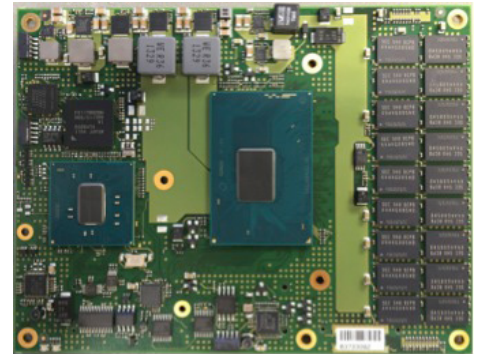




# bCOM6-L1800

## Rugged COM Express® Module Type 6



GE understands that long design cycles and high validation costs make it difficult for OEMs to keep up with the latest processor technologies. We also know that processors deployed in harsh environments need to deliver the utmost performance at all times, under any condition.

GE's bCOM6-L1800 module addresses the needs of many high performance applications, taking advantage of the capable video processing, turbo-boost acceleration and power management capabilities of Intel® core™ processors. As such, the bCOM6-L1800 is ideally suited for a wide variety of commercial, industrial, transportation and defense applications in a broad range of embedded computing environments. This durable COM Express solution reduces overall design cycle and validation costs to lower total cost of ownership.

### Best-in-class performance and reliability

The bCOM6-L1800 is the premium solution in GE's COM Express portfolio. It offers the high-level performance and ultimate durability needed for applications that operate in harsh environments. The bCOM6-L1800 should be selected for applications with multiple graphic functions or high-end computing needs. All GE Type 6 modules fully enable the capabilities of the newest generation of processors.

Onboard components are specifically selected for their reliability in demanding conditions. Unlike solutions designed for benign environments, the processor and memory are soldered to the board for maximum resistance to shock and vibration. Extended mechanical construction protects the module, which is designed for optional conformal coating for even greater resistance to moisture, dust, chemicals, and temperature extremes.

### Longer lifecycles and lower product costs

The COM Express architecture separates the processor module and carrier card, allowing the useful life of a subsystem to be extended by offering a simple, cost-effective upgrade of the processor alone.

Alternatively, once a system is qualified, GE's extended life COM Express modules can be utilized in fixed configuration, long term production programs, under the protection of a Long Term Support contract.

Whichever strategy is chosen, GE's range of COM Express modules can help minimize the total cost of ownership and support long term programs typical in the industrial, defense and aerospace markets.

FEATURE	BENEFIT
Rugged design with soldered components	<ul style="list-style-type: none"> <li>Reliable computing capabilities for applications needing higher immunity to shock and vibration</li> </ul>
Advanced processing capability	<ul style="list-style-type: none"> <li>Delivers high performance coupled with low power consumption</li> <li>Supports up to four graphics displays</li> </ul>
Dynamic thermal management	<ul style="list-style-type: none"> <li>Enables controlled system shutdown to avoid damage to equipment</li> <li>Offers cost saving by allowing simulation in the lab before conducting field tests</li> </ul>
Flexible options	<ul style="list-style-type: none"> <li>Additional shock and vibration protection</li> </ul>

## Specifications

### Processor (Final list to be defined)

- Intel® core™ i3-6102E Processor  
25W 2c 1.9GHz 3MB cache
- Intel® core™ i5-6440EQ Processor  
45W 4c 2.7GHz (-3.4GHz) 6MB no ECC
- Intel® core™ i7-6820EQ Processor  
45W 4c 2.8GHz (-3.5GHz) 8MB no ECC
- Intel® XEON® Processor E3-1505L v5  
25W 4c 2.0GHz (-2.8GHz) 8MB
- Intel® XEON® Processor E3-1505M v5  
45/35W 4c 2.8GHz (-3.7GHz) 8MB

### Memory

- Supports up to 32 GB of DDR4 @ 2133 MHz
- Soldered, with ECC depending on CPU

### Graphics Features

- Integrated graphics interface
  - 1x VGA
  - 1x embedded Display port
  - 2x (3x without VGA) DisplayPort++

### Audio

- Supports HDA

### LAN Port

- 1x Gigabit Ethernet port

### Serial ATA Interface

- 5x serial ATA interfaces
- Supports 4x SATA devices, up to 6 Gb/s
- Supports RAID
- 1x optional onboard SSD up to 64Gbytes

### USB Interface

- 8x USB 2.0 ports + 4x USB 3.0 ports

### Others

- Alarm sensors for temperature
- Environmental Controller on module
- Trusted Platform Module TPM 1.2
- Pre-mounted heat sink/spreader for optimal cooling

### Extension

- PCIe® Graphics (PEG) x16 (or 8+8 or 8+4+4) Gen 3, SETUP selectable
- PCIe lanes 0-7: 8 lanes x1 (or x4 or x2) Gen 3

### I/O Interface

- 8x GPIO ports or SD-Card Interface, SETUP selectable

### Power

- Input: 12V, 5 VSB

### Environmental

- Operating: -40° to +85°C (CPU dependent)
- Storage: -40° to +105°C
- Operating humidity: 10% to 90%

### Shock / Vibration

- Increased shock and vibration immunity; depends on carrier / system design

### Ruggedization

- Conformal coating
- Level A and F
- Shock: 20 g, 11 ms
- Vibration: 5 – 100 Hz, 0.04 g<sup>2</sup> / Hz, 60 minutes per axis

### BIOS

- UEFI AMI Aptio® 5

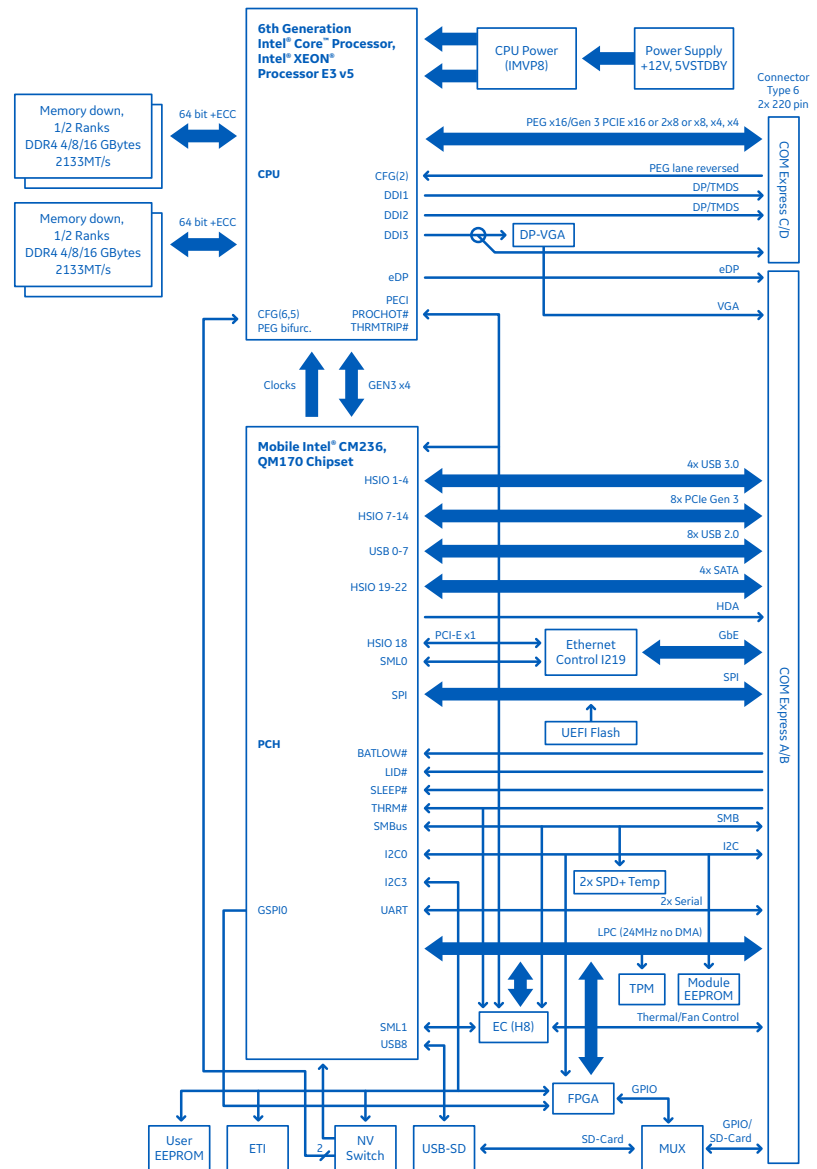
### PCB

- Dimensions: 95 mm x 125 mm (3.74" x 4.9")
- COM Express basic form factor
- Compliance: PICMG COM Express R2.0

### Software Support

- Microsoft® Windows® 7, Windows® 10, Linux®, VxWorks®

## Block Diagram



## Ordering Information

- bc6L18D9A0ZHA** Intel® XEON® Processor E3-1505M v5 45W 4 Core up to 3.7 GHz, 32 GB ECC memory, VGA, standard temp, heatspreader
- bc6L18WFD0AHA** Intel® core™ i5-6440EQ Processor 45W 4 Core up to 3.4 GHz, 16 GB no ECC memory, 3xDP+, standard temp, heatspreader
- bc6L18NFD0AHA** Intel® core™ i7-6820EQ Processor 45W 4 Core up to 3.5 GHz, 16 GB no ECC memory, 3xDP+, standard temp, heatspreader
- bc6L18B7A0ZHA** Intel® core™ i3-6102E Processor 25W 2 Core 1.9 GHz, 8 GB ECC memory, VGA, standard temp, heatspreader
- CEC05-CNAHA** Standard mini-ITX COM Express carrier without COM Express module

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