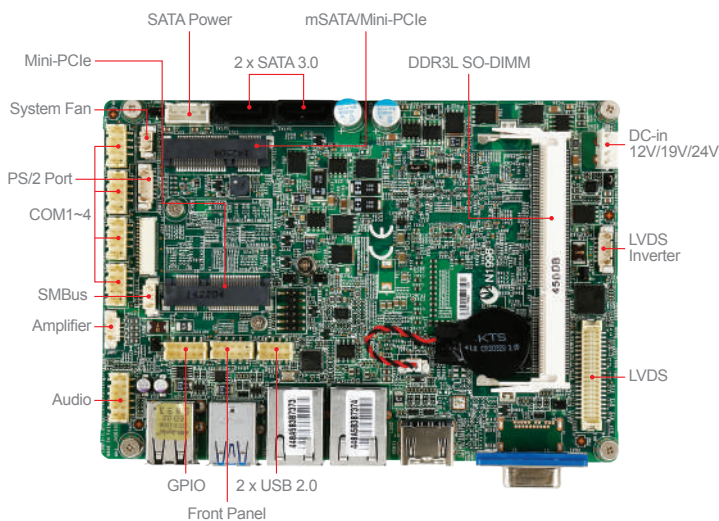
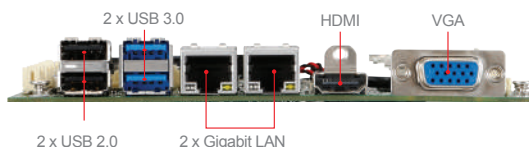


# MS-98F3

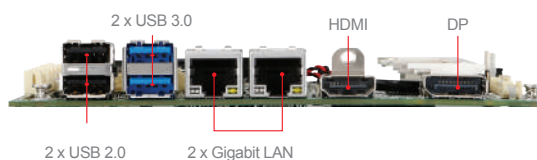
3.5" SBC with Intel® HSW/BDW ULT Series Platform for High-Performance, Low-Power & Fanless Solution



919-98F3-009/919-98F3-011/919-98F3-013  
919-98F3-014/919-98F3-016/919-98F3-017



919-98F3-015/919-98F3-018



## Features

- Intel® HSW/BDW ULT Series Processors
- Supports DDR3L 1600 MHz SO-DIMM memory up to 8GB
- HDMI and VGA/DP and LVDS display interfaces
- Dual GbE LAN, USB 3.0, and 4 COM
- Dual Mini-PCle, dual SATA 3.0, and mSATA

## Ordering Information

Part Number	Description
919-98F3-009	MS-98F3 1609-98F3-110/809-98F3-008 VER11 STD Intel HSW ULT i3-4010U, DDR3 SO DIMM+VGA+HDMI+LVDS+2*Mini-PCle+2*LAN+2*SATA3.0+2*USB3.0+4*USB 2.0+4*COM,DC 12V/19V/24V
919-98F3-011	MS-98F3 1609-98F3-130/809-98F3-008 VER11 OPT:B Intel HSW ULT i5-4300U, DDR3 SO DIMM+VGA+HDMI+LVDS+2*Mini-PCle+2*LAN+2*SATA3.0+2*USB3.0+4*USB 2.0+4*COM,DC 12V/19V/24V
919-98F3-013	MS-98F3 1609-98F3-150/809-98F3-010 VER11 OPT:D Intel BDW ULT i3-5010U, DDR3 SO DIMM+VGA+HDMI+LVDS+2*Mini-PCle+2*LAN+2*SATA3.0+2*USB3.0+4*USB 2.0+4*COM,DC 12V/19V/24V
919-98F3-014	MS-98F3 1609-98F3-160/809-98F3-010 VER11 OPT:E Intel BDW ULT i5-5350U, DDR3 SO DIMM+VGA+HDMI+LVDS+2*Mini-PCle+2*LAN+2*SATA3.0+2*USB3.0+4*USB 2.0+4*COM,DC 12V/19V/24V
919-98F3-015	MS-98F3 1609-98F3-170/809-98F3-010 VER11 OPT:F Intel BDW ULT i3-5010U, DDR3 SO DIMM+DP+HDMI+LVDS+2*Mini-PCle+2*LAN+2*SATA3.0+2*USB3.0+4*USB 2.0+4*COM,DC 12V/19V/24V
919-98F3-016	MS-98F3 1609-98F3-180/809-98F3-010 VER11 OPT:G Intel BDW ULT i5-5350U, DDR3 SO DIMM+VGA+HDMI+LVDS+2*Mini-PCle+2*LAN+2*SATA3.0+2*USB3.0+4*USB 2.0+4*COM,DC 12V/19V/24V
919-98F3-017	MS-98F3 1609-98F3-210/809-98F3-010 VER11 OPT:J Intel BDW ULT i7-5650U, 3.5" DDR3L SO-DIMM, VGA+HDMI+LVDS+2*Mini-PCle+2*LAN+2*SATA3.0+2*USB3.0+4*USB2.0+4*COM+DC-IN 12V/19V/24V, SATA CABLE+SATA POWER CABLE+USB CABLE+COM CALBE+DC POWER CABLE, CD, SINGLE
919-98F3-018	MS-98F3 1609-98F3-220/809-98F3-010 VER11 OPT:K Intel BDW ULT i7-5650U, DDR3 SO DIMM+DP+HDMI+LVDS+2*Mini-PCle+2*LAN+2*SATA3.0+2*USB3.0+4*USB 2.0+4*COM,DC 12V/19V/24V

## Specifications

<b>Processor</b>	CPU	Intel® Core™ i5-4300U/i3-4010U Processors, DC, 15W Intel® Core™ i7-5650U/i5-5350U/i3-5010U/3765U Processors, DC, 15W
	Frequency	i5-4300U, 1.9GHz, up to 2.9GHz i3-4010U, 1.7GHz i7-5650U, 2.2GHz, up to 3.1GHz i5-5350U, 1.8GHz, up to 2.9GHz i3-5010U, 2.1GHz 3765U, 1.9GHz
	L2 Cache	2MB~4MB (Depends on CPU)
	CPU Type	BGA
	Chipset	N/A
<b>Memory</b>	BIOS	AMI
	Technology	Single-channel for DDR3L 1600 MHz
	Max. Capacity	Up to 8GB
	Socket	1 x 204-pin SO-DIMM
<b>Display</b>	Controller	Intel® HD Graphics
	Graphic Memory	Shared system memory up to 1.7 GB SDRAM
	LVDS	Dual channel 18/24-bit
	VGA	1 (optional)
	HDMI	1
	DisplayPort	1 (optional)
	Multiple Display	3 independent displays
<b>Display Interface</b>	VGA up to 1920 x 1200 @60Hz HDMI up to 2560 x 1600 @60Hz LVDS up to 1920 x 1200 @60Hz DP up to 3840 x 2160 @60Hz	
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<b>Ethernet</b>	Controller	1 x Intel® I210-AT GbE LAN 1 x Intel® I218-LM GbE LAN PHY
<b>Audio</b>	Controller	Realtek® ALC887-VD2-CG HD Audio Codec
<b>Super I/O</b>	Controller	Fintek F81866AD-I
<b>H/W Monitor</b>	Watchdog Timer	256-level Watchdog Timer
<b>I/O Interface</b>	USB	4 x USB 2.0 (2 x internal; 2 x rear) 2 x USB 3.0 (2 x rear with USB 2.0 signal)
	Serial	4 x COM ports (internal) COM1: RS-232/422/485, 0V/5V/12V COM2~4: RS-232, 0V/5V/12V
	PS/2	1 (pin header)
	GPIO	8-bits (4 x GPI; 4 x GPO), 5V
	M.2	N/A
<b>Expansion Slot</b>	Mini-PCle	1 x Full-size (w/ mSATA) 1 x Half-size
	SATA	2 x SATA 3.0
<b>Storage</b>	mSATA	1
<b>Power Supply</b>	DC	DC-in 12V/19V/24V
<b>Environment</b>	Operating Temperature	-10 ~ 60°C
	Operating Humidity	10 ~ 90%, non-condensing
	Storage Temperature	-20 ~ 80°C
	Storage Humidity	10 ~ 90%, non-condensing
<b>Form Factor</b>	Dimensions	146 x 102mm (3.5")
	Weight	0.56 kg
<b>Certification</b>	EMC	FCC, CE, RCM, VCCI, BSMI
<b>Software Platform</b>	OS Support	Windows 7 (64-bit) Windows 8.1 (32/64-bit) Windows 10 (64-bit) Linux Fedora 19 (by request) Linux Ubuntu 13.04 (by request)

## Packing List

Part Number	Description	Quantity
G71-SEDC161-N56 (HSW ULT SKU) G71-SEDC162-N56 (BDW ULT SKU)	Driver DVD	1
K10-3002145-V03	DC Power Cable, 120mm	1
K14-1009062-V03	COM Port Cable, 250mm	1
K1B-3008034-V03	USB Cable, 150mm	1
K1D-1012064-V03	SATA Cable with Power, 200mm	1
K1D-3008006-V03	SATA Cable, 300mm	1

Semi-Tugged Terminal  
POS System  
HMI Panel PC  
Embedded System  
Embedded Board  
COM Express Board  
Oseven Board  
Pico-ITX Board  
3.5" Board  
EPIC Board  
PiCMG 1.0 Board  
Mini-ITX Board  
Micro-ATX Board  
ATX Board  
Mini-PCle Module