



3630 Compressor/Limiter
And
NanoCompressor
Service Manual V 1.00e
5/1/97

T.J. Goodwin
Editor

WWW.ALESIS.COM

PREFACE

This document is intended to assist the service technician in the operation, maintenance and repair of the 3630 Compressor/Limiter and the NanoCompressor. Together with the 3630 and NanoCompressor Reference Manuals, this document provides a complete description of the functionality and serviceability of these units. Any comments or suggestions you may have pertaining to the document are welcome and encouraged.

WARNINGS

TO REDUCE THE RISK OF ELECTRIC SHOCK OR FIRE, DO NOT EXPOSE THIS PRODUCT TO WATER OR MOISTURE.



The arrowhead symbol on a lightning flash inside a triangle is intended to alert the user to the presence of un-insulated "dangerous voltage" within the enclosed product which may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point inside a triangle is intended to alert the user to the presence of important operating, maintenance and servicing instructions in the literature which accompanies the product.

REPAIR BY ANY PERSON OR ENTITY OTHER THAN AN AUTHORIZED ALESIS SERVICE CENTER WILL VOID THE ALESIS WARRANTY.

PROVISION OF THIS MANUAL DOES NOT AUTHORIZE THE RECIPIENT TO COMPETE WITH ANY ALESIS DISTRIBUTOR OR AUTHORIZED REPAIR SERVICE CENTER IN THE PROVISION OF REPAIR SERVICES OR TO BE OR MAKE REPAIRS AS AN AUTHORIZED SERVICE CENTER.

ALL REPAIRS DONE BY ANY ENTITY OTHER THAN AN AUTHORIZED ALESIS SERVICE CENTER SHALL BE SOLELY THE RESPONSIBILITY OF THAT ENTITY, AND ALESIS SHALL HAVE NO LIABILITY TO THAT ENTITY OR TO ANY OTHER PARTY FOR ANY REPAIRS BY THAT ENTITY.

SAFETY SUGGESTIONS

Carefully read the applicable items of the operating instructions and these safety suggestions before using this product. Use extra care to follow the warnings written on the product itself and in the operating instructions. Keep the operating instructions and safety suggestions for reference in the future.

1. Power Source. The product should only be connected to a power supply which is described either in the operating instructions or in markings on the product.
2. Power Cord Protection. AC power supply cords should be placed such that no one is likely to step on the cords and such that nothing will be placed on or against them.
3. Periods of Non-use. If the product is not used for any significant period of time, the product's AC power supply cord should be unplugged from the AC outlet.
4. Foreign Objects and Liquids. Take care not to allow liquids to spill or objects to fall into any openings of the product.
5. Water or Moisture. The product should not be used near any water or in moisture.
6. Heat. Do not place the product near heat sources such as stoves, heat registers, radiators or other heat producing equipment.
7. Ventilation. When installing the product, make sure that the product has adequate ventilation. Improperly ventilating the product may cause overheating, which may damage the product.
8. Mounting. The product should only be used with a rack which the manufacturer recommends. The combination of the product and rack should be moved carefully. Quick movements, excessive force or uneven surfaces may overturn the combination which may damage the product and rack combination.
9. Cleaning. The product should only be cleaned as the manufacturer recommends.
10. Service. The user should only attempt the limited service or upkeep specifically described in the operating instructions for the user. For any other service required, the product should be taken to an authorized service center as described in the operating instructions.
11. Damage to the Product. Qualified service personnel should service the unit in certain situations including without limitation when:
 - a. Liquid has spilled or objects have fallen into the product,
 - b. The product is exposed to water or excessive moisture,
 - c. The AC power supply plug or cord is damaged,
 - d. The product shows an inappropriate change in performance or does not operate normally, or
 - e. The enclosure of the product has been damaged.

Acknowledgments

As editor of this book I receive a great deal of credit for it's existence. But without the help of the Alesis service team, this book could not reach the standards we have set for it. In particular I would like to thank Robert Morin, John Sarappo, and Gary Stafford for their extra effort in proofreading this material to ensure that it does live up to our standards. In addition I would like to thank Don Wichman for the QC Test Procedures included here.



T.J. Goodwin
Technical Services Coordinator.

Table Of Contents

PREFACE.....	ii
WARNINGS.....	ii
SAFETY SUGGESTIONS	iii
Acknowledgments	iv
1.00 General Descriptions	1
1.10 3630 Compressor/Limiter.....	1
1.20 NanoCompressor.....	1
2.00 Power Supplies.....	1
3.00 Signal Paths	2
3.10 Audio Signal Paths.....	2
3.20 Control Signal Paths	2
3.21 Compression Detector	2
3.22 3630 Gate Detector	3
3.30 LED Displays	3
3.40 3630 Schematic Cross Connections	3
4.00 Test Procedures	5
4.10 Distortion Adjustments	5
4.20 Input/Output Level Test.....	6
4.30 Function Test	7
4.40 Stereo Mode Test	7
4.50 Final Test	8
5.00 Troubleshooting	9
6.00 Updates And Corrections.....	9
6.10 3630 Changes.....	9
6.11 Revision B Main PCB Distortion Reduction.....	9
6.12 Power Up Oscillation	10
6.13 Revision C Main PCB Dual/Stereo Switch Noise	10
6.20 NanoCompressor Changes.....	10
6.21 Revision B Main PCB Right Channel Sensing Resistor	10
6.22 Revision C Right Channel Normalization	11
6.23 Improvement of High Frequency Phase Response	11
6.24 Improvement of Power Supply Stability Under High Output Loading....	11
7.00 Service Parts List.....	12
7.10 3630 Service Parts List	12
7.20 NanoCompressor Service Parts List	14
8.00 Service Manual History	16
9.00 Dictionary of selected terms	16
INDEX.....	17
10.00 Schematics	20

1.00 General Descriptions

This manual includes two Alesis products. The Alesis 3630 Compressor/Limiter (CL) and the NanoCompressor (NC). Note that 3630 reference designators are in plain text while NanoCompressor designators are in **bold** and placed in [brackets] in order to distinguish them from each other.

1.10 3630 Compressor/Limiter

The 3630 Compressor is a general purpose dual/stereo compressor/limiter and noise gate in a single rack space. It has the ability to utilize both hard knee (fixed ratio) and soft knee (ratio dependent on incoming signal levels) compression techniques allowing for a greater range of applications. It also incorporates a noise gate similar to the Alesis MicroGate. The unit is divided internally into two sections (master and slave). The schematics for these two sections are virtually identical, except for minor differences in the way that functions are switched on and off. The simplified block diagram (Figure 1) shows the generic signal paths for one channel of the unit.

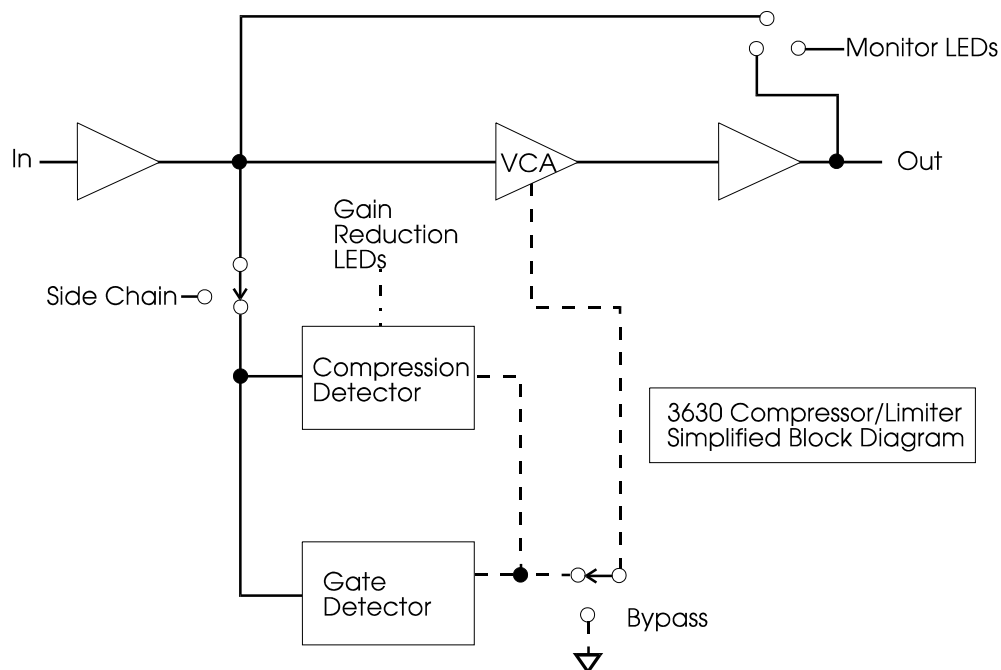


Figure1-3630 Simplified Block Diagram

1.20 NanoCompressor

Introduced in late 1996, the NanoCompressor consists mainly of the compressor section from the 3630, in a small 1/3 rack space case. This product includes the same hard knee/soft knee compression available in the 3630. Note, however the NanoCompressor is permanently wired for stereo operation (no dual mode).

2.00 Power Supplies

The power supply begins with the 9 volt A.C. adapter (Alesis P3 type). C1 acts as an RF filter capacitor before on/off switch S1. In the NanoCompressor there is no switch, so the adapter connects directly to the doubler/regulator section via the P.S. input jack [J1]. The +15V rail is derived from the 9V A.C. via a voltage doubler (C3, C4 and D3, D4) [C2, C34 and D1, D3], a +15V regulator (VR1) [U8], filter capacitor C6 [C12], as well as a multitude of bypass capacitors spread throughout the PC Board. The -15V supply is a mirror of the positive supply, consisting of a doubler (C2, C5 and D1, D2) [C1, C25 and D4 D2], regulator (VR2) [U1] and filter capacitor (C7) [C9], as well as the usual bypass capacitors.

3.00 Signal Paths

In the discussion of signal paths, concentration will be centered on the 3630 master schematic. The slave functions are virtually identical to the master, the only difference being in the way that the front panel switches control various functions. Individual switch connections are discussed in section 3.40. Similarly, since the NanoCompressor utilizes the same basic circuitry as the 3630, and both left and right channels function identically, only the left channel is discussed here.

3.10 Audio Signal Paths

The input from J2 [J3] is R.F. filtered by C12 [C3] and has its impedance set at 100K [1M] by R12 [R1]. One section of U2 [U2] acts as a buffer/gain stage. Note that the -10/+4 switch S2 works by adding a voltage divider element (R13) to the negative feedback path of the op-amp (reducing negative feedback, thus increasing gain) when the switch is in the -10 position. Also note that the NanoCompressor is permanently wired for -10 systems. The output of this op-amp is sent to both the side chain jack J3 [J2] (and consequently on to the detectors) and to the Voltage Controlled Amplifier (U3) [U4] via an A.C. coupling capacitor (C16) [C7] and current limiting resistor R23 [R36]. Please note here that the VCA is a current amplifier and as a consequence, signals present at the VCA will not be visible on an oscilloscope. The output of the VCA is converted back into voltage mode by U2 pins 12, 13, and 14 [U2 pins 12, 13, and 14] before being sent to the output via the -10/+4 switch. S2 which reduces output gain by adding an extra voltage divider (R41, R42) when in the -10 position. Again note that the NanoCompressor has no equivalent switch. Finally, the output is current limited to 470Ω by R26 [R5] before output jack J4 [J5].

3.20 Control Signal Paths

3.21 Compression Detector

The purpose of the compression detector is to vary the audio VCA control signals according to the front panel settings of the compressor section. In the 3630, this hardware must work in conjunction with the gate detector to produce the necessary control signal for the audio VCAs.

The compression detector is based on the use of the 2252 RMS level detector IC U1. [U3] The output of the detector rises roughly 6mV for every dB of input level. R7 is used as a symmetry adjust and should be set for minimum distortion (see section 4.10 for details). The output of the 2252 is then sent to an active rectifier (U2 pins 5, 6 and 7) [U3 pins 5, 6 and 7]. The threshold control works by biasing the input to the rectifier with a D.C. offset. The output of the rectifier will not change until the output of the 2252 exceeds the threshold voltage set by R119 [R88]. The HARD KNEE/SOFT KNEE switch in the SOFT position incorporates R83 [R64] which allows program material to have a greater effect on the final control voltage as well as affecting the ratio setting.

At this point, U2 pins 1, 2, and 3 [U7B pins 5, 6, and 7] provide a small amount of gain prior to entering the envelope shaping circuitry. RC networks consisting of R121, C29, C39 [R83, C36 and C40] and R78, R122, C40 [R82, R52, C26] work in conjunction with U8 pins 1, 6, and 7 [U6A pins 2, 4, and 5] to provide the attack/release shaping for the control signal. The rest of the compression circuitry consists of some filtering, with R123 [R79] providing for output gain level by adding a DC offset to the final control voltage. It is worth noting again here that the VCA functions in current mode causing the "Control Voltage" to be unviewable using an oscilloscope.

3.22 3630 Gate Detector

The purpose of the gate detector is to vary the audio VCA control signals according to the front panel settings for the noise gate. In accomplishing this, it must override the compressor detector when the gate itself is in the closed position, yet still allow the compressor detector to function during the release portion of the noise gates normal cycle. It's also worth noting here the economy of parts used by the Alesis Engineers. Instead of leaving some sections of a quad comparator unused, and needing to add at least a dual op amp to each channel, they instead opted to use the comparators in a linear mode. Since we are only using the audio signal for amplitude detection purposes at this point, the degradation of the audio signal caused by using these parts is not an issue.

The circuit begins with audio signal input via the side chain jack J3. This signal is A.C. coupled via C24, and provided with some gain by U4 pins 8, 9, and 10. The signal is then buffered (U9 pins 10, 11, 13, 8, 9, and 14) and filtered (C44) prior to entering the threshold detector.

The threshold detector consists of a simple level detector with hysteresis (U9 pins 6, 7, and 1). It's threshold level is set by R124. This signal is then rectified (D9, D10) and filtered (R89, C45) to further shape the control signal as well as prevent the system from reacting too quickly (i.e. causing the gate to "chatter" when the audio level and threshold level are roughly equivalent).

Immediately following the threshold detector is the rate circuit, whose main components consist of U9 pins 5, 6, and 7, Q1, C20, and R125. While the gate is in the open position, the base of Q1 is held at -15V (turning it on) forcing the voltage across C20 to stay low (about 0.7V). As soon as the threshold is exceeded and the gate is closed, the base of Q1 jumps to +10V (turning it off) and allowing C20 to charge at a rate determined by the rate potentiometer (R125).

The signal is finally buffered and mixed with the output of the compression detector via D5, R32, R30 and C19. Note that D5 helps prevent component damage under conditions when the compression detector signal and gate detector signal combined might cause excessive reverse currents.

3.30 LED Displays

While there is an obvious difference between the sensitivities of the LED bar graph displays of the 3630 and the NanoCompressor, they both use the same basic circuit to generate it. Here we will use the 3630 master input output LED bar graph as an example.

U18 buffers the incoming signal and C66 acts to low pass filter the signal (without this the LEDs might only light briefly making it look dim). Q5 and Q6 provide a constant current so that the LEDs maintain a constant brightness no matter how many are on. U15-U19 compare the incoming signal to a series of set threshold values (set by R151-R162).

In the 3630 the gain reduction LEDs lack the input signal buffer and low pass filtering as it is already slow enough to hold the LEDs on long enough to stay visible.

3.40 3630 Schematic Cross Connections

Due to the relative complexity of the various connections between master and slave, it can be difficult to follow the various connections throughout the schematics. The following table is presented to help simplify troubleshooting.

Connection Designation	Function
T1	Sets correct path for the cap input of slave 2252 (U5), according to the state of the stereo/dual switch.

T2	Connects master rectifier control signal U9 pins 13 and 14 to stereo dual switch S6 (Slave section).
T3	Connects output of master noise gate detector to slave gate LEDs, depending on the state of the stereo/dual switch.
T4	Connects master bypass switch S10 to slave stereo dual switch S6. Used to determine the correct source of input to the gain reduction LEDs, depending on the state of the stereo/dual switch.
T5	Connects master bypass switch to stereo/dual switch to provide the correct path for the VCA control voltage signal, depending on the state of the stereo/dual switch.
T6	Connects the master gain reduction LEDs to the stereo/dual switch.
T7	Connects channel A input (U2 pin 8) to input side of monitor switch 9.
T8	Connects channel A final output (Just prior to -10/+4 switch S2) to output side of monitor switch S9.
T9	Connects channel B input (U2 pin 8) to input side of monitor switch 9.
T10	Connects channel B final output (Just prior to -10/+4 switch S2) to output side of monitor switch S9.
T11	Connects the slave gain reduction LEDs to the stereo/dual switch.

4.00 Test Procedures

Testing the 3630 or NanoCompressor can be as simple as plugging the unit in to an audio source and listening to the outputs for distortion while changing settings. In the interest of being thorough, the full QC procedure for the 3630 is presented below. The full test requires a distortion analyzer to complete it. Test procedures are identical for both channels. Bearing in mind the obvious limitations of the NanoCompressor, (i.e. no noise gate or stereo/dual operation), the same test procedure can be used.

4.10 Distortion Adjustments

- ✓ Connect equipment to channel A and establish settings as shown in Figure 2.
- ✓ Set Distortion Analyzer to 1KHz, 1V output.
- ✓ Adjust the output level of the distortion analyzer until all of the YELLOW INPUT/OUTPUT LEDs are ON.
- ✓ Adjust the trimpot (Channel A-R24, Channel B-R49) for the lowest distortion possible. The specification for this adjustment is 0.08%. Any value above this indicates that further troubleshooting may be required.
- ✓ Change the frequency control of the distortion analyzer to 100Hz.
- ✓ Press the PEAK/RMS switch IN.
- ✓ Rotate the compression THRESHOLD knob until 7 red GAIN REDUCTION LEDs are ON.
- ✓ Adjust the trimpot (Channel A-R7, Channel B-R49) for the lowest distortion possible. The specification for this adjustment is 0.6%. Any value above this indicates that further troubleshooting may be required.

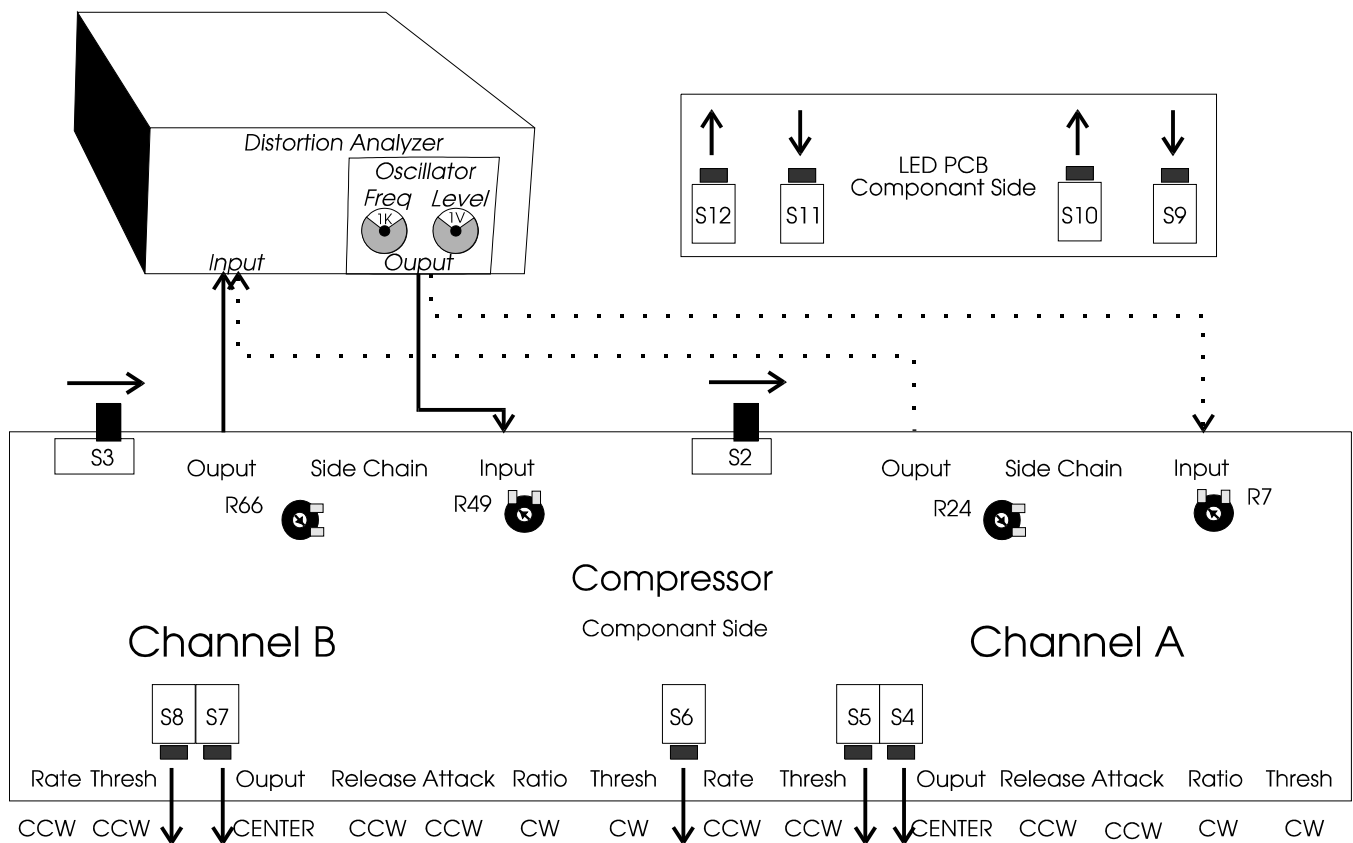


Figure 2-QC Test Setup

4.20 Input/Output Level Test

- ✓ Connect equipment to channel A and set all knobs and switches according as shown in Figure 3.
- ✓ Set Distortion Analyzer to 1KHz, 1V output.
- ✓ Adjust the output level of the distortion analyzer until all of the *YELLOW INPUT/OUTPUT LEDs* are ON.
- ✓ Press the *INPUT/OUTPUT* switch OUT. The LEDs should stay the same.
- ✓ Set the distortion analyzer frequency to 20KHz. 2 or 3 of the *YELLOW INPUT/OUTPUT LEDs* should be ON.
- ✓ Set the distortion analyzer frequency to 20Hz. 2 or 3 of the *YELLOW INPUT/OUTPUT LEDs* should be ON.
- ✓ Set Distortion Analyzer to 1KHz.
- ✓ Press the *BYPASS/COMP* switch OUT.
- ✓ Rotate the *OUTPUT* knob until all of the *YELLOW INPUT/OUTPUT LEDs* are on.
- ✓ Change the distortion analyzer to 0.3V output level. 5 *GREEN INPUT/OUTPUT LEDs* should be on.
- ✓ Change the distortion analyzer to 0.1V output level. 3 *GREEN INPUT/OUTPUT LEDs* should be on.

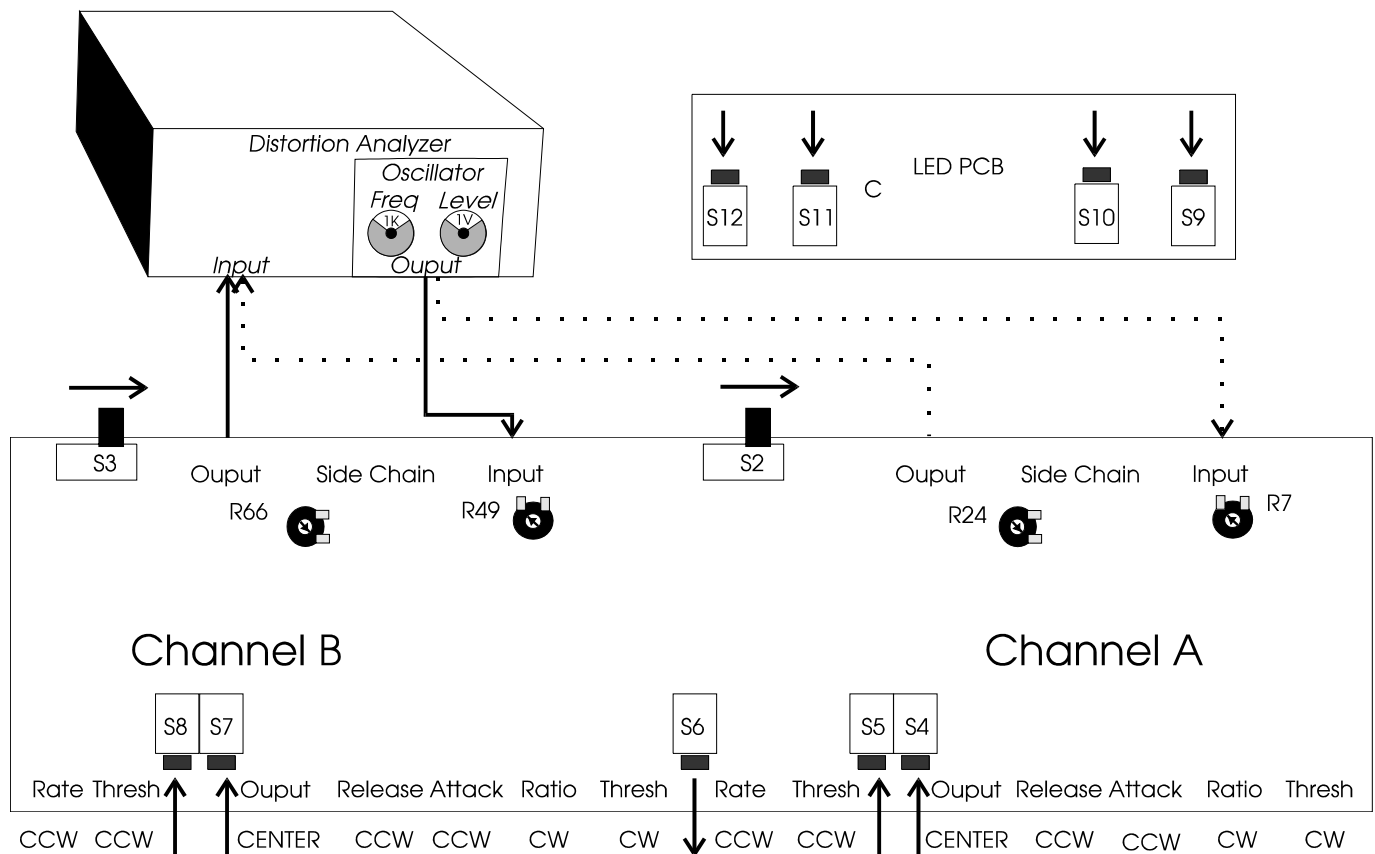


Figure 3-QC Test Setup

4.30 Function Test

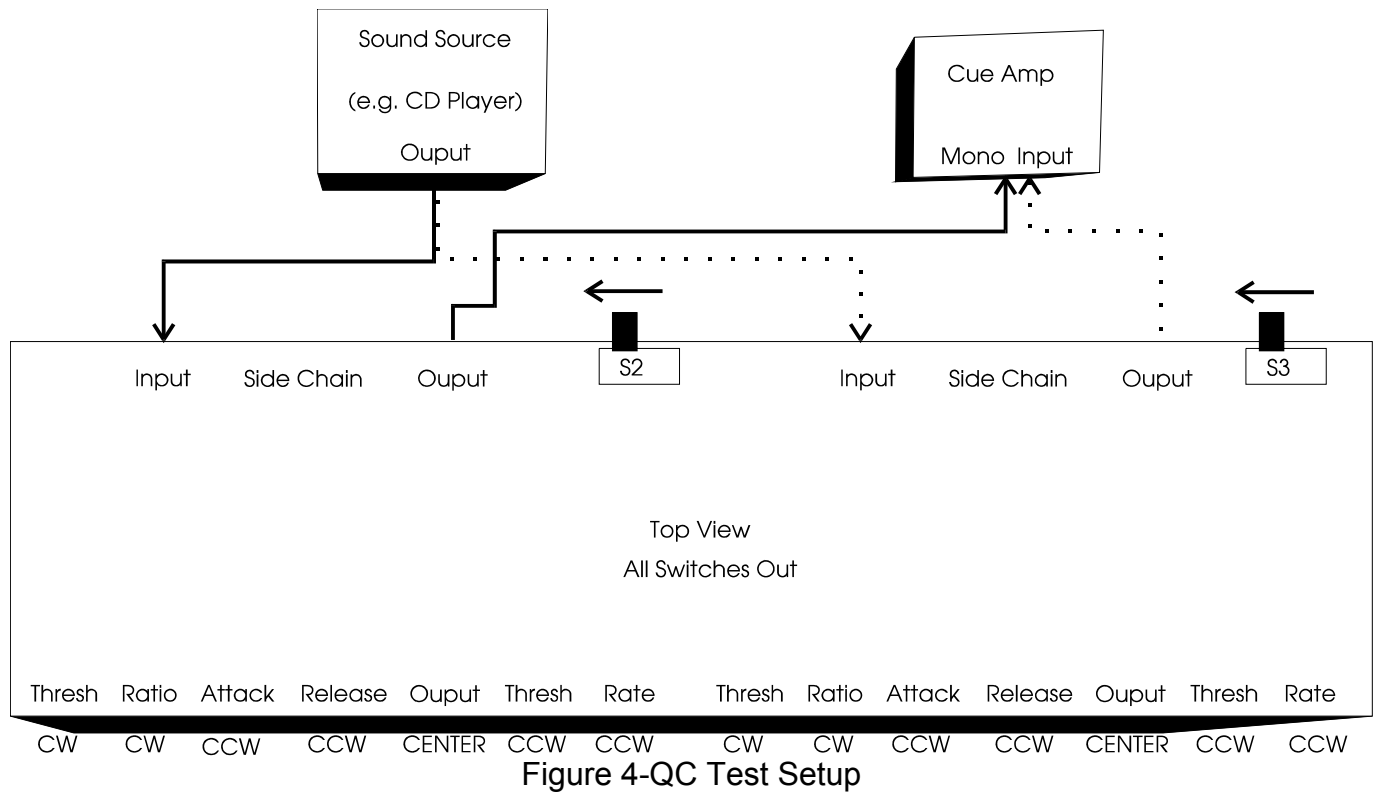
- ✓ Connect equipment to channel A and establish settings as shown in Figure 3.
- ✓ Set the distortion analyzer for 1KHz, 0.3V output.
- ✓ Rotate the *OUTPUT* knob CW. All *INPUT/OUTPUT LEDs* should be on.
- ✓ Rotate the *OUTPUT* knob slowly CCW. The *INPUT/OUTPUT LEDs* should turn off 1 at a time. (Two or more turning off at the same time may indicate a faulty comparator or a short between traces.)
- ✓ Set the *OUTPUT* knob to center position.
- ✓ Rotate the compression *THRESHOLD* knob CCW. All red *GAIN REDUCTION LEDs* should be on, and all *INPUT/OUTPUT LEDs* should be off.
- ✓ Rotate the *RATIO* knob CW.
- ✓ Rotate the *RELEASE* knob CW.
- ✓ Quickly rotate the compression *THRESHOLD* knob CW. The red *GAIN REDUCTION LEDs* should slowly turn off.
- ✓ Press the *PEAK/RMS* switch OUT.
- ✓ Rotate the compression *THRESHOLD* knob CCW. All red *GAIN REDUCTION LEDs* should be on. Then quickly rotate the compression *THRESHOLD* knob CW. The red *GAIN REDUCTION LEDs* should quickly turn off.
- ✓ Rotate the *RELEASE* knob CCW.
- ✓ Rotate the compression *THRESHOLD* knob until only 1 red *GAIN REDUCTION LED* is on.
- ✓ Press the *HARD KNEE/SOFT KNEE* switch to out. 5 or 6 red *GAIN REDUCTION LEDs* should be on.
- ✓ Set the distortion analyzer for 0.1V output level.
- ✓ Rotate the *GATE THRESHOLD* knob CW. The green *OPEN LED* should quickly turn off at the same time that the red *CLOSE LED* quickly turns on.
- ✓ Rotate the gate *RATE* knob CW. Rotate the gate *THRESHOLD* knob CCW.
- ✓ Rotate the gate *THRESHOLD* knob CW. The green *OPEN LED* should turn slowly off at the same time the red *CLOSED LED* turns slowly on.

4.40 Stereo Mode Test

- ✓ Connect equipment to Channel B and establish settings as shown in Figure 3.
- ✓ Set the distortion analyzer for 1KHz, 0.3V output.
- ✓ Press the *STEREO LINK/DUAL MONO* switch IN.
- ✓ Rotate Channel A compression *THRESHOLD* CCW. All channel A and B *GAIN REDUCTION LEDs* should be on.
- ✓ Set the distortion analyzer for a 0.1V output level.
- ✓ Rotate the channel A gate *THRESHOLD* knob CW. The channel A and B *OPEN LEDs* should go off, and the channel A and B *CLOSE LEDs* should be on.

4.50 Final Test

- ✓ Connect equipment and establish settings as shown in Figure 4.
- ✓ Listen for noise or distortion.
- ✓ Press the *PEAK/RMS* switch IN and OUT. Listen for noise.
- ✓ Press the *HARD KNEE/SOFT KNEE* switch IN and OUT. Listen for noise.
- ✓ Press the *BYPASS/COMP* switch IN and OUT. Listen for noise.
- ✓ Rotate the *THRESHOLD* knob CCW. The volume should drop a little. Listen for noise.
- ✓ Rotate the output knob CW. Volume should increase. Again, listen for noise.



5.00 Troubleshooting

Symptom	Possible Failure and Solution
Unit is dead. No LEDs, no audio.	AC adapter is bad. Check adapter for 9VAC output and replace if necessary.
	Broken PS input jack. Check and replace if necessary.
	In 3630, the ribbon cable between the main PCB and the LED PCB (J5 to J9) is disconnected. Check and reseat if necessary.
	Faulty component in Power supply circuitry. Particularly check electrolytic capacitors C1, C2, C25, and C34, diodes D1-D4, and regulators U1 and U8.
(3630 Only) All Gain Reduction LEDs are on	U18 on LED PCB had failed. Check and replace if necessary.

6.00 Updates And Corrections

Unless otherwise noted, all changes are incorporated into subsequent PCB revisions.

6.10 3630 Changes

6.11 Revision B Main PCB Distortion Reduction.

It was found that distortion while compression is off in the hard knee setting could be improved by adding a ground jumper on the solder side of the PCB between the ground at the power supply input jack and the ground point of the ratio potentiometer. Additionally R76 and R99 should be changed from 1K to 1.5K (Part No. 0-00-0152) and two 150Ω and two 10K resistors added (See Figure 5 for details). Note that this change was done largely at the factory and it is extremely unlikely that you will ever see a unit without it. It is included here for the sake of completeness.

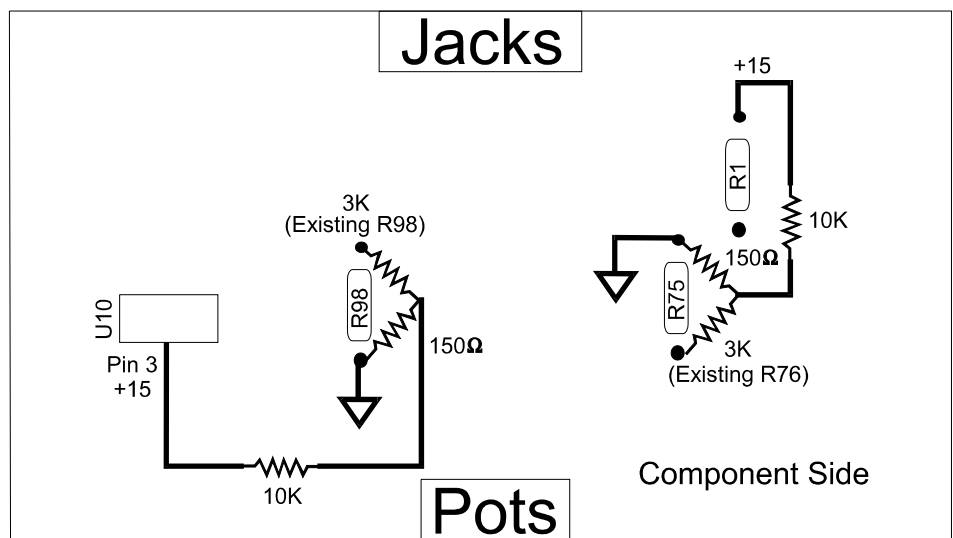


Figure 5 -Added Resistors

6.12 Power Up Oscillation

It was found that some units go into oscillation at power up. The addition of a 0.1 μ F capacitor (Part No. 1-02-0104) between the collector of Q6 and -15V (See Figure 6) eliminates this.

6.13 Revision C Main PCB Dual/Stereo Switch Noise

It was found that some units had an audible “pop” when switching between Dual and Stereo modes. Adding a 1K resistor between Pin 2 of U7 and Ground eliminates the popping sound.

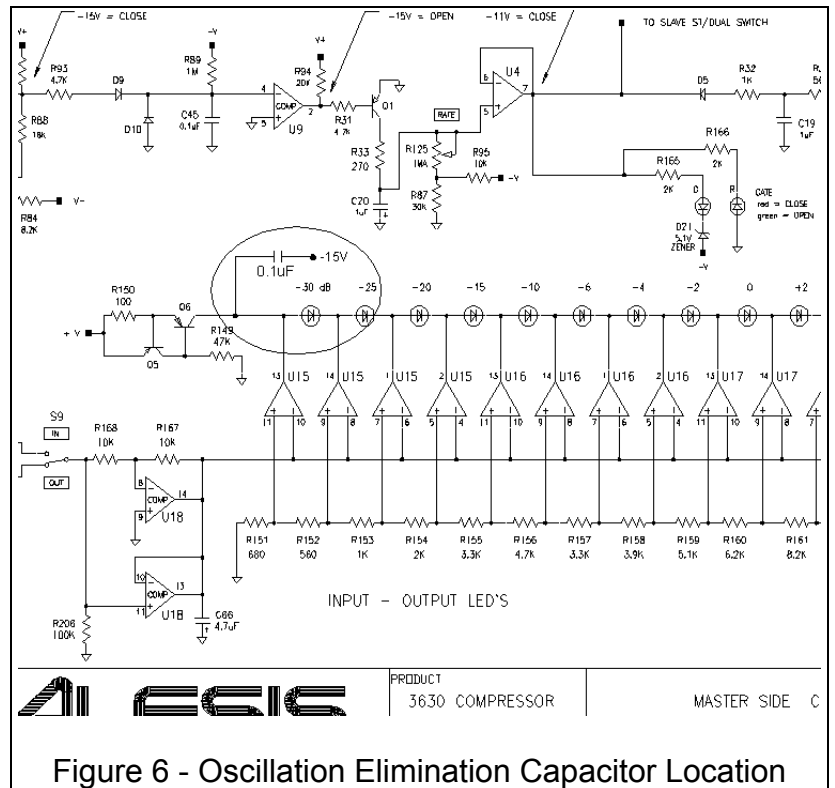
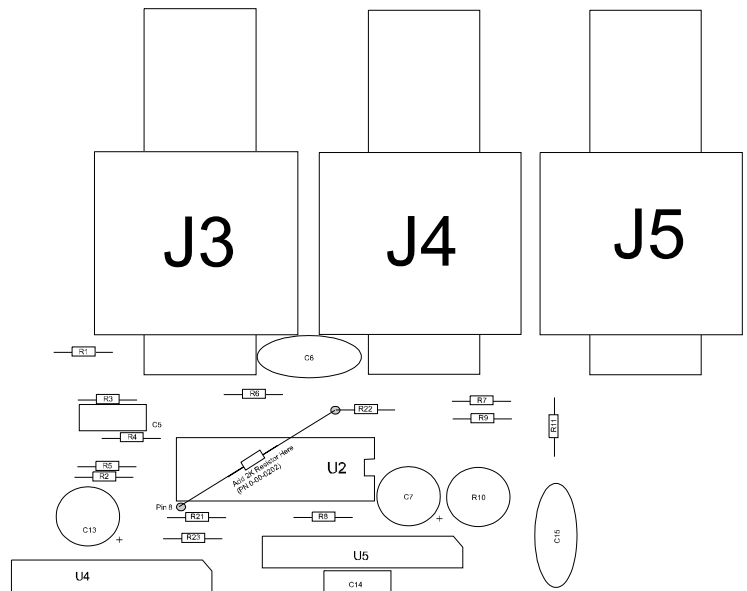


Figure 6 - Oscillation Elimination Capacitor Location

6.20 NanoCompressor Changes

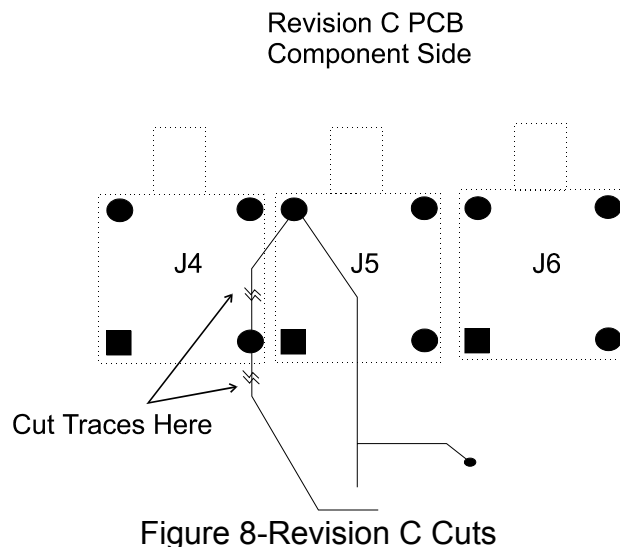
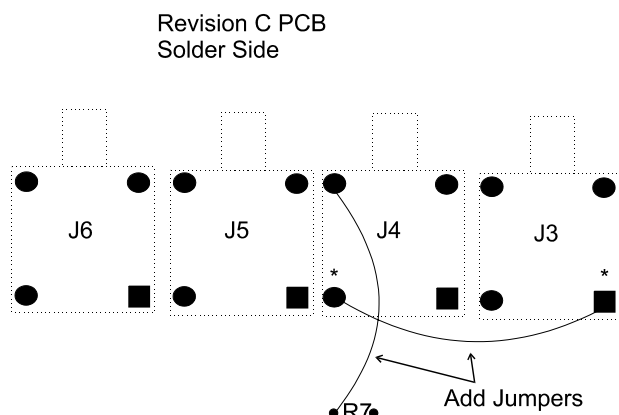
6.21 Revision B Main PCB Right Channel Sensing Resistor

In the original design only the left channel was used for compression detection. This change mixes the right channel audio into the sensor circuitry in order to ensure that compression takes place in the event of material passing through the right channel only. The change consists of soldering a 2K (Part No. 0-00-0202) resistor between pin 8 of [U2] and the left side of [R22] (See Figure 7 for details). Note that this change was done largely at the factory and it is extremely unlikely that you will ever see a unit without it. It is included here for the sake of completeness.



6.22 Revision C Right Channel Normalization

Two cuts and two jumpers were installed to correct a normalization error in Revision C PCBs (See Figures 8 and 9 for details). Note that this change was done largely at the factory and it is extremely unlikely that you will ever see a unit without it. It is included here for the sake of completeness.



6.23 Improvement of High Frequency Phase Response

C5 and C14 should be changed from a 1500pF monoblock capacitor to a 470pF monoblock (Part No. 1-21-4714).

6.24 Improvement of Power Supply Stability Under High Output Loading

It was found that under high output loading (i.e. the output voltage of the unit swings close to the limits set by the power supply, and current demands are at maximum) the supply began to contain significant amounts of ripple voltage which could cause excess distortion of the audio output. To cure this, the power supply filter capacitor [**C2**] was changed from 100 μ F to 220 μ F.

7.00 Service Parts List

7.10 3630 Service Parts List

GRP	DESCRIPTION	ALPARTNO	QTY	POSITION	PCB
ASSY	PCB, MAIN ASSEMBLY	8-20-0016	1	MAIN BOARD	
ASSY	PCB, LED ASSEMBLY	8-20-0017	1	LED BOARD	
CAB	20 PIN DIL 4 IN 0.1 CTR	4-18-0420	1	J5,J9	LED
CAP	22 MF ELEC 25V	1-09-0022	4	C11,29,43,55	MAIN
CAP	10 MF ELEC 25V	1-09-0100	4	C9,16,27,33	MAIN
CAP	1.0 MF ELEC 25V 4x7mm	1-09-0105	10	C8,17,19-21,24-26,34,48	MAIN
CAP	4.7 MF ELEC 25V 4x7mm	1-09-0475	22	C6,7,14,22,23,36,41,46,47,49,54,59,60,62-70	MAIN
CAP	1000 MF ELEC 25V 10x20	1-09-1000	4	C2-5	MAIN
CER	0.1 MF CERDISC	1-02-0104	8	C1,42,44,45,56-58,LED PCB	MAIN
CER	150 PF CERDISC	1-02-0151	4	C12,13,30,31	MAIN
CER	1500 PF CERDISC	1-02-0152	2	C18,35	MAIN
CER	0.22 MF CERDISC	1-02-0223	2	C37,51	MAIN
CER	0.047 MF CERDISC	1-02-0473	6	C38,39,50,52,71,72	MAIN
CER	56 PF CERDISC	1-02-0560	4	C10,15,28,32	MAIN
CER	0.47 MF CERDISC	1-02-1474	2	C40,53	MAIN
HDR	20 PIN DIL 0.1 CTR	4-14-0020	2	J5,9	MAIN
HDW	6-32x1/4 PP BLK UNC	5-00-0003	2	VR1,VR2	MAIN
HDW	M-3x7mm PHILSLOT	5-00-0020	6	CASE	
HDW	#6 INT STAR WASHER	5-01-0002	2	VR1,VR2	MAIN
HDW	#6 FLAT WASHER	5-01-0003	6	J2-4,J6-8	MAIN
HDW	6-32x1/2 STANDOFF	5-02-0003	2	VR1,VR2	MAIN
HDW	SOLDER LUG PCB MNT	9-03-1036	6	J2-4,J6-8	
IC	7815 +15V REG TO220	2-11-7815	1	VR1	MAIN
IC	7915 -15V REG TO220	2-11-7915	1	VR2	MAIN
IC	LF347 QUAD OP-AMP	2-21-0347	3	U2,4,6	MAIN
IC	2150A VCA	2-21-2150	2	U3,7	MAIN
IC	LM339 QUAD COMP	2-22-0339	17	U8-24	LED
IC	2252 RMS DETECTOR	2-30-2252	2	U1,5	MAIN
JAC	1/4 CLIFF (MONO)	4-02-0001	4	J2,4,6,8	MAIN
JAC	1/4 CLIFF (STER)	4-03-0001	2	J3,7	MAIN
JAC	3.5mm BAR JACK (P3)	4-16-0002	1	J1 (POWER, 2.5mm CTR)	MAIN
ME	1N4148 SIGNAL DIODE	2-00-4148	8	D5,6,8-10,12-14	MAIN
ME	1N4003 POWER DIODE	2-01-4001	4	D1-4	MAIN
ME	1N5231B ZENER DIODE	2-02-5231	2	D21,22	LED
ME	2N4403 PNP TRANS	2-04-4403	10	Q1-10	LED
ME	LED (GRN) 1151 T1	3-00-0001	14		LED
ME	LED (YEL) 1131 T1	3-01-0001	6		LED
ME	LED (RED) 1102 T1	3-02-0001	32		LED
ME	DPDT SLIDE SWITCH	6-01-0002	2	S2,3 (GAIN)	MAIN
ME	DPDT SWITCH	6-02-0001	8	S9-12,4,5,7,8 (FUNCT)	LED
ME	DPDT SWITCH (CLIQS)	6-02-0003	1	S1 (POWER)	MAIN
ME	6PDT SWITCH	6-02-0005	1	S6 (LINK)	MAIN
MIS	FOAM STRIP 0.3x7.5	9-23-1014	4	FRONT PANEL	
GRP	DESCRIPTION	ALPARTNO	QTY	POSITION	PCB
MTL	RACK EAR 100mm	9-58-1009	2		

MTL	FRONT PANEL	9-02-1005	1		
MTL	CASE 100mm	9-03-1048	1		
PCB	PCB, MAIN REV C	9-40-1036	1		MAIN
PCB	PCB, LED REV C	9-40-1037	1		LED
PLS	SWITCH XTENDER 70mm	9-15-0012	1	S1 (POWER)	
PLS	KNOB 15x20mm	9-15-0043	14	R119-132	
PLS	SWITCH XTENDER 20mm	9-15-0044	8	S4,5,7-12	
PLS	FRONT PANEL BEZEL REV B	9-15-0045	2		
PLS	SWITCH XTENDER	9-15-0056	1	S6	
POT	50K TRIMPOT	0-08-0503	4	R7,24,49,66	MAIN
POT	2MA SINGLE	0-09-1003	2	R122,129	MAIN
POT	10KA SINGLE	0-09-1005	2	R124,131	MAIN
POT	10KB SINGLE	0-09-1006	4	R119,123,126,130	MAIN
POT	1MA SINGLE	0-09-1007	4	R121,125,128,132	MAIN
POT	1KB SINGLE	0-09-1014	2	R120,127	MAIN
RES	0 OHM 1/8W 5%	0-00-0000	119	0.3"(83),0.5"(36)	MAIN/LED
RES	100 OHM 1/8W 5%	0-00-0101	8	R29,71,86,113,147,150,185,188	MAIN/LED
RES	1K OHM 1/8W 5%	0-00-0102	12	R2,14,21,32,36,44,56,63,83,106,153,191	MAIN/LED
RES	10K OHM 1/8W 5%	0-00-0103	12	R8,50,85,90,91,95,110,111,114,117,214,217	MAIN
RES	10K OHM 1/8W 5%	0-00-0103	12	R134,136,137,162,167-171,174,175,200	LED
RES	100K OHM 1/8W 5%	0-00-0104	10	R12,18,37,38,54,60,77,100,206,207	MAIN/LED
RES	1M OHM 1/8W 5%	0-00-0105	6	R10,35,52,82,89,105	MAIN
RES	150 OHM 1/8W 5%	0-00-0151	2	R215,216	MAIN
RES	1.5K OHM 1/8W 5%	0-00-0152	2	R76,99	MAIN
RES	150K OHM 1/8W 5%	0-00-0154	4	R27,69,208,211	MAIN
RES	18K OHM 1/8W 5%	0-00-0183	2	R88,109	MAIN
RES	20 OHM 1/8W 5%	0-00-0200	2	R5,47	MAIN
RES	2K OHM 1/8W 5%	0-00-0202	20	R11,53,141-146,154,165,166,179-184,192,203,204	MAIN/LED
RES	20K OHM 1/8W 5%	0-00-0203	8	R16,58,94,116,135,163,173,201	MAIN/LED
RES	2.2K OHM 1/8W 5%	0-00-0222	6	R13,20,42,55,62,72	MAIN
RES	22K OHM 1/8W 5%	0-00-0223	2	R22,64	MAIN
RES	22M OHM 1/8W 5%	0-00-0226	2	R4,46	MAIN
RES	270 OHM 1/8W 5%	0-00-0271	2	R33,34	MAIN
RES	3K OHM 1/8W 5%	0-00-0302	4	R17,59,75,98	MAIN
RES	30K OHM 1/8W 5%	0-00-0303	4	R78,87,101,118	MAIN
RES	33 OHM 1/8W 5%	0-00-0330	4	R79,102,209,212	MAIN
RES	3.3K OHM 1/8W 5%	0-00-0332	6	R81,103,155,157,193,195	MAIN/LED
RES	3.9K OHM 1/8W 5%	0-00-0392	2	R158,196	LED
RES	47 OHM 1/8W 5%	0-00-0470	2	R28,70	MAIN
RES	470 OHM 1/8W 5%	0-00-0471	6	R19,26,61,68,210,213	MAIN
RES	4.7K OHM 1/8W 5%	0-00-0472	11	R31,39,40,92,93,108,112,115,156,194,205	MAIN/LED
RES	47K OHM 1/8W 5%	0-00-0473	8	R9,51,148,149,164,186,187,202	MAIN/LED
RES	5.1K OHM 1/8W 5%	0-00-0512	4	R25,67,159,197	MAIN/LED
RES	560 OHM 1/8W 5%	0-00-0561	4	R30,96,152,190	MAIN/LED
RES	560K OHM 1/8W 5%	0-00-0564	2	R3,45	MAIN
RES	620 OHM 1/8W 5%	0-00-0621	2	R80,104	MAIN
GRP	DESCRIPTION	ALPARTNO	QTY	POSITION	PCB
RES	6.2K OHM 1/8W 5%	0-00-0622	14	R15,41,57,73,74,97,138-140,160,176-178,198	MAIN/LED
RES	680 OHM 1/8W 5%	0-00-0681	2	R151,189	LED
RES	6.8K OHM 1/8W 5%	0-00-0683	2	R1,43	LED

RES	8.2K OHM 1/8W 5%	0-00-0822	6	R84,107,133,161,172,199	MAIN/LED
RES	20K OHM 1/8W 1%	0-02-0203	2	R23,65	MAIN
RES	22K OHM 1/8W 1%	0-02-0223	2	R22,64	MAIN

7.20 NanoCompressor Service Parts List

GRP	DESCRIPTION	ALPARTNO	QTY	POSITION
ASY	ASSY KNOB NANO-SERIES NV/NC	9-96-1276	5	
ASY	ASSY PCB MAIN NC	9-79-1301	1	PCB
CAP	CAP 0.1uF CERDISC 10% .30"DIA. 50V	1-02-0104	8	C4, C15-16, C18, C24, C29, C33, C35
CAP	CAP 150PF CERDISC 10%	1-02-0151	2	C3, C6
CAP	CAP 22uF ELEC 25V	1-09-0022	2	C20, C31
CAP	CAP 10uF ELEC 25V	1-09-0100	2	C7, C11
CAP	CAP 1.0uF ELEC 25V	1-09-0105	4	C8, C10, C13, C17
CAP	CAP 220uF ELEC 25V	1-09-0221	2	C1, C2
CAP	CAP 4.7uF ELEC 50V 20% 05x11	1-11-0407	3	C9, C12, C30
CAP	CAP 220uF ELEC 50V .20"-LEAD	1-12-0226	2	C25, C34
CAP	CAP 0.1uF MONO 50V RADIAL	1-21-0104	1	C32
CAP	CAP 1500PF MONO 50V	1-21-0152	2	C21-22
CAP	CAP 0.22uF MONO 50V	1-21-0223	1	C28
CAP	CAP 56PF MONO 50V	1-21-0560	1	C19
CAP	CAP 0.47uF MONO 50V	1-21-1474	1	C26
CAP	CAP 471PF MONO 50V	1-21-4714	2	C5, C14
DIO	DIODE SIGNAL 1N4148	2-00-4148	1	D5
DIO	DIODE POWER 1N4003	2-01-4003	4	D1-4
FIL	CAP 0.047uF FILM 5%	1-20-0473	3	C23, C27, C36
IC	IC TL082 TEXAS INSTRUMENTS	2-21-0082	1	U7
IC	IC TL084 QUAD OPAMP TI	2-21-0084	1	U2
IC	IC 2150A VCA DBX	2-21-2150	2	U4-5
IC	IC 2252 RMS DETECTOR DBX	2-30-2252	1	U3
IC	REG 7815 +15V TO220 NATIONAL	2-11-7815	1	U8
IC	REG 7915 -15V TO220 NATIONAL	2-11-7915	1	U1
IC	IC LM339 QUAD COMP NATIONA	2-22-0339	5	U6, U9-12
JAC	JACK ¼ MONO CLIFF	4-02-0001	4	J3-6
JAC	JACK ¼ STEREO (CL1239LK)	4-03-0001	1	J2
JAC	JACK 3.5MM BARREL (P3)	4-16-0002	1	J1
LED	LED GRN T1	3-00-0001	4	D9-11, D18
LED	LED YEL T1	3-01-0001	2	D7-8
LED	LED RED T1	3-02-0001	7	D6, D12-17
LIT	MANUAL REFERENCE NC	7-51-1205	1	
MIS	GASKET FACEPLATE NC	9-13-1043	1	
MTL	COVER (TOP/SID22E) NANO-SERIES	9-03-1188	1	
MTL	PANEL SUB NC	9-03-1233	1	
GRP	DESCRIPTION	ALPARTNO	QTY	POSITION
MTL	CHASSIS MAIN NC (BTM/SIDE/BACK)	9-03-1234	1	
MTL	LUG SOLDER PCB MNT	9-03-1036	5	J2-6
PLS	EXTENDER SWITCH NC	9-15-0134	4	
PLS	FACEPLATE NC	9-15-1307	1	
POT	POT TRIM 50K	0-08-1503	3	R10, R27-28

POT	POT 2MA SINGLE CONTROL	0-09-1003	1	R82
POT	POT 10KB SINGLE CONTROL PCB-MNT 18mm-SHFT	0-09-1006	2	R79, R88
POT	POT 1MA SINGLE CONTROL	0-09-1007	1	R83
POT	POT 1KB SINGLE CONTROL	0-09-1014	1	R85
RES	RES 100 OHM 1/8W 5%	0-00-0101	4	R34, R42, R44, R49
RES	RES 1K OHM 1/8W 5%	0-00-0102	6	R2-3, R14, R25, R64, R68
RES	RES 10K OHM 1/8W 5%	0-00-0103	4	R15, R53, R57, R80
RES	RES 100K OHM 1/8W 5%	0-00-0104	2	R46, R59
RES	RES 1M OHM 1/8W 5%	0-00-0105	4	R1, R6, R19, R54
RES	RES 12K OHM 1/8W 5%	0-00-0123	1	R67
RES	RES 150 OHM 1/8W 5%	0-00-0151	1	R29
RES	RES 1.5K OHM 1/8W 5%	0-00-0152	1	R58
RES	RES 150K OHM 1/8W 5%	0-00-0154	6	R31-32, R38, R41, R55, R73, R92
RES	RES 16K OHM 1/8W 5%	0-00-0163	2	R65, R75
RES	RES 20 OHM 1/8W 5%	0-00-0200	1	R16
RES	RES 2K OHM 1/8W 5%	0-00-0202	6	R22, R86, U2(8) TO LEFT-SIDE-OF-R22, R89-91
RES	RES 20K OHM 1/8W 5%	0-00-0203	2	R45, R74
RES	RES 2.2K OHM 1/8W 5%	0-00-0222	4	R7, R21, R48, R77
RES	RES 22K OHM 1/8W 5%	0-00-0223	2	R18, R81
RES	RES 22M OHM 1/8W 5%	0-00-0226	1	R12
RES	RES 3K OHM 1/8W 5%	0-00-0302	3	R26, R30, R63
RES	RES 30K OHM 1/8W 5%	0-00-0303	3	R52, R66, R72
RES	RES 33 OHM 1/8W 5%	0-00-0330	3	R33, R37, R40
RES	RES 3.3K OHM 1/8W 5%	0-00-0332	2	R51, R69
RES	RES 47 OHM 1/8W 5%	0-00-0470	2	R35, R39
RES	RES 470 OHM 1/8W 5%	0-00-0471	4	R5, R11, R62, R84
RES	RES 47K OHM 1/8W 5%	0-00-0473	4	R17, R50, R60-61
RES	RES 5.1K OHM 1/8W 5%	0-00-0512	3	R20, R24, R76
RES	RES 560K OHM 1/8W 5%	0-00-0564	1	R13
RES	RES 620 OHM 1/8W 5%	0-00-0621	1	R56
RES	RES 6.2K OHM 1/8W 5%	0-00-0622	1	R9, R23, R78
RES	RES 6.8K OHM 1/8W 5%	0-00-0682	2	R70, R87
RES	RES 75K OHM 1/8W 5%	0-00-0753	1	R71
RES	RES 9.1K OHM 1/8W 5%	0-00-0912	1	R47
RES	RES 20.0K OHM 1/8W 1%	0-01-2002	2	R36, R43
RES	RES 5.11K OHM 1/8W 1%	0-01-5111	2	R4, R8
RUB	FOOT RUBBER NANO-SERIES	9-23-1071	1	(SET OF 4 FEET)
SWT	SWITCH DPDT 5mm	6-02-0013	4	S1-4
TRN	TRANS 2N4403 PNP	2-03-4403	4	Q1-4

8.00 Service Manual History

5/16/97

V1.00 1st Release.

9.00 Dictionary of selected terms

VCA Voltage Controlled Amplifier

CV Control Voltage

CL 3630 Compressor Limiter

NC NanoCompressor

Side Chain An extra input into any gate/compressor/limiter that allows the user to use a different audio source to change the characteristics of the normal audio input. This is particularly useful when using percussion instruments to “gate” an instrument with a different amplitude envelope (such as brass or strings).

CW Clockwise

CCW Counter Clockwise

PS Power Supply

QC Quality Control

INDEX

+

+15V · 1, 12, 14

I

-10/+4 switch · 2, 4
100Hz · 5
-15V · 1, 3, 10, 12, 14
1KHz · 5, 6, 7

2

2252 · 2, 4, 12, 14

3

3630 · i, ii, 1, 2, 3, 4, 5, 9, 12, 16

9

9V A.C. · 1

A

A.C. coupled · 3
A.C. coupling capacitor · 2
adapter · 1, 9
Alesis · i, ii, iv, 1, 3
amplitude detection · 3
applications · 1
attack/release · 3
Audio · 2, 3, 5, 9, 10, 11, 16

B

bar graph displays · 3
buffer/gain stage · 2
bypass capacitors · 1

C

C1 · 1, 9, 12, 14
C12 · 1, 2, 12, 14
C14 · 11, 14
C16 · 2
C19 · 3, 14
C2 · 1, 9, 11, 12, 14
C20 · 3, 14
C24 · 3, 14
C25 · 1, 9, 14
C26 · 3, 14
C29 · 3, 14
C3 · 1, 2, 14
C34 · 1, 9, 14
C36 · 3, 14
C39 · 3
C4 · 1, 14
C40 · 3, 12
C44 · 3
C45 · 3
C5 · 1, 11, 14
C6 · 1, 12, 14
C66 · 3
C7 · 1, 2, 14
C9 · 1, 12, 14
CAUTION · ii
channel A · 4, 5, 6, 7, 10
channels · 2, 5
chatter · 3
Cleaning · iii
compression detector · 2, 3
compression techniques · 1
compressor · i, ii, 1, 2, 3, 16

compressor/limiter · i, ii, 1, 16
control signal · 2, 3, 4
control voltage · 2, 3, 4, 16
current amplifier · 2
current limited · 2
current limiting · 2

D

D.C. offset · 2
D1 · 1, 9, 12, 14
D10 · 3
D2 · 1
D3 · 1
D4 · 1, 9
D5 · 3, 12, 14
D9 · 3, 14
damage · iii
distortion analyzer · 5, 6, 7
doubler · 1
dual mode · 1
dual/stereo · 1, 10

E

envelope · 3, 16

F

feedback path · 2
filter capacitor · 1, 11
front panel switches · 2

G

gain · 2, 3, 4, 5, 7, 9, 12
gate detector · 2, 3
Ground · 9, 10

H

hard knee · 1, 2, 7, 8, 9
Heat · iii
hysteresis · 3

I

impedance · 2

J

J1 · 1, 12, 14
J2 · 2, 12, 14, 15
J3 · 2, 3, 12, 14
J4 · 2
J5 · 2, 9, 12

L

LED · 3, 7, 9, 12, 13, 14
low pass filter · 3, 4

M

master · 1, 2, 3, 4
MicroGate · 1
MOISTURE · ii, iii
Mounting · iii

N

NanoCompressor · i, ii, 1, 2, 3, 5, 10, 14, 16
negative feedback · 2
noise gate · 1, 3, 4, 5

O

on/off switch · 1
oscilloscope · 2
output jack · 2

P

P.S. input jack · 1
P3 · 1, 12, 14
PEAK/RMS · 5, 7, 8
pop · 10
Power Cord · iii
power supply · iii, 1, 9, 11, 16
PS input jack · 9

Q

Q1 · 3, 12, 15
Q5 · 3
Q6 · 3, 10
QC procedure · 5

R

R.F. filtered · 2
R1 · 2, 14, 15
R119 · 2, 13
R12 · 2, 13, 15
R121 · 3, 13
R122 · 3, 13
R123 · 3
R124 · 3, 13
R125 · 3
R13 · 2, 13, 15
R151 · 3, 14
R162 · 3
R22 · 10, 13, 14, 15
R23 · 2, 14, 15
R24 · 5, 15
R26 · 2, 15
R30 · 3, 13, 15
R32 · 3
R36 · 2, 15
R41 · 2, 15
R42 · 2, 15
R49 · 5, 15
R5 · 2, 13, 15
R52 · 3, 15
R64 · 2, 15
R78 · 3, 13, 15
R79 · 3, 13, 15
R82 · 3, 15
R83 · 2, 3, 15
R88 · 2, 13, 15
R89 · 3, 15
rack · iii, 1, 13
range · 1
rate circuit · 3
ratio · 1, 2, 7, 9
RC networks · 3
rectifier · 2, 4
regulator · 1

release · 3, 7, 16
Revision B · 9, 10
Revision C · 10, 11
RF filter · 1
ribbon cable · 9
RMS level detector · 2

S

S1 · 1, 12, 13, 15
S10 · 4
S2 · 2, 4, 12
S6 · 4, 12, 13
S9 · 4, 12
SAFETY · iii
schematic · 2, 4
schematics · 1, 4, 20
section · 1, 2, 4
Service · i, ii, iii, iv, 12, 14, 16
side chain · 2, 3, 16
signal paths · 1, 2
slave · 1, 2, 4
soft knee · 1, 2, 7, 8
stereo operation · 1
stereo/dual switch · 4

T

threshold control · 2
threshold detector · 3
threshold level · 3
threshold voltage · 2
trimpot · 5, 13

U

U1 · 1, 2, 9, 12, 14
U15 · 3
U18 · 3, 9
U19 · 3
U2 · 2, 3, 4, 10, 12, 14, 15
U3 · 2, 12, 14
U5 · 4
U6A · 3
U7 · 10, 14
U7B · 3
U8 · 1, 3, 9, 12, 14
U9 · 3, 4, 14

V

VCA · 2, 3, 4, 12, 14, 16
Ventilation · iii
voltage divider · 2
voltage mode · 2
VR1 · 1, 12
VR2 · 1, 12

W

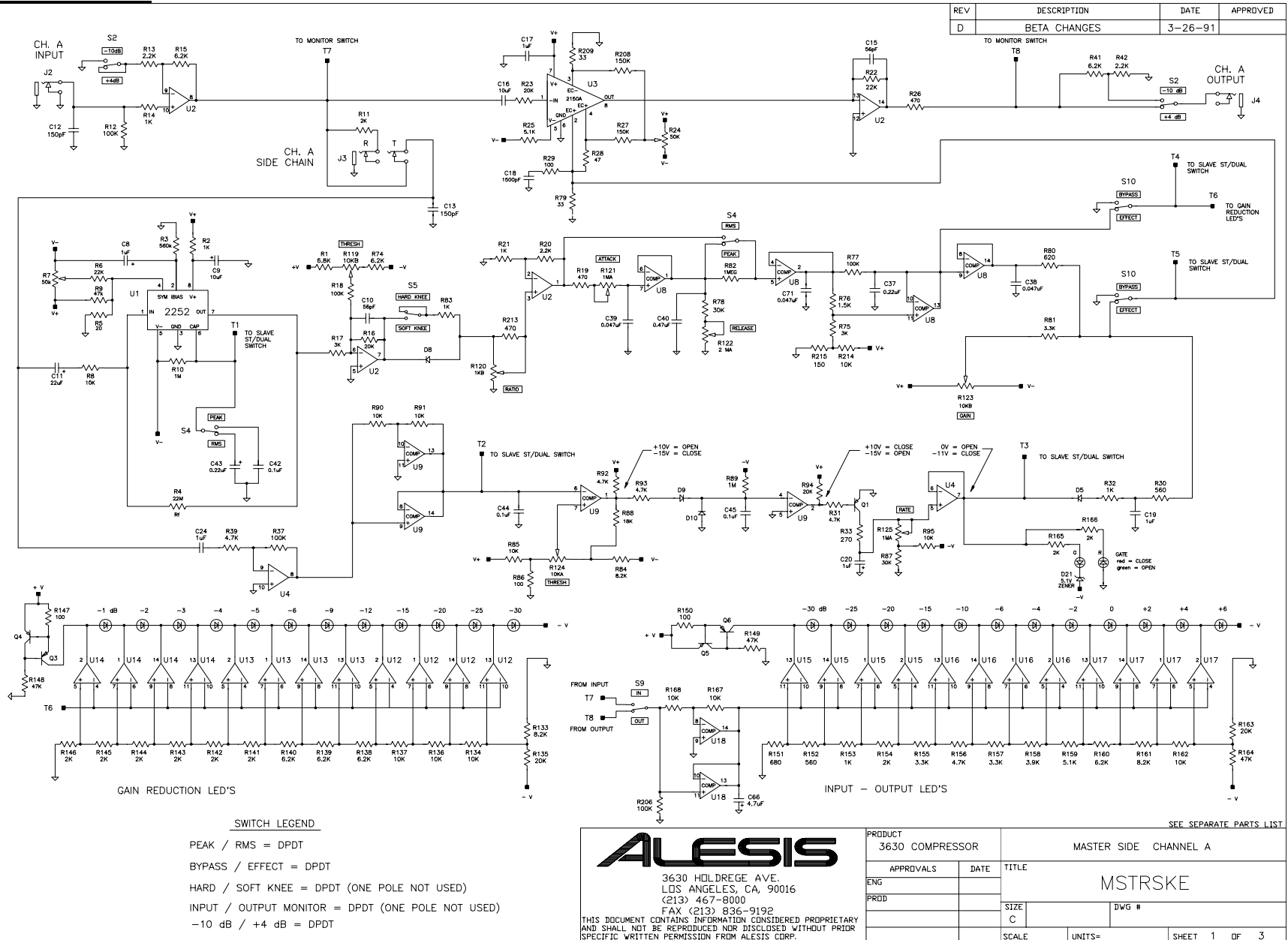
WARNINGS · ii, iii

NOTES

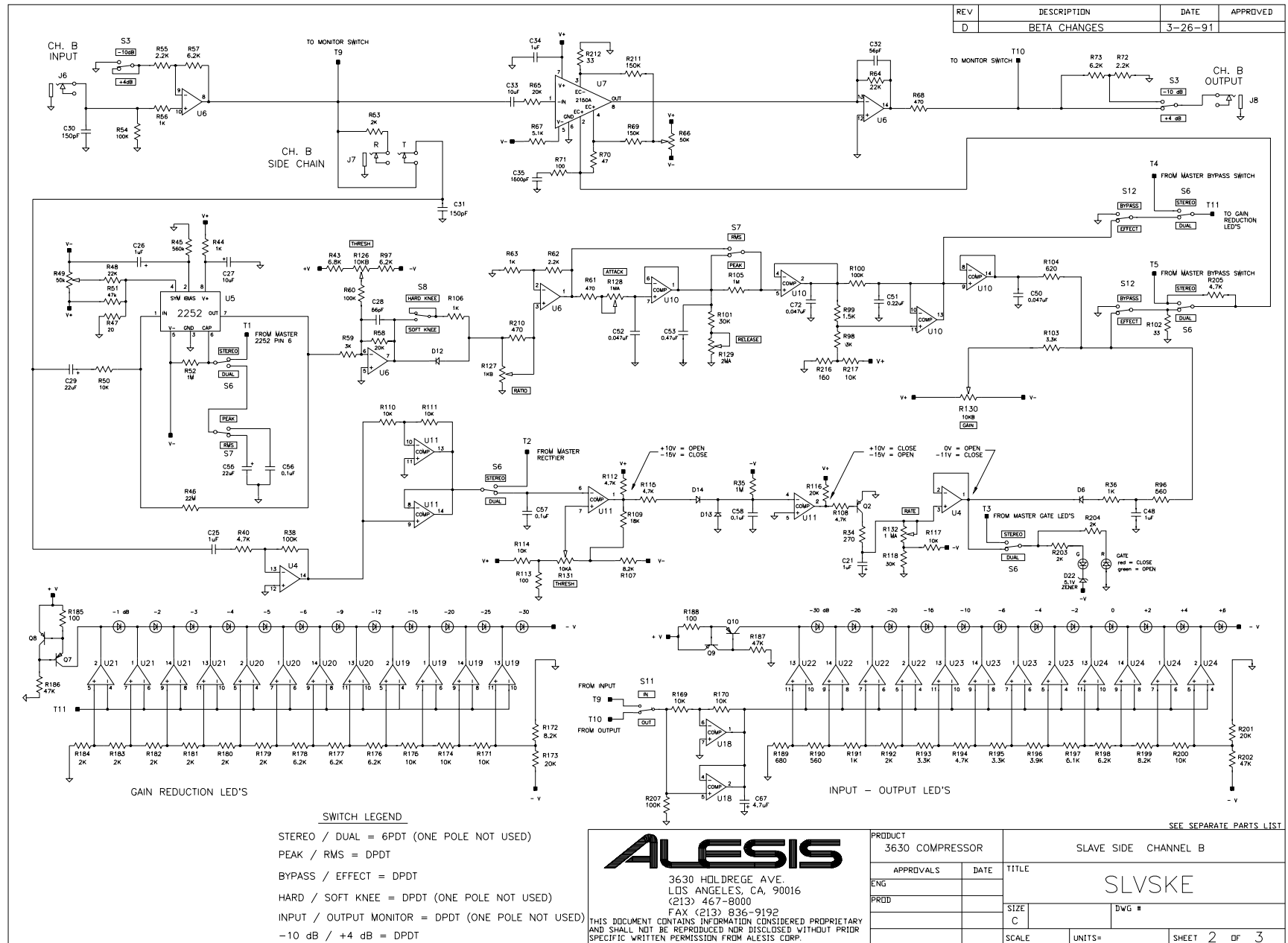
10.00 Schematics

3630 Schematics

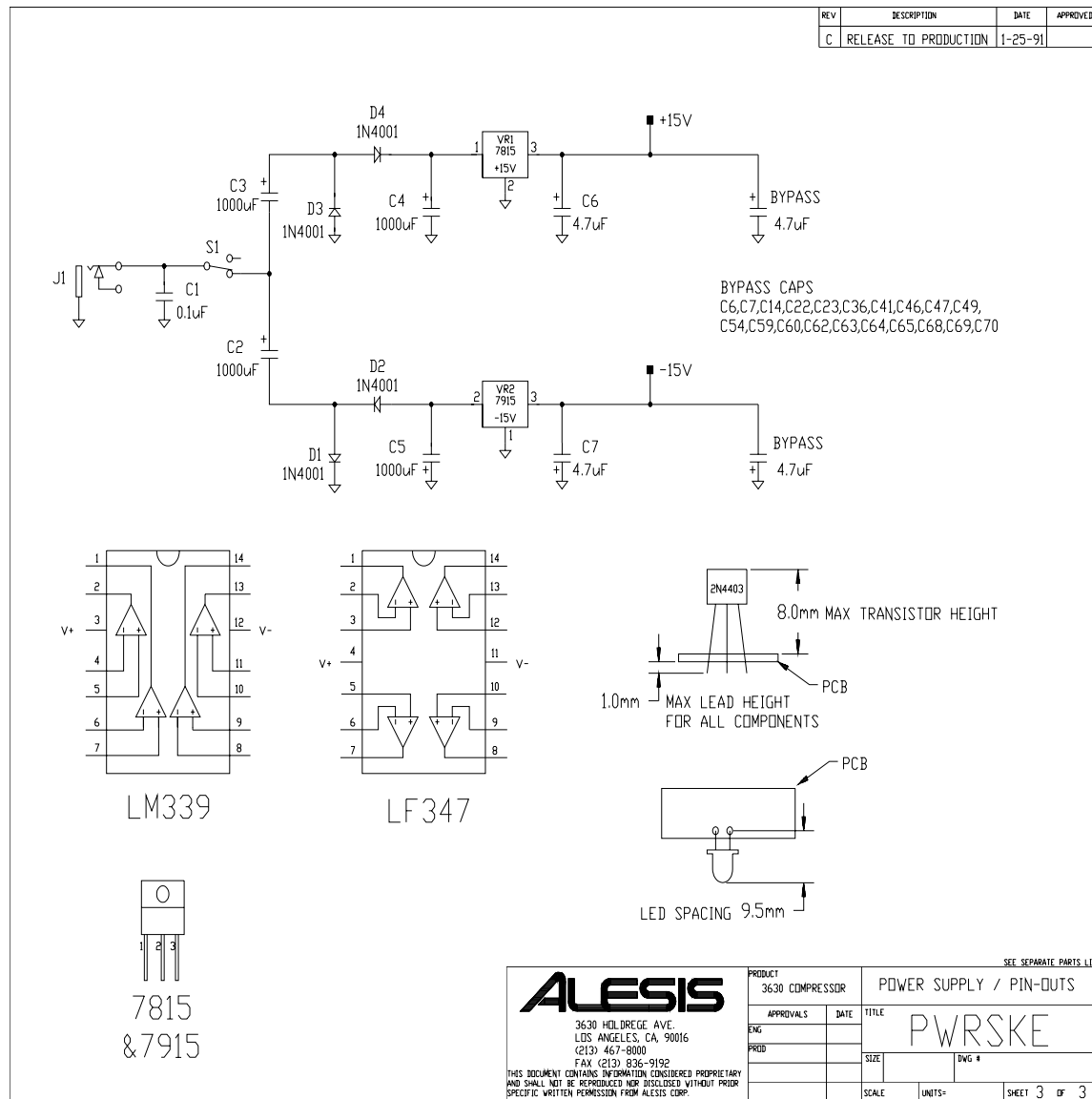
Master Schematic



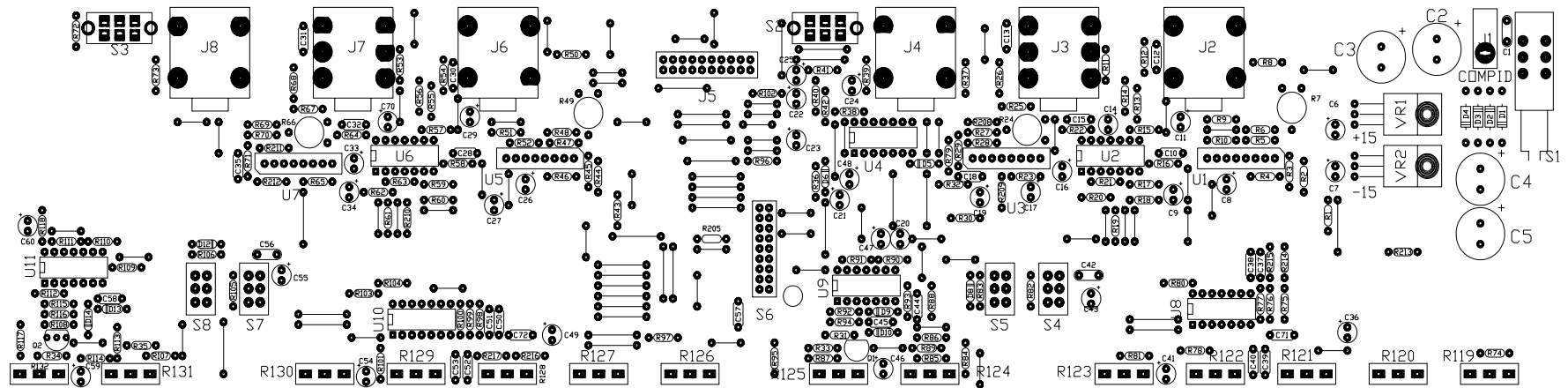
3630 Slave Schematic



3630 Power Supply Schematic

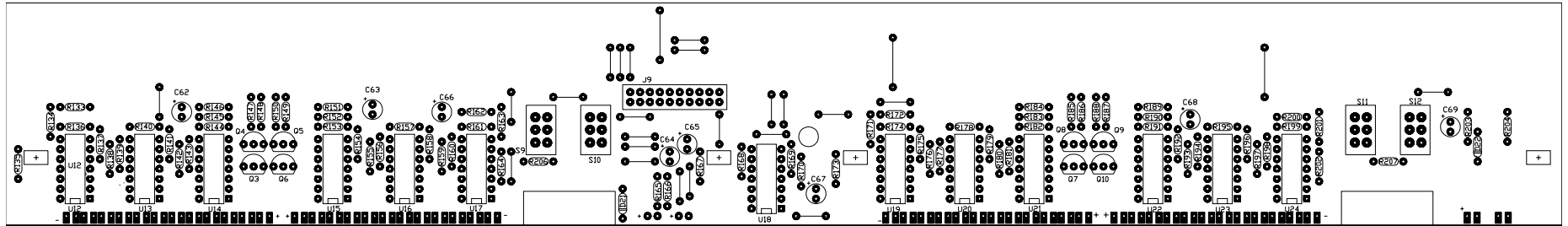
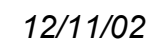


Alesis 3630 Compressor Service Manual 1.00



Alesis 3630 Compressor Service Manual 1.00

5



ALESIS

ENGINEERING CHANGE ORDER

ECO# 234602

SH 1 OF 2

ALESIS CORP 3630 HOLDREGE LA CA 90016

TIME COMPLIANCE

ISSUED BY: B. BRUNER

DATE: 12/11/92

☒ ASAP

PRODUCT: CL

SUBASSY:

☐ IMPLEMENT AS OF: / /

ITEM: Main PCB

P/N: 9-40-1036

☐ WILL NOTIFY

DESCRIPTION OF CHANGE:

ADD 1 K OHM 1/8 W 5% position to PCB Layout

CURRENT REV: C
NEW REV: 0

REASON FOR CHANGE:

To Eliminate Popping Sound when switching to
Stereo Link.

SERIAL NUMBERS

START:

END:

COMPLIANCE ITEMS	CHANGE DATE	ITEM DISPOSITION	USE	RWRK	SCRAP	ADD	N/A
BOM	ASAP	PO's - PENDING					
SCHEMATICS	ASAP	PO's - CURRENT					
COMP ID	ASAP	KITS - PENDING					
FAB DRAWINGS		KITS - WIP					
ARTWORK		PROD STOCK					
QC/TEST PROC		FINAL ASSYS					
LITERATURE		PRE-QC GOODS					
		POST-QC GOODS					
		SHIPPED GOODS					

EC'S INCORPORATED

EC#: 223302

DESC: ADD 1K OHM RES

CHANGE REVIEW BOARD: YES ☐ NO ☒ DATE: / / TIME: :

AUTHORIZATION:

DEPT: PROD ENG ENG ENG DIR PROD PURCH QE S/M A/P RPR

APPROVAL: ☒ CMM ☒ DD ☒ LHW ☒ DUBDATE: ☒ 12/11/92 ☒ 12/11/92 ☒ 12/11 ☒ 12/11

DEPT: WHSE COO CFO EST FRWD

APPROVAL: ☒ ☒ ☒ ☒DATE: ☒ ☒ ☒ ☒

NOTES/INSTRUCTIONS/DRAWINGS (ATTACH SEPARATE SHEET IF NEEDED):

* SEE Attached Change Request dated 12/8/92

* Change will be reflected in ——— production.

* Do not scrap REV C. PCBs.

USE until stock is Depleted.

15 12/11

To: Brady. → NOTIFY BRODIE ON APPROVAL
OF ARTWORK CHANGE

ALESIS CHANGE REQUEST

DATE: 12/8/92

ISSUED BY: Alex M

PRODUCT: 3630. (CL)

ITEM: 1KR

SUBASSY.:

P/N: 9-40-1036

EXISTING REV: C

DESCRIPTION OF CHANGE:

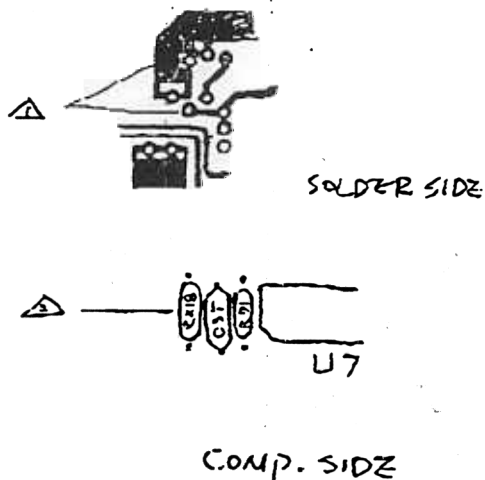
ADD 1KR POSITION INTO PCB LAYOUT

REASON FOR CHANGE:

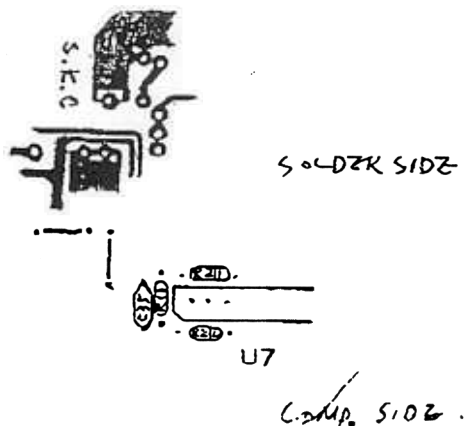
FROM 8/20/92 WE RECEIVED ECO #223702 UNTIL NOW STILL DON'T HAVE
NEW ARTWORK TO ADD 1KR RESISTOR INTO PCB LAYOUT.

DRAWING: (ATTACH SEPARATE DRAWING OR CONTINUE ON REVERSE IF NEEDED)

IS:



WAS:



COMPLIANCE ITEMS:

<input checked="" type="checkbox"/> SCHEMATIC DWG	<input type="checkbox"/> SPECIFICATIONS	<input type="checkbox"/> PRODUCTION STOCK	<input type="checkbox"/> FIELD UNITS
<input checked="" type="checkbox"/> PCB ARTWORK	<input type="checkbox"/> KII LIST	<input type="checkbox"/> P.O.'S-PENDING	<input type="checkbox"/> PACKAGING
<input type="checkbox"/> BILL OF MATERIALS	<input type="checkbox"/> WORK IN PROGRESS	<input type="checkbox"/> P.O.'S-CURRENT	<input type="checkbox"/> LITERATURE
<input type="checkbox"/> GRAPHICS A/W	<input type="checkbox"/> FINAL ASSY.'S	<input type="checkbox"/> INCOMING INSP.	<input type="checkbox"/> OTHER:
<input type="checkbox"/> MECHANICAL DWG	<input type="checkbox"/> PRE-QC GOODS	<input type="checkbox"/> SCHEDULING	
<input type="checkbox"/> SOFTWARE	<input type="checkbox"/> POST-QC GOODS	<input type="checkbox"/> SHIPPING DATE	

NOTES:

△ ADD 2 PADS. 1 TRACE. CENTER IS 5.0mm FAR FROM R21.
HORIZONTAL AT SAME LEVEL.

△ ADD R218 POSITION ARTWORK



ENGINEERING CHANGE ORDER

ECO# 223302

SH 1 OF 1

ALESIS CORP 3630 HOLDREGE LA CA 90016

TIME COMPLIANCE

ISSUED BY: Brooks Bruner

DATE: 8/20/92

☒ ASAP

PRODUCT: CL

SUBASSY:

☐ IMPLEMENT AS OF: 8/20/92

ITEM: 2150A vca

P/N:

☐ WILL NOTIFY

DESCRIPTION OF CHANGE:

ADD 1K OHM Resistor Between PIN 2 of Channel B3
2150A and Ground. (2 PLACES)

CURRENT REV:

NEW REV:

REASON FOR CHANGE: ELIMINATED

To improve the popping sound when switching
to Stereo Link.

SERIAL NUMBERS

START:

END:

COMPLIANCE ITEMS	CHANGE DATE	ITEM DISPOSITION	USE	RWRK	SCRAP	ADD	N/A
BOM	8-21-92	PO's - PENDING				X	
SCHEMATICS	ASAP	PO'S - CURRENT				X	
COMP ID	ASAP	KITS - PENDING				X	
FAB DRAWINGS	N/A	KITS - WIP	X				
ARTWORK	N/A	PROD STOCK	X				
QC/TEST PROC		FINAL ASSYS	X				
LITERATURE		PRE-QC GOODS	X				
		POST-QC GOODS	X				
		SHIPPED GOODS	X				

EC'S INCORPORATED

EC#:

DESC:

CHANGE REVIEW BOARD: YES ☐ NO ☒ DATE: / / TIME: :

AUTHORIZATION:

DEPT: PROD ENG ENG ENG DIR PROD PURCH S/M A/P RPR

APPROVAL: [Signature] [Signature] [Signature] [Signature] [Signature] [Signature] [Signature] [Signature] [Signature]

DATE: 8/14 8/20 8/20 8/20 8/20 8/20 8/20 8/20 8/20

DEPT: WHSE COO CFO FST FRWD

APPROVAL: [Signature] [Signature] [Signature] [Signature] [Signature] [Signature] [Signature] [Signature] [Signature]

DATE: [Signature] [Signature] [Signature] [Signature] [Signature] [Signature] [Signature] [Signature] [Signature]

NOTES/INSTRUCTIONS/DRAWINGS (ATTACH SEPARATE SHEET IF NEEDED):

- 1.) MODIFY PER FORTRON REQUEST (VERIFIED BY C. MAPLE)
'SEE ATTACHED MEMOS' - 2 PAGES

REWORK WIP @ FORTRON
DO NOT FINISHED GOODS

NOTIFY ALESIS IF SHIPPING SCHEDULE CAN NOT
BE MET.)



ENGINEERING WAIVER

ALESIS CORP 3630 HOLDREGE LA CA 90016

EW# 129102

SH 1 OF 2

EFFECTIVE DATE: NOV / 91

ISSUED BY: B. BARGER-AST

DATE: 11 / 1 / 91 ECR#:

PRODUCT: CL

SUBASSY: ~~MAIN~~ PCB (LED) REV#:

ITEM: 0.1NF CAP

P/N: 1-02-0104

DESCRIPTION OF WAIVER:

ADD ONE 0.1NF CAP TO LED LADDER (SEE ATTACHED)

SERIAL NUMBERS

START:

END:

REASON FOR WAIVER:

DRAWING (INCLUDE SEPARATE SHEET IF NEEDED):

NEW:

BOM WAS 15
0.1NF 7 8

OLD:

DEPT:

PE

APPROVAL:

CAP

DATE:

1/7/92

RPR

GB

1.7.92

ADDITIONAL NOTES:

1.) BOM CHANGED: 11/12/91

2.) CAP TO BE INCORPORATED INTO PCB FOR STAN PRODUCTION.

RESCIND FOR 8 IN PROD.

Part.Number	Description	Quantity	PCB	Ref.Designator	Mfg	Comment
CL-UL	SIGNAL PROCESSOR COMPRESSOR 3630 CL - UL	1				
7-40-0903	TRANSFORMER P3-UL	1				
7-51-1219-B	SHEET "WELCOME TO ALESIS FAMILY" 5 x 8"	1				
CL-AS	SIGNAL PROCESSOR COMPRESSOR 3630 CL - AS	1				
7-40-2011	TRANSFORMER P3-AS	1				
CL-EU	SIGNAL PROCESSOR COMPRESSOR 3630 CL - EU	1				
7-40-2007	TRANSFORMER P3-EU	1				
CL-UK	SIGNAL PROCESSOR COMPRESSOR 3630 CL - UK	1				
7-40-2015	TRANSFORMER P3-UK	1				
CL	COMPRESSOR 3630 CL	1				
4-18-0420	CABLE DIL 20-PIN 4"	1	LED	J5,J9		
5-00-0020	SCREW M3 x 7mm PPB PHIL-SLOT	6		CASE (6)		
7-50-0029	STICKER BARCODE S/N CL	1		BOX/UNIT/MAIN PCB		TYPE A LA
7-51-1054	MANUAL REFERENCE CL	1				
7-80-0005	BOX CARDHOLDER P/S	1				
7-80-0152	BOX GIFT STANDARDIZED CL	1				
7-81-0104	FOAM ENDCAP RIGHT SINGLE-RACK STD	1				
7-81-0105	FOAM ENDCAP LEFT SINGLE-RACK STD	1				
7-91-1002	GEL SILICA 5G PACKET	2		PKG		
7-94-0710	POLYBAG 7 x 10 - 4 MIL	1		FOR LITERATURE		
7-94-0924	POLYBAG 9 x 24 - 4 MIL	1				
9-02-1005	FRONT-PANEL CL	1				
9-03-1172	CASE 100MM CL (MADE IN CHINA)	1				
9-15-0012	EXTENDER SW 70mm CL/QS/A2	1		S1 (POWER)		
9-15-0043	KNOB 15 x 20mm CL	14		R199-R132		
9-15-0044	EXTENDER SWITCH 20mm CL	8		S4,S5,S7-S12		
9-15-0045	BEZEL FRONT-PANEL CL	2				
9-15-0056	EXTENDER SWITCH CL	1		S6		
9-23-1014	STRIP FOAM FRONT-PANEL 7 x 180mm	5		FRONT PANEL		
9-58-1009	PANEL SIDE/RACK EAR 100mm	2				
9-96-1140	ASSY PCB MAIN CL	1				
0-00-0000	RES 0 OHM 1/8W 5%	94	MAIN	0.3" (94)		
0-00-0101	RES 100 OHM 1/8W 5%	4	MAIN	R29, 71 86, 113		
0-00-0102	RES 1K OHM 1/8W 5%	11	MAIN	R 2, 14, 21, 32, 36, 44, 56, 63, 83, 106, 218		
0-00-0103	RES 10K OHM 1/8W 5%	12	MAIN	R 8, 50, 85, 90, 91, 95, 110, 111, 114, 117, 214, 217		
0-00-0104	RES 100K OHM 1/8W 5%	8	MAIN	R 12, 18, 37, 38, 54, 60, 77, 100		

0-00-0105	RES 1M OHM 1/8W 5%	6	MAIN	R 10, 35, 52, 82, 89, 105		
0-00-0151	RES 150 OHM 1/8W 5%	2	MAIN	R 215, 216		
0-00-0152	RES 1.5K OHM 1/8W 5%	2	MAIN	R 76, 99		
0-00-0154	RES 150K OHM 1/8W 5%	4	MAIN	R 27, 69, 208, 211		
0-00-0183	RES 18K OHM 1/8W 5%	2	MAIN	R 88, 109		
0-00-0200	RES 20 OHM 1/8W 5%	2	MAIN	R 5, 47		
0-00-0202	RES 2K OHM 1/8W 5%	2	MAIN	R 11, 53		
0-00-0203	RES 20K OHM 1/8W 5%	4	MAIN	R 16, 58, 94, 116		
0-00-0222	RES 2.2K OHM 1/8W 5%	6	MAIN	R 13, 20, 42, 55, 62, 72		
0-00-0223	RES 22K OHM 1/8W 5%	2	MAIN	R 6, 48		
0-00-0226	RES 22M OHM 1/8W 5%	2	MAIN	R 4, 46		
0-00-0271	RES 270 OHM 1/8W 5%	2	MAIN	R 33,34		
0-00-0302	RES 3K OHM 1/8W 5%	4	MAIN	R 17, 59, 75, 98		
0-00-0303	RES 30K OHM 1/8W 5%	4	MAIN	R 78, 87, 101, 118		
0-00-0330	RES 33 OHM 1/8W 5%	4	MAIN	R 79, 102, 209, 212		
0-00-0332	RES 3.3K OHM 1/8W 5%	2	MAIN	R 81, 103		
0-00-0470	RES 47 OHM 1/8W 5%	2	MAIN	R 28,70		
0-00-0471	RES 470 OHM 1/8W 5%	6	MAIN	R 19, 26, 61, 68, 210, 213		
0-00-0472	RES 4.7K OHM 1/8W 5%	9	MAIN	R 31, 39, 40, 92, 93, 108, 112, 115, 205		
0-00-0473	RES 47K OHM 1/8W 5%	2	MAIN	R 9, 51		
0-00-0512	RES 5.1K OHM 1/8W 5%	2	MAIN	R 25, 67		
0-00-0561	RES 560 OHM 1/8W 5%	2	MAIN	R 30, 96		
0-00-0564	RES 560K OHM 1/8W 5%	2	MAIN	R 3, 45		
0-00-0621	RES 620 OHM 1/8W 5%	2	MAIN	R 80, 104		
0-00-0622	RES 6.2K OHM 1/8W 5%	6	MAIN	R15, R41, R57, R73, R74, R97		
0-00-0682	RES 6.8K OHM 1/8W 5%	2	MAIN	R 1, 43		
0-00-0822	RES 8.2K OHM 1/8W 5%	2	MAIN	R 84, 107		
0-01-2002	RES 20.0K OHM 1/8W 1%	2	MAIN	R23, R65		
0-01-2212	RES 22.1K OHM 1/8W 1%	2	MAIN	R22, R64		
0-08-0503	POT TRIM 50K OHM	4	MAIN	R,7, 24, 49, 66		
0-09-1003	POT 2MA SINGLE CONTROL	2	MAIN	R122, R129		
0-09-1005	POT 10KA SINGLE CONTROL	2	MAIN	R124, R131		
0-09-1006	POT 10KB SINGLE CONTROL PCB-MNT 18mm-SHFT	4	MAIN	R119, R123, R126, R130		
0-09-1007	POT 1MA SINGLE CONTROL	4	MAIN	R121, R125, R128, R132		
0-09-1014	POT 1KB SINGLE CONTROL	2	MAIN	R120, R127		
1-02-0151	CAP 150pF CERDISC 10%	2	MAIN	C12, C30		
1-02-0470	CAP 47pF CERDISC 10%	2	MAIN	C13, C31		
1-08-1000	CAP 1000uF ELEC 20% 16V 5x10.2x20mm	2	MAIN	C2, C3		
1-09-0022	CAP 22uF ELEC 35V 2x5x11mm	4	MAIN	C11, C29, C43, C55		
1-09-0100	CAP 10uF ELEC 25V 2x5x11mm	4	MAIN	C9, C16, C27, C33		
1-09-0105	CAP 1.0uF ELEC 25V 2x5x11mm	10	MAIN	C8, C17, C19-21, C24-26, C34, C48		
1-09-1000	CAP 1000uF ELEC 25V 5x12.5x20mm	2	MAIN	C4, C5		

1-12-0471	CAP 4.7uF ELEC 63V 2x5x11mm	14	MAIN	C6, C7, C14, C22, C23, C36, C41, C46, C47, C49, C54, C59, C60, C70		
1-21-0104	CAP 0.1uF MONO 20% 50V RADIAL	7	MAIN	C1, C42, C44, C45, C56-58		
1-21-0152	CAP 1500PF MONO 50V	2	MAIN	C18, C35		
1-21-0223	CAP 0.22uF MONO 50V	2	MAIN	C37, C51		
1-21-0473	CAP 0.047uF MONO 50V	6	MAIN	C38, C39, C50, C52, C71, C72		
1-21-0560	CAP 56pF MONO 50V	4	MAIN	C10, C15, C28, C32		
1-21-1474	CAP 0.47uF MONO 50V	2	MAIN	C40, C53		
2-00-4148	DIODE SIGNAL 1N4148 75V 200mA	8	MAIN	D5-6, D8-10, D12-14		
2-01-4003	DIODE POWER 1N4003 200V 1A	4	MAIN	D1-4		
2-03-4403	TRANS PNP 2N4403 40V 600mA TO-92	2	MAIN	Q1, Q2		
2-11-7815	REG VOLTAGE LM7815 +15V TO-220	1	MAIN	VR1		
2-11-7915	REG VOLTAGE LM7915 -15V TO-220	1	MAIN	VR2		
2-21-0084	IC TL084 QUAD OP-AMP DIP-14	2				
2-21-0347	IC LF347N QUAD OP-AMP	1	MAIN	U4	NAT (LF347 ONLY - N	
2-21-2150	IC 2150A VCA 8-PIN SIP	2	MAIN	U3, U7	THAT/DBX	
2-22-0339	IC LM339 QUAD COMP	4		U8-11		
2-30-2252	IC 2252 RMS DETECTOR DBX	2	MAIN	U1, U5	THAT/DBX	
4-02-0001	JACK 1/4" MONO	4	MAIN	J2, J4, J6, J8 (INC.#5-02-6321)	CLIFF	
4-03-0001	JACK 1/4" STEREO	2	MAIN	J3, J7 (INC. #5-02-6321)	CLIFF	
4-14-0020	HEADER DIL 20-PIN 0.1"	1	MAIN	J5		
4-16-0002	JACK 6.3mm BARREL (P3) 2.5mm CENTER PIN	1	MAIN	J1		
5-00-0020	SCREW M3 x 7mm PPB PHIL-SLOT	2	MAIN	HEATSINK VR1, VR2		
5-01-0003	WASHER FLAT #6	6	MAIN	J2-4, J6-8		
5-02-0009	HEATSINK M3 x 20	2	MAIN	HEATSINK VR1, VR2		
5-04-0009	WASHER M3 SPLITLOCK	2	MAIN	VR1, VR2		
6-01-0002	SWITCH SLIDE DPDT	2	MAIN	S2, S3		
6-02-0001	SWITCH DPDT	4	MAIN	S4-5, S7-8		
6-02-0003	SWITCH PUSH DPDT	1	MAIN	S1		
6-02-0005	SWITCH 6PDT	1	MAIN	S6 (Link)		
9-03-1036	LUG SOLDER PCB MNT	6	MAIN	J2-4, J6-8		
9-40-1036-D	PCB MAIN CL - REV D	1	MAIN	PCB		
9-96-1141	ASSY PCB LED CL	1				
0-00-0000	RES 0 OHM 1/8W 5%	26	LED	0.5 (26)		
0-00-0101	RES 100 OHM 1/8W 5%	4	LED	R 147, 150, 185, 188		
0-00-0102	RES 1K OHM 1/8W 5%	2	LED	R 153, 191		
0-00-0103	RES 10K OHM 1/8W 5%	12	LED	R 134, 136, 137, 162, 167, 171-174, 175, 200		
0-00-0104	RES 100K OHM 1/8W 5%	2	LED	R 206, 207		
0-00-0202	RES 2K OHM 1/8W 5%	18	LED	R 141-146, 154, 165, 166, 179-184, 192, 203, 204		
0-00-0203	RES 20K OHM 1/8W 5%	4	LED	R 135, 163, 173, 201		
0-00-0332	RES 3.3K OHM 1/8W 5%	4	LED	R 155, 157, 193, 195		
0-00-0392	RES 3.9K OHM 1/8W 5%	2	LED	R 158, 196		

0-00-0472	RES 4.7K OHM 1/8W 5%	2	LED	R 156, 194		
0-00-0473	RES 47K OHM 1/8W 5%	6	LED	R 148, 149, 164, 186, 187, 202		
0-00-0512	RES 5.1K OHM 1/8W 5%	2	LED	R 159, 197		
0-00-0561	RES 560 OHM 1/8W 5%	2	LED	R 152, 190		
0-00-0622	RES 6.2K OHM 1/8W 5%	8		R138-140, R160, R176-178, R198		
0-00-0681	RES 680 OHM 1/8W 5%	2	LED	R 151, 189		
0-00-0822	RES 8.2K OHM 1/8W 5%	4	LED	R 133, 161, 172, 199		
1-02-0104	CAP 0.1uF CERDISC 10% .30"DIA.	4	LED	C73, C74, (S10, S12, for REWORK)		
1-12-0471	CAP 4.7uF ELEC 63V 2x5x11mm	8		C63-70		
2-02-5231	DIODE ZENER 1N5231B 5.1V 1/2W DO-35	2	LED	D21, D22		
2-03-4403	TRANS PNP 2N4403 40V 600mA TO-92	8	LED	Q3-10		
2-22-0339	IC LM339 QUAD COMP	13		U12-24		
3-00-0001	LED GREEN DIFFUSED ROUND T1(3mm)	14	LED			
3-01-0001	LED YELLOW ROUND T1(3mm)	6	LED			
3-02-0001	LED RED DIFFUSED ROUND T1(3mm)	32	LED			
4-14-0020	HEADER DIL 20-PIN 0.1"	1	LED	J9		
6-02-0001	SWITCH DPDT	4	LED	S9-12		
9-40-1037	PCB FRONT CL - REV D	1	LED	PCB		