

User Guide

# CDC MC Dante Set-up



Description

This document provides a guide to setting up a CDC MC Dante for a Dante network

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## Introduction

This guide provides an overview on how to set up a Cadac CDC MC Dante.

The following Audinate software is also required in order to use the CDC MC Dante on a Dante network:

- 'Dante Controller', provided free by Audinate, provides remote control and set up of all Dante equipment attached to a given Dante audio network. [Link](#)
- 'Dante Virtual Soundcard', which requires a separate software license, is needed to send / receive audio on a Dante network to / from a local DAW or media player. [Link](#)



## CDC MC Dante



The CDC MC Dante supports up to 64 bi-directional connections to map between MegaCOMMS ports and a Dante network.

Two network ports **A** and **B** are available to provide the channel count required. Each has a primary and secondary connection; the secondary connections are for redundant network connections **only**.

## Channel Configurations Available \*

| Fsample         | Port A I/O | MegaCOMMS mapping | Port B I/O | MegaCOMMS mapping |
|-----------------|------------|-------------------|------------|-------------------|
| 44.1 / 48 kHz   | 64         | 1-64              | Not used   | -                 |
| 88.2 / 96 kHz   | 32         | 1-32              | 32         | 33-64             |
| 176.8 / 192 kHz | 16         | 1-16              | 16         | 33-48             |

MegaCOMMS to Dante audio channel connections are configured on the routing page of the Dante Controller.

Port A must always be connected when using CDC MC Dante.

## Front Panel Dip Switch 1 - 2 - 3: Settings for Different Sample Rates

| Fsample   | DIP 1 / FS 0 | DIP 2 / FS 1 | DIP 3 / FS 2 |
|-----------|--------------|--------------|--------------|
| 44.1 kHz  | ON           | OFF          | OFF          |
| 48 kHz    | OFF          | OFF          | OFF          |
| 88.2 kHz  | ON           | ON           | OFF          |
| 96 kHz    | OFF          | ON           | OFF          |
| 176.8 kHz | ON           | OFF          | ON           |
| 192 kHz   | OFF          | OFF          | ON           |

Sample rate settings are made via the Dante Controller and **MUST** be mimicked via the dip switches on the CDC MC Dante's front panel.

**BOTH** left and right ports must be set to the same sample rate via the Dante controller. This applies **EVEN** if you are only using the left port! **IT WILL** require you to attach the network cable to both ports in order to access them via the controller, one at a time.



### Front Panel Dip Switch 4 - 5 : Settings for Different WORD CLOCK Modes

| Mode  | DIP 4                                | DIP 5  |
|---|--------------------------------------|--|
| <p>CDC MC Dante is as SLAVE to the WORD CLOCK derived from third party equipment attached to the Dante network</p> <p><b>Dante Controller MUST be set such that both Brooklyn ports on CDC MC Dante are set as SLAVE</b></p>  | <p>ON</p> <p>WORD CLOCK LED = S</p>  | <p>OFF</p> <p>SYNC LED = Dante</p>               |
| <p>CDC MC Dante is as SLAVE to a WORD CLOCK provided at WORD CLOCK BNC input port</p> <p><b>Dante Controller MUST be set such that either Brooklyn port on CDC MC Dante is set as MASTER</b></p>  | <p>ON</p> <p>WORD CLOCK LED = S</p>  | <p>ON</p> <p>SYNC LED = Word Clock</p>           |
| <p>CDC MC Dante is the MASTER WORD CLOCK</p> <p><b>Dante Controller MUST be set such that either Brooklyn port on CDC MC Dante is set as MASTER</b></p> <p><i>This is the mode to use when there is one PC (controller + virtual soundcard) is attached to one CDC MC Dante</i></p> | <p>OFF</p> <p>WORD CLOCK LED = M</p> | <p>X – Don't care</p> <p>SYNC LED = Both OFF</p> |

Several WORD CLOCK modes may be selected when using the CDC MC Dante. The Dante Controller settings and front panel dip switch settings must align with those shown above.

External WORD CLOCK input BNC signal frequency must mirror the FS settings of the system.

### Important Notes

\* Dante port connections are identified via MAC addresses on the Dante Controller. Each port on all CDC MC Dante units has a unique MAC address. The User must work out the MAC address of each unit, and port, by connecting one at a time to the network, and observing what device (MAC address) appears on the controller.

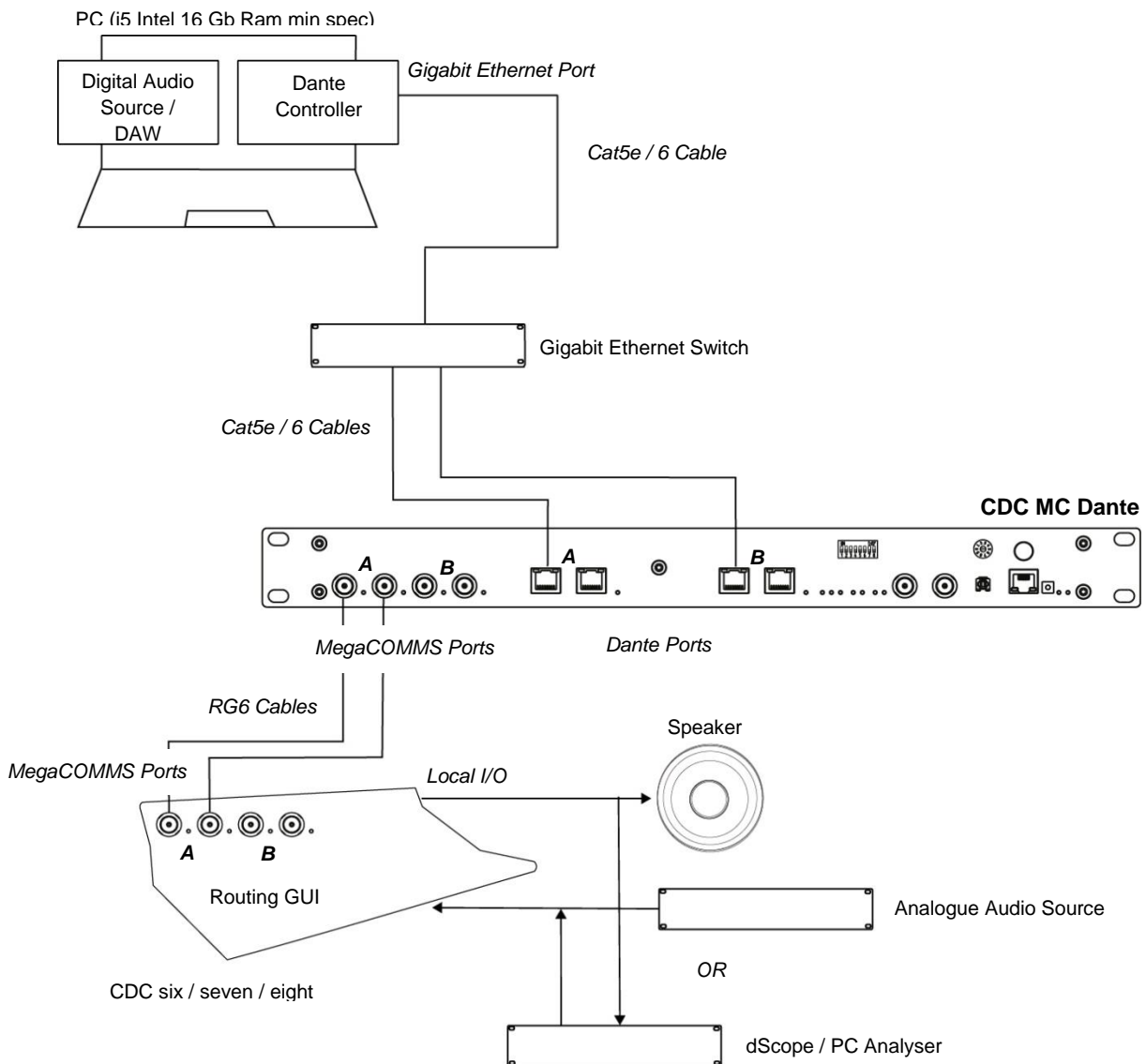
- Frequencies 192 kHz and 176.4 kHz are not currently enabled
- DIP switches 6, 7, 8 are not used
- Definitions of Master / Slave operation above DO NOT relate to MegaCOMMS. The CDC MC Dante will always operate as MegaCOMMS slave either connected to the CDC MC Router or Cadac digital console hardware.
- One Dante port Tx connection may not be routed to a Rx connection from the same port



## Appendix A: Example of Simple System Test Setup

This is the simplest test to configure, as it requires no DAW or digital audio on the PC and no virtual soundcard software (this is licenced software and costs money!). It also enables a back to back analogue audio test to be performed using the dScope.

Connect up equipment as shown below, apply power and switch on:



Select address 2 on the CDC MC Dante rotary switch

Check Power switch LED is illuminated

Check all BNCs illuminated

Check that the MegaCOMMS LEDs Tx and Rx are illuminated

Check that Dante Port A Ethernet LEDs are active

**Configure the Dante system as follows:**

|   |  |
|---|--|
| CDC MC Dante, MegaCOMMS address                   | 2 (only one CDC MC Dante in the system)      |
| CDC MC Dante, Front panel DIP 1-3 switch settings | 96 kHz (off, on, off)                        |
| CDC MC Dante, Front panel DIP 4-5 switch settings | CDC MC Dante is MASTER WORD CLOCK (off, off) |
| Dante controller, Device view, Device config.     | Port A – 96 kHz, Port B – 96 kHz             |
| Dante controller, Routing map*                    | Connection 1 Port A CH1 to Port B CH1        |
| Dante controller, Clock Status, Primary status    | Port A or B operating as MASTER              |

Apply analogue audio source to local Mic IN on the console (alternatively connect dScope OUT)

Connect speaker to local Line OUT on Console (alternatively connect dScope IN)

Select CH1 routing on the console GUI:

Input set to analogue audio source port

Send set to Dante 1 port 1

Select CH1 routing on console GUI

Input set to Dante1 port 33

Send set to speaker port

At this point an audio path should now exist between the two analogue ports on the console. This will be utilising both Dante Port A and B on the CDC MC Dante.

***\*Important Note:*** Where audio is routed from Port A to B this method is the only way the audio loopback will work on the CDC MC Dante. You cannot connect between channels on the same ports!!!!



## Appendix B: Audinate Dante Controller Details

This program may be downloaded from the Audinate website.

Link: [Dante Controller Software](#)

It is free but you may need to register to get a copy.

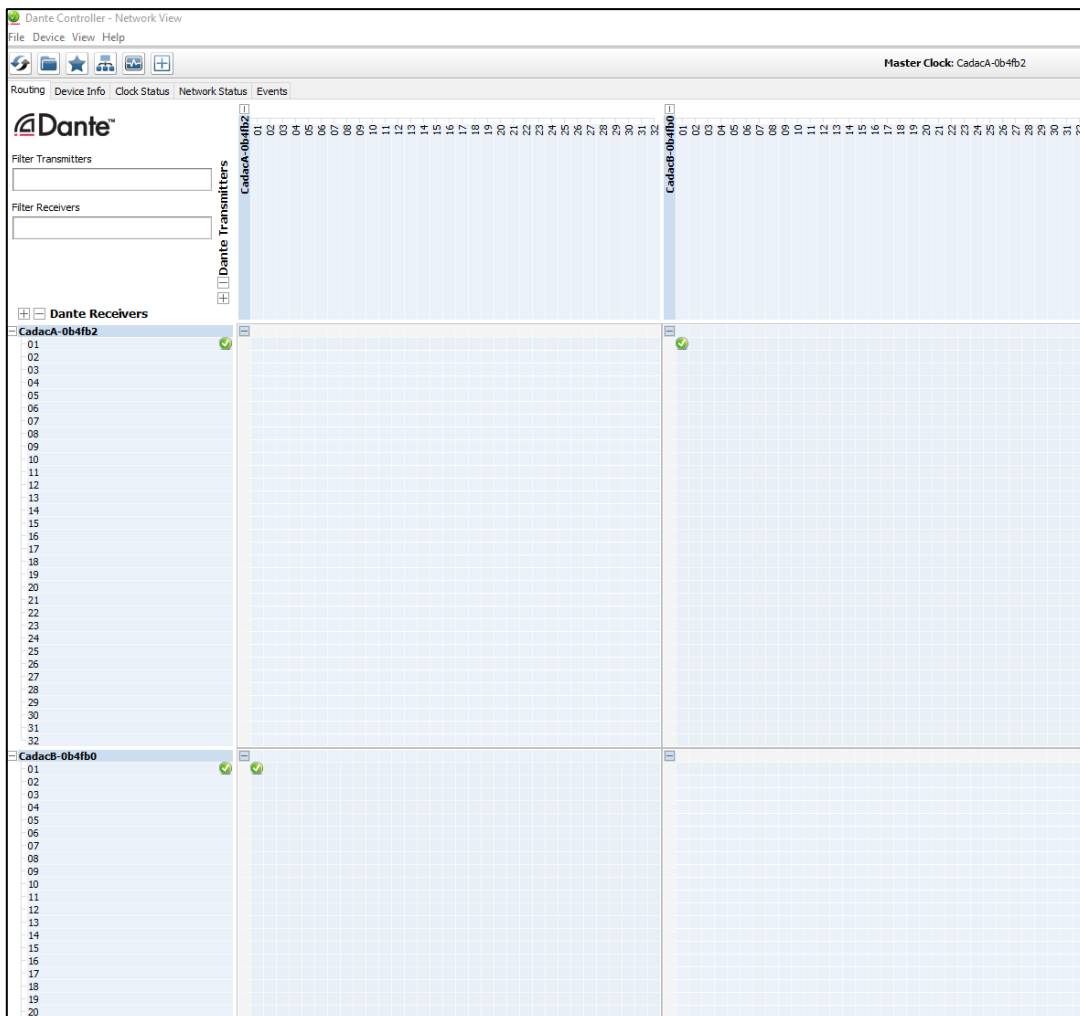
Once installed the program automatically searches out any Dante enabled devices connected to the PC and then allows you to configure each device.

There are **three** main screens that need to be considered.

### Routing Screen

The example below shows the two Dante ports found on a single CDC MC Dante unit.

Note how the matrix allows connections to be set up between ports.



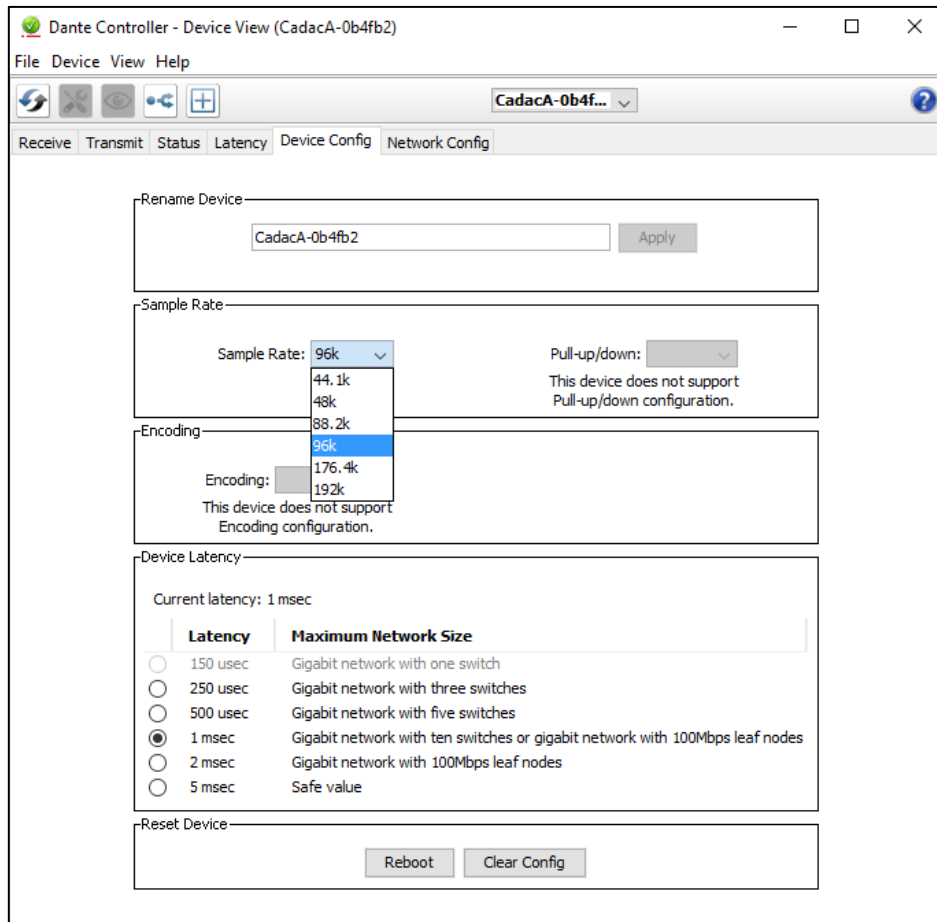
The screenshot displays the Dante Controller software interface in 'Network View' mode. The main window is titled 'Dante Controller - Network View' and includes a menu bar (File, Device, View, Help) and a toolbar. The 'Routing' tab is selected, showing a routing matrix. The matrix is organized into two columns representing Dante units: 'CadacA-0b4fb2' and 'CadacB-0b4fb0'. Each column has 32 rows, numbered 01 to 32. The top row of the matrix shows connections between the two units, with green checkmarks indicating active connections. The interface also includes filter fields for transmitters and receivers, and a 'Dante Receivers' list on the left side.



## Device Configuration Screen

The screen below demonstrates how the required sample frequency should be set-up for each device (separate screens will exist for each Dante port).

This set-up is required in addition to the CDC MC Dante front panel DIP switch settings.





## Clock Status Screen

The screen below shows how each Dante port is running - either as WORD CLOCK SLAVE or MASTER - in the Dante system.

More complex Dante systems may have multiple elements which may act as SLAVE or MASTER, with the network automatically choosing who is MASTER.

However, if you have selected any modes on the CDC MC Dante via the front panel DIP switches that require it to be the Dante network CLOCK MASTER, then you need to check the CLOCK STATUS SCREEN to ensure the required mode has been achieved on the network.

If MASTER / SLAVE settings are incorrect, they can be influenced by clicking on the preferred master box for a desired port.

**BE AWARE OF POTENTIAL CONFUSION** introduced by the term SLAVE and MASTER modes of CDC MC Dante itself (DIP 4 / 5 settings)

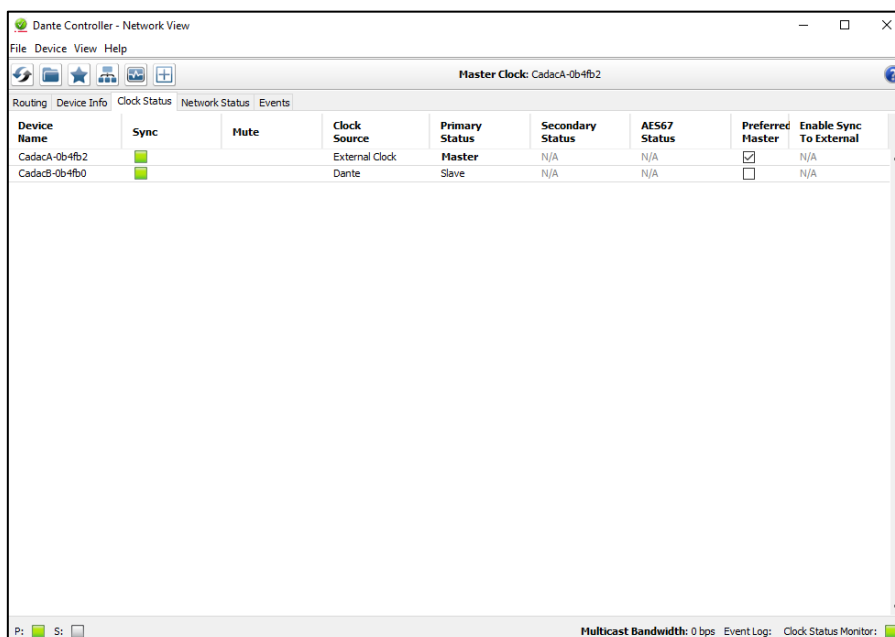
**MODE 1:** CDC MC Dante SLAVE mode using Dante network

**MODE 2:** CDC MC Dante MASTER MODE

**MODE 3:** CDC MC Dante SLAVE mode using External BNC

**MODES 2 and 3** both require one of the CC MC Dante ports that are in use to be MASTER on the controller screen below.

**MODE 1** however requires both of the CDC MC Dante ports in use to be SLAVE.



| Device Name   | Sync                                | Mute | Clock Source   | Primary Status | Secondary Status | AE567 Status | Preferred Master                    | Enable Sync To External |
|---------------|-------------------------------------|------|----------------|----------------|------------------|--------------|-------------------------------------|-------------------------|
| Cadaca-0b4fb2 | <input checked="" type="checkbox"/> |      | External Clock | Master         | N/A              | N/A          | <input checked="" type="checkbox"/> | N/A                     |
| CadacB-0b4fb0 | <input checked="" type="checkbox"/> |      | Dante          | Slave          | N/A              | N/A          | <input type="checkbox"/>            | N/A                     |

P:  S:  Multicast Bandwidth: 0 bps Event Log: Clock Status Monitor:



## Networking screen

The screen below demonstrates how each CDC MC Dante port is running either as SWITCHED or REDUNDANT. Normally this should be set and left as **SWITCHED**.

**Only** when you are implementing a fully redundant Dante network should you select **REDUNDANT**.

