

ShenZhen Renice Technology Co., Ltd

X17 2.5" PATA IDE SSD

Datasheet

V1.0

2025-10-21



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1. INTRODUCTION

1.1 Product Overview

Renice X17 Series 2.5-inch PATA SSD designed with standard 44-pin IDE interface, high-capacity support up to 1TB, well-suited for industrial environments' operation from -40° C to +85° C.

Featuring consistent transfer rates, maintaining over 85% of its performance throughout its entire lifespan, regardless of platform or operating conditions, with no significant performance drops.

1.2 Feature

- Form Factor: 2.5-inch (100.0mm x 70.0mm x 9.5mm) L×W×H
- Interface: 44 PIN PATA IDE
 - Support ATA/ATAPI PIO Mode 0, 1, 2, 3, 4
 - Support ATA/ATAPI Multi-Word DMA Mode 0, 1, 2
 - Support ATA/ATAPI Ultra DMA Mode 0, 1, 2, 3, 4, 5, 6, 7
- Performance: Max Sequential Read/Write: 100/70MB/s (@128GB)
- Density: 64GB~1TB
- NAND Configuration: pSLC (30,000~50,000 P/E Cycles)
- Industrial operating temperature range from -40°C to +85°C
- Input voltage: 5.0V (±5%)
- Flash management algorithm: static and dynamic wear-leveling, bad block management algorithm.
- Supports dynamic power management and SMART (Self-Monitoring, Analysis and Reporting Technology).
- Internal detectors for power fail protection and Over voltage and over current protection hardware design.
- Data retention: JESD47 compliant
- MTBF: 3,000,000 Hours

2. Product Specifications

2.1 Physical Specifications

Form factor	2.5 inch	
Dimensions(mm)	Length	100.00±0.40
	Width	70.00±0.20
	Height	9.50±0.15
Weight	<70g	
Connector	44pin PATA connector	

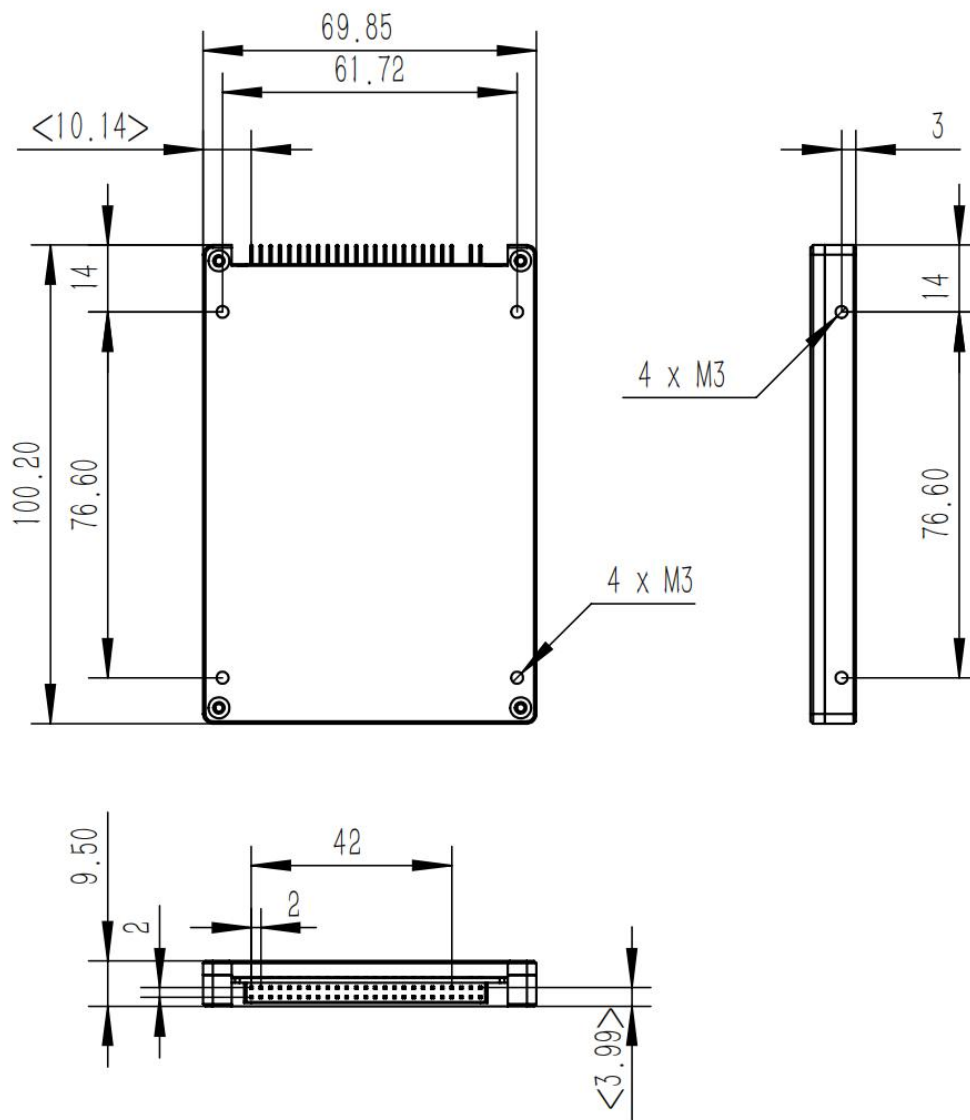


Figure 1: Mechanical Diagram

2.2 Environment

Item	Features
Operating Temperature	-40°C ~ +85°C
Storage Temperature	-50°C ~ +95°C
Humidity	5-95% (Operating)
Vibration	16.4 G (10Hz-2000Hz)
Shock	1,500G (0.5ms duration, half-sine wave)

2.3 Power Consumption

Item	Features
Input voltage	5V (±5%)
Active Power (Read/Write)	1W/1.2W
Idle Mode Power (Average)	0.9W
Over-Voltage/Current Protection	Support

2.4 Interface and Transmission

Item	Features
Interface protocol	Compliant with ATA7(True ID)
Max. Sequential Read/Write	100/70 MB/s (@128GB pSLC)

3. Interface Description

3.1 Pin Assignment

43 41 39 37 35 33 31 29 27 25 23 21 19 17 15 13 11 09 07 05 03 01	49 47
44 42 40 38 36 34 32 30 28 26 24 22 18 16 14 12 10 08 06 04 02	50 48

3.2 Pin Description

Pin No.	Pin Name	Pin No.	Pin Name	Pin No.	Pin Name	Pin No.	Pin Name
1	RESET	14	D13	27	5.0V	40	GND
2	GND	15	D1	28	CSEL	41	VCC_1
3	D7	16	D14	29	DMACK#	42	VCC

4	D8	17	D0	30	GND	43	GND
5	D6	18	D15	31	IREQ#	44	TYPE#
6	D9	19	GND	32	IOIS16#	45	NC
7	D5	20	KEY	33	A1	46	NC
8	D10	21	DMARQ	34	DIG	47	CSEL#
9	D4	22	GND	35	A0	48	GND
10	D11	23	IOWR#	36	A2	49	CSEL#
11	D3	24	GND	37	CE#1	50	CSEL
12	D12	25	IORD#	38	CE#2		
13	D2	26	GND	39	SPKR#		

3.3 Master/ Slave settings instructions

Master disk: No Connect

Slave disk: Connect 47 and 48

CableSelect: Connect 49 and 50

4. ATA Identify Device Information

4.1 ATA command

No.	Command name	Code	FR	SC	SN	CY	DR	HD	LBA
1	Check power mode	E5h, 98h	—	—	—	—	Y	—	—
2	Data Set Management	06h	—	Y	—	—	Y	—	—
3	Download Microcode	92h	Y	Y	Y	—	Y	—	—
4	Download Microcode DMA	93h	Y	Y	Y	—	Y	—	—
5	Erase sector(s)	C0h	—	Y	Y	Y	Y	Y	Y
6	Execute drive diagnostic	90h	—	—	—	—	—	—	—
7	Flush Cache	E7h	—	—	—	—	Y	—	—
8	Flush Cache Ext	EAh	—	—	—	—	Y	—	—
9	Format track	50h	—	Y	—	Y	Y	Y	Y
10	Identify Device	ECh	—	—	—	—	Y	—	—
11	Idle	E3h, 97h	—	Y	—	—	Y	—	—
12	Idle immediate	E1h, 95h	—	—	—	—	Y	—	—
13	Initialize drive parameters	91h	—	Y	—	—	Y	Y	—
14	Media Lock	DEh	—	—	—	—	Y	—	—
15	Media Unlock	DFh	—	—	—	—	Y	—	—
16	NOP	00h	—	—	—	—	Y	—	—
17	Read buffer	E4h	—	—	—	—	Y	—	—

No.	Command name	Code	FR	SC	SN	CY	DR	HD	LBA
18	Read DMA	C8h, C9h	—	Y	Y	Y	Y	Y	Y
19	Read DMA Ext	25h	—	Y	Y	Y	Y	Y	Y
20	Read Log Ext	2Fh	—	Y	Y	Y	Y	—	Y
21	Read Log DMA Ext	47h	—	Y	Y	Y	Y	—	Y
22	Read Multiple	C4h	—	Y	Y	Y	Y	Y	Y
23	Read Multiple Ext	29h	—	Y	Y	Y	Y	Y	Y
24	Read native max address	F8h	—	—	—	—	Y	—	—
25	Read native max addr Ext	27h	—	—	—	—	Y	—	—
26	Read sector(s)	20h, 21h	—	Y	Y	Y	Y	Y	Y
27	Read sector(s) Ext	24h	—	Y	Y	Y	Y	Y	Y
28	Read verify sector(s)	40h, 41h	—	Y	Y	Y	Y	Y	Y
29	Read verify sector(s) Ext	42h	—	Y	Y	Y	Y	Y	Y
30	Recalibrate	1Xh	—	—	—	—	Y	—	—
31	Request sense	03h	—	—	—	—	Y	—	—
32	Security Disable Password	F6h	—	—	—	—	Y	—	—
33	Security Erase Prepare	F3h	—	—	—	—	Y	—	—
34	Security Erase Unit	F4h	—	—	—	—	Y	—	—
35	Security Freeze Lock	F5h	—	—	—	—	Y	—	—
36	Security Set Password	F1h	—	—	—	—	Y	—	—
37	Security Unlock	F2h	—	—	—	—	Y	Y	—
38	Seek	7Xh	—	—	Y	Y	Y	Y	Y
39	Set features	EFh	Y	—	—	—	Y	—	—
40	Set max address	F9h	—	Y	Y	Y	Y	Y	Y

Notes: FR: Feature Register

SC: Sector Count register

SN: Sector Number register

CY: Cylinder Low/High register

DR: Drive bit of Drive/Head register

HD: Head No. (0 to 15) of Drive/Head register

Y: Used for the command

—: Not used for the command

5. Ordering Information

Valid Combinations

Part Number	Description
RIS064G-IDEX17A	64GB X17 2.5" PATA IDE SSD, pSLC, -40°C to +85°C
RIS128G-IDEX17A	128GB X17 2.5" PATA IDE SSD, pSLC, -40°C to +85°C
RIS256G-IDEX17A	256GB X17 2.5" PATA IDE SSD, pSLC, -40°C to +85°C
RIS512G-IDEX17A	512GB X17 2.5" PATA IDE SSD, pSLC, -40°C to +85°C
RIS960G-IDEX17A	960GB X17 2.5" PATA IDE SSD, pSLC, -40°C to +85°C



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