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Dante 4 Musicians

SYMPHONY

SYMPHONY

Musicians' Mic Amplifier & Monitor Mix For Dante Audio Networks

Highlights

Dante Network Audio Interface

Low Noise Mic Amplifiers

AES67 Option

Redundancy On Network Links

Original Designed For Orchestras

Suitable For 2 x Musicians

Overview

Our Symphony musicians' audio monitoring and microphone amplifier was originally designed to meet the requirements of one of our customers. They had been using a similar analogue monitoring system for many years and when they updated their production mixer to a Dante enabled desk they naturally wanted to encompass and embrace the advantages of the network audio system to include their monitoring and musical instrument pre-amplifiers.

The shape and feature set of the Symphony came from the customer's many years of experience from within the orchestral music industry. The simple controls for the musicians, the microphone amplifier setup hidden away from the musicians, the ability to mount the Symphony on a microphone stand and a clean blank audience facing side of the box were all key required features.

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Symphony
Musicians' Interface

The Symphony is designed to be mounted on a microphone stand and placed between two musicians.

Each musician has a set of monitoring controls on an ergonomically shaped sloping front panel, with a headphone monitoring output jack conveniently placed at the bottom of the controls. The monitoring controls allow each musician to adjust the volume of 3 incoming stereo audio mixes from the Dante network, allowing them to monitor their preferred mix at a level that they are happy with. Each musician is also provided with an instrument headphone volume control, so they can adjust the level of their own instrument in their own ears. A panning control is also provided for the instrument in case they only wish to monitor their own instrument in one ear or off centre. Finally an overall volume control is provided for each musician to allow one single control to adjust the overall volume of the whole mix.

On the front panel, mounted centrally between the 2 sets of monitoring controls and at the top of the panel, is a talkback microphone. At the bottom of the panel and within easy reach of each musician is a push to talk (PTT) switch that turns the talkback microphone on. This talkback circuit is very useful for communications between the musicians and sound control room.
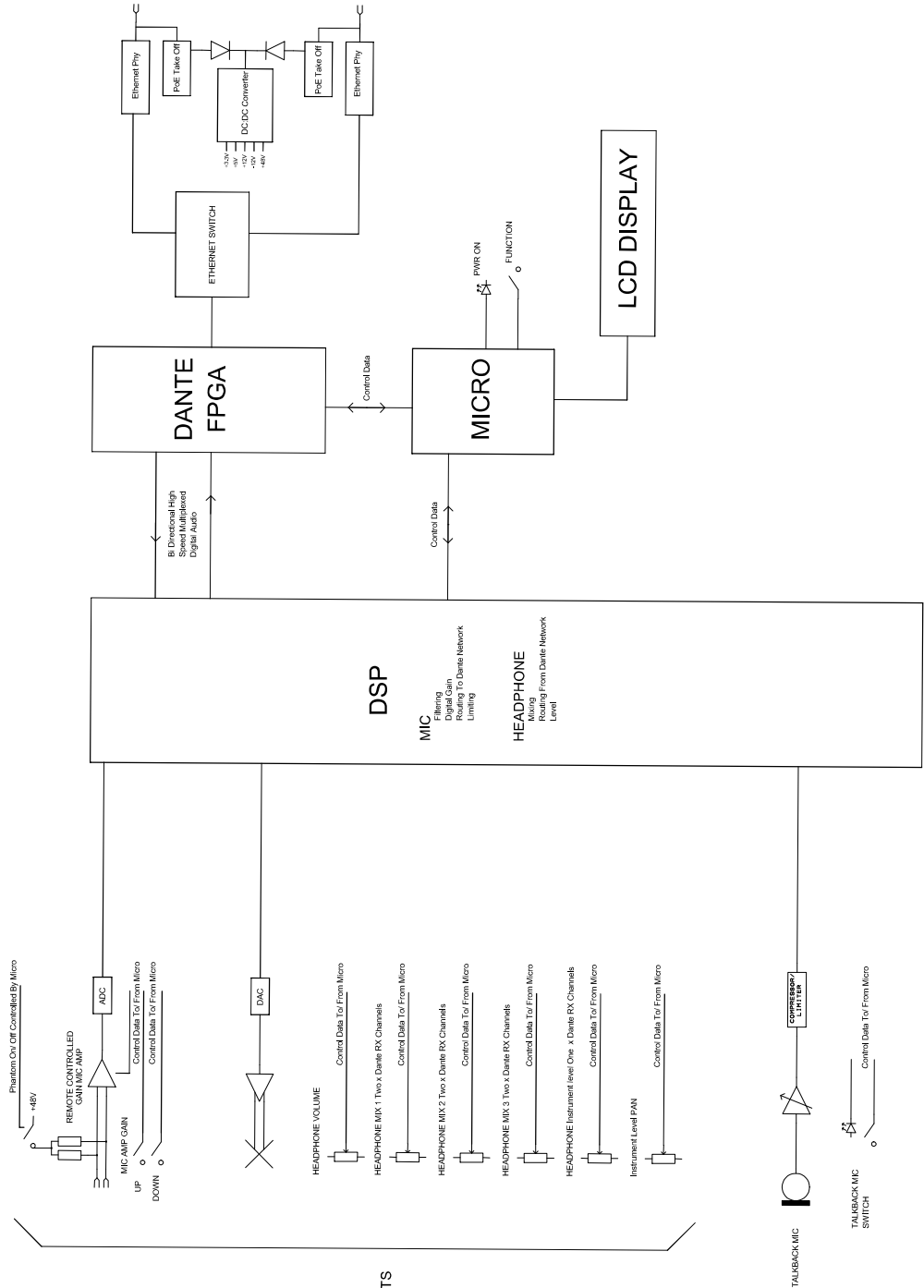
The bottom panel contains the 2 microphone inputs, 1 on each side of the unit allowing the microphone cable to enter the box in a tidy and organised way. The panel also contains simple engineering setup controls to adjust the microphone input gain, turn phantom power on/ off and also turn the internal compressor limiter circuit on/off. Connections to the Dante/ AES67 network are also located on the bottom panel, so like the microphone cables the network cables can easily be routed safely down the microphone stand.

There are 2 Dante network interfaces allowing a fully redundant network to be set up with primary and secondary Dante networks. Both of these interfaces are on Neutrik Ethercon connectors and both accept Power Over Ethernet (PoE).

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SYMPHONY
Designed For Musicians

Block Diagram

Ethernet Phy
PoE Take Off
DC-DC Converter
PoE Take Off
Ethernet Phy
+3.3V
+5V
+12V
+48V

ETHERNET SWITCH

DANTE FPGA

Bi Directional High Speed Multiplexed Digital Audio

Control Data

PWR ON
FUNCTION

MICRO

LCD DISPLAY

Control Data

DSP

MIC
Filtering
Digital Gain
Routing To Dante Network
Limiting

HEADPHONE
Mixing
Routing From Dante Network
Level

Phantom On/ Off Controlled By Micro
+48V

ADC

REMOTE CONTROLLED GAIN MIC AMP
Control Data To/ From Micro
Control Data To/ From Micro

MIC AMP GAIN
UP
DOWN

DAC

HEADPHONE VOLUME
Control Data To/ From Micro

HEADPHONE MIX 1 Two x Dante RX Channels
Control Data To/ From Micro

HEADPHONE MIX 2 Two x Dante RX Channels
Control Data To/ From Micro

HEADPHONE MIX 3 Two x Dante RX Channels
Control Data To/ From Micro

HEADPHONE Instrument level One x Dante RX Channels
Control Data To/ From Micro

Instrument Level PAN
Control Data To/ From Micro

COMPRESSOR/ LIMITER

TALKBACK MIC

TALKBACK MIC SWITCH
Control Data To/ From Micro

2 x IDENTICAL
MUSICIAN CIRCUITS
(Only 1 Shown)

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Specification

MICROPHONE INPUTS

Mic Input Gain Range
-30dB to +15dB

Dynamic Mic Line Up
58dB

Mic + Phantom Power Line Up
35dB

Mic Input Impedance
2k4

Number Of Microphone Inputs
2

Equivalent Input Noise
127dBu (22-22kHz RMS terminated 300 Ohms)

Maximum Input Level Before Clipping
Dynamic Mic: +10dBu
Mic + 48V PH: +18dBu
Line: +18dBu

Frequency Response
Mic: > +/-0.25dB 50Hz to 22kHz
        (-2 @ 25Hz)

THD + Noise (Ref +8dBu)
100Hz = 0.023%
1kHz = 0.012%
10kHz = 0.014%

POWER

PoE
2 x Redundant PoE Interfaces

Consumption
<12 Watts

DC Input
2.5mm Barrel, Centre +Ve, 9 - 15 Volts

Power On LED
Blue

INCLUDED ITEMS

Handbook
By download

RJ45 Network Cable
2 metre Cat5 RJ45plug /RJ45plug cable

HEADPHONE OUTPUTS

Headphone Impedance
16 to 1000 Ohms
(Auto output level to match impedance)

Maximum Headphone Output
+16.8dB into 600 Ohms

Headphone Frequency Response
>= -0.1dB 22Hz to 22kHz

Headphone Noise
-76.6dB @ lineup (residual noise)

Headphone THD + Noise (ref =8dBu)
0.008% @ 1kHz

Headphone Volume Pot Range
+10dB to Off

Network

Dante/AES67 Network Interface
Sample Frequency: 48kHz
Resolution: 24 Bit
Can be configured for AES67

PHYSICAL

Size
185 x 122 x 182mm (WxDxH)

Weight
1.84Kg

Mechanics
All aluminium construction, anodized and
laser etched, powder coated sides

Shipping Carton
Rugged export quality cardboard carton
610 x 420 x 170mm (WxDxH)

Shipping Weight
3.1Kg

OPTIONAL ITEMS

External Power Supply
Desktop style switch mode PSU

E & OE

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