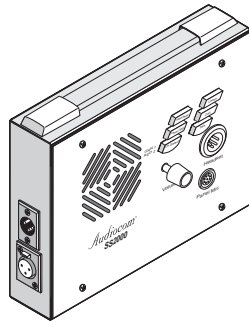
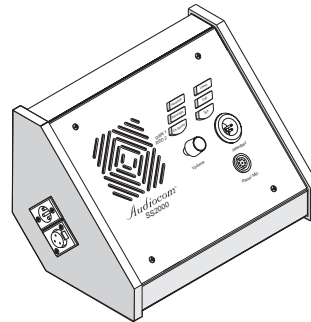


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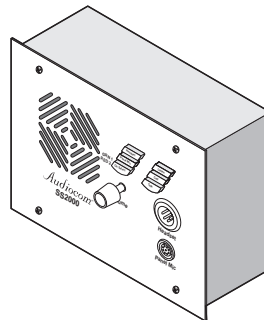
User Instructions



SS2000 "S" Box



SS2000 "P" Box



SS2000 "U" Box

**Model SS1000 / SS2000
Intercom Speaker Stations**

Audiocom[®] Intercom Systems

TELEX[®]

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.

Introduction.

Thank you for purchasing the Audiocom SS1000 / SS2000 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.

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Description

The SS1000 and SS2000 Intercom Speaker Stations may be used with a headset, or with the built-in speaker and an optional gooseneck panel microphone, or with headphones and an optional gooseneck microphone. As an alternative to a headset, a telephone style handset may also be used. The SS1000 is a single-channel station; the SS2000 provides switch-selectable access to either of two intercom channels. Both the SS1000 and SS2000 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 quick release terminals for connection to the intercom system.

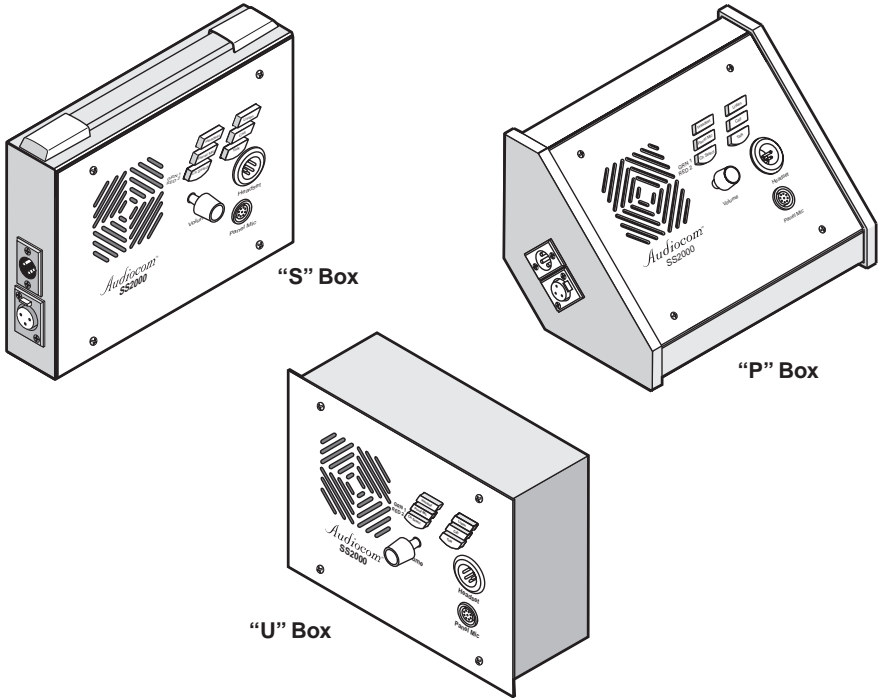


Figure 1. Speaker station versions (SS2000 shown.)

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 may 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 (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 (SS2000 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. The SS1000 / SS2000 also features a "mic kill receive" circuit, which allows an operator at a remote master station (such as the US2000A) to turn off the SS1000 / SS2000 talk key.
10. Dynamic-Mic Headset Connector: 4-pin male XLR connector accepts headsets with monoaural 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. Or, can be used with a handheld microphone along with the internal speaker.
11. Panel Mic / Electret-mic Headset Connector: Accepts an electret gooseneck microphone, such as the Telex Model EGM-12N or EGM-18N.
12. 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.

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13. Balanced / Unbalanced Selector Switch: This switch sets the intercom station for compatibility with either Audiocom or Clear-Com* intercom systems.
14. Mounting Holes (Figure 3): The “U” box is typically mounted in a wall. The “S” and “P” boxes may be mounted on a wall, desktop, or console.

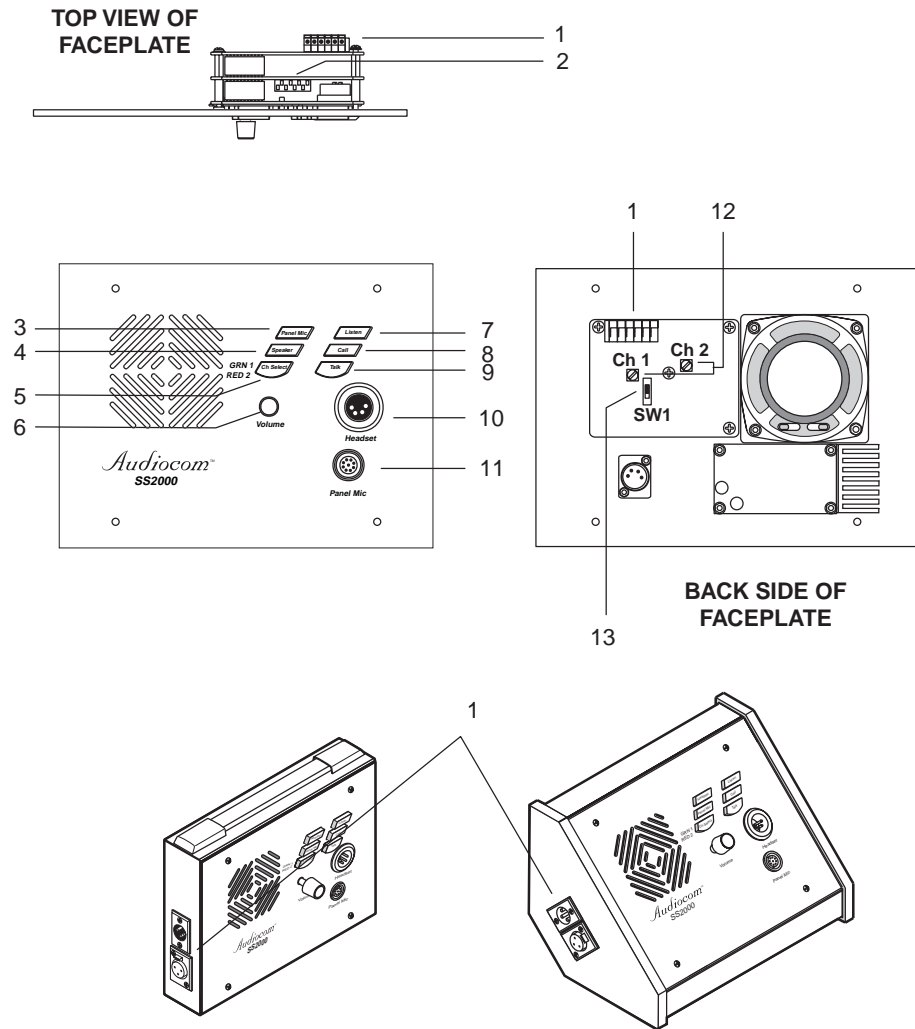


Figure 2. Reference view for controls, indicators and configuration switches. (The numbered items refer to the features list.)

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

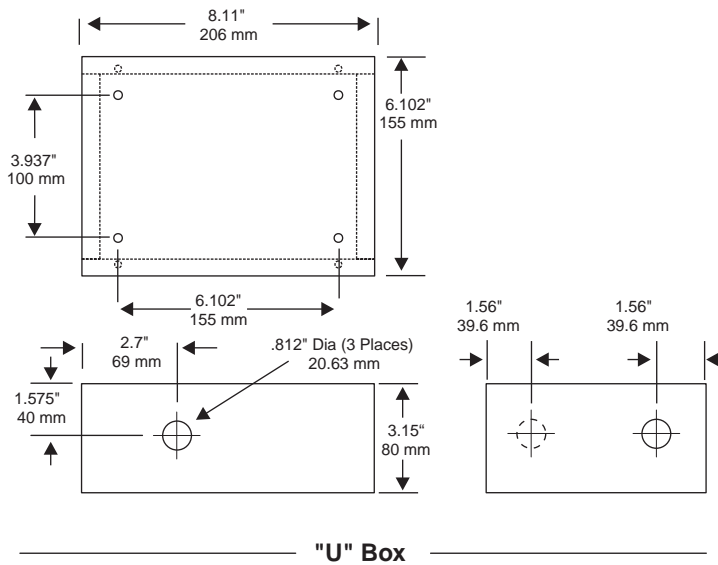
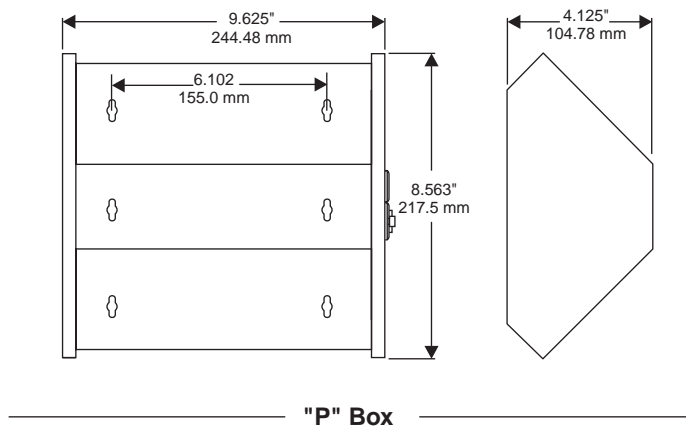
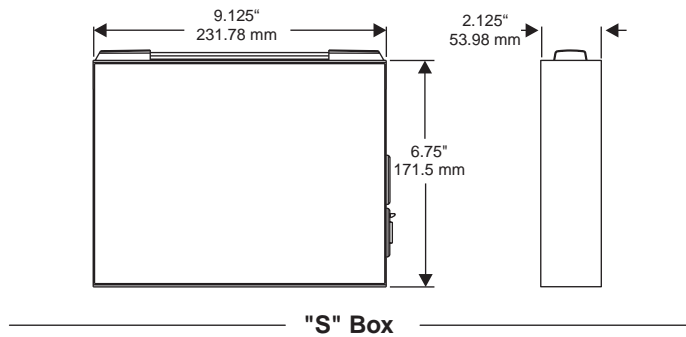


Figure 3. Dimensions

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Installation

Unpacking

Each SS1000 / SS2000 is supplied with the following items. Contact the shipper or your Audiocom dealer immediately if anything is damaged or missing. Detach and fill out the registration card and return it to Telex to properly register your intercom station.

Quantity	Description
1	SS1000 or SS2000 Intercom Station
1	Warranty and registration card
1	User Instructions

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. Figure 2 shows the locations of the internal controls.

DIP Switches (Figure 2, item 2)

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

DC Call Enable (DIP Switch 2)

For Audiocom setup, leave this switch in the open position, and also leave the Balanced / Unbalanced switch (Figure 2, item 13) 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.

Table 1. DIP Switch Settings

Switch Number	Description	Settings Open=Off, Closed=On	Default Setting
1	Not used	Don't care	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

Incoming Call Beep (DIP Switch 3)

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.

Dynamic Microphone Type Selection (DIP Switch 4)

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 operation. Use the position that produces the best audio quality at other stations.

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Speaker Beep for Incoming Call (DIP 5)

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 (Figure 2, item 13)

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 (Figure 2, item 12)

These are normally adjusted after all connections are completed. See "Sidetone Adjustment", page 20.

Intercom Channel Connections

The method of connection depends on the type of box. The “S” box and “P” box versions connect to the intercom system using prefabricated cables in a phantom-powered configuration, as described below and illustrated in Figure 4. The “U” box version is designed for permanent installation, and it can be either phantom powered or locally powered. Examples are shown in Figures 6 and 7.

Description of Phantom Powered Connection

In this method, operating power and intercom audio for the entire intercom system are carried over the same wires. The advantage of this method is simplicity of connection. Also, the system power supply (PS2000L, SPS2000A etc.) automatically provides what is known as a terminating impedance for the intercom system. Without this terminating impedance, the sound quality will be very 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” and “P” box versions, since these versions are usually connected with relatively short cables of less than 200 ft. Figure 4, page 13, illustrates a phantom powered intercom system with “S” and “P” type stations. Figure 6, page 15, illustrates phantom power for “U” boxes.

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

☞ Only the “U” box has provisions for local power. The 3-pin connectors on the “S” box and “P” box do not permit this type of connection.

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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 by 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 (PS2000L, SPS2000A, 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 no system power supply, a special line termination must be installed as described below.

All Locally Powered Intercom Stations (Dry Lines)

If intercom stations are widely distributed, you can dispense with a system power supply (PS2000L, SPS2000A, 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" box and "P" box do not permit this type of connection. Figure 7 illustrates an intercom system using all locally powered "U" boxes.

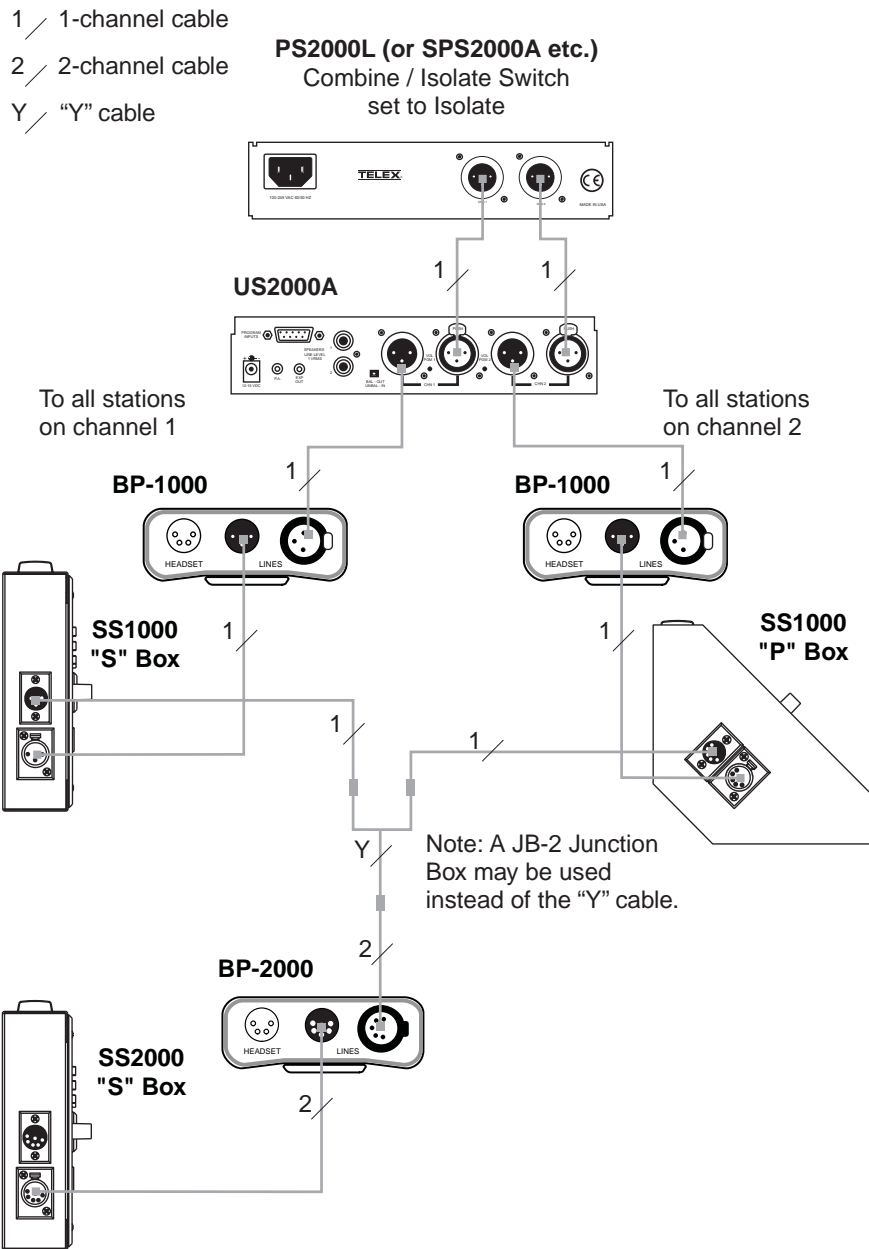
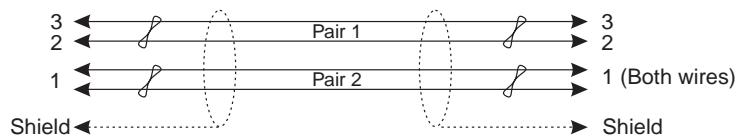


Figure 4. A two-channel Audiocom intercom system powered by a PS2000L Power Supply. The power supply is set to isolate mode. In this mode, each channel is a separate party line, and current per channel is limited to 1 amp. Note that both single- and two-channel intercom stations may be connected by using "Y" cables (or JB2 Junction boxes). Prefabricated cables may be used, or cables may be constructed using Figure 5.

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

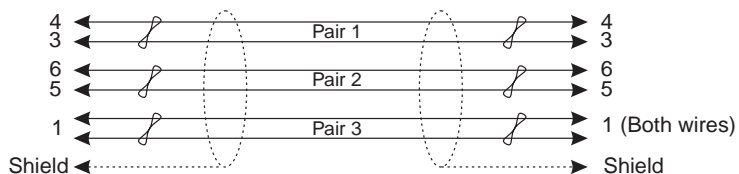
Pin 3: Channel Audio / Power

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

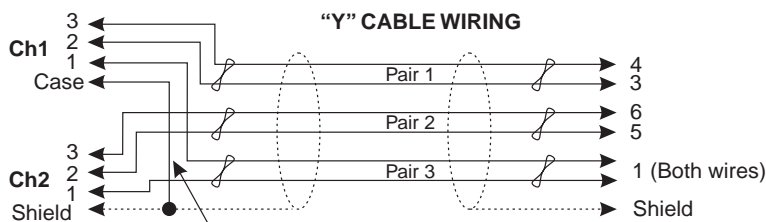
Pin 6: Channel 2 Audio / Power

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 5. Audiocom cable wiring diagrams.

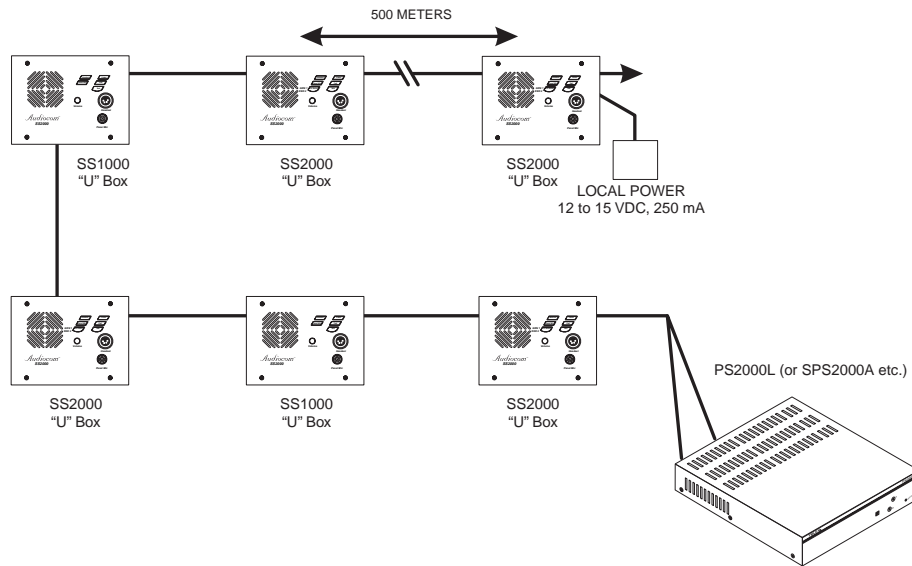


Figure 6. A two-channel Audiocom intercom system using a PS2000L Power Supply with "U" boxes. The PS2000L is set to isolate mode. In isolate mode, each intercom channel is a separate party line, and total current for each channel is limited to 1 amp. Note that both SS1000 and SS2000 stations may be connected, depending on each locations' need to communicate with one or two channels. SS1000 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 PS2000L provides termination for the intercom channels, no user-installed termination is required. For SS1000 connection details refer to Figure 8; for the SS2000, refer to Figure 9

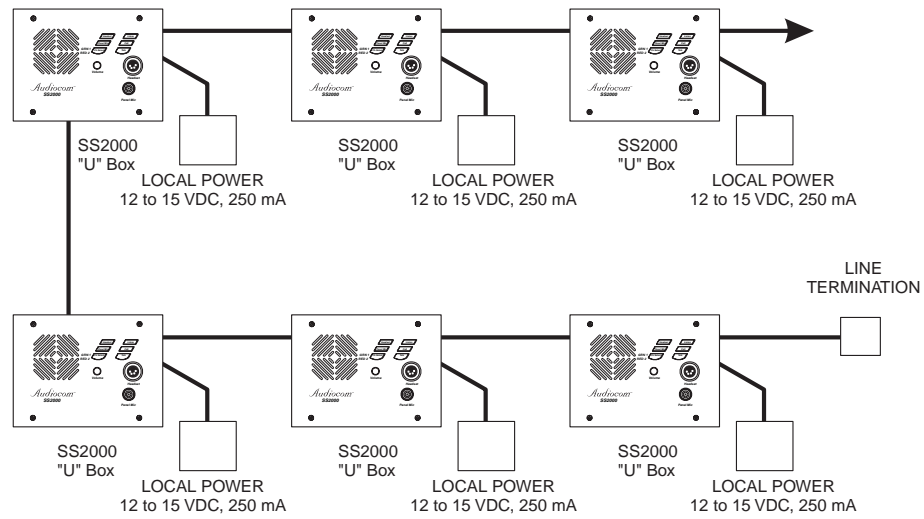
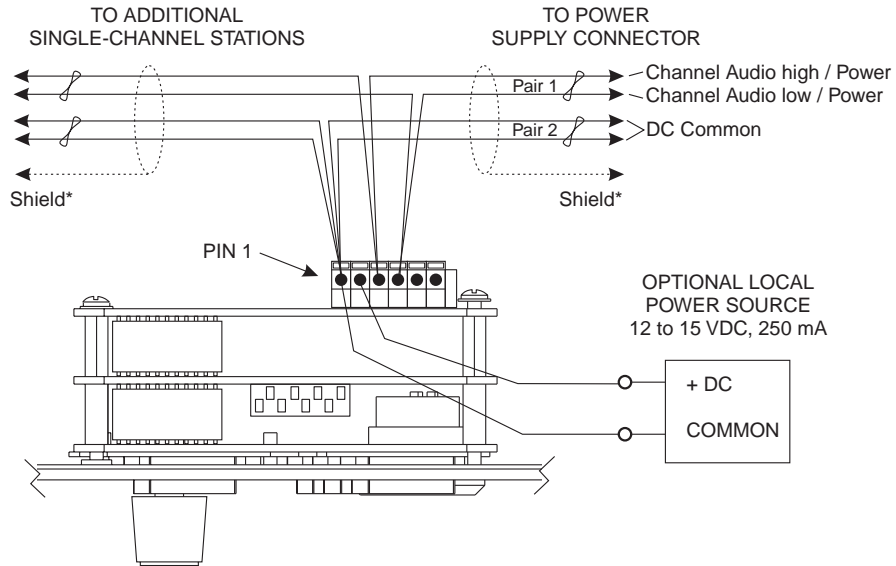




Figure 7. An example of an Audiocom intercom system using all locally powered “U” box stations, with no power being distributed on the intercom channels (dry lines). Since an Audiocom power supply is not used, the installer must connect a line termination somewhere in each channel for proper operation. For intercom channel connections, refer to Figures 8 and 9. The required line termination is shown in Figure 10.



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

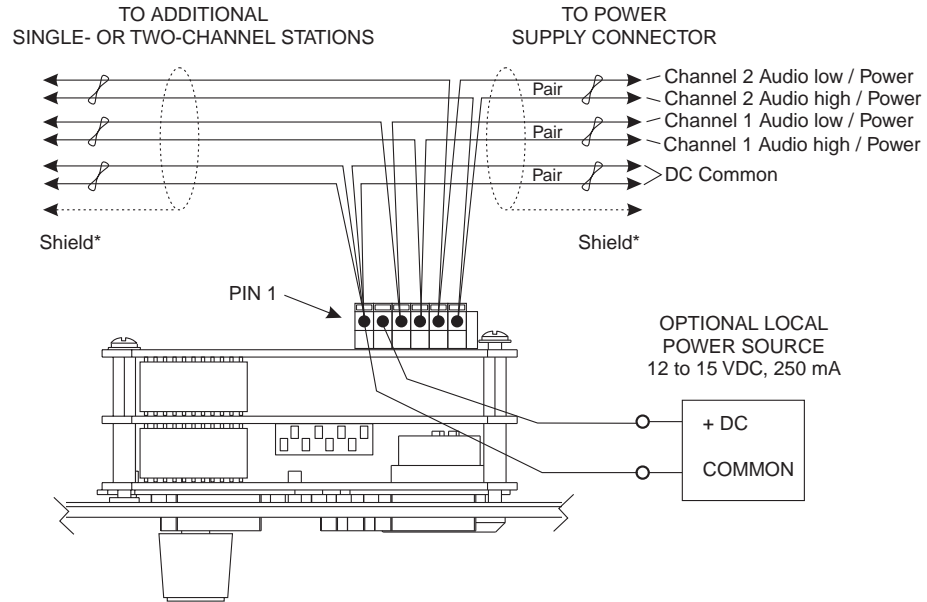
 Denotes twisted pair.

 Denotes shield.

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

Figure 8. Audiocom mode connections for a SS1000 Intercom Station in a "U" box.
 Note: For Clear-Com connection, use the Unbalanced Mode Intercom Channel pin-out information listed on page [25](#).

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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 9. Audiocom mode connections for a SS2000 Intercom Station in a "U" box. Note: For Clear-Com connection, use the Unbalanced Mode Intercom Channel pin-out information listed on page 25.

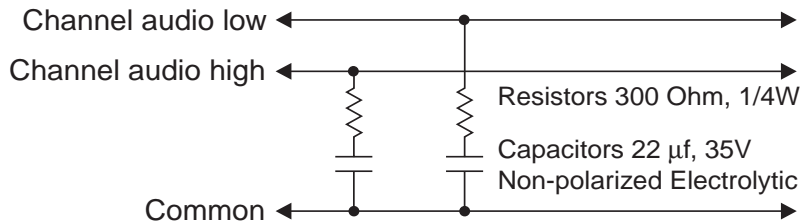


Figure 10. Audiocom mode line termination for dry-line operation. (One required for each channel.)

Headset / Headphone / Microphone Connections

The Headset and Panel Mic connectors may be used in a variety of talk/listen configurations:

- To use a dynamic-mic headset or dynamic, telephone-style handset for talk and listen, connect it to the Headset connector.
- To use headphones for listening and a panel microphone for talkback, connect the headphones to the Headset connector and connect the microphone to the Panel Mic connector.
- To use a handheld dynamic microphone for talkback and the internal speaker for listening, connect the microphone to the Headset connector.
- To use a panel microphone for talkback and the internal speaker for listening, connect the microphone to the Panel Mic connector.

☞ For Headset and Panel Mic connector specifications, see page [24](#). For best results in noisy environments, a noise canceling (directional or cardioid) microphone is highly recommended.

☞ If you are connecting a headset, telephone handset, or handheld dynamic microphone, make sure that DIP switch 4 is properly set for either balanced or unbalanced microphone. See "Dynamic Microphone Type Selection", page [9](#).

☞ To connect a Telex model EGM-12N or EGM-18N panel microphone, line up the arrow on the top of the microphone with the top of the connector on the intercom station.

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Power-Up

Make sure any local power supplies are plugged in, then turn on the power switches of any phantom power supplies (PS2000L, SPS2000A etc.).

☞ If you are using a large number of locally powered intercom stations, you should activate their local power supplies before activating any phantom power supply. Otherwise, you may get an overload indication on the phantom supply. In this case, either reset the phantom supply, or momentarily turn it off, then on.

Sidetone Adjustment

The SS1000 and SS2000 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 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. And, 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. SS2000 only: activate channel 1 as described in the operating instructions, page [22](#).
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 (Figure [2](#), page [6](#), item 12) to minimize your voice level in the headphones.

5. SS2000 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. SS2000 only: activate channel 1 as described in the operating instructions on page [22](#).
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 (Figure [1](#)) so that you can hear your own voice in the headphones at an acceptable level.
5. SS2000 only: activate channel 2 and repeat the above steps to adjust the channel 2 sidetone.
6. If the intercom station will be mounted in place, mount the case back as described below before reinstalling the faceplate. If the “S” box or “P” box version will be used in a portable configuration, you may reinstall the faceplate in the case and proceed to the operating instructions.

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Operation

Channel Select (SS2000 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 a panel microphone, set the Speaker key to off and set the Panel Mic key to on.
- 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 a panel microphone, set the Speaker and Panel Mic keys to on.

Receiving Calls

1. 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 (page 9).

☞ SS2000 only: incoming call indication is provided only for the currently selected intercom channel.

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

☞ 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. SS2000 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.

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Specifications

General

Power Requirements:

Phantom Power: 24 VDC nominal (12 to 30 VDC), 175 mA

Local Power: 12 to 15 VDC, 250 mA

Dimensions: See Figure 3

Environmental Requirements:

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

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

Dynamic-mic Headset

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

Headphones: 150 to 600 ohm, monaural

Connector Type: XLR-4M

Pin 1 Microphone low

Pin 2 Microphone high

Pin 3 Headphone high

Pin 4 Headphone low

Panel Microphone

Microphone: 5 kohm, electret (-57 dB)

Connector Type: NTRK-8F

Pin 1 Common

Pin 2 Microphone high

Pin 3 +12 VDC microphone bias

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

Output Level: 1 Vrms nominal

Input Impedance: 300 ohms

Bridging Impedance: greater than 10,000 ohms

Sidetone: -40 dB, 35 dB adjustable range

Call Signaling:

Send: 20 kHz \pm 100 Hz, 0.5 Vrms \pm 10%

Receive: 20 kHz \pm 800 Hz, 100 mVrms

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

Noise Contribution: less than -70 dB

Common Mode Rejection Ratio: greater than 50 dB

Connector Type: Six-position terminal block with screw-in wire clamps

Pin 1 Audio and DC Common

Pin 2 Local power (12 to 15 VDC, 65 to 150 mA)

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

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

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

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

Intercom Channel, Unbalanced Mode (SW1 set to Unbalanced or UNBAL position)

Output Level: 1 Vrms \pm 10%

Input Impedance: 150 ohms

Bridging Impedance: greater than 10,000 ohms

Call Signaling:

Send: 11 \pm 3 VDC

Receive: 4 VDC minimum

Connector Type: Six-position terminal block with screw-in wire clamps

Pin 1 Common

Pin 2 Local power (12 to 15 VDC, 65 to 150 mA)

Pin 3 Channel 1 +24 VDC input

Pin 4 Channel 1 Intercom audio high and DC call

Pin 5 Channel 2 +24 VDC input

Pin 6 Channel 2 Intercom audio high and DC call

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Factory Service and Parts Information

When returning equipment for repair include your return address, telephone number and proof of date of purchase, along with a description of the problem.*

The address for Audiocom equipment returns and parts information is:

Service Department
Telex Communications, Inc.
West 1st Street
Blue Earth, Minnesota 56013 U.S.A.
Telephone: (507) 526-3205
(Collect calls not accepted)

Warranty Repairs - If in warranty, no charge will be made for the repairs. Equipment returned for warranty repair must be sent prepaid and will be returned prepaid.

Non-Warranty Repairs - Equipment that is not under warranty must be sent prepaid to Telex. If requested, an estimate of repair costs will be issued prior to service. After your approval and completion of the repairs, the equipment will be returned on a collect basis. Collect charges may be avoided by sending a signed check for payment in full along with your signed estimate approval form (shipping charges are included in the estimate).

* For sales / technical support and system design contact:

Pro Audio Sales Department
Telex Communications, Inc.
12000 Portland Avenue South
Burnsville, Minnesota 55337 U.S.A.
Telephone: (952) 884-4051
(Collect calls not accepted)

Notes

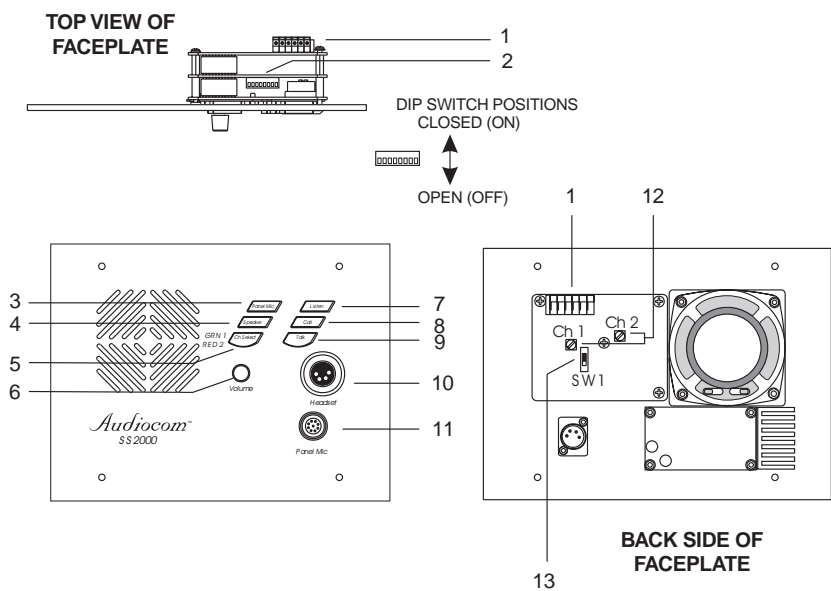
Addendum

Document Affected: SS1000/SS2000 User Instructions, Publication Number 9350-7620-000 Rev. D

Addendum Number: 1

General Instructions: Use this addendum with Revision D of the user instructions. This information will be included in Revision E.

When setting the DIP switches, it is difficult to identify the open and closed positions. The open and closed positions are shown below.



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9350-7620-000 Rev. E, 8/00