



SPECIALISTS IN PRACTICAL PRECISION ENGINEERING™

## Models RU-MLB4 & RU-MLB4P Mic/Line Bi-Directional Network Interface

- Interfaces Four Dante Inputs and Four Dante Outputs
- Converts Four Standard Mic or Line Audio Sources to Dante Network Channels
- Each Input is Switch-Selectable for Mic or Line
- No User or Installer Gain Adjustments are Required
- Automatic Microphone Gain of 40 dB for Condenser Mics and 60 dB for Dynamic Mics
- P48 Phantom is Provided on Each Microphone Input
- Line-Level Inputs Accept Unbalanced -10 dBV or Balanced +4 dBu Signals with >18 dB Headroom
- Front-Panel Signal LED for Each Audio Input
- Converts Four Dante Network Audio Signals to Balanced Line Level
- Line-Level Outputs Provide +4 dBu with >18 dB Headroom
- Signal LEDs Indicate Audio for Each of the Received Network Signal Channels
- High Resolution 24 Bit Analog to Digital and Digital to Analog Conversion
- Legendary RDL Analog Filtering Enhances Superb Audio Performance
- LED Indicators Show Network Sync Status
- Normal or Hot-Standby Operation from PoE (Model RU-MLB4P)
- Equipped for Rack Mounting or Surface Mounting



The RU-MLB4 modules are Dante audio network interface products compatible with microphones and line-level audio equipment inputs and outputs. These modules are designed to be mounted in equipment racks, closets, conference tables and on shelves or backboards in commercial/industrial installations.

**APPLICATION:** The RU-MLB4 is a high quality converter that provides professional line-level outputs from four Dante network received audio channels. It also converts four professional or consumer line-level sources, or dynamic or condenser microphones to Dante network audio channels.

### Network to Line Level Interface Section

The RU-MLB4 converts four Dante audio channels to balanced line level. Each output provides +4 dBu balanced for a network digital audio level of -18 dBFS. The professional output directly interfaces with other professional and commercial equipment without the need for additional gain. Crosstalk is below the noise floor between all outputs across the entire audio spectrum. The noise floor is better than 80 dB below operating level.

One front-panel green signal LED corresponds to each of the four Dante input channels. Received audio level is indicated on the variable-intensity LED indicator, facilitating setup when a networked computer is not connected at the module's location.

### Mic or Line Level to Network Interface Section

The RU-MLB4 converts four audio sources to Dante networked digital audio channels. Each input is equipped with a rear-panel input selector the installer sets to mic or line. In the mic position, the balanced input provides P48 phantom to an associated microphone jack. Connection of a dynamic microphone sets the preamplifier gain to 60 dB. Connection of a condenser microphone sets the gain to 40 dB. The automatic gain setting is always active so that no user adjustment is required when changing microphones. In the line position, the balanced input accepts a standard +4 dBu source, and the unbalanced line input terminals accept a -10 dBV source for normal operating level. Separate wiring terminals are provided for balanced and unbalanced sources. A front-panel variable-intensity LED indicator is provided for each of the four inputs to facilitate setup.

The RU-MLB4 is powered from an external 24 Vdc power supply, available separately. The RU-MLB4P is equipped to operate from a PoE enabled network switch. The RU-MLB4P will reserve power from the switch even while being powered from an external 24 Vdc supply. If PoE power and an external 24 Vdc supply are both feeding an RU-MLB4P the unit will run from the external supply and will seamlessly switch over to PoE power upon loss of the external supply.

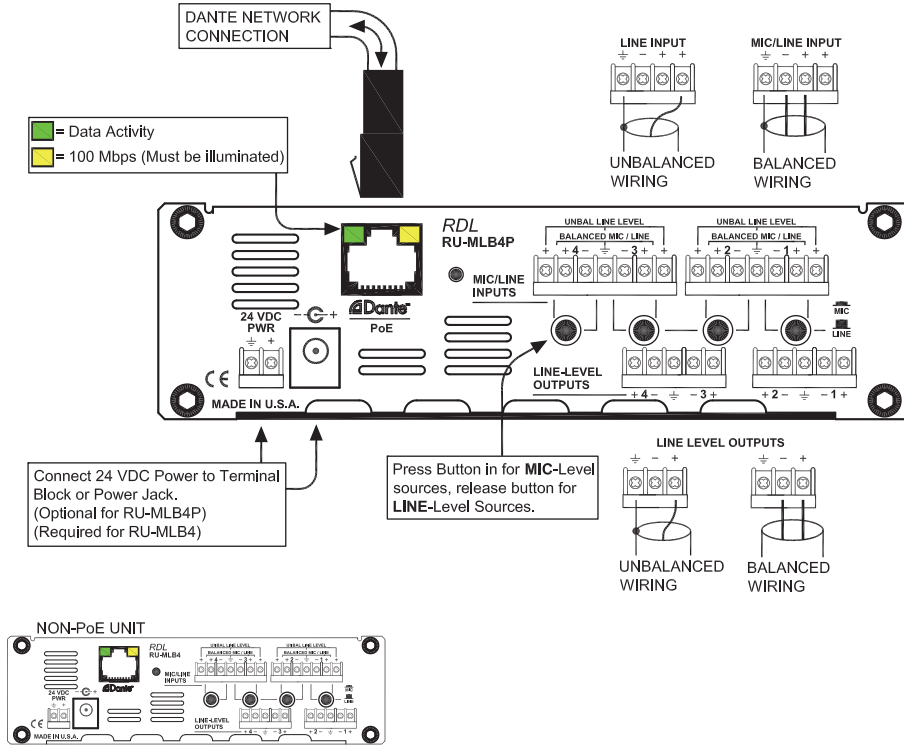
The RU-MLB4's superior performance specifications make it ideally suited to the most demanding installations, and an exceptional value in commercial networked audio systems.

The RU-MLB4 is constructed in a durable, professional all-metal enclosure suitable for free-standing, surface-mounted or rack-mounted operation. This full-featured product is engineered and manufactured in the U.S.A for continuous duty in demanding installations. Built to last. Built to outperform.

# Models RU-MLB4 & RU-MLB4P Mic/Line Bi-Directional Network Interface

## Installation/Operation

**CE** Declaration of Conformity available from rdlnet.com.  
Sole EMC specifications provided on product package.  
Specifications are subject to change without notice.



### 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 Levels: -20 dBFS = +4 dBu

THD+N: < 0.1%  
 Noise below +4 dBu: < -75 dB  
 CMRR: > 60 dB (50 Hz to 120 Hz)  
 Crosstalk: < 75 dB (1 kHz, any line to any mic channel), < 70 dB (20 Hz to 20 kHz)  
 Headroom above +4 dBu: > 18 dB

### Mic/Line Inputs to Network Interface Section

#### Mic Inputs

Inputs (4): Balanced, detachable terminal block  
 Gain: Automatic; 40 dB for condenser mics, 60 dB for dynamic mics  
 Input Level for +4 dBu: -56 dBu (dynamic), -36 dBu maximum; -36 dBu (condenser), -19 dBu maximum (unclipped), -14 dBu maximum (soft clipped)

Input Impedance: > 1kΩ  
 Phantom Power: P48, 48 Vdc  
 Standard for Phantom: IEC 61938: 2013  
 Frequency Response: 20 Hz to 20 kHz (± 0.5 dB)  
 THD+N: < 0.1%  
 Noise below +4 dBu: < -70 dB  
 CMRR: > 70 dB (50 Hz to 120 kHz)  
 Crosstalk: < 70 dB (20 Hz to 20 kHz)

#### Line Inputs

Inputs (8): Balanced, detachable terminal block (4); Unbalanced, detachable terminal block (4)  
 Input Level for +4 dBu: +4 dBu (balanced); -10 dBV (unbalanced)  
 Input Impedance: > 20 kΩ  
 Frequency Response: 20 Hz to 20 kHz (± 0.5 dB)

### Network to Line Level Interface Section

Outputs (4): Balanced, detachable terminal block  
 Output Level: +4 dBu (nominal)  
 Output Impedance: 150 Ω balanced; 75 Ω unbalanced  
 Frequency Response: 20 Hz to 20 kHz (± 0.5 dB)  
 THD+N: < 0.05%  
 Noise below +4 dBu: < -80 dB (output active); < -95 dB (outputs muted)  
 Crosstalk: < 85 dB (20 Hz to 20 kHz)  
 Headroom above +4 dBu: > 18 dB

Selectors (4): MIC or LINE (rear panel)  
 Indicators (13): Power In (1); Output Signal LEDs (4); Input Signal LEDs (4); Network Sys and Sync (2), Ethernet Link and Speed (2)

Power Connections (2): Power Jack; Detachable Terminal Block  
 Ambient Operating Environment: 0° C to 40° C  
 Power Requirement: 24 Vdc @ 180 mA plus connected phantom loads, or PoE (RU-MLB4P)

PoE (RU-MLB4P): Class 0, IEEE 802.3af  
 Dimensions: 5.8" (15 cm) W; 1.7" (4.3 cm) H; 5.2" (13.2 cm) D  
 Package Type: Cardboard Box  
 Package Dimensions: 6 x 6 x 2.625 in.  
 Shipping Weight: 1.78 lbs. (RU-MLB4); 1.805 lbs. (RU-MLB4P)  
 WEEE weight: 1.52 lbs. (RU-MLB4); 1.545 lbs. (RU-MLB4P)  
 Tariff code: 8517.18.0050

Radio Design Labs Technical Support Centers