MiniModule™/SVG-II
High resolution CRT display controller with GUI accelerator

- Compatible with five popular PC video standards
- Supports 24-bit “true color” VGA display
- Supports DOS, Windows®, and most other popular operating systems
- Built-in GUI accelerator for high performance graphics
- Feature connector for external device connection
- Compact PC/104™ form-factor
- 16-bit PC/104 bus allows 8- or 16-bit operation
- 5-volt only operation
- Low power, rugged, and reliable
- Wide operating temperature range

The MiniModule/SVG-II expansion module is a high resolution analog CRT display controller that offers full software compatibility with five popular video standards — VESA (super VGA), VGA, EGA, CGA, and MDA. With its full one megabyte of display memory populated, the module supports high resolution “super VGA” graphics, up to 1024 × 768 pixels in 256 colors and 640 × 480 pixels in 16M colors. The MiniModule/SVG-II also includes a built-in graphical user interface (GUI) accelerator engine for optimal Windows performance.

The MiniModule/SVG-II drives analog CRT monitors directly. In addition, the module’s VESA feature connector interface allows direct connection of certain electroluminescent (EL) display panels and supports a number of specialized video input and output interfaces.

The MiniModule/SVG-II is supported by virtually all operating systems, drivers, utilities, and applications for both text and graphics because of its register- and BIOS-level compatibility with nearly all standard PC video controllers. “Super VGA” software development is greatly simplified by the module’s VESA-enhanced video BIOS, which supports the high resolution display modes beyond normal VGA.

The MiniModule/SVG-II complies with the PC/104 16-bit form-factor specification and is jumper-configurable to operate with either 8- or 16-bit PC/104 compatible CPUs. This allows it to be used with any Ampro CoreModule™ or Little Board™ CPU.
## SPECIFICATIONS

### GENERAL
- **Onboard display RAM (soldered):** 512 K bytes, standard; 1 M byte, special order
- **Modes and resolutions supported:** see Table 1
- **Memory required vs. resolution:** see Table 1
- **Option of interlaced or non-interlaced displays in 1024 × 768 resolution modes**
- **Memory-mapped I/O VGA GUI accelerator**
- **24-bit “true color”**
- **Feature connector with VESA standard pinout**
- **Onboard video BIOS supports standard VESA “super VGA” modes** (see Table 1)
- **Compatible with 8-bit and 16-bit Ampro CPUs**

### MECHANICAL AND ENVIRONMENTAL
- **Size:** 3.6 × 3.8 × 0.9* in, (90 × 109 × 23 mm)
  - * Includes stackthrough pins. See PC/104 Specification for stacking and other dimensions.
- **PC/104:**
  - — 16-bit double-stackthrough bus
  - — Four mounting holes
- **Power requirements (typical):**
  - — 350 mA at +5V ± 5%
- **Operating environment:**
  - — 0° to +70° C temperature, standard; extended temperature screening available by special order
  - — 5% to 95% relative humidity, non-condensing
- **Storage temperature:** -55° to +85° C
- **Weight:** 2.2 oz. (62 gm)

**NOTE:** Contact Ampro regarding custom configurations and special order options.

### ORDERING INFORMATION

When ordering, refer to the following model numbers:
- **MM2-SVG-K-71** Development Kit, MiniModule/SVG-II, 512 K RAM, DST bus
- **MM2-SVG-Q-71** MiniModule/SVG-II, 512 K RAM, DST bus (Quantity Orders)
- **MM2-SVG-Q-72** MiniModule/SVG-II, 1 M RAM, DST bus (Quantity Orders - special order only)
- **MM2-SVG-Q-73** MiniModule/SVG-II, 512 K RAM, DST bus (for CM/PC only)

The Development Kit includes the MiniModule/SVG-II, interface cables, and technical manual. Quantity orders include only the module.

**NOTE:** 1MB video RAM versions available by special order only.

Please contact your local Ampro representative or Ampro Sales Administration for ordering information.

### Table 1. Video Modes and RAM Required

<table>
<thead>
<tr>
<th>VIDEO STANDARD</th>
<th>MAXIMUM RESOLUTION</th>
<th>MAXIMUM COLORS DISPLAYED</th>
<th>VIDEO RAM REQUIRED* (BYTES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGA Graphics</td>
<td>320 x 200</td>
<td>4</td>
<td>512 K</td>
</tr>
<tr>
<td></td>
<td>640 x 200</td>
<td>2</td>
<td>512 K</td>
</tr>
<tr>
<td>CGA Text</td>
<td>640 x 200</td>
<td>16</td>
<td>512 K</td>
</tr>
<tr>
<td>MDA</td>
<td>720 x 350</td>
<td>Mono</td>
<td>512 K</td>
</tr>
<tr>
<td>Hercules</td>
<td>Not supported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EGA</td>
<td>640 x 350</td>
<td>16</td>
<td>512 K</td>
</tr>
<tr>
<td>VGA</td>
<td>320 x 200</td>
<td>256</td>
<td>512 K</td>
</tr>
<tr>
<td></td>
<td>640 x 480</td>
<td>16</td>
<td>512 K</td>
</tr>
<tr>
<td>VESA</td>
<td>640 x 480</td>
<td>256</td>
<td>512 K</td>
</tr>
<tr>
<td></td>
<td>640 x 480</td>
<td>32 K / 64 K</td>
<td>1 M</td>
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<tr>
<td></td>
<td>640 x 480</td>
<td>16 M</td>
<td>1 M</td>
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<tr>
<td></td>
<td>800 x 600</td>
<td>256</td>
<td>512 K</td>
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<tr>
<td></td>
<td>1024 x 768</td>
<td>16</td>
<td>512 K</td>
</tr>
<tr>
<td></td>
<td>800 x 600</td>
<td>32 K / 64 K</td>
<td>1 M</td>
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<tr>
<td></td>
<td>1024 x 768</td>
<td>256</td>
<td>1 M</td>
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<tr>
<td></td>
<td>1024 x 768 ***</td>
<td>32 K / 64 K</td>
<td>1 M</td>
</tr>
<tr>
<td></td>
<td>1280 x 1024 ***</td>
<td>16 / 256</td>
<td>1 M</td>
</tr>
</tbody>
</table>

**NOTES**
- * All video RAM is factory-installed (soldered onboard); 512K is standard, 1MB is available by special order
- ** 24-bit “true color”**
- *** Interlaced only