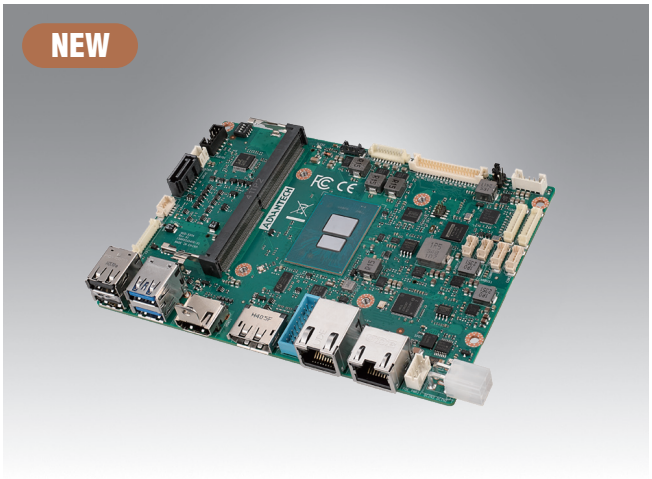
MIO-5354

Intel® Atom™ x7835RE, x7433RE, x7211RE; Core™ i3-N305; Core™ 3-N355; Processor N97, N150 on 3.5" SBC



Features

- Intel® Atom™ x7835RE, x7433RE, x7211RE, support Extend Temp
- DDR5-4800 up to 16GB, support IBECC by Platform
- 3 independent display: LVDS + HDMI + DP
- 2x LAN, 6x USB, 4x COM, 2x CAN-FD, SMBus/I²C, DC-in 12~24V
- Expansion: M.2 E-Key 2230, M.2 B-Key 2280 & M.2 B-Key 3052
- Supports EdgeBMC (for OOB control) & Software APIs, DeviceOn

Software APIs: GPIO, SMBus/I²C, Watch Dog Timer, Backlight On/Off, Brightness

Utilities: Hardware Monitor, System Throttling, Thermal Protection, Smart Fan, Data Security, System Info

Windows Ubuntu DeviceOn EdgeBMC CE FC

Specifications

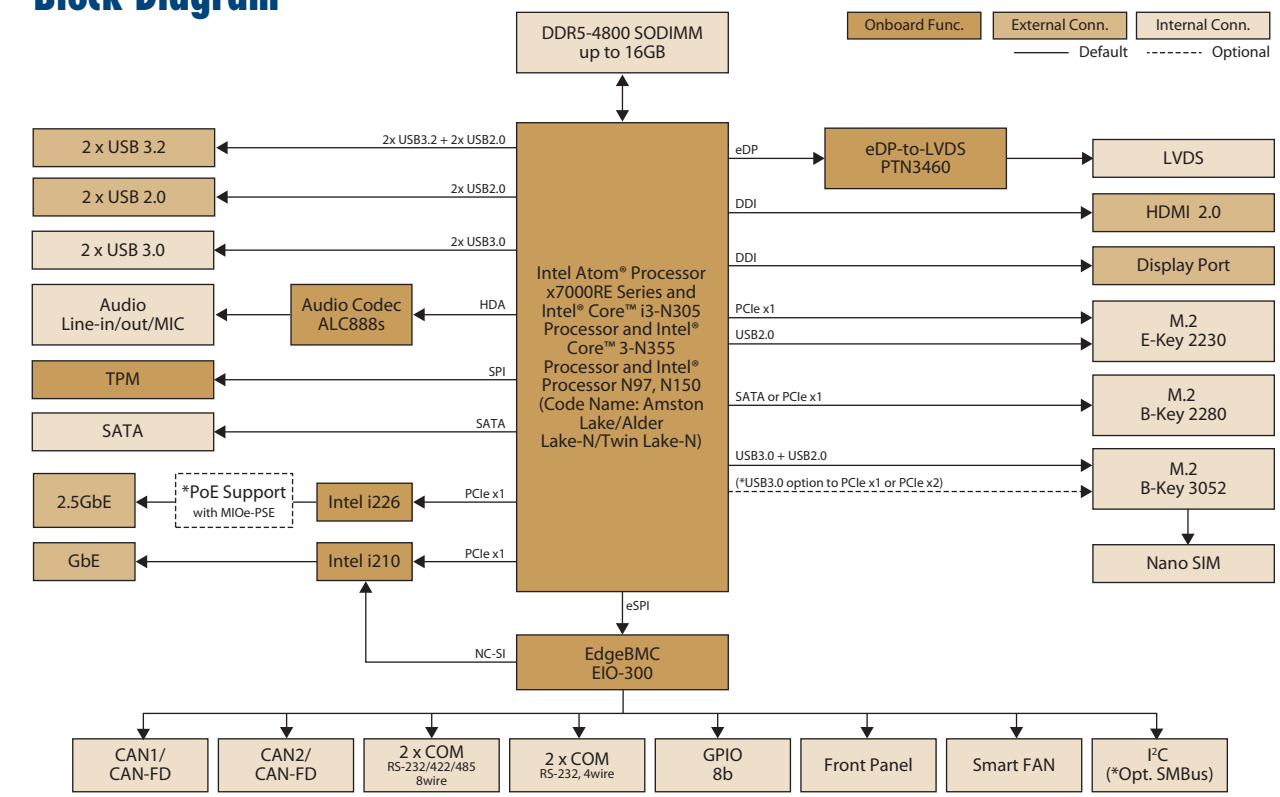
Platform	Processor	x7835RE	x7433RE	x7211RE	i3-N305	N97	N355	N150
	Max. Frequency	3.60 GHz	3.40 GHz	3.20 GHz	3.80 GHz	3.60 GHz	3.90 GHz	3.60 GHz
	Base Frequency	1.30 GHz	1.50 GHz	1.00 GHz	1.80 GHz	2.00 GHz	TBU	TBU
	Core	8	4	2	8	4	8	4
	LLC	6MB	6MB	6MB	6MB	6MB	6MB	6MB
	CPU TDP	12W	9W	6W	15W	12W	15W	6W
	Chipset	Intel 300 Series Chipset (SoC Integrated)						
	BIOS	AMI UEFI 256Mbit						
Memory	Technology	DDR5 4800 MT/s						
	Max. Capacity	Up to 16GB						
	Channel/Socket	Single Channel / One 262pin SODIMM Slot						
	ECC Support	Support IBECC by Platform						
Graphics	Controller	Intel® UHD Graphics						
	Max. Frequency	1.20 GHz	1.00 GHz	1.00 GHz	1.25 GHz	1.20 GHz	1.35 GHz	1.00 GHz
	Execution Unit	32	32	16	32	24	32	24
	3D/HW Acceleration	DX12, OGL4.0, OCL1.2, HW Encode: H265, AVC/H264, VP9, HW Decode: H265, AVC/H264, VP9						
Display I/F	LCD	1 x LVDS, Dual Channel 18/24-bit, up to 1920 x 1080						
	HDMI/DP	1 x HDMI 2.0, up to 4096 x 2160 x 24bpp@48-60Hz 1 x DP1.4a, up to 4096 x 2304 x 36bpp@60Hz						
	Triple Display	3 simultaneous displays by LVDS + HDMI + DP						
Ethernet	Controller	LAN1: i226; LAN2: i210						
	Speed	LAN1: 2.5GbE; LAN2: GbE						
	Feature	LAN1: Optional Support PoE. PSE compliant to IEEE 802.3at (30W with power module: MIOe-PSE) LAN2: Support EdgeBMC, Out of Band remote control						
External I/O	Ethernet	2 x RJ-45						
	VGA/HDMI/DP	-/1/1						
	USB3.2/USB2.0	2/2						
Internal I/O	SATA	1 x SATA GenIII 6.0Gbps						
	USB3.0	2						
	Serial Bus	1 x I²C (*BOM option to SMBus by request)						
	COM Port	2 x RS-232/422/485, 2 x RS-232						
	CAN Bus	2 x CAN-FD, 2M/4M/8M bit/s or CAN 2.0, 1M bit/s						
	GPIO	8-bit general purpose input output I/O						
	Audio	Realtek ALC888s, Line-in/Line-out/MIC						
	Invertor	5V @2A						
	Smart Fan	12V, 2A (4-wire)						
	Front Panel Control	Power-on, Reset, Buzzer, SATA LED, Power LED, Case Open						
Board Feature	Watchdog Timer	65536 level, 0~65535 sec						
	TPM	Discrete TPM2.0						
	iManager 3.0	SW API for Hardware Monitor, Smart Fan Control, Brightness Control, I²C, GPIO, WDT						
Expansion	M.2 E-Key	1 x E-Key 2230 (PCIe x1, USB2.0)						
	M.2 B-Key	1 x B-Key 2280 (SATA or PCIe x1) 1 x B-Key 3052 (USB3.0, USB2.0) w/ Nano-SIM. (*BOM option: USB3.0 to PCIe x1 or PCIe x2. Customized BIOS is required.)						
Power	Supply Voltage	Vin: DC 12V~24V ± 10%; RTC Battery: Lithium 3V/200mAH, support w/o CMOS Battery						
	Connector	ATX 2x2 pin 90D (*BOM option to DC-Jack or ATX 2x2 pin 180D by request)						
	Power Management	AT, ATX						
	Max. Consumption (*Ref. data with Burn-In Test. Please contact FAE for adapter selection.)	19.3W (12V) 20.8W (24V)	15.4W (12V) 17.2W (24V)	11.9W (12V) 14.8W (24V)	22.4W (12V) 23.8W (24V)	18.7W (12V) 20.4W (24V)	TBU TBU	TBU TBU
	Idle Consumption	12.7W (12V) 15.7W (24V)	10.4W (12V) 14.9W (24V)	10.5W (12V) 14.0W (24V)	11.7W (12V) 14.8W (24V)	10.7W (12V) 14.0W (24V)	TBU TBU	TBU TBU
Environment	Temperature	Operating: Standard: 0 ~ 60 °C (32 ~ 140 °F) with 0.7m/s airflow; Extend: -40 ~ 85 °C (-40 ~ 185 °F) with 0.7m/s airflow Storage: -40 ~ 85 °C (-40 ~ 185 °F)						
	Humidity	Operating: 40 °C @ 95% relative humidity, non-condensing Storage: 60 °C @ 95%relative humidity, non-condensing						
	Vibration Resistance	3.5 Grms						
Certification	EMC	CE, FCC Class B, ESD 8KV/15KV Criteria A						
Mechanical	Dimensions	146 x 102 mm (5.7" x 4")						
	Net Weight	145g						

*Note: Support by request

All product specifications are subject to change without notice.

Last updated: 23-Nov-2026

Block Diagram



*Optional PoE support on LAN2 requires external power module: MIOe-PSE

Ordering Information

Part No.	CPU	CPU Max. Frequency	Core	TDP	Memory IBECC	GPU	GPU Max. Frequency	Execution Units	Thermal Solution	Operating Temperature
MIO-5354AW-P6A1	x7835RE	3.60 GHz	8	12W	Yes	Intel® UHD Graphics	1.20 GHz	32	Active	-40 ~ 85 °C
MIO-5354AW-P4A1	x7433RE	3.40 GHz	4	9W	Yes	Intel® UHD Graphics	1.00 GHz	32	Passive	-40 ~ 85 °C
MIO-5354AW-P2A1	x7211RE	3.20 GHz	2	6W	Yes	Intel® UHD Graphics	1.00 GHz	16	Passive	-40 ~ 85 °C
MIO-5354C3-P8A1	i3-N305	3.80 GHz	8	15W	Yes	Intel® UHD Graphics	1.25 GHz	32	Passive	0 ~ 60 °C
MIO-5354N-P6A1	N97	3.60 GHz	4	12W	Yes	Intel® UHD Graphics	1.20 GHz	24	Passive	0 ~ 60 °C
MIO-5354C3-P9A1	N355	3.9 GHz	8	15W	Yes	Intel® UHD Graphics	1.35 GHz	32	Passive	0 ~ 60 °C
MIO-5354N-P7A1	N150	3.60 GHz	4	6W	Yes	Intel® UHD Graphics	1.00 GHz	24	Passive	0 ~ 60 °C

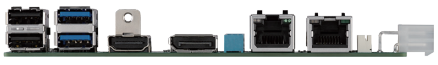
Packing List

Part No.	Description	Quantity
	MIO-5354 SBC	1
1700006291	SATA Cable 30cm	1
1700031583-01	SATA Power Cable 25cm	1
1700030404-01	COM1/COM2 Cable 20cm	2
1700019584-01	Audio Cable 20cm	1
1970005854T001	MIO-5354 CPU Heatsink (Passive Solution)	1
1970005931T001	MIO-5354 CPU Cooler (Active Solution)	1

Optional Accessories

Part No.	Description
1970006081N001	MIO-5354 CPU Heatspreader
1700032181-01	Dual USB 3.0 Cable 35cm
1700031582-01	COM3/COM4 Cable 20cm
MIOE-PSE-SPA1	MIOe-PSE PoE Module A1 Single 30W
MIOe-M2LAN-DPA1	M.2 3052 to Dual 2.5GbE LAN port (0 ~80 °C) *Support with option BOM (PCIe x1) and customized BIOS

Rear I/O View



Embedded OS/API

OS/API	Part No.	Description
Windows 11 LTSC	20706WLE1S0037	Win11 IoT Ent. LTSC 2024 64bit (Entry SKU: Atom x7000RE & N97 & N355 & N150)
	20706WLV1S0037	Win11 IoT Ent. LTSC 2024 64bit (Value SKU: i3-N305)
Ubuntu 24.04 LTS	20706U24DS0011	Ubuntu Desktop 24.04 LTS 64-bit
Software API	Website Download	SUSI v4.0