YAMAHA
RSio64-D Firmware Update Guide
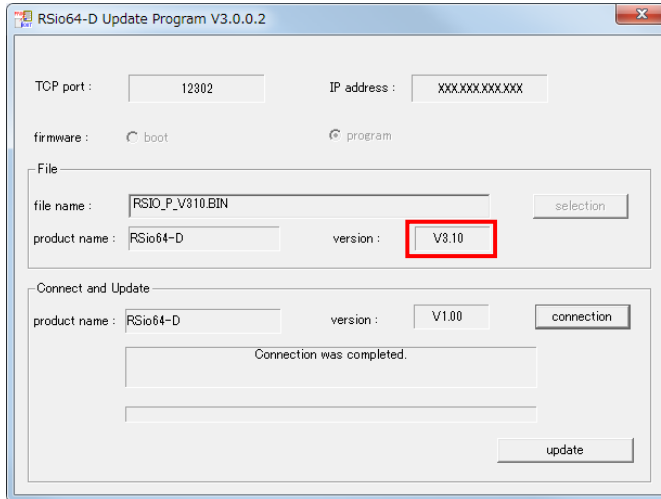
Thank you for choosing a Yamaha product.

This guide explains how to update the R series (RSio64-D) firmware and its built-in Dante module firmware.

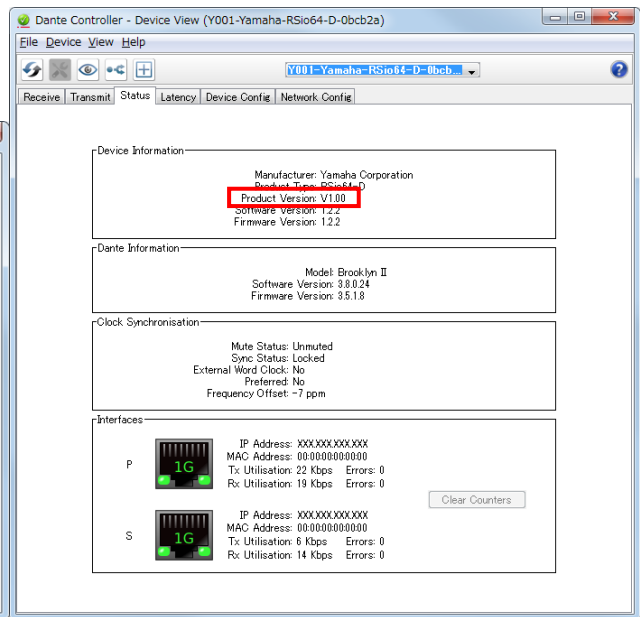## ■ Precautions (Please be sure to read this section first!)

- The user assumes full responsibility for the update.
- Update the firmware components one device at a time.
- Please note that the device may be damaged if you fail to follow these instructions properly, or turn off the device or disconnect the cable while the update is in progress.
- If the update fails, and the device still does not operate correctly even after you execute the update once again, please contact your Yamaha dealer.
- Yamaha Corporation owns exclusive copyrights for the R series firmware, its update program, and the update guide.
- Audinate owns exclusive copyrights for the Dante firmware and its update program.
- It is prohibited to duplicate or modify the firmware, software or guides, in part or in their entirety, without permission from the copyright owner.
- The screen shots in this guide are for use with this update procedure only and may be different from the actual screen shots.
- Dante is a registered trademark of Audinate.
- Windows is a registered trademark of Microsoft ® Corporation in the United States and other countries.
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■ Checking the version number

・ You may check the R series device main firmware version number from the firmware update program (RSio64-D Update Program V3) or the Dante Controller of Audinate.
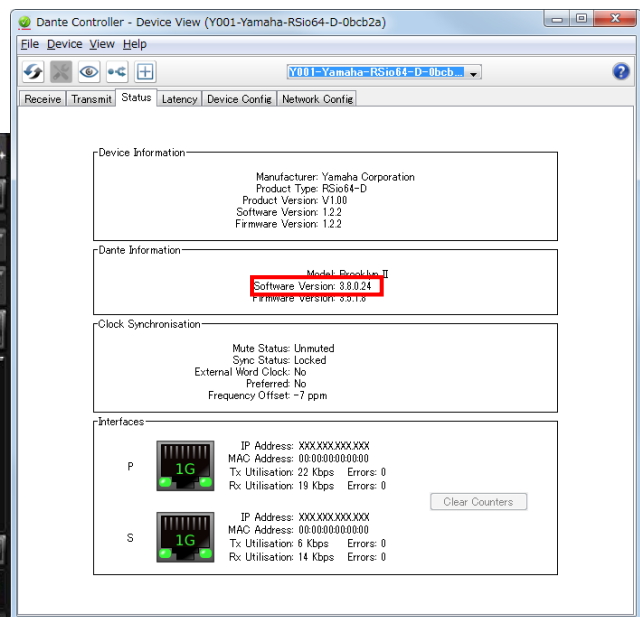

RSio64-D Update Program V3   Dante Controller (Device View)

・ You may check the Dante firmware version number from the I/O DEVICE screen of CL/QL series or Dante Firmware Update Manager of Audinate.

CL/QL (I/O DEVICE screen)   Dante Controller (Device View)

■ Preparing for the update

You will need the following items ready to execute the update procedure.

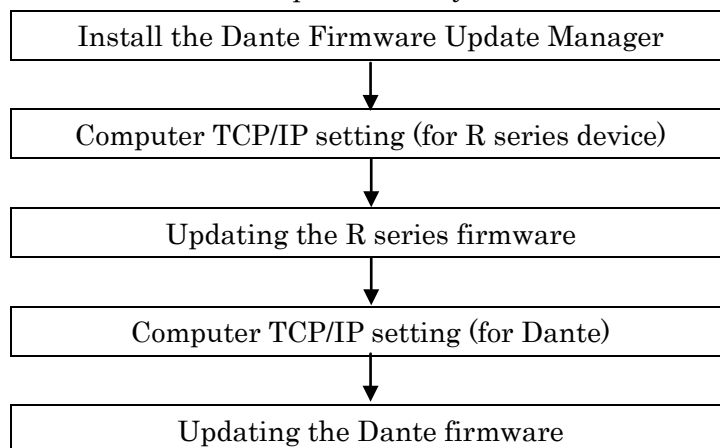● A Windows computer equipped with the following conditions:

OS	Windows 8/8.1	/ Pro
	Windows 7	Ultimate / Professional / Home Premium
CPU	Intel Pentium 1.2GHz or Intel Celeron 1.7GHz or higher	
HDD	250MB or more	
Connector	An Ethernet connector that supports a data transfer rate of 100Mbps or higher	

● An Ethernet cable (CAT5e or higher recommended. Straight or cross.)

● The R series firmware

Download the latest firmware from the following URL.

http://www.yamahaproaudio.com/downloads/

● The Dante firmware update program

Download the latest program from the following URL.

http://www.yamahaproaudio.com/downloads/

■ Update procedure sequence

Update each firmware component in the following sequence.

To update more than one R series device, configure "Computer TCP/IP setting (for R series device)" and perform "R series device firmware update" one by one. Then, configure "Computer TCP/IP setting (for Dante)" and perform "Dante firmware update" one by one.

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┌─────────────────────────────────────────────┐
│   Install the Dante Firmware Update Manager   │
└─────────────────────────────────────────────┘
                        ↓
┌─────────────────────────────────────────────┐
│   Computer TCP/IP setting (for R series device)│
└─────────────────────────────────────────────┘
                        ↓
┌─────────────────────────────────────────────┐
│        Updating the R series firmware         │
└─────────────────────────────────────────────┘
                        ↓
┌─────────────────────────────────────────────┐
│      Computer TCP/IP setting (for Dante)      │
└─────────────────────────────────────────────┘
                        ↓
┌─────────────────────────────────────────────┐
│         Updating the Dante firmware           │
└─────────────────────────────────────────────┘
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If there are 2 computers, you may use one for R series device firmware update and the other for Dante firmware update so that you can perform the work without switching the TCP/IP settings. To update more than one R series firmware application, it is recommended to use 2 computers for the update.

■ Install the Dante Firmware Update Manager

Before you update the Dante firmware, you must install the Dante Firmware Update Manager. Double-click the Dante Firmware Update Manager installer downloaded in "Preparing for the update" (DanteFirmwareUpdateManager-x.x.x.exe) and follow the on-screen instructions to install the firmware.

   x.x.x represents the version number of the Dante Firmware Update Manager.

In addition, extract the Dante firmware (extension: .dnt) from the compressed file.
The Dante firmware will not work correctly if the path contains any characters other than single-byte alphanumeric characters, "-" (hyphen), or "_" (underscore). You must save the firmware update file in a directory whose name contains only single-byte alphanumeric characters, "-" (hyphen), or "_" (underscore). (E.g., C:\temp)

NOTE
・The "Windows Security" dialog box may appear. In such case, click [Install this driver software anyway].
・You may be prompted to restart the computer after the installation is complete. Before proceeding to update, restart the computer.
・When installing the Dante Firmware Update Manager, temporarily disable any running anti-virus software.

■ Computer TCP/IP setting (for R series device)

To update R series device firmware, configure computer TCP/IP settings.

1. **Open the Network and Sharing Center as described below.**
   Windows 7
   Select [Start] → [Control Panel], then click or double-click [Network and Sharing Center] or [View network status and tasks].

   Windows 8 and Windows 8.1
   [Windows]+[X] → [Control Panel], then click or double-click [Network and Sharing Center] or [View network status and tasks].

   The "Network and Sharing Center" is displayed.

2. **Click [Manage network connection] or [Change Adapter settings] from the "Tasks" list located in the left side of "Network and Sharing Center" window, then double-click [Local Area Connection].**
   The "Local Area Connection Status" dialog box will be displayed.
   ┌ **NOTE** ┐
   ・The "User Account Control" dialog box may appear. Click [Continue] or [Yes].
   ・If the "Local Area Connection properties" dialog box appears, skip ahead to step 4.

3. **Click [Properties].**
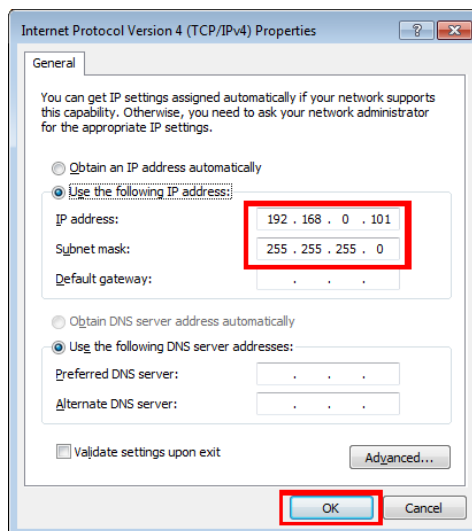   The "Local Area Connection properties" dialog box will be displayed.
   ┌ **NOTE** ┐
   ・The "User Account Control" dialog box may appear. Click [Continue] or [Yes].

4. **Select [Internet Protocol Version 4 (TCP/IPv4)], then click [Properties].**
   The "Internet Protocol Version 4(TCP/IPv4) Protocol" dialog box will be displayed.

5. **Click [Use the following IP address].**

6. **Enter your computer's IP address "192.168.0.101" into [IP address], and "255.255.255.0" into [Subnet mask].**

   ┌ **NOTE** ┐
   ・If you specify other values for the IP address, you will be unable to update R series firmware.

7. **Click [OK].**

■ Updating the R series firmware

This section explains how to update the R series firmware.

Before you start updating the firmware, decompress the downloaded compressed file. Place "RSIO_P_Vxxx.BIN," "RSio64-D_UpdaterV3.exe" and "update.ini" in the same folder.

xxx represents the firmware version number. (E.g., RSIO_P_V310.BIN)

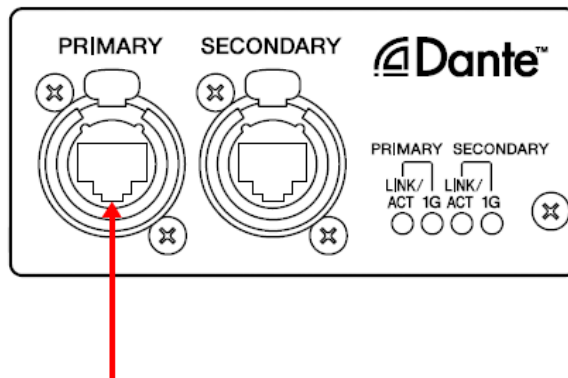> **NOTE**
> For information about messages displayed by the R series firmware update program, refer to "Error Message List (RSio64-D Update Program V3)" at the end of this guide.
> ・ Before starting the update program, quit all other programs. While the update is in progress, do not start any other programs or switch between windows.
> ・ If your computer enters Sleep or Energy Save mode, data transfer to the device may stop. Therefore, you should disable these functions to prevent this from happening. We also recommend that you do not use any screen saver or similar background programs.

1. **Turn off the power to the R series device.**

2. **Take note of the dip switch settings on the R series device front panel.**
    Follow the procedure below to change dip switch settings. Take note of the original dip switch settings in order to restore the settings when the Dante firmware update is completed.

3. **Disconnect the Ethernet cable from the Dante [PRIMARY] connector and [SECONDARY] connector on the rear panel of the R series device.**

4. **Pull the dip switch 4 on the R series device front panel down (ON) and turn the power on with the other switches remaining in their up positions (OFF).**

5. **After the orange [SYNC] indicator flashes twice periodically on the front panel of the R series device, turn off the power.**

6. **Connect the Dante [PRIMARY] connector on the rear panel of the R series device to the Ethernet connector on the computer using an Ethernet cable.**

7. Set the [UNIT ID] rotary switch on the R series device to 2, pull dip switches 3, 4 and 8 down (to ON) and turn the power on with the other switches remaining in their up positions (OFF).

All the red indicators of SLOT and WORD CLOCK, and the right red indicator of SYSTEM and the right orange indicator of SYNC light up, and then the device is activated in update mode.
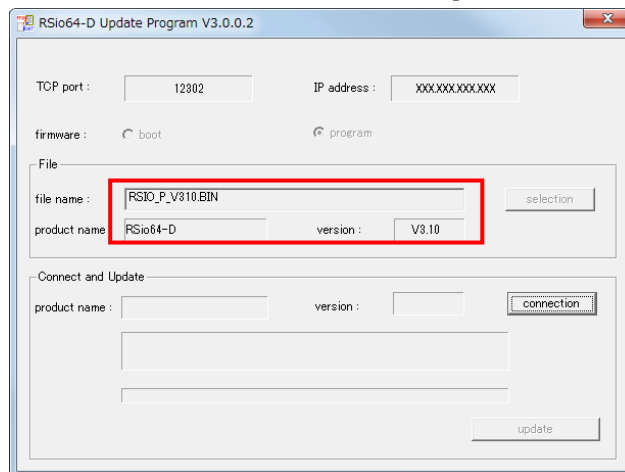

8. Double-click [RSio64-D_UpdaterV3.exe].

The RSio64-D Update Program V3 will start up.
Make sure that the fields in the "File" section indicate as follows:

    file name   : RSIO_P_Vxxx.BIN
                      xxx represents the firmware version number. (E.g., RSIO_P_V310.BIN)
    product name : RSio64-D
    Version   : Version number to which the firmware will be updated

> **╱ NOTE ╲**
> ・The "User Account Control" dialog box may appear. Click [Continue] or [Yes].

9. Click the [Connection] button in the "Connect and Update" column.

The "product name" field will display "R-Series," and the "version" field will display the version number of the R series firmware.

> **╱ NOTE ╲**
> ・If these fields are empty, your computer may not be properly connected to the R series. Please make sure that the cable is not disconnected or damaged, that the TCP/IP settings are correct, and that the R series has started in Update mode.

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10. Click the [Update] button in the "Connect and Update" column.

The update operation will begin.

⚠ **CAUTION**

The update will take about 30 seconds. During the update operation, do not turn off the power to the device or disconnect the cable. If update fails due to disconnection of the power cable during the update, or due to other reasons, the device may become inoperative.

11. When the "Connect and Update" section displays the message "Update was completed. Close this Update Program." click the [X] button in the upper-right corner of the program window to close the program.

12. Turn off the power to R series device.

■ Computer TCP/IP setting (for Dante)

To update Dante firmware, configure computer TCP/IP settings.

1. **Open the Network and Sharing Center as described below.**
    Windows 7
    Select [Start] → [Control Panel], then click or double-click [Network and Sharing Center] or [View network status and tasks].

    Windows 8 and Windows 8.1
    [Windows]+[X] → [Control Panel], then click or double-click [Network and Sharing Center] or [View network status and tasks].

    The "Network and Sharing Center" is displayed.

2. **Click [Manage network connection] or [Change Adapter settings] from the "Tasks" list located in the left side of "Network and Sharing Center" window, then double-click [Local Area Connection].**
    The "Local Area Connection Status" dialog box will be displayed.

    > **NOTE**
    > ・The "User Account Control" dialog box may appear. Click [Continue] or [Yes].
    > ・If the "Local Area Connection properties" dialog box appears, skip ahead to step 4.

3. **Click [Properties].**
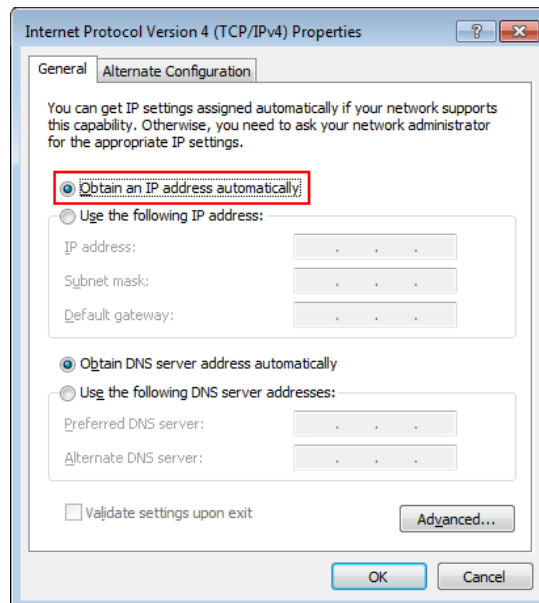   The "Local Area Connection properties" dialog box will be displayed.

    > **NOTE**
    > ・The "User Account Control" dialog box may appear. Click [Continue] or [Yes].

4. **Select [Internet Protocol Version 4 (TCP/IPv4)], then click [Properties].**
    The "Internet Protocol Version 4(TCP/IPv4) Protocol" dialog box will be displayed.

5. **Click [Obtain an IP address automatically].**
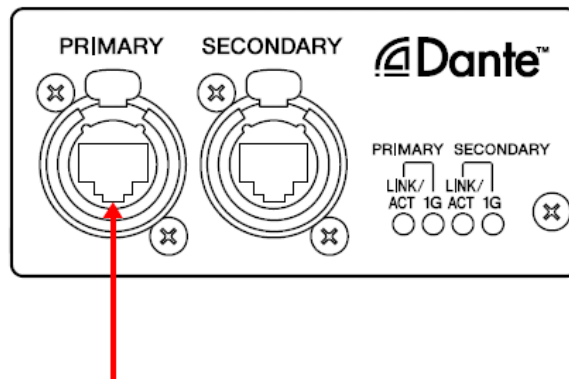

6. **Click [OK].**

■ Updating the Dante firmware

Described below are the procedures to update the Dante module firmware integrated in the R series device.

⌐ **NOTE** ⌐
・For details of the Dante Firmware Update Manager, refer to "AUD-MAN-Firmware Update Manager" stored in the compressed file folder.

1. **Connect the Dante [PRIMARY] connector on the rear panel of the R series device to the Ethernet connector on the computer using an Ethernet cable.**
   Be sure to directly connect the computer and the R series device, and do not connect any other Dante device to the computer.

2. **Set the [UNIT ID] rotary switch on the R series device to 2, pull the switches 3, 4 and 8 down (to ON) with the other switches remaining in their up positions (OFF).**

3. **Turn on the power to the R series device.**

4. **Select [Start]→[All programs]→[Audinate]→[Dante Firmware Update Manager]→[Dante Firmware Update Manager] , then right-click and select "Run as Administrator."**
   The Dante Firmware Update Manager will start up.
   Check that the version number is 1.3.2 or higher from the title bar.
   ⌐ **NOTE** ⌐
   ・The "User Account Control" dialog box may appear. Click [Continue] or [Yes].

5. **If you see the interface selection screen, select the interface card to connect the Dante device.**

6. **Click [Update Dante Firmware].**

7. **Click [Browse] and select "FWUpdate_RSio64-D_vxxx_swyyy.dnt." Then click [Open].**
    xxx and yyy represent the firmware version number.

> ┌─── **NOTE** ───┐
> ・The Dante firmware will not work correctly if the path contains any characters other than single-byte alphanumeric characters, "-" (hyphen), or "_" (underscore). You must save the firmware update file in a directory whose name contains only single-byte alphanumeric characters, "-" (hyphen), or "_" (underscore). (E.g., C:\temp)
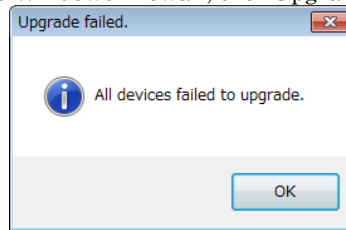
> ⚠ **CAUTION**
> **Be sure to ensure compatibility of the update files with the device. If update files other than the device are applied, the device will become inoperable. In general, do not check the [Override Device Matching] option. If this option is left unchecked, only devices that support the file can be selected, ensuring that updating the device with invalid or wrong files is prevented.**
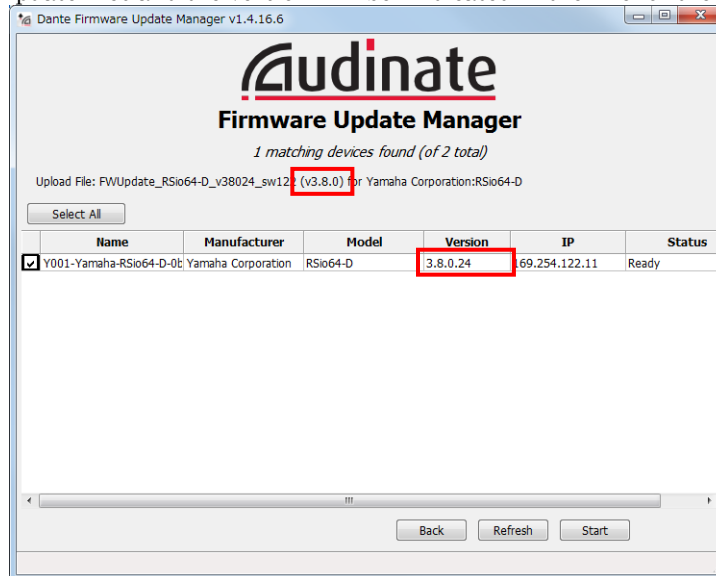
8. **Click [Next].**

> ┌─── **NOTE** ───┐
> ・In some cases the Windows firewall may be blocking the Dante Firmware Update Manager. Select the [Private network] check box, and click [Allow access]. Alternatively, in the Windows firewall, click "Allow programs or functions through the Windows firewall," and if the "fum" checkbox is unselected, select this check box to allow access.
> If the update manager is blocked by the Windows firewall, the "Upgrade Failed" dialog box appears.

9. **Check the R series device to update.**
    Check the version of the update files and the version number indicated in the line for the device to be updated.

> ┌─── **NOTE** ───┐
> ・ If the device which you want to update is not displayed, click [Refresh]. If it is still not displayed, use Dante Controller to check whether the cable might be disconnected or broken, whether the TCP/IP settings are correct, and whether the device is running.

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10. Click [Start].

The update operation will begin.

"Updating(n/m)" appears in the Status field during updating. "Done" is displayed once update is completed.

⚠ CAUTION

Update takes 2 to 4 minutes. During the update operation, do not turn off the power to the device or disconnect the cable. If update fails due to disconnection of the power cable during the update, or due to other reasons, the device may become inoperative.

NOTE

・If update is not completed after 5 minutes, or update failure indication appears, click X at the upper right corner of Dante Firmware Update Manager to exit the program **without turning the device power off**, and restart the procedure from the step 4. If update still fails, follow the instructions stated in "About Failsafe Mode" to perform the recovery process.

11. Turn off the power to the R series device and return the dip switches to their original settings.

Please return the dip switch settings to the positions noted in step 2 of the "Updating the R series firmware."

The firmware update is now complete.

■About Failsafe Mode

The Dante module integrated in the R series may become unusable due to data corruption if the Dante device is powered-off during a firmware update.
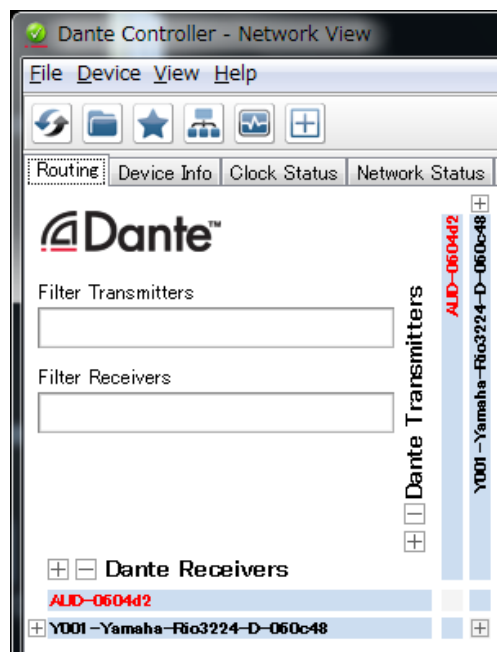
To recover from such a state, the Dante module will enter "failsafe mode."

To restore the Dante module from failsafe mode, a recovery image must be sent from the Firmware Update Manager.

If the red [SYSTEM] indicator of the R series device periodically blinks twice, it may be that the Dante module is in failsafe mode.
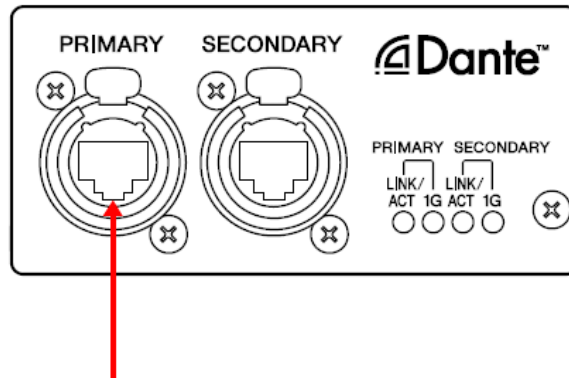
Use Dante Controller to check whether the Dante module is in failsafe mode.

A Dante module that is in failsafe mode is shown as a red device name in the network grid view of Dante Controller (version 3.1.x or later).

Described below are the procedures to recover the Dante module integrated in the R series device.

1. Turn off the power to the R series device.

2. Separate the R series device from the Dante network.

3. Connect the Dante [PRIMARY] connector on the rear panel of the R series device to the Ethernet connector on the computer using an Ethernet cable.
   In some cases, an error may occur during recovery if you are going through a network switch. Connect the computer with the R series device in a one-to-one connection.
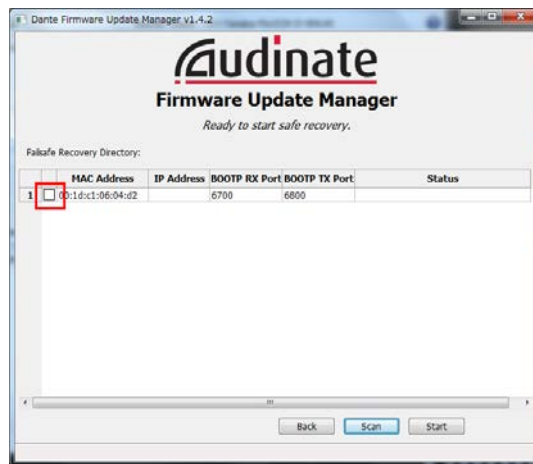

4. Turn on the power to the R series device.

5. Disable all but one of the network interfaces on your computer.
   You should also disable the wireless LAN.

6. Select [Start]→[All programs]→[Audinate]→[Dante Firmware Update Manager]→[Dante Firmware Update Manager] , then right-click and select "Run as Administrator."
   The Dante Firmware Update Manager will start up.
   ⌐ NOTE ⌐
   ・The "User Account Control" dialog box may appear. Click [Continue] or [Yes].

7. If you see the interface selection screen, select the interface card to connect the Dante device.

8. Click [Failsafe Recovery].

9. **When the R series device is detected, click the [Stop Scan] button.**
   If several minutes have passed without detection, use Dante Controller to check whether the cable might be disconnected or broken, whether the TCP/IP settings are correct, and whether the R series device is running.

10. **Select the check box of the detected R series.**

11. **Click [Start].**

   A pop-up is displayed confirming that you wish to proceed.

12. **Click [OK] to start the recovery.**
   Firmware Update Manager will display "Processing Safe Recovery", and then "Safe recovery Done" when the device(s) are recovered.

13. **Exit the Dante Firmware Update Manager, and wait for two minutes before turning off the power to the R series device.**
After recovery, restart the Dante module. If you power-off the R series device before restart is completed, the data of the Dante module will be corrupted, and you will have to perform the recovery once again. Start Dante Controller, and if the device name is shown in black, it is safe to turn off the power.

14. **The correct Dante firmware now needs to be loaded.**
After recovery, the Dante firmware will not be the latest version. To update to the latest firmware, perform steps 2 through 11 of "Updating the Dante firmware."

Now recovery and firmware update are completed.

■ Error Message List (RSio64-D Update Program V3)

Error messages (that consist of an error number and a string in English) for the RSio64-D Update Program V3 may be displayed on the computer.

This section explains the error numbers, the English strings, and the appropriate action to take.

<u>NOTE</u>
・ If the same error message appears each time you try to update, the device may need repairing, in which case you should contact your Yamaha dealer.

Number	Cause	Possible Solution
[ERROR:001]～ [ERROR:006]、 [ERROR:101]～[ERROR:107]	An error occurred while communicating with the device.	Make sure that the computer is connected to the R series device correctly, then restart the RSio64-D Update Program V3 and the R series device. (→P.7)
[ERROR:009]	The R series device is not engaged in Update mode.	After turning the R series device power off, set the UNIT ID number to 2, pull the dip switches 3, 4 and 8 down (ON) and put all other switches (OFF) and then turn the power on. (→P.7)
[ERROR:108]、[ERROR:109]	Information on the R series device could not be obtained.	The device may need repairing, in which case you should contact your Yamaha dealer.
[ERROR:111]	The firmware data file was not found.	Place the "RSIO_P_Vxxx.BIN" file in the folder that contains the "RSio64-D_UpdaterV3.exe" file.(→P.7) xxx represents the firmware version number. (E.g., RSIO_P_V310.BIN)