Infinity

Interlude Series

IL60 L/R

Powered Loudspeaker

Service Manual

Infinity Systems, Inc

250 Crossways Park Dr.

Woodbury, New York 11797

REV 5 5/2005

CONTENTS

Specifications

IL60 L/R Frequency Response:	28Hz - 22,000Hz (±3dB)
Recommended Amplifier Power Range	15-175 watts*
Subwoofer Amplifier Output:	500 watts (In to 8Ω from 20 Hz - 100Hz with no more than 0.1% THD)
Sensitivity:	89dB (2.83V @ 1 meter)
Nominal Impedance:	8Ω
Crossover Frequencies:	150Hz; 500Hz,2800Hz, 24dB/octave
Low-Frequency Driver:	12" C.M.M.D., magnetically shielded
Mid-Bass Driver:	6-1/2” C.M.M.D., magnetically shielded
Midrange Driver:	4” C.M.M.D., magnetically shielded
High-Frequency Driver:	1” C.M.M.D., magnetically shielded
Dimensions (H x W x D):	48" x 9-1/4" x 17-1/4" (1219mm x 235mm x 438mm)
Weight:	75 lb (34kg)

* The maximum recommended amplifier power rating will ensure proper system headroom to allow for occasional peaks. We do not recommend sustained operation at these maximum power levels.

Detailed Specifications

IL60 subwoofer 500W Powered Sub/ Plate Amp

LINE VOLTAGE	Yes/No	Hi/Lo Line	Nom.	Unit	Notes
US 120vac/60Hz	Yes	108-132	120	Vrms	Normal Operation
EU 230vac/50-60Hz	Yes	207-264	230	Vrms	Normal operation, MOMS required

Parameter	Specification	Unit	QA Test Limits	Conditions	Notes
Amp Section					
Type (Class AB, D, other)	AB	---		HC-BASH Power Supply	
Load Impedance (speaker)	4	Ohms		Nominal	Resistor Load
Rated Output Power	500	Watts	450	@30Hz, THD 15%, Limiter defeated	
THD@ 470W	0.5	%	5	22k filter, 50Hz, LPF "On"	
THD @ 1 Watt	0.05	%	0.3	22k filter, 50Hz, LPF "On"	
Polarity (Input vs Output)	0	deg.	0° ±20	@40Hz; LPF "On"	.250 faston (+).....205 faston (-)
DC Offset	1	mV-DC	1.5	@ Speaker Outputs	
Damping factor	> 50	DF			
Input Sensitivity					
Input Frequency	50	Hz		Nominal Freq.	1 input driven
Line Input	45	dBr	±2	STO 1 Watt, @30Hz	LPF "On", BOS "Off"
Speaker/Hi Level Input	21	dBr	±2	STO 1 Watt, @30Hz	LPF "On", BOS "Off"
Signal to Noise					
SNR-A-Weighted	110	dBA	100	relative to 400W output	A-Weighting filter
SNR-unweighted	100	dBr	85	relative to 400W output	22k filter
SNR rel. 1W-unweighted	70	dBr	60	relative to 1W output	22k filter
Residual Noise Floor	2	mVrms	3	Volume @max, using RMS reading DMM/VOM (or A/P)	
Residual Noise Floor	1	mVrms(max)	3	Volume @max, w/ A/P Swept Bandpass Measurement (Line freq.+ harmonics)	
Input Impedance					
Line Input	10k	ohms		Nominal	
Speaker/Hi Level Input	1k	ohms		Nominal	
Active Filters					
Low Pass (fixed or variable)	fixed	--			
Frequency	100	Hz			
Slope	24	dB/Octave			
Q	0.741	Damping			
Subsonic filter (HPF)	fixed	--			
Frequency	30	Hz			
Slope	12	dB/Octave			
Q	0.9	Damping			
Line Out Filter (HPF)	no	--		Output to satellites	
Frequency	--	Hz		switchable	
Slope	--	dB/Octave			
Q	--	Damping			
Friend Circuit	no	--			
Frequency	--	Hz		notch filter	
Slope	--	dB			
Q	--	Damping			
Parametric EQ (BOS)					
Frequency Pot	yes	--		21 detent pot (0.1 oct. steps)	
Range	20-80	Hz	functional		
Level Pot	yes	--	--	21 detent pot (0.5dB steps)	
Range	0 to -14	dB	functional		
Width (Q) Pot	yes	--	--	21 detent pot (5steps/0.1 octave)	
Range	0.05-0.5	octave	functional		
Features					
Main Power On/Off Switch	rocker	--	funtional	Locate at amp plate	
Line/Spkr Input Select Switch	toggle	--	funtional	Locate at amp plate	
BOS Bypass Switch	toggle	--	funtional	Locate at amp plate	
Low Pass Filter Switch	toggle	--	funtional	Locate at amp plate	
Limiter (yes/no)	yes				
Output power limited to	470	Watts	430	THD <5%	
Output Volume Control					
Volume Control Pot	10k	ohm		Locate at front	
Detent (center/#)	no	--			

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Detailed Specifications (Cont.)

Parameter	Specification	Unit	QA Test Limits	Conditions	Notes
Taper (lin/log)	A- / C-taper	--		D-shaft pot for knob fitting; A-taper for "right" and C-taper for "left"	
@minimum setting	no output	dB			
Input/Output Configuration					
Line In (L,C,R,AC3,Mono)	Mono	--		RCA phono jack, gold plated	
Spkr/Hi Level In (L,C,R,mono)	Mono	--		Binding posts	
Line Outputs (L,C,R)	Mono	--		RCA phono jack, gold plated	High pass filtered, 2nd order
Signal Sensing (ATO)					
Auto-Turn-On (yes/no)	yes	--		Under the condition that bias power never exceed 15W	
ATO Input Frequency	30	Hz			
ATO Level	8/100	mV	15/120	@30Hz into single Line/Speaker Input	LPF "On", BOS "Off"
ATO Bandwidth	300	Hz	350	ATO-LPF for noise immunity	LPF "On", BOS "Off"
ATO Turn-on time	5	ms	10	Amp connected and AC on, then input signal applied	
Auto Mute/ Turn-OFF Time	15	minutes	20	Time before muting, after signal is removed	
Power on Features					
Power on Delay time	2	sec.	3	AC Power Applied	
Power on LED	yes	--		Bi-color LED located at front	
Normal On	green	color			
ATO	red	color		"Active": green; "Standby": red	
Transients/Pops					
ATO Transient	10	mV-peak	N/P	@ Speaker Outputs	
Turn-on Transient	100	mV-peak	1V-pp	@ Speaker Outputs	AC Line cycled from OFF to ON
Turn-off Transient	100	mV-peak	1V-pp	@ Speaker Outputs	AC Line cycled from ON to OFF
Efficiency					
Stand-by Input Power	14	Watts	15	@ nom. line voltage	
AC Power Cons.@1W	25	Watts	28	@ nom. line voltage	
Power Cons.@470W	820	Watts	940	@ nom. line voltage	
Efficiency	57	%	50		
Protection					
Short Circuit Protection		--	functional	Direct short at output	Compliance to HCG Reliability Test Plan
Thermal Protection		--	functional	@1/8 max unclipped Power	Compliance to HCG Reliability Test Plan
DC Offset Protection		--	functional	DC present at Speaker Out leads	Compliance to HCG Reliability Test Plan
ESD Protection		--	functional	ESD 15kV test apply to all input terminals	Compliance to HCG Reliability Test Plan
Line Fuse Rating	4	Amps		Type-T or Slo Blo	External fuse with UL/SEMKO rated holder

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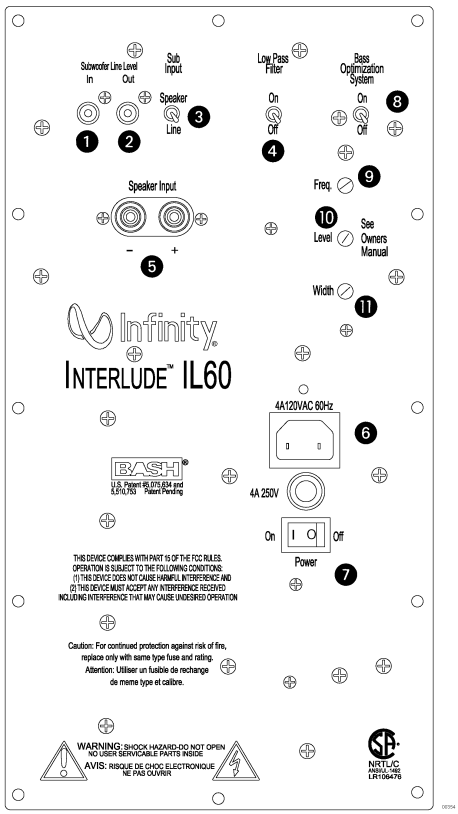
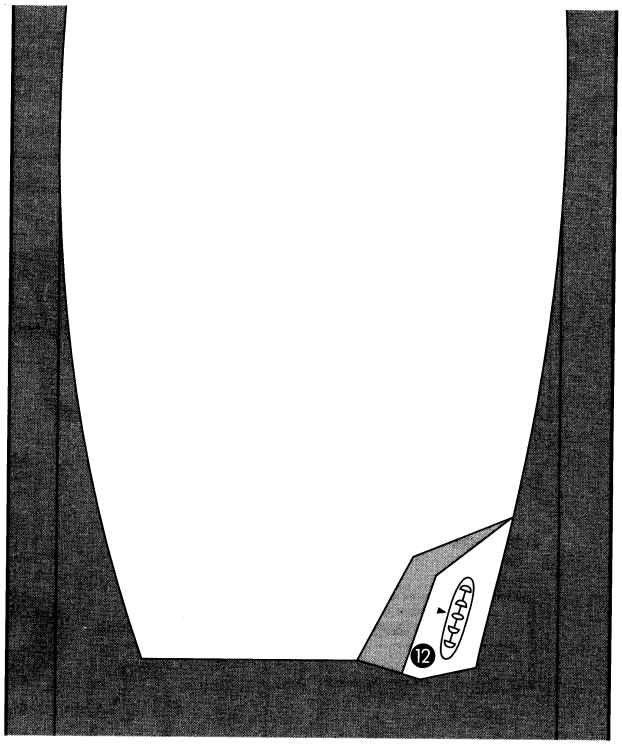
Controls and Connections

Controls and Connections

Rear Panel



Front Panel



❶ Subwoofer Line-Level-In Connector

❷ Subwoofer Line-Level-Out Connector

❸ Subwoofer Input Selector

❹ Low-Pass Filter Switch

❺ Speaker-Level Input

❻ AC-Cord Input

❼ Power Switch

Bass Optimization System

❽ Bass Optimization System Selector

❾ Center-Frequency Adjustment

❿ Bass Optimization System Level

⓫ Bandwidth Adjustment

⓬ Subwoofer Level Control

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Controls and Connections

The Interlude IL50 and IL60 offer unprecedented flexibility for connecting the system to any type of audio or home-theater system. Consult the table at right to determine which system description most closely matches your own, then follow the hook-up method corresponding to that system.

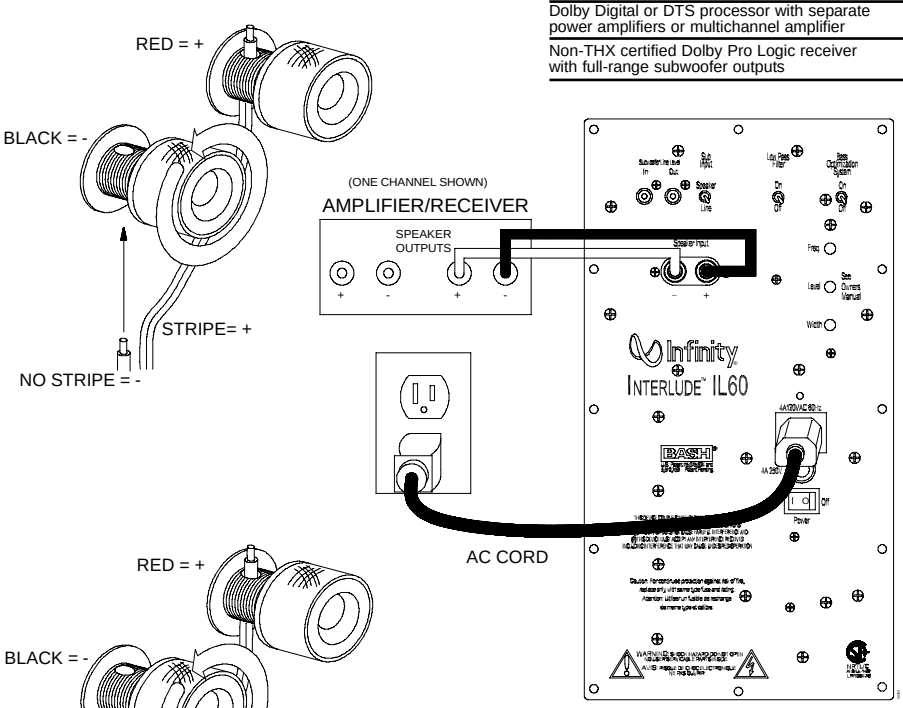
If none of these system configurations seem to match yours, consult your dealer or Infinity customer service for direction on how best to hook up your system.

For methods 2, 3a, 3b and 4, make sure all bass-management features are properly set. The Audio channels should all be set to “Small” or “High-Pass” and the subwoofer set to “On.”

System Type	Connection Methods
2-Channel receiver or integrated amplifier that has no subwoofer output or Pre-out/Main-In connectors	1
2-Channel receiver or integrated amplifier with preamp output and input connectors	2
2-Channel system with separate preamplifier and power amplifier	2
Dolby* Pro Logic* with THX®, Dolby Digital, or DTS® receiver with a filtered subwoofer (or LFE) output connector	3a
Dolby Digital or DTS processor with separate power amplifiers or multichannel amplifier	3b
Non-THX certified Dolby Pro Logic receiver with full-range subwoofer outputs	4

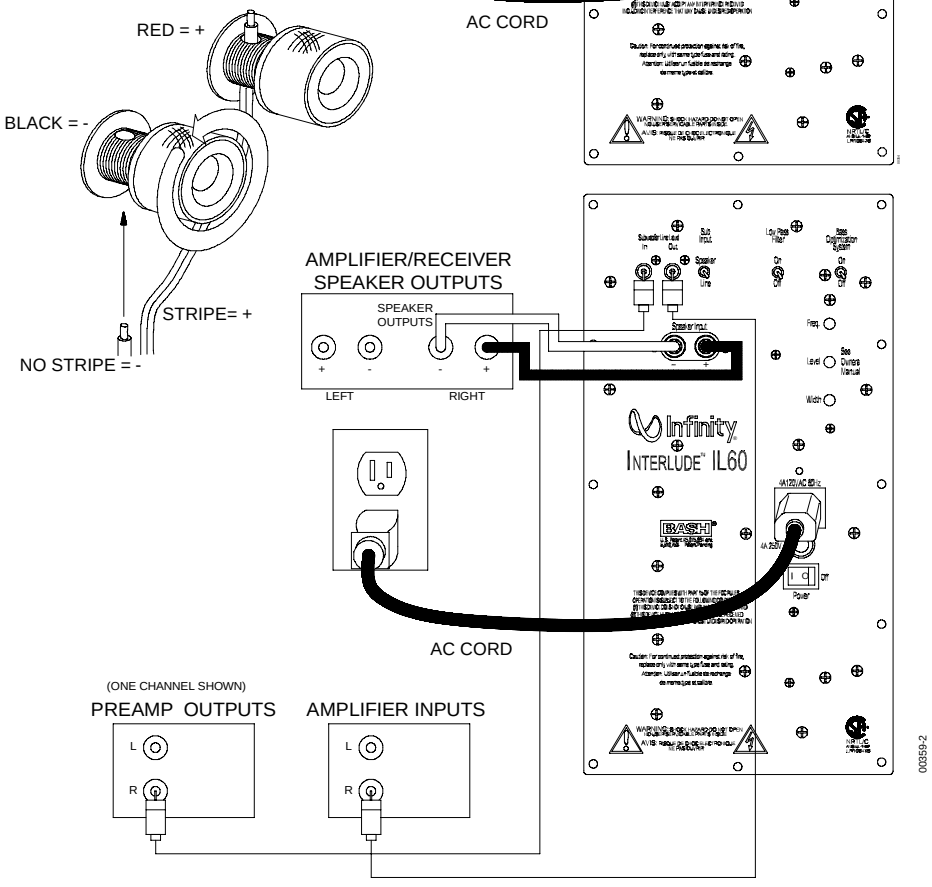
METHOD 1

1. LOOSEN TERMINALS
2. INSERT BARE END: TIGHTEN TERMINALS
3. SET **INPUT SUB** ❸ TO "SPEAKER"
4. SET **LOW-PASS FILTER** ❹ "ON"



METHOD 2

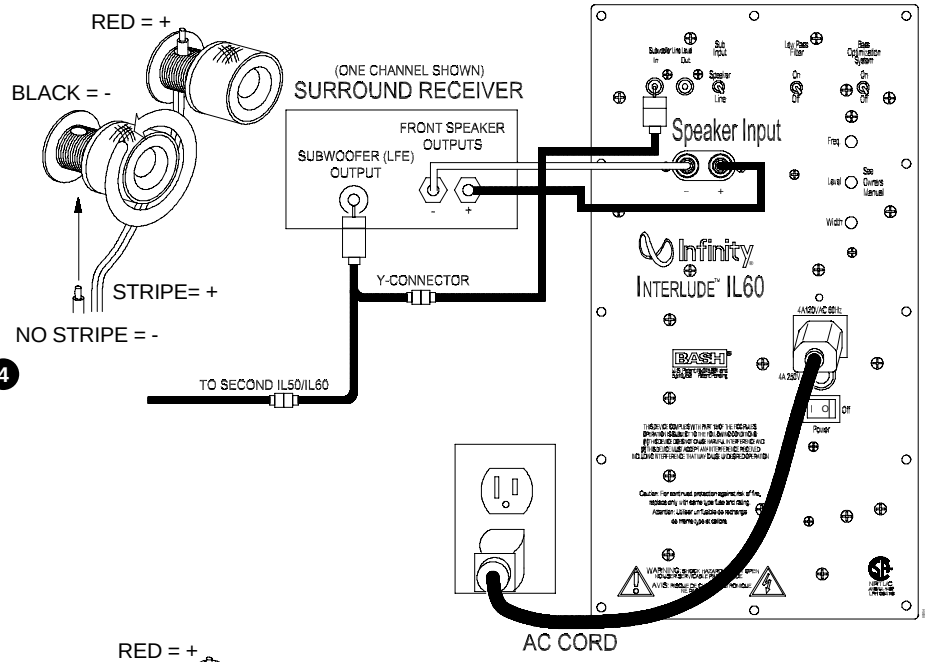
1. LOOSEN TERMINALS
2. INSERT BARE END: TIGHTEN TERMINALS
3. SET **INPUT SUB** ❸ TO "LINE LEVEL"
4. SET **LOW-PASS FILTER** ❹ "ON"



Controls and Connections (Cont.)

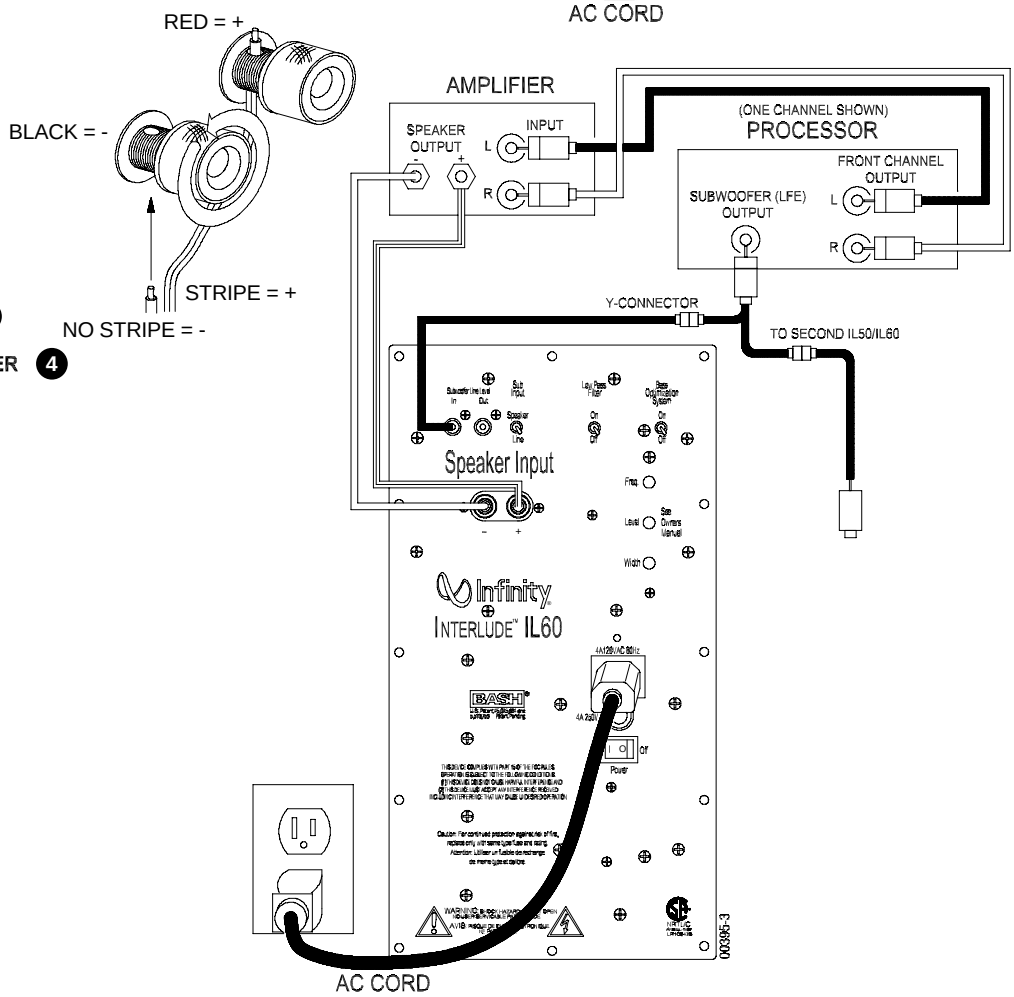
METHOD 3a

1. LOOSEN TERMINALS
2. INSERT BARE END: TIGHTEN TERMINALS
3. SET **INPUT SUB** ❸ TO "LINE LEVEL"
4. SET **LOW-PASS FILTER** ❹ TO "OFF"



METHOD 3b

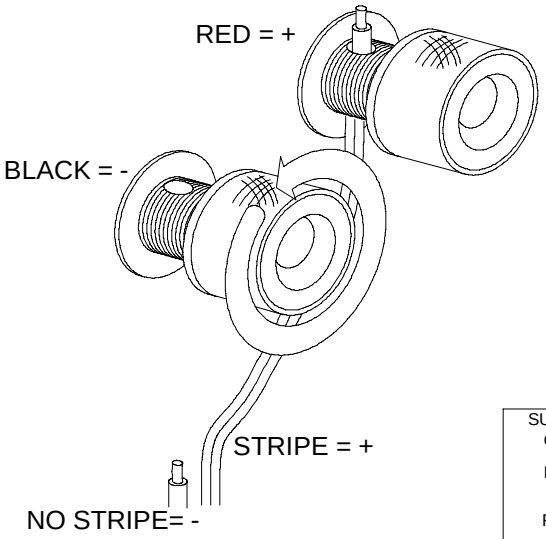
1. LOOSEN TERMINALS
2. INSERT BARE END: TIGHTEN TERMINALS
3. SET **INPUT SUB** TO "LINE LEVEL" ❸
4. SET **LOW-PASS FILTER** ❹ TO "OFF"

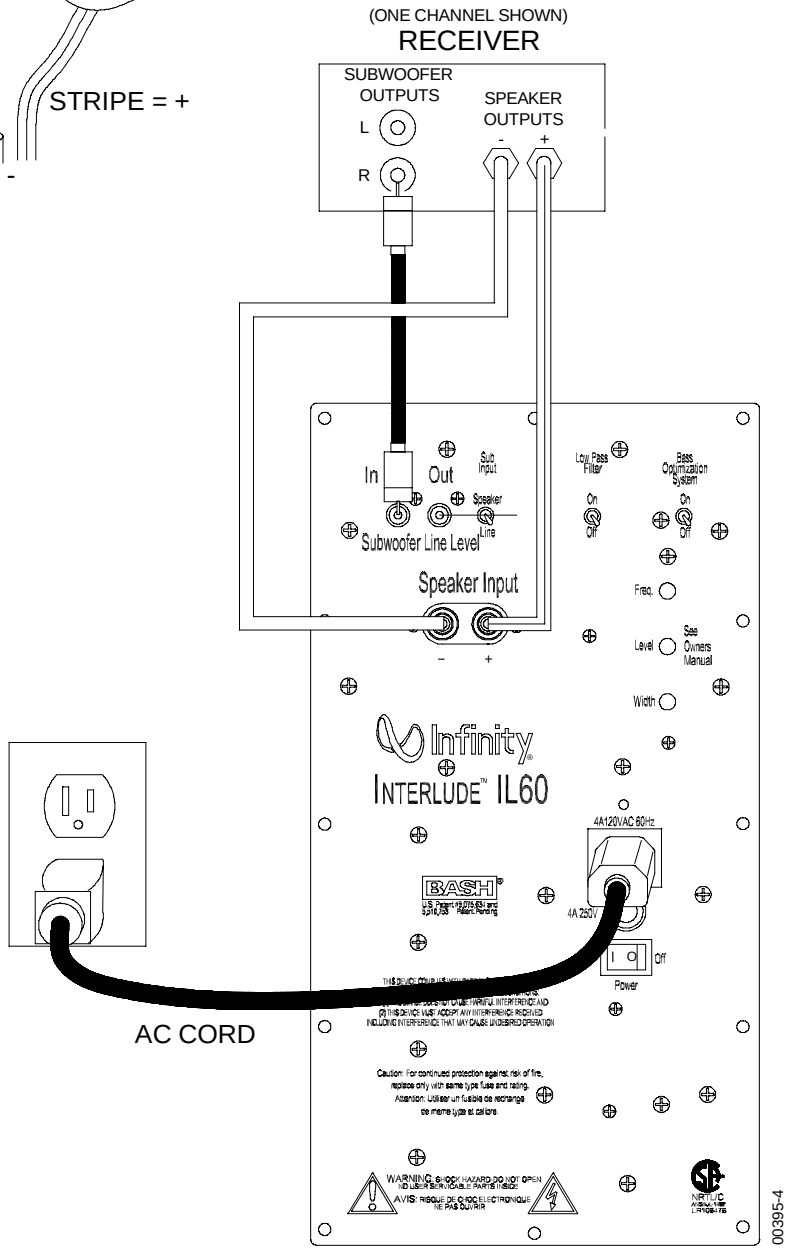


Controls and Connections (Cont.)

METHOD 4

1. LOOSEN TERMINALS
2. INSERT BARE END: TIGHTEN TERMINALS
3. SET **INPUT SUB** ❸ TO "LINE LEVEL"
4. SET **LOW-PASS FILTER** ❹ TO "ON"





Final Positioning

After correctly connecting the loudspeaker and verifying that both the subwoofer and main section portions are playing, it is time to optimize the system for your particular listening room.

Earlier, you placed the loudspeakers in their general location. Finding the exact location for optimum performance sometimes only involves moving the speakers a few inches in any direction. We urge you, therefore, to experiment with placement until your speakers deliver their full potential. When the speakers are moved inward (toward each other) there is generally better focus of instruments and vocalists; however, moving the speakers too close together can reduce the spaciousness of the stage effect and you may need to experiment with the trade-off between focus and imaging. If your listening room is larger than average and your listening position is relatively far from the speakers, wider placement of the speakers may be required.

Operation/Bass Optimization System™

Operation

Power On

Plug your speakers' AC cords into a wall outlet. Do not use the outlets on the back of the receiver.

Initially set the subwoofer Level Controls (12) to the "0" position.

Turn on your subwoofers by pressing the power buttons (7) on the rear panel of the speakers.

Turn on your entire audio system and start a CD or movie soundtrack at a moderate level.

Adjust Gain

Turn both subwoofer Level Controls (12) up to the "5" position (half way). If no sound emanates from the subwoofers, check the AC-line cords and input cables. Are the connectors on the cables making proper contact? Are the AC plugs connected to "live" receptacles? Have the power buttons (7) been pressed to the "On" position? (Note: The Level Control on the front panel will turn green when the power is on and there is a signal present. After about ten minutes with no audio signal, the indicator will turn red.) Once you have confirmed that the subwoofers are active, proceed by playing a CD, record or cassette. Use a selection that has ample bass information.

Set the overall volume control of the preamplifier or stereo to a comfortable level. Adjust the subwoofer Level Controls (12) until you obtain a pleasing blend of bass. Bass response should not overpower the room but rather be adjusted so there is a harmonious blend across the entire musical range. Many users have a tendency to set subwoofer volume too loud, adhering to the belief that a subwoofer is there to produce lots of bass. This is not entirely true. A subwoofer is there to enhance bass, extending the response of the entire system so the bass can be felt as well as heard. However, overall balance must be maintained or the music will not sound natural. An experienced listener will set the volume of the subwoofer so its impact on bass response is always there but never obtrusive.

Bass Optimization System™

Infinity's Bass Optimization System is a simple-to-use, yet sophisticated, low-frequency calibration system. Each Interlude IL50 or IL60 subwoofer contains a parametric equalizer that you can adjust by following the directions below. By following these instructions, you can improve the sound of your system.

The Bass Optimization System Goal

It is a fact of audio that what we hear at low frequencies is determined as much or more by the listening room than by the loudspeaker itself. Placement of the loudspeakers and listeners and the acoustical characteristics of the room surfaces are all important determinants of bass quantity and quality. In most practical situations, there is little that can be done about this, except for patient trial-and-error repositioning of the loudspeakers and listeners. Usually, the practical constraints of a living space and the impracticality of massive acoustical treatment mean that equalization is the only practical solution.

Professional sound engineers routinely employ sophisticated measurement systems and equalizers to optimize speakers to the installation. This was never practical for the home audiophile. This is why the Bass Optimization System was created. It enables you to identify the dominant low-frequency response characteristic of your room. Once you know the problem, the Bass Optimization System provides the tools needed to optimize the low-frequency characteristics of the speakers to the room they are in, exactly as the professional sound engineers do it.

Preparations

Before beginning the bass tests, please check the following:

- Make sure all three Bass Optimization System controls, (9), (10) and (11), on both speakers are turned fully clockwise.
- Make sure the loudness contour (if any) on your receiver/processor/preamp is turned off.
- Set the tone controls (Bass and Treble) to their center or flat positions.
- Bypass all surround and effects features of your receiver/processor/preamp or set to Stereo Bypass.
- If you are using a multichannel surround processor or receiver, make sure all bass-management features are properly set. The Audio channels should all be set to "Small" or "High-Pass" and the subwoofer set to "On."
- Set the Bass Optimization System selectors (8) to "On."

For best results, it is recommended that all major furnishings are in place and that all doors and windows in the listening area are in their normal positions. That is, if you normally listen to music with all doors closed, then this is how they should be during this procedure.

To solve a problem, it helps to first identify whether you have one and, if so, what it is. First, play a variety of music and films with energetic bass sounds, like bass guitar, kick drum, keyboards, etc. A kick drum should produce a tight "thump" not a flabby "boom." Bass melody or harmony lines should have notes that are about equally loud. If some notes disappear, or stand out because they are consistently too loud, there is a problem. Disappearing notes have to be handled by moving the listening position, or the loudspeakers, to slightly different locations. Often, but not always, this will be enough. Excesses in bass tend to be most annoying, and energetic resonances that cause "boomy" or "lumpy" bass can be truly aggravating over a period of time. Infinity's Bass Optimization System can fix this.

So, the first step is to exercise your music collection, and listen for low-frequency problems that crop up in several different recordings. Something that only happens in one recording is likely to be a problem in the recording – it happens! If you identify something that is consistently wrong, select a record that shows it very clearly, and put your CD/DVD player into a repeat mode (A-B repeat is especially helpful, because you can isolate a short musical passage).

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Bass Optimization System™ (Cont.)

NOTE:It is important that you make the same adjustments to both loudspeakers.

Set the Bass Optimization System Bandwidth adjustments ⓫ to a middle position (10 clicks from a fully clockwise position) and set Level adjustments ⓾ for a –6dB (8 clicks from a fully clockwise position). Then,while the music is playing,sit in your favorite chair and have somebody else slowly adjust the Frequency controls ❾ from fully clockwise to fully counter-clockwise. At a certain frequency, you should hear the problem lessen and the overall bass performance improve. When you are satisfied that you have found the best frequency, have your assistant vary the Levels ⓾ slowly up and down until you have maximized the improvement.If you have really keen ears, you can also have the Bandwidth controls ⓫ adjusted for maximum benefit.

While the Bass Optimization System allows the listener to fine-tune the bass response to sound best in a particular room,some listeners don't have the skill or desire to adjust their system by ear. In order to facilitate quicker and more accurate results, Infinity has developed an optional test and measurement kit that allows the user to perform a series of measurements and aids him/her in properly setting the Bass Optimization System controls. With the addition of this kit,the Bass Optimization System becomes truly room-adaptive.

The kit consists of the following:a test CD, a sound-level meter that is specifically calibrated for low frequencies, and something we call a "Q-Finder, "a device to help find the width of the measured curve and, finally, a measurement template. It works as follows. The listener plays the tones from the test CD and records the relative output level of each test tone, using the sound-level meter, on the provided measurement template. After all the tones are complete, the template contains a response curve for the frequencies below 100Hz. The user simply notes the frequency of the largest bass peak,calculates the correct amount of attenuation,and uses the "Q-Finder" to determine the width of the curve. These three values are dialed into the Bass Optimization System controls located on the speaker.The entire process takes less than twenty minutes.

If your dealer does not stock the Bass Optimization System test and measurement kit,you may purchase it directly from Infinity. U.S. residents can visit our Web site at www.infinitysystems.com or call 1-800-553-3332.Canadian residents should contact their dealer or call 1-800-567-3275.

Ask for Infinity part number 335852-002.

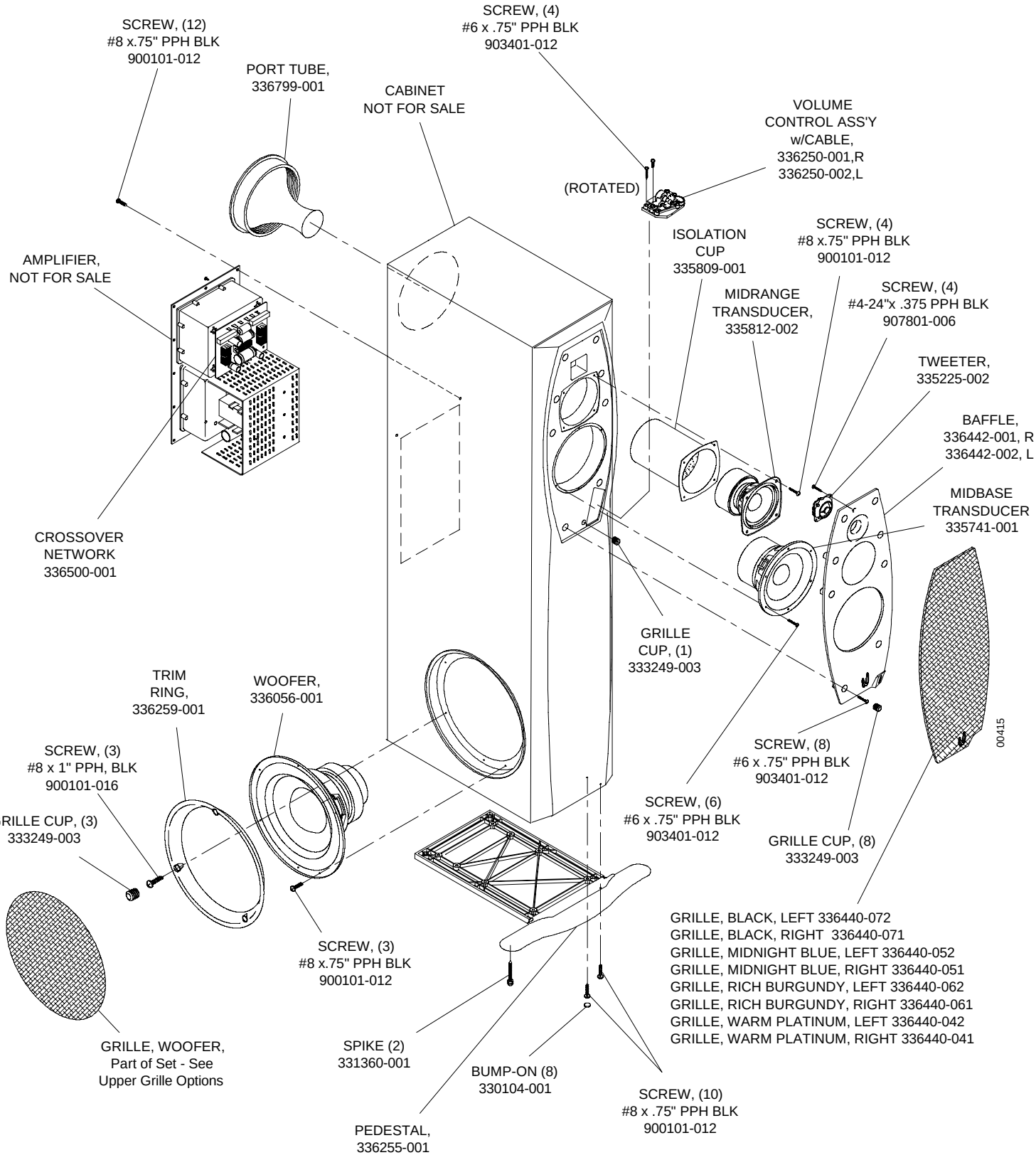
Mechanical Parts List

IL60 Complete Amplifier Ass'y	N/A
Grille Set (one Upper and one Woofer):	
Grille, Black, Left	336440-072
Grille, Black, Right	336440-071
Grille, Midnight Blue, Left	336440-052
Grille, Midnight Blue, Right	336440-051
Grille, Rich Burgundy, Left	336440-062
Grille, Rich Burgundy, Right	336440-061
Grille, Gray, Left	336440-042
Grille, Gray, Right	336440-041
Mid-Bass, 6-1/2" C.M.M.D., shielded, 4.5 ohms±10%	335741-001
Midrange, 4" C.M.M.D., shielded, 4.6 ohms±10%	335812-002
Woofer, 12", C.M.M.D., shielded, 3.4 ohms±10%	336056-001
Tweeter, 1", C.M.M.D., shielded, 3.5 ohms±10%	335225-002
Volume Control Assembly (Left)	336250-002
Volume Control Assembly (Right)	336250-001
Passive Crossover Network	336500-001
Port Tube	336799-001
Pedestal	336255-001
Cup, Grille, (12)	333249-003
Baffle, Front, Left	336442-002
Baffle, Front, Right	336442-001
Bump-On, Foot (8)	330104-001
Midrange Cup	335809-001
Trim Ring, Woofer	336259-001

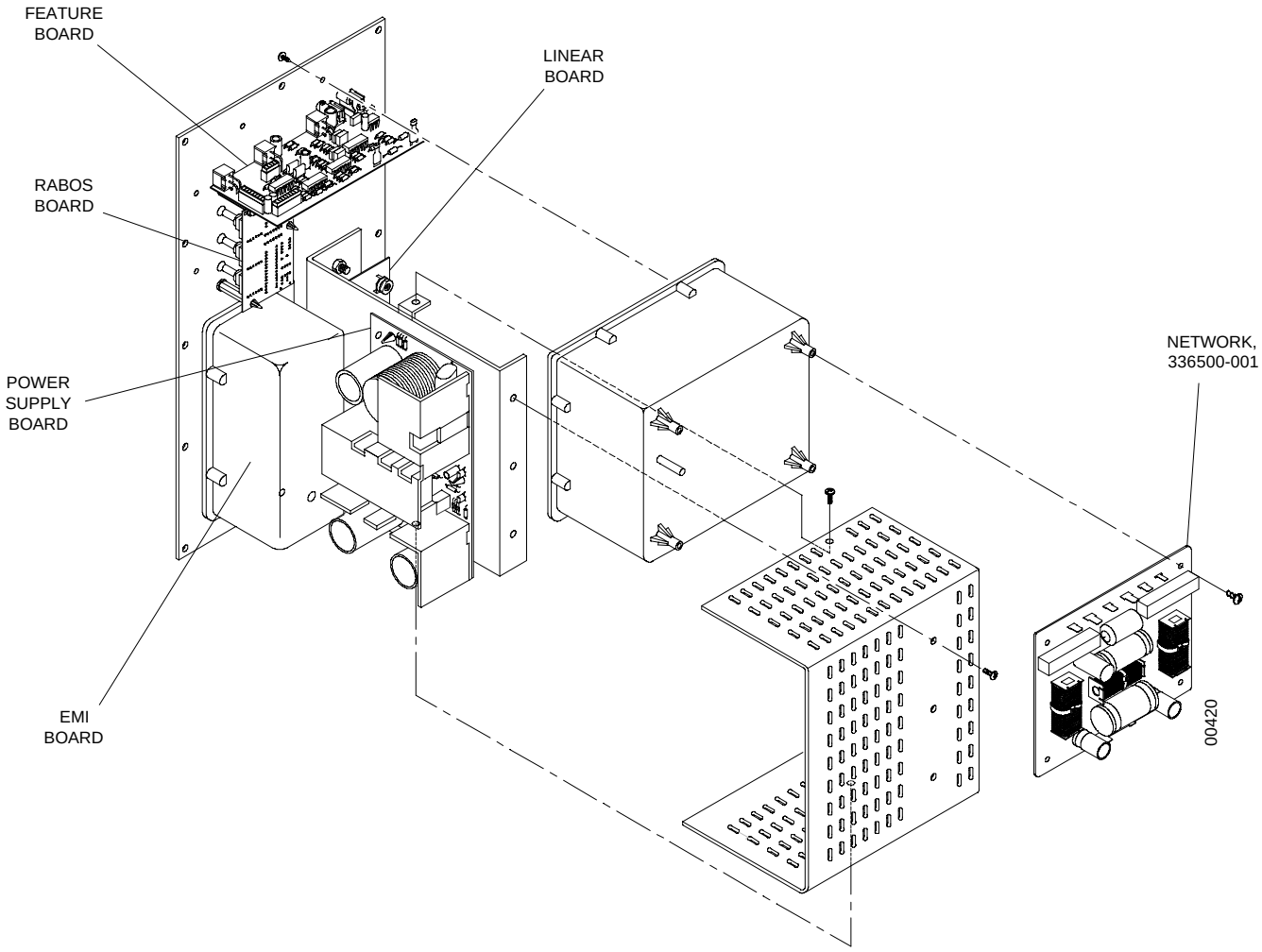
PACKAGING

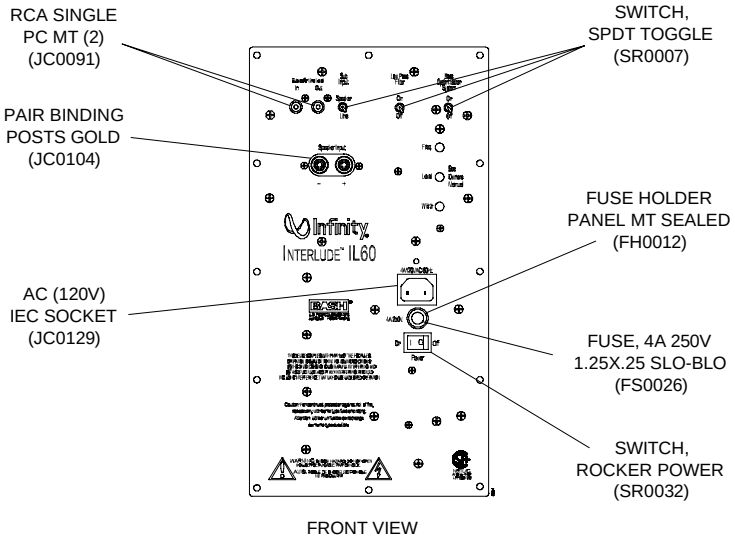
Owners Manual, IL50,60	335832-001
Grille Option Literature	336503-002
Grille Assembly	See Options Above
Pad, End, Bottom/L	336488-003
Pad, End, Bottom/R	336488-002
Pad, End, Top	336488-001
Protective Corners (4)	335692-003
Outer Carton	336489-001
Survey Card	330033-001
Warranty Card	335841-001
Spike Foot Set	331360-001
Power cord 120v US (15')	336658-115
RABOS screwdriver w/bag	335848-002

Exploded View



Exploded View of Amplifier





FRONT VIEW

Service Tips

SERVICING THE VOLUME CONTROL PCB (part# 336250-001 Right or 336250-002 Left)

If the VOLUME CONTROL PCB has to be serviced for any reason:

1. Remove the grille.
2. Extract all (8) rubber grille retainers; this can be accomplished by carefully pulling them out of their cavities with long-nosed pliers or similar tool.
3. Remove the (8) Phillips screws that are now exposed.
4. Lift the front baffle off the cabinet; this exposes the VOLUME CONTROL PCB.
5. Remove the (3) plated mounting screws and unplug the molex connector from the PCB.
6. 10K Potentiometer part# is RP0097 for right control, RP0099 for left control; LED part# is DL0014.

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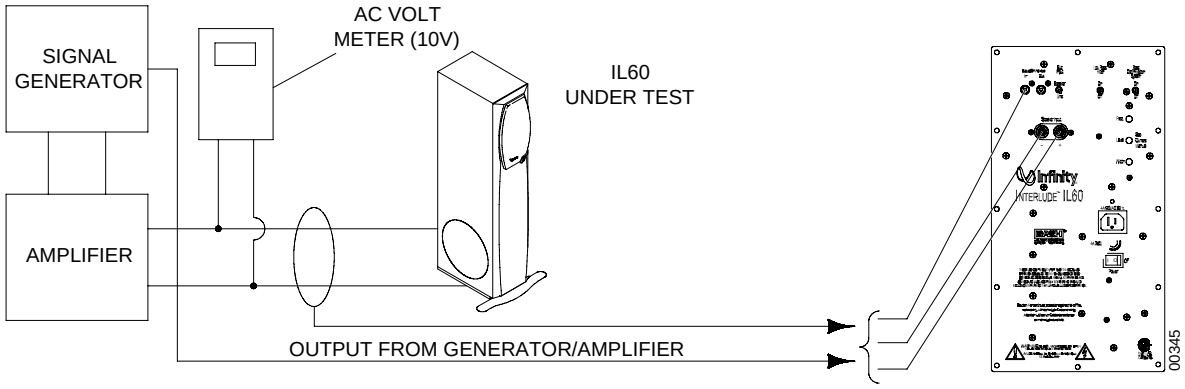
Test Set Up and Procedure



SYSTEM AURAL SWEEP TEST

Equipment needed:

- Function/signal generator/sweep generator
- Integrated Amplifier
- Multimeter
- Speaker cables

General Unit Function (UUT = Unit Under Test)

Switches on the amplifier faceplate:

Sub Input to “Line Level”
Low Pass Filter to OFF
Bass Optimization system to OFF

1. From the signal generator, connect one line level (RCA) cable to the IL60 Line Level Input jack on the UUT.
2. On the front of the unit, turn the LEVEL control full counterclockwise (1).
3. Turn on generator, adjust to **100mV, 40 Hz**.
4. Plug in UUT; turn the power switch ON. LED should be Red. Turn LEVEL control full clockwise (10).
5. LED should now be Green; immediate bass response should be heard and felt from rear port tube opening.
6. Turn off generator, turn LEVEL control fully counterclockwise (1), disconnect RCA cable.
7. Connect one pair of speaker cables to Speaker Level input terminal on UUT. Cables should be connected to an integrated amplifier fed by the signal generator.
8. Switch Sub Input on the amplifier faceplate to “Speaker”.
9. Turn on generator and adjust so that speaker level input at the amplifier is **1.5V, 50 Hz**. Turn LEVEL control full clockwise (10).
10. Green LED should light, immediate bass response should be heard and felt from the port tube opening.

Sweep Function

1. Follow steps 7-10 above, using a sweep generator as a signal source.
2. Sweep generator from 20Hz to 20kHz. Listen to the cabinet and drivers for any rattles, clicks, buzzes or any other noises. If any unusual noises are heard, remove woofer and test.

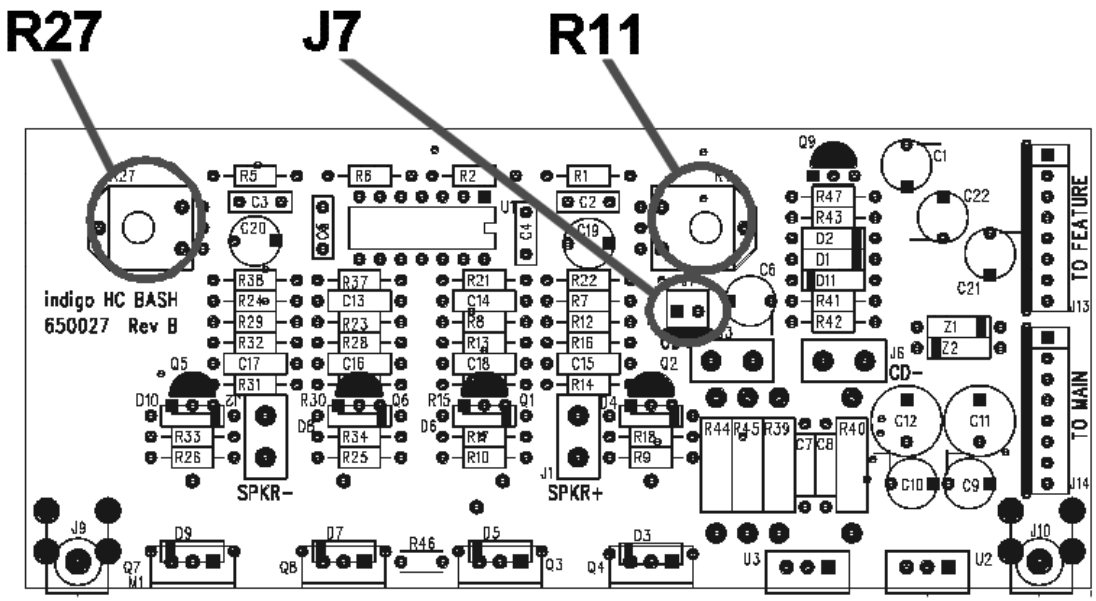
Driver Function (Woofer)

1. Remove woofer from cabinet; detach + and - wire clips.
2. Check DC resistance of woofer; it should be **3.4 ohms** ±10%.
3. Connect a pair of speaker cables to driver terminals. Cables should be connected to an integrated amplifier fed by a signal generator. Turn on generator and adjust so that speaker level output is **5.0V**.
4. Sweep generator from 20Hz to 1kHz. Listen to driver for any rubbing, buzzing, or other unusual noises.

IL60 ADJUST BIAS PROCEDURE

(Mandatory when any output MOSFET transistors Q3,4,7,8 are replaced)

1. Amplifier should be unplugged and OFF.
2. Remove Amp assembly from cabinet; remove rear plastic cover if present. All wires exiting the cover can remain connected unless they will prevent you from removing the amplifier or accessing potentiometers on the Linear board PCB in the following steps.
3. Locate the Linear board assembly (PCB with the output transistors)
4. Adjust R11 and R27 fully Counter Clockwise. See diagram below.
5. Apply 120 VAC power to unit, Turn power switch ON.
6. Verify LED illuminates on the front gain control dial unless you have disconnected the plug.
7. Connect voltmeter set to DC millivolt range to twin pins on terminal J7, on Linear board
8. Verify initial voltage is less then 0.1 mV.
9. Adjust R11 Clockwise until voltmeter reads **0.3 mV** + the initial current from step #8.
10. Adjust R27 Clockwise until voltmeter now reads **0.6 mV** + the initial current from step #8.
11. Turn amplifier OFF. Disconnect AC power to unit.
12. Remove voltmeter from terminal J7.
13. Replace cover (if present), wires if disconnected, and replace amplifier back into cabinet.



Service Bulletin

Service Bulletin INF2000-04 - December 2000 — Warranty labor rate: MINOR repair

To: All Infinity Service Centers

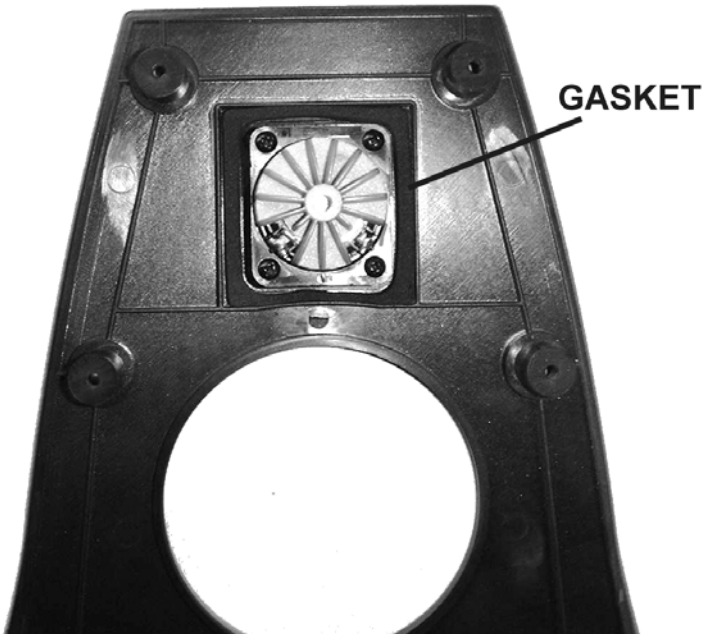
Model: Interlude IL60

Subject: Air Leak or Buzzing from Front Baffle

Some early versions of the Interlude IL60 loudspeaker may need an additonal gasket surrounding the tweeter. The original gasket is located behind and is affixed to the front baffle.

In the event you receive an Interlude IL60 loudspeaker with the complaint: "There is buzzing or an air leak coming from the upper part of the front baffle", perform the following modification:

1) Remove the loudspeaker grille.
2) Extract the (8) grille cups from their cavities with a needle-nosed pliers or similar tool.
3) Remove the (8) Phillips screws holding the front baffle to the cabinet
4) Remove the front baffle; unplug the two faston connections to the tweeter terminals.
5) Apply a new rectangular gasket, Infinity part# 336050-003, *on top of the present gasket*, surrounding the tweeter. Final gasket(s) height should rise above the plastic "ledge" surrounding the tweeter.
6) Plug both faston connections back on the tweeter terminals.
7) Replace the front baffle, Phillips screws, grille cups, and front grille.



Service Bulletin

Service Bulletin INF2001-04 Rev2 – May 2005 | Warranty labor rate: MINOR repair

To: All Infinity Service Centers

Model: Interlude and Intermezzo IL50, IL60, IL100s, IL120s, IM1.2s, IM4.1t

Subject: No Output

In the event you receive an Interlude or Intermezzo loudspeaker with the complaint: "There is no output, and the LED on the volume control does not light, red or green", check the item listed below:

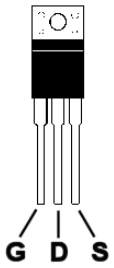
1) Check the line fuse to make sure it's not damaged. Replace if necessary

IL50, IL100s	3A	Infinity part# FS0022
IL60, IL120s	4A	Infinity part# FS0026
IM1.2s, IM4.1t	6A	Infinity part# FS0027

If the fuse is intact, or the unit still does not function, check the power supply portion of the amplifier circuit, described below:

2) Refer to the Exploded view page for detailed instructions on amplifer removal from the enclosure.
3) Remove all connectors and screws necessary to detach the Power Supply PCB from the main chassis heatsink. Squeeze the heads of the plastic standoffs with long-nosed pliers to detach the PCB from the heatsink.
4) Refer to the illustration on page 2. Check the DC resistance of following parts, in circuit, with a DMM:

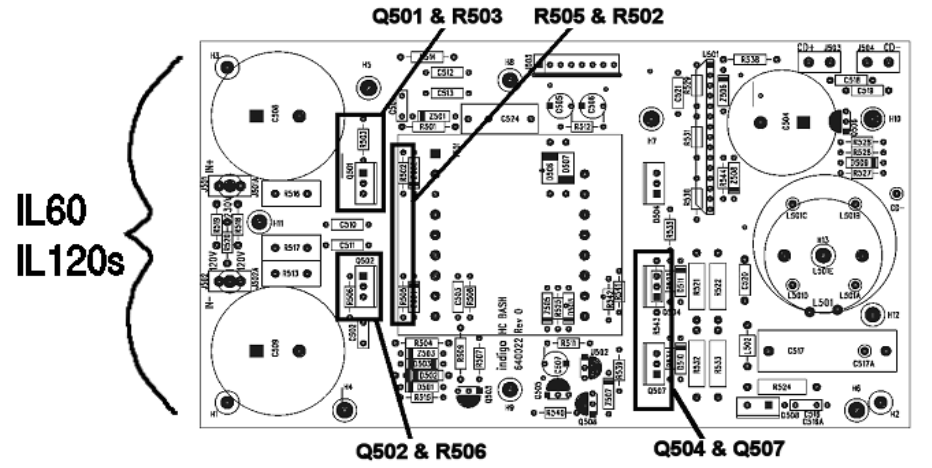
IL120s IL60	IRF740 MOSFETS **Q501, Q502** Infinity part# QM0055	D to S or S to D G to S or S to G D to G or G to D	Should measure >28K ohms* Should measure >400 ohms Should measure >28K ohms*
	22 Ohm 0.6W Resistors **R506, R503** Infinity part# RM0340	Should measure 22 ohms ±1%	
	422 Ohm 1/4 watt Resistors **R505, R502** Infinity part# RM0397	Should measure 422 ohms ±1%	
IL50 IL100s	IRF740 MOSFETS **Q4, Q5** Infinity part# QM0055	D to S or S to D G to S or S to G D to G or G to D	Should measure >28K ohms* Should measure >400 ohms Should measure >28K ohms*
	22 Ohm 0.6W Resistors **R17, R20** Infinity part# RM0340	Should measure 22 ohms ±1%	
	475 Ohm 1/4 watt Resistors **R16, R19** Infinity part# RM0075	Should measure 475 ohms ±1%	
IM1.2s IM4.1t	IRF740 MOSFETS **Q403,404,406,407** Infinity part# QM0055	D to S or S to D G to S or S to G D to G or G to D	Should measure >28K ohms* Should measure >400 ohms Should measure >28K ohms*
	22 Ohm 0.6W Resistors **R407,410,414,417** Infinity part# RM0340	Should measure 22 ohms ±1%	
	365 Ohm 1/4 watt Resistor **R408,411,415,418** Infinity part# RM0072	Should measure 365 ohms ±1%	

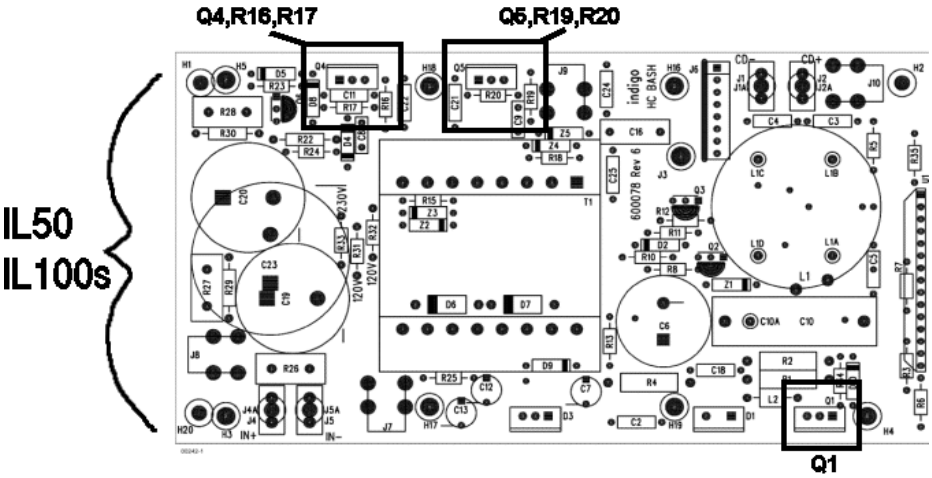


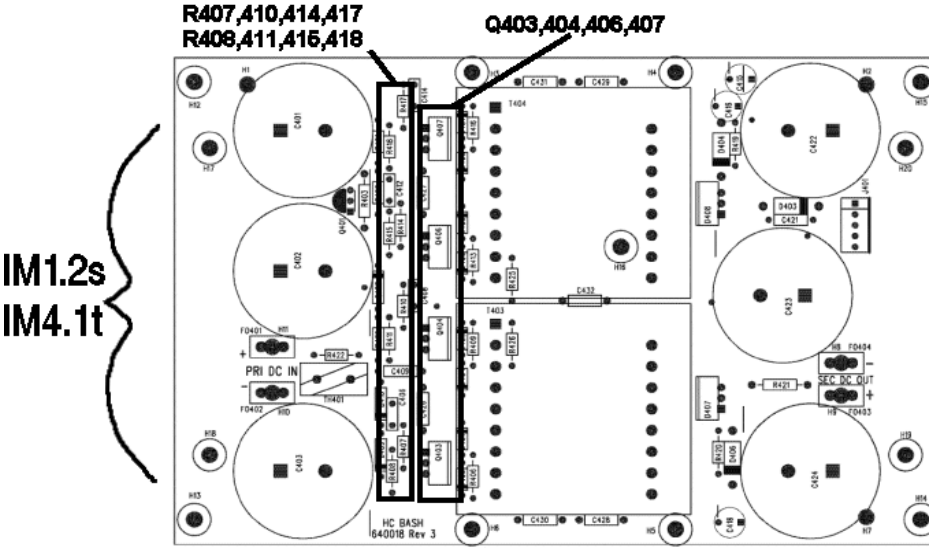
* The two transistor leads should be shorted together before these measurements are taken; the DMM leads will "charge" the circuit and the value may change, but should match the values above. Very low values that do not change indicate a shorted MOSFET.

5) Replace any defective parts above that show measured values lower than normal.
6) Reconnect J505 or J6 multicolor ribbon cable connector; remount the Power supply PCB; reconnect J501/502 or J4/J5 black/red Faston connectors.
7) All models except IM1.2S, IM4.1t: **temporarily DO NOT connect the pair of black/red "CD±" leads on the linear PCB).** Isolate the ends so they are not touching each other, or any conductive material. (For models IM1.2S, IM4.1t procedure is finished; replace amplifier).

8) Connect the subwoofer amplifier to an AC power source; turn the unit ON. Measure the DC voltage at the **"CD±"** wires; it should be 10-20 volts.
9) If it is 25 volts or greater, turn the amplifier OFF, disconnect from the power source, and replace:
   IL120S, IL60: **Q504,Q507** IRF640 on the Power Supply PCB, Infinity part# QM0015.
   IL50, IL100s: **Q1** IRF540 on the Power Supply PCB, Infinity part# QM0020.
10) If the voltage is normal, turn the amplifier OFF, disconnect from the power source, and reconnect the "CD±" leads.
11) Finish reassembling the amplifier, remount the heatsink, replace the amplifier in the cabinet and test the subwoofer.







TECH TIPS

Troubleshooting tips and solutions to common service problems

For models: IL50, IL100s, MSW-1, IL60, IL120s, IM2.6, IM3.5c **TIP# INFTT2003-03**

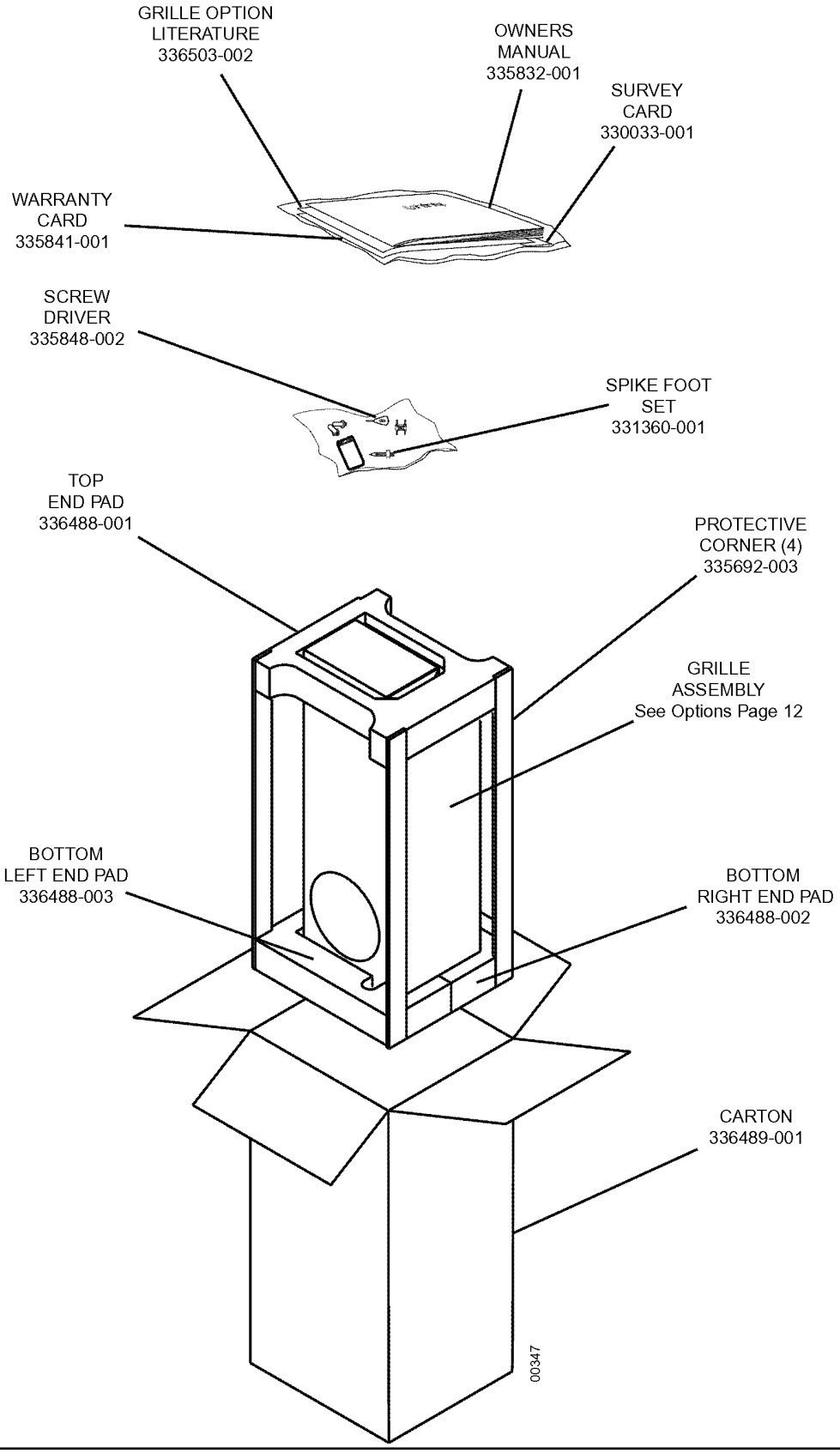
Intermezzo, Interlude and Modulus MSW-1 Power Supply Repair

Recommended for instances where the PCB has been damaged, for the above models only:

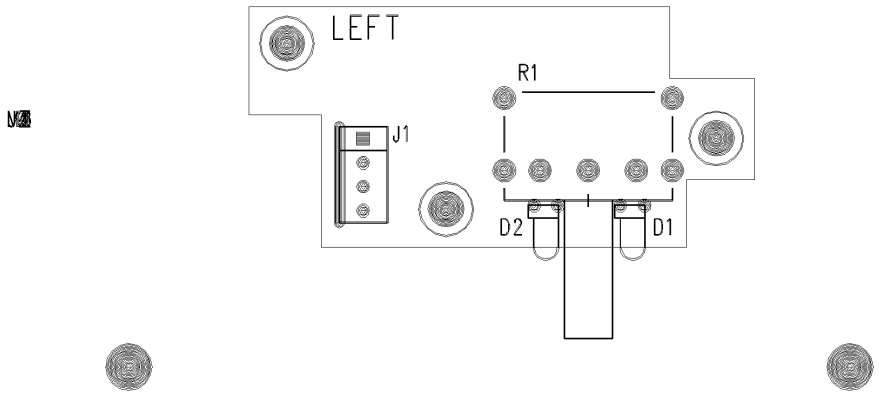
1) Change all MOSFETS, even for one device failure.
2) Clean and repair the PC board if required (See Tech Tip HCG2002-01 - Damaged Printed Circuit Boards).
3) Replace the Hybrid Bash Controller IC:
   U1 in models: IL50,IL100s,MSW-1,IM2.6,IM3.5c
   U501 in models: IL60, IL120s
   Infinity part # **HC1011**

FAILURE TO FOLLOW THE INSTRUCTIONS ABOVE MAY RESULT IN UNIT FAILURE WHEN THE AMPLIFIER IS POWERED UP

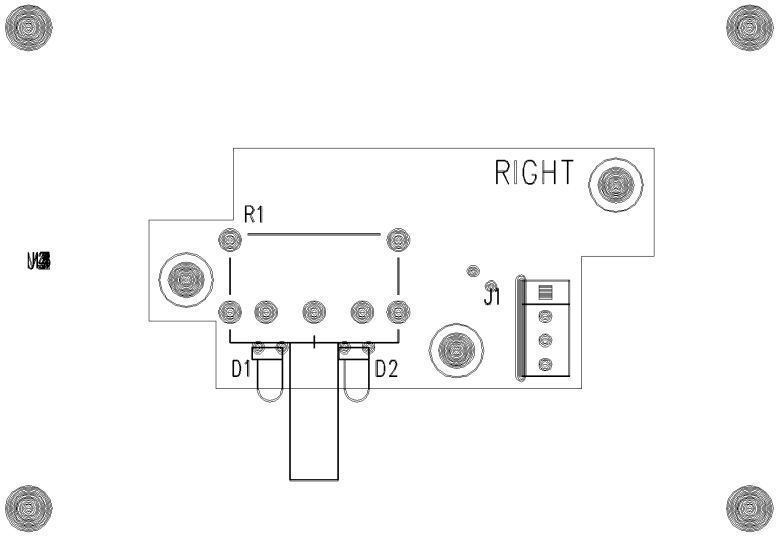
Packaging


GRILLE OPTION LITERATURE 336503-002
OWNERS MANUAL 335832-001
SURVEY CARD 330033-001
WARRANTY CARD 335841-001
SCREW DRIVER 335848-002
SPIKE FOOT SET 331360-001
TOP END PAD 336488-001
PROTECTIVE CORNER (4) 335692-003
GRILLE ASSEMBLY See Options Page 12
BOTTOM LEFT END PAD 336488-003
BOTTOM RIGHT END PAD 336488-002
CARTON 336489-001
00347

Volume Left/Right Boards



IL Volume Left Board

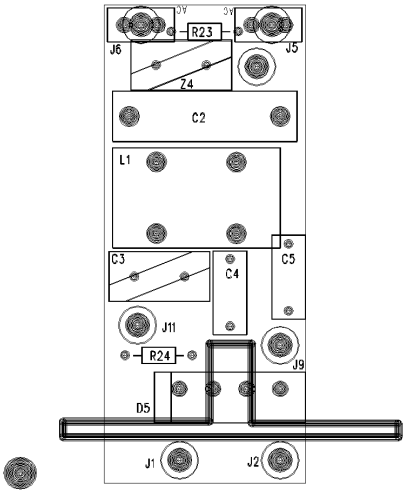


00343-1

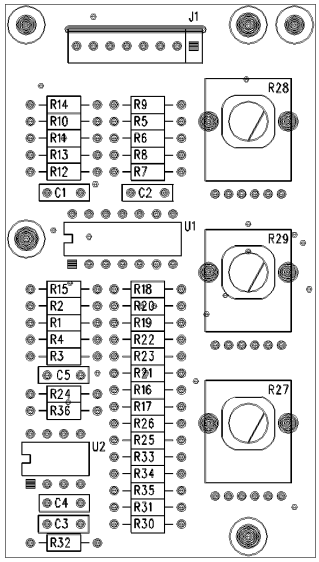
IL Volume Right Board

IL60 L/R

EMI FILTER/RABOS PCBs

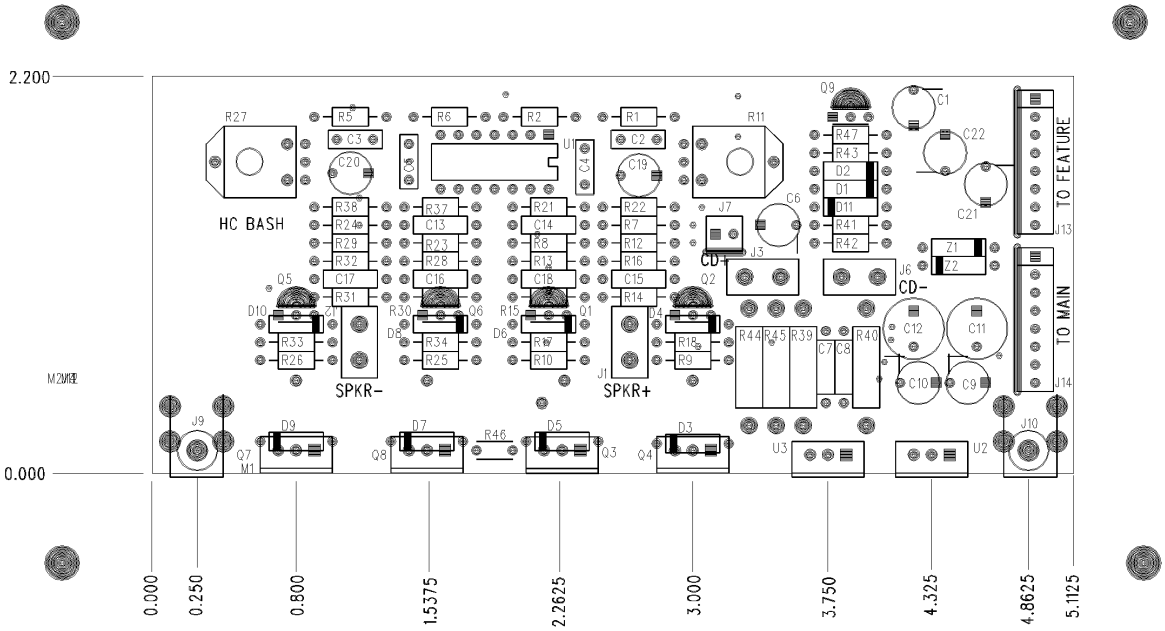


EMI FILTER BOARD

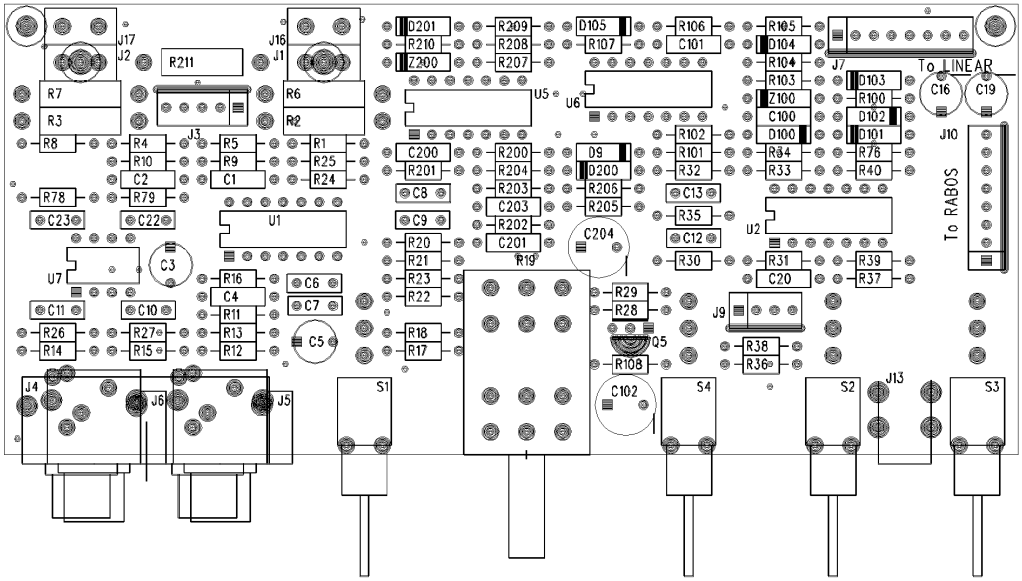


IL Robos Board

IL 500W Linear/Feature Boards

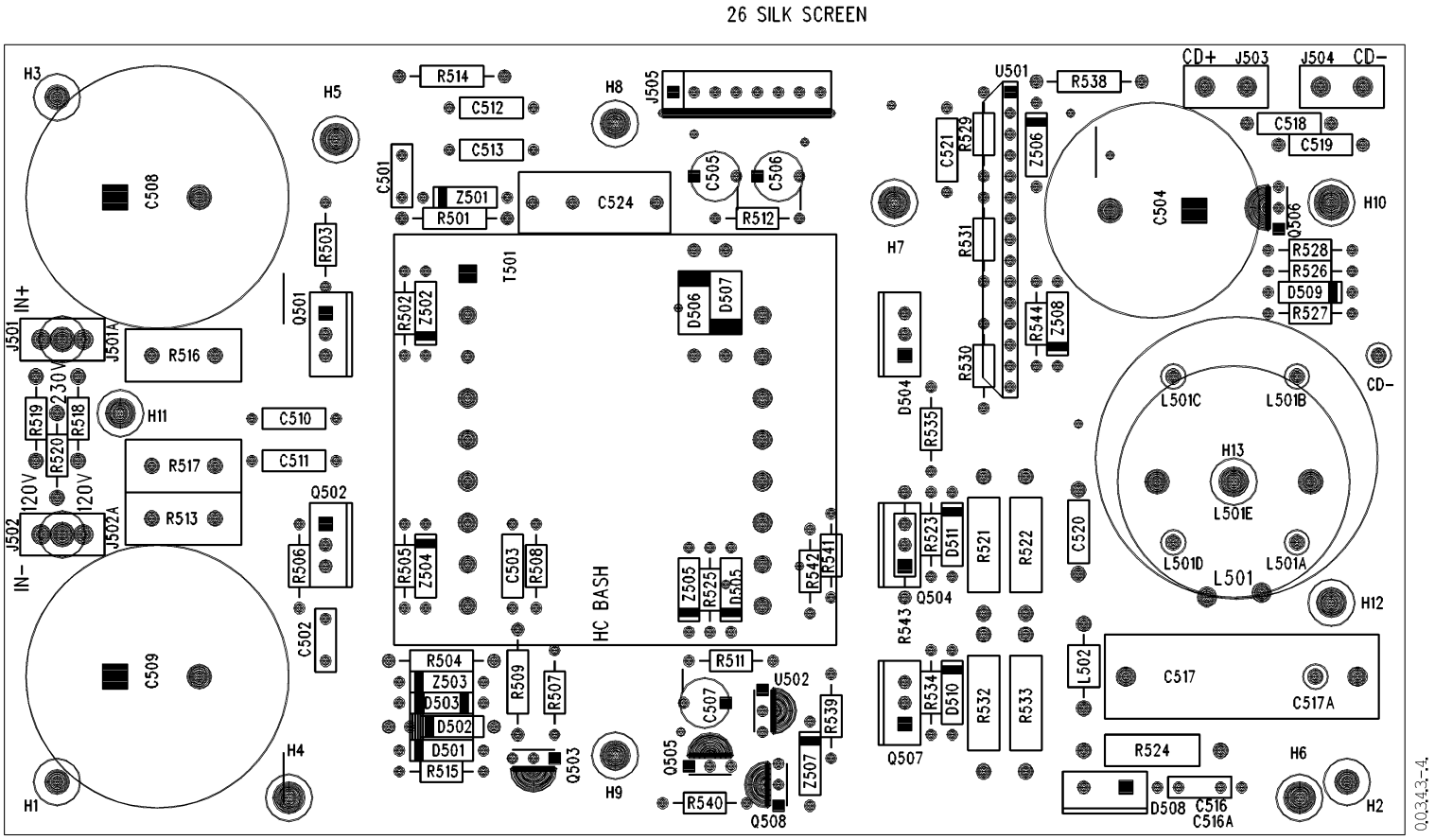


IL 500W Linear Board



IL Feature Board

500W HC BASH Power Supply (120V/230V Selectable)



D502A

500W HC BASH POWER SUPPLY (120V/230V Selectable)

IL60 Electrical Parts List

Feature PCB Assembly

Part#	Reference Designator	Qty	Description
	SEMICONDUCTORS		
DS0001	D9,D100,D101,D102,D103, D104,D105,D200,D201	9	RECT, 100mA 75V SIGNAL 1N4148T
QM0035	Q5	1	JFET, N-CH J111 TO92 TR
UA0003	U5,U6	2	OPAMP, QUAD 14PIN DIL LM324N
UA0009	U1,U2	2	OPAMP, QUAD 14P DIL TL074/084
UA0010	U7	1	OPAMP, DUAL 8PIN DIL TL082
DZ0014	Z100	1	ZENER, 500MW 14V 5% 1N5244B
DZ0002	Z200	1	ZENER, 500mW 12V 5% 1N5242B
	CAPACITORS		
CC0020	C200	1	CAP, CA 470PF 100V 5%
CC0025	C203	1	CAP, CA 1000PF 100V 10%
CC0072	C1, C2, C4, C20, C100, C101	6	CAP, CA 100PF 100V 10%
CC0082	C201	1	CAP, CA .1UF 50V 20%
CE0013	C204	1	CAP, E 47UF 50V 20% 5MMLS
CE0101	C16, C19	2	CAP, E 4.7UF 50V 85D 5X11 5MML
CE0103	C102	1	CAP, E 100UF 35V 85DEG 5MMLS
CE0106	C5	1	CAP, E 22UF 35V BP 8X11 5MMLS
CE0108	C3	1	CAP, E 4.7UF 16V BIPOLAR 5X11
CF0045	C7, C9, C10, C11	4	CAP, F .1UF 63DC 5% 5MMLS
CF0055	C6, C8	2	CAP, F .22UF 63V 10% 5MMLS
CF0078	C12, C13	2	CAP, F .47UF 63V 10% 5MMLS
	RESISTORS		
RC0001	R211	1	RES, CF 1K0 1/2W 5%
RC0192	R3	1	RES, CF 2K00 1/2W 5%
RC0273	R19A, R19B, R19C, R19D, R20, R24, R33, R36, R39, R79	10	RES, ZERO OHM 1/4W
RC0290	R206	1	RES, CF 9M1 1/4W 5%
RM0002	R12, R17, R22, R100, R101, R102, R208, R209	8	RES, MF 10K0 1/4W 1%
RM0003	R16, R210	2	RES, MF 15K0 1/4W 1%
RM0011	R1,R4,R103,R105,R201	5	RES, MF 100K 1/4W 1%
RM0012	R14,R30	2	RES, MF 100R 1/4W 1%
RM0016	R104	1	RES, MF 13K0 1/4W 1%
RM0020	R28,R29	2	RES, MF 1K40 1/4W 1%
RM0024	R207	1	RES, MF 2K21 1/4W 1%
RM0031	R204	1	RES, MF 3K32 1/4W 1%
RM0035	R200	1	RES, MF 4K75 1/4W 1%
RM0075	R205	1	RES, MF 475R 1/4W 1%
RM0085	R107	1	RES, MF 2K00 1/4W 1%
RM0097	R35	1	RES, MF 6K19 1/4W 1%
RM0106	R26	1	RES, MF 14K0 1/4W 1%
RM0120	R9,R10	2	RES, MF 30K1 1/4W 1%
RM0136	R202	1	RES, MF 150K 1/4W 1%
RM0156	R108	1	RES, MF 392K 1/4W 1%
RM0158	R27	1	RES, MF 28K0 1/4W 1%
RM0171	R31,R203	2	RES, MF 475K 1/4W 1%
RM0188	R106	1	RES, MF 499R 1/4W 1%
RM0191	R32	1	RES, MF 20K5 1/4W 1%
RM0263	R11	1	RES, MF 48K7 1/4W 1%
RM0361	R76	1	RES, MF 2K10 1/4W 1%
RM0402	R18,R23	2	RES, MF 11K5 1/4W 1%
RM0404	R2	1	RES, MF 54R9 1/4W 1%
	MISCELLANEOUS		
480113	J1	1	SUB, #18B 6 1/4 STRIP BOTH
480114	J2	1	SUB, #18R 6 1/4 STRIP BOTH
JC0091	J5, J6	2	CNCTR, RCA SINGLE PC MT
JH0006	J9	1	CNCTR, HEADER 4PIN .100CTR
JH0074	J7, J10	2	CNCTR, HEADER 8PIN LOCKING .1C
MT0003	J17	1	TERM, FASTON MALE PCMT 250X032

IL60 Electrical Parts List (Cont.)

Part#	Reference Designator	Qty	Description
MT0036	J16	1	TERM, FASTON MALE PCMT 205X032
SR0007	S1,S3,S4	3	SWITCH, SPDT TOGGLE C/W CAP PC
PCB, RABOS Board			
SEMICONDUCTORS			
UA0009	U1	1	OPAMP, QUAD 14P DIL TL074/084
UA0010	U2	1	OPAMP, DUAL 8PIN DIL TL082
RESISTORS			
RC0273	R30,R32,R33	3	RES, ZERO OHM 1/4W
RM0001	R24,R25	2	RES, MF 1K00 1/4W 1%
RM0002	R1,R2,R4,R9,R14,R15,R21,R23	8	RES, MF 10K0 1/4W 1%
RM0003	R8,R13	2	RES, MF 15K0 1/4W 1%
RM0012	R3	1	RES, MF 100R 1/4W 1%
RM0013	R34	1	RES, MF 11K0 1/4W 1%
RM0024	R22	1	RES, MF 2K21 1/4W 1%
RM0042	R26	1	RES, MF 681R 1/4W 1%
RM0080	R5,R10	2	RES, MF 825R 1/4W 1%
RM0260	R36	1	RES, MF 1M0 1/4W 1%
RM0271	R19	1	RES, MF 110K 1/4W 1%
RM0281	R7,R12	2	RES, MF 6K04 1/4W 1
RM0315	R17	1	RES, MF 2K67 1/4W 1%
RM0369	R6,R11	2	RES, MF 340R 1/4W 1%
RM0370	R18	1	RES, MF 9K31 1/4W 1%
RM0377	R16	1	RES, MF 3K57 1/4W 1%
RM0378	R20	1	RES, MF 549R 1/4W 1%
RP0087	R27,R29	2	POT, A10K DUAL 12MM HOR SEL
RP0088	R28	1	POT, C10K DUAL 12MM HOR SEL
DNI	R31, R35	2	Do Not Insert
CAPACITORS			
DNI	C3, C4	2	Do Not Insert
CF0045	C1,C2,C5	3	CAP, F .1UF 63DC 5% 5MMLS
MISCELLANEOUS			
JH0074	J1	1	CNCTR, HEADER 8PIN LOCKING .1C
PCB, Linear Board			
SEMICONDUCTORS			
DS0001	D1-11	11	RECT, 100mA 75V SIGNAL 1N4148T
QB0017	Q2, Q6	2	TRANS, NPN 150V 0.6A 2N5551TR
QB0018	Q1, Q5	2	TRANS, PNP 150V 0.6A 2N5401TR
QM0015	Q3, Q7	2	MOSFET, IRF640 T0220AB
QM0034	Q4, Q8	2	MOSFET, IRF9540 T0220AB
QM0054	Q9	1	JFET, N-CH J113 T092
UA0009	U1	1	OPAMP, QUAD 14P DIL TL074/084
UV0015	U2	1	VREG, +18v 500MA LM7818CT
UV0016	U3	1	VREG, -18V 500MA LM7918CT
DZ0011	Z1, Z2	2	ZENER, 500MW 3V 5% 1N5225B
RESISTORS			
RM0001	R12-15, R28-31	8	RES, MF 1K00 1/4W 1%
RM0002	R1, R2, R5, R6	4	RES, MF 10K0 1/4W 1%
RM0021	R7, R8, R23, R24	4	RES, MF 1K82 1/4W 1%
RM0024	R17, R18, R33, R34	4	RES, MF 2K21 1/4W 1%
RM0029	R9, R10, R25, R26	4	RES, MF 3K01 1/4W 1%
RM0035	R41, R42	2	RES, MF 4K75 1/4W 1%
RM0039	R47	1	RES, MF 5K11 1/4W 1%
RM0091	R22, R38	2	RES, MF 3K65 1/4W 1%
RM0170	R21, R37	2	RES, MF 59K 1/4W 1%
RM0180	R16, R32	2	RES, MF 4K99 1/4W 1%
RP0059	R11, R27	2	POT, 2K 8MM TOP ADJ/COVER

IL60 Electrical Parts List (Cont.)

Part#	Reference Designator	Qty	Description
RW0022	R44, R45	2	RES, WW 0R1 2W 5%
RX0055	R39, R40	2	RES, MO 470R 2W 5%
	CAPACITORS		
CC0025	C15-18	4	CAP, CA 1000PF 100V 10%
CC0080	C13, C14	2	CAP, CA 220P 100V 10%
CC0082	C7, C8	2	CAP, CA .1UF 50V 20%
CC0097	C4, C5	2	CAP, C 10P 50V 10
CE0003	C6	1	CAP, E 2.2UF 50V 20% 105C
CE0013	C9, C10, C21, C22	4	CAP, E 47UF 50V 20% 5MMLS
CE0085	C19, C20	2	CAP, E 22UF 16V BP 6X11 5MMLS
CE0103	C11-12	2	CAP, E 100UF 35V 85DEG 5MMLS
CE0116	C1	1	CAP, E 2.2UF 50V BP 6X11 5MMLS
CF0125	C3	1	CAP, F .068UF 100V 5% 5MMLS
CF0128	C2	1	CAP, F .033UF 100V 5% 5MMLS
	MISCELLANEOUS		
KS0019	R46	1	THERMISTOR, PTH9L04BD22TS2F510
JH0016	J7	1	CNCTR, HEADER 2PIN .100CTR
JH0074	J13, J14	2	CNCTR, HEADER 8PIN LOCKING .1C
MM0025	J9, J10	2	MISC, PC MT SCREW TERM 6-32
MT0003	J1	1	TERM, FASTON MALEPCMT 250X032
MT0023	J3, J6	2	TERM, FASTON MALEPCMT 187X032
MT0036	J2	1	TERM, FASTON MALEPCMT 205X032
TS0016		6	TUBING, #5 BLACK CUT TO .3
810056		6	MET, HTSNK CLIP .9X.5X.2 FET Used on Q3, Q4, Q7, Q8, U2 & U3
MS0005		2	SILPAD, .009 .3C/W TO3P used with regulators U2 & U3
MS0017		4	MISC, CERAMIC PLATE TO-220 Oxide used with FETs
PCB, Power Supply 500W 230V/120V			
	SEMICONDUCTORS		
DR0077	D506, D507	2	RECT, 1A 100V FAST REC 1N4934
DS0001	D509, D510, D511	3	RECT, 100mA 75V SIGNAL 1N4148T
DS0002	D501, D502, D505	3	RECT, 100MA 200V SIGNAL 1N3070
DD0003	D503	1	RECT, 1A2 60V DIAC
DR0076	D504	1	RECT, 16A 400V ULTRA MUR1640CT
DR0087	D508	1	RECT, 15A 200V ULTRA MUR1540
QB0002	Q505	1	TRANS, NPN 40V .6A TO92 2N4401
QB0014	Q503	1	TRANS, PNP TO92 MPSA92TR
QB0017	Q506	1	TRANS, NPN 150V 0.6A 2N5551
QM0015	Q504, Q507	2	MOSFET, IRF640 TO220AB
QM0055	Q501, Q502	2	MOSFET, IRF740 TO220AB
HC1011	U501	1	HYBRID, THK FILM HC BUCK CNTR
DZ0002	Z501, Z503	2	ZENER, 500mW 12V 5% 1N5242B
DZ0004	Z505	1	ZENER, 500mW 18V 5% 1N5248B
DZ0021	Z502, Z504	2	ZENER, 500MW 15V 5% 1N5245B
DZ0038	Z506	1	ZENER, 500MW 33V 5% 1N5257B
	RESISTORS		
RC0082	R509	1	RES, CF 100K 1/2W 5%
RC0136	R515	1	RES, CF 160K 1/4W 5%
RC0273	R518, R519	2	RES, ZERO OHM 1/4W
RM0001	R507	1	RES, MF 1K00 1/4W 1%
RM0002	R525	1	RES, MF 10K0 1/4W 1%
RM0050	R531	1	RES, MF 90K9 1/4W 1%
RM0070	R528	1	RES, MF 301R 1/4W 1%
RM0191	R529	1	RES, MF 20K5 1/4W 1%
RM0198	R508	1	RES, MF 205K 1/4W 1%
RM0260	R526	1	RES, MF 1M0 1/4W 1%
RM0337	R530	1	RES, MF 19K6 1/4W 1%
RM0339	R511, R512, R523, R534, R535	5	RES, MF 10R 0.6W 1% FLAMEPROOF

IL60 Electrical Parts List (Cont.)

Part#	Reference Designator	Qty	Description
RM0340	R503, R506	2	RES, MF 22R 1/4W 1% FLAMEPROOF
RM0397	R502, R505	2	RES, MF 422R 1/4W 1%
RM0399	R527	1	RES, MF 3K48 1/4W 1%
RW0022	R521, R522, R532, R533	4	RES, WW 0R1 2W 5%
RX0046	R514	1	RES, MO 47K 1W 5%
RX0048	R501, R504	2	RES, MO 330R 1W 5%
RX0072	R524	1	RES, MO 100R 1W 5
RX0106	R538	1	RES, MO 15K 2W 5%
	CAPACITORS		
CE0013	C505, C506	2	CAP, E 47UF 50V 20%
CE0098	C507	1	CAP, E 22UF 50V 20% 5X11 .2LS
CF0019	C501, C502	2	CAP, F 4700PF 100V 5% 5MMLS
CC0040	C503	1	CAP, CA 4700PF 100V 10%
CC0059	C518, C519	2	CAP, CA .1UF 100V 20%
CC0082	C521	1	CAP, CA .1UF 50V 20%
CC0021	C516	1	CAP, C 470PF 1KV 10%
CC0130	C524	1	CAP, CY1 4700PF 250V 20% 10MML
CE0040	C504	1	CAP, E 680UF 200V 30X35 85DEG
CE0136	C508, C509	2	CAP, E 820UF 200V 20% 30X35
CF0050	C510, C511, C512, C513, C520	5	CAP, F .1UF 250V 10%
CF0146	C517	1	CAP, F 6.8UF 250V 10% 27MMLS
	MISCELLANEOUS		
KS0021	R513	1	SURGISTOR, 4R 8A 70J SL154R008
BF0007	L502	1	BEAD, FERRITE
500111	T501	1	XFMR, ETD44
540131	L501	1	IND, 25UH UPRIGHT AIR COIL
TS0016	HtSkTube	6	TUBING, #5 BLACK CUT TO .3 Used on D504, D508, Q501, Q502, Q504 & Q507
HS0054		4	SCREW, #4 SELF TAP 1/2 PAN PHI USED ON H4, H5, H6, H7
HS0089		4	SCREW, #4-40X1/2 PAN PHIL ZNP USED ON HEATSINK
HW0030		4	WASHER, FLAT #8 NYLON USED WITH HS0089 ON HEATSINK
JH0074	J505	1	CNCTR, HEADER 8PIN LOCKING .1C
MT0023	J501, J502, J503, J504	4	TERM, FASTON MALE PCMT 187X032
810066	Clip	6	MET, HTSNK CLIP HPS SERIES Used on Q501, Q502, Q504, Q507, D504 & D508
810105	Heatsink	1	Lance and Form Heatsink Primary
810106	Heatsink	1	Lance and Form Heatsink Secondary There should be a piece of tape in between the heatsink and the PCB.
MS0017	Ceramic	2	MISC, CERAMIC PLATE TO-220 USED ON Q504, Q507
Q508		1	Do not insert
R516, R517, R539, R540, R541, R542, R543, R544		8	Do not insert
U502		1	Do not insert
Z507, Z508		2	Do not insert
PCB, EMI Filter board			
	SEMICONDUCTORS		
DB0009	D5	1	RECT, 6A 400V BRIDGE
	RESISTORS		
RC0004	R23	1	RES, CF 1M0 1/4W 5%
	CAPACITORS		
CC0130	C3	1	CAP, CY1 4700PF 250V 20% 10MML
CF0050	C4, C5	2	CAP, F .1UF 250V 10% 10MMLS
CF0057	C2	1	CAP, FX .22UF 250V 10%

IL60 Electrical Parts List (Cont.)

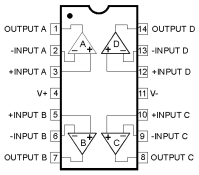
Part#	Reference Designator	Qty	Description
	MISCELLANEOUS		
KV0001	Z4	1	VARISTOR, 275V 100J .6W
MT0023	J5, J6	1	TERM, FASTON MALE PCMT 187X032
480097	J1	1	SUB, #18B 9 187X032/1/4STRP
480090	J2	1	SUB, #18R 9 187X032/1/4STRP
540124	L1	1	IND, CM CHOKE YT7271
810088		1	MET, Heatsink 1x2 Bridge
HN0006		1	NUT, HEX KEP #6-32 ZNP Used with screw HS0066
HS0066		1	SCREW, #6-32X1/2 PAN PHIL BLK Used on the bridge and heatsink
PCB, VOLUME-LED INTERLUDE LEFT			
DL0014	D1,D2	2	LED, 3MM BICOLOR RED/GR
RP0099	R1	1	POT, C10K SINGLE/BRKT D SHAFT
JH0006	J1	1	CNCTR, HEADER 4PIN .100CTR
HS0078		3	SCREW, #4-24X1/2 HL PP BLK USED ON 610043
HW0038		1	WASHER, FLAT .195ID .437OD RB AT PLASTIC HOUSING FOR CABLE.
		1	INTERLUDE VOL-LED MTG PLT LEFT
JC0169A		1	CNCTR, FEM-MA HARNESS 4PSH 15 USED ON LOCATION J1
MM0065		1	MISC, VOL GASKET L INTERLUDE
RP0104		1	POT, KNOB INTERLUDE LEVEL L
PCB, VOLUME-LED RIGHT			
DL0014	D1,D2	2	LED, 3MM BICOLOR RED/GR
RP0097	R1	1	POT, A10K SINGLE/BRKT D SHAFT
JH0006	J1	1	CNCTR, HEADER 4PIN .100CTR
HS0078		3	SCREW, #4-24X1/2 HL PP BLK USED ON 610044
HW0038		1	WASHER, FLAT .195ID .437OD RB AT PLASTIC HOUSING FOR CABLE.
INTERLUDE CUP R		1	INTERLUDE VOL-LED MTG PLT RIGH
JC0169A		1	CNCTR, FEM-MA HARNESS 4PSH 15 USED ON LOCATION J1
MM0066		1	MISC, VOL GASKET R INTERLUDE
RP0103		1	POT, KNOB INTERLUDE LEVEL R
	MISCELLANEOUS		
480033		3	SUB, #18R 4 187X032/187X032 1 PCS FOR IEC L TO FUSE; 1 PCS FOR FUSE TO SWITCH; 1 PCS FOR SWITCH TO EMI
480048		1	SUB, #18B 9 187X032/187X032 Power Supply CD- TO LINEAR CD-
480073		1	SUB, #18R 9 187X032/187X032 Power Supply CD+ TO LINEAR CD+
480083		2	SUB, #18B 4 187X032/187X032 1 for IEC TO SWITCH; 1 FOR SWITCH TO EMI
480091		1	SUB, #18R 7 187X032/187X032 DC+ TO POWER SUPPLY
480119		1	SUB, #16B 20 205X032/205X032 XOVER - WIRE;
480120		1	SUB, #16R 20 250X032/250X032 XOVER + WIRE;
480121		1	SUB, #16B 30 205X032/205X032 SPEAKER - WIRE;
480122		1	SUB, #16R 30 250X032/250X032 SPEAKER + WIRE;
480130		1	SUB, #18B 7 187X032/187X032 DC- TO POWER SUPPLY
810066		6	MET, HTSNK CLIP HPS SERIES USED ON D4, D8, Q1, Q2, Q4 & Q7
810088		1	MET, HTSNK 1X2 BRIDGE REV 2; USED WITH THE BRIDGE
810105		1	MET, HTSNK PRI 3FET IL120
810106		1	MET, HTSNK SEC 3FET IL120
810107		1	IL60/120 SHIELD
810108		1	IL60/120 POWER BRACKET

IL60 Electrical Parts List (Cont.)

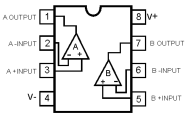
Part#	Reference Designator	Qty	Description
930054		1	CUP, PCBA BUCKET C/W GASKET FEATURE BOARD BOX
930055		1	CUP, AMP BUCKET AC IN W/GASKET AC BOX
FH0012		1	FUSE, HOLDER PANEL MT SEALED
FS0026		1	FUSE, 4A 250V 1.25X.25 GLASS
HN0006		1	NUT, HEX KEP #6-32 ZNP USED WITH THE BRIDGE
HN0015		4	NUT, HEX KEP #8-32 ZNP USED WITH HS0057
HS0004		4	SCREW, #6-32X1/4 PAN PHIL ZNP 1PER USED ON MZ0040; 1PER USED ON standoff P/N MZ0045; 2PER USED ON MM0025 for Linear board
HS0041		7	SCREW, #4-3/8 TYPE A PP BLK 2 USED ON EMI BOARD; 5 USED ON POWER SUPPLY BOARD
HS0057		4	SCREW, #8-32X1/2 PAN PHIL BLK MOUNT BRACKET TO PANEL
HS0060		3	SCREW, #6-32X3/8 PAN PHIL BLK MOUNT SHIELD TO BRACKET
HS0062		6	SCREW, #6-1/2 TYPE B PP BLK USED ON FETS
HS0065		3	SCREW, #6-32X1/4 PAN PHIL BLK 1 USED ON MZ0025 for Feature Board, 1 used on MZ0040, 1 used on standoff P/N NEW
HS0066		1	SCREW, #6-32X1/2 PAN PHIL BLK USED WITH THE BRIDGE
HS0067		26	SCREW, #6-3/8 TYPE A PP BLK 8 USED WITH 930054; 6 USED WITH 930055; 6pcs used on MZ0030; 3pcs used on MZ0040; 3 pcs used on MM0025
HS0078		6	SCREW, #4-24X1/2 HL PP BLK 2PER USED ON BINDING POSTS; 2PER USED ON RCA'S; 2PER USED ON RABOS STANDOFF
HS0089		4	SCREW, #4-40X1/2 PAN PHIL ZNP TO CONNCT THE HEATSINKS
IL60 PANEL		1	INTERLUDE IL60 PANEL COMPLETE
JC0071		1	CNCTR, FEM-FEM HARNESS 8PIN 9 USED ON THE RABOS BOARD TO FEATURE BOARD
JC0104		1	CNCTR, 2PIN BP GOLD C/W TERM
JC0129		1	CNCTR, AC IEC SOCKET .250 2PIN
JC0163A		1	CNCTR, FEM-MAL HARNESS 8P 10 J7 ON THE FEATURE TO J13 ON LINEAR BOARD
JC0163B		1	CNCTR, FEM-FEM HARNESS 8P 10 J7 ON THE FEATURE TO J13 ON LINEAR BOARD
JC0165		1	CNCTR, FEM-FEM HARNESS 8P 12 Power supply to Linear
JC0169C		1	CNCTR, FEM-FEM HARNESS 4PS 28 USED ON J9;
MM0069		3	MISC, RUBBER GROMMET IL50/100
MM0076		2	MISC, PANEL GASKET, IL60/IL120
MS0005		7	SILPAD, .009 .3C/W TO3P 3PER USED ON MAIN BOARD; 4PER USED ON THE LINEAR BOARD;
MZ0003		1	STANDOFF, 6-32 3/8 ROUND AL USED ON AC FILTER PCB
MZ0030		2	STANDOFF, 3/8 NYLON 2 PER USED ON AC FILTER BOARD
MZ0040		2	STANDOFF, 30MM NYLON USED ON THE RABOS BOARD
MZ0045		1	STANDOFF, 6-32X 1-3/16 HEX AL USED WITH THE RABOS BOARD
SR0032		1	SWITCH, ROCKER TV5 ON THE FRONT PANEL

Integrated Circuit Diagrams

OPAMP, QUAD 14P DIL LM324N,TL074/084
U1,2,5,6

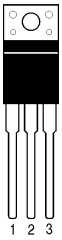


OPAMP, DUAL 8PIN DIL TL082
U2,7



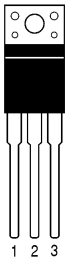
-18V LM7918CT
REGULATOR
U3

1. GROUND
2. INPUT
3. OUTPUT



+18V LM7818CT
REGULATOR
U2

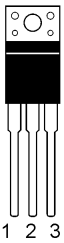
1. INPUT
2. GROUND
3. OUTPUT



JFET, J111, J113, Q5,9

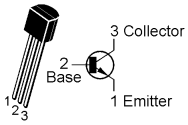
1. D
2. S
3. G

MOSFET, IRF640/740/9540,
Q3,4,7,8,501,502,504,507

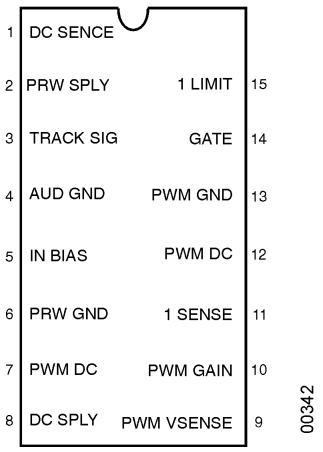


1. G
2. D
3. S

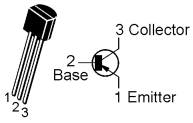
TRANS, NPN 150V 0.6A 2N5551, 2N4401,
Q2,6,505,506



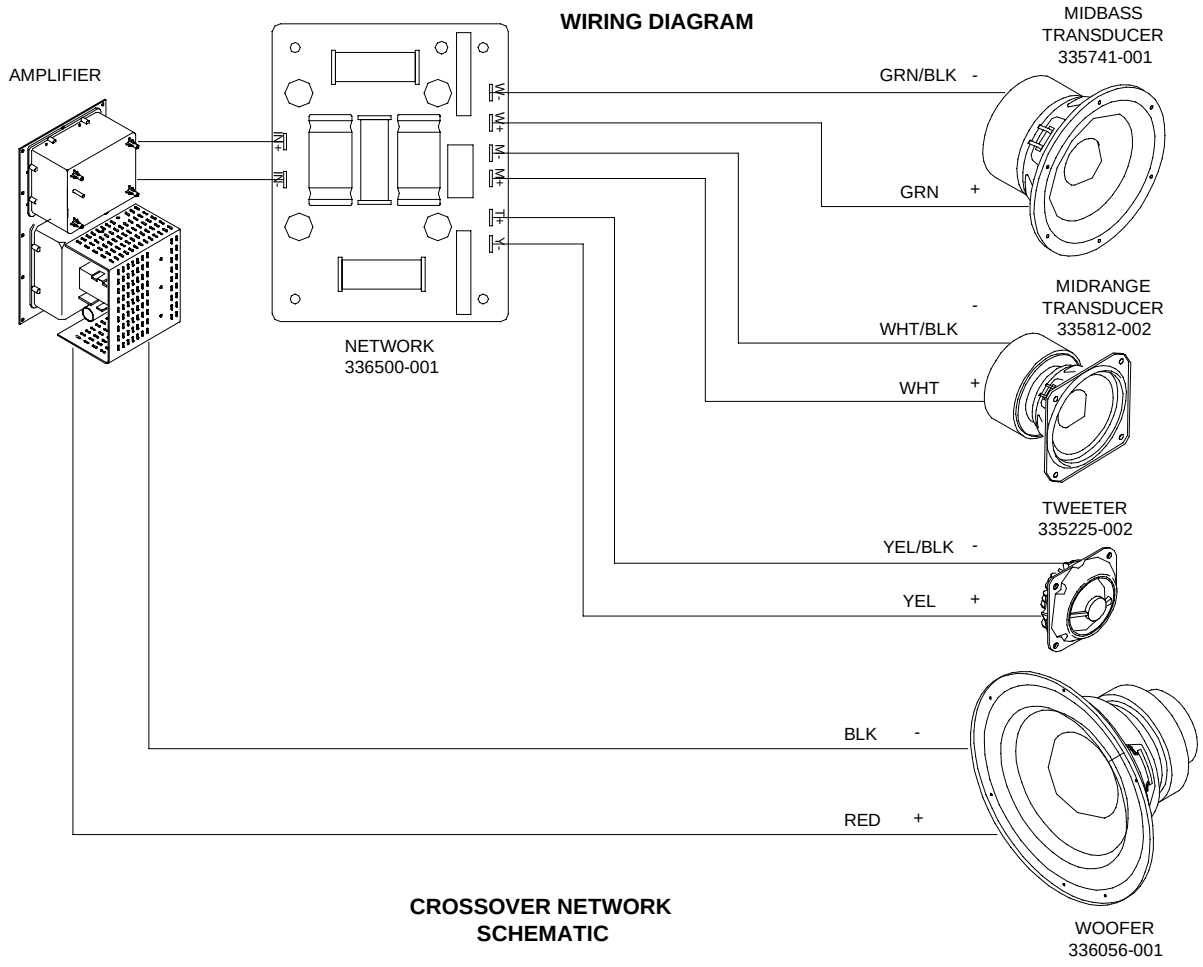
BASH CONTROLLER, U501



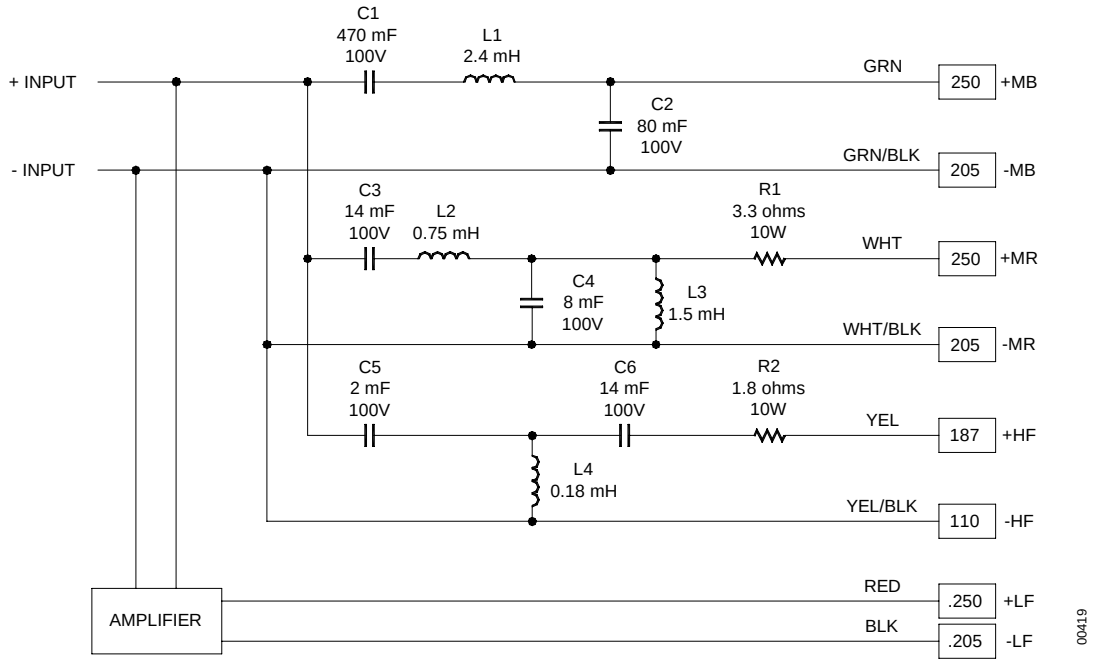
TRANS, PNP 150V 0.6A 2N5401,MPSA92TR
Q1,5,503



Wiring Diagram/Crossover Network



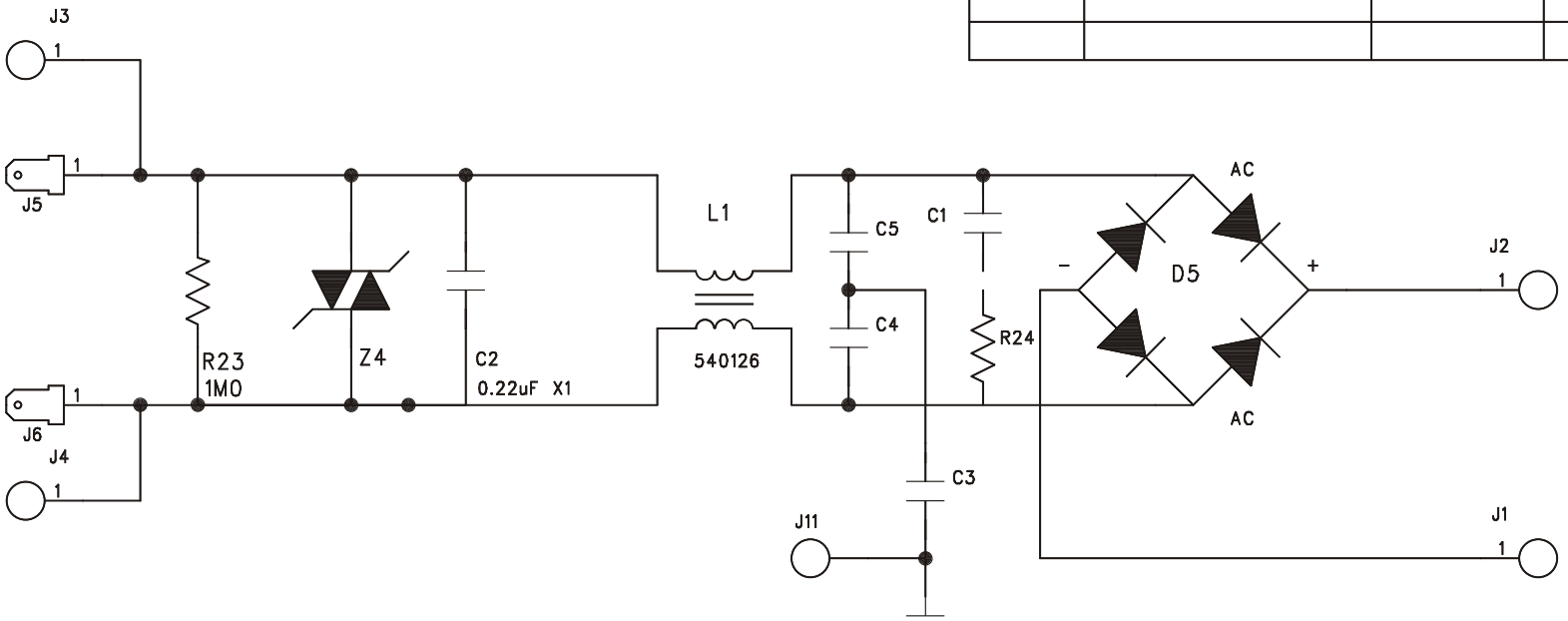
CROSSOVER NETWORK SCHEMATIC

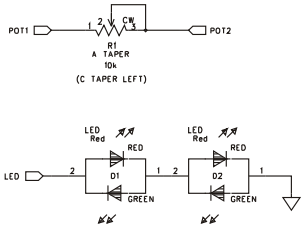


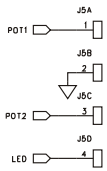
IL60

Infinity

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:
	see sheet 2		







500W EMI/Volume PCB's

IL60

Infinity

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:
A	First trial		Nov 22 99
B	Add R356,R357		Dec 8 99
C	ADD THERMAL SHUTDOWN		Feb 29 2000
D	Add R513,R518...R520		Jun 1 2000

See sheet 2 for changes

SUPPLY CONTROL TO LINEAR AMP

BASH SUPPLY

DRAWN: PATRICK LEE	DATED: NOV 12 99	
CHECKED:	DATED:	
QUALITY CONTROL:	DATED:	
RELEASED:	DATED:	

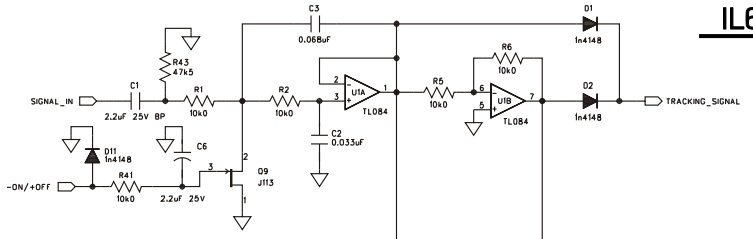
TITLE: INTERLUDE IL60 HC BASH 500W POWER SUPPLY 120V/230V SELECTABLE

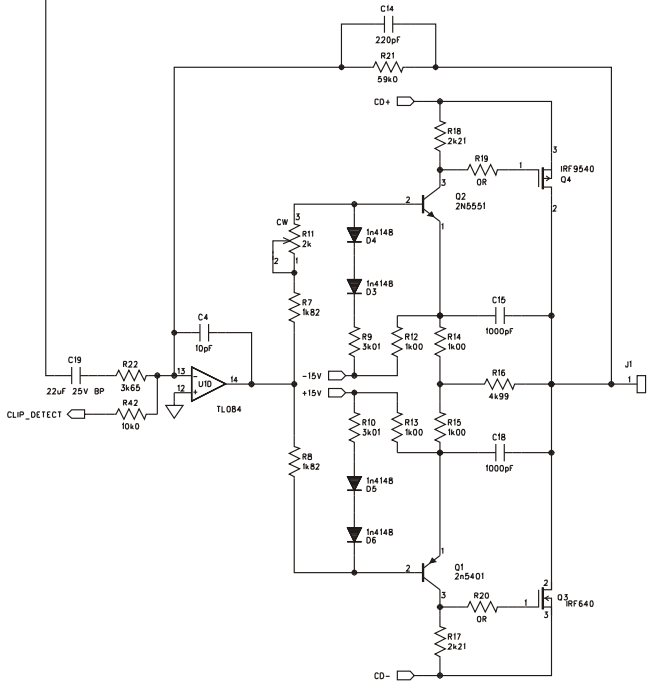
SCALE: | SHEET: 1 OF 2

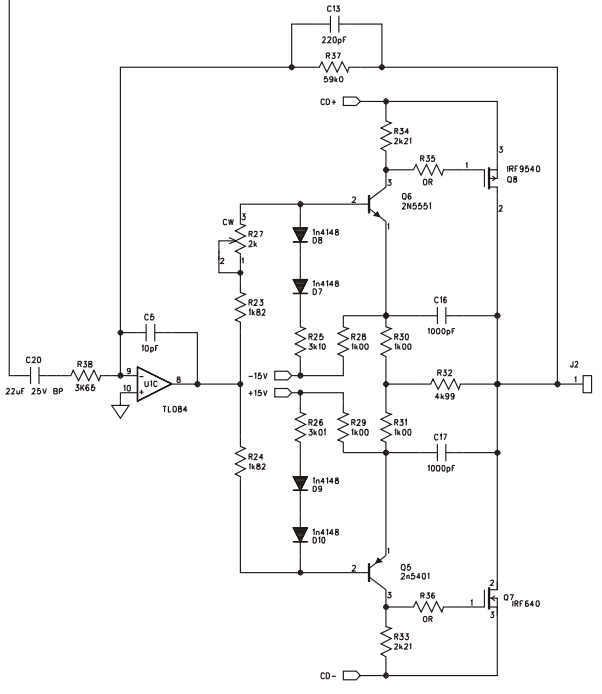
IL60

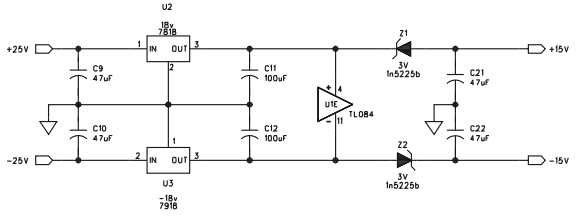
Infinity

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:
2	Title changed		03AUG00
	see sheet 2		

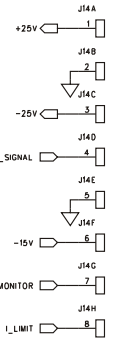




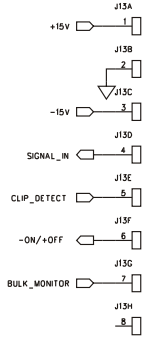




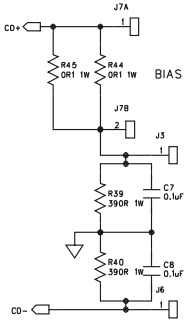
CLASS D

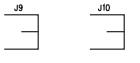


FEATURE



POWER SUPPLY





DRAWN: Doug Hansen	DATED: Oct.13.99
CHECKED:	DATED:
QUALITY CONTROL:	DATED:
RELEASED:	DATED:

TITLE: Interlude IL60 Linear Board

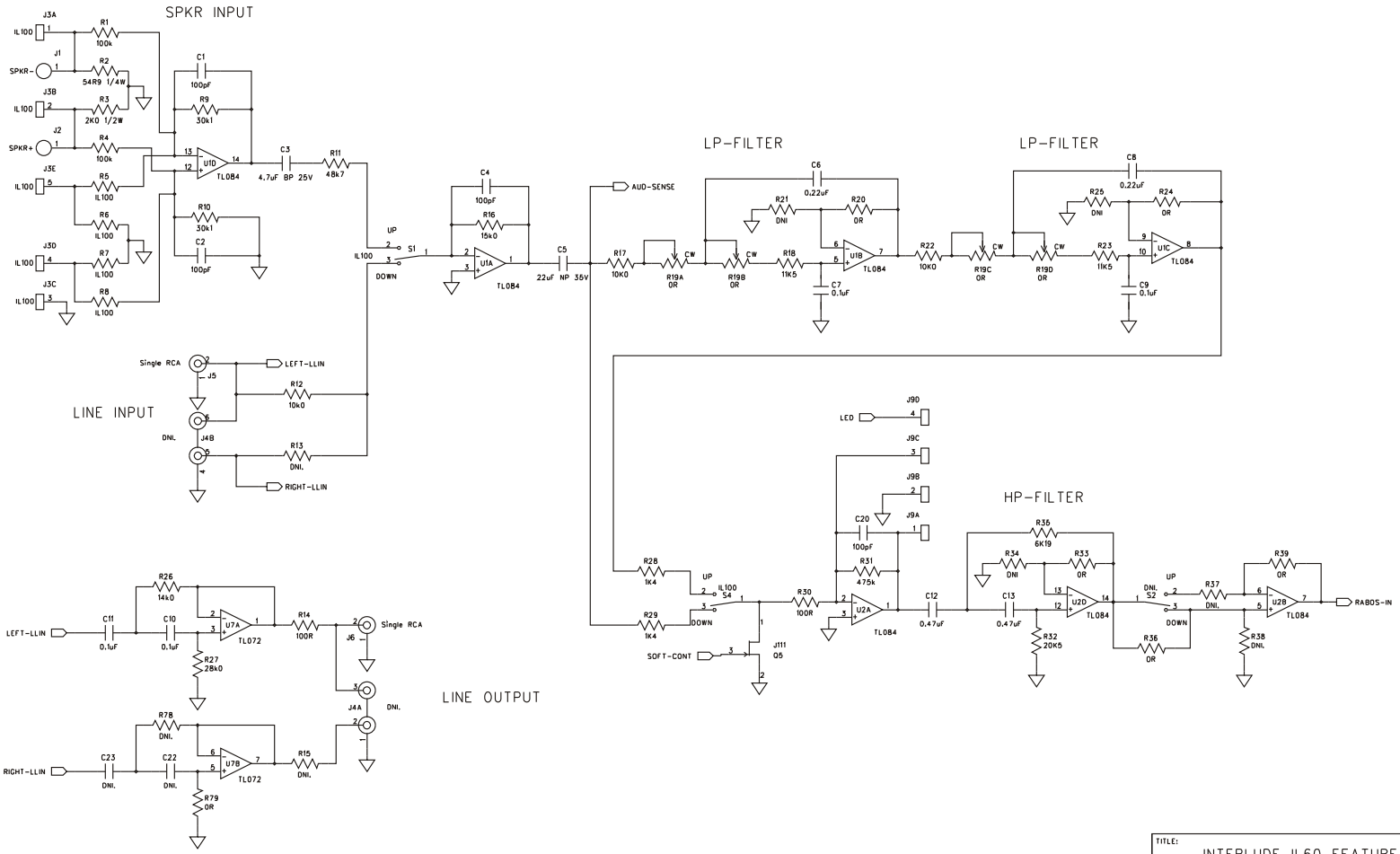
SCALE:

SHEET: 1 OF 2

IL60

Infinity

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:
1			18JUL00
2	R200 CHANGED TO 4K75		31JUL00
3	R2 CHANGED TO 54R9 1/4W		
	R3 CHANGED TO 2K0 1/2W		21AUG00



DRAWN: Doug Hansen	DATED: Dec.06.99
CHECKED:	DATED:
QUALITY CONTROL:	DATED:
RELEASED:	DATED:

TITLE: INTERLUDE IL60 FEATURE MAIN BOARD

SCALE:

SHEET 1 OF 2

IL60

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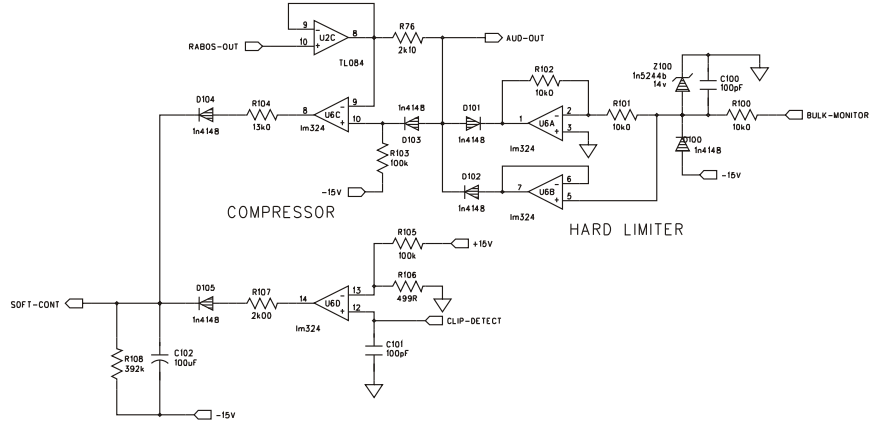
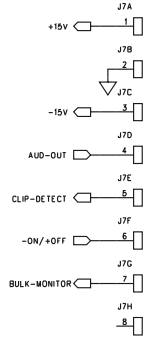
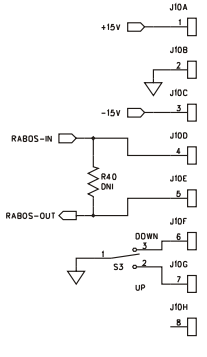
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

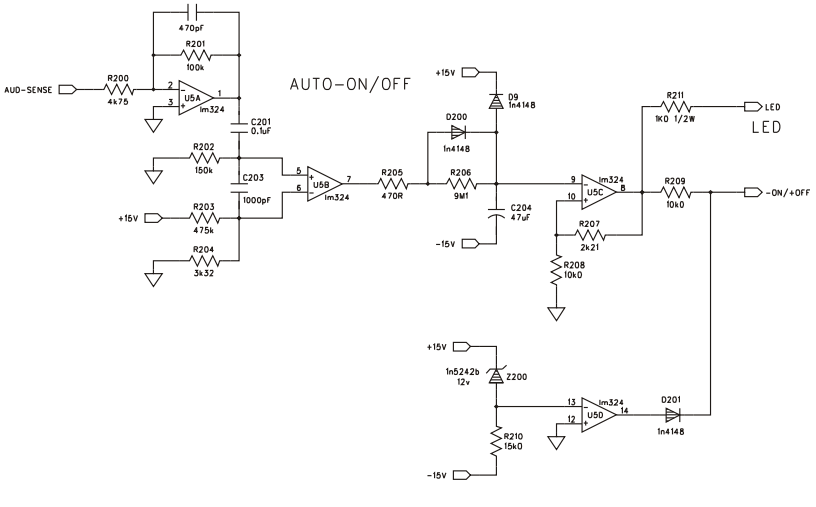


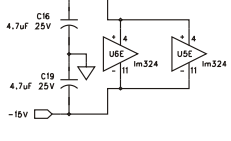
TO AMPLIFIER



TO RABOS



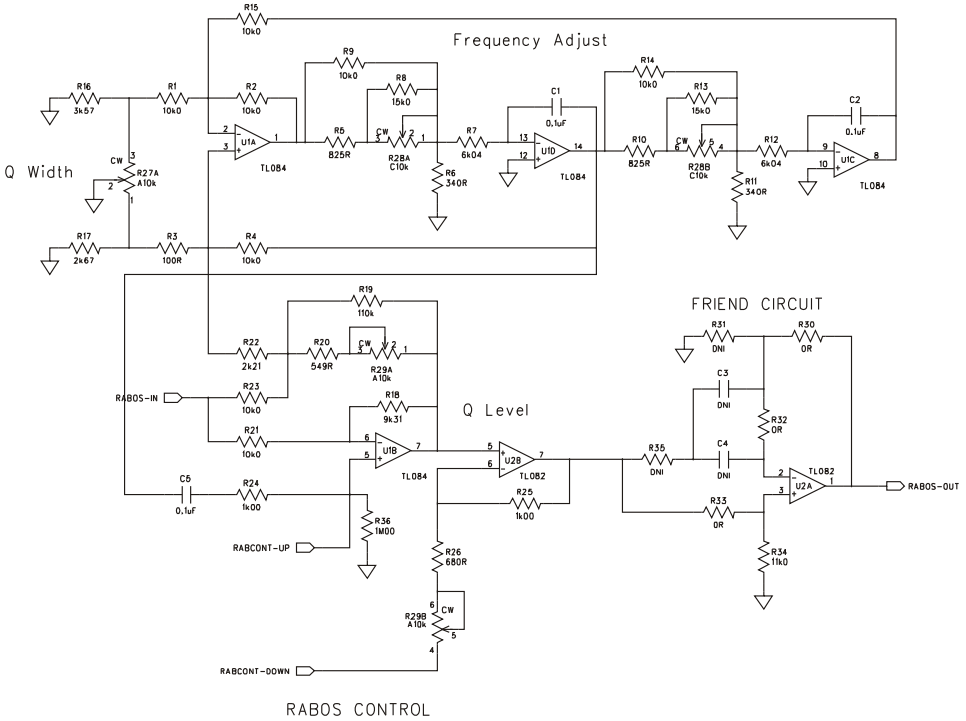


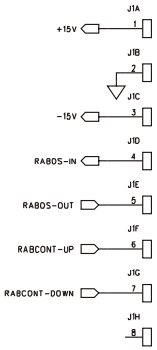


DRAWN: Doug Hansen	DATED: Dec.06.99	TITLE: INTERLUDE IL60 FEATURE HOUSEKEEPING
CHECKED:	DATED:	
QUALITY CONTROL:	DATED:	
RELEASED:	DATED:	SCALE: / SHEET 2 OF 2

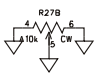
Infinity

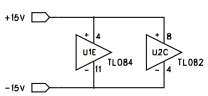
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:
1			18JUL00





UNUSED





DRAWN: Doug Hansen	DATED: Dec.06.99
CHECKED:	DATED:
QUALITY CONTROL:	DATED:
RELEASED:	DATED:

TITLE: Interlude IL60 Feature Rabos Board

SCALE:

SHEET: 1 OF 1

Rev.	Date	ECR No.	APPROVED	DESCRIPTION	Rev.
E	Jul 4 2000			Propose H10 for AUDIOGROUND	
F	Jul 28 2000			R527 Changed to 3K48	
G	Aug 29 2000			1. PCB CHANGED FROM REV E TO REV D TO CORRECT ERROR.	
				2. C504 CHANGED FROM 560UF TO 680UF	
				3.C505 CHANGED FROM 22UF CONNECTING D505 TO 47UF CONNECTING D506	
				4. C506 CHANGED LOCATION FROM CONNECTING D506 TO CONNECTING D507	
				5. C507 CHANGED FROM 47UF CONNECTING D507 TO 22UF CONNECTING D505	
				6. REF. DESIGNATOR OF C514 CHANGED TO C524	
				7. ADD D501 IN4936, WHICH IS NOT USED IN REV E	
				8. Q503 CHANGED FROM 2N5401 TO MPSA92	
				9. R516 & R517 CHANGED TO OPT	
				10. PIN 10 & 11 CHANGED FROM "CONNECTING D506 & R512" TO "CONNECTING	
				D505 & R511"	
				11. PIN 16 & 17 CHANGED FROM "CONNECTING D505 & R511" TO "CONNECTING	
				D506 & R512"	
0	Sep 12 2000		Q. KHALIFA	1. The Revision of PCB P/N 640022 changed to Rev 0.	
				2. D501 & D502 CHANGED FROM 1N4936 TO 1N3070.	
				3. R508 changed from "CONNECTING T501 PIN7" TO "CONNECTING PRI-".	
				4. R529 CHANGED FROM 3K65 TO 20K5.	
				5. R530 CHANGED FROM 5K11 TO 19K6.	
				6. R531 CHANGED FROM 31K6 TO 90K9.	
				R22 changed from 10K0 to 3K65	
				R38 changed from 10K0 to 3K65	