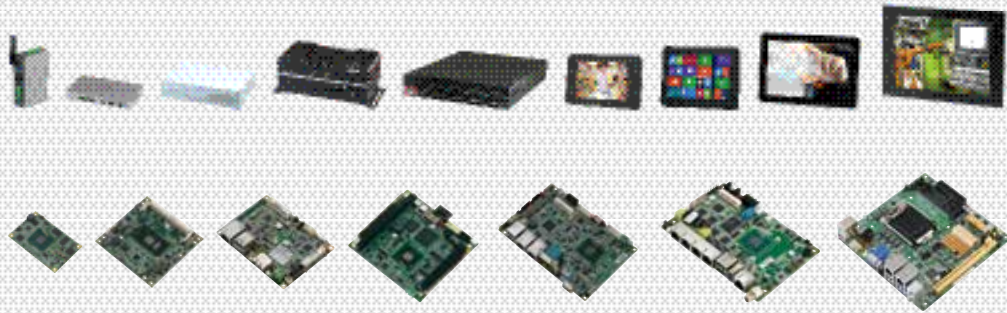




About Us



Established in 1992, AAEON is one of the leading designers and manufacturers of advanced industrial and embedded computing platforms today. Committed to innovative engineering, AAEON provides integrated solutions, hardware and services for premier OEM/ODMs and system integrators worldwide. Reliable and high quality computing platforms include industrial motherboards and systems, industrial displays, rugged tablets, PC/104, PICMG and COM modules, embedded SBCs, embedded controllers, network appliances and related accessories. AAEON also offers customized end-to-end services from initial product conceptualization and product development on through to volume manufacturing and after-sales service programs.

With our continuous pursuit of innovation and excellence, AAEON has further strengthened its leadership by leveraging advanced technology and resources from ASUS. AAEON is poised to offer more diversified embedded products and solutions at higher quality standards to meet world-class design and manufacturing demands in the years to come.

AAEON is an Associate member of the Intel® Internet of Things Solutions Alliance as well as a GSA Contract holder (#GS-35F-0470Y) serving the Federal, State & Local government sectors.

Peruse AAEON's services and product portfolio by visiting us at www.aaeon.com.

AAEON Core Values

Reliability:

Delivering trustworthy products in a timely manner

Integrity:

Valuing business integrity and ethics

Innovation:

Turning cutting-edge concepts into reality

Index

About Us	1		
Index	2		
Design Manufacturing Service (DMS)	5		
Network Security Platform	6		
AAEON Hi-Safe	7		
AAEON Hi-Manager	8		
AAEON's Embedded OS Solutions	9		
Q Service Plus	11		
Board Level Products	12		
Compact Boards	13		
PCM-QM77	13		
PCM-LN02	13		
PCM-5895 Rev. A	14		
PCM-5895 Rev. B	14		
EPIC Boards	15		
EPIC-SKS7	15		
EPIC-BDU7	15		
EPIC-QM77	16		
EPIC-QM57	16		
EPIC-BT07	16		
EPIC-CV07	17		
EPIC-5536	17		
SubCompact Boards	18		
GENE-SKU6	18		
GENE-QM87	18		
GENE-QM77 Rev. A	18		
GENE-QM77 Rev. B	19		
GENE-APL5	19		
GENE-BSW5	19		
GENE-BT04	20		
GENE-BT05	20		
GENE-BT06	20		
GENE-CV05	21		
GENE-LN05 Rev. B	21		
GENE-A55E	22		
GENE-5315 Rev. A	22		
GENE-5315 Rev. B	22		
AIOT-X1000	23		
PC/104 Modules	24		
PFM-HDS	24		
PFM-LNP	24		
PFM-CVS Rev. A	24		
PFM-CVS Rev. B	25		
PFM-541I	25		
PFM-540I Rev. A	26		
PFM-540I Rev. B	26		
Pico-ITX Boards	27		
PICO-BSW1	27		
PICO-BT01	27		
PICO-CV01	28		
		PICO-HD01	28
		PICO-IMX6	28
		Pico-ITX Boards-BIO	29
		BIO-ST01-L1U2	29
		BIO-ST01-M1U1	29
		BIO-ST02-C4M1	29
		COM Express CPU Modules	30
		COM-SKHB6	30
		COM-SKUC6	30
		COM-QM87	30
		COM-QM77 Rev. B	31
		COM-HM76	31
		COM-BT	31
		COM-BYTC2	32
		COM-CV Rev. B	32
		COM-CV Rev. A11	32
		COM-LN Rev. B	33
		NanoCOM-SKU	33
		NanoCOM-BT	34
		NanoCOM-CV Rev. A	34
		NanoCOM-CV Rev. B	34
		COM Carrier Boards	35
		ECB-916M Rev. B	35
		ECB-920A	35
		XTX/ETX CPU Modules	36
		XTX-BSW	36
		XTX-CV Rev. A11	36
		ETX-LN Rev. A11	37
		ETX-A55E	37
		ETX-701	37
		XTX/ETX Carrier Board	38
		ECB-902M	38
		ECB-910M	38
		Qseven CPU Modules	39
		AQ7-IMX6	39
		AQ7-BT	39
		Qseven Carrier Board	40
		ECB-970-A10	40
		ECB-970-A10-01	40
		SMARC CPU Module	41
		uCOM-BT	41
		SMARC Carrier Module	41
		ECB-960T	41
		Industrial Motherboards	42
		NITX-BD1	42
		NITX-SKL1	42
		EMB-APL1	43
		EMB-BT1	43
		EMB-BT2	44
		EMB-BT4	44
		EMB-BT7	45
		EMB-BSW1	45

Index

EMB-Q170A	46
EMB-Q170B	46
EMB-Q170C	47
EMB-H110B	47
EMB-Q87A	48
EMB-H81A	48
EMB-H81B	48
EMB-QM87A	49
EMB-B75A	49
EMB-B75B	50
EMB-QM77	50
EMB-H61A	51
EMB-H61B	51
EMB-QM67	52
EMB-KB1	52
IMBI-QM57	53
IMBA-Q87A	54
IMBA-Q77	54
IMBA-967	55
IMBA-H61A	55
IMBM-Q170A	56
IMBM-B150A	56
IMBM-Q87A	57
IMBM-B75A	57
IMBM-H61A	58
IMBM-H61B	58
Networking Motherboards	59
FWB-2250	59
FWB-7250	59
FWB-7401	60
FWB-7811	60
RISC CPU Module	61
GENE-1350	61
Xeon Industrial Server Motherboards	62
CMB-A9SC2	62
CMB-A9DP2	62
Full-size SBCs — PICMG 1.0 SBC	63
FSB-B75G	63
Half-size SBCs — PCI/ ISA	64
HSB-CV1P	64
HSB-LN2I	64
HSB-800I	64

System Level Products	65
Industrial HMI Touch Panel Solutions	67
AHP-1154	67
AHP-1125	67
AHP-1123	68
AHP-1083	69
AHP-1070	69
Wide Temp. HMI Touch Panel Solutions	70
AHP-2173	70
AHP-2176	70
AHP-2153	71
AHP-2122	71
Industrial Modular Touch Panel Solutions	72
OMNI-2155	72
OMNI-2215-BT	72
OMNI-3105-BT	73
OMNI-3125-BT	73
OMNI-3155-BT	74
OMNI-3175-BT	74
OMNI-3195-BT	75
OMNI-2155-SKU	75
Infotainment Multi-Touch Panel Solutions	76
ACP-5217	76
ACP-5153	76
ACP-1104	77
ACP-1103	77
ACP-1074	78
ACP-1073	78
ACP-2153	78
Industrial Touch Display Solutions	79
AGD-317D	79
AGD-315D	79
AGD-315D V2	79
AGD-312D	80
AGD-312D V2	80
ACD-110D	81
ACD-515D	81
Rugged Stainless Touch Panel Solutions	82
AFP-6152	82
AFP-6123	82
Rugged Tablet Computers	83
RTC-600A	83
RTC-700A	83
RTC-700M	84
RTC-700B	84
RTC-700C	85
RTC-900R	85
RTC-900B	86
RTC-1000i	86
RTC-1200SK	87
Ultra Slim Fanless BOX PC Solutions	88
BOXER-6401	88
BOXER-6402	88

Index

BOXER-6403	89	Network Appliances	112
BOXER-6403WT	89	FWS-2350	112
BOXER-6403M	90	FWS-2260	112
BOXER-6404	90	FWS-2253	113
BOXER-6404WT	91	FWS-2252	113
BOXER-6404M	91	FWS-2251	114
Compact Fanless BOX PC Solutions	92	FWS-2250	114
BOXER-6616	92	FWS-7820	115
BOXER-6639	92	FWS-7811	115
BOXER-6639M	93	FWS-7810	116
BOXER-6615	93	FWS-7520	116
BOXER-6614	94	FWS-7400	117
AEC-6613	94	FWS-7350	117
AEC-6612 Rev. B	95	FWS-7250	118
BOXER-6638U	95	FWS-8500	118
AEC-6638	96	IoT Gateway	119
AEC-6637	96	AIOT-QG	119
AEC-6646B	97	AIOT-QA	119
AEC-6643	97	AIOT-QM	120
BOXER-6652	98	AIOT-DRM	120
BOXER-6651	98	Industrial Chassis — Rackmount	121
Expandable Fanless BOX PC Solutions	99	ARC-645	121
BOXER-6852	99	ARC-645M	121
AEC-6877	99	ARC-625M	121
AEC-6876	100	Industrial Chassis — Wallmount	122
Automation Fanless BOX PC Solutions	101	AMC-280M	122
BOXER-6914	101	AMC-262	122
AEC-6977	101	AEC-206	122
AEC-6967	101	AEC-204	122
AEC-6950	102	ACS-1U02	123
AEC-6913	102	ACS-1U03	123
Transportation BOX PC Solutions	103		
BOXER-6313U	103		
BOXER-6313VS	103		
BOXER-6301VS	104		
BOXER-6357VS	104		
AEV-6356	104		
Network Video Recorder & Mobile NVR	105		
NVR-6300S	105		
NVR-CV	105		
NVR-Q67	105		
NVR-Q67S	106		
NVR-B75	106		
VPC-3300S	107		
VPC-5500S	107		
Turn-Key Chassis Solutions	108		
TKS-EMB	108		
TKS-P20-CV01	108		
NANO-001N	109		
NANO-001F	109		
NANO-002	110		
ACS-1U01-BT4	110		
ACS-1U01-H110B	111		
ACS-1U01-H81B	111		

Design Manufacturing Service (DMS) offers exceptional end-to-end services from product conceptualization and development to manufacturing and service programs. All services are linked together through a comprehensive process and closely monitored by dedicated professionals to guarantee the highest level in product quality, reliability and durability.



Collaboration Models

Customers can consign to AAEON the manufacturing of their existing products, customize existing AAEON COTS products, or joint develop new products with the expertise of a dedicated project team that oversees the project from product conceptualization to on-time delivery of the goods. AAEON DMS handles Large Volume as well as Low-Volume-High-Mix projects, satisfying the need of our customers for every type of computing platform requirement.

Areas of Expertise

- Retail
- Transportation
- Energy
- Automation
- Medical & Healthcare
- Networking



Network Security Platform

Based on Intel Xeon processor based server-grade/ workstation-grade motherboard, AAEON offers superb Network Appliance, up scaled to 40GbE Network Interface Module, and intelligent PoE supported Network Surveillance solutions.

Network Computing Platforms and Services

Network Workstation Platform

- Intel® 4th generation Core™ i processor to Xeon® processor
- Single or dual ATX power supply compatible



FWS-7811

Network Server Platform

- High density storage server
- SSD storage server
- Designed for Hadoop, Openstack and Object storage



FWS-8500

Surveillance Cloud Platform

- Fanless in-vehicle PoE video surveillance server box
- EMARK certificated
- Wide Voltage; Wide Temperature



VPC-5500S



NVR-Q67S



FWS-2251

Hi-Safe is a free and powerful program providing SDKs for UIs running Microsoft® Windows® operating systems. It provides an easy way to develop the end user's own UI software to monitor vital system information such as those for the processor, RAM and VGA. It monitors received data from the Super I/O, fan, temperature and voltage, offers configuration options for Digital I/O pin direction and data patterns, provides watchdog timer and fan speed settings, SMBus base address detection and device ID settings. It also offers two modes for backlight display control if one uses the LVDS interface. Based on the user interface SDK, no coding is needed and customers can create their own customized user interface by using the function codes provided by AAEON.

Hi-Safe Advantages

- ▶ **Faster time-to-market**
- ▶ **Easy to use**



System Information:

Receives CPU, VGA and RAM information



Hardware Monitor:

Receives super I/O, fan, temperature and voltage data



DIO:

Obtains DIO information: sets the pin direction and pin data



Watchdog:

Sets the system reboot timer



Smart Fan:

Receives fan and temperature data; sets the fan speed into the smart fan mode



SM Bus:

Reads and writes SMBus device, and detects SMBus base address automatically.



Backlight Controller:

Controls the backlight display; two modes

AAEON Hi-Manager

Hi-Manager is a tool based on the Intel® Active Management Technology 9.0 (iAMT 9.0) and has backward compatibility with earlier versions of iAMT. This allows users to locate all iAMT devices within the intranet, power On/Off target devices remotely, set power On/Off scheduling, arrange device groupings for better management, offer event logs and timer settings to wake up devices at specified times, recover systems that have crashed from virtual CD-ROM, remote KVM management and access to target device hardware information for asset management. Hi-Manager can be installed on all AAEON platforms and can remotely manage AAEON client devices that use Intel® Q77, Q87, QM77, QM87 chipsets and run Microsoft® Windows® XP, Windows® 7 Operating Systems.

Hi-Manager Advantages

- ▶ **Easy-to-use and build custom applications**
- ▶ **Supports AAEON products with iAMT**
- ▶ **In-depth technical support**



Network Discovery:

AMT device discovery



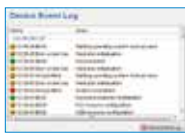
Power Control:

Powers On/Off the target device



Group Management:

Arrange devices in this function



Event Log:

Logs boot records of the selected device



Alarm Clock:

Sets timer to wake up a sleeping device



Remote Recovery:

Mounts boot image or physical CD-ROM to target device



KVM:

Controls remotely from the target device



Schedule:

Schedules the power On/Off target devices



Device Information:

Shows target device assets

Intel® Active Management Technology Features

Intel® Chipset	QM67/ Q77/ QM77/ HM76/ B75A/ Q87/ QM87
Intel® AMT Version	AMT 7.0/8.0/9.0
HW Inventory	✓
SW Inventory	✓
Power State Management	✓
System Defense	✓
Remote Configuration	✓
Remote Boot Option	✓
KVM Redirection	✓
KVM Remote Control	✓
ME Wake on LAN	✓
Proactive Security Block, HW-Based and Remote Management Recovery	✓
Host-Based Provisioning	✓
Enhanced System Defense Filters	✓

AAEON's Embedded OS Solutions

AAEON provides Embedded OS Solutions to customers who are in need of OS customization. AAEON's Embedded OS Solutions are designed to shorten time-to-market and save customers' time and R&D resources.

Windows® Embedded Family

Windows Embedded Standard

Windows® Embedded Standard 2009

Windows® Embedded Standard 7

Windows® Embedded Standard 8



Entertainment



Industrial Automation



ATM/ Kiosk



Office Automation

Windows Embedded Enterprise

Windows® 7 Professional

Windows® 8.1 Professional

Windows® 10 IoT Enterprise



Kiosks



Entertainment

Windows Embedded Compact 7

Windows® CE 6.0

Windows® Compact 7



Handheld Terminals



Portable Media



Consumer



Medical



Industrial Automation



Thin Client



Robotics

Windows Embedded POSReady

POSReady 2009

POSReady 7

Windows® Embedded Industry 8.1 Pro Retail

Windows® 10 IoT Enterprise for Retail or Thin Clients



Point of Service

Windows Embedded Server

Windows® Server 2012 R2 for Embedded System



Dedicated Servers

Embedded OS Main Features

OS Family	Windows® Embedded CE	Windows® Embedded Standard	Windows® Embedded POS Ready	Windows® Embedded Enterprise	Windows® Embedded Server
Features	Simple Customization	Full Customization	Simple Installation	Full Function	Full Function
Windows® Product Sku	Windows® CE 6.0 Windows® Compact 7	Windows® Embedded Standard 2009 Windows® Embedded Standard 7 Windows® Embedded Standard 8	POSReady 7 POSReady 2009 Windows® Embedded Industry 8.1 Pro Retail Windows® 10 IoT Enterprise for Retail or Thin Clients	Windows® 7 Professional Windows® 8.1 Professional Windows® 10 IoT Enterprise	Windows® Server 2012 R2 for Embedded Systems
CPU Type	ARM/ MIPS/ SH4/ X86	x86	x86	x86	x86
Development Tool	Customization Image	Customization Image	CD Installation	CD Installation	CD Installation
Development Time	Long	Short	None	None	None
Maintenance Cost	High	Middle	Low	Low	Low
Embedded Features	Custom Shell	Custom Shell/ EWF/ FBWF/ USB Boot/ HORM	Custom Shell/ FBWF/ USB Boot	Standard Shell	Standard Shell

AAEON Embedded OS Solution

Chipset	Windows® Embedded Standard 2009 (Note 1)	Windows® Embedded Standard 7 (Note 2)	Windows® Embedded 8 Standard (Note 2)	Windows® CE 6.0	Windows® Compact 7
Intel® Q170/H110	—	✓	✓	—	—
Intel® QM87/Q87/H81	—	✓	✓	—	—
Intel® QM77/Q77/HM76/B75	✓	✓	✓	—	—
Intel® QM67/Q67/H61	✓	✓	✓	—	—
Intel® QM57/Q57	✓	✓	—	—	—
Intel® Atom™ D2550/N2800/N2600	✓	✓	—	—	✓
Intel® Atom™ D525/N455/D425	✓	✓	—	✓	—
Intel® Atom™ N450/D410/D510	✓	✓	—	✓	—
Intel® Atom™ E620/E640/E660/E680	✓	✓	—	—	—
Intel® Atom™ J1900/N2000/E3800	—	✓	✓	—	✓
AMD Geode™ LX700/LX800/LX900	—	✓	—	—	—
AMD T56N/T40R/T40E/T16R	✓	✓	✓	✓	✓

Note 1: Former Windows® Embedded XP SP3

Note 2: 64-bit Multilingual User Interface (MUI) with English, French, German, Italian, Korean, Japanese, Russian, Chinese (Simplified), Chinese (Traditional)

AAEON's Q Service Plus



Q Service Plus is AAEON's unique set of multi-faceted services aimed at getting you up and running in the shortest possible time. We provide:

- Quick BIOS setup within 5 working days
- Preliminary troubleshooting feedback within 1~2 working days
- Complete compatibility, reliability and debugging within 3~5 working days
- On-site service and consultation, including resolution and risk management

More than Design and Support

With Q Service Plus, AAEON assures that any of our products will be timely and adequately supported by our team of experienced engineers, providing services, such as designing, debugging and circuitry review.

For circuitry review, initial feedback will be provided after the first 2 days with a complete assessment after 5 days. Debugging will be performed on the customer's equipment and initial feedback will be available within 72 hours. Similarly, the setup of BIOS will be completed within 5 working days.

Q service is our commitment to you.

Please contact Qservice@aaeon.com.tw to learn more.



AAEON Carrier Board Design Service

With over 20 years of quality design and manufacturing experience, AAEON provides professional carrier board design services according to the customer's specifications and passes all compatibility and functional tests required in the process. There are also default carrier boards available for evaluation purposes.



NanoCOM Module



Qseven Module



COM Module



SMARC Module



ETX Module



XTX Module



Carrier Board

Board Level Products

Board Level Products

Compact Boards

Compact Boards



Model	PCM-QM77	PCM-LN02
System		
Form Factor	5.25" Compact Board	5.25" Compact Board
CPU	Intel® Core™ i7/i5/i3/Celeron® IVY bridge and Sandy Bridge (Socket-G2 based)	Onboard Intel® Atom™ N455/D525
CPU Frequency	Up to 2.5 GHz	Up to 1.83GHz
Chipset	Intel® QM77/HM76	PineView™ D/M DDR3 + ICH8M
Memory Type	DDR3 1066/1333/1600, SODIMM x 2 up to 16G	Onboard 2 GB /4 GB DDR3 667/800
Max. Memory Capacity	8 GB	4 GB
BIOS	UEFI	AMI 8 MB
Wake on LAN	Yes	Yes
Watchdog Timer	255 Levels	255 Levels
Power Requirement	ATX/DC12V	+12V & ATX co-lay
Power Supply Type	ATX	ATX/ DC-12V
Power Consumption (Typical)	—	—
Dimension (L x W)	8" x 5.75" (203mm x 146mm)	8" x 5.75" (203mm x 146mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (hours)	60,000	—
Certification	CE/FCC	CE/FCC
Display		
VGA/LCD Controller	Intel® Core™ i7/i5/i3 integrated	Integrated
Video Output	CRT, LVDS LCD, DVI-I	CRT, TTL (Optional), or LVDS 18/24 bit
Backlight Inverter Supply	Max. 12V	Max. 12V
I/O		
Ethernet	Intel® 82579LM x 1, Intel® 82583V x 1, 10/100/1000Base-TX need Pin header for LAN	Intel® 82567V x 1, Intel® 82583V x 1, 10/100/1000Base-TX x 2
Audio	Realtek ALC892, 2.1CH	ALC888-GR, 2 CH
USB Port	USB3.0 x 4, USB 2.0 x 4	USB2.0 x 6
Serial Port	RS-232 x 8, RS-232/422/485 x 2	RS-232 x 5, RS-232/422/485 x 1
Parallel Port	SPP/EPP/ECP x 1 or FDD Function	SPP/EPP/ECP x 1
HDD Interface	SATA 3.0 x 2, SATA 2.0 x 2	—
FDD Interface	—	—
SSD	CFast™, mSATA	—
Expansion Slot	PCI-Express [x16], Mini-Card or mSATA, PCI, Mini PCI, Digital I/O (8 in/8 out), iAMT 8.0 support 5V/12V Voltage output	PCMCIA x 1, PC-104-Plus, Two mini-card (1st: full size+SIM; 2nd: half size) on the top side; CompactFlash™ x 1, LAN connector Pin header Type
PWM LCD Support	—	—
DIO	16 bit	8 bit
TPM	Optional	Optional
Touch	Optional	—
Note		

Board Level Products

Compact Boards



Model	PCM-5895 Rev. A	PCM-5895 Rev. B
System		
Form Factor	5.25" Compact Board	5.25" Compact Board
CPU	Onboard AMD Geode™ LX 800	Onboard AMD Geode™ LX 800
CPU Frequency	Up to 500 MHz	Up to 500 MHz
Chipset	AMD Geode™ LX 800 + CS5536	AMD Geode™ LX 800 + CS5536
Memory Type	SDRAM DDR333/400, DIMM x 1	SDRAM DDR333/400 DIMM x 1 or Onboard memory
Max. Memory Capacity	1 GB	1 GB DIMM x 1 or onboard memory 256 MB
BIOS	Award 1 MB	Award 1 MB
Wake on LAN	Yes	Yes
Watchdog Timer	255 Levels	255 Levels
Power Requirement	+5V	+5V
Power Supply Type	AT/ ATX	AT/ ATX
Power Consumption (Typical)	AMD Geode™ LX 800 (500 MHz) DDR400 256 MB 2.33A@+5V	AMD Geode™ LX 800 (500 MHz) DDR400 256 MB 2.33A@+5V
Dimension (L x W)	8" x 5.75" (203mm x 146mm)	8" x 5.75" (203mm x 146mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	80,000	80,000
Certification	CE/FCC	CE/FCC
Display		
VGA/LCD Controller	AMD Geode™	AMD Geode™
Video Output	LVDS/TTL, CRT	LVDS/TTL, CRT
Backlight Inverter Supply	Max. 12V	Max. 12V
I/O		
Ethernet	10/100Base-TX x 2, Realtek RTL8139DL (Real I/O, Pin Header x 1)	10/100Base-TX x 2, Realtek RTL8100C
Audio	Realtek ALC203	Realtek ALC203
USB Port	USB2.0 x 4	USB2.0 x 4
Serial Port	RS-232 x 3, RS-232/422/485 x 1	RS-232 x 3, RS-232/422/485 x 1
Parallel Port	SPP/EPP/ECP x 1	SPP/EPP/ECP x 1
HDD Interface	UDMA100 x 1	UDMA100 x 1
FDD Interface	FDD x 1	—
SSD	CompactFlash™	CompactFlash™
Expansion Slot	PCI, Mini-PCI, PC/104	PCI, PC/104+, CAN x 2 (Optional)
PWM LCD Support	—	—
DIO	8 bit	8 bit
TPM	—	—
Touch	—	—
Note		

Board Level Products

EPIC Boards



Model	EPIC-SKS7	EPIC-BDU7
System		
Form Factor	EPIC	EPIC
CPU	i3-6100TE (2C) 2.7 GHz (TDP: 35W) i5-6500TE (4C) 2.3 GHz, up to 3.3 GHz (TDP: 35W) i7-6700TE (4C) 2.4 GHz, up to 3.4 GHz (TDP: 35W)	Intel® 5th Generation Intel® Core™ i3/i5/i7 ULT Processor SoC
CPU Frequency	Intel® 6th Generation Core™ i3/i5/i7/Celeron	Up to 2.2 GHz
Chipset	H110 (6W)	5th Generation Intel® Core™ i series ULT Processor SoC
Memory Type	DDR4 (Non-ECC), 2133MHz	DDR3L 1333/1600, SODIMM x 1
Max. Memory Capacity	Up to 16G	Up to 8G
BIOS	AMI	UEFI
Wake on LAN	Yes	Yes
Watchdog Timer	255 Levels	255 Levels
Power Requirement	+12V or 9-24V	+12V or 9-24V AT/ATX (default)
Power Supply Type	AT/ ATX	AT/ ATX
Power Consumption (Typical)	—	38.8W
Dimension (L x W)	4.53" x 6.50" (115mm x 165mm)	4.53" x 6.50" (115mm x 165mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C) or -4 °F ~ 158 °F (-20 °C ~ 70 °C) For WITAS 1
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (hours)	—	63,000
Certification	CE/FCC	CE/FCC
Display		
VGA/LCD Controller	Intel® 6th Generation Intel® Core™ i3/i5/i7/Celeron	5th Generation Intel® Core™ i series ULT Processor SoC
Video Output	CRT/LVDS/HDMI	Triple independent Displays VGA, LVDS, DP, LVDS (Optional), eDP (Optional)
Backlight inverter supply	Max. 12V	Max. 12V
I/O		
Ethernet	LAN x 2 (Real IO) (i211*2)	Intel® WGI211AT x 1/ WGI218LM x 1, RJ-45 x 2
Audio	ALC892, no Amp	High Definition Audio Interface
USB Port	USB3.0 x 4 (Real IO) USB2.0 x 2 (Internal)	USB2.0 x 4, USB3.0 x 2
Serial Port	COM x 4 (COM2: RS-232/422/485)	COM: RS-232 x 4 COM2, COM3: RS-232/422/485 x 2 (Ring/+5V/+12V)
Parallel Port	—	SPP/EPP/ECP x 1
HDD Interface	SATA Gen3 x 2, SATA Power (5V)	SATA 3.0 x 2
FDD Interface	—	—
SSD	mSATA x 1	mSATA (Share with half-size Mini-Card by BIOS)
Expansion Slot	Mini-card x 1	Mini Card x 1, SIM x1 (Optional) PCI-104 (Optional) 16 bit DIO or LPT PS/2 x 1
DIO	8-bit	16 bit
TPM	Micro SIM x 1	Optional
Touch	—	Optional
Note		

Board Level Products

EPIC Boards



Model	EPIC-QM77	EPIC-QM57	EPIC-BT07
System			
Form Factor	EPIC	EPIC	EPIC
CPU	Intel® Core™ i7/i5/i3/Celeron® (BGA based, ≤25W)	Intel® Core™ i7/ i5 (Socket-988)	Intel® Atom™/ Celeron® E3845/J1900/ N2807
CPU Frequency	Up to 2.5 GHz	Up to 2.66 GHz	Up to 2.0 GHz
Chipset	Intel® PCH QM77/HM76	Intel® QM57	Intel® Atom™/ Celeron® SOC
Memory Type	DDR3 1066/1333/1600, SODIMM x 1	DDR3 (800/1066), SODIMM x 1	DDR3L 1333, SODIMM x 1
Max. Memory Capacity	Up to 8G	4 GB	Up to 8G
BIOS	UEFI	AMI 8 MB	AMI
Wake on LAN	Yes	Yes	Yes
Watchdog Timer	255 Levels	255 Levels	255 Levels
Power Requirement	DC12V	+12V	+12V or 9-24V AT/ATX(default)
Power Supply Type	AT/ ATX	AT/ATX	AT/ ATX
Power Consumption (Typical)	—	—	11.8W
Dimension (L x W)	4.53" x 6.50" (115mm x 165mm)	4.53" x 6.50" (115mm x 165mm)	4.53" x 6.50" (115mm x 165mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (hours)	—	70,000	110,000
Certification	CE/FCC	CE/FCC	CE/FCC
Display			
VGA/LCD Controller	Intel® Core™ i7/i5/i3 integrated	Intel® Core™ i7/i5 Mobile	Intel® Atom™/ Celeron® SOC
Video Output	CRT+2 LVDS(eDP+Internal LVDS), CRT+HDMI, CRT+DVI, DVI+HDMI	CRT, LVDS, DVI, Display Port	CRT, LVDS, HDMI
Backlight inverter supply	Max. 12V	Max. 12V	Max. 12V
I/O			
Ethernet	Intel® 82579LM x 1/Intel® 82583V x 1 10/100/1000Base-TX	10/100/1000Base-TX x 2, Intel® 82577LM, Intel® 82574L	Intel® i211 Gigabit Ethernet, RJ-45 x 2
Audio	High Definition Audio Interface	High Definition Audio (HDA)	High Definition Audio Interface
USB Port	USB2.0 x 4, USB3.0 x 2	USB2.0 x 6	USB2.0 x 5, USB3.0 x 1
Serial Port	RS-232 x 5, RS-232/422/485 x 1(COM2)	RS-232 x 3, RS-232/422/485 x 1	COM1, 4, 5, 6 : RS-232 x 4 COM2, 3 : RS-232/422/485 x 1 (Ring/ +5V/ +12V)
Parallel Port	SPP/EPP/ECP x 1	SPP/EPP/ECP x 1	SPP/EPP/ECP x 1
HDD Interface	SATA3 x 2	SATA 2 x 2	SATA 2.0 x 1
FDD Interface	—	—	—
SSD	mSATA x 1	CompactFlash™	mSATA x 1 (Share with half-size Mini-Card by BOM)
Expansion Slot	Mini Card x 1, 16 bit DIO or LPT PCI-104	PCI/104-Express (PCI-Express & PCI-104)	Mini-Card x 1, SIM x 1 (Only E3800 series), PCI-104 x 1 (optional, 16 bit DIO or LPT SMBus x 1, I2C x 1 (optional), PS/2 x 1
DIO	16 bit	8 bit	16 bit
TPM	Optional	—	Optional
Touch	Optional	Yes	Optional
Note			

Board Level Products

EPIC Boards

EPIC Boards/ SubCompact Boards



Model	EPIC-CV07	EPIC-5536
System		
Form Factor	EPIC	EPIC
CPU	Intel® Atom™ D2550/N2800/N2600	AMD Geode™ LX 800
CPU Frequency	1.6 GHz ~ 2.13 GHz	Up to 500 MHz
Chipset	Intel® Atom™ D2550/N2600 + NM10	AMD CS5536
Memory Type	DDR3 800/1066 MHz	SDRAM DDR333 (DDR400 optional), SODIMM x 1
Max. Memory Capacity	Up to 4G	1 GB
BIOS	AMI 4MB	Award 1 MB
Wake on LAN	Yes	Yes
Watchdog Timer	255 Level	255 Levels
Power Requirement	+12V	+12V
Power Supply Type	AT/ATX	AT/ATX
Power Consumption (Typical)	—	AMD Geode™ LX 800 500 MHz, DDR333 1 GB 1.35A@12V
Dimension (L x W)	(165mm x 115mm)	4.53" x 6.50" (115mm x 165mm)
Operating Temperature	32 °F ~ 140 °F (0 °C ~ 60 °C); -4 °F ~ 158 °F (-20 °C ~ 70 °C) For WiTAS 1	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40 °F ~ 176 °F (-40 °C ~ 80 °C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	10~80%, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	—	70,000
Certification	CE/FCC	CE/FCC
Display		
VGA/LCD Controller	Intel® Atom™ D2550/ N2600 integrated	AMD Geode™ + TI SN75LVDS83
Video Output	CRT, LVDS, DVI (optional, need to change connector)	CRT, LVDS & TTL
Backlight Inverter Supply	Max. 12V	Max. 12V
I/O		
Ethernet	Giga LAN Realtek 8111E x 2	10/100Base-TX x 2, Realtek 8100C (Optional Gigabit LAN)
Audio	ALC662 co-lay ALC886/892	High Definition Audio (HDA)
USB Port	USB 2.0 x 7	USB2.0 x 4 (Does not support wake-up function)
Serial Port	RS-232 x 7, RS-232/422/485 x 1 (COM 2)	RS-232 x 3, TTL only/ GPS x1, RS-232/422/485 x 1
Parallel Port	SPP/EPP/ECP x 1	SPP/EPP/ECP x 1
HDD Interface	SATA 2.0 x 1	UDMA100 x 1, SATA 1 x 2
FDD Interface	—	FDD x 1
SSD	mSATA	CompactFlash™
Expansion Slot	PCI-104 x 1 Mini-Card x 2 (One support mSATA) Touch Panel feature (Optional) 8 pin DIO 4 in/4out	PC/104-plus
DIO	16 bit	8-bit
TPM	—	—
Touch	Yes	—
Note		

Board Level Products

SubCompact Boards



Model	GENE-SKU6	GENE-QM87	GENE-QM77 Rev. A
System			
Form Factor	3.5" SubCompact Board	3.5" SubCompact Board	3.5" SubCompact Board
CPU	Intel® 6th Generation Core™ i5-6300U SoC Processor	Onboard Intel® 4th Generation Core™ i5-4402E Processor	Intel® Core™ i7/i5/i3/Celeron® (Socket-G2 based)
CPU Frequency	Up to 3.0GHz	Up to 2.7GHz	Up to 2.7 GHz
Chipset	Intel® 6th Generation Core™ i5-6300U SoC Processor	Intel® PCH QM87	Intel® PCH QM77/MH76
Memory Type	DDR4 1866/2133, SODIMM x 1	DDR3L 1333/1600, SODIMM x 1	DDR3 1333/1600, SODIMM x 1
Max. Memory Capacity	Up to 8GB	8 GB	8 GB
BIOS	UEFI	SPI type	SPI type
Wake on LAN	Yes	Yes	Yes
Watchdog Timer	255 Levels	255 Levels	255 Levels
Power Requirement	+9~36V or +12V	+12V	+12V
Power Supply Type	AT/ ATX	AT/ ATX	AT/ ATX
Power Consumption (Typical)	Intel® i7-6600U, DDR4 2133MHz 16G, 1.75A@ +12V	Intel® Core™ i5-4402E 1.6 GHz, DDR3L 1600 8GB 2.73A@+12V	Intel® Core™ i7-3610QE 2.3 GHz, DDR3 1333 8 GB 5.2A@+12V Intel® Core™ i5-3610ME 2.7 GHz, DDR3 1333 8 GB 3.47A@+12V
Dimension (L x W)	5.75" x 4" (146mm x 101.7mm)	5.75" x 4" (146mm x 101.7mm)	5.75" x 4" (146mm x 101.6mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 61°C)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 176°F (-40°C ~ 81°C)	-40°F ~ 176°F (-40°C ~ 81°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 91% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (hours)	12,300	105,000	51,000
Certification	CE/FCC	CE/FCC	CE/FCC
Display			
VGA/LCD Controller	Intel® 6th Generation Core™ i5-6300U SoC Processor	Intel® 4th Generation Core™ i5-4402E Processor BGA integrated	Intel® Core™ i7/i5/i3/Celeron® integrated
Video Output	DVI-I, CRT/DP, LVDS (CRT is shared with DP, and default is DP)	CRT+LVDS, CRT+HDMI, LVDS+DVI, LVDS+HDMI, DVI+HDMI, LVDS+LVDS (Real I/O as GENE-QM77 Rev.B)	CRT+LVDS, CRT+DVI, LVDS+DVI, LVDS+LVDS
Backlight inverter supply	Yes	Up to 24-bit dual-channel LVDS x 2	Up to 24-bit dual-channel LVDS x 2
I/O			
Ethernet	Intel® i210/i211, 10/100/1000Base-TX, RJ-45 x 2 (Support EtherCAT)	Intel® I211AT, I217LM, Intel® i210 10/100/1000Base-TX x 2	Intel® 82579LM, Realtek RTL-8111E, 10/100/1000Base-TX
Audio	High Definition Audio Interface	High Definition Audio Interface	High Definition Audio Interface
USB Port	USB 3.0 x 4 USB 2.0 x 2	USB2.0 x 6, USB3.0 x 2	USB2.0 x 6, USB3.0 x 2
Serial Port	RS-232 x 1, RS-232/422/485 x 3	RS-232 x 3, RS-232/422/485 x 1	RS-232 x 3, RS-232/422/485 x 1
Parallel Port	SPP/EPP/ECP x 1 (Optional, shared with DIO)	—	SPP/EPP/ECP x 1 (shared with DIO, By BIOS setting)
HDD Interface	SATA 3.0 x 1 +5V SATA power connector x 1	SATA 3.0 (6Gbps) x 2	SATAIII x 2
FDD Interface	—	—	—
SSD	mSATA (shared with half-size Mini-Card and selectable by BIOS)	CFast™ mSATA (shared with Mini-Card by jumper)	CFast™ mSATA (shared with Mini-Card by BOM)
Expansion Slot	1. BIO x 1 2. Mini-Card x 2 and default is 2.1. mSATA x 1 (half-size) 2.2. Mini-Card x 1 (Full-size)	Mini-Card x 1	Mini-Card x 1
DIO	8 Bit	8 bit	8 bit
TPM	x 1 (Optional)	x 1	x 1
Touch	x 1	x 1	x 1
Note			

Board Level Products

SubCompact Boards

SubCompact Boards



Model	GENE-QM77 REV. B	GENE-APL5	GENE-BSW5
System			
Form Factor	3.5" SubCompact Board	3.5" SubCompact Board	3.5" SubCompact Board
CPU	Intel® Core™ i7/i3/Celeron® (BGA based, 17W)	Intel® Atom™ E3900 Processor SoC	Intel® Pentium® & Celeron® M/D Processor SoC
CPU Frequency	Up to 1.8 GHz	Up to 1.6 GHz	Up to 2.6 GHz
Chipset	Intel® PCH QM77/HM76	Intel® Atom™ E3900 Processor SoC	Intel® Pentium® & Celeron® M/D Processor SoC
Memory Type	DDR3 1066/1333/1600, SODIMM x 1	DDR3L 1867MHz, SODIMM x1	DDR3L 1600, SODIMM x 1
Max. Memory Capacity	8 GB	Up to 8GB	Up to 8 GB
BIOS	SPI type	UEFI	UEFI
Wake on LAN	Yes	Yes	Yes
Watchdog Timer	255 Levels	255 Levels	255 Levels
Power Requirement	+12V	+9~19V or +12V	+12V
Power Supply Type	AT/ ATX	AT/ ATX	AT/ ATX
Power Consumption (Typical)	Intel® Core™ i7-3555LE 2.5 GHz, DDR3 1333 8 GB 2.49A@+12V	—	Intel® Pentium® N3700 @ 2.40 GHz, DDR3L 1600MHz, 8G, 1.55A@+12V
Dimension (L x W)	5.75" x 4" (146mm x 101.6mm)	5.75" x 4" (146mm x 101.7mm)	5.75" x 4" (146mm x 101.7mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 81°C)	-40°F ~ 176°F (-40°C ~ 81°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	50,000	—	81,000
Certification	CE/FCC	CE/FCC	CE/FCC
Display			
VGA/LCD Controller	Intel® Core™ i7/i3/Celeron® integrated	Intel® Atom™ E3900 Processor SoC integrated	Intel® Pentium® & Celeron® M/D SoC
Video Output	CRT+LVDS, CRT+DVI, CRT+HDMI, LVDS+DVI, LVDS+HDMI, DVI+HDMI, LVDS+LVDS	3 independent displays: LVDS&HDMI/ LVDS& VGA at least :LVDS x 2 + VGA	LVDS x 2 + VGA (HDMI is optional, shared with LVDS2)
Backlight Inverter Supply	Up to 24-bit dual-channel LVDS x 2	Yes	Up to 24-bit dual-channel LVDS
I/O			
Ethernet	Intel® 82579LM , Realtek RTL-8111E, 10/100/1000Base-TX	Intel® i210/i211, 10/100/1000Base-TX, RJ-45 x 2	Realtek RTL-8111E, 10/100/1000Base-TX, RJ-45 x 2
Audio	High Definition Audio Interface	High Definition Audio Interface	High Definition Audio Interface
USB Port	USB2.0 x 6 , USB3.0 x 2	USB 3.0 x 2, USB 2.0 x 4 (one of USB2.0 signal for mSATA/ touch co-layout)	USB3.0 x 2, USB2.0 x 3
Serial Port	RS-232 x 3 , RS-232/422/485 x 1	RS-232 x 2 , RS-232/422/485 x 2	RS-232/422/485 x 2, RS-232 x 4
Parallel Port	SPP/EPP/ECP x 1 (By BIOS setting)	SPP/EPP/ECP x 1 (Optional, shared with DIO)	SPP/EPP/ECP x 1 (Optional, shared with DIO)
HDD Interface	SATAIII x 2	SATA 3.0 x 1, +5V SATA power connector x 1	SATA 3.0 x 1
FDD Interface	—	—	—
SSD	CFast™, mSATA (shared with Mini-Card by BOM)	mSATA	mSATA x 1 (half-size)
Expansion Slot	Mini-Card x 1	Mini Card x 2 and default is 2.1. mSATA x 1 (full-size), 2.2. miniCard x 1(half-size)	Mini-Card x 1 (Full-size)
DIO	8 bit	8 Bit	8 bit
TPM	x 1	x 1	x 1
Touch	x 1	x 1	x 1 (USB interface)
Note			

Board Level Products

SubCompact Boards



Model	GENE-BT04	GENE-BT05	GENE-BT06
System			
Form Factor	3.5" SubCompact Board	3.5" SubCompact Board	3.5" SubCompact Board
CPU	Intel® Celeron® J1900/ N2807 Processor SoC	Intel® N2930/N2807/J1900/E3845/E3825	Intel® Atom™ E3845/E3825
CPU Frequency	Up to 2.0GHz	Up to 2.0GHz	Up to 2.0GHz
Chipset	Intel® Celeron® J1900/ N2807 Processor SoC	Intel® N2930/N2807/J1900/E3845/E3825	Intel® Atom™ series Processor SoC
Memory Type	DDR3L 1333, SODIMM x 1	DDR3L 1066/1333, SODIMM x 1	On Board DDR3L 1066/1333
Max. Memory Capacity	Up to 8G	Up to 8G	Up to 4GB
BIOS	UEFI	UEFI	UEFI
Wake on LAN	Yes	Yes	Yes
Watchdog Timer	255 Level	255 Level	255 Level
Power Requirement	+12V	+12V	Wide DC support 9~24V
Power Supply Type	ATX mode	AT/ATX	AT/ATX
Power Consumption (Typical)	Intel® N2807, DDR3L 1600MHz 4G, 0.65A@+12V	Intel® N2930, DDR3L 1600MHz 8G, 0.65A@+12V	Intel® E3845, Onboard DDR3L 1600MHz 4G, 0.64A@+12V
Dimension (L x W)	5.75" x 4" (146mm x 101.6mm)	5.75" x 4" (146mm x 101.6mm)	5.75" x 4" (146mm x 101.6mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C), -40°F ~ 185°F (-40°C ~ 85°C) WITAS 2 (E3825, E3845)	32°F ~ 140°F (0°C ~ 60°C) or WITAS 2 (TBD)
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	155,000	111,000	110,000
Certification	CE/FCC	CE/FCC	CE/FCC
Display			
VGA/LCD Controller	Intel® Celeron® J1900/ N2807 Processor SoC	Intel® N2930/N2807/J1900/E3845/E3825	Intel® Atom™ series Processor SoC
Video Output	HDMI x 2: HDMI 1 (w/Audio), HDMI 2 (w/o Audio)	CRT+LVDS, HDMI+LVDS, CRT+HDMI	CRT+LVDS, HDMI+LVDS, CRT+HDMI
Backlight Inverter Supply	—	Up to 24-bit dual-channel LVDS x 1	18/24-bit dual-channel LVDS LCD
I/O			
Ethernet	Intel® I211AT (or 210), 10/100/1000Base-TX, RJ-45 x 4	Intel® I211 (or 210), 10/100/1000Base-TX, RJ-45 x 2	Intel® I211 (or 210), 10/100/1000Base-TX, RJ-45 x 2
Audio	High definition audio interface	High definition audio interface	High definition audio interface
USB Port	USB2.0 x 2, USB 3.0 x 1	USB2.0 x 3, USB 3.0 x 1	USB2.0 x 3, USB 3.0 x 1
Serial Port	RS-232 x 1	RS-232 x 2, RS-232/422/485 x 2	RS-232 x 2, RS-232/422/485 x 2
Parallel Port	—	SPP/EPP/ECP x 1	SPP/EPP/ECP x 1
HDD Interface	SATA 2.0 x 1	SATA 2.0 x 1	—
FDD Interface	—	—	—
SSD	CFast™ x 1	CFast™ (alternative with mSATA by BOM and also occupy one Mini-Card location)	—
Expansion Slot	Mini-Card x 1 (for USB only)	Mini-Card x 2(Full-size x 1, Half-size x 1)	—
DIO	4 Bit	8 bit	—
TPM	x 1	x 1	—
Touch	—	x 1	—
Note			

Board Level Products

SubCompact Boards

SubCompact Boards



Model	GENE-CV05	GENE-LN05 Rev. B
System		
Form Factor	3.5" SubCompact Board	3.5" SubCompact Board
CPU	Intel® Atom™ D2550/N2800/N2600	Intel® Atom™ D525/N455
CPU Frequency	Up to 1.86GHz	1.8 GHz
Chipset	Intel® NM10	Intel® ICH8M
Memory Type	DDR3 800/1066, SODIMM x 1	SODIMM DDR3 800
Max. Memory Capacity	4 GB	4 GB for D525, 2GB for N455
BIOS	SPI type	AMI 4MB
Wake on LAN	Yes	Yes
Watchdog Timer	255 Levels	255 Levels
Power Requirement	+12V	+12V or +5V
Power Supply Type	AT/ ATX	AT/ATX
Power Consumption (Typical)	Intel® Atom™ N2800, DDR3 1333 4 GB 1.00A@+12V Intel® Atom™ N2600, DDR3 1066 2 GB 0.87A@+12V Intel® Atom™ D2550, DDR3 1333 4 GB 1.24A@+12V	Intel® Atom™ D525, DDR3 800 1 GB, 1.29A @ +12V
Dimension (L x W)	5.75" x 4" (146mm x 101.6mm)	5.75" x 4" (146mm x 101.6mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	62,000	70,000
Certification	CE/FCC	CE/FCC
Display		
VGA/LCD Controller	Intel® Atom™ D2550/N2800/N2600 integrated	Intel® Atom™ D525/N455
Video Output	CRT+LVDS, CRT+DVI, LVDS+DVI, LVDS+LVDS	CRT, LVDS
Backlight Inverter Supply	Up to 24-bit Dual-Channel LVDS	Up to 24-bit single channel LVDS
I/O		
Ethernet	Realtek RTL 8111E x 2, 10/100/1000Base-TX, RJ-45 x 2	10/100/1000Base-TX x 2, Intel® 82567V, Intel® 82583V
Audio	High definition audio interface	High definition audio interface
USB Port	USB2.0 x 6	USB2.0 x 7
Serial Port	RS-232 x 5, RS-232/422/485 x 1	RS-232 x 5, RS-232/422/485 x 1
Parallel Port	SPP/EPP/ECP x 1 (Shared with COM6 by BOM)	SPP/ECP/EPP x 1
HDD Interface	SATAII x 1	SATA 2 x 2
FDD Interface	—	—
SSD	CFast™ (alternative with mSATA by BOM and also occupy one Mini-Card location)	CompactFlash™
Expansion Slot	Mini-Card x 1	Mini-Card x 1
DIO	8 bit	8 bit
TPM	x 1	x1
Touch	x 1	x1
Note		

Board Level Products

SubCompact Boards



Model	GENE-A55E	GENE-5315 Rev. A	GENE-5315 Rev. B
System			
Form Factor	3.5" SubCompact Board	3.5" SubCompact Board	3.5" SubCompact Board
CPU	AMD G-Series T16R	Onboard AMD Geode™ LX 800	Onboard AMD Geode™ LX 800
CPU Frequency	615MHz up to dual core 1G	500 MHz	500 MHz
Chipset	AMD A55E	AMD Geode™ LX	AMD Geode™ LX
Memory Type	DDR3L 1066, SODIMM x 1	DDR333 SODIMM x 1 (DDR400 optional)	DDR333 SODIMM x 1 (DDR400 optional)
Max. Memory Capacity	4 GB	1 GB	1 GB
BIOS	SPI type	Award 1 MB	Award 1 MB
Wake on LAN	Yes	Yes	Yes
Watchdog Timer	255 Levels	255 Levels	255 Levels
Power Requirement	+5V	+5V	+5V
Power Supply Type	AT/ ATX	AT/ ATX	AT/ ATX
Power Consumption (Typical)	AMD G-T16R, DDR3 1333MHz 4GB, 2.20A@+5V	LX 800 500 MHz, DDR400 1 GB, 1.17A@+5V	LX 800 500 MHz, DDR400 1 GB, 1.17A@+5V
Dimension (L x W)	5.75" x 4" (146mm x 101.6mm)	5.75" x 4" (146mm x 101.6mm)	5.75" x 4" (146mm x 101.6mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C), -4°F ~ 158°F (-20°C ~ 70°C) for WiTAS 1	32°F ~ 140°F (0°C ~ 60°C), -4°F ~ 158°F (-20°C ~ 70°C) for WiTAS 1
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	148,000	90,000	90,000
Certification	CE/FCC	CE/FCC	CE/FCC
Display			
VGA/LCD Controller	AMD Radeon HD 6250	AMD Geode™	AMD Geode™
Video Output	CRT, LVDS, TTL LCD	CRT, TTL LCD, LVDS LCD	CRT, TTL LCD, LVDS LCD
Backlight Inverter Supply	Up to 24-bit dual-channel LVDS	Up to 24-bit single channel TTL/LVDS	Up to 24-bit single channel TTL/LVDS
I/O			
Ethernet	Realtek RTL-8111E, 10/100/1000Base-TX x2	10/100Base-TX x 2, Realtek RTL 8139DL	10/100Base-TX x 2, Realtek RTL 8139DL
Audio	High definition audio interface	High Definition Audio Interface	High Definition Audio Interface
USB Port	USB2.0 x 4	USB2.0 x 4	USB2.0 x 4
Serial Port	RS-232 x 2, RS-232/422/485 x 2	RS-232 x 1, RS-232/422/485 x 1	RS-232 x 4 & TTL UART x 1, RS-232/422/485 x 1
Parallel Port	SPP/ECP/EPP X 1 (Shared with DIO)	SPP/EPP/ECP x 1	SPP/EPP/ECP x 1
HDD Interface	SATAII x 1	UDMA33 x 1	UDMA33 x 1
FDD Interface	—	FDD x 1	FDD x 1
SSD	CompactFlash™	CompactFlash™	CompactFlash™
Expansion Slot	Mini-Card x 1, PC/104	Mini-PCI, PC/104	Mini-PCI
DIO	8 bit	8 bit	8 bit
TPM	—	—	—
Touch	x 1	—	—
Note			

Board Level Products

SubCompact Boards



Model	AIOT-X1000
System	
Processor	Intel® Quark X1000 Series Processor SoC, 400MHz
System Memory	Onboard DDR3 800 MHz ECC, un-buffered memory, up to 1 GB
Power Requirement	VDC 5V, or 9~24V
Operating Temperature	Standard Version: 32°F ~ 140°F (0°C ~ 60°C) Wide-Temp Version: -40°F ~ 185°F (-40°C ~ 85°C)
Operating Humidity	0% ~ 90% R/H, non-condensing
Certification	CE & FCC
Board Size	5.75" x 4" (146mm x 101.6mm)
Gross Weight	0.88 lb (0.4 kg)
OS support	Wind River Linux with McAfee for Moon Island Support Yocto linux
Optional Module	Wi-Fi, Bluetooth, ZigBee, 3G (Wind River) Wi-Fi, Bluetooth, 3G (Yocto)
Serial Port	RS-232 x 1, RS-232/422/485 x 1
USB	USB2.0 x 4, USB client port x 1
LAN	10/100Base-TX, RJ-45 x 2
DIO	16-bit Digital I/O interface
ADC	Supports 8-pin with 12-bit resolution, Analog input range: 0 V to 2.5 V (0 - 20mA)
SPI	2 pairs (support optional module)
I2C	1 pair (supports optional module)
TPM	SLB9645TT1.2
Expansion Interface	Full Size Mini-PCle Slot for PCIe and USB Host Interface x 1 Half-size Mini-PCle Slot for PCIe x 1
Boot Loader	8 MB SPI Flash
Storage	Micro SD card slot x 1
Note	

Board Level Products

PC/104 Modules



Model	PFM-HDS	PFM-LNP	PFM-CVS Rev. A
System			
Form Factor	PC/104+ (ONTARIO + ITE8888 ISA solution)	PC/104	PC/104+
CPU	AMD G-series T16R (secondly for single core 614MHz, 4.5W)	Onboard Intel® Atom™ N450	Intel® Atom™ N2600 Processor
CPU Frequency	Single core 615MHz	1.66 GHz	1.6GHz
Chipset	A55E	Intel® Atom™ N450 + ICH8M	NM10
Memory Type	SODIMM DDR3 1066	Onboard DDR2 Memory up to 1 GB	SODIMM DDR 3
Max. Memory Capacity	4GB	1 GB	2GB
BIOS	AMI 32MB	AMI - 4MB ROM	AMI 32MB
Wake on LAN	Yes	Yes	Yes
Watchdog Timer	255 Level	255 Levels	255 Level
Power Requirement	+5V/ +12V	+12V	12V
Power Supply Type	AT/ATX	AT/ATX	AT / ATX
Power Consumption (Typical)	Ontario 615MHz, DDR3 1066 4GB	—	<15W (Atom™ 1.6 GHz, DDR3 1066 2GB)
Dimension (L x W)	3.55" x 3.77" (90mm x 96mm)	3.55" x 3.77" (90mm x 96mm)	3.55" x 3.77"(90mm x 96mm)
Operating Temperature	-20°F ~ 158°F (-20°C ~ 70°C) -40°F ~ 185°F (-40°C ~ 85°C) (Nice to Have)	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C) -20°F ~ 158°F (-20°C ~ 70°C) -40°F ~ 176°F (-40°C ~ 80°C) (Nice to Have)
Storage Temperature	-40°F ~ 185°F (-40°C ~ 85°C)	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	—	129,000	—
Certification	CE/FCC Class A	CE/FCC	CE/FCC Class A
Display			
VGA/LCD Controller	AMD G-Series APU integrated graphic engine - Radeon™ HD6250	N450	CedarView integration
Video Output	CRT+LVDS (18-bit)	CRT, LVDS (18-bit)	CRT, LVDS
Backlight Inverter Supply	Max. +12V	—	Max. 12V
I/O			
Ethernet	Realtek RTL 8111E, 10/100/1000Base-TX x 1	Intel® 82576V, 10/100/1000Base-TX	Realtek RTL 8111E, 10/100/1000Base-TX x 1
Audio	ALC892, Amp	—	—
USB Port	USB 2.0 x 4	USB2.0 x 4	USB 2.0 x 4
Serial Port	RS-232 x 3, RS-232/422/485 x 1	RS-232 x 3, RS-232/422/485 x 1	RS-232 x 3, RS-232/422/485 x 1
Parallel Port	—	—	—
HDD Interface	SATA2 x 1	SATA x 1	SATA2 x 1
FDD Interface	—	—	—
SSD	CFast™	CompactFlash™	—
Expansion Slot	PC/104 +	PCI-104, Mini-Card	PC/104 +, Mini-Card/mSATA
DIO	8 bit	8 bit	8 bit
TPM	—	—	—
Touch	—	—	—
Note			

Board Level Products

PC/104 Modules

PC/104 Modules



Model	PFM-CVS Rev.B	PFM-5411
System		
Form Factor	PC/104	PC/104
CPU	Intel® Atom™ N2600 Processor	Onboard AMD Geode™ LX 800
CPU Frequency	1.6 GHz	500 MHz
Chipset	NM10	AMD Geode™ LX 800 + CS5536
Memory Type	SODIMM DDR3	Onboard DDR333 Memory up to 256 MB
Max. Memory Capacity	2GB	256 MB
BIOS	AMI	Award Plug & Play BIOS - 1 MB ROM
Wake on LAN	Yes	Yes
Watchdog Timer	255 Level	255 Levels
Power Requirement	12V	+5V
Power Supply Type	AT / ATX	AT
Power Consumption (Typical)	14W	AMD Geode™ LX 800 500 MHz, DDR333 256 MB 1.83A@+5V
Dimension (L x W)	3.55" x 3.77" (90mm x 96mm)	3.55" x 3.77" (90mm x 96mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C) -20°F ~ 158°F (-20°C ~ 70°C) -40°F ~ 176°F (-40°C ~ 80°C) (Nice to Have)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	70,000	90,000
Certification	CE/FCC Class A	CE/FCC
Display		
VGA/LCD Controller	CedarView integration	AMD Geode™ LX 800
Video Output	CRT, LVDS	CRT, TTL LCD
Backlight Inverter Supply	Max. 12V	—
I/O		
Ethernet	Intel® 82583V, 10/100/1000Base-TX x 1	Intel® 82551ER, 10/100Base-TX, RJ-45 x 2
Audio	—	—
USB Port	USB 2.0 x 4	USB2.0 x 4
Serial Port	RS232 x 3, RS232/422/485 x 1	RS-232 x 3, RS-232/422/485 x 1
Parallel Port	—	SPP/EPP/ECP x 1
HDD Interface	SATA2 x 1	UDMA33 x 1
FDD Interface	—	—
SSD	—	CompactFlash™
Expansion Slot	PC/104-Plus, mini Card/ mSATA (switch by R)	PC/104
DIO	8 bit	—
TPM	—	—
Touch	—	—
Note		

Board Level Products

PC/104 Modules



Model	PFM-540I Rev. A	PFM-540I Rev. B
System		
Form Factor	PC/104	PC/104
CPU	Onboard AMD Geode™ LX 800	Onboard AMD Geode™ LX 800
CPU Frequency	500 MHz	500 MHz
Chipset	AMD Geode™ LX 800 + CS5536	AMD Geode™ LX 800 + CS5536
Memory Type	DDR333/400, SODIMM x 1, (512 MB for DDR400)	DDR333/400, SODIMM x 1, (512 MB for DDR400)
Max. Memory Capacity	1 GB	1 GB
BIOS	Award 512 KB	Award 512 KB
Wake on LAN	Yes	Yes
Watchdog Timer	255 Levels	255 Levels
Power Requirement	+5V	+5V
Power Supply Type	AT	AT
Power Consumption (Typical)	AMD Geode™ LX 800 500 MHz, DDR400 512 MB, 1.53A@+5V	AMD Geode™ LX 800 500 MHz, DDR400 512 MB, 1.53A@+5V
Dimension (L x W)	3.55" x 3.77" (90mm x 96mm)	3.55" x 3.77" (90mm x 96mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	100,000	100,000
Certification	CE/FCC	CE/FCC
Display		
VGA/LCD Controller	AMD Geode™ LX 800	AMD Geode™ LX 800
Video Output	CRT, TTL LCD	CRT, TTL LCD
Backlight Inverter Supply	—	—
I/O		
Ethernet	Realtek RTL 8139DL, 10/100Base-TX x 1	Intel® 82551ER, 10/100Base-TX x 1
Audio	—	—
USB Port	USB2.0 x 4	USB2.0 x 4
Serial Port	RS-232 x 1, RS-232/422/485 x 1	RS-232 x 3, RS-232/422/485 x 1
Parallel Port	SPP/EPP/ECP x 1	SPP/EPP/ECP x 1
HDD Interface	UDMA33 x 1	UDMA33 x 1
FDD Interface	FDD x 1	FDD x 1
SSD	CompactFlash™	CompactFlash™
Expansion Slot	PC/104	PC/104
DIO	—	—
TPM	—	—
Touch	—	—
Note		

Board Level Products

Pico-ITX Boards



Model	PICO-BSW1	PICO-BT01
System		
Form Factor	Pico-ITX	Pico-ITX
CPU	Intel® N3160 Quad Core 1.6GHz (6W), X5-E8000 Quad Core 1.04GHz (5W)	Onboard Intel® Atom™ E3845 or Celeron® J1900/N2807 Processor SoC
CPU Frequency	Up to 1.6G	Up to 2.0 GHz
Chipset	Intel® N3160 Quad Core 1.6GHz (6W), X5-E8000 Quad Core 1.04GHz (5W)	Intel® E3845/J1900/N2807
Memory Type	204-pin DDR3L SODIMM x 1, DDR3L 1600, Max 8GB	204-pin DDR3L SODIMM x 1, DDR3L 1066/1333, Max 8GB
Max. Memory Capacity	Up to 8GB	Up to 8GB
BIOS	AMI/SPI	AMI/SPI
Wake On LAN	Yes	Yes
Watchdog Timer	255 Level	1-255 steps by software program
Power Requirement	+12V AT/ATX(default)	+12VDC
Power Supply Type	AT/ATX(default). lockable connector optional	AT/ATX (default), lockable connector optional
Power Consumption (Typical)	—	Intel® Celeron® J1900 2.0GHz ,DDR3L 1333 MHz 8 GB, 1.14A@+12V
System Cooling	Heat-spreader; heatsink optional	Heat-spreader, heatsink or cooler optional
Dimension	3.94" x 2.84" (100mm x 72mm)	3.94" x 2.84" (100mm x 72mm)
Gross Weight	0.88 lb (0.4kg)	0.88lb (0.4 kg)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	—	80,000
Certification	CE,FCC	CE,FCC
Display		
VGA/LCD Controller	Intel® N3160 or X5-E8000 SoC	Intel® E3845/J1900/N2807
Resolution	1. LVDS (18/24bit 2CH) 1920 x1200, 2. HDMI up to 3840 x 2160 (4K*2K) 3. DDI (by BIO)	VGA up to 2048 x 1152 @60Hz or DP up to 2560 x 1400 @60Hz LVDS (18/24-bit) up to 1400 x 900 @60Hz
LCD Interface	18/24-bit 2CH LVDS	18/24-bit Single Channel LVDS
I/O		
Storage/SSD	SATA 6.0Gb/s x 1, mSATA/MiniCard(Full size) x 1	SATA 3.0Gb/s x 1, mSATA/Mini-Card (Full-size) x 1
Ethernet	Realtek RTL 8111E, 10/100/1000Base-TX, RJ-45 x 1	Intel® Gigabit Ethernet i211AT 10/100/1000Base-TX x 1
USB Port	USB 3.0 x 1 Rear IO, USB 2.0 x 1 Rear IO	USB 3.0 x 1 Rear IO, USB 2.0 x 1 Rear IO and x 1 Pin header
Serial Port	COM1: RS-232 x 1, COM2: RS-232/422/485 x 1 (Ring/ +5V/ +12V)	RS-232 x 1, RS-232/422/485 x 1 (Ring /+5V/+12V)
Audio	Line-out x1	Line-out x 1
DIO	4-bit (2-in, 2-out)	4-bit (2-in, 2-out)
Expansion Slot	Mini Card(Half-size) x 1, BIO x1(optional), I2C x 1, Smbus x1	Mini-Card (Half-size) x 1, BIO x 1, SMBus x 1
SIM	—	Option by BIO Board
TPM	—	—
Touch	—	—
Note	Triple display support, 4K display	

Board Level Products

Pico-ITX Boards



Model	PICO-CV01	PICO-HD01	PICO-IMX6
System			
Form Factor	Pico-ITX	Pico-ITX	Pico-ITX
CPU	Intel® Atom™ N2600 Processor	AMD G-series T40E (Dual Core)/T40R (Single Core) Processor	Freescall i.MX6 Quad 1.0 GHz Automotive, Freescall i.MX6 Dual Lite 1.0 GHz Ex. Consumer
CPU Frequency	1.6 GHz Dual Core	1.0 GHz Dual Core	1.0 GHz Dual/Quad Core
Chipset	N2600 + NM10	G-Series T40E+ A50M	i.MX6
Memory Type	SODIMM DDR3 1066MHz	SODIMM DDR3 1066MHz	1GB DDR3
Max. Memory Capacity	2 GB	4 GB	2GB
BIOS	AMI 32MB	AMI 32Mb	—
Wake On LAN	Yes	YES	—
Watchdog Timer	255 Level	255 Levels	Integrated
Power Requirement	+12V only	+12V only	12V
Power Supply Type	AT / ATX	AT/ATX	AT
Power Consumption (Typical)	Intel® Atom™ N2600 1.6GHz, DDR3 800MHz 2GB, 0.83A@12VDC	AMD T-40R 1.0 GHz, DDR3 1066MHz 2GB, 0.91A@12V DC	0.6A@12V, full load, Quad CPU
System Cooling	Fanless, Heat-sink	Fanless, Heat-sink	Fanless, Heat-sink
Dimension	3.94" x 2.84" (100mm x 72mm)	3.94" x 2.84" (100mm x 72mm)	3.94" x 2.84" (100mm x 72mm)
Gross Weight	1.1 lb (0.5 kg)	1.1 lb (0.5 kg)	0.88lb (0.4 kg)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C), -4°F ~ 158°F (-20°C ~ 70°C) WiTas I	32°F ~ 140°F (0°C ~ 60°C)	0°C ~ 60°C, -40°C ~ 85°C (optional)
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)	-40°C ~ 85°C
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	95,000	89,000	80,000
Certification	CE,FCC	CE,FCC	CE/FCC
Display			
VGA/LCD Controller	Intel® Atom™ N2600 integration	Integrated decoders in AMD G-series	Freescall i.MX6
Resolution	VGA up to 1920x1200 @60Hz uHDMI up to 1920 x 1200 @60Hz LVDS (18-bit) up to 1366 x768 @60Hz	VGA up to 1920x1200 @60Hz uHDMI up to 1920 x 1200 @60Hz LVDS (18-bit) up to 1366 x768 @60Hz	mHDMI, LVDS
LCD Interface	18-bit Single Channel LVDS with PWM function	18-bit Single Channel LVDS with PWM function	1 CH 18b LVDS x 1
I/O			
Storage/SSD	SATA 3.0Gb/s x 1, mSATA/Mini-Cardx1	SATA 3.0Gb/s x 1, mSATA/Mini-Cardx1	SATA w/SATA PWR connector, eMMC up to 16GB
Ethernet	Realtek RTL 8111E, 10/100/1000Base-TX x 1	Realtek RTL 8111E, 10/100/1000Base-TX x 1	GbE x 1
USB Port	USB2.0 x 5	USB2.0 x 5	Up to 4, one OTG port
Serial Port	RS-232 x 1, RS-232/422/485 x 1	RS-232 x 1, RS-232/422/485 x 1	4-wire UART x 2
Audio	Audio Buzzer x 1, HD Audio Codec (ALC662) for Mic-in/Line-in/Line-out	Audio Buzzer x 1, HD Audio Codec (ALC662) for Mic-in/Line-in/Line-out	Line-in, Speaker out, mic
DIO	4-bit (2-in, 2-out)	4-bit (2-in, 2-out)	8-bit
Expansion Slot	—	—	Mini-Card (Quad only), CAN Bus (optional)
SIM	—	—	Optional
TPM	—	—	—
Touch	—	—	—
Note			

Board Level Products

Pico-ITX Boards-BIO



Model	BIO-ST01-L1U2	BIO-ST01-M1U1	BIO-ST02-C4M1
System			
Form Factor	2.5" Board	2.5" Board	2.5" Board
BIO	80 Pin Hi-speed Board to board connector	80 Pin Hi-speed Board to board connector	80 Pin hi-speed Board to board connector
Power Requirement	Power from MB by BIO	Power from MB by BIO	Power from MB by BIO
Board Size	3.94" x 2.84" (100mm x 72mm)	3.94" x 2.84" (100mm x 72mm)	3.94" x 2.84" (100mm x 72mm)
Gross Weight	200g	200g	200g
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40 °F ~ 176°F (-40°C ~ 80°C)	-40 °F ~ 176°F (-40°C ~ 80°C)	-40 °F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
I/O			
PCIe	Realtek 811E, 10/100/1000Base-TX, RJ-45 x 1	Mini-Card x 1	Mini-Card x 1 (full size), SIM x 1
Serial Port	—	—	COM1, COM2 RS-232 by Pin Header COM3, COM4 RS-232 on Rear I/O
Audio	Dual Channel Audio output with 2W Amp.	Dual Channel Audio output with 2W Amp.	—
Expansion Interface	SMBus x 1, GPIO x 1	SMBus x 1, GPIO x 1	—
SIM	—	SIM Slot x 1	—
USB	USB 2.0 x2 on rear I/O	USB 2.0 x 1 on rear I/O	USB 2.0 x 1 on rear I/O
Note			

Pico-ITX Boards-BIO/ COM Express CPU Modules

Board Level Products

COM Express CPU Modules



Model	COM-SKHB6	COM-SKUC6	COM-QM87
System			
Form Factor	COM Express Basic Size, Pin-out Type 6	COM Express Compact Size, Pin-out Type 6	COM Express Basic Size, Pin-out Type 6
CPU	Onboard 6th Gen Intel® Core™ H i7-6820EQ 4c/2.7GHz i5-6440EQ 4c/2.6GHz i3-6100E 2c/2.7GHz	Onboard 6th Gen Intel® Core™ U-series Processor, BGA type	Onboard 4th Generation Intel® Core™ i Processor
CPU Frequency	Up to i7-6820EQ 2.8 GHz, vPro™	Up to i7-6600U 2.6 GHz, vPro™	Up to 2.7GHz
Chipset	PCH QM170 or CM236 (by sku)	Onboard 6th Gen Intel® Core™ U-series Processor	Intel® PCH QM87
Memory Type	DDR4, SODIMM x 2, ECC Support with CM236 sku only	DDR3L 1333/1600, SODIMM x 1	DDR3/DDR3L 1333/1600, SODIMM x 2, Supports Dual Channel function
Max. Memory Capacity	32GB	8 GB	16GB
BIOS	AMI BIOS, Legacy Free	AMI BIOS, Legacy Free	AMI BIOS, Legacy Free
Wake on LAN	Yes	Yes	Yes
Watchdog Timer	255 levels	255 levels	255 Levels
Power Requirement	Standard: +12V	Standard: +12V	Nominal: +12V
Power Supply Type	AT/ATX	AT/ATX	AT/ ATX
Power Consumption (Typical)	Intel® Core™ i7-6820EQ 2.8GHz, DDR4 16GB 3.08A@12V	i7-6600U, 4GB DDR3., full loading 1.07A@12V during 100% loading burn in test	Intel® Core™ i5-4400E 2.7GHz, DDR3 1600 8GB, 3.21A @+12V
Dimension (L x W)	4.92" x 3.75" (125mm x 95mm)	3.75in x 3.75in (95mm x 95mm)	4.92" x 3.75" (125mm x 95mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-4°F ~ 158°F (-20°C ~ 70°C)	-4°F ~ 158°F (-20°C ~ 70°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	10% ~90% relative humidity, non-condensing	10% ~90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (hours)	80,000	80,000	80,000
Certification	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A
Display			
VGA/LCD Controller	Onboard 6th Gen Intel® Core™ H-series Processor, GT2	Onboard 6th Gen Intel® Core™ U-series Processor, GT2/GT1	Intel® Core™ i7/i5/i3 Celeron® integrated
Video Output	VGA, LVDS/eDP, DDI x 2 (up to 3)	VGA, LVDS/eDP, DDI x 1 (up to 2)	CRT, LVDS LCD, DDI
I/O			
Ethernet	Intel® I219, Gigabit Ethernet	Intel® I219, Gigabit Ethernet	Intel® 217LM, Gigabit Ethernet
Audio	HD Audio	HD Audio	High definition audio
USB Port	USB2.0 x8, USB3.0 x4	USB2.0 x 8, USB3.0 x 4	USB2.0 x 8, USB3.0 x 4
Serial Port	2-Wire UART (Tx/Rx) x2	2-Wire UART (Tx/Rx) x 2	Tx/Rx x 2
Parallel Port	—	—	—
HDD Interface	SATA x4	SATA x 3 (SATA Port 3 optional)	SATA x 4
FDD Interface	—	—	—
SSD	—	—	—
Expansion Slot	PCIe[x16] x 1, PCIe[x1] x8, I2C, LPC, SMBus	PCIe[x1] x 5, I2C, LPC, SMBus	PCI-Express[x1] x 7 (Gen 2.0), PCI-Express[x16] x 1 (Gen 3.0) Configurable to 2 x 8-lane PCI Express Ports, Configurable to 1 x 8-lane or 2 x 4-lane PCI Express Ports LPC Bus x 1, SM Bus x 1, I2C x 1
DIO	GPIO 8-bit	GPIO 8-bit	GPIO 8-bit
Note			

Note: All specifications are subject to change without notice.

Board Level Products

COM Express CPU Modules

COM Express CPU Modules



Model	COM-QM77 Rev. B	COM-HM76	COM-BT
System			
Form Factor	COM Express, Basic, Pin-out Type 6	COM Express, Basic Module, Pin-out Type 6	COM Express, Compact, Pin-out Type 6
CPU	On board 3rd Gen. Intel® Core™ i7/i5/i3/Celeron® (FCBGA1023)	Socket G2 for Intel® 2nd & 3rd Gen. Core™ i7/i5/i3/Pentium®/Celeron® processor	Onboard Intel® Atom™ SoC
CPU Frequency	Up to 2.5GHz	Up to i7-3610QE, Quad core, 2.3GHz	Intel® Atom™ N2930 (1.83 GHz), N2807 (1.58 GHz), E3845 (1.91 GHz), E3827 (1.75 GHz), E3826 (1.46 GHz), E3825 (1.33 GHz), E3815 (1.46 GHz), J1900 (2.0 GHz)
Chipset	Intel® PCH QM77/HM76	Intel® HM76	Intel® Atom™ SoC
Memory Type	DDR3 1333/1600, SODIMM x 2, Supports Dual Channel function	Non-ECC DDR3L 1333/1600	DDR3L 1066/1333 MHz SODIMM x 1
Max. Memory Capacity	16GB	Single-channel SODIMM DDR3L 1333/1600 Memory, Max. 8 GB	8 GB
BIOS	AMI BIOS	AMI BIOS	AMI BIOS
Wake on LAN	Yes	Yes	Yes
Watchdog Timer	255 Levels	255 Levels	255 Levels
Power Requirement	Nominal: +12V	Nominal: +12V	Nominal: +12V
Power Supply Type	AT/ ATX	AT/ ATX	AT/ ATX
Power Consumption (Typical)	Intel® Core™ i3-3217UE 1.6GHz, DDR3 1066 4GB, 2.23A @+12V	i7-3610QE 2.3GHz, DDR3L 8GB 2.73A@12V, 1.18A@5V, 0.31A@3.3V, 100% loading on ECB-920A	0.92A@12V, full load, J1900 0.48A@12V, full load, N2807
Dimension (L x W)	4.92" x 3.75" (125mm x 95mm)	4.92" x 3.75" (125mm x 95mm)	3.75" x 3.75" (95mm x 95mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C) 4°F ~ 158°F (-20°C ~ 70°C) for WITAS 1	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (hours)	80,000	150,000	80,000
Certification	CE/FCC	CE/FCC	CE/FCC
Display			
VGA/LCD Controller	Intel® Core™ i7/i5/i3 Celeron® integrated	Intel® Core™ i7/ i5/i3/Celeron® processor integrated	Intel® Atom™ SoC Integrated
Video Output	CRT, LVDS LCD, DDI x 2	CRT, 18/24-bit Dual-channel LVDS, DDI x 2	CRT, LVDS LCD, DDI, eDP (on module, by switch)
I/O			
Ethernet	Intel® 82579LM, Gigabit Ethernet	Intel® 82579LM for 10/100/1000Base-TX	Intel® 211, Gigabit Ethernet
Audio	High definition audio	High Definition Audio Interface	High Definition Audio Interface
USB Port	USB2.0 x 8	USB 2.0 x 8, USB 3.0 x 4	USB 2.0 x 6, USB 2.0/3.0 x 1
Serial Port	Tx/Rx x 2	Tx/Rx x 2	Tx/Rx x 2
Parallel Port	—	—	—
HDD Interface	SATA 2 x 4	SATA x 4	SATA x 2
FDD Interface	—	—	—
SSD	—	—	—
Expansion Slot	PCI-Express [x16] x 1, PCI-Express [x1] x 7, LPC Bus x 1, SM Bus x 1, I2C x 1	PCI-Express [x16] x 1, PCI-Express [1] x 7, LPC bus x 1, SMBus x 1	PCI-Express[x1] x 3 (Gen 2.0), LPC Bus x 1, SMBus x 1
DIO	GPIO 8-bit	GPIO 8-bit	GPIO 8-bit
Note			

Board Level Products

COM Express CPU Modules



Model	COM-BYTC2	COM-CV Rev. B	COM-CV Rev. A11
System			
Form Factor	COM Express Compact Size, Type 2	COM Express, Compact, Pin-out Type 6	COM Express, Compact, Pin-out Type 2
CPU	Onboard Intel® Atom™ Processor SoC	Onboard Intel® Atom™ D2550/N2600, Dual Core Processors up to 1.86 GHz	Onboard Intel® Atom™ D2550/N2600 Dual Core Processors up to 1.86 GHz
CPU Frequency	Up to J1900 1.91 GHz, Quad core	Up to 1.86 GHz	Up to 1.86 GHz
Chipset	Intel® Atom™ SoC	Intel® NM10	Intel® NM10
Memory Type	DDR3L 1066/1333, SODIMM x 1	DDR3 1066, SODIMM x 1	DDR3 1066, SODIMM x 1
Max. Memory Capacity	Up to 8GB	Up to 4 GB	Up to 4 GB
BIOS	AMI BIOS, Legacy Free	AMI BIOS	AMI BIOS
Wake on LAN	Yes	Yes	Yes
Watchdog Timer	255 levels	255 Levels	255 Levels
Power Requirement	Standard: +12V	Nominal: +12V	Nominal: +12V
Power Supply Type	AT/ATX Selection	AT/ ATX	AT/ ATX
Power Consumption (Typical)	1A@ 12V with J1900, full load	Intel® D2550 1.86 GHz, DDR3 1066/4GB, 1.39A@+12V	Intel® D2550 1.86 GHz, DDR3 1066/4GB, 1.21A@+12V
Dimension (L x W)	3.75" x 3.75" (95mm x 95mm)	3.75" x 3.75" (95mm x 95mm)	3.75" x 3.75" (95mm x 95mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C) (D2550/N2600) -40°F ~ 185°F (-40°C ~ 85°C) (N2600)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-4°F ~ 158°F (-20°C ~ 70°C)	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	10% ~90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	80,000	80,000	80,000
Certification	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A
Display			
VGA/LCD Controller	Intel® Atom™ SoC	Intel® Atom™ D2550/N2600 Processor integrated	Intel® Atom™ D2550/N2600 Processor integrated
Video Output	VGA, LVDS, eDP	CRT/ LVDS LCD/ DisplayPort™/ HDMI	CRT/ LVDS LCD
I/O			
Ethernet	Intel® I210IT, Gigabit Ethernet	Intel® 82583V, Gigabit Ethernet	Intel® 82583V, Gigabit Ethernet
Audio	HD Audio	High Definition Audio Interface	High Definition Audio Interface
USB Port	USB2.0 x 7	USB2.0 x 8, USB3.0 x 2	USB2.0 x 8
Serial Port	—	Tx/Rx x 2	From LPC interface
Parallel Port	—	—	From LPC interface
HDD Interface	SATA x 1 PATA x 1	SATA 2 x 2	SATA 2 x 4 PATA x 1
Onboard SSD	—	—	—
Expansion Slot	PCIe[x1] x 2 PCI x 4 I2C LPC SMBus	PCI-Express [x1] x 4 LPC Bus x 1 SM Bus x 1	PCI-Express [x1] x 3 32-bit PCI x 2 LPC Bus x 1 SM Bus x 1
DIO	GPIO 8-bit	GPIO 8-bit	GPIO 8 bit
TPM	—	—	—
Note			

Board Level Products

COM Express CPU Modules



Model	COM-LN Rev. B	NanoCOM-SKU
System		
Form Factor	COM Express, Compact Module, Pin-out Type 2	COM Express, Mini Module, Pin-out Type 10
CPU	Onboard Intel® Atom™ D525	Onboard 6th Generation Intel® Core™ U-series Processor, BGA type
CPU Frequency	Up to 1.8 GHz	Up to 2.3GHz
Chipset	Intel® ICH8M	Onboard 6th Generation Intel® Core™ SoC
Memory Type	DDR3 667/800, SODIMM x 2	Onboard 4GB DDR4
Max. Memory Capacity	4 GB	Onboard 4GB DDR4
BIOS	AMI BIOS	AMI BIOS
Wake on LAN	Yes	Yes
Watchdog Timer	255 Levels	255 Levels
Power Requirement	+8.5V ~ +19V (Optional) Nominal: +12V	Standard : +12V, AT/ATX Optional: +5V, AT/ATX
Power Supply Type	AT/ ATX	AT/ATX
Power Consumption (Typical)	Intel® Atom™ D525 1.8 GHz, DDR3 800 1GB, 1.24A@+12V	1.07A @ 12V, with i7-6600U in 100% loading
Dimension (L x W)	3.75" x 3.75" (95mm x 95mm)	3.31" x 2.17" (84mm x 55mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32 °F ~ 140 °F (0 °C ~ 60 °C) standard -40 °F ~ 185 °F (-40 °C ~ 80 °C) plan to have
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	90,000	80,000
Certification	CE/FCC	CE/FCC
Display		
VGA/LCD Controller	Intel® Atom™ D525 Processor Integrated	Onboard 6th Gen Intel® Core™ U-series Processor, GT2/ GT1
Video Output	CRT/ LVDS LCD	LVDS LCD/eDP, DDI x 1
I/O		
Ethernet	Intel® 82567V, Gigabit Ethernet	Intel® 219LM, Gigabit Ethernet
Audio	High Definition Audio Interface	High Definition Audio Interface
USB Port	USB2.0 x 8	USB2.0 x 8, USB3.0 x 2
Serial Port	From LPC interface	TX/RX x 2
Parallel Port	From LPC interface	—
HDD Interface	PATA x 1 (Two devices) SATA 2 x 3	SATA 2 x 2
Onboard SSD	—	—
Expansion Slot	PCI-Express [x1] x 5 (x 6: Optional) 32-bit PCI x 4 LPC Bus x 1 SM Bus x 1 I2C x 1	PCI Express [x1] x 3 LPC Bus x 1 SMBus x 1
DIO	GPIO 8-bit	GPIO 8-bit
TPM	—	—
Note		

Board Level Products

COM Express CPU Modules



Model	NanoCOM-BT	NanoCOM-CV Rev. A	NanoCOM-CV Rev. B
System			
Form Factor	COM Express, Mini Module, Pin-out Type 10	COM Express, Mini Module, Pin-out Type 1	COM Express, Mini Module, Pin-out Type 10
CPU	Intel® Atom™/ Celeron® SOC Processor (M/I)	Onboard Intel® Atom™ N2600	Onboard Intel® Atom™ N2600
CPU Frequency	Up to E3845, 1.91 GHz	Up to 1.6GHz	Up to 1.6GHz
Chipset	Intel® Atom™/ Celeron® SOC Processor	Intel® NM10	Intel® NM10
Memory Type	Onboard DDR3L	Non-ECC DDR3 800	Non-ECC DDR3 800
Max. Memory Capacity	2 GB DDR3L Onboard (up to 4 GB)	2GB, DDR3 onboard	2GB, DDR3 onboard
BIOS	AMI BIOS	AMI BIOS	AMI BIOS
Wake on LAN	Yes	Yes	Yes
Watchdog Timer	255 Levels	255 Levels	255 Levels
Power Requirement	Standard : +12V, Optional: +5V	Nominal: +12V	Nominal: +12V
Power Supply Type	AT/ATX	AT/ATX	AT/ATX
Power Consumption (Typical)	0.7A@12V, full load, E3845	0.65A@12V, full load, N2600	0.72A@12V, full load, N2600
Dimension (L x W)	3.31" x 2.17" (84mm x 55mm)	3.31" x 2.17" (84mm x 55mm)	3.31" x 2.17" (84mm x 55mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C) -40°F ~ 185°F (-40°C ~ 85°C) by E3845	32°F ~ 140°F (0°C ~ 60°C), -40°F ~ 185°F (-40°C ~ 85°C) for WITAS 2	32°F ~ 140°F (0°C ~ 60°C), -40°F ~ 185°F (-40°C ~ 85°C) for WITAS 2
Storage Temperature	-40°F ~ 176°F (-40°C ~ 85°C)	-40°F ~ 185°F (-40°C ~ 85°C)	-40°F ~ 185°F (-40°C ~ 85°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	90,000	80,000	80,000
Certification	CE/FCC	CE/FCC	CE/FCC
Display			
VGA/LCD Controller	Intel® Atom™ SOC	Intel® Atom™ N2600 integrated	Intel® Atom™ N2600 integrated
Video Output	LVDS LCD/eDP, DDI x 1	LVDS, CRT	LVDS, DDI
I/O			
Ethernet	Intel® I210-IT/I211-AT	Intel® 82583V	Intel® 82583V
Audio	High Definition Audio Interface	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out
USB Port	USB 2.0 x 7, USB3.0 x 1	USB 2.0 x 8 via NM10	USB 2.0 x 8 via NM10
Serial Port	Tx/Rx x 2	—	TX/RX x 2
Parallel Port	From LPC interface	—	—
HDD Interface	SATA 2 x 2	SATA 3.0Gb/s x 2 (one share with SSD) SATA SSD x 1 up to 4GB (optional)	SATA 3.0Gb/s x 2 (one share with SSD) SATA SSD x 1 up to 4GB (optional)
Onboard SSD	Optional for 8GB/16GB eMMC	Optional	Optional
Expansion Slot	PCI Express [x1] x 3 LPC Bus x 1 SMBus x 1	PCI Express [x1] x 3 LPC Bus x 1 SMBus x 1	PCI Express [x1] x 3 LPC Bus x 1 SMBus x 1
DIO	GPIO 8-bit	GPIO 8-bit	GPIO 8-bit
TPM	—	—	—
Note			

Board Level Products

COM Carrier Boards



Model	ECB-916M Rev. B	ECB-920A
System		
Form Factor	Micro-ATX	ATX
COM Express Connector	x2	x2
I/O Chipset	Winbond W83627DHG	N/A (Legacy support)
Front Panel Control	10-pin (5x2) header	10-pin (5x2) header
Ethernet	Intel® 82573L, 10/100/1000Base-TX, RJ-45 x 1 10/100 Base-TX or 10/100/1000Base-TX, RJ-45 x 1 (From CPU module)	10/100/1000Base-TX, RJ-45 x 1 (From CPU module)
Expansion Interface	PCI-Express [x1] slot x 1 (additional 2 for testing only) PCI-Express [x16] slot x 1 ==> Added a 3-pin header for SDVO enabled or disabled PCI slot x 1 Mini-PCI slot x 1 Mini-Card slot x 1 Express Card slot x 1	PCI-Express [x1] slot x 4 (3 by PCI-E[x1] x 1 pin-out, 1 by SIO pin-out) PCI-Express [x4] slot x 1 PCI-Express [x16] slot x 1 Mini-Card slot x 1
Power Supply Type	AT/ATX	ATX
CMOS Battery	RTC battery socket x 1	RTC battery socket x 1
BIOS	SPI x 1, Firmware Hub x 1 (with DIP Switch for BIOS Selection)	—
Board Size	9.6" x 9.6" (243.84mm x 243.84mm)	12" x 9.6" (304mm x 244mm)
Gross Weight	1.32 lb (0.6 kg)	1.32 lb (0.6 kg)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 185°F (-40°C ~ 85°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	77,000	75,000
Display		
DVI/CRT	DVI 29-pin + DB 15-pin stack-type connector	DB15 connector x 1
LVDS	30-pin (15 x 2) Dual-Channel LVDS connector x 1	30-pin (15 x 2) Dual-Channel LVDS connector x 1
DDI	—	DP connector x 4 (Dual x 1, Single x 2)
SDVO	40pin (20 x 2) SDVO connector x 1	—
Touch Screen	Yes	—
I/O		
Storage	40-pin PATA connector x 1 SATA 3.0 Gb/s x 3 CompactFlash™ Type 2 slot x 1	SATA x 4
Serial Port	RS-232 Port x 1 RS-232/422/485 Port x 1	2-wire RS-232 port x 2 (10-pin (5x2) box header x 2)
USB	Type-A connector x 4	Type A connector x 4 (USB3.0) for Type 6 USB2.0 port x 4
I2C	—	1
PS/2 Port	x 1	—
Digital I/O	Supports 8-bit (Programmable)	—
Audio	Audio jack x 6, support 7.1 channel audio Audio Codec: Realtek ALC888 Buzzer x 1	Audio Jack Line-in Line-out Microphone
Debug LED	—	80 PORT
Switch/Button	Power button x 1 Reset button x 1	—
Note		

Board Level Products

XTX/ETX CPU Modules



Model	XTX-BSW	XTX-CV Rev. A11
System		
Form Factor	XTX	XTX
CPU	Onboard Intel® Atom™ N3000 Processor SoC, D1 stepping	Onboard Intel® Atom™ D2550/N2600 Dual Core Processors, up to 1.86GHz
CPU Frequency	Up to 1.86 GHz	Up to 1.86 GHz
Chipset	Onboard Intel® Atom™ N3000 Processor SoC, D1 stepping	Intel® NM10
Memory Type	DDR3L 1066 MHz, SODIMM x 1	DDR3 1066, SODIMM x 1
Max. Memory Capacity	8 GB	4 GB (64-bit OS)
BIOS	AMI BIOS	AMI BIOS
Wake on LAN	Yes	Yes
Watchdog Timer	255 Levels	255 Levels
Power Requirement	+5V	+5V
Power Supply Type	AT/ATX	AT/ ATX
Power Consumption (Typical)	Intel® Celeron® N3710 1.6GHz, 1.71A@5V, full loading	Intel® Atom™ N2600 1.6 GHz, DDR 1066 4GB 2.38A@+5V
Dimension (L x W)	4.5" x 3.74" (114mm x 95mm)	4.5" x 3.74" (114mm x 95mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	80,000	68,000
Certification	CE/FCC	CE/FCC
Display		
VGA/LCD Controller	Intel® Atom™ N3000 Processor integrated	Intel® Atom™ D2550/N2600 Processor integrated
Video Output	CRT, LVDS LCD, DP (optional)	CRT/ LVDS LCD
Backlight Inverter Supply	—	—
I/O		
Ethernet	Realtek 8105E, 10/100Base-TX	Realtek 8105E, 10/100Base-TX
Audio	Realtek ALC892	Realtek ALC892
USB Port	USB2.0 x 5	USB2.0 x 6
Serial Port	2	2
Parallel Port	1	1
HDD Interface	SATA x 2 (one shared with PATA) PATA x 1	SATA x 2 (one shared with SATA) PATA x 1
FDD Interface	—	—
SSD	—	—
Expansion Slot	PCI Express [x1] x 2 PCI x 4	PCIe[x1] x 4 PCI x 4
DIO	—	—
TPM	—	—
Note	LPC (Optional)	

Board Level Products

XTX/ETX CPU Modules



Model	ETX-LN Rev. A11	ETX-A55E	ETX-701
System			
Form Factor	ETX	ETX	ETX
CPU	Onboard Intel® Atom™ D525/N455	Onboard AMD® G-series APU T16R/ T56N	Onboard AMD Geode™ LX 800
CPU Frequency	Up to 1.8 GHz/ FSB	T16R: Single Core 615 MHz/ 4.5W T56N: Dual Core 1.6GHz/18W	LX800: 500 MHz
Chipset	ICH8M	AMD G-series A55E	AMD Geode™ LX 800 + CS5536
Memory Type	DDR3 667/800, SODIMM x 1	DDR3L 1066/1333 MHz, SODIMM x 1	DDR333/400, DDR SODIMM x 1, DDR333: 1 GB, DDR400: 512 MB
Max. Memory Capacity	N455 667/2G, D525 800/4G	Up to 8 GB	1 GB
BIOS	AMI AMI BIOS, 4MB	AMI BIOS	Award PLCC Type, 2MB
Wake on LAN	Yes	Yes	Yes
Watchdog Timer	255 Levels	255 Levels	255 Levels
Power Requirement	+5V	+5V	+5V
Power Supply Type	Intel® Atom™ D525 1.8 GHz, DDR3 1066 4 GB, 3.42A@+5V	T16R: 10.7W T56N: 24.2W	LX 800, DDR333 1 GB 0.25A@+12V, 2.02A@+5V W/ TF-ECB-901A-A10-01
Power Consumption (Typical)	AT/ ATX	AT/ ATX	AT/ ATX
Dimension (L x W)	4.5" x 3.74" (114mm x 95mm)	4.5" x 3.74" (114mm x 95mm)	4.5" x 3.74" (114mm x 95mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	100,000	83500	110,000
Certification	CE/FCC	CE/FCC	CE/FCC
Display			
VGA/LCD Controller	Intel® D525/N455/D425 integrated	AMD G-series T16R/T56N integrated	AMD Geode™ LX 800 processor integrated
Video Output	CRT, LVDS LCD	CRT/ LVDS LCD	CRT, LVDS LCD, TTL LCD
Backlight Inverter Supply	—	—	—
I/O			
Ethernet	Realtek RTL8105E, 10/100Base-TX	Realtek RTL8105 10/100 Base-TX	Realtek RTL8139DL, 10/100Base-TX
Audio	Realtek ALC662	Realtek ALC892	Realtek ALC203
USB Port	USB2.0 x 4	USB2.0 x 4	USB2.0 x 4
Serial Port	COM 1/2	2	COM 1/2
Parallel Port	SPP/EPP/ECP x 1	1	SPP/EPP/ECP x 1
HDD Interface	PATA x 1, SATA 2 x 2	SATA x 2, PATA x 2 (2 devices)	PATA x 2, SATA 1 x 2
FDD Interface	—	—	Option
SSD	—	—	—
Expansion Slot	32-bit PCI x 4 SMBUS x 1 I2C x 1 8/16-bit ISA	32-bit PCI x 4 SMBUS x 1 I2C x 1 8/16-bit ISA	32-bit PCI x 4 SMBUS x 1 I2C x 1 8/16-bit ISA
DIO	—	—	—
TPM	—	—	—
Note			

Board Level Products

XTX/ETX Carrier Boards



Model	ECB-902M	ECB-910M
System		
Form Factor	MicroATX	MicroATX
I/O Chipset	Winbond W83977EG-AW	ITE IT8712KX
Ethernet	10/100Base-TX, RJ-45 x 1	10/100Base-TX, RJ-45 x 1
Expansion Interface	PCI Slot x 2 ISA Slot x 2 Mini-PCI Slot x 1	PCI-Express [x1] Slot x 2 PCI Slot x 1 ExpressCard Slot x 1 Mini-PCI Slot x 1 Mini-Card Slot x 1 LPC Connector x 1
Power Supply Type	AT/ ATX	AT/ ATX
Board Size	9.6" x 9.6" (244mm x 244mm)	9.6" x 9.6" (243.8mm x 243.8mm)
Gross Weight	1.32 lb (0.6 kg)	1.32 lb (0.6 kg)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	132,000	60,000
Display		
VGA	DB15 connector x 1	DB15 connector x 1
LCD	30-pin (15x2) Dual-Channel LVDS connector x 1 40-pin (20x2) TTL connector x 1	30-pin (15x2) dual-channel LVDS connector x 1
I/O		
Storage	PATA connector x 2	PATA connector x 1 SATA Port x 2
Serial Port	RS-232 port x 3 (9-pin Dsub connector x 1 + 5x2-pin box header x 2) RS-232/422/485 port x 1 (5x2-pin box header)	RS-232 port x 3 (9-pin D-Sub connector x 1 + 5x2-pin box header x 2) RS-232/422/485 port x 1 (5x2-pin box header)
Parallel Port	DB-25 connector x 1, supports SPP/ EPP/ ECP mode	DB25 connector x 1, supports SPP/ EPP/ ECP mode
USB	Type A connector x 4	Type A connector x 2, Wafer x 1
PS/2 Port	Keyboard x 1, Mouse x 1	Keyboard x 1, Mouse x 1
Digital I/O	Supports 8-bit (Programmable)	Supports 8-bit (Programmable)
Audio	Audio jack, supports 2 channel audio	Audio jack, supports 5.1 channel audio
IrDA	Tx/Rx header x 1	Tx/Rx header x 1
Note		

Board Level Products

Qseven CPU Modules



Model	AQ7-IMX6	AQ7-BT
System		
Form Factor	Qseven Rev. 2.0	Qseven Rev.2.0
CPU	Freescap® i.MX6 SoC Processor	Intel® Atom™ SoC Processor
CPU Frequency	1.0 GHz (Dual lite), 1.2 GHz(Quad)	Up to 1.91GHz
Chipset	Freescap® i.MX6 Quad 1.0GHz Processor (Automotive) Freescap® i.MX6 Quad 1.2GHz Processor (Commercial) Freescap® i.MX6 Dual Lite 800MHz Processor (Commercial)	Intel® Atom™ E3800 series SoC
Memory Type	Onboard DDR3 1066MHz (Quad) Onboard DDR3 800MHz (Dual lite)	Onboard DDR3L
Max. Memory Capacity	Onboard DDR3 1066MHz, 1GB, up to 2GB (Quad) Onboard DDR3 800MHz, 1GB, up to 2GB (Dual lite)	2GB (Optional to 4 GB)
BIOS	—	AMI BIOS
Wake on LAN	No	No
Watchdog Timer	255 level (per level 0.5 sec)	255 Levels
Power Requirement	+5V	+5V
Power Supply Type	AT/ ATX	AT/ ATX
Power Consumption (Typical)	Freescap iMX6 Quad 1.2GHz, DDR3 1GB, eMMC 8GB, 5.375W (w/ECB-970)	2A@5V, full load, E3845
Dimension (L x W)	2.75" x 2.75" (70mm x 70mm)	2.75" x 2.75" (70mm x 70mm)
Operating Temperature	32 °F ~ 140 °F (0 °C ~ 60 °C) -40 °F ~ 185 °F (-40 °C ~ 80 °C) WITAS 2	32 °F ~ 140 °F (0 °C ~ 60 °C) -40 °F ~ 185 °F (-40 °C ~ 80 °C) by E3825
Storage Temperature	-40°F ~ 185°F (-40°C ~ 85°C)	-40°F ~ 185°F (-40°C ~ 85°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	100,000	80,000
Certification	CE/FCC	CE/FCC
Display		
VGA/LCD Controller	Freescap® i.MX6 Quad 1.0GHz Processor (Automotive) Freescap® i.MX6 Quad 1.2GHz Processor (Commercial) Freescap® i.MX6 Dual Lite 800MHz Processor (Commercial)	Intel® Atom™ SOC
Video Output	LVDS1: 18b, 1CH LVDS2: 24/18b, 2CH HDMI 1.4	24-bit LVDS LCD, DDI x 1
Backlight Inverter Supply	—	—
I/O		
Ethernet	Micrel® KSZ9021RNI, 10/100/1000Base-TX	Intel® I210IT, 10/100/1000Base-TX
Audio	I2S x 1	High Definition Audio Interface
USB Port	USB 2.0 x 5 (Shared with USB OTG client x 1)	USB 2.0 x 6, USB 3.0 x 1
Serial Port	4-Wire UART x 1	4-Wire UART x 1, 2-wire UART x 1
Parallel Port	—	—
HDD Interface	SATA 3.0GB/s x 1 (Quad)	SATA x 2, 1 shared with onboard SSD
FDD Interface	—	—
SSD	eMMC x 1 (optional)	Optional
Expansion Slot	PCI Express [x1] x 1 CAN Bus x 1 I2C x 1 SDIO x 1	PCI Express [x1] x 3 LPC Bus x 1 (shared with GPIO SMBus x 2
DIO	8 bit	GPIO 8 bit (shared w/ LPC, optional)
TPM	—	—
Note		

Board Level Products

Qseven Carrier Boards



Model	ECB-970-A10	ECB-970-A10-01
System	X86 (A10)	ARM (A10-01)
Form Factor	Micro ATX	Micro ATX
I/O Chipset	—	—
Ethernet	10/100/1000Base-TX, RJ-45 x 1 (From CPU module)	10/100/1000Base-TX, RJ-45 x 1 (From CPU module)
Expansion	Interface PCI-E [x4] x 1(For Super I/O Card only) LPC Connector x 1	PCI-E [x1] x 1
Power Requirement	+5V DC	+5V DC
Power Consumption (Typical)	—	3~5 Watt @5V
Board Size	9.65" x 9.65" (243.84mm x 243.84mm)	9.65" x 9.65" (243.84mm x 243.84mm)
Gross Weight	1.32 lb (0.6 kg)	1.32 lb (0.6 kg)
Operation Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 185°F (-40°C ~ 85°C)	-40°F ~ 185°F (-40°C ~ 85°C)
Operation Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	75,000	75,000
Display		
VGA/LCD Controller	—	—
Video Output	VGA x 1, 18-bit Single Channel LVDS	LVDS x 2, eDP x 2, HDMI x 1
Backlight Inverter Supply	—	—
I/O		
Storage	SATA x 2, SDIO x 1	SATA 2 x 1
Serial Port	RS-232 x 1, RS-232/422/485 x 1	One, For debug only
Parallel Port	—	—
USB	USB 2.0 x 8, USB 3.0 x 2	USB 2.0 x 5 (one shared with USB OTG)
PS/2 Port	—	—
I2C	—	1
Audio	Line-out, Microphone	Headphone
Debug LED	Port 80	—
Note		

Board Level Products

SMARC CPU Module



SMARC Carrier Board



Model	uCOM-BT	Model	ECB-960T
System		System	
Form Factor	SMARC	Form Factor	Mini-ITX form Factor (170mmx 170mm)
Processor	Intel® Atom™ Processor SoC N2807: Dual Core 1.58 GHz/4.3W E3825: Dual Core 1.33 GHz/6W E3845: Quad Core 1.91 GHz/10W	I/O Chipset	N/A (Legacy Support)
System Memory	Onboard DDR3L 2 GB, (optional 4GB)	Ethernet	10/100/1000Base-TX, RJ-45 x 1 (From CPU module)
Chipset	HDMI/LVDS	Expansion Interface	PCI-Express [x1] x 3 via adapter card
I/O Chipset	Intel® Atom™ Processor SoC	Power Consumption (Typical)	—
Ethernet	Intel® I211AT/I210IA for 10/100/1000Base-TX	Power Requirement	+12V DC; +8~20VDC-in on separate connector
BIOS	AMI BIOS, Legacy free BIOS	Board Size	6.69" x 6.69" (170mm x 170mm)
Wake on LAN	Yes	Gross Weight	—
Watchdog Timer	ITE IT8528	Operation Temperature	32 °F ~ 140 °F (0 °C ~ 60 °C)
HW status monitoring	Supports CPU Temperature Monitoring	Storage Temperature	-4 °F ~ 158 °F (-20 °C ~ 70 °C)
Expansion Interface	PCI Express [x1] x 3, SPI x 1, I2C, I2S	Operation Humidity	10% ~ 80% relative humidity, non-condensing
Power Requirement	Standard: +3.3V/5V, AT/ATX	MTBF	80,000
Power Consumption (Typical)	Intel® Atom™ E3845 1.91 GHz, DDR3 2 GB, full load 0.7A@12V, 8.4W	Display	
Board Size	3.31" x 2.17" (82mm x 50mm)	LVDS	18/24-bit Single channel LVDS
Gross Weight	0.44 lb (0.2 kg)	I/O	
Operating Temperature	32 °F ~ 140 °F (0 °C ~ 60 °C) -40 °F ~ 185 °F (-40 °C ~ 85 °C) optional	Storage	SATA x 1, microSD card x 1
Storage Temperature	-40 °F ~ 176 °F (-40 °C ~ 85 °C)	Serial Port	2-wire x 1, 4-wire x 1
Operating Humidity	0% ~ 90% relative humidity, non-condensing	USB	USB port 3.0 x 1 USB port 2.0 x 5 (Port 0 for client only)
MTBF (hours)	80,000	I2C	Client mode
Display		Audio	Line-in, Line-out, Microphone
VGA/LCD Controller	Intel® Atom™ SOC		
Resolution	LCD: up to 1920 x 1080 HDMI: up to 1920 x 1080		
LCD Interface	18-bit single channel LVDS		
I/O			
Storage	SATA x 2, eMMC (by SKU)		
Serial Port	UART x 2		
Parallel Port	—		
USB	USB2.0 x 3, USB3.0 x 1		
PS/2 Port	—		
IRDA	—		
Audio	High definition audio		
Note	SPIO for boot device only No OTG Support	Note	

Board Level Products

Industrial Motherboards



Model	NITX-BD1	NITX-SKL1
System		
Processor	Intel® 5th gen. 14nm ULT i7-5650U/ i5-5350U/ i3-5010U, BGA CPU, 15W TDP.	Intel® 6th gen. 14nm ULT, i7-6600U/ i5-6300U/ i3-6100U/ Celeron® 3955U, BGA CPU, 15W TDP.
Chipset	Intergrate into SoC	Intergrate into SoC
Memory	SODIMM x 2, max. 16GB, DDR3L 1600 MHz, non-ECC, un-buffered memory	SODIMM x 2, max. 16GB, DDR4 2133/1867 MHz, non-ECC, un-buffered memory
I/O Chipset	NCT5538D	NCT5538D
Ethernet	Realtek 8111G x 2	Realtek 8111G x 2
Audio	Realtek® ALC887	Realtek® ALC887
TPM	—	—
Expansion Slots	M.2 (M-key) x 1, length: 60mm (mSATA colay LVDS), auto detect, Mini-Card half size (default USB+PCIe, mSATA BOM change) x 1	M.2 (M-key) x 1, length: 80mm (PCIEv4+mSATA), default mSATA, M.2 (E-Key) x 1, length: 30mm (PCIe+USB), default PCIe
Graphics		
Graphics Chipset	Integrated Graphics, LVDS via CH7511, support by add on M2 module	Integrated Graphics
VGA	—	—
DVI	—	—
HDMI	—	—
Display Port	DP 1.2a (U): 3840 x 2160, (H): 4096 x 2304	HDMI 1.4 up to 4096x2160@24Hz
LVDS	Up to 1920 x 1080 @60Hz, Dual Channel 18/24-bit (via CH7511)	—
eDP	—	—
Backlight Control	Yes	—
Environment & Power & ME		
Power Requirement	DC power jack x 1 (DC: 12V~19V, wide rage: 12V-5%~ 19V+10%)	DC power jack x 1 (DC: 12V~19V, wide rage: 12V-5%~ 19V+10%)
Operating Temperature	32°F ~ 131°F (0°C ~ 50°C)	32°F ~ 131°F (0°C ~ 50°C)
Operating Humidity	20% ~ 90% RH, non-condensing	20% ~ 90% RH, non-condensing
Certificate	CE & FCC class A	CE & FCC class A
Form Factor	NANO ITX: 120mm x 120mm (4.72" x 4.72")	NANO ITX: 120mm x 120mm (4.72" x 4.72")
MTBF (Hours)	434,910	—
Panel I/O Ports		
USB	Front: USB 3.0 port x 2, USB 2.0 port x 2, Rear: USB 3.0 port x 2	Front: USB 3.0 port x 2, Rear: USB 3.0 port x 2
Display I/O	DP x 2	HDMI x 2
Audio I/O	Line-out x1 (green), Mic-in x1 (pink)	Line-out x1 (green), Mic-in x1 (pink)
LAN I/O	RJ-45 x 2	RJ-45 x 2
Serial Port	—	—
PS/2 Port	—	—
Others	Reset Switch x 1, DC power jack x 1, On/Off Button x 1, Power LED + HD LED x 1; Antenna output (from internal mini-card) x 2	Reset Switch x 1, DC power jack x 1, On/Off Button x 1, Power LED + HD LED x 1; Antenna output (from internal mini-card) x 2
Internal I/O Connectors		
Storage	SATA3 x 1, M.2 slot for mSATA x 1	M.2 slot for mSATA x 1
USB	USB 2.0 x 1 (p=2.00mm)	—
Display I/O	LVDS x 1, support by add on M.2 module	—
Audio I/O	—	—
Serial Port	COM (RS-232) x 1, p=2.00mm	—
PS/2 Port	—	—
Parallel Port	—	—
DIO	—	—
FAN	Chassis Fan x 1 (3-pin, p=2.00mm)	Chassis Fan x 1 (3-pin, p=2.00mm)
Power	SATA power connector x 1, support by add on M.2 module, int. 2-pin reset switch x 1, int. 2-pin power switch x 1,	int. 2-pin reset switch x 1, int. 2-pin power switch x 1
Others	Mini-Card half size x 1 (default USB+PCIe, mSATA BOM change)	M.2 2230 E-Key slot x 1
OS		
OS Support	Windows® 7 32/64-bit, Windows® 8.1 64-bit, Windows® 10 64-bit, Linux Fedora	Windows® 7 32/64-bit, Windows® 8.1 64-bit, Windows® 10 64-bit, Linux Fedora
Note		

Board Level Products

Industrial Motherboards

Launching in Q4



Model	EMB-APL1	EMB-BT1
System		
Processor	Intel® Atom™ E3930 (2C 1.8 GHz), E3950 (4C 2.0 GHz), TDP Targets: 5.5~12Watts, FCBGA1296	Intel® Atom™ J1900 Processor (4C @ 2.00 GHz CPU, 688/854 MHz GFX, 10W TDP), N2807 Processor (2C @ 1.58 GHz CPU, 313/750 MHz GFX, 4.3W TDP), E3845 Processor (4C @ 1.91 GHz CPU, 542/792 MHz GFX, 10W TDP), E3825 Processor
Chipset	Intergrate into SoC	—
Memory	DDR3L SO-DIMM x 1, max. 8GB, 1333/1600/1867MTS, non-ECC, un-buffered memory	DDR3L 1333 MHz SODIMM x 2 up to 8 GB (for J1900 / E3845), DDR3L 1333 MHz SODIMM x 1 up to 4 GB (for N2807), DDR3L 1067 MHz SODIMM x 1 up to 8 GB (for E3825), Non-ECC, un-buffered memory, Dual-channel memory architecture flat type
I/O Chipset	Fintech 81866D	Fintech 81866D
Ethernet	Realtek 8111G x 2	Realtek PCIe Gb LAN 8111G x 2
Audio	Realtek® ALC3236-VB2-CG	Realtek® ALC887
TPM	Nuvoton NPCT650ABAYX TPM2.0 (default : No)	Infineon SLB9635 TT 1.2 (default : No)
Expansion Slots	M.2 M key (22 x 42mm) x 1 for SATA, M.2 E Key (22 x 42mm) x 1 for PCIe, PCIe[x1] x 1	Full-size Mini-Card (mSATA default) (PCIe+USB optional) + SIM Card (default: No) x 1, Half-size Mini-Card (PCIe+USB) x 1, PCIe [x1] x 1
Graphics		
Graphics Chipset	Intel® HD Graphics	Intel® HD Graphics
VGA	Up to 1920 x 1200 @60 Hz	Up to 1920 x 1200 @60 Hz
DVI	—	—
HDMI	HDMI Up to 3840 x 2160 @ 30Hz	Up to 1920 x 1200 @60 Hz
Display Port	—	—
LVDS	LVDS Up to 1920 x 1080 @60Hz, Dual Channel 18/24 bit (via CH7511) (colay w/ eDP, default: No)	Up to 1920 x 1080 @60Hz, Dual Channel 18/24-bit (via CH7511)
eDP	eDP Up to 4096 x 2160 @60Hz	—
Backlight Control	Voltage/PWM	Voltage/PWM
Environment & Power & ME		
Power Requirement	12-24V DC (wide range: 12V-5% ~ 24V +10%)	12V DC
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Operating Humidity	0% ~ 90%RH, non-condensing	0% ~ 90%RH, non-condensing
Certificate	CE & FCC	CE & FCC
Form Factor	Mini-ITX 6.7" x 6.7" (170mm x 170mm)	Mini-ITX 6.7" x 6.7" (170mm x 170mm)
MTBF (Hours)	—	111,131
Panel I/O Ports		
USB	USB 3.0 x 2, USB 2.0 x 2	USB 3.0 x 1, USB 2.0 x 2
Display I/O	VGA x 1, HDMI x 1	VGA x 1, HDMI x 1
Audio I/O	Mic-in x 1, Line-out x 1	Line-out x 1
LAN I/O	RJ-45 x 2	RJ-45 x 2
Serial Port	—	COM (RS-232) x 1
PS/2 Port	—	—
Others	DC Jack x 1	DC Jack x 1
Internal I/O Connectors		
Storage	SATA3 x 2 (1 colay with M.2) (default: SATA x 1 + M.2)	SATA3 x 2, SATA2 x 2 (1 colay with mSATA), mSATA x 1
USB	USB 2.0 x 3	USB 2.0 x 5
Display I/O	LVDS or eDP x 1 (Default: eDP)	LVDS x 1
Audio I/O	—	AAFP x 1
Serial Port	COM (RS-232) x 5, COM (RS-232/422/485) x 1	COM (RS-232) x 4, COM (RS-232/422/485) x 1
PS/2 Port	1	1
Parallel Port	—	SPP/EPP Mode
DIO	8-bit programmable (4-in/4-out) x 1	8-bit programmable (4-in/4-out) x 1
FAN	Chassis Fan x 1	Chassis Fan x 1
Power	12V AUX x 1, AT/ATX mode select jumper x 1	12V AUX x 1, AT/ATX mode select jumper (default : No) x 1
Others	Front Panel x 1	miniPCIe x 1, PCIe [x1] x 1, SIM Card Socket(default : No) x 1, LPT x 1, Front Panel x 1, CMOS jumper x 1
OS		
OS Support	Windows® 7 32/64-bit, Windows® 8.1 64-bit, Windows® 10 64-bit, Linux Fedora	Windows® 7/8.1/10 for 32/64-bit, Linux Fedora
Note		

Board Level Products

Industrial Motherboards



Model	EMB-BT2	EMB-BT4
System		
Processor	Intel® Atom™ J1900 Processor (4C @ 2.00 GHz CPU, 688/854 MHz GFX, 10W TDP)	Intel® Atom™ J1900 Processor (4C @ 2.00 GHz CPU, 688/854 MHz GFX, 10W TDP), Intel® Atom™ N2807 Processor (2C @ 1.58 GHz CPU, 313/750 MHz GFX, 4.3W TDP)
Chipset	—	—
Memory	DDR3L 1333 MHz SODIMM x 2 up to 8 GB, Non-ECC, un-buffered memory	DDR3L 1333 MHz SODIMM x 2 up to 8 GB (for J1900), DDR3L 1333 MHz SODIMM x 1 up to 4 GB (for N2807), Non-ECC, un-buffered memory, Dual-channel memory architecture flat type
I/O Chipset	Fintech 81866D	Fintech 81866D
Ethernet	Realtek PCIe Gb LAN 8111G x 2	Realtek PCIe Gb LAN 8111G x 1
Audio	Realtek® ALC887 (colay ALC892/886)	Realtek® ALC887 (colay ALC892/886)
TPM	Infineon SLB9635 TT 1.2 (default : No)	Infineon SLB9635 TT 1.2 (default : No)
Expansion Slots	Full-size Mini-Card (mSATA default PCIe+USB optional) x 1, PCIe [x1] x 1	Full-size Mini-Card (mSATA default) (PCIe+USB optional) + SIM Card (default: No) x 1, Half-size Mini-Card (PCIe+USB) x 1
Graphics		
Graphics Chipset	Intel® HD Graphics	Intel® HD Graphics
VGA	Up to 1920 x 1200 @60 Hz	Up to 1920 x 1200 @60 Hz
DVI	—	—
HDMI	—	Up to 1920 x 1200 @60 Hz
Display Port	—	—
LVDS	Dual LVDS, Up to 1920 x 1080 @60Hz, Dual Channel 18/24-bit (via CH7511)	Up to 1920 x 1080 @60Hz, Dual Channel 18/24-bit (via CH7511)
eDP	—	—
Backlight Control	Voltage/PWM	Voltage/PWM
Environment & Power & ME		
Power Requirement	ATX	12V DC
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Operating Humidity	0% ~ 90%RH, non-condensing	0% ~ 90%RH, non-condensing
Certificate	CE & FCC	CE & FCC
Form Factor	Mini-ITX, 6.7" x 6.7" (170mm x 170mm)	Mini-ITX, 6.7" x 6.7" (170mm x 170mm)
MTBF (Hours)	290,990	295,750
Panel I/O Ports		
USB	USB 2.0 x 6	USB 3.0/2.0 x 1, USB 2.0 x 2
Display I/O	VGA x 1	HDMI x 1
Audio I/O	Mic-in x 1, Line-out x 1	Line in x 1, Line-out x 1
LAN I/O	LAN (RJ-45) port x 2	LAN (RJ-45) port x 1
Serial Port	COM (RS-232/422/485) x 1, COM (RS-232) x 2	COM (RS-232) x 1
PS/2 Port	PS/2 Keyboard Mouse combo x 1	—
Others	—	DC port (12V) Screw type x 1
Internal I/O Connectors		
Storage	SATA2 x 2 (1 colay with mSATA), mSATA x 1	SATA3 x 2, SATA2 x 2 (1 colay with mSATA), mSATA x 1
USB	USB 2.0 x 4	USB 2.0 x 5
Display I/O	LVDS x 2	VGA x 1, LVDS x 1
Audio I/O	AAFP x 1, Speaker x 1	AAFP x 1
Serial Port	COM (RS-232) x 3	COM (RS-232) x 4, COM (RS-232/422/485) x 1
PS/2 Port	—	1
Parallel Port	—	SPP/EPP Mode
DIO	8-bit programmable (4-in/4-out) x 1	8-bit programmable (4-in/4-out) x 1
FAN	Chassis Fan x 1	Chassis Fan x 1
Power	24-pin ATX x 1, AT/ATX mode select jumper (default : No) x 1	12V AUX x 1, AT/ATX mode select jumper (default : No) x 1
Others	Front Panel x 1, CMOS jumper x 1	miniPCIe x 1, PCIe [x1] x 1, SIM Card Socket (default : No) x 1, LPT x 1, Front Panel x 1, CMOS jumper x 1
OS		
OS Support	Windows® 7/8.1 for 32/64-bit, Linux Fedora	Windows® 7/8.1 for 32/64-bit, Linux Fedora
Note		

Board Level Products

Industrial Motherboards



Model	EMB-BT7	EMB-BSW1
System		
Processor	Intel® Atom™ E3845 Processor (4C @ 1.91 GHz CPU, 542/792 MHz GFX, 10W TDP)	Intel® Atom™ N3710 Processor, (4C @ 2.4GHz CPU (Burst Mode), 400/700 MHz GFX (Turbo), ~6W TDP), N3060 Processor, (2C @ 2.08GHz CPU (Burst Mode), 20/600MHz GFX (Turbo), ~6W TDP)
Chipset	—	—
Memory	DDR3L 1333 MHz SODIMM x 1 up to 8 GB, ECC, un-buffered memory, flat type	DDR3L 1600 MHz SODIMM x 2 up to 8 GB, Non-ECC, un-buffered memory, Dual-channel memory architecture flat type
I/O Chipset	Fintech 81866D	F81866D
Ethernet	Realtek PCIe Gb LAN 8111G x 2	Intel® i211AT x 2
Audio	Realtek® ALC887 (colay ALC892/886)	Realtek® ALC3236
TPM	Infineon SLB9635 TT 1.2 (default : No)	Infineon SLB96XX TT 1.2/2.0 (default: No)
Expansion Slots	Full-size Mini-Card (mSATA default) (PCIe+USB optional) + SIM Card (default: No) x 1, Half-size Mini-Card (PCIe+USB) x 1, PCIe [x1] x 1	Full-size Mini-Card (mSATA default) (PCIe+USB optional) x 1, Half-size Mini-Card (PCIe+USB) x 1
Graphics		
Graphics Chipset	Intel® HD Graphics	Intel® HD Graphics
VGA	Up to 1920 x 1200 @60 Hz	—
DVI	—	—
HDMI	Up to 1920 x 1200 @60 Hz	Up to 2560 x 1600 @60 Hz, 3840 x 2160 @30Hz
DisplayPort	—	—
LVDS	Up to 1920 x 1080 @60Hz, Dual Channel 18/24-bit (via CH7511)	Up to 1920 x 1080 @60Hz, Dual Channel 18/24-bit (via CH7511)
eDP	—	Up to 2560 x 1440 @60Hz
Backlight Control	Voltage/PWM	Voltage/PWM, use HW control
Environment & Power & ME		
Power Requirement	12V DC	12-24V DC (wide range: 12V-5% ~ 24V+10%)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Operating Humidity	0% ~ 90%RH, non-condensing	0% ~ 90%RH, non-condensing
Certificate	CE & FCC	CE & FCC
Form Factor	Mini-ITX, 6.7" x 6.7" (170mm x 170mm)	Mini-ITX, 6.7" x 6.7" (170mm x 170mm)
MTBF (Hours)	283,770	—
Panel I/O Ports		
USB	USB 3.0/2.0 x 1, USB 2.0 x 2	USB 3.0 x 2
Display I/O	VGA x 1, HDMI x 1	HDMI x 2
Audio I/O	Line-out x 1	Mic-in x 1, Line-out x 1
LAN I/O	LAN (RJ-45) port x 2	LAN (RJ-45) port x 2
Serial Port	COM (RS-232) x 1	—
PS/2 Port	—	—
Others	DC port (12V) Screw type x 1	DC port (12V~24V) Screw type x 1
Internal I/O Connectors		
Storage	SATA3 x 2, SATA2 x 2 (1 colay with mSATA), mSATA x 1	SATA3 x 3 (1 colay with mSATA), SATA power connector x 1, Full Size Mini-Card (mSATA) x 1
USB	USB 2.0 x 5	USB 3.0 x 1 port supports additional 2 USB, USB 2.0 x 3 ports support additional 6 USB
Display I/O	LVDS x 1	LVDS x 1, eDP connector (colay with LVDS, optional) x 1
Audio I/O	AAFP x 1	Speaker x 1
Serial Port	COM (RS-232) x 4, COM (RS-232/422/485) x 1	RS-232 x 5, RS-232/422/485 x 1
PS/2 Port	1	PS/2 Keyboard Mouse 6 PIN Connector x 1
Parallel Port	SPP/EPP Mode	—
DIO	8-bit programmable (4-in/4-out) x 1	8-bit programmable (4-in/4-out) x 1
FAN	Chassis Fan x 1	Chassis Fan connector x 1
Power	12V AUX x 1, AT/ATX mode select jumper (default : No) x 1	12V AUX Power Connector x 1, AT/ATX mode select jumper (optional) x 1
Others	miniPCIe x 1, PCIe [x1] x 1, SIM Card Socket(default : No) x 1, LPT x 1, Front Panel x 1, CMOS jumper x 1	Front Panel connector x 1, CMOS jumper x 1
OS		
OS Support	Windows® 7/8.1 for 32/64-bit, Linux Fedora	Windows® 7 32/64-bit, Windows® 8.1 32/64-bit, Windows® 10 32/64-bit, Linux Fedora
Note		

Board Level Products

Industrial Motherboards



Model	EMB-Q170A	EMB-Q170B
System		
Processor	Intel® 6th Generation Core™ i7/i5/i3, LGA1151 Socket Processor, Max. 65W TDPs	Intel® 6th Generation Core™ i7/i5/i3, LGA1151 Socket Processor, Max. 65W TDPs
Chipset	Intel® Q170	Intel® Q170
Memory	DDR4 2133/1867 MHz SODIMM x 2, Up to 32GB, Non-ECC, Un-buffered Memory, Dual channel memory architecture	DDR4 2133/1867 MHz SODIMM x 2, Up to 32GB, Non-ECC, Un-buffered Memory, Dual channel memory architecture
I/O Chipset	NCT6791D	NCT6791D
Ethernet	Intel® PCIe Gb LAN I219LM x 1, Intel® PCIe Gb LAN I211AT x 1	—
Audio	Realtek® ALC887	Realtek® ALC887
TPM	Infineon SLB96XX TT 1.2/2.0 (default: No)	Infineon SLB96XX TT 1.2/2.0 (default: No)
Expansion Slots	PCIe [x16] x 1, M.2 M-key(22x80mm) at bottom side x 1	PCIe [x4] x 1, M.2 M key (22 x 80mm) at Bottom side x 1, M.2 E key (22 x 30mm) at Top side x 1
Graphics		
Graphics Chipset	Intel® HD Graphics	Intel® HD Graphics
VGA	Up to 1920 x 1200 @60 Hz	—
DVI	—	—
HDMI	—	—
Display Port	Up to 4096 x 2160 @24 Hz / 3840 x 2160 @60 Hz, with Digital Audio	Up to 4096 x 2160 @24 Hz / 3840 x 2160 @60 Hz, with Digital Audio
LVDS	—	Up to 1920 x 1200 @60 Hz, Dual Channel 18/24-bit
eDP	—	Up to 4096 x 2340 @60Hz
Backlight Control	—	Voltage/PWM
Environment & Power & ME		
Power Requirement	ATX	12VDC
Operating Temperature	32°F ~140°F (0°C ~ 60°C)	32°F ~140°F (0°C ~ 60°C)
Operating Humidity	0% ~ 90%RH, non-condensing	0% ~ 90% RH, non-condensing
Certificate	CE & FCC	CE & FCC
Form Factor	Mini-ITX, 6.7" x 6.7" (170mm x 170mm)	Mini-ITX, 6.7" x 6.7" (170mm x 170mm)
MTBF (Hours)	—	—
Panel I/O Ports		
USB	USB 3.0 x 4, USB 2.0 x 2	USB 3.0 x 4
Display I/O	VGA x 1, DP x 3	DP x 2
Audio I/O	Mic-in x 1, Line-out x 1	Mic-in x 1, Line-out x 1
LAN I/O	LAN (RJ-45) port x 2	LAN (RJ-45) port x 2
Serial Port	—	—
PS/2 Port	PS/2 for KB/MS x 1	—
Others	—	DC Jack x 1
Internal I/O Connectors		
Storage	SATA3 x 2, SATA power connector x 1, M.2 M-key(22 x 80mm) at bottom side x 1	SATA3 x 4, SATA power connector x 1, M.2 M key (22 x 80mm) at Bottom side x 1, M.2 E key (22 x 30mm) at Top side x 1
USB	USB 2.0 x 2 ports support additional 4 USB	USB 2.0x 3 ports support additional 6 USB
Display I/O	—	LVDS x 1, eDPx 1
Audio I/O	Speaker x 1	AAFP x 1, Speaker x 1 (pin out refer to manual)
Serial Port	RS-232/422/485 x 1, RS-232 x 1	RS-232/422/485 x 1
PS/2 Port	—	—
Parallel Port	—	—
DIO	8-bit programmable (4-in/4-out) x 1	8-bit programmable (4-in/4-out) x 1
FAN	CPU Fan x 1, Chassis Fan x 1	CPU Fan x 1, Chassis Fan x 1
Power	12V AUX Power Connector x 1, AT/ATX mode select jumper (optional) x 1	12V AUX Power Connector x 1, AT/ATX mode select jumper (optional) x 1
Others	Front Panel connector x 1, Chassis Intrusion x 1, Buzzer on board x 1, CMOS jumper x 1	Front Panel connector x 1, Chassis Intrusion x 1, Buzzer on board (pin header) x 1, CMOS jumper x 1
OS		
OS Support	Windows® 7 32/64-bit, Windows® 8.1 32/64-bit, Windows® 10 32/64-bit, Linux Fedora	Windows® 7 32/64-bit, Windows® 8.1 32/64-bit, Windows® 10 32/64-bit, Linux Fedora
Note		

Board Level Products

Industrial Motherboards

Launching in Q4



Model	EMB-Q170C	EMB-H110B
System		
Processor	Intel® 6th Gen. Core™ i7/i5/i3, LGA1151 Socket Processor, Max. 65W TDPs	Intel® 6th Generation Core™ i7/i5/i3, LGA1151 Socket Processor, Max. 65W TDPs
Chipset	Intel® Q170	Intel® H110
Memory	DDR4 2133/1867 MHz SODIMM x 2, Up to 32GB, Non-ECC, Un-buffered Memory	DDR4 2133/1867 MHz SODIMM x 2, Up to 32GB, Non-ECC, Un-buffered Memory, Dual channel memory architecture
I/O Chipset	NCT6791D w/ 4C2 Amp.	NCT6791D
Ethernet	—	Realtek PCIe Gb LAN 8111G x 2
Audio	Realtek® ALC887	Realtek® ALC887
TPM	Infineon SLB9665 TT 2.0 (default: No)	Infineon SLB9665 TT 1.2/2.0 (default: No)
Expansion Slots	PCIe [x8] x 1, M.2 E key (22 x 30mm) x 1	PCIe [x1] x 1, Full-size Mini-Card (mSATA default) (PCIe+USB optional)x 1, Half-size Mini-Card (PCIe+USB) x 1
Graphics		
Graphics Chipset	Intel® HD Graphics	—
VGA	Up to 1920 x 1200 @60 Hz	—
DVI	—	—
HDMI	Up to 4096 x 2160 @24 Hz ; 3840 x 2160 @60 Hz, with Digital Audio	Up to 4096 x 2160 @24 Hz / 2560 x 1600 @60 Hz, with Digital Audio (HDMI/DP Combo)
Display Port	—	Up to 4096 x 2160 @24 Hz / 3840 x 2160 @60 Hz, with Digital Audio (HDMI/DP Combo)
LVDS	—	Up to 1920 x 1200 @60 Hz, Dual Channel 18/24-bit colay
eDP	—	UP to 4096 x 2340 @60Hz
Backlight Control	—	Voltage/PWM
Environment & Power & ME		
Power Requirement	ATX	12VDC
Operating Temperature	32°F ~140°F (0°C ~ 60°C)	32°F ~140°F (0°C ~ 60°C)
Operating Humidity	0% ~ 90% RH, non-condensing	0% ~ 90%RH, non-condensing
Certificate	CE & FCC	CE & FCC
Form Factor	Mini-ITX, 6.7" x 6.7" (170mm x 170mm)	Mini-ITX, 6.7" x 6.7" (170mm x 170mm)
MTBF (Hours)	—	—
Panel I/O Ports		
USB	USB 3.0 x 4	USB 3.0 x 4
Display I/O	VGA x 1, HDMI x 2	DP/HDMI (BOM Change) x 2
Audio I/O	Mic-in x 1, Line-out x 1	Mic-in x 1, Line-out x 1
LAN I/O	RJ-45 x 2	LAN (RJ-45) port x 2
Serial Port	—	—
PS/2 Port	—	—
Others	—	DC Jack x 1
Internal I/O Connectors		
Storage	SATA3 x 6, M.2 E Key x 1	SATA3 x 2, Full Size Mini-Card (mSATA) x 1, SATA power connector x 1
USB	USB 3.0 x 2	USB 2.0 x 2 ports support additional 4 USB
Display I/O	—	LVDS x 1, eDPx 1, LCD x 1
Audio I/O	Speaker x 1	—
Serial Port	—	RS-232/422/485 x 1, RS-232 x 1
PS/2 Port	—	—
Parallel Port	—	—
DIO	8-bit programmable (4-in/4-out) x 1	8-bit programmable (4-in/4-out) x 1
FAN	CPU Fan x 1, Chassis Fan x 1	CPU Fan x 1, Chassis Fan x 1
Power	12V AUX x 1, AT/ATX mode select jumper (default : No) x 1	12V AUX Power Connector x 1, AT/ATX mode select jumper (optional) x 1
Others	Front Panel x 1, Chassis Intrusion x 1, Buzzer x 1, CMOS jumper x 1	Front Panel connector x 1, Chassis Intrusion x 1, Buzzer on board (pin header) x 1, CMOS jumper x 1
OS		
OS Support	Windows® 7 32/64-bit, Windows® 8.1 64-bit, Windows® 10 64-bit, Linux Fedora	Windows® 7 32/64-bit, Windows® 8.1 32/64-bit, Windows® 10 32/64-bit, Linux Fedora
Note		

Board Level Products

Industrial Motherboards



Model	EMB-Q87A	EMB-H81A	EMB-H81B
System			
Processor	Intel® 4th Gen. Core™ i Series 22nm LGA1150 socket Processor, Max. 65W TDPs	Intel® 4th Gen. Core™ i Series 22nm LGA1150 socket Processor, Max. 65W TDPs	Intel® 4th Gen. Core™ i Series 22nm LGA1150 socket Processor, Max. 65W TDPs
Chipset	Intel® Q87	Intel® H81	Intel® H81
Memory	DDR3 1333/1600 MHz SODIMM x 2, Up to 16GB, Non-ECC, Dual-channel memory architecture(flat type)	DDR3 1333/1600 MHz SODIMM x 2, Up to 16GB, Non-ECC, Dual-channel memory architecture(flat type)	DDR3 1333/1600 MHz SODIMM x 2, Up to 16GB, Non-ECC, Dual-channel memory architecture(flat type)
I/O Chipset	NCT6791D	NCT6791D, NCT5104D	NCT6791D
Ethernet	Intel® PHY I217LM Giga LAN x 1, Intel® I210AT Giga LAN x 1	Realtek PCIe Gb LAN 8111F x 2	Realtek PCIe Gb LAN 8111G x 2
Audio	Realtek® ALC887	Realtek® ALC887	Realtek® ALC887
TPM	Infineon SLB96XX TT 1.2/2.0	Infineon SLB9635 TT 1.2	Infineon SLB9635 TT 1.2
Expansion Slots	PCIe [x4] x 1, Full-size Mini-Card x 1 (mSATA default) (PCIe+USB optional, selected by BIOS), Half-size Mini-Card x 1 (PCIe+USB default, selected by BIOS).	PCIe [x4] x 1, Full-size Mini-Card (PCIe+USB default) (mSATA optional) x 1	PCIe [x1] x 1, Full-size Mini-Card (mSATA default) (PCIe+USB optional)x 1, Half- size Mini-Card (PCIe+USB) x 1
Graphics			
Graphics Chipset	Intel® HD Graphics	Intel® HD Graphics	Intel® HD Graphics
VGA	Up to 1920 x 1200 @60 Hz	Up to 1920 x 1200 @60 Hz	Up to 1920 x 1200 @60 Hz
DVI	—	Up to 1920 x 1200 @60 Hz	—
HDMI	Up to 4096 x 2160 @24 Hz ; 3840 x 2160 @60 Hz, with Digital Audio	—	Up to 4096 x 2160 @24 Hz / 3840 x 2160 @60 Hz, with Digital Audio
Display Port	Up to 4096 x 2160 @24 Hz ; 3840 x 2160 @60 Hz, with Digital Audio	—	Up to 4096 x 2160 @24 Hz / 3840 x 2160 @60 Hz, with Digital Audio
LVDS	Up to 1920 x 1200 @60 Hz, Dual Channel 18/24-bit	Up to 1920 x 1200 @60 Hz, Dual Channel 18/24-bit Support LVDS	Up to 1920 x 1200 @60 Hz, Dual Channel 18/24-bit
Backlight Control	Voltage/PWM	Voltage/PWM	Voltage/PWM
Environment & Power & ME			
Power Requirement	12-24V DC (wide rage: 12V-5%~ 24V+10%)	24pin ATX connector x 1, 4pin ATX 12V Power connector x 1	12-24V DC (wide rage:12V-5%~ 24V+10%)
Operating Temperature	32°F ~140°F (0°C ~ 60°C)	32°F ~140°F (0°C ~ 60°C)	32°F ~140°F (0°C ~ 60°C)
Operating Humidity	0% ~ 90%RH, non-condensing	0% ~ 90%RH, non-condensing	0% ~ 90% R/H, non-condensing
Certificate	CE & FCC	CE & FCC	CE & FCC
Form Factor	Mini-ITX, 6.7" x 6.7" (170mm x 170mm)	Mini-ITX, 6.7" x 6.7" (170mm x 170mm)	Mini-ITX, 6.7" x 6.7" (170mm x 170mm)
MTBF (Hours)	104,363	288,500	288,850
Panel I/O Ports			
USB	USB 3.0 x 4	USB 3.0 x 2, USB 2.0 x 4	USB 3.0 x 2, USB 2.0 x 2
Display I/O	HDMI x 1, DP x 1	VGA x 1, DVI-I x 1	HDMI x 1, DP x 1
Audio I/O	Mic-in x 1, Line-out x 1	Mic-in x 1, Line-out x 1	Mic-in x 1, Line-out x 1
LAN I/O	LAN (RJ-45) port x 2	LAN (RJ-45) port x 2	LAN (RJ-45) port x 2
Serial Port	—	COM (RS-232/422/485) x 1, COM (RS-232) x 2	—
Others	DC Jack x 1	—	DC Jack x 1
Internal I/O Connectors			
Storage	SATA3 x 4, SATA power connector x 1, Full Size Mini-Card (mSATA) x 1	SATA3 x 2, SATA 3.0Gb/s x 2 (1 colay with mainboard), Full/Half Size Mini-Card slot x 1	SATA3 x 2, SATA 3.0Gb/s x 1, SATA power connector x 1, Full Size Mini-Card (mSATA) x 1
USB	USB 2.0 x 3 ports support additional 6 USB	USB 2.0 connectors support additional 2 USB ports x 1, USB 2.0 connectors support additional 1 USB ports x 1	USB 2.0 x 3 ports support additional 6 USB (2 colay with Mini-Card)
Display I/O	VGA x 1, LVDS x 1, LCD x 1	LVDS x 1, LCD x 1	VGA x 1, LVDS x 1, LCD x 1
Audio I/O	AAFP x 1, Speaker x 1, DMIC (optional) x 1	AAFP x 1	AAFP x 1, Speaker x 1
Serial Port	RS-232 x 2	Box header for COM (RS-232) x 4	RS-232 x 1, RS-232/422/485 x 1
PS/2 Port	PS/2 Keyboard Mouse 6 PIN Connector x 1	—	PS/2 Keyboard Mouse 6 PIN Connector x 1
Parallel Port	—	SPP/EPP/ECP Mode	—
DIO	8-bit programmable (4-in/4-out) x 1	8-bit programmable (4-in/4-out) x 1	8-bit programmable (4-in/4-out) x 1
FAN	CPU Fan x 1, Chassis Fan x 1	CPU Fan x 1, Chassis Fan x 1	CPU Fan x 1, Chassis Fan x 1
Power	12V AUX Power Connector x 1, AT/ATX mode select jumper (optional) x 1	12V AUX Power Connector x 1, 24-pin EATX Power connector x 1	12V AUX Power Connector x 1, AT/ATX mode select jumper (optional) x 1
Others	Front Panel connector x 1, Chassis Intrusion x 1, CMOS jumper x 1	Front Panel connector x 1	Front Panel connector x 1, Chassis Intrusion x 1, Buzzer on board (pin header) x 1, CMOS jumper x 1
OS			
OS Support	Windows® 7 32/64-bit, Windows® 8.1 32/64-bit, Windows® 10 32/64-bit, Linux Fedora	Windows® XP 32-bit, Windows® 7 32/64-bit, Windows® 8 32/64-bit, Linux Fedora	Windows® 7 32/64-bit, Windows® 8.1 32/64-bit, Windows® 10 32/64-bit, Linux Fedora
Note			

Note: All specifications are subject to change without notice.

Board Level Products

Industrial Motherboards



Model	EMB-QM87A	EMB-B75A
System		
Processor	On board Intel® 4th generation BGA 1364 Processor	LGA1155 socket for Intel® 3rd/2nd Generation Core™ i7/ i5/ i3/ Pentium® / Celeron® Processor
Chipset	Intel® QM87	Intel® B75 Express Chipset
Memory	Dual-Channel with 204-pin SDRAM x 2, DDR3L 1600/1333, up to 16GB	DDR3 1333/1600 MHz DIMM x 2, Up to 16GB, Non-ECC, Dual-channel memory architecture
I/O Chipset	Fintek F8186D-I	ITE 8728F
Ethernet	Intel® I217-LM / Realtek RTL 8111E, Gigabit LAN x 2	Realtek PCIe Gb LAN 8111F x 2
Audio	Realtek® ALC892/886/662	Realtek® ALC887
TPM	Infineon SLB9635 TT 1.2(Optional)	Infineon SLB9635 TT 1.2
Expansion Slots	PCIe [x16] x 1, Mini-PCIe x 1	PCI-E [x16] slot x 1
Graphics		
Graphics Chipset	Intel® Core™i7/i5/i3 + QM87	Intel® HD Graphics
VGA	1	Up to 1920 x 1200 @60Hz
DVI	—	—
HDMI	1	Up to 1920 x 1080 @60Hz
Display Port	—	—
LVDS	1	—
Backlight Control	Voltage/PWM	—
Environment & Power & ME		
Power Requirement	12V DC	24pin ATX connector x 1, 4pin ATX 12V Power connector x 1
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Operating Humidity	0% ~ 90% R/H, non-condensing	0% ~ 90%RH, non-condensing
Certificate	CE/FCC	CE & FCC
Form Factor	Mini-ITX 6.7" x 6.7" (170mm x 170mm)	Mini-ITX, 6.7" x 6.7" (170mm x 170mm)
MTBF (Hours)	106,000	116,656
Panel I/O Ports		
USB	USB 3.0 x 4	USB 3.0 x 2, USB 2.0 x 2
Display I/O	HDMI x 3, VGA x 1	VGA x 1, HDMI x 3
Audio I/O	Line-in, Mic-in, Line-out	Mic-in x 1, Line in x 1, Line-out x 1
LAN I/O	RJ-45 x 2	LAN (RJ-45) ports x 2
Serial Port	RS-232/422/485 x 1	—
PS/2 Port	Mini-Din PS/2 K/B and Mouse x 1	PS/2 Port (Keyboard & Mouse) x 2
Others	—	—
Internal I/O Connectors		
Storage	SATA3 x 4, SATA2 x 2, Support RAID 0,1,5,10	SATA3 x 1, SATA2 x 2
USB	USB 3.0 x 2, USB 2.0 x 4	USB 3.0 connector supports additional 2 USB port x 1, USB 2.0 connectors support additional 4 USB port x 2
Display I/O	LVDSx 1	—
Audio I/O	—	—
Serial Port	RS-232 x 4	RS-232 x 1, RS-232/422/485 x 1
PS/2 Port	—	—
Parallel Port	—	—
DIO	8-bit programmable (4-in/4-out)	8-bit Digital I/O interface (4-in /4-out) x 1
FAN	CPU Fan x 1, Chassis Fan x 1	CPU Fan x 1, Chassis Fan x 1
Power	8-pin connector x 1	24-pin EATX Power connector, 4-pin AUX 12V Power connector
Others	—	Front panel header x 1
OS		
OS Support	Windows® 7 32/64-bit, Windows® 8.1 32/64-bit, Linux Fedora	Windows® XP 32-bit, Windows® 7 32/64-bit, Linux Fedora
Note		

Board Level Products

Industrial Motherboards



Model	EMB-B75B	EMB-QM77
System		
Processor	LGA1155 socket for Intel® 3rd/2nd Generation Core™ i7/ i5/ i3/ Pentium® / Celeron® Processor	Socket Intel® 3rd generation rPGA988 Processor
Chipset	Intel® B75 Express Chipset	Intel® QM77
Memory	DDR3 1333/1600 MHz DIMM x 2, Up to 16GB, Non-ECC, Dual-channel memory architecture	Dual-Channel with 204-pin SDRAM x 2, DDR3 1600/1333/1066, up to 16GB
I/O Chipset	ITE 8728F	ITE IT8728F+Fintek F81216DG
Ethernet	Realtek PCIe Gb LAN 8111F x 1, RJ-45 x 1	Intel® PHY WG82579LM / Realtek RTL 8111E, Gigabit LAN x 2
Audio	Realtek® ALC887	Realtek® ALC892/886/662
TPM	—	Infineon SLB9635TT 1.2
Expansion Slots	PCIe [x16] x 1	PCIe [x16] x 1, Mini-PCIe x 1, CFast™ x 1
Graphics		
Graphics Chipset	Intel® HD Graphics	Intel® Core™ i7/i5/i3 + QM77
VGA	Up to 1920 x 1200 @60Hz	1
DVI	—	1
HDMI	Up to 1920 x 1080 @60Hz	1 (by SKU)
Display Port	—	2 (by SKU)
LVDS	Up to 1920 x 1200 @60 Hz, Dual Channel 18/24-bit, support EDID LVDS autodetect	1
Backlight Control	—	Voltage/PWM
Environment & Power & ME		
Power Requirement	24pin ATX connector x 1, 4pin ATX 12V Power connector x 1	12V DC
Operating Temperature	32°F ~ 131°F (0°C ~ 55°C)	32°F ~ 140°F (0°C ~ 60°C)
Operating Humidity	0% ~ 90%RH, non-condensing	0% ~ 90% R/H, non-condensing
Certificate	CE & FCC	CE/FCC
Form Factor	Mini-ITX 6.7" x 6.7" (170mm x 170mm)	Mini-ITX 6.7" x 6.7" (170mm x 170mm)
MTBF (Hours)	199,397	60,000
Panel I/O Ports		
USB	USB 3.0 x 2, USB 2.0 x 2	USB 3.0 x 4
Display I/O	VGA x 1, HDMI x 2 (1 optional)	DP x 2 or DP x 1+HDMI x 1, DVI-D x 1
Audio I/O	Mic-in x 1, Line in x 1, Line-out x 1	Line-in, Mic-in, Line-out
LAN I/O	LAN (RJ-45) port x 1	RJ-45 x 2
Serial Port	RS-232 x 1	RS-232/422/485 x 1
PS/2 Port	PS/2 Port (Keyboard & Mouse) x 2	Mini-Din PS/2 K/B and Mouse x 1
Others	—	—
Internal I/O Connectors		
Storage	SATA 6.0Gb/s connector x 1, SATA 3.0Gb/s connector x 1	SATA3 x 2, SATA2 x 2, Support RAID 0,1,5,10
USB	USB port x 2, USB 2.0 connectors support additional x 4	USB 2.0 x 6
Display I/O	LVDS x 1	VGA x 1, LVDS x 1
Audio I/O	—	—
Serial Port	RS-232 x 1	RS-232 x 1
PS/2 Port	—	—
Parallel Port	—	—
DIO	8-bit Digital I/O interface (4-in /4-out) x 1	8-bit programmable (4-in/4-out)
FAN	CPU Fan x 1, Chassis Fan x 1	CPU Fan x 1, Chassis Fan x 1
Power	24-pin EATX Power connector, 4-pin AUX 12V Power connector	4-pin connector x 1
Others	Front panel header x 1	—
OS		
OS Support	Windows® XP 32-bit, Windows® 7 32/64-bit, Linux Fedora	Windows® XP, Windows® 7 32/64-bit, Windows® 8.1 32/64-bit, Linux Fedora
Note		

Board Level Products

Industrial Motherboards



Model	EMB-H61A	EMB-H61B
System		
Processor	LGA1155 socket for Intel® 3rd/2nd Generation Core™ i7/ i5/ i3/ Pentium® / Celeron® Processors (Supports Intel® 32 nm CPU up to 35W)	LGA1155 socket for Intel® 3rd/2nd Generation Core™ i7/ i5/ i3/ Pentium® / Celeron® Processors (Supports Intel® 32 nm CPU up to 35W)
Chipset	Intel® H61	Intel® H61 Express Chipset
Memory	DDR3 1333/1600 MHz SODIMM x 2, Up to 16GB, Non-ECC, Dual-channel memory architecture	DDR3 1333/1600 MHz SODIMM x 2, Up to 16GB, Non-ECC, Dual-channel memory architecture
I/O Chipset	Fintek F81866D-I	Fintek F81866D-I
Ethernet	Realtek PCIe Gb LAN 8111E x 2	Realtek PCIe Gb LAN 8111F x 2
Audio	Realtek® ALC887	Realtek® ALC887
TPM	Infineon SLB9635 TT 1.2	Infineon SLB9635 TT 1.2
Expansion Slots	PCIe [x4] x 1, Full-size Mini-Card (PCIe + USB) (mSATA optional)+ SIM Card x 1	PCIe [x4] x 1, Full-size Mini-Card (PCIe + USB) (mSATA optional) + SIM Card x 1
Graphics		
Graphics Chipset	Intel® HD Graphics	Intel® HD Graphics
VGA	Up to 2048 x 1536 @ 75 Hz	Up to 2048 x 1536 @ 75 Hz
DVI	Up to 1920 x 1200 @60 Hz	—
HDMI	Up to 1920 x 1200 @60 Hz	Up to 1920 x 1200 @60 Hz
Display Port	—	—
LVDS	Up to 1920 x 1200 @60 Hz, Dual Channel 18/24-bit	Up to 1920 x 1200 @60 Hz, Dual Channel 18/24-bit
Backlight Control	Voltage/PWM	Voltage/PWM
Environment & Power & ME		
Power Requirement	12V DC with 4pin Power connector x 1	12V DC with 4pin Power connector x 1
Operating Temperature	32~131°F (0~55°C)	32~131°F (0~55°C)
Operating Humidity	0% ~ 90%RH, non-condensing	0% ~ 90%RH, non-condensing
Certificate	CE & FCC	CE & FCC
Form Factor	Mini-ITX, 6.7" x 6.7" (170mm x 170mm)	Mini-ITX, 6.7" x 6.7" (170mm x 170mm)
MTBF (Hours)	117,673	211,000
Panel I/O Ports		
USB	USB 2.0 x 6	USB 2.0 x 6
Display I/O	VGA x 1, DVI-D x 1, HDMI x 1	VGA x 1, HDMI x 2
Audio I/O	Mic-in x 1, Line in x 1, Line-out x 1	Mic-in x 1, Line in x 1, Line-out x 1
LAN I/O	LAN (RJ-45) port x 2	LAN (RJ-45) port x 2
Serial Port	COM (RS-232/422/485) x 1	COM (RS-232/422/485) x 1
PS/2 Port	PS/2 Keyboard Mouse Connector x 1	PS/2 Keyboard Mouse Connector x 1
Others	—	—
Internal I/O Connectors		
Storage	SATA connectors x 2, SATA power connector x 1, Mini-Card slot x 1	SATA connectors x 2, SATA power connector x 1, Mini-Card slot x 1
USB	USB 2.0 connectors support additional 2 USB port x 1	USB 2.0 connectors support additional 2 USB port x 1
Display I/O	LVDS x 1	LVDS x 1
Audio I/O	—	—
Serial Port	COM header x 5 (RS-232)	COM header x 5 (RS-232)
PS/2 Port	—	—
Parallel Port	—	—
DIO	8-bit programmable (4-in/4-out) x 1	8-bit programmable (4-in/4-out) x 1
FAN	CPU Fan x 1, Chassis Fan x 1	CPU Fan x 1, Chassis Fan x 1
Power	12V AUX Power Connector x 1, AT/ATX mode select jumper x 1	12V AUX Power Connector x 1, AT/ATX mode select jumper x 1
Others	SIM Card Socket x 1, Front Panel connector x 1, CMOS jumper x 1	SIM Card Socket x 1, Front Panel connector x 1, CMOS jumper x 1
OS		
OS Support	Windows® XP 32-bit, Windows® 7 32/64-bit, Linux Fedora	Windows® XP 32-bit, Windows® 7 32/64-bit, Linux Fedora
Note		

Board Level Products

Industrial Motherboards



Model	EMB-QM67	EMB-KB1
System		
Processor	Socket Intel® 2nd generation rPGA988 Processor	AMD 1st generation APU SoC (FT3 BGA Package), Quad(2G,1.5G), Dual (1.6G,1.0G)
Chipset	Intel® QM67	—
Memory	Dual-Channel with 204-pin SDRAM x 2, DDR3 1600/1333/1066, up to 16GB	SO-DIMM x 2, max. 16GB, DDR3L (1.35V)/DDR3 (1.5V) 1600 MHz /1333 MHz , Non-ECC, un-buffered memory, Single channel memory architecture
I/O Chipset	ITE IT8728F+Fintek F81216DG	Fintek F81866D-I
Ethernet	Intel® PHY WG82579LM / Realtek RTL 8111E, Gigabit LAN x 2	Realtek PCIe Gb LAN 8111F x 2
Audio	Realtek® ALC892/886/662	Realtek® ALC887 with Amplifier
TPM	Infineon SLB9635 TT 1.2(Optional)	Infineon SLB9635 TT 1.2 (default: No)
Expansion Slots	PCIe [x4] x 1, Mini-PCIe x 1, CFast™ x 1	PCIe [x4] x 1, Full-size Mini-Card (PCIe + USB + mSATA) + SIM Card (mSATA optional) x 1, Half-size Mini-Card (PCIe + USB) x 1
Graphics		
Graphics Chipset	Intel® Core™i7/i5/Celeron® + QM67	"Sea Islands" Family (Integrated)
VGA	1	Up to 1920 x 1200 @60 Hz
DVI	1	Up to 1920 x 1200 @60 Hz
HDMI	1	—
Display Port	—	—
LVDS	1	Up to 1920 x 1080 @60Hz, Dual Channel 18/24 bit (via CH7511)
Backlight Control	Voltage	Voltage/PWM
Environment & Power & ME		
Power Requirement	12V DC	ATX
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Operating Humidity	0% ~ 90% R/H, non-condensing	0% ~ 90%RH, non-condensing
Certificate	CE/FCC	CE & FCC
Form Factor	Mini-ITX 6.7" x 6.7" (170mm x 170mm)	Mini-ITX, 6.7" x 6.7" (170mm x 170mm)
MTBF (Hours)	70000	140,000
Panel I/O Ports		
USB	USB 2.0 x 4	USB 3.0 x 2, USB 2.0 x 2
Display I/O	HDMI x 1, DVI-D x 1, VGA x 1	VGA x 1, DVI-D x 1
Audio I/O	Line-in, Mic-in, Line-out	Mic-in x 1, Line-out x 1
LAN I/O	RJ-45 x 2	LAN (RJ-45) port x 2
Serial Port	RS-232/422/485 x 1	COM (RS-232/422/485) x 1, COM (RS-232) x 1
PS/2 Port	Mini-Din PS/2 K/B and Mouse x 1	PS/2 x 2
Others	—	—
Internal I/O Connectors		
Storage	SATA2 x 2, Support RAID 0,1,5,10	SATA connectors x 2, SATA power connector x 1, Mini-Card slot (half size) x 1, Mini-Card slot (full size) x 1
USB	USB 2.0 x 4	USB 2.0 connectors support additional 4 USB ports x 2
Display I/O	LVDS x 1	LVDS x 1, LCD x 1
Audio I/O	—	Speaker x 1
Serial Port	RS-232 x 5	COM header x 4 (RS-232)
PS/2 Port	—	—
Parallel Port	—	—
DIO	8-bit programmable (4-in/4-out)	DIO x 1
FAN	CPU Fan x 1, Chassis Fan x 1	CPU Fan x 1, Chassis Fan x 1
Power	4-pin connector x 1	24-pin ATX connector x 1, 4-pin ATX connector x 1, AT/ATX mode select jumper x 1
Others	—	SIM Card Socket x 1, Front Panel connector x 1, on board buzzer x 1, CMOS jumper x 1
OS		
OS Support	Windows® XP, Windows® 7 32/64-bit, Linux Fedora	Windows® XP 32 / 64-bit, Windows® 7 32 / 64-bit, Windows® 8, Linux Fedora
Note		



Model	IMBI-QM57
System	
Processor	Socket Intel® Core i rPGA988 Processor
Chipset	Intel® QM57
Memory	Dual-Channel with 204-pin SDRAM x 2, DDR3 1066/800, up to 8GB
I/O Chipset	ITE IT8728F
Ethernet	Intel® 82577LM / 82574L, Gigabit LAN x 2
Audio	Realtek® ALC888
TPM	—
Expansion Slots	PCIe [x4] x 1, Mini-PCIe x 1, PCI x 1, CF x 1
Graphics	
Graphics Chipset	Intel® Core™ i7/i5 + QM57
VGA	1
DVI	1
HDMI	1
Display Port	—
LVDS	1
Backlight Control	Voltage
Environment & Power & ME	
Power Requirement	12V DC
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)
Operating Humidity	0% ~ 90% R/H, non-condensing
Certificate	CE/FCC
Form Factor	Mini-ITX 6.7" x 6.7" (170mm x 170mm)
MTBF (Hours)	56000
Panel I/O Ports	
USB	USB 2.0 x 4
Display I/O	HDMI x 1, DVI-D x 1, VGA x 1
Audio I/O	Line-in, Mic-in, Line-out
LAN I/O	RJ-45 x 2
Serial Port	RS-232 x 1
PS/2 Port	Mini-Din PS/2 K/B and Mouse x 1
Others	—
Internal I/O Connectors	
Storage	SATA2 x 3, Support RAID 0,1,5,10
USB	USB 2.0 x 4
Display I/O	LVDS x 1
Audio I/O	—
Serial Port	RS-232 x 2, RS-232/422/485 x 1
PS/2 Port	—
Parallel Port	—
DIO	8-bit programmable (4-in/4-out)
FAN	CPU Fan x 1, Chassis Fan x 1
Power	24-pin ATX connector x 1, 4-pin connector x 1
Others	—
OS	
OS Support	Windows® XP, Windows® 7 32/64-bit, Linux Fedora
Note	

Board Level Products

Industrial Motherboards



Model	IMBA-Q87A	IMBA-Q77
System		
Processor	Intel® 4th Generation Core™ i7/i5/i3/Pentium®/ Celeron® 22nm LGA 1150 socket Processor	Socket Intel® 3rd generation LGA 1155 Processor
Chipset	Intel® Q87 Express Chipset	Intel® Q77
Memory	240-pin DIMM x 4, max. 32GB, DDR3 1600/1333 MHz, non-ECC, un-buffered memory. Dual channel memory architecture	Dual-Channel with 240-pin DRAM x 4, DDR3 1600/1333/1066, up to 32GB
I/O Chipset	NCT6791D, F81216HD	Winbond W83627DHG
Ethernet	LAN1: Intel® PHY I217LM Giga LAN (support AMT 9.0) x 1 LAN2: Intel® I210AT Giga LAN x 1, RJ-45 x 2	Intel® 82579 / 82583V, Gigabit LAN x 2
Audio	Realtek® ALC887 (Colay with ALC886)	Realtek® ALC662
TPM	20-1 PIN header for TPM1.2/FW3.19	Infineon SLB9635TT 1.2(Optional)
Expansion Slots	PCIe 3.0/2.0[x16] Slot x 1, PCIe 2.0 [x4] Slot x 1, PCI x 5	PCIe [x16] x 1, PCIe [x4] x 1, PCIe [x1] x 2, PCI x 3
Graphics		
Graphics Chipset	Intel® HD Graphics	Intel® Core™i7/i5/i3 + Q77
VGA	Up to 1920 x 1200 @60Hz	1
DVI	Up to 1920 x 1200 @60Hz	1
HDMI	HDMI 1.4, up to 4096 x 2610 @24Hz	1 (by SKU)
Display Port	DP 1.2, up to 2560 x 1440 @60Hz	2 (by SKU)
LVDS	—	1
Backlight Control	—	Voltage/PWM
Environment & Power & ME		
Power Requirement	24-pin ATX connector x 1, 8 pin ATX 12V Power connector x 1	12V DC
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Operating Humidity	0% ~ 90% RH, non-condensing	0% ~ 90% R/H, non-condensing
Certificate	CE & FCC Class A	CE/FCC
Form Factor	ATX, 12" x 9.6" (305 mm x 244 mm)	ATX, 12" x 9.6" (305 mm x 244 mm)
MTBF (Hours)	86000	56,000
Panel I/O Ports		
USB	USB 3.0 x 2 with Type A connectors, USB 2.0 x 2 with Type A connectors	USB 3.0 x 2 with Type A connectors, USB 2.0 x 2 with Type A connectors
Display I/O	DP x 2 or DP x 1+HDMI x 1, DVI-D x 1	DP x 2 or DP x 1+HDMI x 1, DVI-D x 1
Audio I/O	Line-in, Mic-in, Line-out	Line-in, Mic-in, Line-out
LAN I/O	RJ-45 x 2	RJ-45 x 2
Serial Port	RS-232/422/485 x 1	RS-232/422/485 x 1
PS/2 Port	Mini-Din PS/2 K/B and Mouse x 1	Mini-Din PS/2 K/B and Mouse x 1
Internal I/O Connectors		
Storage	SATA3 x 2, SATA2 x 4, Support RAID 0,1,5,10	SATA3 x 2, SATA2 x 4, Support RAID 0,1,5,10
USB	USB 3.0 x 2, USB 2.0 x 6	USB 3.0 x 2, USB 2.0 x 6
Display I/O	VGA x 1, LVDS x 1	VGA x 1, LVDS x 1
Audio I/O	—	—
Serial Port	RS-232 x 5	RS-232 x 5
PS/2 Port	—	—
Parallel Port	—	—
DIO	8-bit programmable (4-in/4-out)	8-bit programmable (4-in/4-out)
FAN	4 pin CPU Fan x 1, 4-pin Chassis Fan x 1	4 pin CPU Fan x 1, 4-pin Chassis Fan x 1
Power	24-pin ATX connector x 1, 4-pin connector x 1	24-pin ATX connector x 1, 4-pin connector x 1
Others	—	—
OS		
OS Support	Windows® XP, Windows® 7 32/64-bit, Linux Fedora	Windows® XP, Windows® 7 32/64-bit, Linux Fedora
Note		

Board Level Products

Industrial Motherboards



Model	IMBA-967	IMBA-H61A
System		
Processor	Socket Intel® 2nd generation LGA 1155 Processor	Intel® 3rd/ 2nd Generation Core™ i7/i5/i3/Pentium®/ Celeron® 22nm LGA 1155 Processors
Chipset	Intel® Q67	Intel® H61 Express Chipset
Memory	Dual-Channel with 240-pin DRAM x 4, DDR3 1333/1066, up to 32GB	240-pin DIMM x 2, max. 16GB, DDR3 1333/1066/800 MHz, non-ECC, un- buffered memory, Dual channel memory architecture
I/O Chipset	Winbond W83627DHG	NCT6776F
Ethernet	Intel® 82579LM / 82574L, Gigabit LAN x 2	Realtek RTL8111F Giga LAN x 2
Audio	Realtek® ALC662	Realtek® ALC887 (Colay with ALC886)
TPM	Infineon SLB9635TT 1.2(Optional)	20-1 PIN header for TPM1.2/FW3.19
Expansion Slots	PCIe [x16] x 1, PCIe [x4] x 1, PCIe [x1] x 1, PCI x 4	PCIe 2.0[x16] Slot x 1, PCIe 2.0 [x1] slot x 2, PCI x 4, Full/Half Size Mini-card x 1
Graphics		
Graphics Chipset	Intel® Core™i7/i5/i3 + Q67	Intel® HD Graphics
VGA	1	Up to 1920 x 1200 @60 Hz
DVI	1	Up to 1920 x 1200 @60 Hz
HDMI	1	—
Display Port	—	—
LVDS	—	—
Backlight Control	Voltage	—
Environment & Power & ME		
Power Requirement	12V DC	24-pin ATX connector x 1, 4-pin ATX 12V Power connector x 1
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Operating Humidity	0% ~ 90% R/H, non-condensing	0%~90%RH, non-condensing
Certificate	CE/FCC	CE & FCC Class A
Form Factor	ATX, 12" x 9.6" (305 mm x 244 mm)	ATX, 12" x 9.6" (305 mm x 244 mm)
MTBF (Hours)	52,000	136,599
Panel I/O Ports		
USB	USB 2.0 x 4 with Type A connectors	USB 2.0 ports x 4
Display I/O	HDMI x 1, DVI-D x 1, VGA x 1	VGA x 1, DVI-D x 1
Audio I/O	Line-in, Mic-in, Line-out	Audio Jack x 3: Line-in, Mic-in, Line-out
LAN I/O	RJ-45 x 2	LAN (RJ-45) port x 2
Serial Port	RS-232 x 1	DB-9 connector COM x 2 (COM2 support RS-232/422/485)
PS/2 Port	Mini-Din PS/2 K/B and Mouse x 1	PS/2 Keyboard Connector x 1, PS/2 Mouse Connector x 1
Internal I/O Connectors		
Storage	SATA3 x 2, SATA2 x 4, Support RAID 0,1,5,10	SATA 3.0Gb/s connector x 4
USB	USB 2.0 x 8	USB 2.0 2x5-pin connector x 2 support additional USB port x4, USB 2.0 1 x 5-pin connector x 1 support USB port x 1
Display I/O	—	—
Audio I/O	—	—
Serial Port	RS-232 x 3, RS-232/422/485 x 1	RS-232 header x 4
PS/2 Port	—	—
Parallel Port	LPT x 1	LPT connector x 1, Support SPP/EPP/ECP Mode
DIO	8-bit programmable (4-in/4-out)	8-bit Digital I/O interface x 1 (In/Out programmable)
FAN	4 pin CPU Fan x 1, 4-pin Chassis Fan x 1	4 pin CPU Fan x 1, 4-pin Chassis Fan x 1
Power	24-pin ATX connector x 1, 4-pin connector x 1	—
Others	IrDA x 1	Front panel header x 1, Clear CMOS jumper x 1, TPM header x 1, BIOS flash header (2[x4]P p=1.27mm) x 1
OS		
OS Support	Windows® XP 32-bit, Windows® 7 32/64-bit, Windows® 8 32/64-bit	Windows® XP 32-bit, Windows® 7 32/64-bit, Windows® 8 32/64-bit
Note		

Board Level Products

Industrial Motherboards



Launching in Q4

Model	IMBM-Q170A	IMBM-B150A
System		
Processor	Intel® 6th Generation Core™ i7/i5/i3/Pentium®/ Celeron® 14nm LGA1151 Socket Processor	Intel® 6th Generation Core™ i7/ i5 /i3, Pentium 14nm LGA 1151 socket Processor
Chipset	Intel® Q170 Express Chipset	Intel® B150 Express Chipset
Memory	288-pin DIMM x 4, max. 64GB, DDR4 2133/1867 MHz, non-ECC, un-buffered memory, Dual channel memory architecture	288-pin DIMM x 4, max. 64GB, DDR4 2133/1867 MHz, non-ECC, unbuffered memory, Dual channel memory architecture
I/O Chipset	NCT6791D, F81216HD	NCT6791D+ F81216HD
Ethernet	LAN 1: Intel® PHY i219LM Giga LAN (support Intel® AMT 11.0) x 1 LAN 2: Intel® i211AT Giga LAN x 1, RJ-45 x 2	Realtek 8111G x 2
Audio	Realtek® ALC887 (Colay with ALC886)	Realtek® ALC887 6-Channel High Definition Audio CODEC (Colay ALC892/ALC886)
TPM	20-1 PIN header for TPM1.2/FW3.19	onboard Infineon SLB9635/9665 TT 1.2/2.0 colay
Expansion Slots	PCIe 3.0/2.0 [x16] Slot x 1, PCIe 3.0/2.0 [x4] Slot (open edge) x 1, PCIe 3.0/2.0 [x1] Slot (open edge) x 1, PCI x 1	PCIe [x16] x 1, PCIe [x4] x 1, PCIe [x1] x 1, PCI x 1 (Default:No)
Graphics		
Graphics Chipset	Intel® HD Graphics	Intel® HD Graphics
VGA	—	Up to 1920 x 1200 @60Hz (via RTD2168)
DVI	Up to 1920 x 1200 @60Hz	—
HDMI	HDMI 1.4 up to 4096 x 2160 @24Hz	Up to 4096 x 2160 @24Hz
Display Port	—	—
LVDS	—	—
Backlight Control	—	—
Environment & Power & ME		
Power Requirement	24-pin ATX connector x 1, 8 pin ATX 12V Power connector x 1	24 pin ATX connector x 1, 8 pin (2x4) ATX 12V Power connector x 1
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Operating Humidity	0% ~ 90% RH, non-condensing	0% ~ 90%RH, non-condensing
Certificate	CE & FCC Class A	CE & FCC Class A
Form Factor	Micro-ATX, 9.6" x 9.6" (244mm x 244mm)	Micro-ATX, 9.6" x 9.6" (244mm x 244mm)
MTBF (Hours)	—	—
Panel I/O Ports		
USB	USB 3.0 ports x 10	USB 3.0 x 4
Display I/O	DVI-I x 1, HDMI x 2	VGA x 1, HDMI x 3
Audio I/O	Audio Jack x 3: Line-in, Mic-in, Line-out	Audio Jack x 3: Line-in, Mic-in, Line-out
LAN I/O	LAN (RJ-45) port x 2	RJ-45 x 2
Serial Port	RS-232/422/485 DB-9 connector x 1 (COM1, supports 5/12V on RI pin)	RS-232/422/485 (COM1, supports 5V/12V/RI optional) x 1
PS/2 Port	PS/2 Combo Port (Keyboard & Mouse) x 1	PS/2 stack Port (Keyboard & Mouse) x 1
Internal I/O Connectors		
Storage	SATA3 x 6, Support RAID 0/1/5/10	SATA3 x 6, Support RAID 0/1/5/10
USB	USB 2.0 port x 2 connectors support additional USB port x 4	USB 3.0 x 2, USB 2.0 x 6
Display I/O	—	—
Audio I/O	Speaker header x 1 (Line-out)	Speaker header x 1 (Line-out)
Serial Port	RS-232 header x 5	RS-232 header x 5
PS/2 Port	—	—
Parallel Port	—	—
DIO	8-bit Digital I/O interface x 1 (In/Out programmable)	8-bit Digital I/O interface x 1 (In/Out programmable)
FAN	CPU Fan x 1, Chassis Fan x 2	4-pin CPU Fan connector x 1, 4-pin Chassis Fan connector x 2
Power	—	24-pin EATX Power header x 1, 8-pin EATX 12V Power connector x 1
Others	Front panel header x 1, Clear CMOS jumper x 1, TPM header x 1, BIOS flash header (2[x4]P p=1.27mm) x 1, Chassis Intrusion x 1	Front panel header x 1, Clear CMOS jumper x 1, BIOS flash header (2[x4]P p=1.27mm) x 1, Chassis Intrusion x 1
OS		
OS Support	Windows® 7 32/64-bit, Windows® 8.1 64-bit, Windows® 10 64-bit, Linux Fedora 64-bit	Windows® 7 32/64-bit, Windows® 8.1 64-bit, Windows® 10 64-bit, ,Linux Fedora 64-bit
Note		

Board Level Products

Industrial Motherboards



Model	IBM-Q87A	IBM-B75A
System		
Processor	Intel® 4th Generation Core™ i7/i5/i3/Pentium®/ Celeron® 22nm LGA 1150 socket Processor	Intel® 3rd/ 2nd Generation Core™ i7/i5/i3/Pentium®/ Celeron® 22nm LGA 1155 Processors
Chipset	Intel® Q87	Intel® B75 Express Chipset
Memory	240-pin DIMM x 4, max. 32GB, DDR3 1600/1333, Dual channel	240-pin DIMM x 4, max. 32GB, DDR3 1600/1333 MHz, non-ECC, un-buffered memory, Dual channel memory architecture
I/O Chipset	NCT6791D, F81216HD	ITE IT8783F
Ethernet	LAN1: Intel® PHY I217LM Giga LAN, LAN2: Intel® I210AT Giga LAN	Realtek RTL8111F Giga LAN x 2
Audio	Realtek® ALC887 (Colay with ALC886)	Realtek® ALC887
TPM	20-1 PIN header for TPM1.2/FW3.19	Infineon SLB9635 TT 1.2
Expansion Slots	PCIe [x16] x 1, PCIe [x4] x 1, PCI x 2, Half size Mini-Card x 1 (PCIe + USB or mSATA optional)	PCIe 3.0/2.0[x16] x 1, PCIe 2.0[x4] x 1, PCI x 2
Graphics		
Graphics Chipset	Intel® HD Graphics	Intel® HD Graphics
VGA	Up to 1920 x 1200 @60Hz	Up to 1920 x 1200 @60Hz
DVI	Up to 1920 x 1200 @60Hz	—
HDMI	—	Up to 1920 x 1080 @60Hz
Display Port	DP 1.2, up to 3840 x 2160 @60Hz	—
LVDS	—	—
Backlight Control	—	—
Environment & Power & ME		
Power Requirement	24-pin ATX connector x 1, 8 pin ATX 12V Power connector x 1	24-pin ATX connector x 1, 8 pin ATX 12V Power connector x 1
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Operating Humidity	0% ~ 90% RH, non-condensing	0% ~ 90% RH, non-condensing
Certificate	CE & FCC Class A	CE & FCC Class A
Form Factor	Micro-ATX, 9.6" x 9.6" (244mm x 244mm)	Micro-ATX, 9.6" x 9.6" (244mm x 244mm)
MTBF (Hours)	100,000	83,621
Panel I/O Ports		
USB	USB 3.0 ports x 4, USB 2.0 ports x 6	USB 3.0 ports x 2, USB 2.0 port x 2
Display I/O	DVI-D x 1, DP x 2, VGA x 1	VGA x 1, HDMI x 3
Audio I/O	Audio Jack x 3: Line-in, Mic-in, Line-out	Audio Jack x 3: Line-in, Mic-in, Line-out
LAN I/O	LAN (RJ-45) port x 2	LAN (RJ-45) port x 2
Serial Port	—	—
PS/2 Port	PS/2 Combo Port (Keyboard & Mouse) x 1	PS/2 Keyboard Connector x 1, PS/2 Mouse Connector x 1
Internal I/O Connectors		
Storage	SATA3 x 5, Supports RAID 0/1/5/10; Half size Mini-Card (PCIe + USB, or mSATA optional) x 1	SATA3 x 1, SATA2 x 4
USB	USB 2.0 ports x 1 connectors support additional 2 USB ports	USB 3.0 connector x 1 supports additional USB port x 2, USB 2.0 port x 2 connectors support additional USB port x 4
Display I/O	—	—
Audio I/O	—	—
Serial Port	RS-232 header x 5, RS-232/422/485 DB-9 connector x 1 (COM1, supports 5/12V on RI pin)	RS-232/422/485 header x 1 (COM1), RS-232 header x 4
PS/2 Port	—	—
Parallel Port	—	LPT connector x 1, support SP/EP/EC/PC mode
DIO	8-bit Digital I/O interface x 1 (In/Out programmable)	8-bit Digital I/O interface x 1 (In/Out programmable)
FAN	CPU Fan x 1, Chassis Fan x 2	CPU Fan x 1, Chassis Fan x 1
Power	—	—
Others	Front panel header x 1, Clear CMOS jumper x 1, TPM header x 1, BIOS flash header (2[x4]P p=1.27mm) x 1, Chassis Intrusion x 1	Front panel header x 2, IrDA header x 1, Clear CMOS jumper x 1, BIOS flash header (2[x4]P p=1.27mm) x 1
OS		
OS Support	Windows® 7 32/64-bit, Windows® 8 32/64-bit, Linux Fedora	Windows® XP 32-bit, Windows® 7 32/64-bit, Linux Fedora
Note		

Board Level Products

Industrial Motherboards



Model	IMBM-H61A	IMBM-H61B
System		
Processor	Intel® 3rd/ 2nd Generation Core™ i7/i5/i3/Pentium®/ Celeron® 22nm LGA 1155 Processors	Intel® 3rd/ 2nd Generation Core™ i7/i5/i3/Pentium®/ Celeron® 22nm LGA 1155 Processors
Chipset	Intel® H61 Express Chipset	Intel® H61 Express Chipset
Memory	240-pin DIMM x 2, max. 16GB, DDR3 1333/1066/800 MHz, non-ECC, un-buffered memory, Dual channel memory architecture	240-pin DIMM x 2, max. 16GB, DDR3 1333/1066/800 MHz, non-ECC, un-buffered memory, Dual channel memory architecture
I/O Chipset	Fintech 81866D (5 COM), Fintech 81216HD (8 COM) x 2	Fintech 81866D (5 COM), Fintech 81216HD (8 COM) x 2
Ethernet	Realtek RTL8111F Giga LAN x 2	Realtek RTL8111F Giga LAN x 2
Audio	Realtek ALC887	Realtek ALC887
TPM	—	—
Expansion Slots	PCIe 2.0[x16] Slot x 1, PCIe 2.0 [x1] Slot x 1, PCI x 1, Half Size Mini-Card x 1	PCIe 2.0[x16] Slot x 1, PCI x 2, Half Size Mini-Card x 1
Graphics		
Graphics Chipset	Intel® HD Graphics	Intel® HD Graphics
VGA	Up to 1920 x 1200 @75Hz	Up to 1920 x 1200 @75Hz
DVI	Up to 1920 x 1200 @60 Hz	—
HDMI	—	—
Display Port	—	—
LVDS	Up to 1920 x 1200 @60 Hz	Up to 1920 x 1200 @60 Hz
Backlight Control	Voltage/ PWM	Voltage/ PWM
Environment & Power & ME		
Power Requirement	24-pin ATX connector x 1, 4-pin ATX 12V Power connector x 1	24-pin ATX connector x 1, 4-pin ATX 12V Power connector x 1
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Operating Humidity	0% ~ 80% RH , non-condensing	0% ~ 80% RH , non-condensing
Certificate	CE & FCC Class A	CE & FCC Class A
Form Factor	Micro-ATX, 9.6" x 9.6" (244mm x 244mm)	Micro-ATX, 9.6" x 9.6" (244mm x 244mm)
MTBF (Hours)	87,274	—
Panel I/O Ports		
USB	USB 2.0 ports x 4 port	USB 2.0 port x 4
Display I/O	VGA x 1, DVI-D x 1,	VGA x 2
Audio I/O	Audio Jack x 3: Line-in, Mic-in, Line-out	Audio Jack x 3: Line-in, Mic-in, Line-out
LAN I/O	LAN (RJ-45) port x 2	LAN (RJ-45) port x 2
Serial Port	RS232 DB-9 connector x 2	RS232 DB-9 connector x 2
PS/2 Port	PS/2 Keyboard Connector x 1, PS/2 Mouse Connector x 1	PS/2 Keyboard Connector x 1, PS/2 Mouse Connector x 1
Internal I/O Connectors		
Storage	SATA2 x 3, CFAST™ Socket x 1	SATA2 x 3, CFAST™ Socket x 1
USB	USB 2.0 port x 2 connectors support additional USB port x 4	USB 2.0 port x 2 connectors support additional USB port x 4
Display I/O	—	—
Audio I/O	—	—
Serial Port	RS-232/422/485 box header x 2	RS-232/422/485 box header x 2 (COM4 & COM9, COM 4 supports 5V/12V/RI option), RS-232 box header x 9 (COM3, COM5~8, COM10~13)
PS/2 Port	—	—
Parallel Port	LPT connector x 1	LPT connector x 1, SPP/EPP/ECP mode Support
DIO	8-bit Digital I/O interface x 1 (In/Out programmable)	8-bit Digital I/O interface x 1 (In/Out programmable)
FAN	CPU Fan x 1, Chassis Fan x 1	CPU Fan x 1, Chassis Fan x 2 (Fan2 optional)
Power	—	—
Others	Front panel header x 1, Clear CMOS jumper x 1, BIOS flash header (2[x4]P p=1.27mm) x 1	Front panel header x 1, Clear CMOS jumper x 1, BIOS flash header (2[x4]P p=1.27mm) x 1
OS		
OS Support	Windows® XP 32-bit, Windows® 7 32/64-bit, Linux Fedora	Windows® XP 32-bit, Windows® 7 32/64-bit, Linux Fedora
Note		

Board Level Products

Networking Motherboards



Model	FWB-2250	FWB-7250
System		
Form Factor	Networking Motherboard	Mini-ITX / Networking Motherboard
Processor	Intel® Atom™ E3815 processor SoC	Intel® Celeron® J1900 2.0 GHz
System Memory	204-pin DDR3L 1066/1333 MHz SODIMM x 2, up to 8 GB	204-pin DDR3L 1333MHz SODIMM x 2, up to 8GB
Chipset	Intel® Atom™ E3815	Intel® Celeron® J1900
Ethernet	Intel® Ethernet Controller I211-AT, Gigabit Ethernet x 4	Intel® I210-AT (Co-lay with Intel® I211-AT), Gigabit Ethernet x 4
Bypass Function	1 Pair (Optional)	—
BIOS	AMI BIOS	AMI BIOS
Serial ATA	SATA 3.0 Gb/s Connector x 2, (Optional CompactFlash™ Socket x 1)	CompactFlash Socket x 1, SATA II connector x 1 (Optional SATA II connector x 2)
Expansion Interface	Mini-Card Socket x 1(Optional)	Mini-Card socket w/ SIM card socket x 1
Power Requirement	40W, 12V DC-in power connector	ATX 100W PSU
Power Consumption	Intel® Celeron® J1900 2.0 GHz, DDR3L 1333 2GB 0.39A@100VAC, 1.21A@12V	Intel® Celeron® J1900 2.4 GH, DDR3L 1600 4GB, 0.26A@100VAC
Board Size	5.67" x 3.94" (114 mm x 100 mm)	6.7" x 6.7" (170mm x 170mm)
Watchdog Timer	1~255 steps by software programming	1~255 steps by software programming
MTBF (Hours)	90630	110571
OS support	Windows® 7 or above, Linux	Windows® 7 or above, Linux
Display		
Graphics Engine	Intel® HD	Intel HD Graphic
Resolution	2560 x 1600	2560 x 1600
Output Interface	Reserved VGA Internal box header	Reserved Pin Header for Graphic Integrated Proccessor
I/O		
LAN Port	RJ-45 Port x 4	RJ-45 Port x 4
Serial Port	RJ-45 Console x 1	RJ-45 Console x 1
USB	USB 2.0 x 2, USB 3.0 x 1(Optional)	USB 2.0 x 2
LED	Power LED x 1 HDD Active x 1 LAN LED x 8 (Optional Status LED x 1, Bypass LED x 1)	Power LED x 1 Status LED x 1 HDD Active x 1
Others	Power Button x 1, Software Programmable Reset Button x 1	Software Programmable Reset Button x 1
Environment		
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 185°F (-40°C ~ 85°C)	-40°F ~ 185°F (-40°C ~ 85°C)
Operating Humidity	0%~90% @RH, non-condensing	0%~90% relative humidity, non-condensing
Note		

Board Level Products

Networking Motherboards



Model	FWB-7401	FWB-7811
System		
Form Factor	Networking Motherboard	Networking Motherboard
Processor	Intel® LGA1150 4th Generation Core™ Processor	Intel® LGA1150 4th Generation Core™/Xeon Processor
System Memory	240-pin Dual channel DDR3L 1333/1600MHz UDIMM x 2, up to 16GB	240-pin Dual channel ECC or non-ECC DDR3L 1333/1600MHz UDIMM x 4, up to 32GB
Chipset	H81	C226
Ethernet	Intel® i211AT Gigabit Ethernet x 6	Intel® i211AT Gigabit Ethernet x 8
Bypass Function	Supports 2 pair bypass function	Optional Max. 2 pairs LAN bypass function.
BIOS	AMI BIOS	AMI BIOS
Serial ATA	SATA 6.0 Gb/s connector x 2, CF socket x 1	SATA III ports on board x 2 (optional extra 3 SATA ports), CF socket x 1
Expansion Interface	Optional by riser card	Optional by riser card
Power Requirement	Flex ATX 24-pin connector 4-pin DC power out connector for HDD x 2	Flex ATX 24-pin connector 4-pin DC power out connector for HDD x 5
Power Consumption	Intel® i7-4770S 3.1GHz, DDR3-1600 4GB x 2, 1.27A@100VAC, 127.2W	Intel® Xeon E3-1225 V3 3.2GHz, DDR3-1333 4GB x 2, 1.42A@90VAC, 127.4W
Board Size	10.43" x 7.56" (265mm x 192mm)	10.43" x 7.56" (265mm x 192mm)
Watchdog Timer	1~255 steps by software programming	1~255 steps by software programming
MTBF (Hours)	106,215	115,771
OS support	Linux kernel 2.6 and above	Linux kernel 2.6 and above
Display		
Chipset	H81	C226
Graphic Engine	Integrated	Integrated
Outer Interface	Reserve internal VGA pin header x 1	Reserve internal VGA pin header x 1
I/O		
LAN Port	RJ-45 Port x 6	RJ-45 Port x 8
Serial Port	RJ-45 Console x 1	RJ-45 Console x 1
Output Interface	USB3.0 x 2	USB3.0 x 2
LED	Power LED x 1 HDD Active x 1 Status LED x 1 LAN LED x 1 (Optional Bypass LED x 2)	Power LED x 1 HDD Active x 1 Status LED x 1 LAN LED x 1 (Optional Bypass LED x 2)
Others	Power Button x 1 Software Programmable Reset Button x 1	Power Button x 1 Software Programmable Reset Button x 1
Environment		
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 185°F (-40°C ~ 85°C)	-40°F ~ 185°F (-40°C ~ 85°C)
Operating Humidity	0%~90% @RH, non-condensing	0%~90% @RH, non-condensing
Note		

Board Level Products

RISC CPU Module

RISC CPU Module/ Xeon Industrial Server Motherboards



Model	GENE-1350
System	
Form Factor	3.5"
Processor	TI OMAP™ 3503/3530 600 MHz
System Memory	Onboard 128/256 MB (Optional) LP DDR RAM
Ethernet	Davicom DM9000AEP, 10/100Base-TX, RJ-45 x 1
Boot Loader	Microsoft Windows® CE 6.0 or Linux - Kernal 2.6.32
Watchdog Timer	Generate a time-out system reset
Expansion Interface	Mini-Card (with USB interface only) x 2, Proprietary Expansion Slot x 1
Battery	Lithium battery
Battery Charger	Linear tech LTC4100
Power Requirement	+9V to +24V DC
Power Consumption (Typical)	TI OMAP™ 3530, 128/256 MB LP DDR, 0.24A@+12V
Board Size	5.75"(L) x 4"(W) (146mm x 101.6mm)
Gross Weight	0.88 lb (0.4 kg)
Operating Temperature	32°F ~ 158°F (0°C ~ 70°C) -4°F ~ 158°F (-20°C ~ 70°C) for WiTAS 1 -40°F ~ 176°F (-40°C ~ 80°C) for WiTAS 2
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	100,000
Display	
Chipset	TI OMAP™ 3
Resolution	Up to 1280 x 768 for LCD Up to 1024 x 768 for CRT
LCD Interface	Up to 18-bit single channel TTL/LVDS LCD
I/O	
Storage	256 MB NAND Flash, SD, MicroSD
Serial Port	RS-232 x 1, RS-232/422/485 (auto flow) x 1, TTL UART x 1
USB	USB2.0 Host x 2, USB2.0 Client x 1
Digital I/O	Supports 8-bit (Programmable)
Audio	Line-in, Line-out, Mic-in, Speaker-out (1W Amplifier)
Touch Screen	Supports 4-wire resistive touch screen
Keypad Interface	Supports 6 x 6 matrix keypad
Motion Sensor	ST LIS35DE
Note	

Board Level Products

Xeon Industrial Server Motherboards



Model	CMB-A9SC2	CMB-A9DP2
System		
Form Factor	Micro ATX	EEB
Processor	Socket LGA 1155, Intel® Xeon™ E3 -1200 Series Processors Socket LGA 1155, Intel® Core™ i3 -2100 Processors Socket LGA 1155, Intel® Pentium® G800/G600 Processors Socket LGA 1155, Intel® Celeron® G500/G400 Processors	Support dual processor with socket type 2011 Intel® Xeon® processor E5-1600, E5-2600 v2 product family
System Memory	204-pin Dual channel DDR3 1066/1333/1600MHz, UDIMM, with ECC, up to 32GB	DDR 1333/1600 slot x 12 with maximum capacity up to 284 GB
Chipset	Intel® C202	Intel® C602-A PCH
I/O Chipset	—	—
Ethernet	Intel® 82574L, RJ-45 x 2, Management, RJ-45 x 1	Intel® 82574L x 2 + Management LAN x 1
BIOS	AMI	—
H/W monitoring	CPU Temperature, Cooling Fan status	—
Management Solution	—	ASWM Enterprise, AS MB6-iKVM for KVM-over-Internet
Expansion Interface	PCI-E [x16] x 1 PCI-E [x8] x 1 PCI 32-bit x 1	Slot Location 1: PCI-E [x8] (Gen3 X8 Link) Slot Location 2: PCI-E [x8] (Gen3 X8 Link) Slot Location 3: PCI-E [x8] (Gen3 X8 Link) Slot Location 4: PCI-E [x8] (Gen3 X8 Link) Slot Location 5: PCI-E [x8] (Gen3 X8 Link) Slot Location 6: PCI-E [x16] (Gen3 x16 Link), Auto switch to x8 link if slot 5 is occupied Slot Location 7: PCI-E [x8] (Gen3 X8 Link) Additional Slot 1: PIKE Slot for Storage expansion Follow SSI Location#
Power Requirement	—	—
Board Size	9.6" (L) x 9.6" (W) (244mm x 244mm)	12" x 13"
Gross Weight	10 pcs in BULK package	—
Operation Temperature	50°F ~ 95°F (10°C ~ 35°C)	—
Display		
Chipset	Aspeed AST2050	Aspeed AST2300
Memory	16MB VRAM	16 MB VRAM
Resolution	1920 x 1200 @60Hz 32bpp, 1600 x 1200 @60Hz 32bpp	—
Output Interface	VGA x 1	—
I/O		
Storage	SATA3 x 6, support software RAID 0,1,5,10	SATA Controller : Intel® C602-A AHCI SATA2 (3.0 Gb/s) ports x 4, SATA3 (6.0 Gb/s) ports x 2 Intel® Rapid Storage Technology Enterprise(RSTe) (For Windows Only) (Support Software RAID 0, 1, 5, 10) LSI® MegaRAID (For Linux/Windows) (Support Software RAID 0, 1, 10) SATA Controller : Intel® C602-A SCU SATA2 (3.0 Gb/s) ports x 4 Intel® Rapid Storage Technology Enterprise(RSTe) (For Windows Only) (Support Software RAID 0, 1, 5, 10)
Serial Port	RS-232 x 1	—
USB	USB2.0 x 2	External USB Port x 2
PS/2 Port	Keyboard/Mouse x 1	—
Note		

Board Level Products

Full-size SBCs — PICMG 1.0 SBC



Model	FSB-B75G
System	
Form Factor	Full size CPU Card
Bus Interface	PICMG 1.0
CPU	LGA 1155 for Intel® 3rd Generation Core™ i3/i5/i7 Processor
Memory Type	Up to 16 GB (DDR 3 1333/1600 DIMM x 2)
Chipset	Intel® B75
BIOS	AMI
Wake on LAN	No
Watchdog Timer	Yes
Power Requirement	ATX 2.1
Power Consumption (Typical)	Intel® Core™ i7-3770 3.4 GHz, DDR3 8 GB 3.38A@+12V, 3.11A@+5V, 0.41A@+3.3V, 0.2A@5VSB, 58.45W (Full load)
Dimension (L x W)	13.3" x 5" (339 mm x 126 mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing
Operating Humidity	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	60,000
Certification	CE/FCC, Class A
Display	
VGA/LCD Controller	Intel® B75
Video Output	Up to 2048 x 1536 @75 Hz for CRT
Backlight Inverter Supply	—
I/O	
Ethernet	10/100/1000Base-TX x 2
Audio	HDAC Daughter Board (optional) Mic-in/ Line-in/ Line-out/ CD-in
USB Port	USB3.0 x 4, USB2.0 x 6
Serial Port	RS-232 x 1 RS-232/422/485 x 1
Parallel Port	1
HDD Interface	SATA 3 x 1, SATA 2 x 2
FDD Interface	Optional
SSD	CFast™ x 1
Expansion Slot	PCI x 4/ ISA
DIO	8-bit programmable (4-in/4-out)
TPM	—
Note	

Full-size SBCs - PICMG 1.0 SBC/ Half-size SBCs — PCI/ ISA

Board Level Products

Half-size SBCs — PCI/ ISA



Model	HSB-CV1P	HSB-LN2I	HSB-800I
System			
Form Factor	Half-size CPU Card	Half-size CPU Card	Half-size CPU Card
Bus Interface	PCI	ISA	ISA
CPU	Onboard Intel® Atom™ D2550/ N2600	Intel® Atom™ D525/N455	Onboard AMD Geode™ LX800
Memory Type	DDR 3 800/ 1066 SODIMM x 1, max. 4 GB	Up to 4 GB (DDR 3 800 SODIMM)	Onboard 128 MB (DDR 400)
Chipset	Intel® NM10	Intel® Atom™ D525/N455 + ICH8M	AMD Geode™ LX800 + CS 5536
BIOS	AMI	AMI	Award
Wake on LAN	No	No	No
Watchdog Timer	255 Levels	255 Levels	255 Levels
Power Requirement	ATX 2.1	ATX 2.1	ATX 2.1
Power Consumption (Typical)	Intel® Atom™ D2550 1.86 GHz, DDR3 4 GB, 0.1A @+12V, 0.95A@+5V, 5.95W	Intel® Atom™ D525 1.8GHz,DDR3 4 GB (Full load), 0.5A@+12V, 2.86A@ +5V	AMD LX800, DDR400 128MB, 0.19A@+12V, 1.51A@+5V, 9.83W
Power Supply Type	ATX 2.1 (+12V)	+5V, +12V for ISA bus	+5V, +12V operation
Dimension (L x W)	7.3" x 4.8" (185mm x 122mm)	7.3"x 4.8" (185mm x 122mm)	7.3" x 4.8" (185mm x 122mm)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)	-40°F ~ 176°F (-40°C ~ 80°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing	0% ~ 90% relative humidity, non-condensing
MTBF (hours)	80,000	73,000	85,000
Certification	CE/FCC, Class A	CE/FCC, Class A	CE/FCC, Class A
Display			
VGA/LCD Controller	Intel® NM10	Intel® Atom™ D525/N455 integrated	AMD Geode™ LX800
Video Output	Up to 1920 x 1200 for CRT Up to 1440 x 900, (D2550) 18-bit & 24-bit Single channel for LVDS Up to 1366 x 768, (N2600) 18-bit single channel for LVDS	VGA, 18b 1 CH LVDS	1600 x 1200@32bpp at 100 MHz for CRT 1600 x 1200@24bpp for LCD
Backlight Inverter Supply	5V/12V	5V/12V	5V/12V
I/O			
Ethernet	10/100/1000Base-TX x 2	10/100/1000Base-TX x 2	10/100 or 10/100/1000Base-TX (optional)
Audio	HD codec daughter board (optional)	Yes	Yes
USB Port	USB2.0 x 8	USB2.0 x 5	USB2.0 x 4
Serial Port	RS-232 x 3 (-12V Required) RS-232/422/485 x 1	RS-232 x 1 (-12V required) RS-232/422/485 x 1	RS-232 x 3 RS-232/422/485 x 1
Parallel Port	1	1	1
HDD Interface	SATA 2 x 2	IDE x 1, SATA 2 x 3	IDE x 1
FDD Interface	—	1	1
SSD	—	CompactFlash™	CompactFlash™
Expansion Slot	PCI x 4	ISA	ISA, PC/104
DIO	8-bit Programmable (4-in/4-out)	8-bit Programmable (4-in/ 4-out)	8-bit Programmable (4-in/4-out)
TPM	—	—	—
Note			

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System Level Products

System Level Products

Industrial HMI Touch Panel Solutions



Model	AHP-1154
System	
Processor	Intel® Celeron® J1900, 2 GHz / N2807, 1.58 GHz
System Memory	204-pin DDR3L 1333MHz SODIMM x 1, up to 8 GB (J1900), 4 GB (N2807) Default 2 GB
LCD/CRT Controller	Integrated in processor
Ethernet	10/100/1000Base-TX, RJ-45 x 2
I/O Port	USB type A x 1 for USB 3.0 USB type A x 3 for USB 2.0 DB-9 for RS-485/422/232 x 2 (COM2, COM3) DB-9 for RS-232 x 2 RJ-45 x 2 for 10/100/1000Base-TX DB-15 x 1 for VGA 3-pin terminal block x 1 Power button x 1
Storage Disk Drive	CFast™ Socket x 1 SATA 2.5" HDD bay x 1
Expansion Slot	Mini-Card x 2 (Full Size, Half Size)
OS support	Windows® 10, Windows® 8.1, Windows® 7, WES 7, Linux kernel 2.6.x or above, Android 4.4.4
Mechanical	
Construction	Plastic (ABS) front bezel + metal chassis
Color	PMS877C + Black
Mounting	VESA 100/ VESA 75/ Panel mount
Dimension	16.02" x 12.22" x 2.3" (407mm x 310.5mm x 58.3mm)
Carton Dimension	19.8" x 8.2" x 17.9" (505mm x 210mm x 455mm)
Gross Weight	14.96 lb (6.8 kg)
Net Weight	11.02 lb (5 kg)
Environmental	
Operating Temperature	-10°C ~ 60°C with 0.5 m/s airflow (N2807) -10°C ~ 50°C with 0.5 m/s airflow (J1900)
Storage Temperature	-4°F ~ 158°F (-20°C ~ 70°C)
Storage Humidity	90% @40°C, non-condensing
Vibration	1 Grms/ 5-500Hz/ Operation (HDD)
Shock	20 G peak acceleration (11 msec. duration)
EMC	CE/FCC Class A
Power Supply	
DC input	DC 12V/DC 9 ~ 30 V
LCD	
Display type	15" TFT-LCD, LED backlight
Max Resolution	1024 x 768
Max. Colors	16.7M colors (8-bit for R,G,B)
Luminance	450 cd/m²
Viewing Angle	160°(H), 140°(V)
Back Light	LED
Back Light MTBF (Hours)	100,000
Touchscreen	
Type	5-wire, analog resistive
Light Transmission	80%
Life Time	10 million activations

System Level Products

Industrial HMI Touch Panel Solutions



Model	AHP-1125	AHP-1123
System		
Processor	Intel® Atom™ N3710 processor, 1.6 GHz (Quad-Core) Intel® Atom™ N3060 processor, 1.6 GHz (Dual-Core)	Onboard Intel® Atom™ D2550 1.86 GHz
System Memory	204-pin DDR3L SODIMM x 1, default 2GB, up to 8GB	204-pin DDR 3 800/1066 SODIMM x 1, up to 4 GB, default 2 GB RAM inside
LCD/CRT Controller	Intel® Atom™ N3710/N3060 Processor SoC	Integrated in processor
Ethernet	10/100/1000Base-TX, RJ-45 x 2	10/100/1000Base-TX, RJ-45 x 2
I/O Port	DB9 Type RS-232/422/485 x 1 DB9 Type RS-232 x 3 USB 2.0 x 2, USB 3.0 x 2 DB-15 VGA x 1 RJ-45 10/100/1000 LAN x 2 3-pin terminal block for power input Power button x 1	RS-232 x 3 RS-232/422/485 x 1 USB 2.0 x 4 VGA x 1 Power button x 1 LAN x 2
Storage Disk Drive	CFast™ x 1 2.5" SATA HDD bay x 1	2.5" SATA HDD/ CFast™ slot (internal)
Expansion Slot	Half-size Mini-Card x 1 Full size Mini-Card x 1	Mini-Card x 1
OS support	Windows® 7, Windows® 8.1, Windows® 10, Linux kernel 2.6.3 or above	Windows® XP Embedded, Windows® XP, Windows® 7 32-bit, Windows® Embedded Standard 7 32-bit, Linux kernel 2.6.3 or above
Mechanical		
Construction	Plastic Front Bezel + Aluminum Chassis	IP65 plastic front bezel
Color	PMS877C + Black	PMS 5425C + Gray
Mounting	VESA 100/ Panel mount/ Stand	VESA100/ Panel mount
Dimension	12.5"(W) x 9.6"(H) x 2.5"(D) (317mm x 243mm x 63.5mm)	12.5"(W) x 9.6"(H) x 2.5"(D) (317mm x 243mm x 63.5mm)
Carton Dimension	16.6"(W) x 15.9"(H) x 7.7"(D) (422mm x 404mm x 196mm)	16.6"(W) x 15.9"(H) x 7.7"(D) (422mm x 404mm x 196mm)
Gross Weight	10.1 lb (4.6 kg)	10.1 lb (4.6 kg)
Net Weight	7.9 lb (3.6 kg)	7.9 lb (3.6 kg)
Environmental		
Operating Temperature	14°F ~ 140°F (-10°C ~ 60°C) with 0.5 m/s airflow	32°F ~ 131°F (0°C ~ 55°C) w/ airflow 32°F ~ 122°F (0°C ~ 50°C) w/o airflow
Storage Temperature	-4°F ~ 158°F (-20°C ~ 70°C)	-4°F ~ 158°F (-20°C ~ 70°C)
Storage Humidity	90% @40°C, non-condensing	10~95% @40°C, non-condensing
Vibration	1 Grms/ 5~ 500Hz/ operation - with HDD	1 Grms/ 5~ 500Hz/ operation - with HDD
Shock	15G peak acceleration (11 msec. duration) - with HDD	15G peak acceleration (11 msec. duration) - with HDD
EMC	CE/FCC class A	CE/FCC class A
Power Supply		
DC input	DC 12V, DC 9~30V	DC 12V input, w/3-pin terminal block
LCD		
Display type	12.1" TFT-LCD, LED	12.1" TFT LCD
Max Resolution	1024 x 600	1024 x 768
Max. Colors	16.2M colors (6/8-bit for R,G,B)	16.2M colors
Luminance	500 cd/m²	500 cd/m²
Viewing Angle	160°(H), 160°(V)	160°(H), 160°(V)
Back Light	LED	LED
Back Light MTBF (Hours)	50,000	50,000
Touchscreen		
Type	5-wire resistive	5-wire, analog resistive
Light Transmission	80%	80%
Life Time	10 million activations	10 million activations

System Level Products

Industrial HMI Touch Panel Solutions

Industrial HMI Touch Panel Solutions/ Wide Temp. HMI Touch Panel Solutions



Model	AHP-1083	AHP-1070
System		
Processor	Intel® Atom™ D2550, 1.86 GHz	TI OMAP 600 MHz
System Memory	204-Pin DDR3 800/1066 MHz SODIMM x 1, up to 4GB, Default 2 GB	LP DDR 128 MB RAM, up to 256 MB
LCD/CRT Controller	Integrated in Intel® NM10 chipset	Integrated in TI processor
Ethernet	10/100/1000Base-TX, RJ-45 x 2	10/100Base-TX, RJ-45 x 1
I/O Port	USB 2.0 x 2 RS-232 x 1 RS-232/422/485 x 1 LAN x 2 VGA x 1	RS-232 x 1 RS-232/422/485 x 1 USB 2.0 x 2 USB client x 1 LAN x 1 VGA out x 1
Storage Disk Drive	2.5" SATA HDD/ CFast™ slot	256 MB NAND FLASH onboard/ SD card slot x1
Expansion Slot	Mini-Card x 1	Mini-Card x 1 (USB interface only)
OS support	Windows® XP Embedded, Windows® XP, Windows® 7 32-bit, Windows® Embedded Standard 7 32-bit, Linux kernel 2.6.3 or above	Windows® CE 6.0, Linux
Mechanical		
Construction	IP65 certified plastic front panel, aluminum back panel	IP65, NEMA 4, plastic front bezel
Color	Front panel: gray, Back panel: light gray	Bezel: Patone 5425C, Rear cover: RAL 7040
Mounting	VESA 75/ Panel mount	VESA 75/ Panel mount
Dimension	9.65" x 7.2" x 2.67" (245mm x 183mm x 67.9mm)	8.8" (W) x 6.14" (H) x 1.77" (D) (225mm x 156mm x 45mm)
Carton Dimension	20.67"(W) x 18.31"(H) x 9.1"(D) (4525mm x 465mm x 230mm)	11.4" (W) x 7.48" (H) x 9" (D) (290mm x 190mm x 230mm)
Gross Weight	4.4 lb (2 kg)	4.41 lb (2 kg)
Net Weight	3.3 lb (1.5 kg)	1.54 lb (0.7 kg)
Environmental		
Operating Temperature	32°F ~ 131°F (0°C ~ 55°C) w/ airflow 32°F ~ 122°F (0°C ~ 50°C) w/o airflow	32°F ~ 122°F (0°C ~ 50°C) (ambient w/ airflow)
Storage Temperature	-4°F ~ 158°F (-20°C ~ 70°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Storage Humidity	5~90% @40°C, non-condensing	5~90% @ 40°C, non-condensing
Vibration	1 Grms/ 5~ 500Hz/ operation - with HDD	3 Grms/ 5~ 500Hz/ operation - with SD
Shock	20 G peak acceleration (11 msec. duration)	20 G peak acceleration (11 msec. duration)
EMC	CE/FCC class A	CE/FCC class A
Power Supply		
DC input	DC 12V w/ 2-pin terminal block	DC 12V w/ 2-pin terminal block
LCD		
Display type	DC 12V w/ 2-pin terminal block	DC 12V w/ 2-pin terminal block
Max Resolution	8.4" TFT-LCD	7" TFT LCD
Max. Colors	800 x 600	800 x 480
Luminance	262K	262K colors
Viewing Angle	450 cd/m²	300 cd/m²
Back Light	160°(H), 140°(V)	140°(H), 120°(V)
Back Light MTBF (Hours)	LED	LED
Touchscreen		
Type	5-wire, analog resistive	5-wire, analog resistive
Light Transmission	80%	80%
Life Time	10 million activations	10 million activations

System Level Products

Wide Temp. HMI Touch Panel Solutions



Model	AHP-2173	AHP-2176
System		
Processor	Onboard Intel® Atom™ D2550, 1.86 GHz	Onboard Intel® Celeron® 827E, 1.4 GHz/ Core™ i7-2610UE, 1.5 GHz
System Memory	204-Pin DDR3 SODIMM x 2 up to 4 GB, default 2 GB	204-pin DDR3 SODIMM x 2, up to 8 GB, default 2 GB
LCD/CRT Controller	Integrated in NM10	Integrated in Intel® QM67 chipset
Ethernet	10/100/1000Base-TX, RJ-45 x 2	10/100/1000Base-TX, RJ-45 x 2
I/O Port	RS-232 x 2 RS-232/422/485 x 1 USB 2.0 x 2 Line-out VGA out x 1	RS-232 x 4 USB 2.0 x 6 (2 on front; 4 on rear) Line-in/Line-out VGA x 1
Storage Disk Drive	2.5" SATA HDD/ CFast™ slot (internal)	2.5" SATA HDD/ CFast™ slot (internal)
Expansion Slot	Mini-Card x 1	Mini-Card x 1
OS support	Windows® XP Embedded, Windows® XP, Windows® 7 32-bit, Windows® Embedded Standard 7 32-bit, Linux kernel 2.6.3 or above	Windows® XP Embedded, Windows® XP, Windows® 7 32-bit, Windows® Embedded Standard 7 32-bit, Linux kernel 2.6.3 or above
Mechanical		
Construction	IP65/ NEMA4 aluminum die cast front bezel & aluminum chassis	IP65/ NEMA4 aluminum die cast front bezel & aluminum chassis
Mounting	Panel mount/ Desktop/ VESA100/ Wallmount	Desktop/ VESA100/ Rackmount/ Wallmount/ Panel mount
Dimension	16.56"(W) x 14.08"(H) x 2.87"(D) (420mm x 358mm x 73mm)	16.54" x 14.09" x 3.82" (420mm x 358mm x 97mm)
Carton Dimension	26.02"(W) x 19.53"(H) x 8.11"(D) (661mm x 496mm x 206mm)	26.02" x 8.11" x 19.53" (661mm x 206mm x 496mm)
Gross Weight	18.7 lb (8.5 kg)	23.1 lb (10.5 kg)
Net Weight	13.2 lb (6 kg)	17.82 lb (8.1 kg)
Environmental		
Operating Temperature	-4°F ~ 140°F (-10°C ~ 60°C) w/ airflow -4°F ~ 131°F (-10°C ~ 55°C) w/o airflow	-4°F ~ 140°F (-20°C ~ 60°C) w/o airflow -4°F ~ 131°F (-20°C ~ 55°C) with Core™ i7, w/o airflow
Storage Temperature	-20°F ~158°F (-20°C ~ 70°C)	-4°F ~ 158°F (-20°C ~ 70°C)
Storage Humidity	10~95% @40°C, non-condensing	10~95% @40°C, non-condensing
Vibration	1 Grms/5-500 Hz/ random operation (HDD)	3 Grms/ 5~500 Hz/ random operation (HDD)
Shock	20 G peak acceleration (11 msec. duration)	15 G peak acceleration (11 msec. duration)
EMC	CE/FCC class A	CE/FCC class A
Power Supply		
DC input	DC 9~30V input, w/3-pin terminal block	DC 9~30V input, w/3-pin terminal block: Over-Voltage protection; low-voltage protection; reverse-voltage protection; surge protection
LCD		
Display type	17" TFT-LCD	17" TFT-LCD
Max Resolution	1280 x 1024	1280 x 1024
Max. Colors	16.7M colors	16.7M colors
Luminance	350 cd/m²	350 cd/m²
Viewing Angle	170°(H), 160°(V)	170°(H)/160°(V)
Back Light	LED	LED
Back Light MTBF (Hours)	50,000	50,000
Touchscreen		
Type	5-wire resistive	5-wire resistive
Light Transmission	80%	80%
Life Time	10 million activations	10 million activations

System Level Products

Wide Temp. HMI Touch Panel Solutions



Model	AHP-2153	AHP-2122
System		
Processor	Onboard Intel® Dual Core™ Atom™ D2550	Onboard Intel® Atom™ D525, 1.8 GHz
System Memory	204-pin DDR3 SODIMM x 1, up to 4 GB, default 2 GB	204-pin DDR3 800 MHz SODIMM x 1, up to 4 GB, default 2 GB RAM inside
LCD/CRT Controller	Integrated in processor	Integrated in Processor
Ethernet	10/100/1000Base-TX, RJ-45 x 2	10/100/1000Base-TX, RJ-45 x 2
I/O Port	RS-232 x 2 RS-232/422/485 x 1 USB 2.0 x 4 (2 on front; 2 on rear) Line-out x 1 VGA x 1	RS-232 x 1 RS-232/422/485 x 1 USB 2.0 x 4 (2 on front; 2 on rear) Line-out x 1 VGA x 1
Storage Disk Drive	2.5" SATA HDD/ CFast™ slot (internal)	2.5" SATA HDD/ CompactFlash™ Slot (Internal)
Expansion Slot	Mini-Card x 1	Mini-Card x 1
OS support	Windows® XP Embedded, Windows® XP, Windows® 7 32-bit, Windows® Embedded Standard 7 32-bit, Linux kernel 2.6.3 or above	Windows® XP, Windows® 7, Windows® CE, Linux Fedora
Mechanical		
Construction	IP65/ NEMA4 aluminum die cast front bezel & aluminum chassis	IP65/ NEMA4 aluminum die cast front bezel & metal chassis
Mounting	Desktop/ VESA100/ Rackmount/ Wallmount/ Panel mount	Panel mount/ Wallmount/ VESA 100/ Desktop
Dimension	15.35" x 12.74" x 3.08" (389.98mm x 323.48mm x 78.3mm)	13.6" x 10.46" x 3.58" (345.6mm x 265.7mm x 91mm)
Carton Dimension	20.08" x 9.84" x 18.11" (510mm x 250mm x 460mm)	17.9" x 15.75" x 12.6" (455mm x 400mm x 320mm)
Gross Weight	18.96 lb (8.62 kg)	19.8 lb (9 kg)
Net Weight	13.64 lb (6.2 kg)	15.4 lb (7 kg)
Environmental		
Operating Temperature	-4°F ~ 149°F (-20°C ~ 65°C) w/ airflow -4°F ~ 140°F (-20°C ~ 60°C) w/o airflow	-4°F ~ 140°F (-20°C ~ 60°C), w/o airflow
Storage Temperature	-4°F ~ 158°F (-20°C ~ 70°C)	-4°F ~ 158°F (-20°C ~ 70°C)
Storage Humidity	10~95% @ 40°C, non-condensing	10~95% @ 40°C, non-condensing
Vibration	1 Grms/ 5~500Hz/ random operation (HDD)	1 Grms/5~500Hz/ random operation (HDD)
Shock	20 G peak acceleration (11 msec. duration)	20 G peak acceleration (11 msec. duration)
EMC	CE/FCC class A	CE/FCC class A
Power Supply		
DC input	DC 9 ~ 30V input Over-Voltage protection; Low-voltage protection; Reverse-voltage protection	DC 9~30V input: Over-Voltage protection; Low-voltage protection; Reverse-voltage protection
LCD		
Display type	15" TFT-LCD	12.1" TFT-LCD
Max Resolution	1024 x 768	1024 x 768
Max. Colors	16.7M colors	262k colors
Luminance	HTT: 450 cd/m ² , STT: 800 cd/m ²	HTT: 500 cd/m ² , STT: 1000 cd/m ²
Viewing Angle	160°(H)/ 140°(V)	HTT: 160°(H)/160°(V), STT: 160°(H)/140°(V)
Back Light	LED	HTT: LED, STT: LED
Back Light MTBF (Hours)	HTT: 50,000, STT: 100,000	HTT: 50,000, STT: 100,000
Touchscreen		
Type	5-wire resistive	5-wire, analog resistive
Light Transmission	80%	80%
Life Time	10 million activations	10 million activations

System Level Products

Industrial Modular Touch Panel Solutions



Model	OMNI-2155	OMNI-2215-BT
System		
Processor	Intel® Celeron® J1900, 2 GHz/ N2807, 1.58 GHz	Intel® N2807 processor, 1.58 GHz Intel® J1900 processor, 2 GHz
System Memory	204-pin DDR3L 1333MHz SODIMM x 1, up to 8 GB (J1900), 4 GB (N2807)	204-Pin DDR3L SODIMM x 1, default 2 GB, up to 8 GB (J1900) 204-Pin DDR3L SODIMM x 1, default 2 GB, up to 4 GB (N2807)
LCD/CRT Controller	Integrated in Processor	Integrated in processor
Ethernet	10/100/1000Base-TX, RJ-45 x 2	10/100/1000Base-TX, RJ-45 x 2
I/O Port	USB type A x 1 for USB 3.0 USB type A x 3 for USB 2.0 SMA antenna hole x 1 HDMI x 1 CFast™ x 1 DB-9 for RS-232/422/485 x 1 RJ-45 x 2 for 10/100/1000Base-TX DB-15 x 1 for VGA 3-pin terminal block x 1 for 9~30 V DC power input LED Power On/Off Switch x 1	DB9 Type RS-232/422/485 x 1 USB 2.0 x 3 USB 3.0 x 1 HDMI x 1 RJ-45 10/100/1000 LAN x 1 Lockable power input connector Power switch x 1
Storage Disk Drive	CFast™ socket x 1, SATA 2.5" HDD bay x 1	CFast™ x 1, 2.5" SATA HDD bay x 1
Expansion Slot	Mini-Card x 2 (Full Size)	Full size Mini-Card x 2
OS support	Windows® 7, WES 7, Windows® 8, Windows® 10, Linux kernel 2.6.x or above	Windows® 7, Window® 8.1, Window® 10, Linux kernel 2.6.3 or above
Mechanical		
Construction	Aluminum front bezel + metal chassis	Aluminum design
Mounting	VESA 100/ Panel mount	VESA 100/ Panel mount
Dimension	16.54" x 10.43" x 2.36" (420 mm x 265 mm x 60 mm)	21.65" x 14.69" x 2.09" (550mm x 373mm x 53 mm)
Gross Weight	6.6 lb (3 kg)	19.58 lb (8.9 kg)
Environmental		
Operating Temperature	-20°C~60°C with industrial grade device (with 0.5 m/s air flow, according to IEC68-2-14, CPU: N2807) -20°C~55°C with industrial grade device (with 0.5 m/s air flow, according to IEC68-2-14, CPU: J1900)	-20°C~60°C with industrial grade device (with 0.5 m/s air flow, according to IEC68-2-14, CPU: N2807) -20°C~55°C with industrial grade device (with 0.5 m/s air flow, according to IEC68-2-14, CPU: J1900)
Storage Temperature	-4°F ~ 158°F (-20°C ~ 70°C)	-4°F ~ 158°F (-20°C ~ 70°C)
Storage Humidity	90% @40°C, non-condensing	90% @40°C, non-condensing
Vibration	1 Grms/ 5 ~ 500 Hz/ Operation (HDD)	1 Grms/ 5 ~ 500Hz/ operation - with HDD
Shock	15 G peak acceleration (11 msec. duration)	15 G peak acceleration (11 msec. duration) - with HDD
EMC	CE/FCC class A	CE/FCC class A
Power Supply		
DC input	DC 9 ~ 30 V	DC 9~30V, with lockable power adapter
LCD		
Display type	15.6" TFT-LCD, LED backlight	21.5" TFT-LCD, LED
Max Resolution	1366 x 768	1920 x 1080
Max. Colors	16.7M colors (8-bit for R,G,B)	16.7M colors (6/8-bit for R,G,B)
Luminance	400 cd/m²	250 cd/m²
Viewing Angle	160°(H), 140°(V)	170°(H), 160°(V)
Back Light	LED	LED
Back Light MTBF (Hours)	50,000	50,000
Touchscreen		
Type	P-CAP/ 5-wire resistive Projective capacitive multi-touch (2-point)	P-CAP/ 5-wire resistive Projective capacitive multi-touch (2-point)
Light Transmission	90 ± 3%/ 80% ± 5%	90%

System Level Products

Industrial Modular Touch Panel Solutions



Model	OMNI-3105-BT	OMNI-3125-BT
System		
Processor	Intel® N2807 processor, 1.58 GHz Intel® J1900 processor, 2 GHz	Intel® N2807 processor, 1.58 GHz Intel® J1900 processor, 2 GHz
System Memory	204-pin DDR3L 1333MHz SODIMM x 1, up to 8 GB, (J1900) 204-pin DDR3L 1333MHz SODIMM x 1, up to 4 GB, (N2807)	204-pin DDR3L 1333MHz SODIMM x 1, up to 8 GB, (J1900) 204-pin DDR3L 1333MHz SODIMM x 1, up to 4 GB, (N2807)
LCD/CRT Controller	Integrated in processor	Integrated in processor
Ethernet	Intel® I211, 10/100/1000Base-TX x 2	Intel® I211, 10/100/1000Base-TX x 2
I/O Port	USB 2.0 type A x 3 USB 3.0 type A x 1 SMA Antenna hole x 1 HDMI x 1 CFast x 1 DB-9 Type RS-232/422/485 x 1 RJ-45 x 2 for 10/100/1000 Base-TX DB-15 x 1 for VGA 3-pin terminal block x1 for 9~30 Vdc power input LED Power on/off switch x1	USB 2.0 type A x 3 USB 3.0 type A x 1 SMA Antenna hole x 1 HDMI x 1 CFast x 1 DB-9 Type RS-232/422/485 x 1 RJ-45 x 2 for 10/100/1000 Base-TX DB-15 x 1 for VGA 3-pin terminal block x1 for 9~30 Vdc power input LED Power on/off switch x1
Storage Disk Drive	CFast™ x 1, 2.5" SATA HDD bay x 1	CFast™ x 1, 2.5" SATA HDD bay x 1
Expansion Slot	Mini card x 2 SIM card x 2 PCIe x 1 connector (AAEON PIN Define)	Mini card x 2 SIM card x 2 PCIe x 1 connector (AAEON PIN Define)
OS support	Window® 7, Window® 8, Window® 10, Linux Kernel 2.6.x or above	Window® 7, Window® 8, Window® 10, Linux Kernel 2.6.x or above
Mechanical		
Construction	Aluminum design	Aluminum design
Mounting	Wall / VESA Mount/Desktop (Optional panel mount kits)	Wall / VESA Mount/Desktop (Optional panel mount kits)
Dimension	11.02" x 9.41" x 2.32" (280mm x 239mm x 59mm)	12.95" x 11.34" x 2.2" (329mm x 288mm x 56 mm)
Gross Weight	7.92 lb (3.6 kg)	11 lb (5.0 kg)
Environmental		
Operating Temperature	-10°C ~ 55°C (J1900), -10°C ~ 60°C (N2807) with 0.5 m/s airflow (CF & HDD)	-10°C ~ 55°C (J1900), -10°C ~ 60°C (N2807) with 0.5 m/s airflow (CF & HDD)
Storage Temperature	-4°F ~ 158°F (-20°C ~ 70°C)	-4°F ~ 158°F (-20°C ~ 70°C)
Storage Humidity	90% @40°C; non-condensing	90% @40°C; non-condensing
Vibration	1 Grms/ 5~ 500Hz/ operation - with HDD	1 Grms/ 5~ 500Hz/ operation - with HDD
Shock	15G peak acceleration (11 msec. duration) - with HDD	15G peak acceleration (11 msec. duration) - with HDD
EMC	CE/FCC class A	CE/FCC class A
Power Supply		
DC input	DC 9V (min) ~ 30V (max) w/3-pin terminal block, ATX Power function	DC 9V (min) ~ 30V (max) w/3-pin terminal block, ATX Power function
LCD		
Display type	10.4" TFT-LCD, LED	12.1" TFT-LCD, LED
Max Resolution	800(H) x 600(V)	1024(H) x 768(V)
Max. Colors	16.2M colors	16.2M colors
Luminance	230 cd/m²	500 cd/m²
Viewing Angle	120 (H), 100 (V)	160 (H), 160 (V)
Back Light	LED	LED
Back Light MTBF (Hours)	—	—
Touchscreen		
Type	P-CAP/ 5-wire resistive	P-CAP/ 5-wire resistive
Light Transmission	P-CAP (90% ± 3%), 5-wire Resistive (80% ± 3%)	P-CAP (90% ± 3%), 5-wire Resistive (80% ± 3%)

System Level Products

Industrial Modular Touch Panel Solutions



Model	OMNI-3155-BT	OMNI-3175-BT
System		
Processor	Intel® N2807 processor, 1.58 GHz Intel® J1900 processor, 2 GHz	Intel® N2807 processor, 1.58 GHz Intel® J1900 processor, 2 GHz
System Memory	204-pin DDR3L 1333MHz SODIMM x 1, up to 8 GB, (J1900) 204-pin DDR3L 1333MHz SODIMM x 1, up to 4 GB, (N2807)	204-pin DDR3L 1333MHz SODIMM x 1, up to 8 GB, (J1900) 204-pin DDR3L 1333MHz SODIMM x 1, up to 4 GB, (N2807)
LCD/CRT Controller	Integrated in processor	Integrated in processor
Ethernet	Intel® I211, 10/100/1000Base-TX x 2	Intel® I211, 10/100/1000Base-TX x 2
I/O Port	USB 2.0 type A x 3 USB 3.0 type A x 1 SMA Antenna hole x 1 HDMI x 1 CFast x 1 DB-9 Type RS-232/422/485 x 1 RJ-45 x 2 for 10/100/1000 Base-TX DB-15 x 1 for VGA 3-pin terminal block x 1 for 9~30 Vdc power input, LED Power on/off switch x 1	USB 2.0 type A x 3 USB 3.0 type A x 1 SMA Antenna hole x 1 HDMI x 1 CFast x 1 DB-9 Type RS-232/422/485 x 1 RJ-45 x 2 for 10/100/1000 Base-TX DB-15 x 1 for VGA 3-pin terminal block x 1 for 9~30 Vdc power input LED Power on/off switch x 1
Storage Disk Drive	CFast™ x 1, 2.5" SATA HDD bay x 1	CFast™ x 1, 2.5" SATA HDD bay x 1
Expansion Slot	Mini card x 2 SIM card x 2 PCIe x 1 connector (AAEON PIN Define)	Mini card x 2 SIM card x 2 PCIe x 1 connector (AAEON PIN Define)
OS support	Window® 7, Window® 8, Window® 10, Linux Kernal 2.6.x or above	Window® 7, Window® 8, Window® 10, Linux Kernal 2.6.x or above
Mechanical		
Construction	Aluminum design	Aluminum design
Mounting	Wall / VESA Mount/Desktop (Optional panel mount kits)	Wall / VESA Mount/Desktop (Optional panel mount kits)
Dimension	14.53" x 12.36" x 2.28" (369 mm x 314 mm x 58 mm)	15.75" x 14.57" x 2.32" (400mm x 370mm x 59 mm)
Gross Weight	13.97 lb (6.35 kg)	15.84 lb (7.2 kg)
Environmental		
Operating Temperature	-10°C ~ 55°C (J1900) -10°C ~ 60°C (N2807) with 0.5 m/s airflow (CF & HDD)	-10°C ~ 55°C (J1900) -10°C ~ 60°C (N2807) with 0.5 m/s airflow (CF & HDD)
Storage Temperature	-4°F ~ 158°F (-20°C ~ 70°C)	-4°F ~ 158°F (-20°C ~ 70°C)
Storage Humidity	90% @40°C; non-condensing	90% @40°C; non-condensing
Vibration	1 Grms/ 5~ 500Hz/ operation - with HDD	1 Grms/ 5~ 500Hz/ operation - with HDD
Shock	15G peak acceleration (11 msec. duration) - with HDD	15G peak acceleration (11 msec. duration) - with HDD
EMC	CE/FCC class A	CE/FCC class A
Power Supply		
DC input	DC 9(min) ~ 30 (max) V w/3-pin terminal block, ATX Power function	DC 9(min) ~ 30 (max) V w/3-pin terminal block, ATX Power function
LCD		
Display type	15" TFT-LCD, LED	17" TFT-LCD, LED
Max Resolution	1024(H) x 768(V)	1280(H) x 1024(V)
Max. Colors	16.7M (8 bit/color)	16.7M colors (RGB 6-bits + Hi-FRC data)
Luminance	450 cd/m²	350 cd/m²
Viewing Angle	160 (H), 140 (V)	170 (H), 160 (V)
Back Light	LED	LED
Back Light MTBF (Hours)	—	—
Touchscreen		
Type	P-CAP/ 5-wire resistive	P-CAP/ 5-wire resistive
Light Transmission	P-CAP (≥85%), 5-wire Resistive (80% ± 2%)	P-CAP (≥85%), 5-wire Resistive (80% ± 5%)

System Level Products

Industrial Modular Touch Panel Solutions



Model	OMNI-3195-BT	OMNI-2155-SKU
System		
Processor	Intel® N2807 processor, 1.58 GHz Intel® J1900 processor, 2 GHz	Intel® i5-6300U processor, 2.4 GHz Intel® Celeron 3955U processor, 2.0 GHz
System Memory	204-pin DDR3L 1333MHz SODIMM x 1, up to 8 GB, (J1900) 204-pin DDR3L 1333MHz SODIMM x 1, up to 4 GB, (N2807)	260-pin DDR4 SODIMM x 1, up to 8GB
LCD/CRT Controller	Integrated in processor	Integrated in processor
Ethernet	Intel® I211, 10/100/1000Base-TX x 2	Intel® I211, 10/100/1000Base-TX x 2
I/O Port	USB 2.0 type A x 3 USB 3.0 type A x 1 SMA Antenna hole x 1 HDMI x 1 CFast x 1 DB-9 Type RS-232/422/485 x 1 RJ-45 x 2 for 10/100/1000 Base-TX DB-15 x 1 for VGA 3-pin terminal block x1 for 9~30 Vdc power input, LED Power on/off switch x 1	USB 3.0 type A x 4 SMA Antenna hole x 1 HDMI x 1 DB-9 Type RS-232/422/485 x 2, RJ-45 x 1 for 10/100/1000 Base-TX 3-pin terminal block x1 for 9~30 Vdc power input LED Power on/off switch x 1
Storage Disk Drive	CFast™ x 1, 2.5" SATA HDD bay x 1	CFast™ x 1, 2.5" SATA HDD bay x 1
Expansion Slot	Mini card x 2 SIM card x 2 PCIe x 1 connector (AAEON PIN Define)	Mini card x 1 SIM card x 1 PCIe x 1 connector (AAEON PIN Define)
OS support	Window® 7, Window® 8, Window® 10, Linux Kernal 2.6.x or above	Window® 7, Window® 8, Window® 10, Linux Kernal 2.6.x or above
Mechanical		
Construction	Aluminum design	Aluminum design
Mounting	Wall / VESA Mount/Desktop (Optional panel mount kits)	Wall / VESA Mount/Desktop (Optional panel mount kits)
Dimension	18.14" x 16.14" x 2.47" (460.8mm x 410mm x 62.7 mm)	14.53" x 12.36" x 2.28" (369mm x 314mm x 58mm)
Gross Weight	19.36lb (8.8 kg)	20.68lb (9.4 kg)
Environmental		
Operating Temperature	-10°C ~ 55°C (J1900), -10°C ~ 60°C (N2807) with 0.5 m/s airflow (CF & HDD)	-20°C ~ 55°C with 0.5 m/s airflow (Industrial Grade HDD)
Storage Temperature	-4°F ~ 158°F (-20°C ~ 70°C)	-4°F ~ 158°F (-20°C ~ 70°C)
Storage Humidity	90% @40°C; non-condensing	90% @40°C; non-condensing
Vibration	1 Grms/ 5~ 500Hz/ operation - with HDD	1 Grms/ 5~ 500Hz/ operation - with HDD
Shock	15G peak acceleration (11 msec. duration) - with HDD	—
EMC	CE/FCC class A	CE/FCC class A
Power Supply		
DC input	DC 9(min) ~ 30 (max) V w/3-pin terminal block, ATX Power function	DC 9(min) ~ 30 (max) V w/3-pin terminal block, ATX Power function
LCD		
Display type	19" TFT-LCD, LED	15.6" TFT-LCD, LED
Max Resolution	1280(H)x1024(V)	1366(H)x768(V)
Max. Colors	16.7M colors	16.7M (8 bit/color)
Luminance	350 cd/m²	400 cd/m²
Viewing Angle	170 (H), 160 (V)	160 (H), 140 (V)
Back Light	LED	LED
Back Light MTBF (Hours)	—	—
Touchscreen		
Type	P-CAP/ 5-wire resistive	P-CAP/ 5-wire resistive
Light Transmission	P-CAP (≥85%), 5-wire Resistive (80% ± 5%)	P-CAP (90% ± 3%), 5-wire Resistive (80% ± 2%)

System Level Products

Infotainment Multi-Touch Panel Solutions



Model	ACP-5217	ACP-5153
System		
Processor	Intel® Core™ i7-3610QE Intel® Core™ i5-3610ME Intel® Celeron® 1020E	Intel® Atom™ D2550 processor, 1.86 GHz
System Memory	DDR3 SODIMM x 1, up to 8 GB, default 2 GB	DDR3 SODIMM up to 4 GB, default 2 GB
LCD/CRT Controller	Integrated in Intel® QM77 chipset	Integrated in Intel® NM10 chipset
Ethernet	10/100/1000Base-TX, RJ-45 x 2	10/100/1000Base-TX, RJ-45 x 2
I/O Port	RS-232 x 1 USB 2.0 x 6 (2 on side, 4 on rear) Line-out x 1 DVI-I x 1	RS-232 x 1 USB 2.0 x 4 (2 on side, 2 on rear) Line-out x 1 VGA out x 1 RJ-45 x 2 Lockable Power Input connector Power Switch x 1
Storage Disk Drive	2.5" SATA HDD/ CFast™ slot (internal)	2.5" SATA HDD/ CFast™ (internal)
Expansion Slot	Mini-Card x 1	Mini-PCIe card x 1
OS support	Windows® XP (T/S: Single point), Linux Fedora (T/S: multi-point), Windows® 7 (T/S: multi-point)	Windows® XP 32-bit, Windows® 7 32-bit, Linux kernel 2.6.3 or above
Mechanical		
Construction	IP65/ NEMA4 plastic front bezel, IPX1 for plastic back chassis	IP65 / NEMA 4 plastic front bezel, IPX1 plastic chassis
Mounting	VESA 100	VESA 75/100
Dimension	21.57" x 13.7" x 2.2" (546mm x 348.1mm x 86mm)	15.5" x 10.7" x 2.44" (394mm x 272mm x 62mm)
Carton Dimension	26" x 19.52" x 7.87" (661mm x 496mm x 200mm)	20.47" x 18.5" x 9.06" (520mm x 470mm x 230mm)
Gross Weight	24.2 lb (11 kg)	12.1 lb (5.5 kg)
Net Weight	19.8 lb (9 kg)	—
Environmental		
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C) (w/o airflow)	32°F ~ 104°F (0°C ~ 40°C) w/o airflow
Storage Temperature	-4°F ~ 158°F (-20°C ~ 70°C)	-4°F ~ 158°F (-20°C ~ 70°C)
Storage Humidity	10~95% @ 40°C, non-condensing	10%~90% @40°C, non-condensing
Vibration	1 Grms/ 5~500Hz/ random operation (HDD)	1 Grms/ 5~ 500Hz/ operation - with HDD
Shock	20 G peak acceleration (11 msec. duration)	20 G peak acceleration (11 msec. duration) - with HDD
EMC	CE/FCC class A	CE/FCC class A
Power Supply		
DC input	DC 12V, with lockable AC power adapter	DC12V, with lockable power adapter
LCD		
Display type	21.5" TFT-LCD, LED	15.6" TFT-LCD, LED
Max Resolution	1920 x 1080	1366 x 768
Max. Colors	16.7 M colors (6/8-bit for R,G,B)	16.7M colors (6/8-bit for R,G,B)
Luminance	250 cd/m²	400 cd/m²
Viewing Angle	170°(H), 160°(V)	160°(H), 140°(V)
Back Light	LED	LED
Back Light MTBF (Hours)	30,000	50,000
Touchscreen		
Type	Projected capacitive multi-touch (2-point)	Projected capacitive multi-touch (2-point)
Light Transmission	88 %	90%
Life Time	10 million activations	10 million activations

System Level Products

Infotainment Multi-Touch Panel Solutions



Model	ACP-1104	ACP-1103
System		
Processor	Intel® Celeron® J1900 processor, 2 GHz Intel® Celeron® N2807 processor, 1.58 GHz	Intel® Atom™ N2600 1.6 GHz processor
System Memory	204-pin DDR3L 1333MHz SODIMM x 1, default 2 GB, up to 8 GB (J1900) 204-pin DDR3L 1333MHz SODIMM x 1, default 2 GB, up to 4 GB (N2807)	204-pin DDR3 SODIMM up to 2 GB, default 2 GB
LCD/CRT Controller	—	Integrated in Intel® NM10 chipset
Ethernet	10/100/1000Base-TX, RJ-45 x 2	10/100/1000Base-TX, RJ-45 x 1
I/O Port	RS-232/422/485 x 2 (RJ-45 connector)	RJ-48 type RS-232/422/485 x 2
	USB 2.0 type A x 3	RJ-48 type RS-232 x 1
	USB 3.0 type A x 1	USB 2.0 x 4
	HDMI x 1	Mini HDMI x 1
	DI/O (4 DI, 2 DO) BIOS selection	RJ-45 type LAN x 1
	Power button x 1	Lockable power input connector
	Lockable power connector x 1	Power Switch x 1
Storage Disk Drive	Half size mSATA x 1 (Installation by AAEON recommended)	Half size mSATA storage (Installation by AAEON recommended)
Expansion Slot	Full size Mini-Card x 1	WiFi (by module)
OS support	Window® 7, Window® 8.1, Linux kernel 2.6.3 or above, Android 4.4.4	Windows® XP 32-bit, Windows® 7 32-bit, Linux kernel 2.6.3 or higher
Mechanical		
Construction	Aluminum Design	IP65/NEMA 4 Aluminum front bezel, aluminum back chassis
Mounting	VESA 75/ Panel mount/ Stand	VESA 75/ Panel mount/ Stand
Dimension	10.47" x 7.22" x 1.81" (266 x 183.5 x 30mm)	10.47" x 7.22" x 1.81" (266mm x 183.5mm x 30mm)
Carton Dimension	13.58" x 7.87" x 9.65" (345 x 200 x 245mm)	13.58" x 7.87" x 9.65" (345mm x 200mm x 245mm)
Gross Weight	5.5 lb (2.5 kg)	5.5 lb (2.5 kg)
Net Weight	1.2 kg (2.6 lb)	2.42 lb (1.1 kg)
Environmental		
Operating Temperature	32°F ~ 113°F (0°C ~ 45°C) without airflow 32°F ~ 122°F (0°C ~ 50°C) with airflow	32°F ~ 113°F (0°C ~ 45°C) without airflow 32°F ~ 122°F (0°C ~ 50°C) with airflow
Storage Temperature	-4°F ~ 158°F (-20°C ~ 70°C)	-4°F ~ 158°F (-20°C ~ 70°C)
Storage Humidity	5%~90% @40°C, non-condensing	95% @40°C, non-condensing
Vibration	1 Grms/ 5~ 500Hz/ operation - with HDD	1 Grms/ 5~ 500Hz/ operation - with HDD
Shock	15 G peak acceleration (11 msec. duration) - with HDD	15 G peak acceleration (11 msec. duration) - with HDD
EMC	CE/FCC class A	CE/FCC class A
Power Supply		
DC input	DC 12V with lockable power adapter	DC 12V, with lockable power adapter
LCD		
Display type	10.1" TFT-LCD, LED	10.1" TFT-LCD, LED
Max Resolution	1280 x 800	1280 x 800
Max. Colors	262k	262K
Luminance	250 cd/m ²	250 cd/m ²
Viewing Angle	160°(H), 160°(V)	160°(H), 160°(V)
Back Light	LED	LED
Back Light MTBF (Hours)	—	20,000
Touchscreen		
Type	Projected capacitive multi-touch (2-point)	Projected capacitive multi-touch (2-point)
Light Transmission	>86 %	90%
Life Time	10 million activations	10 million activations

System Level Products

Infotainment Multi-Touch Panel Solutions



Model	ACP-1074	ACP-1073	ACP-2153
System			
Processor	Intel® N2807 processor, 1.58 GHz Intel® J1900 processor, 2 GHz	Intel® Atom™ N2600 1.6 GHz processor	Intel® Atom™ D2550 processor, 1.86 GHz
System Memory	204-Pin DDR3L SODIMM x 1, default 2GB, up to 8 GB (J1900) 204-Pin DDR3L SODIMM x 1, default 2GB, up to 4 GB (N2807)	204-pin DDR3 SODIMM up to 2 GB, default 2 GB	DDR 3 SODIMM up to 4 GB, default 2 GB
LCD/CRT Controller	Integrated in processor	Intel® NM10 integrated graphics	Integrated in Intel® NM10 chipset
Ethernet	10/100/1000Base-TX, RJ-45 x 2	10/100/1000Base-TX, RJ-45 x 1	10/100/1000Base-TX, RJ-45 x 2
I/O Port	RJ-45 type RS-232/422/485 x 2, USB 2.0 x 3, USB 3.0 x 1, HDMI x 1, RJ-45 10/100/1000 LAN x 2, DI/O (4DI, 2DO)BIOS Selection, Lockable power input connector, Power switch x 1	RJ-48 type RS-232/422/485 x 2, RJ-48 type RS-232 x 1, USB 2.0 x 4, Mini HDMI x 1, RJ-45 type LAN x 1, Lockable power input connector, power switch x 1	RS-232 x 2, RS-232/422/485 x 1, USB 2.0 x 4, Line-out x 1, VGA out x 1, RJ-45 x 2, Power input 3-pins terminal block x 1, Power switch x 1
Storage Disk Drive	Half size mSATA storage x 1 (Installation by AAEON recommended)	Half-size mSATA storage (installation by AAEON recommended)	2.5" SATA HDD/ CFast™
Expansion Slot	Full size Mini-Card x 1	WiFi (by module)	Mini-PCIe card x 1
OS support	Window® 7, Window® 8.1, Window® 10, Linux kernel 2.6.3 or above	Windows® XP 32-bit, Windows® 7 32-bit, Linux kernel 2.6.3 or higher	Windows® XP 32-bit, Windows® 7 32-bit, Linux Fedora
Mechanical			
Construction	Aluminum Design	IP65/NEMA 4 aluminum front bezel, aluminum back chassis	Open frame
Mounting	VESA 75/ Panel mount/ Stand	VESA 75 stand/ Panel mount	VESA 75/100/ Panel mount
Dimension	7.71" x 5.27" x 1.18" (196mm x 134mm x 30 mm)	7.96" x 5.28" x 1.46" (202.19mm x 134.18mm x 37.2mm)	14.12" x 10.75" x 2.75" (358.6mm x 273.1mm x 69.8 mm)
Carton Dimension	13.58" x 7.87" x 9.64" (345mm x 200mm x 245 mm)	13.58" x 7.87" x 9.65" (345mm x 200mm x 245mm)	20.67"(W) x 18.31"(H) x 9.1"(D) (525mm x 465mm x 230mm)
Gross Weight	5.5 lb (2.5 kg)	5.5 lb (2.5 kg)	16.5 lb (7.48 kg)
Net Weight	2.6 lb (1.2 kg)	2.42 lb (1.1 kg)	13.17 lb (5.98 kg)
Environmental			
Operating Temperature	32°F ~ 122°F (0°C ~ 50°C) without airflow 23°F ~ 131°F (-5°C ~ 55°C) with airflow	32°F ~ 113°F (0°C ~ 45°C) without airflow 32°F ~ 122°F (0°C ~ 50°C) with airflow	-4°F ~ 140°F (-20°C ~ 60°C) w/o airflow
Storage Temperature	-4°F ~ 158°F (-20°C ~ 70°C)	-4°F ~ 158°F (-20°C ~ 70°C)	-4°F ~ 158°F (-20°C ~ 70°C)
Storage Humidity	5%~90% @40°C, non-condensing	95% @40°C, non-condensing	10%~90% @40°C, non-condensing
Vibration	1 Grms/ 5~ 500Hz/ operation - with HDD	1 Grms/ 5~ 500Hz/ operation - with HDD	1 Grms/ 5~ 500Hz/ operation - with HDD
Shock	15G peak acceleration (11 msec. duration) - with HDD	15 G peak acceleration (11 msec. duration) - with HDD	20 G peak acceleration (11 msec. duration) - with HDD
EMC	CE/FCC class A	CE/FCC class A	CE/FCC class A
Power Supply			
DC input	DC12V, with lockable power adapter	DC12V, with lockable power adapter	9~30V 3-pin terminal block
LCD			
Display type	7" TFT-LCD, LED	7" TFT-LCD, LED	15" TFT-LCD
Max Resolution	1024 x 600	1024 x 600	1024 x 768
Max. Colors	26M colors (6/8-bit for R,G,B)	26M colors (6/8-bit for R,G,B)	16.7M colors (6/8-bit for R,G,B)
Luminance	250 cd/m²	250 cd/m²	450 cd/m²
Viewing Angle	150°(H), 145°(V)	150°(H), 145°(V)	160°(H), 140°(V)
Back Light	LED	LED	LED
Back Light MTBF (Hours)	20,000	20,000	50,000
Touchscreen			
Type	Projected capacitive multi-touch (2-point)	Projected capacitive multi-touch (2-point)	Projective capacitive multi-touch (2-point)
Light Transmission	90%	90%	88%
Life Time	10 million activations	10 million activations	10 million activations

System Level Products

Industrial Touch Display Solutions



Model	AGD-317D	AGD-315D	AGD-315D V2
System			
Input Signal	VGA/DVI	VGA/DVI	VGA/DVI
On Screen Display Control	LCD On/Off, Brightness +, Brightness -	MENU, AUTO, LCD On/Off, UP, DOWN	MENU, AUTO, LCD On/Off, UP, DOWN
I/O Port	VGA/DVI RS-232/ Mini-USB (For T/S) DIP Switch USB x 2 (on front panel)(AGD-317DHTT-A2)	VGA/DVI RS-232/ Mini-USB (For T/S) DIP Switch USB x 2 (AGD-315DHTT-A2)	VGA/DVI RS-232 (For T/S)
OS Support	Windows® XP, Windows® 7, Linux Fedora	Windows® XP, Windows® 7, Linux Fedora	Windows® XP, Windows® 7, Windows® 8.1, Windows® 10, Linux Fedora
Mechanical			
Construction	IP65/ NEMA4 aluminum die cast front bezel & steel chassis	IP65/ NEMA4 aluminum die cast front bezel & steel chassis	IP65/ NEMA4 aluminum die cast front bezel & steel chassis
Mounting	Panel mount/ Rackmount/ VESA 75/100/ Wallmount/ Desktop	Panel mount/ Rackmount/ VESA 75/100/ Wallmount/ Desktop	Panel mount/ Rackmount/ VESA 75/100/ Wallmount/ Desktop
Dimension	16.54" x 14.1" x 2.84" (420mm x 358mm x 72mm)	15.35" x 12.74" x 2.84" (390mm x 323.5mm x 72mm)	15.35" x 12.74" x 2.84" (390mm x 323.5mm x 72mm)
Carton Dimension	26" x 19.53" x 7.87" (661mm x 496mm x 200mm)	20" x 18.11" x 8.26" (510mm x 460mm x 210mm)	20" x 18.11" x 8.26" (510mm x 460mm x 210mm)
Gross Weight	18.59 lb (8.45 kg)	13 lb (5.9 kg)	13 lb (5.9 kg)
Net Weight	14.3 lb (6.5 kg)	9 lb (4.1 kg)	9 lb (4.1 kg)
Environmental			
Operating Temperature	32°F ~122°F (0°C~50°C)	14°F ~ 140°F (-10°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Storage Temperature	-4°F ~ 140°F (-20°C~60°C)	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Storage Humidity	10~95% @ 40°C, non-condensing	10~95% @ 40°C, non-condensing	10~95% @ 40°C, non-condensing
Vibration	1 Grms/ 5~500Hz/ random operation	1 Grms/ 5~500Hz/ random operation	1 Grms/ 5~500Hz/ random operation
Shock	15 G peak acceleration (11 msec. duration)	15 G peak acceleration (11 msec. duration)	15 G peak acceleration (11 msec. duration)
EMC	CE/FCC class A	CE/FCC class A	CE/FCC class A
Power Supply			
DC input	DC 9~30V, w/ 3-pin terminal block Over-voltage (31V DC) Under-voltage (8V DC) Reverse-voltage protection Surge protection (1000V DC)	DC 9~30V, w/ 3-pin terminal block Over-voltage (31V DC) Under-voltage (8V DC) Reverse-voltage protection Surge protection (1000V DC)	DC 12 V or 9~30V, w/3-pin terminal block Over-voltage (31V DC) Under-voltage (8V DC) Reverse-voltage protection Surge protection (1000V DC)
LCD			
Display type	17" TFT-LCD	15" TFT-LCD	15" TFT-LCD
Max Resolution	1280 x 1024	1024 x 768	1024 x 768
Max. Colors	16.7M colors (6/8-bit for R,G,B)	16.7M colors (6/8-bit for R,G,B)	16.7M colors (6/8-bit for R,G,B)
Luminance	350 cd/m²	450 cd/m²	450 cd/m²
Viewing Angle	170°(H), 160°(V)	160°(H), 140°(V)	160°(H), 140°(V)
Back Light	LED	LED	LED
Back Light MTBF (Hours)	50,000	100,000	100,000
Touchscreen			
Type	5-wire resistive	5-wire resistive	5-wire resistive (V2A/V2A)
Light Transmission	80%	80%	80%
Life Time	10 million activations	10 million activations	10 million activations

System Level Products

Industrial Touch Display Solutions



Model	AGD-312D	AGD-312D V2
System		
Input Signal	VGA/DVI	VGA/DVI
On Screen Display Control	LCD On/Off, Brightness +, Brightness -	LCD On/Off, Auto, Menu, Up, Down
I/O Port	VGA/DVI	VGA/DVI
	RS-232/ Mini-USB (For T/S)	RS-232 (For T/S)
	DIP Switch USB x 2 (on front panel) (AGD-312DHTT-A2)	
OS Support	Windows® XP, Windows® 7, Linux Fedora	Windows® XP, Windows® 7, Windows® 8.1, Windows® 10, Linux Fedora
Mechanical		
Construction	IP65/ NEMA4 aluminum die cast front bezel & steel chassis	IP65/ NEMA4 aluminum die cast front bezel & steel chassis
Mounting	Panel mount/ Rackmount/ VESA 75/100/ Wallmount/ Desktop	Panel mount/ Rackmount/ VESA 75/100/ Wallmount/ Desktop
Dimension	13.61" x 10.46" x 2.41" (345.8mm x 265.8mm x 61.1mm)	13.61" x 10.46" x 2.41" (345.8mm x 265.8mm x 61.1mm)
Carton Dimension	20.67" x 18.31" x 9.1" (525mm x 465mm x 230mm)	20.67" x 18.31" x 9.1" (525mm x 465mm x 230mm)
Gross Weight	13 lb (5.9 kg)	13 lb (5.9 kg)
Net Weight	9 lb (4.1 kg)	9 lb (4.1 kg)
Environmental		
Operating Temperature	-4°F ~ 140°F (-20°C~60°C)	-4°F ~ 140°F (-20°C~60°C)
Storage Temperature	-4°F ~ 140°F (-20°C~60°C)	-4°F ~ 140°F (-20°C~60°C)
Storage Humidity	10~95% @ 40°C, non-condensing	10~95% @ 40°C, non-condensing
Vibration	1 Grms/ 5~500Hz/ random operation	1 Grms/ 5~500Hz/ random operation
Shock	15 G peak acceleration (11 msec. duration)	15 G peak acceleration (11 msec. duration)
EMC	CE/FCC class A	CE/FCC class A
Power Supply		
DC input	DC 9~30V, w/ 3-pin terminal block Over-voltage (31V DC) Under-voltage (8V DC) Reverse-voltage protection Surge protection (1000V DC)	DC 12 V or 9~30V, w/3-pin terminal block Over-voltage (31V DC) Under-voltage (8V DC) Reverse-voltage protection Surge protection (1000V DC)
LCD		
Display type	12.1" TFT-LCD	12.1" TFT-LCD
Max Resolution	1024 x 768	1024 x 768
Max. Colors	16.7M colors (6/8-bit for R,G,B)	16.7M colors (6/8-bit for R,G,B)
Luminance	500 cd/m²	500 cd/m²
Viewing Angle	170°(H), 160°(V)	170°(H), 160°(V)
Back Light	LED	LED
Back Light MTBF (Hours)	50,000	50,000
Touchscreen		
Type	5-wire resistive	5-wire resistive5-wire resistive (AGD-312DHTT-V2A-1010/ AGD-312DHTT-V2B-1010)
Light Transmission	80%	80% (±5%)
Life Time	10 million activations	10 million activations

System Level Products

Industrial Touch Display Solutions

Industrial Touch Display Solutions/ Rugged Stainless Touch Panel Solutions



Model	ACD-110D	ACD-515D
System		
Input Signal	VGA, DVI-D	VGA/ DVI-D
On Screen Display Control	Auto, Menu, Up, Down, LCD On/Off	Menu, Auto, LCD On/Off, Up, Down
I/O Port	DB-15: VGA x 1 DVI-D x 1 Mini USB x 1 Power input x 1	USB x 3 (2 on side; 1 on rear) VGA/DVI x 1 Mini-USB x 1 (for T/S) Line-out x 1 2W speaker x 2
OS Support	Windows® XP 32 bit Windows® 7 32/64 bit Windows® 8 32/64 bit Linux Ubuntu 12.04	Windows® XP (T/S: single point), Linux Fedora (T/S: single point), Windows® 7 (T/S: multi-point)
Mechanical		
Construction	IP65 aluminum front bezel & SGCC chassis	IP65/ NEMA4 for plastic front bezel, IPX1 for plastic chassis
Mounting	VESA75/ Panel mount/ Stand	VESA 75/100
Dimension	9.97" x 6.72" x 1.57" (265.96mm x 183.56mm x 40mm)	15.51" x 10.71" x 2.32" (394mm x 272mm x 59mm)
Carton Dimension	13.58" x 7.87" x 9.65" (345mm x 200mm x 245mm)	20.47" x 18.5" x 9.06" (520mm x 470mm x 230mm)
Gross Weight	4.4 lb (2.6 kg)	11.02 lb (5 kg)
Net Weight	2.64 lb (1.4 kg)	6.6 lb (3 kg)
Environmental		
Operating Temperature	32°F ~ 113°F (0°C ~ 45°C) w/o airflow 32°F ~ 122°F (0°C ~ 50°C) w/ airflow	32°F ~ 104°F (0°C ~ 40°C)
Storage Temperature	14°F ~ 140°F (-10°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Storage Humidity	5%~90% @40°C, non-condensing	10~95% @ 40°C, non-condensing
Vibration	1 Grms/ 5 ~ 500Hz/ operation - with HDD	1 Grms/ 5~500Hz/ random operation
Shock	15 G peak acceleration (11 msec. duration)	15 G peak acceleration (11 msec. duration)
EMC	CE/FCC class A	CE/FCC class A
Power Supply		
DC input	DC 12V with Lockable Power adapter	DC 12V, with lockable power adapter
LCD		
Display type	10.1" TFT LCD	15.6" TFT-LCD, LED type
Max Resolution	1280 x 800	1366 x 768
Max. Colors	262K colors	16.7M colors (6/8-bit for R,G,B)
Luminance	250 cd/m ²	400 cd/m ²
Viewing Angle	160°(H)/ 160°(V)	160°(H)/140°(V)
Back Light	LED	LED
Back Light MTBF (Hours)	20,000	50,000
Touchscreen		
Type	Projective capacitive multi-touch (2-point)	Projected capacitive multi-touch (2-point)
Light Transmission	86%	90%
Life Time	10 million activations	10 million activations

System Level Products

Rugged Stainless Touch Panel Solutions



Model	AFP-6152	AFP-6123
System		
Processor	Onboard Intel® Atom™ D525 Dual Core Processor, 1.8 GHz	Onboard Intel® Atom™ D2550 Dual Core Processor
Memory	DDR3 SODIMM x 1 up to 4 GB (Wide-Temp. and Factory-Installed), Default: 2 GB	DDR3 SODIMM x 1 up to 4 GB (Wide-Temp. and Factory-Installed), 2 GB Include
LCD/CRT Controller	Integrated in Processor	Integrated in Processor
Ethernet	10/100/1000Base-TX x 1	10/100/1000Base-TX x 1
I/O Port	M12 x 1 for USB 2.0 x 2 M12 x 1 for RS-232 x 1 M12 x 1 for RS-232/422/485 x 1 M12 x 1 for LAN x 1 Power input x 1	M12 x 1 for USB 2.0 x 2 M12 x 1 for RS-232 x 1 M12 x 1 for RS-232/422/485 x 1 M12 x 1 for LAN x 1 Power input x 1
Storage Disk Drive	2.5" SATA Hard Disk Drive x 1/ CompactFlash™ Slot x 1 (Internal) (Wide-Temp. and Factory- Installed)	2.5" SATA Hard Disk Drive x 1/ CFast™ Slot x 1 (Internal) (Wide-Temp. and Factory- Installed)
Expansion Slot	Mini-card x 1	Mini-card x 1
OS Support	Windows® XP, Windows® 7, Linux Fedora	Windows® XP, Windows® 7 32-bit, Linux Fedora
Mechanical		
Construction	IP66 / NEMA4x for stainless front bezel & stainless chassis	IP66 / NEMA4x for stainless front bezel & stainless chassis
Mounting	VESA 75/100	VESA 75/100
Dimension	15.75" (W) x 12.76" (H) x 3.32" (D) (390 mm x 324mm x 84.5mm)	14.6" x 11.2" x 3.42" 370mm x 285mm x 87mm)
Carton Dimension	20.47" x 18.5" x 9.06" (520mm x 470mm x 230mm)	20" x 18.1" x 8.26" (510mm x 460mm x 210mm)
Gross Weight	16.1 lb (7.5Kg)	18.1 lb (8.2 Kg)
Net Weight	13.2 lb (6 Kg)	15.2 lb (6.93 Kg)
Environmental		
Operating Temperature	-4°F ~ 122°F (-20°C ~ 50°C) Ambient without Airflow -4°F ~ 130°F (-20°C ~ 55°C) Ambient with Airflow	-4°F ~ 122°F (-20°C ~ 50°C) Ambient without Airflow -4°F ~ 130°F (-20°C ~ 55°C) Ambient with Airflow
Storage Temperature	-4°F ~ 158°F (-20°C ~ 70°C)	-4°F ~ 158°F (-20°C ~ 70°C)
Storage Humidity	8%~90% @40°C, non-condensing	5%~90% @40°C, non-condensing
Vibration	1G rms/ 5~500Hz/ Random operation (HDD)	1G rms/ 5~500Hz/ Random operation (HDD)
Shock	20 G peak acceleration (11 msec. Duration)	15 G peak acceleration (11 msec. Duration)
EMC	CE/FCC Class A	CE/FCC Class A
Power Supply		
DC input	DC 9~30V input -Over-voltage protection -Low-voltage protection -Reverse-voltage protection	DC 9~30V input -Over-voltage protection -Low-voltage protection -Reverse-voltage protection
LCD		
Display type	15" TFT-LCD	12.1" TFT-LCD
Max Resolution	1024 x 768	1024 x 768
Max. Colors	262K colors	262K colors
Luminance	400	500
Viewing Angle	160°(H)/140°(V)	160°(H)/160°(V)
Back Light	LED	LED
Back Light MTBF (Hours)	50,000	50,000
Touchscreen		
Type	5-wire, Analog Resistive	Glass-Film-glass, anti-scratch 7H
Light Transmission	80%	80%
Life Time	10 million times	10 million times

System Level Products

Rugged Tablet Computers



Model	RTC-600A	RTC-700A
System		
Processor	OMAP 4470 up to 1.5 GHz Processor	NVIDIA® TEGRA™ 2 1.0 GHz Dual Core Processor
Memory	LPDDR2 1 GB SDRAM	1 GB LPDDRII
Chipset	—	—
LCD Display	5.7" TFT LCD (1280 x 720)/ 16:9	7" TFT-LCD (1280 x 800)/ 16:10
I/O	SIM Card x 1, Micro SD Card Slot x 1, USB 2.0 (type A) x 1, Micro USB port x 1, 3.5-mm stereo headphone jack x 1, DC-In Jack x 1, Built-in Speaker & Microphone	DC-in jack x 1, MicroSD Card x 1, SIM card slot x 1, Mini HDMI port x 1, Mini USB x 1, Built-in Speaker & Microphone x 1, 3.5mm, stereo headphone jack x 1, 1D/2D Barcode scanner x 1 (Optional), Magnetic Stripe Reader x 1 (Optional)
Communication	Wifi support IEEE 802.11 b/g/n 5GHz/2.4GHz Band, BT 3.0(HS) with integrated class 1 PA and BLE	Bluetooth v2.1, Wi-Fi (802.11 b/g/n), NFC / RFID (13.56MHz), 3G (Optional)
Storage	16 GB eMMC Flash	16GB eMMC
WWAN(optional)	3G: WCDMA/CDMA	3G: WCDMA
Navigation	GPS, Glonass, Beidou, AGPS, *AGPS only available when the 3G module is enabled.	GPS, Glonass (Optional), AGPS* is enabled with 3G
BCS (optional)	1D Scanner support CMOS engine (optional), 2D Scanner support LED engine	1D Scanner support CMOS engine (optional), 2D Scanner support LED engine
RFID (optional)	HF RFID based on 13.56MHz compatible with NFC	HF RFID based on 13.56MHz compatible with NFC
Camera	5M Pixel AF camera with flash light	Front-facing: 1.2MP, Rear-facing: 5MP
Sensors	Light Sensor, G-Sensor, 3-axis digital gyroscope,vibrator	G-sensor, E-Compass, Gyroscope, Light-sensor
Expansion Slot	Docking	Docking (Optional)
OS	Android™ 4.2	Android™ 3.2/4.0.3
Mechanical		
Color	Black	Black
Dimension (W x H x D)	4.13" x 8.27" x 0.83" (105mm x 210mm x 21mm)	5.38" x 8.58" x 0.83" (136.6mm x 219mm x 21mm)
Gross Weight	0.94 lb (0.43 kg)	1.254 lb (0.57 kg)
Environmental		
Operating Temperature	Battery charging status: -4°F ~ 122°F (-20°C ~ 50°C) Battery discharging status: -4°F ~ 104°F (-20°C ~ 40°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Storage Temperature	-67°F ~ 167°F (-55°C ~ 75°C)	-67°F ~ 158°F (-55°C ~ 70°C)
Operating Humidity	10% to 95%	50°C; 5% ~ 90%RH; 120 hours
Water & Dust Proof	IP67	IP65
Vibration	Meet Mil Std 810G-514.6, Procedure I	MIL-STD-810G Method 514.6 Procedure I, Cat. 24, Fig. 514.6E-1 & E-2
Drop	Mil-STD-810G-516.6, Procedure IV	MIL-STD-810G Method 516.6 Procedure IV, Height of Drop: 122cm (48 inch; 4ft), Number of Drop: 26 times., Floor: Two-inch plywood backed by concrete., For all surfaces, edges and corners
ESD	Air +/- 8KV , Contact +/- 4KV	Air charge: +/- 8KV, Contact charge: +/- 4KV
EMI / Safety	CE / FCC Class B / UL	UL: UL60950-1, CE/LVD: EN60950-1, FCC, CE
Power Supply		
AC / DC Adapter	AC input 100V-240V, 50Hz-60Hz; DC output: 12V/3A	AC Power: 100~240V, 24W, DC Power:12V/2A
Battery Life	Hotswappable Lithium-Polymer high capacity battery, support up to 8hrs	Li-polymer High Capacity Battery, up to 8 Hours Battery Life, Li-polymer High Capacity Battery, up to 6 Houes Battery Life, one hard pack removable
Master Battery	External Battery: 7.4V 1530mAh	Battery: 7.4V 3700 mAh
Slave Battery	Internal Battery: 7.4V 1530mAh	—
LCD		
Display	5.7" TFT LCD with LED backlight	7" TFT-LCD / 16:10
Resolution	1280 x 720 Pixels	1280 x 800 pixel
Max. Color	—	16.7M
Dot Size	—	0.117 x 0.117(H)
Brightness	420 nits	400 nits, 680 nits (optional)
Viewing angle	Horizontal: 178° (Typ.), Vertical: 178° (Typ.)	Horizontal: 178° (Typ.), Vertical: 178° (Typ.)
Touch Screen		
Touch Screen	Projected Capacitive Multi-Touch panel	Projected capacitive multi-touch screen (PCT)
Light Transmission	≥ 87%	Min 87% (ASTM D1003; Wavelength = 550nm)

System Level Products

Rugged Tablet Computers



Model	RTC-700B	RTC-700C
System		
Processor	Intel® Atom™ X5-Z8350 CHT-T3 Quad Core 1.92 GHz Processor	Intel® Atom™ Z2760 1.8 GHz Dual Core Processor, (Clover Trail Platform)
Memory	DDR3L 2GB	2GB LPDDRIII-800MHz
Chipset	—	—
LCD Display	7" TFT-LCD (1280 x 800) / 16:10	7" TFT-LCD (1280 x 800) / 16:10
I/O	DC-in jack x 1, MicroSD Card x 1, SIM card slot x 1, USB 2.0 x 2 (A Type x 1, Mini USB x 1), USB 3.0 x 1 (Type C), Built-in Speaker & Microphone x 1, 3.5mm stereo headphone jack x 1, 1D/2D Barcode scanner x 1 (Optional), Magnetic Stripe Reader x 1 (Optional), COM port x 1+Ethernet x 1 (Optional)	DC-in jack x 1, MicroSD Card x 1, SIM card slot x 1, Mini HDMI port x 1, Mini USB x 1, Built-in Speaker & Microphone x 1, 3.5mm stereo headphone jack x 1, 1D/2D Barcode scanner x 1 (Optional), Magnetic Stripe Reader x 1 (Optional)
Communication	Bluetooth v4.0, Wi-Fi (802.11 b/g/n), NFC / RFID (13.56MHz), 3G (Optional),	Bluetooth v4.0, Wi-Fi (802.11 b/g/n), NFC / RFID (13.56MHz), 3G (Optional),
Storage	64GB Flash eMMC	64GB eMMC 4.4.1
WWAN(optional)	3G: WCDMA	3G: WCDMA
Navigation	GPS, Glonass	GPS+Glonass, AGPS* is enabled with 3G
BCS (optional)	1D Scanner support CMOS engine (optional), 2D Scanner support LED engine	1D Scanner support CMOS engine (optional), 2D Scanner support LED engine
RFID (optional)	HF RFID based on 13.56MHz compatible with NFC	HF RFID based on 13.56MHz compatible with NFC
Camera	2 MP front camera, 8 MP auto-focus rear camera with flash	Front-facing: 2MP, 720p; Rear-facing: 8MP, 1080p HD, auto-focus with flash
Sensors	G-sensor, E-Compass, Gyroscope, Light-sensor	G-sensor, E-Compass, Gyroscope, Light-sensor
Expansion Slot	Docking	Docking (Optional)
OS	Windows® 10, Android™ 5.0	Windows® Industry Pro 8.1
Mechanical		
Color	Black	Black
Dimension (W x H x D)	5.38" x 8.58" x 0.83" (136.6mm x 219mm x 21mm)	5.38" x 8.58" x 0.83" (136.6mm x 219mm x 21mm)
Gross Weight	1.254 lb (0.57 kg)	1.254 lb (0.57 kg)
Environmental		
Operating Temperature	-20 °C ~ 50 °C (-4 °F ~ 122°F)	-20 °C ~ 60 °C (-4 °F ~ 140°F)
Storage Temperature	-67°F ~ 158°F (-55 °C ~ 70 °C)	-67°F ~ 158°F (-55 °C ~ 70 °C)
Operating Humidity	50°C; 5% ~ 90%RH; 120 hours	50°C; 5% ~ 90%RH; 120 hours
Water & Dust Proof	IP65	IP65
Vibration	MIL-STD-810G Method 514.6 Procedure I, Cat. 24, Fig. 514.6E-1 & E-2	MIL-STD-810G Method 514.6 Procedure I, Cat. 24, Fig. 514.6E-1 & E-2
Drop	MIL-STD-810G Method 516.6 Procedure IV, Height of Drop: 122cm (48 inch; 4ft), Number of Drop: 26 times., Floor: Two-inch plywood backed by concrete., For all surfaces, edges and corners	MIL-STD-810G Method 516.6 Procedure IV, Height of Drop: 122cm (48 inch; 4ft), Number of Drop: 26 times., Floor: Two-inch plywood backed by concrete., For all surfaces, edges and corners
ESD	Air charge: +/- 8KV, Contact charge: +/- 4KV	Air charge: +/- 8KV, Contact charge: +/- 4KV
EMI / Safety	UL: UL60950-1, CE/LVD: EN60950-1, FCC, CE	UL: UL60950-1, CE/LVD: EN60950-1, FCC, CE
Power Supply		
AC / DC Adapter	AC Power: 100~240V, 24W, DC Power: 12V/3A	AC Power: 100~240V, 24W, DC Power: 12V/2A
Battery Life	Li-polymer High Capacity Battery, up to 8 Hours Battery Life, Li-polymer High Capacity Battery, up to 6 Houes Battery Life, one hard pack removable	Li-polymer High Capacity Battery, up to 8 Hours Battery Life, Li-polymer High Capacity Battery, up to 6 Houes Battery Life, one hard pack removable
Master Battery	External Battery: 7.4V 1530mAh	External Battery: 7.4V 1530mAh
Slave Battery	Internal Battery: 7.4V 1530mAh	Internal Battery: 7.4V 1530mAh
LCD		
Display	7" TFT-LCD / 16:10	7" TFT-LCD / 16:10
Resolution	1280 x 800 pixel	1280 x 800 pixel
Max. Color	16.7M	16.7M
Dot Size	0.117x 0.117(H)	0.117x 0.117(H)
Brightness	400 nits	400 nits
Viewing angle	Horizontal: 178° (Typ.), Vertical: 178° (Typ.)	Horizontal: 178° (Typ.), Vertical: 178° (Typ.)
Touch Screen		
Touch Screen	Projected capacitive multi-touch screen (PCT)	Projected capacitive multi-touch screen (PCT)
Light Transmission	Min 87% (ASTM D1003; Wavelength = 550nm)	Min 87% (ASTM D1003; Wavelength = 550nm)

System Level Products

Rugged Tablet Computers



Model	RTC-700M	RTC-900R
System		
Processor	TI® OMAP™ 4470 1.5GHz Dual Core Processor	Nvidia® Tegra 2 1.0 GHz Dual Core Processor
Memory	LPDDR2 1GB	LPDDR2 1GB
Chipset	—	—
LCD Display	7" TFT-LCD (1280 x 800) / 16:10	10.1" WXGA (1280 x 800) TFT LCD up to 900 nits (Optional)
I/O	DC-in jack x 1, MicroSD Card x 1, SIM card slot x 1, Mini HDMI port x 1, Mini USB x 1, Built-in Speaker & Microphone x 1, 3.5mm stereo headphone jack x 1, 1D/2D Barcode scanner x 1 (Optional), Magnetic Stripe Reader x 1 (Optional), COM port x 1+ Ethernet x 1 (Optional)	Mini USB 2.0 x 1, Mini HDMI x 1, Micro SD Card Slot x 1, 3.5-mm stereo headphone Jack x 1, Built-in Speaker & Microphone, SIM Card Slot x 1, DC-in Jack x 1
Communication	Bluetooth v3.0, Wi-Fi (802.11 b/g/n), NFC/ RFID (13.56MHz), 3G (Optional),	WLAN 802.11 b/g/n + Bluetooth 2.1, 3G module (Optional)
Storage	16GB eMMC	16GB eMMC
WWAN(optional)	3G: WCDMA	3G
Navigation	GPS, Glonass (Optional), AGPS* is enabled with 3G	GPS, AGPS
BCS (optional)	1D Scanner support CMOS engine (optional), 2D Scanner support LED engine	—
RFID (optional)	HF RFID based on 13.56MHz compatible with NFC	—
Camera	Rear-facing: 5MP (8MP: optional)	Front Camera: 1.2 Mega, Real Camera : 5Mega
Sensors	G-sensor, E-Compass, Gyroscope, Light-sensor	G-sensor, Light-sensor
Expansion Slot	Docking	—
OS	Android™ 4.2/ 5.1	Android 4.0
Mechanical		
Color	Black	Black
Dimension (W x H x D)	5.38" x 8.58" x 0.83" (136.6mm x 219mm x 21mm)	10.65" x 7.42" x .96" (270.4mm x 188.4mm x 24.29mm)
Gross Weight	1.254 lb (0.57 kg)	2.4 lb (1.1 kg)
Environmental		
Operating Temperature	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 131°F (-20°C ~ 55°C)
Storage Temperature	-67°F ~ 158°F (-55°C ~ 70°C)	-67°F ~ 131°F (-55°C ~ 55°C)
Operating Humidity	50°C; 5% ~ 90%RH; 120 hours	10 to 95%@ 40°C, non-condensing
Water & Dust Proof	IP65	IP65 Compliant
Vibration	MIL-STD-810G Method 514.6 Procedure I, Cat. 24, Fig. 514.6E-1 & E-2	Meets MIL-STD-810G-514.6, Procedure I Cat. 24, Fig. 514.6E-1 & 514.6E-2(UNITS is non-operating), ASTM 4169-99 Truck Assurance Level 2, Schedule E(UNITS is operating)
Drop	MIL-STD-810G Method 516.6 Procedure IV, Height of Drop: 122cm (48 inch; 4ft), Number of Drop: 26 times,, Floor: Two-inch plywood backed by concrete,, For all surfaces, edges and corners	26 drop of 48 inches height to 2" plywood over concrete with uNITS off MIL-STD-810G-516.6, Procedure IV
ESD	Air charge: +/- 8KV, Contact charge: +/- 4KV	Air +/- 8KV, Contact +/- 4KV, IEC61000-4-2
EMI / Safety	UL: UL60950-1, CE/LVD: EN60950-1, FCC, CE	CE/FCC Class B/UL
Power Supply		
AC / DC Adapter	AC Power: 100~240V, 36W, DC Power output: 12V/3A	AC Power input: 100V-240V, 50Hz-60Hz, 24W, DC Power output: 12V/2A
Battery Life	Li-polymer High Capacity Battery, up to 8 Hours Battery Life, Li-polymer High Capacity Battery, up to 6 Houes Battery Life, one hard pack removable	2S1P 6-Cell (6,810 mAh) battery, up to 10-Hours battery life
Master Battery	External Battery: 7.4V 1530mAh	—
Slave Battery	Internal Battery: 7.4V 1530mAh	—
LCD		
Display	7" TFT-LCD / 16:10	10.1" 16:10 TFT LCD
Resolution	1280 x 800 pixel	1280 x 800
Max. Color	16.7M	16.7M colors
Dot Size	0.117 x 0.117(H)	0.0565 x 0.1695 mm
Brightness	400 nits, 680 nits (Optional)	350/900 nits (Optional)
Viewing angle	Horizontal: 178° (Typ.), Vertical: 178° (Typ.)	Vertical 60° (R)/60° (L), Horizontal 70° (U)/70° (L)
Touch Screen		
Touch Screen	Projected capacitive multi-touch screen (PCT)	Projected Multi-Touch Panel
Light Transmission	Min 87% (ASTM D1003; Wavelength = 550nm)	≥87%

System Level Products

Rugged Tablet Computers



Model	RTC-900B	RTC-1000i
System		
Processor	Intel® Atom™ E3825 1.33 GHz Dual Core Processor, up to E3827 1.75 GHz	Intel® Core™ i7-620UE 1.06GHz
Memory	DDR3L 4 GB (Default) SODIMM socket x 1, up to 8 GB	DDR3 onboard 2 GB (Default)+SODIMM socket x 1, up to 6 GB
Chipset	—	Intel® QM57 Express chipset
LCD Display	10.1" WXGA (1280 x 800) TFT LCD up to 800 nits (Optional)	10.2" WSVGA (1024x600) TFT LCD with Touch Screen (AOT)
I/O	Micro USB 3.0 x 1, Micro HDMI x 1, Micro SD Card Slot x 1, 3.5-mm stereo headphone Jack x 1, Built-in Speaker & Microphone, SIM Card Slot x 1, DC-in Jack x 1, Docking (optional)	COM (RX-232/422/485) x 1, USB 2.0 x 2, Mini USB x 1, VGA x 1, Docking port x 1, Two audio in/out jacks for Microphone/ Earphone
Communication	WLAN 802.11 a/b/g/n + Bluetooth 4.0, 3G/4G module (Optional)	Gigabit Ethernet, WLAN 802.11 b/g+Bluetooth 2.0 Class 1, 3.5G Modem module (Optional)
Storage	32GB mSATA (Default) up to 256 GB (Optional)	2.5" SATA Hard Disk/SSD (Optional)
WWAN(optional)	3G	—
Navigation	U-blox AMY-6M	—
BCS (optional)	—	—
RFID (optional)	HF, 13.56MHz with HFC	—
Camera	Front Camera: 2Mega, Real Camera : 5Mega	—
Sensors	Light Sensor, G-Sensor	—
Expansion Slot	Docking (optional)	PCMCIA (Default) or Smart Card x 1, Mini-Card x 2, CompactFlash x 1 or SDHC x 1, SIM x 1
OS	Windows® Embedded Standard 7, Windows® Embedded 8.1, Windows® 10	Windows Embedded Standard 2009, Windows Embedded Standard 7, Linux Ubuntu 9.04
Mechanical		
Color	Black	Black
Dimension (W x H x D)	10.65" x 7.42" x .96" (270.4mm x 188.4mm x 24.29mm)	10.63" x 7.24" x 1.93" (270mm x 184mm x 49mm)
Gross Weight	2.7 lb (1.24 kg)	5 lb (2.3 kg), including 9-cell battery, hand strap and bumpers
Environmental		
Operating Temperature	-4°F ~ 131°F (-20°C ~ 55°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Storage Temperature	-67°F ~ 131°F (-55°C ~ 55°C)	-67°F ~ 167°F (-55°C ~ 75°C)
Operating Humidity	10 to 95% @ 40°C, non-condensing	10 to 95% @ 40°C, non-condensing
Water & Dust Proof	IP65 Compliant	IP54 Compliance
Vibration	Meets MIL-STD-810G-514.6, Procedure I Cat. 24, Fig. 514.6E-1 & 514.6E-2(Units is non-operating), ASTM 4169-99 Truck Assurance Level 2, Schedule E(Units is operating)	Meets MIL-STD-810G-514.6, Procedure I Cat. 24, Fig. 514.6E-1 & 514.6E-2(Units is non-operating), ASTM 4169-99 Truck Assurance Level 2, Schedule E(Units is operating)
Drop	26 drop of 48 inches height to 2" plywood over concrete with uNits off MIL-STD-810G-516.6, Procedure IV	26 drop of 48 inches height to 2" plywood over concrete with uNits off MIL-STD-810G-516.6, Procedure IV
ESD	Air +/- 8KV, Contact +/- 4KV, IEC61000-4-2	Air +/- 8KV, Contact +/- 4KV, IEC61000-4-2
EMI / Safety	CE/FCC Class B/UL	CE/FCC Class B/UL
Power Supply		
AC / DC Adapter	AC Power input: 100V-240V, 50Hz-60Hz, 48W, DC Power output: 12V	AC Power input: 100V-240V, 50Hz-60Hz, 65W, DC Power output: 19V
Battery Life	2S1P 6-Cell (6,810 mAh) battery, up to 7-Hours battery life	3SSP 9-Cell (7,800 mAh) battery, up to 5-Hours battery life
Master Battery	—	—
Slave Battery	—	—
LCD		
Display	10.1" 16:10 TFT LCD	10.2" 16:9 TFT LCD
Resolution	1280 x 800	1024 x 600
Max. Color	16.7M colors	262K colors
Dot Size	0.0565 x 0.1695 mm	0.2175 x 0.2175
Brightness	350/800 nits (Optional)	200/500 nits (Optional)
Viewing angle	Vertical 60° (R)/60° (L), Horizontal 70° (U)/70° (L)	Vertical 60° (R)/60° (L), Horizontal 70° (U)/70° (L)
Touch Screen		
Touch Screen	Projected Multi-Touch Panel	4-wire, Analog Resistive
Light Transmission	≥87%	≥87%

Note: All specifications are subject to change without notice.

System Level Products

Rugged Tablet Computers



Model	RTC-1200SK
System	
Processor	6th Generation Intel® Core™ i3-6100U 2.3 GHz
Memory	One DDR3L SODIMM Socket, up to 8 GB
Chipset	—
LCD Display	11.6" Sunlight Readable 1000 nits (1980 x1080) TFT LCD, PCAP Multi-touch LED backlight
I/O	DC-in Jack x 1 USB 3.0 x 1 USB 2.0 x 2 RJ45 x 1 COM x 1 HDMI x1 Micro SD Card Slot x 1 3.5-mm stereo headphone jack x 1 Built-in Speaker & Microphone SIM Card Slot x 1
Communication	WiFi support IEEE 802.11 a/b/g/n/ac 5GHz/2.4GHz Band, Bluetooth 4.0(HS)
Storage	64 GB M.2 SSD, up to 512 GB
WWAN(optional)	3G: WCDMA/CDMA
Navigation	GPS, Glonass
BCS (optional)	1D Scanner support
RFID (optional)	Front-facing HF RFID based on 13.56MHz compatible with NFC
Camera	Front Camera: 2MP, Rear: 5MP
Sensors	Light Sensor, G-Sensor, 3-axis digital gyroscope
Expansion Slot	Docking
OS	Windows® Embedded Standard 7, Windows® Embedded 8.1, Windows® 10
Mechanical	
Construction	—
Color	Black
Dimension (W x H x D)	12.22" x 7.87" x 0.96"(310.4 mm x 200 mm x 24.5 mm)
Carton Dimension	—
Gross Weight	3.52 lb (1.6 kg) (including two removable batteries)
Environmental	
Operating Temperature	-4°F ~ 140°F (-20°C ~ 60°C)
Storage Temperature	-67°F ~ 167°F (-55°C ~ 75°C)
Operating Humidity	10% to 95%
Water & Dust Proof	IP65
Vibration	Meets Mil Std 810G-514.6, Procedure I
Drop	Mil-STD-810G-516.6, Procedure IV
ESD	Air +/- 15KV, Contact +/- 8KV
EMI / Safety	CE / FCC Class B / UL
Power Supply	
AC / DC Adapter	AC input 100V-240V, 50Hz-60Hz 65 W; DC output: 19V
Battery Life	Two hotswappable Li-Ion high capacity batteries, support up to 6 hrs
Master Battery	14.8V, 2200mAh *1pc
Slave Battery	14.8V, 2200mAh *1pc
LCD	
Display	11.6" TFT LCD
Resolution	1920 x 1080 Full HD
Max. Color	—
Dot Size	178°(V)/ 178°(H)
Brightness	1000 nits
Viewing angle	—
Touch Screen	
Touch Screen	Projected Capacitive Multi-Touch panel
Light Transmission	≥ 87%

System Level Products

Ultra Slim Fanless BOX PC Solutions



Model	BOXER-6401	BOXER-6402
System		
CPU	Intel® Atom™ N2600, 1.6 GHz	Intel® Atom™ N2600, 1.6 GHz
Chipset	Intel® NM10	Intel® NM10
System Memory	DDR3 800/1066 SODIMM slot x 1, up to 4 GB	DDR3 800/1066 SODIMM slot x 1, up to 4 GB
Display Interface	mini HDMI	mini HDMI
Storage Device	mSATA	mSATA
Ethernet	Realtek RTL8111E-VB-GR x 1	Realtek RTL8111E-VB-GR x 2
I/O	RS-232/422/485 x 2 RS-232 x 1 USB 2.0 x 4 mini HDMI x 1 LAN x 1 Antenna holes x 1 Power button Power input	RS-232/422/485 x 2 USB 2.0 x 2 mini HDMI x 1 LAN x 2 CAN bus Antenna holes x 1 Power button Power input
Expansion	Half Mini-Card x 1 (mSATA only)	Half Mini-Card x 1 (mSATA only)
Indicator	Power LED on power button	Power LED on power button
OS Support	Windows® 7 (32 bit) Windows® XP (32 bit), Windows® Embedded Standard 7 Windows® Embedded Standard 2009 Linux Fedora	Windows® 7 (32 bit) Windows® XP (32 bit), Windows® Embedded Standard 7 Windows® Embedded Standard 2009 Linux Fedora
Power Supply		
Power Requirement	12V with lockable DC jack	12V with lockable DC jack
Mechanical		
Mounting	VESA (Mounting kit is optional) DIN rail (Mounting kit is optional)	VESA (Mounting kit is optional) DIN rail (Mounting kit is optional)
Dimensions (W x H x D)	5.35" x 3.13" x 0.79" (136mm x 79.6mm x 20mm)	5.35" x 3.13" x 0.79" (136mm x 79.6mm x 20mm)
Gross Weight	2.64 lb (1.20 Kg)	2.64 lb (1.20 Kg)
Net Weight	—	—
Mechanical		
Operating Temperature	0°C ~ 50°C with wide temperature mSATA (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)	0°C ~ 50°C with wide temperature mSATA (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)
Storage Temperature	-20°C ~ 70°C	-20°C ~ 70°C
Storage Humidity	95% @ 40°C, non-condensing	95% @ 40°C, non-condensing
Anti-Vibration	3G rms/ 5 ~ 500Hz/ operation - mSATA	3G rms/ 5 ~ 500Hz/ operation - mSATA
Certification	CE/FCC class A	CE/FCC class A

System Level Products

Ultra Slim Fanless BOX PC Solutions

Ultra Slim Fanless BOX PC Solutions



Model	BOXER-6403	BOXER-6403WT
System		
CPU	Intel® Celeron™ J1900, 2.0 GHz Intel® Celeron™ N2930, 1.83 GHz Intel® Celeron™ N2807, 1.58 GHz Intel® Atom™ E3825, 1.33 GHz	Intel® Celeron™ J1900, 2.0 GHz Intel® Celeron™ N2807, 1.58 GHz
Chipset	Intel® System on Chip	Intel® System on Chip
System Memory	DDR3L 1333 SODIMM slot x 1, up to 8 GB (J1900 / N2930 / E3825) or 4 GB (N2807)	DDR3L 1333 SODIMM slot x 1, up to 8 GB (J1900) or 4 GB (N2807)
Display Interface	HDMI	HDMI
Storage Device	mSATA	mSATA
Ethernet	Intel® I211, 10/100/1000Base-TX x 2	Intel® I211, 10/100/1000Base-TX x 2
I/O	RS-232/422/485 x 2 USB 2.0 x 3 USB 3.0 x 1 HDMI x 1 LAN x 2 Digital input x 4 Digital output x 2 Antenna holes x 2 Power button Power input	RS-232/422/485 x 2 USB 2.0 x 3 USB 3.0 x 1 HDMI x 1 LAN x 2 Digital input x 4 Digital output x 2 Antenna holes x 2 Power button Power input
Expansion	Half Mini-Card x 1 (mSATA only) Full Mini-Card x 1 with SIM slot	Half Mini-Card x 1 (mSATA only) Full Mini-Card x 1 with SIM slot
Indicator	Power LED on power button	Power LED on power button
OS Support	Windows® 10, Windows® 8.1, Windows® 7, Windows® Embedded 8, Windows® Embedded 7, Linux Fedora	Windows® 10, Windows® 8.1, Windows® 7, Windows® Embedded 8, Windows® Embedded 7, Linux Fedora
Power Supply		
Power Requirement	12V with lockable DC jack	12V with lockable DC jack
Mechanical		
Mounting	VESA (Mounting kit is optional) DIN rail (Mounting kit is optional)	VESA (Mounting kit is optional) DIN rail (Mounting kit is optional)
Dimensions (W x H x D)	6.22" x 3.74" x 0.79" (158mm x 95mm x 20mm)	6.22" x 3.74" x 1.41" (158mm x 95mm x 29mm)
Gross Weight	2.56 lb (1.16kg)	2.98 lb (1.35kg)
Net Weight	—	—
Mechanical		
Operating Temperature	-30°C ~ 60°C with wide temperature CFast™ card (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)	-30°C ~ 70°C with wide temperature CFast™ card (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)
Storage Temperature	-30°C ~ 80°C	-30°C ~ 80°C
Storage Humidity	95% @ 40°C, non-condensing	95% @ 40°C, non-condensing
Anti-Vibration	3G rms/ 5 ~ 500Hz/ operation - mSATA	3G rms/ 5 ~ 500Hz/ operation - mSATA
Certification	CE/FCC class A	CE/FCC class A

System Level Products

Ultra Slim Fanless BOX PC Solutions



Model	BOXER-6403M	BOXER-6404
System		
CPU	Intel® Celeron™ J1900, 2.0 GHz Intel® Celeron™ N2807, 1.58 GHz	Intel® Celeron™ J1900, 2.0 GHz Intel® Celeron™ N2807, 1.58GHz
Chipset	Intel® System on Chip	Intel® System on Chip
System Memory	DDR3L 1333 SODIMM slot x 1, up to 8 GB (J1900) or 4 GB (N2807)	DDR3L 1333 SODIMM slot x 1, up to 8 GB (J1900) or 4 GB (N2807)
Display Interface	HDMI	HDMI
Storage Device	mSATA, HDD/SSD	CFast™
Ethernet	Intel® I211, 10/100/1000Base-TX x 2	Intel® I211, 10/100/1000Base-TX x 4
I/O	RS-232/422/485 x 2 USB 2.0 x 3 USB 3.0 x 1 HDMI x 1 LAN x 2 Digital input x 4 Digital output x 2 Antenna holes x 2 Power button Power input	RS-232 x 1 USB 2.0 x 2 USB 3.0 x 1 HDMI x 2 LAN x 4, CFast™ slot x 1 Antenna holes x 1 Power button Power input
Expansion	Half Mini-Card x 1 (mSATA only) Full Mini-Card x 1 with SIM slot	Full-size Mini-Card (USB interface only) x 1
Indicator	Power LED on power button	Power LED on power button
OS Support	Windows® 10, Windows® 8.1, Windows® 7, Windows® Embedded 8, Windows® Embedded 7, Linux Federa	Windows® 10, Windows® 8.1, Windows® 7, Windows® Embedded 8, Windows® Embedded 7, Linux Federa
Power Supply		
Power Requirement	12V with lockable DC jack	12V with lockable DC jack
Mechanical		
Mounting	VESA (Mounting kit is optional) DIN rail (Mounting kit is optional)	VESA (Mounting kit is optional) DIN rail (Mounting kit is optional)
Dimensions (W x H x D)	6.22" x 3.74" x 1.63" (158.0mm x 95.0mm x 41.5mm)	6.53" x 4.20" x 1.18" (166 mm x 106.6 mm x 30 mm)
Gross Weight	3.20 lb (1.45kg)	2.9 lb (1.3 kg)
Net Weight	—	—
Mechanical		
Operating Temperature	-30°C ~ 70°C with wide temperature CFast™ card (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)	-30°C ~ 65°C with wide temperature CFast™ card (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)
Storage Temperature	-30°C ~ 80°C	-30°C ~ 80°C
Storage Humidity	95% @ 40°C, non-condensing	95% @ 40°C, non-condensing
Anti-Vibration	3G rms/ 5 ~ 500Hz/ operation -SSD 1G rms/ 5 ~ 500Hz/ operation -HDD	5 Grms/ 5 ~ 500Hz/ operation - CFast™ card
Certification	CE/FCC class A	CE/FCC class A

System Level Products

Ultra Slim Fanless BOX PC Solutions

Ultra Slim Fanless BOX PC Solutions/ Compact Fanless BOX PC Solutions



Model	BOXER-6404WT	BOXER-6404M
System		
CPU	Intel® Celeron™ J1900, 2.0 GHz Intel® Celeron™ N2807, 1.58GHz	Intel® Celeron™ J1900, 2.0 GHz Intel® Celeron™ N2807, 1.58 GHz
Chipset	Intel® System on Chip	Intel® System on Chip
System Memory	DDR3L 1333 SODIMM slot x 1, up to 8 GB (J1900) or 4 GB (N2807)	DDR3L 1333 SODIMM slot x 1, up to 8 GB (J1900) or 4 GB (N2807)
Display Interface	HDMI	HDMI
Storage Device	CFast™	CFast™, HDD/SSD
Ethernet	Intel® I211, 10/100/1000Base-TX x 4	Intel® I211, 10/100/1000Base-TX x 4
I/O	RS-232 x 1 USB 2.0 x 2 USB 3.0 x 1 HDMI x 2 LAN x 4 CFast™ slot x 1 Antenna holes x 1 Power button Power input	RS-232 x 1 USB 2.0 x 2 USB 3.0 x 1 HDMI x 2 LAN x 4 CFast™ slot x 1 Antenna holes x 1 Power button Power input
Expansion	Full-size Mini-Card (USB interface only) x 1	Full-size Mini-Card (USB interface only) x 1
Indicator	Power LED on power button	Power LED on power button
OS Support	Windows® 10, Windows® 8.1, Windows® 7, Windows® Embedded 8, Windows® Embedded 7, Linux Federa	Windows® 10, Windows® 8.1, Windows® 7, Windows® Embedded 8, Windows® Embedded 7, Linux Federa
Power Supply		
Power Requirement	12V with lockable DC jack	12V with lockable DC jack
Mechanical		
Mounting	VESA (Mounting kit is optional) DIN rail (Mounting kit is optional)	VESA (Mounting kit is optional) DIN rail (Mounting kit is optional)
Dimensions (W x H x D)	6.53" x 4.20" x 1.59" (166mm x 106.6mm x 40.5mm)	6.53" x 4.20" x 2.05" (166mm x 106.6mm x 52mm)
Gross Weight	3.59 lb (1.63kg)	3.81 lb (1.73kg)
Net Weight	—	—
Mechanical		
Operating Temperature	-30°C ~ 75°C with wide temperature CFast™ card (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)	-30°C ~ 75°C with wide temperature CFast™ card (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)
Storage Temperature	-30°C ~ 80°C	-30°C ~ 80°C
Storage Humidity	95% @ 40°C, non-condensing	95% @ 40°C, non-condensing
Anti-Vibration	5 Grms/ 5 ~ 500Hz/ operation - CFast™ card	5 Grms/ 5 ~ 500Hz/ operation - CFast™ card or SSD 1 Grms/ 5 ~ 500Hz/ operation - HDD
Certification	CE/FCC class A	CE/FCC class A

System Level Products

Compact Fanless BOX PC Solutions

Launching in Q4



Model	BOXER-6616	BOXER-6639
System		
CPU	N3350 & J4205	Intel® Core™ i7-6700TE, 2.4 GHz Intel® Core™ i5-6500TE, 2.3 GHz Intel® Core™ i3-6100TE, 2.7 GHz Intel® Pentium® G4400TE, 2.4 GHz Intel® Celeron® G3900TE, 2.3 GHz
Chipset	Intel® System on Chip	Q170
System Memory	DDR3L 1867 SODIMM slot x 1, up to 8 GB	DDR4 1866/2133 SODIMM slot x 2, up to 32 GB, ECC or Non-ECC support
Display Interface	VGA, HDMI	VGA, HDMI
Storage Device	CFast™, HDD/SSD, mSATA	CFast™, HDD/SSD, mSATA
Ethernet	Intel® I211, 10/100/1000Base-TX x 2	Intel® I210IT, 10/100/1000Base-TX x 3
I/O	RS-232/422/485 x 2 RS-232 x 4 USB 3.0 x 4 VGA x 1 HDMI x 1 Line-out x 1 LAN x 2 DIO x 8 bit Antenna holes x 2 Power switch Power input Reset button x 1 AT/ATX Switch x 1	RS-232/422/485 x 6 USB 3.0 x 6 VGA x 1 HDMI x 2 Line-out x 1 Mic-in x 1 LAN x 3 CFast™ slot x 1 SIM slot x 1 Antenna holes x 2 32 bit DIO x 1 (A2 SKU) Power switch Power input Remote power switch Reset Button
Expansion	Full-size Mini-Card x 2	Full-size Mini-Card x 2
Indicator	Power LED HDD active LED	Power LED HDD active LED
OS Support	Windows® 10	Windows® 7 (32/64-bit), Windows® 8/8.1 (64-bit), Windows® 10 (64-bit)
Power Supply		
Power Requirement	9~24V or 9~36V with power protection	9~36V with 3-pin terminal block
Mechanical		
Mounting	Wallmount, DIN Rail (Mounting kit is optional)	Wallmount
Dimensions (W x H x D)	8.35" x 4.21" x 2.53" (212.15mm x 107mm x 64.2mm)	264 mm x 62 mm x 154 mm
Gross Weight	6.6 lb (2.8 kg)	3.5 kg
Net Weight	4.4 lb (2 kg)	3 kg
Mechanical		
Operating Temperature	-20°C ~ 65°C with wide temperature component (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)	-20°C ~ 55°C (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)
Storage Temperature	-20°C ~ 70°C	-45°C ~ 80°C
Storage Humidity	95% @ 40°C, non-condensing	5~95% @ 40°C, non-condensing
Anti-Vibration	5 Grms/ 5 ~ 500Hz/ operation - SSD 1 Grms/ 5 ~ 500Hz/ operation - HDD	2 Grms/ 5 ~ 500Hz/ operation - CFast™ card 1 Grms/ 5 ~ 500Hz/ operation - HDD
Certification	CE/FCC class A	CE/FCC class A

System Level Products

Compact Fanless BOX PC Solutions

Launching in Q4



Model	BOXER-6639M	BOXER-6615
System		
CPU	Intel® Core™ i7-6700TE 2.4 GHz Intel® Core™ i5-6500TE 2.3 GHz Intel® Core™ i3-6100TE 2.7 GHz Intel® Pentium® G4400TE 2.4 GHz Intel® Celeron® G3900TE 2.3 GHz	Intel® Pentium N3710, 1.6GHz
Chipset	Q170	Intel® System on Chip
System Memory	DDR4 1866/2133 SODIMM slot x 2, up to 32 GB, ECC or Non-ECC support	DDR3L 1867 SODIMM slot x 1, up to 8 GB
Display Interface	VGA, HDMI	VGA, HDMI
Storage Device	CFast™, HDD/SSD, mSATA	HDD/SSD, mSATA
Ethernet	Intel® I210IT, 10/100/1000Base-TX x 3	Intel® I211, 10/100/1000Base-TX x 2
I/O	RS-232/422/485 x 6 USB 3.0 x 6 VGA x 1 HDMI x 2 Line-out x 1 Mic-in x 1 LAN x 3 (for SKU A1), x 7 (for SKU A2) PoE x 4 (802.3 af, for SKU A1) CFast™ slot x 1 SIM slot x 1 Antenna holes x 2 32 bit DIO x 1 Power switch Power input Remote power switch Reset Button	RS-232/422/485 x 2 RS-232 x 4 USB 3.0 x 2 USB 2.0 x 2 VGA x 1 HDMI x 1 Line-out x 1 LAN x 2 DIO x 8 bit Antenna holes x 2 Power switch Power input
Expansion	Full-size Mini-Card x 2	Full-size Mini-Card x 1 Half-size Mini-Card x 1
Indicator	Power LED HDD active LED	Power LED HDD active LED
OS Support	Windows® 10, Windows® 8.1 (32/64-bit), Windows® 7(32/64-bit), WES7/WES8, Linux Ubuntu 14.04/ Kernel 3.13.0	Windows® 10, Windows® 8.1 (32/64-bit), Windows® 7(32/64-bit), WES7/WES8, Linux Ubuntu 14.04/ Kernel 3.13.0
Power Supply		
Power Requirement	9~36V with 3-pin terminal block	9~30V with 3-pin terminal block 12V with lockable DC jack
Mechanical		
Mounting	Wallmount	Wallmount, DIN Rail (Mounting kit is optional)
Dimensions (W x H x D)	—	8.35" x 4.21" x 2.53" (212.15mm x 107mm x 64.2mm)
Gross Weight	—	6.6 lb (2.8 kg)
Net Weight	—	4.4 lb (2 kg)
Mechanical		
Operating Temperature	-20°C ~ 55°C with wide temperature component (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)	-20°C ~ 55°C with wide temperature CFast™ card -20°C ~ 60°C with wide temperature HDD (according to IEC68-2-14 with 0.5 m/s AirFlow ; with industrial devices)
Storage Temperature	-45°C ~ 80°C	-20°C ~ 70°C
Storage Humidity	95% @ 40°C, non-condensing	95% @ 40°C, non-condensing
Anti-Vibration	5 Grms/ 5 ~ 500Hz/ operation - SSD 1 Grms/ 5 ~ 500Hz/ operation - HDD	5 Grms/ 5 ~ 500Hz/ operation - CFast™ card 1 Grms/ 5 ~ 500Hz/ operation - HDD
Certification	CE/FCC class A	CE/FCC class A

System Level Products

Compact Fanless BOX PC Solutions



Model	BOXER-6614	AEC-6613
System		
CPU	Intel® Celeron™ J1900, 2.0 GHz Intel® Celeron™ N2930, 1.83 GHz Intel® Celeron™ N2807, 1.58GHz	Intel® Atom™ D2550, 1.86 GHz
Chipset	Intel® System on Chip	Intel® NM10
System Memory	DDR3L 1333 SODIMM slot x 1, up to 8 GB (J1900/N2930/ E3845) or 4 GB (N2807)	DDR3 800/1066 SODIMM slot x 1, up to 4 GB
Display Interface	VGA, HDMI	VGA, DVI-D (A3/A4/A3M/A4M)
Storage Device	CFast™, HDD/SSD	CFast™, HDD/SSD
Ethernet	Intel® I210/I211, 10/100/1000Base-TX x 2	Realtek RTL 8111E, 10/100/1000Base-TX x 2
I/O	RS-232/422/485 x 2 RS-232 x 2 USB 2.0 x 3 USB 3.0 x 2 VGA x 1 HDMI x 1 Line-out x 1 LAN x 2 CFast™ slot x 2 Antenna holes x 2 Power switch Power input	RS-232/422/485 x 1 RS-232 x 3 USB 2.0 x 4 VGA x 1 DVI-D x1 (A3 / A4 / A3M / A4M) Line-out x 1 LAN x 2 CFast™ slot x 2 Antenna holes x 2 Power switch Power input
Expansion	Full-size Mini-Card x 1 Half-size Mini-Card x 1	Full-size Mini-Card x 1
Indicator	Power LED HDD active LED	Power LED HDD active LED
OS Support	Windows® 10, Windows® 8.1 (32/64-bit), Windows® 7(32/64-bit), WES7/WES8, Linux Ubuntu 14.04/ Kernel 3.13.0	Windows® 7(32-bit), WES2009, WES7 32-bit, Linux Fedora 15/ Kernel 2.6.38.6
Power Supply		
Power Requirement	9~30V with 3-pin terminal block 12V with lockable DC jack	9~30V with 3-pin terminal block 12V with lockable DC jack
Mechanical		
Mounting	Wallmount DIN Rail (Mounting kit is optional)	Wallmount DIN Rail (Mounting kit is optional)
Dimensions (W x H x D)	8.35" x 4.21" x 2.53" (212.15mm x 107mm x 64.2mm)	8.35" x 3.1" x 2.25" (212.15mm x 78.88mm x 107mm)
Gross Weight	6.6 lb (2.8 kg)	8.38 lb (3.8 kg)
Net Weight	4.4 lb (2 kg)	4.57 lb (2.07 kg)
Mechanical		
Operating Temperature	-20°C ~ 55°C with wide temperature CFast™ card -20°C ~ 60°C with wide temperature HDD (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)	-20°C ~ 55°C with wide temperature CFast™ card -20°C ~ 60°C with wide temperature HDD (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)
Storage Temperature	-20°C ~ 70°C	-20°C ~ 70°C
Storage Humidity	95% @ 40°C, non-condensing	95% @ 40°C, non-condensing
Anti-Vibration	5 Grms/ 5 ~ 500Hz/ operation - CFast™ card 1 Grms/ 5~ 500Hz/ operation - HDD	5 Grms/ 5 ~ 500Hz/ operation - CFast™ card 1 Grms/ 5~ 500Hz/ operation - HDD
Certification	CE/FCC class A	CE/FCC class A

System Level Products

Compact Fanless BOX PC Solutions



Model	AEC-6612 REV. B	BOXER-6638U
System		
CPU	Intel® Atom™ D525, 1.8 GHz	Intel® 5th Generation Core™ i3-5010U, 2.1 GHz
Chipset	Intel® ICH8M	Intel® System on Chip
System Memory	DDR3 667/800 SODIMM slot x 1, up to 4 GB	DDR3L 1600 SODIMM slot x 1, up to 8 GB
Display Interface	VGA	VGA, DP
Storage Device	Compact Flash™, HDD/SSD	mSATA, HDD/SSD
Ethernet	Intel® 82567V, 10/100/1000Base-TX x 1 Intel® 82583V, 10/100/1000Base-TX x 1	Intel® WGI211AT, 10/100/1000Base-TX x 1 Intel® WGI218LM, 10/100/1000Base-TX x 1
I/O	RS-232/422/485 x 1 RS-232 x 5 (B2 / B2M); x 1 (A1 / A1M) USB 2.0 x 6 (B2 / B2M); x 2 (A1 / A1M) VGA x 1 Line-out x 1 DIO x 8 (DI x 4; DO x 4) LAN x 2 Compact Flash slot x 2 Power switch Power input	RS-232/422/485 x 2 RS-232 x 2 USB 2.0 x 2 (A2M) USB 3.0 x 2 VGA x 1 DP x 1 Line-out x 1 LAN x 2 Antenna holes x 2 Power switch, Power input
Expansion	Full-size Mini-Card x 1	Full-size Mini-Card and SIM slot x 1 (optional for mSATA) Half-size Mini-Card x 1
Indicator	Power LED HDD active LED	Power LED HDD active LED
OS Support	Windows® XP (32-bit), Windows® 7 (32-bit / 64-bit), WES2009, WES7 32-bit / 64-bit, WinCE 6.0, WEC7, Linux Fedora 14/ Kernel 2.6.35.6	Windows® 10 (64 bit), Windows® 8.1 (32/64-bit), Windows® 7 (32/64-bit), Linux Ubuntu 14.10
Power Supply		
Power Requirement	9~30V with 3-pin terminal block 12V with lockable DC jack	9~24V with lockable DC jack
Mechanical		
Mounting	Wallmount DIN Rail (Mounting kit is optional)	Wallmount
Dimensions (W x H x D)	7.76" x 2.26" x 4.34" (197mm x 57.2mm x 110mm)	7.76" x 2.17" x 5.63" (197mm x 55mm x 143mm)
Gross Weight	8.38 lb (3.8 kg)	8.38 lb (3.8 kg)
Net Weight	4.85 lb (2.2 kg)	3.3 lb (1.5 kg)
Mechanical		
Operating Temperature	-20°C ~ 50°C with wide temperature CFast™ card -20°C ~ 55°C with wide temperature HDD (according to IEC68- 2-14 with 0.5 m/s AirFlow; with industrial devices)	-20°C ~ 60°C with wide temperature HDD (according to IEC68- 2-14 with 0.5 m/s AirFlow; with industrial devices)
Storage Temperature	-20°C ~ 70°C	-45°C ~ 80°C
Storage Humidity	95% @ 40°C, non-condensing	95% @ 40°C, non-condensing
Anti-Vibration	5 Grms/ 5 ~ 500Hz/ operation - CFast™ card 1 Grms/ 5 ~ 500Hz/ operation - HDD	5 Grms/ 5 ~ 500Hz/ operation - mSATA/SSD 1 Grms/ 5 ~ 500Hz/ operation - HDD
Certification	CE/FCC class A	CE/FCC class A

System Level Products

Compact Fanless BOX PC Solutions



Model	AEC-6638	AEC-6637
System		
CPU	Intel® 4th Generation Core™ i7-4700EQ, 2.4 GHz Intel® 4th Generation Core™ i5-4400EQ, 2.7 GHz Intel® 4th Generation Core™ i3-4100EQ, 2.4 GHz	Intel® 3rd Generation Core™ i7-3610QE, 2.3 GHz Intel® 3rd Generation Core™ i5-3610ME, 2.7 GHz
Chipset	Intel® QM87	Intel® QM77
System Memory	DDR3L 1333/1600 SODIMM slot x 1, up to 8 GB	DDR3 1066/1333 SODIMM slot x 1, up to 8 GB
Display Interface	VGA, HDMI, DVI-D	VGA, DVI-D (C1 / C2)
Storage Device	CFast™, HDD/SSD	CFast™, HDD/SSD
Ethernet	Intel® I211AT, 10/100/1000Base-TX x 1 Intel® I217LM, 10/100/1000Base-TX x 1	Intel® 82579LM, 10/100/1000Base-TX x 1 Realtek RTL-8111E, 10/100/1000Base-TX x 1
I/O	RS-232/422/485 x 1 RS-232 x 3 USB 2.0 x 2 USB 3.0 x 2 VGA x 1 DVI-D x 1 Line-out x 1 LAN x 2 Antenna holes x 2 Power switch Power input	RS-232/422/485 x 1 RS-232 x 3 USB 2.0 x 2 USB 3.0 x 2 VGA x 1 DVI-D x 1 (C1 / C2) Line-out x 1 LAN x 2 Antenna holes x 2 Power switch Power input
Expansion	Full-size Mini-Card x 1	Full-size Mini-Card x 1
Indicator	Power LED HDD active LED	Power LED HDD active LED
OS Support	Windows® 10, Windows® 8.1 (32/64-bit), Windows® 7(32/64-bit), WES7/WES8, Linux Ubuntu 14.04/ Kernel 3.13.0	Windows® 10, Windows® 8.1 (32/64-bit), Windows® 7(32/64-bit), WES7/WES8, Linux Ubuntu 14.04/ Kernel 3.13.0
Power Supply		
Power Requirement	9 - 30V with 3-pin terminal block	9~30V with 3-pin terminal block
Mechanical		
Mounting	Wallmount	Wallmount
Dimensions (W x H x D)	8.35" x 2.53" x 6.14" (212.2mm x 64.3mm x 156mm)	8.35" x 2.53" x 6.14" (212.2mm x 64.3mm x 156mm)
Gross Weight	8.38 lb (3.8 kg)	7.94 lb (3.6 kg)
Net Weight	6.0 lb (2.7 kg)	6.0 lb (2.7 kg)
Mechanical		
Operating Temperature	-15°C ~ 50°C with wide temperature CFast™ card -15°C ~ 55°C with wide temperature HDD (according to IEC68-2-14 with 0.5 m/s AirFlow ; with industrial devices)	-15°C ~ 50°C with wide temperature CFast™ card -15°C ~ 55°C with wide temperature HDD (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)
Storage Temperature	-20°C ~ 70°C	-20°C ~ 70°C
Storage Humidity	95% @ 40°C, non-condensing	95% @ 40°C, non-condensing
Anti-Vibration	5 Grms/ 5 ~ 500Hz/ operation - CFast™ card 1 Grms/ 5 ~ 500Hz/ operation - HDD	5 Grms/ 5 ~ 500Hz/ operation - CFast™ card 1 Grms/ 5 ~ 500Hz/ operation - HDD
Certification	CE/FCC class A	CE/FCC class A

System Level Products

Compact Fanless BOX PC Solutions

Compact Fanless BOX PC Solutions



Model	AEC-6646B	AEC-6643
System		
CPU	Intel® Pentium® G540, 2.50 GHz Intel® Pentium® G850, 2.90 GHz Intel® Core™ i3-2120, 3.30 GHz Intel® Core™ i3-3220, 3.10 GHz	Intel® Atom™ D2550, 1.86 GHz
Chipset	Intel® H61	Intel® NM10
System Memory	DDR3 800/1066 SODIMM x 1, up to 16 GB	DDR3 800/1066 SODIMM slot x 1, up to 4 GB
Display Interface	VGA, HDMI	VGA, DVI-D
Storage Device	HDD/SSD	HDD/SSD
Ethernet	Realtek RTL-8111E, 10/100/1000Base-TX x 2	Realtek RTL-8111E, 10/100/1000Base-TX x 2
I/O	RS-232/422/485 x 1 RS-232 x 3 USB 2.0 x 6 VGA x 1 HDMI x 2 Line-in x 1 Line-out x 1 Mic-in x 1 LAN x 2 Antenna holes x 2 Power switch Power input	RS-232/422/485 x 1 RS-232 x 3 USB 2.0 x 6 VGA x 1 DVI-D x 1 Line-in x 1 Line-out x 1 Mic-in x 1 LAN x 2 Antenna holes x 2 Power switch Power input
Expansion	Full-size Mini-Card x 1	Full-size Mini-Card x 1
Indicator	Power LED HDD active LED	Power LED HDD active LED
OS Support	Windows® 8.1(32/64-bit), Windows® 7(32/64-bit), WES8, WES7, Win XP, WES2009, Linux Fedora 15 / Kernel 2.6.38.6	Windows® 7(32/64-bit), WES7, Win XP, Linux Fedora 15/Kernel 2.6.38.6
Power Supply		
Power Requirement	12V with DC Jack	12V with DC Jack
Mechanical		
Mounting	Wallmount	Wallmount
Dimensions (W x H x D)	11.81" x 3.05" x 7.48" (300mm x 77.5mm x 190mm)	11.81" x 3.05" x 7.48" (300mm x 77.5mm x 190mm)
Gross Weight	12.98 lb (5.9 kg)	12.98 lb (5.9 kg)
Net Weight	6.0 lb (2.7 kg)	6.0 lb (2.7 kg)
Mechanical		
Operating Temperature	-5°C ~ 45°C with W.T. HDD (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)	-5°C ~ 45°C with wide temperature HDD (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)
Storage Temperature	-10°C ~ 60°C	-10°C ~ 60°C
Storage Humidity	95% @ 40°C, non-condensing	95% @ 40°C, non-condensing
Anti-Vibration	1 Grms/ 5~ 500Hz/ operation - HDD	1 Grms/ 5~ 500Hz/ operation - HDD
Certification	CE/FCC class A	CE/FCC class A

System Level Products

Compact Fanless BOX PC Solutions



Model	BOXER-6652	BOXER-6651
System		
CPU	Intel® Core™ i5-4402E, 2.7 GHz	Intel® Atom™ E3845, 1.91 GHz
Chipset	Intel® QM87	Intel® System on Chip
System Memory	DDR3L 1333/1600 SODIMM slot x 1, up to 8 GB	DDR3L 1333 SODIMM slot x 1, up to 8 GB
Display Interface	VGA, HDMI, DVI-D	VGA, DVI-D
Storage Device	CFast™, HDD/SSD	CFast™, HDD/SSD
Ethernet	Intel® I211, 10/100/1000Base-TX x 1 Intel® I217LM, 10/100/1000Base-TX x 1	Intel® I211, 10/100/1000Base-TX x 1 Intel® I217LM, 10/100/1000Base-TX x 1
I/O	Isolated RS-232/422/85 x 2 RS-232 x 4 USB 2.0 x 4 USB 3.0 x 2 VGA x 1 HDMI x 1 DVI x 1 Line-out x 1 LAN x 2 CFast™ slot x 1 Antenna holes x 2 Power switch Power input	Isolated RS-232/422/85 x 2 RS-232 x 4 USB 2.0 x 5 USB 3.0 x 1 VGA x 1 DVI x 1 Line-in x 1 Line-out x 1 LAN x 2 CFast™ slot x 1 Antenna holes x 2 Power switch Power input
Expansion	Full-size Mini-Card x 1 Half-size Mini-Card x 1	Full-size Mini-Card x 1 Half-size Mini-Card x 1
Indicator	Power LED HDD active LED LAN LED	Power LED HDD active LED LAN LED
OS Support	Windows® 7, Windows® 8/8.1, Windows® 10, Linux Fedora	Windows® 10, Windows® 8.1 (32/64-bit), Windows® 7 (32/64-bit), WES7/WES8, Linux Ubuntu 12.04/ Kernel 3.2.0
Power Supply		
Power Requirement	9~30V with 3-pin terminal block	9~30V with 3-pin terminal block
Mechanical		
Mounting	Wallmount	Wallmount
Dimensions (W x H x D)	10.4" x 2.74" x 7.62" (264.16mm x 69.62mm x 193.5mm)	10.4" x 2.74" x 7.62" (264.16mm x 69.62mm x 193.5mm)
Gross Weight	12.1 lb (5.5 kg)	12.1 lb (5.5 kg)
Net Weight	6.0 lb (2.7 kg)	6.0 lb (2.7 kg)
Mechanical		
Operating Temperature	-20°C ~ 60°C with wide temperature HDD (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)	-20°C ~ 65°C with wide temperature HDD (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)
Storage Temperature	-20°C ~ 70°C	-20°C ~ 70°C
Storage Humidity	95% @ 40°C, non-condensing	95% @ 40°C, non-condensing
Anti-Vibration	5 Grms/ 5 ~ 500Hz/ operation - mSATA/SSD 1 Grms/ 5 ~ 500Hz/ operation - HDD	5 Grms/ 5 ~ 500Hz/ operation - mSATA/SSD 1 Grms/ 5 ~ 500Hz/ operation - HDD
Certification	CE/FCC class A	CE/FCC class A

System Level Products

Expandable Fanless BOX PC Solutions



Model	BOXER-6852	AEC-6877
System		
CPU	Intel® Core™ i5-4402E, 2.7 GHz	Intel® Core™ i7-3610QE, 2.3 GHz Intel® Core™ i7-2710QE, 2.1 GHz Intel® Core™ i5-3610ME, 2.7 GHz Intel® Core™ i5-2510E, 2.5 GHz Intel® Celeron® B810 1.6 GHz
Chipset	Intel® QM87	Intel® QM77
System Memory	DDR3L 1333/1600 SODIMM slot x 1, up to 8 GB	DDR3 1066/1333/1600 SODIMM slot x 1, up to 16 GB
Display Interface	VGA, HDMI, DVI-D	VGA, DVI-D, DP
Storage Device	CFast™, HDD/SSD	CFast™, HDD/SSD
Ethernet	Intel® 82579LM, 10/100/1000Base-TX x 1 Intel® 82583V, 10/100/1000Base-TX x 1	Intel® 82579LM, 10/100/1000Base-TX x 1 Intel® 82583V, 10/100/1000Base-TX x 1
I/O	Isolated RS-232/422/85 x 2 RS-232 x 4 USB 2.0 x 4 USB 3.0 x 2 VGA x 1 HDMI x 1 DVI x 1 Line-out x 1 LAN x 2 CFast™ slot x 1 PCI/PCIe slot x 2 Antenna holes x 2 Power switch Power input	RS-232/422/485 x 1 RS-232 x 1 USB 3.0 x 4 VGA x 1 DVI x 1 DP x 2 Line-in x 1 Line-out x 1 Mic-in x 1 LAN x 2 PS/2 KB x 1 PS/2 Mouse x 1 PCIe slot x 1 (A Sku) PCI slot x 2 (B Sku) Antenna holes x 2 Power switch Power input
Expansion	Full-size Mini-Card x 1 Half-size Mini-Card x 1 PCI/PCIe slot x 2	Full-size Mini-Card x 1 PCIe x 1 (A Sku) PCI x 2 (B Sku)
Indicator	Power LED HDD active LED LAN LED	Power LED HDD active LED
OS Support	Windows® 7, Windows® 8/8.1, Windows® 10, Linux Fedora	Windows® 7, Windows® XP Embedded, WES2009, WES 7, Linux Fedora 13 / Kernel 2.6.33.3
Power Supply		
Power Requirement	9~30V with 3-pin terminal block	9~30V with 3-pin terminal block
Mechanical		
Mounting	Wallmount	Wallmount
Dimensions (W x H x D)	10.4" x 4.3" x 7.62" (264.16mm x 109.3mm x 193.5mm)	10.4" x 4.84" x 7.62" (264.16mm x 123mm x 193.5mm)
Gross Weight	12.1 lb (5.5 kg)	13.2 lb (6 kg)
Net Weight	—	—
Mechanical		
Operating Temperature	-20°C ~ 60°C with wide temperature HDD (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)	0°C ~ 55°C with wide temperature HDD (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)
Storage Temperature	-20°C ~ 70°C	-20°C ~ 70°C
Storage Humidity	95% @ 40°C, non-condensing	95% @ 40°C, non-condensing
Anti-Vibration	5 Grms/ 5 ~ 500Hz/ operation - mSATA/SSD 1 Grms/ 5 ~ 500Hz/ operation - HDD	5 Grms/ 5 ~ 500Hz/ operation - mSATA/SSD 1 Grms/ 5 ~ 500Hz/ operation - HDD
Certification	CE/FCC class A	CE/FCC class A

System Level Products

Expandable Fanless BOX PC Solutions



Model	AEC-6876
System	
CPU	Intel® Core™ i7-2710QE, 2.1 GHz Intel® Core™ i5-2510E, 2.5 GHz Intel® Core™ i3-2330E, 2.2 GHz Intel® Celeron® B810 1.6 GHz
Chipset	Intel® QM67
System Memory	DDR3 1066/1333 SODIMM slot x 1, up to 16 GB
Display Interface	VGA, DVI-D, HDMI
Storage Device	CFast™, HDD/SSD
Ethernet	Intel® WG82579LM, 10/100/1000Base-TX x 1 Realtek RTL-8111E, 10/100/1000Base-TX x 1
I/O	RS-232/422/485 x 1 RS-232 x 3 USB 2.0 x 4 VGA x 1 DVI x 1 HDMI x 1 Line-in x 1 Line-out x 1 Mic-in x 1 LAN x 2 PS/2 KB x 1 PS/2 Mouse x 1 PCIe slot x 1 (A Sku) PCI slot x 2 (B Sku) Antenna holes x 2 Power switch Power input
Expansion	Full-size Mini-Card x 1 PCIe x 1 (A Sku) PCI x 2 (B Sku)
Indicator	Power LED HDD active LED
OS Support	Windows® 7, Windows® XP Embedded, WES2009, WES 7, Linux Fedora 13 / Kernel 2.6.33.3
Power Supply	
Power Requirement	9~30V with 3-pin terminal block 12V with DC Jack
Mechanical	
Mounting	Wallmount
Dimensions (W x H x D)	9.37" x 4.03" x 7.62" (223 mm x 107mm x 238mm)
Gross Weight	13.2 lb (6 kg)
Net Weight	—
Mechanical	
Operating Temperature	-15°C ~ 55°C with wide temperature HDD (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)
Storage Temperature	-20°C ~ 70°C
Storage Humidity	95% @ 40°C, non-condensing
Anti-Vibration	5 Grms/ 5 ~ 500Hz/ operation - mSATA/SSD 1 Grms/ 5~ 500Hz/ operation - HDD
Certification	CE/FCC class A

System Level Products

Automation Fanless BOX PC Solutions



Model	BOXER-6914	AEC-6977	AEC-6967
System			
CPU	Intel® Atom™ D2550, 1.86 GHz	Intel® Core™ i7-3612QE, 2.1 GHz/ i7-3517UE, 1.7 GHz/ i3-3217UE, 1.6 GHz/ Intel® Celeron® 1020E, 2.2 GHz	Intel® Core™ i7-2610UE, 1.5 GHz Intel® Core™ i3-2310E, 2.1 GHz
Chipset	Intel® NM10	Intel® QM77	Intel® QM67
System Memory	DDR3 800/1066 SODIMM slot x 2, Max. 4 GB	DDR3 1066/1333 MHz SODIMM slot x 2, up to 16 GB	DDR3 1066/1333 MHz SODIMM slot x 2, up to 16 GB
Display Interface	VGA, DVI-D	HDMI, DVI-D, VGA	HDMI, DVI-D, VGA
Storage Device	mSATA, HDD/SSD	CFAST™, HDD/SSD	CFAST™, HDD/SSD
Ethernet	Intel® 82583V, 10/100/1000Base-TX x 2	Intel® 82579LM, 10/100/1000Base-TX x 1 Intel® 82574L, 10/100/1000Base-TX x 1	Intel® 82579LM, 10/100/1000Base-TX x 1 REALTEK, RTL8111E-VL-C6, 10/100/1000Base-TX x 1
I/O	RS-232/422/485 x 2, RS-232 x 12 (A00) or 14 (A01 & A02), USB 3.0 x 2, USB 2.0 x 4, DVI-D x 1, VGA x 1, LAN x 2, Programmable 30 channel digital input/output, Line-out x 1, CFAST™ slot x 1, SIM card slot x 1, Antenna hole x 1, Power button x 1, Remote power on/off x 1	RS-232/422/485 x 1, Isolation RS-232 x 1, Isolation RS-232 x 4, USB 3.0 x 4, USB 2.0 x 2, HDMI x 1, DVI-D x 1, VGA x 1, LAN x 2, Programmable 8-bit digital input/output isolation, Mic-in x 1, Line-in x 1, Line-out x 1, PS/2 x 1, Grounding x 1, CFAST™ slot x 1, Antenna hole x 1, Power button x 1, Remote power on/off x 1	RS-232/422/485 x 1, Isolation RS-232 x 1, Isolation RS-232 x 4, USB 2.0 x 6, HDMI x 1, DVI-D x 1, VGA x 1, LAN x 2, Programmable 8-bit digital input/output isolation, Mic-in x 1, Line-in x 1, Line-out x 1, PS/2 x 1, Grounding x 1, CFAST™ slot x 1, Power switch x 1, Reset x 1
Expansion	Full-size Mini-Card x 2	Full-size Mini-Card x 2 PCIe[x4] x 2 (SKU A1, A4, A7, A10) PCI x 2 (SKU A2, A5, A8, A11) PCIe[x4] x 1 & PCI x 1 (SKU A3, A6, A9, A12)	Full-size Mini-Card x 2 PCIe[x4] x 2 (SKU A5) PCI x 2 (SKU A2, A4) PCIe[x4] x 1 & PCI x 1 (SKU A1, A3)
Indicator	Power LED on power button, HDD active LED	Power LED HDD active LED	Power LED HDD active LED
OS Support	Windows® 7, Windows® XP, Linux Fedora	Windows® 7, Windows® XP, Windows® XP Embedded, Linux Fedora	Windows® 7, Windows® XP, Windows® XP Embedded, Linux Fedora 15-2.6.38.6 Support
Power Supply			
Power Requirement	9~30V with 3-pin terminal block	9~30V with 3-pin terminal block	9~30V with 3-pin terminal block
Mechanical			
Mounting	Wallmount	Wallmount	Wallmount
Dimensions (W x H x D)	13.10" x 5.39" x 7.48" (332.8mm x 136.8mm x 190mm)	8.19" x 4.9" x 9.37" (208mm x 124.4mm x 238mm)	8.19" x 4.9" x 9.37" (208mm x 124.4mm x 238mm)
Gross Weight	9.7 lb (4.4 kg)	13.2 lb (6.0 kg)	13.2 lb (6.0 kg)
Net Weight	6.17 lb (2.8 kg)	—	—
Mechanical			
Operating Temperature	-20°C ~ 60°C with wide temperature CFAST™ card (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)	-20°C ~ 60°C with CPU Intel® Core™ i7-3612QE or Celeron® 1020E, and wide temperature CFAST™ card (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices) -20°C ~ 75°C with CPU Intel® Core™ i7-3517UE or Core™ i3-3217UE, and wide temperature CFAST™ card (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)	-20°C ~ 60°C with CPU Intel® Core™ i3-2310E, and wide temperature CFAST™ card (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices) -20°C ~ 75°C with CPU Intel® Core™ i7-2610UE, and wide temperature CFAST™ card (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)
Storage Temperature	-20°C ~ 70°C	-20°C ~ 70°C	-20°C ~ 70°C
Storage Humidity	95% @ 40°C, non-condensing	95% @ 40°C, non-condensing	95% @ 40°C, non-condensing
Anti-Vibration	5 Grms/ 5 ~ 500Hz/ operation - CFAST™/SSD 1 Grms/ 5 ~ 500Hz/ operation - HDD	3 Grms/ 5 ~ 500Hz/ operation - CFAST™/SSD 1 Grms/ 5 ~ 500Hz/ operation - HDD	3 Grms/ 5 ~ 500Hz/ operation - CFAST™/SSD 1 Grms/ 5 ~ 500Hz/ operation - HDD
Certification	CE/FCC class A, CCC	CE/FCC class A	CE/FCC class A

System Level Products

Automation Fanless BOX PC Solutions



Model	AEC-6950	AEC-6913
System		
CPU	Intel® Core™ i7 3517UE 1.7 GHz	Intel® Atom™ D2550, 1.86 GHz
Chipset	Intel® QM77	Intel® NM10
System Memory	DDR3 1333/1600 MHz SODIMM slot x 2, up to 16 GB	DDR3 800/1066 MHz SODIMM slot x 1, up to 4 GB
Display Interface	DVI-I, DVI-D	DVI-I
Storage Device	CFast™, HDD/SSD	CFast™, HDD/SSD
Ethernet	Intel® 82583V, 10/100/1000Base-TX x 1 Intel® 82579LM, 10/100/1000Base-TX x 1	Intel® 82583V, 10/100/1000Base-TX x 2
I/O	Isolated RS-232/422/485 x 2 RS-232/422/485 x 2 RS-232 x 4 USB 3.0 x 2 USB 2.0 x 4 DVI-I x 1 DVI-D x 1 LAN x 2 Isolated Digital input x 4 Isolated Digital output x 4 Isolated CANBUS x 2 (Optional) Line-out x 1 CFast™ slot x 1 Antenna hole x 3 Power switch x 1	Isolated RS-232/422/485 x 2 RS-232/422/485 x 2 RS-232 x 4 USB 3.0 x 2 USB 2.0 x 4 DVI-D x 1 LAN x 2 Isolated Digital input x 4 Isolated Digital output x 4 Isolated CANBUS x 2 (Optional) Line-out x 1 CFast™ slot x 1 Antenna hole x 3 Power switch x 1 Remote power on/off x 1
Expansion	Full-size Mini-Card x 2 PCIe [x1] x 1 & PCIe [x 16] x 1 (SKU A1) PCI x 2 (SKU A2)	Full-size Mini-Card x 2 PCIe [x1] x 1 (SKU A1) PCI x 2 (SKU A2)
Indicator	Power LED HDD active LED	Power LED HDD active LED
OS Support	Windows® 7, Windows® XP, Windows® XP Embedded, Linux Fedora	Windows® 7, Windows® XP, Windows® XP Embedded, Linux Fedora
Power Supply		
Power Requirement	9~30V with 3-pin terminal block	9~30V with 3-pin terminal block
Mechanical		
Mounting	Wallmount	Wallmount
Dimensions (W x H x D)	8.4" x 3.9" x 9.5" (214mm x 100mm x 241mm)	8.4" x 3.9" x 9.5" (214mm x 100mm x 241mm)
Gross Weight	11 lb (5 kg)	11 lb (5 kg)
Net Weight	—	—
Mechanical		
Operating Temperature	-20°C ~ 55°C with wide temperature CFast™ card (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices) *Power consumption of add-on PCI/PCI-E card must be under 30W.	-20°C ~ 75°C with wide temperature CFast™ card (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices) *Power consumption of add-on PCI/PCI-E card must be under 30W.
Storage Temperature	-20°C ~ 70°C	-20°C ~ 70°C
Storage Humidity	95% @ 40°C, non-condensing	95% @ 40°C, non-condensing
Anti-Vibration	3 Grms/ 5 ~ 500Hz/ operation - CFast™/SSD 1 Grms/ 5 ~ 500Hz/ operation - HDD	3 Grms/ 5 ~ 500Hz/ operation - CFast™/SSD 1 Grms/ 5 ~ 500Hz/ operation - HDD
Certification	CE/FCC class A, UL	CE/FCC class A

System Level Products

Transportation BOX PC Solutions



Model	BOXER-6313	BOXER-6313U	BOXER-6313VS
System			
CPU	Intel® Atom™ E3845, 1.91 GHz	Intel® Atom™ E3845, 1.91 GHz	Intel® Atom™ E3845, 1.91 GHz
Chipset	Intel® System on Chip	Intel® System on Chip	Intel® System on Chip
System Memory	DDR3L 1066/1333 SODIMM slot x 1, up to 8 GB	DDR3L 1066/1333 SODIMM slot x 1, up to 8 GB	DDR3L 1066/1333 SODIMM slot x 1, up to 8 GB
Display Interface	HDMI, VGA	HDMI, VGA	HDMI, VGA
Storage Device	CFast™, HDD/SSD	CFast™	CFast™, HDD/SSD
Ethernet	Intel® I211, 10/100/1000Base-TX x 2	Intel® I211, 10/100/1000Base-TX x 2	Intel® I211, 10/100/1000Base-TX x 2
I/O	RS-232/422/485 x 2 isolated RS-232 x 2 USB 3.0 x 1 USB 2.0 x 3 HDMI x 1 VGA x 1 LAN x 2 CAN bus x 1 Mic-In x 1 Line-out x 1 CFast™ slot x 1 Antenna hole x 4 Removable 2.5" HDD kit x 2 Power on/off LED button x 1 Power input	RS-232/422/485 x 2 isolated RS-232 x 2 USB 3.0 x 1 USB 2.0 x 3 HDMI x 1 VGA x 1 LAN x 2 CAN bus x 1 CAN bus x 1 Mic-in x 1 Line-out x 1 Line-out x 1 CFast™ slot x 1 Antenna hole x 4 Power on/off LED button x 1 Power input	RS-232/422/485 x 2 isolated RS-232 x 2 USB 3.0 x 1 USB 2.0 x 3 HDMI x 1 VGA x 1 LAN x 2 CAN bus x 1 Mic-in x 1 Line-out x 1 Line-out x 1 CFast™ slot x 1 PoE x 4 (802.3 af, for SKU A2, A3) Antenna hole x 4 Removable 2.5" HDD kit x 2 Power on/off LED button x 1 Power input
Expansion	Full-size Mini-Card x 3	Full-size Mini-Card x 3	Full-size Mini-Card x 3
Indicator	Power LED on power button HDD active LED	Power LED on power button HDD active LED	Power LED on power button HDD active LED
OS Support	Windows® 10, Windows® 8.1, Windows® 7, Linux Fedora	Windows® 10, Windows® 8.1, Windows® 7, Linux Fedora	Windows® 10, Windows® 8.1, Windows® 7, Linux Fedora
Power Supply			
Power Requirement	9 - 30V with 3-pin terminal block	12V with M12 (for SKU A1) 24V with M12 (for SKU A2)	12V with M12 (for SKU A1) 24V with M12 (for SKU A2, A3)
Mechanical			
Mounting	Wallmount	Wallmount	Wallmount
Dimensions (W x H x D)	11.26" x 6.46" x 3.62" (286mm x 164.2mm x 92mm)	10.55" x 6.48" x 2.00" (268mm x 164.6mm x 51mm)	—
Gross Weight	15.4 lb (7 kg)	—	—
Net Weight	14.3 lb (6.5 kg)	—	—
Mechanical			
Operating Temperature	-15°C ~ 65°C (according to IEC60068-2, with 0.5m/s AirFlow)	-15°C ~ 65°C (according to IEC60068-2, with 0.5m/s AirFlow)	-15°C ~ 65°C (according to IEC60068-2, with 0.5m/s AirFlow)
Storage Temperature	-40°C ~ 80°C	-40°C ~ 80°C	-40°C ~ 80°C
Storage Humidity	95% @ 40°C, non-condensing	95% @ 40°C, non-condensing	95% @ 40°C, non-condensing
Anti-Vibration	3 Grms/ 5~ 500Hz/ operation - CFast™	3 Grms/ 5~ 500Hz/ operation - CFast™	1 Grms/ 5~ 500Hz/ operation - HDD
Certification	CE/FCC class A, E13, ISO7637	CE/FCC class A, E13, ISO7637	CE/FCC class A, E13, ISO7637

System Level Products

Transportation BOX PC Solutions



Model	BOXER-6301VS	BOXER-6357VS	AEV-6356
System			
CPU	Intel® Core™ i5-4402E 1.6 GHz	Intel® Core™ i7 3517UE 1.7 GHz	Intel® Core™ i7 3517UE 1.7 GHz
Chipset	Intel® QM87	Intel® QM77	Intel® QM77
System Memory	DDR3L 1333/1600MHz SODIMM x 1, up to 8 GB	DDR3 1333/1600 SODIMM slot x 2, up to 16 GB (4 GB pre-installed)	DDR3 1333/1600 SODIMM slot x 1, up to 8 GB
Display Interface	VGA	DVI-I, VGA	DVI-I, VGA
Storage Device	CFast™, HDD/SSD	CFast™, HDD/SSD	CFast™, HDD/SSD (for HDD SKU)
Ethernet	Intel® i211, 10/100/1000Base-TX x 1, Intel® i217LM, 10/100/1000Base-TX x 1	Intel® 82579LM, 10/100/1000Base-TX x 1, Intel® 82574L, 10/100/1000Base-TX x 1	Intel® 82579LM, 10/100/1000Base-TX x 1, Intel® 82574L, 10/100/1000Base-TX x 1
I/O	RS-232/422/485 x 1 RS-232 x 2 USB 3.0 x 2 USB 2.0 x 2 VGA x 1 LAN x 2 Mic-in x 1, Line-out x 1 CFast™ slot x 1 PoE x 4 (802.3 af) Antenna hole x 6 Removable 2.5" HDD kit x 2 Power switch x 1 Power input	M12 RS-232/422/485 x 1 M12 LAN x 2, M12 dual USB2.0 x 1 Isolated RS-232/422/485 x 1 RS-232/422/485 x 2 USB3.0 x 2 VGA x 1 DVI-I x 1 Isolated Digital input x 4 Isolated Digital output x 2 PoE x 4 (802.3 af, for SKU A1, A2, A3) Antenna hole x 3 Removable 2.5	M12 RS-232/422/485 x 1 M12 LAN x 2 M12 dual USB2.0 x 1 Isolated RS-232/422/485 x 1 RS-232/422/485 x 2 USB3.0 x 2 VGA x 1 DVI-I x 1 Isolated Digital input x 4 Isolated Digital output x 2 Antenna hole x 3 Removable 2.5" HDD kit x 2 (for HDD SKU) Power on/off
Expansion	Full-size Mini-Card x 3	Ful-sized Mini-Card x 3	Full-size Mini-Card x 1 Half-size Mini-Card x 1
Indicator	Power LED HDD active LED	Power LED on power button	Power LED on power button
OS Support	Windows® 8.1, Windows® 7, Linux Fedora	Windows® 8.1, Windows® 7, Windows® XP	Windows® 8.1, Windows® 7, Windows® XP
Power Supply			
Power Requirement	9~30V with 3-pin terminal block	12~36V, 16.5~75V, 43~160V with M12	17~30V with M12
Mechanical			
Mounting	Wallmount	Wallmount	Wallmount
Dimensions (W x H x D)	10" x 7.5" x 3.5" (255mm x 190mm x 88mm)	11.26" x 6.46" x 3.62" (286mm x 164.2mm x 92mm)	11.26" x 6.86" x 5.32" (286mm x 174.2mm x 135mm)
Gross Weight	10.8 lb (4.9 kg)	15.4 lb (7 kg)	18.2 lb (8.3 kg)
Net Weight	8.6 lb (3.9 kg)	—	—
Mechanical			
Operating Temperature	-20°C ~ 55°C (according to IEC60068-2, with 0.5m/s AirFlow)	-40°C to 70°C, 85°C for 10 minutes (according to EN50155 Tx)	-40°C to 70°C, 85°C for 10 minutes (according to EN50155 Tx)
Storage Temperature	-20°C ~ 70°C	Compliant with EN50155 / EN50121 standard	Compliant with EN50155 / EN50121 standard
Storage Humidity	95% @ 40°C, non-condensing	Compliant with EN50155 / EN50121 standard	Compliant with EN50155 / EN50121 standard
Anti-Vibration	3 Grms/ 5 ~ 500Hz/ operation - CFast™/SSD 1 Grms/ 5~ 500Hz/ operation - HDD	Compliant with EN613731 standard	Compliant with EN613731 standard
Certification	CE/FCC class A, E13, ISO7637	CE/FCC class A,, EN50155, EN50121, EN45545	CE/FCC class A,, EN50155, EN50121, EN45545

System Level Products

Network Video Recorder & Mobile NVR

Network Video Recorder & Mobile NVR



Model	NVR-6300S	NVR-CV	NVR-Q67
System			
Form Factor	4U Rackmount	Tower Station	2U Rackmount
Processor	Intel® 4th Gen. Core™ i3/i5/i7 Processor	Intel® Atom™ D2250	Intel® 2nd Gen. Core™ i3/i5/i7 Processor
Chipset	Intel® Q87	Intel® ICH10R	Intel® Q67
Main Memory	Up to 32GB, DDR3, Non-ECC 1333MHz, 240-pin DIMM	Up to 4GB, DDR3, Non-ECC, 1066MHz, 204-pin SODIMM	Up to 32GB, DDR3, Non-ECC 1333MHz, 240-pin DIMM
Display	HDMI x 1, DP x 1, VGA x 1	DVI-D x 1, VGA x 1	DVI-D x 1, VGA x 1, DP x 1
Ethernet	10/100/1000Base-TX x 2	10/100/1000Base-TX x 2	10/100/1000Base-TX x 2
PoE Ethernet Port	2 ports (optional)	—	—
RAID support	0/1/5/10	36530	0/1/5/10
Expansion Slot	PCI-E [x16] x 1, PCI-E [x4] x 1	PCI-E [x4] x 1	PCI-E [x16] x 1, PCI-E [x4] x 1, PCI x 2
GPS	—	Upto	—
Front I/O Panel	Power Button x 1, Reset Button x 1, Power LED x 1, USB3.0 x 2, USB2.0 x 1, Slim optical disk drive x 1	Power Button x 1, Reset Button x 1, Power & HDD LED, USB2.0 x 2	Power Button x 1, Reset Button x 1, Power & HDD LED, USB2.0 x 2 (only for RM-S model)
Rear I/O Panel	USB3.0 x 2, USB2.0 x 2, LAN (RJ-45) Ports x 2 (PoE optional), HDMI x 1, DP x 1, VGA x 1, Audio Jack x 3, PS/2 keyboard/Mouse x 1	VGA x 1, DVI-D x 1, LAN (RJ-45) port x 2, USB 2.0 x 4, COM console x 2, Audio jack x 3	VGA x 1, DVI-D x 1, DP x 1, LAN (RJ-45) port x 2, USB 2.0 x 4, Audio jack x 3, PS/2 x 1 (Keyboard + Mouse)
Environmental			
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Storage Humidity	10%~80% @40°C, non-condensing	10%~80% @40°C, non-condensing	10%~80% @40°C, non-condensing
Vibration/Shock	IEC68-2-64	IEC68-2-64	IEC68-2-64
Certification	CE/FCC Class A	CE/FCC Class A, CCC	CE/FCC Class A, CCC
Power Requirement			
Power Supply	600W ATX single PS2	200W AC power input	460W ATX PS2
Mechanical			
Hot Swappable HDD Tray	3.5" x 12, 2.5" x 1	3.5" or 2.5" x 4	—
Internal System HDD Bay	3.5" x 1 or 2.5" x 1 (SATA DOM optional)	2.5" HDD x 1 (SATA DOM optional)	2.5" HDD x 1 (SATA DOM optional)
Dimension	19.02" x 25" x 7.01" (483mm x 635mm x 178mm)	7.87" x 11.93" x 9.84" (200mm x 303mm x 250mm)	19.41" x 16.61" x 3.46" (493mm x 422mm x 88mm)
Gross Weight	33 lb (15 Kg)	19.8 lb (9 kg)	26.4 lb (12 kg)

System Level Products

Network Video Recorder & Mobile NVR



Model	NVR-Q67S	NVR-B75
System		
Form Factor	2U Rackmount	Tower Station
Processor	Intel® 2nd Gen. Core™ i3/i5/i7 Processor	Intel® 3rd Gen. Core™ i3/i5/i7 Processor
Chipset	Intel® Q67	Intel® B75
Main Memory	Up to 32GB, DDR3, Non-ECC 1333MHz, 240-pin DIMM	Up to 16GB, DDR3, Non-ECC 1333MHz, 240-pin DIMM
Display	DVI-D x 1, VGA x 1, DP x 1	VGA x 1, HDMI port x 3
Ethernet	10/100/1000Base-TX x 2	10/100/1000Base-TX x 2
PoE Ethernet Port	—	—
RAID support	0/1/5/10	—
Expansion Slot	PCI-E [x16] x 1, PCI x 2	—
GPS	—	—
Front I/O Panel	Power Button x 1, Reset Button x 1, Power & HDD LED, USB2.0 x 2 (only for RM-S model)	Power Button x 1, Reset Button x 1, Power & HDD, LED USB3.0 x 2
Rear I/O Panel	VGA x 1, DVI-D x 1, DP x 1, LAN (RJ-45) port x 2, USB 2.0 x 4, Audio jack x 3 PS/2 x 1 (Keyboard + Mouse)	HDMI x 3, DVI-D x 1 LAN (RJ-45) port x 2, USB 2.0 x 4, Audio jack x 3, PS/2 x 1 (Keyboard + Mouse)
Environmental		
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Storage Humidity	10%~80% @40°C, non-condensing	10%~80% @40°C, non-condensing
Vibration/Shock	IEC68-2-64	IEC68-2-64
Certification	CE/FCC Class A, CCC	CE/FCC Class A
Power Requirement		
Power Supply	1U 500W PSU, 80 plus Gold	SFX 400W PSU
Mechanical		
Hot Swappable HDD Tray	3.5" x 8	3.5" x 5
Internal System HDD Bay	2.5" HDD x 1 (SATA DOM optional)	3.5" HDD x 1 (SATA DOM optional)
Dimension	25.98" x 16.93" x 3.46" (660mm x 430mm x 88mm)	10.83" x 8.07" x 11.81" (275mm x 205mm x 300mm)
Gross Weight	28.7 lb (13 kg)	22 lb (10 kg)

System Level Products

Network Video Recorder & Mobile NVR



Model	VPC-3300S	VPC-5500S
System		
Form Factor	In-Vehicle NVR	In-Vehicle NVR
Processor	Intel® Celeron® J1900 Processor	Intel® 4th Gen. Core™ i3/i5/i7 Processor
Chipset	Quad Core SoC	Intel® QM87
Main Memory	Up to 8GB, DDR3L 204-pin SODIMM	Up to 16GB, DDR3L 204-pin SODIMM
Display	VGA x 1, HDMI x 1	VGA x 1, HDMI x 1, DP x 1
Ethernet	10/100/1000Base-TX x 6	10/100/1000Base-TX x 5
PoE Ethernet Port	4 ports	4 ports
RAID support	0/1	0/1
Expansion Slot	Mini-Card x 3 Built-in CAN 2.0B x 1	Mini-Card slot x 3 (for 3G/4G/Wifi Module) Built-in CAN 2.0B x 1
GPS	On board(GPS/GLoS)	On board(GPS/GLoS)
Front I/O Panel	Power Button x 1, Power Input x 1, Remote Power x 1, 3G/4G/WIFI LED x 3, SIM slot x 2, HDD LED x 1, CanBus connector x 1, DIO x 1	Power Button x 1, 3G/4G/WIFI LED x 3, USB3.0 x 4, SIM slot x 2, LAN (RJ-45) port x 1, PoE LAN x 4
Rear I/O Panel	VGA out x 1, HDMI x 1, LAN (RJ-45) port x 2, PoE LAN x 4, USB2.0 x 2, USB3.0 x 1, Audio Line-out x 1, Mic-In x 1	DC-In power x 1, Remote Power x 1, DIO x 1, DC 12V Output x 1, RS-232 x 2, RS-232/422/485 x 2, VGA out x 1, HDMI x 1, DP x 1 CanBus connector x 1, USB2.0 x 2, Audio Line-out x 1, Mic-In x 1
Environmental		
Operating Temperature	-4°F ~ 158°F (-20°C ~ 70°C)	-4°F ~ 158°F (-20°C ~ 70°C)
Storage Temperature	-40°F ~ 185°F (-40°C ~ 85°C)	-40°F ~ 185°F (-40°C ~ 85°C)
Storage Humidity	10%~80% @40°C, non-condensing	10%~80% @40°C, non-condensing
Vibration/Shock	MIL-STD-810G	MIL-STD-810G
Certification	CE & FCC Class A, eMARK 13	CE & FCC Class A, eMARK 13
Power Requirement		
Power Supply	DC 9-36V, with Ignition Pin	DC 10~35V
Mechanical		
Hot Swappable HDD Tray	2.5" HDD x 2 (optional)	2.5" HDD x 2 (optional)
Internal System HDD Bay	2.5" HDD x 1 (optional with 2 HDD)	2.5" HDD x 2
Dimension	6.85" x 7.87" x 2.36" (174mm x 200mm x 60mm)	11.34" x 8.27" x 3.3" (288mm x 210mm x 84mm)
Gross Weight	5.7 lb (2.6 kg)	8.3 lb (3.8 kg)

System Level Products

Turn-Key Chassis Solutions



Model	TKS-EMB	TKS-P20-CV01
System		
CPU	By Mini-ITX board	Intel® Atom™ N2600, 1.6 GHz
Chipset	By Mini-ITX board	Intel® NM10
System Memory	By Mini-ITX board	DDR3 800 SODIMM slot x 1, up to 2 GB
Display Interface	—	VGA, HDMI
Storage Device	2.5" HDD/SSD slot x 1 (2nd slot kit by option)	mSATA, HDD/SSD (Optional)
Ethernet	—	Realtek RTL-8111E, 10/100/1000Base-TX x 1
I/O	USB Type A x 2 for USB 2.0, Line-out x 1, Mic-in x 1, Power On/Off button x 1, Mini-ITX board I/O, AC-inlet x 1 for TKS-EMB-AC	RS-232/422/485 x 1, RS-232 x 1, USB 2.0 x 5, VGA x 1, HDMI x 1 (Type C), LAN x 1, DIO x 4, Line-out x 1, Mic-in x 1, Antenna holes x 2, Power switch Power input
Expansion	—	Half-size Mini-Card x 1 (for mSATA)
Indicator	Power LED HDD active LED	Power LED HDD active LED
OS Support	—	Windows® 7, Windows® XP, Windows® XP Embedded, Linux Fedora
Power		
Power Requirement	200W AC/DC power supply (For TKS-EMB-AC)	9~30V with 2-pin terminal block 12V with 2-pin terminal block
Mechanical		
Mounting	—	Wallmount DIN Rail (Mounting kit is optional)
Net Weight	—	1.8 lb (820 g)
Gross Weight	—	2.2 lb (1 kg)
Dimensions (W x H x D)	12.40" x 9.06" x 2.95" (315mm x 230mm x 75 mm)	4.7" x 2.3" x 4.3" (120mm x 59.5mm x 110mm)
Environmental		
Operating Temperature	32°F ~ 113°F (0°C ~ 45°C) w/ airflow 32°F ~ 104°F (0°C ~ 40°C) w/o airflow	0°C ~ 55°C with wide temperature HDD (according to IEC68-2-14 with 0.5 m/s AirFlow; with industrial devices)
Storage Temperature	-4°F ~ 176°F (-20°C ~ 80°C)	-40°C ~ 80°C
Storage Humidity	—	90% @ 40°C, non-condensing
Anti-Vibration	1 Grms/ 5 ~ 500Hz/ operation - HDD	2 Grms/ 5 ~ 500Hz/ operation - mSATA
Shock	20 G peak acceleration (11 msec. duration) - HDD	20 G peak acceleration (11 msec. duration) — mSATA
Certification	CE /FCC class A (self-declaration)	CE/FCC class A

System Level Products

Turn-Key Chassis Solutions



Model	NANO-001N	NANO-001F
System		
CPU	Intel® 5th gen. 14nm ULT i7-5650U/ i5-5350U/ i3-5010U BGA CPU, 15W TDP.	Intel® 5th gen. 14nm ULT i7-5650U/ i5-5350U/ i3-5010U BGA CPU, 15W TDP.
Chipset	Intergrate into SoC	Intergrate into SoC
System Memory	SO-DIMM x 2, max. 16GB, DDR3L 1600 MHz, non-ECC, un-buffered memory	SO-DIMM x 2, max. 16GB, DDR3L 1600 MHz, non-ECC, un-buffered memory
Display Interface	DP x 2	DP x 2
Storage Device	M.2 slot(M-key) x 1, optional mSATA x 1	M.2 slot(M-key) x 1, optional mSATA x 1
Ethernet	Realtek 8111G Giga LAN 10/100/1000Mb LAN x 2	Realtek 8111G Giga LAN 10/100/1000Mb LAN x 2
I/O	USB 3.0 ports x 4 USB 2.0 ports x 2 Audio Jack x 2 : Line-out(green), Mic-in(pink), On/Off Button x 1 DP x 2 RJ-45 x 2 Reset Switch x 1 DC Power jack x 1 Antenna output x 1 (from internal mini-card)	USB 3.0 ports x 4 USB 2.0 ports x 2 Audio Jack x 2 : Line-out(green), Mic-in(pink), On/Off Button x 1 DP x 2 RJ-45 x 2 Reset Switch x 1 DC Power jack x 1 Antenna output x 1 (from internal mini-card)
Expansion	Half size mini card x 1 (default USB+PCIe), (mSATA BOM change), RS-232 9-pin box header x 1, 5-pin USB 2.0 header(p=2.00mm) x 1	Half size mini card x 1 (default USB+PCIe), (mSATA BOM change), RS-232 9-pin box header x 1, 5-pin USB 2.0 header(p=2.00mm) x 1
Indicator	Front: Power LED x 1, HDD Active LED x 1	Front: Power LED x 1, HDD Active LED x 1
OS Support	Windows 7 32/64 bit, Windows 8.1 32/64 bit, Windows 10 64bit, Linux Fedora	Windows 7 32/64 bit, Windows 8.1 32/64 bit, Windows 10 64bit, Linux Fedora
Power		
Power Requirement	12V~19VDC, (wide rage:12V-5%~ 19V+10%)	12V~19VDC, (wide rage:12V-5%~ 19V+10%)
Mechanical		
Mounting	VESA Mount: 75mm x 75mm	VESA Mount: 75mm x 75mm
Net Weight	—	—
Gross Weight	—	—
Dimensions (W x H x D)	5.91" x 4.92" x 2.17" (150mm x 125mm x 55 mm)	5.91" x 4.92" x 2.17" (150mm x 125mm x 55 mm)
Environmental		
Operating Temperature	32°F ~ 104°F(0~40°C), with 0.5 m/s airflow	32°F ~ 122°F(0~50°C), with 0.5 m/s airflow
Storage Temperature	—	—
Storage Humidity	—	—
Anti-Vibration	3.0 Grms/ 5~ 500Hz/ operation - SSD	3.0 Grms/ 5~ 500Hz/ operation - SSD
Shock	20 G peak acceleration (11 msec. duration) - SSD	20 G peak acceleration (11 msec. duration) - SSD
Certification	CE & FCC class A	CE & FCC class A

System Level Products

Turn-Key Chassis Solutions

Launching in Q4



Model	NANO-002	ACS-1U01-BT4
System		
CPU	Intel® 6th gen. 14nm ULT, BGA CPU, 15W TDP. i7-6600U 2C/4T GT2 2.6/3.4 GHz 4M, (vPro)/ i5-6300U 2C/4T GT2 2.4/3.0 GHz 3M, (vPro)/ i3-6100U 2C/4T GT2 2.3 GHz 3M/ Celeron 3955U 2C/2T GT1 (f) 2.0 GHz 2M	Intel® Atom™ J1900 Processor (4C @ 2.00 GHz CPU, 688/854 MHz GFX, 10W TDP), Intel® Atom™ N2807 Processor (2C @ 1.58 GHz CPU, 313/750 MHz GFX, 4.3W TDP)
Chipset	Intergrate into SoC	Intergrate into SoC
System Memory	SO-DIMM x 2, max. 16GB, DDR4 2133/1867 MHz Non-ECC, un-buffered memory	204-pin SODIMM x 2 up to 8 GB (for J1900), 204-pin SODIMM x 1 up to 4 GB (for N2807) DDR3L 1333 MHz, Non-ECC, un-buffered memory, Dual-channel memory architecture"
Display Interface	HDMI1.4 x 2, up to 4096x2160@24Hz	VGA x 1, Up to 1920 x 1200 @60 Hz HDMI x 1, Up to 1920 x 1200 @60 Hz
Storage Device	M.2 2280 M-Key slot x 1 (PCIex4+mSATA), default mSATA	2.5" HDD, Full-Size Mini-Card (optional)
Ethernet	Realtek 8111G Giga LAN 10/100/1000Mb LAN x 2, RJ-45 x 2	Realtek PCIe Gb LAN 8111G x 1
I/O	USB 3.0 ports x 4 Audio Jack x 2: Line-out(green), Mic-in(pink) On/Off Button x 1 HDMI x 2 RJ-45 x 2 Power LED + HD LED x 1 Reset Switch x 1 Screw type DC Power jack x 1 Antenna output x 2	USB 2.0 port x 4 VGA x 1 On/Off Button x 1 Power LED + HD LED x 1 (COM port optional if no VGA need.) USB 3.0/2.0 port x 1 USB 2.0 port x 2 Line-out (green) x 1 Line-in (blue) x 1 HDMI x 1 RJ-45 connector x 1 DC Power x 1 RS-232 connector x 1
Expansion	M.2 2230 E-Key slot (PCIe+USB) x 1, default PCIe	Full-size Mini-Card (PCIe +USB or mSATA) + SIM Card (mSATA default) x 1 Half-size Mini-Card (PCIe +USB) x 1 Full-size Mini-Card slot (mSATA default) x 1 SATA3 (6.0Gb/s) x 2 SATA2 (3.0Gb/s) x 2 SATA power connector x 1 RS-232 9-pin int. box header x 5 RS-232/422/485 9-pin box header x 1 5-pin USB 2.0 header(p=2.00mm) x 1 8-bit Digital I/O x 1 (In/Out programmable)
Indicator	Front: Power LED x 1 HDD Active LED x 1	Power LED x 1 HDD Active LED x 1
OS Support	Windows® 7 32/64 bit, Windows® 8.1 64 bit, Windows® 10 64bit, Linux Fedora* 22 (64b)	Windows® 7 32/64 bit, Windows® 8.1 32/64 bit, Fedora
Power		
Power Requirement	12V~19VDC, (wide rage:12V-5%~ 19V+10%)	DC: 12V
Mechanical		
Mounting	VESA Mount: 75mm x 75mm	Wallmount
Net Weight	—	—
Gross Weight	—	—
Dimensions (W x H x D)	5.91" x 4.92" x 2.17" (150mm x 125mm x 55 mm)	8" x 8" x 1.75" (203.20mm x 203.20mm x 44.45mm)
Environmental		
Operating Temperature	32°F ~ 104°F (0°C~40°C), with 0.5 m/s airflow	32°F ~ 122°F (0°C ~ 50°C)
Storage Temperature	—	—
Storage Humidity	—	—
Anti-Vibration	3.0 Grms/5~ 500Hz/ operation - SSD	0.5 Grms/ 5~ 500Hz/ operation - HDD
Shock	—	10 G peak acceleration (11 msec. duration)
Certification	CE & FCC class A	CE & FCC Class A

Note: All specifications are subject to change without notice.

System Level Products

Turn-Key Chassis Solutions



Model	ACS-1U01-H110B	ACS-1U01-H81B
System		
CPU	LGA 1151 socket for Intel® 6th Gen. Processor, Max. 65W TDPs	LGA 1150 Socket For Intel® 4th Generation Core™ i Series 22nm Processor, Max. 65W TDPs (follow thin mini-ITX)
Chipset	Intel® H110 Express Chipset	—
System Memory	SO-DIMM x 2 Max. 32GB, DDR4 2133/1867 MHz, Non-ECC Dual-channel memory architecture	204pin SO-DIMM x 2 Max. 16GB, DDR3 1600/1333 MHz Non-ECC, un-buffered memory, Dual-channel memory architecture
Display Interface	HDMI x 1, Up to 4096 x 2160 @ 24 Hz / 2560 x 1600 @ 60 Hz, with Digital Audio DP x 1, Up to 4096 x 2160 @ 24 Hz/ 3840 x 2160 @ 60 Hz, with Digital Audio	HDMI1.4 x 1, up to 4096 x 2160@24 Hz/ 2560 x 1600@60 Hz DP1.2 x 1, up to 4096 x 2160@24 Hz/ 3840 x 2160@60 Hz VGA x 1, up to 1920 x 1200@60 Hz
Storage Device	SATA 6Gb/s x 2 Full size Mini Card (SATA 6.0Gb/s) x 1	2.5" HDD, Full-Size Mini-Card (optional)
Ethernet	Realtek PCIe Gb LAN 8111G x 2	Realtek PCIe Gb LAN 8111G x 2
I/O	USB 3.0 port x 4 On/Off Button x 1 Power LED + HD LED x 1 (COM port optional if not use VGA port) Line-out (green) x 1 Mic-in (pink) x 1 HDMI / DP (HDMI and DP colay; default: HDMI) x 2 RJ-45 connector x 2 DC Power x 1 Infineon SLB96XX TT 1.2 colay 2.0 (optional, default: no) x 1	USB 2.0 port x 4 VGA x 1 On/Off Button x 1 Power LED + HD LED x 1 (COM port optional if not use VGA port) USB 3.0/2.0 port x 2 USB 2.0 port x 2 Line-out (green) x 1 Mic-in (pink) x 1 HDMI x 1 DP x 1 RJ-45 connector x 2 DC Power x 1
Expansion	PCIe[x1] Slot x 1 Half Size Mini Card slot (PCIe + USB) x 1 SATA 6Gb/s 4-pin x 2 SATA power (5V, 12V @1A) x 1 USB 2.0 connectors support additional 4 USB ports (2.00 mm) x 2 Boxer header for COM (COM1: RS-232/422/485 supports 5V/12V/RI; COM2: RS-232) x 2 LVDS connector x 1 eDP connector x 1 Digital I/O box header x 1	Half size Mini-Card (PCIe+USB) x 1 Full-Size Mini-Card x 1 SATA3 (6.0Gb/s) x 2 SATA2 (3.0Gb/s) x 1 SATA power connector x 1 Boxer header for COM x 2 (COM1: RS-232/422/485 supports 5V/12V/RI; COM2: RS-232) USB 2.0 connectors support additional 2 USB ports (2.54 mm) x 1 8-bit Digital I/O x 1 (In/Out programmable)
Indicator	Power LED x 1, HDD Active LED x 1	Power LED x 1, HDD Active LED x 1
OS Support	Windows® 10 32/64 bit, Windows® 7 32/64 bit, Windows® 8.1 32/64 bit, Fedora	Windows® 10 32/64 bit, Windows® 7 32/64 bit, Windows® 8.1 32/64 bit, Fedora
Power		
Power Requirement	DC: 12V	DC: 12V~24V (± 5% wide range voltage input)
Mechanical		
Mounting	Wallmount	Wallmount
Net Weight	—	—
Gross Weight	—	—
Dimensions (W x H x D)	8" x 8" x 1.75" (203.20mm x 203.20mm x 44.45mm)	8" x 8" x 1.75" (203.20mm x 203.20mm x 44.45mm)
Environmental		
Operating Temperature	32°F ~ 122°F (0°C ~ 50°C)	32°F ~ 122°F (0°C ~ 50°C)
Storage Temperature	—	—
Storage Humidity	—	—
Anti-Vibration	0.5 Grms/ 5~ 500Hz/ operation - HDD	0.5 Grms/ 5~ 500Hz/ operation - HDD
Shock	10 G peak acceleration (11 msec. duration)	10 G peak acceleration (11 msec. duration)
Certification	CE & FCC Class A	CE & FCC Class A

System Level Products

Network Appliances



Model	FWS-2350	FWS-2260
Platform		
Form Factor	Desktop 6-Port Network Appliance	Desktop 6-Port Network Appliance
Processor	Intel® Atom™ C2358 1.7 GHz (Dual Core) Intel® Atom™ C2558 2.4 GHz (Quad Core)	Intel® Celeron® N3060 1.6GHz (Dual Core) Intel® Celeron® N3160 1.6GHz (Dual Core)
Chipset	—	—
System Memory	240-pin DDR3 1333MHz ECC or non-ECC SODIMM up to 16GB, C2358 single channel, C2558 dual-channel	204-pin DDR3L 1600MHz SODIMM x 2, up to 8GB
Network		
Ethernet	Intel® i211, Gigabit Ethernet x 2 (Optional additional Intel® i211, Gigabit Ethernet x 2), Intel® SoC Integrated i354 with Marvell 88E1543 PHY x 1	Intel® i211, Gigabit Ethernet x 6 (Optional Intel® i211, Gigabit Ethernet x 4)
Bypass	Supports up to 2 pairs bypass function	Supports up to 2 pairs bypass function
NIM Slot	—	—
Display		
Graphic Controller	—	—
Connector	—	HDMI x 1
Storage		
HDDs	Internal 2.5" SATA HDD Bay x 1, SATA III port x 1	Internal 2.5" SATA HDD Bay x 1, SATA II Port x 1
CF/CFast/mSATA	CF socket x 1 (Optional CFast™ socket x 1)	CF socket x 1 (Optional CFast™ socket or mSATA socket x 1)
Expansion/Internal Interface		
PCIe slot	—	—
Mini-Card	Mini-Card slot with SIM socket x 1 (Full size) (Optional Mini-Card slot up to 2)	Mini-Card slot with SIM socket x 1 (USB Signal only, full size) (Optional Mini-Card slot with SIM socket x 2)
Mini-PCIe slot	—	—
IPMI	—	—
Keyboard & Mouse	Pin-header	Pin-header
Universal Serial Bus	USB 2.0 x 2, 1x5 pin USB 2.0 header x 1	USB 3.0 x 2, USB 3.0 internal pin-header x 1 (optional)
Miscellaneous		
RTC	Internal RTC	Internal RTC
Watchdog Timer	1~255 steps by software programmable	1~255 steps by software programmable
Software Button	GPIO Programmable push button x 1	GPIO Programmable push button x 1
TPM	Optional TPM v1.2/v2.0	Optional TPM v1.2 /v2.0
GPIO	Internal GPIO 2x5 Pin header x 1	Reserve internal GPIO Pin header x 1
Fan	System Fan x 1	Fanless
MTBF (hours)	86286	85321
Color	Black	Black
Environmental and Dimension		
Power Requirement	12V DC power in connector/ 60W Power adapter x 1 4-pin DC power out connector for HDD x 1	12V DC power in connector/ 60W Power adapter x 1 4-pin DC power out connector for HDD x 1
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Operating Humidity	10%~80% relative humidity, non-condensing	10%~80% relative humidity, non-condensing
Storage Humidity	10%~80% @40°C, non-condensing	10%~80% @40°C, non-condensing
Vibration	0.5 Grms/ 5 ~ 500Hz/ operation (2.5" Hard Disk Drive) 1.5 Grms/ 5 ~ 500Hz/ non-operation	0.5 Grms/ 5 ~ 500Hz/ operation (2.5" Hard Disk Drive) 1.5 Grms/ 5 ~ 500Hz/ non-operation
Shock	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non-operation	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non-operation
Dimension (W x D x H)	10.24" x 7.01" x 1.73" (260mm x 178mm x 44mm)	10.23" x 7.01" x 1.73" (260mm x 178mm x 44mm)
I/O Interfaces		
Front Panel	Power LED x 1, Status LED x 1, HDD Active LED x 1, Bypass LED x 2, LAN LED x 12 (Supports up to LAN LED x 16)	Power LED x 1, Status LED x 1, HDD Active LED x 1, Bypass LED x 2, LAN LED x 12
Rear Panel	12V DC Power Input x 1, Power Button x 1, USB 2.0 x 2, RJ-45 LAN x 6 (Supports up to RJ-45 LAN x 8), RJ-45 Console x 1, Software Programmable Button x 1	12V DC Power Input x 1, Power Button x 1, USB 3.0 x 2, RJ-45 LAN x 6, RJ-45 Console x 1, Software Programmable Button x 1, HDMI x 1

Network Appliances



Model	FWS-2253	FWS-2252
Platform		
Form Factor	Desktop 4-Port Network Appliance	Desktop 4-Port Network Appliance
Processor	Intel® Celeron® N2807 2.0 GHz (Dual Core) Intel® Celeron® J1900 2.0 GHz (Quad Core)	Intel® Celeron® J1900 2.0 GHz (Quad Core)
Chipset	—	—
System Memory	204-pin SODIMM: Intel® N2807 Single-channel DDR3L 1333MHz x 1 Intel® J1900 Dual-channel DDR3L 1333MHz x 2	204-pin Dual channel DDR3L 1333MHz SODIMM x 2, up to 8GB
Network		
Ethernet	Intel® i211, Gigabit Ethernet x 4	Intel® i211, Gigabit Ethernet x 4
Bypass	Supports 1 pair bypass function	Supports 1 pair bypass function
NIM Slot	—	—
Display		
Graphic Controller	Reserve internal VGA pin header x 1	Reserve internal VGA pin header x 1
Connector	—	—
Storage		
HDDs	SATA II port x 1	2.5" HDD Bay x 1
CF/CFast/mSATA	CF socket x 1	CF socket x 1
Expansion/ Internal Interface		
PCIe slot	—	—
Mini-Card	Mini-Card Slot x 1 (Half size)	Mini-Card Slot x 1 (Half size)
Mini-PCIe slot	—	—
IPMI	—	—
Keyboard & Mouse	Pin-header	Pin-header
Universal Serial Bus	USB 2.0 x 2, USB 3.0 x 1	USB 2.0 x 2, USB 3.0 x 1
Miscellaneous		
RTC	Internal RTC	Internal RTC
Watchdog Timer	1~255 steps by software programmable	1~255 steps by software programmable
Software Button	GPIO programmable push button x 1	GPIO Programmable push button x 1
TPM	—	—
GPIO	—	—
Fan	Fanless	Fanless
MTBF (hours)	90630	90630
Color	Black	Black
Environmental and Dimension		
Power Requirement	12V DC power in connector/ 40W Power adapter x 1, 4-pin DC power out connector for HDD x 1	12V DC power in connector/ 40W Power adapter x 1 4-pin DC power out connector for HDD x 1
Operating Temperature	-4°F ~ 158°F (-20°C ~ 70°C), N2807/ 32°F ~ 122°F (0°C ~ 50°C), J1900	32°F ~ 104°F (0°C ~ 40°C)
Storage Temperature	-4°F ~ 158°F (-20°C ~ 70°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Operating Humidity	10%~80% relative humidity, non-condensing	10%~80% relative humidity, non-condensing
Storage Humidity	10%~80% @40°C, non-condensing	10%~80% @40°C, non-condensing
Vibration	1 Grms/ 5 ~ 500Hz/ operation 2 Grms/ 5 ~ 500Hz/ non-operation	0.5 Grms/ 5 ~ 500Hz/ operation (2.5" HDD) 1.5 Grms/ 5 ~ 500Hz/ non-operation
Shock	15 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non-operation	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non-operation
Dimension (W x D x H)	6.89" x 4.09" x 1.5" (175mm x 104mm x 38mm)	7.87" x 4.09" x 1.73" (200mm x 104mm x 44mm)
I/O Interfaces		
Front Panel	Power LED x 1, Status LED x 1, HDD Active LED x 1, LAN LED x 8	Power LED x 1, Status LED x 1, HDD Active LED x 1, LAN LED x 8, Bypass LED x 1
Rear Panel	12V DC Power Input x 1, Power Button x 1, USB 3.0 x 1, USB 2.0 x 2, RJ-45 LAN x 4, RJ-45 Console x 1, Software Programmable Button x 1	12V DC Power Input x 1, Power Button x 1, USB 3.0 x 1, USB 2.0 x 2, RJ-45 LAN x 4, RJ-45 Console x 1, Software Programmable Button x 1, VGA Port x 1 (Optional)

System Level Products

Network Appliances



Model	FWS-2251	FWS-2250
Platform		
Form Factor	Desktop 4-Port Network Appliance	Desktop 4-Port Network Appliance
Processor	Intel® Celeron® J1900 2.0 GHz (Quad Core)	Intel® Atom™ E3815 1.46 GHz (Single Core) Intel® Atom™ E3827 1.75 GHz (Dual Core) Intel® Celeron® J1900 2.0 GHz (Quad Core)
Chipset	—	—
System Memory	204-pin Dual channel DDR3L 1333/1600MHz SODIMM x 2, up to 8GB	204-pin Dual channel DDR3L 1333/1600MHz SODIMM x 2, up to 8GB (E3815 Single Channel)
Network		
Ethernet	Intel® i211, Gigabit Ethernet x 4	Intel® i211, Gigabit Ethernet x 4
Bypass	—	Supports 1 pair bypass function
NIM Slot	—	—
Display		
Graphic Controller	Reserve internal VGA pin header x 1	Reserve internal VGA pin header x 1
Connector	—	—
Storage		
HDDs	Optional SATA II connector x 1 (SATA DOM Horizontal and no housing type only)	Optional SATA II connector x 1
CF/CFast/mSATA	CF socket x 1	CF socket x 1
Expansion/ Internal Interface		
PCIe slot	—	—
Mini-Card	Mini-Card Slot x 3 (Half Size x 1, Full Size with SIM Socket x 1, USB 2.0 Signal only Full size with dual SIM socket x 1)	Mini-Card slot x 1 (Half size)
Mini-PCIe slot	—	—
IPMI	—	—
Keyboard & Mouse	Pin-header	Pin-header
Universal Serial Bus	USB 3.0 x 1	USB 2.0 x 2, USB 3.0 x 1
Miscellaneous		
RTC	Internal RTC	Internal RTC
Watchdog Timer	1~255 steps by software programmable	1~255 steps by software programmable
Software Button	GPIO Programmable push button x 1	GPIO Programmable push button x 1
TPM	—	—
GPIO	—	—
Fan	Fanless	Fan/Fanless refers to order information
MTBF (hours)	—	90630
Color	White	White
Environmental and Dimension		
Power Requirement	12V DC power in connector/ 40W Power adapter x 1 4-pin DC power out connector for HDD x 1	12V DC power in connector/ 40W Power adapter x 1 4-pin DC power out connector for HDD x 1
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Operating Humidity	10%~80% relative humidity, non-condensing	10%~80% relative humidity, non-condensing
Storage Humidity	10%~80% @40°C, non-condensing	10%~80% @40°C, non-condensing
Vibration	0.5 Grms/ 5 ~ 500Hz/ operation (SATA DOM) 1.5 Grms/ 5 ~ 500Hz/ non-operation	0.5 Grms/ 5 ~ 500Hz/ operation 1.5 Grms/ 5 ~ 500Hz/ non-operation
Shock	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non-operation	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non-operation
Dimension (W x D x H)	8.27" x 4.09" x 1.38" (210mm x 104mm x 35mm)	6.3" x 4.09" x 1.38" (160mm x 104mm x 35mm)
I/O Interfaces		
Front Panel	Power LED x 1, HDD Active LED x 1, LAN LED x 8, Accessible SIM cover x 1	Power LED x 1, Status LED x 1, HDD Active LED x 1, Bypass LED x 1 (Optional), LAN LED x 8
Rear Panel	12V DC Power Input x 1, Power Button x 1, USB 3.0 x 1, RJ-45 LAN x 4, RJ-45 Console x 1, Software Programmable Button x 1	12V DC Power Input x 1, Power Button x 1, USB 3.0 x 1, USB 2.0 x 2, RJ-45 LAN x 4, RJ-45 Console x 1, Software Programmable Button x 1

System Level Products

Network Appliances



Model	FWS-7820	FWS-7811
Platform		
Form Factor	1U Rackmount Network Platform	1U Rackmount Network Platform
Processor	Intel® 6th Generation Core™/ Xeon Processors	Intel® LGA1150 4th Gen Core™/ Xeon Processor
Chipset	Intel® C236	Intel® C226
System Memory	DDR4 1600/1866/2133 UDIMM/ECC, Up to 64GB, 288-pin DIMM x 4	DDR3 1333/1600 UDIMM/ECC, Up to 32GB, 240-pin DIMM x 4
Network		
Ethernet	1GbE x 6 + NIM	1GbE x 8 + NIM
Bypass	On board 2 pairs bypass, others depend on NIM module	2 ~ 4 (Depends on NIM)
NIM Slot	4	1
Display		
Graphic Controller	Intel® Integrated	Intel® Integrated
Connector	VGA cable (Optional)	VGA cable (Optional)
Storage		
HDDs	Internal 3.5" SATA HDD x 1 or 2.5" SATA HDD x 2 (Optional)* *(mSATA/ CF/ CFast will be disabled if 2nd SATA HDD is used)	Internal 3.5" SATA HDD x 1 or 2.5" SATA HDD x 2 (Optional)
CF/CFast/mSATA	CF socket x 1 (Optional BOM CFast™ socket or mSATA slot)	CF socket x 1
Expansion/ Internal Interface		
PCIe slot	PCIe [x4] signal use [x8] slot (3rd NIM slot will be disabled if PCIe Riser supported)	PCIe [x8] slot x 1 (Optional)
Mini-Card	—	—
Mini-PCIe slot	—	—
IPMI	—	—
Keyboard & Mouse	Pin-header	Pin-header
Universal Serial Bus	USB 3.0 x 2, Box Header (2.0mm)	USB 2.0 x 2, Box Header (2.0mm) (optional)
Miscellaneous		
RTC	Internal RTC	Internal RTC
Watchdog Timer	1~255 steps by software programmable, 1 sec per step	1~255 steps by software programmable
Software Button	GPIO Programmable push button x 1	GPIO Programmable push button x 1
TPM	Yes	—
GPIO	8 bits, BIOS default 4 bits input, 4 bits output.	—
Fan	3	2
MTBF (hours)	—	97,000
Color	Black	Black
Environmental and Dimension		
Power Requirement	250W ATX PSU	275W Redundant PSU
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Operating Humidity	10 ~ 80%	10 ~ 80%
Storage Humidity	10 ~ 80% @ 40°C, non-condensing	10 ~ 80% @ 40°C, non-condensing
Vibration	0.5 Grms/ 5 ~ 500Hz/ operation (3.5" H.D.D) 1.5 Grms/ 5 ~ 500Hz/ no operation	0.5 Grms/ 5 ~ 500Hz/ operation (3.5" H.D.D) 1.5 Grms/ 5 ~ 500Hz/ no operation
Shock	10G peak acceleration (11 m sec. duration), operation 20G peak acceleration (11 m sec. duration), non-operation	10G peak acceleration (11 m sec. duration), operation 20G peak acceleration (11 m sec. duration), non-operation
Dimension (W x D x H)	16.93" x 18.7" x 1.73" (430mm x 475mm x 44mm)	16.93" x 18.7" x 1.73" (430mm x 475mm x 44mm)
I/O Interfaces		
Front Panel	Power LED x 1, Status LED x 1, HDD Active LED x 1, USB 3.0 Ports x 2, RJ-45 Console x 1, Parallel LCM display and 4 keypad x 1 (Optional w/ NIM slot), Software Programmable Switch x 1	Power LED x 1, Status LED x 1, HDD Active LED x 1, LAN ports Link/Active LED x 8, Bypass LED (Default 2 LEDs), USB 3.0 Ports x 2, RJ-45 Console x 1, Parallel LCM display and 4 keypad x 1, Software Programmable Switch x 1
Rear Panel	AC Power Input x 1, Power Switch x 1, VGA port (Optional), Rear Expansion Slot x 1 (Optional PCIe [x4] signal use [x8] slot, 3rd NIM slot will be disabled if PCIe Riser supported)	AC Power Input x 2, Power Switch x 1, VGA port (Optional), Rear Expansion Slot x 2 (Optional)

System Level Products

Network Appliances



Model	FWS-7810	FWS-7520
Platform		
Form Factor	1U Rackmount Network Platform	1U Rackmount Network Platform
Processor	Intel® LGA1150 4th Gen Core™/ Xeon Processor	Intel® FCBGA Xeon D-1548/D-1518 (Optional) SOC
Chipset	Intel® C226	Integrated
System Memory	DDR3 1333/1600 UDIMM/ECC, up to 32GB, 240-pin DIMM x 4	DDR4 1600/1866/2133 RDIMM/UDIMM/ECC, up to 128GB, 288 Pin DIMM x 4
Network		
Ethernet	1GbE x 8 + NIM	1GbE x 1 + 10GbE x 2 + NIM
Bypass	2 ~ 4 (Depends on NIM)	Depends on NIM
NIM Slot	1	3
Display		
Graphic Controller	Intel® Integrated	IPMI integrated (Optional)
Connector	VGA cable (Optional)	VGA cable (Optional)
Storage		
HDDs	Internal 3.5" SATA HDD x 1 or 2.5" SATA HDD x 2 (Optional)	Support 2.5" SATA HDD x 2
CF/CFast/mSATA	CF socket x 1	CF socket x 1 (Optional CFast™ socket or mSATA slot)
Expansion/ Internal Interface		
PCIe slot	PCIe [x8] slot x 1 (Optional) or PCIe [x8] slot x 2, cannot use w/ NIM (Optional)	PCIe [x4] signal use [x8] slot (optional)
Mini-Card	—	—
Mini-PCIe slot	—	Optional Module
IPMI	—	—
Keyboard & Mouse	Pin-header	Pin-header
Universal Serial Bus	USB 2.0 x 2 Box Header (2.0mm) (optional)	USB 3.0 x 2 Box Header (2.0mm) (optional)
Miscellaneous		
RTC	Internal RTC	Internal RTC
Watchdog Timer	1~255 steps by software programmable	1~255 step by software programmable
Software Button	GPIO Programmable push button x 1	GPIO Programmable push button x 1
TPM	—	Yes
GPIO	—	8bits, BIOS default 4 bits input, 4bits output.
Fan	2	3
MTBF (hours)	115,000	—
Color	Black	Black
Environmental and Dimension		
Power Requirement	250W ATX PSU	250W ATX PSU or 220W Redundant PSU (Optional)
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Operating Humidity	10 ~ 80%	10 ~ 80%
Storage Humidity	10 ~ 80% @ 40°C, non-condensing	10 ~ 80% @ 40°C, non-condensing
Vibration	0.5 Grms/ 5 ~ 500Hz/ operation (3.5" H.D.D) 1.5 Grms/ 5 ~ 500Hz/ no operation	0.5 Grms/ 5 ~ 500Hz/ operation (3.5" H.D.D) 1.5 Grms/ 5 ~ 500Hz/ no operation
Shock	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non-operation	10G peak acceleration (11 m sec. duration), operation 20G peak acceleration (11 m sec. duration), non operation
Dimension (W x D x H)	16.93" x 12.01" x 1.73" (430mm x 305mm x 44mm)	16.93" x 18.7" x 1.73" (430mm x 475mm x 44mm)
I/O Interfaces		
Front Panel	Power LED x 1, Status LED x 1, HDD Active LED x 1, LAN ports Link/Active LED x 8, Bypass LED (Default 2 LEDs), USB 3.0 Ports x 2, RJ-45 Console x 1, Parallel LCM display and 4 keypad x 1, Software Programmable Switch x 1	Power LED x 1, Status LED x 1, HDD Active LED x 1, USB 3.0 Ports x 2, RJ-45 Console x 1, Parallel LCM display and 4 keypad x 1, Software Programmable Switch x 1
Rear Panel	AC Power Input x 1, Power Switch x 1, VGA port (Optional), Rear Expansion Slot x 2 (Optional)	AC Power Input x 1, Power Switch x 1, VGA port (Optional), Rear Expansion Slot x 1 (Optional PCIe [x4] signal use x8 slot)

System Level Products

Network Appliances



Model	FWS-7400	FWS-7350
Platform		
Form Factor	1U Rackmount Network Platform	1U Rackmount Network Platform
Processor	Intel® LGA1150 4th Gen Core™ Processor	Onboard Intel® C2758/C2558 4-Core/ 8-Core 2.4 GHz Processor SoC
Chipset	Intel® H81	Integrated
System Memory	DDR3L 1333/1600 UDIMM, up to 16GB, 240-pin DIMM x 2	DDR3L 1600 UDIMM/ECC, up to 64GB, 240-pin DIMM x 4
Network		
Ethernet	1GbE x 6 + NIM	1GbE x 4 + NIM
Bypass	2 ~ 4 (Depends on NIM)	2 ~ 4 (Depends on NIM)
NIM Slot	1	1
Display		
Graphic Controller	Intel® Integrated	Mini-card VGA (Optional)
Connector	VGA cable (Optional)	VGA cable (Optional)
Storage		
HDDs	Internal 3.5" SATA HDD x 1 or 2.5" SATA HDD x 2 (Optional)	Internal 3.5" SATA HDD x 1 or 2.5" SATA HDD x 2 (Optional)
CF/CFast/mSATA	CF socket x 1	CF socket x 1
Expansion/ Internal Interface		
PCIe slot	PCIe [x8] slot x 1 (Optional), cannot use w/ NIM	PCIe [x4] signal use [x8] slot
Mini-Card	—	—
Mini-PCIe slot	—	—
IPMI	—	—
Keyboard & Mouse	Pin-header	Pin-header
Universal Serial Bus	USB 2.0 x 2 Box Header (2.0mm) (optional)	USB 2.0 x 1 Box Header (2.0mm) (optional)
Miscellaneous		
RTC	Internal RTC	Internal RTC
Watchdog Timer	1~255 steps by software programmable	1~255 steps by software programmable
Software Button	GPIO Programmable push button x 1	GPIO Programmable push button x 1
TPM	—	—
GPIO	—	—
Fan	2	1
MTBF (hours)	106000	109000
Color	Black	Black
Environmental and Dimension		
Power Requirement	250W ATX PSU	100W ATX PSU
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Operating Humidity	10 ~ 80%	10 ~ 80%
Storage Humidity	10 ~ 80% @ 40°C, non-condensing	10 ~ 80% @ 40°C, non-condensing
Vibration	0.5 Grms/ 5 ~ 500Hz/ operation (3.5" H.D.D) 1.5 Grms/ 5 ~ 500Hz/ no operation	0.5 Grms/ 5 ~ 500Hz/ operation (3.5" H.D.D) 1.5 Grms/ 5 ~ 500Hz/ no operation
Shock	10G peak acceleration (11 m sec. duration), operation 20G peak acceleration (11 m sec. duration), non-operation	10G peak acceleration (11 m sec. duration), operation 20G peak acceleration (11 m sec. duration), non-operation
Dimension (W x D x H)	16.93" x 12.01" x 1.73" (430mm x 305mm x 44mm)	16.93" x 12.01" x 1.73" (430mm x 305mm x 44mm)
I/O Interfaces		
Front Panel	Power LED x 1, Status LED x 1, HDD Active LED x 1, LAN ports Link/Active LED x 6, Bypass LED (Default 2 LEDs), USB 3.0 Ports x 2, RJ-45 Console x 1, Parallel LCM display and 4 keypad x 1, Software Programmable Switch x 1	Power LED x 1, Status LED x 1, HDD Active LED x 1, LAN ports Link/Active LED x 4, Bypass LED (Default 2 LEDs), USB 2.0 Ports x 2, RJ-45 Console x 1, Parallel LCM display and 4 keypad x 1, Software Programmable Switch x 1
Rear Panel	AC Power Input x 1, Power Switch x 1, VGA port (Optional), Rear Expansion Slot x 2 (Optional)	AC Power Input x 1, Power Switch x 1, VGA port (Optional), Rear Expansion Slot x 2 (Optional PCIe [x4] signal use x8 slot)

System Level Products

Network Appliances



Model	FWS-7250	FWS-8500
Platform		
Form Factor	1U Rackmount Network Platform	2U Rackmount Network Platform
Processor	Intel® Atom™ E3845, up to 1.91 GHz/ Celeron® J1900 up to 2.42 GHz	Intel® Xeon® Processor E5-2600 v3 Series, LGA 2011
Chipset	Integrated	Intel® Communications Chipset 8925 PCH
System Memory	DDR3(L) 1333 SODIMM, up to 8GB, 204 Pin DIMM x 2	DDR4 1600/1866/2133 RDIMM, Up to 512GB 288-Pin DIMM x 16 (8 DIMM Per CPU)
Network		
Ethernet	1GbE x 4	Depends on NIM, onboard 1 GbE LAN x 1 (optional 1 GbE x 2)
Bypass	2	Depends on NIM
NIM Slot	—	8
Display		
Graphic Controller	Intel® Integrated	Mini-card VGA (Optional)
Connector	VGA cable (Optional)	VGA cable (Optional)
Storage		
HDDs	2.5" SATA HDD x 1 (Optional)	Internal 3.5" SATA HDD x 1 or 2.5" SATA HDD x 2 (Optional)
CF/CFast/mSATA	CF socket x 1	CF socket x 1
Expansion/Internal Interface		
PCIe slot	—	PCIe [x8] slot x 2 (Optional), co-lay with NIM slot 7 & slot 8
Mini-Card	1	1
Mini-PCIe slot	—	—
IPMI	—	—
Keyboard & Mouse	Pin-header	Pin-header
Universal Serial Bus	USB 2.0 x 1 Box Header (2.0mm) (optional)	USB x 2 for internal pin-header (optional)
Miscellaneous		
RTC	Internal RTC	Internal RTC
Watchdog Timer	1~255 steps by software programmable	1~255 steps by software programmable
Software Button	GPIO Programmable push button x 1	GPIO Programmable push button x 1
TPM	—	TPM v1.2
GPIO	—	8-bit, BIOS default 4-bit input, 4-bit output
Fan	2	5
MTBF (hours)	110,000	—
Color	Black	Black
Environmental and Dimension		
Power Requirement	100W ATX PSU	650W Redundant PSU
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Operating Humidity	10 ~ 80%	10 ~ 80%
Storage Humidity	10 ~ 80% @ 40°C, non-condensing	10 ~ 80% @ 40°C, non-condensing
Vibration	0.5 Grms/ 5 ~ 500Hz/ operation (3.5" H.D.D) 1.5 Grms/ 5 ~ 500Hz/ no operation	0.5 Grms/ 5 ~ 500Hz/ operation (3.5" H.D.D) 1.5 Grms/ 5 ~ 500Hz/ no operation
Shock	10G peak acceleration (11 m sec. duration), operation 20G peak acceleration (11 m sec. duration), non-operation	10G peak acceleration (11 m sec. duration), operation 20G peak acceleration (11 m sec. duration), non-operation
Dimension (W x D x H)	16.93" x 11.02" x 1.73" (430mm x 280mm x 44mm)	18.9" x 23.62" x 3.46" (480mm x 600mm x 88mm)
I/O Interfaces		
Front Panel	Power LED x 1, Status LED x 1, HDD Active LED x 1, LAN ports Link/Active LED x 4, Bypass LED (Default 2 LEDs), USB 2.0 Ports x 2, RJ-45 Console x 1, Parallel LCM display and 4 keypad x 1, Software Programmable Switch x 1	Power LED x 1, Status LED x 1, HDD Active LED x 1, USB 2.0 Ports x 2, RJ-45 Console x 1, Parallel LCM display and 4 keypad x 1, Software Programmable Button x 1 RJ-45 LAN x 1 (optional up to RJ-45 LAN x 2)
Rear Panel	AC Power Input x 1, Power Switch x 1, VGA port (Optional)	AC Power Input x 2, Power Switch x 1, Rear Expansion Slot x 2 (Optional PCIe [x8])

System Level Products

IoT Gateway



Model	AIOT-QG	AIOT-QA
System		
Processor	Intel® Quark SoC x1021	Intel® Quark SoC x1021
System Memory	Onboard 1 GB DDR3 800MHz ECC, un-buffered memory	Onboard 1 GB DDR3 800MHz ECC, un-buffered memory
Ethernet	10/100, RJ-45 x 2	10/100, RJ-45 x 2
Rear I/O	USB 2.0 Ports x 2 Mini USB Port x 1 Serial Port (RS-232/422/485) x 1 LAN (RJ-45) Port x 2 RESET Button x 1 Lockable DC connector (9~24V) x 1 Antenna hole x 2	USB 2.0 Ports x 2 Mini USB Port x 1 Serial Port (RS-232/422/485) x 1 LAN (RJ-45) Ports x 2 RESET Button x 1 Lockable DC connector (9~24V) x 1 Digital I/O x 1 Power input x 1 Antenna hole x 2 Serial Port (RS-232) x 1
Top I/O	Analog Input x 1 Digital I/O x 1 RS-232 x 1 Power input x 1 Antenna hole x 2	Analog Input x 1 (optional) Antenna hole x 2 Power LED x 1 SD card LED x 1
Storage	Micro SD Slot x 1 (default 4G card)	Micro SD Slot x 1 (default 4G card)
Expansion Slot	Full Size Mini-PCIe Slot for PCIe and USB Host Interface x 1 Half Size Mini-PCIe Slot for PCIe x 1 SPI Slot for optional module	Full Size Mini-PCIe Slot for PCIe and USB Host Interface x 1 Half Size Mini-PCIe Slot for PCIe x 1 SPI Slot for optional module
OS support	Wind River Linux Yocto Linux (MOQ required)	Wind River Linux Yocto Linux (MOQ required)
Mechanical		
Mounting	VESA/ Wallmount	Din-Rail mounted
Dimension	44.2" x 4.77" x 1.26" (174mm x 121.2mm x 32mm)	6.6" x 4.53" x 1.77" (168mm x 115mm x 45mm)
Environmental		
Operating Temperature	-4°F ~ 158°F (-20°C ~ 70°C)	-4°F ~ 158°F (-20°C ~ 70°C)
Storage Temperature	-40°F ~ 185°F (-40°C ~ 85°C)	-40°F ~ 185°F (-40°C ~ 85°C)
Storage Humidity	10%~95% @40°C, non-condensing	10%~95% @40°C, non-condensing
DC Input	DC 9-24V	DC 9-24V
Optional Connectivity		
Supported Connectivity	3G/ Wi-Fi/ ZigBee/ Bluetooth	3G/ Wi-Fi/ ZigBee/ Bluetooth

IoT Gateway



Note: All specifications are subject to change without notice. www.aaeon.com 120

System Level Products

Industrial Chassis — Rackmount



Model	ARC-645	ARC-645M	ARC-625M
System			
Construction	1.2 mm SECC Zinc-coated Steel	1.2mm SECC Zinc-coated Steel (Japanese Manufactured)	1.2mm SECC Zinc-Coated Steel
Storage	External: 3.5" Drive Bay x 1 5.25" Drive Bay x 4 Internal: 3.5" Drive Bay x 2	External: 3.5" Drive Bay x 1 5.25" Drive Bay x 4 Internal: 3.5" Drive Bay x 2	External: 3.5" Disk Drive x 1 5.25" CD-ROM or Removable Hard Disk Drive x 1 Internal: 3.5" Hard Disk Drive Bay x 2
System Fan	12 cm Ball Bearing Fan with Removable Filter x 1	12 cm Fan on Front Panel x 1, 8 cm Fan On Rear Side x 1	8cm Ball Bearing Fan with Removable Filter x 1
Front Panel	Power ON/OFF Switch x 1 Reset Button x 1 Power ON LED x 1 Hard Disk Drive Active LED x 1 USB Port x 4	Power ON/OFF Switch x 1 Reset Button x 1 Power ON LED x 1 Hard Disk Drive Active LED x 1 USB Port x 4	Power ON/OFF Switch x 1 Reset Button x 1 Power ON LED x 1 Hard Disk Drive Active LED x 1 USB x 2
Rear Panel	AT Keyboard Cut-out x 1 14 Slots (including system slot), supports max. 339 mm (length) for expansion card	AT Keyboard Cut-out x 1 Reserved Cut-out for DB Connector x 4 7 Slots, supports max. 312 mm (length) for expansion card	—
Expansion	—	—	PCI via riser card x 3, supports max. 167 mm (length) for expansion card
Color	Black	Black	Black
Dimension (W x D x H)	19" (W) x 20.8" (D) x 7" (H) (482mm x 528mm x 177mm)	19" (W) x 7" (H) x 20.8" (D) (482mm x 177mm x 528mm)	19" (W) x 20.8" (D) x 3.5" (H) (482mm x 528mm x 88.2mm)
Carton Dimension	21.6" (W) x 27" (D) x 12.4" (H) (548mm x 685mm x 315mm)	21.6" (W) x 12.4" (H) x 27" (D) (548mm x 315mm x 685mm)	21.6" (W) x 27" (D) x 8.8" (H) (548mm x 685mm x 224mm)
Net Weight	26.4 lb (12 kg)	26.4 lb (12 kg)	22 lb (10 kg)
Gross Weight	30.8 lb (14 kg)	30.8 lb (14 kg)	26.4 lb (12 kg)
Environmental			
Operating Temperature	32°F ~ 122°F (0°C ~ 50°C)	32°F ~ 122°F (0°C ~ 50°C)	32°F ~ 122°F (0°C ~ 50°C)
Storage Temperature	-4°F ~ 176°F (-20°C ~ 80°C)	-4°F ~ 176°F (-20°C ~ 80°C)	-4°F ~ 176°F (-20°C ~ 80°C)
Storage Humidity	10 ~ 90% @ 40°C, non-condensing	10 ~ 90% @ 40°C, non-condensing	10 ~ 90% @ 40°C, non-condensing
Vibration	0.5 Grms/ 5 ~ 500Hz/ operation (2.5" Hard Disk Drive) 1.5 Grms/ 5 ~ 500Hz/ non operation	0.5 Grms/ 5 ~ 500Hz/ operation (2.5" Hard Disk Drive) 1.5 Grms/ 5 ~ 500Hz/ non operation	0.5 Grms/ 5 ~ 500Hz/ operation (2.5" Hard Disk Drive) 1.5 Grms/ 5 ~ 500Hz/ non operation
Shock	15 G peak acceleration (11 m sec. duration), operation 30 G peak acceleration (11 m sec. duration), non operation	15 G peak acceleration (11 m sec. duration), operation 30 G peak acceleration (11 m sec. duration), non operation	15 G peak acceleration (11 m sec. duration), operation 30 G peak acceleration (11 m sec. duration), non operation
EMC	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A

System Level Products

Industrial Chassis — Wallmount



Model	AMC-280M	AMC-262	AEC-206	AEC-204
System				
Construction	Heavy-duty Steel	Heavy-duty steel	Heavy-duty Steel	Heavy-duty Steel
Storage	External: 5.25" External Drive Bay x 2 Internal: Up to 3.5" Drive Bay x 1 Optional: Two 3.5 HDD Bay Cage	External: 3.5" Drive Bay x 1 5.25" Drive Bay x 1 Internal: 3.5" Drive Bay x 2	External: 5.25" Drive Bay x 1 (Front Accessible) 3.5" Drive Bay x 1 (Front Accessible) Internal: 3.5" Drive Bay x 2	External: Slim CD-ROM & Disk Drive x 1 or 3.5" Disk Drive x 1 (front accessible) Internal: 3.5" Hard Disk Drive Bay or 2.5" Hard Disk Drive Bay x 1
System Fan	12cm Ball Bearing Fan with Removable Filter x 1	12cm Ball Bearing Fan with Removable Filter x 1	12cm Ball Bearing Fan with Removable Filter (Flow-in) x 1	9 cm ball Bearing Fan with removable filter (flow-in) x 1
Front Panel	Power ON/OFF Switch x 1 Reset Button x 1 Power ON LED x 1 Hard Disk Drive Active LED x 1 PS/2 Keyboard Connector x 1 USB x 2	Power ON/OFF Switch x 1 Reset Button x 1 Power LED x 1 HDD Active LED x 1 PS/2 Keyboard Connector x 1 USB Port x 2	Power On/ Off Switch with LED x 1 Reset Button x 1 Hard Disk Drive Active LED x 1 USB x 2	—
Rear Panel	I/O Bracket provided by motherboard mfg 7 slots, supports max. 312 mm (length) for expansion card	Reserved Cut-out for DB-25 Connector x 1 Reserved Cut-out for DB-9 Connector x 1 6 slots (including system slot), supports max. 339 mm (length) for expansion card	COM x 1 Parallel x 1 Reserved Cut-out for LVDS Connector x 1 6 slots (including system slot), supports max. 339 mm (length) for expansion card	COM x 1 Parallel x 1 Reserved Cut-out for LVDS Connector x 1 4 slots (including system slot), supports max. 185 mm (length) for expansion card
Expansion	—	—	—	—
Color	White	White	Black	White
Dimension (W x D x H)	7.7" (W) x 17.7" (D) x 13" (H) (196mm x 450mm x 330mm)	6.9" (W) x 16.1" (D) x 10" (H) (175mm x 405mm x 254mm)	7.7" (W) x 15.55" (D) x 8.5" (H) (196mm x 395mm x 216mm)	6.3" (W) x 9.7" (D) x 8.1" (H) (161mm x 247mm x 207mm)
Carton Dimension	11.1" (W) x 20.3" (D) x 18" (H) (281mm x 515mm x 457mm)	12.4" (W) x 14.37" (D) x 20.47" (H) (315mm x 365mm x 520mm)	12.2" (W) x 13.2" (D) x 20" (H) (310mm x 335mm x 510mm)	13.39" (W) x 10.63" (H) x 13.19" (D) (340mm x 270mm x 335mm)
Net Weight	19.8 lb (9 kg)	12.1 lb (5.5 kg)	17 lb (7.8 kg)	12.1 lb (5.5 kg)
Gross Weight	22 lb (10 kg)	13.9 lb (6.3 kg)	20 lb (9.2 kg)	13.9 lb (6.3 kg)
Environmental				
Operating Temperature	32°F ~ 122°F (0°C ~ 50°C)	32°F ~ 122°F (0°C ~ 50°C)	32°F ~ 122°F (0°C ~ 50°C)	32°F ~ 113°F (0°C ~ 45°C)
Storage Temperature	-4°F ~ 176°F (-20°C ~ 80°C)	-4°F ~ 176°F (-20°C ~ 80°C)	32°F ~ 167°F (0°C ~ 75°C)	32°F ~ 167°F (0°C ~ 75°C)
Storage Humidity	10 ~ 90% @ 40°C, non-condensing	10 ~ 80% @ 40°C, non-condensing	5 ~ 95% @ 40°C, non-condensing	10 ~ 80% @ 40°C, non-condensing
Vibration	0.5 Grms/ 5 ~ 500Hz/ operation	0.5 Grms/ 5 ~ 500Hz/ operation 1.5 Grms/ 5 ~ 500Hz/ non operation	1 Grms/ 5 ~ 500Hz/ random operation	1 Grms/ 5 ~ 500Hz/ random operation
Shock	15 G peak acceleration (11 m sec. duration), operation	15 G peak acceleration (11 m sec. duration), operation 30 G peak acceleration (11 m sec. duration), non operation	15 G peak acceleration (11 msec. duration)	15 G peak acceleration (11 msec. duration)
EMC	CE/ FCC Class A	CE/FCC Class A	CE/FCC class A	CE/FCC class A

Launching in Q4

Launching in Q4

Model	ACS-1U02	ACS-1U03
System		
Construction	—	—
Storage	—	—
System Fan	—	—
Front Panel	—	—
Rear Panel	—	—
Expansion	—	—
Color	—	—
Dimension (W x D x H)	7.68" x 7.68" x 2.68" (195mm x 195mm x 68mm)	10.04" x 8.46" x 3.5" (255mm x 230mm x 88mm)
Carton Dimension	—	—
Net Weight	—	—
Gross Weight	—	—
Environmental		
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)
Storage Temperature	-40°F ~ 158°F (-40°C ~ 70°C)	-40°F ~ 158°F (-40°C ~ 70°C)
Storage Humidity	5%~95% RH (non-condensing)	5%~95% RH (non-condensing)
Mount	VESA/Wallmount bracket	VESA/Wallmount bracket
Shock	—	—
EMC	—	—

Memo

Memo

Memo

Memo/Contact Information

Dotted lines for writing content.

Contact Information

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