

MIO-5354

Intel® Atom™ Processors x7835RE, x7433RE, x7211RE on 3.5" SBC (Code name: Amston Lake)

Preliminary



Features

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

Software APIs:



Utilities:



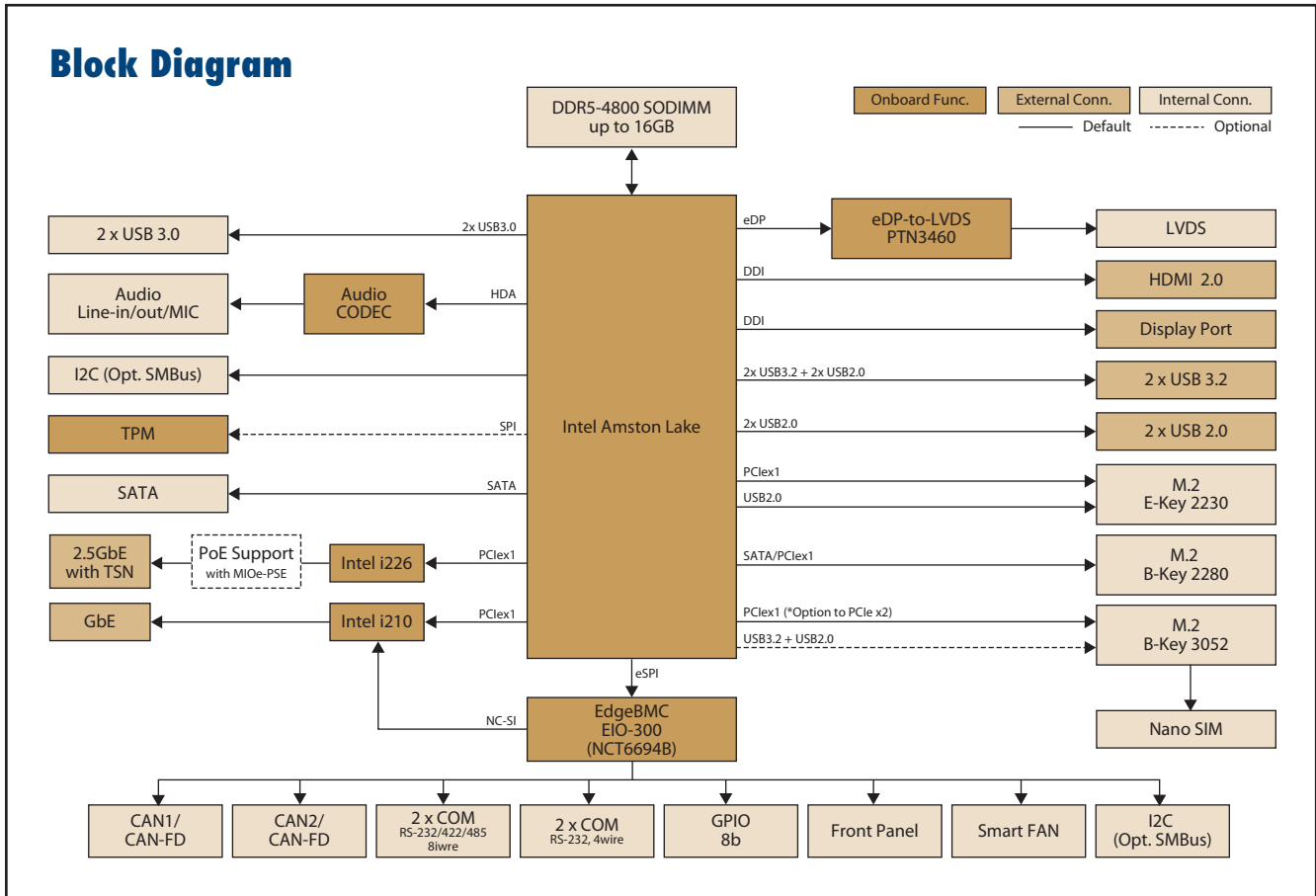
Windows 10 Ubuntu DeviceOn EdgeBMC CE FC

Specifications

	Processor	x7835RE	x7433RE	x7211RE
Platform	Max. Frequency	3.60 GHz	3.40 GHz	3.20 GHz
	Base Frequency	1.30 GHz	1.50 GHz	1.00 GHz
	Core	8	4	2
	LLC	6MB	6MB	6MB
	CPU TDP	12W	9W	6W
	Chipset	Intel 300 Series Chipset (SoC Integrated)		
	BIOS	AMI UEFI 256Mbit		
Memory	Technology	DDR5-4800		
	Max. Capacity	Up to 16GB		
	Channel/Socket	Single Channel / One 262pin SODIMM Slot		
	ECC Support	IB ECC		
Graphics	Controller	Intel® UHD Graphics		
	Max. Frequency	1.20 GHz	1.00 GHz	1.00 GHz
	Execution Unit	32	32	16
	3D/HW Acceleration	DX12, OGL4.0, OCL1.2, HW Encode: HEVC/H265, AVC/H264, VP9, HW Decode: HEVC/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: i210; LAN2: i226		
	Speed	LAN1: GbE; LAN2: 2.5GbE		
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 (Default. BOM option to SMBus by request)		
	COM Port	2 x RS-232/422/485, 2 x RS-232		
	CAN Bus	2 x CAN-FD		
	GPIO	8-bit general purpose input output I/O		
	Audio	Realtek ALC888s, Line-in/Line-out/MIC		
	Inverter	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		fTPM support by Intel® Platform Trust Technology Discrete TPM2.0 (*optional)		
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 (PCIe x1, USB2.0; BOM option to PCIe x2 or USB 3.0) w/ Nano-SIM		
Power	Supply Voltage	Vin: DC 12V-24V ± 10%; RTC Battery: Lithium 3V/200mAH, support w/o CMOS Battery		
	Connector	ATX 2pin 180D, optional ATX 2pin 90D or DC Jack		
	Power Management	AT, ATX		
	Max. Consumption	TBC	TBC	TBC
Environment	Idle Consumption	TBC	TBC	TBC
	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

Block Diagram



Ordering Information

Part No.	CPU	TDP	Max. Frequency	Core	Display Port	USB 3.0	RS232/422/485	RS232	Cable kits	Thermal Solution	Operating Temperature
TBD	x7835RE	12W	3.60 GHz	8	Y	Y	2	2	Y	Active	-40 ~ 85 °C
TBD	x7433RE	9W	3.40 GHz	4	Y	Y	2	2	Y	Passive	-40 ~ 85 °C
TBD	x7211RE	6W	3.20 GHz	2	Y	Y	2	2	Y	Passive	-40 ~ 85 °C

Packing List

Part No.	Description	Quantity
	MIO-5354 SBC	
	Startup Manual	
1700006291	SATA Cable 30cm	1
17000031583-01	SATA Power Cable 25cm	1
1700032181-01	USB 3.0 Cable 35cm	1
1700030404-01	COM1/COM2 Cable 20cm	2
1700019584-01	Audio Cable 20cm	1
1970005854T001	MIO-5354 CPU Heatsink	1
TBD	MIO-5354 CPU Cooler	1

Optional Accessories

Part No.	Description
TBD	MIO-5354 CPU Heatspreader

Embedded OS/API

OS	Part No.	Description
WIN10	TBD	64-bit (UEFI mode only)
Ubuntu 22.04 LTS	TBD	
Software API	Download by website	

Rear I/O View

