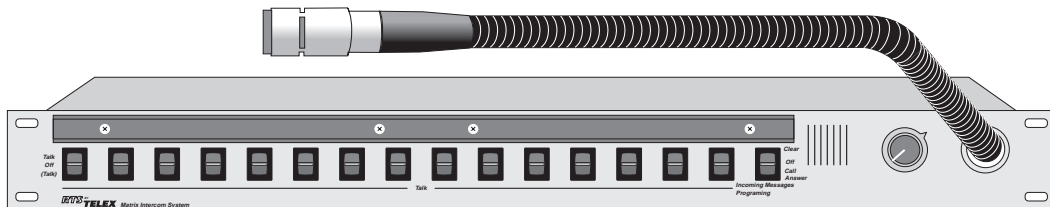# INSTALLATION INSTRUCTIONS
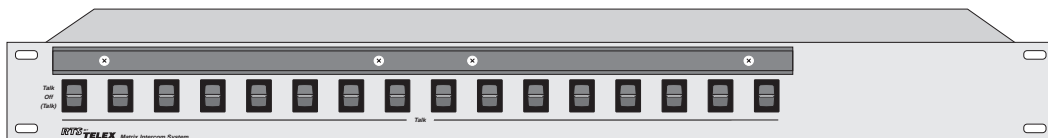
KP95-0 KEYPANEL
VERSION 8.2

WITH EKPD-95 EXPANSION PANEL

ADAM™, ADAM™ CS, AND ZEUS™ INTERCOM SYSTEMS

KP95-0 Keypanel

EKPD-95 Expansion Panel

RTS™

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Telex Communications, Incorporated
8601 E. Cornhusker Hwy
Lincoln, NE 68505 U.S.A.

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1   INTRODUCTION

This manual describes the installation of the KP95-0 Keypanel and EKPD-95 Expansion Panel. The manual is based on version 8.2 of the keypanel firmware. For operating information, refer to the KP95-0 Operating Instruction Manual, version 8.2.

Designation Strips Holder.

Gooseneck Microphone.

Internal Speaker.

Intercom Volume.

Incoming Messages Key (call waiting).

Talk Keys.

Expansion Connector for connection to up to three EKPD-95 Expansion Panels. Page 10.

Terminal Strip. See "Optional Connections", page 10.

AC Power Connector with Fuse and Power Switch. Page 12.

Rear Panel Headset Connector. Page 10.

Level trimmers provide adjustment for nonstandard levels. See "Electrical Adjustments", page 12.

Configuration switches. See "DIP Switch Settings", page 8.

Choice of DE9S or RJ11 intercom connector. See "Connection to Intercom Matrix", page 9.

Figure 1. KP95-0 Keypanel Reference View

EXPANSION IN connector for additional EKPD-95's. See "Expansion Panels", page 10.

EXPANSION OUT connector for connection to KP95-0 keypanel. See "Expansion Panels", page 10.

Terminal block for Group Call. See page 11.

Fused power entry module with 110/220 voltage
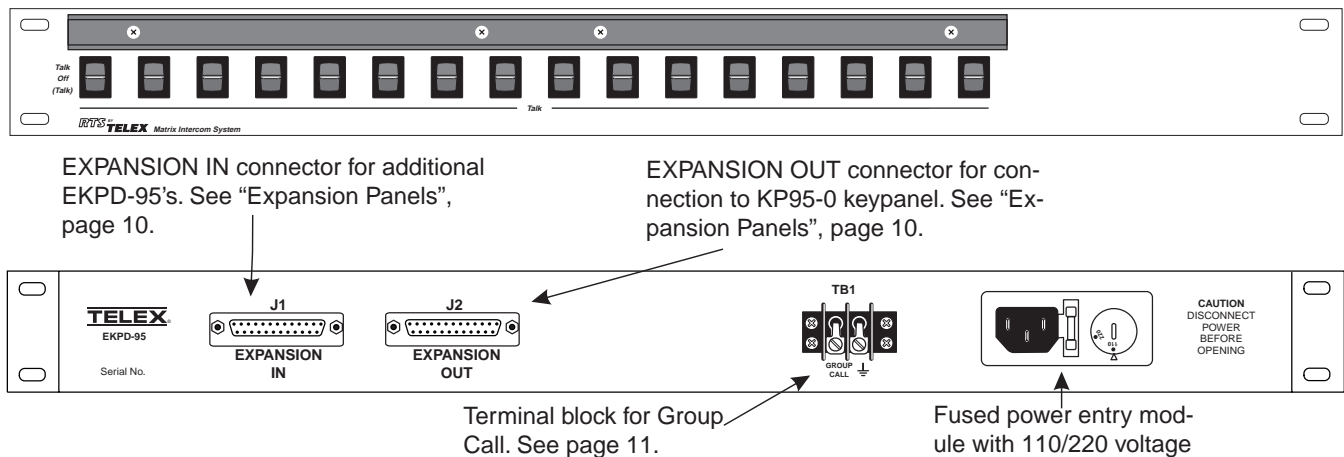
Figure 2. EKPD-95 Expansion Panel Reference View

2 INSTALLATION

2.1 GENERAL

Installation consists of the following general steps:

1. Unpack and inspect the equipment.

2. Check that the factory default jumper positions and level settings are appropriate for your application and make any required changes. (The defaults are virtually always acceptable.)

3. Set the back panel DIP switches.

4. Mount the keypanel and any expansion panels in an equipment rack or bay.

5. Connect the keypanel and any expansion panels.

6. Power up the equipment and check operation.

7. Program the keypanel using the intercom system configuration software (ADAMedit or ZEUSedit).

2.2 UNPACKING AND INSPECTION

As soon as possible after receipt, inspect the container(s) and contents for physical damage that may have occurred in shipping. If damage has occurred, immediately (within 24 hours of receipt of equipment) contact the carrier involved and file a claim. Save all packing materials, and request an immediate inspection by the carrier's insurance claims agent.

There should be one power cord for each keypanel and one gooseneck microphone for each keypanel ordered with a microphone. There should be one power cord and one interconnect cable for each expansion panel.

☞ For information about returns to RTS, refer to the front of this manual.

2.3 CHECKING THE FACTORY JUMPER AND LEVEL SETTINGS

There are several internal jumpers and level adjustments which can be changed to modify the keypanel operation and audio input/output levels. These have been set to meet the requirements of most typical situations. However, if you wish to review these settings prior to installation, refer to "Electrical Adjustments", page 12.

2.4 DIP SWITCH SETTINGS

The DIP switches are located on the back of the keypanel. The switch settings are summarized in Table 1 and are described in the following paragraphs.

☞ **Important:** Any time you change the DIP switch settings you must turn the power off-then-on to reset.

Table 1. DIP Switch Summary

DIP Switch	Description	Settings (X=Don't care)			
1	Not used	X			
2	Not used	X			
3	Not used	X			
		ID	SW 4	SW 5	SW 6	SW 7
4-7	Logical keypanel ID select.	1	Close	Open	Open	Open
		2	Open	Close	Open	Open
		3	Close	Close	Open	Open
		4	Open	Open	Close	Open
		5	Close	Open	Close	Open
		6	Open	Close	Close	Open
		7	Close	Close	Close	Open
		8	Open	Open	Open	Close
8	Baud rate select	Open: 9600 baud Closed: 76.8 kbaud (DO NOT USE!)			

2.4.1 Logical Keypanel ID Selection

DIP switches 4-7 set the logical keypanel ID, which uniquely identifies the keypanel in the intercom system.

Zeus Intercom Systems: The logical keypanel ID's are the numbers ID1 through ID8 printed on the back panel of the Zeus frame next to the keypanel connectors. (The numbers repeat for every group of 8 connectors.) As you connect each keypanel to a connector, use the number printed next to that connector to set the ID. For example, if you connect a keypanel to a connector numbered ID1, refer to Table 1 and set DIP switches 4 through 7 to select ID1.

ADAM CS Intercom Systems: Use the appropriate planning worksheet in the ADAM CS Installation Manual. (Refer to the List of Tables in the front of the manual. The planning worksheets are listed at the bottom of the List of Tables.)

- **ADAM CS with RJ-11 or DB-9 back panel:** You can determine the correct logical keypanel ID from the worksheet in either of two ways: 1) If you know the port number that a keypanel will be connected to, look up the port number in the worksheet, then read across to the appropriate logical keypanel number for that port number. 2) If you know the connector number (on the back of the ADAM CS frame) that the keypanel will be connected to, look up that connector number in the worksheet, then read across to the appropriate logical keypanel number.

  Once you have determined the correct logical keypanel number, refer to Table 1 and position DIP switches 4 through 7 to set this as the ID.

- **ADAM CS frame with 50-pin Telco back panel:** You can determine the correct logical keypanel ID from the worksheet in either of two ways: 1) If you know the port number that a keypanel will be connected to, look up the port number in the worksheet, then read across to the appropriate logical keypanel number for that port number. 2) If you know the connector numbers and pin numbers that the keypanel will be connected to, look up these numbers in the worksheet, then read across to the appropriate logical keypanel number.

  Once you have determined the correct logical keypanel number, refer to Table 1 and position DIP switches 4 through 7 to set this as the ID.

ADAM Intercom Systems: To set the ID, first refer to Table 8, page 18, and locate the intercom port number to which the keypanel will be connected. Then, read across to the "ID" column to find the logical keypanel ID (it will always be a number between 1 and 8). Finally, refer to Table 1 and set the DIP switches to this ID number.

2.4.2 Baud Rate

Dip switch 8 selects the baud rate for communication with the intercom system's configuration computer. For all ADAM, ADAM CS, and Zeus intercom systems this switch must be set to the open position (9600 baud). Do not use the 76.8 kbaud setting.

2.5 MOUNTING THE KEYPANEL AND ACCESSORIES

Keypanels and expansion panels may be mounted in any industry standard 483 mm (19") wide equipment rack or equipment bay. For all panels, allow an additional 2 to 3 inches in back for cables and connectors. No special tools other than those found in a typical tool kit are required for mounting. The panels have no special ventilation requirements.

2.6 STANDARD CONNECTIONS

☞ For additional connection information, see page 10.

2.6.1 Gooseneck Microphone

If you ordered the keypanel with a gooseneck microphone, screw the microphone into the panel microphone jack on the front panel.

2.6.2 Connection To Intercom Matrix

Use either a 9-pin or RJ-11 intercom cable (but not both) to connect to the intercom system. You can use a prefabricated cable, or construct a cable using the wiring diagram in Figure 3 or 4. Plug one end of the cable into the P10 or P11 connector on the back panel of the keypanel. Plug the other end into the appropriate port of the intercom system. (This will be the port number that you designated previously when setting the logical keypanel ID.)

☞ Keypanels may be connected while the intercom system is running.

☞ Note that 9-pin intercom cables for use with an ADAM CS frame must use special connectors at the intercom matrix end as shown in Figure 3.

2.7 KEYPANEL PROGRAMMING

If you previously configured the keypanel using the intercom system configuration software, it should be ready for operation. Refer the station operator to the Keypanel Operation instructions in the KP95-0 Operating Instruction Manual.

If the keypanel has not yet been configured you can do so now. Run the ADAMedit or ZEUSedit configuration software. By default, the configuration software starts up in the "Keypanels / Ports" setup screen. For assistance with keypanel setup, press the F1 key on the computer while viewing that screen. Once you have configured the keypanel as instructed and sent the changes to the intercom

DE-9P (MALE)
TO KEYPANEL

DE-9S (FEMALE)
TO INTERCOM SYSTEM*

DATA

1 + 1
2 − 2
6   6

AUDIO TO MATRIX

4 + 4
5 − 5
9   9

AUDIO FROM MATRIX

7 − 7
8 + 8
3   3

CABLE TYPE:
BELDEN 8777
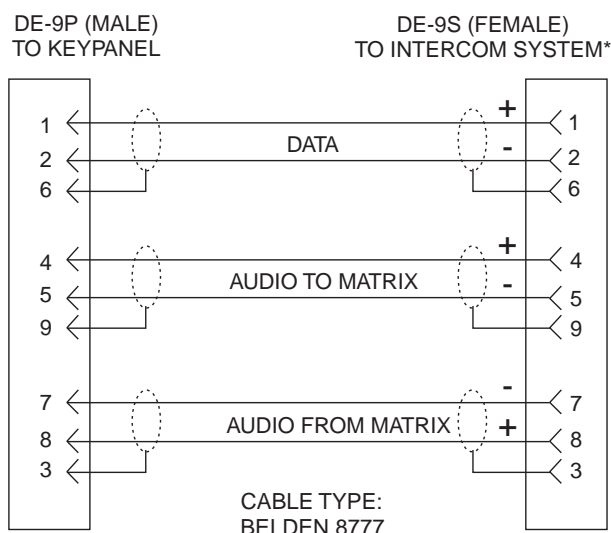
IMPORTANT!

* When connecting to an ADAM CS back panel, use only low-profile cable connectors such as AMP Part No. 747516-3 (Telex Part No. 59926-678)

Figure 3. 9-pin Intercom cable wiring diagram

RJ 11 MOD PLUG
AMP 55550423 or equivalent
(View from cable entrance)

CONTACTS

123456

Use AMP Crimp Tool
12316661

LATCH

3 TWISTED PAIR TELEPHONE CABLE
PAIR 1: AUDIO TO MATRIX
PAIR 2: AUDIO FROM MATRIX
PAIR 3: DATA

1	DATA −	1
2	AUDIO FROM MATRIX +	2
3	AUDIO TO MATRIX +	3
4	AUDIO TO MATRIX −	4
5	AUDIO FROM MATRIX −	5
6	DATA +	6

Figure 4. RJ-11 Intercom cable wiring diagram

Table 2. 9-pin FRAME Connector Pin-out

Pin	Function
1	RS422 Data "+"
2	RS 422 Data "−"
3	Ground , Shield
4	Audio Output "+"
5	Audio Output "−"
6	Ground, Shield
7	Audio Input "−"
8	Audio Input "+"
9	Ground

Table 3. RJ-11 FRAME Connector Pin-out

Pin	Function
1	RS422 Data "−"
2	Audio Input "+"
3	Audio Output "+"
4	Audio Output "−"
5	Audio Input "−"
6	RS422 Data "+"

system, the keypanel should be ready for operation. Refer the station operator to the Keypanel Operation instructions in the KP95-0 Operating Instruction Manual.

2.8 PRINTING DESIGNATION STRIPS

Designation strips can be printed for configured keypanels by using the ADAMedit or ZEUSedit software. You can insert the strips into the designation strips holder on the front panels of keypanels and expansion panels to label the keys with their assigned destinations.

This completes the standard installation procedures.

2.9 OPTIONAL CONNECTIONS

2.9.1 Expansion Panels

Figure 5 shows optional interconnections when using expansion panels with the keypanel. Use the cables provided with the panels. Connect a maximum of three EKPD-95 expansion panels to the KP95-0.

2.9.2 Rear Panel Headset Connection

Table 4 lists the HEADSET connector pin functions. A variety of headset types can be connected. Headset/speaker switching can be accomplished from this connector. Shorting pins 7 and 8 will cause the headset to activate, and the front panel speaker and microphone will turn off.

Figure 5. Optional interconnections.

Figure 6. Terminal block wiring diagram

Table 4. Rear Panel Headset Connector Pin-out

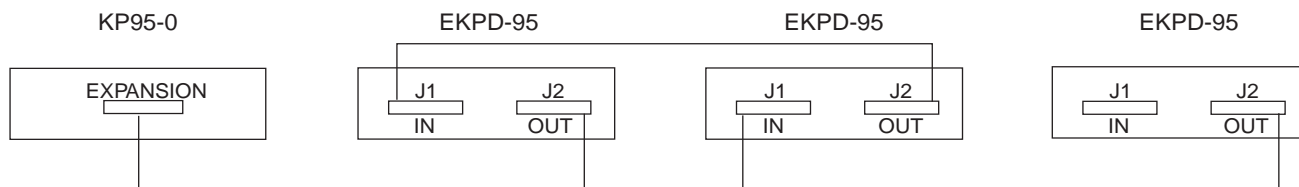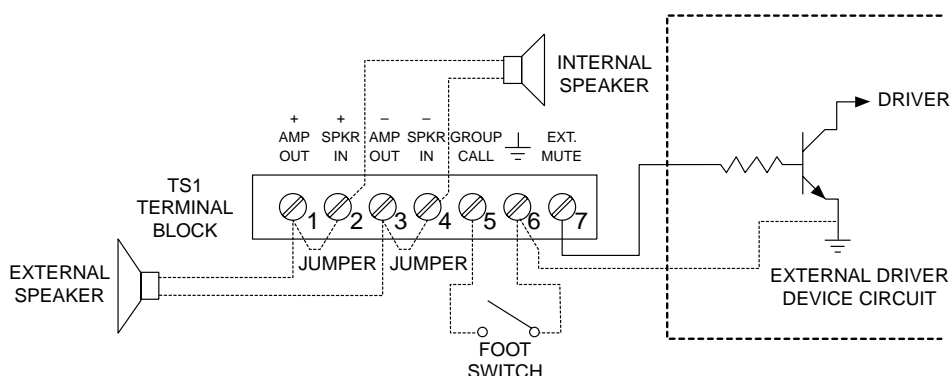| Pin	Function
1	Dynamic mic "+" input
2	Dynamic mic common (shield)
3	Carbon mic "+" input
4	Carbon mic common
5	Headphone "+"
6	Dynamic mic "-" input
7	HDST switch control
8	HDST switch common
9	Headphone common

2.9.3   Terminal Block Connections

(Reference Figure 6)

AMP OUT + and - : These terminals provide the keypanel audio amplifier output signal to drive an 8-ohm, 3-watt speaker. As supplied from the factory, jumpers connect these terminals to the SPKR IN + and - terminals. Remove these jumpers only if the keypanel audio output is to be redirected to an external speaker.

SPKR IN + and - : These terminals connect to the internal speaker.

GRP CALL (Group Call): As supplied from the factory, a jumper connects this terminal to the ground terminal for normal Talk key operation. For external group call, remove the jumper, and connect a normally open foot switch between this terminal and the ground terminal. When the foot switch is pressed, all Talk keys that are latched in the up position will be activated. When the foot switch is released, they will be deactivated.

EXT MUTE: This terminal may be used to drive an external device at no greater than 2 mA sinking current. Its normal logic state is low (0 Vdc). It shifts to logic high (+5Vdc) when any Talk key is pressed. This signal may be used, for example, to mute a monitor speaker when the keypanel operator is talking on the intercom system.

2.9.4   EXT MIC IN Connector

An external microphone can be connected. The external microphone may be used with or without a front panel gooseneck microphone of the same type. (Internal key-

panel jumpers J404-J406 must be set for the type of microphone (see "Internal Jumpers", page 12).

Table 7. EXT MIC IN Connector Pin-out

Pin	Function
1	Shield
2	Mic in "+"
3	Mic in "-"

2.9.5   EXT LINE IN Connector

An external balanced audio source, such as program sound, can be connected. The input is calibrated for a nominal line level of +8dBu. This level can be changed if required. See "Line Input to Speaker Level Adjustment", page 16, for further information.

Table 5. EXT LINE IN Connector Pin-out

Pin	Function
1	Shield
2	Line in "+"
3	Line in "-"

2.9.6   MIC PRE OUT Connector

This connector provides a balanced mic output signal of +8 dBu at 60 ohms. As supplied, the MIC PRE OUT signal is activated only when any Talk key is on. If you want this output to be on continuously, you must reset internal jumper J403 (see "Internal Jumpers", page 12).

Table 6. MIC PRE OUT Connector Pin-out

Pin	Function
1	Shield
2	Mic out "+"
3	Mic out "-"

2.10   POWER-UP AND OPERATIONAL CHECK

Plug in the AC power cords on the keypanel and expansion panel, if used. Assign a talk key to a crosspoint using the configuration software, and place calls to and from the keypanel.

The following symptoms may occur if the logical keypanel number is incorrectly set: 1) when a key is pressed to talk, the destination may not hear the audio, or may hear audio from a different intercom station, or 2) there may be no audio received when a call is placed to the keypanel. If these symptoms occur, recheck the logical keypanel number DIP switches.

☞ **Important!** Always reset the keypanel after changing the DIP switch settings. Do this by briefly removing power to the keypanel.

3   ELECTRICAL ADJUSTMENTS

3.1   INTERNAL JUMPERS

There are several internal jumpers which modify keypanel operation. The jumpers are set for the following default operations:

J201: The EXT LINE IN signal is muted when any Talk key is pressed. May be optionally set for no mute.

J202: The speaker (or headphones) are muted by 15 dB when any Talk key is pressed. May be optionally set to full mute.

J203: Continuous sidetone. When using a headset, the keypanel operators own voice will be heard at all times in the headphones. May be optionally set for sidetone only during talk.

J401: The microphone activates when any Talk key is pressed. May be optionally set for continuous microphone.

J402: Normal/test switch set for normal operation.

J403: The MIC PRE OUT signal is activated only when any Talk key is pressed. May be optionally set for continuous operation.

J404-J406: The keypanel is configured for operation with the standard dynamic, -70dB, 150-ohm gooseneck microphone. May be optionally configured for other microphone types.

To reset any of the jumpers, remove the top cover from the keypanel. Locations of the jumpers are shown in Figure 7. The following paragraphs describe the alternative settings for the jumpers.

3.1.1 J201 (EXTERNAL INPUT MUTING)

When pins 2 and 3 are shorted, a signal input at the EXT LINE IN connector is muted when any Talk key is pressed. When pins 1 and 2 are shorted, the signal is not muted during Talk key activation.

3.1.2 J202 (SPEAKER/HDST MUTE)

When pins 1 and 2 are shorted, the speaker/headset signal is fully muted when any Talk keys are pressed. When pins 2 and 3 are shorted, the signal is muted by 15 dB when any Talk keys are pressed.

3.1.3 J203 (SIDETONE MUTING)

When pins 1 and 2 are shorted, the sidetone signal is always on. When pins 2 and 3 are shorted, the sidetone signal is on only when a Talk key is pressed.

3.1.4 J401 (OUTPUT ENABLE)

When the jumper is installed, the microphone is on only when any Talk key is pressed. When the jumper is removed, the microphone will always be on.

3.1.5 J402 (BALANCE TEST)

For normal operation, there should be no jumper installed. This jumper is used when adjusting the keypanel audio levels. See "Balance Adjustment", page 15.

3.1.6 J403 (PREAMP OUT)

When pins 1 and 2 are shorted, the mic signal at the MIC PRE OUT connector is switched on and off by the Talk keys. When pins 2 and 3 are shorted, the mic signal at the MIC PRE OUT connector is always on.

3.1.7 J404-J406 (PANEL MIC SELECTION)

These jumpers work together to configure the panel microphone preamp for various types of microphones as follows:

2-Wire Electret:
J404	Pins 1 and 2 shorted
J405	No jumper
J406	No jumper

3-Wire Electret:
J404	No jumper
J405	No jumper
J406	No jumper

Balanced Dynamic (-70 dB, 150 ohms):

J404	Pins 2 and 3 shorted
J405	Pins 1 and 2 shorted
J406	Pins 1 and 2 shorted

3.2 AUDIO LEVEL ADJUSTMENTS

3.2.1 GENERAL

The following paragraphs describe the procedures to calibrate the output level to the factory standard of +8 dBu. If a different level is required, substitute that level for +8 dBu.

Most audio level trimmers are accessible through access holes on the back of the keypanel. Each trimmer access hole is labeled with its function. Some trimmers are internal, and can only be accessed with the top cover removed. Locations of trimmers are shown in Figure .7

Audio levels may be adjusted with the panel disconnected from the intercom system. However, proper operation should be confirmed when the panel is reconnected. If levels change after reconnection, check the intercom system wiring for one-sided shorts to ground, wiring errors, or unintended terminations.

Connector pin-outs for these connectors were presented earlier in this section. If the keypanel under adjustment does not have these connectors, refer to drawing number IKP-950/2-5 (in the Keypanel Drawings and Parts Manual). The IKP-950/2-5 drawing shows equivalent locations where test equipment may be connected.

Required test equipment:

Audio Signal Generator with balanced output

Audio Signal Analyzer with balanced input

DC Millivoltmeter

Oscilloscope - any commercially available type

3.2.2 MICROPHONE PREAMPLIFIER

1. Set the HDST switch to off.

2. Remove the gooseneck microphone, and insert a -70 dBm signal (1KHz at 150 ohms) into the microphone connector. Or use the EXT MIC IN connector with the front panel microphone removed (ref Table 7, page 12 for pin-out).

3. Activate the microphone by setting a Talk key to the latched-up position.

Figure 7. Locations of internal jumpers and trimmers
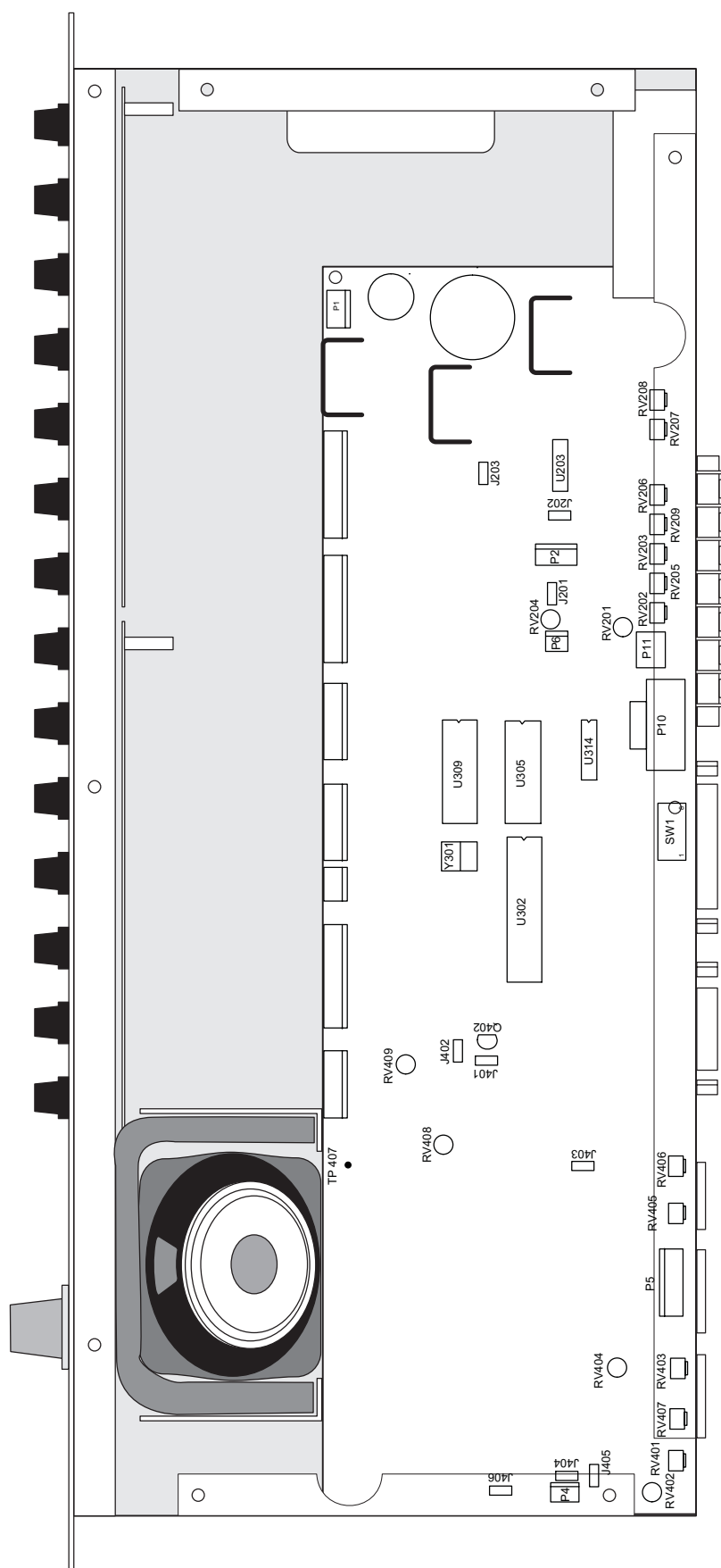
4. Check the level at the MIC PRE OUT connector (ref Table 6 for pin-out). It should measure +8 dBu.

5. If the reading is not +8 dBu, but within a 3dB range, adjust the LEVEL TO MATRIX trimmer (RV406) for +8dBu.

6. If the reading is more than 3 dB from +8 dBu, or another output level is used by your facility, proceed to paragraph to begin the mic preamp calibration procedures.

7. Check the frequency response from 200 Hz to 15 KHz. It should be within 1 dB.

8. Check the input noise. It should be at least -70 dB below +8 dBu.

9. Check the Total Harmonic Distortion (THD) from 200 Hz to 15KHz at +18 dBu output. It should be less than or equal to 0.15 percent.

Balance Adjustment

1. Turn the COMPR trimmer (RV405) fully counterclockwise. This sets the compressor circuit to minimum (compressor ratio of 1:1).

2. Measure and record the dc voltage at test point TP407.

3. Install a shorting plug across J402.

4. Measure the dc voltage at TP407, and adjust RV408 (internal) to match (within 5 mV) the previously recorded voltage.

5. Remove the shorting plug at J402.

Tone Generator Level Adjustment

1. Activate the 400 Hz tone generator in the keypanel (enter 0-8-7 on the keypad).

2. Adjust the LEVEL TO MATRIX trimmer (RV406) for a +8dBu tone output level at the MIC PRE OUT connector.

3. Turn off the tone generator (press CLR on the keypad).

Panel Mic Level Adjustment

1. Configure the J404-J406 jumper blocks for a balanced dynamic panel microphone: J404 short pins 2-3; J405 short pins 1-2; J406 short pins 1-2. (This is the default microphone configuration.)

2. Insert a -70dBm signal (1 KHz at 150 ohms) into the gooseneck microphone connector. Or use the EXT MIC IN connector (with the front panel microphone removed).

3. Adjust the PNL trimmer (RV401) for +8dBu at the MIC PRE OUT connector.

4. Insert a common mode signal (120 Hz, -70 dBm) into the gooseneck microphone connector, or into the EXT MIC IN connector.

5. Adjust RV402 (internal) for a minimum common mode signal at the MIC PRE OUT connector.

6. Reinsert a -70dBm signal.

7. Remove the shorting plug across J401 (causes continuous mic activation).

8. Monitor the level at the audio output pins of the FRAME connector, P10 (reference Table - for pin-out). The output level should be +8dBu.

9. Remove the signal from the mic input, and reinstall the shorting plug across J401.

Headset Dynamic-Mic Level

1. Insert a -60dBm signal (1 KHz at 150 ohms) into the dynamic mic input of the HEADSET connector (reference Table 4, page 11 for pin-out).

2. Activate the HDST key on the front of the keypanel.

3. Monitor the signal level at the MIC PRE OUT connector. It should be +8 dBu. If not, adjust the DYN HDST trimmer (RV403) to achieve an output reading of +8 dBu.

4. Insert a common mode signal into the dynamic mic input of the HEADSET connector.

5. Adjust RV404 (internal) for a minimum common mode signal at the MIC PRE OUT connector.

6. Remove the signal at the dynamic mic input.

Headset Carbon-Mic Level

1. Insert a -25dBm signal (1 KHz at 50 ohms) into the carbon mic input of the HEADSET connector (reference Table 4 for pin-out).

☞ A +12 vdc bias voltage is supplied at pin 3 (carbon mic + input) of the HEADSET connector. The signal generator should be isolated from this dc bias voltage.

2. Activate the HDST key on the front of the keypanel.

3. Monitor the signal level at the MIC PRE OUT connector. It should be +8 dBu. If not, adjust the CARBON HDST trimmer (RV407) to achieve an output reading of +8 dBu.

4. Remove the signal from the carbon mic input.

Compressor/AGC Setup

1. Insert a -60 dBm signal (1 KHz at 150 ohms) into the front panel microphone connector. Or use the EXT MIC IN connector (with the front panel microphone removed).

2. Adjust the COMPR trimmer (RV405) to measure +13dBu at the audio output of the FRAME connector, P10.

3. Reduce the input signal level to -80 dBm.

4. Adjust RV409 (internal) for a +4 dBu audio output level at the FRAME connector.

5. Perform this procedure several times to optimize the compression ratio accuracy. This will test compression at a 2:1 ratio (0.5dBu). Confirm correct operation of the compression circuit by increasing and reducing input levels and measuring output ratio accordingly.

3.2.3   SPEAKER/HEADSET AMPLIFIER ADJUSTMENTS

Matrix-to-Speaker Gain

1. Disconnect the loudspeaker (either internal or external) from the + AMP OUT and - AMP OUT terminals on the back of the keypanel.

2. Terminate the + AMP OUT and - AMP OUT terminals with an 8-ohm, 10-watt resistive load. Connect an audio analyzer across the load.

3. Remove the keypanel audio connection from the intercom matrix.

4. Insert a +8dBu (1 KHz) signal into the audio input + and - pins of the FRAME connector, P10 (Table 2, page 10).

5. Turn the front panel HDST switch off.

6. Turn the front panel intercom audio level control (outer knob) fully clockwise (maximum volume).

7. Adjust the SPKR trimmer (RV207) to measure 4.9VRMS (3 watts) at the audio analyzer. There should be no clipping of the output signal.

8. Turn the front panel intercom audio level control fully counterclockwise (minimum volume). Adjust the MIN I/C trimmer (RV202) to measure -30 dB below the 4.9VAC reference level.

9. Readjust the front panel intercom audio level control to again measure 4.9VAC at the audio analyzer.

10. Insert a 1 KHz common mode signal into the audio input + and - pins of the FRAME connector.

11. Adjust RV201 (internal) for a minimum common mode signal.

12. Remove the signal from the FRAME connector.

Line Input-to-Speaker Gain Adjustment

1. Install a shorting plug across J201, pins 2 and 3.

2. Insert a +8dBu (1 KHz) signal into the EXT LINE IN connector (reference Table 5, page 12, for pin-out).

3. The HDST switch should be off.

4. Turn the line input level control (inner knob on the front panel) fully counterclockwise.

5. Adjust the MIN EXT trimmer (RV205) to measure -30 dB below a reference level of 4.9VAC level at the audio analyzer connected to the amplifier output.

6. Readjust the line input level control to measure 4.9VAC output at the audio analyzer.

7. Insert a 1KHz common mode signal into the EXT LINE IN connector.

8. Adjust RV204 (internal) for a minimum common mode signal.

9. Insert a +8dBu (1 KHz) signal into the EXT LINE IN connector and record the output reading.

10. Remove the signal from the EXT LINE IN connector, and insert it into the audio input + and - pins of the FRAME connector, P10.

11. Remove the shorting plug from jumper block J201. The output reading should be the same as in step 9.

Speaker Muting Setup

1. Short pins 2 and 3 of jumper block J202.

2. Insert a +8dBu signal (1 KHz) into the audio input pins of the FRAME connector, P10.

3. Alternately activate and deactivate a front panel Talk key while adjusting the SPKR MUTE trimmer (RV203) to provide 15dB muting at the + AMP OUT and - AMP OUT terminals during Talk switch activation.

4. Short pins 1 and 2 of J202. Insert a +8dBu signal (1 KHz) into the audio input of the FRAME connector.

5. Activate a front panel Talk key, and check that the amplifier output is fully muted. Restore the J202 shorting plug to pins 2-3.

6. Remove the 8-ohm load from the amplifier output, and reconnect the speaker.

Headphone Level Adjust

1. Terminate the headphone output of the HEADSET connector (pins 5 and 9) with an 8-ohm, 10-watt resistive load. Connect an audio analyzer across the load.

2. Set the front panel HDST switch to on.

3. Insert a +8dBu signal (1 KHz) into the audio input of the FRAME connector.

4. Adjust the HDST trimmer (RV208) for 2VRMS (500 milliwatts) at the headphone output.

5. Set the front panel HDST switch to off.

6. Adjust the HDST MUTE trimmer (RV206) for 6dB muting below the 2V AC reference level.

Sidetone Level Adjust

1. Install a shorting plug across pins 1-2 of J203.

2. Insert a -70dBm signal (1KHz at 150 ohms) into the dynamic mic input of the HEADSET connector .

3. Turn on the HDST switch, and monitor the signal level across the 8-ohm load at the headphone output of the HEADSET connector.

4. Adjust the SIDETONE trimmer (RV209) to 35 dB below a 2V AC reference level. (The level may be varied according to user preference.)

5. Remove the test equipment.

Table 8. Correspondence between address numbers and intercom port numbers for ADAM Intercom Systems

Address	Intercom Port Numbers (8 Ports per Audio I/O Card)																								
1	1	9	17	25	33	41	49	57	65	73	81	89	97	105	113	121	129	137	145	153	161	169	177	185	193
2	2	10	18	26	34	42	50	58	66	74	82	90	98	106	114	122	130	138	146	154	162	170	178	186	194
3	3	11	19	27	35	43	51	59	67	75	83	91	99	107	115	123	131	139	147	155	163	171	179	187	195
4	4	12	20	28	36	44	52	60	68	76	84	92	100	108	116	124	132	140	148	156	164	172	180	188	196
5	5	13	21	29	37	45	53	61	69	77	85	93	101	109	117	125	133	141	149	157	165	173	181	189	197
6	6	14	22	30	38	46	54	62	70	78	86	94	102	110	118	126	134	142	150	158	166	174	182	190	198
7	7	15	23	31	39	47	55	63	71	79	87	95	103	111	119	127	135	143	151	159	167	175	183	191	199
8	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120	128	136	144	152	160	168	176	184	192	200
1	201	209	217	225	233	241	249	257	265	273	281	289	297	305	313	321	329	337	345	353	361	369	377	385	393
2	202	210	218	226	234	242	250	258	266	274	282	290	298	306	314	322	330	338	346	354	362	370	378	386	394
3	203	211	219	227	235	243	251	259	267	275	283	291	299	307	315	323	331	339	347	355	363	371	379	387	395
4	204	212	220	228	236	244	252	260	268	276	284	292	300	308	316	324	332	340	348	356	364	372	380	388	396
5	205	213	221	229	237	245	253	261	269	277	285	293	301	309	317	325	333	341	349	357	365	373	381	389	397
6	206	214	222	230	238	246	254	262	270	278	286	294	302	310	318	326	334	342	350	358	366	374	382	390	398
7	207	215	223	231	239	247	255	263	271	279	287	295	303	311	319	327	335	343	351	359	367	375	383	391	399
8	208	216	224	232	240	248	256	264	272	280	288	296	304	312	320	328	336	344	352	360	368	376	384	392	400
1	401	409	417	425	433	441	449	457	465	473	481	489	497	505	513	521	529	537	545	553	561	569	577	585	593
2	402	410	418	426	434	442	450	458	466	474	482	490	498	506	514	522	530	538	546	554	562	570	578	586	594
3	403	411	419	427	435	443	451	459	467	475	483	491	499	507	515	523	531	539	547	555	563	571	579	587	595
4	404	412	420	428	436	444	452	460	468	476	484	492	500	508	516	524	532	540	548	556	564	572	580	588	596
5	405	413	421	429	437	445	453	461	469	477	485	493	501	509	517	525	533	541	549	557	565	573	581	589	597
6	406	414	422	430	438	446	454	462	470	478	486	494	502	510	518	526	534	542	550	558	566	574	582	590	598
7	407	415	423	431	439	447	455	463	471	479	487	495	503	511	519	527	535	543	551	559	567	575	583	591	599
8	408	416	424	432	440	448	456	464	472	480	488	496	504	512	520	528	536	544	552	560	568	576	584	592	600
1	601	609	617	625	633	641	649	657	665	673	681	689	697	705	713	721	729	737	745	753	761	769	777	785	793
2	602	610	618	626	634	642	650	658	666	674	682	690	698	706	714	722	730	738	746	754	762	770	778	786	794
3	603	611	619	627	635	643	651	659	667	675	683	691	699	707	715	723	731	739	747	755	763	771	779	787	795
4	604	612	620	628	636	644	652	660	668	676	684	692	700	708	716	724	732	740	748	756	764	772	780	788	796
5	605	613	621	629	637	645	653	661	669	677	685	693	701	709	717	725	733	741	749	757	765	773	781	789	797
6	606	614	622	630	638	646	654	662	670	678	686	694	702	710	718	726	734	742	750	758	766	774	782	790	798
7	607	615	623	631	639	647	655	663	671	679	687	695	703	711	719	727	735	743	751	759	767	775	783	791	799
8	608	616	624	632	640	648	656	664	672	680	688	696	704	712	720	728	736	744	752	760	768	776	784	792	800
1	801	809	817	825	833	841	849	857	865	873	881	889	897	905	913	921	929	937	945	953	961	969	977	985	993
2	802	810	818	826	834	842	850	858	866	874	882	890	898	906	914	922	930	938	946	954	962	970	978	986	994
3	803	811	819	827	835	843	851	859	867	875	883	891	899	907	915	923	931	939	947	955	963	971	979	987	995
4	804	812	820	828	836	844	852	860	868	876	884	892	900	908	916	924	932	940	948	956	964	972	980	988	996
5	805	813	821	829	837	845	853	861	869	877	885	893	901	909	917	925	933	941	949	957	965	973	981	989	997
6	806	814	822	830	838	846	854	862	870	878	886	894	902	910	918	926	934	942	950	958	966	974	982	990	998
7	807	815	823	831	839	847	855	863	871	879	887	895	903	911	919	927	935	943	951	959	967	975	983	991	999
8	808	816	824	832	840	848	856	864	872	880	888	896	904	912	920	928	936	944	952	960	968	976	984	992	1000

NOTES

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