Cactus Technologies 290PC Series Flash Memory Storage Devices User Guide

Contents

Cactus Technologies 290PC Series Flash Memory Storage Devices

The information in this manual is preliminary and is believed to be accurate at the time of publication but is subject to change without notice. Cactus Technologies ® Limited shall not be liable for technical or editorial errors or

omissions contained herein; nor for incidental or consequential damages resulting from the furnishing, performance, or use of this material.

1. **Cactus Technologiesâ Industrial Grade PCIe-Chip Product Highlights**

Features

- Solid state design with no moving parts
- Native PCIe mode operation
- DRAM-less supports HBM
- Available in capacities of 128/256/512 GB
- Compliant with PCIe Gen3 8Gbits/s x 2 lanes
- Compliant with NVMe v1.4 specifications
- Supports NVMe-defined SMART attributes
- Advanced LDPC ECC
- 40 C to +85 C operating temperature
- Operating voltage of 3.3V±5%

Overview
Cactus Technologiesâ Industrial Grade PCI-Chip is a capacity solid-state flash memory product that complies with PCIe Gen3 and NVMe v1.4 standards. This product comes in a castellated PCB module and is designed to be directly soldered onto customer’s system board in embedded applications.

Cactus Technologiesâ Industrial Grade PCIe-Chip product is built with high-quality Kioxia (formerly Toshiba) 3D NAND flash and includes an on-card intelligent controller that manages interface protocols, data storage and retrieval as well as ECC, defect handling and diagnostics, power management, and clock control.

Supported Standards
Cactus Technologiesâ Industrial Grade PCIe-Chip products are fully electrically compatible with the following specifications:

- PCIe Gen3 Specification published by PCI-SIG
- NVMe v1.4 Specification published by NVM Express Organization

Product Specifications

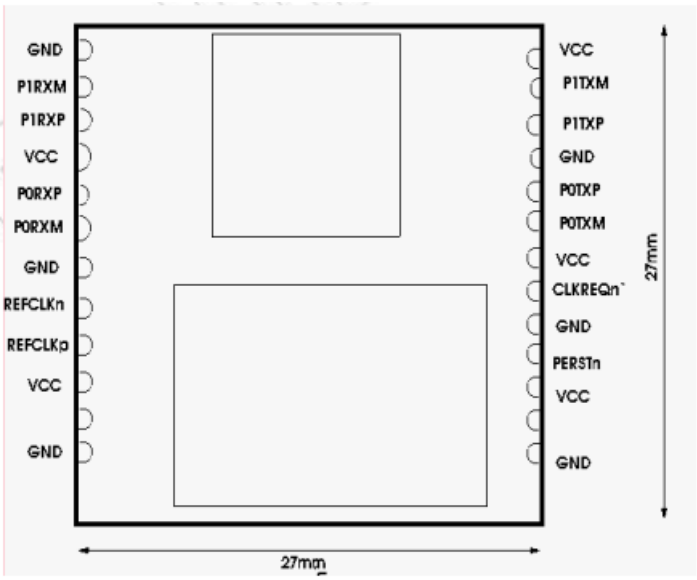
The following are preliminary specifications for Cactus Technologiesâ Industrial Grade PCIe-Chip products.

Interface

PCI Express: Generation 3, 8Gbits/s x 2 lanes; backwards compatible to Generation 1, 2.5Gbits/s; Generation 2, 5.0Gbits/s

Dimensions

Cactus Technologiesâ Industrial Grade PCIe-Chip comes in a castellated PCB module that can be soldered onto customer’s system board. The dimensions of this module is as shown below:



Performance

- **Sequential Write**: Up to 1200MB/s
- **Sequential Read:** Up to 1800MB/s
- **Random 4K Read IOPS:** Up to 90K
- **Random 4K Write IOPS:** Up to 75K

Power Supply Requirements

- **Input Voltage:** 3.3V ±5%
- **Power Consumption:** TBD

Environmental Specifications

- **Operating Temperature:** -40 to +85 C
- **Storage Temperature:** -55 to 100 C
- **Humidity:** 5 to 95% (non-condensing)
- **Shock:** 3,000 G MIL-STD-883G Method 2002.3 condition C
- **Vibration:** 20 G MIL-STD-883G Method 2005.2 condition A
- **Altitude:** sea level to 100,000 feet

Reliability

Endurance: Estimated TBW (based on flash vendor typical NAND flash P/E cycle ratings and large block sequential writes at room temperature only; does not take into account data retention requirement):

Capacity TBW

- **128GB** 384
- **256GB** 768
- **512GB** 1536

www.cactus-tech.com

Documents / Resources

	Cactus Technologies 290PC Series Flash Memory Storage Devices [pdf] User Guide 290PC Series Flash Memory Storage Devices, 290PC Series, Flash Memory Storage Devices, Memory Storage Devices, Storage Devices, Devices

References

- User Manual