

G-Monster-IDE V2
2.5inch
IDE/PATA SSD
Datasheet Rev. A

1. Product Description

The G-Monster-IDE V2 2.5inch IDE/PATA SSD (Solid State Drive) is based on standard IDE/ATA interface. It uses SLC or MLC NAND Flash and capacity can up to 128GB (SLC) and 256GB (MLC). The 2.5inch IDE/PATA SSD give a good solution in a notebook and portable device for a storage device with a high performance, high reliability, low power consumption and a standard form factor.

2. Features

- ◆ Interface: IDE/PATA 44pin (44-pins IDE with gap and 4 jumper pins)
- ◆ Fully Compliant with ATA/ATAPI-7 Standard
- ◆ Capacities:

Item	Mechanical Height	Capacities
2.5inch (MLC)	9.3mm	32GB, 64GB, 128GB, 256GB

- ◆ Performance

Item	Read	Write	Random Read	Random Write
2.5inch (MLC)	100.7 MB/s	100.6 MB/s	24.8 MB/s	12.9 MB/s

- ◆ Host Interface: 16-bit access
 - Support IDE PIO mode 0~6
 - Support IDE Multi-Word DMA mode 0~2
 - Support IDE Ultra DMA mode 0~6
- ◆ Low power, 5V Power Supply
- ◆ Low Current Operation:
 - Active mode: 410mA Typical (500mA max.)
 - Sleep mode: 300μA Typical
- ◆ Support firmware ISP (in system programming) function, firmware upgradeable
- ◆ Supports SMART (Self-Monitor Analysis and Reporting Technology)
- ◆ Supports Dynamic and Static Wear Leveling
- ◆ Supports SLC and MLC NAND Flash
- ◆ Internal data buffer size: SDRAM 64MB
- ◆ Data integrity under power-cycling
- ◆ MTBF > 2,500,000 Hours
- ◆ High reliability based on internal BCH 15bit ECC
- ◆ Write Endurance
 - SLC: 100K cycles per block
 - MLC: 5K~10K cycles per block
- ◆ Data Retention
 - > 5 years (SLC and MLC)
- ◆ All non-Pb (lead-free) Devices are RoHS Compliant

3. Specifications

CE and FCC Compatibility

IDE/PATA SSD conforms to CE requirements and FCC standards

RoHS Compliance

IDE/PATA SSD is fully compliant with RoHS directive.

Environment Specifications

Temperature

Table 3: Temperature Related Specifications

Item	Mode	Test Conditions
Standard Temperature	Operating	0 °C to +70 °C
	Non-operating	-45 °C to +85 °C
Humidity	Operating	5% to 95%, 20 °C
	Non-operating	5% to 95%, 30 °C

Shock and Vibration

Table 4: Shock and Vibration Specifications

Reliability	Mode	Test Conditions	Reference Standards
Vibration	Operating	7 Hz to 800 Hz, 2.15 G, 3 axes	IEC 68-2-6
	Non-operating	5 Hz to 500 Hz, 3.05 G, 3 axes	
Shock	Operating	Duration: 0.5 ms, 1,500 G, 3 axes	IEC 68-2-27
	Non-operating	Duration: 0.5 ms, 1,500 G, 3 axes	

Mean Time Between Failures (MTBF)

Table 5 summarizes the MTBF prediction results for various IDE/PATA SSD configurations. The analysis was performed using a RAM Commander™ failure rate prediction.

- Failure Rate: The total number of failures within an item population, divided by the total number of life units expended by that population, during a particular measurement interval under stated condition.
- Mean Time between Failures (MTBF): A basic measure of reliability for repairable items: The mean number of life units during which all parts of the item perform within their specified limits, during a particular measurement interval under stated conditions.

Table 5: IDE/PATA SSD MTBF

Product	Condition	MTBF (Hours)	Failure Rate per Million Hours
2.5inch IDE/PATA SSD	Telcordia SR-332 GB, 25°C	> 2,500,000	0.1938

4. General DC Characteristics

Table 6: DC Characteristics

I/O at 5.0V

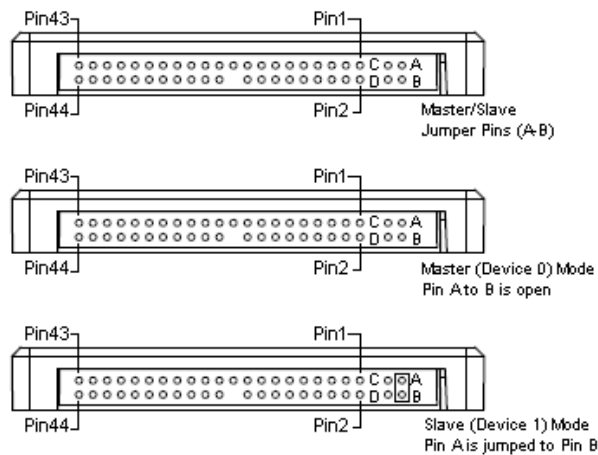
Parameter	Symbol	Min.	Max.	Unit
Power Supply Voltage	V_{CC}	4.5	5.5	V
Input LOW Voltage	V_{IL}		0.6	V
Input HIGH Voltage	V_{IH}	4.0		V
Output LOW Voltage	V_{OL}		0.8	V
Output HIGH Voltage	V_{OH}	$V_{CC} - 0.8$		V
Pull up resistance	R_{PU}	50	73	K Ω
Pull down resistance	R_{PD}	50	97	K Ω

4. Drive Configuration

The drive must be configured to operate as either the Master (Device 0) or Slave (Device 1) IDE device. The Master /Slave setting represent the order of electronic devices on an IDE channel. If the SSD is the only PATA (IDE) drive installed in the system, the drive is configured as the master device. If two drives are installed in the machine, one device must be configured as the master and the remaining device as the slave. Jumper pins located at the rear of the SSD allow the user to configure the drive as either the master or the slave device.

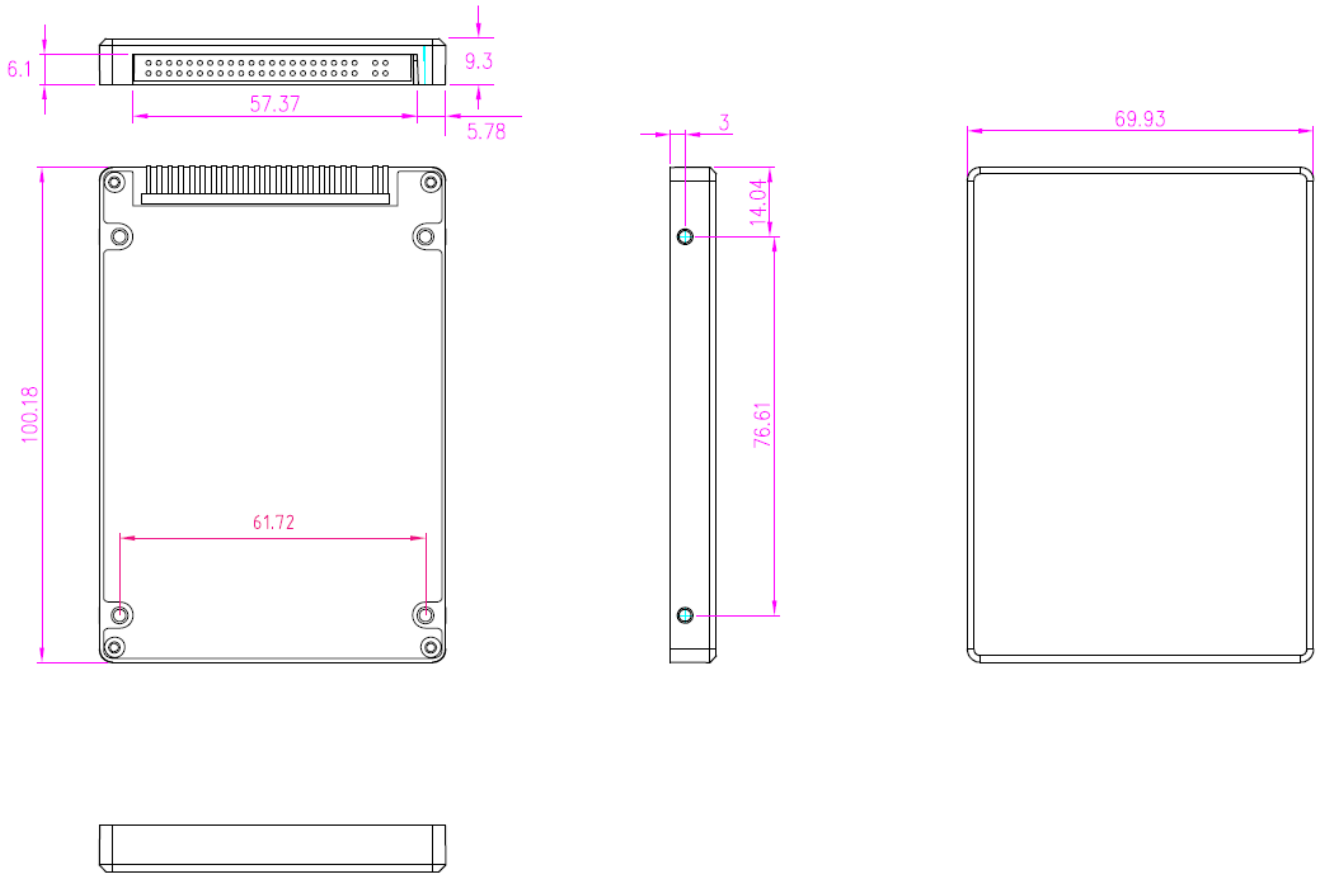
To configure the SSD as either the Master or Slave device, place a jumper across the appropriate pins (A-B) as illustrated in follow figure.

Figure 8: Master and Slave Jumper Settings



5 Physical Dimensions

- 100.18 x 69.93 x 9.3mm



6 Revision History

Revision	History	Date	Memo
A	First Release	2009/4/21	

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