

APPLICATION NOTE

CONVERGE® Pro/SR and CONNECT™ Dante™ with Digital Microphone Processing

PRODUCTS SUPPORTED:

CONVERGE Pro and SR Models:
880, 880T, 880TA, 840T, 8i, SR1212, SR1212A

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USING THE CONVERGE CONSOLE®
TO CONTROL DIGITAL MICROPHONE PROCESSING
WITH THE CONNECT DANTE NETWORK BRIDGE

OVERVIEW

This note details how CONNECT Dante network bridges can interface digital microphones within CONVERGE Pro/SR installations, and how Digital Microphone Processing is controlled in CONVERGE Console.

As a network audio bridge, the CONNECT Dante can receive audio signals from any device on the network controlled by the Dante Controller software and places them on selected channels on the E-bus. Conversely, audio signals on selected E-bus channels can be directed through the CONNECT Dante to the Dante network. The CONNECT Dante bridge supports up to eight audio channels in and eight channels out.

When Digital Microphone Processing is enabled in CONVERGE Console, the CONNECT Dante audio is directed through the input and output stage instead of the selected E-bus channels. This disables the rear panel analog Mic/Line inputs and instead uses the audio coming in from a CONNECT Dante bridge. This allows digital microphones on a Dante network to be processed in the CONVERGE Pro/SR using AEC, Noise Suppression, AGC, Filtering, Gating, etc.

With this enabled, the analog output audio is mirrored to the digital outputs on the CONNECT Dante bridge.

The following figure is a simplified site diagram with three digital microphones connected to an Ethernet LAN utilizing Dante Controller software to manage the Dante-enabled digital devices on the LAN. It also shows the CONNECT Dante network bridge interfacing the Dante network to the CONVERGE Pro.

NOTE: Sites here are defined as CONVERGE Pro/SR units and CONNECT Dante units on the same E-bus. CONVERGE Pro/SR and CONNECT Dante units share only audio across the Ethernet LANs so CONVERGE Pr/SRo units connected through CONNECT Dante networks are separate sites.

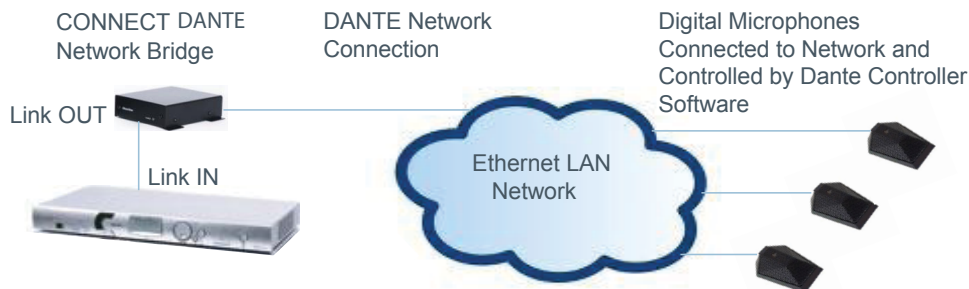


Figure 1.

Sites may have up to eight CONNECT bridges (of any type) connected (with unique DID settings).

If Digital Microphone Processing **is not** enabled, eight input/output channels are available (E- bus S -Z) regardless of the number and types of CONNECT bridges used. The CONNECT is simply an audio network bridge and there would be no AEC, Noise Suppression, AGC, Filtering, Gating, etc. as with microphone inputs.

If the Digital Microphone Processing feature **is** enabled and only CONNECT Dante bridges are being used, there can be up to eight CONNECT Dante units with each one connected to a separate CONVERGE Pro/SR. These can then be used to provide up to 64 microphone channels, assuming each connect CONVERGE unit has eight microphone inputs.

Figure 2 shows three CONNECT Dante bridges, each connected to a separate CONVERGE Pro 8i, as an example. In this configuration, each CONNECT Dante can provide up to eight audio inputs to the site. (For simplicity, other connections are not shown.) Dante devices allow for a secondary network connection for redundancy providing uninterrupted audio in case of primary connection failure.

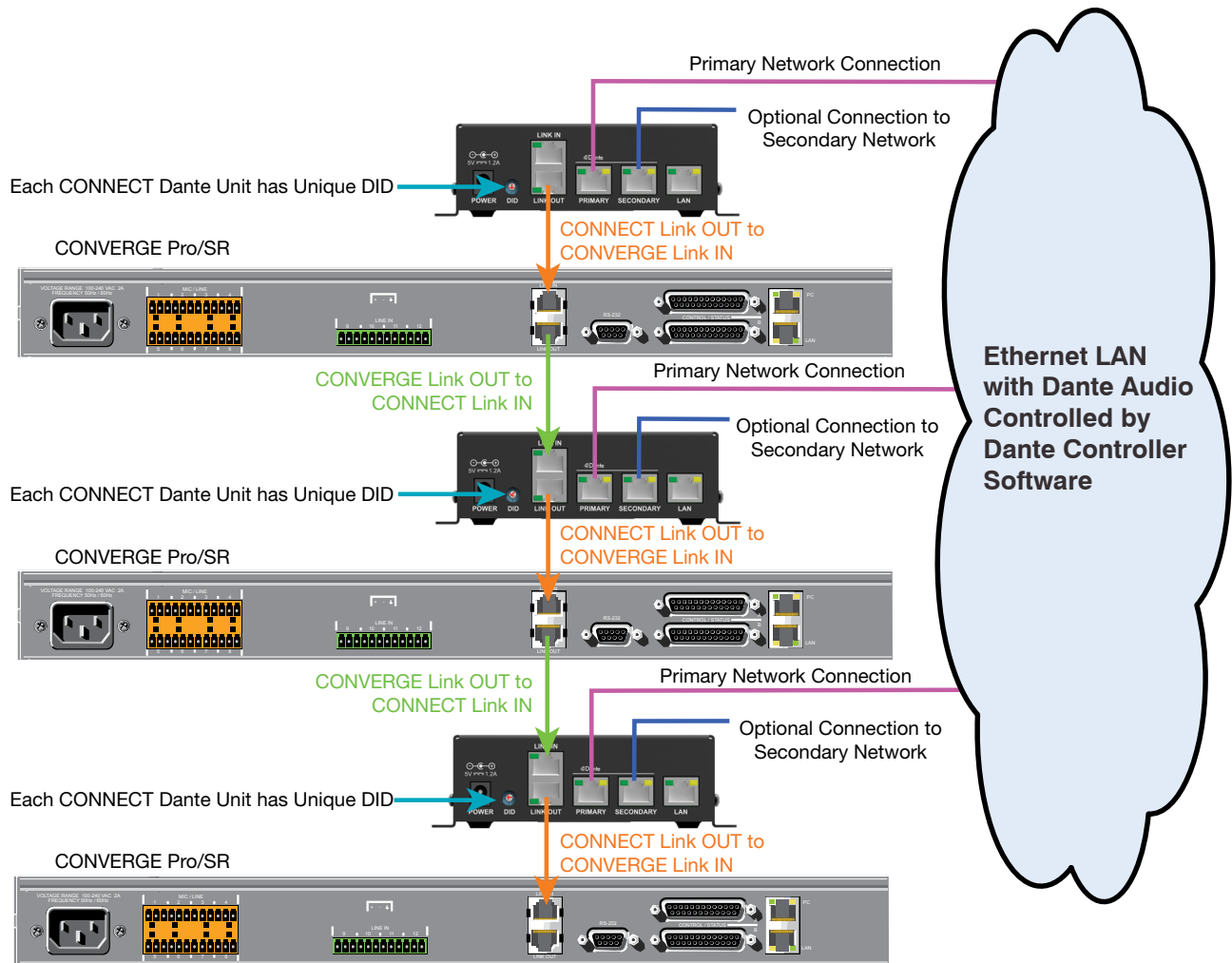


Figure 2.

BRIDGE INSTALLATION

Information regarding the installation of the CONNECT Dante network bridge and its configuration within CONVERGE Console is included in the CONNECT Dante Quick Start Guide available on the ClearOne website.

http://www.clearone.com/resources#professional_audio

SOFTWARE AND FIRMWARE PREREQUISITES

- 4.5.x - CONVERGE Console Installer
- 4.4.x - CONVERGE Console Application
- 4.3.x - Firmware for all units including Converge Pro, SR1212, Beamforming Microphone Array, CONNECT Dante and CONNECT CobraNet.

Information regarding the installation of the proper levels of software and firmware is included in the CONNECT Dante Quick Start Guide available on the ClearOne website. The latest versions of the software and firmware also can be found on the ClearOne website at:

http://www.clearone.com/resources#professional_audio

LIMITATIONS

- Control within the site of the audio channels provided by the CONNECT Dante audio network bridge is provided only by the CONVERGE Pro/SR that is directly connected to the bridge. (CONNECT Dante LINK OUT > CONVERGE LINK IN)
- When Digital Microphone Processing is active, E-busses S through Z are unavailable in the matrix. These channels are used internally in the CONVERGE Pro unit and are no longer available to the user.
- When digital microphones are enabled, the associated Analog Microphone Inputs are disabled and the associated Analog Line Outputs are mirrored to the digital outputs.
- On a per CONVERGE Pro unit basis, a unit property is set that configures how many digital microphones are processed. The settings are Off, 2, 4, or 8. (Eight is not available on 840T.)
- Each CONNECT Dante unit in a site must have a unique DID
- The CONVERGE Pro TH20 and VH20 mixers do not support Digital Microphone Processing.

STEPS TO ENABLE DIGITAL MICROPHONE PROCESSING

1. Enable Site for Digital Microphone Processing

In CONVERGE Console on your site file. Go to **File > Site Properties**, then navigate to the **Management Tab** and check the **Box for Digital Microphone Processing**. (See Figure 3.)

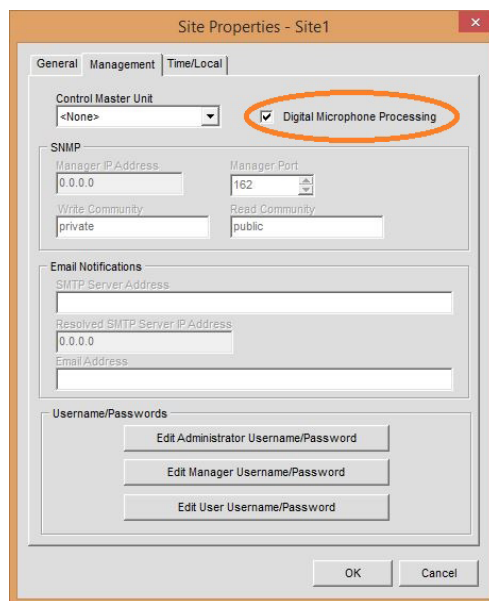


Figure 3.

Once this is enabled, E-bus channels S-Z will no longer be available for routing. Those are now being used exclusively for routing digital microphone channels.

2. Set Digital Microphone Count

Select the CONVERGE Pro unit in the site that is directly attached to the CONNECT Dante Link OUT by right-clicking on the unit and go to the **Unit Properties**.

Then on the **General Tab** and under **Digital Microphone Count**, select how many digital microphone inputs to use. Options are Off, 2, 4, or 8. (See Figure 4.)

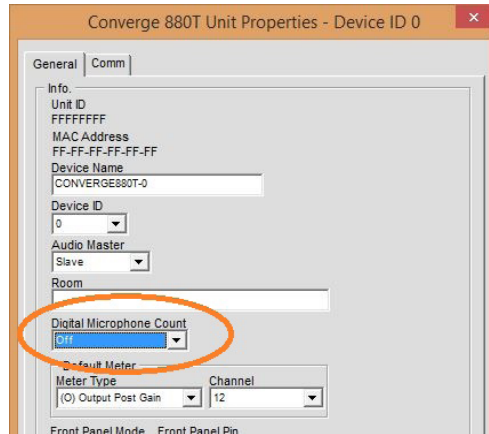


Figure 4.

The **Digital Microphone Count** determines what E-bus channels are used for the routing. A **Digital Microphone Count** of 2 would use E-bus channels Y and Z, where 4 would use W, X, Y, and Z.

Once you have the **Digital Microphone Processing** option enabled and the **Digital Microphone Count** selected. The site file shows the CONVERGE Pro unit's channel count under the **Site View Tab**, and the **Unit Tab** for that CONVERGE Pro unit will show what input/output channels are using the digital microphones. (See Figure 5.)

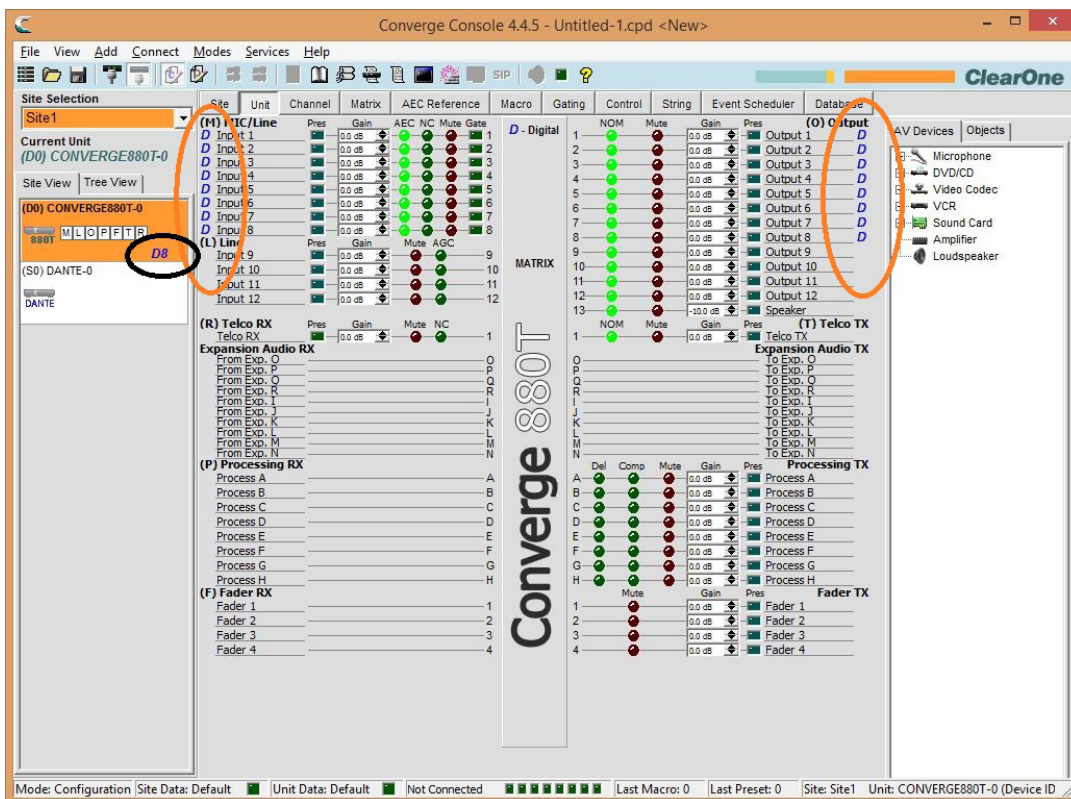


Figure 5.

Notice in the figure that the E-bus channels S through Z in all the site are removed from the display since they are being used internally to route audio to the Analog Input and Output channels.

The Inputs are audio FROM the far end Dante device. They will also only pass Dante audio. The physical inputs will not be available if Digital Microphone processing is enabled on that channel.

The Outputs are audio TO the far end Dante device. Even though this audio is sent to the Dante device, the physical outputs can still be used as an Analog output.

3. Setup Microphone Channels

NOTE: Digital audio on a Dante network is controlled by the Dante Controller software. The CONNECT Dante bridge interfaces those pre-configured Dante audio channels to the CONVERGE Pro/SR system, therefore, digital microphones on the Dante network must also be set up and configured by the Dante Controller software.

Now that the Digital Microphones are setup to be used by the analog input/output channels, you must setup those microphone channels as you would a regular Microphone channel with AEC, Noise Cancelling, Gating, etc.

Identify which microphones are assigned to which E-bus channels and the corresponding Analog Inputs and Outputs.

Open the **CONNECT Dante Unit Properties > Dante Tab**. Listed there are the Receive (Input) and Transmit (Output) names of the digital devices (microphones) as named by the Dante Controller software and recognized by the CONNECT Dante bridge. (See Figure 6.)

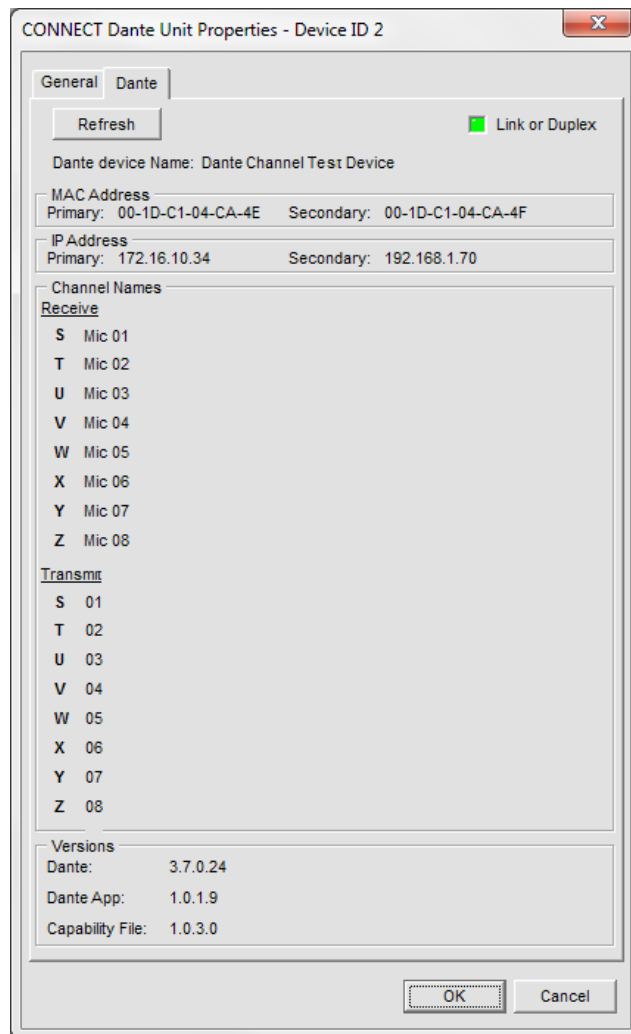


Figure 6.

In CONVERGE Console, while configuring the audio channels, notice you will not have a Pre-Gain slider or Phantom Power option but all other settings are available. (See Figure 7.)

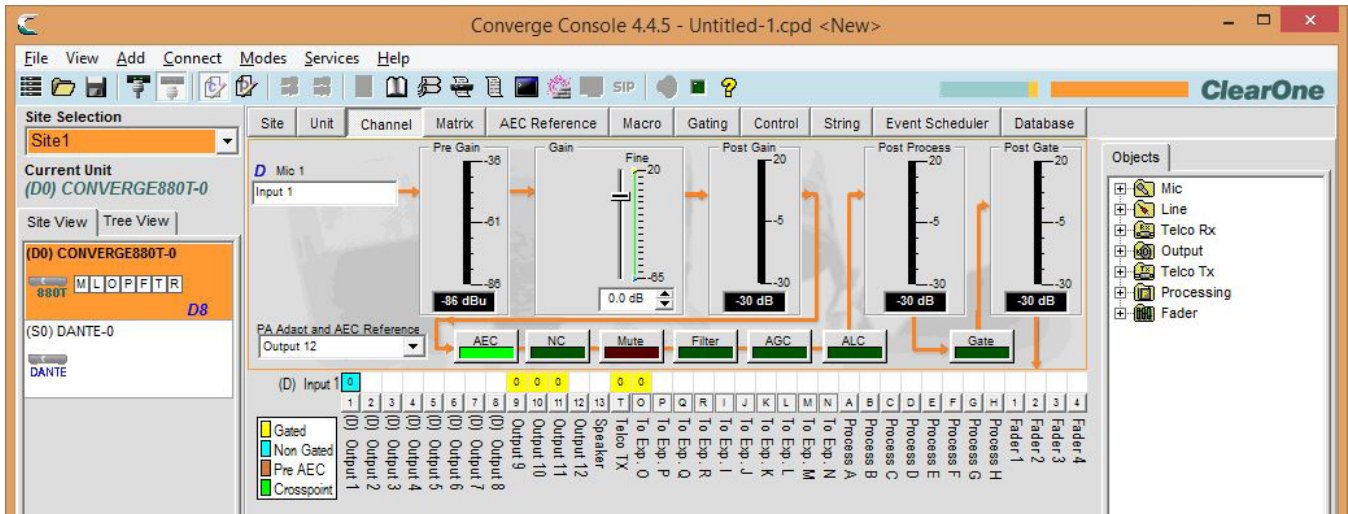


Figure 7.

- Continue to the matrix and route your microphone audio as needed. Matrix labels will also show which channels are using digital microphone inputs indicated by a **(D)** (See Figure 8.)

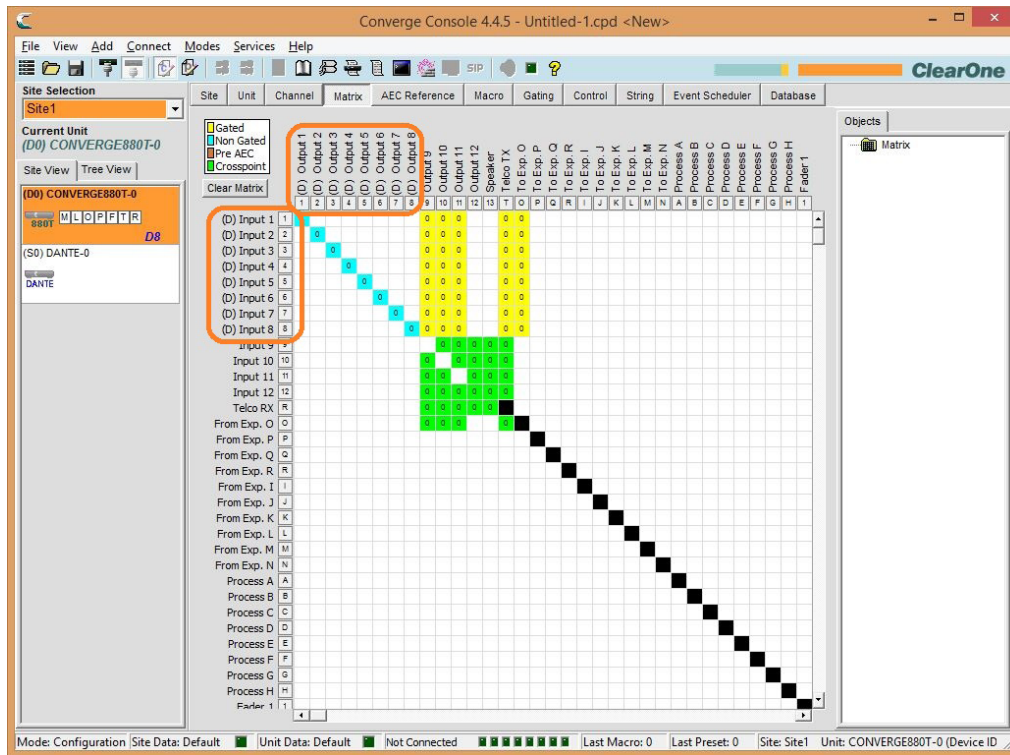


Figure 8.

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