

conga-X965

XTX Embedded CPU module based on the latest Intel® Chipset



■ High End

The conga-X965 features the latest Intel® Core™ 2 Duo 64 bit processors up to 2x 1.6 GHz with 4 MByte shared cache. It offers all XTX features including 4x X1 PCI Express lanes.

■ ETX® compatible

The conga-X965 offers the highest computing performance available on ETX® module size. It's completely ETX® compatible but offers PCI Express, SATA and much more state of the art features by using the ETX® ISA pins.

■ Mass Storage

Up to three serial ATA® drives can be connected as fast mass storage devices. In order to support economical and robust CompactFlash cards, parallel ATA is also available.

■ Connectivity

Thanks to the four PCI Express, six USB 2.0, 3x SATA®, 2x COM ports, PCI, I²C, LPT,... the conga-X965 offers more connectivity than most other computer modules.

■ Graphics Efficiency

The integrated Intel® Graphics Media Accelerator X3100 features the latest 3D, 2D and video capabilities. It supports up to 384 MByte frame buffer using Dynamic Video Memory Technology (DVMT 4.0). With EPI support the conga-X965 automatically recognizes almost every available flat panel display and sets all parameters accordingly. Additional displays can be connected using the analog VGA interface or the SDVO port. TV-Out is also supported.



■ Sound

conga-X965 can utilize several high definition audio (HDA) codecs. This allows for the easy implementation of telephone and audio applications that require the highest sound quality and numerous channels.

■ Embedded BIOS Features

The conga-X965 is equipped with the congatec Embedded BIOS and supports the following features:

- ACPI Power Management
- ACPI Battery Support
- Supports Customer Specific CMOS Defaults
- Multistage Watchdog
- User Data Storage
- Manufacturing Data and Board Information
- OEM Splash Screen
- Flat Panel Auto Detection
- BIOS Setup Data Backup
- Fast Mode I²C Bus
- Real Headless Operation
- Console Redirection and BIOS
- Update (flashing BIOS) via Serial Port

■ Security

The conga-X965 can be equipped optionally with a "Trusted Platform Module" (TPM). This TPM includes coprocessors to calculate efficient hash- and RSA-algorithms with key lengths up to 2,048 bits as well as a real random number generator. Security sensitive applications like gaming and ecommerce will benefit also with improved authentication, integrity and confidence levels.

■ Software and Driver Support

congatec offers advanced Board-Support-Packages for the conga-X965, which include both the latest tested drivers from silicon vendors and the congatec specific drivers for accessing all of our additional embedded BIOS features. This will help our customers reduce their time-to-market.

■ Design-In Support

congatec support begins with your product idea and philosophy and continues throughout the series phase all the way up to the next product generation. This commitment to support helps our customers keep system development costs low and speeds up time-to-market.

■ System Integration

An important factor for each system integration is the thermal design. The heatspreader is a thermal coupling interface that makes fanless and rugged solutions possible.

Technical Data

Preliminary - Available Q4/2007

conga-X965	
Formfactor	ETX® Spec 2.7. without ISA Support, XTX™ Extensions
CPU	Intel® Core™ 2 Duo L7500 1.6 GHz, (4M cache, 800 MHz FSB, 65nm) Intel® Celeron® M 550, 2.0 GHz, (1M cache, 533 MHz FSB, 65nm)
DRAM	SO-DIMM DDR2 667/PC 5300 up to 2 GByte
Chipset	Graphics & Memory Controller Hub: Intel® GM965 I/O Controller Hub: Intel® 82801HBM (ICH8-M) I/O Controller: Winbond 83627HG Ethernet PHY: Intel® 82562GZ
I/O Interfaces	4x PCI Express® Lanes, 3x Serial ATA® (AHCI), 1x EIDE (UDMA-66/100), 2x Express Card®, (uses 2x USB & 2x PCI Express), 6x USB 2.0 (EHCI), PCI Bus, Rev. 2.3, no ISA Bus, LPC Bus, I²C (Fast Mode, 400 kHz, Multi Master), Floppy (Shared with LPT), LPT (EPP/ECP, Shared with Floppy), 2x COM Ports, TTL Level, 1x IrDA Port, PS/2 Keyboard, Mouse
Ethernet	IEEE 802.3u 100Base-Tx, Fast Ethernet compatible
Sound	AC'97 Rev.2.2 Compatible, Line In, Line Out, Mic In, Digital High Definition Audio Interface, with support for multiple Codecs
Graphic Interface	Intel® Graphics Media Accelerator X3100 max. Resolution 2048 x 1536 (QXGA) @ 60Hz and 32bpp, 500MHz core render clock with Intel® Display Power Saving Technology (DPST 3.0) max. 384 MByte 64 Bit Video RAM (DVMT 4.0), Dynamic Display Modes for flat-panel, wide-screen and Digital TV support
Full Dual View	With two independent Pipelines
Motion Video Support	MPEG-2 Hardware Acceleration, High Definition Hardware Motion Compensation to support high definition hi-bitrate MPEG2 media playback, Up and Down Scaling of Video Content, High Definition Content Decode, HDTV (1080i/p) Support
Flat panel Interface	Dual 112 MHz LVDS Transmitter, Supports all 1x18, 2x18, 1x24, 2x24 Bit, VESA- and openLDI-Mappings, Resolution up to WUXGA (1920x1200 @ 60Hz) Automatic Panel Detection via EPI, (Embedded Panel Interface, based on VESA EDID™ 1.3)
CRT Interface	300 MHz RAMDAC
AUX Output	2x SDVO, True HDTV 1080p support
TV Out	On ETX® X3 connector, Three integrated 10-bit DACs, True HDTV 1080p support
congatec Board Controller	Multi Stage Watchdog, Non-volatile User Data Storage, Manufacturing and Board information, Board Statistics, BIOS Setup Data Backup, I²C (Fast Mode, 400 kHz, Multi Master)
Embedded BIOS Features	OEM Logo, OEM CMOS Defaults, LCD Control, (Auto Detection, Backlight Control), Serial Port Console Redirection, for Remote Setup and Installation, Flash Update, Based on AMIBIOS®
Security (optional)	TPM 1.2/TPCA Security Functions, tor Hash, RSA, Keys and Random Numbers
Power Management	ACPI 2.0 with Battery support
Operating Systems	Microsoft® Windows® Vista™, Windows® XP, Windows® 2000, Windows® XP embedded, Windows® CE 5.0/6.0, Windriver VxWorks, LINUX, QNX
Power Consumption	max. 30W @ 5V, 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 114 mm² (3.7" x 4.5")



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