

Features

- LPDDR5x x 1, up to 16GB
- eMMC, up to 128GB
- DP++ x 2 / DP++ x 1 + HDMI x 1, eDP x 1
- USB 3.2 Gen 2 x 2, USB 2.0 x 6
- PCIe 3.0 [x2] x 1 + [x1] x 2 (Optional: PCIe [x1] x 3)
- Intel® Ethernet Controller I226-V/IT x 2
- SMARC Module Form Factor: 82mm x 50mm
- 5V input



Specifications

System	
Form Factor	SMARC Module
CPU	Intel Atom® x7425E Processor (4C, up to 3.4 GHz, 12W) Intel® Core™ 3 Processor N355 (8C/8T, up to 3.9 GHz, 15W) Intel® Processor N150 (4C/4T, up to 3.6 GHz, 6W)
Chipset	Integrated with Intel® SoC
Memory	Onboard LPDDR5x 4800MHz, up to 8GB
Storage	eMMC, up to 128GB
BIOS	AMI UEFI
MTBF (Hours)	2,624,901
Wake On LAN	Yes
Watchdog Timer	255 Levels
Real Time Clock	RTC x 1
Boot Select	Module eMMC Flash
Security	TPM 2.0
Display	
Graphics Controller	Intel® UHD Graphics
Video Output	Up to 3 Simultaneous Displays: DP++ x 2 / DP++ x 1 + HDMI x 1, up to 3840 x 2160 (by SKU) eDP x 1, up to 3840 x 2160
I/O Interfaces	
Ethernet	Intel® Ethernet Controller I226 2.5GbE x 2
USB	USB 2.0 x 6, USB 3.2 x 2
Serial Port	2-Wire UART x 2 (Tx/Rx) 4-Wire UART x 2 (Tx/Rx/RTS/CTS)
Audio	High Definition Audio Interface (Optional: I2S)
PCIe	PCIe 3.0 [x2] x 1 + [x1] x 2 (Optional: PCIe [x1] x 3)
CANBus	—
MIPI-CSI	MIPI CSI x 2
GPIO	7-bit (up to 14-bit by customization)
Other Interfaces	SATA 6Gb/s x 1 GP_I2C x 1 SMBus x 1
Power	
Power Requirement	+5V for ATX / AT
Power Consumption	Intel® Core™ i3-N305, 4.23A @+5V
Environmental And Mechanical	
Dimensions	3.23" x 1.97" (82mm x 50mm)
Weight	0.14 lb. (0.06Kg)
Operating Temperature	-4°F ~ 158°F (-20°C ~ 70°C) -40°F ~ 185°F (-40°C ~ 85°C)

Storage Temperature	-40°F ~ 185°F (-40°C ~ 85°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing
Certification	CE/FCC Class A
OS Support	Windows 10 (64-bit) Windows 11 (64-bit) Linux Ubuntu 24.04/Kernel 6.11
Support Protocol	—

Packing List

- uCOM-TWL

Optional Accessories

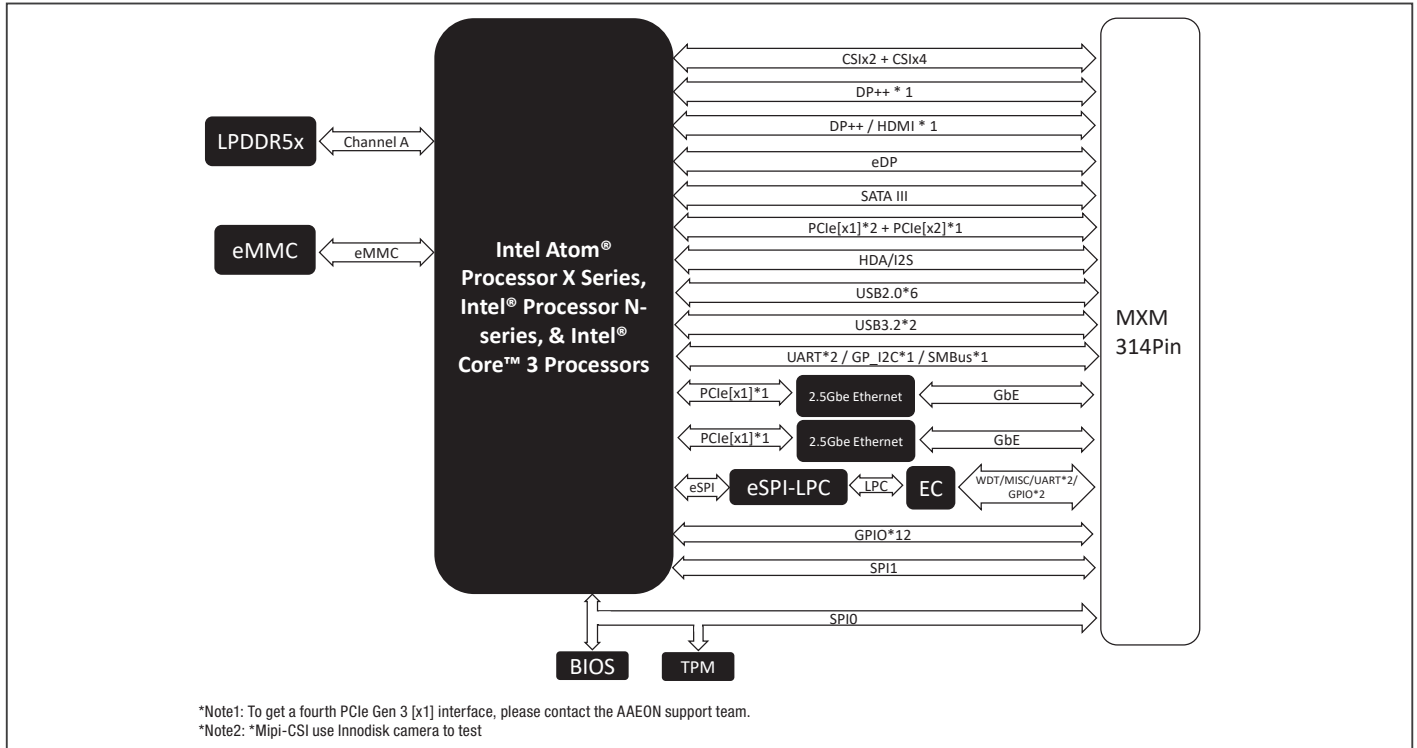
Part Number	Description
uCOM-ADN-FAN01	Cooler.82*42*16mm.4pin
ECB-960T-A15-0001	SMARC Carrier.2DP.LCD.2LAN.6USB.SATA.4COM.PCIe.HDA.12V.A1.5 for x86
ECB-960T-A15-0003	SMARC Carrier.DP+HDMI.LCD.2LAN.6USB.SATA.4COM.PCIe.HDA.12V.A1.5 for x86
UCOM-ADN-HSP01	Heat Spreader.82x42x6mm.Black

Pairing Info

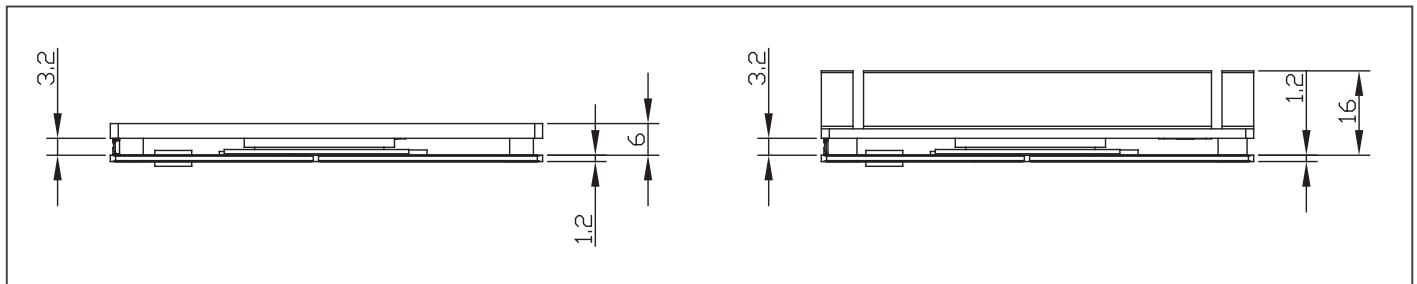
SMARC	Carrier Board
uCOM-TWL-B11-0001	ECB-960T-A15-0001
uCOM-TWL-B11-0002	ECB-960T-A15-0003



Block Diagram



Dimension Unit: mm



Ordering Information

Part Number	Form Factor	CPU	Memory	ECC support	Display	Storage	LAN	USB	UART	Expansion	Power	Temperature	Others
uCOM-TWL-B11-0001	SMARC	Intel® Processor N150	8GB LPDDR5x	—	eDP x 1 DP++ x 2	128GB eMMC	Intel® Ethernet Controller I226-V x 2	USB 3.2 x 2 USB 2.0 x 6	4-wire UART x 2 2-Wire UART x 2	PCIe [x2] x 1 + [x1] x 2	+5V	-20°C ~ 70°C	LPC, GPIO 7-bit, I2C, SMBus
uCOM-TWL-B11-0002	SMARC	Intel® Core™ 3 Processor N355	8GB LPDDR5x	—	eDP x 1 DP++ x 1 HDMI x 1	64GB eMMC	Intel® Ethernet Controller I226-V x 2	USB 3.2 x 2 USB 2.0 x 6	4-wire UART x 2 2-Wire UART x 2	PCIe [x2] x 1 + [x1] x 2	+5V	-20°C ~ 70°C	LPC, GPIO 7-bit, I2C, SMBus