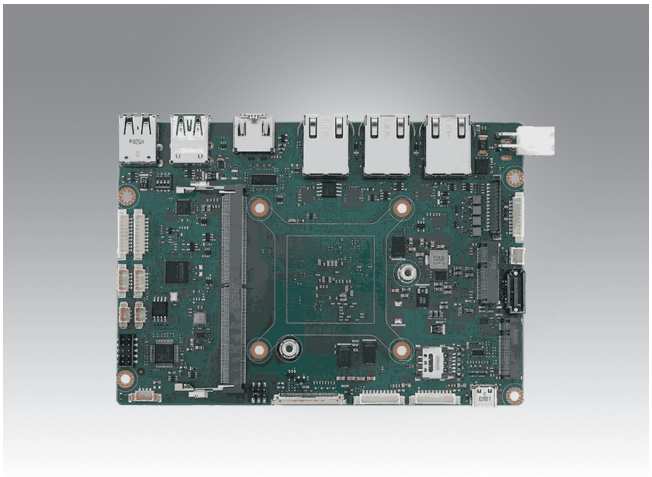
MIO-5854

Intel Processor N-series N355; N150 (Code Name: Twin Lake)



Ubuntu Windows 10 DeviceOn EdgeBMC CE FC

Features

- Intel Processor N-series N355 and N150
- DDR5-4800 up to 16GB
- 4x LAN, 4x USB, 4x UART, 2x CAN-FD, 16bit GPIO, I2C/SMBus
- 2x M.2 Expansions: E-Key 2230, B-Key 2280
- Support EdgeBMC for OOB(Out-of-Band) remote control

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

Specifications

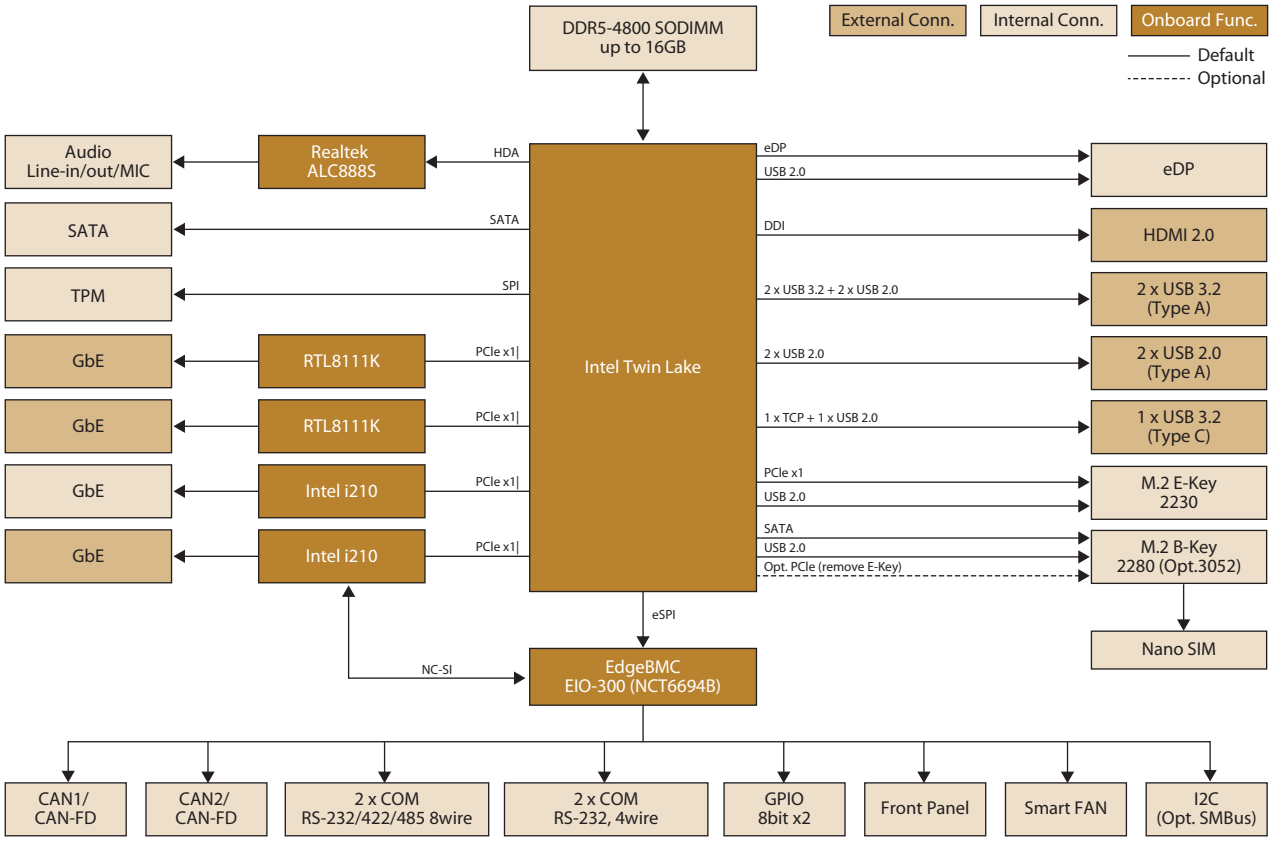
Platform	Processor	N355	N150
	Max. Frequency	3.9 GHz	3.6 GHz
	Base Frequency	1.9 GHz	0.8 GHz
	Core/Tread	8/8	4/4
	LLC	6MB	6MB
	CPU TDP	15W	6W
	Chipset	Intel® Chipset (SoC Integrated)	
	BIOS	AMI UEFI 256Mbit	
Memory	Technology	DDR5-4800	
	Max. Capacity	Up to 16GB	
	Channel/Socket	Single Channels / One Socket	
Graphics	Controller	Intel® Graphics	
	Max. Frequency	1.35 GHz	1.0 GHz
	Base Frequency	1.0 GHz	400 MHz
	3D/HW Acceleration	Open GL 4.6, Vulkan 1.2 HW Encode: AVC, VP9/SCC HW Decode: AVC, VP9/SCC, AV1	
Display I/F	eDP	1 x eDP 1.4	
	HDMI	1 x HDMI 2.0	
	Multiple Display	2 simultaneous displays: eDP/HDMI	
Ethernet	Controller	LAN1/LAN2: Realtek 8111k; LAN3/LAN4: Intel i210	
	Speed	LAN1/LAN2/LAN3/LAN4: 1Gbps	
External I/O	Ethernet	3 x RJ-45	
	HDMI/USB-C	1/1	
	USB3.2/2.0	2/2	
	Power DC-Jack	4-pin 90D ATX connector	
Internal I/O	SATA	1 x SATA GenIII 6.0Gbps	
	Serial Bus	1 x I2C (Opt. SMBus)	
	COM Port	2 x RS-232/422/485(8-wire) , 2 x RS-232(4-wire)	
	GPIO	16-bit general purpose input output I/O	
	LAN	14-pin internal connector	
	Audio	Realtek ALC888S, Line-in/Line-out/MIC	
	Invertor	5V @ 2A	
	CAN Bus	2 x CAN-FD	
	Fan	4-wire smart fan	
	Front Panel Control	Power-on, Reset, Buzzer, CaseOpen	
Board Feature	EdgeBMC OOB	LAN3: Support EdgeBMC Out-of-Band(OOB) remote control	
	Watchdog Timer	65536 level, 0~65535 sec	
	TPM	Discrete TPM2.0 (*optional)	
Expansion	M.2 E-Key	1 x E-Key 2230 (PCIe x1, USB2.0)	
	M.2 B-Key	1 x B-Key 2280 (SATA, USB2.0,*optional PCIe x1) w/ Nano-SIM	
Power	Supply Voltage	Vin: DC 12~24V ± 10%; RTC Battery: Lithium 3V/200mAH	
	Connector	ATX 4pin 90D (*BOM Option to ATX 4pin 180D or DC-IN Jack by request)	
	Power Management	AT, ATX	
Environment	Temperature	0 ~ 60 °C (32 ~ 140 °F) with 0.7m/s airflow	
	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	
Mechanical	Dimensions	146 x 102 mm (5.7" x 4")	

*Note: Optional function support by request

All product specifications are subject to change without notice.

Last updated: 23-Nov-2026

Block Diagram



Ordering Information

Part No.	CPU	Core	TDP	GPU	GPU Max. Frequency	Thermal Solution	Operating Temperature
MIO-5854N-P9A1	N355	8	15W	Intel® Graphics	1.35 GHz	Passive	0~60° C
MIO-5854N-P6A1	N150	4	6W	Intel® Graphics	1 GHz	Passive	0~60° C

Packing List

Part No.	Description	Quantity
	MIO-5854 SBC	1
1700031583-01	SATA Power Cable 25cm	1
1700006291	SATA Cable 30cm	1
1700019584-01	Audio Cable 20cm	1
1700030404-01	COM Cable 20cm	2
1970005854T001	MIO-5854 CPU Heatsink (Passive Solution)	1

Optional Accessories

Part No.	Description
1970005925T001	MIO-5854 CPU Heatspreader
1970006081N001	MIO-5854 Full-board Heatspreader
1960103315N020	M.2 3042/3052 Extension Bracket
1700033611-01	Internal LAN Cable 15cm

Rear I/O View



Embedded OS/API

OS	Part No.	Description
WIN11	20706WLE1S0117	Windows 11 IoT Enterprise 2024 LTSC 64 bit
Ubuntu	20706U24DS0046	Ubuntu Desktop 24.04 LTS
Ubuntu Pro	20706U24ES0012	Ubuntu Pro for Devices 24.04
Software API	Download by website	SUSI v5.0