

**Crest 8200/7200 AMPLIFIER PORTION CHECKOUT PROCEDURE*****Signal Pretest:***

Bypass the front panel pots via jumpers on pins 1 & 2 of J100 & J300, or if connected, turn up the front panel pots. Verify that the gain select switch SW1 is in the out (extended) position. Place a shunt on jumper J6. Connect a 3.32K resistor across J102 and J302. Connect +/- 24 volts to J4 and monitor the current for each rail. Apply 0.5 volt 1 kHz. balanced signal with a source imp. of 50 ohms, floating ground, to the combi connectors J6 & J7 or via test cable connected directly to J502. Monitor test points TP100 & TP300. The input current for the negative rail should be < 200 mA. and < 250 mA. for the positive rail for the first 5 seconds until the relays close. After relay closure the negative rail should be < 210 mA. and < 480 mA If the display board is connected, add 20 mA. to the measurement of the positive rail. The output at TP100 & TP300 should be between 3.32 volts sine wave. Within approximately 5 seconds, the relays should close. Increase the input signal to 1 volt. The clip light should be active and the output should at TP100 & TP300 should increase to between 5 and 6 volts.

Fan Driver Pretest:

Connect fans to J200 and J400. The fans should operate at high speed and increase the current consumption for the positive rail to approximately 1.5 amps. Disconnect the +/- 24 volt supply.

Hail Mary power up Test:

Turn off the signal generator output. Connect the supply to the variac. Drop your variac output to 90 VAC. Connect the LED board. Adjust VR100 & VR200 fully counterclockwise. Connect a voltmeter to the emitter resistors for each channel via J101 and J301. With the input signal off, say one Hail Mary and turn on the front panel breaker while observing both voltmeters. The initial reading should not exceed 10 mV. If the reading exceeds 10 mV, stop and turn off the power. The channel with the high reading has a problem. If the mV reading is within limits, verify that the relays close within approximately 12 seconds.

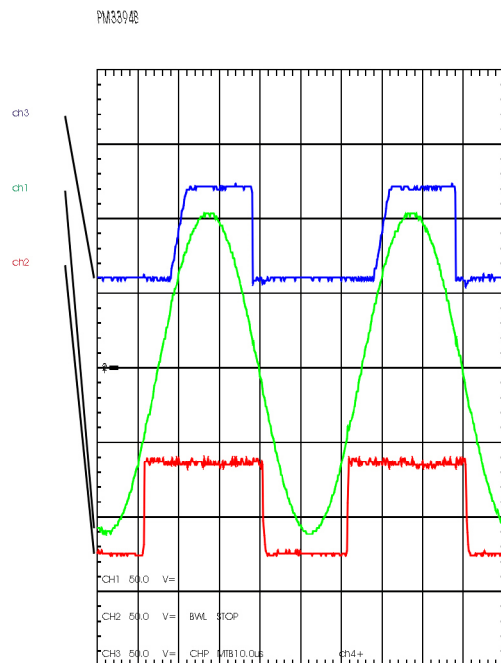
Turn on the signal generator and confirm 30 volts on each speaker output. Increase the variac to 120 volts.

Cycle the power switch. Verify that both the orange ACL and blue Signal LEDs illuminate within approximately one second. Within approx 5 seconds, the relays should kick in and the green Active LEDs should come on. The output signal should fade up on each channel.

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Bias Adjustment: The heat sinks are electrically live. Use an insulated screwdriver for bias adjustments. Adjust the signal generator to give you 20 kHz. at four watts into a four ohm load. With the voltmeter still connected as above, carefully adjust VR100 and VR200 for the minimum distortion reading. The trim pots should be in the most counterclockwise position that yields the minimum reading. The readings should be approximately 20mV at J101 and J301.

High Rail Check: With the signal generator still at 20 kHz., increase the input level to 2 volts. Monitor the switched rails via C107 & C108, C307 & C308 pads. Verify that the high rails switch as per the picture.



Next Step: Assuming good consistent yields, the motherboard assembly is probably ready for final assembly.

Functional Test:

(A) **High Level Performance Test:** Disconnect and remove leads from J101 and J301. Set the variac to 120 volts. Verify that jumper link is connected to J2 and J3. Remove the shunt on J6. Bypass the front panel pots via jumpers on J100 & J300, or if connected, turn up the front panel pots. Verify that the gain select switch SW1 is in the out (extended) position. With the load resistors disconnected, apply a 1.75 volt 1 kHz. balanced signal with a source imp. of 50 ohms, floating ground, to the combi connectors J6 & J7 or via test cable connected directly to J502. Set the test equipment output filter to <80kHz. Verify the following:

- (1) Output voltage at the binding posts = 70 volts +/- 1 volt
- (2) T.H.D. both channels driven (no load) = < 0.01%

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(B) *Signal Ramp up Test:* With the input signal on, toggle the front panel switch to OFF and then back ON. Observe the amplifier output signal. It should slowly ramp up to the 80 volt level. Signal should be a full amplitude at the same time the orange ACL LED turns off.

(C) *Noise Test:* Turn off the signal generator output. With the test equipment output filter still at <80kHz, verify residual noise output is < 1.5 mV. Reset test equipment output filter to 22kHz and verify noise <400 uV. If 22kHz filter is not available, test with 30kHz and verify < 500 uV.

(D) *Medium Power Test:* Turn on the signal generator. Reset the generator output to 1.75 volts. Reset the filter to < 80kHz. Connect a 8 ohm load to the channel A output connector. You should measure 70 +/- .25/.5 volts out with T.H.D. <0.04%. Repeat for channel B.

(E) *High Power Test:* Reset the generator output to 1.5 volts. Connect a 2 ohm load to the channel A output connector. You should measure 60.5 +/- 1/.5 volts out with T.H.D. <0.05%. Repeat for channel B.

(F) *Low Power Test:* With the 4 ohm load connected to channel A, reduce the input signal level to 100 mV. Output should be 4 volts +/- .1 volts at < 0.05%. Repeat for channel B.

(G) *Fan Test:* Reduce the input level to 1 volt. Let the amplifier operate into 2 ohms into channel A for one minute. Observe the fans. As the channels heat up, the fan speed should continue to increase. Verify that the air flow direction is into the amplifier on both fans. After one minute, remove the load or signal for channel A and allow the amplifier to cool for one minute or until the fans start to slow down. Connect the load and signal to channel B. The fans should slow slightly as channel A continues to cool down and speed back up as channel B heats up.

(H) *Load Fault Correction Test:* With the input back to 1.75 volts, connect a 1ohm load to the channel A output. The output should drop to 30 +/- 2 volts. The output should remain a clean looking sine wave (< 5% T.H.D.). The ACL LED should toggle with the output. Repeat the procedure for channel B.

Repeat the above with a high wattage 0.5 ohm load to the channel A output. The output should drop to 25 +/- 2 volts. Repeat the procedure for channel B.

(I) *Short Circuit Test:* Do this test with extreme caution as a nasty failure is possible. With the input still at 2 volts, connect a high wattage 0.1ohm load to the channel A output. Repeat for channel B. If the room is not filled with smoke, proceed to the next step.

(J) *Clip Light Test:* Disconnect the output load. Increase the signal level to 4 volts on both channels. Verify that the ACL LEDs are on.

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(K) *Front Panel Pot Test:* With the settings of above, turn the channel A pot to half way. Is the ACL LED off? Verify that the SIG LED is still on for channel A. Turn the pot down completely. Verify that the SIG LED is off. Repeat for channel B.

(L) *Signal Light Test:* Decrease the signal level to 25mV on both channels. Verify that the SIG LEDs are on.

(M) *DC & Subsonic Signal Protection Test:* Change the input signal to 3 volts out at 10 Hz. Pulse the signal into channel A. The amplifier should go into protect, reset, slowly ramp up the signal, and repeat the protect cycle. Observe the front panel LEDs. The red Temp LED should turn on while the green Active LED turns off. The Active LED should come back on and the cycle repeats itself. The blue Signal LED should flash at the 10 Hz rate regardless of the protect status. Repeat the procedure for channel B.

(N) Remove J2 to J3 voltage selection jumper for 220 – 240 volt export units.

(O) *Visual Inspection:* Perform quality of workmanship and accuracy inspection