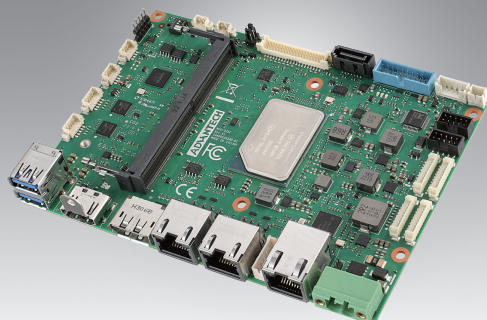


AFE-E350

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

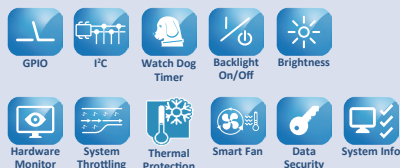
NEW



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 PoE
- 4x RS232/422/485, 6x USB, 2x CANBus/CAN-FD, 1x I2C/SMBus
- 3 Expansions: M.2 E-Key, B-Key, M-Key (support NVMe)
- Supports EdgeBMC & Software APIs, WISE-DeviceOn

Software APIs:

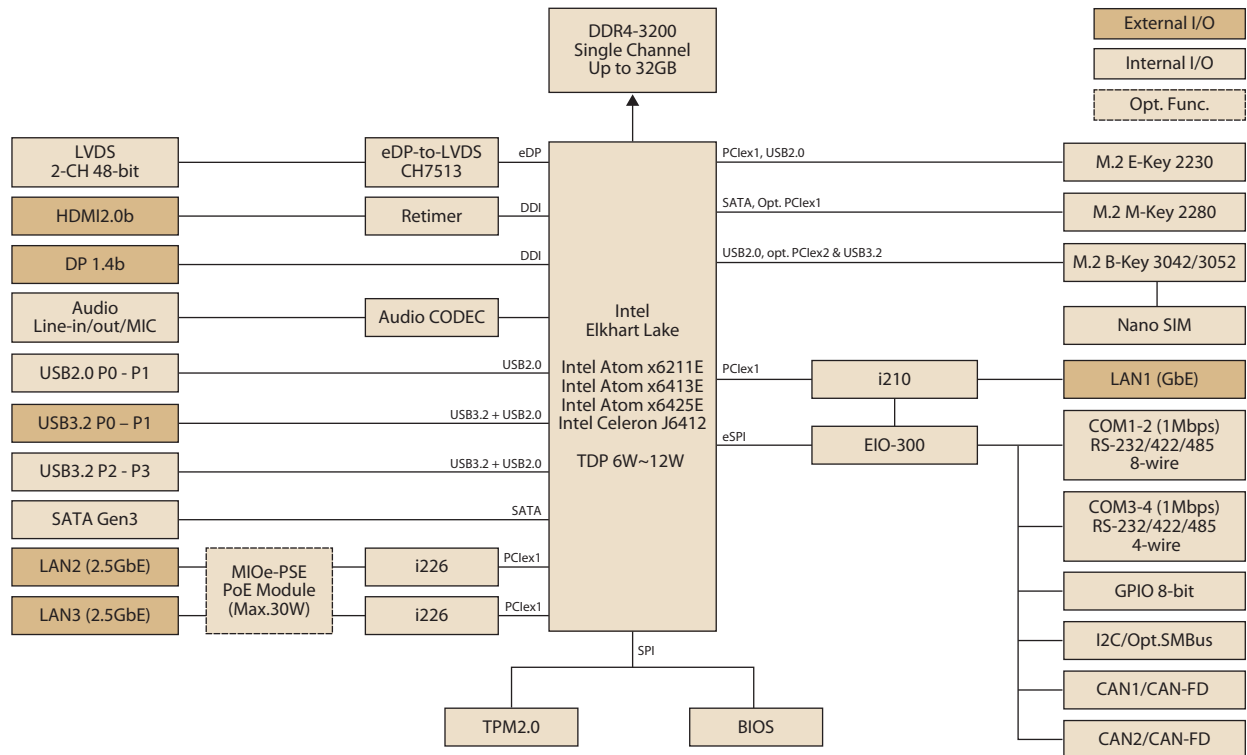


Specifications

Platform	Processor	Intel® Atom® x6211E	Intel® Atom® x6413E	Intel® Atom® x6425E	Intel® Celeron® J6412
	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	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			
	HDMI/DP	LAN1: Support EdgeBMC Out-of-Band remote control			
	USB3.2	LAN2&LAN3: Support optional PoE PSE compliant to 802.3af (PSE module: MIOe-PSE)*			
	Power DC-Jack	1/1			
Internal I/O	SATA	2-pin phoenix connector, optional 4-pin ATX connector*			
	USB	1 x SATA GenIII 6.0Gbps			
	Serial Bus	2 x USB3.2 ; 2 x USB2.0			
	COM Port	I2C default, optional SMBus			
	GPIO	2 x RS-232/422/485(8-wire), 2x RS-232 (4-wire), RS-422/485*			
	Audio	8-bit general purpose input output I/O			
	Inverter	Realtek ALC888S, Line-in/Line-out/MIC			
	CAN Bus	12V/5V			
	Fan	2 x CANBus 1M, CAN-FD 2M/4M/8M			
	Front Panel Control	4-wire smart fan			
	Watchdog Timer	Power-on, Reset, Buzzer, CaseOpen			
Board Feature	TPM	65536 level, 0-65535 sec			
	iManager 3.0	TPM2.0			
	M.2 E-Key	SW API for Hardware Monitor, Smart Fan Control, Brightness Control, I2C, GPIO, WDT			
Expansion	M.2 B-Key	1 x E-Key 2230 (PCIe x1, USB2.0)			
	M.2 M-Key	1 x B-Key 3042/3052 (default USB2.0, optional PCIe2*) w/ Nano-SIM (Default with 3042. *Support 3052 for 5G module by request.)			
	Supply Voltage	1 x M-Key 2280 (default SATA III, optional PCIe1*)			
Power	Connector	Vin: DC 12-24V ± 10%; RTC Battery: Lithium 3V/210mAh			
	Power Management	ATX 2x2 pin 90D, optional DC-Jack or ATX 2x2 pin 180D*			
	Max. Consumption	20.81W (12V), 24.07W (24V)	27.72W (12V), 28.98W (24V)	31.55W (12V), 33.02W (24V)	28.41W (12V), 29.48W (24V)
	Idle Consumption	10.20W (12V), 11.76W (24V)	10.44W (12V), 11.76W (24V)	16.55W (12V), 19.14W (24V)	10.56W (12V), 12.00W (24V)
Environment	Temperature	Extended: -40 ~ 85 °C (-40 ~ 185 °F)			
	Humidity	Operating: 40 °C @ 95% relative humidity, non-condensing			
	Vibration Resistance	Storage: 60 °C @ 95%relative humidity, non-condensing			
Certification	EMC	3.5 Grms			
Mechanical	Dimensions	CE, FCC Class B			
		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	Celeron® J6412	2.6GHz	4	10W	3	4	2	4	STD Passive	0~60° C
AFE-E350AW-S3A1	Atom® x6211E	3.0GHz	2	6W	3	4	2	4	WT Passive	-40~85° C
AFE-E350AW-S5A1	Atom® X6413E	3.0GHz	4	9W	3	4	2	4	WT Passive	-40~85° C
AFE-E350AW-U0A1	Atom® X6425E	3.0GHz	4	12W	3	4	2	4	WT Passive	-40~85° C

Packing List

Part No.	Description	Quantity
1970005873T001	AFE-E350 STD Passive Heatsink 0~60°C	1
1970005855T001	AFE-E350 WT Passive Heatsink -40~85°C	1
1700006291	SATA 7-Pin Cable 180/90 30cm	1
1700031583-01	SATA 15-Pin Power Cable 35cm	1
1700030406-01	USB2.0 Type-A cable 2ports 20cm	1
1700030404-01	8 wires COM RS-232/422/485 cables	2
1700031582-01	4 wires COM RS-232 cables	2

Optional Accessories

Part No.	Description
1970005997T001	AFE-E350 Heatspreader(for X6211/6413/6425E CPU SKU)
1700035016-01	4 wires COM RS-422/485 cables
1700032181-01	Cable 20P-2.0/USB-A 9P(F)x2 35CM
1700019584-01	A Cable 2*5P-2.0/Audio JACK*3 20cm
MIOE-PSE-DPA1	MIOe-PSE PoE Module A1 Dual 15.4W
MIOE-PSE-SPA1	MIOe-PSE PoE Module A1 Single 30W

Rear IO View

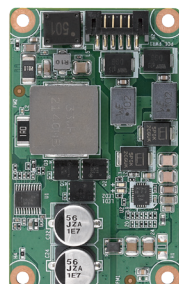


Embedded OS/API

OS	Part No.	Description
WIN10	20706WX1ES0107	64-bit (UEFI mode only)
Ubuntu	20706U22DS0055	Ubuntu Desktop 22.04 LTS 64-bit Image & License Sticker for AFE-E350
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