SECTION II

INSTALLATION

2-1. INTRODUCTION.

2-2. This section explains how to prepare the Stereo 5 Console for operation. Also included is information relative to power requirements, environmental requirements, input and output connections, etc.

2-3. INITIAL INSPECTION.

2-4. Upon receipt of the Stereo 5 Console, inspect the shipping container for damage. If damage is evident, the shipping container and cushioning material should be kept until the unit has been checked mechanically and electrically.

2-5. The contents of the shipment should be as indicated on the packing list. If the contents are incomplete or if the unit is damaged electrically or mechanically, notify the carrier and Harris Corporation, Broadcast Division. Keep the shipping materials for carrier's inspection.

2-6. PREPARATION FOR USE.

2-7. POWER REQUIREMENTS.

2-8. The Stereo 5 Console requires a power source of 117 or 234V ac ±10%, 50 to 60 Hz, single phase. Power consumption is approximately 55 watts. The Power Transformer, as delivered from the factory, is connected for operation from 117V ac.

2-9. POWER TRANSFORMER. As shipped from the factory for domestic use, the primary windings of the power transformer are parallel-connected for 117V ac, 50/60 Hz operation. However, the two primary windings are accessible by removing the bottom cover of the console, and may be reconnected in series for 234V ac, 50/60 Hz operation. These connections are illustrated in the Transformer Diagram in Section VII.

2-10. POWER CABLE. In accordance with international safety standards this unit is equipped with a three-wire power cable. When connected to an appropriate power line outlet, this cable grounds the console chassis. The cable includes a standard three-wire plug. In some countries, it may be necessary to obtain a special adapter for operation from 234V ac service. These adapters are normally available at local electrical supply houses. The console assembly includes a ground stud for connection to the station ground system.

1539

2-11. OPERATING ENVIRONMENT.

2-12. The operating environment should be withing the following limitations:

a. Temperature: 0°C to +55°C

WARNING: Disconnect primary power prior to servicing.

b. Relative Humidity: 5% to 95%, non-condensing

c. Altitude: 10,000 feet

2-13. MOUNTING.

2-14. The Stereo 5 Console is designed for mounting on a desk top or other horizontal surface and is equipped with four "bumper" feet which provide proper spacing for air ventilation. All input and output cables should be installed along each side of the console so that wires will pass through the slots in each end of the cover. Cables should be routed under the retaining clamps located at each end of the console, then up over the rolled top edge of the chassis end-plate, and along the transverse rod to the appropriate input and output terminals. Secure cables to the transverse rod with tie-wraps or lacing cord. This technique will permit the console to be tilted or inverted for maintenance.

2-15. INPUT CONNECTIONS.

2-16. The input cables should be solder-connected to the terminal boards which are located on the input switching printed circuit boards along the front surface of the console (refer to figure 2-1 and figure 2-2). These cables should be 2-conductor shielded wire with an overall vinyl jacket. The vinyl jacket prevents the shield from shorting to other building grounds which could result in troublesome ground loops. Tie the input shields to the appropriate lugs on the transverse rod behind the switches. Input connections are listed in table 2-1. Also refer to the overall schematic provided in Section VII.

CAUTION

To prevent ground loops, all wiring connected to these inputs should be free from ground connections in the source equipment (Microphones, Turntables, Preamplifiers, Tape Recorders, etc.). An ohmmeter check is recommended to be certain each wire is not grounded before connecting it to the console input.

1539

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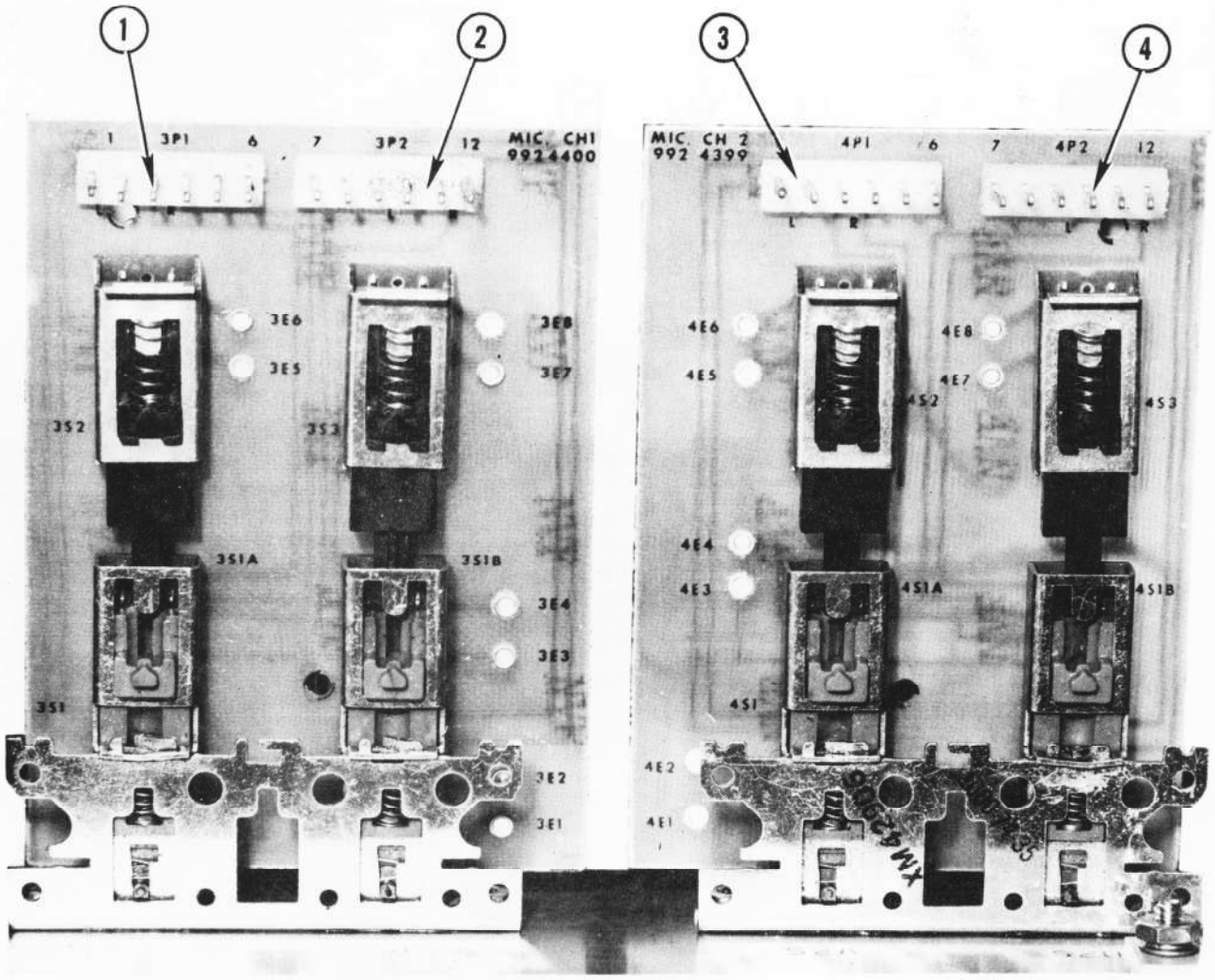


1539

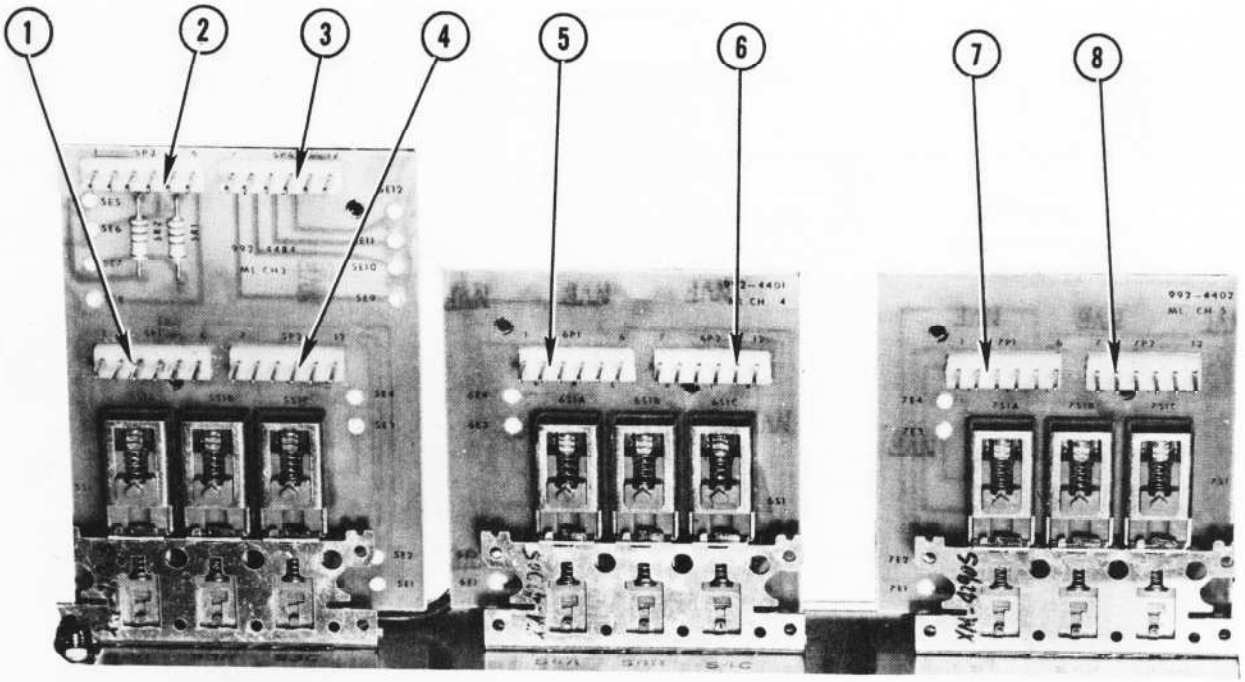
1 Terminal Board 3P1, Channel 1, Mic 1

2 Terminal Board 3P2, Channel 1, Mic 2

3 Terminal Board 4P1, Channel 2, Mic 1

4 Terminal Board 4P2, Channel 2, Mic 2

Figure 2-1. Input Connections



1 Terminal Board 5P1, Channel 3, Medium Level

2 Terminal Board 5P3, Audition Outputs

3 Terminal Board 5P4, External Monitor Input

4 Terminal Board 5P2, Channel 3, Medium Level

5 Terminal Board 6P1, Channel 4, Medium Level

6 Terminal Board 6P2, Channel 4, Medium Level

7 Terminal Board 7P1, Channel 5, Medium Level

8 Terminal Board 7P2, Channel 5, Medium Level

Figure 2-2. Input Connections

Table 2-1. Input Connections

MIXING CHANNEL	INPUT	TERMINAL BOARD CONNECTIONS
1	Mic 1 Left	3P1- 1 and 2
1	Mic 1 Right	3P1- 3 and 4
1	Mic 2 Left	3P2- 9 and 10
1	Mic 2 Right	3P2- 11 and 12
2	Mic 1 Left	4P1- 1 and 2
2	Mic 1 Right	4P1- 3 and 4
2	Mic 2 Left	4P2- 9 and 10
2	Mic 2 Right	4P2- 11 and 12
3	Medium Level Left	5P1- 1 and 2
3	Medium Level Right	5P1- 3 and 4
3	Medium Level Left	5P1- 5 and 6
3	Medium Level Right	5P2- 7 and 8
3	Medium Level Left	5P2- 9 and 10
3	Medium Level Right	5P2- 11 and 12
4	Medium Level Left	6P1- 1 and 2
4	Medium Level Right	6P1- 3 and 4
4	Medium Level Left	6P1- 5 and 6
4	Medium Level Right	6P2- 7 and 8
4	Medium Level Left	6P2- 9 and 10
4	Medium Level Right	6P2- 11 and 12
5	Medium Level Left	7P1- 1 and 2
5	Medium Level Right	7P1- 3 and 4
5	Medium Level Left	7P1- 5 and 6
5	Medium Level Right	7P2- 7 and 8

WARNING: Disconnect primary power prior to servicing.

Table 2-1. Input Connections (Continued)

MIXING CHANNEL	INPUT	TERMINAL BOARD CONNECTIONS
5	Medium Level Left	7P2- 9 and 10
5	Medium Level Right	7P2- 11 and 12

2-17. MICROPHONE INPUTS. Mic 1, Ch. 1 and Mic 1, Ch. 2 inputs are assigned as Control Room microphone inputs. Mic 2, Ch. 1 and Mic 2, Ch. 2 inputs are assigned as Studio microphone inputs. The nominal level to these inputs is -60 dBm at 150 ohms. Microphones with impedances from 100 ohms to 250 ohms may be used.

2-18. MEDIUM LEVEL INPUTS. All medium level channels (3, 4, and 5) present a balanced input impedance. Nominal input levels are -20 dBm.

2-19. EXTERNAL MONITOR INPUT. The external monitor input presents a single-ended, high impedance input to bridge a 600 ohm source. The nominal input level is -15 VU.

2-20. OUTPUT CONNECTIONS.

2-21. Output connections are provided on the main printed circuit board and on 5P3 of the channel 3 input board. Refer to table 2-2, figures 2-2 and 2-3, and the overall schematic provided in Section VII.

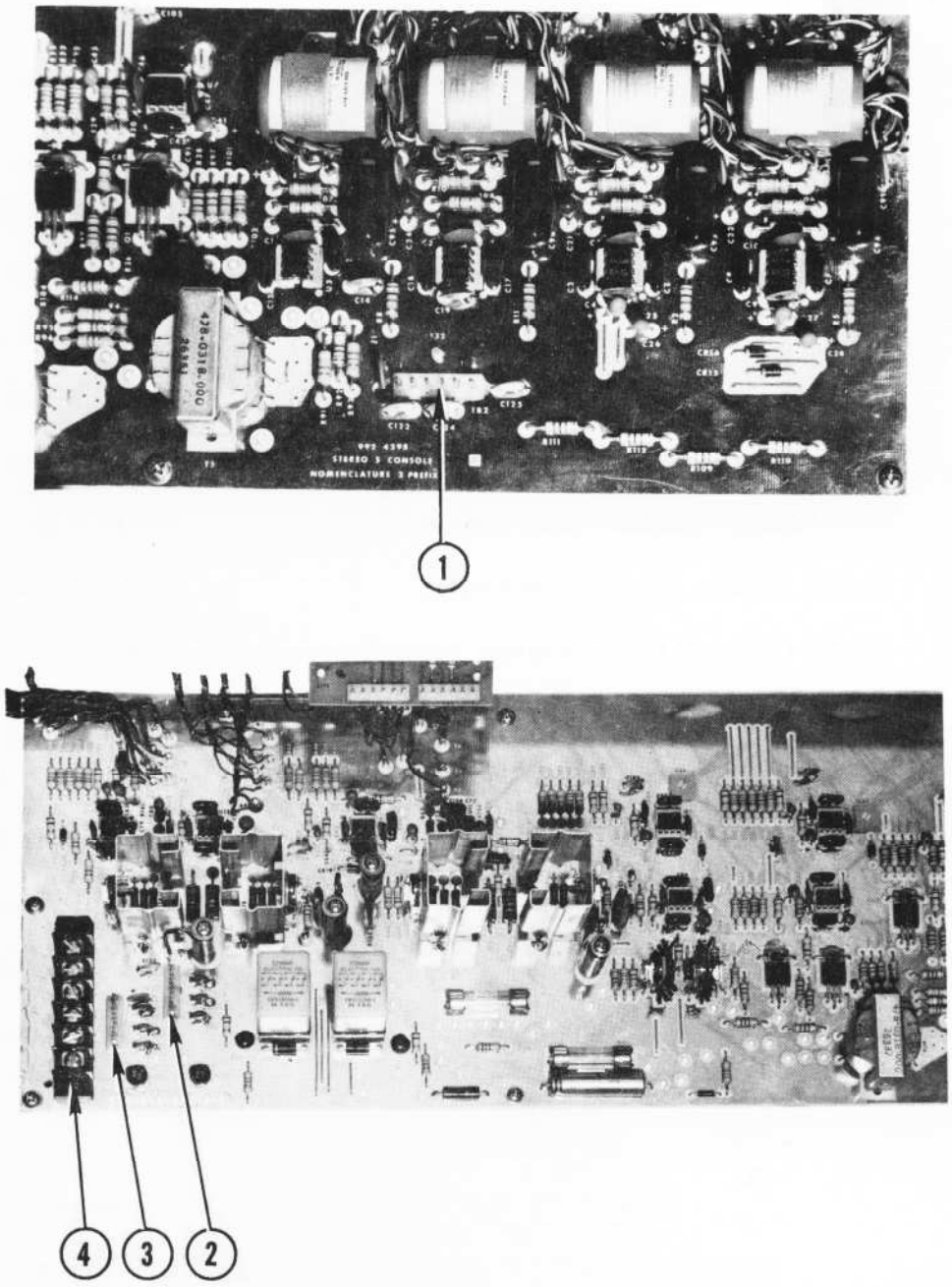
2-22. LEFT PROGRAM CHANNEL. The left channel output is 600 ohms, balanced, and provides +8 dBm output level when the Left Channel VU meter reads 0 VU. This output appears at terminals 1 and 2 of 2TB2. When loaded with 600 ohms, the maximum output level obtained is in excess of +20 dBm. This output level provides an adequate amount of headroom to prevent clipping of program signal peaks.

2-23. RIGHT PROGRAM CHANNEL. The right channel output is 600 ohms, balanced, and provides +8 dBm output level when the Right Channel VU meter reads 0 VU. This output appears at terminals 5 and 6 of 2TB2. When loaded with 600 ohms, the maximum output level obtainable is in excess of +20 dBm.

2-24. PROGRAM HEADPHONES. A high impedance headphone output is available at J1 which is located on the front panel. This output is single-ended, of the ring-top-sleeve type for stereo headphones and is bridged across the program lines at the primary side of the left and right output transformers.

2-25. CUE HEADPHONES. The cue headphone jack, J2, is located on the front panel. This jack is a single-phone type which is configured to drive the left phone only of a stereo headset.

1539



1539

1 Terminal Board 2TB2, Left and Right Program Channel

2 Terminal Board 2TB4, Right Speakers

3 Terminal Board 2TB3, Left Speakers

4 Terminal Board 2TB1, Warning Lights

Figure 2-3. Output Connections

Table 2-2. Output Connections

OUTPUT	TERMINAL BOARD CONNECTIONS
Left Program Channel	2TB2- 1 and 2
Right Program Channel	2TB2-5 and 6
Left Studio Speaker (muted)	2TB3- 1 and 2
Left Control Room Speaker (muted)	2TB3- 3 and 4
Left Lobby Speaker (not muted)	2TB3- 5 and 6
Right Studio Speaker (muted)	2TB4- 1 and 2
Right Control Room Speaker (muted)	2TB4- 3 and 4
Right Lobby Speaker (not muted)	2TB4- 5 and 6
Left Audition Output (figure 2-2)	5P3- 3 and 4
Right Audition Output (figure 2-2)	5P3- 5 and 6
Warning Light ac Input	2TB1- 1* and 2
Studio Warning Light	2TB1- 3* and 4
Control Room Warning Light	2TB1- 5* and 6

NOTE

*2TB1-1, 3 and 5 are internally connected.

2-26. AUDITON OUTPUTS. The left and right audition outputs are 1400 ohm, single-ended, and deliver a nominal -20 VU with normal input levels into a 600 ohm load. The left audition output is available on terminals 3 and 4 of terminal board 5P3; The right audition output is available on terminals 5 and 6 of terminal board 5P3. The audition outputs provide a convenient source for recording and may be used for other purposes. This feature, which is independent of the monitor circuitry, permits the operator to record from any channel selected for audition while simultaneously monitoring the channel selected for broadcast.

2-27. MONITOR SPEAKERS. Connections for the monitor speakers are located on terminal boards 2TB3 and 2TB4 (refer to figure 2-3). It is important to make certain that the total load on the amplifier from all speakers does not drop below 2.6 ohms. Load impedance below 2.6 ohms may cause the output amplifier fuse (2F1 left, 2F2 right) to blow, or cause the output to sound distorted.

2-28. WARNING LIGHTS. Connections for the warning lights are located on terminal board 2TB1 (refer to figure 2-3). Terminals 1 and 2 are for the 117V ac, 60 Hz input voltage. If possible, connect the neutral side of the line to terminal 1 and the high side to terminal 2. Terminals 3 and 4 are for the studio light; terminals 5 and 6 are for the control room. The warning lights should not be grounded except through the power line, and they should not exceed two amperes of current.

2-29. MUTING ASSIGNMENT.

2-30. As supplied from the factory, the Stereo 5 is arranged to mute in the following manner: Mic 1, Ch. 1 and Mic 1, Ch. 2 will mute the Control Room and internal cue speakers. Mic 2, Ch. 1 and Mic2, Ch. 2 will mute the Studio speakers. This assignment is arbitrary and can be changed by providing proper connections to the following turret terminals located on the Ch. 1 and Ch. 2 Input Board Switch assemblies: 3E6, 3E8, 4E6, and 4E8. Muting connections as assigned at the factory are listed in table 2-3. In order to change the muting assignment, it is necessary to understand the operation of the muting system.

2-31. MUTING SYSTEM OPERATION. The muting control voltage is supplied to open contacts of the program and audition positions of the Ch. 1 key switch (S1) and the Ch. 2 key switch (S2). When either switch is moved to the program or audition position, switch contacts close and apply the control voltage to the corresponding input switch board. The control voltage from S1 is connected to the wiper of switches 3S2 and 3S3. Also, the control voltage from S2 is connected to the wiper of switches 4S2 and 4S3. When any of these switches are depressed, the control voltage is transferred to a bus which returns to the solid state relay driver input terminals on the main printed circuit board. This input activates the transistor switch, energizing the appropriate relay. Since relay 2K1 controls the muting for the control room and relay 2K2 controls the muting for the studio, changing the muting assignment is accomplished by directing the control voltage through the input selector switch to the studio or control room bus as described in table 2-4.

2-32. STATION GROUNDING.

2-33. The stereo 5 Console should be grounded by means of a heavy copper wire or strap connected to the ground stud on the console chassis near the filter capacitors. This should be the only ground connection to the Stereo 5 Console.

1539

WARNING: Disconncect primary power prior to servicing.

Table 2-3. Assigned Muting Connections

MICROPHONE	MUTING	CONNECTION
Mic 1, Ch. 1; Mic 1, Ch. 2	Control Room	Jumper between 3E6 and 4E6
Mic 2, Ch. 1; Mic 2, Ch. 2	Studio	Jumper between 3E8 and 4E8

Table 2-4. Alternate Muting Connections

MICROPHONE	MUTING	CONNECTION
Mic 1, Ch. 1; Mic 2, Ch. 1; Mic 1 Ch. 2	Control Room	Jumper 3E6, 3E8, and 4E6
Mic 2, Ch. 2	Studio	Remove jumper between 3E8 and 4E8
Mic 1, Ch. 2	Control Room	Remove Jumper between 3E6 and 4E6
Mic 1, Ch. 1, Mic 2, Ch. 1; Mic 2, Ch. 2	Studio	Jumper between 3E6, 3E8, and 4E8