



DATA MODUL Headquarters Munich

Landsberger Str. 322
D-80687 Munich - Germany
Phone: +49-89-56017-0
Fax: +49-89-56017-119
www.data-modul.com

Sales Office Hamburg

Borsteler Chaussee 51
D-22453 Hamburg - Germany
Phone: +49-40-42947377-0

Sales Office Duesseldorf

Fritz-Vomfelde-Str. 8
D-40547 Duesseldorf - Germany
Phone: +49-211-52709-0

Sales Office Scandinavia

Lundsmindevej 5
DK-6000 Kolding - Denmark
Phone: +45-75-224477

DATA MODUL FRANCE

7 rue Saint Christophe
F-60300 BARON - FRANCE
Phone: +33-3-44549699

DATA MODUL Italy, S.r.l.

Regus Center Senigallia
Via Senigallia 18/2
I-20161 Milano - Italy
Phone: +39-02-64672509

DATA MODUL Iberia, S.L.

c/ Adolfo Pérez Esquivel 3
Edificio Las Americas III Oficina 40
28230 Parque Empresarial
Las Rozas / Madrid - Spain
Phone: +34-916-366458

DATA MODUL Suisse GmbH

Stationsstr. 57
CH-8606 Nänikon - Switzerland
Phone: +41-44-94091-50

DATA MODUL Ltd. / UK

Collins Building
3 Vigo Place - Aldridge - Walsall
WS9 8UG - United Kingdom
Phone: +44-1922-457358

DATA MODUL Inc. / USA

275 Marcus Blvd, Unit K
Hauppauge, NY 11788 - USA
Phone: +1-631-951-0800



EMBEDDED SYSTEMS



DATA MODUL AG, market leader for display solutions in Europe, offers perfectly tuned Embedded Computer Systems based on ARM, XScale and x86 architectures. They provide optimal combinations for the whole spectrum of displays.

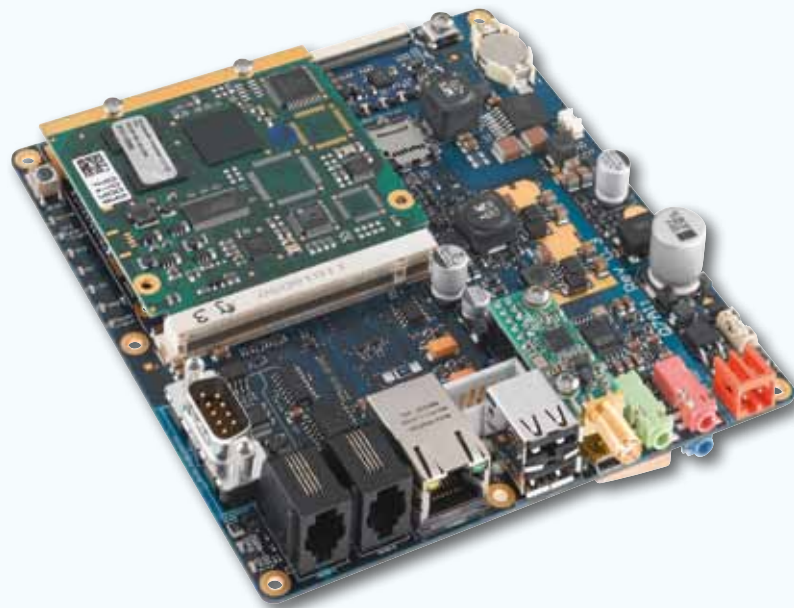


DESIGNED, DEVELOPED AND
MANUFACTURED BY DATA MODUL

Baseboard Design

Fully customized baseboard designs

- » Architectures: x86, ARM/Xscale
- » Qseven, ETX, XTX, COM Express, SO-DIMM modules
- » Integration of LED converters, easyTOUCH controllers and card readers
- » FPGA-Design
- » Smart battery management
- » Mechanical design



Kit-Solutions

Pre-configured kits consisting of embedded board, display, fitting cable set and inverter/converter

- » Adaption and integration of all available displays (STN, CSTN, TFT-LVDS, TFT-TTL) incl. inverters, tested cables and adapted power-ON/OFF timing
- » Adaption of full HD panels
- » Customized images for embedded operating systems
- » Clean room, class 100 for professional touch mounting





PRODUCT STABILITY, LOCAL SUPPORT,
COMPETITIVE COST

easyPANEL EMBEDDED

Assembled open frame panel PCs with customized bezels



- » x86 or ARM/Xscale based
- » LCD size: 5.7" (14.8 cm) - 46" (116.34 cm)
- » LED- or CCFL-backlight version
- » Standard 4:3, 5:4 or wide 16:9, 16:10 formats
- » High brightness solutions
- » Touch options: resistive, capacitive, projective capacitive, IR, SAW
- » Optional with 2,5" HDD or SSD
- » Certifications on request

eDM Mini-ITX Line

High-quality industrial motherboards



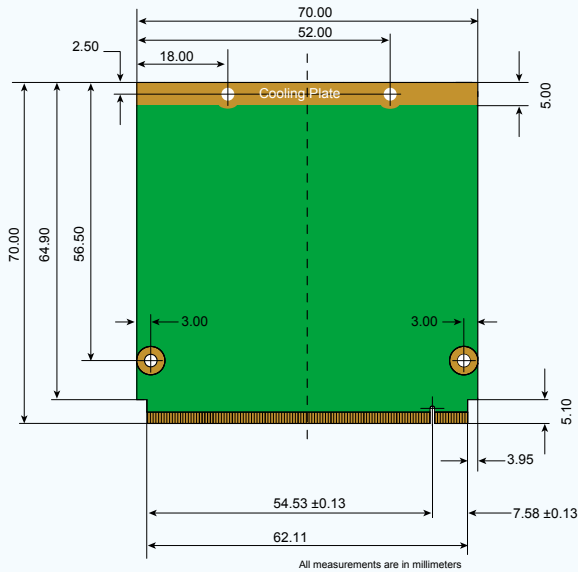
Mini-ITX	eDM-ION2	eDM-A55E	eDM-CDV	eDM-QM77
Formfactor	Mini-ITX (170 x 170mm)			
Processor	Intel® Atom™ D525 1.8 GHz	AMD G-Series T40E 1.0 GHz/ T56N 1.6 GHz	Intel® Cedarview N2600 1.6 GHz/N2800 1.86 GHz/D2700 2.13 GHz	Intel® Socket rPGA989 for Ivy Bridge Processors
Chipset	Intel® ICH8M	AMD A55E	Intel® NM10 Express	Intel® QM77
DRAM	max. 4 GByte DDR3 800	max. 2 GByte DDR3 1333	max. 4 GByte DDR3 1066	max. 16 GByte DDR3 1333/1600
Mass storage	2 x SATA, 1 x Compact Flash Socket	4 x SATA, 1 x CFast Socket	2 x SATA, 1 x Compact Flash Socket	5 x SATA, 1 x CFast Socket
Bus	1 x PCIe x1, 1 x Mini PCIe	1 x PCIe x4, 1 x Mini PCIe	1 x PCI, 1 x Mini PCIe	1 x PCIe x16, 1 x Mini PCIe
Ethernet	10/100/1000BaseT	Dual 10/100/1000BaseT	Dual 10/100/1000BaseT	Dual 10/100/1000BaseT
I/O	8 x USB 2.0, 4 x COM, Keyboard/Mouse	8 x USB 2.0, 4 x COM, Keyboard/Mouse	7 x USB 2.0, 4 x COM, Keyboard/Mouse	4 x USB 3.0, 8 x USB 2.0, 4 x COM, Keyboard/Mouse
Graphics	NVIDIA GT218 (ION2) Integrated			
max. Memory	512 MByte	512 MByte	tbd	tbd
Panel Interface	CRT/DVI/HDMI	CRT/LVDS 2x24, 2nd LVDS 2x24	CRT/LVDS 2x24/DVI	CRT/LVDS 2x24/DVI/HDMI
Audio	HD Audio	HD Audio with amplifier	HD Audio	HD Audio
Others	+12V DC input	8 x GPIO, Wide range DC input: +12V ~ +28V	8 x GPIO, Wide range DC input: +12V ~ +19V	8 x GPIO

COMPUTER-ON-MODULES

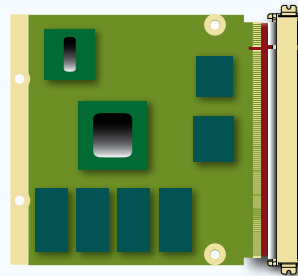
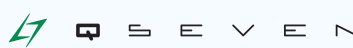


Qseven™ - Small form factor for ultra mobile applications

Targeting next generation ultra mobile embedded processors built using 45 nm technology, the Qseven™ format complements the low power and small size of these processors.



Qseven Module Top Side

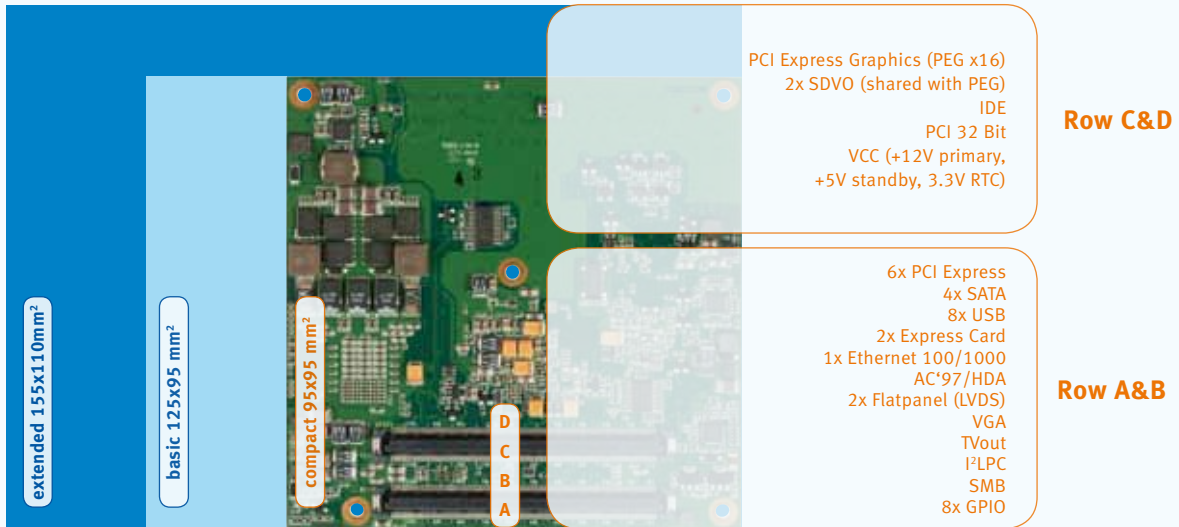


Qseven™	conga-QA	conga-QA6	conga-QAF	QBliss
Formfactor	Qseven™ (70 x 70mm)			
Processor	Intel® Atom™ Z510 1,1 GHz/ Z530 1.6 GHz	Intel® Atom™ E620(T) 600 MHz/E640(T) 1.0 GHz/ E660(T) 1.3 GHz/E680(T) 1.6 GHz	AMD G-Series T40E 1.0 GHz/ T40R 1.0 GHz	Cortex A8 667/800 MHz
Chipset	Intel® SCH US15W	Intel® PCH EG20T	AMD A55E	integrated
DRAM	max. 1 GByte DDR2 onboard	max. 2 GByte DDR2 onboard	max. 4 GByte DDR3 onboard	256/512 MByte DDR onboard
Mass storage	1 x SATA, max. 4 GByte SSD Drive	2 x SATA, max. 32 GByte SSD Drive	2 x SATA, max. 32 GByte SSD Drive	1 x SATA, 1 GByte NAND Flash
Bus	LPC, I²C, 1 x PCIe x1	LPC, I²C, 3 x PCIe x1, 1 x CAN Bus	LPC, I²C, 4 x PCIe x1	2 x I²C, SPI
Ethernet	10/100/1000BaseT	10/100/1000BaseT	10/100/1000BaseT	10/100BaseT
I/O	8 x USB 2.0, 1 x SDIO	6 x USB 2.0, 1 x SDIO	8 x USB 2.0, 1 x SDIO, 2 x ExpressCard support	6 x USB 2.0
Graphics	integrated			
max. Memory	256 MByte	256 MByte	512 MByte	n/a
Panel Interface	LVDS 1x24/SDVO	LVDS 1x24/SDVO	LVDS 2x24/HDMI or DisplayPort	LVDS 1x24/HDMI
Audio	HD Audio	HD Audio	HD Audio	AC'97 Compliant
Others	ACPI 3.0 compliant, Smart Battery Management	ext. Temp., ACPI 3.0 compliant, Smart Battery Management	ACPI 3.0 compliant, Smart Battery Management	

COMPUTER-ON-MODULES



COM Express™ is a PICMG standard that defines a COM packaged as a super component. The defined interfaces provide a smooth transition path from legacy parallel interfaces to LVDS serial interfaces. This includes SDVO, PCI Express and Serial ATA. COM Express™ defines 5 different pinout types in order to be scalable for future applications.



COM Express	conga-CA6	conga-CAx	conga-CA945	conga-CS45
Formfactor	COM Express Compact Type II connector layout			
Processor	Intel® Atom™ E620(T) 600 MHz / E640(T) 1.0 GHz / E660(T) 1.3 GHz / E680(T) 1.6 GHz	Intel® Atom™ Z510PT 1.1 GHz/Z520PT 1.3 GHz	Intel® Atom™ N270 1.6 GHz	Intel® Celeron® M 722 ULV 1.2 GHz up to Intel® Core™ 2 Duo SL9400 1.86 GHz
Chipset	Intel® PCH EG20T	Intel® SCH US15WPT	Intel® 945GSE	Intel® GS45 / ICH9M-SFF
DRAM	max. 2 GByte DDR2 onboard	max. 1 GByte DDR2 onboard	max. 2 GByte DDR2 533	max. 4 GByte DDR3 800/1067
Mass storage	2 x SATA, 1 x EIDE	1x EIDE, max. 2 GByte SSD Drive	2 x SATA, 1 x EIDE	3 x SATA, 1 x EIDE
Bus	PCI, LPC, I²C, 2 x PCIe x1	PCI, LPC, I²C	PCI, LPC, I²C, 3 x PCIe x1	PCI, LPC, I²C, 5 x PCIe x1, 1 x 16 Lanes (PEG)
Ethernet	10/100/1000BaseT			
I/O	6 x USB 2.0, 1 x SDIO	8 x USB 2.0	8 x USB 2.0, 2 x ExpressCard support	8 x USB 2.0, 2 x ExpressCard support
Graphics	integrated			
max. Memory	256 MByte	256 MByte	224 MByte	tbd
Panel Interface	LVDS 1x24/SDVO	LVDS 1x24/SDVO	LVDS 2x18/SDVO	CRT/LVDS 2x24/TV-Out/2xSDVO/HDMI/Display Port
Audio	HD Audio	HD Audio	HD Audio	HD Audio
Others	ACPI 3.0 with Battery Support, S3 Support (suspend to RAM), ext. Temp. -40°C...+85°C	ACPI 3.0 with Battery Support, S3 Support (suspend to RAM), ext. Temp. -40°C...+85°C	ACPI 2.0 with Battery Support, S3 Support (suspend to RAM)	ACPI 3.0 with Battery Support, S3 Support (suspend to RAM)

COMPUTER-ON-MODULES



COM Express	conga-BA945	conga-B945	conga-BAF
Formfactor	COM Express Basic Type II connector layout		
Processor	Intel® Atom™ N270 1.6 GHz	Intel® Celeron® M423 1.06 GHz up to Intel® Core™ 2 Duo 2.16 GHz	AMD Embedded G-Series: T56N 1.6GHz DC, T48N 1.4GHz DC, T40N 1.0GHz SC, T52R 1.5GHz SC, T44R 1.2GHz SC
Chipset	Intel® 945GME / ICH7-M	Intel® 945GME / ICH7-M	AMD A55E Controller Hub
DRAM	max. 4 GByte DDR2 667	max. 4 GByte DDR2 667	max. 4 GByte DDR3 1066
Mass storage	2 x SATA, 1x EIDE	2 x SATA, 1x EIDE	4 x SATA, 1x EIDE
Bus	PCI, LPC, I ² C, 5 x PCIe x1 (or 1x4 & 1x1 Links), 1 x 16 Lanes (PEG)	PCI, LPC, I ² C, 5 x PCIe x1 (or 1x4 & 1x1 Links), 1 x 16 Lanes (PEG)	PCI, I ² C, 6 x PCIe x1
Ethernet	10/100/1000BaseT		
I/O	8 x USB 2.0, 2 x ExpressCard support	8 x USB 2.0, 2 x ExpressCard support	8 x USB 2.0, 2 x ExpressCard support
Graphics	integrated		
max. Memory	224 MByte	224 MByte	512 MByte
Panel Interface	CRT/LVDS 2x24/TV-Out/2xSDVO	CRT/LVDS 2x24/TV-Out/2xSDVO	CRT/LVDS 2x24/2xHDMI/2xDisplayport
Audio	HD Audio	HD Audio	HD Audio
Others	ACPI 2.0 with Battery Support, S3 Support (suspend to RAM)	ACPI 2.0 with Battery Support, S3 Support (suspend to RAM)	ACPI 3.0 with Battery Support, S3 Support (suspend to RAM)

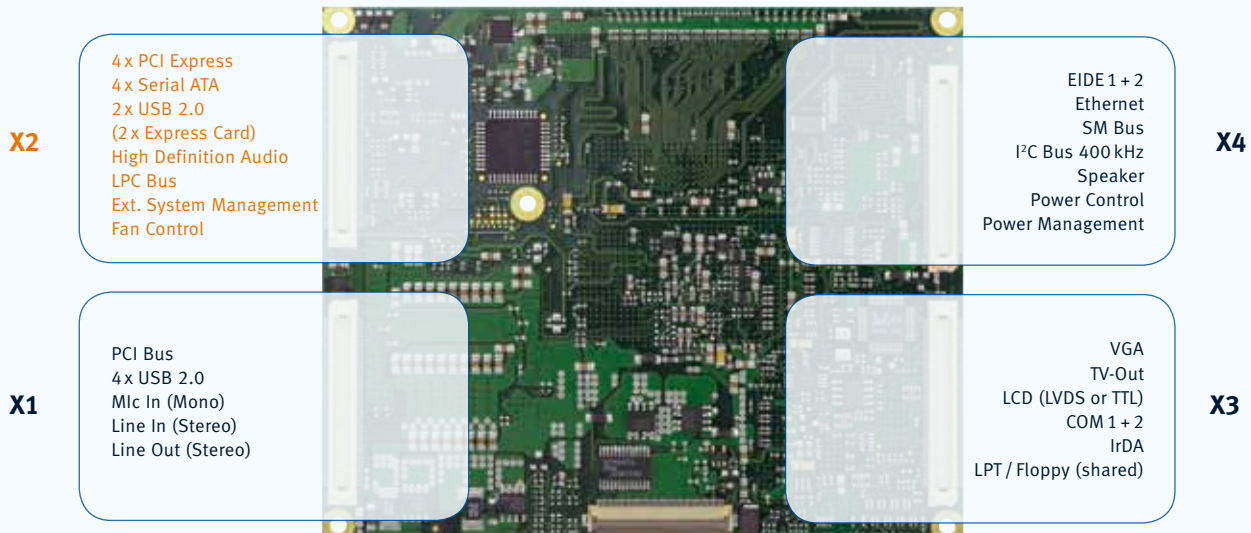


COM Express	conga-BM45	conga-BM57	conga-TM67
Formfactor	COM Express Basic Type II connector layout		Type 6 connector layout
Processor	Intel® Celeron® M575 up to Intel® Core™ 2 Duo T9400 2.53 GHz	Intel® Core™ i3-330M 2.13 GHz, Intel® Core™ i5-520M 2.40 GHz, Intel® Core™ i7-620M 2.66 GHz	Intel® Celeron™ B810 2 x 1.6 GHz, Intel® Core™ i3-2330E 2 x 2.2 GHz Intel® Core™ i5-2510E 2 x 2.5 GHz, Intel® Core™ i7-2710QE 4 x 2.1 GHz
Chipset	Intel® GM45 / ICH9M-E Intel® GL40 / ICH9M-E	Intel® QM57 / HM55	Intel® QM67 / HM65
DRAM	max. 8 GByte DDR3 1067	max. 8 GByte DDR3 1333	max. 16 GByte DDR3 1600
Mass storage	4 x SATA, 1x EIDE (optional)	3 x SATA, 1 x EIDE	4 x SATA
Bus	PCI, LPC, I ² C, 5 x PCIe x1, 1 x 16 Lanes (PEG)	PCI, LPC, I ² C, 6 x PCIe x1, 1 x 16 Lanes (PEG)	PCI, LPC, I ² C, 7 x PCIe x1, 1 x 16 Lanes (PEG)
Ethernet	10/100/1000BaseT		
I/O	8 x USB 2.0, 2 x ExpressCard support	8 x USB 2.0, 2 x ExpressCard support	8 x USB 2.0, 2 x ExpressCard support
Graphics	integrated		
max. Memory	224 MByte	256 MByte	tbd
Panel Interface	CRT/LVDS 2x24/TV-Out/ 2xSDVO/HDMI/Display Port	CRT/LVDS 2x18/TV-Out/SDVO/ 3xHDMI/Display Port	CRT/LVDS 2x24/SDVO 3xHDMI/Display Port
Audio	HD Audio	HD Audio	HD Audio
Others	ACPI 3.0 with Battery Support, S3 Support (suspend to RAM)	ACPI 3.0 with Battery Support, S3 Support (suspend to RAM)	ACPI 4.0 with Battery Support, S3 Support (suspend to RAM)

COMPUTER-ON-MODULES



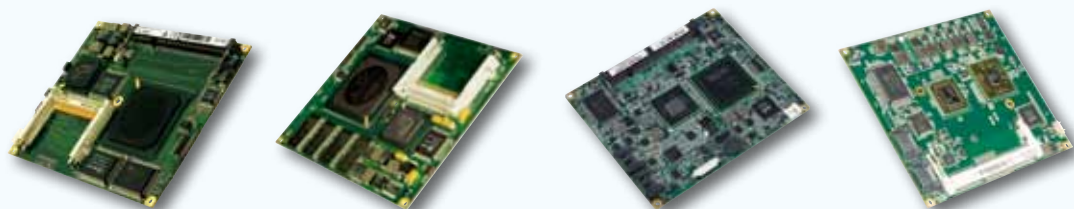
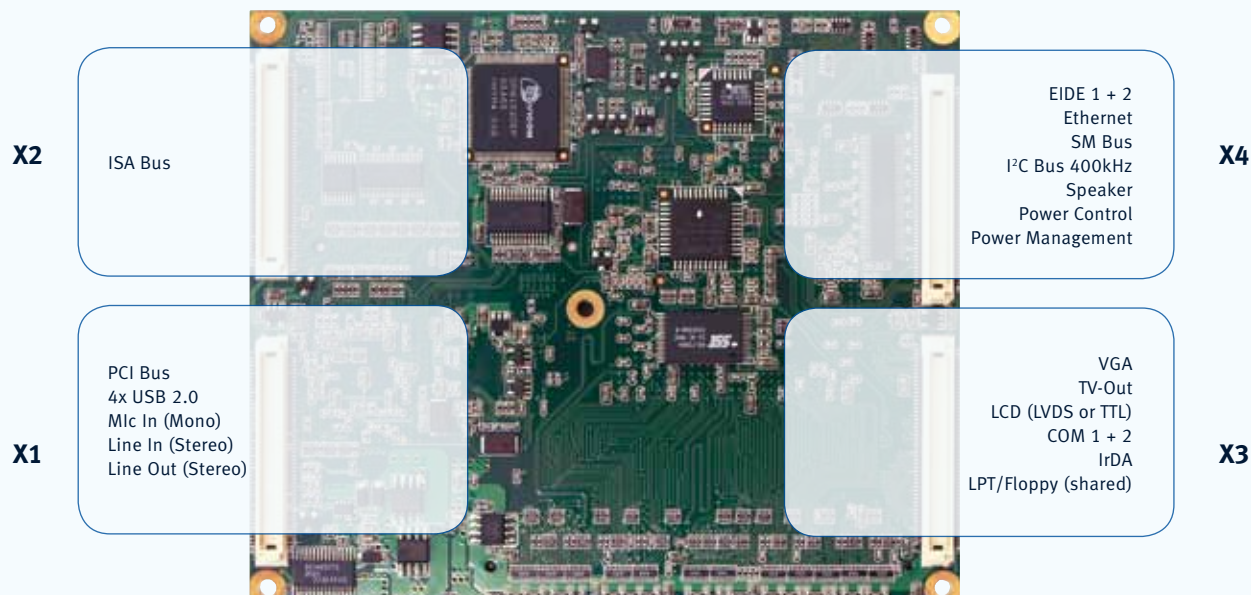
XTX™ is an expansion of the well established and highly successful ETX® standard. XTX™ offers the newest I/O technologies on this proven form factor. Now that the ISA bus is being used less and less in modern embedded applications, congatec offers different features on the X2 connector instead of the ISA bus currently found on the ETX® platform.



XTX™	conga-XLX	conga-XA945	conga-X945	conga-XAF
Formfactor	XTX™			
Processor	AMD Geode™ LX800 500 MHz 128 kByte L2 cache	Intel® Atom™ N270 1.6 GHz	Intel® Celeron® M423 1.06 GHz up to Intel® Core™ 2 Duo 1.5GHz	AMD Embedded G-Series: T56N 1.6 GHz DC, T48N 1.4 GHz DC, T40N 1.0 GHz SC, T52R 1.5 GHz SC, T40R 1.0 GHz SC, T40E 1.0GHz DC
Chipset	AMD Geode™ CS5536	Intel® 945GME / ICH7-M	Intel® 945GME / ICH7-M	AMD A55E Controller Hub
DRAM	max. 1 GByte DDR333	max. 2 GByte DDR2 533	max. 2 GByte DDR2 667	max. 4 GByte DDR3 1066
Mass storage	2 x SATA, 2 x EIDE	2 x SATA, 1 x EIDE	2 x SATA, 1 x EIDE	4 x SATA, 2 x EIDE
Bus	PCI, LPC, I²C	PCI, LPC, I²C, 4 x PCIe x1	PCI, LPC, I²C, 4 x PCIe x1	PCI, LPC, I²C, 4 x PCIe x1
Ethernet	10/100BaseT			
I/O	4 x USB 2.0, Floppy / LPT, 2 x COM (TTL), Keyboard/Mouse	6 x USB 2.0, 2 x ExpressCard support, Floppy / LPT, 2 x COM (TTL), Keyboard/Mouse	6 x USB 2.0, 2 x ExpressCard support, Floppy / LPT, 2 x COM (TTL), Keyboard/Mouse	6 x USB 2.0, 2 x ExpressCard support, Floppy / LPT, 2 x COM (TTL), Keyboard/Mouse
Graphics	integrated			
max. Memory	254 MByte	224 MByte	224 MByte	512 MByte
Panel Interface	CRT/LVDS 1x18/TTL/TV-Out	CRT/LVDS 2x24/TV-Out/2xSDVO	CRT/LVDS 2x24/TV-Out/2xSDVO	CRT/LVDS 2x24/HDMI/DisplayPort
Audio	AC'97 Digital Audio	HD Audio	HD Audio	HD Audio
Others	ACPI 2.0 with Battery Support, S3 Support (suspend to RAM), APM 1.2	ACPI 2.0 with Battery Support, S3 Support (suspend to RAM), APM 1.2	ACPI 2.0 with Battery Support, S3 Support (suspend to RAM), APM 1.2	ACPI 3.0 with Battery Support, S3 Support (suspend to RAM)

COMPUTER-ON-MODULES

ETX® was one of the first Computer-On-Module concepts ever. It was defined in 1998 by JUMPtec as an open standard. ETX® is a well established and highly successful standard. It offers most standard PC I/O's on a compact form factor.



ETX®	conga-ELX	conga-ELXeco	SOM-4463 B1	conga-EAF
	ETX®		ETX® 3.0	ETX® Spec 3.02
Processor	AMD Geode™ LX800 500 MHz 128 kByte L2 cache	AMD Geode™ LX800 500 MHz 128 kByte L2 cache	Intel® Atom™ N455 1.66GHz/D525 1.8 GHz	AMD Embedded G-Series: T56N 1.6 GHz DC, T48N 1.4 GHz DC, T40N 1.0 GHz SC, T52R 1.5 GHz SC, T40R 1.0 GHz SC, T40E 1.0 GHz DC
Chipset	AMD Geode™ CS5536	AMD Geode™ CS5536	Intel® ICH8M	AMD A55E Controller Hub
DRAM	max. 1 GByte DDR333	128/256 MByte DDR onboard	max. 4 GByte DDR3 800	max. 4 GByte DDR3 1066
Mass storage	1 x EIDE 1 x CompactFlash Socket	1 x EIDE 1 x CompactFlash Socket	2 x SATA, 2 x EIDE	2 x SATA, 2 x EIDE
Bus	ISA PCI, I²C	ISA, PCI, I²C	PCI, ISA	ISA, PCI, I²C
Ethernet	10/100BaseT			
I/O	4 x USB 2.0, Floppy / LPT 2 x COM (TTL), Keyboard/Mouse	4 x USB 2.0, LPT, 2 x COM (TTL), Keyboard/Mouse	4 x USB 2.0, Floppy/LPT, 2 x COM, Keyboard/Mouse	4 x USB 2.0, Floppy/LPT, 2 x COM, Keyboard/Mouse
Graphics	integrated			
max. Memory	254 MByte	254 MByte	224 MByte	512 MByte
Panel Interface	CRT/LVDS 1x18/ TTL/TV-Out	CRT/LVDS 2x18, TTL 18Bit (optional)	CRT/LVDS 1x24	CRT/LVDS 2x24/HDMI/ DisplayPort
Audio	AC'97 Rev. 2.2	AC'97 Rev. 2.2	HD Audio	HD Audio
Others	APM 1.2	APM 1.2	2 x GPIO	ACPI 3.0



ARM AND XSCALE BASED SBCs AND MODULES

F&S offer extremely energy-efficient boards, with on board DRAM and Flash and pre-installed Windows CE or Linux for fast design-in cycles. With their numerous interfaces and a very versatile display connector, these boards are ideally suited for HMI-applications.



NetDCU	NetDCU8	NetDCU9	NetDCU14
Form factor	NetDCU (100 x 80 mm)	NetDCU (100 x 80 mm)	NetDCU (100 x 80 mm)
OS	Win CE (including license) or Linux	Win CE (including license) or Linux	Win CE 6.0R3/Compact7 or Linux
Processor	ARM9 300 MHz	Xscale 520 MHz	CortexA8 800 MHz/1GHz
DRAM	32 MByte+ SDRAM onboard	64 MByte+ SDRAM onboard	256 MByte+ SDRAM onboard
Mass storage	32 MByte+ Flash onboard	64 MByte+ Flash onboard	64 MByte+ Flash onboard
Bus	FSBUS (8 bit Extension interface)	FSBUS (8 bit Extension interface)	FSBUS (8 bit Extension interface)
Ethernet	10/100MBit	10/100MBit	10/100MBit
I/O	1+1 x USB, 3xCOM, SD-Card, CAN Bus, Touchpanel, VEE, I2C (option), SPI (option)	1+1 x USB, 3 x COM, SD-Card, CAN Bus, Touchpanel, I2C (option), SPI (option), video-in (option), CF-Card (option)	1+1 x USB, 3 x COM, microSD-Card, 2 x CAN Bus, Touchpanel, I2C (option), SPI (option)
Graphics	integrated up to 640 x 480	SM 502 up to 1280 x 1024	integrated up to 1280 x 768
Panel Interface	3 x 6bit TTL, LVDS optional	3 x 6bit TTL, LVDS optional	TTL, LVDS, HDMI optional
Audio	n.a.	In/Out	In/Out/Mic
Others	21 x GPIO	21 x GPIO	21 x GPIO



PicoMOD/PicoCOM	PicoMOD6	PicoMOD7	PicoCOM5
Formfactor	PicoMOD (80 x 50 mm)	PicoMOD (80 x 50 mm)	PicoCOM (40 x 50 mm)
OS	Win CE 6.0R3/Compact7 or Linux	Win CE 6.0R3/Compact7 or Linux	Win CE 6.0R3/Compact7 or Linux
Processor	ARM11+FPU 533 MHz	CortexA8 833MHz/666 MHz	CortexA8 833MHz/666 MHz
DRAM	128 MByte+ SDRAM onboard	256 MByte+ SDRAM onboard	256 MByte+ SDRAM onboard
Mass storage	64 MByte+ Flash onboard	1 GByte Flash onboard	1 MByte Flash onboard
Bus	FSBUS (8 bit Extension interface)	FSBUS (8 bit Extension interface)	n.a.
Ethernet	10/100MBit	10/100MBit	10/100MBit
I/O	1 x USB 1.1 (Host), 1 x USB 2.0 (Device), 3/4 x COM, SD-Card, CF-Card, CAN Bus, Touchpanel, I2C, SPI (option)	1 x USB 1.1 (Host), 1 x USB 2.0 (Device), 3 x COM, microSD-Card, CF-Card, CAN Bus, Touchpanel, I2C, SPI (option)	1 x USB 1.1 (Host), 1 x USB 2.0 (Device), 3 x COM, SD-Card, CAN Bus, Touchpanel, I2C, SPI (option)
Graphics	integrated up to 800 x 600	integrated up to 1280 x 768	integrated up to 1024 x 768
Panel Interface	3 x 6bit TTL, LVDS optional	TTL, LVDS, HDMI optional	3 x 6bit TTL, LVDS optional
Audio	In/Out/MIC	In/Out/Mic	In/Out
Others	64 x GPIO, -20°C...+85°C	64 x GPIO, -40°C...+85°C	8 x GPIO

ARM AND XSCALE BASED SBSCS AND MODULES

Toradex Colibri So-DIMM Computer Modules - Scalable XScale Power from 208 MHz to 806 MHz



Colibri	Colibri PXA300	Colibri PXA270	Colibri PXA320 (IT)	Colibri T20 (IT)
Formfactor	SO-DIMM (67.6 mm x 36.7 mm)	SO-DIMM (67.6 mm x 36.7 mm)	SO-DIMM (67.6 mm x 36.7 mm)	SO-DIMM (67.6 mm x 36.7 mm)
OS	Win CE/Linux	Win CE/Linux	Win CE/Linux	Win CE/Linux
Processor	Marvell PXA300 208 MHz	Marvell PXA270 312/520 MHz	Mar well PXA320 806 MHz	NVIDIA®Tegra 2 CortexA9 1 GHz
DRAM	64 MByte DDR RAM	64 MByte SDRAM	128 MByte DDR RAM	up to 512MB
Mass storage	128 MByte Flash	32 MByte Flash	1 GByte Flash	up to 1 GByte Flash
Bus	16 Bit External Bus	32 Bit External Bus	16 Bit External Bus	32 Bit External Bus
Ethernet	10/100MBit	10/100MBit	10/100MBit	10/100MBit
I/O	1 + 1 USB, 3 x COM, 2 x SD-Card, I2C, SPI, IrDA, PWM, Camera	1 x USB 1.1 (Host), 3 x COM, 1 x SD-Card, I2C, SPI, IrDA, PWM, Touchpanel, Camera	1 x USB 1.1 (Host), 1 x USB 2.0 (Device), 3 x COM, 2 x SD-Card, I2C, SPI, IrDA, PWM, Touchpanel, Camera	2 x USB 2.0 (1 x OTG), 5 x COM, 2 x SD-Card, I2C, SPI, IrDA, PWM, Touchpanel, Camera
Graphics	integrated up to 1024 x 768	integrated up to 1024 x 768	integrated up to 1024 x 768	integrated up to Full HD (1080p)
Panel Interface	3 x 6bit TTL	3 x 6bit TTL	3 x 6bit TTL	3 x 6bit TTL, HDMI
Audio	n.a.	In/Out	In/Out	In/Out
Others	up to 92 GPIOs	up to 85 GPIOs, -10°C...+70°C	up to 93 GPIOs, -40°C...+85°C opt.	up to 110 GPIOs

F&S ARM Platform - Cost efficient ARM Single Board solution



armStone1	
Form factor	Pico-ITX (100 mm x 72 mm)
OS	Win CE 6.0R3/Compact7 or Linux
Processor	CortexA8 800 MHz/1 GHz
DRAM	up to 512 MByte SDRAM onboard
Mass storage	up to 1 GByte Flash onboard
Ethernet	10/100MBit
I/O	1 x USB 2.0 (Host), 1 x USB 2.0 (Dev.), 1 x COM, 1 x microSD-Card, Touchpanel, 1 x SPI, 1 x I2C, 1 x CAN
Graphics	integrated up to 1280 x 768
Panel Interface	LVDS
Audio	In/Out/Mic
Others	GPIO, 0°C...+70°C, -25°C...+85°C opt.

Iris - Pico ITX Carrier Board

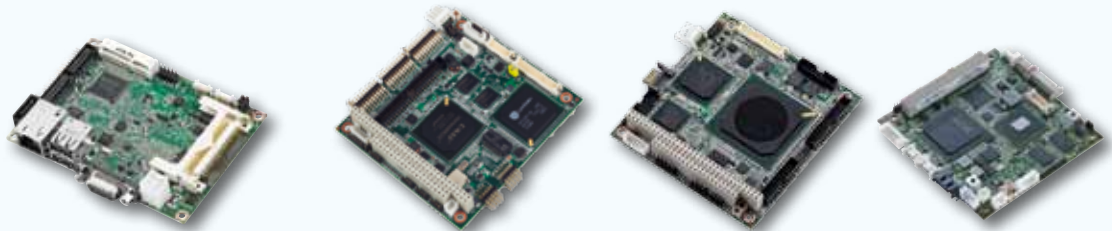
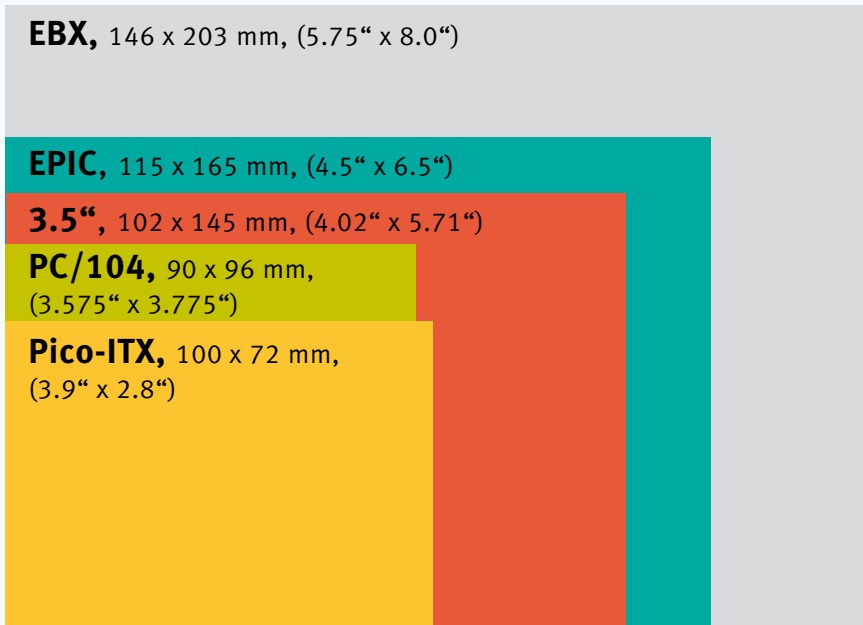
Iris is a tiny carrier board for the Colibri Modules. Iris supports all modules in the Colibri product family, and includes support for the additional/enhanced functionality on the Colibri T20 product.



Iris	Iris - Pico ITX Carrier Board V1.1a
Form factor	Pico-ITX (100 mm x 72 mm)
Processormodules	Colibri (SO-DIMM)
Mass storage	Micro SD card slot
Ethernet	RJ45 Ethernet Connector
I/O	1 x USB Type-A, 1 x USB OTG Micro-AB, 1 x RS232, res. Touch connector, I2C
Panel Interface	LVDS interface, DVI-I , VGA interface
Audio	Audio Out on 3.5mm stereo jack Mic in and Line in header
Others	4 x ADCs, 4 PWMs, 8 x GPIO, SSP on header

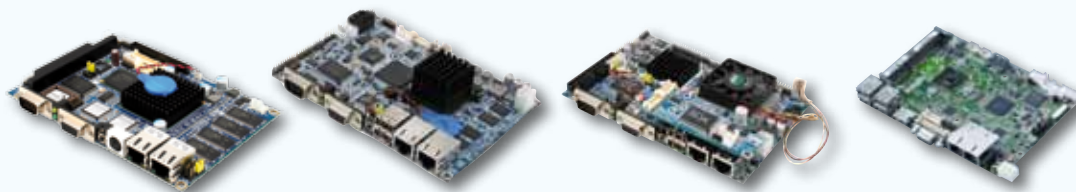
SINGLE BOARD COMPUTERS

Small-sized and fully-integrated single board computers with a wide range of performance levels



Pico-ITX / PC/104	MIO-2260	PCM-3343	PCM-3355	PCM-3363
Formfactor	Pico-ITX	PC/104	PC/104	PC/104+
Processor	Intel® Atom™ N455 1.66 GHz	DM&P Vortex86DX 933 MHz	AMD Geode™ LX800 500 MHz 128 kByte L2 cache	Intel® Atom™ N455 1.66 GHz/D525 1.8 GHz
Chipset	Intel® ICH8M	Integrated	AMD Geode™ CS5536	Intel® ICH8M
DRAM	max. 2 GByte DDR3 800	256 MByte DDR2 onboard	max. 1 GByte DDR333	1 GByte DDR3 onboard
Mass storage	1 x SATA, 1 x Compact Flash Socket	1 x IDE, 1 x Compact Flash Socket	1 x SATA, 1 x Compact Flash Socket	1 x SATA, 1 x Compact Flash Socket
Bus	1 x Mini PCIe (half-size), MIOe (Smbus, 3 x USB 2.0, 4 x PCIe, LPC, line out, 5V/12V power, ACPI S3/S5)	PC/104	PC/104	PC/104+
Ethernet	10/100/1000BaseT	Dual 10/100BaseT	10/100BaseT	10/100/1000BaseT
I/O	2 x USB 2.0, 2 x COM	4 x USB 2.0, 4 x COM, Keyboard/Mouse	2 x USB 2.0, 2 x COM, Keyboard/Mouse, LPT	4 x USB 2.0, 3 x COM, Keyboard/Mouse
Graphics	integrated	SMI SM712	integrated	integrated
max. Memory	224 MByte	4 MByte	64 MByte	224 MByte
Panel Interface	CRT/LVDS 1x18	CRT/LVDS 1x24/ TTL 24Bit (optional)	CRT/TTL 24Bit	CRT/LVDS 1x24
Audio	HD Audio	n/a	n/a	HD Audio (via extension module)
Others	8 x GPIO	16 x GPIO, ext. Temp. -40°C...+85°C (optional)	8 x GPIO, ext. Temp. -40°C...+85°C (optional)	8 x GPIO, ext. Temp. -40°C...+85°C (optional)

SINGLE BOARD COMPUTERS



3.5"	ECM-LX800D	ECM-QB	ECM-PNV	MIO-5250
Formfactor	3.5"	3.5"	3.5"	3.5"
Processor	AMD Geode™ LX800 500 MHz 128 kByte L2 cache	Intel® Atom™ E640 1.0 GHz	Intel® Atom™ D525 1.8 GHz	Intel® Cedarview N2600 1.6 GHz/N2800 1.86 GHz/ D2700 2.13 GHz
Chipset	AMD Geode™ CS5536	Intel® PCH EG20T	Intel® ICH8M	Intel® NM10 Express
DRAM	256/512 MB SDRAM onboard	1 GByte DDR2 onboard	max. 4 GByte DDR3 1066/1333	max. 4 GByte DDR3 800/1066
Mass storage	1 x EIDE, 1 x Compact Flash Socket	2 x SATA, 1 x MicroSD, 1 x Compact Flash Socket	2 x SATA, 1 x Compact Flash Socket	1 x SATA, 1 x CFast Socket
Bus	PC/104	1 x Mini PCIe, 1 x CAN Bus	1 x Mini PCIe	1 x Mini PCIe, MIOe
Ethernet	Dual 10/100BaseT	Dual 10/100/1000BaseT	Dual 10/100/1000BaseT	Dual 10/100/1000BaseT
I/O	2 x USB 2.0, 2 x COM, Keyboard/Mouse, LPT	4 x USB 2.0, 3 x COM	6 x USB 2.0, 2 x COM	6 x USB 2.0, 4 x COM
Graphics	Integrated			
max. Memory	64 MByte	256 MByte	224 MByte	tbd
Panel Interface	CRT/LVDS 1x24/TTL 24Bit	CRT/LVDS 1x24	CRT/LVDS 2x24 (via converter module)	CRT/LVDS 1x18, 2nd LVDS 2x24 (optional)/ HDMI
Audio	AC'97 Compliant	HD Audio	HD Audio	HD Audio
Others	8 x GPIO, Wide range DC input: +10V ~ +28V, Touch Screen Interface (optional)	16 x GPIO, ext. Temp. (optional)	16 x GPIO, Wide range DC input: +12V ~ +28V, Touch Screen Interface (optional)	8 x GPIO



3.5"	ECM-CDV	ECM-A50M	MIO-5270	ECM-QM57
Formfactor	3.5"	3.5"	3.5"	3.5"
Processor	Intel® Cedarview D2700 2.13 GHz	AMD G-Series T40E 1.0 GHz/ T56N 1.6 GHz	AMD G-Series T40R 1.0 GHz/ T40E 1.0 GHz/T44R 1.2 GHz/T56N 1.6 GHz	Intel® Core™ i7-620LE 2.0 GHz/ i7-620UE 1.06 GHz
Chipset	Intel® NM10 Express	AMD A50M	AMD A50M	Intel® QM57
DRAM	max. 4 GByte DDR3 800/1066	max. 4 GByte DDR3 1066	max. 4 GByte DDR3 1066	max. 4 GByte DDR3 800/1066
Mass storage	1 x SATA, 1 x Compact Flash Socket	2 x SATA, 1 x Compact Flash Socket	2 x SATA, 1 x CFast Socket	2 x SATA, 1 x CFast Socket
Bus	1 x Mini PCIe	1 x Mini PCIe	1 x Mini PCIe, MIOe	1 x Mini PCIe (via extension module)
Ethernet	Dual 10/100/1000BaseT	Dual 10/100/1000BaseT	Dual 10/100/1000BaseT	Dual 10/100/1000BaseT
I/O	7 x USB 2.0, 2 x COM	7 x USB 2.0, 2 x COM	6 x USB 2.0, 4 x COM	5 x USB 2.0, 2 x COM
Graphics	Integrated			
max. Memory	tbd	224 MByte	224 MByte	tbd
Panel Interface	CRT/LVDS 2x24/HDMI	CRT/LVDS 2x24/HDMI	CRT/LVDS 2x24/HDMI	CRT/LVDS 2x24/HDMI
Audio	HD Audio	HD Audio	HD Audio	HD Audio
Others	16 x GPIO, Wide range DC input: +12V ~ +28V, Touch Screen Interface (optional)	16 x GPIO, Touch Screen Interface (optional)	8 x GPIO	16 x GPIO

SINGLE BOARD COMPUTERS/BOX PCs



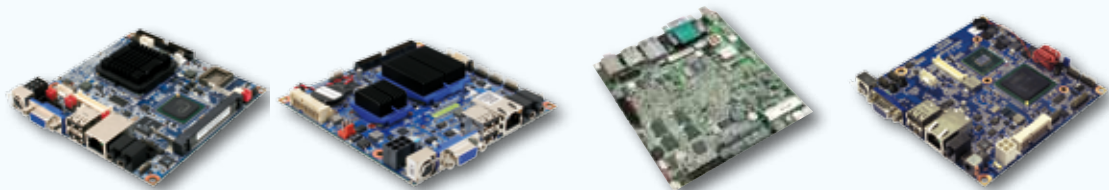
EPIC / 5.25"	EPI-QM67	EPI-QM77	EBM-CDV	EBM-A50M
Formfactor	EPIC	EPIC	5,25"	5,25"
Processor	Intel® Socket FCPGA988	Intel® Socket for Ivy Bridge Processors	Intel® Cedarview N2800 1.86 GHz/D2700 2.13 GHz	AMD G-Series T40E 1.0 GHz/T56N 1.6 GHz
Chipset	Intel® QM67	Intel® QM77	Intel® NM10 Express	AMD A50M
DRAM	max. 4 GByte DDR3 1066/1333	max. 8 GByte DDR3 1066/1333	up to 2 GByte DDR3 onboard, max. 2 GByte DDR3 1066/1333 (Socket)	2 GByte DDR3 onboard, max. 4 GByte DDR3 1066/1333 (Socket)
Mass storage	2 x SATA	2 x SATA	1 x SATA, 1 x Compact Flash Socket	2 x SATA, 1 x Compact Flash Socket
Bus	1 x Mini PCIe	1 x Mini PCIe	1 x Mini PCIe	2 x Mini PCIe
Ethernet	Dual 10/100/1000BaseT	Dual 10/100/1000BaseT	Dual 10/100/1000BaseT	Dual 10/100/1000BaseT
I/O	10 x USB 2.0, 2 x COM	2 x USB 2.0, 4 x USB 3.0, 2 x COM	8 x USB 2.0, 6 x COM	8 x USB 2.0, 6 x COM
Graphics	Integrated			
max. Memory	512 MByte	512 MByte	tbd	224 MByte
Panel Interface	CRT/LVDS 2x24/DVI/HDMI	CRT/LVDS 2x24/DVI/HDMI Triple Display support	CRT/LVDS 2x24/HDMI	CRT/LVDS 2x24/HDMI
Audio	HD Audio	HD Audio	HD Audio	HD Audio
Others	16 x GPIO, Touch Screen Interface (optional)	16 x GPIO, Wide range DC input: +12V ~ +19V, Touch Screen Interface (optional)	16 x GPIO, Touch Screen Interface (optional)	16 x GPIO, Wide range DC input: +12V ~ +28V, Touch Screen Interface (optional)



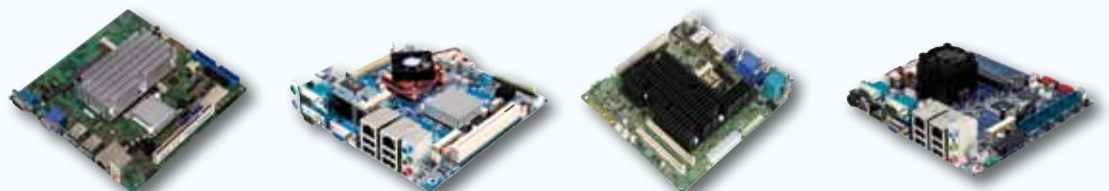
Box PCs	ARK-1120	EPC-A50M	ARK-DS520	EPS-QM57
Processor	Intel® Atom™ N455 1.66 GHz	AMD G-Series T40E 1.0 GHz	Intel® Atom™ N455 1.66 GHz/D525 1.8 GHz With NVIDIA GT218 (ION2) graphics	Intel® Celeron® P4504 1.86 GHz/Core™ i7-620LE 2.0 GHz
DRAM	max. 2 GByte DDR3 800	max. 4 GByte DDR3 1066	max. 2 GByte DDR3	max. 8 GByte DDR3 800/1066
Display	1 x VGA	1 x VGA, 1 x HDMI	1 x VGA, 1 x DVI, 1 x HDMI	1 x VGA, 1 Dual Channel 18/24 bit LVDS
External I/O	4 x USB 2.0, 2 x COM, 1 x LAN, Audio	4 x USB 2.0, 2 x COM, 2 x LAN, Audio	4 x USB 2.0, 2 x COM, 2 x LAN, Audio, GPIO	8 x COM, 6 x USB 2.0, 2 x LAN, Audio, 8-bit/16-bit DIO, Wifi
Expansion Interface	1 x Mini PCIe (half-size)	1 x Mini PCIe	1 x Mini PCIe	2 x PCI, 2 x Mini PCIe
Storage	1 x Compact Flash, 2.5" HDD drive bay	1 x Compact Flash, 2.5" HDD drive bay	1 x Compact Flash, 2.5" HDD drive bay	1 x CFast, 2.5" HDD drive bay
Power Requirement	+12 VDC	+12 VDC	+12 VDC	+9V ~ +30 VDC
Dimension (W x H x D)	133.8 x 43.1 x 94.2 mm	178 x 50 x 112 mm	220 x 44.2 x 150 mm	250 x 108 x 220 mm
Weight	0.7 kg	1.2 kg	1.7 kg	tbd
Operating Temp.	0 ~ 40°C	0 ~ 50°C	0 ~ 40°C	-10°C ~ 55°C
Fanless Operation	Yes	Yes	Yes (with N455)	Yes
Mounting	VESA, Desktop/Wall Mount	VESA	Desktop/Wall Mount	Table Mount
Options	Wifi	Wifi	Wifi	PCIe x16 Riser Card

EMBEDDED MOTHERBOARDS

Embedded Motherboards for industrial applications that require competitive pricing, long-term support (3+ years), proven reliability and strict revision control



Nano-ITX	ENX-LX800	ENX-US15WP	Nano-6040	ENX-PNV
Formfactor	Nano-ITX (120 x 120mm)			
Processor	AMD Geode™ LX800 500 MHz 128 kByte L2 cache	Intel® Atom™ Z510P 1.1 GHz/ Z530P 1.6 GHz	Intel® Atom™ E620T 600 MHz/ E640T 1.0 GHz/660T 1.3 GHz/ 680T, 1.6 GHz	Intel® Atom™ D510 1.66 GHz
Chipset	AMD Geode™ CS5536	Intel® SCH US15WP	Intel® PCH EG20T	Intel® ICH8M
DRAM	max. 1 GByte DDR 400	max. 2 GByte DDR2 400/533	1 GByte DDR2 onboard	max. 4 GByte DDR2 667
Mass storage	1 x EIDE, 1 x Compact Flash Socket	1 x EIDE, 1 x Compact Flash Socket	2 x SATA, 1 x SD Socket	2 x SATA, 1 x CompactFlash Socket
Bus	1 x Mini PCI	1 x Mini PCIe	1 x Mini PCIe, 1 x PCIe x1, 1 x CAN Bus	1 x Mini PCIe
Ethernet	10/100BaseT	10/100/1000BaseT	10/100/1000BaseT	10/100/1000BaseT
I/O	4 x USB 2.0, 2 x COM, Keyboard/Mouse	4 x USB 2.0, 1 x COM	4 x USB, 1 x COM	4 x USB 2.0, 2 x COM, Keyboard/Mouse
Graphics	Integrated			
max. Memory	32 MByte	256 MByte	256 MByte	224 MByte
Panel Interface	CRT/ LVDS 1x18/ TTL 24Bit	CRT/LVDS 1x24	CRT/LVDS 1x24	CRT/LVDS 1x18
Audio	AC'97 Compliant	HD Audio	HD Audio	HD Audio
Others	8 x GPIO	8 x GPIO, TPM support	16 x GPIO, +12V DC input, ext. Temp.	+12V DC input, TPM 1.2



Mini-ITX	MS-9830-C	EMX-PNV-525	MS-9885	EMX-CDV
Formfactor	Mini-ITX (170 x 170mm)			
Processor	Intel® Atom™ N270 1.6 GHz	Intel® Atom™ D525 1.8 GHz	Intel® Atom™ D525 1.8 GHz	Intel® Cedarview N2800 1.86 GHz/D2700 2.13 GHz
Chipset	Intel® 945GSE / ICH7M	Intel® ICH8M	Intel® ICH8M	Intel® NM10 Express
DRAM	max. 2 GByte DDR2 400/533	max. 4 GByte DDR3 800	max. 4 GByte DDR3 800	max. 4 GByte DDR3 800/1066
Mass storage	1 x IDE, 2 x SATA	2 x SATA, 1 x Compact Flash Socket	3 x SATA, 1 x Compact Flash Socket	2 x SATA, 1 x CFast Socket (optional)
Bus	1 x PCI, 1 x Mini PCIe	1 x PCI, 1 x Mini PCIe	1 x PCI, 1 x Mini PCIe	1 x PCIe x1, 1 x Mini PCIe
Ethernet	10/100/1000BaseT	Dual 10/100/1000BaseT	10/100/1000BaseT	Dual 10/100/1000BaseT
I/O	6 x USB 2.0, 6 x COM, LPT	8 x USB 2.0, 6 x COM, Keyboard/Mouse, LPT	7 x USB 2.0 (1 x 12V power USB), 5 x COM, LPT	7 x USB 2.0, 6 x COM
Graphics	Integrated			
max. Memory	224 MByte	224 MByte	224 MByte	tbd
Panel Interface	CRT/LVDS 2x24	CRT/LVDS 1x18	CRT/LVDS 1x24/DVI	CRT/LVDS 1x24/HDMI
Audio	HD Audio	HD Audio	HD Audio	HD Audio
Others	+12V DC input	16 x GPIO, TPM 1.2 (optional)	8 x GPIO	8 x GPIO, TPM 1.2 (optional)

EMBEDDED MOTHERBOARDS



Mini-ITX	MS-9895	AIMB-223	EMX-A55E	EMX-G41
Formfactor	Mini-ITX (170 x 170mm)			
Processor	Intel® Cedarview N2600 1.6 GHz/N2800 1.86 GHz/ 2700 2.13 GHz	AMD G-Series T40E 1.0 GHz /T44R 1.2 GHz/T56N 1.6 GHz	AMD G-Series T40E 1.0 GHz/ T56N 1.6 GHz	Intel® Socket LGA775
Chipset	Intel® NM10 Express	AMD A55E	AMD A55E	Intel® G41 / ICH7
DRAM	max. 4 GByte DDR3 800/1066	max. 4 GByte DDR3 1066/1333	max. 4 GByte DDR3 1066	max. 2 GByte DDR2 667/800
Mass storage	2 x SATA, 1x CFast Socket	4 x SATA, 1 x CFast Socket	5 x SATA, 1 x CFast Socket	2 x SATA
Bus	1 x PCI, 1 x Mini PCIe	1 x PCI, 1 x PCIe x1, 1 x Mini PCIe	1 x PCIe x4, 1 x Mini PCIe	1 x PCIe x16
Ethernet	Dual 10/100/1000BaseT	Dual 10/100/1000BaseT	Dual 10/100/1000BaseT	Dual 10/100/1000BaseT
I/O	8 x USB 2.0, 10 x COM, Keyboard/Mouse	8 x USB 2.0, 6 x COM	8 x USB 2.0, 4 x COM, Keyboard/Mouse	6 x USB 2.0, 2 x COM, Keyboard/Mouse, LPT
Graphics	Integrated			
max. Memory	tbd	512 MByte	512 MByte	352 MByte
Panel Interface	CRT/LVDS 1x24/2nd LVDS 2x24/DVI	CRT/LVDS 2x24/HDMI	CRT/LVDS 1x18/HDMI/eDP	CRT
Audio	HD Audio	HD Audio	HD Audio	HD Audio
Others	8 x GPIO, +12V/+24V DC input, TPM	8 x GPIO, +12V DC input	8 x GPIO, TPM	8 x GPIO



Mini-ITX	MS-9871	MS-9887	EMX-QM67	AIMB-273
Formfactor	Mini-ITX (170 x 170mm)			
Processor	Intel® Core™ 2 Duo SU7300 1.30 GHz/SU9600 1.6 GHz	Intel® Socket rPGA989 (Socket G2)	Intel® Socket rPGA988 (Socket G2)	Intel® Socket rPGA989 for Ivy Bridge Processors
Chipset	Intel® GS45 / ICH9M	Intel® QM67 / HM67	Intel® QM67	Intel® QM77
DRAM	max. 4 GByte DDR2 667/800	max. 16 GByte DDR3 1066/1333	max. 16 GByte DDR3 1066/1333	max. 8 GByte DDR3 1600
Mass storage	2 x SATA	5 x SATA, 1 x CFast Socket	5 x SATA, 1 x CFast Socket	4 x SATA, 1 x CFast Socket
Bus	2 x Mini PCIe	1 x PCI, 1 x Mini PCIe		1 x PCIe x16, 1 x Mini PCIe
Ethernet	Dual 10/100/1000BaseT	Dual 10/100/1000BaseT	Dual 10/100/1000BaseT	Dual 10/100/1000BaseT
I/O	6 x USB 2.0, 10 x COM	8 x USB 2.0, 4 x COM, Keyboard/Mouse	12 x USB 2.0, 4 x COM, Keyboard/Mouse	4 x USB 3.0, 4xUSB 2.0, 2 x COM Keyboard/Mouse
Graphics	Integrated			
max. Memory	tbd	tbd	1.7 GByte	tbd
Panel Interface	CRT/LVDS 2x24/DVI/HDMI	CRT/LVDS 2x24/2 x DVI/ HDMI	CRT/LVDS 2x24/HDMI/ DisplayPort	CRT/LVDS 2x24/DVI/HDMI/ 2 x DisplayPort
Audio	HD Audio	HD Audio	HD Audio	HD Audio
Others	+12V/+19V DC input, TPM, MXM 3.0	8 x GPIO, +12V DC input, TPM	8 x GPIO, TPM	2 x GPIO, TPM