

efficiency embedded

Datasheet

USB Evaluation Module

8GB 3D pSLC USB Drive

hyperston[®]

Description

The USB Evaluation Module USB06-U8-RB1Q03-M01 is a fully assembled USB drive based on the Hyperstone U8 flash memory controller. Its hyReliability™ flash management includes superior wear leveling, read disturb management, and power fail management ensuring highest reliability and durability. With a flexible error correction (ECC) and the state-of-the-art hyMap® flash translation layer, the U8 enables reaching the highest data retention and endurance, thus enabling the most reliable and safe storage systems.

Configuration

Component	Product
Interface Type	USB 2.0
NAND Flash Controller	Hyperstone U8
DRAM	None
NAND Flash	Kioxia 3D TLC
Flash Mode	Pseudo-SLC Mode
Capacity	8GB 15649200 LBAs
Transfer Modes	High-Speed, Full-Speed
Firmware Version	U8 firmware 200403 1.00
Revision	C1_rev1
Product Code	USB06-U8-RB1Q03-M01

Operation

The USB Evaluation Module is only intended as an exemplary configuration of a storage system based on the Hyperstone U8 controller. It is to be used only for evaluation of the NAND flash controller.

U8 NAND Flash Memory Controller

Note: Not all of the controller features are enabled or offered by the evaluation module

- Designed to satisfy industrial requirements
- hyReliability™ Flash Management including superior wear leveling, read disturb management, and power fail management ensuring highest reliability and endurance
- hyMap® Flash Translation Layer and mapping offering second to none random write performance, minimal write amplification, and consequently highest endurance for random access heavy usage profiles (e.g. JEDEC Enterprise)
- Continuously updated Flash Memory chip support and long term availability
- Flexible 96-Bit/1K BCH ECC engine supporting all Flash Memory requirements
- Optimized 32-Bit RISC core, instruction set for Flash Memory handling
- High performance on-the-fly AES 128 and 256 encryption engine
- Custom features can be implemented with simple firmware upgrades
- Turnkey solution including firmware, manufacturing kit, test and development hardware, as well as reference schematics

Targeted Applications

- Industrial USB Flash Drive
- eUSB, embedded USB module
- Ultra-durable flash Drive
- Security Flash Drive
- Multi-Chip-Package (MCP)
- Disk-on-Board

Compliance & Performance

- Fully compliant with USB 2.0 specifications
- USB mass storage device class (MSC)
- High-Speed, Full-Speed,
- Secure Erase support
- S.M.A.R.T feature support
- Host transfer rate of up to 480 MBit/s
- Sequential read and write up to 35 MB/s

Contact

If you have any questions regarding the controller evaluation module, feel free to contact us either at us.sales@hyperstone.com or us.techsupport@hyperstone.com.

Handling precautions: This product includes input protection, however, precautions should be taken to prevent device damage from electrostatic discharge. Hyperstone does not assume any responsibility for the use of any circuitry described. No IPR or circuit patent licences are implied. Hyperstone reserves the right at any time without notice to change the said circuitry and this product specification. Hyperstone has a policy of testing every product shipped using calibrated test equipment to ensure compliance with this product specification. Specific testing of all circuit parameters is not necessarily performed.

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