

# Film-Tech

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**ULTRA\*STEREO**

# **SRM-10** NOISE REDUCTION MAINFRAME

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**INSTALLATION WITH ULTRA\*STEREO PROCESSORS**

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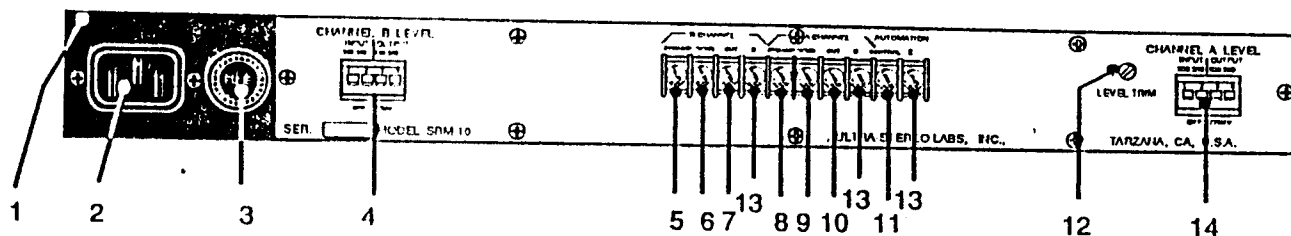
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### ONE YEAR LIMITED WARRANTY

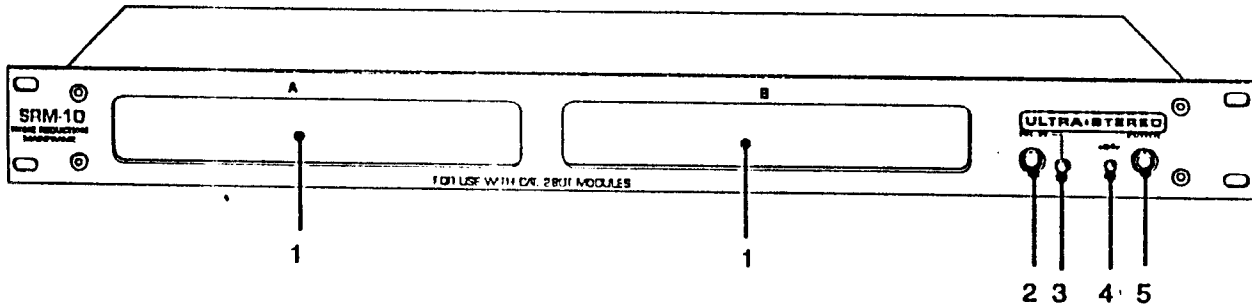
*Equipment manufactured by Ultra-Stereo Labs, Inc. is warranted against defects in materials and workmanship for one year from the date of purchase. Our obligation under this warranty is limited to repairing or replacing components which prove to be defective, and which are returned to our factory prepaid. Ultra-Stereo Labs' obligation under this warranty is restricted to the repair or replacement of defective parts and under no circumstances shall Ultra-Stereo be liable for any other damages, either direct or consequential. This warranty does not apply to any defects caused by modifications, negligence, misuse or accident, or to equipment which has been improperly installed or adjusted.*

# REAR PANEL LAYOUT



1. 115~230VAC voltage selector switch - mounted inside the SRM-10.
2. RFI filtered AC power socket.
3. AC line fuse - 1/8 amp for 115VAC operation, 0.1 amp for 230VAC operation.
4. Channel 'B' (right) input and output level select switches.
5. Channel 'B' (right) PREAMP terminal - connected to the output of the Optical Preamp Right Channel.
6. Channel 'B' (right) "A"NR noise reduction input terminal - connected to the output of the Processor right channel Noise Reduction.
7. Channel 'B' (right) OUT terminal - connected to the Processor right channel Matrix input.
8. Channel 'A' (left) PREAMP terminal - connected to the output of the Optical Preamp Right Channel.
9. Channel 'A' (left) "A"NR noise reduction input terminal - connected to the output of the Processor right channel Noise Reduction.
10. Channel 'A' (left) OUT terminal - connected to the Processor right channel Matrix input.
11. CONTROL Terminal - ground this terminal to activate the SRM-10's internal (SR) noise reduction.
12. Channel 'A' (left) LEVEL TRIM adjustment - this adjusts the output level of the 'A' (left) channel SR module  $\pm 1/2$  dB to "fine tune" any level differences between SR modules.
13. 'E' terminals - system ground.
14. Channel 'A' (left) input and output level select switches.

# FRONT PANEL LAYOUT



1. Noise Reduction module slots - plug your noise reduction cards in here.
2. 'NR IN' button - push this button to select the (SR) noise reduction modules in the SRM-10 Adapter. Pushing this button also over-rides the CONTROL terminal on the rear panel.
3. 'NR IN' indicator lamp - illuminates when the (SR) noise reduction modules in the SRM-10 are selected, either by the rear panel CONTROL terminal or the front panel push button.
4. +24v Power on indicator lamp.
5. POWER switch.

# INTRODUCTION

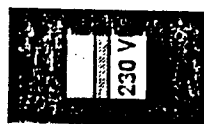
The ULTRA★STEREO SRM-10 Noise Reduction Mainframe is an add-on adapter which enables your ULTRA★STEREO (or other) processor to properly decode SR encoded stereo film soundtracks. Film soundtracks encoded with the SR process should always be decoded with SR modules. The SRM-10 will select either it's plug-in SR modules or the stereo processor's internal noise reduction. A hermetically sealed relay inside the SRM-10 normally passes the audio signal from the processor optical preamp straight to the processor noise reduction circuitry, even when the SRM-10 is shut off.

Because SR noise reduction compresses and expands the soundtrack to a much greater degree than type 'A' noise reduction, any deviation from ideal soundhead and processor (A chain) alignment will be magnified to a much greater degree - MAKE SURE YOUR SOUNDHEAD OPTICS, SOLAR CELL, AND PROCESSOR 'A' CHAIN ARE PROPERLY ALIGNED (see JS Instruction Manual Chapter 5).

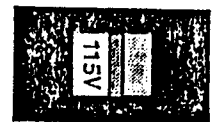
## Installation

The ideal place to mount the SRM-10 is in your audio rack next to the processor and as far away from any exciter supply or power amps as possible to avoid hum pickup. For 230 VAC installations, FIRST UNPLUG the SRM-10 and remove the cabinet top to verify that the internal power selector switch is set to '230 V'.

## Power Selector Switch



*For 215-240VAC  
operation*



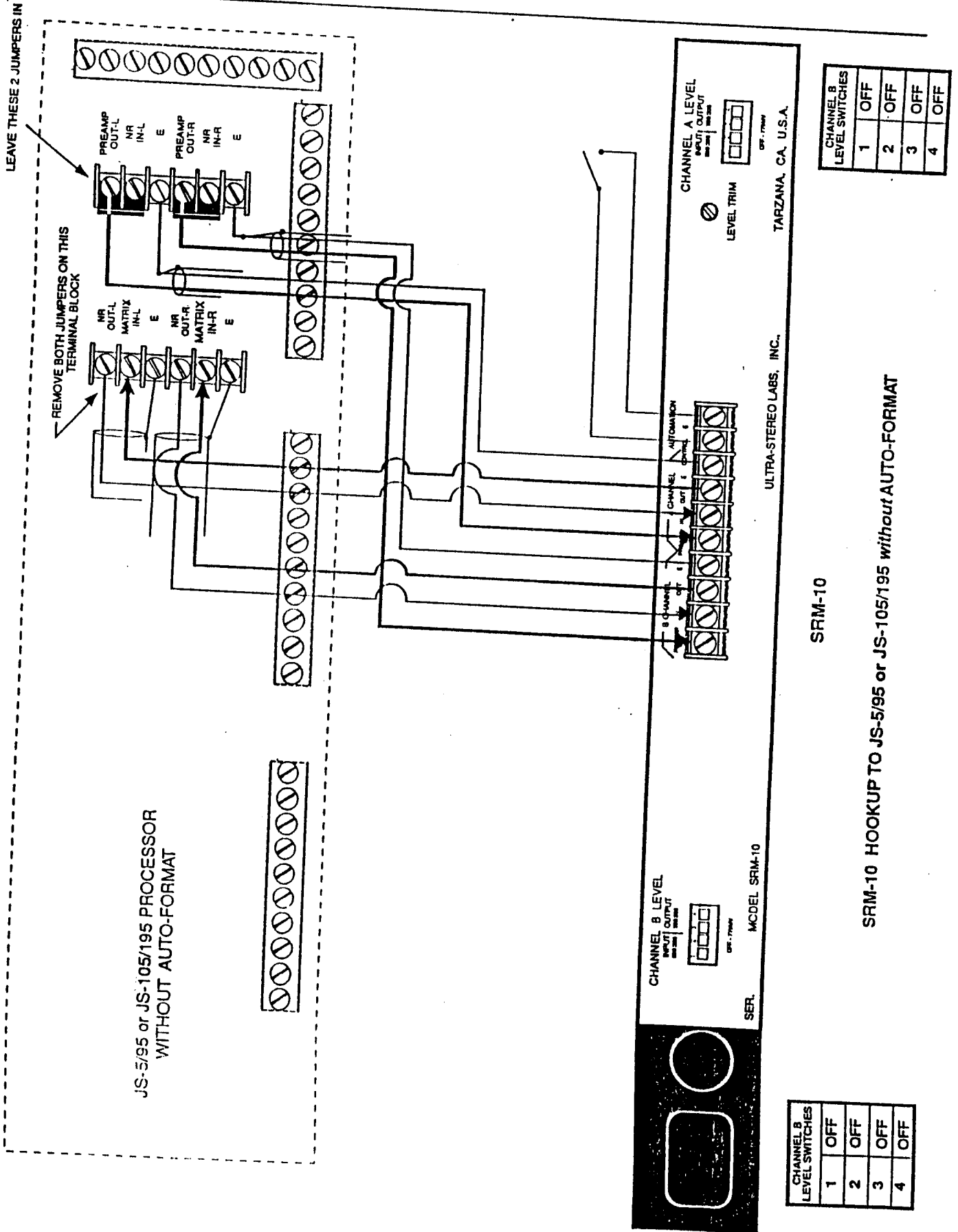
*For 108-120VAC  
operation*

# Installation with JS Series Processors (manual Format)

1. After the projector soundhead optics, solar cell, and processor 'A' chain are aligned and the SRM-10 is mounted in the rack, shut off the processor and all power amps.
2. Remove the 2 metal terminal block jumpers on the rear of the JS Series processor which connect the NR OUT-L to MATRIX IN-L, and NR OUT-R to MATRIX IN-R.
3. Use two BELDEN No. 8404 or equivalent four conductor shielded cables or four 8451 or equivalent two conductor shielded cables, and wire the SRM-10 to the processor as shown in the diagram on page 5.
4. Make sure all INPUT and OUTPUT LEVEL DIP SWITCHES are in their DOWN position.
5. Run a 50% level film such as the ULTRA★STEREO Type I Test Film or equivalent. With the NR button pushed in on the front panel of the SRM-10, adjust the LEVEL TRIM pot on the rear panel for a minimum reading on the Processor Matrix meter. Setting the LEVEL TRIM pot to it's mid position in most cases will yield acceptable results.



Installation with Ultra★Stereo Processors



JS-5/95 or JS-105/195 PROCESSOR  
WITHOUT AUTO-FORMAT

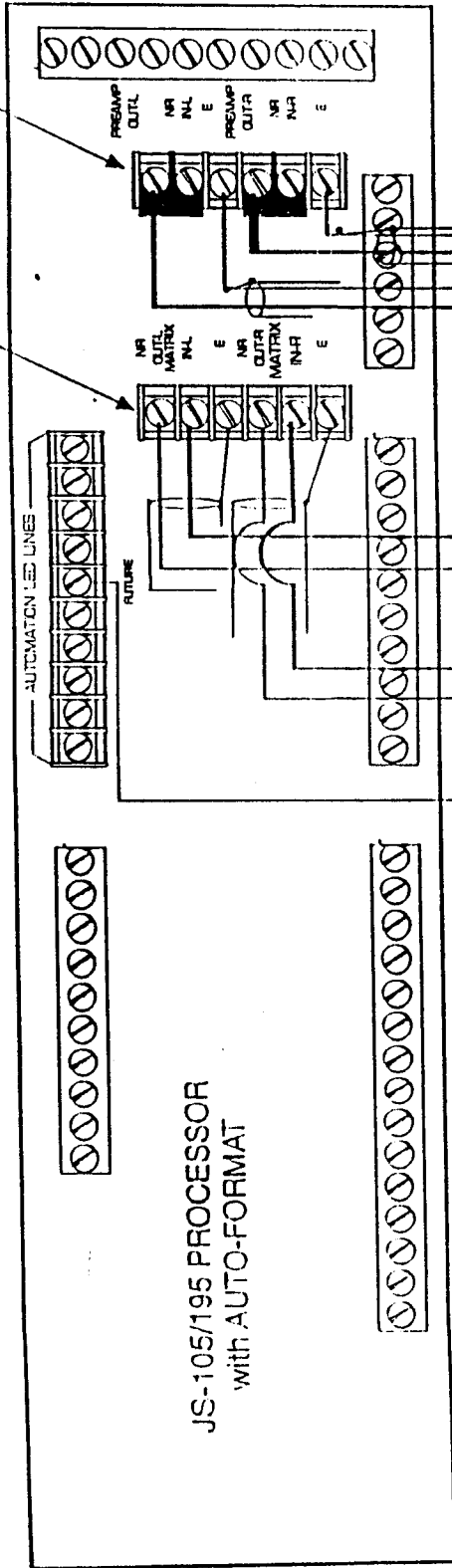
SRM-10

SRM-10 HOOKUP TO JS-5/95 or JS-105/195 without AUTO-FORMAT

# Installation with JS-105/195 Series Processors (Auto Format)

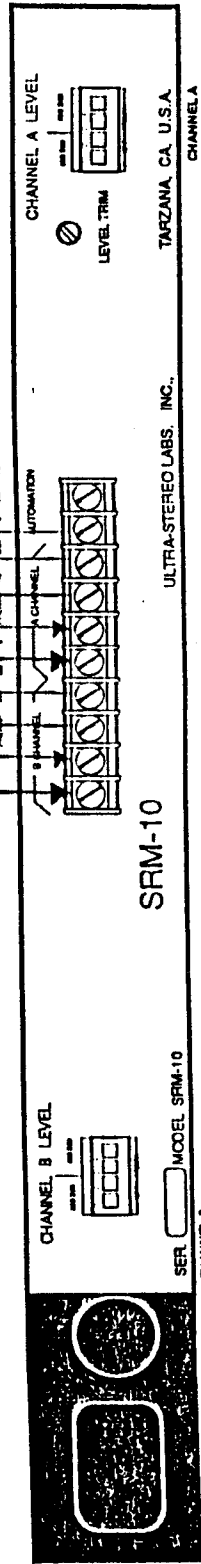
1. After the projector soundhead optics, solar cell, and processor 'A' chain are aligned and the SRM-10 is mounted in the rack, shut off the processor and all power amps.
2. Remove the 2 metal terminal block jumpers on the rear of the processor which connect the NR OUT-L to MATRIX IN-L, and NR OUT-R to MATRIX IN-R.
3. Use two BELDEN No. 8404 or equivalent four conductor shielded cables or four 8451 or equivalent two conductor shielded cables, and wire the SRM-10 to the processor as shown in the diagram on page 9. Connect the CONTROL line to the FUTURE terminal on the AUTOMATION LED LINES terminal block on the rear of the processor, as shown in the diagram. This will cause the audio signal to be routed through the SRM-10 by selecting FUTURE mode on the Auto-Format. Be aware that pushing the NR button in on the SRM-10 OVERRIDES the CONTROL LINE, so make sure the NR button is OUT when controlling the SRM-10 externally.
4. Make sure all INPUT and OUTPUT LEVEL DIP SWITCHES are in their DOWN position.
5. Run a 50% level film such as the ULTRA★STEREO Type I Test Film or equivalent. Select 'FUTURE' mode on the PROCESSOR AUTO-FORMAT MODULE or push the NR button on the front panel of the SRM-10, and adjust the LEVEL TRIM pot on the rear panel for a minimum reading on the Processor Matrix meter. Setting the LEVEL TRIM pot to it's mid position in most cases will yield acceptable results.

REMOVE BOTH JUMPERS ON THIS TERMINAL BLOCK  
LEAVE THESE 2 JUMPERS IN



JS-105/195 PROCESSOR  
with AUTO-FORMAT

SELECT 'FUTURE' MODE ON THE PROCESSOR  
OR USE THE SRM-10'S FRONT PANEL SWITCH  
TO ACTIVATE SR NOISE REDUCTION



CHANNEL A LEVEL SWITCHES

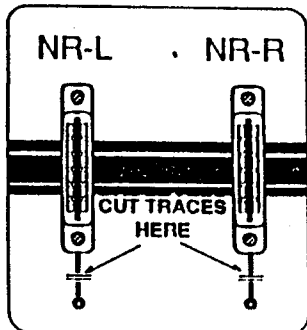
SWITCH OUTPUT
1 OFF
2 OFF
3 OFF
4 OFF

CHANNEL B LEVEL SWITCHES

SWITCH OUTPUT
1 OFF
2 OFF
3 OFF
4 OFF

SRM-10 TO JS-105/195 (with AUTO-FORMAT) HOOKUP

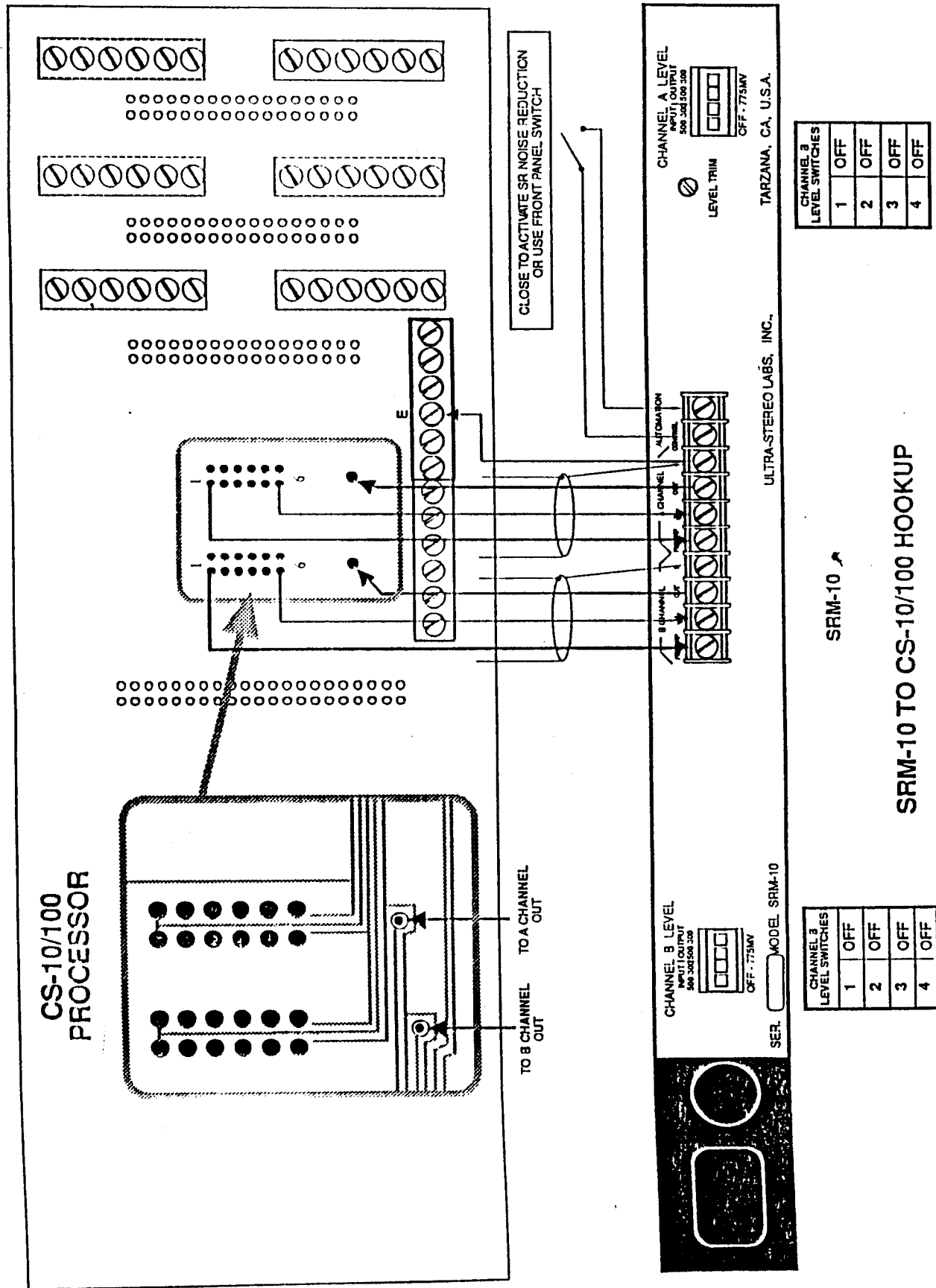
# Installation with CS-10/100 series Processors



1. After the projector soundhead optics, solar cell, and processor 'A' chain are aligned and the SRM-10 is mounted in the rack, shut off the processor and all power amps.
2. With an X-Acto knife, cut the two traces located under the 'NR-L' and the 'NR-R' CARD EDGE CONNECTORS located INSIDE the CS-10/100 chassis as shown in diagram below.
3. Use two BELDEN wire No. 8404 or equivalent four conductor shielded cables or four 8451 or equivalent two conductor shielded cables to connect between the SRM-10 and your processor as shown in the diagram. The wires must be soldered to the NOISE REDUCTION CARD EDGE CONNECTOR PINS and to the PLATE THROUGH HOLES on the rear of the CS-10/100.

## Connections:

- 'B' Ch. PREAM .....Right channel Noise Reduction connector pin 1
  - 'B' Ch. "A"NR .....Right channel Noise Reduction connector pin 6
  - 'B' Ch. OUT .....Plate through hole under right channel NR
  - 'A' Ch. PREAMP .....Left channel Noise Reduction connector pin 1
  - 'A' Ch. "A"NR .....Left channel Noise Reduction connector pin 6
  - 'A' Ch. OUT .....Plate through hole under left channel NR
4. Make sure all INPUT and OUTPUT LEVEL DIP SWITCHES are in their DOWN position.
  5. Run a 50% level film such as the ULTRA★STEREO Type I Test Film or equivalent. With the NR button pushed in on the front panel of the SRM-10, adjust the LEVEL TRIM pot on the rear panel for a minimum reading on the Processor Matrix meter. Setting the LEVEL TRIM pot to it's mid position in most cases will yield acceptable results.



# Installation with CP-55 Processors

This method utilizes the unused inputs of the Cat. No. 222 that were intended for input of calibration tone in the record mode. As with Ultra★Stereo processors, the audio signal for the SRM-10 input is obtained from the preamp output terminals on the rear of the processor (Lt, Rt, pins 11, 12 on TB2). The output from the SRM-10 is fed back into the CP55 via the Dolby★ tone inputs which insert the signal after the A-type NR section of the Cat. No. 222. These inputs are made active by diode programming on the Cat. No. 243 card. In this configuration, the processor provides an either/or path through or around (via the SRM-10) the A-type decoding. Connections to the Dolby★ tone inputs are made by soldering to the backplane at pin 15 (left channel) and pin 1 (right channel) on the edge connector (J14) for the Cat. No. 222. Since switching to these inputs is normally used when in non-sync mode to mute the film audio signal, you must, therefore connect the SR M-10 CONTROL+ line to the ID6 terminal on the Cat. No. 321 interface board. When the non-sync format is called up, it will cause the SRM-10 to switch to its own unused "A" IN inputs, effectively muting the optical signal in the processor. If you use the "03" format button for SR, the diode programming on the Cat. No. 243 requires the removal of two diodes and the addition of two others. Diodes D29 and D33 are removed to enable the surrounds in this format. The diodes that are added switch the logic in the Cat. No. 222 to make the Dolby★ tone inputs active. Unfortunately, there are no marked sites on the matrix section for these additional diodes. They can be installed, however, without much difficulty. You can use the "Aux" format button, of course, but you will then lose the use of the "Aux" inputs. If you chose this route, you must remove D67 and add diodes at locations D60, D61, D64, D65, D66 on the Cat. No. 243.

On the rear of the SRM-10, set the Channel A and B INPUT and OUTPUT level DIP switches marked "300" to the UP position. Make sure all of the DIP switches marked "500" are in the DOWN position.

# SRM-10 Specifications

## Inputs

Switch selectable for 300, 500, and 775 millivolt input levels for each channel. The SRM-10 is set to 775mV at the factory for use with Ultra★Stereo processors. Input impedance is approximately 10k ohms.

## Outputs

Switch selectable for 300, 500, and 775 millivolt output levels for each channel. The SRM-10 is set to 775mV at the factory for use with Ultra★Stereo processors. Output impedance is approximately 2.5k ohms.

## Controls

Connecting the CONTROL terminal to the E terminal on the back of the SRM-10 routes the input signal of each channel through the noise reduction modules in the SRM-10 and illuminates the green 'NR IN' LED on the front panel. Opening the contact or shutting the SRM-10 off causes the input signals to pass straight through to the output. The NR IN push button on the front panel also switches the SR modules in or out of the signal chain, overriding the rear panel CONTROL terminal. A trim-pot mounted on the rear of the SRM-10 adjusts the A (left) channel input level  $\pm 1/2$  dB to exactly balance both channels.

## Power Requirements

A two position switch inside the SRM-10 selects 106 ~ 125 VAC or 212 ~ 250 VAC, 50-60 cycles, approximately 8 watts.

## Construction

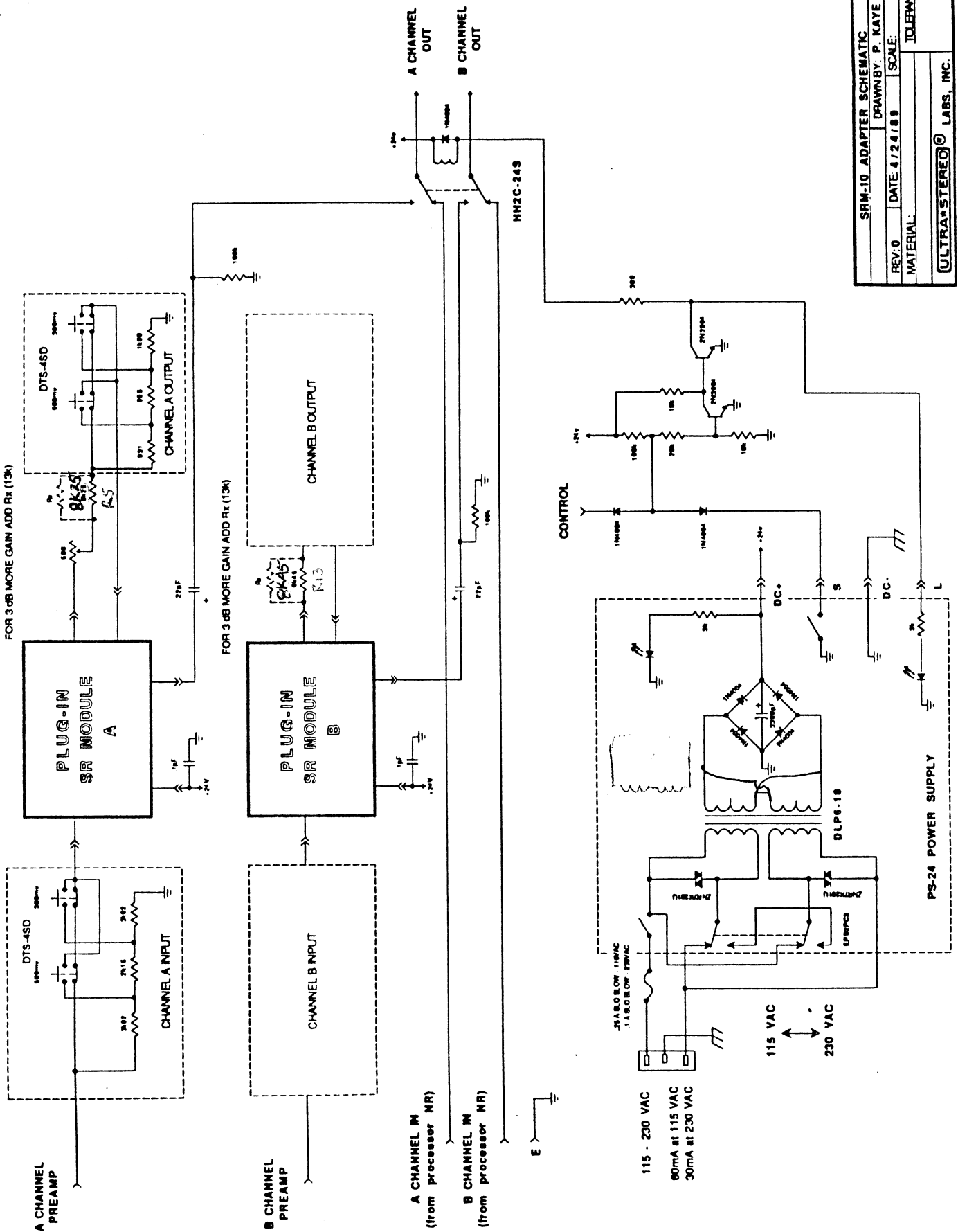
The SRM-10 is constructed of steel to minimize hum pickup and will accept two Cat. No. 280, 280T or Cat. No. 22 noise reduction modules. Gold plated card edge connectors and relays, and 1% precision components are used throughout. The overall size of the unit is 1.75" x 19" x 8". The SRM-10 is designed to mount on a standard rack frame or cabinet. The weight is 6lbs., Shipping weight is approximately 7 lbs.

11/15/89

## SRM-10 TEST PROCEDURE

1. Visually inspect all parts, check for cold solder connections, shorts, etc. MAKE SURE BOTH TRANSISTORS ARE FOLDED OVER AS CLOSE TO THE REAR CIRCUIT BOARD AS POSSIBLE, otherwise the CHANNEL B SR CARD WILL NOT SEAT PROPERLY.
2. Remove the clear seals from the 2 DIP switches on the rear board and set all DIP switches to the DOWN position. Make sure the voltage selector switch on the power supply board inside the SRM-10 is set to 115V.
3. Plug in the power cord, turn on the SRM-10 and confirm +24 VDC at the rear circuit board solder connections. Shut off the unit.
4. Plug an SR card into slot 'A', turn and on the SRM-10.
5. Feed a 775mV (0dB) at around 1kHz into the A CHANNEL PREAMP terminal. With the front panel NR button IN you should measure -1dB ( $\pm 0.5$ dB) at the A CHANNEL OUTPUT terminal.
6. Setting the CHANNEL A LEVEL Input and Output 300mV DIP switches only to the up position, and feeding a 300mV tone in you should measure -9dB ( $\pm 0.5$ dB).
7. Setting the CHANNEL A LEVEL Input and Output 500mV DIP switches only to the up position, and feeding a 500mV tone in you should measure -5dB ( $\pm 0.5$ dB).
8. The signal should disappear when the front panel NR button is OUT.
9. Feed a 775mV (0dB) at around 1kHz into the A CHANNEL 'A' IN terminal. With the front panel NR button OUT you should measure 0dB ( $\pm 0.5$ dB) at the A CHANNEL OUTPUT terminal.
10. The signal should disappear when the front panel NR button is IN.
11. Shut off the SRM-10 and plug the SR card into slot 'B' and repeat steps 5 thru 10.
12. With the NR push button OUT, ground the CONTROL terminal to E and verify that the NR IN LED is illuminated.
13. Set the line voltage selector to either 115V or 230V and mark the SRM-10 accordingly





SRM-10 ADAPTER SCHEMATIC	SCALE:
DRAWN BY: P. KAYE	TOLERANCE
REV. 0	DATE: 4/24/89
MATERIAL:	
ULTRA*STEREO LABS, INC.	

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