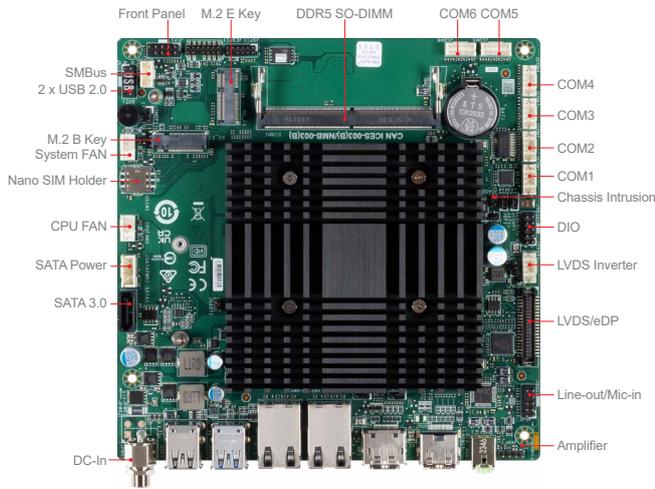# MS-CF13

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

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

Front Panel · M.2 E Key · DDR5 SO-DIMM · COM6 COM5
SMBus
2 x USB 2.0
M.2 B Key
System FAN
Nano SIM Holder
CPU FAN
SATA Power
SATA 3.0
DC-In
COM4
COM3
COM2
COM1
Chassis Intrusion
DIO
LVDS Inverter
LVDS/eDP
Line-out/Mic-in
Amplifier

SKU1/5/6/8

USB 3.2 Gen1
USB 2.0
DC-In 12V · USB 3.2 Gen2 · 2.5Gbe LAN · DP · Line-out

SKU2/3/4/7/9

USB 3.2 Gen1
USB 2.0
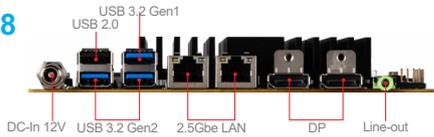DC-In 12V · USB 3.2 Gen2 · 2.5Gbe LAN · DP · HDMI Line-out

Features

- Intel® Alder Lake-N & Twin 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

Ordering Information

Part Number	Description
911-CF13-101	MS-CF13\601-CF13-010\801-CF13-102 10 Fanless, Intel ADL-N N97, 1*DDR5 SO-DIMM, 3*USB 3.2, 3*USB 2.0, 6*COM, 2*DP+1*LVDS/eDP, 2*M.2, 2*2.5GbE LAN, 1*SATA 3.0, DC-in 12V, BULK
911-CF13-102	MS-CF13\601-CF13-020\801-CF13-103 10 Fanless, Intel ADL-N N97, 1*DDR5 SO-DIMM, 3*USB 3.2, 3*USB 2.0, 6*COM, 1*DP+1*HDMI+1*LVDS/eDP, 2*M.2, 2*2.5GbE LAN, 1*SATA 3.0, DC-in 12V, BULK
911-CF13-103	MS-CF13\601-CF13-030\801-CF13-103 10 Fanless, Intel ADL-N Core i3-N305, 1*DDR5 SO-DIMM, 3*USB 3.2, 3*USB 2.0, 6*COM, 1*DP+1*HDMI+1*LVDS/eDP, 2*M.2, 2*2.5GbE LAN, 1*SATA 3.0, DC-in 12V, BULK
911-CF13-104	MS-CF13\601-CF13-040\801-CF13-103 10 Fanless, Intel ADL-N Atom X7425E, 1*DDR5 SO-DIMM, 3*USB 3.2, 3*USB 2.0, 6*COM, 1*DP+1*HDMI+1*LVDS/eDP, 2*M.2, 2*2.5GbE LAN, 1*SATA 3.0, DC 12V, BULK
911-CF13-106	MS-CF13\601-CF13-050\801-CF13-102 10 Fanless, Intel ADL-N Core i3-N305, 1*DDR5 SO-DIMM, 3*USB 3.2, 3*USB 2.0, 6*COM, 2*DP +1*LVDS/eDP, 2*M.2, 2*2.5GbE LAN, 1*SATA 3.0, DC-in 12V, BULK
916-CF13-103	MS-CF13\606-CF13-080\806-CF13-103 10 Fanless, Intel TWL N150, 1*DDR5 SO-DIMM, 3*USB 3.2, 3*USB 2.0, 6*COM, 2*DP+1*LVDS/eDP, 2*M.2, 2*2.5GbE LAN, 1*SATA 3.0, DC-in 12V, Bulk
916-CF13-104	MS-CF13\606-CF13-090\806-CF13-104 10 Fanless, Intel TWL N150, 1*DDR5 SO-DIMM, 3*USB 3.2, 3*USB 2.0, 6*COM, 1*DP+1*HDMI+1*LVDS/eDP, 2*M.2, 2*2.5GbE LAN, 1*SATA 3.0, DC-in 12V, Bulk
916-CF13-105	MS-CF13\606-CF13-100\806-CF13-103 10 Fanless, Intel TWL Core 3 N355, 1*DDR5 SO-DIMM, 3*USB 3.2, 3*USB 2.0, 6*COM, 2*DP+1*LVDS/eDP, 2*M.2, 2*2.5GbE LAN, 1*SATA 3.0, DC-in 12V, Bulk
916-CF13-106	MS-CF13\606-CF13-110\806-CF13-104 10 Fanless, Intel TWL Core 3 N355, 1*DDR5 SO-DIMM, 3*USB 3.2, 3*USB 2.0, 6*COM, 1*DP+1*HDMI+1*LVDS/eDP, 2*M.2, 2*2.5GbE LAN, 1*SATA 3.0, DC-in 12V, Bulk
911-CF13-005	MS-CF13\601-CF13-010\801-CF13-005 10 Fanless, Intel ADL-N N97, 1*DDR5 SO-DIMM, 3*USB 3.2, 3*USB 2.0, 6*COM, 2*DP+1*LVDS/eDP, 2*M.2, 2*2.5GbE LAN, 1*SATA 3.0, DC-in 12V, Single
911-CF13-006	MS-CF13\601-CF13-020\801-CF13-006 10 Fanless, Intel ADL-N N97, 1*DDR5 SO-DIMM, 3*USB 3.2, 3*USB 2.0, 6*COM, 1*DP+1*HDMI+1*LVDS/eDP, 2*M.2, 2*2.5GbE LAN, 1*SATA 3.0, DC-in 12V, Single
911-CF13-007	MS-CF13\601-CF13-030\801-CF13-007 10 Fanless, Intel ADL-N Core i3-N305, 1*DDR5 SO-DIMM, 3*USB 3.2, 3*USB 2.0, 6*COM, 1*DP+1*HDMI+1*LVDS/eDP, 2*M.2, 2*2.5GbE LAN, 1*SATA 3.0, DC-in 12V, Single
911-CF13-008	MS-CF13\601-CF13-040\801-CF13-008 10 Fanless, Intel ADL-N Atom X7425E, 1*DDR5 SO-DIMM, 3*USB 3.2, 3*USB 2.0, 6*COM, 1*DP+1*HDMI+1*LVDS/eDP, 2*M.2, 2*2.5GbE LAN, 1*SATA 3.0, DC 12V, Single
911-CF13-010	MS-CF13\601-CF13-050\801-CF13-010 10 Fanless, Intel ADL-N Core i3-N305, 1*DDR5 SO-DIMM, 3*USB 3.2, 3*USB 2.0, 6*COM, 2*DP +1*LVDS/eDP, 2*M.2, 2*2.5GbE LAN, 1*SATA 3.0, DC-in 12V, Single
916-CF13-001	MS-CF13\606-CF13-080\806-CF13-003 10 Fanless, Intel TWL N150, 1*DDR5 SO-DIMM, 3*USB 3.2, 3*USB 2.0, 6*COM, 2*DP+1*LVDS/eDP, 2*M.2, 2*2.5GbE LAN, 1*SATA 3.0, DC-in 12V, Single
916-CF13-002	MS-CF13\606-CF13-090\806-CF13-004 10 Fanless, Intel TWL N150, 1*DDR5 SO-DIMM, 3*USB 3.2, 3*USB 2.0, 6*COM, 1*DP+1*HDMI+1*LVDS/eDP, 2*M.2, 2*2.5GbE LAN, 1*SATA 3.0, DC-in 12V, Single
916-CF13-003	MS-CF13\606-CF13-100\806-CF13-005 10 Fanless, Intel TWL Core 3 N355, 1*DDR5 SO-DIMM, 3*USB 3.2, 3*USB 2.0, 6*COM, 2*DP+1*LVDS/eDP, 2*M.2, 2*2.5GbE LAN, 1*SATA 3.0, DC-in 12V, Single
916-CF13-004	MS-CF13\606-CF13-110\806-CF13-006 10 Fanless, Intel TWL Core 3 N355, 1*DDR5 SO-DIMM, 3*USB 3.2, 3*USB 2.0, 6*COM, 1*DP+1*HDMI+1*LVDS/eDP, 2*M.2, 2*2.5GbE LAN, 1*SATA 3.0, DC-in 12V, Single

Packing List

Part Number	Description	Quantity
K1D-1012115-V03	SATA Cable with Power, 230mm	1
E21-CF13010-C22	I/O SHIELDING For DP+HDMI	1
E21-CF13020-C22	I/O SHIELDING For DP+DP	

Optional Item

Part Number	Description
K14-1009062-V03	COM Port Cable, 250mm
K14-1018003-V03	COM port cable, 300mm
K1B-3008012-E06	USB 2.0 Cable, 330mm

MSI reserves the right to change the specifications without prior notices.

Specifications

Processor		SKU1	SKU2	SKU3	SKU4	SKU5	SKU6	SKU7	SKU8	SKU9
Processor	CPU	Intel® IOTG Alder Lake-N Processor N97, QC, 12W		Intel® IOTG Alder Lake-N Core i3-N305, QC, 9W up to 15W	Intel® IOTG Alder Lake-N Atom x7425E, QC, 12W	Intel® IOTG Alder Lake-N Core i3-N305, QC, 9W up to 15W	Intel® Twin Lake-N Processor N150, QC, 6W		Intel® Twin Lake-N Core 3 N355, OC, 9W up to 15W	
	Frequency	N97, 2.0GHz, up to 3.6GHz		i3-N305, 1.8GHz, up to 3.8GHz	x7425E, 1.5GHz, up to 3.4GHz	i3-N305, 1.8GHz, up to 3.8GHz	N150, 0.8GHz, up to 3.6GHz		N355, 1.9GHz, up to 3.9GHz	
	L2 Cache	6MB								
	CPU Type	BGA								
	Chipset	Integrated in SoC								
	BIOS	AMI UEFI								
Memory	Technology	Single Channel for DDR5 4800MHz								
	Max. Capacity	Up to 16GB								
	Socket	1 x 262-pin DDR5 SO-DIMM								
Display	Controller	Intel® UHD Graphics								
	Graphic Memory	Depends on CPU								
	LVDS	1 x Dual channel 18/24-bit (Connector shared with eDP)								
	eDP	1 (Connector shared with LVDS)								
	HDMI	N/A	N/A	1	1	N/A	1	1	N/A	1
	DisplayPort	2	2	1	1	2	1	1	2	1
	Multiple Display	3 independent displays								
	Display Interface	LVDS up to 1920 x 1200 @60Hz eDP up to 1920 x 1080 @60Hz DP up to 4096 × 2304 @60Hz		LVDS up to 1920 x 1200 @60Hz eDP up to 1920 x 1080 @60Hz HDMI up to 3840 x 2160 @30Hz DP up to 4096 × 2304 @60Hz		LVDS up to 1920 x 1200 @60Hz eDP up to 1920 x 1080 @60Hz DP up to 4096 × 2304 @60Hz	LVDS up to 1920 x 1200 @60Hz eDP up to 1920 x 1080 @60Hz HDMI up to 3840 x 2160 @30Hz DP up to 4096 × 2304 @60Hz		LVDS up to 1920 x 1200 @60Hz eDP up to 1920 x 1080 @60Hz DP up to 4096 × 2304 @60Hz	LVDS up to 1920 x 1200 @60Hz eDP up to 1920 x 1080 @60Hz HDMI up to 3840 x 2160 @30Hz DP up to 4096 × 2304 @60Hz
Ethernet	Controller	2 x Intel® I226-V 2.5GbE LAN								
Audio	Controller	Realtek® ALC897 Audio Codec (Co-lay ALC888S)								
Super I/O	Controller	Fintek F81966AB-I								
H/W Monitor	Watchdog Timer	256-level Watchdog Timer								
	Smart Fan	Yes								
TPM	Controller	Infineon® SLB 9672VU2.0								
I/O Interface	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								
	GPIO	8-bit (4 x GPI; 4 x GPO), 5V								
	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								
Storage	SATA	1 x SATA 3.0								
Power Supply	DC	DC-in 12V								
	ATX	N/A								
Environment	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								
Form Factor	Dimensions	170 x 170 mm (Mini-ITX)								
	Weight	0.51 kg								
Certification	EMC	CE, FCC Class B, BSMI, RCM, VCCI, UKCA								
Software Platform	OS Support	Windows 10 IoT Enterprise LTSC (64-bit, 21H2, only for ADL-N) Windows 11 IoT Enterprise LTSC (64-bit, 24H2) Linux (Support by request)								

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