

bCOM6-P1100

Rugged COM Express Module

GE Intelligent Platforms understands that long design cycles and high validation costs make it difficult for OEMs building computerized and networked systems 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.

The bCOM6-P1100 module is well-suited for OEMs designing real-time embedded computing platforms into equipment for industrial or harsh environments. This durable COM Express solution delivers high performance coupled with low power consumption, reduced overall design cycle and lower validation costs.

The bCOM6-P1100 takes advantage of the PowerPC QorIQ P1 family processor to deliver embedded real-time computing for harsh environments. It offers ultimate durability, high performance, and low power consumption.

Best-in-class performance and reliability

GE's bCOM6-P1100 COM Express module with PowerPC QorIQ P1 family processor offers the high-level performance, low power consumption and ultimate durability needed for applications that operate in harsh environments. As with all GE Type 6 modules, the bCOM6-P1100 fully uses 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, our 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

COM Express architecture separates the processor and carrier card. This extends the useful life of the subsystem by allowing a simple, cost-effective upgrade of the processor alone. The long-term cost of ownership is reduced while ensuring that performance keeps pace with changing needs.

Commitment to customer satisfaction

Today's organizations are operating lean, engineering resources are scarce, and time-to-market is critical. Therefore, GE complements the performance and practical benefits of our COM Express modules with world-class domain expertise and a focus on exceptional customer service. To help you get to market faster and lower your development costs, we can assist you with in-house carrier design work, or build a custom carrier specifically for you.

FEATURE	BENEFIT
Rugged design with soldered components	<ul style="list-style-type: none"> Reliable computing capabilities for applications needing higher immunity to shock and vibration
Freescalable QorIQ P1 family processors in a varying levels of performance-per-watts	<ul style="list-style-type: none"> Delivers high performance coupled with low power consumption Configure the module for the level of performance-per-watt your application requires
Dynamic thermal management	<ul style="list-style-type: none"> Enables controlled system shutdown to avoid damage to equipment Offers cost saving by allowing simulation in the lab before conducting field tests
Flexible options	<ul style="list-style-type: none"> Additional shock and vibration protection, Extended operating temperature range for environments with temperature extremes



bCOM6-P1100 – Rugged COM Express Module

Specifications

Processor

- Freescale QorIQ P1 family processor, soldered
 - P1022 dual core
 - Core / CLB / DDR3 data frequency SoC Power
 - 1066 / 533 / 667 MHz Typ. 4.5 W
 - 800 / 400 / 667 MHz Typ. 4.1 W
 - P1013 single core
 - 800 / 400 / 667 MHz Typ. 3.9 W

Memory

- Supports up to 8 GB* of DDR3 with up to 800 MHz data rate. Soldered, 64bits + ECC
 - * depends on used operating system
- Supports 16MByte serial NOR boot flash
- Additional 16MByte serial NOR emergency flash
- Option: NAND Flash Support – ask factory

Graphics Features

- QorIQ integrated display interface unit (DIU) and Chrontel CH7036 video encoder / scaler
 - Resolution up to 1280 x 768
 - 1x LVDS interface out (18 or 24 bits)
 - Option: 1x VGA – ask factory
 - Option: DDI1 in variable configurations – ask factory

Audio

- Audio via DDI1 HDMI option - ask factory

LAN Port

- 1x Gigabit Ethernet port
- IEEE1588 (QorIQ) support optional- ask factory

Serial ATA Interface

- Supports 2x serial ATA interfaces, compliant with SATA 2.6 specification
- Supports SATA-II devices with speed up to 3 Gb/s

USB Interface

- Supports up to 8 / 7 USB 2.0 host ports
- Supports up to 0 / 1 USB 2.0 device port

Others

- Watchdog Timer
- 2x Serial
- SPI
- Thermal sensor for CPU temperature with fan controller
 - RTC, User E²Prom
 - Voltage Monitor readable from carrier

Extension

- 1x PCI Express x2
- 4x PCI Express x1

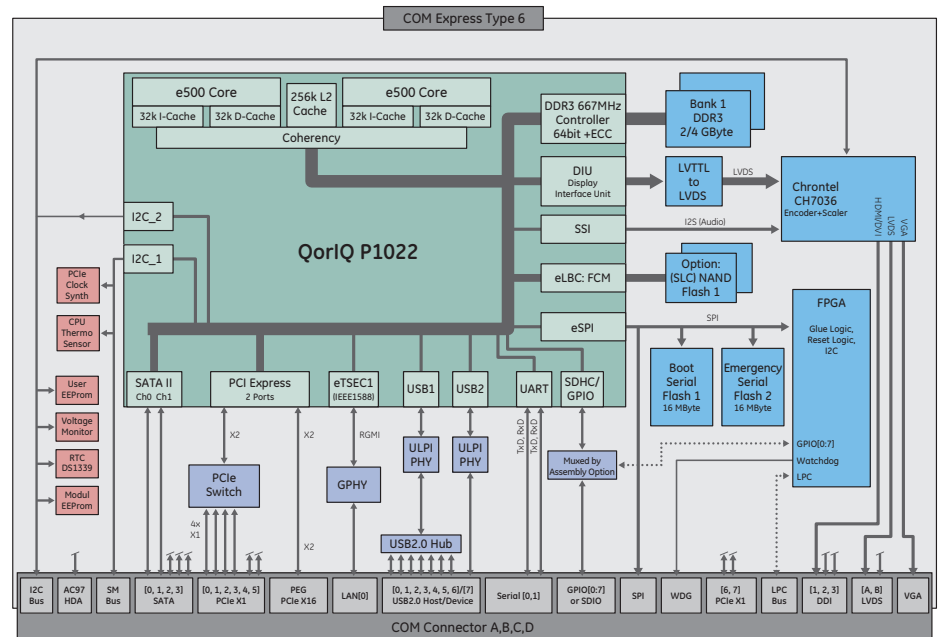
Power

- Input: 12V, 5 VSB optional
 - Typ. current on 12 V rail: 750 mA (P1022 1067MHz)
 - Max current on 5VSB rail: < 0.2 A

Environmental

- Operating: 0°C to +70°C (standard)*
- Operating: -40°C to +85°C (extended, airflow dependend)*
- Storage: -40°C to +125°C
- Operating humidity: 10% to 90%
- * **Note:** Maximum operating temperature range depends on type of selected heatsink: Air (fins) or conduction (plate) cooled.
 - Air cooled (fins): max. temp. depends on air flow
 - conduction cooled: Max. temp 85°C at heat plate center

Block Diagram



Shock / Vibration

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

Firmware

- uBoot loader, 16MByte serial SLC NOR Boot Flash with SPI interface, add. Emergency Flash

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

- QNX, Linux®, VxWorks®

Options

Ruggedization

- Conformal coating
- Level A and F
 - Shock: 20 g, 11 ms
 - Vibration: 5 – 100 Hz, 0.04 g² / Hz, 60 minutes per axis
- Level D
 - Shock: 40 g, 11 ms
 - Vibration: 5 – 2000 Hz, 0.1 g² / Hz, 60 minutes per axis

Ordering Information

BC6P11E2020HF

Dual core, 1.2GHz, 2GB Memory, extended temperature range

CEC02

Standard bCOM6-P1100 COM Express carrier without COM Express module

About GE Intelligent Platforms

GE Intelligent Platforms is a division of GE that offers software, control systems, services, and expertise in automation and embedded computing. We offer a unique foundation of agile and reliable technology providing customers a sustainable competitive advantage in the industries they serve, including energy, water, consumer packaged goods, oil and gas, government and defense, and telecommunications. GE Intelligent Platforms is headquartered in Charlottesville, VA. For more information, visit www.ge-ip.com.

GE Intelligent Platforms Contact Information

Americas: **1 800 433 2682** or **1 434 978 5100**

Global regional phone numbers are listed by location on our web site at www.ge-ip.com/contact

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