

# High Performance COM Express®

## conga-BS77

Highest Performance COM Express Type 2

3rd Generation Intel® Core™ processor-based platform

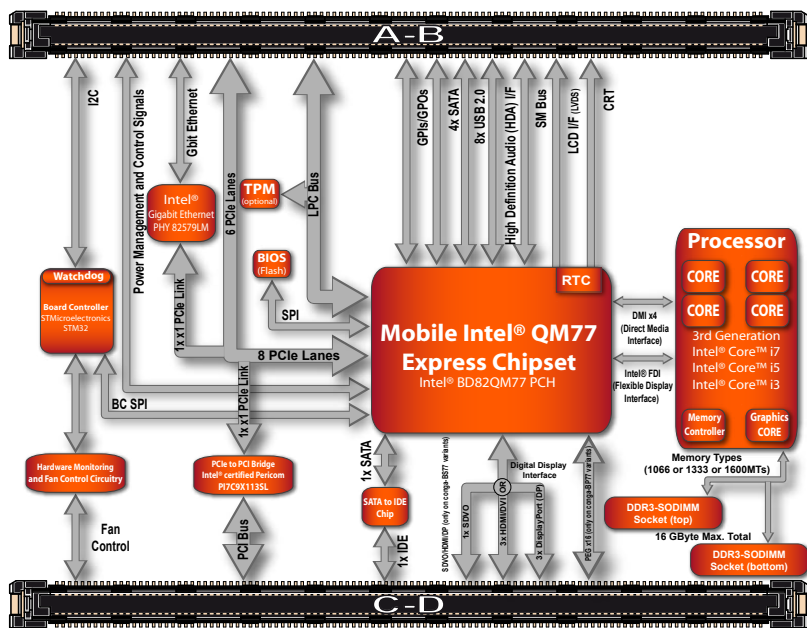
Better transcode HD-HD, HD Video Conferencing

Improved Graphics Performance, DirectX®11



<b>Formfactor</b>	<b>Formfactor COM Express™ Basic, (95 x 125 mm), Type II Connector Layout</b>
<b>CPU</b>	Intel® Core™ i7-3615QE (4x 2.3 GHz, 6MB L2 cache, TDP 45W) Intel® Core™ i7-3612QE (4x 2.1 GHz, 6MB L2 cache, TDP 35W) Intel® Core™ i7-3555LE (2x 2.5 GHz, 4MB L2 cache, TDP 25W) Intel® Core™ i7-3517UE (2x 1.7 GHz, 4MB L2 cache, TDP 17W) Intel® Core™ i5-3610ME (2x 2.7 GHz, 3MB L2 cache, TDP 35W) Intel® Core™ i3-3120ME (2x 2.4 GHz, 3MB L2 Cache, TDP 35W) Intel® Core™ i3-3217UE (2x 1.6 GHz, 3MB L2 Cache, TDP 17W) Intel® Celeron® 1020E (2x 2.2 GHz, 2 MB Cache, 35 W) Intel® Celeron® 1047UE (2x 1.4 GHz, 2 MB Cache, 17 W) Intel® Celeron® 927UE (1x 1.5 GHz, 1 MB Cache, 17 W)  Integrated dual channel memory controller, up to 25,6 GByte/sec. memory bandwidth, Integrated Intel® HD Graphics with dynamic frequency up to 1100 MHz, Intel® Clear Video HD Technology
<b>DRAM</b>	2 Sockets, SO-DIMM DDR3 1600 MHz, up to 16 GByte
<b>Chipset</b>	Mobile Intel® 7 Series Chipset: Intel® QM77/ HM76
<b>Ethernet</b>	Intel® 82579 GbE LAN Controller with AMT 8.0 support (optional)
<b>I/O Interfaces</b>	6x PCI Express™ GEN 2.0 lanes, 4x Serial ATA® (AHCI) with RAID support, 1x EIDE (UDMA-66/100) optional, 8x USB 2.0 (EHCI), PCI Bus 33 MHz Rev. 2.3, LPC bus, I²C bus (fast mode, 400 kHz, multi-master)
<b>Sound</b>	Digital High Definition Audio Interface with support for multiple audio codecs
<b>Graphics</b>	Intel® Flexible Display Interface (FDI), OpenGL 3.1 and DirectX11 support, Three simultaneous independent displays. High performance hardware MPEG-2 decoding, WMV9 (VC-1) and H.264 (AVC) support Blu-ray support @ 40 MBit/s, hardware motion compensation
<b>LVDS</b>	Dual channel LVDS transmitter, supports flat panels 2x24 Bit interface, VESA mappings, resolutions up to 1920x1200, Automatic Panel, Detection via EDID/EPI
<b>Display Port (DP)</b>	3x DisplayPorts 1.1, max. resolution 2560x1600
<b>HDMI or DVI</b>	3x ports shared with Display Port
<b>CRT Interface</b>	340.4 MHz RAMDAC, resolutions up to QXGA (2048x1536)
<b>SDVO</b>	1 x Intel compliant SDVO ports with 200MPixel/sec. Supports external DVI
<b>congatec Board Controller</b>	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
<b>Embedded BIOS Features</b>	AMI Aptio™ UEFI 2.x firmware, 8 MByte serial SPI firmware flash
<b>Security</b>	The conga-BS77 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.
<b>Power Management</b>	ACPI 3.0 with battery support
<b>Operating Systems</b>	Microsoft® Windows 8, Microsoft® Windows 7, Microsoft® Windows® embedded Standard, Microsoft® Windows XP, Linux
<b>Power Consumption</b>	Typ. application: Processor TDP: 17 .. 25 W, see manual for full details
<b>Temperature:</b>	Operating: 0 .. +60°C Storage: -20 .. +80°C
<b>Humidity Operating:</b>	10 - 90% r. H. non cond. Storage: 5 - 95% r. H. non cond.
<b>Size</b>	95 x 125 mm (3.74" x 4.92")

# Block Diagram



# Order Information

Article	PN	Description
conga-BS77/i7-3615QE	046606	COM Express Type 2 Basic modul with Intel® Core™ i7-3615QE quad core processor with 2.3GHz, 6MB L2 cache and 1600MT/s dual channel DDR3 memory interface. Processor TDP 45W.
conga-BS77/i7-3612QE	046601	COM Express Type 2 Basic modul with Intel® Core™ i7-3612QE quad core processor with 2.1GHz, 6MB L2 cache and 1600MT/s dual channel DDR3 memory interface. Processor TDP 35W.
conga-BS77/i7-3555LE	046602	COM Express Type 2 Basic modul with Intel® Core™ i7-3555LE dual core processor with 2.5GHz, 4MB L2 cache and 1600MT/s dual channel DDR3 memory interface. Processor TDP 25W.
conga-BS77/i7-3517UE	046603	COM Express Type 2 Basic modul with Intel® Core™ i7-3517UE dual core processor with 2.3GHz, 4MB L2 cache and 1600MT/s dual channel DDR3 memory interface. Processor TDP 17W.
conga-BS77/i5-3610ME	046604	COM Express Type 2 Basic modul with Intel® Core™ i5-3610ME dual core processor with 2.7GHz, 3MB L2 cache and 1600MT/s dual channel DDR3 memory interface. Processor TDP 35W.
conga-BS77/i3-3217UE	046605	COM Express Type 2 Basic module with Intel® Core™ i3-3217UE dual core processor with 1.6GHz, 3MB L2 cache and 1600MT/s dual channel DDR3 memory interface. Processor TDP 17W.
conga-BS77/i3-3120ME	046607	COM Express Type 2 Basic module with Intel® Core™ i3-3120ME dual core processor with 2.4GHz, 3MB L2 cache and 1600MT/s dual channel DDR3 memory interface. Processor TDP 35W.
conga-BS77/1047UE	046608	COM Express Type 2 Basic module with Intel® Celeron™ 1047UE dual core processor with 1.4GHz, 2MB L3 cache and 1333MT/s dual channel DDR3 memory interface.
conga-BS77/927UE	046609	COM Express Type 2 Basic module with Intel® Celeron™ 927UE dual core processor with 1.5GHz, 1MB L3 cache and 1333MT/s dual channel DDR3 memory interface.
conga-BS77/1020E	046610	COM Express Type 2 Basic module with Intel® Celeron™ 1020E dual core processor with 2.2GHz, 2MB L3 cache and 1333MT/s dual channel DDR3 memory interface.
conga-BS67/HSP-HP-B	046170	Standard heatspreader for high performance COM Express modules conga-BS67, BS77 and BP77 with integrated heat pipes. All standoffs are with 2.7mm bore hole.
conga-BS67/HSP-HP-T	046171	Standard heatspreader for high performance COM Express modules conga-BS67, BS77 and BP77 with integrated heat pipes. All standoffs are M2.5mm thread.
conga-BS67/CSP-HP-B	046172	Standard passive cooling solution for conga-BS77 with integrated heat pipes, 15mm silver fins and 20mm overall heat sink height. All standoffs are with 2.7mm bore hole.
conga-BS67/CSP-HP-T	046173	Standard passive cooling solution for conga-BS77 with integrated heat pipes, 15mm silver fins and 20mm overall heat sink height. All standoffs are M2.5mm thread.
conga-BS67/CSA-HP-B	046174	Standard active cooling solution conga-BS77 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-BS67/CSA-HP-T	046175	Standard active cooling solution for conga-BS77 with integrated heat pipes, 15mm silver fins, 20mm overall heat sink height and integrated 12V fan. All standoffs are M2.5mm thread.
DDR3-SODIMM-1600 (2GB)	068767	DDR3 SODIMM memory module with 1600 MT/s (PC3-12800) and 2GB RAM
DDR3-SODIMM-1600 (4GB)	068770	DDR3 SODIMM memory module with 1600 MT/s (PC3-12800) and 4GB RAM
DDR3-SODIMM-1600 (8GB)	068780	DDR3 SODIMM memory module with 1600 MT/s (PC3-12800) and 8GB RAM

## Engineering Tools / Accessories for COM Express\*

conga-CEVAL	065749	Evaluation carrier board for COM-Express-modules
conga-Cdebug	047854	COM-Express debugging platform. Including cable for COM, PS/2 and VGA.
conga-CKIT	064714	COM-Express-Starterkit, incl. conga-CEVAL, conga-CDEBUG, conga-FPA1 (PN: 024241), Dual DVI-D ADD2 card, Power supply, USB-Stick, ... Without COM Express-module
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 to convert the chipset graphic ports Port-B, Port-C and Port-D to the HDMI or DisplayPort Interface
Single DVI-D ADD2 Card	058500	ADD2 display adapter card with single DVI-D digital output. Suitable for all Intel based platforms that support Serial Digital Display Outputs (SDVO) on the standard, x16 PCI Express Graphics (PEG) port.
Dual DVI-D ADD2 Card	013226	ADD2 display adapter card with dual independent DVI-D output. Suitable for all Intel based platforms that support Serial Digital Display Outputs (SDVO) on the standard, x16 PCI Express Graphics (PEG) port.
conga-FPA2	047250	Flatpanel prototype adapter to develop your own flatpanel adapter including cables set.