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Datasheet

# CF Evaluation Module

## 16GB 3D pSLC CF Card

hyperstone®

## Description

The CF Evaluation Module CF02-F9-ILAT06-M01 is a fully assembled CompactFlash drive based on the Hyperstone F9 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 F9 enables reaching the highest data retention and endurance, thus enabling the most reliable and safe storage systems.

## Configuration

| Component | Product |
|---|---|
| **Interface Type** | CompactFlash 4.0 and 5.0 compliant, compatible to 6.1 |
| **NAND Flash Controller** | Hyperstone F9 |
| **DRAM** | None |
| **NAND Flash** | Kioxia 3D TLC |
| **Flash Mode** | Pseudo-SLC Mode |
| **Capacity** | 16GB, 31277232 LBAs |
| **Transfer Modes** | Up to PIO6, up to MDMA4, up to UDMA6 |
| **Firmware Version** | F9 firmware 181019 1.02 |
| **Revision** | C1_rev1 |
| **Product Code** | CF02-F9-ILAT06-M01 |

## Operation

The CF Evaluation Module is only intended as an exemplary configuration of a storage system based on the Hyperstone F9 controller. It is to be used only for evaluation of the NAND flash controller.

# F9 NAND Flash Memory Controller

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

- Designed to fully satisfy industrial reliability, endurance, and feature requirements
- hyReliability™ Flash Management including superior wear leveling, read disturb management, and power fail management ensuring highest reliability and durability
- hyMap® Flash Translation Layer (FTL) offering second to none random write performance, minimal write amplification,
  and consequently highest endurance for random access heavy usage profiles
- Flexible up to 96-Bit/1K BCH ECC engine supporting all Flash Memory requirements
- Optimized 32-Bit RISC core, extended instruction set for Flash Memory handling
- Continuously updated Flash Memory chip support and long term availability
- 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
- 12 GPIOs for customer specific applications supporting SPI, I²C and ISO7816 or additional flash CE
- Application Programming Interface (API) and Software Development Kit (SDK) to develop own Custom Firmware Extensions (CFE)

## Targeted Applications

- High reliability & industrial Compact Flash™ Cards (CFC)
- IDE Disk-on-Module (DoM)
- Multi-Chip-Package (MCP)
- PCMCIA or ATA PC cards Embedded Flash – Disk-on-Board

## Compliance & Performance

- Fully compliant with CompactFlash™ 4.1, 5.0 and compatible to 6.1 specifications
- Sequential read up to 120 MB/s Sequential write up to 120 MB/s
- Secure Erase and Sanitize support
- S.M.A.R.T. and health monitoring
- -40 to +85 °C industrial grade version