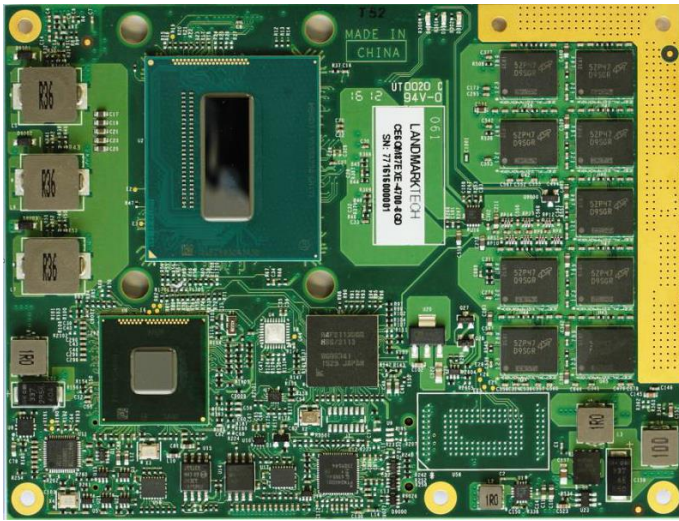


## CE6QM87 COM Express Module



蓝玛科技 CE6QM87MD COM Express 模块，使用英特尔第四代 Core™i7/i5/i3 系列 (Haswell-H) 处理器，板型尺寸为 125mm x 95mm，符合 PICMG COM Express R2.1 Type 6 标准定义。模块能耗在 20-70 瓦特之间，采用双通道 DDR3L 表贴内存芯片，支持 4GB 和 8GB 两种配置，千兆网卡，支持 VGA，PEG3.0, LVDS (或 eDP) 和 3 路 DDI 显示输出。CE6QM87MD COM Express 模块可作为高可靠性、高密度计算，如加固计算机、工业控制、能源交通、测试/测量、医疗影像、通信等应用，是高计算性能的理想解决方案。

### Highlight

- 符合 COM Express R2.1 Type 6 标准的模块
- 高可靠性: 表贴内存，加强的焊接设计，三防处理
- 板载内存标准配置为 4G/8G, 可以高达 16G, 支持 ECC
- 板载表贴 SLC 或 MLC 固态硬盘，容量高达 64GB
- 支持扩展温度：最高宽达 -40 °C to +85 °C
- 基于成熟的 LMT CE6QM87 改版设计，可以共用 CE6QM87 散热器
- 长生命周期：7 年

### Basic Module Form Factor

CE6QM87MD 基于 125mm x 95mm 的基本型尺寸，支持双通道，高达 16G DDR3L 表贴内存芯片，能够结合英特尔第四代 Core™i7/i5/i3 系列处理器一起发挥最高的计算和图形处理性能。COM Express (类型六) 的板级连接器能够支持 PCI Express、SATA、USB3.0/2.0、LVDS、DDI 等高速串行差分信号连接。

蓝玛科技 CE6QM87 模块从英特尔 Haswell-H 系列 CPU 发布之初开始设计，经过了严格的长时间测试验证，具有极高的稳定性。因此，原始设备制造商可以专注于核心能力譬如软件和应用开发而不是高速电路设计。原始设备制造商对功能修改、需求变更、性能升级等问题能够轻而易举的实现而无需重新设计产品。

### 设计服务

基于蓝玛科技 CE6QM87MD COM Express 模块，原始设备制造商在设计自己的载板时，能够得到蓝玛科技的全程服务，如原理图检查和建议、调试协助、Gerber 文件参考、BIOS 客制化等等。蓝玛科技支持原始设备制造商在开发产品任何阶段的载板设计咨询和调试服务。想获得更多信息，请咨询你的 LandmarkTech 销售经理或邮件：[LMT@Landmark-Tech.com](mailto:LMT@Landmark-Tech.com)。

## 订单信息

类别	型号	描述
ECC CE6QM87MD 模块	CE6QM87EXE-4700-8GB	COM-E Rev 2.1, Type 6 Module with Intel i7-4700EQ /2.40~3.4 GHz /TDP-47W/4Core/6M Cache, dual channel 8GB DDR3L ECC ,memory down, EX-TEMP (-20°C-70°C)
	CE6QM87HDE-4402-4GD	COM-E Rev 2.1, Type 6 Module with Intel i5 4402E / 1.6~2.7GHz / TDP-25W/2 Core / 3MB Cache, dual channel 4GB DDR3L ECC ,memory down, I-TEMP (-40°C-85°C)
	CE6QM87HDE-4102-4GD	COM-E Rev 2.1, Type 6 Module with Intel i3 4102E / 1.6GHz / TDP-25W/ 2 Core / 3MB Cache, dual channel 4GB DDR3L ECC ,memory down, I-TEMP (-40°C-85°C)
散热器	CE6QM87MD-AHS-0	CE6QM87MD COM-E MODULE, High Performance Active Heat sink
	CE6QM87MD-PHS-0	CE6QM87MD COM-E MODULE, High Performance Passive Heat sink
	CE6QM87MD-AHS-0	CE6QM87MD COM-E MODULE, Heat Spreader
	CE6QM87-AHS-0	CE6QM87 COM-E MODULE, Common Active Heat sink
	CE6QM87-PHS-0	CE6QM87 COM-E MODULE, Common Passive Heat sink
	CE6QM87-HSP-0	CE6QM87 COM-E MODULE, Heat Spreader

## CE6QM87MD Module Specifications

Feature	Function	Description
<b>Form Factor</b>	Type	Type 6, 125mm x95mm
	Compliance	PICMG COM Express R2.1 Basic Form Factor
<b>Processor</b>	4700EQ	Core™ i7-4700EQ /2.40~3.4 GHz /4Core/6M Cache/47W
	4402E	Core™ i5 4402E / 1.6~2.7GHz / 2 Core / 3MB Cache/25W
	4102E	Core™ i3 4102E / 1.6GHz / 2 Core / 3MB Cache/25W
<b>Chipset</b>	Embedded Intel® QM87 Express chipset	
<b>Memory</b>	Type	Memory Solder Down, 2 x DDR3L Memory chips, Up to 1600 MT/s, Typical 4GB or 8GB
	Capacity	16GB maximum, Up to 8GB per channel
	ECC Supported	ECC memory Supported
<b>Flash</b>	16MB SPI flash	16MB SPI flash for BIOS storage Dual SPI Flash BIOS
<b>Video</b>	Intel® Gen 7.5 integrated graphics engine	LVDS: 18 bit or 24 bit single/dual channel panel with resolutions up to 1920×1200 pixels at 60 Hz; Or eDP:3840×2160 pixels at 60Hz
		VGA: resolutions up to 2048×1536 pixels at 75Hz
		3 DDI supports DP or HDMI or DVI; The resolutions of DP can support up to 3840×2160 pixels at 60Hz, or 4096×2304 at 24Hz in HDMI mode
	External	One x16 PCI Express interface for external PEG3.0 graphics card
<b>Networking</b>	Single LAN	One 10/100/1000Base-T
<b>Audio</b>	High Definition Audio	Support up to 3 codecs
		Speaker Out
<b>Storage</b>	SATA	4 SATA ports supporting both 6.0 and 3.0 Gbps operation
		Supports RAID 0, 1, 5 and 10
	SSD	On Board SLC/MLC SSD
		64GB maximum
<b>PCI Express</b>	PCI Express x1	Seven PCI Express x1 interface
		Ports 0–3 configurable as one x4; or two x2; or one x2 and two x1; or four x1 ports
		Ports 4-5 can be configured as two x1 or one x2 ports
		Ports 6 can be configured as x1

	PCI Express x16	One PCI Express x16 Graphics Expansion Port Configurable as two x8 or one x8 and two x4 ports
<b>USB</b>	USB 3.0	Four USB3.0 expansion ports with transfer rate up to 5Gb/s
	USB 2.0	Eight USB 2.0 expansion ports
<b>LPC</b>		One LPC interface
<b>TPM</b>		Infineon SLB9660 compliant with TPM1.2(Build option)
<b>Power</b>		AT: +12 power rail, primary input, supports 9.0V–16.8V power supply
		ATX: +5V Standby and +12 power rail input, +12 supports 9.0V–16.8V power supply
<b>Power Management</b>		ACPI 4.0 supporting states S0, S3, S4, S5 G3 and C0, C1, C3, C6, C7
		AMT support Intel ME Power States M0, M3, Mox
<b>Miscellaneous</b>		One TTL UART from MCU or Two TTL UART from LPC-UART Bridge
		One 100KHz SMBus from PCH
		One 100KHz I2C from MCU
		One FAN speed PWM and TACH
		Eight GPIO (four GPI and four GPO)
		Watchdog timer
<b>BIOS</b>		EFI Firmware
<b>OS</b>	Windows 8	64bit
	Windows 7	32bit
		64bit
	RedHat Enterprise Linux	32bit
		64bit
Wind River VxWorks	VxWorks	

## Physical Specifications

<b>Physical</b>	Dimensions	125mm x 95mm		
	Compliance	PICMG COM Express R2.1 Basic Form Factor, Type 6		
<b>Environment</b>	Cooling	Forced air	Class EAC1 as defined in the ANSI/VITA 47-2005	
		Conduction	Class ECC1 as defined in the ANSI/VITA 47-2005	
	Temperature	Operating	Up to 2300m (7500 ft), 0 to 60 °C and -20 to 70 °C ; (Up to 2300m (7500 ft), -40 to 85 °C for HD SKUs)	
			Derated -1.1 C per 305 m (1000 ft) above 2300 m (7500 ft)	
	Non-operating	-40 to +85 °C		
		Shock	Operating	30G, half sine shock pulse, 11ms duration, 3 times per face
	Non-Operating/ Unpacked		40G, half sine shock pulse, 11ms duration, 3 times per face (unpacked)	
	Transportation/ Packaged		Fixture assembly: 50G, 17.4ms trapezoidal pulse Drop test, 10-up bulk packaging, 30in free-fall, one drop on each of six faces	
	Vibration (random)	Operating	Random 5Hz to 2KHz, 7.7 grms, 10min in each of 3 axes	
			5Hz – 20Hz: 0.004g <sup>2</sup> /Hz ramping up to 0.04g <sup>2</sup> /Hz	
			20Hz to 1000Hz: 0.04g <sup>2</sup> /Hz	
			1000Hz to 2000Hz: 0.04g <sup>2</sup> /Hz ramping down to 0.01g <sup>2</sup> /Hz	
		Non-Operating/ Storage	Random 5Hz to 2KHz, 9.7 grms, 10min in each of 3 axes	
			5Hz – 20Hz: 0.006g <sup>2</sup> /Hz ramping up to 0.06g <sup>2</sup> /Hz	
			20Hz to 1000Hz: 0.06g <sup>2</sup> /Hz	
			1000Hz to 2000Hz: 0.06g <sup>2</sup> /Hz ramping down to 0.02g <sup>2</sup> /Hz	
	Humidity	Operating	5% to 95% non-condensing. 95%RH@30C, linear Derated to 25%RH@60C; 5% to 95% non-condensing. 95%RH@30C, linear Derated to 25%RH@85C for HD SKUs;	
Non-Operating/ Storage		5% to 95% non-condensing		
Altitude	Operating	To 15,000ft (4570m)		
	Non-Operating/ Storage	To 40,000ft (12000m)		

		Storage	
<b>Regulatory</b>	Safety	UL60950-1, EN60950-1, IEC60950-1	
	RoHS	RoHS compliant	
	EMC	EN55024, EN55022, and FCC Part 15, Subpart B, Class B	