MicroZed™ Industry 4.0 Ethernet Kit

Avnet’s MicroZed™ Industry 4.0 Ethernet Kit (I4EK) demonstrates multi-protocol Industrial Ethernet in the Xilinx Zynq-7000™ SoC. Designers using the I4EK can quickly evaluate HMS Anybus® IP which provides the most widely used protocols with a unified API. The result is seamless hardware and software integration across networks. Protocol support includes EtherCAT®, Powerlink, PROFINET® RT/IRT, EtherNet/IP™, and Modbus-TCP.

No startup fees for evaluation and development. Deployed products are licensed with a tiny 1-wire security chip.

To help you minimize risk and get to market faster, the MicroZed System-on-Module (SOM) is small, rugged, and built for deployment. Getting started is easy.

1. **Evaluate** the Zynq SoC and Anybus IP real-time performance using the I4EK’s MicroZed SOM
2. **Prototype** your system using best-in-class IP, software APIs, and drivers
3. **Deploy** your end product with the MicroZed SOM, Anybus IP, your differentiating features and custom carrier board

REFERENCE DESIGN

The I4EK out-of-box reference design creates a Zynq EtherCAT Slave communicating with a PC soft master using Beckhoff TwinCAT software. Reference designs for EtherNet/IP, PROFINET, Powerlink, and Modbus-TCP protocol are also available.

<table>
<thead>
<tr>
<th>Network</th>
<th>Anybus IP version</th>
<th>Approximate Size (LUTs)</th>
<th>Block RAM Tiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROFINET</td>
<td>1.03</td>
<td>19,000</td>
<td>90</td>
</tr>
<tr>
<td>EtherNet/IP</td>
<td>1.03</td>
<td>18,000</td>
<td>90</td>
</tr>
<tr>
<td>Modbus TCP</td>
<td>1.01</td>
<td>18,000</td>
<td>90</td>
</tr>
<tr>
<td>EtherCAT</td>
<td>1.00</td>
<td>14,000</td>
<td>92</td>
</tr>
<tr>
<td>POWERLINK</td>
<td>1.01</td>
<td>12,000</td>
<td>94</td>
</tr>
</tbody>
</table>

ANYBUS IP FOR XILINIX

HMS Industrial Networks optimized their award-winning Anybus CompactCom™ technology, creating Anybus® IP Cores for Xilinx devices and design suites. The IP takes advantage of Zynq programmable logic (PL) to implement a dedicated soft core for the communication protocol stack, meaning performance is guaranteed independent of applications running on the Zynq processing system (PS). The API is identical across networks allowing the application software to remain unchanged.

To purchase this kit, visit [http://microzed.org/i4ek](http://microzed.org/i4ek)

*Xilinx Z7020 has 140 BRAM tiles and 53,200 LUTs*
**Target Applications**
- Industrial Ethernet
- Smart Factories
- Industrial Automation
- Motor Control

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**Parts**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Resale</th>
</tr>
</thead>
<tbody>
<tr>
<td>AES-Z7MB-I4EK-G</td>
<td>MicroZed Industry 4.0 Ethernet Kit (I4EK)</td>
<td>$699 USD</td>
</tr>
</tbody>
</table>

**Related Parts**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Resale</th>
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</thead>
<tbody>
<tr>
<td>AES-MBCC-FMC-G</td>
<td>MicroZed FMC Carrier Card</td>
<td>$149 USD</td>
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<tr>
<td>AES-FMC-ISMNET2-G</td>
<td>ISM Networking FMC Module (version 2)</td>
<td>$250 USD</td>
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</tbody>
</table>

Countries Available for Purchase: Americas, EMEA, Asia, Japan

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**Contact Information**

**North America**
2211 S 47th Street  
Phoenix, Arizona 85034  
United States of America  
eval.kits@avnet.com  
1-800-585-1602

**Europe**
Gruber Str. 60c  
85586 Poing  
Germany  
marketing@silica.com  
+49-8121-77702

**Japan**
Yebisu Garden Place Tower, 23F  
4-20-3 Ebisu, Shibuya-ku  
Tokyo 150-6023 Japan  
eval-kits-jp@avnet.com  
+81-(0)3-5792-8210

**Asia**
151 Lorong Chuan  
#06-03 New Tech Park  
Singapore 556741  
XilinxAPAC@avnet.com  
+65-6580-6000

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