For 30 years Diamond Systems has been delivering embedded computing products with innovative features, rugged performance, high feature density, and increased value to customers all over the world in all major industries. This guide presents a sample of our current standard product offerings. We welcome the opportunity to serve you with one of these products or a custom solution based on our vast library of technologies and our worldwide design and manufacturing resources.

Let's build a better tomorrow!

NVidia Solutions

Diamond Systems is proud to announce that we have joined the NVidia partner ecosystem to deliver NVidia’s advanced computing technologies to the embedded market in a rugged, reliable, and I/O-rich carrier board and system solutions. Our ELTON board is the first in the world to combine the power and performance of NVidia AGX Xavier with the ruggedness and reliability of PCIe/104.

<table>
<thead>
<tr>
<th></th>
<th>ZIGGY</th>
<th>ZIGGYBOX</th>
<th>JETHRO</th>
<th>STEVIE</th>
<th>ELTON</th>
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<td>TX2/TX2i</td>
<td>TX2/TX2i</td>
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<td>AGX Xavier</td>
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<td>Camera</td>
<td>1x CSI 4-lane</td>
<td>N/A</td>
<td>2x CSI 4-lane</td>
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<td>Display</td>
<td>HDMI</td>
<td>HDMI</td>
<td>HDMI</td>
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<td>Mass storage</td>
<td>Micro SD</td>
<td>Micro SD</td>
<td>M.2 SATA, Micro SD</td>
<td>M.2 PCIe x4 NVMe</td>
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<td>2x RS-232</td>
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<td>1x Gbe</td>
<td>2x USB 3.1, 2x USB 2.0</td>
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<td>Integrated GPIO</td>
<td>6x 12-16-bit A/D</td>
<td>6x 12-16-bit A/D</td>
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<td>2x 12-bit D/A</td>
<td>2x 12-bit D/A</td>
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<td>SkyWire modem socket</td>
<td>SkyWire modem socket</td>
<td>SkyWire modem socket</td>
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<td>Size</td>
<td>50x87mm / 2.0x3.4”</td>
<td>63x67x96mm / 2.5x2.6x3.8”</td>
<td>76x107mm / 3.0x4.2”</td>
<td>100x87mm / 3.9x3.4”</td>
<td>102x152mm / 4.0x6.0”</td>
</tr>
</tbody>
</table>

* This feature is provided by the installed Ziggy or Jethro carrier.

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## Single Board Computers

Diamond's SBCs feature wide temperature performance, rugged design with thicker PCBs and latching connectors, integrated data acquisition, and board support packages for Linux and Windows operating systems.

### ZETA
- **Form Factor**: COM Express Mini
- **Dimensions**: 3.5 inch
- **Processor**: Bay Trail: E3825 1.33GHz 2C E3845 1.91GHz 4C Apollo Lake: E3940 1.6GHz 4C N4200 1.1GHz 4C
- **RAM**: E3826 2GB down E3845 4GB down
- **Expansion Interface**: PCI-104 Plus
- **Display**: LVDS single channel VGA
- **USB Ports**: 4x USB 2.0 1x USB 3.0 1x SATA
domino
- **Serial Ports**: 4x RS-232/422/485
- **Network**: 2x Gigabit Ethernet
- **Mass Storage**: 1x mSATA
- **Audio**: HD Audio via Daughterboard
- **Power Input**: 6-36VDC
- **Dimensions**: 2.16" x 3.30" 55 x 84mm
- **Weight**: 7.7 oz (220g)

### VENUS
- **Form Factor**: ARIES
- **Dimensions**: 2.16 inch
- **Processor**: Skylake Gen6 Core i7-6600U 2.6GHz 2C Kaby Lake Gen7 Core i7-7600U 2.6GHz 2C
- **RAM**: E3826 2GB down E3845 4GB down
- **Expansion Interface**: PCIe+ PCI express
- **Display**: LVDS dual channel HDMI VGA DisplayPort
- **USB Ports**: 2x RS-232/422/485
- **Serial Ports**: 2x Gigabit Ethernet
- **Network**: 1x 10/100 Ethernet
- **Mass Storage**: 1x SATA
domino
- **Audio**: HD Audio via Daughterboard
- **Power Input**: 9-18VDC
- **Dimensions**: 4.5" x 4.0" 114mm x 102mm
- **Weight**: 14.2 oz (392g)

### ARIES
- **Form Factor**: HELIX
- **Dimensions**: 2.16 inch
- **Processor**: Bay Trail: E3845 1.91GHz 4C Bay Trail E3826 1.6GHz 2C
- **RAM**: E3826 2GB down E3845 4GB down
- **Expansion Interface**: PCIe+ PCI express
- **Display**: LVDS dual channel HDMI VGA DisplayPort
- **USB Ports**: 3x USB 2.0 1x USB 3.0
- **Serial Ports**: 2x RS-232/422/485
- **Network**: 1x 10/100 Ethernet
- **Mass Storage**: 1x SATA
domino
- **Audio**: HD Audio via Daughterboard
- **Power Input**: 9-18VDC
- **Dimensions**: 4.5" x 4.0" 114mm x 102mm
- **Weight**: 14.2 oz (392g)

### HELIX
- **Form Factor**: HELIOS
- **Dimensions**: 2.16 inch
- **Processor**: Vortex86DX3
- **RAM**: E3826 2GB down E3845 4GB down
- **Expansion Interface**: PCIe+ PCI express
- **Display**: LVDS single channel VGA
- **USB Ports**: 4x USB 2.0 2x USB 3.0
- **Serial Ports**: 2x RS-232/422/485
- **Network**: 2x Gigabit Ethernet
- **Mass Storage**: 1x SATA
domino
- **Audio**: HD Audio via Daughterboard
- **Power Input**: 9-18VDC
- **Dimensions**: 4.5" x 4.0" 114mm x 102mm
- **Weight**: 14.2 oz (392g)

### RHODEUS
- **Form Factor**: EAGLE
- **Dimensions**: 3.5 inch
- **Processor**: AMD Geode LX800 500MHz
- **RAM**: E3826 2GB down E3845 4GB down
- **Expansion Interface**: PCIe+ PCI express
- **Display**: LVDS single channel VGA
- **USB Ports**: 2x USB 2.0 2x USB 3.0
- **Serial Ports**: 2x RS-232/422/485
- **Network**: 1x 10/100 Ethernet
- **Mass Storage**: 1x SATA
domino
- **Audio**: HD Audio via Daughterboard
- **Power Input**: 9-18VDC
- **Dimensions**: 4.5" x 4.0" 114mm x 102mm
- **Weight**: 14.2 oz (392g)

### EAGLE
- **Form Factor**: EAGLET
- **Dimensions**: 3.5 inch
- **Processor**: Toradex Apalis ARM modules: T30 1.46GHz Quad Core Cortex A9 i.MX6 1GHz/800MHz Cortex A9 i.MX8 1.6GHz Cortex A7, A53 & M4
- **RAM**: E3826 2GB down E3845 4GB down
- **Expansion Interface**: PCIe+ PCI express
- **Display**: LVDS single channel VGA
- **USB Ports**: 2x USB 2.0 2x USB 3.0
- **Serial Ports**: 2x RS-232/422/485
- **Network**: 2x Gigabit Ethernet
- **Mass Storage**: 1x SATA
domino
- **Audio**: HD Audio via Daughterboard
- **Power Input**: 9-18VDC
- **Dimensions**: 4.5" x 4.0" 114mm x 102mm
- **Weight**: 14.2 oz (392g)

### DATA ACQUISITION FEATURES

**Analog In**
- 16 single-ended/ 8 differential 16-bit resolution
- 16 single-ended/ 8 differential 16-bit resolution
- 16 single-ended/ 8 differential 16-bit resolution
- 4x single-ended 12-bit resolution
- 4x single-ended 12-bit resolution
- **Max Rate**
- 100KHz
- 250KHz
- 180KHz
- 180KHz
- **Input Ranges**
- 10V, ±5V, 0-10V, 0-5V
- ±10V, ±5V, ±2.5V, ±1.25V, 0-10V, 0-5V, 0-2.5V
- ±10V, ±5V, ±2.5V, ±1.25V, 0-10V, 0-5V, 0-2.5V
- 0-3.3V
- 0-3.3V
- **Accuracy**
- < ±2LSB
- < ±2LSB after autocalibration
- < ±2LSB after autocalibration
- < ±1LSB
- < ±1LSB
- **A/D FIFO**
- 2048 samples with programmable threshold
- 2048 samples with programmable threshold
- 2048 samples with programmable threshold
- 16x GPIO (3.3V)
- 8x GPIO (3.3V)
- **Analog Out**
- 16-bit
- 4x 16-bit
- 4x 16-bit
- 4 12-bit
- 4 12-bit
- **Digital I/O**
- 27 GPIO 3.3V/5V
- 16 GPIO 3.3V/5V
- 22 GPIO 3.3V/5V
- 19-27 GPIO 3.3V/5V
- 16-40 GPIO 3.3V
- **Direction**
- Programmable
- Programmable
- Programmable
- Programmable
- Programmable
- **Pull-up**
- Prog. up/down
- Prog. up/down
- Prog. up/down
- Prog. up/down
- Prog. up/down
- **Opto I/O**
- 4 in, 4 out
- 8 bit bit 4 down
- 8 bit bit 4 down
- 8 bit bit 4 down
- 8 bit bit 4 down

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**www.diamondsystems.com**
**Ethernet Switches**

Diamond’s EPSILON Ethernet switches feature 1 to 10Gbps speeds, Layer 2+ / Layer 3 operation, IEEE-1588 PTP, latching connectors, thicker PCBs, and -40 to +85°C operating temperature. These products are ideal for Ethernet backbones in vehicles.

**Rugged Systems**

The SABRE family offers rugged mission computers and Ethernet switches for use in the most challenging vehicle environments. MIL-STD-461, 704, and 1275 compliance is available. Systems have been tested to MIL-STD-810G specifications up to 75G shock.

**Power Supplies**

These PC/104 size power supplies offer -40/+85°C operation and rugged design. They are ideal for vehicle and industrial PC/104 systems. JMM-73xx offers MIL spec compliance.
I/O Expansion Modules

Diamond Systems offers a wide range of I/O modules in PC/104 and PCIe MiniCard form factors. Our analog and digital I/O modules are supported by our industry-leading Universal Driver software, consisting of a C language programming library along with example programs and GUI demos that provide instant verification of system operation. All products meet -40 to +85°C operating temperature.

### ANALOG I/O

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<tr>
<th>Product</th>
<th>Form Factor</th>
<th># A/D</th>
<th>Res</th>
<th>Max</th>
<th>Min</th>
<th>Gain</th>
<th>Max</th>
<th>Autocal</th>
<th>FIFO</th>
<th># D/A</th>
<th>Res</th>
<th>Max</th>
<th>Min</th>
<th>GPIO</th>
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<tbody>
<tr>
<td>DMM-32DX-AT</td>
<td>PC/104</td>
<td>32 SE, 16 DI</td>
<td>16</td>
<td>±10V</td>
<td>0-625V</td>
<td>Program</td>
<td>250K</td>
<td>Auto</td>
<td>1024</td>
<td>4</td>
<td>16</td>
<td>±10V</td>
<td>0-5V</td>
<td>24 I/O</td>
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<td>PC/104</td>
<td>32 SE, 16 DI</td>
<td>16</td>
<td>±10V</td>
<td>0-625V</td>
<td>Program</td>
<td>250K</td>
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<td>1024</td>
<td>4</td>
<td>12</td>
<td>±10V</td>
<td>0-5V</td>
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<td>0-5V</td>
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<td>12</td>
<td>±10V</td>
<td>0-5V</td>
<td>8 in, 8 Out</td>
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<td>16SE, 8 DI</td>
<td>12</td>
<td>±10V</td>
<td>0-1.25V</td>
<td>Program</td>
<td>100K</td>
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<td>512</td>
<td>2</td>
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<td>±10V</td>
<td>0-5V</td>
<td>8 in, 8 Out</td>
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<td>DMM-XT</td>
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<td>±10V</td>
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<td>Jumper</td>
<td>100K</td>
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<td>2</td>
<td>12</td>
<td>0-5V</td>
<td>0-5V</td>
<td>8 in, 8 Out</td>
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<td>0-5V</td>
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<td>0-5V</td>
<td>0-2.5V</td>
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### DIGITAL I/O

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<th>Counters</th>
<th>Ctr Bits</th>
<th>Max Rate</th>
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<tbody>
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<td>5V</td>
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<td>Programmable</td>
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<td>IR104-PBF</td>
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### SERIAL I/O

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<th># RS-422</th>
<th>Max Rate</th>
<th># RS-485</th>
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<td>EMM-8P-XT</td>
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