

## Main Features

- Intel® 4th generation Core™ processor
- Mobile Intel® QM87 chipset
- Support PICMG COM.0 Rev. 2.1 Type 6 pin-outs
- Support Dual channel ECC-DDR3L/SO-DIMMs 1333/1600MHz up to 16GB
- Support PCIe16, 7 x PCIe1, 4 x USB3.0/8 x USB2.0, 2 x SATA3.0/2 x SATA2.0 and GbE
- Up to 3 x independent displays, VGA, eDP/LVDS, DVI, HDMI, DisplayPort
- Dimension 95 x 125mm<sup>2</sup> (W x L)

## Product Overview

The ICES 670 is a COM Express Type 6-pinouts Basic module featuring Intel® Lynx-Point PCH chipset supports Intel® 4th generation Intel® Core™ processors (Haswell/Shark Bay mobile) with Dual ECC-DDR3 SO-DIMM socket up to 16GB DDR3L 1333/1600MHz SDRAM. The ICES 670 integrated Intel® GT1/GT2/GT3 graphics engines with DX11.1 support or expands via PCI Express Graphic 1 x 16 lanes and support three DDI (Digital Display Interface) to follow the standard of PICMG COM.0 Rev. 2.0 specification. It allows type 6-pinout Carrier board to implement HDMI, DVI, Display Port, eDP and legacy VGA, single channel 18-/24-bits LVDS interface. The high performance ICES 670 COM Express Basic Module supports 4 x USB3.0/8 x USB2.0, 2 x SATA3.0/2 x SATA2.0 and 7 x PCIe1 lanes through our NEXCOM designed ICES 8060 as well as customized solution for your embedded projects.

## Specifications

### CPU Support

- Support Intel® BGA 1364, 4th generation Intel® Core™ processors (Haswell-M/Shark Bay-MB)

### Main Memory

- Dual ECC-DDR3L/SO-DIMMs, support 1333/1600MHz memory up to 16GB

### Platform Control Hub

- Intel® 8 series (Lynx Point-M) PCH chipset

### BIOS

- AMI System UEFI BIOS
- Plug and play support
- Advanced power management and advanced configuration & power interface support

### Display

- Intel® GT1/GT2/GT3 integrated graphics processing unit (iGPU)
- One PCI Express x16 (Gen. 3.0) Lane down to the carried board
- Supports VGA and eDP/LVDS interface
- 3 x DDI (Digital Display Interface) supports HDMI/DVI, DP/eDP interfaces

### Audio

- HD audio interface

### On-board LAN

- Intel® Clarkville(I217) Gigabit Ethernet, support next generation vPro/iAMT
- Support PXE boot from LAN, wake on LAN function
- Signals down to I/O board

### COM Express Connector

- AB  
VGA/LVDS/8 x USB2.0/HD Audio/4 x SATA/GbE/GPIO/LPC bus,  
1 x PCIe4/2 x PCIe1/SMBus (I2C)/SPI BIOS/SPK out
- CD  
PCIe16/3 x DDI/4 x USB3.0/1 x PCIe1

### Power Requirements

- +12V, +5VSB, +3.3V RTC power

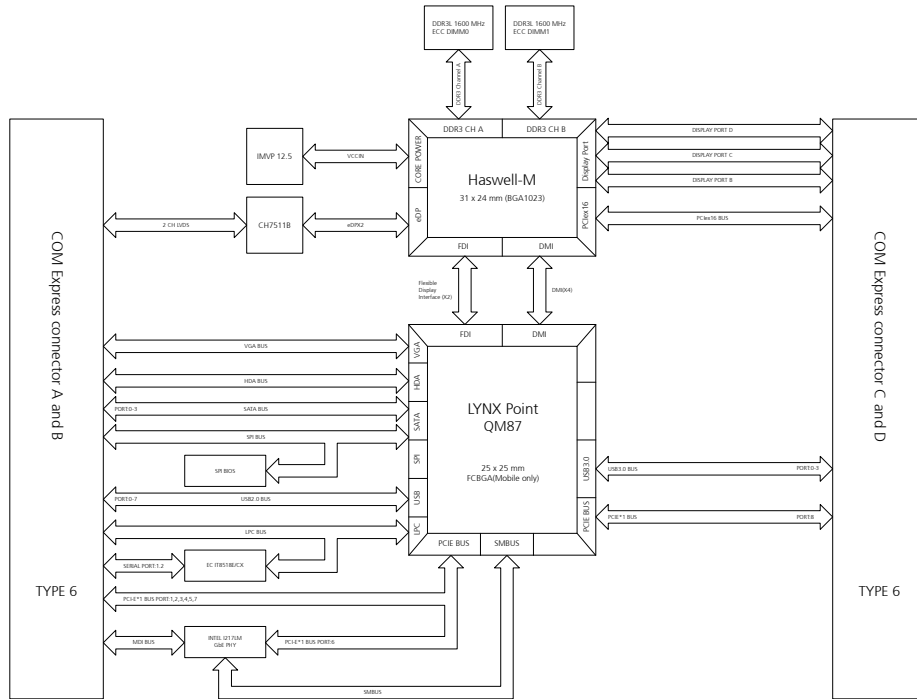
### Dimensions

- 95mm (W) x 125mm (L)

### Environment

- Board level operating temperatures: -15°C to 60°C
- Storage temperatures: -20°C to 80°C
- Relative humidity:  
10% to 90% (operating, non-condensing)  
5% to 95% (non-operating, non-condensing)

## Block Diagram



### Certifications

- Meet CE
- FCC Class A

### Ordering Information

- **ICES 670 (P/N: 10K0006700X0)**  
COM Express Type 6, Basic Module, onboard 4th Generation Intel® Core™ Processors with ECC DDR3L/2 x SO-DIMMs, Mobile Intel® QM87 Express Chipset