Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NVMSTOR-Ultra™ 1.1ST</td>
<td>1.1TB storage, 8 Nand flash channels</td>
</tr>
<tr>
<td>NVMSTOR-Ultra™ 1.3ST</td>
<td>3.3TB storage, 8 Nand flash channels</td>
</tr>
<tr>
<td>NVMSTOR-Ultra™ 1.1ST-ETh</td>
<td>1.1TB storage, 8 Nand flash channels with 100G Ethernet option</td>
</tr>
<tr>
<td>NVMSTOR-Ultra™ 1.3ST-ETh</td>
<td>3.3TB storage, 8 Nand flash channels with 100G Ethernet option</td>
</tr>
<tr>
<td>NAND-SCDIMM - 750GB</td>
<td>750GB storage</td>
</tr>
<tr>
<td>NAND-SCDIMM - 15TB</td>
<td>15TB storage</td>
</tr>
</tbody>
</table>

About Mobiveil and Trademark notes

Mobiveil is a fast growing Technology company that specializes in the creation of Intellectual Properties, Frameworks and Solutions for the Networking, Enterprise, and Device Mobility markets. The Mobiveil team leverages decades of experience in delivering high-quality, production-proven, high-speed serial interconnects Silicon IP cores to the leading customers worldwide. With a highly motivated engineering team, dedicated integration support, flexible business models, strong industry presence through strategic alliances and key partnerships, Mobiveil solutions have added tremendous value to the customers in executing their marketing and engineering goals within budget and on time.

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Mobiveil is headquartered in the Silicon Valley with engineering development centers located in Milpitas, Chennai, Bangalore and Hyderabad. Sales offices and representatives located in the US, Europe, Israel, Japan, Taiwan and Peoples Republic of China.

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The smart way to expand your cloud storage with efficient migration to the next generation

NVMStor-Ultra™ Solution Brief

- Accelerated Product Development
- Highly Customizable
- Cost Effective
Executive summary

Mobiveil’s latest NVMStor Ultra™ platform offers high performance and low power SSD solution with its UNH certified NVMe controller IP (UNH). Based on Xilinx’s high-performance Zynq Ultrascale+ FPGA, it greatly improves random and sequential performance by reducing latency and enabling high levels of parallelism. The modular approach of NAND flash arrays in SODIMM form factor helps our data center clients to easily upgrade their cloud storage and to migrate to next-generation NAND flash devices. Currently available in densities up to 3TB in PCIe full-length form factor.

Benefits

- Efficient, high performance and low power SSD solution with its UNH certified NVMe controller IP (UNH)
- Based on Xilinx’s high-performance Zynq Ultrascale+ FPGA, it greatly improves random and sequential performance by reducing latency and enabling high levels of parallelism
- With PCIe Gen4 interface on Edge fingers, the platform is ready to be deployed for next-generation storage servers

Upgrade and scale up

NAND flash technologies keep evolving and there is an ever-increasing demand for performance and density. Hence flash components are ingeniously merged out of the processing platform and this offers a great advantage of scaling up the performance and density. Mobiveil’s NAND flash SODIMMs support both ONFI and Toggle mode.

Applications

- NVMe SSD
- Development platform for next generation
- NVMe over Fabric
- Network attached storage

NVMStor-Ultra Block diagram

Specifications

<table>
<thead>
<tr>
<th>Interface Specifications</th>
<th>PCIe Gen4 x 8 at edge fingers, PCIe Gen4 x 4 at M.2 connectors (2 Nos) PCIe Gen4 x 4 at PCIe edge connectors, NVMe 1.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAND flash specifications</td>
<td>8 independent NAND flash channels + 2 external NAND flash channels through PCIe connectors Supports ONFI (4.0) 64MB/s and Toggle mode NAND flash parts</td>
</tr>
<tr>
<td>Memory Specifications</td>
<td>Supports up to 16GB DDR4 SODIMMs for PL (FPGA (agile) memory Supports up to 16GB DDR4 SODIMMs for PS (ARM Sub system) memory</td>
</tr>
<tr>
<td>Environmental specifications</td>
<td>Operating temperature: 0 deg C to 55deg C, Storage temperature: 20deg C to 70deg C, Humidity: 10% to 90% non-condensing, Airflow: 400 LFM</td>
</tr>
<tr>
<td>Mechanical specifications</td>
<td>PCIe Full length, Full height form factor 312mm x 111mm, Weight: TBD</td>
</tr>
</tbody>
</table>

Power specifications

Typical power consumption: Less than 75 watts Support for Auxiliary power connector to feed additional work loads.

FPGA

Xilinx Zynq Ultrascale+, XCZU19EG 114K Logic elements

Controller

Mobiveil IPs (to be licensed separately)
- NVMe controller (UNH)
- PCIe Gen 4 controller (IP)
- DRR4 controller (UNH)
- 2DPC, ECC

Storage Capacity

Upto 3TB organized as 2 SODIMMS

Standard Compliance

- NVMe 1.3
- Standard Compliance PCIe Base specifications 3.1
- PCIe CEM specifications 2.0

Certifications

- RoHS compliance
- UNH certified NVMe IP
- PCIe Gen4 complaint
- CE/FCC: To be certified

Package Contents

- NVMStor-Ultra platform
- Software Drivers
- Quick start guide