

固态硬盘芯片 PCIe控制器(iRAID™)



PCIe iRAID™ S86x 是同时支持SATA III和PCIe 两种接口的固态硬盘控制器芯片。

S86x芯片可以管理多路FLASH存储器(最大5路), 采用华澜微专利保护的多核架构, S861可以提供很多特色功能(优点): 多分区, 隐秘区, 加密区, 通道间的坏块隔离, 不同型号甚至来自不同制造厂的FLASH混合使用, 等等。

S86x非常适合于数据安全方面的应用。它不仅仅集成了国际上常用加密算法的硬件模块, 例如AES, ECC, SHA, RSA, DES/3DES等等, 而且集成了中国商密算法SM2/SM3/SM4。因为这些算法全部采用硬件电路实现, 客户可以根据需要通过固件来选择激活某个算法, 而且系统性能不受影响。

S86x具有DDR接口, 高端客户可以外接DRAM缓存满足系统的高性能要求。S86x还有专设的片上电压检测电路, 用来保护因上下电对固态硬盘可能造成的损害, 对电压稳定度不高的工业或者移动系统, 提供了高可靠性保障。

主要特征 Key Features

- **SATA Interface Gen3**
 - Support SATA1.5G /SATA3.0G /SATA6.0G
- **PCIe Interface Gen2x2**
 - Compliant with PCI Express Base Spec. Revision 2.1
 - PCIe I/O interface with 2.5Gbps/5.0Gbps auto-negotiation
 - Supports AHCI, IDE,NVM
- **NAND FLASH Interface**
 - Compliant with Toggle and ONFI3.0
 - Support SLC/MLC/TLC flash
 - Integrated DMA & Error Correction engines(Up to 72 bits)
 - Built-in flash management algorithm, such as intelligent Wear-Leveling, Homogenous technology, etc
- **Multiple Channel Controller Units (CCUs)**
 - Each CCU has its own RISC CPU embedded
 - Up to 5 CCUs. Configurable channel number: 1,2,4,5
 - Multi-partitions, Secured partitions
- **Built-in Encryption/Decryption Engines**
 - AES-128/256, GOST,DES/3DES
 - ECC, SHA1/SHA2, RSA-1024/2048
 - China Commercial Algorithms (SM2, SM3, SM4)
 - True Random Number Generator (TRNG)
- **DDR Interface for External DRAM Buffer (Optional)**
- **Peripheral Interfaces**
 - ISO-7816 Interface (Smart Card Interface).SPI Interface
 - JTAG Interface, UART Interface. PWM Driver
- **Power Management**
- **On-Chip Switching Regulator: High conversion efficiency, Maximum output current up to 350mA**
- **On-Chip Voltage Detector: High Sensitivity to protect SSD from damage of power-cycling**
- **Package: BGA302**
- **Operating Temperature**
 - Commercial: 0°C -- +70°C
 - Industrial: -40°C -- +85°C

