

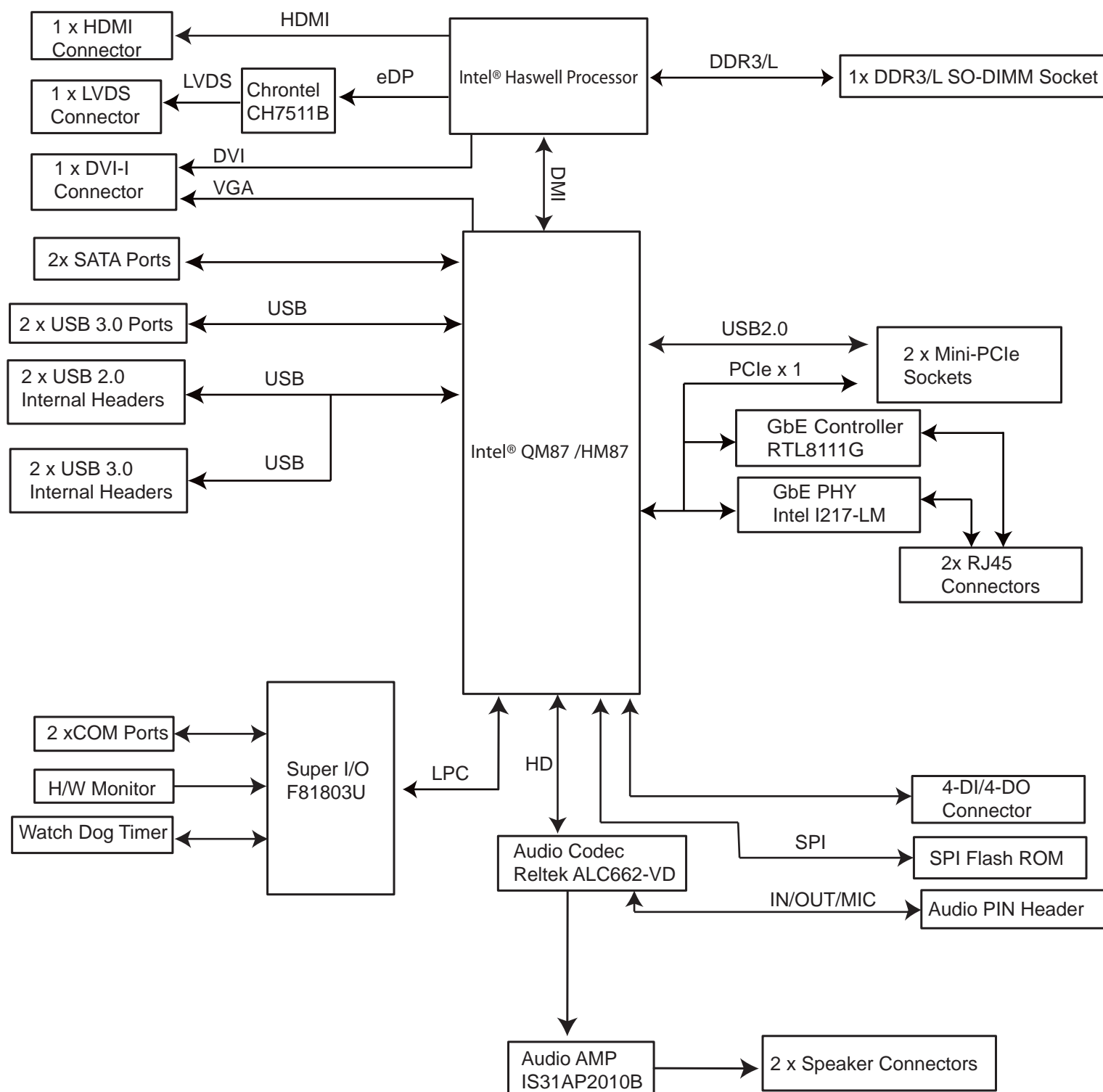
KEEX-8100 Series

Standard / Extended Temperature
Single Board Computer in ECX Form Factor
with Intel® Haswell M Series Processors



- Intel® Haswell M Series Processor
- Intel® QM87 Express Chipset
- 1x DDR3/L SO-DIMM Socket
- 1x LVDS, 1x DVI-I, 1x HDMI for video output
- 2x SATA, 2x mSATA (shared with mPCIe) for storage
- 2x LAN, 4x USB3.0, 2x USB 2.0 for network and peripherals
- 2x mPCIe Sockets (SIM card support, shared w/ mSATA)
- 8-bit Digital I/O supported (4-bit input/4-bit output)
- Watchdog Timer, Hardware Monitor, TPM, iAMT
- Extended temperature model available

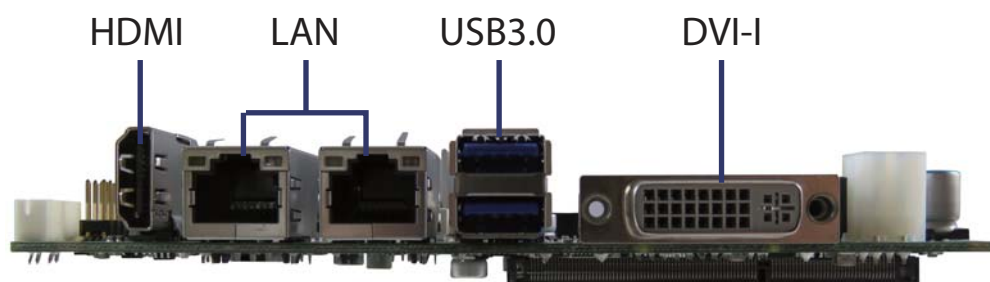
Block Diagram



Technical Information

CPU Support	Storage & Expansion
Intel® Socket G3 (FCPGA946) Haswell Core™ i / Celeron® Processor (Dual / Quad Core, 2M ~ 8M Cache, 2.00 ~ 3.90 GHz, 37W ~ 57W TDP)	2x SATA 2x mSATA / mPCIe (1x full size, 1x half size) 1x SIM Card Cage (by wafer)
Chipset	Power Supply
Intel® QM87	Connector: 2x2-pin ATX Connector Input Voltage: DC 12V
Memory	Firmware
1x DDR3/L 1333/1600 SO-DIMM up to 8GB	BIOS: AMI uEFI BIOS w/ 128Mb SPI Flash Watchdog: Programmable WDT to generate system reset event H/W Monitor: Voltages, Temperatures Real Time Clock: Chipset integrated RTC TPM: Yes (Infineon SLB 9635 TPM 1.2) iAMT: depending on processor
Graphic Controller	System Control & Monitoring
Intel® HD Graphics 4600 (for Core™ i processor) Intel® HD Graphics (for Celeron® processor)	1x Header for Reset button, HDD LED & External Speaker 1x Header for Power button, Power LED & SM bus 1x Header for mPCIe activity LED
Display Interfaces	Cooling
1x LVDS (24-bit, 2-ch, 1920 x 1200 @ 60Hz) 1x HDMI (on rear, 3840 x 2160 @ 60Hz) 1x DVI-I (on rear, 1920 x 1200 @ 60Hz)	1x Wafer for CPU Smart Fan
Multiple Display	OS Support
Triple	Windows 7, Windows 8, Linux
Audio Chipset	Dimensions (L x W)
Realtek ALC662	ECX (146 x 105 mm / 5.75" x 4.13")
Audio Interfaces	Environmental Characteristics
2x Speaker-out (3W) 1x Line-in (by header) 1x Line-out (by header) 1x Mic-in (by header)	Operation Temp.: 0°C ~ 60°C / 32°F ~ 140°F (Standard) -20°C ~ 70°C / -4°F ~ 158°F (Extended) Storage Temp.: -20°C ~ 80°C / -4°F ~ 176°F (Standard) -40°C ~ 85°C / -40°F ~ 185°F (Extended) Humidity: 0% ~ 95%
Ethernet	Certification
2x LAN (RJ-45 on rear, 1x Intel® I217-LM, 1x Realtek RTL8111G)	CE, FCC Class A
USB	
4x USB3.0 (2x Type A on rear, 2x by header) 2x USB2.0 (by header)	
Serial Ports	
2x RS-232/422/485 (by header)	
Other I/O Ports	
1x 8-bit DIO (by header)	

KEEX-8100 Series I/Os



Ordering Information



Model Name	Part No.	Description
KEEX-8101	B3EX8100-010000T	ECX SBC, Intel® Socket G3 Haswell Processor, Intel® QM87 Chipset, 1x DDR3/L SO-DIMM, 1x LVDS, 1x DVI-I, 1x HDMI, 2x LAN, 4x USB3.0, 2x USB2.0, 2x COM, 1x 8-bit DIO, 2x mPCIe / mSATA, w/ TPM, Op. temp.: 0°C ~ 60°C
KEEX-810A	B3EX810A-010000T	ECX SBC, Intel® Socket G3 Haswell Processor, Intel® QM87 Chipset, 1x DDR3/L SO-DIMM, 1x LVDS, 1x DVI-I, 1x HDMI, 2x LAN, 4x USB3.0, 2x USB2.0, 2x COM, 1x 8-bit DIO, 2x mPCIe / mSATA, w/ TPM, Op. temp.: -20°C ~ 70°C