NTCKF-F6M.2NVME Solid State Drive Datasheet

（Based on NAND Flash）

Version: 1.0

April , 2019

NOTE: INFORMATION IN THIS PRODUCT SPECIFICATION IS SUBJECT TO CHANGE AT ANYTIME WITHOUT NOTICE.
ALL PRODUCT SPECIFICATIONS ARE PROVIDED FOR REFERENCE ONLY.

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I. Introduction

1 Overview

NTC Nvme M.2 SSD (Solid State Drive) is a high performance and high reliability storage device based on NAND Flash technology that designed to solve the bottleneck of computing system by traditional hard disk drives. NGFF SSD can be plugged into a standard NGFF connector commonly found in desktops.

NTC M.2 SSD purely consists of semiconductor devices and NAND flash memories, without any moving parts. It gives rugged features against shock and vibration, used in extreme environment such as industrial PC to increase MTBF. Furthermore, Our SSD has highly advanced flash memory management algorithm to guarantee higher performance and data integrity.

2 Part Type Introduction

This chapter is about the specifications of the M.2 SSD with PCIE M key interface, it is compatible with PCIE NVMe protocol.

Product Type	Capacity	Flash	interface
NTCKF-F6M.2NVME-128	128GB	3D	PCIE3.1 X4
NTCKF-F6M.2NVME-256	256GB	3D	PCIE3.1 X4
NTCKF-F6M.2NVME-512	512GB	3D	PCIE3.1 X4
NTCKF-F6M.2NVME-1TB	1TB	3D	PCIE3.1 X4

Table 1 Capacity Specifications

① the letter 'x' means some information of the products, please visit the chapter 8 for more information.

Capacity	Available Capacity	Flash Type	Read（MB/s）	Write(MB/s)
128GB	119GB	TLC	1700	600
256GB	238GB	TLC	1700	800
512GB	476GB	TLC	1880	1500
1TB	1TB	TLC	1880	1500

Note: The performance test by ATTO Benchmark V2.47

II. Outline

Based spec	Interface	M.2 M key
	Dimension	22*80*3.73 mm
	Weight①	<40g
	Capacity	128GB~1TB
	Flash type	TLC NAND Flash
Read/Write Performance②	Sequential Read	Up to 1880MB/s
	Sequential Write	Up to 1500MB/s
	4KB Random Read IOPS	40K
	4KB Random Write IOPS	46K
Power Consumption	Power Supply	3.3V±5%
	Standby	0.3W
	4KB Random Write	5W
Reliability	Write endurance: 8 years @ 100G write/day(128G-1TB)	
	Read endurance: unlimited	
	MTBF: >2,000,000 hours	
	Data retention: >20years @ 25℃	
	Data destroy do not support	
	Sudden power-off recovery support	
	S.M.A.R.T,NCQ,Trim and dynamic power management support	
	Static and dynamic wear-leveling	
	Bad block management algorithm	
	ECC: LDPC ECC	
Environment	Storage temperature: -40~85 ℃	
	Operation temperature: Optional	
	Humidity: 5%~95%	
	Vibration: 20G Peak, 10 ~ 2000Hz, (15mins/ Axis) x3 Axis	
	Shock: 1500G (@0.5ms half sine wave)	
Warranty	**2** years	

Table 2 outline of the driver

①, ②: The Read/Write performance and weight vary with different capacity of products.

The testing environment is below:

OS: Windows 7 Ultimate

CPU: Intel (R) Core(TM) i3 CPU

Memory: 8GB Motherboard:X470

Test program: ATTOBenchMark V4.0 (sequential R/W speed)

IOmeter2008 (IOPS)

HD tune V4.6.1 (sustainably R/W speed, access time)

Test Drive: NTCKF-F6M.2NVME-128 (TLC)

III. Block Diagram

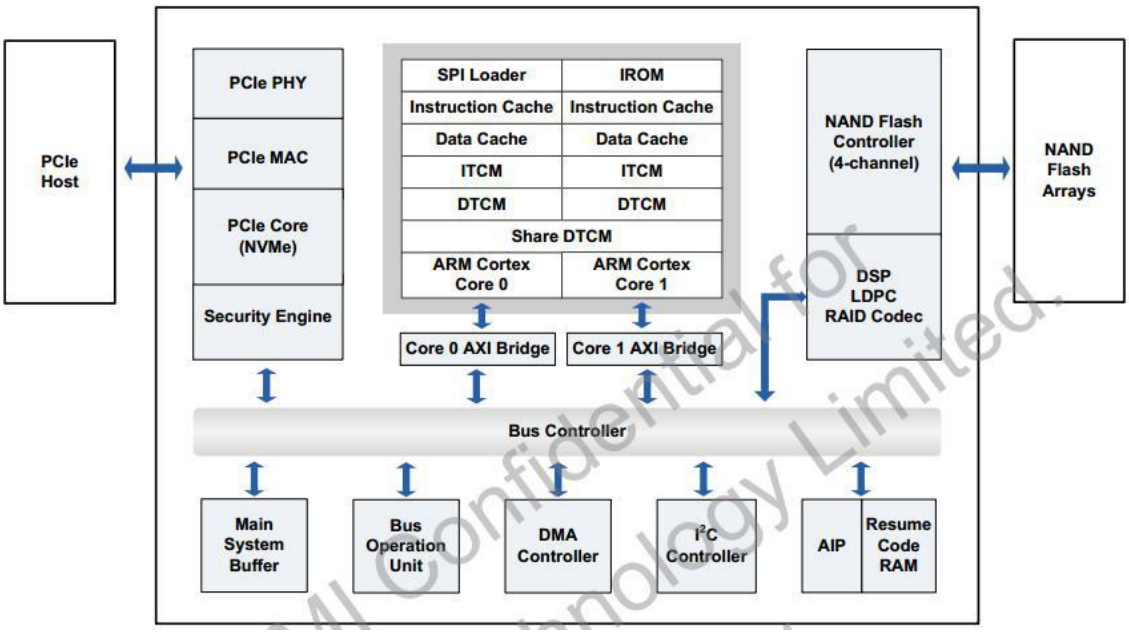


Figure 1 Block Diagram

IV. Product Specifications

4.1 Physical Dimensions

Parameter	Value
Length	80±0.2 mm
width	22±0.1 mm
height	3.20±0.2 mm

Table 3 Physical dimensions of the driver

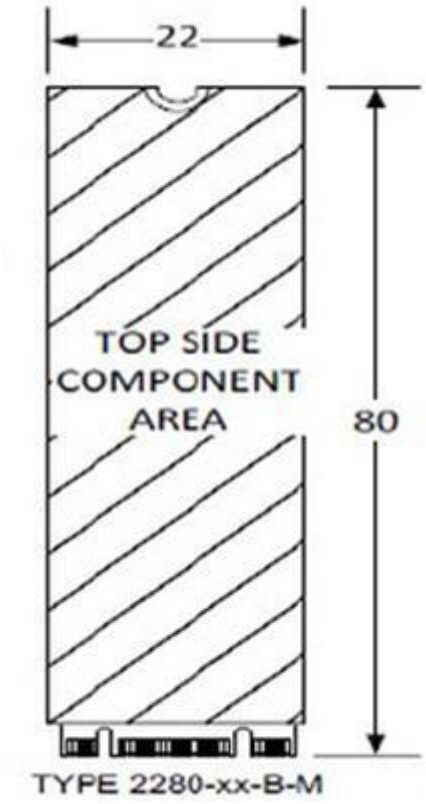


Figure 2 Physical dimensions

4.2 Interface Specification

4.2.1 Pin Assignment

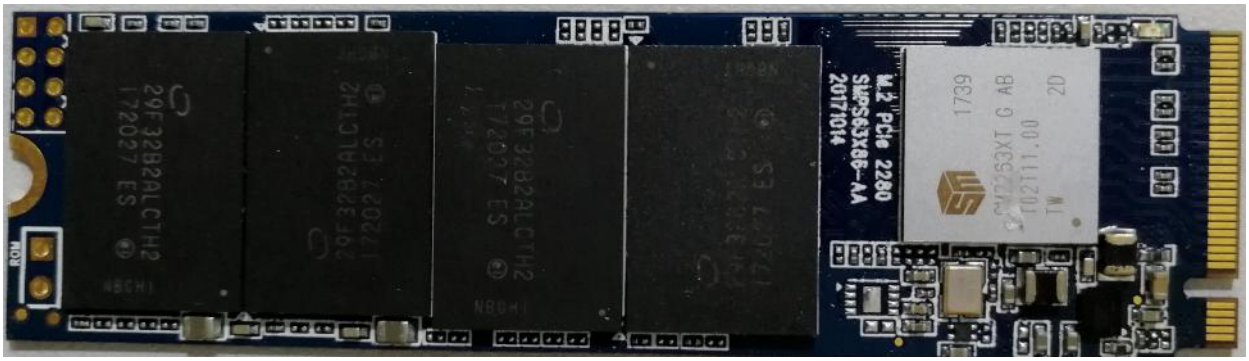


Table 4 pin assignment

Pin#	Assignment	Pin#	Assignment
1	GND	2	VCC 3.3V
3	GND	4	VCC 3.3V
5	P3 TXN	6	N/A
7	P3 TXP	8	N/A
9	GND	10	LED1
11	P3 RXN	12	VCC 3.3V
13	P3 RXP	14	VCC 3.3V
15	GND	16	VCC 3.3V
17	P2 TXN	18	VCC 3.3V
19	P2 TXP	20	N/A
21	GND	22	N/A
23	P2 RXN	24	N/A
25	P2 RXP	26	N/A
27	GND	28	P1_3_R
29	P1 TXN	30	N/A
31	P1 TXP	32	N/A
33	GND	34	N/A
35	P1 RXN	36	N/A
37	P1 RXP	38	N/A
39	GND	40	I2C_SCL
41	P0 TXN	42	I2C_SDA
43	P0 TXP	44	M2_ALERT
45	GND	46	N/A
47	P0 RXN	48	N/A
49	P0 RXP	50	PERST
51	GND	52	CLKREQ#
53	REFCLKN	54	WAKE#
55	REFCLKP	56	N/A
57	GND	58	N/A
59	Notch	60	Notch
61	Notch	62	Notch
63	Notch	64	Notch
65	Notch	66	Notch
67	N/A	68	N/A
69	PEDET	70	VCC 3.3V
71	GND	72	VCC 3.3V
73	GND	74	VCC 3.3V
75	GND		

VII. order number

Model	Capacity	PN
NTCKF-F6M.2VNME	128GB	NTCKF-F6M.2VNME-128
NTCKF-F6M.2VNME	256GB	NTCKF-F6M.2VNME-256
NTCKF-F6M.2VNME	512GB	NTCKF-F6M.2VNME-512
NTCKF-F6M.2VNME	1TB	NTCKF-F6M.2VNME-1TB

Ⅷ. Related documentation

For more information, visit www.ntccomputadores.com.br

Attachment

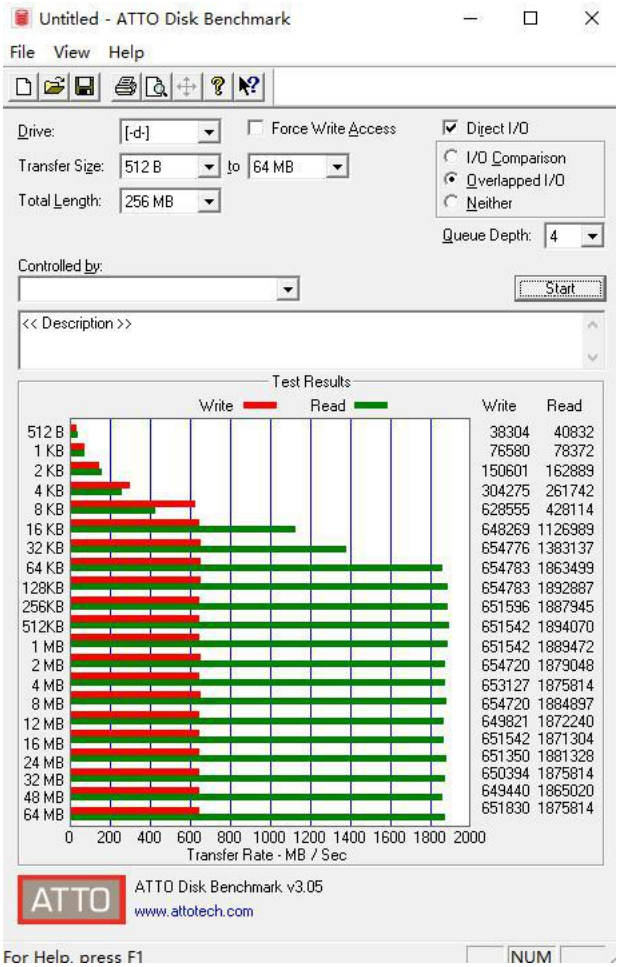
PERFORMANCE TEST

Testing Platform Information

OS: Windows 7 Ultimate
CPU: Intel (R) Core(TM) i3 CPU
Memory: 8GB
Motherboard: X470
SSD: NTCKF-F6M.2NVME-(128-1TB)

Performance:

ATTO:



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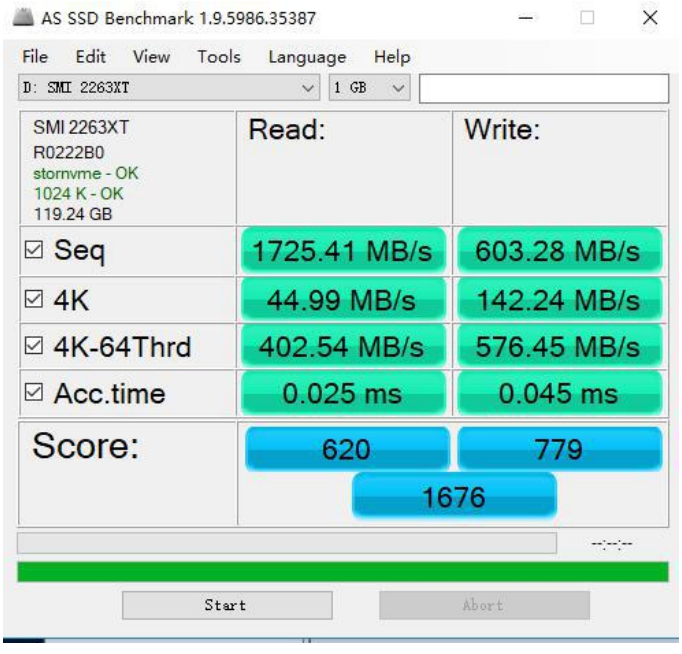

Performance:

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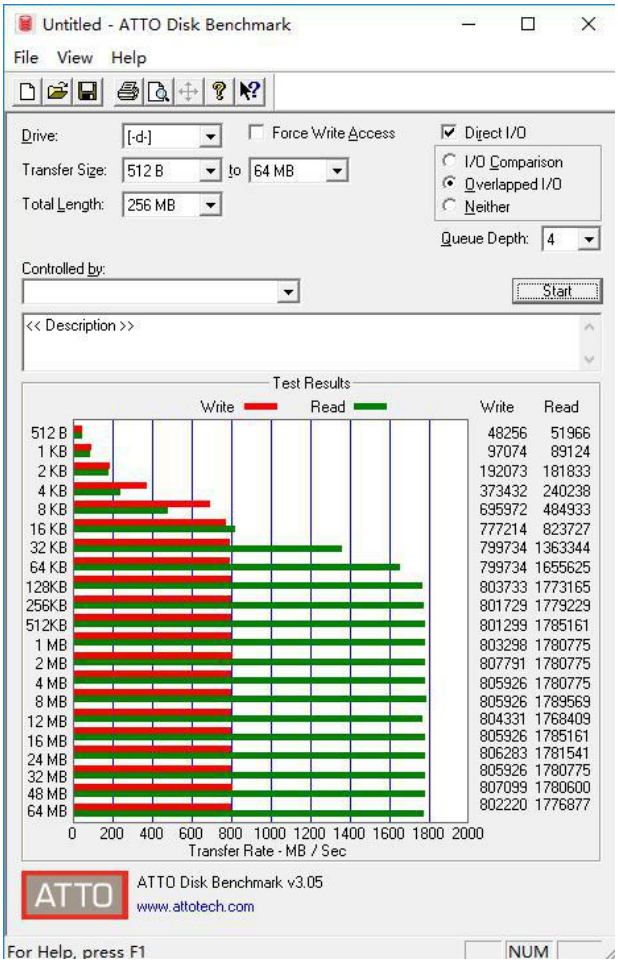

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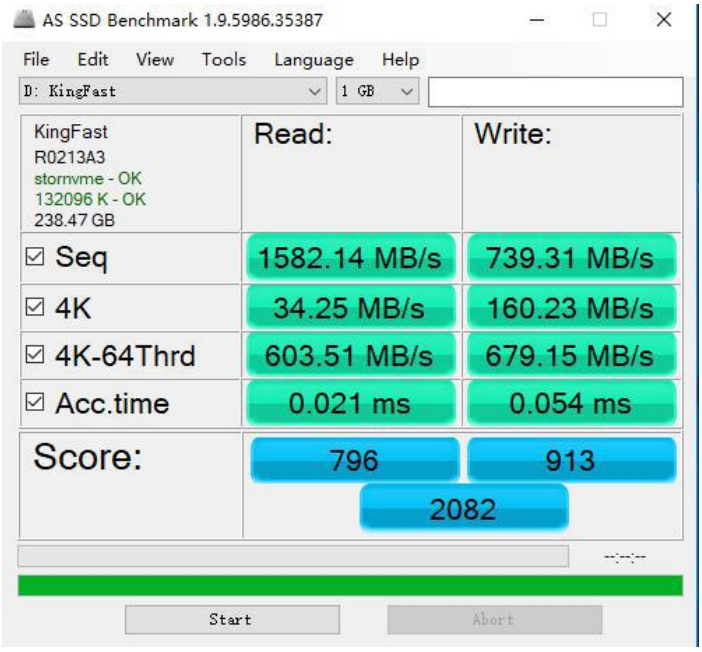

Performance:

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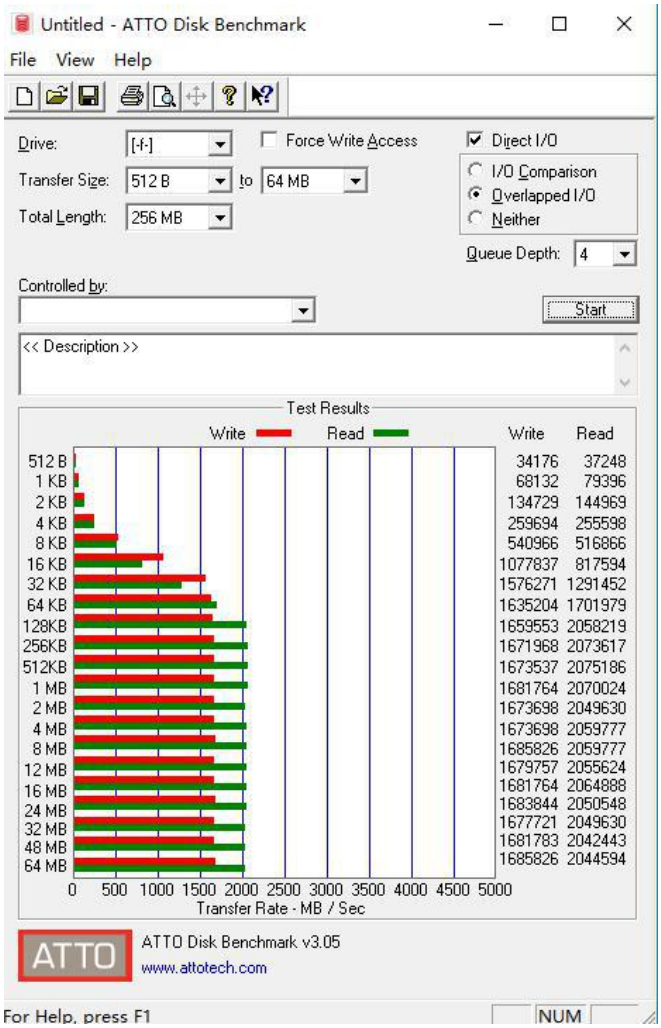

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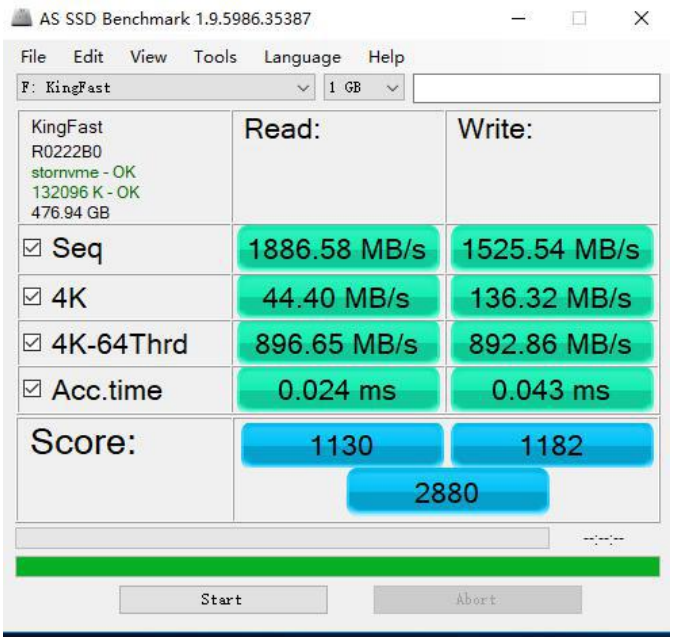

Performance:

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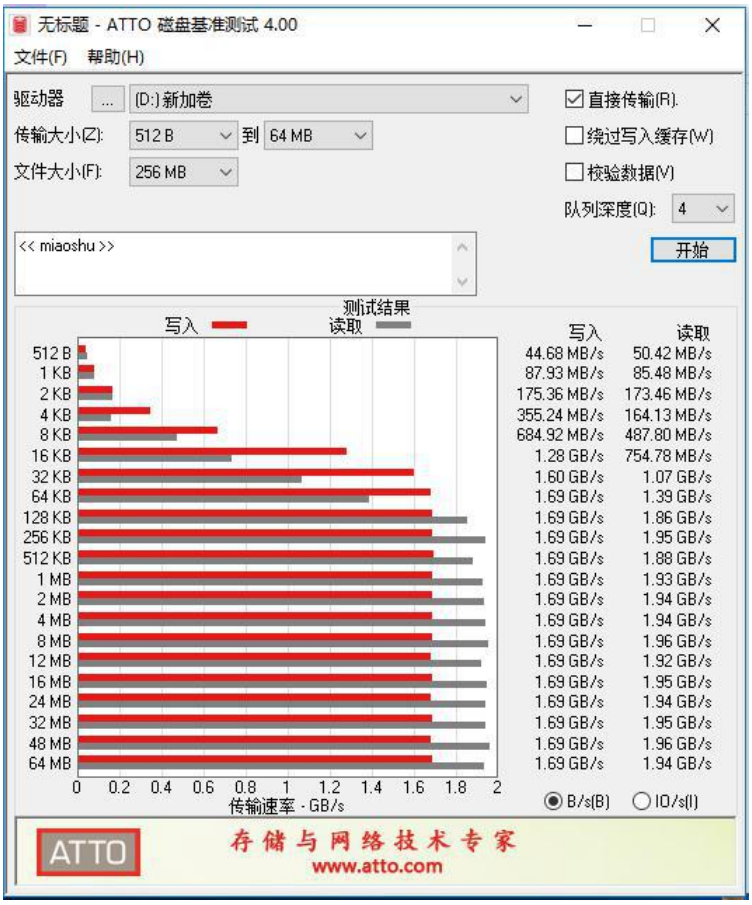

AS SS benchmark: