

IG5600 Product Brief

Accelerating Next-Gen Applications



InnoGrit® IG5600 is an industry-leading **one-port SATA III** SSD controller and supports capacity up to 8TB.

Stable and Outstanding Performance

- Speed up Sequential Read/Write to 560/520 MB/s, and Random Read/Write to 98K/70K IOPs
- Support DDR3L, DDR4, LPDDR3 and LPDDR4, up to 1600 MT/s DDR interface rate
- Support SLC/MLC/TLC/QLC NAND, with ONFI 4.1 or Toggle 2.0/3.0/4.0 and maximum data rate of 1200 MT/s

Outstanding Data Security and Integrity Protection

- Support multiple data encryption and protection schemes including AES, SHA, RSA, TCG Opal, SM2/3/4, ECC, CRC, RAID, General-Purpose Cipher Engine, and End-to-End data protection
- Leverage proprietary 4K LDPC ECC technology, to improve reliability, endurance and performance

Please visit the website for more information:

<http://www.innogritcorp.com/>

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Other Advanced Functions

- Smart Cache
- Thermal throttling protection
- Two temperature grade options
- Intelligent PMU with support for multi-level power management
- Various peripheral interfaces: SPI, SMBus/I2C, UART, JTAG and GPIO

Key Features and Specifications

Full Part Number	IG5600BAA	IG5600BAAI
Ball Number	575	
Package	TFBGA	
Dimensions	15mm x 15mm	
NAND CH x CE	8CH x 8CE	
DDR Data Bus Bit Width	(32+8)-bit or 32-bit	
Typical Application	Data Centers and Enterprise Applications	
Max Read/Write Performance	Sequential Read: 560 MB/s	
	Sequential Write: 520 MB/s	
	Random Read: 98K IOPs	
	Random Write: 70K IOPs	
Power Consumption	Peak: ≤ 2W	
Operating Temperature	Commercial grade, 32°F (0°C) ~ 158°F (70°C)	Industrial grade, -40°F (-40°C) ~ 185°F (85°C)
Reliability	UBER ≤ 10 ⁻¹⁷	
	MTBF: 3 million hours	
CPU	Four ARM Cortex R5 CPU cores	
Interface	SATA III interface, one port NAND flash interface DDR interface 1 x UART, 1 x SPI Master, 1 x JTAG 2 x SMBus/I2C Master/Slave 15 GPIOs + 4 SPI pins which can be multiplexed with GPIO function	
Data Security	TCG Opal 2.01 AES-128/256 SHA3-256/384/512, SHA256 RSA1024/2048/3072/4096 SM2/3/4 published by the State Cryptography Administration of China General-Purpose Cipher Engine, support AES/SM4 with ECB/CBC/XTS mode	
Data Integrity Protection	Programmable RAID operation End-to-End data protection CRC protection Advanced LDPC ECC engine, support ECC protection for TCM, Cache, SRAM and DDR	