Dante Firmware
Update Manager

User Guide

for Windows and Mac OS X

For Dante Firmware Update Manager software version: 1.3.0 and up

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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

1732 NW Quimby Street

Suite 215

Portland, OR 97209

USA

Tel: +1 503 224 2998

info@audinate.com

www.audinate.com

Contents

1. Introduction

1.1. About Audinate

Audinate Pty Ltd is a leading developer of media networking technology whose products and solutions are transforming the way the world interconnects multimedia systems. Audinate's rapidly growing customer base spans the broader international AV industry and includes many key industry brands.

Audinate's hardware and software products and solutions are founded on patented technologies invented by its world-class networking experts. They enable manufacturers and AV system solution providers to produce sophisticated, easy to use, pro-audio quality AV solutions over standard IP networks.

Audinate is based in Sydney, Australia with offices in the United States and the UK.

With Audinate's Dante technology, digital media networking just got easy.

1.2. About Dante

Audinate's Dante technology provides high performance digital media networking that meets the quality and performance requirements of professional live sound, AV installations and broadcast and recording systems.

Designed to fully exploit the capabilities of today and tomorrow's networking equipment, Dante provides media transport mechanisms that eliminate many traditional audio network design restrictions. Dante makes it easy to set up robust, flexible digital audio networks with unrestricted performance. A Dante network can be designed with mixed Gigabit and 100Mbps network speeds, simultaneously support audio with different sample rates and bit depths, and even allow the design of network zones with different latencies.

Dante is built on Internet Protocols — not just Ethernet. Because it uses standard IP over Ethernet, Dante is capable of running on inexpensive off-the-shelf computer networking hardware, and with the use of standard QoS can share installed networks with other data and computing traffic.

Dante provides sample-accurate synchronization and can deliver the very low latency required by professional audio. Dante's network-centric, audio-independent approach to synchronization allows perfectly synchronized playout across different audio channels, devices and networks, even over multiple switch hops.

Dante makes networking a true plug-and-play process, allowing automatic device discovery and system configuration. Dante-enabled devices will automatically setup their network configuration and advertise themselves and their channels on the network, reducing complicated, error-prone set-up procedures. Instead of "magic numbers", networked devices and their input and output signals can be named to make sense to the user.

Dante is not restricted to allowing configuration and transmission of audio channels. Dante also provides mechanisms to send or receive control and monitoring information across the Dante IP network, including equipment-specific messages and control specified and developed by a particular manufacturer.

With its strong foundations and links to current and evolving network standards, Dante is able to deliver a level of future proofing otherwise unavailable in other types of digital audio transportation. Dante was designed for Gigabit networks from its inception, and Dante as it exists today already incorporates aspects of the emerging AVB networking standards. Continued evolution of its networking technology is an integral part of the Dante roadmap.

Dante technology is available in ready-to-implement hardware and software products, reference designs and development APIs.

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

2. 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 device type
- Discover matching Dante-enabled audio devices on your network
- Manage the firmware upgrade for these devices
- Restore Dante-enabled devices in failsafe mode

Figure 1 - Start screen

2.1. About version 1.3.0

Version 1.3.0 of the Firmware Update Manager can be used to update the firmware for the following Dante hardware modules:

- Brooklyn II
- Dante PCIe Card
- Dante-MY16-AUD version 3.3.9 and up (for previous versions, see the Yamaha website)
- 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.

3. Installing the Firmware Update Manager

3.1. 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 XP SP3 or Windows 7 32-bit
- Windows 7 64-bit
- Mac OS X 10.6.8, 10.7 or 10.8

3.2. What is included

The Dante Firmware Update Manager contains:

- Dante Firmware Update Manager installer file, including failsafe recovery image(s)

> **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.

3.3. Windows Installation

3.3.1. 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.

3.3.2. 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.

3.4. Mac OS X Installation

3.4.1. To install

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

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.

3.4.2. To uninstall

Drag the application to the trash folder.

4. Using the Firmware Update Manager

4.1. 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 using *Using Failsafe* Recovery. Always ensure the update file you apply is the correct file for your device.

4.2. 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.

4.3. Selecting a mode

The Firmware Update Manager has two modes of operation:

1. Firmware Update
2. Failsafe Recovery

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

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

4.4. Quitting or exiting

To quit the application:

- Select **Quit** from the main mode selection page
- Select **Back** until you reach the main mode selection page 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. About Dante Firmware

5.1. What is Dante Firmware?

All Dante hardware devices run Audinate firmware loaded onto the device.

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

These updates may:

- Add new features
- Improve performance
- Provide bug fixes

5.2. What does a Firmware Update file look like?

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

The filename is usually formatted as:

```
FWUpdate_<deviceName>_<version>.dnt
```

For example, the version 3.5.2 firmware update file for Brooklyn II modules is called:

```
FWUpdate_BrooklynII_3-5-2-0.dnt
```

5.3. 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.

5.4. 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 2 - 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.

6. Updating firmware

6.1. Prerequisites

Before starting the update process, ensure that:

1. All Dante devices that you wish to update are connected to the Dante network via their **primary** Ethernet ports only.

2. The computer on which you are running Firmware Update Manager is connected to the *Dante network only, via one network interface only* - unplug any other network connections, and disable Wi-Fi for the duration of the updating process.

3. You have saved the appropriate firmware update file/s to a local drive.

> ℹ **Note**: Only run 1 copy of Firmware Update Manager at a time. Running multiple copies one 1 machine is not supported.

6.2. Basic Steps

To update the firmware of a Dante device:

1. Open the Dante Firmware Update Manager.

2. Select **Update Dante Firmware**.

3. Click **Browse**.

4. Browse to the directory in which you saved your firmware update files.

5. Select the required Dante firmware update file.

> ℹ **Note**: Do not select 'Override Device Matching'. This option should only be used if you have accidentally updated a module with the wrong firmware (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 device type, manufacturer and model.

6. View the discovered Dante devices, and select those you wish to update, by clicking the associated checkboxes, as shown below:
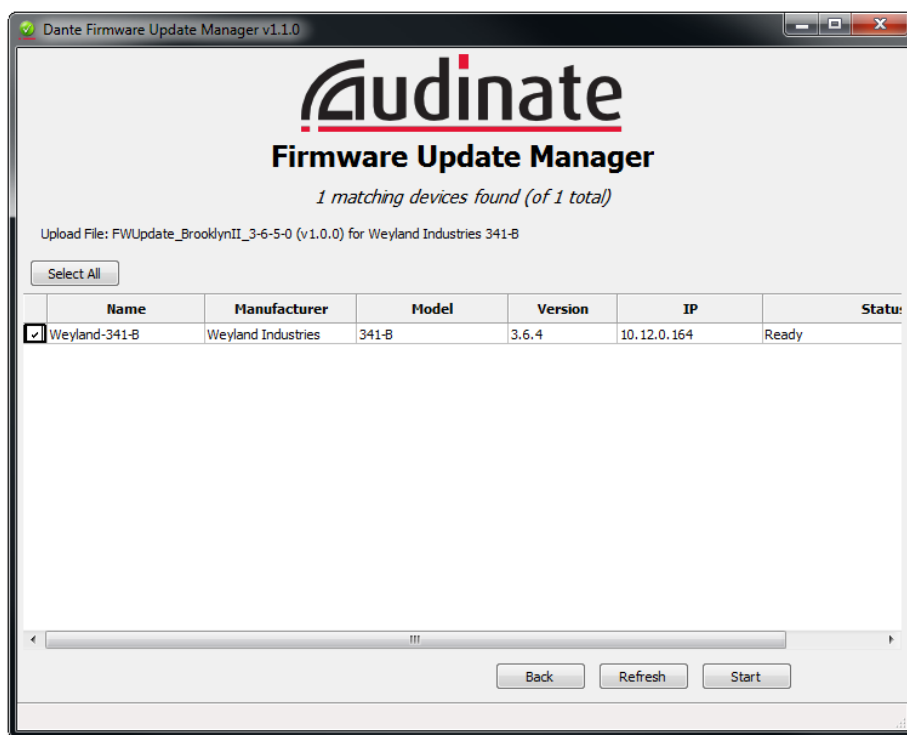
Figure 3 - Matching devices

> ℹ️ **Note:** Audinate recommends that you select a maximum of 10 devices for simultaneous updating. Attempting to update more than 10 devices simultaneously can result in Firmware Update Manager stability problems.

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.

> ⚠️ The Firmware Update Manager may also display devices that are of the correct device 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.

7. Select **Start**.

The Firmware Update Manager will start updating all selected devices.

> ℹ️ **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'
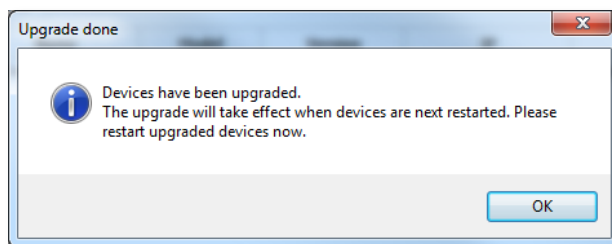- When all devices have been updated, the following message will be shown:

Figure 4 - Upgrade complete notification

8. Power cycle the Dante-enabled audio 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.

7. About Failsafe

7.1. What is failsafe mode?

All Dante hardware devices 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 devices have a special protected part of Flash that will run in the event the main part is corrupted.

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

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

By viewing it 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).
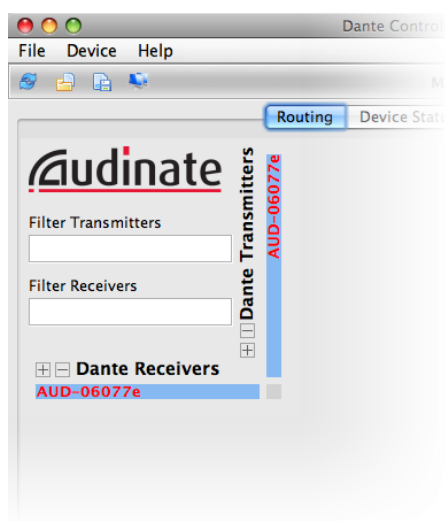
Figure 5 - Dante Controller showing device in failsafe mode

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

7.3. 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.

8. Using Failsafe Recovery

8.1. Basic Steps

The basic steps for recovering a Dante hardware device that has entered failsafe mode are:

1. Check that the device is actually in failsafe mode (see About Failsafe above).

2. Disconnect the Dante-enabled audio equipment from the Dante network. If the audio equipment has multiple Dante devices onboard, disconnect all of them.

3. On Windows, disable Windows Firewall.

   If your computer has multiple network interfaces, disable all but one of them, including any wireless connections.

   On Mac OS X, physically disconnect from all Ethernet networks, and disable any wireless connections.

4. Using a single Ethernet cable, connect your computer's Ethernet interface directly to the Ethernet interface of the Dante device that has entered failsafe mode. If the device has primary and secondary Ethernet interfaces, connect using only the primary interface.

5. Make sure the computer is set to automatically configure its IP address.

6. Power cycle the computer.

7. Power cycle the Dante-enabled audio equipment containing the Dante device.

   Both devices will automatically be assigned link local IP addresses.

> ℹ **Note**: Your computer's default Ethernet interface **must** have a link local IP address 169.254.*.* or you will not be able to proceed with failsafe recovery.

8. Start the Dante Firmware Update Manager.

> ℹ **Note**: If using Windows Vista or Windows 7, make sure you right-click and select 'Run as Administrator'.

9. Select **Failsafe Recovery**.

    You will receive the following message confirming that you have your network set up correctly.

Figure 6 - Confirm recovery notification

The Firmware Update Manager will check for a connected Dante device in failsafe mode.

10. Select the discovered device, and click **Start** to commence recovery.

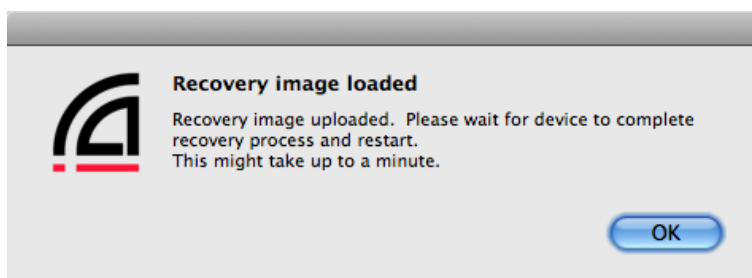11. The following notification will be displayed when the recovery file has completed uploading.

Figure 7 - Image loaded notification

12. The Dante device will write the recovery file and when finished, will automatically reboot.

Please be patient while the recovery file is written and the device reboots – this can take up to 2 minutes.

> ℹ **Note**: You will need to power cycle your Dante-enabled audio equipment after the Dante device or card automatically reboots.

13. Apply the appropriate firmware update after recovery, to bring the device firmware back up to the latest version.

9. Troubleshooting

9.1. Failed to initiate/start TFTP process/server

The Firmware Update Manager starts a TFTP server prior to updating a module'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 module update can progress.

9.2. Updating a module that is running the wrong firmware

If your Dante module 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 module, using the 'Override Device Matching' option on the 'Select Firmware Update File' screen (shown below).
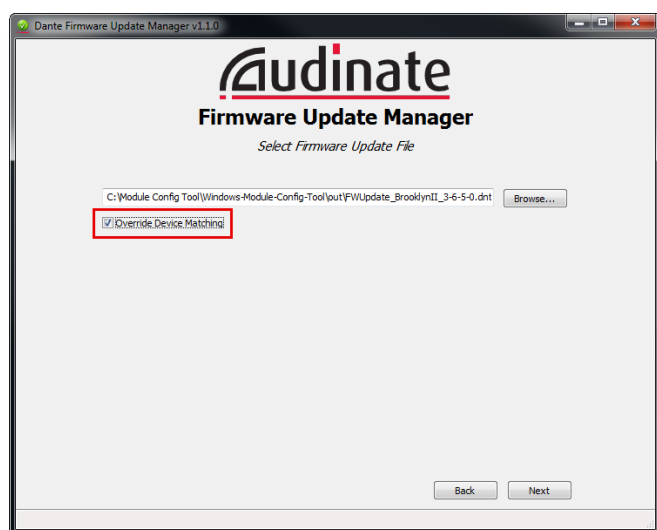

Figure 8 - Override Device Matching option

With this option selected, Firmware Update Manager will apply the selected update file to the module even if the device manufacturer and model IDs in the update file do not match the manufacturer and model IDs on the module. 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.

> ⚠️ **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.