Film-Tech

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KT-800 SERIES THEATRE SOUND PROCESSOR

Installation and Operation Manual

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Equipment manufactured by KINTEK carries a limited warranty against defects in materials and workmanship for a period of two years from the date of purchase. Kintek will, at its option, repair or replace defective components provided the faulty equipment is shipped prepaid to Kintek with a Return Authorization number. Defects caused by modifications or misuse, or other damage caused by improper packing are not covered by this limited warranty.

Manufactured under one or more of the following patents

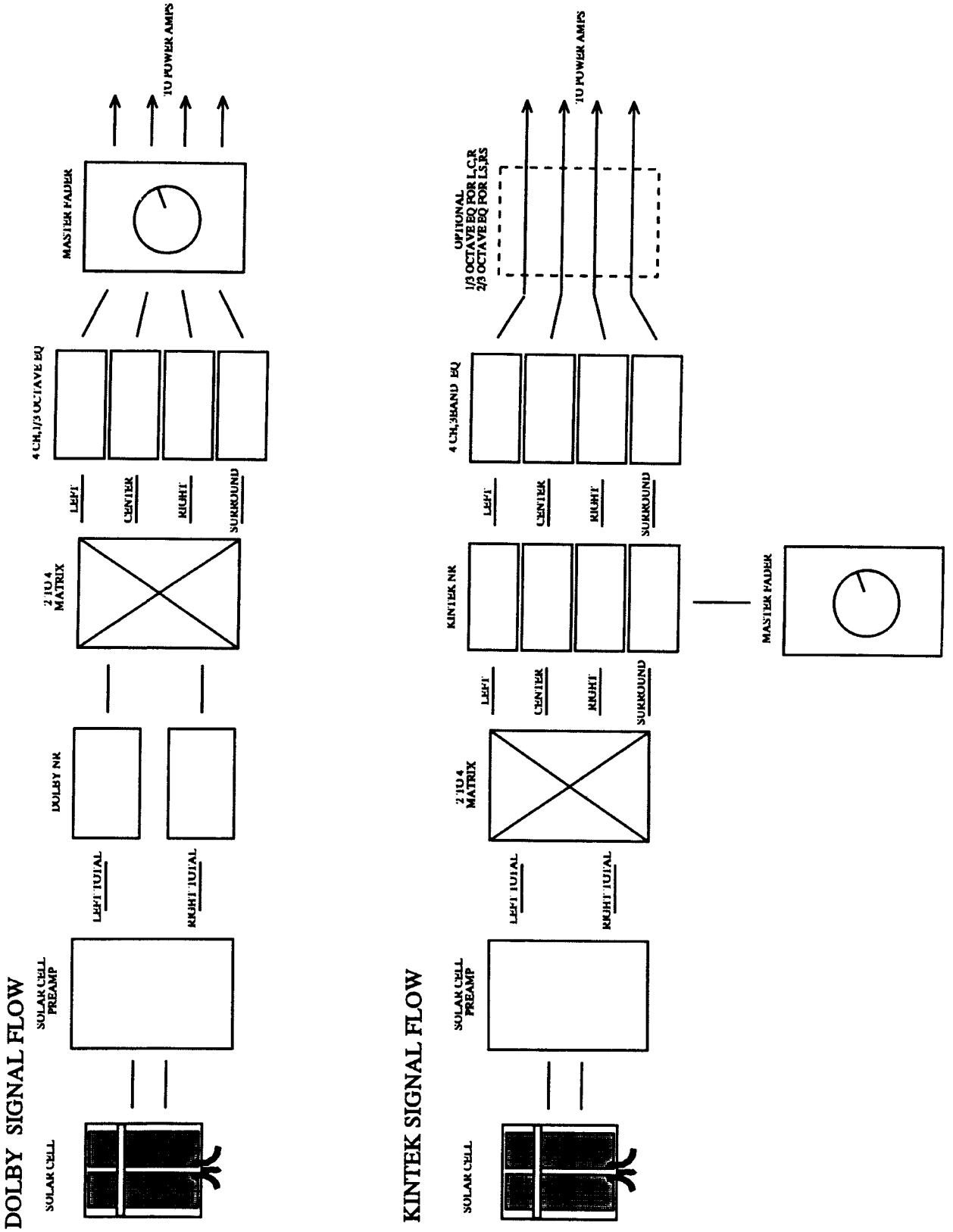
U.S. 3,681,618
3,714,462
4,404,427
Canada 1,153,701
Other patents pending

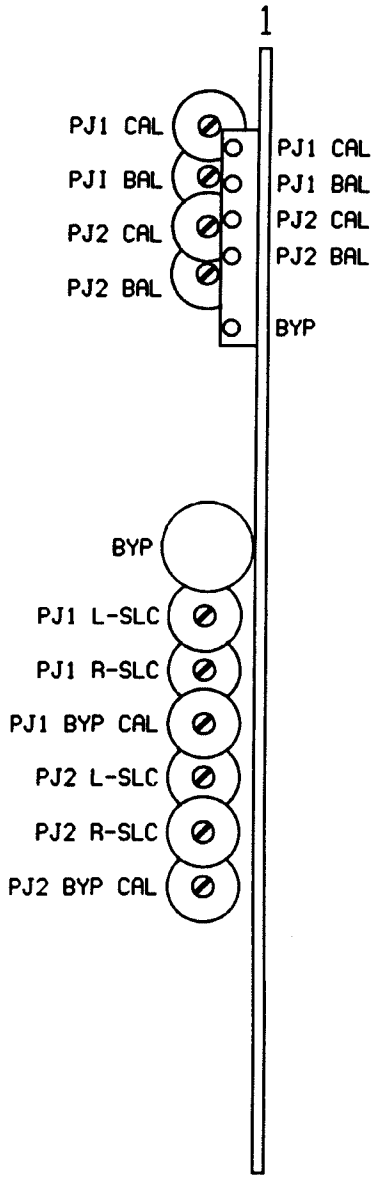
INSTALLATION/USER MANUAL NOTES

This manual has been produced with drawings that show a KT-800 SERIES processor equipped with all available options. The processor that is installed in your cinema may not include all available options.

The side view drawings have been simplified to show only the necessary user controls. All other controls on the cards are factory calibrated and should not be adjusted by the user.

SIGNAL FLOW COMPARISON





Drawing above shows Option A (Additional stereo solar cell preamp and 2 balanced aux inputs).

Card 1 Solar Cell Preamplifier

This card converts each Solar Cell output current to a voltage and amplifies it to a calibrated level

There are three types of control pots located at the front edge of the card: **CAL** (calibrate), **BAL** (balance), **SLC** (slit loss correction).

If your processor is equipped with Option A(additional solar cell preamp), you will find controls for both **PJ1** and **PJ2** (projector 1 and projector 2).

CAL

With the exciter lamp on and no film in the projector, adjust the **CAL** control for maximum **CAL** LED brightness. The preamp gain is now calibrated to produce an output level of -2dBv at the KINTEK Test Card when the Dolby Tone test film is rolling.

BAL

With the exciter lamp on and no film in the projector, adjust the **BAL** control for maximum **BAL** LED brightness. Left and right outputs of the solar cell preamp are now balanced to within +/- 1dB of each other.

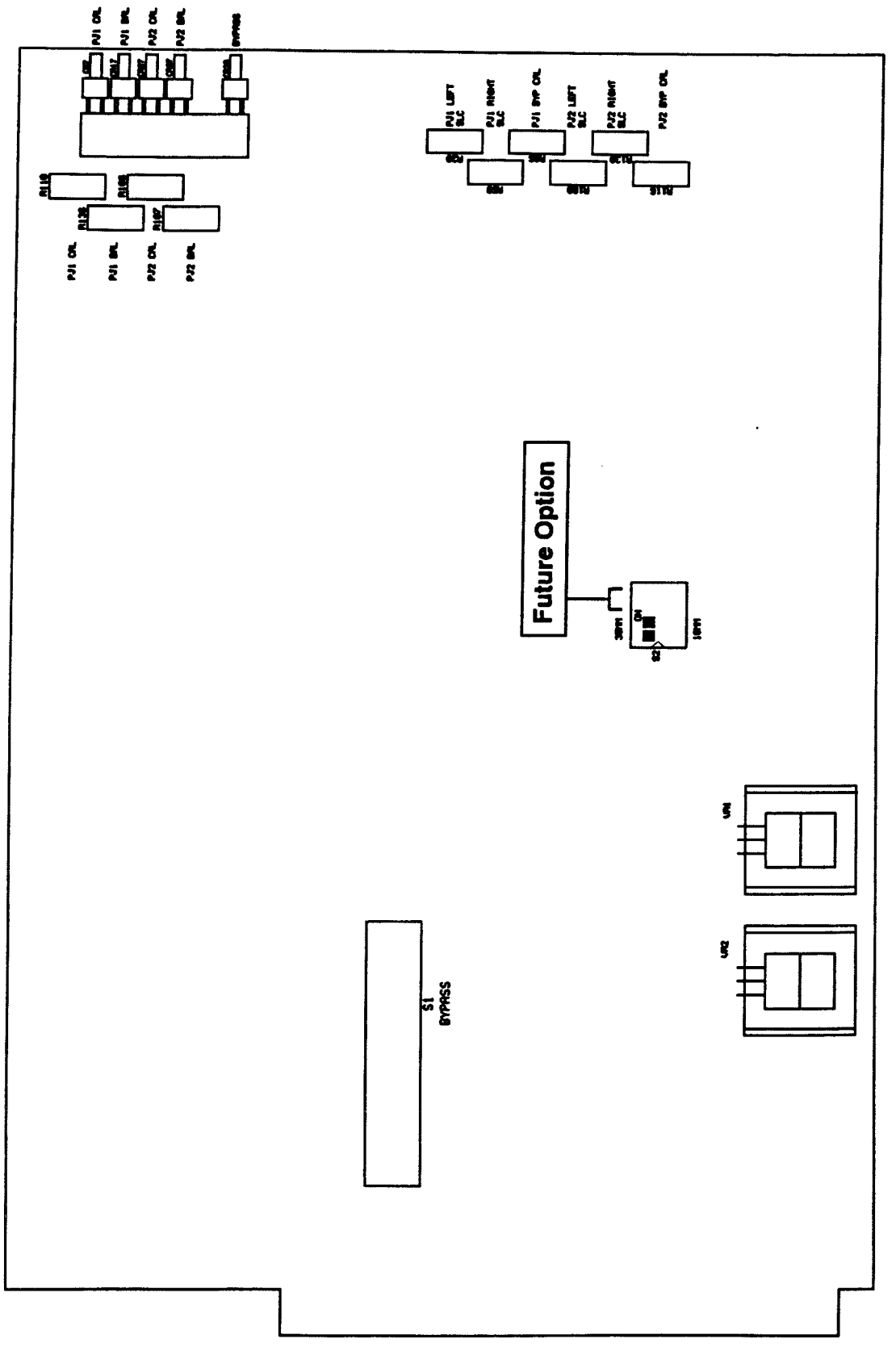
The **CAL** and **BAL** LEDs are useful indicators of A Chain alignment, refer to the A Chain Alignment section for more detail.

SLC

The Slit Loss Correction control is used to vary the frequency of a fixed amplitude boost so that a flat response to 12.5kHz or beyond can be achieved. Consult the A Chain Alignment section for more detail.

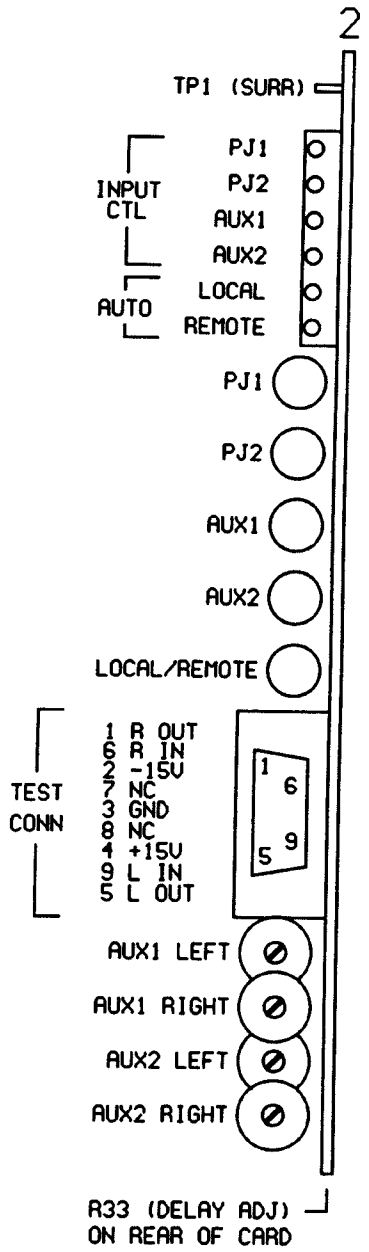
BYP

In the unlikely event of a solar cell preamp failure, the red bypass button substitutes a spare mono preamp to drive the center channel output. Use **BYP CAL** control to set bypass level with film program playing.



CARD 1
SOLAR CELL PREAMPLIFIER

A2.0



Drawing above shows Option A (Additional stereo solar cell preamp and 2 balanced aux inputs).

Card 2 - Input Selector/Test Connector

This card provides manual selection of input source. Depending on the options your KT-800 is equipped with, **PJ1** (projector 1), **PJ2** (projector 2), **AUX 1** or **AUX 2** may be selected by the push buttons. LEDs indicate selected Source.

TP1 - is a test point to verify the presence of the delayed surround signal. (0 dBv with KINTEK Test Card set to Surround).

When the **LOCAL / REMOTE** button is pushed, preamp/aux automation is disconnected and the **AUTO LOCAL** LED is lit. With the **LOCAL / REMOTE** button in the out position, preamp / aux automation is connected and the **AUTO REMOTE** LED is lit.

Test Connector

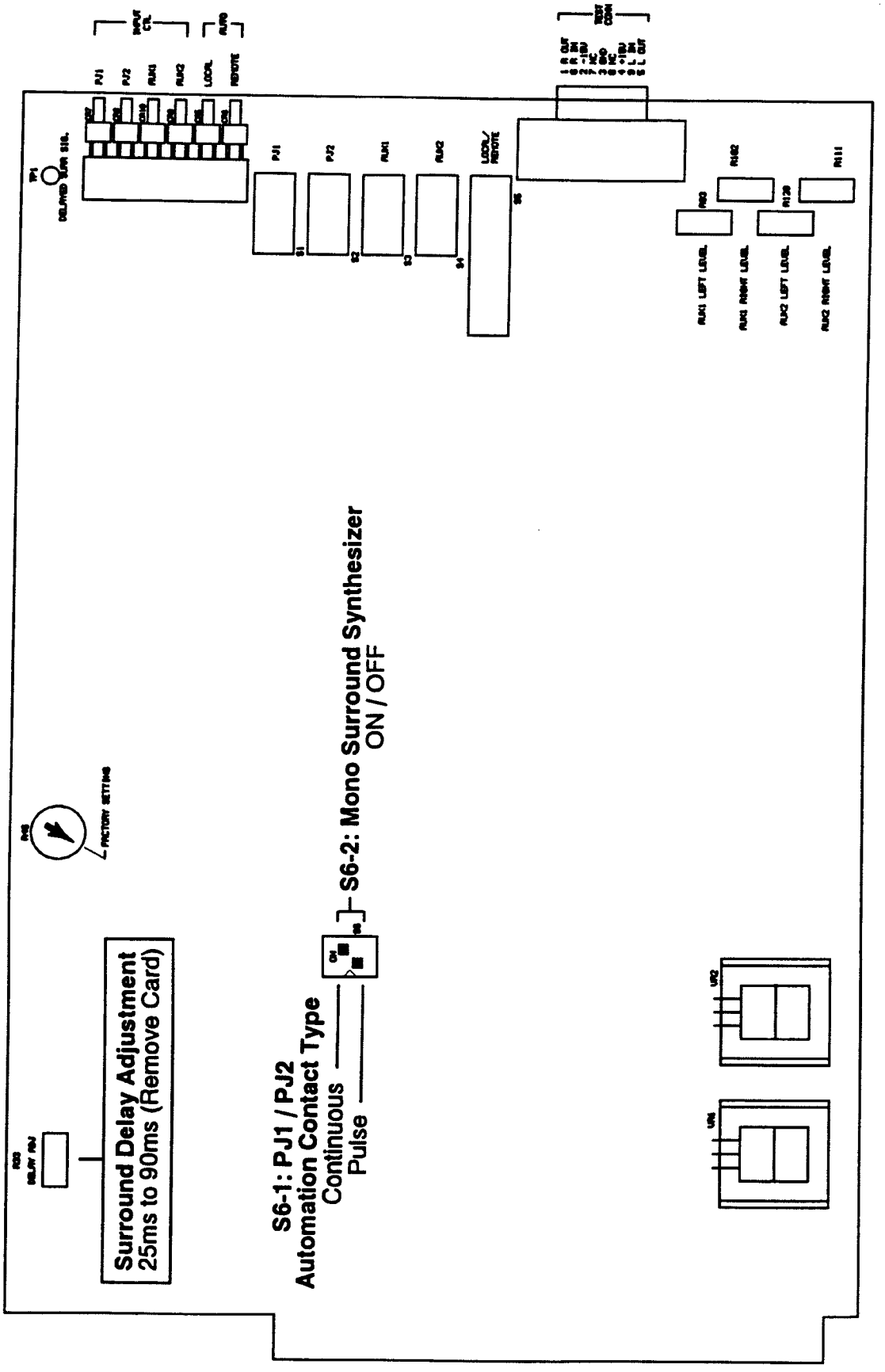
This connector accepts the KINTEK Test Card. The test card is used for A Chain and B Chain alignment. Refer to these sections and Appendix A, KINTEK Test Card for more detail.

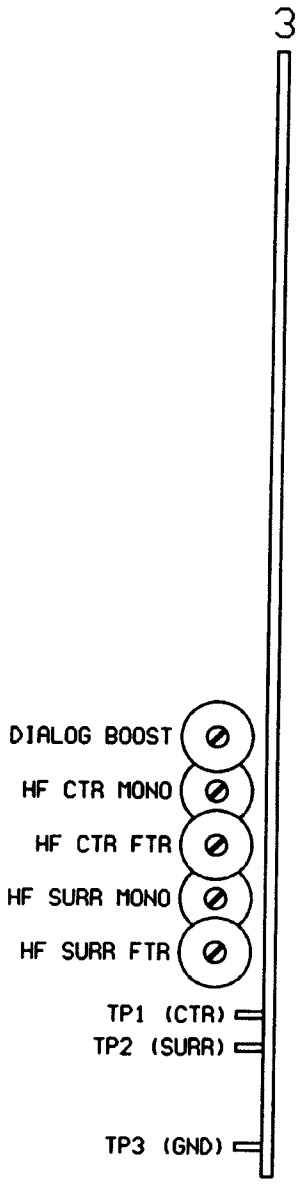
AUX1 LEFT, AUX1 RIGHT, AUX2 LEFT and **AUX2 RIGHT** set the operating level of the signal sources applied to the **AUX** Inputs. These inputs feed into the noise reduction and steering circuits. The level can be monitored at the KINTEK Test Card left and right test pins.

SURROUND DELAY

The surround delay adjustment is located at the rear of the card. (The card must be removed from the frame to access this control.) **TP1** is a test point to verify the presence of the delayed surround signal.

TP1 - 0 dBv with KINTEK Test Card set to Surround.


CARD 2
SURROUND DELAY AND FILM/AUX SIGNAL CONTROL
Surround Delay Adjustment
25ms to 90ms (Remove Card)
S6-1: PJ1 / PJ2
Automation Contact Type
Continuous
Pulse
S6-2: Mono Surround Synthesizer
ON / OFF



Card 3 - Center/Surround Noise Reduction

This card contains the proprietary KINTEK circuitry to perform accurate emulation of Dolby A and SR noise reduction and reduce optical print noise of mono format films.

The noise reduction circuitry is factory set and no user adjustments are required for proper operation.

The **DIALOG BOOST** control increases dialog levels by up to 6dB without increasing the maximum level of music and effects. Clockwise rotation increases the boost amount.

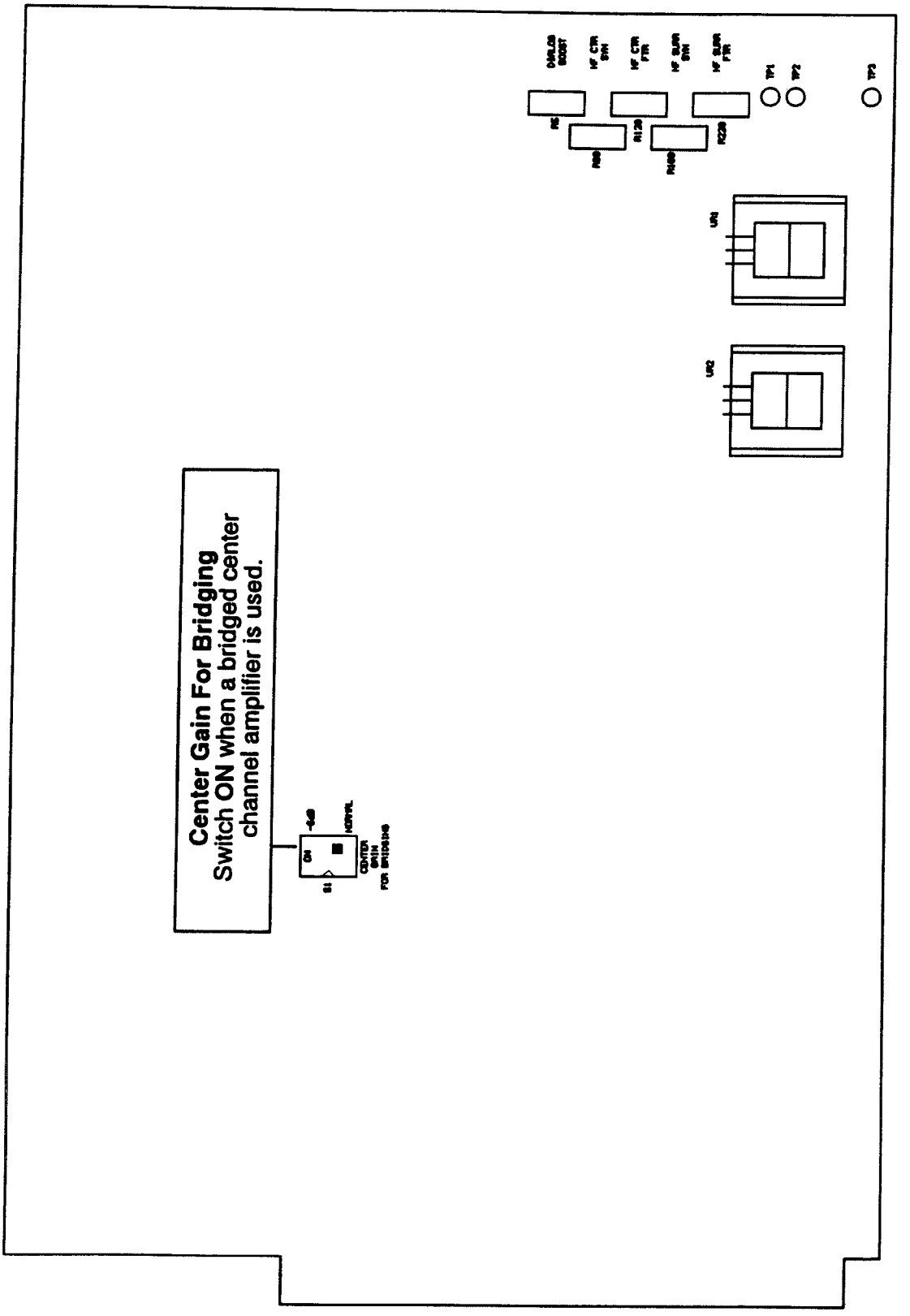
The **HF CTR MONO** (high frequency center mono) and **HF SURR MONO** (high frequency surround mono) are +/- 6dB shelving **EQ** controls for mono film sound adjustment. Corner frequencies are set at 2kHz.

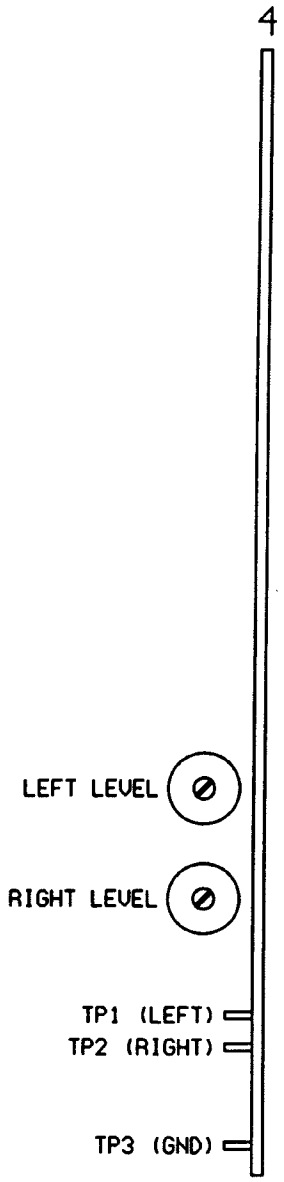
The **HF CTR FTR** and **HF SURR FTR** controls are intended for future sound formats. They are not used in this processor.

TEST POINT LEVEL CHART
(SET MASTER FADER TO 7)

TEST CARD SETTING	TEST POINT	CARD 5 TRIM	OUTPUT RANGE (dBv)
CENTER 	TP1	CTR SYN	- 50 TO - 21
	TP1	CTR SVA	- 30 TO - 2
	TP1	[2]CTR SR	- 31 TO - 4
	[1]TP2	SURR SYN	- 39 TO - 17
SURROUND 	TP2	SURR SVA	- 35 TO - 13
	TP2	[2]SURR SR	- 38 TO - 12

1. Center signal used to derive SURR SYN.
2. With SVA trim set at mid rotation.


Center Gain For Bridging
Switch ON when a bridged center channel amplifier is used.
CARD 3
CENTER/SURROUND NOISE REDUCTION



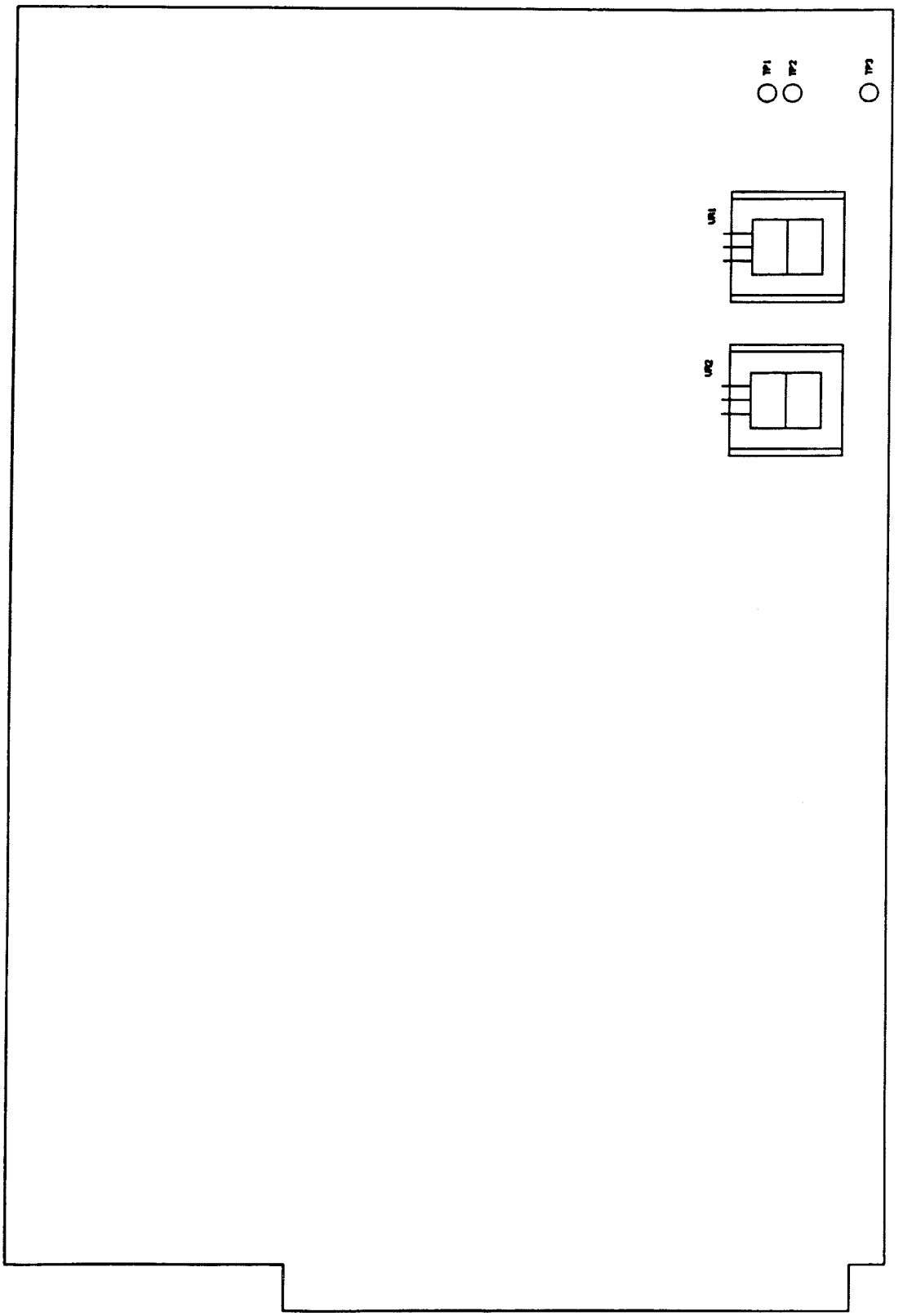
Card 4 - Left / Right Noise Reduction

This card contains the proprietary KINTEK circuitry to perform accurate emulation of Dolby A and SR noise reduction and reduce optical print noise of mono format films.

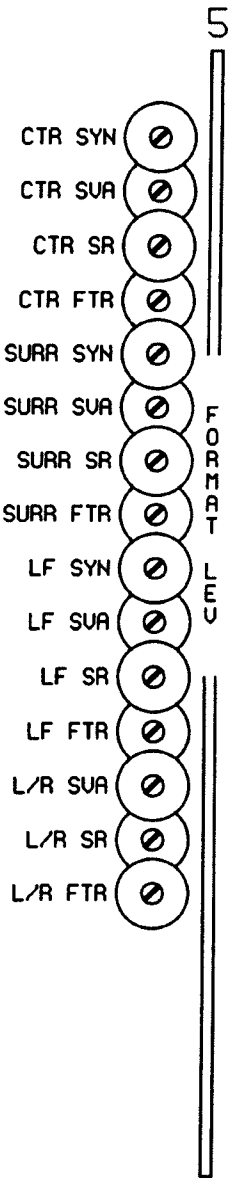
The noise reduction circuitry is factory set and no user adjustments are required for proper operation.

TEST POINT LEVEL CHART
(SET MASTER FADER TO 7)

TEST CARD SETTING	TEST POINT	CARD 5 TRIM	OUTPUT RANGE (dBv)
LEFT 	TP1	L / R SVA	- 34 TO - 7
	TP1	L / R SR	- 34 TO - 7
RIGHT 	TP2	L / R SVA	- 34 TO - 7
	TP2	L / R SR	- 34 TO - 7



CARD 4
LEFT/RIGHT NOISE REDUCTION



Card 5 - Format Level Trims

This card provides B chain level trims for all output channels in each Format.

CTR SYN	Center Synthesize (for mono films)
CTR SVA	Center Split Variable Area (Dolby Stereo)
CTR SR	Center Dolby SR
CTR FTR	Center Future
SURR SYN	Surround Synthesize (for mono films)
SURR SVA	Surround Split Variable Area
SURR SR	Surround Dolby SR
SURR FTR	Surround Future
LF SYN	Low Frequency Synthesize (for mono fims)
LF SVA	Low Frequency Split Variable Area
LF SR	Low Frequency Dolby SR
LF FTR	Low Frequency Future
L/R SVA	Left and Right Split Variable Area
L/R SR	Left and Right Dolby SR
L/R FTR	Left and Right Future

On Center / Surround processors L / R trim pots are inactive

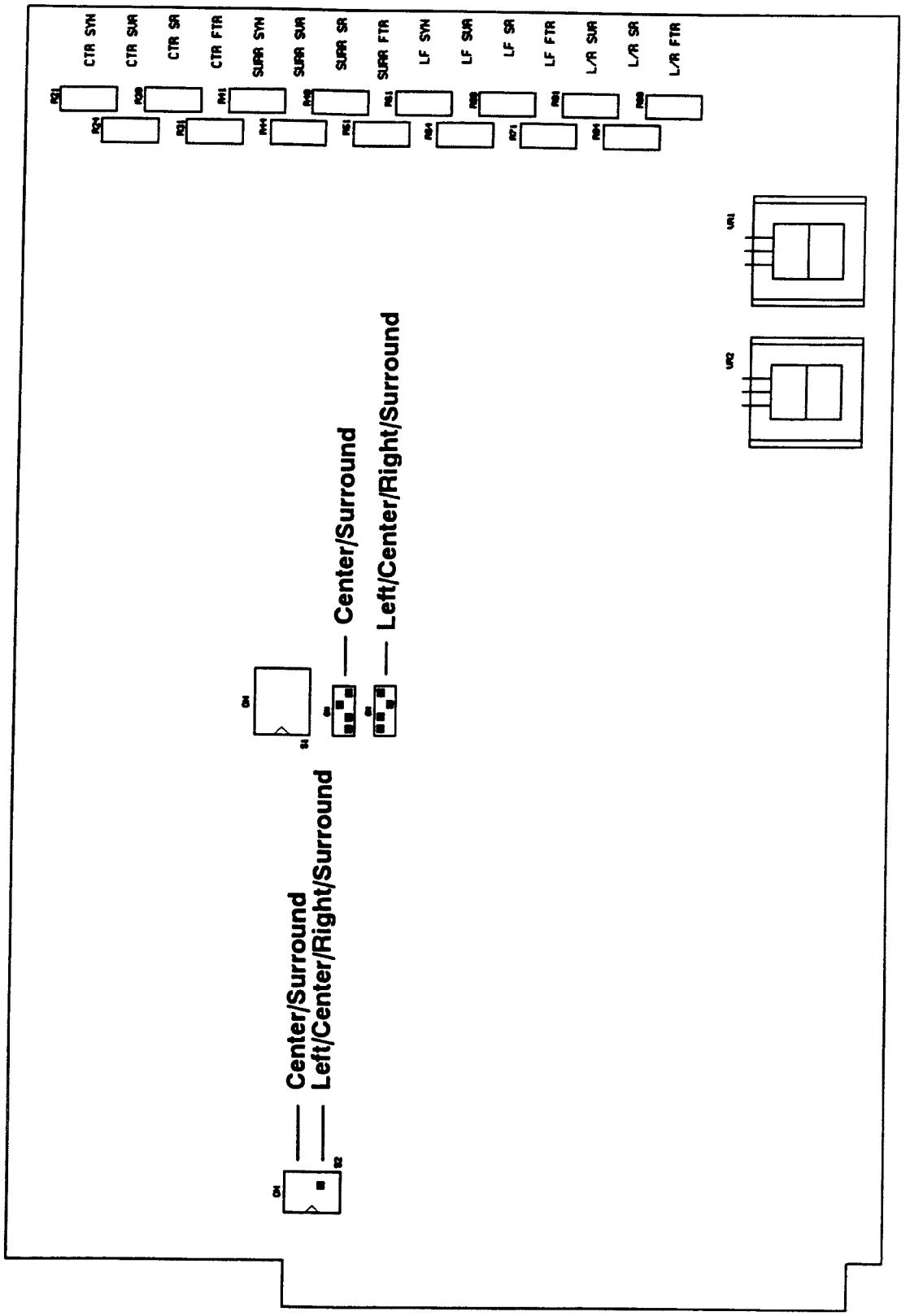
NOTE: The sound pressure levels in the chart below are general starting points. Audition the system with a familiar film and make changes in the level settings if necessary.

KT- 804 B CHAIN SPL CHART (dBc)
(SET MASTER FADER TO 8)

Format	Left	Center	Right	Surr	LF
SYN	73	73	73	67	70
SR	78	80	78	80	76
SVA	78	80	78	80	76
FTR	X	X	X	X	X

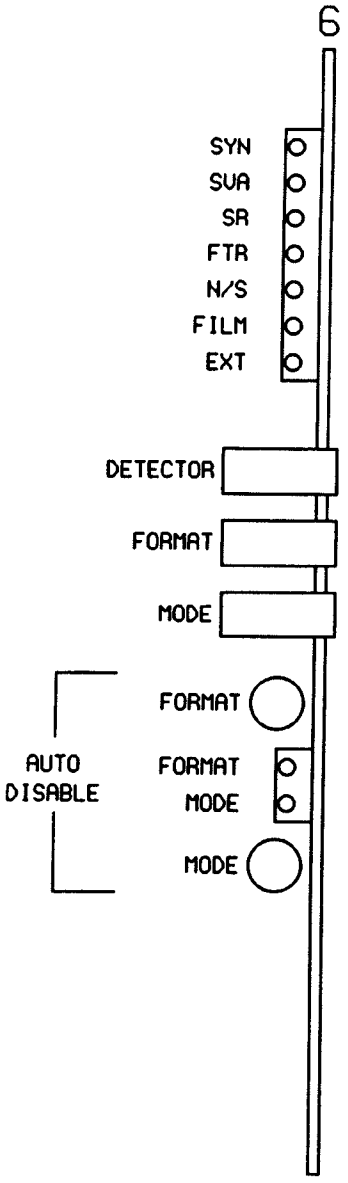
KT- 802 & KT- 803 B CHAIN SPL CHART (dBc)
(SET MASTER FADER TO 8)

Format	Left	Center	Right	Surr	LF
SYN		73		67	70
SR		80		80	76
SVA		80		80	76
FTR	X	X	X	X	X



CARD 5
MASTER FADER AND STEERING

A10.0



Drawing above shows Option B
(Six analog inputs for digital audio processors).

Card 6 - Format / Mode Selection

This card provides manual selection of **Format (SYN, SVA, SR)** and **MODE (Non sync, Film, External).** It is also used to program the stereo print Detector.

LEDs indicate Format and Mode selected manually or by automation.

Detector: Push to select **SVA** or **SR.** When a stereo print is detected,the processor will switch from **SYN** to the selected format. Pre -detect format selection is indicated by a dimmed format LED.

To disable detector, set S9-4, Card 6 to ON.(See Card 6 side view).

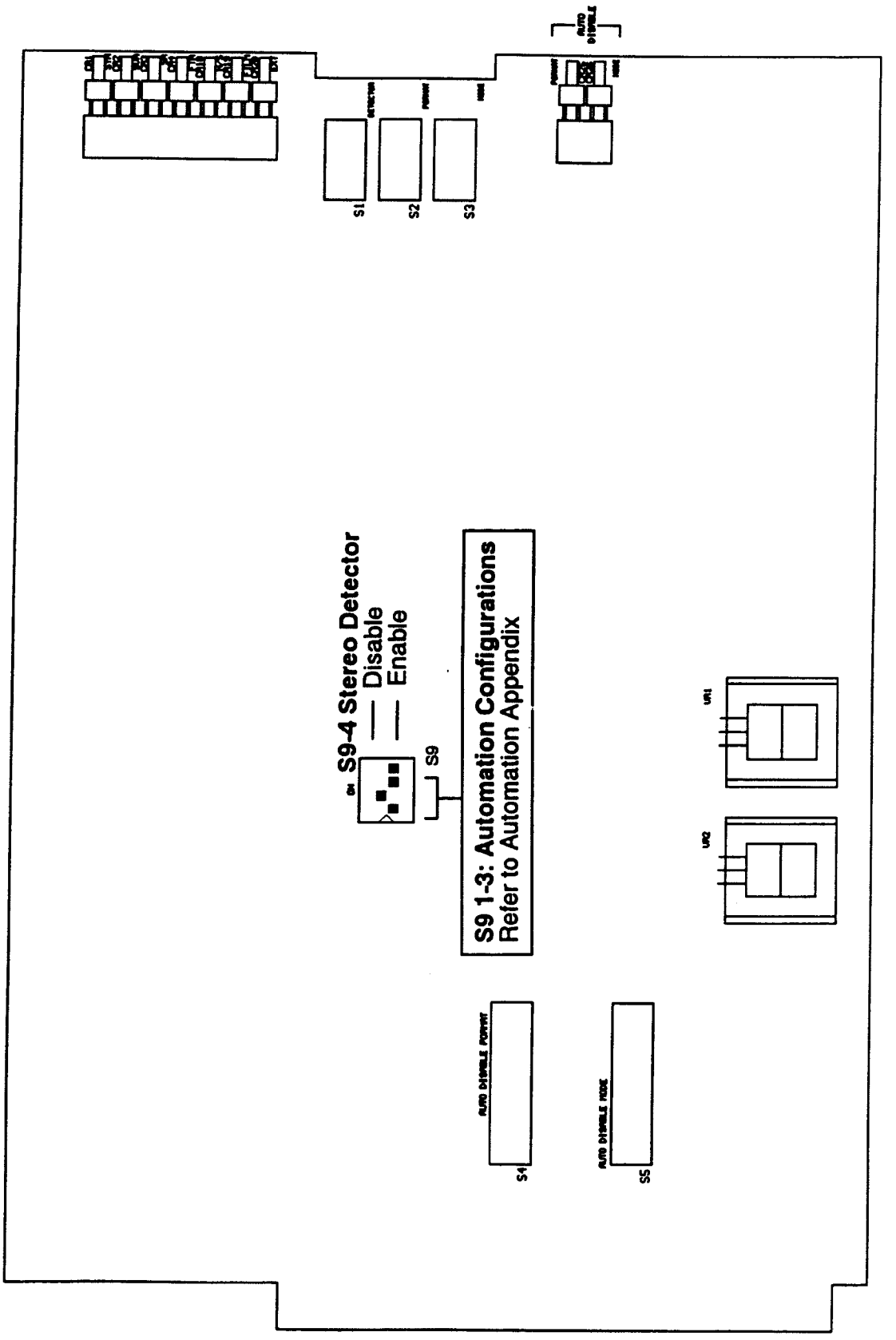
Format: Push to cycle through **SYN SVA** and **SR.** Format LEDs indicate selection.

Mode: Push to cycle through **Non sync Film** and **External.** Mode LEDs indicate selection.

(Auto disable format and mode) Push to disconnect automation system from processor.

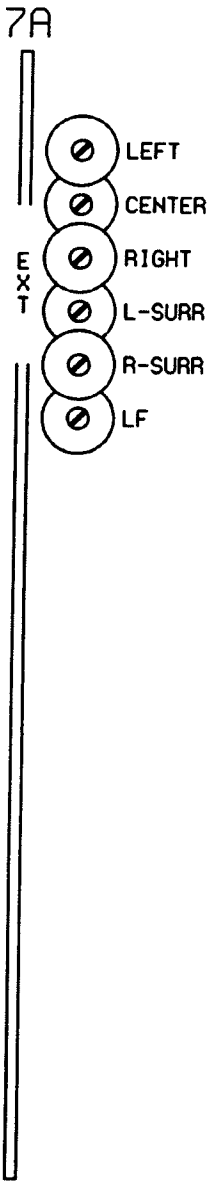
Format and Mode disconnect LEDs

Refer to Automation Appendix for more detail.


S1
S2
S3
S9-4 Stereo Detector
Disable
Enable
S9
S9 1-3: Automation Configurations
Refer to Automation Appendix
S4
S5
CARD 6
AUTOMATION

A12.0

Card 7A - External Input Level Controls, Future Film Sound



Drawing above shows Option B (Six analog inputs for digital audio processors).

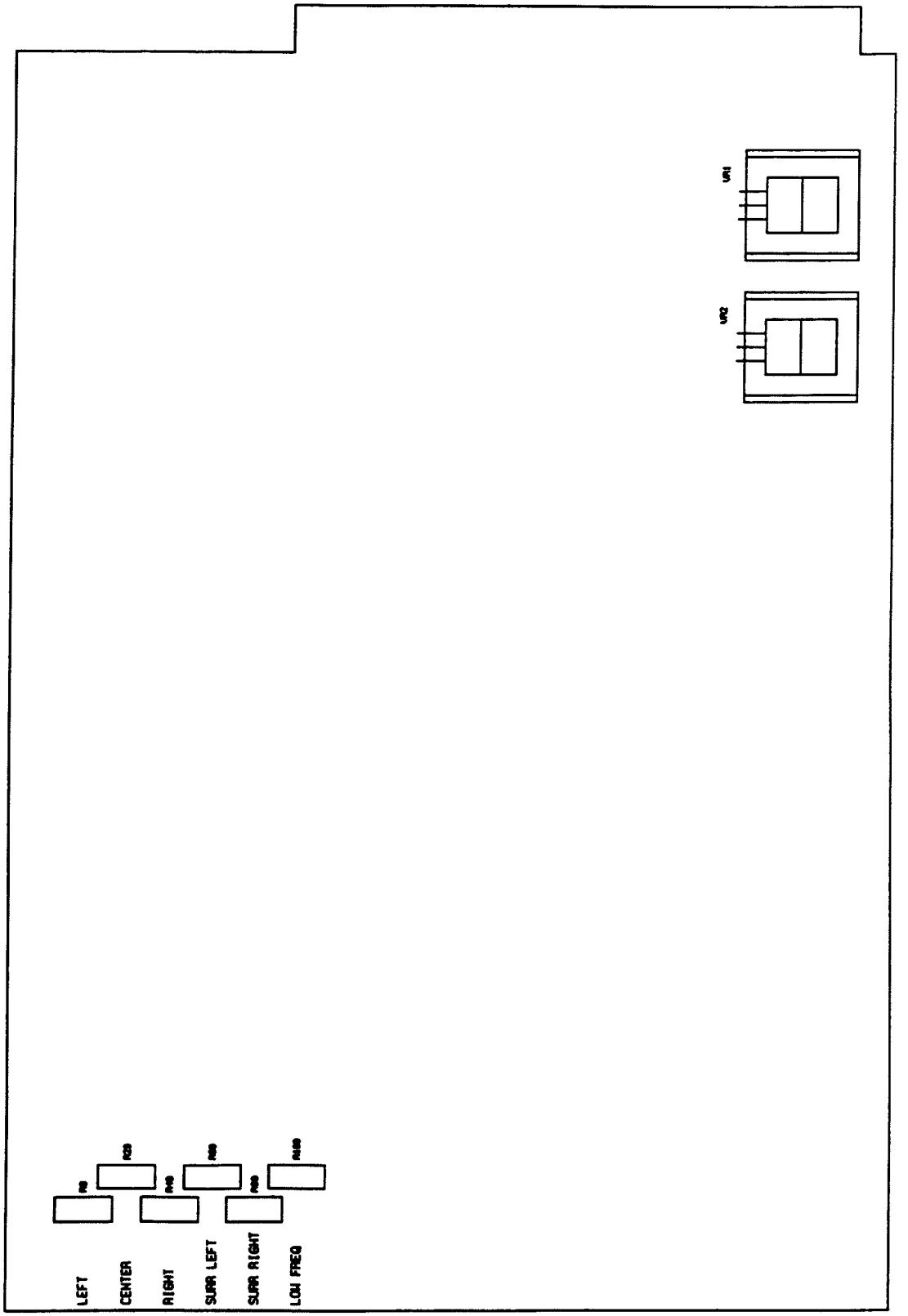
This card provides balanced inputs for external film sound sources (Digital).

Input impedance is 10K Ohms. Accepts -10dBv or +4dBm source levels. Level controls have +/- 20dB adjustment range.

The master fader controls the level of all external signals.

External inputs can be selected by an automation system or the **MODE** push button on Card 6.

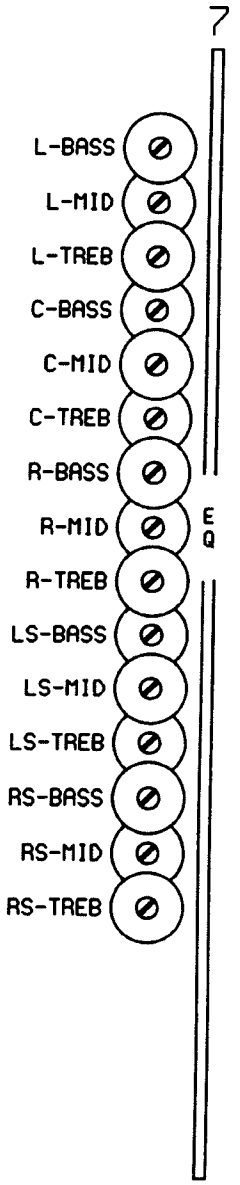
The External Input signals are sent to the equalizers on Card 7 and optional Cards 8 and 9B before appearing at the output connector.

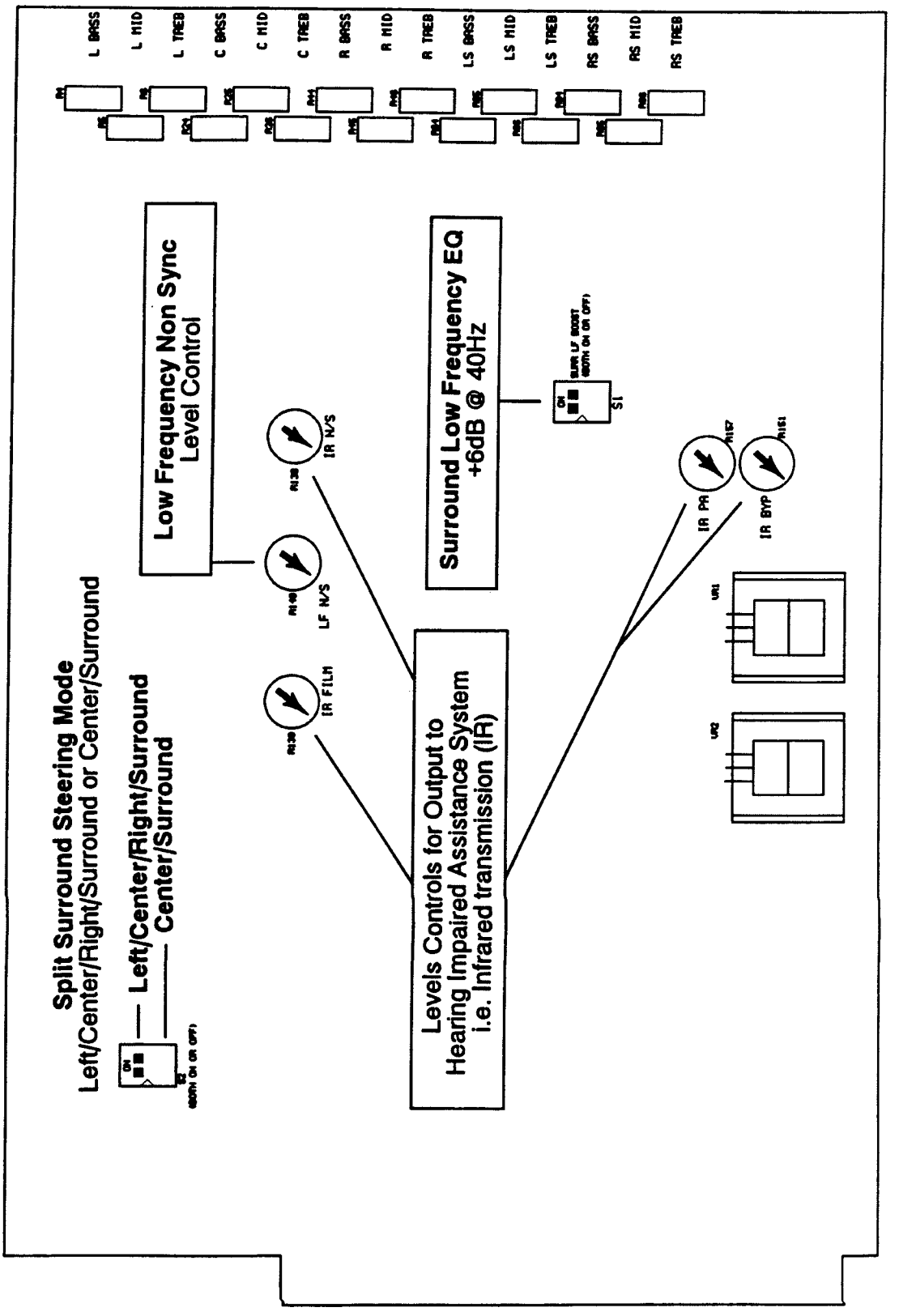

CARD 7A
EXTERNAL INPUTS
LEFT
CENTER
RIGHT
SURR LEFT
SURR RIGHT
LOW FREQ

A14.0

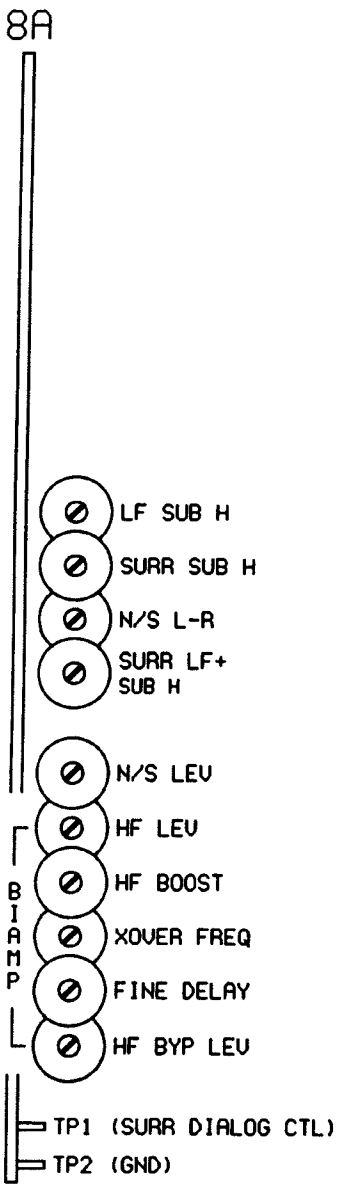
Card 7 - Three Band EQ

This card provides **BASS, MID** and **TREBLE** equalization for Left, Center, Right, Left Surround and Right Surround channels.





CARD 7
EQUALIZERS AND SURROUND STEERING



Drawing above shows board as used in KT-803.

Card 8A - Subharmonic, Synthesizer,Non-Sync Control, Biamp Crossover (used in KT-803)

This card synthesizes an extra octave of low frequency information, processes the stereo non sync program through a matrix for surround sound playback and splits the center channel output into high and low frequencies for biamplification.

Trim Pots:

LF SUB H - Controls the level of subharmonics sent to a subwoofer system

SURR SUB H - Controls the level of subharmonics sent to the surround loudspeaker system.

N/S L-R - Surround non sync level control

SURR LF + SUB H - Master level control for all surround low frequency enhancements.

N/S LEVEL - Master level control of non sync signal

Biamp Pots:

HF LEV - adjusts the level of the high frequency horn.

HF BOOST - adjustable EQ gain for constant directivity high frequency horns.

XOVER FREQ - varies the low frequency section by +/- 50hz.

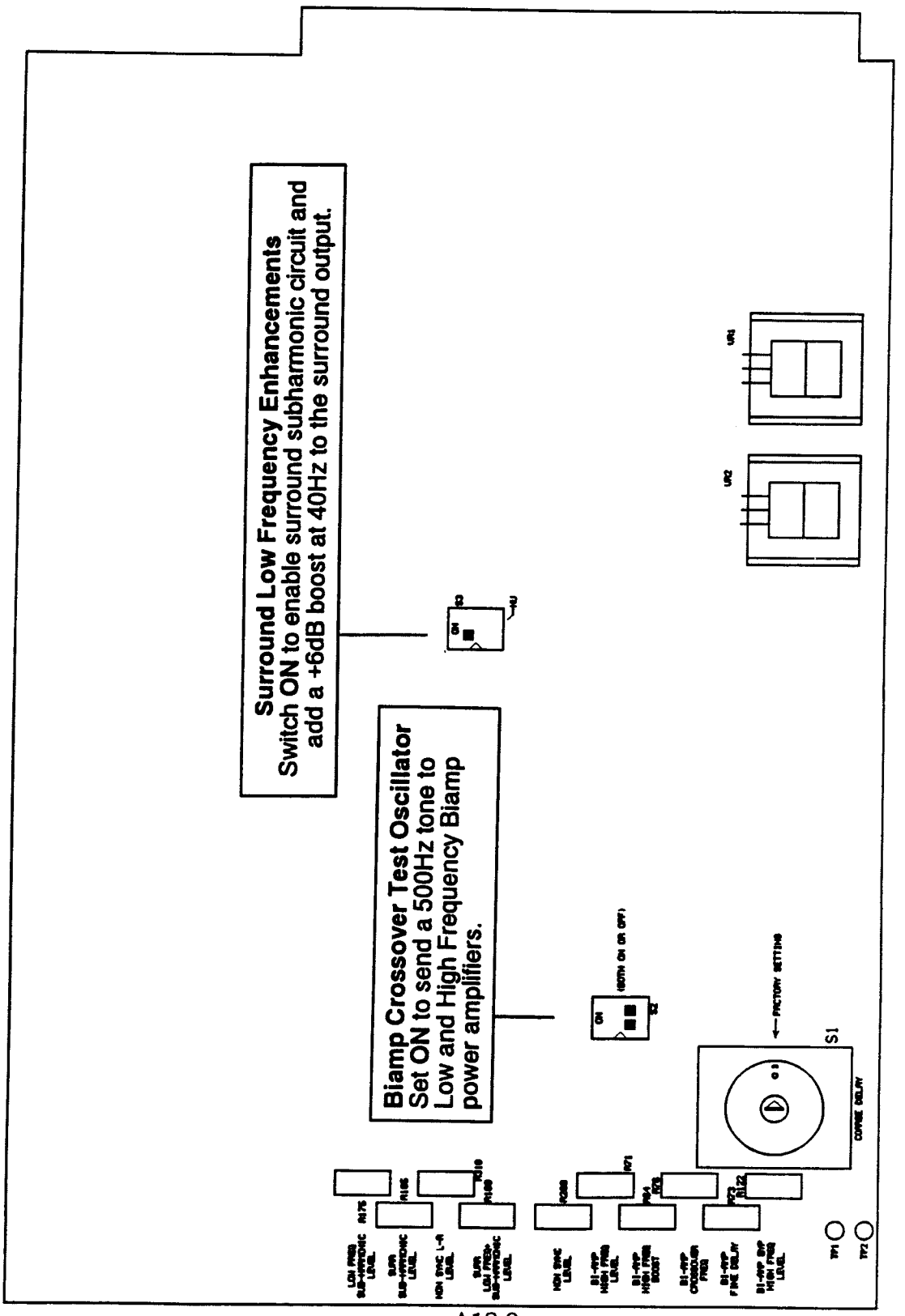
FINE DELAY - adjusts the time alignment of the low frequency section by +/- .15ms.

HF BYP LEV - adjusts the level of the high frequency horn when Card 1 **BYP** is pushed.

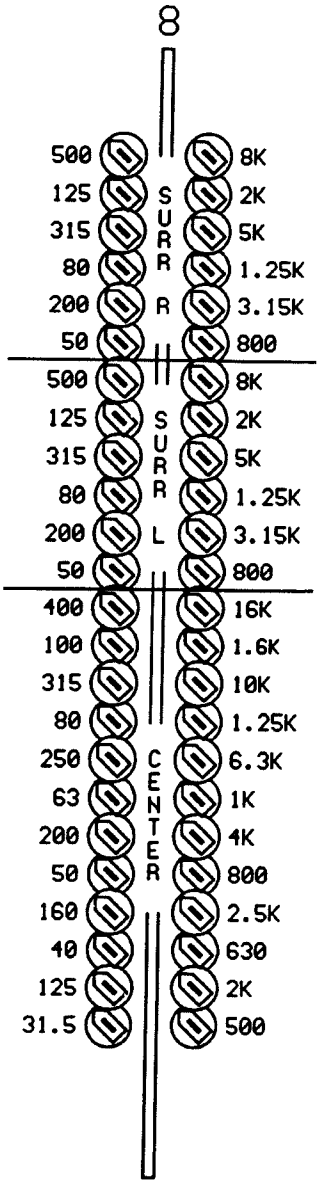
TP 1 LEVELS:

1. - 1.8 VDC with KINTEK Test Card set to Center.
2. - 4.0 VDC when switching rapidly between Center and Surround on KINTEK Test Card.
3. Recovery time: 4 seconds from - 4.0 V to - 1.8 V.

The Biamp crossover course delay (.3 ms /step) set switch can be reached by removing the card.



CARD 8A
LOW FREQ ENHANCEMENT - BIAMP



Card 8 - Optional Center / Surround EQ

This card provides separate Eq sections for Surround Right, Surround Left and Center channel.

Surround left and Surround right adjustment range is +/- 6dB with a Bandwidth of 2/3 Octave.Center channel adjustment range is +/- 6dB with a bandwidth of 1/3 Octave.

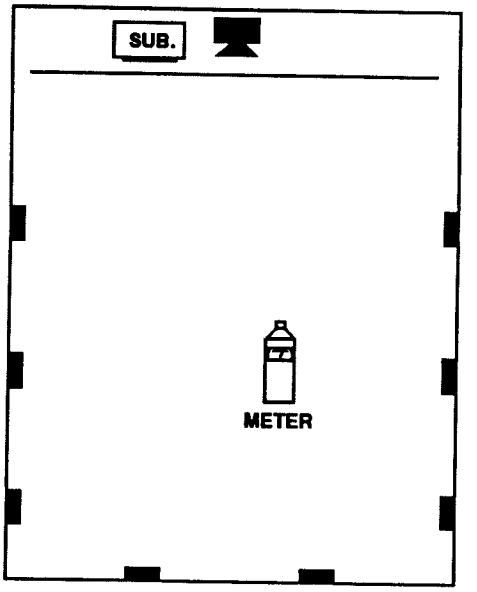
Equalization tips:

Begin a B Chain alignment with all EQ sections at flat (center of rotation). Play the pink noise source through one of the sound system channels.

Walk around the auditorium with a hand held 1/3 octave spectrum analyzer or have an assistant move about the auditorium with the analyzer mic on a long cable. Make notes about the frequency response of the channel you are measuring. Try to identify peaks or nulls in response that occur throughout the auditorium and ignore those that occur in a single specific location.

When you start the equalization process, the mic should be located at a position in the rear 1/3 of the auditorium that corresponds to the general trend noted earlier. Position the mic about 1 1/2 feet above seat back level.

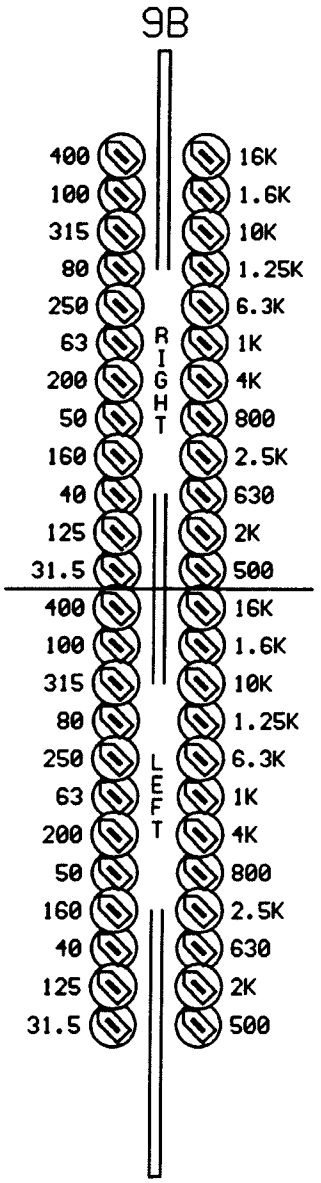
KINTEK CENTER / SURROUND SYSTEM

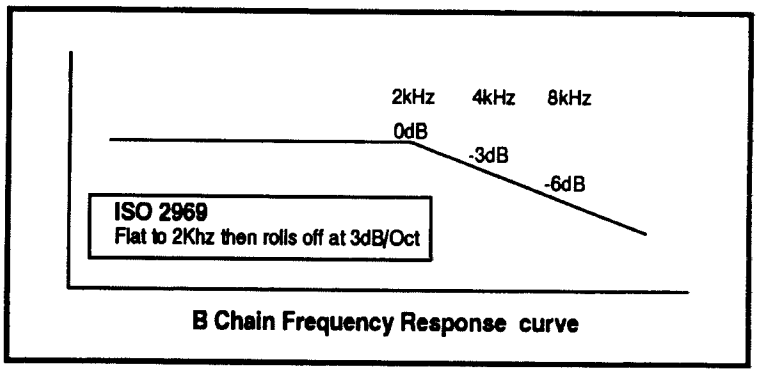


Card 9B - Optional Left / Right EQ

This card provides Right and Left channel EQ.

Adjustment range is +/- 6dB with a bandwith of 1/3 Octave.





B Chain Frequency Response curve

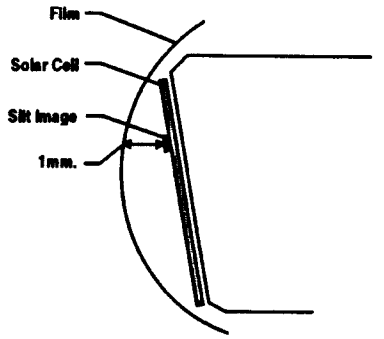
ALIGNMENT SUMMARY

The A Chain Alignment involves setting the position of the exciter lamp, slit optics, film path and solar cell to give the desired response at the preamp output.

The center of the evenly illuminated slit should line up with the center of the film soundtrack, then be projected onto the center of the solar cell.

Standardized test films are run through the projector and monitored at the output of the preamplifier. The Buzz track test film is used to set the slit to soundtrack position. The left/right test film is used to set the solar cell position for optimum balance and channel separation. The Pink Noise test film is used to adjust slit optics for optimum frequency response and azimuth. For stereo film playback KINTEK recomends the use of 1 mil or narrower slit optics.

ALIGNMENT PROCEDURE



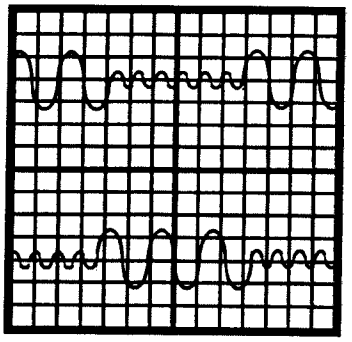
Side View of Solar Cell

In most projectors these adjustments will interact with one another, so it is necessary to recheck the adjustments made previously.

Clean and inspect the solar cell for cracks or breaks, a damaged cell will not calibrate. Put the solar cell bracket in place. Adjust the bracket until the surface of the cell is 1mm from the film plane surface. Left/right crosstalk will result if the cell is further away.

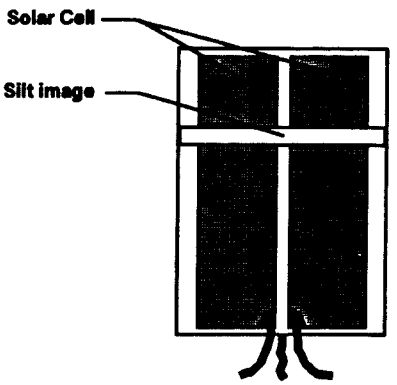
Set the exciter lamp voltage to 80% of the lamps rating. This will prolong usefulness and minimize filament sag.

Make sure the slit optics are clean and not fogged.



LEFT / RIGHT CROSSTALK

Install the slit optics and turn on the exciter lamp. Focus the filament and see that it is centered horizontally and vertically, adjust the exciter lamp mount if necessary. For an enlarged view of the filament remove solar cell bracket and hold a piece of white paper on the opposite side of the sound drum.



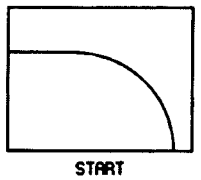
Front View of Solar Cell

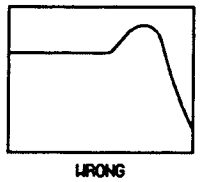
Check the image of the slit on the cell. The image should be a thin sharp line centered on, and nearly as wide as the cell. The image should be positioned at 3/4 of the height of the cell. Try to get the best compromise among all of these conditions and then tighten the cell bracket.

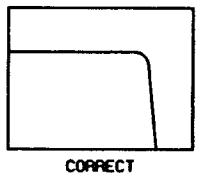
Set the **BAL** pot on Card 1 to the physical center of its rotation. Select film mode and adjust the **CAL** pot until the **CAL** LED is lit. Loosen the cell bracket and move the cell laterally until the **BAL** LED is lit, then re-tighten the cell bracket. Re-adjust the **BAL** pot to light the **BAL** LED if necessary. Try to achieve a balance indication with the pot near the center of its rotation. (Adjustment of exciter lamp position may be necessary).

Connect a dual trace scope to the left and right preamp test points on the KINTEK test card. Run the SMPTE Buzz Track and adjust the lateral guide roller until a minimum or no modulation is detected from either scope trace. If some modulation is observed, the amplitude of both sides should be equal. This assures that the slit is illuminating only the track area and is centered on the track.

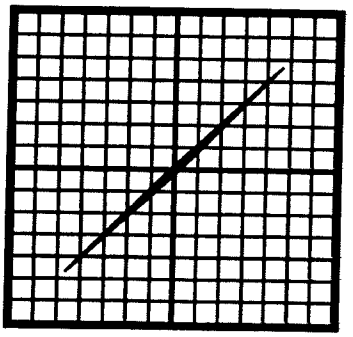
A CHAIN FREQ RESPONSE





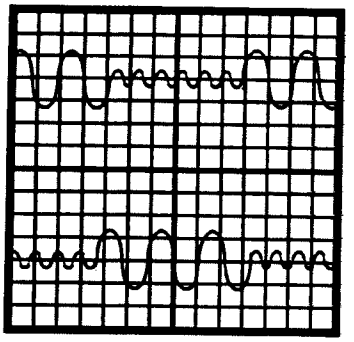


Connect the spectrum analyzer to one of the preamplifier output channels. Place a loop of pink noise film in the projector, be sure the emulsion is facing away from the screen as it runs through the projector. Loosen the clamp and adjust the slit lens position to obtain maximum high frequency output.



OPTIMUM

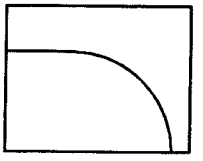
Set the scope to x/y mode and adjust the slit to obtain the best azimuth indication. Tighten the clamp only enough to hold the slit lens in place, over tightening will distort the lens elements.



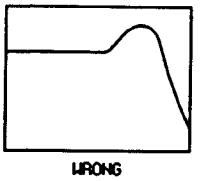
LEFT / RIGHT CROSSTALK

Remove the pink noise film and replace it with the left/right test film. Set the scope to dual trace mode and run the film. Loosen the cell bracket and adjust its lateral position for a minimum of cross talk, and for an equal amplitude of signal in both tracks. Check to see if the left and right cell are properly connected to their left and right preamplifiers by inserting a business card in front of the slit lens. The right channel should drop first.

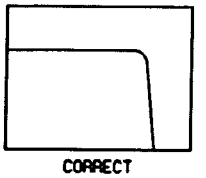
A CHAIN FREQ RESPONSE



START



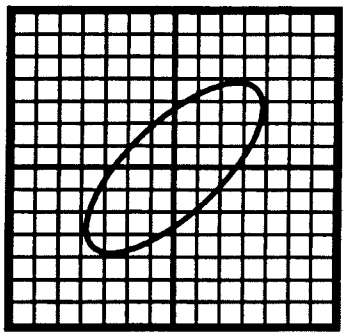
WRONG



CORRECT

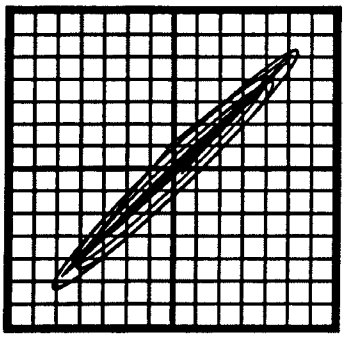
Remove the left/right film from the projector. With the slit illuminating the solar cell, re-trim the preamp **CAL** and **BAL.** The balance pot should be near the center of its rotation.

Lace up and roll the pink noise loop. Adjust the slit loss **L-SLC** pot for the most flat line possible to 12.5kHz. Repeat for the second channel.

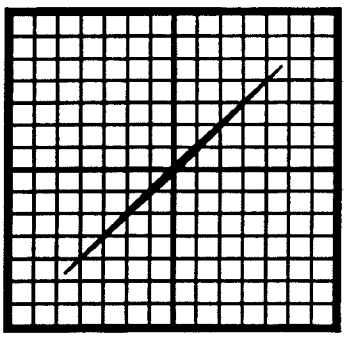


NEEDS ADJUSTMENT

Take care not to introduce high frequency phase shift between left and right channels while adjusting the second channel **R-SLC** pot.



ACCEPTABLE

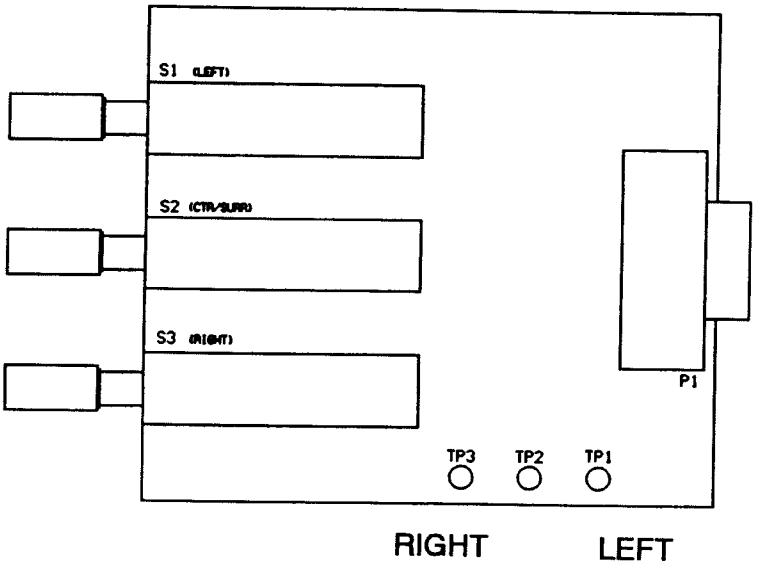


OPTIMUM

The scope x/y trace should still show a narrow azimuth indication. If the pot position required for each side is very different, inspect the slit lens for oil or dirt. A defective exciter lamp could also cause left / right high frequency phase shift.

This completes the A chain adjustment procedure.

KINTEK Test Card



The KINTEK Test Card contains a pink noise source, channel select switches and Left Total / Right Total test points.

The pink noise source is used to set the level and equalization of each channel in a KINTEK sound system. For quick reference use the B Chain SPL Chart on the following page that corresponds to the processor model you are aligning.

Plug the test card into the sub D connector located in the lower front section of Card 2. With all three buttons IN, the noise source is disconnected from the matrix input. The outputs of the solar cell preamplifier can be monitored from the test points for setting A Chain Alignment.

B Chain Alignment is accomplished by sending pink noise into the processor decoding matrix with the test card. The chart below illustrates the switch combinations to generate pink noise in each channel. The B Chain SPL Charts below offer quick reference for proper level setting. Use the **Format Level Trims** on **Card 5** to set output levels of each individual channel. Mute all other channels while setting each channel. When setting **SYN** levels, use center channel pink noise only. If you are aligning a **KT-804**, separate L/R level trims are located on **Card 4.** If you are aligning a **KT-803,** refer to the **Biamp/ Crossover Alignment Procedure** section on page C4.0 prior to setting SPL Levels.

	S1	S2	S3	OUTPUT (dBv) TP1	TP3
OFF	IN	IN	IN	-	-
CENTER	OUT	IN	OUT	-12	-12
LEFT	IN	IN	OUT	-10	-
RIGHT	OUT	IN	IN	-	-10
SURROUND	OUT	OUT	OUT	-14	-14
SURR LEFT	IN	OUT	OUT	-14	-22
SURR RIGHT	OUT	OUT	IN	-22	-14

KT- 804 B CHAIN SPL CHART (dBc)
(SET MASTER FADER TO 8)

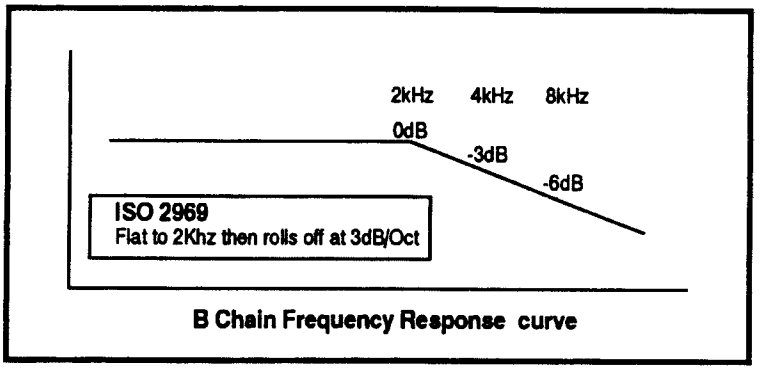
Format	Left	Center	Right	Surr	LF
SYN	73	73	73	67	70
SR	78	80	78	80	76
SVA	78	80	78	80	76
FTR	X	X	X	X	X

KT- 802 & KT- 803 B CHAIN SPL CHART (dBc)
(SET MASTER FADER TO 8)

Format	Left	Center	Right	Surr	LF
SYN		73		67	70
SR		80		80	76
SVA		80		80	76
FTR	X	X	X	X	X

To set EQ use the three band equalizers on **Card 7.** Position the microphone of a 1/3 octave spectrum analyzer in the rear 1/3 of the auditorium. Set the center channel EQ to correspond with the ISO 2969 Curve illustrated below. Position left & right channel trims to physically match the the center channel trims. Move the mic to several other locations in the auditorium and verify that the EQ you have set dose not cause major boosts or cuts in frequency response throughout the room.

If equipped with **Options C and/or D 1/3 Octave EQ Cards** refer to the **Card Descriptions** for further information.



B Chain Frequency Response curve

Set the Surround Delay located on the top rear section of **Card 2.** Remove card from frame to access. The delay is adjustable from 25ms at full CCW through 60ms at mid rotation to 90ms at full CW. The delay setting is determined by measuring the distance in feet from the screen to a seat in the last row close to a surround speaker. From this seat, measure the distance to the nearby surround speaker and subtract this number from the first measurement. Set the delay in milliseconds to equal this number.

Set the Bypass Level located on **Card 1.** This can only be set with film. Use a pink noise loop with the master fader set on 6.5 or a stereo feature set at a comfortable level to match **BYP CAL** level when red **BYP** button is pressed IN.

Set Non-Sync Levels located on **Card 8A.** Adjust **N/S LEV** and **N/S L-R** for desired balance between front and surround. A Low Frequency Non-Sync level control **LF N/S** is located on **Card 7.** This completes **B Chain Alignment.**

KT-803 BYAMP/CROSSOVER ALIGNMENT PROCEDURE

The trim pots for the crossover are located on **Card 8A.** Time delay must be set first.

Place a sound level meter on a line perpendicular to the faces of the speakers. It should be equidistant from the high frequency horn and the nearest low frequency driver. Make sure the **XOVER FREQ** adjust is set in mid position. The **COARSE DELAY** switch is factory set at its mid point. Try this setting first. Next turn on the **Test Oscillator** located on **Card 8A.** Turn on the low frequency amp and measure the SPL. Turn off the low frequency amp.

Turn on the high frequency amp and set the **HF LEV** trim to produce the same SPL as the low frequency loudspeaker. Reverse the polarity of the high frequency driver and turn on both amplifiers. Adjust the **FINE DELAY** control until a SPL null is observed. If a null cannot be set, change the coarse delay setting. The depth of the null will be affected by room reflections and high frequency driver level. If you are unsuccessful at obtaining a null, change the **COARSE DELAY** located on the side of **Card 8A.**

Return the high frequency driver to normal polarity and turn off the **Test Oscillator.** With the KINTEK test card generating center channel pink noise, adjust **HF LEV** and **HF BOOST** for desired frequency response on a 1/3 octave spectrum analyzer. Use the **XOVER FREQ** to adjust for smoothest response through the 500 Hz crossover region. You may now set output levels and EQ following the SPL chart for the KT-803 and the ISO 2969 Curve. When setting **BYP** level for emergency operation also set **HF BYP LEV** on **Card 8** to most closely match the high frequency level of the emergency passive crossover to the biamp crossover.

The KT-800 Series processors have been designed to work with single or multiple contact automation systems.

Automation system connections are made at **TB9** and **TB7** on the backplane.(See FIG.1)

Processors are shipped from the factory with internal switches set for **PULSE** type automation systems. **CONSTANT** contact type automation may be used if internal switches are changed on Card 2 and Card 6. (See FIG.2 and 3)

FORMAT and MODE Selection

Kintek automation circuitry responds to a contact closure to **GROUND**. For example, **FILM** mode may be selected by connecting the **FILM** terminal on **TB9** to **GROUND**. If the automation system you are using provides a large number of contacts, you should make connections at **TB7** and **TB9** for each **FORMAT** and **MODE** desired.

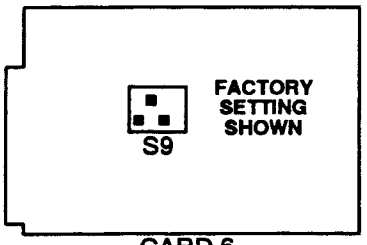
If your automation system does not have contacts for each **FORMAT** and **MODE** required, the KT-800 can provide automation assistance. For example, DIP switch **S9 - 2** on Card 6 is set at the factory to allow any format command to select film mode. This eliminates the need to provide a separate contact for **MODE** selection.

If your automation system does not have contacts for each **FORMAT** desired, you may use the **FILM** mode connection and allow the **STEREO PRINT DETECTOR** to put the system into the proper **FORMAT** for the picture showing. (The correct **FORMAT** must be selected before the show by using the **DETECTOR SELECT** push button.)

Alternately, the **XFER** (TRANSFER) connection may be used to instantaneously put the KT-800 into the FORMAT indicated by the **DETECTOR SELECT** LED. The stereo print detector is bypassed. Use your automation system **FILM MODE** contact to activate the **XFER** circuit.

NOTE: THE STEREO PRINT DETECTOR IS SHIPPED FROM THE FACTORY IN THE DISABLED STATE (S9-4 ON)

FIG.1



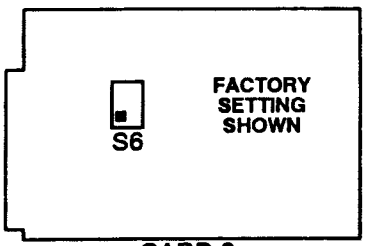
S9:

1 ON: STEADY STATE NS/ FILM GND NS EXT CMD FOR NON-SYNC. (FACTORY SETTING - OFF)

2 ON: ANY EXTERNAL FORMAT COMMAND SELECTS FILM MODE. (FACTORY SETTING - ON)

3 ON: NON-SYNC COMMAND SELECTS MONO FORMAT WHEN SWITCHING FROM FILM TO NON-SYNC. (FACTORY SETTING - OFF)

FIG. 2



S6:

1 ON: STEADY STATE PJ1/PJ2 FLOAT PJ2 EXT CMD FOR PJ1 GROUND PJ2 EXT CMD FOR PJ2 (FACTORY SETTING - OFF)

FIG. 3

Projector / Aux Selector

The KT-800 is set at the factory (**S6-1** Card 2 OFF) to respond to pulses that correspond to each projector and aux signal source. Your automation system must send a pulse for each projector or aux signal source required.

Alternately, a single **CONSTANT** contact may be used to toggle back and forth between **PROJ 1** and **PROJ 2.** To do this, **S6-1** on Card 2 must be closed (ON). Make your projector connection at **TB7 PJ2.**

When **PJ2** terminal is open, **PJ1** is selected. When **PJ2** terminal is closed, PJ2 is selected.

AUX1 and **AUX2** may be selected by a constant contact closure.

NO FILM SOUND:	Make sure **FILM** mode has been selected, not Non Sync , EXT, or PA CMD . Check **Exciter Lamp** to be on.
DISTORTED SOUND:	Clean and inspect **Solar Cell.** With no film in the projector, make sure **BAL** and **CAL** LEDs are lit. Verify correct **A Chain Alignment.**
SOUND LEVEL NOT CORRECT FOR ALL FORMATS:	Re-adjust **level trim controls** for one or more formats. Make sure a correct **Format** has been chosen for the film now showing.
DULL OR SHRILL DIALOG:	Check **B Chain** frequency response.
DIALOG IN SURROUNDS:	Check **A Chain azimuth** alignment. **BAL** LED on Card 1 should be lit with exciter lamp on and no film in the projector. Make sure **surround level** and **surround delay** are set according to **B Chain Alignment** procedure.
DIALOG NOT CLEAR:	Verify proper operation of **center channel amp** and **Loudspeaker**,particularly the **HF Horn** and **HF Amplifier** Check **A Chain Alignment.** Check **B Chain Alignment.** Make sure correct **Format** is selected.
DIALOG NOT CENTERED:	Check **center channel amp** and **Loudspeaker.** Check **Left, Center** and **Right output levels.** Check **BAL LED** on Card 1 to be lit.
SOUND LEVEL JUMPS:	Select correct **Format** for film.
HUM HEARD IN QUIET SCENES:	Turn off **ambient light** sources that may reach solar cell.
LOUD SOUNDS DISTORTED:	Clean and inspect Solar Cell.
DIALOG QUIET/MUSIC LOUD:	Select correct **Format** for film.
NON SYNC LEVEL INCORRECT:	Re-adjust **Non Sync level trims.**

LACK OF SEPARATION :

Verify correct **A Chain Alignment,** (20 dB channel separation, no modulation from Buzz Track test film, good azimuth and focus adjustments.) then perform the following audio steering test.

1. Set Master Fader to 7 and select **SVA** Format.

2. Install the Kintek Test Card at the TEST CONN on Card 2.

3. Using the **trim controls** on Card 5, set **LEFT, CENTER,** and **RIGHT output levels** to -24dBv at TB5 on the backplane. (Make sure the Test Card is set for the output channel you are measuring.)

4. Select **SURROUND** (all buttons out) on the Kintek Test Card. Set **SURR LEFT** and **SURR RIGHT output levels** to -22dBv at TB5 on the backplane.

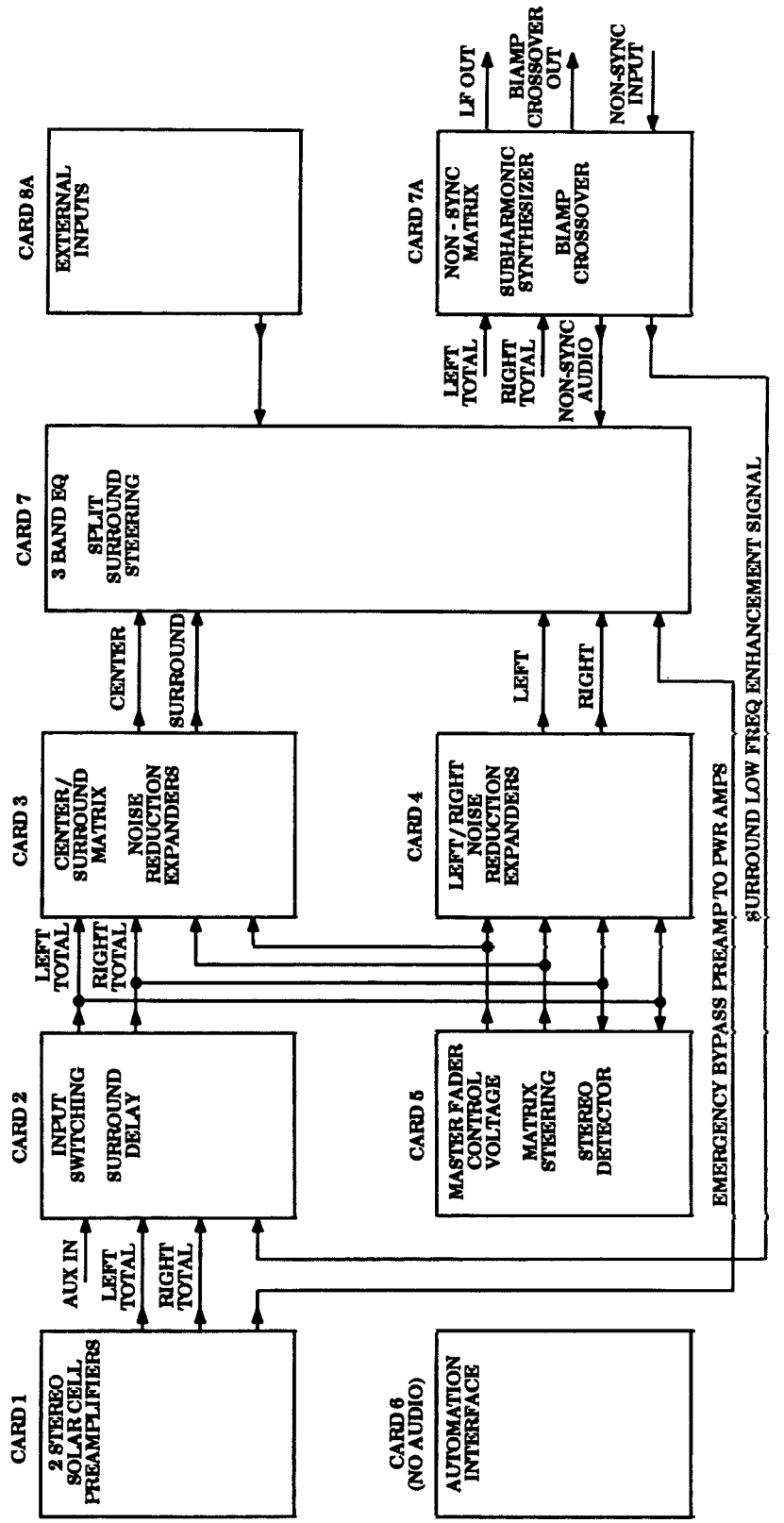
5. Use the chart below to verify steering: (All readings are in dBv, 1 volt RMS = 0dBv.)

TB5 OUTPUT READING:
(+ / - 2dB)

LEFT	-24	-44	-75	-40	-40
CENTER	-40	-24	-40	-56	-56
RIGHT	-75	-44	-24	-40	-40
SURROUND	-52	-75	-52	-22	-22
SURR LEFT	-30	-46	-44	-28	-38
SURR RIGHT	-44	-46	-30	-38	-28

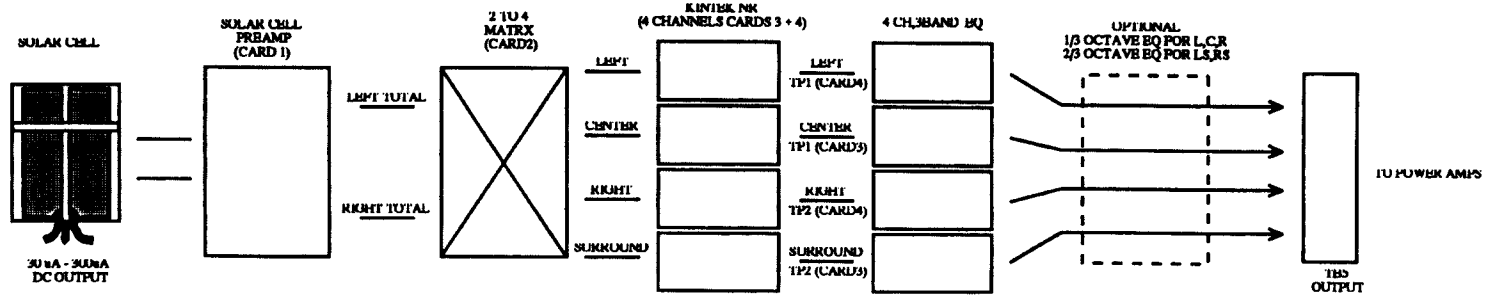
If significant deviations from these levels are observed, contact your authorized service center and report your findings.

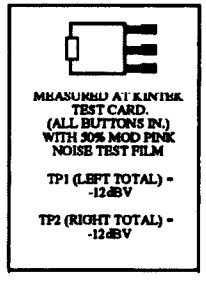
KT - 804 SIGNAL FLOW

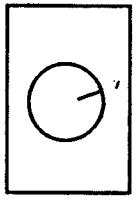


KT-804 LEVEL DIAGRAM

KINTEK SIGNAL FLOW







CARD 3 TEST POINT LEVEL CHART
(SET MASTER FADER TO 7)

TEST CARD SETTING	TEST POINT	CARD 5 TRIM	OUTPUT RANGE (dBv)
CENTER	TP1	CTR SYN	-50 TO - 21
	TP1	CTR SVA	-30 TO - 2
	TP1	[1]CTR SR	-31 TO - 4
	[1]TP2	SURR SYN	-39 TO - 17
SURROUND	TP2	SURR SVA	-35 TO - 13
	TP2	[2]SURR SR	-38 TO - 12

1. Center signal used to derive SURR SYN.
2. With SVA trim set at mid rotation.

CARD 4 TEST POINT LEVEL CHART
(SET MASTER FADER TO 7)

TEST CARD SETTING	TEST POINT	CARD 5 TRIM	OUTPUT RANGE (dBv)
LEFT	TP1	L / R SVA	-34 TO - 7
	TP1	L / R SR	-34 TO - 7
RIGHT	TP2	L / R SVA	-34 TO - 7
	TP2	L / R SR	-34 TO - 7

OUTPUT TEST

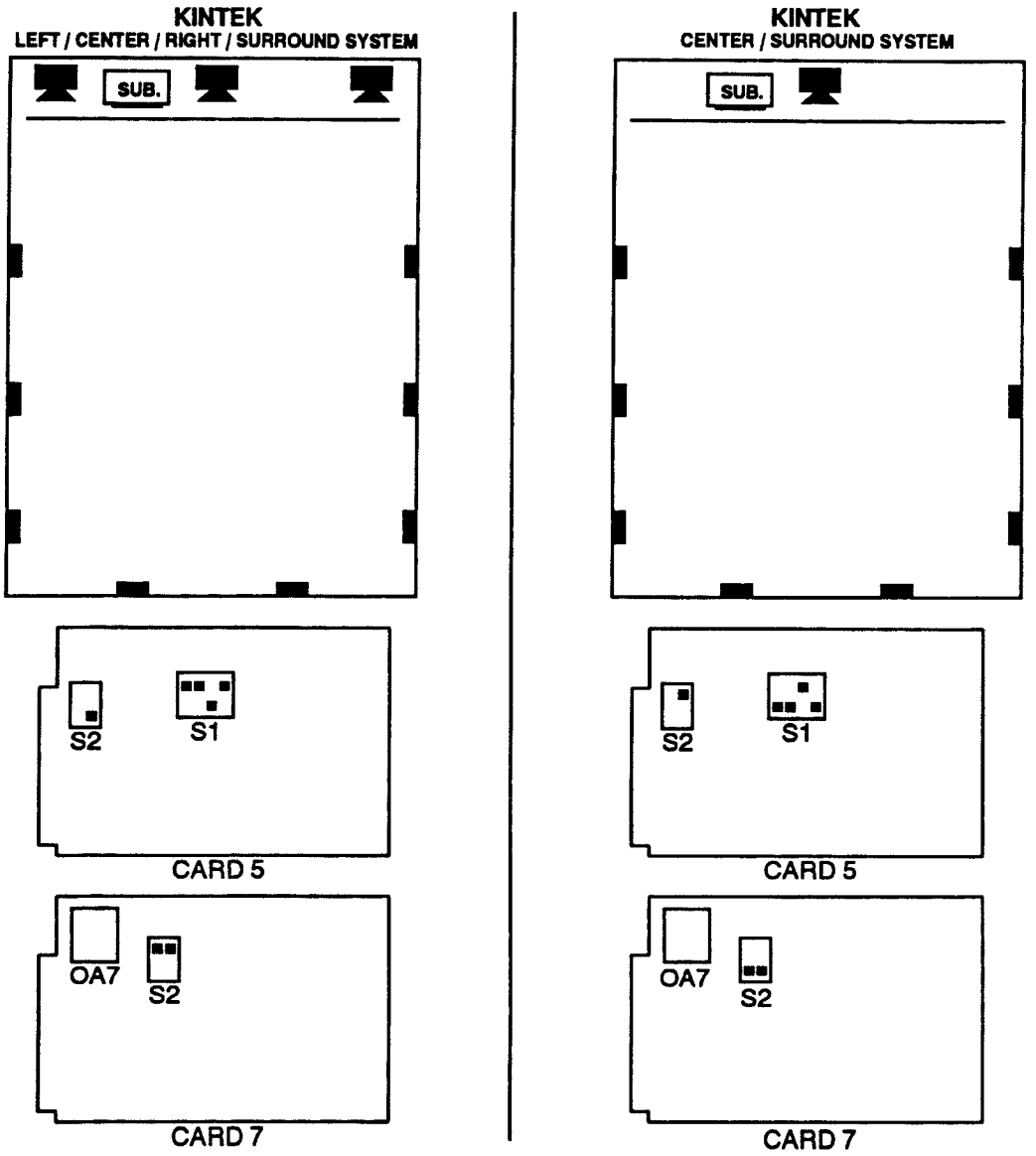
1. Initialize system as described on page "Audio Signal Steering Test".
2. Solar cell preamp Calibrated and Balanced (page A1.0).
3. All levels indicated are dBv (1vrms = 0dBv) +/- 3dB.
4. Levels indicated are with Kintek Test Card assigned to channel under test (Kintek Test Card page C1.0)

TB5 OUTPUT READING: (+ / - 2dB)

LEFT	-24	-44	-75	-40	-40
CENTER	-40	-24	-40	-56	-56
RIGHT	-75	-44	-24	-40	-40
SURROUND	-52	-75	-52	-22	-22
SURR LEFT	-30	-46	-44	-28	-38
SURR RIGHT	-44	-46	-30	-38	-28

L/C/R/S TO C/S CONVERSION

A Left / Center / Right / Surround / system can be converted to a Center / Surround system by changing DIP switches on Cards 5 and 7. The diagrams below show theatre loudspeaker positions and Card DIP switch positions for the two system types.



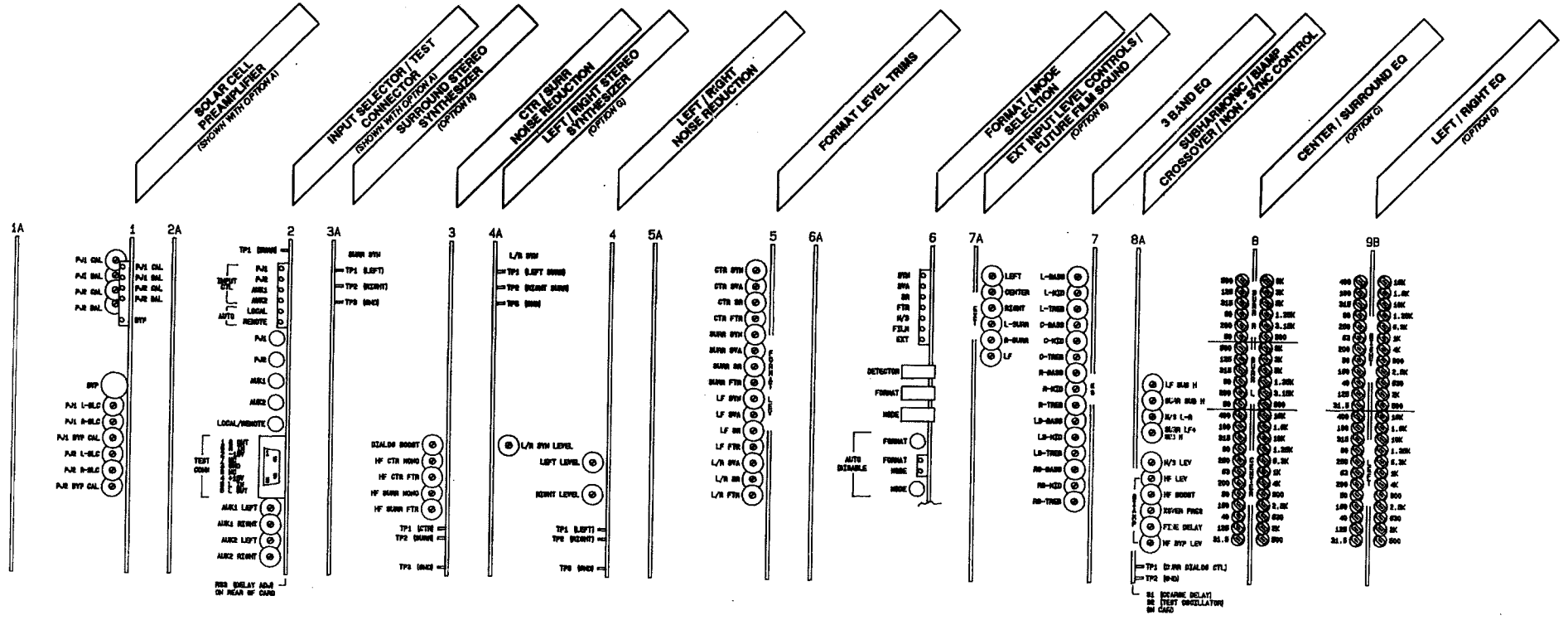
The surround array can be powered from a two channel amplifier for split surround or a single amplifier for mono mode. In a single surround power amplifier system, the split surround feature may be disabled by removing OA7 on Card 7 from the socket. For mono surrounds, connect loudspeaker array to either Left Surround or Right Surround output. Use corresponding EQ section.

A subwoofer may be used with either system.

Biamplification of Center channel is also an option with either system.

Option Description Chart

A. *Additional stereo solar cell preamp and 2 balanced aux inputs.*
B. *Six wide dynamic range analog inputs for digital audio processors.*
C. *1/3 octave center channel EQ and two 2/3 octave surround EQ's.*
D. *1/3 octave left and right channel EQ.*
F. *1/3 octave Biamp low freq EQ.*
G. *Stereo synthesizer for left and right channels.*
H. *Stereo synthesizer for split surrounds.*



Single ended, 470 Ohm impedance

+20dBv Max Output Level

Kintek wiring convention is to connect shields at the signal source and float shields at the load

Output level trims on Card 5

10k Ohm impedance, balanced inputs for external processor signals

-10dBv to +4dBm source level OK

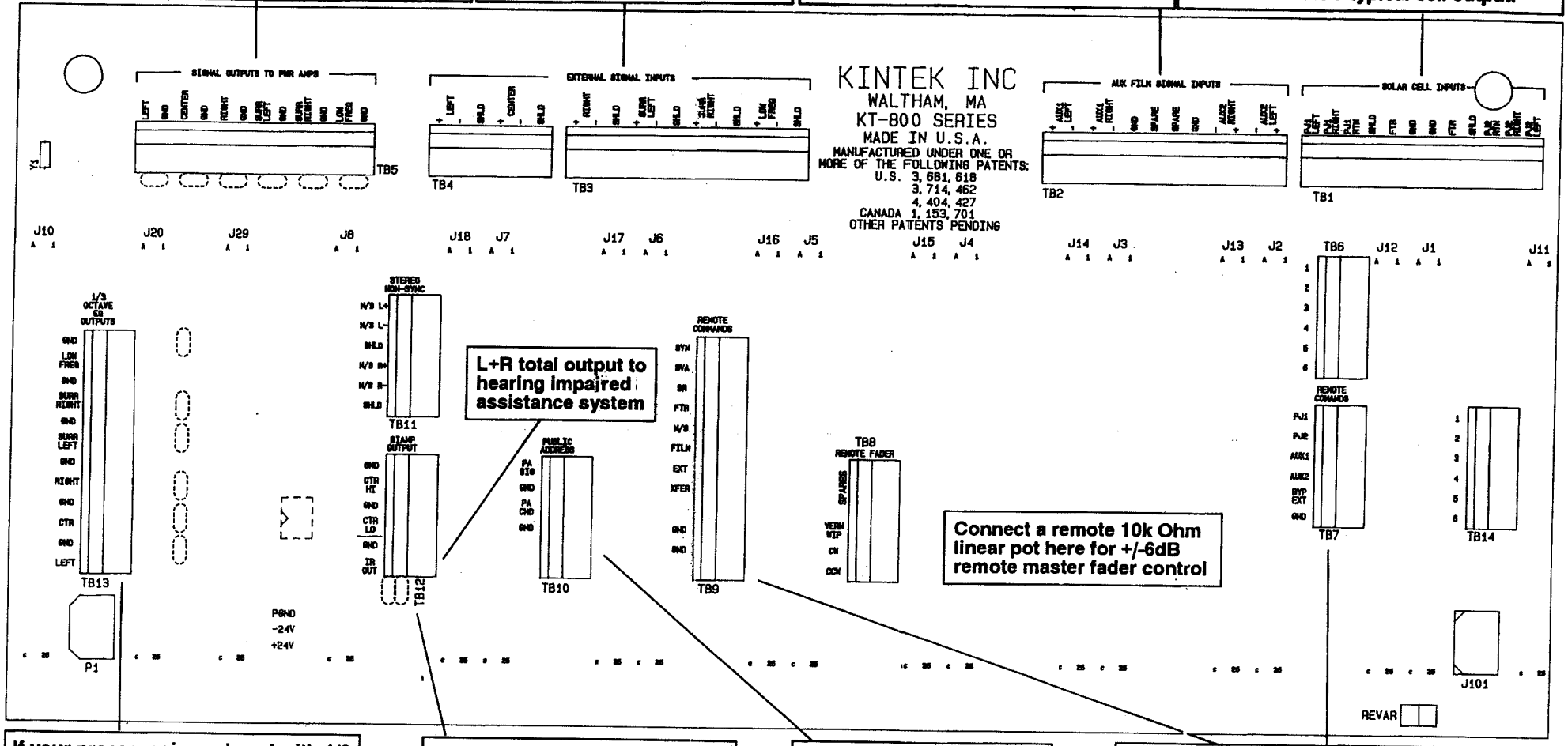
+/- 20dB level control on card 7A

Balanced aux inputs for mag dubber sources

These inputs feed into the noise reduction and steered matrix circuits

Input level controls are on Card 2, level is monitored at the Kintek test card.

For projector hookup, connect shields at this end. Float the shields at projector. Make sure your projector is equipped with stereo solar cells that are not DC blocked with capacitors. The Kintek solar cell preamplifier will work with currents sources in the range of 3uA to 300uA. 30uA is a typical cell output.



If your processor is equipped with 1/3 octave EQ cards 8 and 9B, connect power amplifiers here. The backplane connections at this terminal block (TB13) and TB5 are identical. The connector can be installed at either location without changing the wiring.

If your processor is equipped with the Biamp Center channel option, connect power amps for Low Freq and High Freq here.

Biamp adjustments are on Card 8A

Connect line level public address source to PA SIG. Close PA CMD to ground to mute film / non sync and feed the PA signal to the center channel. Use PA source to adjust level.

CONNECT AUTOMATION SYSTEM HERE

Kintek factory setting anticipates momentary (pulse) dry contact closure to ground

Refer to Card 6 description in manual and Automation Appendix