Audio Authority ®

Series 1500™
Intercom Systems

US Patent D/528,534

Installer's Reference Guide

Contents

Installing and Using the Series 1500™ Intercom Systems

Series 1500™ Intercoms enable clear two-way communications in retail service businesses. Two-way video is integrated with high-performance audio to provide a complete intercommunication solution over a single Category 5e or 6 UTP cable. The versatile Model 1500 Counter Station, which can access up to 16 lanes, and the Model 1520 Lane Station can be connected directly to each other in a one-on-one system, or multiples of each can be networked using a Model 1509 Hub for up to two-on-four audio performance or Series 1510 Hub for multi-lane systems (See example diagrams on the following pages). Series 1510 Hubs can support up to 8 Counter Stations on 16 lanes.
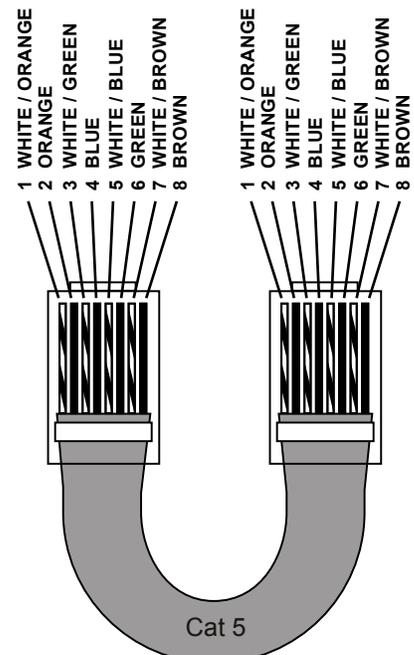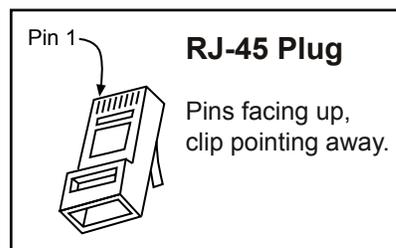
Series 1500 System Components

Counter Audio Station	1500	Lane Station	1520
Counter Video Add-on	1502	Complete A/V Station	1522
		Customer Video Add-On	1523
2-on-4 Audio Hub	1509		
4-on-4 Audio/Video Hub	1510	Surface-mount handset	1540
4-on-8 Audio/Video Hub	1511	Flush-mount handset	1541
8-on-12 Audio/Video Hub	1512	Wireless headset	1542
8-on-16 Audio/Video Hub	1513	Wired headset	1543
(See page 11 for Hub configurations)		Field Setup LCD	1550
		Universal 1A Power Supply	571-013
4-counter plug-in card	1515	Boom Microphone	631-026
4-lane plug-in card	1516	External microphone kit	631-029
System plug-in card	1517	External 3", 4 ohm speaker	631-030
		3 Amp UL DC power supply	805-016

Tools and Supplies

- Cat 5 network cable tester
- RJ-45 plug crimping tool (Audio Authority recommends EZ-RJpro crimp tool)
- Category 5e or 6 UTP cable and RJ-45 terminations (Audio Authority recommends EZ-RJ-45 connectors)
- 18mm open-end wrench (for boom mic)
- Model 1550 Field Setup LCD Display Tool

Cable Fabrication

Terminate the ends of each cable with RJ-45 modular plugs using the EIA 568B pinout (paired 1-2, 3-6, 4-5, and 7-8). Pre-made network cables may also be used for shorter runs. Test all cables with a network cable tester.
Note: Cat 5e and Cat 6 are also acceptable cable types.

Pin 1

RJ-45 Plug

Pins facing up, clip pointing away.

1 WHITE / ORANGE
2 ORANGE
3 WHITE / GREEN
4 BLUE
5 WHITE / BLUE
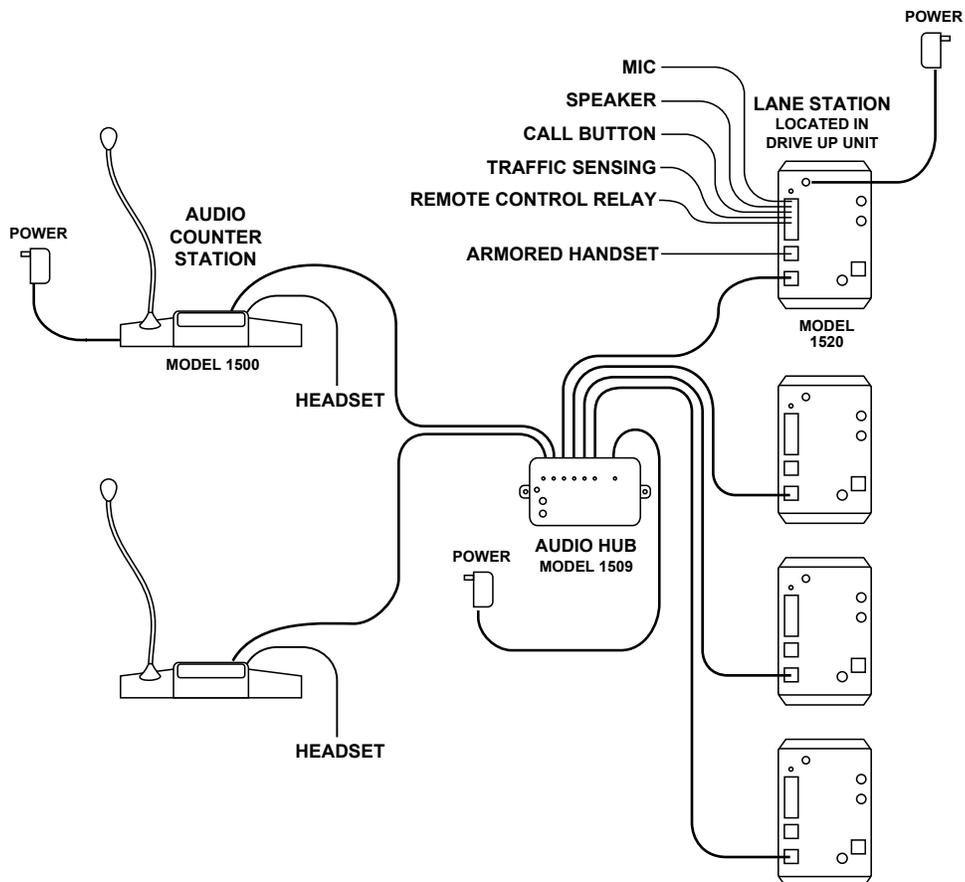6 GREEN
7 WHITE / BROWN
8 BROWN

Cat 5

1x1 Installation

The simplest system configuration involves only one counter station connected directly to one lane station (no hub). This configuration can be audio-only or audio/video. Run a length of Cat 5 cable from the counter location to the lane location; the cable can be up to 1,000 feet long. See "Installing Components" for detailed instructions.

AUDIO/VIDEO
COUNTER STATION

POWER

MIC
SPEAKER
CALL BUTTON
TRAFFIC SENSING
REMOTE CONTROL RELAY

LANE STATION
LOCATED IN
DRIVE UP UNIT

CUSTOMER
VIDEO ADD-ON

ARMORED HANDSET

MODEL 1523

MODEL 1500
WITH 1502

HEADSET
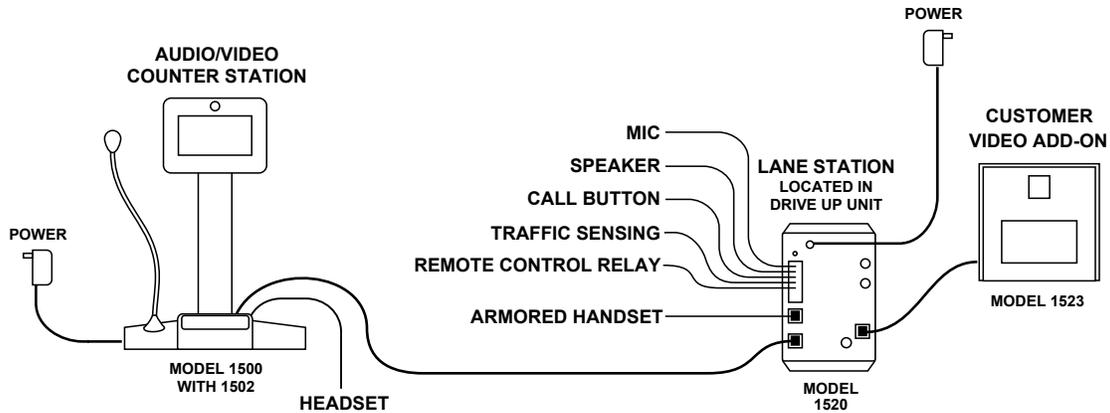
MODEL
1520

2x4 Audio Installation

The Model 1509 Audio Hub allows one or two Model 1500 Audio Counter Stations to serve up to four 1520 Lane Stations. **1509 Hub configurations must be audio-only**. Run a length of Cat 5 cable from each Counter Station to the Hub. Run a length of Cat 5 cable from the Hub to each Lane Station. The total cable length from Counter Station to Lane Station can be up to 1,000 feet. See "Installing Components" for detailed instructions.

POWER

MIC
SPEAKER
CALL BUTTON
TRAFFIC SENSING
REMOTE CONTROL RELAY

LANE STATION
LOCATED IN
DRIVE UP UNIT

POWER

AUDIO
COUNTER
STATION

ARMORED HANDSET

MODEL
1520

MODEL 1500

HEADSET

AUDIO HUB
MODEL 1509

POWER

HEADSET

2x4 Audio/Video Installation

The Audio/Video Hub configurations allow from one to as many as eight Counter Stations to serve up to 16 Lane Stations. **These configurations (1510, 1511, 1512 and 1513) may be audio-only or audio/video.** Run a length of Cat 5 cable from each Counter Station to the Hub. Run a length of Cat 5 cable from the Hub to each Lane Station. The total cable length from Counter Station to Lane Station can be up to 1,000 feet. See "Installing Components" for detailed instructions.

POWER

MIC
SPEAKER
CALL BUTTON
TRAFFIC SENSING
REMOTE CTRL RELAY

ARMORED HANDSET

LANE STATION
LOCATED IN
DRIVE UP UNIT

CUSTOMER
VIDEO ADD-ON

MODEL 1523

MODEL
1520

POWER

AUDIO/VIDEO
COUNTER
STATION

HEADSET

EXISTING
CAMERA

EXISTING
VIDEO
DISPLAY

AUDIO/VIDEO HUB
TYPICALLY LOCATED IN
TELEPHONE CLOSET OR
UNDER A COUNTER
MODEL 1510

HEADSET

POWER

SINGLE CAT 5 CABLE
COAX (RG59)
AUDIO OR OTHER WIRE

FROM HUB CAMERA OUTPUTS
TO SECURITY VIDEO RECORDER

FROM DVD or PC* AUDIO/VIDEO
TO HUB PROGRAM INPUTS

SURVEILLANCE CAMERA OUTPUT
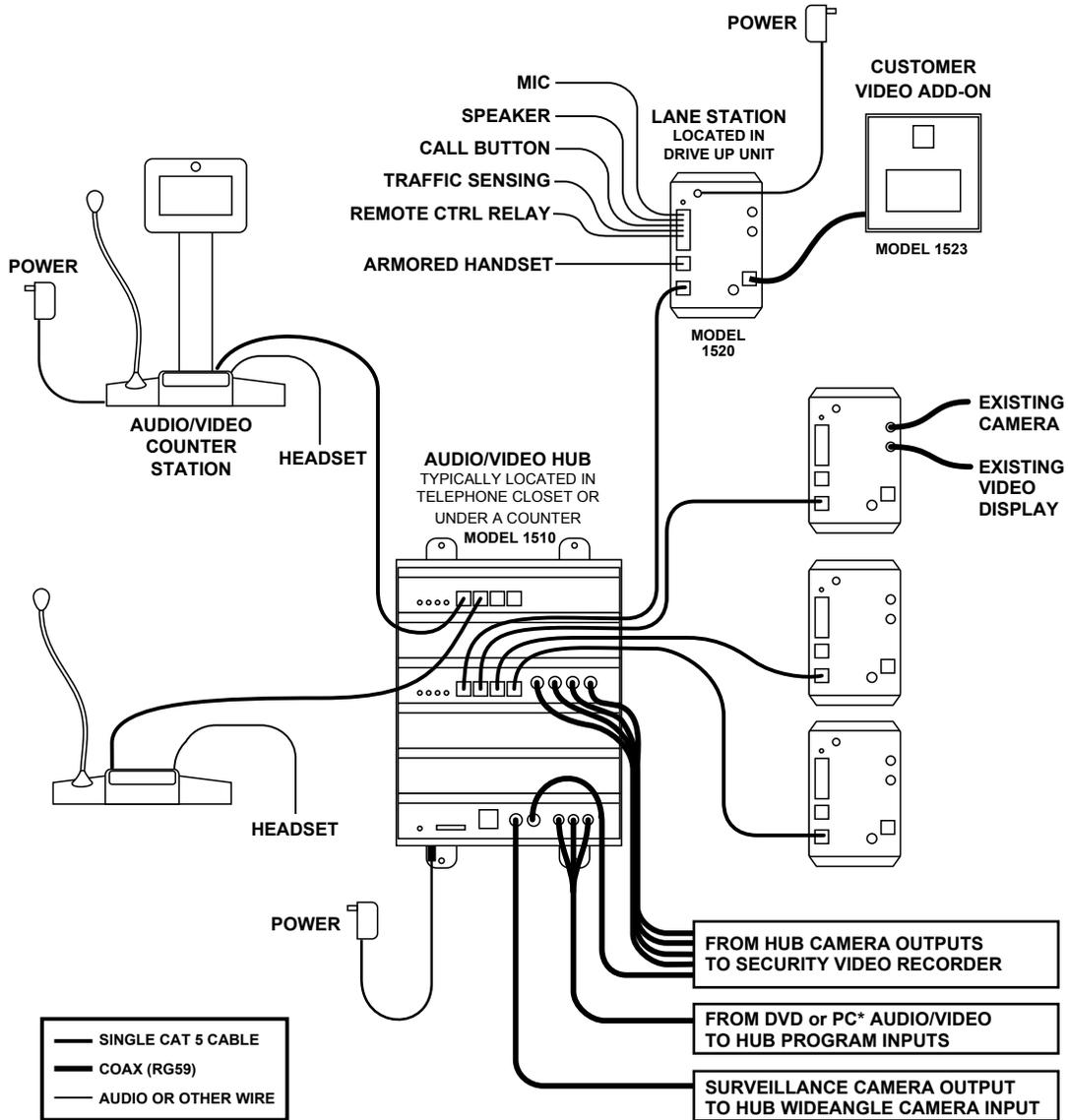TO HUB WIDEANGLE CAMERA INPUT

Illustration: Two Counter Stations serve Four Lane Stations. Counter Stations and Lane Stations may have video capability, or be audio-only. One Lane Station is shown with a Model 1523 Video Add-On; alternatively, any 1520 may be connected to existing camera and video display.

If desired, any 1520 could be replaced by a 1522 Customer Video Station, which has all the capability and connections of a 1520 plus a camera, video display and call button mounted in one enclosure.

* PC video output signals may need to be modified for viewing on intercom video displays. Call Audio Authority for details.

Installing a 1509 Hub

1. Position and install the Hub under the counter or in a secure indoor location such as a telephone closet. Ground the hub to a nearby electrical device cover using the green grounding wire attached to the hub.

2. Run a length of Cat 5 cable from each counter and lane station to the hub. Observe the wiring guide on page 2, and use a cable tester to verify the terminations.

3. Connect audio source to Program Audio jacks if desired, and adjust volume level during system testing.

Illustration: Shown is Model 1509 Audio Intercom Hub. Minimum connections for Audio/Video Hubs are shown. For more information on Memory and Diagnostics functionality, see page 16.
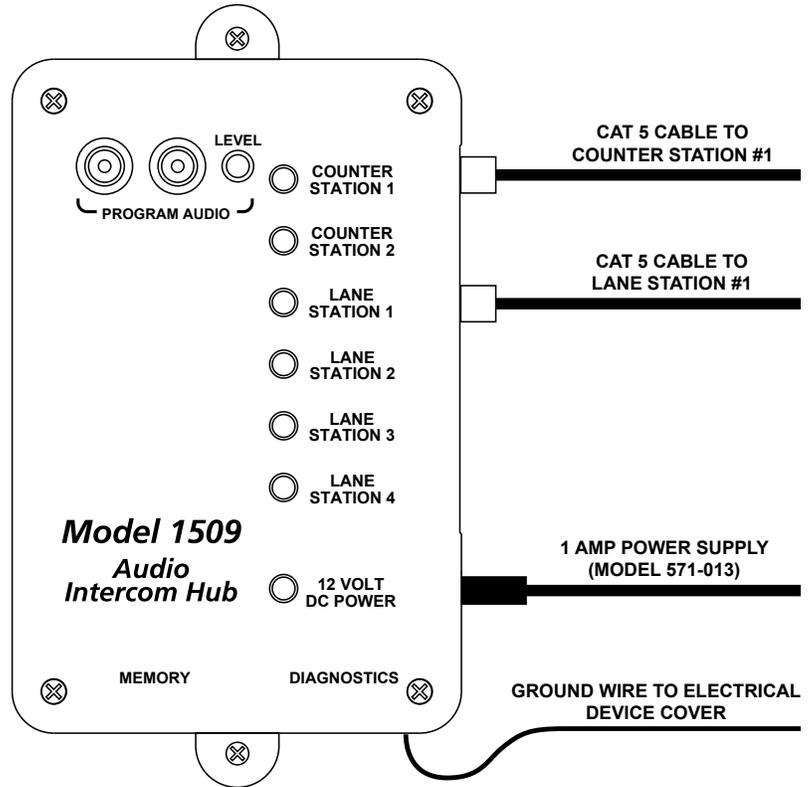
Installing a 1510 Hub (1511, 1512, 1513 are similar)

1. Position and install the Hub under the counter or in a secure indoor location such as a telephone closet. Ground the hub to a nearby electrical device cover using the green grounding wire attached to the hub.

2. If the installation requires additional capacity, install a Counter Card or Lane Card(s) as needed (see page 11).

3. Run a length of Cat 5 cable from each counter and lane station to the hub. Observe the wiring guide on page 2, and use a cable tester to verify the terminations.

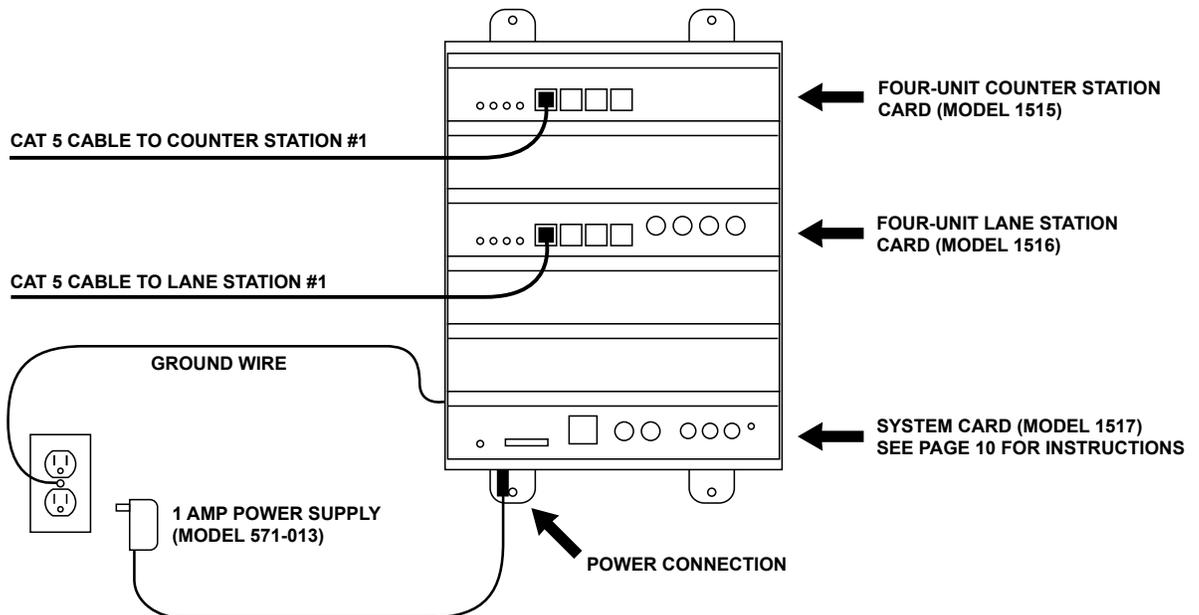4. Connect other equipment as needed (see page 11).

Illustration: Model 1510, the minimum capacity AV Hub configuration. Minimum connections for Audio/Video Hubs are shown. For more configurations, system card functions, and other connections, see page 11.
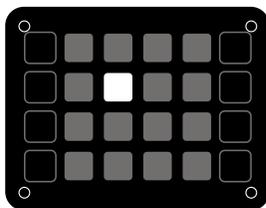
Installing Counter Stations

1. Unpack each Model 1500 Counter Station and, if applicable, slide a 1502 Video Display onto it (the rear panel must first be slid out and discarded). Plug the 1502 cable into the matching port on the 1500.
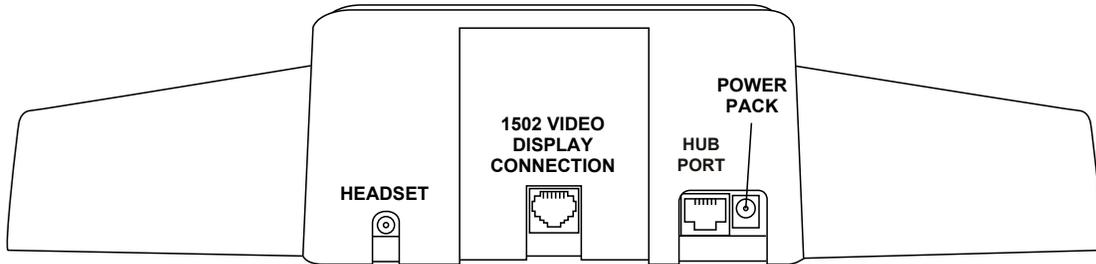
2. Attach the field-replaceable microphone, tightening the nut securely with a 18mm open end wrench, and tuck its rubber boot firmly into place.

3. Plug the Cat 5 cable from the hub into the Hub port of each 1500 and connect the power supply to the Power jack.
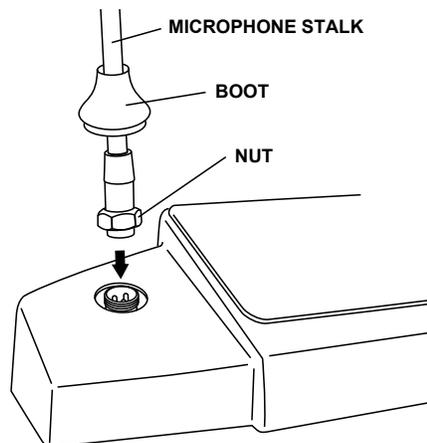
4. Install the desired keyboard inlays into the Model 1500. The hub configuration sets the default key layout automatically (see examples below). You can choose to color-code by the carrier color or label the keys numerically. For one-on-one systems, place a lane color chip in the position shown. Place blank, black chips in all the other positions. For multi-lane systems, place the desired chips in the active lane positions as indicated and black chips in the other positions. Save the unused key chips on the premises for future changes or expansion.

| Single Lane (1x1) Default | 1509 or 1510 Default | 1511 Default | 1512 Default |
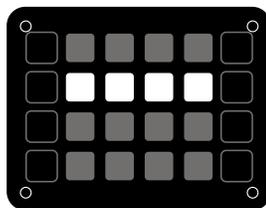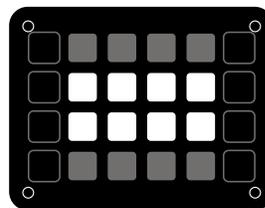
OPERATOR CARD
Audio Authority Audio/Video Counter Station

Lane Key indicators are interpreted as follows:

RED (flashing rapidly) = Customer CALLING for service
GREEN = Customer in 2-WAY contact with your counter station
RED = Customer in 2-WAY contact with another counter station
GREEN (blinking slowly) = Customer placed on HOLD from your counter station
RED (blinking slowly) = Customer placed on HOLD from another counter station
GREEN (flashing rapidly) = Monitoring transaction on another counter station*
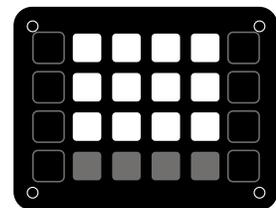
Operate Counter Station as follows:
• To CONTACT a customer calling..................Press the LANE key
• To place a customer on HOLD......................Press the HOLD key (indicator blinks)
• To CONTACT a customer on hold.................Press the LANE key
• To END contact with customer ....Press the active LANE key
• To CANCEL hold and END contact ....Press the LANE key twice
• To TALK OVER a customer ....Press and hold the active LANE key
• To adjust incoming volume ....Press VOLUME UP or VOLUME DOWN key
• To enter/exit PRIVACY (headset) mode ....Press the PRIVACY key
• To activate remote relay ....Press and hold HOLD key** (30 seconds max)

If unit is equipped with video:
• To adjust outside camera ....Press CAMERA UP or CAMERA DOWN key
• To view yourself...Press MIRROR key (30 second time-out)
• To view outgoing video program ....Hold MIRROR key 3 seconds (no lane selected)
• To pause lane camera scrolling ....Press HOLD key (no lane selected)
• To view next lane camera..............................Press CAMERA UP key (no lane selected)
• To view previous lane camera ....Press CAMERA DOWN key (no lane selected)

Notes: 1) Speak naturally into the microphone at a distance of about two inches. 2) To operate keys, simply touch with the pad of your finger. 3) Press and hold the SETUP key for one second to adjust ringtone type and volume; then press PRIVACY to adjust headset microphone level.

* If your counter station is configured as the Supervisor, you may monitor a transaction by selecting an active (RED) Lane key.
**Remote relay operation must be configured from the system Setup menu.

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Installing Model 1520 Lane Stations

Lane Stations may be placed at the customer end of a drive-up or walk-up intercom system. The Model 1520 is the basic Lane Station unit for installations where the microphone, speaker (plus video screen and camera, if used) are mounted separately. The Model 1522 is a Video Lane Station, including all of the features of the 1520 plus microphone, speaker, camera and video screen mounted inside one enclosure. The Model 1523 Video Add-on must be used with a 1520, and contains only the camera and video screen.

1. Install the Model 1520 Lane Station in each deal drawer or pneumatic unit on the customer end, using the screws provided. If AC power is not available at the customer end, see Step 5.

2. Install the lane microphones and speakers if they are not already installed. Mount the speakers in the grilles provided in the drive-up units. Peel the backing from the microphone shrouds and adhere them directly centered over a 1/8" hole drilled in the faces of the customer units. At each station, place the microphone and speaker as far apart as practical, while centering the microphone to receive customer speech. Install Teller Call push-button switches, if needed.

3. Connect the Microphones, Speakers and Teller Call switches to the 1520 terminal blocks. Strip all wires **1/4" long**. If pneumatic blower muting is desired, connect the **DRY** blower contacts to the corresponding points on the terminal blocks, using small (about 22 AWG) wire. If traffic sensing devices or remote-controlled security doors are in use, connect them as indicated.

Recommended AWG	
Maximum	
Distance	**Gauge**
40 ft	18
60 ft	16
100 ft	14
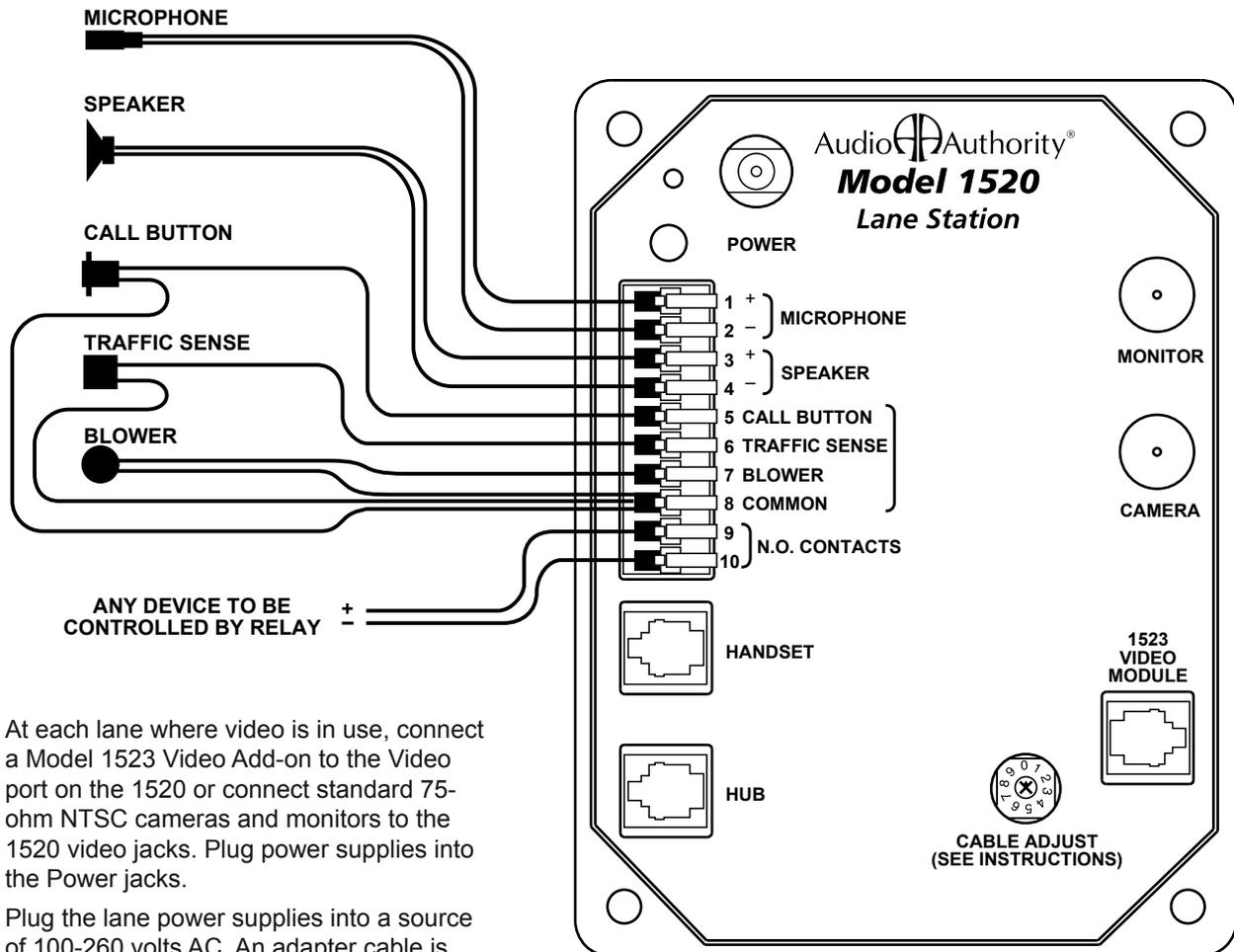
4. At each lane where video is in use, connect a Model 1523 Video Add-on to the Video port on the 1520 or connect standard 75-ohm NTSC cameras and monitors to the 1520 video jacks. Plug power supplies into the Power jacks.

5. Plug the lane power supplies into a source of 100-260 volts AC. An adapter cable is provided with the 1520 to allow power to be drawn from a terminal block in a pneumatic unit. If AC power is not available on the customer end, a power supply may be located indoors and its output leads extended using a suitable gauge of wire as shown at right. To power multiple lane units, it may be convenient to use an 805-016 three amp power supply. Call Audio Authority for details.

Audio Hub Model 1509

The Model 1509 is a compact audio Hub with a maximum capacity of two Counter Stations serving four Lane Stations.

PROGRAM AUDIO INPUTS ALLOW CONTENT TO BE HEARD AT ALL COUNTER AND LANE STATIONS

PROGRAM AUDIO VOLUME LEVEL ADJUSTMENT

LEVEL

PROGRAM AUDIO

COUNTER STATION 1

COUNTER STATION 2

LANE STATION 1

LANE STATION 2

LANE STATION 3

LANE STATION 4

Model 1509
Audio Intercom Hub

12 VOLT DC POWER

MEMORY

DIAGNOSTICS

CONNECT COUNTER STATIONS HERE

CONNECT LANE STATIONS HERE

CONNECT 12V POWER PACK HERE

MEMORY CARD FOR STORING SYSTEM SETTINGS AND FIELD UPGRADES

DIAGNOSTICS PORT NOT CURRENTLY USED

CONNECT GROUND WIRE TO ELECTRICAL DEVICE COVER SCREW

Audio or AV Hub Model 1510

- The Model 1510 is an audio/video Hub with a capacity of up to four Counter Stations serving four Lane Stations. The Hub's capacity can be expanded in the field by adding Counter and/or Lane cards (see page 11).
- System settings can be stored on a removable, proprietary media card for security or replication purposes, and firmware upgrades can be performed when necessary. These operations are performed via a Model 1550 Field Setup Tool and a Counter Station.
- Composite video and stereo analog audio inputs allow multimedia source devices to play advertising content on any lane whenever it is idle.
- Direct outputs from wide angle camera (dedicated security camera) and/or lane cameras for surveillance recording. Video is output continuously from each camera connected.
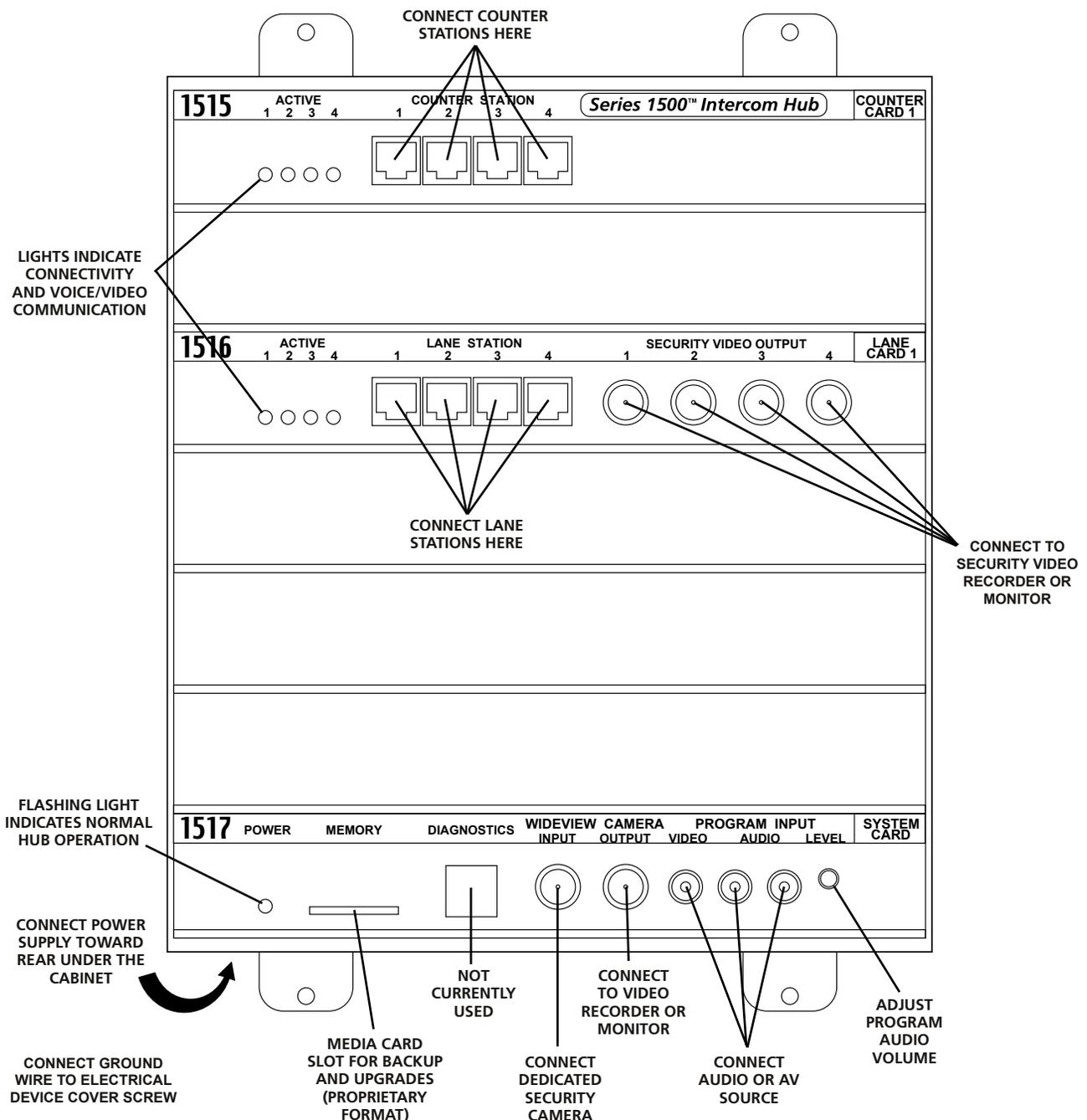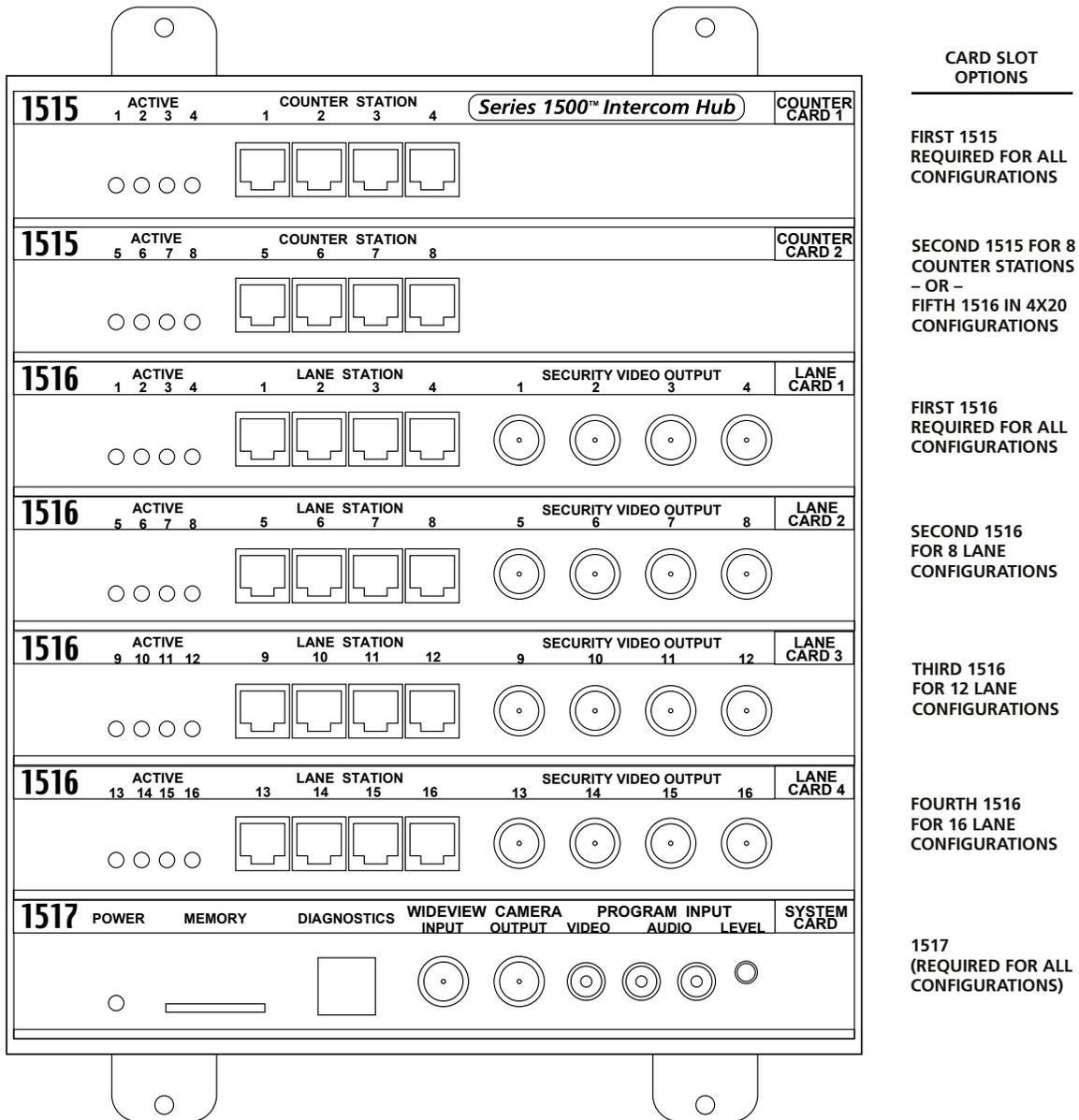
Hub Configurations and Capacity

Shown below is the Model 1513 Hub, a maximum capacity configuration; all Counter and Lane Card slots are filled. Several other configurations are available; contact Audio Authority® for details, or visit www.audioauthority.com.

To increase Counter or Lane Station capacity, remove power from the Hub. Remove the blank faceplate from the appropriate card slot(s) and insert the new cards carefully, making sure the connections are firmly seated. Insert the two screws to secure the card, and connect new Lane Stations and/or Counter Stations. Connect power and test the system.

One other maximum configuration is possible, in which four Counter Stations serve 20 Lane Stations. If a 4x20 configuration is desired, contact Audio Authority for special instructions.

CARD SLOT OPTIONS

FIRST 1515 REQUIRED FOR ALL CONFIGURATIONS

SECOND 1515 FOR 8 COUNTER STATIONS – OR – FIFTH 1516 IN 4X20 CONFIGURATIONS

FIRST 1516 REQUIRED FOR ALL CONFIGURATIONS

SECOND 1516 FOR 8 LANE CONFIGURATIONS

THIRD 1516 FOR 12 LANE CONFIGURATIONS

FOURTH 1516 FOR 16 LANE CONFIGURATIONS

1517 (REQUIRED FOR ALL CONFIGURATIONS)

Testing Your Installation

Check the following locations for successful power-up and connectivity, indicated as follows:
- 1500 Counter Station: All LEDs become dark until keys are pressed
- 1509 Audio Hub: flashing green Power LED, rapidly flashing counter station and lane station LEDs
- 1510 Hub system card: flashing green LED, rapidly flashing counter station and lane station LEDs
- 1520 Lane Station: rapidly flashing Power LED

Check system operation by selecting each lane and speaking with an assistant at the customer position. Adjust Lane Microphone and Speaker gains using the Model 1550 Field Setup LCD.

Troubleshooting Tips

- Always test your Cat 5 cables with a cable tester – even pre-made cables
- Try connecting Counter Station directly to Lane Station to rule out faulty system components
- In case of unexpected performance, restore system defaults to rule out incorrect system parameters

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Common Issues

Acoustical Coupling
- Increase separation of lane microphone and speaker
- Isolate lane microphone and speaker with sound-damping barrier (i.e. foam rubber)
- Mount lane speaker and microphone on separate surfaces or adjust their mounting angles
- Adjust inbound, outbound or open loop gain levels

The Deal Drawer Doesn't Sound Right
- Fill hollow cavities in the deal drawer with foam rubber sheets or blocks
- Do not rest Counter Station directly on top surface of deal drawer

Repeating Pops in Audio
- Check Cat 5 cables - consistently use EIA 568A or EIA 568B standard cable termination

No Inbound / Outbound Video or Poor Video Quality
- Check Cat 5 cables - consistently use EIA 568A or EIA 568B standard cable termination
- Eliminate long coaxial cable runs between cameras/displays and Lane Station.

Lane Keys Don't Respond
- Keys not assigned to Counter Station – reassign keys or restore factory defaults in configuration menu

Counter Station LEDs Remain in 'Burn in' Pattern
- Check Cat 5 cable - consistently use EIA 568A or EIA 568B standard cable termination
- Ensure Counter Station is connected to the correct hub port

Lane Microphone Doesn't Work
- Ensure microphone is electret condenser type
- Check microphone polarity

Wind Noise
- Can often be eliminated by putting a small plug of 3M Scotchbrite™ in the microphone opening. The Audio Authority lane microphone has a special foam surround; for optimum results, use Audio Authority microphones.
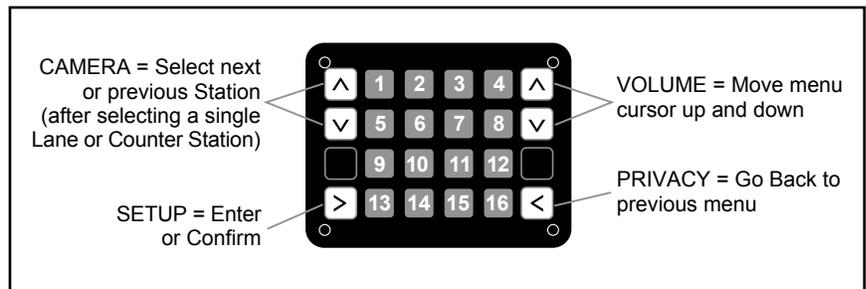
Using the 1550 Field Setup Tool

System Calibration and Setup

The Model 1550 is a liquid crystal display that shows the setup menus and settings for Series 1500 Intercom Systems. The entire system can be calibrated from one Counter Station. Connect the 1550 Field Setup Display to the RJ45 jack on the underside of any live Counter Station. (The jack is at an angle.) Upon connection, the 1550 will display "SERIES 1500 EQUIPMENT CALIBRATION PLATFORM".

• Hold the SETUP key on the Counter Station for one second to enter Setup Mode. The 1550 displays the top level of the menu shown on page 4.

• To navigate the menus, use the VOLUME UP and VOLUME DOWN keys to move the cursor.

• Use SETUP to enter a submenu or confirm a selection, and PRIVACY to go back.

• Any changes you make are recorded as you exit each menu. When you exit Setup Mode, you must choose to either save all changes and exit or exit without saving.

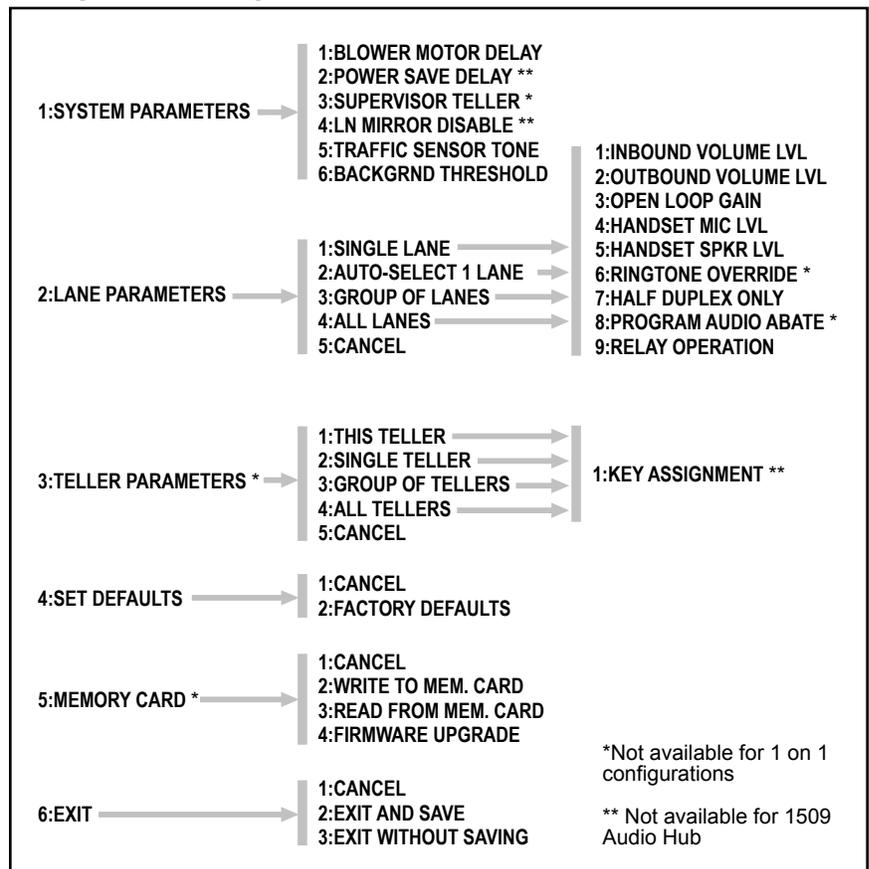• If you need to re-enter Setup Mode, simply press SETUP for 1 second.

Power User Tips

• For faster menu navigation, submenus may be selected by touching the key that is lit RED corresponding to the menu item (see the numbered keys above). For instance, to enter BLOWER MOTOR DELAY, press 1 and then 1.

• To Exit Setup Mode from any menu, hold SETUP for one second and follow the prompts on the 1550.

• After adjusting a Lane Station or Counter Station, use the CAMERA UP or CAMERA DOWN keys to select other stations for adjustment without leaving the submenu.

Using the Keypad for Navigation

CAMERA = Select next or previous Station (after selecting a single Lane or Counter Station)

VOLUME = Move menu cursor up and down

SETUP = Enter or Confirm

PRIVACY = Go Back to previous menu

Setup Menu Map

1:SYSTEM PARAMETERS
1:BLOWER MOTOR DELAY
2:POWER SAVE DELAY **
3:SUPERVISOR TELLER *
4:LN MIRROR DISABLE **
5:TRAFFIC SENSOR TONE
6:BACKGRND THRESHOLD

2:LANE PARAMETERS
1:SINGLE LANE
2:AUTO-SELECT 1 LANE
3:GROUP OF LANES
4:ALL LANES
5:CANCEL

1:INBOUND VOLUME LVL
2:OUTBOUND VOLUME LVL
3:OPEN LOOP GAIN
4:HANDSET MIC LVL
5:HANDSET SPKR LVL
6:RINGTONE OVERRIDE *
7:HALF DUPLEX ONLY
8:PROGRAM AUDIO ABATE *
9:RELAY OPERATION

3:TELLER PARAMETERS *
1:THIS TELLER
2:SINGLE TELLER
3:GROUP OF TELLERS
4:ALL TELLERS
5:CANCEL

1:KEY ASSIGNMENT **

4:SET DEFAULTS
1:CANCEL
2:FACTORY DEFAULTS

5:MEMORY CARD *
1:CANCEL
2:WRITE TO MEM. CARD
3:READ FROM MEM. CARD
4:FIRMWARE UPGRADE

6:EXIT
1:CANCEL
2:EXIT AND SAVE
3:EXIT WITHOUT SAVING

*Not available for 1 on 1 configurations

** Not available for 1509 Audio Hub

Definitions

BLOWER MOTOR DELAY	If enabled, the period between disengagement of blower and microphone audio un-mute.
POWER SAVE DELAY	If enabled, the length of time the system must be idle before entering Power Save (LCD sleep).
SUPERVISOR TELLER	If enabled, allows one Counter Station to monitor others.
LANE MIRROR DISABLE	OFF = idle Lane Stations display their own camera output. ON = idle Lane Stations DO NOT display their own camera output.
TRAFFIC SENSOR TONE	Press a key to select a unique ringtone for all traffic sensor events. 0 = no ringtone, 1 = use Lane Station Ringtone Override setting.
BACKGRND THRESHOLD	Adjustment for level of background audio rejected by Counter Station microphone. 0 = no rejection.
SINGLE LANE	Configure lane without live audio. Useful when lanes are in use or audio is not required for adjustments.
AUTO-SELECT 1 LANE	Configure lane with live audio. Useful for adjusting inbound and outbound audio levels.
INBOUND VOLUME LVL	Inbound volume level adjustment.
OUTBOUND VOLUME LVL	Outbound volume level adjustment.
OPEN LOOP GAIN	Adjustment for adapting to different acoustic environments. Lower this setting for Lane Station acoustical environments with too much microphone and speaker coupling. Increase this setting to hear more of the customer while operator is talking.
HANDSET MIC LVL	Inbound handset volume level adjustment.
HANDSET SPKR LVL	Outbound handset volume level adjustment.
RINGTONE OVERRIDE	Press a key to select a unique ringtone for the selected Lane Station(s). 1 = no override (plays the ringtone set by each Counter Station). All other keys represent unique ring tones which override any Counter Station settings.
HALF DUPLEX ONLY	Enables 'push-to-talk' operation.
PGM AUDIO ABATE	ON = Program Audio heard ONLY when lane is *on hold*. OFF = Program Audio heard when lane is *idle* OR *on hold*
RELAY OPERATION	Allows configuration of Lane Station relay contacts (Model 1520 terminal block pos. 9 & 10). The contacts can be set to close using the HOLD key, or while the lane is selected. (See Operator Card l for HOLD key operation details.)
KEY ASSIGNMENT	This menu enables lane selection keys to be redefined in any configuration desired. First select the lane number to be assigned using the VOLUME keys. Then touch the key to be assigned to that lane. If the desired key is already assigned, touch it twice. For 20 lane systems use "Page Mode". Page Mode allows the user to flip between two "pages" of keys. The first page contains lane 1-10, the second 11-20. To enter or exit Page Mode, touch the HOLD key while in KEY ASSIGNMENT.
WRITE TO MEM. CARD	System settings are saved to hub memory card.
READ FROM MEM. CARD	System settings are restored from hub memory card.
FIRMWARE UPGRADE	This menu allows the firmware of system components to be upgraded.

1550 Configuration Example

To enter the configuration menu, connect a 1550 Field Setup LCD Display to the underside of any 1500 Counter Station, then press and hold the SETUP key for one second.

1. **Adjust Audio Levels**
    Select 2: LANE PARAMETERS – Select 2: AUTO-SELECT 1 LANE – Touch SETUP
    a. Inbound audio level
        i.   Select 1: INBOUND VOLUME LVL
        ii. Select exact value (1 – 16) or use VOLUME keys to raise or lower inbound volume
        iii. Touch PRIVACY key to return
    b. Outbound audio level
        i.   Select 2: OUTBOUND VOLUME LVL
        ii. Select exact value (1 – 16) or use VOLUME keys to raise or lower outbound volume
        iii. Touch PRIVACY key to return
    c. Adjust open loop gain
        i.   Select 3: OPEN LOOP GAIN
        ii. Select exact value (1 – 16) or use VOLUME keys to raise or lower open loop gain
        iii. Touch PRIVACY key to return
    d. Touch CAMERA UP/DOWN keys at any time to adjust next/previous lane station

2. **Configure Key Assignment**
    Select 3: TELLER PARAMETERS - Select 2: SINGLE TELLER – Touch SETUP – Select 1: KEY ASSIGNMENT
    a. Use VOLUME keys to select lane to be assigned
    b. Touch any lane key to assign selected lane to that key
    c. If the desired key is already assigned, touch it twice
    d. Touch CAMERA UP to configure next teller station

3. **Exit Setup**
    a. Hold SETUP for one second to jump to EXIT menu at any time
    b. Select 2: EXIT AND SAVE
    c. Touch SETUP to exit

Notes for Series 1500 Intercom Installers Regarding the Memory Card

Series 1500 memory cards have two uses: Storing intercom configuration data and upgrading the intercom system firmware.

• Storing the configuration of the intercom system for later retrieval is the primary use for the memory card. This can save time from one installation to the next if the installations are similar. The system settings can also be retrieved from the memory card in case of a system upgrade or replacement.

• To store configuration data on the memory card, insert the card into the hub and perform a WRITE TO MEM.CARD operation in the SETUP menu (See Model 1550 manual). Then remove the card and store it onsite in a safe, designated location. In the same manner, write the configuration data to an additional card if copying the settings to another system is desired.

• To retrieve configuration data from the memory card, insert the card into the hub and perform a READ FROM MEM.CARD operation in the SETUP menu (See Model 1550 manual, or page 13 of this guide).

NOTE: It is NOT necessary that the memory card remain in the slot in the hub during normal operation.

Intercom system firmware may be upgraded if necessary with a memory card containing firmware files.

Firmware Upgrade Instructions

The Series 1500 Intercom was designed to be firmware upgraded in the field if necessary. In order to perform a firmware upgrade, a memory card with the desired firmware level is required, and the resident firmware on the system must be at version 1.2 or higher.

1. Insert memory card into slot in Audio or Audio/Video Hub.*

2. Attach 1550 Field Setup Display to Counter Station.

3. Press and hold SETUP key on Counter Station for one second.

4. Select Menu Option 5. MEMORY CARD.

5. Select Menu Option 4. FIRMWARE UPGRADE.

6. Use the VOLUME keys to scroll through system components; the current firmware level for each system component is displayed as well as the firmware level resident on the memory card.

7. Touch the HOLD key to select/deselect the listed component for upgrading. Touch the MIRROR key to select/deselect all components.

8. To begin the upgrade, touch the SETUP key twice.

The firmware upgrade may take several minutes to complete. If power is disconnected from the hub during the firmware upgrade, the procedure must be repeated. Once the upgrade is complete, all indicators on the hub will return to normal operation.

* 1 on 1 Systems may be upgraded by temporarily inserting a hub into the system.

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