WTSD-PWHUB
Audio / Power & Control Interface

WTSD-PWHUB
WTSD Power - Audio Interface

LIMIT   OUTPUT
SLEEP   PRIORITY
INPUT   POWER
PEAK

0dB
0dB   −dB   −∞   +6dB
LIMITER   LEVEL

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G   −   +

LIFT

BALANCED
OUTPUT

SYSTEM   AUTO
PRIORITY   ON-SLEEP

−   +
24VDC   EMERGENCY   NO C NC NO C NC   FROM WTSD OUTPUT
1000mA   MUTE   RELAY CONTROL
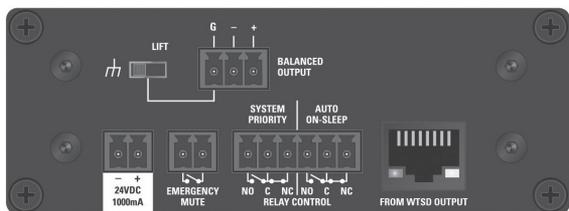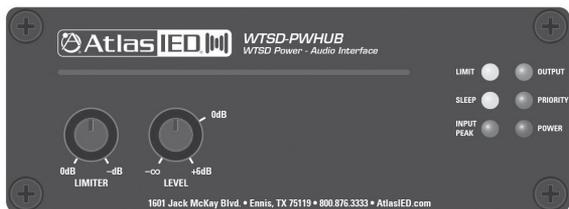
WTSD-PWHUB

Owner's Manual

Introduction

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 amplifier(s) and possibly damaging the speaker(s).

Key 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
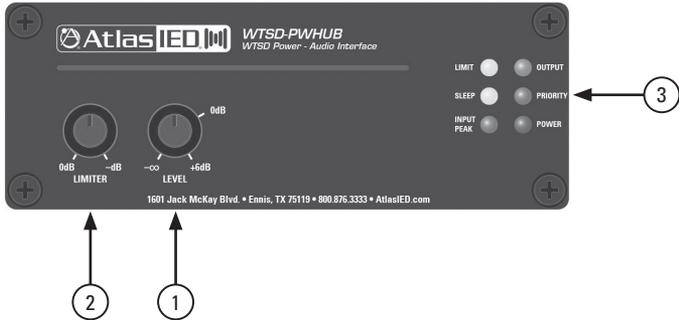- WTSD RJ45 Bus Input for Easy Termination and Wiring

Applications

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

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Front Panel

1. Input Level Control

Adjust the input mix signal gain from the WTSD-RJ45 bus. Turn clockwise to increase the signal level from -∞ to +6dB with 0 dB Mark. **Note:** Knobs are removable and security covers are included.

2. Output Limiter Control

Adjusts threshold from 0dB to -6dB. Turn clockwise to increase the limiting (gain reduction) to protect the input of the amplifier from overdriving.
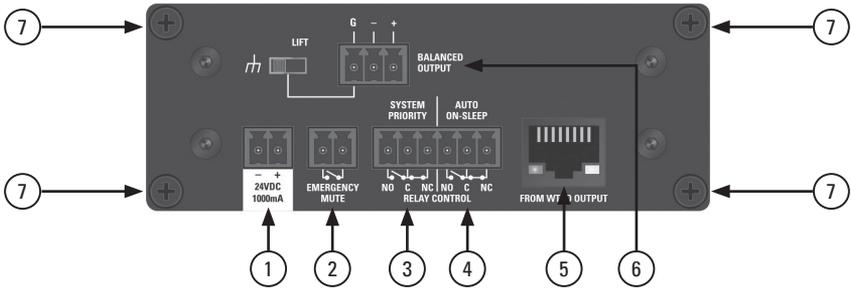
3. LED Indicators

Output Signal LED: Illuminates green when there is 25mV of signal present at the output.

Input Peak LED: Illuminates red when the the input signal from the BUS exceeds the Peak Input threshold at turn on. Occasional flashing is normal but if this indicator is continuously on, reduce the input level from the BUS at the WTSDs.

Limit LED: Illuminates yellow when engaged.

Sleep LED: Illuminates yellow when activated.

Priority LED: Illuminates red when activated.

Power LED: Illuminates Blue when 24VDC power is present.

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Rear Panel

1. DC Power Input

Each TSD that requires DC power comes with a 2 position connector for an external 24VDC power supply (sold separately). Because of the TSD's low power consumption, a single external power supply may power more than one TSD. Please refer to the specifications on current requirements in milliamps to match with the appropriate power supply. Please observe the polarity of the wiring to this connector. **Note:** It is acceptable to exceed the current requirements of the TSDs but NOT safe to use a power supply that is below the current requirement of the device.

2. Emergency Mute Override

CC mutes balanced audio output from WTSD bus.

3. System Priority Relay

Toggled by priority button on WTSD.

4. Auto Sleep Relay

Toggled when sleep mode is active.

5. RJ45 WTSD Bus Input

Connect a Cat5/6 cable to a WTSD RJ45 input marked "TO WTSD – PWBOB, PWHUB".

6. Balanced Audio Output with Ground Lift

The WTSD-RJ45 bus carries the balanced audio mix signals from any WTSD that is connected in the signal. Connect a 3-way audio cable to the input of the amplifier.

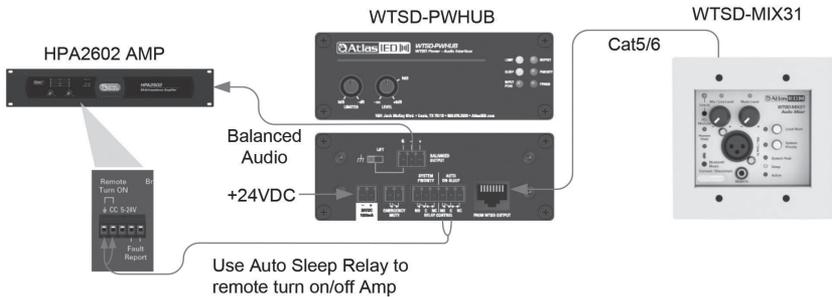### 7. Cable Management Retainer Points

Each TSD includes two cable retainer straps for securing the included cable management retainers. Remove one of the rear panel screws, align the panel hole with a retainer and firmly tighten the screws.

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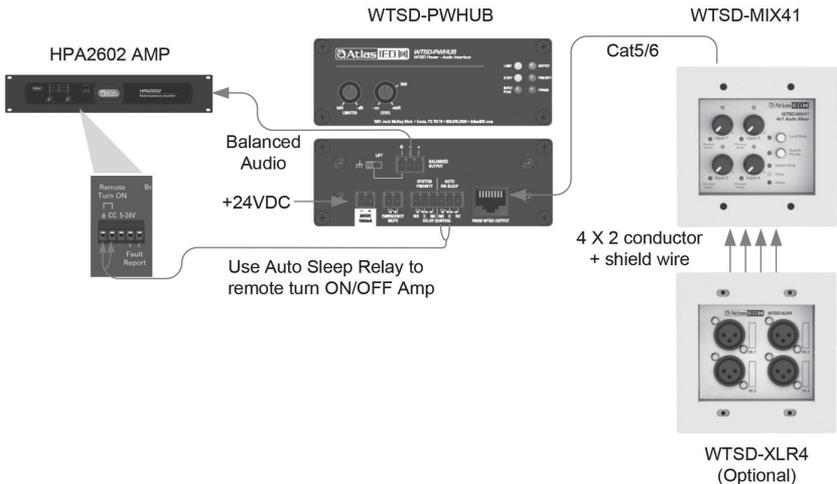
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WTSD-MIX31 Cat5/6 Interface with a WTSD-PWHUB

WTSD-PWHUB auto sleep relay controlling power amp turn on / off. **Note:** The advantage of using a WTSD-PWHUB over a WTSD-PWBOB is that the WTSD-PWHUB has a variable gain control at the rack, a variable hard limiter, Auto Sleep and System Priority override relay contacts instead of voltage triggers. An emergency override GPIO port to interface with fire / evacuation systems.
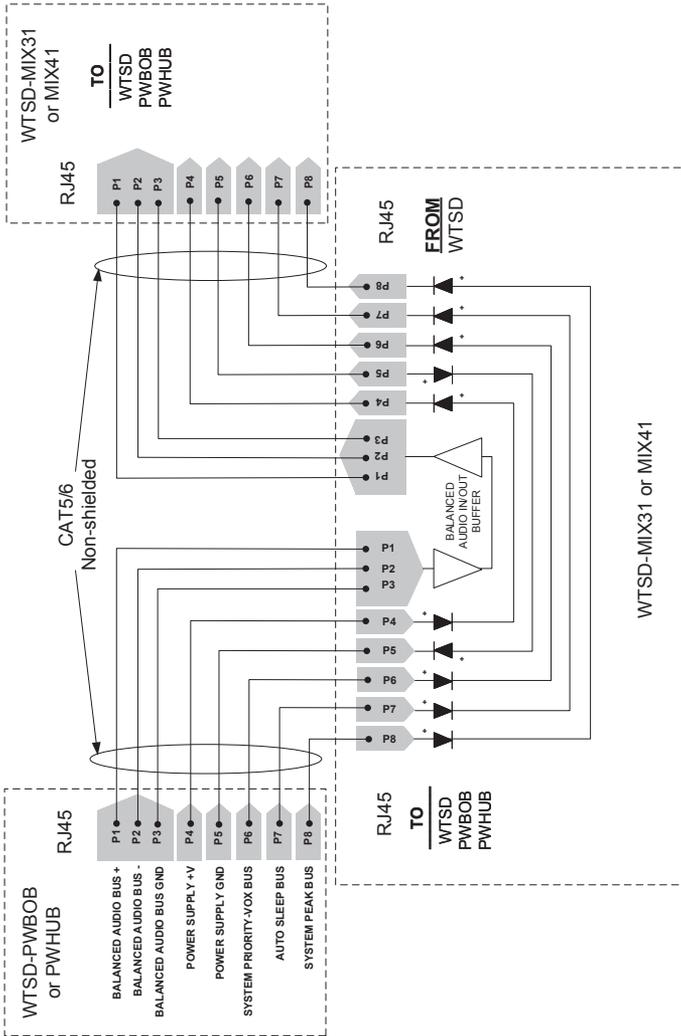

WTSD-PWHUB   WTSD-MIX31

HPA2602 AMP

Cat5/6

Balanced Audio

+24VDC

Use Auto Sleep Relay to remote turn on/off Amp

WTSD-MIX41 Cat5/6 Interface with a WTSD-PWHUB

WTSD-PWHUB   WTSD-MIX41

HPA2602 AMP

Cat5/6

Balanced Audio

+24VDC

Use Auto Sleep Relay to remote turn ON/OFF Amp

4 X 2 conductor + shield wire

WTSD-XLR4 (Optional)

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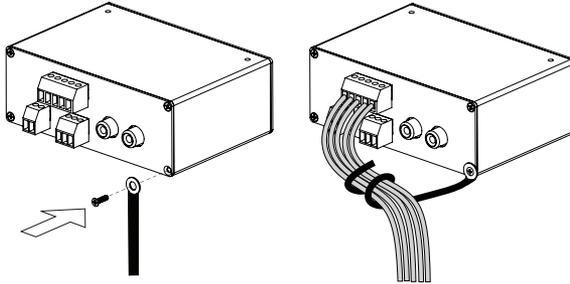
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WTSD BUS Structure

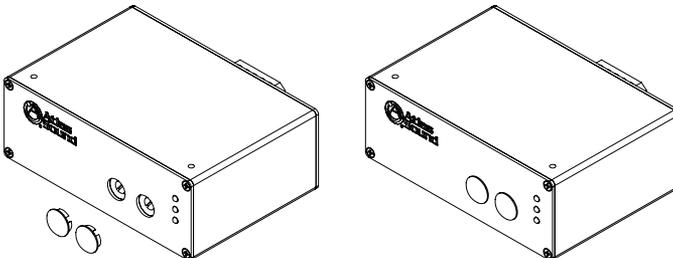# WTSD-PWHUB

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Cable Management

Knob and Security Cover

All front panel level controls feature a removable knob that can be replaced with an included security cover. Follow these steps to prevent potentiometer damage or unwanted changes.

1. Knob Installation - Turn the potentiometer shaft fully counter-clockwise. Align the knob indicator to the lowest setting on the panel and the potentiometer shaft slot. Carefully press the knob onto the potentiometer shaft. Do not force or damage may occur to the potentiometer.
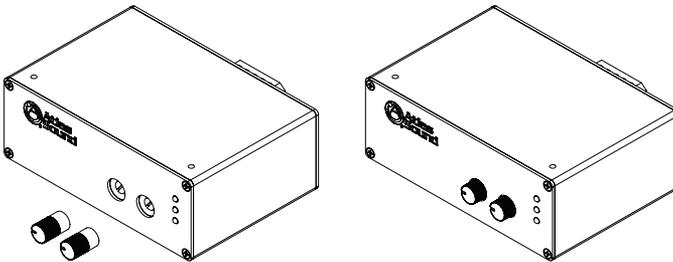
2. Security Cover Installation - Remove the knob from the panel and insert the cover. Small pliers may be required to remove the knobs. Align the security cover to the level control panel hole. Push the cover into the hole until it snaps into place. Do not force or damage may occur to the potentiometer.
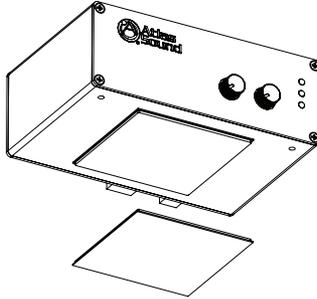
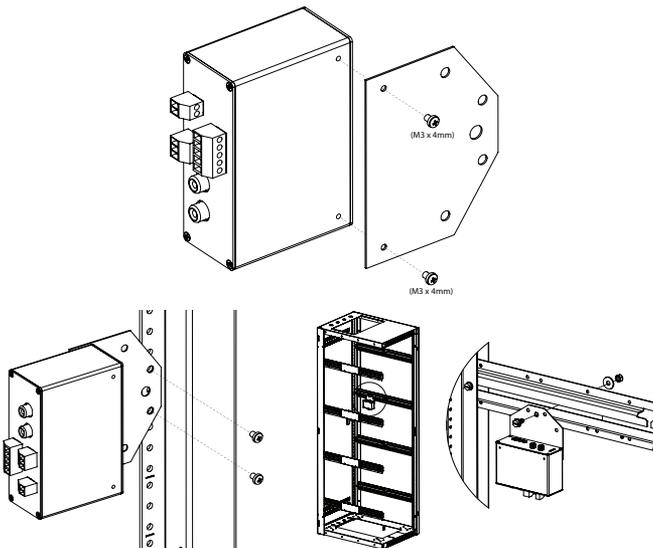# WTSD-PWHUB

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Mounting

Listed below are the ways to mount the TSD and the optional accessories that can be purchased.

1. Velcro™ - Each unit includes two 2" x 2" pieces of industrial-grade Velcro™ with adhesive backing to adhere to any flat surface. Clean all surfaces before applying the adhesive side of the Velcro™.

2. Multi Mount Plate - Each TSD includes a versatile multi-position mounting plate. This plate allows the TSD to be mounted to any surface; but is ideal for use with rear rack rails or side rack hat channels. Use the included M3 x 4mm screws to install the plate on the TSD. **Note:** Only use the included M3 x 4mm screws as other screws may be too long and will cause internal damage to the TSD. The multi-position mounting plate is a new addition being included with TSDs. If the TSD being used did not include the mounting plate, contact AtlasIED customer service at 1-800-876-3333.
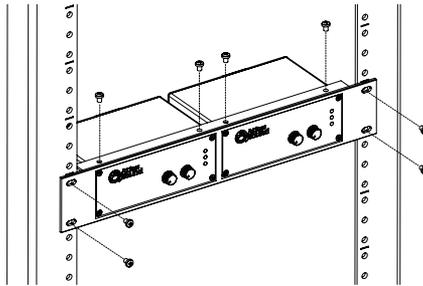
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Optional Mounting Accessories

1. TSD-RMK 19" Width Rack Mount Kit - For 19" rack mounting, AtlasIED offers an optional rack mount kit, the TSD-RMK. This rack mount kit can support up to four TSD units. The kit includes three blank panels designed to fill any unused slots. Use the included hardware to mount the TSD into the rack mount kit using the top mount screw holes on the TSD.
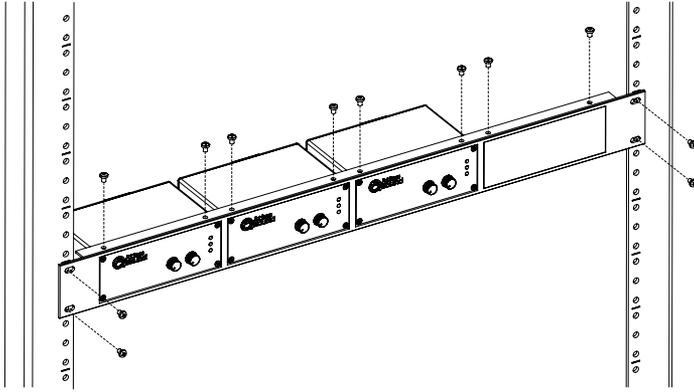

2. TSD-RMKHR Half Width Rack Mount Kit - AtlasIED offers an optional rack mount kit that can be used in half width rack applications including the AtlasIED WMA-HR and AWR-HR models. The TSD-RMKHR can support up to two TSDs. Included is an extra blank panel to fill one of the spaces if only one TSD is being used.

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3. TSD-RRMK Rear Rack Mounting Kit - For complete flexibility in mounting a TSD or TSD external power supplies the optional TSD-RRMK is available. The TSD-RRMK can support mounting of either two larger TSDs with external power supplies or up to 4 TSD models. **Note:** Only use the included M3 x 4mm screws as other screws may be too long and will cause internal damage to the TSD.
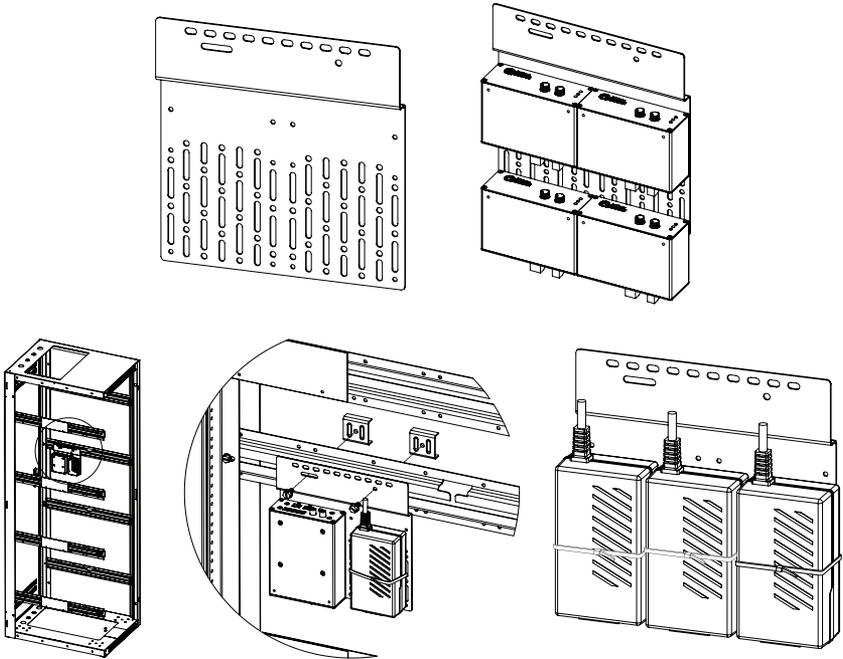
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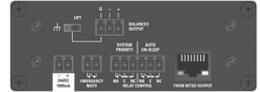
WTSD Product Family

WTSD-MIX31

WTSD-MIX41

WTSD-XLR4

WTSD-COVER

WTSD-PWBOB

WTSD-PWHUB

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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

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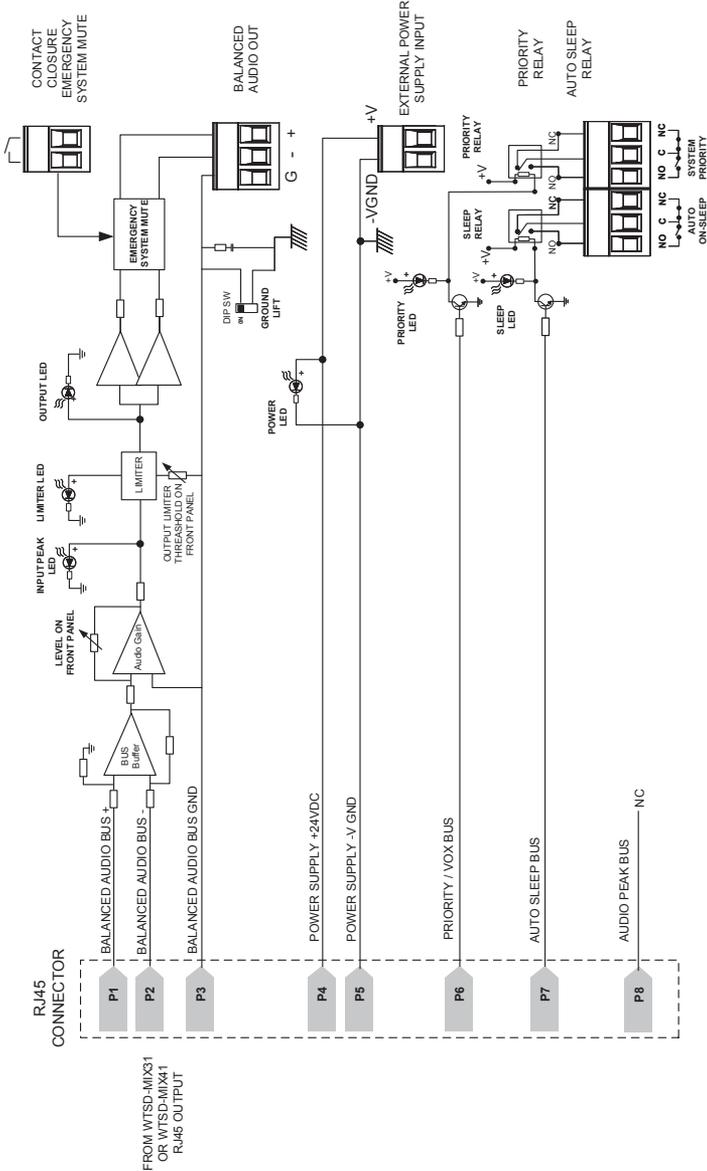| Ambient Operating Conditions	
Maximum Temperature	104°F / 40°C
Minimum Operating Temperature	14°F / -10°C
Maximum Humidity	90%
Mounting	
Velcro	Industrial-Grade, Included
Brackets	Qty 2, Included
TSD-RMK	Optional 1 RU Rack Mount Panel (Supports 4 TSD Units)
Cable Retainer	Qty 2, Included
Mechanical	
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.
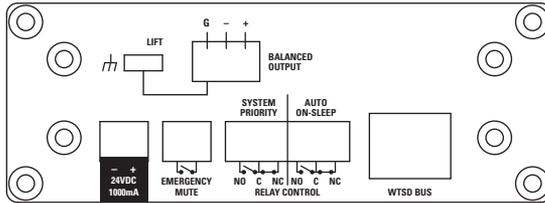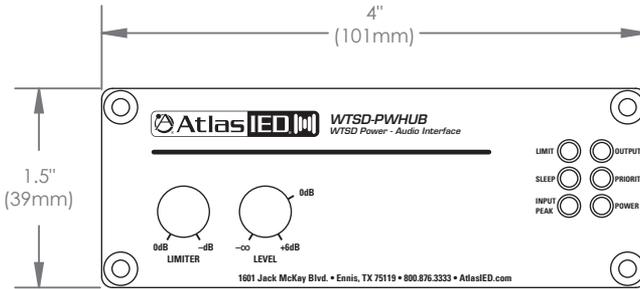
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Block Diagram

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Dimensional Drawings

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Limited Warranty

All products manufactured by AtlasIED are warranted to the original dealer/installer, industrial or commercial purchaser to be free from defects in material and workmanship and to be in compliance with our published specifications, if any. This warranty shall extend from the date of purchase for a period of three years on all AtlasIED products, including SOUNDOLIER brand, and ATLAS SOUND brand products except as follows: one year on electronics and control systems; one year on replacement parts; and one year on Musician Series stands and related accessories. Additionally, fuses and lamps carry no warranty. AtlasIED will solely at its discretion, replace at no charge or repair free of charge defective parts or products when the product has been applied and used in accordance with our published operation and installation instructions. We will not be responsible for defects caused by improper storage, misuse (including failure to provide reasonable and necessary maintenance), accident, abnormal atmospheres, water immersion, lightning discharge, or malfunctions when products have been modified or operated in excess of rated power, altered, serviced or installed in other than a workman like manner. The original sales invoice should be retained as evidence of purchase under the terms of this warranty. All warranty returns must comply with our returns policy set forth below. When products returned to AtlasIED do not qualify for repair or replacement under our warranty, repairs may be performed at prevailing costs for material and labor unless there is included with the returned product(s) a written request for an estimate of repair costs before any nonwarranty work is performed. In the event of replacement or upon completion of repairs, return shipment will be made with the transportation charges collect.

EXCEPT TO THE EXTENT THAT APPLICABLE LAW PREVENTS THE LIMITATION OF CONSEQUENTIAL DAMAGES FOR PERSONAL INJURY, ATLASIED SHALL NOT BE LIABLE IN TORT OR CONTRACT FOR ANY DIRECT, CONSEQUENTIAL OR INCIDENTAL LOSS OR DAMAGE ARISING OUT OF THE INSTALLATION, USE OR INABILITY TO USE THE PRODUCTS. THE ABOVE WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

AtlasIED does not assume, or does it authorize any other person to assume or extend on its behalf, any other warranty, obligation, or liability. This warranty gives you specific legal rights and you may have other rights which vary from state to state.

Service

Should your WTSD-PWHUB require service, please contact the AtlasIED warranty department at 1-800-876-3333 or atlaswarranty@atlasied.com to obtain an RA number.

AtlasIED Tech Support can be reached at 1-800-876-3333 or www.atlasied.com/support.

Visit our website at www.atlasied.com to see other AtlasIED products.

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