固态硬盘芯片

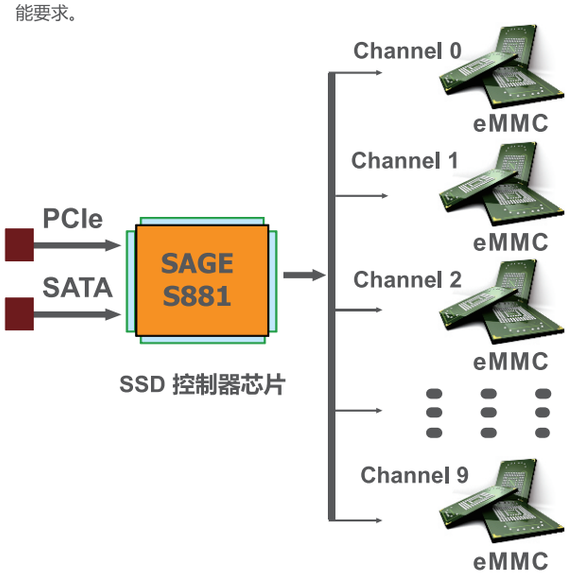
PCIe控制器(eRAID™)

PCIe eRAID™ 控制器S88x是同时支持SATA III和PCIe 两种接口的固态硬盘控制器芯片。

它开拓了采用标准存储模块如SD/MMC/eMMC等来替代FLASH存储器颗粒生产固态硬盘(SSD)的模块化道路。S88x就好像集合器把多个存储卡模块集中起来并连接到PCIe接口上去（速度5Gb/s）。

S88x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等等，而且也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。

S88x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。



主要特征
Key Features

- **SATA Interface Gen3**
  - Supports AHCI
  - Support SATA1.5G /SATA3.0G /SATA6.0G
- **PCIe Interface**
  - Compliant with PCI Express Base Spec. Revision 2.1
  - PCIe II 2 Lane interface with 5.0Gbps auto-negotiation
  - Supports AHCI,IDE,NVM
- **Memory Card Interface**
  - Compliant with eMMC 5.1 eMMC5.0 MMC 4.5, SD3.0
- **Multiple Channel Controller Units (CCUs)**
  - Each CCU has its own RISC CPU embedded
  - Up to 5 CCUs. Max.10 channels
  - Configurable channel number: 1,2,4,5,8,10
  - 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)**
- **Rich 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℃ -- +70℃
  - Industrial: -40℃ -- +85℃