

Product Guide

TO emBEDded OR NOT TO emBEDded



Industrial Embedded Solutions



SBC



Panel PC



Box PC



Storage



QEC EtherCAT Solution

The Processors



Elkhart Lake is Intel’s first IoT-optimized platform with best-in-class CPU/GPU performance to support IoT application requirements. It has a low TDP between 4.5 to 12 Watt TDP and up to 4 cores with Gen 11LP graphics and video encoding/decoding. For industrial and embedded applications, it has In-Band ECC, 3 x 2.5GbE TSN MACs, x12 configurable HSIO lanes and supports -40 to +85°C ambient temperatures.

Code Name	Elkhart Lake / Embedded			
Processor Number	x6211E	x6413E	x6425E	J6412
Product Collection	Atom	Atom	Atom	Celeron
Clock Speed	1.3GHz	1.5GHz	2.0GHz	2.0GHz
Burst Speed	3.0GHz	3.0GHz	3.0GHz	2.6GHz
# of Cores	2	4	4	4
OS Support	Windows 10/11, Windows 10/11 IoT, Linux			
TDP	6W	9W	12W	10W
Passmark Score	1695	4070	4884	4710



Braswell is the multicore system-on-a-chip based on Intel’s latest microarchitecture and 14 nm process technology. It’s built for designs that target entry-level 2-in-1 devices, laptops, desktops, and all-in-one PCs.

Apollo Lake is the multicore system-on-a-chip which empowers real-time computing in digital surveillance, new in-vehicle experiences, advancements in industrial and office automation, new solutions for retail and medical, and more. Utilizing Intel’s industry-leading 14nm process technology.

Code Name	Braswell	Braswell	Braswell	Apollo Lake	Apollo Lake	Apollo Lake
Processor Number	N3710	N3160	x5-E8000	N4200	J3455	N3350
Product Collection	Pentium	Celeron	Atom	Pentium	Celeron	Celeron
Clock Speed	1.6GHz	1.6GHz	1.04GHz	1.10GHz	1.5GHz	1.10GHz
Burst Speed	2.56GHz	2.24GHz	2.0GHz	2.50GHz	2.3GHz	2.4GHz
# of Cores	4	4	4	4	4	2
OS Support	Windows 10, Windows 10 IoT, Linux					
Passmark Score	1864	1666	1568	2035	2108	879



i.MX8M Mini is NXP’s first embedded multicore application processor built using advanced 14LPC FinFET process technology, providing more speed and improved power efficiency. Backed by NXP’s product longevity program, the I.MX8M Mini family can be used in any general purpose industrial and IoT application.

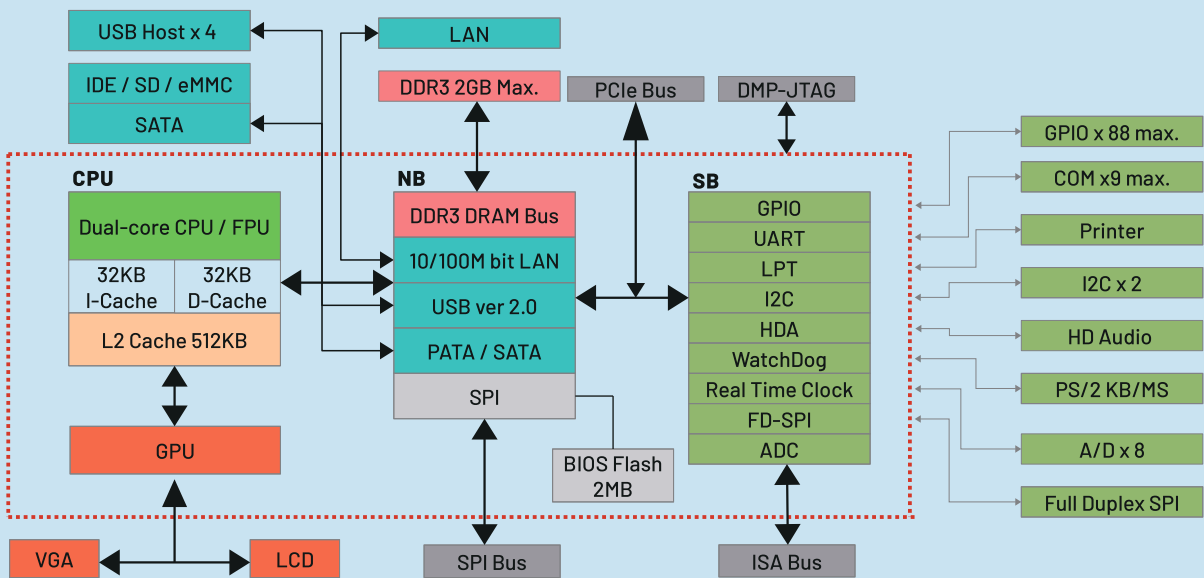
Code Name	NXP I.MX8M Mini			
Core	Cortex-A53 1.6GHz			
# of Cores	4	2	4	2
GPU	GCNono Ultra for 3D, GC320 for 2D			
VPU	Decode 1080p60, H.264, H.264 / Encode 1080p60, H.264			
RAM, LPDDR4	1GB / 2GB / 4GB			
eMMC	8 ~ 64GB, SLC . MLC			
OS Support	Yocto Linux, Android			
Working Temp.	-40 to 85°C	-40 to 85°C	0 to 70°C	0 to 70°C

DMP

Vortex86 DX series includes the DX, DX2 and DX3. This family was originally designed for legacy x86 based applications that need traditional buses such as ISA, PCI, etc.; in the newest DX3 line, the system now utilizes an optional dual-core and also enriches the I/O interface, GPU, SATA and PCIe for legacy applications to take advantage of new technologies. The -40 to 85 °C wide temperature and 15+ year life cycle guarantee had consistently supported a variety of industrial applications for decades.



[Vortex86DX3 Block Diagram]

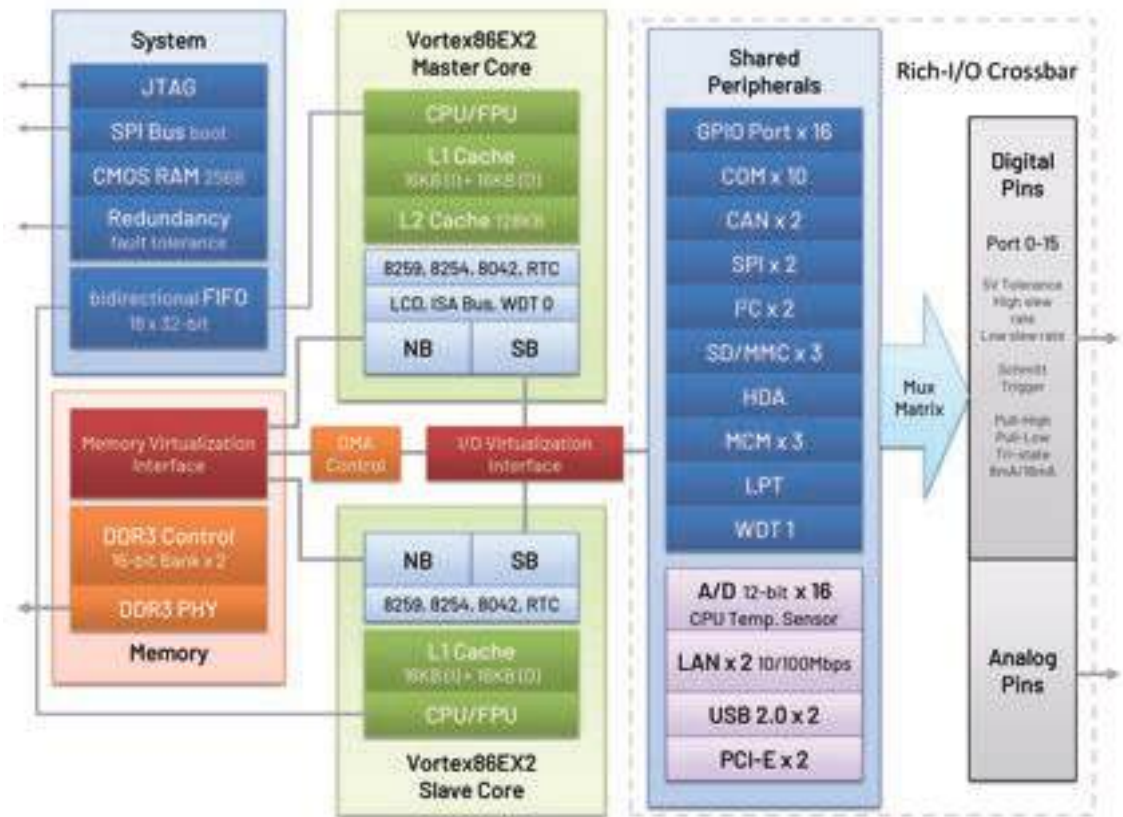


DMP

Vortex86 EX series includes the EX, EX2, and the upcoming EX3 in 2023. This tiny and low power consumption line of processors is equipped with a crossbar switch that allows for plenty of I/O for IoT, automation, and industrial applications. And for real-time applications, the current EX2 two-core CPU uses a Primary and Secondary core that can run different OS concurrently, making a system that can process in real-time while utilizing a dedicated CPU core.



[Vortex86EX2 Block Diagram]



Product Category



Embedded SBC

Based on the DM&P family SoC core Technology, ICOP can provide several series of Industrial SBCs and SOMs for different industrial applications and customer needs.

SoM-ICOP Proprietary | SoM-Standard | PC/104 SBC | 3.5" SBC | Tiny SBC | Half-size SBC | ITX Board



Industrial Panel PC

Support for touch panel sizes including 4.3", 5.7", 6.5", 7", 8.4", 9", 10.4", and 15", the ICOP Industrial PPC series offers flexible I/O expansion and a ruggedized design.

Panel PC Series | HMI Series | OpenFrame | LCD



Box PC

To satisfy the demands for different environments and applications, ICOP offers 3 series of Box PCs: ICE-104, iBPC and Mini PC.

Mini PC | ICE-104 | Embedded Barebone



QEC EtherCAT Solution

The QEC device series, including the EtherCAT Master Device & Slave Controller, conform to standard EtherCAT protocol while promoting Arduino Style Programming and/or Block Coding.

QEC-M | QEC-R | QEC-P



Flash Disk

ICOP's storage products offer a wider variety of interfaces for industrial embedded flash including SLC, MLC, and iSLC types. Storage sizes range from 512MB to 256GB.

IDE DOM | SATA DOM | SATA-Slim | mSATA | M.2 | CF cards



Peripheral

ICOP's line of peripherals are external additions to our products that allow for easy development by our customers and include items such as the DC-to-DC power module, PC/104 48-bit/24-bit digital I/O card, PC/104 RS232 x4 port card, etc.

Peripheral



PC/104

- **CPU** : Intel Braswell Family / DMP Vortex86
- **Operating Temp.** : -40 ~ +85°C Max.
- **Features** : 16-bit full ISA support
 - Fanless
 - 10 years life cycle



■ **Size** : 90 x 96mm



■ **Size** : 116 x 96mm

Part No.	CPU	RAM	Storage	I/O
IBW-6954	Pentium® N3710 Atom® x5-E8000 Celeron® N3160	4GB	SATA	4S/4U/GLAN/LPT/I²C/Audio/ mPCIe/16GPIO/HDMI/VGA/LVDS
VEX2-6454-2C4INE	Vortex86EX2-600MHz	1GB	Micro SD/eMMC	2S/2U/LAN/LPT/Audio/mPCIe/ VGA/LCD/LVDS
VEX2-6454-4C4NE	Vortex86EX2-600MHz	1GB	Micro SD/eMMC	4S/2U/LAN/LPT/Audio/mPCIe/ 16GPIO/VGA/LCD/LVDS
VDX3-6754-V2-2G	Vortex86DX3-1GHz	2GB	SATA	4S/2U/LAN/LPT/Audio/16GPIO/ VGA/LCD/LVDS
VDX3-6754-V2-2C-2G	Vortex86DX3-Dual Core -1GHz	2GB	SATA	4S/2U/LAN/LPT/Audio/16GPIO/ VGA/LCD/LVDS
VDX3-6754S-V2	Vortex86DX3-600MHz	256MB	SATA	4S/2U/LAN/LPT/16GPIO/ VGA/LCD/LVDS
VDX3-6755-2G	Vortex86DX3-1GHz	2GB	SATA	3S(isolated)/2U/GLAN/LAN/ CAN(Opt.)/VGA/LVDS
VDX3-6755-2C-2G	Vortex86DX3-Dual Core -1GHz	2GB	SATA	3S(isolated)/2U/GLAN/LAN/ CAN(Opt.)/VGA/LVDS
NAD11-103-SD	Vortex86DX2-800MHz	256MB	SD	4S/4U/LAN/I²C/VGA/LCD/LVDS

■ S=RS232/422/485; U=USB; GLAN=GigaLan; LPT=Printer; mPCIe=miniPCIe

3.5" SBC

- CPU : Intel Braswell Family / Intel Apollo Lake Family / DMP Vortex86
- Operating Temp. : -40 ~ +85°C Max.
- Size : 102 x 146mm
- Features : 10 COM
 - Fanless
 - 10 years life cycle



Part No.	CPU	RAM	Storage	I/O
NX8MM-35	NXP I.MX8M MINI Quad Core 1.6GHz	2GB/4GB Max.	eMMC/SD	4S/3U/LVDS/MIPI-CSI/15GPIO Audio/mPCIe/GLAN/WIFI/BT
IBW-35	Pentium® N3710 Atom® x5-E8000 Celeron® N3160	4GB	mSATA/SATA	4S/6U/2GLAN/I²C/Audio/mPCIe/ 16GPIO/HDMI/VGA/LVDS
APL-35	Celeron® N3350 Pentium® N4200 Celeron® J3455	8GB Max.	M.2 SATA/SATA	6S/6U/2GLAN/I²C/Audio/mPCIe/ 8GPIO/2DP/eDP
VEX2-6427-10C4VNE	Vortex86EX2-600MHz	1GB	Micro SD/SD/ eMMC	10S/4U/LAN/2CAN/2I²C/Audio/ mPCIe/VGA/LCD/LVDS
VDX3-6726-V2-2G	Vortex86DX3-1GHz	2GB	SATA	4S/4U/2GLAN/LAN/LPT/ Audio/16GPIO/VGA/LVDS
VEX-6225-43VE	Vortex86EX-400MHz	512MB	Micro SD/SATA	2S/2U/LAN/CAN/I²C/ mPCIe/8ADC/VGA/LCD
iEHL-35-x6413 (Coming Soon)	Intel Atom® X6413E	16GB Max.	SATA/NVMe	4S//2U3.0/3U/2GLAN/Audio/ mPCIe/8GPIO/2HDMI

■ S=RS232/422/485; U=USB; GLAN=GigaLan; LPT=Printer; mPCIe=miniPCIe

Half-size SBC

- CPU : DMP Vortex86
- Operating Temp. : -40 ~ +85°C Max.
- Size : 187 x 122mm
- Features : 16-bit full ISA support
 - PCI support
 - Fanless
 - 10 years life cycle



Part No.	CPU	RAM	Storage	I/O
VDX3-6724-V2-2G	Vortex86DX3-1GHz	2GB	SATA	4S/4U/GLAN/LAN/LPT/Audio/ 16GPIO/VGA/LCD/LVDS
VDX3-6724-V2-CF-2G	Vortex86DX3-1GHz	2GB	CF/SATA	4S/4U/GLAN/LAN/Audio/ VGA/LCD/LVDS
VDX3-PCI-7S5E	Vortex86DX3-1GHz	2GB	IDE/CF/SATA	2S/2U/GLAN/Audio/ VGA/LVDS
VDX3-PCI-7S4E	Vortex86DX3-1GHz	1GB	IDE/CF/SATA	2S/2U/GLAN/Audio/ VGA/LVDS

■ S=RS232/422/485; U=USB; GLAN=GigaLan; LPT=Printer; mPCIe=miniPCIe

Tiny SBC

- CPU : DMP Vortex86
- Operating Temp. : -40 ~ +85°C Max.
- Size : 100 x 66mm
- Features : Compact design
Fanless
10 years life cycle



Part No.	CPU	RAM	Storage	I/O
VEX2-6415-4C4NE	Vortex86EX2-600MHz	1GB	Micro SD/eMMC	4S/2U/2LAN/LPT/Audio/ 2mPCle/16GPIO
VEX2-6415-4C3NE	Vortex86EX2-600MHz	512MB	Micro SD/eMMC	4S/2U/2LAN/LPT/Audio/ 2mPCle/16GPIO
VDX2-6518-1G-SD	Vortex86DX2-800MHz	1GB	SD	4S/2U/LAN/LPT/8GPIO/ VGA/LVDS

■ S=RS232/422/485; U=USB; GLAN=GigaLan; LPT=Printer; mPCle=miniPCle

ITX Board



VDX3-EITX
■ Size : 170 x 120mm



VDX3-PITX
■ Size : 100 x 72mm

Part No.	CPU	RAM	Storage	I/O
APL-PITX	Celeron® N3350 Pentium® N4200	8GB Max.	M.2 SATA/SATA	2S/4U/GLAN/Audio/mPCle/ 8GPIO/HDMI/LVDS
VDX3-PITX-7S5E1	Vortex86DX3-1GHz	2GB	Micro SD/SATA	4U/LAN/Audio/16GPIO/ 8ADC/VGA
VDX3-EITX-7S5E1	Vortex86DX3-1GHz	2GB	CF/SATA	3S/6U/GLAN/LAN/CAN/Audio/ VGA/LVDS

■ S=RS232/422/485; U=USB; GLAN=GigaLan; LPT=Printer; mPCle=miniPCle

ETX Module | ETX®

- CPU : DMP Vortex86
- Operating Temp. : -40 ~ +85°C Max.
- Size : 95 x 144mm
- Features : 16-bit full ISA support
PCI support
Fanless
10 years life cycle



Part No.	CPU	RAM	Onboard Storage	I/O
VDX3-ETX-74IE-V2	Vortex86DX3-1GHz	1GB	SATA	2S/4U/LAN/I²C/Audio/IDE/VGA/LCD
VDX3-ETX-74LE-V2	Vortex86DX3-1GHz	1GB	SATA	2S/4U/LAN/LPT/I²C/Audio/VGA/LCD
VDX3-ETX-75IE-V2	Vortex86DX3-1GHz	2GB	SATA	2S/4U/LAN/I²C/Audio/IDE/VGA/LCD
VDX3-ETX-75LE-V2	Vortex86DX3-1GHz	2GB	SATA	2S/4U/LAN/LPT/I²C/Audio/VGA/LCD

■ S=RS232/422/485; U=USB; GLAN=GigaLan; LPT=Printer; mPCle=miniPCle

EBM

- CPU : Intel Braswell Family / Intel Apollo Lake Family
- Operating Temp. : 0 ~ +60°C Max.
- Size : 101.6 x 111.5mm
- Features : Fanless
10 years life cycle



Part No.	CPU	RAM	Storage	I/O
APL-U	Celeron® N3350 Celeron® J3455	8GB Max.	M.2 SATA/SATA	1S/5U/2GLAN/Audio/2mPCle/8GPIO/HDMI/VGA
IBW-U	Pentium® N3710 Atom® x5-E8000 Celeron® N3160	8GB Max.	Micro SD/SATA	2S/4U/2GLAN/Audio/M.2 2230 E-key/HDMI

■ S=RS232/422/485; U=USB; GLAN=GigaLan; LPT=Printer; mPCle=miniPCle

SOM304 Module

- CPU : DMP Vortex86
- Operating Temp. : -40 ~ +85°C Max.
- Size : 70 x 70mm
- Features : 16-bit full ISA support
PCIe support
Fanless
10 years life cycle



Part No.	CPU	RAM	Onboard Storage	I/O
SOM304D375EINE1-HS	Vortex86DX3-1GHz	2GB	N/A	4U/LAN/2PCIe/SATA/ISA/VGA/ 11 Configurable I/O Ports/LCD

■ S=RS232/422/485; U=USB; GLAN=GigaLan; LPT=Printer; mPCIe=miniPCIe

SOM200 Module

- CPU : DMP Vortex86EX
- Operating Temp. : -40 ~ +85°C Max.
- Size : 52 x 52mm
- Features : Maximum 10 configurable I/O ports
16-bit x-ISA support
PCIe support
Fanless
10 years life cycle



Part No.	CPU	RAM	Onboard Storage	I/O
SOM200EX43VGNE1	Vortex86EX-400MHz	512MB	N/A	2S/LAN/8ADC/SATA/ 10 Configurable I/O Ports/VGA
SOM200EX43EGNE1	Vortex86EX-400MHz	512MB	N/A	2U/LAN/8ADC/PCIe/SATA/ 10 Configurable I/O Ports

■ S=RS232/422/485; U=USB; GLAN=GigaLan; LPT=Printer; mPCIe=miniPCIe



VDX3-6726

■ Development board for SOM304D3



VEX-6225

■ Development board for SOM200EX

DIP-128 Module

- CPU : DMP Vortex86EX
- Operating Temp. : -40 ~ +85°C Max.
- Size : 45 x 28mm
- Features : Maximum 10 configurable I/O ports
16-bit x-ISA support
PCIe support
Fanless
10 years life cycle



Part No.	CPU	RAM	Onboard Storage	I/O
VEX-SOM	Vortex86EX-400MHz	128MB	N/A	2U/LAN/8ADC/PCIe/SATA/ 10 Configurable I/O Ports
VEX-SOM-512	Vortex86EX-400MHz	512MB	N/A	2U/LAN/8ADC/PCIe/SATA/ 10 Configurable I/O Ports

■ S=RS232/422/485; U=USB; GLAN=GigaLan; LPT=Printer; mPCle=miniPCle

DIP-168 Module

- CPU : NXP i.MX8M Mini / DMP Vortex86EX2
- Operating Temp. : -40 ~ +85°C Max.
- Size : 55 x 35mm
- Features : Maximum 15 configurable I/O ports
16-bit full ISA support
PCIe support
Fanless
10 years life cycle



VEX2-DIP-168



N8MM-D168

Part No.	CPU	RAM	Onboard Storage	I/O
NX8MM-D168	NXP i.MX 8M Mini Quad Core 1.6GHz	2GB Max.	Micro SD	4S/2U/GLAN/MIPI-CSI/4PWM/3I ² C /3SPI/3I ² S/20GPIO/PCIe/MIPI-DSI
VEX2-DIP-168-4NE1	Vortex86EX2-600MHz	1GB	Micro SD	2U/LAN/8ADC/2PCIe/ 15 Configurable I/O Ports
VEX2-DIP-168-4EE1	Vortex86EX2-600MHz	1GB	4GB eMMC	2U/LAN/8ADC/2PCIe/ 15 Configurable I/O Ports

■ S=RS232/422/485; U=USB; GLAN=GigaLan; LPT=Printer; mPCle=miniPCle



VEX-IOT-DEV

- Development kit for VEX-SOM



VEX2-6427

- Development board for VEX2-DIP-168

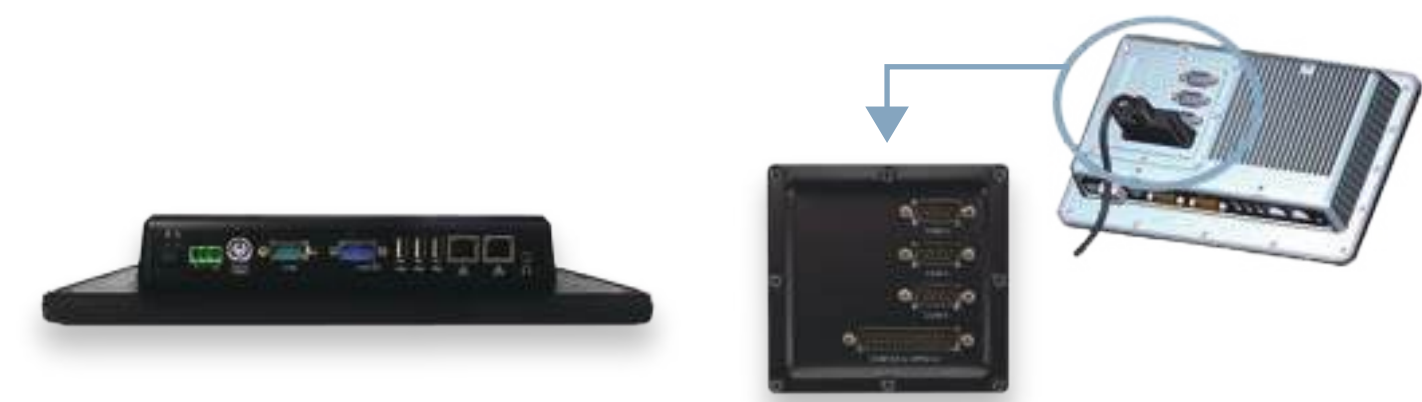
Rugged PPC Series

- **Features :** Support x86 platform of DMP Vortex86 Processors.
Different size of LCD and Touch panel support for 9", 10.4" and 15".
Wide power requirement, +12VDC ~ +24VDC.
Flexible I/O expansion.
IP65 Front Panel Protection.
Metal and Fanless Design & VESA and Panel Mount Support.



Model Name	PPC-090T	PPC-104T	PPC-150T	PPC-150P
Display Size	9" WSVGA	10.4" SVGA	15" XGA	
Max. Resolution	1024 x 600	800 x 600	1024 x 768	
Luminance (cd/m²)	300	500	400	
Touch Screen	Analog Resistive/ Capacitive Touch Panel	Analog Resistive		Capacitive Touch Panel
CPU	Vortex86DX2-933MHz Vortex86DX3-1GHz (Dual core)			
System Memory	1GB/2GB			
I/O	2S/3U/LAN/GLAN/Audio			
Storage	CF Card/STAT SLIM/2GB Nand Flash Onboard			
Expansion I/O	PoE/COM x5/COM x3 + 16bit GPIO			
Power Requirement	+12VDC ~ 24VDC			
Operating Temp.	0 ~ 50°C / -20 ~ +60°C			
Dimension (WxHxD mm)	242 x 156.5 x 44	273.4 x 219.8 x 49	354.9 x 280.4 x 55	354.9 x 280.9 x 54.9
Certificate	CE, FCC, VCCI, Shock, Vibration, IP65 (Front Panel)			

■ S=RS232/422/485; U=USB; GLAN=GigaLan; LPT=Printer; mPCIe=miniPCIe



■ Expansion I/O Ports with Custom Design

Rugged PPC Series

- **Features :** Support x86 platform of Intel® Processor.
Different size of LCD and Touch panel support for 9", 10.4" and 15".
IP65 Front Panel Protection.
Metal and Fanless Design.
VESA and Panel Mount Support.



Model Name	PPC-090T-EHL	PPC-104T-EHL	PPC-150T-EHL	PPC-150P-EHL
Display Size	9" WSVGA	10.4" SVGA	15" XGA	
Max. Resolution	1024 x 600	800 x 600	1024 x 768	
Luminance (cd/m²)	300	500	400	
Touch Screen	Analog Resistive/ Capacitive Touch Panel	Analog Resistive		Capacitive Touch Panel
CPU	Intel® Elkhart Lake J6412 Processor (Quad Core 2.0GHz)			
System Memory	8GB / 16GB / 32GB			
I/O	2S/USB3.1 x3/USB2.0 x3/2.5GbE x2 /HDMI x2/Audio			
Storage	M.2 M-key (2242/2280) PCIe Gen.3 x2/SATA Interface Support NVME			
Expansion I/O	M.2 B-key (3024) USB3.1/USB2.0 Interface & M.2 E-key (2230) USB2.0/PCIe Gen.3 x1 Interface			
Power Requirement	+12VDC ~ 24VDC			
Operating Temp.	0 ~ +60°C			
Dimension (WxHxD mm)	242.02 x 156.52 x 50.55	273.44 x 219.84 x 56.05	354.84 x 280.84 x 61.55	359.63 x 282.98 x 61.54
Sample & Certificate	CE, UKCA, FCC, VCCI, Shock, Vibration, IP65 (Front Panel)			

Model Name	PPC-090T-APL	PPC-104T-APL	PPC-150T-APL	PPC-150P-APL
Display Size	9" WSVGA	10.4" SVGA	15" XGA	
Max. Resolution	1024 x 600	800 x 600	1024 x 768	
Luminance (cd/m²)	300	500	400	
Touch Screen	Analog Resistive / Capacitive Touch Panel	Analog Resistive		Capacitive Touch Panel
CPU	Intel® Pentium® N4200 (Quad) Intel® Celeron® N3350 (Dual)			
System Memory	4GB/8GB			
I/O	2S/3U/LAN/GLAN/Audio			
Storage	M.2 2242 SATA M-key/2.5" SATA HDD / SSD			
Expansion I/O	mPCIe Slot x1 /HDMI 1.4 (as DUAL Display)			
Power Requirement	+12VDC			
Operating Temp.	0 ~ +60°C			
Dimension (WxHxD mm)	242 x 156.5 x 50.6	273.4 x 219.8 x 52.5	354.9 x 280.9 x 58	359.6 x 283 x 57.9
Certificate	CE, FCC, VCCI, Shock, Vibration, IP65 (Front Panel)			

■ S=RS232/422/485; U=USB; GLAN=GigaLan; LPT=Printer; mPCIe=miniPCIe

Compact PPC Series

- Features :** Support x86 platform of Intel® and DMP Vortex86 processors, and ARM platform of NXP iM8M Mini Cortex-A53 & Realtek RTD 1195 Cortex-A7 processors. Different size of LCD and Touch panel support for 5.7" and 9". IP65 Front Panel Protection for 9" Panel PC. Metal and Fanless Design. VESA and Panel Mount Support.



Model Name	PEX-057T	PEX-090T	PINT-090T-APL	PBSW-090T	PN8M-090T	PRTD-090T
	PDX2-057T	PDX2-090T				
	PDX3-057T	PDX3-090T				
Display Size	5.7" VGA	9" WSVGA				
Max. Resolution	640 x 480	1024 x 600				
Luminance (cd/m²)	500	300				
Touch Screen	Analog Resistive	Analog Resistive/Capacitive Touch Panel				Analog Resistive
CPU	Vortex86EXm-400MHz Vortex86DX2-933MHz Vortex86DX3-1GHz	Pentium® N4200 Celeron® N3350	Atom® x5-E8000 Pentium® N3710 Celeron® N3160	NXP i.MX8M Mini 1.6GHz Cortex-A53 (Quad)	Realtek RTD1195-1.2GHz Cortex-A7	
System Memory	1GB/2GB	4GB/8GB	4GB	1GB/2GB/4GB	1GB/2GB	
I/O	1S/2U/LAN/Audio	2S/3U/LAN/ GLAN/Audio	1S/2U/GLAN/Audio			1S/2U/LAN/ Audio
Storage	Miro SD Slot / CF Card/ 2GB Nand Flash Onboard	M.2 2242 SATA M-key			16GB eMMC, Micro SD Slot	8GB eMMC Onboard
Expansion I/O	N/A	mPCIe Slot x 1 HDMI 1.4 x 1	mPCIe Slot x 1			N/A
Power Requirement	+5VDC / +8 ~ +35VDC	+12VDC	+12 ~ +36VDC	+5VDC / +12 ~ +36VDC	+5VDC / +8 ~ +35VDC	
Operating Temp.	0 ~ +50°C / -20 ~ +60°C	0 ~ +60°C	0 ~ +50°C / -20 ~ +60°C	0 ~ +60°C / -20 ~ +70°C		
Dimension (WxHxD mm)	152 x 112 x 33	236.6 x 146 x 35	236.3 x 146 x 44.5		236.6 x 146 x 35	
Certificate	CE, VCCI, FCC, Vibration	CE, VCCI, FCC, Shock, Vibration, IP65 (Front Panel)				

■ S=RS232/422/485; U=USB; GLAN=GigaLan; LPT=Printer; mPCIe=miniPCIe



HMI-043T Series



Model Name	HMI-043T	HMI-043T-OP
Display Size	4.3" WQVGA	4.3" WQVGA
Max. Resolution	480 x 272	480 x 272
Luminance (cd/m²)	280	280
Touch Screen	Analog Resistive	Analog Resistive
CPU	Vortex86EXm-400MHz	Vortex86EX-400MHz
System Memory	128MB/256MB	128MB/256MB
I/O	1S/1U/CAN/LAN/Audio/8GPIO	3S/2U/LCD/LAN/CAN/Audio/8GPIO
Storage	SD Slot/512MB or 8GB eMMC	512MB/8GB eMMC
Expansion I/O	HF RFIC	3 Configurable I/O Ports
Power Requirement	+7VDC ~ 24VDC	+5VDC
Operating Temp.	0 ~ +50°C / -20 ~ +60°C	-20 ~ +60°C
Dimension (WxHxD mm)	116.4 x 94.4 x 34.36	105.5 x 67.2 x 13.6
Certificate	CE, FCC, VCCI, Shock, Vibration, IP65 (Front Panel)	N/A

■ S=RS232/422/485; U=USB; GLAN=GigaLan; LPT=Printer; mPCle=miniPCle

Open Frame Series



Model Name	VOX-070-TS	VOX-065-TS	VOX-084-TS	VOX-090-TS	VOX-104-TS	VOX-150-TS
Display Size	7" WVGA /WSVGA	6.5" VGA	8.4" SVGA	9" WSVGA	10.4" SVGA	15" XGA
Max. Resolution	800 x 480 /1024 x 600	640 x 480	800 x 600	1024 x 600	800 x 600	1024 x 768
Luminance (cd/m²)	400/500	800	250	300	300	350
Touch Screen	Analog Resistive					
CPU	Vortex86EX2 -600MHz/ NXP i.MX8M Mini	Vortex86DX2-933MHz / Vortex86DX3-1GHz / Intel® Braswell x5-E8000 / N7310 / N3160 / 9" Support NXP i.MX8M Mini				
System Memory	1GB/2GB	1GB/2GB/4GB				
Storage	eMMC onboard /SD Slot	SATA / mSATA / eMMC onboard for NXP i.MX8M Mini only				
Expansion I/O	MiniPCle Slot					
Power Requirement	+12 ~ +36VDC	+5VDC & +12VDC / +12VDC / +12V~36VDC				
Operating Temp.	0 ~ +50°C / -20 ~ +60°C					

■ S=RS232/422/485; U=USB; GLAN=GigaLan; LPT=Printer; mPCle=miniPCle

EBOX-IMX8MM Series

- **Operating Temp.** : 0 ~ +60°C / -40 ~ +80°C
- **Dimensions** : 115 x 115 x 35mm
- **Features** : 2GB / 4GB LPDDR4, 16GB/64GB eMMC onboard
2GLAN, Dual RS-232/485
Auto Power On support
Fanless design/DIN Rail support
100 x 100mm VESA support

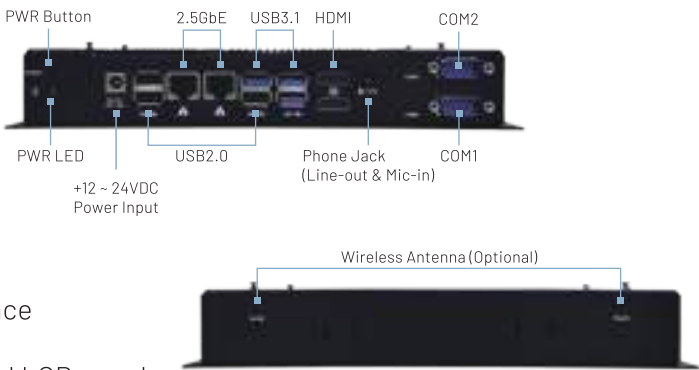


Model Types	CPU	RAM	Storage	I/O
EBOX-IMX8MM w/Dual RS-232/485	NXP i.MX8M Mini Quad-Core 1.6GHz	2GB 4GB	eMMC Micro SD	2S / 3U / GLAN / HDMI CON / Mic-in / Line-out / mPCIe
EBOX-IMX8MM w/Dual RS-232/485, WiFi & BT				2S / 3U / 2GLAN / HDMI CON / Line-out / mPCIe
EBOX-IMX8MM w/Dual RS-232/485, Dual GLAN				
EBOX-IMX8MM w/Dual RS-232/485, Dual GLAN, WiFi & BT				
EBOX-IMX8MM w/Wide Temp.				Available for all model types

■ S=RS232/485; U=USB; GLAN=Giga LAN; CON=Console

EB-EHL Series

- **CPU** : Intel® Elkhart Lake J6412
- **Operating Temp.** : 0 ~ +60°C
- **Dimensions** : 245 x 126 x 37.2mm
- **Features** : Dual HDMI output (Max. 4096x2160@60Hz)
Intel® i225-V 2.5GbE *2
M.2 M-Key (2242/2280) PCIe Gen.3 *2/
SATA interface support NVME
M.2 E-Key (2230) USB2.0/PCIe Gen.3 *1 interface
M.2 B-Key (3024) USB3.1/USB2.0 interface
Reserve LVDS / LED Backlight hole for external LCD panel



Model Types	CPU	RAM	Storage	I/O
EB-EHL-J6-8G	Intel® Elkhart Lake J6412 Quad-core 2.0GHz	8GB	M.2 M-key (2242/2280) PCIe Gen.3*2 SATA interface support NVME	2S / 6U / 2.5GLAN*2 2HDMI / LVDS / eDP Micro SIM / Audio
EB-EHL-J6-16G		16GB		M.2 B-key (3024) USB3.1 / USB2.0
EB-EHL-J6-32G		32GB		M.2 E-key (2230) USB2.0 / PCIe Gen.3

■ S=COM port, COM1=RS-232/485/422, COM2=RS-232; U=USB; 2.5GLAN=2.5GbE LAN; Micro SIM=Micro SIM Card slot



■ EB-EHL – Top Case



■ EB-EHL – Bottom

EBOX Apollo Lake Series

- **Operating Temp.** : 0 ~ +60°C / -20 ~ +60°C
- **Dimensions** : 115 x 115 x 48.5mm
- **Features** : Multi-Display outputs, Dual GLAN
RS-232 / 485 / 422 switchable
Full size / Half-size mPCIe
Fanless design / DIN Rail support
100 x 100mm VESA support



Model Types	CPU	RAM	Storage	I/O	
EBOX-ALN3350 w/COM	Intel® Apollo Lake N3350 Dual-Core 1.1GHz	4GB 8GB	mSATA SATA DOM	4U / 2GLAN / 2HDMI Audio / mPCIe / SIM	VGA
EBOX-ALN3350 w/8-bit GPIO					No VGA
EBOX-ALN3350 w/COM + 8-bit GPIO					
EBOX-ALJ3455 w/COM	Intel® Apollo Lake J3455 Quad-Core 1.5GHz	4GB 8GB	mSATA SATA DOM	4U / 2GLAN / 2HDMI Audio / mPCIe / SIM	VGA
EBOX-ALJ3455 w/8-bit GPIO					No VGA
EBOX-ALJ3455 w/COM + 8-bit GPIO					

■ U=USB; GLAN=Giga LAN; SIM=SIM Card slot

EBOX Braswell Series

- **Operating Temp.** : 0 ~ +60°C
- **Dimensions** : 115 x 115 x 35mm
- **Features** : AMI UEFI BIOS (Legacy mode switchable)
M.2 2230 E Key support
Dual GLAN, Dual RS-232 / 485
Auto Power On/PXE Diskless Boot
Fanless design/DIN Rail support
100 x 100mm VESA support



Model Types	CPU	RAM	Storage	I/O	
EB-58E w/o COM	Intel® Atom x5-E8000 Quad-Core 1.04GHz	4GB 8GB	SATA DOM* Micro SD	4U / HDMI Mic-in / Line-out / M.2	1GLAN
EB-58E w/o COM, w/Dual GLAN					2GLAN
EB-58E w/Dual RS-232/485			SATA DOM Micro SD	2S / 4U / HDMI Mic-in / Line-out / M.2	1GLAN
EB-58E w/Dual RS-232/485, Dual GLAN					2GLAN
EB-58N w/o COM	Intel® Celeron N3160 Quad-Core 1.6GHz	4GB 8GB	SATA DOM* Micro SD	4U / HDMI Mic-in / Line-out / M.2	1GLAN
EB-58N w/o COM, w/Dual GLAN					2GLAN
EB-58N w/Dual RS-232/485			SATA DOM Micro SD	2S / 4U / HDMI Mic-in / Line-out / M.2	1GLAN
EB-58N w/Dual RS-232/485, Dual GLAN					2GLAN

■ S=RS232/485; U=USB; GLAN=Giga LAN; *=2.5" SATA HDD/SSD

iBPC Series

- **CPU** : DMP Vortex86DX3
- **Operating Temp.** : -20 ~ +70°C
- **Dimensions** : 151.7 x 103 x 53.3mm
- **Features** : Panel mounting available
Isolated GPIO
LVDS support
10 years life cycle

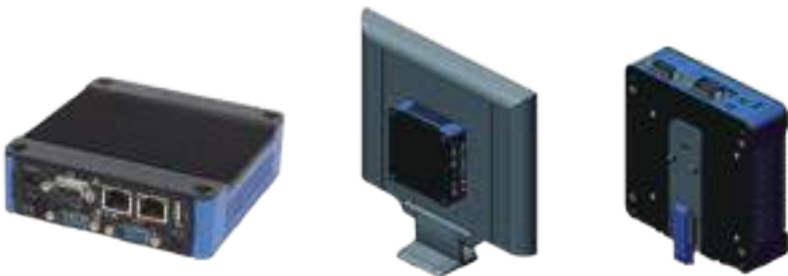


Model Types	CPU	RAM	Storage	I/O
iBPC-75GE	Vortex86DX3-1GHz	2GB Max.	SATA DOM Micro SD	3S / 4U / 2GLAN / LAN / Audio / 8GPIO / 8GPIO (isolated) / VGA / LVDS
iBPC-75CE				3S / 4U / 2GLAN / LAN / Audio / 8GPIO (isolated) / VGA / LVDS / CAN
iBPC-75FE				3S / 4U / 2GLAN / LAN / Audio / 8GPIO / 8GPIO (isolated) / VGA / LVDS

■ S=RS232/422/485; U=USB; GLAN=Giga LAN

EBOX-3362 Series

- **CPU** : DMP Vortex86DX3
- **Operating Temp.** : -20 ~ +70°C
- **Dimensions** : 115 x 115 x 35mm
- **Features** : Dual-core SoC All-in-One Module
Multiple RS-232/485/GPIO
Auto Power On/PXE Diskless Boot
Fanless design/DIN Rail support
100 x 100mm VESA support
10 years life cycle



■ VESA Mount ■ Din-Rail rack

Model Types	CPU	RAM	Storage	I/O
EB-3362-L2851C3P-I	Vortex86DX3 Dual-core 1GHz	2GB	SATA DOM SD / mPCle	4S / 3U / GLAN / LAN VGA / Line-out / mPCle
EB-3362-C2G2SIM-I			SATA DOM SD	2S / 3U / LAN / VGA / SIM Line-out / 16GPIO / mPCle
EB-3362-L2C2851G1E-I			SATA* SD	3S / 3U / GLAN / LAN VGA / Mic-in / Line-out / 8GPIO

■ S=RS232/485; U=USB; GLAN=Giga LAN; SIM=SIM Card slot; *=2.5" SATA HDD/SSD

D-3362 Series

- CPU : DMP Vortex86DX3
- Operating Temp. : -20 ~ +70°C
- Dimensions : 151.7 x 103 x 53.3mm
- Features : Dual-core SoC All-in-One Module
GLAN, RS-232/485/GPIO
Auto Power On/PXE Diskless Boot
Fanless design/DIN Rail support
10 years life cycle



■ DIN-Rail rack

Model Types	CPU	RAM	Storage	I/O
D-3362-852C2-I	Vortex86DX3 Dual-core 1GHz	2GB	SATA DOM* SD (Internal)	4S / 2U / GLAN / LAN / VGA
D-3362-851C1G2-I				2S / 2U / GLAN / LAN / 16GPIO / VGA

■ S=RS232/485; U=USB; GLAN=Giga LAN; *=2.5" SATA HDD/SSD

ICE-104 Series

- CPU : DMP Vortex86DX3
- Operating Temp. : -100 ~ +80°C Max.
- Dimensions : 181.6 x 184.7 x 56.6mm
- Features : 100 x 100mm VESA support
IP67 dust&water design enclosure
Support PC/104 form factor
Customizable I/O ports configuration services



Model Types	CPU	RAM	Storage	I/O
ICE-6754-DC	Vortex86DX3-1GHz	2GB Max.	SATA	3S / 2U / 16GPIO / VGA

■ S=RS232/422/485; U=USB; GLAN=Giga LAN; LPT=Printer; mPCle=miniPCle

ICE-104 _ Passive Cooling Design / Active Warming System Design

- Heat flows through enclosure
- Active warming design form factor
- Works below freezing



ICE-104 _Customizable Service & Function

- Company Logo engraving services
- Customizable I/O panels services
- Stackable Chassis system form



EBOX-335xDX3 Series

- **Operating Temp.** : 0 ~ +60°C / -20 ~ +70°C
- **Dimensions** : 95 x 95 x 20mm / 95 x 95 x 35mm
- **Features** : Dual-core SoC onboard
GLAN, Internal SD slot (optional)
Auto Power On/PXE Diskless Boot
Fanless design/DIN Rail support
75 x 75mm VESA support
10 years life cycle



Model Types	CPU	RAM	Storage	I/O
EBOX-335xDX3	Vortex86DX3 Dual-core 1GHz	1GB 2GB	SD	2S / 3U / LAN VGA / Mic-in / Line-out
EBOX-335xDX3 w/Wide Temp.				2S / 3U / GLAN VGA / Mic-in / Line-out
EBOX-335xDX3 w/1G LAN				
EBOX-335xDX3 w/1G LAN & Wide Temp.				
EBOX-335xDX3-RCA			SATA DOM / Micro SD eMMC (Optional)	3U / LAN / HDMI / VGA / Mic-in / Line-out / mPCIe / RCA Jack

■ S=RS232/422/485; U=USB; GLAN=Giga LAN; RCA Jack=RCA Audio

DIN PC-336x Series

- **Operating Temp.** : 0 ~ +60°C / -20 ~ +70°C
- **Dimensions** : 151.7 x 103 x 53.3mm
- **Features** : Dual-core SoC All-in-One Module
GLAN, RS-232/485/422/GPIO
Auto Power On/PXE Diskless Boot
Fanless design/DIN Rail support
10 years life cycle



Model Types	CPU	RAM	Storage	I/O
DIN PC-336x w/RS-232	Vortex86DX3 Dual-core 1GHz	1GB 2GB	SATA DOM* SD (Internal)	4S / 2U / GLAN / LAN / VGA
DIN PC-336x w/RS-485				
DIN PC-336x w/RS-422				2S / 2U / GLAN / LAN / VGA / 16GPIO
DIN PC-336x w/8-bit GPIO x2				
DIN PC-336x w/Mic-in & Line-out				Available for all model types

■ S=RS232/485/422; U=USB; GLAN=Giga LAN; *=2.5" SATA HDD/SSD

EBOX-336x Standard Series

- **Operating Temp.** : 0 ~ +60°C / -20 ~ +70°C
- **Dimensions** : 115 x 115 x 35mm
- **Features** : Dual-core SoC All-in-One Module
Multiple RS-232/485/422/GPIO/CANbus
Auto Power On/PXE Diskless Boot
Fanless design/DIN Rail support
100 x 100mm VESA support
10 years life cycle



Model Types	CPU	RAM	Storage	I/O
EBOX-336x w/HDMI	Vortex86DX3 Dual-core 1GHz	1GB 2GB	SATA DOM* SD / mPCIe	4S / 3U / GLAN / LAN / CAN / HDMI Line-out / Mic-in / mPCIe / 16GPIO
EBOX-336x w/RS-232				4S / 3U / GLAN / LAN / CAN VGA / Line-out / mPCIe / 16GPIO
EBOX-336x w/RS-485				
EBOX-336x w/RS-422				
EBOX-336x w/RS-485 x3, x4				4S / 3U / GLAN / LAN / CAN VGA / Line-out / Mic-in / mPCIe

■ S=RS232/485/422; U=USB; GLAN=Giga LAN; *=2.5"SATA HDD/SSD

EBOX-336x Special Series

- **Operating Temp.** : 0 ~ +60°C / -20 ~ +70°C
- **Dimensions** : 115 x 115 x 35mm
- **Features** : Dual-core SoC All-in-One Module
Multiple LANs & COM ports
SATA, SD, CF, mPCIe, LPT, 4G LTE
Auto Power On/PXE Diskless Boot
Fanless design/DIN Rail support
100 x 100mm VESA support
10 years life cycle

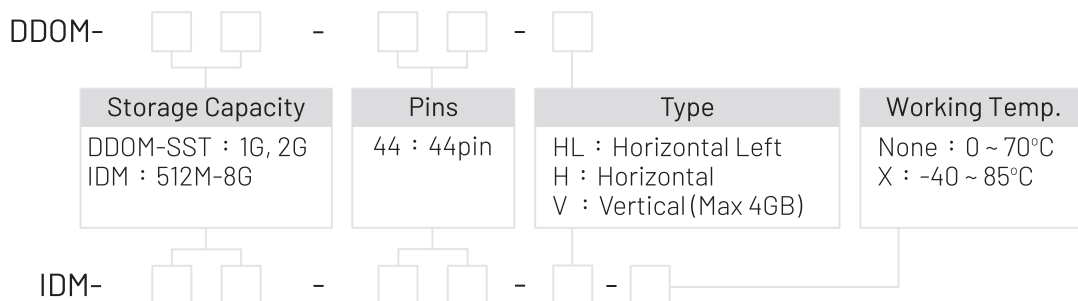


Model Types	CPU	RAM	Storage	I/O
EBOX-336x w/4G LTE	Vortex86DX3 Dual-core 1GHz	1GB 2GB	SATA DOM SD	4S / 3U / LAN / CAN VGA / Line-out / mPCIe / SIM
EBOX-336x w/8-bit GPIO x2			SATA DOM* SD / mPCIe	2S / 3U / GLAN / LAN / CAN VGA / Line-out / mPCIe / 16GPIO
EBOX-336x x/Multi LAN			SATA DOM SD / mPCIe	4S / 4U / 2GLAN / LAN / CAN / VGA Mic-in / Line-out / mPCIe / 16GPIO
EBOX-336x w/Legacy I/O			SATA DOM SD / CF	3S / 3U / GLAN / LAN / LPT / VGA / Line-out

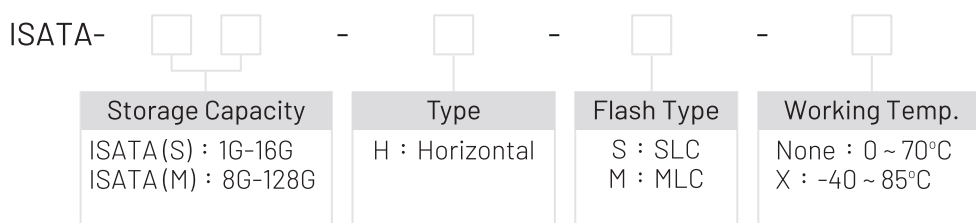
■ S=RS232/485/422; U=USB; GLAN=Giga LAN; LPT=Parallel port; SIM=SIM Card slot; *=2.5"SATA HDD/SSD

Flash Disk

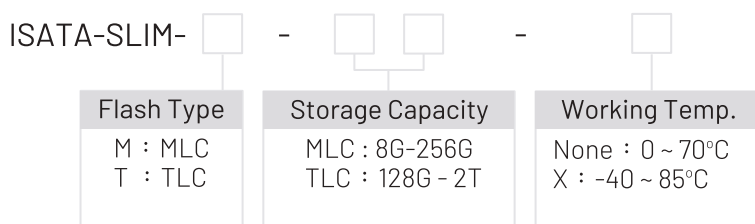
■ IDE DOM Series



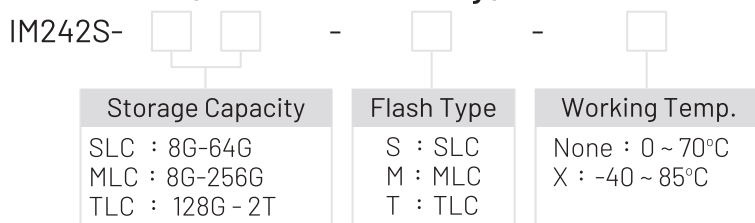
SATA DOM Series



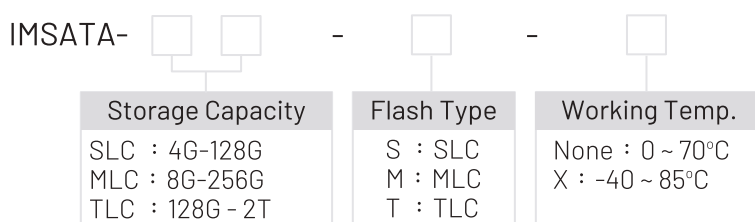
SATA SLIM Series



- M.2 Series (SATA 2242 M key)



- mSATA Series



Peripheral



DCM
DC to DC power module



SERIALCAN
UART to CAN module



ICOP-0072
PC/104 DC to DC + 24-bit digital I/O card



ICOP-1800
PC/104 RS232 x 4 port card



ICOP-0101
PC/104 48-bit digital I/O card



ICOP-0102
PC/104 24-bit digital I/O card



MINIPCI-E-9160
Mini-PCIe VGA card



MINIPCI-E-4S
Mini-PCIe to four RS232 card



SD-1917
IDE (44pin) to Micro SD Controller



CF-1916
IDE (44pin) to Compact Flash Type I/II



CF-1915
IDE (44pin) to Compact Flash Type I/II



ICOP-0076
LAN Adapter Kit

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