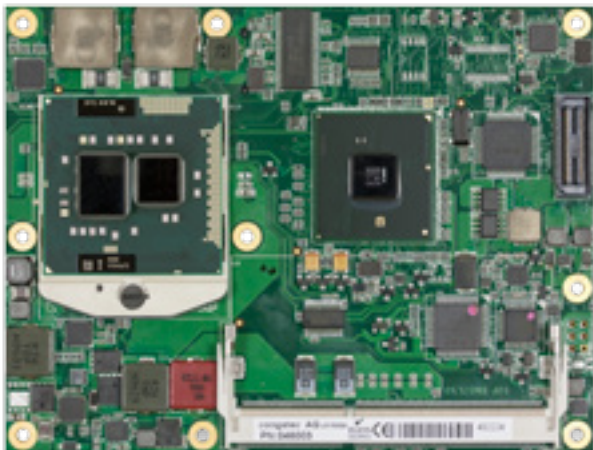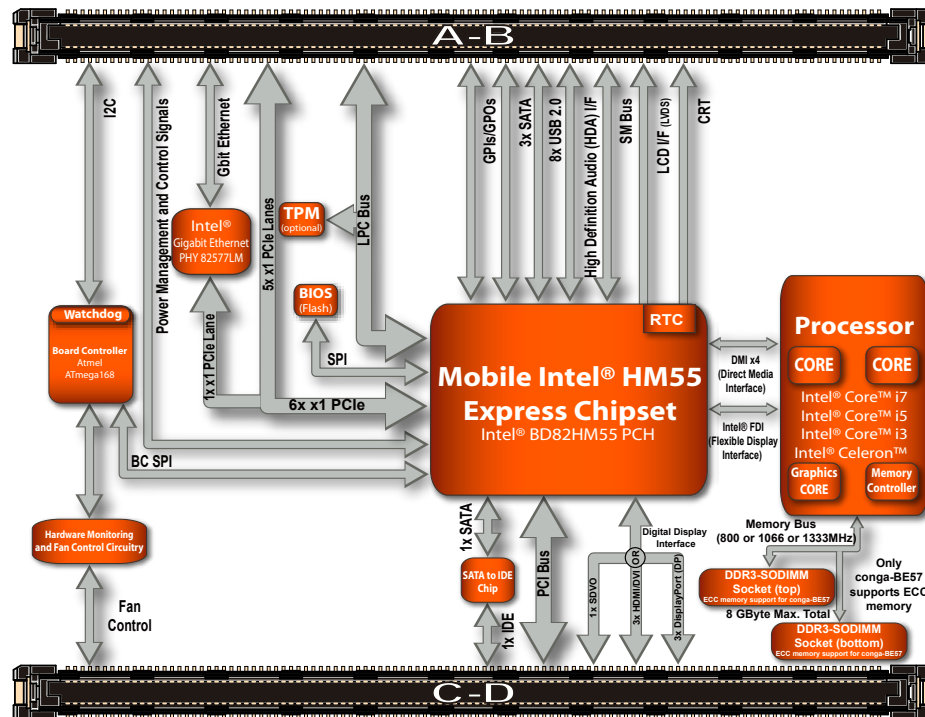# conga-BM57

Maximum Computing Performance

- up to Intel® Core™ i7 Processors 2.66 GHz

- Highest end graphics performance

- Intel® Turbo Boost Technology up to 3.33 GHz

COM Express®

Formfactor	COM Express™ Basic	(95 x 125 mm)	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	32 nm process	2MB cache		TDP 35 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 1333 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	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	The conga-BM57 can be optionally equipped with a discrete "Trusted Platform Module" (TPM). It is capable of calculating efficient hash and RSA algorithms with key lengths up to 2,048 bits and includes a real random number generator. Security sensitive applications such as gaming and e-commerce will benefit also with improved authentication	integrity and confidence levels.
Power Management	ACPI 3.0 with battery support
Operating Systems	Microsoft® Windows 8	Microsoft® Windows 7	Microsoft® Windows XP	Microsoft® Windows® embedded Standard	Linux
Power Consumption	Typ. application: tbd.	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")

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conga-BM57 | Block diagram

A - B

I2C | Power Management and Control Signals | Gbit Ethernet | GPIs/GPOs | 3x SATA | 8x USB 2.0 | High Definition Audio (HDA) I/F | SM Bus | LCD I/F (LVDS) | CRT

Intel® Gigabit Ethernet PHY 82577LM

TPM (optional)

5x x1 PCIe Lanes

LPC Bus

BIOS (Flash)

Watchdog

Board Controller Atmel ATmega168

1X X1 PCIe Lane

SPI

6x x1 PCIe

RTC

Mobile Intel® HM55 Express Chipset
Intel® BD82HM55 PCH

DMI x4 (Direct Media Interface)

Intel® FDI (Flexible Display Interface)

Processor

CORE | CORE

Intel® Core™ i7
Intel® Core™ i5
Intel® Core™ i3
Intel® Celeron™

Graphics CORE | Memory Controller

BC SPI

Hardware Monitoring and Fan Control Circuitry

Fan Control

1x SATA

PCI Bus

SATA to IDE Chip

1x IDE

1x SDVO | 3x HDMI/DVI (OR) | 3x DisplayPort (DP)

Digital Display Interface

Memory Bus (800 or 1066 or 1333MHz)

DDR3-SODIMM Socket (top)
ECC memory support for conga-BE57
8 GByte Max. Total

DDR3-SODIMM Socket (bottom)
ECC memory support for conga-BE57

Only conga-BE57 supports ECC memory

C - D

conga-BM57 | Order Information

Article	PN	Description
conga-BM57/i5-520M	046001	Intel® Core™ i5-520M processor with 2.4GHz	3MB L2 cache and 1066MT/s dual channel DDR3 memory interface
conga-BM57/i7-620M	046002	Intel® Core™ i7-620M processor with 2.66GHz	4MB L2 cache and 1066MT/s dual channel DDR3 memory interface
conga-BM57/P4500	046005	Intel® Celeron® P4500 processor with 1.86 GHz	2MB L2 cache and 800MT/s dual channel DDR3 SODIMM memory interface for up to 8GB
conga-BM57/CSP-HP-B	046022	Standard passive cooling solution for high performance COM Express module conga-BM57 with integrated heat pipes	15mm silver fins and 20mm overall heat sink height. All standoffs are with 2.7mm bore hole
conga-BM57/CSP-HP-T	046023	Standard passive cooling solution for high performance COM Express module conga-BM57 with integrated heat pipes	15mm silver fins and 20mm overall heat sink height. All standoffs are M2.5mm thread
conga-BM57/CSA-HP-B	046024	Standard active cooling solution for high performance COM Express module conga-BM57 with integrated heat pipes	15mm silver fins	20mm overall heat sink height and integrated 12V fan. All standoffs are with 2.7mm bore hole
conga-BM57/CSA-HP-T	046025	Standard active cooling solution for high performance COM Express module conga-BM57 with integrated heat pipes	15mm silver fins	20mm overall heat sink height and integrated 12V fan. All standoffs are M2.5mm thread
conga-BM57/HSP-HP-B	046020	Standard heatspreader for high performance COM Express module conga-BM57 with integrated heat pipes. All standoffs are with 2.7mm bore hole
conga-BM57/HSP-HP-T	046021	Standard heatspreader for high performance COM Express module conga-BM57 with integrated heat pipes. All standoffs are M2.5mm thread
DDR3-SODIMM-1066 (1GB)	068750	DDR3 SODIMM memory module with 1066MT/s and 1GB RAM
DDR3-SODIMM-1066 (2GB)	068760	DDR3 SODIMM memory module with 1066MT/s and 2GB RAM
DDR3-SODIMM-1066 (4GB)	068765	DDR3 SODIMM memory module with 1066MT/s and 4GB RAM

Accessories	PN	Description
conga-CEVAL	065749	Evaluation Carrier Board for COM Express Type 2 modules
conga-Cdebug	047854	COM-Express debugging platform. Including cable for COM	PS/2 and VGA.
conga-LDVI/EPI	011115	LVDS to DVI converter board for digital flat panels with onboard EEPROM
conga-HDMI/Display Port adapter	500014	The conga-HDMI/DisplayPort adapter is used fo convert the chipset graphic ports Port-B	Port-C and Port-D to the HDMI or DisplayPort Interface
conga-FPA2	047250	Flatpanel prototype adapter to develop your own flatpanel adapter Including cables set.
COM-Express-carrier-board-Socket-5	400007	Connector for COM-Express carrier boards	height 5mm	packing unit 4 pieces
COM-Express-carrier-board-Socket-8	400004	Connector for COM-Express carrier boards	height 8mm	packing unit 4 pieces

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