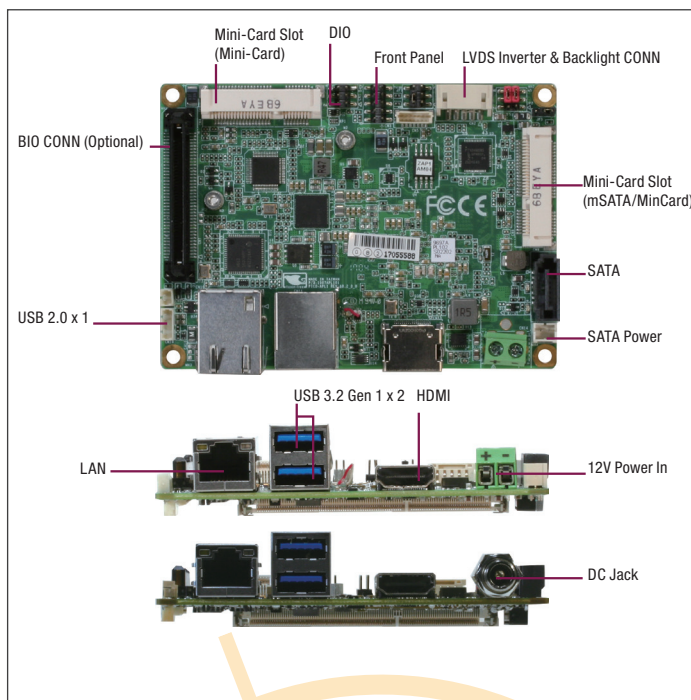


PICO-APL1

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



Specifications

System	
Form Factor	PICO-ITX
CPU	Intel® Atom® / Celeron® / Pentium® Processors: N4200 (4C/4T, 1.10GHz, 6W) N3350 (2C/2T, 1.10GHz, 6W) E3950 (4C/4T, 1.60GHz, 12W) E3940 (4C/4T, 1.60GHz, 9.5W) E3930 (2C/2T, 1.306GHz, 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	—
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 20.04.4/ Kernel 5.11.0-13-generic
Power	
Power Requirement	+12V
Power Supply Type	AT/ATX
Connector	Phoenix 2-pin Connector (Default) Lockable DC Jack Connector (colay)
Power Consumption	Intel® E3940 Processor, DDR3L 8GB x 1, 1.11A@+12V(TYPICAL)
Display	
Controller	Intel® HD Graphics 500/505
LVDS/eDP	LVDS x 1 (18/24bit 2CH) 1920 x 1200 @60Hz (Optional)
Display Interface	HDMI 1.4 x 1, 3840 x 2160 @30Hz DDI (Via BIO, Optional)
Multiple Display	Up to 3 Simultaneous Displays
Audio	
Codec	Realtek ALC897/892
Audio Interface	Line-Out (Audio function not available for WiTAS SKU)
Speaker	—
External I/O	
Ethernet	Intel® i210 1GbE, RJ45 x 1
USB	USB 3.2 Gen1 x 2
Serial Port	—
Video	HDMI 1.4 x 1

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 x 1
- 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)



Internal I/O	
USB	USB 2.0 x 1
Serial Port	COM1 (RS232) COM2 (RS232/422/485, support 5V/12V/RI)
Video	LVDS x 1
SATA	SATA 6.0 Gb/s x 1, +5V SATA Power Connector x 1
Audio	Line-out header x 1 (Audio function not available for WiTAS SKU)
DIO/GPIO	GPIO 4-bit
SMBus/I2C	I2C/SMBus x1 (Default: SMBus)
Fan	—
Front Panel	HDD LED, PWR LED, Power Button, Buzzer, Reset
Others	—
Expansion	
Mini PCIe/mSATA	Full-Size mSATA/mPCIe x 1 (Default: mSATA, select with HW BOM) Half-Sized mPCIe x 1
M.2	—
Others	BIO x 1 (Optional, supports PCIe [x1] x 2, line out, DDI, GPIO, LPC, SMBUS, USB3.0/2.0)
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

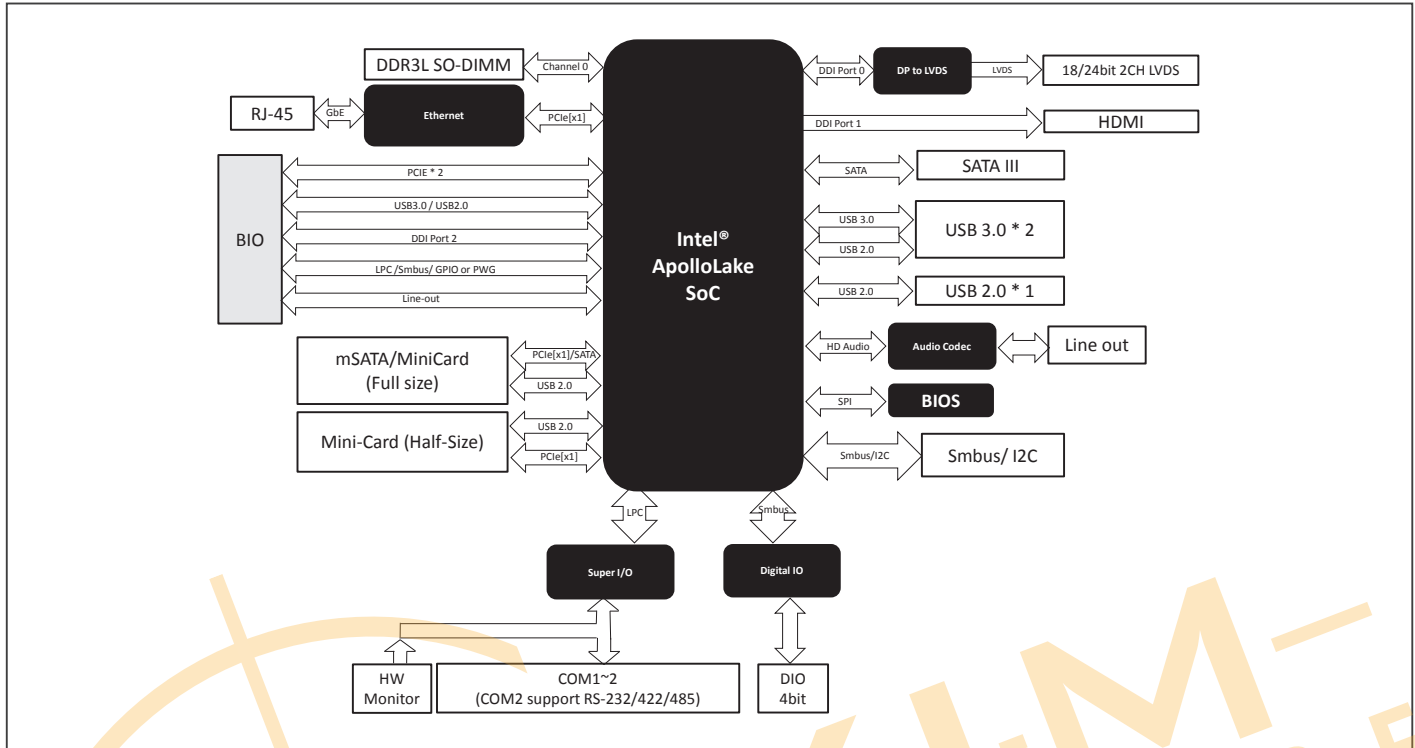
Packing List

- 1703200153 (Optional by model)
COM x 2, Line-out Cable
- PICO-APL1

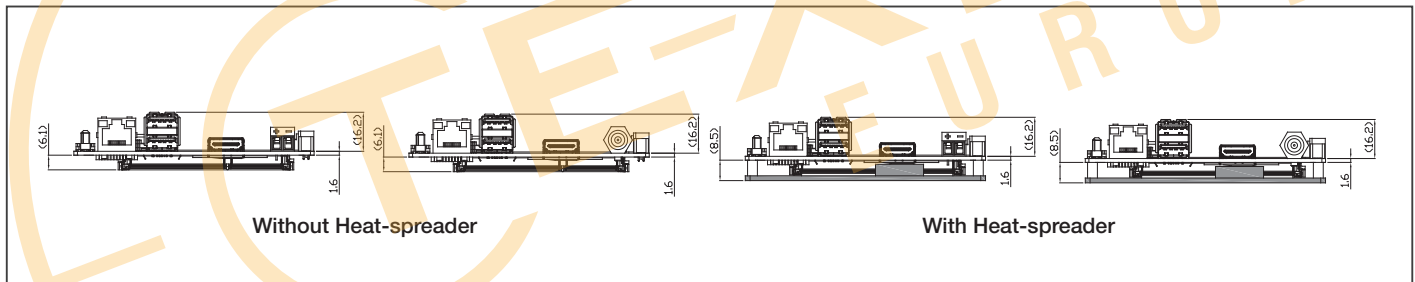
Optional Accessories

Part Number	Description	Qty.
1709070500	SATA CABLE.500mm	1
1702150155	SATA Power Cable.150mm	1
1700050207	USB Cable.200mm.for PFM-945C Active Others	1
1703200153	COM Port 1/2 & line out cable.2ports.150mm	1
PICO-APL1-HSP01	Heatspreader.100*72*8.5mm.Silver	1
PICO-APL1-HSP02	Heat spreader.100*72*8.5mm for E3950/E3940/E3930	1
PICO-APL1-HSK02	Heat Sink.100*72*15.5mm.Silver.used with HSP	1
PER-P30D-A10	120W, DC-DC Converter, 9~36V input, 12V output, Rev A1.0, 30 x 72mm	1

Note: All specifications are subject to change without notice.

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-F0A1	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-F0A3	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-F0A4	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.

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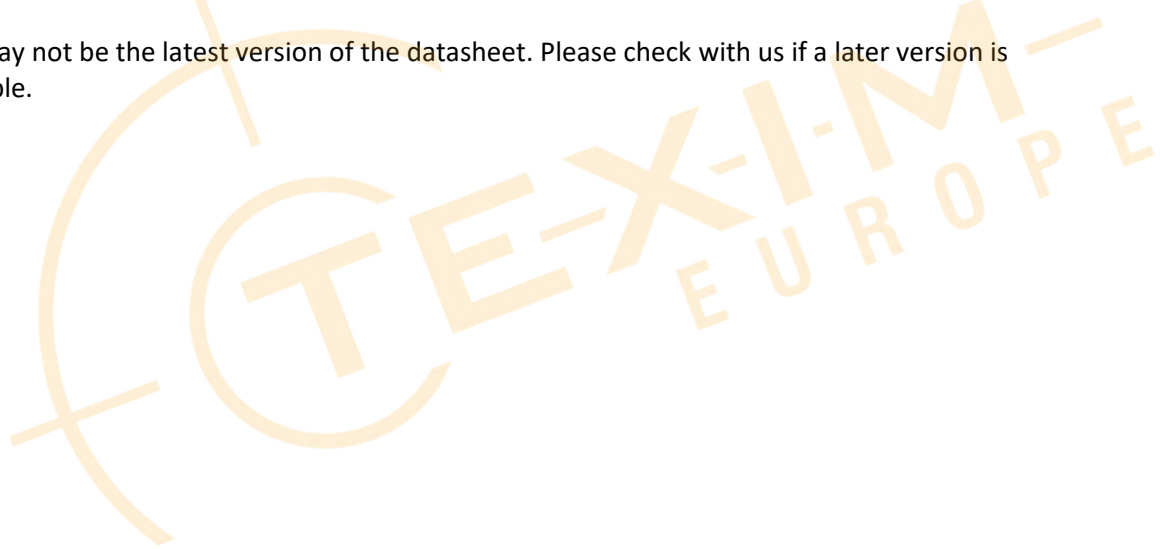
It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application.

Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time.

All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts.

Please contact us if you have any questions about the contents of the datasheet.

This may not be the latest version of the datasheet. Please check with us if a later version is available.





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