

Film-Tech

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Section 8.0

8.0 KT-28 Automation Interface/Changeover Unit

KT-38 Manual Changeover Option

8.1 Introduction

The KT-28 Automation Interface Unit provides for the automatic crossfade of audio signals from film sound tracks and non-sync sources: non-sync > projector 1 or 2 and projector 1 or 2 > non-sync. A fast crossfade switches between projectors 1 and 2 for projector changeover; another feature provides for projector preamplifier changeover. Two optional KT-38s are located next to the projectors and are used for manual changeover.

8.2 Front Panels

Refer to Figure 8.1. Front Panel of the KT-28.

1. Barrier Strips. All control-signal connections are made at TB1 and TB2.

2. Non-Sync Level Adjustment. This control sets the level for the auxiliary input so it can be matched to sound-track levels.

3. Normal/Emergency Bypass Switch. Use this switch to bypass the KT-28 circuitry.

4. Accessory Connector. The input audio signals from the solar cell preamplifiers and the KT-33 are connected through this jack.

Refer to Figure 8.2. The KT-38.

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The green (left) and red (right) LEDs indicate which projector is chosen. See Section 8.4.3.

Choose one of the following two methods to allow this unit to automatically switch sound sources between film sound and intermission music. Method one is Remote Command by momentary switch closure and method two is by exciter lamp changeover sensing. Jumper INHIBIT and GND terminals on TB2 to enable the REMOTE COMMAND method. To use method two EXCITER LAMP CHANGEOVER, remove the jumper between INHIBIT and GND terminals on TB2. Run 2 wires from the exciter lamp(s) and connect one to EXCITER LAMP 1 (or 2) and the other wire to EXCITER LAMP 1 (or 2) RETURN. When the Exciter lamp turns on, intermission music turns off and film sound is automatically selected. When REMOTE COMMAND method is used, an external (not supplied by KINTEK) automation controller and/or pushbutton switches control sound system input switching. With either method, be sure to set the selector switch on the KT-33 unit to 'AUX' for automation control of inputs. For manual (or emergency) control, set the selector on the KT-33 to either film or non-sync positions.

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8.3 Specifications

Audio Input Level	1 V RMS, maximum.
Non-Sync Level Adjustment	-10 dB to +20 dB.
AC Power	120 VAC, 50 or 60 Hz, 3 watts maximum. Consult factory for operation with other line voltages.
Automatic Crossfade	5-second duration.
Dimensions	3" H X 10" W X 5" D. (76.2 mm H X 254 mm W X 122 mm D.)
Weight	2 3/4 pounds. (1.25 kilograms.)

Kintek products are manufactured under one or more of the following U.S. patents: 3,681,618; 3,714,462; 3,789,143; 4,101,849; 4,097,767. Other patents pending.

8.4 Installation

8.4.1 Unpacking and Mounting

Remove the unit carefully from its shipping carton. Mount the KT-28 in the equipment rack; mount the KT-38s at convenient locations next to the projectors. Both units were carefully inspected and tested at the factory. Contact your dealer in the event of any problems. We suggest saving the shipping carton and packing materials for safely transporting the unit in the future.

8.4.2 Precautions

When locating any electronic equipment near heat sources, provide adequate clearance for ventilation. Excessive heat

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shortens the life of any electronic component. Avoid high humidity and water.

Mounting electronic equipment and connecting cables as far as possible from motors and large power transformers lessens the possibility of 60-Hz hum being heard in the system.

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8.4.3 Connections

Use shielded cable with foil wrapping for all audio and control-signal connections.

Audio Connections. All audio connections are made at the 12-pin accessory jack:

<u>Accessory Connector Terminal</u>	<u>Connect to</u>
1	Projector 1: preamplifier (high)
2	Projector 2: preamplifier (high)
3	Projectors 1 and 2: preamplifier (ground)
10	KT-33: Film Input (high)
11	KT-33: Aux Input (high)
12 (ground)	KT-33: Film and Aux

Remote Commands.

Refer to Figure 8.3. KT-28 Remote-Command Wiring.

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Follow the wiring information in Figure 8.3 if KT-38s are not used. The LED drivers (+ 24 V) are current limited (50 mA). A 2-kilohm series resistor is required for each LED to permit the paralleling of remote stations. The sound-off and non-sync drivers are positive; projector 1 and 2 drivers are negative to ground.

On TB2, the inhibit signal must be grounded for remote-command operation. For the remote stations, KT-38s (or normally-open switches) are used to permit control from different stations. Only one function is allowed at a time; when a function is continuous, all others are inhibited. The modes are sound-off, non-sync, projector 1, and projector 2.

Follow the wiring code below for KT-38 stations:

<u>KT-28 Terminal TB1</u>	<u>Station 1 KT-38 Terminal</u>	<u>Station 2 KT-38 Terminal</u>
Projector 1 Remote	1 (red arrow)	2
Projector 2 Remote	2	1 (red arrow)
Projector 1 LED	3	4
Projector 2 LED	4	3
Ground	5	5

Green LED = Proj. 1

Red LED = Proj. 2

Green LED = Proj. 2

Red LED = Proj. 1

Exciter-Lamp Automation. Refer to Figure 8.4 (KT-28 Exciter-Lamp Automation). Remove the ground wire from the inhibit terminal to permit exciter-lamp automation. Either + or - DC voltage may be connected to the floating inputs on TB1. AC voltage between 5 V and 10 V may also be used.

In the absence of exciter lamp voltage (from projector 1 and

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2), the system stays in the non-sync mode.

By connecting the sound-off and the inhibit terminals and grounding them, the KT-28 is held in the sound off mode.

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8.5 Operation

8.5.1 System Alignment

Command Memory. If the inhibit terminal is grounded, the KT-28 starts in the sound-off mode when AC power is first turned on after being off for at least 20 seconds. A momentary loss of AC power, of about 10 seconds in duration, does not change the selected function.

Bypass. Normally, the KT-33 is set at "aux" for automation; if the programmer fails, the "film" position enables the projector signals to feed the system.

If the KT-28 fails, the emergency bypass switch connects outputs of projectors 1 and 2 and sends them to the film input of the KT-33. The signal level of the emergency bypass mode is -6 dB below normal level: an increase in the master fader level may be necessary.

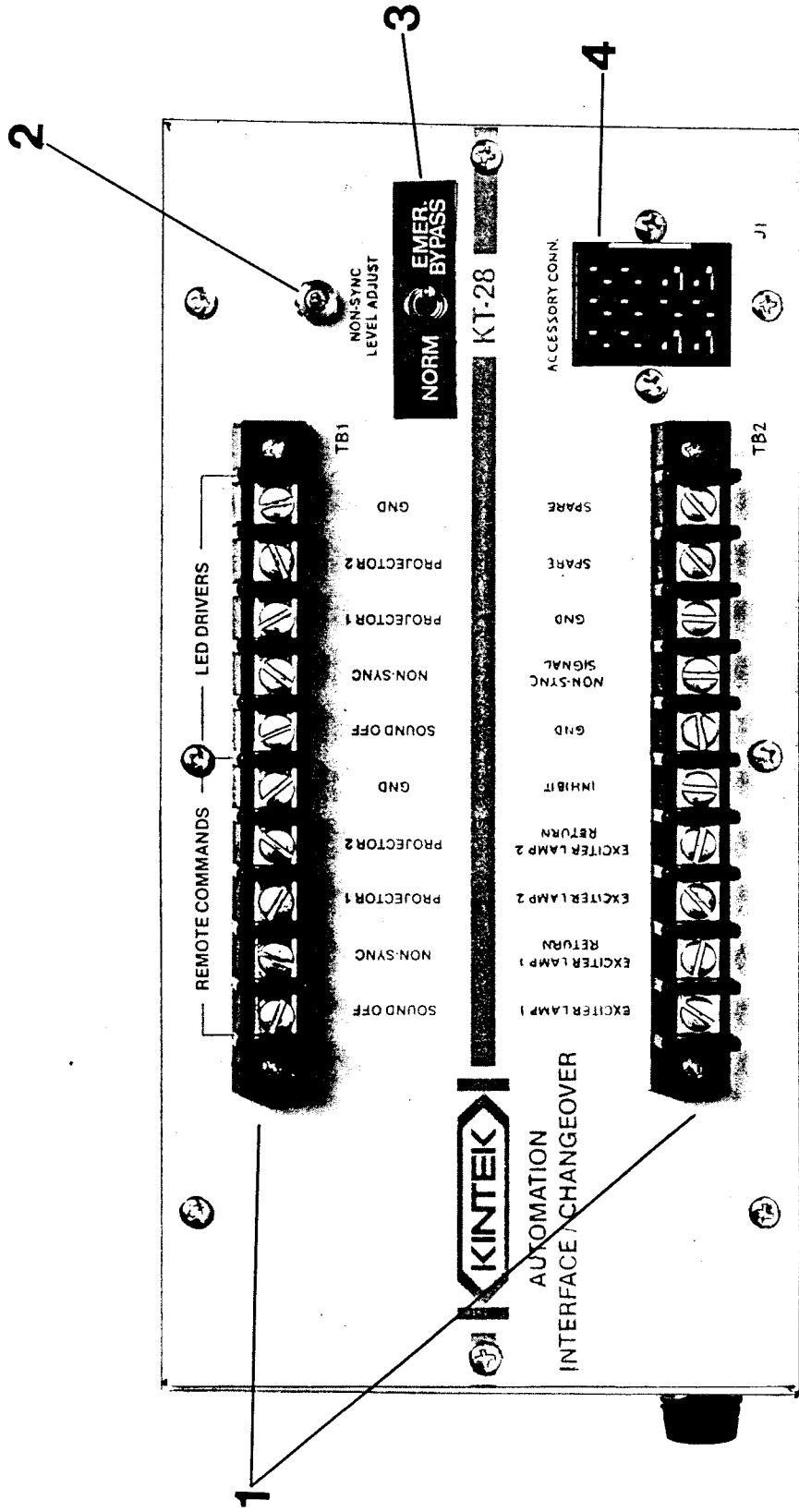


Figure 8.1. Front Panel of the KT-28.

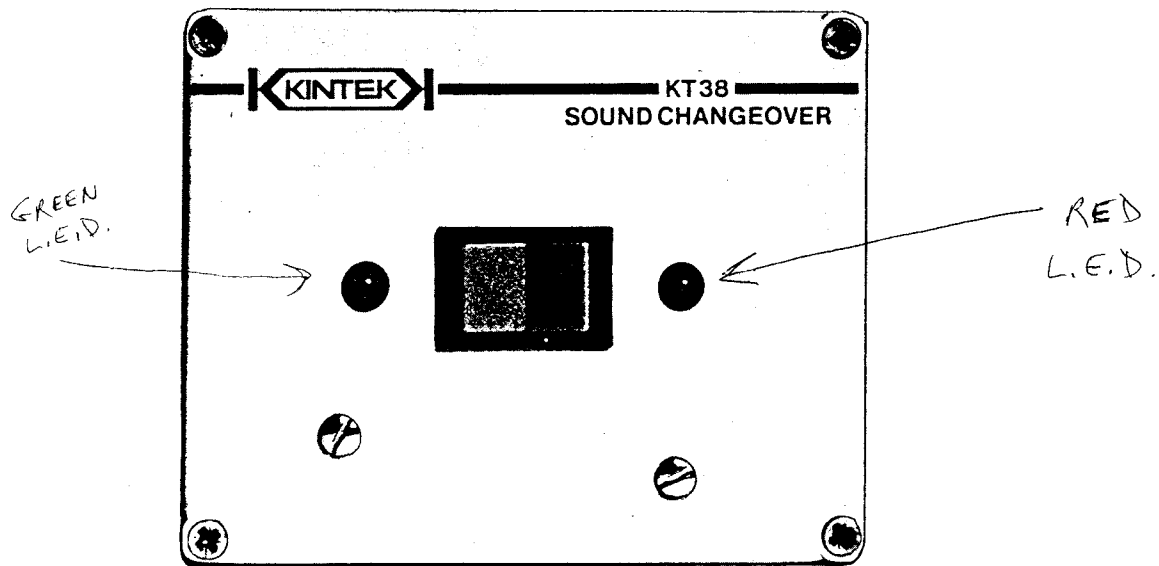


Figure 8.2. The KT-38.

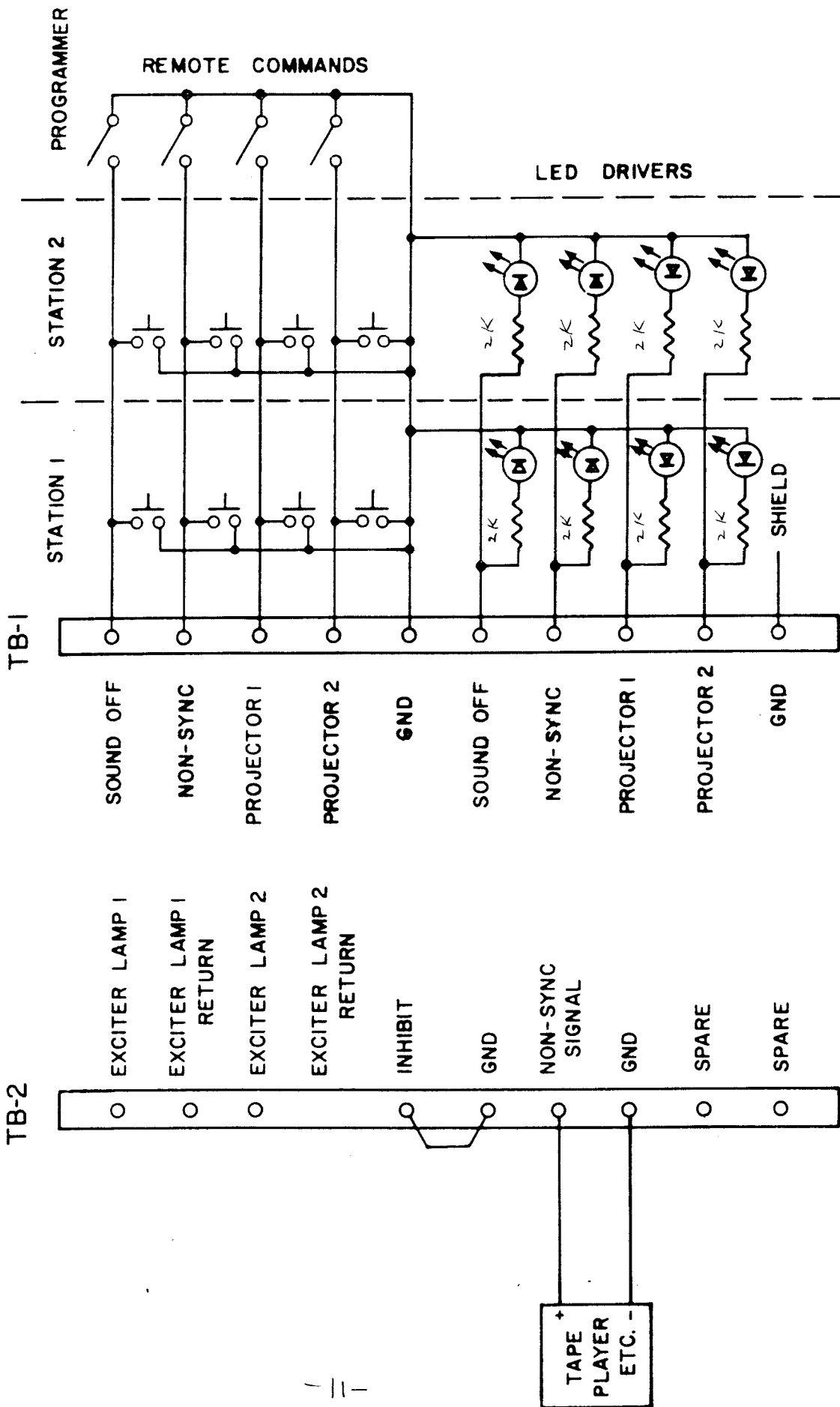


FIGURE 8.3. KT-28 REMOTE-COMMAND WIRING

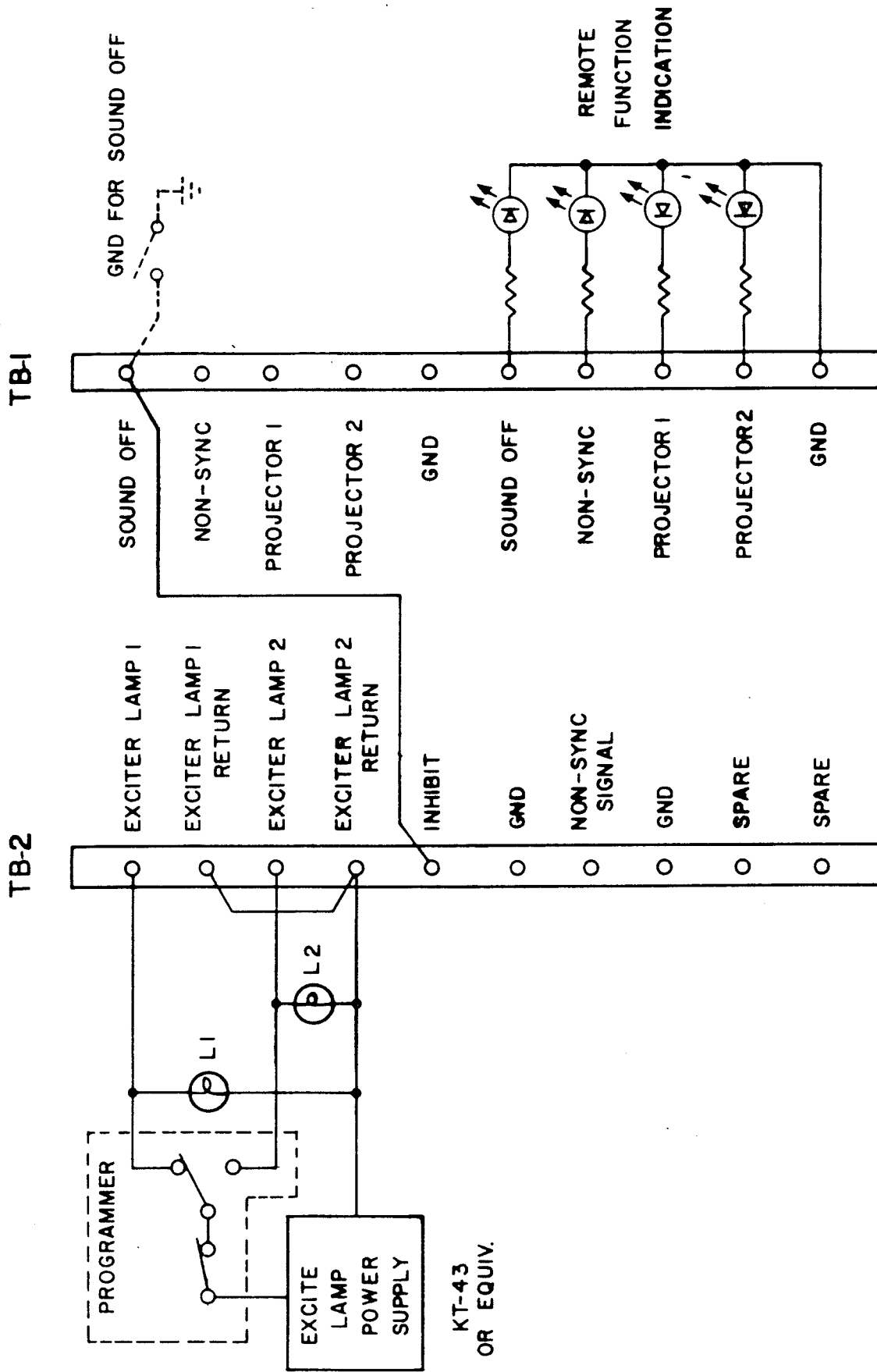


FIGURE 8.4. KT-28 EXCITER LAMP AUTOMATION.

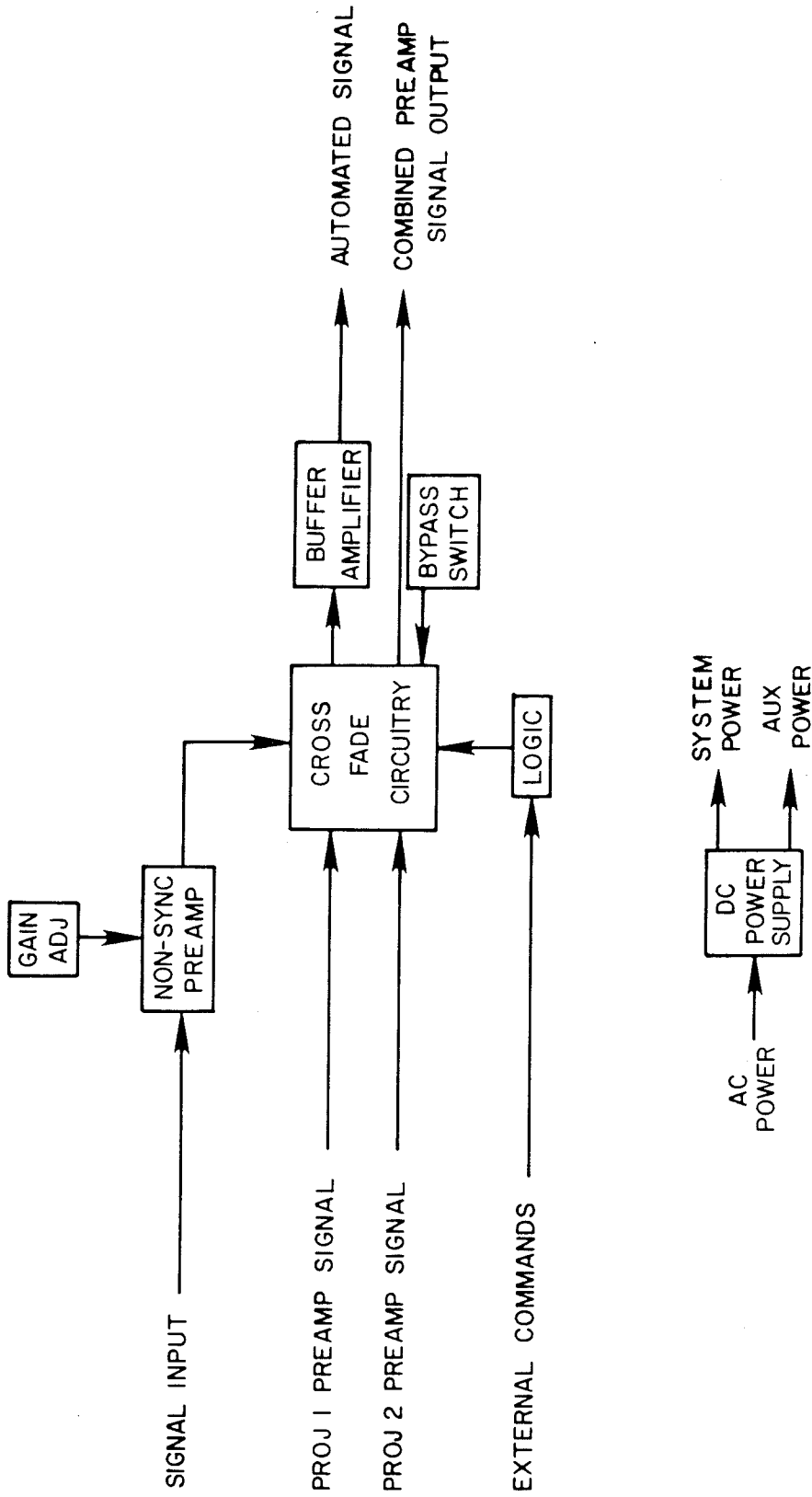
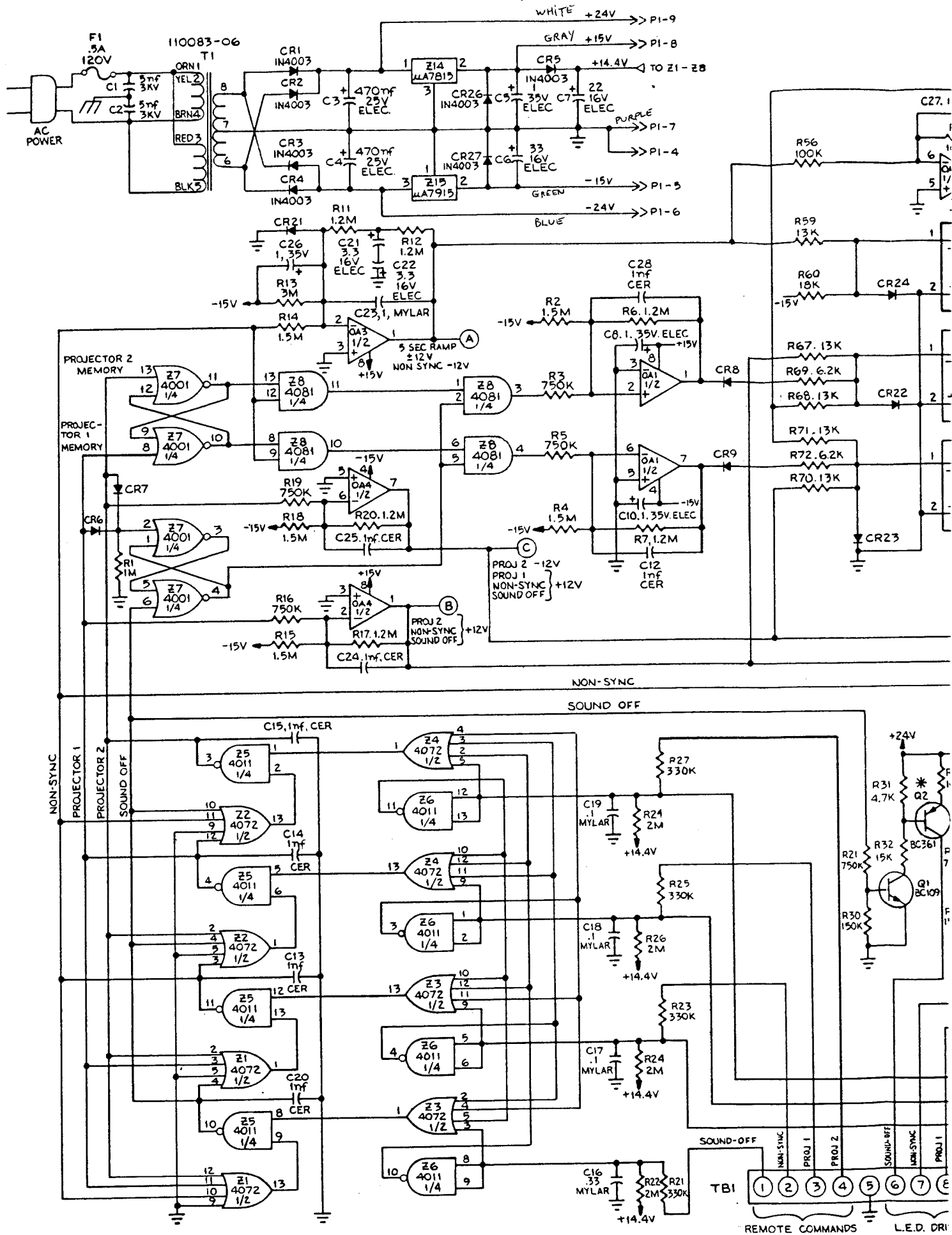
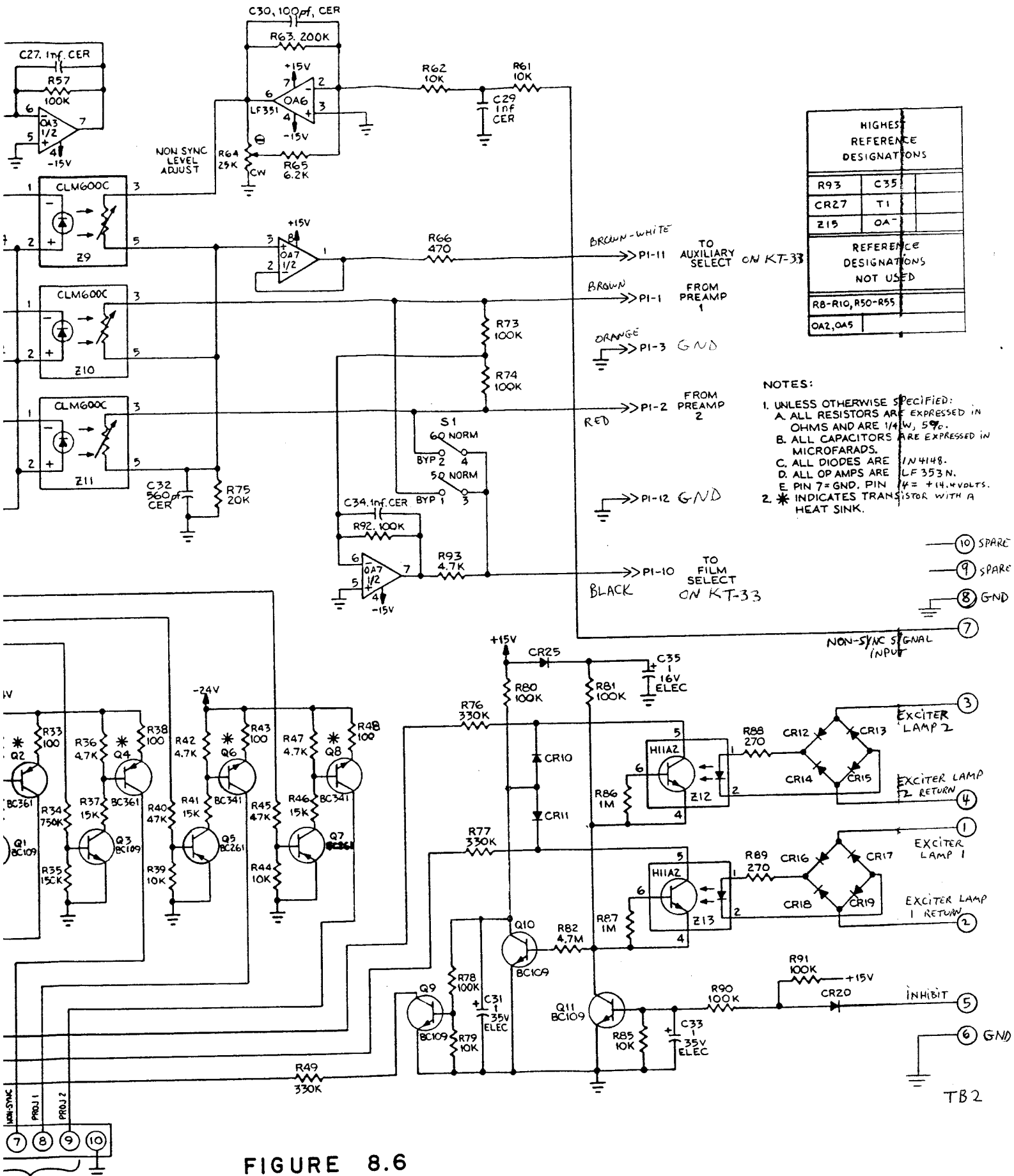


FIGURE 85. FLOW CHART OF THE KT-28.





HIGHEST REFERENCE DESIGNATIONS		
R93	C35	
CR27	T1	
Z15	OA	
REFERENCE DESIGNATIONS NOT USED		
R8-R10, R50-R55		
OA2, OA5		

- NOTES:
- UNLESS OTHERWISE SPECIFIED:
 - ALL RESISTORS ARE EXPRESSED IN OHMS AND ARE 1/4W, 5%.
 - ALL CAPACITORS ARE EXPRESSED IN MICROFARADS.
 - ALL DIODES ARE 1N4148.
 - ALL OP AMPS ARE LF353N.
 - PIN 7 = GND. PIN 14 = +14.4VOLTS.
 - * INDICATES TRANSISTOR WITH A HEAT SINK.

- ⑩ SPARE
- ⑨ SPARE
- ⑧ GND
- ⑦

FIGURE 8.6
SCHEMATIC OF THE KT-28

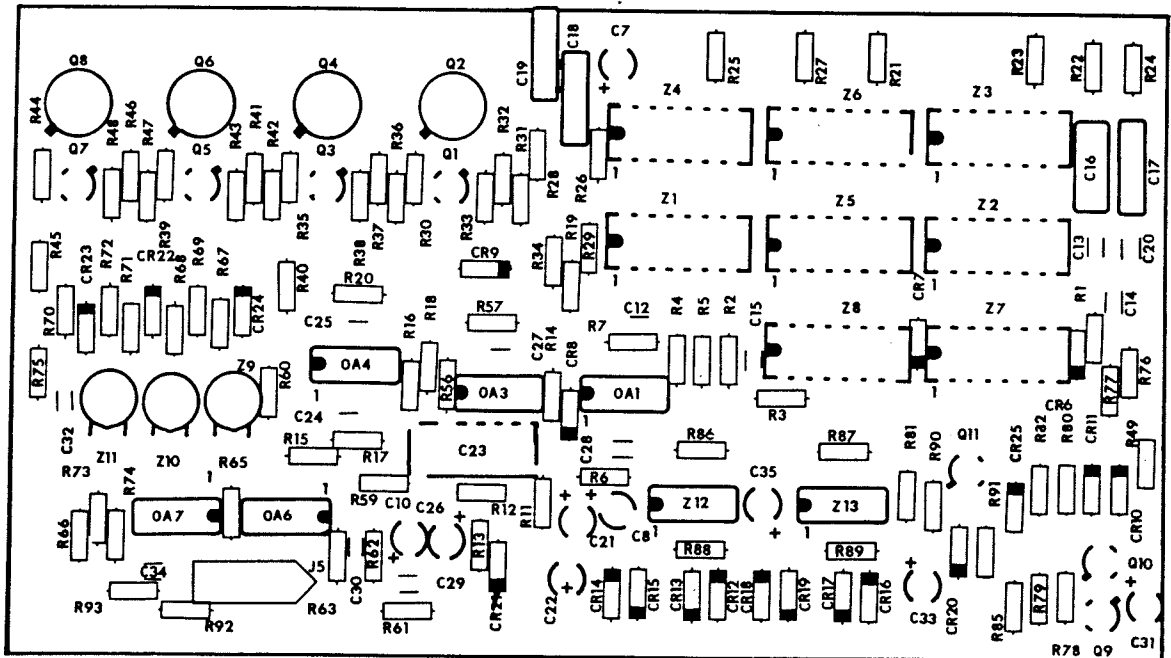


FIGURE 8.7A
BOARD LAYOUT OF THE KT-28

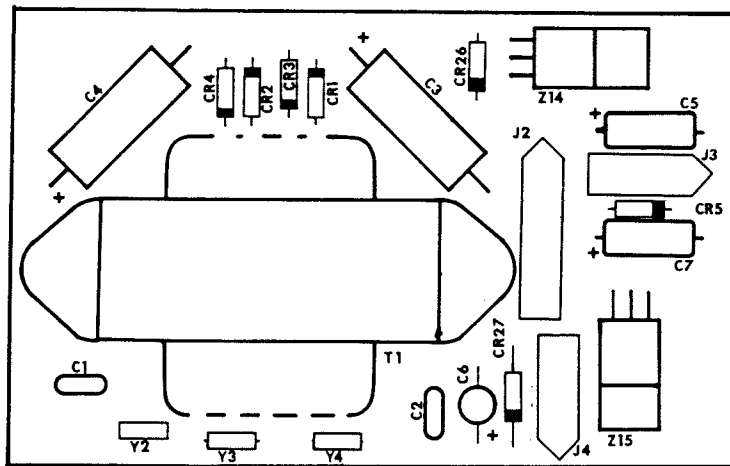


FIGURE 8.7B
BOARD LAYOUT OF THE KT-28
POWER SUPPLY BOARD