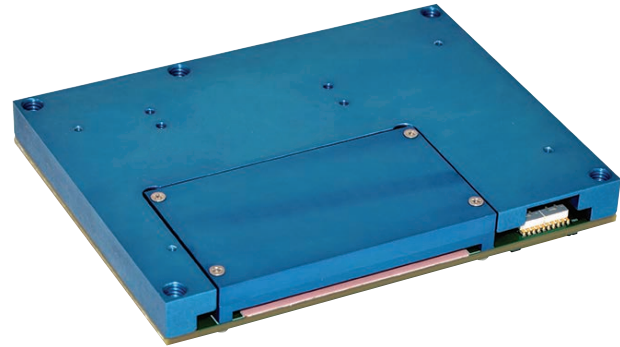
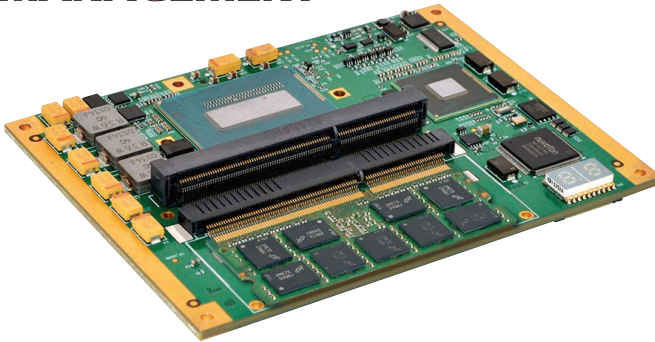




## XCOM-6400 Rugged COM Express Type 6 Module



### POWER MANAGEMENT



4th Generation Intel® Core™ i7 or i5 CPU ♦ Programmable CPU ♦ Type 6 interconnects ♦ Ruggedized

#### Description

Acromag's XCOM-6400 is a basic size platform (95 x 125mm) processor module with Type 6 interconnects. Several models are available with the 4th generation (Haswell) Intel Core i7 or i5 CPUs. Designed for industrial and defense applications, the XCOM-6400 has an extra rigid PCB and extended temperature support.

The 4<sup>th</sup> generation of Intel's i5 and i7 processors delivers many enhanced capabilities for media, graphics, security, and power management. Huge performance improvements were made for floating-point-intensive computations which are critical for digital signal and image processing applications such as radar and sonar. Enhanced graphics enable smoother playback of high-quality images for digital signage or displays. Better power efficiency reduces heat and allows smaller, lighter designs with more portability.

Cutting-edge technology features programmable power limits, allowing the user to "dial-down" the maximum power consumption of the CPU in systems where power is a concern.

This module sets a new standard for shock and vibration by implementing a SODIMM hold down mechanism. Soldering down the memory is no longer necessary.

The XCOM-6400 also provides a heat sink capability not available on traditional COM Express designs. Conduction-cooled rails set a new standard for carrier cards.

#### Key Features & Benefits

- Intel 4th Gen (Haswell) multi-core processor: Core i7 CPU for high performance (47W) or Core i5 CPU for low power (25W)
- Programmable CPU power for heat sensitive applications
- Intel 8-Series QM87 PCH chipset (formerly Lynx Point)
- Up to 16GB of high-speed DDR3L memory with SODIMM lock-down mechanism (permits user removal or upgrades)
- Advanced heat management technologies with heat spreader plates, conduction-cooled rails, and optional fan
- Up to -40 to 85°C extended operating range
- PEG/ General Purpose PCIe x16 (bifurcation/trifurcation supported)
- 7 ports of PCIe x1 (gangable into ports of greater width)
- SPI bus
- LPC bus
- SMBus (system)
- I<sup>2</sup>C (user)
- VGA Interface
- 3x Digital Display Interface
- eDP Interface (x2)
- HDA Audio Interface
- Gigabit Ethernet Medium Dependent Interface (MDI)
- 4 USB 3.0/2.0 Ports
- 4 USB 2.0 only Ports
- 4 SATA III Ports (6 Gb/s)
- 4 General Purpose Outputs
- 4 General Purpose Inputs
- Post code display (Port 80)



# COM Express

## XCOM-6400 Rugged COM Express Type 6 Module

### Performance Specifications

#### ■ COM Express

##### Form Factor

Basic form factor (95 x 125mm). 8mm stack height.  
Type 6 pinouts.

##### PICMG Compliance

Complies with PICMG COM.0.

#### ■ Processor and Memory

##### Processor

Intel Core™ i7 or i5 processor  
(4th generation, codename Haswell). The CPU allows programming a lower power limit in the BIOS setup allowing use in applications where less power is available or heat removal is an issue.

i7-4700EQ: 2.4GHz, quad core, 6Mb cache, 47W.

i5-4402E: 1.6GHz, dual core, 3Mb cache, 25W.

##### Chipset

Intel 8-Series QM87 PCH chipset  
(codename Lynx Point).

Intel DH82QM87 Platform Controller Hub.

##### Memory

Up to 16GB total of 1600 DDR3L ECC memory.

#### ■ Interfaces

##### Graphics

Intel integrated graphics processor.  
3x digital display interface (DVI or DisplayPort).  
eDP interface (x2)

##### Audio

HDA audio interface

##### LAN Port

Gigabit Ethernet Medium Dependent Interface (MDI)

##### Serial ATA Interface

4 SATA III Ports (6 Gb/s)

##### PCIe Interface

PEG / general-purpose PCIe x16  
(bifurcation/trifurcation supported).  
PCIe x1 (gangable into ports of greater width).

##### USB Interface

4 USB 3.0/2.0 ports  
4 USB 2.0 ports.

##### Other Interfaces

SPI bus.

LPC bus.

SMBus (system).

I<sup>2</sup>C (user).

##### I/O

4 general-purpose outputs,  
4 general-purpose inputs.

#### ■ Environmental

##### Operating temperature

Standard temperature models: 0 to 70°C.  
Extended temperature models: -40 to 85°C.  
*NOTE: CPU internal temperature cannot exceed 100°C.*

##### Storage temperature

-55 to 100°C.

##### Relative humidity

90% at 60°C non-condensing.

##### Ruggedization

Thicker PCB.

High shock and vibration SODIMM hold-down mechanism and heat sink.

##### Shock

50g peak-to-peak, 11ms duration,  
MIL-STD-810G Method 516.6B.

##### Vibration

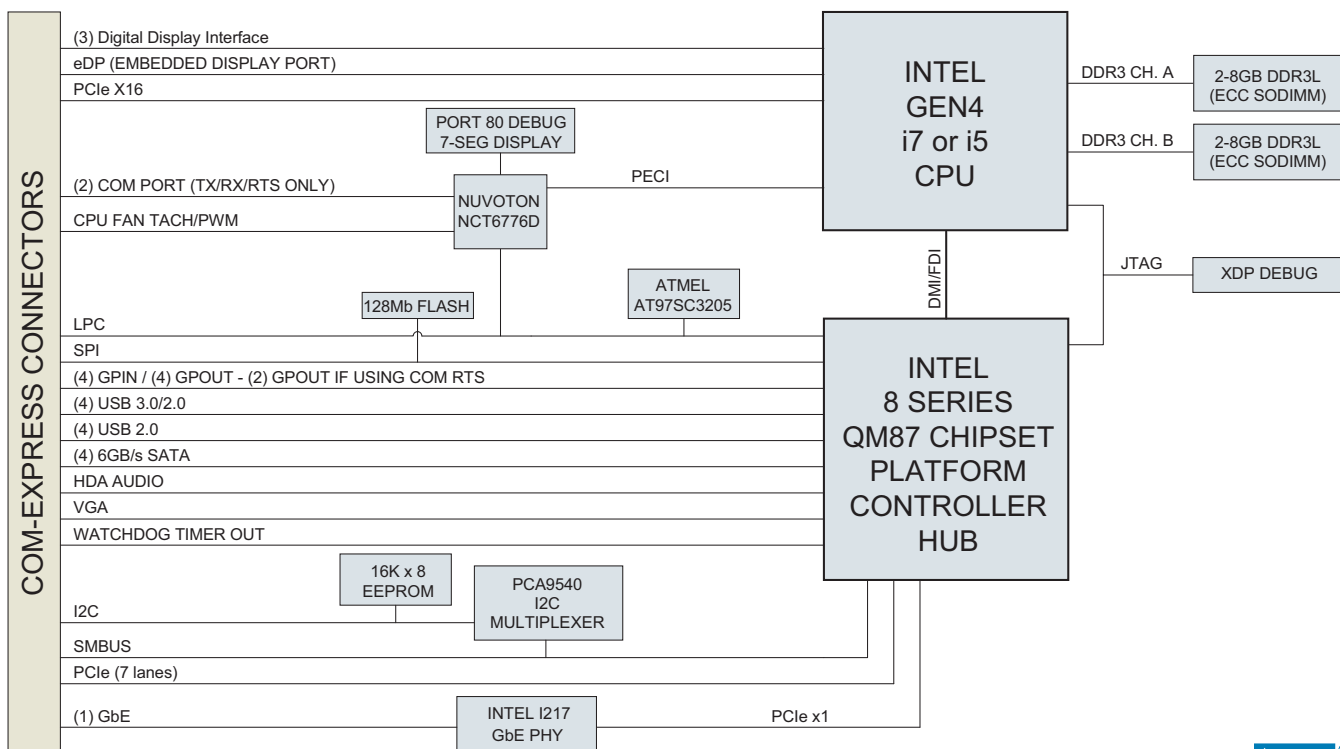
5 g<sub>RMS</sub>, 8-500 Hz, each axis,  
MIL-STD-810G Method 514.6.

##### Power Inputs from carrier board:

12V (+/- 5%): 36W typical, 61W max

5V<sub>SBY</sub>\* (+/- 5%): 0.5W typical, 1W max

\*Optional. Please see the manual for full power requirement information.





## XCOM-6400 Rugged COM Express Type 6 Module

### Ordering Information

#### ■ COM Express Module

##### XCOM-6400-104-LF

i7, 2.4GHz, quad core processor with 6Mb cache and 4GB memory.

##### XCOM-6400-104E-LF

Same as XCOM-6400-104-LF plus extended operating temperature.

##### XCOM-6400-108-LF

i7, 2.4GHz, quad core processor with 6Mb cache and 8GB memory.

##### XCOM-6400-108E-LF

Same as XCOM-6400-108-LF plus extended operating temperature.

##### XCOM-6400-116-LF

i7, 2.4GHz, quad core processor with 6Mb cache and 16GB memory.

##### XCOM-6400-116E-LF

Same as XCOM-6400-116-LF plus extended operating temperature.

##### XCOM-6400-304-LF

i5, 1.6GHz, dual core processor with 3Mb cache and 4GB memory.

##### XCOM-6400-304E-LF

Same as XCOM-6400-304-LF plus extended operating temperature.

##### XCOM-6400-308-LF

i5, 1.6GHz, dual core processor with 3Mb cache and 8GB memory.

##### XCOM-6400-308E-LF

Same as XCOM-6400-308-LF plus extended operating temperature.

##### XCOM-6400-316-LF

i5, 1.6GHz, dual core processor with 3Mb cache and 16GB memory.

##### XCOM-6400-316E-LF

Same as XCOM-6400-316-LF plus extended operating temperature.

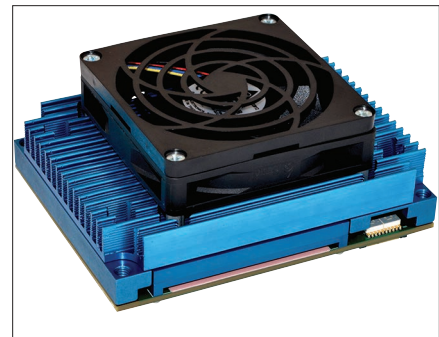
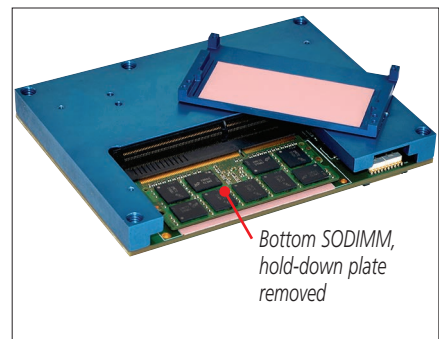
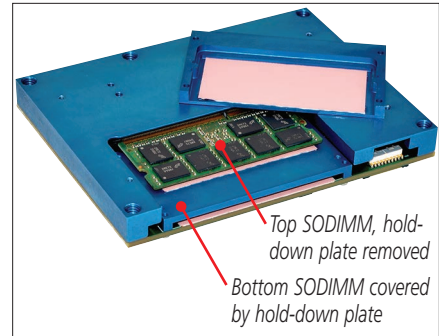
*Note: Please contact factory for lead solder options*

#### ■ Accessories

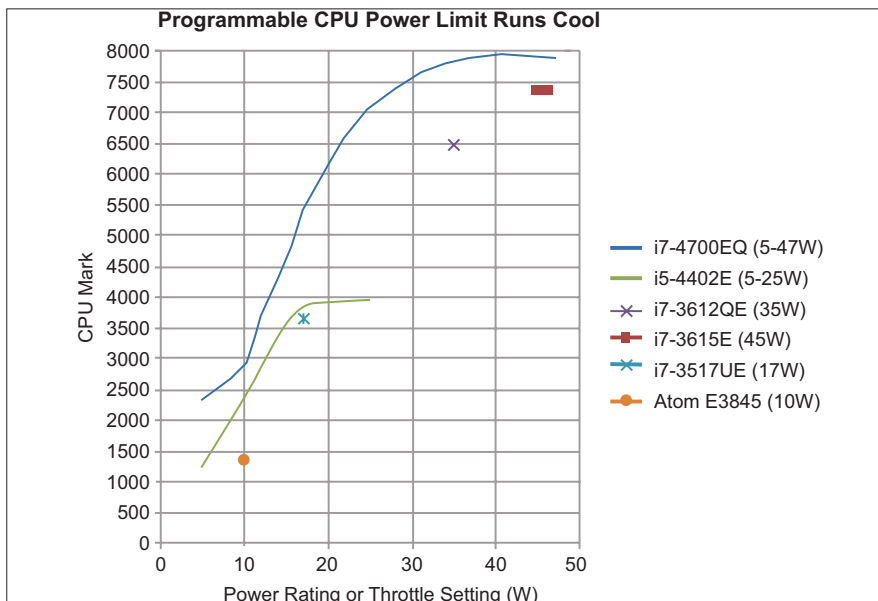
For more information, see [www.acromag.com](http://www.acromag.com).

##### XHSA-6400

Active heat sink with fan



Module with optional XHSA-6400 heat sink and fan.



ISO9001

AS9100



**Acromag**  
THE LEADER IN INDUSTRIAL I/O