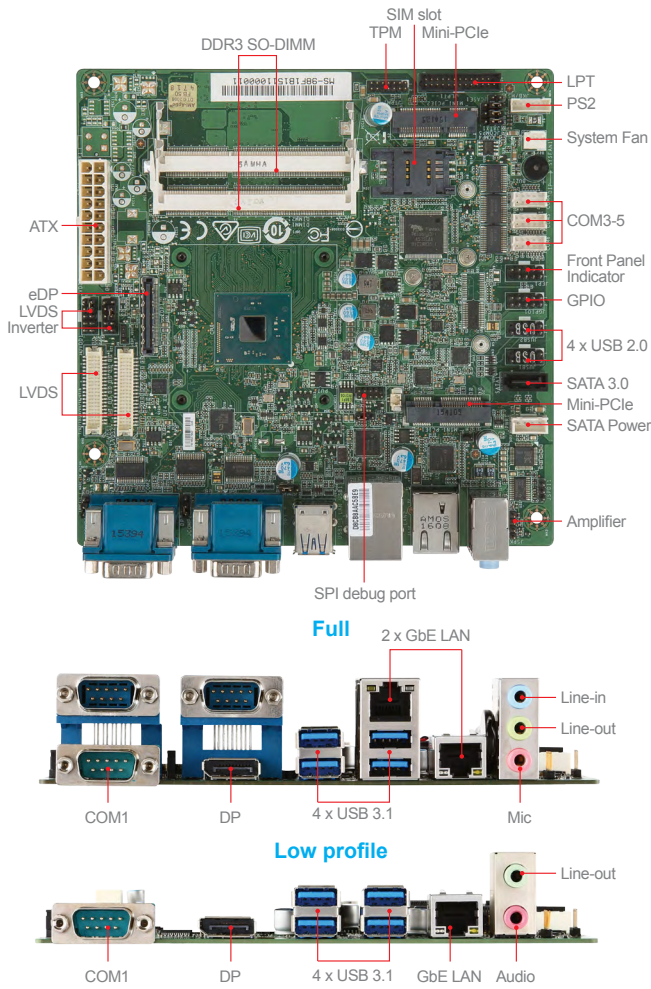


# MS-98F1

Mini-ITX with Intel® Atom™ Braswell Platform for Rich I/O ports, Multi-Displays, Low-Power, Fanless & DC/ATX Solution



## Features

- Intel® Braswell Series SoC
- 2 DDR3L 1600/1333 MHz SODIMM slots up to 8GB
- Triple independent displays: DP, LVDS, LVDS(eDP by option)
- 2 GbE LAN with RJ-45
- 1 Mini-PCle (Full/Half size, with SIM Holder), 1 Mini-PCle (Full/Half size, with mSATA) slots
- mSATA, SATA 3.0 for storage SATA RAID 0/1
- 4 USB 3.2 Gen 1, 4 USB 2.0, 6 COM(2 RS485, 4 ports by option), GPIO, LPT, PS/2, Audio, S/PDIF, System FAN
- Onboard TPM 1.2 (by option)
- 2 LVDS for dual independent panels
- DC-IN 12V/19V/24V (ATX Power by option)

## Ordering Information

Part Number	Description
919-98F1-104	MS-98F1\609-98F1-040\809-98F1-105\VER 11 OPT:D Intel N3160,2*DDR3L,1*DP,1*LVDS,1*LVDS colay eDP,6*COM,4*USB3.0, 4*USB2.0, 2*Gbe LAN,1*SATA3.0, 2*Mini-PCle,ATX Power,1*SATA cable, 1*I/O Shield, Bulk, For channel
919-98F1-103	MS-98F1\609-98F1-030\809-98F1-104\VER 11 OPT:C Intel N3060,2*DDR3L,1*DP,1*LVDS,1*LVDS colay eDP,4*COM,4*USB3.0, 4*USB2.0, 1*Gbe LAN,1*SATA3.0, 2*Mini-PCle,DC Power, 1*SATA cable,1*Power cable,1*I/O Shield,Bulk, For Channel

## Packing List

Part Number	Description
K1D-1012064-V03	SATA CABLE
K10-3004215-V03	DC POWER CABLE For OPT: C
E21-98F1010-C22	I/O SHIELDING For OPT: C
E21-98F1020-C22	I/O SHIELDING For OPT: D

## Specifications

<b>Processor</b>	CPU	Intel® Pentium processor N3710, QC, 6W Intel® Celeron processor N3160, QC, 6W Intel® Celeron processor N3060, DC, 6W Intel® Celeron processor N3010, DC, 4W
	Frequency	N3710, 1.6 GHz, up to 2.56 GHz N3160, 1.6 GHz, up to 2.24 GHz N3060, 1.6 GHz, up to 2.48 GHz N3010, 1.04 GHz, up to 2.24 GHz
	L2 Cache	2MB
	CPU Type	BGA
	Chipset	Integrated
<b>Memory</b>	BIOS	AMI
	Technology	Dual-channel DDR3L 1333/1600 MHz
	Max. Capacity	Up to 8GB
	Socket	2 x 204-pin SO-DIMM
<b>Display</b>	Controller	Intel® HD Graphics
	Graphic Memory	Depends on CPU
	LVDS	2 x dual channel 18/24-bit
	eDP	1 (colay with LVDS)
	DisplayPort	1
<b>Ethernet</b>	Multiple Display	3 independent displays
	Display Interface	LVDS up to 1920 x 1200 @60Hz DP up to 3840 x 2160 @30Hz eDP up to 2560 x 1600 @60Hz
<b>Ethernet</b>	Controller	2 x Intel® i210-AT GbE LAN 1 x Intel® i210-AT GbE LAN
<b>Audio</b>	Controller	Realtek® ALC887 co-layer ALC888S
<b>Super I/O</b>	Controller	Fintek F81866AD-I
<b>H/W Monitor</b>	Watchdog Timer	256-level Watchdog Timer
	Smart Fan	Yes
<b>TPM</b>	Controller	Pin header (default) Infineon SLB9635TT 1.2 (by BOM option) Pin header
	<b>I/O Interface</b>	USB
Serial		2 x USB 2.0 (internal) 4 x USB 3.1 Gen 1 (rear)
<b>Expansion Slot</b>	COM1&5: RS-232/422/485, 0V/5V/12V COM2~4: RS-232, 0V/5V/12V COM6: RS-232 w/o power	4 x COM ports (COM1~3: rear, COM4~6: internal) COM1&5: RS-232/422/485, 0V/5V/12V COM4: RS-232, 0V/5V/12V COM6: RS-232 w/o power
	Parallel	1
	PS/2	1 (pin header)
	GPIO	8-bits (4 x GPI; 4 x GPO), 5V
	M.2	N/A
<b>Storage</b>	Mini-PCle	2 x Full/Half-size (one w/ SIM holder & one w/mSATA)
	SATA	1 x SATA 3.0
<b>Power Supply</b>	mSATA	1 (support by mini PCIe slot )
	CompactFlash	N/A
<b>Environment</b>	DC	DC-in 12V/19V/24V
	ATX	ATX Power 20P
<b>Form Factor</b>	Operating Temperature	0 ~ 60°C Note: Thermal w/ Airflow:0.7m/s
	Operating Humidity	10 ~ 90%, non-condensing
	Storage Temperature	-20 ~ 80°C
<b>Certification</b>	Storage Humidity	10 ~ 90%, non-condensing
	Dimensions	170 x 170 mm (Mini-ITX)
<b>Software Platform</b>	Weight	0.37 kg
	EMC	FCC, CE, RCM, VCCI, BSMI
<b>Optional Item</b>	OS Support	Windows 7 (32/64-bit) Windows 8.1 (64-bit) Windows 10 (64-bit) Linux (Support by request)
	Part Number	Description
K14-1018003-V03	COM port cable, 300mm	
K1B-3008012-E06	USB 2.0 Cable, 330mm	