

CLOCKAUDIO CUI-2

Stereo Microphone Preamp and USB Interface



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IMPORTANT SAFETY INSTRUCTIONS



TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with a dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Only use attachments/accessories as specified by Clockaudio.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, if the apparatus has been exposed to rain or moisture, does not operate normally or has been dropped.

LIMITED ONE YEAR WARRANTY

The equipment is warranted for one year from date of purchase from Clockaudio against defects in materials or workmanship.

This warranty does not cover equipment which has been abused or damaged by careless handling or shipping.

This warranty does not apply to used or demonstrator equipment.

Should any defect develop, Clockaudio will, at our option, repair or replace any defective parts without charge for either parts or labor. If Clockaudio cannot correct the defect in the equipment, it will be replaced at no charge with a new item. Clockaudio will pay for the cost of returning the replacement equipment to you.

This warranty applies only to items returned to Clockaudio, shipping costs prepaid, within one year from the date of purchase.



At the end of the life of this equipment, dispose of equipment according to local regulations.

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GETTING STARTED

The Clockaudio CUI-2 is a premier quality stereo microphone preamp and USB interface. The ultra-low noise preamp ensures that your audio is clear and intelligible. When used with a Clockaudio Touch Switch and microphone, the CUI-2 is a powerful tool for conferencing of all types.

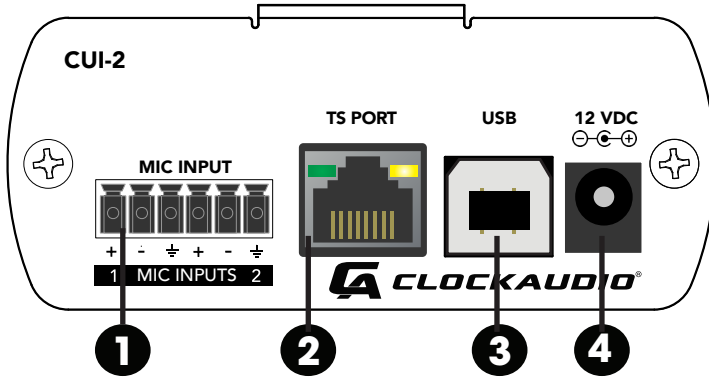
FEATURE OVERVIEW

- 24-bit/48Khz high quality digital conversion
- Plug and Play with PC and Mac
- USB bus power
- 48V phantom power (always on)
- TouchSwitch port for use with Clockaudio capacitive touch switches (TS003, TS005, etc.)
- LED brightness control
- Easily programable LED color options
- Compact design with under table mount flanges
- Tamper resistant front cover

IN THE BOX

- CUI-2 Unit
- Quick start card
- Tamper resistant front cover
- 6POS terminal block
- 6' USB cable
- 2x 6-32 3/8" machine screws
- 2x #6 wood screws

DIAGRAM OF FUNCTIONS



1. MIC INPUT TERMINAL BLOCK

Two channels of microphone preamplification for a stereo mic or (up to) two mono microphones.

2. TOUCHSWITCH PORT

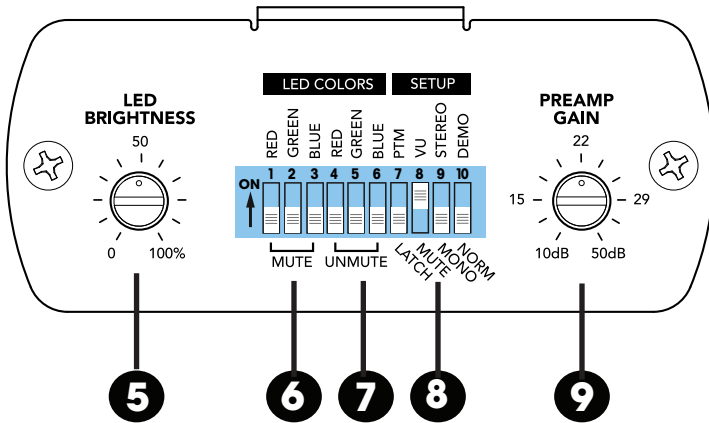
RJ45 port for connection to Clockaudio Touch Switch controls.

3. USB PORT

USB streaming port (Type B) for connection to Windows or Mac PC (Type A). Also powers the CUI-2.

4. 12VDC POWER INLET (OPTIONAL)

Use with Clockaudio PSU 1205 (North America) or PSU 6 (Worldwide). Only required if running more than one Touch Switch.



5. LED BRIGHTNESS

Adjust the brightness of the Touch Switch LEDs

6. LED COLORS - MUTE COLOR SELECTION

Configure the "mute" state color(s) of the Touch Switch LEDs

7. LED COLORS - UNMUTE COLOR SELECTION

Configure the "unmute" state color(s) of the Touch Switch LEDs.

8. SETUP

TOUCH SWITCH FUNCTION

Select Push to Mute or Latch Touch Switch functionality.

LED FUNCTION

Select VU meter or mute indicator for Touch Switch LEDs.

STEREO OR MONO MIC OPERATION

Select stereo (or dual mono) or mono microphone modes.

DEMO/DIAGNOSTIC MODE

Activate the DEMO/DIAGNOSTIC mode.

9. PREAMP GAIN

Adjust the amount of gain for the microphone.

APPLICATION EXAMPLES

The CUI-2 is an ideal preamp and USB interface for home office or small conferencing spaces. When used with Clockaudio microphones and Touch Switch units, the CUI-2 serves as an audio command center for video calls, voice conferences and group chats.



Use with a Clockaudio gooseneck microphone, shockmount and TS005 Touch Switch for a personal work space

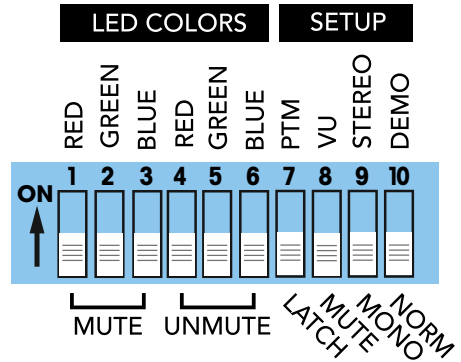


The Clockaudio CS2S-V-RF-RGB (stereo) or CS1S-RF-RGB (mono) are ideal for huddle rooms and minimalist desks.

SETTING UP THE CUI-2

We recommend setting up the CUI-2 in the following order:

1. Configure Switches
2. Connect Microphones, Touch Switch, and USB
3. Adjust preamp and LED Brightness
4. Test features with DEMO/DIAGNOSTIC mode
5. Mount the CUI-2



CONFIGURING THE CUI-2

Use the 10 dip switches on the front panel along with the LED BRIGHTNESS and GAIN knobs to configure the CUI-2 for each specific application.

MUTE & UNMUTE COLORS

The red, green and blue switches are provided to set the colors displayed on a Touch Switch when the microphone is muted or active.

Use DIP SWITCHES 1-3 to select the MUTE color and DIP SWITCHES 4-6 for the UNMUTE color. Multiple DIP SWITCHES in the ON position will yield a combination of the colors.

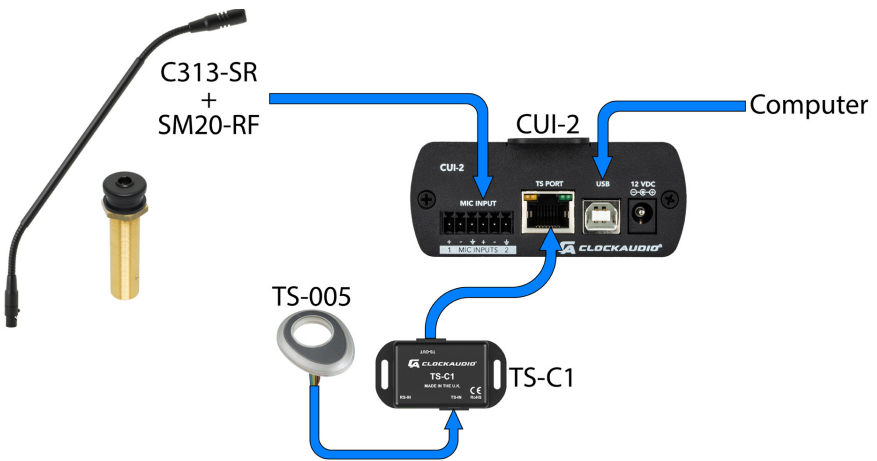
COLOR OPTIONS

- RED
- GREEN
- BLUE
- YELLOW (RED & GREEN ON)
- PURPLE (RED & BLUE ON)
- LIGHT BLUE (GREEN & BLUE ON)
- WHITE (ALL SWITCHES ON)
- NO COLOR (ALL SWITCHES OFF)

The most common use is DIP SWITCH 1 and 5 in the ON position. This would show a green LED when the mic is active and a red LED when the microphone is muted.

CUI-2 CONNECTIONS

Connect a Clockaudio microphone, Touch Switch, and Windows or Mac PC in the manner shown below. In this example, we will use the C313-SR, SM20-RF & TS005



TOUCH SWITCH PORT SETUP

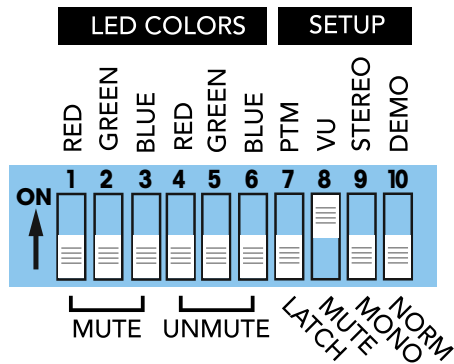
The TS PORT allows users to connect a Touch Switch such as the TS 003 or TS 005 to the CUI-2 for microphone muting and unmuting. The first 8 DIP SWITCHES and the LED BRIGHTNESS control will alter the functionality of the connected TS Switch.

TS PORT OPTIONS

DIP SWITCH 7 places the Touch Switch in latch or momentary mode.

In the OFF or down position, the Touch Switch will be in LATCH mode. In this mode, press the switch one time to mute the microphone.

The microphone will remain muted until the switch is pressed a second time. The second press will unmute the microphone.



In the UP or on position, the Touch Switch is in Push To Mute, or PTM mode. In this mode, the microphone(s) will mute only while the switch is touched/pressed. This mode is often used as a “Cough Mute”.

DIP SWITCH 8 determines if the LEDs on the Touch Switch display the MUTE status or a VU meter.

When DIP SWITCH 8 is the MUTE (down) position, the LEDs on the Touch Switch will indicate a muted or active microphone or microphones. In this position, the colors for both MUTE and UNMUTE are determined by DIP SWITCHES 1-6.

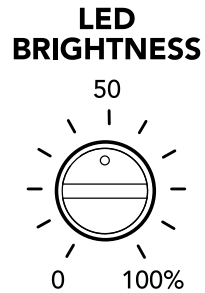
When DIP SWITCH 8 is in the VU (up) position, the LEDs on the TS switch will function as a VU meter.

- A green LED indicates the audio input is in an acceptable range.
- A yellow LED indicates the audio is near clipping
- A red LED indicates that the microphone audio is clipping or clipping is imminent.

LED BRIGHTNESS

The LED Brightness control determines the brightness of the Touch Switch LEDs.

NOTE: When turned fully counter-clockwise to the 0 position, all LEDs will be turned off, regardless of the DIP SWITCH settings.

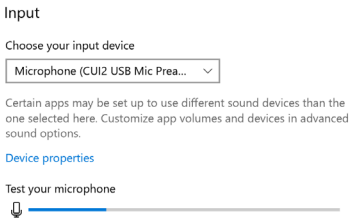


CONNECTING TO PC/MAC VIA USB

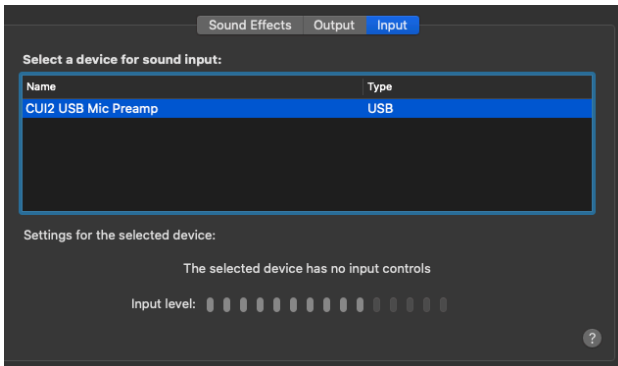
The CUI-2 is a plug and play USB interface. When connected to a PC or Mac computer, the CUI-2 will show up as CUI-2 USB Mic Preamp, a two-channel input device.

Launch Windows Sound panel (on a Windows PC) or Sound from System Preferences (on a Mac computer) to verify the CUI-2 has installed properly.

To adjust the gain of the microphone, use the gain trim knob on the CUI-2 as described in the microphone setup section.



Windows Sound Panel



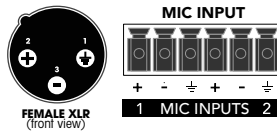
Mac OS X Sound Preferences

MICROPHONE SETUP

The CUI-2 provides 2 channels of microphone amplification and USB streaming to a connected PC or Mac computer.

Connect microphone(s) to the CUI-2 with professional grade cabling. We recommend that the cable be shielded.

If using an XLR connector, wire the positive (pin 2) on the XLR to the first terminal. The negative (pin 3) to the second terminal, and the ground (pin 1) to the third terminal. Repeat for a second microphone if using.



MONO MICROPHONE

When using a single mono microphone with the CUI-2:

- Set DIP SWITCH 10 to the MONO (Off or DOWN) position.
- Connect the microphone to Channel 1 on the terminal block.
- In this mode, the signal on Channel 1 will be duplicated on Channel 2 on the USB device. Mic input of Channel 2 will be disabled.

STEREO OR DUAL MONO MICROPHONES

When using a single stereo microphone such as the CS2S-V-RF-RGB (or dual mono microphones) with the CUI-2:

- Set DIP SWITCH 10 to the STEREO (ON or UP) position.
- Connect Mic A to Channel 1 on the terminal block.
- Connect Mic B to Channel 2 on the terminal block.
- In this mode, both Channel 1 (Left) and Channel 2 (Right) will be accessible via USB

Stereo mode is only compatible with stereo capable soft codecs like Zoom. Currently, Teams and Webex are not stereo compatible and will only work with a single microphone in mono mode.

USE THE VU MODE TO SET GAIN

If using a Clockaudio Touch Switch with the CUI-2, place the LED indicators in VU mode (see TS Port Setup section). In this mode, the LEDs will appear green when a signal is present, yellow when a signal is near clipping, and red when the signal is clipping.

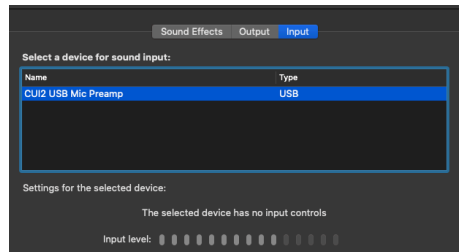
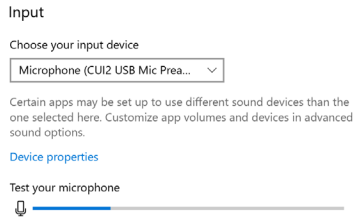
In VU mode, speak into the microphone(s) at a slightly elevated speech level. Set the microphone preamp gain trim knob so the signal is mostly green with infrequent peaks into yellow during louder speech testing. You do not want to see any Red.

Once the gain is set properly, move DIP SWITCH 8 back to the MUTE position (DOWN or OFF). This reassigns the LEDs back to identifying the MUTE/ UNMUTE state of the CUI-2.

VERIFY STREAMING AND GAIN LEVELS VIA USB

After you have adjusted the gain on the CUI-2, verify that it is passing the signal to a Windows or Mac PC. Connect the CUI-2 to a Windows or Mac PC.

Launch Windows Sound panel (on a Windows PC) or Sound from System Preferences (on a Mac computer). Verify that the input level is satisfactory.



Mac OS X Sound Preferences

MICROPHONE PLACEMENT

Optimizing the position of your microphone is key to reducing unwanted room noise for videoconferencing and voice conferences. Lower noise will improve intelligibility and sound quality. In a home office installation, consideration must be made for noise such as:

- AC unit
- Natural room reverb
- Computer fan noise
- Mechanical keyboard noise
- Dog barking
- Kids playing/screaming

Please keep the directionality of your microphone in mind when mounting the microphone on your desk. Before drilling, connect your kit and test different positions with a software like Zoom that will let you listen to the signal of your microphone. This will let you test different positions and angles to optimize your sound quality before drilling in your desk.



Another factor to keep in mind with noise is proximity: the closer to the noise source you are, the louder it will be unless you strategically aim the back of a directional microphone (ie: cardioid) facing away from the noise source. In the example to your left, the modular gooseneck (CA30-RF) has a knuckle-joint termination that will help to aim any mounted

Clockaudio microphone capsule toward you while rejecting keyboard noise. If you have a regular gooseneck without the knuckle-joint, try making an “S” shape like the picture above to accomplish similar results.

Optimal microphone placement is around 12-18 inches from your mouth. If you place the microphone further you will pick up more room reflections, and room noise. Mics placed closer than 12 inches may distort.

While there are amazing digital noise suppression features in your favorite conferencing software (Zoom, Teams, etc.) or third party noise suppression software (RTX Voice) to filter out noise digitally, the best results will be found by reducing your noise at the source with the help of optimized microphone positioning techniques.

If you have a quieter keyboard or a keyboard that is not near the microphone, a directional boundary layer

microphone like the CS1S-RF is a good option.

This will offer a low-profile alternative to a gooseneck microphone while providing great intelligibility and audio quality.



Please note that a directional microphone should be kept at least

2 inches away from other objects to maintain rear noise rejection. Any directional microphone placed closer than 2 inches from a surface will become omni-directional and lose its rear noise rejection.

NOTE: Some video conferencing systems only support mono audio. It is common for mono conferences to use Input 1 and ignore the signal on Input 2. When using a stereo microphone, review the audio settings in your conference software and select the stereo microphone input option if available.

DEMO/DIAGNOSTIC/TEST MODE

The DEMO mode on the CUI-2 is useful for troubleshooting or testing an installation. When the DEMO mode is active, the CUI-2 will:

- Stream a 440Hz test tone to the USB input
- Cycle through all the available color combinations on the Touch Switch (if installed).

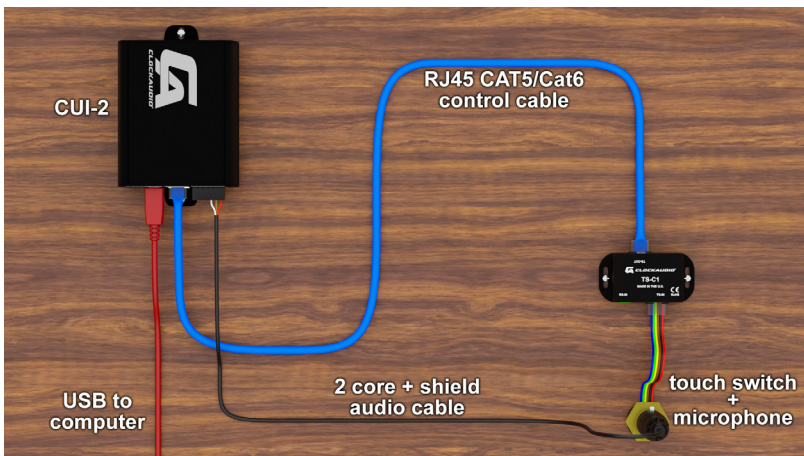
To activate the Test mode, slide DIP SWITCH 10 to the UP or DEMO position.

The DEMO mode tone generator provides an easy way to verify USB audio is streaming properly. The tone can be identified on the input meter in the Windows Sound panel (on a Windows PC) or Sound from System Preferences (on a Mac computer). If signal is present on your input meter in DEMO mode but not in NORM mode with your microphone(s) connected, please review the microphone wiring.

MOUNTING

The CUI-2 is most commonly mounted to the underside of a desk or conference table. When mounting the CUI-2, please consider the following:

- Ensure the mount point is close enough to reach the USB ports on a computer.
- Mount in a secure location that will not interfere with chairs or users.
- Secure the CUI-2 to a flat surface with a No. 6 (included) screw through each mounting flange.



See Mechanical Drawing Section for specific dimensions.

FRONT COVER

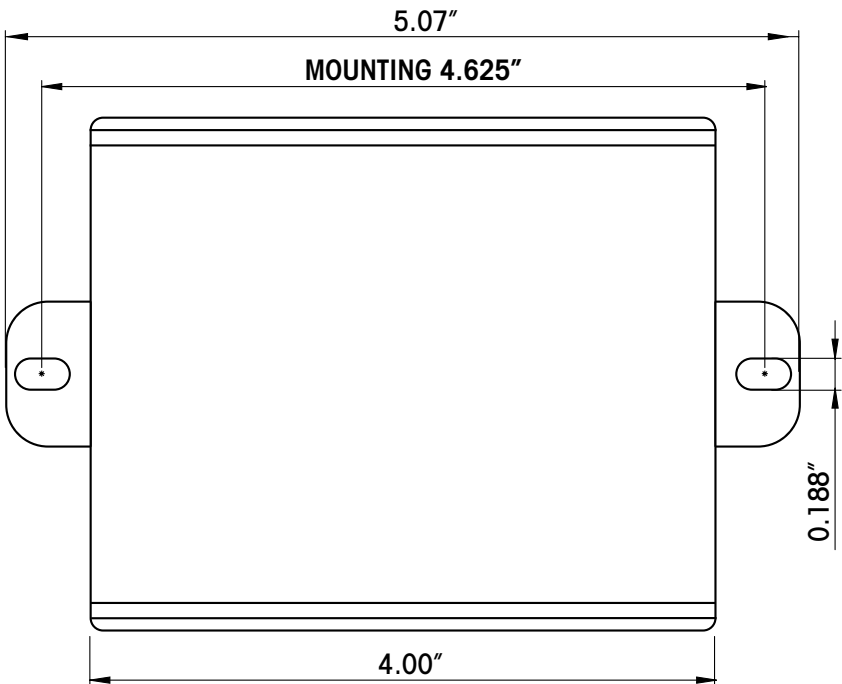
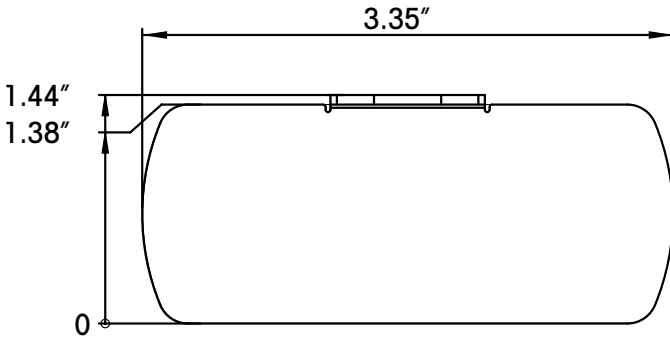
If desired, install the tamper resistant front cover after CUI-2 configuration and testing is completed. The CUI-2 front cover conceals the hardware controls. To install the front cover:

- Partially back out the No.6 screw from the front panel flange.
- Install the tamper resistant front panel over the controls.
- Reinstall the No. 6 screw to secure the front plate and the CUI-2.

SPECIFICATIONS

AUDIO SPECIFICATIONS	
Input Type	Balanced and RF filtered
Gain	Variable (10-50dB)
Input Impedance	2.5 K Ω
Phantom Power	48V (always on)
Terminal Block Replacement PN	Molex 39500-0006
EIN	-122dBu
System THD+N	<0.01% at any gain, input signal 3dB below maximum
Frequency Response	20Hz - 20kHz, +/- 1dB @ 40dB Gain
GENERAL SPECIFICATIONS	
TS Control Device Input	RJ45, interfaces with Clockaudio TS-C1 and Clockaudio Touch Switches
Power Consumption (USB type B)	2W
Max Product Dimensions	5.07" x 3.35" x 1.44"
Mounting Slot Mounting Dimension	4.625" to 4.75" (center to center)
Recommended Mounting Screw	#6
Unit Weight	0.5 lbs
Packaged Weight	0.8 lbs
Compliance	TBD

MECHANICAL DIMENSIONS



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