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INSTALLATION AND OPERATION MANUAL



MP7035 MAGNETIC PROGRAMMER



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ATLANTA, GA 30341

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MP 7035 ADDENDUM

The MP 7035 has been updated and improved to offer additional features and performance. This addendum supplements the standard MP 7035 manual and should be used until new manuals are available.

An emergency bypass switch has been added which will route Left, Center, Right, and Surround inputs directly to the corresponding output terminals should a failure occur in the MP 7035. Pushing the switch fully in until it locks activates the emergency feature. When the switch is engaged the LED indicator to the left of the emergency switch will light if the MP 7035 power supply is still operating.

When setting overall system levels, set the master fader between the 12:00 and 1:00 positions. Set the output trims as required. This balances the normal operating level with the emergency output level to prevent speaker damage when switching to emergency.

It is now possible to add Dynamic Noise Reduction (DNR) in addition to the Smart Noise Reduction used for 70MM encoded prints. This will reduce any residual soundtrack noise. DNR is activated by a front panel switch labeled DNR. DNR can be locked on by setting the #1 DIP switch under the security cover to the down position. This selects DNR regardless of the front panel position.

There are eight (8) DIP switches under the security cover. The functions are as follows:

- #1 - UP - DNR Select Off
Down DNR Select On
- #2 - Up - Calibrate
Down - Operate
- #3 - Left Input
- #4 - Left Extra Input
- #5 - Center Input
- #6 - Right Extra Input
- #7 - Right Input
- #8 - Surround Input

Switches 3-8 are used to select each input for calibration to Dolby reference level. Only one of switches 3-8 should be down at a time when calibrating. Switch #2 must be UP for calibration of any channel.

For normal operation, switch #2 should be down and one or more of switches 3-8 may be down. For typical applications, switches 2,3,5, and 7 should be down. This sums the left, center, and right channels to the meter to yield an average level indication of the main front channels. A meter pad is inserted

when switch #2 is in the operate position to avoid "pegging" the meter during loud program passages.

MP7035 MAGNETIC PROGRAMMER INSTALLATION INSTRUCTIONS

The SMART MP7035 Magnetic Programmer is a product that performs several important functions in a motion theatre magnetic playback system. First, it formats the outputs of multi-channel magnetic preamplifiers, such as the SMART SMP435, to the correct channel assignment for the various standard track formats of 70MM and 35MM release prints. This allows the proper noise reduction system to be used with each format (or none at all), and contains the logic circuits to enable and disable various preamplifiers that are pre-assigned to the penthouse(s) playback heads.

Two types of noise reduction are incorporated into the MP7035. In 70MM presentations, some prints are encoded in the DOLBY type A professional noise reduction system. This system has a format of Left, Center, and Right Stereo for the stage along with Left-Center (Left Extra) and Right-Center (Right Extra) channels used for bass enhancement. A surround channel feeds the rear speakers in the auditorium. Three SMART NR modules **decode** the special **encoded** soundtrack for proper playback, and a DNR noise reduction circuit noise reduces the surround channel. For STANDARD 70MM release prints, **no noise** reduction circuitry is used, and the 5 stage channels go directly to their respective stage positions.

35MM release prints follow the standard format of Left, Center, Right, and Surround channels. The MP7035 includes **four channels** of DNR noise reduction to quiet the smaller magnetic tracks. These post-recording noise reduction channels are activated by a front panel selector switch.

The MP7035 is very easy to install and operate. All inputs are high level and accept the outputs of magnetic preamplifiers. All adjustments are made from the front of the product and a **master meter is used to align each channel** and provide visual reference to program levels of a magnetic release print soundtrack.

TOOLS NEEDED FOR ADJUSTMENT OF 70MM/35MM MAGNETIC SYSTEM

- (1) Third octave real-time spectrum analyzer.
- (1) AC/DC voltmeter.
- (1) 70MM Dolby level test film.
- (1) 70MM 10 kHz test film (head contact test).
- (1) 70MM pink noise test film (azimuth and preamp EQ).
- (1) Degausser kit.

The MP7035 mates very nicely with the SMART SR300 Stereo Optical Decoder which provides the programming commands to enable the Magnetic chain. If another product is used (SR135 Decoder or another brand of decoder) **external switching must be provided** to enable the magnetic system and provide output switching through the normal 35MM optical stereo house equalizers and power amplifiers.

FRONT PANEL SWITCHES. Four operator switches and one MASTER FADER control are the only controls available to the operator. The intelligent logic circuit in the MP7035 will automatically format the program channels, and know which switch positions are valid. For instance, if the 70MM mode is selected by the operator, the **ELECTRONIC FILM CLEANER** switch is disabled. It only functions when 35MM mode is selected. If **ENCODED** (Dolby) films are run and the switch is in the **ENCODED** position, the tracks are outputted as LEFT, CENTER, RIGHT, AND SURROUND, while a low pass filter is placed in the LEFT-EXTRA and RIGHT-EXTRA channels. The special noise reduction modules for encoded print playback is inserted in the primary stage channels automatically. For 35MM films, the noise reduction modules are switched out and the DNR circuits are switched in (if the operator also selects **ELECTRONIC FILM CLEANER**). The LEFT-EXTRA and RIGHT-EXTRA channels are supplied bass enhancement material from special filters in the MP7035. The MP7035 is the simplest to operate 70MM/35MM magnetic system on the market.

INSTALLATION INSTRUCTIONS

If multiple preamplifiers are used in the magnetic system, Each must be connected according to instructions covered in the SMP435 MANUAL. The SMP435 has a unique "bussing" arrangement at the output channels of each preamplifier that allow direct connection of several preamplifiers to the same channel output bus. Each preamplifier package is enabled by the MP7035 programmer when the front panel operator switches select a desired format. The logic DIP switches in each SMP435 must be set for the proper logic function.

We recommend that the preamplifiers be placed directly over the MP7035 in the equipment rack so that wiring is short and direct between the components of the magnetic system. If SVA stereo is also part of the system, the SR300 should be mounted below the MP7035. The preamplifier's AC cords are plugged into the AC convenience outlets on the rear of the MP7035. Six outlets are **switched** by the front panel **power switch**, and two outlets are unswitched. The unswitched outlets may be used for other equipment in the rack as long as the total current draw for all outlets does not exceed 10 amperes.

Careful planning before hookup can avoid a lot of lost time when adjusting the final installation. Preamps assigned to the wrong channel, or the wrong logic selection can cause "backtracking" and tracing of the wiring. It is a good idea to label the back of each preamplifier chassis with the track assignment at each input and output. Masking tape can be applied to the area above the terminal strip to assist in identifying each channel for 70MM and 35MM use.

HOOKUP INSTRUCTIONS

Label each shielded cable from the penthouse cluster(s) so that you can identify the proper channels. Route the cables into the equipment rack and dress them away from AC lines or high level audio Lines.

- (1) Connect each cluster head lead to an assigned preamp channel of the SMP435's. Be sure to **observe polarity** for each cable. Each input is balanced and can be inverted easily, producing an out-of-phase signal in the system. Ground the shield **only** at the preamp end.
- (2) Connect the **LEFT** output of the first SMP435 to the **LEFT** output of the second SMP435. Connect the same output to the third SMP435 , the forth, etc. This is the **LEFT BUS**.
- (3) Hook the **left bus** to the **LEFT INPUT** of the MP7035. Perform the same operation for the **CENTER, RIGHT, and SURROUND** channels. This completes the hookup for the **LEFT BUS, the RIGHT BUS, the CENTER BUS, and the SURROUND BUS**.
- (4) Create a **LEFT-EXTRA** bus by tying the outputs together of each SMP435 that is assigned for 70MM **LEFT-CENTER** channels. Hook this bus to the **LEFT-CENTER(LC)** input of the MP7035. Bus the outputs of the **RIGHT-EXTRA** channels of the SMP435's and connect to the **RIGHT-CENTER (RC)** input of the MP7035.
- (5) Run a shielded audio cable from the **LEFT, CENTER, RIGHT AND SURROUND OUTPUTS** of the MP7035 to the **FOUR CHANNEL OUTPUTS OF THE SR300**. This scheme allows the primary outputs (Left, Center, Right, and Surround of the MP7035 to tie directly to the primary outputs of the SR300. Each product contains electronic switches that enable or disable the output terminals of each device when commanded by the logic circuit.
- (6) Run shielded audio cable from the **LEFT-CENTER OUTPUT** of the MP7035 to the Left-Center power amplifier input. Do the same thing with the **RIGHT-CENTER** output. The six gang master fader in the MP7035 controls level when in the magnetic mode, and the four gang master fader in the SR300 controls level in SVA, Mono, or Synthesized modes. If extra house equalizers are employed in the Left-Extra, and Right-Extra channels, then run the MP7035 outputs to the equalizer inputs instead of the power amplifiers.

This completes the hookup wiring for the **audio paths** of the MP7035. Next, connect the logic interconnections using unshielded hookup wire.

MP7035

⊗ ⊗ ⊗ ⊗ ⊗ ⊗ ⊗ ⊗ ⊗ ⊗
 OUTPUTS
 L LC G C RC G R S OPT 70 G 35
 MUTE

⊗ ⊗ ⊗ ⊗ ⊗ ⊗ ⊗ ⊗ ⊗ ⊗
 INPUTS
 MUTE MAG G L G LC C G RC R G S

Rear view of chassis and terminal layout.

Logic wiring between the MP7035, the SMP435(s), the SR300 SVA Decoder, and other head end equipment allow the units to "talk to each other" and enable or disable each other from the system with the computer logic built into the SR300. This powerful design feature permits control of the entire system from a single point, and allows remote control or automation switching to any mode.

- (1) Hook a single wire from the **MAG** terminal of the MP7035 and connect the other end to the **MAG** terminal of the SR300.
- (2) Hook a wire to the **OPTICAL(OPT)** terminal of the MP7035 and connect the other end to the **MUTE** terminal of the SR300.
- (3) Hook a wire to the **35** terminal of the MP7035 and connect the other end to **ALL** of the **MUTE** terminals of the SMP435 preamplifiers that are assigned to 35MM operation.
- (4) Hook a wire from the **70** terminal of the MP7035 and connect the other end to **ALL** of the **MUTE** terminals of the SMP435 preamplifiers that are assigned to 70MM operation.
- (5) If a remote mute is desired in order to kill start-up noises and xenon ignitor strikes, connect a wire from the **MUTE** terminal of the MP7035 with the other end connected to a momentary contact muting relay in the automation equipment. Make sure the relay has no voltage on its contacts. Grounding the **mute** terminal will kill all six channels of the MP7035 for as long as the ground exists.
- (6) A two projector magnetic system for either 70MM or 35MM (or both) requires changeover between penthouses. Connect a wire to the **X-OVER 1** terminal of the first SMP435 in the system. Run wire to the next SMP435 and connect to it's **X-OVER 1** terminal. Continue to connect together all **X-OVER 1** terminals of every SMP435 in the system. Make the last connection to the **X-OVER 1** terminal of the SR300 Decoder. This "bus" is now connected to the automation equipment, or a remote momentary contact manual changeover switch near the projector.
- (7) Projector two changeover must be wired the same way on each unit. Connect the "bus" of **X-OVER 2** terminals to the automation equipment or another remote manual changeover switch near projector 2.

This completes the **logic wiring** which interfaces each of the components in the stereo system.

CALIBRATION AND ADJUSTMENT

After you have verified that each head of each penthouse cluster is properly wired and polarized into designated SMP435 preamplifier channels, you next must set levels and playback equalization for each channel in the system. No matter how carefully head clusters are manufactured, there are always small variations from head-to-head and cluster-to cluster. This is why it is necessary to have complete level and EQ control of each channel. If you are installing a full 70MM dual projector system with 35MM dual mag capability you will have 20 channels of preamplifier with three adjustments per channel. That's 60 controls to adjust plus 6 controls on the MP7035. All adjustments are made from the front of the SMP435 and MP7035 by removing the security covers. Replacing the covers after completion will hide the controls from the operator.

The meter on the face of the MP7035 is used to calibrate **incoming levels from the preamplifiers**, and DOES NOT register output levels of the MP7035. This is necessary to set Dolby reference levels so that the noise reduction cards track properly. The DIP (dual inline package) switch hidden behind the security cover will select one channel at a time to be viewed. This is a high quality broadcast type meter that is very accurate. The upper scale indicates dBm, and lower scale indicates % power modulation. Use the **upper scale for calibration settings**.

The DIP switch sections individually select an input channel for meter monitoring. Any switch in the **DOWN POSITION** will register signal on the front panel meter. All switch sections should be in the **UP** position **except** the channel being monitored. The switch is numbered 1-6 and represents the channels as they appear in real life. Switch 1 is the **LEFT** channel. Switch 2 is **LEFT-EXTRA**. Switch 3 is **CENTER CHANNEL** and 4 is **RIGHT-EXTRA**. Switch 5 is **RIGHT** and 6 is the **SURROUND** channel. When the MP7035 is in the 35MM mode the **LEFT-EXTRA** and **RIGHT-EXTRA** channels contain **BASS information** that is summed from the **LEFT, CENTER, and RIGHT** channels to provide bass enhancement in 5 stage speaker installations. A special low pass filter in the MP7035 allows information below 125 Hz to appear on the extra channels.

- (1) **Degauss the penthouse clusters** with a good degaussing kit. This also applies to sprockets, gate assembly, and any metal part that comes in contact with the magnetic soundtrack.
- (2) Remove the front panel security covers on all SMP435 preamps and the MP7035. Place front panel operator switches in the **(1) encoded (Dolby) mode, (2) 70MM mode**. Run a 10 kHz 70MM test loop on the selected projector (if dual projector booth)
- (3) Select a channel (We suggest the **LEFT** channel) to monitor

on the meter by placing **one** of the DIP switches in the **DOWN** position. All other DIP switches should be **UP**. Adjust the level pot on the preamp channel until you get a usable reading on the meter. Adjust the mechanical **AZIMUTH** of the penthouse cluster for the **highest reading on the meter**. Switch to another channel with the DIP switch (We suggest the **RIGHT** channel). Fine adjust your azimuth setting for the highest reading. Go back to the **first** switch position to see if the level has changed on the track. Switch between the two tracks and get the best compromise between the highest level of each reading. We suggest the **LEFT** and **RIGHT** tracks because they are the outside tracks on the film. Now check each of the other tracks to see that the high frequency response is adequate and no major differences exist. Also check for **head contact** while the 10 kHz tone is running on the projector. Some slight tension changes may be necessary in the projector mechanism to assure proper holdback tension across the playback heads.

- (4) Replace the 10 kHz tone loop with a **pink noise** loop. Place your real time analyzer across the output terminal of the **Center channel** of the MP7035. Adjust the level pot in the SMP435 for a good reading on the analyzer. Adjust the LF(Low Frequency) pot and HF(High Frequency) equalizer pots for the flattest response on the real-time analyzer. You should be able to equalize the head to within plus or minus 2 dB from 50 Hz to 10 kHz. If you can't, you may have a worn or defective head in the cluster. Replacement of the cluster is necessary.
- (5) Perform the same alignment procedure on each head of the 70MM cluster. Move the loop to the second projector (if a dual projector booth) and repeat the same tests and adjustments.



REMEMBER ! If you can't get the pre-amplifiers to calibrate, then you may have a defective head in the penthouse cluster. Reverse the cables coming from the cluster with a preamp channel that is known to be good to verify a bad head.

- (6) Remove the pink noise loop and place a Dolby Reference loop on the projector in use. Set each level pot of the six tracks until they read **0VU on the meter**. Selecting each track with the DIP switch allows you to read each separately.
- (7) Perform the same level alignment on the opposite projector (if this is a dual projector installation). The meter is calibrated so that **0VU is .5 volts RMS**.
- (8) Replace the 70MM loop with a 35MM pink noise loop. Select **35MM** on the 35MM-70MM front panel switch. Select **CLEANER**

(DNR) OFF on the CLEANER-OFF switch.

- (9) Adjust each of the HF and LF controls of each 35MM channel for the flattest response while monitoring the output of the channel with a real time analyzer. Do the same for the other projector, if used.
- (10) There is **no level reference loop** in the industry. The SMPTE 1 kHz tone loop is not a reference since SMPTE will not guarantee consistency from recording to recording. There are no Dolby 35MM magnetic prints. Use the SMPTE loop and set levels the same as 70MM. You may have to readjust after listening to a release print. The **main objective** is to get all four channels **to operate at the same level**.



If the average level coming into the MP7035 from each 35MM preamp channel in the 35MM is not at least .5 volts RMS, the DNR (FILM CLEANER) circuits will not track properly and HF response may suffer.

- (11) Adjust the **OUTPUT LEVEL POTS** for matching level between channels. The pots are behind the removable security cover and are labeled on the front panel. Use the reference level loop on either projector after all other alignment steps have been completed.
- (12) Play a release print of a magnetic recording of **known quality**. Observe that all channels in the mag system are balanced and appear to have hi-fidelity response. **Replace all security** covers after calibration.

If the Stereo System has SVA capability and uses house equalizers, the magnetic portion of the system should be equal or superior to the sound from the SVA system. The advantage of magnetic sound is more dynamic range, a slightly more "transparent" sound quality, and a wider frequency response bandwidth.

INTERFACING TO OTHER PRODUCTS

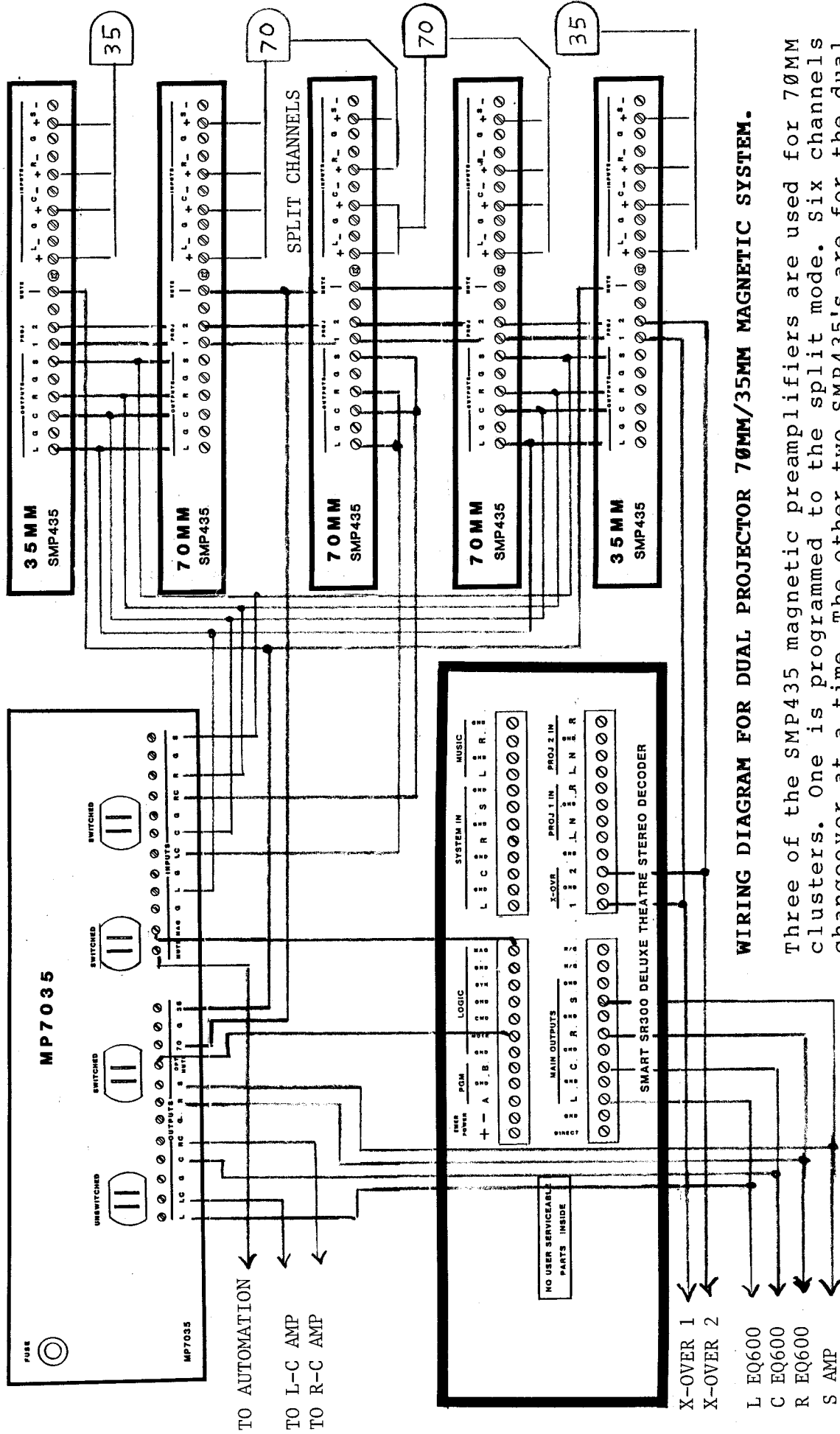
If you **are not using an SR300 Stereo Decoder** in the stereo system you must control the internal logic of the MP7035 with an external SPST switch mounted on a panel or other place that is convenient to the operator. The switch will **activate the magnetic system** when engaged. Only four channels of audio need to be switched between the MP7035 and the other type of SVA decoder (SR135, etc) to change from magnetic sound to optical stereo. A good choice for switching is the SMART SW900 4 channel switching panel.

- (1) Do not connect anything to the **OPT MUTE** terminal on the rear terminal strip.

- (2) Do not connect anything to the **MAG** logic terminal.
- (3) Connect a SPST remote switch to the **MUTE** logic terminal and the closest ground terminal. When the switch is **MADE** (ground to the mute terminal) **NO SOUND WILL LEAVE THE 6 CHANNEL OUTPUTS OF THE MP7035** . When the switch is **OPEN**, sound will pass to the selected outputs of the product.
- (4) **Only** the Left, Center, Right and Surround channels require **audio** switching. The Extra channels are **muted** when the system is not in magnetic operation by using the extra SPST switch.
- (5) You must match output levels between the MP7035 and the other decoder so that the operator does not have gross adjustments to make when changing modes.
- (6) **DO NOT TIE THE OUTPUTS OF THE MP7035 TO THE OUTPUTS OF ANOTHER DECODER.** Switching is mandatory.

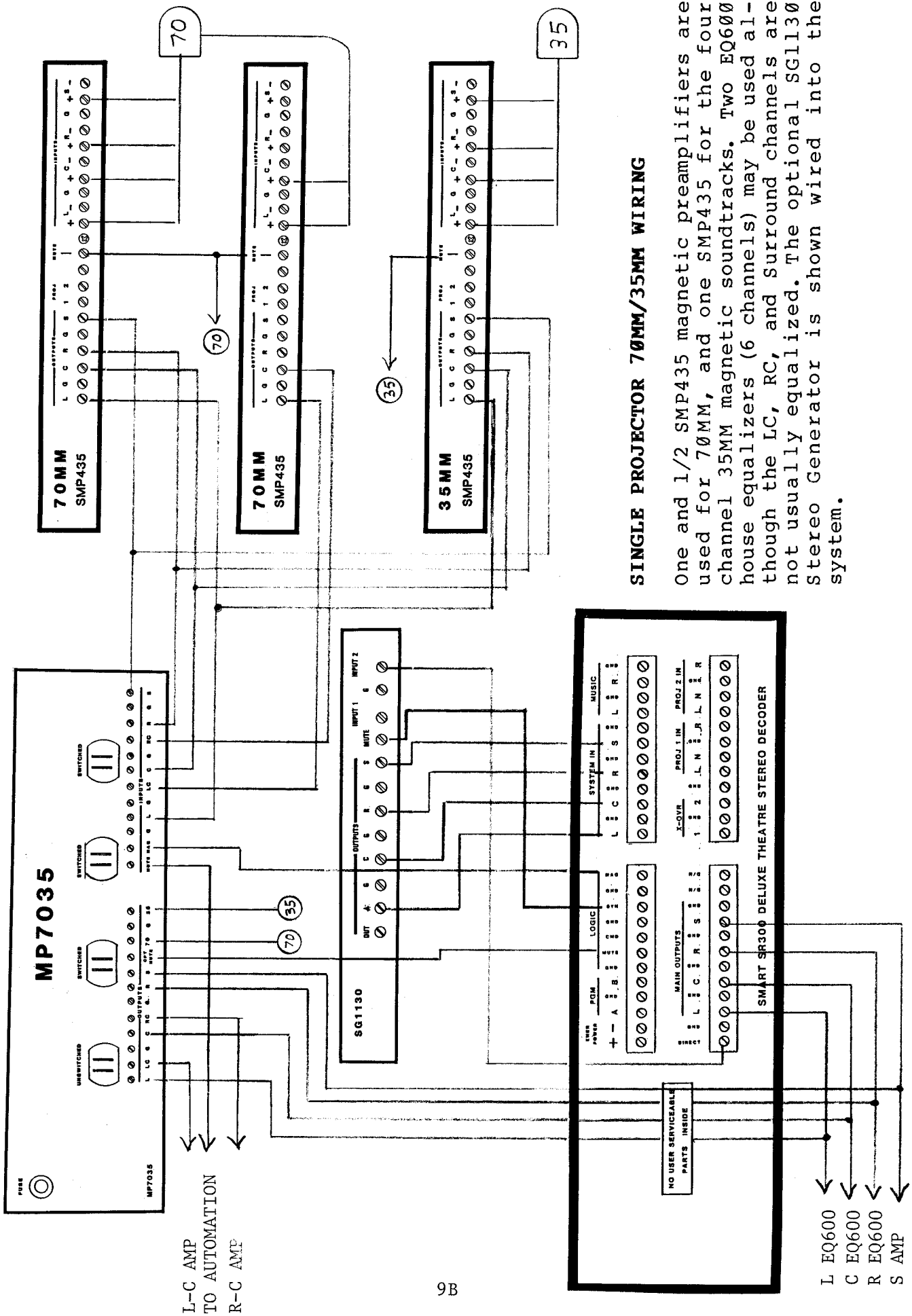


The **WIDE SCREEN STEREO** logo shown above may be used by the theatre that installs a SMART stereo product to advertise the playback capability of the theatre. This logo may be incorporated into a newspaper ad, program flyers, or reproduced for special promotional activities. The logo tells the patrons that the theatre is presenting it's feature in Stereo. This pertains to optical stereo, synthesized stereo, or magnetic 35MM/70MM formats.



WIRING DIAGRAM FOR DUAL PROJECTOR 70MM/35MM MAGNETIC SYSTEM.

Three of the SMP435 magnetic preamplifiers are used for 70MM clusters. One is programmed to the split mode. Six channels changeover at a time. The other two SMP435's are for the dual 35MM four channel magnetic tracks. Outputs may be wired to the individual channels of a pair of EQ600 house equalizers, or one EQ600 may be used for Left, Center, and Right output channels. The mute terminal of the MP7035 may be run to automation to momentarily mute the mag system during start-up if booth machinery noises are getting into the sound system. The "mute" command is transmitted also to the SR300 through the MP7035.



SINGLE PROJECTOR 70MM/35MM WIRING

One and 1/2 SMP435 magnetic preamplifiers are used for 70MM, and one SMP435 for the four channel 35MM magnetic soundtracks. Two EQ600 house equalizers (6 channels) may be used although the LC, RC, and Surround channels are not usually equalized. The optional SGL130 Stereo Generator is shown wired into the system.

L-C AMP
TO AUTOMATION
R-C AMP

- L EQ600
- C EQ600
- R EQ600
- S AMP

A fanning strip makes connecting input and output leads easier. Leads are permanently soldered to the strip and then mated to the screw terminals. If the unit ever has to be removed for service, the fanning strip can be quickly removed. Fanning strips may be ordered separately from SMART THEATRE SYSTEMS if you cannot procure them locally.

The latest SMART equipment uses "shunts", instead of switches to select the various operation selections. This is generally a one time function, and is set by the sound engineer during installation. To move the "shunt", simply pull the plastic shorting plug straight up, and place on the desired pins. Note that the two small holes face downward when properly installed.

The knobs used on SMART equipment are COLLET type. A special wrench is necessary to remove or tighten them. Slip a fingernail or small screwdriver between the plastic color cap and the knob to remove the cap. Use the wrench to remove the knob. Clockwise rotation tightens the collet.

MP7035 SERVICE

Almost every component used in the MP7035 is available locally from a radio parts house. The only parts that are not likely to be found are the special sealed modules, and the time delay chip. Refer to the schematic diagram and parts list for information regarding a component description. IC sockets are used to facilitate easy removal and replacement of any Integrated Circuit, should this ever become necessary.

Each unit is burned in for a minimum of 48 hours before Q.C. testing and packaging. A failure of one or more functions of the MP7035 will result in a service call from the owner. Always check the obvious causes of the symptoms first.

1. Is the unit receiving A.C. power? (Power L.E.D. ON)
2. Has the fuse blown? (replace with 1/2 amp 3AG type only)
3. Are all panel switches in their proper position?
4. Is the supporting equipment functioning properly?
(amplifiers, equalizers, exciter lamp supply, etc.)

When all symptoms point to an internal problem, your only choice is to substitute a spare (or similar piece of equipment) and fix the unit in the booth or shop.

A quick check of the power supply voltages will indicate the proper operating voltages for the active components. Place your service meter negative lead on a convenient chassis GROUND point. Switch the meter to the PLUS 30 D.C. range and measure the

voltage input to the POSITIVE regulator(pin 1). It should be 18-24 volts. Now measure the output of the regulator (pin 3). This voltage should be very close to PLUS 15 volts. Now, do the same with the NEGATIVE regulator. Use the positive lead of your meter on the chassis GROUND, and the negative lead for voltage measurements. Pin 2 is the input to the regulator, and pin 3 is the output. Again, you should measure nearly 15 volts. If you cannot obtain the voltages mentioned, you could have a bad diode in the rectifier bridge, a shorted filter capacitor, or an open winding on the transformer.



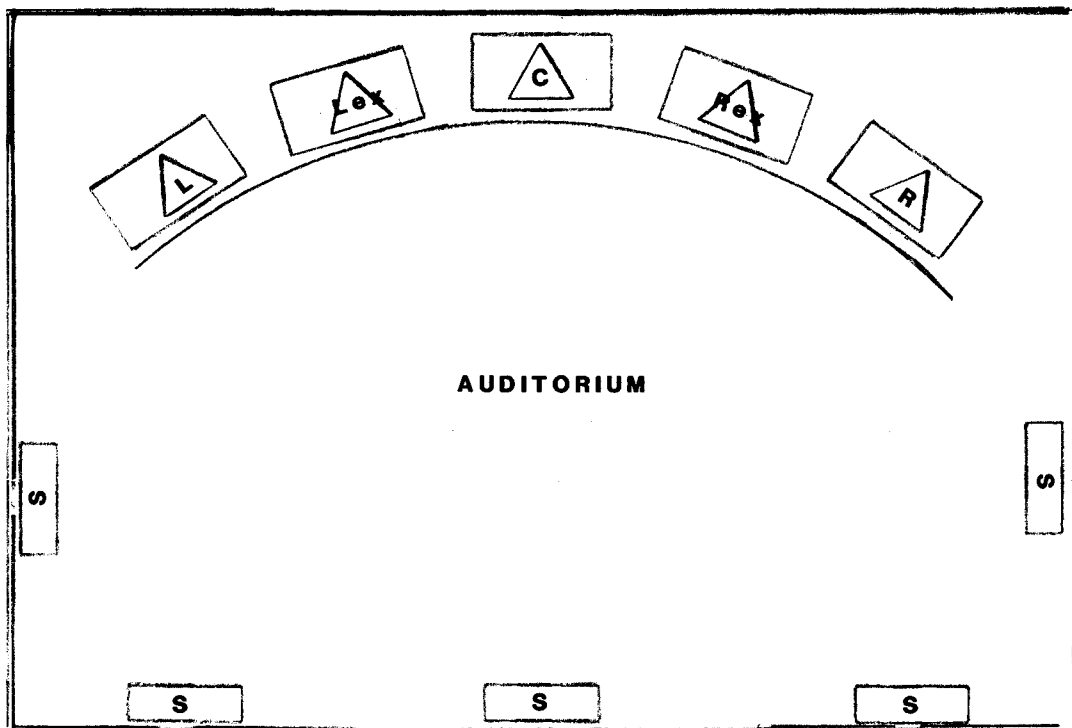
BE CAREFUL NOT TO SHORT THE PINS ON THE REGULATORS WHILE MAKING THESE TESTS. A MOMENTARY SHORT COULD DESTROY THE IC REGULATORS.

When you are satisfied that the voltages are correct, go the section for the circuitry that appears to be giving trouble. The most practical way to troubleshoot audio circuits is through signal tracing. Put an audio signal into the input and follow the signal with a scope until the signal stops. This method allows you to locate a defective component in the related section.

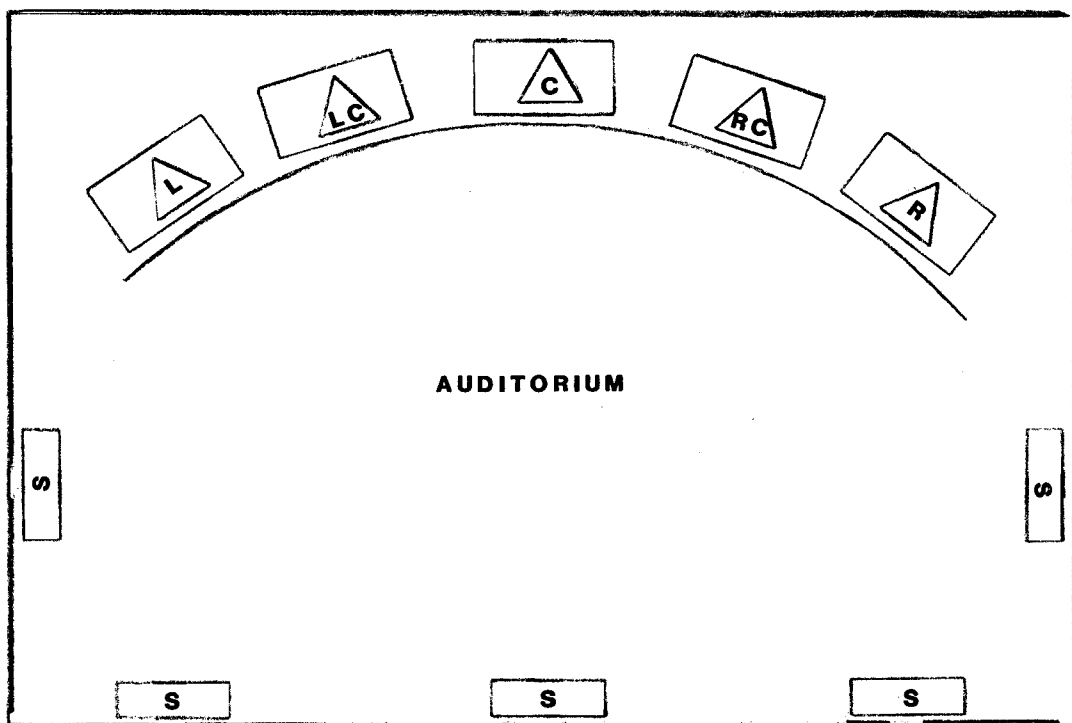
Since the MP7035 uses a bi-polar supply, each audio IC op-amp output should measure nearly 0 volts D.C. with no signal. That is, you should be able to probe each output pin with your service meter and see a minimum offset. If the op-amp is showing a few volts at the output pin, it is likely that a bad capacitor or resistor is causing an input bias that forces the output of the amplifier to shift. A defective IC could also be the culprit. Also check for a hairline short in the PC card foil traces. Here are several tips that will aid in troubleshooting.

1. Make sure the switches are in the proper position before testing the unit.
2. Very hot IC's usually indicate an internal short.
3. An open resistor may lead you to believe that an IC is defective. Use a substitute device to see if problem is in the device itself, or elsewhere.
4. Shorted input capacitors may bias an IC op-amp OFF.
5. Be sure IC's are firmly in their sockets. They can be vibrated loose during shipment.

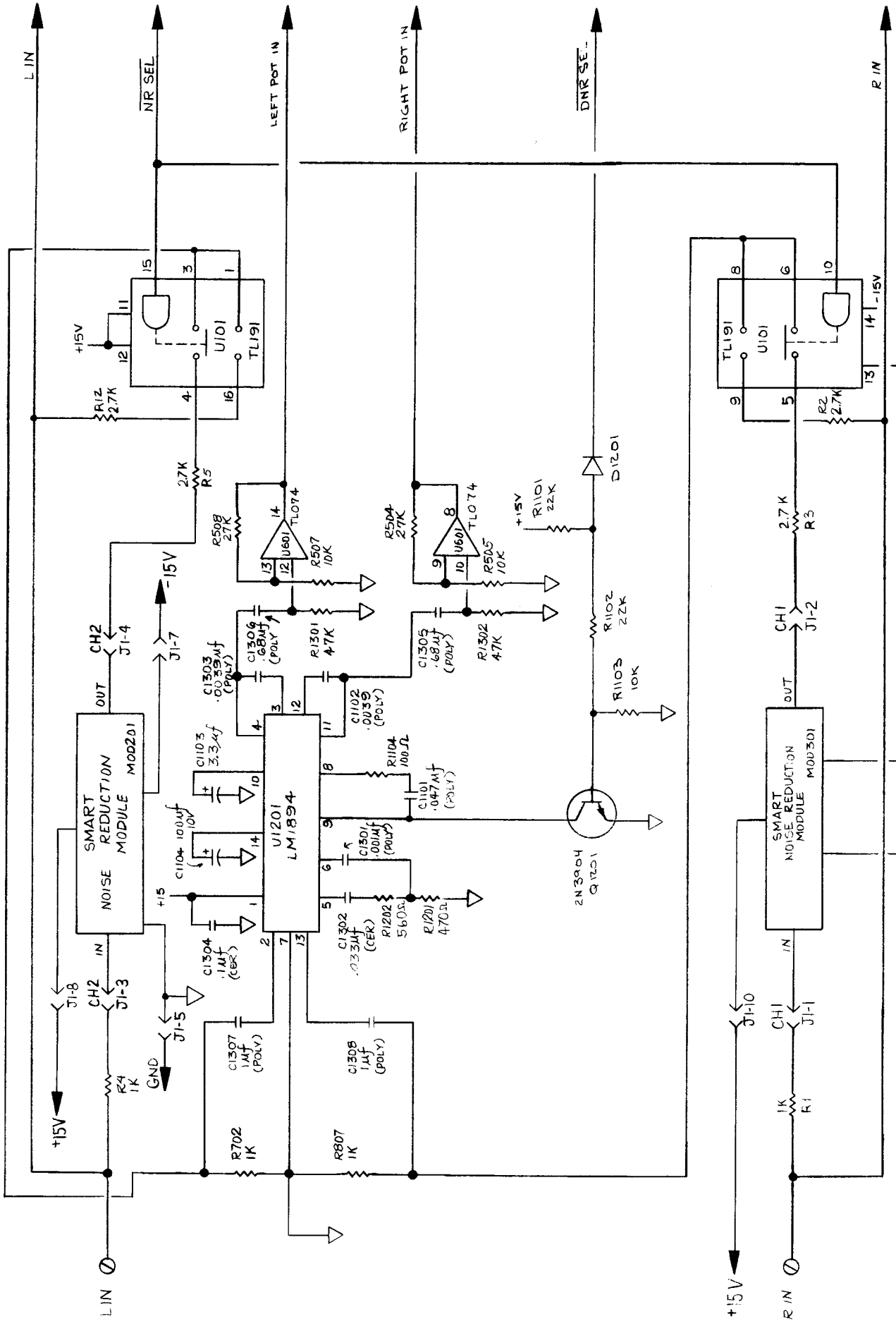
An important part of any pre-service call is to make sure that the operator or other theater personnel is fully familiar with the operation of this equipment. Often service calls are made unnecessarily because the operator was not trained with the correct operation procedures.

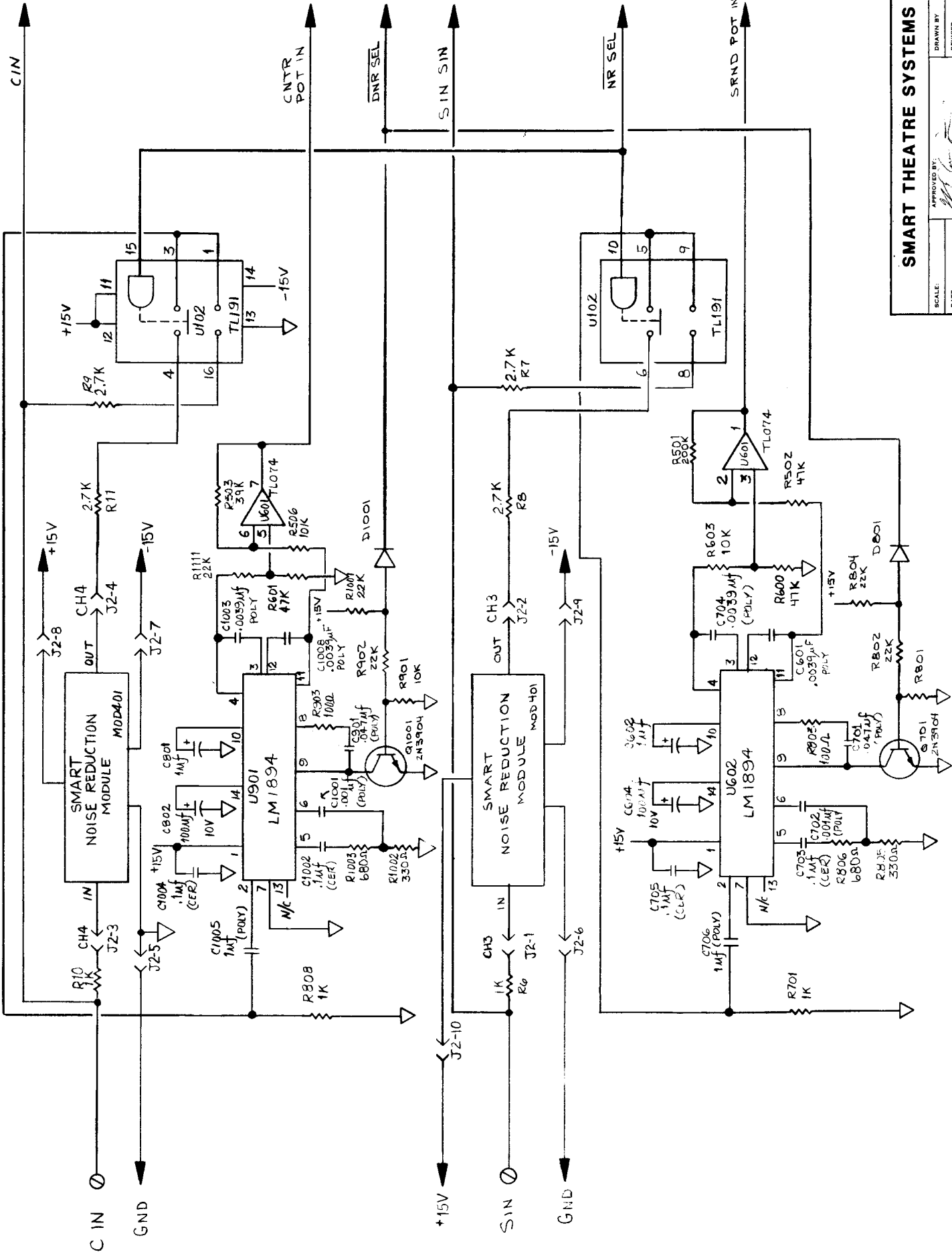


DOLBY 70MM FORMAT

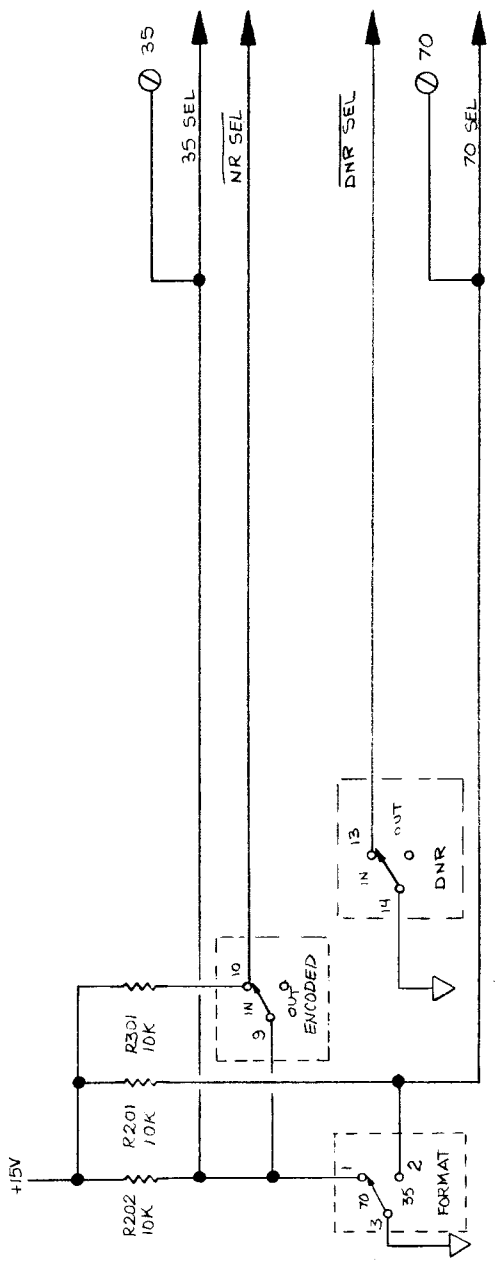
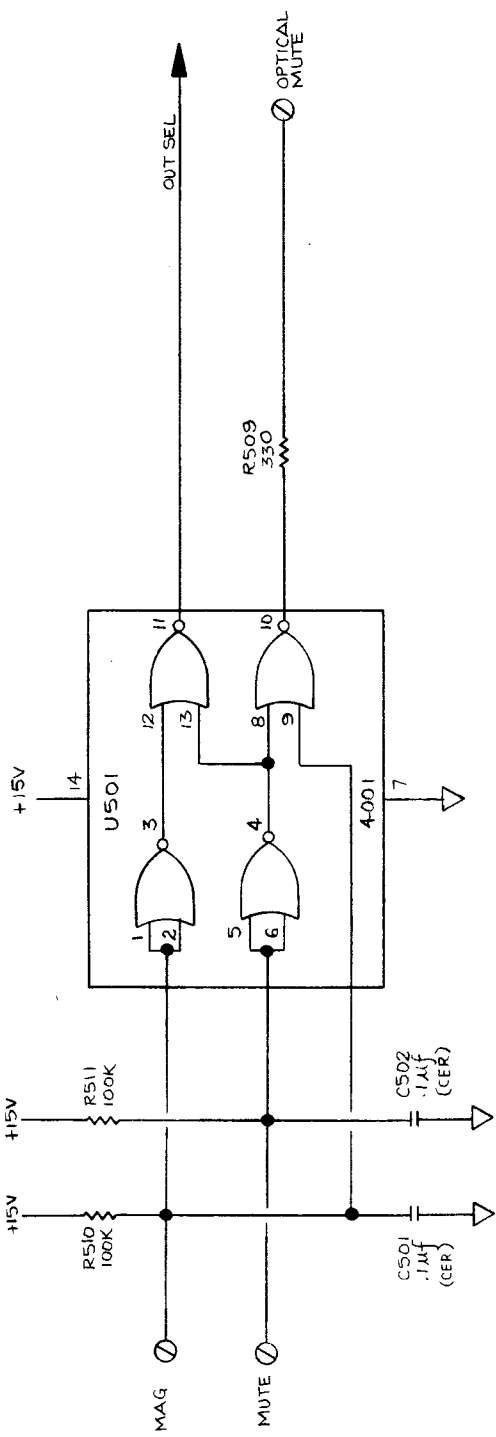


STANDARD 70MM FORMAT





17322 PRINTED ON NO. 50001 CLEARPRINT



SMART THEATRE SYSTEMS

APPROVED BY: *W. C. ...*

SCALE: _____ DATE: _____

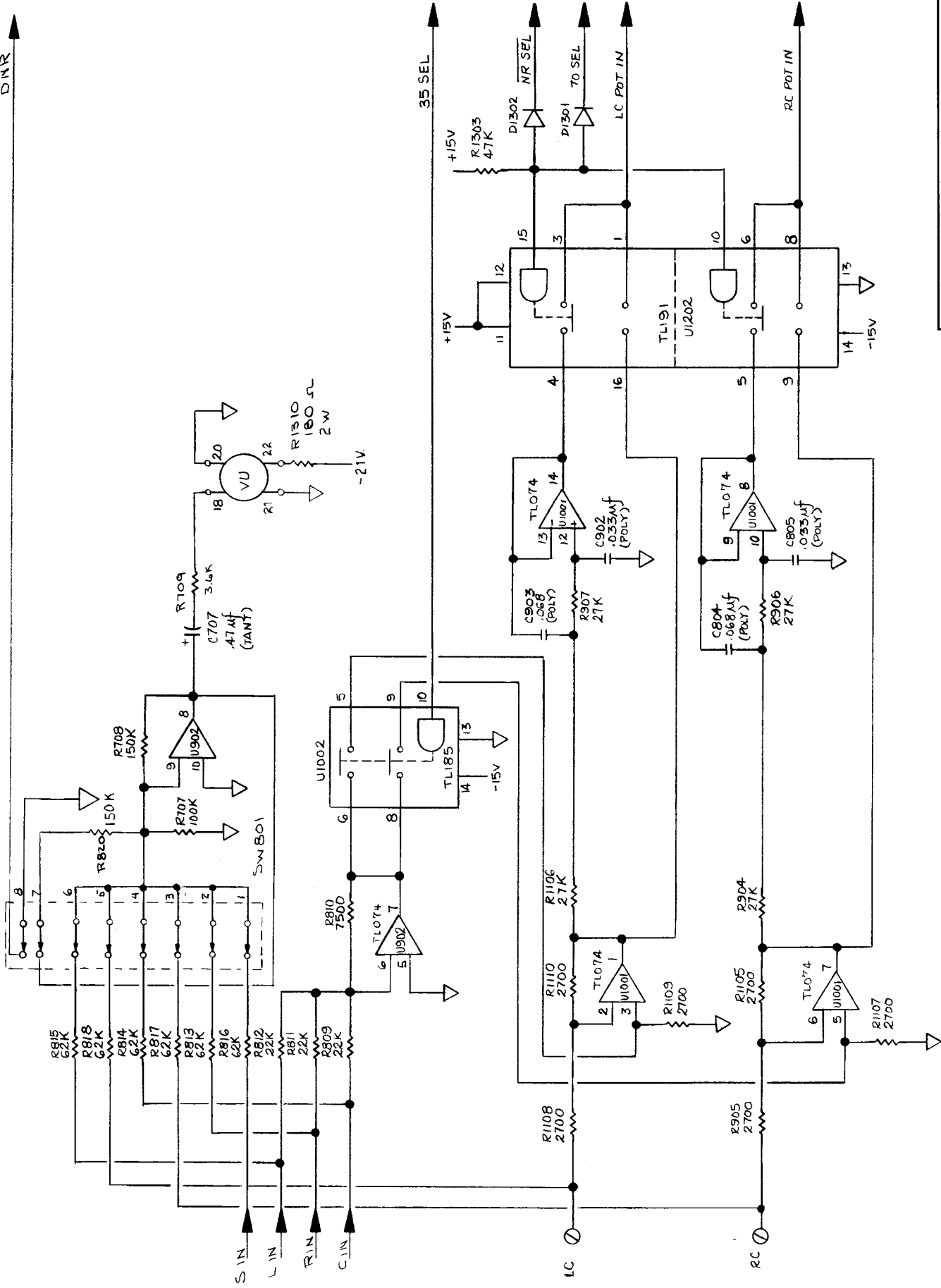
DRAWN BY: _____ REVISED: _____

MP7035

DRAWING NUMBER

SHEET 3 OF 6

7035D3



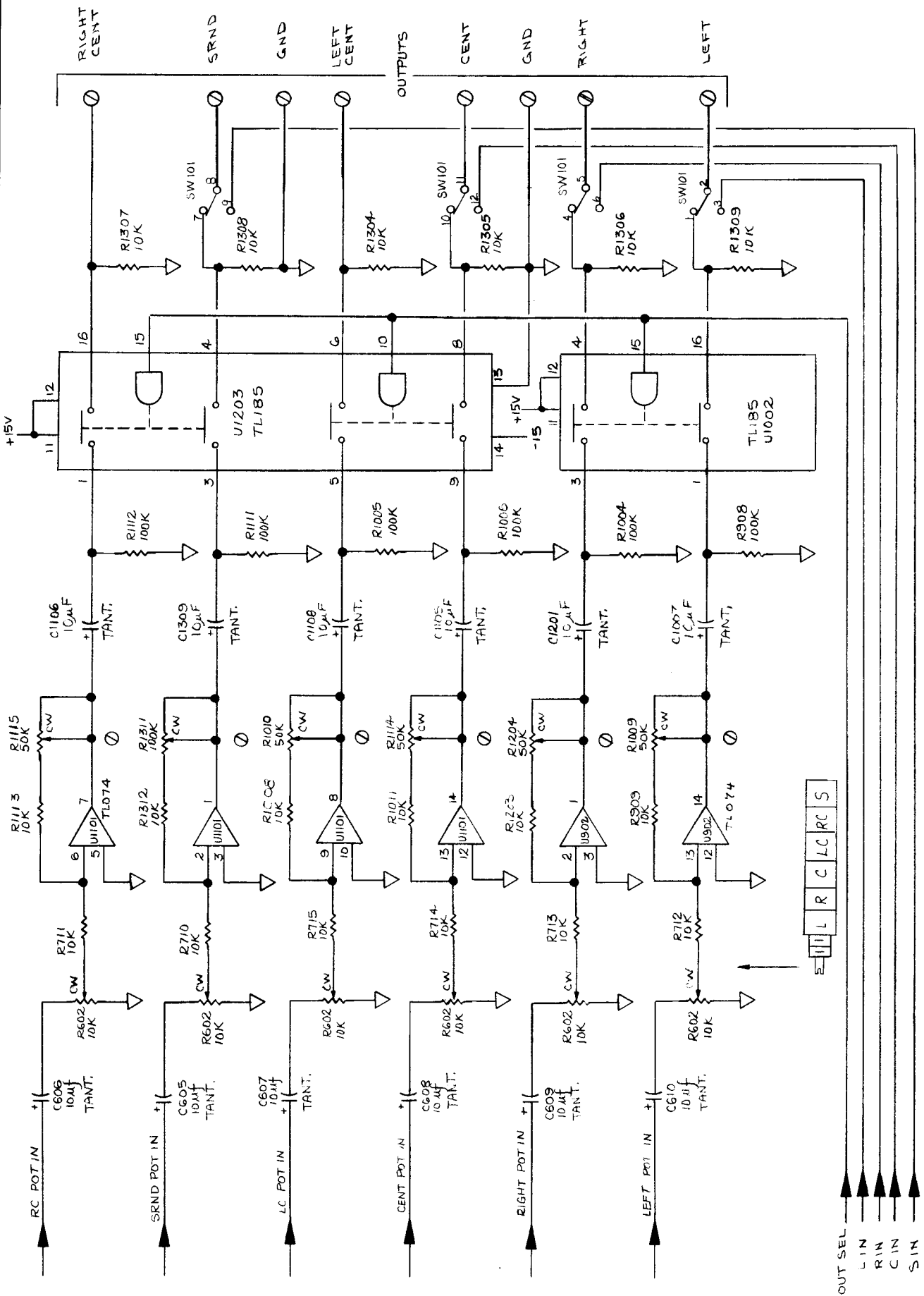
SMART THEATRE SYSTEMS

SCALE: _____ APPROVED BY: _____
 DATE: 2-15-84 DRAWN BY: J. T. _____
 REVISED _____

MP7035

DRAWING NUMBER: **SHEET 4 OF 6**

7035D3



SMART THEATRE SYSTEMS

APPROVED BY: *[Signature]*

SCALE: _____

DATE: 2-13-84

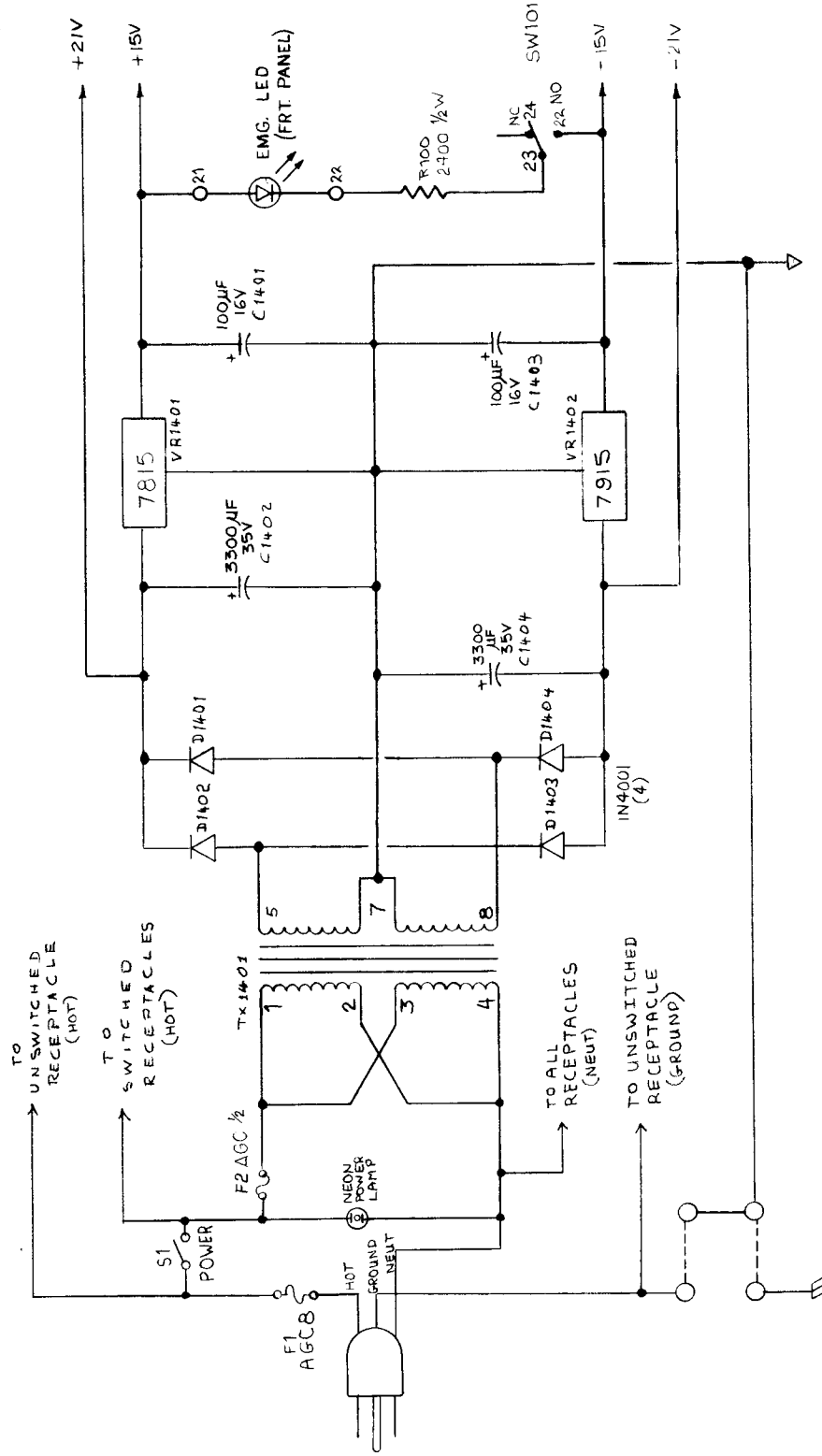
DRAWING NUMBER: **MP7035**

SHEET 5 OF 6

DRAWING NUMBER: **7035D3**

OUT SEL
L IN
R IN
C IN
S IN

DATE/SYM	REVISION RECORD



SMART THEATRE SYSTEM	
DRAWN BY: J. THOMAS	
APPROVED BY: [Signature]	
6 OF 6 SHEETS	TITLE
FRACTIONAL	MP7035 POWER SUPPLY
ANGULAR	DRAWING NUMBER
	7035D300
	DATE

MP7035 PARTS

C0501	CAPACITOR	.1 UF	CERAMIC, 50VDC
C0502	CAPACITOR	.1 UF	CERAMIC, 50VDC
C0601	CAPACITOR	.68 UF	POLY 50VDC
C0602	CAPACITOR	1 UF	ELECTRO, 50VDC
C0604	CAPACITOR	100 UF	ELECTRO, 10 VDC
C0605	CAPACITOR	10 UF	ELECTRO, 16VDC
C0606	CAPACITOR	10 UF	ELECTRO, 16VDC
C0607	CAPACITOR	10 UF	ELECTRO, 16VDC
C0608	CAPACITOR	10 UF	ELECTRO, 16VDC
C0609	CAPACITOR	10 UF	ELECTRO, 16VDC
C0701	CAPACITOR	.047 UF	POLY, 100VDC
C0703	CAPACITOR	.1 UF	CERAMIC, 50VDC
C0705	CAPACITOR	.1 UF	CERAMIC, 50VDC
C0706	CAPACITOR	1 UF	POLY 50VDC
C0707	CAPACITOR	.47 UF	TANTALUM
C0801	CAPACITOR	1 UF	POLY 50VDC
C0802	CAPACITOR	100 UF	ELECTRO, 10VDC
C0804	CAPACITOR	.068 UF	POLY 50VDC
C0805	CAPACITOR	.033 UF	POLY 50VDC
C0901	CAPACITOR	.047 UF	POLY 50VDC
C0902	CAPACITOR	.033 UF	POLY 50VDC
C0903	CAPACITOR	.068	POLY 50VDC
C1001	CAPACITOR	.001 UF	POLY 50VDC
C1002	CAPACITOR	.1 UF	CERAMIC, 50VDC
C1003	CAPACITOR	.0039UF	POLY, 100VDC
C1004	CAPACITOR	.1 UF	CERAMIC, 50VDC
C1005	CAPACITOR	1 UF	POLY 50VDC
C1006	CAPACITOR	.68 UF	POLY 50VDC
C1007	CAPACITOR	22 UF	ELECTRO, 16VDC
C1101	CAPACITOR	.047 UF	POLY 50VDC
C1102	CAPACITOR	.0039	POLY, 100VDC
C1103	CAPACITOR	1 UF	ELECTRO, 50VDC
C1104	CAPACITOR	100 UF	ELECTRO, 10VDC
C1105	CAPACITOR	22 UF	ELECTRO, 16VDC
C1106	CAPACITOR	22 UF	ELECTRO, 16VDC
C1108	CAPACITOR	22 UF	ELECTRO, 16VDC
C1201	CAPACITOR	22 UF	ELECTRO, 16VDC
C1301	CAPACITOR	.001 UF	POLY, 100VDC
C1302	CAPACITOR	.1 UF	CERAMIC, 50VDC
C1304	CAPACITOR	.1 UF	CERAMIC, 50VDC
C1305	CAPACITOR	.68 UF	POLY 50VDC
C1307	CAPACITOR	1 UF	POLY 50VDC
C1308	CAPACITOR	1 UF	POLY 50VDC
C1309	CAPACITOR	22 UF	ELECTRO, 16VDC
C1401	CAPACITOR	100 UF	ELECTRO, 16VDC
C1402	CAPACITOR	3300 UF	ELECTRO, 35VDC
C1403	CAPACITOR	100 UF	ELECTRO, 16VDC
C1404	CAPACITOR	3300 UF	ELECTRO, 35VDC
C610	CAPACITOR	10 UF	ELECTRO, 16VDC
D0101	DIODE	1N4148	SILICON
D0102	DIODE	1N4148	SILICON
D0801	DIODE	1N4148	SILICON
D0802	DIODE	1N4148	SILICON
D1001	DIODE	1N4148	SILICON
D1201	DIODE	1N4148	SILICON
D1301	DIODE	1N4148	SILICON
D1302	DIODE	1N4148	SILICON
D1401	DIODE	1N4001	1 AMP
D1402	DIODE	1N4001	1 AMP
D1403	DIODE	1N4001	1 AMP
D1404	DIODE	1N4001	1 AMP
M201	MODULE	MOD201	NOISE REDUCTION
M301	MODULE	MOD301	NOISE REDUCTION
M401	MODULE	MOD401	NOISE REDUCTION
Q1001	TRANSISTOR	2N3904	NPN EPOXY
Q701	TRANSISTOR	2N3904	NPN EPOXY
R0101	RESISTOR	22K	5% 1/4 WATT
R0201	RESISTOR	10K	5% 1/4 WATT
R0202	RESISTOR	10K	5% 1/4 WATT
R0301	RESISTOR	10K	5% 1/4 WATT
R0501	RESISTOR	180K	5% 1/4 WATT
R0502	RESISTOR	47K	5% 1/4 WATT
R0503	RESISTOR	27K	5% 1/4 WATT
R0504	RESISTOR	27K	5% 1/4 WATT
R0505	RESISTOR	10K	5% 1/4 WATT
R0506	RESISTOR	10K	5% 1/4 WATT
R0509	RESISTOR	1800	5% 1/4 WATT
R0510	RESISTOR	100K	5% 1/4 WATT
R0511	RESISTOR	100K	5% 1/4 WATT
R0601	RESISTOR	47K	5% 1/4 WATT

R0602	POT	10K	6 GANG FADER
R0701	RESISTOR	1K	5% 1/4 WATT
R0702	RESISTOR	1K	5% 1/4 WATT
R0703	RESISTOR	2700	5% 1/4 WATT
R0704	RESISTOR	2700	5% 1/4 WATT
R0705	RESISTOR	2700	5% 1/4 WATT
R0706	RESISTOR	2700	5% 1/4 WATT
R0707	RESISTOR	100K	5% 1/4 WATT
R0708	RESISTOR	150K	5% 1/4 WATT
R0709	RESISTOR	3600	5% 1/4 WATT
R0710	RESISTOR	10K	5% 1/4 WATT
R0710	RESISTOR	7500	5% 1/4 WATT
R0711	RESISTOR	10K	5% 1/4 WATT
R0712	RESISTOR	10K	5% 1/4 WATT
R0713	RESISTOR	10K	5% 1/4 WATT
R0714	RESISTOR	10K	5% 1/4 WATT
R0715	RESISTOR	10K	5% 1/4 WATT
R0801	RESISTOR	10K	5% 1/4 WATT
R0801	RESISTOR	1K	5% 1/4 WATT
R0802	RESISTOR	22K	5% 1/4 WATT
R0803	RESISTOR	100	5% 1/4 WATT
R0804	RESISTOR	22K	5% 1/4 WATT
R0805	RESISTOR	470	5% 1/4 WATT
R0806	RESISTOR	510	5% 1/4 WATT
R0808	RESISTOR	1K	5% 1/4 WATT
R0809	RESISTOR	22K	5% 1/4 WATT
R0811	RESISTOR	62K	5% 1/4 WATT
R0812	RESISTOR	62K	5% 1/4 WATT
R0813	RESISTOR	62K	5% 1/4 WATT
R0814	RESISTOR	62K	5% 1/4 WATT
R0815	RESISTOR	62K	5% 1/4 WATT
R0816	RESISTOR	62K	5% 1/4 WATT
R0817	RESISTOR	62K	5% 1/4 WATT
R0818	RESISTOR	62K	5% 1/4 WATT
R0901	RESISTOR	10K	5% 1/4 WATT
R0902	RESISTOR	22K	5% 1/4 WATT
R0904	RESISTOR	27K	5% 1/4 WATT
R0905	RESISTOR	2700	5% 1/4 WATT
R0906	RESISTOR	27K	5% 1/4 WATT
R0907	RESISTOR	27K	5% 1/4 WATT
R0908	RESISTOR	100K	5% 1/4 WATT
R0909	RESISTOR	10K	5% 1/4 WATT
R1002	RESISTOR	910	5% 1/4 WATT
R1003	RESISTOR	100	5% 1/4 WATT
R1004	RESISTOR	100K	5% 1/4 WATT
R1005	RESISTOR	100K	RESISTOR
R1007	RESISTOR	22K	5% 1/4 WATT
R1008	RESISTOR	10K	5% 1/4 WATT
R1009	POT	50K	PC MOUNT
R1010	POT	50K	PC MOUNT
R1011	RESISTOR	10K	5% 1/4 WATT
R1102	RESISTOR	22K	5% 1/4 WATT
R1103	RESISTOR	10K	5% 1/4 WATT
R1104	RESISTOR	100	5% 1/4 WATT
R1105	RESISTOR	2700	5% 1/4 WATT
R1106	RESISTOR	27K	5% 1/4 WATT
R1107	RESISTOR	2700	5% 1/4 WATT
R1108	RESISTOR	2700	5% 1/4 WATT
R1110	RESISTOR	2700	5% 1/4 WATT
R1111	RESISTOR	100K	5% 1/4 WATT
R1112	RESISTOR	100K	5% 1/4 WATT
R1113	RESISTOR	10K	5% 1/4 WATT
R1114	POT	50K	PC MOUNT
R1115	POT	50K	P.C.MOUNT
R1201	RESISTOR	910	5% 1/4 WATT
R1202	RESISTOR	100	5% 1/4 WATT
R1203	RESISTOR	10K	5% 1/4 WATT
R1204	POT	50K	PC MOUNT
R1301	RESISTOR	47K	5% 1/4 WATT
R1301	RESISTOR	180	2 WATR810
R1302	RESISTOR	47K	5% 1/4 WATT
R1303	RESISTOR	47K	5% 1/4 WATT
R1304	RESISTOR	10K	5% 1/4 WATT
R1305	RESISTOR	10K	5% 1/4 WATT
R1306	RESISTOR	10K	RESISTOR
R1307	RESISTOR	10K	5% 1/4 WATT
R1308	RESISTOR	10K	5% 1/4 WATT
R1309	RESISTOR	10K	5% 1/4 WATT
R1311	POT	100K	P.C. MOUNT
R1312	RESISTOR	10K	5% 1/4 WATT
T1	TRANSFORM	900007	POWER XFORMER
U0501	IC	CD4001	14 PIN DIP
U0602	IC	LM1894	14 PIN DIP
U0901	IC	LM1894	14 PIN DIP
U0902	IC	TL074	14 PIN DIP
U0902	IC	TL074	14 PIN DIP
U1001	IC	TL185	14 PIN DIP
U1001	IC	TL074	14 PIN DIP
U1002	IC	TL185	14 PIN DIP
U1101	IC	TL074	14 PIN DIP
U1201	IC	LM1894	14 PIN DIP
U1202	IC	TL191	14 PIN DIP
U1203	IC	TL185	14 PIN DIP
V1401	REGULATOR	LM7915	1 AMP
V1402	REGULATOR	LM7815	1 AMP