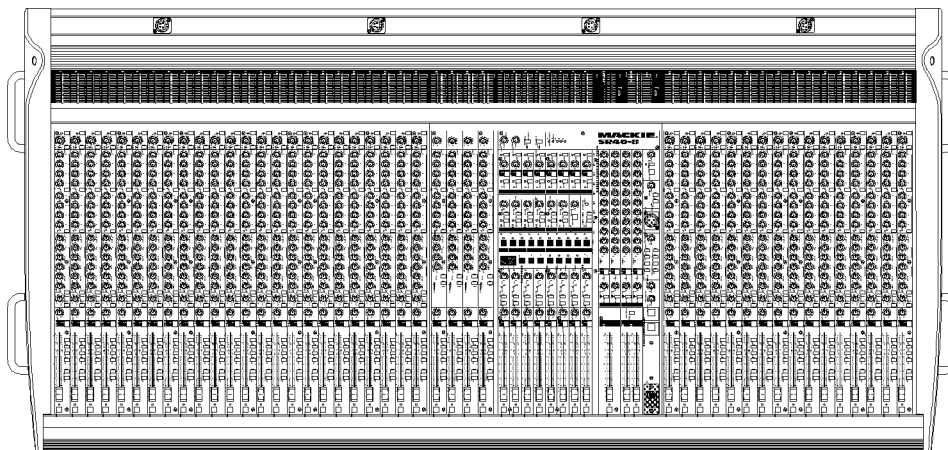


# MACKIE®

## SR40•8

## SR56•8

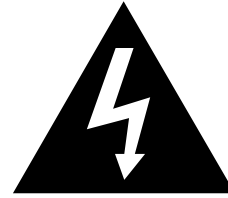


# SERVICE MANUAL



## CAUTION AVIS

RISK OF ELECTRIC SHOCK  
DO NOT OPEN  
*RISQUE DE CHOC ELECTRIQUE  
NE PAS OUVRIR*



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE THE COVER (OR BACK) NO USER SERVICEABLE PARTS INSIDE REFER SERVICING TO QUALIFIED PERSONNEL

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE

TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

*ATTENTION: POUR EVITER LES RISQUES DE CHOC ELECTRIQUE, NE PAS ENLEVER LE COUVERCLE. AUCUN ENTRETIEN DE PIECES INTERIEURES PAR L'USAGER. CONFIER L'ENTRETIEN AU PERSONNEL QUALIFIE.*

*AVIS: POUR EVITER LES RISQUES D'INCENDIE OU D'ELECTROCUTION, N'EXPOSEZ PAS CET ARTICLE A LA PLUIE OU A L'HUMIDITE.*

*POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UN PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS LAISSER AUCUNE PARTIE A DECOUVERT.*

This apparatus does not exceed the Class A/Class B (whichever is applicable) limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

**ATTENTION :** Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de class A/de class B (selon le cas) prescrites dans le règlement sur le brouillage radioélectrique édicté par les ministere des communications du Canada.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio energy and, if not installed properly and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure, that may be of sufficient magnitude to constitute a risk of electric shock to persons.

*Le symbole éclair avec point de flèche à l'intérieur d'un triangle équilatéral est utilisé pour alerter l'utilisateur de la présence à l'intérieur du coffret de "voltage dangereux" non isolé d'ampleur suffisante pour constituer un risque d'électrocution.*



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

*Le point d'exclamation à l'intérieur d'un triangle de la présence d'instructions importantes pour le fonctionnement et l'entretien (service) dans le livret d'instruction accompagnant l'appareil.*

# CONTENTS

INTRODUCTION .....	4
TECHNICAL SUPPORT .....	4
DISCLAIMER .....	4
SYSTEM OVERVIEW .....	5
THE SR40•8 IN A NUTSHELL .....	5
MATRIX .....	5
STAGE MONITORS & EFFECTS .....	6
MONITORING, SOLO, & METERING .....	6
TALKBACK & INTERCOM .....	7
ULTRA MUTE™ .....	7
SWITCH POSITIONS .....	7
ULTRA MUTE™ FUNCTION SUMMARY .....	8
BLOCK DIAGRAM .....	10
SPECIFICATIONS .....	12
CIRCUIT THEORY .....	13
ANALOG CIRCUITS / SIGNAL PATH .....	13
INPUT CIRCUITRY .....	14
PREAMP CIRCUITRY .....	14
SOLO CONTROL CIRCUIT .....	15
INPUT SOLO LOGIC .....	16
OUTPUT SOLO LOGIC .....	16
OTHER MATTERS .....	17
CLEAR COM™ INTERFACE .....	18
CIRCUIT DESCRIPTION .....	18
TRANSMIT SIGNAL PATH .....	19
RECEIVE SIGNAL PATH .....	19
CALL SIGNAL .....	19
IGNORE SWITCH (Rev 6 PCB) .....	20
IGNORE SWITCH (Rev A and higher PCBs) .....	20
ULTRA MUTE™ .....	22
CIRCUIT DESCRIPTION .....	22
SELF TEST PROCEDURE .....	24
PARTS .....	25
QUICK PARTS .....	25
CONSOLE CHASSIS ASSEMBLY .....	29
POWER SUPPLY CHASSIS ASSEMBLY .....	41
CONSOLE PARTS LIST .....	42
POWER SUPPLY PARTS LIST .....	46
CONNECTOR PINOUT AND LOCATION .....	48
SCHEMATICS / PCB LAYOUTS .....	54

## INTRODUCTION

This manual contains complete service information for the SR40•8 and SR56•8 mixing consoles and power supply. Operating instructions will be touched on briefly. For complete operating instructions refer to the owner's manual. For simplicity, this manual will refer to both products as the SR40•8.

The SR40•8 is a large format mixing console designed for professional sound reinforcement and recording. It features 40 input channels, 8 sub groups, 12x4 matrix, RS232 / MIDI compatible microprocessor controlled muting, Clear-Com™ interface, and more. The SR40•8 incorporates the latest technologies to provide sonic quality, price/performance value, and legendary Mackie reliability.

**SERVICE ON THE SR40•8 / SR56•8 IS  
TO BE PERFORMED BY EXPERIENCED  
TECHNICIANS ONLY!**

To service the SR40•8, technicians should be familiar with op-amp based and discrete analog circuitry, digital troubleshooting, and the operation / application of mixing consoles. Presentation of this manual does not constitute endorsement of qualifications by Mackie Designs.

### **! SMD !**

The SR40•8 / SR56•8 make extensive use of surface mount components. Servicing technicians should have the tools and experience to perform surface mount rework.

### **! ESD !**

The SR40•8 / SR56•8 contain components that may be damaged by electrostatic discharge. ESD precautions should be taken when servicing.

## SERVICE TECHNICAL ASSISTANCE

Mackie Designs, Service Technical Assistance, is available 8AM - 5PM PST, Monday through Friday for Authorized Mackie Service Centers, at 1-800-258-6883. Feel free to call with any questions and speak with a carefully-calibrated technician. If one is not available, leave a detailed message and a qualified Mackoid will return your call asap.

## DISCLAIMER

The information contained in this manual is proprietary to Mackie Designs, Inc. The entire manual is protected under copyright and may not be reproduced by any means without express written permission from Mackie Designs, Inc.

# SYSTEM OVERVIEW

## THE SR40•8 IN A NUTSHELL

This section provides a quick summary of the SR40•8's major features. It is not intended to take the place of the owner's manual. It is included here to help servicing technicians familiarize themselves with the SR40•8.

### MIXING

Channel controls manipulate mic/line signals in this order: phantom power, trim, polarity, low cut filter, insert, EQ, mute, fader, pan, and assignment switches. These signals are then assigned to the left, right and/or center mix, or to one of the eight subgroups.

The main mix (left, right and center) typically feeds the main sound system. The left/right mix can be controlled by individual faders or switched to share one fader. Subs 1-8 can be assigned to the left/right or center mix, enabling them to be used as master faders for submixes of channels. Alternatively, the subs can be used for secondary speaker systems. More output routing options involve the matrix, discussed below.

### MATRIX

The SR40•8 has 11 primary mix buses: left, right, center, and 8 subs. Via the channel's assignment switching, signals can be distributed among these buses. If a situation demands a unique destination for each mix, the dedicated outputs for each of these mixes will suffice.

More likely, a situation will demand that these 11 mixes be recombined in some way, to feed off-site systems, delay towers, assistive listening systems, or special mixes for recording or broadcast. Enter the Matrix.

The matrix is simply four separate 12 x 1 mixers. Its inputs include: left, right, center, subs 1-8 and an external input at the patch panel. Each matrix strip has a level control for each of the eleven internal inputs as well as master level, solo and mute controls.

## STAGE MONITORS & EFFECTS

Every channel, as well as each of the four main aux returns (A1-A4), has eight aux send controls. Per channel, aux sends 1-4 can be switched to be post-fader (for effects sends) or pre-EQ/pre-fader (for stage monitors). Aux sends 5-8 have a similar switch, post-fader (for effects sends) or post-EQ/pre-fader (for stage monitors with EQ).

In the output section, aux sends can be routed in one of two ways. Normally, these aux mixes are controlled by the rotary master level control and mute switch, and then sent to TRS output jacks. This method is fine for effects sends or small applications. Larger installations may demand more flexibility for the stage mixes. Enter the flip switch.

Each aux send master has a flip switch. This removes an aux mix from its dedicated mute switch and level control, and diverts it to the like-numbered sub routing. This way, an aux send designated for stage cueing will have its own dedicated 100mm fader, "Air" EQ, insert, and balanced XLR output. Meanwhile, a flipped aux send also diverts the sub signal to the original aux send master controls and TRS output, ensuring that sub assignments can still be used.

When used for effects, aux sends are patched into the inputs of parallel effects devices, like reverb and delay units. The outputs of these devices are the origin of aux return signals. Aux return signals, or any stereo line-level signals, can be injected into either the main aux returns or the "B" aux returns (or into pairs of channels). The main aux returns provide most of the controls present in the channels: trim, high-pass filter, EQ, mute, pan, and assign. "B" aux returns B1, B2, and B3 are dedicated to the left/right mix and offer only rotary level and mute switch controls. (Aux return B4 is dedicated to the center mix.) Additionally, there are two stereo line-level RCA tape returns, dedicated to the left/right mix, with level control and mute switch.

## MONITORING, SOLO, & METERING

Usually an engineer listens to the left/right mix (with the center mix blended in), just as the audience is hearing it. Signals available for monitoring by the engineer are available via either of the high-powered headphone outputs, with level control, or a line-level monitor (control room) output, also with level control. There is a stereo insert dedicated to the phones mix, to allow a delay device to synchronize the distance delay present in large halls.

To audition individual signals or groups of signals, there are solo switches on every channel, main aux return, aux send master, matrix A-D, tape return, and sub 1-8, as well as the left/right/center faders. The engineer behind an SR40•8 can listen to any signal, individually or in groups, without disturbing the content of any of the console's primary outputs. Input signals (channels, main aux returns, "B" aux returns, tape A, and tape B) can be globally switched PFL (pre-fader-listen) or AFL (after-fader-listen, stereo-in-place). Output signals (main/left/right, subs 1-8, aux send masters, and matrix A-D) have a similar switch.

There are 59 twelve-segment LED-ladder meter displays on the SR40•8, one for each channel and sub, two for each stereo main aux return, and one each for the left/right/center main mixes. Input and output meters can each be globally switched PFL or AFL. During solo, described earlier, the left/right/center meters automatically display the solo levels: AFL on the left/right meters and PFL on the center.

## TALKBACK & INTERCOM

The SR40•8's extensive talkback section allows the engineer to speak into several outputs via a master talkback switch, with assignment switches for aux 1-4, aux 5-8, L/R mix, an external talkback output, and one switch for each matrix (A-D). Talkback microphones are patched into either of the two phantom powered XLR inputs and regulated by a level control. Additionally, the talkback signal may be replaced by a 400Hz sine wave for checking levels, or pink noise for quickly checking frequency response.

The Clear-Com™ Intercom System is already standard equipment in most large facilities. It allows all crew members to share a "party line," so they may communicate at will, without having to toggle between send and receive. The Mackie SR40•8 takes that a step farther by allowing the engineer to join in at his/her discretion using the talkback microphone and phones outputs: No separate intercom headset is required for the engineer.

## ULTRA MUTE™

Almost every signal path in the SR40•8 has an electronically-controlled mute switch, including the channels, main aux return, subgroups, aux sends, and matrices. These mutes may be activated in four ways: By pressing the local mute switch included for each path, by assigning paths to a mute group, by assigning paths to a mute snapshot, or by external MIDI and RS232 commands. Using just the local switches and mute groups, an engineer can quickly mute or un-mute large groups of signal paths. Using an external sequencer to generate MIDI muting commands, complicated muting moves can be made automatically, with no user intervention.

When a channel or main aux return is muted, the entire channel is muted, including the assign outputs, pre- and post-fader aux sends, and direct out. The insert send remains active, as do the channel's PFL meters and PFL solo outputs.

## SWITCH POSITIONS

You may have noticed the white lines printed just above most of the push-button switches on your SR40•8. We've put them there to make it easier for you to see if the switch is engaged (down). Here's how they work:

Assuming you are sitting in front of the console, when a switch is disengaged (up), its button hides the white line from your field of vision. When you engage the switch, the line suddenly appears. Although it may not seem obvious at first, you'll soon find that the indicator line really helps you determine switch positions at a glance. Clever, ain't it?

## ULTRA MUTE™ FUNCTION SUMMARY

---

### GENERAL

- There are 9 Sets of 10 Groups each, for a total of 90 Groups. Up to 10 Groups can be active at a time within a Set.
- There are 100 Snapshots (00-99). Only one Snapshot can be active at a time.
- Snapshot 00 is loaded into the console when it is first powered up. Factory default is all mutes off.

### MODE

- Toggles between Group Mode and Snapshot Mode.
- When going from Group Mode to Snapshot Mode, you should press the DO IT button to engage the Snapshot in the Numeric Display.
- When going from Snapshot to Group Mode, you must press CLEAR for two seconds to clear the Snapshot's mute configuration from the board. Then select the Group you want to engage using the 0-9 buttons.

### ARROW UP/DOWN BUTTONS

- In Group Mode, increments and decrements the Set Number in the Numeric Display (all Groups must be OFF).
- In Snapshot Mode, increments and decrements Snapshots in the Numeric Display.
- In Snapshot Mode, press and hold the CLEAR and Arrow Up buttons to enter Auto-Increment (Load-and-Go) mode. Then press the DO IT button to engage consecutively increasing Snapshots.
- Press and hold the CLEAR and Arrow Down buttons to exit Auto-Increment mode.

### SYSTEM BYPASS

- Turns off ULTRA MUTE. Disables all automation, including all MIDI commands received through the MIDI or DATA ports.  
Note: Sysex messages are still recognized while in Bypass mode. A Sysex data move does not affect the console's current mute status.

### MUTE PREVIEW

- In Group or Snapshot Mode, allows viewing the mute configuration of programmed Snapshots or Groups without engaging them. Press DO IT to engage a previewed Snapshot or Group.
- Press MUTE PREVIEW again to exit Preview Mode.

### STORE

- In Group Mode, press STORE followed by a number button (0-9) to store a mute configuration in ULTRA MUTE's memory.
- In Snapshot Mode, press STORE twice to store a mute configuration in ULTRA MUTE's memory.
- Press CLEAR to exit Store mode without saving.



## **CLEAR**

- In Group Mode, used to turn off all active Groups. Press and hold CLEAR for two seconds, then release to turn off all mutes on the console. This also indicates which Groups have been programmed (programmed Groups' LEDs light up, unprogrammed Groups' LEDs do not).
- In Group Preview Mode, clears all Groups currently being previewed.
- In Snapshot Mode, press and hold for two seconds to turn off all mutes on the console.
- In Snapshot Preview Mode, clears Snapshot currently being previewed.
- In Snapshot Mode, press and hold the CLEAR and Arrow Up buttons to enter Auto-Increment (Load-and-Go) Mode. Then press DO IT to engage consecutive Snapshots.
- Press and hold the CLEAR and Arrow Down buttons to exit Auto-Increment Mode.
- Press to abort a store procedure.
- To clear all programmed mutes, in Group or Snapshot Mode, press and hold the CLEAR and MODE buttons for two seconds.

## **DO IT**

- In Snapshot Mode, press DO IT to engage the Snapshot selected in the Numeric Display.
- In Auto-Increment Mode, press to advance to the next Snapshot.
- In Preview Mode, press DO IT to engage the Group or Snapshot selected.

## **NUMBER BUTTONS (0-9)**

- In Group Mode, press number buttons to select Groups to engage, preview, or program.
- In Snapshot Mode, press number buttons to select a two-digit Snapshot number to engage, preview or program. For example, to select Snapshot 5, press "0" and "5." To select Snapshot 38, press "3" and "8."

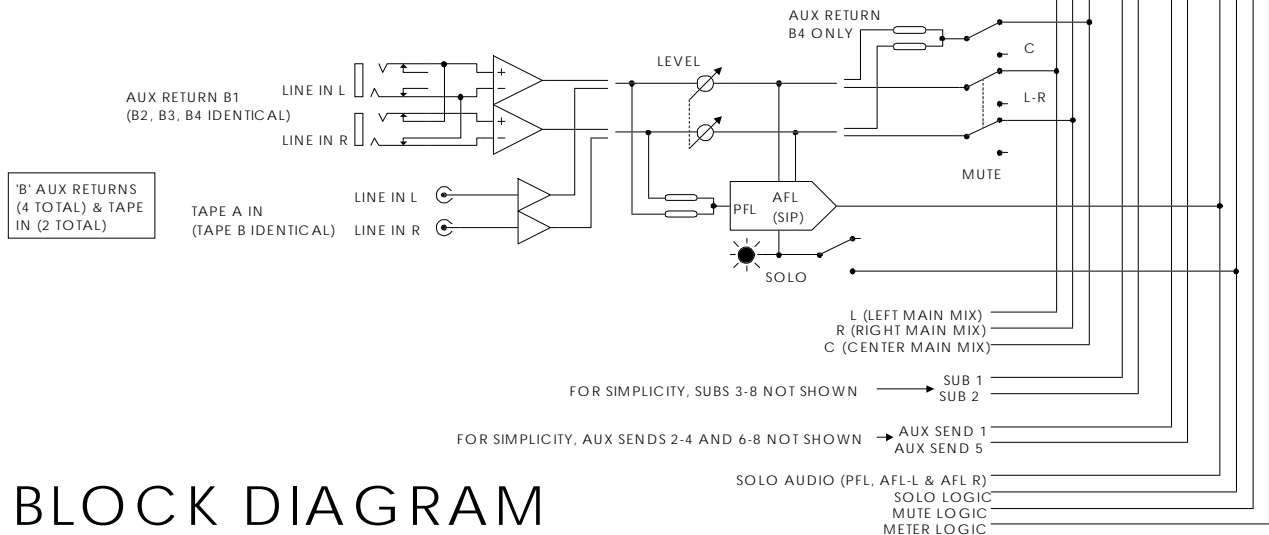
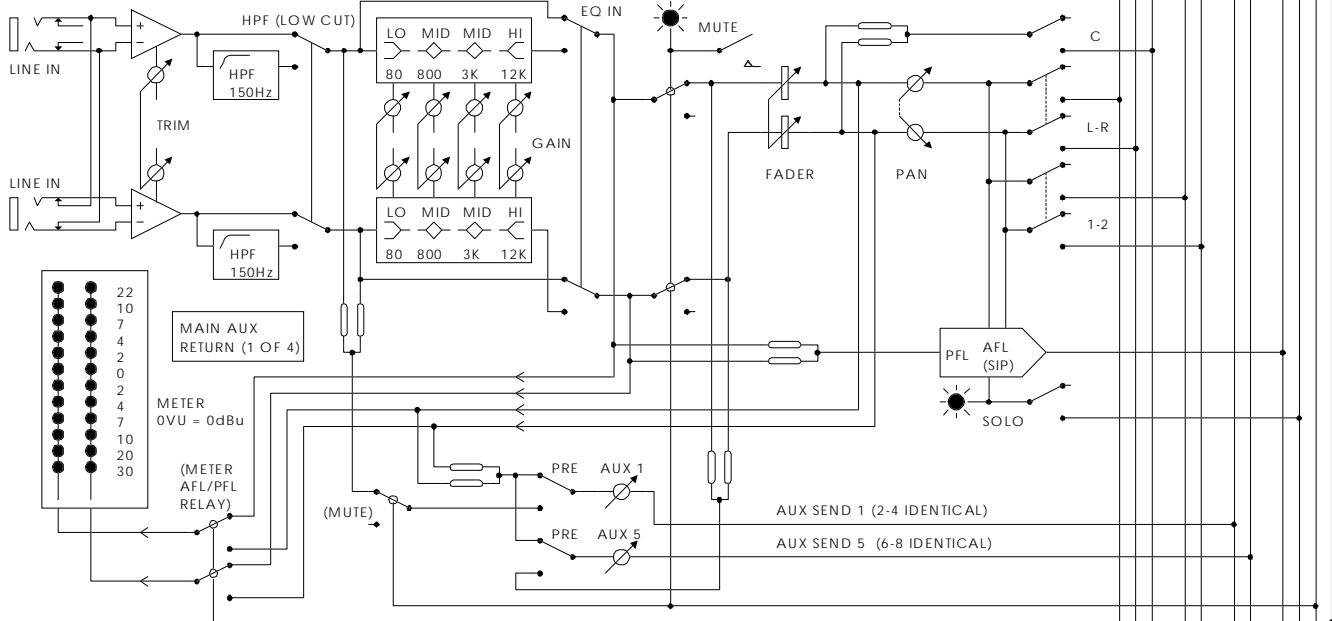
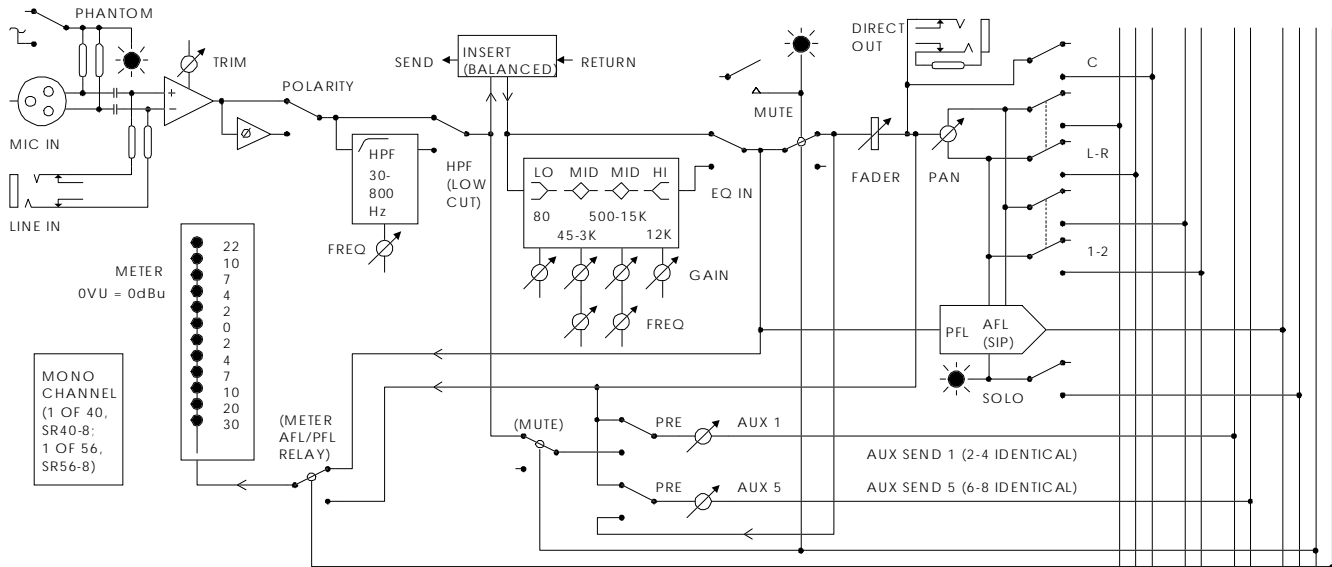
## **TO CREATE A GROUP:**

1. Press the MODE button to enter Group mode (one digit lights in the numeric display).
2. Select the Set in which to store the Group by pressing the Arrow Up/Down buttons.
3. Activate all the mute switches you wish to store in the Group.
4. Press STORE.
5. Press a number button 0-9 to select the Group in which to store the current mute configuration.

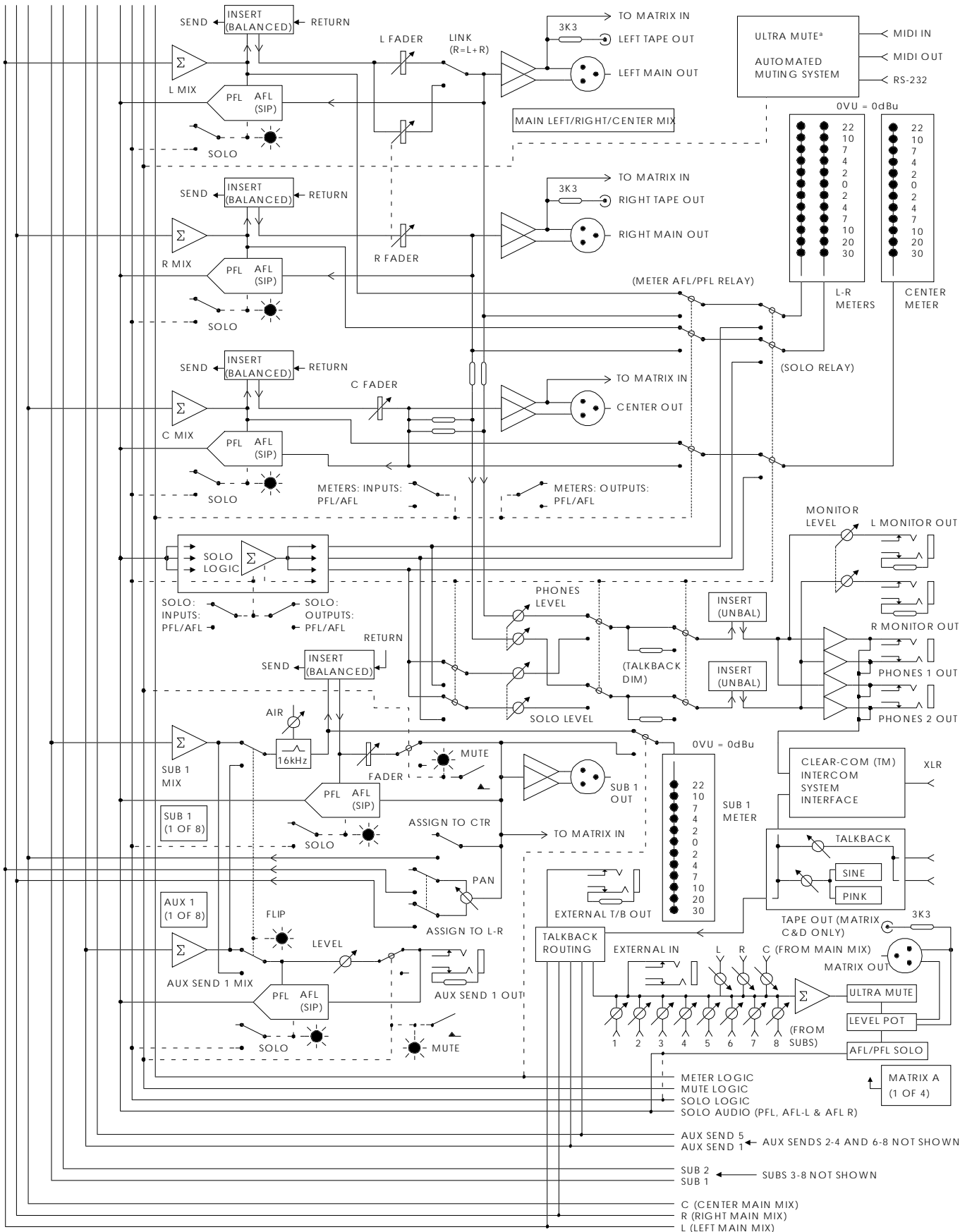
## **TO CREATE A SNAPSHOT:**

1. Press the MODE button to enter Snapshot mode (both digits light in the numeric display).
2. Select the Snapshot number in which to store the mute configuration by pressing the Arrow Up/Down buttons, or by selecting the number using the number buttons 0-9.
3. Activate all mute switches you wish to store in the Snapshot.
4. Press STORE twice.

# MACKIE SR40•8 SERVICE MANUAL



## BLOCK DIAGRAM



## SPECIFICATIONS

### Noise

Master Fader @ Unity, channel gains down	-90dBu
Master Fader @ Unity, channel gains @ Unity	-86dBu
Signal to Noise Ratio (ref +4)	≥90dB
Total Harmonic Distortion	Below 0.005%

### Crosstalk

Channel Fader down, channels @ Unity	-95dBu
Channel muted, other channels @ Unity	-95dBu

### Frequency Response

20Hz to 60kHz	+0/-1dB
10Hz to 100kHz	+0/-3dB

### Maximum Levels

Mic preamp input	+22dBu
All other inputs	+22dBu
Balanced XLR outputs	+28dBu
All other outputs	+22dBu

### Impedances

Mic preamp input	2.4kΩ
All other inputs (except inserts): bal.	>10kΩ
RCA outputs	3.3kΩ
All other outputs:	
balanced	240Ω
unbalanced	120Ω

### Equalization

Low EQ, shelving	±15dB, 80Hz
Low Mid EQ, 1.5 octave bandwidth	
Mono channels: sweepable	±15dB, 45Hz-3kHz
Stereo channels: fixed	±15dB, 800Hz
Hi Mid EQ, 1.5 octave bandwidth	
Mono channels: sweepable	500Hz-15kHz
Stereo channels: fixed	±15dB, 3kHz
Hi EQ, shelving	±15dB, 12kHz
High Pass Filter	
Mono channels: sweepable	12dB/octave, 30-800Hz
Stereo channels: fixed	18dB/octave, 150Hz

### Microphone Preamp

E.I.N.	-129.5dBm (20Hz-20KHz)
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### Power Requirement

SR40•8/SR56•8 400-Watt Power Supply	475W
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### Weight

SR40•8	110 lbs.
SR56•8	145 lbs.
Power Supply	44 lbs.

# CIRCUIT THEORY

## ANALOG CIRCUITS / SIGNAL PATH

The SR40•8 signal path begins with hybrid (discrete/op-amp) mic/line preamps. After the mic/line preamp, the circuitry is largely op-amp based. The function of audio op-amp “building blocks” should be self-evident from the schematics (If not, you need to fold up this manual, put the screws back in the mixer, and take it to someone who knows electronics!). This section will explain some of the circuits and architecture unique to the SR40•8.

### VLZ® ARCHITECTURE

To keep thermal (Johnson) noise to a minimum, Mackie mixers employ VLZ architecture. In VLZ, or “Very Low Impedance”, architecture internal impedances are kept as low as practical in as many places as possible. Resistor values are scaled down by a factor of 3 to 4.

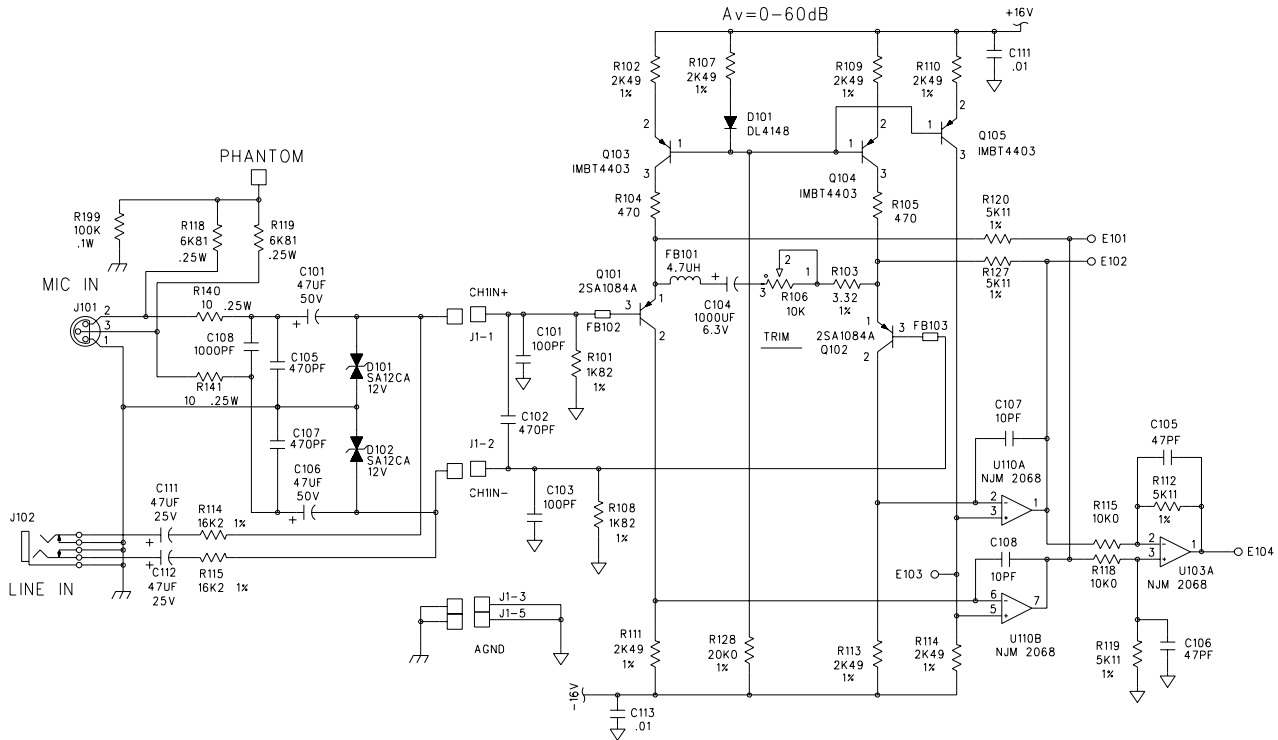
NJM4560 and NJM2068 op-amps are used to drive the lower internal impedances. These devices’ outputs are capable of sinking more current than comparable devices.

It is critical that these op-amps not be substituted. Using NE5532 or TL0xx op-amps will compromise performance.

(Yes, there are some costly devices that outperform the 4560 on paper, but in optimized VLZ circuitry, they will offer little to no improvement. Besides, do you REALLY want to replace 600+ SMD op-amps AND void the warranty?!!)

## MIC/LINE PREAMP

The SR40•8 uses Mackie's famous low-noise, high headroom mic/line preamp design. The circuit has been revised since the version you may be familiar with from the earlier Mackie products. It's topology is more elaborate than a standard discrete differential pair feeding an op-amp and has considerable performance advantages.



## INPUT CIRCUITRY

Audio signal can be applied to either the XLR jack or 1/4" TRS jack. From the XLR input R140 and R141 provide fusing protection, C105,107, 108 roll RF, coupling capacitors C101,106 block DC from the 48V phantom supply or any external source. From the 1/4" TRS input the signal passes through coupling caps C111,112. R114,115 provide a -20dB pad when using the 1/4" TRS input. Both inputs are clamped to within 12V of ground by D101,102.

## PREAMP CIRCUITRY

On the channel board further RF rolloff is provided by C101,102,103 and FB102,103.

Q103,104 form current sources for the differential pair Q101,102. Q105 provides a voltage reference to U110A,110B that tracks the differential pair's current source, providing excellent DC stability and power supply rejection (reduced power-up pop).

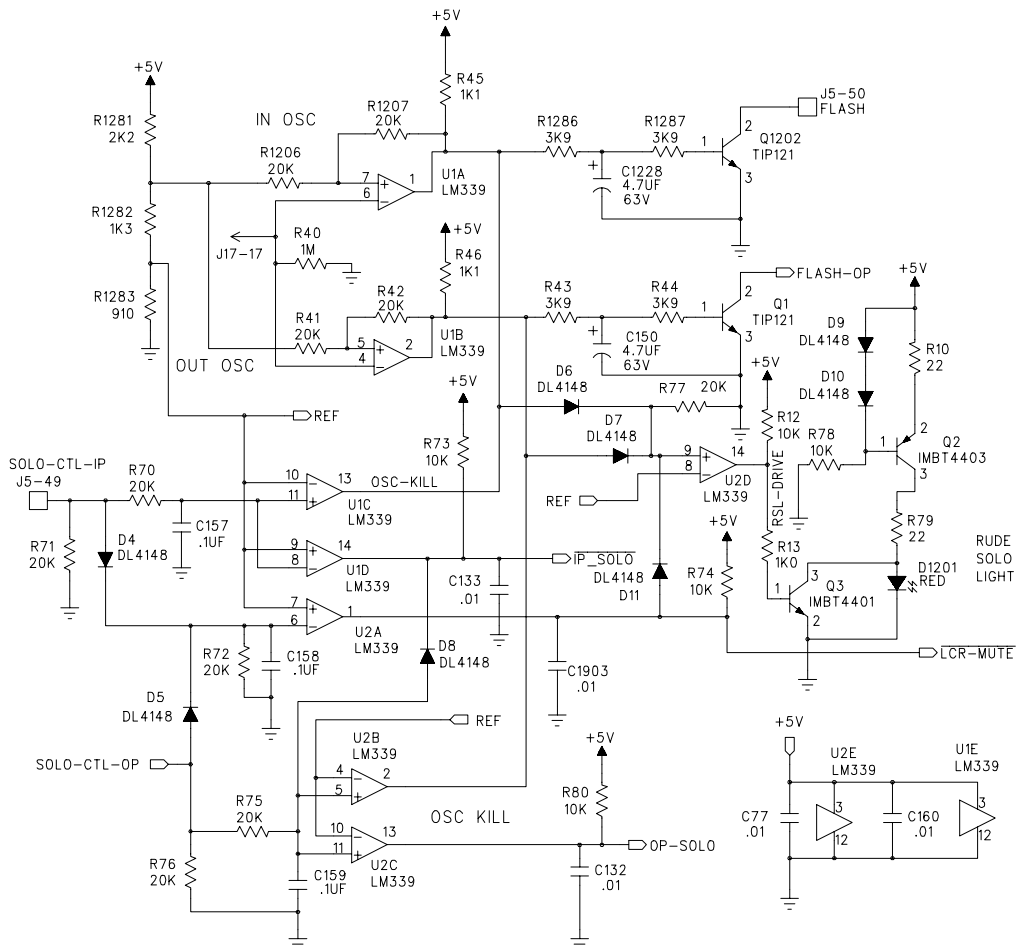
Q101,102 function as discrete voltage to current stages for op-amps U110A,110B respectively. Notice that the collectors of Q101,102 drive current to U110A,110B inverting inputs, there is no voltage swing on the collectors. Gain is adjusted by R106. FB101 is added for further RF rejection. The outputs of U110A,110B are then fed to the differential op-amp U103A.

## SOLO CONTROL CIRCUIT

The SR40-8 has two interlinked solo systems. One serves all inputs: channels 1 to 40, aux returns A1-A4, B1-B4, and Tape inputs A and B. The other serves all outputs: subs 1-8, aux sends 1-8, left, center, right, and matrices A-D.

Separate push-switches select between pre-fade-listen (PFL) and after-fade-listen/solo-in-place (AFL/SIP or just AFL). There is one switch for the input solo system, and another for the output solo system.

The solo clock is generated on the Output Digital PCB. This arrangement allows the blink rate of the solo LEDs to sync with the ULTRA MUTE system.



## INPUT SOLO LOGIC

At any input, depressing the solo switch connects 5V to the solo LED and to the solo control bus *SOLO-CNTL-IP* via a 4148 diode. The cathode of the solo LED connects to the flash bus *FLASH* via a 220-ohm current-limiting resistor. The flash bus is a current sink and only operates when an input has been soloed.

U1A is an LM339 comparator wired as an inverting buffer. Its output is wire-OR connected to the output of U1C, another LM339 comparator, allowing U1C to short U1A to ground. (note: unlike a standard op-amp used as a comparator the LM339 has an open collector output and switches only to its negative supply. In this case, ground.) When *SOLO-CNTL-IP* is higher than the solo reference voltage (1V, ref), U1C goes high, allowing U1A to pass the solo clock. R70 and C157 form a lowpass filter which removes any extraneous "junk" from the signal.

U1A drives power darlington transistor Q1202 through a shaping network consisting of R1286, C1228, and R1287. Q1202's collector is distributed to all input solo switches via the *FLASH* bus, acting as a current sink for all input solo LEDs.

Comparator U1D's inverting input is wired in parallel with U1C. U1D's output goes low whenever *SOLO-CNTL-IP* is high, controlling analog switches U1211D, U1211C, U3C, U3D, and U3A. U1211 delivers input solo signals to the headphone system. U3 delivers input solo signals to the LCR meters.

## OUTPUT SOLO LOGIC

At any output, depressing the solo switch connects 5V to the solo LED and to the solo control bus *SOLO-CNTL-OP* via a 4148 diode. The cathode of the solo LED connects to the flash bus *FLASH-OP* via a 220-ohm current-limiting resistor. The flash bus is a current sink and only operates when an output has been soloed.

U1B is an LM339 comparator wired as an inverting buffer. Its output is wire-OR connected to U2B, another LM339 comparator, allowing U2B to short U1B to ground. When *SOLO-CNTL-OP* is higher than the solo reference voltage (1V, ref), U2B goes high allowing U1B to pass the solo clock. R75 and C159 form a lowpass filter which removes any extraneous "junk" from the signal.

U1B drives power darlington transistor Q1 through a shaping network consisting of R43, C150, and R44. Q1's collector is distributed to all output solo switches via the *FLASH-OP* bus, acting as a current sink for all output solo LEDs.

Comparator U2C's non-inverting input is wired in parallel with U2B's. U2C's output goes high whenever *SOLO-CNTL-OP* is high. U2C's output controls analog switches U1211A, U1211B, U4A, U4B, and U4C. U1211 delivers output solo signals to the headphone system. U4 delivers output solo signals to the LCR meters.



## OTHER MATTERS

Diode OR gate D4 and D5 drive comparator U2A, whose output goes low whenever *SOLO-CNTL-IP* or *SOLO-CNTL-OP* is high. U2A's active low output drives the *LCR-MUTE* line, which controls shunt-series analog switches U1209A, U1209B, U1209C, and U1209D.

Q2 operates as a 25 mA current source for the Rude Solo Light (RSL). Diode OR gate D6, D7 and D11 link both oscillators (U1A and U1B) to comparator U2D whose output drives transistor Q3 which shorts and unshorts the RSL, causing it to flash. Note that the RSL is out-of-phase with the solo LEDs at any of the solo switches; that is, they alternate. D11 couples the *LCR-MUTE* line to U2D, ensuring that the RSL is extinguished when nothing is soloed (the resting state for U1A and U1B is low, which would allow the RSL to be on).

D8 couples the *IP-SOLO* line to the input to the *SOLO-CNTL-OP* comparators. Since U1D acts as a current-sink, it (via D8) prevents the output solo comparators from functioning any time that *SOLO-CNTL-OP* is present. This means that inputs have precedence over outputs in the solo system; if an output is soloed, and the user solos any input, that input will be heard, and the output solo muted. The corresponding output solo LED is extinguished during this time.

## CLEAR COM™ INTERFACE

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The Clear Com production intercom system is the de-facto standard within the music industry. The SR40-8 has an integral Clear Com interface that emulates a standard belt pack and ties it into the console's headphone system. To use it, you use the console's talkback microphone and the solo system headphones. The interface provides the standard Clear Com beltpack features: call button, call light, receive level control, and push-to-talk switch. Of course, like any Mackie product, there's some new thinking going on to make your life easier.

One major problem for any intercom system is the possibility of a ground loop between the audio console's ground system and whatever ground the production intercom system is using. In many situations, the stage lighting company provides the intercom. In this case, the intercom system ground is most likely the same as the dimmer rack's (nasty, really nasty). It is best if this ground not come in contact with the audio console's ground.

The SR40-8's Clear Com interface uses an isolation transformer to keep the two ground systems completely separate. There is no possibility of a ground loop regardless of who supplies the intercom system and where they get their ground from.

### CIRCUIT DESCRIPTION

(Refer to the MASTER PCB schematic.)

The Clear Com intercom system uses a standard microphone cable as its means of interconnection. Signal levels are low enough that the system can use a spare mic line in the microphone snake. The three wires of the mic cable are used for: pin 1 - ground, pin 2 - 28V dc power, pin 3 audio. This is a party-line intercom system since all talkers and all listeners share the same line. All stations are connected in parallel. The DC voltage on pin 2 supplies power for the entire system. Any station can talk and any station can listen. The system uses a low voltage DC signal applied to the audio line for signaling. A simple darlington transistor switch monitors the DC conditions on the line and turns on a light bulb when it detects a call signal.

One other competing intercom system, pioneered by RTS Systems (now a division of Telex), uses a balanced line for the audio signal with the audio modulated onto the power supply voltage. Ultrasonic tones provide addressable signaling. This system has found a home within the broadcast and video production fields. The two systems are not compatible without use of a special interface system.

## TRANSMIT SIGNAL PATH

The transmit signal path begins at the talkback microphone. The intercom interface takes the line level signal at U1705A and sends it to the intercom sub-system via JP1704 and JP1803.

Analog switch U1801A passes the transmit audio when the INTERCOM button has been pressed. U1802A buffers the analog switch output and U1802B operates as a bi-directional current source that drives the intercom line via isolation transformer T1801.

## RECEIVE SIGNAL PATH

Audio signals from the common party line appear on pin 3 of the XLR connector, pass through isolation transformer T1801, and on to one input of diffamp U1803B. As far as signals coming into the interface are concerned, the non-inverting input of U1803B is all that matters. This audio passes on to analog switches U1801B (ignore), and U1801C (listen when called).

The output of the analog switches drives U1803A, connected as an active variable gain amplifier. The stage gain is variable from off to unity to 16dB. U1803A then feeds a mono input into the headphone amplifier.

The input to the non-inverting side of the diffamp, U1803B, is also common to the output of the bi-directional current source used to drive the line. Since the current source has a high output impedance, it presents a minimal load to signals coming from the line. Another input to the diffamp's inverting input comes from the current source op-amp, but prior to the current sensing resistor, R1807. The two signals are subtracted from each other in the diffamp, and this partially cancels the audio signal (sidetone) that would otherwise appear at U1803B during transmit times. Without sidetone cancellation, the talker's own voice would be very loud in their own headset.

## CALL SIGNAL

When the outside world calls the SR40-8's intercom station, the DC call signal travels through T1801's primary, turning on darlington pair Q1802 and Q1803, which turns on opto-isolator U18. The intercom line powers this circuitry. The lowpass filter formed by R1821 and C1807 and the filtering action of C1806 prevents the call system from being activated by audio signals on the line. Opto-isolator U18 isolates the intercom system ground from the SR40-8's ground system for call signals.

On the revision 6 output PCB, the output of U18 drives the call lamp (physically located in the INTERCOM switch) via Q1805 and simultaneously turning off the LED located in the talkback switch, SW1 via Q1806. U18 also drives the listen-when-called switch U1801C. From revision A on, Q1806 was replaced by a comparator, U1804D. U1804C drives the lamp kill feature via JP1804.

When the SR40-8 originates a call signal, current source Q1801 supplies about 3 milliamps to the intercom line whenever CALL switch, SW1801 is pressed.

## IGNORE SWITCH (Rev 6 PCB)

If the SR40-8 shares the intercom line with the lighting company, there is a high degree of activity on the line, which would ordinarily be distracting to the mix engineer. The ignore switch isolates the SR40-8 from the intercom line, while still allowing it to be accessible.

When the IGNORE switch, SW1802, has been depressed, analog switch U1801B opens, disconnecting the headphone system from the intercom receive audio. When a call signal comes in, U18.4 goes low, which closes analog switch U1801C, re-connecting the receive audio from the intercom to the headphone system in the SR40-8. During the time that the call lamp is lit, the console operator is connected to the intercom system again (assuming that they're wearing the headphones).

Answering the call by pressing the INTERCOM switch charges C144 via D1806, closing analog switch U1801.8, temporarily defeating the effect of pressing the IGNORE switch for a time determined by the discharge of C144 through R1899. Double-clicking the ignore switch quickly discharges C144 through R1832, resetting the ignore state.

The ignore LED monitors the state of the ignore timer (C144 and R1899) via analog switch U1801.16 and Q1807.

## IGNORE SWITCH (Rev A and higher PCBs)

If the SR40-8 shares the intercom line with the lighting company, there is a high degree of activity on the line, which would ordinarily be distracting to the mix engineer. The ignore switch isolates the SR40-8 from the intercom line, while still allowing it to be accessible.

When the IGNORE switch, SW1802, has been depressed, analog switch U1801B opens, disconnecting the headphone system from the intercom receive audio. When a call signal comes in, U18.4 goes low, which closes analog switch U1801C, re-connecting the receive audio from the intercom to the headphone system in the SR40-8. During the time that the call lamp is lit, the console operator is connected to the intercom system again (assuming that they're wearing the headphones).

Answering the call by pressing the INTERCOM switch charges C144 via D1806, closing analog switch U1801.8, temporarily defeating the effect of pressing the IGNORE switch for a time determined by the discharge of C144 through R1899. Double-clicking the ignore switch quickly discharges C144 through R1832, resetting the ignore state. Another comparator section monitors the state of the ignore timer (C144 and R1899) and drives the ignore LED D1803.

CLEAR COM™ JUMPER OPTIONS

Name	Description	Procedure	Default Setting
Intercom pre-fader	Makes talk level independent of R1741.	JP1704, cut trace between pins 2 and 3, jumper pins 1 and 2.	Post fader.
Modify talk level	Use with pre-fader mod	JP1803, cut jumper between pins 2 and 3, install resistor voltage divider across pins 1, 2, and 3. Keep total value below 10k	bypassed
Change sidetone level (rev A and later)	Use to raise or lower sidetone level	using a resistor, bridge E1804/E1805 to lower, bridge E1805/E1806 to raise it. Try 4k7 for starters. See schematic.	Not present. Normal sidetone cancellation is about 10 dB. More cancellation than this is highly dependent on the intercom line and its loading conditions.
Listen when called	Bypasses ignore switch when call signal detected	locate JP1801, cut trace between pins 2 and 3, jumper pins 1 and 2.	Enabled. (call signal bypasses ignore switch).
Talk when called	Enables microphone when call signal detected	Locate JP1802, install jumper.	Disabled. Could cause trouble in high-noise environments.
Lamp Kill (rev A and later)	Flashes console lamps when call signal detected	Locate JP1804, install jumper.	Disabled.

## ULTRA MUTE™

### CIRCUIT DESCRIPTION

ULTRA MUTE is a microprocessor based system that stores and recalls specific mute states on the SR40•8 console. The system uses a 12MHz 80C51 processor. The 80C51 CPU produces a 14 bit address. The lower 8 bits are latched by a 74HC573 from the multiplexed address/data bus. User presets are stored in a 24C65 non-volatile RAM.

To communicate with the console, the 80C51 CPU uses serial data sent along chains of shift registers. There are three chains of shift registers; *LED*, *FET*, and *SWITCH*. The serial-in-parallel-out *LED* chain controls all mute LEDs, the Ultra Mute control panel LEDs, and numeric display. The *FET* chain is also SIPO and controls the DG213 analog switch ICs, which perform the actual signal path muting. The *SWITCH* chain is parallel-in-serial-out. It scans all mute switches and Ultramute control switches. All serial data is sent along the *MUTE BUS*.

#### MUTE BUS PINOUT AND FUNCTION

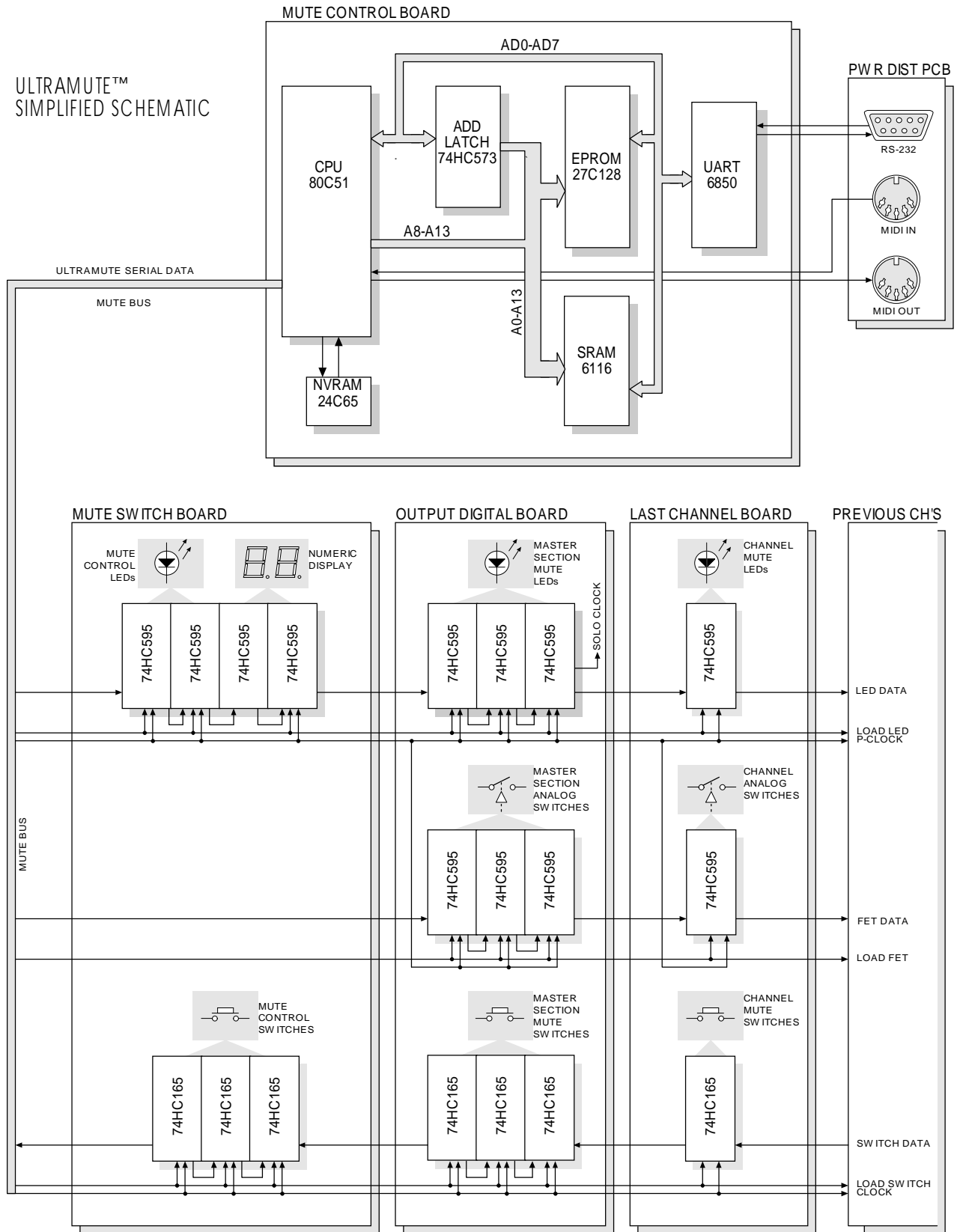
Pin #	Name	Function
1	LED DATA	Serial data for all mute LEDs, control LEDs and numeric display
2	LOAD LED	Updates LED data to shift register parallel outputs
3	SW DATA	Serial data from all mute and control switches
4	LOAD SW	Updates switch data from shift register parallel inputs
5	FET DATA	Serial data for all FET analog switches
6	LOAD FET	Updates FET data to shift register parallel outputs
7	CLOCK	Serial clock for switch data
8		n/c
9	P-CLOCK	Serial clock for LED and FET data
10		n/c

Obviously, it is critical that the mute bus is chained through the PCBs in the proper sequence. The mute bus originates at the *MUTE CONTROL BOARD*, which contains the CPU, EPROM, SRAM, NVRAM, UART and supporting IC's. It next goes to the *MUTE SWITCH BOARD* (daughter board of the master section) which contains all the Ultramute system controls and numeric display. It continues to the *OUTPUT DIGITAL BOARD* which contains the shift registers for the master section and also generates the solo clock. Finally, the mute bus chains through all *CHANNEL BOARDS* in descending order. Each PCB in the mute bus chain has designated MUTE BUS IN and MUTE BUS OUT connectors, no address jumpers are required.

MIDI communication is handled directly by the 80C51 CPU. RS-232 communication is processed by a 6850 UART. The UART clock comes from the factory set to 19.2K BAUD. It can be modified to 9600 or 32.4K via JP1. For RS-232 communication, the SR40•8's data port uses a DB9 connector. Pin 3 is RDX (receiving line), pin 2 is TDX (transmitting line), and pin 5 is ground (shield).

For complete MIDI implementation information, refer to the owner's manual.

ULTRAMUTE™  
SIMPLIFIED SCHEMATIC



## ULTRA MUTE SELF TEST PROCEDURE

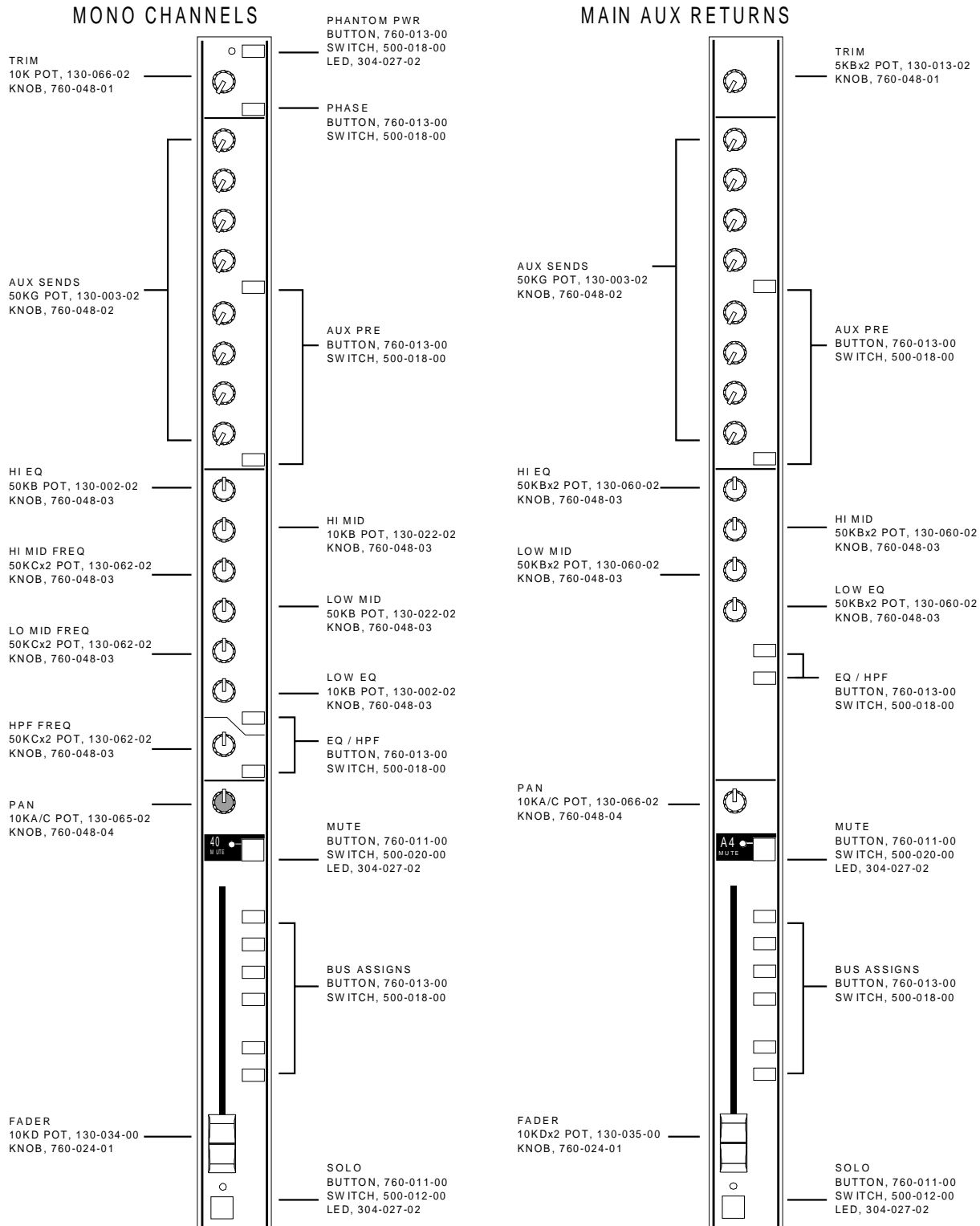
The following procedure tests the Ultra Mute system. Performing it will not erase any stored mute groups/scenes.

Step	Procedure	Result / Verify
1	Power off the console	n/a (the console is off)
2	Connect MIDI in to MIDI out, connect pins 2 and 3 on the data port	n/a (you accidentally burn your finger soldering pins on an old DB9 plug)
3	While powering up, hold down Ultramute control switches 0, 1, and 2	0, 1, and 2 LEDs light
4	Release switches	Both numeric displays count 0-9, A-F (1-16 hex), all mute LEDs light
5	Individually press all mute switches (sequence not relevant)	Switch's corresponding LED shuts off while switch is depressed
6	Individually press all Ultramute control switches (sequence not relevant)	Switch's corresponding LED lights while switch is depressed (bottom row switches light same LED's as top row)
7	Disconnect the MIDI in and MIDI out, disconnect pins 2 and 3 on the data port	Count on the numeric displays stops (MIDI = first display, RS-232 = second)
8	Press Ultramute control switches 8 and 9 simultaneously	All mute LEDs flash together
9	Press and hold Ultramute control switches 8 and 9 again	All LEDs off
10	Release switches	System bypass LED on, TEST COMPLETE

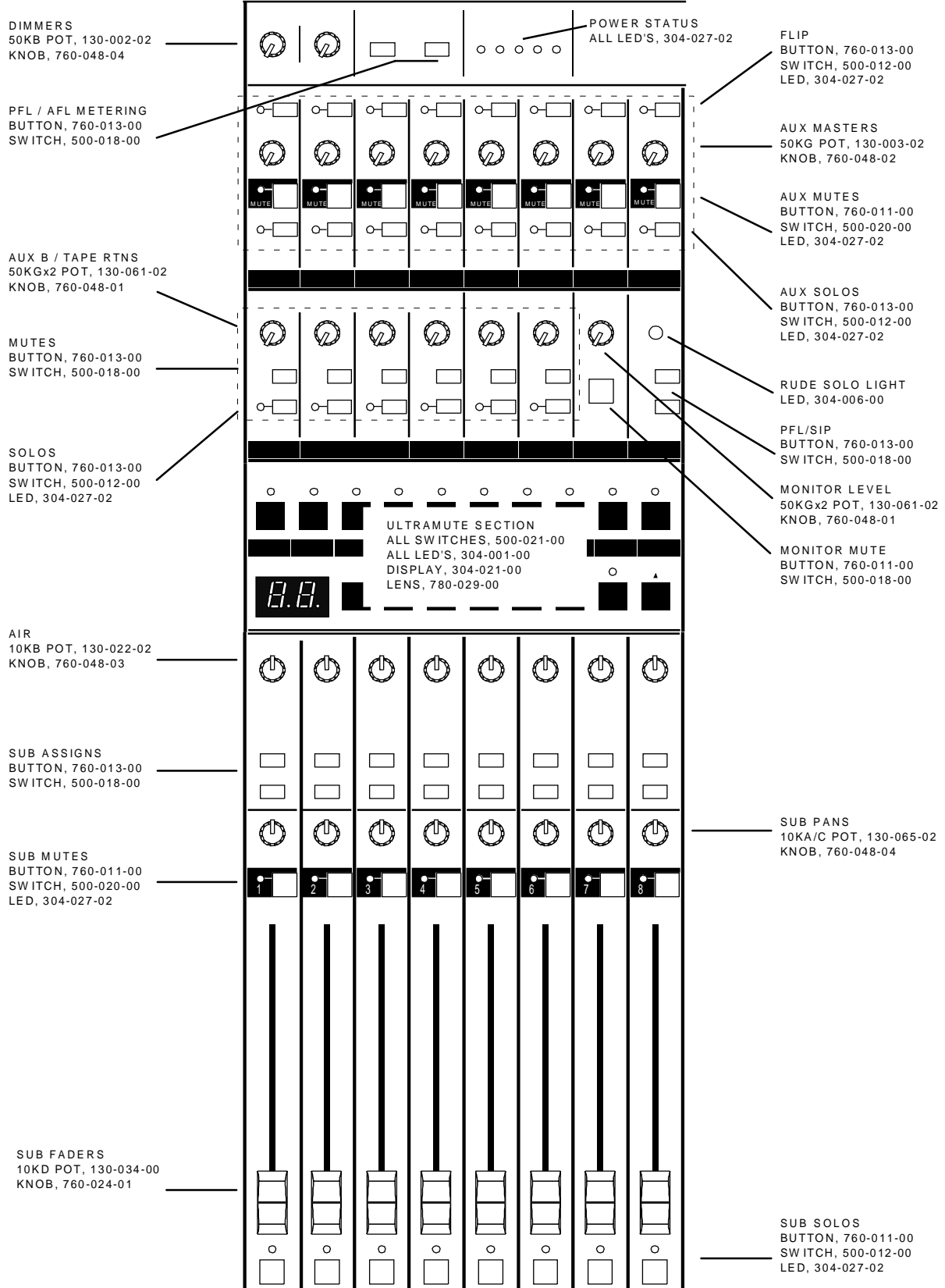


# PARTS

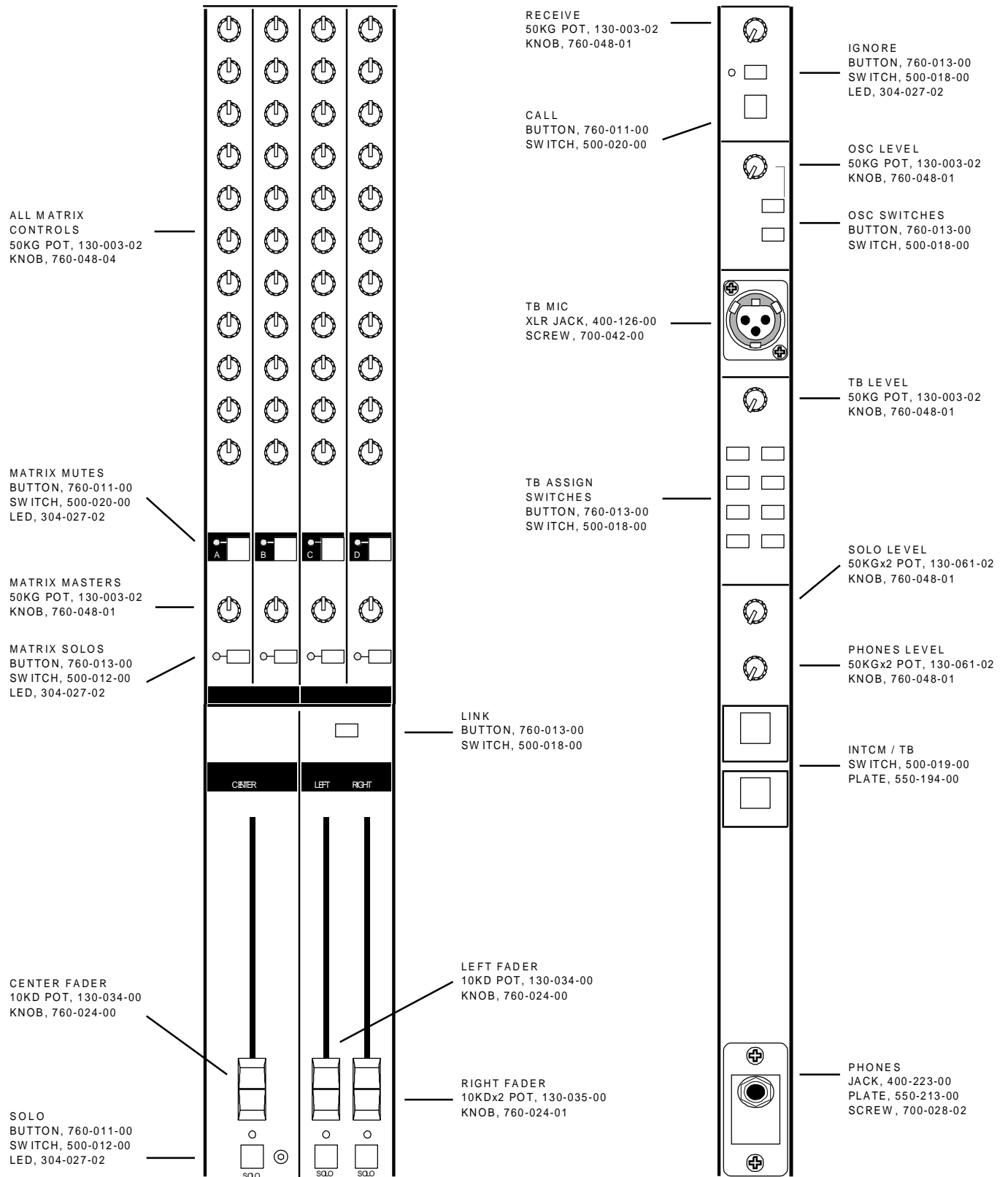
## QUICK PARTS

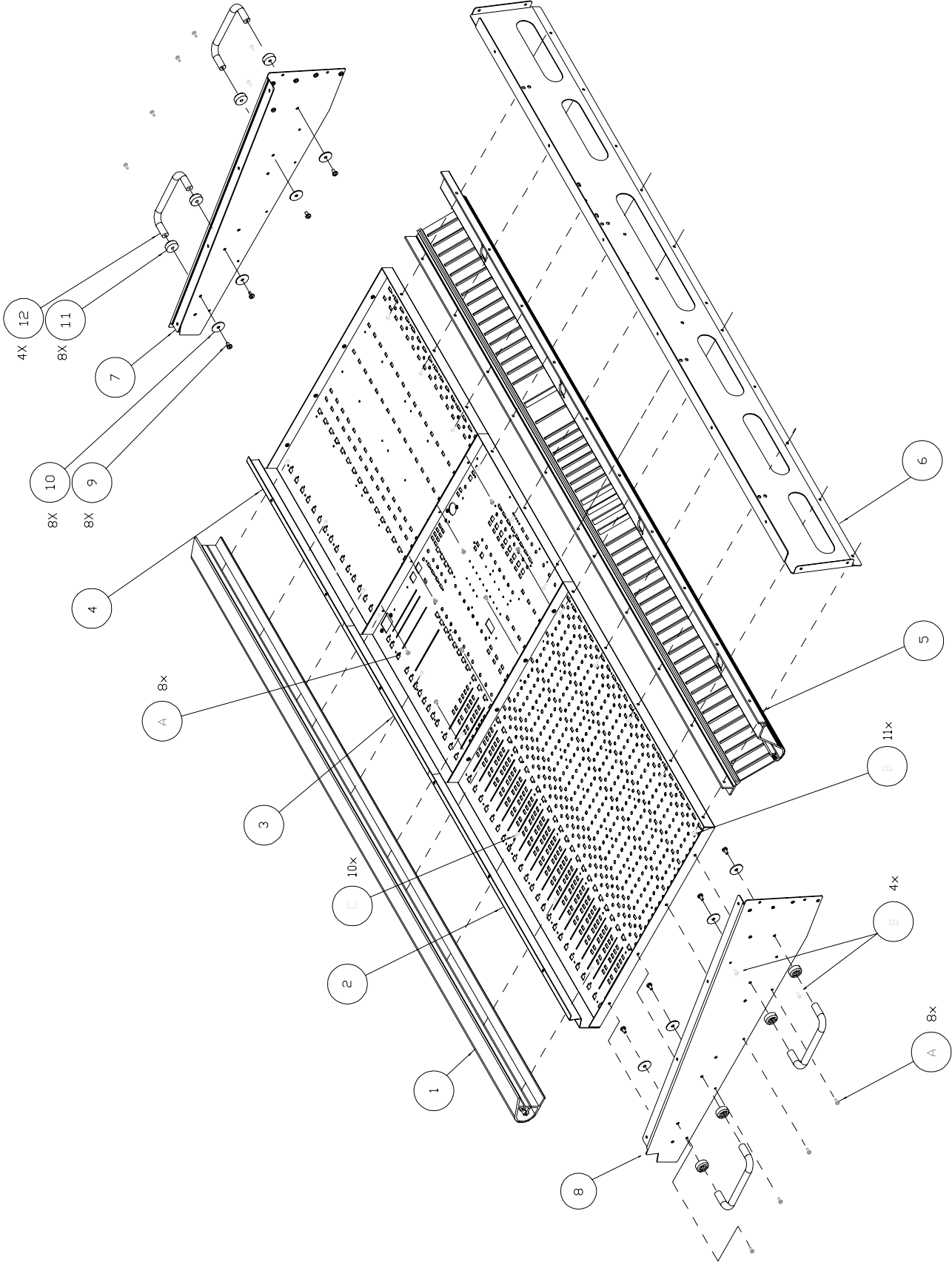


## MASTER, 1 OF 2



MASTER, 2 OF 2





# CONSOLE CHASSIS ASSEMBLY

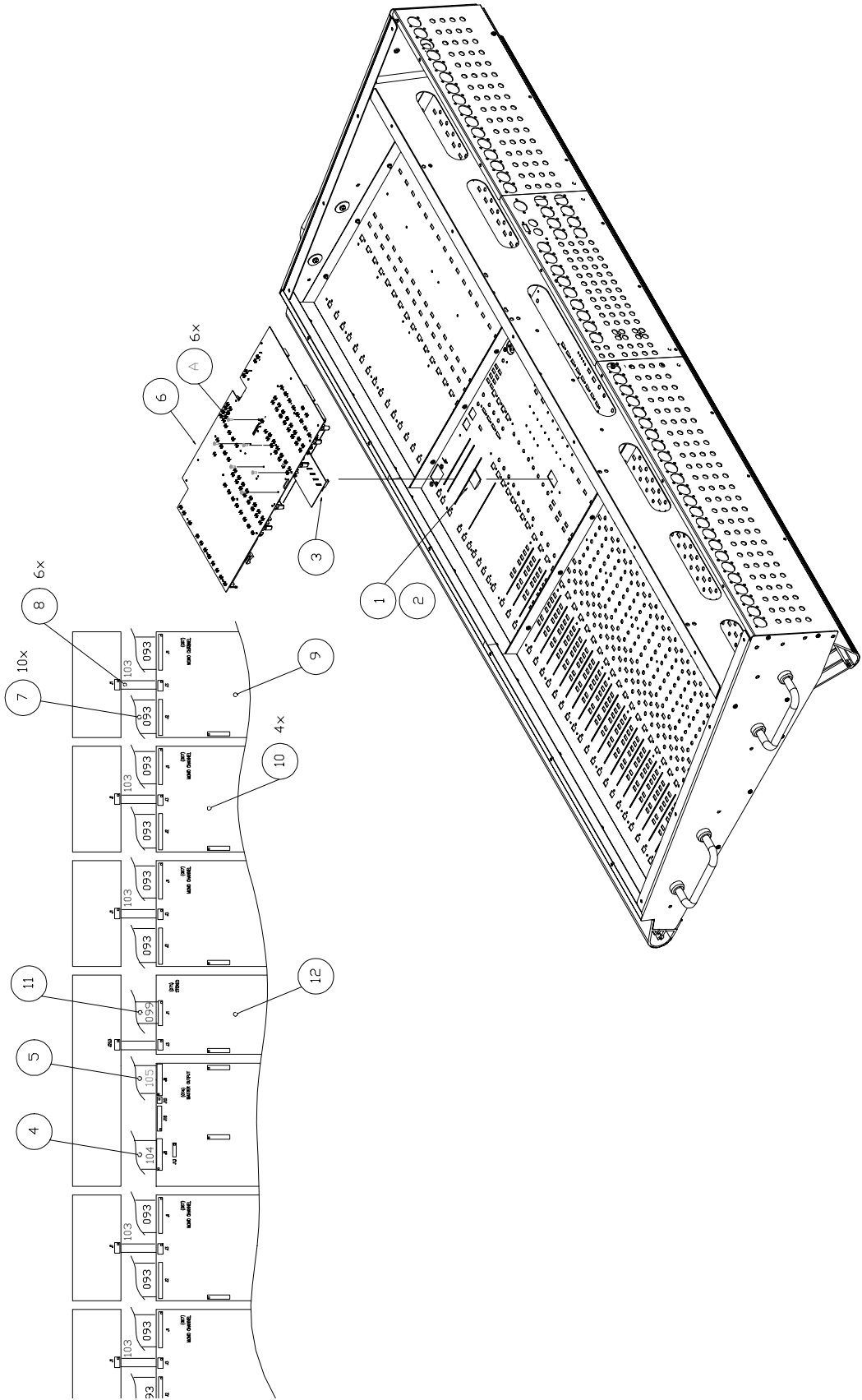
## CHASSIS ASSEMBLY, DRAWING 1 OF 6

ITEM	PART #	DESCRIPTION
1	551-025-00	ARMREST
2	550-187-00	TOP PANEL 24 CH
3	550-189-00	TOP PANEL MASTER
4	550-188-00	TOP PANEL 16 CH
5	551-026-00	METER BRIDGE
6	550-196-00	STIFFENER
7	550-193-10	SIDE PANEL RIGHT
8	550-193-20	SIDE PANEL LEFT
9	700-046-09	SCREW SEMS 10-32X3/4 (HANDLES)
10	710-012-00	FLAT WASHER # 10 (HANDLES)
11	712-033-00	FERRULE
12	712-032-00	HANDLES
13	400-126-00	XLR JACK TALKBACK MIC (PRE-ASSEMBLED)
14	550-213-00	JACK PLATE (PRE-ASSEMBLED)
A	700-028-00	SCREW SEMS 6-32X1/4 (TOP PANELS)
	700-028-00	SCREW SEMS 6-32X1/4 (SIDE PANELS)
B	700-028-02	SCREW SEMS 6-32X3/8 (HEADPHONE JACK)
	700-028-02	SCREW SEMS 6-32X3/8 (MTR BRIDGE/STIFFENER)
	700-028-02	SCREW SEMS 6-32X3/8 (STIFFENER SIDES)
C	700-035-04	SCREW TF 6-32X3/8 (ARMREST)
D	700-042-04	SCREW MACH 6-32X3/8 (TALKBACK MIC)



## CHASSIS ASSEMBLY, DRAWING 2 OF 6

ITEM	PART #	DESCRIPTION
1	055-069-00	PCB ASSY. CHANNEL METER
2	055-076-00	PCB ASSY. MASTER METER
3	040-132-00	RIBBON CABLE 5C 74"
4	550-190-00	BACK PANEL 24 CH
5	550-192-00	BACK PANEL MASTER SECTION
6	550-191-00	BACK PANEL 16 CH
7	040-130-00	CABLE ASSY BLK 9" (NOT SHOWN)
8	040-131-00	CABLE ASSY GRN 3.5" (NOT SHOWN)
9	400-127-00	XLR LAMP JACK
10	550-194-00	NUTPLATE LAMP JACKS
A	700-028-00	SCREW SEMS 6-32X1/4 (BACK PANEL)
B	700-028-02	SCREW SEMS 6-32X3/8 (BACK PANEL SIDE, GND)
C	700-035-04	SCREW TF 6-32X3/8 (POD PCBS)
D	700-042-04	SCREW MACH 6-32X3/8 (LAMP JACKS)
E	740-001-00	TYRAP 3-1/4 (LAMP WIRES TO STIFFENER)





## CHASSIS ASSEMBLY, DRAWING 3 OF 6

ITEM	PART #	DESCRIPTION
1	780-029-00	DISPLAY LENS
2	720-002-00	TAPE USED ON ABOVE
3	055-075-00	PCB ASSY. MUTE SWITCH
4	040-104-00	RIBBON CABLE ASSY. 34C 16"
5	040-015-00	RIBBON CABLE ASSY. 34C 10"
6	055-074-00	PCB ASSY. MASTER OUTPUT
7	040-093-00	RIBBON CABLE ASSY. 40C 9.5"
8	040-103-00	RIBBON CABLE ASSY. 10C 5"
9	055-067-00	PCB ASSY. MONO CHANNEL
10	055-067-00	PCB ASSY. MONO CHANNEL
11	040-099-00	RIBBON CABLE ASSY. 26C 9.5"
12	055-071-00	PCB ASSY. STEREO CHANNEL
A	700-011-00	SCREW 4-40X1/4 BUTTON



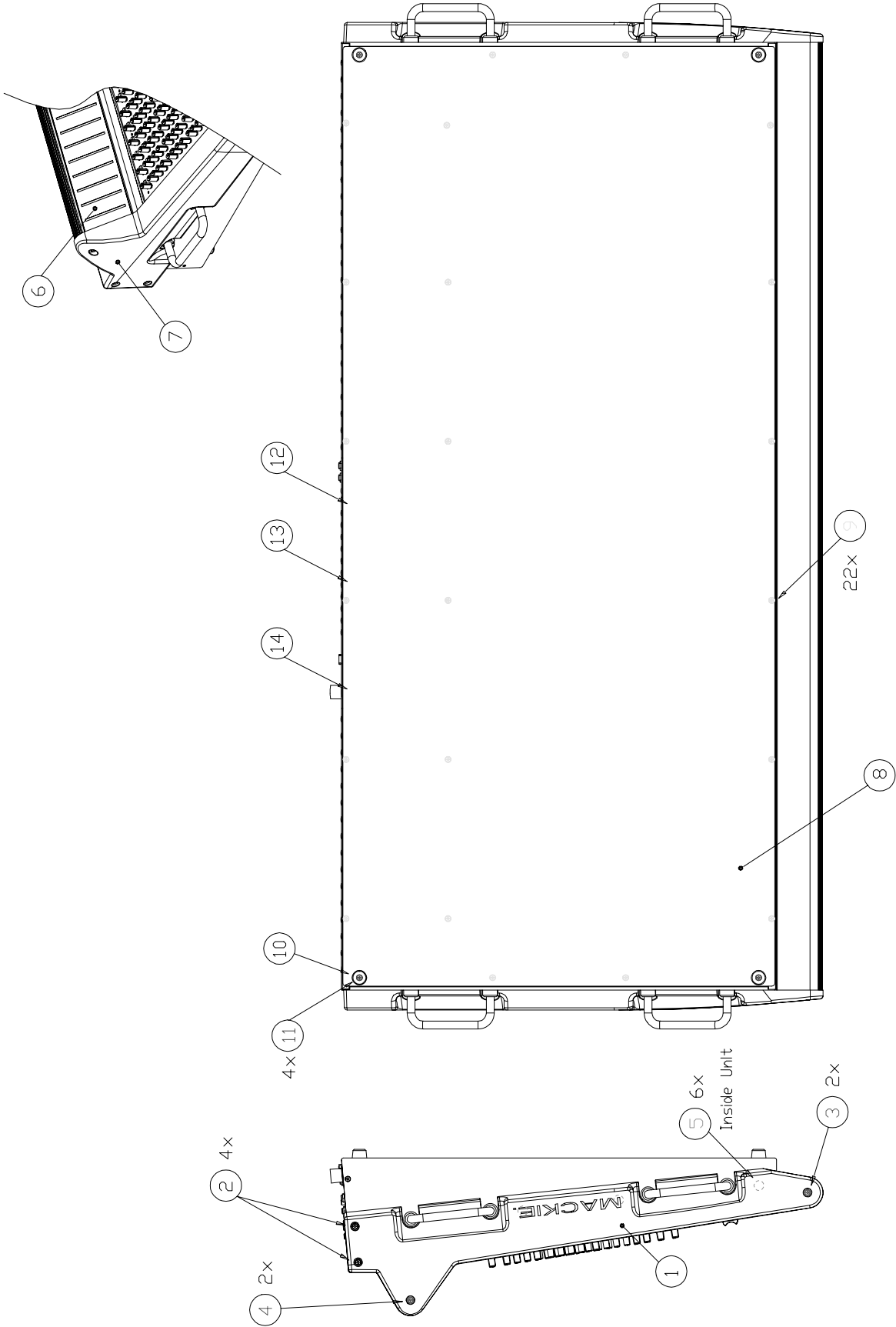
**CHASSIS ASSEMBLY, DRAWING 4 OF 6**

<b>ITEM</b>	<b>PART #</b>	<b>DESCRIPTION</b>
1	040-093-00	RIBBON CABLE ASSY. 40C 9.5"
2	040-102-00	RIBBON CABLE ASSY. 10C 15"
3	055-070-00	PCB ASSY. MONO POD
4	040-097-00	RIBBON CABLE ASSY. 40C 20"
5	040-098-00	RIBBON CABLE ASSY. 34C 27"
6	040-099-00	RIBBON CABLE ASSY. 26C 9.5"
7	040-104-00	RIBBON CABLE ASSY. 34C 16"
8	040-105-00	RIBBON CABLE ASSY. 34C 10"
9	055-073-00	PCB ASSY. MASTER POD
A	701-001-00	SCREW TYPE B 6X3/8 (RCA JACKS)
B	701-005-00	SCREW A-AB 6X1/4 (XLRS)
C	705-003-00	NUT HEX 1/4 JACK (1/4" JACKS)
D	710-002-00	WASHER FLAT, 1/4 JACK (1/4" JACKS)
E	710-001-00	WASHER INTERNAL STAR (1/4" JACKS)



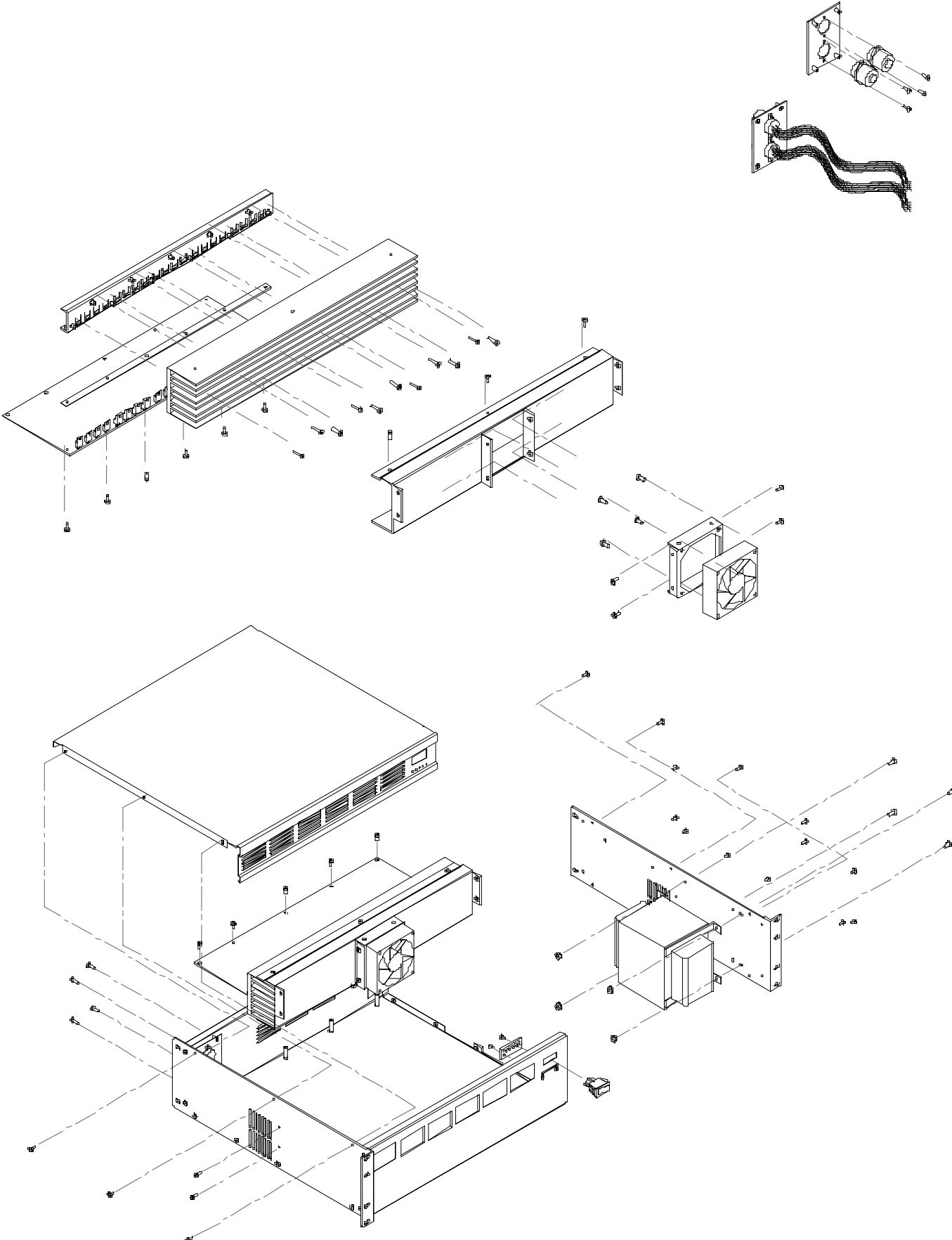
**CHASSIS ASSEMBLY, DRAWING 5 OF 6**

ITEM	PART #	DESCRIPTION
1	055-077-00	PCB ASSY. POWER DIST
2	700-023-00	SCREW MACH 6-32X1/2 BLK
3	705-001-00	KEPNUT 6-32 DC POWER IN
4	700-028-00	SCREW SEMS 6-32X1/4 (POWER DIST)
5	706-017-00	STANDOFF 4-40 JACKSCREW (DSUB CONN)
6	710-008-00	SPLITLOCK WASHER # 4 (DSUB CONN)
7	055-101-00	PCB ASSY. OUTPUT DIGITAL
8	700-028-00	SCREW SEMS 6-32X1/4 (OUTPUT DIGITAL)
9	055-068-00	PCB ASSY. MUTE CONTROL
10	700-028-00	SCREW SEMS 6-32X1/4 (MUTE CONTROL)
11	055-155-00	PCB ASSY. CLOCK BUFFER
12	040-133-01	RIBBON CABLE ASSY. 14C 2"
13	040-107-00	RIBBON CABLE ASSY. 3C 5"
14	040-133-01	RIBBON CABLE ASSY. 14C 2"
15	040-133-02	RIBBON CABLE ASSY. 3C 16"
16	040-192-00	RIBBON CABLE ASSY. 50C
17	040-091-00	RIBBON CABLE ASSY. 24C
18	040-094-00	RIBBON CABLE ASSY. 5C 77"
19	040-132-00	RIBBON CABLE ASSY. 5C 74"
20	040-108-00	RIBBON CABLE ASSY. 5C 12"
21	040-110-00	RIBBON CABLE ASSY. 3C 4"
22	040-096-00	RIBBON CABLE ASSY. 20C 12"
23	040-095-00	RIBBON CABLE ASSY. 3C 5"
24	040-124-00	CABLE ASSY. 4C 26"
25	040-123-00	CABLE ASSY. 2C 31"
26	040-109-00	RIBBON CABLE ASSY. 2C 10"
27	040-111-00	CABLE ASSY. 2C 25"
28	040-036-00	CABLE ASSY. 2C 12"
29	040-133-00	RIBBON CABLE ASSY. 14C 30"
30	040-062-02	RIBBON CABLE ASSY. 20C 18"
31	040-062-03	RIBBON CABLE ASSY. 20C 12"
32	040-095-05	RIBBON CABLE ASSY. 20C 12"
33	040-099-01	RIBBON CABLE ASSY. 26C 6"
34	040-100-01	RIBBON CABLE ASSY. 10C 12"
35	040-117-00	CABLE ASSY. 10C 18"



**CHASSIS ASSEMBLY, DRAWING 6 OF 6**

<b>ITEM</b>	<b>PART #</b>	<b>DESCRIPTION</b>
1	760-060-10	ENDCAP - RIGHT
2	700-039-00	SCREW MACH 10-32X1/2 (END CAP)
3	700-043-09	SCREW TF 10-32X3/4 (END CAP)
4	700-043-15	SCREW TF 10-32X1-1/2 (END CAP)
5	700-045-04	SCREW SEMS 10-32X3/8 (END CAP)
6	780-028-00	METER LENS
7	760-60-20	ENDCAP - LEFT
8	550-195-00	BOTTOM COVER
9	700-028-02	SCREW SEMS 6-32X3/8 (BOTTOM COVER)
10	750-004-00	FOOT # 10
11	700-044-08	SCREW SEMS 6-32X5/8 (FEET)
12	840-024-00	DATE CODE LABEL
13	840-053-00	S/N LABEL
14	840-060-00	CAUTION LABEL





**POWER SUPPLY CHASSIS ASSEMBLY**

<b>PART #</b>	<b>DESCRIPTION</b>
040-010-00	CABLE RIBBON 22GA 7C 19IN (LED TO MAIN PCB)
040-112-00	CABLE DIS 18GA 1015 7C .156 9IN
040-113-00	CABLE DIS 18GA 1010 GRN/YEL 4IN LUG
040-114-00	CBL DIS 18GA 1010 BRN 11IN QD
040-115-00	CBL DIS 18GA 1010 BRN 18IN QDX2
040-116-00	CBL DIS 18GA 1010 BLU 20IN QD
040-118-00	CBL POWER CORD FEMALE TO MALE
040-119-00	CBL POWER CORD MALE TO MALE
055-078-00	PCB ASSY PWR SUPPLY SR40.8
400-009-00	CONN AC RECPT IEC W/FUSEHOLDER
400-046-00	CONN DSUB CIRCULAR FEMALE
400-062-00	CONN 20 .100X126GA END
400-121-00	CONN DSUB 7P CIRCULAR FEMALE
400-122-00	CONN DSUB 7P CIRCULAR MALE
410-003-00	INS SIL-PAD K6 W/ADHESIVE
500-007-00	THERMAL SWITCH 210-F
500-013-00	SWITCH ROCKER SPST 6A
510-011-00	FUSE SB 4A 5X20MM 250V
510-013-00	FUSE SB 7A 5X20MM 250V
510-024-00	FUSE SB 8A 5X20MM 250V
550-214-00	SMTL TOP COVER PS SR40.8
550-215-00	SMTL BOTTOM COVER PS SR40.8
550-216-10	SMTL SIDE RAIL RIGHT PS SR40.8
550-216-20	SMTL SIDE RAIL LEFT PS SR40.8
550-217-00	SMTL BRKT HEATSINK PS SR40.8
550-218-00	SMTL BRKT COWLING PS SR40.8
550-219-00	SMTL BRKT AC OUTPUT PS SR40.8
550-220-00	SMTL BRKT AC OUTPUT PS SR40.8
550-257-00	SMTL BRKT
551-027-00	HEATSINK SR40.8 PS
600-018-00	XFMR 40-56.8 PS 120V
600-018-01	XFMR 40-56.8 PS 230V
600-018-02	XFMR 40-56.8 PS 100V
700-010-04	SCREW TF 6-32X3/8 PHP BLKZC
700-011-00	SCREW MACH 4-40X1/4 BTN SKT BLKOX
700-019-00	SCREW MACH 10-32X3/8 PHP BLKZC
700-022-00	SCREW MACH 6-32X5/8 FIL PHP CLRRZC
700-028-00	SCREW SEMS 6-32X1/4 PHP BLKZC
700-028-02	SCREW SEMS 6-32X3/8 PHP BLKZC
700-028-03	SCREW SEMS 6-32X1/2 PHP BLKZC
700-047-04	SCREW SEMS 10-32X3/8 FIL PHL CLR
700-050-04	SCREW MACH 6-32X3/8 FIL PHL CLR
705-001-00	NUT LOCK 6-32
705-011-00	NUT LOCK 10-32
710-015-00	WASHER FLAT #6 ZC
770-001-00	FAN 80MM 12VDC

# CONSOLE PARTS LIST

PART #	DESCRIPTION	PART #	DESCRIPTION
040-036-00	DIS 22GA 1007 2C .10 12IN	115-373-00	RES MF .25W 1% 6K81 OHM
040-062-02	RIB 28GA 20C .100 18IN	130-002-02	POT RTY 50KB 9MM MNO H TN
040-062-03	RIB 28GA 20C .100 12IN	130-003-02	POTRTY 50KG 9MM MN TN PAN
040-091-00	RIB 28GA 24C 2MM AUX SEND	130-011-02	POT RTY 50KB 12MM DUAL TN
040-092-00	RIB 28GA 50C 2MM 55IN	130-012-02	POT RTY 50KG 12MM DUAL TN
040-093-00	RIB 28GA 40C .100 9.5IN	130-013-02	POT RTY 5KB 12MM DUAL TN
040-094-00	RIB 18GA 5C .156 77IN	130-015-00	POT TRIM 50KB 6MM H
040-095-00	RIB 28GA 10C .100 15IN	130-017-02	POT RTY 50KC 12MM DUAL TN
040-095-05	RIB 28GA 10C .100 9IN	130-022-02	POT RTY 10KB 9MM MONO TN
040-096-00	RIB 18GA 3C .156 21IN	130-028-02	POT RTY 10KCA 12MM DL TN
040-097-00	RIB 28GA 40C .100 20IN	130-033-02	POT RTY 10KZ 12MM MNO TN
040-098-00	RIB 28GA 34C .100 27IN	130-034-00	POT SLD 10KD 100MM MNRAIL
040-099-00	RIB 28GA 26C .100 9.5IN	130-035-00	POTSLD 10KD 100MM DL MNRL
040-099-01	RIB 28GA 26C .100 6IN	140-017-00	RES TF SM .1W 5% 4.7 OHM
040-100-01	RIB 28G TRNS 10C .10 12IN	140-033-00	RES TF SM .1W 5% 22 OHM
040-102-00	RIB 28GA 10C .100 15IN	140-037-00	RES TF SM .1W 5% 33 OHM
040-103-00	RIB 28G TRNS 10C .100 5IN	140-042-00	RES TF SM .1W 5% 51 OHM
040-104-00	RIB 28GA 34C .100 16IN	140-044-00	RES TF SM .1W 5% 62 OHM
040-105-00	RIB 28GA 34C .100 10IN	140-049-00	RES TF SM .1W 5% 100 OHM
040-106-00	RIB 28G TRNS 14C .10 16IN	140-051-00	RES TF SM .1W 5% 120 OHM
040-107-00	DIS 22GA 1007 3C .156 5IN	140-054-00	RES TF SM .1W 5% 160 OHM
040-108-00	RIB 18GA 5C .156 12IN	140-057-00	RES TF SM .1W 5% 220 OHM
040-109-00	RIB 22G 1007 2C .100 10IN	140-060-00	RES TF SM .1W 5% 300 OHM
040-110-00	RIB 18GA 3C .156 4IN	140-061-00	RES TF SM .1W 5% 330 OHM
040-111-00	DIS 22G 1007 2C .100 25IN	140-062-00	RES TF SM .1W 5% 360 OHM
040-117-00	RIB 28G TRANS 10C .100 18	140-064-00	RES TF SM .1W 5% 430 OHM
040-123-00	DIS 22G 1007 2C .100 31IN	140-065-00	RES TF SM .1W 5% 470 OHM
040-124-00	DIS 22G 1007 2C .100 42IN	140-066-00	RES TF SM .1W 5% 510 OHM
040-132-00	RIB 18GA 5C .156 74IN	140-068-00	RES TF SM .1W 5% 620 OHM
040-133-00	RIB 28GA 14C .100 36IN	140-069-00	RES TF SM .1W 5% 680 OHM
040-133-01	RIB 28GA 14C .100 2IN	140-070-00	RES TF SM .1W 5% 750 OHM
040-133-02	RIB 28GA 14C .100 16IN	140-072-00	RES TF SM .1W 5% 910 OHM
055-067-00	PCB ASSY MONO CHAN - 40.8	140-073-00	RES TF SM .1W 5% 1K0 OHM
055-068-00	PCB ASSY MUTE CNTRL -40.8	140-074-00	RES TF SM .1W 5% 1K1 OHM
055-069-00	PCB ASSY CHAN METER -40.8	140-076-00	RES TF SM .1W 5% 1K3 OHM
055-070-00	PCB ASSY MONO POD - 40.8	140-077-00	RES TF SM .1W 5% 1K5 OHM
055-071-00	PCB ASSY STEREO CHAN 40.8	140-079-00	RES TF SM .1W 5% 1K8 OHM
055-073-00	PCB ASSY MASTER POD 40.8	140-080-00	RES TF SM .1W 5% 2K0 OHM
055-074-00	PCB ASSY MASTER OUT 40.8	140-081-00	RES TF SM .1W 5% 2K2 OHM
055-075-00	PCB ASSY MUTE SWITCH 40.8	140-083-00	RES TF SM .1W 5% 2K7 OHM
055-076-00	PCB ASSY MASTER MTR -40.8	140-085-00	RES TF SM .1W 5% 3K3 OHM
055-077-00	PCB ASSY PWR DISTR - 40.8	140-086-00	RES TF SM .1W 5% 3K6 OHM
055-101-00	PCB ASSY DIGITAL OUT 40.8	140-087-00	RES TF SM .1W 5% 3K9 OHM
055-155-00	PCB ASSY CLOCK BUFFR 40.8	140-089-00	RES TF SM .1W 5% 4K7 OHM
080-022-00	SA EPROM PROGMD - SR40.8	140-090-00	RES TF SM .1W 5% 5K1 OHM
100-073-00	RES CF .125W 5% 10K OHM	140-091-00	RES TF SM .1W 5% 5K6 OHM
100-089-00	RES CF .125W 5% 47K OHM	140-092-00	RES TF SM .1W 5% 6K2 OHM
100-109-00	RES CF .125W 5% 1M OHM	140-094-00	RES TF SM .1W 5% 7K5 OHM
100-113-00	RES CF .125W 5% 470K OHM	140-095-00	RES TF SM .1W 5% 8K2 OHM
105-293-00	RES MF .125W 1% 1K00 OHM	140-097-00	RES TF SM .1W 5% 10K OHM
105-331-00	RES MF .125W 1% 2K49 OHM	140-098-00	RES TF SM .1W 5% 11K OHM
110-001-00	RES CF .25W 5% 10 OHM	140-099-00	RES TF SM .1W 5% 12K OHM

PART PREFIX LEGEND

040- Cables	400- Jacks/Connectors	601- Inductors	770- Fans
055- Finished PCB Assys	500- Switches	610- Wires and Cables	790- Misc./Packing
100- Pots and Resistors	510- Fuses	640- AC Line Cords	800- Printed Material
200- Capacitors	550- Chassis Metal	700- Hardware	860- EPROM
300- Semiconductors	600- Transformers	760- Knobs/Plastic	

PART #	DESCRIPTION	PART #	DESCRIPTION
140-101-00	RES TF SM .1W 5% 15K OHM	212-004-00	CER 220PF 5% 50V NPO SM
140-103-00	RES TF SM .1W 5% 18K OHM	212-005-00	CER 20PF 5% 50V NPO SM
140-104-00	RES TF SM .1W 5% 20K OHM	212-006-00	CER 470PF 5% 50V NPO SM
140-105-00	RES TF SM .1W 5% 22K OHM	212-007-00	CER .047UF 20% 50V Z5U SM
140-106-00	RES TF SM .1W 5% 24K OHM	212-009-00	CER 47PF 5% 50V NPO SM
140-108-00	RES TF SM .1W 5% 27K OHM	212-010-00	CER .1 +80/-20 25V Z5U SM
140-109-00	RES TF SM .1W 5% 30K OHM	212-015-00	CER 33PF 5% 50V NPO SM
140-111-00	RES TF SM .1W 5% 36K OHM	212-016-00	CER 1000PF 5% 50V NPO SM
140-112-00	RES TF SM .1W 5% 39K OHM	212-018-00	CER 10PF 5% 50V NPO SM
140-114-00	RES TF SM .1W 5% 47K OHM	212-019-00	CER 150PF 5% 50V SM
140-115-00	RES TF SM .1W 5% 51K OHM	220-002-00	LYT 47UF 20% 25V RAD
140-117-00	RES TF SM .1W 5% 62K OHM	220-002-02	LYT 47UF 20% 25V RAD TR
140-118-00	RES TF SM .1W 5% 68K OHM	220-003-02	LYT 47UF 20% 50V RAD TR
140-123-00	RES TF SM .1W 5% 100K OHM	220-005-00	LYT 470UF 20% 25V RAD
140-126-00	RES TF SM .1W 5% 150K OHM	220-006-00	LYT 2200UF 20% 25V RAD
140-130-00	RES TF SM .1W 5% 200K OHM	220-008-02	LYT 1UF 20% 50V RAD TR
140-139-00	RES TF SM .1W 5% 470K OHM	220-011-02	LYT 100UF 20% 25V RAD
140-140-00	RES TF SM .1W 5% 510K OHM	220-012-02	LYT 4.7UF 20% 63V RAD TR
140-147-00	RES TF SM .1W 5% 1M OHM	220-013-00	LYT .22UF 20% 50V RAD
145-051-00	RES MF SM .1W 1% 3R32 OHM	220-014-00	LYT 2.2UF 20% 50V RAD
145-201-00	RES MF SM .1W 1% 121 OHM	220-020-00	LYT 10000UF 20% 16V RAD
145-229-00	RES MF SM .1W 1% 237 OHM	220-021-00	LYT 2200UF 20% 100V RAD
145-311-00	RES MF SM .1W 1% 1K69 OHM	220-027-00	LYT 10UF 20% 50V RAD
145-314-00	RES MF SM .1W 1% 1K82 OHM	220-027-02	LYT 10UF 20% 50V RAD TR
145-331-00	RES MF SM .1W 1% 2K49 OHM	220-030-00	LYT 1000UF 20% 6.3V RAD
145-339-00	RES MF SM .1W 1% 3K01 OHM	220-031-02	LYT 10UF 20 50V RAD KS TR
145-343-00	RES MF SM .1W 1% 3K32 OHM	220-032-02	LYT 33UF 20 25V RAD KS TR
145-360-00	RES MF SM .1W 1% 4K99 OHM	300-001-00	DIO SIG 1N4148 100W 500MW
145-361-00	RES MF SM .1W 1% 5K11 OHM	300-003-00	DIO SW DL4148 100V SM
145-373-00	RES MF SM .1W 1% 6K81 OHM	302-010-03	DIO ZEN DL5232B 5.6V SM
145-377-00	RES MF SM .1W 1% 7K50 OHM	302-015-02	DIO ZEN SA12CA BI-DIR TR
145-389-00	RES MF SM .1W 1% 10K0 OHM	304-001-00	LED RED T-1
145-406-00	RES MF SM .1W 1% 15K0 OHM	304-006-00	LED RED T1-3/4
145-409-00	RES MF SM .1W 1% 16K2 OHM	304-021-00	DISPL 7SEG 1 DIGIT YEL
145-418-00	RES MF SM .1W 1% 20K0 OHM	304-022-00	LED ARRAY 70MM GRN\Y\L\RED
145-456-00	RES MF SM .1W 1% 49K9 OHM	304-027-02	LED RED W/.425 SPACER TR
200-002-02	PLY .018UF 10% 100V TR	310-003-02	XSTR PNP 2SA1316 AMMO PK
200-003-02	PLY/FL .033UF 10% 100V TR	310-015-00	XSTR NPN MJE3055
200-004-02	PLY .047UF 10% 100V TR	310-018-00	XSTR NPN TIP121
200-005-02	PLY .0068UF 10% 100V TR	310-030-00	XSTR MOSFET NCHAN 40A 30V
200-007-00	PLY .01UF 10% 100V	310-031-00	XSTR MOSFET PCHAN 40A 30V
200-007-02	PLY .01UF 10% 100V TR	311-001-00	XSTR NPN IMBT4401 SM
200-008-02	PLY .0039UF 10% 100V TR	311-002-00	XSTR PNP MMST4403 SM
200-014-00	PLY .0033UF 10% 100V	311-004-00	XSTR SST112 SM
200-015-02	PLY .0047UF 10% 100V PEI	311-005-00	XSTR NPN MMBTA06LT1 SM
200-019-02	PLY/BX .1UF 10% 63V TR	311-006-00	XSTR PNP IMBTA56 SM
200-021-02	PLY .027UF 10% 100V TR	315-001-00	CRYSTAL 12 MHZ
211-001-00	CER .01UF +80/-20% 25V AX	315-003-00	CRYSTAL 4.9152 MHZ
211-006-00	CER 20PF 10% 50V AX	320-003-00	OPAMP 2068L 8P SIP
211-007-00	CER 470PF 10% 50V AX	320-004-00	OPAMP 4560F
212-001-00	CER .01UF 10% 50V X7R SM	320-006-00	OPAMP 2068E
212-003-00	CER 100PF 5% 50V NPO SM	320-011-00	OPAMP 4560 8P SIP

PART PREFIX LEGEND

040- Cables	400- Jacks/Connectors	601- Inductors	770- Fans
055- Finished PCB Assys	500- Switches	610- Wires and Cables	790- Misc./Packing
100- Pots and Resistors	510- Fuses	640- AC Line Cords	800- Printed Material
200- Capacitors	550- Chassis Metal	700- Hardware	860- EPROM
300- Semiconductors	600- Transformers	760- Knobs/Plastic	

## CONSOLE PARTS LIST (CONTINUED)

PART #	DESCRIPTION	PART #	DESCRIPTION
321-008-03	REG LM317L ADJ SM	401-001-28	IC SOCKET 28PIN DIP
321-009-00	REG LM337T ADJ	410-002-00	INSL SILPAD .007 SELF ADH
323-002-00	LM339D QUAD COMP SM	500-012-00	SW PUSH 4PDT V PCMNT LGCR
323-005-00	LP339M QUAD COMP SM	500-018-00	SW PUSH DPDT V PCMNT LGCR
325-007-03	TTL 74HC14A INV SH-TR SM	500-019-00	SW PUSH SPST W/LED PCMNT
325-009-03	TTL 74HC1573 OCT D LATCH	500-020-00	SW MOM DPDT V PCMNT LGCR
325-012-03	TTL 74HC595 SHIFT REG SM	500-021-00	SW MOM SPST PCMNT 10.3MM
325-013-03	TTL 74HC165 8BIT SH RG SM	550-187-00	TOP PANEL 24CH - SR40.8
325-014-03	CMOS 4006 18STAGE SHFT RG	550-188-00	TOP PANEL 16CH - SR40.8
325-015-03	CMOS 4093 2IN NAND SCH-TR	550-189-00	TOP PNL MASTER OUT-SR40.8
325-016-03	TTL 74HC393 DUAL BIN CNT	550-190-00	BACK PANEL 24CH - SR40.8
325-018-03	DG213 QUAD ANALOG SW SM	550-191-00	BACK PANEL 16CH - SR40.8
325-019-03	TTL 74HC00 QUAD NAND SM	550-192-00	BACK PNL MSTR SECT-SR40.8
325-020-03	TTL 74HC04 HEX INV SM	550-193-10	SIDE PANEL RIGHT - SR40.8
325-021-03	CMOS 14C88 LIN DRV/RCV SM	550-193-20	SIDE PANEL LEFT - SR40.8
325-022-03	CMOS 14C89 LIN DRV/RCV SM	550-194-00	NUTPLATE LIGHT JACKS-40.8
329-004-00	27C128 16X8 BIT EPROM	550-195-00	BOTTOM COVER - SR40.8
329-006-03	80C51FA MICROPROCESSOR SM	550-196-00	STIFFNER - SR40.8/56.8
329-007-00	MC6850 ACIA	550-197-00	POWER DIST BRKT - SR40.8
329-008-00	PC900V OPTOISOLATOR	550-198-00	HTSK BRKT PWR DIST-40.8
329-011-00	6116/5116 2048X8BIT SRAM	550-199-10	GUARD BRKT RIGHT - SR40.8
329-013-03	24C65 64K BIT SER EEPROM	550-199-20	GUARD BRKT LEFT - SR40.8
400-002-01	XLR PCMNT NEUTRIK-RP SER	550-213-00	PLATE TALKBACK JACK-40.8
400-003-01	JACK 1/4 VERT PCMNT W/WSH	551-025-00	EXTR PNT ARMREST - SR40.8
400-003-02	JACK 1/4 V PCMNT THIN WSH	551-026-00	EXTR SCRNM MTR BR - SR40.8
400-005-00	HDR 40P .100X2 STR	553-002-04	CRS 18GA 30 X 120
400-022-00	RCA QUAD PCMNT	553-003-03	CRS 16GA 48 X 120
400-041-00	XLR VERT MALE PCMNT	553-006-01	EG 18GA 36 X 120
400-043-00	HDR 26P .100X2 STR	553-006-06	EG 18GA 36 X 72
400-045-00	7P CIRCULAR MALE PC MNT	553-007-03	AL .063 48 X 120
400-053-00	HDR 10P .100X2 STR	600-017-00	XFMR AUDIO PCMT SR40.8
400-055-00	HDR 34P .100X2 STR	601-002-00	INDUCTOR 4.7MH AX
400-059-00	TERM QDISC .250 MALE PCMT	601-003-00	INDUCTOR 1000UH AX
400-061-00	HDR 2P .100X1 STR LOCK	601-004-00	FERRITE CHIP 150 OHM
400-063-00	HDR 3P .156X1 STR LOCK	611-006-00	WIR 18G 1010 BLK 1.25 ST2
400-065-00	TERM QDISC .250 F 18-22GA	611-029-01	WIR 18GA 1007 BLK 9IN ST2
400-071-00	DIN 5P PC MNT RTA	611-030-01	WIR 18GA 1007 GRN 3.5IN
400-077-00	HDR 20P .1X2 STR LCK SHRD	620-037-00	CBL FLT 3C W/TABS .1 5IN
400-078-00	HDR 10P .1X2 STR LCK SHRD	700-011-00	MCH 4-40X1/4 BTNSKT BLKQX
400-079-00	HDR 14P .1X2 STR LCK SHRD	700-023-00	MCH 6-32X1/2 PHP BLKZC
400-112-00	HDR 50P 2MMX2 STR SHRD	700-028-00	SEMS 6-32X1/4 PHP BLKZC
400-114-00	HDR 6P .100X2 STR	700-028-02	SEMS 6-32X3/8 PHP BLKZC
400-116-00	HDR 24P 2MMX2 STR LK SHRD	700-028-03	SEMS 6-32X1/2 PHP BLKZC
400-120-00	DSUB 9P PCMT RTA F SMALL	700-035-04	TF 6-32X3/8 PHP CLRZC
400-123-00	HDR 4P .156X1 STR	700-039-00	MCH 10-32X1-1/2 PHP BLKZC
400-126-00	XLR 3P FEMALE P-SERIES	700-042-04	MCH 6-32X3/8 OVAL PHL SS
400-127-00	XLR 4P FEMALE P-SERIES	700-043-09	TF 10-32X3/4 PHP BLKZC
400-139-00	SHUNT 2P .100	700-043-15	TF 10-32X1-1/2 PHP BLKZC
400-146-00	HDR 5P .156X1 STR LOCK	700-044-08	SEMS 6-32X5/8 PHP ZC
400-147-00	HDR 26P .1X2 STR LK SHRD	700-045-04	SEMS 10-32X3/8 PHP BLKZC
400-152-00	HDR 34P .1X2 STR LK SHRD	700-046-09	SEMS 10-32X3/4 PHP ZC
400-173-00	TERM .25 QKDS PCMT STABLE	701-001-00	SM B 6X3/8 PHP BLKZC

## PART PREFIX LEGEND

040- Cables	400- Jacks/Connectors	601- Inductors	770- Fans
055- Finished PCB Assys	500- Switches	610- Wires and Cables	790- Misc./Packing
100- Pots and Resistors	510- Fuses	640- AC Line Cords	800- Printed Material
200- Capacitors	550- Chassis Metal	700- Hardware	860- EPROM
300- Semiconductors	600- Transformers	760- Knobs/Plastic	

PART #	DESCRIPTION	PART #	DESCRIPTION
701-002-00	SM B 6X1/4 PHP BLKZC	840-068-00	LBL EPROM - SR40/56.8
701-005-00	SM A-AB 6X1/4 PHP BLKZC	860-007-00	EPROM SOFTWARE - SR40.8
704-001-01	PEMNUT 6-32 .038 STL		
704-001-02	PEMNUT 6-32 .054 STL		
704-005-01	PEMNUT 10-32 .038 STL		
704-023-03	STUD 6-32X.500 STL FLSH		
705-001-00	KEPNUT 6-32		
705-003-00	NUT (SPLD W/JACK)		
706-017-00	STDF 4-40X.25 JACKSCREW		
706-033-01	STDF SWAGE NO.4 X .542L F		
706-033-04	STDF SWAGE NO.4 X .200L F		
706-036-02	STDF 6-32X.250L STL PEM		
706-040-00	SPCR PVC .200 LED		
710-001-00	WASH STAR 3/8 OD .02 THK		
710-002-00	WASHER (SPLD WITH JACK)		
710-008-00	WASH SPLTLCK NO.4		
710-012-00	WASH FLAT NO.10 FENDER		
711-001-00	LUG NO.6 SOLDER STAR		
712-032-00	HDL 1-7/8H 5L 1/2D AL PNT		
712-033-00	FERRULE 1/2 DIA PNT		
720-002-00	TAPE DS 10MIL X .75W CLR		
740-001-00	TYRAP 3-1/4L		
750-004-00	FOOT #10 BLK 1 X .562		
760-011-00	BTN 9 X 9MM LG CORE		
760-013-00	BTN 9 X 5MM LG CORE		
760-024-00	KNOB SLIDE WHT 10X25MM		
760-048-01	KNOB 9MM LT GRY		
760-048-02	KNOB 9MM MAGENTA		
760-048-03	KNOB 9MM BLU/GRY		
760-048-04	KNOB 9MM DARK GRAY		
760-060-10	ENDCAP RIGHT SR40.8		
760-060-20	ENDCAP LEFT SR40.8		
780-028-00	LEXAN - MB 40.8		
780-029-00	DISPLAY LENS - 40.8		
790-002-00	BAG POLY 12 X 18 2MIL		
790-003-00	BAG POLY 3 X 3 2MIL		
790-014-00	BAG 92X87 4MIL 46IN P-SHT		
800-060-00	BOX BOTTOM SR40.8		
800-061-00	BOX TOP SR40.8		
810-045-00	FOAM END BTM LEFT SR40.8		
810-045-01	FOAM END BTM RIGHT SR40.8		
810-046-00	FOAM END TOP LEFT SR40.8		
810-046-01	FOAM END TOP RIGHT SR40.8		
810-047-00	FOAM CTR TOP SR40.8		
810-048-00	FOAM CTR BOTTOM SR40.8		
810-049-00	INST BAR SUPPORT SR40.8		
820-052-00	OWN MNL - SR40.8/SR56.8		
820-052-01	ADDEND - OWN MNL SR40/56		
820-067-00	INSTL-REAR GUARD SR40/56		
830-015-00	REG & WARR CARD - SR40.8		
840-024-00	LBL DATE CODE		
840-053-00	LBL SN SR40.8 AD		
840-060-00	LBL SERIAL AND CAUTION		

## PART PREFIX LEGEND

040- Cables	400- Jacks/Connectors	601- Inductors	770- Fans
055- Finished PCB Assys	500- Switches	610- Wires and Cables	790- Misc./Packing
100- Pots and Resistors	510- Fuses	640- AC Line Cords	800- Printed Material
200- Capacitors	550- Chassis Metal	700- Hardware	860- EPROM
300- Semiconductors	600- Transformers	760- Knobs/Plastic	

# POWER SUPPLY PARTS LIST

PART #	DESCRIPTION	PART #	DESCRIPTION
040-101-00	RIB 22GA 7C .100 19IN	301-005-00	DIO FAST RECOVERY FR602
040-112-00	DIS 18GA 1015 7C .156 9IN	302-005-00	DIO ZEN 1N4732A 5V .4X.3
040-118-00	POWER CORD FEMALE TO MALE	302-007-00	DIO ZEN 1N5234C 6.2V 2%
040-119-00	POWER CORD MALE TO MALE	302-012-00	DIO ZEN 5257 33V 500MV
055-078-00	PCB ASSY PWR SPLY - 40.8	304-004-00	LED GREEN T-1
100-044-00	RES CF .125W 5% 620 OHM	310-002-00	XSTR PNP 2N4403
100-047-00	RES CF .125W 5% 820 OHM	310-004-00	XSTR NPN MPSA06
100-051-00	RES CF .125W 5% 1K2 OHM	310-007-00	XSTR NPN 2N4401
100-057-00	RES CF .125W 5% 2K2 OHM	310-014-00	XSTR PNP MJE2955
100-073-00	RES CF .125W 5% 10K OHM	310-015-00	XSTR NPN MJE3055
110-027-00	RES CF .25W 5% 120 OHM	310-016-00	XSTR NPN MPSA18
110-029-00	RES CF .25W 5% 150 OHM	310-017-00	XSTR PNP MPSA56
110-032-00	RES CF .25W 5% 200 OHM	310-018-00	XSTR NPN TIP121
110-046-00	RES CF .25W 5% 750 OHM	310-019-00	XSTR NPN TIP31A
110-049-00	RES CF .25W 5% 1K OHM	310-020-00	XSTR PNP TIP32A
110-056-00	RES CF .25W 5% 2K OHM	321-006-00	REG 78T12 +12V
110-065-00	RES CF .25W 5% 4K7 OHM	321-007-00	REG 78T05 +5V
110-072-00	RES CF .25W 5% 9K1 OHM	400-009-00	IEC W/FUSEHOLDER
110-079-00	RES CF .25W 5% 18K OHM	400-015-00	HDR 7P .156X1 STR
110-080-00	RES CF .25W 5% 20K OHM	400-046-00	7P CIRCULAR FEMALE CBLEND
110-083-00	RES CF .25W 5% 27K OHM	400-060-00	FUSE CLIP PCMT 5MM DIA
115-269-00	RES MF .25W 1% 619 OHM	400-061-00	HDR 2P .100X1 STR LOCK
115-298-00	RES MF .25W 1% 1K24 OHM	400-062-00	2P .100X1 26GA END
115-331-00	RES MF .25W 1% 2K49 OHM	400-065-00	TERM QDISC .250 F 18-22GA
115-350-00	RES MF .25W 1% 3K92 OHM	400-065-00	TERM QDISC .250 F 18-22GA
115-376-00	RES MF .25W 1% 7K32 OHM	400-065-00	TERM QDISC .250 F 18-22GA
115-407-00	RES MF .25W 1% 15K4 OHM	400-065-00	TERM QDISC .250 F 18-22GA
115-427-00	RES MF .25W 1% 24K9 OHM	400-121-00	7P CIRCULAR FEMALE PNLMT
121-088-00	RES MO 1W 5% 4K3 OHM	400-122-00	7P CIRCULAR MALE CBL END
121-093-00	RES MO 1W 5% 6K8 OHM	400-122-00	7P CIRCULAR MALE CBL END
122-043-00	RES MO 2W 5% 5.6 OHM	400-124-00	HDR 11P .156X1 STR LOCK
123-056-00	RES MO 3W 5% 20 OHM	400-125-00	HDR 7P .100X1 STR LOCK
125-018-00	RES WW 5W 10% .51 OHM	400-148-00	HOUSING 11P .156 LOCK
200-001-02	PLY .012UF 10% 100V TR	400-149-00	TERM CRIMP 18-20GA PHOSBZ
210-013-02	CER 2700PF 10% 50V Y5P TR	410-003-00	INSL SILPAD K6 W/ADHESIVE
211-001-00	CER .01UF +80/-20% 25V AX	450-078-00	PCB POWER SUPPLY - 40.8
220-003-02	LYT 47UF 20% 50V RAD TR	500-007-00	THERMOSTAT 210-F
220-004-02	LYT 470UF 20% 6.3V RAD TR	500-013-00	SW RCKR SPST 6A PWR SFTY
220-006-00	LYT 2200UF 20% 25V RAD	510-001-00	FUSE SB 1A 5X20MM 250V
220-007-00	LYT 100UF 20% 100V RAD	510-003-00	FUSE SB .25A 5X20MM 250V
220-011-02	LYT 100UF 20% 25V RAD	510-013-00	FUSE SB 7A 5X20MM 250V
220-020-00	LYT 10000UF 20% 16V RAD	510-014-00	FUSE SB 6.3A 5X20MM 250V
220-021-00	LYT 2200UF 20% 100V RAD	510-015-00	FUSE SB 1.6A 5X20MM 250V
220-022-00	LYT 22000UF 20% 35V RAD	510-021-00	FUSE FB 10A 5X20MM 250V
220-023-00	LYT 6800UF 20% 35V RAD	550-214-00	TOP COVER PWR SPLY-SR40.8
220-024-00	LYT 100UF 20% 35V RAD	550-215-00	BTM COVER PWR SPLY-SR40.8
220-025-00	LYT 1000UF 20% 35V RAD	550-216-10	SIDE RAIL RIGHT PS-SR40.8
220-026-00	LYT 1000UF 20% 100V RAD	550-216-20	SIDE RAIL LEFT PS-SR40.8
300-001-00	DIO SIG 1N4148 100W 500MW	550-217-00	BRKT HEATSINK PS - SR40.8
300-006-00	DIO SW 8AMP/200V ULTRAFST	550-218-00	BRKT COWLING PS - SR40.8
301-001-00	DIO PWR 1N4002	550-219-00	BRKT FAN PS - SR40.8
301-003-00	DIO PWR 1N5401 3A 100V	550-220-00	BRKT AC OUTPUT PS-SR40.8

PART PREFIX LEGEND

040- Cables	400- Jacks/Connectors	601- Inductors	770- Fans
055- Finished PCB Assys	500- Switches	610- Wires and Cables	790- Misc./Packing
100- Pots and Resistors	510- Fuses	640- AC Line Cords	800- Printed Material
200- Capacitors	550- Chassis Metal	700- Hardware	860- EPROM
300- Semiconductors	600- Transformers	760- Knobs/Plastic	

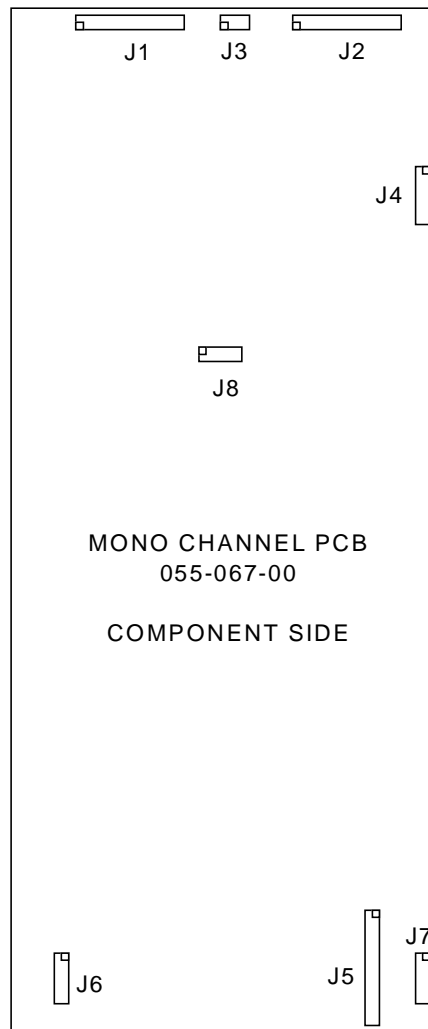
PART #	DESCRIPTION	PART #	DESCRIPTION
551-027-00	EXTR HEATSINK - SR40.8 PS	830-015-00	REG & WARR CARD - SR40.8
553-001-03	CRS 20GA 48 X 120	840-024-00	LBL DATE CODE
553-002-04	CRS 18GA 30 X 120	840-065-00	LBL SN SR40/56 PS AE
553-005-03	CRS 11GA 48 X 120		
553-005-03	CRS 11GA 48 X 120		
553-007-03	AL .063 48 X 120		
553-007-03	AL .063 48 X 120		
553-007-03	AL .063 48 X 120		
600-018-00	XFMR 40/56.8 PS 120V		
600-018-01	XFMR 40/56.8 PS 230V		
600-018-02	XFMR 40/56.8 PS 100V		
611-038-00	WR 18G 1010 GN/YL 4IN ST2		
611-038-01	WR 18G 1010 GN/YL 9IN ST2		
611-039-00	WIR 18G 1010 BLU 20IN ST2		
611-040-00	WIR 18G 1010 BRN 11IN ST2		
611-040-01	WIR 18G 1010 BRN 18IN ST2		
630-001-00	CBL 16GA 7COND		
630-001-00	CBL 16GA 7COND		
640-001-00	LC IEC SJT 10A/125V 6FT		
700-010-04	TF 6-32X3/8 PHP BLKZC		
700-011-00	MCH 4-40X1/4 BTNSKT BLKOX		
700-019-00	MCH 10-32X3/8 PHP BLKZC		
700-022-00	MCH 6-32X5/8 FILPHP CLRZC		
700-028-00	SEMS 6-32X1/4 PHP BLKZC		
700-028-02	SEMS 6-32X3/8 PHP BLKZC		
700-028-03	SEMS 6-32X1/2 PHP BLKZC		
700-047-04	MCH 10-32X3/8 FIL PHL CLR		
700-050-04	MCH 6-32X3/8 FIL PHL CLR		
704-001-00	PEMNUT 6-32 .030 STL		
704-001-01	PEMNUT 6-32 .038 STL		
704-001-01	PEMNUT 6-32 .038 STL		
704-001-01	PEMNUT 6-32 .038 STL		
704-001-02	PEMNUT 6-32 .054 STL		
705-001-00	KEPNUT 6-32		
705-011-00	NUT LOCK 10-32		
706-036-00	STDF 6-32X.125L STL PEM		
706-036-04	STDF 6-32X.375L STL PEM		
706-036-11	STDF 6-32X.812L STL PEM		
710-015-00	WASH FLAT NO.6 ZC		
711-001-00	LUG NO.6 SOLDER STAR		
711-001-00	LUG NO.6 SOLDER STAR		
730-001-00	THERMAL JOINT COMPOUND		
730-003-00	ADHESIVE INDSTRL 3M 4799		
740-003-00	TYRAP 8IN BLK		
770-001-00	FAN 80MM 12VDC		
790-002-00	BAG POLY 12 X 18 2MIL		
790-011-00	BAG POLY 20 X 7 X 24 4MIL		
800-064-00	BOX SR40/56.8 PWR SPLY		
810-053-00	INST TOP SR40.8 PWR SPLY		
810-054-00	INST BOTTOM SR40.8 PS		
810-055-00	INST CORD SR40.8 PS		
820-044-00	OWN MNL - SR40.8 PS		

PART PREFIX LEGEND

040- Cables	400- Jacks/Connectors	601- Inductors	770- Fans
055- Finished PCB Assys	500- Switches	610- Wires and Cables	790- Misc./Packing
100- Pots and Resistors	510- Fuses	640- AC Line Cords	800- Printed Material
200- Capacitors	550- Chassis Metal	700- Hardware	860- EPROM
300- Semiconductors	600- Transformers	760- Knobs/Plastic	

# CONNECTOR PINOUT AND LOCATION

## SR40•8 CHANNEL PCB CONNECTOR LOCATIONS





SR40•8 CHANNEL PCB CONNECTOR PINOUT

**J1**

CONNECTS TO POD PCB P1  
40 PIN CABLE 040-093-00

CH 1 IN +	1	2	CH 1 IN -
CH 1 GROUND	3	4	CH 1 PHANTOM
CH 1 GROUND	5	6	CH 1 RETURN -
CH 1 RETURN +	7	8	CH 1 SEND
CH 1 48V	9	10	CH 1 GROUND
CH 2 IN +	11	12	CH 2 IN -
CH 2 GROUND	13	14	CH 2 PHANTOM
CH 2 GROUND	15	16	CH 2 RETURN -
CH 2 RETURN +	17	18	CH 2 SEND
CH 2 48V	19	20	CH 2 GROUND
CH 3 IN +	21	22	CH 3 IN -
CH 3 GROUND	23	24	CH 3 PHANTOM
CH 3 GROUND	25	26	CH 3 RETURN -
CH 3 RETURN +	27	28	CH 3 SEND
CH 3 48V	29	30	POS 16V
CH 4 IN +	31	32	CH 4 IN -
CH 4 GROUND	33	34	CH 4 PHANTOM
CH 4 GROUND	35	36	CH 4 RETURN -
CH 4 RETURN +	37	38	CH 4 SEND
CH 4 48V	39	40	POS 16V

**J2**

CONNECTS TO POD PCB P2  
40 PIN CABLE 040-093-00

CH 5 IN +	1	2	CH 5 IN -
CH 5 GROUND	3	4	CH 5 PHANTOM
CH 5 GROUND	5	6	CH 5 RETURN -
CH 5 RETURN +	7	8	CH 5 SEND
CH 5 48V	9	10	CH 5 GROUND
CH 6 IN +	11	12	CH 6 IN -
CH 6 GROUND	13	14	CH 6 PHANTOM
CH 6 GROUND	15	16	CH 6 RETURN -
CH 6 RETURN +	17	18	CH 6 SEND
CH 6 48V	19	20	CH 6 GROUND
CH 7 IN +	21	22	CH 7 IN -
CH 7 GROUND	23	24	CH 7 PHANTOM
CH 7 GROUND	25	26	CH 7 RETURN -
CH 7 RETURN +	27	28	CH 7 SEND
CH 7 48V	29	30	NEG 16V
CH 8 IN +	31	32	CH 8 IN -
CH 8 GROUND	33	34	CH 8 PHANTOM
CH 8 GROUND	35	36	CH 8 RETURN -
CH 8 RETURN +	37	38	CH 8 SEND
CH 8 48V	39	40	NEG 16V

**J3**

CONNECTS TO METER PCB J1  
10 PIN CABLE 040-103-00

CH 1 MTR	1	2	CH 2 MTR
CH 3 MTR	3	4	CH 4 MTR
CH 5 MTR	5	6	CH 6 MTR
CH 7 MTR	7	8	CH 8 MTR
GND	9	10	MTRCTL

**J4**

AUX SEND BUS  
40 PIN CABLE 040-093-00

AUX 1	1	2	AUX 1 GND
AUX 1 GND	3	4	AUX 2
AUX 2 GND	5	6	AUX 2 GND
AUX 3	7	8	AUX 3 GND
AUX 3 GND	9	10	AUX 4
AUX 4 GND	11	12	AUX 4 GND
AUX 5	13	14	AUX 5 GND
AUX 5 GND	15	16	AUX 6
AUX 6 GND	17	18	AUX 6 GND
AUX 7	19	20	AUX 7 GND
AUX 7 GND	21	22	AUX 8
AUX 8 GND	23	24	AUX 8 GND

**J5**

MAIN BUS  
50 PIN CABLE 040-092-00

SUB 1 +	1	2	SUB 1 -
GND	3	4	SUB 2 +
SUB 2 -	5	6	GND
SUB 3 +	7	8	SUB 3 -
GND	9	10	SUB 4 +
SUB 4 -	11	12	GND
SUB 5 +	13	14	SUB 5 -
GND	15	16	SUB 6 +
SUB 6 -	17	18	GND
SUB 7 +	19	20	SUB 7 -
GND	21	22	SUB 8 +
SUB 8 -	23	24	GND
LEFT +	25	26	LEFT -
GND	27	28	RIGHT +
RIGHT -	29	30	GND
CENTER +	31	32	CENTER -
GND	33	34	PFL +
PFL -	35	36	GND
SOLO L +	37	38	SOLO L -
GND	39	40	SOLO R +
SOLO R -	41	42	GND
GND	43	44	GND
GND	45	46	GND
GND	47	48	GND
SOLO CNTRL	49	50	FLASH

**J8**

CONNECTS TO POD PCB J2  
10 PIN CABLE 040-102-00

CH 1 DIR	1	2	CH 2 DIR
CH 3 DIR	3	4	CH 4 DIR
CH 5 DIR	5	6	CH 6 DIR
CH 7 DIR	7	8	CH 8 DIR
NC	9	10	NC

**J7**

MUTE BUS IN

LED DATA IN	1	2	LOAD LED
SW DATA OUT	3	4	LOAD SW
FET DATA IN	5	6	LOAD FET
CLOCK	7	8	5V
P-CLK IN	9	10	5V
GND	11	12	5V
GND	13	14	5V

**J6**

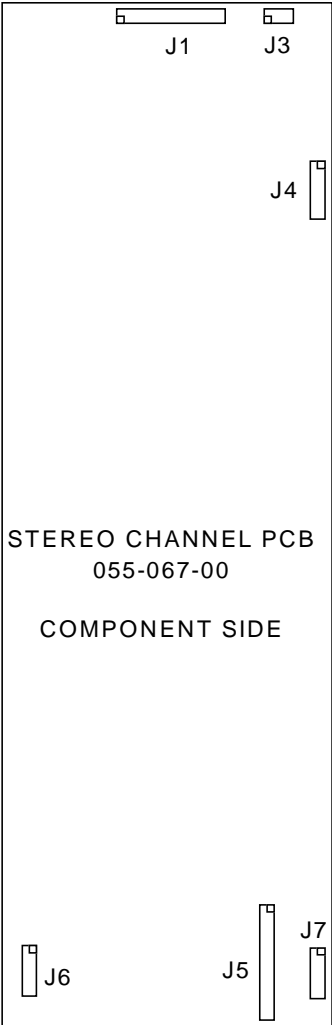
MUTE BUS OUT

LED DATA OUT	1	2	LOAD LED
SW DATA IN	3	4	LOAD SW
FET DATA OUT	5	6	LOAD FET
CLOCK	7	8	5V
P-CLK OUT	9	10	5V
GND	11	12	5V
GND	13	14	5V

**MUTE BUS CABLES**

14 PIN 2IN, 040-133-01  
14 PIN 16IN, 040-133-02  
14 PIN 30IN, 040-133-00

SR40•8 STEREO CHANNEL PCB CONNECTOR LOCATIONS



SR40•8 STEREO CHANNEL PCB CONNECTOR LOCATIONS

**J1**

CONNECTS TO POD PCB J11  
40 PIN CABLE 040-099-00

A1 LEFT +	1	2	A1 LEFT -
A1 LEFT GND	3	4	A1 RIGHT +
A1 RIGHT -	5	6	A1 RIGHT GND
A2 LEFT +	7	8	A2 LEFT -
A2 LEFT GND	9	10	A2 RIGHT +
A2 RIGHT -	11	12	A2 RIGHT GND
A3 LEFT +	13	14	A3 LEFT -
A3 LEFT GND	15	16	A3 RIGHT +
A3 RIGHT -	17	18	A3 RIGHT GND
A4 LEFT +	19	20	A4 LEFT -
A4 LEFT GND	21	22	A4 RIGHT +
A4 RIGHT -	23	24	A4 RIGHT GND
+16V	25	26	-16V

**J3**

CONNECTS TO METER PCB J203  
10 PIN CABLE 040-103-00

A1 LEFT	1	2	A1 RIGHT
A2 LEFT	3	4	A2 RIGHT
A3 LEFT	5	6	A3 RIGHT
A4 LEFT	7	8	A4 RIGHT
GND	9	10	MTRCTL

**J4**

AUX SEND BUS  
40 PIN CABLE 040-093-00

AUX 1	1	2	AUX 1 GND
AUX 1 GND	3	4	AUX 2
AUX 2 GND	5	6	AUX 2 GND
AUX 3	7	8	AUX 3 GND
AUX 3 GND	9	10	AUX 4
AUX 4 GND	11	12	AUX 4 GND
AUX 5	13	14	AUX 5 GND
AUX 5 GND	15	16	AUX 6
AUX 6 GND	17	18	AUX 6 GND
AUX 7	19	20	AUX 7 GND
AUX 7 GND	21	22	AUX 8
AUX 8 GND	23	24	AUX 8 GND

**J5**

MAIN BUS  
50 PIN CABLE 040-092-00

SUB 1 +	1	2	SUB 1 -
GND	3	4	SUB 2 +
SUB 2 -	5	6	GND
SUB 3 +	7	8	SUB 3 -
GND	9	10	SUB 4 +
SUB 4 -	11	12	GND
SUB 5 +	13	14	SUB 5 -
GND	15	16	SUB 6 +
SUB 6 -	17	18	GND
SUB 7 +	19	20	SUB 7 -
GND	21	22	SUB 8 +
SUB 8 -	23	24	GND
LEFT +	25	26	LEFT -
GND	27	28	RIGHT +
RIGHT -	29	30	GND
CENTER +	31	32	CENTER -
GND	33	34	PFL +
PFL -	35	36	GND
SOLO L +	37	38	SOLO L -
GND	39	40	SOLO R +
SOLO R -	41	42	GND
GND	43	44	GND
GND	45	46	GND
GND	47	48	GND
SOLO CNTRL	49	50	FLASH

**J6**

MUTE BUS OUT

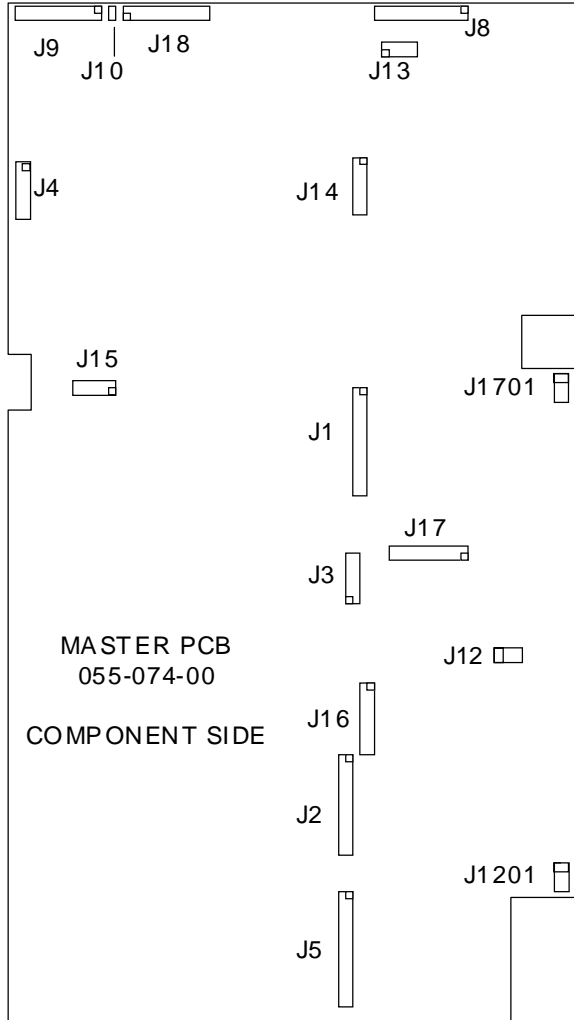
LED DATA OUT	1	2	LOAD LED
SW DATA IN	3	4	LOAD SW
FET DATA OUT	5	6	LOAD FET
CLOCK	7	8	5V
P-CLK OUT	9	10	5V
GND	11	12	5V
GND	13	14	5V

**J7**

MUTE BUS IN

LED DATA IN	1	2	LOAD LED
SW DATA OUT	3	4	LOAD SW
FET DATA IN	5	6	LOAD FET
CLOCK	7	8	5V
P-CLK IN	9	10	5V
GND	11	12	5V
GND	13	14	5V

## SR40•8 MASTER PCB CONNECTOR LOCATIONS / PINOUT



### J1

CONNECTS TO POD PCB J2  
41 PIN CABLE 040-097-00

SUB 1 OUT	1	2	SUB 2 OUT
SUB 3 OUT	3	4	SUB 4 OUT
SUB 5 OUT	5	6	SUB 6 OUT
SUB 7 OUT	7	8	SUB 8 OUT
SUB 1 SEND	9	10	SUB 2 SEND
SUB 3 SEND	11	12	SUB 4 SEND
SUB 5 SEND	13	14	SUB 6 SEND
SUB 7 SEND	15	16	SUB 8 SEND
GND	17	18	SUB 1 RET +
SUB 1 RET -	19	20	GND
SUB 2 RET +	21	22	SUB 2 RET -
GND	23	24	SUB 3 RET +
SUB 3 RET -	25	26	GND
SUB 4 RET +	27	28	SUB 4 RET -
GND	29	30	SUB 5 RET +
SUB 5 RET -	31	32	GND
SUB 6 RET +	33	34	SUB 6 RET -
GND	35	36	SUB 7 RET +
SUB 7 RET -	37	38	GND
SUB 8 RET +	39	40	SUB 8 RET -

### J2

CONNECTS TO POD PCB J3  
35 PIN CABLE 040-098-00

LEFT SEND	1	2	RIGHT SEND
CENTER SEND	3	4	GND
LEFT RTN +	5	6	LEFT IRTN -
GND	7	8	RIGHT RTN +
RIGHT RTN -	9	10	GND
CENTER RTN +	11	12	CENTER RTN -
GND	13	14	PHONE 2 LEFT
PHONE 2 RIGHT	15	16	PHONE L SEND
PHONE R SEND	17	18	GND
PHONE L RETURN	19	20	GND
PHONE R RETURN	21	22	N/C
GND	23	24	GND
LEFT MONITOR OUT	25	26	RIGHT MONITOR OUT
TALKB. EXTERNAL	27	28	GND
REAR XLR +	29	30	REAR XLR -
GND	31	32	ICOM XLR (1)
ICOM XLR (2)	33	34	ICOM XLR (3)

### J13

POWER DISTRIBUTION

### J10

1	12V
2	LAMP CNTRL

1	18
2	GND
3	-18
4	AUX SEND GND
5	48

### J12

1	18
2	GND
3	-18
4	AUX SEND GND
5	48

### J1701

1	FRONT XLR +
2	FRONT XLR -
3	GND

### J1201

1	N/C
2	PHONE 1 LEFT
3	PHONE 1 RIGHT

SR40•8 MASTER PCB CONNECTOR PINOUT

**J3**

CONNECTS TO METER PCB J102  
14 PIN CABLE 040-106-00

SUB 1 METER	1	2	SUB 2 METER
SUB 3 METER	3	4	SUB 4 METER
SUB 5 METER	5	6	SUB 6 METER
SUB 7 METER	7	8	SUB 8 METER
GND	9	10	LEFT METER
RIGHT METER	11	12	CENTER METER
MTRDIM	13	14	MTRCTL

**J4 / J14**

AUX SEND BUS  
40 PIN CABLE 040-093-00

AUX 1	1	2	AUX 1 GND
AUX 1 GND	3	4	AUX 2
AUX 2 GND	5	6	AUX 2 GND
AUX 3	7	8	AUX 3 GND
AUX 3 GND	9	10	AUX 4
AUX 4 GND	11	12	AUX 4 GND
AUX 5	13	14	AUX 5 GND
AUX 5 GND	15	16	AUX 6
AUX 6 GND	17	18	AUX 6 GND
AUX 7	19	20	AUX 7 GND
AUX 7 GND	21	22	AUX 8
AUX 8 GND	23	24	AUX 8 GND

**J5**

MAIN BUS  
50 PIN CABLE 040-092-00

SUB 1 +	1	2	SUB 1 -
GND	3	4	SUB 2 +
SUB 2 -	5	6	GND
SUB 3 +	7	8	SUB 3 -
GND	9	10	SUB 4 +
SUB 4 -	11	12	GND
SUB 5 +	13	14	SUB 5 -
GND	15	16	SUB 6 +
SUB 6 -	17	18	GND
SUB 7 +	19	20	SUB 7 -
GND	21	22	SUB 8 +
SUB 8 -	23	24	GND
LEFT +	25	26	LEFT -
GND	27	28	RIGHT +
RIGHT -	29	30	GND
CENTER +	31	32	CENTER -
GND	33	34	PFL +
PFL -	35	36	GND
SOLO L +	37	38	SOLO L -
GND	39	40	SOLO R +
SOLO R -	41	42	GND
GND	43	44	GND
GND	45	46	GND
GND	47	48	GND
SOLO CNTRL	49	50	FLASH

**J8**

CONNECTS TO POD PCB J8  
34 PIN CABLE 040-104-00

LEFT OUT	1	2	RIGHT OUT
CENTER OUT	3	4	MATRIX A OUT
MATRIX B OUT	5	6	MATRIX C OUT
MATRIX D OUT	7	8	GND
MATRIX A IN +	9	10	MATRIX A IN -
GND	11	12	MATRIX B IN +
MATRIX B IN -	13	14	GND
MATRIX C IN +	15	16	MATRIX C IN -
GND	17	18	MATRIX D IN +
MATRIX D IN -	19	20	GND
TAPE A LEFT IN +	21	22	TAPE A LEFT IN -
GND	23	24	TAPE A RIGHT IN +
TAPE A RIGHT IN -	25	26	GND
TAPE B LEFT IN +	27	28	TAPE B LEFT IN -
GND	29	30	TAPE B RIGHT IN +
TAPE B RIGHT IN -	31	32	GND
N/C	33	34	N/C

**J9**

CONNECTS TO POD PCB J9  
34 PIN CABLE 040-105-00

AUX 1 OUT	1	2	AUX 2 OUT
AUX 3 OUT	3	4	AUX 4 OUT
AUX 5 OUT	5	6	AUX 6 OUT
AUX 7 OUT	7	8	AUX 8 OUT
GND	9	10	B1 LEFT +
AUX B1 LEFT -	11	12	GND
AUX B1 RIGHT +	13	14	AUX B1 RIGHT -
GND	15	16	AUX B2 LEFT +
AUX B2 LEFT -	17	18	GND
AUX B2 RIGHT +	19	20	AUX B2 RIGHT -
GND	21	22	AUX B3 LEFT +
AUX B3 LEFT -	23	24	GND
AUX B3 RIGHT +	25	26	AUX B3 RIGHT -
GND	27	28	AUX B4 LEFT +
AUX B4 LEFT -	29	30	GND
AUX B4 RIGHT +	31	32	AUX B4 RIGHT -
GND	33	34	GND

**J15**

CONNECTS TO DIGI PCB 15  
10 PIN CABLE 040-095-00

GND	1	2	SUB 8 MUTE
SUB 1 MUTE	3	4	SUB 7 MUTE
SUB 2 MUTE	5	6	SUB 6 MUTE
SUB 3 MUTE	7	8	SUB 5 MUTE
SUB 4 MUTE	9	10	5V

**J16**

CONNECTS TO DIGI PCB J16  
20 PIN CABLE 040-062-02

5V	1	2	5V
SUB 8 LED DATA	3	4	SUB 8 SW DATA
SUB 7 LED DATA	5	6	SUB 7 SW DATA
SUB 6 LED DATA	7	8	SUB 6 SW DATA
SUB 5 LED DATA	9	10	SUB 5 SW DATA
SUB 4 LED DATA	11	12	SUB 4 SW DATA
SUB 3 LED DATA	13	14	SUB 3 SW DATA
SUB 2 LED DATA	15	16	SUB 2 SW DATA
SUB 1 LED DATA	17	18	SUB 1 SW DATA
GND	19	20	GND

**J17**

CONNECTS TO DIGI PCB J17  
20 PIN CABLE 040-062-03

5V	1	2	GND
5V	3	4	GND
MTRX D SW DATA	5	6	MTRX D LED DATA
MTRX D MUTE	7	8	MTRX C MUTE
MTRX C SW DATA	9	10	MTRX C LED DATA
MTRX B SW DATA	11	12	MTRX B LED DATA
MTRX B MUTE	13	14	MTRX A MUTE
MTRX A SW DATA	15	16	MTRX A LED DATA
SOLO CLK	17	18	N/C
N/C	19	20	N/C

**J18**

CONNECTS TO DIGI PCB J18  
26 PIN CABLE 040-099-01

GND	1	2	5V
AUX 1 LED DATA	3	4	AUX 1 SW DATA
AUX 2 LED DATA	5	6	AUX 2 SW DATA
AUX 1 MUTE	7	8	AUX 2 MUTE
AUX 4 LED DATA	9	10	AUX 4 SW DATA
AUX 5 LED DATA	11	12	AUX 5 SW DATA
AUX 5 MUTE	13	14	AUX 6 MUTE
AUX 6 LED DATA	15	16	AUX 6 SW DATA
AUX 3 LED DATA	17	18	AUX 3 SW DATA
AUX 3 MUTE	19	20	AUX 4 MUTE
AUX 7 LED DATA	21	22	AUX 7 SW DATA
AUX 8 LED DATA	23	24	AUX 8 SW DATA
AUX 7 MUTE	25	26	AUX 8 MUTE

## SCHEMATICS / PCB LAYOUTS

The remainder of this manual contains schematics and PCB layouts for the SR40•8. Documents are organized in numeric order by Mackie part #. The schematics and PCB layouts are placed as close together as possible to reduce "page flipping fatigue syndrome"

### SR40•8 Circuit Boards

Part #	Description
055-067-00	Channel PCB
055-068-00	Mute Control PCB
055-069-00	Channel Meter PCB
055-070-00	Mono Pod (channel) PCB
055-071-00	Stereo Channel (main aux) PCB
055-073-00	Master Pod PCB
055-074-00	Master (output) PCB
055-075-00	Mute Switch PCB
055-076-00	Master Meter PCB
055-077-00	Power Distribution PCB
055-078-00	Power Supply PCB
055-101-00	Output Digital PCB

For simplicity (and to save a few trees) step & repeated schematic sheets are omitted. On the SR40•8 component designators are stepped by 200 (R<sub>107</sub> on ch 1 = R<sub>307</sub> on ch 2 = R<sub>507</sub> on ch 3, etc).

### Omitted Schematic Sheets

PCB	Sheets Omitted	Refer To Sheet(s)
Channel	3-16, channels 2-8	1-2, channel 1
Mono Pod	2-8, channels 2-8	1, channel 1
Stereo Ch's	3-8, main aux returns 2, 3, and 4	1-2, main aua rtn 1
Master Section	2-8, aux sends/sub 2-8	1, aux send/sub 1

## SPEAKING MACKIE-EESE

Some of the terminology and labeling used in the SR40•8 schematics may be confusing (or at least illogical) to those new to servicing Mackie products. Here are a few explanations.

- “Mono Pod ” and “Master Pod” refer to the circuit boards at the rear of the console containing most of the jacks. “Pod” is a term that comes from the original CR-1604 detachable rotopod. Ever since, Mackie has referred to mixer PCBs that contain jacks as the “pod” regardless of whether or not they actually detach.
- Like expectant parents, Mackie engineers couldn’t decide on just one name for some of the SR40•8’s features. So to alleviate any confusion, “Stereo Channel” and “Main Aux Returns” are one and the same.
- The “Master Section” is sometimes referred to as the “Output Section”.
- The “Output Digital” PCB contains the Master section’s Ultramute shift registers. It is not directly involved in outputting any external digital communications.

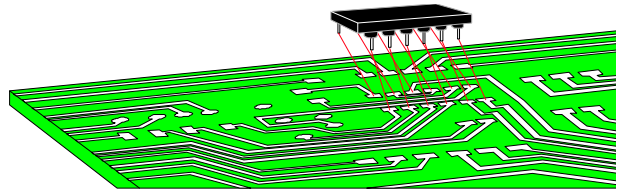
## FINAL NOTES

The hard working Mackie engineering department is on a neverending quest to improve product designs. Therefore, the information in this manual is subject to change without notice.

At Mackie Designs we strive for unparalleled technical support for our products. We welcome any feedback.

This manual was created by Jay Tannenhau on an indestructible KIWI laptop computer. Jay would like to thank the rest of the Mackie alpine snowboard team for their help.

# MACKIE®



## THE MIXER FIXER • MACKIE DESIGNS SERVICE NEWS

### SR 40•8 +12V Power Supply Fuse Upgrade:

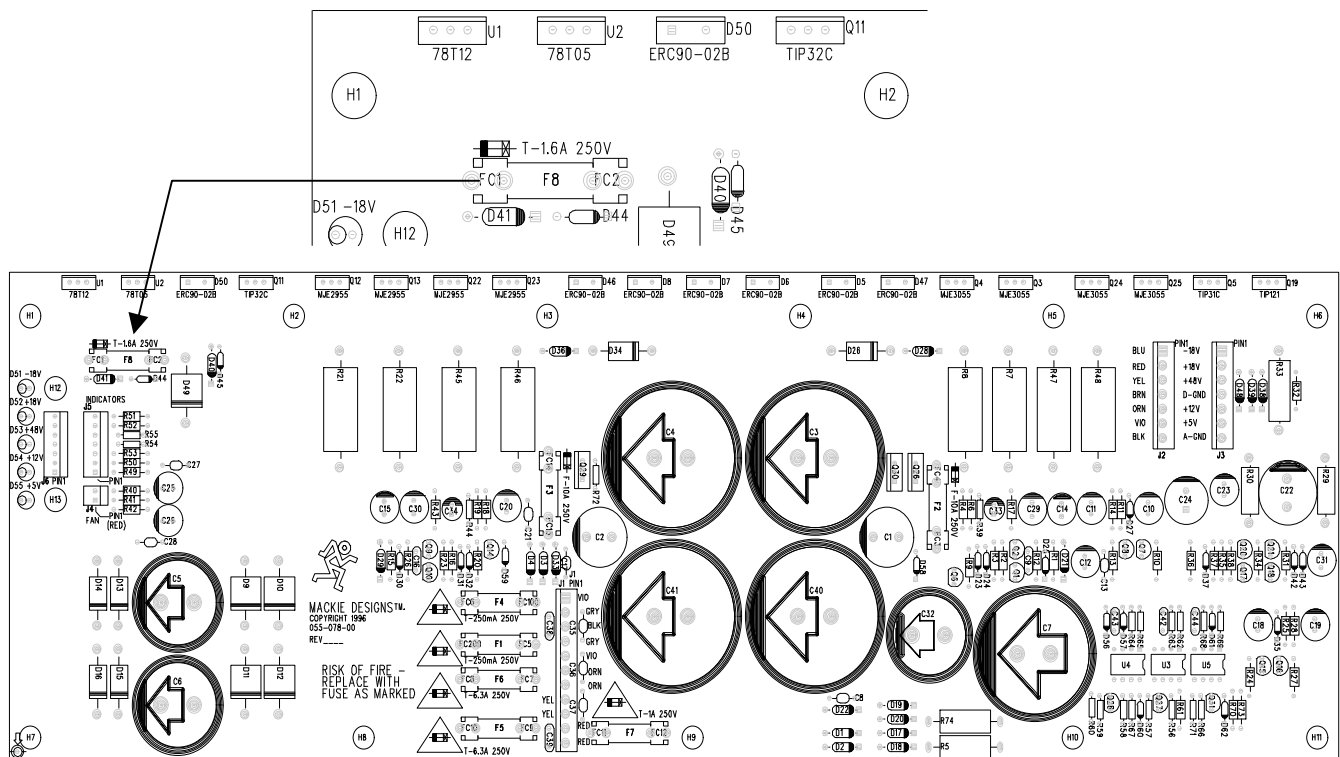
Model: SR40/56•8 440W Power supplies

Serial #: Prior to SN#AD14392

Effective 4/20/98

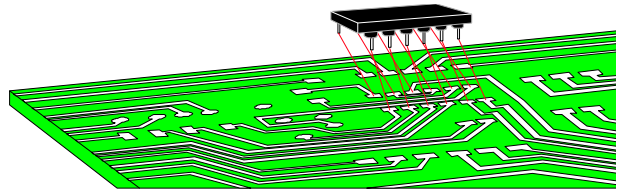
Symptom: No +12V Power LED's or no power to the Little Light outlets.

Solution: Replace F8 (1.6A Fuse) with a 3.15A 5X20MM 250V (Part # 510-026-00).



MACKIE®  
SR40•8 POWER SUPPLY PCB





# THE MIXER FIXER • MACKIE DESIGNS SERVICE NEWS

## SR 40•8 5-Volt Filter Capacitor

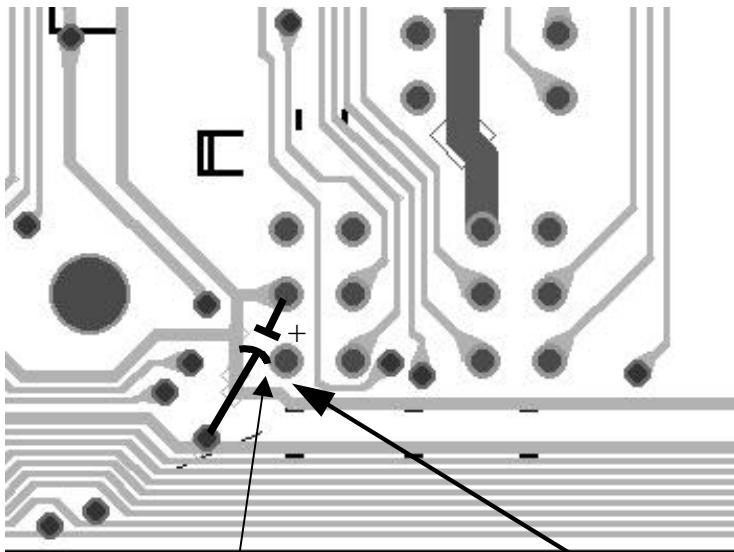
Model: SR40•8

Serial #: Prior to SN # AD14392

Effective 8/11/97

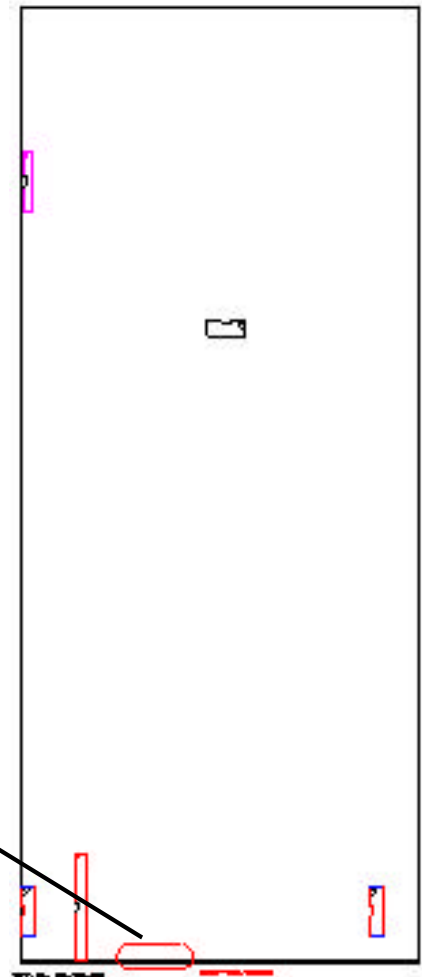
Symptom: No symptoms, just improved supply filtering.

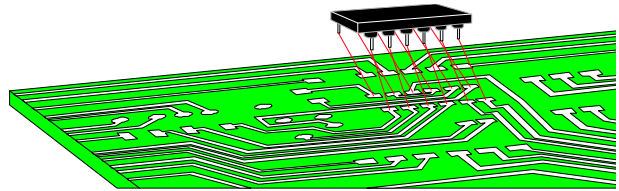
Solution: Install one 47uf 25V cap (part #220-002-00) per each Mono Channel PCB's (055-067-00). Solder the positive of leg of the cap to the 5V rail. Solder the negative leg to ground. (As shown below)



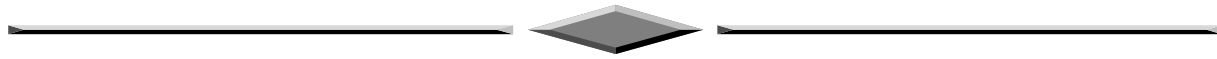
47uf 25v  
220-002-00

Back side of  
Mono  
Channel PCB  
(055-067-00)





## THE MIXER FIXER • MACKIE DESIGNS SERVICE NEWS



### SR 40•8 Clock Jumper

Model: SR40•8

Serial #: Prior to SN#AD14392

Effective 6/1/97

Symptom: Digital clock noise in the PFL Solo bus.

Solution: On the Mono Channel PCB cut and jump the trace pictured in Fig. 1

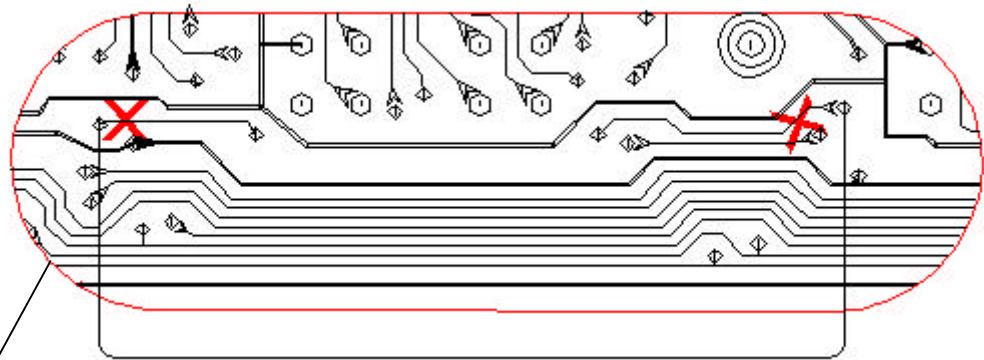
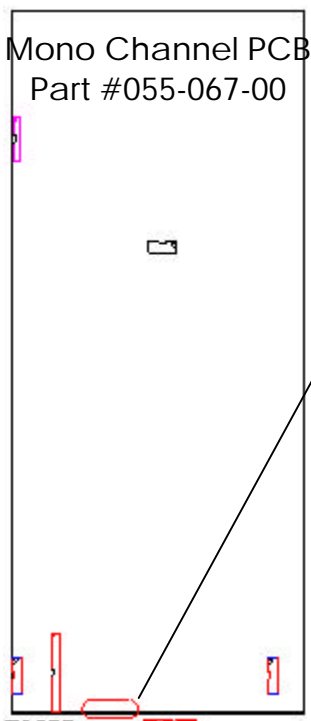
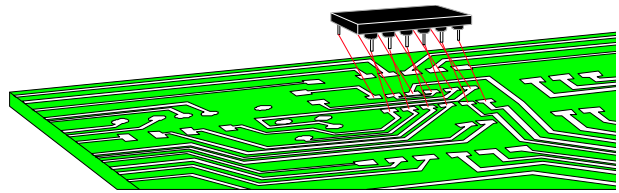


Fig. 1



# THE MIXER FIXER • MACKIE DESIGNS SERVICE NEWS

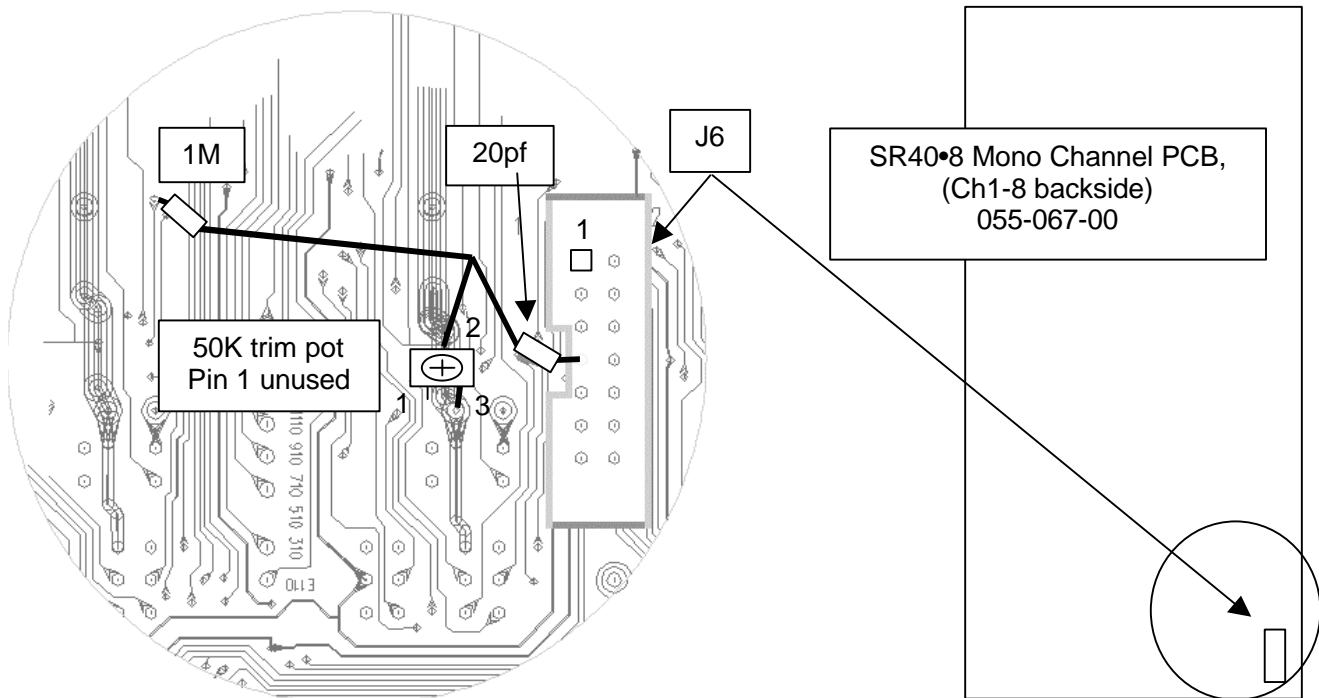
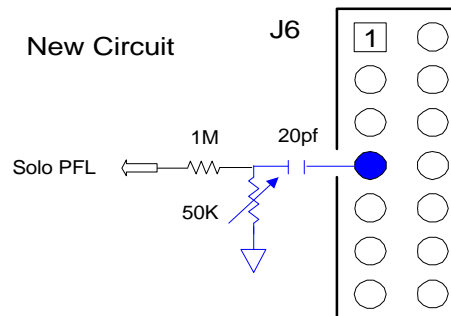
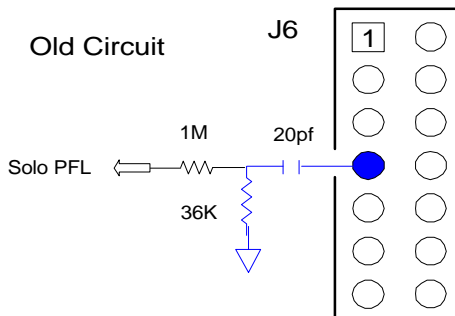
## SR 40•8 Solo Clock Noise

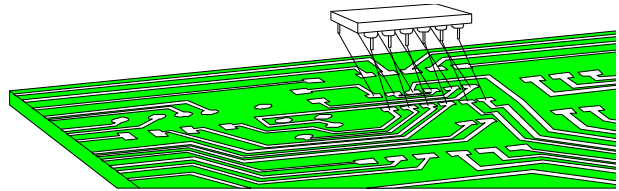
Model: SR40•8

Serial #: Prior to SN# AD14392 Effective 5/8/97

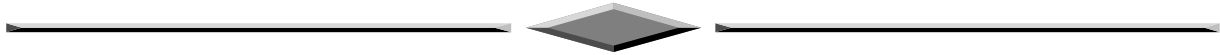
Symptom: Digital clock noise in the PFL Solo bus.

Solution: On the Ch1-8 Channel PCB replace the add-on resistor (backside, 36kohms) to ground with a 50K pot (part# 130-015-00). Monitor the Solo bus in the PFL mode and adjust the pot for minimum (null) clock noise.





# THE MIXER FIXER • MACKIE DESIGNS SERVICE NEWS



## SR 40•8 Digital Output PCB Clock Noise Mod

Model: SR40•8

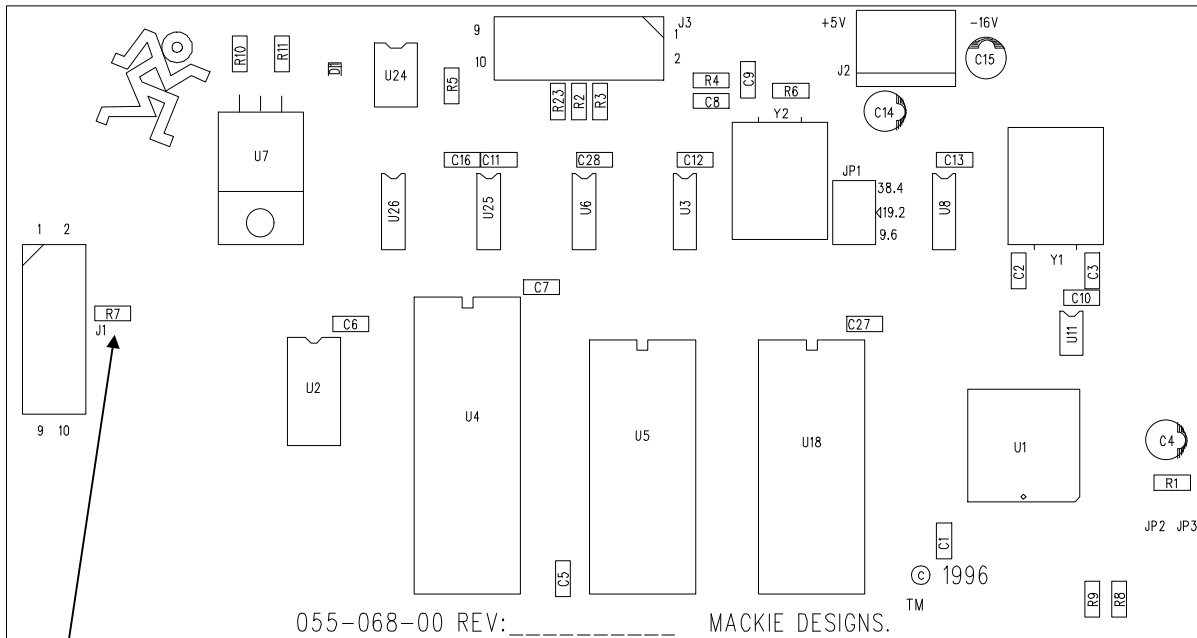
Serial #: Prior to SN# AD14392

Effective 7/1/97

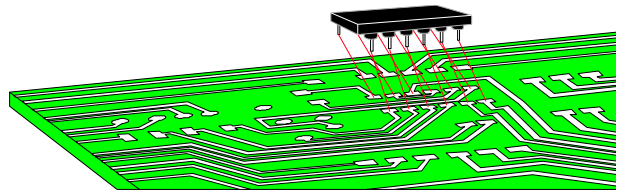
Symptom: Clock noise in PFL bus.

Solution: Remove 220Ω SMT resistor, R7, and replace with an SMT zeroΩ link, part# 145-000-00.

Digital output PCB part #055-101-00



Replace R7 with zeroΩ link



# THE MIXER FIXER • MACKIE DESIGNS SERVICE NEWS

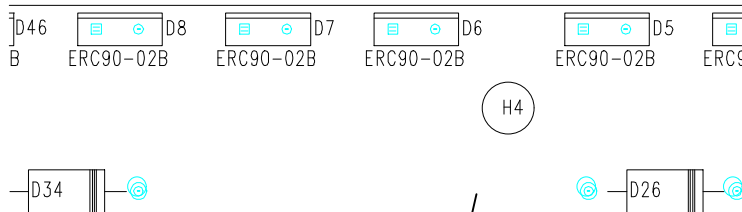
## SR 40•8 Power Supply Diode Failure

Model: SR40 8 PSU (Power supply unit)

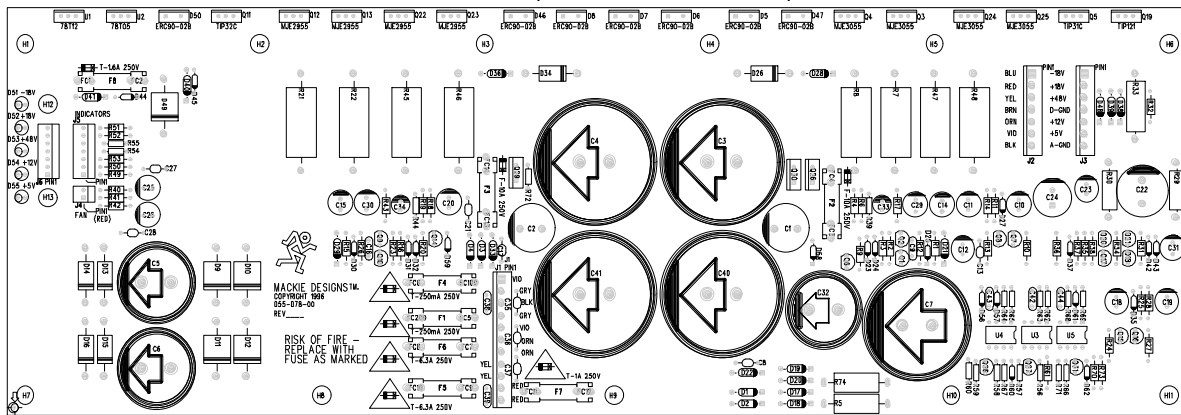
Serial #: Not available. Very early production, probably only 10-20  
Effective 6/1/97

Symptom: Rectifier diodes D5 and D6 Fail. Main fuse may fail.

Solution: Replace diodes D5, D6, D7, and D8 with part type FES8DT (part# 300-006-00) which has a higher current rating.



PSU PCB Part #055-078-00





MACKIE DESIGNS INC., 16220 Wood-Red Road NE, Woodinville, WA 98072  
Phone 800/258-6883, Service Fax 206/402-7833, General Fax 206/487-4337

7/11/97

To: Mackie Designs Authorized Warranty Service Centers

Subject: SR40•8 upgrade kit. (Prior to SN #AD14392)

Dear Service Centers,

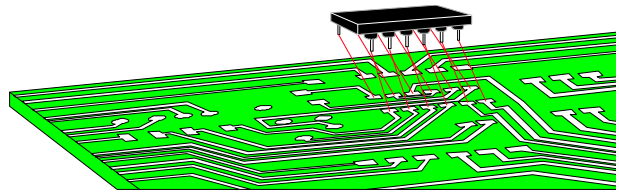
Mackie Designs has recently created an upgrade kit for the SR40•8 Large Format Mixer. We have created a Mixer Fixer for each upgrade.

On all SR 40•8 consoles that come in for service with serial number prior to AD14392 the following updates must be done.

1. Replace all five Mono Pod PCB's. (Part #055-070-00)
2. Replace the Master PCB. (Part #055-073-00)
3. Update the EPROM to Ver. 1.3. (Part #080-022-00)
4. Install Mixer Fixer SR 40•8 ULTRA MUTE Timing Error.
5. Install Mixer Fixer SR 40•8 Solo Clock Noise.
6. Install Mixer Fixer Control PCB Resistor.
7. Install Mixer Fixer 5-Volt Filter Cap.
8. Install Mixer Fixer SR40•8 Solo LED failure (SN #AD14976)
9. Install Mixer Fixer SR 40•8 Clock Jumper.
10. Install Mixer Fixer SR 40•8 Matrix Crosstalk
11. Check the power supply for Mixer Fixer. (Power supply rectifier diode)

Sincerely,

Mackie Designs Inc.



## THE MIXER FIXER • MACKIE DESIGNS SERVICE NEWS

### SR 40 8 ULTRA MUTE Timing Error

Model: SR40•8

Serial #: Prior to SN# AD14298

Effective 6/1/97

Symptom: Muting FETs don't always follow mute LEDs when recalling snapshots.

Solution: Install modification PCB 055-155-00 and ribbon cable assembly 040-133-00/ 055-155-00.

To install modification PCB 055-155-00 (see Figures 1 & 2):

1. Remove the bottom panel from the SR40•8 (requires a Phillips head screwdriver).
2. Unplug the 50-pin cable from the Mono (CH17-24) PCB.
3. Unplug the 3" 14-pin cable interconnecting the A1-A4 and Mono (CH17-24) PCBs.
4. Replace the cable with the -155 modification PCB. **Be sure to install the assembly so the red stripe on the cable is towards the top when the armrest of the mixer is closest to you.**
5. Reinstall the 50-pin cable into the connector on the Mono (CH17-24) PCB.

To install the 040-133-00/055-155-00 ribbon cable assembly:

1. Remove ribbon cable# 040-133-00, which connects the digital output board (055-101-00) to the channel 33-40 channel board.
2. Install the ribbon cable assembly which we have supplied. Connect the short cable to connector J6 on the digital output board and the long cable to connector J7 on the channel 33-40 channel board.
3. Use a cable tie to tie the 055-155-00 PCB to cable# 040-062-03 to keep it in place.
4. Reinstall the bottom cover.

Fig. 1  
Side View

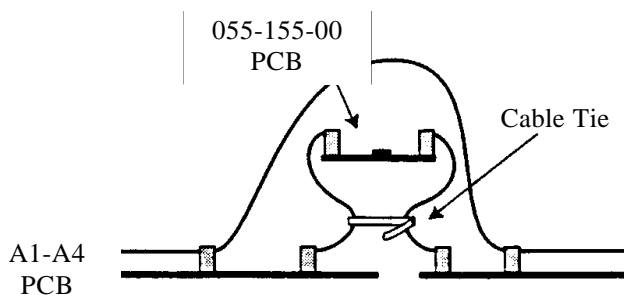


Fig. 2  
Top View

