



# MAGIC1

## Rugged, High Performance, Display and Multicore Payload Processor

### Features

- High performance display computer
- CUDA enabled compute node
- Leading edge graphics performance
- CPU options
  - Intel® 3rd Gen Core™ i7
  - Intel 2nd Gen Core i7
- GPU options
  - NVIDIA® EXK107
  - Intel® Graphics 3000
  - Intel® 4500MHD integrated graphics
- Multiple video standards
- Dual Channel Output
- Up to 256 GBytes solid state disk
- Baseplate, convection or forced air cooled

The small form factor MAGIC1 combines state of the art CPU technology with the latest Graphics Processing Units (GPUs) in order to deliver unprecedented levels of performance to the rugged marketplace.

When deployed as a Display Computer this enables the MAGIC1 to support the industry's most demanding visual applications, such as embedded training, 360° situational awareness, or advanced digital maps.

Additionally, through use of the EXK107 GPU (as used on the GeForce GT 650M), the MAGIC1 provides General Purpose computing on Graphics Processing Units (GPGPU) for data-intensive application, opening up a huge range of Intelligence, Surveillance and Reconnaissance applications. Example ISR applications on this 384-core CUDA-capable GPU include wide-area persistent surveillance, hyperspectral sensor fusion, IED detection, synthetic aperture radar processing, and many more.

The MAGIC1 benefits from form, fit and function technology upgrades, and has evolved to the third generation of Intel CPU, the Core i7. System memory is made up of two banks of dual data rate SDRAM, with capacity of 8 GBytes DDR3.

The dual channel NVIDIA EXK107 GPU with 2 Gbytes of GDDR5 memory can output both channels as either DVI and RGB. The GPU connects to the CPU through a dedicated 16-lane Gen 2 PCI Express™ link.

To enable rapid application development and deployment, the MAGIC1 is code compatible with desktop environments such as CUDA, OpenCL and MATLAB, allowing easy porting of applications and algorithms onto the deployable platform.

Storage is provided by a hardware-encrypted solid state disk drive, which boasts a capacity of up to 256 GBytes, a sustained read/write performance of greater than 250 Mbytes/second, and a purge facility to allow data on the drive to be securely deleted in an emergency. A software development kit allows selection of the desired purge algorithm.

The MAGIC1 Rugged Display Processor is available in three chassis configurations:

Base-plate cooling for when a suitable coldplate is available, convection-assisted cooling by means of integral fins, or forced air cooling through hollow sidewall heat exchangers suitable for rugged airborne applications.



# MAGIC1 – Rugged, High Performance, Display and Multicore Payload Processor

## Specifications

### CPU

- Intel Core i7-3612QE @ 2.1 GHz

### Main memory

- Up to 8 GBs DDR3 SDRAM

### Local Flash memory

- 8x GB Flash

### GPU

- NVIDIA EXK107 384-core GPU
- Intel HD Graphics 3000 integrated graphics
- Intel 4500MHD integrated graphics

### Internal mass storage

- Rotating media for lab use
- 32, 64, 128 or 256 GB SSD
- AE-128 encryption
- Hardware purge, i.a.w. military standards

### Front panel Interfaces

- 3 Gigabit Ethernet
- 4 USB
- PS/2 keyboard and mouse
- 2 x RS232
- 1 or 2 VGA out
- 2 DVI out
- Audio Stereo line out, Audio in

### Software support

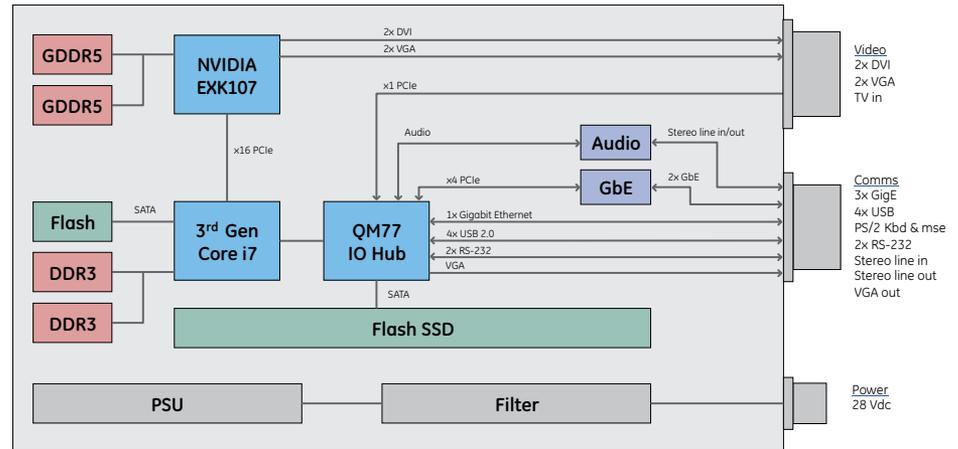
- BIOS to support Microsoft® Windows® XP, Linux®, VxWorks®, OpenGL, DirectX, NVIDIA® PhysX™, NVIDIA® 3D Vision™

### Dimensions

Baseplate cooled

- Length 230mm (9.05in) x Width 167mm (6.57in) x Height 83mm (3.25in)

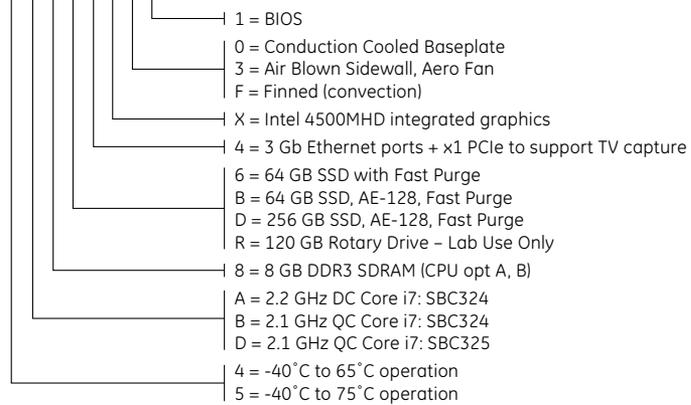
## Block Diagram



## Ordering Information

MAGIC1 - 4 D 8 6 4 K F 1

NOTE: Consult GE for preferred options



## About GE Intelligent Platforms

GE Intelligent Platforms is a General Electric (NYSE: GE) company, headquartered in Charlottesville, VA and part of GE Energy Management. The company's Military/Aerospace business, headquartered in Huntsville, AL, and Towcester, England, provides one of the industry's broadest ranges of high performance, rugged, SWaP-optimized embedded computing platforms. Backed by programs that provide responsive customer support and minimize long term cost of ownership for multi-year programs, GE's solutions are designed to help customers minimize program risk and cost, and to speed time-to-market. For more information, visit [defense.ge-ip.com](http://defense.ge-ip.com).

## GE Intelligent Platforms Contact Information

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Global regional phone numbers are listed by location on our web site at [defense.ge-ip.com/contact](http://defense.ge-ip.com/contact)

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