

## OWNER'S MANUAL

# Ultra Slim Super Multi DVD Writer

To enjoy fully all the features and functions of your product,  
please read this owner's manual carefully and completely.

### GS40N

## Safety Instructions

**⚠ CAUTION:** The laser used in the writer can damage your eyes. Do not attempt to open the cover. To reduce the risk of electric shock, do not remove the cover (or back).

There are no user-serviceable parts inside. Refer servicing to qualified service personnel. Use of controls or performance of procedures other than those specified herein may result in hazardous radiation exposure.

**⚠ WARNING:** To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

### FCC COMPLIANCE STATEMENT

**Note :** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an Authorized Service Center for help.

#### • FCC WARNING

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

- This product is for use only with UL listed personal computers that have installation instructions detailing user-installation of card cage accessory.

CLASS 1

LASER PRODUCT

**⚠ CAUTION:** CLASS 3B VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO THE BEAM.

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# Introduction

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## Drive Description

This drive reads and writes to CD and DVD media. This drive has a 9.5 mm slot form factor.

## Features of the Drive

- 9.5 mm height internal slim Super Multi DVD Drive.
- CD-R/RW, DVD-R/-R DL/ -RW/ +R/ +R DL/ +RW, DVD-RAM read and write compatible.
- CD Family and DVD-ROM read compatible.
- Active OPC (Running OPC)<sup>1</sup> "Optimum Power Controller" provides for more reliable writes.
- Slot loading with powered disc pull-in and eject mechanism.
- Enhanced-IDE (ATAPI) model: SATA Interface.
- Vertical and Horizontal installable
- Improved Buffer Under- Run Error handling through the Preventive function.

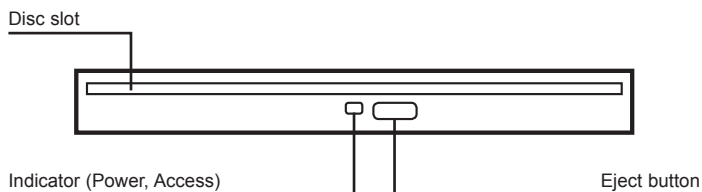
<sup>1</sup>. Continuously monitors the signal level during recording and adjusts the laser power to compensate when the disc is dirty, insuring a flat signal.

# Using the Drive

## Drive Operation

### Front Panel

This following is the general figure of the design of the drive. The drive's appearance and specifications may change without prior notice.



#### 1. Disc slot

This is the slot for the disc. Insert a disc on the disc slot, and then lightly push the disc. The disc will be loaded.

**NOTE: *Disc Slot Load Eject Mechanism***

This drive uses a powered slot mechanism for loading and removing the disc.

#### 2. Indicator (Power, Access)

#### 3. Eject button

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## Inserting a Disc

- Insert the disc, label-side up, about quarter-way into the drive slot till a slight resistance is felt.
- Gently push the disc further into the drive slot until the drive mechanism is heard to engage and draw in the disc. Release the disc when the disc is pulled in by the mechanism.

**NOTE:** 8 cm discs are not supported for Slot load drive.

## Removing a Disc

- Select the Eject Command on OS/Applications, then the drive will eject the disc.
- Remove the disc.

## Usage Guidelines

- Never use a damaged, broken, scratched, or deformed disc.
- Keeps the disc unloaded when not using the drive.

**NOTES :** High-speed drives spin the disc at a high rotational speed. If a disc has printing on only half of the disc, or if there is a slight imbalance in the disc, the imbalance is greatly magnified by the high speed, causing the drive to vibrate or produce a fan-like noise. These effects are inherent in the high-speed technology and do not indicate a problem with the drive.

## Cleaning Media

If dust or fingerprints get on the disc, wipe it with a soft cloth from the center to the edge.



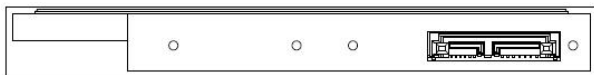
**⚠ CAUTION:** Do not use benzene, paint thinner, record cleaner, solvent, or static repellent. This can damage the disc.

## Cleaning the Drive

Cleaning the inside of the drive is not recommended.

## Drive Connectors

### Slim SATA Drive Connector



## Troubleshooting

Please refer to the Introduction section to determine if the drive in your system is a slim device.

### Symptoms and Solutions

Symptoms	Solutions
1. Drive is not recognized by system.	1-1. Turn off the system, remove the drive, and re-insert back to the system.
2. Cannot read or play disc.	2-1. If the disc is dirty (fingerprints, etc.), clean it with a non-abrasive cloth from the disc center hole to the outside. 2-2. If the disc is scratched and warped, do not insert it into the drive. 2-3. If the disc is inserted upside-down, re-insert the disc with the label facing upward. 2-4. Check to see that the necessary software applications are installed correctly.
3. Certain types of disc do not play.	3-1. This drive only supports discs with the formats indicated in the Specifications section. It cannot read the data on discs with other formats. Check the disc's format.
4. When playing an audio CD, drive shows disc activity but there is no sound.	4-1. The CD player application may need to be set to "Digital." In Windows Media Player, for example, from the menu bar, click on "Tools," then "Options," and then click on the "Device" tab. Select the drive and click on the "Properties" button. Set the playback mode to "Digital."
5. Drive will not write or read at maximum speed.	5-1. Ensure disc is clean and free of scratches. 5-2. Media from different manufacturers or purchased at different times will record at different speeds. The drive will adjust the available recording speeds to achieve the highest write quality.
6. Cannot eject disc.	6-1. Check to see that the system is powered up. 6-2. If the system is capable of booting into an operating system, attempt to issue an eject command from within the operating system.



Symptoms	Solutions
7. Cannot write to disc (for drives with write capability).	<p>7-1. Is the disc loaded in the drive with the read/write surface facing the right direction? The label should be up. If a disc does not have a label, the disc code on the inner side of the disc should be properly oriented for reading when looking from the top of the disc.</p> <p>7-2. CD-R, DVD+R, and DVD-R discs cannot be re-written.</p> <p>7-3. Please check the type of disc that is being used. Please refer to Specifications section to ensure that the disc type is supported by this drive.</p> <p>7-4. Is there enough free space on the writable disc?</p> <p>7-5. Did a screen saver or other application operate while writing to the disc? If so, try again with the application turned off.</p>
8. Cannot insert disc (for slot load drives).	<p>8-1. Check to see that the system is powered up.</p> <p>8-2. Check whether there is already a disc in the drive. If so, select the Eject Command on OS/Applications to eject the disc, then load the intended disc.</p> <p>8-3. Note that this drive only supports 12cm discs.</p>

# Specifications

System Interface	Host Interface	T13 ATA/ATAPI-8, MMC-6, INF-8090i v8.
Applicable disc formats	DVD	DVD-ROM(Single Layer/Dual Layer), DVD-R, DVD-RW, DVD-RAM, DVD+R, DVD+RW
	CD	CD-ROM Mode-1 data disc, CD-ROM Mode-2 data disc, CD-ROM XA, CD-I, Photo-CD Multi-Session, Video CD, CD-Audio Disc, Mixed mode CD-ROM disc (data and audio), CD-Extra, CD-Text, CD-R (Conforming to "Orange Book Part 2": read & write), CD-RW (Conforming to "Orange Book Part 3": read & write)
	Disc diameter	120 mm
Performance		
CD	Key: insert "Max X" speed for each media below. For CD 1X=150 KB/s; DVD 1X=1350 KB/s; BD 1x = 4.5 MB/s	
	Read	24x max.
	Digital Audio Extraction (DAE)	24x max.
	Write CD-R	10x, 16x, 24x
	Write CD-RW	High Speed: 10x Ultra Speed: 24x
DVD	Read (Single Layer / Dual or Double Layer)	8x max.
	Write DVD+/-R	8x max.
	Write DVD+R /-R Double Layer	6x max.
	Write DVD-RAM	5x max. (Ver. 2.2)
	Write DVD+RW	8x max.
	Write DVD-RW	6x max.
Burst transfer rate	SATA Gen.1	1.5 G bps (150 MB/s)
Access time (1/3 stroke)	DVD-ROM	160 ms typ.
	DVD-RAM(Ver. 2.2)	260 ms typ.
	CD-ROM	140 ms typ.
Buffer capacity	0.75 MB	
Reliability	MTBF	60,000 power on hours (POH)
Power supply	Voltage	+5V +/-5% ripple less than 100 mVp-p
Temperature	Operating °C	5° C to 50° C
	Non-operating °C	-30° C to 60° C
Relative Humidity	Operating (No condensation)	15 % to 85 %
	Non-operating (No condensation, Power Off, without disc)	10 % to 90 %

