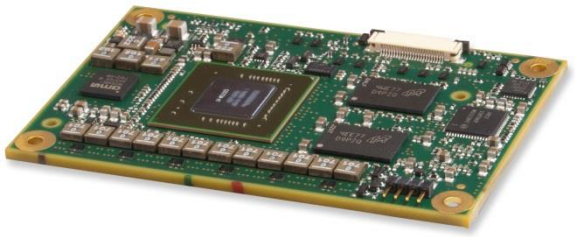
GE
Intelligent Platforms

mCOM10-K1

Mini COM Express Module



As billions of machines continue to expand the Industrial Internet, they will be performing more tasks at greater speed and operating in harsh environments. The NVIDIA Tegra K1 will revolutionize the way these machines interact with the world, by allowing significant processing and data reduction at the edge nodes of the network.

To address these needs, GE developed the mCOM10K1. This module takes advantage of the game-changing performance and low power consumption of NVIDIA's Tegra K1 System-on-Chip (SOC). And thanks to its COM Express architecture, as chip technology evolves, the module can be replaced without adverse effect on the underlying hardware and assets.

The mCOM10K1 is ideal for a variety of commercial, industrial, and defense applications in a range of embedded computing environments. This durable COM Express solution reduces overall design cycle and validation requirements to lower the total cost of ownership.

Best-in-class performance and reliability

GE's mCOM10-K1 COM Express module is the miniature form-factor solution in our COM Express portfolio, and offers the high level performance and ultimate durability needed for applications that operate in harsh environments. It extends General Purpose GPU capability into a low power envelope, dramatically increasing the scope of applications that can exploit the parallel processing of data-intensive applications, particularly in video & image processing, radar, sonar, medical and transportation.

On-board 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 to provide additional resistance to moisture, dust, chemicals, and temperature extremes.

Longer lifecycles and lower product costs

The COM Express architecture extends the useful life of the subsystem by allowing a simple, cost-effective upgrade of the processor module 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, or build a carrier specifically for you.

FEATURE	BENEFIT
Small form factor	• Size (84x55 mm) makes the mCOM10K1 ideal for applications where compact size is critical
Rugged design with soldered components	• Reliable computing capabilities for applications needing higher immunity to shock and vibration
NVIDIA Tegra K1 SOC platform	• Delivers a total of 327 GFLOPS of compute performance while drawing less than 15W power • General purpose computing on Graphics Processing Units (GPGPU) for data-intensive applications
Flexible options	• Additional shock and vibration protection • Extended operating temperature range for environments with temperature extremes

Specifications

Processor
- NVIDIA Tegra K1 SOC
  - 4 Core ARM Cortex-A15 @ 2.0 GHz
  - 192 Kepler GPU cores
  - 327 GFLOPS peak

Memory
- 2 GB of DDR3L
- 4 GB of eMMC Flash

Graphics Features
- HDMI integrated graphics interface

LAN Port
- 1x Gigabit Ethernet port

Serial ATA Interface
- 1x serial ATA interface (3 Gb/s)

USB Interface
- 1x USB 3.0/2.0
- 1x USB 2.0 (recovery)
- 4x USB 1.1

Serial
- 1x RS-232

Audio
- 1x I2S

Others
- Pre-mounted heat sink/spreader for optimal cooling
- Optional conformal coating

Extension
- 1x PCIe® x2 Gen 2 (SKU-A)

I/O Interface
- 8x GPIO ports

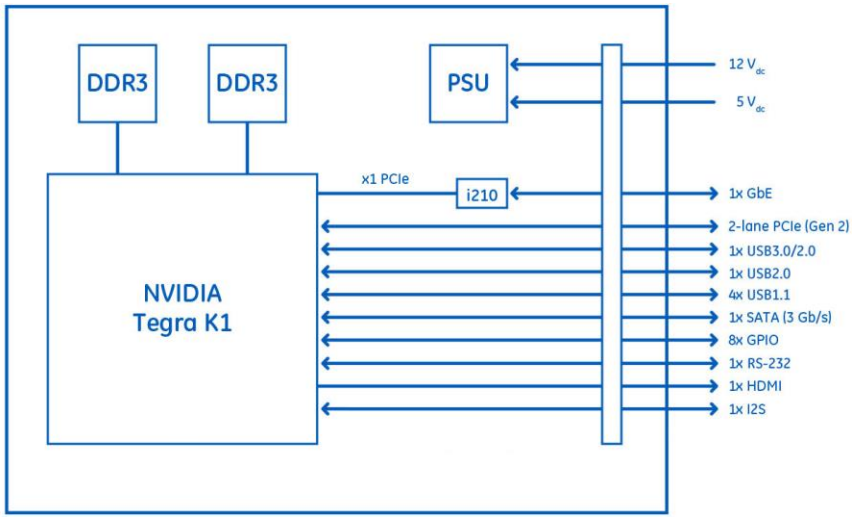
Power
- Input: 12V

Dimensions
- 55 mm x 84 mm
- COM Express mini form factor; Type 10
- Compliance: PICMG COM Express R2.1

Software Support
- CUDA™ 6.0, VisionWorks™; Linux®

Environmental
- Operating: 0° to +55°C (standard)
- Operating: -40° to +75°
- Storage: -40° to +125°C
- Operating humidity: 10% to 90%
- Shock: 40g, 11 ms
- Vibration: 15-2000 Hz, 0.1 g2 / Hz

SOC Diagram



Ordering information

MC10K1A40VHA	4 core ARM + 192 Kepler GPU cores; 4GB eMMC; standard temperature range
SLIO-MC10K1-01M	Software Developers Kit. First years maintenance and support
SLIO-MC10K1-01A	Software Developers Kit. Maintenance and support renewal

Option

Conformal coating available

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