



DATASHEET

Solid State Drive

K765-128GB

Rev:1.0

2022-04-19

Note:

Company will not give any notice for change of products specifications. This product manual is only for reference. Please contact with Kston Memory Technologies Co., Ltd. for more detail technical parameters and information.

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1. Product introduction

1.1 Summary

K765-128GB is a high performance and high reliability storage device which consists nonvolatile NAND Flash memories and semiconductor components, PCIe Gen3 standard, supports the NVME1.3 protocol. To solve the performance bottleneck in computer system using mechanical hard disk brought by no mechanical parts, make the work reduce the failure rate in vibration and shock and other special circumstances, is a high reliability the storage device.

1.2 Product model list

Model	Controller	Flash	Capacity	Sequential Read	Sequential Write	PCB Color
K765-128GB	Realtek RTS5765DL	Samsung KLUDG8UHDB (SSV5)	128GB	1500-2000 MB/S	750-800MB/S	Blue

1.3 Specifications

- 1.3.1 Interface protocol: NVME 1.3;
- 1.3.2 Input voltage: DC 3.3V (±5%);
- 1.3.3 Operating temperature: 0°C ~ +70°C;

1.3.4 Storage temperature: -20°C ~ +75°C;

1.3.5 physical dimension: m.2(80mm length *22.0mm wide * 3.5mm height
error±0.5mm);

1.3.6 Write endurance: Write 100GB /Day, theoretically can use 8 years;

1.3.7 Read life: unlimited;

1.3.8 MTBF: 1,000,000 hours;

1.3.9 Support Capacity: 128GB;

1.4 Features

1.4.1 PCIe GEN 3 (8Gb/s) x 4 Lane interface.

1.4.2 Support wear leveling.

1.4.3 Support Garbage collection.

1.4.4 Support Over-provisioning.

1.4.5 Support power management and intelligent management technology.

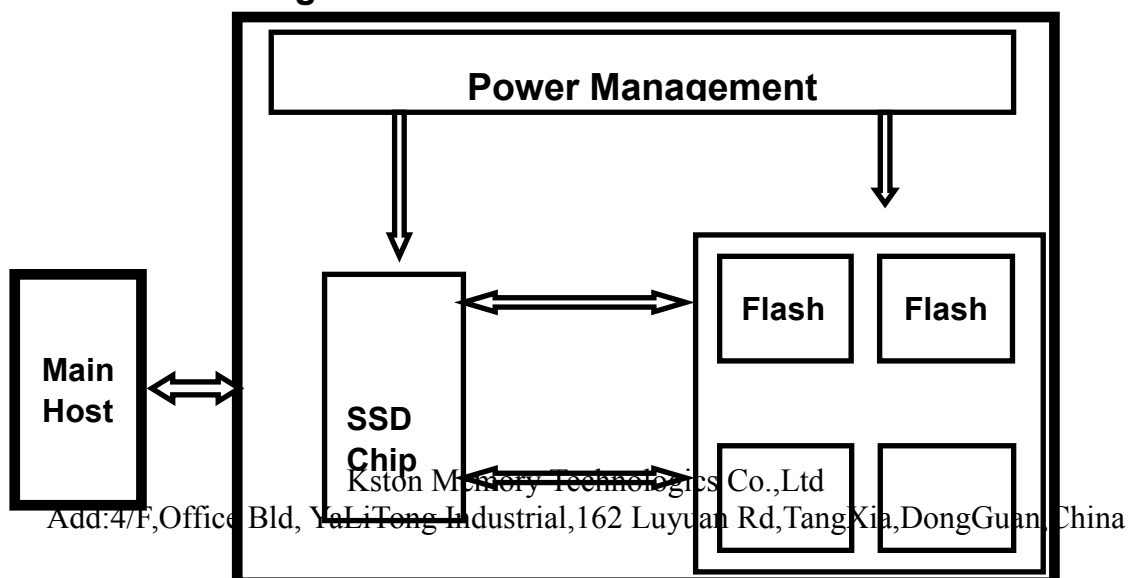
1.4.6 Support Native Command Queuing (NCQ) ;

1.4.7 Support TRIM (Disable Delete Notify) command;

1.4.8 Support Error Checking And Correcting(ECC).

1.4.9 Support HMB mode

2. Block diagram



3.

4. Measurements

L80.0mm * W22.0mm * H3.5mm, Error±0.5m (e.g. Figure 1)

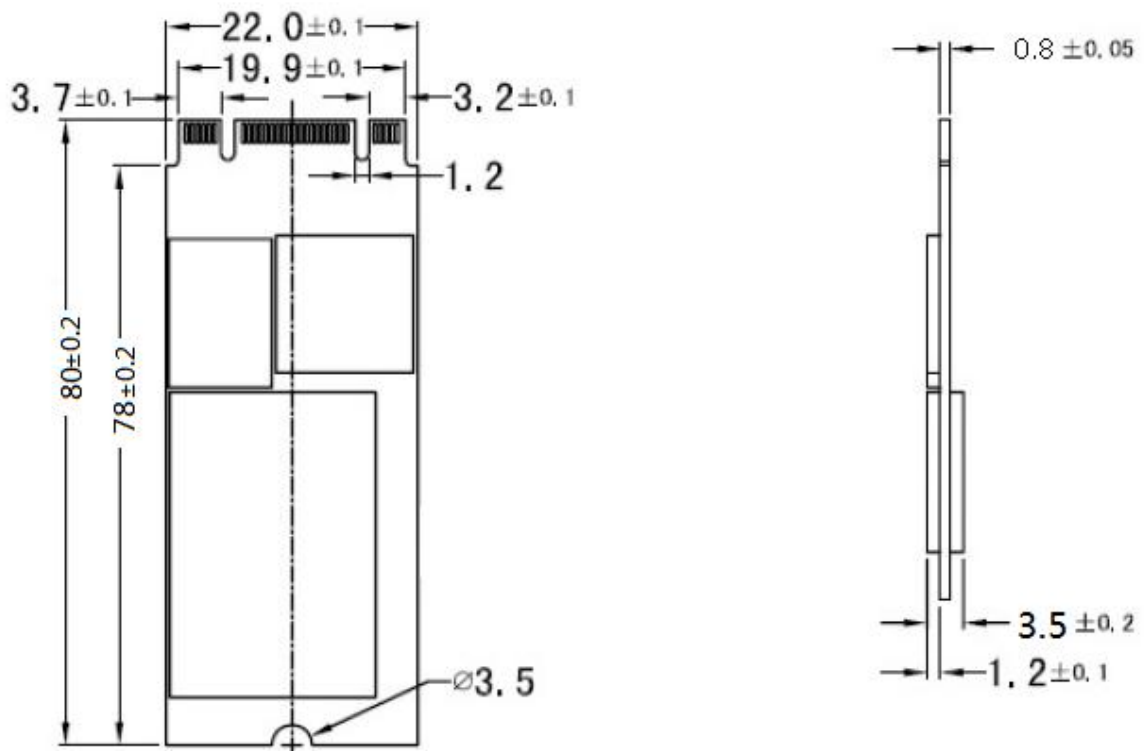


Figure 1

5. Interface description/Pin description



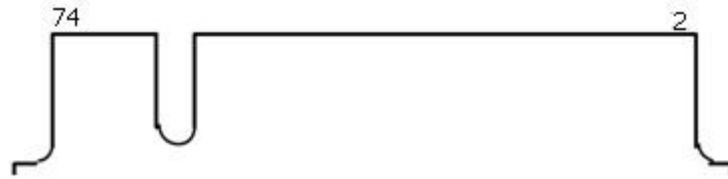


Figure 2

(e.g. Figure 2)

PIN	PIN Definition	PIN	PIN Definition
1	GND	2	DC 3.3V
3	GND	4	DC 3.3V
5	PETn3	6	/
7	PETp3	8	/
9	GND	10	DAS
11	PERn3	12	DC 3.3V
13	PERp3	14	DC 3.3V
15	GND	16	DC 3.3V
17	PETn2	18	DC 3.3V
19	PETp2	20	/
21	GND	22	/
23	PERn2	24	/
25	PERp2	26	/
27	GND	28	/
29	PETn1	30	/
31	PETp1	32	/
33	GND	34	/
35	PERn1	36	/
37	PERp1	38	/
39	GND	40	/
41	PETn0	42	/
43	PETp0	44	/
45	GND	46	/
47	PERn0	48	/
49	PERp0	50	PERSTn
51	GND	52	CLKREQn
53	REFCLKn	54	/



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55	REFCKLp	56	UART
57	GND	58	UART
Key M			
67	/	68	/
69	/	70	DC 3.3V
71	GND	72	DC 3.3V
73	GND	74	DC 3.3V
75	GND	76	

5. Performance

5.1 Read & Write Speed Test

Model: K765-128GB

Motherboard: GIGABYTE GA-Z270X-Gaming K5

CPU: Intel® Core(TM) i3-6100 3.70GHz

Memory: Kingston 4GB

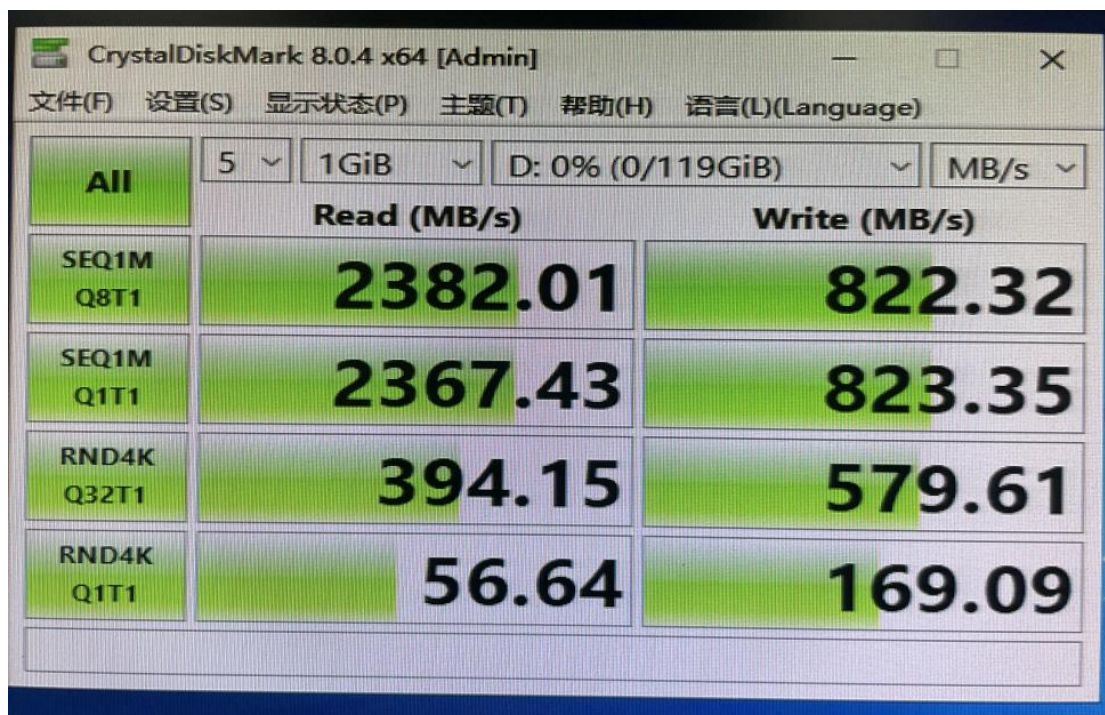
OS: WIN10 Professional

BIOS Set: AHCI model

Test Software: CrystalDiskMark8.0.4

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CrystalDiskMark 8.0.4 x64 [Admin]
文件(F) 设置(S) 显示状态(P) 主题(T) 帮助(H) 语言(L)(Language)

All 5 4GiB D: 0% (0/119GiB) MB/s

	Read (MB/s)	Write (MB/s)
SEQ1M Q8T1	2371.21	822.31
SEQ1M Q1T1	2346.42	823.25
RND4K Q32T1	394.48	563.21
RND4K Q1T1	56.57	167.85

CrystalDiskMark 8.0.4 x64 [Admin]
文件(F) 设置(S) 显示状态(P) 主题(T) 帮助(H) 语言(L)(Language)

All 5 16GiB D: 0% (0/119GiB) MB/s

	Read (MB/s)	Write (MB/s)
SEQ1M Q8T1	2381.35	822.50
SEQ1M Q1T1	2222.15	810.91
RND4K Q32T1	392.57	334.62
RND4K Q1T1	53.43	161.70

5.2 Data Throughput Test

Model: K765-128GB

Motherboard: GIGABYTE GA-Z270X-Gaming K5

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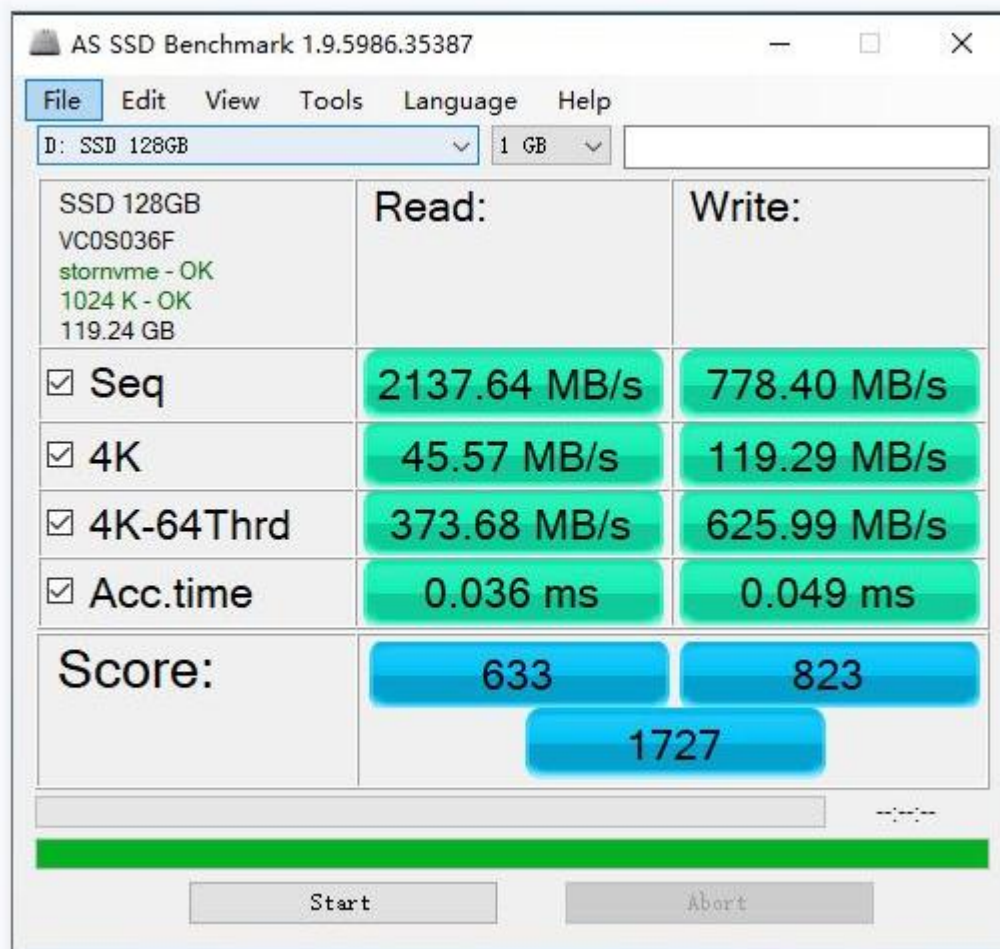
CPU: Intel® Core(TM) i3-6100 3.70GHz

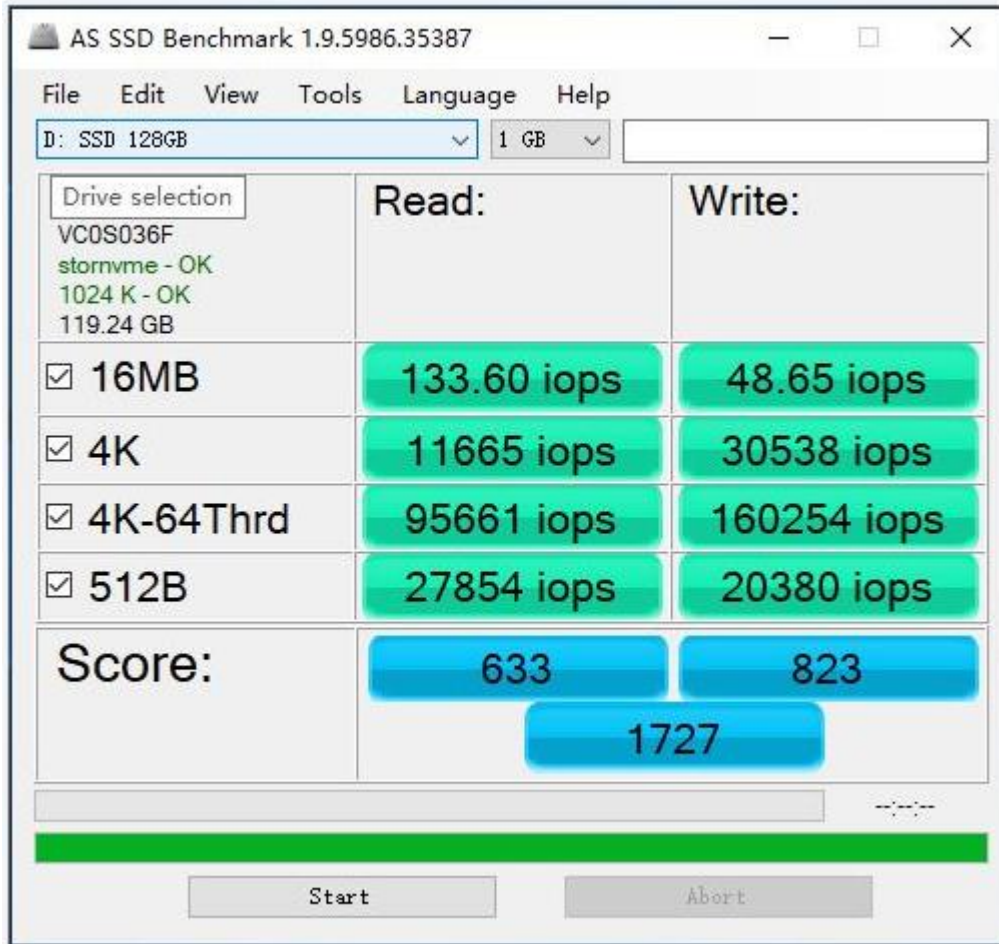
Memory: Kingston 4GB

OS: WIN10 Professional

BIOS Set: AHCI model

Test Software: AS SSD Benchmark





5.3 Access time

Model: K765-128GB

Motherboard: GIGABYTE GA-Z270X-Gaming K5

CPU: Intel® Core(TM) i3-6100 3.70GHz

Memory: Kingston 4GB

OS: WIN10 Professional

BIOS Set: AHCI model

Test Software: HD Tune Pro 3.50

Random Access time: 0.01ms



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6. Power consumption

Input voltage: DC 3.3V ($\pm 5\%$)

Model test: K765-128GB

Test Project		Power Consumption	Unit
Idle		0.67	W
4K	Sequential Read	1.58	W
	Sequential Write	1.61	W
	Random Read	1.63	W
	Random Write	1.69	W
512K	Sequential Read	1.43	W
	Sequential Write	1.38	W
	Random Read	1.49	W
	Random Write	1.65	W