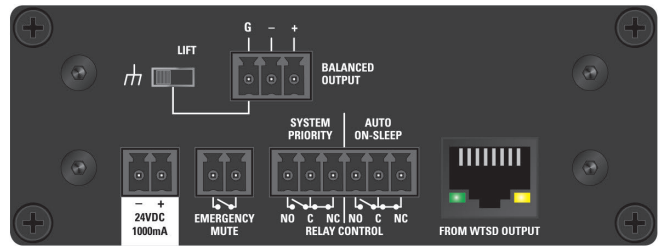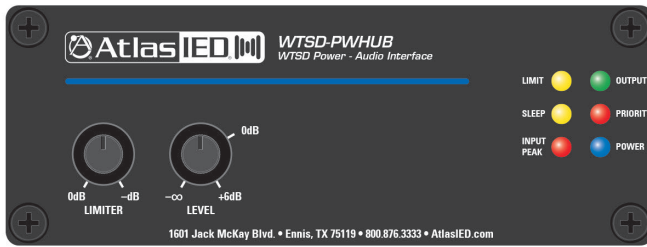# WTSD-PWHUB

Audio / Power Interface

Features

- Gain Adjust - Acts as a Master Mix Bus Level at the Head End
- Peak Limiter - Protects Overloading Amp and Speakers
- Balanced Audio Out with Ground Lift - Reduces HUM and Ground Point Reference
- TSD Power Supply Input - Provides More Current for Larger Systems
- Emergency CC Mute - Mutes Balanced Audio Output
- System Priority Relay Toggled by Priority Button on WTSD
- Auto Sleep Relay - Toggled by Sleep Mode Function
- WTSD RJ45 Bus Input for Easy Termination and Wiring

Applications

- School Multi-Purpose Rooms, Rally Areas
- Indoor / Outdoor Sports Complexes
- Hotel Ballrooms
- Community Multi-Use Facilities
- Industrial Facilities
- House of Worship Rooms
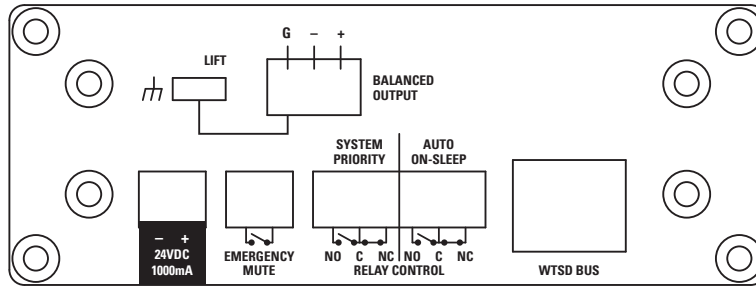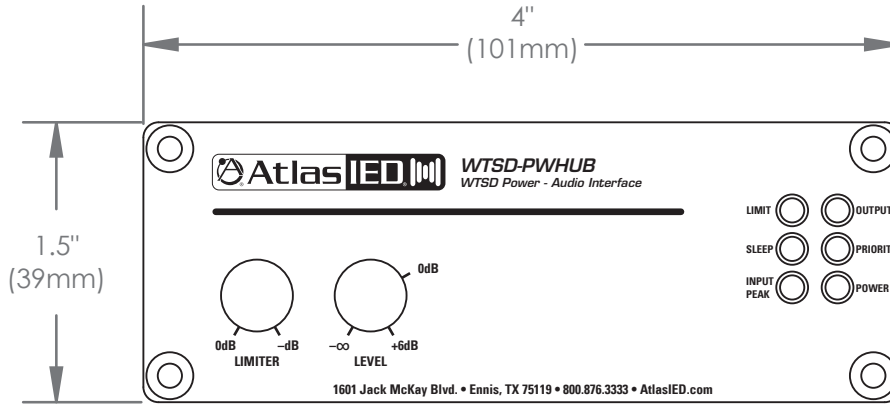
General Description

The WTSD-PWHUB is designed to replace the WTSD-PWBOB at the head-end (amp rack) in a WTSD-MIX31K or WTSD-MIX41K system when additional headroom control and external device integration is needed. The WTSD-PWHUB provides an emergency audio mute for fire systems and two NO / NC relays, one that is activated automatically by the auto sleep function and one that can be manually activated by a local latching "System Priority" button on the WTSD-MIX31K or WTSD-MIX41K. These relays can be configured to turn the head-end amp rack On or Off with the auto sleep function. The system priority button can be used to take over priority of the room by muting a background music and paging building wide system when the room is in use. The gain-headroom-limiter settings and indicators help control the balanced audio feed prior to the head-end amp when multiple WTSDs are on a single bus. The limiter can be set to protect a
high-power system from over loading the amp and possibly speaker damage.

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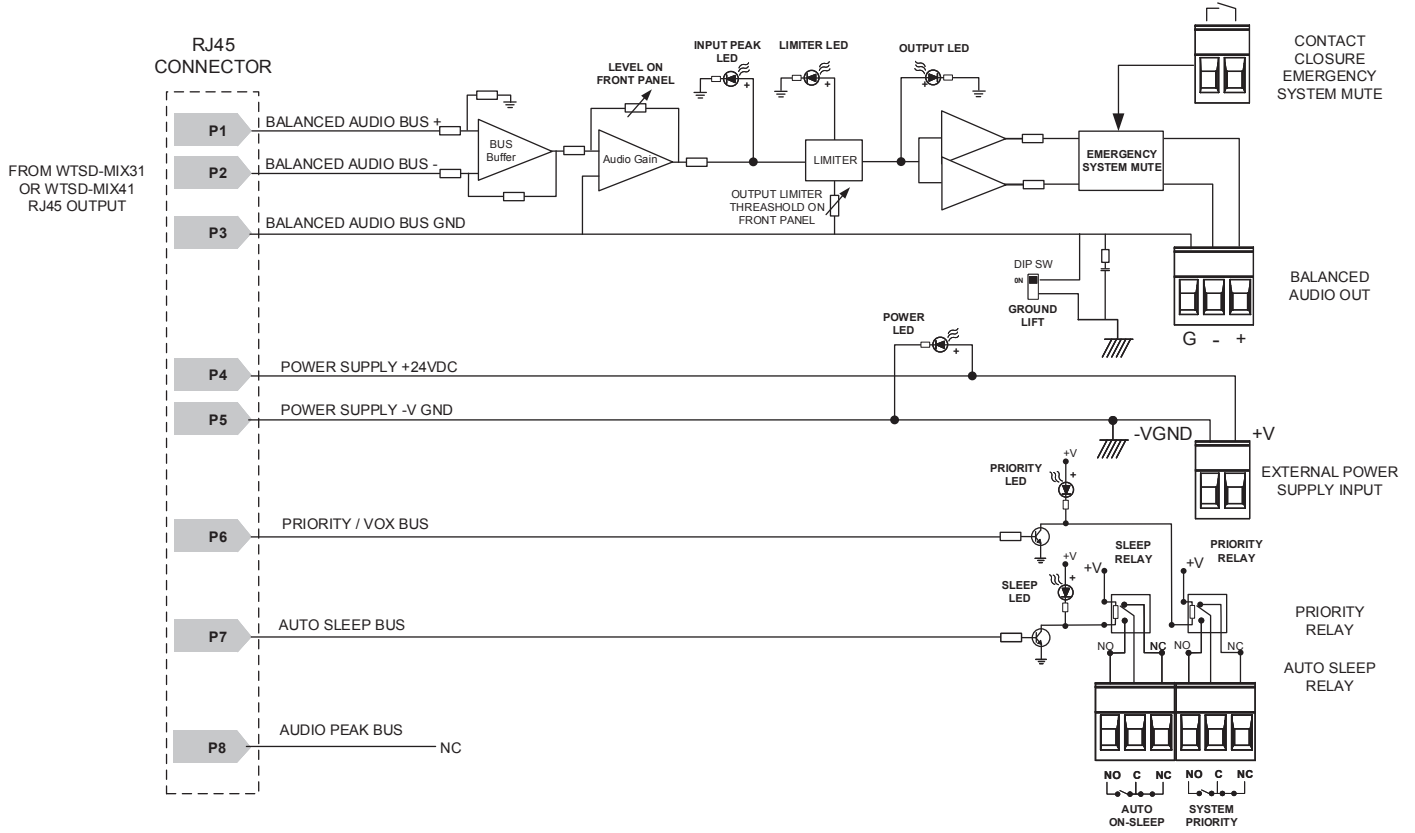| System	
Type	WTSD-RJ45 Bus to Balanced Audio 3-Way Phoenix Out with Control
Inputs	
Input Type	RJ45 Proprietary WTSD 8-wire Bus, Qty 1
Connection	Standard RJ45-T568B Terminated Cable
Impedance	10kΩ
Input Type	TSD 24VDC Power Supply, Qty 1 (Note 1)
Connection	Removable 2 Position Captive Screw 3.5mm Spacing
Outputs	
Output Type	Balanced Line Level, Qty 1
Connection	Removable 3 Position Captive Screw 3.5mm Spacing
Impedance	300Ω Balanced, 150Ω Unbalanced
Controls	
Level Control	-∞ to +6dB with 0 dB Mark, Removable Knobs with Security Covers, Qty 1
Output Limiter	Threshold Adjust 0dB to -6dB (with WTSD RJ45 bus input at 500mV and Threshold adjust set to 0dB, rotate to max -dB = 250mV out)
Emergency Audio Mute	
Type	2-Conductor NC = No Mute; Connect 1 & 2 = Mute Audio Bus Out, Qty 1
Relays	
Type	Auto Sleep and System Priority, Qty 2
Connection	Removable 3 Position, NO / C / NC, Captive Screw 3.5mm Spacing
Indicators	
Output Signal	Green LED, 25mV On Threshold , Qty 1
Input Peak	Red LED, -3dB Before Clip, Qty 1
Limit	Yellow LED, Qty 1
Sleep	Yellow LED, Qty 1
Priority	Red LED, Qty 1
Power	Blue LED, Qty 1
Technical Data	
Frequency Response	20Hz - 20kHz ±1dB
THD	0.06% @ 1kHz
Signal To Noise	Line to Line: 85dBV
Ambient Operating Conditions	
Maximum Temperature	104°F / 40°C
Minimum Operating Temperature	14°F / -10°C
Maximum Humidity	90%
Mounting	
Velcro	Industrial-Grade, Included
Brackets	Qty 2, Included
TSD-RMK	Optional 1 RU Rack Mount Panel (Supports 4 TSD Units)
Cable Retainer	Qty 2, Included
Mechanical	
Chassis Finish	Black
Chassis Material	Aluminum
Product Dimensions (HxWxD)	1.5" x 4" x 2.75" (39mm x 101mm x 70mm)
Shipping Dimensions (HxWxD)	2.75" x 5.25" x 3.7" (69mm x 133mm x 94mm)
Unit Weight	0.375 lbs. (0.17kg)
Shipping Weight	0.625 lbs. (0.28kg)

NOTES:
1. The TSD-24VDC power supply is not included with the WTSD-PWHUB; Use the power supply that is included with the WTSD-MIX31 or WTSD-MIX41.

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Dimensional Drawings

4"
(101mm)

1.5"
(39mm)

AtlasIED **WTSD-PWHUB**
WTSD Power - Audio Interface

LIMIT   OUTPUT
SLEEP   PRIORITY
INPUT   POWER
PEAK

0dB

0dB   −dB
LIMITER

−∞   +6dB
LEVEL

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G   −   +

LIFT

**BALANCED
OUTPUT**

**SYSTEM   AUTO
PRIORITY   ON-SLEEP**

**−   +
24VDC
1000mA**

**EMERGENCY
MUTE**

NO   C   NC   NO   C   NC
RELAY CONTROL

WTSD BUS

2.75"
(70mm)

Block Diagram

RJ45 CONNECTOR

FROM WTSD-MIX31 OR WTSD-MIX41 RJ45 OUTPUT

P1 BALANCED AUDIO BUS +
P2 BALANCED AUDIO BUS -
P3 BALANCED AUDIO BUS GND
P4 POWER SUPPLY +24VDC
P5 POWER SUPPLY -V GND
P6 PRIORITY / VOX BUS
P7 AUTO SLEEP BUS
P8 AUDIO PEAK BUS — NC

BUS Buffer
LEVEL ON FRONT PANEL
Audio Gain
INPUT PEAK LED
LIMITER LED
OUTPUT LED
LIMITER
OUTPUT LIMITER THRESHOLD ON FRONT PANEL
EMERGENCY SYSTEM MUTE
CONTACT CLOSURE EMERGENCY SYSTEM MUTE
DIP SW ON GROUND LIFT
BALANCED AUDIO OUT G - +
POWER LED
-VGND +V
EXTERNAL POWER SUPPLY INPUT
PRIORITY LED
SLEEP LED
SLEEP RELAY
PRIORITY RELAY
PRIORITY RELAY
AUTO SLEEP RELAY
NO NC NO NC
NO C NC NO C NC
AUTO ON-SLEEP SYSTEM PRIORITY

Architect and Engineer Specifications

The WTSD-PWHUB shall be designed to be used at the head-end (amp rack) in a WTSD-MIX31K or WTSD-MIX41K system when additional headroom control and external device integration is needed.

The WTSD-PWHUB shall provide for an emergency audio override mute for use with fire and emergency announcement systems by connecting a 2-way Phoenix connector contact closure. The WTSD-PWHUB shall provide two 3-way Phoenix connector NO-C-NC relays for external system integration. One shall be activated automatically by the auto sleep function and one shall be manually activated via local latching "System Priority" button on the WTSD-MIX31K or WTSD-MIX41K.

These relays shall be provided to turn On or Off a head-end amp rack using the auto sleep function to save energy when not in use. The system priority button shall be provided to take over priority of the room by muting a background music and paging building wide system when the room is in use. Gain, headroom and limiter settings with LED indicators shall provide control over the balanced mix audio signal prior to the head end amp when multiple WTSDs are on a single bus. The output limiter shall be adjustable to protect a high-power system from over loading the amplifier and blowing speakers. The balanced bus line out shall have a ground lift to mitigate ground loops in long wire runs. The frequency response shall be 20Hz – 20kHz ± 1dB and THD shall be 0.06% @ 1kHz.