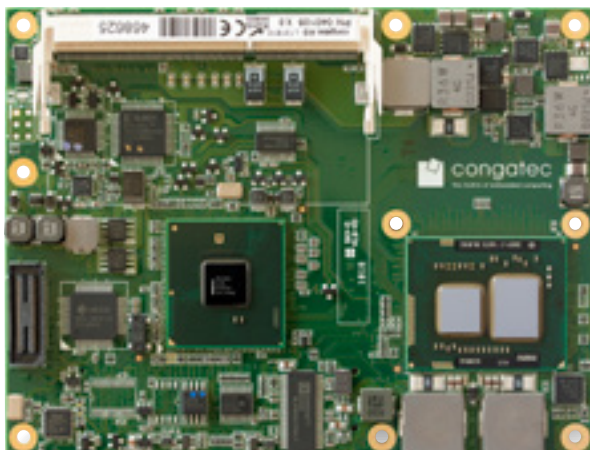# conga-BS57

Maximum Computing Performance
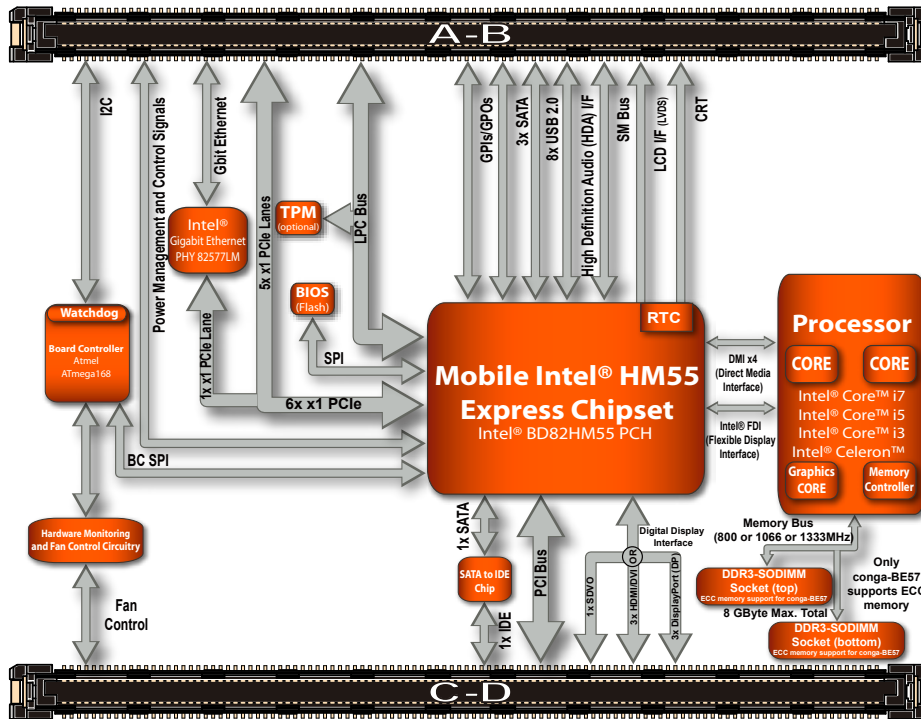

- Power-Efficient Processors
- up to Intel® Core™ i7 Processor 2.0 GHZ
- Intel® Clear Video HD Technology

COM✦Express®

Formfactor	COM Express™ Basic	(95 x 125 mm)	Type II Connector Layout				
CPU	Intel® Core™ i7-620LE	2.0 GHz	32 nm process	4MB cache	1066 MHz	TDP 25 W	BGA package
	Intel® Core™ i7-620UE	1.06 GHz	32 nm process	4MB cache	800 MHz	TDP 18 W	BGA package
	Intel Core™ i3-330E	2.13 GHz	32 nm process	3MB cache	1066 MHz	TDP 35 W	BGA package
	Intel® Celeron® U3405	1.07 GHz	32 nm process	2MB cache	1066 MHz	TDP 18 W	BGA 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-BS57 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-BS57 | Block diagram

A - B

I2C | Power Management and Control Signals | Gbit Ethernet | 5x x1 PCIe Lanes | LPC Bus | 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)

BIOS (Flash)

RTC

Watchdog

Board Controller Atmel ATmega168

1x x1 PCIe Lane

SPI

6x x1 PCIe

BC SPI

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

Hardware Monitoring and Fan Control Circuitry

Fan Control

1x SATA

SATA to IDE Chip

1x IDE

PCI Bus

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

Only conga-BE57 supports ECC memory

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

C - D

conga-BS57 | Order Information

Article	PN	Description
conga-BS57/i7-620LE	040100	Intel® Core™ I7-620LE processor 2.0GHz	4MB L2 cache	1066MT/s dual channel DDR3 SODIMM memory interface for up to 8GB.
conga-BS57/i7-620UE	040105	Intel® Core™ i7-620UE processor 1.06GHz	4MB L2 cache	800MT/s dual channel DDR3 SODIMM memory interface for up to 8GB.
conga-BS57/i3-330E	040106	Intel® Core™ i3-330E processor 2.13GHz	3MB L2 cache	1066MT/s dual channel DDR3 SODIMM memory interface for up to 8GB.
conga-BS57/U3405	040107	Intel® Celeron® U3405 processor 1.06 GHz (BGA)	2MB L2 cache	dual channel DDR3 SODIMM memory interface for up to 8GB.
conga-BS57/HSP-HP-B	040120	Standard heatspreader for the high performance COM Express module conga-BS57 with integrated heat pipes. All standoffs are with 2.7mm bore hole
conga-BS57/HSP-HP-T	040121	Standard heatspreader for the high performance COM Express module conga-BS57 with integrated heat pipes. All standoffs are M2.5mm thread
conga-BS57/CSP-HP-B	046026	Standard passive cooling solution for the high performance COM Express module conga-BS57 with integrated heat pipes	15mm silver fins and 20mm overall heat sink height. All standoffs are with 2.7mm bore hole
conga-BS57/CSP-HP-T	046027	Standard passive cooling solution for the high performance COM Express module conga-BS57 with integrated heat pipes	15mm silver fins and 20mm overall heat sink height. All standoffs are M2.5mm thread
conga-BS57/CSA-HP-B	046028	Standard active cooling solution for the high performance COM Express modulee conga-BS57with integrated heat pipes	15mm silver fins	20mm overall heat sink height and integrated 12V fan. All standoffs are with 2.7mm bore hole
conga-BS57/CSA-HP-T	046029	Standard active cooling solution for the high performance COM Express module conga-BS57 with integrated heat pipes	15mm silver fins	20mm overall heat sink height and integrated 12V fan. 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		
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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