

AMB-3AR0

3.5" SubCompact Board
with Intel® Core™ Ultra SoC



Features

- Intel® Core™ Ultra processors (Series 2)
- DDR5 6400 MHz, Dual Channel SODIMM x 2, up to 96GB
- LVDS x 1, eDP x 1, DP x 1, HDMI x 1
- LAN x 3, SATA 6Gb/s x 1, 8-bit GPIO
- USB 3.2 Gen 2 x 2, USB 2.0 x 4
- M.2 2280 M-Key x 1, M.2 3052 B-Key x 1, M.2 2230 E-Key x 1
- DC Input 9 ~ 36V

Specifications

System	
Form Factor	3.5" SubCompact Board
CPU	Intel® Core™ Ultra Processors (Series 2): Intel® Core™ Ultra 7 Processor 255H (16C/16T, up to 5.1 GHz, 28W) Intel® Core™ Ultra 5 Processor 225H (14C/14T, up to 4.9 GHz, 28W) Intel® Core™ Ultra 7 Processor 255U (12C/14T, up to 5.2 GHz, 15W) Intel® Core™ Ultra 5 Processor 225U (12C/14T, up to 4.8 GHz, 15W)
Chipset	Integrated with Intel® SoC
Memory Type	DDR5 6400, Dual Channel SODIMM x 2 Max. 96GB, Non-ECC Note: Max capacity up to 2x 48GB DDR5 SODIMM up to 5600 MT/s
BIOS	UEFI
Wake on LAN	Yes
Watchdog Timer	255 Levels
Security	TPM 2.0
RTC Battery	Lithium Battery 3V/240mAh
Dimension	5.75" x 4" (146mm x 101.7mm)
Gross Weight	0.88 lb. (0.4Kg)
OS Support	Windows 10 (64-bit), Windows 11 (64-bit) Linux Ubuntu 24.04.2 (Kernel 6.11.0-25-generic)
Power	
Power Requirement	+9V~36V (Optional: +12V), Support ERP
Power Type	AT/ATX, support 3pin ATX
Connector	Phoenix 2-pin Connector (Colay 4 pin connector)
Power Consumption	Intel® Core™ Ultra 7, DDR5 48GB x 2, 5.44A @+12V (Typical) Intel® Core™ Ultra 7, DDR5 48GB x 1, 9.56A @+12V (Max)

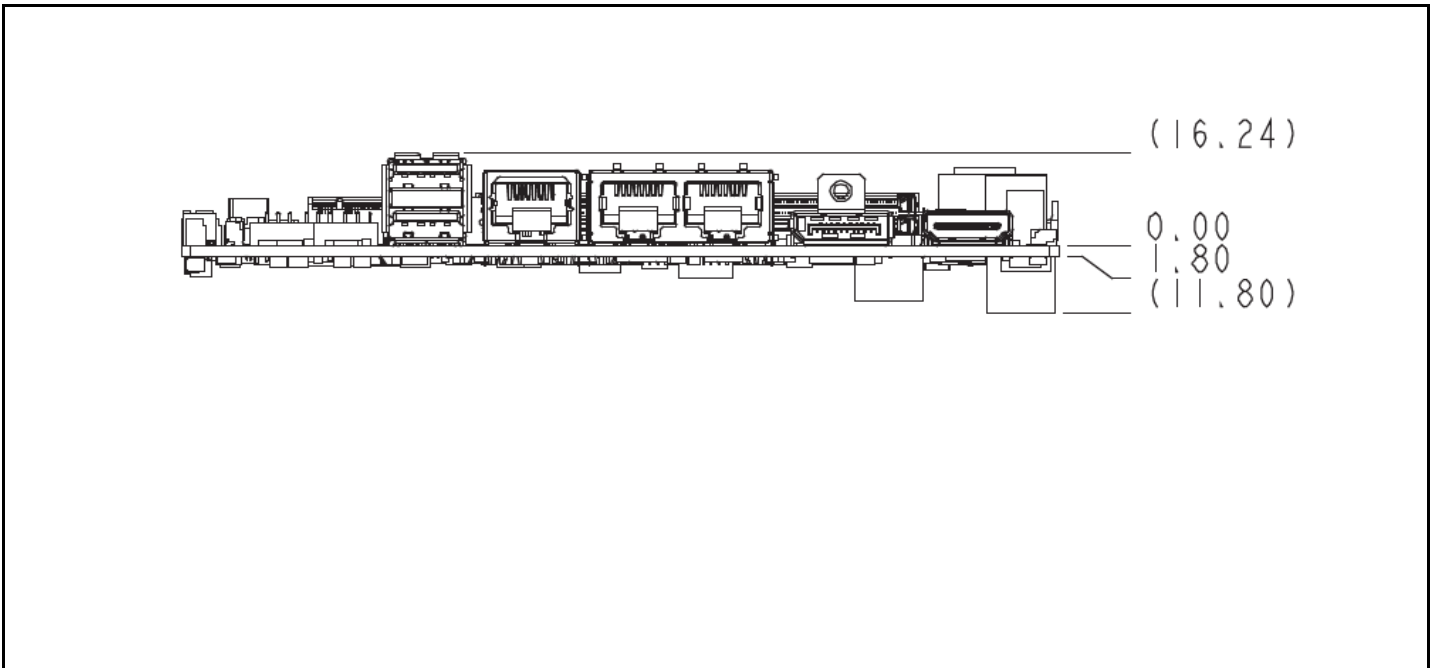
Display	
Controller	Intel® Arc™ Graphics, Intel® Graphics
LVDS/eDP	LVDS x 1, Dual-Channel 18/24-bit, up to 1920 x 1080 eDP 1.4b HBR3 x 1, up to 3840 x 2160 @60Hz
Display Interface	HDMI 2.1 x 1, up to 8K x 4K@60Hz or 4K x 2K@120Hz DP 2.0 x 1, up to 7680 x 4320@60Hz 30bpp (support DP++)
Audio	
Codec	Realtek ALC897
Audio Interface	Line-in/Line-out/MIC (Audio function not available for WiTAS SKU)
External I/O	
Ethernet	Intel® Ethernet Connection I219 1GbE, RJ-45 x 1 Intel® Ethernet Controller I226 2.5GbE, RJ-45 x 2, support PEX (Intel vPro® support with Intel® Core™ Ultra 7 Processor 265H)
USB	USB 3.2 Gen 2 x 2
Video	HDMI 2.1 x 1, DP 2.0++ x 1
Internal I/O	
USB	USB 2.0 x 4
Serial Port	COM 1, COM 2 (RS-232/422/485, supports 5V/12V/RI) COM 3, COM 4 (RS-232)
Video	LVDS x 1 Inverter x 1 (12V/2A) eDP x 1
SATA	SATA 6.0 Gb/s x 1 +5V SATA Power Connector x 1
Audio	Audio Header x 1 (Optional, Audio function not available for WiTAS SKU)
DIO/GPIO	GPIO 8-bit
SMBus/I2C	SMBus/ I2C x 1 (Default: SMBus)
Fan	4 wire Smart Fan x 1
Sim	Nano SIM x 1
Front Panel	HDD LED, PWR LED, Power Button, Buzzer, Reset

Expansion	
M.2	M.2 2280 M-Key x 1 (PCIe 4.0 [x4]/SATA) Default: PCIe 4.0 [x4] (selected by BOM) M.2 3052 B-Key x 1 (PCIe 3.0 [x1] + USB 3.2/PCIe 3.0 [x2]) Default: PCIe 3.0 [x1] (selected by BOM) M.2 2230 E-Key x 1 (PCIe 3.0 [x1] + USB 2.0), supports Wi-Fi 6E CNVi (RAID 0, RAID 1 support on PCIe storage)
Others	FPC2 x 1 (PCIe Gen4 [x4] x 2), Support RAID 0, RAID 1

Environment & Certification	
Operating Temperature	-4°F ~ 158°F (-20°C ~ 70°C)
Storage Temperature	-40°F ~ 185°F (-40°C ~ 85°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	337963
EMC	CE/FCC Class A

Dimension

Unit: mm / inch



Ordering Information

Part Number / Item	
AMB-3AR0-001	Intel® Core™ Ultra 7 Processor 255H
AMB-3AR0-002	Intel® Core™ Ultra 5 Processor 225H
AMB-3AR0-003	Intel® Core™ Ultra 7 Processor 255U
AMB-3AR0-004	Intel® Core™ Ultra 5 Processor 225U