The rugged small form factor GVC2000 small form factor display computer is enabled by the Abaco Lightning systems architecture, and features the Intel® Xeon® D processor in combination with an NVIDIA® GM107 GPU and the unique I/O flexibility of the Abaco expansion module to deliver high performance plus remarkable flexibility.

Abaco’s revolutionary expansion module allows the GVC2000 to accommodate almost any custom I/O requirements with minimal to no NRE cost and minimal development time.

The high-performance Intel Xeon D processor, with up to 16 cores, is a dense, low power system-on-chip solution, ideal for High Performance Embedded Computing (HPEC) applications where high core count and substantial memory capacity are paramount.

NVIDIA’s GM107 GPU enables significant gains in SIGINT, radar and video- or image processing applications. With 640 processing cores and single- and double-precision floating point units, together with faster atomic operations, the GM107 GPU is capable of CUDA™ Compute Capability v3.0.

Transfers between the CPU and GPU are provided by 16x PCIe™ Gen3 lanes to ensure maximum data rates between both. Additionally, 4x lanes of PCIe between the Expansion Module (XPM) and SBC ensure minimal latency from XPM I/O.

Available in fan-cooled or base plate-cooled versions, the GVC2000 is designed to meet the requirements of a wide range of applications from industrial to fully rugged defense and aerospace programs - with precisely the I/O mix required by the application.

The GVC2000 is an ideal mission- or graphics computer with highly configurable I/O options. It is an optimum fit for symbol generation, mission computing, demanding graphics generation applications, and GPU accelerated data processing.

The GVC2000 shares its footprint with all other 3U VPX 2-slot systems enabled by the Lightning architecture. This commonality enables customers to build this system into a new design with confidence that other Lightning-enabled products with differing capabilities will benefit from an identical form factor, making integration easier.

Abaco’s ECM tiles allow a user to select from a broad range of I/O according to the specific needs of the application. Up to four of these tiles can be configured in the GVC2000. Available I/O capabilities include analog to digital conversion, general purpose discrete I/O, audio inputs, specialty avionics I/O and many others.

The GVC2000 benefits from a highly robust qualification test plan comprising elements from MIL-STD-461G, DO-160G, MIL-STD-704F and MIL-STD-810G outlined below. This test plan ensures the GVC2000 will meet an application’s toughest requirements with little to no additional testing needed.
GVC2000  Rugged Small Form Factor HPEC Display Computer Enabled by Lightning

**Specifications**

**CPU**
- Xeon D high density, low power SoC
- 12-core CPU standard
- 32 GB DDR4 SDRAM with ECC
- 32 GB onboard SSD (On SBC)
- x16 PCIe Gen 3 to GPU

**Graphics Options**
- NVIDIA GM107 GPU
- 640 Cores
- 2 GB DDR5

**Video Outputs**
- 4x DVI
- 2x VGA

**Additional I/O**
- 6x 1000BASE-T Ethernet
- 2x 10GBASE-T Ethernet
- 4x USB 2.0
- 2x USB 3.0
- 2x RS232
- 4x RS232/422/485

**Qualification**
- Select MIL-STD-810G
- Select MIL-STD-810G
- Select MIL-STD-704F

**Environment**
- Base plate cooled
- Fan-blown
- Convection cooled
- Operating temperature: -40ºC to +71ºC

**Removable or Fixed SSD**
- 128 GB - 1 TB

**Software Support**
- RedHat 7.2
- Microsoft Windows & Linux on Intel Host
- OpenGL 4.1 and DirectX 11 drivers for Windows 10 capable
- RedHat 7.2
- 128 GB - 1 TB

**ECM Expansion**
- 4 EMC slots
- Configurable

**Standard Required Test/Category**

<table>
<thead>
<tr>
<th>Standard</th>
<th>Required Test/Category</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIL-STD-810G Method 514.3</td>
<td>-2</td>
<td>Vibration, Procedure I for Category 12 equipment (Aircraft, Jet) with spectrum described below: 0.04g2/Hz, 15 Hz to 150 Hz; 4 dB/octave increase, 150 Hz to 300 Hz; 0.1g2/Hz, 300 Hz to 1000 Hz; 6dB/octave decrease, 1000 Hz to 2000 Hz.</td>
</tr>
<tr>
<td>MIL-STD-810G Method 516.5</td>
<td>I</td>
<td>Shock = Functional, 400 for 1ms</td>
</tr>
<tr>
<td>MIL-STD-810G Method 516.6</td>
<td>V</td>
<td>Shock = Crash, 400 for 1ms</td>
</tr>
<tr>
<td>DO-160D Section 4 B2</td>
<td>-</td>
<td>Temperature and Altitude: Tested using the methodology of category B2 (but not the operational test levels). Operating low temperature = +40ºC; Operating high temperature = +71ºC; Non-operational ground survival low temperature = -55ºC; Non-operational ground survival high temperature = +85ºC; Altitude = 0.50,000 ft</td>
</tr>
<tr>
<td>DO-160D Section 4 B</td>
<td>-</td>
<td>Temperature and Altitude; overpressure test, test in accordance with section 4; figure 4-B (706KPa)</td>
</tr>
<tr>
<td>DO-160D Section 9 E</td>
<td>Explosive atmosphere</td>
<td></td>
</tr>
</tbody>
</table>

**Block diagram**

<table>
<thead>
<tr>
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</tr>
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<tbody>
<tr>
<td>Optional Removable SSD</td>
</tr>
<tr>
<td>SBC347D Intel Xeon-D</td>
</tr>
<tr>
<td>GRA113Q NVIDIA GM107 GPU</td>
</tr>
</tbody>
</table>

**Contact Information**

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