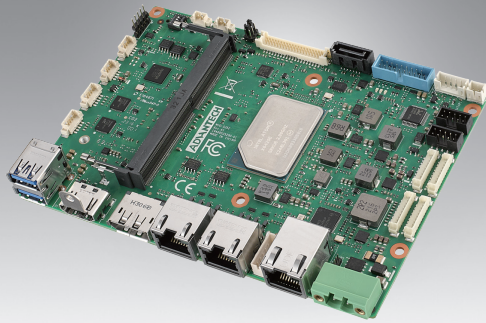


AFE-E350

Intel® Atom® x6000E series and Celeron® J series 3.5" SBC

Preliminary



Features

- Atom® x6000E series and Intel® Celeron® J and N series with Quad/Dual Cores, TDP 6-12W
- 3 simultaneous displays: LVDS/HDMI/DP
- 3 GbE support support TSN & PoE
- 4x RS232/422/485, 6x USB, 2x CANBus, 1x I2C/SMBus
- 3 Expansions: M.2 E-Key, B-Key, M-Key (support NVMe)
- Supports EdgeBMC & Software APIs, WISE-DeviceOn

Software APIs:

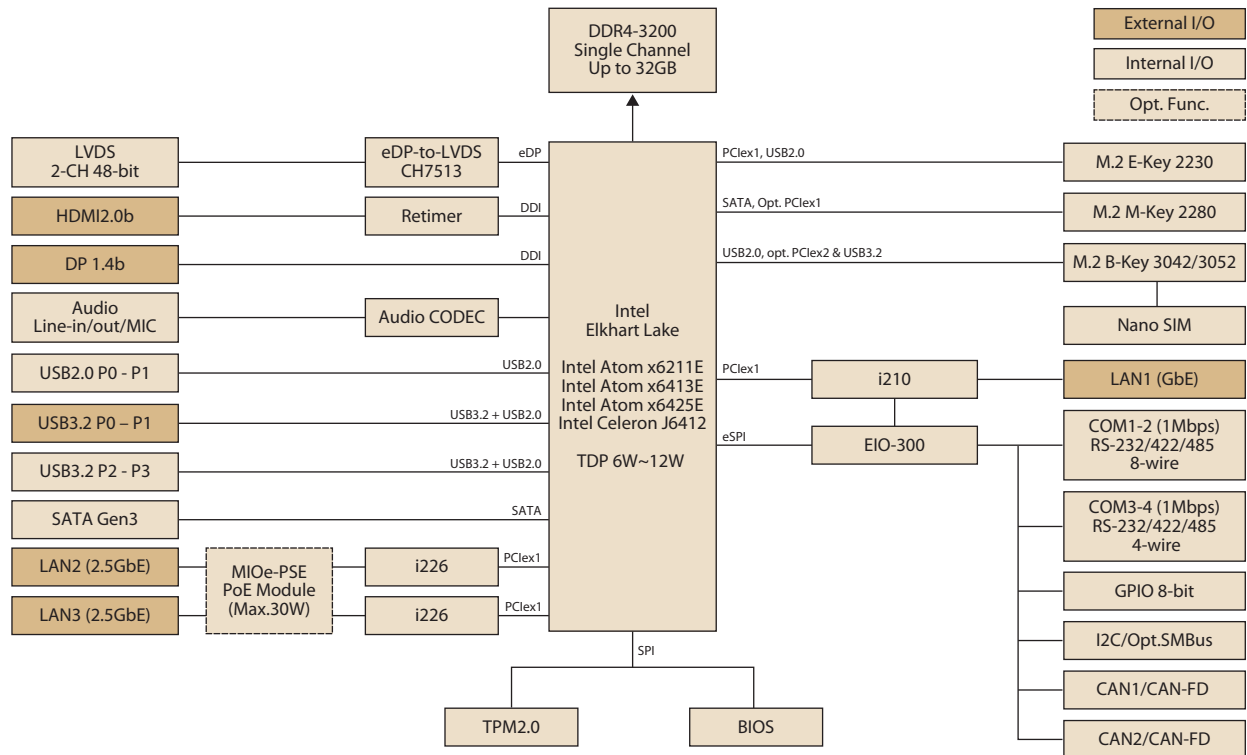


Specifications

	Processor	Intel® Atom® x6211E	Intel® Atom® x6413E	Intel® Atom® x6425E	Intel® Celeron® J6412
Platform	Max. Frequency	3.0GHz	3.0GHz	3.0GHz	2.6GHz
	Base Frequency	1.3GHz	1.5GHz	2.0GHz	2.0GHz
	Core/Tread	2/2	4/4	4/4	4/4
	LLC	L2	L2	L2	L2
	CPU TDP	6W	9W	12W	10W
	Chipset	Intel® Chipset (SoC Integrated)			
	BIOS	AMI UEFI 256Mbit			
Memory	Technology	DDR4-3200 SDRAM			
	Max. Capacity	Up to 32GB			
	Channel/Socket	Single Channel / 1 Socket			
	ECC Support	In-Band ECC Supported by SoC	In-Band ECC Supported by SoC	In-Band ECC Supported by SoC	N/A
Graphics	Technology	Intel Gen11 Graphics Engines (SoC integrated)			
	Max. Frequency	750MHz	750MHz	750MHz	800MHz
	Base Frequency	350MHz	500MHz	500MHz	400MHz
	3D/HW Acceleration	DX12, OGL4.5, OCL1.2, Vulkan 1.1; HW encode HEVC/H.265, MPEG2, JPEG/MJPEG			
Display I/F	LCD	LVDS Dual Channel 18/24-bit LVDS			
	HDMI	1 x HDMI2.0 up to 4096 x 2160 x 24bpp @60Hz			
	DP	1 x DP1.4a, up to 4096 x 2160 x 36bpp @60Hz			
	Multiple Display	3 simultaneous displays: LVDS/HDMI/DP			
Ethernet	Controller	LAN1: Intel i210; LAN2&3: Intel i226			
	Speed	LAN1: 1Gbps; LAN2&3: 2.5Gbps			
External I/O	Ethernet	3 x RJ-45 LAN1: Support Out-Of-Band(OOB) remote control LAN2&LAN3: Support optional PoE PSE compliant to 802.3af (PSE module: MIOe-PSE)*			
	HDMI/DP	1/1			
	USB3.2	2			
	Power DC-Jack	2-pin phoenix connector, optional 4-pin ATX connector*			
Internal I/O	SATA	1 x SATA GenIII 6.0Gbps			
	USB	2 x USB3.2 ; 2 x USB2.0			
	Serial Bus	I2C default, optional SMBus			
	COM Port	2 x RS-232/422/485(8-wire) , 2 x RS-232/422/485 (4-wire)			
	GPIO	8-bit general purpose input output I/O			
	Audio	Realtek ALC888S, Line-in/Line-out/MIC			
	Inverter	12V/5V			
	CAN Bus	2 x CAN-FD			
	Fan	4-wire smart fan			
	Front Panel Control	Power-on, Reset, Buzzer, CaseOpen			
	Watchdog Timer	65536 level, 0-65535 sec			
Board Feature	TPM	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 3042/ 3052 (default USB2.0, optional PCIe2*) w/ Nano-SIM M.2 M-Key: 1 x M-Key 2280 (default SATA III, optional PCIe1*)			
Power	Supply Voltage	Vin: DC 12-24V ± 10%; RTC Battery: Lithium 3V/210mAH			
	Connector	ATX 2x2 pin 90D, optional DC-Jack or ATX 2x2 pin 180D*			
	Power Management	AT, ATX			
	Max. Consumption	TBD	TBD	TBD	TBD
Environment	Idle Consumption	TBD	TBD	TBD	TBD
	Temperature	Extended: -40 ~ 85 °C (-40 ~ 185 °F)			Standard: 0 ~ 60 °C (32 ~ 140 °F)
	Humidity	Operating: 40 °C @ 95% relative humidity, non-condensing Storage: 60 °C @ 95%relative humidity, non-condensing			
Certification	Vibration Resistance	3.5 Grms			
	EMC	CE, FCC Class B			
Mechanical	Dimensions	146 x 102 mm (5.7" x 4")			

*Note: Optional function support by request

Block Diagram



*Optional PoE LAN requires external MIOe-PSE module, which provides dual 15.4W port or single port 30W

Ordering Information

Part No.	CPU	Max. Frequency	Core	TDP	GbE	USB 3.2	USB 2.0	RS232/422/485	Thermal Solution	Operating Temperature
AFE-E350J-U0A1	J6412	2.6GHz	4	10W	3	4	2	4	STD Passive	0-60° C
AFE-E350AW-S3A1	X6211E	3.0GHz	2	6W	3	4	2	4	WT Passive	-40-85° C
AFE-E350AW-S5A1	X6413E	3.0GHz	4	9W	3	4	2	4	WT Passive	-40-85° C
AFE-E350AW-U0A1	X6425E	3.0GHz	4	12W	3	4	2	4	WT Passive	-40-85° C

Packing List

Part No.	Description	Quantity
1700006291	SATA 7P/SATA 7P 30cm C=R 180/90	1
1970005873T001	AFE-E350 STD Passive Heatsink 0-60°C	1
1970005855T001	AFE-E350 WT Passive Heatsink -40-85°C	1
1700031583-01	M CABLE SATA 15P/1*2P-2.0 35cm	1
1700032181-01	Cable 20P-2.0/USB-A 9P(F)x2 35CM	1
1700030406-01	M Cable 2*5P-2.0/USB-A 4P(F)*2 20cm MIO	1
1700030404-01	F Cable D-SUB 9P(M)/1*10P-1.25 20cm MIO	2
1700031582-01	F Cable D-SUB 9P(M)/1*5P-1.25 20cm	2
1700019584-01	A Cable 2*5P-2.0/Audio JACK*3 20cm	1

Rear IO View



Optional Accessories

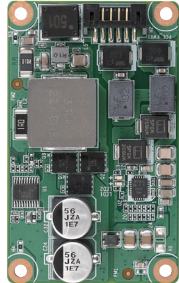
Part No.	Description
TBD	Heat spreader
MIOE-PSE-DPA1	MIOE-PSE Dual PSE Ports Power Module (15.4W x 2)
1700035016-01	4 wires COM RS-422/485 cables

Embedded OS/API

OS	Part No.	Description
WIN10	TBD	64-bit (UEFI mode only)
Ubuntu	TBD	Ubuntu Desktop 22.04 LTS 64-bit Image & License Sticker for MIO-5352
Software API	Download by website	SUSI v4.0

Compatible Expansion Boards

MIOe-PSE



Specifications

Output DC Voltage	50V
Input DC Voltage	12-24V
Power Sourced at PSE module	15.4W / 30W per port
Power at PD (End-point)	12.95W / 25.5W per port
PoE Standard	IEEE 802.3 at
Operating temperature	-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
EMC	CE, FCC Class B
Dimensions	72.1 x 44.0 x 1.6 mm

Ordering Information

P/N	Description
MIOE-PSE-DPA1	MIOe-PSE PoE Module A1 Dual 15.4W
MIOE-PSE-SPA1	MIOe-PSE PoE Module A1 Single 30W