

# Velocity<sup>TM</sup> 110

## Board Specifications

|                    |  |
|--------------------|--|
| FPGA               | <ul style="list-style-type: none"><li>• AMD Xilinx Virtex Ultrascale Plus XCVU13PFHGA2014-2L-E</li><li>• Speed Grade -2, Low Power</li><li>• Extended temperature range</li></ul>  |
| On-board Flash     | <ul style="list-style-type: none"><li>• 2Gbit Flash memory for booting FPGA</li></ul>  |
| DRAM               | <ul style="list-style-type: none"><li>• 3x banks chip on board DDR4</li><li>• With ECC, up to 24GB total (3x 8GB)</li><li>• 2400MHz</li></ul>  |
| Host interface     | <ul style="list-style-type: none"><li>• PCIe Gen3 x 16G interface direct to FPGA, connected PCIe hard IP</li></ul>   |
| QSFP28 cage        | <ul style="list-style-type: none"><li>• 1x - 100 Gbps (2x 50 Gbps PAM4)</li><li>• PAM4: 1x 100GbE, 2x 50GbE</li><li>• NRZ: 1x 100GbE, 2x 50GbE, 4x 10/25 GbE</li><li>• Multi-rate hard MAC supports all combinations</li></ul> |
| External Power Pin | <ul style="list-style-type: none"><li>• PCIe Slot (75W)</li><li>• 8-Pin connector (up to 150W)</li></ul>   |
| VCCINT Supply      | <ul style="list-style-type: none"><li>• 80A</li></ul>  |
| Config Port        | <ul style="list-style-type: none"><li>• PMBus, Soft Processor JTAG</li></ul>   |

|               |   |
|---------------|---|
| SD Card       | <ul style="list-style-type: none"><li>• Boot drive for soft core processor</li><li>• Data storage expansion</li></ul>   |
| Cooling       | <ul style="list-style-type: none"><li>• Standard: single-width passive heat-sink</li></ul>  |
| Electrical    | <ul style="list-style-type: none"><li>• PCIe slot (75W) or 1x 8-pin External PCIe 12V connectors (150W)</li><li>• Up to 225W total</li></ul>                        |
| Environmental | <ul style="list-style-type: none"><li>• Operating Temperature: 0°C - 100°C</li></ul>  |
| Quality       | <ul style="list-style-type: none"><li>• Manufactured to IPC-A-610</li><li>• Class 2</li><li>• RoHS compliant</li><li>• CE, FCC, UKCA &amp; ICES approvals</li></ul> |
| Form factor   | <ul style="list-style-type: none"><li>• 1/2 length, 1/2 height PCIe single-slot board</li><li>• Size: 68.9mm x 167.65mm</li><li>• (2.7in x 6.6in)</li></ul>         |

## Development Tools

|                         |   |
|-------------------------|---|
| System development      | <ul style="list-style-type: none"><li>• Pascaline SDK including PCL-e driver, Host software, libraries, and board utilities</li></ul> |
| Application development | <ul style="list-style-type: none"><li>• C High level synthesis, AMD Vivado Tools (HDL and VHDL)</li></ul>                             |

To learn more, visit  
[www.pascalinetechology.com](http://www.pascalinetechology.com)

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