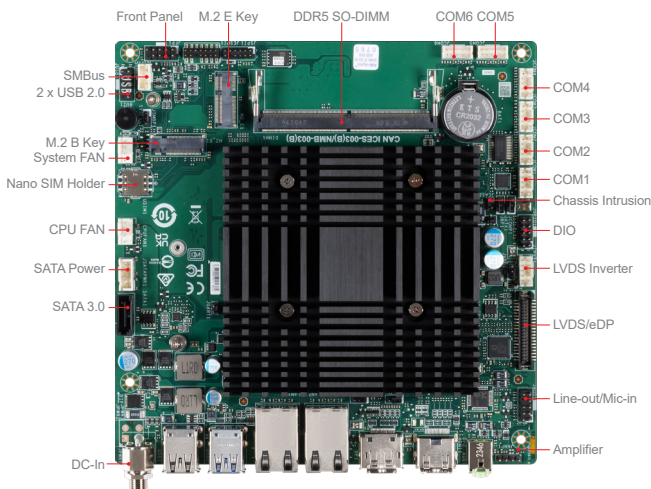


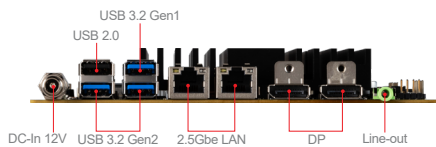
# MS-CF13

Mini-ITX with Intel® Alder Lake-N SoC Series for Fanless, Low-Profile, Ultra Low-Power & Multi-Displays Solution

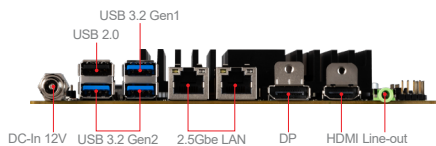
**NEW**



## SKU1



## SKU2/3/4



### Features

- Intel® Alder Lake-N PC Client & Embedded Series SoC
- DDR5 4800 MHz SODIMM Slot up to 16GB
- Triple independent displays: DP, HDMI/DP, LVDS/eDP
- 2 2.5 GbE LAN with RJ-45
- 1 M.2 E Key Slot, 1 M.2 B Key (with SIM Holder)
- 1 M.2 B key, 1 SATA 3.0 for storage
- 2 USB 3.2 Gen 2, 1 USB 3.2 Gen 1, 3 USB 2.0, 6 COM, GPIO, Audio, Amplifier-3W
- Onboard TPM 2.0
- DC-IN 12V

### Specifications

	SKU1	SKU2	SKU3	SKU4	
<b>Processor</b>	CPU	Intel® IOTG Alder Lake-N Processor N97, QC, 12W		Intel® IOTG Alder Lake-N Core i3-N305, QC, 9W up to 15W	
	Frequency	N97, 2.0GHz, up to 3.6GHz		i3-N305, 1.8GHz, up to 3.8GHz	
	L2 Cache	6MB			
	CPU Type	BGA			
	Chipset	Integrated in SoC			
	BIOS	AMI UEFI			
<b>Memory</b>	Technology	Single Channel for DDR5 4800MHz			
	Max. Capacity	Up to 16GB			
	Socket	1 x 262-pin DDR5 SO-DIMM			
	Controller	Intel® UHD Graphics			
<b>Display</b>	Graphic Memory	Depends on CPU			
	LVDS	1 x Dual channel 18/24-bit (Connector shared with eDP)			
	eDP	1 (Connector shared with LVDS)			
	VGA	N/A			
	DVI	N/A			
	HDMI	N/A		1	
	DisplayPort	2		1	
	Multiple Display	3 independent displays			
	Display Interface	LVDS up to 1920 x 1200 @60Hz		LVDS up to 1920 x 1200 @60Hz	
		eDP up to 1920 x 1080 @60Hz		eDP up to 1920 x 1080 @60Hz	
<b>Ethernet</b>	Controller	2 x Intel® I226-V 2.5GbE LAN			
	Controller	Realtek® ALC897 Audio Codec (Co-lay ALC888S)			
<b>Super I/O</b>	Controller	Fintek F81966AB-I			
	Watchdog Timer	256-level Watchdog Timer			
<b>H/W Monitor</b>	Smart Fan	Yes			
	TPM	Infineon® SLB 9672VU2.0			
<b>I/O Interface</b>	USB	2 x USB 3.2 Gen 2 (rear) 1 x USB 3.2 Gen 1 (rear) 1 x USB 2.0 (rear) 2 x USB 2.0 (internal)			
	Serial	6 x COM ports (internal) COM1: RS-232/422/485, 0V/5V/12V COM2~6: RS-232			
	Parallel	N/A			
	PS/2	N/A			
	GPIO	8-bit (4 x GPI; 4 x GPO), 5V			
	<b>Expansion Slot</b>	PCIe x16	N/A		
PCIe x4		N/A			
PCIe x1		N/A			
PCI		N/A			
M.2		1 x M.2 B key (SATA/PCIe x1, USB 3.2 Gen 2 x 1, USB 2.0 w/NANO SIM-Holder), 2242/3042/2280 1 x M.2 E key (PCIe x1, USB 2.0), 2230			
<b>Storage</b>	Mini-PCIe	N/A			
	SATA	1 x SATA 3.0			
	IDE	N/A			
	eSATA	N/A			
	CFast	N/A			
	mSATA	N/A			
<b>Power Supply</b>	DC	DC-in 12V			
	ATX	N/A			
<b>Environment</b>	Operating Temperature	0 ~ 60°C Note: Thermal w/ Airflow:0.7m/s			
	Operating Humidity	10 ~ 90%, non-condensing			
	Storage Temperature	-20 ~ 80°C			
	Storage Humidity	10 ~ 90%, non-condensing			
<b>Form Factor</b>	Dimensions	170 x 170 mm (Mini-ITX)			
	Weight	0.51 kg			
<b>Certification</b>	EMC	CE, FCC Class B, BSMI, RCM, VCCI, UKCA			
<b>Software Platform</b>	OS Support	Windows 10 IoT Enterprise LTSC (64-bit, 21H2)			
		Windows 11 IoT Enterprise (64-bit, 22H2, Pre-scan) Linux (Support by request)			

Panel PC  
Tablet PC  
Industrial Computer  
COM Express Board  
COM Express Board  
Pico-ITX Board  
3.5" Board  
EPC Board  
Mini-ITX Board  
Micro-ATX Board  
ATX Board