Dante Firmware Update Manager

User Guide

for Windows and Mac OS X

For Dante Firmware Update Manager software version: 3.10.6.2 and up

Document version: 2.7

September 18th, 2018

Document name: AUD-MAN-Firmware_Update_Manager-v2.7

Copyright

© 2018 Audinate Pty Ltd All Rights Reserved.

Audinate®, the Audinate logo and Dante are trademarks of Audinate Pty Ltd.

All other trademarks are the property of their respective owners.

Audinate products are protected by one or more of US Patents 7747725, 8005939, 7978696, 8171152, European Patent 2255541, Chinese Patent ZL200780026677.0 and other patents pending or issued. See www.audinate.com/patents.

Legal Notice and Disclaimer

Audinate retains ownership of all intellectual property in this document.

The information and materials presented in this document are provided as an information source only. While effort has been made to ensure the accuracy and completeness of the information, no guarantee is given nor responsibility taken by Audinate for errors or omissions in the data.

Audinate is not liable for any loss or damage that may be suffered or incurred in any way as a result of acting on information in this document. The information is provided solely on the basis that readers will be responsible for making their own assessment, and are advised to verify all relevant representation, statements and information with their own professional advisers.

Software Licensing Notice

Audinate distributes products which are covered by Audinate license agreements and third-party license agreements.

For further information and to access copies of each of these licenses, please visit our website: www.audinate.com/software-licensing-notice

Contacts

Audinate Pty Ltd

Level 1, 458 Wattle Street

Ultimo NSW 2007

AUSTRALIA

Tel. +61 2 8090 1000

Postal address

Audinate Pty Ltd

PO Box 855

Broadway NSW 2007

AUSTRALIA

Audinate Inc

1200 NW Naito Parkway

Suite 630

Portland, OR 97209

USA

Tel: +1 503 224 2998

info@audinate.com

www.audinate.com

Contents

1. Introduction 6

1.1. About Audinate 6
1.2. About Dante 6

2. Terminology 6
3. About the Firmware Update Manager 6

3.1. About version 3.10.6 7

4. Installing the Dante Firmware Update Manager 8

4.1. System Requirements 8
4.2. What is included 8
4.3. Windows Installation 8

4.3.1. To install 8
To install the Dante Firmware Update Manager: 8
4.3.2. To uninstall 9
To uninstall the Dante Firmware Update Manager, either uninstall the program via the Control Panel (Start > Control Panel > Programs and Features), or: 9

4.4. Mac OS X / macOS Installation 9

4.4.1. To install 9
To install the Dante Firmware Update Manager on Mac OS X / macOS: 9
4.4.2. To uninstall 9

5. Using the Firmware Update Manager 10

5.1. Prerequisites 10
5.2. Starting 10
5.3. Quitting or exiting 10
5.4. Selecting an interface 11
5.5. Selecting a mode 11

6. About Dante Firmware 12

6.1. What is Dante Firmware? 12
6.2. What does a Firmware Update file look like? 12
6.3. When should I update my Dante Firmware? 12
6.4. How do I know whether a particular Dante device needs updating? 13

7. Updating firmware 14

7.1. Prerequisites 14
7.2. Basic Steps 14

8. About Failsafe 16

8.1. What is failsafe mode? 16
8.2. How do I tell if a device is in failsafe mode? 16

8.2.1. Upgrade Mode 17

8.3. How do I recover from failsafe mode? 17

9. Using Failsafe Recovery 17

9.1. Basic Steps 17

10. Troubleshooting 20

10.1. Failed to initiate/start TFTP process/server 20

10.2. Updating a device that is running the wrong firmware 20
10.3. Devices failed to upgrade 21
10.4. Firmware Update Manager cannot locate a device 21

1. Introduction

1.1. About Audinate

Founded in 2006, Audinate revolutionizes how AV systems are connected so customers can thrive in a networked world. Audinate's Dante audio networking technology has been adopted by the professional audio industry's leading manufacturers. Dante is used extensively for live performance events, commercial installations, broadcast, recording and production, and communications systems. Audinate offices are located in US, United Kingdom, Hong Kong and Australia.

1.2. About Dante

Dante audio networking utilizes standard IP networks to transmit high-quality, uncompressed audio with near-zero latency. It's the most economical, versatile, and easy-to-use audio networking solution, and is scalable from simple installations to large-capacity networks running thousands of audio channels. Dante can replace multiple analog or multicore cables with a single affordable Ethernet cable to transmit high-quality multi-channel audio safely and reliably. With Dante software, the network can be easily expanded and reconfigured with just a few mouse clicks. Dante is the audio networking choice of nearly all professional audio manufacturers, with hundreds of Dante-enabled audio products now available.

For more information, please visit the Audinate website at www.audinate.com.

2. Terminology

In this document, the term 'module' is used to refer to the Dante component of a host device - for example, a Brooklyn II module installed in a mixing console.

The term 'device' is used to refer to the host equipment in which the Dante module is installed.

3. About the Firmware Update Manager

The Dante Firmware Update Manager is a software application that allows you to:

- Select a firmware update file for a particular Dante module type
- Discover matching Dante-enabled audio devices on your network
- Manage the firmware upgrade for these devices
- Restore Dante-enabled modules in failsafe mode

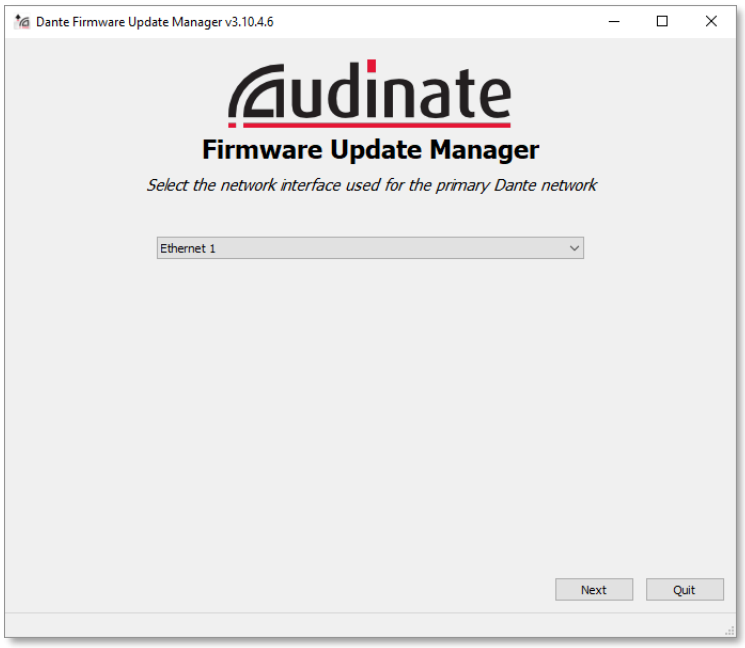


Figure 1 - start screen

3.1. About version 3.10.6

Version 3.10.6 of the Firmware Update Manager can be used to update the firmware for the following Dante modules:

- Brooklyn II
- Broadway
- Ultimo
- Ultimo X
- Dante PCIe Card
- Dante HC
- Dante IP Core
- AVIO (Dante adapters)
- Dante-MY16-AUD version 3.3.9 and up (for previous versions, see the Yamaha website)
- Dante-MY16-AUD2
- DLM version 3.3.6 and up (for previous versions, upgrade using the module web interface)

The Firmware Update Manager applies Dante firmware update files (file extension .dnt) to connected hardware devices. Update files may be provided by Audinate or by your device manufacturer.

4. Installing the Dante Firmware Update Manager

4.1. System Requirements

The Dante Firmware Update Manager can be installed on Windows PCs or Macs. Wherever practical, install it on the same computer as the Dante Controller so you can use both tools as required.

Note: If running Dante Controller on the same computer, please ensure you have updated to the latest version available from the Audinate website.

The Dante Firmware Update Manager can be installed on a computer running:

- Windows 7 (SP1), 8.1 and 10
- Mac OS X / macOS 10.11.5, 10.12.6 and 10.13

4.2. What is included

The Dante Firmware Update Manager contains:

- Dante Firmware Update Manager installer file, including failsafe recovery files

Note: Dante firmware update files are not included - they must be downloaded prior to using the Firmware Update Manager. See the *Prerequisites* section below for more information.

Note: For Dante IP Core devices, firmware update files *and* failsafe recovery files are provided by the device manufacturer.

4.3. Windows Installation

4.3.1. To install

To install the Dante Firmware Update Manager:

1. Ensure you are logged on to your PC as an Administrator.
2. Double-click and extract the Windows installer file to a temporary location.
3. Close any running Dante applications, including Dante Controller and Dante Virtual Soundcard.
4. Temporarily disable any running antivirus software.
5. Double-click the installer file.
6. If prompted with a message:

   “The publisher could not be verified. Are you sure you want to run this software?”

   Select **Yes**.

You will be presented with the End User License Agreement.

7. Read and select the “I agree” checkbox if you agree to the terms. If you do not accept, the install will terminate.
8. Click **Install**

Wait until the Firmware Update Manager is installed.

9. If prompted with a message:

   “Do you want to allow the following program from an unknown publisher to make changes to this computer?”

   Select **Yes**.

10. The installation should now complete.

4.3.2. To uninstall

To uninstall the Dante Firmware Update Manager, either uninstall the program via the Control Panel (Start > Control Panel > Programs and Features), or:

1. Click **Start** and navigate to:

   All Programs > Audinate > Firmware Update Manager

2. Select **Uninstall**

   You will be given a chance to confirm. Select **Yes** to proceed.

The Dante Firmware Update Manager will be uninstalled.

Note: Uninstalling Firmware Update Manager will not affect Dante Controller or Dante Virtual Soundcard.

4.4. Mac OS X / macOS Installation

4.4.1. To install

To install the Dante Firmware Update Manager on Mac OS X / macOS:

1. Ensure you are logged on to your Mac as an admin user.
2. Download the Mac OS X “dmg” file.
3. Close any running Dante applications, including Dante Controller and Dante Virtual Soundcard.
4. Double-click the “.dmg” file to open it.
5. Double click on the installer “pkg” file to start the installer.
6. Read the terms and select the “I accept” checkbox if you agree to the terms. If you do not accept, the install will terminate.
7. Click **Install**.

You will be prompted to enter your password.

8. The installation will be completed when Firmware Update Manager is run for the first time.

4.4.2. To uninstall

Use the included uninstaller, or drag the application to the trash folder.

5. Using the Firmware Update Manager

5.1. Prerequisites

Dante firmware update files are not included with the Firmware Update Manager - they are provided separately by Audinate or your device manufacturer. Contact your device manufacturer if you are unsure where to obtain the latest firmware update file for your device.

Firmware update files must be saved to a local drive on the machine on which you have installed Dante Firmware Update Manager.

Note: Firmware Update Manager does not support multibyte characters in file paths to firmware update files. If your computer contains any directory names that include multibyte characters, save firmware update files to a location that contains only ASCII characters.

Warning: Applying the incorrect type of update file for your device will render the device unusable, and it will have to be restored to its original firmware version (see *Using Failsafe Recovery*). Always ensure the update file you apply is the correct file for your device.

5.2. Starting

To start the Dante Firmware Update Manager on Windows:

- Click the Windows **Start** button and navigate to:

  All Programs > Audinate > Dante Firmware Update Manager
- Select **Dante Firmware Update Manager**

To start the Dante Firmware Update Manager on Mac OSX:

- Open the Applications folder
- Open the 'Dante Firmware Update Manager' folder
- Double-click **Dante Firmware Update Manager**

Note: On Mac OS X, you will be required to enter an admin password to run Firmware Update Manager.

5.3. Quitting or exiting

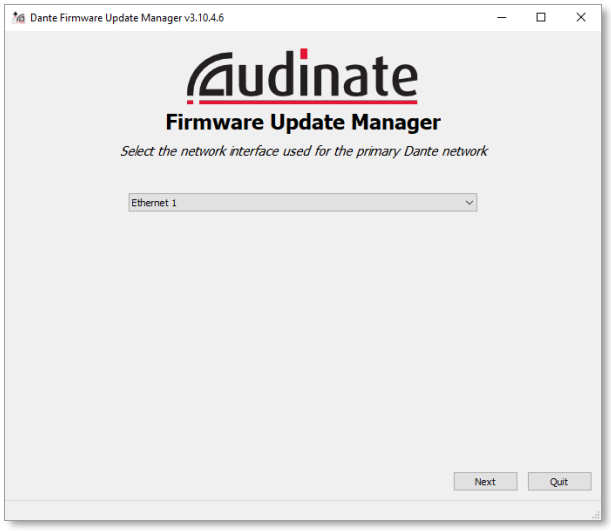
To quit the application:

- Select **Quit** from the interface selection screen, or the mode selection screen
- Select **Back** until you reach the mode selection screen, then select **Quit**
- Select the standard **Close Window** icon in the corner of the window

Important: To avoid corrupting the firmware on your device, you should not quit the application if a firmware update is already in progress.

5.4. Selecting an interface

If you have multiple network interfaces enabled on your computer, when you first start Dante Firmware Update Manager you will be prompted to choose a Dante network interface for the upgrade (as shown below).



Select the interface used for the **primary** Dante network, then click **Next**.

If you have Dante Controller or Dante Virtual Soundcard installed, Firmware Update Manager will automatically preselect the primary interface that was last used by either of those applications.

If Dante Virtual Soundcard is running, you will not be able to change the primary interface in Firmware Update Manager, unless you first stop Dante Virtual Soundcard.

Note: If you do not have a secondary (redundant) network, the network interface will be automatically selected. Just click **Next** to continue.

5.5. Selecting a mode

The Firmware Update Manager has two modes of operation:

1. Update Dante Firmware
2. Failsafe Recovery

In most cases, you will require 'Update Dante Firmware' mode. This is the mode to use to update Dante modules with new firmware versions.

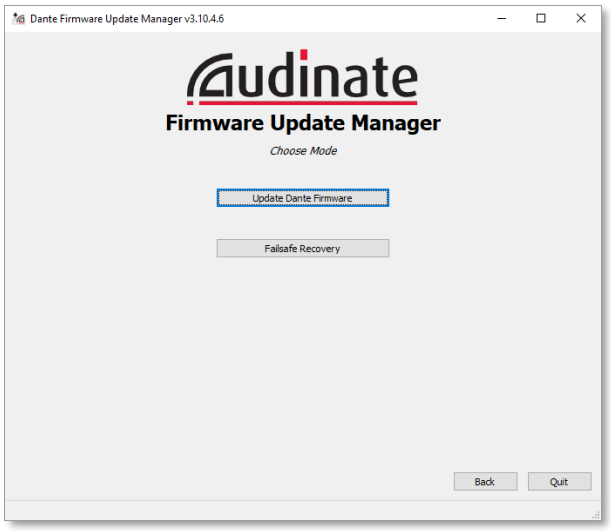


Figure 2 - mode select screen

Failsafe Recovery mode is only required if a module has been corrupted and has entered failsafe mode. Failsafe mode and using failsafe recovery are described in separate sections later in this document.

6. About Dante Firmware

6.1. What is Dante Firmware?

All Dante hardware modules run Audinate firmware loaded onto the module.

From time to time Audinate makes firmware updates available on our website for different Dante modules.

These updates may:

- Add new features
- Improve performance
- Provide bug fixes

6.2. What does a Firmware Update file look like?

A firmware update file for a Dante module is a binary file containing a new firmware image for the module.

The filename is sometimes formatted as:

```
<deviceName>-<version>_<component>-<version>.dnt
```

For example, a version 4.0.9.1 firmware update file for Brooklyn II modules might be called:

```
bklyn2-4.0.9.1_fpga-4.0.2.7_vcxo-4.0.2.7.dnt
```

6.3. When should I update my Dante Firmware?

It is good practice to update your firmware when a new release becomes available to take advantage of the latest improvements and bug fixes.

Firmware updates for your device will be distributed by the device manufacturer.

6.4. How do I know whether a particular Dante device needs updating?

By checking whether its product version is an earlier version than the available update.

You can use the Dante Controller **Device View > Status** tab to view the product version of Dante-enabled devices on your network.

To open the **Status** tab for a device, double-click the device in the Network view, then select the **Status** tab. The product version is shown in the **Device Information** pane, as shown below.

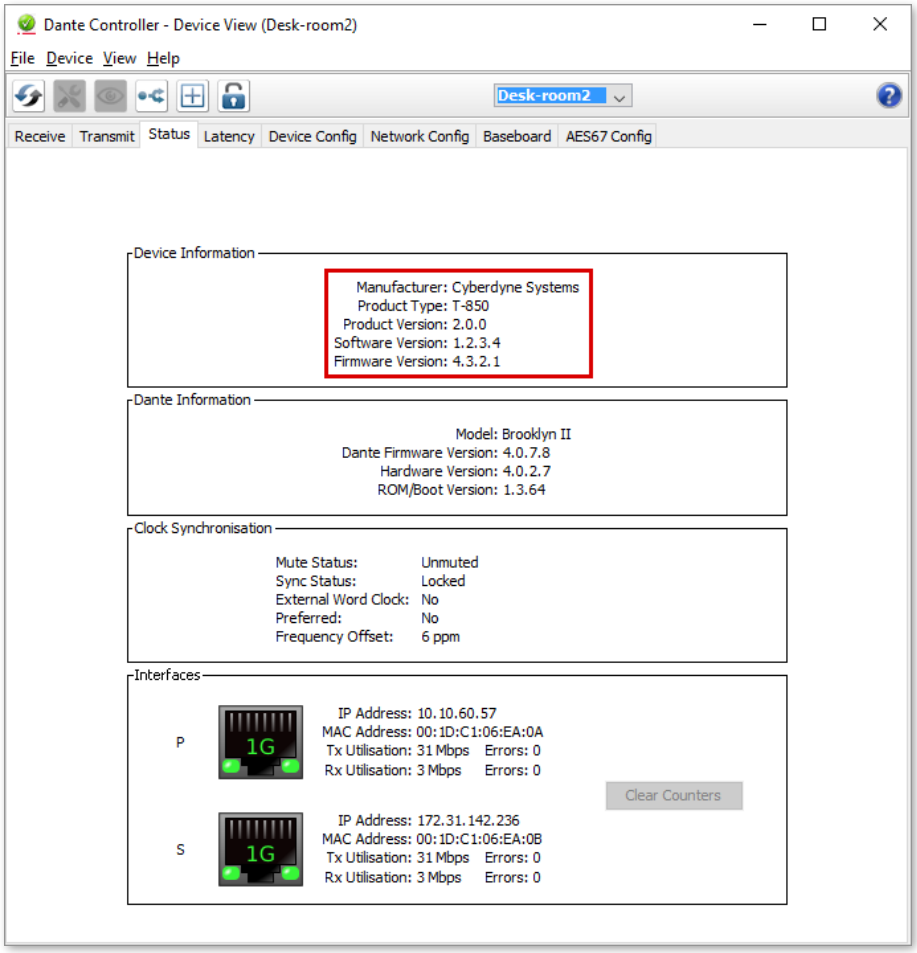


Figure 3 - Dante firmware information as shown in Dante Controller

The Firmware Update Manager also displays product version information for any discovered devices with a device type, manufacturer ID and model ID that match the update file you have selected.

7. Updating firmware

7.1. Prerequisites

Before starting the update process, ensure that:

1. All Dante devices that you wish to update are connected to the primary Dante network.
2. The computer on which you are running Firmware Update Manager is also connected to the primary Dante network, and Wi-Fi is disabled (for the duration of the updating process).
3. The computer and all relevant Dante devices are connected to the same IP subnet (Firmware Update Manager does not support routed networks).
4. You have saved the appropriate firmware update file/s to a local drive.

> **Note**: Only run one instance of Firmware Update Manager at a time. Running multiple instances on a single machine is not supported.

7.2. Basic Steps

To update the firmware of a Dante module:

1. Open the Dante Firmware Update Manager.
2. If you see the interface selection screen (shown in section 5.4 - *Selecting an interface*), select the primary Dante network.
3. Select **Update Dante Firmware**.
4. Click **Browse**.
5. Browse to the directory in which you saved your firmware update files.
6. Select the required Dante firmware update file.

> **Note**: Do not select 'Override Device Matching'. This option should only be used if you have accidentally updated a module with the wrong firmware, or if you have been specifically instructed to do so by your device manufacturer (see the *Troubleshooting* section for more information).

The Firmware Update Manager will now scan for devices on the network that match the firmware update file, based on the module type, manufacturer and model.

7. View the discovered Dante devices, and select those you wish to update, by clicking the associated checkboxes, as shown below:

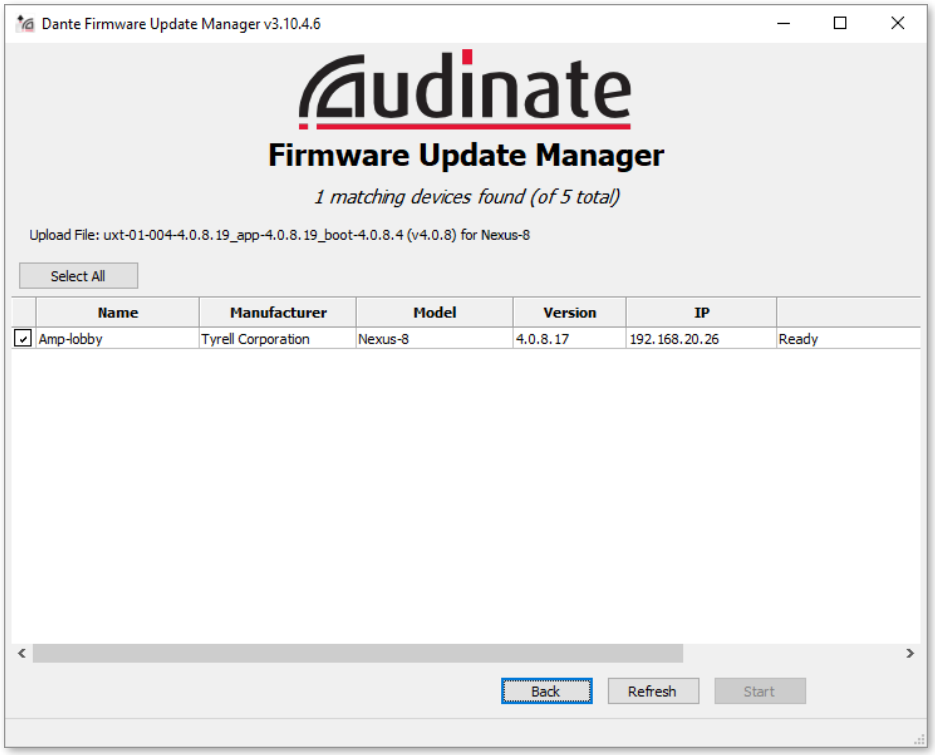


Figure 4 - Matching devices

If you are not sure where a particular device is located, you can use the **Identify** function in Dante Controller to help find it. Not all Dante-enabled devices have this function.

Information about the update file, including the file name and manufacturer and model information (where applicable) is displayed in the top pane for reference.

Note: Locked devices cannot be updated. Locked devices are indicated by a padlock icon in the device list: Stagebox-1
To update a locked device, unlock it first using Dante Controller.

Click a column header to re-sort the device list.

The Firmware Update Manager may also display devices that are of the correct module type, but are configured with incomplete or missing manufacturer and model information. In this case, the Firmware Update Manager will warn you that updating the module may result in functionality problems. Proceed only if you are completely sure that you want to apply the selected update file.

Note: If the status field for a device indicates that the device must first be upgraded to an intermediate version, and the device is not selectable, it is because the device does not support a direct upgrade to the loaded firmware update file. Click **Back** and upgrade the device to the indicated version before continuing.

8. Select **Start**.

The Firmware Update Manager will start updating all selected devices.

Note: If Windows Firewall opens a new window asking you to confirm you allow the application to pass through the firewall, accept.

- Each device will be updated in turn, taking 2-4 minutes per device
- As each device is updated, the device Status column will change to 'Updating (n/m)'
- When all sections are updated for a device, the device will show 'Done'
- When all devices have been updated, the following message will be shown:

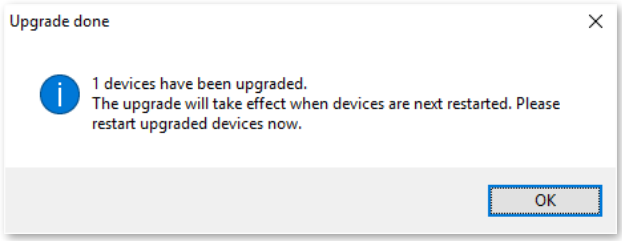


Figure 5 - Upgrade complete notification

9. Power cycle the Dante-enabled devices that have been upgraded, to finish applying the firmware update and restore your configuration. If the device is not power cycled or rebooted, the update will not be applied.

8. About Failsafe

8.1. What is failsafe mode?

All Dante hardware modules use software loaded from Flash memory as part of their operation.

As with any storage device, it is possible to corrupt the data on the Flash part, potentially rendering it unusable, if there are interruptions while writing to the Flash device.

By far the most common way for this to occur as with other Flash devices is by losing power to the Dante-enabled device in the middle of a firmware upgrade.

To provide recovery from this event, Dante hardware modules have a special protected part of the Flash memory that will run in the event the main part is corrupted.

When this is run, the module is in “failsafe mode”, and will wait for a recovery image to be provided by the Firmware Update Manager.

8.2. How do I tell if a device is in failsafe mode?

By viewing the device in the Dante Controller.

A Dante device that is in failsafe mode will appear with its default device name in **red** in the default network grid view of Dante Controller (versions 3.1.x and above).

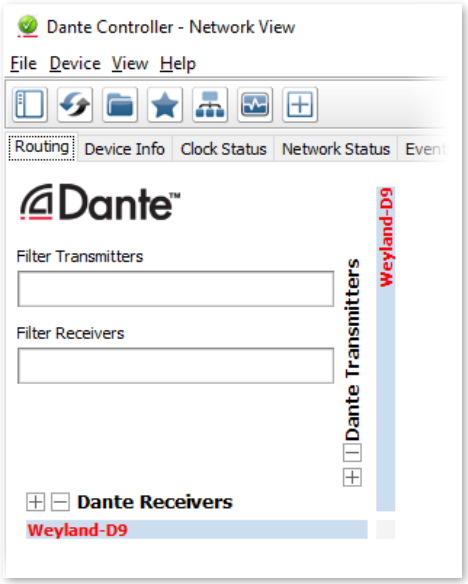


Figure 6 - Dante Controller showing device in failsafe mode

Also, for devices with LEDs, all status LEDs on the device will be red.

8.2.1. Upgrade Mode

If a device appears in **orange** in Dante Controller, it is in 'upgrade mode' and must be reset via Dante Controller (or via a physical power-cycle) in order to complete the upgrade process.

8.3. How do I recover from failsafe mode?

To restore a device that has entered failsafe mode, use the Dante Firmware Update Manager 'Failsafe Recovery' option.

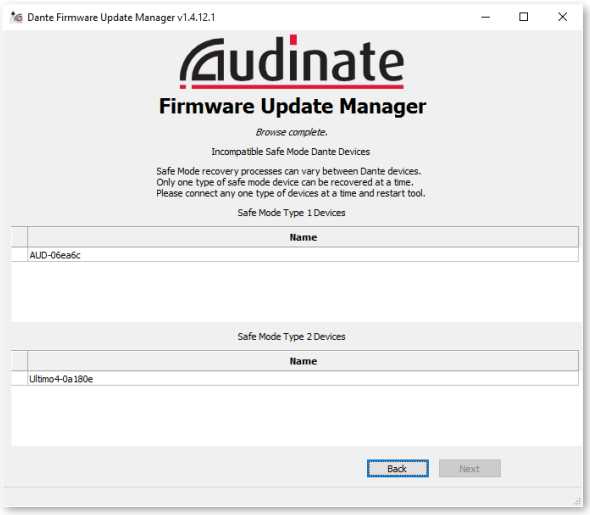
9. Using Failsafe Recovery

9.1. Basic Steps

To recover Dante devices in safe mode:

1. Ensure the computer running Dante Firmware Update Manager and the device you wish to recover are on the same IP subnet.
2. Disable all but one of the network interfaces on your computer.
3. Start Dante Firmware Update Manager.
4. If you see the interface selection screen (shown in section 5.4 - *Selecting an interface*), click **Next** to confirm the primary Dante network.
5. Select **Failsafe Recovery**.

   Firmware Update Manager will browse the network to find safe mode devices.
6. After a few seconds, one of four screens will be displayed:

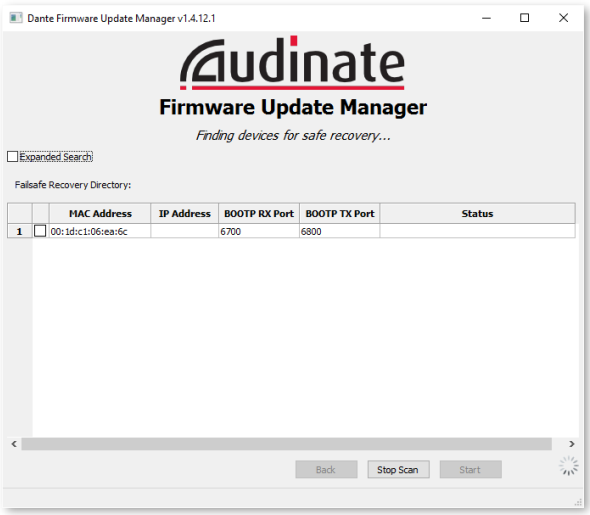


Incompatible Safe Mode Devices

This screen indicates that you have two types of devices (for example, Brooklyn II devices and Ultimo devices) in safe mode on your network. Only one type of device can be recovered at a time.

Click **Back**, disconnect either the Type 1 devices or Type 2 devices (it doesn't matter which at this point), and click **Failsafe Recovery** again. You will then see one of the two screens shown immediately below.

When you have restored one type of devices, repeat the process for the other type.

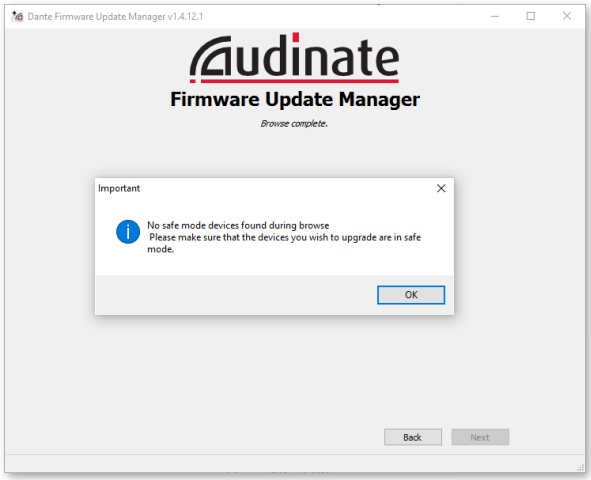


Finding devices for safe recovery...

This screen indicates that Firmware Update Manager has detected at least device in safe mode, and is scanning the network for the full list. It should take less than a minute to find all applicable devices.

When you are sure that all your safe mode devices have been found, click **Stop Scan,** and go to step 6 below.

Some older Dante-MY16-AUD and DLM devices may not appear in the failsafe recovery device list. If you have either of these devices in failsafe and they are not appearing in the failsafe device list, see the note regarding 'Expanded Search' below.



No safe mode devices found

This popup indicates that Firmware Update Manager has not detected any devices in safe mode on the network.

Check to ensure that your safe mode device/s are connected to the same network as Firmware Update Manager.

If you are sure that a device is in safe mode, but Firmware Update Manager cannot find it, contact your device manufacturer.

7. Select the devices that you wish to recover, and click **Start**.

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

8. 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.

   The Dante module will reboot automatically.

Note: You will need to power cycle the host device (e.g. the mixing console containing the Dante module) after the Dante module automatically reboots.

9. Apply the appropriate firmware update from your device manufacturer, to bring the module firmware back up to the latest version.

Expanded Search
Older Dante-MY16-AUD and DLM devices may not appear in the failsafe device list. To see these devices, click the 'Expanded Search' checkbox. The Expanded Search option may also display devices that are not actually in failsafe. Dante-MY16-AUD devices have MAC addresses beginning 00:1d:c1:03. DLM devices have MAC addresses beginning 00:1d:c1:01. When the relevant device/s appear in the list, follow the above procedure from step 6.

Note: For Dante IP Core devices, failsafe recovery files are provided by the device manufacturer.

10. Troubleshooting

10.1. Failed to initiate/start TFTP process/server

The Firmware Update Manager starts a TFTP server prior to updating a device's firmware.

If you see the following error message when using Firmware Update Manager:

'Failed to initiate TFTP process' (Mac OS X) or **'Failed to start TFTP server'** (Windows)

This is because a TFTP server is already running, which must be stopped before the device update can progress.

10.2. Updating a device that is running the wrong firmware

If your Dante device is running the wrong firmware (for instance, if it has been updated with firmware for a different manufacturer) it is possible to 'force' an update file onto the device, using the 'Override Device Matching' option on the 'Select Firmware Update File' screen (shown below).

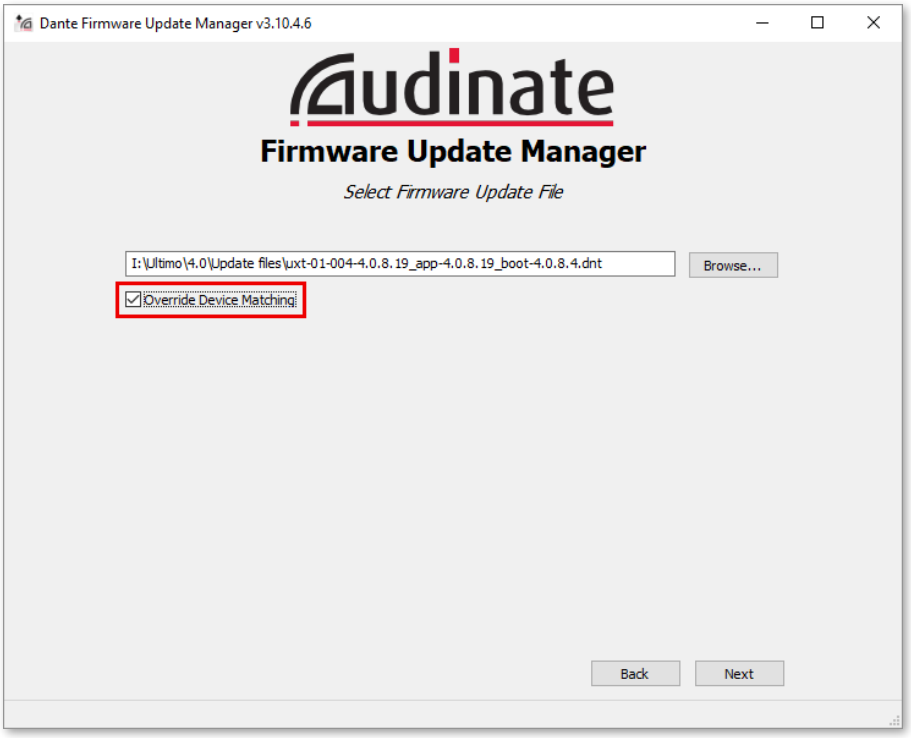


Figure 7 - Override Device Matching option

With this option selected, Firmware Update Manager will apply the selected update file to the device, even if the device manufacturer and model IDs in the update file do not match the manufacturer and model IDs on the device. This can be used to 'reset' your device with the correct manufacturer's firmware.

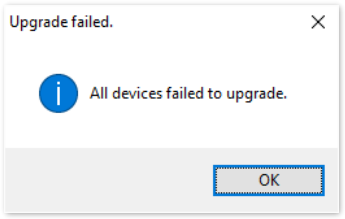
Firmware Update Manager will display a warning when this option is selected.

If the update file can be used to update multiple device models, you will be prompted to select which model type to update.

> **Warning**: Only use this option if you have been instructed to do so by your equipment manufacturer or by Audinate Technical Support. Applying firmware for the wrong manufacturer or model to your device can lead to functionality problems.

10.3. Devices failed to upgrade

If you see the following error dialog:



This may be because the device you are trying to upgrade is locked, but you are using an older version of Firmware Update Manager that does not indicate locked devices. Install the latest version of Firmware Update Manager for locked device support.

10.4. Firmware Update Manager cannot locate a device

This may be because the computer running Firmware Update Manager and the device you wish to upgrade / recover are not on the same IP subnet.

To resolve, ensure that the computer and device are connected to the same network switch, and the relevant switch ports are in the same IP subnet. Alternatively, connect the device directly to the computer via the computer's Ethernet port.

> **Note**: Firmware Update Manager does not support routed networks – the computer and device must be on the same IP subnet.