



congatec

the rhythm of embedded computing



Maximum Computing Performance

HIGHLIGHTS



+80°



www.congatec.com



Maximum Computing Performance

Formfactor	COM Express™ Basic (95x125mm), Type II Connector Layout
CPU	Intel® Core™ i7-620M, 2.66 GHz (32 nm process, 4MB cache, 1066 MHz, TDP 35 W, PGA package) Intel® Core™ i5-520M, 2.4 GHz (32 nm process, 3MB cache, 1066 MHz, TDP 35 W, PGA package) Intel® Celeron™ P4500, 1.86 GHz (32nm process, 2MB cache, TDP35 W, PGA package) Integrated dual channel memory controller, up to 17.1 GByte/sec. memory bandwidth Integrated Intel® HD Graphics with dynamic frequency up to 667 MHz Intel® Clear Video HD Technology
DRAM	2 Sockets, SO-DIMM DDR3 1066 MHz, up to 8 GByte
Chipset	Intel® 5 Series Chipset: Intel® HM55
Ethernet	Intel® 82577LM Ethernet PHY
I/O Interfaces	5x PCI Express™ lanes, 3x Serial ATA® (AHCI) no RAID support, 1x EIDE (UDMA-66/100) optional, 2x ExpressCard®, 8x USB 2.0 (EHCI), PCI bus 33 MHz Rev. 2.3, LPC bus, I²C bus (fast mode, 400 kHz, multi-master)
Sound	Digital High Definition Audio Interface with support for multiple audio codecs
Graphics	Processor integrated Mobile Intel® 5 Series HD graphics. OpenGL 2.1 and DirectX10 support, Two independent pipelines for full dual view support High performance hardware MPEG-2 decoding, WMV9 (VC-1) and H.264 (AVC) support Blu-ray support @ 40 MBit/s, hardware motion compensation, no PEG support
LVDS	Dual channel LVDS transmitter, Supports flat panels 2x24 Bit interface, VESA mappings, resolutions up to 1920x1200, Automatic Panel Detection via EDID/EPI
DisplayPort (DP)	3x DisplayPorts 1.1 shared with HDMI
HDMI	3x ports shared with DisplayPorts
CRT Interface	350 MHz RAMDAC, resolutions up to QXGA (2048x1536)
AUX Output	Supports one SDVO port shared with HDMI and DisplayPort capable of driving a 200MP pixel rate
congatec Board Controller	Multi Stage Watchdog, non-volatile User Data Storage, Manufacturing and Board Information, Board Statistics, BIOS Setup Data Backup, I²C bus (fast mode, 400 kHz, multi-master), Power Loss Control
Embedded BIOS Features	AMI Aptio® UEFI 2.x firmware, 4 MByte serial SPI firmware flash
Security	Discrete on-board TPM 1.2/TCPPA security functions, for Hash, RSA, keys and random numbers (optional)
Power Management	ACPI 3.0 with battery support
Operating Systems	Microsoft® Windows7, Microsoft® Windows XP, Microsoft® Windows® embedded Standard, Linux 2.6, QNX 6.x
Power Consumption	Typ. application: tbd., see manual for full details, CMOS Battery Backup
Temperature	Operating: 0 to +60°C Storage: -20 to +80°C
Humidity	Operating: 10 to 90% r. H. non cond. Storage: 5 to 95% r. H. non cond.
Size	95 x 125 mm (3.74" x 4.92")

conga - BM57

- Up to Intel® Core™ i7 Processors 2.66 GHz
- Highest end graphics performance
- Intel® Turbo Boost Technology up to 3.33 GHz





Small-Footprint Performance

Formfactor	COM Express™ Basic, (95 x 125 mm), Type II Connector Layout
CPU	Intel® Core™ 2 Duo SU9300, 1.20 GHz (3M cache, 800 MHz FSB, TDP 10W) Intel® Core™ 2 Duo SP9300, 2.26 GHz (6M cache, 1066 MHz FSB, TDP 25W) Intel® Core™ 2 Duo SL9400, 1.86 GHz (6M cache, 1066 MHz FSB, TDP 17W) Intel® Celeron® M ULV 722, 1.20 GHz (1M cache, 800 MHz FSB, TDP 5.5W) Intel® Celeron® M ULV 723, 1.20 GHz (1M cache, 800 MHz FSB, TDP 10W)
DRAM	2 Sockets, SO-DIMM DDR3 1067 MHz, up to 8 GByte
Chipset	Graphics & Memory Controller Hub: Intel® GS45 I/O Controller Hub: Intel® 82801IUX (ICH9ME-SFF)
Ethernet	Intel® 82567LM Gigabit Ethernet Phy
I/O Interfaces	5x PCI Express™ lanes, PCI Express Graphics (PEG x16), 3x Serial ATA® (AHCI) supporting RAID 0/1/5/10, 1x EIDE (UDMA-66/100) optional, 2x ExpressCard® (uses 2x USB & 2x PCI Express), 8x USB 2.0 (EHCI), PCI bus 33 MHz Rev. 2.3, LPC bus, I²C bus (fast mode, 400 kHz, multi-master), Power Loss Control, temperature controlled Power-Up
Sound	Digital High Definition Audio Interface with support for multiple audio codecs
Graphics	Mobile Intel® Graphics Media Accelerator 4500MHD, graphics core speeds up to 533 MHz, improved graphics and 3D rendering performance, Intel® Dynamic Video Memory Technology (Intel® DVM 5.0), OpenGL 2.0 and DirectX10 support. Two independent pipelines for full dual view support, High performance hardware MPEG-2 decoding, WMV9 (VC-1) and H.264 (AVC) support Blu-ray support @ 40 Mb/s, hardware motion compensation
LVDS	Dual channel 112 MHz LVDS transmitter, Supports flat panels with 1x18, 2x18, 1x24, 2x24 bit interface, VESA mappings, resolutions from 640x480 up to 1920x1200, Automatic Panel Detection via EDID/EPI
DisplayPort (DP)	Supports two DisplayPorts multiplexed with the PCI Express Graphics interface 1.62 Gb/s and 2.7 Gb/s, 1/2/4 data lanes, 8B10B-coding, Hot-Plug detect support, HDCP support
HDMI	Single TMDS Link, only support for RGB, Video support for CEA modes 480i/p, 576i/p, 720p, 1080i/p and PC modes via dot clock, HDCP and HDMI repeater support
CRT Interface	300 MHz RAMDAC, resolutions up to QXGA
AUX Output	Supports two SDVO Ports multiplexed with the PCI Express Graphics interface
TV Out	Onboard TV encoder, supports HDTV (420p, 720p and 1080i), supports component and S-video
congatec Board Controller	Multi Stage Watchdog, non-volatile User Data Storage, Manufacturing and Board Information, Board Statistics, BIOS Setup Data Backup, I²C bus (fast mode, 400 kHz, multi- master), Power Loss Control
Embedded BIOS Features	OEM Logo, OEM CMOS Defaults, LCD Control, Display Auto Detection, Backlight Control, Flash Update, Based on AMBIOS8®
Security	Integrated TPM 1.2/TPCA security functions, for Hash, RSA, keys and random numbers (optional)
Power Management	ACPI 3.0 with battery support
Operating Systems	Microsoft® Windows7, Microsoft® Windows XP, Microsoft® Win- dows® embedded Standard, Linux 2.6, QNX 6.x
Power Consumption	Typ. application: ~TBD W @ 12V, see manual for full details, CMOS Battery Backup
Temperature	Operating: 0 .. +60°C Storage: -20 .. +80°C
Humidity	Operating: 10 - 90% r. H. non cond. Storage: 5 - 95% r. H. non cond.
Size	95 x 125 mm (3.74" x 4.92")

conga - BS45

- Intel® Core 2 Duo up to 2.26
- Up to 8 GByte DRAM
- Intel® Graphics Media Accelerator 4500MHD



COM Express®





Superior Graphics Performance

Formfactor	COM Express™ Compact, (95 x 95 mm), Type II Connector Layout
CPU	Intel® Core™ 2 Duo SU9300, 1.20 GHz (3M cache, 800 MHz FSB, TDP 10W) Intel® Core™ 2 Duo SP9300, 2.26 GHz (6M cache, 1066 MHz FSB, TDP 25W) Intel® Core™ 2 Duo SL9400, 1.86 GHz (6M cache, 1066 MHz FSB, TDP 17W) Intel® Celeron® M ULV 722, 1.20 GHz (1M cache, 800 MHz FSB, TDP 5.5W) Intel® Celeron® M ULV 723, 1.20 GHz (1M cache, 800 MHz FSB, TDP 10W)
DRAM	SO-DIMM DDR3 1067/800 MHz, up to 4 GByte
Chipset	Graphics & Memory Controller Hub: Intel® GS45 I/O Controller Hub: Intel® 82801IUX (ICH9ME-SFF)
Ethernet	Intel® 82567LM Gigabit Ethernet Phy
I/O Interfaces	5x PCI Express™ lanes, PCI Express Graphics (PEG x16), 3x Serial ATA® (AHCI) supporting RAID 0/1/5/10, 1x EIDE (UDMA-66/100) optional, 2x ExpressCard® (uses 2x USB & 2x PCI Express), 8x USB 2.0 (EHCI), PCI bus 33 MHz Rev. 2.3, LPC bus, I²C bus (fast mode, 400 kHz, multi-master)
Sound	Digital High Definition Audio Interface with support for multiple audio codecs
Graphics	Mobile Intel® Graphics Media Accelerator 4500MHD, graphics core speeds up to 533 MHz, improved graphics and 3D rendering performance, Intel® Dynamic Video Memory Technology (Intel® DVM 5.0), OpenGL 2.0 and DirectX10 support Two independent pipelines for full dual view support, High performance hardware MPEG-2 decoding, WMV9 (VC-1) and H.264 (AVC) support Blu-ray support @ 40 Mb/s, hardware motion compensation
LVDS	Dual channel 112 MHz LVDS transmitter, Supports flat panels with 1x18, 2x18, 1x24, 2x24 bit interface, VESA mappings, resolutions from 640x480 up to 1920x1200, Automatic Panel Detection via EDID/EPI
DisplayPort (DP)	Supports two DisplayPorts multiplexed with the PCI Express Graphics interface 1.62 Gb/s and 2.7 Gb/s, 1/2/4 data lanes, 8B10B-coding, Hot-Plug detect support, HDCP support
HDMI	Single TMDS Link, only support for RGB, Video support for CEA modes 480i/p, 576i/p, 720p, 1080i/p and PC modes via dot clock
CRT Interface	300 MHz RAMDAC, resolutions up to QXGA
AUX Output	Supports two SDVO Ports multiplexed with the PCI Express Graphics interface
TV Out	Onboard TV encoder, supports HDTV (420p, 720p and 1080i), supports component and S-video
congatec Board Controller	Multi Stage Watchdog, non-volatile User Data Storage, Manufacturing and Board Information, Board Statistics, BIOS Setup Data Backup, I²C bus (fast mode, 400 kHz, multi-master), Power Loss Control
Embedded BIOS Features	OEM Logo, OEM CMOS Defaults, LCD Control, Display Auto Detection, Backlight Control, Flash Update, Based on AMIBIOS8®
Security	TPM 1.2/TPCA security functions, for Hash, RSA, keys and random numbers (optional)
Power Management	ACPI 3.0 with battery support
Operating Systems	Microsoft® Windows7, Microsoft® Windows XP, Microsoft® Windows® embedded Standard, Linux 2.6, QNX 6.x
Power Consumption	Typ. application: ~TBD W @ 12V, see manual for full details, CMOS Battery Backup
Temperature	Operating: 0 .. +60°C Storage: -20 .. +80°C
Humidity	Operating: 10 - 90% r. H. non cond. Storage: 5 - 95% r. H. non cond.
Size	95 x 95 mm (3.74" x 3.74")

conga - CS45

- High Graphics Performance
- Features Intel® Core™ 2 Duo processor based on 45nm structure
- Single channel DDR3 memory up to 4 GByte with 1067 MHz



COM Express®





Ultra Mobile

Formfactor	Qseven Form Factor, 70x70 mm
CPU	Intel® Atom™ processor Z530 1.6 GHz, 533 MHz FSB and memory bus speed, 512k L2 cache, 45 nm, with Hyper-Threading Technology Intel® Atom™ processor Z510 1.1 GHz, 400 MHz FSB and memory bus speed, 512k L2 cache, 45 nm
DRAM	up to 1 GByte on-board DDR2 memory with 400/533 MT/s
Chipset	Intel® SCH US15W
Ethernet	Gigabit Ethernet Realtek RTL8111
I/O Interfaces	8x USB 2.0, 1x SATA, 1x SDIO, 1x PCIe, I²C Bus, 1x USB client, LPC bus
Mass Storage	On-board ATA Solid State Drive up to 4 GByte (optional)
Sound	Intel® High Definition Audio (Intel® HD Audio)
Graphics	Intel® Graphics Media Accelerator 500 (Intel® GMA 500), up to 256 MByte frame buffer supporting Direct X 9.0E, Open GL 2.0
Video Decode Acceleration	Full hardware acceleration for MPEG2, MPEG4, H.264, WMV9 and VC1
Motion Video Support	Single channel 112 MHz LVDS transmitter, support for flat panels with 1x18 and 1x24 bit data mapping up to resolutions of 1366x768 pixel Single channel SDVO interface, supports resolutions up to 1280x1024 pixel, Dual independent display support
congatec Board Controller	Multi Stage Watchdog, non-volatile User Data Storage, Manufacturing and Board information, Board Statistics, BIOS Setup, Data Backup, I²C bus (fast mode, 400 kHz, multi-master), Power Loss Control
Embedded BIOS Features	OEM Logo, OEM CMOS Defaults, LCD Control, Display Auto Detection, Backlight Control, Flash Update, based on AMIBIOS®
Power Management	ACPI 3.0 compliant, Smart Battery Management
Operating Systems	Windows® XP, Windows® XP embedded, Windows® CE 6.0, LINUX, QNX
Power Consumption	Typ. application ~5 Watt @ 5V
Temperature	Operating: 0 to +60°C Storage: -20 to +80°C
Humidity	Operating: 10 to 90% r. H. non cond. Storage: 5 to 95% r. H. non cond.
Size	70 x 70 mm (2¾" x 2¾")

conga-QA

- Module for ultra mobile applications
- Lowest power consumption
- Fast serial differential interfaces for high data bandwidth





Rugged module for harsh environment

Formfactor	COM Express™ Compact, (95 x 95 mm), Type II Connector Layout
CPU	Intel® Atom™ processor Z520PT 1.33 GHz, 533 MHz FSB and memory bus speed, 512k L2 cache, 45 nm, with Hyper-Threading Technology, industrial temperature. Intel® Atom™ processor Z510PT 1.1 GHz, 400 MHz FSB and memory bus speed, 512k L2 cache, 45 nm with Hyper-Threading Technology, industrial temperature.
DRAM	Up to 1 GByte on-board DDR2 400/533 MHz
Chipset	Intel® System Controller Hub US15WPT, industrial temperature
Ethernet	Intel® Gigabit Ethernet 82574L Controller
I/O Interfaces	1x EIDE (UDMA-66/100), PCI bus Rev. 2.3, LPC bus, 8x USB 2.0, I ² C bus, up to 2 PCI Express links optional
Mass Storage	Onboard IDE Solid State Disk up to 8GB
Sound	Intel® High Definition Audio (Intel® HD Audio)
Graphics	Intel® Graphics Media Accelerator 500 (Intel® GMA 500), up to 256 MByte frame buffer supporting Direct X 9.0E and Open GL 2.0
Video Decode Acceleration	Full hardware acceleration for MPEG2, MPEG4, H.264, WMV9 and VC1
Motion Video Support	Single channel 112MHz LVDS transmitter, support for flat panels with 1x18 and x24 bit data mapping up to resolutions of 1366x768 pixel Single channel SDVO Interface, supports resolutions up to 1280x1024 pixel Dual independent display support
congatec Board Controller	Multi Stage Watchdog, non-volatile User Data Storage, Manufacturing and Board information, Board Statistics, BIOS Setup, Data Backup, I ² C bus (fast mode, 400 kHz, multi-master), Power Loss Control
Embedded BIOS Features	OEM Logo, OEM CMOS Defaults, LCD Control, Display Auto Detection, Backlight Control, Flash Update, based on AMIBIOS®
Power Management	ACPI 3.0 with battery support
Operating Systems	Microsoft® Windows XP, Microsoft® Windows® embedded Standard, Microsoft® Windows CE 6.0, Linux 2.6, QNX 6.x
Power Consumption	Typ. application 5 Watt
Temperature	Operating: -40 to +85°C Storage: -40 to +85°C
Humidity	Operating: 10 to 90% r. H. non cond. Storage: 5 to 95% r. H. non cond.
Size	95 x 95 mm (3¾" x 3¾")



conga-CAx

- **Extended Temperature Range -40° .. +85°C**
- **Compact COM Express™ Module with best Performance per Watt Ratio**
- **Onboard IDE Solid State Disk up to 8 GB**



COM Express®