 System Fan	
OS Support		Win7, WES7, Win8.1, Win10 IoT Enterprise, Debian, CentOS, Linux	
Mechanism	Construction	Sheet Metal	
	Mounting	Wall Mount	
	Dimensions (W x H x D)	349 x 140.2 x 290.9mm	
Environment	Operating Temp.	0°C~45°C	

9th/8th/7th/6th Gen Intel Core Processor & AMD Ryzen Embedded V1000/R1000 Series



Model Name		ST102-CS	ST102-SD	DT122-SD	DT122-GH	
Platform		Stand IPC		Desktop IPC		
System	Processor	9th/8th Gen Intel® Core™ Processor	7th/6th Gen Intel® Core™ Processor	7th/6th Gen Intel® Core™ Processor	AMD® Ryzen™ Embedded V1000/R1000 Series	
	Socket	LGA 1151		LGA 1151	Onboard	
	Max. Speed	2.9~4.0GHz	2.4~3.8GHz	2.4~3.8GHz	3.2~3.8GHz	
	CPU TDP	35W		35W	12~25 or 35~54W	
	Cache	2/4/6/9/12M	2/3/4/6/8M	2/3/4/6/8M	1/2M	
	Chipset	Intel® H310/Q370	Intel® H110	Intel® Q170/H110	-	
	BIOS	AMI SPI 128Mbit	AMI SPI 64Mbit	Insyde SPI 128Mbit	AMI BIOS 64Mbit	
Memory	Technology	Dual Channel DDR4 2666MHz	Dual Channel DDR4 1866/2133/2400MHz	Dual Channel DDR4 1866/2133MHz	Dual Channel DDR4 3200MHz	
	Max. Capacity	32GB	4GB/8GB	32GB		
	Socket	2 SODIMM		2 SODIMM		
Storage		1x 2.5" SATA 3.0 Drive bay, 1 mSATA, 1 M.2 2280, 1 Slim ODD Bay (Opt.)	1x 2.5" SATA 3.0 Drive bay, 1 mSATA, 1 Slim ODD Bay (Opt.)	1x 3.5" or 2x 2.5" SATA 3.0 Drive Bay, 1 mSATA(Opt.), 1 Slim ODD Bay(Opt.)	1x 3.5" or 2x 2.5" SATA 3.0 Drive Bay, 1 M.2 2280 NVME SSD	
Expansion		1 Full mPCIe, 1 M.2 2280 M Key, 1 M.2 2230 E Key	-	1 PCIe x16 or 1 PCI, 1 Half mPCIe or 1 Full mPCIe	1 PCIe or 1 PCI, 1 M.2 2280 M Key	
Audio	Audio Codec	Realtek ALC888S-VD2-GR	Realtek ALC888	Realtek ALC888S-VD2-GR	Realtek Audio Codec with 5.1 Channel	
Ethernet	Controller	1 Intel® I210, 1 Intel® I219		1 Intel® I210/I211, 1 Intel® I219	2 Realtek Ethernet	
LED	Indicators	Power, HDD LED		Power, HDD LED		
I/O	Ethernet (GbE)	2		2		
	Serial	-		1 RS-232	1 RS-232/422/485, 1 RS-232	
	USB	4 USB 3.2, 2 USB 2.0		4 USB 3.2, 2 USB 2.0	2 USB 3.2, 2 USB 2.0	
	Display	2 DP++, 1 HDMI	1 DVI-I (DVI-D signal), 1 HDMI/DP	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++	3 or 4 DP++	
	DIO	-		-		
	Buttons	Power Button		Power, Reset	Power	
	Wi-Fi Antenna	2	-		-	
	Audio	Line-out, Mic-in		Line-out, Mic-in, Line-in(Opt.)	Line-out, Mic-in, Line-in	
Power		12V DC-In Jack		250W Flex ATX	150W FLEX ATX	
Cooling		1 System Fan, 1 CPU Fan		1 System Fan, 1 CPU Fan		
OS Support		Win10 IoT Enterprise		Win7, WES7, Win8.1, Win10 IoT Enterprise, Debian 8, CentOS 7, Linux	Win10, Linux	
Mechanism	Construction	Metal chassis + Aluminum front bezel Kensington lock	Sheet Metal & Aluminum	Front Bezel aluminum + Chassis Sheet Metal		
	Mounting	Wall Mount		Wall Mount		
	Dimensions (W x H x D)	219 x 75.15 x 229.7mm (without of stand holder)		300 x 73.6 x 218 mm	300 x 75 x 217 mm	
Environment	Operating Temp.	-5°C~55°C	0°C~40°C	0°C~45°C		

3rd/2nd/1st Gen Intel Xeon Scalable Processor Family



Model Name		RM645-ICX610	RM620-PR611
Platform		Rack Mount IPC	Rack Mount IPC
System	Processor	3rd Gen Intel® Xeon® Scalable Processor Family	2nd/1st Gen Intel® Xeon® Scalable Processor Family
	Socket	LGA 4189	LGA 3647
	Max. Speed	3.1~3.6GHz	3.0~3.9GHz
	CPU TDP	up to 185W	up to 150W
	Cache	12~48M	11~35.75M
	Chipset	Intel® C621A	Intel® C621
	BIOS	Insyde SPI 128Mbit	Insyde SPI 128Mbit
Memory	Technology	Single Channel DDR4 up to 3200MHz	Single Channel DDR4 up to 2933MHz
	Max. Capacity	512GB	192GB
	Socket	8 x 288-pin ECC-RDIMM up to 512GB	6 x 288-pin RDIMM up to 192GB
Storage		1 M.2 2280 M key, 6 SATA 3.0(RAID 0/1/5/10)	1 M.2 2280 M key, 1 M.2 2230 E key, 6 SATA 3.0(RAID 0/1/5/10)
Expansion		3 PCIe x16 Gen4, 3 PCIe x8 Gen4	3 PCIe x16 (Gen 3), 3 PCIe x8 (Gen 3)(share w/ PCIe x16)
Audio	Audio Codec	ALC888S	ALC887
Ethernet	Controller	2 Intel® I210, 2 Intel® X550-AT2, 1 IPMI: RTL8211F	2 Intel® I210, IPMI: RTL8211F (Opt.)
LED	Indicators	Power, HDD LED	Power, HDD LED
I/O	Ethernet (GbE)	2x GbE, 2x 10GbE, 1 Dedicated IPMI LAN(opt.)	2 GbE, 1 dedicated IPMI LAN (Opt.)
	Serial	1 RS-232 (DB-9)	1 RS-232 (DB-9)
	USB	4 USB 3.2 Gen1, 2 USB 2.0	4 USB 3.2 Gen1, 2 USB 2.0
	Display	1 VGA	1 VGA (Opt.)
	DIO	16-bit DIO(opt.)	-
	Buttons	Power	Power
	Wi-Fi Antenna	-	-
Audio		1 Front Audio Header	1 Front Audio Header
Power		ATX PS2/ Mini Redundant (Opt.)	ATX PS2/ Mini Redundant (Opt.)
Cooling		2x 12CM system Fan	3x 8CM system Fan
OS Support		Win10 IoT Enterprise LTSB RS5(64-bit), Windows Server 2019, Ubuntu 20.04	Win10 IoT Enterprise LTSB RS5(64-bit), Windows Server 2019, Windows Server 2016
Mechanism	Construction	Chassis Sheet Metal	Chassis Sheet Metal
	Mounting	Rack Mount	Rack Mount
	Dimensions (W x H x D)	481.6 x 175.6 x 470.8 mm	482.6 x 88 x 495.8 mm
Environment	Operating Temp.	0°C~40°C	0°C~40°C

Application-Specific System

Application-Oriented Solutions



10 TRAINS PLATFORM

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.

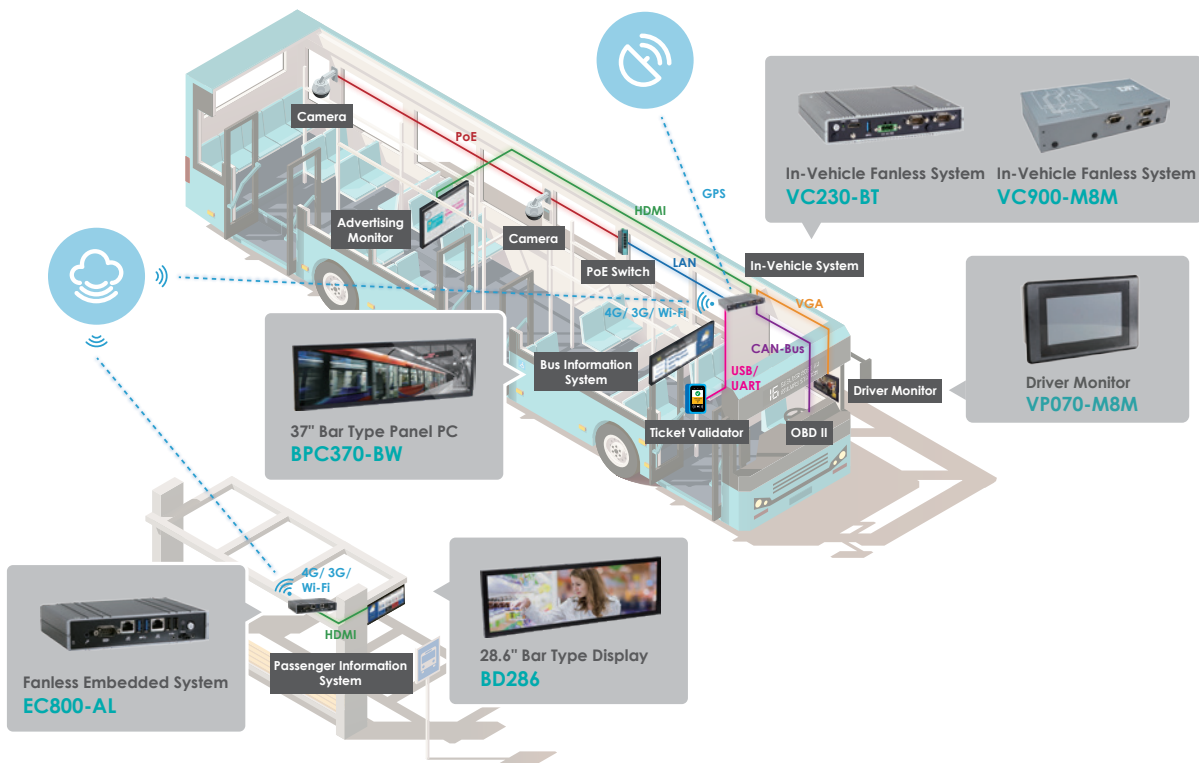
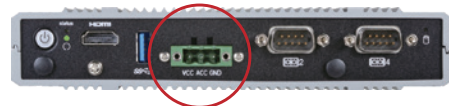
CAN-Bus Interface Support



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

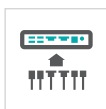
Medical Computing

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

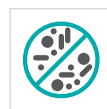
4KV Isolated I/O Ports



Isolated I/O



Medical-Grade Antibacterial Finish



Antibacterial finish



13th/10th Gen Intel Core Railway Systems



Model Name		MPC544-RPS	VC500-CMS	VC500-CMS-MXM
Platform		Desktop	Desktop	
System	Processor	13th Gen Intel® Core™ Processor	10th Gen Intel® Core™ Processor	
	Socket	LGA1700	LGA 1200	
	Max. Speed	4.6 ~ 5.2GHz	3.0~4.5GHz	
	CPU TDP	65W	35W	
	Cache	24/30/36M	2/4/6/12/16/20M	
	Chipset	Intel® R680E/Q670E	Intel® Q470E/W480E/H420E	
	BIOS	AMI SPI 256Mbit	AMI SPI 256Mbit	
GPU / AI Accelerator Card Support		RTX 6000 Ada, RTX 5000 Ada, RTX 4500 Ada, RTX 4000 Ada, RTX A6000, RTX A5000, RTX 4070	N/A	up to 150W MXM GPU module Compatible MXM Type A/B: RTX A2000, A500, A4500
Memory	Technology	Dual Channel DDR5 up to 4400 MHz (ECC/Non-ECC)	Dual Channel DDR4 2933/2666/2400/2133 SDRAM (ECC support for Xeon-1270TE)	
	Max. Capacity	128GB	64GB	
	Socket	4 UDIMM	2 SODIMM	
Storage		2 swappable 2.5" SATA drive bays, 1 M.2 2242/2260/2280, 1 M.2 2242/2260/2280	2 swappable 2.5" SATA drive bays, 1 M.2 2242/2260/2280	
Expansion		2 PCIe x16 (Gen 4) (1 x16 or 2 x8), 2 PCIe x4 (Gen 4), 1 M.2 E key 2230(Opt.)	1 mPCIe, 1 M.2 2230 E key, 1 M.2 3042/3052 B key, 1 M.2 2242/2280 M Key, 2 SIM	
Audio	Audio Codec	Realtek ALC888	Realtek ALC888	
Ethernet	Controller	1 Intel® I226, 1 Intel® I226	1 Intel® i219, 1 Intel® i210	
LED	Indicators	1 Power Status	1 Storage Activity, 1 Power Status, 2 Programmable general purpose	
I/O	PoE/10G	N/A	4x 802.11af PoE (RJ45/M12) or 2x 10GbE (SFP+ cage)	
	Ethernet (GbE)	2x 2.5GbE, 2x GbE (supports 2kV isolation) (Opt.)	2	
	Serial	2 RS-232, 2 RS-232 (supports 4kV isolation) (Opt.)	4 RS-232/422/485, 1 RS-232	
	USB	10 USB 3.2 Gen1	8 USB 3.2	
	Display	1 HDMI, 2 DP++, 1 VGA	2 DP++, 1 HDMI	
	DIO	4-IN / 8-OUT DIO (internal)	8-bit DI + 8-bit DO	
	Buttons	Power	Power, Reset	
	Antenna	2 holes	8 holes	
	Audio	Line-in, Line-out, Mic-in	Mic-in, Line-in, Line-out	Mic-in, Line-in
Power		PSU 700W	3pin 3W3 connector or 3 pin terminal block, 9~50V DC-in	
Cooling		Active Fan	Passive	Passive or active fan
OS Support		Win10 IoT Enterprise, Ubuntu Linux	Win10 IoT Enterprise, Ubuntu Linux	
Mechanism	Construction	Metal	Aluminum + Metal	
	Mounting	Wall Mount	Wall Mount	
	Dimensions (W x H x D)	380 x 180 x 400 mm	235 x 87.5 x 221mm (mounting bracket excluded)	383 x 87.5 x 221mm (mounting bracket excluded)
Environment	Operating Temp.	0°C~40°C	-20°C~70°C	-20°C~60°C

9th/8th Gen Intel Core In-vehicle System



Model Name		RC300-CS	VC300-CS
Platform		Desktop	
System	Processor	9th/8th Gen Intel® Core™ Processor	
	Socket	LGA 1151	
	Max. Speed	1.8~2.4GHz	1.8~2.6GHz
	CPU TDP	35W	
	Cache	9/12M	
	Chipset	Intel® Q370	
	BIOS	AMI SPI 128Mbit	
GPU / AI Accelerator Card Support		up to 115W GPU MXM module without active fan MXM Type A/B/C	up to 150W MXM GPU module MXM Type A/B/C
Memory	Technology	Dual Channel DDR4 2666/2400MHz	
	Max. Capacity	64GB	
	Socket	2 SODIMM	
Storage		4 Swappable 2.5" 7mm SSD Storage Bays, 1 M.2 2280	2 Swappable 2.5" 7mm SSD Storage Bays, 1 M.2 2280
Expansion	PCIe, PCI	-	
	Mini PCIe, M.2	1 Half mPCIe, 2 Full mPCIe, 1 M.2 3042/3052 B Key, 1 M.2 2280 M Key	
	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	2 RJ45 GbE, 4 RJ45/M12 X-coded PoE
	Serial	2 RS-232/422/485 (DB-9)	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 SMA Holes	
Power		77~137.5VDC or 9~36VDC	9~36VDC
Cooling		Fanless	Fan or Fanless
OS Support		Win10 IoT Enterprise, Linux Ubuntu	
Mechanism	Construction	Metal + Aluminum	
	Mounting	Wall Mount	
	Dimensions (W x H x D)	340.5 x 132 x 223mm	340.5 x 132 x 223mm
Environment	Operating Temp.	-25°C~55°C or -25°C~70°C	-25°C~60°C or -25°C~70°C

7th/6th Gen Intel Core & Atom Processor



Model Name		VC70B-KU	MD711-SU	VC230-AL	VC230-BT
Platform		ULT	ULT	Atom	Atom
System	Processor	7th Gen Intel® Core™ Processor	6th Gen Intel® Core™ Processor	Intel Atom® Processor E3900	Intel Atom® Processor E3800
	Socket	FCBGA 1356	BGA 1356	BGA 1296	BGA 1170
	Max. Speed	2.4~2.8GHz	2.4~2.6GHz	1.6~2.0GHz	1.33~1.91GHz
	CPU TDP	15W	15W	6.5/9/12W	6/10W
	Cache	3/4M	3/4M	2M	1/2M
	BIOS	Insyde SPI 128Mbit	Insyde SPI 128Mbit	AMI SPI 64Mbit	
Memory	Technology	Dual Channel DDR4 2133MHz	Dual Channel DDR4 2133MHz	Single Channel DDR3L 1600/1866MHz	Single Channel DDR3L 1066/1333MHz
	Max. Capacity	4/8GB	32GB	8GB	2/4GB
	Socket	Memory Onboard	2 SODIMM	1 SODIMM	ECC Memory Onboard
Storage		1x 2.5" SATA 3.0 Drive Bay	2x 2.5" SATA 3.0 Drive Bay, 1 M.2 2242	eMMC up to 64GB, 1 mSATA-mini	eMMC up to 32GB (Opt.), 1 mSATA
Expansion	PCIe, PCI	-	1 PCIe x16	-	
	Mini PCIe, M.2	1 Full mPCIe, 1 Half mPCIe	1 Full mPCIe, 1 M.2 2242	2 Full mPCIe, 1 Half mPCIe	
	microSD, SIM	-	-	3 SIM	1 SIM, 1 micro SD Card Slot (Opt.)
Audio	Audio Codec	Realtek ALC888	Realtek ALC888	-	
Ethernet	Controller	1 Intel® I210, 1 Intel® I219	1 Intel® I210, 1 Intel® I219	2 Intel® I210	
LED	Indicators	Status, HDD LED	Power, HDD LED	Power, Storage LED	Status, HDD LED
I/O	Ethernet (GbE)	2	2	2	
	Serial	2 RS-232/422/485, 4 RS-232	2 RS-232	1 RS-232/422/485	3 RS-232/422/485
	USB	4 USB 3.2, 2 USB 2.0	4 USB 3.2, 2 USB 2.0	2 USB 3.2, 2 USB 2.0	1 USB 3.2, 4 USB 2.0
	Display	1 HDMI, 1 VGA	1 DP/HDMI(Opt.), 1 DVI-D	1 HDMI, 1 DVI	1 HDMI, 1 VGA
	DIO	8-bit DIO (Opt.)	-	8-bit Isolated DIO up to 30V Input	8-bit DIO via DB-9 port (Opt.)
	Buttons	Power, Reset Button	Power Button	Reset Button	Power, Reset Button
	Antenna	5 Holes	1 Holes	4 SMA Holes, 1 FME Hole	3 Holes
	Audio	Line-out, Mic-in	Line-out, Mic-in	Audio Out 1 x 4pins 5.00mm terminal block connector	Line-out (Opt.)
Interfaces		CAN-Bus via DB-9 port (Opt.)	4kV isolated I/O ports: 2 GbE, 2 RS-232, 2 USB 2.0	CAN-Bus via DB-9 (Opt.)	
Power		9~36V DC-in with Ignition control	9~36V DC-in	9~36V DC-in with Ignition control	
Cooling		Fanless	Fanless	Fanless	
OS Support		Win10 IoT Enterprise, Win10, Linux	Win7, Win8.1, Win10, WES 7, WE8S, Linux	Win10, Linux, CentOS 7	Win7, Win8, Win8.1, Win10 (Opt.), WES 7, WES 8
Mechanism	Construction	Aluminum + Sheet Metal	Aluminum + Metal Aluminum	Aluminum + SPGC Metal	Aluminum + Metal Aluminum
	Dimensions (W x H x D)	184 x 82 x 118.4 mm	182 x 97.6 x 200mm	180 x 50 x 121.2 mm	180 x 33 x 121.2 mm
Environment	Operating Temp.	-20°C~60°C	0°C~40°C (w/0.7m air flow)	-40°C~70°C	-20°C~60°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	2/4GB
	Socket	Memory Onboard
Storage		eMMC 5.1 up to 64GB, Micro SD card slot
Sensor		6 axis IMU (3 Accelerometer + 3 Gyroscope)
Expansion		1 M.2 2242/3042 B Key, 1 M.2 2230 E Key, 1 Nano SIM
LED	Indicators	Status LED
I/O	Ethernet (GbE)	1
	Serial	1 RS-232/422/485, 3 RS-232
	USB	2 USB 3.2, type A, 1 OTG, micro USB
	Display	1 HDMI
	Buttons	Power reset button
	Antenna	4 Holes
	Audio	with Amplifier to support 2W speaker (Opt.) Line-out, MIC-in (internal header)
Power		9~36V with ACC/IGN function (3-pole terminal block)
Cooling		Fanless
OS Support		Yocto Linux 2.5, Android 9.0 (Opt.)
Mechanism	Construction	Sheet Metal
	Mounting	Wall/DIN-Rail mount
	Dimensions (W x H x D)	220 x 122 x 43 mm
Environment	Operating Temp.	-20°C~70°C

Ruggedized Embedded System

Application-Oriented Solutions



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



12th Gen Intel Core & Atom Processor



Model Name		ECX700-ADP	ECX700-AL
Platform		ULT	Atom
System	Processor	12th Gen Intel® Core™ Processor	Intel Atom® Processor E3900
	Socket	BGA 1744	BGA 1296
	Max. Speed	4.7GHz	1.8~2.0GHz
	CPU TDP	15W	6/9.5/12W
	Cache	10/12M	2M
	BIOS	AMI SPI 256Mbit	AMI SPI 128Mbit (supports UEFI/Legacy mode and Security Boot (Opt.))
Memory	Technology	Dual Channel DDR4 3200MHz	Dual Channel DDR3L 1866MHz
	Max. Capacity	40GB(8GB memory onboard + 32GB memory DIMM)	2/4/8GB, 8GB total max
	Socket	Memory Onboard, 1 SODIMM	Memory Onboard, 1 SODIMM
Storage		1 M.2 2280 M Key, 1 M.2 3042/3052 B Key, 1 M.2 2230 E Key, 1 SIM for 4G/5G	eMMC 8G/16GB/32GB/64GB (Opt.)
Expansion	Mini PCIe, M.2	-	2 Full mPCIe, 1 M.2 2230 E Key
	SIM, microSD	1 SIM	1 SIM
Audio	Audio Codec	Realtek ALC888	-
Ethernet	Controller	2 Intel® I225	2 Intel® I210
LED	Indicators	Power	Power Status
I/O	Ethernet (GbE)	2	2 (M12 type)
	Serial	2 RS-232/422/485 or 2 RS-232/422/485 + 2 CANBUS (for optional)	1 combo waterproof connector (2 RS-232, 2 CANbus protocol)
	USB	4 USB 3.2 (4 Type A)	2 Waterproof USB Type-A Connector with cover
	Display	1 HDMI	1 Waterproof HDMI Connector with cover
	DIO	N/A	-
	Buttons	N/A	-
	Antenna	4 (LTE), 2 (WiFi)	2 (LTE), 2 (WiFi)
	Audio	N/A	-
Interfaces	-	-	
Power		9~36V DC-in	9~36V DC-in
Cooling		Fanless	Fanless
OS Support		Win10 IoT Enterprise 64-bit, Linux	Win10 IoT Enterprise 64-bit, Linux
Mechanism	Construction	Metal + Aluminum	Aluminum, IP66 waterproof
	Dimensions (W x H x D)	181.6 x 57 x 118.4mm	217 x 188 x 87 mm (with wall-mount bracket)
Environment	Operating Temp.	Fanless: -20°C~60°C	-40°C~70° C



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