



## CD-R/RW DRIVE SW-232

# User's Guide

### FCC Compliance

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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.

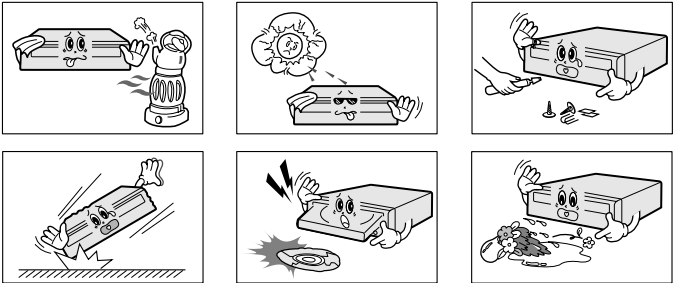
These limits are designed to provide reasonable protection against harmful interference in a residential installation.

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:

- Re-orient 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 experienced radio/TV technician for help.

# Safety Precautions

The following diagrams illustrate the precautions to be taken when using your CD-R/RW drive.



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

You must not use the drive in any manner other than that specified in this guide.

**CAUTION** Do not attempt to repair the CD-R/RW drive yourself. Contact your dealer or local SAMSUNG representative for all repairs. If you make any adjustments or perform any operations other than those specified in this guide, you run the risk of exposure to hazardous radiation.

Avoid exposing your eyes or skin to direct or scattered radiation.

**WARRANTY** Please refer to the Samsung limited warranty statements.

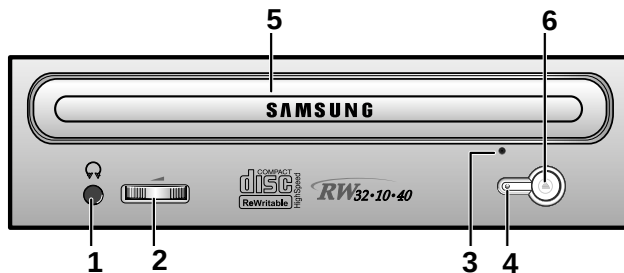
- Precautions**
1. To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.
  2. Always check each disc for cracks before using it. If there are cracks on the surfaces, especially around the border of the center hole, we recommend that you make a copy of the disc immediately and then stop using it. If you continue using the disc, it will probably develop more cracks and eventually cause irreparable damage.
  3. Do not use poor quality discs:
    - From unknown sources
    - Without any copyright
    - Scratched or damaged in any way

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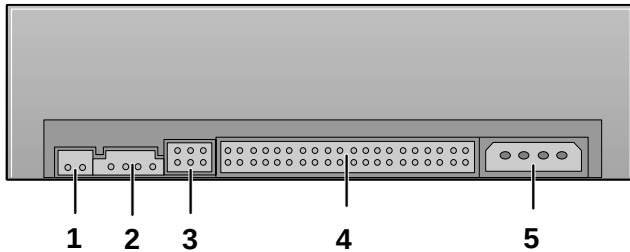
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\* All product names mentioned in this document are trademarks or registered trademarks of their respective owners.

## Your CD-R/RW Drive



1. Connector for stereo headphones with a 3.6 mm stereo mini-jack
2. Headphone volume control
3. Emergency eject hole (if the compartment does not open when you press the Eject button, power off the computer, insert a pin or unfolded paper clip in the hole and push firmly)
4. Indicator light (when it is green, a disc is being read or recorded)
5. Disc compartment (the compartment opens and closes automatically when you press the Eject button)
6. Eject button



1. Two-pin digital audio output terminal for use with a sound or MPEG card supporting digital audio features
2. Four-pin sound output terminal for use with a sound card (refer to the sound card documentation for further details)
3. Master/slave select terminal
4. 40pin host E-IDE interface connector
5. 4pin power terminal

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## Upgrading the Firmware Flash Memory

The product firmware can be upgraded by downloading the updated file from the following Web site:

<http://www.samsungodd.com>  
[www.samsungelectronics.com](http://www.samsungelectronics.com)

## System Requirements

Before you install the CD-R/RW drive, we strongly recommend that you check that your setup meets the system requirements listed below.

| Item            | Description                                                                    |
|-----------------|--------------------------------------------------------------------------------|
| Computer        | Intel Pentium II (or higher), 32 MB of RAM (or higher) with an E-IDE interface |
| Disk space      | 700 MB minimum                                                                 |
| Windows version | Windows 95 / 98 OSR2 / 2000 / ME or XP / Windows NT 4.0 (or higher)            |



## General DMA Installation Guide Windows 95/98/Me

### Important!

Please read the entire DMA installation guide before installing your CD-R/RW drive.

### About DMA Installation

For stable writing performance at high speeds, installation of DMA transfer mode for E-IDE/ATAPI interface is strongly recommended.

We recommend DMA mode for fast writing.

### DMA Setting

Before you install your CD-R/RW drive, we recommend to set DMA to enabled on your PC system. See the following procedure to set DMA transfer mode in windows operating system. (Windows 95 OSR2/98/ME)

- Click on START
- Click on Settings
- Select Control Panel
- Select the System Icon
- Select the Device Manager panel in System Properties
- Expand the CD-ROM icon
- Select your CD-R/RW drive
- Click on the Properties button
- Click on the Settings tab
- Check the DMA checkbox to enables DMA.
- Click OK
- Restart your PC

### Windows 2000/XP

Select the DMA mode by selecting [Start > Setting > Control Panel > System > Device Manager > IDEATA/ATAPI Controller > Default/Assistant IDE Channel Advanced Information]

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## Installing the CD Record Utility

*To record data on a CD-R or CD-RW disc in the CD-R/RW drive, you must first install the CD record utility. For compatibility reasons, you are recommended to uninstall any existing software of the same type before installing this utility.*

- 1 Insert the disc supplied with the CD-R/RW drive in the drive.
- 2 Follow the instructions displayed on the screen to install the utility. Refer to the separate utility documentation for further details.
- 3 Store the utility disc in a safe place.

## Installing the Device Driver

*No additional device driver is needed for Windows 95/98/2000/ME/XP/NT4.0, as the default Windows device driver is used. You can check that the CD-R/RW drive has been correctly detected by Windows. To do so, proceed as follows.*

- 1 Double-click on the **My Computer** icon on your desktop.
- 2 Double-click on the **Control Panel** folder.
- 3 Double-click on the **System** icon.
- 4 Click on the **Device Manager** tab.
- 5 Expand the **CD-ROM** branch.  
The **SAMSUNG CD-R/RW SW - \*\*\*** device name is displayed.

The SAMSUNG device driver enables discs in the CD-R/RW drive to be read but not recorded in an MS-DOS environment; the driver is located in the D driver folder on the CD record utility disc.

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## Setting Up the Device Driver

### ◆ Automatic Setup

- 1 Insert the setup diskette in the diskette drive and change the directory to A:, where A: is the diskette drive.  
To do so, type **A:** after the **C:\** prompt and press **[Enter]**.
- 2 Type **CDSETUP** and press **[Enter]**.
- 3 Reboot the computer.

### ◆ Manual Setup

- 1 Make the **C:\SAMSUNG** directory.
- 2 Copy the files from the diskette to the **C:\SAMSUNG** directory.  
To do so, type **COPY A:.\* C:\SAMSUNG** after the **C:\** prompt and press **[Enter]**.
- 3 Edit the **CONFIG.SYS** file.  
Add the **DEVICE=C:\SAMSUNG\SSCDROM.SYS /D:SSCD000 /V** entry.

```
LAST DRIVE = Z
-----
DEVICE = C:\SAMSUNG\SSCDROM.SYS /D:SSCD000 /V
```

- 4 Edit the **AUTOEXEC.BAT** file.  
Add the **C:\SAMSUNG\MSCDEX /D:SSCD000** entry.

```
-----
C:\SAMSUNG\MSCDEX /D:SSCD000
```

- 5 Reboot the computer.

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## Using the CD-R/RW Drive

*To play audio or video CDs in your CD-R/RW drive, proceed as follows.*

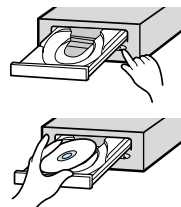
**1** Push the power button and boot the computer.

**2** After booting the computer, open the disc compartment by pressing the Eject button.

**3** Insert the disc (CD) with the label on the disc facing upwards and close the disc compartment by pressing the Eject button.

The indicator light comes on.

**4** Play the disc (CD).



### Playing Audio CDs

Run the CD player supplied with Windows or your sound card. You can listen to the CD by connecting headphones to the appropriate connector. If you have installed the appropriate player, such as Microsoft Windows Media Player, you can adjust the volume using the headphone volume control on the drive front panel.

If you select DIGITAL at CD Audio Play in Media Player of Windows ME, the earphone does not appear in the Digital Mode.

## Storing and Cleaning Your Discs

*To ensure a long service life for your discs and drive, follow the precautions below when storing and cleaning your discs.*

**1** Do not place a disc in direct sunlight.

**2** Store a disc vertically in a well-ventilated and stable location.

**3** Do not write or attach a label on a disc.

**4** Do not drop a disc or place heavy objects on it.



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**5** Do not touch the surface of a disc; hold it by the edges.

**6** To clean a disc, polish lightly from the inside of the disc to the outside with a soft cotton cloth.

**7** Do not leave the disc compartment open when you are not using it.



## Solving Recording Problems

*If you have any problems recording via your CD-R/RW drive, follow the appropriate instructions below for the source that you are using.*

### ◆ Hard Drive

**1** Check whether the source file is corrupted.

**2** Optimize the hard disk by using the Windows defragmenter feature:

**START / PROGRAMS / ACCESSORIES / SYSTEM TOOLS / DISC DEFRAGMENTER**

**3** Decompress the hard disk if it is compressed.

**4** Make sure that the space available on the hard disk is at least twice the size of the largest file to be recorded on the disc.

**5** If you wish to record more than 1000 small files:

- First create an image file and copy the image file to the disc; refer to the section entitled "CD Creation from CD Image" in the CD record utility documentation
- Choose the low record speed
- Compress small files and then record them

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### ◆ Network Drive

- 1 Copy the network drive contents to the hard disk and then from the hard disk to the CD-R/RW drive.

### ◆ CD-ROM Drive

- 1 Clean the source CD, if necessary.
- 2 Create an image file and then copy the image file to the CD-R/RW drive.
- 3 Check the CD-ROM drive record speed.

There are two recording methods :

  - Low-speed (file by file)
  - High-speed (transfer of an image file from the hard disk)
- 4 If the transfer speed of the CD-ROM drive is slower than the record speed, reduce the record speed.

### ◆ Others

Please refer to help menu of writing software provided.

- 1 To perform a record test before copying to a CD, select the **[Test/Copy]** option.
- 2 If the test fails, try recording on another disc.
- 3 Disable the PC's screen saver. If the screen saver activates while writing data, the data transfer may become too slow, resulting in data writing errors.

- 4 Close all application programs except writing software.

- 5 The CD-R/RW drive supports high-speed recording to High-speed CD-RW discs. Discs above CD-RW 8X use different rewriting methods and can only be via the CD-R/RW drive.

### Recommended Disc Types

|       |                                                                                                      |
|-------|------------------------------------------------------------------------------------------------------|
| CD-R  | Taiyo Yuden, Maxwell, TDK, Ritek, Kodak, Ricoh, CMC, SKC Samsung                                     |
| CD-RW | H/S-RW : Ricoh, Ritek, CMC, SKC, Samsung (4X-10X)<br>CD-RW : Ricoh, MCC, CMC, Ritek, Samsung (1X-4X) |

## Caution with errors

*Every CD-R or CD-RW drive records data by applying recording laser onto a CD. If the CD is damaged or recording data is not possible, you need to remove the following causes of the error before using the CD.*

- It is recommended to set a CD-R or CD-RW drive as follows.

### 1 Do not work on a multi-tasking environment and remove screen savers.

- If you work on a multi-tasking environment while the CD-RW drive is recording/deleting data, Buffer Under-Run may occur.

### 2 Do not allow any external access to the Host PC while recording data.

- If another user accesses your printer through a network while you are recording data, errors may occur.

### 3 Remove the Auto-Run function of the CD.

- If you insert a CD that has the Auto-Run function to a drive connected to a PC while recording/deleting data, this may cause errors.

#### How to cancel (select) the Auto-Run function

Cancel (Select) the Auto-Run function in [Start > Setting > Control Panel > System > Device Manager > CD-ROM Setting]

### 4 Use image files when you record many small files.

- If you use a lot of small size files for recording, this may reduce the transaction rate of the PC. Although Super-Link function is often run, the recording quality may become low.
- If you copy a CD from another, you do not require making available space in the hard disk. However, when you use image files, you need to copy them on the hard disk first and then copy to a CD. In this case, you need to ensure maximum 700MB of available space in the hard disk for reliable recording process.

### 5 Use an E-IDE cable, which has the specified length (46cm).

- Using E-IDE cables longer than 46cm may cause errors during data transaction.

### 6 Use only one recording software program.

- To install a software program for recording, uninstall any other types or versions of recording software programs first and then reboot the computer.

Make sure you use the recording software CD (Nero Burning Rom / Roxio Easy CD Creator) provided by us. Using our software program with others may cause errors in recording.

## Term Description

### What is Buffer Under-Run?

Every CD-R or CD-RW drive records the data that the Host PC wants to record until the data flow ends. However, if the buffer becomes empty temporarily, this may cause errors in recording data.

### What is Auto-Run?

If inserting a CD into a drive, the operating system executes the Autorun.inf file of the CD automatically.

### What is Super-Link?

This function is to check the buffer to see if there are data while recording. If the buffer is empty, it waits at the address and then restarts recording after the buffer is full. You can avoid Buffer Under-Run problems by applying the above-mentioned principle.

## Solving Technical Problems

| Problem                                                                                                     | Meaning / Solution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The CD-R/W drive is not detected by the computer.<br>After installing the CD-R/W drive, the PC gets slower. | <ul style="list-style-type: none"> <li>◆ Check that the power, audio and E-IDE cables are correctly connected to the computer.</li> <li>◆ Change the E-IDE cable and reconnect it to the computer. Preferably, connect a second E-IDE cable to the CD-R/RW drive in master mode; see page 7 for further details.</li> <li>◆ Check the position of the jumper in the master/slave select terminal.</li> </ul>                                                                                                                                                                                                                                                                                                                                                       |
| The CD-R/RW drive is not recognized by MS-DOS.                                                              | <ul style="list-style-type: none"> <li>◆ Reinstall the device driver or update it with the latest version by downloading it from the Samsung Web site.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| The CD-R/RW drive is not detected by Windows.                                                               | <ul style="list-style-type: none"> <li>◆ This case may occur when there is a Windows installation problem; reinstall Windows.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| No sound is heard from an audio CD.                                                                         | <ul style="list-style-type: none"> <li>◆ Check whether the audio cable is correctly connected to the sound output terminal on the CD-R/RW drive and the sound card CD-IN terminal.</li> <li>◆ Check that the sound card is operational.</li> <li>◆ Adjust the volume control.</li> <li>◆ Run the CD player supplied with Windows or your sound card. You can listen to the CD by connecting headphones to the appropriate connector. If you have installed the appropriate player, such as Microsoft Windows Media Player, you can adjust the volume using the headphone volume control on the drive front panel.</li> <li>◆ If you select DIGITAL at CD Audio Play in Media Player of Windows ME/XP, the earphone does not appear in the Digital Mode.</li> </ul> |
| A CD is not read or is read too slowly.                                                                     | <ul style="list-style-type: none"> <li>◆ Check whether the CD is of good quality and clean it, if necessary.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| The disc compartment will not open.                                                                         | <ul style="list-style-type: none"> <li>◆ Check that the power cable is correctly connected.</li> <li>◆ Power off and disconnect the PC. Insert a pin or unfolded paper clip in the emergency hole and push firmly until the disc compartment opens.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| When the MPEG software plays a Video CD, the pictures are not regular and the running speed is too slow.    | <ul style="list-style-type: none"> <li>◆ Adjust the size of the replay screen.</li> <li>◆ After checking the display resolution, adjust it, if necessary.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| The <i>Disc is not in</i> message is displayed even though a disc has been inserted.                        | <ul style="list-style-type: none"> <li>◆ The computer may not recognize the disc if you start playback too quickly after inserting the disc. Open and close the disc compartment and try again.</li> <li>◆ Clean the disc and try again.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| The CD-R/RW drive is not detected after it is connected to a sound card.                                    | <ul style="list-style-type: none"> <li>◆ The interface mode of the sound card is AT-BUS. You must therefore connect the CD-R/RW drive to the E-IDE port on the PC mother board, rather than to the sound card, or install an E-IDE-compatible sound card.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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| Problem                                                                        | Meaning / Solution                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IN CD has the Formatted Disc Eject function.                                   | <ul style="list-style-type: none"> <li>◆ Right-click the mouse on TRAY ICON (right side of the menu bar at the bottom of the monitor) and then select "Eject" to take the CD out.</li> <li>◆ Select the drive where the disc is inserted from Windows Explorer. Right-click the mouse and select "Eject" to take the CD out.</li> </ul>                                                                                                                              |
| When recording NERO, it will be recorded not on a CD but a form of image file. | <ul style="list-style-type: none"> <li>◆ This seems to occur when you select the recording function as the system selects "Image Recorder" instead of SW-232. In this case, select a recorder from the menu items at the upper part of NERO and then select SW-224 from the Recorder Selection window.</li> <li>◆ When installing the recording software, try not to install the software before the ROM drive as this makes the Image Recorder selected.</li> </ul> |
| The Recorder cannot recognize the disc.                                        | <ul style="list-style-type: none"> <li>◆ Use the firmware automatic upgrade function available at the ODD service website to download the newest firmware and then reinstall the recording software which is included in the bundle.<br/>- <a href="http://www.samsungodd.com">www.samsungodd.com</a><br/>- <a href="http://www.samsungelectronics.com">www.samsungelectronics.com</a></li> </ul>                                                                    |

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# Technical Specifications

*SAMSUNG continually strives to improve its products. Both the design specifications and these user instructions are thus subject to change without notice.*

| Item                  |                                    | SW-232                                                                                                                                                                    |                                                                                                                                                             |
|-----------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Disc                  | Disc types supported in read mode  | CD-DA, CD-ROM mode 1, CD-ROM XA mode 2, Form 1, Form 2, CD-Plus, CD-Extra, Photo-CD (Single, Multi-session), Video CD ready, Enhanced CD, CD-I/IFMV, CD-R, CD-RW, CD-TEXT |                                                                                                                                                             |
|                       | Disc types supported in write mode | CD-R, CD-RW                                                                                                                                                               |                                                                                                                                                             |
|                       | Erasing disc types                 | CD-RW                                                                                                                                                                     |                                                                                                                                                             |
|                       | Disc diameter                      | 120 mm or 80 mm                                                                                                                                                           |                                                                                                                                                             |
| Drive Performance     | Data transfer rate                 | CD-R (write mode)                                                                                                                                                         | 600 KB/sec. (4X), 1 200 KB/sec. (8X), 1800 KB/sec. (12X), 2400 KB/sec. (16X), 3000 KB/sec. (20X), 3600 KB/sec. (24X) 4200 KB/sec. (28X), 4800 KB/sec. (32X) |
|                       |                                    | CD-RW (write mode)                                                                                                                                                        | 600 KB/sec. (4X), 1500 KB/sec. (10X)                                                                                                                        |
|                       |                                    | Read mode 6,000 KB/sec. (max.), PIO Mode 4, DMA Mode 2                                                                                                                    |                                                                                                                                                             |
|                       | Access time (typical)              | 110ms (typical)                                                                                                                                                           |                                                                                                                                                             |
|                       | Laser                              | Semiconductor laser                                                                                                                                                       |                                                                                                                                                             |
|                       | Slide mechanism                    | Stepping motor                                                                                                                                                            |                                                                                                                                                             |
|                       | Spindle motor                      | Brushless motor                                                                                                                                                           |                                                                                                                                                             |
|                       | Load mechanism                     | Tray. DC motor (Soft Eject).                                                                                                                                              |                                                                                                                                                             |
| Front Panel           | Eject button                       | Auto eject or Auto inject                                                                                                                                                 |                                                                                                                                                             |
|                       | Indicator (LED)                    | Green when playing or recording a disc                                                                                                                                    |                                                                                                                                                             |
|                       | Headphone output                   | Stereo mini-jack (Ø 3.6 mm) 0.65±20% (vrms) 33 Ω                                                                                                                          |                                                                                                                                                             |
|                       | Volume control                     | Dial type                                                                                                                                                                 |                                                                                                                                                             |
| Rear Panel            | Required power                     | +5 VDC: 1.5 A (max.), +12 VDC: 1.5 A (max.)                                                                                                                               |                                                                                                                                                             |
|                       | Interface connector                | ATAPI (EIDE)                                                                                                                                                              |                                                                                                                                                             |
|                       | Audio output                       | Line out 0.75 ± 20% (vrms): 47 KΩ                                                                                                                                         |                                                                                                                                                             |
|                       | Jumper block                       | Device configuration jumper                                                                                                                                               |                                                                                                                                                             |
| Operating Environment | Operations                         | Temperature: 0~50°C                                                                                                                                                       | Humidity: 10~80%                                                                                                                                            |
|                       | Storage                            | Temperature: -25~55°C                                                                                                                                                     | Humidity: 10~90%                                                                                                                                            |
| General               | Dimensions                         | 148.2 (W) x 42 (H) x 184 (D) mm (including bezel)                                                                                                                         |                                                                                                                                                             |
|                       | Net weight                         | 770 g                                                                                                                                                                     |                                                                                                                                                             |
| Reliability           | MTBF                               | 125,000 POH (20% duty)                                                                                                                                                    |                                                                                                                                                             |