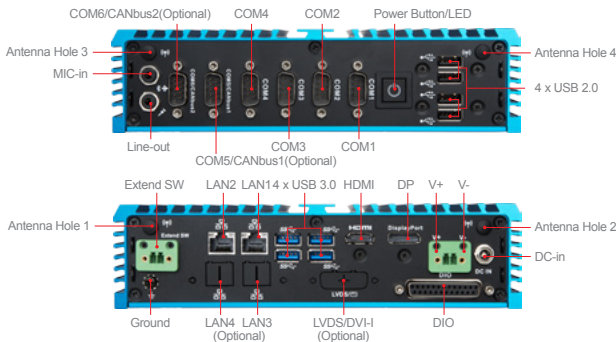


MS-9A89

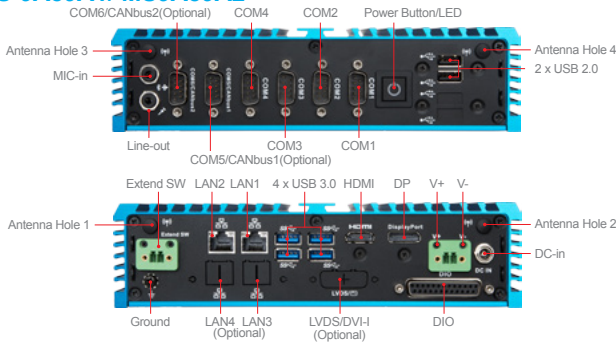
Compact-Size Box PC with Intel® KBL-U or APL-I Series Processor for Ultra Low-Power Fanless Solution



MS-9A89U1



MS-9A89A1/ MS9A89A2



Features

- Ultra low power with fanless design
- Support DDR4 2133MHz SO-DIMM Memory up to 16GB(For KBL-U Series)
- Support DDR3L 1866/1600MHz SO-DIMM Memory up to 8GB(For APL-I Series)
- Support operating temperature: -20~70°C (w/ WT SSD or mSATA For MS-9A89A1 SKU)
- 3 independent displays: HDMI, DP and LVDS/DVI-I(Optional)
- Supports 16-bit GPIO (8*GPI; 8*GPO)
- Dual GbE LAN and 4*USB 3.0 and 4*USB2.0(APL-I Series support 2*USB2.0) and 6*COM
- Dual Mini-PCIe for expansion
- Support DC in 12V~24V
- 4 openings reserved for antennas

Ordering Information

Part Number	Description
Coming soon	

Packing List

Part Number	Description
Coming soon	

Specifications

NEW

		MS-9A89-U1	MS-9A89-A1	MS-9A89-A2	
Processor	CPU	Intel® KBL-U Core™ i3-7100U Processor, DC, 15W	Intel® Atom™ x7 Processor E3950, QC, 12W	Intel® Atom™ x5 Processor E3940, QC, 9W	
	Frequency	2.4GHz	1.6GHz~2.0GHz	1.6GHz~1.8GHz	
	L2 Cache	3MB	2MB		
	CPU Type	BGA			
	Chipset	Integrated in Process	Integrated in SoC Process		
Memory	BIOS	AMI			
	Technology	Single channel for DDR4 2133 MHz	Single channel for DDR3L 1866/1600 MHz		
	Max. Capacity	Up to 16GB	Up to 8GB		
	Socket	1 x 260-pin SO-DIMMs	1 x 204-pin SO-DIMMs		
Display	Controller	Intel® HD Graphics			
	Graphic Memory	Shared system memory up to 1.7 GB SDRAM			
	Multiple Display	3 independent displays			
	Display Interface	HDMI1.4 up to 4096 x 2160 @24Hz DP up to 3840 x 2160 @60Hz LVDS up to 1920 x 1200 @60Hz (optional by cable) DVI-I up to 1920 x 1200 @60Hz (optional by MS-99C0)	HDMI up to 3840 x 2160 @30Hz DP up to 4096 x 2160 @60Hz LVDS up to 1920 x 1200 @60Hz (optional) DVI-I up to 1920 x 1200 @60Hz (optional)		
Ethernet	Controller	1 x Intel® I210-AT GbE LAN 1 x Intel® I219-LM GbE LAN PHY	2 x Intel® I210-IT GbE LAN	2 x Intel® I210-AT GbE LAN	
	Audio	Realtek® ALC887-VD2-CG HD Audio Codec			
H/W Monitor	Watchdog Timer	256-level Watchdog Timer			
	Smart Fan	Yes			
Expansion Slot	Mini-PCIe	2 x Full-size (Mini-PCIe1 Slot w/ NANO SIM-Holder) (Mini-PCIe2 Slot w/ mSATA)			
Storage	SATA	1 x 2.5" HDD/SSD Bay			
	mSATA	1			
I/O Interface	RJ-45	4 (optional 2) (LAN1/2 Standard, LAN3/4 by Option)			
	PoE	2 x 802.11af (Option by Request)			
	Audio	1 x Line-out / 1 x Mic-in			
	USB	4 x USB 3.0, 4 x USB 2.0	4 x USB 3.0, 2 x USB 2.0		
	Serial	6 x COM ports COM1: RS-232/422/485, 0V/5V/12V COM2~6: RS-232, 0V/5V/12V			
	GPIO	16-bit (8*GPI; 8*GPO), 5V			
	CANbus	2 x CAN 2.0B (by BOM option)			
	HDMI	1			
	LVDS	1 (optional)			
	DVI	1 (DVI-I by option)			
Power Supply	DisplayPort	1			
	VGA	N/A			
Environment	Antenna	4 openings reserved for antennas			
	DC Input	DC-in 12V~24V			
	Operating Temperature	-10~45°C (HDD) -10~60°C (w/ WT SSD/mSATA)	-10~45°C (HDD) -20~70°C (w/ WT SSD/mSATA)	-10~45°C (HDD) -10~60°C (w/ WT SSD/mSATA)	
	Operating Humidity	10 ~ 90%, non-condensing			
	Storage Temperature	-20 ~ 80°C			
	Storage Humidity	10 ~ 90%, non-condensing			
	Vibration	Operating: 0.5 Grms, 5-300Hz, 3axes (w/ HDD) Operating: 5 Grms, 5-300Hz, 3axes (w/ SSD)			
	Shock	Operating: 3 G, half sine 11 ms duration (w/ HDD) Operating: 30 G, half sine 11 ms duration (w/ SSD)			
	Form Factor	Dimensions (Wx DxH)	215 x 155 x 55mm		
		Weight	1.55 kg		
Mounting		Wall mount(STD)/DIN-rail mount(STD)/ VESA mount(by BOM option)			
Certification	EMC	CE, FCC, VCCI, RCM, BSMI			
	Safety	BSMI			
Software Platform	OS Support	Windows 10 (64-Bit) Linux Fedora 25 (By Request) Linux Ubuntu 16.04 (By Request)			