

RVT-H Reader Manual

Version 2007/06/26

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Table of Contents

1	Introduction	5
2	Control Panel	6
3	Using the Writing Software	8
3.1	Installation	8
3.2	Connecting Devices	8
3.3	Starting the GUI Version	8
3.4	Device Dialog Box.....	9
3.5	Firmware Update Dialog Box.....	11
3.6	Device Info Dialog Box.....	12
3.7	Bank Info Dialog Box	12
4	Application Startup	13
4.1	Writing Master Disc Images (Review).....	13
4.2	Starting Master Disc Images.....	13
4.3	Changing Banks.....	13
4.4	Terminating RVT-H Reader.....	14
5	Batch Writing.....	15
6	Other Features.....	16
7	Precautions	17

Tables

Table 2-1 Control Panel Interface	6
Table 3-1 Device Dialog Box Items.....	10

Figures

Figure 2-1 Control Panel.....	6
Figure 3-1 Main GUI Window	9
Figure 3-2 Device Dialog Box	9
Figure 3-3 Firmware Update Dialog Box	11
Figure 3-4 Device Info Dialog Box	12
Figure 3-5 Bank Info Dialog Box	12

Revision History

Version	Revision Date	Description
2007/06/26	2007/06/26	<ul style="list-style-type: none">• Moved from <i>RVT-H Simplified Reader Manual</i>• Revised text in section “4.2 Starting Master Disc Image”• Corrected typographical errors
1.0.1	2007/1/15	<ul style="list-style-type: none">• Added more steps to the Firmware update• Clarified what “erase” actually does• Shortened the procedure in section “3.3 Starting the GUI Version”• Modified the procedure for Batch Writing• Added chapter “6 Other Features”
1.0.0	2006/10/16	Initial version.

1 Introduction

RVT-H Reader is a hardware-based Wii development tool that uses a hard drive to store master disc images. A maximum of eight master disc images can be stored on the drive. As with NDEV, two external GDDR3 main memory modules are installed. In addition to the conventional wireless model, the RVT-H Reader comes in a wired model that uses cables for the controllers. RVT-H Reader supports master disc images for Wii (single- and dual-layer) and master disc images for Nintendo GameCube. RVT-H Reader can write to `rpf` and `d1f` files, as well as `rvm` files.

2 Control Panel

This chapter describes the RVT-H Reader's control panel.

Figure 2-1 Control Panel

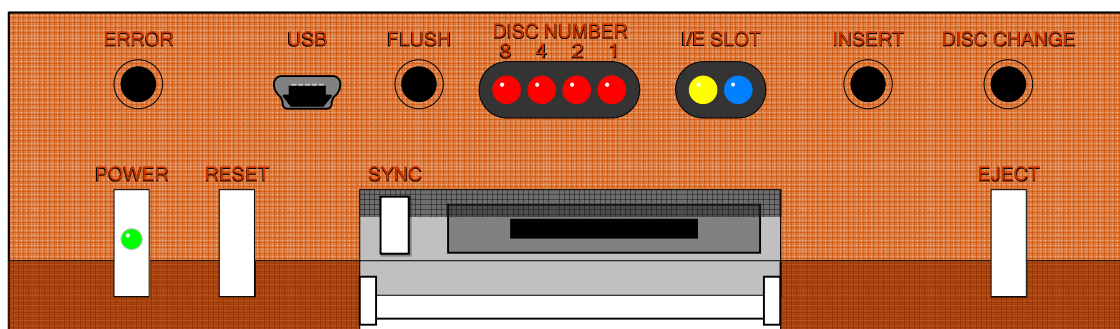


Table 2-1 describes various components of the control panel interface.

Table 2-1 Control Panel Interface

Item	Type	Description
ERROR	Button	<ul style="list-style-type: none"> • Button for creating a drive error virtually • A retry error is generated by simultaneously holding down the ERROR and INSERT buttons for about two seconds • A fatal error is generated by simultaneously holding down the ERROR and DISC CHANGE buttons for a few seconds • Pressing just the ERROR button does nothing
USB	Connector	<ul style="list-style-type: none"> • Port for connecting to the PC • Master disc image is loaded through this port
FLUSH	Button	When held down for a few seconds in the EJECT state (indicated by the I/E LED not being illuminated), this button (partially) deletes the master disc image that has the currently selected disc number.
DISC NUMBER	LED	<ul style="list-style-type: none"> • Displays the disc number as a 4-bit binary number • There are a total of eight (8) banks for storing master disc images: a single-layer disc uses one (1) bank and a double-layer disc uses two (2) banks. Nintendo GameCube discs also use a single bank. • All four LEDs being illuminated indicates a state where a master disc image can be written from PC to RVT-H Reader. The Reader will always be in a writable state immediately after startup. When the INSERT or DISC CHANGE button is pressed, a master disc image will enter an application startup state and become non-writable. <ul style="list-style-type: none"> ✓ To revert from a non-writable state to writable, simultaneously hold down the DISC CHANGE and INSERT buttons for a few seconds • All four LEDs being turned off indicates that there are no valid master disc images on the hard drive
I/E	LED	<ul style="list-style-type: none"> • Indicates virtual disc insertion when illuminated • I/E stands for INSERT/EJECT
SLOT	LED	Serves the same purpose as slot illumination on Wii.

Item	Type	Description
INSERT	Button	When held down for a few seconds, virtually inserts or ejects a disc.
DISC CHANGE	Button	Switches to the next bank of a master disc image when pressed in the EJECT state.
POWER	Button	<ul style="list-style-type: none">• Turns the power on when pressed and the power is off (LED is red)• Turns the power off when held down for a few seconds and the power is on (LED is green)
RESET	Button	<ul style="list-style-type: none">• The operation differs depending on how the application was created• To switch disc number after the application has started, a reboot (<code>OsRebootSys</code>) using the RESET button is necessary
SYNC	Button	Used for connecting with Wii Remotes.
EJECT	Button	Not used in RVT-H Reader. Note: Pressing this button will result in a malfunction.

3 Using the Writing Software

3.1 Installation

The writing software for the RVT-H Reader is integrated with the RVT-R Writer software. There is no need to reinstall it if it is already installed as a part of the RVT-R Reader. The software comes in the GUI (graphical) and CUI (command line) versions. Both are available online at the Software Development Support Group (SDSG) web site, <http://www.warioworld.com>.

The executable files are `rvtwriter.exe` for the GUI version and `rvtwt.exe` for the CUI version. For details on using the command-line interface, see *RVT-R Writer/RVT-H Reader Writing Software Operation Manual*. Command line version will be documented in the official version of this manual.

To use the writing software, log on with a username that has administrator privileges.

3.2 Connecting Devices

Connect the hardware.

1. Connect the PC and RVT-H Reader with a Mini-USB cable
2. Connect the AC adapter to RVT-H Reader
3. Press the POWER button on RVT-H Reader
4. Verify that all DISC NUMBER LEDs are illuminated

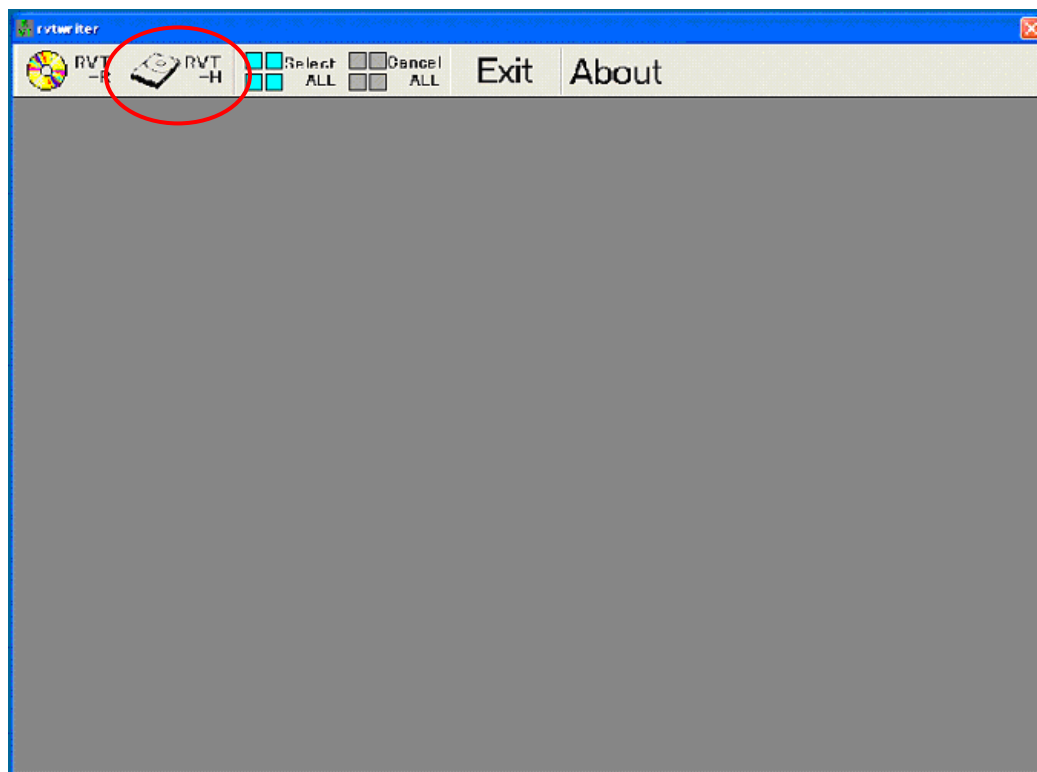
3.3 Starting the GUI Version

To run the GUI version of the software, execute `rvtwriter.exe`. The window shown in Figure 3-1 opens.

When **RVT-H** is selected in the main window, the connected RVT-H Reader device will be displayed. When **RVT-R** is selected in the main window, the connected RVT-R Writer device will be displayed. Although both RVT-H Reader and RVT-R Writer can be connected to a single PC, they cannot be used (written to) at the same time.

A device is not displayed when **RVT-H** is selected while the application is running

Figure 3-1 Main GUI Window



3.4 Device Dialog Box

When **RVT-H** is clicked in the main window (Figure 3-1), the dialog box shown in Figure 3-2 opens.

Figure 3-2 Device Dialog Box



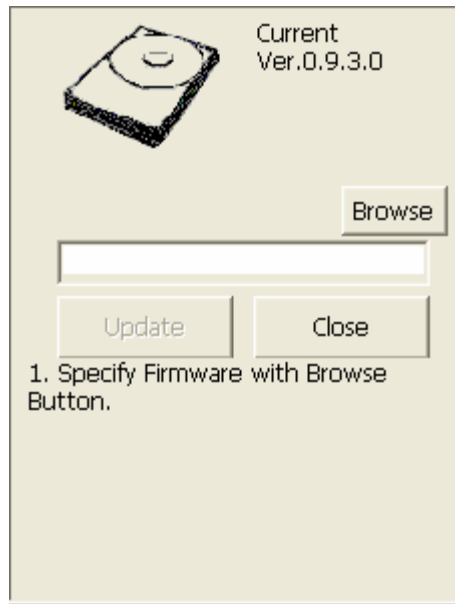
Table 3-1 Device Dialog Box Items

Item	Description
Remove	<ul style="list-style-type: none"> Clicking the Remove button will close the device screen Once the write process has completed, always perform Remove. RVT-H Reader cannot be operated while the Device dialog box is open.
Bank 1–8	<ul style="list-style-type: none"> Specifies the bank where the master disc image will be written Specify an even-numbered bank for a double layer master disc image A bank where a master disc image has already been written cannot be overwritten; delete that data first Blank banks will be shown in gray Used banks will be shown in purple When a used bank is selected, it will become yellow When a writable bank is selected, it will become red
H Reader Update	Updates firmware of the hard disk inside the RVT-H Reader.
Device Info	Displays detailed information about the device.
Bank Info	Displays detailed information about the master disc image registered with each bank.
Browse	<ul style="list-style-type: none"> Specifies master disc image Files of type <code>.rvm</code>, <code>.gcm</code>, and <code>.rpf</code> can be selected
DATA CRC CHECK	Performs CRC check prior to writing.
Write	Writing will start when the Write button is clicked after the bank is configured, a file is specified through Browse , and Write is enabled.
Initialize	<ul style="list-style-type: none"> Initializes index of the hard drive Firmware can be rewritten at initialization <p>Note: The entire hard drive is not deleted; partial deletion is used..</p>
Verify	<ul style="list-style-type: none"> Performs verification of an already written master disc image or a file specified using the Browse button A file from the bank must be specified to perform verification
Cancel	Cancels writing or verification.

3.5 Firmware Update Dialog Box

When **H Reader Update** is clicked in the **Device** dialog box, the dialog box shown in Figure 3-3 opens.

Figure 3-3 Firmware Update Dialog Box



This dialog box is used to update firmware of the hard drive installed on the RVT-H Reader.

Select a firmware file with **Browse** and click **Update**.

Hold down the INSERT button on RVT-H Reader. The DISC NUMBER LED will go out and writing to firmware will begin. When the DISC NUMBER LED illuminates, writing to firmware ends. Update is complete when the RVT-H Reader is restarted (power is cycled).

Note: This update is unrelated to Wii firmware.

3.6 Device Info Dialog Box

When **Device Info** is clicked in the **Device** dialog box, the dialog box shown in Figure 3-4 opens. Devices displayed in the main window will be displayed in iSerial order.

Figure 3-4 Device Info Dialog Box



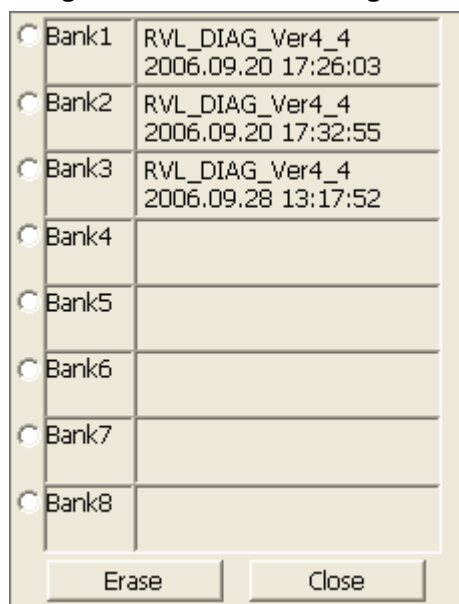
The dialog box features a floppy disk icon at the top. Below it is a section titled "Device Info" containing several text input fields. At the bottom is a "Close" button.

VendorID:	HTS54104
ProductID:	0G9AT00
Revision:	MB20
VendorStr:	
iSerial:	00000105

3.7 Bank Info Dialog Box

When **Bank Info** is clicked in the **Device** dialog box, the dialog box shown in Figure 3-5 opens.

Figure 3-5 Bank Info Dialog Box



The dialog box displays a list of eight banks, each with a radio button for selection. The first three banks contain data, while the remaining five are empty. At the bottom are "Erase" and "Close" buttons.

<input type="radio"/> Bank1	RVL_DIAG_Ver4_4 2006.09.20 17:26:03
<input type="radio"/> Bank2	RVL_DIAG_Ver4_4 2006.09.20 17:32:55
<input type="radio"/> Bank3	RVL_DIAG_Ver4_4 2006.09.28 13:17:52
<input type="radio"/> Bank4	
<input type="radio"/> Bank5	
<input type="radio"/> Bank6	
<input type="radio"/> Bank7	
<input type="radio"/> Bank8	

To delete a bank, select the bank to delete and click **Erase**. In the confirmation dialog that opens, click **OK** to delete the selected bank. Clicking **Erase** results in partial deletion of data, including the header.

4 Application Startup

4.1 Writing Master Disc Images (Review)

To write the master disc image,

1. Connect the PC to RVT-H Reader using a Mini-USB cable
2. Start `rvtwriter.exe` on the PC
3. Connect the AC adapter to RVT-H Reader
4. Press the POWER button on RVT-H Reader; all DISC NUMBER LEDs should illuminate
5. In the **rvtwriter** main window, click the **RVT-H** button (see Figure 3-1); devices will be displayed in the main window
6. Select an unused bank from the **Device** dialog box (see Figure 3-2)
7. Click the **Browse** button to select the master disc image file
8. Click **Verify** and **DATA CRC CHECK** as needed
9. Click **Write** to begin writing
10. After writing is complete, click **Remove** to close the **Device** dialog box

4.2 Starting Master Disc Images

To start the master disc image,

1. Connect equipment other than the USB cable (AC adapter and video cables) to the RVT-H Reader
 - Note:** Occasionally, the master disc image may not run if the RVT-H Reader and PC are connected with a USB cable. Just to be safe, unplug the USB cable in advance.
 2. Press the POWER button on the RVT-H Reader
 3. Hold down the INSERT button on the RVT-H Reader for several seconds
 - ✓ The I/E LED will illuminate, indicating the virtual insertion of the disc
 4. The master disc image from the lowest number bank will start as an application
 - ✓ If there are no valid master disc images, "NO DISC" will be displayed on the TV
- Note:** Master disc images cannot be written while the application is running.

4.3 Changing Banks

It is possible to switch banks by pressing the DISC CHANGE button when the main window has not been started, or when the DISC NUMBER LEDs on the RVT-H Reader are all illuminated and the I/E LED is off in the REMOVE state. In addition, the master disc image of a specified bank can be started as an application by holding down the INSERT button..

4.4 Terminating RVT-H Reader

Be careful when turning off the RVT-H Reader because it uses the hard drive. Disconnect the device using the procedure that follows. Do not put the RVT-H Reader into standby mode using the POWER button on the Wii Remote.

1. If the I/E LED is on, hold down the INSERT button for several seconds to park the hard drive head and to turn off the I/E LED
2. Hold down the POWER button for several seconds to set the power to standby mode (red)
3. Disconnect the AC adapter power plug

5 Batch Writing

Make sure there are enough USB ports on the PC for all RVT-H Readers to perform a batch write. If the number of ports is insufficient, use a commercially available PCI-to-USB card.

Note: While it is possible to use a USB hub, this is not recommended because using a hub will reduce performance considerably.

The write speed may vary depending on the particular USB port that is used. Because the best approach for improving write speed depends on the PC being used, you will need to perform tests to determine the best performance environment.

A maximum of 127 RVT-H Readers can be connected to a single PC. Because the PC performs task processing, the RVT-H Reader's writing speed will decrease as the number of RVT-H Readers writing simultaneously increases.

6 Other Features

A button for debugging applications has been added to the RVT-H Reader next to the AC adapter power plug. For information on its use, check the support page.

In addition to `rvm` files, RVT-H Reader supports `rpf` and `dlf` files. When using writing software to write `rpf` and `dlf` files, you can decrease the amount of time needed to write data to discs by writing it inside out. To do this, in the `[layout]` section of the `ddf` file set `O="*", -1`.

7 Precautions

Even in a state where the writing software is not being used (or has not been started), if the RVT-H Reader and PC are connected with a USB cable, the RVT-H Reader's INSERT and DISC CHANGE buttons cannot be used. Either disconnect the USB cable or start the writing software and click **Remove** in the **Device** dialog box.

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