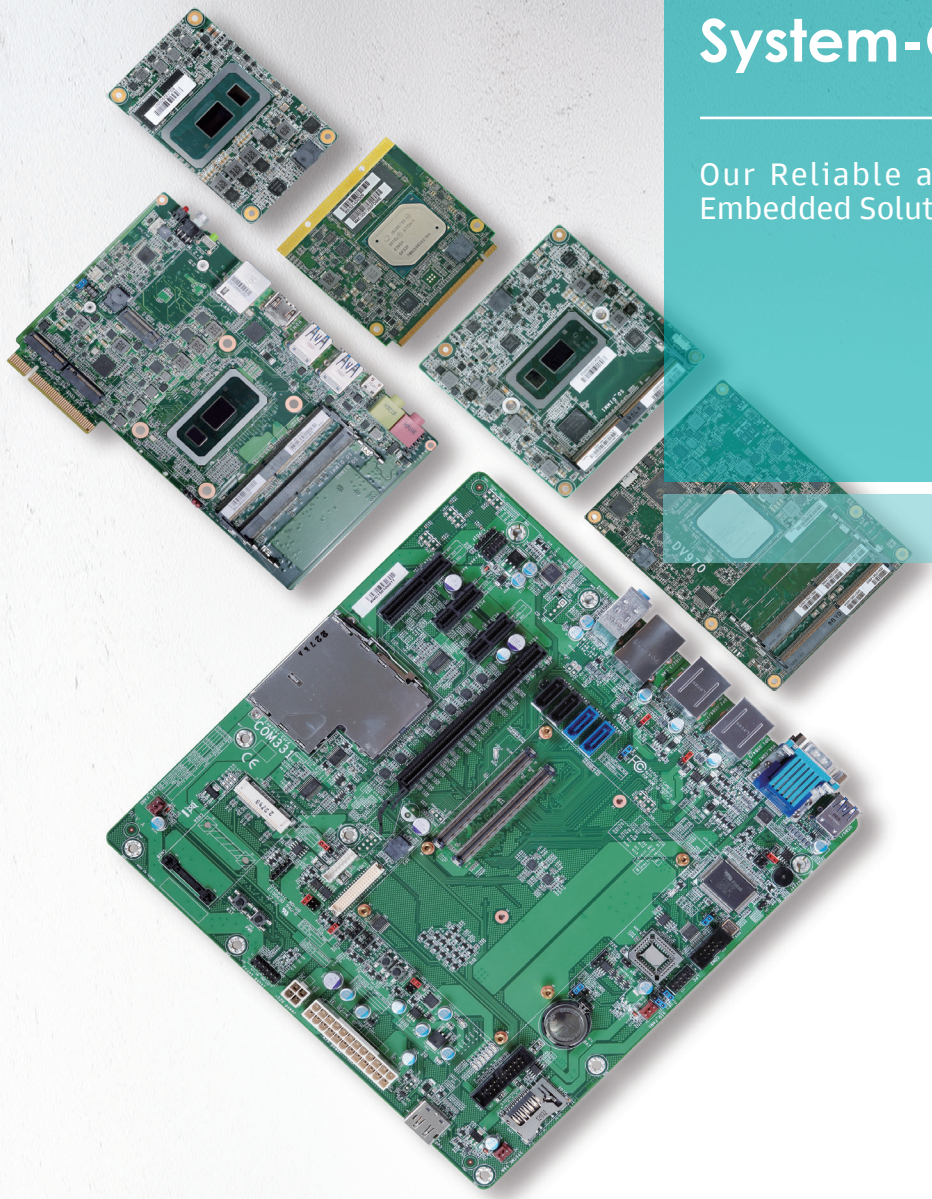
DFI Desire For Innovation



System-On-Modules

Our Reliable and Scalable SOMs for Your Embedded Solutions

Our Reliable and Scalable SOMs for Your Embedded Solutions

We provide off-the-shelf System-On-Modules including COM Express Mini, COM Express Compact, COM Express Basic, Qseven, SMARC and Customized Design-in Services for various embedded computing solutions

System-On-Modules Product Overview

Qseven

EHL701

Processor	Platform	Chipset	Model	Index
Intel® Atom® Processor x6000	Atom	-	EHL701	P6
			EHL700	
Intel® Atom® Processor E3900	Atom	-	AL701	
			AL700	P7
Intel® Atom® Processor E3800	Atom	-	BT700	
Rockchip RK3568 / RK3568J Cortex A55	ARM	-	RK701	
Freescale™ i.MX6 Series	ARM	-	FS700	

COM Express Mini

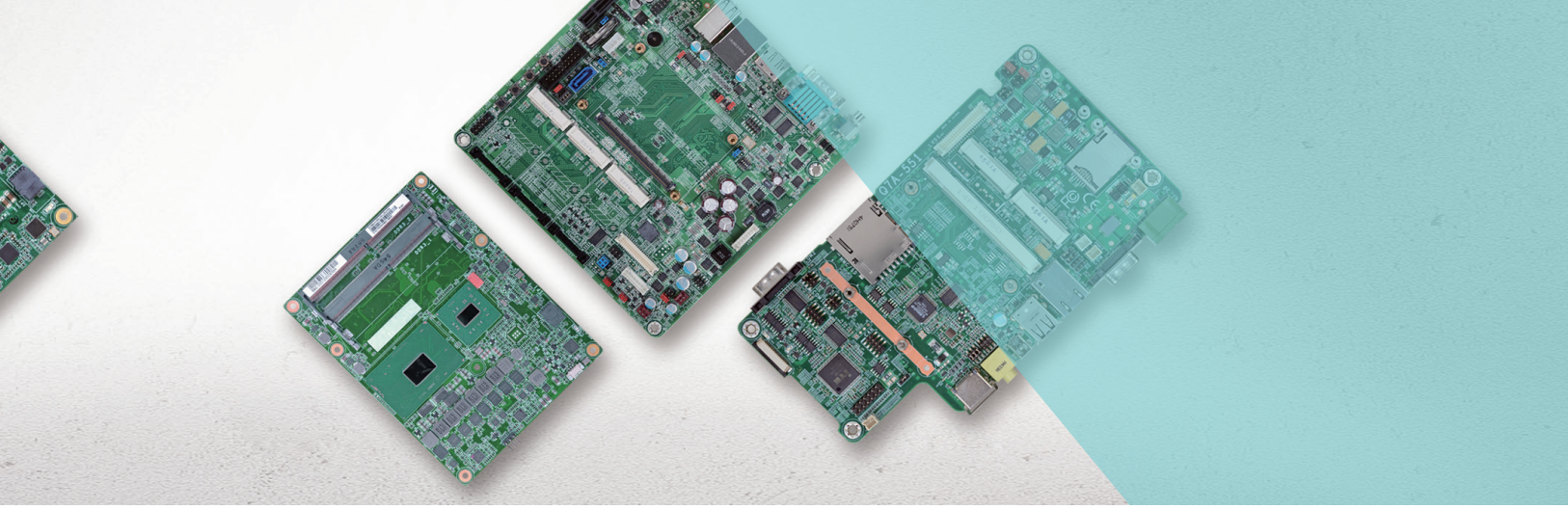
ASL9A2

Processor	Platform	Chipset	Model	Index
Intel® Core™ Ultra Processor	ULT	-	MTU9A2	P8
11th Gen Intel® Core™ Processor	ULT	-	TGU9A2	
8th Gen Intel® Core™ Processor	ULT	-	WL9A3	
Intel® Atom® Processor Alder Lake-N Series	Atom	-	ADN9A2	
Intel® Atom® Processor Amston Lake	Atom	-	ASL9A2	P9
Intel® Atom® Processor Elkhart Lake Series	Atom	-	EHL9A2	
Intel® Atom® Processor E3900/ Intel® Pentium® N4200	Atom	-	AL9A2	
		-	AL9A3	
		-	AL9A8	
Intel® Atom® Processor E3800	Atom	-	BT9A3	
AMD® Ryzen™ R1000 Series Processor	AMD	-	GH9A3	

COM Express Compact

MTH968

Processor	Platform	Chipset	Model	Index
Intel® Core™ Ultra Processor	U/H	-	MTH966	P10
Intel® Core™ Ultra Processor	U/H	-	MTH968	
13th Gen Intel® Core™ Processor	ULT	-	RPP968	
12th Gen Intel® Core™ Processor	ULT	-	ADP968	
11th Gen Intel® Core™ Processor	ULT	-	TGU968	P11
8th Gen Intel® Core™ Processor	ULT	-	WL968	
7th Gen Intel® Core™ Processor	ULT	-	KU968	
6th Gen Intel® Core™ Processor	ULT	-	SU968	
Intel® Atom® Processor Amston Lake Series	Atom	-	ASL968	
Intel® Atom® Processor E3900/ Intel® Pentium® N4200	Atom	-	AL968	
Intel® Atom® Processor E3800	Atom	-	BT968	



COM Express Basic

ICD970

Type	Processor	Platform	Chipset	Model	Index
Type 7	AMD® Ryzen™ Embedded V3000 Series processors	AMD	-	RBT970	P12
	3rd Gen Intel® Xeon® Scalable Processors D-1700 Family	Server	-	ICD970	
	Intel® Atom® Processor C3000	Atom	-	DV970	
Type 6	11th Gen Intel® Core™ Processor	Mobile	RM590E/ QM580E/ HM570E	TGH960	P13
	9th/8th Gen Intel® Core™ Processor	Mobile	CM246/ QM370/ HM370	CH960-CM246/QM370/ HM370	
				CH961-CM246/QM370/ HM370	
	6th Gen Intel® Core™ Processor	Mobile	CM236/ QM170	SH960MD-CM236/ QM170	
	AMD® Ryzen™ V1000/R1000 Embedded Processors	AMD	-	GH960	

COM HPC

RPS9HC-R680E
Q670E / H610E

Processor	Platform	Chipset	Model	Index
14th/13th Gen Intel® Core Processors	Desktop	R680E/ Q670E/ H610E	RPS9HC-R680E/ Q670E/H610E	P14

SMARC

ASL600

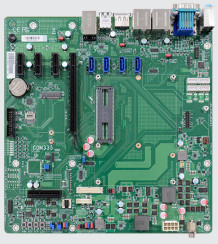
Processor	Compliance	Model	Index
Intel® Atom® Processor Amston Lake Series	SMARC specifications V2.2	ASL600	P15

OSM

QRB812

Processor	Form Factor	Model	Index
Qualcomm QRB5165 Processor	OSM 1.1	QRB812	P16

Carrier Board



COM335

Type	Form Factor	Compliance	Model	Index
-	Extend ATX	COM HPC R2.0	COM836	P17
Type 10, Type 6	microATX	COM Express R3.1	COM335	
Type 7		COM Express R3.0	COM333-I	
Type 6		COM Express R2.1	COM332-B(R.A)	
Type 6		COM Express R2.1	COM332-B(R.B1)	P18
SMARC		SMARC (ASL600)	SMX331	
Type 10	Mini-ITX	COM Express R2.1	COM100-B	
-		Qseven (BT700)	Q7X-151(R.A)	
		Qseven (AL700, AL701, BT701)	Q7X-151(R.D1)	
-	Proprietary	Qseven (FS700)	Q7A-551	

SDM

SDML-WL

Form Factor	Processor	Compliance	Model	Index
SDM Large	8th Gen Intel® Core™ Processor	Intel® Smart Display Module	SDML-WL	P19

Customer-Oriented SOM Design-In Services

Design Assistance

- Comprehensive evaluation of carrier board design during planning phase
  Hardware/Software Recommendations, Technical Specifications, Developing Schedule, and Database Schematic Review, Placement/Layout Review, Debugging Assistance Services, and General/Special Reference Design
- Comprehensive design documentation for designing carrier board
  Carrier Board Design Guide, User's Manual, Schematic & Layout Checklist, and 2D/3D Mechanical Drawing

Strict Validation

- Strict validation and testing process ensures reliable deployments
  Dedicated Design Review Team, Thermal Simulation, and COMe Debug Module Card

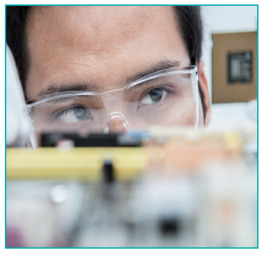
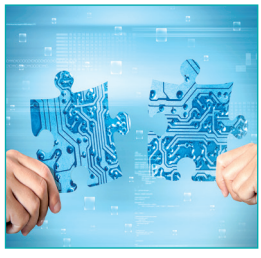
Thermal Solution

- Customized thermal solution design & Optional heatspreader
  For special requirements like high-temperature environments or ultra-slim chassis

Software Integration

- Embedded OS and BIOS customization
  Windows 10, Windows 7, WES 7, Windows XP, Linux (CentOS/Debian), etc.
- Windows licensing offerings
- Application Programming Interface (API) library
  Watchdog, Hardware Control/Monitor, GPIO, Backlight Control, SMBus, etc.
- Remote management utility




Planning → Design → Validation → Integration → Production

Rugged Design

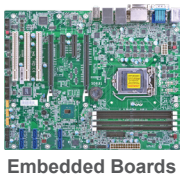
- Industrial-rated components with high MTBF over 100,000 hrs
- Extended operating temperatures
- High ESD protection for I/O ports
- Signal integrity measurement
- Wide range power design
- 100% Japanese-made solid capacitor
- Power hot plug protection for DC-in type SBC and Industrial Motherboards

Software Integration

- Embedded BIOS and OS customization services
- Windows licensing offerings
- Android, Linux distribution (Yocto/Ubuntu/CentOS/Debian)
- Embedded API
  (Hardware Monitor, SMBus, I^2C, 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



Embedded Boards

Peripherals

Systems

Embedded Software & BIOS

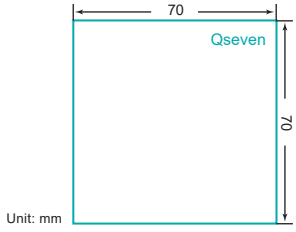
Vertical Solutions

Qseven

Extremely Small & Mobile Solutions

Features

Qseven is equipped with fast serial interfaces in an ultra-small form factor with a measurement of just 70 x 70 mm. It is much smaller than other system-on-module standards such as COM Express, which makes it an ideal solution for space-limited and low power applications such as industrial automation, retail, and power & energy.





		Wide Temp / Atom	Wide Temp / Atom	Wide Temp / Atom
Model Name		**EHL701**	**EHL700**	**AL701**
Compliance		Qseven R2.1	Qseven R2.1	Qseven R2.1
System	Processor	Intel Atom® x6000	Intel Atom® x6000	Intel® Atom® E3900
	Socket	BGA 1493	BGA 1493	BGA 1296
	Max. Speed	1.2~3.0GHz	1.2~3.0GHz	1.8~2.5GHz
	TDP	6W/6.5W/9W/10W/12W	6W/6.5W/9W/10W/12W	6W/6.5W/9.5W/12W
	Cache	1M~2M	1M~2M	2M
	BIOS	AMI SPI 256Mbit (supports UEFI boot only)	AMI SPI 256Mbit (supports UEFI boot only)	AMI SPI 128Mbit (supports UEFI boot only)
Memory	Technology	Dual Channel LPDDR4 3200MHz	Dual Channel LPDDR4 3200MHz	Dual Channel LPDDR4 3200MHz
	Max. Capacity	4GB / 8GB / 16GB	4GB / 8GB	4GB/8GB
	Socket	Memory down	Memory down	Memory down
Graphics	Interface	1 LVDS/eDP, 1 DDI	1 eDP, 1 DDI	1 LVDS/eDP, 1/2 DDI
Expansion	PCIe	4 PCIe x1	4 PCIe x1	4 PCIe x1
	LPC	1	1	1
	I^2C	1	1	1
	SMBus	1	1	1
	CAN Bus	-	-	1 (Opt.)
Audio	Interface	HD Audio	HD Audio	HD Audio
Ethernet	Controller	1 Intel® I211	1 Intel® I211/I210	1 Intel® I211AT / 1 Intel® I210IT
I/O	USB	1 USB 3.1 + 8 USB 2.0 / 2 USB 3.1 + 6 USB 2.0	1 USB 3.2 + 8 USB 2.0 / 2 USB 3.2 + 6 USB 2.0	1 USB 3.2 + 8 USB 2.0 / 3 USB 3.2 + 4 USB 2.0 (Opt.)
	SATA	2 SATA 3.0	2 SATA 3.0	2 SATA 3.0
	eMMC	1 eMMC 5.1 up to 128GB (Opt.)	1 eMMC 5.1 up to 128GB (Opt.)	eMMC 5.0 up to 32GB (Opt.)
	DIO	4-bit GPIO	4-bit GPIO	4-bit GPIO
	SD	-	-	-
TPM		dTPM or fTPM (Opt.)	fTPM	fTPM
Power		5V, 5VSB, VCC-RTC	5V, 5VSB, VCC-RTC	5V, 5VSB, VCC_RTC
Operating Temperature		-40°C~85°C, 0°C~60°C, -5°C~65°C (Opt.)	-40°C~85°C, 0°C~60°C, -5°C~65°C (Opt.)	-40°C~85°C, 0°C~60°C

*Populated by default

Wide Temp Atom

Wide Temp Atom

Model Name		AL700	BT700
Compliance		Qseven R2.1	Qseven R2.0
System	Processor	Intel® Atom® E3900	Intel® Atom® E3800
	Socket	BGA 1296	BGA 1170
	Max. Speed	1.8~2.5GHz	1.46~2.41GHz
	TDP	6W/6.5W/9.5W/12W	5W/7.5W/8W/10W
	Cache	2M	0.5M/1M/2M
	BIOS	AMI SPI 128Mbit (supports UEFI boot only)	AMI SPI 64Mbit
Memory	Technology	Dual Channel DDR3L 1600MHz	Single Channel DDR3L 1066/1333MHz
	Max. Capacity	4GB/8GB	2GB/4GB
	Socket	Memory down	Memory down
Graphics	Interface	1 LVDS/eDP, 1/2 DDI	1 LVDS, 1 DDI
Expansion	PCIe	4 PCIe x1	3 PCIe x1
	LPC	1	1
	I^2C	1	1
	SMBus	1	1
	CAN Bus	-	-
Audio	Interface	HD Audio	HD Audio
Ethernet	Controller	1 Intel® I211AT / 1 Intel® I210IT	1 Intel® I210AT / 1 Intel® I210IT
I/O	USB	1 USB 3.2 + 8 USB 2.0 / 3 USB 3.2 + 4 USB 2.0 (Opt.)	1 USB 3.2, 6 USB 2.0
	SATA	2 SATA 3.0	2 SATA 2.0
	eMMC	eMMC 5.0 up to 32GB (Opt.)	1 eMMC up to 32GB (Opt.)
	DIO	4-bit GPIO	8-bit SDIO
	SD	-	1
TPM		fTPM	Optional
Power		5V, 5VSB, VCC_RTC	5V, 5VSB, VCC_RTC
Operating Temperature		-40°C~85°C, 0°C~60°C	-40°C~85°C, 0°C~60°C

*Populated by default

Wide Temp ARM

ARM

Model Name		RK701	FS700
Compliance		Qseven R2.1	Qseven R1.2
System	Processor	Rockchip RK3568 / RK3568J Cortex A55	Freescale™ i.MX6 Series
	Socket	FCBGA	FCPBGA
	Max. Speed	1.8~2GHz	1.0GHz
	TDP	5W	-
	Cache	32KB	32KB
	BIOS	-	-
Memory	Technology	DDR4 3200MHz	Single Channel DDR3 1000/1200MHz
	Max. Capacity	2GB / 4GB / 8GB	1GB/2GB
	Socket	Memory Down	Memory down
Graphics	Interface	1 eDP/LVDS, 1 DP/TMDS	2 LVDS
Expansion	PCIe	2 PCIe x1 (Gen3), 1 PCIe x1 (Gen2)	1 PCIe x1
	LPC	-	-
	I^2C	1	2
	SMBus	-	1
	CAN Bus	1	1
Audio	Interface	HD Audio	I2S
Ethernet	Controller	1 RTL8211F-CG	1 Atheros AR8033
I/O	USB	1 USB 3.2, 4 USB 2.0	4 USB 2.0, 1 USB OTG
	SATA	2 SATA 3.0	1 SATA 2.0
	eMMC	1 eMMC 5.1 up to 128GB (Opt.)	1 eMMC up to 16GB
	DIO	4-bit GPIO	1 SDIO
	SD	-	1 microSD onboard
TPM		dTPM 2.0	-
Power		5V, 5VSB, VCC-RTC	5V
Operating Temperature		-40°C~85°C, 0°C~60°C	-20°C~70°C

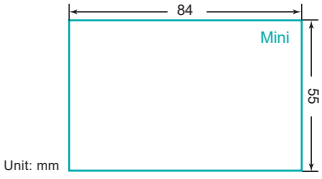
*Populated by default

COM Express Mini

Power-Saving & Small-Size Solutions

Features

COM Express® Mini module delivers high performance on a small footprint which features 55 x 84 mm in size. It is ideal for space-limited, power-saving and mobile applications. DFI's ultra-small modules are available with COM Express® pin-out Type 10.






ULT | Wide Temp | ULT | Wide Temp | ULT | Atom

Model Name		MTU9A2	TGU9A2	WL9A3	ADN9A2
Compliance		COM Express® R3.1 Mini, Type 10	COM Express® R3.0 Mini, Type 10	COM Express® R3.0 Mini, Type 10	COM Express® R3.1 Mini, Type 10
System	Processor	Intel® Core™ Ultra Processor	11th Gen Intel® Core™	8th Gen Intel® Core™	Intel® Atom® Processor Alder Lake-N Series
	Socket	FCBGA1744	BGA1526	FCBGA 1528	BGA 1264
	Max. Speed	1.3~1.7GHz	up to 3.0GHz(Turbo)	3.9~4.4GHz	3.2~3.8GHz
	TDP	15W	15-28W	15W	6W/9W/10W/12W/15W
	Cache	12M	4M/6M/8M/12M	4M/6M/8M	6M
	BIOS	AMI SPI 256Mbit	AMI SPI 256Mbit	AMI SPI 128Mbit	AMI SPI 256Mbit
Memory	Technology	Single Channel LPDDR5 7467MHz (IBECC Supported by Ubuntu)	Single Channel LPDDR4X 4266MHz	Dual Channel LPDDR3 2133MHz	Dual Channel LPDDR5 4800MHz (IBECC Supported)
	Max. Capacity	8GB/16GB	8GB/16GB	8GB/16GB	8GB/16GB
	Socket	Memory down	Memory down	Memory down	Memory down
Graphics	Interface	1 DDI, 1 eDP	1 eDP, 1 DDI	1 LVDS/eDP, 1 DDI	1 LVDS/eDP, 1 DDI
Expansion	PCIe	4 PCIe x1	4 PCIe x1	4 PCIe x1	4 PCIe x1
	SDIO	-	-	1	-
	LPC	1 eSPI	-	1	1
	I^2C	1	1	2	1
	SMBus	1	1	1	1
	CAN Bus	1 (Opt.)	-	-	1 (Opt.)
Audio	Interface	HD Audio	HD Audio	HD Audio	HD Audio
Ethernet	Controller	1 Intel® I226IT	1 Intel® I225IT	1 Intel® I219	1 Intel® I226IT/LM
I/O	USB	2 USB 3.2 Gen2, 8 USB 2.0	2 USB 3.2, 8 USB 2.0	2 USB 3.2, 8 USB 2.0	2 USB 3.2 Gen2, 8 USB 2.0
	SATA	2 SATA 3.0	2 SATA 3.0	2 SATA 3.0	2 SATA 3.0
	SSD	1 on board SSD up to 1024GB (Opt.)	1 on board SSD up to 1024GB (Opt.)	-	-
	eMMC	-	-	1 eMMC up to 64GB (Opt.)	1 eMMC 5.1 up to 128GB (Opt.)
	DIO	8-bit DIO	8-bit DIO	8-bit GPIO	8-bit DIO
TPM		dTPM or fTPM (Opt.)	dTPM or fTPM (Opt.)	fTPM	dTPM or fTPM (Opt.)
Power		4.75V~20V, 5VSB, VCC-RTC (ATX mode), 4.75V~20V, VCC-RTC (AT mode)	4.75V~20V, 5VSB, VCC-RTC (ATX mode), 4.75V~20V, VCC-RTC (AT mode)	12V~20V, 5VSB, VCC-RTC (ATX mode) 12V~20V, VCC-RTC (AT mode)	4.75V~20V, 5VSB, VCC-RTC (ATX mode), 4.75V~20V, VCC-RTC (AT mode)
Operating Temperature		-40°C~85°C, -5°C~65°C	-30°C~85°C, 0°C~60°C	-40°C~85°C, -5°C~65°C	-40°C~85°C, -5°C~65°C

*Populated by default




Wide Temp Atom | Wide Temp Atom | Wide Temp Atom | Wide Temp Atom

Model Name		ASL9A2	EHL9A2	AL9A2	AL9A3
Compliance		COM Express® R3.0 Mini, Type 12	COM Express® R3.0 Mini, Type 10	COM Express® R2.1 Mini, Type 10	COM Express® R2.1 Mini, Type 10
System	Processor	Intel® Atom® Processor Amston Lake Series	Intel® Atom® Processor Elkhart Lake Series	Intel® Atom® E3900 / Intel® Pentium® N4200	Intel® Atom® E3900 / Intel® Pentium® N4200
	Socket	BGA 1264	FCBGA 1528	BGA 1296	BGA 1296
	Max. Speed	3.2~3.6GHz	1.7~4.4GHz	1.8~2.5GHz	1.8~2.5GHz
	TDP	6W/9W/10W/12W	6W/9W/10W/12W	6W/6.5W/9.5W/12W	6W/6.5W/9.5W/12W
	Cache	6M	4M/6M/8M	2M	2M
	BIOS	AMI SPI 256Mbit	AMI SPI 256Mbit	AMI SPI 128Mbit (supports UEFI boot only)	AMI SPI 128Mbit
Memory	Technology	Dual Channel LPDDR5 4800MHz (IBECC Supported)	Dual Channel LPDDR4X 3733/4267MHz (IBECC Supported)	Single Channel DDR3L 1600MHz	Dual Channel DDR3L 1600MHz
	Max. Capacity	8GB/16GB	8GB/16GB	4GB non-ECC / 8GB ECC	4GB / 8GB
	Socket	Memory down	-	Memory down	Memory down
Graphics	Interface	1 LVDS/eDP, 1 DDI	1 LVDS/eDP, 1 DDI	1 LVDS/eDP, 1 DDI	1 LVDS/eDP, 1 DDI
Expansion	PCIe	4 PCIe x1	4 PCIe x1	4 PCIe x1	4 PCIe x1
	SDIO	-	1 (Opt.)	1 (Opt.)	1 (Opt.)
	LPC	1	1	1	1
	I^2C	1	1	2	1
	SMBus	1	1	1	1
	CAN Bus	1 (Opt.)	-	-	-
Audio	Interface	HD Audio	HD Audio	HD Audio	HD Audio
Ethernet	Controller	1 Intel® I226IT/LM	1 Intel® I225IT/LM	1 Intel® I210AT/IT	1 Intel® I210AT/IT
I/O	USB	2 USB 3.2 Gen2, 8 USB 2.0	2 USB 3.2, 8 USB 2.0	2 USB 3.2, 8 USB 2.0	2 USB 3.2, 8 USB 2.0
	SATA	2 SATA 3.0	2 SATA 3.0	2 SATA 3.0	2 SATA 3.0
	SSD	-	-	-	1 SSD up to 64GB (Opt.)
	eMMC	1 eMMC 5.1 up to 128GB (Opt.)	1 eMMC 5.1 up to 128GB (Opt.)	1 eMMC up to 64GB (Opt.)	-
	DIO	8-bit DIO	8-bit DIO	8-bit GPIO	8-bit GPIO
TPM		dTPM or fTPM (Opt.)	dTPM or fTPM (Opt.)	-	-
Power		4.75V~20V, 5VSB, VCC-RTC (ATX mode) 4.75V~20V, VCC-RTC (AT mode)	4.75V~20V, 5VSB, VCC-RTC (ATX mode) 4.75V~20V, VCC-RTC (AT mode)	4.75V~20V, 5VSB, VCC-RTC (ATX mode) 4.75V~20V, VCC-RTC (AT mode)	4.75V~20V, 5VSB, VCC-RTC (ATX mode) 4.75V~20V, VCC-RTC (AT mode)
Operating Temperature		-40°C~85°C	-40°C~85°C, -5°C~65°C	-40°C~85°C, 0°C~60°C	-40°C~85°C, 0°C~60°C

*Populated by default



Wide Temp Atom | Wide Temp ULT | Wide Temp AMD R1000

Model Name		AL9A8	BT9A3	GH9A3
Compliance		COM Express® R2.1 Mini, Type 10	COM Express® R2.1 Mini, Type 10	COM Express® R3.0 Mini, Type 10
System	Processor	Intel® Atom® E3900 / Intel® Pentium® N4200	Intel® Atom® E3800	AMD® Ryzen™ Embedded R1000 Series
	Socket	BGA 1296	BGA 1170	FP5
	Max. Speed	1.8~2.5GHz	1.46~2.41GHz	up to 3.5GHz (Turbo)
	TDP	6W/6.5W/9.5W/12W	5W/7.5W/8W/10W	12W
	Cache	2M	0.5M/1M/2M	1M
	BIOS	AMI SPI 128Mbit (supports UEFI boot only)	AMI SPI 64Mbit	SPI 64Mbit
Memory	Technology	Dual Channel LPDDR4 2400MHz	Single Channel DDR3L 1333MHz	Single Channel LPDDR4 2400MHz
	Max. Capacity	4GB / 8GB	2GB / 4GB	4GB / 8GB
	Socket	Memory down	ECC Memory down	Memory down
Graphics	Interface	1 LVDS/eDP, 1 DDI	1 LVDS, 1 DDI	1 LVDS/eDP, 1 DDI
Expansion	PCIe	4 PCIe x1	3 PCIe x1	3 PCIe x1
	SDIO	1 (Opt.)	-	1
	LPC	1	1	1
	I^2C	1	1	2
	SMBus	1	1	1
	CAN Bus	-	-	-
Audio	Interface	HD Audio	HD Audio	HD Audio
Ethernet	Controller	1 Intel® I210AT/IT	1 Intel® I210	1 Intel® I210
I/O	USB	2 USB 3.2, 8 USB 2.0	1 USB 3.2, 8 USB 2.0	2 USB 3.2, 8 USB 2.0
	SATA	2 SATA 3.0	2 SATA 2.0	2 SATA 3.0
	SSD	-	-	-
	eMMC	1 eMMC up to 128GB	1 eMMC up to 32GB (Opt.)	Optional
	DIO	6-bit GPIO	8-bit DIO	8-bit GPIO
TPM		dTPM or fTPM (Opt.)	-	dTPM or fTPM (Opt.)
Power		4.75V~20V, 5VSB, VCC-RTC (ATX mode) 4.75V~20V, VCC-RTC (AT mode)	4.75V~20V, 5VSB, VCC-RTC (ATX mode) 4.75V~20V, VCC-RTC (AT mode)	12V~20V, 5VSB, VCC-RTC (ATX mode) 12V~20V, VCC-RTC (AT mode)
Operating Temperature		-40°C~85°C, -5°C~65°C	-40°C~85°C, 0°C~60°C	-40°C~85°C, 0°C~60°C

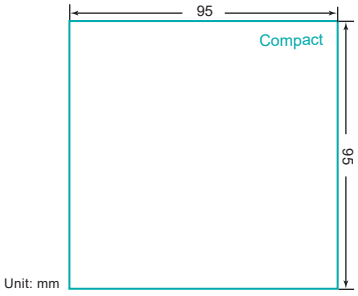
*Populated by default

COM Express Compact

Reliable & Compact Solutions

Features

COM Express® Compact module is designed with computing capability and cost efficiency in a compact form factor with a footprint of 95 x 95 mm, making it the best Option for transportation and defense applications. DFI's Compact modules are available with COM Express® pin-out Type 2 and Type 6.



Wide Temp U/H

Wide Temp U/H

Wide Temp ULT

Wide Temp ULT

Model Name		MTH966	MTH968	RPP968	ADP968
Compliance		COM Express® R3.1 Compact, Type 6	COM Express® R3.1 Compact, Type 6	COM Express® R3.1 Compact, Type 6	COM Express® R3.1 Compact, Type 6
System	Processor	Intel® Core™ Ultra Processor	Intel® Core™ Ultra Processor	13th Gen Intel® Core™	12th Gen Intel® Core™
	Socket	FCBGA1744	FCBGA1744	FCBGA1744	FCBGA1744
	Max. Speed	1.3~1.7GHz	1.1~2.7GHz	1.1~2.7GHz	1.0~1.8GHz
	TDP	15W/28W	15W/28W/45W	15W/28W/45W	15W/28W
	Cache	12M/18M/24M	12M/24M	8M/10M/12M/18M/24M	8M/10M/12M/18M
	Chipset	-	-	-	-
	BIOS	AMI BIOS	AMI BIOS	AMI BIOS	AMI BIOS
Memory	Technology	Dual Channel LPDDR5 7467MHz	Dual Channel DDR5 5600MHz	Dual Channel DDR5 5200MHz	Dual Channel DDR4 3200MHz
	Max. Capacity	64GB	64GB	64GB	64GB
	Socket	Memory down	2 SODIMM	2 SODIMM	2 SODIMM
Graphics	Interface	1 VGA, 1 LVDS/eDP, 3 DDI	1 VGA, 1 LVDS/eDP, 3 DDI	1 VGA, 1 LVDS/eDP, 3 DDI	1 VGA, 1 LVDS/eDP, 3 DDI
Expansion	PCIe	8 PCIe x1, 1 PCIe x8, 2 PCIe x4	1 PCIe x8, 2 PCIe x4, 8 PCIe x1	2 PCIe x4, 5 PCIex1, 1 PCIe x8(H series only)	2 PCIe x4, 5 PCIex1
	PCI	-	-	-	-
	LPC	1 LPC/eSPI	1 LPC/eSPI	-	-
	I^2C	1	-	1	1
	SMBus	1	1	1	1
	CAN Bus	-	-	-	-
Audio	Interface	HD Audio	HD Audio	HD Audio	HD Audio
Ethernet	Controller	1 Intel® I226IT/LM, co-lay PCIe x1 (Opt.)	1 Intel® I226IT/LM, co-lay PCIe x1 (Opt.)	1 Intel® I226IT/LM, co-lay PCIe x1 (Opt.)	1 Intel® I225IT/LM, co-lay PCIe x1 (Opt.)
I/O	USB	2 USB 4.0, 4 USB 3.2 Gen2 (1 Opt.), 8 USB 2.0	2 USB 4.0, 4 USB 3.2 Gen2 (1 Opt.), 8 USB 2.0	4 USB 3.2, 8 USB 2.0, 2 USB 4.0	4 USB 3.2 Gen2, 8 USB 2.0
	SATA	2 SATA 3.0	2 SATA 3.0	2 SATA 3.0	2 SATA 3.0
	SSD	1 on board SSD up to 1024GB (Opt.)	1 on board SSD up to 1024GB (Opt.)	1 on board SSD up to 1024GB (Opt.)	1 on board SSD up to 1024GB (Opt.)
	eMMC	-	-	-	-
	DIO	8-bit DIO	8-bit DIO	8-bit DIO	8-bit DIO
TPM		Optional	Optional	Optional	Optional
iAMT		-	-	-	-
Power		8.5~20V, 5VSB, VCC-RTC (ATX mode) 8.5~12V, VCC-RTC (AT mode)	8.5~20V, 5VSB, VCC-RTC (ATX mode) 8.5~12V, VCC-RTC (AT mode)	8.5~20V, 5VSB, VCC-RTC (ATX mode) 8.5~12V, VCC-RTC (AT mode)	8.5~20V, 5VSB, VCC-RTC (ATX mode) 8.5~20V, VCC-RTC (AT mode)
Operating Temperature		-40°C~85°C, 0°C~60°C	-40°C~85°C, 0°C~60°C	-40°C~85°C, 0°C~60°C	-40°C~85°C, 0°C~60°C

*Populated by default




Wide Temp ULT | Wide Temp ULT | Wide Temp ULT | Wide Temp ULT

Model Name		TGU968	WL968	KU968	SU968
Compliance		COM Express® R3.0 Compact, Type 6	COM Express® R3.0 Compact, Type 6	COM Express® R2.1 Compact, Type 6	COM Express® R2.1 Compact, Type 6
System	Processor	11th Gen Intel® CoreTM	8th Gen Intel® CoreTM	7th Gen Intel® CoreTM	6th Gen Intel® CoreTM
	Socket	FCBGA 1449	FCBGA 1528	BGA 1356	BGA 1356
	Max. Speed	1.8~3.0GHz	2.0~4.4GHz	2.2~3.9GHz	2~3.4GHz
	TDP	15-28W	15W	15W	15W
	Cache	4M~12M	2M/4M/6M/8M	2M/3M/4M	2M/3M/4M
	Chipset	-	-	-	-
	BIOS	AMI BIOS	AMI SPI 128Mbit	Insyde SPI 128Mbit	Insyde SPI 128Mbit
Memory	Technology	Dual Channel DDR4 3200MHz	Dual Channel DDR4 2400/2133MHz	Dual Channel DDR4 2133MHz	Dual Channel DDR3L 1600MHz
	Max. Capacity	64GB	64GB	4GB / 8GB / 16GB	16GB
	Socket	2 SODIMM	2 SODIMM	Memory down	2 SODIMM
Graphics	Interface	1 VGA/DDI, 1 LVDS/eDP, 3 DDI	1 VGA/DDI, 1 LVDS/eDP, 1 DDI	1 VGA/DDI, 1 LVDS/eDP, 1 DDI	1 VGA/DDI, 1 LVDS/eDP, 1 DDI
Expansion	PCIe	1 PCIe x4, 5/8 PCIex1	5 PCIe x1 / 2 PCIe x1 + 1 PCIe x4 / 3 PCIe x1 + 2 PCIe x2	5 PCIe x1 / 4 PCIe x1 + 1 PCIe x4 / 3 PCIe x1 + 2 PCIe x2	5 PCIe x1 / 4 PCIe x1 + 1 PCIe x4 / 3 PCIe x1 + 2 PCIe x2
	PCI	-	-	-	-
	LPC	-	1	1	1
	I^2C	1	1	1	1
	SMBus	1	1	1	1
	CAN Bus	-	-	-	-
Audio	Interface	HD Audio	HD Audio	HD Audio	HD Audio
Ethernet	Controller	1 Intel® I225LM	1 Intel® I219LM	1 Intel® I219LM	1 Intel® I219LM
I/O	USB	4 USB 3.2, 8 USB 2.0	4 USB 3.2, 8 USB 2.0	4 USB 3.2, 8 USB 2.0	4 USB 3.2, 8 USB 2.0
	SATA	2 SATA 3.0	2/3 SATA 3.0 (RAID 0/1/5) (Opt.)	3 SATA 3.0 (RAID 0/1/5)	3 SATA 3.0 (RAID 0/1/5/10)
	SSD	1 on board SSD up to 1024GB (Opt.)	-	-	-
	eMMC	-	1 eMMC 5.1 up to 128GB (Opt.)	-	-
	DIO	8-bit DIO	8-bit DIO	8-bit DIO	8-bit DIO
TPM		Optional	Optional	Optional	Optional
iAMT		-	iAMT 12.0 (Core i7/i5)	iAMT 11.0 (Core i7/i5)	iAMT 11.0 (Core i7/i5)
Power		8.5~20V, 5VSB, VCC-RTC (ATX mode) 8.5~20V, VCC-RTC (AT mode)	12V, 5VSB, VCC-RTC (ATX mode) 12V, VCC-RTC (AT mode)	12V, 5VSB, VCC-RTC (ATX mode) 12V, VCC-RTC (AT mode)	12V, 5VSB, VCC-RTC (ATX mode) 12V, VCC-RTC (AT mode)
Operating Temperature		-40°C~85°C, 0°C~60°C	-40°C~85°C, 0°C~60°C	-40°C~85°C, 0°C~60°C	-40°C~85°C, 0°C~60°C

*Populated by default



Wide Temp Atom | Wide Temp Atom | Wide Temp Atom

Model Name		ASL968	AL968	BT968
Compliance		COM Express® R3.1 Compact, Type 6	COM Express® R2.1 Compact, Type 6	COM Express® R2.1 Compact, Type 6
System	Processor	Intel® Atom® Processor Amston Lake Series	Intel® Atom® E3900 / Intel® Pentium® N4200	Intel® Atom® E3800
	Socket	BGA 1264	BGA 1296	BGA 1170
	Max. Speed	3.2~3.6GHz	1.8~2.5GHz	1.46~2.41GHz
	TDP	6W/9W/12W	6W/6.5W/9.5W/12W	5W/7.5W/8W/10W
	Cache		2M	0.5M/1M/2M
	Chipset	-	-	-
	BIOS	AMI SPI 256MHz	AMI SPI 128Mbit (supports UEFI boot only)	AMI SPI 64Mbit
Memory	Technology	Single Channel DDR5 4800MHz	Dual Channel DDR3L 1600MHz	Dual Channel DDR3L1333MHz
	Max. Capacity	16GB	8GB	8GB
	Socket	1 SODIMM	2 SODIMM	2 SODIMM
Graphics	Interface	1 LVDS/eDP, 2 DDI	1 VGA/DDI, 1 LVDS/eDP, 1 DDI	1 VGA, 1 LVDS/DDI, 1 DDI
Expansion	PCIe	Up to 7 PCIe x1	4 PCIe x1	3 PCIe x1 / 1 PCIe x4
	PCI	-	-	-
	LPC	1 LPC/eSPI	1	1
	I^2C	1	1	1
	SMBus	1	1	1
	CAN Bus	1	-	-
Audio	Interface	HD Audio	HD Audio	HD Audio
Ethernet	Controller	1 Intel® I226IT/LM, co-lay PCIe x1 (Opt.)	1 Intel® I211AT/I210IT	1 Intel® I210AT
I/O	USB	2 USB 3.2 Gen2, 8 USB 2.	4 USB 3.2, 8 USB 2.0	1 USB 3.2, 8 USB 2.0
	SATA	2 SATA 3.0	2 SATA 3.0	2 SATA 2.0
	SSD	-	-	-
	eMMC	1 64GB eMMC 5.1	1 eMMC up to 32GB (Opt.)	1 eMMC up to 32GB (Opt.)
	DIO	8-bit DIO	8-bit DIO	8-bit DIO
TPM		dTPM 2.0 / fTPM (Opt.)	Optional	Optional
iAMT		-	-	-
Power		8.5~20V, 5VSB, VCC-RTC (ATX mode) 8.5~12V, VCC-RTC (AT mode)	12V, 5VSB, VCC-RTC (ATX mode) 12V, VCC-RTC (AT mode)	12V, 5VSB, VCC-RTC (ATX mode) 12V, VCC-RTC (AT mode)
Operating Temperature		-40°C~85°C	-40°C~85°C, 0°C~60°C	-40°C~85°C, -20°C~70°C, 0°C~60°C

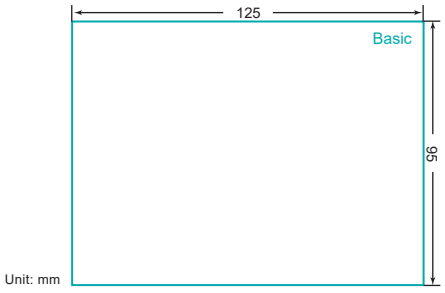
*Populated by default

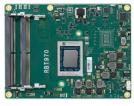
COM Express Basic

High-Performance & Cost-Effective Solutions

Features

COM Express® Basic module provides high-level processing performance and high-speed interfaces for a wide range of computing-demand applications such as medical, transportation, and industrial automation. DFI's Basic modules are compatible with COM Express® pin-out Type 2, Type 6 and Type 7.





Wide Temp Server

Wide Temp Server

Wide Temp Server

Model Name		RBT970	ICD970	DV970
Compliance		COM Express® R3.1 Basic Type 7	COM Express® R3.0 Basic Type 7	COM Express® R3.0 Basic Type 7
System	Processor	AMD® Ryzen™ Embedded V3000 Series processors	3rd Gen Intel® Xeon® Processor D-1700 Family	Intel® Atom® C3000
	Socket	FP7r2	FCLGA4189	BGA 1310
	Max. Speed	1.9~3.5GHz	1.9~2.4GHz	1.7~2.0GHz
	TDP	15W/45W	40W/50W/52W/59W/67W	17W/25W/31W
	Cache	-	10M/15M	12M/16M
	Chipset	-	-	-
	BIOS	AMI SPI 256Mbit	Insyde SPI 512Mbit	Insyde SPI 128Mbit
Memory	Technology	Dual Channel DDR5 4800MHz	Dual Channel DDR4 2666/2933MHz	Dual Channel DDR4 2400MHz
	Max. Capacity	64GB	64GB	64GB
	Socket	2 SODIMM	2 SODIMM	2 SODIMM
Graphics	Interface	-	-	-
Expansion	PCIe	1 PCIe x14	2 PCIe x8, 1 PCIe x16	2 PCIe x8
	LPC	1	1	1
	I^2C	1	1	1
	SMBus	1	1	1
	CAN Bus	-	-	-
Audio	Interface	-	-	-
Ethernet	Controller	2 10Gbase-KR, 1 Intel® I226V/ I225	1 Intel® I210AT/IT	1 Intel® I210AT/IT, 4 10Gbase-KR
I/O	USB	4 USB 3.2, 4 USB 2.0	4 USB 3.2, 4 USB 2.0	2 USB 3.2, 4 USB 2.0
	SATA	2 SATA 3.0	2 SATA 3.0	2 SATA 3.0 (RAID 0/1/10)
	SSD	-	-	-
	eMMC	-	eMMC 5.1 16GB (Opt.)	-
	DIO	8-bit DIO (4 in, 4 out)	8-bit DIO (4 in, 4 out)	8-bit DIO (4 in, 4 out)
TPM		Optional	dTPM 2.0, fTPM (Opt.)	Optional
iAMT		-	-	-
Power		12V, 5VSB, VCC-RTC (ATX mode) 12V, VCC-RTC (AT mode)	12V, 5VSB, VCC-RTC (ATX mode) 12V, VCC-RTC (AT mode)	12V, 5VSB, VCC-RTC (ATX mode) 12V, VCC-RTC (AT mode)
Operating Temperature		-40°C~85°C, 0°C~60°C	-40°C~85°C, 0°C~60°C	-40°C~85°C, 0°C~60°C

*Populated by default

Wide Temp | RM590E/QM580E/HM570E

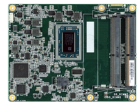
Wide Temp | CM246/QM370/HM370

Wide Temp | CM246/QM370/HM370

Model Name		TGH960	CH960-CM246/QM370/HM370	CH961-CM246/QM370/HM370
Compliance		COM Express® R3.0 Basic Type 6	COM Express® R2.1 Basic Type 6	COM Express® R2.1 Basic Type 6
System	Processor	11th Gen Intel® Core™	9th/8th Gen Intel® Core™	9th/8th Gen Intel® Core™
	Socket	BGA 1787	BGA 1440	BGA 1440
	Max. Speed	3.1~4.7GHz	2.5~4.4GHz	2.5~4.5GHz
	TDP	25W/35W/45W	45W	45W
	Cache	8M/12M/24M	2M/4M/6M/8M/9M/12M	2M/4M/6M/8M/9M/12M
	Chipset	Intel® RM590E/QM580E/HM570E	Intel® CM246/QM370/HM370	Intel® CM246/QM370/HM370
	BIOS	AMI SPI 256Mbit	AMI SPI 128Mbit	AMI SPI 128Mbit
Memory	Technology	Dual Channel DDR4 3200MHz, ECC support (Opt.)	Dual Channel DDR4 2666MHz	Dual Channel DDR4 2666MHz, ECC support in CM246
	Max. Capacity	96/128GB	64GB	96GB
	Socket	3/4 SODIMM	2 SODIMM	4 SODIMM
Graphics	Interface	1 VGA, 1 LVDS/eDP, 3 DDI	1 VGA/DDI, 1 LVDS/eDP, 2 DDI	1 VGA/DDI, 1 LVDS/eDP, 2 DDI
Expansion	PCIe	1 PCIe x16, 8 PCIe x1	1 PCIe x16 / 8 PCIe x1	1 PCIe x16, 8 PCIe x1
	LPC	1	1	1
	I^2C	1	1	1
	SMBus	1	1	1
	CAN Bus	-	-	-
Audio	Interface	HD Audio	HD Audio	HD Audio
Ethernet	Controller	1 Intel® I225LM	1 Intel® I219LM	1 Intel® I219LM/V
I/O	USB	4 USB 3.2 Gen2, 8 USB 2.0	4 USB 3.2, 8 USB 2.0	4 USB 3.2, 8 USB 2.0
	SATA	4 SATA 3.0 (RAID 0/1/5/10)	4 SATA 3.0 (RAID 0/1/5/10 in CM246 & QM370)	4 SATA 3.0 (RAID 0/1/5/10)
	SSD	NVMe SSD: PCIe x4, 64GB~1TB (Opt.)	-	NVMe SSD: PCIe x4, 64GB~1TB (Opt.)
	eMMC	-	-	-
	DIO	8-bit DIO (4 in, 4 out)	8-bit DIO (4 in, 4 out)	8-bit DIO (4 in, 4 out)
TPM		dTPM 2.0. (Opt.)	Optional in CM246 & QM370	dTPM 2.0. (Opt.)
iAMT		iAMT 12.0 (Core i7/i5 in RM590E & QM580E)	iAMT 12.0 (Core i7/i5 in CM246 & QM370)	iAMT 12.0 (Core i7/i5 in CM246 & QM370)
Power		8.5V~20V, 5VSB, VCC-RTC (ATX mode) 8.5V~20V, VCC-RTC (AT mode)	12V, 5VSB, VCC-RTC (ATX mode), 12V, VCC-RTC (AT mode)	8.5V~20V, 5VSB, VCC-RTC (ATX mode) 8.5V~20V, VCC-RTC (AT mode)
Operating Temperature		-40°C~85°C, 0°C~60°C	-40°C~85°C, 0°C~60°C	-40°C~85°C, 0°C~60°C

*Populated by default

Wide Temp | CM236/QM170



Wide Temp | AMD

Model Name		SH960MD-CM236/QM170	GH960
Compliance		COM Express® R2.1 Basic, Type 6	COM Express® R3.0 Basic, Type 6
System	Processor	6th Gen Intel® Core™	AMD® Ryzen™ V1000/R1000 Embedded Processors
	Socket	BGA 1440	FP5 BGA
	Max. Speed	1.6~3.7GHz	3.2~3.8GHz
	TDP	25W/35W/45W	12-25W/35-54W
	Cache	2M/3M/6M/8M	1M/2M
	Chipset	Intel® CM236/QM170	-
	BIOS	Insyde SPI 128Mbit	Insyde SPI 64Mbit
Memory	Technology	Dual Channel DDR4 2400MHz, ECC support in CM236	Dual Channel DDR4 up to 2400/3200MHz
	Max. Capacity	8GB / 16GB	32GB
	Socket	Memory down	2 SODIMM
Graphics	Interface	1 VGA/DDI, 1 LVDS/eDP, 2 DDI	1 VGA/DDI, 1 LVDS/eDP, 2 DDI
Expansion	PCIe	1 PCIe x16 / 2 PCIe x8, 8 PCIe x1	1 PCIe x8, 6 PCIe x1 / 2 PCIe x2 / 1 PCIe x4
	LPC	1	1
	I^2C	1	1
	SMBus	1	1
	CAN Bus	-	-
Audio	Interface	HD Audio	HD Audio
Ethernet	Controller	1 Intel® I210IT	1 Intel® I210AT/IT
I/O	USB	4 USB 3.2, 8 USB 2.0	4 USB 3.2, 8 USB 2.0
	SATA	4 SATA 3.0 (RAID 0/1/5/10)	4 SATA 3.0 (RAID 0/1)
	SSD	-	-
	eMMC	-	-
	DIO	8-bit DIO	8-bit DIO (4 in, 4 out)
TPM		Optional	TPM 1.2/2.0 (Opt.)
iAMT		iAMT 11.0	-
Power		12V, 5VSB, VCC-RTC (ATX mode) 12V, VCC-RTC (AT mode)	12V, 5VSB, VCC-RTC (ATX mode), 12V, VCC-RTC (AT mode)
Operating Temperature		-40°C~85°C, 0°C~60°C	-40°C~85°C, 0°C~60°C

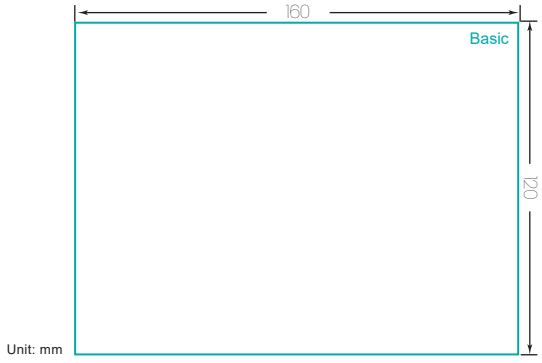
*Populated by default

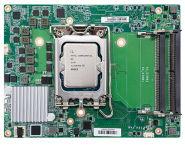
COM HPC

Computer on Module High Performance Computing

Features

Supports high-performance multi-core processors, possesses high-performance edge computing capabilities, and offers flexible expandability, meeting the requirements of various industrial applications. It also supports multiple high-speed interfaces suitable for data-intensive and compute-intensive applications.





Wide Temp

R680E/Q670E/H610E

Model Name		RPS9HC-R680E/Q670E/H610E
Compliance		COM HPC® R1.15, Client Size C
System	Processor	14th/13th Gen Intel® Core™
	Socket	LGA 1700
	Max. Speed	3.3~5.8GHz
	TDP	35W/60W/65W
	Cache	12M/20M/24M/30M/33M/36M
	Chipset	Intel® R680E/Q670E/H610E
	BIOS	AMI SPI 256Mbit
Memory	Technology	Dual Channel DDR5 (ECC support by R680E with i7/i5)
	Max. Capacity	192GB
	Socket	4 SODIMM
Graphics	Interface	1 eDP, 3 DDI
Expansion	PCIe	1 PCIe x16, 4 PCIe x4, 2 PCIe x4, 2 PCIe x1
	PCI	-
	LPC	-
	I^2C	1
	SMBus	1
	CAN Bus	-
Audio	Interface	HD Audio
Ethernet	Controller	2 Intel® I226
I/O	USB	4 USB 3.2 Gen2, 8 USB 2.0
	SATA	2 SATA 3.0
	DIO	12 bit in/out
TPM		dTPM 2.0 (Opt.)
Power		12V, 5VSB, VCC-RTC (ATX mode) 12V, VCC-RTC (AT mode)
Operating Temperature		0°C~60°C

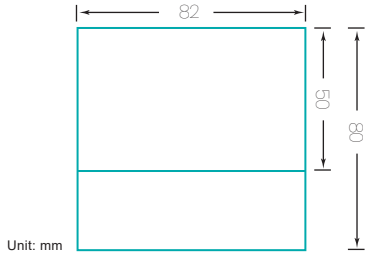
*Populated by default

SMARC

Smart Mobility ARChitecture

Features

SMARC ("Smart Mobility ARChitecture") is mainly designed for applications that require extremely energy-saving, constrained space, and high performance with a full-size module measuring 82 x 80 mm and short size measuring 82 x 50 mm. It's the ideal solution for digital signage, human-machine interface, automation, and portable devices.



Unit: mm

Model Name		ASL600
Compliance		SMARC specifications V2.2
System	Processor	Intel® Atom® Processor Amston Lake Series
	Socket	BGA 1264
	Max. Speed	3.2~3.8GHz
	TDP	6W/9W/10W/12W/15W
	Cache	6M
	Chipset	-
	BIOS	AMI SPI 256MHz
Memory	Technology	LPDDR5 4800MHz
	Max. Capacity	16GB
	Socket	Memory down
Graphics	Interface	1 LVDS/eDP, 1 DDI, 1 DDI
Expansion	PCIe	Up to 4 PCIex1
	PCI	-
	LPC	-
	I^2C	2
	SMBus	1
	CAN Bus	2
Audio	Interface	HD Audio
Ethernet	Controller	2 Intel® I226
I/O	USB	2 USB 3.2, 4 USB 2.0
	SATA	1 SATA 3.0
	eMMC	1 eMMC 5.1 up to 128GB (Opt.)
	DIO	14-pin GPIO
TPM		fTPM
Power		5V DC-in
Operating Temperature		-40°C~85°C

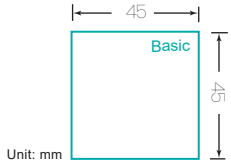
*Populated by default

OSM

Open Standard Module

Features

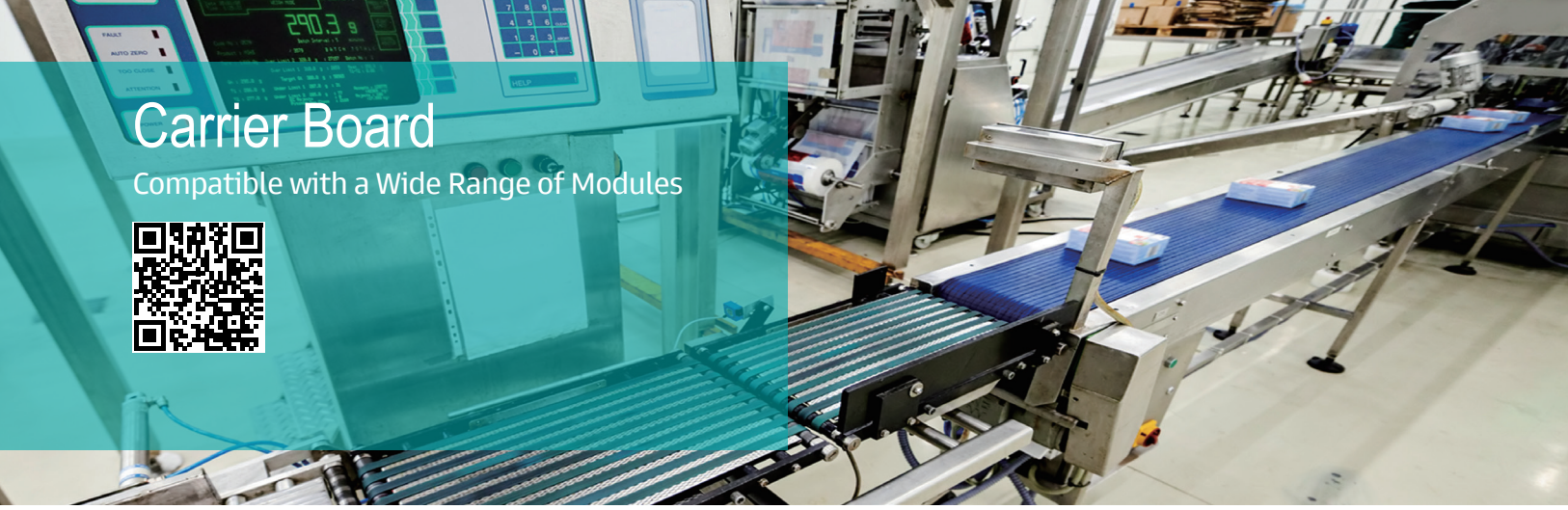
The Open Standard Module is a solderable system-on-module, optimized for rugged applications requiring vibration resistance and a compact form factor. Its modular design enhances cost efficiency, minimizes footprint, and allows for future interface expansion.The Open Standard Module is a solderable system-on-module, optimized for rugged applications requiring vibration resistance and a compact form factor. Its modular design enhances cost efficiency, minimizes footprint, and allows for future interface expansion.



Qualcomm

Model Name		QRB812
Compliance		OSM 1.1
System	Processor	Qualcomm® QRB5165 Processor
	Socket	MPSP1099
	Max. Speed	1.80~2.84GHz
	TDP	8W
	Cache	128KB/256KB/512KB
	Chipset	-
	BIOS	-
Memory	Technology	LPDDR5
	Max. Capacity	8GB
	Socket	Memory down
Graphics	Interface	1 4-lane MIPI-DSI, 1 USB-C DP
Storage	UFS	128GB UFS 3.1
Expansion	PCIe	2 PCIe x2, 1 PCIe x1
	I2C	1
	SPI	2 SPI
	PWM	4 PWM
	UART	2 UART(TX/RX/RTS/CTS), 2 UART(TX/RX), 1 UART(console)
	SDIO	1 4-bit SDIO
	MIPI-CSI	6 4-lane MIPI-CSI
	USB	2 USB 3.2 Gen 2
	GPIO	16 GPIO
Security	TEE	Qualcomm® Trusted Execution Environment v5
Power		5V DC-in
Operating Temperature		-5°C~65°C

*Populated by default

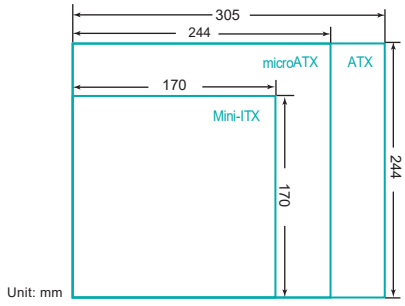


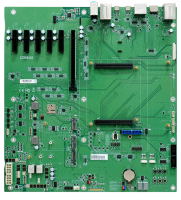
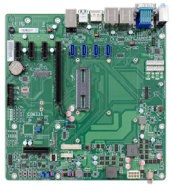
Carrier Board

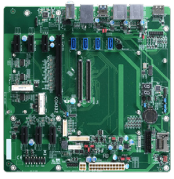
Compatible with a Wide Range of Modules

Features

Our carrier board (also known as base board or evaluation board) offers a flexible engineering development environment for COM Express Type 10, Type 7, Type 6, Type 2, Qseven and SMARC to help our customers minimize installation requirements while reducing design time and cost.



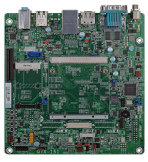


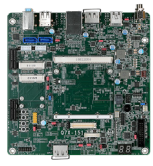
Model Name		COM836	COM335	COM333-I	COM332-B(R.A)
Compliance		COM HPC® R2.0, Client size A, B, C	COM Express® R3.1, Type 6, Type 10	COM Express® R3.0, Type 7	COM Express® R2.1, Type 6
Form Factor		Extend ATX (325 x 340mm)	microATX (244 x 244 mm)	microATX (244 x 244 mm)	microATX (244 x 244 mm)
Graphics	Connector	2 DP++, 1 eDP	1 VGA, 3 DP, 1 LVDS/eDP, 1 eDP/LVDS	1 VGA via BMC	1 VGA, 3 DP, 1 LVDS/eDP, 1 eDP/LVDS
Expansion	PCIe, PCI	1 PCIe x16, 5 PCIe x4	1 PCIe x16, 1 PCIe x4, 3 PCIe x1	8 PCIe x4 / 4 PCIe x8	1 PCIe x16, 6 PCIe x1
	Mini PCIe, M.2	1 M.2 B Key 3052, 1 M.2 E Key 2242, 1 M.2 M key 2242/2260/2280	1 M.2 B Key 3042/3052	-	2 Full-size Mini PCIe
	SIM	1	-	-	-
Audio	Audio Codec	Realtek ALC888S	Realtek ALC888S-VD2-GR	-	Realtek ALC888S-VD2-GR
Rear I/O	Ethernet	2 2.5GbE	1 GbE	2 GbE, 4 10Gbase-KR (2 RJ45, 2 SFP+)	1 GbE
	Serial	-	-	1 RS-232	-
	USB	2 USB 3.2, 2 USB 3.2 type-C	3 USB 3.2, 4 USB 2.0	4 USB 3.2/2.0	4 USB 3.2, 4 USB 2.0
	Display	-	3 DP	-	3 DP
	Audio	Mic-in, Line-in,Line-out	Mic-in, Line-in,Line-out	-	Mic-in, Line-in, Line-out
Internal I/O	Serial	2 (TX/RX/CTS/RTS)	1 (TX/RX)	2 (TX/RX)	2 (TX/RX)
	USB		-	-	-
	Display	1 eDP	1 VGA, 1 LVDS, 1 eDP	-	1 VGA, 1 LVDS, 1 eDP
	Audio	1 Audio (Line-out/Line-in/Mic-in), 1 S/PDIF	1 Audio (Line-out/Mic-in), 1 S/PDIF	-	Audio (Line-out/Mic-in), S/PDIF
	SATA	2 SATA 3.0	4 SATA 3.0	2 SATA 3.0	4 SATA 3.0
	DIO	8-bit GPIO, 4-bit GPIO	8-bit DIO	8-bit DIO, SDIO	8-bit DIO
	LPC	-	1	1	1
	SMBus	1	1	1	1
	I^2C	-	1	1	-
	CANBus	-	-	-	-
Power		8-20V, 5VSB, VCC-RTC (ATX mode) 8-20V, VCC-RTC (AT mode)	12V, 5VSB, VCC-RTC (ATX mode) 12V, VCC-RTC (AT mode)	4-pin ATX 12V, 24-pin ATX	12V, 5VSB, VCC-RTC (ATX mode) 12V, VCC-RTC (AT mode)
Operating Temperature		0°C~60°C	0°C~60°C	0°C~60°C	0°C~60°C

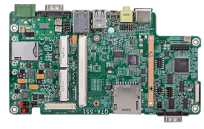
*Populated by default

Model Name		COM332-B(R.B1)	SMX331	COM100-B
Compliance		COM Express® R2.1, Type 6	SMARC (ASL600)	COM Express® R2.1, Type 10
Form Factor		microATX (244 x 244 mm)	microATX (244 x 244 mm)	Mini-ITX (170 x 170 mm)
Graphics	Connector	1 VGA, 3 DP, 1 LVDS/eDP, 1 eDP/LVDS	1 LVDS, 1 DP	1 LVDS, 1 DP
Expansion	PCIe, PCI	1 PCIe x16, 4 PCIe x1	1 PCIex1, 1 PCIex4	1 PCIe x1
	Mini PCIe, M.2	1 M.2 M Key 2280	1 M.2 B Key 3052, 1 M.2 E Key 2242,	3 Mini PCIe
	SIM	-	1	1
Audio	Audio Codec	Realtek ALC888S-VD2-GR	Realtek ALC888S	Realtek ALC886
Rear I/O	Ethernet	1 GbE	2 2.5GbE	1 GbE
	Serial	-	2 RS-232	2 (TX/RX)
	USB	4 USB 3.2, 4 USB 2.0	2 USB 3.2, 2 USB 2.0	2 USB 3.2, 4 USB 2.0
	Display	3 DP	1 DP, 1 DP	1 DP
	Audio	Mic-in, Line-in, Line-out	Mic-in, Line-in, Lone-out	Mic-in, Line-in, Line-out
Internal I/O	Serial	2 (TX/RX)	2 (TX/RX)	1 (TX/RX)
	USB	-	-	-
	Display	1 VGA, 1 LVDS, 1 eDP	1 LVDS	1 LVDS
	Audio	Audio (Line-out/Mic-in), S/PDIF	Audio (Line-out/Mic-in), S/PDIF	Audio (Line-out/Mic-in), S/PDIF
	SATA	4 SATA 3.0	1 SATA 3.0	1 SATA 3.0
	DIO	8-bit DIO	14-bit DIO	8-bit DIO
	LPC	1	-	1
	SMBus	1	1	1
	I^2C	-	1	1
	CANBus	-	2	-
Power		12V, 5VSB, VCC-RTC (ATX mode) 12V, VCC-RTC (AT mode)	9-36VDC in	12V, 5VSB, VCC-RTC (ATX mode) 12V, VCC-RTC (AT mode)
Operating Temperature		0°C~60°C	0°C~60°C	0°C~60°C

*Populated by default







Model Name		Q7X-151(R.A)	Q7X-151(R.D1)	Q7A-551
Compliance		Qseven (BT700)	Qseven (AL700 / AL701 / BT701)	Qseven (FS700)
Form Factor		Mini-ITX (170 x 170 mm)	Mini-ITX (170 x 170 mm)	Proprietary (190 x 102 mm)
Graphics	Connector	1 LVDS, 1 DP	1 LVDS, 2 DP, 1 eDP	1 LVDS
Expansion	PCIe, PCI	1 PCIe x4	2 PCIe x1	-
	Mini PCIe, M.2	-	2 Mini PCIe	1 Mini PCIe
	SIM	-	-	1
Audio	Audio Codec	Realtek ALC886	Realtek ALC886	I2S
Rear I/O	Ethernet	1 GbE	1 GbE	1 GbE
	Serial	2 RS-232	2 RS-232	2 RS-232
	USB	1 USB 3.2, 2 USB 2.0	3 USB 3.2, 6 USB 2.0	2 USB 2.0, 1 USB Client
	Display	1 DP	1 DP	-
	Audio	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Line-out / Mic-in
Internal I/O	Serial	1 (TX/RX)	1 (TX/RX)	1 RS-232/422/485
	USB	2 USB 2.0 (Opt.)	2 USB 2.0 (Opt.)	-
	Display	1 LVDS	1 LVDS	1 LVDS
	Audio	-	-	2 1W audio amplifier connectors (left and right sides)
	SATA	1 SATA 3.0, 1 mSATA	2 SATA 3.0	-
	DIO	-	-	12-bit DIO
	LPC	1	1	-
	SMBus	1	1	-
	I^2C	1	1	-
	CANBus	1	1	1
Power		12V, 5VSB, VCC-RTC (ATX mode) 12V, VCC-RTC (AT mode)	12V, 5VSB, VCC-RTC (ATX mode) 12V, VCC-RTC (AT mode)	12V, 5VSB, VCC-RTC (ATX mode) 12V, VCC-RTC (AT mode)
Operating Temperature		0°C~60°C	0°C~60°C	0°C~60°C

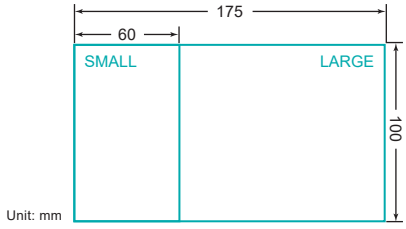
*Populated by default

SDM

Compact & Smart Retail Signage Solutions

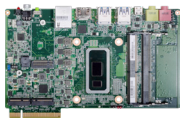
Features

Intel® Smart Display Module is for next generation commercial AIO displays and visual IoT devices. Intel® SDM provides the primary compute building block and requires an interface board on the displays or host system to complete platform implementation and provide standard end user physical interfaces.



Unit: mm

Large Size: 175mm x 100mm
Small Size: 60mm x 100mm



Model Name		SDML-WL
Compliance		SDM Large
System	Processor	8th Gen Intel® CoreTM
	Socket	FCBGA 1528
	Max. Speed	2.0~4.4GHz
	TDP	15W
	Cache	2M/4M/6M/8M
	Chipset	-
	BIOS	AMI Winbond SPI 128Mbit
Memory	Technology	Dual Channel DDR4 2400MHz
	Max. Capacity	32GB
	Socket	2 SODIMM
Graphics	Interface	1 DP
Expansion	M.2	1 2230 E Key (PCIe x1 interface), 1 2242 B Key (PCIe x1 interface), 1 2280 M Key
Audio	Interface	Realtek ALC262-VC2-GR
Ethernet	Controller	1 Intel® I219LM/V
Rear I/O	USB	4 USB 3.2, 1 USB 3.2 Type-C
	Ethernet	1 GbE
	Display	-
	Audio	1 Line-out, 1 Mic-in
SDM Golden Finger	Serial	1 UART
	USB	1 USB 3.2, 1 USB 2.0
	Display	1 DP
	I2C	2
TPM		-
iAMT		iAMT 12.0 (Core i7/i5)
Power		12V DC-in
Operating Temperature		0°C~60°C

*Populated by default

Headquarters
DFI Inc.
10F, No.97, Sec.1, Xintai 5th Rd.
Xizhi Dist., New Taipei City 221416
Taiwan (R.O.C.)
Tel: +886 (2) 2697-2986
Fax: +886 (2) 2697-2168
www.dfi.com
estore.dfi.com

DFI AMERICA, LLC.
197 Route 18 South, STE 108, East
Brunswick, NJ 08816, U.S.A.
Tel: +1 (732) 390-2815
Fax: +1 (732) 562-0693
us.dfi.com
www.dfi-itox.com/estore

Diamond Flower Information (NL) B.V.
Klompenmakerstraat 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)
1819, 18F, Hongyu Building, Longguan Road, Shitouling, Yucui Community, Longhua Street, Longhua District, Shenzhen, China
Tel: +86 (0755) 2372-9390/2372-9391
www.dfi.com

Value-Added Services

Sales and Quotation
Discuss with DFI's sales experts for your business needs.

Online Technical Service
Real-Time / Professional / 24/7
Resolves your technical questions on the spot.

RoHS freescale Connect Partner Microsoft intel IoT Solutions Alliance