Version 2.0

iCP iEi ®
INDUSTRIAL COMPUTER PRODUCTS

...by people who care!

ASSEMBLY

BOX

BOARD

PANEL

Industrial
Computer
Products

COMMUNICATION

CUSTOMIZATION

ACCESSORY
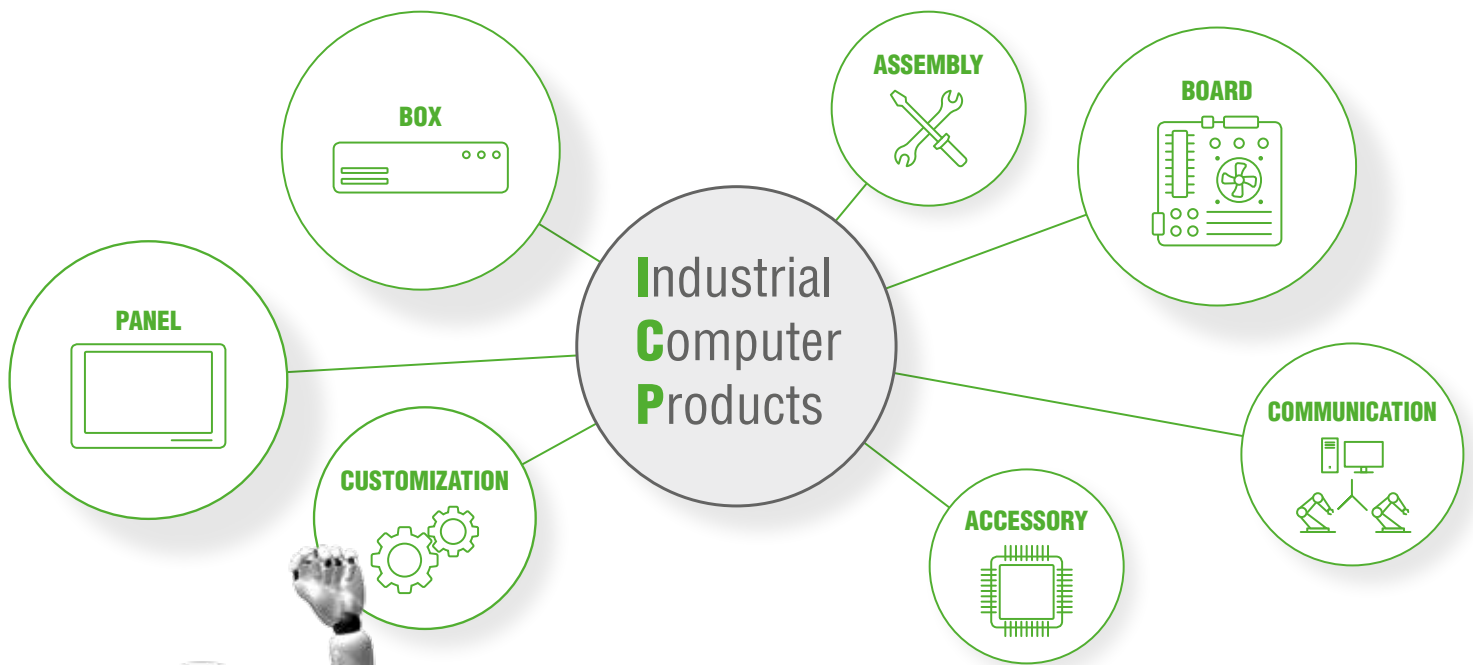
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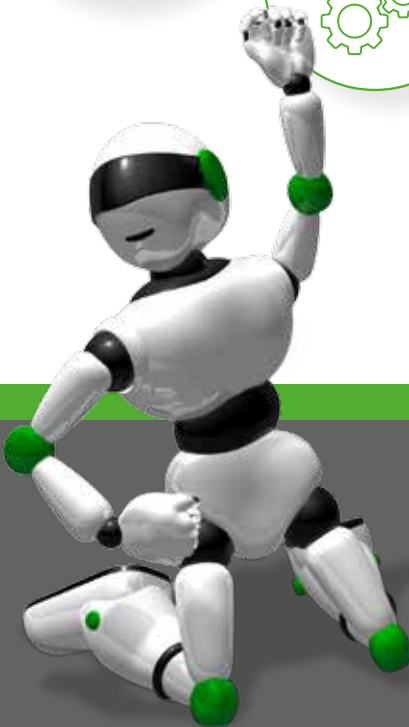
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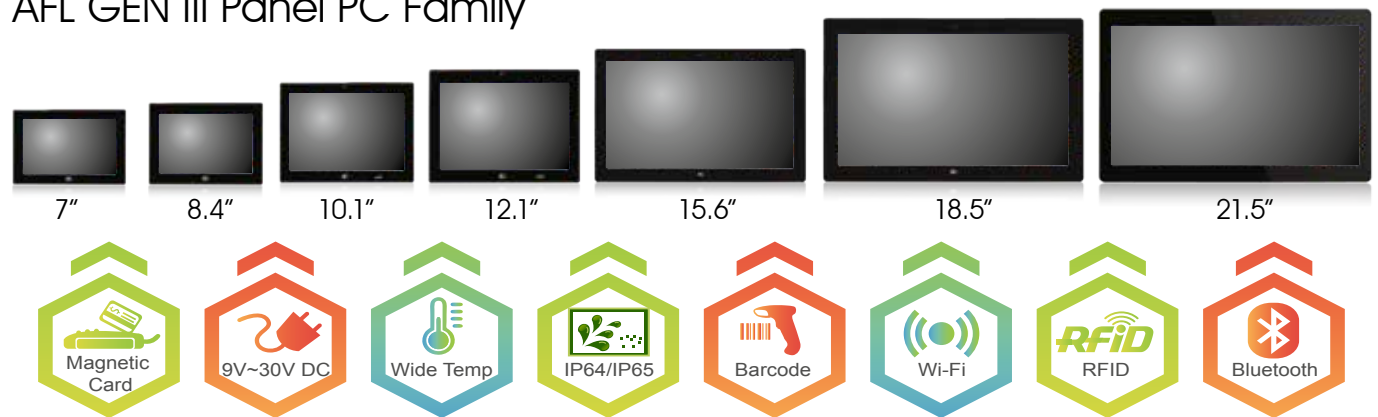
Light Industrial Panel Solution

Today, more and more customers are looking for advanced services such as round-the-clock service or just-in-time delivery. Service automation enables the exchange of information and communication between administrators and clients through the thin, low power consumption portable devices that fit with many circumstances. Upgrade your service platform with IEI service automation solutions, which have advanced communication functions and solid mechanical characteristics. These solutions help you keep up with your customers while staying a step ahead of the competition.

AFOLUX GEN III Interactive Panel PC

Leading the Evolution of Intelligent HMI

AFOLUX GEN III Panel PC, a specialized all-in-one panel computer with 7-inch to 15.6-inch PCAP touchscreen, opens a new era of automation. It looks stylish like a tablet, and supports 802.11ac and Bluetooth 4.0 high speed connectivity. Its robustness meets industrial standards and its scalability make it easy to expand I/O options. The AFOLUX GEN III is designed for a wide range of applications which can be applied in different scenarios.

AFL GEN III Panel PC Family

| 7″ | 8.4″ | 10.1″ | 12.1″ | 15.6″ | 18.5″ | 21.5″ |

Magnetic Card   9V~30V DC   Wide Temp   IP64/IP65   Barcode   Wi-Fi   RFID   Bluetooth

Robustness
- IP65/IP64 front, IPx1 rear cover
- -10°C~50°C extended operating temperature
- 6H PCAP multi-touch

Stylish
- ABS plus PC plastic light weight hosing
- 2mm bezel seamless design
- Upright portrait installation possible for all touch devices
- Less screw design

Scalability
- 1D/2D barcode module for retail applications
- 13.56MHz Mifare reader: meets ISO 14443A/B,15693
- MSR card reader for identifications
- E-Window for function expansion

Connectivity
- Digital microphone, 2-megapixel camera, speakers
- Wireless 802.11ac connectivity
- Bluetooth 4.0 (optional)

AFL3-W07A-BT
Intel® Celeron® N2807 (Dual Core, 1.58 GHz)

AFL3-08A-BT
Intel® Celeron® J1900 (Quad Core, 2.0 GHz)

Features

- W7"~8.4" light industrial interactive panel PC
- 9 V ~ 30 V wide range DC input with lockable DC jack
- Selectable AT/ATX power mode
- Built-in speakers
- One mSATA slot
- IP64/IP65 compliant front panel
- IEI One Key Recovery solution alllows you to create rapid OS backup and recovery (suggested with over 4GB storage capacity)

Fanless | Bluetooth | Touchscreen | mSATA | Speakers | 9V~30V DC | One Key Recovery iEi symantec

Specifications

Model		AFL3-W07A-BT	AFL3-08A-BT
LCD	Size	7"	8.4"
	Resolution	1024 x 600 (16:9)	800 x 600 (4:3)
	Brightness (cd/m²)	500	450
	Contrast Ratio	700:1	600:1
	LCD Color	16.2M	16.2M
	Pixel Pitch (mm)	0.0635 (H) x 0.1905 (V)	0.213 (H) x 0.213 (V)
	Viewing Angle (H-V)	150º / 145º	160º / 140º
	Backlight MTBF(hrs)	20000 hrs	50000 hrs
Touch	Touch Screen	Projected capacitive type	Resistive Touch Window/Projected capacitive type
	Touch Controller	EETI EXC3160	PenMount DMC 9000/EETI EXC3146
Motherboard	CPU	Intel® Celeron® N2807 (dual core, 1.58 GHz)	Intel® Celeron® J1900 (quad core, 2.0 GHz)
	RAM	2GB DDR3L onboard RAM/ 4GB DDR3L onboard RAM	One 204-pin 2 GB 1333MHz single-channel, 2GB DDR3L SDRAM pre-installed (system max. 8GB)
	Ethernet	2 x PCIe GbE by RTL8111E controller	2 x PCIe GbE by RTL8111E controller
	Audio Codec	ALC892	ALC892
Storage		mSATA	mSATA
I/O Ports & Switch		2 x RS-232 COM port (DB-9 connector) 2 x USB 3.0 2 x GbE LAN 1 x Power switch 1 x Reset button 1 x AT/ATX switch 1 x 9-30V Lockable power jack	1 x RS-232 COM port (RJ-45 connector) 1 x RS-232/422/485 COM port (DB-9 connector) (RI/5V/12V) 2 x USB 3.0 2 x RJ-45 for GbE LAN 1 x Power switch 1 x Audio port (line-out) 1 x Reset button 1 x AT/ATX switch 1 x 9-30V DC Lockable power jack
Audio		AMP 2W (internal speaker, left channel output)	AMP 2W + 2W (internal speaker)
Camera and Microphone		N/A	2-megapixel with low light function, digital microphone
Wireless & Bluetooth		IEEE 802.11 a/b/g/n/ac, Bluetooth V4.0 (PCIe mini slot)	IEEE 802.11 a/b/g/n/ac (PCIe mini slot)
OSD Function		Software OSD	
Physical	Front Panel Construction	PC + ABS Plastic	
	Mounting	Panel, Wall, Stand, Arm, Rack VESA 75mm x 75mm	
	Color	Black C	
	Dimensions (WxHxD) (mm)	191 x 127 x 43	233 x 175 x 50
	Cut-out Dimensions (WxH) (mm)	182 x 111	207 x 143
	Net/Gross Weight (kgs)	0.73/1.81	0.8/2.44
Environment	Operating Temperature (°C) (Ambient with air flow)	-20°C~50°C	-15°C~55°C
	Storage Temperature (°C)	-20°C~60°C	-20°C~65°C
	Humidity	10% to 95% (non-condensing)	
	IP Level	IP 65 compliant front panel	IP 64 compliant front panel
	Safety&EMC	CE / FCC	
	Thermal Solution	Fanless	
Power	Power Requirement	9 V ~ 30 V	
	Power Consumption	12V@2.08 (Intel® N2807 CPU with 2GB 1333 MHz DDR3L memory)	12V@2A (Intel® J1900 CPU with 2GB 1333 MHz DDR3L memory)

AFL3-W10A-BT	Intel® Celeron® J1900 (Quad Core, 2.0 GHz)
AFL3-12A-BT	Intel® Celeron® J1900 (Quad Core, 2.0 GHz)
AFL3-12C-ULT3	Intel® Core™ i5 and Celeron® ULT Processor **NEW**

Features

- W10"~12.1" light industrial interactive panel PC
- Wide range DC input with lockable DC jack
- Selectable AT/ATX power mode
- Built-in speakers
- One mSATA slot
- IP64 compliant front panel
- IEI One Key Recovery solution alllows you to create rapid OS backup and recovery (suggested with over 4GB storage capacity)

Fanless **Bluetooth** **Touchscreen** **IP64** **Camera** **Speakers** **One Key Recovery** IEI symantec

Specifications

	Model	AFL3-W10A-BT	AFL3-12A-BT	AFL3-12C-ULT3
LCD	Size	10.1"	12.1"	12.1"
	Resolution	1280 x 800 (16:10)	1024 x 768 (4:3)	1024 x 768 (4:3)
	Brightness (cd/m²)	350	500	500
	Contrast Ratio	800:1	700:1	700:1
	LCD Color	16.2M	16.2M	16.2M
	Pixel Pitch (mm)	0.1695 (H)×0.1695 (V)	0.240 (H) x 0.240 (V)	0.240 (H) x 0.240 (V)
	Viewing Angle (H-V)	170° / 170°	160° / 160°	160° / 160°
	Backlight MTBF(hrs)	15000 hrs	50000 hrs	50000 hrs
Touch	Touch Screen	Projected capacitive type	5-wire resistive touch window/ projected capacitive type	Projected capacitive type with USB interface (anti-UV)
	Touch Controller	EETI EXC3146	PenMount DMC9000/ EETI EXC3146	EETI EXC3180
Motherboard	CPU	Intel® Celeron® J1900 (quad core, 2.0 GHz)	Intel® Celeron® J1900 (quad core, 2.0 GHz)	6th Generation Intel® Core™ i5 and Celeron® on-board processor
	RAM	One 204-pin 2 GB 1333MHz single-channel, 2GB DDR3L SDRAM pre-installed (system max. 8GB)	One 204-pin 2 GB 1333MHz single-channel, 2GB DDR3L SDRAM pre-installed (system max. 8GB)	One 260-pin 2133MHz single-channel, 4GB DDR4L SDRAM pre-installed (system max. 8GB)
	Ethernet	2 x PCIe GbE by RTL8111E controller	2 x PCIe GbE by RTL8111E controller	2 x PCIe GbE by Intel® i211 controller
	Audio Codec	ALC892	ALC892	ALC892
Storage		mSATA	mSATA 2.5" SATA 3Gb/s HDD bay	2.5" SATA 3Gb/s HDD bay M.2 M key PCIe (2230) mSATA slot (PCIe/mSATA/USB)
I/O Ports & Switch		1 x RS-232 COM port (RJ-45 connector) 1 x RS-232/422/485 COM port (DB-9 connector) (RI/5V/12V) 2 x USB 3.0 2 x USB 2.0 2 x RJ-45 for GbE LAN 1 x Power switch 1 x Audio port (line-out) 1 x Reset button 1 x AT/ATX switch 1 x 9-30V DC lockable power jack	1 x RS-232 COM port (RJ-45 connector) 1 x RS-232/422/485 COM port (DB-9 connector) (RI/5V/12V) 2 x USB 3.0 2 x USB 2.0 2 x RJ-45 for GbE LAN 1 x Power switch 1 x Audio port (line-out) 1 x Reset button 1 x AT/ATX switch 1 x 9-30V lockable power jack	1 x RS-232/422/485 (DB-9) 1 x RS232 (RJ-45) 2 x GbE LAN 2 x USB 2.0 2 x USB 3.0 1 x DC jack (12-30V DC) 1 x HDMI 1 x Power switch 1 x Reset button 1 x AT/ATX switch
E-Window Expansion		N/A	Yes, optional	Yes, optional
Audio		AMP 2W + 2W (internal speaker)	AMP 3W + 3W (internal speaker)	AMP 3W + 3W (internal speaker)
Camera and Microphone		2-megapixel with low light function, digital microphone		
Wireless		IEEE 802.11a/b/g/n/ac (PCIe Mini slot)		IEEE 802.11 a/b/g/n/ac, Bluetooth V4.0, M.2 slot
OSD Function		Software OSD		
Physical	Front Panel Construction	PC + ABS Plastic		
	Mounting	Panel, Wall, Stand, Arm VESA 75mm x 75mm	Panel, Wall, Rack, Stand and Arm VESA 75mm x 75mm / 100mm x 100mm	Panel, Wall, Stand and Arm VESA 75mm x 75mm / VESA 100mm x 100mm
	Color	Black C		
	Dimensions (WxHxD) (mm)	262 x 181 x 42	304 x 243 x 44	304 x 243 x 58
	Cut-out Dimensions (WxH) (mm)	236 x 149	243 x 205	272 x 223
	Net/Gross Weight (kgs)	1.06/2.58	1.92/3.95	3/5.03
Environment	Operating Temperature (Ambient with air flow)	-10°C~50°C	-20°C~50°C	-20°C ~ 50°C
	Storage Temperature	-20°C~60°C	-20°C~60°C	-30°C ~ 60°C
	Humidity	10% to 95% (non-condensing)		
	IP Level	IP 64 compliant front panel		
	Safety&EMC	CE / FCC		CE , FCC , ErP 2009/125/EC
	Thermal Solution	Fanless		
Power	Power Requirement	9 V ~ 30 V DC		12 V ~ 30 V DC
	Power Consumption	12V@2.3A (Intel® J1900 CPU with 2GB 1333 MHz DDR3L memory)	12V@3.58A (Intel® J1900 CPU with 2GB 1333 MHz DDR3L memory)	12V@6A (Intel® Core™ i5-6300U CPU with 4GB DDR4 2133 MHz DDR4 memory)

AFL3-W15A-BT
Intel® Celeron® J1900 (Quad Core, 2.0 GHz)

AFL3-W15B-H81
Intel® Core™ i7/i5/i3, Pentium® and Celeron®

AFL3-W15C-ULT3
Intel® Core™ i5 and Celeron® ULT Processor

Features

- W15" light industrial interactive panel PC
- 9 V ~ 30 V wide range DC power input
- Selectable AT/ATX power mode
- Built-in speakers
- One mSATA slot
- IP64 compliant front panel
- IEI One Key Recovery solution alllows you to create rapid OS backup and recovery (suggested with over 4GB storage capacity)

Bluetooth | Touchscreen | IP64 | Camera | Speakers | 9V~30V DC | One Key Recovery (IEi symantec)

Specifications

Model		AFL3-W15A-BT	AFL3-W15B-H81	AFL3-W15C-ULT3
LCD	Size	15.6"		
	Resolution	1366 x 768 (16:9)		
	Brightness (cd/m²)	400		
	Contrast Ratio	500:1		
	LCD Color	16.2M		
	Pixel Pitch (mm)	0.240 (H) x 0.240 (V)		
	Viewing Angle (H-V)	170º / 160º		
	Backlight MTBF(hrs)	50000 (LED backlight)		
Touch	Touch Screen	5-wire resistive type with RS-232 interface / projected capacitive type with USB interface		
	Touch Controller	PenMount DMC9000 / EETI EXC3188	PenMount DMC9000 / EETI EXC7200	PenMount DMC9000 / EETI EXC3188
Motherboard	CPU	Intel® Celeron® J1900 (quad core, 2 GHz)	Intel® Core™ i7/i5/i3, Pentium®, Celeron® processor (TDP 35W)	6th Generation Intel® Core™ i5 and Celeron® on-board processor
	Chipset		Intel® H81	
	RAM	One 204-pin 1333 MHz single-channel DDR3L SDRAM, 2GB pre-installed (system max. 8GB)	Two 204-pin 1333 MHz single-channel DDR3L SDRAM, 4GB pre-installed (system max. 16GB)	Two 260-pin 2133/1867 MHz dual-channel DDR4 SO-DIMMs (system max. 32 GB)
	Ethernet	2 x PCIe GbE by RTL8111E controller		2 x Intel® I211 PCIe GbE controller
	Audio Codec	ALC892		
Storage		(1) 1 x mSATA (2) 1 x 2.5" SATA 3Gb/s HDD bay		(1) 1 x 2.5" SATA 3Gb/s HDD bay (2) 1 x M.2 M key PCIe storage (2280 or 22110) (3) 1 x mSATA slot
I/O Ports & Switch		1 x RS-232 COM port (RJ-45 connector) 1 x RS-232/422/485 COM port (DB-9 connector) (RI/5V/12V) 2 x USB 2.0 2 x USB 3.0 2 x GbE LAN 1 x Power switch 1 x Reset button 1 x AT/ATX switch 1 x Audio port (line-out) 1 x 9-30V lockable power jack	1 x RS-232 COM port (DB-9 connector) 1 x RS-232/422/485 COM port (DB-9 connector) (RI/5V/12V) 2 x GbE LAN 4 x USB 2.0 2 x USB 3.0 1 x HDMI output 1 x Power switch 1 x Reset button 1 x AT/ATX switch 1 x Audio port (line-out) 1 x 9-30V lockable power jack	1 x RS-232 by DB-9 (RI/5V/12V) 1 x RS-232/422/485 by DB-9 (RI/5V/12V) 2 x GbE LAN 4 x USB 3.0 1 x HDMI output 1 x Power switch 1 x Reset button 1 x AT/ATX switch 1 x 9-30V lockable power jack
E-Window Expansion		Yes, optional	N/A	Yes, optional
Audio		AMP 3W + 3W (internal speakers)		
Camera and Microphone		2-megapixel with low light function, digital microphone		
Wireless & Bluetooth		IEEE 802.11a/b/g/n/ac (PCIe Mini slot)	IEEE 802.11a/b/g/n/ac, Bluetooth v4.0 (PCIe Mini slot)	IEEE 802.11a/b/g/n/ac, Bluetooth v4.0 (M.2 slot)
OSD Function		Software OSD		
Physical	Front Panel Construction	PC + ABS Plastic		
	Mounting	Panel, Wall, Rack, Stand and Arm VESA 75mm x 75mm / 100mm x 100mm		
	Color	Black C		
	Dimensions (WxHxD) (mm)	396 x 250 x 53	396 x 250 x 59	396 x 250 x 64
	Cut-out Dimensions (WxH) (mm)	273 x 226	369 x 226	369 x 226
	Net/Gross Weight (kgs)	3.3/5.6	3.74/5.74	4.5/6.5
Environment	Operating Temperature (°C) (Ambient with air flow)	-20°C~50°C	0°C~50°C	-20°C~50°C
	Storage Temperature (°C)	-20°C~60°C		
	Humidity	10% to 95% (non-condensing)		
	IP Level	IP 64 compliant front panel		
	Safety & EMC	CE / FCC		
	Thermal Solution	Fanless	Smart Fan	Fanless
Power	Power Requirement	9 V ~ 30 V		
	Power Consumption	12V@4.16A (Intel® J1900 CPU with 2GB 1333 MHz DDR3 memory)	12V@6.33A (Intel® Pentium® G3320TE CPU with 4GB 1333 MHz DDR3L memory)	12V@.6A (Intel® Core™ i5-6300U CPU with 4GB DDR4 2133 MHz DDR4 memory)

AFL3-W19C-ULT3
Intel® Core™ i5 and Celeron® ULT Processor

AFL3-W19A-AL
Intel® Celeron® / Atom™ Apollo Lake Processor

Preliminary

Features

- 18.5" light industrial interactive panel PC
- Wide range DC power input
- Selectable AT/ATX power mode
- Built-in speakers
- One mSATA slot
- IP64 compliant front panel
- IEI One Key Recovery solution alllows you to create rapid OS backup and recovery (suggested with over 4GB storage capacity)
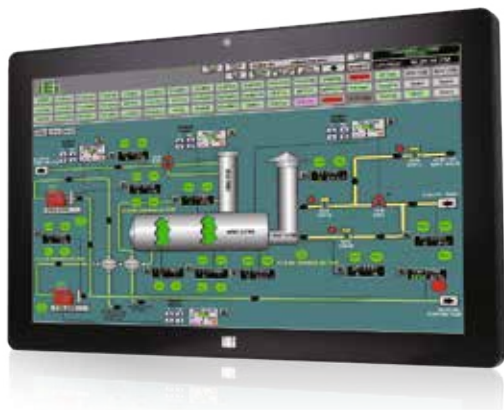
Fanless | Bluetooth | Touchscreen | IP64 | Camera | Speakers | One Key Recovery · iEi symantec

Specifications

Model		AFL3-W19C-ULT3	AFL3-W19A-AL *Preliminary*
LCD	Size	18.5"	18.5"
	Resolution	1366 x 768 (16:9)	1366 x 768 (16:9)
	Brightness (cd/m²)	250	250/350
	Contrast Ratio	1000:1	1000:1
	LCD Color	262K	262K
	Pixel Pitch (mm)	0.240 (H) x 0.240 (V)	0.240 (H) x 0.240 (V)
	Viewing Angle (H-V)	170º/160º	170º/160º
	Backlight MTBF(hrs)	30,000 (LED backlight panel)	30,000 (LED backlight panel)
Touch	Touch Screen	Projected capacitive type with USB interface	Projected capacitive type with USB interface (anti-UV)
	Touch Controller	EETI EXC3180	EETI EXC3188
Motherboard	CPU	Intel® Core™ i5 and Celeron® ULT Processor	Intel® Atom™ Processor E3940 (2M Cache, 1.6 GHZ up to 1.80 GHz) ,TDP 9.5W Intel® Celeron® Processor N3350 (2M Cache, 1.1 GHZ up to 2.40 GHz) , TDP 6W
	RAM	Two 260-pin 2133/1867 MHz dual-channel DDR4 SO-DIMMs (system max. 32 GB)	One 204-pin 1600/1333 MHz single-channel DDR3L SDRAM, 4GB pre-installed (system max. 8GB)
	Ethernet	2 x Intel® I211-AT PCIe GbE controller	2 x PCIe GbE by Intel® i211 controller
	Audio Codec	ALC892	
Storage		(1) 1 x 2.5" SATA 3Gb/s HDD bay (2) 1 x M.2 M key PCIe storage (2280 or 22110) (3) 1 x mSATA slot	(1) 1 x 2.5" SATA 3Gb/s HDD bay (2) 1 x mSATA slot
I/O Ports & Switch		1 x RS-232 by DB-9 (RI/5V/12V) 1 x RS-232/422/485 by DB-9 (RI/5V/12V) 2 x GbE LAN 4 x USB 3.0 1 x HDMI output 1 x Power switch 1 x Reset button 1 x AT/ATX switch 1 x 9V ~ 30V lockable power jack	1 x RS-232/422/485 by RJ-45 1 x RS-232 by RJ-45 2 x GbE LAN 2 x USB 3.0 2 x USB 2.0 1 x HDMI output 1 x 12V ~ 34V DC Jack 1 x Power switch 1 x AT/ATX switch 1 x Line out
Audio		AMP 3W + 3W (internal speaker)	
Camera and Microphone		2-megapixel with low light function, digital microphone	2-megapixel with low light function, digital microphone
Wireless & Bluetooth		IEEE 802.11a/b/g/n/ac, Bluetooth v4.0 (M.2 slot)	IEEE 802.11a/b/g/n/ac, Bluetooth v4.0 (M.2 slot)
OSD Function		Software OSD	
Physical	Front Panel Construction	PC + ABS Plastic	PC + ABS Plastic
	Mounting	Panel, Wall, Rack, Stand and Arm VESA 75mm x 75mm / 100mm x 100mm	Panel, Wall, Stand and Arm VESA 100mm x 100mm
	Color	Black C	Black C
	Dimensions (W x H x D) (mm)	470 x 290 x 70	470 x 280 x 60
	Cut-out Dimensions (W x H) (mm)	443 x 261	418 x 230
	Net/Gross Weight (kgs)	7.3/10	6.3/9
Environment	Operating Temperature (Ambient with air flow)	-20ºC ~ 50ºC	-15ºC ~ 50ºC
	Storage Temperature	-20ºC ~ 60ºC	
	Humidity	10% to 95% (non-condensing)	
	IP Level	IP 64 compliant front panel	
	Safety & EMC	CE / FCC	
	Thermal Solution	Fanless	
Power	Power Requirement	9V ~ 30V DC	12V ~ 34V DC
	Power Consumption	12V@7.1A (Intel® Core™ i5-6300U CPU with 4GB DDR4 2133 MHz DDR4 memory)	12V@3.2A (Intel® Core™ i5-6300U CPU with 4GB DDR4 2133 MHz DDR4 memory)

AFL3-W22C-ULT3

Intel® Core™ i5 and Celeron® ULT Processor

Features

- W21.5 light industrial interactive panel PC
- 9 V ~ 30 V wide range DC power input
- Selectable AT/ATX power mode
- Built-in speakers
- One mSATA slot
- IP64 compliant front panel
- IEI One Key Recovery solution alllows you to create rapid OS backup and recovery (suggested with over 4GB storage capacity)

Fanless | **Bluetooth** | **Touchscreen** | **IP64** | **Camera** | **Speakers** | **9V~30V DC** | **One Key Recovery**

Specifications

Model		AFL3-W22C-ULT3
LCD	Size	21.5"
	Resolution	1920 x 1080
	Brightness (cd/m²)	250
	Contrast Ratio	1000:1
	LCD Color	16.7M
	Pixel Pitch (mm)	248.25 (H) × 248.25 (V)
	Viewing Angle (H-V)	170º/160º
	Backlight MTBF(hrs)	30,000 (LED backlight panel)
Touch	Touch Screen	Projected capacitive type with USB interface
	Touch Controller	EETI EXC3180
Motherboard	CPU	Intel® Core™ i5 and Celeron® ULT Processor
	RAM	Two 260-pin 2133/1867 MHz dual-channel DDR4 SO-DIMMs (system max. 32 GB)
	Ethernet	2 x Intel® I211-AT PCIe GbE controller
	Audio Codec	ALC892
Storage		(1) 1 x 2.5" SATA 3Gb/s HDD bay (2) 1 x M.2 M key PCIe storage (2280 or 22110) (3) 1 x mSATA slot
I/O Ports & Switch		1 x RS-232 by DB-9 (RI/5V/12V) 1 x RS-232/422/485 by DB-9 (RI/5V/12V) 2 x GbE LAN 4 x USB 3.0 1 x HDMI output 1 x Power switch 1 x Reset button 1 x AT/ATX switch 1 x 9-30V lockable power jack
Audio		AMP 3W + 3W (internal speaker)
Camera and Microphone		2-megapixel with low light function, digital microphone
Wireless & Bluetooth		IEEE 802.11a/b/g/n/ac, Bluetooth v4.0 (M.2 slot)
OSD Function		Software OSD
Physical	Front Panel Construction	PC + ABS Plastic
	Mounting	Panel, Wall, Stand and Arm VESA 75mm x 75mm / 100mm x 100mm
	Color	Black C
	Dimensions (W x H x D) (mm)	528 x 336 x 68
	Cut-out Dimensions (W x H) (mm)	502 x 303
	Net/Gross Weight (kgs)	8.27/11.27
Environment	Operating Temperature (Ambient with air flow)	-20ºC ~ 50ºC
	Storage Temperature	-20ºC ~ 60ºC
	Humidity	10% to 95% (non-condensing)
	IP Level	IP 64 compliant front panel
	Safety & EMC	CE / FCC
	Thermal Solution	Fanless
Power	Power Requirement	9 V ~ 30 VDC
	Power Consumption	12V@6A (Intel® Core™ i5-6300U CPU with 4GB DDR42133 MHz DDR4 memory)

Heavy Industrial Panel PC Solution

IEI offers complete robust panel solutions for harsh industrial environments. The product portfolio varies from sizes and performance. To catch the wave of cloud computing and intelligent solutions, IEI introduces the iRIS remote management solution to enhance efficiency for system integration. With all these benefits, IEI is your solid solution for industrial computing.

PPC-F Series
New Generation Industrial Panel Solution

IEI is dedicated to developing impeccable industrial panel PC products.The PPC and PPC-F series industrial panel PCs not only keep rugged design of IP65 protection but also enrich aesthetic experience by implementing the seamless mounting method. The projected capacitive touch option is added to these new series of products to provide up to 2 points multi-touch solution! Additionally, we also provide high performance H81 series and low power consumption Bay Trail series to meet customers' requests.

■ FHD Industrial Panel PC Available

Going big is the market trend on industrial panel PC and monitor products. Thus, IEI launches new PPC-F series industrial panel PC. Users can enjoy high quality graphics and enriched data display at the same time from FHD panels.

■ Impeccable Front Panel

6H Anti-scratch Touch

The PPC-F series equipped with projected capacitive touchscreen uses 6H hardness vandal proof strengthened glass to prevent damages from physical impact.

Front Bezel IP65 Protection

Designed for harsh environments, the PPC-F series provides front bezel IP65 protection to resist dust and water jet.

PPC-F Bay Trail Fanless Series

5.7"/8"/10.4" Fanless Intel® Bay Trail Solution

Features

- 5.7", 8" and 10.4" fanless industrial panel PC
- 2.0 GHz Intel® Celeron® J1900 quad-core processor or 1.58 GHz Intel® Celeron® N2807 dual-core processor
- Low power consumption DDR3L memory supported
- IP 65 compliant front panel
- 9 V~30 V wide DC input
- mSATA SSD suppoted
- Dual GbE for backup
- -10°C~50°C extended operating temperature

Fanless | Multi-touch | IP65 | USB 3.0 | MOUNT

Specifications

Model		PPC-F06B-BT	PPC-F08B-BT	PPC-F10B-BT
LCD	LCD Display	5.7" (4:3)	8" (4:3)	10.4"
	Max. Resolution	640 (W) x 480 (H)	800 (W) x 600 (H)	800 (W) x 600 (H)
	Brightness (cd/m²)	550	500	400
	Contrast Ratio	800:1	500:1	700:1
	LCD Color	262K	16.2M	16.2M
	Pixel Pitch (mm)	0.18 (H) x 0.18 (V)	0.2025 (H) x 0.0675 (V)	0.264 (H) x 0.264 (V)
	Viewing Angle (H-V)	160° / 140°	140° / 120°	160° / 140°
	Backlight MTBF (hrs)	50000	50000	30000
Motherboard	CPU	Intel® Celeron® N2807 dual-core processor, 1.58GHz	Intel® Celeron® J1900 quad-core on-board SoC, 2GHz	
	RAM	2GB DDR3L 1600MHz on-board RAM (system max. 4GB, by MOQ=300pcs)	1 x 204-pin DDR3L SO-DIMM slots (max. 8GB)	
Touch	Touchscreen & Controller	4-wire resistive type flat touch window, PenMount DMC9000	5-wire resistive type flat touchscreen, PenMount DMC9000	
	Surface Hardness	3H	3H	3H
Input Interfaces	I/O Ports & Switches	2 x RJ-45 LAN port 1 x RS-232 COM port (DB-9 connector) (RI/5V/12V) 1 x RS-422/485 2 x USB 3.0 2 x USB 2.0 1 x 9 V~30 V DC lockable DC jack (2-pin) 1 x Audio port (line-out) 1 x Power switch 1 x Reset button 1 x AT/ATX switch	1 x RS-232 COM port (RJ-45 connector) 1 x RS-232/422/485 COM port (DB-9 connector) (RI/5V/12V) 2 x USB 3.0 2 x GbE LAN 1 x Power switch 1 x Reset button 1 x AT/ATX switch 1 x Audio port (line-out) 1 x 9 V~30 V lockable power jack	1 x RS-232 COM port (RJ-45 connector) 1 x RS-232/422/485 COM port (DB9 connector) (RI/5V/12V) 2 x USB 2.0 2 x USB 3.0 2 x GbE LAN 1 x Power switch 1 x Reset button 1 x AT/ATX switch 1 x Audio port (line-out) 1 x 9 V~30 V lockable power jack
Expansion		1 x Full-size PCIe Mini slot (mSATA/PCIe/USB signal)	1 x Full-size PCIe Mini slot (mSATA/PCIe/USB signal) 1 x Full-size/half-size PCIe Mini slot (PCIe/USB signal)	
Wireless LAN		802.11 b/g/n (optional)		
Storage	SSD	mSATA	mSATA	mSATA
	HDD	N/A	N/A	1 x 2.5" HDD bay
Physical	Construction Material	Aluminum front bezel		
	Mounting	Stand, panel mount, rack mount, VESA 75x75	Stand, panel mount, rack mount, VESA 75x75	Stand, panel mount, rack mount, VESA 75x75/100x100
	Enclosure Color	Black C		
	Dimensions (mm)	136.4 x 178.5 x 56.3	182.2 x 222.2 x 44	232.4 x 285.2 x 44
	Net Weight	0.89 kg	1.17 kg	1.77 kg
	Cut-out Dimensions (mm)	157.5 x 115.4	207 x 154	267.2 x 214.4
Environment	Operating Temperature (with air flow)	-10°C~50°C (14°F~122°F)		
	Storage Temperature	-20°C~60°C (-4°F~140°F)		
	Humidity	10% to 95% (non-condensing)		
	IP Level	IP 65 compliant front panel		
	Safety and EMC	CE & FCC Class A certified		
Power	Power Adapter	P/N: 63040-010036-121-RS 36W Power Adapter Input: 90 - 264V AC, 50/60Hz Output: 12V DC		
	Power Requirement	9 ~ 30V DC		
	Power Consumption	24W	28W	34W

PPC-F Bay Trail Fanless Series

12"/15"/17"/19" Fanless Intel® Bay Trail Solution

Features

- Support IEI iRIS-2400 remote intelligent solution
- Intel® Celeron® J1900 quad-core SoC
- Robust IP65 aluminum front bezel
- Aesthetic ultra-thin bezel for seamless panel mount installation
- Projected capacitive multi-touch and resistive single touch options
- Dual full-size PCIe Mini card expansion
- 9V~36V DC wide range DC input

iEi. QTS-Gateway | iRIS™ IPMI 2.0 Compliant | Fanless | Multi-touch | IP65 | PCIe Mini | USB 3.0 | MOUNT

Specifications

	Model	PPC-F12B-BT	PPC-F15B-BT	PPC-F17B-BT	PPC-F19B-BT
LCD	LCD Display	12.1" (4:3)	15" (4:3)	17" (5:4)	19" (5:4)
	Max. Resolution	1024 (W) x 768 (H)	1024 (W) x 768 (H)	1280 (W) x 1024 (H)	1280 (W) x 1024 (H)
	Brightness (cd/m²)	600	450	350	350
	Contrast Ratio	700 : 1	800 : 1	800 : 1	1000 : 1
	LCD Color	16.2M	16.2M	16.7M	16.7M
	Pixel Pitch (mm)	0.24 x 0.24	0.297 x 0.297	0.26 x 0.26	0.294 x 0.294
	Viewing Angle (H-V)	160° / 140°	160° / 150°	170° / 160°	170° / 160°
	Backlight MTBF (hrs)	50000	70000	50000	50000
Motherboard	CPU	Intel® Celeron® processor J1900 (2M cache, up to 2.42 GHz)			
	RAM	2 x 204-pin DDR3L SO-DIMM slot (max. 8GB), pre-installed with 2GB			
Touch	Touchscreen & Controller	5-wire resistive type single touch window (Penmount 9000), 3H 2-point projected capacitive touch window (EETI EXC7200), 6H			
Input Interfaces	I/O Ports & Switches	2 x RJ-45 LAN port 2 x USB 3.0 2 x USB 2.0 1 x HDMI 2 x RS-232 1 x RS-232/422/485 1 x VGA 1 x 9 V~36 V DC jack (4-pin) 1 x 9 V~36 V DC terminal block 1 x Line-out (PPC-F15B & PPC-F17B & PPC-F19B only) 1 x Power switch			
	Expansion	1 x Full-size PCIe Mini slot (mSATA/PCIe/USB signal) 1 x Full-size/half-size PCIe Mini slot (PCIe/USB signal)			
Wireless LAN		802.11 b/g/n (optional)			
Drive Bay		1 x 2.5" HDD/SSD drive bay			
Remote Management Solution		iRIS-2400, QTS-Gateway			
Physical	Construction Material	Aluminum front panel and sheet metal rear cover			
	Mounting	Panel mount, rack mount, VESA 100x100			
	Enclosure Color	Black C			
	Dimensions (mm) (W x L x D)	262.2 x 322.2 x 47.2	303 x 378.5 x 46.2	341.4 x 408.4 x 51.8	372.4 x 447.4 x 52.87
	Weight (Net)	3.2 kg	4.1 kg	5 kg	6.5 kg
	Cutout Dimensions (mm)	244.8 x 304.8	285.6 x 361	323 x 390	355 x 430
Environment	Operating Temperature (with air flow)	-10°C~50°C (14°F~122°F)			
	Storage Temperature	-20°C~60°C (-4°F~140°F)			
	Humidity	10% to 95% (non-condensing)			
	IP Level	IP 65 compliant front panel			
	Safety and EMC	CE & FCC Class A certified			
Power	Power Adapter	P/N: 63040-010060-110-RS 60W Power Adapter Input: 90 - 264V AC, 50/60Hz Output: 12V DC			
	Power Requirement	9 V~36 V DC			
	Power Consumption	40W	41W	42W	33W

PPC-F H81 Series

Intelligent Industrial Panel PC

- Support IEI iRIS-2400 IEI remote intelligent solution
- Scalable Intel® H81 chipset supports LGA1150 Intel® 4th generation Core™ i7/i5/i3, Pentium® or Celeron® processor with up to 65W TDP
- Robust IP65 aluminum front bezel
- Aesthetic ultra-thin bezel for seamless panel mount installation
- Projected capacitive multi-touch
- Dual full-size PCIe Mini card expansion
- AC/DC power input options (DC model by build to order manufacturing)

iRIS™ IPMI 2.0 Compliant | FHD | Multi-touch | IP65 | PCIe Mini | USB 3.0 | MOUNT

Specifications

Model		PPC-F15A	PPC-F17A	PPC-F22A	PPC-F24A
LCD	LCD Display	15" (4:3)	17" (5:4)	21.5" (16:9)	23.8" (16:9)
	Max. Resolution	1024(W) x 768(H)	1280(W) x 1024(H)	1920(W) x 1080(H)	1920(W) x 1080(H)
	Brightness (cd/m²)	450	350	250	250
	Contrast Ratio	800 : 1	800 : 1	1000 : 1	3000 : 1
	LCD Color	16.2M	16.7M	16.7M	16.7M
	Pixel Pitch (mm)	0.297 x 0.297	0.26 x 0.26	0.25 x 0.25	0.28 x 0.28
	Viewing Angle (H-V)	160° / 150°	170° / 160°	170° / 160°	178° / 178°
	Backlight MTBF (hrs)	70000	50000	30000	30000
Motherboard	SBC Model	FPPCMB-H81-R10			
	CPU	LGA1150 Intel® 4th generation Core™ i7/i5/i3, Pentium® or Celeron® processor with up to 65W TDP			
	Chipset	Intel® H81			
	RAM	Support 2 x 204-pin 1066/1333/1600 MHz dual-channel DDR3 SO-DIMM slots (max. 16GB)			
Touch	Touchscreen & Controller	5-wire resistive type single touch window (Penmount 9000), 3H 2-point projected capacitive touch window (EETI EXC7200), 6H		2-point projected capacitive touch window (EETI EXC7200), 6H	2-point projected capacitive touch window (EETI EXC7200), 6H
Input Interfaces	I/O Ports & Switch	2 x RJ-45 LAN Port 2 x USB 3.0 4 x USB 2.0 1 x HDMI output 4 x RS-232 1 x RS-422/485 1 x MIC-in 1 x Line-out		1 x VGA output 1 x AC/DC power plug (DC model is by build to order manufacturing) 1 x AT/ATX switch 1 x Clear CMOS 1 x Reset button 1 x Power switch	
	Expansion	1 x Full-size/half-size PCIe Mini card (PCIe and USB signal) 1 x Full-size/half-size PCIe Mini card (PCIe , USB and mSATA signal)			
Wireless LAN		802.11 b/g/n (optional)			
Storage		1 x 2.5" HDD/SSD drive bay 1 x mSATA		1 x 2.5" HDD/SSD drive bay or 1 x 3.5" HDD/SSD drive bay 1 x mSATA	
iRIS Remote Management Solution		iRIS-2400 (optional)			
Physical	Construction Material	Aluminum front cover and sheet metal rear cover			
	Mounting	Panel mount, rack mount, 100x100 VESA mount		Panel mount, 100x100 VESA mount	
	Enclosure Color	Black C			
	Dimensions (mm)	303 x 378.5 x 65.7	341.4 x 408.4 x 73.8	350.4 x 550.4 x 71.7	382 x 600 x 71.7
	Cutout Dimensions (mm)	285.6 x 361.1	323 x 390	341 x 536	359.6 x 577.6
	Net/ Gross Weight (kg)	5.6/ 8.3	7.5/10.7	10.1/14.4	10.5/14.8
Environment	Operating Temperature (with air flow)	-10°C ~ 50°C			
	Storage Temperature	-20°C ~ 60°C			
	Humidity	10% to 95% (non-condensing)			
	IP Level	Front IP 65			
	Safety and EMC	CE & FCC certified			
Power Supply	AC Input	AC input ATX power supply - P/N: 63030-010220-100-RS - 220W power supply - Input: 90VAC-264VAC, 50/60Hz - Output (max.): 3.3V@10A, 5V@14A, 12V@14A, -12V@0.3A			
	DC Input (produced by order)	DC input ATX power supply - P/N: XACE-4520C-RS - 200W power supply - Input: 24VDC, 15A (max) - Output (max.): 3.3V@12A, 5V@12A, 12V@15.4A, -12V@0.5A			
Power Consumption		80W	100W	110W	120W

ARM-PPC-F / DM-F SERIES

ARM Mounted Panel PC & Monitors

• In an aluminum housing with complete IP65 protection

• Available series: PPC-F-BT / PPC-F-H81 / DM-F
  in Display sizes from 6" till 24"

• With arm system and internal wires

• Individual mounting with control buttons is available

The arm panel PC and monitors combine the latest PPC-F / DM-F series and an appropriate aluminum housing designed by the cooperation partner ROLEC.

In general, the arm solutions provide flexible arm mounting, complete IP65 housing protection, inset cabling and ergonomic handling.

Screen size	15"	17"	19"	22"	24"

Available models
 	
Panel PC
  Haswell
  Baytrail
 	
Monitor
	PPC-F15B
	
	DM-F15
		PPC-F17B
		
		DM-F17
			PPC-F19B
			
			DM-F19
				PPC-F22A
				
				DM-F22
					PPC-F24A
					
					DM-F24

Touch	resistive / projected capacitive			projected capacitive	
Coating of housing	RAL 9005 fine structure				
Front panel	3mm, silver anodized				
Rear panel	standard framed door 15mm				
IP level	IP65 / EN 60529				
Temperature range	0°C bis +40°C				
Housing dim. (mm)	431x506,6x85	470,1x536,5x85	500,5x575,5x85	486,5x678,5x85	497x725x85

FLEX-PL Series

15"~24" TFT LCD/Touch Kit for Flex Panel PC

NEW

Specifications

Model		FLEX-PL15	FLEX-PLW15	FLEX-PL17	FLEX-PLW19	FLEX-PLW22	FLEX-PLW24
TFT LCD	LCD Size	15"	15.6"	17"	18.5"	21.5"	23.8"
	Max. Resolution	1024x768	1336x768	1280x1024	1336x768	1920x1080	1920x1080
	Brightness (cd/m²)	450	400	350	400	250	250
	Contrast Ratio	800:1	500:1	1000:1	1000:1	1000:1	3000:1
	LCD Color	16.2M	16.2M	16.7M	16.7M	16.7M	16.7M
	Pixel Pitch (mm)	0.29 x 0.29	0.252 x 0.252	0.26 x 0.26	0.3 x 0.3	0.25 x 0.25	0.274 x 0.274
	Viewing Angle (H/V)	160°/150°	170°/160°	170°/160°	170°/160°	170°/160°	178°/178°
	Backlight MTBF (Hrs)	70,000	50,000	50,000	50,000	30,000	30,000
Touch Screen	Type	5-wire resistive touch window with anti-glare coating/ projected capacitive type with 10-point multitouch and anti-glare coating				Projected capacitive type with 10-point multitouch and anti-glare coating	
	Touch Controller	Resistive type: Penmount 9000 Projected capacitive type: EETI EXC3000				EETI EXC3000	

FLEX-BX200

2U AI Box PC with 8th Generation LGA1151 Core™ i7/i5/i3, Celeron® and Pentium® Processor

NEW

Features

- 2U AI Box PC with 8th Generation LGA 1151 Intel® Core™ i7/i5/i3, Celeron® and Pentium® processor
- Four hot-swappable and accessible HDD drive bays, support RAID 0/1/5/10
- Two PCIe 3.0 by 4 and two PCIe 3.0 by 8 slots
- Dual M.2 NVMe PCIe 3.0 x4 slots

Specifications

Model		FLEX-BX200-Q370
System	CPU	8th Generation Intel CoreTM i7/i5/i3 processors in the LGA 1151 package
	Chipset	Intel® Q370 Chipset
	Memory	2 x 288-pin 2666/2400 MHz dual-channel DDR4 unbuffered DIMM supporting up to 64GB
	Graphics Engine	Intel® HD Graphics Gen 9 Engines with 16 low-power execution units, supports DX2015, OpenGL 5.X and OpenCL 2 x, ES 2.0
	Ethernet	Intel® I211 controller
Storage		4 x Accessible 2.5" SATA 6Gb/s HDD/SSD bay (RAID 0/1/5/10 support) with LED indicator 2 x NGFF M.2 M-key 2280 PCIe/NVMe SSD socket
I/O Ports and Switches		1 x HDMI output / 1 x Line out 2 x GbE LAN / 1 x AC power in Inlet 6 x USB 3.0 Type-A / Power button with power LED (power on=Blue) 2 x RS-232 DB-9 type / AT/ATX mode switch 1 x Mic in / Reset button
Expansion Slots		2 x PCIe 3.0 by 8 (by 16 slot) 2 x PCIe 3.0 by 4 (maximum card size supported: 68 mm x 167 mm)

RISC Based Panel PC Solution

The IOVU RISC Based PC Series enables the great embedded flexibility for smart factory, building automation, factory control, and medical usage applications. Making use of the low power consumption RISC platform, the IOVU series adopts a fan-less and power efficient design, providing a cost-effective, stable, and easy to use solution to collect, transfer, process, access , and manage data.

IOBA-10F-AD

10.1" RISC Based Panel PC

NEW

Features

- 10.1" 1280x800 LCD
- Project Capacitive Touch Screen
- CPU: Freescale i.MX6 Cortex-A9 Quad-Core 1GHz
- OS: Android 5.1
- Boot Flash: 8GB eMMC Nand Flash
- RAM: 2GB DDR3 SDRAM on board
- Grove Interface IOT Sensor connectors

Fanless | Wireless 802.11b/g/n | Bluetooth | Touchscreen | Camera | Dual GbE | Android

Specifications

Model	IOBA-10F-AD-R10	IOBA-10F-AD-ET-R10
LCD Size	10.1" (16:9)	
Resolution	1280(W) x 800(H)	
Brightness (cd/m²)	300	
Contrast Ratio	800:01:00	
LCD Color	262K	
Pixel Pitch (mm)	0.1695 x 0.1695	
Viewing Angle	85/85/85/85 Deg.	
Backlight MTBF(hrs)	20000	
Touch Screen	Project Capacitive	
CPU	Freescale i.MX6 Cortex-A9 Quad Core 1.0GHz	
RAM	2GB DDR3 SDRAM on board	
Boot Flash	8G eMMC Nand Flash	
OS	Android 5.1	
Input / Output	1 x 10/100/1000 Mbps Ethernet POE (LAN) 1 x 10/100/1000 Mbps Ethernet 2 x USB 2.0 1 x RS-232/422/485 support software controllable(DB9) 1 x RS-232 (Grove Interface) 1 x NFC (13.56MHz) 3 x Analog sensor connectors (4pin) 3 x I2C sensor connectors (4pin) 1 x DIO1 (6-pin) 1 x DIO2 (4pin) (Grove Interface) 1 x DIO3 (4pin) (Grove Interface) 1 x DC jack 1 x Reset button 1 x MicroSD slot	1 x 10/100/1000 Mbps Ethernet 2 x USB 2.0 1 x RS-232/422/485 support software controllable(DB9) 1 x DC jack 1 x Reset button 1 x MicroSD slot
Audio	1 x 2W Speaker	
Camera	1 x 2MP CMOS webcam	

IOVU-207AR-RK39

7" RISC-based Panel PC

Preliminary

Features

- OS: Android 7.1 or Linux Ubuntu 16.04
- CPU: Rockchip RK3399
  (Dual-core Cortex-A72 up to 2.0GHz. Quad-core Cortex-A53 up to 1.5GHz)
- Boot Flash: 16G eMMC Nand Flash
- RAM: 2GB LPDDR3-1866
- 1 x SOS Key (with red bar):
  Press for calling help in case emergency

  2 x Function Keys (with green bar):
  Default hot key by AP programming

Specifications

IOVU I/O

Fanless | Wireless 802.11a/b/g/n/ac | Bluetooth | Touchscreen | Camera | Android | ubuntu

Model		IOVU-207AR-RK39
Chassis	Color	White
	Dimensions (WxHxD) (mm)	210.7 x 154.7 x 29.6
	System Fan	Fanless
	Chassis Construction	PC + ABS plastic front, Metal rear
Display	Size	7"
	Resolution	720 RGB (H) x 1280 (V)
	Brightness (cd/m²)	300 cd/m2 (typ.)
	Contrast Ratio	800:1(typ.)
	Pixel Pitch (mm)	0.1239 (H) ×0.119 (V)
	Viewing Angle (H/V)	70/70/70/70 Deg.
	Touchscreen	Projected capacitive
Motherboard	CPU	Rockchip RK3399 (Dual-core Cortex-A72 up to 2.0GHz. Quad-core Cortex-A53 up to 1.5GHz)
	System Memory	2GB LPDDR3-1866
Storage	SD Card	1 x Micro SD slot
	Flash	16GB eMMC NAND FLASH
Communication	WLAN	802.11 a/b/g/n/ac
	Bluetooth	Bluetooth V4.1
I/O Interfaces	COM port	2 x UART pin header with 3V (internal)
	Ethernet	1 x GbE RJ45 by RTL8211E
	USB 3.0	1 x USB 3.0 Type A
	USB 2.0	1 x USB 2.0 Type A 2 x USB 2.0 pin header (internal)
	Others	2 x SOS button key (2 pin terminal block)
Multimedia	Audio	1 x Speaker (2 W) , 1 x Digital Mic in
	Camera	Front 5-megapixel (CMOS)
LED Indicator & Button	Indicator	1 x Power LED 1 x Mail 1 x Phone 1 x Exclamation Mark
	Button	1 x Reset Button 1 x SOS Key (red bar) 2 x Function Key (green bar)
Power	Power Input	9 V~30 V DC input φ2.5/5.5mm DC Jack
	Consumption	TBD
Reliability	Mounting	VESA Mount 75mmx75mm
	Operating Temperature	-10°C ~ 50°C with air flow
	Storage Temperature	-20°C ~ 60°C
	Humidity	10% ~ 95%, non-condensing
	Weight (Net/Gross)	TBD
	Safety/EMC	CE/FCC Class B
OS	Supported OS	Android 7.1 or Linux Ubuntu 16.04
	Watch dog timer	Yes

IOVU-210AD-RK39

10.1" RISC Base Panel PC

Preliminary

Features

- 10.1" 1280x800 LCD
- Project Capacitive Touch Screen
- CPU: Rockchip RK3399 (Dual-core Cortex-A72 up to 2.0GHz. Quad-core Cortex-A53 up to 1.5GHz)
- OS: Android 7.1 or Linux Ubuntu 16.04
- Boot Flash: 16GB eMMC Nand Flash
- RAM: 2GB LPDDR3

IOVU LV

USB 3.0 | Wireless 802.11a/b/g/n/ac | Bluetooth | Touchscreen | RFID | RS-232 | Android | ubuntu

Specifications

Model		IOVU-210AD-RK39
Chassis	Color	White
	Dimensions (WxHxD) (mm)	293 x 209.5 x 44.5
	System Fan	Fanless
	Chassis Construction	PC + ABS plastic front, Metal rear
Display	Size	10.1"
	Resolution	800(RGB) x 1280
	Brightness (cd/m²)	350 cd/m² (typ.)
	Contrast Ratio	800:1(typ.)
	Pixel Pitch (mm)	0.0564(H) x 0.1692(V)
	Viewing Angle (H/V)	85/85/85/85 Deg.
	Touchscreen	Project Capacitive
Motherboard	CPU	Rockchip RK3399 (Dual-core Cortex-A72 up to 2.0GHz. Quad-core Cortex-A53 up to 1.5GHz)
	System Memory	2GB LPDDR3-1866
Storage	SD Card	1 x Micro SD slot (Internal)
	Flash	16GB eMMC NAND FLASH
Communication	WLAN	802.11 a/b/g/n/ac
	Bluetooth	Bluetooth V4.1
	RFID	13.56 MHz(NFC)
I/O Interfaces	COM port	1 x RS-232 (DB-9) 1 x RS-232/422/485 (DB-9)
	GPIO	4 bit (2 in, 2 out)
	Ethernet	1 x GbE RJ45 by RTL8211E w/ PoE
	USB 3.0	1 x USB 3.0 Type A
	USB 2.0	2 x USB 2.0 Type A 2 x USB 2.0 pin header (internal)
Multimedia	Audio	1 x Speaker (2 W) , 1 x Digital Mic in
	Camera	Front 5-megapixel (CMOS)
LED Indicator & Button	Indicator	1 x Power, 1 x BT, 1 x Wi-Fi
	Button	1 x Reset Button
Power	Power Input	9 V~30 V * DC input: φ2.5/5.5mm DC Jack or Terminal block * PoE: IEEE 802.3 at standard (Power Device)
	Consumption	TBD
Reliability	Mounting	VESA Mount 100mmx100mm
	Operating Temperature	-10°C ~ 50°C with air flow
	Storage Temperature	-20°C ~ 60°C
	Humidity	10% ~ 95%, non-condensing
	Weight (Net/Gross)	TBD
	Safety/EMC	CE/FCC Class A
OS	Supported OS	Android 7.1 or Linux Ubuntu 16.04
	Watch dog timer	Yes

* When both DC-in and PoE are connected to the device, the connection with higher voltage will be the main power source.

IOVU-210AR-RK39

10.1" RISC Base Panel PC

Preliminary

Features

- 10.1" 1280x800 LCD
- Project Capacitive Touch Screen
- CPU: Rockchip RK3399 (Dual-core Cortex-A72 up to 2.0GHz. Quad-core Cortex-A53 up to 1.5GHz)
- OS: Android 7.1 or Linux Ubuntu 16.04
- Boot Flash: 16GB eMMC Nand Flash
- RAM: 2GB LPDDR3-1866
- Grove Interface IOT Sensor connectors

IOVU I/O

Wi-Fi Wireless 802.11a/b/g/n/ac | Bluetooth | Touchscreen | Camera | Dual GbE | Android | ubuntu

Specifications

Model		IOVU-210AR-RK39
Chassis	Color	White
	Dimensions (WxHxD) (mm)	282.5 x 174.3 x 26.8
	System Fan	Fanless
	Chassis Construction	PC + ABS plastic
Display	Size	10.1"
	Resolution	800(RGB) x 1280
	Brightness (cd/m²)	350 cd/m² (typ.)
	Contrast Ratio	800:1(typ.)
	Pixel Pitch (mm)	0.0564(H) ×RGB×0.1692(V)
	Viewing Angle (H/V)	85/85/85/85 Deg.
	Touchscreen	Project Capacitive
Motherboard	CPU	Rockchip RK3399 (Dual-core Cortex-A72 up to 2.0GHz. Quad-core Cortex-A53 up to 1.5GHz)
	System Memory	2GB LPDDR3-1866
Storage	SD Card	1 x Micro SD slot
	Flash	16GB eMMC NAND FLASH
Communication	WLAN	802.11 a/b/g/n/ac
	Bluetooth	Bluetooth V4.1
	RFID	13.56 MHz(NFC)
I/O Interfaces	COM port	1 x RS-232 (4 pin terminal block) 1 x RS-232/422/485 (4 pin wafer connector) 2 x UART pin header with 3V (internal)
	GPIO	1 x 4 bit (2 in, 2 out) 2 x 2 bit (1 in, 1 out)
	Ethernet	1 x GbE RJ45 by RTL8211E with PoE (PD) 1 x GbE RJ45 by RTL8211E
	USB 3.0	1 x USB 3.0 Type A
	USB 2.0	1 x USB 2.0 Type A 2 x USB 2.0 pin header (internal)
	Others	3 x I²C sensor connectors (3V)
Multimedia	Audio	2 x Speaker (1.5W), 1 x Digital Mic in
	Camera	Front 5-megapixel (CMOS)
LED Indicator & Button	Indicator	1 x Power LED 1 x NFC LED
	Button	1 x Reset button 2 x Volume key (up / down) on screen 1 x SOS key on screen
Power	Power Input	9 V~30 V * DC input: φ2.5/5.5mm DC Jack * PoE: IEEE 802.3 at standard (Power Device)
	Consumption	TBD
Reliability	Mounting	Panel mount, In wall cage
	Operating Temperature	-10°C ~ 50°C with air flow
	Storage Temperature	-20°C ~ 60°C
	Humidity	10% ~ 95%, non-condensing
	Weight (Net/Gross)	TBD
	Safety/EMC	CE/FCC Class B
OS	Supported OS	Android 7.1 or Linux Ubuntu 16.04
	Watch dog timer	Yes

* When both DC-in and PoE are connected to the device, the connection with higher voltage will be the main power source.

AFOKAR-08A-RK39

Vehicle Computer Series

Preliminary

Features

- 8" sunlight readable TFT LCD with projected capacitive touchscreen
- Optional LTE module
- Built-in GPS receiver
- Built-in OBD-II/J1939
- OS: Android 7.1 & Ubintu 16.04

Bluetooth | **Wi-Fi** | **Fanless** | **High Brightness** | **Touchscreen** | **Camera** | **OBD-II** | **Android** | **ubuntu**

Specifications

Model Name		AFOKAR-08A-RK39
Chassis	Color	Black C + Silver
	Dimensions (WxHxD) (mm)	210 x 154 x 33.9
	System Fan	Fanless
	Chassis Construction	PC + ABS plastic
Display	Size	8"
	Resolution	800(RGB) × 1280
	Brightness (cd/m²)	500 cd/m2 (typ.)
	Contrast Ratio	800 : 1 (typ.)
	Pixel Pitch (mm)	0.13455(H) × 0.13455(V)
	Viewing Angle (H/V)	85/85/85/85 Deg.
	Touchscreen	Projected capacitive with AG coating
Motherboard	CPU	Rockchip RK3399 (Dual-core Cortex-A72 up to 2.0GHz. Quad-core Cortex-A53 up to 1.5GHz)
	System Memory	2GB LPDDR3-1866
Storage	SD Card	1 x Micro SD slot
	Flash	16GB eMMC NAND FLASH
Communication	WLAN	802.11 a/b/g/n/ac
	Bluetooth	Bluetooth V4.1
	WWAN	PCIe Mini LTE (optional)
	RFID	13.56 MHz (NFC)
	GPS	On board GPS
I/O Interfaces	20-pin Connector	** 1 x Camera input ** 1 x OBD-II/J1939 ** 1 x USB 2.0
	24-pin Connector	** 1 x Audio line-out (R+L) ** 1 x RS-232 ** 1 x RS-485 ** 4 bit digital I/O (2-bit input, 2-bit output)
	USB 3.0	1 x USB 3.0 Type A
	Display	1 x HDMI output
	SIM	1 x on board SIM card slot
	Antenna	1 x GPS, 1 x WWAN
Expansions	PCIe Mini	1 x Full-size PCIe Mini (reserved for WWAN)
Multimedia	Speaker	1 x Speaker (2 W)
	Camera	5-megapixel CMOS
LED Indicator & Button	Indicator	Power/BT/Wi-Fi/3G
	Button	1 x Power botton
Power	Power Input	DC 9 V~30 V, 4 pin connector (with ACC Ignition)
	Consumption	TBD
Reliability	Mounting	VESA Mount 75mm x 75mm
	Operating Temperature	-10°C ~ 50°C with air flow
	Storage Temperature	-20°C ~ 60°C
	Humidity	10% ~ 95%, non-condensing
	Operating Shock	Half-sine wave shock 5G, 11ms, 3 shocks per axis
	Operating Vibration	MIL-STD-810F 514.5C-2
	Weight (Net/Gross)	TBD
	Safety/EMC	CE/FCC/E-Mark/IP 54 compliant front panel
OS	Supported OS	Android 7.1 or Linux Ubuntu 16.04
	Watch dog timer	Yes

Industrial Monitor Solution

Durable waterproof displays are essential in today's commercial and industrial applications. IEI's versatile lines of flat-bezel IP 65 compliant industrial displays with shock and vibration resistance are designed specifically to endure the rigorous demands of modern commerce and industrial environments. These displays are easily integrated into automation applications, ATM machines and human machine interfaces.

Industrial Monitor Introduction

Display Monitor

Maritime Monitor

DM-F Series

- IP65 flat-bezel
- Resistive touch window: 6H anti-scratch PCAP multi-touch
- HDMI/DP high definition audio/video interface
- 9~36V wide range DC input

SxxM Series

- IP66 flat-bezel
- PCAP multi-touch
- DVI/VGA/BNC output and BNC input
- Redundant power : AC and 18-36V DC
- 0%~100% dimmable LCD backlight
- Remote OSD control by serial port or LAN port
- Duplicate daisy chain monitor connection by VGA port

Product Line	DM-F Series	SxxM series
LCD Size	6.5" ~ 24"	19" / 24"
Input Signal Interface	6.5"/ 8": VGA+DVI-D 12.1" ~ 24": VGA+HDMI+DisplayPort	2 x VGA, 2 x DVI 1 x BNC input, 1 x BNC output
Brightness (cd/m²)	250 ~ 800	300
Operating Temperature	-20°C ~ 60°C	-15°C ~ 55°C
OSD Function	Yes	Yes
IEI samrtOSD Support	Yes	-
Front Panel Protection	IP 65	IP 66

Heavy Industrial Monitor

6.5"~15.6" DM-F IP65 Industrial Monitor

Features

● Robust IP65 aluminum front bezel
● Aesthetic ultra-thin bezel for seamless panel mount installation
● DC input
● DVI / VGA flexible video input solution
● Resistive single touch
● Wide temperature support

IP65 | High Brightness | -20°C~60°C | MOUNT
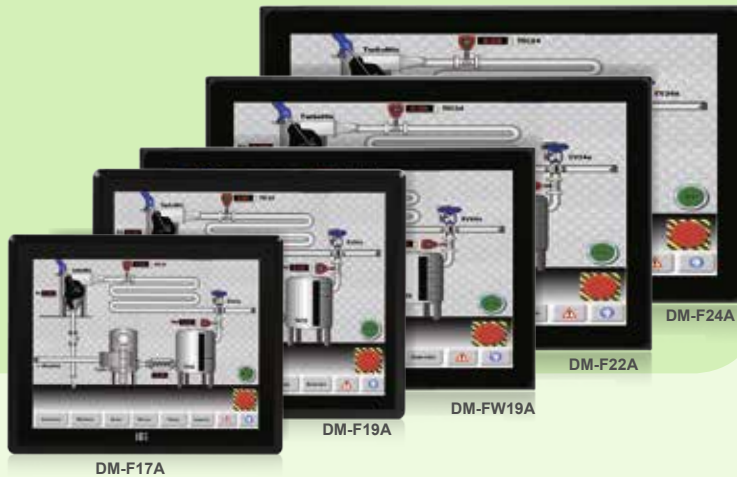
DM-FW15A
DM-F15A
DM-F12A
DM-F08A
DM-F65A

Specifications

Preliminary

	Model	DM-F65A	DM-F08A	DM-F12A	DM-F15A	DM-FW15A
LCD	LCD Display	6.5" (4:3)	8" (4:3)	12" (4:3)	15" (4:3)	15.6" (16:9)
	Max. Resolution	640 (W) x 480 (H)	800 x 600	1024 (W) x 768 (H)	1024 (W) x 768 (H)	1336 (W) x768 (H)
	Brightness (cd/m²)	800	500	600	450	400
	Contrast Ratio	600:1	500:1	700 : 1	800 : 1	500:1
	LCD Color	16.2M	262K	16.2M	16.2M	16.2M
	Pixel Pitch (mm)	0.207 x 0.207	0.0675 x 0.2025	0.24 x 0.24	0.29 x 0.29	0.252 x 0.252
	Viewing Angle (H-V)	160° / 140°	140°/120°	160° /140°	160° / 150°	170° / 160°
	Backlight MTBF (Hrs)	50000	50000	50000	70000	50000
Touchscreen & Controller		5-wire resistive single touch window/ Penmount 6000		5-wire resistive single touch window/ Penmount 6000 2-point projected capacitive touch window/ EETI EXC3000		
I/O Ports		1 x VGA (DB-15) 1 x DVI 1 x USB 2.0 (touch) 1 x RS-232 (reserved for resistive touch ATO) 1 x Lockable 12V DC jack		1 x VGA (DB-15) 1 x HDMI 1 x DisplayPort 1.1 1 x USB 2.0 (touch) 1 x RS-232 (reserved for resistive touch ATO) 1 x Lockable 9V-36V DC jack 1 x 9V-36V terminal block		
OSD	OSD Button	5-key membrane OSD keypad		7-key membrane OSD keypad		
	Smart OSD Software	Smart OSD Software				
Physical	Construction Material	Aluminum front frame and sheet metal rear cover				
	Mounting	Panel Mount/ Rack Mount 75 x 75 VESA Mount		Panel Mount/ Rack Mount/ 100 x 100 VESA Mount		
	Enclosure Color	Black C				
	Dimensions (mm)	191.8 x 154.36 x 42.88	222.2 x 182.2 x 42.7	262.2 x 322.2 x 40.5	303 x 378.5 x 43.2	400.1 x 253.3 x 52.9
	Cutout Dimensions (mm)	180 x 140	206 x 154	244.8 x 304.8	285.6 x 361.1	379.1 x 232.3
	Weight (kg) Net/ Gross	1.1 / 2.6	1.33 / 4.5	2.7 / 4.9	3.5 / 5.5	4 / 6.5
Environment	Operating Temperature (with air flow)	-20°C ~ 60°C (with air flow)				
	Storage Temperature	-20°C ~ 70°C				
	Humidity	10% to 95% (non-condensing)				
	IP Level	IP 65 compliant front panel				
	Safety and EMC	CE & FCC certified				
Power Input		12V DC		9V~36V DC		
Power consumption		12V @ 0.5A	12V @ 0.5A	9V @ 2.2A 36V @ 0.5A	9V @ 1.6A 36V @ 0.4A	9V @ 1.3 36V @ 0.33

Heavy Industrial Monitor

17"~23.8" DM-F IP65 Industrial Monitor

Features

- Robust IP65 aluminum front bezel
- Aesthetic ultra-thin bezel for seamless panel mount installation
- Wide range 9V~36V DC input
- HDMI / DisplayPort / VGA flexible video input solution
- Projected capacitive multi-touch and resistive single touch options
- Wide temperature support

IP65 | **9V~36V DC Input** | **High Brightness** | **Multi-touch** | **MOUNT**

DM-F24A
DM-F22A
DM-FW19A
DM-F19A
DM-F17A

Specifications

Preliminary

Model		DM-F17A	DM-FW19A	DM-F19A	DM-F22A	DM-F24A
LCD	LCD Display	17" (5:4)	18.5" (16:9)	19" (5:4)	21.5" (16:9)	23.8" (16:9)
	Max. Resolution	1280 (W) x 1024 (H)	1336 (W) x 768 (H)	1280 (W) x 1024 (H)	1920 (W) x 1080 (H)	1920 (W) x 1080 (H)
	Brightness (cd/m²)	350	400	350	250	250
	Contrast Ratio	1000 : 1	1000 : 1	1000 : 1	1000 : 1	3000 : 1
	LCD Color	16.7M				
	Pixel Pitch (mm)	0.26 x 0.26	0.3 x 0.3	0.294 x 0.294	0.25 x 0.25	0.28 x 0.28
	Viewing Angle (H-V)	170° / 160°			170° / 160°	178° / 178°
	Backlight MTBF (Hrs)	50000			30000	30000
Touchscreen & Controller		5-wire resistive single touch window/ Penmount 6000 2-point projected capacitive touch window/ EETI EXC3000			2-point projected capacitive touch window/ EETI EXC7200	2-point projected capacitive 2-point touch window/ EETI EXC7200
I/O Ports		1 x VGA (DB-15) 1 x DVI (F19A only) 1 x HDMI (F17A & FW19A only) 1 x DisplayPort 1.1 1 x USB 2.0 (touch) 1 x RS-232 (reserved for resistive touch ATO) 1 x Lockable 9V-36V DC jack 1 x 9V-36V terminal block			1 x VGA (DB-15) 1 x HDMI 1 x DisplayPort 1.1 1 x USB 2.0 (touch) 1 x RS-232 (reserved for resistive touch ATO) 1 x Lockable 9V-36V DC jack 1 x 9V-36V terminal block	
OSD	OSD Button	7-key membrane OSD keypad				
	Smart OSD Software	Smart OSD Software				
Physical	Construction Material	Aluminum front frame and sheet metal rear cover				
	Mounting	Panel Mount/ Rack Mount/ 100 x 100 VESA Mount			Panel Mount / 100 x 100 VESA Mount	Panel Mount / 100 x 100 VESA Mount
	Enclosure Color	Black C				
	Dimensions (mm)	341.4 x 408.4 x 49.3	468.8 x 288.2 x 48.9	372.4 x 447.4 x 49.57	358.4 x 550.4 x 49.1	382 x 600 x 49.4
	Cutout Dimensions (mm)	324 x 391	447.8 x 267.2	430 x 355	340 x 532	358.6 x 576.6
	Weight (kg) Net/ Gross	4.4 / 7.1	5 / 8.1	5.4 /8.4	6.3 / 9.6	7.6 / 10.9
Environment	Operating Temperature (with air flow)	-20°C ~ 60°C	-20°C ~ 60°C (with air flow)	-20°C ~ 60°C	-10°C ~ 50°C	-10°C ~ 50°C
	Storage Temperature	-20°C ~ 70°C	-20°C ~ 70°C	-20°C ~ 70°C	-20°C ~ 60°C	-20°C ~ 60°C
	Humidity	10% to 95% (non-condensing)				
	IP Level	IP 65 compliant front panel				
	Safety and EMC	CE & FCC certified				
Power input		9V~36V DC				
Power consumption		9V @ 2.6A 36V @ 0.6A	9V @ 1.33A 36V @ 0.35A	9V @ 3.3A 36V @ 0.8A	9V @ 2.5A 36V @ 0.6A	9V @ 3.4A 36V @ 0.8A

CPU Cards / Boards / Module

IEI Single Board Computer (SBC) solution provides most flexible and cost-effective solution for industrial computing platform demand. IEI SBC products is applying computing platform from ultimate high-performance solution to cost-effective one. Its onboard chipsets integrated fully Input / Output devices compatibility and flexibility for your working environments.

1. CPU Cards

PICMG 1.3 Cards	HPCIE / SPCIE / PCIE	Intel® Xeon® / Celeron® / Pentium® / Core™ I
PICMG 1.0 Cards	WSB	Intel® Atom™ / Celeron® / Pentium® / Core™ I
Half-size PICOe / PCISA / ISA	PICOe / PCISA / IOWA	Intel® Atom™ / Celeron® / Pentium® / Core™ I / AMD
Backplanes	SPE / SPXE / PE / HPE PCI / PX / IP / IPX / BP	2 ~ 19 Slots

2. Industrial Motherboard

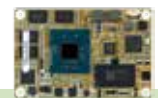|		
ATX	IMBA	Intel® Xeon® / Celeron® / Pentium® / Core™ I
Micro ATX	IMB	Intel® Xeon® / Celeron® / Pentium® / Core™ I
Mini-ITX	KINO	Intel® Atom™ / Celeron® / Pentium® / Core™ I / AMD

3. Embedded Boards

EPIC	NANO	Intel® Atom™ / Celeron® / Core™ I / AMD
3.5"	WAFER	Intel® Atom™ / Celeron® / Core™ I / AMD
Pico-ITX	HYPER	Intel® Atom™ / Celeron® / Pentium® / RISC
PC/104	PC/104	Intel® Atom™ / Celeron® / AMD

4. Computer on Modules

COM Express	ICE	Intel® Atom™ / Celeron® / Core™ I

PICMG 1.3 Selection Guide

Model Name	HPCIE-C236	HPCIE-Q170	SPCIE-C236	SPCIE-C2260-i2
CPU Socket	LGA 1151	LGA 1151	LGA1151	LGA 1150
CPU Type	Intel® Xeon® E3, Core™ i3, Pentium®, Celeron® processor	Intel® Core™ i7/i5/i3, Pentium®, Celeron® processor	Intel® Xeon® E3, Core™ i3, Pentium®, Celeron® processor	Intel® Xeon® E3, Core™ i3, Pentium®, Celeron® processor
Chipset	Intel® C236	Intel® Q170	Intel® C236	Intel® C226
Memory	Two 260-pin 1866/2133 MHz dual-channel DDR4 SO-DIMMs (system max. 32 GB)	Two 260-pin 1866/2133 MHz dual-channel DDR4 SO-DIMMs (system max. 32 GB)	Four 288-pin 1866/2133 MHz Dual-Channel DDR4 ECC & non-ECC unbuffered DIMM supported up to 64GB	Four 240-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SDRAM unbuffered DIMMs (system max. 32 GB)
Display Interface	Dual display supported 1 x VGA 1 x iDP interface	Dual display supported 1 x VGA 1 x iDP interface	Triple display supported 1 x VGA 1 x iDP interface	Dual display supported 1 x VGA 1 x iDP interface
Ethernet	LAN1: Intel® I219-LM with Intel® AMT 11.0 support LAN2: Intel® I211-AT Ethernet controller	LAN1: Intel® I219-LM with Intel® AMT 11.0 support LAN2: Intel® I211-AT Ethernet controller	LAN1: Intel® I219LM Clarkville-V with Intel® AMT 11.0 supported LAN2: Intel® I210 PCIe controller	LAN1: Intel® I217LM with Intel® AMT 9.0 support LAN2: Intel® I210-AT PCIe controller with NCSI support
iRIS Remote Management Module	N/A	N/A	1 x iRIS-2400 slot (Optional)	1 x iRIS-2400 slot
I/O Interface	1 x 6-pin wafer for KB/MS 2 x RS-232/422/485 2 x USB 3.0 4 x USB 2.0	1 x 6-pin wafer for KB/MS 2 x RS-232/422/485 2 x USB 3.0 4 x USB 2.0	1 x 6-pin wafer for KB/MS 1 x LPT 2 x RS-232 2 x RS-232/422/485 4 x USB 3.0 7 x USB 2.0	1 x 6-pin wafer for KB/MS 1 x LPT 1 x RS-422/485 4 x RS-232 4 x USB 3.0 8 x USB 2.0
Storage Interface	1 x mSATA (SATA & USB signal) 2 x SATA 6Gb/s (RAID 0/1 supported)	1 x mSATA (SATA & USB signal) 2 x SATA 6Gb/s (RAID 0/1 supported)	6 x SATA 6Gb/s (RAID 0/1/5/10 supported)	6 x SATA 6Gb/s (RAID 0/1/5/10 supported)
Audio	Supports by IEI AC-KIT-892HD-R10 audio kit			
Digital I/O	8-bit programmable digital I/O			
Power Consumption	5V@0.13A, 12V@7.89A, 3.3V@0.10A, 5VSB@0.20A (Intel® Xeon® E3-1275 v5 3.60 GHz with two 16 GB 2133 MHz DDR4 memory)	5V@0.15A, 12V@8.39A, 3.3V@0.11A, 5VSB@0.21A (Intel® Core™ i7-6700K 4.0GHz with two 16 GB 2133 MHz DDR4 memory)	5V@3.22A, 12V@6.81A, 3.3V@1.21A, 5VSB@0.18A (Intel® Xeon® E3-1275 v5 3.60 GHz CPU with 64GB (four 16GB) 2133 MHz DDR4 memory)	5V@3.55A, 12V@0.37A, Vcore_12V@7.61A, 3.3V@1.55A, 5VSB@0.13A (Intel® E3-1240 v3 3.4GHz CPU with 16 GB (four 4GB) 1333 MHz DDR3 memory)
Watchdog Timer	Software programmable supports 1~255 sec. system reset			
Operation Environment	Temperature Range: -20ºC ~ 60ºC (-4°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing			
Expansion Slot	N/A	N/A	1 x Full-size PCIe Mini card slot (support mSATA)	1 x Full-size PCIe Mini card slot (support mSATA)
CPU Cooler	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11 CF-1150SF-R10

PICMG 1.3 Selection Guide

Model Name	SPCIE-C2160	SPCIE-C2060-R21	PCIE-Q170	PCIE-H810
CPU Socket	LGA 1155	LGA 1155	LGA1151	LGA 1150
CPU Type	Intel® Xeon® E3, Core™ i3, Pentium®, Celeron® processor	Intel® Xeon® E3, Core™ i3, Pentium®, Celeron® processor	6th generation Intel® Core™ i7/i5/i3, Celeron® and Pentium® processor	Intel® Core™ i7/i5/i3, Pentium®, Celeron® processor
Chipset	Intel® C216	Intel® C206	Intel® Q170	Intel® H81
Memory	Two 240-pin 1600/1333 MHz dual-channel ECC and non-ECC unbuffered DDR3 SDRAM DIMMs supported (system max.16 GB)	Two 240-pin 1333/1066 MHz dual-channel ECC and non-ECC unbuffered DDR3 SDRAM DIMMs (system max.16 GB)	Four 288-pin 1866/2133 MHz dual-channel non-ECC unbuffered DDR4 DIMMs (system max. 64 GB)	Two 240-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SDRAM unbuffered DIMMs (system max. 16 GB)
Display Interface	1 x VGA 1 x DVI-D (via header to IO-KIT-001-R20 DVI-D/USB module) (optional)	1 x VGA 1 x DVI-D (via header to IO-KIT-001-R20 DVI-D/USB module) (optional)	Triple display supported 1 x VGA 1 x iDP interface	Dual display supported 1 x VGA 1 x iDP interface
Ethernet	LAN1: Intel® 82574L PCIe controller LAN2: Intel® 82579 PHY with Intel® AMT 8.0 support	LAN1: Intel® 82574L PCIe controller LAN2: Intel® 82579 PHY with Intel® AMT 7.0 support	LAN1: Intel® I219LM Clarkville-V with Intel® AMT 11.0 supported LAN2: Intel® I210 PCIe controller	LAN1: Realtek RTTL8111E PCIe controller LAN: Realtek RTTL8111E PCIe controller
iRIS Remote Management Module	N/A	N/A	1 x iRIS-2400 slot (optinoal)	N/A
I/O Interface	1 x 6-pin wafer for KB/MS 1 x LPT 1 x RS-422/485 4 x RS-232 8 x USB 2.0	1 x 6-pin wafer for KB/MS 1 x LPT 1 x RS-422/485 4 x RS-232 8 x USB 2.0	1 x 6-pin wafer for KB/MS 1 x LPT 2 x RS-232 2 x RS-232/422/485 4 x USB 3.0 7 x USB 2.0	1 x 6-pin wafer for KB/MS 1 x LPT 1 x RS-422/485 2 x RS-232 2 x USB 3.0 8 x USB 2.0
Storage Interface	2 x SATA 6Gb/s (RAID 0/1/5/10 supported) 4 x SATA 3Gb/s	2 x SATA 6Gb/s (RAID 0/1/5/10 supported) 4 x SATA 3Gb/s	6 x SATA 6Gb/s (RAID 0/1/5/10 supported)	2 x SATA 3Gb/s 2 x SATA 6Gb/s
Audio	Supports by IEI AC-KIT-892HD-R10 audio kit			
Digital I/O	8-bit programmable digital I/O			
Power Consumption	5V@3.98A, 12V@0.38A, Vcore_12V@7.81A, 3.3V@1.61A, 5VSB@0.15A (3.4GHz Intel® Xeon® 2.2GHz with two 2 GB 1333 MHz DDR3 memory)	5V@3.98A, 12V@0.38A, Vcore_12V@7.81A, 3.3V@1.61A, 5VSB@0.15A (3.4GHz Intel® Core™ i7-2600K with two 2 GB 1333 MHz DDR3 memory)	5V@3.12A, 12V@6.85A, 3.3V@1.13A, 5VSB@0.15A (Intel® Core™ i7-6700K 4.0GHz CPU with 64GB (four 16GB) 2133 MHz DDR4 memory)	5V@3.41A, 12V@0.35A, Vcore_12V@7.52A, 3.3V@1.41A, 5VSB@0.12A (Intel® Core™ i7-4770K 3.90 GHz CPU with 8 GB (two 4 GB) 1333 MHz DDR3 memory)
Watchdog Timer	Software programmable supports 1~255 sec. system reset			
Operation Environment	Temperature Range: -10ºC ~ 60ºC (14°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing		Temperature Range: -20°C ~ 60°C (-4°F~140°F) Relative Humidity: 5% ~ 95% non-condensing	
Expansion Slot	1 x Full-size PCIe Mini card slot	1 x Full-size PCIe Mini card slot	1 x Full/Half-size PCIe Mini card slot 4 x PCI signal via golden finger	1 x Full-size PCIe Mini card slot (support mSATA)
CPU Cooler	CF-115XA-R10 CF-1156C-R20 CF-1156D-R20 CF-115XE-R10	CF-115XA-R10 CF-1156C-R20 CF-1156D-R20 CF-115XE-R10	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11 CF-1150SF-R10

PICMG 1.3 / PICMG 1.0 Selection Guide

Model Name	PCIE-Q870-i2	PCIE-Q370
CPU Socket	LGA 1150	LGA 1151
CPU Type	Intel® Core™ i7/i5/i3, Pentium®, Celeron® processor	Intel® Core™ i7/i5/i3, Pentium®, Celeron® processor
Chipset	Intel® Q87	Intel® Q370
Memory	Four 240-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SDRAM unbuffered DIMMs (system max. 32 GB)	Four 288-pin 2666MHz dual-channel DDR4 SDRAM unbuffered DIMMs support up to 64GB
Display Interface	Dual display supported 1 x VGA 1 x iDP interface	1 x VGA (up to 1920x1200@60Hz)
Ethernet	LAN1: Intel® I217LM with Intel® AMT 9.0 support LAN2: Intel® I210-AT PCIe controller with NCSI support	LAN1: Intel® I219LM PHY LAN2: Intel® I211-AT PCIe controller (Co-lay I210-AT)
iRIS Remote Management Module	1 x iRIS-2400 slot	NV
I/O Interface	1 x 6-pin wafer for KB/MS 1 x LPT 1 x RS-422/485 4 x RS-232 4 x USB 3.0 8 x USB 2.0	1 x KB/MS (1x6 pin) 1 x RS-422/485 (1x4 pin, P=2.0) 3 x RS-232 (2x5 pin, P=2.54) 6 x USB 2.0 (2x4 pin, P=2.54) 1 x USB 2.0 (Type A 180°) 2 x USB 3.0 (2x10 pin) 2 x USB 3.0 (Rear IO type A)
Storage Interface	6 x SATA 6Gb/s (RAID 0, 1, 5, 10 supported)	6 x SATA 6Gb/s (RAID 0/1/5/10 supported)
Audio	AC-KIT-892HD-R10 7.1-channel HD Audio kit	
Digital I/O	8-bit programmable digital I/O	
Power Consumption	5V@3.55A, 12V@0.37A, Vcore_12V@7.61A, 3.3V@1.55A, 5VSB@0.13A (3.4GHz Intel® Qual CoreCPU with four GB 1333 MHz DDR3 memory)	TBD
Watchdog Timer	Software programmable supports 1~255 sec. system reset	
Operation Environment	Temperature Range: -20ºC ~ 60ºC (-4°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing	
Expansion Slot	1 x Full-size PCIe Mini card slot	1 x M.2 M key 1 x PCIe x16 & 4 x PCIe x1 signal via golden finger 4 x PCI signal via golden finger
CPU Cooler	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11 CF-1150SF-R10	CF-1150SA-R10 CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11 CF-1150SF-R10

Model Name	WSB-BT	WSB-H810
CPU Socket	On board	LGA 1150
CPU Type	Intel® Celeron® J1900 on-board SoC (2GHz, quad-core, 2MB cache, TDP=10W) Intel® Celeron® N2807 on-board SoC (1.58GHz, dual-core, 2MB cache, TDP=4.3W)	Intel® Core™ i7/i5/i3, Pentium®, Celeron® processor
Chipset	N/A	Intel® H81
Memory	One 204-pin 1066/1333 MHz single-channel DDR3L SDRAM unbuffered DIMM (system max. 8 GB)	Two 240-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SDRAM unbuffered DIMMs (system max. 16 GB)
Display Interface	Dual display supported 1 x VGA 1 x 18/24-bit dual-channel LVDS 1 x iDP interface for HDMI, LVDS, VGA, DVI, DP	Dual display supported 1 x VGA 1 x iDP interface
Ethernet	LAN1: Intel® I211-AT PCIe controller LAN2: Intel® I211-AT PCIe controller	LAN1: Intel® I217-V LAN PHY LAN2: Intel® I211-AT Ethernet controller
I/O Interface	1 x KB/MS 1 x LPT 2 x RS-232/422/485 4 x RS-232 1 x USB 3.0 6 x USB 2.0	1 x 6-pin wafer for KB/MS 1 x LPT 1 x RS-422/485 2 x USB 3.0 4 x RS-232 8 x USB 2.0
Storage Interface	1 x mSATA (colay SATA2, supports SATA 3Gb/s signal only) 1 x CF Type II 2 x SATA 3Gb/s	1 x SATA 3Gb/s 2 x SATA 6Gb/s
Audio	IEI AC-KIT-892HD-R10 7.1-channel HD Audio kit via the on-board 10-pin header	
Digital I/O	8-bit digital I/O	
Power Consumption	TBD	5V@3.41A, 12V@0.35A, Vcore_12V@7.52A, 3.3V@1.41A, 5VSB@0.12A (Intel® Core™ i7-4770K 3.90 GHz CPU with 8 GB (two 4 GB) 1333 MHz DDR3 memory)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset	
Operation Environment	Temperature Range: -20ºC ~ 60ºC (-4°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing	
Expansion Slot	1 x Full/Half-size PCIe Mini card slot (support mSATA)	1 x Full/Half-size PCIe Mini card slot (support mSATA)
CPU Cooler	Heatsink	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11 CF-1150SF-R10

Half–size PCISA, ISA Selection Guide

Model Name	PCISA-BT	IOWA-LX
CPU Socket	On board	On board
CPU Type	Intel® Atom™ E3845 on-board SoC (1.91GHz, quad-core, 2MB cache, TDP=10W) Intel® Atom™ E3825 on-board SoC (1.33GHz, dual-core, 1MB cache, TDP=6W)	AMD Geode™ LX600
Chipset	N/A	AMD Geode™ CS5536
Memory	One 204-pin 1066/1333 MHz single-channel DDR3L SDRAM unbuffered DIMM (system max. 8 GB)	On-board 128MB 200/266 MHz DDR SDRAM One 200-pin 200/266 MHz DDR SO-DIMM (system max. 512MB)
Display Interface	Dual display supported 1 x VGA 1 x iDP interface	1 x VGA
Ethernet	LAN1: Intel® I211-AT PCIe controller LAN2: Intel® I211-AT PCIe controller	10/100Mbps Realtek RTL8100C Ethernet controller
I/O Interface	1 x 6-pin wafer for KB/MS 1 x LPT 1 x RS-422/485 2 x RS-232 2 x USB 3.0 8 x USB 2.0	1 x Infrared interface 1 x LPT 1 x PS/2 KB/MS 1 x RS-422/485 2 x RS-232 4 x USB 2.0 (by pin header)
Storage Interface	1 x mSATA (colay SATA2, supports SATA 3Gb/s signal only) 2 x SATA 3Gb/s	1 x CF Type II 1 x FDD 1 x IDE 2 x SATA (RAID 0, 1)
Audio	KIT-892HD-R10 7.1-channel HD Audio	Realtek ALC203 with AC'97 codec
Digital I/O	8-bit digital I/O	
Power Consumption	5V@1.55A,12V@0.74A (Intel® Atom™ E3845 1.91GHz CPU, one 8 GB 1600 MHz memory)	5V@1.51A, 5VSb@0.09A (On-board AMD Geode™ LX600 CPU 366 MHz with on-board 128MB 200 MHz DDR memory and 512MB 333 MHz DDR memory)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset	
Operation Environment	Temperature Range: -20ºC ~ 60ºC (-4ºF ~ 140ºF) Relative Humidity:5% ~ 95%, non-condensing	Temperature Range: 0ºC ~ 60ºC (32ºF ~ 140ºF) Relative Humidity: 5% ~ 95%, non-condensing
Expansion Slot	1 x PCIe Mini slot	NA
CPU Cooler	NA	Heatsink (fanless)

PICMG 1.3 Backplane

Selection Guide

PAC series wall-mount chassis   4U rack-mount chassis

Backplane		SPE-4S	SPE-6S	SPE-9S	SPXE-11S	SPXE-14S
Total	Slot	4	6	7	11	14
PCIe	x16					
PCIe	x8	2 (x16 connector)		1 (x16 connector)		1 (x16 connector)
PCIe	x4	1	5	3	6 (x16 connector)	
PCIe	x1					12
	PCI-X					
	PCI			3	4	
PSU Type		24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+8-pin ATX	24+8-pin ATX

PICMG 1.3 Passive Backplane

Selection Guide

PAC series wall-mount chassis   4U/5U rack-mount chassis   1U/2U rack-mount chassis

PICMG 1.3 (PCIe+PCI)		Model	PE-2SD1	PE-2SD2	PE-4S	PE-4S2	PE-5S	PE-5S2	PE-6S	PE-6S2	PE-6SD	PE-6SD3
Total Slot			2	2	4	4	5	5	6	6	5	5
Expansion Slots	PCIe Slots	x16 *	1		1	1	1	1	1	1	1	1
		x4			1		1			1		1
		x1						3	2		3	
	PCI-X Slots											
	PCI Slots			1	1	2	2		2	3		2
USB Connectors by Pin Header			4	4	4	4	4	4	4	4	4	4
PSU Type			24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX
Note			1U Type	1U Type							2U Type	2U Type

PICMG 1.3 (PCIe+PCI)		Model	PE-7S	PE-7S2	PE-8S	PE-9S	PE-10S	PE-10S2	PE-13SD	PXE-9S2	PXE-12S	PXE-13S	PXE-19S2
Total Slot			7	7	8	9	10	10	13	9	12	13	19
Expansion Slots	PCIe Slots	x16 *	1	1	1	1	1	1	1/1	1	1	1	1
		x4							1/0	3			
		x1	2	4	3	4	4	4	0/4	0		3	1
	PCI-X Slots									0	4		
	PCI Slots		3	1	3	3	4	4	2/2	4	4	8	16
USB Connectors by Pin Header			4	4	4	4	4	4	8	4	4	4	4
PSU Type			24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	Dual 24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX
Note									Dual System Backplane	PCIe to PCIe Switch Backplane	PCIe to PCI-X Bridge Backplane	PCIe to PCI Bridge Backplane	

PICMG 1.3 Passive Backplane for Half-Size CPU Card

Selection Guide

PAC series wall-mount chassis   4U rack-mount chassis

PICMG 1.3 (PCIe+PCI)	Model	HPXE2-5S1	HPXE2-6S1	HPXE2-7S1	HPXE2-8S1
Total Slot		5	6	7	8
Expansion Slots	PCIe x16	1	1		
	PCIe x8			2	2
	PCIe x4				
	PCIe x1				
	PCI-X				
	PCI	2	3	3	4
PSU Type		24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX
Note		ATX power	ATX power	ATX power	ATX power

PICMG 1.0 Backplane

Selection Guide

☐ PAC series wall-mount chassis   ☐ 4U/5U rack-mount chassis   ☐ 1U/2U rack-mount chassis

Model	PCI-4S-RS-R40	PCI-5S-RS-R40	PCI-5S2A-RS-R40 PCI-5S2-RS-R40	PCI-6S-RS-R40	PCI-7S-RS-R41	PCI-8S-RS-R40
Total Slot	4	5	5	6	7	8
PCI Slot	3	3	4	4	4	4
ISA Slot	1	2	1	2	3	4
PSU Type	ATX/AT	ATX/AT	ATX/AT	ATX/AT	ATX/AT	ATX/AT

Model	PCI-10S-RS-R41	PCI-10S2-RS-R41	PX-10S-RS-R50	PCI-12S-RS-R40	PCI-13SD-RS-R40	PCI-14S-RS-R40
Total Slot	10	10	10	12	13	14
PCI Slot	4	4	7	4	3+4	4
ISA Slot	5	5	3	7	3+3	9
PSU Type	ATX/AT	ATX/AT	ATX/AT	ATX/AT	ATX/AT	ATX/AT
Note					For Dual System	

Model	PCI-14S2-RS-R40	PCI-14S3-RS-R40	PX-14S3-RS-R50	PX-14S5-RS-R50
Total Slot	14	14	14	14
PCI Slot	4	4	12	7
ISA Slot	8	9	2	6
PSU Type	ATX/AT	ATX/AT	ATX/AT	ATX/AT

Model	PCI-2SD2-RS-R41	PCI-5SD6-RS-R40	PCI-5SDA-RS-R40	PCI-6SD-RS-R40/PCI-6SR-RS-R30
Total Slot	2	6	6	6
PCI Slot	R2	L2+R2	L2+R2	L1+R1
ISA Slot				L1+R1
PSU Type	ATX/AT	ATX	ATX/AT	ATX

PCISA Backplane

Selection Guide

☐ PAC series wall-mount chassis   ☐ 4U rack-mount chassis

Model	IP-3S-RS	IP-3SA-RS	IP-4S-RS	IP-4S2-RS	IP-4S2A-RS	IP-4S4-RS
Total Slot	3	3	4	4	4	4
PCI Slot	2	2	3	2	3	4
ISA Slot				1		3
PSU Type	AT	ATX	AT	AT	ATX	AT

Model	IP-5S2-RS	IP-5SA-RS	IP-5SA2-RS	IP-6S-RS	IP-6SA-RS	IP-7SA-RS
Total Slot	5	5	5	6	6	7
PCI Slot	4	3	4	3	3	4
ISA Slot		1		2	2	2
PSU Type	AT	ATX	ATX	AT	ATX	ATX

Model	IP-8S-RS	IPX-9S-RS	IP-10S-RS	IPX-13S-RS
Total Slot	8	9	10	13
PCI Slot	4	8	4	12
ISA Slot	3		5	
PSU Type	ATX/AT	ATX/AT	ATX/AT	ATX/AT

ISA Backplane

Selection Guide

☐ PAC series wall-mount chassis   ☐ 4U rack-mount chassis

Model	BP-3S-RS-R40	BP-4S-RS-R40	BP-5S-RS-R40	BP-6S-RS-R40	BP-7S-RS-R40	BP-8S-RS-R41	BP-10S-RS-R40
Total Slot	3	4	5	6	7	8	10
ISA Slot	3	4	5	6	7	8	10
PSU Type	AT	AT	AT	AT	AT	AT	AT

Industrial Motherboard Selection Guide

Model Name	IMBA-H110	IMBA-BDE	IMBA-H810	IMBA-C2260-i2-R11	IMBA-Q870-i2
CPU Socket	LGA1151	On board	LGA1150	LGA1150	LGA1150
CPU Type	6th generation Intel® Core™ i7/i5/i3, Celeron® and Pentium® processor	Intel® Xeon processor D-1500 product family	4th generation Intel® Core™ i7/i5/i3 Pentium® and Celeron® processor	Intel® Xeon® E3, Core™ i3, Pentium®, Celeron® processor	Intel® Core™ i7/i5/i3, Pentium®, Celeron® processor
Chipset	Intel® H110	Intel® Xeon processor D-1500 product family	Intel®H81	Intel® C226	Intel® Q87
Memory	Two 288-pin 2133 MHz dual-channel DDR4 SDRAM unbuffered DIMMs (system Max. 64 GB)	Four 288-pin 2133 MHz dual-channel DDR4 SDRAM unbuffered DIMMs (system max. 128 GB)	Two 240-pin 1333/1600 MHz dual-channel DDR3 SDRAM unbuffered DIMM (system max. 16 GB)	Four 240-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SDRAM ECC and non-ECC unbuffered DIMMs (system max. 32 GB)	Four 240-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SDRAM unbuffered DIMMs (system max. 32 GB)
Display Interface	Dual independent display support 1 x DVI-I 1 x HDMI 1 x iDP interface	VGA via AST2510	Dual independent display support 1 x DVI-D 1 x VGA 1 x iDP interface	Dual display supported 1 x VGA 1 x iDP interface	Triple display supported 1 x VGA 1 x DVI-D 1 x HDMI 1 x iDP interface
Ethernet	LAN1: Intel® I219V PHY LAN2: Intel® I211 PCIe Controller	LAN1: Intel® I211-AT PCIe controller LAN2: Intel® I210-AT PCIe controller LAN3&4: Inphi CS4227 PHY (optional)	LAN1: Intel® I217-LM with Intel® AMT 9.0 support LAN2: Intel® I211-AT PCIe controller	LAN1: Intel® I217LM with Intel® AMT 9.0 support LAN2: Intel® I210-AT PCIe controller with NCSI support	LAN1: Intel® I217LM with Intel® AMT 9.0 support LAN2: Intel® I210-AT PCIe controller with NCSI support
iRIS Remote Management Module	N/A	N/A	N/A	1 x iRIS-2400 slot	1 x iRIS-2400 slot
I/O Interface	1 x KB/MS 1 x LPT 2 x RS-232/422/485 4 x RS-232 4 x USB 3.0 5 x USB 2.0	1 x PS/2 for KM/MS 1 x RS-232/422/485 1 x USB 2.0 Type A 4 x USB 3.0 5 x RS-232 6 x USB 2.0	1 x IR 1 x PS/2 for KB/MS 1 x RS-232/422/485 1 x USB 2.0 Type A 2 x USB 3.0 5 x RS-232 6 x USB 2.0	1 x LPT 1 x PS/2 for KB/MS 1 x RS-422/485 4 x USB 3.0 5 x RS-232 8 x USB 2.0	1 x LPT 1 x PS/2 for KB/MS 1 x RS-422/485 4 x USB 3.0 5 x RS-232 8 x USB 2.0
Storage Interface	4 x SATA 6Gb/s	6 x SATA 6Gb/s	2 x SATA 3Gb/s 2 x SATA 6Gb/s	6 x SATA 6Gb/s (RAID 0/1/5/10 supported) 1 x mSATA (colay SATA port 6) (support SATA 6Gb/s signal only)	6 x SATA 6Gb/s (RAID 0/1/5/10 supported) 1 x mSATA (colay SATA port 6) (support SATA 6Gb/s signal only)
Audio	Realtek ALC662 HD Audio codec				
Digital I/O	8-bit programmable I/O (8-bit GPIO is for programming I/O)				
Power Consumption	3.3V@1.53A, 5V@2.95A, 12V@8.38A, 5VSB@3.2A (Intel® Core™ i7 6700K 4.0GHz CPU with 16GB (two 8GB) 2133 MHz DDR4 memory)	3.3V@0.11A, 5V@2.83A, 12V@3.97A (Intel® Xeon D-1548 2.0GHz CPU with 32GB (four 4 GB) 2133MHz DDR4 memory)	3.3V@0.83A, 5V@2.2A, 12V@3.88A, 5VSB@0.3A (Intel® Core™ i7-4770K 3.90 GHz CPU with 8 GB (two 4 GB) 1333 MHz DDR3 memory)	3.3V@0.57A, 5V@4.50A, 12V@0.14A, Vcore_12V@5.20A, 5VSB@0.19A (Intel® E3-1240 v3 3.4GHz CPU with 16 GB (four 4 GB) 1333 MHz DDR3 memory)	3.3V@0.66A, 5V@4.34A, 12V@0.16A, Vcore_12V@4.01A, 5VSB@0.21A (Intel® Core™ i7-4770K 3.90 GHz CPU with four 1333 MHz 4 GB DDR3 DDR3 memory)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset				
Operation Environment	Temperature Range: -20°C ~ 60°C (-4°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: 0°C ~ 60°C (32°F ~ 140°F) Relative Humidity: 10% ~ 95%, non-condensing	Temperature Range: -20°C ~ 60°C (-4°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: -10°C ~ 60°C (14°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing	
Expansion Slot	1 x Full-size PCIe Mini card slot (support mSATA) 1 x PCIe x16 slot (Gen3) 6 x PCI slot	1 x M.2 connector (M key) 1 x PCIe x4 slot (for 10GbE LAN card only) 5 x PCIe x4 Gen3 1 x PCIe x4 Gen2	1 x PCIe x 16 2 x PCIe x 1 4 x PCI 1 x PCIe Mini (support mSATA)	1 x PCIe x16 slot, 3 x PCIe x4 slot Default setting: 1 x PCIe x8, 2 x PCIe x4 Optional setting: 1 x PCIe x16 by BIOS setting 1 x PCIe x1 slot 2 x PCI slot	1 x PCIe x16 slot (Gen 3) 1 x PCIe x4 slot 1 x PCIe x1 slot 4 x PCI slots
CPU Cooler	CF-115XA-R10 CF-1156C-R20 CF-1156D-R20 CF-115XE-R10	XCF-989A-RS-R12	CF-115XA-R10 CF-115XE-R10	CF-115XA-R10 CF-115XE-R10	CF-115XA-R10 CF-115XE-R10

Industrial Motherboard Selection Guide

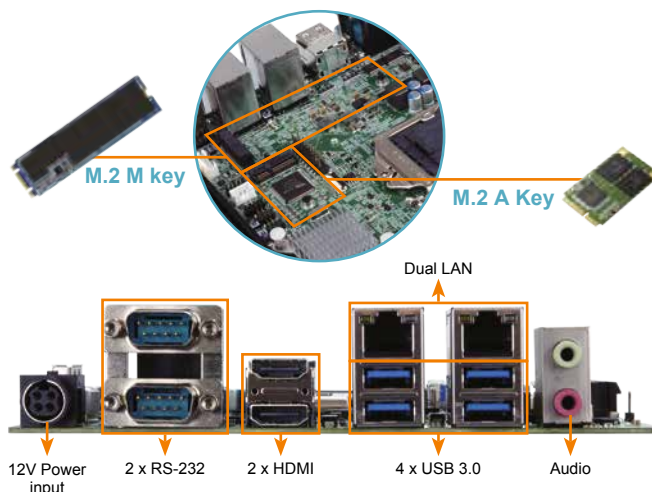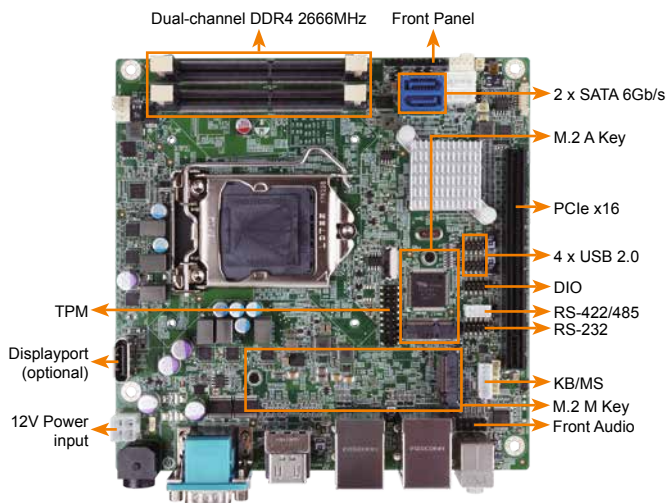| Model Name	IMBA-Q370	IMBA-C2360-i2	IMBA-Q170-i2
CPU Socket	LGA1151	LGA1151	LGA1151
CPU Type	8th generation Intel® Core™ i7/5/i3 Pentium® and Celeron® processor	Intel® Xeon® E3, Core™ i3, Pentium®, Celeron® processor	6th generation Intel® Core™ i7/ i5/i3 Pentium® and Celeron® processor
Chipset	Intel® Q370	Intel® C236	Intel® Q170
Memory	Four 288-pin 2133 MHz dual-channel DDR4 SDRAM unbuffered DIMMs (system Max. 64 GB)	Four 288-pin 2133 MHz dual-channel DDR4 SDRAM unbuffered DIMMs (system Max. 64 GB)	Four 288-pin 2133 MHz dual-channel DDR4 SDRAM unbuffered DIMMs (system Max. 64 GB)
Display Interface	Triple independent display support 1 x HDMI 2.0 1 x DVI-I 1 x iDP interface	Triple independent display support 1 x HDMI 2.0 1 x DVI-D 1 x VGA 1 x iDP interface	Triple independent display support 1 x HDMI 2.0 1 x DVI-D 1 x VGA 1 x iDP interface
Ethernet	LAN1: Intel® I210-AT PCIe controller with NCSI support LAN2: Intel® I219LM with Intel® AMT 11.0 support	LAN1: Intel® I210-AT PCIe controller with NCSI support LAN2: Intel® I219LM with Intel® AMT 11.0 support	LAN1: Intel® I210-AT PCIe controller with NCSI support LAN2: Intel® I219LM with Intel® AMT 11.0 support
iRIS Remote Management Module	N/A	1 x iRIS-2400 slot	1 x iRIS-2400 slot
I/O Interface	1 x PS/2 KB/MS 1 x LPT 2 x RS-232/422/485 4 x RS-232 8 x USB 3.0 4 x USB 2.0	1 x KB/MS 1 x LPT 2 x RS-232/422/485 4 x RS-232 5 x USB 3.0 7 x USB 2.0	1 x KB/MS 1 x LPT 2 x RS-232/422/485 4 x RS-232 5 x USB 3.0 7 x USB 2.0
Storage Interface	6 x SATA 6Gb/s (RAID 0/1/5/10 supported)	6 x SATA 6Gb/s (RAID 0/1/5/10 supported)	6 x SATA 6Gb/s (RAID 0/1/5/10 supported)
Audio	Realtek ALC662 HD Audio codec		
Digital I/O	8-bit programmable digital I/O		
Power Consumption	TBP	3.3V@1.51A, 5V@3.31A, 12V@9.02A, 5VSB@3.7A (Intel® Xeon® E3-1275 v5 3.60 GHz CPU with 32 GB (four 8GB) 2133 MHz DDR4 memory)	3.3V@1.65A, 5V@3.4A, 12V@8.58A, 5VSB@3.4A (Intel® Core™ i7 6700K 4.0GHz CPU with 32 GB (Four 8 GB) 2133 MHz DDR4 memory)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset		
Operation Environment	Temperature Range: -20°C ~ 60°C (-4°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing		
Expansion Slot	1 x Full-size PCIe Mini card slot (support mSATA) 1 x M.2 (A key) 1 x M.2 (M Key) 1 x PCIe x16 (Gen3) (share x16 signal with 1 x8 & 1 x4 slot) 1 x PCIe x8 (Gen3) 2 x PCIe x4 (Gen3) 2 x PCI slot	1 x Full-size PCIe Mini card slot (support mSATA) 2 x PCIe x8 (Gen3) 3 x PCIe x4 (Gen3) 2 x PCI slot	1 x Full-size PCIe Mini card slot (support mSATA) 2 x PCIe x8 (Gen3) 3 x PCIe x4 (Gen3) 2 x PCI slot
CPU Cooler	CF-115XA-R10 CF-1156C-R20 CF-1156D-R20 CF-115XE-R10	CF-115XA-R10 CF-1156C-R20 CF-1156D-R20 CF-115XE-R10	CF-115XA-R10 CF-1156C-R20 CF-1156D-R20 CF-115XE-R10

Industrial Motherboard Selection Guide

Model Name	IMBA-C2160
CPU Socket	LGA1155
CPU Type	Intel® Xeon® E3, Core™ i3 processor
Chipset	Intel® C216
Memory	Four 240-pin 1600/1333 MHz dual-channel DDR3 SDRAM ECC and non-ECC unbuffered DIMMs supported (system max. 32 GB)
Display Interface	Dual display supported 1 x VGA
Ethernet	LAN1: Intel® 82579 PHY with Intel® AMT 8.0 support LAN2: Intel® 82574L PCIe controller
iRIS Remote Management Module	N/A
I/O Interface	1 x I²C 1 x LPT 1 x PS/2 for KB/MS 1 x RS-422/485 1 x SMBus 1 x TPM (2x10 pin) 4 x USB 3.0 5 x RS-232 10 x USB 2.0
Storage Interface	2 x SATA 6Gb/s 4 x SATA 3Gb/s
Audio	Realtek ALC662 HD Audio codec
Digital I/O	8-bit programmable I/O (8-bit GPIO is for programming I/O)
Power Consumption	3.3V@1.55A, 5V@3,43A, Vcore@3.12A, 12V@0.20A, 5VSB@0.18A (Intel® Xeon® 2.2GHz CPU with two 1333 MHz 4 GB DDR3 memory)
Watchdog Timer	Software programmable
Operation Environment	Temperature Range: -10°C ~ 60°C Relative Humidity: 5% ~ 95%
Expansion Slot	2 x PCIe x16 (share 1 PCIe x 16 signal) 2 x PCIe x4 1 x PCIe x1 2 x PCI
CPU Cooler	CF-115XA-R10 (for 1U chassis) CF-1156C-R20 CF-1156D-R20 CF-115XE-R10

Model Name	IMB-H110	IMB-Q870-i2	IMB-H810-i2-R11
CPU Socket	LGA1151	LGA1150	LGA1150
CPU Type	6th generation Intel® Core™ i7/i5/i3, Celeron® and Pentium® processor	Intel® Core™ i7/i5/i3, Pentium®, Celeron® processor	Intel® Core™ i7/i5/i3, Pentium®, Celeron® processor
Chipset	Intel® H110	Intel® Q87	Intel® H81
Memory	Two 288-pin 2133MHz Dual-Channel DDR4 SDRAM Unbuffered DIMM supported up to 64GB	Four 240-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SDRAM unbuffered DIMMs (system max. 32 GB)	Two 240-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SDRAM unbuffered DIMMs (system max. 32 GB)
Display Interface	Dual independent display support 1 x VGA 1 x DVI-I 1 x LVDS 1 x iDP	Triple display supported 1 x VGA 1 x DVI-D 1 x HDMI 1 x iDP interface	Triple display supported 1 x VGA1 1 x VGA2 1 x iDP interface
Ethernet	Dual LAN: RTL 8111GN controller	LAN1: Intel® I217LM with Intel® AMT 9.0 support LAN2: Intel® I210-AT PCIe controller with NCSI support	LAN1: Intel® I217LM LAN2: Intel® I210-AT PCIe controller with NCSI support
iRIS Remote Management Module	N/A	1 x iRIS-2400 slot	
I/O Interface	1 x KB/MS 1 x LPT 2 x RS-232/422/485 4 x USB 3.0 8 x USB 2.0 10 x RS-232	1 x PS/2 for KB/MS 1 x RS-422/485 4 x USB 3.0 5 x RS-232 8 x USB 2.0	1 x LPT 1 x PS/2 for KB/MS 1 x RS-422/485 by s/w selection 2 x RS-232 2 x USB 3.0 8 x RS-232 10 x USB 2.0
Storage Interface	4 x SATA 6Gb/s (RAID 0/1 supported)	4 x SATA 6Gb/s (RAID 0/1/5/10 supported)	2 x SATA 6Gb/s 2 x SATA 3Gb/s (AHCI supported)
Audio	Realtek ALC662 HD Audio codec		
Digital I/O	8-bit programmable digital I/O	8-bit programmable I/O (8-bit GPIO is for programming I/O)	N/A
Power Consumption	3.3V@ 0.93A, 5V@2.99A, 12V@6.88A, 5VSB@0.02A (Intel® Core™ i7-6700K 4.0GHz CPU with 16GB (two 8GB) 2133 MHz DDR4 memory)	3.3V@0.53A, 5V@4.96A, 12V@0.12A, Vcore_12V@3.95A, 5VSB@0.18A (Intel® Core™ i7-4770K 3.90 GHz CPU with 16 GB four 1333 MHz 4 GB DDR3 memory)	3.3V@0.64A, 5V@4.20A, 12V@0.14A, Vcore_12V@3.88A, 5VSB@0.20A (Intel® Core™ i7-4770K 3.90 GHz CPU with 8 GB two 1333 MHz 4 GB DDR3 memory)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset		
Operation Environment	Temperature Range: -20°C ~ 60°C (-4°F~140°F) Relative Humidity: 5% ~ 95% non-condensing		
Expansion Slot	1 x PCIe x16 slot (Gen3) 1 x Full-size PCIe Mini card slot 1 x PCIe x1 slot (Gen2) 2 x PCI slot	1 x PCIe x16 slot (Gen 3) 1 x PCIe x4 slot 1 x PCIe x1 slot 1 x PCI slot	1 x PCIe x16 slot (Gen 3) 1 x PCIe x1 slot 2 x PCI slot
CPU Cooler	CF-115XA-R10 CF-115XE-R10	CF-115XA-R10 CF-115XE-R10	

KINO-DH310

Mini-ITX SBC supports 14nm LGA1151 Intel® 8th Generation Core™ i7/i5/i3, Celeron® and Pentium® processor, DDR4, dual independent displays, dual GbE LAN, M.2, SATA 6Gb/s, HD Audio and RoHS

NEW

Dual-channel DDR4 2666MHz   Front Panel

2 x SATA 6Gb/s
M.2 A Key
PCIe x16
4 x USB 2.0
DIO
RS-422/485
RS-232
KB/MS
M.2 M Key
Front Audio

TPM
Displayport (optional)
12V Power input

M.2 M key
M.2 A Key
Dual LAN

12V Power input   2 x RS-232   2 x HDMI   4 x USB 3.0   Audio

DDR4 2400 | Dual Display | M.2 | SERIAL ATA 6Gb/s | Gigabit Ethernet PCIe GbE

Specifications

◆ CPU
LGA1151 socket supports 8th generation Intel® Core™ i7/i5/i3, Pentium® or Celeron® processor (35W/65W)

◆ Chipset
Intel® H310

◆ BIOS
AMI UEFI BIOS

◆ Memory
Two 260-pin 2666/2400 MHz Dual-Channel DDR4 SDRAM Unbuffered SO-DIMM slots supported up to 64GB

◆ Graphics Engine
Intel® HD Graphics Gen9 Engines with Low power 16 execution unit, supports DX11.3/12, OpenGL 4.3/4.4/4.5and OpenCL1.2/2.0/2.1

◆ Display Output
Dual independent display
2 x HDMI (up to 1920x1080@60Hz)
1 x internal Displayport (up to 4096x2304@60Hz) (optional)

◆ Ethernet
LAN1: Realtek RTL8111H PCIe GbE controller
LAN2: Realtek RTL8111H PCIe GbE controller

◆ External I/O Interface
4 x USB 3.0
2 x RS-232

◆ Internal I/O Interface
1 x KB/MS (1x6 pin)   4 x USB 2.0 (2x4 pin, P=2.0)
1 x RS-422/485 (1x4 pin, P=2.0)   1 x RS-232 (2x5 pin, P=2.0)
2 x SATA 6G/s with 5/12V SATA power connector (No RAID)

◆ I²C: 1 x I²C (1x4 pin)
◆ TPM: 1 x TPM (2x10 pin)
◆ SMBus: 1 x SMBus (1x4 pin)
◆ Audio
Realtek ALC662 HD codec
2 x Audio Jack (Lin-out, Mic-in)
1 x Front audio (2x5 pin)

◆ Front Panel
1 x Front Panel (1x10 pin, Power LED, HDD LED, Power Button, Reset Button)

◆ LAN LED: 2 x LAN LED (1x2 pin)
◆ Expansion
1 x PCIe x16 (Gen3/3.1)
1 x M.2 M key (2280, Gen2 PCIe x2 only)
1 x M.2 A Key (2230, Gen2 PCIe x1 & USB 2.0)

◆ Digital I/O: 1 x 8-bit digital I/O (2x5 pin)
◆ FAN Connector: 2 x Smart fan connector (1x4 pin)
◆ Chassis Open
1 x Chassis intrusion (1x2 pin)

◆ Power supply
DC 12V input
1 x External DC jack (4-pin DIN)
1 x Internal power connector (2x2 pin)
Support AT/ATX mode
ErP/EuP Compliant

◆ Watchdog Timer: Software Programmable support 1~255 sec. System reset
◆ Power Consumption
12V@11.32A (Intel® Core™ i7-8700 up to 4.60 GHz CPU with two 8GB 2666MHz DDR4 memory)

◆ Operating Temperature: 0°C ~ 60°C
◆ Storage Temperature: -10°C ~ 70°C
◆ Operating Humidity: 5% ~ 95%, non-condensing
◆ Dimension: 170mm x 170mm
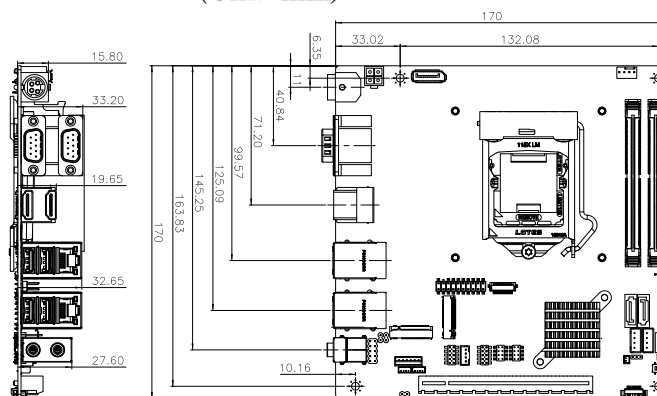◆ Weight: GW:900g / NW:400g
◆ CE/FCC compliant

Features

● LGA1151 Intel® 8th Generation Core™ i7/i5/i3, Celeron® and Pentium® processor
● Dual-channel DDR4 2666MHz
● Support DP & Dual HDMI
● Support M.2 A Key for WLAN expansion & M key for storage
● IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

1 x KINO-DH130 single board computer	1 x SATA cable
1 x I/O Shielding	1 x QIG

Dimensions (Unit: mm)

170
33.02   132.08
6.35
15.80
33.20
40.84
11
71.20
19.65
99.57
125.09
145.25
163.83
170
32.65
27.60
10.16

Ordering Information

Part No.	Description
KINO-DH310-R10	Mini-ITX SBC supports 14nm LGA1151 Intel® 8th Generation Core™ i7/i5/i3, Celeron® and Pentium® processor, DDR4, dual independent displays, dual gbE LAN, M.2, SATA 6Gb/s, HD Audio and RoHS
32000-02300	PS/2 KB/MS cable, 135mm, P=2.0
32000-070301-RS	Dual port USB cable, 210mm, P=2.0
32205-002700-200-RS	RS-232 cable, 200mm, P=2.0
CF-115XA-RS-R10	High-performance LGA1155/1156 cooler kit, 1U chassis compatible 73W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W
TPM-IN02-R20	20-pin Infineon TPM 2.0 module, software management tool, firmware v5.5

Mini–ITX Selection Guide

Model Name	KINO-DH110	KINO-DAL	tKINO-AL	gKINO-DMF	tKINO-ULT3
CPU Socket	LGA1151	On Board	On Board	On Board	On Board
CPU Type	6th/7th generation Intel® Core™ i7/i5/i3 Pentium® and Celeron® processor	Intel® Atom™/Celeron®/Pentium® on-board SoC	Intel® Atom™/Celeron®/Pentium® on-board SoC	AMD G-series on board SoC Merlin Falcon	Intel® Core™ i7/i5/i3, Celeron® ULT processor
Chipset	Intel® H110	Intel® Atom™/Celeron®/Pentium® on-board SoC	Intel® Atom™/Celeron®/Pentium® on-board SoC	AMD G-series on board SoC Merlin Falcon	Intel® Core™ i7/i5/i3, Celeron® ULT processor
Memory	Two 260-pin 2133 MHz dual-channel DDR4 SDRAM SO-DIMMs (system Max. 64 GB)	2 x 204-pin 1866/1600 MHz single-channel DDR3L SO-DIMM (system max. 8 GB)	2 x 204-pin 1866/1600 MHz single-channel DDR3L SO-DIMM (system max. 8 GB)	2 x SO-DIMM DDR4 2400MHz, up to 64GB	2 x SO-DIMM DDR4 2133MHz, system maximun up to 32GB
Display InterfaceD	Dual independent display 1 x DP++ 1 x HDMI 1 x iDP interface	Triple independent display 1 x VGA 1 x HDMI 1 x 18/24-bit dual-channel LVDS	Triple independent display 2 x DP++ 1 x eDP	Triple independent display 1 x HDMI 2.0 1 x HDMI 1.4 1 x DP++	Triple independent display 1 x HDMI/DP 1 x HDMI 1 x LVDS/eDP
Ethernet	LAN1: Intel® I210-AT PCIe controller with NCSI support LAN2: Intel® I219LM with Intel® AMT 11.0 support	Dual LAN: Intel® I210-IT/I211-AT PCIe controller	Dual LAN: RTL8111	Dual LAN: RTL8111GN	LAN1: Intel® I219LM LAN2: Intel® I211AT
iRIS Remote Management Module	N/A				
I/O Interface	1 x KB/MS 1 x RS-232/422/485 2 x RS-232 4 x USB 3.0 4 x USB 2.0	1 x PS/2 KB/MS 2 x RS-232/422/485 2 x USB 2.0 4 x RS-232 4 x USB 3.0	1 x PS/2 KB/MS 2 x RS-232/422/485 2 x USB 2.0 4 x RS-232 4 x USB 3.0	2 x RS-232/422/485 4 x RS-232 (2 support cctalk, TTL) 4 x USB 3.0 5 x USB 2.0	2 x RS-232/422/485 4 x RS-232 4 x USB 2.0 4 x USB 3.0
Storage Interface	2 x SATA 6Gb/s 1 x M.2 (B Key) (2242) (SATA signal)	2 x SATA 6Gb/s with 12/5V SATA power connector 1 x 8 GB eMMC (optional) 1 x M.2 (B Key) (2242)(SATA port1 + USB 2.0 signal) 1 x Micro SD slot (Optional)	2 x SATA 6Gb/s with 12/5V SATA power connector 1 x M.2 (B Key) (2242)(SATA port1 + USB 2.0 signal) 1 x Micro SD slot (Optional)	2 x SATA 6Gb/s with 5V/12V SATA power connector 1 x MicroSD slot 1 x M.2 (B key) (SATA signal)	2 x SATA 6Gb/s with 5V SATA power connector 1 x eMMC5.0 (up to 32G, optional)
Audio	Realtek ALC662 HD Audio codec		Realtek ALC269 HD Audio codec	Realtek ALC662 HD Audio Codec	
Digital I/O	8-bit programmable digital I/O				
Power Consumption	12V@12.16A (3.4GHz Intel® Core i7-6700 with two 2133MHz 16GB DDR4 memory)	TBD	12V@2.58A (Intel® Pentium® N4200 CPU with two 8GB 1600MHz DDR3L memory)	12V@5.54A (AMD RX-421BD 2.1GHz CPU with 2400 MHz 16GB DDR4 memory)	12V@4.68A (Intel® Core™ i7-6600U up to3.4GHz CPU with 16GB (8GB x 2) DDR4-2133 memory running in 3.2GHz)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset				
Operation Enviornment	Temperature Range: -20°C ~ 60°C (-4°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: KINO-DAL: -20°C ~ 70°C (-4°F~158°F) KINO-DALW2: -40°C ~ 85°C (-40°F~185°F) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: -20°C ~ 70°C (-4°F ~ 158°F) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: -20°C ~ 60°C (-4°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing	
Expansion Slot	1 x Full-size PCIe Mini card slot 1 x PCIe x1 slot	1 x PCIe x1 slot 1 x Full/Half-size PCIe Mini card slot (w/ SIM holder)	1 x PCIe x1 slot 1 x Full/Half-size PCIe Mini card slot (w/ SIM holder)	1 x PCIe x8 slot 1 x Full-size PCIe Mini card slot 1 x MicroSD slot	1 x PCIe x4 slot 1 x Full-size PCIe Mini card slot (support mSATA, colay with SATA2) 1 x Full-size PCIe Mini card slot (with SIM card slot)
CPU Cooler	CF-1156C-R20 CF-1156D-R20 CF-115XE-R10	Heatsink	Heatsink	Cooler	Heatsink

Mini–ITX Selection Guide

Model Name	KINO-DCM236	KINO-DQM170	KINO-AQ170	tKINO-BW	KINO-DBT
CPU Socket	On Board	On board	LGA1151	On board	On board
CPU Type	Intel® Xeon® E3, Core™ i3, Celeron® process	6th generation Intel® Core™ i7/ i5/i3 and Celeron® processor	6th/7th generation Intel® Core™ i7/i5/i3, Pentium® and Celeron® processor	Intel® Pentium®/Celeron® on board SoC	Intel® Atom™/Celeron® on board SoC
Chipset	Intel® CM236	Intel® QM170	Intel® Q170	Intel® Pentium®/Celeron® on-board SoC	Intel® Atom™/Celeron® on-board SoC
Memory	2 x SO-DIMM DDR4 2133MHz up to 32GB with ECC support	Two 260-pin 2133 MHz dual-channel DDR4 SDRAM SO-DIMMs (system Max. 64 GB)	Two 260-pin 2133 MHz dual-channel DDR4 SDRAM SO-DIMMs (system Max. 64 GB)	Two 204-pin 1600/1333 MHz dual-channel DDR3L SDRAM SO-DIMMs (support up to 8 GB)	Two 204-pin 1066/1333 MHz dual-channel unbuffered DDR3L SDRAM SO-DIMM support up to 8 GB (J1900, N2930, E3845, E3827, E3826) One 204-pin 1066/1333 MHz dual-channel unbuffered DDR3L SDRAM SO-DIMM supports up to 4 GB (N2807, E3825, E3815)
Display Interface	Triple independent display 1 x HDMI 2.0 2 x HDMI 1.4 1 x LVDS	Triple independent display supported 1 x HDMI 2.0 2 x HDMI 1.4 1 x LVDS	Triple independent display supported 1 x HDMI 2.0 1 x HDMI/DP 1 x VGA 1 x iDP interface	Triple independent display supported 1 x HDMI/DP 1 x VGA 1 x 18/24-bit dual-channel LVDS	Dual independent display supported 1 x VGA 1 x DVI-D
Ethernet	LAN1: Intel® I219LM LAN2: Intel® I211	LAN1: Intel® I219-LM with Intel® AMT 11.0 support LAN2: Intel® I211 PCIe controller	LAN1: Intel® I211 PCIe controller LAN2: Intel® I219LM with intel AMT 11.0 support	Dual LAN: Realtek RTL8111G PCIe controller	Dual LAN: Realtek RTL8111G PCIe controller
iRIS Remote Management Module	N/A				
I/O Interface	1 x KB/MS 2 x RS-232/422/485 4 x RS-232 4 x USB 2.0 4 x USB 3.0	1 x KB/MS 2 x RS-232/422/485 4 x RS-232 4 x USB 2.0 4 x USB 3.0	1 x KB/MS 2 x RS-232/422/485 4 x RS-232 6 x USB 2.0	1 x KB/MS 2 x RS-232/422/485 2 x USB 3.0 4 x RS-232 4 x USB 2.0	1 x KB/MS 1 x RS-422/485 2 x USB 3.0 4 x USB 2.0 5 x RS-232
Storage Interface	4 x SATA6Gb/s 1 x mSATA	4 x SATA 6Gb/s (RAID 0/1/5/10 supported)	4 x SATA 6Gb/s (RAID 0/1/5/10 supported)	2 x SATA 6Gb/s 1 x mSATA 1 x Micro SD slot	2 x SATA 3Gb/s 1 x Micro SD slot (E38xx sku only)
Audio	Realtek ALC662 HD Audio codec				
Digital I/O	8-bit programmable digital I/O	8-bit digital I/O			
Power Consumption	12V@6.93A (Intel Xeon E3-1505M V5 2.8GHz CPU with 32 GB (two 16 GB) 2133 MHz DDR4 memory)	12V@5.08A (Intel® Core™ i7-6820EQ, 3.5GHz CPU with 16 GB (two 8 GB) 2133 MHz DDR4 memory)	3.3V@1.62A, 5V@3.54A, 12V@8.17A, 5VSB@3.6A (Intel® Core™ i7 6700K 4.0 GHz CPU with 16 GB (two 8 GB) 2133 MHz DDR4 memory)	12V@1.61A (Intel® Celeron® N3710 CPU with two 4 GB 1600 MHz DDR3L memory)	12V@1.64A (Intel® Celeron® J1900 CPU with 4 GB 1333 MHz DDR3L memory)
Watchdog Timer	Software programmable supports 1~255 sec. system reset				
Operation Enviornment	Temperature Range: -20°C ~ 60°C (-4°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing				
Expansion Slot	1 x PCIe x16 slot 1 x Full-size PCIe Mini card slot (support mSATA) 1 x Half-size PCIe Mini card slot 1 x M.2 2230 (A key)	1 x PCIe x16 slot 1 x Full-size PCIe Mini card slot (support mSATA) 1 x Half-size PCIe Mini card slot 1 x M.2 2230 (A key)	1 x PCIe x8 slot 1 x Full-size PCIe Mini card Slot (support mSATA)	1 x PCIe x1 slot 1 x PCIe Mini card slot	1 x Full-size PCIe Mini card slot (support mSATA) 1 x PCIe x4 slot (with PCIe x1 signal)
CPU Cooler	Heatsink	Heatsink	CF-1156C-R20 CF-1156D-R20 CF-115XE-R10	Heatsink	Heatsink

Mini–ITX Selection Guide

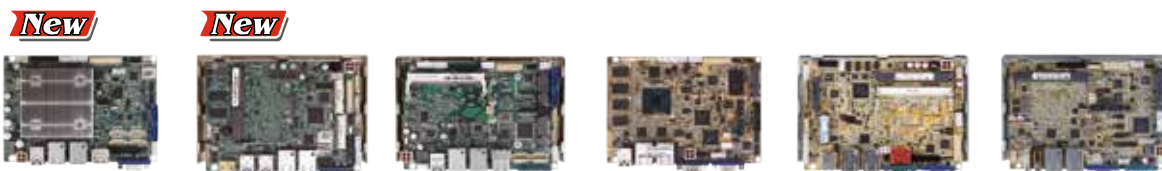| Model Name	KINO-DH810	eKINO-BT	KINO-DQM871-i1	KINO-QM770
CPU Socket	LGA1150	On board	On Board	Socket G2
CPU Type	Intel® Core™ i7/i5/i3, Pentium®, Celeron® processor	Intel® Atom™/Celeron® on-board SoC	Intel® Core™ i7/i5/i3 Mobile processor	Intel® Mobile processor
Chipset	Intel® H81	Intel® Atom™/Celeron® on-board SoC	Intel® QM87	Intel® QM77
Memory	Two 204-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SDRAM unbuffered DIMMs (system max. 16 GB)	Two 204-pin 1066/1333 MHz dual-channel unbuffered DDR3L SDRAM SO-DIMM support up to 8 GB (J1900, N2930, E3845, E3827, E3826) One 204-pin 1066/1333 MHz dual-channel unbuffered DDR3L SDRAM SO-DIMM supports up to 4 GB (N2807, E3825, E3815)	2 x 204-pin, Max. 16 GB, 1333/1600 MHz dual-channel DDR3 SO-DIMMs	2 x 204-pin, Max. 16 GB, 1066/1333/1600 MHz dual-channel DDR3 SO-DIMMs
Display Interface	Dual display supported 1 x VGA 1 x DVI-D 1 x iDP interface	Dual display supported 1 x VGA 2 x 18/24-bit dual-channel LVDS	Triple display supported 2 x HDMI 1 x VGA 1 x 18/24-bit dual-channel LVDS 1 x iDP interface	Triple display supported 2 x HDMI 1 x DVI-I 1 x18/24-bit dual-channel LVDS
Ethernet	Dual LAN: Intel® I211-AT PCIe controller	Dual LAN: Realtek RTL8111E PCIe controller	LAN1: Intel® I217LM with Intel® AMT 9.0 support LAN2: Intel® I210-AT PCIe controller	LAN1:Intel® 82579 PHY with Intel® AMT 8.0 support LAN2:Intel® 82583V PCIe controller
iRIS Remote Management Module	N/A	N/A	1 x iRIS-1010 slot	N/A
I/O Interface	1 x PS/2 for KB/MS 1 x RS-422/485 2 x USB 3.0 5 x RS-232 6 x USB 2.0	1 x PS/2 for KB/MS 1 x RS-422/485 2 x USB 3.0 4 x RS-232 4 x USB 2.0	1 x PS/2 for KB/MS 1 x RS-422/485 1 x SMBus 1 x TPM (2x10 pin) 4 x USB 3.0 5 x RS-232 10 x USB 2.0	1 x KB/MS 1 x RS-422/485 1 x SMBus 1 x TPM (2x10 pin) 2 x RS-232 4 x USB 2.0 4 x USB 3.0
Storage Interface	2 x SATA 6Gb/s	2 x SATA 3Gb/s	2 x SATA 6Gb/s 2 x SATA 3Gb/s 1 x mSATA	2 x SATA 6Gb/s 2 x SATA 3Gb/s
Audio	Realtek ALC662 HD Audio codec		Realtek ALC662 HD Audio codec	Realtek ALC892 HD Audio codec
Digital I/O	8-bit programmable digital I/O			
Power Consumption	12V@6.03A (Intel® Core™ i7-4770K 3.90 GHz CPU with two 1333 MHz 4 GB DDR3 memory)	12V@1.55A (Intel® Celeron® J1900 CPU with two 8 GB 1333 MHz DDR3L memory)	12V@5.03A (2.0GHz Intel® Core™ i7 processor with two 1333 MHz 4 GB DDR3 memory)	12V@6.08A (2.3GHz Intel® Core™ i7-3610QE with two 1333 MHz 4 GB DDR3 memory running 3DMark06 burn in)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset		Software programmable and supports 1~255 sec. system reset	
Operation Environment	Temperature Range: -20°C ~ 60°C Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C	Temperature Range: -10°C ~ 60°C (14°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing	
Expansion Slots	1 x Full-size PCIe Mini card slot 1 x PCIe x1 slot	1 x Full-size PCIe Mini card slot 1 x PCIe x1 slot	1 x PCIe x16 slot 1 x Full-size PCIe Mini slot (support mSATA)	1 x PCIe x16 slot 1 x PCIe Mini card slot (support mSATA)
CPU Cooler	CF-115XA-R10 CF-115XE-R10	Heatsink	XCF-479B-RS CF-989B-RS-R11	CF-989A-RS-R12

EPIC NANO Selection Guide

Model Name	NANO-AL/ALW2	NANO-ULT3	NANO-BT-i1/BTW2	NANO-SE/KBN-i1
CPU Socket	On board	On board	On board	On board
CPU Type	Intel® Atom™/Celeron®/Pentium® on-board SoC	Intel® Core™ i7/i5/i3, Celeron® ULT processor	Intel® Atom™, Celeron® SoC	AMD® Embedded G-Series SoC
Chipset	Intel® Atom™/Celeron®/Pentium® on-board SoC	Intel® Core™ i7/i5/i3, Celeron® ULT processor	Intel® Atom™/Celeron® on-board SoC	AMD® Embedded G-Series SoC
Memory	1 x 204-pin 1866/1600 MHz single-channel DDR3L SO-DIMM (system max. 8 GB)	2 x 260-pin 2133/1867 MHz dual-channel DDR4 SO-DIMMs (system max. 32 GB)	1 x 204-pin 1333/1066 MHz single-channel DDR3L SO-DIMM (system max. 8 GB)	1 x 204-pin 1600/1333 MHz single-channel DDR3 & DDR3L SO-DIMM (system max. 8 GB)
Display Interface	Triple independent display 2 x HDMI 1 x 18/24-bit dual-channel LVDS 1 x iDP	Triple independent display 2 x HDMI 1 x 18/24-bit dual-channel LVDS 1 x iDP interface	Dual display supported 1 x VGA 1 x HDMI 1 x 18/24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x HDMI 1 x 18/24-bit dual-channel LVDS
Ethernet	Dual LAN: Intel® I210-IT/I211-AT PCIe controller	LAN1: Intel® I219-LM PHY with Intel® AMT 11.0 supported LAN2: Intel® I211-AT PCIe GbE Controller	LAN1: Intel® I210-AT PCIe controller with NCSI support LAN2: Intel® I211-AT PCIe controller	LAN1: Intel® I210-AT PCIe controller with NCSI support LAN2: Intel® I211-AT PCIe controller
iRIS Remote Management Module	N/A		1 x iRIS-1010 slot	
I/O Interface	1 x PS/2 KB/MS 2 x RS-232/422/485 2 x USB 2.0 4 x RS-232 4 x USB 3.0	1 x PS/2 KB/MS 1 x RS-232/422/485 2 x RS-232 2 x USB 2.0 4 x USB 3.0	1 x PS/2 KB/MS 1 x RS-422/485 1 x USB 3.0 3 x RS-232 3 x USB 2.0	1 x PS/2 KB/MS 1 x RS-422/485 2 x USB 3.0 5 x RS-232 6 x USB 2.0
Storage Interface	2 x SATA 6Gb/s with 5V SATA power connector 1 x M.2 (B Key) (SATA only)	2 x SATA 6Gb/s with 5V SATA power connector 1 x 8 GB eMMC (optional)	2 x SATA 3Gb/s with 5V SATA power connector	2 x SATA 6Gb/s with 5V SATA power connector
Audio	Realtek ALC662 HD Audio codec			Realtek ALC892 HD Audio codec
Digital I/O	8-bit programmable digital I/O			
Power Consumption	12V@2.13 A (Intel® Pentium® N4200 CPU with one 8GB 1600MHz DDR3L memory)	12V@2.48A (Intel® Core™ i3-6100U CPU)	12V@1.52A (Intel® Atom™ Processor J1900 CPU with one 8 GB 1333 MHz DDR3L memory)	12V@1.02A (AMD GX-415GA 1.5GHz CPU with 1600 MHz 8 GB DDR3 memory)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset			
Operating Environment	Temperature Range: NANO-AL: -20°C ~ 70°C (-4°F~158°F) NANO-ALW2: -40°C ~ 85°C (-40°F~185°F) Relative Humidity: 5% ~ 95% non-condensing	Temperage Range: -20°C ~ 60°C (-4°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: NANO-BT-i1: -20°C ~ 60°C (-4°F~140°F) NANO-BTW2: -40°C ~ 85°C (-40°F~185°F) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C (32°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing
Expansion Slots	1 x Full/Half-size PCIe Mini slot (w/ Micro SIM holder)	1 x Full-size PCIe Mini card slot (with SIM holder & mSATA support) 1 x Half-size PCIe Mini card slot	1 x Full-size PCIe Mini card slot with mSATA support 1 x PCI-104 slot	1 x Full-size PCIe Mini card slot with mSATA support
CPU Cooler	Heatsink	Heat Spreader	Heatsink	GX-415GA (with hearsink) GX-210HA (with cooler)

EPIC NANO Selection Guide

Model Name	NANO-QM871-i1	NANO-QM770	NANO-LX-R12
CPU Socket	On board	Socket G2	On board
CPU Type	Intel® Core™ i7/i5/i3, Celeron® Mobile processor	Intel® Core™ i7/i5/i3, Celeron® Mobile processor	AMD Geode™ LX800
Chipset	Intel® QM87	Intel® QM77	AMD Geode™ LX800 + AMD CS5536
Memory	1 x 204-pin 1600/1333 MHz dual-channel DDR3/DDR3L SO-DIMM (system max. 8 GB)	1 x 204-pin 1600/1333 MHz single-channel DDR3 SO-DIMM (system max. 8 GB)	1 x 200-pin 400/333 MHz DDR SO-DIMM (system max. 1GB)
Display Interface	Dual display supported 1 x VGA 2 x HDMI 1 x 18/24-bit dual-channel LVDS	Dual display supported 1 x DVI-I 2 x HDMI 1 x 24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit TTL (LVDS to TTL)
Ethernet	LAN1: Intel® I217-LM PHY with Intel® AMT 9.0 supported LAN2: Intel® I211-AT PCIe GbE controller	LAN1: Intel® 82583V PCIe controller LAN2: Intel® 82579 PHY with Intel® AMT 8.0 supported	10/100Mbps Realtek RTL8100C
iRIS Remote Management Module	1 x iRIS-1010 slot	N/A	
I/O Interface	1 x PS/2 KB/MS 1 x RS-422/485 2 x RS-232 2 x USB 3.0 4 x USB 2.0	1 x I²C 1 x Infrared 1 x PS/2 KB/MS 1 x RS-422/485 1 x SMBus 1 x TPM connector 2 x RS-232 2 x USB 2.0 4 x USB 3.0	1 x Infrared interface 1 x LPT 1 x PS/2 for KB/MS 1 x RS-422/485 4 x USB 2.0 6 x RS-232
Storage Interface	2 x SATA 6Gb/s with 5V SATA power connector (RAID 0, 1)	2 x SATA 6Gb/s with 5V SATA power connector (RAID 0, 1)	2 x SATA 1.5Gb/s (RAID 0,1) 1 x IDE 1 x CF Type II
Audio	Realtek ALC662 HD Audio codec		Realtek ALC203 with AC'97 codec
Digital I/O	8-bit programmable digital I/O		
Power Consumption	12V@3.78A (Intel® 4th Gen. 2.0GHz CPU with one 1333HMz DDR3 4 GB memory)	12V@4.89A (Intel® 1.8GHz CPU with 1333 MHz DDR3 4 GB memory)	12V@0.92A (AMD LX800, 256 MB 400 MHz DDR)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset		
Operation Environment	Temperature Range: -10°C ~ 60°C (14°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing		Temperature Range: 0°C ~ 60°C (32°F ~ 140°F) Relative Humidity: 5% ~ 95% non- condensing
Expansion Slots	1 x Full-size PCIe Mini card slot	1 x PCIe Mini card slot with mSATA support	1 x PC/104-Plus
CPU Cooler	XCF-479B-RS / CF-989B-RS-R11	CF-989A-RS-R12 / CF-989B-RS-R11	Heatsink

3.5" WAFER Selection Guide

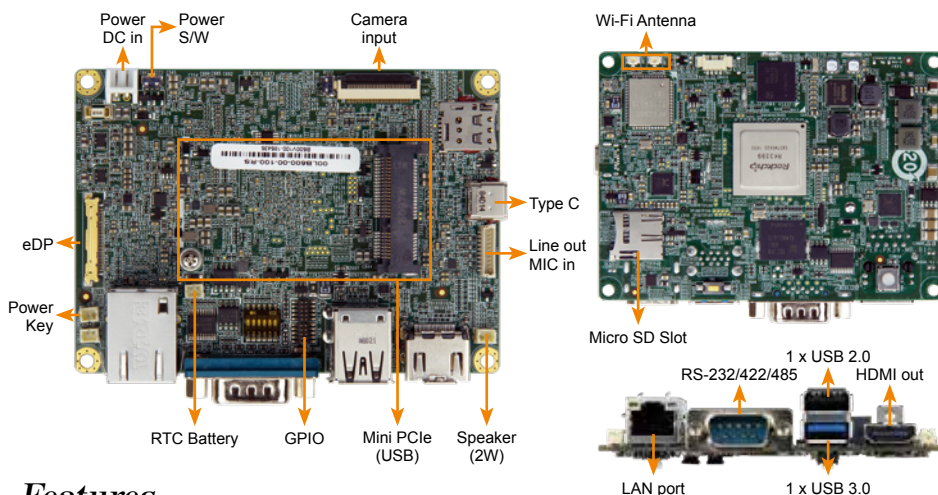| Model Name	WAFER-AL	WAFER-ULT4/ULT3	WAFER-BW	WAFER-BTW2	WAFER-ULT2/ULT-i1	WAFER-BT-i1
CPU Socket	On board	On board	On board	On board	On board	On board
CPU Type	Intel® Atom™/Celeron®/Pentium® on-board SoC	Intel® Mobile ULT processor	Intel® Pentium®/Celeron® SoC	Intel® Atom™/Celeron® SoC	Intel® Mobile ULT processor	Intel® Atom™/Celeron® SoC
Chipset	Intel® Atom™/Celeron®/Pentium® on-board SoC	Intel® Mobile ULT processor	Intel® Pentium®/Celeron® SoC	Intel® Atom™/Celeron® SoC	Intel® Lynx Point SoC	Intel® Atom™/Celeron® on-board SoC
Memory	1 x 204-pin 1866/1600 MHz single-channel DDR3L SO-DIMM (system max. 8 GB)	1 x 260-pin 2133MHz DDR4 SDRAM SO-DIMM (channel 1) On-board DDR4 memory (optional 4/8GB support)	1 x 204-pin 1600/1333 MHz single-channel DDR3L SDRAM unbuffered SO-DIMM slot (system max. 8 GB)	4 GB solder-down 1066/1333 MHz DDR3L memory (for E3845) 2 GB solder-down 1066/1333 MHz DDR3L memory (for E3825)	2 x 204-pin 1600/1333 MHz dual-channel DDR3L SO-DIMMs (system max. 16 GB)	1 x 204-pin 1066/1333 MHz dual-channel DDR3L SO-DIMMs (system max. 8 GB)
Display Interface	Triple independent display 1 x VGA 1 x DP++ 1 x 18/24-bit dual-channel LVDS 1 x iDP	Triple independent displays 1 x VGA 1 x HDMI 1 x 18/24-bit dual-channel LVDS 1 x iDP interface for HDMI, LVDS, VGA, DVI, DP	Triple independent display 2 x HDMI 1 x 18/24-bit dual-channel LVDS	Dual independent display 1 x VGA 1 x 18/24-bit dual-channel LVDS 1 x iDP interface	Dual display supported 1 x VGA 1 x 18/24-bit dual-channel LVDS 1 x iDP interface	Dual display supported 1 x VGA 1 x 18/24-bit dual-channel LVDS 1 x iDP interface
Ethernet	LAN1: Realtek RTL8111 Controller LAN2: Realtek RTL8111 Controller	1 x Intel® I219LM 1 x Intel® I211AT	LAN1: Realtek RTL8111GN controller LAN2: Realtek RTL8111GN controller	LAN1: Intel® I210-IT PCIe controller LAN2: Intel® I210-IT PCIe controller	LAN1: Intel® I218LM PHY with Intel® AMT 9.0 support LAN2: Intel® I210-AT PCIe GbE controller	LAN1: Intel® I210-AT PCIe controller with NCSI support LAN2: Intel® I211-AT PCIe controller
iRIS Remote Management Module		N/A			1 x iRIS-1010 slot	
I/O Interface	2 x RS-232 2 x RS-232/422/485 2 x USB 3.0 4 x USB 2.0	2 x RS-232/422/485 4 x USB 3.0 2 x USB 2.0	1 x PS/2 KB/MS 2 x RS-232/422/485 2 x USB 3.0 4 x RS-232 4 x USB 2.0	1 x PS/2 KB/MS 1 x RS-422/485 1 x USB 3.0 3 x RS-232 5 x USB 2.0	1 x PS/2 KB/MS 1 x RS-422/485 2 x USB 3.0 3 x RS-232	1 x PS/2 KB/MS 1 x RS-422/485 1 x USB 3.0 3 x RS-232 5 x USB 2.0
Storage Interface	2 x SATA 6Gb/s with 5V SATA power connector	1 x SATA 6Gb/s with 5V SATA power connector	2 x SATA 6Gb/s with 5V SATA power connector (no RAID) 1 x eMMC4.51 (optional)	2 x SATA 3Gb/s with 5V SATA power connector (no RAID) 1 x 4 GB on-borad SSD (optional) 1 x microSD 1 x mSATA	2 x SATA 6Gb/s with 5V power connector	2 x SATA 3Gb/s with 5V SATA power connector (no RAID)
Audio	Realtek ALC662 HD Audio codec	N/A	Realtek ALC662 HD Audio codec			
Digital I/O	8-bit programmable digital I/O					
Power Consumption	12V@2.57A (Intel® Pentium® N4200 up to 2.5GHz with 8GB DDR3L memory)	12V@4.27A (Intel® Core™ i7-6600U up to 3.4GHz CPU with 16GB (16GB x1) DDR4-2133 memory running in 3.0GHz)	12V@1.52A (Intel® Pentium® processor N3710 with 8 GB 1600MHz DDR3L memory)	12V@1.32A (Intel® Atom™ processor E3845 with on-board 2 GB 1333 MHz DDR3L memory)	12V@2.72A (Intel® Core™ i5-4300U CPU with two 8 GB 1600 MHz DDR3 memory)	12V@1.45A (Intel® Celeron® Processor J1900 CPU with one 8 GB 1333 MHz DDR3L memory)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset					
Operating Environment	Temperature Range: -20°C ~ 70°C (-4°F~158°F) Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: -20°C ~ 60°C (-4°F~140°F) Relative Humidity: 5% ~ 95%, non-condensing			Temperature Range: -10°C ~ 60°C (14°F~140°F) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: -20°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing
Expansion Slot	2 x Full/Half-size PCIe Mini card slot (one supports mSATA, another one with SIM holder)	1 x Full-size PCIe Mini slot (w/ SATA signal, support mSATA) 1 x Full-size PCIe Mini slot (w/ SIM card slot support)	2 x Full/Half-size PCIe Mini card slot (one with SIM holder)	2 x Full-size PCIe Mini card slot (one with SIM holder)	1 x Full-size PCIe Mini card slot (supports mSATA)	1 x Full-size PCIe Mini card slot (supports mSATA)
Recommended CPU Cooler	Heatsink	Heat Spreader	Heat Spreader	Heatsink	Heat Spreader	N/A

3.5″ WAFER Selection Guide

Model Name	WAFER-KBN-i1	WAFER-LX-R12	WAFER-LX2-R12
CPU Socket	On board	On board	On board
CPU Type	AMD® Embedded G-Series SoC	AMD Geode™ LX800	AMD Geode™ LX800
Chipset	AMD® Embedded G-Series SoC	AMD Geode™ LX800 + AMD CS5536	AMD Geode™ LX800 + AMD CS5536
Memory	1 x 204-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SO-DIMM (system max. 8 GB)	1 x 200-pin 333/400 MHz. 1 GB (max.) DDR SO-DIMM	1 x 200-pin 400 MHz. 1 GB (max.) DDR SO-DIMM
Display Interface	Dual display supported 1 x VGA 1 x 18/24-bit dual-channel LVDS 1 x iDP interface	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit TTL	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit TTL
Ethernet	LAN1: Intel® I210-AT PCIe controller with NCSI support LAN2: Intel® I211-AT PCIe controller	Dual LAN: 10/100Mbps RTL8100C Ethernet Controller	LAN1: 10/100Mbps RTL8100C Ethernet Controller
iRIS Remote Management Module	1 x iRIS-1010 slot	N/A	
I/O Interface	1 x PS/2 KB/MS 1 x RS-422/485 2 x USB 3.0 3 x RS-232 4 x USB 2.0	1 x LPT 1 x PS/2 for KB/MS 1 x RS-422/485 2 x RS-232 4 x USB 2.0	1 x RS-232/422/485 4 x USB 2.0 7 x RS-232
Storage Interface	2 x SATA 6Gb/s with 5V SATA power connector	2 x SATA 1.5Gb/s RAID 1 x IDE 1 x CF Type II	1 x IDE 1 x CF Type II
Audio	Realtek ALC662 HD Audio	Realtek ALC203 with AC'97 codec	
Digital I/O	8-bit programmable digital I/O		
Power Consumption	12V@2.12A (AMD GX-415GA 1.5GHz CPU with 1333 MHz 4 GB DDR3 memory)	5V@1.53A (AMD Geode™ LX 800 1 GB 400 MHz DDR)	5V@1.33A (AMD Geode™ LX800 512MB 333 MHz DDR)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset		
Operating Environment	Temperature Range: 0°C ~ 60°C (32°F~140°F) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C (32°F~140°F) Relative Humidity: 5% ~ 95% non- condensing	
Expansion Slot	1 x Full-size PCIe Mini card slot (supports mSATA)	1 x PC/104	1 x PC/104
Recommended CPU Cooler	GX-415GA (with hearsink) GX-210HA (with cooler)	Heatsink	Heatsink

HYPER-RK39

PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3, 16GB eMMC Flash, HDMI, eDP, GbE LAN, PCIe mini, USB 3.0, USB 2.0, COM, RoHS

Preliminary

Power DC in — Power S/W — Camera input — Wi-Fi Antenna

eDP — Type C

Line out
MIC in

Power Key

RTC Battery — GPIO — Mini PCIe (USB) — Speaker (2W)

Micro SD Slot

RS-232/422/485 — 1 x USB 2.0 — HDMI out

LAN port — 1 x USB 3.0

Kiosk

Digital Signage

POS

Features

- Pico-ITX SBC supports Rockchip RK3399
- HDMI and eDP dual display suppot
- OS: Android 7.1 & Ubuntu 16.04

12V only | **USB 3.0** SUPERSPEED CERTIFIED | **USB 2.0** Hi-Speed CERTIFIED | **Dual Display** | **PCIe Mini Expansion** | **Fanless** | **Android** | **ubuntu**

Specifications

Model Name		HYPER-RK39
Chassis	Dimensions (WxHxD) (mm)	Single board: 100mm x 72mm
Motherboard	CPU	Rockchip RK3399 (Dual-core Cortex-A72 up to 2.0GHz. Quad-core Cortex-A53 up to 1.5GHz)
	System Memory	2GB LPDDR3-1866
Storage	SD Card	1 x Micro SD slot
	Flash	16GB eMMC NAND FLASH
Communication	WLAN	802.11 a/b/g/n/ac
	Bluetooth	Bluetooth V4.1
	WWAN	PCIe Mini LTE (optional)
I/O Interfaces	COM port	1 x RS-232/422/485
	GPIO	8 bit (4 in / 4 out)
	Ethernet	1 x GbE RJ45 by RTL8211E
	USB 3.0	1 x USB 3.0 Type A 1 x USB 3.0 Type-C (for OS update)
	USB 2.0	1 x USB 2.0 Type A
	2nd Display	1 x HDMI out (up to 4096x2160 P60) 1 x eDP port (up to 4096x2160 P30)
	Others	1 x I²C
Expansions	PCIe Mini	1 x Full-size PCIe Mini (reserved for WWAN)
Multimedia	Audio	1 x 2 pin for speaker(2W) 1 x 3 pin (Line in / Line out)
	Camera	1 x MIPI CSI interfaces for Camera
LED Indicator & Button	Indicator	1 x Power LED pin
Power	Power Input	1 x 2 pin DC 12V in wafer connector
	Consumption	TBD
Reliability	Operating Temperature	-10°C ~ 50°C with air flow
	Storage Temperature	-20°C ~ 60°C
	Humidity	10% ~ 95%, non-condensing
	Weight (Net/Gross)	TBD
	Safety/EMC	CE/FCC compliant
OS	Supported OS	Android 7.1 or Linux Ubuntu 16.04
	Watchdog Timer	Yes

Packing List

| 1 x HYPER-RK39 single board computer	1 x QIG

Ordering Information

Part No.	Description
HYPER-RK39-R10-EU	PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3, 16GB eMMC Flash, HDMI, eDP, GbE LAN, PCIe mini, USB 3.0, USB 2.0, COM, Wi-Fi EU reg, ROHS

Pico-ITX Selection Guide

Model Name	HYPER-BW	HYPER-BT	HYPER-AL
CPU Socket	On board	On board	On board
CPU Type	Intel® Pentium®/Celeron® SoC	Intel® Atom™/Celeron® SoC	Intel® Celeron® SoC
Chipset	Intel® Pentium®/Celeron® SoC	Intel® Atom™/Celeron® SoC	Intel® Celeron® SoC
Memory	1 x 204-pin 1600/1333 MHz single-channel DDR3L SDRAM unbuffered SO-DIMM slot (system max. 8 GB)	1 x 204-pin 1600/1333 MHz single-channel DDR3L SDRAM unbuffered SO-DIMM slot (system max. 8 GB)	1 x 204-pin 1866/1600MHz single-channel DDR3L SDRAM unbuffered SO-DIMM slot (system max. 8GB)
Display Interface	Dual independent dispaly 2 x Mini HDMI	Dual independent dispaly 1 x VGA 1 x iDP interface	Dual independent display 1 x HDMI 1 x LVDS (2x10 pin, single channel, 24bit)
Ethernet	LAN: Realtek RTL8111GN controller	LAN: Intel® I211-AT PCIe GbE controller	LAN1: Realtek RTL8111H controller LAN2: Realtek RTL8111H controller
iRIS Remote Management Module	N/A		
I/O Interface	1 x RS-232 1 x USB 3.0 3 x USB 2.0	1 x RS-232 1 x USB 3.0 3 x USB 2.0	1 x RS-232 2 x USB 2.0 2 x USB 3.0
Storage Interface	1 x SATA 6Gb/s with 5V SATA power connector (no RAID)	1 x SATA 3Gb/s with 5V SATA power connector (no RAID)	1 x SATA 6Gb/s with 5V SATA power connector (no RAID)
Audio	10 pin header on board support 7.1 channel HD Audio by AC-KIT-892HD-R10	Realtek ALC662 HD Audio codec	10 pin header on board support 7.1 channel HD Audio by AC-KIT-892HD-R10
Power Consumption	12V@1.52A (Intel® Pentium® processor N3710 with 8 GB 1600 MHz DDR3L memory)	12V@1.35A (Intel® Celeron® processor J1900 with one 8 GB 1333 MHz DDR3L memory)	12V@2.36A (Intel® Celeron processor J1900 with one 8 GB 1333MHz DDR3L memory)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset		
Operating Environment	Temperage Range: -20°C ~ 60°C (-4°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing		
Expansion Slot	1 x M.2 (B key)	N/A	1 x M.2 A key 2230 (PCIe, USB) 1 x M.2 B key 2242 (USB, SATA)
CPU Cooler	Heatsink	Heat Spreader	

Computer on Module Selection Guide
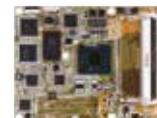
Computer on Module	COM Express Type 10	COM Express Type 7	COM Express Type 6	COM Express Type 6
COM Express Size	Mini: 84 mm x 55 mm	Basic: 125 mm x 95 mm	Compact: 95 mm x 95 mm	Basic: 125 mm x 95 mm
Model Name	ICE-BT-T10 ICE-BT-T10W2	ICE-BDE-T7	ICE-ULT3	ICE-BT-T6
CPU Socket	On board	On board	On board	On board
CPU Type	Intel® Atom™/Celeron® on-board SoC	Intel® Xeon® Processor on-board SoC	Intel® Skylake ULT on-board SoC	Intel® Atom™/Celeron® on-board SoC
Chipset	Intel® Atom™/Celeron® on-board SoC	Intel® Xeon® Processor D-1548 (12MB Cache, 2.00 GHz) Intel® Xeon® Processor D-1518 (6MB Cache, 2.20 GHz)	Intel® Skylake ULT	Intel® Atom™/Celeron® on-board SoC
Memory	2 GB soldered down 1066/1333 MHz DDR3L memory (up to 8 GB)	Two 240-pin 2133/1867 MHz dual-channel DDR4 SDRAM unbuffered DIMM supported (system max. 32GB) Support ECC	Two 260-pin 2133/1867 MHz dual-channel DDR4 SDRAM Unbuffered DIMM supported (system max. 32GB)	Two 204-pin 1066/1333 MHz dual-channel DDR3L SO-DIMM supported (system max. 8 GB)
Display Interface	Dual display supported 1 x VGA 1 x DDI 1 x eDP	NA	Tripal display supported 2 x DDI: DisplayPort/HDMI/DVI 1 x DDI: Embedded DP (Option with 1 x Dual Channel LVDS 18/24 bit via CH7511B)	Dual display supported 1 x VGA 1 x DDI 1 x 18/24-bit dual-channel LVDS
Ethernet	LAN1: Intel® I210 PCIe controller	LAN1: Intel® I210 2 x 10G KR Interfaces 10G Sideband Signals	LAN1: Intel® I219LM	LAN1: Intel® I210 PCIe controller
I/O Interface	1 x I²C 1 x SMBus 1 x LPC 1 x USB 3.0 2 x Serial port (TX & RX) 4 x USB 2.0	2 x RS-232 (2-Wire) to base board 4 x USB 3.0 to base board (with 4 x USB 2.0)	2 x RS-232 (2-Wire) to base board 4 x USB 2.0 to base board 4 x USB 3.0 to base board (with 4 x USB 2.0)	1 x I²C 1 x LPC 1 x SMBus 2 x Serial port (TX & RX) 4 x USB 3.0 7 x USB 2.0
Storage Interface	2 x SATA 3Gb/s Optional soldered down SSD up to 64 GB (SATA port 1)	2 x SATA 6Gb/s signal to base board	2 x SATA 6Gb/s signal to base board eMMC 5.0 (optional)	2 x SATA 3Gb/s Optional soldered down SSD up to 64 GB (SATA port 1)
Audio	High-definition Audio interface	NA	High-definition Audio interface	
Power Consumption	12V@0.43A, Vcore_12V@0.9 A (Intel® Atom™ E3845 CPU with 2 GB 1333 MHz DDR3L memory)	12V@2.57A, 5VSB@0.04A, 5V@0.02A (Intel® Core™ i7-6600U with two 8GB 2400 MHz DDR4 memory)	12V@2.57A, 5VSB@0.04A, 5V@0.02A (Intel® Core™ i7-6600U with two 8GB 2400 MHz DDR4 memory)	12V@0.54A, Vcore_12V@0.95A (Intel® Celeron® J1900 CPU with two 8 GB 1333 MHz DDR3 memory)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset			
Operation Enviornment	Temperature Range: -20°C ~ 60°C -40°C ~ 85°C (ICE-BT-10-E38001W2) Relative Humidity: 10% ~ 95% non-condensing	Operating Temperature: -20°C ~ 60°C Operating Humidity: 5% ~ 95%, non-condensing		Temperature Range: -20°C ~ 60°C Relative Humidity: 10% ~ 95% non-condensing
Expansion Slot	3 x PCIe x1 signal to baseboard	1 x PCIe x16 Gen 3 (Bifurcatable to 2 x8, 1 x8 & 2 x4, or 4 x4) 1 x PCIe x8 Gen 3 (Bifurcatable to 1 x8 & 2 x4) 8 x PCIe x1 (Gen2) signal to base board Bifurcatable to 1 x8 or 2 x4 or 4 x1+1x4 or 8 x1	1 x PCIe x1 signal to base board (Via PCIe x16 channel) 8 x PCIe x1 signal to base board	5 x PCIe x1 signal to baseboard

PC/104 Selection Guide

Model Name	PM-BT	PM-LX	PM-LX2
CPU Socket	On board	On board	On board
CPU Type	Intel® Atom™/Celeron® SoC	AMD Geode™ LX 800 500 MHz	AMD Geode™ LX 800 500 MHz
Chipset	Intel® Atom™/Celeron® SoC	Geode™ LX800 + CS5536	Geode™ LX800 + CS5536
Memory	1 x 204-pin 1066/1333 MHz DDR3L SO-DIMM (system max. 8 GB)	1 x 200-pin 400 MHz 1 GB (max.) DDR SDRAM SO-DIMM	1 x 200-pin 400 MHz 1 GB (max.) DDR SDRAM SO-DIMM
Display Interface	Dual display supported 1 x VGA 1 x 18/24-bit single-channel LVDS	Dual display supported 1 x VGA 1 x 24-bit TTL	Dual display supported 1 x VGA 1 x 24-bit TTL
Ethernet	GbE by Intel® I210 Ethernet PHY	10/100Mbps LAN by Realtek RTL8100C	10/100Mbps LAN by Realtek RTL8100C
iRIS Remote Management Module	N/A		
I/O Interface	2 x RS-232/422/485 (2x5, P=2.0) 3 x USB 2.0 (1x4 pin, P=1.25)	1 x KB/MS by pin header 1 x LPT 1 x RS-422/485 2 x RS-232 2 x USB 2.0	1 x KB/MS by pin header 1 x LPT 1 x RS-422/485 2 x RS-232 2 x USB 2.0
Storage Interface	1 x SATA 3Gb/s with 5V SATA power connector On-board SSD (optional)	1 x IDE 1 x CF Type II	1 x Slim FDD 1 x IDE 1 x CF Type II
Audio	N/A		
Digital I/O	1 x 8-bit DIO	N/A	
Power Consumption	TBD	5V@1.13A (AMD Geode™ LX 800 with 1 GB DDR 400 MHz)	5V@1.09A (AMD Geode™ LX 800 with 512MB DDR 400 MHz)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset		
Operating Environment	-20°C ~ 60°C (for J1900/N2930/N2807) -40°C ~ 85°C (for E38xx)	Temperature Range: 0°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: -40°C ~ 70°C (W) Relative Humidity: 5% ~ 95%, non-condensing
Expansion Slot	1 x Full-size PCIe Mini slot (support mSATA) 1 x PC/104-Plus (ISA+PCI)	1 x PCI-104	1 x PC-104
CPU Cooler	Heatsink	Heatsink	Heatsink

Industrial Automation Solution

IEI offers complete rugged fanless products with a wide range of I/O interfaces and multiple expansion, allowing users to connect to different devices for comprehensive automation solution. IEI's industrial automation solution provides a reliable platform to fulfill a wide variety of application demand, such as machine automation, surveillance application, and information kiosk. To fight the upcoming trend of IoT, IEI develops an IPMI 2.0 compliant technology - iRIS (IEI Remote Intelligent System). iRIS is a hardware-level remote management solution that can make your systems more efficient in system integration. "TANK" is a model name for a series of IEI ruggedize embedded box products.

■ TANK-800 Series

Multiple PCI/PCIe Expansion
- Great flexibility of expansion slots
- IPMI function for remote control management
- Design fulfills high storage demand

■ TANK-600 Series

Multiple Serial Port
- Support 8 COM ports
- mSATA and 2.5" SATA storage device
- Wide range temperature

1. Industrial Automation System

Model Name	Processor
TANK-871-Q170	Intel® Core™ i7-6700TE 2.4 GHz, Intel® Core™ i5-6500TE 2.3 GHz
TANK-870-Q170	Intel® Core™ i7-6700TE 2.4 GHz, Intel® Core™ i5-6500TE 2.3 GHz
TANK-870e-H110	Intel® Core™ i7-6700TE 2.4 GHz, Intel® Core™ i5-6500TE 2.3 GHz
TANK-860-HM86	Intel® Core™ i5-4400E 2.7 GHz, Intel® Celeron® 2000E 2.2 GHz
TANK-820-H61	Intel® Core™ i5/i3, Pentium® processor
TANK-801-BT	Intel® Celeron® J1900 2 GHz
TANK-800-D525	Intel® Atom™ D525 1.8 GHz
TANK-760-HM86	Intel® Core™ i7-4700EQ 2.4 GHz, Intel® Core™ i5-4400E 2.7 GHz, Intel® Celeron® 2000E 2.2 GHz
TANK-620-ULT3	Intel® Celeron® 3855U 1.6GHz
TANK-610-BW	Intel® Celeron® N3160 1.6GHz

2. DIN-Rail Embedded System

Model Name	Processor
DRPC-120-BT	Intel® Atom™ E3845 1.91 GHz
DRPC-130-AL	Intel® Atom™ E3930 1.80 GHz

3. Compact Size Embedded System

Model Name	Processor
uIBX-250-BW	Intel® Celeron® N3160 1.6GHz
uIBX-230-BT	Intel® Celeron® N2930 1.83 GHz

Industrial Automation System

Model Name		TANK-871-Q170	TANK-870-Q170	TANK-870e-H110
Chassis	Color	Black C + Silver	Black C + Silver	Dark silver purple + Silver
	Dimensions (WxDxH) (mm)	82.2 x 255.2 x 204	2-slot: 121.5 x 255.2 x 205 4-slot: 154.8 x 255.2 x 205	132.6 x 255.2 x 190
	System Fan	Fanless	Fanless	Fanless
	Chassis Construction	Extruded aluminum alloy	Extruded aluminum alloys	Extruded aluminum alloys
Motherboard	CPU	Intel® Core™ i7-6700TE 2.4 GHz Intel® Core™ i5-6500TE 2.3 GHz	Intel® Core™ i7-6700TE (2.4 GHz, quad-core, TDP=35W) Intel® Core™ i5-6500TE (2.3 GHz, quad-core, TDP=35W)	Intel® Core™ i7-6700TE (2.4 GHz, quad-core, TDP=35W) Intel® Core™ i5-6500TE (2.3 GHz, quad-core, TDP=35W)
	Chipset	Intel® Q170	Intel® Q170	Intel® H110
	System Memory	2 x 260 pin DDR4 SO-DIMM, Pre-installed one 4GB (system max:64GB)	2 x 260-pin DDR4 SO-DIMM, one 4 GB pre-installed (system max: 64GB)	2 x 260-pin DDR4 SO-DIMM, one 4 GB pre-installed (system max: 32GB)
IPMI	iRIS Solution	1 x iRIS-2400 (optional)	1 x iRIS-2400 (optional)	N/A
Storage	Hard Drive	2 x 2.5" SATA 6Gb/s HDD/SSD bay (RAID 0/1 support)	2 x 2.5" SATA 6Gb/s HDD/SSD bay (RAID 0/1 support)	1 x 2.5" SATA 6Gb/s HDD/SSD bay
	mSTAT	1 x mSATA	1 x mSATA	N/A
I/O Interfaces	USB 3.0	4	4	4
	USB 2.0	4	4	N/A
	Ethernet	2 x RJ-45 LAN1: Intel® I219LM PCIe controller LAN2 (iRIS): Intel® I210 PCIe controller	2 x RJ-45 LAN1: Intel® I219LM PCIe controller LAN2 (iRIS): Intel® I210 PCIe controller	2 x RJ-45 PCIe GbE by RTL8111G controller
	COM Port	4 x RS-232 (2 x RJ-45, 2 x DB-9 w/ isolation) 2 x RS-232/422/485 (DB-9)	4 x RS-232 (2 x RJ-45, 2 x DB-9 w/ isolation) 2 x RS-232/422/485 (DB-9)	2 x RS-232/422/485 (DB-9, w/ isolation)
	Digital I/O	8 bit Digital I/O , 4 bit input / 4 bit output	8-bit digital I/O , 4-bit input / 4-bit output	N/A
	Display	1 x VGA, 1 x HDMI/DP, 1 x iDP (optional)	1 x VGA, 1 x HDMI/DP, 1 x iDP (optional)	1 x VGA, 1 x HDMI 1.4
	Resolution	VGA: Up to 1920 x 1200@60Hz HDMI: Up to 4096×2160@24Hz	VGA: Up to 1920 x 1200@60Hz HDMI/DP: Up to 4096×2304@60Hz	VGA: Up to 1920 x 1200@60Hz HDMI 1.4: Up to 4096x2160@24Hz
	Audio	1 x Line-out ; 1 x Mic-in	1 x Line-out, 1 x Mic-in	1 x Line-out, 1 x Mic-in
	Wireless	1 x 802.11 a/b/g/n/ac (optional)	1 x 802.11 a/b/g/n/ac (optional)	1 x 802.11 a/b/g/n/ac (optional)
Expansions	Backplane	N/A	2-slot model: 1 x PCIe x16, 1 x PCI 2-slot model: 2 x PCIe x8 4-slot model: 2 x PCIe x8, 2 x PCI, 1 x Full-size PCIe Mni 4-slot model: 1 x PCIe x16, 3 x PCI, 1 x Full-size PCIe Mni	3A: 1 x PCIe x16 , 2 x PCI 3B: 1 x PCIe x16 , 1 x PCIe x4, 1 x PCI 3C: 3 x PCI
	PCIe Mini	1 x Half-size PCIe Mini slot 1 x Full-size PCIe Mini slot (supports mSATA, colay with SATA)	1 x Half-size PCIe Mini slot 1 x Full-size PCIe Mini slot (supports mSATA, colay with SATA)	1 x Full-size PCIe Mini slot 1 x Full-size PCIe Mini slot (supports mSATA, colay with SATA)
Power	Power Input	DC Jack: 9 V~36 V DC Terminal Block: 9 V~36 V DC	DC Jack: 9 V~36 V DC Terminal Block: 9 V~36 V DC	DC Jack: 9 V~36 V DC
	Power Consumption	19 V@3.68 A (Intel® Core™ i7-6700TE with 8 GB memory)	19 V@3.68 A (Intel® Core™ i7-6700TE with 8 GB memory)	19 V@3.44 A (Intel® Core™ i7-6700TE with 8 GB memory)
	Internal Power Connector	5V@3A or 12V@3A	5V@3A or 12V@3A	5V@3A or 12V@3A
Reliability	Mounting	Wall mount	Wall mount	Wall mount & Din Rail
	Operating Temperature	i7-6700TE -20°C ~ 45°C with air flow (SSD), 10% ~ 95%, non-condensing i5-6500TE -20°C ~ 60°C with air flow (SSD), 10% ~ 95%, non-condensing	i7-6700TE *-20°C ~ 45°C with air flow (SSD), 10% ~ 95%, non-condensing i5-6500TE *-20°C ~ 60°C with air flow (SSD), 10% ~ 95%, non-condensing	-20°C ~ 50°C with air flow (SSD), 10% ~ 95%, non-condensing
	Operating Shock	Half-sine wave shock 5G; 11ms; 100 shocks per axis	Half-sine wave shock 5G, 11ms, 100 shocks per axis	Half-sine wave shock 5G, 11ms, 100 shocks per axis
	Operating Vibration	MIL-STD-810G 514.6 C-1 (with SSD)	MIL-STD-810G 514.6 C-1 (with SSD)	MIL-STD-810G 514.6C-1 (with SSD)
	Weight (Net/Gross)	TBD	2-slot: 4.2 kg/6.3 kg 4-slot: 4.5 kg/6.5 kg	2.8 kg/4.3 kg
	Safety/EMC	CE/FCC	CE/FCC	CE/FCC
OS	Supported OS	Microsoft® Windows® 8 Embedded, Microsoft® Windows® Embedded Standard 7 E, Microsoft® Windows® 10 IoT Enterprise		

Industrial Automation System

Model Name		TANK-860-HM86	TANK-801-BT	TANK-820-H61	TANK-800-D525
Chassis	Color	Black C + Silver	Black C + Silver	Black C + Silver	Black C + Silver
	Dimensions (WxDxH) (mm)	2-slot: 121.5 x 255.2 x 205 4-slot: 154.8 x 255.2 x 205 6-slot: 195.4 x 255.2 x 205	136 x 219 x 188	133 x 269 x 208	136 x 219 x 188
	System Fan	Fanless	Fanless	Fanless	Fanless
	Chassis Construction	Extruded aluminum alloys	Extruded aluminum alloys	Extruded aluminum alloys	Extruded aluminum alloys
Motherboard	CPU	Intel® Core™ i5-4400E 2.7 GHz Intel® Celeron® 2000E 2.2 GHz	Intel® Celeron® J1900 2 GHz	Intel® Core™ i5-2xxT (above 2.7 GHz) Intel® Core™ i3-2xxT (above 2.5 GHz) Intel® Pentium® G6xxT (above 2.2 GHz)	Intel® Atom™ D525 1.8 GHz
	Chipset	Intel® HM86	SoC	Intel® H61	Intel® ICH8M
	System Memory	2 x 204-pin DDR3 SO-DIMM, one 4GB pre-installed (system max: 16 GB)	1 x 204-pin DDR3L SO-DIMM, 2GB pre-installed (system max: 8 GB)	On-board DDR3 2 GB memory 1 x 204-pin DDR3 SO-DIMM (system max: 10 GB)	On-board DDR3 1 GB memory 1 x 204-pin DDR3 SDRAM SO-DIMM (system max: 3 GB)
IPMI	iRIS Solution	1 x iRIS-2400 (optional)	1 x iRIS-2400 (optional)	N/A	N/A
Storage	Hard Drive	2 x 2.5" SATA 6Gb/s HDD/SSD bay	1 x 2.5" SATA 3Gb/s HDD/SSD bay	1 x 2.5" SATA 3Gb/s HDD/SSD bay	1 x 2.5" SATA 3Gb/s HDD/SSD bay
	CF Card/CFast	1 x CFast	1 x CFast	1 x CF Type II	1 x CF Type II
I/O Interfaces	USB 3.0	4	2	2	N/A
	USB 2.0	2	2	4	4
	Ethernet	2 x RJ-45 1 x PCIe GbE by Intel® I210 1 x PCIe GbE by Intel® I217LM	2 x RJ-45 1 x PCIe GbE by Intel® I210 1 x PCIe GbE by Intel® I211	2 x RJ-45 PCIe GbE by Realtek 8111E controller	2 x RJ-45 PCIe GbE by Realtek 8111E controller
	COM Port	4 x RS-232 (DB-9, two with isolation) 2 x RS-422/485 (RJ-45)	2 x RS-232 (DB-9) 2 x RS-232/422/485 (DB-9, with isolation)	6 x RS-232 (DB-9, two with isolation) 2 x RS-422/485 (RJ-45)	4 x RS-232 (DB-9) 2 x RS-422/485 (RJ-45)
	Digital I/O	8-bit digital I/O, 4-bit input/4-bit output	16-bit digital I/O, 8-bit input/8-bit output	8-bit digital I/O, 4-bit input/4-bit output	8-bit digital I/O, 4-bit input/4-bit output
	Display	1 x VGA, 1 x DVI-I, 1 x DisplayPort	1 x DisplayPort, 1 x DVI-I	1 x VGA, 1 x DVI-I	1 x VGA
	Resolution	VGA: Up to 1920 x 1200@60Hz DVI-I: Up to 2500 x 1600@60Hz Displayport: Up to 2500 x 1600@60Hz	DisplayPort: Up to 2560 x 1600 MHz DVI-I: Up to 2560 x 1600 MHz	VGA: Up to 2048 x 1536@75Hz DVI-I: Up to 1920 x 1080@60Hz	VGA: Up to 2048 x 1536@75Hz
	Audio	1 x Line-out, 1 x Mic-in	1 x Line-out, 1 x Mic-in	1 x Line-out, 1 x Mic-in	1 x Line-out, 1 x Mic-in
	Wireless	1 x 802.11b/g/n (optional)	1 x 802.11b/g/n (optional)	N/A	N/A
Expansions	PCI/PCIe	2 A: Two PCIe x8 (physical PCIe x16 slot) 4 A: Two PCIe x8 (physical PCIe x16 slot) + 2 x PCI 6 A: One PCIe x8 (physical PCIe x16 slot) + two PCIe x4 + three PCI	3A: One PCIe x1 + Two x PCI 3B: Two PCIe x1 + One x PCI 3C: Three x PCI	2P1E: Two PCI, One PCIe x8 (physical PCIe x16 slot) 1P2E: One PCI, One PCIe x1 (physical x4 slot), One PCIe x8 (physical x16 slot)	2P1E: Two PCI, One PCIe x4 (physical PCIe x16 slot) 1P2E: One PCI, One PCIe x1 (physical x4 slot), One PCIe x2 (physical x16 slot)
	PCIe Mini	2A: 1 x Full-size (support mSATA) 4A: 1 x Full-size (support mSATA) + 1 x Full-size (on backplane) 6A: 1 x Full-size (support mSATA) + 1 x Full-size (on backplane)	1 x Full-size PCIe Mini	N/A	N/A
Power	Power Input	DC Jack: 9 V~36 V DC Terminal Block: 9 V~36 V DC	DC Jack: 9 V~36 V DC Terminal Block: 9 V~36 V DC	DC Jack: 9 V~24 V DC Terminal Block: 9 V~24 V DC	DC Jack: 10.5 V~36 V DC Terminal Block: 9 V~36 V DC
	Power Consumption	19 V@3.34 A (Intel® Core™ i5-4400E with 4 GB memory)	19 V@1.8 A (Intel® Celeron® J1900 with 2 GB DDR3 memory)	19 V@3.5 A (Intel® Core™ i3-2100 with 6 GB DDR3 memory) w/o add-on card	19 V@1.73 A (Intel® Atom™ D525 with 1 GB DDR3 Memory)
Reliability	Mounting	Wall mount	Wall mount	Wall mount	Wall mount
	Operating Temperature	-20°C ~ 60°C with air flow (SSD), 5% ~ 95%, non-condensing	-20°C ~ 60°C with air flow (SSD), 5% ~ 95%, non-condensing	-20°C ~ 60°C with air flow (SSD), 5% ~ 95%, non-condensing	-20°C ~70°C with air flow (SSD), 5% ~ 95%, non-condensing
	Operating Shock	Half-sine wave shock 5G, 11ms, 3 shocks per axis	Half-sine wave shock 5G, 11ms, 3 shocks per axis	Half-sine wave shock 5G, 11ms, 3 shocks per axis	Half-sine wave shock 5G, 11ms, 3 shocks per axis
	Operating Vibration	MIL-STD-810F 514.5C-2 (with SSD)	MIL-STD-810F 514.5C-2 (with SSD)	MIL-STD-810F 514.5C-2 (with SSD)	MIL-STD-810F 514.5C-2 (with SSD)
	Weight (Net/Gross)	2-slot: 4.2 kg/6.3 kg 4-slot: 4.5 kg/6.5 kg 6-slot: 4.8 kg/6.9 kg	2.8 kg/4.3 kg	4.2 kg/6.3 kg	2.6 kg/4.1 kg
	Safety/EMC	CE/FCC	CE/FCC	CE/FCC	CE/FCC
OS	Supported OS	Microsoft® Windows® 8 Embedded, Microsoft® WES7E, Microsoft® Windows® 10 IoT Enterprise	Microsoft® Windows® 8 Embedded, Microsoft® WES7E, Microsoft® Windows® 10 IoT Enterprise	Microsoft® WES7E, Microsoft® Windows® XP Embedded	Microsoft® WES7E, Microsoft® Windows® XP Embedded

*Notes : Power adapter supports 0°C ~ 40°C

Industrial Automation System

New

	Model Name	TANK-610-BW	TANK-620	TANK-760-HM86
Chassis	Color	Black C + Silver	Black C + Silver	Black C + Silver
	Dimensions (WxDxH) (mm)	184 x 200.6 x 58.2	260 x 200 x100	310 x 200 x 69.8
	System Fan	Fanless	Fanless	Fanless
	Chassis Construction	Extruded Aluminum alloy	Aluminum alloys	Extruded Aluminum alloy
Motherboard	CPU	Intel® Celeron® N3160 processor (up to 2.24GHz, quad-core, 2MB cache, TDP=6W)	Skylake 3855U 15W	Intel® Core™ i7-4700EQ 2.4 GHz Intel® Core™ i5-4400E 2.7 GHz Intel® Celeron® 2000E 2.2 GHz
	Chipset	SoC	SoC	Intel® HM86
	System Memory	2 x 204-pin DDR3L SO-DIMM, one 2GB pre-installed (system max: 8 GB)	1 x On-board 4 GB 1 x DDR4 2133 MHz SO-DIMM (system max : 32GB)	2 x 204-pin DDR3 SO-DIMM, one 4GB pre-installed (system max: 16 GB)
IPMI	iRIS Solution	N/A	N/A	1 x iRIS-2400 (optional)
Storage	Hard Drive	1 x 2.5" SATA 6Gb/s HDD/SSD bay	1 x 2.5'' SATA 6Gb/s HDD/SSD Bay	2 x 2.5" SATA 6Gb/s HDD/SSD bay
	CF Card/CFast	N/A	1 x CF Card (optional)	1 x CFast
I/O Interfaces	USB 3.0	4	4	4
	USB 2.0	N/A	4	2
	Ethernet	2 x RJ-45 PCIe GbE by Intel® I210-IT controller	2 x RJ-45 PCIe GbE by Intel I211	2 x RJ-45 1 x PCIe GbE by Intel® I210 1 x PCIe GbE by Intel® I217LM
	Fiber	N/A	6 x RS-232 (optional by pin header)	N/A
	COM Port	6 x RS-232 2 x RS-232/422/485	8 x RS-232/422/485 ports 1 x 24-bit GPIO	4 x RS-232 (DB-9, with isolation) 2 x RS-232/422/485 8-bit digital I/O, 4-bit input/4-bit output
	CAN-bus	N/A	N/A	2 x Phoenix terminal block with isolation
	Display	1 x VGA, 1 x HDMI	2 x VGA, 1 x LVDS or 3 x VGA	1 x VGA, 1 x HDMI, 1 x DisplayPort
	Resolution	VGA: Up to 1920 x 1200@60HZ HDMI: Up to 3840 x 2160@30Hz	3 x VGA / 1 x LVDS 2 x VGA (up to 1920 x 1200@60Hz)	VGA: Up to 1920 x 1200@60Hz HDMI: Up to 2500 x 1600@60Hz
	Audio	1 x Line-out, 1 x Mic-in	1 x Mic-in, 1 x Speaker, 1 x line-out	1 x Mic-in, 1 x line-out
	Wireless	1 x 802.11b/g/n (optional)	1 x 802.11b/g/n (optional)	1 x 802.11b/g/n (optional)
Expansions	PCIe	N/A	N/A	N/A
	PCIe Mini	1 x Full-size PCIe Mini (support mSATA, co-lay SATA, w/o USB Signal), 1 x Half-size PCIe Mini	1 x Full-size (support mSATA, co-lay SATA) 1 x Full-size PCIe Mini	3 x Full-size PCIe Mini (1 x support mSATA, co-lay SATA)
Power	Power Input	DC Jack: 9 V~36 V DC	9 V ~ 36 V DC	DC Jack: 9 V~36 V DC Terminal Block: 9 V~36 V DC
	Power Consumption	12 V@1.49 A (Intel® Celeron® N3160 with 4 GB DDR3L memory)	TBD	19 V@3.2 A (Intel® Core™ i5 i5-4400E with 4 GB memory)
Reliability	Mounting	Wall mount, VESA 100	Wall mount	Wall mount
	Operating Temperature/ Humidity	-40°C ~ 60°C with air flow (SSD), 10% ~ 95%, non-condensing	-30°C ~ 70°C with air flow (SSD), 10% ~ 95%, non-condensing	i5: -20°C ~ 70°C with air flow (SSD) i7: -20°C ~ 50°C with air flow (SSD)
	Operating Shock	Half-sine wave shock 5G, 11ms, 100 shocks per axis	Half-sine wave shock 5G, 11ms, 100 shocks per axis	Half-sine wave shock 5G, 11ms, 3 shocks per axis
	Operating Vibration	MIL-STD-810G 514.6C-1 (with SSD)	MIL-STD-810G 514.6C-1 (with SSD)	MIL-STD-810F 514.5C-2 (with SSD)
	Weight (Net/Gross)	2.2Kg/3Kg	TBD	4.2 kg/6.9 kg
	Safety/EMC	CE/FCC	CE/FCC	CE/FCC
OS	Supported OS	Microsoft® Windows 8 Embedded, Microsoft® WES7E, Microsoft® Windows® 10 IoT Enterprise	Microsoft® Windows 8 Embedded, Microsoft® Windows® Embedded Standard 7 E, Microsoft® Windows® 10	Microsoft® Windows® 8 Embedded, Microsoft® WES7E, Microsoft® Windows® 10 IoT Enterprise

*Notes : Power adapter supports 0°C ~ 40°C

DIN-Rail Embedded System

	Model Name	DRPC-130-AL	DRPC-120-BT
Chassis	Color	Black	Black
	Dimensions (WxDxH) (mm)	154 x 123 x 56	74.08 x 140 x 171.5
	System Fan	Fanless	Fanless
	Chassis Construction	Extruded aluminum alloy	Extruded aluminum alloys
Motherboard	CPU	Intel® Atom™ E3930 1.8 GHz	Intel® Atom™ E3845 1.91 GHz
	Chipset	SoC	SoC
	System Memory	1 x 204-pin DDR3L SO-DIMM 4 GB pre-installed (system max: 8GB)	1 x 204-pin DDR3L SO-DIMM 2 GB pre-installed (system max: 8GB)
IPMI	iRIS Solution	N/A	1 x iRIS-2400 (optional)
Storage	Hard Drive	1 x 2.5" SATA 6Gb/s HDD/SSD bay	1 x 2.5" SATA 3Gb/s HDD/SSD bay
	eMMC	1 x 8GB eMMC 5.0 support (optional)	N/A
	CF Card/CFast	N/A	N/A
I/O Interfaces	USB 3.0	4	2
	USB 2.0	1 by pin header	2
	Ethernet	2 x RJ-45 PCIe GbE by Intel® I211 controller	2 x RJ-45 1 x PCIe GbE by Intel® I210 controller 1 x PCIe GbE by Intel® I211 controller
	COM Port	4 x RS-232/422/485 (DB-9)	2 x RS-232 (DB-9 w/ 3kV isol ation protection*) 2 x RS-422/485 (DB-9 w/ 3kV isolation protection*)
	Digital I/O	8-bit digital I/O, 4-bit input/4-bit output (DB-9)	8-bit digital I/O, 4-bit input/4-bit output
	CAN-bus	1 x DB-9 w/ 2.5kV isolation protection supporting 2-port CAN-bus	N/A
	Display	2 x HDMI 1.4b	1 x VGA, 1 x HDMI
	Resolution	Up to 3840 x 2160 @ 30Hz	Up to 1920 x 1200 @ 60Hz
	SIM	1 x internal On-board SIM slot	N/A
	Audio	N/A	N/A
	Wireless	1 x 802.11a/b/g/n/ac (optional)	1 x 802.11a/b/g/n/ac (optional)
	TPM	1 x TPM 2.0 (2x10 pin, optional)	N/A
	Other	1 x Power Button, 1 x LED for HDD (Green), 1 x Reset Button, 1 x LExD for Power (Red), 1 x AT/ATX Switch	N/A
Expansions	PCIe Mini	1 x Full-size PCIe Mini slot 1 x Full-size PCIe Mini slot (supports mSATA, colay with SATA)	1 x Half-size PCIe Mini slot (w/o USB signal) 1 x Full-size PCIe Mini slot (supports mSATA, colay with SATA)
	M.2	N/A	N/A
Power	Power Input	3-pin terminal block: 12 V ~ 24 V DC	3-pin terminal block: 9 V ~ 30 V DC
	Power Consumption	TBD	12 V@ 2.1 A (Intel® Atom™ E3845 with 2 GB memory)
	Remote PWR	PSON 2-pin terminal block	N/A
Reliability	Mounting	DIN-rail / Wall mounting	DIN-rail
	Operating Temperature	-20ºC ~70ºC with air flow (SSD), 10% ~ 95%, non-condensing	-20ºC ~ 60ºC with air flow (mSATA), 5% ~ 95%, non-condensing
	Operating Shock	Half-sine wave shock 5G, 11ms, 100 shocks per axis, IEC68-2-27	Half-sine wave shock 5G
	Operating Vibration	MIL-STD-810G 514.6C-1 (SSD)	MIL-STD-810F 514.5C-2 (with SSD)
	Weight (Net/Gross)	1.4Kg/2.5Kg	1.4 kg/2.5 kg
	Safety/EMC	CE/FCC	CE/FCC
	Watchdog Timer	Programmable 1~255 sec/min	N/A
	IP Level	IP40	N/A
OS	Supported OS	Microsoft® Windows 10	Microsoft® 8, Microsoft® Windows® Embedded Standard 7 E

Compact Size Embedded System

	Model Name	uIBX-250-BW	uIBX-230-BT
Chassis	Color	Black	Silver
	Dimensions (WxDxH) (mm)	136.6 x 102.4 x 52	137 x 102.8 x 57
	System Fan	Fanless	Fanless
	Chassis Construction	Extruded aluminum alloy	Extruded aluminum alloys
Motherboard	CPU	Intel® Celeron® N3160 (up to 2.24 GHz, quad-core, 2 MB cache, TDP=6W)	Intel® Celeron® N2930 1.83 GHz
	Chipset	SoC	SoC
	System Memory	1 x 204-pin DDR3L SO-DIMM 2 GB pre-installed (system max: 8GB)	1 x 204-pin DDR3L SO-DIMM 2 GB pre-installed (system max: 8GB)
Storage	Hard Drive	1 x 2.5" SATA 6Gb/s HDD/SSD bay	1 x 2.5" SATA 3Gb/s HDD/SSD bay
	CF Card/CFast	N/A	N/A
I/O Interfaces	USB 3.0	4	1
	USB 2.0	N/A	3
	Ethernet	2 x RJ-45 PCIe GbE by Intel® I211 controller	1 x RJ-45 PCIe GbE by Intel® I210 controller
	COM Port	2 x RS-232/422/485 (RJ-45)	1 x RS-232 (DB-9)
	Button	1 x Power button 1 x AT/ATX switch 1 x Reset button	1 x Power button 1 x AT/ATX switch 1 x Reset button
	Display	1 x HDMI, 1 x VGA	VGA
	Resolution	HDMI: 3840 x 2160@30MHz VGA: 1920 x1200@60Hz	Up to 2560 x 1600@60Hz
	Audio	1 x Line-out, 1 x Mic-in	1 x Line-out, 1 x Mic-in
	Wireless	1x 802.11a/b/g/n/ac (optional)	N/A
Expansions	PCIe Mini	1 x Full-size PCIe Mini card (supports mSATA)	N/A
Power	Power Input	DC Jack: 12 V DC	DC Jack: 12 V DC
	Power Consumption	12V @ 2A (Intel® Celeron® N3160 with 2 GB memory)	12 V@1.8 A (Intel® Celeron® N2930 with 2 GB memory)
Reliability	Mounting	Wall mount, VESA 75	Wall mount
	Operating Temperature	-20°C ~60°C with air flow (SSD), 10% ~ 95%, non-condensing	-20°C ~60°C with air flow (SSD), 5% ~ 95%, non-condensing
	Operating Shock	Half-sine wave shock 5G, 11ms, 3 shocks per axis	Half-sine wave shock 5G, 11ms, 3 shocks per axis
	Operating Vibration	MIL-STD-810F 514.5 C-1(HDD), MIL-STD-810F 514.5 C-2(SSD)	MIL-STD-810F 514.5-1 (HDD), MIL-STD-810F 514.5 C-2 (SSD)
	Weight (Net/Gross)	470 g/1.4 kg	470 g/1.4 kg
	Safety/EMC	CE/FCC	CE/FCC
OS	Supported OS	Microsoft® Windows 8, Microsoft® Embedded Standard 7 E	Microsoft® Windows 8, Microsoft® Embedded Standard 7 E

Industrial Computer Chassis

As a leading hardware provider in embedded SBC, IEI offers complete industrial computer chassis from ATX/microATX/Mini-ITX support chassis to 1U~7U chassis to support different embedded single board computers, and provides flexibility and scalability for industrial applications. Customers can choose different platform to integrate and fulfil different demanding application and vertical application.

1. SBC Embedded System

Model Name	ECN-380A Series	ECN-360A Series	ECW-281B Series
MB Model No.	NANO Series (EPIC SBC)*	NANO Series (EPIC SBC)*	WAFER Series (3.5" SBC)*

*Please refer to the ECN & ECW datasheets for the NANO & WAFER support list.

2. Embedded Chassis Series

Model Name	EBC-3220	EBC-3100 / EBC-3000
MB Model No.	KINO Series (Mini-ITX)*	KINO Series (Mini-ITX)*

Model Name	EBC-3300	EBC-2200	EBC-2100	EBC-1100
MB Model No.	tKINO Series (Mini-ITX)	NANO Series (EPIC SBC)*	NANO Series (EPIC SBC)*	WAFER Series (3.5" SBC)

*Please refer to the EBC datasheets for the support list.

3. Industrial Computer Chassis

Model Name	RACK-1150G 1U	RACK-220G 2U 6-slot	RACK-360 4U 14-slot
MB Model No.	Full-size CPU card	Full-size CPU card microATX, Mini-ITX	Full-size CPU card ATX, microATX, Mini-ITX

Model Name	ECA-300	ECA-200	ECA-100
MB Model No.	ATX/mATX	mATX	ATX/mATX

Model Name	PAC-125G 10-slot	PAC-700G 7-slot	PAC-53GH 3-slot
MB Model No.	Full-size CPU card	Half-size CPU card	Half-size CPU card

SBC Embedded System

	Model Name	ECN-380-QM87	ECN-360A-ULT3	ECW-281B-BT
Chassis	Color	Silver	Black	Black
	Dimensions (WxDxH) (mm)	265 x 134 x 56.7	255 x 130 x 75	229 x 132 x 64
	System Fan	Fanless	Fanless	Fanless
	Chassis Construction	Aluminum alloy with heavy duty metal	SECC	Aluminum alloy with heavy duty metal
Motherboard	Motherboard Model	NANO-QM871-i1	NANO-ULT3	WAFER-BT-i1
	SBC Size (mm)	EPIC (165 x 115)	EPIC, 165 x 115	3.5", 146 x 102
	CPU	Intel® Core™ i5-4400E 2.7 GHz Intel® Celeron® 2000E 2.2 GHz	Intel® Core™ i5-6300U Intel® Celeron® 3855U	Intel® Celeron® J1900 quad-core 2.42GHz
	Chipset	Intel® QM87	N/A	SoC
	System Memory	One 204-pin DDR3 4GB SO-DIMM pre-installed (system max: 8GB)	2 x 260-pin 2133/1866 MHz dual-channel DDR4 SO-DIMMs support up to 32GB Pre-install 4GB DDR4	1 x 204-pin 2 GB 1066/1333 MHz single-channel DDR3L SO-DIMM (system max. 4 GB)
IPMI	iRIS Solution	1 x iRIS-1010	N/A	1 x iRIS-1010-R10
Storage	Hard Drive	2 x 2.5" SATA 6Gb/s HDD/SSD bay	2 x 2.5" SATA HDD bay (No RAID support)	1 x 2.5" SATA 3Gb/s HDD bay
	CF Card/CFast	N/A	N/A	N/A
I/O Interfaces	USB 3.0	2	4	1
	USB 2.0	4	N/A	3
	Ethernet	2 x RJ-45 LAN1: Intel® I217LM PHY with Intel® AMT 9.0 support LAN2: Intel® I210-AT PCIe controller	LAN1: Intel® I219-LM LAN2: Intel® I211-AT	LAN 1: PCIe GbE by Intel® I210 controller LAN 2: PCIe GbE by Intel® I211 controller
	COM Port	2 x RS-232	1 x RS-232/422/485 2 x RS-232	3 x RS-232 1 x RS-422/485
	Digital I/O	N/A	8-bit digital I/O	8-bit digital I/O (4-bit input, 4-bit output)
	Display	2 x HDMI, 1 x VGA	2 x HDMI	1 x VGA
	Resolution	VGA: Up to 1920x1200@60Hz HDMI: Up to 2500x1600@60Hz	HDMI: up to 4096x2160@24Hz	VGA: 2560x1600@60Hz
	Audio	1 x Line-out, 1 x Mic-in	1 x Line-out	1 x Line out
	Wireless	1 x 802.11b/g/n	2 x 802.11b/g/n (optional)	1 x 802.11b/g/n
Expansions	PCIe Mini	1 x Full-size PCIe Mini (supports mSATA, SATA 6Gb/s signal only) 1 x Half-size PCIe Mini (only for iRIS-1010)	1 x Full-size PCIe Mini card slot (with SIM holder & mSATA support) 1 x Half-size PCIe Mini card slot	1 x Full-size PCIe Mini card slot (supports mSATA) 1 x Half-size PCIe Mini card (only for iRIS)
Power	Power Input	DC Jack: 12 V DC 3-pin terminal: 9 V~36 V DC	DC 12V (Optional 9~36V) Power 1: DC jack Power 2: Terminal block(for optional 9~36V only)	DC jack: 12 V DC 3-pin terminal: 9 V~36 V DC
	Power Consumption	12 V@4.6 A (Intel® mobile Core™ i5-4400E CPU with 4GB 1333MHz DDR3 memory)	12 V@2.4 A (Intel® i5-6300U with 4GB DDR4 memory)	12V@1.45A (Intel® Celeron® J1900 CPU and one 8 GB 1333 MHz DDR3 memory)
Reliability	Mounting	Wall mount, VESA 100	Wall mount, VESA 100	Wall mount, VESA 100
	Operating Temperature	-20°C ~60°C with air flow (SSD), 10% ~ 95%, non-condensing	-20°C~60°C with air flow (SSD), 5% ~ 95%, non-condensing	-20°C~60°C with air flow (SSD), 10% ~ 95%, non-condensing
	Operating Shock	Half-sine wave shock 5G, 11ms, 3 shocks per axis		Half sine wave 5G, 11ms 3-axis (non-operational)
	Operating Vibration	MIL-STD-810F 514.5C-2 (with SSD)	MIL-STD-810F 514.5C-2 (with SSD)	MIL-STD-810F 514.5C-1 (HDD)
	Weight (Net/Gross)	2.4 kg/4.2 kg	2.2 kg/3 kg	2.1 kg / 3.9 kg

Embedded Chassis Series

	Model Name	EBC-3300	EBC-3220	EBC-3100
	Platform	Case only	Case only	Case only
Chassis	Color	Black	Black	Black
	Dimensions (WxDxH) (mm)	190 x 190 x 43	190 x 180 x 55	260 x 250 x 156
	System Fan	--	1 x 4 cm	1 x 8 cm
	Chassis Construction	Heavy duty metal	Heavy duty metal	Heavy duty metal with plastic front panel
Motherboard	Motherboard Model	EBC-3300-ULT3-R10: tKINO-ULT3 EBC-3300-AL-R10 :tKINO-AL EBC-3300-BW-R10: tKINO-BW	tKINO-BW KINO-DQM170 KINO-DH810 KINO-DBT eKINO-BT KINO-DA750-i2 KINO-KBN/SE-i2 KINO-DQM871-i1 KINO-DH610 KINO-QM770 KINO-QM670 KINO-QM57A KINO-HM551 KINO-CV/D2550/N26001 KINO-PV-D4252/D5252	KINO-AQ170 KINO-ABT KINO-AA750-i2 KINO-AQ870 KINO-AQ670 KINO-AH611 KINO-AH612
	SBC Size (mm)	Mini-ITX (170 x 170)	Mini-ITX (170 x 170)	Mini-ITX (170 x 170)
Storage	Hard Drive	1 x 2.5'' SATA HDD drive bay	1 x 2.5'' SATA HDD drive bay	1 x 3.5'' SATA HDD space
	CF Card/CFast	N/A	N/A	Refer to SBC
	SD Card	Refer to SBC	Refer to SBC	Refer to SBC
I/O Interfaces	PS2 (KB/MS)	N/A	N/A	Refer to SBC
	USB 3.0	Refer to SBC	Refer to SBC	Refer to SBC
	USB 2.0	Refer to SBC	Refer to SBC	Refer to SBC
	Ethernet	2	2	2
	COM Port	Refer to SBC	Refer to SBC	Refer to SBC
	LPT	Refer to SBC	Refer to SBC	Refer to SBC
	Display	Refer to SBC	Refer to SBC	Refer to SBC
	Resolution	Refer to SBC	Refer to SBC	Refer to SBC
	Audio	Refer to SBC	Refer to SBC	Refer to SBC
	Wireless	Refer to SBC	Refer to SBC	Refer to SBC
Expansions	PCI	N/A	N/A	N/A
	PCIe	N/A	N/A	1 x Full-height expansion slot
	PCIe Mini	Refer to SBC	Refer to SBC	Refer to SBC
	Others	1 x E-Window	N/A	N/A
Power	Power Input	12V DC	12V DC	90~264V AC
	Power Supply	12V DC	12V DC	ACE-A618A 180W ACE-A627A 270W
Reliability	Mounting	VESA 100, wall mount	VESA 100, wall mount	Desktop, wall mount
	Operating Temperature	-10°C~50°C	-10°C~50°C	0°C ~ 50°C
	Operating Shock	Half-sine wave 3G, 11		
	Operating Vibration	MIL-STD-81		
	Weight (Net/Gross)	1 kg/2 kg	1 kg/2 kg	2.5 kg/3.9 kg

* Optional items
** Systems with hard drive meet MIL-STD-810F 514.5C-1 specifications. SSD/CF systems meet MIL-STD-810F 514.5C-1 specifications.

Embedded Chassis Series

	Model Name	EBC-3000	EBC-2200	EBC-2100	EBC-1100
	Platform	Case only	Case only	Case only	Case only
Chassis	**Color**	Black	Black	Cool gray	Black
	Dimensions (WxDxH) (mm)	280 x 230 x 88	215 x 150 x 55	262 x 134 x 56	190 x 140 x 46
	System Fan	1 x 6 cm	1 x 4 cm	1 x 4 cm*	Refer to MB
	Chassis Construction	Heavy duty metal with plastic front panel	Aluminum alloy with heavy duty metal		
Motherboard	**Motherboard Model**	KINO-AQ170 KINO-ABT KINO-AA750-i2 KINO-AQ870 KINO-AQ670 KINO-AH611 KINO-AH612	NANO-BT-i1 NANO-BTW2 NANO-QM871	NANO-LX	WAFER-BT-E38001W2
	SBC Size (mm)	Mini-ITX (170 x 170)	EPIC (165 x 115)	EPIC (165 x 115)	3.5" SBC (146x102)
Storage	**Hard Drive**	1 x 3.5" SATA HDD space	1 x 2.5" SATA 6Gb/s HDD/SSD drive bay	1 x 2.5" SATA HDD space	1 x 2.5" SATA HDD space
	CF Card/CFast	Refer to SBC	N/A	1	N/A
	SD Card	Refer to SBC	N/A	N/A	N/A
I/O Interfaces	**PS2 (KB/MS)**	Refer to SBC	Refer to SBC	1	Refer to SBC
	USB 3.0	Refer to SBC	Refer to SBC	N/A	1
	USB 2.0	Refer to SBC	Refer to SBC	4	3
	Ethernet	2	2	1	2
	COM Port	Refer to SBC	Refer to SBC	1+2 RS-232*	1x RS232, 1 x RS-232 & 1 x RS-422/485*
	LPT	Refer to SBC	N/A	*1	N/A
	Display	Refer to SBC	Refer to SBC	1 x VGA	1 x VGA
	Resolution	Refer to SBC	Refer to SBC	N/A	VGA (up to 2560x1600@60Hz)
	Audio	Refer to SBC	1 x Line out, 1 x Mic-in	3 x Audio jack*	1 x Line out, 1 x Mic-in
	Wireless	Refer to SBC	1 x 802.11b/g/n	N/A	802.1b/g/n *
Expansions	**PCI**	N/A	N/A	N/A	N/A
	PCIe	N/A	N/A	N/A	N/A
	PCIe Mini	Refer to SBC	1 x Full-size PCIe Mini card slot	N/A	3
	Others	N/A	N/A	1 x PCI-104	N/A
Power	**Power Input**	90~264V AC	12V DC	12V DC in	12V DC in
	Power Supply	ACE-A618A 180W ACE-A627A 270W	12V, 5A	12 V DC in, AT mode only, with 60W power adapter	12V DC in
Reliability	**Mounting**	Desktop, wall mount	Wall mount, VESA 100	Desktop, wall mount	Wall mount, VESA 75
	Operating Temperature	0°C ~ 50°C	-20°C ~ 60°C	0°C ~ 50°C	-40°C ~ 75°C (refer to MB)
	Operating Shock	Half-sine wave 3G, 11ms 3 shocks per axis	Half-sine wave shock 5G, 11ms, 3 shocks per axis	Half-sine wave 3G, 11ms 3 shocks per axis	Half-sine wave shock 5G, 11ms, 3 shocks per axis
	Operating Vibration	MIL-STD-810F 514.5C-1			MIL-STD-810F 514.5C-1 (with SSD)
	Weight (Net/ Gross)	2.5 kg/3.9 kg	1.1kg/2kg	1 kg/3 kg	1.2Kg/2.2Kg

* Optional items
** Systems with hard drive meet MIL-STD-810F 514.5C-1 specifications. SSD/CF systems meet MIL-STD-810F 514.5C-1 specifications.

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SATA Disk 7pin
PATA Disk 40/44pin

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DDR4 RDIMM / ECC DIMM
DDR3 DIMM / SO-DIMM
DDR3 RDIMM / ECC DIMM
DDR2 DIMM / SO-DIMM
DDR1 DIMM / SO-DIMM

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