

## Model DD SERIES-BN22 Wall-Mounted Bi-Directional Mic/Line Dante Interface 2x2

- Interfaces Two Dante Inputs and Two Dante Outputs
- Inputs and Outputs on XLR Jacks on front panels
- Converts Two Standard Mic or Line Audio Sources to Dante Network Channels
- Converts Two Dante Network Audio Signals to Mic or Line Level
- Special Software Not Required for Module Setup
- Each Input is Switch Selectable for Mic or Line
- Studio Quality Low-Noise Microphone Preamplifiers
- Switch-Selectable Mic Gain: 40 dB, 48 dB or 62 dB
- Switch-Selectable 48 V Mic Phantom (P48)
- Switch-Selectable Line Gain: Unity, 12 dB or 19 dB
- Each Output is Switch Selectable for Mic or Line
- Studio Quality, Low-Noise Performance
- High Resolution 24 Bit Analog to Digital and Digital to Analog Conversion
- Legendary RDL Analog Filtering Enhances Superb Audio Performance



**APPLICATION:** The DD-BN22 is a complete wall-mounted Dante audio network interface. It features two XLR mic or line inputs and two XLR mic or line outputs on the front panels. Special software is not required to configure the DD-BN22. Each XLR input provides three switches that may be set from the front of the unit when the cover plate is not installed. One switch enables or disables P48 phantom; the second switch selects the mic or line gain range; the third switch sets the gain. Each XLR output provides a switch to set the output to balanced professional line level or mic level. The DD-BN22 fits a standard US dual-gang electrical box or an RDL WB-2 back box for installations in thinner European or equivalent walls. The DD-BN22 is PoE powered, and is available in multiple finishes with optional customized graphics.

The two XLR inputs are each converted to a separate Dante network transmit channel. Three gain settings are switch-selectable for both the mic and line input ranges to match condenser or dynamic mic levels and standard line levels.

Two Dante audio channels are converted to balanced line level on front-panel XLR jacks. Each output provides +4 dBu balanced for a network digital audio level of -20 dBFS. Each output is equipped with a selector to set the output to line level or attenuate the output by 50 dB to mic level. These switches are located on the top of the chassis and are set by the installer prior to mounting the unit.

Valid PoE power and synchronization to the Dante network are indicated by green LEDs visible from the front of the unit.

The DD-BN22 is a professional grade product with discrete mic preamplifiers for studio quality fidelity and low noise performance, coupled through metal XLR jacks housed in a stainless steel chassis with powder-coated or stainless steel Decora front plates.

The DD-BN22's superior performance specifications make it ideally suited to the most demanding installations, and an exceptional value in commercial networked audio systems. This full-featured product is engineered and manufactured in the U.S.A for continuous duty in demanding installations. Designed to outperform. Built to last.



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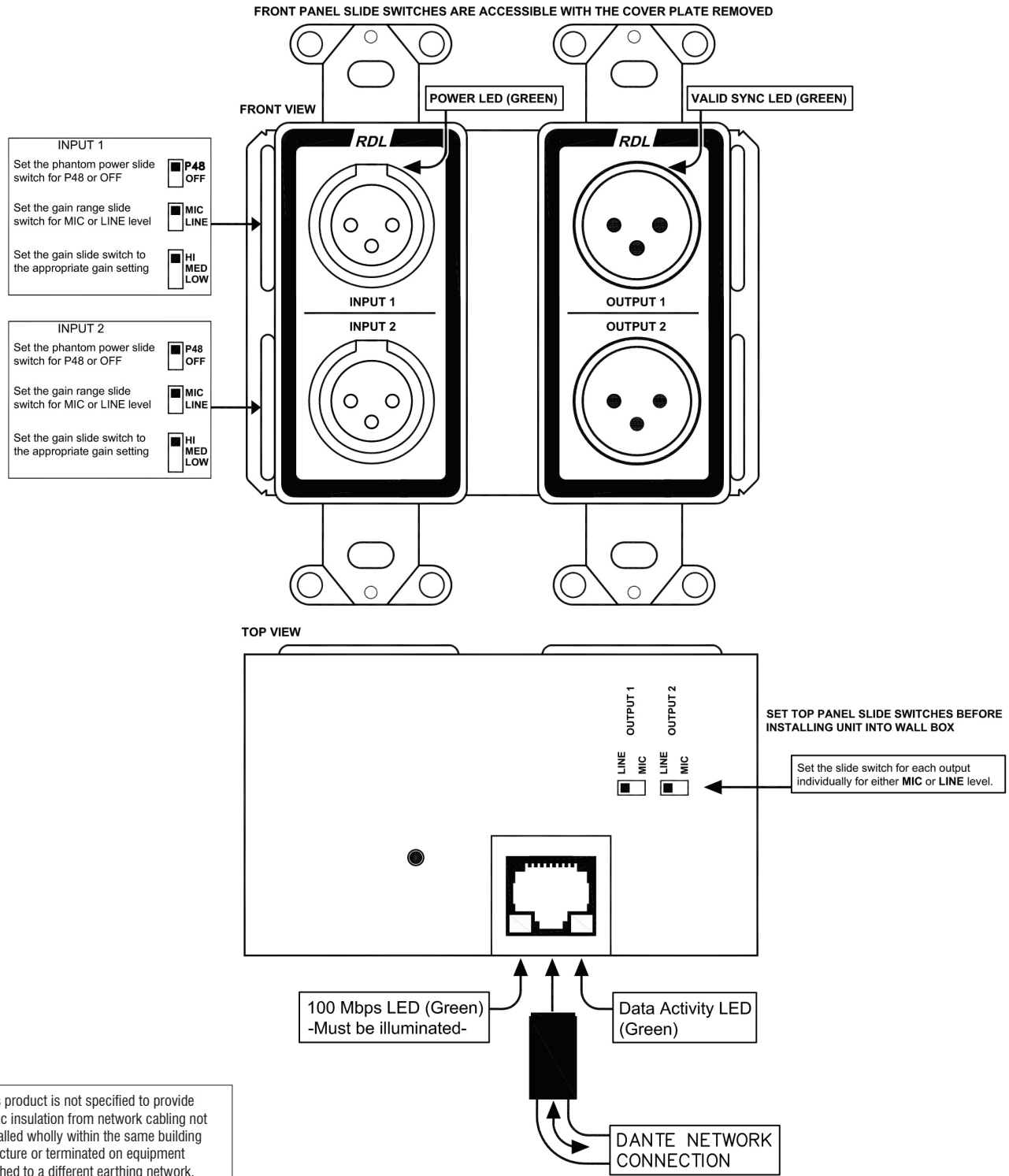
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## Installation/Operation



EN55032; EN55024; EN55103-2 E1-E4  
Typical Performance reflects product at publication time  
exclusive of EMC data, if any, supplied with product.  
Specifications are subject to change without notice.



Radio Design Labs Technical Support Centers

U.S.A. (800) 933-1780, (928) 778-3554; Fax: (928) 778-3506

Europe [NH Amsterdam] (+31) 20-6238 983; Fax: (+31) 20-6225-287

# Model DD SERIES-BN22

## Wall-Mounted Bi-Directional

### Mic/Line Dante Interface 2x2

This product is not specified to provide basic insulation from network cabling not installed wholly within the same building structure or terminated on equipment earthed to a different earthing network.

#### TYPICAL PERFORMANCE

Network Connector: RJ45 with Link and Speed indicators  
Digital Audio Ethernet Protocol: Dante  
Transmission Rate: 100 Mbps  
Sample Rates Supported: 44.1 kHz, 48 kHz (default)  
Bit Depth Supported: 24 bits  
Audio Operating Level: -20 dBFS = +4 dBu  
Reference Level: 0 dBFS = +24 dBu

#### Mic/Line Inputs to Network Interface

Inputs (2): XLR (female)  
Gain: Mic: 40 dB (LO), 48 dB (MED), 62 dB (HI); Line: Unity (LO), 8 dB (MED), 19 dB (HI)  
Input Level (for +4 dBu/-20 dBFS): Mic: -36 dBu (LO), -44 dBu (MED), -58 dBu (HI); Line: +4 dBu (LO), -8 dBu (MED), -15 dBu (HI)  
Input Level (maximum): Mic: -16 dBu (LO), -24 dBu (MED), -38 dBu (HI); Line: +24 dBu (LO), +12 dBu (MED), +5 dBu (HI)  
Input Impedance: > 2.5 kΩ (MIC); > 5 kΩ (LINE)  
Phantom Power: P48, 48 Vdc, switch-selectable  
Standard for Phantom: IEC 61938: 2013  
Selectors per input (3): Phantom, Mic/Line, Gain  
Frequency Response: 20 Hz to 20 kHz (± 0.5 dB)  
Equivalent Input Noise: -130 dBu (62 dB gain); -132 dBu A-Weighted  
Noise below -20 dBFS (20 to 20 kHz): Mic: < -72 dB (LO), < -72 dB (MED), < -68 dB (HI); Line: < -72 dB (LO), < -72 dB (MED), < -70 dB (HI)  
THD+N: < 0.1% (20 Hz to 20 kHz, +4 dBu/-20 dBFS); 0.015% at 1 kHz (typ)  
CMRR: > 65 dB (50 Hz to 120 Hz)  
Crosstalk: Below Noise Floor (20 Hz to 20 kHz at operating level, any input to any input, max. mic gain)

#### Network to Mic/Line Outputs

Outputs (2): XLR (male)  
Output Level (operating): +4 dBu nominal LINE level balanced; -45 dBu nominal MIC level (into 150 Ω)  
Output Level (maximum): +24 dBu LINE level  
Output Impedance: 150 Ω balanced  
Selector per output: Mic/Line  
Frequency Response: 20 Hz to 20 kHz (± 0.5 dB)  
THD+N: < 0.1% (20 Hz to 20 kHz, +4 dBu/-20 dBFS); 0.015% at 1 kHz (typ)  
THD: < .01% (1 kHz)  
Noise: < -80 dB (below +4 dBu); < -100 (below +24 dBu)  
Crosstalk: Below Noise Floor (20 Hz to 20 kHz at operating level, output to output)  
Headroom above +4 dBu: 20 dB  
Indicators (4): Ethernet Link and Speed (2, rear panel); Sync and Power (2, front panel)  
Ambient Operating Environment: 0° C to 40° C; 30° C maximum recommended  
Power Requirement: PoE Class 0, IEEE 802.3af  
Specification Conditions: Gain/Level: ± 1 dB; Source termination: 150 Ω; A to D values measured in digital domain  
Dimensions: 3.52" (8.94 cm) W; 4.11" (10.44 cm) H; 2.09" (5.31 cm) D  
Mounting: Wall mount in North American dual electrical box (4 square deep recommended) or RDL WB-2U (international wall box) at elevation ≤ 2 m.

#### Equivalent Gain Settings for Dante Products

Digital signal levels in a Dante network are measured in dBFS (dB referenced to the maximum output or clipping level). The nominal standard reference level used in professional audio products is: 0 dBFS = +24 dBu. A normal operating level of +4 dBu results from a digital level of -20 dBFS.

Some OEM industry products do not specify their reference and use a non-standard reference, such as 0 dBFS = +2 dBu. Gain definitions for such products do not equate to standard levels. An operating level of -18 dBu results from a digital level of -20 dBFS. For these OEM products, 22 dB must be added to the specified levels (gain, noise floor, etc.) to normalize their specs to be equivalent to those of professional audio products.

The following table helps designers specify functionally equivalent gain settings between products using the two references described above. Installers can use this table to determine the correct switch settings on an RDL Decora module if system specifications are provided for the non-standard dBFS/dBu reference.

| <b>Non-Standard Reference Products (OEM)</b> |                | <b>RDL Dante Decora Products</b> |                 |             |
|----------------------------------------------|----------------|----------------------------------|-----------------|-------------|
| Reference: 0 dBFS = +2 dBu                   |                | Reference: 0 dBFS = +24 dBu      |                 |             |
| Gain Setting                                 | ← Equivalent → | Gain Setting                     | Mic/Line Switch | Gain Switch |
| -18 dB                                       |                | Unity*                           | LINE            | LO          |
| ---                                          |                | 8 dB                             | LINE            | MED         |
| -3 dB                                        |                | 19 dB                            | LINE            | HI          |
| ---                                          |                | 40 dB                            | MIC             | LO          |
| 25 dB                                        |                | 48 dB                            | MIC             | MED         |
| 40 dB                                        |                | 62 dB                            | MIC             | HI          |

\*Unity gain on RDL products is 4 dB less than corresponding "OEM" gain in order to provide full headroom for +4 dBu balanced inputs.

In the table, microphone gain set to "40 dB" on the OEM product will produce the same digital audio level as microphone gain set to "62 dB" on the RDL product and on all industry products using the standard reference 0 dBFS = +24 dBu (-20 dBFS = +4 dBu).

The table is based on the "dBFS to dBu" references shown. OEM products may use a different reference, requiring a value other than 22 dBu be added to their gain, noise and other level specifications for performance comparison to professional audio products. Levels given are nominal, ± 1 dB.

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