



Design
For
Innovation

2018

Industrial Motherboards & Embedded SBCs

DFI's Innovative Embedded Boards
for Intelligent Applications



DFI's Innovative Embedded Boards for Intelligent Applications

DFI's embedded boards (ranging from ultra-small Pico-ITX to full-function ATX motherboards) provide service to a broad range of embedded applications based on cutting-edge platforms and technologies

Embedded SBCs & Industrial Motherboards Product Overview

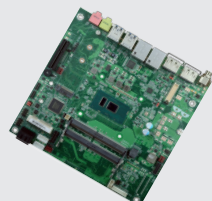
Embedded SBCs



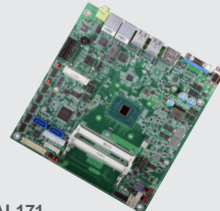
KU551

Form Factor	Processor	Platform	Model	Index
1.8"	Intel Atom® E3900	Atom	ALF51	P6-P7
	Intel Atom® E3900	Atom	AL051, AL053	
2.5"	Intel® Pentium®/Celeron® N3000	Atom	BW051	
	Freescale i.MX6 Series	ARM	FS051, FS053	
3.5"	7th Gen Intel® Core™	ULT	KU551	P7-P8
	6th Gen Intel® Core™	ULT	SU551	
	4th Gen Intel® Core™	ULT	HU551/HU553	
	Intel Atom® E3900	Atom	AL551, AL553	
	Intel® Pentium®/Celeron® N3000	Atom	BW551	
4"	Intel Atom® E3800	Atom	BT551/BT553	P8
	AMD® Embedded G-Series	AMD	OT951	
	6th Gen Intel® Core™	ULT	SU251/SU253	
	Intel Atom® E3800	Atom	BT253, BT259	

Mini-ITX



KU171/173



AL171

Processor	Platform	Chipset	Model	Index
7th Gen Intel® Core™	ULT	-	KU171/KU173	P9-P10
6th Gen Intel® Core™	Desktop	Q170	SD100-Q170, SD101/SD103-Q170	
	ULT	H110	SD100-H110, SD101/SD103-H110	
4th Gen Intel® Core™	ULT	-	SU171/SU173	P10-P11
	Desktop	H81	HD100-H81, HD101-H81, HD171/HD173-H81	
	Mobile	QM87	HM100-QM87, HM101/HM103-QM87	
3rd Gen Intel® Core™	Mobile	HM86	HM100-HM86, HM101/HM103-HM86	P11
		ULT	-	
2nd Gen Intel® Core™	Mobile	QM77	CR100-CRM	P12
	Desktop	HM76	CR101-D	
Intel Atom® E3900	Atom	Q67	SB100-NRM	P13
		H61	SB102-D	
Intel Atom® E3800	Atom	QM67	HR100-CRM	
Intel Atom® E3900	Atom	-	AL170, AL171/AL173	
Intel® Pentium®/Celeron® N3000	Atom	-	BW171/BW173	
Intel Atom® E3800	Atom	-	BT100, BT101/BT103, BT160, BT161	
2nd Gen AMD® Embedded R-Series	AMD	A77E	BE170, BE171/BE173	
AMD® Embedded G-Series SoC	AMD	-	KB160, KB161	
AMD® Embedded R-Series	AMD	A70M	CM100-C	

microATX



KD330-Q170

Processor	Platform	Chipset	Model	Index	
8th Gen Intel® Core™	Desktop	Q370	CS330-Q370	P14	
		H310	CS330-H310		
7th Gen Intel® Core™	Workstation	C236	KD331-C236	P14-P15	
	Desktop	Q170	KD331-Q170, KD330-Q170, KD300-Q170		
		H110	KD330-H110, KD300-H110		
6th Gen Intel® Core™	Workstation	C236	SD331-C236	P15	
	Desktop	Q170	SD331-Q170, SD330-Q170		
4th Gen Intel® Core™	Desktop	H110	SD330-H110	P16	
		Workstation	C226		DL310-C226
		Q87	HD310-Q87, HD330-Q87		
3rd Gen Intel® Core™	Desktop	H81	HD330-H81, HD332-H81	P17	
		Q77	MB330-CRM, MB331-CRM		
2nd Gen Intel® Core™	Desktop	Q67	SB330-CRM, SB331-IPM	P17	
		B65	SB300-C		
		H61	SB331-D, SB332-C, SB336-Ni		



ATX

SD630-H110

Processor	Platform	Chipset	Model	Index
Intel® Xeon® E5	Server-Grade	C622	PL610-C622	P18
		C602J/C604	RL830-C604/C602	
8th Gen Intel® Core™	Desktop	Q370	CS630-H310	P19
		H310	CS630-Q370	
7th Gen Intel® Core™	Workstation	C236	KD631-C236	P20-21
	Desktop	Q170	KD631-Q170, KD600-Q170	
6th Gen Intel® Core™	Workstation	C236	SD631-C236	P20-21
	Desktop	Q170	SD631-Q170	
4th Gen Intel® Core™	Workstation	H110	SD630-H110	P20-21
		C226	DL631-C226	
3rd Gen Intel® Core™	Desktop	Q87	HD631-Q87	P20-21
		H81	HD620-H81, HD630-H81, HD632-H81, HD636-H81CS	
2nd Gen Intel® Core™	Workstation	C216	CL630-CRM	P20-21
		Q77	MB630-CRM	
2nd Gen Intel® Core™	Desktop	Q67	SB630-CRM	P20-21
		B65	SB600-C, SB601-C	

Peripherals

EXT-RS232

Type	Model	Index
Proprietary Expansion Modules	EXT-DP, SDVO-LVDS	P22
	EXT-RS232, EXT-RS485, MPE-EXTB, MPE-EXTF, MPE-SATA	
DC to DC Converters	X102-DC12, X102-DC24, X102-DC30, X103-DC36	P22
Riser Cards	RISER-2PE4, RISER-PE16, X100-2P1M, X100-3PE2	P22
	H300-2E, H300-2P1E, H300-3P1M	

DFI Industrial Chassis

ES520 For 3.5" SBC DT122 For Mini-ITX WM343 For microATX RM641 For microATX/ATX

Rugged Design

- Industrial-rated components with high MTBF over 100,000 hrs
- Extended operating temperatures
- High ESD protection for I/O ports
- Signal integrity measurement
- Wide range power design
- 100% Japanese-made solid capacitor
- Power hot plug protection for DC-in type SBC and Industrial Motherboards



Software Integration

- Embedded BIOS and OS customization services
- Windows licensing offerings
- Android, Linux distribution (Yocto/Ubuntu/CentOS/Debian)
- Embedded API
(Hardware Monitor, SMBus, I²C, Brightness Control, GPIO, Watchdog)
- Remote management utility

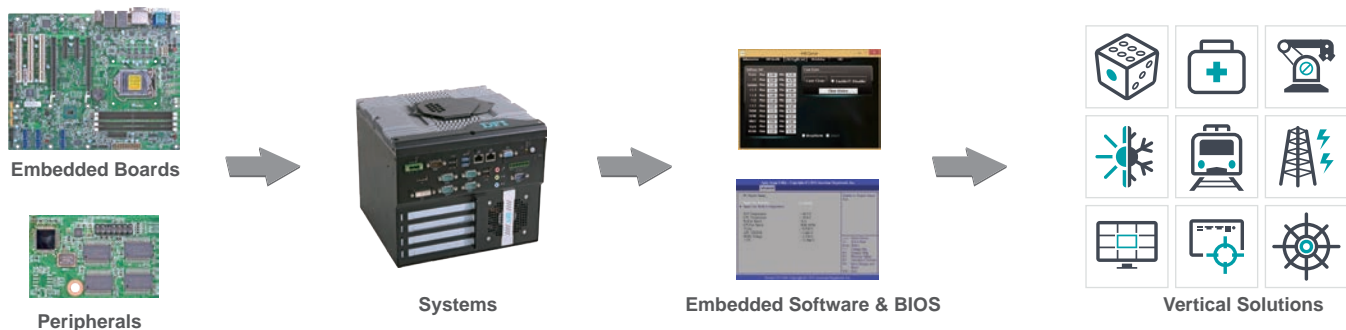


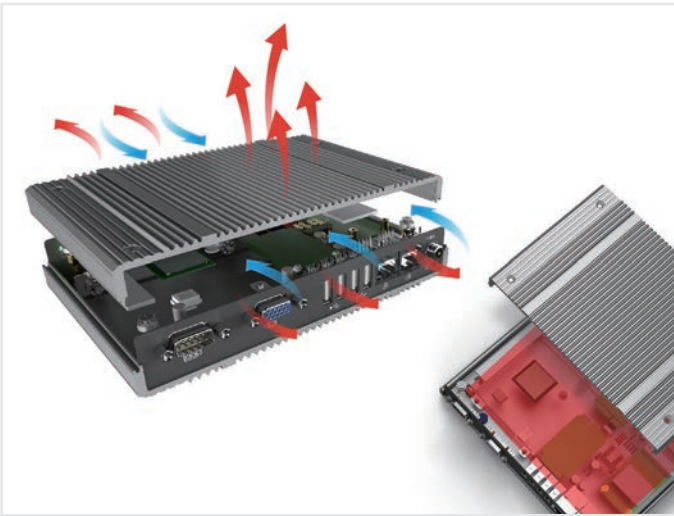
Embedded Total Solution

- Express customization service: 30 days (NRE cost: project based)
- Strict revision control
- Long product life cycle support
- High volume OEM/ODM production capabilities



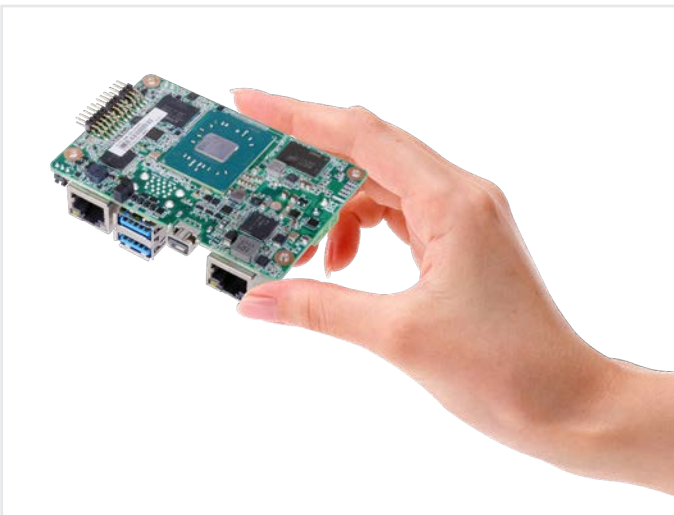
DFI Provides a Total Solution Designed for Your Embedded Applications





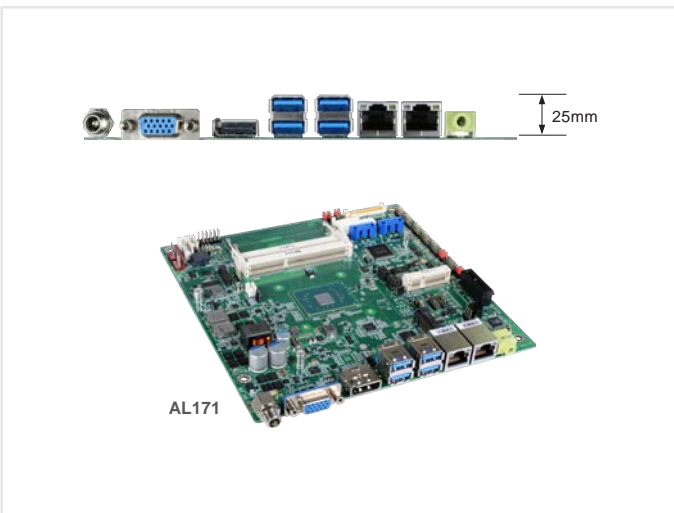
Easy System Integration

- Optional peripheral: DC power module, Wi-Fi, Cellular, GPS module
- Optimized low profile thermal solution: fanless for ULT and Atom based platform
- Optional heatspreader for 4", 3.5", Pico-ITX SBC with efficient thermal dissipation
- Unified mechanical design for rear I/O location, screw hole, and connector type



The Smallest DFI 1.8" SBC

- 1.8" small form factor fits space-limited applications
- All-in-one 100% readiness standalone SBC
- Ultra low power Fanless embedded SBC
- Perfectly fits gateway application with a few I/O requirements



Thin Mini-ITX

- Thinner than general Mini-ITX, and only 25mm in height
- Equipped with a variety of I/O connectivity
- Features mSATA, Mini PCIe, LVDS and built-in DC power connector
- Designed for slim panel PCs, POS systems, portable medical devices, and All-in-One systems

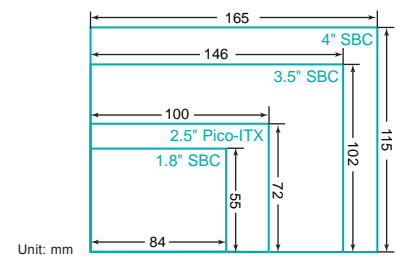
Embedded SBCs

Ultra-Small & Low-Power Solutions



Features

DFI's single board computers (SBC) support low power consumption and fanless design with rich I/O connectivity in a small size. In addition, we provide a wide range of form factors covering from: 1.8" SBC (84mm x 55mm), 2.5" Pico-ITX (100 x 72 mm), 3.5" SBC (146 x 102 mm), to 4" SBC (165 x 115 mm) in order to target space-limited embedded applications like POS, KIOSK, digital signage, and surveillance.



Model Name		ALF51	AL053	AL051	BW051
Platform		Atom			
System	Processor	Intel Atom® E3900	Intel Atom® E3900	Intel Atom® E3900	Intel® Pentium®/Celeron® N3000
	Socket	BGA 1296	BGA 1296	BGA 1296	BGA 1170
	Max. Speed	1.3~1.8GHz	1.1~2.4GHz	1.1~2.4GHz	2.24~2.56GHz
	TDP	6.5W/9.5W	6.5W/9.5W/12W	6W/9.5W/12W	4W/5W/6W
	Cache	2M	2M	2M	2M
	Chipset	-	-	-	-
Memory	BIOS	Insyde SPI 128Mbit			
	Technology	Single Channel LPDDR4 2400MHz	Single Channel DDR3L 1867MHz	Single Channel DDR3L 1867MHz	Single Channel DDR3L 1600MHz
	Max. Capacity	4GB	8GB	8GB	8GB
Graphics	Socket	-			
	Connector	1 Mini DP++	1 VGA, 1 LVDS	1 mini DP, 1 VGA, 1 LVDS	1 VGA*/HDMI, 1 LVDS
Expansion	PCIe, PCI	-			
	Mini PCIe	1 Mini PCIe	1 Mini PCIe, 1 M.2, 1 E I/O(opt.)	1 Mini PCIe, 1 M.2	1 Mini PCIe, 1 mSATA, 1 E I/O(opt.)
	SIM	-			
Audio	Audio Codec	-	Realtek ALC888	Realtek ALC262	Realtek ALC888
Ethernet	Controller	2 Intel® I211AT	1 Intel® I211AT	1 Intel® I211	1 Intel® I211
	Ethernet (GbE)	2	1	2	1
Rear I/O	Serial	-			
	USB	2 USB 3.0	2 USB 3.0	2 USB 3.0	2 USB 3.0
	Display	1 Mini DP++	1 VGA	1 mini DP/VGA	1 VGA*/HDMI
	Audio	-			
	PS/2	-			
	Internal I/O	Serial	1 RS-232/422/485	1 RS-232/422/485	1 RS-232/422/485
USB	1 USB 2.0	2 USB 2.0	2 USB 2.0	2 USB 2.0	
Display	-				
Audio	-	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out	
SATA	-	1 SATA 3.0	1 SATA 3.0	1 SATA 3.0	
DIO	8-bit DIO	8-bit DIO	8-bit DIO	8-bit DIO	
LPC**	-				
SMBus	1	1	1	1	
TPM / iAMT	FTPM				
Power	12V DC-in	9-36V DC-in	12V DC-in	12V DC-in	
Operating Temperature	0~60°C/-20~70°C/-40~85°C				

*Populated by default

**Supports LPC EXT-RS232/RS485 module



Model Name		FS051	FS053
Platform		ARM	ARM
System	Processor	Freescale i.MX6 Series	Freescale i.MX6 Series
	Socket	-	-
	Max. Speed	1.0GHz	1.0GHz
	TDP	-	-
	Cache	-	-
	Chipset	-	-
Memory	Technology	Single Channel DDR3L 1600MHz	Single Channel DDR3L 1600MHz
	Max. Capacity	1GB/2GB	1GB/2GB
	Socket	SDRAM Memory down	SDRAM Memory down
Graphics	Connector	1 HDMI, 1 LVDS	1 HDMI, 1 LVDS
	PCIe, PCI	-	-
Expansion	Mini PCIe	1 Mini PCIe	1 Mini PCIe
	SIM	1 SD, 1 SIM (opt.)	1 SD
Audio	Audio Codec	-	-
Ethernet	Controller	1 ATHEROS AR8033	1 ATHEROS AR8033
	Ethernet (GbE)	1	2
Rear I/O	Serial	1 RS-485	1 RS-485
	USB	2 USB 2.0	2 USB 2.0
	Display	1 HDMI	1 HDMI
	Audio	-	-
	PS/2	-	-
Internal I/O	Serial	1 RS-232/422/485, 1 RS-232	1 RS-232/422/485
	USB	2 USB 2.0, 1 USB 2.0 OTG	1 USB 2.0, 1 USB 2.0 OTG
	Display	1 LVDS	1 LVDS
	Audio	-	-
	SATA	1 SATA 2.0(Quad processor only)	1 SATA 2.0(Quad processor only)
	DIO	8-bit DIO	8-bit DIO
	LPC**	-	-
SMBus	1 CANBus	-	
TPM / iAMT		-	-
Power		5V DC-in	9-36V DC-in
Operating Temperature		0-60°C/-20-70°C (opt.)	0-60°C/-20-70°C (opt.)



Model Name		AL551	AL553	KU551	SU551
Platform		Atom	Atom	ULT	ULT
System	Processor	Intel Atom® E3900	Intel Atom® E3900	7th Gen Intel® Core™	6th Gen Intel® Core™
	Socket	BGA 1296	BGA 1296	BGA 1356	BGA 1356
	Max. Speed	1.1-2.5GHz	1.1-2.5GHz	2.2-3.9GHz	2.0-3.4GHz
	TDP	6.5W/9.5W/12W	6.5W/9.5W/12W	15W	15W
	Cache	2M	2M	2M/3M/4M	2M/3M/4M
	Chipset	-	-	-	-
Memory	Technology	Insyde SPI 64Mbit	Insyde SPI 64Mbit	Insyde SPI 128Mbit	Insyde SPI 128Mbit
	Max. Capacity	8GB	8GB	16GB	8GB
	Socket	1 SODIMM	1 SODIMM	1 SODIMM	1 SODIMM
Graphics	Connector	1 VGA, 1 LVDS, 1 DP++	1 VGA, 1 LVDS, HDMI	1 VGA/DDI, 1 LVDS/eDP, 1 DP++/DDI	1 VGA, 1 LVDS, 1 DP++
	PCIe, PCI	-	-	-	-
Expansion	Mini PCIe	1 Mini PCIe, 1 M.2, 1 E I/O(op.)	1 Mini PCIe, 2 M.2	1 Mini PCIe, 1 M.2, 1 E I/O(opt.)	2 Mini PCIe
	SIM	-	-	-	1(opt.)
Audio	Audio Codec	Realtek ALC262	Realtek ALC262	Realtek ALC888	Realtek ALC888
Ethernet	Controller	1 Intel® I211, 1 Intel® I210	1 Intel® I211(or 1 Intel® I210)	1 Intel® I210, 1 Intel® I219	1 Intel® I210, 1 Intel® I219
	Ethernet (GbE)	2	2	2	2
Rear I/O	Serial	-	-	-	-
	USB	2 USB 3.0, 2 USB 2.0, 1 USB OTG(op.)	2 USB 3.0, 2 USB 2.0	4 USB 3.0	4 USB 3.0
	Display	1 VGA, 1 DP++	1 VGA, 1 HDMI	1 VGA, 1 DP++	1 VGA, 1 DP++
	Audio	-	-	-	-
	PS/2	-	-	-	-
Internal I/O	Serial	2 RS-232/422/485	1 RS-232/422/485	2 RS-232/422/485	2 RS-232/422/485, 2 RS-232
	USB	2 USB 2.0	2 USB 2.0	2 USB 2.0	2 USB 2.0
	Display	1 LVDS	1 LVDS	1 LVDS	1 LVDS
	Audio	Mic-in, Line-out, Speaker Out(opt.)	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out
	SATA	1 SATA 3.0	1 SATA3.0	1 SATA 3.0	2 SATA 3.0
	DIO	8-bit DIO	8-bit DIO	8-bit DIO	8-bit DIO
	LPC**	-	-	-	-
SMBus	1	1	1	1	
TPM / iAMT		TPM (opt.)	FTPM2.0	iAMT 11.6 (Core i5/i7 only)	-
Power		12V DC-in	9-36V DC-in	12V DC-in	12V DC-in
Operating Temperature		0°C-60°C/-20°C-70°C/-40-85°C	0°C-60°C/-20°C-70°C/-40°Cto 85°C	0-60°C/-20-70°C (opt.)	0°C-60°C

*Populated by default

**Supports LPC EXT-RS232/RS485 module



Model Name		BT551/BT553	BW551	HU551/HU553	OT951
Platform		Atom	Atom	ULT	AMD G-Series
System	Processor	Intel Atom® E3800	Intel® Pentium®/Celeron® N3000	4th Gen Intel® Core™	AMD® Embedded G-Series
	Socket	BGA 1170	BGA 1170	BGA 1168	FT1 413
	Max. Speed	1.46~2.42GHz	2.24~2.56GHz	1.6~3.3GHz	1.0~1.65GHz
	TDP	5W/7W/10W	4W/5W/6W	15W	9W/18W
	Cache	0.5M/1M/2M	2M	2M/3M/4M	2x 512KB
	Chipset	-	-	-	AMD® A50M
BIOS		Insyde SPI 64Mbit	Insyde SPI 64Mbit	AMI SPI 64Mbit	AMI SPI 64Mbit
Memory	Technology	Dual Channel DDR3L 1066/1333MHz	Single Channel DDR3L 1600MHz	Single Channel DDR3L 1333/1600MHz	Single Channel DDR3 1066/1333MHz
	Max. Capacity	2GB/4GB	8GB	8GB	8GB
	Socket	Memory down	1 SODIMM	1 SODIMM	1 SODIMM
Graphics	Connector	1 VGA, 1 LVDS, 1 DP	1 VGA, 1 LVDS, 1 DP++	1 LVDS, 2 DP*/2 HDMI	1 VGA, 1 LVDS, 1 HDMI
Expansion	PCIe, PCI	-	-	-	-
	Mini PCIe	1 Mini PCIe	1 Mini PCIe, 1 mSATA	2 Mini PCIe	1 Mini PCIe
	SIM	-	1(opt.)	1	-
Audio	Audio Codec	Realtek ALC888	Realtek ALC888	Realtek ALC888	Realtek ALC886
Ethernet	Controller	2 Intel® I210	2 Intel® I211	1 Intel® I210, 1 Intel® I218	2 Realtek RTL8111DL
Rear I/O	Ethernet (GbE)	2	2	2	2
	Serial	-	-	-	-
	USB	1 USB 3.0, 1 USB 2.0	4 USB 3.0	4 USB 3.0	2 USB 2.0
	Display	1 VGA, 1 DP	1 VGA, 1 DP++	2 DP*/2 HDMI	1 VGA, 1 HDMI
	Audio	-	-	-	-
	PS/2	-	-	-	-
	Internal I/O	Serial	1 RS-485, 2 RS-232	2 RS-232/422/485, 2 RS-232	1 RS-485, 2 RS-232
USB	4 USB 2.0	2 USB 2.0	2 USB 2.0	2 USB 2.0	
Display	1 LVDS	1 LVDS	1 LVDS	1 LVDS	
Audio	Front Audio	Mic-in, Line-out	Front Audio	Front Audio	
SATA	1 SATA 2.0	1 SATA 3.0	2 SATA 3.0 (RAID)	1 SATA 3.0	
DIO	8-bit DIO	8-bit DIO	8-bit DIO	8-bit DIO	
LPC**	-	-	-	-	
SMBus	1	1	1	-	
TPM / iAMT	TPM (opt.)	TPM (opt.)	TPM (opt.), iAMT 9.5	TPM (opt.)	
Power	12V/15~36V DC-in	12V DC-in	12V/15~36V DC-in	12V DC-in	
Operating Temperature	0°C~60°C/-20°C~70°C/40°C~85°C	0°C~60°C	0°C~60°C	0°C~60°C	



Model Name		SU251/SU253	BT253	BT259
Platform		ULT	Atom	Atom
System	Processor	6th Gen Intel® Core™	Intel Atom® E3800	Intel Atom® E3800
	Socket	BGA 1356	BGA 1170	BGA 1170
	Max. Speed	2.0~3.4GHz	1.33~2.41GHz	1.91GHz~2.41GHz
	TDP	15W	4.3W/6W/10W	10W
	Cache	2M/3M/4M	1M/2M	2M
	Chipset	-	-	-
BIOS		Insyde SPI 128Mbit	AMI SPI 64Mbit	AMI SPI 64Mbit
Memory	Technology	Dual Channel DDR4 2133MHz	Single Channel DDR3L 1066/1333MHz	Single Channel DDR3L 1333MHz
	Max. Capacity	4GB/8GB	2GB/4GB	2GB/4GB
	Socket	Memory down	Memory down (ECC/non-ECC)	Memory down
Graphics	Connector	1 VGA, 1 LVDS*/eDP, 1 DP**/HDMI	1 LVDS, 1 VGA*/DVI, 1 HDMI	1 VGA, 1 DVI-I (opt.)
Expansion	PCIe, PCI	-	-	-
	Mini PCIe	2 Mini PCIe	2 Mini PCIe, 1 mSATA	2 Mini PCIe
	SIM	-	1	-
Audio	Audio Codec	Realtek ALC888	Realtek ALC888	-
Ethernet	Controller	1 Intel® I210, 1 Intel® I219	2 Intel® I210	4 Intel® I210
Rear I/O	Ethernet (GbE)	2 (Rear)	2 (Rear)	4
	Serial	2 RS-232/422/485 (Front), 2 RS-232 (1 Front, 1 Rear)	4 RS-232/422/485 (3 Front, 1 Rear)	3 RS232/422/485
	USB	4 USB 3.0 (Rear)	1 USB 3.0 (Front), 4 USB 2.0 (Rear)	4 USB 2.0, 1 USB 3.0
	Display	1 VGA (Front), 1 DP***/HDMI(Rear)	1 HDMI (Front), 1 VGA* / 1 DVI (Rear)	1 VGA, 1 DVI-I (opt.)
	Audio	-	Line-out (opt.) (Rear)	-
	PS/2	-	-	-
	Internal I/O	Serial	2 RS-232	2 RS-232
USB	2 USB 2.0	1 USB 2.0	1 USB 2.0	
Display	1 LVDS	1 LVDS	-	
Audio	Front Audio	Mic-in	-	
SATA	2 SATA 3.0	1 SATA 2.0	1 SATA 2.0, 1 SATA Power	
DIO	8-bit DIO	-	8-bit DIO	
LPC**	-	-	1	
SMBus	1	-	1	
TPM / iAMT	-	TPM (opt.)	TPM (opt.)	
Power	12V/15~36V DC-in	16~24V DC-in	16~24V DC-in	
Operating Temperature	0°C~60°C	-20°C~85°C, 0°C~85°C, 0°C~60°C	0°C~60°C	

*Populated by default

**Supports LPC EXT-RS232/RS485 module

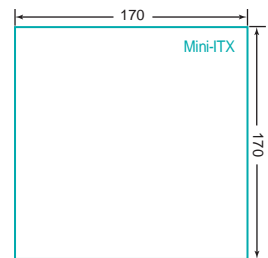
Mini-ITX

Compact & High-Performance Solutions



Features

DFI's embedded Mini-ITX motherboard is designed with a variety of I/O connectors, passive cooling option, and DC input features in a small form factor measuring to only 170 x 170 mm. This compact and highly integrated platform delivers low power consumption of less than 100 Watts and provides the reserved expansion slot; which makes it an ideal solution for the computing-intensive markets such as POS, gaming, and digital signage, etc.



7/6th Gen Intel Core



Thin Mini-ITX



Q170



H110



Thin Mini-ITX Q170

Model Name		KU171/KU173	SD100-Q170	SD100-H110	SD101/SD103-Q170
Platform		ULT	Desktop	Desktop	Desktop
System	Processor	7th Gen Intel® Core™	7/6th Gen Intel® Core™	7/6th Gen Intel® Core™	7/6th Gen Intel® Core™
	Socket	BGA 1366	LGA 1151	LGA 1151	LGA 1151
	Max. Speed	2.2~3.9GHz	2.4~4.0GHz	2.4~4.0GHz	2.4~4.0GHz
	TDP	15W	35W/47W/65W	35W/47W/65W	35W/47W/65W
	Cache	2M/3M/4M	2M/3M/4M/6M/8M	2M/3M/4M/6M/8M	2M/3M/4M/6M/8M
	Chipset	-	Intel® Q170	Intel® Q170	Intel® Q170
Memory		Insyde SPI 128Mbit			
Memory	Technology	Dual Channel DDR4 1866/2133MHz	Dual Channel DDR4 1866/2133MHz	Dual Channel DDR4 1866/2133MHz	Dual Channel DDR4 1866/2133MHz
	Max. Capacity	32GB	32GB	32GB	32GB
	Socket	2 SODIMM	2 SODIMM	2 SODIMM	2 SODIMM
Graphics	Connector	1 LVDS*+eDP, 2 DP++	1 VGA, 1 DVI, 1 LVDS, 1 DP++	1 VGA, 1 DVI, 1 LVDS, 1 DP++	1 LVDS, 1 DVI, 1 HDMI*/DP
	PCIe, PCI	1 PCIe x4	1 PCIe x16	1 PCIe x16	1 PCIe x4
Expansion	Mini PCIe	1 Mini PCIe, 1 M.2 (M key)	1 Mini PCIe	1 Mini PCIe	2 Mini PCIe
	SIM	-	-	-	-
Audio	Audio Codec	Realtek ALC888			
Ethernet	Controller	1 Intel® I210AT, 1 Intel® I219LM	1 Intel® I210AT, 1 Intel® I219LM	1 Intel® I211AT, 1 Intel® I219V	1 Intel® I210AT, 1 Intel® I219LM
	Ethernet (GbE)	2	2	2	2
Rear I/O	Serial	-	1 RS-232	1 RS-232	-
	USB	4 USB 3.0	4 USB 3.0, 2 USB 2.0	4 USB 3.0, 2 USB 2.0	4 USB 3.0
	Display	2 DP++	1 VGA, 1 DVI, 1 DP++	1 VGA, 1 DVI, 1 DP++	1 DVI, 1 HDMI*/DP
	Audio	1 Line-out, 1 Mic-in	Mic-in, Line-in (opt.), Line-out	Mic-in, Line-in (opt.), Line-out	Mic-in, Line-out
	PS/2	-	1	1	-
	Internal I/O	Serial	1 RS-232/422/485, 1 RS-232	1 RS-232/422/485, 2 RS-232	1 RS-232/422/485, 2 RS-232
USB		4 USB 2.0	4 USB 2.0	2 USB 2.0	4 USB 2.0
Display		1 LVDS, 1 LCD/Inverter Power	1 LVDS, 1 LCD Power	1 LVDS, 1 LCD Power	1 LVDS, 1 LCD Power
Audio		Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF
SATA		2 SATA 3.0 (RAID)	3 SATA 3.0 (RAID)	3 SATA 3.0	2 SATA 3.0 (RAID)
DIO		8-bit DIO	8-bit DIO	8-bit DIO	8-bit DIO
LPC**		1	1	1	1 (opt.)
SMBus		1	1	1	1
TPM / iAMT	TPM (opt.)/ iAMT 11.6 (Core i5/i7 only)	TPM (opt.)/ iAMT 11.6 (Core i5/i7 only)	TPM (opt.)	TPM (opt.)/ iAMT 11.6 (Core i5/i7 only)	
Power	12V/9~36V DC-in	24-pin ATX	24-pin ATX	12V (SD101)/15~36V (SD103) DC-in	
Operating Temperature	0~60°C / -20~70°C (opt.)	0°C~60°C	0°C~60°C	0°C~60°C	

*Populated by default

**Supports LPC EXT-RS232/RS485 module

6/4th Gen Intel Core



Thin Mini-ITX
H110



Thin Mini-ITX
ULT



H81



H81

Model Name		SD101/SD103-H110	SU171/SU173	HD100-H81	HD101-H81
Platform		Desktop	ULT	Desktop	Desktop
System	Processor	7/6th Gen Intel® Core™	6th Gen Intel® Core™	4th Gen Intel® Core™	4th Gen Intel® Core™
	Socket	LGA 1151	BGA 1356	LGA 1150	LGA 1150
	Max. Speed	2.4~4.0GHz	2.0~3.4GHz	2.2~4.0GHz	2.2~3.3GHz
	TDP	35W/47W/65W	15W	35W/45W/53W/54W/65W	35W/45W
	Cache	2M/3M/4M/6M/8M	2M/3M/4M	2M/3M/4M/6M/8M	2M/3M/4M/6M/8M
	Chipset	Intel® H110	-	Intel® H81	Intel® H81
BIOS		Insyde SPI 128Mbit	Insyde SPI 128Mbit	AMI SPI 64Mbit	AMI SPI 32Mbit
Memory	Technology	Dual Channel DDR4 1866/2133MHz	Dual Channel DDR3L 1600MHz	Dual Channel DDR3 1333/1600MHz	Dual Channel DDR3 1333/1600MHz
	Max. Capacity	32GB	16GB	16GB	16GB
	Socket	2 SODIMM	2 SODIMM	2 SODIMM	2 SODIMM
Graphics	Connector	1 LVDS, 1 DVI, 1 HDMI*/DP	1 LVDS*/eDP, 1 HDMI*/DP, 1 DP++	1 DVI, 1 HDMI, 1 LVDS	1 DVI, 1 HDMI, 1 LVDS
	PCIe, PCI	1 PCIe x4	1 PCIe x4	1 PCIe x16	1 PCIe x16
Expansion	Mini PCIe	1 Mini PCIe, 1 mSATA	1 Mini PCIe, 1 mSATA/Mini PCIe	1 Mini PCIe	1 Mini PCIe
	SIM	-	1(opt.)	-	-
Audio	Audio Codec	Realtek ALC888	Realtek ALC888	Realtek ALC886	Realtek ALC886
Ethernet	Controller	1 Intel® I211AT, 1 Intel® I219V	1 Intel® I210AT, 1 Intel® I219LM	1 Intel® I210, 1 Intel® I217	1 Intel® I210, 1 Intel® I217
	Ethernet (GbE)	2	2	2	2
Rear I/O	Serial	-	-	2 RS-232	2 RS-232
	USB	4 USB 3.0	4 USB 3.0	2 USB 3.0, 4 USB 2.0	2 USB 3.0, 2 USB 2.0
	Display	1 DVI, 1 HDMI*/DP	1 HDMI*/DP, 1 DP++	1 DVI, 1 HDMI	1 DVI, 1 HDMI
	Audio	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out
	PS/2	-	-	1	-
	Internal I/O	Serial	1 RS-232/422/485, 3 RS-232	2 RS-232/422/485, 2 RS-232	-
USB	4 USB 2.0	4 USB 2.0 (i5), 2 USB 2.0 (Celeron)	2 USB 2.0	4 USB 2.0	
Display	1 LVDS, 1 LCD Power	1 LVDS*/eDP	1 LVDS	1 LVDS	
Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF	
SATA	2 SATA 3.0	2 SATA 3.0 (RAID)	2 SATA 3.0	2 SATA 3.0	
DIO	8-bit DIO	8-bit DIO	8-bit DIO	8-bit DIO	
LPC**	1 (opt.)	1	-	-	
SMBus	1	1	-	-	
TPM / iAMT		TPM (opt.)	TPM (opt.), iAMT 11.0 (Core i7/i5 only)	TPM (opt.)	TPM (opt.)
Power		12V (SD101)/15~36V (SD103) DC-in	12V/15~36V DC-in	24-pin ATX	12V DC-in
Operating Temperature		0°C~60°C	0°C~60°C / -20~70°C (opt.)	0°C~60°C	0°C~60°C

*SD series support 7th Gen Intel® Core™ Processors (available upon request)



H81



Thin Mini-ITX
ULT



Thin Mini-ITX
ULT

4th Gen Intel Core

Model Name		HD171/HD173-H81	HU101/HU103	HU171/HU173
Platform		Desktop	ULT	ULT
System	Processor	4th Gen Intel® Core™	4th Gen Intel® Core™	4th Gen Intel® Core™
	Socket	LGA 1150	BGA 1168	BGA 1168
	Max. Speed	2.2~3.3GHz	1.6~3.3GHz	1.6~3.3GHz
	TDP	35W/45W	15W	15W
	Cache	2M/3M/4M/6M/8M	2M/3M/4M	2M/3M/4M
	Chipset	Intel® H81	-	-
BIOS		AMI SPI 64Mbit	AMI SPI 64Mbit	AMI SPI 64Mbit
Memory	Technology	Dual Channel DDR3 1333/1600MHz	Dual Channel DDR3L 1333/1600MHz	Dual Channel DDR3L 1333/1600MHz
	Max. Capacity	16GB	16GB	16GB
	Socket	2 SODIMM	2 SODIMM	2 SODIMM
Graphics	Connector	1 VGA, 1 DVI, 1 DP	1 LVDS*/eDP, 2 HDMI	1 LVDS*/VGA/eDP, 1 HDMI, 1 DP
	PCIe, PCI	1 PCIe x16	1 PCIe x1	1 PCIe x1
Expansion	Mini PCIe	1 Mini PCIe	1 Mini PCIe	2 Mini PCIe
	SIM	-	-	-
Audio	Audio Codec	Realtek ALC888	Realtek ALC888	Realtek ALC888
Ethernet	Controller	1 Intel® I210, 1 Intel® I217	1 Intel® I210, 1 Intel® I218	1 Intel® I210, 1 Intel® I218
	Ethernet (GbE)	2	2	2
Rear I/O	Serial	1 RS-232	-	-
	USB	2 USB 3.0, 2 USB 2.0	2 USB 3.0, 2 USB 2.0	4 USB 3.0
	Display	1 VGA, 1 DVI, 1 DP	2 HDMI	1 HDMI, 1 DP
	Audio	Mic-in, Line-in, Line-out	Mic-in, Line-out	Mic-in, Line-out
	PS/2	optional	-	-
	Internal I/O	Serial	1 RS-422/485, 2 RS-232	2 RS-232/422/485, 2 RS-232
USB	5 USB 2.0	4*/6 USB 2.0, 2 USB 3.0	6 USB 2.0	
Display	-	1 LVDS*/eDP	1 LVDS*/VGA/eDP	
Audio	Front Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	
SATA	2 SATA 3.0	3 SATA 3.0 (RAID)	3 SATA 3.0 (RAID)	
DIO	8-bit DIO	8-bit DIO	8-bit DIO	
LPC**	-	-	-	
SMBus	-	1	1	
TPM / iAMT		TPM (opt.)	TPM (opt.), iAMT 9.5	TPM (opt.), iAMT 9.5
Power		12V/19~24V DC-in	12V/19~24V DC-in	12V/19~24V DC-in
Operating Temperature		0°C~60°C	0°C~60°C	0°C~60°C

*Populated by default

**Supports LPC EXT-RS232/RS485 module

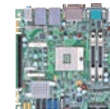
4th/3rd/2nd Gen Intel Core



QM87



QM87



QM77

Model Name		HM100-QM87/HM86	HM101/HM103-QM87/HM86	CR100-CRM
Platform		Mobile	Mobile	Mobile
System	Processor	4th Gen Intel® Core™	4th Gen Intel® Core™	3rd/2nd Gen Intel® Core™
	Socket	BGA 1364	BGA 1364	G2 988B
	Max. Speed	2.4~3.4GHz(QM87) / 1.5~3.3GHz(HM86)	1.6~3.4GHz(QM87) / 1.5~2.7GHz(HM86)	1.6~3.3GHz
	TDP	37W/47W(QM87) / 25W/37W(HM86)	25W/37W/47W(QM87) / 25W/37W(HM86)	35W/45W
	Cache	3M/6M(QM87) / 2M/3M(HM86)	3M/6M(QM87) / 2M/3M(HM86)	2M/3M/6M
	Chipset	Intel® QM87 / HM86	Intel® QM87/HM86	Intel® QM77
BIOS		AMI SPI 64Mbit	AMI SPI 64Mbit	AMI SPI 64Mbit
Memory	Technology	Dual Channel DDR3L 1333/1600MHz	Dual Channel DDR3L 1333/1600MHz	Dual DDR3/DDR3L 1066/1333/1600MHz
	Max. Capacity	16GB	16GB	16GB
	Socket	2 SODIMM	2 SODIMM	2 SODIMM
Graphics	Connector	1 LVDS, 1 DVI, 1 HDMI, 1 DP	1 LVDS, 1 DVI, 1 HDMI, 1 DP	1 LVDS, 2 DVI, 1 HDMI
	PCIe, PCI	1 PCIe x16	1 PCIe x16	1 PCIe x16, 2 DFI Extension Bus
Expansion	Mini PCIe	1 Mini PCIe	1 Mini PCIe	1 Mini PCIe
	SIM	-	-	-
Audio	Audio Codec	Realtek ALC886	Realtek ALC886	Realtek ALC886
Ethernet	Controller	1 Intel® I210, 1 Intel® I217	1 Intel® I210, 1 Intel® I217	1 Intel® 82579, 1 Intel® 82574
	Ethernet (GbE)	2	2	2
Rear I/O	Serial	2 RS-232	2 RS-232	1 RS-232/422/485
	USB	2 USB 3.0, 2 USB 2.0	2 USB 3.0, 2 USB 2.0	4 USB 3.0, 2 USB 2.0
	Display	1 DVI, 1 HDMI	1 DVI, 1 HDMI	2 DVI, 1 HDMI
	Audio	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out
	PS/2	-	-	1
	Serial	-	-	1 RS-232/422/485, 4 RS-232
Internal I/O	USB	4 USB 2.0	4 USB 2.0	4 USB 2.0
	Display	1 LVDS, 1 DP	1 LVDS, 1 DP	1 LVDS
	Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF
	SATA	2 SATA 3.0 (RAID)	2 SATA 3.0 (RAID)(QM87) / 2 SATA 3.0(HM86)	2 SATA 3.0, 2 SATA 2.0 (RAID)
	DIO	8-bit DIO	8-bit DIO	8-bit DIO
	LPC**	-	-	-
	SMBus	-	-	-
TPM / iAMT	TPM (opt.), iAMT 9.0 (QM87 only)	TPM (opt.), iAMT 9.0 (QM87 only)	TPM (opt.), iAMT 8.0	
Power	24-pin ATX	12V/19~24V DC-in	24-pin ATX	
Operating Temperature	0°C~60°C	0°C~60°C	0°C~60°C	



HM76



Q67



H61



QM67

3rd/2nd Gen Intel Core

Model Name		CR101-D	SB100-NRM	SB102-D	HR100-CRM
Platform		Mobile	Desktop	Desktop	Mobile
System	Processor	3rd/2nd Gen Intel® Core™	3rd/2nd Gen Intel® Core™	3rd/2nd Gen Intel® Core™	3rd/2nd Gen Intel® Core™
	Socket	G2 988B	LGA 1155	LGA 1155	G2 988B
	Max. Speed	1.6~3.3GHz	2.9~3.9GHz	2.9~3.9GHz	1.6~3.3GHz
	TDP	35W/45W	55W/65W/77W/95W	55W/65W/77W/95W	35W/45W
	Cache	2M/3M/6M	3M/6M/8M	3M/6M/8M	2M/3M/6M
	Chipset	Intel® HM76	Intel® Q67	Intel® H61	Intel® QM67
BIOS		AMI SPI 64Mbit	AMI SPI 64Mbit	AMI SPI 32Mbit	AMI SPI 64Mbit
Memory	Technology	Dual DDR3/DDR3L 1066/1333/1600MHz	Dual Channel DDR3 1066/1333/1600MHz	Dual Channel DDR3 1066/1333/1600MHz	Dual DDR3 1066/1333/1600MHz
	Max. Capacity	16GB	16GB	16GB	16GB
	Socket	2 SODIMM	2 DIMM	2 SODIMM	2 SODIMM
Graphics	Connector	1 LVDS, 1 DVI, 1 HDMI	1 VGA, 1 DVI	1 DVI, 1 HDMI	1 VGA, 1 LVDS, 1 DVI
	PCIe, PCI	1 PCIe x16	1 PCIe x16	1 PCIe x16	1 PCIe x16, 2 DFI Extension Bus
Expansion	Mini PCIe	1 Mini PCIe	-	1 Mini PCIe	-
	SIM	-	-	-	-
Audio	Audio Codec	Realtek ALC886	Realtek ALC262	Realtek ALC886	Realtek ALC262
Ethernet	Controller	2 Realtek RTL8111DL	1 Intel® 82579, 1 Intel® 82574	1 Intel® 82579, 1 Intel® 82574	1 Intel® 82579, 1 Realtek RTL8111DL
	Ethernet (GbE)	2	2	2	2
Rear I/O	Serial	1 RS-232/422/485	2 RS-232/422/485	1 RS-232/422/485, 1 RS-232	2 RS-232/422/485
	USB	4 USB 3.0	4 USB 2.0	4 USB 2.0	4 USB 2.0
	Display	1 DVI, 1 HDMI	1 VGA, 1 DVI	1 DVI, 1 HDMI	1 VGA, 1 DVI
	Audio	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out
	PS/2	-	2	2	2
	Serial	1 RS-232/422/485	2 RS-232	-	4 RS-232
Internal I/O	USB	4 USB 2.0	4 USB 2.0	4 USB 2.0	4 USB 2.0
	Display	1 LVDS	-	1 SDVO	1 LVDS
	Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio	Front Audio, S/PDIF
	SATA	2 SATA 3.0, 2 SATA 2.0	2 SATA 3.0, 2 SATA 2.0 (RAID)	4 SATA 2.0	2 SATA 3.0, 2 SATA 2.0 (RAID)
	DIO	-	8-bit DIO	8-bit DIO	8 bit DIO
	LPC**	-	-	-	-
	SMBus	-	-	-	-
TPM / iAMT	-	TPM (opt.), iAMT 8.0	-	TPM (opt.), iAMT 7.0	
Power	4-pin 12V Power	24-pin ATX	20-pin ATX	24-pin ATX	
Operating Temperature	0°C~60°C	0°C~60°C	0°C~60°C	0°C~60°C	

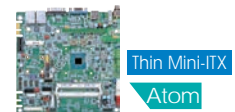
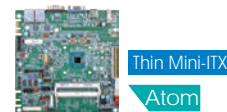
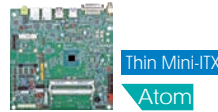
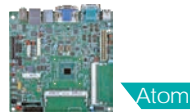
*Populated by default

**Supports LPC EXT-RS232/RS485 module

Intel Atom E3900
Intel Pentium/Celeron N3000



Model Name		AL170	AL171/AL173	BW171/BW173
Platform		Atom	Atom	Atom
System	Processor	Intel Atom® E3900	Intel Atom® E3900	Intel® Pentium®/Celeron® N3000
	Socket	BGA 1296	BGA 1296	BGA 1170
	Max. Speed	1.1-2.5GHz	1.1-2.5GHz	1.04-2.56GHz
	TDP	6.5W/9.5W/12W	6W/9W/12W	4W/5W/6W
	Cache	2M	2M	2M
	Chipset	-	-	-
Memory	BIOS	SPI 64Mbit	Insyde SPI 64Mbit	Insyde SPI 64Mbit
	Technology	Dual Channel DDR3L 1867MHz	Dual DDR3L 1867MHz	Dual Channel DDR3L 1600MHz
	Max. Capacity	8GB	8GB	8GB
Graphics	Socket	2 SODIMM	2 SODIMM	2 SODIMM
	Connector	1 VGA/1 DP++, 1 LVDS/ eDP	1 VGA*/DP++, 1 HDMI*/DP++, 1 LVDS*/eDP	1 VGA, 1 LVDS, 1 DP+*/eDP
Expansion	PCIe, PCI	1 PCIe x1, 1 M.2 (M key)	1 PCIe x1	1 PCIe x1
	Mini PCIe	1 Mini PCIe	1 Mini PCIe, 1 M.2 (B, B+M key)	1 Mini PCIe, 1 mSATA
Audio	SIM	1	1 (opt.)	1 (opt.)
	Audio Codec	Realtek ALC262	Realtek ALC262	Realtek ALC888
Ethernet	Controller	2 Intel® I210IT, 1 Intel® I211AT	2 Intel® I210IT, 2 Intel® I211AT	2 Intel® I211
	Ethernet (GbE)	2	2	2
Rear I/O	Serial	2 RS-232/422/485	-	-
	USB	4 USB 3.0	4 USB 3.0	2 USB 3.0, 2 USB 2.0
	Display	1 VGA/DP++, 1 DP++	1 VGA*/DP++, 1 HDMI*/DP++	1 VGA, 1 DP++
	Audio	Mic-in, Line-out, Line-in	Line-out	Line-out
	PS/2	-	-	-
	Internal I/O	Serial	4 RS-232	2 RS-232/422/485, 4 RS-232
USB	6 USB 2.0	4 USB 2.0, 1 USB 2.0/Vertical USB 2.0	2 USB 3.0, 3 USB 2.0, 1 Vertical USB 2.0	
Display	LVDS	1 LVDS, 1 LCD Power, 1 eDP	1 LVDS, 1 eDP (opt.)	
Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF	
SATA	2 SATA 3.0	1 SATA 3.0/ 2 SATA 3.0 (opt.)	2 SATA 3.0	
DIO	8-bit DIO	8 bit DIO	8-bit DIO	
LPC**	1	1	1	
SMBus	1	1	1	
TPM / iAMT	TPM (opt.)	TPM (opt.)	TPM (opt.)	
Power	ATX	12V (AL171)/15-36V (AL173) DC-in	12V/15-36V DC-in	
Operating Temperature	0°C-60°C/-40°C-85°C	0°C-60°C/-40°C-85°C (opt.)	0°C-60°C	



Intel Atom E3800

Model Name		BT100	BT101/BT103	BT160	BT161
Platform		Atom	Atom	Atom	Atom
System	Processor	Intel Atom® E3800	Intel Atom® E3800	Intel Atom® E3800	Intel Atom® E3800
	Socket	BGA 1170	BGA 1170	BGA 1170	BGA 1170
	Max. Speed	1.46-2.42GHz	1.33-2.42GHz	1.46-2.42GHz	1.46-2.42GHz
	TDP	5W/10W	5W/6W/7W/10W	7W/10W	7W/10W
	Cache	0.5M/2M	0.5M/1M/2M	1M/2M	1M/2M
	Chipset	-	-	-	-
Memory	BIOS	AMI SPI 64Mbit	AMI SPI 64Mbit	AMI SPI 64Mbit	AMI SPI 64Mbit
	Technology	Single/Dual DDR3L 1066/1333MHz	Single/Dual DDR3L 1066/1333MHz	Dual Channel DDR3L 1066/1333MHz	Dual Channel DDR3L 1066/1333MHz
	Max. Capacity	4GB/8GB	4GB/8GB	8GB	8GB
Graphics	Socket	1 or 2 SODIMM	1 or 2 SODIMM	2 SODIMM	2 SODIMM
	Connector	1 VGA, 1 LVDS, 1 DVI	1 LVDS, 1 DVI	1 VGA, 1 LVDS	1 VGA, 1 LVDS
Expansion	PCIe, PCI	1 PCIe x4	1 PCIe x1	1 PCIe x1, 1 DFI Extension Bus	1 PCIe x1, 1 DFI Extension Bus
	Mini PCIe	1 Mini PCIe	1 Mini PCIe	1 Mini PCIe	1 Mini PCIe
Audio	SIM	-	1	-	-
	Audio Codec	Realtek ALC888	Realtek ALC888	-	-
Ethernet	Controller	2 Intel® I210	2 Intel® I210	2 Intel® I210	2 Intel® I210
	Ethernet (GbE)	2	2	2	2
Rear I/O	Serial	1 RS-232/422/485, 1 RS-232	-	1 RS-232	1 RS-232
	USB	1 USB 3.0, 3 USB 2.0	1 USB 3.0, 2 USB 2.0	1 USB 3.0, 1 USB 2.0	1 USB 3.0, 1 USB 2.0
	Display	1 VGA, 1 DVI	1 DVI	1 VGA	1 VGA
	Audio	Mic-in, Line-out	Line-out	-	-
	PS/2	-	-	-	-
	Internal I/O	Serial	1 RS-232/422/485, 3 RS-232	1 RS-232/422/485, 3 RS-232	1 RS-232/422/485, 2 RS-232
USB	3 USB 2.0	4 USB 2.0	3 USB 2.0	3 USB 2.0	
Display	1 LVDS	1 LVDS	1 LVDS	1 LVDS	
Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	-	-	
SATA	2 SATA 2.0	2 SATA 2.0	2 SATA 2.0	2 SATA 2.0	
DIO	8-bit DIO	8-bit DIO	8-bit DIO	8-bit DIO	
LPC**	-	-	-	-	
SMBus	1 (opt.)	1	-	-	
TPM / iAMT	TPM (opt.)	TPM (opt.)	TPM (opt.)	TPM (opt.)	
Power	24-pin ATX	12V/19-24V DC-in	24-pin ATX	12V DC-in	
Operating Temperature	0°C-60°C, -20°C-70°C, -40°C-85°C	0°C-60°C, -20°C-70°C, -40°C-85°C	0°C-60°C	0°C-60°C	

*Populated by default

**Supports LPC EXT-RS232/RS485 module

2nd Gen AMD R-Series



AMD



AMD

Model Name		BE170	BE171/BE173
Platform		AMD R-Series	AMD R-Series
System	Processor	2nd Gen AMD® Embedded R-Series	2nd Gen AMD® Embedded R-Series
	Socket	FP3 BGA	FP3 BGA
	Max. Speed	2.2~3.6GHz	2.2~3.6GHz
	TDP	17W/35W	17W/35W
	Cache	1M/4M	1M/4M
	Chipset	AMD® A77E	AMD® A77E
BIOS		AMI SPI 64Mbit	AMI SPI 64Mbit
Memory	Technology	Dual DDR3/DDR3L 1600/1866/2133MHz	Dual DDR3/DDR3L 1600/1866/2133MHz
	Max. Capacity	16GB	16GB
	Socket	2 SODIMM	2 SODIMM
Graphics	Connector	4 DP	4 DP
	PCIe, PCI	1 PCIe x16	1 PCIe x16
Expansion	Mini PCIe	1 Mini PCIe	1 Mini PCIe
	SIM	-	-
Audio	Audio Codec	Realtek ALC888	Realtek ALC888
Ethernet	Controller	1 Intel® I210, 1 Realtek RTL8111EP	1 Intel® I210, 1 Realtek RTL8111EP
	Ethernet (GbE)	2	2
Rear I/O	Serial	-	-
	USB	4 USB 3.0	4 USB 3.0
	Display	4 DP	4 DP
	Audio	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out
	PS/2	-	-
	Internal I/O	Serial	1 RS-232/422/485, 3 RS-232
USB	5 USB 2.0	5 USB 2.0	
Display	-	-	
Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	
SATA	4 SATA 3.0	4 SATA 3.0	
DIO	8-bit DIO	8-bit DIO	
LPC**	-	-	
SMBus	1	1	
TPM / iAMT		TPM (opt.)	TPM (opt.)
Power		24-pin ATX	12V/19~24V DC-in
Operating Temperature		0°C~60°C	0°C~60°C

AMD G-Series SoC AMD R-Series



Thin Mini-ITX
AMD



Thin Mini-ITX
AMD



AMD

Model Name		KB160	KB161	CM100-C
Platform		AMD G-Series	AMD G-Series	AMD R-Series
System	Processor	AMD® Embedded G-Series SoC	AMD® Embedded G-Series SoC	AMD® Embedded R-Series
	Socket	FT3 BGA	FT3 BGA	FS1r2 PGA
	Max. Speed	1.0~2.0GHz	1.0~2.0GHz	1.9~2.7GHz
	TDP	9W/15W/25W	9W/15W/25W	35W
	Cache	1M/2M	1M/2M	1M/4M
	Chipset	-	-	AMD® A70M
BIOS		AMI SPI 32Mbit	AMI SPI 32Mbit	AMI SPI 32Mbit
Memory	Technology	Single DDR3/DDR3L 1066/1333/1600MHz	Single DDR3/DDR3L 1066/1333/1600MHz	Dual Channel DDR3 1600MHz
	Max. Capacity	8GB	8GB	16GB
	Socket	2 SODIMM	2 SODIMM	2 SODIMM
Graphics	Connector	1 VGA, 1 LVDS, 1 DP	1 VGA, 1 LVDS, 1 DP	2 DVI, 1 HDMI
	PCIe, PCI	1 PCIe x4, 1 DFI Extension Bus	1 PCIe x4, 1 DFI Extension Bus	1 PCIe x16, 2 DFI Extension Bus
Expansion	Mini PCIe	1 Mini PCIe	1 Mini PCIe	1 Mini PCIe
	SIM	-	-	-
Audio	Audio Codec	-	-	Realtek ALC886
Ethernet	Controller	2 Intel® I210	2 Intel® I210	2 Intel® 82574
	Ethernet (GbE)	2	2	2
Rear I/O	Serial	-	-	1 RS-232
	USB	2 USB 3.0, 2 USB 2.0	2 USB 3.0, 2 USB 2.0	4 USB 3.0, 2 USB 2.0
	Display	1 VGA, 1 DP	1 VGA, 1 DP	2 DVI, 1 HDMI
	Audio	-	-	Mic-in, Line-in, Line-out
	PS/2	-	-	1
	Internal I/O	Serial	1 RS-485, 3 RS-232	1 RS-485, 3 RS-232
USB	2 USB 2.0	2 USB 2.0	4 USB 2.0	
Display	1 LVDS	1 LVDS	-	
Audio	-	-	Front Audio, S/PDIF	
SATA	2 SATA 3.0	2 SATA 3.0	4 SATA 3.0	
DIO	8-bit DIO	8-bit DIO	8-bit DIO	
LPC**	-	-	-	
SMBus	-	-	-	
TPM / iAMT		TPM (opt.)	TPM (opt.)	
Power		24-pin ATX	12V	
Operating Temperature		0°C~60°C	0°C~60°C	

*Populated by default

**Supports LPC EXT-RS232/RS485 module

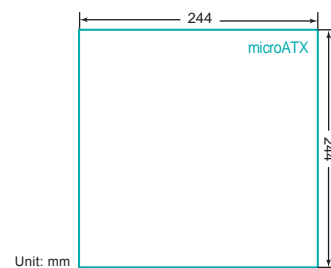
microATX

Cost-Effective & Scalable Solutions



Features

microATX (μ ATX) motherboards (measuring 244 x 244 mm) offer high performance and cost efficiency with a smaller footprint when compared to ATX. DFI's microATX boards are equipped with up to 4 expansion slots (combination of PCI and PCI Express) and rich I/O ports that are ideally suited for space/cost sensitive applications such as medical, industrial automation, and surveillance applications.



8/7th Gen Intel Core



Q370



H310



Q170



H110

Model Name		CS330-Q370	CS330-H310	KD300-Q170	KD300-H110
Platform		Desktop	Desktop	Desktop	Desktop
System	Processor	8th Gen Intel® Core™	8th Gen Intel® Core™	7/6th Gen Intel® Core™	7/6th Gen Intel® Core™
	Socket	LGA 1151	LGA 1151	LGA 1151	LGA 1151
	Max. Speed	2.1~3.7GHZ	2.1~3.7GHZ	2.7~4.2GHz	2.7~4.2GHz
	TDP	35W/54W/65W	35W/54W/65W	35W/54W/65W	35W/54W/65W
	Cache	2M/4M/6M/9M/12M	2M/4M/6M/9M/12M	2M/3M/6M/8M	2M/3M/6M/8M
Memory	Chipset	Intel® Q370	Intel® H310	Intel® Q170	Intel® H110
	BIOS	Insyde SPI 256Mbit	Insyde SPI 256Mbit	Insyde SPI 128Mbit	Insyde SPI 128Mbit
Memory	Technology	Dual Channel DDR4 2400/2666 MHz	Dual Channel DDR4 2400/2666 MHz	Dual Channel DDR4 2133/2400MHz	Dual Channel DDR4 2133/2400MHz
	Max. Capacity	64GB	32GB	64GB	32GB
	Socket	4 DIMM	2 DIMM	4 DIMM	2 DIMM
Graphics	Connector	1 VGA, 1 DVI-D, 1 DP++	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++	1 VGA, 1 DVI-D, 1 DP++	1 VGA, 1 DVI-D, 1 DP++
	Expansion	1 PCIe x16 (Gen 3), 1 PCIe x4 (Gen 3), 2 PCI	1 PCIe x16 (Gen 3), 1 PCIe x4 (Gen 2), 2 PCI	4 PCI, 1 M.2 (M key)	4 PCI
Audio	Mini PCIe	1 Mini PCIe	-	-	-
	SIM	-	-	-	-
Audio	Audio Codec	Realtek ALC888	Realtek ALC888	Realtek ALC888S-VD2-GR	Realtek ALC888S-VD2-GR
Ethernet	Controller	1 Intel® I211AT, 1 Intel® I219LM	1 Intel® I211AT, 1 Intel® I219V	1 Intel® I211AT, 1 Intel® I219V	1 Intel® I211AT, 1 Intel® I219V
	Ethernet (GbE)	2	2	2	2
Rear I/O	Serial	1 RS-232/422/485	1 RS-232/422/485	1 RS-232/422/485	1 RS-232/422/485
	USB	4 USB 3.1 Gen 2, 2 USB 2.0	4 USB 3.1 Gen 1, 2 USB 2.0	4 USB 3.0, 2 USB 2.0	4 USB 3.0, 2 USB 2.0
	Display	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++
	Audio	Line-out, Mic-in, Line-in (opt.)	Line-out, Mic-in, Line-in (opt.)	Mic-in, Line-out	Mic-in, Line-out
	PS/2	1	1	1	1
	Serial	1 RS-232/422/485, 4 RS-232	1 RS-232/422/485, 4 RS-232	1 RS-232/422/485, 4 RS-232	1 RS-232/422/485, 4 RS-232
Internal I/O	USB	2 USB 3.1 Gen 1, 4 USB 2.0	4 USB 2.0	2 USB 3.0, 4 USB 2.0, 1 vertical USB 2.0(opt.)	4 USB 2.0, 1 vertical USB 2.0(opt.)
	Display	-	-	-	-
	Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio	Front Audio
	SATA	4 SATA 3.0 (RAID)	4 SATA 3.0	4 SATA 3.0 (RAID)	4 SATA 3.0
	DIO	8-bit DIO	8-bit DIO	8-bit DIO	8-bit DIO
	LPC**	1	1	1	1
	SMBus	1	1	1	1
	TPM / iAMT	TPM (opt.), iAMT 11.6 (Core i5/i7 only)	TPM (opt.)	TPM (opt.), iAMT 11.6 (Core i5/i7 only)	TPM (opt.)
Power	ATX	ATX	ATX	ATX	
Operating Temperature	0°C~60°C	0°C~60°C	0°C~60°C	0°C~60°C	

*Populated by default

**Supports LPC EXT-RS232/RS485 module

7th Gen Intel Core



C236



Q170



Q170



H110

Model Name		KD331-C236	KD331-Q170	KD330-Q170	KD330-H110
Platform		Desktop	Desktop	Desktop	Desktop
System	Processor	7/6th Gen Intel® Core™	7/6th Gen Intel® Core™	7/6th Gen Intel® Core™	7/6th Gen Intel® Core™
	Socket	LGA 1151	LGA 1151	LGA 1151	LGA 1151
	Max. Speed	2.7~4.2GHz	2.7~4.2GHz	3.4~4.2GHz	3.4~4.2GHz
	TDP	35/65W/80W	35/54W/65W	35/54W/65W	35/54W/65W
	Cache	3M/6M/8M	3M/6M/8M	3M/6M/8M	3M/6M/8M
	Chipset	Intel® C236	Intel® Q170	Intel® Q170	Intel® H110
BIOS		Insyde SPI 128Mbit	Insyde SPI 128Mbit	Insyde SPI 128Mbit	Insyde SPI 128Mbit
Memory	Technology	Dual Channel DDR4 2133/2400MHz	Dual Channel DDR4 2133/2400MHz	Dual Channel DDR4 2133/2400MHz	Dual Channel DDR4 2133/2400MHz
	Max. Capacity	64GB	64GB	64GB	32GB
	Socket	2 ECC DIMM, 2 DIMM	4 DIMM	4 DIMM	2 DIMM
Graphics	Connector	1 DVI-D, 1 VGA, 1 DP++	1 DVI-D, 1 VGA, 1 DP++	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++
	PCIe, PCI	1 PCIe x16/2 PCIe x8, 2 PCIe x4	1 PCIe x16/2 PCIe x8, 2 PCIe x4	1 PCIe x16, 1 PCIe x4, 1 PCI	1 PCIe x16, 1 PCIe x4, 1 PCI
Expansion	Mini PCIe	1 M.2 (M key)	1 M.2 (M key)	-	-
	SIM	-	-	-	-
	Audio Codec	Realtek ALC888	Realtek ALC888	Realtek ALC888	Realtek ALC888
Ethernet	Controller	3 Intel® I211AT, 1 Intel® I219LM	3 Intel® I211AT, 1 Intel® I219LM	1 Intel® I211AT, 1 Intel® I219LM	1 Intel® I211AT, 1 Intel® I219V
	Ethernet (GbE)	4	4	2	2
Rear I/O	Serial	1 RS-232/422/485	1 RS-232/422/485	1 RS-232/422/485	1 RS-232/422/485
	USB	4 USB 3.0, 2 USB 2.0	4 USB 3.0, 2 USB 2.0	4 USB 3.0, 2 USB 2.0	4 USB 3.0, 2 USB 2.0
	Display	1 DVI-D, 1 VGA, 1 DP++	1 DVI-D, 1 VGA, 1 DP++	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++
	Audio	-	-	Mic-in, Line-out	Mic-in, Line-out
	PS/2	1	-	1	1
	Internal I/O	Serial	1 RS-232/422/485, 4 RS-232	1 RS-232/422/485, 4 RS-232	1 RS-232/422/485, 4 RS-232*/8 RS-232
Internal I/O	USB	2 USB 3.0, 4 USB 2.0	2 USB 3.0, 4 USB 2.0	2 USB 3.0, 4 USB 2.0	4 USB 2.0
	Display	-	-	-	-
	Audio	Mic-in, Line-out, S/PDIF	Mic-in, Line-out, S/PDIF	S/PDIF	S/PDIF
	SATA	5 SATA 3.0 (RAID)	5 SATA 3.0 (RAID)	4 SATA 3.0 (RAID)	4 SATA 3.0
	DIO	8-bit DIO	8-bit DIO	8-bit DIO	8-bit DIO
	LPC**	1	1	1	1
	SMBus	1	1	1	1
	TPM / iAMT	TPM (opt.), iAMT 11.6 (Core i5/i7 only)	TPM (opt.), iAMT 11.6 (Core i5/i7 only)	TPM (opt.), iAMT 11.6 (Core i5/i7 only)	TPM (opt.)
Power	8-pin ATX, 24-pin ATX	8-pin ATX, 24-pin ATX	8-pin ATX, 24-pin ATX	8-pin ATX, 24-pin ATX	
Operating Temperature	0°C~60°C	0°C~60°C	0°C~60°C	0°C~60°C	

6th Gen Intel Core



C236



Q170



Q170



H110

Model Name		SD331-C236	SD331-Q170	SD330-Q170	SD330-H110
Platform		Workstation	Desktop	Desktop	Desktop
System	Processor	Intel® Xeon®/7/6th Gen Intel® Core™	7/6th Gen Intel® Core™	7/6th Gen Intel® Core™	7/6th Gen Intel® Core™
	Socket	LGA 1151	LGA 1151	LGA 1151	LGA 1151
	Max. Speed	2.4~4.0GHz	2.4~4.0GHz	2.4~4.0GHz	2.4~4.0GHz
	TDP	35W/47W/80W/95W	35W/47W/65W	35W/47W/65W	35W/47W/65W
	Cache	3M/4M/6M/8M	3M/4M/6M/8M	3M/4M/6M/8M	3M/4M/6M/8M
	Chipset	Intel® C236	Intel® Q170	Intel® Q170	Intel® H110
BIOS		Insyde SPI 128Mbit	Insyde SPI 128Mbit	Insyde SPI 128Mbit	Insyde SPI 128Mbit
Memory	Technology	Dual Channel DDR4 1866/2133MHz	Dual Channel DDR4 1866/2133MHz	Dual Channel DDR4 1866/2133MHz	Dual Channel DDR4 1866/2133MHz
	Max. Capacity	64GB	64GB	64GB	32GB
	Socket	4 DIMM (ECC)	4 DIMM	4 DIMM	2 DIMM
Graphics	Connector	1 VGA, 1 DVI, 1 DP++	1 VGA, 1 DVI, 1 DP++	1 VGA, 1 LVDS, 1 DVI, 1 DP++	1 VGA, 1 LVDS, 1 DVI, 1 DP++
	PCIe, PCI	2 PCIe x16, 2 PCIe x4	2 PCIe x16, 2 PCIe x4	1 PCIe x16, 1 PCIe x4, 2 PCI	1 PCIe x16, 1 PCIe x4, 2 PCI
Expansion	Mini PCIe	-	-	1 Mini PCIe	-
	SIM	-	-	1	-
	Audio Codec	Realtek ALC888	Realtek ALC888	Realtek ALC888	Realtek ALC888
Ethernet	Controller	1 Intel® I210, 1 Intel® I219	1 Intel® I210, 1 Intel® I219	1 Intel® I210, 1 Intel® I219	1 Intel® I211, 1 Intel® I219
	Ethernet (GbE)	2	2	2	2
Rear I/O	Serial	1 RS-232/422/485	1 RS-232/422/485	1 RS-232/422/485	1 RS-232/422/485
	USB	4 USB 3.0, 2 USB 2.0	4 USB 3.0, 2 USB 2.0	4 USB 3.0, 2 USB 2.0	4 USB 3.0, 2 USB 2.0
	Display	1 VGA, 1 DVI, 1 DP++	1 VGA, 1 DVI, 1 DP++	1 VGA, 1 DVI, 1 DP++	1 VGA, 1 DVI, 1 DP++
	Audio	Mic-in, Line-in (opt.), Line-out	Mic-in, Line-in (opt.), Line-out	Mic-in, Line-in (opt.), Line-out	Mic-in, Line-in (opt.), Line-out
	PS/2	1	1	1	1
	Internal I/O	Serial	1 RS-232/422/485, 4 RS-232	1 RS-232/422/485, 4 RS-232	1 RS-232/422/485, 4 RS-232
Internal I/O	USB	4 USB 3.0, 4 USB 2.0	4 USB 3.0, 4 USB 2.0	2 USB 3.0, 4 USB 2.0	4 USB 2.0
	Display	-	-	-	-
	Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	S/PDIF	S/PDIF
	SATA	6 SATA 3.0 (RAID)	6 SATA 3.0 (RAID)	4 SATA 3.0 (RAID)	4 SATA 3.0
	DIO	8-bit DIO	8-bit DIO	8-bit DIO	8-bit DIO
	LPC**	1	1	1	1
	SMBus	1	1	1	1
	TPM / iAMT	TPM (opt.), iAMT 11.0	TPM (opt.), iAMT 11.0	TPM (opt.), iAMT 11.0	TPM (opt.)
Power	24-pin ATX	24-pin ATX	24-pin ATX	24-pin ATX	
Operating Temperature	0°C~60°C	0°C~60°C	0°C~60°C	0°C~60°C	

*Populated by default

**Supports LPC EXT-RS232/RS485 module

***SD series support 7th Gen Intel® Core™ Processors (available upon request)

4th Gen Intel Core



C226



Q87



Q87



H81

Model Name		DL310-C226	HD310-Q87	HD330-Q87	HD330-H81
Platform		Workstation	Desktop	Desktop	Desktop
System	Processor	Intel® Xeon®/4th Gen Intel® Core™	4th Gen Intel® Core™	4th Gen Intel® Core™	4th Gen Intel® Core™
	Socket	LGA 1150	LGA 1150	LGA 1150	LGA 1150
	Max. Speed	2.2~3.9GHz	2.2~4.0GHz	2.2~4.0GHz	2.2~4.0GHz
	TDP	35W/45W/53W/54W/65W/95W	35W/45W/53W/54W/65W	35W/45W/53W/54W/65W	35W/45W/53W/54W/65W
	Cache	2M/3M/4M/6M/8M	2M/3M/4M/6M/8M	2M/3M/4M/6M/8M	2M/3M/4M/6M/8M
	Chipset	Intel® C226	Intel® Q87	Intel® Q87	Intel® H81
Memory	BIOS	AMI SPI 64Mbit	AMI SPI 64Mbit	AMI SPI 64Mbit	AMI SPI 64Mbit
	Technology	Dual Channel DDR3 1333/1600MHz	Dual Channel DDR3 1333/1600MHz	Dual Channel DDR3 1333/1600MHz	Dual Channel DDR3 1333/1600MHz
	Max. Capacity	32GB	32GB	32GB	16GB
Graphics	Socket	4 DIMM (ECC)	4 DIMM	4 DIMM	2 DIMM
	Connector	1 DVI, 1 HDMI	1 DVI, 1 HDMI	1 DVI, 1 HDMI	1 DVI, 1 HDMI
Expansion	PCIe, PCI	2 PCIe x16, 1 PCIe x4, 1 PCIe x1	2 PCIe x16, 1 PCIe x4, 1 PCIe x1	1 PCIe x16, 1 PCIe x4, 2 PCI	1 PCIe x16, 1 PCIe x4, 2 PCI
	Mini PCIe	-	-	1 Mini PCIe	1 Mini PCIe
	SIM	-	-	-	-
Audio	Audio Codec	Realtek ALC886	Realtek ALC886	Realtek ALC886	Realtek ALC886
Ethernet	Controller	1 Intel® I210, 1 Intel® I217	1 Intel® I210, 1 Intel® I217	1 Intel® I210, 1 Intel® I217	1 Intel® I210, 1 Intel® I217
	Ethernet (GbE)	2	2	2	2
Rear I/O	Serial	2 RS-232/422/485	2 RS-232/422/485	2 RS-232/422/485	2 RS-232/422/485
	USB	4 USB 3.0, 2 USB 2.0	4 USB 3.0, 2 USB 2.0	2 USB 3.0, 4 USB 2.0	2 USB 3.0, 4 USB 2.0
	Display	1 DVI, 1 HDMI	1 DVI, 1 HDMI	1 DVI, 1 HDMI	1 DVI, 1 HDMI
	Audio	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out
	PS/2	1	1	1	1
	Internal I/O	Serial	4 RS-232	4 RS-232	4 RS-232
USB		6 USB 2.0	6 USB 2.0	6 USB 2.0	2 USB 2.0
Display		-	-	-	-
Audio		Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF
SATA		6 SATA 3.0 (RAID)	6 SATA 3.0 (RAID)	2 SATA 3.0, 1 SATA 2.0 (RAID)	2 SATA 3.0, 1 SATA 2.0
DIO		8-bit DIO	8-bit DIO	8-bit DIO	8-bit DIO
LPC**		-	-	-	-
SMBus	-	-	-	-	
TPM / iAMT	TPM (opt.), iAMT9.0	TPM (opt.), iAMT9.0	TPM (opt.)	TPM (opt.)	
Power	24-pin ATX	24-pin ATX	24-pin ATX	24-pin ATX	
Operating Temperature	0°C~60°C	0°C~60°C	0°C~60°C	0°C~60°C	

4th/3rd/2nd Gen Intel Core



H81



Q77



Q77

Model Name		HD332-H81	MB330-CRM	MB331-CRM
Platform		Desktop	Desktop	Desktop
System	Processor	4th Gen Intel® Core™	3rd/2nd Gen Intel® Core™	3rd/2nd Gen Intel® Core™
	Socket	LGA 1150	LGA 1155	LGA 1155
	Max. Speed	2.2~4.0GHz	2.9~3.9GHz	2.9~3.9GHz
	TDP	35W/45W/53W/54W/65W	55W/65W/77W/95W	55W/65W/77W/95W
	Cache	2M/3M/4M/6M/8M	3M/6M/8M	3M/6M/8M
	Chipset	Intel® H81	Intel® Q77	Intel® Q77
Memory	BIOS	AMI SPI 64Mbit	AMI SPI 64Mbit	AMI SPI 64Mbit
	Technology	Dual Channel DDR3 1333/1600MHz	Dual Channel DDR3 1066/1333/1600MHz	Dual Channel DDR3 1066/1333/1600MHz
	Max. Capacity	16GB	32GB	32GB
Graphics	Socket	2 DIMM	4 DIMM	4 DIMM
	Connector	1 VGA, 1 VGA/DVI	2 DVI, 1 HDMI	1 VGA, 1 DVI
Expansion	PCIe, PCI	1 PCIe x16, 2 PCIe x1, 1 PCI	1 PCIe x16, 1 PCIe x4, 2 PCI	1 PCIe x16, 1 PCIe x4, 2 PCI
	Mini PCIe	-	1 Mini PCIe	-
	SIM	-	-	-
Audio	Audio Codec	Realtek ALC888	Realtek ALC886	Realtek ALC886
Ethernet	Controller	2 Intel® 82574* / Intel® I210	1 Intel® 82579, 1 Intel® 82574	1 Intel® 82579, 1 Realtek RTL8111DL
	Ethernet (GbE)	2	2	2
Rear I/O	Serial	2 RS-232	1 RS-232/422/485	2 RS-232/422/485
	USB	4 USB 3.0, 2 USB 2.0	4 USB 3.0, 2 USB 2.0	4 USB 3.0
	Display	1 VGA, 1 VGA/DVI	2 DVI, 1 HDMI	1 VGA, 1 DVI
	Audio	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out
	PS/2	1	1	2
	Internal I/O	Serial	1 RS-232/422/485, 7 RS-232	1 RS-232/422/485, 4 RS-232
USB		5*/6 USB 2.0	4 USB 2.0	6 USB 2.0
Display		-	-	-
Audio		-	Front Audio, S/PDIF	Front Audio, S/PDIF
SATA		2 SATA 3.0, 2 SATA 2.0	2 SATA 3.0, 4 SATA 2.0 (RAID)	2 SATA 3.0, 4 SATA 2.0 (RAID)
DIO		-	8-bit DIO	8-bit DIO
LPC**		-	-	-
SMBus	-	-	-	
TPM / iAMT	TPM (opt.)	TPM (opt.), iAMT 8.0	TPM (opt.), iAMT 8.0	
Power	24-pin ATX	24-pin ATX	24-pin ATX	
Operating Temperature	0°C~60°C	0°C~60°C	0°C~60°C	

*Populated by default

**Supports LPC EXT-RS232/RS485 module

3rd/2nd Gen Intel Core



Q67



Q67



B65

Model Name		SB330-CRM	SB331-IPM	SB300-C
Platform		Desktop	Desktop	Desktop
System	Processor	3rd/2nd Gen Intel® Core™	3rd/2nd Gen Intel® Core™	3rd/2nd Gen Intel® Core™
	Socket	LGA 1155	LGA 1155	LGA 1155
	Max. Speed	2.9~3.9GHz	2.9~3.9GHz	2.9~3.9GHz
	TDP	55W/65W/77W/95W	55W/65W/77W/95W	55W/65W/77W/95W
	Cache	3M/6M/8M	3M/6M/8M	3M/6M/8M
	Chipset	Intel® Q67	Intel® Q67	Intel® B65
Memory	BIOS	AMI SPI 64Mbit	AMI SPI 64Mbit	AMI SPI 64Mbit
	Technology	Dual Channel DDR3 1066/1333/1600MHz	Dual Channel DDR3 1066/1333/1600MHz	Dual Channel DDR3 1066/1333/1600MHz
	Max. Capacity	32GB	16GB	32GB
Graphics	Socket	4 DIMM	2 DIMM	4 DIMM
	Connector	1 VGA, 1 DVI	1 DVI, 1 HDMI	1 VGA, 1 DVI
Expansion	PCIe, PCI	1 PCIe x16, 1 PCIe x4, 2 PCI	2 PCIe x16, 2 PCIe x1	4 PCI
	Mini PCIe	-	-	1 Mini PCIe
	SIM	-	-	-
Audio	Audio Codec	Realtek ALC262	Realtek ALC262	Realtek ALC886
Ethernet	Controller	1 Intel® 82579, 1 Realtek RTL8111DL	1 Intel® 82579, 2 Intel® 82574	2 Realtek RTL8111DL
Rear I/O	Ethernet (GbE)	2	3	2
	Serial	2 RS-232/422/485	2 RS-232/422/485	2 RS-232/422/485
	USB	4 USB 2.0	6 USB 2.0	6 USB 2.0
	Display	1 VGA, 1 DVI	1 DVI, 1 HDMI	1 VGA, 1 DVI
	Audio	Mic-in, Line-in, Line-out	-	Mic-in, Line-in, Line-out
	PS/2	2	-	1
Internal I/O	Serial	4 RS-232	-	4 RS-232
	USB	8 USB 2.0	8 USB 2.0	4 USB 2.0
	Display	-	-	-
	Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF
	SATA	2 SATA 3.0, 4 SATA 2.0 (RAID)	2 SATA 3.0, 4 SATA 2.0 (RAID)	1 SATA 3.0, 5 SATA 2.0
	DIO	8-bit DIO	36-bit DIO	8-bit DIO
	LPC**	-	-	-
SMBus	-	-	-	
TPM / iAMT		TPM (opt.), iAMT 8.0	TPM (opt.), iAMT 8.0	TPM (opt.)
Power		24-pin ATX	24-pin ATX	24-pin ATX
Operating Temperature		0°C~60°C	0°C~60°C	0°C~60°C

3rd/2nd Gen Intel Core



H61



H61



H61

Model Name		SB331-D	SB332-C	SB336-Ni
Platform		Desktop	Desktop	Desktop
System	Processor	3rd/2nd Gen Intel® Core™	3rd/2nd Gen Intel® Core™	3rd/2nd Gen Intel® Core™
	Socket	LGA 1155	LGA 1155	LGA 1155
	Max. Speed	2.9~3.9GHz	2.9~3.9GHz	2.9~3.9GHz
	TDP	55W/65W/77W/95W	55W/65W/77W/95W	55W/65W/77W/95W
	Cache	3M/6M/8M	3M/6M/8M	3M/6M/8M
	Chipset	Intel® H61	Intel® H61	Intel® H61
Memory	BIOS	AMI SPI 64Mbit	AMI SPI 32Mbit	AMI SPI 32Mbit
	Technology	Dual Channel DDR3 1066/1333/1600MHz	Dual Channel DDR3 1066/1333/1600MHz	Dual Channel DDR3 1066/1333/1600MHz
	Max. Capacity	16GB	16GB	16GB
Graphics	Socket	2 DIMM	2 DIMM	2 DIMM
	Connector	1 DVI, 1 HDMI	1 VGA, 1 HDMI	1 VGA
Expansion	PCIe, PCI	2 PCIe x16, 2 PCIe x1	1 PCIe x16, 1 PCIe x4, 2 PCI	1 PCIe x16, 2 PCI
	Mini PCIe	-	-	-
	SIM	-	-	-
Audio	Audio Codec	Realtek ALC262	Realtek ALC262	Realtek ALC262
Ethernet	Controller	1 Intel® 82579, 1 Intel® 82574	2 Intel® 82574	1 Realtek RTL8111DL
Rear I/O	Ethernet (GbE)	2	2	1
	Serial	2 RS-232/422/485	1 RS-232/422/485, 1 RS-232	2 RS-232
	USB	6 USB 2.0	4 USB 2.0	4 USB 2.0
	Display	1 DVI, 1 HDMI	1 VGA, 1 HDMI	1 VGA
	Audio	-	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out
	PS/2	2	2	2
Internal I/O	Serial	-	8 RS-232	8 RS-232
	USB	4 USB 2.0	6 USB 2.0	6 USB 2.0
	Display	-	-	-
	Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF
	SATA	4 SATA 2.0	4 SATA 2.0	4 SATA 2.0
	DIO	36-bit DIO	8-bit DIO	-
	LPC**	-	-	-
SMBus	-	-	-	
TPM / iAMT		TPM (opt.)	-	-
Power		24-pin ATX	24-pin ATX	24-pin ATX
Operating Temperature		0°C~60°C	0°C~60°C	0°C~60°C

*Populated by default

**Supports LPC EXT-RS232/RS485 module

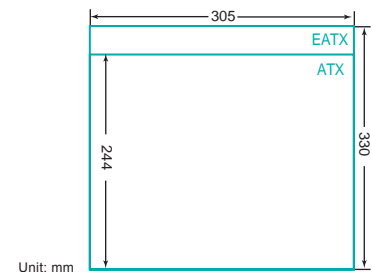
ATX

Fast Computing & Highly Reliable Solutions



Features

DFI's EATX/ATX embedded motherboards feature a high computing capability, rich I/O connectivity, high integration, and expansibility which support up to 7 expansion slots (ATX). The form factors of EATX/ATX boards are 330 x 305 mm for EATX and 305 x 244 mm for ATX, making both motherboards an ideal solution for industrial automation, server, and transportation applications that require a 24/7 operation reliability.



Intel Xeon E5-2600 v2
8th Gen Intel Core

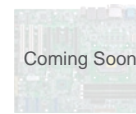


C622



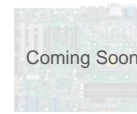
EATX

C602J/
C604



Coming Soon

H310



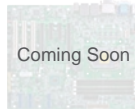
Coming Soon

Q370

Model Name		PL610-C622	RL830-C604/C602	CS630-H310	CS630-Q370
Platform		Server-Grade	Server-Grade	Desktop	Desktop
System	Processor	Intel® Xeon®	Intel® Xeon® E5-2600 v2	8th Gen Intel® Core™	8th Gen Intel® Core™
	Socket	LGA3647	LGA 2011 (2 sockets)	LGA 1151	LGA 1151
	Max. Speed	TBD	2.0~3.6GHz	2.1~3.7GHZ	TBD
	TDP	145W	50W/70W/80W/95W/115W	35W/54W/65W	35W/54W/65W
	Cache	TBD	15M/20M/25M	2M/4M/6M/9M/12M	2M/4M/6M/9M/12M
	Chipset	Intel® C622	Intel® C602J/C604	Intel® H310	Intel® Q370
BIOS		TBD	AMI SPI 128Mbit	SPI 256Mbit	SPI 256Mbit
Memory	Technology	DDR4 1600/1866/2133/2400MHz	Quad DDR3 800/1066/1333/1600MHz	Dual Channel DDR4 2400/2666 MHz	Dual Channel DDR4 2400/2666 MHz
	Max. Capacity	1TB	512GB	32GB	64GB
	Socket	6 DIMM	1616 DIMM (ECC/non-ECC)	2 DIMM	4 DIMM
Graphics	Connector	1 VGA	1 VGA	1 VGA, DVI-D, 1 DP++	1 VGA, DVI-D, 1 DP++
	PCIe, PCI	2 PCIe x16, 1 PCIe x8, 2 PCIe x4	4 PCIe x16, 2 PCIe x8	5 PCI, 1 PCIe x16 GEN3.0, 1 PCIe x4 GEN2.0	5 PCI, 1 PCIe x16 GEN3.0, 1 PCIe x4 GEN3.0
Expansion	Mini PCIe	1 M.2 (M key)	-	-	1 mPCIe, 1 M.2 (M key)
	SIM	-	-	-	-
Audio	Audio Codec	-	-	Realtek ALC888	Realtek ALC888
Ethernet	Controller	TBD	1 Intel® 82580	1 Intel® I219V, 1 Intel® I211AT	1 Intel® I219LM, 1 Intel® I211AT
	Ethernet (GbE)	2 GbE, 1 IPMI LAN, 1 Fiber 10G	4	2	2
Rear I/O	Serial	-	1 RS-232	1 RS-232/422/485	1 RS-232/422/485
	USB	2 USB 2.0	4 USB 2.0	4 USB3.1 Gen 1, 2 USB2.0	4 USB3.1 Gen 1, 2 USB2.0
	Display	1 VGA	1 VGA	-	-
	Audio	-	-	Mic-in, Line-out	Mic-in, Line-out
	PS/2	-	-	1	1
	Serial	1 RS-232	1 RS-232	1 RS-232/422/485, 4 RS-232	1 RS-232/422/485, 4 RS-232
Internal I/O	USB	2 USB 3.0, 2 USB 2.0, 1 Vertical USB 2.0	4 USB 2.0	4 USB 2.0	2 USB3.1Gen2, 4 USB2.0
	Display	-	-	-	-
	Audio	-	-	Front Audio, S/PDIF	Front Audio, S/PDIF
	SATA	6 SATA 3.0	2 SATA 3.0, 4/8 SATA 2.0 (RAID)	4 SATA3.0	5 SATA3.0 (RAID)
	DIO	-	-	8-bit DIO	8-bit DIO
	LPC**	-	-	1	1
	SMBus	1	-	1	1
TPM / iAMT	TPM 2.0	TPM (opt.)	TPM (opt.)	TPM (opt.), iAMT 11.6 (Core i5/i7 only)	
Power	ATX	24-pin ATX	ATX	ATX	
Operating Temperature	0°C~60°C	0°C~50°C	0°C~60°C	0°C~60°C	

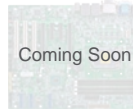
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**Supports LPC EXT-RS232/RS485 module



Coming Soon

Q170



Coming Soon

H110



C236



Q170

7th Gen Intel Core

Model Name		KD600-Q170	KD600-H110	KD631-C236	KD631-Q170
Platform		Desktop	Desktop	Workstation	Desktop
System	Processor	7/6th Gen Intel® Core™	7/6th Gen Intel® Core™	7/6th Gen Intel® Core™	7/6th Gen Intel® Core™
	Socket	LGA 1151	LGA 1151	LGA 1151	LGA 1151
	Max. Speed	2.9~3.9GHz	2.9~3.9GHz	2.4~4.0GHz	2.4~4.0GHz
	TDP	35W/54W/65W	35W/54W/65W	35W/54W/65W/80W	35W/54W/65W
	Cache	3M/6M/8M	3M/6M/8M	3M/4M/6M/8M	3M/4M/6M/8M
	Chipset	Intel® Q170	Intel® H110	Intel® C236	Intel® Q170
Memory	BIOS	Insyde SPI 128Mbit	Insyde SPI 128Mbit	Insyde SPI 128Mbit	Insyde SPI 128Mbit
	Technology	Dual Channel DDR4 2133/2400 MHz	Dual Channel DDR4 2133/2400 MHz	Dual Channel DDR4 1866/2133MHz	Dual Channel DDR4 1866/2133MHz
	Max. Capacity	64GB	32GB	64GB	64GB
Graphics	Socket	4 DIMM	2 DIMM	4 DIMM (ECC)	4 DIMM
	Connector	1 VGA, DVI-D, 1 DP++	1 VGA, DVI-D, 1 DP++	1 VGA, 1 DVI, 1 HDMI	1 VGA, 1 DVI, 1 HDMI
Expansion	PCIe, PCI	6 PCI, 1 PCIe x16	6 PCI, 1 PCIe x16	1 PCIe x16/ 2 PCIe x8, 2 PCIe x4, 3 PCI	1 PCIe x16/ 2 PCIe x8, 2 PCIe x4, 3 PCI
	Mini PCIe	1 Mini PCIe, 1 mSATA	1 mSATA	1 M.2 (M key)	1 M.2 (M key)
	SIM	-	-	-	-
Audio	Audio Codec	RealtekALC888S-VD2-GR	RealtekALC888S-VD2-GR	Realtek ALC888	Realtek ALC888
Ethernet	Controller	1 Intel® I219LM, 1 Intel® I211AT	1 Intel® I219V, 1 Intel® I211AT	1 Intel® I210AT, 1 Intel® I219LM	1 Intel® I210AT, 1 Intel® I219LM
	Ethernet (GbE)	2	2	2	2
Rear I/O	Serial	1 RS-232/422/485	1 RS-232/422/485	1 RS-232/422/485	1 RS-232/422/485
	USB	4 USB 3.0, 2 USB 2.0	4 USB 3.0, 2 USB 2.0	4 USB 3.0, 2 USB 2.0	4 USB 3.0, 2 USB 2.0
	Display	-	-	1 VGA, 1 DVI, 1 HDMI	1 VGA, 1 DVI, 1 HDMI
	Audio	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-in (opt.), Line-out	Mic-in, Line-in (opt.), Line-out
	PS/2	1	1	1	1
Internal I/O	Serial	1 RS-232/422/485, 8 RS-232	1 RS-232/422/485, 8 RS-232	1 RS-232/422/485, 4 RS-232	1 RS-232/422/485, 4 RS-232
	USB	2 USB 3.0, 4 USB 2.0, 1 vertical USB 2.0 (opt.)	4 USB 2.0, 1 vertical USB 2.0 (opt.)	2 USB 3.0, 6 USB 2.0	2 USB 3.0, 6 USB 2.0
	Display	-	-	-	-
	Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF
	SATA	4 SATA 3.0 (RAID), SATA3_3 for 1 mSATA	4 SATA 3.0, SATA3_3 for 1 mSATA	5 SATA 3.0 (RAID)	6 SATA 3.0 (RAID)
	DIO	8-bit DIO	8-bit DIO	8-bit DIO	8-bit DIO
	LPC**	1	1	1	1
SMBus	1	1	1	1	
TPM / iAMT	TPM (opt.), iAMT 11.6 (Core i5/i7 only)	TPM (opt.)	TPM (opt.), iAMT 11.6 (Core i5/i7 only)	TPM (opt.), iAMT 11.6 (Core i5/i7 only)	
Power	ATX	ATX	24-pin ATX	24-pin ATX	
Operating Temperature	0°C~60°C	0°C~60°C	0°C~60°C	0°C~60°C	



C236



Q170

6th Gen Intel Core

Model Name		SD631-C236	SD631-Q170
Platform		Workstation	Desktop
System	Processor	Intel® Xeon™/7/6th Gen Intel® Core™	Intel® Xeon™/7/6th Gen Intel® Core™
	Socket	LGA 1151	LGA 1151
	Max. Speed	2.4~4.0GHz	2.4~4.0GHz
	TDP	35W/47W/80W/95W	35W/47W/65W
	Cache	3M/4M/6M/8M	3M/4M/6M/8M
	Chipset	Intel® C236	Intel® Q170
Memory	BIOS	Insyde SPI 128Mbit	Insyde SPI 128Mbit
	Technology	Dual Channel DDR4 1866/2133MHz	Dual Channel DDR4 1866/2133MHz
	Max. Capacity	64GB	64GB
Graphics	Socket	4 DIMM (ECC)	4 DIMM
	Connector	1 VGA, 1 DVI, 1 HDMI	1 VGA, 1 DVI, 1 HDMI
Expansion	PCIe, PCI	2 PCIe x16, 2 PCIe x4, 3 PCI	2 PCIe x16, 2 PCIe x4, 3 PCI
	Mini PCIe	-	-
	SIM	-	-
Audio	Audio Codec	Realtek ALC888	Realtek ALC888
Ethernet	Controller	1 Intel® I210, 1 Intel® I219	1 Intel® I210, 1 Intel® I219
	Ethernet (GbE)	2	2
Rear I/O	Serial	1 RS-232/422/485	1 RS-232/422/485
	USB	4 USB 3.0, 2 USB 2.0	4 USB 3.0, 2 USB 2.0
	Display	1 VGA, 1 DVI, 1 HDMI	1 VGA, 1 DVI, 1 HDMI
	Audio	Mic-in, Line-in (opt.), Line-out	Mic-in, Line-in (opt.), Line-out
	PS/2	1	1
Internal I/O	Serial	1 RS-232/422/485, 4 RS-232	1 RS-232/422/485, 4 RS-232
	USB	2 USB 3.0, 6 USB 2.0	2 USB 3.0, 6 USB 2.0
	Display	-	-
	Audio	Front Audio, S/PDIF	Front Audio, S/PDIF
	SATA	6 SATA 3.0 (RAID)	6 SATA 3.0 (RAID)
	DIO	8-bit DIO	8-bit DIO
	LPC**	1	1
SMBus	1	1	
TPM / iAMT	TPM (opt.), iAMT 11.0	TPM (opt.), iAMT 11.0	
Power	24-pin ATX	24-pin ATX	
Operating Temperature	0°C~60°C	0°C~60°C	

*Populated by default

**Supports LPC EXT-RS232/RS485 module

*SD series support 7th Gen Intel® Core™ Processors (available upon request)

6th/4th Gen Intel Core



H110



C226

Model Name		SD630-H110	DL631-C226	
Platform		Desktop	Workstation	
System	Processor	7th Gen Intel® Core™	Intel® Xeon®/4th Gen Intel® Core™	
	Socket	LGA 1151	LGA 1150	
	Max. Speed	2.4~4.0GHz	2.2~3.9GHz	
	TDP	35W/47W/65W	35W/45W/53W/54W/54W/65W/95W	
	Cache	3M/4M/6M/8M	2M/3M/4M/6M/8M	
	Chipset	Intel® H110	Intel® C226	
	BIOS	Insyde SPI 128Mbit	AMI SPI 64Mbit	
Memory	Technology	Dual Channel DDR3L 1600MHz	Dual Channel DDR3 1333/1600MHz	
	Max. Capacity	16GB	32GB	
	Socket	2 DIMM	4 DIMM (ECC)	
Graphics	Connector	1 VGA, 1 DVI, 1 HDMI	1 DVI, 1 HDMI	
Expansion	PCIe, PCI	1 PCIe x16, 1 PCIe x4, 5 PCI	2 PCIe x16, 2 PCIe x4, 3 PCI	
	Mini PCIe	-	-	
	SIM	-	-	
Audio	Audio Codec	Realtek ALC888	Realtek ALC886	
Ethernet	Controller	1 Intel® I211, 1 Intel® I219	1 Intel® I210, 1 Intel® I217	
	Ethernet (GbE)	2	2	
Rear I/O	Serial	1 RS-232/422/485	2 RS-232/422/485	
	USB	4 USB 3.0, 2 USB 2.0	4 USB 3.0, 2 USB 2.0	
	Display	1 VGA, 1 DVI, 1 HDMI	1 DVI, 1 HDMI	
	Audio	Mic-in, Line-in (opt.), Line-out	Mic-in, Line-in, Line-out	
	PS/2	1	1	
	Internal I/O	Serial	1 RS-232/422/485, 4 RS-232	4 RS-232
	USB	4 USB 2.0	4 USB 2.0	
Display	-	-		
Audio	S/PDIF	Front Audio, S/PDIF		
SATA	4 SATA 3.0	6 SATA 3.0 (RAID)		
DIO	8-bit DIO	8-bit DIO		
LPC**	1	-		
SMBus	1	-		
TPM / iAMT		TPM (opt.)	TPM (opt.), iAMT9.0	
Power		24-pin ATX	24-pin ATX	
Operating Temperature		0°C~60°C	0°C~60°C	

*SD series support 7th Gen Intel® Core™ Processors (available upon request)



Q87



H81



H81

4th Gen Intel Core

Model Name		HD631-Q87	HD620-H81	HD630-H81	
Platform		Desktop	Desktop	Desktop	
System	Processor	4th Gen Intel® Core™	4th Gen Intel® Core™	4th Gen Intel® Core™	
	Socket	LGA 1150	LGA 1150	LGA 1150	
	Max. Speed	2.2~4.0GHz	2.2~4.0GHz	2.2~4.0GHz	
	TDP	35W/45W/53W/54W/65W	35W/45W/53W/54W/65W	35W/45W/53W/54W/65W	
	Cache	2M/3M/4M/6M/8M	2M/3M/4M/6M/8M	2M/3M/4M/6M/8M	
	Chipset	Intel® Q87	Intel® H81	Intel® H81	
	BIOS	AMI SPI 64Mbit	AMI SPI 64Mbit	AMI SPI 64Mbit	
Memory	Technology	Dual Channel DDR3 1333/1600MHz	Dual Channel DDR3 1333/1600MHz	Dual Channel DDR3 1333/1600MHz	
	Max. Capacity	32GB	16GB	16GB	
	Socket	4 DIMM	2 DIMM	2 DIMM	
Graphics	Connector	1 DVI, 1 HDMI	1 VGA, 1 DVI	1 DVI, 1 HDMI	
Expansion	PCIe, PCI	1 PCIe x16, 2 PCIe x4, 3 PCI	1 PCIe x16, 1 PCIe x4, 4 PCI, 2 ISA	1 PCIe x16, 1 PCIe x4, 1 PCIe x1, 4 PCI	
	Mini PCIe	-	-	1 Mini PCIe	
	SIM	-	-	-	
Audio	Audio Codec	Realtek ALC886	Realtek ALC886	Realtek ALC886	
Ethernet	Controller	1 Intel® I210, 1 Intel® I217	1 Intel® 82574, 1 Intel® I217	1 Intel® I210, 1 Intel® I217	
	Ethernet (GbE)	2	2	2	
Rear I/O	Serial	2 RS-232/422/485	2 RS-232/422/485	2 RS-232/422/485	
	USB	4 USB 3.0, 2 USB 2.0	2 USB 3.0, 4 USB 2.0	2 USB 3.0, 4 USB 2.0	
	Display	1 DVI, 1 HDMI	1 VGA, 1 DVI	1 DVI, 1 HDMI	
	Audio	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	
	PS/2	1	1	1	
	Internal I/O	Serial	4 RS-232	8 RS-232	4 RS-232
	USB	4 USB 2.0	4 USB 2.0	2 USB 2.0	
Display	-	-	-		
Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF		
SATA	6 SATA 3.0 (RAID)	2 SATA 3.0, 2 SATA 2.0	2 SATA 3.0, 2 SATA 2.0		
DIO	8-bit DIO	8-bit DIO	8-bit DIO		
LPC**	-	-	-		
SMBus	-	-	-		
TPM / iAMT		TPM (opt.)	TPM (opt.)		
Power		24-pin ATX	24-pin ATX		
Operating Temperature		0°C~60°C	0°C~60°C		

*Populated by default

**Supports LPC EXT-RS232/RS485 module

4th/3rd Gen Intel Core



H81



H81



C216



Q77

Model Name		HD632-H81	HD636-H81CS	CL630-CRM	MB630-CRM
Platform		Desktop	Desktop	Workstation	Desktop
System	Processor	4th Gen Intel® Core™	4th Gen Intel® Core™	Intel® Xeon®/ 3rd/2nd Gen Intel® Core™	3rd/2nd Gen Intel® Core™
	Socket	LGA 1150	LGA 1150	LGA 1155	LGA 1155
	Max. Speed	2.2~4.0GHz	2.2~4.0GHz	2.9~3.9GHz	2.9~3.9GHz
	TDP	35W/45W/53W/54W/65W	35W/45W/53W/54W/65W	55W/65W/77W/95W	55W/65W/77W/95W
	Cache	2M/3M/4M/6M/8M	2M/3M/4M/6M/8M	3M/6M/8M	3M/6M/8M
	Chipset	Intel® H81	Intel® H81	Intel® C216	Intel® Q77
Memory	BIOS	AMI SPI 64Mbit	AMI SPI 64Mbit	AMI SPI 64Mbit	AMI SPI 64Mbit
	Technology	Dual Channel DDR3 1333/1600MHz	Single Channel DDR3 1333/1600MHz	Dual Channel DDR3 1066/1333/1600MHz	Dual Channel DDR3 1066/1333/1600MHz
	Max. Capacity	16GB	8GB	32GB	32GB
Graphics	Socket	2 DIMM	1 DIMM	4 DIMM	4 DIMM
	Connector	1 VGA, 1 DVI	1 VGA, 1 HDMI	2 DVI, 1 HDMI	2 DVI, 1 HDMI
Expansion	PCIe, PCI	1 PCIe x16, 1 PCIe x4, 5 PCI	1 PCIe x16, 2 PCIe x4, 4 PCI	2 PCIe x16, 2 PCIe x4, 3 PCI	1 PCIe x16, 2 PCIe x4, 3 PCI
	Mini PCIe	-	-	1 Mini PCIe	1 Mini PCIe
	SIM	-	-	-	-
Audio	Audio Codec	Realtek ALC886	Realtek ALC888	Realtek ALC886	Realtek ALC886
Ethernet	Controller	2 Intel® I210	2 Intel® 82574	1 Intel® 82579, 1 Intel® 82574	1 Intel® 82579, 1 Intel® 82574
	Ethernet (GbE)	2	2	2	2
Rear I/O	Serial	2 RS-232	2 RS-232	1 RS-232/422/485	1 RS-232/422/485
	USB	2 USB 3.0, 4 USB 2.0	2 USB 3.0, 2 USB 2.0	4 USB 3.0, 2 USB 2.0	4 USB 3.0, 2 USB 2.0
	Display	1 VGA, 1 DVI	1 VGA, 1 HDMI	2 DVI, 1 HDMI	2 DVI, 1 HDMI
	Audio	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out
	PS/2	1	2	1	1
	Internal I/O	Serial	1 RS-422/485, 7 RS-232	1 RS-232/422/485, 5 RS-232	1 RS-232/422/485, 4 RS-232
USB		3 USB 2.0	5*6 USB 2.0	6 USB 2.0	6 USB 2.0
Display		-	-	-	-
Audio		Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF
SATA		2 SATA 3.0, 2 SATA 2.0	2 SATA 3.0, 2 SATA 2.0	2 SATA 3.0, 4 SATA 2.0 (RAID)	2 SATA 3.0, 4 SATA 2.0 (RAID)
DIO		8-bit DIO	8-bit DIO	8-bit DIO	8-bit DIO
LPC**		-	-	-	-
SMBus	-	-	-	-	
TPM / iAMT		TPM (opt.)	TPM (opt.)	TPM (opt.), iAMT 8.0	TPM (opt.), iAMT 8.0
Power		24-pin ATX	24-pin ATX	24-pin ATX	24-pin ATX
Operating Temperature		0°C~60°C	0°C~60°C	0°C~60°C	0°C~60°C

3rd/2nd Gen Intel Core



Q67



B65



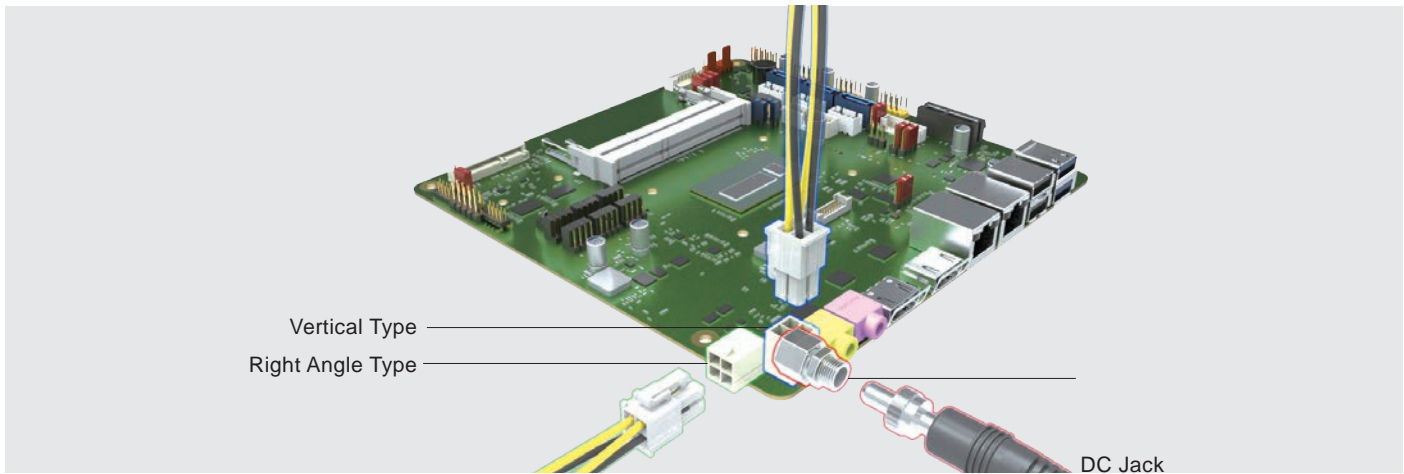
B65

Model Name		SB630-CRM	SB600-C	SB601-C
Platform		Desktop	Desktop	Desktop
System	Processor	3rd/2nd Gen Intel® Core™	3rd/2nd Gen Intel® Core™	3rd/2nd Gen Intel® Core™
	Socket	LGA 1155	LGA 1155	LGA 1155
	Max. Speed	2.9~3.9GHz	2.9~3.9GHz	2.9~3.9GHz
	TDP	55W/65W/77W/95W	55W/65W/77W/95W	55W/65W/77W/95W
	Cache	3M/6M/8M	3M/6M/8M	3M/6M/8M
	Chipset	Intel® Q67	Intel® B65	Intel® B65
Memory	BIOS	AMI SPI 64Mbit	AMI SPI 64Mbit	AMI SPI 64Mbit
	Technology	Dual Channel DDR3 1066/1333/1600MHz	Dual Channel DDR3 1066/1333/1600MHz	Dual Channel DDR3 1066/1333/1600MHz
	Max. Capacity	32GB	32GB	32GB
Graphics	Socket	4 DIMM	4 DIMM	4 DIMM
	Connector	1 VGA, 1 DVI	1 VGA, 1 DVI	1 VGA, 1 DVI
Expansion	PCIe, PCI	1 PCIe x16, 1 PCIe x4, 4 PCI	1 PCIe x16, 6 PCI	1 PCIe x16, 7 PCI
	Mini PCIe	1 Mini PCIe / 1 PCIe x1	1 Mini PCIe	1 Mini PCIe
	SIM	-	-	-
Audio	Audio Codec	Realtek ALC886	Realtek ALC886	Realtek ALC886
Ethernet	Controller	1 Intel® 82579, 1 Intel® 82574	2 Realtek RTL8111DL	2 Realtek RTL8111DL
	Ethernet (GbE)	2	2	2
Rear I/O	Serial	2 RS-232/422/485	2 RS-232/422/485	2 RS-232/422/485
	USB	6 USB 2.0	6 USB 2.0	6 USB 2.0
	Display	1 VGA, 1 DVI	1 VGA, 1 DVI	1 VGA, 1 DVI
	Audio	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out
	PS/2	1	1	1
	Internal I/O	Serial	4 RS-232	4 RS-232
USB		6 USB 2.0	4 USB 2.0	4 USB 2.0
Display		-	1 SDVO	1 SDVO
Audio		Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF
SATA		2 SATA 3.0, 4 SATA 2.0 (RAID)	1 SATA 3.0, 5 SATA 2.0	1 SATA 3.0, 5 SATA 2.0
DIO		8-bit DIO	8-bit DIO	8-bit DIO
LPC**		-	-	-
SMBus	-	-	-	
TPM / iAMT		TPM (opt.), iAMT 8.0	TPM (opt.)	TPM (opt.)
Power		24-pin ATX	24-pin ATX	24-pin ATX
Operating Temperature		0°C~60°C	0°C~60°C	0°C~60°C

*Populated by default

**Supports LPC EXT-RS232/RS485 module

Flexible Power Connector



DFI Applicable Boards:

Processor	Form Factor	Model
7th Gen Intel® Core™	Mini-ITX	KU171/173
	SBC	KU551
6th Gen Intel® Core™	Mini-ITX	SD101/SD103-Q170, SD101/SD103-H110, SU171/SU173
	SBC	SU551
Intel Atom® E3900	Mini-ITX	AL171/AL173
	SBC	AL551, AL553
Intel® Pentium®/Celeron® N3000	Mini-ITX	BW171/BW173
	SBC	BW551

DFI Proprietary LPC Modules

EXT-RS232

EXT-RS485

Proprietary Card

4 COM ports

1. Two proprietary cards for expanding extra 4 COM ports via a LPC interface
2. Provides flexibility and system integration on DFI's newest platforms

DFI Applicable Boards:

Processor	Form Factor	Model
8th Gen Intel® Core™	microATX	CS330-Q370, CS330-H310
7th Gen Intel® Core™	ATX	KD631-C236, KD631-Q170, KD600-Q170, KD600-H110
	microATX	KD331-C236, KD331-Q170, KD330-Q170, KD330-H110, KD300-Q170, KD300-H110
6th Gen Intel® Core™	ATX	SD631-C236, SD631-Q170, SD630-H110
	microATX	SD331-C236, SD331-Q170, SD330-Q170, SD330-H110
	Mini-ITX	SD100-Q170, SD101/SD103-Q170, SD100-H110, SD101/SD103-H110, SU171/SU173
Intel Atom® E3900	Mini-ITX	AL170, AL171/AL173
Intel® Pentium®/Celeron® N3000	Mini-ITX	BW171/BW173

Peripherals

Providing Expansibility & High Flexibility



Proprietary Expansion Modules

Model Name	EXT-DP	SDVO-LVDS
Chip	SN75DP130	Chrontel CH7308B
Ports	DP Connector LCD/Inverter Power Connector	LVDS LCD Panel Connector LCD/Inverter Power Connector
Interface	1 DP	1 SDVO
Dimensions	50 x 40 mm	45 x 38 mm
Applicable Models	HU171/173, HU101/103, HM100/101/103-QM87/HM86	SB102-D, SB300-C, SB630-CRM, SB600-C, SB601-C



Model Name	EXT-RS232	EXT-RS485	MPE-EXTB	MPE-EXTF	MPE-SATA
Chip	NCT5104	NCT5104	-	-	-
Expansion Slots/Ports	4 RS232 Serial Connector	4 RS485 Serial Connector	1 Full-size Mini PCIe	1 Full-size Mini PCIe	1 SATA Connector
Interface	1 LPC	1 LPC	1 Half-size Mini PCIe	1 Half-size Mini PCIe	1 mSATA
Dimensions	48 x 30 mm	48 x 30 mm	30 x 26.8 mm	30 x 26.8 mm	35 x 25 mm
Applicable Models	SD631-C236/Q170, SD630-H110, SD331-C236/Q170, SD331-Q170/H110, SD101/SD103-Q170/H110, SU171/SU173, BW171/BW173		-	-	-



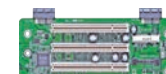
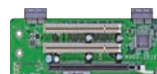
DC to DC Converters

Model Name	X102-DC12	X102-DC24	X102-DC30	X102-DC36
Input Voltage	11.4V~12.6V	20.4V~25.2V	6V~30V	9V~36V
Output Voltage	Output Voltage	Output Voltage	Output Voltage	12V/24V
	Output Current	Output Current (maximum)	Output Current (maximum)	
	Power Output			
	Test Result			
	Maximum Output	130W	140W	
Ports	DC 12V Jack 4-pin ATX +12V Power Connector 20-pin ATX Power Connector	3-pin DC-in Connector 4-pin ATX 12V Power Connector 20-pin ATX Power Connector 4-pin FDD Power Connector	3-pin DC-in Connector 4-pin ATX 12V Power Connector 20-pin ATX Power Connector 4-pin FDD Power Connector	DC-in Jack(default)/ 4-pin Power Connector
Dimensions	146 x 50 mm	146 x 50 mm	146 x 50 mm	146 x 55 mm



Riser Cards

Model Name	RISER-2PE4	RISER-PE16	X100-2P1M	X100-3PE2
Expansion Slots	2 PCIe x4	1 PCIe x16	2 PCI, 1 Mini PCIe	1 PCIe x1, 1 PCI, 1 Mini PCIe
Interface	1 PCIe x8	1 PCIe x16	1 PCIe x1	1 PCIe x1
Dimensions	170 x 52.7 mm	137.1 x 31.3 mm	170 x 52.7 mm	170 x 52.7 mm
Applicable Models	-	-	-	BT161



Model Name	H300-2E	H300-2P1E	H300-3P1M
Expansion Slots	2 PCIe x8	1 PCIe x16, 2 PCI	3 PCI, 1 Mini PCIe
Interface	2 DFI Proprietary Extension Bus		
Dimensions	170 x 37 mm	170 x 64 mm	170 x 64 mm
Applicable Models	CR100-CRM, HR100-CRM, CM100-C, BT161		

*Available upon project request & MOQ required



Headquarters

DFI Inc.

10F, No.97, Sec.1, Xintai 5th Rd.
Xizhi Dist., New Taipei City 22175
Taiwan (R.O.C.)
Tel: +886 (2) 2697-2986
Fax: +886 (2) 2697-2168
www.dfi.com
estore.dfi.com

DFI-ITOX, LLC

15 Corporate Place South, Suite 201
Piscataway, NJ 08854, U.S.A.
Tel: +1 (732) 390-2815
Fax: +1 (732) 562-0693
www.dfi-itox.com
www.dfi-itox.com/estore

Diamond Flower Information (NL) B.V.

Klompemakerstraat 89, 3194 DD
Rotterdam Hoogvliet, The Netherlands
Tel: +31 (10) 313-4100
Fax: +31 (10) 313-4101
www.dfi.com

DFI Co., Ltd.

5F Dai2 Denpa Bldg. 2-14-10 Sotokanda
Chiyoda-ku, Tokyo, 101-0021, Japan
Tel: +81 (3) 5209-1081
Fax: +81 (3) 5209-1082
www.dfi.com

Yan Ying Hao Trading Co., Ltd. (Shenzhen)

Room 505, 5th Floor, Building D
Hua Chuang Da Central Business Building
Bao'an Road, Bao'an 42th District
Shenzhen, China
Tel: +86 (0755) 2372-9390
Fax: +86 (0755) 2372-4065
www.dfi.com

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