

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



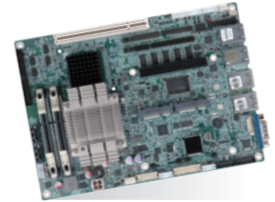
PC/104
96 x 90mm
PM series



3.5"
146 x 102mm
WAFER series



EPIC
165 x 115mm
NANO series



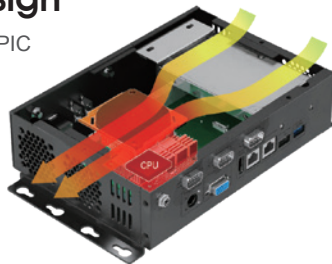
5.25" / EBX
203 x 146mm
NOVA series

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.

■ 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



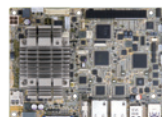
Embedded System Mapping

	ECN		ECW	uIBX
Embedded System	ECN-380	ECN-360A	ECW-281B	uIBX-230
Model	NANO-QM871 NANO-QM770	NANO-ULT3	WAFER-BT-1	HYPER-BT

	EBC		
Embedded System	EBC-2200	EBC-2100	EBC-1100
Model	NANO-BT-i1 NANO-QM871-i1	NANO-LX	WAFER-BT-E38001W2

EPIC NANO Selection Guide

New



Model Name	NANO-AL	NANO-ULT3	NANO-BT-11/BTW2	NANO-SE/KBN-1
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 3.1 Gen 1	1 x PS/2 KB/MS 1 x RS-232/422/485 2 x RS-232 2 x USB 2.0 4 x USB 3.1 Gen 1	1 x PS/2 KB/MS 1 x RS-422/485 1 x USB 3.1 Gen 1 3 x RS-232 3 x USB 2.0	1 x PS/2 KB/MS 1 x RS-422/485 2 x USB 3.1 Gen 1 5 x RS-232 6 x USB 2.0
Storage Interface	2 x SATA 6Gb/s with 5V SATA power connector 1 x M.2 (B Key) (SATA only)	2 x SATA 6Gb/s with 5V SATA power connector 1 x 8 GB eMMC (optional)	2 x SATA 3Gb/s with 5V SATA power connector	2 x SATA 6Gb/s with 5V SATA power connector
Audio	Realtek ALC662 HD Audio codec			Realtek ALC892 HD Audio codec
Digital I/O	8-bit programmable digital I/O			
Power Consumption	12V@2.13 A (Intel® Pentium® N4200 CPU with one 8GB 1600MHz DDR3L memory)	12V@2.48A (Intel® Core™ i3-6100U CPU)	12V@1.52A (Intel® Atom™ Processor J1900 CPU with one 8 GB 1333 MHz DDR3L memory)	12V@1.02A (AMD GX-415GA 1.5GHz CPU with 1600 MHz 8 GB DDR3 memory)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset			
Operating Environment	Temperature Range: NANO-AL: -20°C ~ 70°C (-4°F~158°F) NANO-ALW2: -40°C ~ 85°C (-40°F~185°F) Relative Humidity: 5% ~ 95% non-condensing	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-BTW2: -40°C ~ 85°C (-40°F~185°F) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C (32°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing
Expansion Slots	1 x Full/Half-size PCIe Mini slot (w/ Micro SIM holder)	1 x Full-size PCIe Mini card slot (with SIM holder & mSATA support) 1 x Half-size PCIe Mini card slot	1 x Full-size PCIe Mini card slot with mSATA support 1 x PCI-104 slot	1 x Full-size PCIe Mini card slot with mSATA support
CPU Cooler	Heatsink	Heat Spreader	Heatsink	GX-415GA (with heatsink) GX-210HA (with cooler)

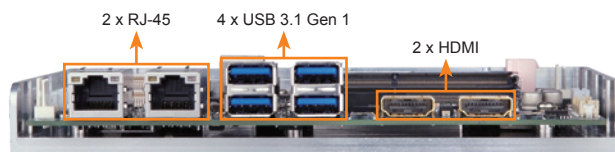
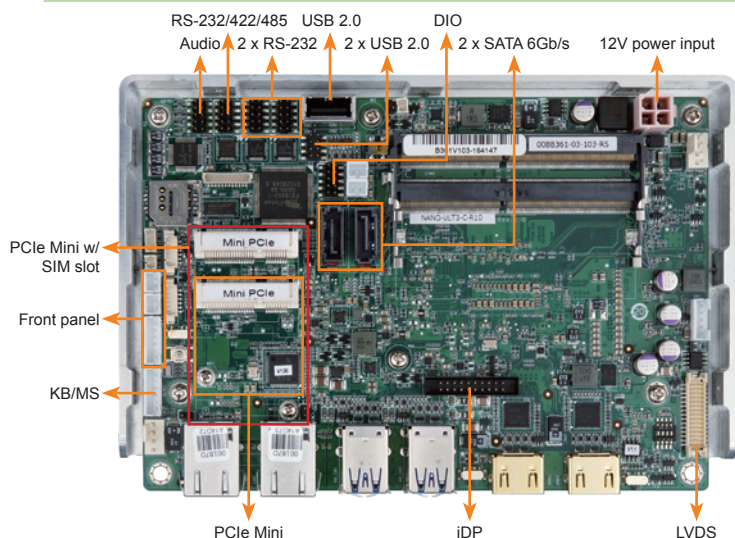
EPIC NANO Selection Guide



Model Name	NANO-QM871-i1	NANO-QM770	NANO-HM651	NANO-HM650	NANO-LX-R12
CPU Socket	On board	Socket G2	On board	Socket G2	On board
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	AMD Geode™ LX800
Chipset	Intel® QM87	Intel® QM77	Intel® HM65	Intel® HM65	AMD Geode™ LX800 + AMD CS5536
Memory	1 x 204-pin 1600/1333 MHz dual-channel DDR3/DDR3L SO-DIMM (system max. 8 GB)	1 x 204-pin 1600/1333 MHz single-channel DDR3 SO-DIMM (system max. 8 GB)	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)	1 x 200-pin 400/333 MHz DDR SO-DIMM (system max. 1GB)
Display Interface	Dual display supported 1 x VGA 2 x HDMI 1 x 18/24-bit dual-channel LVDS	Dual display supported 1 x DVI-I 2 x HDMI 1 x 24-bit dual-channel LVDS	Dual display supported 1 x VGA 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	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit TTL (LVDS to TTL)
Ethernet	LAN1: Intel® I217-LM PHY with Intel® AMT 9.0 supported LAN2: Intel® I211-AT PCIe GbE controller	LAN1: Intel® 82583V PCIe controller LAN2: Intel® 82579 PHY with Intel® AMT 8.0 supported	Dual LAN: Realtek RTL8111E PCIe GbE controller with ASF 2.0 support	Dual Realtek RTL8111E PCIe GbE controller with ASF 2.0 support	10/100Mbps Realtek RTL8100C
iRIS Remote Management Module	1 x iRIS-1010 slot	N/A			
I/O Interface	1 x PS/2 KB/MS 1 x RS-422/485 2 x RS-232 2 x USB 3.1 Gen 1 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 3.1 Gen 1	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 3.1 Gen 1 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	1 x Infrared interface 1 x LPT 1 x PS/2 for KB/MS 1 x RS-422/485 4 x USB 2.0 6 x RS-232
Storage Interface	2 x SATA 6Gb/s with 5V SATA power connector (RAID 0, 1)	2 x SATA 6Gb/s with 5V SATA power connector (RAID 0, 1)	2 x SATA 6Gb/s with 5V SATA power connector (RAID 0, 1)	2 x SATA 6Gb/s with 5V SATA power connector (RAID 0, 1)	2 x SATA 1.5Gb/s (RAID 0, 1) 1 x IDE 1 x CF Type II
Audio	Realtek ALC662 HD Audio codec				Realtek ALC203 with AC'97 codec
Digital I/O	8-bit programmable digital I/O				
Power Consumption	12V@3.78A (Intel® 4th Gen. 2.0GHz CPU with one 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)	12V@0.92A (AMD LX800, 256 MB 400 MHz DDR)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset				
Operation Environment	Temperature Range: -10°C ~ 60°C (14°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing				Temperature Range: 0°C ~ 60°C (32°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing
Expansion Slots	1 x Full-size PCIe Mini card slot	1 x PCIe Mini card slot with mSATA support	1 x PCIe Mini card slot with mSATA support	1 x PCIe Mini card slot with mSATA support 1 x PCI-104 slot	1 x PC/104-Plus
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	Heatsink

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 3.1 Gen 1 (5Gb/s), PCIe Mini, SATA 6Gb/s, mSATA, COM, Audio and RoHS



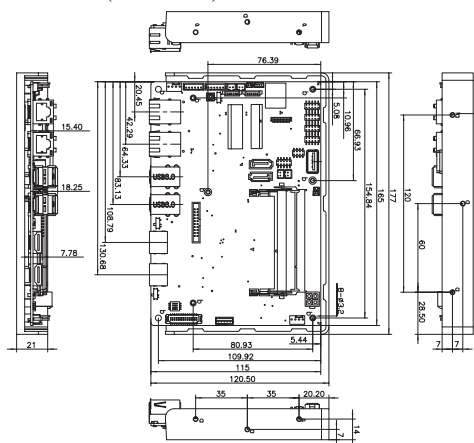
Specifications

- ◆ 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, OpenGL 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 3840x2160@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 3.1 Gen 1 (5Gb/s)
- ◆ Internal I/O Interface
 - 1 x 8 GB eMMC (optional)
 - 1 x KB/MS (1x6 pin)
 - 1 x RS-232/422/485 (2x5 pin, P=2.0)
 - 2 x SATA 6Gb/s with 5V SATA power connector (no RAID)
 - 1 x USB 2.0 (180° Type-A)
 - 2 x USB 2.0 (2x4 pin, P=2.0)
 - 2 x RS-232 (2x5 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 (with SIM holder & mSATA support)
 - 1 x Half-size PCIe Mini card slot
 - * 3855U belongs to Skylake ULT Base series which supports PCIe Gen 2 signal only.
- ◆ 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
 - ◆ CE/FCC compliant

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 3.1 Gen 1 (5Gb/s), SATA 6Gb/s, mSATA, eMMC 5.0 and audio support
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Dimensions (Unit: mm)



Packing List

1 x NANO-ULT3 single board computer with heatspreader	1 x Audio cable
1 x RS-232 cable	1 x Power cable
1 x SATA with power cable kit	1 x QIG

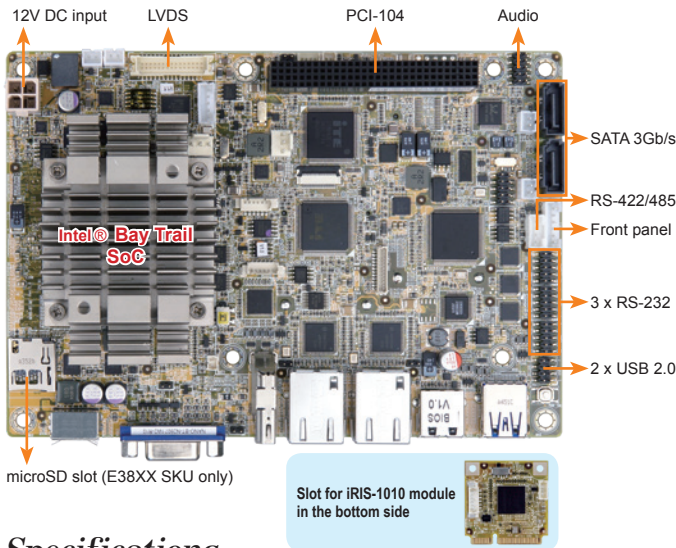
Ordering Information

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 3.1 Gen 1 (5Gb/s), SATA 6Gb/s, Dual PCIe Mini, 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 3.1 Gen 1 (5Gb/s), SATA 6Gb/s, Dual PCIe Mini, 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 3.1 Gen 1 (5Gb/s), SATA 6Gb/s, Dual PCIe Mini, 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 3.1 Gen 1 (5Gb/s), SATA 6Gb/s, Dual PCIe Mini, 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 3.1 Gen 1 (5Gb/s), SATA 6Gb/s, Dual PCIe Mini, 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-i1

EPIC SBC supports 22nm Intel® Atom™/Celeron® on-board SoC with VGA, HDMI, LVDS, Dual Intel® PCIe GbE, USB 3.1 Gen 1 (5Gb/s), Dual PCIe Mini, SATA 3Gb/s, mSATA, COM, Audio and RoHS

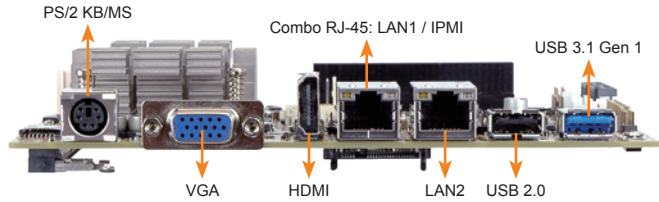


Highly efficient and power optimized multi-format codec engine

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



- Video Encoding
» Full HW acceleration for H.264
» Hybrid HW acceleration of MPEG2



Specifications

- ◆ SoC
 - 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™ 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, E3827, E3826, E3815) or 4 GB (N2807)
- ◆ 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 3.1 Gen 1 (5Gb/s)
- ◆ 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
- ◆ CE/FCC compliant

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	2 x SATA with power cable kit
2 x RS-232 cable	1 x QIG

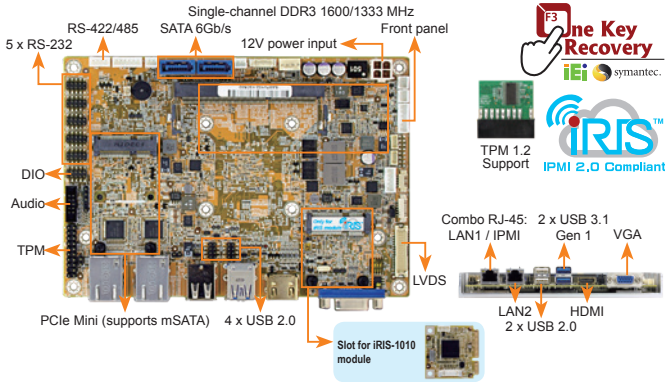
Ordering Information

Part No.	Description
NANO-BT-E38XX1W2-R11**	EPIC SBC supports Intel® 22nm single-Core Atom™ E381XX on-board SoC with VGA/HDMI/LVDS, Dual PCIe GbE, Dual PCIe Mini, USB 3.1 Gen 1 (5Gb/s), 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, PCIe Mini, USB 3.1 Gen 1 (5Gb/s), 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, PCIe Mini, USB 3.1 Gen 1 (5Gb/s), 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, PCIe Mini, USB 3.1 Gen 1 (5Gb/s), 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 3.1 Gen 1 (5Gb/s), 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, PCIe Mini, USB 3.1 Gen 1 (5Gb/s), 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

NANO-SE-i1/KBN-i1/GLX

EPIC SBC supports AMD® Embedded G-Series SoC with VGA/HDMI/LVDS, Dual PCIe GbE, USB 3.1 Gen 1 (5Gb/s), PCIe Mini, SATA 6Gb/s, mSATA, COM, iRIS-1010 and RoHS



Specifications

- ◆ SoC
 - » AMD® Embedded G-Series "Steppe Eagle" SoC GX-424CC on-board Soc (2.4GHz, quad-core, 2MB cache, TDP=25W)
 - » AMD® Embedded G-Series "eKabini" SoC GX-415GA on-board Soc (1.5GHz, quad-core, 2MB cache, TDP=15W)
 - » AMD® Embedded G-Series "LX" SoC GX-210KL on-board Soc (1.0GHz, dual-core, 1MB cache, TDP=4.5W)
- ◆ 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 OpenCL 1.2
 - UV/D4.2 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)
- ◆ LAN LED: 2 x LAN LED (1x2 pin)
- ◆ Ethernet
 - LAN1: Intel® I210-AT PCIe controller with NCSI support
 - LAN2: Intel® I211-AT PCIe controller
- ◆ iRIS Remote Management Module
 - 1 x iRIS-1010 slot (NANO-GLX-2101-R10 support by request)
- ◆ External I/O Interface
 - 2 x USB 2.0
 - 2 x USB 3.1 Gen 1 (5Gb/s)
- ◆ Internal I/O Interface
 - 1 x KB/MS (1x6 pin)
 - 4 x USB 2.0 (2x4 pin, P=2.0)
 - 1 x RS-422/485 (1x4 pin, P=2.0)
 - 5 x RS-232 (2x5 pin, P=2.0)
 - 2 x SATA 6Gb/s with 5V SATA power connector (no RAID)
- ◆ 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)
- ◆ 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
- ◆ CE/FCC compliant

Packing List

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

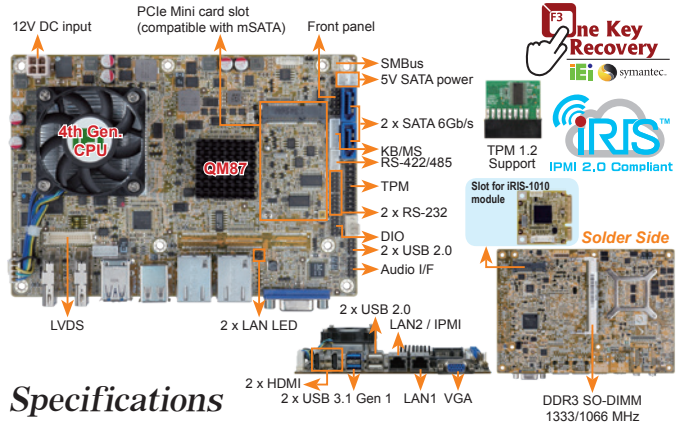
Ordering Information

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 3.1 Gen 1 (5Gb/s), 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 3.1 Gen 1 (5Gb/s), PCIe Mini, SATA 6Gb/s, mSATA, COM, iRIS-1010, HD Audio and RoHS
NANO-GLX-2101-ECO-R10	EPIC SBC supports AMD® 28nm dual core GX-210KL 1.0GHz (4.5W) on-board SoC with VGA/HDMI/LVDS, Dual PCIe GbE, USB 3.1 Gen 1 (5Gb/s), Dual PCIe Mini, SATA 6Gb/s, mSATA, COM and Audio, ECO packing 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-QM871-i1

EPIC SBC supports 4th Generation Intel® Mobile Processor with VGA/Dual HDMI/LVDS, Dual PCIe GbE, USB 3.1 Gen 1 (5Gb/s), PCIe Mini, iRIS-1010



Specifications

- ◆ CPU
 - Intel® mobile Core™ i7-4700EQ on-board processor with Intel® AMT 9.0 support (2.4GHz, dual-core, 6MB cache, TDP=47W)
 - Intel® mobile Core™ i5-4400E on-board processor with Intel® AMT 9.0 support (2.7GHz, dual-core, 3MB cache, TDP=37W)
 - Intel® mobile Core™ i3-4100E on-board processor (2.4GHz, dual-core, 3MB cache, TDP=37W)
 - Intel® mobile Celeron® 2000E on-board processor (2.2GHz, dual-core, 2MB cache, TDP=37W)
 - Intel® mobile Core™ i5-4402E on-board processor with Intel® AMT 9.0 support (1.6GHz, dual-core, 3MB cache, TDP=25W)
 - Intel® mobile Core™ i3-4102E on-board processor (1.5GHz, dual-core, 2MB cache, TDP=25W)
 - Intel® mobile Celeron® 2002E on-board processor (1.5GHz, dual-core, 2MB cache, TDP=25W)
- ◆ Chipset: Intel® QM87
- ◆ BIOS: UEFI BIOS
- ◆ Memory: One 204-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SDRAM unbuffered DIMM supports up to 8 GB
- ◆ Graphics Engine
 - Intel® HD Graphics Gen 7.5 supports DX11.1 and OpenCL 1.2, OpenGL 3.2 Full MPEG2, VC1, AVC Decode
- ◆ Display Output
 - 1 x VGA (up to 1920x1200@60Hz)
 - 1 x 18/24-bit dual-channel LVDS (up to 1920x1200@60Hz)
 - 2 x HDMI (up to 2500x1600@60Hz)
- ◆ TPM: 1 x TPM connector (2x10 pin)
- ◆ SMBus: 1 x SMBus (1x4 pin)
- ◆ Ethernet
 - LAN1: Intel® I217-LM PHY with Intel® AMT 9.0 support
 - LAN2: Intel® I210-AT PCIe controller
- ◆ External I/O Interface
 - 2 x USB 2.0
 - 2 x USB 3.1 Gen 1 (5Gb/s)
- ◆ 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 6Gb/s with 5V SATA power connector (RAID 0,1 supported)
 - 2 x USB 2.0 (2x4 pin, P=2.0)
- ◆ iRIS Remote Management Module: 1 x iRIS-1010 slot
- ◆ Audio
 - Realtek ALC662 HD Audio codec
 - 1 x Front audio (2x5 pin)
- ◆ Front Panel: 1 x Front Panel (2x5 pin)
- ◆ LAN LED: 2 x LAN LED (1x2 pin)
- ◆ Expansion
 - 1 x Full-size PCIe Mini card slot (supports mSATA)
 - 1 x PCIe/104 Type 2 slot (optional)
- ◆ Watchdog Timer: Software programmable, support 1~255 sec. system reset
- ◆ 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
- ◆ Power Consumption
 - 12V@4.78A (Intel® Core™ i7-4770EQ 2.4GHz CPU with 4 GB 1333 MHz DDR3 memory)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Storage Temperature: -20°C ~ 60°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 115 mm x 165 mm
- ◆ Weight: GW: 850g / NW: 350g
- ◆ CE/FCC compliant

Packing List

1 x NANO-QM871-i1 single board computer	
1 x Audio cable	2 x RS-232 cable
1 x CPU cooler	2 x SATA with power cable kit
1 x Power cable	1 x QIG

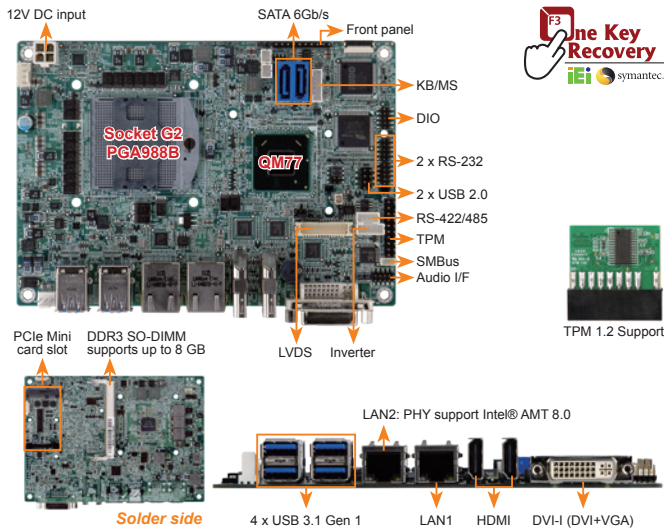
Ordering Information

Part No.	Description
NANO-QM871-i1-i7-R10	EPIC SBC supports Intel® 22nm Mobile Core™ i7-4700EQ on-board Processor with VGA/Dual HDMI/LVDS, Dual PCIe GbE, AMT 9.0, PCIe Mini, USB 3.1 Gen 1 (5Gb/s), SATA 6Gb/s, iRIS-1010, Audio and RoHS
NANO-QM871-i1-i5-R10	EPIC SBC supports Intel® 22nm Mobile Core™ i5-4400E on-board Processor with VGA/Dual HDMI/LVDS, Dual PCIe GbE, AMT 9.0, PCIe Mini, USB 3.1 Gen 1 (5Gb/s), SATA 6Gb/s, iRIS-1010, Audio and RoHS
NANO-QM871-i1-i3-R10	EPIC SBC supports Intel® 22nm Mobile Core™ i3-4100E on-board Processor with VGA/Dual HDMI/LVDS, Dual PCIe GbE, PCIe Mini, USB 3.1 Gen 1 (5Gb/s), SATA 6Gb/s, iRIS-1010, Audio and RoHS
NANO-QM871-i1-C-R10	EPIC SBC supports Intel® 22nm Celeron 2000E on-board Processor (37W) with VGA/Dual HDMI/LVDS, Dual PCIe GbE, PCIe Mini, USB 3.1 Gen 1 (5Gb/s), SATA 6Gb/s, iRIS-1010, 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 2.0 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.

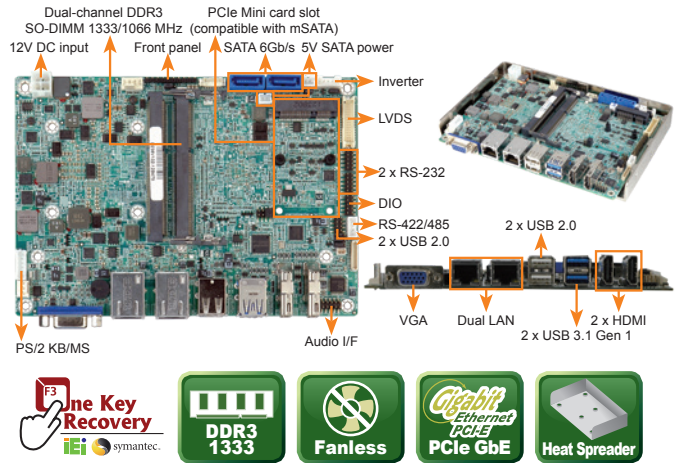
NANO-QM770

EPIC SBC Supports Socket G2 for Intel® 22nm Mobile CPU, DVI-I/Dual HDMI/LVDS, Dual PCIe GbE, USB 3.1 Gen 1 (5Gb/s), PCIe Mini, SATA 6Gb/s and Audio



NANO-HM651

EPIC SBC with on-board Intel® Celeron® Dual Core 847E 1.1GHz CPU, Dual HDMI/VGA/LVDS, Dual GbE, USB 3.1 Gen 1 (5Gb/s), PCIe Mini, SATA 6Gb/s 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 3.1 Gen 1 (5Gb/s), 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 3.1 Gen 1 (5Gb/s)
- ◆ 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 6Gb/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, CE/FCC compliant

Packing List

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

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, PCIe Mini, USB 3.1 Gen 1 (5Gb/s), 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 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 3.1 Gen 1 (5Gb/s), 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 3.1 Gen 1 (5Gb/s)
- ◆ 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 6Gb/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, CE/FCC compliant

Packing List

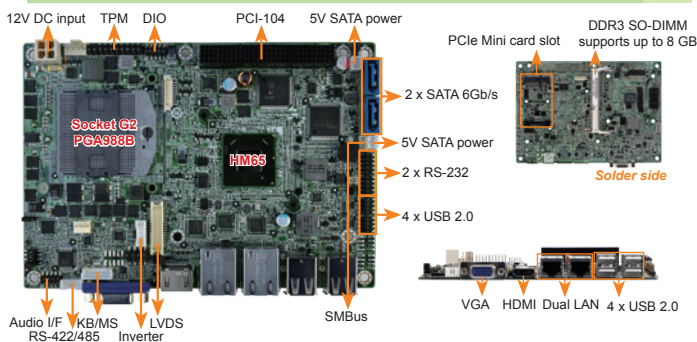
1 x NANO-HM651 single board computer	
1 x Audio cable	2 x RS-232 cable
1 x Power cable	1 x Heat spreader
1 x SATA with power cable kit	1 x Mini jumper pack
2 x Plastic shaft for securing half-size PCIe Mini card	1 x QIG

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, PCIe Mini, USB 3.1 Gen 1 (5Gb/s), SATA 6Gb/s and Audio
32001-008600-200-RS	Dual-port USB cable, 210mm, P=2.0

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 6Gb/s with 5V SATA power connector (RAID 0, 1 supported), 8 x USB 2.0 (2x4 pin, P=2.0)
- ◆ Programmable GPIO: 8-bit digital I/O (2x5 pin)
- ◆ 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
- ◆ 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
- ◆ CE/FCC compliant

Packing List

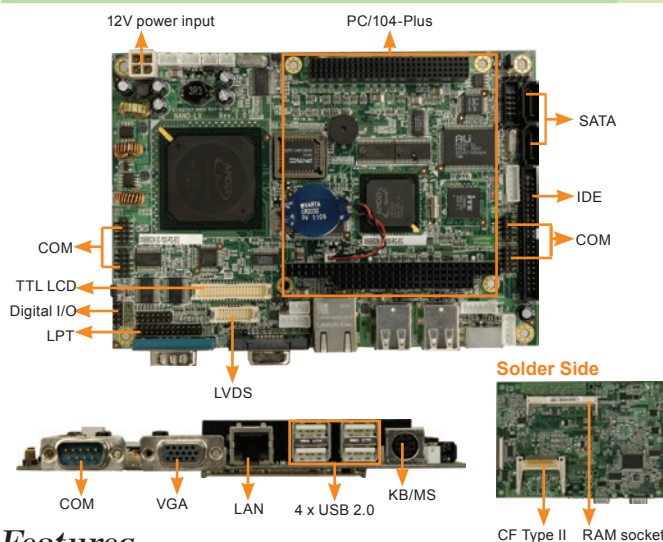
1 x NANO-HM650 single board computer	
1 x Audio cable	2 x SATA with power cable
1 x Power cable	1 x Mini jumper pack
2 x RS-232 cable	1 x QIG

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-LX

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



Features

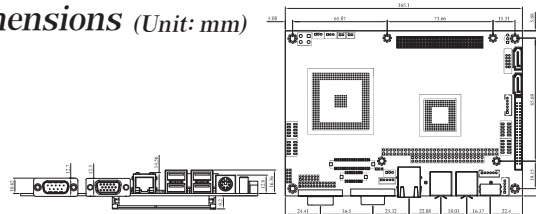
- EPIC form factor AMD LX800 processor embedded board with RoHS compliant
- DDR 400 MHz SO-DIMM SDRAM up to 1 GB
- VGA, 24-bit TTL, and 18-bit single-channel LVDS
- SATA RAID 0, 1, JBOD function support
- Complete I/O support with two SATA, IDE, PC/104-Plus and four USB 2.0
- IEI One Key Recovery solution 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 IDE, 1 x LPT, 1 x RS-232/422/485, 4 x USB 2.0, 5 x RS-232, 2 x SATA (VIA VT6421A RAID 0, 1 function support)
- ◆ 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
- ◆ CE/FCC compliant

Dimensions (Unit: mm)



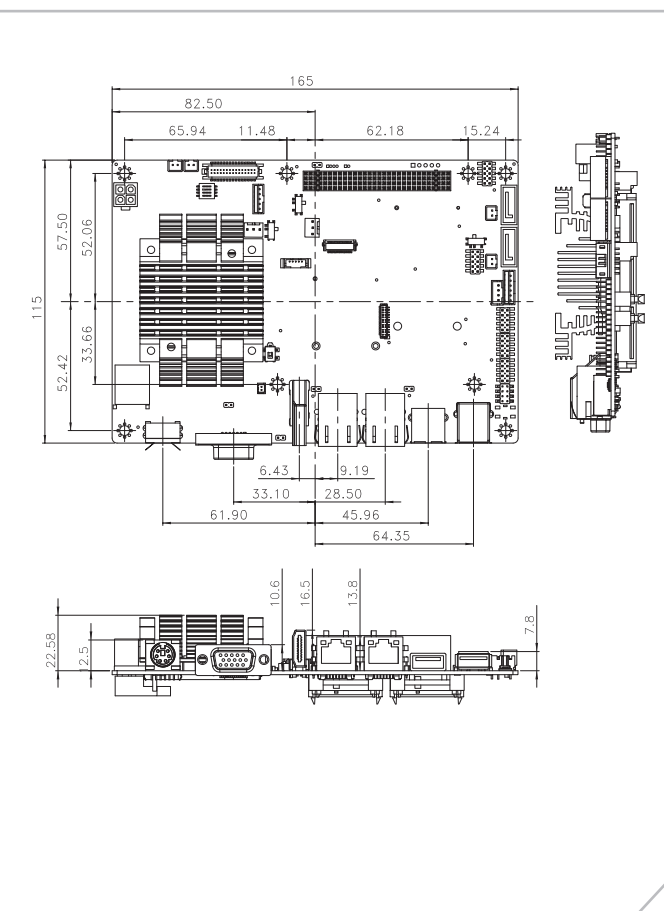
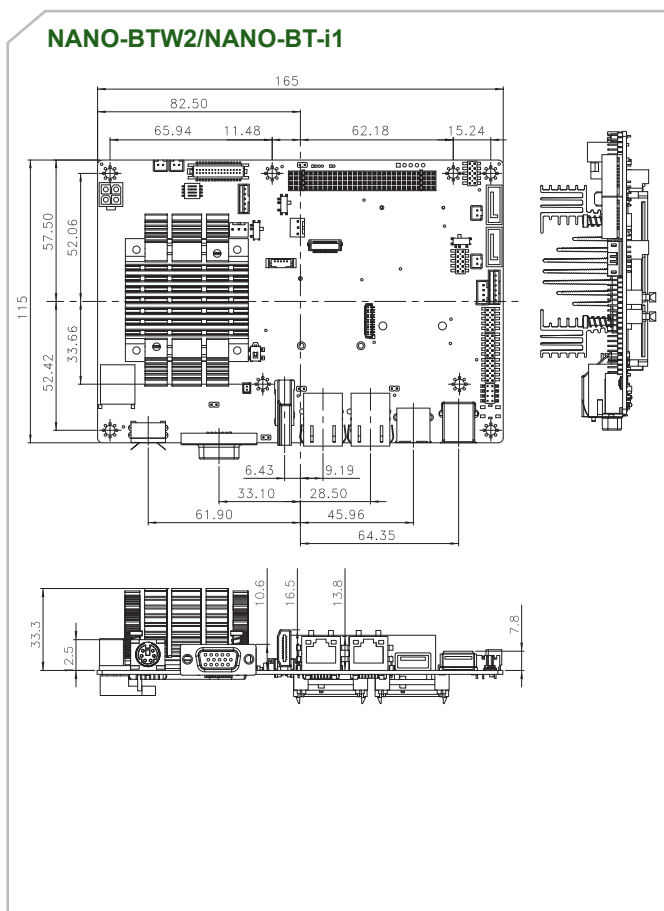
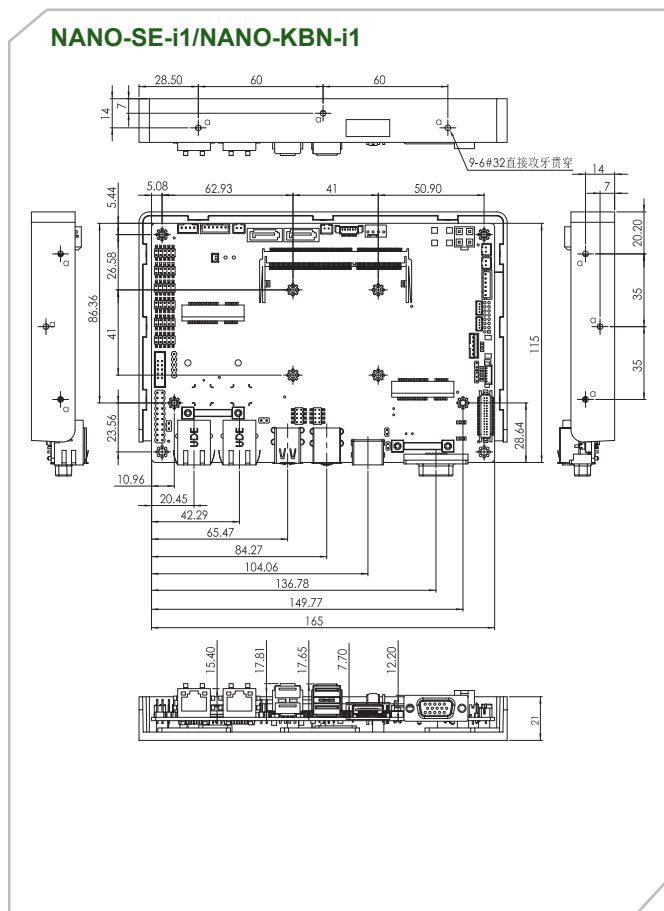
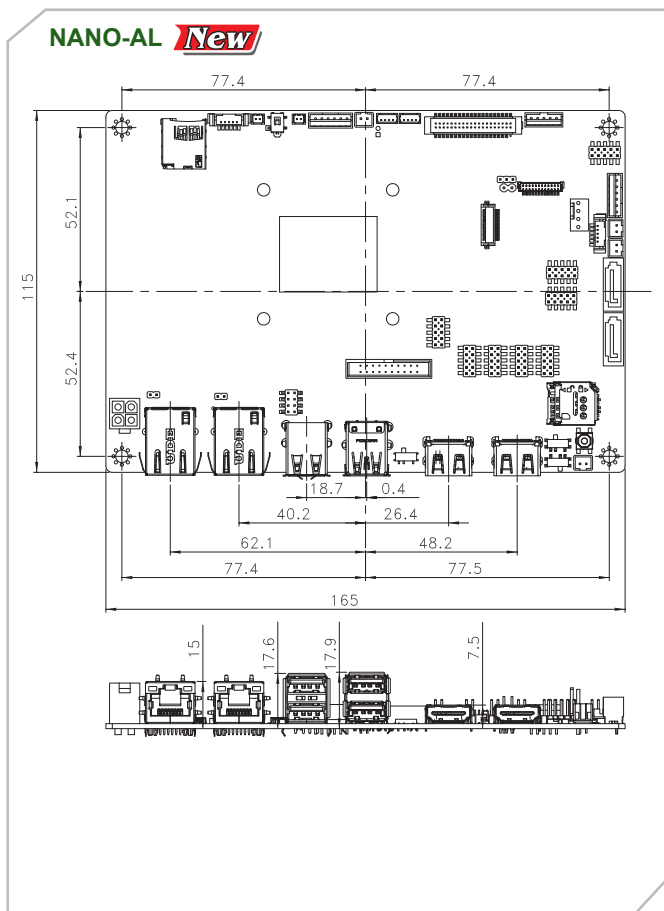
Packing List

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

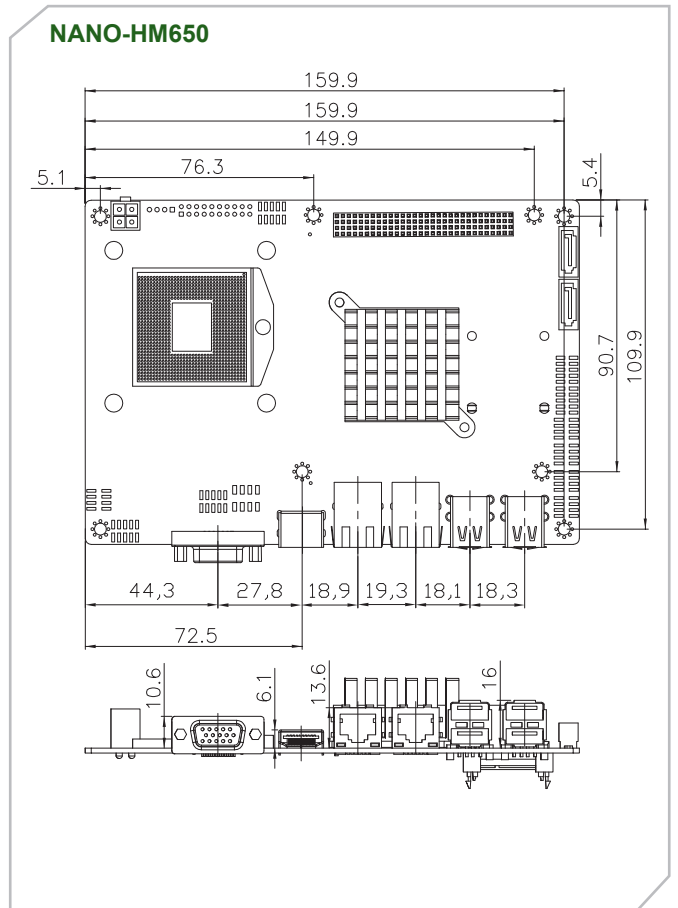
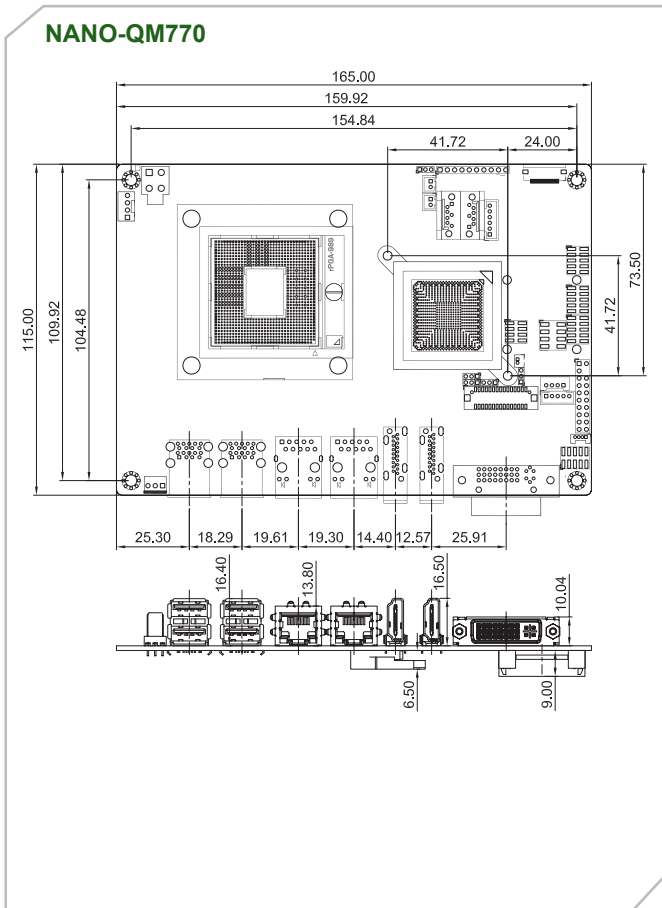
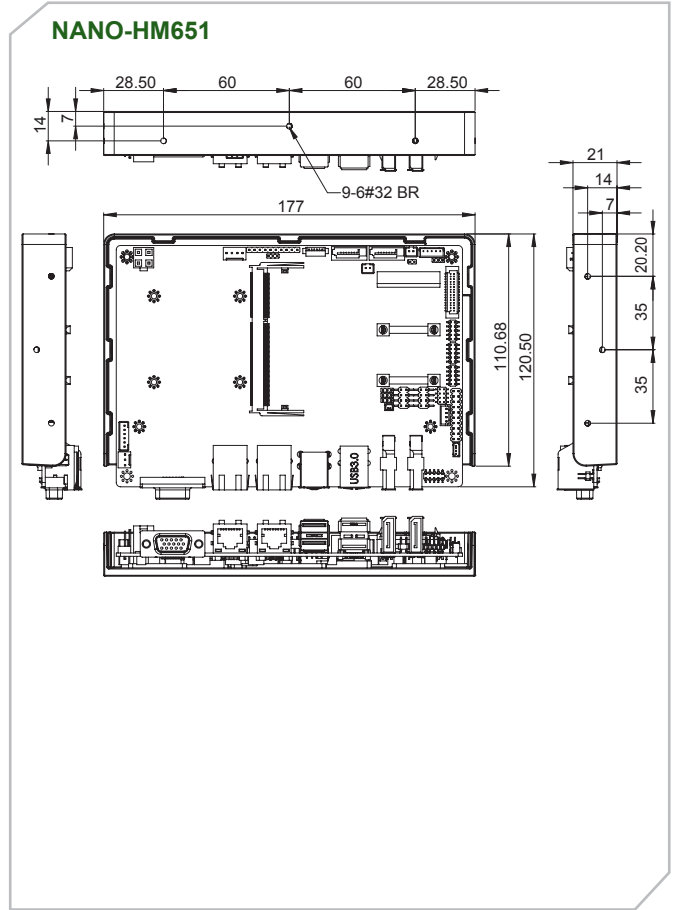
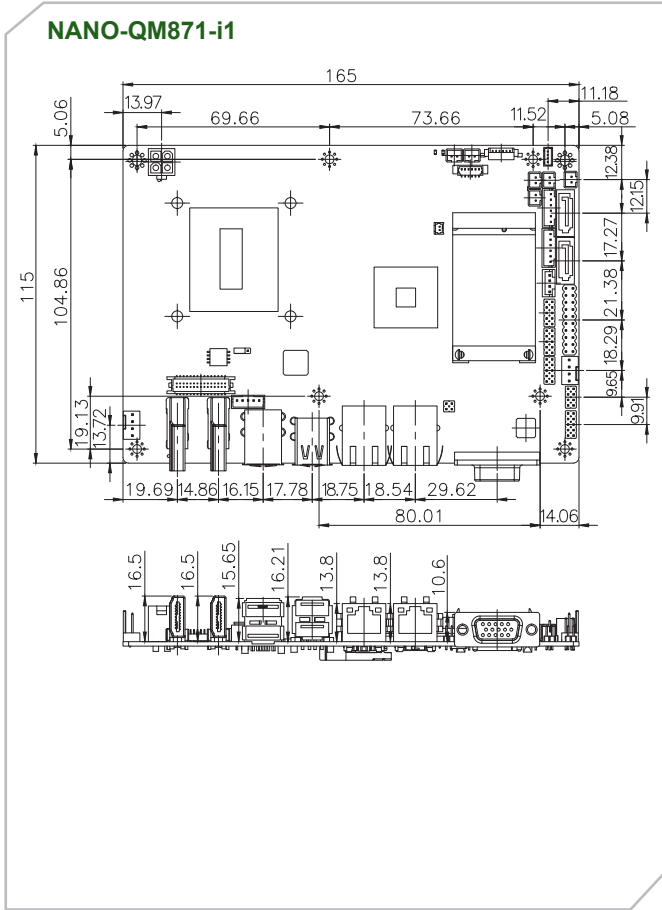
Ordering Information

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

EPIC NANO Dimensions (Unit: mm)



EPIC NANO Dimensions (Unit: mm)



3.5" WAFER Selection Guide



Model Name	WAFER-AL	WAFER-ULT4/ULT3	WAFER-BW	WAFER-BTW2
CPU Socket	On board	On board	On board	On board
CPU Type	Intel® Atom™/Celeron®/Pentium® on-board SoC	Intel® Mobile ULT processor	Intel® Pentium®/Celeron® SoC	Intel® Atom™/Celeron® SoC
Chipset	Intel® Atom™/Celeron®/Pentium® on-board SoC	Intel® Mobile ULT processor	Intel® Pentium®/Celeron® SoC	Intel® Atom™/Celeron® SoC
Memory	1 x 204-pin 1866/1600 MHz single-channel DDR3L SO-DIMM (system max. 8 GB)	1 x 260-pin 2133MHz DDR4 SDRAM SO-DIMM (channel 1) On-board DDR4 memory (optional 4/8GB support)	1 x 204-pin 1600/1333 MHz single-channel DDR3L SDRAM unbuffered SO-DIMM slot (system max. 8 GB)	4 GB solder-down 1066/1333 MHz DDR3L memory (for E3845) 2 GB solder-down 1066/1333 MHz DDR3L memory (for E3825)
Display Interface	Triple independent display 1 x VGA 1 x DP++ 1 x 18/24-bit dual-channel LVDS 1 x iDP	Triple independent displays 1 x VGA 1 x HDMI 1 x 18/24-bit dual-channel LVDS 1 x iDP interface for HDMI, LVDS, VGA, DVI, DP	Triple independent display 2 x HDMI 1 x 18/24-bit dual-channel LVDS	Dual independent display 1 x VGA 1 x 18/24-bit dual-channel LVDS 1 x iDP interface
Ethernet	LAN1: Realtek RTL8111 Controller LAN2: Realtek RTL8111 Controller	1 x Intel® I219LM 1 x Intel® I211AT	LAN1: Realtek RTL8111GN controller LAN2: Realtek RTL8111GN controller	LAN1: Intel® I210-IT PCIe controller LAN2: Intel® I210-IT PCIe controller
iRIS Remote Management Module	N/A			
I/O Interface	2 x RS-232 2 x RS-232/422/485 2 x USB 3.1 Gen 1 4 x USB 2.0	2 x RS-232/422/485 4 x USB 3.1 Gen 1 2 x USB 2.0	1 x PS/2 KB/MS 2 x RS-232/422/485 2 x USB 3.1 Gen 1 4 x RS-232 4 x USB 2.0	1 x PS/2 KB/MS 1 x RS-422/485 1 x USB 3.1 Gen 1 3 x RS-232 5 x USB 2.0
Storage Interface	2 x SATA 6Gb/s with 5V SATA power connector	1 x SATA 6Gb/s with 5V SATA power connector	2 x SATA 6Gb/s with 5V SATA power connector (no RAID) 1 x eMMC4.51 (optional)	2 x SATA 3Gb/s with 5V SATA power connector (no RAID) 1 x 4 GB on-board SSD (optional) 1 x microSD 1 x mSATA
Audio	Realtek ALC662 HD Audio codec	N/A	Realtek ALC662 HD Audio codec	
Digital I/O	8-bit programmable digital I/O			
Power Consumption	12V@2.57A (Intel® Pentium® N4200 up to 2.5GHz with 8GB DDR3L memory)	12V@4.27A (Intel® Core™ i7-6600U up to 3.4GHz CPU with 16GB (16GB x1) DDR4-2133 memory running in 3.0GHz)	12V@1.52A (Intel® Pentium® processor N3710 with 8 GB 1600MHz DDR3L memory)	12V@1.32A (Intel® Atom™ processor E3845 with on-board 2 GB 1333 MHz DDR3L memory)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset			
Operating Environment	Temperature Range: -20°C ~ 70°C (-4°F~158°F) Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: -20°C ~ 60°C (-4°F~140°F) Relative Humidity: 5% ~ 95%, non-condensing		
Expansion Slot	2 x Full/Half-size PCIe Mini card slot (one supports mSATA, another one with SIM holder)	1 x Full-size PCIe Mini slot (w/ SATA signal, support mSATA) 1 x Full-size PCIe Mini slot (w/ SIM card slot support)	2 x Full/Half-size PCIe Mini card slot (one with SIM holder)	2 x Full-size PCIe Mini card slot (one with SIM holder)
Recommended CPU Cooler	Heatsink	Heat Spreader	Heat Spreader	Heatsink

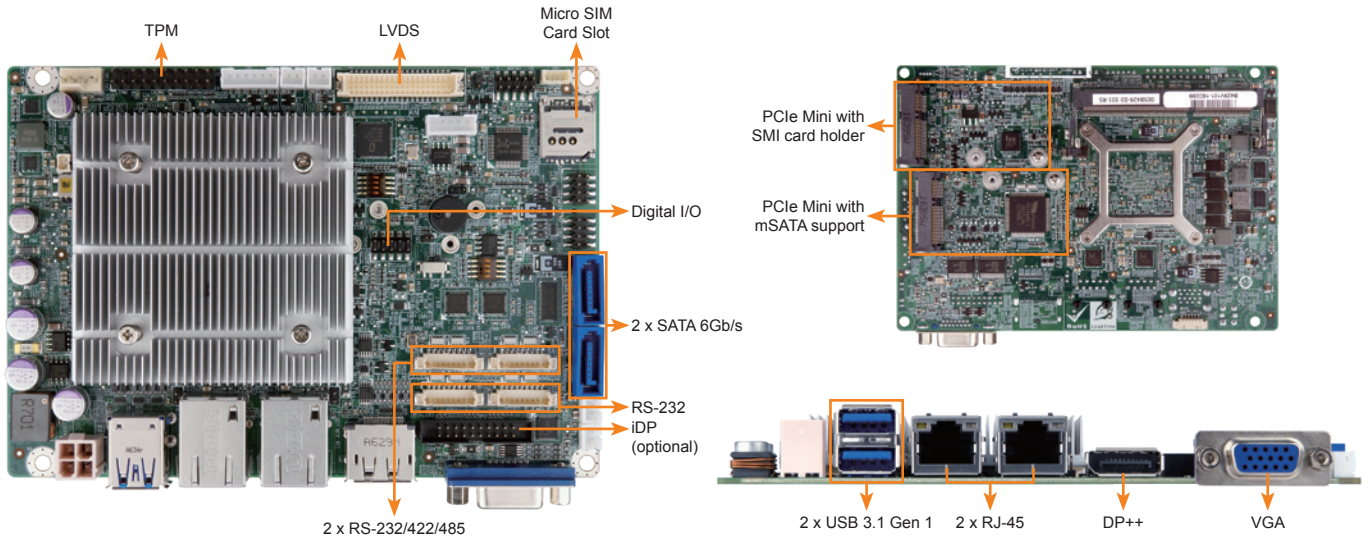
3.5" WAFER Selection Guide



Model Name	WAFER-ULT2/ULT-I1	WAFER-BT	WAFER-KBN-I1	WAFER-LX-R12	WAFER-LX2-R12
CPU Socket	On board	On board	On board	On board	On board
CPU Type	Intel® Mobile ULT processor	Intel® Atom™/Celeron® SoC	AMD® Embedded G-Series SoC	AMD Geode™ LX800	AMD Geode™ LX800
Chipset	Intel® Lynx Point SoC	Intel® Atom™/Celeron® on-board SoC	AMD® Embedded G-Series SoC	AMD Geode™ LX800 + AMD CS5536	AMD Geode™ LX800 + AMD CS5536
Memory	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)	1 x 204-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SO-DIMM (system max. 8 GB)	1 x 200-pin 333/400 MHz. 1 GB (max.) DDR SO-DIMM	1 x 200-pin 400 MHz. 1 GB (max.) DDR SO-DIMM
Display Interface	Dual display supported 1 x VGA 1 x 18/24-bit dual-channel LVDS 1 x iDP interface	Dual display supported 1 x VGA 1 x 18/24-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-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® 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	LAN1: Intel® I210-AT PCIe controller with NCSI support LAN2: Intel® I211-AT PCIe controller	Dual LAN: 10/100Mbps RTL8100C Ethernet Controller	LAN1: 10/100Mbps RTL8100C Ethernet Controller
iRIS Remote Management Module	1 x iRIS-1010 slot	N/A	1 x iRIS-1010 slot	N/A	N/A
I/O Interface	1 x PS/2 KB/MS 1 x RS-422/485 2 x USB 2.0 2 x USB 3.1 Gen 1 3 x RS-232	1 x PS/2 KB/MS 1 x RS-422/485 1 x USB 3.1 Gen 1 3 x RS-232 5 x USB 2.0	1 x PS/2 KB/MS 1 x RS-422/485 2 x USB 3.1 Gen 1 3 x RS-232 4 x USB 2.0	1 x LPT 1 x PS/2 for KB/MS 1 x RS-422/485 2 x RS-232 4 x USB 2.0	1 x RS-232/422/485 4 x USB 2.0 7 x RS-232
Storage Interface	2 x SATA 6Gb/s with 5V power connector	2 x SATA 3Gb/s with 5V SATA power connector (no RAID)	2 x SATA 6Gb/s with 5V SATA power connector	2 x SATA 1.5Gb/s RAID 1 x IDE 1 x CF Type II	1 x IDE 1 x CF Type II
Audio	Realtek ALC662 HD Audio codec			Realtek ALC203 with AC'97 codec	
Digital I/O	8-bit programmable digital I/O				
Power Consumption	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)	12V@2.12A (AMD GX-415GA 1.5GHz CPU with 1333 MHz 4 GB DDR3 memory)	5V@1.53A (AMD Geode™ LX 800 1 GB 400 MHz DDR)	5V@1.33A (AMD Geode™ LX800 512MB 333 MHz DDR)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset				
Operating Environment	Temperature Range: -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	Temperature Range: 0°C ~ 60°C (32°F~140°F) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C (32°F~140°F) Relative Humidity: 5% ~ 95% non-condensing	
Expansion Slot	1 x Full-size PCIe Mini card slot (supports mSATA)	1 x Full-size PCIe Mini card slot (supports mSATA)	1 x Full-size PCIe Mini card slot (supports mSATA)	1 x PC/104	1 x PC/104
Recommended CPU Cooler	Heat Spreader	N/A	GX-415GA (with heatsink) GX-210HA (with cooler)	Heatsink	Heatsink

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 3.1 Gen 1 (5Gb/s), PCIe Mini with mSATA support, SATA 6Gb/s, COM, Audio and RoHS



Specifications

- ◆ SoC
 - 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 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 display
 - 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 3.1 Gen 1 (5Gb/s)
- ◆ 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 6Gb/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, supports 1~255 sec. system reset
- ◆ Power Consumption
 - 12V@2.57A (Intel® Pentium® N4200 up to 2.5GHz with 8GB DDR3L memory)
- ◆ Operating Temperature: -20°C ~ 70°C
- ◆ Storage Temperature: -20°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 146mm x 102mm
- ◆ Weight: 600g / NW: 250g
- ◆ CE/FCC compliant

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 3.1 Gen 1 (5Gb/s), SATA 6Gb/s
- PCIe Mini with mSATA support

Packing List

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

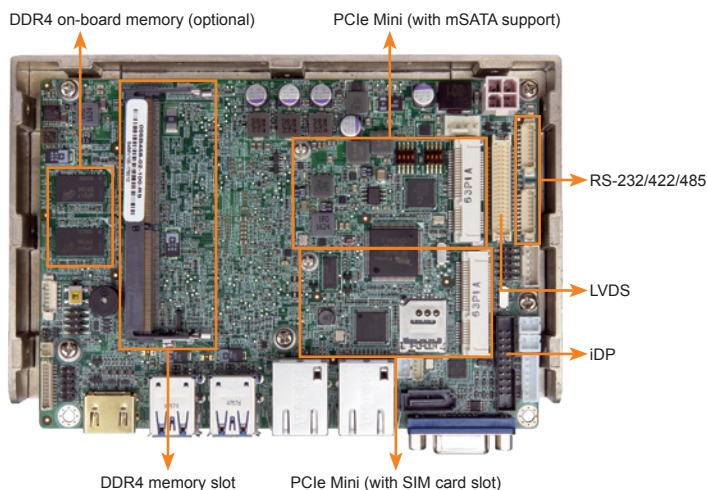
Ordering Information

Part No.	Description
WAFER-AL-N2-R10	3.5" SBC supports Intel® 14nm quad-core Pentium® N4200 2.5GHz on-board SoC with triple display, Dual PCIe GbE, PCIe Mini with mSATA support, USB 3.1 Gen 1 (5Gb/s), 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 triple display, Dual PCIe GbE, PCIe Mini with mSATA support, USB 3.1 Gen 1 (5Gb/s), SATA 6Gb/s, COM, Audio and RoHS
WAFER-AL-Nx-iDP-R10**	3.5" SBC supports Intel® 14nm quad-core Pentium® N4200/ Celeron® N3350 on-board SoC with iDP, DP++, LVDS triple display, Dual PCIe GbE, USB 3.1 Gen 1 (5Gb/s), PCIe Mini with mSATA support, SATA 6Gb/s, COM, Audio and RoHS
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
32007-005200-200-RS	Audio cable, 300mm, P=2.0
TPM-IN02-R20	20-pin Infineon TPM 2.0 module, software management tool, firmware v5.5

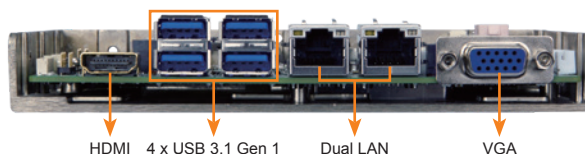
**By order production, MOQ: 100

WAFER-ULT3 -ULT4

3.5" SBC supports Intel® 6th/7th Generation ULT Processor with DDR4 SO-DIMM/On-board Memory Support, Triple Display, PCIe Mini with SIM Card Slot/mSATA Support, SATA 6Gb/s, COM, Audio, and RoHS



Passenger information system for transportation



Specifications

- ◆ CPU
 - 7th generation Intel® mobile ULT processor
 - Intel® Core™ i7-7600U (up to 3.9GHz, dual-core, 4MB cache, TDP=15W)
 - Intel® Core™ i5-7300U (up to 3.5GHz, dual-core, 3MB cache, TDP=15W)
 - Intel® Core™ i3-7100U (up to 2.4GHz, dual-core, 3MB cache, TDP=15W)
 - 6th generation Intel® mobile ULT processor
 - 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
 - 1 x 260-pin 2133MHz DDR4 SDRAM SO-DIMM (channel 1, supports up to 16GB)
 - On-board 4GB/8GB DDR4 memory (channel 2, optional support by request)
- ◆ Graphics Engine
 - Intel® HD Graphics
- ◆ Display Output
 - Triple independent display
 - 1 x VGA (up to 1920x1200@60Hz)
 - 1 x HDMI (up to 4096x2160@30Hz)
 - 1 x 18/24-bit dual-channel LVDS (up to 1920x1200@60Hz)
 - 1 x iDP interface for HDMI, LVDS, VGA, DVI, DP (co-layout with VGA)
- ◆ Ethernet
 - 1 x Intel® I219LM
 - 1 x Intel® I211AT
- ◆ External I/O Interface
 - 4 x USB 3.1 Gen 1 (5Gb/s)
- ◆ Internal I/O Interface
 - 1 x SATA 6Gb/s with 5V SATA power connector
 - 2 x USB 2.0 (2x4 pin, P=2,0)
 - 2 x RS-232/422/485 (1x9 pin, P=1.25)
- ◆ SMBus
 - 1 x SMBus (1x4 pin, P=2,0)
- ◆ Audio
 - 1 x HD audio (2x5 pin, supports 7.1-channel HD audio by AC-KIT-892HD-R10)
- ◆ Front Panel
 - 1 x Power LED & HDD LED (1x6 pin)
 - 1 x Power button (1x2 pin)
 - 1 x Reset button (1x2 pin)
- ◆ Expansion
 - 1 x Full-size PCIe Mini slot (w/ SATA signal, supports mSATA)
 - 1 x Full-size PCIe Mini slot (w/ SIM card slot support)
 - *3855U belongs to Skylake ULT Base series which supports PCIe Gen 2 signal only.
- ◆ Digital I/O
 - 1 x 8-bit digital I/O (2x5 pin)
- ◆ Fan Connector
 - 1 x System 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, or optional terminal block)
- ◆ Power Consumption
 - 12V@4.27A (Intel® Core™ i7-6600U up to 3.4GHz CPU with 16GB 2133MHz DDR4 memory running in 3.0GHz)
- ◆ Operating Temperature: -20°C ~ 60°C
- ◆ Storage Temperature: -20°C ~ 60°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 146mm x 102mm
- ◆ Weight: GW: 600g / NW: 250g
- ◆ CE/FCC compliant



Features

- 3.5" SBC with Intel® 6th/7th Generation ULT processor supports DDR4 SO-DIMM (on-board memory support by request)
- Triple display with VGA/iDP, HDMI and LVDS selection
- Two PCIe Mini with mSATA/SIM card slot support
- Intel® GbE LAN with Intel® AMT 11.0 supported
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

1 x WAFER-ULT3/ULT4 single board computer (heat spreader by default)	
1 x Power cable	1 x SATA with power cable kit
1 x RS-232/422/485 cable	1 x QIG

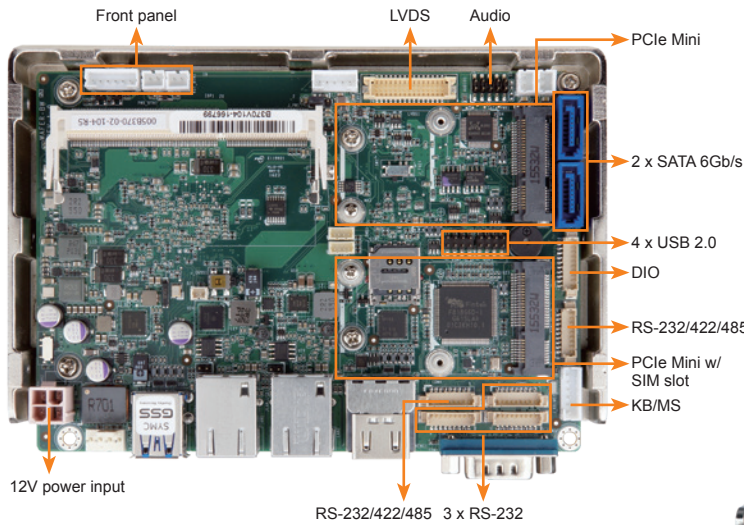
Ordering Information

Part No.	Description
WAFER-ULT3-i7-R10	3.5" SBC supports Intel® 6th Generation ULT Core™ i7-6600U processor with DDR4 SO-DIMM, triple display with VGA/iDP, HDMI, LVDS, Dual GbE, PCIe Mini with SIM card slot/mSATA support, SATA 6Gb/s, COM and RoHS
WAFER-ULT3-i5-R10	3.5" SBC supports Intel® 6th Generation ULT Core™ i5-6300U processor with DDR4 SO-DIMM, triple display with VGA/iDP, HDMI, LVDS, Dual GbE, PCIe Mini with SIM card slot/mSATA support, SATA 6Gb/s, COM and RoHS
WAFER-ULT3-i3-R10	3.5" SBC supports Intel® 6th Generation ULT Core™ i3-6100U processor with DDR4 SO-DIMM, triple display with VGA/iDP, HDMI, LVDS, Dual GbE, PCIe Mini with SIM card slot/mSATA support, SATA 6Gb/s, COM and RoHS
WAFER-ULT3-C-R10	3.5" SBC supports Intel® 6th Generation ULT Celeron® 3955U processor with DDR4 SO-DIMM, triple display with VGA/iDP, HDMI, LVDS, Dual GbE, PCIe Mini with SIM card slot/mSATA support, SATA 6Gb/s, COM and RoHS
WAFER-ULT3-CE-R10	3.5" SBC supports Intel® 6th Generation ULT Celeron® 3855U processor with DDR4 SO-DIMM, triple display with VGA/iDP, HDMI, LVDS, Dual GbE, PCIe Mini with SIM card slot/mSATA support, SATA 6Gb/s, COM and RoHS
WAFER-ULT4-i7-R10**	3.5" SBC supports Intel® 7th Generation ULT Core™ i7-7600U processor with DDR4 SO-DIMM, triple display with VGA/iDP, HDMI, LVDS, Dual GbE, PCIe Mini with SIM card slot/mSATA support, SATA 6Gb/s, COM and RoHS
WAFER-ULT4-i5-R10	3.5" SBC supports Intel® 7th Generation ULT Core™ i5-7300U processor with DDR4 SO-DIMM, triple display with VGA/iDP, HDMI, LVDS, Dual GbE, PCIe Mini with SIM card slot/mSATA support, SATA 6Gb/s, COM and RoHS
WAFER-ULT4-i3-R10**	3.5" SBC supports Intel® 7th Generation ULT Core™ i3-7100U processor with DDR4 SO-DIMM, triple display with VGA/iDP, HDMI, LVDS, Dual GbE, PCIe Mini with SIM card slot/mSATA support, SATA 6Gb/s, COM and RoHS
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
34000-000673-RS	Optional fanless heatsink module, 146mm x 102mm x 16mm

**By order production, MOQ:100

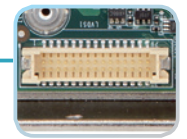
WAFER-BW

3.5" SBC with Intel® 14nm Pentium®/Celeron® on-board SoC with Dual HDMI and LVDS, Dual PCIe GbE, USB 3.1 Gen 1 (5Gb/s), PCIe Mini, SATA 6Gb/s, mSATA, COM, Audio and RoHS

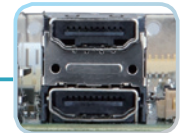


Triple independent display

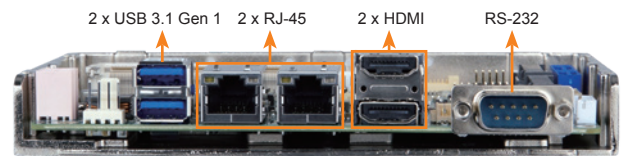
(Dual HDMI and one 18/24-bit dual-channel LVDS)



LVDS



HDMI



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 3.1 Gen 1 (5Gb/s) (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
- ◆ CE/FCC compliant



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 3.1 Gen 1 (5Gb/s), 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	2 x SATA with power cable kit
1 x RS-232/422/485 cable	1 x QIG

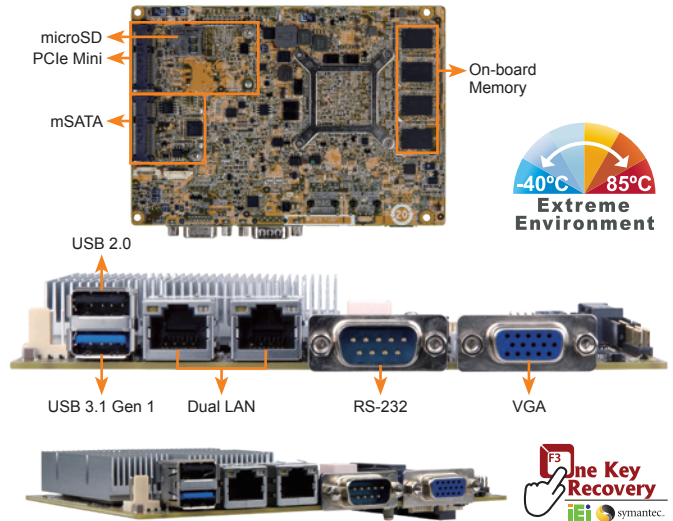
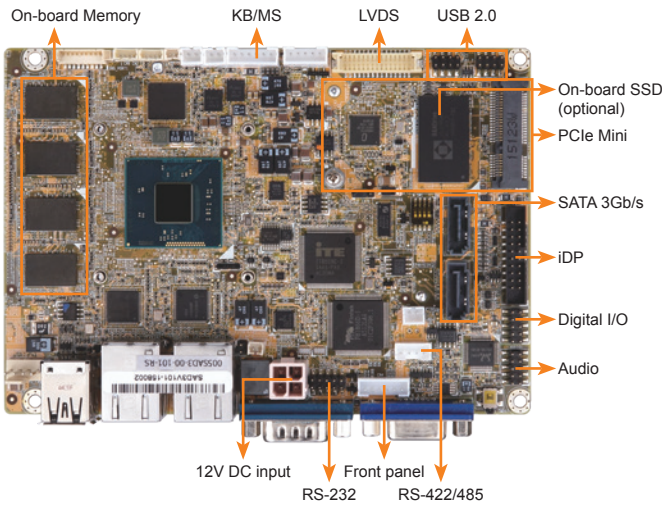
Ordering Information

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 3.1 Gen 1 (5Gb/s), 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 3.1 Gen 1 (5Gb/s), 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 3.1 Gen 1 (5Gb/s), 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 3.1 Gen 1 (5Gb/s), 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

WAFER-BT-E38001W2

3.5" SBC with Intel® 22nm Atom™ SoC, -40°C ~ 85°C, VGA/LVDS/iDP, Dual PCIe GbE, USB 3.1 Gen 1 (5Gb/s), 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™ 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)
- ◆ 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 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 3.1 Gen 1 (5Gb/s)
- ◆ 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
- ◆ CE/FCC compliant

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 3.1 Gen 1 (5Gb/s), 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 SATA with power cable kit
1 x Power cable	1 x QIG

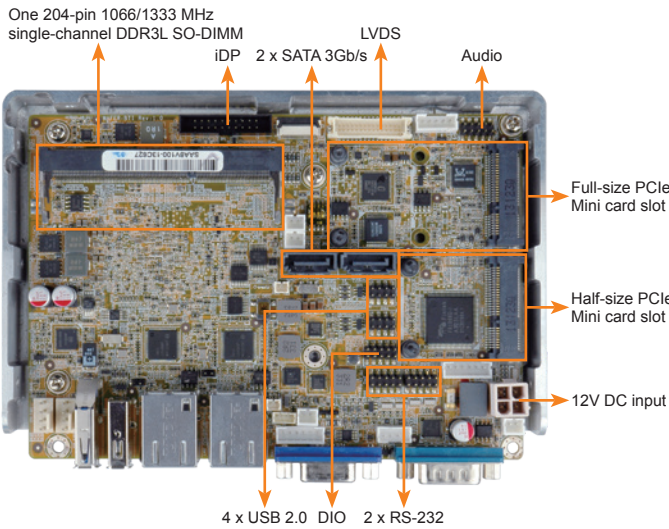
Ordering Information

Part No.	Description
WAFER-BT-E38451W2-R11	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 3.1 Gen 1 (5Gb/s), PCIe Mini, SATA 3Gb/s, mSATA, COM, Audio and RoHS
WAFER-BT-E38271W2-R11**	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, PCIe Mini, USB 3.1 Gen 1 (5Gb/s), SATA 3Gb/s, mSATA, COM, Audio and RoHS
WAFER-BT-E38261W2-R11**	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, PCIe Mini, USB 3.1 Gen 1 (5Gb/s), SATA 3Gb/s, mSATA, COM, Audio and RoHS
WAFER-BT-E38151W2-R11**	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, PCIe Mini, USB 3.1 Gen 1 (5Gb/s), 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)

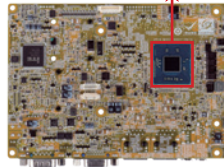
**By order production, MOQ: 100

WAFER-BT

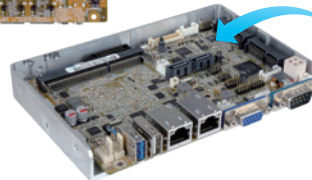
3.5" SBC with Intel® 22nm Atom™/Celeron® on-board SoC, VGA/LVDS/iDP, Dual PCIe GbE, USB 3.1 Gen 1 (5Gb/s), PCIe Mini, SATA 3Gb/s, mSATA, COM, Audio and RoHS



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

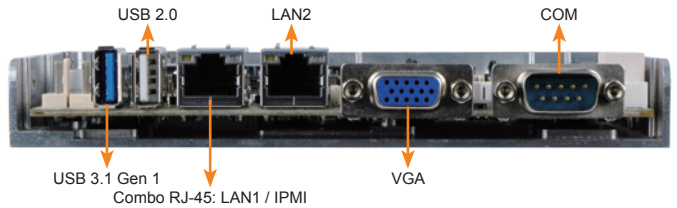


Dual independent display (max. support 1920x1200@60Hz)



Specifications

- ◆ SoC
 - Intel® Atom™ E3845 on-board SoC (1.91GHz, quad-core, 2MB cache, TDP=10W)
 - Intel® Atom™ 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, E3825, E3815) or 4 GB (N2807)
- ◆ Graphics Engine
 - Intel® HD Graphics Gen 7 Engine with 4 execution units, supports DX11.1, OpenGL 4.2 and OpenCL1.2
- ◆ 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 3.1 Gen 1 (5Gb/s)
- ◆ 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)
- ◆ 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)
 - 1 x Half-size PCIe Mini card slot (except for ECO sku)
- ◆ 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
- ◆ CE/FCC compliant



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 3.1 Gen 1 (5Gb/s), 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 SATA with power cable kit
1 x Power cable	1 x QIG

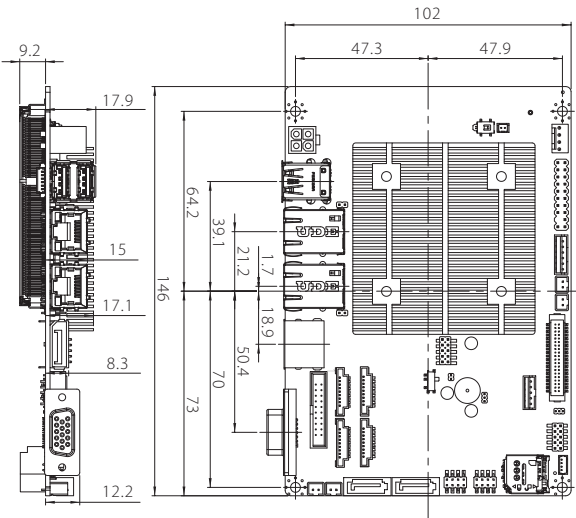
Ordering Information

Part No.	Description
WAFER-BT-J19001-R20	3.5" SBC supports Intel® 22nm Quad-Core Celeron™ J1900 2.0GHz (10W) on-board SoC with VGA/LVDS/iDP, Dual PCIe GbE, USB 3.1 Gen 1 (5Gb/s), PCIe Mini, SATA, mSATA, COM, Audio and RoHS
WAFER-BT-N28071-R20	3.5" SBC supports Intel® 22nm Dual-Core Celeron™ N2807 1.58GHz (4.5W) on-board SoC with VGA/LVDS/iDP, Dual PCIe GbE, USB 3.1 Gen 1 (5Gb/s), PCIe Mini, SATA, mSATA, COM, Audio and RoHS
WAFER-BT-N29301-R20	3.5" SBC supports Intel® 22nm Quad-Core Celeron™ N2920 1.86GHz (7.5W) on-board SoC with VGA/LVDS/iDP, Dual PCIe GbE, USB 3.1 Gen 1 (5Gb/s), PCIe Mini, SATA, mSATA, COM, Audio and RoHS
WAFER-BT-E38XX1-R20**	3.5" SBC supports Intel® 22nm Quad-Core Atom™ E38XX 1.91GHz (10W) on-board SoC with VGA/LVDS/iDP, Dual PCIe GbE, USB 3.1 Gen 1 (5Gb/s), PCIe Mini, SATA, mSATA, COM, Audio and RoHS
WAFER-BT-J19001-ECO-R20	3.5" SBC supports Intel® 22nm Quad-Core Celeron™ J1900 2.0GHz (10W) on-board SoC with VGA/LVDS/iDP, Dual PCIe GbE, USB 3.1 Gen 1 (5Gb/s), 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

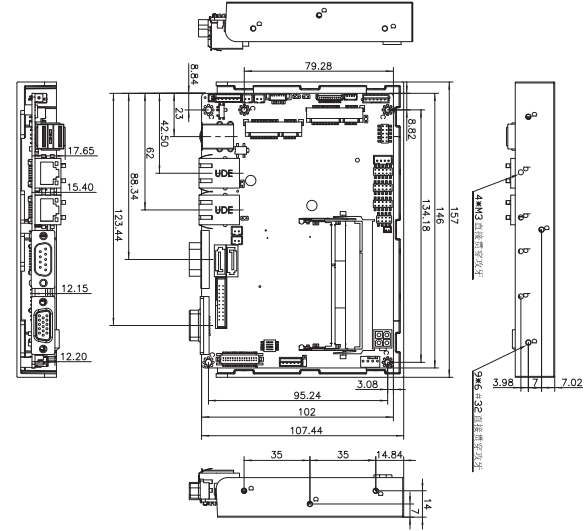
**By order production, MOQ: 100

WAFER Dimensions (Unit: mm)

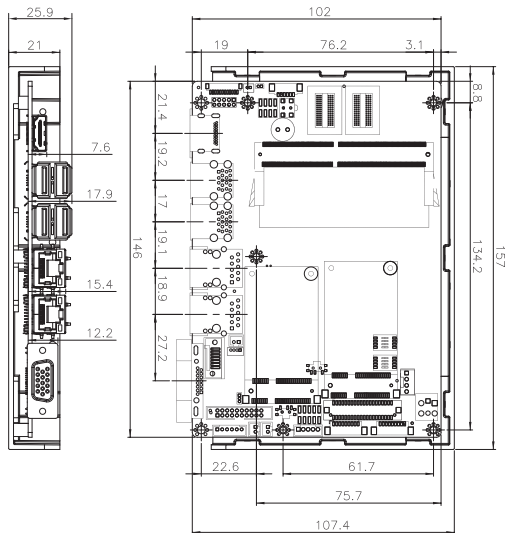
WAFER-AL



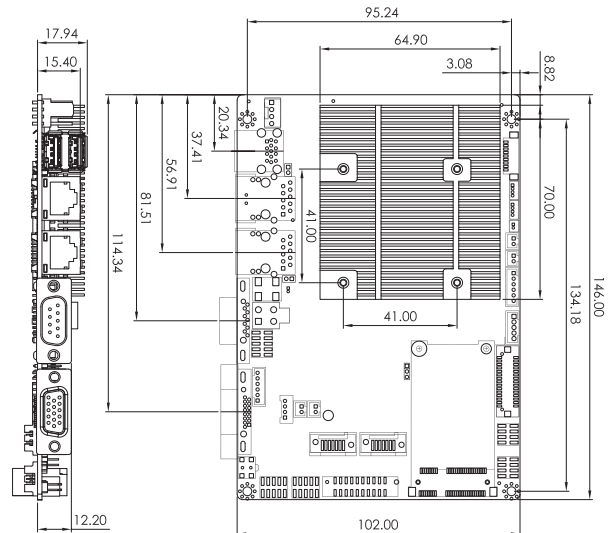
WAFER-ULT2-i1/WAFER-ULT-i1



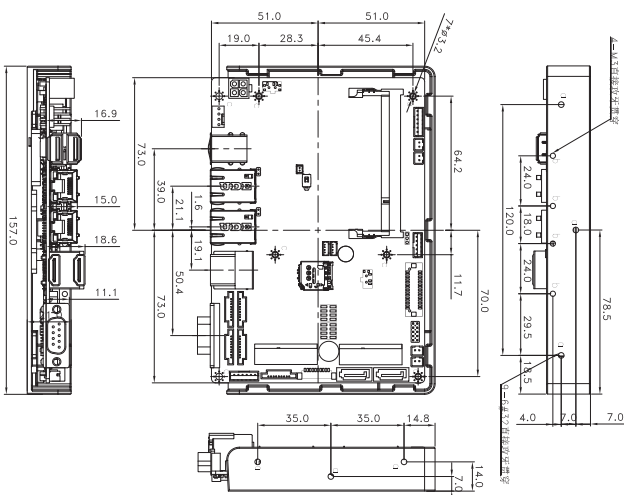
WAFER-ULT4/ULT3



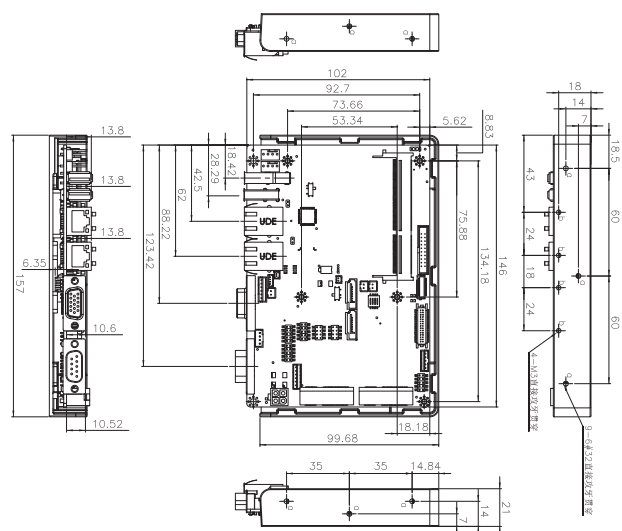
WAFER-BT-E3801W2



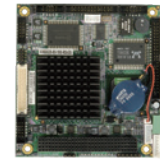
WAFER-BW



WAFER-BT-i1



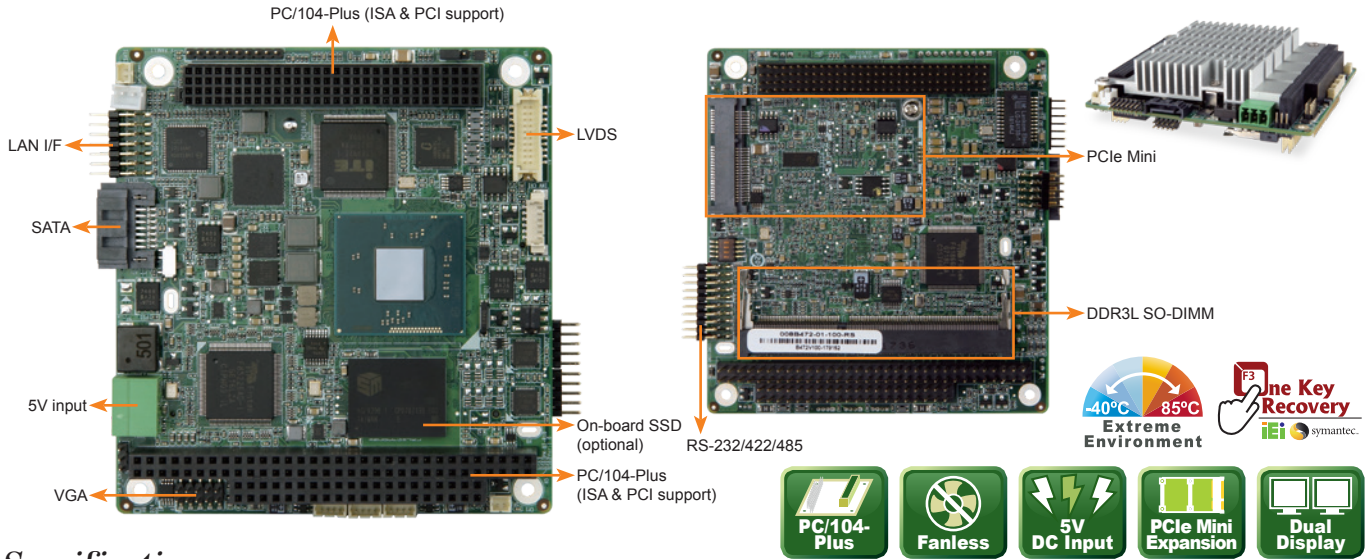
PC/104 Selection Guide



Model Name	PM-BT	PM-LX	PM-LX2
CPU Socket	On board	On board	On board
CPU Type	Intel® Atom™/Celeron® SoC	AMD Geode™ LX 800 500 MHz	AMD Geode™ LX 800 500 MHz
Chipset	Intel® Atom™/Celeron® SoC	Geode™ LX800 + CS5536	Geode™ LX800 + CS5536
Memory	1 x 204-pin 1066/1333 MHz DDR3L SO-DIMM (system max. 8 GB)	1 x 200-pin 400 MHz 1 GB (max.) DDR SDRAM SO-DIMM	1 x 200-pin 400 MHz 1 GB (max.) DDR SDRAM SO-DIMM
Display Interface	Dual display supported 1 x VGA 1 x 18/24-bit single-channel LVDS	Dual display supported 1 x VGA 1 x 24-bit TTL	Dual display supported 1 x VGA 1 x 24-bit TTL
Ethernet	GbE by Intel® I210 Ethernet PHY	10/100Mbps LAN by Realtek RTL8100C	10/100Mbps LAN by Realtek RTL8100C
iRIS Remote Management Module	N/A		
I/O Interface	2 x RS-232/422/485 (2x5, P=2.0) 3 x USB 2.0 (1x4 pin, P=1.25)	1 x KB/MS by pin header 1 x LPT 1 x RS-422/485 2 x RS-232 2 x USB 2.0	1 x KB/MS by pin header 1 x LPT 1 x RS-422/485 2 x RS-232 2 x USB 2.0
Storage Interface	1 x SATA 3Gb/s with 5V SATA power connector On-board SSD (optional)	1 x IDE 1 x CF Type II	1 x Slim FDD 1 x IDE 1 x CF Type II
Audio	N/A		
Digital I/O	1 x 8-bit DIO	N/A	
Power Consumption	5V@1.70A (Intel® Celeron® J1900 CPU with 8GB memory)	5V@1.13A (AMD Geode™ LX 800 with 1 GB DDR 400 MHz)	5V@1.09A (AMD Geode™ LX 800 with 512MB DDR 400 MHz)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset		
Operating Environment	-20°C ~ 60°C (for J1900/N2930/N2807) -40°C ~ 85°C (for E38xx)	Temperature Range: 0°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: -40°C ~ 70°C (W) Relative Humidity: 5% ~ 95%, non-condensing
Expansion Slot	1 x Full-size PCIe Mini slot (support mSATA) 1 x PC/104-Plus (ISA+PCI)	1 x PCI-104	1 x PC-104
CPU Cooler	Heatsink	Heatsink	Heatsink

PM-BT

PC/104-Plus SBC with Intel® Atom™/Celeron® on-board SoC with DDR3L, VGA, LVDS, GbE, USB 2.0, SATA 3Gb/s, RS-232/422/485 and 5V DC input, RoHS



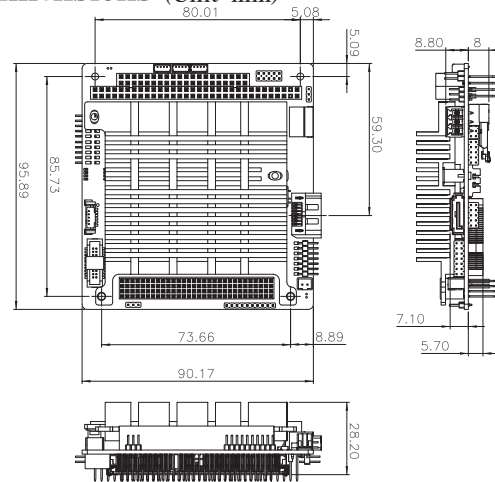
Specifications

- ◆ SoC
 - Intel® Atom™ E3845 on-board SoC (1.91GHz, quad-core, 2MB cache, TDP=10W)
 - Intel® Atom™ E3825 on-board SoC (1.33GHz, dual-core, 1MB cache, TDP=6W)
 - Intel® Celeron® J1900 on-board SoC (2GHz, quad-core, 2MB cache, TDP=10W)
 - Intel® Celeron® N2807 on-board SoC (1.58GHz, dual-core, 2MB cache, TDP=4.3W)
- ◆ BIOS
 - AMI UEFI BIOS
- ◆ Memory
 - One 204-pin 1333/1066 MHz single-channel DDR3L SO-DIMM supports up to 8 GB (J1900, N2930, E3845, E3827, E3826, E3825, E3815) or 4 GB (N2807)
- ◆ 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 18/24-bit single-channel LVDS (2x10 pin)
- ◆ Ethernet
 - 1 x Intel® I210
- ◆ Super I/O
 - Fintek F81866
- ◆ Internal I/O Interface
 - 1 x SATA 3Gb/s with 5V SATA power connector
 - 3 x USB 2.0 (1x4 pin, P=1.25)
 - 2 x RS-232/422/485 (2x5, P=2.0)
- ◆ Storage
 - On-board SSD (optional, support by request)
- ◆ Front Panel
 - 1 x 10-pin header, P=2.0 (power LED, HDD LED, power button and reset button)
- ◆ Expansion
 - 1 x Full-size PCIe Mini slot (supports mSATA)
 - 1 x PC/104-Plus (ISA+PCI)*
- ◆ Digital I/O
 - 1 x 8-bit digital I/O (2x5 pin, P=2.0)
- ◆ Power Supply
 - 5V DC input
 - 12V for fan, LVDS and PCI-104 plus
 - » 5V for PCI-104 plus (1x3 pin, P=2.0)
 - » 12V for PCI-104 plus (1x3 pin, P=2.0)
 - 3/5V jumper for PCI-104 plus
 - Support AT/ATX mode
 - ErP/EuP Compliant
- ◆ Power Consumption
 - 5V@1.70A (Intel® Celeron® J1900 CPU with 8GB memory)
- ◆ Watchdog Timer
 - Software programmable, supports 1~255 sec. system reset
- ◆ Operating Temperature
 - 20°C ~ 60°C (for J1900/N2930/N2807)
 - 40°C ~ 85°C (for E38xx)
- ◆ Storage Temperature
 - 40°C ~ 85°C
- ◆ Thermal
 - Heatsink
- ◆ Operating Humidity
 - 5% ~ 95%, non-condensing
- ◆ Dimensions
 - 96 mm x 90 mm
- ◆ Weight
 - GW: 500g / NW 120g
- ◆ CE/FCC compliant

Features

- PC/104 form factor SBC supports 22nm Intel® Atom™ on-board SoC
- PC/104-Plus (ISA and PCI signal) function support
- 5V DC input solution
- Support 2 COM, PCIe Mini, USB and optional on-board SSD
- Dual display from VGA and LVDS
- Wide range temperature support from -40°C ~ 85°C (for E38xx series CPU)
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Dimensions (Unit: mm)



Packing List

1 x PM-BT single board computer	
1 x COM port cable	1 x SATA cable kit
1 x Heatsink	1 x Single-port USB cable
1 x LAN cable	1 x VGA cable

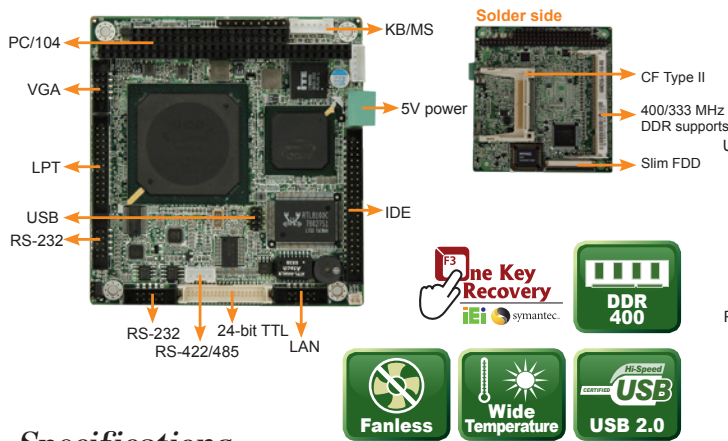
Ordering Information

Part No.	Description
PM-BT-J19001-R10	PC/104-Plus single board computer with Intel® Celeron® J1900 SoC with DDR3L, VGA, LVDS, USB 2.0, SATA 3Gb/s, GbE, RS-232/422/485 and 5V DC input, RoHS
PM-BT-N28071-R10	PC/104-Plus single board computer with Intel® Celeron® N2807 SoC with DDR3L, VGA, LVDS, USB 2.0, SATA 3Gb/s, GbE, RS-232/422/485 and 5V DC input, RoHS
PM-BT-E38xx1W2-R10**	PC/104-Plus single board computer with Intel® Atom™ E38xx SoC with DDR3L, VGA, LVDS, USB 2.0, SATA 3Gb/s, GbE, RS-232/422/485 and 5V DC input, RoHS, -40°C ~ 85°C
33403-000015-RS	PC104 plus spacer (for PCI) 120 pin socket connector
33403-000016-RS	PC104 plus spacer (for ISA) 64+40 pin socket connector

** Note: Models with other CPUs not listed in the table are requested by MOQ - 100 pcs/lot.
 * ISA limitation, Please refer to the user manual for more information.

PM-LX2

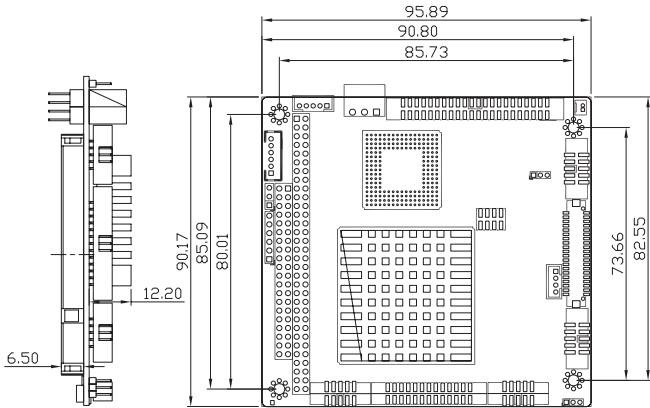
AMD Geode™ LX 800 CPU on-board PC/104 Module



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
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimensions
96mm (L) x 90mm (W)
- ◆ Weight
GW: 500g / NW 110g
- ◆ CE/FCC compliant

Dimensions (mm)



Packing List

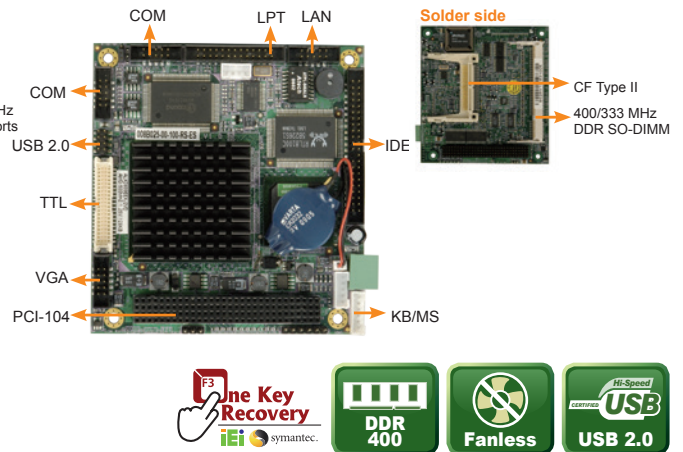
1 x PM-LX2 single board computer	1 x PS/2 KB/MS cable
1 x ATA33 flat cable	1 x VGA cable
1 x Dual USB cable	2 x RS-232 cable
1 x LAN cable	1 x Mini jumper pack
1 x Power cable	1 x QIG

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
32200-015100-RS	LPT cable, 280mm, P=2.0
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0

PM-LX

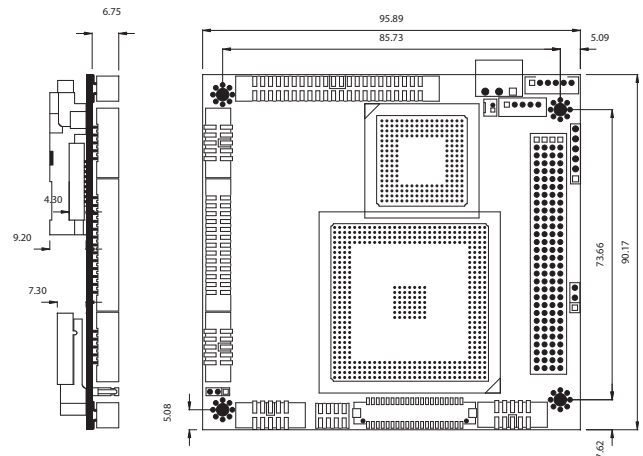
PCI-104 Module with on-board AMD Geode™ LX 800 CPU



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
- ◆ CE/FCC compliant

Dimensions (mm)



Packing List

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

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

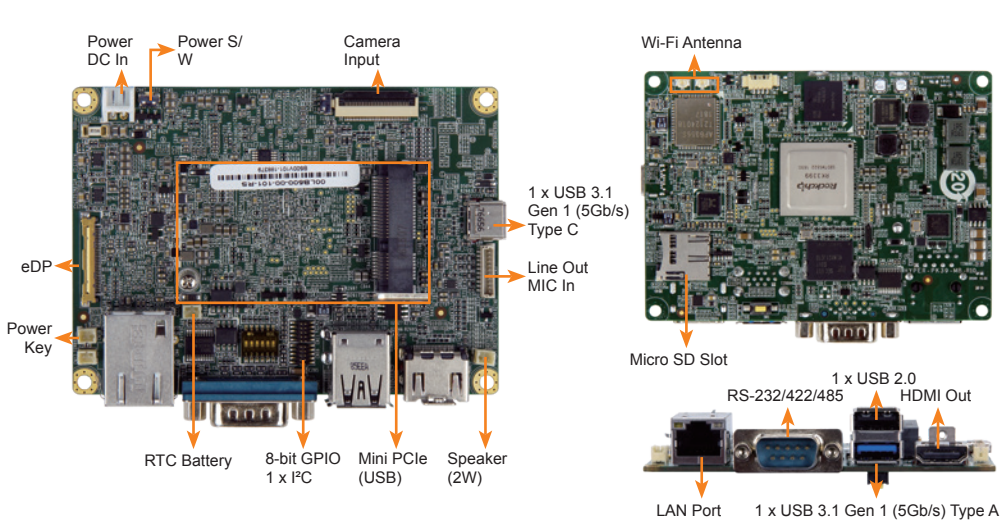
Pico-ITX Selection Guide

New


Model Name	HYPER-RK39	HYPER-BW	HYPER-BT
CPU Socket	On board	On board	On board
CPU Type	Rockchip RK3399 (Dual-core Cortex-A72 up to 1.8GHz + Quad-core Cortex-A53 up to 1.5GHz)	Intel® Pentium®/Celeron® SoC	Intel® Atom™/Celeron® SoC
Chipset	SoC	Intel® Pentium®/Celeron® SoC	Intel® Atom™/Celeron® SoC
Memory	On board 2GB LPDDR3-1866	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 1 x HDMI 1 x eDP	Dual independent display 2 x Mini HDMI	Dual independent display 1 x VGA 1 x iDP interface
Ethernet	LAN: Realtek RTL8211E	LAN: Realtek RTL8111GN controller	LAN: Intel® I211-AT PCIe GbE controller
iRIS Remote Management Module	N/A		
I/O Interface	1 x RS-232/422/485 1 x USB 3.1 Gen 1 (5Gb/s) Type A 1 x USB 3.1 Gen 1 (5Gb/s) Type C 1 x USB 2.0 Type A 1 x I ² C 1 x MIPI CSI interfaces for Camera 8 bit (4 in / 4 out)	1 x RS-232 1 x USB 3.1 Gen 1 3 x USB 2.0	1 x RS-232 1 x USB 3.1 Gen 1 3 x USB 2.0
Storage Interface	1 x Micro SD slot	1 x SATA 6Gb/s with 5V SATA power connector (no RAID)	1 x SATA 3Gb/s with 5V SATA power connector (no RAID)
Audio	1 x 2 pin for speaker (1.5W 8Ω) 1 x 10 pin (Line in / Line out)	10 pin header on board support 7.1 channel HD Audio by AC-KIT-892HD-R10	Realtek ALC662 HD Audio codec
Power Consumption	12V@1.2A	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)
Watchdog Timer	Yes	Software programmable and supports 1~255 sec. system reset	
Operating Environment	Temperature Range: -10°C ~ 50°C Relative Humidity: 10% ~ 90%, non-condensing	Temperature Range: -20°C ~ 60°C (-4°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing	
Expansion Slot	1 x Full-size PCIe Mini (reserved for WWAN)	1 x M.2 (B key)	N/A
CPU Cooler	Heatsink	Heatsink	Heat Spreader

HYPER-RK39

PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3, 16GB eMMC Flash, HDMI, eDP, GbE LAN, PCIe mini, USB 3.1 Gen 1, USB 2.0, COM, RoHS



New



Features

- Pico-ITX SBC supports Rockchip RK3399
- HDMI and eDP dual display support
- OS: Android 7.1 & Linux QT 5.9.4



Specifications

Model Name		HYPER-RK39
Chassis	Dimensions (WxHxD) (mm)	Single board: 100mm x 72mm
	CPU	Rockchip RK3399 (Dual-core Cortex-A72 up to 1.8GHz + Quad-core Cortex-A53 up to 1.5GHz)
Motherboard	System Memory	2GB LPDDR3-1866
	SD Card	1 x Micro SD slot
Storage	Flash	16GB eMMC NAND FLASH
	WLAN	802.11 a/b/g/n/ac
Communication	Bluetooth	Bluetooth V4.1
	WWAN	PCIe Mini LTE (optional)
	COM port	1 x RS-232/422/485
I/O Interfaces	GPIO	8 bit (4 in / 4 out)
	Ethernet	1 x GbE RJ45 by RTL8211E
	USB 3.1 Gen 1	1 x USB 3.1 Gen 1 (5Gb/s) Type A 1 x USB 3.1 Gen 1 (5Gb/s) Type C
	USB 2.0	1 x USB 2.0 Type A
	Display	1 x HDMI out 1 x eDP port
	Others	1 x I²C
	Expansions	PCIe Mini
Multimedia	Audio	1 x 2 pin for speaker (1.5W 8Ω) 1 x 10 pin (Line in / Line out)
	Camera	1 x MIPI CSI interfaces for Camera
Power	Power Input	1 x 2 pin DC 12V in wafer connector
	Power Consumption	12V @ 1.2A
Reliability	Operating Temperature	-10°C ~ 50°C with air flow
	Storage Temperature	-20°C ~ 60°C
	Humidity	10% ~ 90%, non-condensing
	Weight (Net)	80 g
	Safety/EMC	CE/FCC Class A compliant
OS	Supported OS	Android 7.1 or Linux QT 5.9.4
	Watchdog Timer	Yes

Ordering Information

Part No.	Description
HYPER-RK39-R10	PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, Android 7.1, HDMI, eDP, GbE LAN, PCIe mini, USB 3.1 Gen 1, USB 2.0, COM, RoHS
HYPER-RK39-R10-TW	PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, Android 7.1, HDMI, eDP, GbE LAN, PCIe mini, USB 3.1 Gen 1, USB 2.0, COM, Wi-Fi TW reg, RoHS
HYPER-RK39-R10-US	PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, Android 7.1, HDMI, eDP, GbE LAN, PCIe mini, USB 3.1 Gen 1, USB 2.0, COM, Wi-Fi US reg, RoHS
HYPER-RK39-R10-EU	PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, Android 7.1, HDMI, eDP, GbE LAN, PCIe mini, USB 3.1 Gen 1, USB 2.0, COM, Wi-Fi EU reg, RoHS
HYPER-RK39-R10-CN	PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, Android 7.1, HDMI, eDP, GbE LAN, PCIe mini, USB 3.1 Gen 1, USB 2.0, COM, Wi-Fi CN reg, RoHS
HYPER-RK39-R10-L-TW	PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, Linux QT, HDMI, eDP, GbE LAN, PCIe mini, USB 3.1 Gen 1, USB 2.0, COM, Wi-Fi TW reg, RoHS
HYPER-RK39-R10-L-US	PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, Linux QT, HDMI, eDP, GbE LAN, PCIe mini, USB 3.1 Gen 1, USB 2.0, COM, Wi-Fi US reg, RoHS
HYPER-RK39-R10-L-EU	PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, Linux QT, HDMI, eDP, GbE LAN, PCIe mini, USB 3.1 Gen 1, USB 2.0, COM, Wi-Fi EU reg, RoHS
HYPER-RK39-R10-L-CN	PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, Linux QT, HDMI, eDP, GbE LAN, PCIe mini, USB 3.1 Gen 1, USB 2.0, COM, Wi-Fi CN reg, RoHS
HYPER-RK39-R10-L	PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, Linux QT, HDMI, eDP, GbE LAN, PCIe mini, USB 3.1 Gen 1, USB 2.0, COM, RoHS

Packing List

1 x Hyper-RK single board
1 x Two pin to DC in power cable
1 x Heatsink set
1 x RTC battery

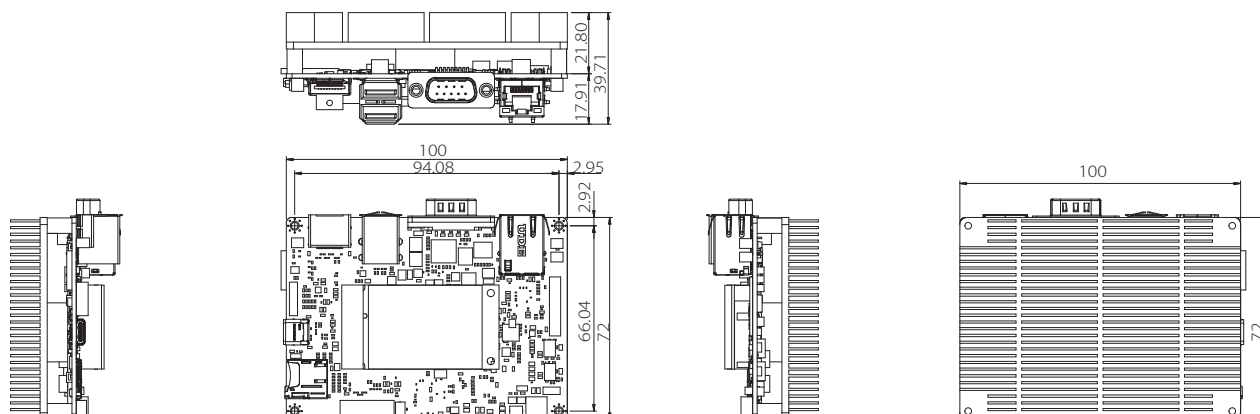
Options

Item	Part No.	Description
Power Adapter	63040-010060-120-RS	Vin:90~264VAC; 60W; Φ 2.5/ Φ 5.5/lock
GPIO Cable	32133-030000-100-RS	FEMALE 2*5P P=1.0*2; (B)PIN HEADER 2*5P P=2.54*2
Audio Cable	32107-005200-100-RS	Audio Jack: Φ 3.5, 6P
Power Switch Cable	19S00-015600-100-RS	ROCKER SWITCH:250V/6A, 2P, ON/OFF
ePD Cable	32602-030700-100-RS	CABLE, 2;300MM, 34AWG, (A)I-PEX:20454-240T P=0.5+PULL BAR*2
Speaker	19800-025000-100-RS	SPEAKER+CABLE MODULE, 2;300MM, 28AWG, (A)Speaker:26.6*15.6*9.0MM,8 Ω ,1.5W
IPEX to SMA cable	32501-000705-100-RS	RF CABLE FOR DVBT, LINE DIAMETER:1.37mm;213MM, 50 Ω , Exceltek, 0-6GHz
Wi-Fi Antenna	32505-004800-100-RS	WLAN, 2.4G+5G WI-FI ANTENNA
Camera module	71001-COC794A5SFE-RS	Image Module, 2592*1944
LTE Antenna	32505-004200-100-RS	WLAN, LTE FULL BAND ANTENNA
LTE Module	27552-000004-RS	WCDMA/HSPA+/LTE, SIM7500SA
	27552-000005-RS	GSM/LTE/WCDMA, SIM7500E
	27552-000006-RS	LTE/WCDMA, SIM7500A

* Use LTE module need to add a SIM card slot board.

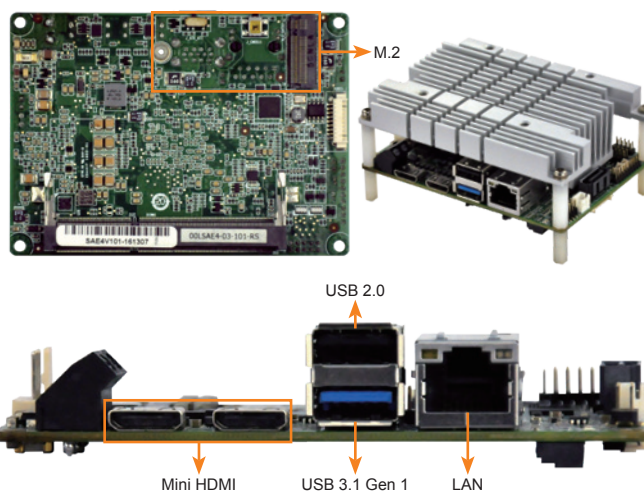
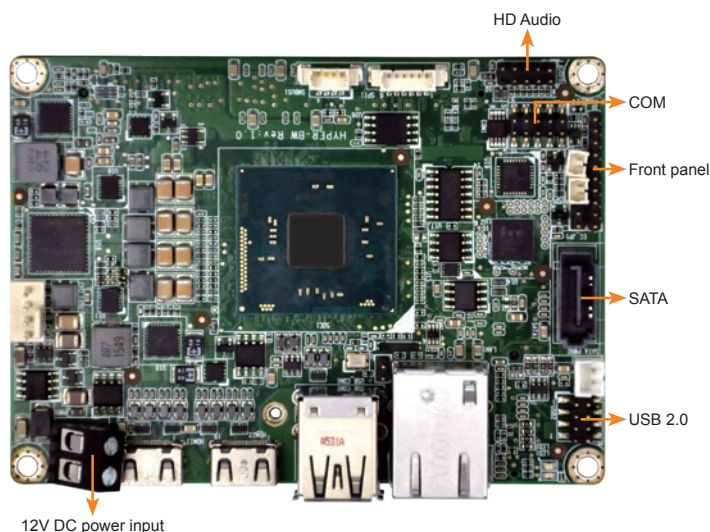
HYPER-RK39 Dimensions

(Unit: mm)



HYPER-BW

Pico-ITX SBC with Intel® 14nm Pentium®/Celeron® on-board SoC with dual Mini HDMI, M.2, GbE, USB 3.1 Gen 1 (5Gb/s), SATA 6Gb/s, 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)
 - Intel® Atom® x5-E8000 on-board SoC (up to 2.00 GHz, quad-core, 2M cache, TDP=5W)
- ◆ 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 3.1 Gen 1 (5Gb/s)
- ◆ Internal I/O Interface
 - 1 x RS-232 (1x9 pin, P=1.25)
 - 1 x SATA 6Gb/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 audiou by AC-KIT-892HD-R10)
- ◆ Front Panel
 - 1 x Front panel (1x10 pin, power LED, HDD LED, power buttom, reset buttom)
- ◆ 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:600g/ NW:250g
- ◆ CE/FCC compliant



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 3.1 Gen 1 (5Gb/s), 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 with heatsink	1 x RS-232 cable
1 x SATA with power cable kit	1 x QIG

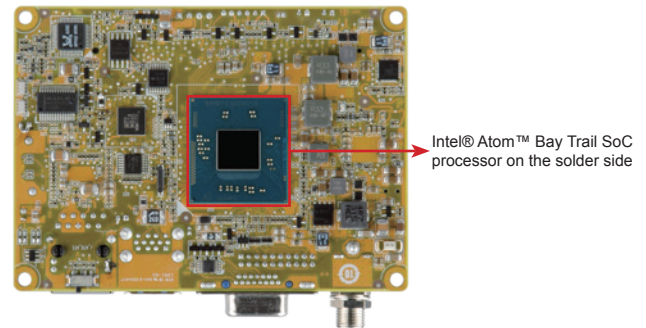
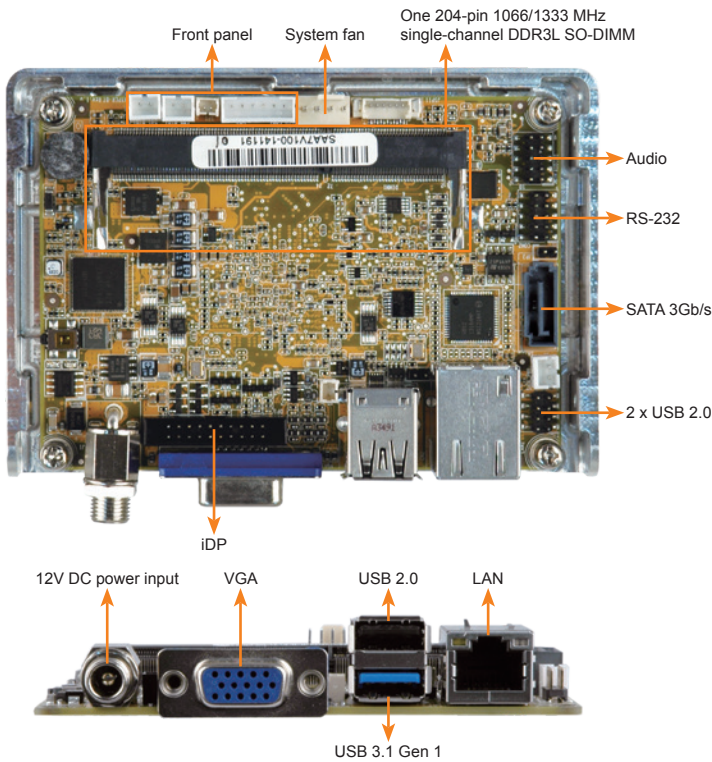
Ordering Information

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 3.1 Gen 1 (5Gb/s), 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 3.1 Gen 1 (5Gb/s), 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 3.1 Gen 1 (5Gb/s), 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 3.1 Gen 1 (5Gb/s), SATA 6Gb/s, COM, Audio and RoHS
HYPER-BW-E8-R10	Pico-ITX SBC with Intel® Atom® 14nm quad-core x5-E8000 up to 2.00GHz (5W) on-board SoC with dual Mini HDMI, PCIe GbE, M.2, USB 3.1 Gen 1 (5Gb/s), SATA 6Gb/s, COM, Audio and RoHS
HYPER-BW-E8-ECO-R10	Pico-ITX SBC with Intel® Atom® 14nm quad-core x5-E8000 up to 2.00GHz (5W) on-board SoC with dual Mini HDMI, PCIe GbE, M.2, USB 3.1 Gen 1 (5Gb/s), SATA 6Gb/s, COM, Audio, ECO packing and RoHS
32001-008600-200-RS	Dual-port USB cable, 210mm, P=2.0
32102-045100-100-RS	DC JACK 5.5*2.5+NUT to open end power cable, 100mm
63040-010036-111-RS	12V 36W AC/DC adapter
AC-KIT-892HD-R10	Realtek ALC892 7.1 Channel HD Audio peripheral board, RoHS

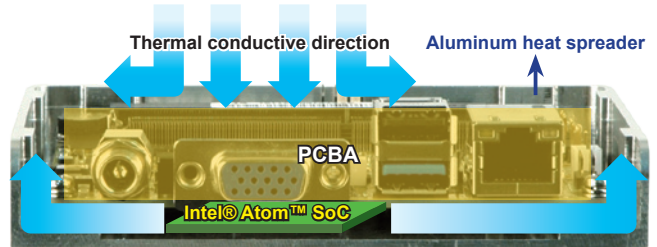
**By order production, MOQ: 100

HYPER-BT

Pico-ITX SBC supports Intel® 22nm Atom™/Celeron® on-board SoC, DDR3L, VGA/iDP, GbE, USB 3.1 Gen 1 (5Gb/s), 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 3.1 Gen 1 (5Gb/s)
- ◆ 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
- ◆ CE/FCC compliant



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 SATA with 5V output cable kit
1 x RS-232 cable	1 x QIG

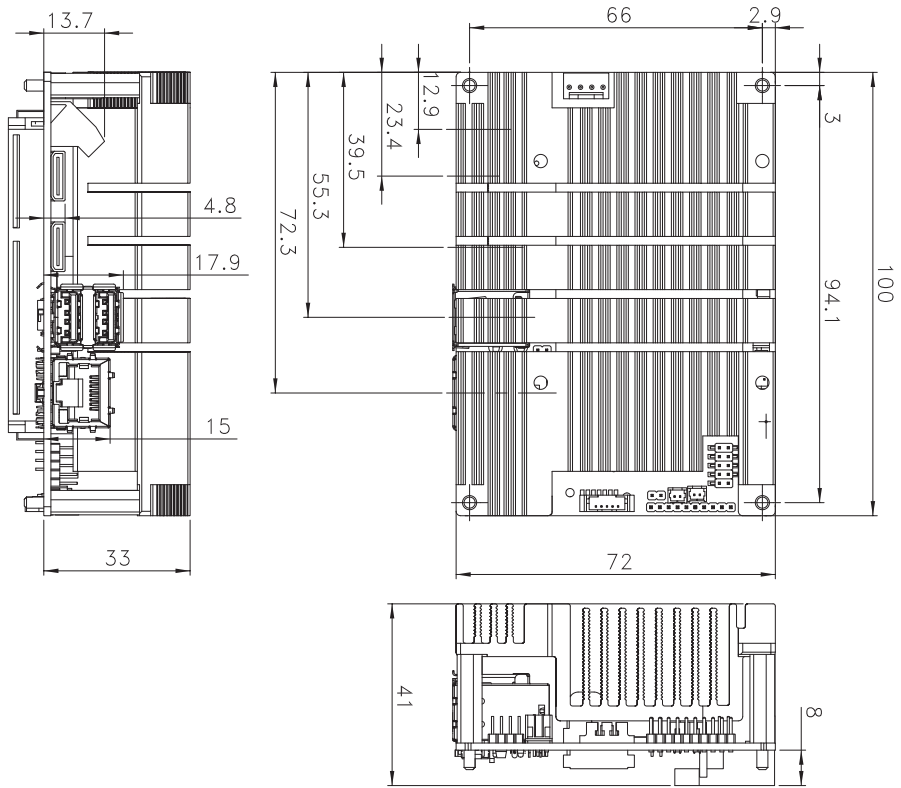
Ordering Information

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 3.1 Gen 1 (5Gb/s), 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 3.1 Gen 1 (5Gb/s), 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 3.1 Gen 1 (5Gb/s), 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)

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HYPER Dimensions (Unit: mm)

HYPER-BW



HYPER-BT

