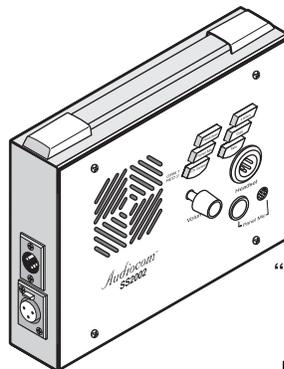


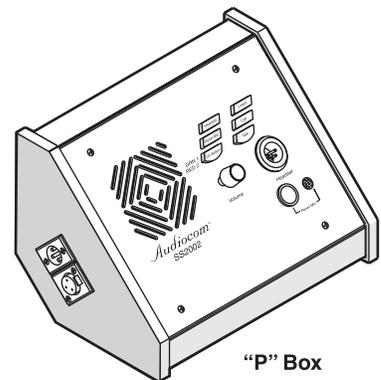
Telex[®]

User Instructions

**Model SS-1002
Single Channel
Intercom Speaker
Station**

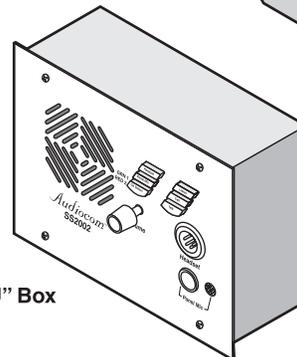


"S" Box



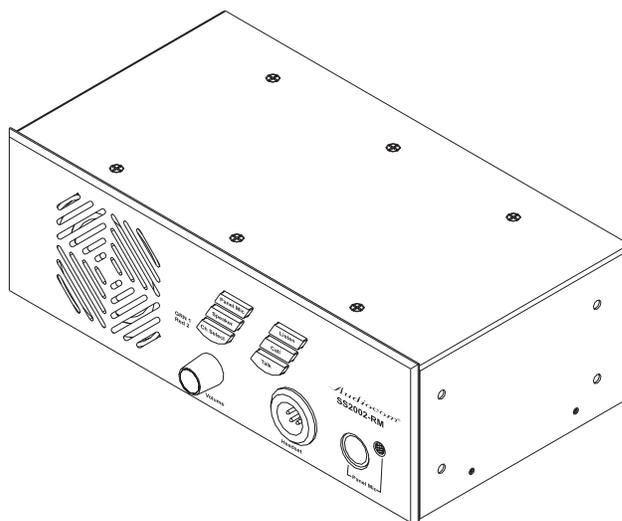
"P" Box

**Model SS-2002
Two Channel
Intercom Speaker
Station**



"U" Box

**Model SS-2002RM
Two Channel
Rack Mount
Intercom Speaker
Station**



Audiocom[®] Intercom Systems

FCC Statement

This equipment uses, and can radiate radio frequency energy that may cause interference to radio communications if not installed in accordance with this manual. The equipment has been tested and found to comply with the limits of a Class A computing device pursuant to Subpart J, Part 15 of FCC Rules which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area may cause interference which the user (at his own expense) will be required to correct.

 This product meets Electromagnetic Compatibility Directive 89/336/EEC

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Introduction

Thank you for purchasing the Audiocom SS-1002/SS-2002/SS-2002RM Intercom Speaker Station. We hope the many design features of this product will satisfy your intercommunication requirements for many years to come. To get the most out of your new intercom station, please take a few moments to look through this booklet before using the Intercom Speaker Station for the first time.

Description

The Intercom Speaker Stations may be used with a headset, or with the built-in speaker and the panel microphone or an optional gooseneck microphone. Another alternative is to use headphones and either the built-in panel microphone or an optional gooseneck microphone. As an alternative to a headset, a telephone style handset may also be used. The SS-1002 is a single-channel station; the SS-2002 & SS-2002RM provide switch selectable access to either of two intercom channels. Both the SS-1002 and SS-2002 come in three versions to suit a variety of applications. The “S” box is a portable version. It has a carrying handle and dual “loop-through” intercom connectors which permit stations to be quickly interconnected using prefabricated cables. The “P” box is a stationary version. It also has dual “loop-through” connectors for quick interconnection, but the case is designed for desktop or console-mount applications. The “U” box is designed for permanent, in-the-wall mounting. It uses push type wire terminals for connection to the intercom system. In addition, the SS-2002RM can be used on a desktop or mounted in a standard 19” equipment rack (using the optional RM-14 Rack Mount Kit).

Features

1. Channel and Power connections: The “U” box uses quick release terminals to connect audio and power wires. For the “S” box and “P” box versions, the terminal connections are brought out to the dual, loop-thru XLR connectors on the side of the box. These permit several stations to be connected in a string, or daisy-chain, using prefabricated intercom cables.
2. Configuration DIP switches: These switches control the following features:
 - Call Beep: In addition to a flashing call key indication for incoming calls, an incoming call beep tone can also be used.
 - Headset Microphone Type Selection: Either a balanced or unbalanced dynamic microphone can be selected.
 - DC call enable: This may be turned on to use the intercom station with intercom systems that use DC call signaling.
3. Panel Mic Key: Selects the Panel Mic connector / Built-in Mic (11) in the on position and the headset connector (10) in the off position.
4. Speaker Key: Selects the built-in speaker in the on position and the Headset connector (10) in the off position.
5. Channel Select Key (SS-2002 & SS-2002RM only): Selects intercom channel 1 or 2. The key lights green for channel 1 and red for channel 2.
6. Volume Control: Adjusts intercom listen volume to headphones or speaker.
7. Intercom Listen Key: Both momentary (push-to-listen) and latching (hands-free listen) are possible.
8. Call Key: Used to send call signals on the intercom channel. Flashes for incoming calls.
9. Intercom Talk Key: Both momentary (push-to-talk) and latching (hands-free talk) are possible. All models are also equipped with a “mic kill receive” circuit, which allows an operator at a remote master station (such as the US-2000A) to turn off the talk key on all stations on the intercom line.
10. Dynamic-Mic Headset Connector: 4-pin male XLR connector accepts headsets with monaural headphones and either a balanced or unbalanced dynamic microphone. Also accepts a telephone style handset. Can also be used with headphones when a Panel Mic is connected. Can also be used with a handheld microphone along with the internal speaker.
11. Panel Mic Connector: Accepts an electret gooseneck microphone such as the Telex MCP-90.
12. Built-in Panel Microphone: Active when the Panel Mic key is pressed and a gooseneck microphone is not inserted in the Panel Mic connector.
13. Sidetone Trimmers: These adjust the level of the user’s own voice in the headphones when using full-cushion headphones. (Eliminates the muffled sensation when talking with the ears completely covered.) When using the speaker or open-ear style headphones, the sidetone trimmers are adjusted to eliminate the user’s voice from the headphones or speaker. This helps to prevent feedback.
14. Balanced / Unbalanced Selector Switch: This switch sets the intercom station for compatibility with either Audiocom (balanced) or Clear-Com* (unbalanced) intercom systems.

* Brand names mentioned are the property of their respective companies.

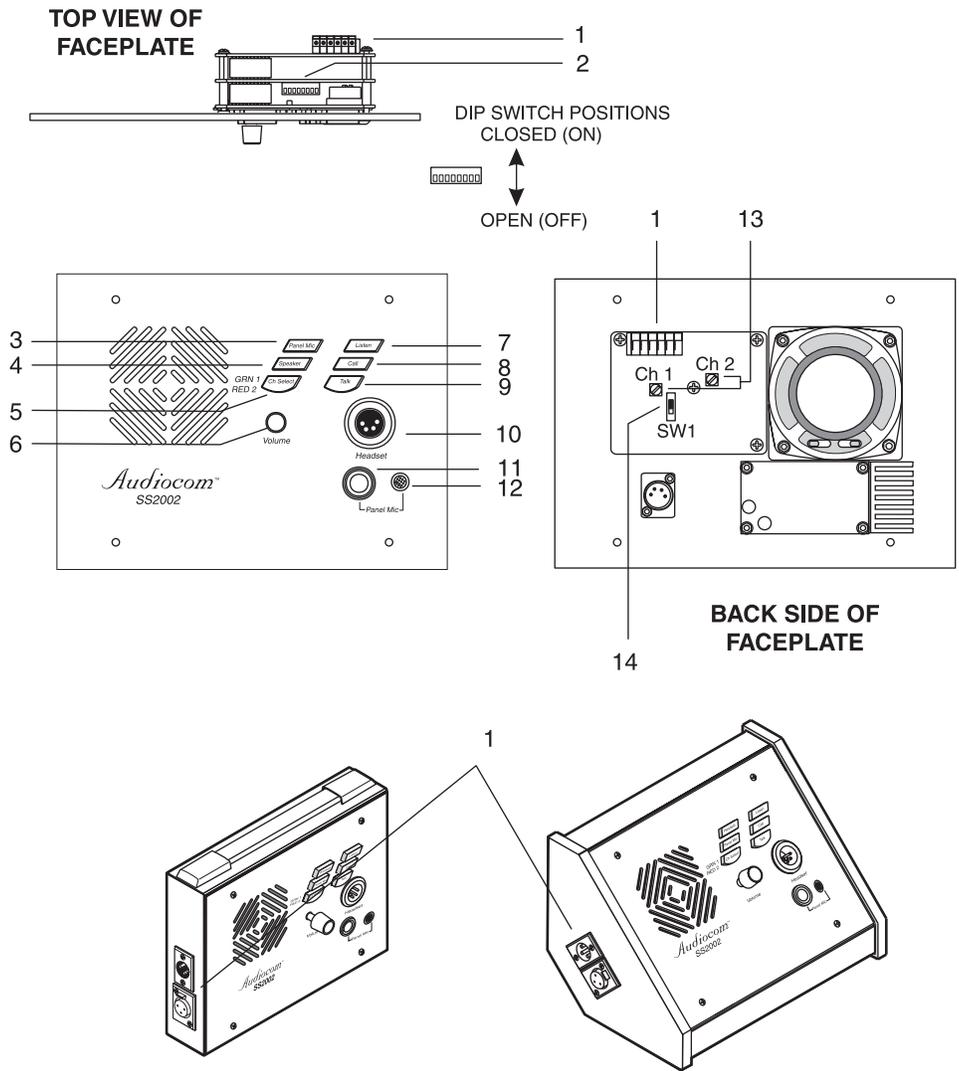


Figure 1 - SS-1002 / SS-2002 features.

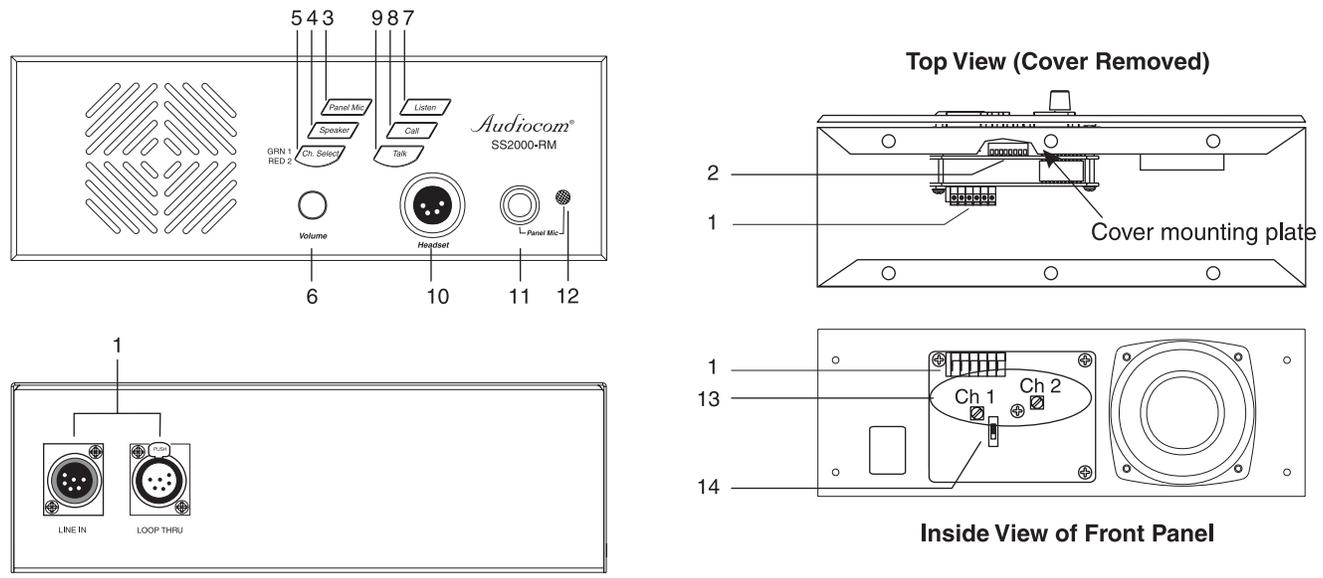


Figure 2 - SS-2002RM features.

Installation

Unpacking

Each SS-1002 / SS-2002 / SS-2002RM is supplied with the following items. Contact the shipper or your Audiocom dealer immediately if anything is damaged or missing. Be sure to fill out and return the product registration card to Telex to properly register your intercom station.

For SS-1002 / SS-2002 units:

Quantity	Description
1	SS1002 or SS2002 Intercom Station
1	Warranty and registration card
1	User Instructions

For SS-2002RM units:

Quantity	Description
1	SS2002RM Intercom Station
1	Warranty and registration card
1	User Instructions
4	Rubber feet (apply to bottom of SS2002RM for desktop use)

Configuration Pre-check

Before making connections, read the configuration notes that follow, and make sure that all internal controls are properly set for your intended usage. If you need to access the internal controls, remove the four screws on the front that secure the intercom station faceplate to the mounting box, then lift out the faceplate for all versions except the RM version. To access the internal controls for the RM version, remove the 10 screws securing the cover on the box and then lift the cover.

DIP Switches

Table 1 lists the DIP switch descriptions and factory default settings.

Switch Number	Description	Settings Open=Off, Closed=On	Default Setting
1	Mic kill receive	Closed: Disabled-no mic kill Open: Enabled-mic kill active	Open
2	Call signal method	Closed: DC (SW1 set to UNBAL) Open: Audiocom (SW1 set to BAL)	Open
3	Incoming call beep	Closed: Disabled Open: Enabled	Open
4	Microphone type	Closed: Unbalanced Open: Balanced	Open
5	Speaker beep for incoming call	Closed: Enabled (DIP switch 3 must be set to Open) Open: Disabled	Open
6	Not used	Don't care	Open
7	Not used	Don't care	Open
8	Not used	Don't care	Open

Mic Kill Receive

Audiocom master stations, such as the US-2002A, can transmit an inaudible signal to turn off the microphones in all remote intercom stations on an intercom channel. This is useful when a remote intercom station has been left unattended with the microphone on. The procedure to send a mic kill signal from a master station is a two-step process, so that it is very unlikely that microphones will ever be turned off by accident. However, you may wish to disable the mic kill receive feature at the intercom unit. You might do this, for example, if communications will be of a very critical nature where it is absolutely essential the microphone never be remotely deactivated. To enable the mic kill receive function set DIP switch 1 to the open position. To disable the mic kill function set DIP switch 1 to the closed position.

Call Signal Compatibility

For Audiocom setup, leave this switch in the open position, and also leave the Balanced / Unbalanced switch in the Balanced position. For Clear-Com setup, set DIP switch 2 to the closed position and set the Balanced / Unbalanced switch in the Unbalanced position.

Incoming Call Beep

Incoming calls are always indicated by a red-flashing call key. If you also want incoming call beep in headphones, set DIP switch 3 to the Open position (default). DIP switch 3 must also be in the Open position if you want to activate incoming call beep to the speaker using DIP switch 5.

Microphone Type

If you will be using a headset, telephone-style handset, or dynamic handheld microphone, and the specifications indicate the microphone type is balanced, leave DIP switch 4 in the Open (default) position. If the specifications indicate an unbalanced microphone set this switch to the Closed position. If you are not sure, leave the switch in the Open position for now, then try both positions during the operation. Use the position that produces the best audio quality at other stations.

Speaker Beep for Incoming Call

Set DIP switch 5 to the Closed position if you want to hear incoming call beep in the speaker. Note that DIP switch 3 must be in the Open position.

Balanced/Unbalanced Switch

This switch is set at the factory to the Balanced, or BAL, position for use with Audiocom intercom channels. Set the switch to the Unbalanced, or UNBAL position for use with a Clear-Com intercom system.

Sidetone Trimmers

These are normally adjusted after all connections are completed. See "Sidetone Adjustment."

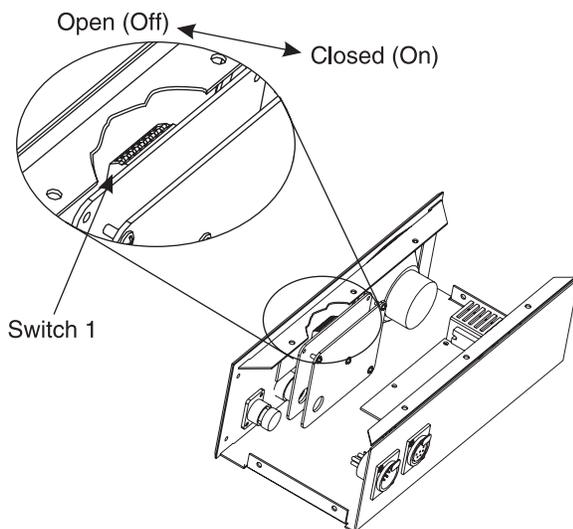


Figure 3 - DIP Switch Location RM Version.

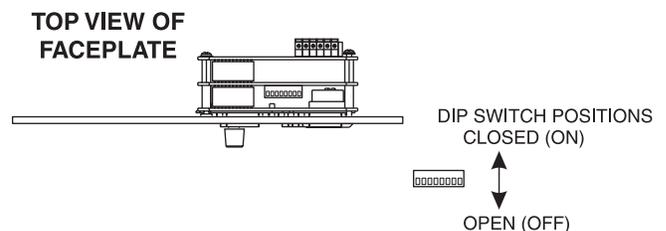


Figure 4 - DIP Switch Location S, U, and P Versions.

Headset Connector Notes

If you are using a monaural, dynamic-mic headset, or a monaural, telephone-style, dynamic-mic handset, or a handheld dynamic microphone, plug it into the Headset connector. You can also use this connector with monaural headphones for listening when you are using either the built in panel microphone, or the optional gooseneck microphone for talk back.

Panel Mic Connector Notes

As an alternative to a headset or telephone-style handset, you can use either the built-in panel microphone or an optional gooseneck microphone. To connect a Telex MCP-90 gooseneck microphone, insert the 1/4" TRS connector into the panel microphone connector and screw the microphone in. When a gooseneck microphone is inserted in the panel microphone connector, the built-in panel microphone is automatically bypassed. Use either of these microphones for talk back, then use the internal speaker for listening, or connect a pair of headphones to the headset connector for private listening.

Intercom Channel Connections

the method of connection depends on the type of box. The "S" box, "P" box, and RM versions connect to the intercom system using prefabricated cables in a phantom-powered configuration. The "U" box version is designed for permanent installation, and it can be either phantom powered or locally powered.

Description of Phantom Powered Connection

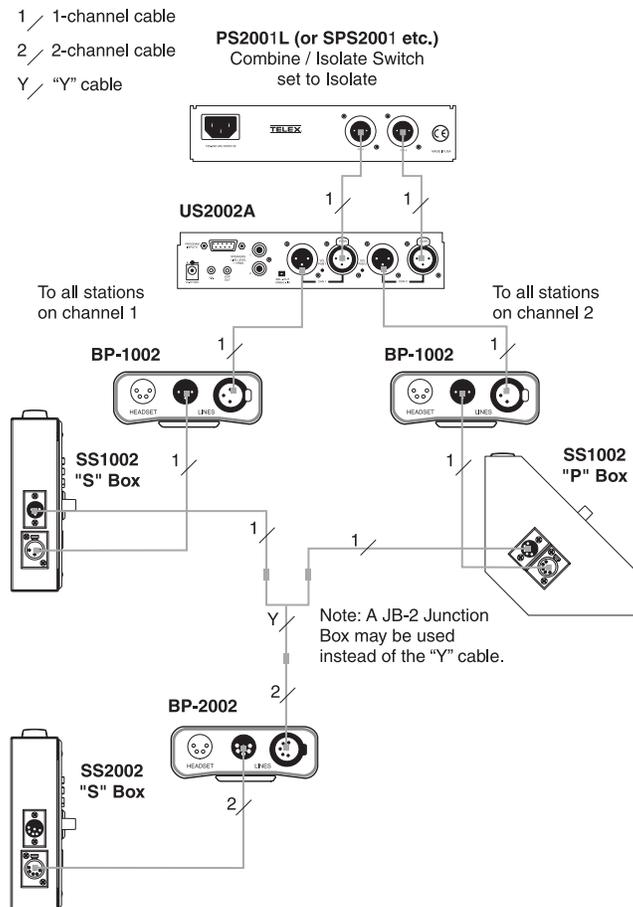


Figure 5 - An example of a phantom powered system. In this system a PS-2001L power supply is set to isolate mode. In this mode each channel is a separate party line and current per channel is limited to 1 amp. Note that both single and two channel intercom stations may be connected by using "Y" cables (or JB2 Junction boxes). Prefabricated cables may be used, or cables may be constructed using the diagrams in Figure 11.

In this method, operating power and intercom audio for the entire intercom system were carried over the same wires. The advantage of this method is simplicity of connection. The system power supply (PS-2001L, SPS-2001A) etc.) automatically provides what is known as a terminating impedance for the intercom system. Without this terminating impedance, the sound quality will be distorted, and the levels will shift every time additional stations are connected. The disadvantage of the phantom power method is that some operating power is lost over very long intercom cables, and performance at distant

intercom stations may be reduced. Generally, if intercom stations are within a few hundred feet from the system power supply, phantom power will be sufficient. Also note that increasing the number of stations will reduce the overall operating distance. Phantom power is generally the only method that will be used to connect the “S” box, “P” box, and RM versions. Figure 5 illustrates a phantom powered intercom system.

Note that the distance over which power can be delivered is less than the distance over which audio can be delivered. Audio can be delivered for several miles to locally powered stations as described below.

Description of Locally Powered Connection

Using this method, an intercom station is connected to the intercom line just like any phantom-powered intercom station, except that a local power supply is also connected. This local power supply is located with the intercom station and provides power for that station only. Since power loss on the intercom lines is no longer an issue, the operating range is now limited only to the audio transmission range, which is several miles. Another advantage to this method is that more stations can be connected to the intercom channels. When local power is supplied to an intercom station, the station detects this and automatically disconnects from the system’s phantom power supply.

Figure 6 illustrates an intercom system with both phantom powered and locally powered “U” boxes. As long as a system power supply (PS-2001L, SPS-2001, etc.) is located somewhere in the intercom system, the proper terminating impedance will still be supplied for all stations. However, if all stations are locally powered, and there is not system power supply, a special line termination must be installed.

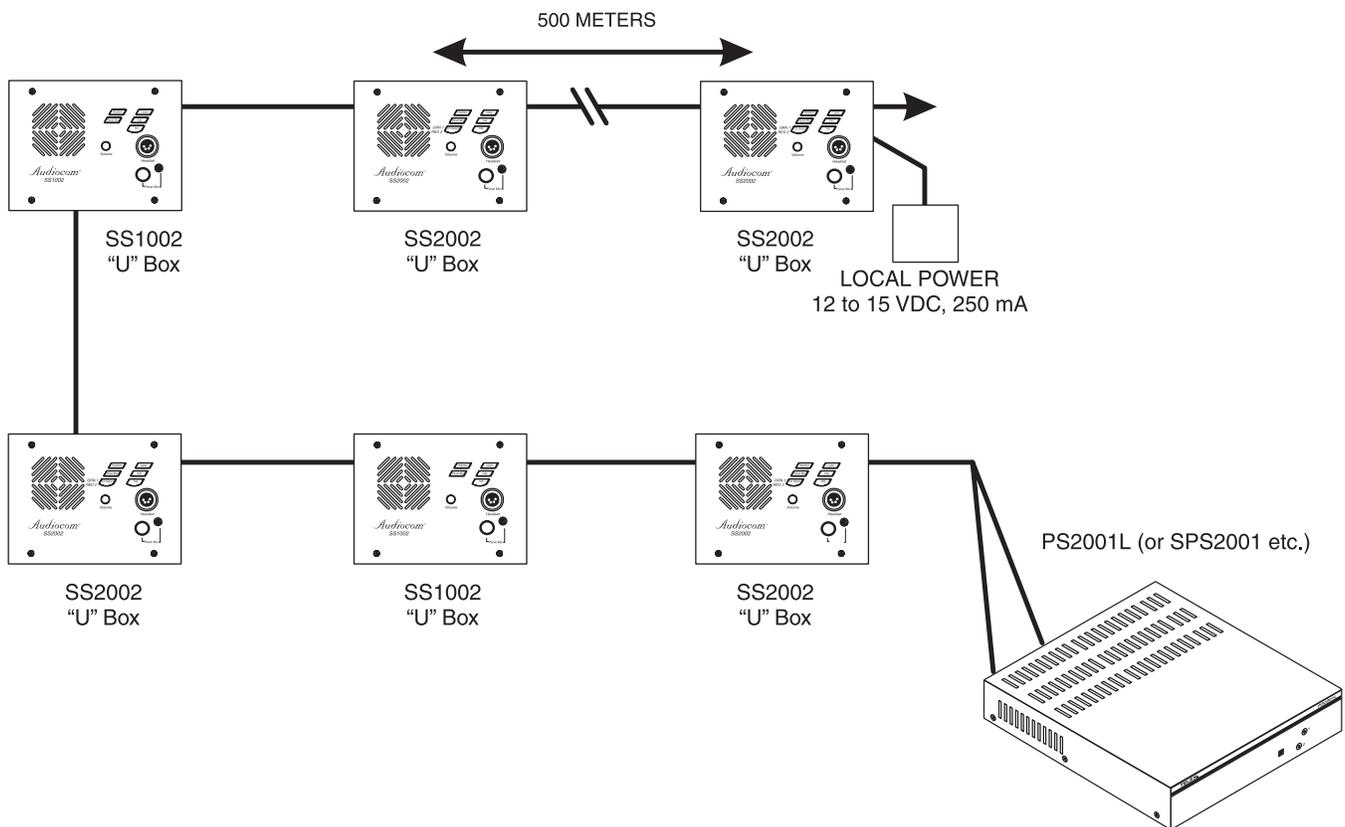


Figure 6 - A two-channel Audiocom intercom system using a PS2001L power supply. the PS2001L is set to isolate mode. In isolate mode, each intercom channel is a separate party line, and total current for each channel is limited to 1 amp. Note that both SS1002 and SS2002 stations may be connected depending on each location’s need to communicate with one or two channels. SS1002 stations may be connected to either channel one or two. Also note that locally powered stations may be connected. This is recommended when stations are installed at remote locations. Since the PS2001L provides termination for the intercom channels, no user-installed termination is required.

All Locally Powered Intercom Stations (Dry Lines)

If intercom stations are widely distributed, you can dispense with a system power supply (PS2001L, SPS-2001, etc.) and use local power for each station. When no power is delivered on the intercom channels, this is known as dry-line operation. Since a system power supply is not used, a line termination must be inserted in each intercom channel for proper operation. Again, note that only the "U" box has provisions for local power. The 3-pin connectors on the "S", "P", and RM versions do not permit this type of connection. Figure 7 illustrates an intercom system using all locally powered "U" boxes.

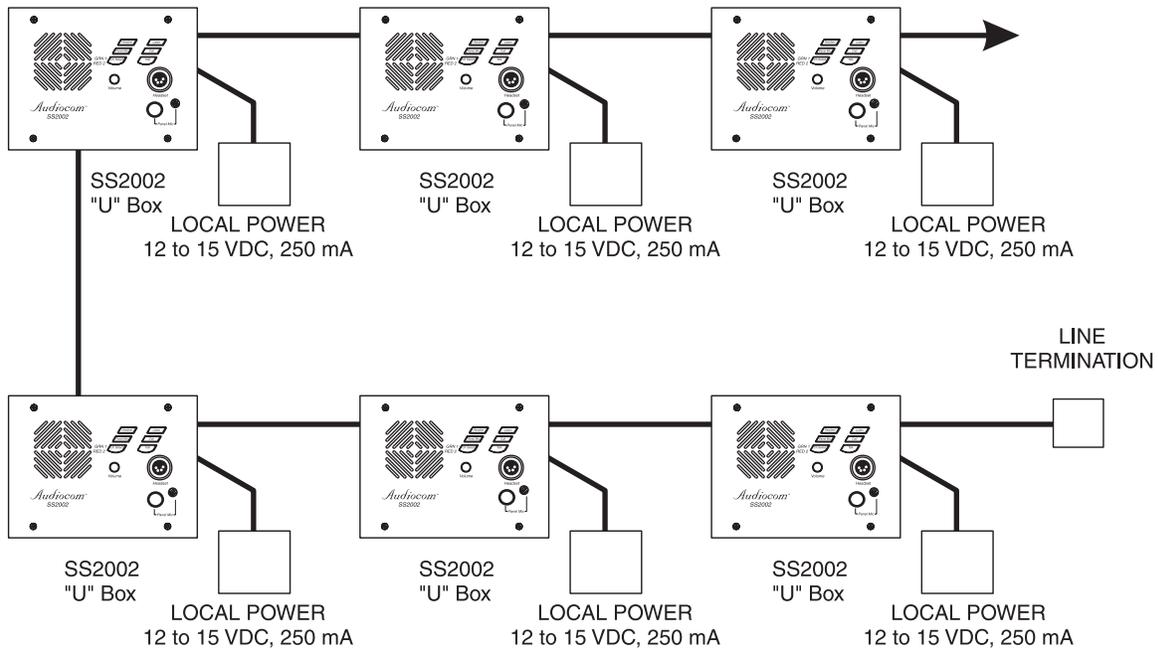


Figure 7 - An example of an Audicom intercom system using all locally powered "U" box stations, with no power being distributed on the intercom channels (dry lines). Since an Audicom power supply is not used, the installer must connect a line termination somewhere in each channel for proper operation.

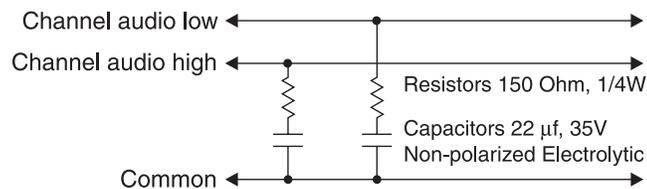
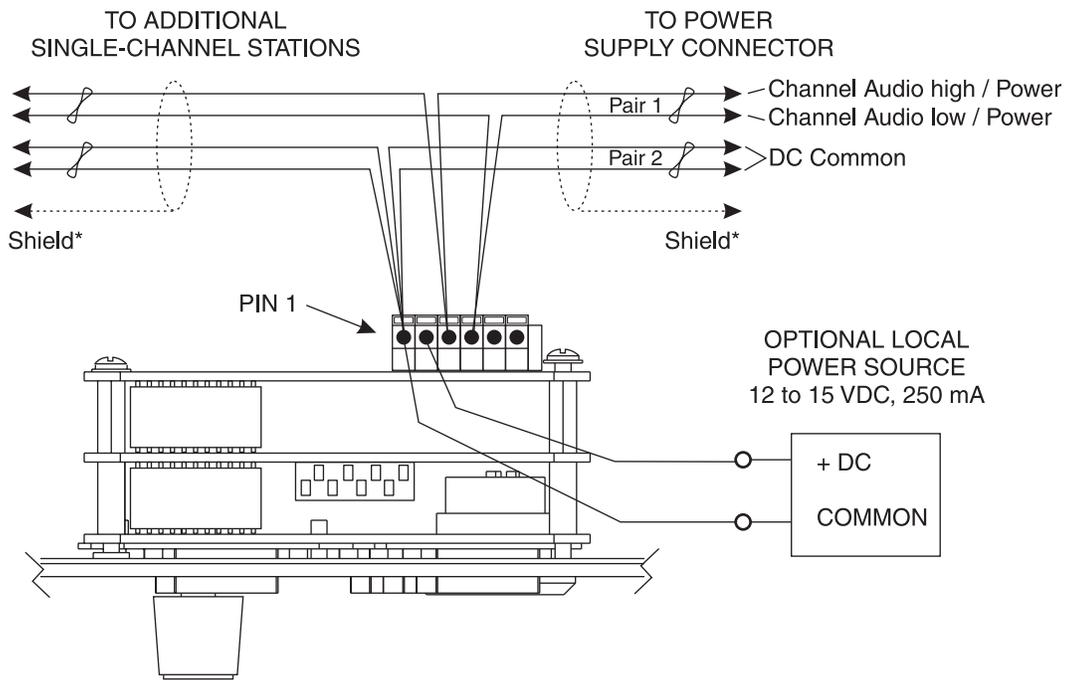


Figure 8 - Audicom mode line termination for dry-line operation. (One required for each channel). the termination is available via PN: 9020-7550-000.



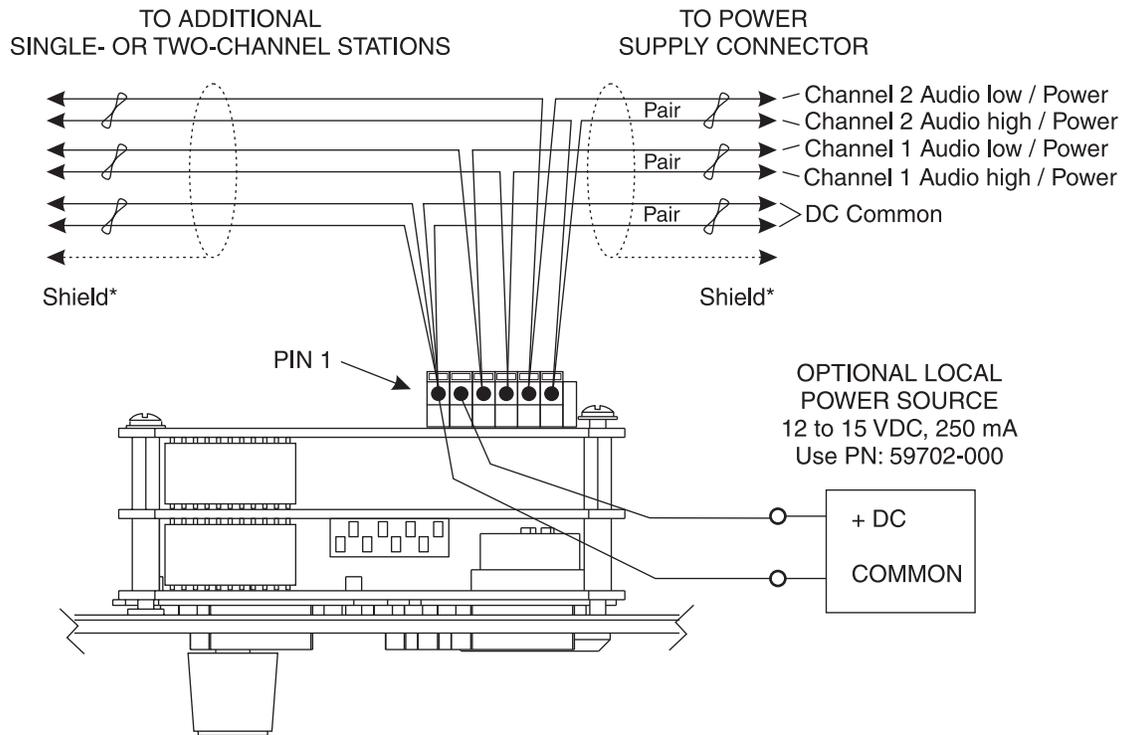
Cable Type: 22AWG Stranded, 2-Pair Twisted-wire, with Shield

⌘ Denotes twisted pair.

⋯ Denotes shield.

*Shield: Earth ground (Connect at power supply only. Do not short to DC common)

Figure 9 - Audiocom mode connections for an SS1002 Intercom Station in a "U" box. Note: for Clear-Com connection, use the Unbalanced Mode Intercom Channel pin-out information listed in the Specifications section.



Cable Type: 22AWG Stranded, 3-Pair Twisted-wire, with Shield

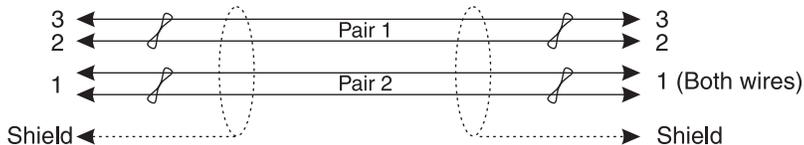
⌘ Denotes twisted pair.

⋯ Denotes shield.

*Shield: Earth ground (Connect at power supply only. Do not short to DC common)

Figure 10 - Audiocom mode connections for an SS2002 Intercom Station in a "U" box. Note: for Clear-Com connection, use the Unbalanced Mode Intercom Channel pin-out information listed in the Specifications section.

TYPICAL 1-CHANNEL CABLE WIRING



Cable Type: 22AWG Stranded, 2-Pair Twisted-wire, with Shield

Connector Type: 3-Pin XLR Audio (Neutrik or Switchcraft)*

Pin 1: Common

Pin 2: Channel Audio / Power

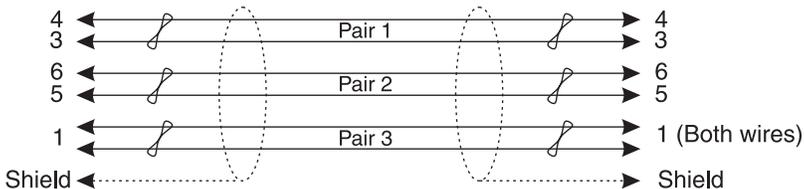
Pin 3: Channel Audio / Power

Shield: Earth ground

 Denotes twisted pair.

 Denotes shield.

TYPICAL 2-CHANNEL CABLE WIRING



Cable Type: 22AWG Stranded, 3-Pair Twisted-wire, with Shield

Connector Type: 6-Pin XLR Audio (Neutrik only, not compatible with 6-pin Switchcraft)*

Pin 1: Channel 1 & 2 Common

Pin 2: No connection

Pin 3: Channel 1 Audio / Power

Pin 4: Channel 1 Audio / Power

Pin 5: Channel 2 Audio / Power

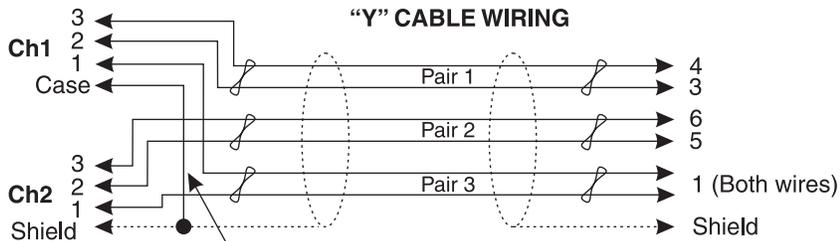
Pin 6: Channel 2 Audio / Power

Shield: Earth ground

 Denotes twisted pair.

 Denotes shield.

“Y” CABLE WIRING



Use second drain wire if available, or add an extra section of wire.

* Standard cables are generally constructed using a male connector at one end and a female connector at the other end. This allows several cables to be interconnected to create longer cable runs. Audiocom master stations, speaker stations and belt packs also typically provide both a male and female Neutrik connector for each intercom channel. This permits loop-through connection of several intercom stations using the standard cables. Audiocom power supplies use a 3-pin male Neutrik connector for each channel. Audiocom wallplates use male Neutrik connectors.

Figure 11 - Audiocom cable wiring diagrams.

Power-Up

Make sure any local power supplies are plugged in, then turn on the power switches of any phantom power supplies (PS-2001L, SPS-2001, etc.)

Sidetone Adjustment

The SS-1002, SS-2002, and SS-2002RM use full-duplex audio (the same as conventional telephone lines) in which the talk and listen audio are sent and received on the same wires. Thus, when you talk, you also here your own voice back as with a telephone. If you are using the built-in speaker for listening and either a panel microphone or handheld microphone for talkback, you could experience unwanted feedback since the microphone may pick up your returned voice audio from the speaker and re-amplify it. This could also happen if you are using a headset or headphones with open-ear style earmuffs. On the other hand, if you are using earmuffs that completely enclose the ears, the microphone is not likely to pick up the returned audio. A certain amount of your own voice level is desirable to overcome the muffled sensation when talking. The sidetone adjustment is different for these different operating conditions:

If you are using the speaker with a panel microphone, or if you are using an open-ear style headset or headphones, adjust sidetone as follows:

1. SS-2002 & SS-2002RM only: activate channel 1 as described in the operating instructions.
2. Activate talk and listen as described in the operating instructions
3. Slowly increase the volume to maximum while talking into the microphone.
4. Using a small flat-bladed screwdriver, adjust the channel 1 sidetone trimmer to minimize your voice level in the headphones.
5. SS-2002 & SS-2002RM only: activate channel 2 and repeat the above steps to adjust the channel 2 sidetone.
6. Install the intercom station mounting screws after completing the adjustments. The station is now ready for use.

If you are using headphones that completely enclose the ears, adjust sidetone as follows:

1. SS-2002 & SS-2002RM only: activate channel 1 as described in the operating instructions.
2. Activate talk and listen as described in the operating instructions.
3. Set the volume control to the normal listening level for intercom audio
4. While talking into the microphone, use a small flat-bladed screwdriver to adjust the channel 1 sidetone trimmer so that you can hear your own voice in the headphones at an acceptable level.
5. SS-2002 & SS-2002RM only: activate channel 2 and repeat the above steps to adjust the channel 2 sidetone.

Operation

Channel Select (SS-2002 & SS-2002RM Only)

Tap the Ch Select key to select channel 1 or 2. The key is green when channel 1 is selected and red when channel two is selected.

Headset/Headphone/Speaker/Microphone Selection

- To use a headset or telephone style handset, set the Speaker and Panel Mic keys to off.
- To use headphones with the built-in panel microphone, set the Speaker key to off, set the Panel Mic Key to on, and make sure that a gooseneck microphone is not inserted in the panel microphone connector.
- To use headphones with a gooseneck microphone, set the Speaker key to off, set the Panel Mic Key to on, and make sure that a gooseneck microphone is inserted in the panel microphone connector.
- To use the speaker with a handheld dynamic microphone, set the speaker key to on and set the Panel Mic Key to off.
- To use the speaker with the built-in panel microphone, set the Speaker and Panel Mic keys to on, and make sure that a gooseneck microphone is not inserted in the panel microphone connector.
- To use the speaker with a gooseneck microphone, set the Speaker and Panel Mic keys to on, and make sure that a gooseneck microphone is inserted in the panel microphone connector.

Receiving Calls

When there is an incoming call signal, the Call key will flash red. There will also be a beep tone in the headphones or speaker if the beep feature is activated.

NOTE: The incoming call indication is provided only for the currently selected intercom channel in the case of SS-2002 & SS-2002RM models.

Turn on the Talk and Listen keys and begin your conversation. Turn the keys off when finished.

NOTE: You can turn the talk and listen keys on in either momentary or latched mode. For momentary operation, press and hold the key. For latched operation, tap the key to turn it on. Then tap it again to turn it off when finished.

Calling an Intercom Channel

1. SS-2002 & SS-2002RM only: select the desired intercom channel.
2. Press and hold the Call key. An inaudible call signal will be sent, and the Listen key will automatically turn on.
3. When you hear a response, release the call key and activate the talk key.
4. Turn off your Talk and Listen keys to end the conversation.

Specifications

General

Power Requirements:

Phantom Power: +24 VDC nominal, 175 mA

Local Power: +12 to +15 VDC, 250 mA

Dimensions: See dimension drawings.

Environmental Requirements:

Storage: -20°C to 80°C; 0% to 95% RH, non-condensing

Operating: -15°C to 60°C; 0% to 95% RH, non-condensing

Dynamic-mic Headset/Handset

Microphone: 50 to 200 ohms, dynamic (balanced or unbalanced)

Headphones: 150 to 600 ohms, monaural

Connector Type: XLR-4M

Pin 1 - Microphone Low

Pin 2 - Microphone High

Pin 3 - Headphone High

Pin 4 - Headphone Low

Panel Microphone

Built-in Microphone:

2.2k ohms, electret (-44 dB nominal), Omnidirectional

Gooseneck Microphone:

Connector Type: ¼" Threaded TRS

5k ohms, electret (-47 dB nominal)

Tip - Microphone High (+12 VDC bias)

Ring - Common

Sleeve - Common

Compatible with MCP-90 Series Microphones

Intercom Channels, Balanced mode (SW1 set to BAL position)

Output Level: 1Vrms nominal

Input Impedance: 300 ohms

Bridging Impedance: greater than 10k ohms

Sidetone: -40 dB, 35 dB adjustable range

Call Signaling:

Send: 20 kHz ±100 Hz, 0.5 Vrms ±10%

Receive: 20 kHz ±800 Hz, 100 mVrms

Mic-Kill Detect Frequency: 24 kHz ±800 Hz, 100mVrms

Noise Contribution: less than -70 dB

Common Mode Rejection Ratio: greater than 50 dB

Connector Type: Six-position push type terminal block

Pin 1 - Audio and DC Common

Pin 2 - Local power (+12 to +15 VDC) If needed

Pin 3 - Intercom channel 1 audio low and +24 VDC power

Pin 4 - Intercom channel 1 audio high and +24 VDC power

Pin 5 - Intercom channel 2 audio low and +24 VDC power

Pin 6 - Intercom channel 2 audio high and +24VDC power

Intercom Channels, Unbalanced mode (SW1 set to UNBAL position)

Output Level: 0.70 Vrms ±10%

Input Impedance: 200 ohms

Bridging Impedance: greater than 10k ohms

Sidetone: -40 dB, 35 dB adjustable range

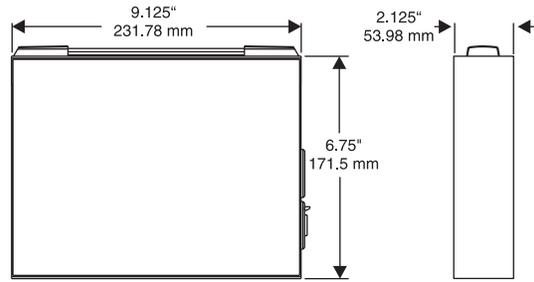
Call Signaling:

- Pin 1 - Common
- Pin 2 - Local power (+12 to +15 VDC) If needed
- Pin 3 - Power +30 VDC
- Pin 4 - Intercom channel 1 audio and DC call signaling
- Pin 5 - Power +30 VDC
- Pin 6 - Intercom channel 2 audio and DC call signaling

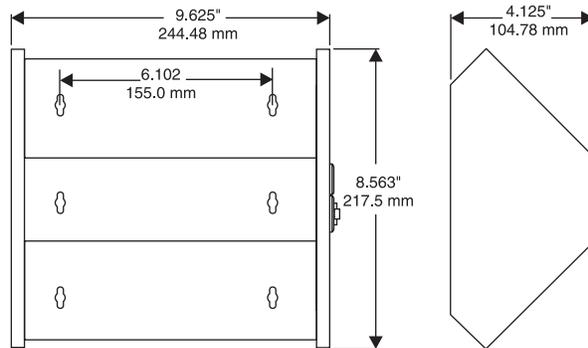
Speaker Output Power

4W max @ 8 ohms

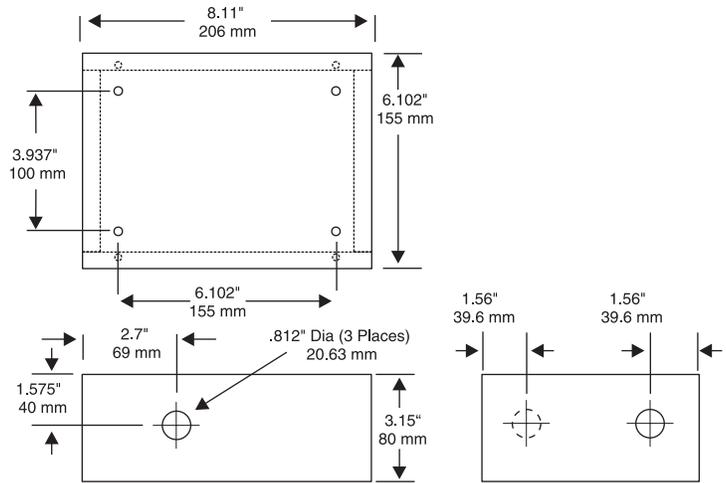
Dimensions



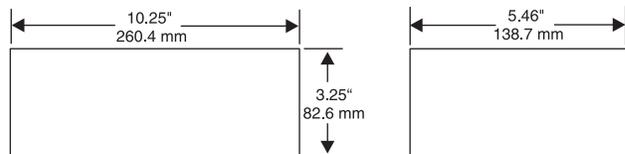
"S" Box



"P" Box



"U" Box



RM

TRADEMARKS

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WARRANTY INFORMATION

Products are warranted by Telex Communications, Inc. to be free from defects in materials and workmanship for a period of one year from the date of sale.

The sole obligation of Telex during the warranty period is to provide, without charge, parts and labor necessary to remedy covered defects appearing in products returned prepaid to Telex. This warranty does not cover any defect, malfunction or failure caused beyond the control of Telex, including unreasonable or negligent operation, abuse, accident, failure to follow instructions in the manual, defective or improper associated equipment, attempts at modification and repair not authorized by Telex, and shipping damage. Products with their serial numbers removed or effaced are not covered by this warranty.

To obtain warranty service, follow the procedures entitled "Procedure for Returns" and " Shipping to Manufacturer for Repair or Adjustment".

This warranty is the sole and exclusive express warranty given with respect to Audiocom products. It is the responsibility of the user to determine before purchase that this product is suitable for the user's intended purpose.

ANY AND ALL IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY ARE LIMITED TO THE DURATION OF THIS EXPRESS LIMITED WARRANTY.

NEITHER TELEX NOR THE DEALER WHO SELLS TELEX PRODUCTS IS LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND.

CUSTOMER SUPPORT

Technical questions should be directed to:

Customer Service Department
Telex
12000 Portland Avenue South
Burnsville, MN 55337 U.S.A
Telephone: (952) 884-4051
Fax: (952) 884-0043

RETURN SHIPPING INSTRUCTIONS

Procedure for Returns

If a return is necessary, contact the dealer where this unit was purchased.

If a return through the dealer is not possible, obtain a RETURN AUTHORIZATION from:

Customer Service Department
Telex Communications, Inc.
Telephone: 1-800-392-3497 or (952) 884-4051
Fax: 1-800-323-0498 or (952) 884-0043

DO NOT RETURN ANY EQUIPMENT DIRECTLY TO THE FACTORY WITHOUT FIRST OBTAINING A RETURN AUTHORIZATION.

Be prepared to provide the company name, address, phone number, a person to contact regarding the return, purchase order number, the type and quantity of equipment, a description of the problem and the serial number(s).

Shipping to Manufacturer for Repair or Adjustment

All shipments of products should be made via United Parcel Service or the best available shipper prepaid. The equipment should be shipped in the original packing carton; if that is not available, use any suitable container that is rigid and of adequate size. If a substitute container is used, the equipment should be wrapped in paper and surrounded with at least four inches of excelsior or similar shock-absorbing material. All returns must include the return authorization number. Units sent for repair or adjustment **DO NOT** need a return authorization number

Factory Service department
Telex Communications, Inc.
West 1st Street
Blue Earth, MN 56013 U.S.A.

Upon completion of any repair the equipment will be returned via United Parcel Service or specified shipper collect.