SP2-MTL Series

Intel® Core™ Ultra - based Open Frame Panel PC

Features

- Intel® Core™ Ultra H series (Meteor Lake) processor
- 10.1"/15.6"/21.5" Projected capacitive touch screen
- 3 independent display output, LVDS, DP, USB type C
- DDR5 -6400 up to 64GB
- 2.5" SSD SATA 6 Gbps Gen3.2
- 7x USB (including 1x Thunderbolt, 1x PCAP)
- Support NVIDIA MXM GPU type A by carrier board (optional)
- Support PoE by extension module (optional)
- 1x M.2 2230 A/E key slot
- 1x full size mPCIe slot
- 12V DC in (Standard), 9-36V DC (Optional)
- EMC Certificated, Safety Compliance

Ordering Information

• SP2-10WP-MTL-125H	10.1" Intel® Core™ Ultra open frame computer
• SP2-15WP-MTL-125H	15.6" Intel® Core™ Ultra open frame computer
• SP2-21WP-MTL-125H	21.5" Intel® Core™ Ultra open frame computer

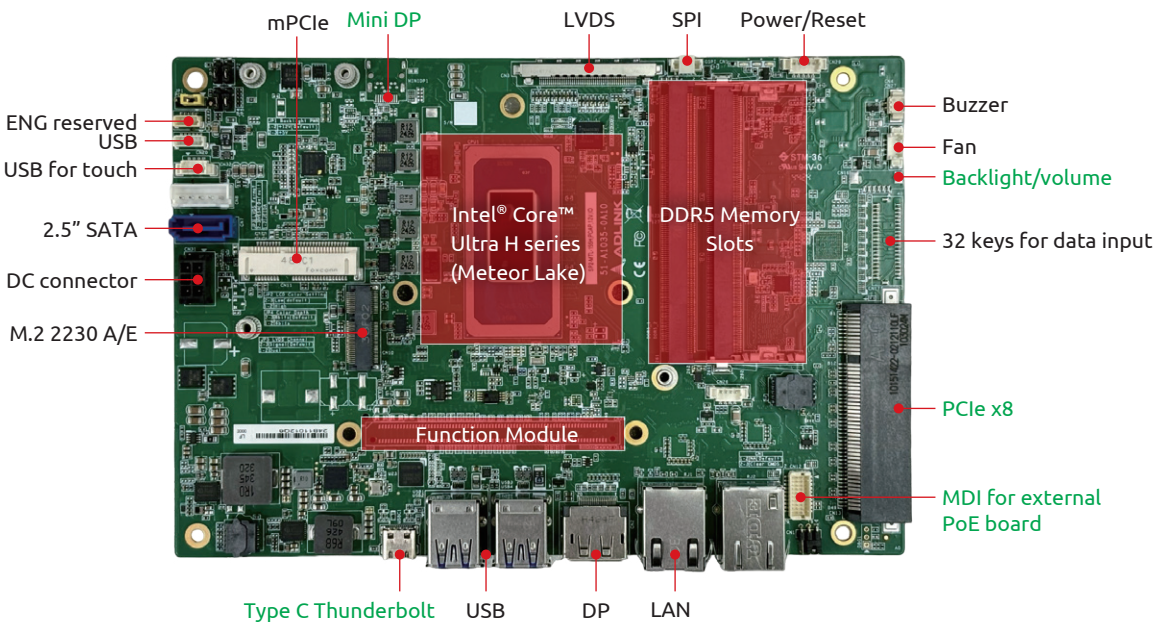
Optional Accessories

- Adapter: 12V 120W adapter
- I/O Cables: Power/Reset, I^2C, DI/O, speaker, MIC in/Line out, COM port, and USB cables
- Wireless Kit: Wi-Fi/BT module and LTE module

Software Support

- Windows® 11/10

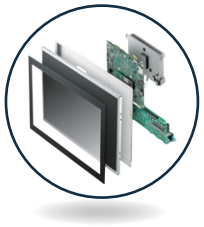
Advanced SP2-MTL Single Board Computer (SBC)



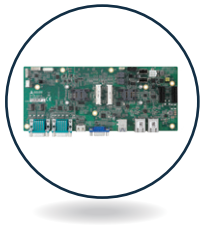
■ Standard
■ Optional

PCB: 190mm x 130 mm

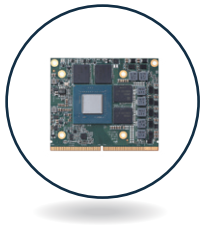
> Feature expansion through internal I/O connectors



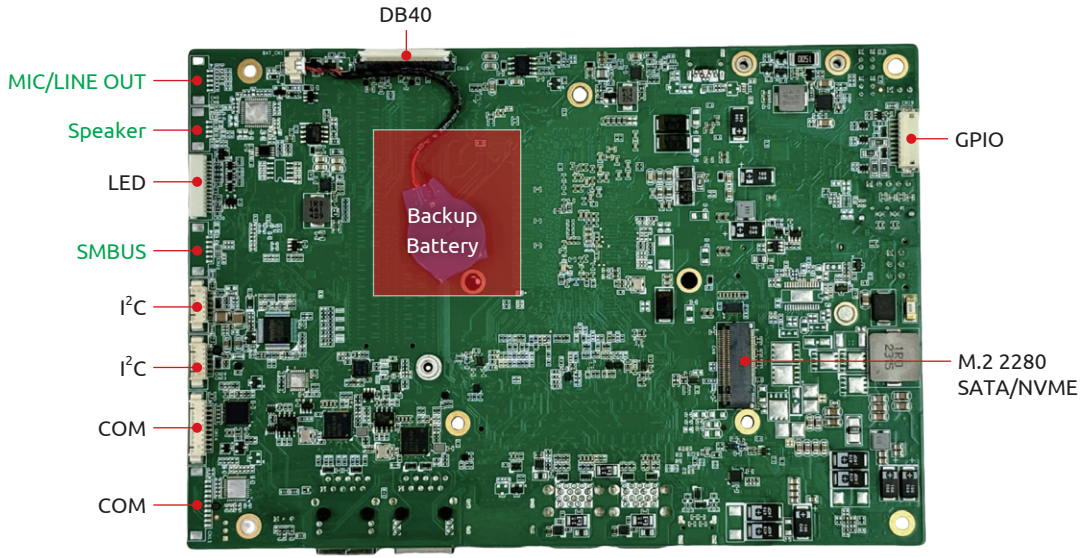
Seamless Integration



Function Module Expansion



Nvidia MXM GPU Type A Support



		93-P1600-20XX	93-P1600-60XX	93-P1600-20XX	Optional accessory	
Model		**SP2-10WP-MTL**	**SP2-15WP-MTL**	**SP2-21WP-MTL**	**Part Number**	**Description**
Processor	Core Ultra 5 processor 125H, 4.50GHz	Core Ultra 5 processor 125H, 4.50GHz	Core Ultra 5 processor 125H, 4.50GHz	Core Ultra 5 processor 125H, 4.50GHz		
	Core Ultra 7 processor 155H, 4.80GHz					
Memory	2x SODIMM socket, DDR5 5600MHz , upto 64GB	8GB	8GB	8GB		
Storage	1x M.2 SATA M key 2280, support SATA SSD or NVME (PCIe x4)	128GB SATA SSD	128GB SATA SSD	128GB SATA SSD		
	1x 2.5" SSD/HDD SATA 6 Gbps port					
Display and Touch						
Display	Size	10.1"	15.6"	21.5"		
	Resolution	1280 x 800	1920 x 1080	1920 x1080		
	Contrast Ratio	800:1	1000:1	1000:1		
	Brightness (Nits)	400 cd/m2 (typ.)	400 cd/m2 (typ.)	400 cd/m2 (typ.)		
	Backlight Life (hrs.)	50,000	50,000	50,000		
	Viewing Angle (U/D/R/L)	89/89/89/89	89/89/89/89	89/89/89/89		
Touch	Touch Points	10 Points	10 Points	10 Points		
	Touch Structure	Glass/Glass	Glass/Glass	Glass/Glass		
Surface	Surface Hardness	7H	7H	7H		
	Surface Treatment	Anti-Fingerprint coating	Anti-Fingerprint coating	Anti-Fingerprint coating		
External I/O						
Ethernet	2x GbE (Intel® I226), RJ-45, WOL (optional TSN support) PoE, share with LAN2	2x 1GbE, RJ-45, WOL	2x 1GbE, RJ-45, WOL	2x 1GbE, RJ-45, WOL		
USB Ports	4x USB 3.2, Gen 2 (10 Gbps), OCP, Type A	4	4	4		
	1x Thunderbolt 4.0					
DisplayPort	1x DisplayPort, DP++, supports DP 1.4, resolutions up to 5120x3200@60Hz 24bpp	1	1	1		
	1x MiniDisplayPort, DP++, supports DP 1.4, resolutions up to 5120x3200@60Hz 24bpp					
Internal I/O with Wire to Connectors						
USB Port	1x wafer USB 2.0 client	1	1	1	30-21401-0000-A0	USB 2.0 wafer to Type A Female
COM Port	2x wafers RS-232/422/485 programmable, auto flow	2	2	2	30-21862-0010-A0	wafer to DB9 connector
I2C wafer	2x wafers for I2C client	2	2	2	30-21353-0000-A0	wafer to open end
Audio	1x wafer for 2x stereo speaker (2 watts)				23-51635-0020	wafer to 2x 2W speakers
	1x wafer for Mic-in and Line-out				30-22087-0000-A0	wafer to Mic/ LineOut Jack
	1x wafer for buzzer	1	1	1	23-52111-0A00	wafer to Buzzer
LED	1x wafer for LED notification and load reset button				30-22249-0000-A0	wafer to 6x LED and 1x Button
Expansion	1x full size mPCIe slot	1	1	1		
	1x M.2 2230 E key for wireless (Wi-Fi/Bluetooth)	1	1	1	91-95266-4000	WiFi kit
	1x PCIE Gen4 x8 slot on edge of PCB					
Keys wafer	1x for 32 physical keys					
	1x LCD backlight up/down and volume up/down					

		93-P1600-20XX	93-P1600-60XX	93-P1600-20XX	Optional accessory	
Model		**SP2-10WP-MTL**	**SP2-15WP-MTL**	**SP2-21WP-MTL**	**Part Number**	**Description**
Internal I/O with Wire to Connectors						
GPIO wafer	1x wafer 8-pin GPIO	1	1	1	30-21352-0000-A0	wafer to open end
SPI	1x wafer for SPI	1	1	1		wafer to open end
Buttons (wire to buttons)	1 wafer for Power/Reset	1	1	1	30-22074-0000-A0	wafer to 1x Power, 1x Reset, 1x LED
Fans	1x wafer for system fan				32-00086-3000-A0	wafer to fan
	1x wafer for PCIe x8 fan					
Power						
Power Input	AT/ATX	AT model (power on mode)	AT model (power on mode)	AT model (power on mode)		
	12V or 9-36V, both with OVP/UVP protection	12V	12V	12V	31-62163-0000-A0	120W adpater
Power Connector	1x 6-pin power connector	1	1	1	30-21863-0000-A0	power cable
Backup Battery (by demand)	1x wafer for UPS kit to back up data when AC shuts down					
	1x SMBus					
Environmental						
Environmental	Operating Temperature for system	0°C ~ +55°C				
	Storage Temperature	-20°C to 70°C (10.1"/15.6") / -20°C to 60°C (21.5")				
	Operating Humidity	Up to 95%				
	Operating Humidity	Up to 95%				
	Vibration	10 ~ 500 Hz, 1.87G for X, Y（IEC 60068-2-64） 5 ~ 500 Hz, 1 G for Z OP 1 Grms, 5-500Hz w/ SSD ISO 7637-2				
	Shock	OP 30G peak acceleration, 11 ms for board OP 20G peak acceleration, 11 ms for system				
	ESD	Air: ±15kV, Contact: ±8kV, screwing grounding				
	EMC	CE, FCC Class B (with PoE, Class A) EN 55032 (EMI) IEC/EN 61000-3-2 (EMI) IEC/EN 61000-3-3 (EMI) EN 55024 (EMS) EN 61000-6-4 (EMI) EN 61000-6-2 (EMS) EN 50155 (Railway application, EMC + Reliability) IEC 60601-1-2:2014/EN 60601-1-2:2015 (MOOP only) UNECE R10				
Safety (Pre-test)		EN 62368-1:2014 + A11:2017				
Optional accessories	Size	10.1"	15.6"	21.5"		
	Construction	SGCC	SGCC	SGCC		
	Dimensions (HXWXD)	420 (L) x 176 (W) x 352(H)mm	620 (L) x 176 (W) x 440(H)mm	420 (L) x 176 (W) x 352(H)mm		
	Optional clips	10.1", with 8 clips (91-95337-20XX)	15.6", with 14 clips (91-95337-10XX)	21.5", with 17 clips	TBD	
					TBD	
	Optional rear cover	10.1" rear cover	15.6" rear cover	21.5" rear cover	91-95394-000E	for both
					91-95394-000E	SP2-101 & 156
					91-95394-100E	for SP2-215
	Optional VESA kit	VESA kit	VESA kit	VESA kit	91-95240-0010	
					91-95240-0010	
					91-95240-0010	
	Weight	2.3 ±0.5 kg	4 ±0.5 kg	6.1 ±0.5 kg		

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