Technical Service Manual

PLX™ Series

- PLX 1202
- PLX 1602
- PLX 2402
- PLX 3002

QSC AUDIO

TD-000078-00

- PLX 1202



- PLX 1602



- PLX 2402



- PLX 3002



PLX SERIES
SERVICE MANUAL

PLX 1202
PLX 1602
PLX 2402
PLX 3002

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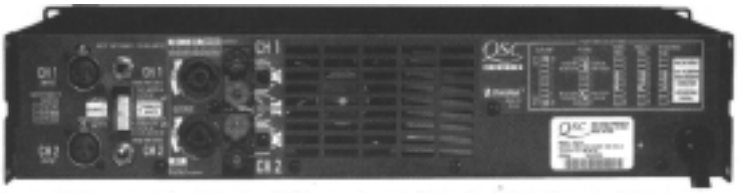
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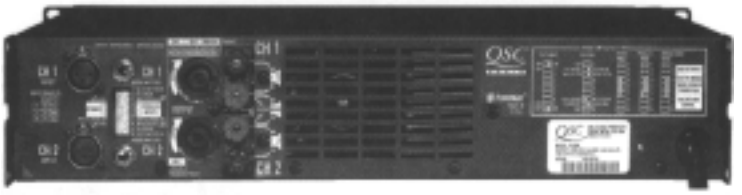
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PLX Product Specifications

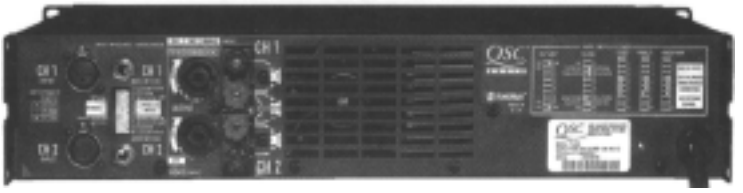
PLX 1202



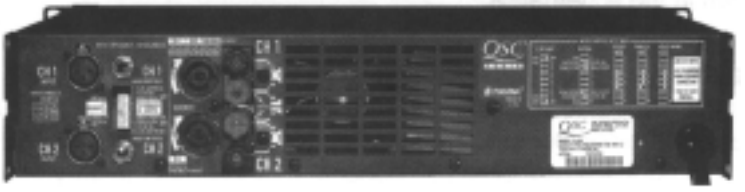
PLX 1602



PLX 2402



PLX 3002



	PLX1202	PLX1602	PLX2402	PLX3002
Output Power (per channel):				
Continuous Average Output Power both channels driven:				
8 ohms, 2OHz - 2OkHz 0.03% THD	200 watts	300 watts	425 watts	550 watts
4 ohms, 2OHz - 2OkHz 0.05% THD	325 watts	500 watts	700 watts	900 watts
Continuous Average Output Power bridged mono operation:				
8 ohms, 2OHz - 2OkHz, 0.1% THD	700 watts	1100 watts	1500 watts	2000 watts
Voltage **Gain (dB)**	32	32	32	32
Sensitivity (for rated power @ 8 ohms)	1.00 V rms	1.20 Vrms	1.50 Vrms	1.70 vrms
Distortion	SMPTE-IM Less than 0.01%			
Frequency Response (LF Switched Off)	2OHz to 20kHz, +/-0.2dB 8Hz to 5OkHz, +0/-3dB			
Damping Factor (1 kHz and Below)	Greater than 500			
Noise	106dB below rated output (20 Hz to 20 kHz)			
Input Impedance	6k unbalanced, 12k balanced			
Dimensions				
FaceplateWidth	Standard 19" Rack Mounting			
FaceplateHeight	3.5"	3.5"	3.5"	3.Y
ChassisDepth	13.25"	13.25"	13.25"	13.25"
Weight				
Net, Lbs/kg	2119.5	2119.5	2119.5	2119.5

Introduction

This manual is prepared to assist service personnel with the repair and calibration of PLX power amplifiers. The procedures described in this manual require advanced technical experience and sophisticated audio test equipment.



CAUTION: To reduce the risk of electric shock, do not remove the cover. No user-serviceable parts inside. Refer servicing to qualified personnel.



WARNING: To prevent fire or electric shock, do not expose this equipment to rain or moisture.



Documentation

This manual contains schematics, printed circuit board (PCB) drawings, parts lists, and mechanical assembly drawings. This information should be used in conjunction with the test and troubleshooting guide.

The electrical and electronic components are identified by circuit identification numbers on the schematics and the parts list. The test & troubleshooting sections refer to designations shown in the schematics.

Equivalent Parts

Although many of the electronic components used in this product may be available from electronic suppliers, some components are specially tested and approved by QSC. A product repaired with non-QSC supplied components may not meet factory specifications. Repairs performed using non-QSC parts may void the product warranty. When in doubt, you may contact QSC Technical Services for assistance.

Parts orders to QSC should include the product model number, the part description, and the QSC part number (from the parts list in this manual). Parts will be shipped via UPS, F.O.B. Costa Mesa, California. Shipping, handling and COD charges may be added to the cost of the parts.

Factory Repair

It may become necessary to return a product to the factory for repair. Call QSC Technical Services for return instructions. QSC Technical Services may be reached at (800) 772-2834.

Test and Troubleshooting Equipment

- Distortion Analyzer capable of 0.01% THD+N -Audio Precision - System One
- High Power Load Bank (8, 4, & 2 ohms)
- Thermometer
- Function Generator 8 Digital Multimeter
- 2OMHz Oscilloscope
- Variac (0-140 VAC, 30-40A)

T e s t & C a l i b r a t i o n

PLX 1202 Test Procedure

- SET-UP

1. Connect a test load to the output terminals of the amplifier.
2. Make sure Mode Switches 1 - 10 are in the default position (1 on, 10 on, all others off).
3. Connect a distortion analyzer with a resolution of 0.01%, 20-2OkHz (or better) to the output terminals of the amplifier. Enable the 8OkHz low pass filter.
4. Connect a dual-channel oscilloscope to the following test points:
   Chl - a 10X (vertical sensitivity - 2V/cm) scope probe to the channel speaker output.
   Ch2 - a IX scope probe (vertical sensitivity - 0.1V/cm) to the distortion analyzer output.
5. Set amp gain pots fully clockwise and turn on power switch.
6. Connect the output of the signal generator to the input terminals of the amplifier and select an output of 1.30 VRMS, 1 kHz sine wave.
7. Plug the amplifier into a variac and set up an AC line current monitor.

. POWER UP 8 MUTE DELAY TEST

CAUTION: To avoid damage to the main printed circuit board, place a 50 ohm 225W resistor (100 ohm, 240VAC) in series with the high (+) lead on the AC cable during variac ramp up. If the switching power supply has a shorted device at initial power up, this AC resistor pad will help prevent undue damage. After the amplifier has been fully powered up via the variac, confirm that the amplifier has achieved stable operation during idle. Remove AC power from the amplifier and disconnect the series resistor for normal operation. Continue with the test & calibration process.

1. Slowly raise the variac voltage and watch for excessive current draw (line current greater than 0.5A a.c. at 60 Volts). ***This is slightly less for 240V.*** Pause at 9OVAC (2OOVAC ***European)*** for three seconds until the mute I protect circuit disengages. Continue to 12OVAC (240V ***European).***
2. Verify that the fan is operating at low speed.
3. Turn the power switch off and on a few times to verify the 3 second power-up muting delay.

CHANNEL OUTPUT

1. Look for amplified signal on the scope for channel 1. Switch the input signal and scope to channel 2 and repeat output test. Check for noisy / contaminated gain pots by observing general instability on the distortion waveform while adjusting the gain control levels.
2. Select an 8 ohm load and confirm that this amplifier is producing 200 watts at 1 kHz just below the point of clipping. Check both channels.

BRIDGE MODE

1. Turn the power switch off.
2. Set Mode Switch #7 in the on position. The gain control, limiter, and filter switch positions on CH2 are disabled with Mode Switch #7 on.
3. Set load to both red output binding posts (CH1 positive and CH2 negative).
4. Apply a 1.30 VRMS, 1 kHz sinewave input to channel I of the amplifier. Check the power and verify that the output does not immediately collapse. Check for 700 watts at 8 ohms.

5. Turn power off and place the amplifier back into the Stereo mode with output loads connected to each channel.

. BIAS

1. Let the amplifier cool down to room temperature.
2. With an input amplitude of 1.3OVrms increase the input frequency to 2OkHz. Reduce the input signal 20dB (80%) from full output. Adjust the crossover trimpot VR43 (CH1) and VR166 (CH2) for about a 4OOmVpk-pk crossover spike protruding from the noise trace on the oscilloscope. It will be necessary to have the oscilloscope measure unfiltered distortion from the amplifier in order to see the crossover spike. It is necessary to disable the 80kHz lowpass filter on the analyzer for this test. Further trim so that the total distortion for that channel is less than 0.1% THD+N.
3. With the trim settings achieved, and with no signal plugged into the amplifier and with an 8 ohm load, verify that the AC idle current from the AC service is no more than 1 .O amperes.
4. Let the amplifier cool down and check channel 2.

. SHORT CIRCUIT CURRENT

1. Select a 2 ohm load and apply a 1.3Vrms sinewave (1 kHz) input signal to both channels of the amplifier. Ensure that power is on and that the gain controls are fully up.
2. While the amplifier is producing power into the loads, apply a short to the output binding posts of each channel. In other words, apply a jumper between the red and black binding posts of each channel. Once this is done, combined AC line current draw for both channels should be no greater than **13A** ac. This is with a 120 volt AC service to the amplifier. Current may be lower if AC line voltage is lower.
3. Remove the short from each channel and verify that the channels recover in to 2 ohm loads. The output should not experience any hang up and a full sinewave should be present just as it was before a short was applied for this test.
4. If the amplifier does not pass any of the above steps, troubleshoot the current limit section of the amplifier. If steps 2, 3, and 4 above pass, continue to the next test FREQUENCY RESPONSE.

FREQUENCY RESPONSE

1, Set load to 8 ohms and scale the input generator to gain 1 watt of power from the amplifier on each channel. Gain controls on the amplifier should be fully up.
2. Check frequency response from 2OHz to 20kHz (+/- 0.2OdB) by sweeping random frequencies between these extremes. This is done by verifying the same voltage amplitude at each of the frequencies selected (within 2OHz to 2OkHz). Check both channels.

POWER vs. DISTORTION TEST

I. Check to ensure that both channels will produce rated power at 2OHz, 2KHz, and 20kHz. into an 8 ohm load.
2. While verifying rated power, check that at all frequencies the distortion measurement is less than or equal to 0.03% THD.

THERMAL TEST

1. Set input frequency to 1 KHz and short both channels while they are producing power into a load.
2. Apply a short to the output of each channel.
3. AC line current draw should be about 11 - 13.5 amperes for both channels. As the amplifier gets hot, there will be some current drift upwards and the fan speed will increase. This is not a problem as long as the case temperature on the output transistors does not exceed 105 degrees C.

4. Verify that the NTC circuit causes thermal shutdown after an extended period.
5. When thermal shutdown occurs, verify AC idle current of less that 0.90 amperes

- CM TEST

1. Select an 8 ohm load and confirm that this amplifier is producing rated power.
2. Check the Common Mode of the amplifier by inserting a 1/4" input jack halfway into each channel and observe about 6 dB of output voltage reduction. There will also be a 180 degree phase inversion at the output of the channel under test.

- OUTPUT NOISE

1. Set the amplifier gain controls all the way up, with a 1 kHz 1.3OVrms sinewave input signal. Note the output level at full power just below clipping. Adjust gain if needed.
2. Remove the input signal connector from the amplifier and measure the residual noise level produced into the load by the amplifier. The noise signal should be 107 dB down from the full output power point measured. A signal to noise ratio should be better than or equal to 107dB. Check both channels.

- FINAL CHECK

This completes the amplifier test procedure for this model. Inspect the amplifier for mechanical defects. Inspect the solder connections. Reassemble the amplifier and verify the amplifier's operation before returning the product to service.

PLX 1602 Test Procedure

- SET-UP

1. Connect a test load to the output terminals of the amplifier.
2. Make sure Mode Switches ***1 - 10*** are in the default position (1 on, 10 on, all others off)
3. Connect a distortion analyzer with a resolution of 0.01%, 20-20kHz (or better) to the output terminals of the amplifier. Enable the 80kHz low pass filter.
4. Connect a dual-channel oscilloscope to the following test points:
   Ch1- a 1 OX (vertical sensitivity - 2V/cm) scope probe to the channel speaker output.
   Ch2 - a IX scope probe (vertical sensitivity - 0.1V/cm) to the distortion analyzer output.
5. Set amp gain pots fully clockwise and turn on power switch.
6. Connect the output of the signal generator to the input terminals of the amplifier and select an output of 1.30 VRMS, 1 kHz sine wave.
7. Plug the amplifier into a variac and set up an AC line current monitor.

- POWER UP 8 MUTE DELAY TEST

CAUTION: To avoid damage to the main printed circuit board, place a 50 ohm 225W resistor (100 ohm, 240VAC) in series with the high (+) lead on the AC cable during variac ramp up. If the switching power supply has a shorted device at initial power up, this AC resistor pad will help prevent undue damage. After the amplifier has been fully powered up via the variac, confirm that the amplifier has achieved stable operation during idle. Remove AC power from the amplifier and disconnect the series resistor for normal operation. Continue with the test & calibration process.

1. Slowly raise the variac voltage and watch for excessive current draw (line current greater than 0.5A a.c at 60 Volts). *This* is *slightly less* ***for*** 240V. Pause at 9OVAC *(200VAC* ***European)*** for three seconds until the mute / protect circuit disengages. Continue to 12OVAC (24OV ***European).***
2. Verify that the fan is operating at low speed.

3. Turn the power switch off and on a few times to verify the 3 second power-up muting delay.

. CHANNEL OUTPUT

1. Look for amplified signal on the scope for channel 1. Switch the input signal and scope to channel 2 and repeat output test. Check for noisy / contaminated gain pots by observing general instability on the distortion waveform while adjusting the gain control levels.
2. Select an 8 ohm load and confirm that this amplifier is producing 300 watts at 1 kHz just below the point of clipping. Check both channels.

. BRIDGE MODE

1. Turn the power switch off.
2. Set Mode Switch #7 in the on position. The gain control, limiter, and filter switch positions on CH2 are disabled with Mode Switch #7 on.
3. Set load to both red output binding posts (CH1 positive and CH2 negative).
4. Apply a 1.30 VRMS, 1 kHz sinewave input to channel 1 of the amplifier. Check the power and verify that the output does not immediately collapse. Check for 1000 watts at 8 ohms.
5. Turn power off and place the amplifier under test back into the Stereo mode with output loads connected to each channel.

. B I A S

I. Let the amplifier cool down to room temperature.
2. With an input amplitude of 1.3OVrms increase the input frequency to 20kHz. Reduce the input signal 20dB (80%) from full output. Adjust the crossover trimpot VR43 (CH1) and VR166 (CH2) for about a 4OOmVpk-pk crossover spike protruding from the noise trace on the oscilloscope. It will be necessary to have the oscilloscope measure unfiltered distortion from the amplifier in order to see the crossover spike. It is necessary to disable the 80kHz lowpass filter on the analyzer for this test. Further trim so that the total distortion for that channel is less than 0.1% THD+N.
3. With the trim settings achieved, and with no signal plugged into the amplifier and with an 8 ohm load, verify that the AC idle current from the AC service is no more than 1 .O amperes.
4. Let the amplifier cool down and check channel 2.

. SHORT CIRCUIT CURRENT

1. Select a 2 ohm load and apply a 1.3Vrms sinewave (1 kHz) input signal to both channels of the amplifier. Ensure that power is on and that the gain controls are fully up.
2. While the amplifier is producing power into the loads, apply a short to the output binding posts of each channel. In other words, apply a jumper between the red and black binding posts of each channel. Once this is done, combined AC line current draw for both channels should be no greater than 13A ac. This is with a 120 volt AC service to the amplifier. Current may be lower if AC line voltage is lower.
3. Remove the short from each channel and verify that the channels recover in to 2 ohm loads. The output should not experience any hang up and a full sinewave should be present just as it was before a short was applied for this test.
4. If the amplifier does not pass any of the above steps, troubleshoot the current limit section of the amplifier. If steps 2, 3, and 4 above pass, continue to the next test FREQUENCY RESPONSE.

FREQUENCY RESPONSE

1. Set load to 8 ohms and scale the input generator to gain 1 watt of power from the amplifier on each channel. Gain controls on the amplifier should be fully up.
2. Check frequency response from 2OHz to 20kHz (+/- 0.2OdB) by sweeping random frequencies between these extremes. This is done by verifying the same voltage amplitude at each of the frequencies selected (within 2OHz to 20kHz). Check both channels.

POWER vs. DISTORTION TEST

1. Check to ensure that both channels will produce rated power at 2OHz, 2KHz, and 20kHz. into an 8 ohm load.
2. While verifying rated power, check that at all frequencies the distortion measurement is less than or equal to 0.03% THD.

THERMAL TEST

1. Set input frequency to 1 KHz and short both channels while they are producing power into a load.
2. Apply a short to the output of each channel.
3. AC line current draw should be about 11 - 13.5 amperes for both channels. As the amplifier gets hot, there will be some current drift upwards and the fan speed will increase. This is not a problem as long as the case temperature on the output transistors does not exceed 105 degrees C.
4. Verify that the NTC circuit causes thermal shutdown after an extended period.
5. When thermal shutdown occurs, verify AC idle current of less that 0.90 amperes.

CM TEST

1. Select an 8 ohm load and confirm that this amplifier is producing rated power.
2. Check the Common Mode of the amplifier by inserting a 1/4" input jack halfway into each channel and observe about 6 dB of output voltage reduction. There will also be a 180 degree phase inversion at the output of the channel under test.

OUTPUT NOISE

1. Set the amplifier gain controls all the way up, with a 1 kHz 1.3OVrms sinewave input signal. Note the output level at full power just below clipping. Adjust gain if needed.
2. Remove the input signal connector from the amplifier and measure the residual noise level produced into the load by the amplifier. The noise signal should be 107 dB down from the full output power point measured. A signal to noise ratio should be better than or equal to 107dB. Check both channels.

FINAL CHECK

This completes the amplifier test procedure for this model. Inspect the amplifier for mechanical defects. inspect the solder connections. Reassemble the amplifier and verify the amplifier's operation before returning the product to service.

PLX 2402 Test Procedure

SET-UP

1. Connect a test load to the output terminals of the amplifier.
2. Make sure Mode Switches 1 - 10 are in the default position (1 on, 10 on, all others off).

3. Connect a distortion analyzer with a resolution of 0.01%, 20-20kHz (or better) to the output terminals of the amplifier. Enable the 80kHz low pass filter.
4. Connect a dual-channel oscilloscope to the following test points:
   Chl - a 1OX (vertical sensitivity - 2V/cm) scope probe to the channel speaker output.
   Ch2 - a IX scope probe (vertical sensitivity - 0.1V/cm) to the distortion analyzer output.
5. Set amp gain pots fully clockwise and turn on power switch.
6. Connect the output of the signal generator to the input terminals of the amplifier and select an output of 1.50 VRMS 1 kHz sine wave.
7. Plug the amplifier into a variac and set up an AC line current monitor.

POWER UP & MUTE DELAY TEST

CAUTION: To avoid damage to the main printed circuit board, place a 50 ohm 225W resistor (100 ohm, 240VAC) in series with the high (+) lead on the AC cable during variac ramp up. if the switching power supply has a shorted device at initial power up, this AC resistor pad will help prevent undue damage. After the amplifier has been fully powered up via the variac, confirm that the amplifier has achieved stable operation during idle. Remove AC power from the amplifier and disconnect the series resistor for normal operation. Continue with the test & calibration process.

1. Slowly raise the variac voltage and watch for excessive current draw (line current greater than 0.5A a.c at 60 Volts). *This* is *slightly less for* 24OV. Pause at 9OVAC *(200VAC* ***European)*** for three seconds until the mute / protect circuit disengages. Continue to 12OVAC *(240V* ***European).***
2. Verify that the fan is operating at low speed.
3. Turn the power switch off and on a few times to verify the 3 second power-up muting delay.

CHANNEL OUTPUT

I. Look for amplified signal on the scope for channel 1. Switch the input signal and scope to channel 2 and repeat output test. Check for noisy / contaminated gain pots by observing general instability on the distortion waveform while adjusting the gain control levels.
2. Select an 8 ohm load and confirm that this amplifier is producing 425 watts at 1 kHz just below the point of clipping. Check both channels.

BRIDGE MODE

1. Turn the power switch off.
2. Set Mode Switch #7 in the on position. The gain control, limiter, and filter switch positions on CH2 are disabled with Mode Switch #7 on.
3. Set load to both red output binding posts (CH1 positive and CH2 negative).
4. Apply a 1.30 VRMS, 1 kHz sinewave input to channel 1 of the amplifier. Check the power and verify that the output does not immediately collapse. Check for 1500 watts at 8 ohms.
5. Turn power off and place the amplifier under test back into the Stereo mode with output loads connected to each channel.

B I A S

1. Let the amplifier cool down to room temperature.
2. With an input amplitude of 1.5OVrms, increase the input frequency to 2OkHz. Reduce the input signal 20dB (80%) from full output. Adjust the crossover trimpot VR43 (CH1) and VR166 (CH2) for about a 4OOmVpk-pk crossover spike protruding from the noise trace on the oscilloscope. It will be necessary to have the oscilloscope measure unfiltered distortion from the amplifier in order to see the crossover spike. It is necessary to

disable the 80kHz lowpass filter on the analyzer for this test. Further trim so that the total distortion for that channel is less than 0.1% THD+N,

3. With the trim settings achieved, and with no signal plugged into the amplifier and with an 8 ohm load, verify that the AC idle current from the AC service is no more than 1 .O amperes.
4. Let the amplifier cool down and check channel 2.

SHORT CIRCUIT CURRENT

1. Select a 2 ohm load and apply a 1.3Vrms sinewave (1 kHz) input signal to both channels of the amplifier. Ensure that power is on and that the gain controls are fully up.
2. While the amplifier is producing power into the loads, apply a short to the output binding posts of each channel. In other words, apply a jumper between the red and black binding posts of each channel. Once this is done, combined AC line current draw for both channels should be no greater than 13A ac. This is with a 120 volt AC service to the amplifier. Current may be lower if AC line voltage is lower.
3. Remove the short from each channel and verify that the channels recover in to 2 ohm loads. The output should not experience any hang up and a full sinewave should be present just as it was before a short was applied for this test,
4. If the amplifier does not pass any of the above steps, troubleshoot the current limit section of the amplifier. If steps 2, 3, and 4 above pass, continue to the next test FREQUENCY RESPONSE.

FREQUENCY RESPONSE

1. Set load to 8 ohms and scale the input generator to gain 1 watt of power from the amplifier on each channel. Gain controls on the amplifier should be fully up.
2. Check frequency response from 2OHz to 20kHz (+/- 0.2OdB) by sweeping random frequencies between these extremes. This is done by verifying the same voltage amplitude at each of the frequencies selected (within 2OHz to 20kHz). Check both channels.

POWER vs. DISTORTION TEST

1. Check to ensure that both channels will produce rated power at 2OHz, 2KHz, and 20kHz. into an 8 ohm load.
2. While verifying rated power, check that at all frequencies the distortion measurement is less than or equal to 0.03% THD.

THERMAL TEST

1. Set input frequency to 1 KHz and short both channels while they are producing power into a load.
2. Apply a short to the output of each channel.
3. AC line current draw should be about 11 - 13.5 amperes for both channels. As the amplifier gets hot, there will be some current drift upwards and the fan speed will increase, This is not a problem as long as the case temperature on the output transistors does not exceed 105 degrees C.
4. Verify that the NTC circuit causes thermal shutdown after an extended period.
5, When thermal shutdown occurs, verify AC idle current of less that 0.90 amperes.

CM TEST

I. Select an 8 ohm load and confirm that this amplifier is producing rated power.
2. Check the Common Mode of the amplifier by inserting a 1/4" input jack halfway into each channel and observe about 6 dB of output voltage reduction. There will also be a 180 degree phase inversion at the output of the channel under test.

OUTPUT NOISE

1. Set the amplifier gain controls all the way up, with a I kHz 1.5OVrms sinewave input signal. Note the output level at full power just below clipping. Adjust gain if needed.
2. Remove the input signal connector from the amplifier and measure the residual noise level produced into the load by the amplifier. The noise signal should be 107 dB down from the full output power point measured. A signal to noise ratio should be better than or equal to 107dB. Check both channels.

FINAL CHECK

This completes the amplifier test procedure for this model. Inspect the amplifier for mechanical defects. Inspect the solder connections. Reassemble the amplifier and verify the amplifier's operation before returning the product to service,

PLX 3002 Test Procedure

SET-UP

1. Connect a test load to the output terminals of the amplifier.
2. Make sure Mode Switches 1 - 10 are in the default position (1 on, 10 on, all others off).
3. Connect a distortion analyzer with a resolution of 0.01%, 20-20kHz (or better) to the output terminals of the amplifier. Enable the 80kHz low pass filter.
4. Connect a dual-channel oscilloscope to the following test points:
   Chl - a 1OX (vertical sensitivity - 2V/cm) scope probe to the channel speaker output.
   Ch2 - a 1X scope probe (vertical sensitivity - 0.1V/cm) to the distortion analyzer output.
5. Set amp gain pots fully clockwise and turn on power switch.
6. Connect the output of the signal generator to the input terminals of the amplifier and select an output of 1.70 VRMS, 1 kHz sine wave.
7. Plug the amplifier into a variac and set up an AC line current monitor.

. POWER UP 8 MUTE DELAY TEST

CAUTION: To avoid damage to the main printed circuit board, place a 50 ohm 225W resistor (100 ohm, 240VAC) in series with the high (+) lead on the AC cable during variac ramp up. If the switching power supply has a shorted device at initial power up, this AC resistor pad will help prevent undue damage. After the amplifier has been fully powered up via the variac, confirm that the amplifier has achieved stable operation during idle. Remove AC power from the amplifier and disconnect the series resistor for normal operation. Continue with the test & calibration process.

1. Slowly raise the variac voltage and watch for excessive current draw (line current greater than 0.5A a.c. at 60 Volts). *This is slightly* less ***for*** *240V.* Pause at 9OVAC *(200VAC* ***European)*** for three seconds until the mute / protect circuit disengages. Continue to 12OVAC (240V ***European).,***
2. Verify that the fan is operating at low speed.
3. Turn the power switch off and on a few times to verify the ***3*** second power-up muting delay.

CHANNEL OUTPUT

1. Look for amplified signal on the scope for channel 1. Switch the input signal and scope to channel 2 and repeat output test. Check for noisy I contaminated gain pots by observing general instability on the distortion waveform while adjusting the gain control levels.

2. Select an 8 ohm load and confirm that this amplifier is producing 550 watts at 1 kHz just below the point of clipping. Check both channels.

BRIDGE MODE

1. Turn the power switch off.
2. Set Mode Switch #7 in the on position. The gain control, limiter, and filter switch positions on CH2 are disabled with Mode Switch # 7 on.
3. Set load to both red output binding posts (CH1 positive and CH2 negative).
4. Apply a 1.30 VRMS, 1 kHz sinewave input to channel 1 of the amplifier. Check the power and verify that the output does not immediately collapse. Check for 2000 watts at 8 ohms.
5. Turn power off and place the amplifier under test back into the Stereo mode with output loads connected to each channel.

BIAS

1. Let the amplifier cool down to room temperature.
2. With an input amplitude of 1.7OVrms increase the input frequency to 20kHz. Reduce the input signal 20dB (80%) from full output. Adjust the crossover trimpot VR43 (CH1) and VR166 (CH2) for about a 4OOmVpk-pk crossover spike protruding from the noise trace on the oscilloscope. It will be necessary to have the oscilloscope measure unfiltered distortion from the amplifier in order to see the crossover spike. It is necessary to disable the 80kHz lowpass filter on the analyzer for this test. Further trim so that the total distortion for that channel is less than 0.1% THD+N.
3. With the trim settings achieved, and with no signal plugged into the amplifier and with an 8 ohm load, verify that the AC idle current from the AC service is no more than 1 .O amperes.
4. Let the amplifier cool down and check channel 2.

SHORT CIRCUIT CURRENT

1. Select a 2 ohm load and apply a 1.3Vrms sinewave (1 kHz) input signal to both channels of the amplifier. Ensure that power is on and that the gain controls are fully up.
2. While the amplifier is producing power into the loads, apply a short to the output binding posts of each channel. In other words, apply a jumper between the red and black binding posts of each channel. Once this is done, combined AC line current draw for both channels should be no greater than **13A** ac. This is with a 120 volt AC service to the amplifier. Current may be lower if AC line voltage is lower.
3. Remove the short from each channel and verify that the channels recover in to 2 ohm loads. The output should not experience any hang up and a full sinewave should be present just as it was before a short was applied for this test.
4. If the amplifier does not pass any of the above steps, troubleshoot the current limit section of the amplifier. If steps 2, 3, and 4 above pass, continue to the next test FREQUENCY RESPONSE.

FREQUENCY RESPONSE

1. Set load to 8 ohms and scale the input generator to gain I watt of power from the amplifier on each channel. Gain controlson the amplifier should be fully up.
2. Check frequency response from 2OHz to 20kHz (+/- 0.2OdB) by sweeping random frequencies between these extremes. This is done by verifying the same voltage amplitude at each of the frequencies selected (within 2OHz to 20kHz). Check both channels.

POWER vs. DISTORTION TEST

1. Check to ensure that both channels will produce rated power at 20Hz, 2KHz, and 20kHz. into an 8 ohm load.
2. While verifying rated power, check that at all frequencies the distortion measurement is less than or equal to 0.03% THD.

THERMAL TEST

I. Set input frequency to 1 KHz and short both channels while they are producing power into a load.
2. Apply a short to the output of each channel.
3. AC line current draw should be about 11 - 13.5 amperes for both channels. As the amplifier gets hot, there will be some current drift upwards and the fan speed will increase. This is not a problem as long as the case temperature on the output transistors does not exceed 105 degrees C.
4. Verify that the NTC circuit causes thermal shutdown after an extended period.
5. When thermal shutdown occurs, verify AC idle current of less that 0.90 amperes.

CM TEST

1. Select an 8 ohm load and confirm that this amplifier is producing rated power.
2. Check the Common Mode of the amplifier by inserting a 1/4" input jack halfway into each channel and observe about 6 dB of output voltage reduction. There will also be a 180 degree phase inversion at the output of the channel under test.

OUTPUT NOISE

1. Set the amplifier gain controls all the way up, with a 1 kHz 1.7OVrms sinewave input signal. Note the output level at full power just below clipping. Adjust gain if needed.
2. Remove the input signal connector from the amplifier and measure the residual noise level produced into the load by the amplifier. The noise signal should be 107 dB down from the full output power point measured. A signal to noise ratio should be better than or equal to 107dB. Check both channels.

FINAL CHECK

This completes the amplifier test procedure for this model. Inspect the amplifier for mechanical defects. Inspect the solder connections. Reassemble the amplifier and verify the amplifier's operation before returning the product to service.

T r o ubleshooting

PLX 1202 | PLX 1602 | PLX 2402 | PLX 3002

Power Supply - - Replacing Blown IGBTs.

In order to improve EMI performance, reduce cost, and increase current capacity, the PLX IGBT's are driven by an active, direct coupled integrated circuit, rather than a gate drive transformer. IGBT or driver failure should be rare (when correctly assembled) but when the IGBT's blow, it usually damages the following parts:

CHECKLIST AFTER BLOWN IGBT'S

Q96, Q97, (IGBT's generally fail in pairs)
D78, D79, R358, R359, gate drive coupling comonents, check after removing blown IGBT's.
U18, IR2110 high-side gate driver, Fault current when low-side IGBT shorts to upper rail. Such currents also typically damage the gate coupling parts noted above.
U19, 3525 controller, Blows from currents shorted thru U18, or possibly by overvoltage on the supply rail
SOMETIMES U14, 556, powered from 5V output of 3525, which may fail high when 3525 fails.
RARELY U13, which has fairly high supply voltage ratings.

PROBABLE CAUSES OF MASSIVE IGBT FAULTS

SHORTS IN CONTROL CIRCUIT.
The parts operate well within their ratings and should hold up well in the field. The usual cause of failure is when both IGBT's turn on at once, shorting Pri-Hi to Pri-Lo. This occurs when something causes the drive signal to one part to remain on when the other part is supposed to turn on. Shorts from solder or debris are one obvious cause.

SHORTS IN THE LOAD.
Although there is peak current shutdown, shorts in the power amplifier transistors or secondary-side supply components can cause currents to increase too quickly to prevent damage.

OVERVOLTAGE ON THE BIAS SUPPLY.
If the TOP-210 bias supply fails to operate, no harm occurs, the unit simply does not operate.
However, open circuit (missing part) in several key components can cause the Bias supply voltage to be much too high, This blows the 2110 and thus the IGBT's.

QUICK TEST OF BIAS SUPPLY.
Ramp the AC voltage up slowly to 25% of regular voltage (30V for 120V unit). If the bias supply is working normally, the green "power" LED should come on between 30 and 35V, with its usual, steady "half-bright" start-up level. If the LED comes on at 20V, or not until 50V, or blinks, DO NOT RAISE VOLTAGE PAST 60V until you have measured the bias voltage. The switching will not start until you reach 90V, so you can save the IGBT's from blowing.
Confirm that bias voltage at CI38 is 18-19V. Open or missing D63, 64, 65, 66, 67 or R349 will break the feedback to U16 and cause overvoltage.

Troubleshooting “TOP-210” Bias Supply.

QUICK TEST OF BIAS SUPPLY.
Ramp the AC voltage up slowly to 25% of regular voltage (30V for 120V unit). If the bias supply is working normally, the green “power” LED should come on between 30 and 35V, with its usual, steady "half-bright" start-up level.
CAUTION: if the LED comes on at 20V, or not until 50V, or blinks, DO NOT RAISE VOLTAGE PAST 60V until you have measured the bias voltage. The switching will not start until you reach 90V, so you can save the IGBT’s from blowing.
Confirm that bias voltage at Cl38 is 18-19V.

BIAS SUPPLY VOLTAGE MUCH TOO HIGH
D63,64,65,66,67 or R349 open or missing -- breaks feedback to U16

NO BIAS SUPPLY VOLTAGE
U16 missing or blown.
Tl missing, reversed, or open primary
D62 open or missing.

BIAS VOLTAGE ERRORS
The exact voltage is controlled by the feedback through D63, 64_ 65, 66, 67 and R349 as follows:
Cl38 is the “+18V’ rail with about 18.8V typical.
D63, 64, 65 each subtract a diode drop (0.7V) from Cl38.
Cl39 , is the “+16V” rail with about 16.6V typcial.
D66, a 10V zener diode , plus diode D67, subtract about 1 IV from +16.6V.
R349 subtracts about 0.5V, bringing the net voltage at U16, feedback pin 4, to about 5.IV.
U16 uses this feedback to adjust the “on” time at pin 5, in order toraise or lower the flyback voltage charging Cl38 and thus maintain regulation of the +16V and +18V supplies
C142, R356, and R349 form a closed-loop stability circuit which prevents the regulated voltage from “hunting”.
Q99 and associated R374 reduce the voltage of the Bias supply by 33% when the AC voltage is turned off. This prevents the Power LED from showing at half brightness after turn-off, since U16 continues to run from the main filters for some time after shut down R375 and 376 sense the output of U13:3, the “Loss of AC” comparator, and cause Q99 to turn on. If Q99 is shorted, the bias voltages will remain 33% low when AC is turned on.

REPLACING BLOWN TOP-210.
If U16 has blown, check T-l for continuity after removing U16. Its primary may be open. Pins I-2 It should measure about 15 ohms

Replacing Blown Output Transistors

OUTPUT TRANSISTOR SHORTED
Shorts in one device tend to cause the opposing device to blow as well,
If an output transistor shorts:

Drive transistor will be shorted (Q26, Q27, Q71, Q72)
Some transistors will short in pairs (Q39 & Q40, Q36 & Q37, Q84 8 Q85, Q81 & Q82)
The rest will short in fours (Q28, Q29, Q34 & Q35; Q73, Q74, Q79 & Q80)
IGBT’s 8 their associated components may fail

CHECK EMITTER AND BASE RESISTORS WHILE DEVICES ARE REMOVED,
Each output transistor has an associatated pair of 0.47 ohm resistors in parallel.
Each BANK of output transistors has a 15 ohm resistor from base to rail (emitter bus).

Audio Outputs, Troubleshooting Current Limit

WEAK CURRENT LIMIT -- PREMATURE CLIPPING.
The usual symptom of weak output current is premature clipping of one or more peaks of the audio voltage. This could be caused by missing step, weak current limit, or dead output section.

PREMATURE CLIPPING at 60% VOLTAGE, SIMILAR AT ALL IMPEDANCES:
This points to a step problem (2402, 3002 only). See Step Troubleshooting.
If the amplifier reaches full voltage at 8 ohms, but prematurely clips at 4 ohms or 2 ohms, we can assume the step is OK but the output current is too low (see below).

NO OUTPUT AT ALL ON ONE POLARITY.
This indicates complete failure (open circuit) in the circuit leading to the dead output polarity. Check the series components in the current splitter for missing or open:
Ch 1: Positive, Q19, R381, Q20, R70, D10, D14. Negative: Q22, R382, Q21, R71, Dl 1, D12
Ch 2: Positive, Q64, R383, Q65, R193, D35, D39. Negative: Q67, R384, Q66, R194, D36, D37

CONSTANT, PREMATURE CLIPPING, WORSE AT LOW IMPEDANCES.
First, check the clamping voltages on C21 (Ch 1+), C22 (Ch I-), C56 (Ch 2+), C57 (Ch 2-), as shown in table below. At idle, all four voltages should all be similar. If one is out, check parts according to the following table

CLAMPING VOLTAGES ARE WRONG AT IDLE

CHANNEL-POLARITY	CH 1+	CH 1-	CH 2+	CH 2-
Measure voltage on: 3002 and 2402, about 6V. 1602, about 4,6V, 1202 about 4.9V.	c21	c22	C56	c57
Voltage too high: missing resistor:	R60	R61	R183	R184
or missing transistor:	Q14	Q15	Q59	Q60
Voltage 0-0.3V: shorted transistor	Q14, 24	Q15, 25	Q59,69	Q60,70
or missing resistor	R 51, 72	R53, 75	R174, 195	R176, 198
Voltage 0.7V, missing resistor:	R59	R62	R182	R185
Voltage wrong: wrong value	R59,60	R62,61	R182, 183	R185, 184

The exact voltage varies with temperature. Look for the mismatching value on the weak cell.
A too-low voltage causes early clamping of that output section, as explained in the previous several pages.

If the voltage is correct and current is still low, also check for missing - unsoldered output device, or emitter resistors.

Audio Power Stage, Current Limit Troubleshooting

CURRENT LIMITS WHICH COLLAPSE PREMATURELY.
An immediate collapse of ALL current limits at full power could be premature triggering of “Power Supply Cutback”, which is described in the section below. Cutback after several seconds of full power operation at two ohms is normal.
Cutback of one or more output sections, at full temperature, while approaching full power into two ohms is also normal. However, cutbacks at 4 ohms, or when cold into two ohms, indicate problems with the transistor power measuring circuitry.

CLAMPING VOLTAGES COLLAPSE TOO SOON.

CHANNEL-POLARITY	CH 1+	CH 1-	CH 2+	CH 2-
Measure voltage on:	c21	c22	C56	c57
Cuts back too easily: low value,	R67, 73	R68, 74	R190, 196	R191, 197
or high value:	R 51, 72	R53, 75	R174, 195	R176, 198
or missing diode:	D9	D8	D34	D33

CLAMPING VOLTAGES ARE CORRECT, CURRENT STILL WEAK.

Shorted diode	D10, 14	D11, 12	D35, 39	D36, 37

Missing-unsoldered output device or emitter resistor.

TROUBLESHOOTING “POWER SUPPLY CUTBACK”.
As noted in the section on Power Supply, the ***amplifier's*** current limit cuts back when necessary to protect the power supply. Because the Observed effect is a reduced output voltage, in response to prolonged operation above the long-term current limit, we commonly refer to this behavior as “power supply cutback”, but we must remember that it is actually *amplifier* ***current*** *limiting* in response to an overload signal sent from the power supply. Full power operation into 2 ohms (both channels) should produce a 50% cutback of current after several seconds.
If both channels of the amplifier fail to cut back after about 3 seconds, 2-ohms, both channels driven, the cutback signal is probably missing. CAUTION: Prolonged operation under these conditions could blow IGBT or burn out C144. Test for 6-10 seconds maximum.
Check the output (secondary side) pins of U17 (sh 4). Confirm presence of +6V on pin 5. Pin 4 should normally be at about 0V, and go high (I-5V) after 3 seconds at full power,
If U17-pin 4 does not go high, check U17 itself. If it appears OK, trace the circuitry driving U17 (PRIMARY SIDE, CAUTION). Check for continuity through L6:2 to Pri-Lo, check missing or open R343, D61, Q95, R347, all of which drive optocoupler U17. A short in R346 or Cl31 will also prevent drive to U17.
If U17-pin 4 goes high on schedule, and BOTH channels fail to cut back, trace voltage on“PS_OL” bus to R273 (sh 3), which connects to “MUTE+” bus. Continue tracing voltage on MUTE+ to Q16 (sh I) and Q61 (sh 2). If only ONE channel fails to cut back, look for missing Q16, R 65, Q17 (sh I) or Q61, R188, Q62 (sh 2).
Cl31 controls the speed of cutback.. If missing, the amplifier current limits will enter cutback almost immediately at or above full power, 4 ohms.

SHORT CIRCUIT CURRENT DOESN’T CUT BACK.
CAUTION: DO NOT MAINTAIN A SHORTED LOAD IF CUTBACK FAILS TO OCCUR WITHIN 1 SECOND.
It will be necessary to measure the output current with a DC current probe, or by noting the voltage across a low value resistance with a DC scope, in order to determine which output cell is failing to cut back.
Failure to cut back could indicate either lack of clamping, or lack of voltage cutback. Measure the voltage on the respective clamp capacitor. If the voltage decreases, but current limiting does not cut back, check the clamping transistor.

CLAMPING VOLTAGE DECREASES, BUT NO CURRENT CUTBACK

CHANNEL-POLARITY	CH 1+	CH 1-	CH 2+	CH 2-
Measure voltage on:	c21	c22	C56	C57
Check clamp transistor	Q18	Q23	Q63	Q68

If the measured voltage on the clamp capacitor is not decreasing to about 50% during the short, check the circuitry which measures the current during short circuit,

CLAMPING VOLTAGE DOES NOT DECREASE TO 50% DURING SHORT.

CHANNEL-POLARITY	CH 1+	CH 1-	CH 2+	CH 2-
Measure voltage on:	c21	c22	C56	c57
Missing cutback transistor, resistor	Q24, R67	Q25, R68	Q69, RI90	Q70, RI91
Missing voltage sense resistor,	R 73	R 74	R196	R197
Shorted or low value shunt resistor	R72	R75	R195	R198

Troubleshooting Thermal Tracking

MOUNTING PROBLEMS WITH 10K SENSING NTC.
The thermal sensing for fan and bias tracking depends on a 1 OK NTC which is mounted in a hole in the heat sink. The hole is filled with thermal grease to improve coupling. If the NTC is not straight while mounting the heat sink, it may short out against the side of its hole. It is mounted on a standoff which protrudes into the hole, so this should not occur if care is taken while installing the heatsink.

If shorted to the heat sink, the amplifier output voltage is coupled to the NTC. If the short is to the grounded lead of the NTC, it may not damage anything. If to the other end, a large voltage is put across the NTC which will probably damage it.

SHORT FROM “LIVE” END OF NTC TO HEAT SINK:
Replace affected NTC
BE AWARE! This can short (relatively) quietly and then appear to be operating normally. Poor bias tracking can indicate this problem. Sometimes this short will not happen until the amplifier is driven past IV input.

NTC BENT OVER AND SHORTED TO DRIVER TRANSISTORS.
May touch Q19, Q26, or Q64, Q71.
This causes severe overcurrent to the affected output cell, possibly damaging the parts in series with the shorted transistor. It may also blow the power supply.

Replace affected NTC, drive transistors, check components in series with drive transistor

Ch 1:	Q19 shorted, check, R381, Q20, R70, D10, D14.
	Q26 shorted, check ALL outputs and opposing driver transistor on this channel.
Ch 2:	Q64 shorted, check R383, Q65, R193, D35, D39.
	Q71 shorted, check ALL outputs and opposing driver transistor on this channel.

Audio Output, Troubleshooting Stability Feedback

HIGH FREQUENCY OSCILLATIONS
SEVERE-DRAWS CURRENT-GROSS DISTORTION
C27 (62) missing or wrong, or series R367 (368)
C 25, 26 (60, 61) missing
Secondary filter capacitors missing or open (unlikely that ALL are defective).

SEVERE, BUT DOES NOT DRAW LARGE CURRENT
R22 (146) open.

MARGINAL -- MAY APPEAR ONLY AS EXCESS DISTORTION
Cl4 (49) missing
Cl 6 (50) missing or too large
C28 (63) missing
C 25 or 26 (60 or 61) missing or too large
Cl95 or 196 missing (input board).

EXCESSIVE OSCILLATION JUST BELOW CLIPPING, 2-4 ohms
Cl 7 (52) missing
NOTE: about 0.1% oscillation right below clipping at 2 ohms is normal.

EXCESSIVE SWITCHING INTERFERENCE.
Switching interference may LOOK like an instability, however it is at a much lower frequency (110kHz) than most instabilities. It will be more visible at low frequencies (2OOHz) and at lower impedances.
Missing jumper at R224.
Missing C129, 134 on output board.
Grounds not connected to chassis at output board and front chassis mounting screw.

FEEDBACK PROBLEMS: GAIN INCORRECT
Gain of output stage set by R23, 31 (147, 153)
Gain of Ch 1 volume control buffer stage set by RI 1, 16.
Gain of Ch 2 volume control buffer stage set by R137, 139. Make sure Q48 is turned on - grounding R137 at Q48 should not affect gain. Check RI 32 (drives Q48).
Gain of balanced input is set by 4 matched resistors R9, 8, 12, 13 (129, 130, 135, 136). Confirm both sides of balanced input are working. Check R5, 6 (123, 124).

Audio Output, Troubleshooting Clipping, Limiting

EXCESS STICKING (TOO MUCH DISTORTION DURING CLIP LIMITING)
Cl4 (49) much too large (also causes increased high frequency distortion).
R38 (161) missing.
R38-39 (161-162) have wrong values.
Q9, 10 (54, 55) missing
R34 (157) or R35 (158) missing
Q8 (53) missing

CLIP LIMITING DOESN'T WORK:

BOTH CHANNELS:
Check U3 missing,
Check U3 supply voltages, +13VCL, -13VCL, on C73, 74

ONLY ONE CHANNEL BAD:
Probe output of U2 (7), pin 7 while clipping. If output exceeds 4V during clipping, check :
R38 (161) missing.
R38-39 (161-162) have wrong values.
Q9, 10 (54, 55) missing.
R34 (157) or R35 (158) missing
Q8 (53) missing

If output at pin 7 clamps at 3.5-4V as expected, check parts surrounding U3:
R32 (154) missing
Q7 (52) missing
R28 (151) missing
Q6 (51) missing
R18 (141) missing
RI9 (142) missing
SW 1:1(1:10) not making contact
Check each pin on U3

CLIP LIMITING OSCILLATES:
Cl 3 (48) missing.
R21, 27 (144, 150) missing

Troubleshooting Step Problems

EXCESSIVE STEP DISTORTION (STEP GLITCH)
Close scrutiny of the distortion trace, and scope probing of the switched waveform, will help determine the cause of excess step distortion, The step should switch when the output voltage is within IO-12 volts of its respective rail, This switching margin should be fairly constant from 20- 20kHz. The switching event itself should be a fairly uniform up and down ramp, moving at about 25 volts/us, therefore taking about 2us to complete its transition.

Step Switching Too Close to the Rail:
This will cause increased step glitch, especially at low impedances. If present at all frequencies, check the reference voltages:
Negref: 17.5 volts above its intermediate rail: D88, R276-7-8.
PosRef: 20V below its intermediate rails: D87, R256, 257, D53.

Confirm correct values in output voltage divider: R48 loaded by R49-50 (R171, and R172-173). If present only at high frequencies, check the value of the speed up capacitor C20 (C55) in the output voltage divider, or look for slow switching (see below).

Step Chattering.
If the step repeatedly switches on and off, usually at a low frequency, it creates an oscillation burst which increases step glitch at low frequency. The tendency is usually worse at low impedances and low frequencies. 2-3 “false trials” at very low frequency, 2 ohms, is normal, but prolonged bursts of maximum frequency chattering may cause FET failure.
Positive step: check hysteresis resistor R66 (RI 89)
Negative step: check hysteresis resistor R69 (RI 92) and capacitor Cl 87 (Cl 93).

Slow or Fast Switching.
Slow switching reduces step glitch but puts more strain on the FET. Fast switching increases step glitch. The usable limit is 17-27 volts/us,
If both slopes are equally off speed, check the slope capacitors:
Positive, C30 (C65) and Negative, C29 (C64).
If only one slope is slow, check the resistors and buffer transistors:
Positive step: R78, 79, D15, Q30-31 (R201, 202, D40, Q75-76)
Negative step: R83, 84, D17, Q32-33 (R206, 207, D42, Q77-78).

Step FET Oscillation.
Certain FET types oscillate at extremely high frequency while ramping up and down. This injects interference into the amplifier which increases the step glitch. Such problems are supposed to be found while (dis)qualifying specific FET types. If they crop up in production, Engineering needs to know.

STEP WON’T TURN ON (Premature Clipping)
If the step refuses to switch high, the amp will clip prematurely, at the intermediate rail, at any load. Make sure the clipping is not acually current cutback, usually evident only at 2 ohms. Probe the output voltage and intermediate rail voltages to confirm clip point and lack of step action. Trace the circuit from the step FET back via gate drive to drive circuit to locate cracks, missing part etc. Check DC power on step driver (14V on EACH positive step drivers, 12V on BOTH negative drivers). Check voltage of PosRef (20V below +65V rail) or Negref (17.5V above -65V rail). Look for severe mismatches of the comparator resistor ladders.

STEP STUCK ON (Switched Rail Voltage Stuck On Full)
If the **positive** step is stuck on, (evidenced by permanent high voltage on switched rail) the FET is probably bad, since the positive gate drive cannot sustain DC turn-on due to the bootstrapping. If the **negative step** is stuck on, it could be a bad FET, or the gate drive circuit could be holding the FET on, which will easily be confirmed by measuring the gate voltage. Malfunctioning gate drive circuitry should be checked as noted above under “Won’t Turn On”.

REPEATED FET FAILURE.
Repeated failure of step FET’s is usually caused by failure to fully switch ON or OFF (lingering in the linear region). The actual failure usually occurs at 2 ohms, where the dissipation is highest. After replacing the FET, the step waveform should be monitored, starting at light load to avoid repeated failure, and advancing briefly to heavier loads while closely watching the waveform. You will need to use an isolated scope probe which allows voltage readings to be taken with respect to the intermediate rails, or to FET sources.

FET Does Not Fully Turn On:
Generally causes problems at low frequency, 2 ohms.
Confirm that the step FET remains fully on for the entire cycle (2OHz). If not, confirm weak gate drive and determine cause.
Weak positive drive: check voltage on C32 (C51) for 14V. Check C31 (C66), low R104 (R227), missing D18 (D148). Check R78, D15, Q30 (R201, D40, Q75).
Weak negative drive: check voltage on C67, 12V. Check R83, D17, Q32 (R206, D42, Q77).

FET Turns On or Off Very Slowly:
Generally causes problems at high frequency, 2 ohms.
If both slopes are equally slow, check the slope capacitors:
Positive, C30 (C65) and Negative, C29 (C64).
If only one slope is slow, check the resistors and buffer transistors:
Positive step: R78, 79, D15, Q30-31 (R201, 202, D40, Q75-76)
Negative step: R83, 84, D17, Q32-33 (R206, 207, D42, Q77-78).

Severe **Step Oscillation.**
Generally observed at low frequency, low impedance, right at threshold.
Positive step: check hysteresis resistor R66 (RI 89)
Negative step: check hysteresis resistor R69 (RI 92) and capacitor Cl 87 (Cl 93)

Troubleshooting DC Fault Shutdown

NORMAL BEHAVIOR OF THE CIRCUIT.
Any amplifier fault which causes a non-symmetrical output, such as premature clipping of one polarity, a missing step, etc, may trigger DC fault shutdown. This indicates normal operation of the circuit

TRACING THE CAUSE OF FALSE TRIGGERS.
If amplifier is shutting down for no apparent cause, the source of the false signal must be found. Be sure the output is checked with a DC coupled scope in order to confirm absence of an actual DC offset. The circuit will trip on DC offsets exceeding about 4V.

The optocoupler's input can be safely disabled by shorted U15, pins I-2 together. This will indicate if false triggering is before or after U15.

The output of U10:1, pin 1 should be monitored. If it goes low during DC shutdown, it is sending the false signal.

SHUTDOWN OCCURS AS SOON AS SWITCHING STARTS.
Disable U15 as noted above, determine if there is a DC fault condition. CAUTION: use 50-ohm resistor in series with AC line to limit fault current in case of shorted outputs.
If amplifier output looks OK, check UlO:l output. If low, check voltage on pins 2 and 3
U10:1, pin 2: should be zero (no signal)
U10:1, pin 3: should be about 2V, set by R243, 244, 245.
Check R348 at Ul.5.

SHUTDOWN OCCURS ABOVE ABOUT 4V OUTPUT:
Q87, C7, R240 or D48 missing.
Confirm D48 is pulled low (-13V), holding Q87 on. If not, check RI 17, 118, Q42
NOTE: this control voltage responds to the Br Mono switch, pole 7.

Check R348 at U15.
Bad connection at step diodes (D21, D22, D46, D47)

Fan Speed Troubleshooting

FAN STUCK HIGH:
Q88 or Q89 failed
R30 or R155, Thermal Sense NTC, shorted to heatsink
R266 or R271 missing.

FAN DOESN'T RUN
Check fan voltage, should be 1 IV when cold, 29V when hot.
Voltage OK -- replace fan.
No Voltage: check Q91, 89, 90, R264 and 265 missing. Confirm that +/-15V is reaching circuit.

PLX 1202 PCB ASSEMBLY (12OV)

Part Number	Description	Reference
CA-010002-30	CAP 1 OPF 5% 50V 0805 SMT	c14,49
CA-01 5002-10	CAP CER 15PF 10% 5OOV SL	C16,50
CA-I 10002-30	CAP CER 1 OOPF 5% 5OV NPO SM	C40,41,43, C5,6,9,18, c53
CA-I 33001-10	CAP SM 330PF 5% 500V	C145,146
CA-I 47003-30	CAP 470PF 5% 5OV 1206 SMT	C1,2,4,17, C119,121, C148,181, C182,186, CI88
CA-168003-30	CAP CER 68OPF 5% 5OV NPO SM	C26,36,37, C52,61, C25,60
CA-21 0005-30	CAP ,001 UF 5% 5OV 1206 SMT	C120,124, C195,196 C75,81,85,
CA-222001-00	CAP CER Y .0022UF 20% 125VAC	C122,127
CA-227001-30	CAP CER .0027UF 10% 100V 0805	C108,109, CI28 C20,23,24, C55,58,59,
CA-233001-10	CAP MYLAR .0033UF 10% 100V	CI13
CA-233002-00	CAP CER Y .0033UF 20% 125VAC	CI 15,118
CA-322001-10	CAP MYLAR .022UF 10% 100V	C27,62
CA-410001-00	CAP MET POLY X.1UF 20% 250V	CI26
CA-410002-10	CAP MYLAR .1UF 5% 100V	c47 C8,12,44,
CA-410003-10	CAP MET POLY .1UF 10% 250V	C129,134, C156,157 C28,63,
CA-410006-30	CAP CER .1UF 10% 5OVX7R SMT	C116,125, C135,155, C162,163, C179,180, C183,185, C189,190, c19,39,54, CI91
CA-410011-00	CAP MMYL .1UF 10% 400V	C107,123
CA-422001-10	CAP MYLAR .22UF 5% 5OV	c10,45
CA-447001 -00	CAP MET POLY X.47UF 20% 250	CI 17
CA-447003-00	CAP POLYP .47UF 10% 400V	CI44
CA-510005-30	CAP LYTIC 1 UF 20% 5OV SMT	C13,48,184
CA-510006-00	CAP MPOLY X 1UF 20% 25OVAC	CI 10,112
CA-610002-10	1 OUF,35V,2O%,RADIAL ELECT	CI92 C3,38,80, C86,114,
CA-647001-10	CAP LYTIC RL 47UF 10% 1 OV NP	C46,71 C7,11,42,
CA-647002-10	CAP LYTIC RL 47UF 20% 5OV	C21,22,56, C57,89
CA-710002-10	CAP LYTIC RL 1 OOUF 20%25V	c139,142, CI43 C15,33,72, C78,79,
CA-710004-10	CAP LYTIC RL 100UF 20% 25V	CI38,149, C150
CA-747001-10	CAP LYTIC RL 47OUF 20% 16V	C73,74,76, c77,131
CA-747004-00	CAP LYTIC RL 47OUF 20% 100V	C152,153, C159,160,

PLX 1202 PCB ASSEMBLY (12OV) Cont'd

Part Number	Description	Reference
		C165,166, C169,170
CA-822200-AE	CAP LYTIC RL 22OOUF 20% 200V	CI 32,133
CH-000102-00	HEATSINK, AUDIO, PLX	
CH-000103-00	SPRING, CLAMP, 2 HOLE	
CH-000104-00	HEATSINK PS PLX	
CH-0001 1 I-00	BRACKT,OUTPUT PCB PLC PLATFORM	
CH-000114-00	CLAMP, 2 FINGER PLX	
CO-000036-CO	SPEAKONS, PC MOUNT	J7,8
CO-000148-00	CONN XLR F VERT PCB	J2,10
CO-000155-00	HEADER PCB ,100 2-POSITION	J13
CO-000162-00	BNDG POST A, DUAL SLOT, PLX	
CO-000163-00	BNDG POST B, DUAL SLOT, PLX	
CO-3001 12-PJ	JACK 1/4" PHONE DBLOPEN CKT	J1,9
HW-OOOOOI-FC	FUSE CLIPS	REF: FI
IC-000024-00	IC REG PWM 40V O.IA SG3525A	U19
IC-000047-30	IC LIN DUAL COMP LM393 SO-8	U10
IC-000048-30	IC LIN DUAL OP AMP MC33078	U1,6
IC-000051-00	IC OPTO-IS0 MOC8101	U15,17
IC-000053-30	IC LIN SMT DUAL TIMER LM556	U14
IC-000054-30	IC LIN SMT QUAD COMP LM339A	U13
IC-000073-30	IC LIN DUAL OP AMP LM13600	U3
IC-000134-00	IC CMOS HV DRVR IR2110	U18
IC-000135-00	IC LIN PWM SWITCH TOP 210	U16
IC-005532-OP	IC LIN DUAL OP AMP 5532 EX/MP	U2,7
MS-000048-HS	HEAT SINK, ISOL TO-220	REF: Q91
MS-0001 12-00	FUSE 25A 125V 3AG FAST CER	FI
PC-000531-00	PCB MAIN PLX	
PL-000114-00	INSULATOR,IGBT/RECT HS, PLX	
PL-000126-00	SPRING, SEAT, PLX	
PL-000128-00	SPACER, LED, ,276"	LD2-LD11 RE155,LD1, REF:R30,
PL-000135-00	INSULATOR, MICA 1.25" X 1.75"	REF:Q96,97
PL-905156-SP	SPACER,ROUND,NYLON,#6,0.155	REF:L1,2
PT-125000-AT	RES VAR IT 250 20% 0.15W CAR	VR43,166
PT-310000-CR	RES VAR IT 10K 20% 0.2W W/DE	VR2,121
QD-000014-QD	DIODE TO220 ULTRAFAST 200V	D74,75,80, D81
QD-000042-00	DIODE RECT ULTRAFAST 400V 3	D70,71
QD-000052-00	LED GRN T-I	LD2,3,4,7, LD8,9,11
QD-000053-00	LED YEL T-I	LD1,6
QD-000054-00	LED RED T-I	LD5,10
QD-000062-10	XISTOR NPN TO-92 40V 0.2A 1.5	Q20,65
QD-000063-10	XISTOR PNP TO-92 40V 0.2A 1.5	Q21,66
QD-000076-00	XISTOR NPN TO-220 250V	Q27,72
QD-000077-00	XISTOR PNP TO-220 25OV	Q26,71
QD-000102-30	DIODE SW IN4148 SMT 75V 75M	D1-5,8,9, D10-12,14, D23-30,33, D34-37,39, D48-51,55, D59,63, D64,65,67, D69,89,90, D91
QD-000103-30	XISTOR NPN SMT 40V .2A .2W	Q13,15,18, Q25,49,50, Q5,7,8,9, Q52,53,54, Q58,60,63,

PLX 1202 PCB ASSEMBLY (12OV) Cont'd

Part Number	Description	Reference
		Q70,89,90, Q92,93,95
QD-000104-30	XISTOR PNP SMT 40V .2A .2W	Q1-4,6,10, Q12,14,23, Q24,42,43, Q44-48,51, Q55,57,59, Q68,69,87, Q88,94,98, Q99
QD-000105-30	XISTOR NPN SMT 300V .2A .2W	Q16,61
QD-000106-30	XISTOR PNP SMT 300V .2A .2W	Q17,62
QD-000108-30	DIODE SMT SWITCH 200V .2A 50	D13,16,38, D41,61,68, D78,79
QD-000110-30	DIODE ZNR 6.2V 5% .3W SMT	D56
QD-000113-30	DIODE ZNR 10V 5% .3W SMT	D66
QD-00011530	DIODE SMT RECT 600V IA	D58,60,86
QD-000116-30	DIODE RECT SMT 200V IA	D62,76,77, D82,83
QD-000154-00	XISTOR NPN TO-220 230V	Q19,64
QD-000155-00	XISTOR PNP TO-220 230V	Q22,67
QD-000156-00	XISTOR PNP TO-220 100V 3A 40	Q91
QD-000162-00	XISTOR,IGBT 20A/600V	Q96,97
QD-000170-00	DIODE BRIDGE RECT 600V 50A	BR1
QD-001302-PN	XISTOR PNP TO-3P 200V 15A	Q28,36,39, Q73,81,84
QD-003281-NP	XISTOR NPN TO-3P 200V 15A	Q29,37,40, Q74,82,85
QD-004744-ZA	DIODE ZNR 15V 5% 1 W 1 N4744A	D53,54
QD-005402-DX	DIODE RECT DO27 200V 3A	D19,20,44, D45
RE-.04703-10	RES MOFP .47 5% 2W MINI	R103,107, R108,111, RI 12-114, R211,212, R214,215, R225,226, R230,231, R234-237 R88,89,91, R92,102,
RE- 56002-10	RES MOFP 5.6 5% 2W MINI	R203,221, R354,355, R373 R80,98,
RE-000210-NR	THERMISTOR NTC 15A CUR LIM	R324
RE-000230-NR	THERMISTOR NTC 10K 5%	R30,155
RE-001003-30	RES SMT 10 OHM 5% 1/8W 1206	R353,356, R358,359
RE-001502-10	RES MOFP 15 5% 2W MINI	R209,210, R213,216, R367,368 R85-87,90, R93,208,
RE-003921-30	RES SMT 39.2 OHM 1% 1/8W 120	R246-249, R349,357
RE-005606-10	RES MOFP 56 5% 2W MINI	R372
RE-007502-30	RES SMT 75 1% 1/1OW 1 OOV	R124 R5,6,123,
RE-010002-30	RES SMT 100 1% 1/10W 100V	R150,193, RI 94,334,

PLX 1202 PCB ASSEMBLY (12OV) Cont'd

Part Number	Description	Reference
		R21,27,70, R364,381, R382-384 R71,144,
RE-027401-30	RES SMT 274 1% 1/1OW 1 OOV	RI 91,204, R205 R67,68,81, R82,190,
RE-038301-30	RES SMT 383 1% 1/10W 100V	R44,167
RE-047001-10	RES MOFP 470 5% 2W MINI	R256,257, R276,277, R278
RE-047502-30	RES SMT 475 1% 1/10W 100V	R151,160 R28,37,
RE-053602-30	RES SMT 536 1% 1/1OW 1 OOV	R22,146, R361,374
RE-063402-30	RES SMT 634 1% 1/8W 1206	R370
RE-110006-30	RES SMT 1 .OOK 1% 1/8W 1206	RI ,7,42, R117,118, R128,165, R232,250, R252,369
RE-115002-30	RES SMT 1.50K 1% 1/10W 1 OOV	R101,109, R147,154, R157,158, R162,164, R23,32,34, R270,273 R35,39,41,
RE-120002-30	RES SMT 2.00K 1% I/I OW 100V	R127,171, R195,198 R48,72,75,
RE-122103-30	RES SMT 2.21K 1% 1/10W 100V	R240,264, R265,267, R347,348 R47,170,
RE-139002-10	RES MOFP 3.9K 5% 2W MINI	R251
RE-147502-30	RES SMT 4.75K 1% 1/1 OW 100V	R11,17, R125,126, R131,137, RI 38,253, R3,4,10, R327,330, R362
RE-156001-10	RES 5.60K .1% 1/4W 25PPM	R13,129, R130,135, R136 R8,9,12,
RE-159002-30	RES SMT 5.90K 1% 1/10W 1 OOV	R122,152, R182,185 R29,59,62,
RE-175002-30	RES SMT 7.50K 1% 1/1 OW 1 OOV	R120,132, R140,161 RI 5,38,
RE-178701-30	RES SMT 7.87K 1% 1/10W 100V	R360
RE-190902-30	RES SMT 9.09K 1% 1/1 OW 1 OOV	R258,266, R272 R36,159,
RE-210003-30	RES SMT 10.0K 1% 1/10W 100V	R336,338, R363,366, R375,376
RE-212702-30	RES SMT 12.7K 1% 1/10W 100V	R106,133,

PLX 1202 PCB ASSEMBLY (120V) Cont'd

Part Number	Description	Reference
		R134,139,
		R14,16,19,
		R142,169,
		R188,199,
		R200,241,
		R245,259,
RE-212702-30	RES SMT 12.7K 1% 1/10W 100V	R329,337
		R46,65,
		R76,77,
RE-215002-30	RES SMT 15.0K 1% 1/10W 100V	R148,168,
		R25,45,
		R262,365
RE-215401-30	RES SMT 15.4K 1% 1/8W 1206	R172,173
		R49,50,
RE-216501-CM	RES MF 16 5K 1% 1/2W	R31,153
RE-220002-30	RES SMT 20.0K 1% 1/10W 100V	R18,141,
		R229,242,
		R244,271,
		R331,346
RE-224901-30	RES SMT 24.9K 1% 1/10W 100V	R325
RE-230002-10	RES MOFP 30K 5% 2W MINI	R351,352
RE-239202-30	RES SMT 39.2K 1% 1/10W 100V	R143,183,
		R184,243,
		R20,60,61,
		R261,323,
		R332
RE-247503-30	RES SMT47 5K 1% 1/10W 100V	R26,149
RE-310002-30	RES SMT 100K 1% 1/10W 100V	R156
		R33,119,
RE-310003-30	RES SMT 100K 5% 1/8W 1206	R176,196,
		R197,268,
		R341-345
		R51,53,73,
		R74,174,
RE-315002-30	RES MF 150K 1% 1/8W 1206	R333,335
RE-339201-30	RES SMT 392K 1% 1/10W 100V	R24,145,
		R260,263,
		R340
RE-348702-30	RES MF 487K 1% 1/8W 1206	R321,322,
		R326,328
RE-375005-BM	RES MF 750K 2% 1/2W	R339,371
SC-0631OO-PP	#6-20 X 5/8" "AB" TYPE 1 XRECE	
SC-081101-SP	#8-18 X 5/8", TYPE 1 PIP BLACK	
SW-000029-S	RELAY, SPKR PROTECT,SPDT,2	KI
SW-000053-00	SWITCH DIP 10-POS, TALL	SW1
WC-0.2020-JW	JMPR BARE 0.2" 20AWG SLD	D22,46,47
		REF:D21,
WC-0.5018-JW	JMPR INS 0.5"18AWG SLD WHT	J120,
		REF:D87,88
WC-000001-10	JUMPER INS .6" 22AWG SOLID W	R224
WC-000103-00	CABLE ASSY, 20 PIN 9"L	J3-4,J5-6
WC-000115-00	AC SWITCH WIRE, BLK, LONG	REF:ES2,
		TO SWITCH
WC-000115-01	AC SWITCH WIRE, RED, SHORT	REF:ES1,
		TO SWITCH
WC-000117-00	SPEAKER WIRE, BLACK	E12A-12C
		REF:
WC-000117-01	SPEAKER WIRE, WHITE	E9A-9C
		REF:
WC-000117-02	SPEAKER WIRE, GREY	E11A-11C
		REF:
WC-000117-03	SPEAKER WIRE, BLACK	E10A-10C

PLX 1202 PCB ASSEMBLY (120V) Cont'd

Part Number	Description	Reference
WC-000118-00	WIRE ASSY,BLK, LONG	EH1-EH2
		REF:
WC-000118-01	WIRE ASSY, RED, SHORT	EL1-E120A
WC-000118-01	WIRE ASSY, RED, SHORT	REF:
XF-000005-00	BEAD FERRITE W/20AWG LEAD	L9,10
XF-000023-00	CHOKE COMMON MODE 2.2MH	L3,4
XF-000061-00	INDUCTOR TORIOD1.9UH13GA	L6
XF-000064-00	XFMR AMP HOUSEKEPPING PLC	TI
XF-000079-00	XFMR PLX1202/2402(120V)	T2
XF-000085-00	***XFMR** PLX1202/2403 (100V)*	***T3***
XF-200014-CR	INDUCTOR 2UH14AWG VERT M	L1,2

PLX 1202 PCB ASSEMBLY (230V)

Part Number	Description	Reference
CA-010002-30	CAP 1 OPF 5% 50V 0805 SMT	C14,49
CA-015002-10	CAP CER 15PF 10% 500V SL	C16,50
CA-I 10002-30	CAP CER 100PF 5% 50V NPO SM	C40,41,43,
		C5,6,9,18,
		c53
CA-133001-10	CAP SM 330PF 5% 500V	C145,146
CA-147003-30	CAP 470PF 5% 50V 1206 SMT	C1,2,4,17,
		C119,121,
		C148,181,
		C182,186,
		CI88
		C26,36,37,
		C52,61,
CA-I 68003-30	CAP CER 68OPF 5% 50V NPO SM	C25,60
CA-210005-30	CAP .001UF 5% 50V 1206 SMT	C120,124,
		C195,196
		C75,81,85,
CA-222001-00	CAP CER Y .0022UF 20% 125VAC	C122,127
CA-227001-30	CAP CER .0027UF 10% 100V 0805	C108,109,
		CI28
		C20,23,24,
		C55,58,59,
CA-233001-10	CAP MYLAR .0033UF 10% 100V	CI 13
CA-233002-00	CAP CER Y .0033UF 20% 125VAC	C115,118
CA-322001-10	CAP MYLAR .022UF 10% 100V	C27,62
CA-410001-00	CAP MET POLY X.1UF 20% 250V	CI26
CA-410002-10	CAP MYLAR .1UF 5% 100V	c47
		C8,12,44,
CA-410003-10	CAP MET POLY .1UF 10% 250V	C129,134,
		C156,157
		C28,63,
CA-410006-30	CAP CER .1UF 10% 50V X7R SMT	C116,125,
		C135,155,
		C162,163,
		C179,180,
		C183,185,
		C189,190,
		C19,39,54,
		CI91
CA-41 001 I-00	CAP MMYL .1UF 10% 400V	C107,123
CA-422001-10	CAP MYLAR .22UF 5% 50V	C10,45
CA-447001 -00	CAP MET POLY X.47UF 20% 250	CI 17
CA-447003-00	CAP POLYP .47UF 10% 400V	CI44
CA-510005-30	CAP LYTIC 1 UF 20% 50V SMT	C13,48,184
CA-510006-00	CAP MPOLY X 1 UF 20% 250VAC	CI 10,112

PLX 1202 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
CA-610002-10	10UF,35V,20%,RADIAL ELECT	C192
CA-647001-10	CAP LYTIC RL 47UF 10% 10V NP	C3,38,80, C86,114, C46,71
CA-647002-10	CAP LYTIC RL 47UF 20% 50V	C7,11,42, C21,22,56, C57,89
CA-710002-10	CAP LYTIC RL 1 OOUF 20%25V	C139,142, CI43
CA-71 0004~10	CAP LYTIC RL 1 OOUF 20%25V	C15,33,72, C78,79, C138,149, C150
CA-747001-10	CAP LYTIC RL 470UF 20% 16V	C73,74,76, C77,131
CA-747004-00	CAP LYTIC RL 470UF 20% 1 OOV	CI 52,153, C159,160, C165,166, C169,170
CA-822200-AE	CAP LYTIC RL 2200UF 20% 200V	CI 32,133
CH-000102-00	HEATSINK, AUDIO, PLX	
CH-000103-00	SPRING, CLAMP, 2 HOLE	
CH-000104-00	HEATSINK PS PLX	
CH-00011 I-00	BRACKT,OUTPUT PCB PLC PLATFORM	
CH-000114-00	CLAMP, 2 FINGER PLX	
CO-000036-CO	SPEAKONS, PC MOUNT	J7,8
CO-000148-00	CONN XLR F VERT PCB	J2,10
CO-000155-00	HEADER PCB .100 2-POSITION	J13
CO-000162-00	BNDG POST A, DUAL SLOT, PLX	
CO-000163-00	BNDG POST B, DUAL SLOT, PLX	
CO-3001 12-PJ	JACK 1/4" PHONE DBLOPEN CKT	J1,9
HW-OOOOOI-FC	FUSE CLIPS	REF: F1
IC-000024-00	IC REG PWM 40V 0.1A SG3525A	U19
IC-000047-30	IC LIN DUAL COMP LM393 so-a	U10
IC-000048-30	IC LIN DUAL OP AMP MC33078	U1,6
IC-00005 I-00	IC OPTO-IS0 MOC8101	U15,17
IC-000053-30	IC LIN SMT DUAL TIMER LM556	U14
IC-000054-30	IC LIN SMT QUAD COMP LM339A	U13
IC-000073-30	IC LIN DUAL OP AMP LM13600	U3
IC-000134-00	IC CMOS HV DRVR IR2110	U18
IC-000135-00	IC LIN PWM SWITCH TOP 210	U16
IC-005532-OP	IC LIN DUAL OP AMP 5532 EX/MP	U2,7
MS-000048-HS	HEAT SINK, ISOL TO-220	REF: Q91
MS-I 50250-FU	FUSE 15A 250V 3AG FAST CER	FI
PC-000531-00	PCB MAIN PLX	
PL-000114-00	INSULATOR, IGBT/RECT HS, PLX	
PL-000126-00	SPRING, SEAT, PLX	
PL-000128-00	SPACER, LED, .276"	LD2-11 R155,LD1, REF:R30,
PL-000135-00	INSULATOR, MICA 1.25" X 1.75"	REF:Q96,97
PL-905156-SP	SPACER,ROUND,NYLON,#6,0.155	REF:L1,2
PT-125000-AT	RES VAR IT 250 20% 0.15W CAR	VR43,166
PT-310000-CR	RES VAR IT 1 OK 20% 0.2W W/DE	VR2,121
QD-000014-QD	DIODE TO220 ULTRAFAST 200V	D74,75,80 D81
QD-000042-00	DIODE RECT ULTRAFAST 400V 3	D70,71
QD-000052-00	LED GRN T-I	LD2,3,4,7, LD8,9,11
QD-000053-00	LED YEL T-I	LD1,6
QD-000054-00	LED RED T-I	LD5,10

PLX 1202 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
QD-000062-10	XISTOR NPN TO-92 40V 0.2A 1.5	Q20,65
QD-000063-10	XISTOR PNP TO-92 40V 0.2A 1.5	Q21,66
QD-000076-00	XISTOR NPN TO-220 250V	Q27,72
QD-000077-00	XISTOR PNP TO-220 250V	Q26,71
QD-000102-30	DIODE SW 1 N4148 SMT 75V 75M	D1-5,8,9, D10-12,14, D23-30,33, D34-37,39, D48-51,55, D59,63-65, D67,69,89, D90,91
QD-000103-30	XISTOR NPN SMT 40V .2A .2W	Q13,15,18, Q25,49,50, Q5,7,8,9, Q52,53,54, Q58,60,63, Q70,89,90, Q92,93,95
QD-000104-30	XISTOR PNP SMT 40V .2A .2W	Q1-4,6,10, Q12,14,23, Q24,42,43, Q44-48,51, Q55,57,59, Q68,69,87, Q88,94,98, Q99
QD-000105-30	XISTOR NPN SMT 300V .2A .2W	Q16,61
QD-000106-30	XISTOR PNP SMT 300V .2A .2W	Q17,62
QD-000108-30	DIODE SMT SWITCH 200V .2A 50	D13,16,38, D41,61,68, D78,79
QD-000110-30	DIODE ZNR 6.2V 5% .3W SMT	D56
QD-000113-30	DIODE ZNR 10V 5% .3W SMT	D66
QD-000115-30	DIODE SMT RECT 600V IA	D58,60,86
QD-000116-30	DIODE RECT SMT 200V 1A	D62,76,77, D82,83
QD-000154-00	XISTOR NPN TO-220 230V	Q19,64
QD-000155-00	XISTOR PNP TO-220 230V	Q22,67
QD-000156-00	XISTOR PNP TO-220 1 OOV 3A 40	Q91
QD-000162-00	XISTOR,IGBT 20A/600V	Q96,97
QD-000170-00	DIODE BRIDGE RECT 600V 50A	BR1
QD-001302-PN	XISTOR PNP TO-3P 200V 15A	Q28,36,39, Q73,81,a4
QD-003281-NP	XISTOR NPN TO-3P 200V 15A	Q29,37,40, Q74,82,85
QD-004744-ZA	DIODE ZNR 15V 5% 1 W 1 N4744A	D53,54
QD-005402-DX	DIODE RECT DO27 200V 3A	D19,20,44, D45
RE-.04703-10	RES MOFP .47 5% 2W MINI	R103,107, R108,111, R112-114, R211,212, R214,215, R225,226, R230,231, R234-237 R88,89,91, R92,102,
RE-.56002-10	RES MOFP 5.6 5% 2W MINI	R203,221, R354,355,

PLX 1202 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
		R373
		R80,98,
RE-000210-NR	THERMISTOR NTC 15A CUR LIM	R324
RE-000230-NR	THERMISTOR NTC 10K 5%	R30,155
RE-001003-30	RES SMT 10 OHM 5% 1/8W 1206	R353,356,
		R358,359
RE-001502-10	RES MOFP 15 5% 2W MINI	R209,210,
		R213,216,
		R367,368
		R85-87,90,
		R93,208,
RE-003921-30	RES SMT 39.2 OHM 1% 1/8W 120	R246-249,
		R349,357
RE-005606-10	RES MOFP 56 5% 2W MINI	R372
RE-007502-30	RES SMT 75 1% 1/10W100V	R124
		R5,6,123,
RE-010002-30	RES SMT 100 1% 1/10W100V	R150,193,
		R194,334,
		R21,27,70,
		R364,381,
		R382-384
		R71,144,
RE-027401-30	RES SMT 274 1% 1/10W100V	R191,204,
		R205
		R67,68,81,
		R82,190,
RE-038301-30	RES SMT 383 1% 1/10W100V	R44,167
RE-047001-10	RES MOFP 470 5% 2W MINI	R256,257,
		R276-278
RE-047502-30	RES SMT475 1% 1/10W100V	R151,160
		R28,37,
RE-053602-30	RES SMT 536 1% 1/10W100V	R22,146,
		R361,374
RE-063402-30	RES SMT 634 1% 1/8W 1206	R370
RE-110006-30	RES SMT 1 .OOK 1% 1/8W1206	RI ,7,42,
		R117,118,
		R128,165,
RE-110006-30	RES SMT 1 .OOK 1% 1/8W1206	R232,250,
		R252,369
RE-115002-30	RES SMT 1.50K 1% 1/10W100V	R101,109,
		R147,154,
		R157,158,
		R162,164,
		R23,32,34,
		R270,273
		R35,39,41,
RE-120002-30	RES SMT 2.00K 1% 1/10W100V	R127,171,
		R195,198
		R48,72,75,
RE-122103-30	RES SMT 2.21K 1% 1/10W100V	R240,264,
		R265,267,
		R347,348
		R47,170,
RE-139002-10	RES MOFP 3.9K 5% 2W MINI	R251
RE-147502-30	RES SMT 4.75K 1% 1/10W100V	R11,17,
		R125,126,
		R131,137,
		RI 38,253,
		R3,4,10,
		R327,330,
		R362

PLX 1202 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
RE-156001-10	RES 5.60K .1% 1/4W 25PPM	R13,129,
		R130,135,
		R136
		R8,9,12,
RE-159002-30	RES SMT 5.90K 1% I/I OW 1 OOV	R122,152,
		R182,185
		R29,59,62,
RE-175002-30	RES SMT 7.50K 1% 1/1 OW 1 OOV	R120,132,
		R140,161
		R15,38,
RE-178701-30	RES SMT 7.87K 1% 1/1 OW 1 OOV	R360
RE-190902-30	RES SMT 9.09K 1% 1/1 OW 1 OOV	R258,266,
		R272
		R36,159,
RE-210003-30	RES SMT 10.0K 1% 1/10W 100V	R336,338,
		R363,366,
		R375,376
RE-212702-30	RES SMT 12.7K 1% 1/10W 100V	R106,133,
		R134,139,
		R14,16,19,
		R142,169,
		R188,199,
		R200,241,
		R245,259,
		R329,337
		R46,65,
		R76,77,
RE-215002-30	RES SMT 15.0K 1% 1/10W 100V	R148,168,
		R25,45,
		R262,365
RE-215401-30	RES SMT 15.4K 1% 1/8W 1206	R172,173
		R49,50,
RE-216501-CM	RES MF 16.5K 1% 1/2W	R31,153
RE-220002-30	RES SMT 20.0K 1% 1/10W 100V	R18,141,
		R229,242,
		R244,271,
RE-220002-30	RES SMT 20.0K 1% 1/10W 100V	R331,346
RE-224901-30	RES SMT 24.9K 1% 1/10W 100V	R325
RE-230002-10	RES MOFP 30K 5% 2W MINI	R351,352
RE-239202-30	RES SMT 39.2K 1% 1/10W 100V	R143,183,
		RI 84,243,
		R20,60,61,
		R261,323,
		R332
RE-247503-30	RES SMT 47.5K 1% 1/10W 100V	R26,149
RE-310002-30	RES SMT 100K 1% 1/10W 100V	R156
		R33,119,
RE-310003-30	RES SMT 100K 5% 1/8W 1206	R176,196,
		RI 97,268,
		R341-345
		R51,53,73,
		R74,174,
RE-315002-30	RES MF 150K 1% 1/8W 1206	R333,335
RE-339201-30	RES SMT 392K 1% 1/1 OW 1 OOV	R24,145,
		R260,263,
		R340
RE-348702-30	RES MF 487K 1% 1/8W 1206	R321,322,
		R326,328
RE-375005-BM	RES MF 750K 2% 1/2W	R339,371
SC-063100-PP	#6-20 X 5/8""AB" TYPE 1 XRECE	
SC-081 101 -SP	#8-18 X 5/8", TYPE 1 P/P BLACK	

PLX 1202 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
SW-000029-S	**RELAY, SPKR PROTECT,SPDT,2**	**KI**
SW-000053-00	**SWITCH DIP IO-POS, TALL**	**SW1**
WC-0.2020-JW	**JMPR BARE 0.2" 20AWG** SLD	D22,46,47
WC-O 5018-JW	JMPR INS 0.5"18AWG SLD WHT	REF:D21, J240, REF:D87,88
WC-000001-10	**JUMPER INS .6" 22AWG SOLID W**	**R224**
WC-000103-00	**CABLE ASSY, 20 PIN** 9"L	J3-4,J5-6
WC-000115-00	**AC SWITCH WIRE,** BLK, **LONG**	REF:ES2, **TO SWITCH**
WC-000115-01	**AC SWITCH WIRE, RED, SHORT**	REF:ES1, TO **SWITCH**
WC-000117-00	**SPEAKER WIRE, BLACK**	E12A-12C
WC-000117-01	SPEAKER WIRE, WHITE	REF: E9A-9C
WC-000117-02	SPEAKER WIRE, GREY	REF: E11A-11C
WC-000117-03	SPEAKER WIRE, BLACK	REF: E10A-10C
WC-000118-00	WIRE ASSY,BLK, LONG	REF: EH1-EH2
XF-000005-00	BEAD FERRITE W/20AWG LEAD	L9,10
XF-000023-00	CHOKE COMMON MODE 2.2MH	L3,4
xF-000061-00	INDUCTOR TORIOD1.9UH13GA	L6
XF-000064-00	XFMR AMP HOUSEKEPPING PLC	TI
XF-000079-00	XFMR PLX1202/2402	T2
XF-200014-CR	INDUCTOR 2UH 14AWG VERT M	L1,2

PLX 1202 CHASSIS ASSEMBLY (120V)

Part Number	Description	Reference
CH-000097-00	CHASSIS, PLX	
CH-000100-00	HANDLE-EAR CASTING PLX	
CH-000112-00	SHIELD, AC, PLX	
LB-000052-00	LABEL, cUL APPROVAL	
LB-000053-00	LBL, FRENCH, FUSE REPLACEMENT	
LB-000077-00	LABEL,WARNING,HIGH ENERGY	
LB-000215-00	LABEL, INPUT/OUTPUT, PLX	
LB-000236-00	LABEL, FACEPLATE PLX 1202	
LB-I 60226-05	LABEL, FUSE, UL CAUT. 25A125V	
NW-380801-IL	3/8" INTERNAL TOOTH LOCKWASHER	
PL-000003-CP	AC CORD PROTECTOR	
PL-000040-PL	POT COVERS	
PL-000044-PL	BUSHING, STRAIN RELIEF	
PL-000054-00	KNOB FAB.	
PL-000066-00	CLIP XMAS-TREE SLG HEAD FASTEX	
PL-00009500	FAN INTERFACE PLX	
PL-000096-00	INSULATOR,FAN DUCT, PLX	
SC-025000-PP	SCREW M2.5 X 6MM TYPE 1 PH BLK	
SC-060060-PS	SCREW 6-32 X .375 SEMS EXTL ZC	
SC-082051-PL	SCREW,TAP,PAN PH#8X5/16" "B"BK	
SW-000016-S	SPST SNAP IN POWER SWITCH	
WC-000114-00	AC CORD ASSY PLX	
WP-000057-00	FAN ASSY, 3.15" 24VDC W/5.5L"	
WP-001203-00	PCB ASSY, PLX 1202 (120V)	

PLX 1202 CHASSIS ASSEMBLY (230V)

Part Number	Description	Reference
CH-000097-00	CHASSIS, PLX	
CH-000100-00	HANDLE-EAR CASTING PLX	
CH-000112-00	SHIELD, AC, PLX	
LB-000053-00	LBL, FRENCH, FUSE REPLACEMENT	
LB-000077-00	LABEL,WARNING,HIGH ENERGY	
LB-000099-01	LABEL, CE LISTING	
LB-000215-00	LABEL, INPUT/OUTPUT, PLX	
LB-000236-00	LABEL, FACEPLATE PLX 1202	
LB-I60226-01	LABEL, FUSE, UL CAUT. 15A 250V	
NW-380801-IL	3/8" INTERNAL TOOTH LOCKWASHER	
PL-000003-CP	AC CORD PROTECTOR	
PL-000024-00	STRAIN RELIEF,LIQ.TIGHT,HEYCO	
PL-000040-PL	POT COVERS	
PL-000054-00	KNOB FAB.	
PL-000055-00	EXPORT BINDING POST PLUG(RED)	
PL-000056-00	EXPORT BINDING POST PLUG(BLK)	
PL-000066-00	CLIP XMAS-TREE SLG HEAD FASTEX	
PL-000095-00	FAN INTERFACE PLX	
PL-000096-00	INSULATOR,FAN DUCT, PLX	
SC-025000-PP	SCREW M2.5 X 6MM TYPE 1 PH BLK	
SC-060060-PS	SCREW 6-32 X .375 SEMS EXTL ZC	
SC-082051-PL	SCREW,TAP,PAN PH#8X5/16" "B"BK	
SW-000016-S	SPST SNAP IN POWER SWITCH	
WC-000134-00	AC CORD ASSY, 230V, PLX	
WP-000057-00	FAN ASSY, 3.15" 24VDC W/5.5L"	
WP-001203-02	PCB ASSY, PLX 1202 (230V)	

PLX 1602 PCB ASSEMBLY (120V)

Part Number	Description	Reference
CA-010002-30	CAP 1OPF 5% 50V 0805 SMT	C14,49
CA-015002-10	CAP CER 15PF 10% 500V SL	C16,50
CA-I 10002-30	CAP CER 1 OOPF 5% 50V NPO SM	C40,41,43, C5,6,9,18, C53
CA-133001-10	CAP SM 330PF 5% 500V	C145,146
CA-I 47003-30	CAP 47OPF 5% 50V 1206 SMT	C1,2,4,17, C119,121, C148,181, C182,186, CI88
CA-I 68003-30	CAP CER 680PF 5% 50V NPO SM	C26,36,37, C52,61, C25,60
CA-210005-30	CAP .OOIUF 5% 50V 1206 SMT	C120,124, C195,196
CA-222001-00	CAP CER Y .0022UF 20% 125VAC	C75,81,85, C122,127
CA-227001-30	CAP CER .0027UF 10% 100V 0805	C108,109, CI28
CA-227001-30	CAP CER .0027UF 10% 1 OOV 0805	C20,23,24, C55,58,59,
CA-233001-10	CAP MYLAR .0033UF 10% 100V	CI 13
CA-233002-00	CAP CER Y .0033UF 20% 125VAC	C115,118
CA-322001-10	CAP MYLAR .022UF 10% 100V	C27,62
CA-410001-00	CAP MET POLY X. 1 UF 20% 250V	CI 26
CA-410002-10	CAP MYLAR .1UF 5% 100V	C47
CA-410003-10	CAP MET POLY .1UF 10% 250V	C8,12,44, C129,134,

PLX 1602 PCB ASSEMBLY (120V) Cont'd

Part Number	Description	Reference
		C156,157
		C28,63,
CA-410006-30	CAP CER .1UF 10% 50V X7R SMT	C116,125,
		C135,155,
		C162,163,
		C179,180,
		C183,185,
		C189,190,
		C19,39,54,
		CI91
CA-410011-00	CAP MMYL .IUF 10% 400V	C107,123
CA-422001-10	CAP MYLAR .22UF 5% 50V	C10,45
CA-447001-00	CAP MET POLY X.47UF 20% 250	CI 17
CA-447003-00	CAP POLYP 47UF 10% 400V	CI44
CA-510005-30	CAP LYTIC 1 UF 20% 50V SMT	C13,48,184
CA-510006-00	CAP MPOLY X 1 UF 20% 250VAC	CI10,112
CA-610002-10	10UF,35V,20%,RADIAL ELECT	CI92
		C3,38,80,
		C86,114,
CA-647001-10	CAP LYTIC RL 47UF 10% 10V NP	C46,71
		C7,11,42,
CA-647002-10	CAP LYTIC RL 47UF 20% 50V	C21,22,56,
		C57,89
CA-710002-10	CAP LYTIC RL 1 OOUF 20%25V	C139,142,
		CI43
		C15,33,72,
		C78,79,
CA-710004-10	CAP LYTIC RL 1 OOUF 20%25V	C138,149,
		C150
CA-747001-10	CAP LYTIC RL 470UF 20% 16V	C73,74,76,
		C77,131
CA-747004-00	CAP LYTIC RL 470UF 20% 1 OOV	CI 52,153,
		C159,160,
		C165,166,
		C169,170,
		C173,174
CA-822200-AE	CAP LYTIC RL 2200UF 20% 200V	C132,133,
		C136,137
CH-000102-00	HEATSINK, AUDIO, PLX	
CH-000103-00	SPRING, CLAMP, 2 HOLE	
CH-000104-00	HEATSINK PS PLX	
CH-0001 1 I-00	BRACKT,OUTPUT PCB PLC PLATFORM	
CH-000114-00	CLAMP, 2 FINGER PLX	
CO-000036-CO	SPEAKONS, PC MOUNT	J7,8
CO-000148-00	CONN XLR F VERT PCB	J2,10
CO-0001 55-00	HEADER PCB .1 00 2-POSITION	J13
CO-000162-00	BNDG POST A, DUAL SLOT, PLX	
CO-000163-00	BNDG POST B, DUAL SLOT, PLX	
CO-3001 12-PJ	JACK 1/4" PHONE DBLOPEN CKT	J1,9
HW-OOOOOI-FC	FUSE CLIPS	REF: FI
IC-000024-00	IC REG PWM 40V O.IA SG3525A	U19
IC-000047-30	IC LIN DUAL COMP LM393 so-a	U10
IC-000048-30	IC LIN D UAL OP AMP MC33078	U1,6
IC-000051-00	IC OPTO-IS0 MOC8101	U15,17
IC-000053-30	IC LIN SMT DUAL TIMER LM556	U14
IC-000054-30	IC LIN SMT QUAD COMP LM339A	U13
IC-000073-30	IC LIN DUAL OP AMP LM13600	U3
IC-000134-00	IC CMOS HV DRVR IR2110	u l a
IC-000135-00	IC LIN PWM SWITCH TOP 210	U16
IC-005532-OP	IC LIN DUAL OP AMP 5532 EX/MP	U2,7
MS-000048-HS	HEAT SINK, ISOL TO-220	REF: Q91

PLX 1602 PCB ASSEMBLY (120V) Cont'd

Part Number	Description	Reference
MS-0001 12-00	FUSE 25A125V 3AG FAST CER	FI
PC-000531-00	PCB MAIN PLX	
PL-000114-00	INSULATOR, IGBT/RECT HS, PLX	
PL-000126-00	SPRING, SEAT, PLX	
PL-000128-00	SPACER, LED, .276"	LD2-LD11
		RE155,LD1,
		REF:R30,
PL-000135-00	INSULATOR, MICA 1.25" X 1.75"	REF:Q96,97
PL-905156-SP	SPACER,ROUND,NYLON,#6,0.155	REF:L1,2
PT-125000-AT	RES VAR IT 250 20% 0.15W CAR	VR43,166
PT-310000-CR	RES VAR IT 10K 20% 0.2W W/DE	VR2,121
QD-000014-QD	DIODE TO220 ULTRAFAST 200V	D74,75,80,
		D81
QD-000042-00	DIODE RECT ULTRAFAST 400V 3	D70,71
QD-000052-00	LED GRN T-I	LD2,3,4,7,
		LD8,9,11
QD-000053-00	LED YEL T-I	LD1,6
QD-000054-00	LED RED T-I	LD5,10
QD-000062-10	XISTOR NPN TO-92 40V 0.2A 1.5	Q20,65
QD-000063-10	XISTOR PNP TO-92 40V 0 2A 1.5	Q21,66
QD-000076-00	XISTOR NPN TO-220 250V	Q27,72
QD-000077-00	XISTOR PNP TO-220 250V	Q26,71
QD-000102-30	DIODE SW IN4148 SMT 75V 75M	D1-5,8,9,
		D10-12,14,
		D23-30,33,
		D34-37,39,
		D48-51,55,
		D59,63,
		D64,65,67,
		D69,89,90,
		D91
QD-000103-30	XISTOR NPN SMT 40V .2A 2W	Q13,15,18,
		Q25,49,50,
		Q5,7,8,9,
		Q52,53,54,
		Q58,60,63,
		Q70,89,90,
		Q92,93,95
QD-000104-30	XISTOR PNP SMT 40V .2A .2W	Q1-4,6,10,
		Q12,14,23,
		Q24,42,43,
		Q44-48,51,
		Q55,57,59,
		Q68,69,87,
		Q88,94,98,
		Q99
QD-000105-30	XISTOR NPN SMT 300V .2A .2W	Q16,61
QD-000106-30	XISTOR PNP SMT 300V .2A .2W	Q17,62
QD-000108-30	DIODE SMT SWITCH 200V .2A 50	D13,16,38,
		D41,61,68,
		D78,79
QD-0001IO-30	DIODE ZNR 6.2V 5% .3W SMT	D56
QD-000113-30	DIODE ZNR 10V 5% .3W SMT	D66
QD-000115-30	DIODE SMT RECT 600V IA	D58,60,86
QD-000116-30	DIODE RECT SMT 200V IA	D62,76,77,
		D82,83
QD-000154-00	XISTOR NPN TO-220 230V	Q19,64
QD-000155-00	XISTOR PNP TO-220 230V	Q22,67
QD-000156-00	XISTOR PNP TO-220 100V 3A 40	Q91
QD-000162-00	XISTOR,IGBT 20A/600V	Q96,97
QD-000170-00	DIODE BRIDGE RECT 600V 50A	BR1

PLX 1602 PCB ASSEMBLY (120V) Cont'd

Part Number	Description	Reference
QD-001302-PN	XISTOR PNP TO-3P 200V 15A	Q28,34,36, Q39,73,79, Q81,84
QD-003281-NP	XISTOR NPN TO-3P 200V 15A	Q29,35,37, Q40,74,80, Q82,85
QD-004744-ZA	DIODE ZNR 15V 5% 1 W 1 N4744A	D53,54
QD-005402-DX	DIODE RECT DO27 200V 3A	D19,20,44, D45
RE-.04703-10	RES MOFP .47 5% 2W MINI	R102,103, R107,108, RIII-114, R211,212, R214,215, R217,218, R220,222, R225,226, R230,231, R234-237
RE-.56002-10	RES MOFP 5.6 5% 2W MINI	R88,89,91, R92,94,95, R97,99, R203,221, R354,355, R373
RE-000210-NR	THERMISTOR NTC 15A CUR LIM	R80,98, R324
RE-000230-NR	THERMISTOR NTC 1 OK 5%	R30,155
RE-001003-30	RES SMT 10 OHM 5% 1/8W 1206	R353,356, R358,359
RE-001502-10	RES MOFP 15 5% 2W MINI	R209,210, R213,216, R367,368
RE-003921-30	RES SMT 39.2 OHM 1% 1/8W 120	R85-87,90, R93,208, R246-249, R349,357
RE-005606-10	RES MOFP 56 5% 2W MINI	R372
RE-007502-30	RES SMT 75 1% I/I OW 1 OOV	R124
RE-010002-30	RES SMT 100 1% 1/10W100V	R5,6,123, RI 50,193, RI 94,334, R21,27,70, R364,381, R382-384
RE-027401-30	RES SMT 274 1% 1/10W100V	R71,144, RI 91,204, R205
RE-038301-30	RES SMT 383 1% 1/10W100V	R67,68,81, R82,190, R44,167
RE-047502-30	RES SMT 475 1% 1/10W100V	R151,160
RE-053602-30	RES SMT 536 1% 1/10W100V	R28,37, R22,146, R361,374
RE-063402-30	RES SMT 634 1% 1/8W 1206	R370
RE-082001-10	RES MOFP 820 5% 2W MINI	R256,257, R276-278
RE-110006-30	RES SMT 1.00K 1% 1/8W 1206	RI ,7,42, R117,118, R128,165,

PLX 1602 PCB ASSEMBLY (120V) Cont'd

Part Number	Description	Reference
		R232,250, R252,369
RE-115002-30	RES SMT 1.50K 1% 1/10W100V	R101,109, R147,154, R157,158, R162,164, R23,32,34, R270,273
RE-116202-30	RES SMT 1.62K 1% 1/10W100V	R35,39,41, R195,198
RE-120002-30	RES SMT 2.00K 1% I/I OW 1 OOV	R72,75, RI 71
RE-122103-30	RES SMT 2.21K 1% 1/10W100V	R48,127, R240,264, R265,267, R347,348
RE-139002-10	RES MOFP 3.9K 5% 2W MINI	R47,170, R251
RE-147502-30	RES SMT 4.75K 1% 1/10W100V	R11,17, R125,126, R131,137, R138,253, R3,4,10, R327,330, R362
RE-156001-10	RES 5.60K .1%1/4W 25PPM	R13,129, R130,135, R136
RE-159002-30	RES SMT 5.90K 1% I/I OW 1 OOV	R8,9,12, RI 52
RE-163402-30	6.34K I/I OW 1% 1 OOV SMT	R29,122, R182,185
RE-175002-30	RES SMT 7.50K 1% 1/10W 100V	R59,62, R120,132, R140,161
RE-178701-30	RES SMT 7.87K 1% 1/10W100V	R15,38, R360
RE-190902-30	RES SMT 9.09K 1% I/I OW 1 OOV	R258,266, R272
RE-210003-30	RES SMT 10.0K 1% 1/10W100V	R36,159, R336,338, R363,366, R375,376
RE-212702-30	RES SMT 12.7K 1% 1/10W100V	R106,133, R134,139, R14,16,19, R142,169, R188,199, R200,241,
RE-212702-30	RES SMT 12.7K 1% I/I OW 1 OOV	R245,259, R329,337
RE-215002-30	RES SMT 15.0K 1% 1/10W100V	R46,65, R76,77, R148,168, R25,45, R262,365
RE-216501-CM	RES MF 16.5K 1% 1/2W	R31,153
RE-220002-30	RES SMT 20.0K 1% 1/10W 100V	R18,141, R229,242, R244,271, R331,346

PLX 1602 PCB ASSEMBLY (120V) Cont'd

Part Number	Description	Reference
RE-220003-30	RES SMT 20.0K 1% 1/8W 1206	R172,173 R49,50,
RE-224901-30	RES SMT 24.9K 1% 1/1 OW 1 OOV	R325
RE-230002-10	RES MOFP 30K 5% 2W MINI	R351,352
RE-239202-30	RES SMT 39.2K 1% 1/10W 100V	R143,183, RI 84,243, R20,60,61, R261,323, R332
RE-247503-30	RES SMT 47 5K 1% 1/10W 100V	R26,149
RE-310002-30	RES SMT 100K 1% 1/10W 100V	R156 R33,119,
RE-310003-30	RES SMT 1 OOK 5% 1/8W 1206	R196,197, R268,341, R342,344, R343,345 R73,74,
RE-315002-30	RES MF 150K 1% 1/8W 1206	R174,176, R333,335 R51,53,
RE-339201-30	RES SMT 392K 1% 1/10W 100V	R24,145, R260,263, R340
RE-348702-30	RES MF 487K 1% 1/8W 1206	R321,322, R326,328
RE-375005-BM	RES MF 750K 2% 1/2W	R339,371
SC-063100-PP	#6-20 X 5/8"'"AB" TYPE 1 XRECE	
SC-081 101-SP	#8-18 X 5/8", TYPE 1 P/P BLACK	
SW-000029-S	RELAY, SPKR PROTECT,SPDT,2	KI
SW-000053-00	SWITCH DIP 10-POS, TALL	SW1
WC-0.2020-JW	JMPR BARE 0.2" 20AWG SLD	D22,46,47 REF:D21,
WC-0.5018-JW	JMPR INS 0.5" 18AWG SLD WHT	J120, REF:D87,88
WC-000001-10	JUMPER INS .6" 22AWG SOLID W	R224
WC-000103-00	CABLE ASSY, 20 PIN 9"L	J3-4,J5-6
WC-0001 15-00	AC SWITCH WIRE, BLK, LONG	REF:ES2, TO SWITCH
WC-0001 15-01	AC SWITCH WIRE, RED, SHORT	REF:ES1, TO SWITCH
WC-0001 17-00	SPEAKER WIRE, BLACK	E12A-12C REF:
WC-0001 17-01	SPEAKER WIRE, WHITE	E9A-9C REF:
WC-0001 17-02	SPEAKER WIRE, GREY	E11A-11C REF:
WC-0001 17-03	SPEAKER WIRE, BLACK	E10A-10C REF:
WC-0001 18-00	WIRE ASSY, BLK, LONG	EH1-EH2 REF:
WC-0001 18-01	WIRE ASSY, RED, SHORT	ELI-EI2OA REF:
XF-000005-00	BEAD FERRITE W/20AWG LEAD	L9,10
XF-000023-00	CHOKE COMMON MODE 2.2MH	L3,4
XF-000061-00	INDUCTOR TORIOD 1.9UH 13GA	L6
XF-000063-00	XFMR, PWR PLX1602(120V)	T2
XF-000086-00	*XFMR, **PWR** PLX1602(100V)*	T2
XF-000064-00	XFMR AMP HOUSEKEPPING PLC	TI
XF-200014-CR	INDUCTOR 2UH 14AWG VERT M	L1,2

PLX 1602 PCB ASSEMBLY (230V)

Part Number	Description	Reference
CA-010002-30	**CAP** 1 OPF 5% 50V 0805 SMT	C14,49
CA-015002-10	CAP CER 15PF 10% 500V SL	C16,50
CA-I 10002-30	CAP CER 1 OOPF 5% 50V NPO SM	C40,41,43, C5,6,9,18, C53
CA-I 33001-10	CAP SM 330PF 5% 500V	C145,146
CA-I 47003-30	CAP 470PF 5% 50V 1206 SMT	C1,2,4,17, C119,121, C148,181, C182,186, CI88
CA-147003-30	CAP 470PF 5% 50V 1206 SMT	C26,36,37, C52,61,
CA-168003-30	CAP CER 680PF 5% 50V NPO SM	C25,60
CA-210005-30	CAP .OOIUF 5% 50V 1206 SMT	C120,124, C195,196 C75,81,85,
CA-222001-00	CAP CER Y .0022UF 20% 125VAC	C122,127
CA-227001-30	CAP CER .0027UF 10% 100V 0805	C108,109, CI28 C20,23,24, C55,58,59,
CA-233001-10	CAP MYLAR .0033UF 10% 100V	C113
CA-233002-00	CAP CER Y .0033UF 20% 125VAC	CI 15,118
CA-322001-10	CAP MYLAR .022UF 10% 100V	C27,62
CA-410001-00	CAP MET POLY X.IUF 20% 250V	CI26
CA-410002-10	CAP MYLAR .1UF 5% 100V	c47 C8,12,44,
CA-410003-10	CAP MET POLY .1UF 10% 250V	C129,134, C156,157 C28,63,
CA-410006-30	CAP CER .IUF 10% 50V X7R SMT	C116,125, C135,155, C162,163, C179,180, C183,185, C189,190, C19,39,54, CI91
CA-410011-00	CAP MMYL .IUF 10% 400V	C107,123
CA-422001-10	CAP MYLAR .22UF 5% 50V	C10,45
CA-447001-00	CAP MET POLY X.47UF 20% 250	CI 17
CA-447003-00	CAP POLYP .47UF 10% 400V	CI44
CA-510005-30	CAP LYTIC 1 UF 20% 50V SMT	C13,48,184
CA-510006-00	CAP MPOLY X 1 UF 20% 250VAC	CI 10,112
CA-610002-10	10UF,35V,20%,RADIAL ELECT	CI92 C3,38,80, C86,114,
CA-647001-10	CAP LYTIC RL 47UF 10% 1 OV NP	C46,71 C7,11,42,
CA-647002-10	CAP LYTIC RL 47UF 20% 50V	C21,22,56, C57,89
CA-710002-10	CAP LYTIC RL 100UF 20% 25V	C139,142, CI43 C15,33,72, C78,79,
CA-710004-10	CAP LYTIC RL 1 OOUF 20% 25V	C138,149, CI50
CA-747001-10	CAP LYTIC RL 470UF 20% 16V	C73,74,76, C77,131
CA-747004-00	CAP LYTIC RL 470UF 20% 1 OOV	CI 52,153,

PLX 1602 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
		C159,160,
		C165,166,
		C169,170,
		C173,174
CA-822200-AE	**CAP LYTIC RL 2200UF 20% 200V**	C132,133,
		C136,137
CH-000102-00	**HEATSINK, AUDIO, PLX**	
CH-000103-00	**SPRING, CLAMP, 2 HOLE**	
CH-000104-00	HEATSINK **PS PLX**	
CH-00011 I-00	BRACKT,OUTPUT PCB PLC PLATFORM	
CH-000114-00	CLAMP, 2 FINGER PLX	
CO-000036-CO	SPEAKONS, PC MOUNT	J7,8
CO-000148-00	CONN XLR F VERT PCB	J2,10
CO-000155-00	HEADER PCB .100 2-POSITION	J13
CO-000162-00	BNDG POST A, DUAL SLOT, PLX	
CO-000163-00	BNDG POST B, DUAL SLOT, PLX	
CO-300112-PJ	JACK 1/4" PHONE DBLOPEN CKT	J1,9
HW-OOOOOI-FC	FUSE CLIPS	REF. FI
IC-000024-00	IC REG PWM 40V O.IA SG3525A	U19
IC-000047-30	IC LIN DUAL COMP LM393 SO-8	U10
IC-000048-30	IC LIN DUAL OP AMP MC33078	U1,6
IC-000051-00	IC **OPTO-IS0** MOC8101	U15,17
IC-000053-30	IC LIN SMT DUAL TIMER LM556	U14
IC-000054-30	IC LIN SMT QUAD COMP LM339A	U13
IC-000073-30	IC LIN DUAL OP AMP LM13600	U3
IC-000134-00	IC CMOS HV DRVR IR2110	U18
IC-000135-00	IC LIN PWM SWITCH TOP 210	U16
IC-005532-OP	IC LIN DUAL OP AMP 5532 EX/MP	U2,7
MS-000048-HS	HEAT SINK, ISOL TO-220	REF: Q91
MS-1 50250-FU	FUSE 15A 250V 3AG FAST CER	FI
PC-000531-00	PCB MAIN PLX	
PL-000114-00	INSULATOR, IGBT/RECTHS, PLX	
PL-000126-00	SPRING, SEAT, PLX	
PL-000128-00	SPACER, LED, .276"	LD2-11
		R155,LD1,
		REF:R30,
PL-000135-00	INSULATOR, MICA 1.25" X 1.75"	REF:Q96,97
PL-905156-SP	SPACER,ROUND,NYLON,#6,0.155	REF:L1,2
PT-125000-AT	RES VAR IT 250 20% 0.15W CAR	VR43,166
PT-310000-CR	RES VAR IT 1 OK 20%0.2W W/DE	VR2,121
QD-000014-QD	DIODE TO220 ULTRAFAST 200V	D74,75,80
		D81
QD-000042-00	**DIODE RECT ULTRAFAST 400V 3**	D70,71
QD-000052-00	**LED GRN T-I**	LD2,3,4,7,
		LD8,9,11
QD-000053-00	LED YEL T-I	LD1,6
QD-000054-00	LED RED T-I	LD5,10
QD-000062-10	XISTOR NPN TO-92 40V 0.2A 1.5	Q20,65
QD-000063-10	XISTOR PNP TO-92 40V 0.2A 1.5	Q21,66
QD-000076-00	XISTOR NPN TO-220 250V	Q27,72
QD-000077-00	XISTOR PNP TO-220 250V	Q26,71
QD-000102-30	DIODE SW 1 N4148 SMT 75V 75M	D1-5,8,9,
		D10-12,14,
		D23-30,33,
		D34-37,39,
		D48-51,55,
		D59,63-65,
		D67,69,89,
		D90,91
QD-000103-30	XISTOR NPN SMT 40V .2A .2W	Q13,15,18,
		Q25,49,50,

PLX 1602 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
		Q5,7,8,9,
		Q52,53,54,
		Q58,60,63,
		Q70,89,90,
		Q92,93,95
QD-000104-30	XISTOR PNP SMT 40V .2A .2W	Q1-4,6,10,
		Q12,14,23,
		Q24,42,43,
		Q44-48,51,
QD-000104-30	XISTOR PNP SMT 40V .2A .2W	Q55,57,59,
		Q68,69,87,
		Q88,94,98,
		Q99
QD-000105-30	XISTOR NPN SMT 300V .2A .2W	Q16,61
QD-000106-30	XISTOR PNP SMT 300V .2A .2W	Q17,62
QD-000108-30	DIODE SMT SWITCH 200V .2A 50	D13,16,38,
		D41,61,68,
		D78,79
QD-0001IO-30	DIODE ZNR 6.2V 5% .3W SMT	D56
QD-000113-30	DIODE ZNR 10V 5% .3W SMT	D66
QD-000115-30	DIODE SMT RECT 600V IA	D58,60,86
QD-000116-30	DIODE RECT SMT 200V IA	D62,76,77,
		D82,83
QD-000154-00	XISTOR NPN TO-220 230V	Q19,64
QD-000155-00	XISTOR PNP TO-220 230V	Q22,67
QD-000156-00	XISTOR PNP TO-220 100V 3A 40	Q91
QD-000162-00	XISTOR,IGBT 20A/600V	Q96,97
QD-000170-00	DIODE BRIDGE RECT 600V 50A	BR1
QD-001302-PN	XISTOR PNP TO-3P 200V 15A	Q28,34,36,
		Q39,73,79,
		Q81,84
QD-003281-NP	XISTOR NPN TO-3P 200V 15A	Q29,35,37,
		Q40,74,80,
		Q82,85
QD-004744-ZA	DIODE ZNR 15V 5% 1 W 1 N4744A	D53,54
QD-005402-DX	DIODE RECT DO27 200V 3A	D19,20,44,
		D45
RE-.04703-10	RES MOFP .47 5% 2W MINI	R102,103,
		R107,108,
		RIII-114,
		R211,212,
		R214,215,
		R217,218,
		R220,222,
		R225,226,
		R230,231,
		R234-237
		R88,89,91,
		R92,94,95,
		R97,99,
RE-.56002-10	RES MOFP 5.6 5% 2W MINI	R203,221,
		R354,355,
		R373
		R80,98,
RE-000210-NR	THERMISTOR NTC 15A CUR LIM	R324
RE-000230-NR	THERMISTOR NTC 10K 5%	R30,155
RE-001003-30	RES SMT 10 OHM 5% 1/8W 1206	R353,356,
		R358,359
RE-001502-10	RES MOFP 15 5% 2W MINI	R209,210,
		R213,216,
		R367.368

PLX 1602 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
		R85-87,90,
		R93,208,
RE-003921-30	RES SMT 39.2 OHM I % 1/8W I 20	R246-249,
		R349,357
RE-005606-10	RES MOFP 56 5% 2W MINI	R372
RE-007502-30	RES SMT 75 1% 1/10W 100V	R124
		R5,6,123,
RE-010002-30	RES SMT 100 1% 1/10W 100V	R150,193,
RE-010002-30	RES SMT 100 1% 1/10W 100V	R194,334,
		R21,27,70,
		R364,381,
		R382-384
		R71,144,
RE-027401-30	RES SMT 274 1% 1/10W 100V	R191,204,
		R205
		R67,68,81,
		R82,190,
RE-038301-30	RES SMT 383 I % 1/10W ioov	R44,167
RE-047502-30	RES SMT 475 1% 1/10W 100V	R151,160
		R28,37,
RE-053602-30	RES SMT 536 1% 1/10W 100V	R22,146,
		R361,374
RE-063402-30	RES SMT 634 1% 1/8W 1206	R370
RE-082001-10	RES MOFP a20 5% 2W MINI	R256,257,
		R276-278
RE-I 10006-30	RES SMT I .00K I % 1/8W 1206	RI ,7,42,
		R117,118,
		R128,165,
		R232,250,
		R252,369
RE-115002-30	RES SMT 1 50K 1% I/I OW 1 OOV	R101,109,
		R147,154,
		R157,158,
		R162,164,
		R23,32,34,
		R270,273
		R35,39,41,
RE-116202-30	RES SMT 1 62K 1% 1/10W 100V	R195,198
		R72,75,
RE-120002-30	RES SMT 2.00K 1% 1/1OW 1OOV	R171
		R48,127,
RE-122103-30	RES SMT 2.21K 1% 1/10W 100V	R240,264,
		R265,267,
		R347,348
		R47,170,
RE-139002-10	RES MOFP 3.9K 5% 2W MINI	R251
RE-147502-30	RES SMT 4.75K 1% 1/1OW 1 OOV	R11,17,
		R125,126,
		R131,137,
		RI 38,253,
		R3,4,10,
		R327,330,
		R362
RE-156001-10	RES 5.60K .1% 1/4W 25PPM	R13,129,
		R130,135,
		R136
		R8,9,12,
RE-159002-30	RES SMT 5.90K 1% 1/10W 100V	R152
		R29,122,
RE-163402-30	6.34K 1/10W 1% 100V SMT	R182,185
		R59,62,

PLX 1602 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
RE-175002-30	RES SMT 7.50K 1% 1/10W 100V	R120,132,
		R140,161
		RI 5,38,
RE-178701-30	RES SMT 7.87K 1% 1/1OW 1OOV	R360
RE-I 90902-30	RES SMT 9.09K 1% I/I OW 100V	R258,266,
		R272
		R36,159,
RE-210003-30	RES SMT 1 O.OK 1% 1/1OW 1 OOV	R336,338,
		R363,366,
		R375,376
RE-212702-30	RES SMT 12.7K 1% 1/10W 100V	R106,133,
		R134,139,
		R14,16,19,
		R142,169,
		R188,199,
		R200,241,
		R245,259,
		R329,337
		R46,65,
		R76,77,
RE-215002-30	RES SMT 15.0K 1% 1/10W 100V	R148,168,
		R25,45,
		R262,365
RE-216501-CM	RES MF 16.5K 1% 1/2W	R31,153
RE-220002-30	RES SMT 20.0K 1% 1/10W 100V	R18,141,
		R229,242,
		R244,271,
		R331,346
RE-220003-30	RES SMT 20.0K 1% 1/8W 1206	R172,173
		R49,50,
RE-224901-30	RES SMT 24.9K 1% I/I OW 1 OOV	R325
RE-230002-10	RES MOFP 30K 5% 2W MINI	R351,352
RE-239202-30	RES SMT 39.2K 1% 1/10W 100V	R143,183,
		RI 84,243,
		R20,60,61,
		R261,323,
		R332
RE-247503-30	RES SMT 47.5K 1% 1/1OW 1OOV	R26,149
RE-310002-30	RES SMT 1 OOK 1% 1/1OW 1 OOV	R156
		R33,119,
RE-310003-30	RES SMT 1 OOK 5% 1/8W 1206	R196,197,
		R268,341,
		R342,344,
		R343,345
		R73,74,
RE-315002-30	RES MF 150K 1% 1/8W 1206	R174,176,
		R333,335
		R51,53,
RE-339201-30	RES SMT 392K 1% I/I OW 1 OOV	R24,145,
		R260,263,
		R340
RE-348702-30	RES MF 487K 1% 1/8W 1206	R321,322,
		R326,328
RE-375005-BM	RES MF 750K 2% 1/2W	R339,371
SC-0631 00-PP	#6-20 X 5/8" "AB" TYPE 1 XRECE	
SC-Oal 101-SP	#a-la X 5/8", TYPE 1 P/P BLACK	
SW-000029-S	RELAY, SPKR PROTECT, SPDT, 2	KI
SW-000053-00	SWITCH DIP 10-POS, TALL	SW1
WC-0.2020-JW	JMPR BARE 0.2" 20AWG SLD	D22,46,47
		REF:D21,
WC-O.501 a-JW	JMPR INS 0.5" 18AWG SLD WHT	J240,

PLX 1602 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
		REF:D87,88
WC-000001-10	JUMPER INS .6" 22AWG SOLID W	R224
WC-000103-00	CABLE ASSY, 20 PIN 9"L	J3-4,J5-6
WC-0001 15-00	AC SWITCH WIRE, BLK, LONG	REF:ES2, TO SWITCH
WC-0001 15-01	AC SWITCH WIRE, RED, SHORT	REF:ES1,
WC-0001 15-01	AC SWITCH WIRE, RED, SHORT	TO SWITCH
WC-0001 17-00	SPEAKER WIRE, BLACK	E12A-12C
		REF:
WC-0001 17-01	SPEAKER WIRE, WHITE	E9A-9C
		REF:
WC-0001 17-02	SPEAKER WIRE, GREY	E11A-11C
		REF:
WC-0001 17-03	SPEAKER WIRE, BLACK	E10A-10C
		REF:
WC-0001 18-00	WIRE ASSY,BLK, LONG	EHI-EH2
		REF:
XF-000005-00	BEAD FERRITE W/20AWG LEAD	L9,10
XF-000023-00	CHOKE COMMON MODE 2.2MH	L3,4
XF-000061-00	INDUCTOR TORIOD1.9UH13GA	L6
XF-000063-00	XFMR, PWR PLX1602	T2
XF-000064-00	XFMR AMP HOUSEKEPPING PLC	TI
XF-200014-CR	INDUCTOR 2UH 14AWG VERT M	L1,2

PLX 1602 CHASSIS ASSEMBLY (120V)

Part Number	Description	Reference
CH-000097-00	CHASSIS, PLX	
CH-000100-00	HANDLE-EAR CASTING PLX	
CH-000112-00	SHIELD, AC, PLX	
LB-000052-00	LABEL, cUL APPROVAL	
LB-000053-00	LBL, FRENCH, FUSE REPLACEMENT	
LB-000077-00	LABEL,WARNING,HIGH ENERGY	
LB-000214-00	LABEL, FACEPLATE PLX 1602	
LB-000215-00	LABEL, INPUT/OUTPUT, PLX	
LB-160226-05	LABEL, FUSE, UL CAUT. 25A 125V	
NW-380801-IL	3/8" INTERNAL TOOTH LOCKWASHER	
PL-000003-CP	AC CORD PROTECTOR	
PL-000040-PL	POT COVERS	
PL-000044-PL	BUSHING, STRAIN RELIEF	
PL-000054-00	KNOB FAB.	
PL-000066-00	CLIP XMAS-TREE SLG HEAD FASTEX	
PL-000095-00	FAN INTERFACE PLX	
PL-000096-00	INSULATOR,FAN DUCT, PLX	
SC-025000-PP	SCREW M2.5 X 6MM TYPE 1 PH BLK	
SC-060060-PS	SCREW 6-32 X .375 SEMS EXTL ZC	
SC-082051-PL	SCREW,TAP,PAN PH#8X5/16" "B"BK	
SW-000016-S	SPST SNAP IN POWER SWITCH	
WC-0001 14-00	AC CORD ASSY PLX	
WP-000057-00	FAN ASSY, 3.15" 24VDC W/5.5L"	
WP-000516-00	PCB ASSY, PLX 1602 (120V)	

PLX 1602 CHASSIS ASSEMBLY (230V)

Part Number	Description	Reference
CH-000097-00	CHASSIS, PLX	
CH-000100-00	HANDLE-EAR CASTING PLX	
CH-000112-00	SHIELD, AC, PLX	
LB-000053-00	LBL, FRENCH, FUSE REPLACEMENT	
LB-000077-00	LABEL,WARNING,HIGH ENERGY	
LB-000099-01	LABEL, CE LISTING	
LB-000214-00	LABEL, FACEPLATE PLX 1602	
LB-000215-00	LABEL, INPUT/OUTPUT, PLX	
LB-160226-01	LABEL, FUSE, UL CAUT. 15A 250V	
NW-380801-IL	3/8" INTERNAL TOOTH LOCKWASHER	
PL-000003-CP	AC CORD PROTECTOR	
PL-000024-00	STRAIN RELIEF,LIQ.TIGHT,HEYCO	
PL-000040-PL	POT COVERS	
PL-000054-00	KNOB FAB.	
PL-000055-00	EXPORT BINDING POST PLUG(RED)	
PL-000056-00	EXPORT BINDING POST PLUG(BLK)	
PL-000066-00	CLIP XMAS-TREE SLG HEAD FASTEX	
PL-000095-00	FAN INTERFACE PLX	
PL-000096-00	INSULATOR,FAN DUCT, PLX	
SC-025000-PP	SCREW M2.5 X 6MM TYPE 1 PH BLK	
SC-060060-PS	SCREW 6-32 X .375 SEMS EXTL ZC	
SC-082051-PL	SCREW,TAP,PAN PH#8X5/16" "B"BK	
SW-000016-S	SPST SNAP IN POWER SWITCH	
WC-0001 34-00	AC CORD ASSY, 230V, PLX	
WP-000057-00	FAN ASSY, 3.15" 24VDC W/5.5L"	
WP-000516-02	PCB ASSY, PLX 1602 (230V)	

PLX 2402 PCB ASSEMBLY (120V)

Part Number	Description	Reference
CA-010002-30	CAP 1 OPF 5% 50V 0805 SMT	C14,49
CA-015002-10	CAP CER 15PF 10% 500V SL	C16,50
CA-047002-30	CAP CER 47PF 5% 50V NPO SMT	CI93
		C29,30,64,
		C65,187,
CA-1 10001-10	CAP SM IOOPF, 5%, 500V	CI47
CA-I 10002-30	CAP CER IOOPF 5% 50V NPO SM	C40,41,43,
		C5,6,9,18,
		C53
CA-I 33001-10	CAP SM 330PF 5% 500V	C145,146
CA-I 47003-30	CAP 470PF 5% 50V 1206 SMT	cI ,2,4,
CA-I 47003-30	CAP 470PF 5% 50V 1206 SMT	C119,121,
		C148,181,
		CI 7,26,36,
		C182,186,
		CI88
		C37,52,61,
CA-168003-30	CAP CER 68OPF 5% 50V NPO SM	C25,60
CA-210005-30	CAP 001 UF 5% 50V 1206 SMT	C120,124,
		C195,196
		C75,81,85,
CA-222001-00	CAP CER Y .0022UF 20% 125VAC	C122,127
CA-227001-30	CAP CER .0027UF 10% 100V 0805	C108,109,
		CI28
		C20,23,24,
		C55,58,59,
CA-233001-10	CAP MYLAR .0033UF 10% 100V	CI 13
CA-233002-00	CAP CER Y .0033UF 20% 125VAC	CI 15,118
CA-322001-10	CAP MYLAR .022UF 10% 100V	C27,62
CA-410001-00	CAP MET POLY X.1UF 20% 250V	CI26
CA-410002-10	CAP MYLAR .1UF 5% 100V	c47
		C8,12,44,
CA-410003-10	CAP MET POLY 1UF 10% 250V	C129,134,
		C156,157
		C28,34,35,
		C63,69,70,
		C84,87,90,
CA-410006-30	CAP CER .1UF 10% 50V X7R SMT	C116,125,
		C135,155,
		C162,163,
		C177,178,
		C179,180,
		C183,185,
		C189,190,
		C19,39,54,
		CI91
CA-41001 I-00	CAP MMYL .IUF 10% 400V	C107,123
CA-422001-10	CAP MYLAR .22UF 5% 50V	CI 0,45
CA-447001-00	CAP MET POLY X.47UF 20% 250	CI 17
CA-447003-00	CAP POLYP .47UF 10% 400V	CI44
CA-510005-30	CAP LYTIC 1 UF 20% 50V SMT	C13,48,184
CA-510006-00	CAP MPOLY X 1 UF 20% 25OVAC	CI10,112
CA-610002-10	10UF,35V,20%,RADIAL ELECT	C114,192
		C3,31,38,
		C66,80,86,
CA-647001-10	CAP LYTIC RL 47UF 10% 10V NP	C46,71
		C7,11,42,
CA-647002-10	CAP LYTIC RL 47UF 20% 50V	C21,22,56,
		C57,89
CA-710002-10	CAP LYTIC RL 1 OOUF 20%25V	C139,142,
		CI43

PLX 2402 PCB ASSEMBLY (120V) Cont'd

Part Number	Description	Reference
		C15,32,51,
		C67,72,78,
		C79,33,
CA-710004-10	**CAP** LYTIC RL 100UF 20% 25V	C138,149,
		C150
CA-747001-10	CAP LYTIC RL 470UF 20% 16V	C73,74,76,
		C77,131
CA-747004-00	CAP LYTIC RL 470UF 20% 1 OOV	CI 52,153,
		C159,160,
		C165,166,
CA-747004-00	CAP LYTIC RL 470UF 20% 100V	C169,170,
		C173,174
CA-747063-AE	CAP LYTIC RL 470UF 20% 63V	C151,154,
		C158,161,
		C164,167,
		C168,171,
		C172,175
CA-822200.AE	CAP LYTIC RL 2200UF 20% 200V	CI 32,133,
		C136,137
CH-000102-00	HEATSINK, AUDIO, PLX	
CH-000103-00	SPRING, CLAMP, 2 HOLE	
CH-000104-00	HEATSINK PS PLX	
CH-00011 I-00	BRACKT,OUTPUT PCB PLC PLATFORM	
CH-000114-00	CLAMP, 2 FINGER PLX	
CO-000036-CO	SPEAKONS, PC MOUNT	J7,8
CO-000148-00	CONN XLR F VERT PCB	J2,10
CO-0001 55-00	HEADER PCB 100 2-POSITION	J13
CO-000162-00	BNDG POST A, DUAL SLOT, PLX	
CO-000163-00	BNDG POST B, DUAL SLOT, PLX	
CO-3001 12-PJ	JACK 1/4" PHONE DBLOPEN CKT	J1,9
HW-000001-FC	FUSE CLIPS	REF:FI
IC-000024-00	IC REG PWM 40V O.IA SG3525A	U19
IC-000047-30	IC LIN DUAL COMP LM393 SO-8	U10
IC-000048-30	IC LIN DUAL OP AMP MC33078	U1,6
IC-000051-00	IC OPTO-ISO MOC8101	U15,17
IC-000053-30	IC LIN SMT DUAL TIMER LM556	U14
IC-000054-30	IC LIN SMT QUAD COMP LM339A	U13
IC-000073-30	IC LIN DUAL OP AMP LM13600	U3
IC-000133-30	IC LIN COMP LM311	U4,5,8,9
IC-000134-00	IC CMOS HV DRVR IR2110	U18
IC-000135-00	IC LIN PWM SWITCH TOP 210	U16
IC-005532-OP	IC LIN DUAL OP AMP 5532 EX/MP	U2,7
MS-000048-HS	HEAT SINK, ISOL TO-220	REF:Q91
MS-0001 12-00	FUSE 25A125V 3AG FAST CER	FI
PC-000531 -00	PCB MAIN PLX	
PL-000098-00	INSULATOR, TO-220, PLX	
PL-000114-00	INSULATOR, IGBT/RECTHS, PLX	
PL-000117-00	INSULATOR, TO-247, PLX	
PL-000126-00	SPRING, SEAT, PLX	
PL-000128-00	SPACER, LED, .276"	LD2-LD11
		R155,LD1,
		REF:R30,
PL-000135-00	INSULATOR, MICA 1.25" X 1.75"	REF:Q96,97
PL-905156-SP	SPACER,ROUND,NYLON,#6,0.155	REF:L1,2
PT-125000-AT	RES VAR IT 250 20% 0.15W CAR	VR43,166
PT-310000-CR	RES VAR IT 10K 20% 0.2W W/DE	VR2,121
QD-000014-QD	DIODE TO220 ULTRAFAST 200V	D21,22,46,
		D47,74,75,
		D80,81
QD-000021-QD	1N4740 1 OV ZENER1W	D7,32,88
QD-000031 -QD	FET NCHAN TO220 60V 50A	Q38,41,83,

PLX 2402 PCB ASSEMBLY (120V) Cont'd

Part Number	Description	Reference
		Q86
QD-000042-00	DIODE RECT ULTRAFAST 400V 3	D70,71
QD-000052-00	LED GRN T-I	LD2,3,4,7, LD8,9,11
QD-000053-00	LED YEL T-I	LD1,6
QD-000054-00	LED RED T-I	LD5,10
QD-000062-10	XISTOR NPN TO-92 40V 0.2A 1.5	Q20,65
QD-000063-10	XISTOR PNP TO-92 40V 0.2A1.5	Q21,66
QD-000076-00	XISTOR NPN TO-220 250V	Q27,72
QD-000077-00	XISTOR PNP TO-220 250V	Q26,71
QD-000102-30	DIODE SW 1N4148 SMT 75V 75M	D1-5,8,9, D10-12,14, D15,17,18, D23-30,33, D34-37,39, D40,42,43, D48-51,55, D59,63,64, D65,67,69, D89,90,91
QD-000103-30	XISTOR NPN SMT 40V 2A .2W	Q13,15,18, Q25,30,32, Q49,50,52, Q5,7,8,9, Q53,54,58, Q60,63,70, Q75,77,89, Q90,92,93, Q95
QD-000104-30	XISTOR PNP SMT 40V .2A .2W	Q1-4,6,10, Q12,14,23, Q24,31,33, Q42,43,44, Q45-48,51, Q55,57,59, Q68,69,76, Q78,87,88, Q94,98,99
QD-000105-30	XISTOR NPN SMT 300V .2A .2W	Q16,61
QD-000106-30	XISTOR PNP SMT 300V .2A .2W	Q17,62
QD-000108-30	DIODE SMT SWITCH 200V .2A 50	D13,16,38, D41,61,68, D78,79
QD-0001IO-30	DIODE ZNR 6.2V 5% .3W SMT	D56
QD-000113-30	DIODE ZNR 10V 5% .3W SMT	D66
QD-000115-30	DIODE SMT RECT 600V IA	D58,60,86
QD-000116-30	DIODE RECT SMT 200V IA	D62,76,77, D82,83
QD-000152-10	DIODE ZNR 12V 5% 1 W 1 N4742A	D57
QD-000153-00	DIOD RECT TO247 UFAST 400V 3	D72,73,84, D85
QD-000154-00	XISTOR NPN TO-220 230V	Q19,64
QD-000155-00	XISTOR PNP TO-220 230V	Q22,67
QD-000156-00	XISTOR PNP TO-220 100V 3A 40	Q91
QD-000169-00	XISTOR IGBT TO-247AC 600V 55	Q96,97
QD-000170-00	DIODE BRIDGE RECT 600V 50A	BR1
QD-0003.9-ZT	DIODE ZNR 3.9V TESTED	D6,31
QD-001302-PN	XISTOR PNP TO-3P 200V 15A	Q28,34,36, Q39,73,79, Q81,84
QD-003281-NP	XISTOR NPN TO-3P 200V 15A	Q29,35,37,

PLX 2402 PCB ASSEMBLY (120V) Cont'd

Part Number	Description	Reference
		Q40,74,80, Q82,85
QD-004744-ZA	DIODE ZNR 15V 5% 1 W 1 N4744A	D53,54,87
QD-005402-DX	DIODE RECT DO27 200V 3A	D19,20,44, D45
RE- 04703-10	RES MOFP .47 5% 2W MINI	R102,103, R107,108, RIII-114,
RE-.04703-10	RES MOFP .47 5% 2W MINI	R211,212, R214,215, R217,218, R220,222, R225,226, R230,231, R234-237 R88,89,91, R92,94,95, R97,99,
RE-.15002-10	RES MOFP 1.5 5% 2W MINI	R115,116, R238,239, R269
RE-.56002-10	RES MOFP 5.6 5% 2W MINI	R203,221, R354,355, R373 R80,98,
RE-000210-NR	THERMISTOR NTC 15A CUR LIM	R324
RE-000230-NR	THERMISTOR NTC 10K 5%	R30,155
RE-001003-30	RES SMT 10 OHM 5% 1/8W 1206	R353,356, R358,359
RE-001502-10	RES MOFP 15 5% 2W MINI	R209,210, R213,216, R350,367, R368 R85-87,90, R93,208,
RE-003921-30	RES SMT 39.2 OHM 1% 1/8W 120	R246-249, R349,357
RE-004752-30	RES SMT 47.5 1% 1/1OW 1 OOV	R100,110, R223,233
RE-005606-10	RES MOFP 56 5% 2W MINI	R372
RE-007502-30	RES SMT 75 1% 1/10W 1 OOV	R124,193, R194 R5,6,70, R71,123,
RE-010002-30	RES SMT 100 1% 1/10W 100V	R144,150, R21,27, R334,364, R381-384
RE-015004-10	RES MOFP 150 5% 2W MINI	R256,278
RE-020002-30	RES SMT 200 1% 1/1OW 1 OOV	R204,205 R81,82,
RE-027401-30	RES SMT 274 1% 1/10W 1 OOV	R190,191 R67,68,
RE-038301-30	RES SMT 383 1% 1/10W 100V	R44,167
RE-047001-10	RES MOFP 470 5% 2W MINI	R274-277, R279
RE-047502-30	RES SMT 475 1% 1/1OW 100V	R151,160 R28,37,
RE-053602-30	RES SMT 536 1% 1/1OW 1 OOV	R22,146, R361,374
RE-063402-30	RES SMT 634 1% 1/8W 1206	R370

PLX 2402 PCB ASSEMBLY (120V) Cont'd

Part Number	Description	Reference
RE-082001-10	RES MOFP 820 5% 2W MINI	R257
RE-110006-30	RES SMT 1.00K 1% 1/8W 1206	R1,7,42, R117,118, R128,165, R232,250, R252,369
RE-115002-30	RES SMT 1.50K 1% 1/10W 100V	R101,109,
RE-115002-30	RES SMT 1.50K 1% 1/10W 100V	R147,154, R157,158, R162,164, R23,32,34, R270,273
		R35,39,41,
RE-120002-30	RES SMT 2.00K 1% 1/10W 100V	RI71
		R48,127,
RE-122103-30	RES SMT 2.21K 1% 1/10W 100V	RI 70,195, R198,240, R207
		R264,265, R267,347, R348,84,
		R47,72,75,
RE-130102-30	RES SMT 3.01K 1% 1/10W 100V	R79,202
RE-139002-10	RES MOFP 3 9K 5% 2W MINI	R219,228, R251
		R96,105,
RE-147502-30	RES SMT 4.75K 1% 1/10W 100V	R11,17, R125,126, R131,137, R138,178, R179,182, R185,186, R187,253, R3,4,10, R327,330, R362
		R55,56,59,
		R62-64,
RE-156001-10	RES 5.60K .1% 1/4W 25PPM	R13,129, R130,135, R136
		R8,9,12,
RE-159002-30	RES SMT 5.90K 1% I/I OW 1 OOV	R122,152, R201,206
		R29,78,83,
RE-175002-30	RES SMT 7.50K 1% 1/10W 100V	R120,132, R140,161
		R15,38,
RE-178701-30	RES SMT 7.87K 1% 1/10W 100V	R360
RE-190902-30	RES SMT 9.09K 1% I/I OW 1 OOV	R258,266, R272
RE-210003-30	RES SMT 1 O.OK 1% I/I OW 1 OOV	R336,338, R363,366, R375,376
RE-212702-30	RES SMT 12.7K 1% 1/10W 100V	RIO6
		R133,134, R139,142,
		R14,16,19,
		R159,168, R169,188, R227,241,

PLX 2402 PCB ASSEMBLY (120V) Cont'd

Part Number	Description	Reference
		R245,259, R329,337, R36,45,46, R65,104,
RE-215002-30	RES SMT 15.0K 1% 1/10W 100V	R25,148, R262,365
RE-216501-CM	RES MF 16.5K 1% 1/2W	R31,153
RE-220002-30	RES SMT 20.0K 1% 1/10W 1 OOV	R18,141, R229,242, R244,271, R331,346
RE-224901-30	RES SMT 24.9K 1% I/I OW 1 OOV	R325
RE-230002-10	RES MOFP 30K 5% 2W MINI	R351,352
RE-230102-30	RES SMT 30.1K 1% 1/8W 1206	R172,173
		R49,50,
RE-239202-30	RES SMT 39.2K 1% 1/10W 100V	R143,183, R184,199, R20,60,61, R200,243, R261,323, R332,76,77
RE-247503-30	RES SMT 47.5K 1% 1/10W 100V	R149
		R2,26,43,
RE-310002-30	RES SMT 1 OOK 1% I/I OW 1 OOV	R156
		R33,1IQ,
RE-310003-30	RES SMT 100K 5% 1/8W 1206	R176,196, R197,268, R344,345
		R51,53,73,
		R74,174,
RE-315002-30	RES MF 150K 1% 1/8W 1206	R177,180, R181,333, R335,341, R342,343
		R52,54,57,
		R58,175,
RE-339201-30	RES SMT 392K 1% 1/10W 100V	R145,189,
		RI 92,260,
		R24,66,69, R263,340
RE-348702-30	RES MF 487K 1% 1/8W 1206	R321,322, R326,328
RE-375005BM	RES MF 750K 2% 1/2W	R339,371
SC-063100-PP	#6-20 X 5/8" "AB" TYPE 1 XRECE	
SC-081 101-SP	#8-18 X 5/8", TYPE 1 P/P BLACK	
SW-000029-S	RELAY, SPKR PROTECT,SPDT,2	KI
SW-000053-00	SWITCH DIP 10-POS, TALL	SW1
WC-0.5018-JW	JMPR INS 0.5" 18AWG SLD WHT	J120
WC-000001-10	JUMPER INS .6" 22AWG SOLID W	R224,280
WC-000103-00	CABLE ASSY, 20 PIN 9"L	J3-4,J5-6
WC-0001 15-00	AC SWITCH WIRE, BLK, LONG	REF:ES2, TO SWITCH
WC-0001 15-01	AC SWITCH WIRE, RED, SHORT	REF:ES1, TO SWITCH
WC-0001 17-00	SPEAKER WIRE, BLACK	E12A-12C REF:
WC-0001 17-01	SPEAKER WIRE, WHITE	E9A-9C REF:
WC-0001 17-02	SPEAKER WIRE, GREY	E11A-11C REF:

PLX 2402 PCB ASSEMBLY (120V) Cont'd

Part Number	Description	Reference
WC-000117-03	SPEAKER WIRE, BLACK	E10A-10C
		REF:
WC-00011 8-00	WIRE ASSY,BLK, LONG	EH1-EH2
		REF:
WC-000118-01	WIRE ASSY, RED, SHORT	ELI-EI2OA
WC-000118-01	WIRE ASSY, RED, SHORT	REF:
XF-000005-00	BEAD FERRITE W/20AWG LEAD	L7-12
XF-000023-00	CHOKE COMMON MODE 2.2MH	L3,4
XF-000061-00	INDUCTOR TORIOD 1.9UH 13GA	L6
XF-000064-00	XFMR AMP HOUSEKEPPING PLC	TI
XF-000079-00	XFMR PLX1202/2402 (120V)	T2
XF-000085-00	***XFMR** PLX1202/2402 (100V)*	***T2***
XF-200014-CR	INDUCTOR 2UH 14AWG VERT M	L1,2

PLX 2402 PCB ASSEMBLY (230V)

Part Number	Description	Reference
CA-010002-30	CAP 1 OPF 5% 50V 0805 SMT	C14,49
CA-015002-10	CAP CER 15PF 10% 500V SL	C16,50
CA-047002-30	CAP CER 47PF 5% 50V NPO SMT	CI93
CA-047002-30	CAP CER 47PF 5% 50V NPO SMT	C29,30,64,
		C65,187,
CA-110001-10	CAP SM IOOPF, 5%, 500V	CI47
CA-I 10002-30	CAP CER IOOPF 5% 50V NPO SM	C40,41,43,
		C5,6,9,18,
		C53
CA-133001-10	CAP SM 330PF 5% 500V	C145,146
CA-147003-30	CAP 470PF 5% 50V 1206 SMT	C1,2,4,
		C119,121,
		C148,181,
		C17,26,36,
		C182,186,
		CI88
		C37,52,61,
CA-I 68003-30	CAP CER 68OPF 5% 50V NPO SM	C25,60
CA-210005-30	CAP .001UF 5% 50V 1206 SMT	C120,124,
		C195,196
		C75,81,85,
CA-222001-00	CAP CER Y .0022UF 20% 125VAC	C122,127
CA-227001-30	CAP CER .0027UF 10% 100V 0805	C108,109,
		CI28
		C20,23,24,
		C55,58,59,
CA-233001-10	CAP MYLAR .0033UF 10% 100V	C113
CA-233002-00	CAP CER Y .0033UF 20% 125VAC	CI 15,118
CA-322001-10	CAP MYLAR .022UF 10% 100V	C27,62
CA-410001-00	CAP MET POLY X. 1 UF 20% 250V	CI 26
CA-410002-10	CAP MYLAR.1UF 5% 1 OOV	c47
		C8,12,44,
CA-410003-10	CAP MET POLY .IUF 10% 250V	C129,134,
		C156,157
		C28,34,35,
		C63,69,70,
		C84,87,90,
CA-410006-30	CAP CER .IUF 10% 50V X7R SMT	C116,125,
		C135,155,
		C162,163,
		C177,178,
		C179,180,

PLX 2402 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
		C183,185,
		C189,190,
		C19,39,54,
		CI91
CA-410011-00	CAP MMYL .IUF 10% 400V	C107,123
CA-422001-10	CAP MYLAR .22UF 5% 50V	C10,45
CA-447001-00	CAP MET POLY X.47UF 20% 250	CI 17
CA-447003-00	CAP POLYP .47UF 10% 400V	C144
CA-510005-30	CAP LYTIC 1 UF 20% 50V SMT	C13,48,184
CA-510006-00	CAP MPOLY X 1UF 20% 25OVAC	C110,112
CA-610002-10	10UF,35V,20%,RADIAL ELECT	C114,192
		C3,31,38,
		C66,80,86,
CA-647001-10	CAP LYTIC RL 47UF 10% 10V NP	C46,71
		C7,11,42,
CA-647002.10	CAP LYTIC RL 47UF 20% 50V	C21,22,56,
		C57,89
CA-710002-10	CAP LYTIC RL 1 OOUF 20%25V	C139,142,
		C143
		C15,32,51,
		C67,72,78,
CA-710002-10	CAP LYTIC RL IOOUF 20% 25V	C79,33,
CA-710004-10	CAP LYTIC RL 100UF 20% 25V	C138,149,
		C150
CA-747001-10	CAP LYTIC RL 470UF 20% 16V	C73,74,76,
		C77,131
CA-747004-00	CAP LYTIC RL 470UF 20% 1 OOV	CI 52,153,
		C159,160,
		C165,166,
		C169,170,
		C173,174
CA-747063-AE	CAP LYTIC RL 470UF 20% 63V	C151,154,
		C158,161,
		C164,167,
		C168,171,
		C172,175
CA-822200-AE	CAP LYTIC RL 2200UF 20% 200V	CI 32,133,
		C136,137
CH-000102-00	HEATSINK, AUDIO, PLX	
CH-000103-00	SPRING, CLAMP, 2 HOLE	
CH-000104-00	HEATSINK PS PLX	
CH-0001 1 I-00	OBS-BRACKET,OUTPUT PCB PLC	
CH-000114-00	CLAMP, 2 FINGER PLX	
CO-000036-CO	SPEAKONS, PC MOUNT	J7,8
CO-000148-00	CONN XLR F VERT PCB	J2,10
CO-000155-00	HEADER PCB .100 2-POSITION	J13
CO-000162-00	OBS-BNDG POST A,DUAL SLOT,PLX	
CO-000163-00	OBS-BNDG POST B,DUAL SLOT,PLX	
CO-3001 12-PJ	JACK 1/4" PHONE DBLOPEN CKT	J1,9
HW-OOOOOI-FC	FUSE CLIPS	REF:FI
IC-000024-00	IC REG PWM 40V O.IA SG3525A	U19
IC-000047-30	IC LIN DUAL COMP LM393 SO-8	U10
IC-000048-30	IC LIN DUAL OP AMP MC33078	U1,6
IC-000051-00	IC OPTO-IS0 MOC8101	U15,17
IC-000053-30	IC LIN SMT DUAL TIMER LM556	U14
IC-000054-30	IC LIN SMT QUAD COMP LM339A	U13
IC-000073-30	IC LIN DUAL OP AMP LM13600	U3
IC-000133-30	IC LIN COMP LM311	U4,5,8,9
IC-000134-00	IC CMOS HV DRVR IR21IO	U18
IC-000135-00	IC LIN PWM SWITCH TOP 210	U16

PLX 2402 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
IC-005532-OP	IC LIN DUAL OP AMP 5532 EX/MPU	2,7
MS-000048-HS	HEAT SINK, ISOL TO-220	REF:Q91
MS-I 50250-FU	FUSE 15A 250V 3AG FAST CER	FI
PC-000531-00	PCB MAIN PLX	
PL-000098-00	INSULATOR, TO-220, PLX	
PL-000114-00	INSULATOR, IGBT/RECTHS, PLX	
PL-000117-00	INSULATOR, TO-247, PLX	
PL-000126-00	SPRING, SEAT, PLX	
PL-000128-00	SPACER, LED, .276"	LD2-11 R155,LD1, REF:R30,
PL-000135-00	INSULATOR, MICA 1.25" X 1.75"	REF:Q96,97
PL-905156-SP	SPACER,ROUND,NYLON,#6,0.155	REF:L1,2
PT-125000-AT	RES VAR IT 250 20% 0.15W CAR	VR43,166
PT-310000-CR	RES VAR IT 10K 20% 0.2W W/DE	VR2,121
QD-000014-QD	DIODE TO220 ULTRAFAST 200V	D21,22,46, D47,74,75, D80,81
QD-000021-QD	1N4740 1 OV ZENER 1 W	D7,32,88
QD-000031-QD	FET NCHAN TO220 60V 50A	Q38,41,83, Q86
QD-000042-00	DIODE RECT ULTRAFAST 400V 3	D70,71
QD-000052-00	LED GRN T-I	LD2,3,4,7, LD8,9.11
QD-000053-00	LED YEL T-I	LD1,6
QD-000054-00	LED RED T-I	LD5,10
QD-000062-10	XISTOR NPN TO-92 40V 0.2A 1 5	Q20,65
QD-000063-10	XISTOR PNP TO-92 40V 0.2A 1.5	Q21,66
QD-000076-00	XISTOR NPN TO-220 250V	Q27,72
QD-000077-00	XISTOR PNP TO-220 250V	Q26,71
QD-000102-30	DIODE SW IN4148 SMT 75V 75M	D1-5,8,9, D10-12,14, D15,17,18, D23-30,33, D34-37,39, D40,42,43, D48-51,55, D59,63-65, D67,69,89, D90,91
QD-000103-30	XISTOR NPN SMT 40V .2A .2W	Q13,15,18, Q25,30,32, Q49,50,52, Q5,7,8,9, Q53,54,58, Q60,63,70, Q75,77,89, Q90,92,93, Q95
QD-000104-30	XISTOR PNP SMT 40V .2A .2W	Q1-4,6,10, Q12,14,23, Q24,31,33, Q42,43,44, Q45-48,51, Q55,57,59, Q68,69,76, Q78,87,88, Q94,98,99
QD-000105-30	XISTOR NPN SMT 300V .2A .2W	Q16,61
QD-000106-30	XISTOR PNP SMT 300V .2A .2W	Q17,62
QD-000108-30	DIODE SMT SWITCH 200V .2A 50	D13,16,38,

PLX 2402 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
		D41,61,68, D78,79
QD-000110-30	DIODE ZNR 6.2V 5% .3W SMT	D56
QD-000113-30	DIODE ZNR 10V 5% .3W SMT	D66
QD-000115-30	DIODE SMT RECT 600V IA	D58,60,86
QD-000116-30	DIODE RECT SMT 200V IA	D62,76,77, D82,83
QD-000152-10	DIODE ZNR 12V 5% 1W 1 N4742A	D57
QD-000153-00	DIOD RECT TO247 UFAST 400V 3	D72,73,84, D85
QD-000154-00	XISTOR NPN TO-220 230V	Q19,64
QD-000155-00	XISTOR PNP TO-220 230V	Q22,67
QD-000156-00	XISTOR PNP TO-220 100V 3A 40	Q91
QD-000169-00	XISTOR IGBT TO-247AC 600V 55	Q96,97
QD-000170-00	DIODE BRIDGE RECT 600V 50A	BR1
QD-0003.9-ZT	DIODE ZNR 3.9V TESTED	D6,31
QD-001302-PN	XISTOR PNP TO-3P 200V 15A	Q28,34,36, Q39,73,79, Q81,84
QD-003281-NP	XISTOR NPN TO-3P 200V 15A	Q29,35,37,
QD-003281-NP	XISTOR NPN TO-3P 200V 15A	Q40,74,80, Q82,85
QD-004744.ZA	DIODE ZNR 15V 5% 1W 1 N4744A	D53,54,87
QD-005402-DX	DIODE RECT DO27 200V 3A	D19,20,44, D45
RE-.04703-10	RES MOFP .47 5% 2W MINI	R102,103, R107,108, RIII-114, R211,212, R214,215, R217,218, R220,222, R225,226, R230,231, R234-237 R88,89,91, R92,94,95, R97,99,
RE-.15002-10	RES MOFP 1.5 5% 2W MINI	R115,116, R238,239, R269
RE-.56002-10	RES MOFP 5.6 5% 2W MINI	R203,221, R354,355, R373 R80,98,
RE-000210-NR	THERMISTOR NTC 15A CUR LIM	R324
RE-000230-NR	THERMISTOR NTC 10K 5%	R30,155
RE-001003-30	RES SMT 10 OHM 5% 1/8W 1206	R353,356, R358,359
RE-001502-10	RES MOFP 15 5% 2W MINI	R209,210, R213,216, R350,367, R368 R85-87,90, R93,208,
RE-003921-30	RES SMT 39.2 OHM 1% 1/8W 120	R246-249, R349,357
RE-004752.30	RES SMT47.5 1% 1/10W 100V	R100,110, R223,233
RE-005606-10	RES MOFP 56 5% 2W MINI	R372
RE-007502-30	RES SMT 75 1% 1/10W 100V	R124,193, R194 R5,6,70,

PLX 2402 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
RE-010002-30	RES SMT 100 1% 1/10W100V	R71,123, R144,150, R21,27, R334,364, R381-384
RE-015004-10	RES MOFP 150 5% 2W MINI	R256,278
RE-020002-30	RES SMT 200 1% 1/10W100V	R204,205
RE-027401-30	RES SMT 274 1% 1/10W100V	R81,82, R190,191
RE-038301-30	RES SMT 383 1% 1/10W100V	R67,68, R44,167
RE-047001-10	RES MOFP 470 5% 2W MINI	R274-277, R279
RE-047502-30	RES SMT 475 1% 1/10W100V	R151,160
RE-053602-30	RES SMT 536 1% 1/10W100V	R28,37, R22,146, R361,374
RE-063402-30	RES SMT 634 1% 1/8W 1206	R370
RE-082001-10	RES MOFP 820 5% 2W MINI	R257
RE-110006-30	RES SMT 1.00K 1% 1/8W 1206	RI ,7,42, RI 17,118, R128,165, R232,250, R252,369
RE-115002-30	RES SMT1.50K 1%1/1OW 1 OOV	R101,109, R147,154, R157,158, R162,164, R23,32,34, R270,273
RE-120002-30	RES SMT 2.00K 1% 1/10W100V	R35,39,41, RI71
RE-122103-30	RES SMT 2.21K 1% 1/10W100V	R48,127, R170,195, R198,240, R207
RE-130102-30	RES SMT 3.01K 1% 1/10W100V	R264,265, R267,347, R348,84, R47,72,75, R79,202
RE-139002-10	RES MOFP 3.9K 5% 2W MINI	R219,228, R251
RE-147502-30	RES SMT 4.75K 1% 1/10W100V	R96,105, R11,17, R125,126, R131,137, R138,178, R179,182, R185,186, R187,253, R3,4,10, R327,330, R362
RE-156001-10	RES 5.60K .l% 1/4W 25PPM	R55,56,59, R62-64, R13,129, R130,135, R136
RE-159002-30	RES SMT 5.90K 1% 1/10W100V	R8,9,12, R122,152,

PLX 2402 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
RE-175002-30	RES SMT 7.50K 1% 1/10W100V	R201,206 R29,78,83, R120,132, R140,161
RE-178701-30	RES SMT 7.87K 1% 1/10W IOOV	R15,38, R360
RE-190902-30	RES SMT 9.09K 1% 1/10W100V	R258,266, R272
RE-210003-30	RES SMT 1 O.OK 1%1/10W 1 OOV	R336,338, R363,366, R375,376
RE-212702-30	RES SMT 12.7K 1% 1/10W100V	R106 R133,134, R139,142, R14,16,19, R159,168,
RE-212702-30	RES SMT 12.7K 1% 1/10W100V	R169,188, R227,241, R245,259, R329,337, R36,45,46, R65,104,
RE-215002-30	RES SMT 15.0K 1% 1/1OW 1 OOV	R25,148, R262,365
RE-216501-CM	RES MF 16.5K 1% 1/2W	R31,153
RE-220002-30	RES SMT20.0K 1% I/I OW 1 OOV	R18,141, R229,242, R244,271, R331,346
RE-224901-30	RES SMT 24.9K 1% 1/10W100V	R325
RE-230002-10	RES MOFP 30K 5% 2W MINI	R351,352
RE-230102-30	RES SMT 30.1K 1% 1/8W 1206	R172,173
RE-239202-30	RES SMT 39 2K 1% 1/10W100V	R49,50, R143,183, R184,199, R20,60,61, R200,243, R261,323, R332,76,77
RE-247503-30	RES SMT 47.5K 1% 1/10W100V	R149
RE-310002-30	RES SMT 100K 1% 1/10W100V	R2,26,43, RI 56
RE-310003-30	RES SMT 1 OOK 5%1/8W1206	R33,119, R176,196, R197,268, R344,345
RE-315002-30	RES MF 150K 1% 1/8W 1206	R51,53,73, R74,174, R177,180, R181,333, R335,341, R342,343
RE-339201-30	RES SMT 392K 1% 1/1OW 1 OOV	R52,54,57, R58,175, R145,189, R192,260, R24,66,69, R263,340
RE-348702-30	RES MF 487K 1% 1/8W 1206	R321,322,

PLX 2402 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
		R326,328
RE-375005-BM	RES MF 750K 5% 1/2W 100PPM	R339,371
SC-063100-PP	#6-20 X 5/8" "AB" TYPE 1 XRECE	
SC-081101-SP	#8-18 X 5/8", TYPE 1 P/P BLACK	
SW-000029-S	RELAY, SPKR PROTECT,SPDT,2 KI	
SW-000053-00	SWITCH DIP IO-POS, TALL	SW1
WC-0.5018-JW	JMPR INS 0.5"18AWG SLD WHT	J240
WC-000001-10	JUMPER INS .6" 22AWG SOLID W	R224,280
WC-000103-00	CABLE ASSY, 20 PIN 9"L	J3-4,J5-6
WC-000115-00	AC SWITCH WIRE, BLK, LONG	REF:ES2, TO SWITCH
WC-000115-01	AC SWITCH WIRE, RED, SHORT	REF:ES1, TO SWITCH
WC-000117-00	SPEAKER WIRE, BLACK	E12A-12C
		REF:
WC-000117-01	SPEAKER WIRE, WHITE	E9A-9C
WC-000117-01	SPEAKER WIRE, WHITE	REF.
WC-000117-02	SPEAKER WIRE, GREY	E11A-11C
		REF:
WC-000117-03	SPEAKER WIRE, BLACK	E10A-10C
		REF.
WC-000118-00	WIRE ASSY,BLK, LONG	EH1-EH2
		REF:
XF-000005-00	BEAD FERRITE W/20AWG LEAD	L7-12
XF-000023-00	CHOKE COMMON MODE 2.2MH	L3,4
XF-000061-00	**INDUCTOR TORIOD 1.9UH 13GA**	**L6**
XF-000064-00	**XFMR AMP HOUSEKEEPING PLC**	TI
XF-000079-00	XFMR PLX1202/2402	T2
XF-200014-CR	INDUCTOR 2UH 14AWG VERT M	L1,2

PLX 2402 CHASSIS ASSEMBLY (120V)

Part Number	Description	Reference
CH-000097-00	CHASSIS, PLX	
CH-000100-00	HANDLE-EAR CASTING PLX	
CH-000112-00	SHIELD, AC, PLX	
LB-000052-00	LABEL, cUL APPROVAL	
LB-000053-00	LBL, FRENCH, FUSE REPLACEMENT	
LB-000077-00	LABEL,WARNING,HIGH ENERGY	
LB-000215-00	LABEL, INPUT/OUTPUT, PLX	
LB-000237-00	LABEL, FACEPLATE PLX 2402	
LB-I 60226-05	LABEL, FUSE, UL CAUT.25A 125V	
NW-380801.IL	3/8" INTERNAL TOOTH LOCKWASHER	
PL-000003-CP	AC CORD PROTECTOR	
PL-000040-PL	POT COVERS	
PL-000044-PL	BUSHING, STRAIN RELIEF	
PL-000054-00	KNOB FAB.	
PL-000066-00	CLIP XMAS-TREE SLG HEAD FASTEX	
PL-000095-00	FAN INTERFACE PLX	
PL-000096-00	INSULATOR,FAN DUCT, PLX	
SC-025000-PP	SCREW M2.5 X 6MM TYPE 1 PH BLK	
SC-060060-PS	SCREW 6-32 X .375 SEMS EXTL ZC	
SC-082051 -PL	SCREW,TAP,PAN PH#8X5/16" "B"BK	
SW-000016~S	SPST SNAP IN POWER SWITCH	
WC-000114-00	AC CORD ASSY PLX	
WP-000057-00	FAN ASSY, 3.15" 24VDC W/5.5L"	
WP-002403-00	PCB ASSY, PLX 2402 (120V)	

PLX 2402 CHASSIS ASSEMBLY (230V)

Part Number	Description	Reference
CH-000097-00	CHASSIS, PLX	
CH-000100-00	HANDLE-EAR CASTING PLX	
CH-000112-00	SHIELD, AC, PLX	
LB-000053-00	LBL, FRENCH, FUSE REPLACEMENT	
LB-000077-00	LABEL,WARNING,HIGH ENERGY	
LB-000099-01	LABEL, CE LISTING	
LB-000215-00	LABEL, INPUT/OUTPUT, PLX	
LB-000237-00	LABEL, FACEPLATE PLX 2402	
LB-160226-01	LABEL, FUSE, UL CAUT. 15A 250V	
NW-380801-IL	3/8" INTERNAL TOOTH LOCKWASHER	
PL-000003-CP	AC CORD PROTECTOR	
PL-000024-00	STRAIN RELIEF,LIQ.TIGHT,HEYCO	
PL-000040-PL	POT COVERS	
PL-000054-00	KNOB FAB.	
PL-000055-00	EXPORT BINDING POST PLUG(RED)	
PL-000056-00	EXPORT BINDING POST PLUG(BLK)	
PL-000066-00	CLIP XMAS-TREE SLG HEAD FASTEX	
PL-000095-00	FAN INTERFACE PLX	
PL-000096-00	INSULATOR,FAN DUCT, PLX	
SC-025000-PP	SCREW M2.5 X 6MM TYPE 1 PH BLK	
SC-060060-PS	SCREW 6-32 X .375 SEMS EXTL ZC	
SC-082051-PL	SCREW,TAP,PAN PH#8X5/16" "B"BK	
SW-000016-S	SPST SNAP IN POWER SWITCH	
WC-000134-00	AC CORD ASSY,230V, PLX	
WP-000057-00	FAN ASSY,3.15" 24VDC W/5.5L"	
WP-002403-02	PCB ASSY, PLX 2402 (230V)	

PLX 3002 PCB ASSEMBLY (120V)

Part Number	Description	Reference
CA-010002-30	CAP 1 OPF 5% 50V 0805 SMT	C14,49
CA-015002-10	CAP CER 15PF 10% 500V SL	C16,50
CA-047002-30	CAP CER 47PF 5% 50V NPO SMT	Cl 93
		C29,30,64,
		C65,187,
CA-110001-10	CAP SM IOOPF, 5%, 500V	CI47
CA-I 10002-30	CAP CER IOOPF 5% 50V NPO SM	C40,41,43,
		C5,6,9,18,
		C53,99,100
CA-133001-10	CAP SM 330PF 5% 500V	C145,146
CA-I 47003-30	CAP 470PF 5% 50V 1206 SMT	Cl ,2,4,17,
		C119,121,
		C148,181,
		C182,186,
		CI88
		C26,36,37,
		C52,61,
CA-168003-30	CAP CER 680PF 5% 50V NPO SM	C25,60,68,
		C98
CA-21 0005-30	CAP .001UF 5% 50V 1206 SMT	C120,124,
		C195,196
		C75,81,85,
CA-222001-00	CAP CER Y .0022UF 20% 125VAC	C122,127
CA-227001-30	CAP CER .0027UF 10% 100V 0805	C108,109,
		CI28
		C20,23,24,
		C55,58,59,
CA-233001-10	CAP MYLAR .0033UF 10% 100V	C113
CA-233002-00	CAP CER Y .0033UF 20% 125VAC	C115,118
CA-310004-30	CAP 01 UF 10% 50V 1206 SMT	C95,96
CA-322001-10	CAP MYLAR .022UF 10% 100V	C27,62
CA-41 0001-00	CAP MET POLY X.1UF 20% 250V	Cl26
CA-410002-10	CAP MYLAR .IUF 5% 100V	c47
		C8,12,44,
CA-410003-10	CAP MET POLY .IUF 10% 250V	C129,134,
		C156,157
		C28,34,35,
		C63,69,70,
		C84,87,90,
CA-410006-30	CAP CER .IUF 10% 50V X7R SMT	C125,135,
		C155,162,
		C163,179,
		C178,189,
		C180,183,
		C185,177,
		Cl 9,39,54,
		C190,191,
		CI94
		C88,116,
CA-41 001 I-00	CAP MMYL .1UF 10% 400V	C107,123
CA-422001-10	CAP MYLAR .22UF 5% 50V	C10,45
CA-447001-00	CAP MET POLY X.47UF 20% 250	Cl 17
CA-447003-00	CAP POLYP .47UF 10% 400V	CI44
CA-51 0005-30	CAP LYTIC 1 UF 20% 50V SMT	C13,48,184
CA-510006-00	CAP MPOLY X 1UF 20% 25OVAC	C110,112
CA-610002-10	10UF,35V,20%,RADIAL ELECT	C114,192
		C3,31,38,
		C66,80,86,
CA-647001-10	CAP LYTIC RL 47UF 10% 10V NP	C46,71
		C7,11,42,
CA-647002-10	CAP LYTIC RL 47UF 20% 50V	C21,22,56,

PLX 3002 PCB ASSEMBLY (120V) Cont'd

Part Number	Description	Reference
		C57,89
CA-710002-10	CAP LYTIC RL 100UF 20% 25V	C102,104,
		C105,106,
		C139,142,
		Cl43
		C15,32,51,
		C67,72,78,
		C79,33,
CA-710004-10	CAP LYTIC RL 1 OOUF 20%25V	C138,149,
CA-710004-10	CAP LYTIC RL 1 OOUF 20% 25V	C150
CA-722001-10	CAP LYTIC RL 220UF 20% 10V N	C91,92
CA-747001-10	CAP LYTIC RL 470UF 20% 16V	CI31
		C73,74,76,
		C77,82,83,
CA-747004-00	CAP LYTIC RL 470UF 20% 1 OOV	Cl 52,153,
		C159,160,
		C165,166,
		C169,170,
		C173,174
CA-747063-AE	CAP LYTIC RL 470UF 20% 63V	C151,154,
		C158,161,
		C164,167,
		C168,171,
		C172,175
CA-822200-AE	CAP LYTIC RL 2200UF 20% 200V	C132,133,
		C136,137,
		C140,141
CH-000102-00	HEATSINK, AUDIO, PLX	
CH-000103-00	SPRING, CLAMP, 2 HOLE	
CH-000104-00	HEATSINK PS PLX	
CH-0001 11-00	BRACKT,OUTPUT PCB PLC PLATFORM	
CH-000114-00	CLAMP, 2 FINGER PLX	
CO-000036-CO	SPEAKONS, PC MOUNT	J7,8
CO-000106-00	CONN HD15 PIN RT ANGLE PC M	J17
CO-000148-00	CONN XLR F VERT PCB	J2,10
co-0001 55-00	HEADER PCB ,100 2-POSITION	J13
CO-000161-00	CONN BLK HDR 3-PIN EURO OPE	J16,18
CO-000162-00	BNDG POST A, DUAL SLOT, PLX	
CO-000163-00	BNDG POST B, DUAL SLOT, PLX	
CO-300112-PJ	JACK 1/4" PHONE DBLOPEN CKT	J1,9
HW-OOOOOI-FC	FUSE CLIPS	REF:F1
IC-000024-00	IC REG PWM 40V 0.1A SG3525A	U19
IC-000046-30	IC LIN DUAL OP AMP TL072 SO-8	UI 1 ,12
IC-000047-30	IC LIN DUAL COMP LM393 SO-8	U10
IC-000048-30	IC LIN DUAL OP AMP MC33078	U1,6
IC-000051-00	IC OPTO-IS0 MOC8101	U15,17
IC-000053-30	IC LIN SMT DUAL TIMER LM556	U14
IC-000054-30	IC LIN SMT QUAD COMP LM339A	U13
IC-000073-30	IC LIN DUAL OP AMP LM13600	U3
IC-000133-30	IC LIN COMP LM311	U4,5,8,9
IC-000134-00	IC CMOS HV DRVR IR2110	U18
IC-000135-00	IC LIN PWM SWITCH TOP 210	U16
IC-005532-OP	IC LIN DUAL OP AMP 5532 EX/MP	U2,7
MS-000048-HS	HEAT SINK, ISOL TO-220	REF:Q91
MS-000112-00	FUSE 25A 125V 3AG FAST CER	FI
PC-000531-00	PCB MAIN PLX	
PL-000098-00	INSULATOR, TO-220, PLX	
PL-000114-00	INSULATOR, IGBT/RECTHS, PLX	
PL-000117-00	INSULATOR, TO-247, PLX	
PL-000126-00	SPRING, SEAT, PLX	
PL-000128-00	SPACER, LED, .276"	LD2-11

PLX 3002 PCB ASSEMBLY (120V) Cont'd

Part Number	Description	Reference
		R155,LD1,
		REF:R30,
PL-000135-00	INSULATOR, MICA 1.25" X 1.75"	REF:Q96,97
PL-905156-SP	SPACER,ROUND,NYLON,#6,0.155	REF:L1,2
PT-125000-AT	RES VAR IT 250 20% 0.15W CAR	VR43,166
PT-31 OOOO-CR	RES VAR IT 1 OK 20%0.2WW/DE	VR2,121
QD-000014-QD	DIODE TO220 ULTRAFAST 200V	D21,22,46,
		D47,74,75,
QD-000014-QD	DIODE TO220 ULTRAFAST 200V	D80,81
QD-000021-QD	1N4740 1 OV ZENER 1 W	D7,32,88
QD-000031-QD	FET NCHAN TO220 60V 50A	Q38,41,83,
		Q86
QD-000042-00	DIODE RECT ULTRAFAST 400V 3	D70,71
QD-000052-00	LED GRN T-I	LD2,3,4,7,
		LD8,9,11
QD-000053-00	LED YEL T-I	LD1,6
QD-000054-00	LED RED T-I	LD5,10
QD-000062-10	XISTOR NPN TO-92 40V 0 2A 1.5	Q20,65
QD-000063-10	XISTOR PNP TO-92 40V 0 2A 1.5	Q21,66
QD-000076-00	XISTOR NPN TO-220 250V	Q27,72
QD-000077-00	XISTOR PNP TO-220 250V	Q26,71
QD-000102-30	DIODE SW 1N4148 SMT 75V 75M	D1-5,8,9,
		D10-12,14,
		D15,17,18,
		D23-30,33,
		D34-37,39,
		D40,42,43,
		D48-52,55,
		D59,63-65,
		D67,69,89,
		D90,91,93,
		D94
QD-000103-30	XISTOR NPN SMT 40V .2A.2W	Q13,15,18,
		Q25,30,32,
		Q49,50,52,
		Q5,7,8,9,
		Q53,54,58,
		Q60,63,70,
		Q75,77,89,
		Q90,92,93,
		Q95
QD-000104-30	XISTOR PNP SMT 40V .2A 2W	Q1-4,6,10,
		Q11,12,14,
		Q23,24,31,
		Q33,42,43,
		Q44-48,51,
		Q55-57,59,
		Q68,69,76,
		Q78,87,88,
		Q94,98,99
QD-000105-30	XISTOR NPN SMT 300V .2A.2W	Q16,61
QD-000106-30	XISTOR PNP SMT 300V .2A.2W	Q17,62
QD-000108-30	DIODE SMT SWITCH 200V .2A 50	D13,16,38,
		D41,61,68,
		D78,79
QD-0001IO-30	DIODE ZNR 6.2V 5% .3W SMT	D56,92
QD-000113-30	DIODE ZNR 10V 5% .3W SMT	D66
QD-000115-30	DIODE SMT RECT 600V 1A	D58,60,86
QD-000116-30	DIODE RECT SMT 200V IA	D62,76,77,
		D82,83
QD-000152-10	DIODE ZNR 12V 5% 1 W 1 N4742A	D57

PLX 3002 PCB ASSEMBLY (120V) Cont'd

Part Number	Description	Reference
QD-000153-00	DIOD **RECT TO247 UFAST 400V 3**	D72,73,84,
		D85
QD-000154-00	**XISTOR NPN TO-220 230V**	Q19,64
QD-000155-00	**XISTOR PNP TO-220 230V**	Q22,67
QD-000156-00	**XISTOR PNP TO-220** 100V 3A 40	Q91
QD-000169-00	XISTOR IGBT TO-247AC 600V 55	Q96,97
QD-000170-00	DIODE BRIDGE RECT 600V 50A	BR1
QD-0003.9-ZT	DIODE ZNR 3.9V TESTED	D6,31
QD-001302-PN	XISTOR PNP TO-3P 200V 15A	Q28,34,36,
		Q39,73,79,
		Q81,84
QD-003281.NP	XISTOR NPN TO-3P 200V 15A	Q29,35,37,
		Q40,74,80,
		Q82,85
QD-004744-ZA	DIODE ZNR 15V 5% 1W 1 N4744A	D53,54,87
QD-005402-DX	DIODE RECT DO27 200V 3A	D19,20,44,
		D45
RE- 04703-10	RES MOFP .47 5% 2W MINI	R102,103,
		R107,108,
		RIII-114,
		R211,212,
		R214,215,
		R217,218,
		R220,222,
		R225,226,
		R230,231,
		R234-237
		R88,89,91,
		R92,94,95,
		R97,99,
RE-.15002-10	RES MOFP 1.5 5% 2W MINI	R115,116,
		R238,239,
		R269
RE-.56002-10	RES MOFP 5.6 5% 2W MINI	R203,221,
		R354,355,
		R373
		R80,98,
RE-000210-NR	THERMISTOR NTC 15A CUR LIM	R324
RE-000230-NR	THERMISTOR NTC 10K 5%	R30,155
RE-001003-30	RES SMT 10 OHM 5% 1/8W 1206	R314,353,
		R356,358,
		R359
RE-001502-10	RES MOFP 15 5% 2W MINI	R209,210,
		R213,216,
		R350,367,
		R368
		R85-87,90,
		R93,208,
RE-003921-30	RES SMT 39.2 OHM 1% 1/8W 120	R246-249,
		R349,357
RE-004752-30	RES SMT 47.5 1% 1/1OW 1 OOV	R100,110,
		R223,233,
		R308,309,
		R312,313,
		R319
RE-005606-10	RES MOFP 56 5% 2W MINI	R372
RE-007502-30	RES SMT 75 1% 1/1OW 1 OOV	R124,193,
		R194
		R5,6,70,
		R71,123,
RE-010002-30	RES SMT 100 1% 1/10W100V	R144,150,

PLX 3002 PCB ASSEMBLY (120V) Cont'd

Part Number	Description	Reference
		R21,27, R334,364, R381-384
RE-015004-10	RES MOFP 150 5% 2W MINI	R256,278
RE-020002-30	RES SMT 200 1% 1/10W100V	R204,205
RE-027401-30	RES SMT274 1% 1/10W100V	R81,82, R190,191, R290,293
RE-038301-30	RES SMT 383 1% 1/10W100V	R67,68, R254,255
RE-047001-10	RES MOFP 470 5% 2W MINI	R44,167, R274-277, R279,280
RE-047502-30	RES SMT 475 1% 1/10W 1 OOV	R151,160, R28,37, R291,294
RE-053602-30	RES SMT 536 1%1/10W100V	R22,146, R361,374
RE-063402-30	RES SMT 634 1% 1/8W 1206	R370
RE-082001-10	RES MOFP 820 5% 2W MINI	R257
RE-090901-30	909 1/10W 1% 100V SMT	R282,287
RE-110006-30	RES SMT 1 OOK 1% 1/8W 1206	R1,7,42, R117,118, R128,165, R232,250, R252,369
RE-115002-30	RES SMT1.50K 1%1/10W 1 OOV	R101,109, R147,154, R157,158, R162,164, R23,32,34, R270,273, R297-300
RE-117401-30	RES MF 1.74K 1% 1/10W 0805	R35,39,41, R310,311
RE-120002-30	RES SMT 2 OOK 1% 1/10W100V	R171
RE-122103-30	RES SMT 2.21K 1% 1/10W100V	R48,127, R195,198, R207,240, R264,265, R267,306, R307,347, R348
RE-130102-30	RES SMT 3.01K 1% 1/10W100V	R47,72,75, R84,170, R79,202
RE-139002-10	RES MOFP 3.9K 5% 2W MINI	R219,228, R251
RE-147502-30	RES SMT 4 75K1%1/10W100V	R96,105, R11,17,40, R125,126, R131,137, R138,163, R166,178, R179,182, R185-187, R253,315, R3,4,10, R316-318, R327,330, R362

PLX 3002 PCB ASSEMBLY (120V) Cont'd

Part Number	Description	Reference
		R55,56,59, R62-64,
RE-156001-10	RES 5.60K.1%1/4W25PPM	R13,129, R130,135, R136
RE-156001-10	RES 5.60K.1%1/4W25PPM	R8,9,12,
RE-159002-30	RES SMT 5.90K 1% 1/10W100V	R122,152, R201,206
RE-175002-30	RES SMT 7.50K 1% 1/10W100V	R29,78,83, R120,132, R140,161
RE-178701-30	RES SMT 7.87K 1% 1/1OW 1 OOV	R15,38, R360
RE-190902-30	RES SMT 9.09K 1% I/I OW 100V	R258,266, R272
RE-210003-30	RES SMT 10.0K 1% 1/10W100V	R121,305, R336,338, R363,366, R375,376
RE-212702-30	RES SMT 12.7K 1% 1/10W100V	R106,133, R134,139, R14,16,19, R142,159, R168,169, RI 88,227, R241,245, R259,329, R337
RE-215002-30	RES SMT 15.0K 1% 1/10W100V	R36,45,46, R65,104, R25,148, R262,365
RE-216501-CM	RES MF 16.5K 1% 1/2W	R31,153
RE-220002-30	RES SMT 20.0K 1% 1/10W100V	R18,141, R229,242, R244,271, R281,303, R304,331, R346
RE-224901-30	RES SMT 24.9K 1% 1/10W100V	R325
RE-230002-10	RES MOFP 30K 5% 2W MINI	R351,352
RE-230102-30	RES SMT 30.1K 1% 1/8W 1206	R172,173
RE-233201-30	RES SMT 33.2K1% 1/8W 1206	R49,50, R283-286
RE-239202-30	RES SMT 39.2K 1% 1/10W100V	R143,183, R184,199, R20,60,61, R200,243, R261,323, R332,76,77
RE-247503-30	RES SMT 47.5K 1% 1/10W100V	R149
RE-310002-30	RES SMT 100K 1% 1/10W100V	R2,26,43, R156
RE-310003-30	RES SMT 1OOK 5% 1/8W 1206	R33,119, RI 76,196, R197,268, R344,345
RE-315002-30	RES MF 150K 1% 1/8W 1206	R51,53,73, R74,174, R177,180, RI 81,333,

PLX 3002 PCB ASSEMBLY (120V) Cont'd

Part Number	Description	Reference
		R335,341,
		R342,343
		R52,54,57,
		R58,175,
RE-339201-30	**RES** SMT **392K 1%** 1/10W100V	R145,189,
		RI 92,260,
		R24,66,69,
		R263,340
RE-348702-30	RES MF 487K I % 1/8W I 2 0 6	R321,322,
		R326,328
RE-375005-BM	RES MF 750K 2% 1/2W	R339,371
RE-410001-30	RES SMT 1.0 MEG OHM 5% 1/8W	R289,292
SC-063100-PP	#6-20 X 5/8" "AB" TYPE I XRECE	
SC-081101-SP	#8-18 x 5/8", TYPE I P/P BL AC K	
SW-000029-S	RELAY, SPKR PROTECT,SPDT,2	KI
SW-000053-00	SWITCH DIP IO-POS, TALL	SW1
WC-O 5018-JW	JMPR INS 0.5" 18AWG SLD WHT	J120
WC-000001-10	JUMPER INS .6" 22AWG SOLID W	R224
WC-000103-00	CABLE ASSY, 20 PIN 9"L	J14-15
		J3-4,J5-6,
WC-0001 15-00	AC SWITCH WIRE, BLK, LONG	REF:ES2,
		TO SWITCH
WC-0001 15-01	AC SWITCH WIRE, RED, SHORT	REF:ES1,
		TO SWITCH
WC-0001 17-00	SPEAKER WIRE, BLACK	E12A-12C
		REF:
WC-0001 17-01	SPEAKER WIRE, WHITE	E9A-9C
		REF:
WC-0001 17-02	SPEAKER WIRE, GREY	E11A-11C
		REF:
WC-0001 17-03	SPEAKER WIRE, BLACK	E10A-10C
		REF:
WC-0001 Ia-00	WIRE ASSY, BLK, LONG	EHI-EH2
		REF.
WC-0001 18-01	WIRE ASSY, RED, SHORT	ELI-EI2OA
		REF:
XF-000005-00	BEAD FERRITE W/20AWG LEAD	L7-12
XF-000023-00	CHOKE COMMON MODE 2.2MH	L3,4
XF-000050-00	XFMR, PWR, PLX3002 (120V)	T2
XF-000087-00	***XFMR,*** *PWR, PLX3002 (100V)*	***T2***
XF-000061-00	INDUCTOR TORIOD 1.9UH 13GA	L6
XF-000064-00	XFMR AMP HOUSEKEPPING PLC	T1
XF-000066-00	INDUCTOR AIR 2UH 14/22GA	L1,2

PLX 3002 PCB ASSEMBLY (230V)

Part Number	Description	Reference
CA-010002-30	CAP 1 OPF 5%50V Oa05 SMT	C14,49
CA-015002-10	CAP CER 15PF 10% 500V SL	C16,50
CA-047002-30	CAP CER 47PF 5% 50V NPO SMT	CI93
		C29,30,64,
		C65,187,
CA-I 10001-10	CAP SM 1 00PF, 5%, 500V	C147
CA-110002-30	CAP CER 1 OOPF 5% 50V NPO SM	C40,41,43,
		C5,6,9,1a,
		C53,99,100
CA-I 33001-10	CAP SM 330PF 5% 500V	C145,146
CA-147003-30	CAP 47OPF 5% 50V 1206 SMT	C1,2,4,17,

PLX 3002 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
		C119,121,
		C148,181,
		C182,186,
		C188
		C26,36,37,
		C52,61,
CA-168003-30	CAP CER 6aOPF 5% 50V NPO SM	C25,60,68,
		C98
CA-21 0005-30	CAP .001 UF 5% 50V 1206 SMT	C120,124,
		C195,196
		C75,81,85,
CA-222001-00	CAP CER Y .0022UF 20% 125VAC	C122,127
CA-227001-30	CAP CER .0027UF 10% 100V Oa05	C108,109,
		C128
		C20,23,24,
CA-227001-30	CAP CER .0027UF 10% 100V Oa05	C55,58,59,
CA-233001-10	CAP MYLAR .0033UF 10% 100V	C113
CA-233002-00	CAP CER Y .0033UF 20% 125VAC	CI 15,11a
CA-310004-30	CAP .OI UF 10% 50V 1206 SMT	C95,96
CA-322001-10	CAP MYLAR.022UF 10% 1 OOV	C27,62
CA-410001-00	CAP MET POLY X.IUF 20% 250V	CI26
CA-410002-10	CAP MYLAR .IUF 5% 100V	C47
		C8,12,44,
CA-410003-10	CAP MET POLY .IUF 10% 250V	C129,134,
		C156,157
		C28,34,35,
		C63,69,70,
		C84,87,90,
CA-410006-30	CAP CER .1 UF 10% 50V X7R SMT	CI 25,135,
		C155,162,
		C163,179,
		C178,189,
		C180,183,
		C185,177,
		C19,39,54,
		C190,191,
		CI94
		C88,116,
CA-410011-00	CAP MMYL .1UF 10% 400V	C107,123
CA-422001-10	CAP MYLAR .22UF 5% 50V	C10,45
CA-447001-00	CAP MET POLY X.47UF 20% 250	CI 17
CA-447003-00	CAP POLYP .47UF 10% 400V	CI44
CA-510005-30	CAP LYTIC 1 UF 20% 50V SMT	C13,48,184
CA-510006-00	CAP MPOLY X 1UF 20% 250VAC	C110,112
CA-610002-10	10UF,35V,20%,RADIAL ELECT	C114,192
		C3,31,38,
		C66,80,86,
CA-647001-10	CAP LYTIC RL 47UF 10% 1 OV NP	C46,71
		C7,11,42,
CA-647002-10	CAP LYTIC RL 47UF 20% 50V	C21,22,56,
		C57,89
CA-710002-10	CAP LYTIC **RL 1 OOUF 20% 25V**	C102,104,
		C105,106,
		C139,142,
		CI43
		C15,32,51,
		C67,72,78,
		C79,33,
CA-710004-10	**CAP** LYTIC **RL** 100UF **20% 25V**	C138,149,

PLX 3002 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
		Cl.50
CA-722001-10	CAP LYTIC RL 220UF 20% 1 OV N	C91,92
CA-747001-10	CAP LYTIC RL 470UF 20% 16V	Cl31
		C73,74,76,
		C77,82,83,
CA-747004-00	CAP LYTIC RL 470UF 20% 1 OOV	Cl 52,153,
		C159,160,
		C165,166,
		C169,170,
		C173,174
CA-747063-AE	CAP LYTIC RL 470UF 20% 63V	C151,154,
		C158,161,
		C164,167,
		C168,171,
		C172,175
CA-822200-AE	CAP LYTIC RL 2200UF 20% 200V	C132,133,
CA-822200-AE	CAP LYTIC RL 2200UF 20% 200V	C136,137,
		C140,141
CH-000102-00	HEATSINK, AUDIO, PLX	
CH-000103-00	SPRING, CLAMP, 2 HOLE	
CH-000104-00	HEATSINK PS PLX	
CH-000111-00	BRACKT,OUTPUT PCB PLC PLATFORM	
CH-000114-00	CLAMP, 2 FINGER PLX	
CO-000036-CO	SPEAKONS, PC MOUNT	J7,8
CO-000106-00	CONN HD15 PIN RT ANGLE PC M	J17
CO-000148-00	CONN XLR F VERT PCB	J2,10
CO-0001 55-00	HEADER PCB .100 2-POSITION	J13
CO-000161-00	CONN BLK HDR 3-PIN EURO OPE	J16,18
CO-000162-00	BNDG POST A, DUAL SLOT, PLX	
CO-000163-00	BNDG POST B, DUAL SLOT, PLX	
CO-3001	12-PJ JACK 1/4" PHONE DBLOPEN CKT	J1,9
HW-000001-FC	FUSE CLIPS	REF:FI
IC-000024-00	IC REG PWM 40V 0. IA SG3525A	U19
IC-000046-30	IC LIN DUAL OP AMP TLO72 SO-a	Ull ,12
IC-000047-30	IC LIN DUAL COMP LM393 SO-a	U10
IC-000048-30	IC LIN DUAL OP AMP MC33078	U1,6
IC-000051-00	IC OPTO-ISO MOC8101	U15,17
IC-000053-30	IC LIN SMT DUAL TIMER LM556	U14
IC-000054-30	IC LIN SMT QUAD COMP LM339A	U13
IC-000073-30	IC LIN DUAL OP AMP LM13600	U3
IC-000133-30	IC LIN COMP LM311	U4,5,8,9
IC-000134-00	IC CMOS HV DRVR IR2110	u l a
IC-000135-00	IC LIN PWM SWITCH TOP 210	U16
IC-005532-OP	IC LIN DUAL OP AMP 5532 EX/MP	U2,7
MS-000048-HS	HEAT SINK, ISOL TO-220	REF:Q91
MS-150250-FU	FUSE 15A 250V 3AG FAST CER	FI
PC-000531-00	PCB MAIN PLX	
PL-000098-00	INSULATOR, TO-220, PLX	
PL-000114-00	INSULATOR, IGBT/RECTHS, PLX	
PL-000117-00	INSULATOR, TO-247, PLX	
PL-000126-00	SPRING, SEAT, PLX	
PL-000128-00	SPACER, LED, .276"	LD2-11
		R155,LD1,
		REF:R30,
PL-000135-00	INSULATOR, MICA 1.25" X 1.75"	REF:Q96,97
PL-905156-SP	SPACER,ROUND,NYLON,#6,0.155	REF:L1,2
P-f-I 25000-AT	RES VAR IT 250 20% 0.15W CAR	VR43,166
PT-310000-CR	RES VAR IT 10K 20% 0.2W W/DE	VR2,121
QD-000014-QD	DIODE TO220 ULTRAFAST 200V	D21,22,46,
		D47,74,75,
		D80,81

PLX 3002 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
QD-000021-QD	1N4740 10V ZENER 1 W	D7,32,88
QD-000031-QD	FE-r NCHAN TO220 60V 50A	Q38,41,83,
		Q86
QD-000042-00	DIODE RECT ULTRAFAST 400V 3	D70,71
QD-000052-00	LED GRN T-1	LD2,3,4,7,
		LD8,9,11
QD-000053-00	LED YEL T-1	LD1,6
QD-000054-00	LED RED T-1	LD5,10
QD-000062-10	XISTOR NPN TO-92 40V 0.2A 1.5	Q20,65
QD-000063-10	XISTOR PNP TO-92 40V 0 2A 1.5	Q21,66
QD-000076-00	XISTOR NPN TO-220 250V	Q27,72
QD-000077-00	XISTOR PNP TO-220 250V	Q26,71
QD-000102-30	DIODE SW 1N4148 SMT 75V 75M	D1-5,8,9,
		D10-12,14,
		D15,17,18,
QD-000102-30	DIODE SW 1N4148 SMT 75V 75M	D23-30,33,
		D34-37,39,
		D40,42,43,
		D48-52,55,
		D59,63-65,
		D67,69,89,
		D90,91,93,
		D94
QD-000103-30	XISTOR NPN SMT 40V .2A .2W	Q13,15,18,
		Q25,30,32,
		Q49,50,52,
		Q5,7,8,9,
		Q53,54,58,
		Q60,63,70,
		Q75,77,89,
		Q90,92,93,
		Q95
QD-000104-30	XISTOR PNP SMT 40V .2A .2W	Q1-4,6,10,
		Q11,12,14,
		Q23,24,31,
		Q33,42,43,
		Q44-48,51,
		Q55-57,59,
		Q68,69,76,
		Q78,87,88,
		Q94,98,99
QD-000105-30	XISTOR NPN SMT 300V .2A .2W	Q16,61
QD-000106-30	XISTOR PNP SMT 300V .2A .2W	Q17,62
QD-000108-30	DIODE SMT SWITCH 200V .2A 50	D13,16,38,
		D41,61,68,
		D78,79
QD-000110-30	DIODE ZNR 6.2V 5% .3W SMT	D56,92
QD-000113-30	DIODE ZNR 1 OV 5% .3W SMT	D66
QD-000115-30	DIODE SMT RECT 600V IA	D58,60,86
QD-000116-30	DIODE RECT SMT 200V IA	D62,76,77,
		D82,83
QD-000152-10	DIODE ZNR 12V 5% 1 W 1N4742A	D57
QD-000153-00	DIOD RECT TO247 UFAST 400V 3	D72,73,84,
		D85
QD-000154-00	XISTOR NPN TO-220 230V	Q19,64
QD-000155-00	XISTOR PNP TO-220 230V	Q22,67
QD-000156-00	XISTOR PNP TO-220 100V 3A 40	Q91
QD-000169-00	XISTOR IGBT TO-247AC 600V 55	Q96,97
QD-000170-00	DIODE BRIDGE RECT 600V 50A	BR1
QD-0003.9-ZT	DIODE ZNR 3.9V TESTED	D6,31
QD-001302-PN	XISTOR PNP TO-3P 200V 15A	Q28,34,36,

PLX 3002 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
		Q39,73,79, Qal ,a4
QD-003281-NP	XISTOR NPN TO-3P 200V 15A	Q29,35,37, Q40,74,80, Q82,85
QD-004744-ZA	DIODE ZNR 15V 5% 1W 1N4744A	D53,54,87
QD-005402-DX	DIODE RECT DO27 200V 3A	D19,20,44, D45
RE-.04703-10	RES MOFP .47 5% 2W MINI	R102,103, R107,108, R111-114, R211,212, R214,215, R217,218,
RE-.04703-10	RES MOFP .47 5% 2W MINI	R220,222, R225,226, R230,231, R234-237
		R88,89,91, R92,94,95, R97,99,
RE-.15002-10	RES MOFP 1.5 5% 2W MINI	R115,116, R238,239, R269
RE-.56002-10	RES MOFP 5.6 5% 2W MINI	R203,221, R354,355, R373
		R80,98,
RE-000210-NR	THERMISTOR NTC 15A CUR LIM	R324
RE-000230-NR	THERMISTOR NTC 10K 5%	R30,155
RE-001003-30	RES SMT 10 OHM 5% 1/8W 1206	R314,353, R356,358, R359
RE-001502-10	RES MOFP 15 5% 2W MINI	R209,210, R213,216, R350,367, R368
		R85-87,90, R93,208,
RE-003921-30	RES SMT 39.2 OHM 1% 1/8W 120	R246-249, R349,357
RE-004752-30	RES SMT 47.5 1% 1/10W 100V	R100,110, R223,233, R308,309, R312,313, R319
RE-005606-10	RES MOFP 56 5% 2W MINI	R372
RE-007502-30	RES SMT 75 1% 1/10W 100V	R124,193, R194
		R5,6,70, R71,123,
RE-010002-30	RES SMT 100 1% 1/10W 100V	R144,150, R21,27, R334,364, R381-384
RE-015004-10	RES MOFP 150 5% 2W MINI	R256,278
RE-020002-30	RES SMT 200 1% 1/1 OW 100V	R204,205 Rai ,82,
RE-027401-30	RES SMT 274 1% 1/10W 100V	R190,191, R290,293
		R67,68,

PLX 3002 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
RE-038301-30	RES SMT 383 1% 1/10W 100V	R254,255
		R44,167,
RE-047001-10	RES MOFP 470 5% 2W MINI	R274-277, R279,280
RE-047502-30	RES SMT 475 1% 1/10W 100V	R151,160, R28,37,
		R291,294
RE-053602-30	RES SMT 536 1% 1/10W 100V	R22,146, R361,374
RE-063402-30	RES SMT 634 1% 1/8W 1206	R370
RE-082001-10	RES MOFP 820 5% 2W MINI	R257
RE-090901-30	909 1/10W 1% 100V SMT	R282,287
RE-110006-30	RES SMT 1 .OOK 1% 1/8W 1206	R1,7,42,
RE-110006-30	RES SMT 1.00K 1% 1/8W 1206	R117,118, R128,165, R232,250, R252,369
RE-115002-30	RES SMT 1.50K 1% 1/10W 100V	R101,109, R147,154, R157,158, R162,164,
		R23,32,34, R270,273, R297-300
		R35,39,41,
RE-117401-30	RES MF 1.74K 1% 1/10W 0805	R310,311
RE-120002-30	RES SMT 2.00K 1% I/I OW 100V	RI71
		R48,127,
RE-122103-30	RES SMT 2.21K 1% 1/10W 100V	R195,198, R207,240, R264,265, R267,306, R307,347, R348
		R47,72,75, R84,170,
RE-130102-30	RES SMT 3.01K 1% 1/10W 100V	R79,202
RE-139002-10	RES MOFP 3.9K 5% 2W MINI	R219,228, R251
		R96,105,
RE-147502-30	RES SMT 4.75K 1% 1/10W 100V	R11,17,40, R125,126, R131,137, R138,163, R166,178, R179,182, R185-187,
		R253,315, R3,4,10, R316-318, R327,330,
		R362
		R55,56,59, R62-64,
RE-156001-10	RES 5.60K .1% 1/4W 25PPM	R13,129, R130,135, R136
		R8,9,12,
RE-159002-30	RES SMT 5.90K 1% I/I OW 100V	R122,152, R201,206
		R29,78,83,

PLX 3002 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
RE-175002-30	**RES SMT** 7.50K 1% 1/10W 100V	R120,132, R140,161
	RI 5,38,	
RE-178701-30	**RES SMT** 7.87K **1%** 1/10W 100V	R360
RE-190902-30	RES SMT 9.09K 1% 1/10W 100V	R258,266, R272
RE-210003-30	RES SMT 10.0K 1% 1/10W 100V	R121,305, R336,338, R363,366, R375,376
RE-212702-30	RES SMT 12 7K 1% 1/10W 100V	R106,133, R134,139,
RE-212702-30	RES SMT 12.7K 1% 1/10W 100V	R14,16,19, R142,159, R168,169, R188,227, R241,245, R259,329, R337
		R36,45,46, R65,104,
RE-215002-30	RES SMT 15.0K 1% 1/10W 100V	R25,148, R262,365
RE-216501-CM	RES MF 16 5K 1% 1/2W	R31,153
RE-220002-30	RES SMT 20.0K 1% 1/10W 100V	R18,141, R229,242, R244,271, R281,303, R304,331, R346
RE-224901-30	RES SMT 24 9K 1% 1/10W 100V	R325
RE-230002-10	RES MOFP 30K 5% 2W MINI	R351,352
RE-230102-30	RES SMT 30.1 K 1% 1 /8W 1206	R172,173
		R49,50,
RE-233201-30	RES SMT 33.2K 1% 1/8W 1206	R283-286
RE-239202-30	RES SMT 39.2K 1% 1/10W 100V	R143,183, R184,199, R20,60,61, R200,243, R261,323, R332
		R76,77,
RE-247503-30	RES SMT 47.5K 1% 1/10W 100V	R149
		R2,26,43,
RE-310002-30	RES SMT 100K 1% 1/10W 100V	R156
		R33,119,
RE-310003-30	RES SMT 100K 5% 1/8W 1206	RI 76,196, R197,268, R344,345
		R51,53,73, R74,174,
RE-315002-30	RES MF 150K 1% 1/8W 1206	R177,180, R181,333, R335,341, R342,343
		R52,54,57, R58,175,
RE-339201-30	RES SMT 392K 1% 1/10W 100V	R145,189, R192,260, R24,66,69, R263,340

PLX 3002 PCB ASSEMBLY (230V) Cont'd

Part Number	Description	Reference
RE-348702-30	RES MF 487K 1% 1/8W 1206	R321,322, R326,328
RE-375005-BM	RES MF 750K 2% 1/2W	R339,371
RE-410001-30	**RES SMT** 1 .O MEG OHM 5% 1/8W	R289,292
SC-0631 OO-PP	#6-20 x 5/8" "AB" TYPE I XRECE	
sc-oai 101-SP	#a-l a X 5/8", TYPE 1 PIP BLACK	
SW-000029-S	RELAY, SPKR PROTECT,SPDT,2 KI	
SW-000053-00	SWITCH DIP IO-POS, TALL	SW1
WC-0.5018-JW	JMPR INS 0.5" 18AWG SLD WHT	J240
WC-000001-10	JUMPER INS .6" 22AWG SOLID W	R224
WC-000103-00	CABLE ASSY, 20 PIN 9"L	J14-15
WC-000103-00	CABLE ASSY, 20 PIN 9"L	J3-4,J5-6,
WC-000115-00	AC SWITCH WIRE, BLK, LONG	REF:ES2, TO SWITCH
WC-000115-01	AC SWITCH WIRE, RED, SHORT	REF:ES1, TO SWITCH
WC-000117-00	SPEAKER WIRE, BLACK	EI 2A-12C REF:
WC-000117-01	SPEAKER WIRE, WHITE	E9A-9C REF:
WC-000117-02	SPEAKER WIRE, GREY	E11A-11C REF:
WC-000117-03	SPEAKER WIRE, BLACK	E10A-10C REF:
wc-0001 ia-00	WIRE ASSY, BLK, LONG	EH1-EH2 REF:
XF-000005-00	BEAD FERRITE W/20AWG LEAD	L7-12
XF-000023-00	CHOKE COMMON MODE 2.2MH	L3,4
XF-000050-00	XFMR, PWR, PLX3002	T2
XF-000061-00	INDUCTOR TORIOD1.9UH13GA	L6
XF-000064-00	XFMR AMP HOUSEKEPPING PLC	TI
XF-000066-00	INDUCTOR AIR 2UH 14/22GA	L1,2

PLX 3002 CHASSIS ASSEMBLY (120V)

Part Number	Description	Reference
CH-000097-00	CHASSIS, PLX	
CH-000100-00	HANDLE-EAR CASTING PLX	
CH-000112-00	SHIELD, AC, PLX	
LB-000052-00	LABEL, cUL APPROVAL	
LB-000053-00	LBL, FRENCH, FUSE REPLACEMENT	
LB-000077-00	LABEL,WARNING,HIGH ENERGY	
LB-000213-00	LABEL, FACEPLATE PLX 3002	
LB-000215-00	LABEL, INPUT/OUTPUT, PLX	
LB-I 60226-05	LABEL, FUSE, UL CAUT. 25A 125V	
NW-380801-IL	3/8" INTERNAL TOOTH LOCKWASHER	
PL-000003-CP	AC CORD PROTECTOR	
PL-000040-PL	POT COVERS	
PL-000044-PL	BUSHING, STRAIN RELIEF	
PL-000054-00	KNOB FAB.	
PL-000066-00	CLIP XMAS-TREE SLG HEAD FASTEX	
PL-000095-00	FAN INTERFACE PLX	
PL-000096-00	INSULATOR,FAN DUCT, PLX	
SC-025000-PP	SCREW M2.5 X 6MM TYPE 1 PH BLK	
SC-060060-PS	SCREW 6-32 X .375 SEMS EXTL ZC	
sc-oa2051 -PL	SCREW,TAP,PAN PH#8X5/16" "B"BK	
SW-000016-S	SPST SNAP IN POWER SWITCH	
WC-000114-00	AC CORD ASSY PLX	
WP-000057-00	FAN ASSY, 3.15" 24VDC W/5.5L"	
WP-000541-00	PCB ASSY, PLX 3002 (120V)	

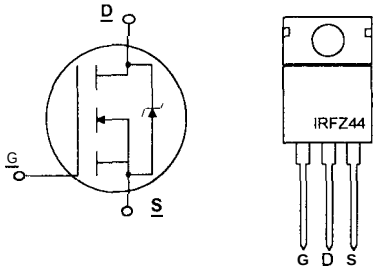
PLX 3002 CHASSIS ASSEMBLY (230V)

Part Number	Description	Reference
CH-000097-00	CHASSIS, PLX	
CH-000100-00	HANDLE-EAR CASTING PLX	
CH-000112-00	SHIELD, AC, PLX	
LB-000053-00	LBL, FRENCH, FUSE REPLACEMENT	
LB-000077-00	LABEL,WARNING,HIGH ENERGY	
LB-000099-01	LABEL, CE LISTING	
LB-000213-00	LABEL, FACEPLATE PLX 3002	
LB-00021 5-00	LABEL, INPUT/OUTPUT, PLX	
LB-160226-01	LABEL, FUSE, UL CAUT. 15A 250V	
NW-380801.IL	3/8" INTERNAL TOOTH LOCKWASHER	
PL-000003-CP	AC CORD PROTECTOR	
PL-000024-00	STRAIN RELIEF,LIQ.TIGHT,HEYCO	
PL-000040-PL	POT COVERS	
PL-000054-00	KNOB FAB.	
PL-000055-00	EXPORT BINDING POST PLUG(RED)	
PL-000056-00	EXPORT BINDING POST PLUG(BLK)	
PL-000066-00	CLIP XMAS-TREE SLG HEAD FASTEX	
PL-000095-00	FAN INTERFACE PLX	
PL-000096-00	INSULATOR,FAN DUCT, PLX	
SC-025000-PP	SCREW M2.5 X 6MM TYPE 1 PH BLK	
SC-060060-PS	SCREW 6-32 X .375 SEMS EXTL ZC	
SC-082051-PL	SCREW,TAP,PAN PH#8X5/16" "B"BK	
SW-000016-S	SPST SNAP IN POWER SWITCH	
WC-000134-00	AC CORD ASSY,230V, PLX	
WP-000057-00	FAN ASSY, 3.15" 24VDC W/5.5L"	
WP-000541-02	PCB ASSY, PLX 3002 (230V)	

PLX Series
Semiconductor Identification

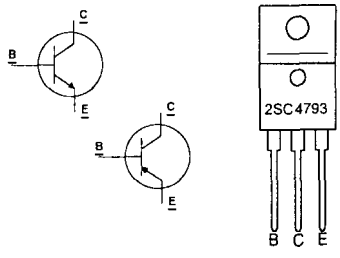
TMOS FET IRFZ44

TMOS Power Field Effect Transistor



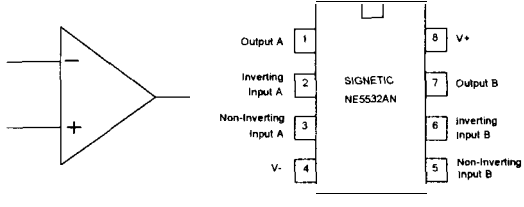
DRIVER TRANSISTORS

2SC4793 NPN / 2SA1837 PNP



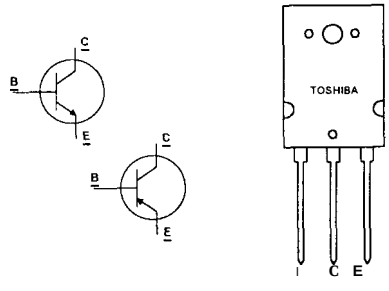
OP-AMP NE5532AN

Dual Operational Amplifier



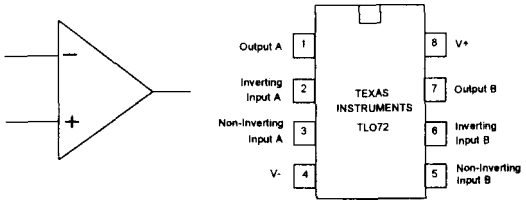
POWER TRANSISTORS

2SC3281 NPN / 2SA1302 PNP



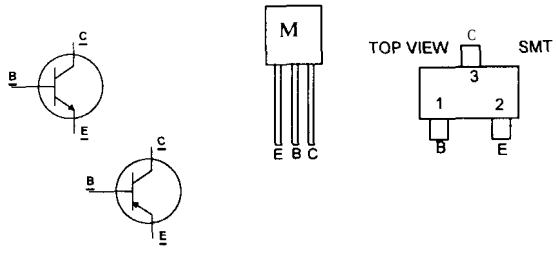
OP-AMP TL072

Dual Operational Amplifier



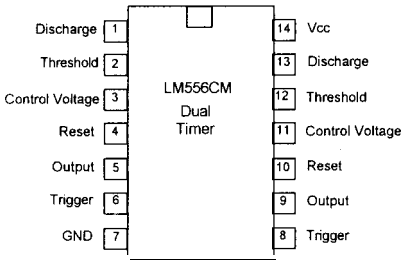
SMALL SIGNAL TRANSISTORS

2N3904 NPN / 2N3906 PNP

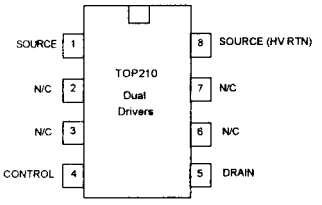


PLX Series
Semiconductor Identification

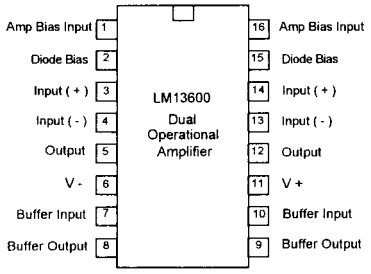
TIMER — LM556CM
Dual Timer



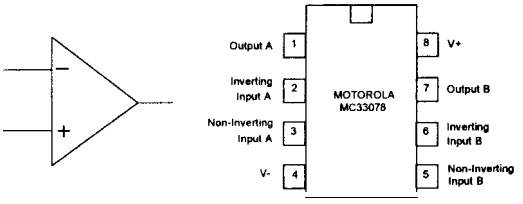
PWM Switch — TOP21 0
PWM MOSFET Gate Driver



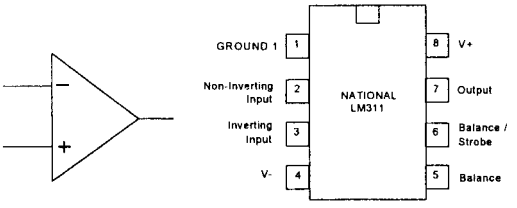
OP-AMP — LM1 3600
Dual Transconductance Operational Amplifier



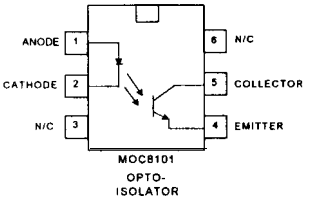
OP-AMP — MC33078
Dual Low Noise Operational Amplifier



COMPARATOR — LM311
Voltage Comparator



OPTO-ISOLATOR — MOC8101
Gallium Arsenide LED Coupled to Phototransistor.

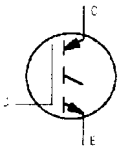


PLX Series
Semiconductor Identification

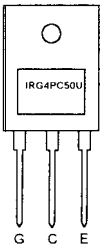
IGBT IRG4PC50U

PLX2402, PLX3002

insulated Gate Bipolar Transistor



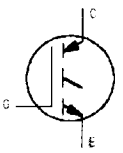
n-channel



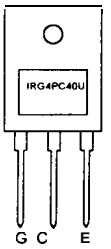
IGBT IRG4PC40U

PLX1202, PLX1602

Insulated Gate Bipolar Transistor

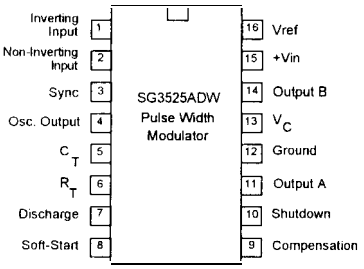


n-channel



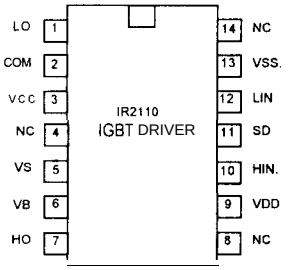
PWM SG3525AN

Regulating Pulse Width Modulator



HIGH/LOW SIDE DRIVER IR2110

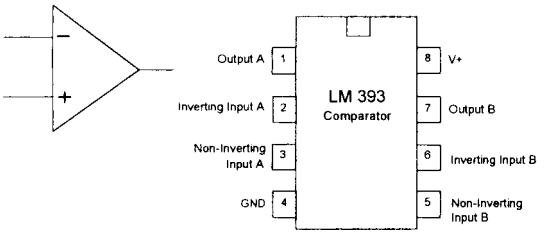
High Speed MOSFET I IGBT Driver



VDD	Logic supply
HIN	Logic input high side
SD	Logic input for shutdown
LIN	Logic input low side
VSS	Logic ground
VB	High side floating supply
HO	High side output
v s	High side floating supply
v c c	Low side supply
LO	Low side output
COM	Low side return

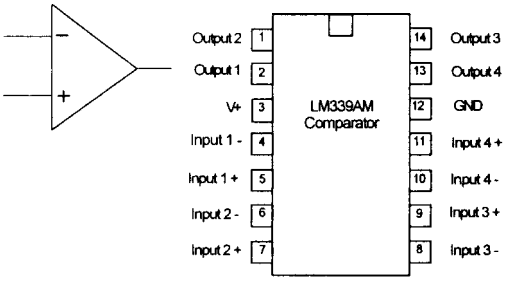
COMPARATOR LM393NE

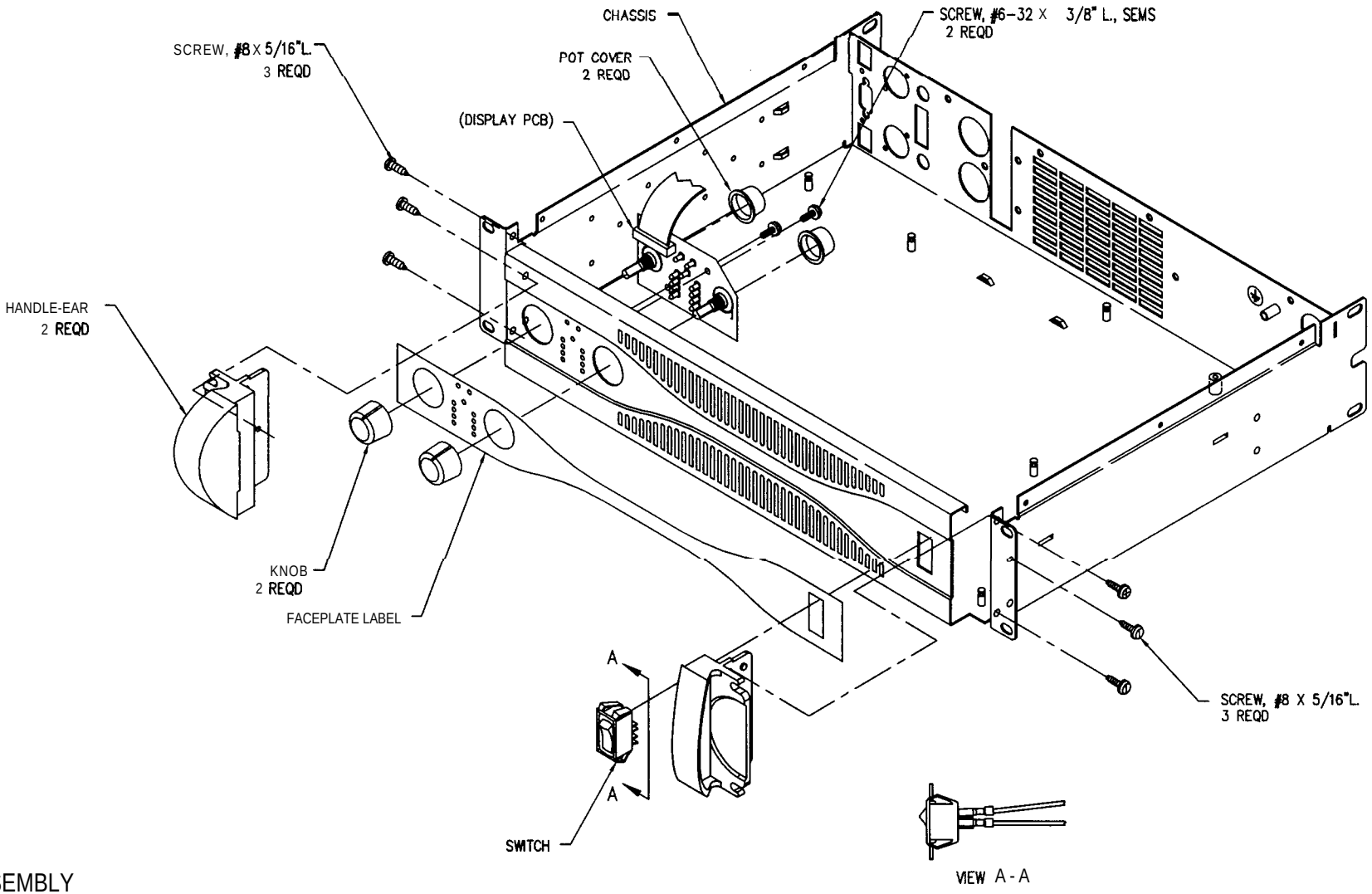
Low Power Dual Comparators



COMPARATOR LM339AM

SOIC Quad Comparator

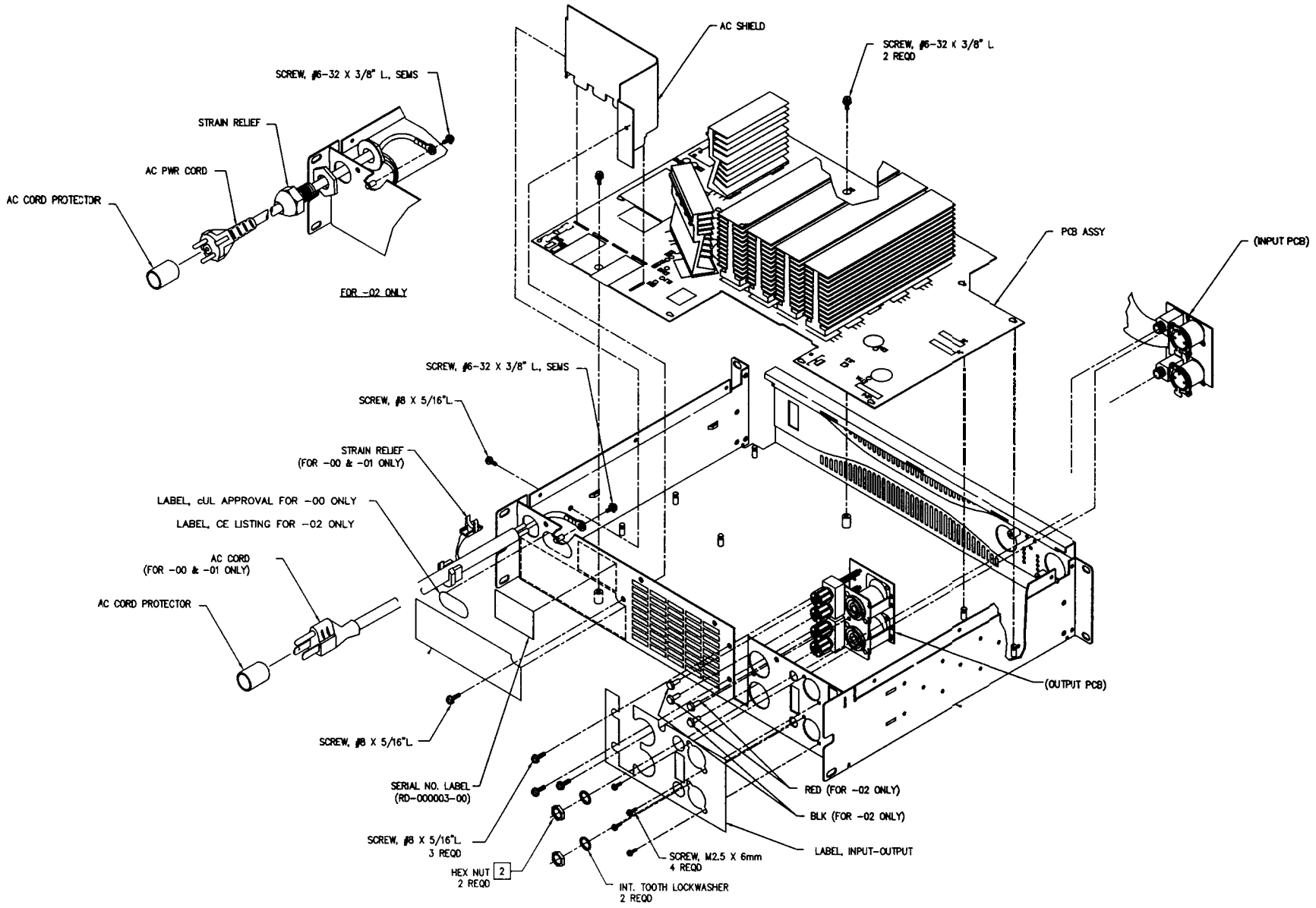


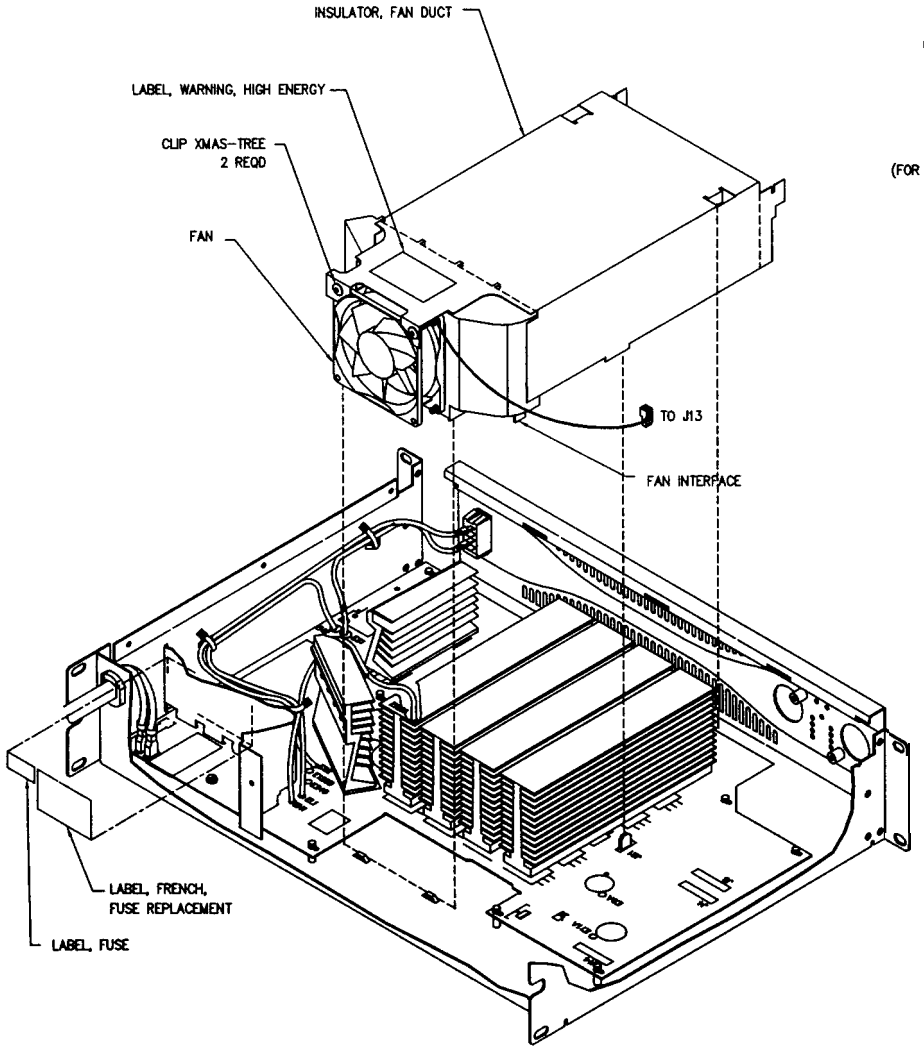


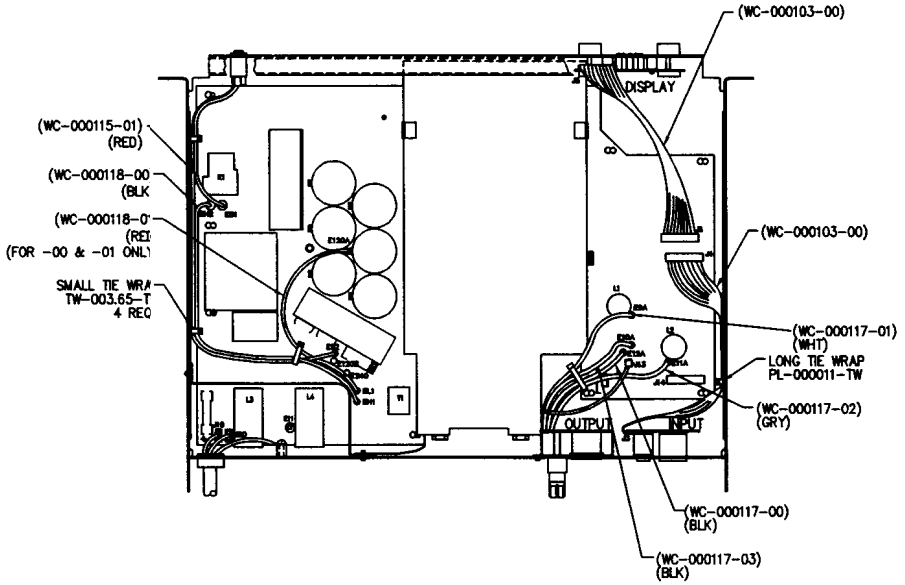
CHASSIS ASSEMBLY

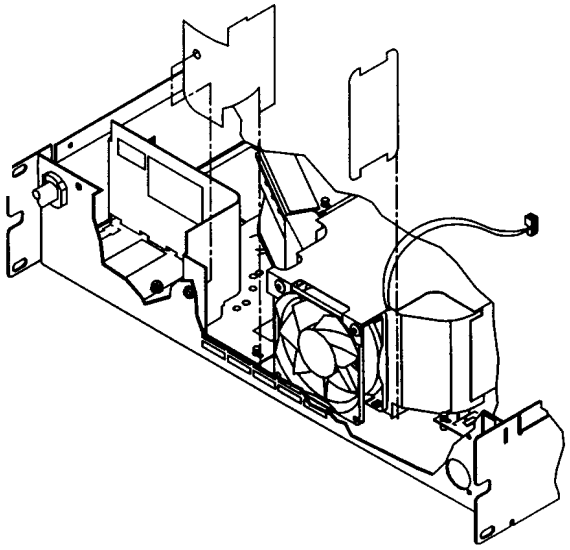
1 HEX NUT (NW-380803-HN) PART OF 1/4" PHONE JACK ON ITEM 39 (PCB ASSY).

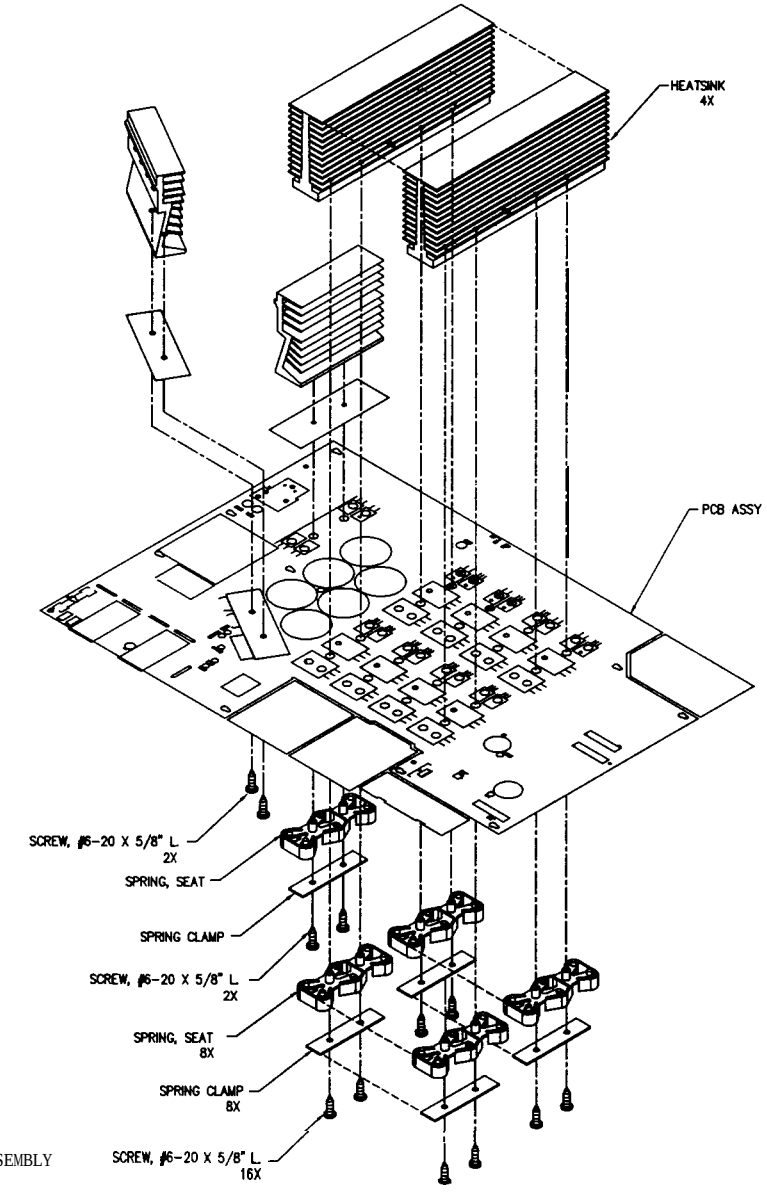
1. THIS DRAWING USED IN CONJUNCTION WITH SCHEMATIC DWGs MAIN PCB ASSY SH-000541-00, WIRING DIAGRAM SH-000540-00 AND FINAL ASSY FG-000540-XX.


AC SHIELD
SCREW, #6-32 X 3/8" L
2 REQD
SCREW, #6-32 X 3/8" L, SEMS
STRAIN RELIEF
AC PWR CORD
AC CORD PROTECTOR
FOR -02 ONLY
PCB ASSY
(INPUT PCB)
SCREW, #6-32 X 3/8" L, SEMS
SCREW, #8 X 5/16"L
STRAIN RELIEF
(FOR -00 & -01 ONLY)
LABEL, cUL APPROVAL FOR -00 ONLY
LABEL, CE LISTING FOR -02 ONLY
AC CORD
(FOR -00 & -01 ONLY)
AC CORD PROTECTOR
(OUTPUT PCB)
SCREW, #8 X 5/16"L
SERIAL NO. LABEL
(RD-000003-00)
RED (FOR -02 ONLY)
BLK (FOR -02 ONLY)
SCREW, #8 X 5/16"L
3 REQD
SCREW, M2.5 X 6mm
4 REQD
LABEL, INPUT-OUTPUT
HEX NUT
2 REQD
2
INT. TOOTH LOCKWASHER
2 REQD


INSULATOR, FAN DUCT
LABEL, WARNING, HIGH ENERGY
CLIP XMAS-TREE
2 REQD
FAN
TO J13
FAN INTERFACE
LABEL, FRENCH,
FUSE REPLACEMENT
LABEL, FUSE

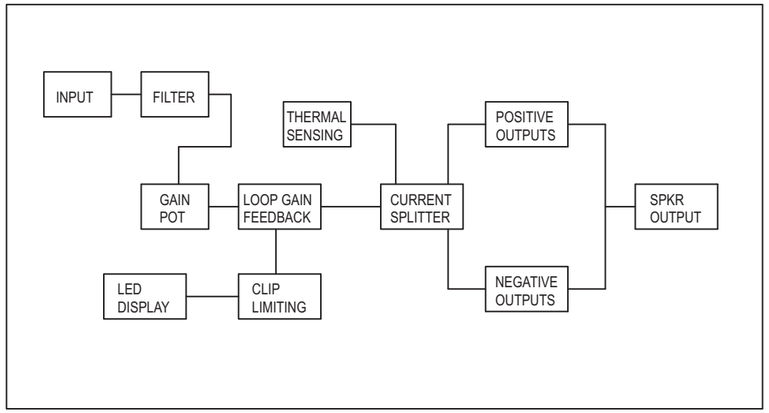

(WC-000103-00)
DISPLAY
(WC-000115-01)
(RED)
(WC-000118-00
(BLK
(WC-000118-0
(REI
(FOR -00 & -01 ONL
SMALL TIE WRA
TW-003.65-T
4 REQ
(WC-000103-00)
(WC-000117-01)
(WHT)
LONG TIE WRAP
PL-000011-TW
(WC-000117-02)
(GRY)
OUTPUT
INPUT
(WC-000117-00)
(BLK)
(WC-000117-03)
(BLK)





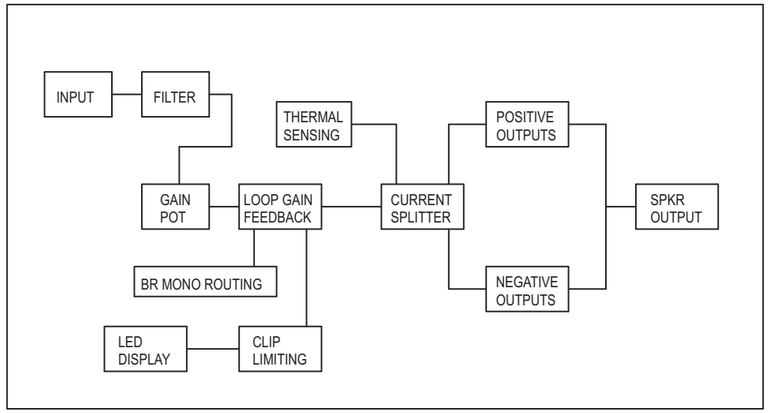
PLX MAIN MODULE ASSEMBLY

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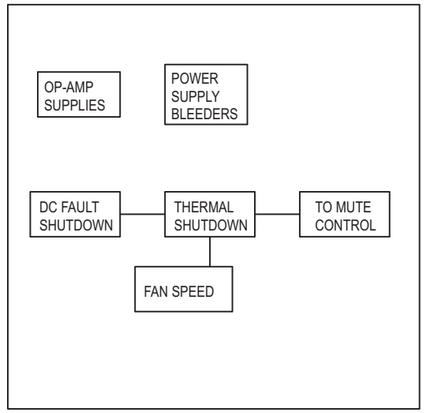
CHANNEL A
AUDIO CIRCUITS

SHEET 2



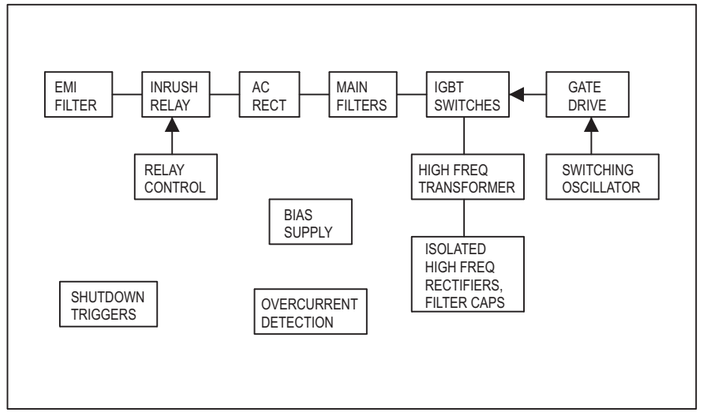
CHANNEL B
AUDIO CIRCUITS

SHEET 3



SUPPORT AND
PROTECTION
CIRCUITS

SHEET 4



SWITCHING
POWER
SUPPLY

SHEET 5

TABULATION BLOCK	
VOLTAGE	VARIABLE
120/230V	R321, 322, 326, 328 - 487K, ^R 1206
100V	R321, 322, 326, 328 - 392K, ^R 1206

2. COMPONENTS WITH VALUE PREFIXED WITH A "^" REPRESENT SMT COMPONENTS.
1. THIS DRAWING USED IN CONJUNCTION WITH ASSEMBLY WP-001203-00.
NOTES: UNLESS OTHERWISE SPECIFIED

QTY	ITEM NO.	PART NO.	DESCRIPTION	VENDOR

PARTS LIST

WP-001203-00	PLX 1202
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
DIMENSIONS PER ANSI Y14.5-1982
TOLERANCES ARE:
DECIMALS .XX ± DECIMALS .XXX ± ANGLES 0
DEBURR EDGES .XXX R MAX
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN PAT QUILTER	5-15-98
CHECKED	
ISSUED	
CAD SEED FILE NO.	PLOT DATE: Fri Dec 11, 1998

QSC AUDIO PRODUCTS, INC.
COSTA MESA, CALIFORNIA

SCHEMATIC DIAGRAM
PLX 1202

SIZE	FSCM NO.	DWG NO.	REV
D		SH-001203-00	B

SCALE NONE | CAD FILE NO. plx1202.sch | SHEET 1 OF 5

P:\TANGOPRO\PLX\PLX1202

DWG NO. SH-001203-00
SH 1
REV B

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INPUT AND FILTER SECTION, CH A

DIP SWITCH TABLE, 10-POS
1 - CLIP LIM, CH-A
2 - LF FILT, CH-A
3 - 30 HZ LF, CH-A
4 - PAR INPUT LED
5 - PAR INPUTS, +
6 - PAR INPUTS, -
7 - BR MONO
8 - 30 HZ LF, CH B
9 - LF FILT, CH B
10- CLIP LIM CH B

SIGNAL POLARITY INVERTED

SIGNAL POLARITY INVERTED

DATAPORT CONNECTED TO INPUT AS USUAL TO MINIMIZE CROSSTALK WHEN USING REGULAR INPUTS

INPUTS IN PARALLEL - SH 3

2 POLE CASCADED ROLLOFF -0.15dB, 20Hz. -0.4dB, 10Hz.

R-parallel, 7.5K, 10K, 4.7K, = 2.24K

GAIN

SIGNAL POLARITY INVERTED

PARALLEL INPUT SW. STATUS LED

LED-SIGNAL DISPLAY

CLIP

THERMAL AND BIAS SENSING

AMP LOOP GAIN – 32DB REVISION
USE SAME VALUE AS PLC-2

DISCUSS STAR GND

ROUTE TO SPKR OUTPUT. R226 = 5.90K for PLC-2

U1:2 MC33078-SMT

U1:1 MC33078-SMT

U2:1 NE5532

U2:2 NE5532

U_OPAMP_DUAL1

U3:1 LM13600M

^U_LM13600

CLIP-LIMIT PROCESSOR

POS STEP DRIVER

.36W at full clip

POS OUTPUT SECTION

NEG OUTPUT SECTION

NEG STEP DRIVER

PWR-GND, TO SUPPLY CT

JACK-SPEAKON

FROM CH B SHEET 3

JUMPER

SIZE D	FSCM NO.	DWG NO. SH-001203-00	REV B
SCALE NONE	CAD FILE NO. plx1202a.sch	SHEET 2 OF 5	

DWG NO. SH-001203-00 | SH 2 | REV B

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INPUT AND FILTER SECTION, CH B

DIP SWITCH TABLE, 10-POS
1 - CLIP LIM, CH-A
2 - LF FILT, CH-A
3 - 30 HZ LF, CH-A
4 - PAR INPUT LED
5 - PAR INPUTS, +
6 - PAR INPUTS, -
7 - BR MONO
8 - 30 HZ LF, CH B
9 - LF FILT, CH B
10- CLIP LIM CH B

SH 4, EURO-INPUTS
SH 2, INPUT-PARALLEL SW
A-18, -B
A-19, +B
A-17, GND
A-11, BR-M
A-15, GND
A-12, SIG
A-13, LF30
A-14, LF0N
A-16, CLIP-B
C-13, BR-L
C-14, BR-L
BR MONO STATUS LED
BR-MONO CH B INPUT CLAMP
STEREO - CLAMPED
BR-MONO - OPEN
SIGNAL POLARITY INVERTED
DISCUSS STAR GND
ROUTE TO SPKR OUTPUT. R226 = 5.90K for PLC-2
DATAPORT, SH 4, CLIP B
SEE SH 4
PWR GND

GAIN

LED-SIGNAL DISPLAY

CLIP

THERMAL AND BIAS SENSING

CLIP-LIMIT PROCESSOR

POS STEP DRIVER

.36W at full clip

POS OUTPUT SECTION

PWR-GND, TO SUPPLY CT

NEG OUTPUT SECTION

NEG STEP DRIVER

SIZE D	FSCM NO.	DWG NO. SH-001203-00	REV B
SCALE NONE	CAD FILE NO. plx1202a.sch	SHEET 3 OF 5	

DWG NO. SH-001203-00 REV B SH 3

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OPAMP POWER SUPPLIES

DC MUTING

FAN SPEED CONTROL

CH A V-MON, I-MON

CH B V-MON, I-MON

SET ID- R

DATAPORT
HD-15 JACK

EURO-PLUG:
RAVE SIGNAL
FORMAT

SIZE	FSCM NO.	DWG NO.	REV
D		SH-001203-00	B
SCALE NONE	CAD FILE NO. plx1202a.sch	SHEET 4 OF 5	

DWG NO. SH-001203-00 SH 4 REV B

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LINE FILTER SHIELD

INRUSH LIMITING RELAY, QSC-COM, 30A, COIL 24V MIN VOLT 18V, OK

AC-SW

BR1 600V-50A

T2:1 TRANSFORMER QUIET END XF-79

IGBT HEAT SINK

Q96 IRG4PC40

Q97 IRG4PC40

MURS160T3 ^D_SMB

MURS120T3 ^D_SMB

IR2110

USE THRU HOLE, HIGHER WATTAGE

SG3525AN

LM556-SMT

RELAY STARTS OFF LOW. 5V LINE SETTLES HIGH BEFORE 16V > 8V, BECAUSE TRIG IS LOW UP TO 10V

0V - RUN
5V - SHUTDOWN

RELAY 25MA

TIME DELAY 3 SECONDS

NON CRIT BYPASS

NOM BUS VOLTAGE 340V (120-240VAC)
MIN BUS VOLTAGE 200-220V (75-150 VAC)

UNDERVOLTAGE SHUTDOWN TRIGGERS AT 5.1 V-REF RESETS AT 5.6V (10% HYST)

974K - 24.9K RES DIVIDER 340V NOM BUS = 8.67V 200V MIN BUS = 5.1V UV

SET NOM PEAK AT 13V, 120VAC DECLINES ABOUT 30% EVERY 36 MS REACHES 8.1V IN 40 MS, (2 AC CYCLES)

OFF-BUS VOLTAGES RISES ONLY AFTER V-BIAS > 10V. ENSURES THAT 556-TRIG PIN STARTS LOW.

PARALLEL WINDING ON RESONANT INDUCTOR

AVERAGE LIMITING HAS SEVERAL SECOND TIME CONSTANT TO REACH 2.4V THRESHOLD, AVE CURRENT 20-25A

600V TRACE

5V NOM

0.5-1 MA TO TRIGGER

100PF @ 15KV ESD
100PF @ 15V BYPASS

FROM DC SHUTDOWN, SHEET 4

2 BEADS IN PAR HI RAIL
1 BEAD LO RAIL

TO TURN-OFF MUTING SHEET 4 (FAN SPEED)

SMT-B PKG OK

NEW, LO-ESR, 2PL

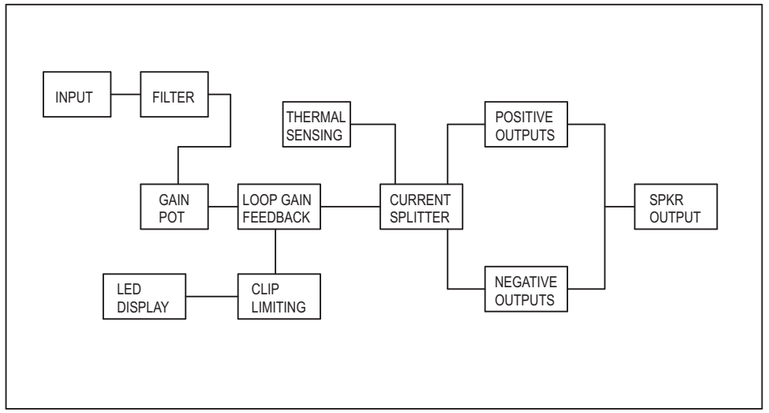
SIZE	FSCM NO.	DWG NO.	REV
D		SH-001203-00	B
SCALE NONE	CAD FILE NO. plx1202a.sch	SHEET 5 OF 5	

DWG NO. SH-001203-00 | REV B | SH 5

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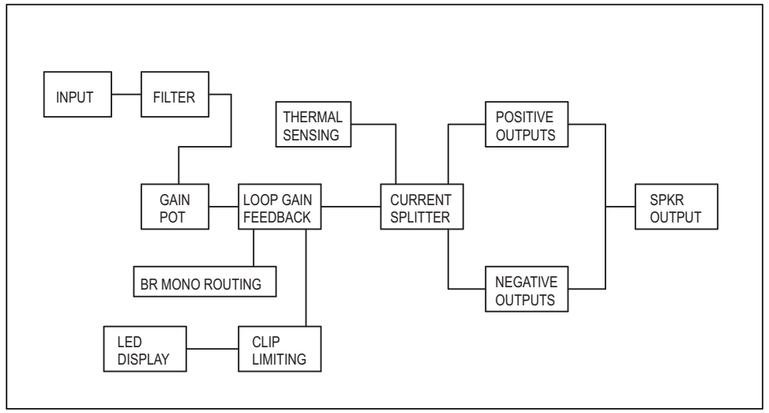
REVISION

REV	DESCRIPTION	EFF. DATE	CHK	APPROVED / DATE
A	PRODUCTION RELEASE PER ECO 3724 AC	6-26-98	KM	TS 6/30/98
B	REVISE PER ECO 3803 AC	8-28-98		



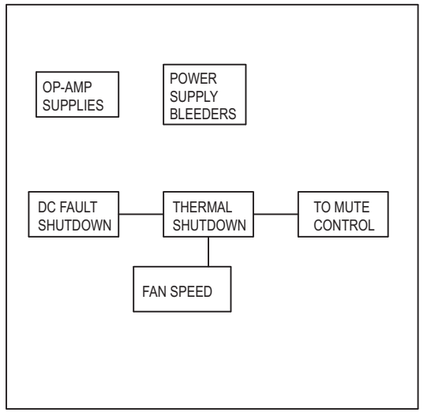
CHANNEL A
AUDIO CIRCUITS

SHEET 2



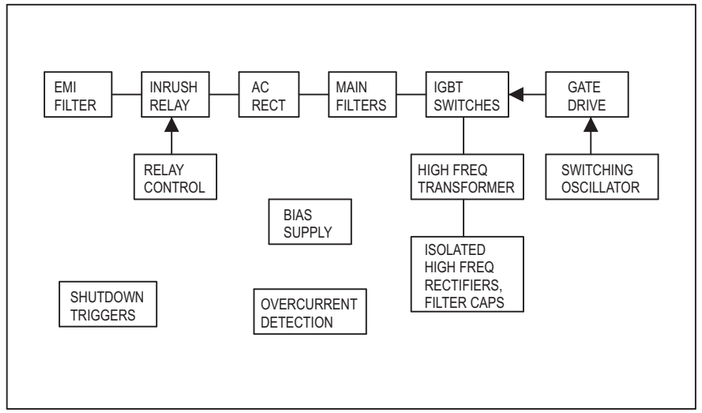
CHANNEL B
AUDIO CIRCUITS

SHEET 3



SUPPORT AND
PROTECTION
CIRCUITS

SHEET 4



SWITCHING
POWER
SUPPLY

SHEET 5

TABULATION BLOCK	
VOLTAGE	VARIABLE
120/230V	R321, 322, 326, 328 - 487K, ^R 1206
100V	R321, 322, 326, 328 - 392K, ^R 1206

2. COMPONENTS WITH VALUE PREFIXED WITH A "^" REPRESENT SMT COMPONENTS.
1. THIS DRAWING USED IN CONJUNCTION WITH ASSEMBLY WP-000516-00.
NOTES: UNLESS OTHERWISE SPECIFIED

QTY	ITEM NO.	PART NO.	DESCRIPTION	VENDOR

PARTS LIST

WP-000516-00 | PLX 1602
NEXT ASSY | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
DIMENSIONS PER ANSI Y14.5-1982
TOLERANCES ARE:
DECIMALS .XX ± | DECIMALS .XXX ± | ANGLES °
DEBURR EDGES .XXX R MAX
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN PAT QUILTER	5-15-98
CHECKED	
ISSUED	
CAD SEED FILE NO.	PLOT DATE: Tue Dec 08, 1998

QSC AUDIO PRODUCTS, INC.
COSTA MESA, CALIFORNIA

SCHEMATIC DIAGRAM
PLX 1602

SIZE	FSCM NO.	DWG NO.	REV
D		SH-000516-00	B

SCALE NONE | CAD FILE NO. plx1602.sch | SHEET 1 OF 5

P:\TANGOPRO\PLX\PLX1602

DWG NO. SH-000516-00 | REV B | SH 1

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INPUT AND FILTER SECTION, CH A

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1 - CLIP LIM, CH-A
2 - LF FILT, CH-A
3 - 30 HZ LF, CH-A
4 - PAR INPUT LED
5 - PAR INPUTS, +
6 - PAR INPUTS, -
7 - BR MONO
8 - 30 HZ LF, CH B
9 - LF FILT, CH B
10- CLIP LIM CH B

SH 4, EURO-INPUTS
-IN, CH-A
+IN, CH-A
-IN, DPA
NEG INPUT
POS INPUT
+IN, DPA
DATAPORT CONNECTED TO INPUT AS USUAL TO MINIMIZE CROSSTALK WHEN USING REGULAR INPUTS
INPUTS IN PARALLEL - SH 3
A-1 GND
A-4, GND
A-2 +A
A-3 -A
A-10, LED-PAR
A-20, +13V
A-6, GND
SIGNAL POLARITY INVERTED
SIGNAL POLARITY INVERTED
A-8, LF-5K6
A-8, LF-3K
A-8, LF-0N
A-7, LF-0N
A-5, CLIP A
2 POLE CASCADED ROLLOFF -0.15dB, 20Hz. -0.4dB, 10Hz.
R-parallel, 7.5K, 10K, 4.7K, = 2.24K
DISCUSS STAR GND
ROUTE TO SPKR OUTPUT. R226 = 5.90K for PLC-2
BR MONO FEED, SH 3
CH_A_SIG
DATAPORT, SH 4, CLIP A
PWR GND

GAIN

LED-SIGNAL DISPLAY

CLIP

CLIP-LIMIT PROCESSOR

THERMAL AND BIAS SENSING

AMP LOOP GAIN – 32DB REVISION
USE SAME VALUE AS PLC-2

POS STEP DRIVER

.36W at full clip

POS OUTPUT SECTION

PLC-2 USES MID-RAILS ONLY.
JUMP STEP DIODES
OMIT STEP CIRCUITRY
+15-NTC SUPPLY SERVES AS POS BLEEDER

FULL MUTE, 5.7V
MUTE-1
SEE SH 4
SPKR_BUS_A
I-MON SH 4
FROM CH B SHEET 3
PWR-GND, TO SUPPLY CT

NEG OUTPUT SECTION

NEG STEP DRIVER

SIZE	FSCM NO.	DWG NO.	REV
D		SH-000516-00	B
SCALE NONE	CAD FILE NO. plx1602.sch	SHEET 2 OF 5	

DWG NO. SH-000516-00
REV B
SH 2

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INPUT AND FILTER SECTION, CH B

DIP SWITCH TABLE, 10-POS
1 - CLIP LIM, CH-A
2 - LF FILT, CH-A
3 - 30 HZ LF, CH-A
4 - PAR INPUT LED
5 - PAR INPUTS, +
6 - PAR INPUTS, -
7 - BR MONO
8 - 30 HZ LF, CH B
9 - LF FILT, CH B
10- CLIP LIM CH B

SH 4, EURO-INPUTS
-IN_CH-B
+IN_CH-B
-IN_DPB
+IN_DPB
NEG INPUT
POS INPUT
R_RING
T_TIP
A-18, -B
A-19, +B
A-17, GND
A-11, BR-M
A-15, GND
A-16, CLIP-B
SH 2, INPUT-PARALLEL SW
-XLR_B
+XLR_B
SH 4
SH 3
SH 2
DIP-10
SW1:8
SW1:7
SW1:10
U6:1
U6:2
MC33078-SMT
SIGNAL POLARITY INVERTED
U7:1
U7:2
NE5532
U_OPAMP_DUAL1
U3:2
LM13600M
A-12, 3kG
A-13, LF3b
A-14, LFON
+14VC
-14VC
+13VC
-13VCL
+13N
+14N
+14_DISP
+13N
-15NTC
+15NTC
TH-SUBC-B
NTCBUS
DISCUSS STAR GND
ROUTE TO SPKR OUTPUT. R226 = 5.90K for PLC-2
SPKR_BUS_B
DC_SENSE
PROT
DATAPORT, SH 4, CLIP B
BR-ON
BR-MONO CH B INPUT CLAMP
BR MONO STATUS LED
STEREO - CLAMPED
BR-MONO - OPEN
CH_A_SIG
SIGNAL POLARITY INVERTED
PWR GND
LD6
LD7
LD8
LD9
LD10
GAIN
CLIP
LED-SIGNAL DISPLAY
THERMAL AND BIAS SENSING
CLIP-LIMIT PROCESSOR

POS STEP DRIVER

POSREF
.36W at full clip
+HI-RAIL

POS OUTPUT SECTION

+MID-RAIL
I-MON-B, SH 4
SPKR_BUS_B
PWR-GND, TO SUPPLY CT
JACK-SPEAKON
TO CH A SHEET 2
BR-POS
BR-NEG
EMI_G

NEG OUTPUT SECTION

NEG STEP DRIVER

NEGREF
V-NEGSTEP
-HI-RAIL
MUTE+
SEE SH 4

SIZE	FSCM NO.	DWG NO.	REV
D		SH-000516-00	B
SCALE NONE	CAD FILE NO. plx1602.sch	SHEET 3 OF 5	

DWG NO. SH-000516-00 | SH 3 | REV B

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OPAMP POWER SUPPLIES

+15V, -15V, N282, N283, N284, N285, N286, N287, N288, N322, N323, N324, N325, N326, N327, N328, N329, N330, N331, N332, N333, N334, N335, N336, N337, N338, N339, N340, N341, N342, N343, N344, N345, N346, N347, N348, N349, N350, N351, N352, N353, N354, N355, N356, N357, N358, N359, N360, N361, N362, N363, N364, N365, N366, N367, N460, N468, N469, N474, R246 39.2 ^R_1206, R247 39.2 ^R_1206, R248 39.2 ^R_1206, R249 39.2 ^R_1206, C73 470-16V, C74 470-16V, C76 470-16V, C77 470-16V, C181 1-50V ^C_1206, R221 0.7 JUMPER, +13VCL, -13VCL, +14VIC, -14VIC, +11V, -11V, +HI-RAIL, -HI-RAIL, +MID-RAIL, -MID-RAIL, PLC-2 USES MID RAILS ONLY, TO PWR SUPPLY C-T, R276 820-2W, R277 820-2W, R278 820-2W, NEGREF, D88 JUMPER, V-NEGSTEP, POS RAIL, FROM PWR SUPPLY OPTOCOUPLER, SH 5, PS-OL, TO SHEETS 2 AND 3, MUTE+, FULL MUTE, 5.7V FULL CUTBACK, 2.8V, 1MA, MUTE_HI, DP+STBY, DC-OFF, TO SHUTDOWN OPTOCOUPLER, SH 5 (6V), TO OPTOCOUPLER LED 1.6V OF HYSTERESIS, D87 JUMPER, R256 820-2W, R257 820-2W, POSREF, R250 1.00K ^R_1206, +15NTC, -15NTC, D53 1N4744A, D54 1N4744A, R251 3.9K-2W, R258 9.09K ^R_0805, R259 12.7K ^R_0805, R260 30K ^R_0805, R261 39.2K ^R_0805, R268 100K ^R_1206, FAN SPEED THRESHOLD, ON-OFF DELAY, THERMAL THRESHOLD, THERM HYST, R263 392K ^R_0805, R270 1.50K ^R_0805, R273 1.50K ^R_0805, NTCBUS, Q88 3906 ^Q_BJTP_SOT-23, BR-ON, SH 3, D48 4148 ^D_SOT-23, R240 2.21K ^R_0805, DC_SENSE, SH 2, 3, R242 20.0K ^R_0805, Q87 3906 ^Q_BJTP_SOT-23, D50 4148 ^D_SOT-23, -DC THRESH, -4V, R243 39.2K ^R_0805, R244 20.0K ^R_0805, C75 .001-5% ^C_1206, C71 47-10NP-10%, D49 4148 ^D_SOT-23, +DC THRESH 4V, U10:1 ^LM393-SMT, 15V-SW, SEE SH 5, D51 4148 ^D_SOT-23, C81 .001-5% ^C_1206, U10:2 ^LM393-SMT, D55 4148 ^D_SOT-23, C80 10-35V, C86 10-35V, R262 15.0K ^R_0805, D56 6.2V-3W ^D_ZEN_SOT-23, R241 12.7K ^R_0805, R245 12.7K ^R_0805, DC MUTING, V-STBY, R252 1.00K ^R_1206, R232 1.00K ^R_1206, D90 4148 ^D_SOT-23, R229 20.0K ^R_0805, R253 4.75K ^R_0805, Q89 3904 ^Q_BJTN_SOT-23, R264 2.21K ^R_0805, R267 2.21K ^R_0805, R265 2.21K ^R_0805, Q91 TIP 32C, R271 20.0K ^R_0805, R272 9.09K ^R_0805, C89 47-50V, J13:1 +FAN, J13:2 -FAN, Q90 3904 ^Q_BJTN_SOT-23, R270 634 ^R_1206, POWER LED ON DISPLAY PCB, GRN LD11, J5:14, J6:14, J5:16, J6:16, FAN SPEED CONTROL

CH A V-MON, I-MON

V-MON CONVERSION SCALES:
PLC-2: (sim to 1.4) 30.1K / 2.00K = 15.05 Vout/Vmon
PLC-3: (between 1.8, 2.0) 33.2K / 1.5K = 22.13 Vout/Vmon

ROUTE TO SPKR OUTPUT, SPKR-A, OUTER COIL, 6T, L-Z_A1, DP-PAR-F, SH 2, DP-BR-F, SH 3, V-MON CH A (NEW BMF SUBCODE, 0-2V, 0.5V BITS) INJECT V-DC POST OPAMP; NO GAIN SCALING, SEE SH 2, TH-SUBC-A, I-MON CH A (WITH SEPARATE CH A THERMAL SUBCODE)

BMF VOLTAGE SCHEME: BINARY CODING, 2 BITS

SOURCE VOLTAGE, 13V NOM, 11V-14.5V (UNREG)
STEREO (NORMAL): BINARY 0,0 = 0V OUT
INPUTS PARALLEL: BINARY 0,1 = .5V NOM, .42-.575,
BR MONO: BINARY 1,0 = 1.0V NOM, .85-1.15
BR-MONO + PAR: BINARY 1,1 = 1.5V NOM, 1.27-1.72
NOM THRESHOLDS, 0.25, .75, 1.25.
FOR UNREG TRACKING DECODING, USE V-ON (1V NOM) AS REF

DATAPORT INPUT SENSITIVITY:
PLC 2:
7.87K / 5.60 K,
1.23V-IN -> 2.95V-DP

PLC-3:
4.75K / 5.60K
1.70V-IN -> 3.15V-DP

EURO-PLUG: RAVE SIGNAL FORMAT

DATAPORT HD-15 JACK

+A, -A, GND, -IN, A, STBY, VMON-A, IMON-A, CLIP-A, CHAS GND, +IN, A, +IN, B, +15V ??, D-REF, -IN, B, IDR, VMON-B, IMON-B, CLIP-B, +B, -B, GND

CH B V-MON, I-MON

ROUTE TO SPKR OUTPUT, SPKR-B, OUTER COIL, 6T, L-Z_B1, V-MON CH B (PWR-SUPPLY- ON SUBCODE: .8-1.3V) SCALE 13V TO 1V NOM, SEE SH 3, TH-SUBC-B, I-MON CH B (WITH SEP. CH B THERMAL SUBCODE), FOR 1/8 WATT: 110 MA, 1.1V MAX

SET ID- R

CH GND

SIZE	FSCM NO.	DWG NO.	REV
D		SH-000516-00	B
SCALE NONE	CAD FILE NO. plx1602.sch	SHEET 4 OF 5	

DWG NO. SH-000516-00 | SH 4 | REV B

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LINE FILTER SHIELD

750K, X-CAP DISCHARGE TO MEET IEC STANDARD: BECAUSE X-CAP EXCEEDS 0.1UF MUST DISCHARGE X-CAP TO 34 V WITHIN 2 SECONDS. 230V X 1.41 = 325V ->34 V FOR C = 1.5UF, R < 628K, 0.1W

NTC NEXT TO RELAY LOCATE DOWNSTREAM OF FILTER, OUTSIDE SHIELD

INRUSH APPROX 0.5 SEC

INRUSH LIMITING RELAY. QSC-COM, 30A, COIL 24V MIN VOLT 18V, OK

AC-HI 120, 240V — J19 — N388 — F1 25A-125V — N369 — L3:1 — N374 — L4:1 — N376 — EH1 — EH2 — R324 10-OHM-20% — N378 — K1 (Value) — ES1 — ES2 — AC-SW

AC-LO — J20 — N371 — L3:2 — N375 — L4:2 — N377 — EL1 — EL2 — N309

X-CAPS, 3 PL: C110 1.0 250VAC, C112 1.0 250VAC, C117 .47-250VAC

C115 .0033 250VAC, C118 .0033 250VAC

CH-GND STUD

R339 750K-1/2W, R371 750K-1/2W

BR1 600V-50A — N379 — N380 — E120B — C126 .1-250V-X — N382 — N383 — PRI_LO

120V, PAR RECT DIODES

240V, FULL WAVE RECT — E240

120V, VOLT DOUBLER — E120A — N384

PRI ENERGY STORAGE, 6 PL USE 4 PL FOR PLC-2

N381 — C132 2200-200V, C136 2200-200V, C133 2200-200V, C137 2200-200V, C122 .0022-250VAC — N370 — E14 IGBT HEAT SINK

PRI_HI — R351 30K-2W — T2:1 — R352 30K-2W — PRI_LO

TRANSFORMER QUIET END

N385 — C144 .47-400V — N386 — L6:1 — N458 — R373 5.6-2W — C123 .1-400V

C113 .0033 — N472 — R372 56-2W

N387 — N389 — C145 330p-500V — C146 330p-500V — R354 5.6-2W — R355 5.6-2W

D70 MUR440 — Q96 IRG4PC40 — D78 ^200V-.2A-50NS ^D_SOT-23 — N390 — R359 10.0 ^R_1206 — N391

D71 MUR440 — Q97 IRG4PC40 — D79 ^200V-.2A-50NS ^D_SOT-23 — N392 — R358 10.0 ^R_1206 — N393

N394 — D86 MURS160T3 ^D_SMB — +16V

C155 .1-50V-10% ^C_1206, C163 .1-50V-10% ^C_1206

+16V — N395 — C162 .1-50V-10% ^C_1206 — PRI_LO

U18 IR2110 — N397 — N398 — PRI_LO

USE THRU HOLE, HIGHER WATTAGE

+VREF — C185 .1-50V-10% ^C_1206

U19 SG3525AN — N399 — N402 — N403 — R364 100 ^R_0805 — N404 — N405 — C186 470pF-50V-5% ^C_1206

^C_E_ALUM_B 1-50V — C184 — R365 15.0K ^R_0805

+16V — C183 .1-50V-10% ^C_1206 — +VREF — N400 — N401

PRI_LO

+16V — N372 — D59 4148 ^D_SOT-23 — RELAY 25MA — Q92 3904 ^Q_BJTN_SOT-23 — N406 — Q93 3904 ^Q_BJTN_SOT-23 — N407 — PRI_LO

+VREF — N373 — R327 4.75K ^R_0805 — R329 12.7K ^R_0805 — Q94 3906 ^Q_BJTP_SOT-23

RELAY STARTS OFF LOW. 5V LINE SETTLES HIGH BEFORE 16V > 8V, BECAUSE TRIG IS LOW UP TO 10V

0V - RUN
5V - SHUTDOWN

N412 — R335 150K ^R_1206 — +VREF — R333 150K ^R_1206 — N413 — R334 100 ^R_0805 — N414 — N415

LM556-SMT: TRIGGER, OUTPUT, RESET, CONTROL_V, THRESHOLD, DISCHARGE — U14:2

10-35V C114 — TIME DELAY 3 SECONDS — C120 .001-5% ^C_1206 — PRI_LO

NON CRIT BYPASS

D58 ^D_SMB MURS160T3

NOM BUS VOLTAGE 340V (120-240VAC)
MIN BUS VOLTAGE 200-220V (75-150 VAC)

R326 487K ^R_1206 — N411 — R328 487K ^R_1206 — N408

N416 — R321 487K ^R_1206 — N417 — R322 487K ^R_1206 — N410 — N418

C107 .1-400V

SET MOM PEAK AT 131V 120VAC
DECLINES ABOUT 30% EVERY 35 MS
REACHES 8.7 V IN 40 MS, (2 AC CYCLES)

U13:3 LM339 — 974K - 24.9K RES DIVIDER 340V NOM BUS = 8.67V 200V MIN BUS = 5.1V UV

D91 4148 ^D_SOT-23 — N471

R323 39.2K ^R_0805, C108 .0027 ^C_0805, R325 24.9K ^R_0805, C109 .0027 ^C_0805

C128 .0027 ^C_0805 — PRI_LO

UNDERVOLTAGE SHUTDOWN TRIGGERS AT 5.1 V-REF RESETS AT 5.6V (10% HYST)

+VREF — +16V — U13:1 LM339 — R332 39.2K ^R_0805 — N409 — R340 392K ^R_0805

C119 470pF-50V-5% ^C_1206, C121 470pF-50V-5% ^C_1206, C125 .1-50V-10% ^C_1206 — PRI_LO

N419 5V NOM — R369 1.00K ^R_1206 — N470

10-35V C192 — PRI_LO

+16V — R330 4.75K ^R_0805 — R336 10.0K ^R_0805 — N444 — R341 100K ^R_1206

COMBINED EFFECT OF 150K-1206 RESISTOR AND 10K, 12.7K THRESHOLD RAISES PEAK LIMIT 25%, RELATIVE TO PROTO

LM339 U13:4 — N445 — R342 100K ^R_1206

4V NOM — LM339 U13:2 — R337 12.7K ^R_0805 — N446

R331 20.0K ^R_0805 — R338 10.0K ^R_0805 — C124 .001-5% ^C_1206 — L6:2 — PARALLEL WINDING ON RESONANT INDUCTOR — PRI_LO

OFF-BUS VOLTAGES RISES ONLY AFTER V-BIAS > 10V. ENSURES THAT 556-TRIG PIN STARTS LOW.

AVERAGE LIMITING HAS SEVERAL SECOND TIME CONSTANT TO REACH 2.4V THRESHOLD, AVE CURRENT 20-25A

+16V — R347 2.21K ^R_0805 — N450 — Q95 3904 ^Q_BJTN_SOT-23 — N447 — R343 100K ^R_1206 — N448 — D61 ^200V-.2A-50NS ^D_SOT-23 — N449 — N451 — N452 — V-STBY — TO SH 4

R346 20.0K ^R_0805, C131 470-16V — PRI_LO — U17 — +6 V — PS-OL — SH 4

0.5-1 MA TO TRIGGER — 100PF @ 15KV ESD, 100NF @ 15V BYPASS — U15 — +6 V — C135 .1-50V-10% ^C_1206 — R348 2.21K ^R_0805 — PRI_LO — DC-OFF — FROM DC SHUTDOWN, SHEET 4

R353 10.0 ^R_1206 — N454 — D68 ^200V-.2A-50NS ^D_SOT-23 — N455 — T1:3 ISOL WINDING - 6V — C143 100-25V

N426 — D62 MURS120T3 — +16V — XF BIAS T1:4 — PRI_LO — C138 100-25V-105C

D63 4148 ^D_SOT-23 — N427 — D64 4148 ^D_SOT-23 — N428 — D65 4148 ^D_SOT-23

R376 10.0K ^R_0805 — N117 — R375 10.0K ^R_0805 — Q99 3906 ^Q_BJTP_SOT-23 — N453 — R374 536 ^R_0805 — N425

+16V — C139 100-25V — PRI_LO

D66 10V- 3W ^D_ZEN_SOT-23 — D67 4148 ^D_SOT-23 — N424 — R349 39.2 ^R_1206

D69 4148 ^D_SOT-23

PRI_HI — R344 100K ^R_1206 — XF_PRI T1:1 — R345 100K ^R_1206 — N421 — N422 — D60 MURS160T3 ^D_SMB — N420 — C127 .0022-250VAC — PRI_LO

5V NOM — U16 TOP 210 — 600V TRACE — N423 — R356 10.0 ^R_1206 — N476 — C142 100-25V

2 BEADS IN PAR HI RAIL
1 BEAD LO RAIL

T2:2 — N429 — N430 — N431 — N432 — N433 — N434 — N435 — N436

D74 200V-15A — N437 — L9 6UH-BEAD — +HI-RAIL

D80 200V-15A

D75 200V-15A

D81 200V-15A — N438 — L10 6UH-BEAD — -HI-RAIL

C152 470-100V, C159 470-100V, C165 470-100V, C169 470-100V, C173 470-100V

C153 470-100V, C160 470-100V, C166 470-100V, C170 470-100V, C174 470-100V

TO TURN-OFF MUTING SHEET 4 (FAN SPEED) — 15V-SW

D76 MURS120T3 — D82 MURS120T3 — D77 MURS120T3 — D83 MURS120T3 ^D_SMB — SMT-B PKG OK

R357 39.2 ^R_1206 — N456 — C148 470pF-50V-5% ^C_1206

C149 100-25V-105C, C156 .1-250V — C150 100-25V-105C, C157 .1-250V — NEW, LO-ESR, 2PL

+15V — -15V

+VREF — C116 .1-50V-10% ^C_1206 — R362 4.75K ^R_0805 — Q98 3906 ^Q_BJTP_SOT-23 — N439 — R363 10.0K ^R_0805 — N440 — R366 10.0K ^R_0805

LM556-SMT: TRIGGER, OUTPUT, RESET, CONTROL_V, THRESHOLD, DISCHARGE — U14:1

R360 7.87K ^R_0805 — N441 — N442 — R361 536 ^R_0805 — N443

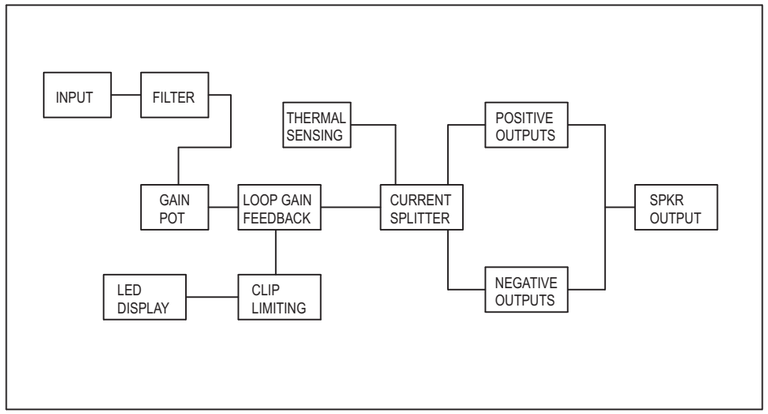
C161 470pF-50V-5% ^C_1206, C182 470pF-50V-5% ^C_1206

PRI_LO

SIZE	FSCM NO.	DWG NO.	REV
D		SH-000516-00	B
SCALE NONE	CAD FILE NO. plx1602.sch	SHEET 5 OF 5	

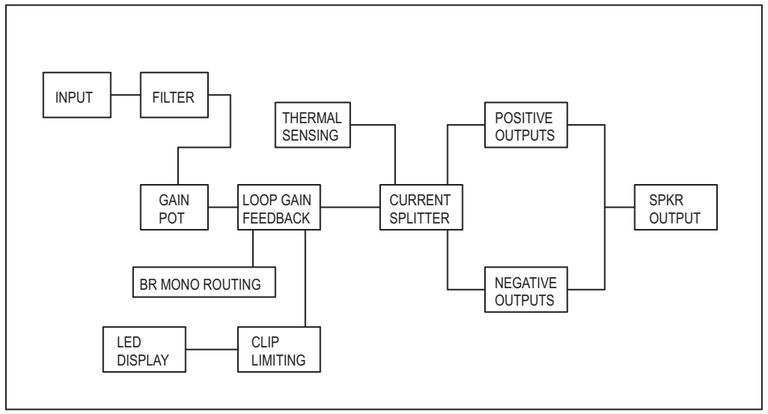
DWG NO. SH-000516-00 — SH 5 — REV B

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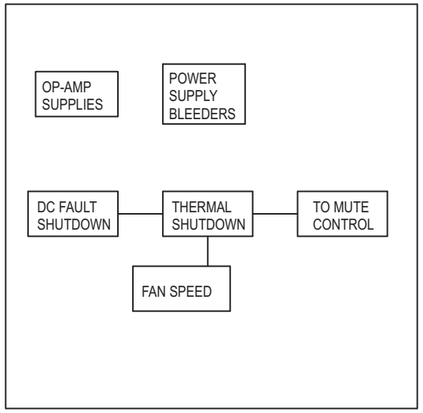
CHANNEL A
AUDIO CIRCUITS

SHEET 2



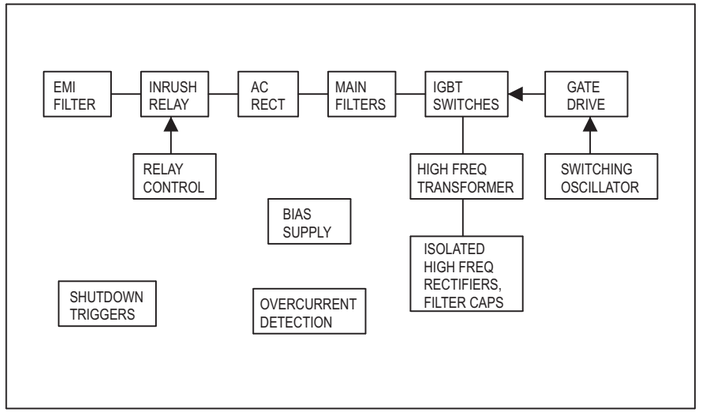
CHANNEL B
AUDIO CIRCUITS

SHEET 3



SUPPORT AND
PROTECTION
CIRCUITS

SHEET 4



SWITCHING
POWER
SUPPLY

SHEET 5

TABULATION BLOCK	
VOLTAGE	VARIABLE
120/230V	R321, 322, 326, 328 - 487K, ^R_1206
100V	R321, 322, 326, 328 - 392K, ^R_1206

2. COMPONENTS WITH VALUE PREFIXED WITH A "^" REPRESENT SMT COMPONENTS.
1. THIS DRAWING USED IN CONJUNCTION WITH ASSEMBLY WP-002403-00.
NOTES: UNLESS OTHERWISE SPECIFIED

QTY	ITEM NO.	PART NO.	DESCRIPTION	VENDOR

PARTS LIST

WP-002403-00	PLX 2402
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
DIMENSIONS PER ANSI Y14.5-1982
TOLERANCES ARE:
DECIMALS .XX ± DECIMALS .XXX ± ANGLES °
DEBURR EDGES .XXX R MAX
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

QSC AUDIO PRODUCTS, INC.
COSTA MESA, CALIFORNIA

APPROVALS	DATE
DRAWN PAT QUILTER	5-15-98
CHECKED	
ISSUED	
CAD SEED FILE NO.	PLOT DATE: Wed Dec 09, 1998

SCHEMATIC DIAGRAM
PLX 2402

SIZE	FSCM NO.	DWG NO.	REV
D		SH-002403-00	C
SCALE NONE	CAD FILE NO. plx2402.sch	SHEET 1 OF 5	

P:\TANGOPRO\PLX\PLX2402

DWG NO. SH-002403-00
SH 1
REV C

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INPUT AND FILTER SECTION, CH A

DIP SWITCH TABLE, 10-POS
1 - CLIP LIM, CH-A
2 - LF FILT, CH-A
3 - 30 HZ LF, CH-A
4 - PAR INPUT LED
5 - PAR INPUTS, +
6 - PAR INPUTS, -
7 - BR MONO
8 - 30 HZ LF, CH B
9 - LF FILT, CH B
10- CLIP LIM CH B

SH 4, EURO-INPUTS
+IN_CH-A
-IN_CH-A
-IN_DPA
NEG INPUT
SIGNAL POLARITY INVERTED
POS INPUT
DATAPORT CONNECTED TO INPUT AS USUAL TO MINIMIZE CROSSTALK WHEN USING REGULAR INPUTS
INPUTS IN PARALLEL - SH 3
DP-PAR-F
SH 4
A-1 GND
A-4, GND
A-2 +A
A-3 -A
A-10, LED-PAR
A-20, +13V
+12VCL
2 POLE CASCADED ROLLOFF
-0.15dB, 20Hz. -0.4dB, 10Hz.
R-parallel, 7.5K, 10K, 4.7K, = 2.24K
DISCUSS STAR GND
ROUTE TO SPKR OUTPUT.
R226 = 5.90K for PLC-2
SPKR_BUS_A
BR MONO FEED, SH 3
CH_A_SIG
A-5, CLIP A
A-6, GND
A-4, LF SIG
A-8, LF ON
A-7, LF-ON
U1:1 MC33078-SMT
U1:2 MC33078-SMT
U2:1 NE5532
U2:2 NE5532
U_OPAMP_DUAL1
+14VIC
-14VIC
+13IN
DIP-10
SW1:1
SW1:2
SW1:3
SW1:4
SW1:5
SW1:6
J1 R_RING
J2 XLR_B
J3:1 J3:2 J3:3 J3:4 J3:10 J3:20
J4:1 J4:2 J4:3 J4:4 J4:10 J4:20
J5:1 J5:2 J5:3 J5:4 J5:5 J5:6 J5:7 J5:8 J5:12
J6:1 J6:2 J6:3 J6:4 J6:5 J6:6 J6:7 J6:8 J6:12
J4:5 J4:6 J4:7 J4:8 J4:9
J3:5 J3:6 J3:7 J3:8 J3:9
+12VCL
-12VCL
C1 470pF-50V-5% ^C_1206
C2 470pF-50V-5% ^C_1206
C5 100pF-50V-5% ^C_0805
C6 100pF-50V-5% ^C_0805
C7 47-10NP-10%
C8 .1-5% ^C_1206
C9 100pF-50V-5% ^C_0805
C10 22-50V-5% ^C_1206
C11 47-10NP-10%
C12 1-5% ^C_1206
C13 1-50V ^C_E_ALUM_B
C14 10pF-50V-5% ^C_0805
C15 100-25V
C16 15pF
C195 .001-5% ^C_1206
R1 1.00K ^R_1206
R4 4.75K ^R_0805
R5 75 ^R_0805
R6 75 ^R_0805
R8 5.60K-.1%
R9 5.60K-.1%
R10 4.75K ^R_0805
R11 4.75K ^R_0805
R12 5.60K-.1%
R13 5.60K-.1%
R14 12.7K ^R_0805
R15 7.50K ^R_0805
R16 12.7K ^R_0805
R17 4.75K ^R_0805
R18 20.0K ^R_0805
R19 12.7K ^R_0805
R20 39.2K ^R_0805
R21 100 ^R_0805
R22 536 ^R_0805
R23 1.50K ^R_0805
R24 392K ^R_0805
R25 15.0K ^R_0805
R26 47.5K ^R_0805
R27 100 ^R_0805
R28 475 ^R_0805
R29 5.90K ^R_0805
R30 10K RE-230
R31 16.5K-1/2W-1%
R32 1.50K ^R_0805
R33 100K ^R_0805
R34 1.05K ^R_0805
R35 1.50K ^R_0805
R36 12.7K ^R_0805
R37 475 ^R_0805
R38 1.50K ^R_0805
R39 1.50K ^R_0805
R40 12.7K ^R_0805
R41 1.50K ^R_0805
R42 1.00K ^R_1206
R43 7.50K ^R_0805
R44 383 ^R_0805
R45 12.7K ^R_0805
R46 12.7K ^R_0805
R47 2.21K ^R_0805
R48 2.00K ^R_0805
R49 30.1K ^R_1206
R50 30.1K ^R_1206
R101 1.50K ^R_0805
VR2 10K-THRU-PCB
VR43 250
D1 4148 ^D_SOT-23
D2 4148 ^D_SOT-23
D3 4148 ^D_SOT-23
D4 4148 ^D_SOT-23
D5 4148 ^D_SOT-23
D89 4148 ^D_SOT-23
LD1 YEL
LD2 GRN
LD3 GRN
LD4 GRN
LD5 RED
Q1 3906 ^Q_BJTP_SOT-23
Q2 3906 ^Q_BJTP_SOT-23
Q3 3906 ^Q_BJTP_SOT-23
Q4 3906 ^Q_BJTP_SOT-23
Q5 3904 ^Q_BJTN_SOT-23
Q6 3906 ^Q_BJTP_SOT-23
Q7 3904 ^Q_BJTN_SOT-23
Q8 3904 ^Q_BJTN_SOT-23
Q9 3904 ^Q_BJTN_SOT-23
Q10 3906 ^Q_BJTP_SOT-23
Q12 3906 ^Q_BJTP_SOT-23
Q13 3904 ^Q_BJTN_SOT-23
U3:1 LM13600M
^U_LM13600
TH-SUB-A
NTCBUS
+15NTC
-15NTC
PROT
MUTE_HI
DC_SENSE
PWR GND
PARALLEL INPUT SW. STATUS LED
LED-SIGNAL DISPLAY
GAIN
CLIP
CLIP-LIMIT PROCESSOR

AMP LOOP GAIN -- 32DB REVISION
USE SAME VALUE AS PLC-2

THERMAL AND BIAS SENSING

POS STEP DRIVER

POSREF
U4
^LM311-SMT
BAL/STR
BAL
D7 10V-1N4740A
.36W at full clip
R52 150K ^R_1206
R54 150K ^R_1206
R55 4.75K ^R_0805
R56 4.75K ^R_0805
R66 392K ^R_0805
R73 5.90K ^R_0805
R79 3.01K ^R_0805
R96 3.9K-2W
R105 3.9K-2W
D15 4148 ^D_SOT-23
Q30 3904 ^Q_BJTN_SOT-23
Q31 3906 ^Q_BJTP_SOT-23
Q41 RFZ44
C30 47pF-50V-5% ^C_0805
C31 10-35V
C32 100-25V
R104 12.7K ^R_0805
R110 47.5 ^R_0805
D18 4148 ^D_SOT-23
+HI-RAIL

POS OUTPUT SECTION

Q14 3906 ^Q_BJTP_SOT-23
Q24 3906 ^Q_BJTP_SOT-23
Q18 3904 ^Q_BJTN_SOT-23
Q26 MJE15033
Q28 2SA1302
Q34 2SA1302
Q36 2SA1302
Q39 2SA1302
D9 4148 ^D_SOT-23
D14 4148 ^D_SOT-23
D19 1N5402
D22 15A-200V
+MID-RAIL
C21 47-50V
C23 .0027 ^C_0805
R50 4.75K ^R_0805
R60 39.2K ^R_0805
R72 2.21K ^R_0805
R73 100K ^R_1206
R76 39.2K ^R_0805
R81 200 ^R_0805
R85 15-2W
R88 15-2W
R91 15-2W
R94 15-2W
R97 15-2W
R102 15-2W
R107 15-2W
R111 15-2W
R113 47-2W 8 PL
R115 1.5-2W
C34 .1-250V

NEG STEP DRIVER

Q16 300V-.2A ^Q_BJTP_SOT-23
Q17 300V-.2A ^Q_BJTP_SOT-23
Q19 2SC4793
Q20 2N3904
Q21 2N3906
Q22 2SA1837
Q23 3906 ^Q_BJTP_SOT-23
Q25 3904 ^Q_BJTN_SOT-23
D10 4148 ^D_SOT-23
D16 200V-2A-50NS ^D_SOT-23
D13 200V-2A-50NS ^D_SOT-23
D11 4148 ^D_SOT-23
R381 100 ^R_0805
R382 100 ^R_0805
R70 75 ^R_0805
R71 75 ^R_0805
R65 12.7K ^R_0805
C25 680pF ^C_0805
C26 470pF ^C_1206
C177 .1-50V-10% ^C 1206
C180 1-50V ^C_1206
L1 2UH-14GA-AIR
R98 5.6-2W
R80 5.6-2W
C27 .022
R466 15-2W
R367 15-2W
I-MON SH 4
SPKR_BUS_A
SPKR-A
BR-POS
BR-NEG
FROM CH B SHEET 3
JACK-SPEAKON
PWR-GND, TO SUPPLY CT

NEG OUTPUT SECTION

Q27 MJE15032
Q29 2SC3281
Q35 2SC3281
Q37 2SC3281
Q40 2SC3281
D12 4148 ^D_SOT-23
D8 4148 ^D_SOT-23
D20 1N5402
D21 15A-200V
R74 100K ^R_1206
R75 2.21K ^R_0805
R77 39.2K ^R_0805
R82 200 ^R_0805
R86 15-2W
R89 15-2W
R92 15-2W
R95 15-2W
R99 15-2W
R103 15-2W
R106 15-2W
R108 15-2W
R112 15-2W
R114 47-2W 8 PL
R116 1.5-2W
C35 .1-250V
-V-NEGSTEP
NEGREF
^U_LM311-SMT
Q32 3904 ^Q_BJTN_SOT-23
Q33 3906 ^Q_BJTP_SOT-23
Q38 RFZ44
D17 4148 ^D_SOT-23
R57 150K ^R_1206
R58 150K ^R_1206
R63 4.75K ^R_0805
R64 4.75K ^R_0805
R69 392K ^R_0805
R83 5.90K ^R_0805
R84 2.21K ^R_0805
R100 47.5 ^R_0805
C29 47pF-50V-5% ^C_0805
C177 .1-50V-10% ^C 1206

SIZE	FSCM NO.	DWG NO.	REV
D		SH-002403-00	C
SCALE NONE	CAD FILE NO. plx2402.sch	SHEET 2 OF 5	

DWG NO. SH-002403-00
REV C
SH 2

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INPUT AND FILTER SECTION, CH B

DIP SWITCH TABLE, 10-POS
1 - CLIP LIM, CH-A
2 - LF FILT, CH-A
3 - 30 HZ LF, CH-A
4 - PAR INPUT LED
5 - PAR INPUTS, +
6 - PAR INPUTS, -
7 - BR MONO
8 - 30 HZ LF, CH B
9 - LF FILT, CH B
10- CLIP LIM CH B

SH 4, EURO-INPUTS
+IN_CH-B
-IN_CH-B
A-18, -B
A-19, +B
J9
R_RING
T_TIP
S
J10
SH 2, INPUT-PARALLEL SW
+XLR_B
-XLR_B
-IN_DPB
+IN_DPB
NEG INPUT
POS INPUT
SIGNAL POLARITY INVERTED
A-17, GND
A-11, BR-M
A-15, GND
A-16, CLIP-B
A-12, SIG
A-13, LFIN
A-14, LFGN
DIP-10
SW1:7
SW1:8
SW1:9
SW1:10
+13IN
+14VIC
-14VIC
+12VCL
-12VCL
MC33078-SMT
U6:1
U6:2
U7:1
NE5532
U7:2
NE5532
U_OPAMP_DUAL1
SIGNAL POLARITY INVERTED
STEREO - CLAMPED
BR-MONO - OPEN
BR-MONO CH B INPUT CLAMP
DISCUSS STAR GND
ROUTE TO SPKR OUTPUT. R226 = 5.90K for PLC-2
SPKR_BUS_B
DP-BR-F
BR-ON
CH_A_SIG
BR MONO STATUS LED
LD6
10K-THRU-PCB
VR121
GAIN
LED-SIGNAL DISPLAY
+14_DISP
-13VCL
LD7
LD8
LD9
LD10
CLIP
PWR GND
THERMAL AND BIAS SENSING
NTCBUS
TH-SUBC-B
+15NTC
-15NTC
CLIP-LIMIT PROCESSOR
DATAPORT, SH 4, CLIP B
PSOT
SH 2
U3:2
LM13600M

POS STEP DRIVER

+HI-RAIL
POSREF
MC33078-SMT
^LM311-SMT
10V-1N4740A
.36W at full clip
SIGNAL POLARITY INVERTED

POS OUTPUT SECTION

+MID-RAIL
I-MON-B, SH 4
SPKR-B
SPKR_BUS_B
2UH-14GA-AIR
EM_G
JACK-SPEAKON
BR-POS
BR-NEG
TO CH A SHEET 2
PWR-GND, TO SUPPLY CT
MUTE+
SEE SH 4

NEG OUTPUT SECTION

-HI-RAIL
MID-RAIL
DC SENSE
SH 4
NEGREF
V-NEGSTEP

NEG STEP DRIVER

SIZE	FSCM NO.	DWG NO.	REV
D		SH-002403-00	C
SCALE NONE	CAD FILE NO. plx2402.sch	SHEET 3 OF 5	

DWG NO. SH-002403-00 | SH 3 | REV C

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OPAMP POWER SUPPLIES

+15V, -15V, N282, N283, N284, N285, R246 392 ^R_1206, R247 392 ^R_1206, R248 39.2 ^R_1206, R249 39.2 ^R_1206, C73 470-16V, C74 470-16V, C76 470-16V, C77 470-16V, C191 .1-50V ^C_1206, R224 0.7 JUMPER, +13VCL, -13VCL, +14VC, -14VC, +11V, -11V

DC MUTING

DP - STBY, TO SHUTDOWN OPTOCOUPLER, SH 5 (/EV) /DC-OFF, TO OPTOCOUPLER LED 1.6V OF HYSTERESIS, N335, R250 1.00K ^R_1206, N336, D48 4148 ^D_SOT-23, N331, BR-ON SH 2, R240 2.21K ^R_0805, R242 20.0K ^R_0805, R243 39.2K ^R_0805, R244 20.0K ^R_0805, DC_SENSE SH 1, 2, N332, Q87 3906 ^Q_BJTP_SOT-23, D50 4148 ^D_SOT-23, N338, -DC THRESH, -4V, N337, C75 .001-5% ^C_1206, N333, C71 47-10NP-10%, D49 4148 ^D_SOT-23, N339, +DC THRESH 4V, U10:1 ^LM393-SMT, +MID-RAIL, D87 1N4744A, N468, R256 150-2W, POSREF, C84 .1-250V, +15NTC, D53 1N4744A, D54 1N4744A, -15NTC, R251 3.9K-2W, -MID-RAIL, R258 9.09K ^R_0805, R261 39.2K ^R_0805, FAN SPEED THRESHOLD, ON-OFF DELAY, THERMAL THRESHOLD, R259 12.7K ^R_0805, R260 392K ^R_0805, THERM HYST, R263 392K ^R_0805, N345, R270 1.50K ^R_0805, R273 1.50K ^R_0805, TO SHEETS 2 AND 3, MUTE+, FULL MUTE, 5.7V FULL CUTBACK, 2.8V, 1MA, Q88 3906 ^Q_BJTP_SOT-23, NTCBUS, C81 .001-5% ^C_1206, N342, N343, N344, U10:2 ^LM393-SMT, MUTE_HI, D55 4148 ^D_SOT-23, C80 10-35V, N474, D56 6.2V-.3W ^D_ZEN_SOT-23, R262 15.0K ^R_0805, C86 10-35V, N340, D51 4148 ^D_SOT-23, N341, 15V-SW, SEE SH 5, R241 12.7K ^R_0805, R245 12.7K ^R_0805

FAN SPEED CONTROL

SH 4, V-STBY, R252 1.00K ^R_1206, N334, D89 4148 ^D_SOT-23, R232 1.00K ^R_1206, R229 20.0K ^R_0805, N347, C85 .001-5% ^C_1206, N351, R264 2.21K ^R_0805, R267 2.21K ^R_0805, R265 2.21K ^R_0805, N352, Q91 TIP 32C, N353, R253 4.75K ^R_0805, Q89 3904 ^Q_BJTN_SOT-23, R370 634 ^R_1206, POWER LED ON DISPLAY PCB, GRN LD11, N349, J5:14, J6:14, N348, J5:16, J6:16, N350, Q90 3904 ^Q_BJTN_SOT-23, N355, N354, R271 20.0K ^R_0805, R272 9.09K ^R_0805, R286 9.09K ^R_0805, 47-50V C89, J13:1 +FAN, J13:2 -FAN, +15V, -15V

POS RAIL

+HI-RAIL, R269 1.5-2W, N286, C87 1-250V, N287, R274 470-2W, R275 470-2W, PLC-2 USES MID RAILS ONLY, +MID-RAIL, TO PWR SUPPLY C-T, R276 470-2W, N288, R277 470-2W, C90 .1-250V, NEGSREF, R278 150-2W, D88 10V-1N4740A, N469, R279 470-2W, N322, R280 0.7 JUMPER, V-NEGSTEP, C87 100-25V, D57 12V-1W-1N4742A, -HI-RAIL, FROM PWR SUPPLY OPTOCOUPLER, SH 5, PS-OL, R268 100K ^R_1206, N346

CH A V-MON, I-MON

ROUTE TO SPKR OUTPUT, P1, SPKR-A, OUTER COIL, 6T, L_Z_A1, N323, N324, N325, N326, N327, N328, N329, N330, N69, +11V, -11V, N289, N290, N291, DP-PAR-F SH 2, DP-BR-F SH 3, N292, V-MON CH A (NEW BMF SUBCODE, 0-2V, 0.5V BITS) INJECT V-DC POST OPAMP, NO GAIN SCALING, SEE SH 2, TH-SUBC-A, I-MON CH A (WITH SEPARATE CH A THERMAL SUBCODE)

CH B V-MON, I-MON

ROUTE TO SPKR OUTPUT, SPKR-B, OUTER COIL, 6T, L_Z_B1, N360, N361, N362, N363, N364, N365, N366, N367, N149, +11V, -11V, +13VCL, N356, N357, N358, N359, V-MON CH B (PWR-SUPPLY- ON SUBCODE: .8-1.3V) SCALE 13V TO 1V NOM, SEE SH 3, TH-SUBC-B, I-MON CH B (WITH SEP. CH B THERMAL SUBCODE), FOR 1/8 WATT: 110 MA, 1.1V MAX, +15V

SET ID- R

+IN_CH-A, -IN_CH-A, +IN_DPA, -IN_DPA, +IN_DPB, -IN_DPB, +IN_CH-B, -IN_CH-B, CLIP_A, CLIP_B, SEE SH 2, N293, N294, N295, N296, N304, N305, N306, N307, N315, N316, N317, N318, N319, N460, N320, N321, N297, N298, N299, N300, N301, N302, N303, N308, N310, N311, N312, N313, N314, EURO-PLUG: RAVE SIGNAL FORMAT, DATAPORT HD-15 JACK, +A, -A, GND, -IN, A, STBY, VMON-A, IMON-A, CLIP-A, CHAS GND, +IN, A, +IN, B, +15V ??, D-REF, -IN, B, IDR, VMON-B, IMON-B, CLIP-B, +B, -B, GND, CH GND

SIZE	FSCM NO.	DWG NO.	REV
D		SH-002403-00	C
SCALE NONE	CAD FILE NO. plx2402.sch	SHEET 4 OF 5	

DWG NO. SH-002403-00, SH 4, REV C

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LINE FILTER SHIELD

AC-HI 120, 240V — J19 — N388 — F1 25A-125V — N369 — L3:1 — N374 — L4:1 — N376 — EH1 — EH2 — N378 — R324 10-OHM-20% — K1 (Value) — ES1 — ES2 — AC-SW

AC-LO — J20 — N371 — X-CAPS, 3 PL — C110 1.0 250VAC — L3:2 — C112 1.0 250VAC — L4:2 — C117 .47-250VAC — R339 750K-1/2W — R371 750K-1/2W — N375 — N377

C115 .0033 250VAC — C118 .0033 250VAC — CH-GND STUD — E11 — N309

NTC: WRONG P/N:
PATTERN OK
NEW VALUE
10 OHMS, 180 JOULES

INRUSH LIMITING RELAY,
QSC-COM, 30A, COIL 24V
MIN VOLT 18V, OK

BR1 600V-50A — AC1 — AC2 — C1 — C2

C126 .1-250V-X — E120B — 120V PAR RECT BRIDGES — N383 — PRI_LO — N382

240V, FULL WAVE RECT — E240 — EL1 — 120V, VOLT DOUBLER — E120A — N384

J120

N379 — N380 — N381

C132 2200-200V — C136 2200-200V — C133 2200-200V — C137 2200-200V — C122 .0022-250VAC — N370 — IGBT HEAT SINK E14

PRI_HI — R351 30K-2W — R352 30K-2W — PRI_LO

T2:1 — TRANSFORMER XF-79 QUIET END — N385 — N386

C144 .47-400V — L6:1 — C113 .0033 — R372 56-2W — N472 — N458 — C123 .1-400V — R373 5.6-2W

R354 5.6-2W — R355 5.6-2W — C145 330p-500V — C146 330p-500V — N388 — N389

D70 MUR440 — D71 MUR440 — N387

Q96 IRG4PC50U — Q97 IRG4PC50U — N390 — N392 — R359 10.0 ^R_1206 — R358 10.0 ^R_1206 — D78 ^200V-.2A-50NS ^D_SOT-23 — D79 ^200V-.2A-50NS ^D_SOT-23 — N391 — N393

+18V — D86 MURS160T3 ^D_SMB — N394

C155 .1-50V-10% ^C_1206 — C163 .1-50V-10% ^C_1206 — C185 .1-50V-10% ^C_1206 — C183 .1-50V-10% ^C_1206

+16V — +VREF — N395 — C162 .1-50V-10% ^C_1206

U18 IR2110 — LO — COM — VCC — VS — VB — HO — VSS — LIN — SD — HIN — VDD

USE THRU HOLE, HIGHER WATTAGE

U19 SG3525AN — VREF — VIN — OUTB — VC — GND — OUTA — SHTDWN — COMP — +IN — -IN — SYNC — OSC.OUT — CT — RT — DISCHG — SFT-STRT

N397 — N398 — N399 — N400 — N401 — N402 — N403 — R364 100 ^R_0805 — N404 — C184 ^C_E_ALUM_B 1-50V — N405 — R365 15.0K ^R_0805 — C186 470pF-50V-5% ^C_1206

PRI_LO

N372 — +18V — D59 4148 ^D_SOT-23 — N373 — +VREF — R327 4.75K ^R_0805 — R329 12.7K ^R_0805 — RELAY 25MA — Q92 3904 — N406 — Q93 3904 — N407 — ^Q_BJTN_SOT-23 — ^Q_BJTP_SOT-23

RELAY STARTS OFF LOW. 5V LINE SETTLES HIGH BEFORE 16V > 8V, BECAUSE TRIG IS LOW UP TO 10V

0V - RUN
5V - SHUTDOWN

U14:2 LM556-SMT — TRIGGER — OUTPUT — RESET — CONTROL_V — THRESHOLD — DISCHARGE — COMP — FLIP-FLOP

N412 — R335 150K ^R_1206 — +VREF — R333 150K ^R_1206 — N413 — N415 — R334 100 ^R_0805 — N414 — C120 .001-5% ^C_1206 — 10-35V C114 — TIME DELAY 3 SECONDS — NON CRIT BYPASS

D58 ^D_SMB MURS160T3

NOM BUS VOLTAGE 340V (120-240VAC)
MIN BUS VOLTAGE 200-220V (75-150 VAC)

R326 487K ^R_1206 — N411 — R328 487K ^R_1206 — N408

N416 — R321 487K ^R_1206 — N417 — R322 487K ^R_1206 — C107 .1-400V

+VREF — +16V — U13:1 LM339 — R332 39.2K ^R_0805 — N409 — R340 392K ^R_0805 — C125 .1-50V-10% ^C_1206

UNDERVOLTAGE SHUTDOWN TRIGGERS AT 5.1 V-REF RESETS AT 5.6V (10% HYST)

N410 — U13:3 LM339 — D91 4148 ^D_SOT-23 — N418 — C119 470pF-50V-5% ^C_1206 — C121 470pF-50V-5% ^C_1206

974K - 24.9K RES DIVIDER
340V NOM BUS = 8.67V
200V MIN BUS = 5.1V UV

SET NOM PEAK AT 13V / 120VAC
DECLINES ABOUT 30% EVERY 35 MS
REACHES 8.7V IN 40 MS. (2 AC CYCLES)

N471 — R323 39.2K ^R_0805 — C108 .0027 ^C_0805 — R325 24.9K ^R_0805 — C109 .0027 ^C_0805 — C128 .0027 ^C_0805

PRI_LO

N426 — +18V — D62 MURS120T3 — T12 XF-BIAS — C138 100-25V-105C

D63 4148 ^D_SOT-23 — D64 4148 ^D_SOT-23 — D65 4148 ^D_SOT-23 — N427 — N428

R376 10.0K ^R_0805 — N117 — R375 10.0K ^R_0805 — Q99 3906 — ^Q_BJTP_SOT-23 — N453 — R374 536 ^R_0805 — D67 4148 ^D_SOT-23 — N425

D66 10V-.3W ^D_ZEN_SOT-23 — N424 — R349 39.2 ^R_1206 — R356 10.0 ^R_1206 — N423 — D69 4148 ^D_SOT-23

+16V — C139 100-25V

PRI_HI — R344 100K ^R_1206 — R345 100K ^R_1206 — N421 — T11:1 XF-PRI — N422 — D60 MURS160T3 ^D_SMB — N420 — C127 .0022-250VAC — 600V TRACE — U16 TOP 210 — N476 — C142 100-25V

5V NOM — N/C — PRI_LO

+6 V — R30 4.75K ^R_0805 — R336 10.0K ^R_0805 — R341 150K ^R_1206 — N444 — LM339 U13:4 — N445 — R342 150K ^R_1206 — R337 12.7K ^R_0805 — LM339 U13:2 — N446 — R331 20.0K ^R_0805 — R338 10.0K ^R_0805 — C124 .001-5% ^C_1206 — L6:2 — PARALLEL WINDING ON RESONANT INDUCTOR

OFF-BUS VOLTAGES RISES ONLY AFTER V-BIAS > 10V. ENSURES THAT 556-TRIG PIN STARTS LOW.

5V NOM

100PF @ 15KV ESD
100NF @ 15V BYPASS

0.5-1 MA TO TRIGGER — U15 — C135 .1-50V-10% ^C_1206 — R348 2.21K ^R_0805 — DC-OFF — FROM DC SHUTDOWN, SHEET 4

R369 1.00K ^R_1206 — N419 — N470 — C192 10-35V

AVERAGE LIMITING HAS SEVERAL SECOND TIME CONSTANT TO REACH 2.4V THRESHOLD, AVE CURRENT 20-25A

R347 2.21K ^R_0805 — N450 — Q95 3904 — ^Q_BJTN_SOT-23 — N449 — N451 — R346 20.0K ^R_0805 — C131 470-16V — N447 — R343 150K ^R_1206 — N448 — D61 ^200V-.2A-50NS ^D_SOT-23

V-STBY — TO SH 4 — N452 — U17 — +6 V — PS-OL — SH 4

R353 10.0 ^R_1206 — N454 — D68 ^200V-.2A-50NS ^D_SOT-23 — N455 — T13 SDL WINDING - 6V — C143 100-25V

T2:2 XF-79 — N429 — N430 — N431 — N432 — N433

D72 30A-400V D_TO247AD — N435 — D84 30A-400V — N436 — D74 15A-200V — N437 — D80 15A-200V — D75 15A-200V — D81 15A-200V — N438 — D73 30A-400V — D85 30A-400V

2 BEADS IN PAR HI RAIL
1 BEAD LO RAIL

L7 6UH-BEAD — L8 6UH-BEAD — L9 6UH-BEAD — L10 6UH-BEAD — L11 6UH-BEAD — L12 6UH-BEAD — HHI-RAIL — HI-RAIL — MID-RAIL

R350 15-2W — C147 100pF-500V

C151 470-63V — C158 470-63V — C164 470-63V — C168 470-63V — C172 470-63V

C152 470-100V — C159 470-100V — C165 470-100V — C169 470-100V — C173 470-100V

C153 470-100V — C160 470-100V — C166 470-100V — C170 470-100V — C174 470-100V

C154 470-63V — C161 470-63V — C167 470-63V — C171 470-63V — C175 470-63V

P1

TO TURN-OFF MUTING SHEET 4 (FAN SPEED) — 15V-SW — +15V — D76 MURS120T3 — D82 MURS120T3 — D77 MURS120T3 — D83 MURS120T3 ^D_SMB — SMT-B PKG OK

R357 39.2 ^R_1206 — N456 — C148 470pF-50V-5% ^C_1206

C149 100-25V-105C — C156 .1-250V — C150 100-25V-105C — C157 .1-250V — NEW, LO-ESR, 2PL — -15V

+VREF — C116 .1-50V-10% ^C_1206 — Q98 3906 — ^Q_BJTP_SOT-23 — N439 — R362 4.75K ^R_0805 — R363 10.0K ^R_0805 — N440 — R366 10.0K ^R_0805

U14:1 LM556-SMT — TRIGGER — OUTPUT — RESET — CONTROL_V — THRESHOLD — DISCHARGE — COMP — FLIP-FLOP

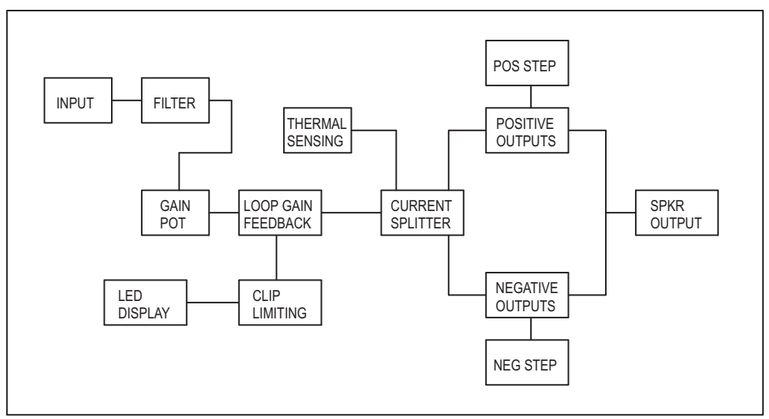
R360 7.87K ^R_0805 — N442 — N441 — R361 536 ^R_0805 — N443 — C181 470pF-50V-5% ^C_1206 — C182 470pF-50V-5% ^C_1206

SIZE	FSCM NO.	DWG NO.	REV
D		SH-002403-00	C
SCALE NONE	CAD FILE NO. plx2402.sch	SHEET 5 OF 5	

DWG NO. SH-002403-00 — SH 5 — REV C

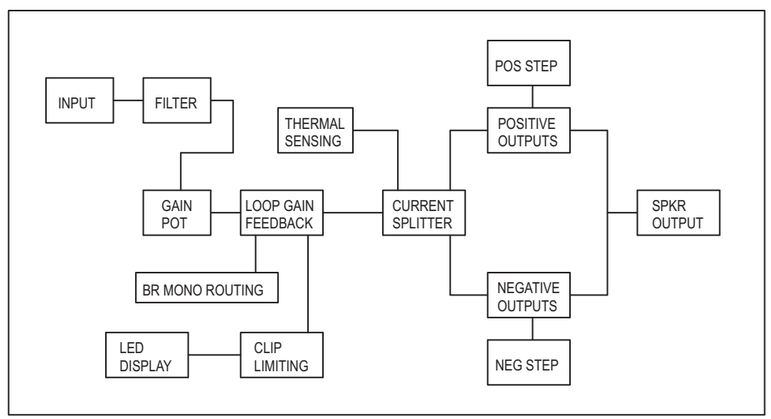
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REVISION



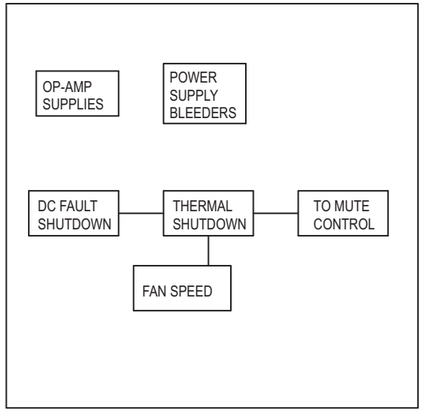
CHANNEL A
AUDIO CIRCUITS

SHEET 2



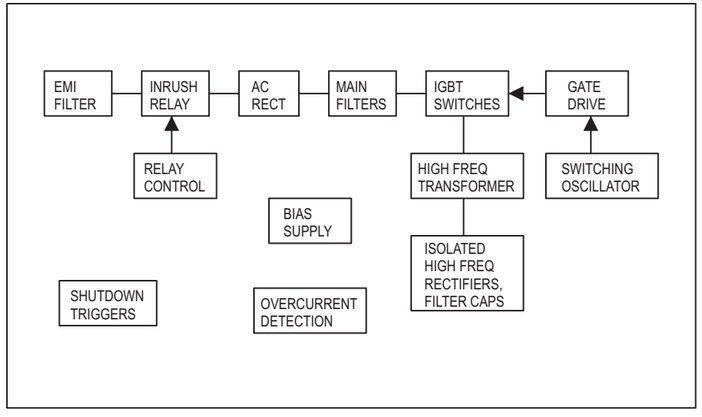
CHANNEL B
AUDIO CIRCUITS

SHEET 3



SUPPORT AND
PROTECTION
CIRCUITS

SHEET 4



SWITCHING
POWER
SUPPLY

SHEET 5

TABULATION BLOCK	
VOLTAGE	VARIABLE
120/230V	R321, 322, 326, 328 - 487K, ^R_1206
100V	R321, 322, 326, 328 - 392K, ^R_1206

2. COMPONENTS WITH VALUE PREFIXED WITH A "^" REPRESENT SMT COMPONENTS.
1. THIS DRAWING USED IN CONJUNCTION WITH ASSEMBLY WP-000541-00.
NOTES: UNLESS OTHERWISE SPECIFIED

QTY	ITEM NO.	PART NO.	DESCRIPTION	VENDOR

PARTS LIST

WP-000541-00	PLX 3002
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
DIMENSIONS PER ANSI Y14.5-1982
TOLERANCES ARE:
DECIMALS .XX ± .01 DECIMALS .XXX ± .005 ANGLES ±0°
DEBURR EDGES .XXX R MAX
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN PAT QUILTER	5-15-98
CHECKED	
ISSUED	
CAD SEED FILE NO.	PLOT DATE: Wed Dec 09, 1998

QSC AUDIO PRODUCTS, INC.
COSTA MESA, CALIFORNIA

SCHEMATIC DIAGRAM
PLX 3002

SIZE	FSCM NO.	DWG NO.	REV
D		SH-000541-00	C

SCALE NONE | CAD FILE NO. plx3002.sch | SHEET 1 OF 5

P:\TANGOPRO\PLX\PLX3002

DWG NO. SH-000541-00
REV C SH 1

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INPUT AND FILTER SECTION, CH A

DIP SWITCH TABLE, 10-POS
1 - CLIP LIM, CH-A
2 - LF FILT, CH-A
3 - 30 HZ LF, CH-A
4 - PAR INPUT LED
5 - PAR INPUTS, +
6 - PAR INPUTS, -
7 - BR MONO
8 - 30 HZ LF, CH B
9 - LF FILT, CH B
10- CLIP LIM CH B

SH 4, EURO-INPUTS
-IN, CH-A
+IN, CH-A
-IN, DPA
+IN, DPA
NEG INPUT
POS INPUT
SIGNAL POLARITY INVERTED
SIGNAL POLARITY INVERTED
DATAPORT CONNECTED TO INPUT AS USUAL TO MINIMIZE CROSSTALK WHEN USING REGULAR INPUTS
INPUTS IN PARALLEL - SH 3
A-10, LED-PAR
A-20, +13V
R-parallel, 7.5K, 10K, 4.7K, = 2.24K
2 POLE CASCADED ROLLOFF -0.15dB, 20Hz. -0.4dB, 10Hz.
DISCUSS STAR GND
ROUTE TO SPKR OUTPUT. R226 = 5.90K for PLC-2
BR MONO FEED, SH 3 CH_A_SIG
PARALLEL INPUT SW. STATUS LED
A-1 GND A-4, GND
A-2 +A A-3 -A
A-8, LF SIG
A-8, LF-30
A-7, LF-ON
A-6, GND
A-5, CLIP A

GAIN

LED-SIGNAL DISPLAY

CLIP

CLIP-LIMIT PROCESSOR

THERMAL AND BIAS SENSING

AMP LOOP GAIN – 32DB REVISION
USE SAME VALUE AS PLC-2

POS STEP DRIVER

POS OUTPUT SECTION

NEG OUTPUT SECTION

NEG STEP DRIVER

FULL MUTE, 5.7V
SEE SH 4
PWR-GND, TO SUPPLY CT
FROM CH B SHEET 3
DC_SENSE, SH 4
I-MON SH 4

SIZE	FSCM NO.	DWG NO.	REV
D		SH-000541-00	C
SCALE NONE	CAD FILE NO. plx3002.sch	SHEET 2 OF 5	

DWG NO. SH-000541-00
REV C
SH 2

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INPUT AND FILTER SECTION, CH B

DIP SWITCH TABLE, 10-POS
1 - CLIP LIM, CH-A
2 - LF FILT, CH-A
3 - 30 HZ LF, CH-A
4 - PAR INPUT LED
5 - PAR INPUTS, +
6 - PAR INPUTS, -
7 - BR MONO
8 - 30 HZ LF, CH B
9 - LF FILT, CH B
10- CLIP LIM CH B

SH 4, EURO-INPUTS
J9 R_RING T_TIP
J10
POS INPUT
NEG INPUT
SH 2, INPUT-PARALLEL SW
SIGNAL POLARITY INVERTED
U6:1 MC33078-SMT
U6:2 MC33078-SMT
SIGNAL POLARITY INVERTED
DIP-10
A-15, GND
A-11, BR-M
A-18, -B
A-19, +B
A-17, GND
A-12, SIG
A-13, LF30
A-14, LF0N
A-16, CLIP-B
C-13, BR-L
C-14, BR-L
BR MONO STATUS LED
LD6
BR-MONO CH B INPUT CLAMP
GAIN
10K-THRU-PCB
U7:1 NE5532
U_OPAMP_DUAL1
SIGNAL POLARITY INVERTED
STEREO - CLAMPED
BR-MONO - OPEN
BR-ON
CH_A_SIG
SH 4

THERMAL AND BIAS SENSING

DISCUSS STAR GND
ROUTE TO SPKR OUTPUT. R226 = 5.90K for PLC-2
U7:2 NE5532
U_E_ALUM_B
SPKR_BUS_B
TH-SUBC-B
DATAPORT, SH 4, CLIP B
PROT
SH 2

LED-SIGNAL DISPLAY

LD7 LD8 LD9 LD10
GRN
RED
+14_DISP
-13VCL

CLIP

PWR GND

CLIP-LIMIT PROCESSOR

U3:2 LM13600M

POS STEP DRIVER

POSREF
U8 LM311-SMT
BAL/STR
BAL
D32 10V-1N4740A
.36W at full clip
+HI-RAIL

POS OUTPUT SECTION

+MID-RAIL
Q71 MJE15033
Q72 MJE15032
2SA1302
2SC3281
1N5402
15A-200V
200V-.2A-50NS
I-MON-B, SH 4
L-Z_B1
L2 2UH-14GA-AIR
SPKR-B
SPKR_BUS_B
E10 EMI_G
E11A E11B E11C E12A E12B E12C
J8 JACK-SPEAKON
BR-POS
BR-NEG
TO CH A SHEET 2
PWR-GND, TO SUPPLY CT

NEG OUTPUT SECTION

NEG STEP DRIVER

I_DC_SENSE
SH 4
NEGREF
U9 LM311-SMT
V-NEGSTEP
-HI-RAIL

SIZE	FSCM NO.	DWG NO.	REV
D		SH-000541-00	C
SCALE NONE	CAD FILE NO. plx3002.sch	SHEET 3 OF 5	

DWG NO. SH-000541-00 | REV C | SH 3

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OPAMP POWER SUPPLIES

+15V, -15V, N282, N283, N284, N285
R246 39.2 ^R_1206 (+13VCL)
R248 39.2 ^R_1206 (+14VIC)
R247 39.2 ^R_1206 (-13VCL)
R249 39.2 ^R_1206 (-14VIC)
470-16V C73, C76, C74, C77
C181 .1-50V ^C_1206
R224 0.7 JUMPER

DC MUTING

BR-ON (SH 3) → D48 4148 ^D_SOT-23 → N331
R240 2.21K ^R_0805 → N332
Q87 3906 ^Q_BJTP_SOT-23
DC_SENSE (SH 2, 3)
R242 20.0K ^R_0805
D50 4148 ^D_SOT-23 -DC THRESH, -4V → N338
D49 4148 ^D_SOT-23 +DC THRESH 4V → N339
C71 47-10NP-10% → N333
R243 39.2K ^R_0805
R244 20.0K ^R_0805 → N337
C75 .001-5% ^C_1206
U10:1 ^LM393-SMT
15V-SW (SEE SH 5) → D51 4148 ^D_SOT-23 → N340 → N341
C81 .001-5% ^C_1206
Q88 3906 ^Q_BJTP_SOT-23
D55 4148 ^D_SOT-23 → N344
U10:2 ^LM393-SMT
MUTE_HI
C80 10-35V → N474
D56 6.2V-.3W ^D_ZEN_SOT-23
R241 12.7K ^R_0805
R245 12.7K ^R_0805
C86 10-35V
R262 15.0K ^R_0805

FAN SPEED CONTROL

DP-STBY
TO SHUTDOWN OPTOCOUPLER, SH 5 (EV) DC-OFF
TO OPTOCOUPLER LED 1.6V OF HYSTERESIS
N335 → R250 1.01K ^R_1206 → N336
+MID-RAIL → D87 1N4744A → N468 → R256 150-2W → POSREF
R257 820-2W → C84 .1-250V
+19NTC → D53 1N4744A, D54 1N4744A → -19NTC
100-25V C72, C78, C79
R251 3.9K-2W
R258 9.09K ^R_0805
R259 12.7K ^R_0805
R260 392K ^R_0805
R261 39.2K ^R_0805
FAN SPEED THRESHOLD
ON-OFF DELAY, THERMAL THRESHOLD
THERM HYST
R263 392K ^R_0805 → N345
R270 1.50K ^R_0805 → TO SHEETS 2 AND 3 (MUTE+)
FULL MUTE, 5.7V
FULL CUTBACK, 2.8V, 1MA
R268 100K ^R_1206
FROM PWR SUPPLY OPTOCOUPLER, SH 5 (PS-OL)
R273 1.50K ^R_0805 → N346
R252 1.01K ^R_1206
D52 4148 ^D_SOT-23 → N334
R229 20.0K ^R_0805
R253 4.75K ^R_0805
C85 .001-5% ^C_1206 → N347
Q89 3904 ^Q_BJTN_SOT-23
N351 → R264 2.21K ^R_0805, R267 2.21K ^R_0805, R265 2.21K ^R_0805 → N352
Q91 TIP 32C → N353
R271 20.0K ^R_0805 → J13:1 +FAN
J13:2 -FAN
C89 47-50V
Q90 3904 ^Q_BJTN_SOT-23 → N355 → N354
R272 9.09K ^R_0805
R266 9.09K ^R_0805
+15V, -15V
V-STBY (SH 5)
R232 1.01K ^R_1206
R270 6.34 ^R_1206
POWER LED ON DISPLAY PCB
GRN LD11
N349 → J5:14 → J6:14 → N348
J5:16 → J6:16 → N350

POS RAIL

+HI-RAIL
R269 1.5-2W → N286
R274 470-2W → N287
C87 .1-250V
R275 470-2W
PLC-2 USES MID RAILS ONLY
+MID-RAIL
TO PWR SUPPLY C-T
R276 470-2W → N288
R277 470-2W
C90 .1-250V → NEGREF
R278 150-2W → N469
D88 10V-1N4740A → -MID-RAIL
R279 470-2W → N322
R280 470-2W
V-NEGSTEP
100-25V C67
D57 12V-1W-1N4742A → -HI-RAIL

CH A V-MON, I-MON

V-MON CONVERSION SCALES:
PLC-2: (sim to 1.4) 30.1K / 2.00K = 15.05 Vout/Vmon
PLC-3: (between 1.8, 2.0) 33.2K / 1.5K = 22.13 Vout/Vmon
ROUTE TO SPKR OUTPUT (P1)
SPKR-A
+11V → N289 → N291 → N290 → -11V
DP-PAR-F (SH 2), DP-BR-F (SH 3) → N292
V-MON CH A (NEW BMF SUBCODE, 0-2V, 0.5V BITS) INJECT V-DC POST OPAMP, NO GAIN SCALING
SEE SH 2 (D)
TH-SUBC-A
I-MON CH A (WITH SEPARATE CH A THERMAL SUBCODE)
OUTER COIL, 6T (L_Z_A1) → N323 → N324
N325 → N327 → N328 → N329 → N326 → N330 → N69

BMF VOLTAGE SCHEME: BINARY CODING, 2 BITS
SOURCE VOLTAGE, 13V NOM, 11V-14.5V (UNREG)
STEREO (NORMAL): BINARY 0,0 = 0V OUT
INPUTS PARALLEL: BINARY 0,1 = .5V NOM, .42-.575,
BR MONO: BINARY 1,0 = 1.0V NOM, .85-1.15
BR-MONO + PAR: BINARY 1,1 = 1.5V NOM, 1.27-1.72
NOM THRESHOLDS, 0.25, .75, 1.25.
FOR UNREG TRACKING DECODING, USE V-ON (1V NOM) AS REF

DATAPORT INPUT SENSITIVITY:
PLC 2:
7.87K / 5.60 K,
1.23V-IN -> 2.95V-DP
PLC-3:
4.75K / 5.60K
1.70V-IN -> 3.15V-DP

+IN_CH-A, -IN_CH-A (A1)
+IN_DPA → N293, N294, N295, N296 (CLIP_A, SEE SH 2)

EURO-PLUG: RAVE SIGNAL FORMAT
N297 +A, N298 -A, GND
DATAPORT HD-15 JACK
N299 -IN, A
N300 STBY
N301 VMON-A
N302 IMON-A
N303 CLIP-A
CHAS GND
N308 +IN, A
N310 +IN, B
N311 +15V ??
N312 D-REF
N313 -IN, B
N314 IDR
N317 VMON-B
N318 IMON-B
N319 CLIP-B
N460 EURO-PLUG: RAVE SIGNAL FORMAT
N320 +B
N321 -B
GND
CH GND

CH B V-MON, I-MON

ROUTE TO SPKR OUTPUT (P1)
SPKR-B
+11V → N356 → N358 → N357 → -11V
+13VCL
V-MON CH B (PWR-SUPPLY- ON SUBCODE: .8-1.3V) SCALE 13V TO 1V NOM
SEE SH 3
TH-SUBC-B
I-MON CH B (WITH SEP. CH B THERMAL SUBCODE)
OUTER COIL, 6T (L_Z_B1) → N360 → N361
N362 → N363 → N364 → N365 → N367 → N149 → N366
+15V
FOR 1/8 WATT: 110 MA, 1.1V MAX

+IN_DPB → N304, N305, N306, N307 (CLIP_B, SEE SH 2)
+IN_CH-B, -IN_CH-B (A1)
N315, N316

SET ID- R

SIZE	FSCM NO.	DWG NO.	REV
D		SH-000541-00	C
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DWG NO. SH-000541-00 | SH. 4 | REV. C

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LINE FILTER SHIELD

AC-HI 120, 240V — J19 — N368 — F1 25A-125V — N369 — L3:1 — N374 — L4:1 — N376 — EH1 — EH2 — R324 10-OHM-20% — N378

AC-LO — J20 — N371 — L3:2 — N375 — L4:2 — N377

X-CAPS, 3 PL: C110 1.0 250VAC; C112 1.0 250VAC; C117 .47-250VAC; R339 750K-1/2W; R371 750K-1/2W

C115 .0033 250VAC; C118 .0033 250VAC; CH-GND STUD; EI1; N309

759K, X-CAP DISCHARGE TO MEET IEC STANDARD; BECAUSE X-CAP EXCEEDS 0.1UF MUST DISCHARGE X-CAP TO 34 V WITHIN 2 SECONDS. 230V X 1.41 = 325V ->34 V FOR C = 1.5UF, R < 628K, 0.1W

NTC NEXT TO RELAY LOCATE DOWNSTREAM OF FILTER, OUTSIDE SHIELD

INRUSH APPROX 0.5 SEC

INRUSH LIMITING RELAY. QSC-COM, 30A, COIL 24V MIN VOLT 18V, OK

K1 — N379 — ES1 — ES2 — AC-SW — N380 — E120B — C126 .1-250V-X — 240V, FULL WAVE RECT — E240 — EI1 — 120V, VOLT DOUBLER — E120A — N384

BR1 600V-50A — N381 — N382 — N383 — PRI_LO

PRI ENERGY STORAGE, 6 PL USE 4 PL FOR PLC-2

C132 2200-200V; C136 2200-200V; C140 2200-200V; C133 2200-200V; C137 2200-200V; C141 2200-200V; C122 .0022-250VAC

PRI_HI — R351 30K-2W — R352 30K-2W — PRI_LO

T2:1 — N385 — C144 .47-400V — N386 — L6:1

TRANSFORMER QUIET END

R373 5.6-2W — N458 — C123 .1-400V — C113 .0033 — R372 56-2W — N472

R354 5.6-2W — N388 — C145 330p-500V — D70 MUR440 — N387 — Q96 IRG4PC50U — N390 — R359 10.0 ^R_1206 — D78 ^200V-.2A-50NS ^D_SOT-23 — N391

R355 5.6-2W — N389 — C146 330p-500V — D71 MUR440 — Q97 IRG4PC50U — N392 — R358 10.0 ^R_1206 — D79 ^200V-.2A-50NS ^D_SOT-23 — N393

IGBT HEAT SINK SDFAP — N370 — E14

N394 — D86 MURS160T3 ^D_SMB — +18V

C155 .1-50V-10% ^C_1206; C163 .1-50V-10% ^C_1206

+16V — N395 — C162 .1-50V-10% ^C_1206 — PRI_LO

U18 IR2110 — USE THRU HOLE, HIGHER WATTAGE

C185 .1-50V-10% ^C_1206 — +VREF — N397 — N398 — PRI_LO

U19 SG3525AN — N399 — N402 — N403 — R364 100 ^R_0805 — N404 — N405 — C186 470pF-50V-5% ^C_1206 — R365 15.0K ^R_0805 — C184 .1-50V — ^C_E_ALUM_B

+16V — C183 .1-50V-10% ^C_1206 — +VREF — N400 — N401 — PRI_LO

+18V — N372 — D59 4148 ^D_SOT-23 — RELAY 25MA — N373 — +VREF — R327 4.75K ^R_0805 — R329 12.7K ^R_0805 — N406 — Q92 3904 ^Q_BJTN_SOT-23 — N407 — Q93 3904 ^Q_BJTN_SOT-23 — PRI_LO

RELAY STARTS OFF LOW. 5V LINE SETTLES HIGH BEFORE 16V > 8V, BECAUSE TRIG IS LOW UP TO 10V

0V - RUN
5V - SHUTDOWN

N412 — R335 150K ^R_1206 — +VREF — R333 150K ^R_1206 — N413 — N414 — N415 — R334 100 ^R_0805 — C114 10-35V — C120 .001-5% ^C_1206 — TIME DELAY 3 SECONDS — PRI_LO

Q94 3906 ^Q_BJTP_SOT-23

U14:2 LM556-SMT — TRIGGER — OUTPUT — RESET — CONTROL_V — THRESHOLD — DISCHARGE — COMP — FLIP-FLOP

NON CRIT BYPASS

D58 1N4148 ^D_SMB MURS160T3

NOM BUS VOLTAGE 340V (120-240VAC)
MIN BUS VOLTAGE 200-220V (75-150 VAC)

R326 487K ^R_1206 — N411 — R328 487K ^R_1206 — N408

R321 487K ^R_1206; R322 487K ^R_1206 — N416 — N417 — C107 .1-400V

UNDERVOLTAGE SHUTDOWN TRIGGERS AT 5.1 V-REF RESETS AT 5.6V (10% HYST)

+VREF — +16V — U13:1 LM339 — C125 .1-50V-10% ^C_1206

N410 — R332 39.2K ^R_0805 — N409 — C119 470pF-50V-5% ^C_1206 — C121 470pF-50V-5% ^C_1206 — R340 392K ^R_0805

N418 — U13:3 LM339 — D91 4148 ^D_SOT-23

974K - 24.9K RES DIVIDER
340V NOM BUS = 8.67V
200V MIN BUS = 5.1V UV

SET NOM PEAK AT 15V, 120VAC
DECLINES ABOUT 20% EVERY 20 MS
REACHES 0 V IN 40 MS (2 AC CYCLES)

R323 39.2K ^R_0805; C108 .0027 ^C_0805; R325 24.9K ^R_0805; C109 .0027 ^C_0805

N471 — C128 .0027 ^C_0805 — PRI_LO

N419 — 5V NOM — R369 1.00K ^R_1206 — N470 — C192 10-35V — PRI_LO

+16V — R330 4.75K ^R_0805 — R336 10.0K ^R_0805 — R341 150K ^R_1206

COMBINED EFFECT OF 150K-1206 RESISTOR AND 10K, 12.7K THRESHOLD RAISES PEAK LIMIT 25% RELATIVE TO PROTO

N444 — LM339 U13:4 — N445 — R342 150K ^R_1206

OFF-BUS VOLTAGES RISES ONLY AFTER V-BIAS > 10V. ENSURES THAT 556-TRIG PIN STARTS LOW.

4V NOM — LM339 U13:2 — R337 12.7K ^R_0805 — N446 — R338 10.0K ^R_0805 — C124 .001-5% ^C_1206 — L6:2 — PARALLEL WINDING ON RESONANT INDUCTOR

R331 20.0K ^R_0805

N447 — R343 150K ^R_1206 — N448 — D61 ^200V-.2A-50NS ^D_SOT-23 — N449 — R346 20.0K ^R_0805 — C131 470-16V

0.5-1 MA TO TRIGGER

100PF @ 15KV ESD
100NF @ 15V BYPASS

+6 V — U15 — C135 1-50V-10% ^C_1206 — R348 2.21K ^R_0805 — DC-OFF — FROM DC SHUTDOWN, SHEET 4

R353 10.0 ^R_1206 — N454 — D68 ^200V-.2A-50NS ^D_SOT-23 — N455 — T1:3 ISOL WINDING - 6V — C143 100-25V

+16V — R347 2.21K ^R_0805 — N450 — Q95 3904 ^Q_BJTN_SOT-23 — N451 — N452 — V-STBY — TO SH 4

U17 — +6 V — PS-OL — SH 4

N426 — D62 MURS120T3 — +18V — XF-BIAS — C138 100-25V-105C — N427 — N428

D63 4148 ^D_SOT-23; D64 4148 ^D_SOT-23; D65 4148 ^D_SOT-23

R376 10.0K ^R_0805 — N117 — R375 10.0K ^R_0805 — Q99 3906 ^Q_BJTP_SOT-23 — N453 — R374 536 ^R_0805 — N425

D66 10V-.3W ^D_ZEN_SOT-23 — +16V — C139 100-25V

D67 4148 ^D_SOT-23 — N424 — R349 39.2 ^R_1206 — N423

D69 4148 ^D_SOT-23

PRI_HI — R344 100K ^R_1206; R345 100K ^R_1206 — N421 — XF-FBI — T1:1 — N422 — D60 MURS160T3 ^D_SMB — N420 — C127 .0022-250VAC — PRI_LO

5V NOM — R356 10.0 ^R_1206 — U16 TOP 210 — 600V TRACE — N476 — C142 100-25V

T2:2 — N429 — N430 — R350 15-2W — N434 — C147 100pF-500V — N431 — N432 — N433

D72 30A-400V D_TO247AD — N435 — D84 30A-400V — N436 — D74 15A-200V — N437 — D80 15A-200V — D75 15A-200V — D81 15A-200V — N438 — D73 30A-400V — D85 30A-400V

2 BEADS IN PAR HI RAIL
1 BEAD LO RAIL

L7 6UH-BEAD — L8 6UH-BEAD — +HI-RAIL

L9 6UH-BEAD — +MID-RAIL

L10 6UH-BEAD — MID-RAIL

L11 6UH-BEAD — L12 6UH-BEAD — -HI-RAIL

C151 470-63V; C158 470-63V; C164 470-63V; C168 470-63V; C172 470-63V

C152 470-100V; C159 470-100V; C165 470-100V; C169 470-100V; C173 470-100V

C153 470-100V; C160 470-100V; C166 470-100V; C170 470-100V; C174 470-100V

C154 470-63V; C161 470-63V; C167 470-63V; C171 470-63V; C175 470-63V

P1

TO TURN-OFF MUTING SHEET 4 (FAN SPEED)

15V-SW — D76 MURS120T3 — D82 MURS120T3 — D77 MURS120T3 — D83 MURS120T3 ^D_SMB — SMT-B PKG OK

R357 39.2 ^R_1206 — N456 — C148 470pF-50V-5% ^C_1206

C149 100-25V-105C; C156 .1-250V — C150 100-25V-105C; C157 .1-250V — NEW, LO-ESR, 2PL

+15V — -15V

N439 — R362 4.75K ^R_0805 — R363 10.0K ^R_0805 — Q98 3906 ^Q_BJTP_SOT-23 — R366 10.0K ^R_0805

R360 7.87K ^R_0805 — N441 — R361 536 ^R_0805 — N442 — N443

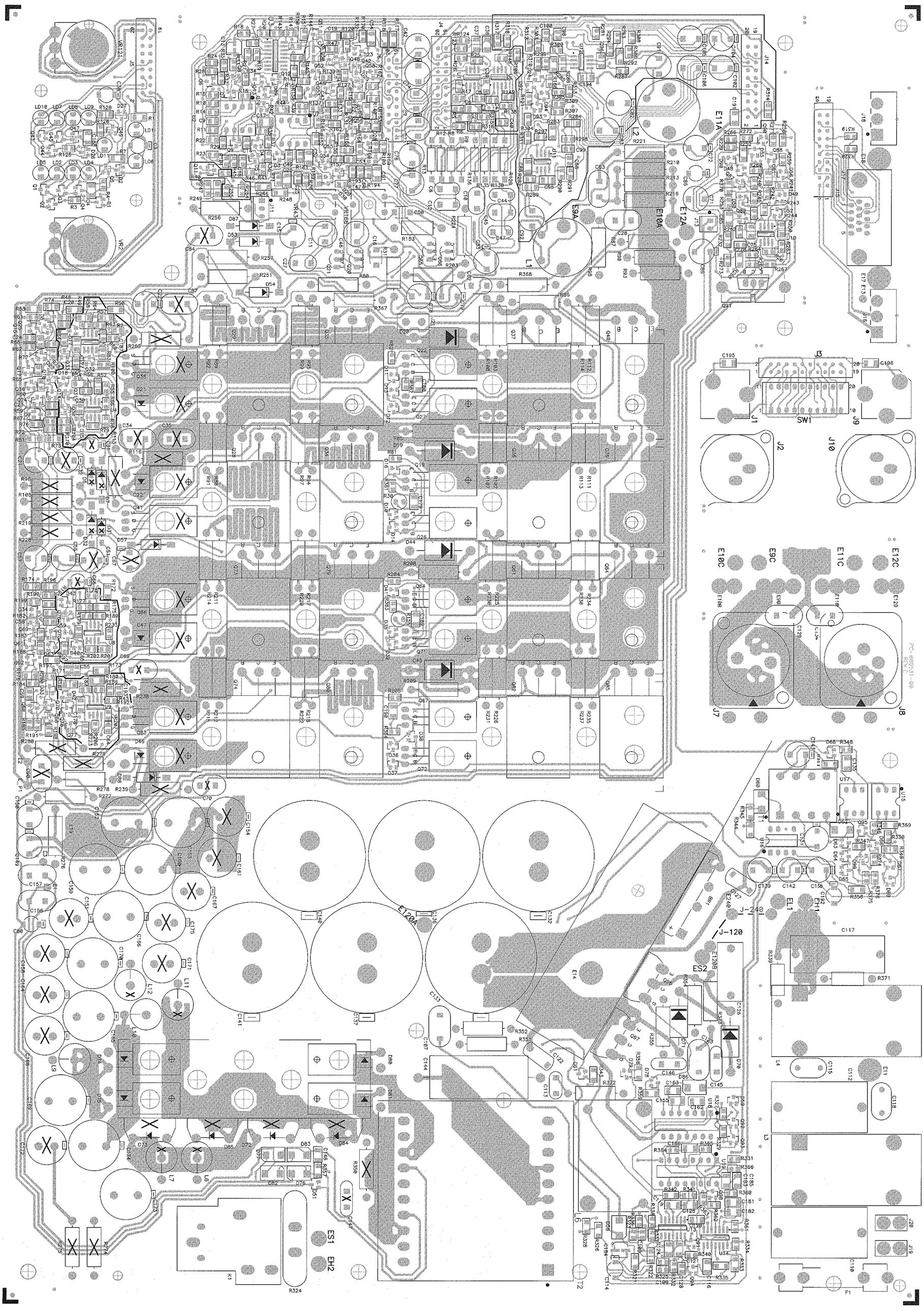
U14:1 LM556-SMT — TRIGGER — OUTPUT — RESET — CONTROL_V — THRESHOLD — DISCHARGE — COMP — FLIP-FLOP

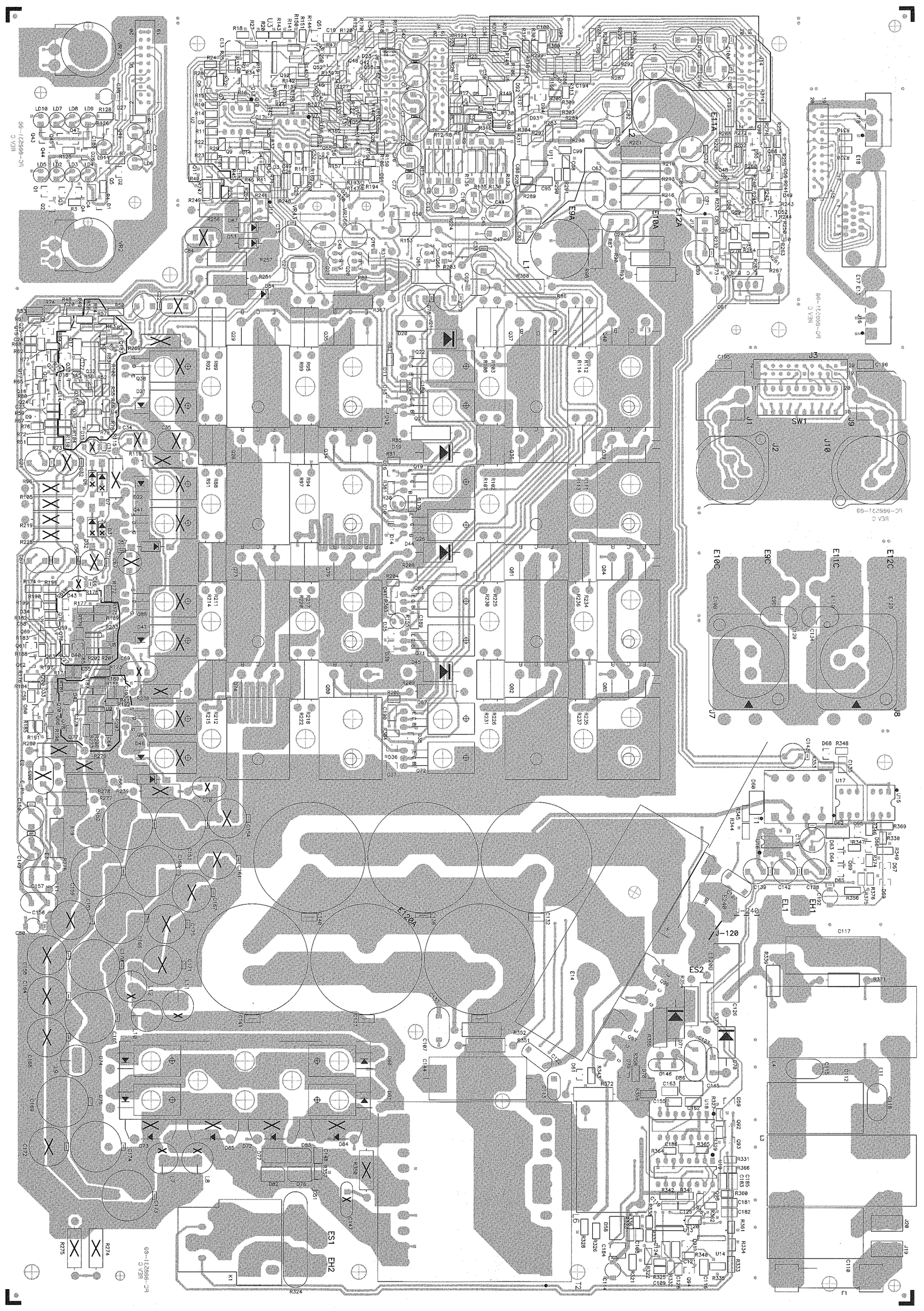
C161 470pF-50V-5% ^C_1206; C162 470pF-50V-5% ^C_1206

C116 .1-50V-10% ^C_1206 — +VREF

SIZE	FSCM NO.	DWG NO.	REV
D		SH-000541-00	C
SCALE NONE	CAD FILE NO. plx3002.sch	SHEET 5 OF 5	

DWG NO. SH-000541-00 — REV C — SH 5


J1
J2
J3
J7
J8
J9
J10
SW1
E11A
E9A
E10A
E12A
E12C
E11C
E9C
E10C
E120A
ES1
ES2
EH2
EL1
EH1
J-120
J-240


E9A
E10A
E11A
E12A
E10C
E9C
E11C
E12C
E120A
ES1
ES2
EH1
EH2
EL1
J-120
SW1
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