

IEI Embedded Boards

IEI provides various sizes of embedded boards from Pico-ITX (100mm x 72mm) to 5.25" SBC and can meet different applications involving data acquisition, video processing, telecommunications, networking, motion control plus the associated field wiring termination, I/O circuit protection, etc. IEI embedded boards are all with rich rear I/O and multiple I/O expansion options. IEI also provides suitable chassis for our embedded boards, you can easily build feature-rich embedded systems for industrial, medical, military, transportation, and commercial applications.

IEI Embedded Single Board Computer Form Factors

Ultra compact mainboard form factor for a small footprint
Embedded PCs, Systems and Appliances



Pico-ITX
100 x 72mm
HYPER series



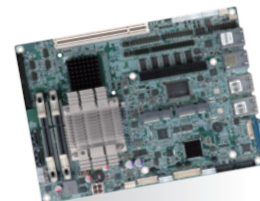
PC/104
96 x 90mm
PM series



3.5"
146 x 102mm
WAFER series



EPIC
165 x 115mm
NANO series



5.25" / EBX
203 x 146mm
NOVA series

Two Types of Thermal Solution

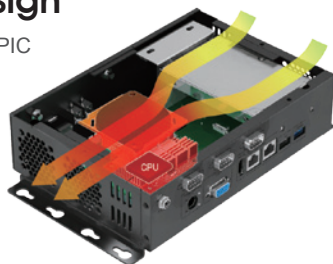
IEI provides types of thermal solution for embedded boards with high flexibility. Heatsink and heat spreader design are both with various advantages and meet the needs of different applications.

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Industrial
Computing
Solutions

■ With heatsink design

- Easy upgrading from same EPIC form factor CPU boards
- Complex I/O functions based on customers' requirements
- Small form factor
- Saves money and space with cables and shared chassis



■ With heat spreader

- Heat is spreading out from system surface
- Multiple screw mounting holes for easy chassis design
- Possibility of totally enclosed design



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Video
Capture
Solutions

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Industrial
Computer
Chassis

Embedded System Mapping





	ECN			uIBX
Embedded System				
Model	ECN-380 NANO-QM871 NANO-QM770	ECN-360A NANO-HM651 NANO-CV-D25502	ECN-581A NANO-PV-D5251	uIBX-230 HYPER-BT

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Open
Frame
Monitor

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Power Supply/
Peripherals

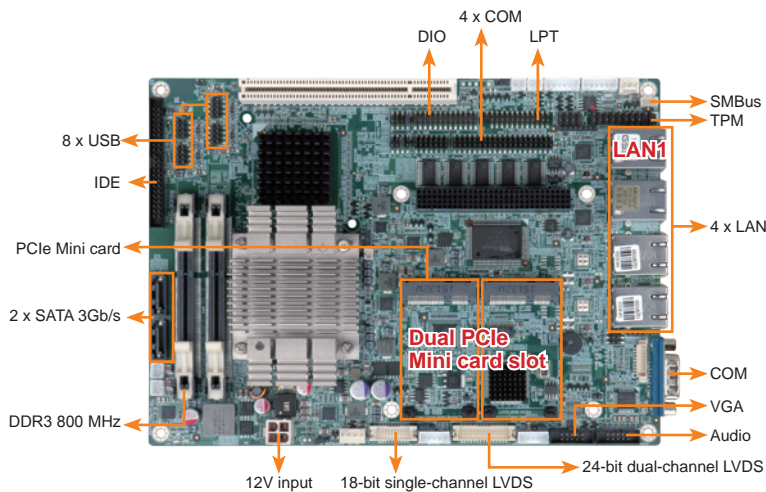
	EBC			
Embedded System				
Model	EBC-2200 NANO-BT-11 NANO-QM871-11	EBC-2100 NANO-LX	EBC-2102 NANO-PV-D5251	EBC-1100 WAFER-BT-E38001W2

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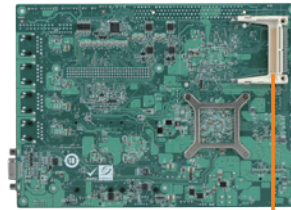
All-in-One
System

NOVA-PV-D5251

5.25" SBC, Intel® Atom™ D425/D525, DDR3, 18-bit+48-bit LVDS/VGA, Dual PCIe Mini, Quad PCIe GbE, USB 2.0, SATA 3Gb/s, Audio, RoHS



Solder side



CF Type II

Dual LVDS
4 PCIe GbE
24-bit DIO



TPM 1.2 Support

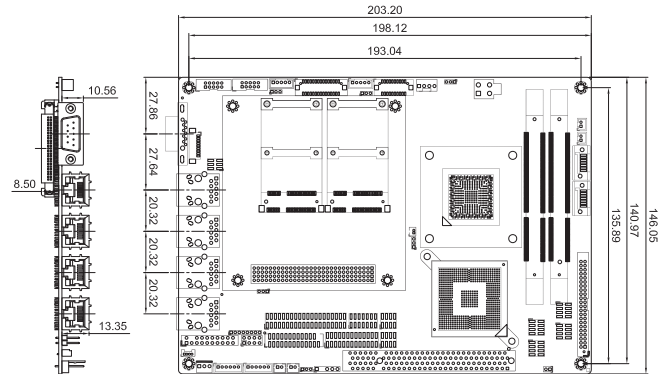
Specifications

- ◆ CPU
1.8GHz Intel® Atom™ D525 dual-core processor with 1MB L2 cache
- ◆ Chipset
Intel® ICH8M
- ◆ BIOS
UEFI BIOS
- ◆ Memory
Two 204-pin 800 MHz DDR3 SDRAM SO-DIMM supports up to 4 GB
- ◆ Ethernet
LAN1: Realtek RTL8111E PCIe GbE controller with ASF 2.0 support
LAN2~4: Realtek RTL8111E PCIe GbE controller
- ◆ Graphics
GMA 3150
Graphic core speed 400 MHz for D525
- ◆ External I/O Interface
1 x RS-232
- ◆ Internal I/O Interface
1 x CF Type II
1 x KB/MS (1x6 pin)
1 x IDE
1 x LPT (2x13 pin, P=2.0)
1 x RS-232/422/485 (2x5 pin, P=2.0) (Auto flow control)
2 x SATA 3Gb/s with 5V SATA power connector (no RAID)
3 x RS-232 for NOVA-PV-D5251-G2L2-R11 (2x5 pin, P=2.0)
4 x RS-232 for NOVA-PV-D5251-G4-R11 (2x5 pin, P=2.0)
8 x USB 2.0 (2x4 pin, P=2.0)
- ◆ TPM
1 x TPM (2x10 pin)
- ◆ SMBus
1 x SMBus (1x4 pin)
- ◆ Expansion
1 x PCI-104
2 x Full-size PCIe Mini card slot
1 x PCI
- ◆ Digital I/O
24-bit digital I/O (2x15 pin)
- ◆ Display Output
Dual display supported
1 x VGA (up to 2048x1536@60Hz)
1 x 18-bit single-channel LVDS (up to 1366x768@60Hz)
1 x 24-bit dual-channel LVDS (up to 1920x1080@60Hz)
- ◆ Audio
Realtek ALC662 HD Audio codec
1 x Front audio (2x5 pin)
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Fan Connector
1 x CPU smart fan (1x4 pin)
1 x System smart fan (1x3 pin)
- ◆ Power Supply
12V only DC input
1 x Internal power connector (2x2 pin)
Support AT/ATX mode
- ◆ Power Consumption
12V@1.46A (Intel® Atom™ D525 1.8GHz with two 800 MHz 1 GB DDR3 SO-DIMM)
- ◆ Operating Temperature
-10°C ~ 60°C
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimensions
203 mm x 146 mm
- ◆ Weight
GW: 1000g / NW: 400g

Features

- 5.25" SBC supports Intel® Atom™ D525/D425 processor
- 800/1066 MHz DDR3 supports up to 4 GB
- VGA/18-bit single-channel/24-bit dual-channel LVDS for dual independent display support
- Quad PCIe Ethernet, two SATA 3Gb/s, and six RS-232 serial port connectors
- TPM V1.2 hardware security function supported by TPM module
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Dimensions (Unit: mm)



Packing List

1 x NOVA-PV-D5251 single board computer	
1 x Audio cable	1 x VGA cable
1 x KB/MS cable	1 x Mini jumper pack
1 x Quad port RS-232 cable	1 x One Key Recovery CD
1 x SATA with power cable kit	1 x QIG
1 x USB cable	1 x Utility CD

Ordering Information

Part No.	Description
NOVA-PV-D5251-G4-R12	5.25" SBC, Intel® Atom™ D525 dual-core 1.8GHz, DDR3, 18-bit LVDS/VGA, dual PCIe Mini, quad PCIe GbE, USB 2.0, SATA 3Gb/s, audio, RoHS
NOVA-PV-D5251-G2L2-R12	5.25" SBC, Intel® Atom™ D525 dual-core 1.8GHz, DDR3, 18+48-bit LVDS/VGA, dual PCIe Mini, dual PCIe GbE, USB 2.0, SATA 3Gb/s, audio, RoHS
19FFD124010HB2A7-000001-RS	CPU fan (40mm x 40mm x 10mm)
19800-004300-100-RS	RS-232 & RS-422/485 cable with bracket, 14-pin to two DB-9, 250mm, P=2.0
32200-000009-RS	44-pin 2.5" IDE cable, 400mm, P=2.0
32200-015100-RS	LPT cable, 280mm, P=2.0
34000-000510-RS	30mm higher heatsink
TPM-IN01-R20	20-pin Infineon TPM module, software management tool, firmware v3.17

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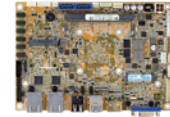
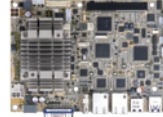
All-in-One
System

EPIC NANO Selection Guide

Preliminary



New



Model Name	NANO-AL/ALW2	NANO-ULT3	NANO-BT-11/BT-W2	NANO-SE/KBN-11
CPU Socket	On Board	On board	On board	On board
CPU Type	Intel® Atom™/Celeron®/Pentium® on-board SoC	Intel® Core™ i7/i5/i3, Celeron® ULT processor	Intel® Atom™, Celeron® SoC	AMD® Embedded G-Series SoC
Chipset	Intel® Atom™/Celeron®/Pentium® on-board SoC	Intel® Core™ i7/i5/i3, Celeron® ULT processor	Intel® Atom™/Celeron® on-board SoC	AMD® Embedded G-Series SoC
Memory	1 x 204-pin 1866/1600 MHz single-channel DDR3L SO-DIMM (system max. 8 GB)	2 x 260-pin 2133/1867 MHz dual-channel DDR4 SO-DIMMs (system max. 32 GB)	1 x 204-pin 1333/1066 MHz single-channel DDR3L SO-DIMM (system max. 8 GB)	1 x 204-pin 1600/1333 MHz single-channel DDR3 & DDR3L SO-DIMM (system max. 8 GB)
Display Interface	Triple independent display 2 x HDMI 1 x 18/24-bit dual-channel LVDS 1 x iDP	Triple independent display 2 x HDMI 1 x 18/24-bit dual-channel LVDS 1 x iDP interface	Dual display supported 1 x VGA 1 x HDMI 1 x 18/24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x HDMI 1 x 18/24-bit dual-channel LVDS
Ethernet	Dual LAN: Intel® I210-IT/I211-AT PCIe controller	LAN1: Intel® I219-LM PHY with Intel® AMT 11.0 supported LAN2: Intel® I211-AT PCIe GbE Controller	LAN1: Intel® I210-AT PCIe controller with NCSI support LAN2: Intel® I211-AT PCIe controller	LAN1: Intel® I210-AT PCIe controller with NCSI support LAN2: Intel® I211-AT PCIe controller
iRIS Remote Management Module	N/A		1 x iRIS-1010 slot	
I/O Interface	1 x PS/2 KB/MS 2 x RS-232/422/485 2 x USB 2.0 4 x RS-232 4 x USB 3.0	1 x PS/2 KB/MS 1 x RS-232/422/485 2 x RS-232 2 x USB 2.0 4 x USB 3.0	1 x PS/2 KB/MS 1 x RS-422/485 1 x USB 3.0 3 x RS-232 3 x USB 2.0	1 x PS/2 KB/MS 1 x RS-422/485 2 x USB 3.0 5 x RS-232 6 x USB 2.0
Drive Interface	2 x SATA 6G/s with 5V SATA power connector 1 x M.2 (B Key) (SATA only)	2 x SATA 6G/s with 5V SATA power connector 1 x 8 GB eMMC (optional)	2 x SATA 3Gb/s with 5V SATA power connector	2 x SATA 6G/s with 5V SATA power connector
Audio	Realtek ALC662 HD Audio codec			Realtek ALC892 HD Audio codec
Digital I/O	8-bit programmable digital I/O			
Power Consumption	12V@2.81A (Intel® Atom™ x7-E3950 CPU with one 8GB 1600MHz DDR3L memory)	12V@2.48A (Intel® Core™ i3-6100U CPU)	12V@1.52A (Intel® Atom™ Processor J1900 CPU with one 8 GB 1333 MHz DDR3L memory)	12V@1.02A (AMD GX-415GA 1.5GHz CPU with 1600 MHz 8 GB DDR3 memory)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset			
Operating Environment	Temperature Range: NANO-AL: -20°C ~ 60°C (-4°F~140°F) NANO-ALW2: -40°C ~ 85°C (-40°F~185°F) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: -20°C ~ 60°C (-4°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: NANO-BT-11: -20°C ~ 60°C (-4°F~140°F) NANO-BT-W2: -40°C ~ 85°C (-40°F~185°F) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C (32°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing
Expansion Slots	1 x Full/Half-size PCIe Mini slot (w/ Micro SIM holder)	1 x Full-size PCIe Mini card slot (with SIM holder & mSATA support) 1 x Half-size PCIe Mini card slot	1 x Full-size PCIe Mini card slot with mSATA support 1 x PCI-104 slot	1 x Full-size PCIe Mini card slot with mSATA support
CPU Cooler	Heatsink	Heat Spreader	Heatsink	GX-415GA (with heatsink) GX-210HA (with cooler)

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Industrial Computing Solutions

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Video Capture Solutions

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Industrial Computer Chassis

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Open Frame Monitor

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Power Supply/Peripherals

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All-in-One System

EPIC NANO Selection Guide



Model Name	NANO-QM871-i1	NANO-QM770	NANO-HM651	NANO-HM650
CPU Socket	On board	Socket G2	On Board	Socket G2
CPU Type	Intel® Core™ i7/i5/i3, Celeron® Mobile processor	Intel® Core™ i7/i5/i3, Celeron® Mobile processor	Intel® Celeron® 847E 1.1GHz	Intel® Core™ i7/i5/i3/Celeron® mobile processor
Chipset	Intel® QM87	Intel® QM77	Intel® HM65	Intel® HM65
Memory	1 x 204-pin 1600/1333 MHz dual-channel DDR3/DDR3L SO-DIMM (system max. 8 GB)	1 x 204-pin 1600/1333 MHz single-channel DDR3 SO-DIMM (system max. 8 GB)	2 x 204-pin 1333/1066 MHz dual-channel DDR3 SO-DIMMs (system max. 16 GB)	1 x 204-pin 1333/1066 MHz single-channel DDR3/DDR3L SO-DIMM (system max. 8 GB)
Display Interface	Dual display supported 1 x VGA 2 x HDMI 1 x 18/24-bit dual-channel LVDS	Dual display supported 1 x DVI-I 2 x HDMI 1 x 24-bit dual-channel LVDS	Dual display supported 1 x VGA 2 x HDMI 1 x 24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x HDMI 1 x 24-bit dual-channel LVDS
Ethernet	LAN1: Intel® I217-LM PHY with Intel® AMT 9.0 supported LAN2: Intel® I211-AT PCIe GbE controller	LAN1: Intel® 82583V PCIe controller LAN2: Intel® 82579 PHY with Intel® AMT 8.0 supported	Dual LAN: Realtek RTL8111E PCIe GbE controller with ASF 2.0 support	Dual Realtek RTL8111E PCIe GbE controller with ASF 2.0 support
iRIS Remote Management Module	1 x iRIS-1010 slot	N/A		
I/O Interface	1 x PS/2 KB/MS 1 x RS-422/485 2 x RS-232 2 x USB 3.0 4 x USB 2.0	1 x I ² C 1 x Infrared 1 x PS/2 KB/MS 1 x RS-422/485 1 x SMBus 1 x TPM connector 2 x RS-232 2 x USB 2.0 4 x USB 3.0	1 x I ² C 1 x PS/2 KB/MS 1 x RS-422/485 1 x SMBus 1 x TPM connector 2 x RS-232 2 x USB 3.0 4 x USB 2.0	1 x PS/2 KB/MS 1 x RS-422/485 2 x RS-232 8 x USB 2.0
Drive Interface	2 x SATA 6Gb/s with 5V SATA power connector (RAID 0, 1)	2 x SATA 6Gb/s with 5V SATA power connector (RAID 0, 1)	2 x SATA 6Gb/s with 5V SATA power connector (RAID 0, 1)	2 x SATA 6Gb/s with 5V SATA power connector (RAID 0, 1)
Audio	Realtek ALC662 HD Audio codec			
Digital I/O	8-bit programmable digital I/O			
Power Consumption	12V@3.78A (Intel® 4th Gen. 2.0GHz CPU with one 1333MHz DDR3 4 GB memory)	12V@4.89A (Intel® 1.8GHz CPU with 1333 MHz DDR3 4 GB memory)	12V@3.01A (Intel® Celeron® 847E 1.1GHz with 1333 MHz 4 GB memory)	12V@4.85A (2.6GHz Intel® Core™ i5-2540M with 1333 MHz 4 GB DDR3 DIMM)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset			
Operation Environment	Temperature Range: -10°C ~ 60°C (14°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing			
Expansion Slots	1 x Full-size PCIe Mini card slot	1 x PCIe Mini card slot with mSATA support	1 x PCIe Mini card slot with mSATA support	1 x PCIe Mini card slot with mSATA support 1 x PCI-104 slot
CPU Cooler	XCF-479B-RS / CF-989B-RS-R11	CF-989A-RS-R12 / CF-989B-RS-R11	Heat Spreader	CF-989A-RS-R12 / CF-989B-RS-R11

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All-in-One System

EPIC NANO Selection Guide



Model Name	NANO-CV-D25502/N26002	NANO-CV-D25501/N26001	NANO-PV-D5251	NANO-PV-D5252	NANO-LX-R12
CPU Socket	On Board	On Board	On board	On board	On board
CPU Type	Intel® Atom™ D2550 1.86GHz Intel® Atom™ N2600 1.6GHz	Intel® Atom™ D2550 1.86GHz Intel® Atom™ N2600 1.6GHz	Intel® Atom™ D525 1.8GHz	Intel® Atom™ D525 1.8GHz	AMD Geode™ LX800
Chipset	Intel® NM10	Intel® NM10	Intel® ICH8M	Intel® ICH8M	AMD Geode™ LX800 + AMD CS5536
Memory	1 x 204-pin 1066 MHz DDR3/ DDR3L SO-DIMM (system max. 4 GB) for D2550 1 x 204-pin 800 MHz DDR3/ DDR3L SO-DIMM (system max. 2 GB) for N2600	1 x 204-pin 1066 MHz DDR3/ DDR3L SO-DIMM (system max. 4 GB) for D2550 1 x 204-pin 800 MHz DDR3/ DDR3L SO-DIMM (system max. 2 GB) for N2600	1 x 204-pin 800 MHz 4 GB DDR3 SO-DIMM (system max. 4 GB)	1 x 204-pin 800 MHz DDR3 SO- DIMM (system max. 4 GB) for D525/D425 1 x 204-pin 800 MHz DDR3 SO- DIMM (system max. 2 GB) for N455	1 x 200-pin 400/333 MHz DDR SO-DIMM (system max. 1GB)
Display Interface	Dual display supported VGA1: Integrated in Intel® CPU VGA2: Integrated in NXP PTN3392 1 x Single-channel 18-bit (N2600)/24-bit LVDS2 (D2550)	Dual display supported 1 x VGA 1 x Single-channel 18-bit (N2600)/24-bit LVDS2 (D2550) 1 x 24-bit dual-channel LVDS 1 x HDMI	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit TTL (LVDS to TTL)
Ethernet	Dual Realtek RTL8111E PCIe GbE controller with ASF 2.0 support		Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Realtek RTL8111E PCIe GbE controller with ASF 2.0 support	10/100Mbps Realtek RTL8100C
iRIS Remote Management Module	N/A				
I/O Interface	1 x KB/MS 1 x RS-422/485 3 x RS-232 6 x USB 2.0	1 x KB/MS 1 x RS-422/485 1 x TPM connector 2 x USB 3.0 5 x RS-232 6 x USB 2.0	1 x KB/MS 1 x LPT 1 x RS-232/422/485 1 x TPM connector 4 x RS-232 8 x USB 2.0	1 x KB/MS 1 x LPT 1 x RS-232/422/485 4 x RS-232 8 x USB 2.0	1 x Infrared interface 1 x LPT 1 x PS/2 for KB/MS 1 x RS-422/485 4 x USB 2.0 6 x RS-232
Drive Interface	2 x SATA 3Gb/s	2 x SATA 3Gb/s 1 x microSD	2 x SATA 3Gb/s 1 x CF Type II	2 x SATA 3Gb/s 1 x CF Type II	2 x SATA 1.5Gb/s (RAID 0,1) 1 x IDE 1 x CF Type II
Audio	Realtek ALC662 HD Audio codec		Realtek ALC888 HD Audio codec	Realtek ALC888 HD Audio codec	Realtek ALC203 with AC'97 codec
Digital I/O	8-bit programmable digital I/O				
Power Consumption	12V@1.59A (Intel® dual core D2550 CPU with 1333 MHz 4 GB DDR3 memory) 12V@1.23A (Intel® dual core N2600 CPU with 1333 MHz 4 GB DDR3 memory)	12V@2.1A (1.86GHz Intel® D2550 CPU with DDR3 1333 MHz 2 GB DIMM) 12V@1.72A (1.6GHz Intel® N2600 CPU with DDR3 1333 MHz 2 GB DIMM)	12V@2.21A (Intel® Atom™ D525 with 2 GB 1066 MHz DDR3) 12V@2.11A (Intel® Atom™ D425 with 2 GB 1066 MHz DDR3) 12V@2.00A (Intel® Atom™ N455 with 2 GB 1066 MHz DDR3)	12V@2.16A (Intel® Atom™ D525 with 2 GB 1066 MHz DDR3) 12V@2.08A (Intel® Atom™ D425 with 2 GB 1066 MHz DDR3) 12V@1.99A (Intel® Atom™ N455 with 2 GB 1066 MHz DDR3)	12V@0.92A (AMD LX800, 256 MB 400 MHz DDR)
Watchdog Timer	Software programmable and supports 1–255 sec. system reset				
Operating Environment	-20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2550 processor -20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600 processor			Temperature Range: -10°C ~ 60°C (14°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C (32°F ~ 140°F) Relative Humidity: 5% ~ 95% non- condensing
Expansion Slots	1 x PCIe Mini card slot with mSATA support 1 x Half-size PCIe Mini card slot	1 x PCIe Mini card slot 1 x PC/104-Plus	1 x PCI-104 slot 1 x PCIe Mini card Slot	1 x PCI-104 slot 1 x PCIe Mini card slot	1 x PC/104-Plus
CPU Cooler	Heat Spreader	Heatsink	Heatsink	Heatsink	Heatsink

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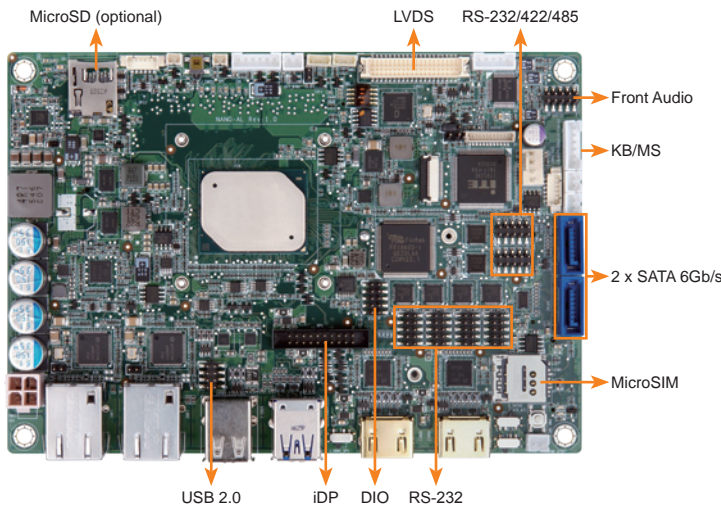
Power Supply/
Peripherals

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All-in-One
System

NANO-AL ALW2

EPIC SBC supports Intel® 14nm Generation Atom™ or Celeron® on-board SoC with Dual HDMI/LVDS/iDP, Dual PCIe GbE, USB 3.0, PCIe Mini, M.2, SATA 6Gb/s, COM, Audio and RoHS, -40°C ~ 85°C



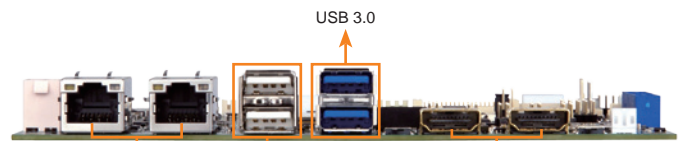
Extreme Environment

Preliminary



Specifications

- ◆ SoC
 - Intel® Atom™ E3950 on-board SoC (up to 2.0GHz, quad-core, 2M Cache, TDP=12W)
 - Intel® Atom™ E3940 on-board SoC (up to 1.8GHz, quad-core, 2M Cache, TDP=9W)
 - Intel® Atom™ E3930 on-board SoC (up to 1.8GHz, dual-core, 2M Cache, TDP=6W)
 - Intel® Pentium® N4200 on-board SoC (up to 2.5GHz, quad-core, 2M Cache, TDP=6W)
 - Intel® Celeron® N3350 on-board SoC (up to 2.4GHz, dual-core, 2M Cache, TDP=6W)
- ◆ BIOS
 - AMI UEFI BIOS
- ◆ Memory
 - One 204-pin 1866/1600MHz Dual-channel DDR3L DIMMs supports up to 8GB
- ◆ Graphics Engine
 - Intel® HD Graphics Gen9 Low Power, 18 Execution Units
 - 4K Codec Decode & Encode for HEVC 4 , H.264, VP8, SVC, MVC
- ◆ Display Output
 - Triple Independent Displays
 - 1 x 18/24-bit dual-channel LVDS (up to 1920x1200@60Hz)
 - 2 x HDMI (up to 3840x2160 @ 30Hz)
 - 1 x iDP interface for HDMI. LVDS, VGA, DVI, DP (up to 4096x2304@60Hz) (colay with HDMI1)
- ◆ Ethernet
 - Intel® I211-AT PCIe controller
- ◆ External I/O Interface
 - 2 x USB 3.0
 - 2 x USB 2.0
- ◆ Internal I/O Interface
 - 1 x KB/MS (1x6 pin) 2 x USB 2.0 (2x4 pin, P=2.0)
 - 2 x RS-232/422/485 (2x5 pin, P=2.0) 4 x RS-232 (2x5 pin, P=2.0)
 - 2 x SATA 6G/s with 5V SATA power connector (no RAID)
- ◆ SMBus
 - 1 x SMBus (1x4 pin)
- ◆ I²C
 - 1 x I²C (1x4 pin)
- ◆ Audio
 - Realtek ALC662 HD codec
 - 1 x Front audio (2x5 pin)
- ◆ Front Panel
 - 1 x Power LED & HDD LED (1x6 pin)
 - 1 x Power button (1x2 pin)
 - 1 x Reset button (1x2 pin)
- ◆ LAN LED
 - 2 x LAN LED (1x2 pin)
- ◆ Expansion
 - 1 x Full/Half-size PCIe Mini slot (with SIM holder)
 - 1 x M.2 2242 (B key, SATA, USB 2.0, USB 3.0 signal only)
 - 1 x Micro SD (Optional)
- ◆ Digital I/O
 - 8-bit digital I/O (2x5 pin)
- ◆ Fan Connector
 - 1 x Smart fan connector (1x4 pin)
- ◆ Power Supply
 - 9V~30V DC input
 - 1 x Internal power connector (2x2 pin)
 - Support AT/ATX mode
- ◆ Watchdog Timer
 - Software programmable support 1~255 sec. system reset
- ◆ Power Consumption
 - 12V@2.81A (Intel® Atom™ x7-E3950 CPU with one 8GB 1600MHz DDR3L memory)
- ◆ Operating Temperature: -20°C ~ 60°C / -40°C ~ 85°C (NANO-AL-ExW2)
- ◆ Storage Temperature: -40°C ~ 85°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 115mm x 165mm
- ◆ Weight: GW: 850g / NW: 350g



DDR3L

Fanless

Jumper-less

M.2/NGFF

USB 3.0

SATA 6Gb/s

Extreme Environment

One Key Recovery

Features

- ◆ EPIC SBC supports Intel® 14nm Generation Atom™, Celeron® or Petium® on-board SoC supports dual-channel DDR3L SO-DIMMs
- ◆ Triple independent display support
- ◆ Wide range 9V~30V DC input design
- ◆ COM, USB 3.0, SATA 6Gb/s, M.2 and audio support
- ◆ Support wide temperature operation: -40°C ~ 85°C

Packing List

1 x NANO-AL single board computer with Heatsink	1 x One key recovery CD
1 x SATA with power cable kit	1 x QIG
1 x RS-232 cable	1 x Utility CD

Ordering Information

Part No.	Description
NANO-AL-N2-R10	EPIC SBC supports Intel® 14nm quad-core Pentium® N4200 2.5GHz on-board SoC with Dual HDMI/LVDS/iDP, Dual PCIe GbE, USB 3.0, PCIe Mini, M.2, SATA 6Gb/s, COM, Audio and RoHS
NANO-AL-N1-R10	EPIC SBC supports Intel® 14nm dual-core Celeron® N3350 2.3GHz on-board SoC with Dual HDMI/LVDS/iDP, Dual PCIe GbE, USB 3.0, PCIe Mini, M.2, SATA 6Gb/s, COM, Audio and RoHS
NANO-AL-E3W2-R10**	EPIC SBC supports Intel® 14nm quad-core Atom™ E3950 2.0GHz on-board SoC with Dual HDMI/LVDS/iDP, Dual PCIe GbE, USB 3.0, PCIe Mini, M.2, SATA 6Gb/s, COM, Audio and RoHS, -40°C ~ 85°C
NANO-AL-E2W2-R10	EPIC SBC supports Intel® 14nm quad-core Atom™ E3940 1.8GHz on-board SoC with Dual HDMI/LVDS/iDP, Dual PCIe GbE, USB 3.0, PCIe Mini, M.2, SATA 6Gb/s, COM, Audio and RoHS, -40°C ~ 85°C
NANO-AL-E1W2-R10	EPIC SBC supports Intel® 14nm dual-core Atom™ E3930 1.8GHz on-board SoC with Dual HDMI/LVDS/iDP, Dual PCIe GbE, USB 3.0, PCIe Mini, M.2, SATA 6Gb/s, COM, Audio and RoHS, -40°C ~ 85°C
32000-070301-RS	Dual-port USB cable, 210mm, P=2.0
32000-023800-RS	PS/2 KB/MS cable, 135mm, P=2.0

**By order production, MOQ: 100

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Industrial Computer Chassis

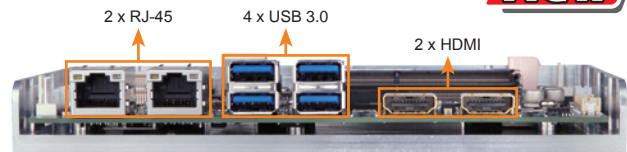
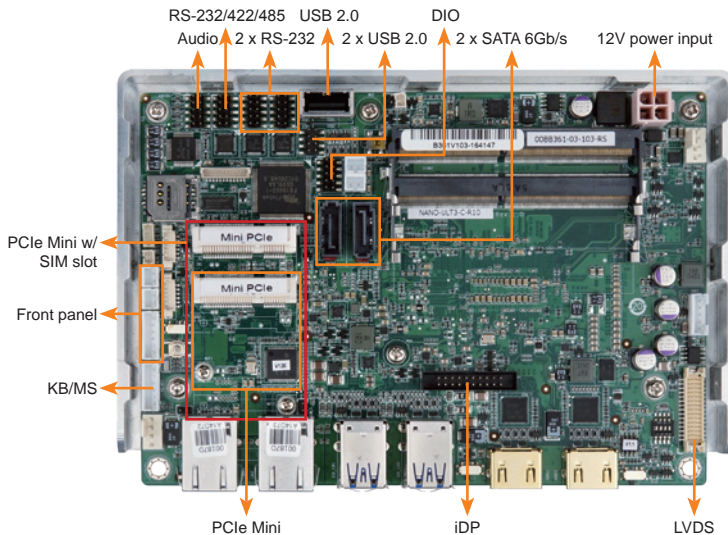
4 Open Frame Monitor

5 Power Supply/ Peripherals

6 All-in-One System

NANO-ULT3

EPIC SBC supports Intel® 14nm 6th Generation Mobile Core™ i7/i5/i3 and Celeron® on-board Processor (ULT) with HDMI/LVDS/iDP, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 6Gb/s, mSATA, COM, Audio and RoHS



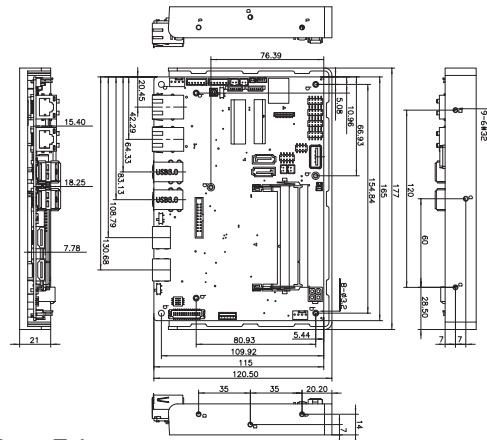
Features

- EPIC SBC with 6th generation Intel® ULT processor supports dual-channel DDR4 SO-DIMMs
- Triple independent display support
- Easy assembly heat spreader for thermal management
- Full-size PCIe Mini slot with SIM sockets for 3G/LTE expansion
- COM, USB 3.0, SATA 6Gb/s, mSATA, eMMC 5.0 and audio support
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ SoC
 - 6th generation Intel® mobile ULT on-board SoC
 - Intel® Core™ i7-6600U (up to 3.4GHz, dual-core, 4MB cache, TDP=15W)
 - Intel® Core™ i5-6300U (up to 3.0GHz, dual-core, 3MB cache, TDP=15W)
 - Intel® Core™ i3-6100U (up to 2.3GHz, dual-core, 3MB cache, TDP=15W)
 - Intel® Celeron® processor 3955U (up to 2.0GHz, dual-core, 2MB cache, TDP=15W)
 - Intel® Celeron® processor 3855U (up to 1.6GHz, dual-core, 2MB cache, TDP=15W)
- ◆ BIOS
 - AMI UEFI BIOS
- ◆ Memory
 - Two 260-pin 2133/1866 MHz dual-channel DDR4 non-ECC unbuffered SO-DIMMs support up to 32GB
- ◆ Graphics Engine
 - Intel® HD Graphics Gen 9 Engine with 16 low-power execution units, supporting DX11/12, OpenCL 4.3/4.4 and OpenCL2.x, ES 2.0
- ◆ Display Output
 - Triple independent display
 - 2 x HDMI (up to 4096x2160@24Hz)
 - 1 x 18/24-bit dual-channel LVDS (up to 1920x1200@60Hz)
 - 1 x iDP interface for HDMI, LVDS, VGA, DVI, DP (up to 4096 x 2304@60Hz) (colay with HDMI1)
- ◆ Ethernet
 - LAN1: Intel® I219-LM PHY with Intel® AMT 11.0 supported
 - LAN2: Intel® I211-AT PCIe GbE controller
- ◆ External I/O Interface
 - 4 x USB 3.0
- ◆ Internal I/O Interface
 - 1 x 8 GB eMMC (optional)
 - 1 x USB 2.0 (180° Type-A)
 - 1 x KB/MS (1x6 pin)
 - 2 x USB 2.0 (2x4 pin, P=2.0)
 - 1 x RS-232/422/485 (2x5 pin, P=2.0)
 - 2 x RS-232 (2x5 pin, P=2.0)
 - 2 x SATA 6G/s with 5V SATA power connector (no RAID)
- ◆ SMBus
 - 1 x SMBus (1x4 pin)
- ◆ Audio
 - Realtek ALC662 HD codec
 - 1 x Front audio (2x5 pin)
- ◆ Front panel
 - 1 x Power LED & HDD LED (1x6 pin)
 - 1 x Power button (1x2 pin)
 - 1 x Reset button (1x2 pin)
- ◆ LAN LED
 - 2 x LAN LED (1x2 pin)
- ◆ Expansion
 - 1 x Full-size PCIe Mini card slot (with SIM holder & mSATA support)
 - 1 x Half-size PCIe Mini card slot
- ◆ Digital I/O
 - 8-bit digital I/O (2x5 pin)
- ◆ Fan Connector
 - 1 x CPU fan connector (1x4 pin)
 - 1 x System fan connector (1x4 pin)
- ◆ Power Supply
 - 12V only DC input
 - 1 x Internal power connector (2x2 pin)
 - Support AT/ATX mode
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset
- ◆ Power Consumption
 - 12V@2.48A (Intel® Core™ i3-6100U CPU with two 8 GB memory)
- ◆ Operating Temperature: -20°C ~ 60°C
- ◆ Storage Temperature: -30°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 115mm x 165mm
- ◆ Weight: GW: 850g / NW: 350g

Dimensions (Unit: mm)



Packing List

1 x NANO-ULT3 single board computer with heatspreader	1 x Audio cable
1 x Power cable	1 x One Key Recovery CD
1 x RS-232 cable	1 x QIG
1 x SATA with power cable kit	1 x Utility CD

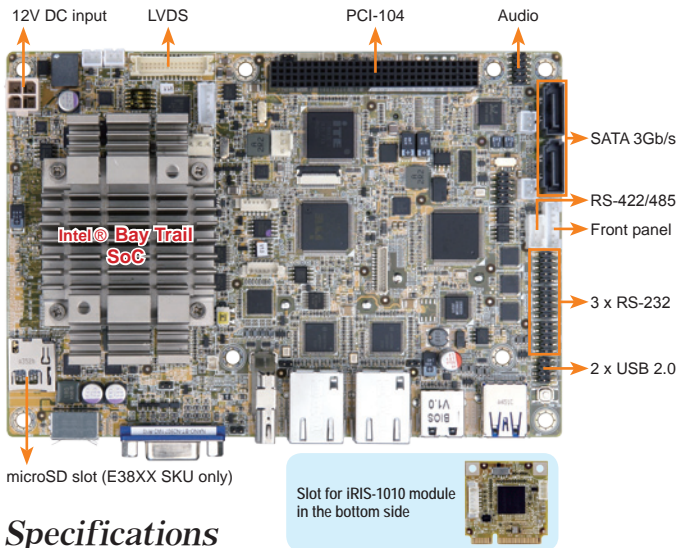
Ordering Information

Part No.	Description
NANO-ULT3-i7-R10	EPIC SBC supports Intel® 14nm 6th Generation Mobile Core™ i7-6600U (15W) on-board Processor (ULT) with HDMI/LVDS/iDP, Dual PCIe GbE, USB 3.0, Dual PCIe Mini, SATA 6Gb/s, mSATA, COM, Audio and RoHS
NANO-ULT3-i5-R10	EPIC SBC supports Intel® 14nm 6th Generation Mobile Core™ i5-6300U (15W) on-board Processor (ULT) with HDMI/LVDS/iDP, Dual PCIe GbE, USB 3.0, Dual PCIe Mini, SATA 6Gb/s, mSATA, COM, Audio and RoHS
NANO-ULT3-i3-R10	EPIC SBC supports Intel® 14nm 6th Generation Mobile Core™ i3-6100U (15W) on-board Processor (ULT) with HDMI/LVDS/iDP, Dual PCIe GbE, USB 3.0, Dual PCIe Mini, SATA 6Gb/s, mSATA, COM, Audio and RoHS
NANO-ULT3-C-R10	EPIC SBC supports Intel® 14nm 6th Generation Mobile Celeron® 3955U (15W) on-board Processor (ULT) with HDMI/LVDS/iDP, Dual PCIe GbE, USB 3.0, Dual PCIe Mini, SATA 6Gb/s, mSATA, COM, Audio and RoHS
NANO-ULT3-CE-R10*	EPIC SBC supports Intel® 14nm 6th Generation Mobile Celeron® 3855U (15W) on-board Processor (ULT) with HDMI/LVDS/iDP, Dual PCIe GbE, USB 3.0, Dual PCIe Mini, SATA 6Gb/s, mSATA, COM, Audio and RoHS
32000-023800-RS	PS/2 KB/MS cable, 135mm/110mm, P=2.0
32001-008600-200-RS	Dual-port USB cable, 210mm, P=2.0

*Without full functions support, please refer to user manual.

NANO-BT-W2 BT-i1

EPIC SBC supports 22nm Intel® Atom™/Celeron® on-board SoC with VGA, HDMI, LVDS, Dual Intel® PCIe GbE, USB 3.0, Dual PCIe Mini, SATA 3Gb/s, mSATA, COM, Audio and RoHS

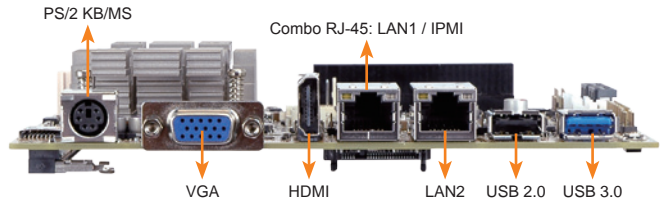


Specifications

- ◆ SoC
 - Intel® Atom™ E3845 on-board SoC (1.91GHz, quad-core, 2MB cache, TDP=10W)
 - Intel® Atom™ E3827 on-board SoC (1.75GHz, dual-core, 1MB cache, TDP=8W)
 - Intel® Atom™ E3826 on-board SoC (1.46GHz, dual-core, 1MB cache, TDP=7W)
 - Intel® Atom™ E3825 on-board SoC (1.33GHz, dual-core, 1MB cache, TDP=6W)
 - Intel® Atom™ E3815 on-board SoC (1.46GHz, single-core, 512KB cache, TDP=5W)
 - Intel® Celeron® J1900 on-board SoC (2GHz, quad-core, 2MB cache, TDP=10W)
 - Intel® Celeron® N2930 on-board SoC (1.83GHz, quad-core, 2MB cache, TDP=7.5W)
 - Intel® Celeron® N2807 on-board SoC (1.58GHz, dual-core, 2MB cache, TDP=4.3W)
- ◆ BIOS: AMI UEFI BIOS
- ◆ Memory
 - One 204-pin 1333/1066 MHz single-channel unbuffered DDR3L SDRAM SO-DIMM supports up to 8 GB (J1900, N2930, E3845, E3827, E3826) or 4 GB (N2807, E3825, E3815)
- ◆ Graphics Engine
 - Intel® HD Graphics Gen 7 Engine with four execution units, supporting DX11.1, OpenGL 4.2 and OpenCL 1.2
- ◆ Display Output
 - Dual independent display
 - 1 x VGA (up to 2560x1600@60 Hz)
 - 1 x HDMI (up to 1920x1080@60 Hz)
 - 1 x 18/24-bit dual-channel LVDS (up to 1920x1200@60Hz)
- ◆ Ethernet
 - » NANO-BT-i1
 - LAN1: Intel® I210-AT PCIe controller with NCSI support
 - LAN2: Intel® I211-AT PCIe controller
 - » NANO-BT-E38XX1W2
 - LAN1: Intel® I210-IT PCIe controller with NCSI support
 - LAN2: Intel® I210-IT PCIe controller
- ◆ External I/O Interface
 - 1 x PS/2 KB/MS
 - 1 x USB 2.0
 - 1 x USB 3.0
- ◆ Internal I/O Interface
 - 1 x RS-422/485 (1x4 pin, P=2.0)
 - 2 x SATA 3Gb/s with 5V SATA power connector (no RAID)
 - 2 x USB 2.0 (2x4 pin, P=2.0)
 - 3 x RS-232 (2x5 pin, P=2.0)
- ◆ iRIS Remote Management Module: 1 x iRIS-1010 slot
- ◆ SMBus: 1 x SMBus (1x4 pin)
- ◆ Audio
 - Realtek ALC662 HD Audio codec
 - 1 x Front audio (2x5 pin)
- ◆ Front Panel
 - 1 x Power LED & HDD LED (1x6 pin)
 - 1 x Power button (1x2 pin)
 - 1 x Reset button (1x2 pin)
- ◆ LAN LED: 2 x LAN LED (1x2 pin)
- ◆ Expansion
 - 1 x Full-size PCIe Mini card slot (support mSATA co-lay SATA port 2)
 - 1 x PCI-104 slot (PCI signal)
 - 1 x microSD slot (E38XX SKU only)
- ◆ Digital I/O: 8-bit digital I/O (2x5 pin)
- ◆ Fan Connector
 - 1 x CPU smart fan (1x3 pin)
 - 1 x System smart fan (1x3 pin)
- ◆ Power Supply
 - 12V only DC input
 - 1 x Internal power connector (2x2 pin)
 - Support AT/ATX mode
- ◆ Power Consumption
 - 12V@1.52A (Intel® Atom™ processor J1900 with one 8 GB 1333 MHz DDR3 memory)
- ◆ Watchdog Timer: Software programmable, support 1~255 sec. system reset
- ◆ Operating Temperature: -20°C ~ 60°C, -40°C ~ 85°C (NANO-BT-E38XX1W2)
- ◆ Storage Temperature: -30°C ~ 70°C, -40°C ~ 85°C (NANO-BT-E38XX1W2)
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 115mm x 165mm
- ◆ Weight: GW: 850g / NW: 350g

Highly efficient and power optimized multi-format codec engine

- ◆ Full HW Acceleration for Video Decoding
 - H.264, VC1 MPEG2, MVC, VP8, MPEG-4/H.263 MJPEG formats



Features

- ◆ EPIC SBC supports 22nm Intel® Atom™ or Celeron® on-board SoC
- ◆ Supports dual independent display with LVDS, VGA and HDMI
- ◆ 1.35V DDR3L 1333/1066 MHz SDRAM support up to 8 GB
- ◆ Support IPMI 2.0 with iRIS-1010 module
- ◆ IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

1 x NANO-BT single board computer with heatsink	
1 x Power cable	1 x One Key Recovery CD
2 x RS-232 cable	1 x QIG
2 x SATA with power cable kit	1 x Utility CD

Ordering Information

Part No.	Description
NANO-BT-E38451W2-R11	EPIC SBC supports Intel® 22nm quad-Core Atom™ E3845 1.91GHz (10W) on-board SoC with VGA/HDMI/LVDS, Dual PCIe GbE, USB 3.0, Dual PCIe Mini, SATA 3Gb/s, mSATA, COM, audio and RoHS, -40~85°C
NANO-BT-E38XX1W2-R11**	EPIC SBC supports Intel® 22nm single-Core Atom™ E381XX on-board SoC with VGA/HDMI/LVDS, Dual PCIe GbE, USB 3.0, Dual PCIe Mini, SATA 3Gb/s, mSATA, COM, audio and RoHS, -40~85°C
NANO-BT-i1-J19001-R11	EPIC SBC supports Intel® 22nm quad-core J1900 2.0GHz (10W) on-board SoC with VGA/HDMI/LVDS, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 3Gb/s, mSATA, COM, iRIS-1010, Audio and RoHS
NANO-BT-i1-N29301-R11	EPIC SBC supports Intel® 22nm quad-core N2930 1.83GHz (7.5W) on-board SoC with VGA/HDMI/LVDS, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 3Gb/s, mSATA, COM, iRIS-1010, Audio and RoHS
NANO-BT-i1-N28071-R11	EPIC SBC supports Intel® 22nm dual-core N2807 1.58GHz (4.3W) on-board SoC with VGA/HDMI/LVDS, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 3Gb/s, mSATA, COM, iRIS-1010, Audio and RoHS
NANO-BT-i1-E38XX1-R11**	EPIC SBC supports Intel® Atom™ E38XX on-board SoC with VGA/HDMI/LVDS, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 3Gb/s, mSATA, COM, iRIS-1010, Audio and RoHS
NANO-BT-J19001-ECO-R10	Intel® 22nm Quad-Core J1900 2.0GHz (10W) on-board SoC with VGA/HDMI/LVDS, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA, mSATA, COM, Audio, ECO packing and RoHS (10 pcs/pack)
iRIS-1010-R10	IPMI 2.0 adapter card with AST1010 BMC chip (w/o KVM over IP function) for PCIe Mini socket interface
32001-008600-200-RS	Dual-port USB 2.0 cable, 210mm, P=2.0
32006-000300-100-RS	PS/2 KB/MS Y-cable without bracket, 140mm/120mm
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0

**By order production, MOQ: 100

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Industrial Computer Chassis

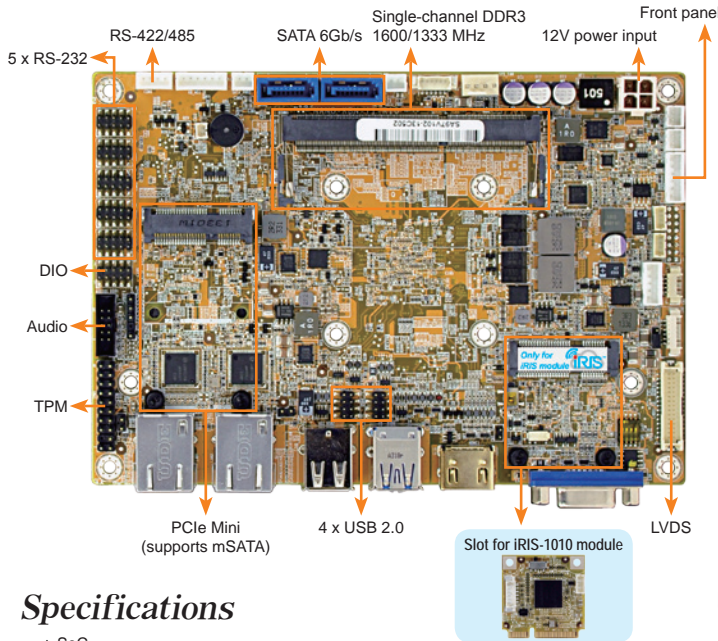
4 Open Frame Monitor

5 Power Supply/Peripherals

6 All-in-One System

NANO-SE-i1 KBN-i1

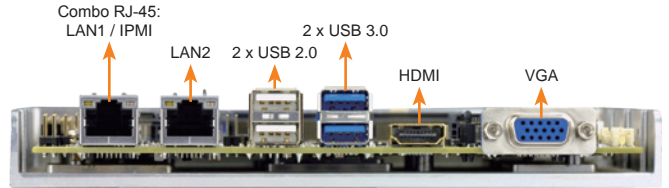
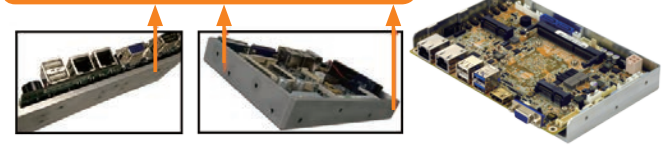
EPIC SBC supports AMD® Embedded G-Series SoC with VGA/HDMI/LVDS, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 6Gb/s, mSATA, COM, iRIS-1010, HD Audio and RoHS



Lower thermal design power with high performance

- Upgraded AMD® Embedded G-Series SoC provides lower TDP and higher overall performance-per-watt
- Integrated AMD's next generation graphics core architecture for discrete-class graphic processing
- Available in dual or quad-core processor
- Integrated security solution to protect system at the hardware level

Multiple screw mounting holes provide flexibility for all thermal solutions.



Specifications

- ◆ SoC
 - » AMD® Embedded G-Series "Steppe Eagle" SoC
 - GX-424CC on-board Soc (2.4GHz, quad-core, 2MB cache, TDP=25W)
 - GX-412HC on-board Soc (1.2GHz, quad-core, 2MB cache, TDP=7W)
 - GX-212JC on-board Soc (1.2GHz, dual-core, 1MB cache, TDP=6W)
 - GX-411GA on-board Soc (1.0GHz, quad-core, 2MB cache, TDP=15W)
 - GX-209HA on-board Soc (1.0GHz, dual-core, 1MB cache, TDP=9W)
 - » AMD® Embedded G-Series "eKabini" SoC
 - GX-415GA on-board Soc (1.5GHz, quad-core, 2MB cache, TDP=15W)
 - GX-210HA on-board Soc (1.0GHz, dual-core, 1MB cache, TDP=9W)
 - GX-420CA on-board Soc (2.0GHz, quad-core, 2MB cache, TDP=25W)
 - GX-217GA on-board Soc (1.65GHz, dual-core, 1MB cache, TDP=15W)
- ◆ BIOS: AMI UEFI BIOS
- ◆ Memory
 - One 204-pin 1600/1333 MHz single-channel DDR3 & DDR3L SDRAM unbuffered SO-DIMM slot supports up to 8 GB
- ◆ Graphics Engine
 - Support DX11.1, OpenGL 4.1 and OpenCL1.2
 - UVD4.2 decode for H.264, MPEG2/4, VC1, MVC
 - VCE 2.0 encode for H.264, VCE
- ◆ Display Output
 - Dual independent display
 - 1 x VGA (up to 2048x1536@60Hz)
 - 1 x HDMI (up to 3840x2160@60Hz)
 - 1 x 18/24-bit dual-channel LVDS (up to 1920x1200@60Hz)
- ◆ Ethernet
 - LAN1: Intel® I210-AT PCIe controller with NCSI support
 - LAN2: Intel® I211-AT PCIe controller
- ◆ External I/O Interface
 - 2 x USB 2.0
 - 2 x USB 3.0
- ◆ Internal I/O Interface
 - 1 x KB/MS (1x6 pin)
 - 1 x RS-422/485 (1x4 pin, P=2.0)
 - 5 x RS-232 (2x5 pin, P=2.0)
 - 2 x SATA 6Gb/s with 5V SATA power connector (no RAID)
- ◆ iRIS Remote Management Module: 1 x iRIS-1010 slot
- ◆ TPM: 1 x TPM (2x10 pin)
- ◆ SMBus: 1 x SMBus (1x4 pin)
- ◆ I²C: 1 x I²C (1x4 pin)
- ◆ Audio
 - Realtek ALC892 HD Audio codec
 - 1 x Front audio (2x5 pin)
 - 1 x S/PDIF (1x4 pin)
- ◆ Front Panel
 - 1 x Power LED & HDD LED (1x6 pin)
 - 1 x Power button (1x2 pin)
 - 1 x Reset button (1x2 pin)
- ◆ LAN LED: 2 x LAN LED (1x2 pin)
- ◆ Expansion: 1 x Full-size PCIe Mini card slot (supports mSATA co-lay SATA port 2)
- ◆ Watchdog Timer: Software programmable, support 1~255 sec. system reset
- ◆ Digital I/O: 8-bit digital I/O (2x5 pin)
- ◆ Fan Connector: 1 x System smart fan (1x4 pin)
- ◆ Power Supply
 - 12V only DC input
 - 1 x Internal power connector (2x2 pin)
 - Support AT/ATX mode
- ◆ Power Consumption
 - 12V@1.02A (AMD GX-415GA 1.5GHz CPU with 1600 MHz 8 GB DDR3 memory)
- ◆ Operating Temperature: 0°C ~ 60°C
- ◆ Storage Temperature: -10°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 115mm x 165mm
- ◆ Weight: GW: 850g / NW: 350g



Features

- EPIC SBC supports AMD® Embedded G-Series SoC
- Dual independent display support
- 1.35V DDR3L 1600/1333 MHz SDRAM supports up to 8 GB
- HD Audio supported by S/PDIF
- Support IPMI 2.0 with iRIS-1010 module
- COM, USB 3.0, SATA 6Gb/s PCIe Mini, mSATA and audio supported
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

1 x NANO-KBN/SE-i1 single board computer with heatspreader	
1 x Audio cable	
1 x Power cable	1 x One Key Recovery CD
2 x RS-232 cable	1 x QIG
2 x SATA with power cable kit	1 x Utility CD

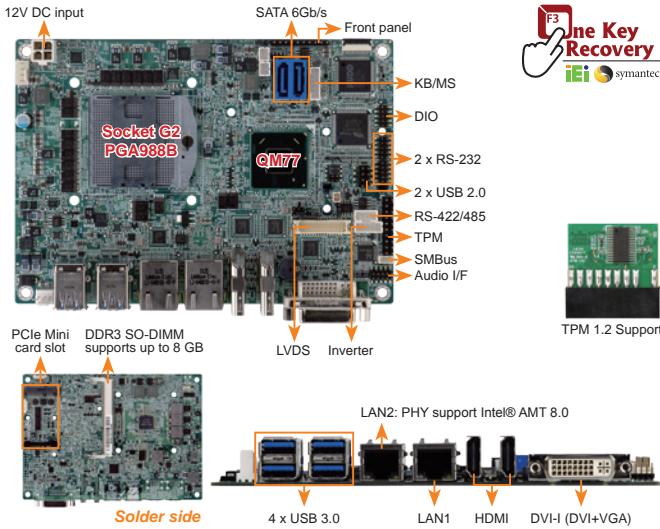
Ordering Information

Part No.	Description
NANO-SE-i1-4241-R10	EPIC SBC supports AMD® 28nm quad core GX-424CC 2.4GHz (25W) on-board SoC with VGA/HDMI/LVDS, Dual PCIe GbE, USB 3.0, Dual PCIe Mini, SATA 6Gb/s, mSATA, COM and Audio, iRIS-1010 and RoHS
NANO-KBN-i1-4151-R10	EPIC SBC supports AMD 28nm quad-core GX-415GA 1.5GHz (15W) on-board SoC with VGA/HDMI/LVDS, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 6Gb/s, mSATA, COM, iRIS-1010, HD Audio and RoHS
NANO-KBN-i1-2101-R10	EPIC SBC supports AMD 28nm dual-core GX-210HA 1.0GHz (9W) on-board SoC with VGA/HDMI/LVDS, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 6Gb/s, mSATA, COM, iRIS-1010, HD Audio and RoHS
iRIS-1010-R10	IPMI 2.0 adapter card with AST1010 BMC chip (w/o KVM over IP function) for PCIe Mini socket interface
32000-023800-RS	PS/2 KB/MS cable, 135mm/110mm, P=2.0
32001-008600-200-RS	Dual-port USB cable, 210mm, P=2.0
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
TPM-IN01-R20	20-pin Infineon TPM module, software management tool, firmware v3.17

Note: Models with other CPUs not listed in the table are requested by MOQ - 100 pcs/lot.

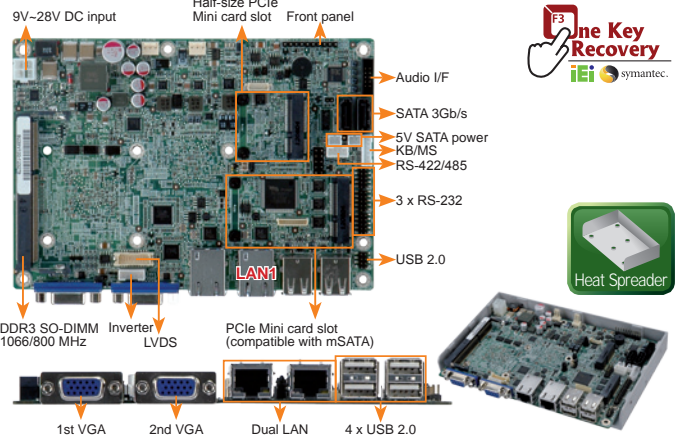
NANO-QM770

EPIC SBC Supports Socket G2 for Intel® 22nm Mobile CPU, DVI-I/Dual HDMI/LVDS, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 6Gb/s and Audio



NANO-CV-D25502/N26002

EPIC SBC with Intel® Atom™ D2550 1.86GHz/ N2600 1.6GHz, DDR3, Dual VGA/LVDS, Dual GbE, USB 2.0, Dual PCIe Mini, SATA 3Gb/s, mSATA and Audio



Features

- EPIC SBC with Socket G2 for Intel® 22nm mobile processor
- Triple independent display supports with dual HDMI+DVI/dual HDMI+LVDS (HDMI V1.3a compliant)
- 1066/1333/1600 MHz DDR3 SDRAM supports up to 8 GB
- Supports three COM, four USB 3.0, two SATA 6Gb/s and audio
- Intel® GbE LAN with Intel® AMT 8.0 supported
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU: Socket G2 for 3rd generation 22nm Intel® mobile processor
- ◆ Chipset: Intel® QM77
- ◆ BIOS: UEFI BIOS
- ◆ Memory: One 204-pin 1600/1333 MHz single-channel DDR3 & DDR3L SDRAM unbuffered SO-DIMM slot supports up to 8 GB
- ◆ Graphics: Intel® HD Graphics Gen 7 with 12 execution units DirectX 11, OpenGL 3.1, OpenCL 1.1
- ◆ Display Output: 1 x DVI-I (up to 2048x1536@75Hz), 1 x 18/24-bit dual-channel LVDS (up to 1920x1200@60Hz), 2 x HDMI (up to 1920x1200@60Hz)
- ◆ Ethernet: LAN1: Intel® 82583V PCIe controller, LAN2: Intel® 82579 PHY with Intel® AMT 8.0 support
- ◆ External I/O Interface: 4 x USB 3.0
- ◆ Internal I/O Interface: 1 x KB/MS (1x6 pin), 2 x USB 2.0 (2x4 pin, P=2.54), 1 x RS-422/485 (1x4 pin, P=2.0), 2 x RS-232 (2x5 pin, P=2.0), 2 x SATA 6G/s with 5V SATA power connector (RAID 0, 1 supported)
- ◆ TPM: 1 x TPM (2x10 pin)
- ◆ Audio: Realtek ALC662 HD codec, 1 x Front audio (2x5 pin)
- ◆ Front Panel: 1 x Front panel (1x10 pin)
- ◆ Expansion: 1 x Full-size PCIe Mini card slot (supports mSATA)
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Programmable I/O: 8-bit digital I/O
- ◆ Fan Connector: 1 x CPU smart fan (1x4 pin), 1 x System smart fan (1x3 pin)
- ◆ Power Supply: 12V only DC input, 1 x Internal power connector (2x2 pin), Support AT/ATX mode
- ◆ Power Consumption: 12V@4.89A (Intel® 1.8GHz CPU with one 1333 MHz 4 GB DDR3 SO-DIMM)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Storage Temperature: -20°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 115 mm x 165 mm
- ◆ Weight: GW: 850g / NW: 350g

Packing List

1 x NANO-QM770 single board computer	
1 x Audio cable	1 x Mini jumper pack
1 x Power cable	1 x One Key Recovery CD
2 x RS-232 cable	1 x QIG
2 x SATA with power cable kit	1 x Utility CD

Ordering Information

Part No.	Description
NANO-QM770-R10	EPIC SBC supports Socket G2 for Intel® 22nm mobile CPU, DVI-I/dual HDMI/LVDS, dual PCIe GbE, USB 3.0, PCIe Mini, SATA 6Gb/s and Audio
32000-023800-RS	PS/2 KB/MS cable, 135mm/110mm, P=2.0
32000-044300-RS	Dual port USB cable, 210mm, P=2.54
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
CF-989A-RS-R12	CPU cooler for mobile socket-G (PGA988) up to 55W processor, copper, 60 x 60 x 27.6mm, RoHS
TPM-IN01-R20	20-pin Infineon TPM module, software management tool, firmware v3.17

Features

- EPIC form factor with Intel® Atom™ dual core D2550 1.86GHz/N2600 1.6GHz processor supporting DDR3 memory
- Dual display support by dual VGA and 18/24-bit single-channel LVDS
- 1066/800MHz DDR3 SO-DIMM supports up to 4 GB
- Easy assembly heat spreader for thermal management
- Wide power voltage range supports 9V ~ 28V power input
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU: Intel® Atom™ D2550 (1.86GHz, dual-core, 1MB cache), Intel® Atom™ N2600 (1.6GHz, dual-core, 1MB cache), Intel® Atom™ N2800 (1.86GHz, dual-core, 1MB cache)
- ◆ Chipset: Intel® NM10
- ◆ BIOS: UEFI BIOS
- ◆ Memory: One 204-pin 1066/800 MHz DDR3 SDRAM SO-DIMM slot supports up to 4 GB (D2550/N2800) or 2 GB (N2600)
- ◆ Graphics Engine: GMA 3650 at 640 MHz graphics core speed (for N2550 and N2800), GMA 3600 at 400 MHz graphics core speed (for N2600)
- ◆ Display Output: VGA1 integrated in the CPU (up to 1920x1200@60Hz), VGA2 driver via the NXP PTN3392 (up to 1920x1200@60Hz), 24-bit single-channel LVDS (D2550) (up to 1440x900@60Hz), 18-bit single-channel LVDS (N2600/N2800) (up to 1366x768@60Hz)
- ◆ Ethernet: Dual PCIe LAN controller by Realtek RTL8111E with ASF 2.0 support
- ◆ Audio: Realtek ALC662 HD Audio codec, 1 x Front audio (2x5 pin)
- ◆ Digital I/O: 8-bit digital I/O (2x5 pin)
- ◆ External I/O Interface: 4 x USB 2.0
- ◆ Internal I/O Interface: 1 x KB/MS (1x6 pin), 1 x RS-422/485 (1x4 pin, P=2.0), 2 x SATA 3Gb/s with 5V SATA power connector, 2 x USB 2.0 (2x4 pin, P=2.0), 3 x RS-232 (2x5 pin, P=2.0)
- ◆ Expansion: 1 x Full-size PCIe Mini card slot (supports mSATA, co-lay with SATA1), 1 x Half-size PCIe Mini card slot
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Fan Connector (smart fan support): 1 x CPU smart fan (1x3 pin), 1 x System smart fan (1x3 pin)
- ◆ Power Supply: 9~28V DC input, 1 x Internal power connector (2x2 pin), Support AT/ATX mode
- ◆ Power Consumption: 12V@1.59A (Intel® Atom™ D2550 dual-core CPU with 1333 MHz 4 GB DDR3 memory), 12V@1.23A (Intel® Atom™ D2600 dual-core CPU with 1333 MHz 4 GB DDR3 memory)
- ◆ Operating Temperature: -20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2550 processor, -20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600/N2800 processor
- ◆ Storage Temperature: -30°C ~ 80°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 115 mm x 165 mm
- ◆ Weight: GW: 850g / NW: 350g

Packing List

1 x NANO-CV-D25502/N26002 single board computer	
1 x Audio cable	
1 x Heat spreader	1 x Mini jumper pack
1 x Power cable	1 x One Key Recovery CD
1 x RS-232 cable	1 x QIG
1 x SATA with 5V output cable kit	1 x Utility CD

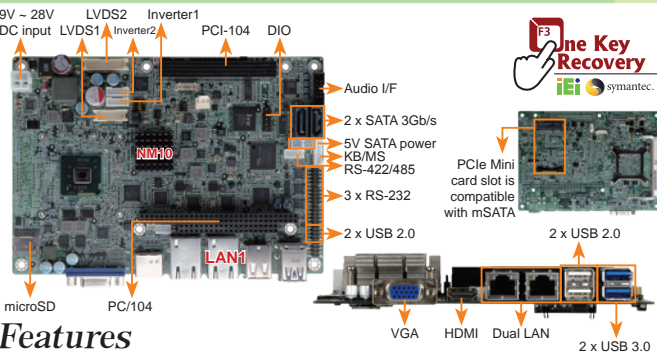
Ordering Information

Part No.	Description
NANO-CV-D25502-R10	EPIC SBC with Intel® Atom™ D2550 1.86GHz, DDR3, dual VGA/LVDS, dual GbE, USB 2.0, dual PCIe Mini, SATA 3Gb/s, mSATA and Audio
NANO-CV-N26002-R10	EPIC SBC with Intel® Atom™ N2600 1.6GHz, DDR3, dual VGA/LVDS, dual GbE, USB 2.0, dual PCIe Mini, SATA 3Gb/s, mSATA and Audio
NANO-CV-N28002-R10**	EPIC SBC with Intel® Atom™ N2800 1.86GHz, DDR3, dual VGA/LVDS, dual GbE, USB 2.0, dual PCIe Mini, SATA 3Gb/s, mSATA and Audio (by project support, MOQ 100pcs / lot)
32000-023800-RS	PS/2 KB/MS cable, 135mm/110mm, P=2.0
32001-008600-200-RS	Dual-port USB cable, 210mm, P=2.0
32205-002700-200-RS	RS-232/422/485 cable, 200mm, P=2.0
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0

**By order production, MOQ: 100

NANO-CV-D25501/N26001

EPIC SBC with Intel® D2550/N2600, DDR3, VGA/HDMI/Dual LVDS, Dual GbE, USB 3.0, mSATA, SATA 3Gb/s, Audio and RoHS



Features

- EPIC form factor with Intel® D2550/N2600 dual-core processor supporting DDR3/DDR3L (1.35V) memory
- Wide range 9V ~ 28V DC input design
- Flexible VGA, dual LVDS and HDMI with dual-display support
- Supports PC/104-Plus and PCIe Mini card slot compatible with mSATA SSD storage
- Complete I/O with six USB, two SATA 3Gb/s, four COM and audio
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Intel® Atom™ D2550 (1.86GHz, dual-core, 1MB cache)
 - Intel® Atom™ N2600 (1.6GHz, dual-core, 1MB cache)
 - Intel® Atom™ N2800 (1.86GHz, dual-core, 1MB cache)
- ◆ Chipset: Intel® NM10
- ◆ BIOS: UEFI BIOS
- ◆ Memory
 - One 204-pin 1066/800 MHz DDR3/DDR3L SDRAM SO-DIMM slot supports up to 4 GB (D2550/N2800) or 2 GB (N2600)
- ◆ Graphics
 - GMA 3650 at 640 MHz graphics core speed (for N2550 and N2800)
 - GMA 3600 at 400 MHz graphics core speed (for N2600)
- ◆ Display Output
 - Dual display supported
 - VGA (up to 1920x1200@60Hz)
 - (Due to Intel GMA driver limitation, the monitor connected to the VGA connector may not have signal to it or become extended desktop after restarting from the graphics driver installation. To solve this problem, press the Ctrl+Alt+F1 hotkey to switch the primary screen to CRT mode.)
 - HDMI (up to 1920x1200@60Hz)
 - 24-bit single-channel LVDS1 (D2550) (up to 1440x900@60Hz)
 - 18-bit single-channel LVDS1 (N2600/N2800) (up to 1366x768@60Hz)
 - 24-bit dual-channel LVDS2 (up to 1920x1200@60Hz)
 - DP to LVDS converter (up to 1920x1200(D2550) or 1600x1200(N2600/N2800)@60Hz)
- ◆ Ethernet
 - Dual LAN by Realtek RTL8111E controllers
- ◆ Audio
 - Realtek ALC662 HD Audio codec
 - 1 x Front audio (2x5 pin)
- ◆ External I/O Interface
 - 2 x USB 3.0
 - 2 x USB 2.0
- ◆ Internal I/O Interface
 - 1 x KB/MS (1x6 pin)
 - 1 x RS-422/485 (1x4 pin, P=2.0)
 - 2 x SATA 3Gb/s with 5V SATA power connector
 - 2 x USB 2.0 (2x4 pin, P=2.0)
 - 3 x RS-232 (2x5 pin, P=2.0)
- ◆ Expansion
 - 1 x Full-size PCIe Mini card slot (supports mSATA, co-lay with SATA1)
 - 1 x PC/104 slot (ISA)
 - 1 x PCI-104 slot (PCI)
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O: 8-bit digital I/O (2x5 pin)
- ◆ Fan Connector (smart fan support)
 - 1 x CPU smart fan (1x3 pin)
 - 1 x System smart fan (1x3 pin)
- ◆ Power Supply
 - 9~28V DC input
 - 1 x Internal power connector (2x2 pin)
 - Support AT/ATX mode
- ◆ Power Consumption
 - 12V@2.1A (Intel® D2550 1.86GHz CPU with 1333 MHz 2 GB DDR3 memory)
 - 12V@1.72A (Intel® N2600 1.6GHz CPU with 1333 MHz 2 GB DDR3 memory)
- ◆ Operating Temperature
 - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2550 processor
 - 20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600/N2800 processor
- ◆ Storage Temperature: -30°C ~ 80°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Weight: GW: 670g / NW: 350g

Packing List

1 x NANO-CV-D25501/N26001 single board computer	
1 x Audio cable	1 x USB cable
1 x Power cable	1 x Mini jumper pack
1 x PS/2 KB/MS cable	1 x One Key Recovery CD
1 x RS-232 cable	1 x QIG
1 x SATA with 5V output cable	1 x Utility CD

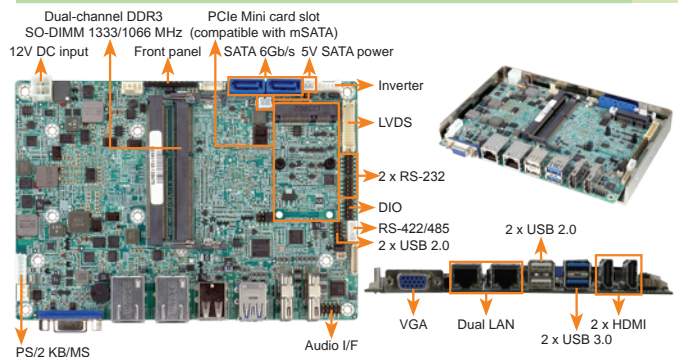
Ordering Information

Part No.	Description
NANO-CV-D25501-R10	EPIC SBC with Intel® Atom™ D2550 1.86GHz, DDR3, VGA/HDMI/dual LVDS, dual GbE, USB 3.0, mSATA, SATA 3Gb/s, Audio, RoHS
NANO-CV-N26001-R10	EPIC SBC with Intel® Atom™ N2600 1.6GHz, DDR3, VGA/HDMI/dual LVDS, dual GbE, USB 3.0, mSATA, SATA 3Gb/s, Audio, RoHS
NANO-CV-N28001-R10**	EPIC SBC with Intel® Atom™ N2800 1.86GHz, DDR3, VGA/HDMI/dual LVDS, dual GbE, USB 3.0, mSATA, SATA 3Gb/s, Audio and RoHS (by project support, MOQ 100pcs / lot)
19FFD124010HB2A7-000001-RS	CPU fan (40mmx40mmx10mm)
32205-002700-200-RS	RS-232/422/485 cable, 200mm, P=2.0
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
34000-000510-RS	30mm higher heatsink

**By order production, MOQ: 100

NANO-HM651

EPIC SBC with on-board Intel® Celeron® Dual Core 847E 1.1GHz CPU, Dual HDMI/VGA/LVDS, Dual GbE, USB 3.0, PCIe Mini, SATA 6Gb/s and Audio



Features

- EPIC SBC with on-board mobile 32nm Intel® Celeron® dual-core 847E 1.1GHz processor
- Dual HDMI/VGA with dual display support
- Dual-channel 204-pin 1333/1066 MHz DDR3 SO-DIMMs support up to 8 GB
- Easy assembly heat spreader for thermal management
- Supports three COM, four USB 3.0, two SATA 6Gb/s and audio
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - 1.1GHz Intel® Celeron® 847E dual-core processor
- ◆ Chipset
 - Intel® HM65
- ◆ BIOS
 - UEFI BIOS
- ◆ Memory
 - Two 204-pin 1333/1066 MHz dual-channel DDR3 SO-DIMMs support up to 16 GB
- ◆ Graphics
 - Intel® HD Graphics Gen 6 supports DX10.1 and OpenGL 3.0
 - Full MPEG-2, VC1, AVC Decode
- ◆ Display Output
 - 1 x VGA (up to 2048x1536@75Hz)
 - 1 x 18/24-bit dual-channel LVDS (up to 1920x1200@60Hz)
 - 2 x HDMI (up to 1920x1200@60Hz)
- ◆ Ethernet
 - Dual LAN: Realtek RTL8111E PCIe GbE controller with ASF 2.0 support
- ◆ Audio
 - Realtek ALC662 HD Audio codec
 - 1 x Front audio (2x5 pin)
- ◆ Front Panel
 - 1 x Front panel (1x10 pin)
- ◆ Expansion
 - 1 x Full-size PCIe Mini card slot (supports mSATA)
- ◆ Digital I/O
 - 8-bit digital I/O (2x5 pin)
- ◆ External I/O Interface
 - 2 x USB 2.0
 - 2 x USB 3.0
- ◆ Internal I/O Interface
 - 1 x KB/MS (1x6 pin)
 - 1 x RS-422/485 (1x4 pin, P=2.0)
 - 2 x RS-232 (2x5 pin, P=2.0)
 - 2 x USB 2.0 (2x4 pin, P=2.0)
 - 2 x SATA 6G/s with 5V SATA power connector (RAID 0,1 supported)
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset
- ◆ Fan Connector
 - 1 x CPU smart fan (1x4 pin)
 - 1 x System smart fan (1x4 pin)
- ◆ Power Supply
 - 12V only DC input
 - 1 x Internal power connector (2x2 pin)
 - Support AT/ATX mode
- ◆ Power Consumption
 - 12V@1.88A (Intel® Celeron® with two 1333 MHz 4 GB DDR3 SO-DIMM)
- ◆ Operating Temperature
 - 10°C ~ 60°C
- ◆ Storage Temperature
 - 20°C ~ 70°C
- ◆ Operating Humidity
 - 5% ~ 95%, non-condensing
- ◆ Dimensions
 - 115 mm x 165 mm
- ◆ Weight
 - GW: 850g / NW: 350g

Packing List

1 x NANO-HM651 single board computer	
1 x Audio cable	1 x Heat spreader
1 x Power cable	1 x Mini jumper pack
1 x SATA with power cable kit	1 x One Key Recovery CD
2 x Plastic shaft for securing half-size PCIe Mini card	1 x QIG
2 x RS-232 cable	1 x Utility CD

Ordering Information

Part No.	Description
NANO-HM651-847E-R10	EPIC SBC supports Intel® Celeron® dual core 847E 1.1GHz CPU, dual HDMI/VGA/LVDS, dual GbE, USB 3.0, PCIe Mini, SATA 6Gb/s and Audio
32001-008600-200-RS	Dual-port USB cable, 210mm, P=2.0

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Industrial Computer Chassis

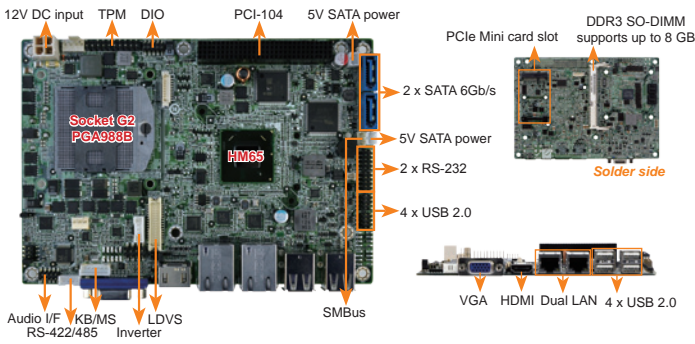
4 Open Frame Monitor

5 Power Supply/Peripherals

6 All-in-One System

NANO-HM650

EPIC SBC Supports Socket G2 for 2nd Generation Intel® Core™ i7/i5/i3 and Celeron® CPU, VGA/HDMI, Dual PCIe GbE, USB 2.0, PCI-104, SATA 6Gb/s and Audio



Features

- EPIC SBC with Socket G2 for Intel® 2nd generation Core™ i7/i5/i3 and Celeron® processor
- VGA/24-bit dual-channel LVDS/HDMI for dual display support
- 1066/1333MHz DDR3 SDRAM supported (system max. 8 GB)
- Supports three COM, eight USB 2.0, two SATA 6Gb/s, PCI-104 and audio
- TPM V1.2 hardware security function supported by TPM module
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
Socket G2 for 2nd generation Intel® Core™ i7/i5/i3 and Celeron® mobile processor
- ◆ Chipset
Intel® HM65
- ◆ BIOS
UEFI BIOS
- ◆ Memory
One 204-pin 1333/1066 MHz DDR3 SDRAM SO-DIMM slot supports up to 8 GB
- ◆ Display Output
Dual display supported
1 x VGA (up to 2048x1536@75Hz)
1 x 18/24-bit dual-channel LVDS (up to 1920x1200@60Hz)
1 x HDMI (up to 1920x1200@60Hz)
- ◆ Ethernet
Dual LAN: Realtek RTL8111E PCIe GbE controller with ASF 2.0 support
- ◆ External I/O Interface
4 x USB 2.0
- ◆ Internal I/O Interface
1 x KB/MS (1x6 pin)
1 x RS-422/485 (1x4 pin, P=2.0)
2 x RS-232 (2x5 pin, P=2.0)
2 x SATA 6G/s with 5V SATA power connector (RAID 0, 1 supported)
8 x USB 2.0 (2x4 pin, P=2.0)
- ◆ Audio
Realtek ALC662 HD Audio codec
1 x Front audio (2x5 pin)
- ◆ Expansion
1 x Full-size PCIe Mini card slot
1 x PCI-104 slot (PCI signal)
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Programmable GPIO
8-bit digital I/O (2x5 pin)
- ◆ Fan Connector
1 x CPU smart fan (1x4 pin)
1 x System smart fan (1x3 pin)
- ◆ Power Supply
1 x Internal power connector (2x2 pin)
12V only DC input, support AT/ATX mode
- ◆ Power Consumption
12V@4.85A (2.6GHz Intel® Core i5-2540M with 1333 MHz 4 GB DDR3 memory)
- ◆ Operating Temperature
-10°C ~ 60°C
- ◆ Storage Temperature
-20°C ~ 70°C
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimensions
115 mm x 165 mm
- ◆ Weight
GW: 850g / NW: 350g

Packing List

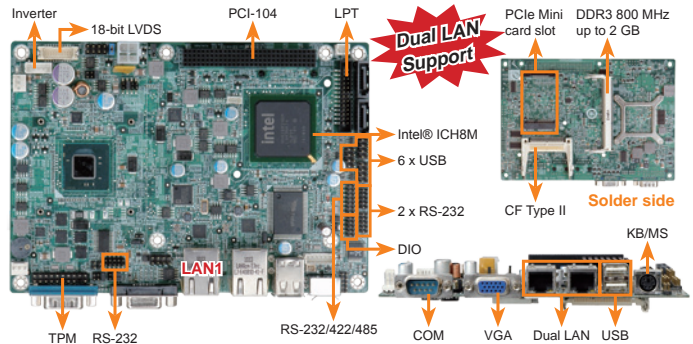
1 x NANO-HM650 single board computer	
1 x Audio cable	1 x Mini jumper pack
1 x Power cable	1 x One Key Recovery CD
2 x RS-232 cable	1 x QIG
2 x SATA with power cable	1 x Utility CD

Ordering Information

Part No.	Description
NANO-HM650-R11	EPIC SBC supports Socket G2 for Intel® 2nd generation Core™ i7/i5/i3 and Celeron® CPU, VGA/HDMI, USB 2.0, dual PCIe GbE, PCI-104, SATA 6Gb/s and Audio
32000-023800-RS	PS/2 KB/MS cable, 135mm/110mm, P=2.0
32001-008600-200-RS	Dual-port USB cable, 210mm, P=2.0
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
CF-989A-RS-R12	CPU cooler for mobile socket-G up to 55W processor, copper, 60mm x 60mm x 27.6mm

NANO-PV-D5251

EPIC SBC with Intel® Atom™ D525, DDR3, VGA/LVDS, Dual GbE, USB 2.0, CF Type II, Audio and SATA 3Gb/s, RoHS



Features

- EPIC SBC with Intel® Atom™ D525/D425/N455 processor
- 800 MHz DDR3 SDRAM supported (system max. 2 GB)
- Support VGA and 18-bit single-channel LVDS with dual display
- Support PCI-104 and PCIe Mini card slot
- Support five COM, eight USB, two SATA 3Gb/s and one CF Type II socket
- TPM V1.2 hardware security function supported by TPM module
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
Intel® Atom™ D525 (1.8GHz, dual-core, 1MB cache)
- ◆ Chipset
Intel® ICH8M
- ◆ BIOS
UEFI BIOS
- ◆ Memory
One 204-pin 800 MHz DDR3 SDRAM SO-DIMM slot supports up to 4 GB
- ◆ Graphics
GMA 3150
Graphic core speed 400 MHz for D525
- ◆ Display Output
VGA (up to 2048x1536@60Hz)
18-bit single-channel LVDS (up to 1366x768@60Hz)
- ◆ Audio
Realtek ALC888 HD codec
1 x Front Audio (2x5 pin)
- ◆ SMBus
1 x SMBus (1x4 pin)
- ◆ TPM
1 x TPM (2x10 pin)
- ◆ Expansion
1 x PCI-104 slot
1 x PCIe Mini card slot
- ◆ Ethernet
LAN1: Realtek RTL8111E PCIe GbE controller with ASF 2.0 support
LAN2: Realtek RTL8111E PCIe GbE controller
- ◆ External I/O Interface
1 x PS/2 KB/MS
2 x USB 2.0
- ◆ Internal I/O Interface
1 x CF Type II socket
1 x KB/MS (1x6 pin)
1 x LPT (2x13 pin, P=2.0)
1 x RS-232/422/485 (2x7 pin, P=2.0)
2 x SATA 3Gb/s with 5V SATA power connector
3 x RS-232 (2x5 pin, P=2.0)
6 x USB 2.0 (2x4 pin, P=2.54)
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O
8-bit digital I/O (2x5 pin)
- ◆ Fan Connector
1 x CPU smart fan (1x3 pin)
1 x System smart fan (1x3 pin)
- ◆ Power Supply
12V only DC input
1 x Internal power connector (2x2 pin)
support AT/ATX mode
- ◆ Power Consumption
12V@2.21A (Intel® Atom™ D525 with one 2 GB 1066 MHz DDR3 memory)
- ◆ Operating Temperature
-10°C ~ 60°C
- ◆ Storage Temperature: -20°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Weight: GW: 670g / NW: 350g

Packing List

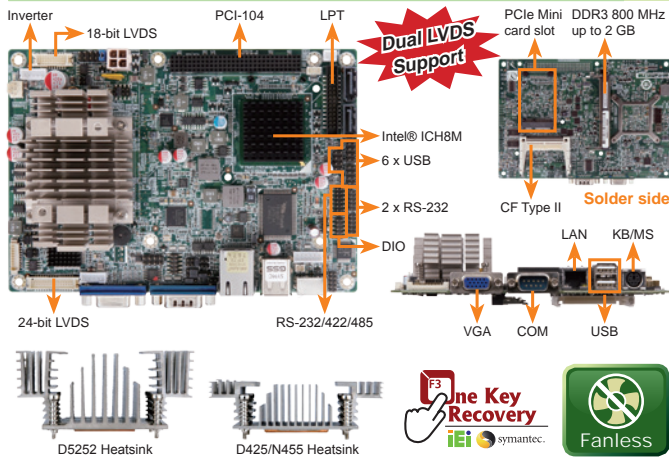
1 x NANO-PV-D5251 single board computer	
1 x Audio cable	2 x RS-232 cable
1 x Dual port USB cable	1 x Mini jumper pack
1 x KB/MS Y cable	1 x One Key Recovery CD
1 x Power cable	1 x QIG
1 x SATA with 5V output cable	1 x Utility CD

Ordering Information

Part No.	Description
NANO-PV-D5251-R10	EPIC with Intel® Atom™ D525 1.8GHz, DDR3, VGA/LVDS, Dual GbE, USB 2.0, CF Type II, audio and SATA 3Gb/s, RoHS
19800-004300-100-RS	RS-232 & RS-422/485 cable with bracket, 14-pin to two DB-9, 250mm, P=2.0
19FFD124010HB2A7-000001-RS	CPU fan (40mmx40mmx10mm)
32200-015100-RS	LPT cable, 280mm, P=2.0
32801-000703-500-RS	SATA (7-pin to 7-pin) cable, 500mm
34000-000510-RS	30mm higher heatsink
TPM-IN01-R20	20-pin Infineon TPM module, software management tool, firmware v3.17

NANO-PV-D4252/N4552/D5252

EPIC SBC with Intel® Atom™ D425/N455/D525, DDR3, VGA/Dual LVDS, PCIe GbE, CF Type II, SATA 3Gb/s



Features

- EPIC SBC with Intel® Atom™ D525/D425/N455 processor and DDR3 solution
- 12V only single voltage design for AT/ATX mode
- Support dual LVDS
- Support PCI-104 and PCIe Mini card slot
- Support five COM, eight USB, two SATA 3Gb/s and one CF Type II socket
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Intel® Atom™ D525 (1.8GHz, dual-core, 1MB cache)
 - Intel® Atom™ D425 (1.8GHz, single-core, 512KB cache)
 - Intel® Atom™ N455 (1.66GHz, single-core, 512KB cache)
- ◆ Chipset: Intel® ICH8M
- ◆ BIOS: UEFI BIOS
- ◆ Memory
 - One 204-pin 800 MHz DDR3 SDRAM SO-DIMM slot supports up to 4 GB (D525/D425) or 2 GB (N455)
- ◆ Graphics
 - GMA 3150
 - Graphic core speed 400 MHz for D525/D425
 - Graphic core speed 200 MHz for N455
- ◆ Display Output
 - VGA (up to 2048x1536(D525) or 1400x1050(N455)@60Hz)
 - 18-bit single-channel LVDS (up to 1366x768(D525) or 1024x768(N455)@60Hz)
 - 24-bit dual-channel LVDS (up to 1920x1080@60Hz)
- ◆ Audio
 - Realtek ALC662 HD codec
 - 1 x Front Audio (2x5 pin)
- ◆ TPM (optional): On-board Infineon SLB9635TT1.2
- ◆ Ethernet
 - LAN: Realtek RTL8111E PCIe GbE controller with ASF 2.0 support
- ◆ External I/O Interface
 - 1 x PS/2 KB/MS
 - 1 x RS-232
 - 2 x USB 2.0
- ◆ Internal I/O Interface
 - 1 x CF Type II socket
 - 1 x KB/MS (1x6 pin)
 - 1 x LPT (2x13 pin, P=2.0)
 - 1 x RS-232/422/485 (2x7 pin, P=2.0)
 - 2 x RS-232 (2x5 pin, P=2.0)
 - 2 x SATA 3Gb/s with 5V SATA power connector
 - 6 x USB 2.0 (2x4 pin, P=2.54)
- ◆ Expansion
 - 1 x PCI-104 slot
 - ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset
 - ◆ Digital I/O: 8-bit digital I/O (2x5 pin)
 - ◆ Fan Connector
 - 1 x CPU smart fan (1x3 pin)
 - 1 x System smart fan (1x3 pin)
 - ◆ Power Supply
 - 12V only DC input
 - 1 x Internal power connector (2x2 pin) support AT/ATX mode
 - ◆ Power Consumption
 - 12V@2.16A (Intel® Atom™ D525 with 2 GB 1066 MHz DDR3)
 - 12V@2.08A (Intel® Atom™ D425 with 2 GB 1066 MHz DDR3)
 - 12V@1.99A (Intel® Atom™ N455 with 2 GB 1066 MHz DDR3)
 - ◆ Operating Temperature: -10°C ~ 60°C
 - ◆ Storage Temperature: -20°C ~ 70°C
 - ◆ Operating Humidity
 - 5% ~ 95%, non-condensing
 - ◆ Weight: GW: 650g / NW: 340g

Packing List

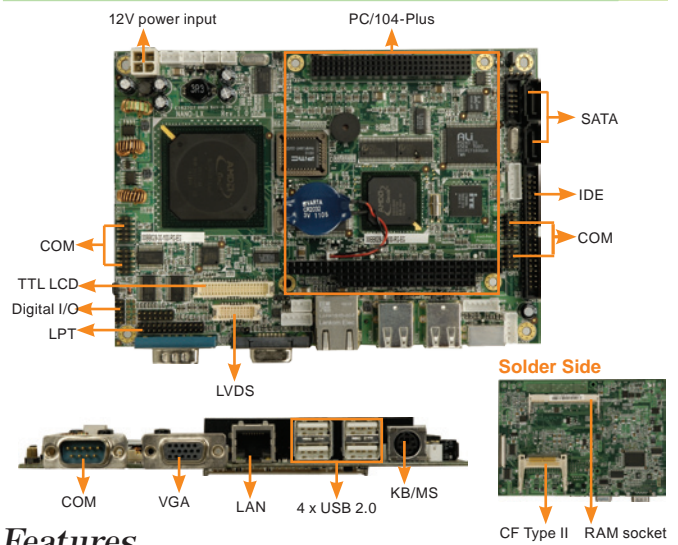
1 x NANO-PV-D4252/N4552/D5252 single board computer	
1 x Audio cable	2 x RS-232 cable
1 x Dual port USB cable	1 x Mini jumper pack
1 x KB/MS Y cable	1 x One Key Recovery CD
1 x Power cable	1 x QIG
1 x SATA with 5V output cable	1 x Utility CD

Ordering Information

Part No.	Description
NANO-PV-D5252-R11	EPIC SBC with Intel® Atom™ D525 1.8GHz/1MB L2, VGA/Dual LVDS, PCIe GbE, CF Type II, SATA 3Gb/s
NANO-PV-D4252-R11	EPIC SBC with Intel® Atom™ D425 1.8GHz/512KB L2, VGA/Dual LVDS, PCIe GbE, CF Type II, SATA 3Gb/s
NANO-PV-N4552-R11	EPIC SBC with Intel® Atom™ N455 1.66GHz/512KB L2, VGA/Dual LVDS, PCIe GbE, CF Type II, SATA 3Gb/s
19800-004300-100-RS	RS-232 & RS-422/485 cable with bracket, 14-pin to two DB-9, 250mm, P=2.0
19FFD124010HB2A7-000001-RS	CPU fan (40mmx40mmx10mm)
32200-015100-RS	LPT cable, 280mm, P=2.0
32801-000703-500-RS	SATA (7-pin to 7-pin) cable, 500mm

NANO-LX

EPIC SBC with AMD LX800 CPU, Audio, VGA/LVDS, SATA and RAID 0, 1, JBOD Function Support



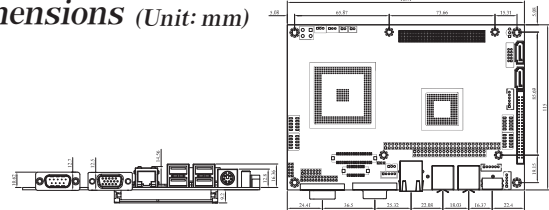
Features

- EPIC form factor AMD LX800 processor embedded board with RoHS compliant
- DDR 400 MHz SO-DIMM SDRAM up to 1 GB
- VGA, 24-bit TTL, and 18-bit single-channel LVDS
- SATA RAID 0, 1, JBOD function support
- Complete I/O support with two SATA, IDE, PC/104-Plus and four USB 2.0
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - AMD Geode™ LX800 (500 MHz) processor
- ◆ Chipset: AMD Geode LX800 + AMD CS5536
- ◆ BIOS: AWARD
- ◆ System Memory
 - One 200-pin 400/333 MHz DDR SDRAM SO-DIMM supports up to 1GB
- ◆ Ethernet
 - LAN: 10/100Mbps Realtek RTL8100C
- ◆ External I/O Interface
 - 1 x PS/2 KB/MS
 - 1 x RS-232
 - 4 x USB 2.0
- ◆ Internal I/O Interface
 - 1 x CF Type II
 - 1 x LPT
 - 1 x RS-232/422/485
 - 4 x USB 2.0
 - 5 x RS-232
- ◆ Expansion
 - 1 x PC/104 slot (ISA)
 - 1 x PCI-104 slot (PCI)
- ◆ Audio: Realtek ALC203 with AC'97 codec
- ◆ Digital I/O: 8-bit digital I/O (2x5 pin)
- ◆ Infrared Interface: 1 x Infrared interface (1x5 pin)
- ◆ Display Output
 - 1 x VGA (up to 1920x1440@60Hz)
 - 1 x 24-bit single-channel TTL (up to 1600x1200@60Hz)
 - 1 x 18-bit single-channel LVDS (up to 1280x1024@60Hz)
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Power Supply: 12V only DC input
 - 1 x Internal power connector (2x2 pin) support AT/ATX mode
- ◆ Power Consumption
 - 12V@0.92A (AMD LX800 with 400 MHz 256MB DDR RAM)
- ◆ Operating Temperature: 0°C ~ 60°C
- ◆ Storage Temperature: -10°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 115 mm x 165 mm
- ◆ Weight: GW: 950g / NW: 350g

Dimensions (Unit: mm)



Packing List

1 x NANO-LX single board computer	2 x RS-232 port cable
1 x Audio cable	2 x SATA cable
1 x IDE flat cable 44p/44p	1 x Mini jumper pack
1 x KB/MS Y cable	1 x One Key Recovery CD
1 x Power cable	1 x QIG
1 x SATA power cable	1 x Utility CD

Ordering Information

Part No.	Description
NANO-LX-800-R12	EPIC SBC, AMD LX800 500 MHz processor, VGA/LVDS/TTL, LAN, SATA and Audio
32102-022100-100-RS	ATX power cable, 300mm
32200-015100-RS	LPT cable, 280mm, P=2.0
19800-004300-100-RS	RS-232 & RS-422/485 cable with bracket, 14-pin to two DB-9, 250mm, P=2.0

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Industrial Computer Chassis

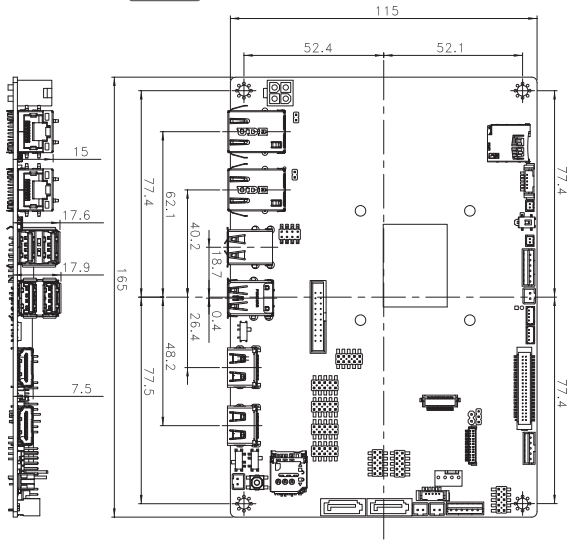
4 Open Frame Monitor

5 Power Supply/Peripherals

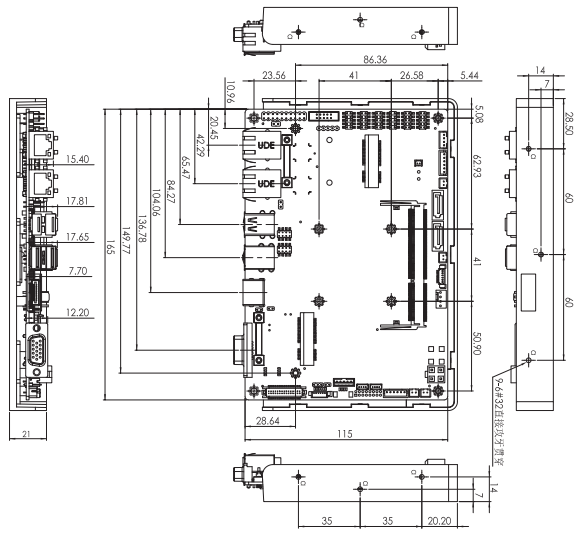
6 All-in-One System

EPIC NANO Dimensions (Unit: mm)

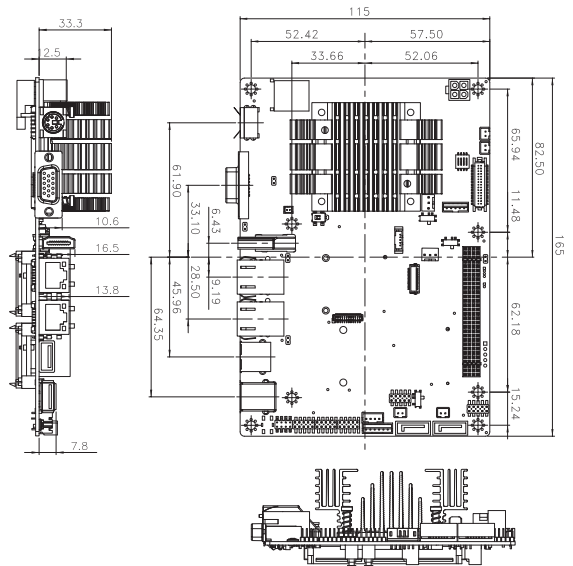
NANO-AL *Preliminary*



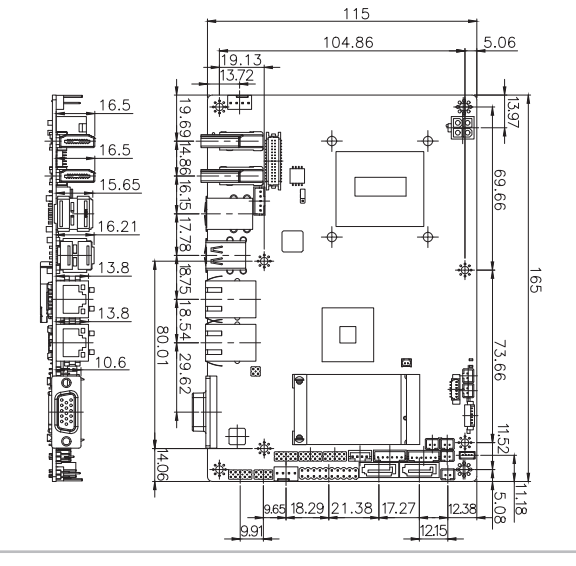
NANO-SE-i1/NANO-KBN-i1



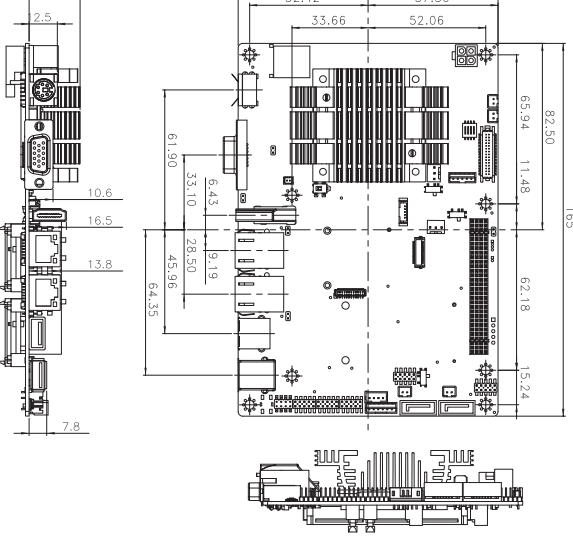
NANO-BTW2/NANO-BT-i1



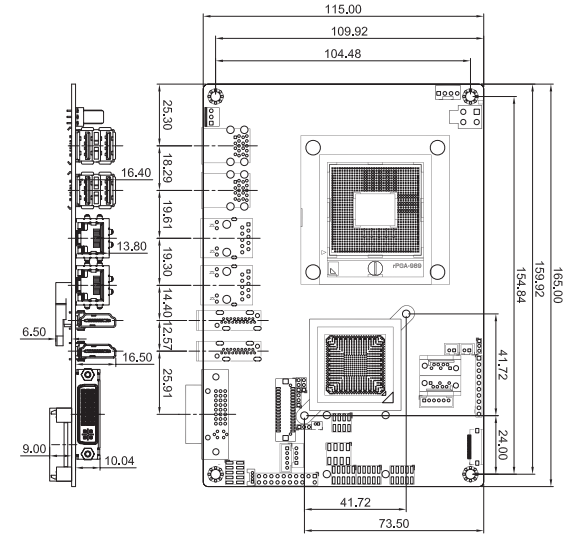
NANO-QM871-i1



NANO-QM770



NANO-QM770



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Industrial Computing Solutions

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Video Capture Solutions

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Open Frame Monitor

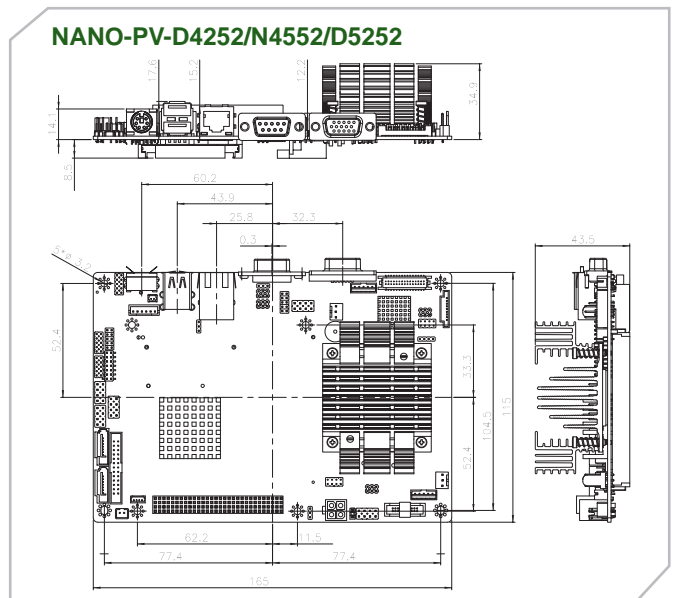
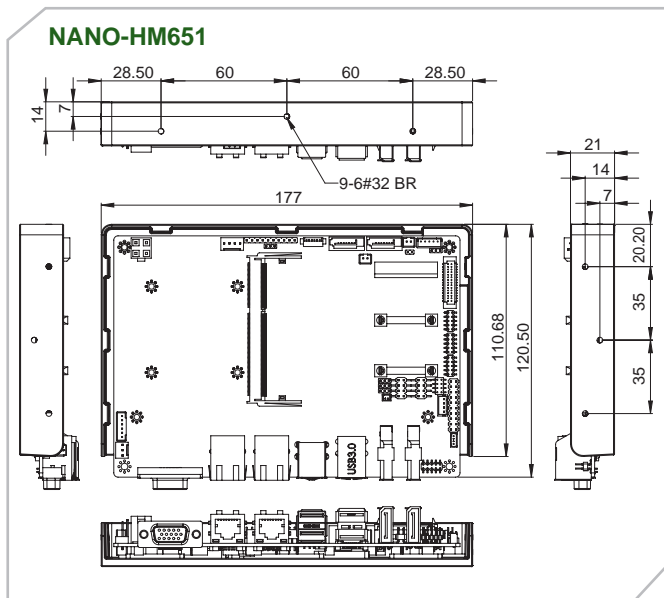
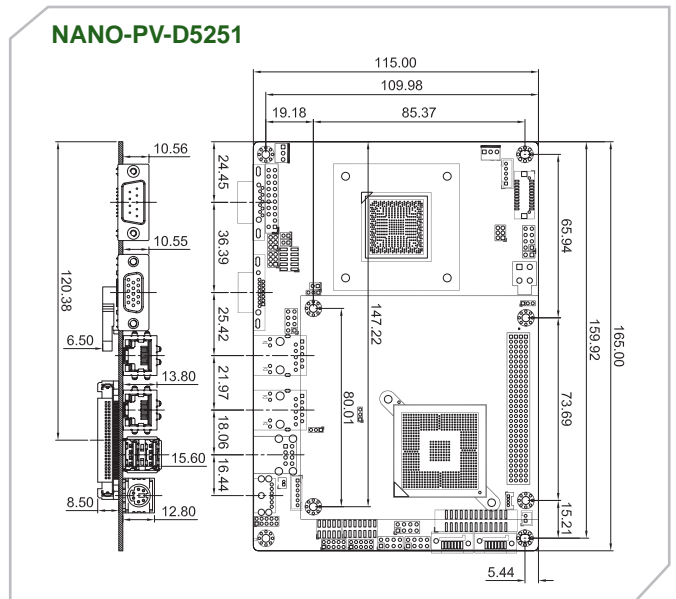
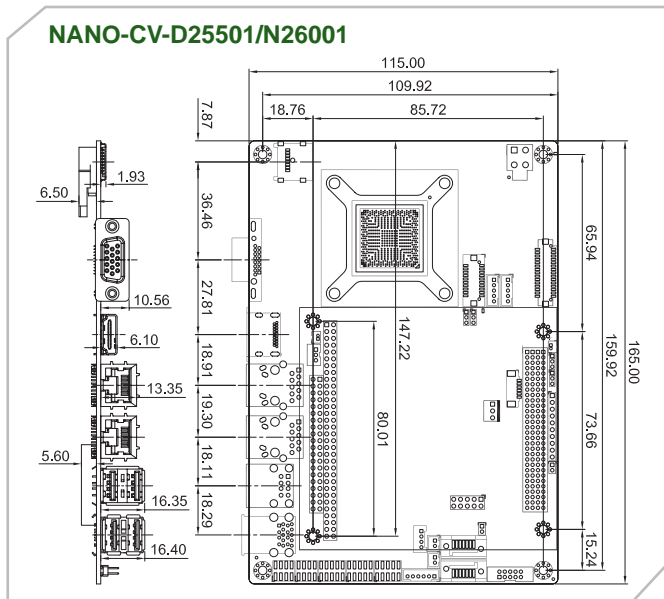
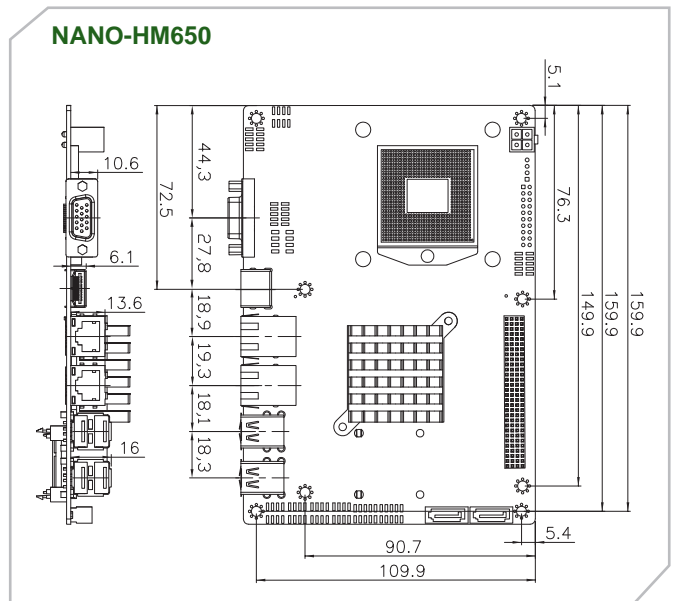
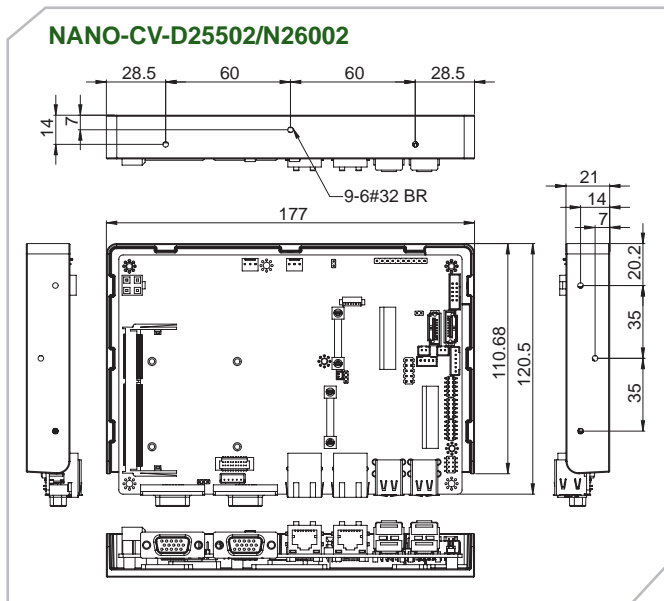
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Power Supply/ Peripherals

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All-in-One System

EPIC NANO Dimensions (Unit: mm)



- 1 Industrial Computing Solutions
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- 3 Industrial Computer Chassis
- 4 Open Frame Monitor
- 5 Power Supply/Peripherals
- 6 All-in-One System

3.5" WAFER Selection Guide

Preliminary



New



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

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Industrial Computing Solutions

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Video Capture Solutions

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Industrial Computer Chassis

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Open Frame Monitor

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Power Supply/Peripherals

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All-in-One System

3.5" WAFER Selection Guide



Model Name	WAFER-KBN-i1	WAFER-CV-D25502/ N26002	WAFER-CV-D25501/ N26001	WAFER-PV-N4552/D5252	WAFER-LX-R12	WAFER-LX2-R12
CPU Socket	On board	On board	On board	On board	On board	On board
CPU Type	AMD® Embedded G-Series SoC	Intel® Atom™ D2550 1.86GHz Intel® Atom™ N2600 1.6GHz	Intel® Atom™ D2550 1.86GHz Intel® Atom™ N2600 1.6GHz	Intel® Atom™ D525 1.8GHz Intel® Atom™ N455 1.66GHz	AMD Geode™ LX800	AMD Geode™ LX800
Chipset	AMD® Embedded G-Series SoC	Intel® NM10	NM10	Intel® ICH8M	AMD Geode™ LX800 + AMD CS5536	AMD Geode™ LX800 + AMD CS5536
Memory	1 x 204-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SO-DIMM (system max. 8 GB)	On-board 2 GB 1066 MHz DDR3 SDRAM	1 x 204-pin 1066 MHz 4 GB (max.) DDR3/DDR3L (1.35V) SO-DIMM (D2550) 1 x 204-pin 800 MHz 2 GB (max.) DDR3/DDR3L (1.35V) SO-DIMM (N2600)	1 x 204-pin 800 MHz 4 GB (max.) DDR3 SO-DIMM (D525/ D425) 1 x 204-pin 800 MHz 2 GB (max.) DDR3 SO-DIMM (N455)	1 x 200-pin 333/400 MHz. 1 GB (max.) DDR SO-DIMM	1 x 200-pin 400 MHz. 1 GB (max.) DDR SO-DIMM
Display Interface	Dual display supported 1 x VGA 1 x 18/24-bit dual-channel LVDS 1 x iDP interface	Dual display supported 1 x VGA integrated in Intel® CPU 1 x Single-channel 18-bit (N2600)/24-bit LVDS2 (D2550)	Dual display supported 1 x VGA 1 x Single-channel 18-bit (N2600)/24-bit LVDS2 (D2550) 1 x 24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit TTL	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit TTL
Ethernet	LAN1: Intel® I210-AT PCIe controller with NCSI support LAN2: Intel® I211-AT PCIe controller	Dual LAN: Realtek RTL8111E controllers	Dual LAN: Realtek RTL8111E controllers	Dual LAN: Realtek RTL8111E controllers	Dual LAN: 10/100Mbps RTL8100C Ethernet Controller	LAN1: 10/100Mbps RTL8100C Ethernet Controller
iRIS Remote Management Module	1 x iRIS-1010 slot	N/A				
I/O Interface	1 x PS/2 KB/MS 1 x RS-422/485 2 x USB 3.0 3 x RS-232 4 x USB 2.0	1 x PS/2 KB/MS 1 x RS-422/485 4 x USB 2.0 5 x RS-232	1 x KB/MS 1 x RS-422/485 3 x RS-232 6 x USB 2.0	1 x KB/MS 1 x RS-232/422/485 5 x RS-232 8 x USB 2.0	1 x LPT 1 x PS/2 for KB/MS 1 x RS-422/485 2 x RS-232 4 x USB 2.0	1 x RS-232/422/485 4 x USB 2.0 7 x RS-232
Drive Interface	2 x SATA 6Gb/s with 5V SATA power connector	2 x SATA 3Gb/s or 1 x SATA 3Gb/s + 1 x mSATA	2 x SATA 3Gb/s	2 x SATA 3Gb/s 1 x CF Type II	2 x SATA 1.5Gb/s RAID 1 x IDE 1 x CF Type II	1 x IDE 1 x CF Type II
Audio	Realtek ALC662 HD Audio codec				Realtek ALC203 with AC'97 codec	
Digital I/O	8-bit programmable digital I/O					
Power Consumption	12V@2.12A (AMD GX-415GA 1.5GHz CPU with 1333 MHz 4 GB DDR3 memory)	12V@1.19A (1.86GHz Intel® D2550 with on-board 1066 MHz 1 GB SDRAM) 12V@0.95A (1.6GHz Intel N2600 with on-board 1066 MHz 1 GB SDRAM)	12V@1.53A (1.86GHz Intel® D2550 with 1 GB DDR3 1066 MHz) 12V@1.15A (1.6GHz Intel® N2600 with 1 GB DDR3 1066 MHz)	12V@1.79A (Intel® Atom™ D525 with 2 GB 1066 MHz DDR3)	5V@1.53A (AMD Geode™ LX 800 1 GB 400 MHz DDR)	5V@1.33A (AMD Geode™ LX800 512MB 333 MHz DDR)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset					
Operating Environment	Temperature Range: 0°C ~ 60°C (32°F~140°F) Relative Humidity: 5% ~ 95% non-condensing	-20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2550 processor -20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600 processor Relative Humidity: 5% ~ 95%, non-condensing	-20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2550 processor -20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600 processor Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: -10°C ~ 60°C (14°F~140°F) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C (32°F~140°F) Relative Humidity: 5% ~ 95% non-condensing	
Expansion Slot	1 x Full-size PCIe Mini card slot (supports mSATA)	1 x Full/Half-size PCIe Mini card slot (support mSATA) 1 x PCI-104 slot supports PCI singal	1 x Full-size PCIe Mini card slot (support mSATA) 1 x Half-size PCIe Mini card slot	1 x PCIe Mini card slot	1 x PC/104	1 x PC/104
Recommended CPU Cooler	GX-415GA (with heatsink) GX-210HA (with cooler)	Heatsink	Heat Spreader	Heat Spreader	Heatsink	Heatsink

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Industrial Computing Solutions

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Video Capture Solutions

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Industrial Computer Chassis

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Open Frame Monitor

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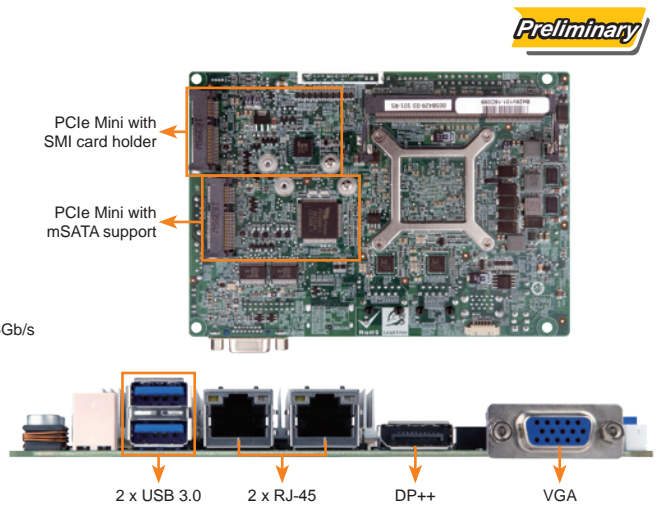
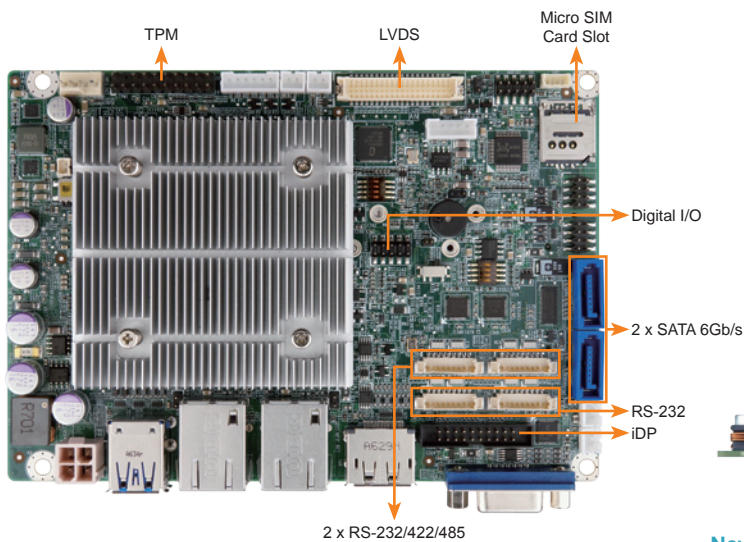
Power Supply/Peripherals

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All-in-One System

WAFER-AL

3.5" SBC supports Intel® 14nm Generation Atom™ or Celeron® on-board SoC with DP++/VGA/LVDS/iDP support, Dual PCIe GbE, USB 3.0, PCIe Mini with mSATA support, SATA 6Gb/s, COM, Audio and RoHS



Preliminary

Specifications

- ◆ SoC
Intel® Apollo Lake platform
- ◆ BIOS
AMI UEFI BIOS
- ◆ Memory
One 204-pin 1866/1600MHz Single-channel DDR3L DIMMs support up to 8GB
- ◆ Graphics Engine
Intel® HD Graphics Gen9 Low Power; 18 Execution Units
4K Codec Decode & Encode for HEVC 4, H.264, VP8, SVC, MVC
- ◆ Display Output
Triple Independent Displays
1 x DP++ (up to 4096x2160@60Hz)
1 x VGA (up to 1920x1200@60Hz)
1 x LVDS: 18/24-bit dual-channel LVDS (up to 1920x1200@60Hz)
1 x iDP (colay with VGA, support by request)
- ◆ Ethernet
2 x PCIe GbE LAN Realtek RTL8111 Controller
- ◆ External I/O Interface
2 x USB 3.0
- ◆ Internal I/O Interface
2 x RS-232 (1x9 pin, P=1.25)
2 x RS-232/422/485 (1x9 pin, P=1.25)
2 x SATA 6G/s with 5V SATA power connector (no RAID)
4 x USB 2.0 (2x4 pin, P=2.0)
- ◆ SMBus/I²C
1 x SMBus (1x4 pin, P=2.0)
- ◆ TPM
1 x TPM (2x10 pin)
- ◆ Audio
Realtek ALC662 HD codec
1 x Front audio (2x5 pin)
- ◆ Front Panel
1 x Power LED & HDD LED (1x6 pin)
1 x Power button (1x2 pin)
1 x Reset button (1x2 pin)
- ◆ LAN LED
2 x LAN LED (1x2 pin)
- ◆ Expansion
1 x Full/Half-size PCIe Mini slot (supports mSATA, colay with SATA port 2)
1 x Full/Half-size PCIe Mini slot (supports SIM card holder)
- ◆ Digital I/O
1 x 8-bit digital I/O (2x5 pin)
- ◆ Fan Connector
1 x System fan connector (1x4 pin)
- ◆ Power supply
+12V DC input power (AT/ATX mode)
- ◆ Watchdog Timer
Software programmable support 1~255 sec. system reset
- ◆ Power Consumption
TBD
- ◆ Operating Temperature
-20°C ~ 60°C
- ◆ Storage Temperature
-20°C ~ 60°C
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimensions
146mm x 102mm
- ◆ Weight
TBD

New Intel® Atom™ solution for entry level system



Features

- 3.5" SBC with Intel® Apollo Lake platform on-board SoC
- One SO-DIMM DDR3L 1867/1600MHz support up to system maximum 8GB
- Triple displays with 1 x DP++, 1 x VGA / 1 x iDP, 1 x LVDS selection
- High speed I/O interface for USB 3.0, SATA 6Gb/s
- PCIe mini with mSATA support

Packing List

1 x WAFER-AL single board computer	
1 x Power cable	1 x One Key Recovery CD
1 x RS-232/422/485 cable	1 x QIG
1 x SATA with power cable kit	1 x Utility CD

Ordering Information

Part No.	Description
WAFER-AL-N2-R10	3.5" SBC supports Intel® 14nm quad-core Pentium® N4200 2.5GHz on-board SoC with tripple display, Dual PCIe GbE, USB 3.0, PCIe Mini with mSATA support, SATA 6Gb/s, COM, Audio and RoHS
WAFER-AL-N1-R10	3.5" SBC supports Intel® 14nm dual-core Celeron® N3350 2.4GHz on-board SoC with tripple display, Dual PCIe GbE, USB 3.0, PCIe Mini with mSATA support, SATA 6Gb/s, COM, Audio and RoHS
WAFER-AL-E3-R10**	3.5" SBC supports Intel® 14nm quad-core Atom™ E3950 2.0GHz on-board SoC with tripple display, Dual PCIe GbE, USB 3.0, PCIe Mini with mSATA support, SATA 6Gb/s, COM, Audio and RoHS
WAFER-AL-E2-R10**	3.5" SBC supports Intel® 14nm quad-core Atom™ E3940 1.8GHz on-board SoC with tripple display, Dual PCIe GbE, USB 3.0, PCIe Mini with mSATA support, SATA 6Gb/s, COM, Audio and RoHS
WAFER-AL-E1-R10**	3.5" SBC supports Intel® 14nm dual-core Atom™ E3930 1.8GHz on-board SoC with tripple display, Dual PCIe GbE, USB 3.0, PCIe Mini with mSATA support, SATA 6Gb/s, COM, Audio and RoHS
32007-005200-200-RS	Audio cable, 300mm, P=2.0
32000-070301-RS	Dual-port USB 2.0 cable, 210mm, P=2.0
TPM-IN02-R20	20-pin Infineon TPM 2.0 module, software management tool, firmware v5.5

**By order production, MOQ: 100

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Industrial Computing Solutions

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Video Capture Solutions

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Industrial Computer Chassis

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Open Frame Monitor

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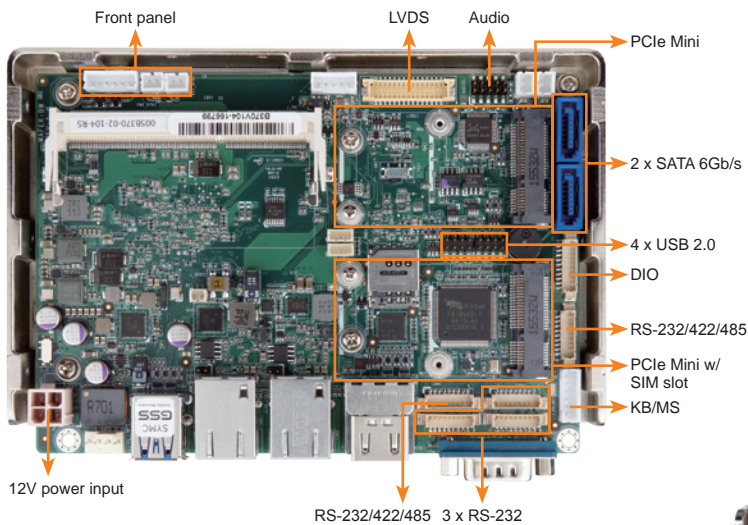
Power Supply/Peripherals

6

All-in-One System

WAFER-BW

3.5" SBC with Intel® 14nm Pentium®/Celeron® on-board SoC with Dual HDMI and LVDS, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 6Gb/s, mSATA, COM, Audio and RoHS



Specifications

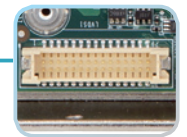
- ◆ SoC
 - Intel® Pentium® N3710 on-board SoC (up to 2.56GHz, quad-core, 2MB cache, TDP=6W)
 - Intel® Celeron® N3160 on-board SoC (up to 2.24GHz, quad-core, 2MB cache, TDP=6W)
 - Intel® Celeron® N3060 on-board SoC (up to 2.48GHz, dual-core, 2MB cache, TDP=6W)
 - Intel® Celeron® N3010 on-board SoC (up to 2.24GHz, dual-core, 2MB cache, TDP=4W)
- ◆ BIOS
 - AMI UEFI BIOS
- ◆ Memory
 - One 204-pin 1600/1333 MHz single-channel DDR3L SDRAM unbuffered SO-DIMM slot supports up to 8 GB
- ◆ Graphics Engine
 - Intel® HD Graphics Gen 8 Engine with 16 low-power execution units, supporting DX11.1, OpenGL 4.2 and OpenCL1.2
- ◆ Display Output
 - Triple independent display
 - 2 x HDMI (up to 3840x2160@30Hz)
 - 1 x 18/24-bit dual-channel LVDS (up to 1920x1200@60Hz)
- ◆ Ethernet
 - LAN1: Realtek RTL8111GN
 - LAN2: Realtek RTL8111GN
- ◆ External I/O Interface
 - 1 x RS-232
 - 2 x USB 3.0 (on rear I/O)
- ◆ Internal I/O Interface
 - 1 x eMMC4.51 (optional)
 - 1 x KB/MS (1x6 pin)
 - 1 x mSATA
 - 2 x RS-232/422/485 (2 by pin header) (1x9 pin, P=1.25)
 - 2 x SATA 6Gb/s with 5V SATA power connector (no RAID)
 - 3 x RS-232 (1x9 pin, P=1.25)
 - 4 x USB 2.0 (2x4 pin, P=2.0)
- ◆ SMBus
 - 1 x SMBus (1x4 pin)
- ◆ I²C
 - 1 x I²C (1x4 pin)
- ◆ Audio
 - Realtek ALC662 HD codec
 - 1 x Front audio (2x5 pin)
- ◆ Front Panel
 - 1 x Power LED & HDD LED (1x6 pin)
 - 1 x Power button (1x2 pin)
 - 1 x Reset button (1x2 pin)
- ◆ LAN LED
 - 2 x LAN LED (1x2 pin)
- ◆ Expansion
 - 1 x Full/Half-size PCIe Mini slot (with SIM card holder)
 - 1 x Full/Half-size PCIe Mini slot (supports mSATA, colay with SATA port 2)
- ◆ Digital I/O: 8-bit digital I/O (1x10 pin, P=1.25)
- ◆ Fan Connector
 - 1 x Smart fan connector (1x4 pin)
- ◆ Power Supply
 - 12V only DC input
 - 1 x Internal power connector (2x2 pin)
 - Support AT/ATX mode
- ◆ Power Consumption
 - 12V@1.52A (Intel® Pentium® processor N3710 with 8 GB 1600 MHz DDR3L memory)
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Operating Temperature: -20°C ~ 60°C
- ◆ Storage Temperature: -30°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 146mm x 102mm
- ◆ Weight: GW: 600g/ NW: 250g

Triple independent display

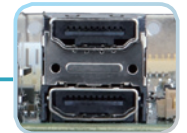
(Dual HDMI and one 18/24 bit dual-channel LVDS)



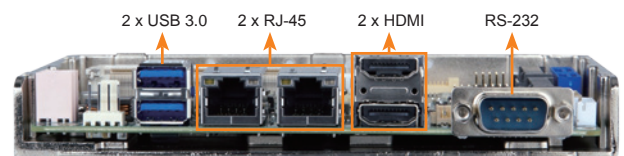
New



LVDS



HDMI



Features

- 3.5" SBC supports Intel® 14nm Pentium®/Celeron® on-board SoC
- Triple independent display support
- 1.35V DDR3L 1333/1600 MHz SDRAM up to 8 GB
- COM, USB 3.0, SATA 6Gb/s, PCIe Mini, mSATA and Audio support
- Two full-size PCIe Mini slots (one with SIM holder for WLAN/WWAN expansion)
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

1 x WAFER-BW single board computer
1 x Audio cable
1 x Power cable
1 x RS-232/422/485 cable
2 x SATA with power cable kit
1 x One Key Recovery CD
1 x QIG
1 x Utility CD

Ordering Information

Part No.	Description
WAFER-BW-N4-R10	3.5" SBC supports Intel® Pentium® quad-core processor N3710 up to 2.56GHz (6W) with dual HDMI and LVDS, Dual PCIe GbE, PCIe Mini, USB 3.0, SATA 6Gb/s, mSATA, COM, Audio and RoHS
WAFER-BW-N3-R10	3.5" SBC supports Intel® Celeron® quad-core processor N3160 up to 2.24GHz (6W) with dual HDMI and LVDS, Dual PCIe GbE, PCIe Mini, USB 3.0, SATA 6Gb/s, mSATA, COM, Audio and RoHS
WAFER-BW-N2-R10	3.5" SBC supports Intel® Celeron® dual-core processor N3060 up to 2.48GHz (6W) with dual HDMI and LVDS, Dual PCIe GbE, PCIe Mini, USB 3.0, SATA 6Gb/s, mSATA, COM, Audio and RoHS
WAFER-BW-N1-R10**	3.5" SBC supports Intel® Celeron® dual-core processor N3010 up to 2.24GHz (4W) with dual HDMI and LVDS, Dual PCIe GbE, PCIe Mini, USB 3.0, SATA 6Gb/s, mSATA, COM, Audio and RoHS
32000-023800-RS	PS/2 KB/MS cable, 135mm/110mm, P=2.0
32001-008600-200-RS	Dual-port USB 2.0 cable, 210mm, P=2.0
32005-003500-200-RS	RS-232/422/485 cable, 250mm, P=1.25

**By order production, MOQ: 100

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Industrial Computing Solutions

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Video Capture Solutions

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Industrial Computer Chassis

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Open Frame Monitor

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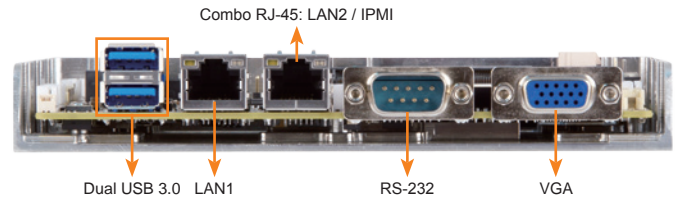
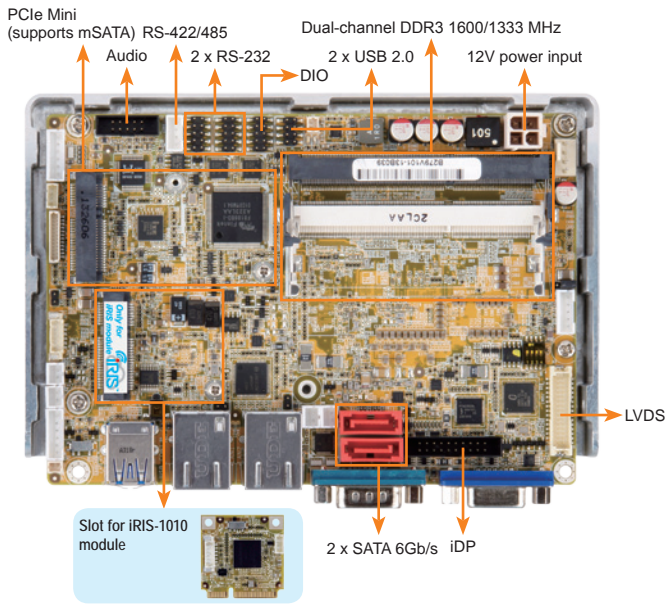
Power Supply/Peripherals

6

All-in-One System

WAFER-ULT2-i1

3.5" SBC supports Intel® 22nm 4th/ 14nm 5th Generation Mobile Core™ i7/i5/i3 and Celeron® on-board Processor (ULT), VGA/LVDS/iDP, Dual GbE, PCIe Mini, USB 3.0, SATA 6Gb/s Audio, iRIS-1010 and RoHS



Specifications

- ◆ CPU
 - » 5th generation Intel® mobile ULT on-board SoC
 - Intel® Core™ i7-5650U (2.2GHz, dual-core, 4MB cache, TDP=15W)
 - Intel® Core™ i5-5350U (1.8GHz, dual-core, 3MB cache, TDP=15W)
 - Intel® Core™ i3-5010U (2.1GHz, dual-core, 3MB cache, TDP=15W)
 - Intel® Celeron® processor 3765U (1.9GHz, dual-core, 2MB cache, TDP=15W)
 - » 4th generation Intel® mobile ULT on-board SoC
 - Intel® Core™ i7-4650U (1.7GHz, dual-core, 4MB cache, TDP=15W)
 - Intel® Core™ i5-4300U (1.9GHz, dual-core, 3MB cache, TDP=15W)
 - Intel® Core™ i3-4010U (1.7GHz, dual-core, 3MB cache, TDP=15W)
 - Intel® Celeron® processor 2980U (1.6GHz, dual-core, 2MB cache, TDP=15W)
- ◆ BIOS: UEFI BIOS
- ◆ Memory
 - Two 204-pin 1600/1333 MHz dual-channel DDR3L SDRAM SO-DIMM slots support up to 16 GB
- ◆ Graphics Engine
 - Intel® HD Graphics Gen 7.5 supports DX11.1, OpenGL 4.2 and OpenCL 1.2 Full MPEG2, VC1, AVC decode (4th generation SoC)
 - Intel® HD Graphics Gen 8 supports DX11.1, OpenGL 4.2 and OpenCL 1.2 Full MPEG2, VC1, AVC decode (5th generation SoC)
- ◆ Display Output
 - Triple independent display
 - 1 x VGA (up to 2560x1600@60Hz)
 - 1 x 18/24-bit dual-channel LVDS (up to 1920x1200@60Hz)
 - 1 x iDP interface for HDMI, LVDS, VGA, DVI, DP (up to 3840x2160@60Hz)
- ◆ Ethernet
 - LAN1: Intel® I218LM PHY with Intel® AMT 9.0 support
 - LAN2: Intel® I210-AT PCIe controller with NCSI support
- ◆ External I/O Interfaces
 - 2 x USB 3.0
 - 1 x RS-232
- ◆ Internal I/O Interfaces
 - 1 x KB/MS (1x6 pin)
 - 1 x RS-422/485 (1x4 pin, P=2.0)
 - 2 x USB 2.0 (2x4 pin, P=2.0)
 - 2 x RS-232 (2x5 pin, P=2.0)
 - 2 x SATA 6Gb/s with 5V power connector
- ◆ iRIS Remote Management Module
 - 1 x iRIS-1010 slot
- ◆ Expansion: 1 x Full-size PCIe Mini card slot (mSATA support)
- ◆ Audio
 - Realtek ALC662 HD Audio codec
 - 1 x audio (2x5 pin)
- ◆ Front Panel
 - 1 x Power LED & HDD LED (1x6 pin)
 - 1 x Power button (1x2 pin)
 - 1 x Reset button (1x2 pin)
- ◆ LAN LED: 2 x LAN LED (1x2 pin)
- ◆ Digital I/O: 8-bit digital I/O (2x5 pin)
- ◆ Fan Connector: 1 x System smart fan (1x4 pin)
- ◆ Watchdog Timer: Software programmable, support 1~255 sec. system reset
- ◆ Power Supply
 - 12V only DC input
 - 1 x Internal power connector (2x2 pin)
 - Support AT/ATX mode
- ◆ Power Consumption
 - 12V@2.72A (Intel® Core™ i5-4300U CPU with two 8 GB 1600 MHz DDR3 memory)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Storage Temperature: -20°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 146mm x 102mm
- ◆ Weight: GW: 600g/ NW: 250g

Features

- 3.5" form factor with 4th/5th generation Intel® ULT SoC supports dual-channel DDR3L DIMMs
- 12V only single voltage design with AT/ATX mode support
- 18/24-bit dual-channel LVDS support
- Support triple independent display via LVDS, VGA and iDP
- Support PCIe Mini card slot for mSATA, 3G card, wireless card and DOM

Packing List

1 x WAFER-ULT2 single board computer with heatsink enclosure	
1 x Audio cable	
1 x Dual-port USB 2.0 cable	1 x One Key Recovery CD
1 x Power cable	1 x QIG
2 x SATA with 5V output cable kit	1 x Utility CD

Ordering Information

Part No.	Description
WAFER-ULT2-i1-i7-R11	3.5" SBC with Intel® 14nm 5th Generation ULT Mobile Core™ i7-5650U processor (ULT), VGA/LVDS/iDP, Dual GbE, PCIe Mini, USB 3.0, SATA 6 GB/s and iRIS
WAFER-ULT2-i1-i5-R11	3.5" SBC with Intel® 14nm 5th Generation ULT Mobile Core™ i5-5350U processor (ULT), VGA/LVDS/iDP, Dual GbE, PCIe Mini, USB 3.0, SATA 6 GB/s and iRIS
WAFER-ULT2-i1-i3-R11	3.5" SBC with Intel® 14nm 5th Generation ULT Mobile Core™ i3-5010U processor (ULT), VGA/LVDS/iDP, Dual GbE, PCIe Mini, USB 3.0, SATA 6 GB/s and iRIS
WAFER-ULT2-i1-C-R11	3.5" SBC with Intel® 14nm 5th Generation ULT Mobile Celeron® 3765U processor (ULT), VGA/LVDS/iDP, Dual GbE, PCIe Mini, USB 3.0, SATA 6 GB/s and iRIS
WAFER-ULT-i1-i7-R11	3.5" SBC supports Intel® 22nm 4th Generation Mobile Core™ i7-4650U processor (ULT), VGA/LVDS/iDP, Dual GbE, USB 3.0, PCIe Mini, SATA 6Gb/s Audio, iRIS-1010 and RoHS
WAFER-ULT-i1-i5-R11	3.5" SBC supports Intel® 22nm 4th Generation Mobile Core™ i5-4300U processor (ULT), VGA/LVDS/iDP, Dual GbE, USB 3.0, PCIe Mini, SATA 6Gb/s Audio, iRIS-1010 and RoHS
WAFER-ULT-i1-i3-R11	3.5" SBC supports Intel® 22nm 4th Generation Mobile Core™ i3-4010U processor (ULT), VGA/LVDS/iDP, Dual GbE, USB 3.0, PCIe Mini, SATA 6Gb/s Audio, iRIS-1010 and RoHS
WAFER-ULT-i1-C-R11	3.5" SBC supports Intel® 22nm 4th Generation Mobile Celeron™ 2980U processor (ULT), VGA/LVDS/iDP, Dual GbE, USB 3.0, PCIe Mini, SATA 6Gb/s Audio, iRIS-1010 and RoHS
iRIS-1010-R10	IPMI 2.0 adapter card with AST1010 BMC chip (w/o KVM over IP function) for PCIe Mini socket interface
19800-000300-200-RS	RS-232 cable, 300mm, P=2.0
32000-023800-RS	PS/2 KB/MS cable, 135mm/110mm, P=2.0
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
DP-DP-R10	DisplayPort to DisplayPort converter board (for IEI iDP connector)
DP-DVI-R10	DisplayPort to DVI-D converter board (for IEI iDP connector)
DP-HDMI-R10	DisplayPort to HDMI converter board (for IEI iDP connector)
DP-LVDS-R10	DisplayPort to LVDS converter board (for IEI iDP connector)
DP-VGA-R10	DisplayPort to VGA converter board (for IEI iDP connector)

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Industrial Computing Solutions

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Video Capture Solutions

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Industrial Computer Chassis

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Open Frame Monitor

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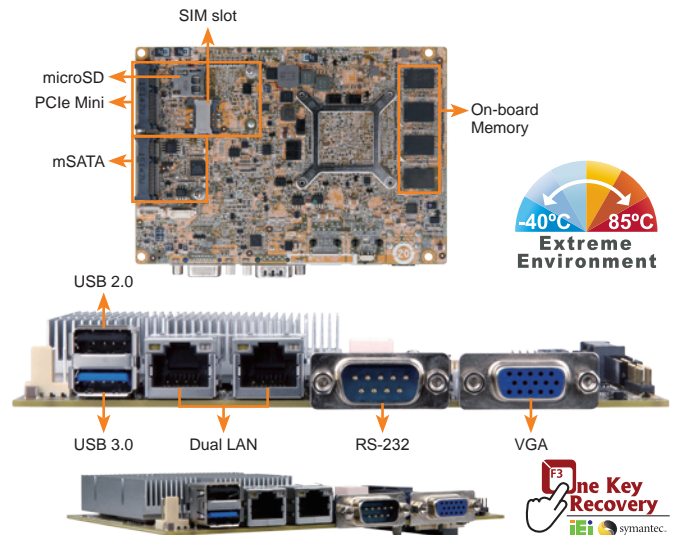
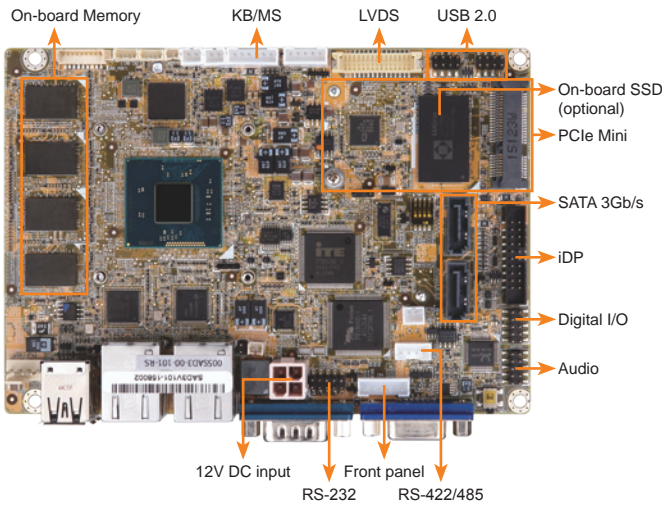
Power Supply/Peripherals

6

All-in-One System

WAFER-BT-E38001W2

3.5" SBC with Intel® 22nm Atom™ SoC, -40°C ~ 85°C, VGA/LVDS/iDP, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 3Gb/s, mSATA, COM, Audio and RoHS



Specifications

- ◆ SoC
 - Intel® Atom™ E3845 on-board SoC (1.91GHz, quad-core, 2MB cache, TDP=10W)
 - Intel® Atom™ E3827 on-board SoC (1.75GHz, dual-core, 1MB cache, TDP=8W)
 - Intel® Atom™ E3826 on-board SoC (1.46GHz, dual-core, 1MB cache, TDP=7W)
 - Intel® Atom™ E3825 on-board SoC (1.33GHz, dual-core, 1MB cache, TDP=6W)
 - Intel® Atom™ E3815 on-board SoC (1.46GHz, single-core, 512KB cache, TDP=5W)
- ◆ BIOS
 - UEFI BIOS
- ◆ Memory
 - 4 GB solder-down 1066/1333 MHz DDR3L memory (for E3845)
 - 2 GB solder-down 1066/1333 MHz DDR3L memory (for E3825)
- ◆ Graphics
 - Intel® HD Graphics Gen 7 Engine with 4 execution units, supporting DX11.1, OpenGL 4.2 and OpenCL1.2
- ◆ Display Output
 - Dual independent display
 - 1 x VGA (up to 2560x1600@60Hz)
 - 1 x 18/24-bit dual-channel LVDS (up to 1920x1200@60Hz)
 - 1 x iDP interface for HDMI, LVDS, VGA, DVI, DP (up to 2560x1600@60Hz)
- ◆ Ethernet
 - LAN1: Intel® I210-IT PCIe controller
 - LAN2: Intel® I210-IT PCIe controller
- ◆ External I/O Interface
 - 1 x RS-232
 - 1 x USB 2.0
 - 1 x USB 3.0
- ◆ Internal I/O Interface
 - 1 x PS/2 KB/MS (1x6 pin) 1 x RS-232 (2x5 pin, P=2.0)
 - 4 x USB 2.0 (2x4 pin, P=2.0) 1 x RS-422/485 (1x4 pin, P=2.0)
 - 2 x SATA 3Gb/s with 5V SATA power connector (no RAID)
- ◆ Expansion
 - 2 x Full-size PCIe mini slot
- ◆ Audio
 - Realtek ALC662 HD Audio codec
 - 1 x Front audio (2x5 pin)
- ◆ Storage
 - On-board SSD 4 GB colay SATA port 1 (optional)
 - 1 x mSATA colay SATA port 2
 - 1 x microSD socket
- ◆ Front Panel
 - 1 x Power LED & HDD LED (1x6 pin)
 - 1 x Power button (1x2 pin)
 - 1 x Reset button (1x2 pin)
- ◆ SMBus: 1 x SMBus (1x4 pin)
- ◆ I²C: 1 x I²C (1x4 pin)
- ◆ LAN LED: 2 x LAN LED (1x2 pin)
- ◆ Digital I/O: 8-bit digital I/O (2x5 pin)
- ◆ Fan Connector
 - 1 x Smart fan connector (1x4 pin)
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
 - 12V only DC input
 - 1 x Internal power connector (2x2 pin)
 - Support AT/ATX mode
- ◆ Power Consumption
 - 12V@1.32A (Intel® Atom™ processor E3845 with on-board 2 GB 1333 MHz DDR3L memory)
- ◆ Operating Temperature: -40°C ~ 85°C
- ◆ Storage Temperature: -40°C ~ 85°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 146mm x 102mm
- ◆ Weight: GW: 600g / NW: 250g

Features

- 3.5" SBC supports Intel® 22nm Atom™ on-board SoC
- Dual independent display support
- On-board 2 GB/4 GB 1066/1333 MHz DDR3L memory
- COM, USB 3.0, SATA 3Gb/s, PCIe Mini, mSATA and Audio support
- Supports -40°C ~ 85°C
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

1 x WAFER-BT single board computer	1 x QIG
1 x Power cable	1 x Utility CD
1 x SATA with power cable kit	1 x One Key Recovery CD

Ordering Information

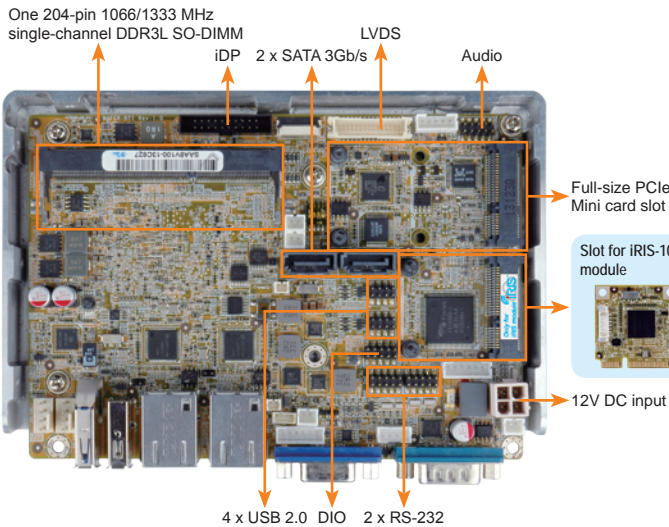
Part No.	Description
WAFER-BT-E3845W2-R10	3.5" SBC with Intel® 22nm Atom™ quad-core E3845 1.91GHz (10W) on-board SoC supports -40°C ~ 85°C, 4 GB DDR3 memory on board, VGA/LVDS/iDP, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 3Gb/s, mSATA, COM, Audio and RoHS
WAFER-BT-E3827W2-R10**	3.5" SBC with Intel® 22nm Atom™ dual-core E3827 1.75GHz (8W) on-board SoC supports -40°C ~ 85°C, 2 GB DDR3 memory on board, VGA/LVDS/iDP, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 3Gb/s, mSATA, COM, Audio and RoHS
WAFER-BT-E3826W2-R10**	3.5" SBC with Intel® 22nm Atom™ dual-core E3826 1.46GHz (7W) on-board SoC supports -40°C ~ 85°C, 2 GB DDR3 memory on board, VGA/LVDS/iDP, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 3Gb/s, mSATA, COM, Audio and RoHS
WAFER-BT-E3825W2-R10	3.5" SBC with Intel® 22nm Atom™ dual-core E3825 1.33GHz (6W) on-board SoC supports -40°C ~ 85°C, 2 GB DDR3 memory on board, VGA/LVDS/iDP, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 3Gb/s, mSATA, COM, Audio and RoHS
WAFER-BT-E3815W2-R10**	3.5" SBC with Intel® 22nm Atom™ single-core E3815 1.46GHz (5W) on-board SoC supports -40°C ~ 85°C, 2 GB DDR3 memory on board, VGA/LVDS/iDP, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 3Gb/s, mSATA, COM, Audio and RoHS
19800-000300-100-RS	RS-232 cable with bracket, 300mm, P=2.0
32000-023800-RS	PS/2 KB/MS cable, 135mm/110mm, P=2.0
32001-008600-200-RS	Dual-port USB cable, 210mm, P=2.0
32007-005200-200-RS	Audio cable, 300mm, P=2.0
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
DP-DP-R10	DisplayPort to DisplayPort converter board (for IEI iDP connector)
DP-DVI-R10	DisplayPort to DVI-D converter board (for IEI iDP connector)
DP-HDMI-R10	DisplayPort to HDMI converter board (for IEI iDP connector)
DP-LVDS-R10	DisplayPort to LVDS converter board (for IEI iDP connector)
DP-VGA-R10	DisplayPort to VGA converter board (for IEI iDP connector)

**By order production, MOQ: 100

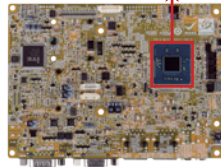
- Industrial Computing Solutions
- Video Capture Solutions
- Industrial Computer Chassis
- Open Frame Monitor
- Power Supply/Peripherals
- All-in-One System

WAFER-BT-i1

3.5" SBC with Intel® 22nm Atom™/Celeron® on-board SoC, VGA/LVDS/iDP, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 3Gb/s, mSATA, COM, Audio and RoHS



Intel® Atom™ Bay Trail SoC processor on solder side



1 x Full-size PCIe Mini slot for Wi-Fi expansion
2 x SATA connector for storage

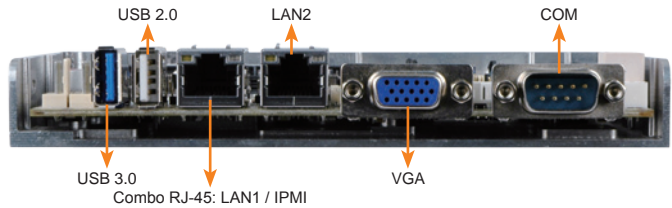


Dual independent display (max. support 1920x1200@60Hz)



Specifications

- ◆ SoC
 - Intel® Atom™ E3845 on-board SoC (1.91GHz, quad-core, 2MB cache, TDP=10W)
 - Intel® Atom™ E3827 on-board SoC (1.75GHz, dual-core, 1MB cache, TDP=8W)
 - Intel® Atom™ E3826 on-board SoC (1.46GHz, dual-core, 1MB cache, TDP=7W)
 - Intel® Atom™ E3825 on-board SoC (1.33GHz, dual-core, 1MB cache, TDP=6W)
 - Intel® Atom™ E3815 on-board SoC (1.46GHz, single-core, 512KB cache, TDP=5W)
 - Intel® Celeron® J1900 on-board SoC (2GHz, quad-core, 2MB cache, TDP=10W)
 - Intel® Celeron® N2930 on-board SoC (1.83GHz, quad-core, 2MB cache, TDP=7.5W)
 - Intel® Celeron® N2807 on-board SoC (1.58GHz, dual-core, 2MB cache, TDP=4.3W)
- ◆ BIOS
 - AMI UEFI BIOS
- ◆ Memory
 - One 204-pin 1066/1333 MHz single-channel DDR3L SO-DIMM slot supports up to 8 GB (J1900, N2930, E3845, E3827, E3826) or 4 GB (N2807, E3825, E3815)
- ◆ Graphics Engine
 - Intel® HD Graphics Gen 7 Engine with 4 execution units, supports DX11.1, OpenGL 4.2 and OpenCL 1.2
- ◆ Display Output
 - Dual independent display
 - 1 x VGA (up to 2560x1600@60Hz)
 - 1 x 24-bit dual-channel LVDS connector (up to 1920x1200@60Hz)
 - 1 x iDP interface for HDMI, LVDS, VGA, DVI, DP (up to 2560x1600@60Hz)
- ◆ Ethernet
 - LAN1: Intel® I210-AT PCIe controller with NCSI support
 - LAN2: Intel® I211-AT PCIe controller
- ◆ External I/O Interface
 - 1 x RS-232
 - 1 x USB 2.0
 - 1 x USB 3.0
- ◆ Internal I/O Interface
 - 1 x KB/MS (1x6 pin)
 - 1 x RS-422/485 (1x4 pin, P=2.0)
 - 2 x RS-232 (2x5 pin, P=2.0)
 - 2 x SATA 3Gb/s with 5V SATA power connector
 - 4 x USB 2.0 (2x4 pin, P=2.0)
- ◆ SMBus: 1 x SMBus (1x4 pin)
- ◆ Audio
 - Realtek ALC662 HD codec
 - 1 x Front audio (2x5 pin)
- ◆ Front Panel
 - 1 x Power LED & HDD LED (1x6 pin)
 - 1 x Power button (1x2 pin)
 - 1 x Reset button (1x2 pin)
- ◆ LAN LED: 2 x LAN LED (1x2 pin)
- ◆ Expansion: 1 x Full-size PCIe Mini card slot (supports mSATA, colay with SATA port 2)
- ◆ iRIS Remote Management Module: 1 x iRIS-1010 slot
- ◆ Digital I/O: 8-bit digital I/O (2x5 pin)
- ◆ Fan Connector
 - 1 x CPU smart fan (1x4 pin)
 - 1 x System smart fan (1x4 pin)
- ◆ Power Supply
 - 12V only DC input
 - 1 x Internal power connector (2x2 pin)
 - Support AT/ATX mode
- ◆ Watchdog Timer: Software programmable, supports 1~255 sec. system reset
- ◆ Power Consumption
 - 12V@1.45A (Intel® Celeron® J1900 with one 8 GB 1333 MHz DDR3 memory)
- ◆ Operating Temperature: -20°C ~ 60°C
- ◆ Storage Temperature: -30°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 146mm x 102mm
- ◆ Weight: GW: 600g / NW: 250g



Features

- 3.5" SBC supports Intel® 22nm Atom™ on-board SoC
- Dual independent display support
- 1333/1066 MHz 1.35V DDR3L SDRAM up to 8 GB
- COM, USB 3.0, SATA 3Gb/s, PCIe Mini, mSATA and Audio support
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery



Packing List

1 x WAFER-BT-i1 single board computer	
1 x Audio cable	1 x One Key Recovery CD
1 x Power cable	1 x QIG
1 x SATA with power cable kit	1 x Utility CD

Ordering Information

Part No.	Description
WAFER-BT-i1-J19001-R10	3.5" SBC supports Intel® 22nm quad-core Celeron® J1900 2.0GHz on-board SoC with VGA/LVDS/iDP, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 6Gb/s, mSATA, COM, Audio, iRIS-1010 and RoHS
WAFER-BT-i1-N28071-R10	3.5" SBC supports Intel® 22nm dual-core Celeron® N2807 1.58GHz (4.3W) on-board SoC with VGA/LVDS/iDP, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 6Gb/s, mSATA, COM, Audio, iRIS-1010 and RoHS
WAFER-BT-i1-N29301-R10	3.5" SBC supports Intel® 22nm quad-core Celeron® N2930 1.86GHz (7.5W) on-board SoC with VGA/LVDS/iDP, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 6Gb/s, mSATA, COM, Audio, iRIS-1010 and RoHS
WAFER-BT-i1-E38XX1-R10**	3.5" SBC supports Intel® 22nm Atom™ E38XX on-board SoC with VGA/LVDS/iDP, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 6Gb/s, mSATA, COM, Audio, iRIS-1010 and RoHS
WAFER-BT-J19001-ECO-R10	Intel® 22nm Quad-Core Celeron® J1900 2.0GHz on-board SoC with VGA/LVDS/iDP, Dual PCIe GbE, USB 2.0, PCIe Mini, SATA, mSATA, COM, Audio, ECO packing and RoHS
19800-000300-100-RS	RS-232 cable, 300mm, P=2.0
32000-023800-RS	PS/2 KB/MS cable, 135mm/110mm, P=2.0
32001-008600-200-RS	Dual-port USB cable, 210mm, P=2.0
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0

**By order production, MOQ: 100

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Industrial Computing Solutions

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Video Capture Solutions

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Industrial Computer Chassis

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Open Frame Monitor

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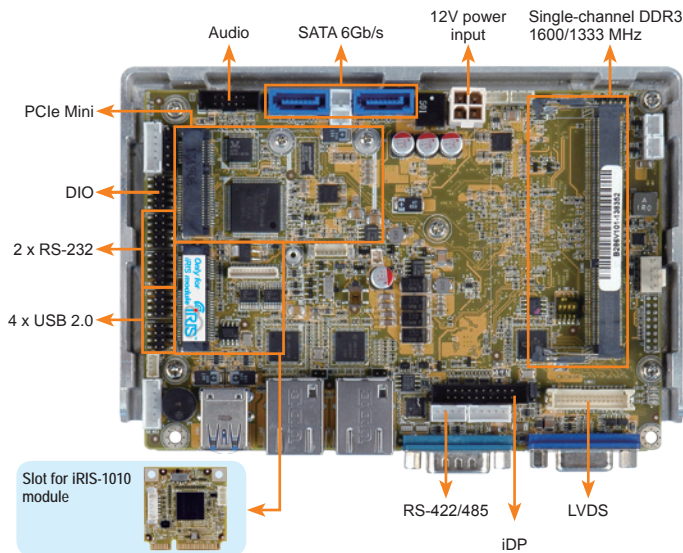
Power Supply/Peripherals

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All-in-One System

WAFER-KBN-i1

3.5" SBC supports AMD® Embedded G-Series SoC with VGA/LVDS/iDP, Dual GbE, PCIe Mini, USB 3.0, SATA 6Gb/s, iRIS-1010, HD Audio and RoHS



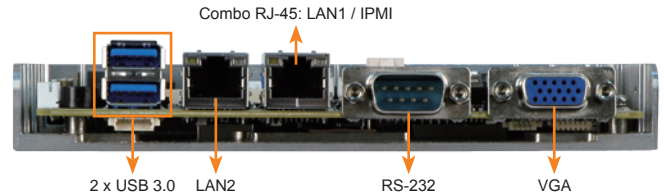
Multimedia Features

Unified Video Decoder 4.2 H.264, MPEG-2, VC-1, MPEG4 (DivX), and WMV

Outstanding graphics performance and power saving through integrated advanced graphics and hardware

Video Compression Engine 2.0 Video conferencing, wireless display, H.264, SVC

Fast HD transcoding, low latency encoding conclusions, power efficient video conferencing



Specifications

- ◆ SoC
 - AMD® Embedded G-Series SoC
 - GX-415GA on-board SoC (1.5GHz, quad-core, 2MB cache, TDP=15W)
 - GX-210HA on-board SoC (1.0GHz, dual-core, 1MB cache, TDP=9W)
 - GX-420CA on-board SoC (2.0GHz, quad-core, 2MB cache, TDP=25W)
 - GX-217GA on-board SoC (1.65GHz, dual-core, 1MB cache, TDP=15W)
- ◆ BIOS
 - AMI UEFI BIOS
- ◆ Memory
 - One 204-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SDRAM SO-DIMM slot supports up to 8 GB
- ◆ Graphics Engine
 - GPU frequency 500 MHz (Radeon™ HD 8330E) for GX-415GA
 - GPU frequency 300 MHz (Radeon™ HD 8310E) for GX-210HA
 - GPU frequency 600 MHz (Radeon™ HD 8400E) for GX-420CA
 - GPU frequency 450 MHz (Radeon™ HD 8280E) for GX-217GA
 - Support DX11.1, OpenGL 4.1 and OpenCL1.2
 - UVD4.2 decode for H.264, MPEG2/4, VC1, MVC
 - VCE 2.0 encode for H.264, VCE
- ◆ Display Output
 - 1 x VGA (up to 2048x1536@60Hz)
 - 1 x 18/24-bit dual-channel LVDS (up to 1920x1200@60Hz)
 - 1 x iDP interface for HDMI, LVDS, VGA, DVI, DP (up to 2560x1600@60 Hz)
- ◆ Ethernet
 - LAN1: Intel® I210-AT PCIe controller with NCSI support
 - LAN2: Intel® I211-AT PCIe controller
- ◆ External I/O Interface
 - 1 x RS-232
 - 2 x USB 3.0
- ◆ Internal I/O Interface
 - 1 x KB/MS (1x6 pin)
 - 1 x RS-422/485 (1x4 pin, P=2.0)
 - 2 x RS-232 (2x5 pin, P=2.0)
 - 2 x SATA 3Gb/s with 5V SATA power connector
 - 4 x USB 2.0 (2x4 pin, P=2.0)
- ◆ iRIS Remote Management Module: 1 x iRIS-1010 slot
- ◆ SMBus: 1 x SMBus (1x4 pin)
- ◆ I²C: 1 x I²C (1x4 pin)
- ◆ Audio
 - Realtek ALC892 HD codec
 - 1 x Front audio (2x5 pin)
 - 1 x S/PDIF (1x4 pin)
- ◆ Front Panel
 - 1 x Power LED & HDD LED (1x6 pin)
 - 1 x Power button (1x2 pin)
 - 1 x Reset button (1x2 pin)
- ◆ LAN LED: 2 x LAN LED (1x2 pin)
- ◆ Expansion: 1 x Full-size PCIe Mini card slot (supports mSATA co-lay SATA port 2)
- ◆ Digital I/O: 8-bit digital I/O (2x5 pin)
- ◆ Fan Connector: 1 x 4-pin system fan connector
- ◆ Watchdog Timer: Software programmable, support 1~255 sec. system reset
- ◆ Power Supply
 - 12V only DC input
 - 1 x Internal power connector (2x2 pin)
 - Support AT/ATX mode
- ◆ Power Consumption
 - 12V@2.12A (AMD GX-415GA 1.5GHz CPU with one 4 GB 1333 MHz DDR3 memory)
- ◆ Operating Temperature: 0°C ~ 60°C
- ◆ Storage Temperature: -10°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 146mm x 102mm
- ◆ Weight: GW: 600g/ NW: 250g



Features

- 3.5" form factor with AMD® Embedded G-Series SoC
- 12V only single voltage design with AT/ATX mode
- 18/24-bit dual-channel LVDS for high resolution panel
- Dual independent display by VGA, LVDS and iDP
- Support IPMI 2.0 with iRIS-1010 module
- Support full-size PCIe Mini card slot for mSATA, wireless card and DOM
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

1 x WAFER-KBN single board computer with Enclosure Heatsink	
1 x Audio cable	
1 x Power cable	1 x One Key Recovery CD
1 x RS-232 cable	1 x QIG
2 x SATA with 5V output cable kit	1 x Utility CD

Ordering Information

Part No.	Description
WAFER-KBN-i1-4151-R10	3.5" SBC supports AMD 28nm quad-core GX-415GA 1.5GHz (15W) on-board SoC with VGA/LVDS, Dual GbE, PCIe Mini, USB 3.0, SATA 6Gb/s, iRIS-1010, HD Audio and RoHS
WAFER-KBN-i1-2101-R10	3.5" SBC supports AMD 28nm dual-core GX-210HA 1.0GHz (9W) on-board SoC with VGA/LVDS, Dual GbE, PCIe Mini, USB 3.0, SATA 6Gb/s, iRIS-1010, HD Audio and RoHS
iRIS-1010-R10	IPMI 2.0 adapter card with AST1010 BMC chip (W/O KVM over IP function) for PCIe Mini socket interface
32000-023800-RS	PS/2 KB/MS cable, 135mm/110mm, P=2.0
32001-008600-200-RS	Dual-port USB cable, 210mm, P=2.0
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
DP-DP-R10	DisplayPort to DisplayPort converter board (for IEI iDP connector)
DP-DVI-R10	DisplayPort to DVI-D converter board (for IEI iDP connector)
DP-HDMI-R10	DisplayPort to HDMI converter board (for IEI iDP connector)
DP-LVDS-R10	DisplayPort to LVDS converter board (for IEI iDP connector)
DP-VGA-R10	DisplayPort to VGA converter board (for IEI iDP connector)

Note: Models with other CPU not listed in the table are requested by MOQ: 100 pcs/lot.

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Industrial Computer Chassis

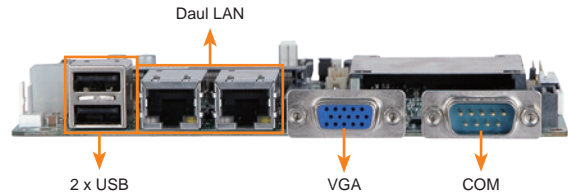
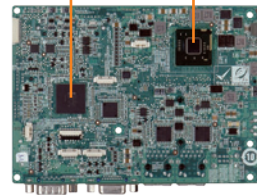
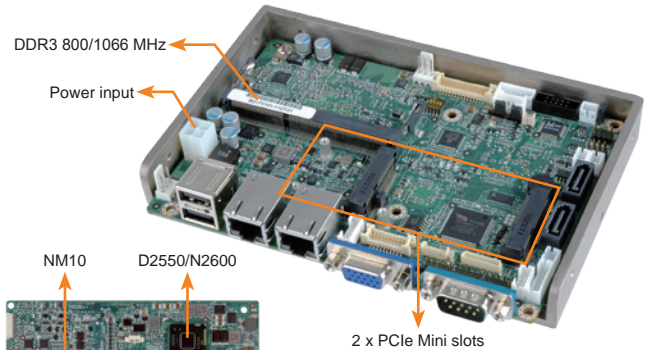
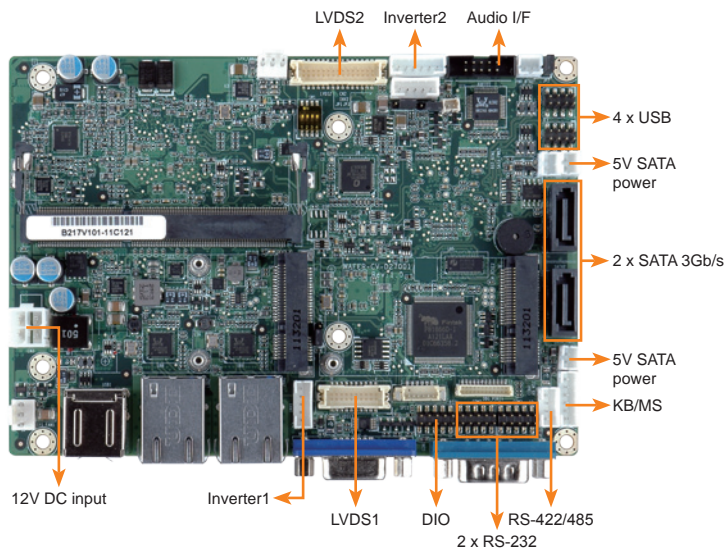
4 Open Frame Monitor

5 Power Supply/Peripherals

6 All-in-One System

WAFER-CV-D25501 N26001

3.5" SBC with Intel® Atom™ D2550/N2600 Processor, DDR3, VGA/Dual LVDS, Dual GbE, USB 2.0, SATA 3Gb/s, Audio and RoHS



Specifications

- ◆ CPU
 - Intel® Atom™ D2550 (1.86GHz, dual-core, 1MB cache)
 - Intel® Atom™ N2600 (1.6GHz, dual-core, 1MB cache)
 - Intel® Atom™ N2800 (1.86GHz, dual-core, 1MB cache)
- ◆ Chipset
 - Intel® NM10
- ◆ BIOS
 - UEFI BIOS
- ◆ Memory
 - One 204-pin 1066 MHz DDR3 SDRAM SO-DIMM slot supports up to 4 GB (D2550/N2800) or 2 GB (N2600)
- ◆ Display Output
 - Dual display supported
 - VGA (up to 1920x1200@60Hz)
 - (Due to Intel GMA driver limitation, the monitor connected to the VGA connector may not have signal to it or become extended desktop after restarting from the graphics driver installation. To solve this problem, press the Ctrl+Alt+F1 hotkey to switch the primary screen to CRT mode.)
 - 24-bit single-channel LVDS1 (D2550) (up to 1440x900@60Hz)
 - 18-bit single-channel LVDS1 (N2600/N2800) (up to 1366x768@60Hz)
 - 24-bit dual-channel LVD2 (up to 1920x1200 (D2550) or 1600x1200 (N2600/N2800)@60Hz)
- ◆ Graphics
 - GMA 3650 at 640 MHz graphics core speed (for N2550 and N2800)
 - GMA 3600 at 400 MHz graphics core speed (for N2600)
- ◆ Ethernet
 - Dual LAN: Realtek RTL8111E controllers
- ◆ External I/O Interface
 - 1 x RS-232
 - 2 x USB 2.0
- ◆ Internal I/O Interface
 - 1 x KB/MS (1x6 pin)
 - 1 x RS-422/485 (1x4 pin, P=2.0)
 - 2 x RS-232 (2x5 pin, P=2.0)
 - 2 x SATA 3Gb/s with 5V SATA power connector
 - 4 x USB 2.0 (2x4 pin, P=2.0)
- ◆ Digital I/O
 - 8-bit digital I/O (2x5 pin)
- ◆ Expansion
 - 1 x Full-size PCIe Mini card slot (supports mSATA, colay with SATA port 2)
 - 1 x Half-size PCIe Mini card slot
- ◆ Audio
 - Realtek ALC662 HD codec
 - 1 x Front audio (2x5 pin)
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
 - 12V only DC input
 - 1 x Internal power connector (2x2 pin)
 - Support AT/ATX mode
- ◆ Fan Connector (smart fan support)
 - 1 x CPU smart fan (1x3 pin)
 - 1 x System smart fan (1x3 pin)
- ◆ Power Consumption
 - 12V@1.53A (Intel® D2550 1.86GHz CPU with one 1 GB 1066 MHz DDR3 memory)
 - 12V@1.15A (Intel® N2600 1.6GHz CPU with one 1 GB 1066 MHz DDR3 memory)
- ◆ Operating Temperature
 - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2550 processor
 - 20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600/N2800 processor
- ◆ Storage Temperature: -30°C ~ 80°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Weight: GW: 600g / NW: 250g



Features

- 3.5" form factor with Intel® Atom™ D2550/N2600 dual-core processor supporting DDR3 memory
- 12V only single voltage design for AT/ATX power
- Open frame heatsink thermal design for fanless solutions
- Flexible VGA, 18/24-bit LVDS with dual display support
- Complete I/O: six USB, two SATA 3Gb/s, one mSATA, four COM and audio
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

1 x WAFER-CV-D25501/N26001 single board computer	
1 x Audio cable	
1 x KB/MS cable	1 x One Key Recovery CD
1 x Power cable	1 x Heat spreader
1 x RS-232 cable	1 x Mini jumper pack
1 x Screw set for PCIe Mini card	1 x Utility CD
2 x SATA with 5V output cable	1 x QIG

Ordering Information

Part No.	Description
WAFER-CV-D25501-R10	3.5" SBC with Intel® Atom™ D2550 1.86GHz, DDR3, VGA/ dual LVDS, dual GbE, USB 2.0, SATA 3Gb/s, Audio, RoHS
WAFER-CV-N26001-R10	3.5" SBC with Intel® Atom™ N2600 1.6 GHz, DDR3, VGA/ dual LVDS, dual GbE, USB 2.0, SATA 3Gb/s, Audio, RoHS
WAFER-CV-N28001-R10**	3.5" SBC with Intel® Atom™ N2800 1.86GHz, DDR3, VGA/ dual LVDS, dual GbE, USB 2.0, SATA 3Gb/s, Audio, RoHS (by project support, MOQ 100pcs / lot)
32001-008600-200-RS	Dual-port USB cable, 210mm, P=2.0
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0

**By order production, MOQ: 100

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Industrial Computing Solutions

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Video Capture Solutions

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Industrial Computer Chassis

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Open Frame Monitor

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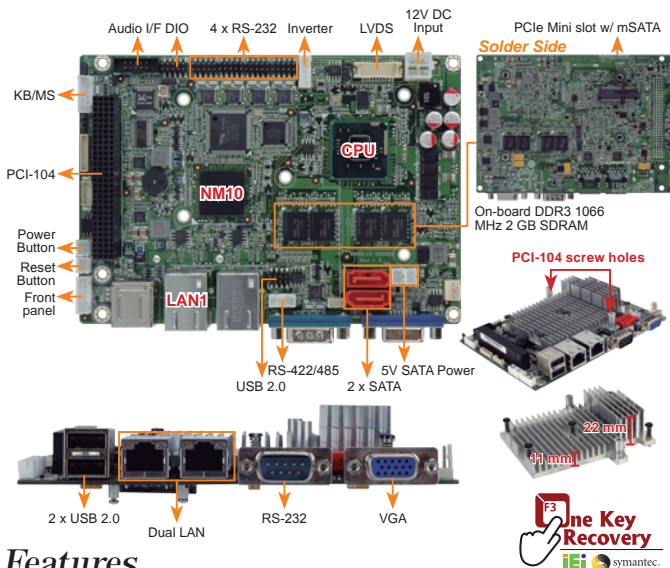
Power Supply/ Peripherals

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All-in-One System

WAFER-CV-D25502/N26002

3.5" SBC Supports Intel® Atom™ D2550/N2600 Processor with 2 GB DDR3 Memory, VGA/LVDS, Dual GbE, PCI-104, USB 2.0, SATA 3Gb/s and Audio



Features

- 3.5" form factor supports Intel® Atom™ D2550/N2600 dual-core processor with 2 GB DDR3 memory
- 12V only single voltage design for AT/ATX power
- 24-bit single-channel LVDS via D2550 CPU or 18-bit single-channel via N2600/N2800 CPU support
- Supporting PCI-104 and mSATA
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Intel® Atom™ D2550 (1.86GHz, dual-core, 1MB cache)
 - Intel® Atom™ N2600 (1.6GHz, dual-core, 1MB cache)
 - Intel® Atom™ N2800 (1.86GHz, dual-core, 1MB cache)
- ◆ System Chipset: Intel® NM10
- ◆ BIOS: UEFI BIOS
- ◆ Memory
 - 2 GB soldered-down 1066 MHz DDR3 memory
- ◆ Graphics
 - GMA 3650 with 640 MHz graphics core speed for D2550 and N2800
 - GMA 3600 with 400 MHz graphics core speed for N2600
- ◆ Display Output
 - VGA (up to 1920x1200@60Hz)
 - 24-bit single-channel LVDS (D2550) (up to 1440x900@60Hz)
 - 18-bit single-channel LVDS (N2600/N2800) (up to 1366x768@60Hz)
- ◆ Ethernet
 - LAN1: Realtek RTL8111E controllers with ASF2.0 support
 - LAN2: Realtek RTL8111E controllers
- ◆ Digital I/O
 - 8-bit digital I/O (2x5 pin)
- ◆ External I/O Interface
 - 1 x RS-232
 - 2 x USB 2.0
- ◆ Internal I/O Interface
 - 1 x KB/MS (1x6 pin)
 - 1 x RS-422/485 (1x4 pin, P=2.0)
 - 2 x SATA 3Gb/s with 5V SATA power connector
 - 2 x USB 2.0 (2x4 pin, P=2.0)
 - 4 x RS-232 (2x5 pin, P=2.0)
- ◆ Expansion
 - 1 x Full-size PCIe Mini card slot (support mSATA)
 - 1 x PCI/104 slot (PCI signal)
- ◆ Audio: Realtek ALC662 HDA codec
- ◆ Fan Connector
 - 1 x Smart fan connector (1x3 pin)
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
 - 12V only DC input
 - 1 x Internal power connector (2x2 pin)
- ◆ Support AT/ATX mode
- ◆ Power Consumption:
 - 12V@1.19A (1.86GHz Intel® Atom™ D2550 with on-board 1 GB 1066 MHz DDR3 memory)
 - 12V@0.95A (1.6GHz Intel® Atom™ N2600 with on-board 2 GB 1066 MHz DDR3 memory)
- ◆ Operating Temperature
 - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2550 processor
 - 20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600/N2800 processor
- ◆ Storage Temperature: -30°C ~ 80°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 146 mm x 102 mm
- ◆ Weight: GW: 600g / NW: 250g

Packing List

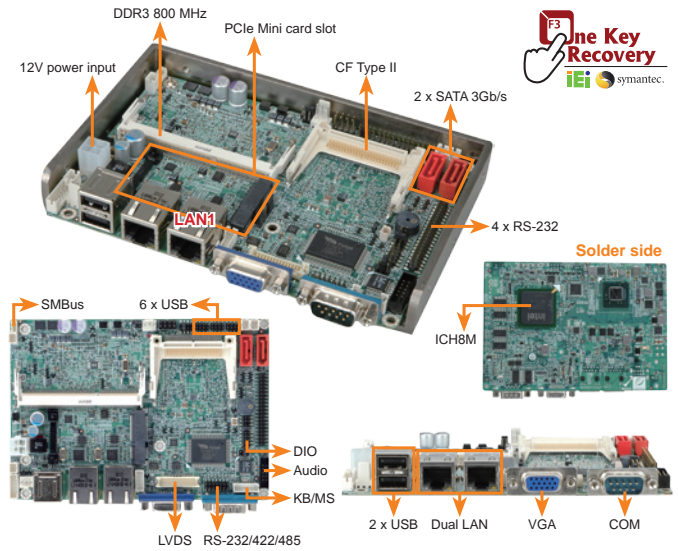
1 x WAFER-CV-D25502/N26002 single board computer	
1 x Audio cable	
1 x Power cable	1 x Mini jumper pack
1 x PS/2 KB/MS cable	1 x QIG
1 x RS-232 cable	1 x Utility CD
2 x SATA with 5V output cable kit	1 x One Key Recovery CD

Ordering Information

Part No.	Description
WAFER-CV-D25502-R10	3.5" SBC supports Intel® Atom™ D2550 1.86 MHz processor with 2 GB DDR3 memory, VGA/LVDS, Dual GbE, PCI/104, USB 2.0, SATA 3Gb/s and Audio
WAFER-CV-N26002-R10	3.5" SBC supports Intel® Atom™ N2600 1.6 MHz processor with 2 GB DDR3 memory, VGA/LVDS, Dual GbE, PCI/104, USB 2.0, SATA 3Gb/s and Audio
**WAFER-CV-N28002-R10	3.5" SBC supports Intel® Atom™ N2800 1.86 MHz processor with 2 GB DDR3 memory, VGA/LVDS, Dual GbE, PCI/104, USB 2.0, SATA 3Gb/s and Audio (by project support, MOQ 100pcs / lot)
32001-008600-200-RS	Dual-port USB cable, 210mm, P=2.0
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0

WAFER-PV-D5252/D4252/N4552

3.5" SBC with Intel® Atom™ D425/N455/D525, DDR3, VGA/LVDS, Dual GbE, USB 2.0 and SATA 3Gb/s, Audio, RoHS



Features

- 3.5" form factor with Intel® Atom™ D525/D425/N455 processor supports DDR3 memory
- 12V only single voltage design for AT/ATX power
- Open frame heatsink thermal design for fanless solutions
- Support VGA and 18-bit single-channel LVDS with dual display support
- Complete I/O with eight USB, two SATA 3Gb/s, one CF Type II, six COM and audio
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Intel® Atom™ D525 (1.8GHz, dual-core, 1MB cache)
 - Intel® Atom™ D425 (1.8GHz, single-core, 512KB cache)
 - Intel® Atom™ N455 (1.66GHz, single-core, 512KB cache)
- ◆ Chipset: Intel® ICH8M
- ◆ BIOS: UEFI BIOS
- ◆ Memory
 - One 204-pin 800 MHz DDR3 SDRAM SO-DIMM slot supports up to 4 GB (D525/D425) or 2 GB (N455)
- ◆ Graphics
 - GMA 3150
 - Graphics core speed 400 MHz for D525/D425
 - Graphics core speed 200 MHz for N455
- ◆ Display Output
 - VGA (up to 2048x1536 (D525/D425) or 1400x1050 (N455) @60Hz)
 - 18-bit single-channel LVDS (up to 1366x768 (D525/D425) or 1024x768 (N455) @60Hz)
- ◆ Ethernet
 - LAN1: Realtek RTL8111E controllers with ASF2.0 support
 - LAN2: Realtek RTL8111E controllers
- ◆ Digital I/O: 8-bit digital I/O (2x5 pin)
- ◆ Expansion: 1 x Full-size PCIe Mini card slot
- ◆ Audio: Realtek ALC662 HD Audio codec
- ◆ External I/O Interface
 - 1 x RS-232
 - 2 x USB 2.0
- ◆ Internal I/O Interface
 - 1 x CF Type II
 - 1 x KB/MS (1x6 pin)
 - 1 x RS-232/422/485 (2x7 pin, P=2.0)
 - 2 x SATA 3Gb/s with 5V SATA power connector
 - 4 x RS-232 (2x5 pin, P=2.0)
 - 6 x USB 2.0 (2x4 pin, P=2.0)
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
 - 12V only DC input
 - 1 x Internal power connector (2x2 pin)
- ◆ Support AT/ATX mode
- ◆ Fan Connector
 - 1 x CPU smart fan (1x3 pin)
 - 1 x System smart fan (1x3 pin)
- ◆ SMBus: 1 x SMBus (1x4 pin)
- ◆ Power Consumption
 - 12V@1.79A (Intel® Atom™ D525 with one 1 GB 800 MHz DDR3 memory)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Storage Temperature: -20°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Weight: GW: 600g / NW: 250g

Packing List

1 x WAFER-PV-D5252/D4252/N4552 single board computer	
1 x Audio cable	1 x Heat spreader
1 x KB/MS cable	1 x Mini jumper pack
1 x Power cable	1 x One Key Recovery CD
1 x Quad RS-232 cable	1 x Utility CD
1 x SATA with 5V output cable	1 x QIG

Ordering Information

Part No.	Description
WAFER-PV-D5252-R11	3.5" SBC with Intel® Atom™ D525 1.8GHz, DDR3, VGA/LVDS, dual GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
WAFER-PV-D4252-R11	3.5" SBC with Intel® Atom™ D425 1.8GHz, DDR3, VGA/LVDS, dual GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
WAFER-PV-N4552-R11	3.5" SBC with Intel® Atom™ N455 1.66GHz, DDR3, VGA/LVDS, dual GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
19800-004300-100-RS	RS-232 & RS-422/485 cable with bracket, 14-pin to two DB-9, 250mm, P=2.0
32001-008600-200-RS	Dual-port USB cable, 210mm, P=2.0

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Industrial Computer Chassis

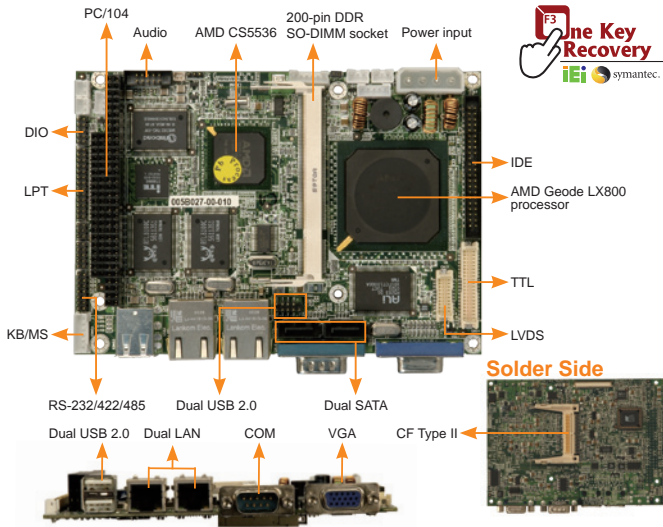
4 Open Frame Monitor

5 Power Supply/Peripherals

6 All-in-One System

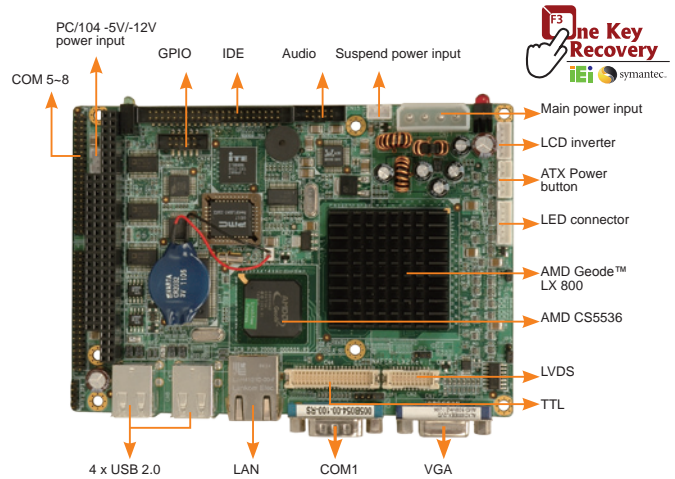
WAFER-LX

3.5" SBC with on-board AMD Geode™ LX 800 Processor VGA/LVDS/TTL, Dual LAN and SATA



WAFER-LX2

3.5" SBC with AMD Geode™ LX 800 Processor, Eight COM, DDR 400 MHz, VGA/LVDS/TTL Display Interfaces, PC/104, Four USB 2.0, Embedded OS Support



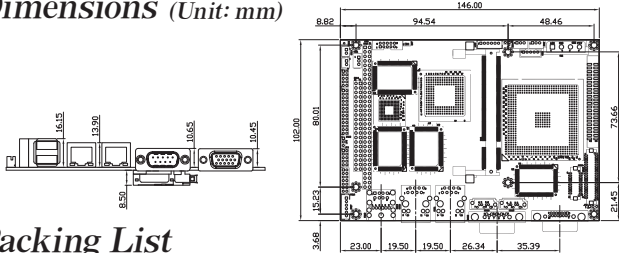
Features

- 3.5" form factor embedded board with AMD Geode™ LX 800 processor and RoHS compliant
- 333/400 MHz DDR SDRAM SO-DIMM supports up to 1 GB
- Complete I/O support with two SATA, IDE, CF Type II, PC/104, dual LAN and four USB 2.0
- 24-bit TTL/18-bit single-channel LVDS
- Value embedded applications with low power and fanless design. Support Windows® XP/CE/XPe
- The best choice for thin client Windows® CE 5.0, XPe OS image with ICA, RDP and IE APs ready
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU: AMD Geode™ LX800 (500 MHz) processor
- ◆ Chipset: AMD CS5536
- ◆ BIOS: Award BIOS
- ◆ System Memory: One 200-pin 400/333 MHz DDR SDRAM SO-DIMM slot supports up to 1 GB
- ◆ Ethernet: Dual LAN: 10/100Mbps RTL8100C Ethernet Controller
- ◆ External I/O Interface: 1 x RS-232, 2 x USB 2.0
- ◆ Internal I/O Interface: 1 x CF Type II, 1 x IDE (2x22 pin, P=2.0), 1 x LPT (2x13 pin, P=2.0), 1 x KB/MS (1x6 pin), 1 x RS-232 (2x5 pin, P=2.0), 1 x RS-422/485 (2x2 pin, P=2.0), 2 x SATA 1.5Gb/s (RAID 0, 1 support), 2 x USB 2.0 (2x4 pin, P=2.0)
- ◆ Expansion: 1 x PC/104
- ◆ Digital I/O: 8-bit digital I/O (2x5 pin)
- ◆ Audio: Realtek ALC203 with AC'97 codec
- ◆ Display Output: 1 x VGA (up to 1920x1440@60Hz), 1 x 18-bit single-channel LVDS (up to 1280x1024@60Hz)
- ◆ Infrared Interface: 1 x Infrared interface (1x5 pin)
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Power Supply: 5V only DC input, 1 x Internal power connector (1x4 pin) Support AT/ATX mode
- ◆ Power Consumption: 5V@1.53A (AMD LX800 with one 1 GB 400 MHz DDR memory)
- ◆ Operating Temperature: 0°C ~ 60°C
- ◆ Storage Temperature: -10°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 146 mm x 102 mm
- ◆ Weight: GW: 670g / NW: 230g

Dimensions (Unit: mm)



Packing List

1 x WAFER-LX single board computer	1 x Audio cable
1 x KB/MS Y cable	1 x IDE flat cable 44p/44p
1 x RS-232/422/485 cable	1 x Mini jumper pack
1 x SATA power cable	1 x One Key Recovery CD
1 x USB cable	1 x QIG
2 x SATA cable	1 x Utility CD

Ordering Information

Part No.	Description
WAFER-LX-800-R12	3.5" SBC with AMD Geode™ LX 800 processor, audio, VGA/LVDS/TTL, dual LAN and SATA connectors
32200-015100-RS	LPT cable, 280mm, P=2.0

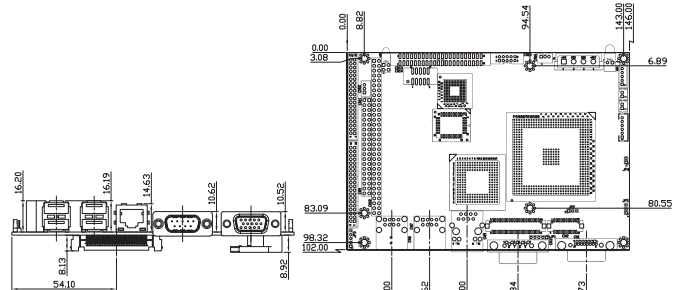
Features

- 3.5" form factor with AMD Geode™ LX 800 CPU
- One 333/400 MHz DDR SO-DIMM socket supports up to 1 GB memory
- VGA, 24-bit TTL, 18-bit LVDS display interfaces
- Seven RS-232 and one RS-232/422/485
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU: AMD Geode™ LX 800 (500 MHz)
- ◆ Chipset: CS5536
- ◆ BIOS: Award BIOS
- ◆ System Memory: One 200-pin 400/333 MHz DDR SDRAM SO-DIMM slot supports up to 1 GB
- ◆ Ethernet: LAN: 10/100Mbps RTL8100C Ethernet Controller
- ◆ External I/O Interface: 1 x RS-232, 4 x USB 2.0
- ◆ Internal I/O Interface: 1 x CF Type II, 1 x IDE (2x22 pin, P=2.0), 1 x RS-232/422/485 (2x7 pin, P=2.0), 6 x RS-232 (2x5 pin, P=2.0)
- ◆ Expansion: 1 x PC/104 (ISA Bus)
- ◆ Digital I/O: 8-bit digital I/O (2x5 pin)
- ◆ Display Output: 1 x VGA (up to 1920x1440@60Hz), 1 x 24-bit single-channel TTL (up to 1600x1200@60Hz), 1 x 18-bit single-channel LVDS (up to 1280x1024@60Hz)
- ◆ Audio: Realtek ALC203 with AC'97 codec
- ◆ Watchdog Timer: Software programmable supports 1 ~ 255 sec. system reset
- ◆ Power Supply: 5V only DC input, 1 x Internal power connector (1x4 pin) Support AT/ATX mode
- ◆ Power Consumption: 5V@1.33A (AMD Geode™ LX 800 with one 1 GB 400 MHz DDR memory)
- ◆ Operating Temperature: 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Storage Temperature: -10°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 146 mm x 102 mm
- ◆ Weight: GW: 670g / NW: 230g

Dimensions (Unit: mm)



Packing List

1 x WAFER-LX2 single board computer	1 x Mini jumper pack
1 x Audio cable	1 x One Key Recovery CD
1 x IDE flat cable 44p/44p	1 x QIG
2 x Quad RS-232 adapter cable	1 x Utility CD

Ordering Information

Part No.	Description
WAFER-LX2-800-R12	3.5" SBC with AMD Geode™ LX 800 processor, Audio, VGA/LVDS, TTL/LVDS, four USB 2.0, seven RS-232 and one RS-232/422/485

1 Industrial Computing Solutions

2 Video Capture Solutions

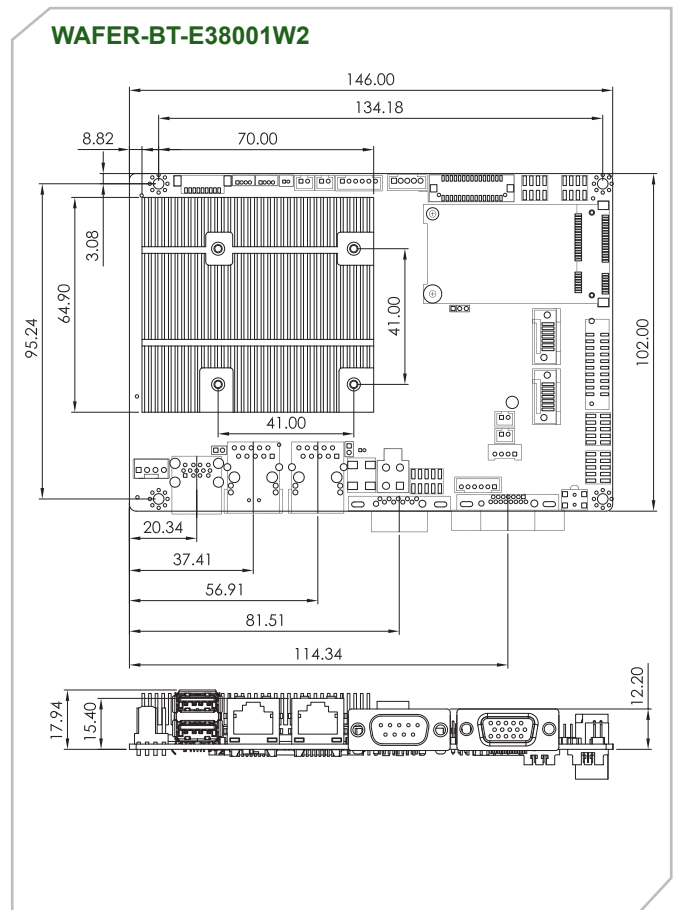
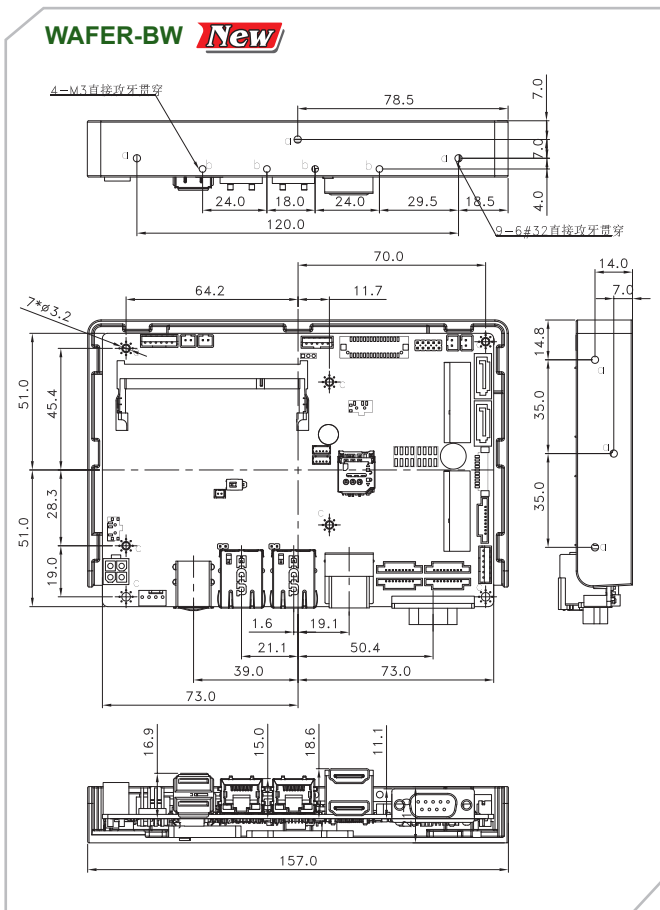
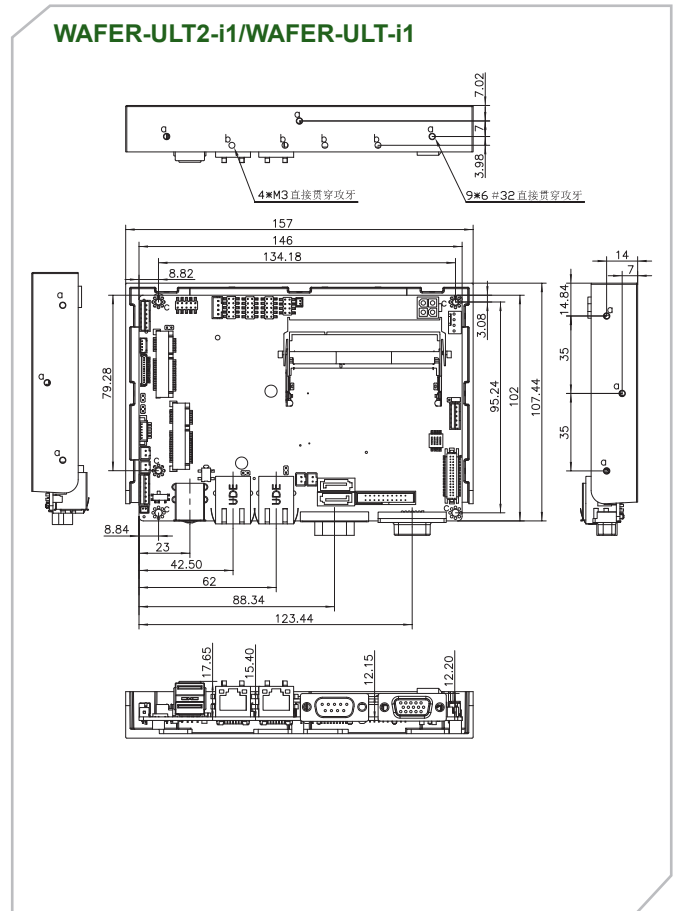
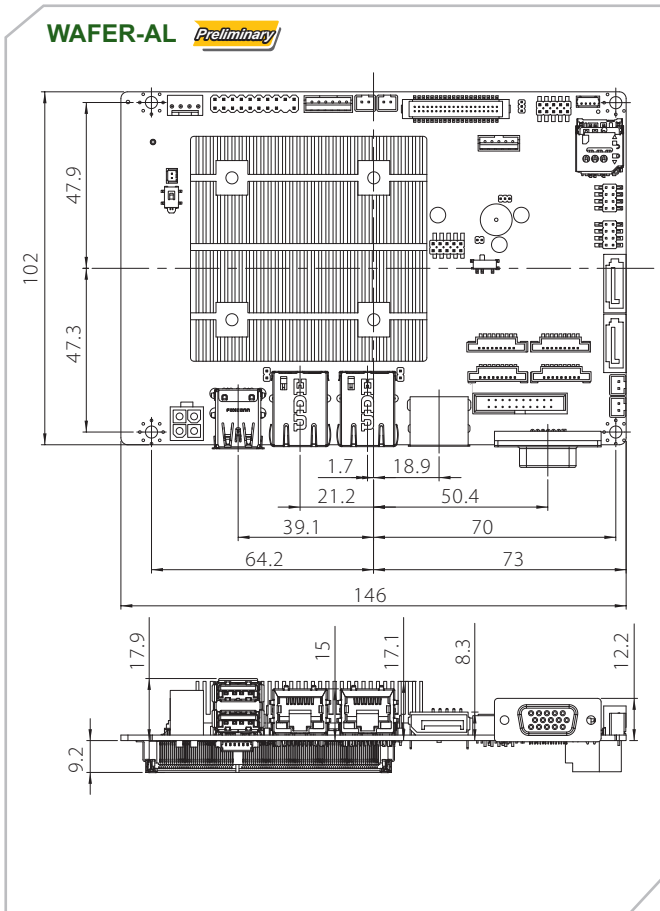
3 Industrial Computer Chassis

4 Open Frame Monitor

5 Power Supply/Peripherals

6 All-in-One System

WAFER Dimensions (Unit: mm)



1 Industrial Computing Solutions

2 Video Capture Solutions

3 Industrial Computer Chassis

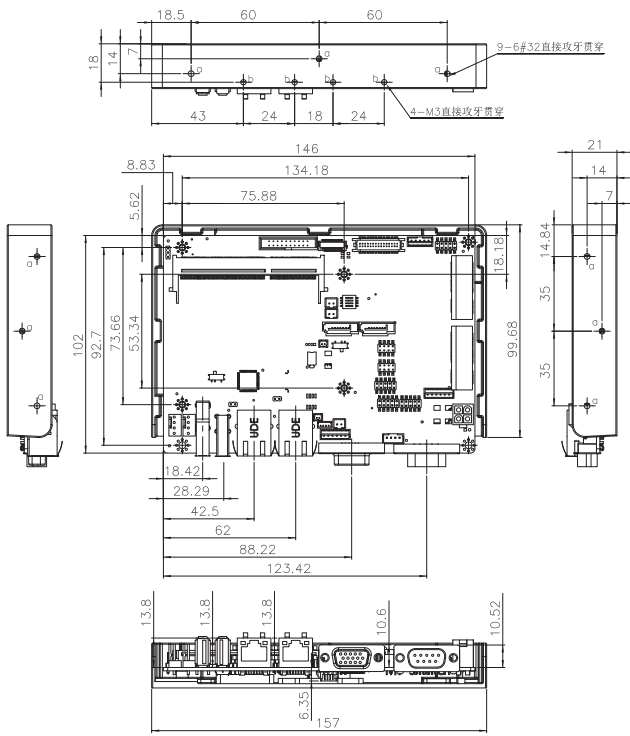
4 Open Frame Monitor

5 Power Supply/Peripherals

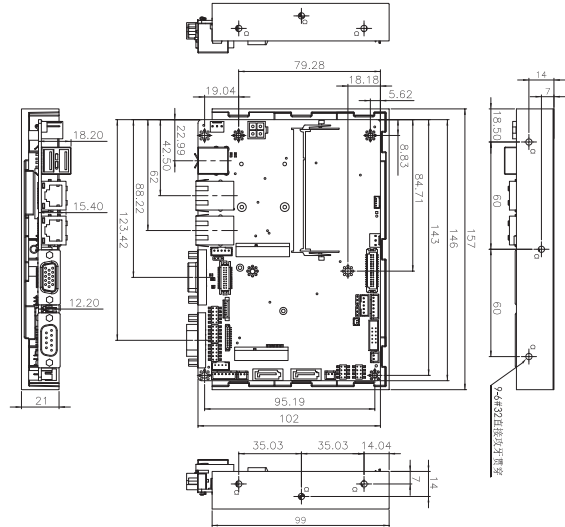
6 All-in-One System

WAFER Dimensions (Unit: mm)

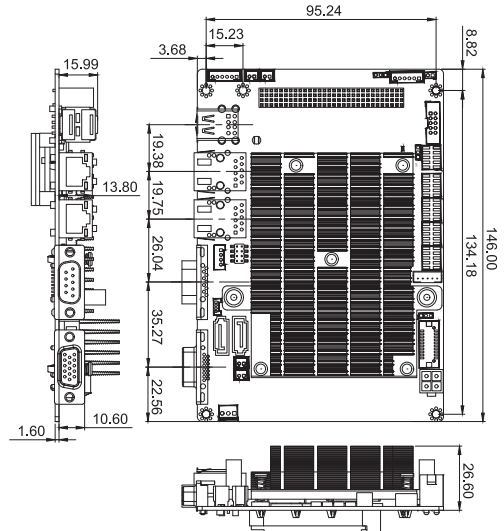
WAFER-BT-i1



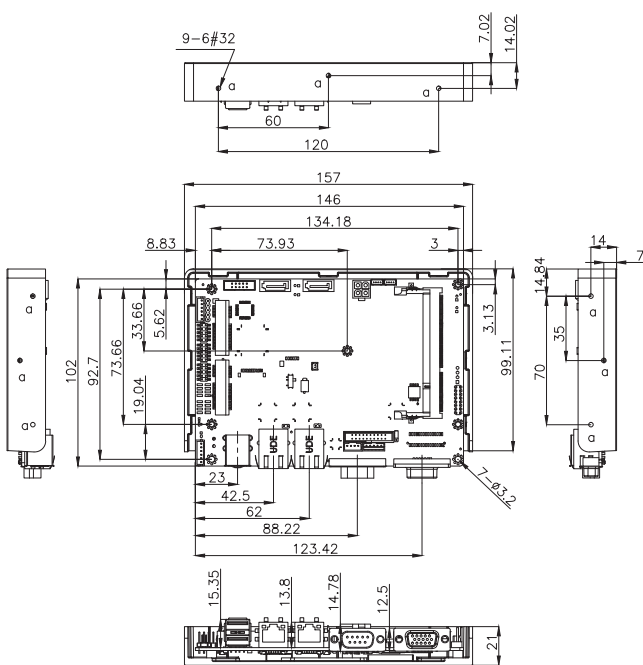
WAFER-CV-D25501/N26001



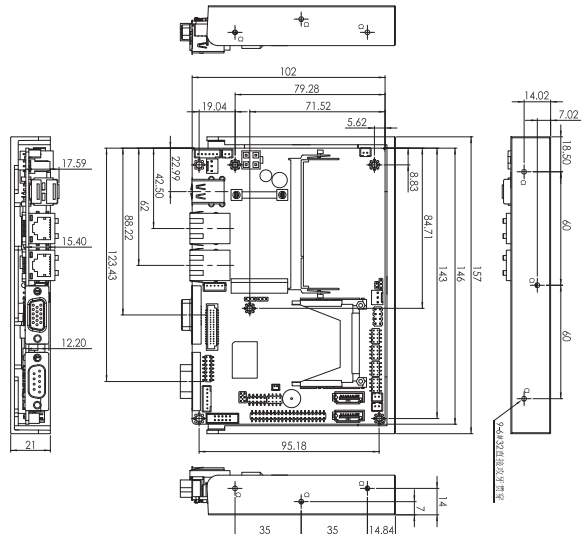
WAFER-CV-D25502/N26002



WAFER-KBN-i1



WAFER-PV-N4552/D5252



1

Industrial Computing Solutions

2

Video Capture Solutions

3

Industrial Computer Chassis

4

Open Frame Monitor

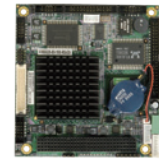
5

Power Supply/Peripherals

6

All-in-One System

PC/104 Selection Guide



Model Name	PM-PV-N4551/D5251-R11	PM-LX	PM-LX2
CPU Socket	On board	On board	On board
CPU Type	Intel® Atom™ D525 1.8GHz Intel® Atom™ N455 1.66GHz	AMD Geode™ LX 800 500 MHz	AMD Geode™ LX 800 500 MHz
Chipset	ICH8M	Geode™ LX800 + CS5536	Geode™ LX800 + CS5536
Memory	1 x 204-pin 800 MHz 4 GB (max.) DDR3 SO-DIMM (D525) 1 x 204-pin 800 MHz 2 GB (max.) DDR3 SO-DIMM (N455)	1 x 200-pin 400 MHz 1 GB (max.) DDR SDRAM SO-DIMM	1 x 200-pin 400 MHz 1 GB (max.) DDR SDRAM SO-DIMM
Display Interface	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS	Dual display supported 1 x VGA 1 x 24-bit TTL	Dual display supported 1 x VGA 1 x 24-bit TTL
Ethernet	GbE by Intel® 82567V Ethernet PHY	10/100Mbps LAN by Realtek RTL8100C	10/100Mbps LAN by Realtek RTL8100C
iRIS Remote Management Module	N/A		
I/O Interface	1 x KB/MS by pin header 1 x RS-232 1 x RS-232/422/485 4 x USB 2.0	1 x KB/MS by pin header 1 x LPT 1 x RS-422/485 2 x RS-232 2 x USB 2.0	1 x KB/MS by pin header 1 x LPT 1 x RS-422/485 2 x RS-232 2 x USB 2.0
Drive Interface	1 x SATA 3Gb/s 1 x CF Type II	1 x IDE 1 x CF Type II	1 x Slim FDD 1 x IDE 1 x CF Type II
Audio	10-pin header on board supports 7.1-channel HD Audio by AC-KIT-892HD-R10	N/A	
Digital I/O	1 x 8-bit DIO	N/A	
Power Consumption	5V@3.31A (Intel® Atom™ D525 with 1 GB DDR3) 5V@2.39A (Intel® Atom™ N455 with 1 GB DDR3)	5V@1.13A (AMD Geode™ LX 800 with 1 GB DDR 400 MHz)	5V@1.09A (AMD Geode™ LX 800 with 512MB DDR 400 MHz)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset		
Operating Environment	Temperature Range: -10°C ~ 60°C (14°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: -40°C ~ 70°C (W) Relative Humidity: 5% ~ 95%, non-condensing
Expansion Slot	1 x PCI-104	1 x PCI-104	1 x PC-104
CPU Cooler	Heatsink	Heatsink	Heatsink

1

Industrial Computing Solutions

2

Video Capture Solutions

3

Industrial Computer Chassis

4

Open Frame Monitor

5

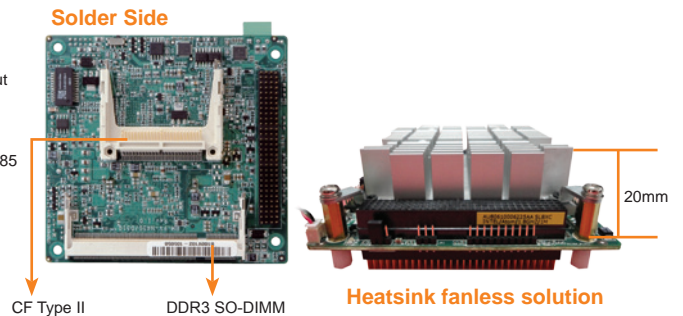
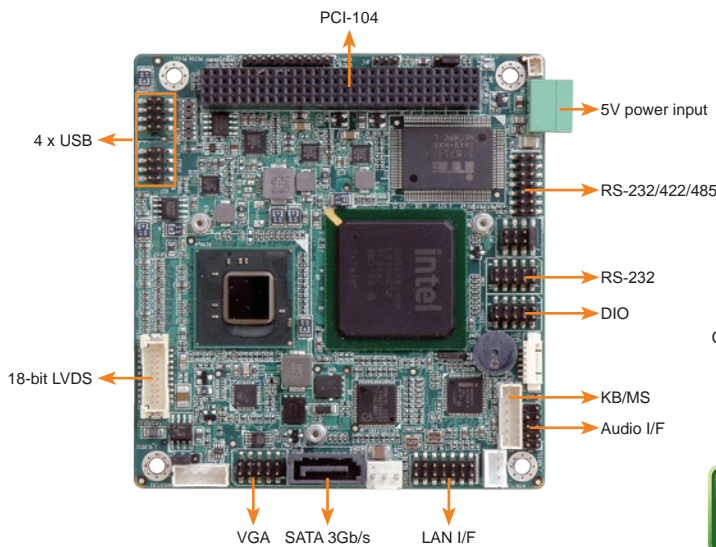
Power Supply/Peripherals

6

All-in-One System

PM-PV-N4551 D5251

PCI-104 SBC with Intel® Atom™ N455/D525, DDR3, VGA/LVDS, GbE, USB 2.0, SATA 3Gb/s and CF Type II, RoHS



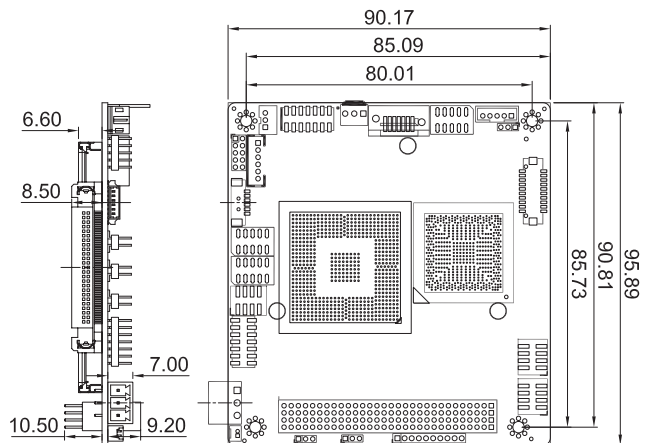
Specifications

- ◆ CPU
Intel® Atom™ D525 (1.8GHz, dual-core, 1MB cache)
Intel® Atom™ N455 (1.66GHz, single-core, 512KB cache)
- ◆ Chipset
Intel® ICH8M
- ◆ BIOS
UEFI BIOS
- ◆ Memory
One 204-pin 800 MHz DDR3 SDRAM SO-DIMM supports up to 4 GB (D525) or 2 GB (N455)
- ◆ Graphics
GMA 3150
Graphics core speed 400 MHz for D525
Graphics core speed 200 MHz for N455
- ◆ Display Output
VGA (up to QXGA 2048x1536 (D525) or SXGA+ 1400x1050 (N455) @60Hz)
18-bit single-channel LVDS (up to WXGA 1366x768 (D525) or XGA 1024x768 (N455) @60Hz)
- ◆ Ethernet
Intel® 82567V GbE Ethernet PHY
- ◆ Expansion
1 x PCI-104
- ◆ Digital I/O
8-bit digital I/O (2x5 pin)
- ◆ Audio
1 x Audio I/F (2x5 pin, P=2.0)
- ◆ Internal I/O Interface
1 x CF Type II
1 x KB/MS (1x6 pin)
1 x RS-232 (2x5 pin, P=2.0)
1 x RS-232/422/485 (2x5 pin, P=2.0)
1 x SATA 3Gb/s
4 x USB 2.0 (2x4 pin, P=2.0)
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
5V only DC input
1 x Internal power connector (1x2 pin)
support AT/ATX mode
- ◆ Power Consumption
5V@3.31A (Intel® Atom™ D525 with 1 GB DDR3)
5V@2.39A (Intel® Atom™ N455 with 1 GB DDR3)
- ◆ Operating Temperature
-10°C ~ 60°C
- ◆ Storage Temperature
-10°C ~ 70°C
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimensions
96mm x 90mm

Features

- Intel® Atom™ N455/D525 processor with DDR3 memory
- Single 5V power input design, 12V for LCD/fan
- Single-channel 18-bit LVDS/VGA output for display
- Support two COM, four USB, SATA 3Gb/s and CF Type II socket
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Dimensions (mm)



Packing List

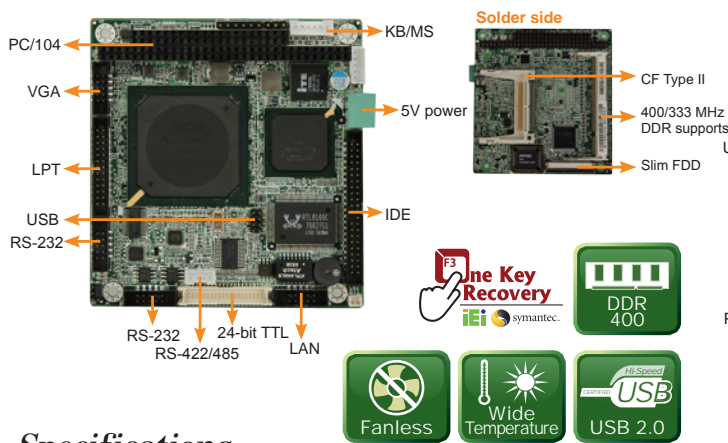
1 x PM-PV-N4551/D5251 single board computer	1 x SATA cable
1 x Dual-port USB cable	1 x VGA cable
1 x LAN cable	1 x Mini jumper pack
1 x Power cable	1 x One Key Recovery CD
1 x PS/2 KB/MS cable	1 x QIG
1 x RS-232 cable	1 x Utility CD

Ordering Information

Part No.	Description
PM-PV-D5251-R11	PCI-104 SBC with Intel® Atom™ D525 1.8GHz, DDR3, VGA/LVDS, GbE, USB 2.0, SATA 3Gb/s and CF Type II, RoHS
PM-PV-N4551-R11	PCI-104 SBC with Intel® Atom™ N455 1.66GHz, DDR3, VGA/LVDS, GbE, USB 2.0, SATA 3Gb/s and CF Type II, RoHS
19800-004300-100-RS	RS-232 & RS-422/485 cable with bracket, 14-pin to two DB-9, 250mm, P=2.0
32102-000100-200-RS	SATA power cable, MOLEX 5264-4P to SATA15P
AC-KIT-892HD-R10	7.1-channel HD Audio kit with Realtek ALC888 supports dual audio streams
CF-PV4010-R10	CPU fan (40mm x 40mm x 10mm)

PM-LX2

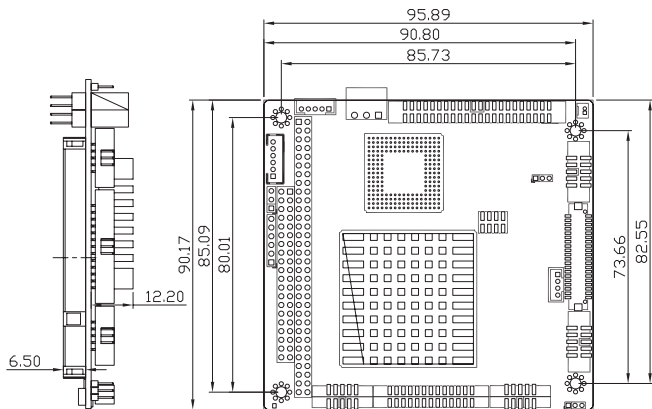
AMD Geode™ LX 800 CPU on-board PC/104 Module



Specifications

- ◆ CPU
AMD Geode™ LX 800 (500 MHz)
- ◆ Chipset
AMD CS5536
- ◆ BIOS
AMI BIOS
- ◆ System Memory
One 200-pin 400 MHz DDR SDRAM SO-DIMM supports up to 1 GB
- ◆ Ethernet
One Realtek RTL8100C 10/100Mbps Ethernet chipset
- ◆ Internal I/O Interface
1 x CF Type II
1 x IDE (2x22 pin, P=2.0)
1 x LPT (2x13 pin, P=2.0)
1 x KB/MS (1x6 pin)
2 x RS-232 (2x5 pin, P=2.0)
1 x RS-422/485 (1x4 pin, P=2.0)
1 x Slim FDD
2 x USB 2.0 (2x4 pin, P=2.0)
- ◆ Expansion
1 x PC/104
- ◆ Display Output
1 x VGA (up to 1920x1440@60Hz)
1 x 24-bit single-channel TTL (up to 1600x1200@60Hz)
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset.
- ◆ Power Supply
5V only DC input
1 x Internal power connector (1x2 pin) Support AT mode
- ◆ Power Consumption
5V@1.09A (AMD Geode™ LX 800 with one 512MB 400 MHz DDR)
- ◆ Operating Temperature
PM-LX2-800-R10: 0°C ~ 60°C
PM-LX2-800W-R10: -40°C ~ 70°C
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimensions
96mm (L) x 90mm (W)
- ◆ Weight
GW: 500g / NW 110g

Dimensions (mm)



Packing List

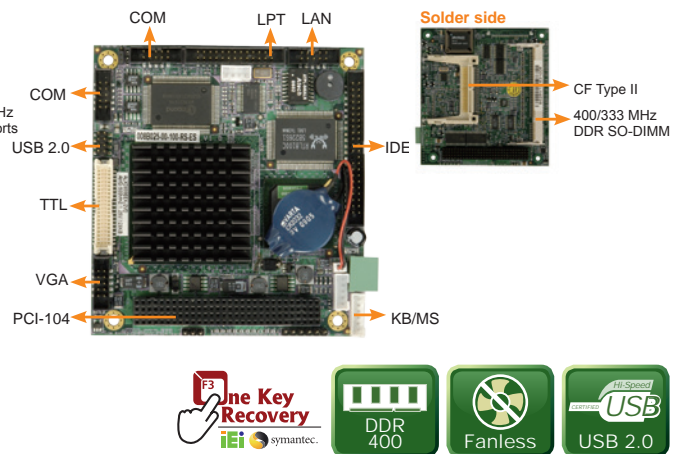
1 x PM-LX2 single board computer	1 x Power cable
1 x ATA33 flat cable	2 x RS-232 cable
1 x Dual USB cable	1 x Mini jumper pack
1 x LAN cable	1 x One Key Recovery CD
1 x PS/2 KB/MS cable	1 x QIG
1 x VGA cable	1 x Utility CD

Ordering Information

Part No.	Description
PM-LX2-800-R10	PC/104 SBC with AMD Geode™ LX 800 500 MHz, VGA/TTL, LAN, USB 2.0 and CF Type II
PM-LX2-800W-R10	PC/104 SBC with AMD Geode™ LX 800 500 MHz, VGA/TTL, LAN, USB 2.0 and CF Type II, Wide Temperature -40°C ~ 70°C
32200-015100-RS	LPT cable, 280mm, P=2.0
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0

PM-LX

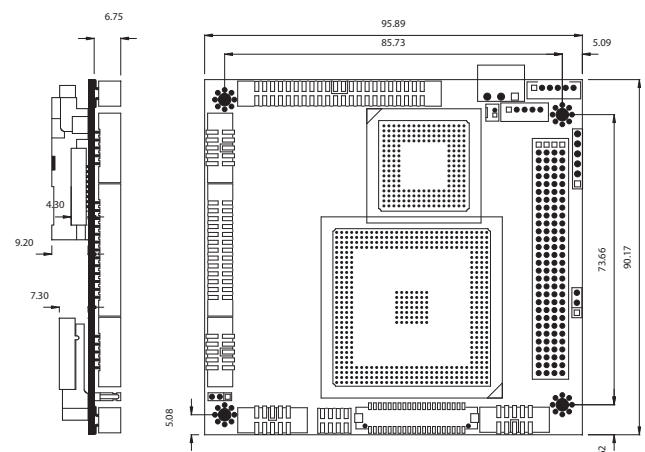
PCI-104 Module with on-board AMD Geode™ LX 800 CPU



Specifications

- ◆ CPU
AMD Geode™ LX 800 (500 MHz) processor
- ◆ Chipset
AMD CS5536
- ◆ BIOS
Award BIOS
- ◆ System Memory
One 200-pin 400 MHz DDR SDRAM SO-DIMM supports up to 1 GB
- ◆ Ethernet
10/100Mbps realtek RTL8100C Ethernet chipset
- ◆ Internal I/O Interface
1 x CF Type II
1 x IDE (2x22 pin, P=2.0)
1 x LPT (2x13 pin, P=2.0)
1 x KB/MS (1x6 pin)
2 x RS-232 (2x5 pin, P=2.0)
1 x RS-422/485 (1x4 pin, P=2.0)
2 x USB 2.0 (2x4 pin, P=2.0)
- ◆ Expansion
1 x PCI-104
- ◆ Display Output
1 x VGA (up to 1920x1440@60Hz)
1 x 24-bit single-channel TTL (up to 1600x1200@60Hz)
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
5V only DC input
1 x Internal power connector (1x2 pin) Support AT mode
- ◆ Power Consumption
5V@1.13A (AMD Geode™ LX 800 with one 1 GB 400 MHz DDR memory)
- ◆ Operating Temperature
0°C ~ 60°C
- ◆ Storage Temperature
-10°C ~ 70°C
- ◆ Operating Humidity
5% ~ 95%
- ◆ Dimensions: 95 mm x 95 mm
- ◆ Weight: GW: 500g / NW: 110g

Dimensions (mm)



Packing List

1 x PM-LX single board computer	1 x ATA33 flat cable
1 x LAN cable	1 x KB/MS Y cable
1 x Power cable	1 x Mini jumper pack
1 x USB cable	1 x One Key Recovery CD
1 x VGA cable	1 x QIG
2 x RS-232 cable	1 x Utility CD

Ordering Information

Part No.	Description
PM-LX-800-R11	PCI-104 SBC with AMD Geode™ LX 800 processor , VGA/TTL, LAN, USB 2.0, CF Type II
32200-015100-RS	LPT cable, 280mm, P=2.0
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0

1 Industrial Computing Solutions

2 Video Capture Solutions

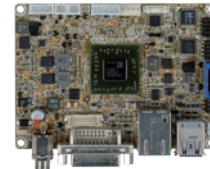
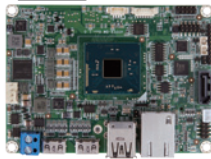
3 Industrial Computer Chassis

4 Open Frame Monitor

5 Power Supply/ Peripherals

6 All-in-One System

Pico-ITX Selection Guide

New


Model Name	HYPER-BW	HYPER-BT	HYPER-KBN
CPU Socket	On board	On board	On board
CPU Type	Intel® Pentium®/Celeron® SoC	Intel® Atom™/Celeron® SoC	AMD® Embedded G-Series SoC
Chipset	Intel® Pentium®/Celeron® SoC	Intel® Atom™/Celeron® SoC	AMD® Embedded G-Series SoC
Memory	1 x 204-pin 1600/1333 MHz single-channel DDR3L SDRAM unbuffered SO-DIMM slot (system max. 8 GB)	1 x 204-pin 1600/1333 MHz single-channel DDR3L SDRAM unbuffered SO-DIMM slot (system max. 8 GB)	1 x 204-pin 1600/1333 MHz single-channel DDR3L SDRAM unbuffered SO-DIMM slot (system max. 8 GB)
Display Interface	Dual independent display 2 x Mini HDMI	Dual independent display 1 x VGA 1 x iDP interface	Dual independent display 1 x DVI-I 1 x 18-bit single-channel LVDS
Ethernet	LAN: Realtek RTL8111GN controller	LAN: Intel® I211-AT PCIe GbE controller	LAN: Realtek RTL8111E controller with ASF2.0 supported
iRIS Remote Management Module	N/A		
I/O Interface	1 x RS-232 2 x USB 2.0 2 x USB 3.0	1 x RS-232 1 x USB 3.0 3 x USB 2.0	1 x RS-232 2 x USB 2.0 2 x USB 3.0
Drive Interface	1 x SATA 6G/s with 5V SATA power connector (no RAID)	1 x SATA 3G/s with 5V SATA power connector (no RAID)	1 x SATA 6G/s with 5V SATA power connector (no RAID)
Audio	10 pin header on board support 7.1 channel HD Audio by AC-KIT-892HD-R10	Realtek ALC662 HD Audio codec	
Power Consumption	12V@1.52A (Intel® Pentium® processor N3710 with 8 GB 1600 MHz DDR3L memory)	12V@1.35A (Intel® Celeron® processor J1900 with one 8 GB 1333 MHz DDR3L memory)	12V@1.45A (AMD GX-415GA 1.5GHz CPU with one 2 GB 1333 MHz DDR3L memory)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset		
Operating Environment	Temperature Range: -20°C ~ 60°C (-4°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing		
Expansion Slot	1 x M.2 (B key)	N/A	N/A
CPU Cooler	Heatsink	Heat Spreader	Heatsink

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Industrial Computing Solutions

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Video Capture Solutions

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Industrial Computer Chassis

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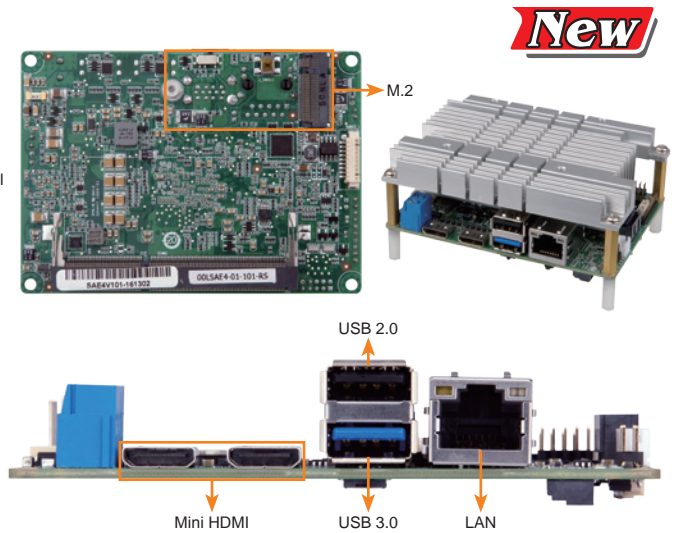
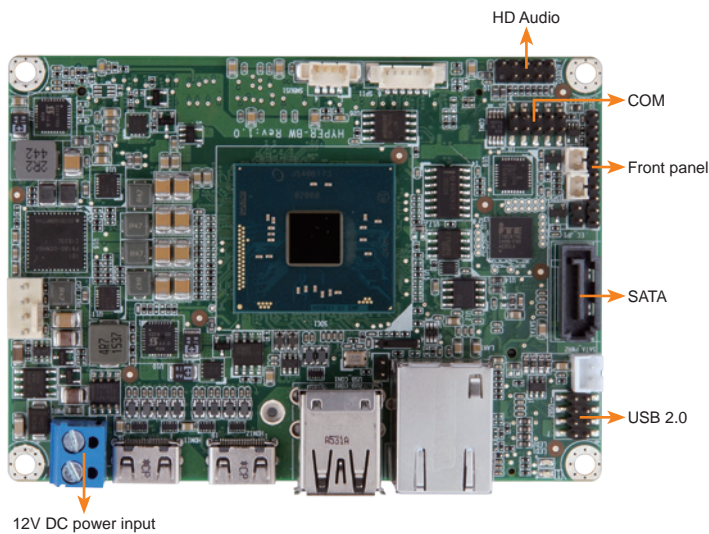
Power Supply/Peripherals

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All-in-One System

HYPER-BW

Pico-ITX SBC with Intel® 14nm Pentium®/Celeron® on-board SoC with dual Mini HDMI, M.2, GbE, USB 3.0, SATA 6Gb/s, COM, Audio and RoHS



New

Specifications

- ◆ SoC
 - Intel® Pentium® N3710 on-board SoC (up to 2.56GHz, quad-core, 2MB cache, TDP=6W)
 - Intel® Celeron® N3160 on-board SoC (up to 2.24GHz, quad-core, 2MB cache, TDP=6W)
 - Intel® Celeron® N3060 on-board SoC (up to 2.48GHz, dual-core, 2MB cache, TDP=6W)
 - Intel® Celeron® N3010 on-board SoC (up to 2.24GHz, dual-core, 2MB cache, TDP=4W)
- ◆ BIOS
 - AMI UEFI BIOS
- ◆ Memory
 - One 204-pin 1600/1333 MHz single-channel DDR3L SDRAM SO-DIMM slot supports up to 8 GB
- ◆ Graphics Engine
 - Intel® HD Graphics Gen 8 Engine with 16 low-power execution units, supporting DX11.1, OpenGL 4.2 and OpenCL 1.2
- ◆ Display Output
 - Dual independent display
 - 2 x Mini HDMI (up to 3840x2160@30Hz)
- ◆ Ethernet
 - LAN1: Realtek RTL8111 controller
- ◆ External I/O Interface
 - 1 x USB 2.0
 - 1 x USB 3.0
- ◆ Internal I/O Interface
 - 1 x RS-232 (1x9 pin, P=1.25)
 - 1 x SATA 6G/s with 5V SATA power connector
 - 2 x USB 2.0 (2x4 pin, P=2.0)
- ◆ Audio
 - 1 x HD audio (2 x 5 pin, support 7.1 channel HD audio by AC-KIT-892HD-R10)
- ◆ Front Panel
 - 1 x Front panel (1x10 pin, power LED, HDD LED, power button, reset button)
- ◆ LAN LED
 - 1 x LAN LED (1x2 pin)
- ◆ Expansion
 - 1 x M.2 2242 (B key)
- ◆ Fan Connector
 - 1 x Smart fan connector (1x4 pin)
- ◆ Power Supply
 - 12V DC input only
 - 1 x Power terminal block (1x2 pin)
 - Support AT/ATX mode
- ◆ Power Consumption
 - 12V@1.52A (Intel® Pentium® processor N3710 with 8 GB 1600 MHz DDR3L memory)
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset
- ◆ Operating Temperature
 - 20°C ~ 60°C
- ◆ Storage Temperature
 - 30°C ~ 70°C
- ◆ Operating Humidity
 - 5% ~ 95%, non-condensing
- ◆ Dimensions
 - 100mm x 72mm
- ◆ Weight
 - GW: 30g / NW: 250g



Features

- Pico-ITX SBC supports Intel® 14nm Pentium®/Celeron® on-board SoC
- IEI jumper-less function
- Dual independent display support
- 1333/1600 MHz 1.35V DDR3L SDRAM up to 8 GB supported
- COM, USB 3.0, SATA 6Gb/s and Audio support
- 1 x M.2 B key slot for expansion possibility
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

1 x HYPER-BW single board computer
1 x RS-232 cable
1 x SATA with power cable kit
1 x One Key Recovery CD
1 x QIG
1 x Utility CD

Ordering Information

Part No.	Description
HYPER-BW-N4-R10	Pico-ITX SBC with Intel® Pentium® 14nm quad-core N3710 up to 2.56GHz (6W) on-board SoC with dual Mini HDMI, PCIe GbE, M.2, USB 3.0, SATA 6Gb/s, COM, Audio and RoHS
HYPER-BW-N3-R10	Pico-ITX SBC with Intel® Celeron® 14nm quad-core N3160 up to 2.24GHz (6W) on-board SoC with dual Mini HDMI, PCIe GbE, M.2, USB 3.0, SATA 6Gb/s, COM, Audio and RoHS
HYPER-BW-N2-R10	Pico-ITX SBC with Intel® Celeron® 14nm dual-core N3060 up to 2.48GHz (6W) on-board SoC with dual Mini HDMI, PCIe GbE, M.2, USB 3.0, SATA 6Gb/s, COM, Audio and RoHS
HYPER-BW-N1-R10**	Pico-ITX SBC with Intel® Celeron® 14nm dual-core N3010 up to 2.24GHz (4W) on-board SoC with dual Mini HDMI, PCIe GbE, M.2, USB 3.0, SATA 6Gb/s, COM, Audio and RoHS
32001-008600-200-RS	Dual-port USB cable, 210mm, P=2.0
AC-KIT-892HD-R10	Realtek ALC892 7.1 Channel HD Audio peripheral board, RoHS

**By order production, MOQ: 100

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Industrial Computing Solutions

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Video Capture Solutions

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Industrial Computer Chassis

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Open Frame Monitor

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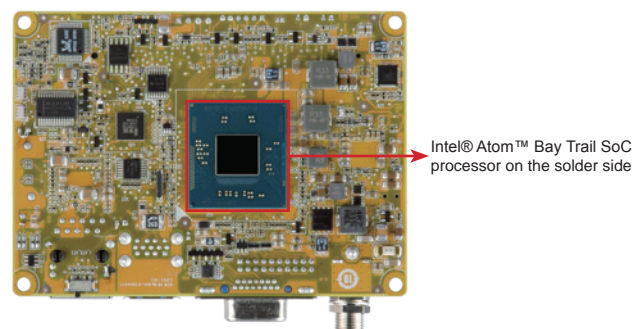
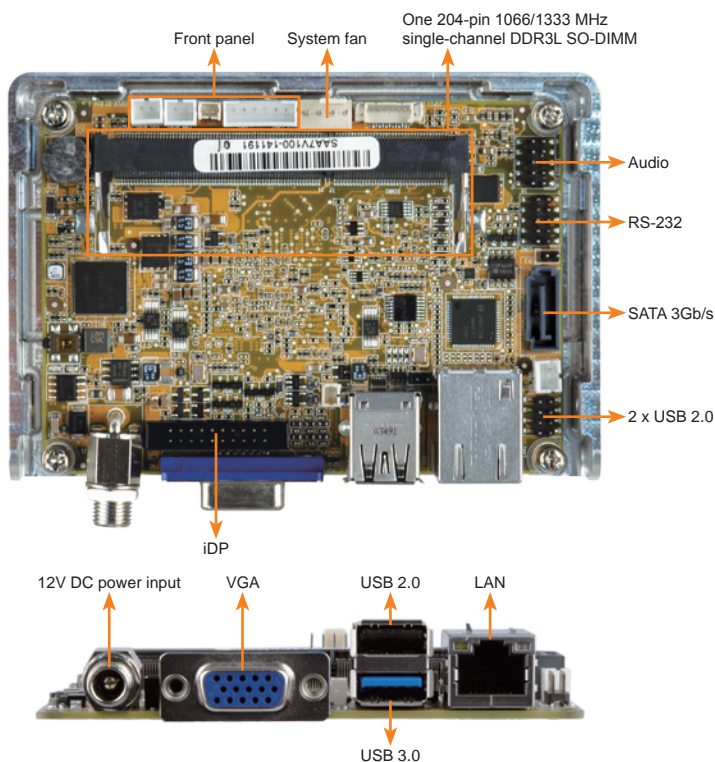
Power Supply/Peripherals

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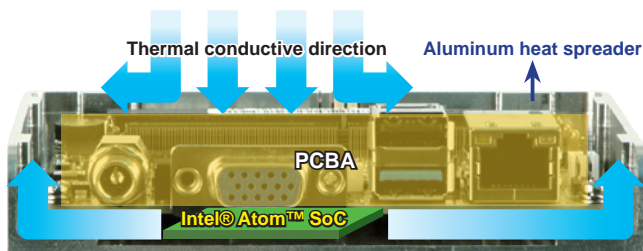
All-in-One System

HYPER-BT

Pico-ITX SBC supports Intel® 22nm Atom™/Celeron® on-board SoC, DDR3L, VGA/iDP, GbE, USB 3.0, SATA 3Gb/s, HD Audio and RoHS



You can attach aluminum heat spreader directly to your construction for better heat dissipation



Specifications

- ◆ SoC
 - Intel® Atom™ E3845 on-board SoC (1.91GHz, quad-core, 2MB cache, TDP=10W)
 - Intel® Atom™ E3827 on-board SoC (1.75GHz, dual-core, 1MB cache, TDP=8W)
 - Intel® Atom™ E3826 on-board SoC (1.46GHz, dual-core, 1MB cache, TDP=7W)
 - Intel® Atom™ E3825 on-board SoC (1.33GHz, dual-core, 1MB cache, TDP=6W)
 - Intel® Atom™ E3815 on-board SoC (1.46GHz, dual-core, 1MB cache, TDP=5W)
 - Intel® Celeron® J1900 on-board SoC (2GHz, quad-core, 2MB cache, TDP=10W)
 - Intel® Celeron® N2930 on-board SoC (1.83GHz, quad-core, 2MB cache, TDP=7.5W)
 - Intel® Celeron® N2807 on-board SoC (1.58GHz, dual-core, 2MB cache, TDP=4.3W)
- ◆ BIOS
 - AMI UEFI BIOS
- ◆ Memory
 - One 204-pin 1066/1333 MHz single-channel DDR3L SO-DIMM supports up to 8 GB (J1900, N2930, E3845, E3827, E3826) or 4 GB (N2807, E3825, E3815)
- ◆ Graphics
 - Intel® HD Graphics Gen 7 Engine with 4 execution units, supporting DX11.1 OpenGL 4.2 and OpenCL 1.2
- ◆ Display Output
 - Dual independent display
 - 1 x VGA (up to 2560x1600@60Hz)
 - 1 x iDP interface for HDMI, LVDS, VGA, DVI, DP (up to 2560x1600@60Hz)
- ◆ Ethernet: LAN: Intel® I211-AT PCIe controller
- ◆ External I/O Interface
 - 1 x USB 2.0
 - 1 x USB 3.0
- ◆ Internal I/O Interface
 - 1 x RS-232 (2x5 pin, P=2.0)
 - 1 x SATA 3Gb/s with 5V SATA power connector
 - 2 x USB 2.0 (2x4 pin, P=2.0)
- ◆ Audio: Realtek ALC662 HD codec supports 5.1-channel
- ◆ Front Panel
 - 1 x Power LED & HDD LED (1x6 pin)
 - 1 x Power button (1x2 pin)
 - 1 x Reset button (1x2 pin)
- ◆ LAN LED: 1 x LAN LED (1x2 pin)
- ◆ Fan Connector: 1 x Smart fan connector (1x4 pin)
- ◆ Watchdog Timer: Software programmable, support 1~255 sec. system reset
- ◆ Power Supply
 - 12V only DC input
 - 1 x External DC power jack (ø5.5 mm)
 - Support AT/ATX mode
- ◆ Power Consumption
 - 12V@1.35A (Intel® Celeron® J1900 with one 4 GB 1333 MHz DDR3 memory)
- ◆ Operating Temperature: -20°C ~ 60°C
- ◆ Storage Temperature: -30°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions (LxW)
 - Single board: 100mm x 72mm / Heat spreader: 112mm x 78mm
- ◆ Weight: GW: 600g / NW: 250g

Features

- Pico-ITX SBC supports Intel® 22nm Atom™ or Celeron® on-board SoC
- 12V only single voltage design for AT/ATX power by DC power jack
- VGA and iDP support dual display
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

1 x HYPER-BT single board computer	
1 x Audio cable	1 x One Key Recovery CD
1 x RS-232 cable	1 x QIG
1 x SATA with 5V output cable kit	1 x Utility CD

Ordering Information

Part No.	Description
HYPER-BT-J19001-R10	PICO-ITX SBC supports Intel® Celeron® quad-core J1900 (10W) on-board SoC with DDR3L, VGA/iDP, GbE, USB 3.0, SATA 3Gb/s, Audio and RoHS
HYPER-BT-N29301-R10	PICO-ITX SBC supports Intel® Celeron® quad-core N2930 (7.5W) on-board SoC with DDR3L, VGA/iDP, GbE, USB 3.0, SATA 3Gb/s, Audio and RoHS
HYPER-BT-N28071-R10	PICO-ITX SBC supports Intel® Celeron® dual-core N2807 (4.3W) on-board SoC with DDR3L, VGA/iDP, GbE, USB 3.0, SATA 3Gb/s, Audio and RoHS
HYPER-BT-E38XX1-R10**	PICO-ITX SBC supports Intel® Atom™ E38XX on-board SoC with DDR3L, VGA/iDP, GbE, USB 2.0, SATA 3Gb/s, Audio and RoHS
32001-008600-200-RS	Dual-port USB cable, 210mm, P=2.0
32006-000300-100-RS	PS/2 KB/MS Y-cable without bracket, 140mm/120mm
32200-000049-RS	RS-232 cable, 240mm, P=2.0
DP-DP-R10	DisplayPort to DisplayPort converter board (for IEI iDP connector)
DP-DVI-R10	DisplayPort to DVI-D converter board (for IEI iDP connector)
DP-HDMI-R10	DisplayPort to HDMI converter board (for IEI iDP connector)
DP-LVDS-R10	DisplayPort to LVDS converter board (for IEI iDP connector)
DP-VGA-R10	DisplayPort to VGA converter board (for IEI iDP connector)

**By order production, MOQ: 100

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Industrial Computing Solutions

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Industrial Computer Chassis

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Open Frame Monitor

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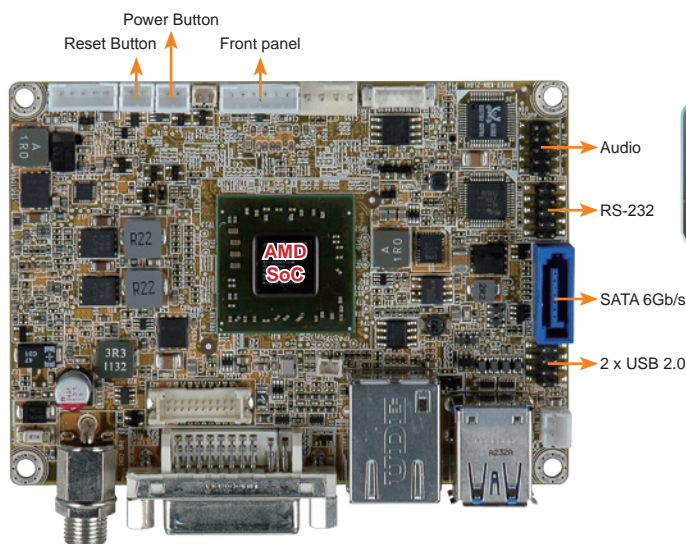
Power Supply/Peripherals

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All-in-One System

HYPER-KBN

Pico-ITX SBC Supports AMD® Embedded G-Series SoC with DDR3, DVI-I/LVDS, GbE, USB 3.0, SATA 6Gb/s, Audio and RoHS

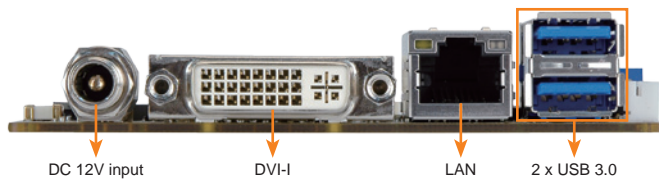


Flexible Application Small size form factor: Pico-ITX



Specifications

- ◆ SoC
 - GX-415GA on-board SoC (1.5GHz, quad-core, 2MB cache, TDP=15W)
 - GX-210HA on-board SoC (1.0GHz, dual-core, 1MB cache, TDP=9W) (support fanless solution)
 - GX-420CA on-board SoC (2.0GHz, quad-core, 2MB cache, TDP=25W)
 - GX-217GA on-board SoC (1.65GHz, dual-core, 1MB cache, TDP=15W)
- ◆ BIOS
 - AMI UEFI BIOS
- ◆ Memory
 - One 204-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SDRAM unbuffered DIMM supports up to 8 GB
- ◆ Graphics Engine
 - Support DX11.1, OpenGL 4.1 and OpenCL1.2
 - UVD4.2 decode for H.264, MPEG2/4, VC1, MVC
 - VCE 2.0 encode for H.264, VCE
- ◆ Display Output
 - 1 x DVI-I (DVI-D up to 1920x1200@60Hz, VGA up to 2048x1536@60Hz)
 - 1 x 18-bit single-channel LVDS (up to 1600x900@60Hz)
- ◆ Ethernet
 - LAN: Realtek RTL8111E controllers with ASF2.0 supported
- ◆ External I/O Interface
 - 2 x USB 3.0
- ◆ Internal I/O Interface
 - 1 x RS-232 (2x5 pin, P=2.0)
 - 1 x SATA 6Gb/s with 5V SATA power connector
 - 2 x USB 2.0 (2x4 pin, P=2.0)
- ◆ Audio
 - Realtek AL662 HD Audio codec
 - 1 x Front audio (2x5 pin)
- ◆ Front Panel
 - 1 x Power LED & HDD LED (1x6 pin)
 - 1 x Power button (1x2 pin)
 - 1 x Reset button (1x2 pin)
- ◆ LAN LED
 - 1 x LAN LED (1x2 pin)
- ◆ Fan Connector
 - 1 x Smart fan connector (1x4 pin)
- ◆ Watchdog Timer
 - Software programmable, support 1~255 sec. system reset
- ◆ Power Supply
 - 12V only DC input
 - 1 x External DC power jack (ø5.5 mm)
 - Support AT/ATX mode
- ◆ Power Consumption
 - 12V@1.45A (AMD GX-415GA 1.5GHz CPU with one 2 GB 1333 MHz DDR3 memory)
- ◆ Operating Temperature
 - 0°C ~ 60°C
- ◆ Storage Temperature
 - 10°C ~ 70°C
- ◆ Operating Humidity
 - 5% ~ 95%, non-condensing
- ◆ Dimensions (LxW)
 - 100mm x 72mm
- ◆ Weight
 - GW: 600g/ NW: 250g



Features

- Pico-ITX form factor with AMD® Embedded G-Series SoC supports DDR3/DDR3L up to 1600 MHz memory
- 12V only single voltage design for AT/ATX power by DC power jack
- DVI-I and 18-bit single-channel LVDS support for dual display
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

1 x HYPER-KBN single board computer
1 x Audio cable
1 x RS-232 cable
1 x SATA with 5V output cable kit
1 x Special heatsink
1 x One Key Recovery CD
1 x QIG
1 x Utility CD

Ordering Information

Part No.	Description
HYPER-KBN-4151-R10	Pico-ITX SBC with AMD 28nm quad-core GX-415GA 1.5GHz (15W) SoC processor, DDR3 DVI-I/LVDS, GbE, SATA 6Gb/s, USB 3.0, HD Audio and RoHS
HYPER-KBN-2101-R10	Pico-ITX SBC with AMD 28nm dual-core GX-210HA 1.0GHz (9W) SoC processor, DDR3 DVI-I/LVDS, GbE, SATA 6Gb/s, USB 3.0, HD Audio and RoHS
32001-008600-200-RS	Dual-port USB cable, 210mm, P=2.0

Note: Models with other CPUs not listed in the table are requested by MOQ - 100 pcs/lot

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Industrial
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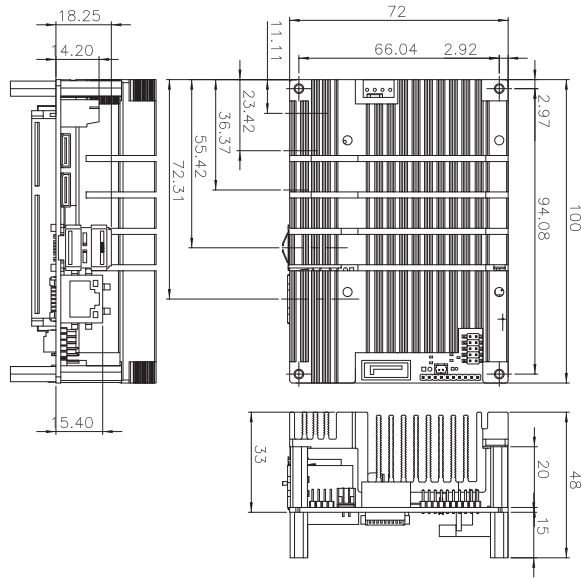
Power Supply/
Peripherals

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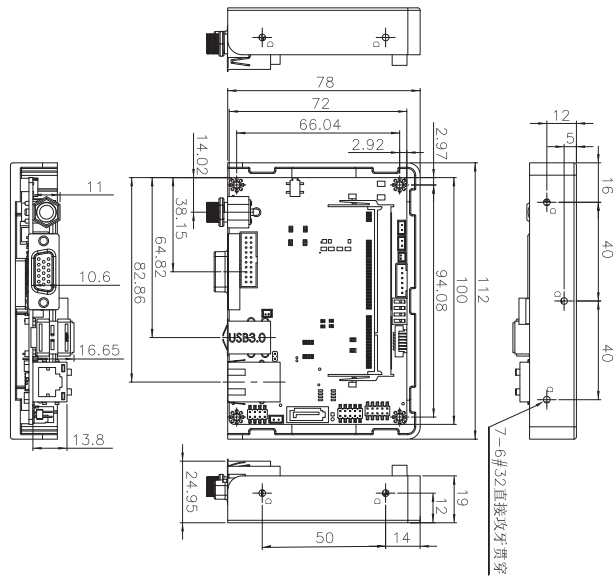
All-in-One
System

HYPER Dimensions (Unit: mm)

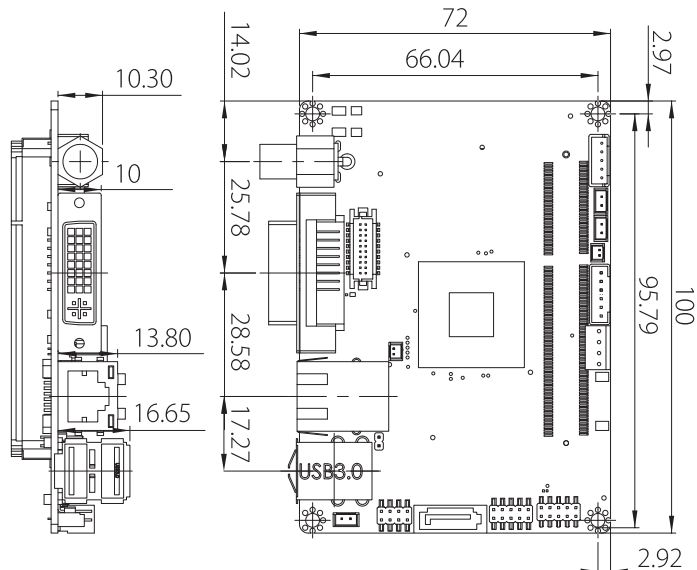
HYPER-BW *New*



HYPER-BT



HYPER-KBN



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All-in-One System