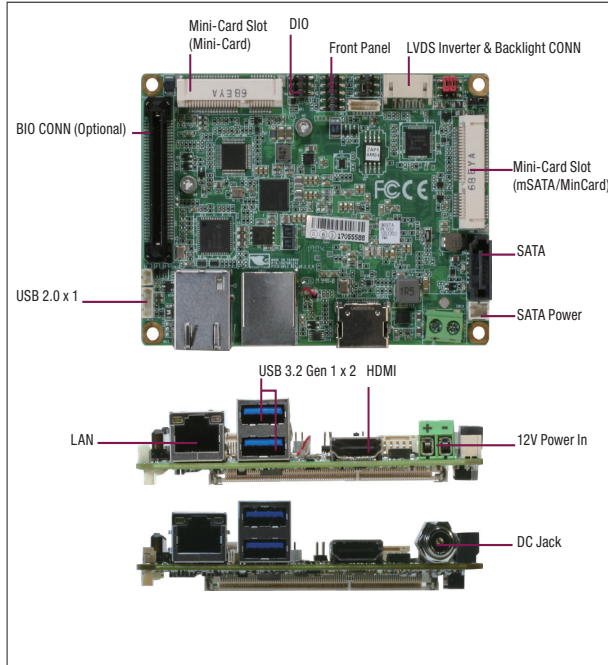


03 PICO-APL1

Pico-ITX Board with Intel® Atom® E3900 series/ Pentium® N4200/ Celeron® N3350 Processor SoC

Pico-ITX Boards



Features

- Intel® Atom®/ Pentium® N4200/ Celeron® N3350 Processor SoC
- DDR3L 1866, Single Channel SODIMM x 1, Non-ECC (Max.8GB, up to 1600MHz)
- 18/24-bit Dual Channel LVDS LCD (Optional)
- Supports Triple Display (Optional)
- HDMI 1.4b Supports 3840 x 2160 (4K x 2K)
- SATA 6.0Gb/s x 1, mSATA (Full Size) x 1
- Intel® Gigabit Ethernet x 1, RJ-45 x1
- USB 3.2 Gen 1 x 2, USB 2.0 x 1
- RS-232 x 1, RS-232/422/485 x 1 (Optional by Cable)
- Mini-Card x 1 (Half-Size)
- Digital I/O 4-bit
- BIO Connector for Daughter Board (Optional)



Specifications

SYSTEM	
FORM FACTOR	PICO-ITX
CPU	Pentium N4200 (4C/4T, 1.10GHz, up to 2.50GHz, TDP 6W) Celeron N3350 (2C/2T, 1.10GHz, up to 2.40GHz, TDP 6W) Atom E3950 (4C/4T, 1.60GHz, up to 2.00GHz, TDP 12W) Atom E3940 (4C/4T, 1.60GHz, up to 1.80GHz, TDP 9.5W) Atom E3930 (2C/2T, 1.30GHz, up to 1.80GHz, TDP 6.5W)
CHIPSET	Integrated with Intel® SoC
MEMORY TYPE	DDR3L 1866, Single Channel SODIMM x 1, Non-ECC (Max.8GB, up to 1600MHz)
BIOS	UEFI
WAKE ON LAN	Yes
WATCHDOG TIMER	255 Levels
SECURITY	TPM2.0 (Optional via LPC cable)
RTC Battery	Lithium Battery 3V/240mAh
DIMENSION	3.94" x 2.84" (100mm x 72mm)
Gross Weight	0.18 lbs (0.08 kg)
OS Support	Windows 10 (64 bit) Linux Ubuntu 21.04.0/Kernel 5.10
POWER	
POWER REQUIREMENT	+12V
POWER SUPPLY TYPE	AT/ATX
CONNECTOR	Phoenix 2-pin Connector (Default) Lockable DC Jack Connector (colay)
POWER CONSUMPTION	Intel® N3350 Processor, DDR3L 8GB, 0.91A@+12V(TYPICAL)
DISPLAY	
CONTROLLER	Intel® HD Graphics 500/505
LVDS/eDP	LVDS (18/24bit 2CH) 1920 x 1200 (Optional)
Display Interface	HDMI 1.4b x 1 (up to 3840 x 2160) DDI (BIO, Optional)
Multiple Display	Up to 3 Simultaneous Displays
AUDIO	
CODEC	Realtek ALC897/892
AUDIO INTERFACE	Line-out
Speaker	—
EXTERNAL I/O	
ETHERNET	Intel® i210/i211, 10/100/1000Base, RJ-45 x 1
USB	USB 3.2 Gen 1 x 2
SERIAL PORT	—
VIDEO	HDMI 1.4b x 1 (up to 3840 x 2160)

INTERNAL I/O	
USB	USB 2.0 x 1
SERIAL PORT	COM1: RS-232 x 1, COM2: RS-232/422/485 x 1 (Ring/ +5V/ +12V)
VIDEO	LVDS (18/24bit 2CH) 1920 x 1200 (Optional)
SATA	SATA III x 1 +5V SATA Power Connector x 1
AUDIO	Line-out
DIO/GPIO	4-bit
SMBus/I2C	SMBus/I2C x 1 (SMBUS as default)
Touch	—
FAN	—
SIM	—
Front Panel	HDD LED, PWR LED, Power Button, Buzzer, Reset
Others	—
EXPANSION	
Mini PCI-E/mSATA	Half-size Mini Card (mPCIe as default) x 1, Full size mPCIe/mSATA or USB2.0 x 1 (SATA as default, PCIe selected by HW BOM)
M.2	—
Others	BIO (Optional)
ENVIRONMENT & CERTIFICATION	
OPERATING TEMP	32°F ~ 140°F (0°C ~ 60°C)
STORAGE TEMP	-40°F ~ 185°F (-40°C ~ 85°C)
OPERATING HUMIDITY	0% ~ 90% relative humidity, non-condensing
MTBF (HOURS)	170,000
EMC	CE/FCC Class A

Packing List

- 1703200153 (Optional by model)

COM x 2, Line-out Cable

- PICO-APL1

Optional Accessories

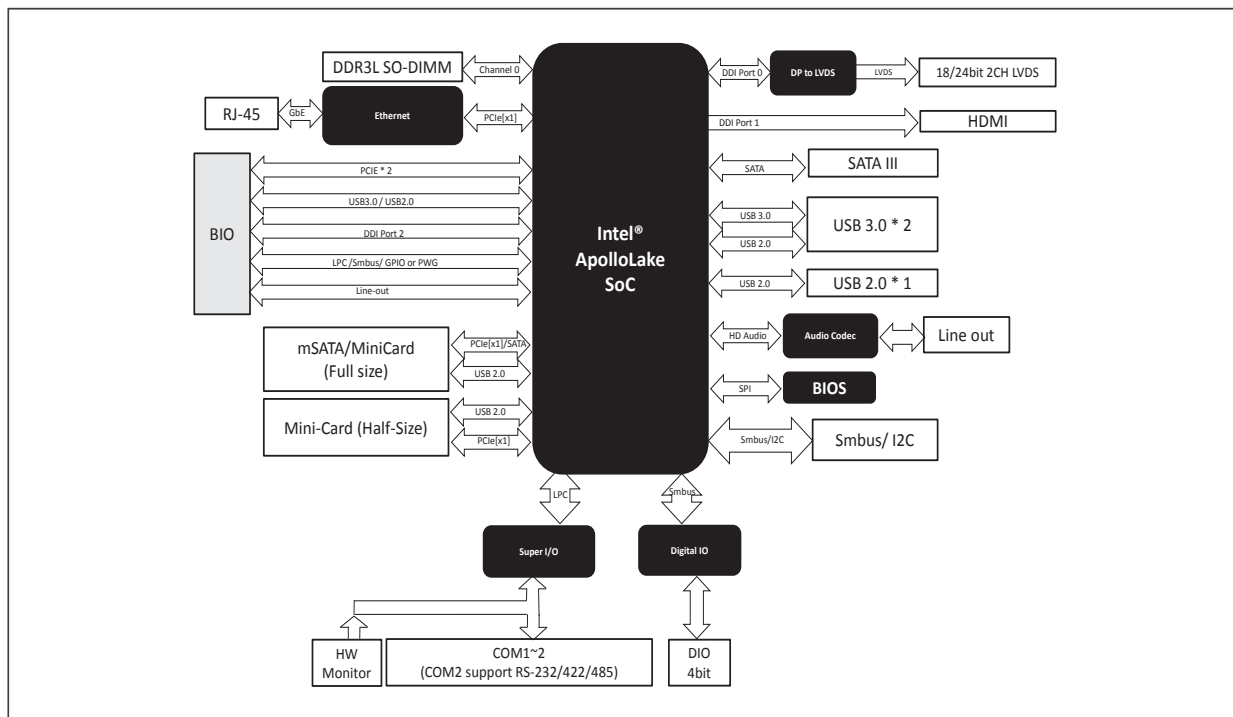
Part Number	Description	Qty.
1709070500	SATA CABLE.7P Pitch 1.27mm.50cm	1
1702150155	SATA Power Cable	1
1700050207	USB cable 20cm	1
1703200153	COM x 2, line-out cable	1
PICO-APL1-HSP01	Heat-spreader for PICO-APL1 N4200/N3350 SKUs	1
PICO-APL1-HSP02	Heat-spreader for PICO-APL1 E3950/E3940/E3930 SKUs	1
PICO-APL1-HSK02	Heat-sink for all PICO-APL1 series, to be used with Heat-spreader	1

PICO-APL1

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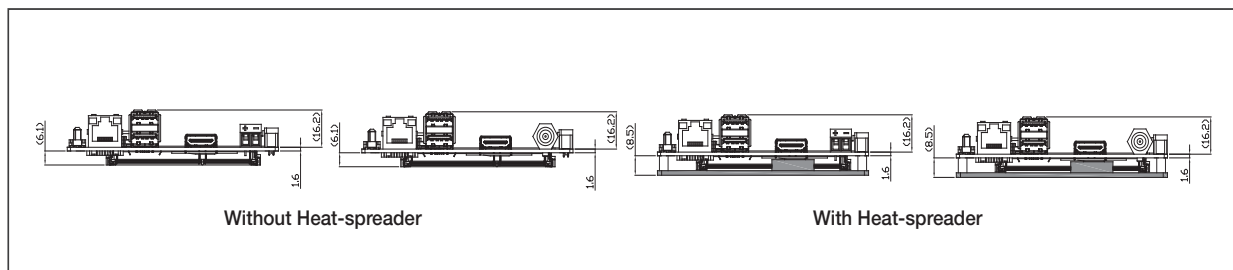
Pico-ITX Boards

Block Diagram



Dimension

Unit: mm



Ordering Information

Part number	CPU	FAN/FANLESS	Display	Storage	LAN	USB	RS-232	RS-422/485	Expansion slot	Power	Operating Temp	Others
PICO-APL1-A11-FOA1	N4200	W/o Heat-spreader	LVDS x 1 HDMI x 1	SATAIII x 1 mSATA (Full size) x 1	GbE x 1	USB 3.2 Gen 1 x 2 USB 2.0 x 1	1	1	miniCard x 1 (Half-size)	12V Phoenix Terminal	0°C ~ 60°C	DIO x 4, Line-out
PICO-APL1-A11-FDA2	N3350	W/o Heat-spreader	HDMI x 1	SATAIII x 1 mSATA (Full size) x 1	GbE x 1	USB 3.2 Gen 1 x 2 USB 2.0 x 1	(Optional the COM cable)	(Optional the COM cable)	miniCard x 1 (Half-size)	12V DC-Jack	0°C ~ 60°C	DIO x 4
PICO-APL1-A11-FOA3	N3350	W/o Heat-spreader	LVDS x 1 HDMI x 1	SATAIII x 1 mSATA (Full size) x 1	GbE x 1	USB 3.2 Gen 1 x 2 USB 2.0 x 1	1	1	miniCard x 1 (Half-size)	12V Phoenix Terminal	0°C ~ 60°C	DIO x 4, Line-out, BIO
PICO-APL1-A11-FOA4	E3940	W/o Heat-spreader	LVDS x 1 HDMI x 1	SATAIII x 1 mSATA (Full size) x 1	GbE x 1	USB 3.2 Gen 1 x 2 USB 2.0 x 1	1	1	miniCard x 1 (Half-size)	12V Phoenix Terminal	0°C ~ 60°C	DIO x 4, Line-out

Remark: Heatspreader and cooler is recommended as the thermal solution.

Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

US

sales@assured-systems.com

Sales: +1 347 719 4508

Support: +1 347 719 4508

1309 Coffeen Ave
Ste 1200
Sheridan
WY 82801
USA

EMEA

sales@assured-systems.com

Sales: +44 (0)1785 879 050

Support: +44 (0)1785 879 050

Unit A5 Douglas Park
Stone Business Park
Stone
ST15 0YJ
United Kingdom

VAT Number: 120 9546 28

Business Registration Number: 07699660