AUDIOACCESS

PX-612

MULTI-ROOM AMPLIFIER

PRELIMINARY SERVICE MANUAL

Harman Consumer Group
250 Crossways Park Dr.
Woodbury, New York 11797

PX-612 PRODUCT DESCRIPTION

The Audioaccess PX-612 multi-room amplifier has been designed to meet the specialized requirements of a total home/multi-room environment. Unlike conventional audio amplifier designs, multi-room amplifiers must reject interference from power circuits, lighting, RF, and even other audio/video system components. The PX-612 6 zone/12 channel, bridgeable amplifier readily meets these challenges while delivering a level of audio performance that rivals far more esoteric amplifier designs. To ensure reliability, each of the twelve identical audio channels is manufactured using discrete transistor driver and output stages. A built-in pass through connection and its channel bridging capabilities further enhances PX-612 flexibility. The PX-612 has been thermally and mechanically engineered to allow simultaneous operation of all twelve channels into four-ohm loads without compromising sonic performance.

The PX-612 is silent in operation. Crosstalk between channels is reduced to completely inaudible levels. The sophistication of the PX-612 power supply and muting circuit assures freedom from audible ticks and pops. Signal sensing relays on the speaker outputs mute the signal when a zone is not in use.

PX-612 turn on and off is automatic. Built-in signal sensing provides unattended, transparent system operation. A built-in pass thru connection and channel bridging capabilities further enhances PX-612 flexibility. The PX-612 is housed in a compact 4" high chassis that matches the Audioaccess PX-600 Multi-Room Preamp/Controller. Each PX-612 is supplied with a speaker harness and an external termination board that allows hookup of the speakers at the pre-wire stage of installation. RCA-type audio input jacks accept signals from the matching PX-600 or any other high quality audio source.

PX-612 features, performance and reliability make it the perfect amplifier choice for a wide range of home theater and multi-room applications.

FEATURES

- Six stereo zones, twelve channels (six channels bridged via switches)
- Pass-thru inputs for easy daisy-chaining to additional channels and/or PX-612s
- Hybrid design with rugged, discrete driver and output stages
- Reliable operation with over-current, short-circuit, thermal, and DC protection automatic resetting)
- Quiet, convection cooling (when properly installed according to factory recommendations)
- 24-conductor wiring harness connections output to Speaker Termination Board (allows for early construction speaker pre-wire)
- RF filtering on audio inputs
- Tri-color LED status indicator on front panel illuminates Orange for standby, GREEN for normal operation and RED for DC and/or thermal protection (trouble).
- AC mains input is fused and EMI filtered
- AC mains switch on back panel

INSTALLATION

Audio Inputs/Outputs:

Each pair of channels has two sets of RCA connectors. (2-right, 2-left). These are labeled Zones 1 thru 12 on the back panel. The input source are plugged into either set of jacks, making the other set an output. If needed, this output can be connected to another set or zone of channels within the PX-612 or to separate PX-612 or other type of amplifier. To connect the RCA output to another set of channels within the PX-612, plug the input source into the left set of inputs for a zone, then jump the right set of inputs to the next zone with a 14mm jumper (available at electronics supply outlets) or simply use a short RCA cable. To connect to another amplifier, use an RCA cable of appropriate length.

Speaker Outputs:

The PX-612 uses an outboard Speaker Terminator Board and a 48" long, 24-conductor speaker harness supplied with the unit. Plug the harness into the back of the amplifier then into the speaker terminator board. Connect the wiring from all the speakers to the screw terminals on the Speaker Terminator Board.

Do not strip more than 3/8" of insulation from the speaker wire. Excess bare wire can lead to shorting problems. Twist wire ends carefully and make sure all strands are under the square clamp pad.

Bridged Mode Speaker Outputs:

In bridged mode, amplifier channels normally used for left and right sides are combined to form one channel (left or right). Therefore, when using bridged mode, connect input signals only to the ***left*** RCA input jack. For example, use the left channel of the set of inputs marked "Zone 1" for the left channel and the left channel of the set of inputs marked "Zone 2" for the right channel. Be sure to set the bridging switch for that zone to the **"bridged mode"** position (to the left).

Connect your speaker's **positive (+)** lead to the **right positive (+)** on Speaker Terminator Board.

Connect your speaker's **negative (-)** lead to the **left positive (+)** on Speaker Terminator Board.

Power switch

The main power switch is on the rear panel next to the IEC jack for the AC power cord. Turn the power on (up). When the main power is turned on, the LED on the front panel should be orange indicating a "standby" condition.

SPECIFICATIONS

Number of channels:	Twelve Un-bridged (six stereo pairs); six bridged (three stereo pairs)	
Power Output Per Channel: ***Un-bridged*** ***From 20Hz-20kHz***	***Two channels driven***	50 watts @ 8 ohms 65 watts @ 4 ohms
	All channels driven	30 watts @ 8 ohms 40 watts @ 4 ohms
Power Output Per Channel: ***Bridged*** ***From 20Hz-20kHz***	***Two channels driven***	130 watts @ 8 ohms
	All channels driven	80 watts @ 8 ohms
Minimum Speaker Impedance: ***Per Channel***	***Un-bridged:***	4 Ω min
	Bridged:	8 Ω min
THD & Noise:	0.1% or less, at rated power, 20Hz-20kHz	
Frequency Response:	20Hz-20kHz, +0/-0.2dB, at rated power	
Signal/Noise:	100 dB (ref: Rated Power), measured with amplifier operating unbridged into 8 ohm loads.	
Muting:	Turn on, Turn off and Signal Sensing (each stereo pair output mutes with no input signal)	
Slew Rate:	35 volts/microsecond	
Damping Factor:	Over 200	
Input Impedance:	10K Ohm	
Input Sensitivity:	1 volt for rated output	
Fuses:	____	
Dimensions:	17 3/8" W x 4" H x 15" D (442 mm x 102 mm x 381 mm) Includes connectors and feet	
Weight:	_____lbs (____kg)	

AUDIOACCESS

DOC. NUMBER	AA420-0000-0
CUSTOMER	AUDIO ACCESS
PRODUCT	PX612
STOCK NUMBER	AA302-0000-0
DATE	4/7/95
REVISION	D

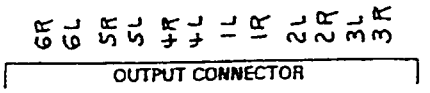
6) BRIDGE TEST
- A SET GT. LOAD BOX OPEN.
- B CONNECT X10 PROBES FROM SCOPE CHANNELS "A" AND "B" TO L113A AND L92A.
- C CONNECT 1700B OUTPUT TO CH-1L INPUT. SET "ZONE 1" BRIDGE SWITCH TO BRIDGE MODE.
- D ADJUST VERNIER FOR 15VRMS. COMPARE TO PHOTO "F". OUTPUTS SHOULD BE EQUAL IN AMPLITUDE AND 180 DEGREES OUT OF PHASE.
- E RETURN "ZONE 1" BRIDGE SWITCH TO STEREO.

7) REPEAT STEPS (5) AND (6) FOR ZONES "2" THROUGH "6".

8) SIGNAL SENSE
- A DAISY CHAIN CHANNELS "1L" TO "3R", AND CHANNELS "4L" TO "6R".
- B SET 1700B ATTEN = -60DB, INPUT = 10MV. USING SPLITTER CONNECT OUTPUT TO CHANNELS "3R" AND "4L".
- C ALL 12 CHANNELS ARE NOW DRIVEN. ADJUST VERNIER FOR 20MVRMS AT OUTPUT. ALL CHANNELS SHOULD BE ON.
- D ADJUST VERNIER TO ZERO (3MVRMS AT OUTPUT). ALL ZONES SHOULD TURN OFF BETWEEN 30 AND 60 SEC.
- E SET 1700B INPUT = 3V. ATTEN = 0DB. ALL ZONES SHOULD GO GREEN (ON) INSTANTLY.
- F CHECK ALL OUTPUTS. SHOULD BE 8VP-P (2.7VRMS) +/-5%.
- G TURN UNIT OFF. DISCONNECT CABLES. LEAVE INPUTS DAISY CHAINED. DELIVER TO BURN IN.

9) BURN IN
- A CONNECT INPUT AND OUTPUT CABLES. CONNECT MAINS CABLE.
- B TURN UNIT ON. SET OUTPUT POWER TO 5VRMS.
- C BURN IN FOR TWO HOURS. CHECK THAT ALL LOAD AND RELAY LED'S ARE ON.
- D TURN POWER OFF. REMOVE FROM BURN IN RACK. IF ALL LED'S OK, INSTALL COVER AND DELIVER TO FINAL TEST.
- E IF ALL LED'S NOT ON DELIVER TO REWORK.

10) FINAL TEST
- A SET TEST EQUIPMENT AS IN BEGINNING OF TEST PROCEDURE.
- B CONNECT OUTPUT CABLE TO PX612 LOAD BOX. CONNECT GT. LOAD BOX TO OUTPUT 1L
- C CONNECT 1700B OUTPUT TO CH-1L INPUT.
- D SET LOADS OPEN. SET 1700B TO VOLTS.



- E RAISE VERNIER ON 1700B UNTIL SCOPE CLIP 20VRMS. SEE PHOTO "A".
- F GRADUALLY LOWER VERNIER UNTIL OUTPUT = 17VRMS. COMPARE TO PHOTO "B". SET DIST ON 1700B <.15%.
- G GRADUALLY LOWER VERNIER ON 1700B TO ZERO. DISTORTION SHOULD HOVER BETWEEN .1% AND .15% UNTIL
- H OUTPUT BELOW 8V. OUTPUT SHOULD THEN SUDDENLY DROP BELOW .1% AND REMAIN THERE UNTIL VERNIER = 0.
- I REPEAT FOR CHANNELS 1R THROUGH 6R.

AUDIOACCESS

NUMBER	AA420-0000-0
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UCT	PX612
K NUMBER	AA302-0000-D
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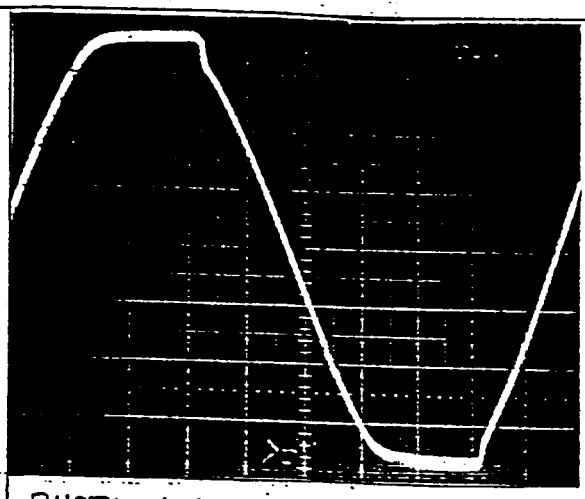


PHOTO "A". 20V RMS 20KHZ CLIP 4Ω.

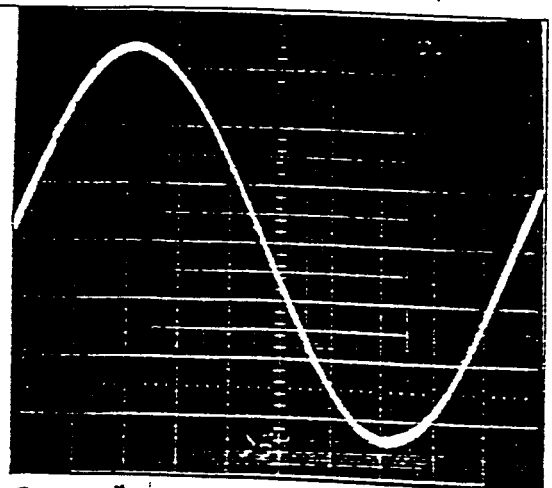


PHOTO "B" 17VRMS 20KHz 4Ω

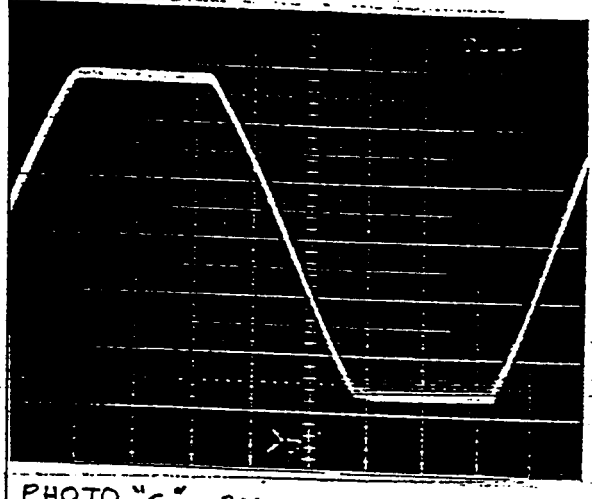


PHOTO "C". 20V RMS, 2KHz, 2Ω

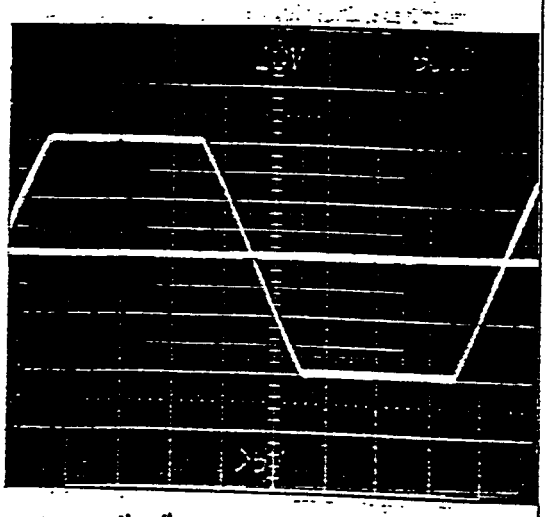


PHOTO "D". 2KHz, 1.33Ω, CLIP.

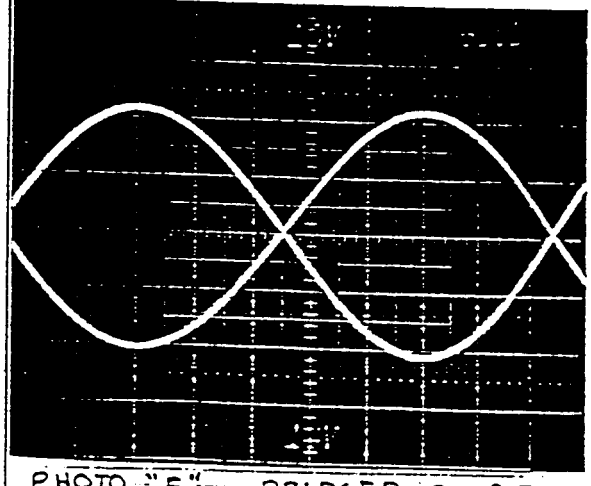


PHOTO "E". BRIDGED OUTPUT

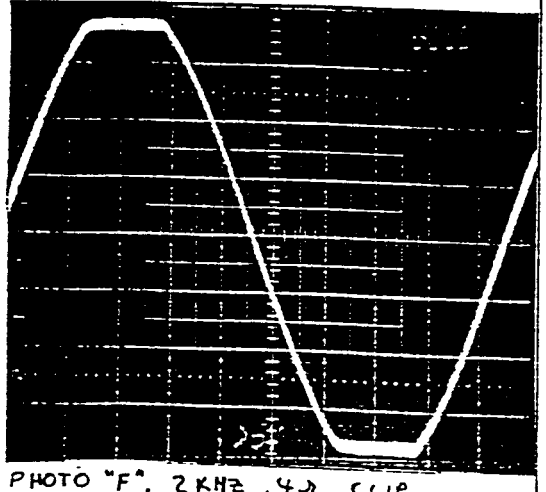


PHOTO "F". 2KHz, 4Ω, CLIP
NOT REFERENCED IN TEST.

MADRIGAL AUDIO LABS

Procedure No: Revision: Title: PX – 612 TEST PROCEDURE

Prepared By: Wayne Mergel Approved By:

Purpose: The purpose of this document is to establish a procedure for testing PX-612 units.

Application: For use in the PX-612 Department

Related Documents: None Equipment Needed: 1-Audio Source, 1 -Speaker Switch Box, 1-48" Speaker Wire Harness

Procedure:

I. Connect AC Line to PX-612, and then turn on with the power switch on rear panel. Observe LED on the front panel. It should initially be Red, then change to Amber. Watch for about 1 minute to ensure it does not turn Green. Set all six stereo/bridged switches to the stereo position (switched to right).

II. Connect speaker harness to PX-612 and the speaker switch box.

III. On PX-612 back panel connect Audio Source to Zone 1 Input.

IV. As soon as the Audio Source is connected to Zone Inputs on the rear of the unit, the front panel LED should change from Amber to Green.

V. Make sure that the speaker switch box is set to the same number as the Audio Source is plugged into. You should be able to hear Audio in both speakers.

VI. Move Right Audio Source to other Zone 1 Right RCA and listen for Audio cut off and come back on the right speaker.

VII. Switch Zone 1 to bridged mode by moving switch Left. Then move Left Audio Source to the second Zone 1 Left RCA. The Audio should cut out completely on both Left and Right speakers.

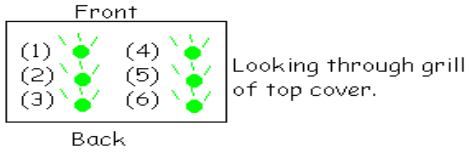
VIII. Switch back to stereo on Zone 1 by switching switch back to the Right (stereo mode) and move the Left RCA connector to Zone 2 and listen for the Left speaker to cut out.

IX. Switch the speaker switch box to Zone 2 and listen for the Left channel to come on as the Right goes off.

X. Move Left RCA to Zone 2 also.

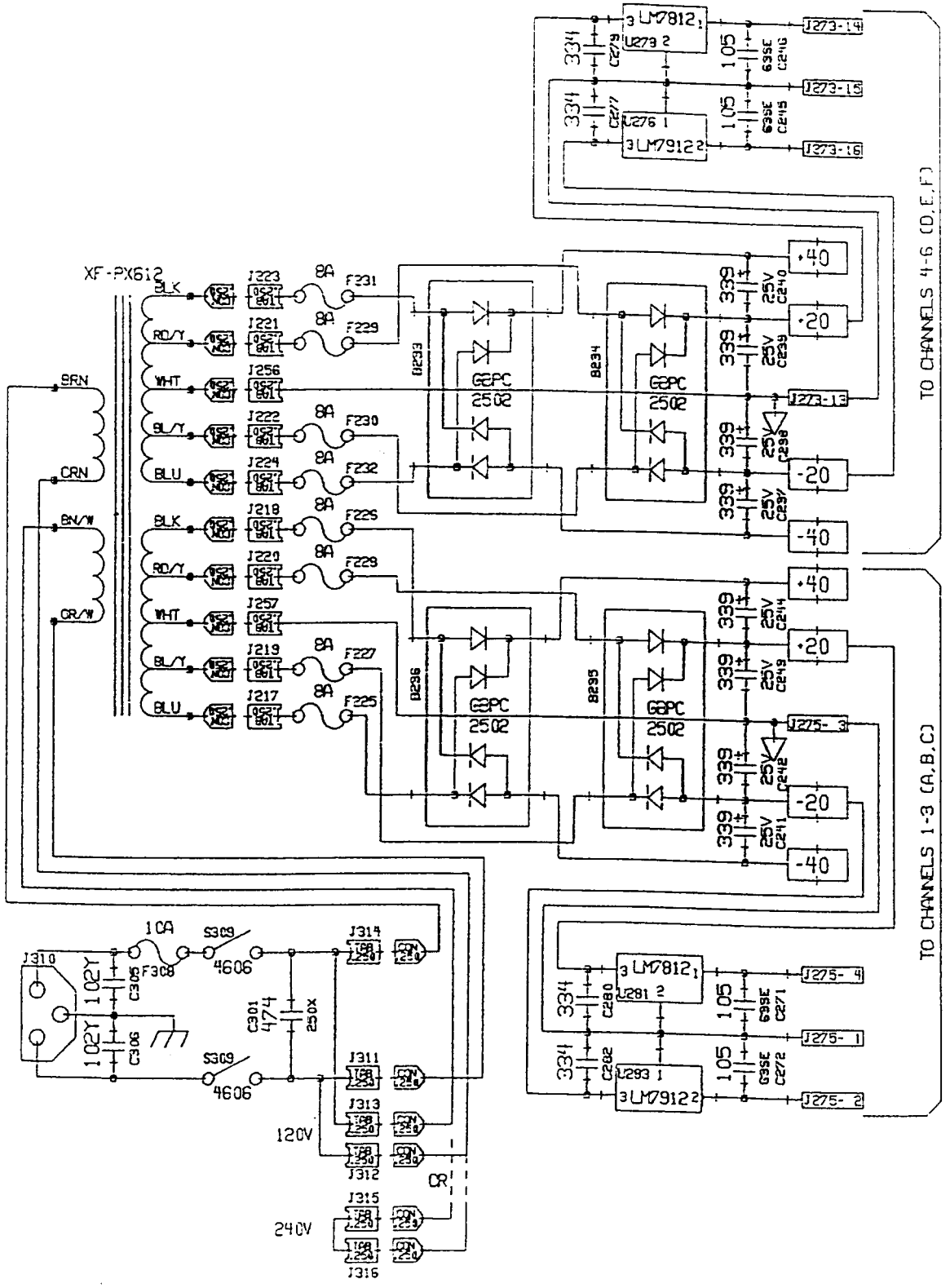
XI. Repeat steps VI through X, working through all Six Zones.

XII. As each Zone is activated observe that the Green LEDS inside unit light as it's respective zone "sees" an Input.



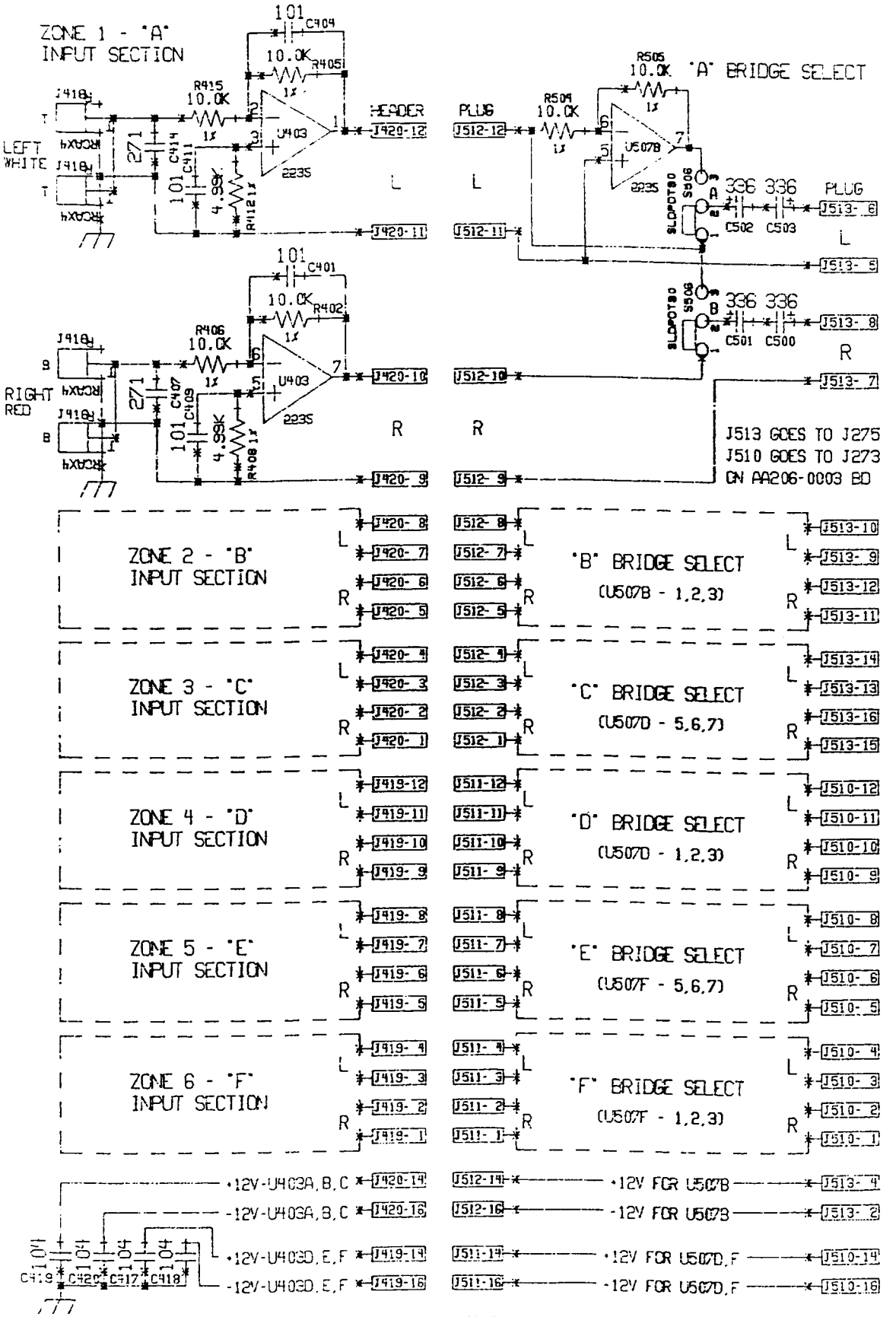
XIII. After testing all Six Zones disconnect Audio Source and leave unit on for several minutes. The Front panel LED should eventually change to Amber Again.

XIV. This completes Testing.



PCO#	DATE											

GALLIEN TECHNOLOGY 408-441-8081 2240 PARAGON, SAN JOSE, CA 95131	DATE: 3/6/95		DESCRIPTION: POWER SUPPLY	
SCHEM.PG:3 OF:3 MODEL:PX612	DBF: AA503D	DESIGNED BY: R.GALLIEN	PART #:	FOR: (COMPANY) AUDIOACCESS



GALLIEN TECHNOLOGY 408-441-8081 2240 PARAGON, SAN JOSE, CA 95131	DATE: 2/8/95	DESCRIPTION: INPUT BOARD	
SCHEM.PG:1 OF:1 MODEL:PX612	DBF: AA605C	DESIGNED BY: R.GALLIEN	PART #: FOR: (COMPANY) AUDIOACCESS

AUDIOACCESS

DOC. NUMBER	AA420-0000-0
CUSTOMER	AUDIO ACCESS
PRODUCT	PX612
STOCK NUMBER	AA302-0000-D
DATE	4/7/95
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EQUIPMENT	SETTINGS	CONNECTIONS
SCOPE	VERT (10 VOLT/ DIV), TIME BASE (5 USEC/DIV) MEASUREMENTS WITH RESPECT TO CHASSIS	"A" - LOAD BOX SCOPE OUTPUT, "B" - X10 PROBE
1700B	INPUT (30V), RATIO (.3%), FILTERS (OUT), FREQ (20KHz), ATTEN (0dB), VERN (MIN)	INPUT - LOAD BOX INST OUT, OUTPUT - RCA ADAPTER
FLUKE D810	DC VOLTS, 200MV	INPUT - BIAS CABLE
VARIAC	ZERO	
PX612 LOAD		
GT. LOAD BOX	LOAD "A" & "B" OPEN, INST SELECT "A"	CABLE FROM LOAD "A" TO LOAD "B". CABLE TO LOAD "A" WITH RED AND BLACK CLIP LEADS.

1) SETUP

A INSPECT ALL WIRING, SOLDER JOINTS, AND ASSEMBLY FOR GOOD WORKMANSHIP.

B CHECK THAT ALL TEMP SENSE TRANSISTORS SNUG AGAINST SINKS. ADJUST ALL TRIM POTS FULL CLOCKWISE.

C POWER SWITCH OFF. CONNECT MAINS CORD FROM VARIAC.

D CONNECT BIAS CABLE CH-6R (J118A), X10 PROBE CH-1L OUTPUT (L113A).

E SET ALL TRIM POTS FULL CLOCKWISE. SET ALL BRIDGE SWITCHES TO STEREO.

2) TURN ON

A SLOWLY RAISE VARIAC TO 50V AC, WHILE WATCHING SCOPE OUTPUT AND VARIAC CURRENT. THE VARIAC CURRENT SHOULD READ ZERO. THE OUTPUT SHOULD GO NEG < 10V THEN SNAP TO 0V.

B MEASURE Q34-C = +8V, Q96-C=-8V, Q117-C=+8V, Q105-C=-8V, FOR ZONES "A" TO "F".

C MEASURE C0 = +15V, C188=-15V FOR ZONE "A" AND "D". VOLTAGE ON ALL HEAT SINKS = ZERO.

D RAISE VARIAC TO 120 VOLTS, CURRENT <300MA. NOTE FRONT PANEL LED IS ORANGE.

E SUPPLY VOLTAGES NOW MEASURE +/- 19V, AND +/- 38V.

F SET SCOPE TO 50MV/DIV. MEASURE OUTPUT VOLTS AT L113(A-F), AND L92(A-F). LESS THAN +/- 50MV.

3) BIAS ADJUST

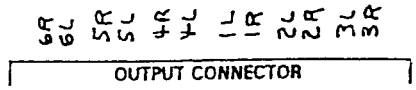
A ADJUST R109 FOR 2.5MV +/- .2MV. MOVE BIAS CABLE TO J97A, REPEAT FOR R88. REPEAT FOR ZONES B-F.

4) POWER TEST

A CONNECT OUTPUT CABLE TO PX612 LOAD BOX. CONNECT GT. LOAD BOX TO OUTPUT 1L

B CONNECT 1700B OUTPUT TO CH-1L INPUT.

C SET LOADS OPEN. SET 1700B TO VOLTS.



C RAISE VERNIER ON 1700B UNTIL SCOPE CLIP 20VRMS. SEE PHOTO "A".

D GRADUALLY LOWER VERNIER UNTIL OUTPUT = 17VRMS. COMPARE TO PHOTO "B". SET DIST ON 1700B <.15%.

E GRADUALLY LOWER VERNIER ON 1700B TO ZERO. DISTORTION SHOULD HOVER BETWEEN .1% AND .15% UNTIL OUTPUT BELOW 8V. OUTPUT SHOULD THEN SUDDENLY DROP BELOW .1% AND REMAIN THERE UNTIL VERNIER = 0.

F REPEAT FOR CHANNELS 1R THROUGH 6R.

5) CURRENT SENSE

A SET 1700B TO 2KHZ, AND VOLTS. SET SCOPE TO 10V, AND 50USEC.

B CONNECT GT. LOAD BOX TO OUTPUT 1L, AND SET TO 4 OHMS (2 OHMS TOTAL LOAD).

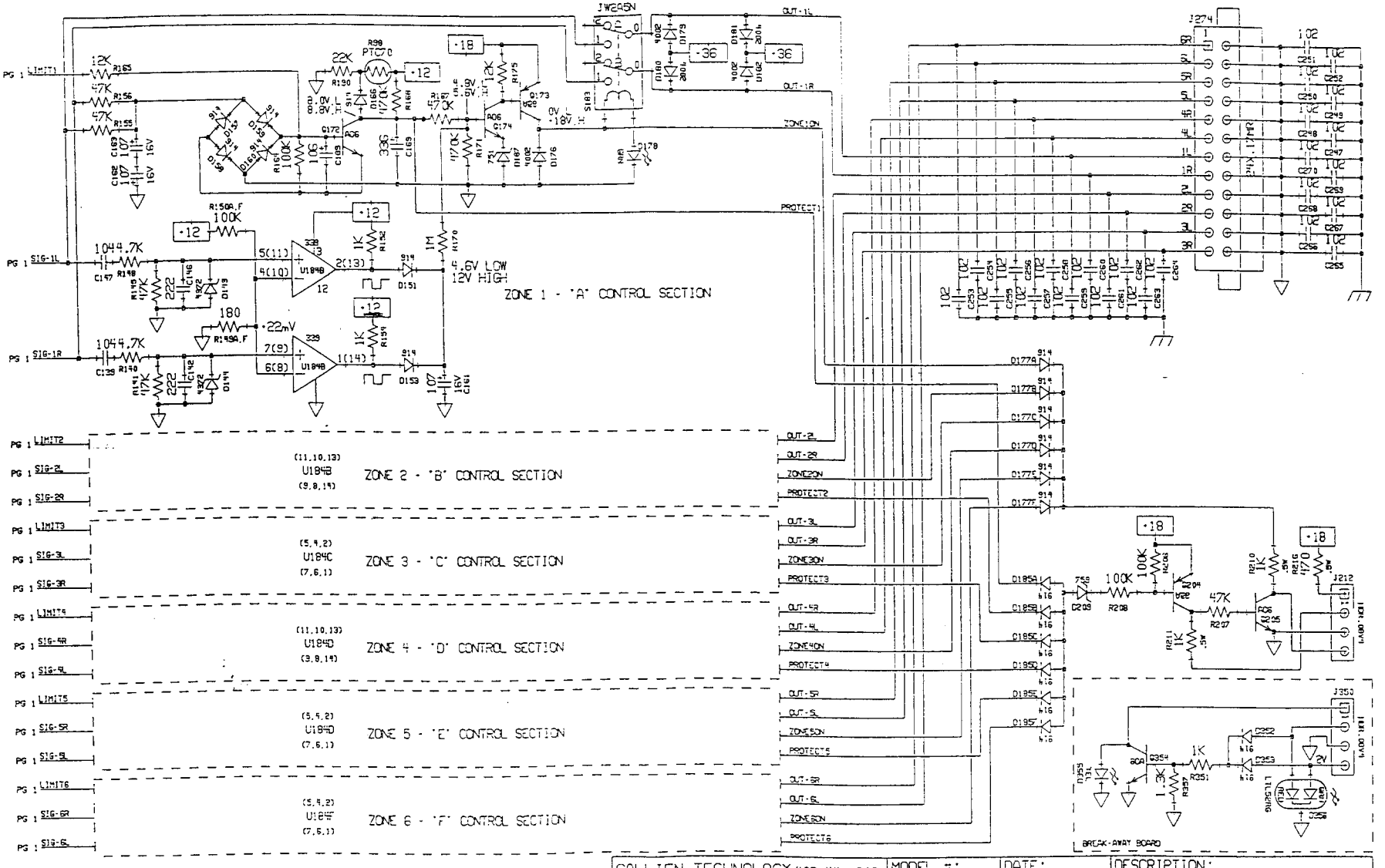
C CONNECT 1700B OUTPUT TO CH-1L. ADJUST VERNIER FOR 20VRMS OUTPUT.

D COMPARE TO PHOTO "C". UNIT MAY CYCLE ON AND OFF.

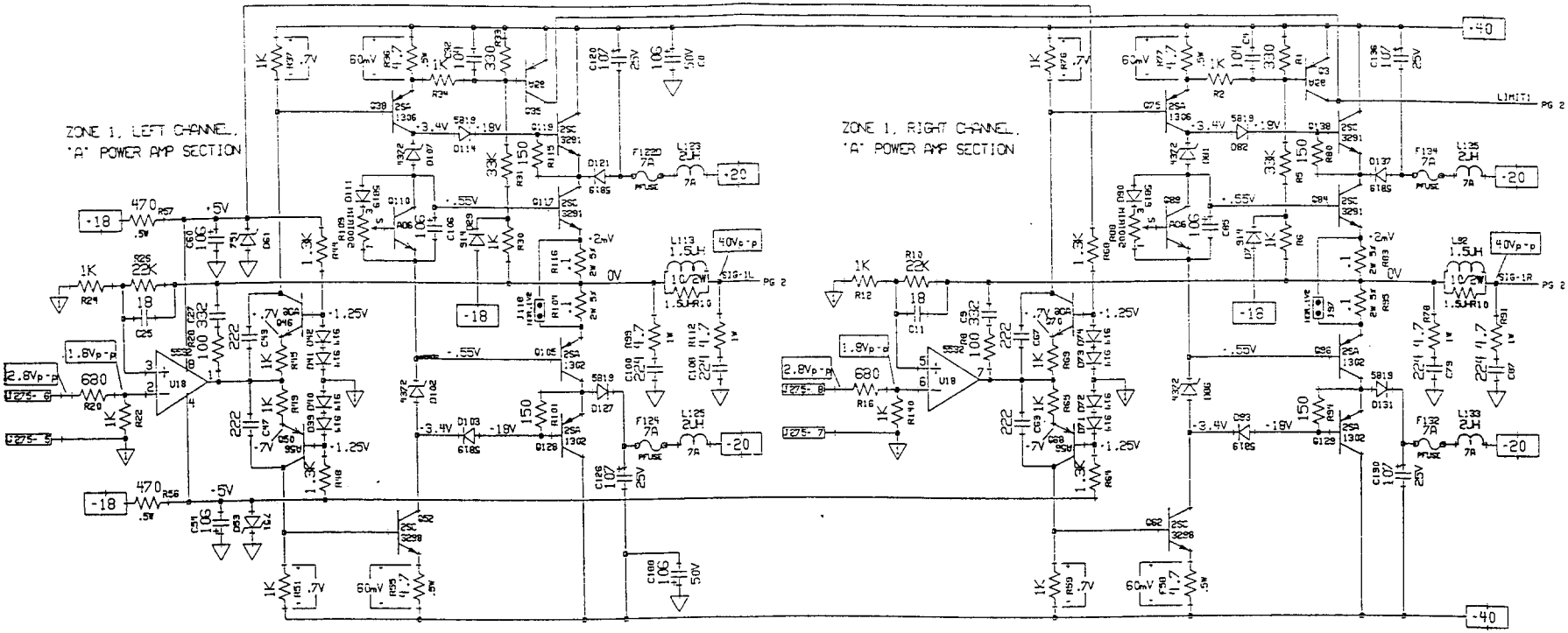
E SET GT. LOAD BOX TO 2 OHMS (1.33 OHMS TOTAL LOAD). COMPARE TO PHOTO "D". UNIT MAY CYCLE ON AND OFF.

F SHORT OUTPUT WITH SHORTING PLUG. UNIT SHOULD SHUT OFF INSTANTLY AND REMAIN OFF 5 TO 10 SECONDS. THE FRONT PANEL INDICATOR SHOULD GO RED THEN DRIFT THROUGH ORANGE TO GREEN. THE UNIT SHOULD THEN TURN ON AGAIN AND INSTANTLY TURN OFF REPEATING THE CYCLE AGAIN. THIS CYCLE WILL REPEAT UNTIL THE SHORT IS REMOVED.

G REPEAT FOR CH-1R.



GALLIEN TECHNOLOGY 408-441-8081 2240 PARAGON, SAN JOSE, CA 95131		MODEL #: PX612	DATE: 3/6/95	DESCRIPTION: PX612 AMPLIFIER SCHEMATIC	
SCHEMATIC PG:2 OF:3	DBF: AA603D	DESIGNED BY: R. GALLIEN	PART #:	PCB#-DATE: -	FGR: (COMPANY) AUDIOACCESS



GALLIEN TECHNOLOGY 408-441-8081 2240 PARAGON, SAN JOSE, CA 95131	MODEL #: PX612	DATE: 3/6/95	DESCRIPTION: PX612 AMPLIFIER SCHEMATIC	
SCHEMATIC PS:1 OF:3	DBF: AA603D	DESIGNED BY: R. GALLIEN	PART #:	PCO#-DATE: -	FOR: (COMPANY) AUDIOACCESS

PX-612

PARTS CROSS-REFERENCE

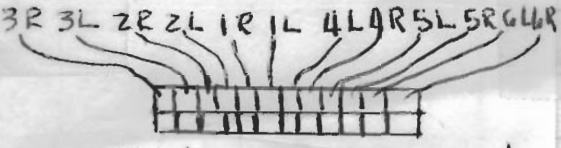
		DESCRIPTION
023-0110-0		BRIDGE RECTIFIER, KBPC25-02
030-2271-0		CAP, CER AX, 271, 10%, 50V
001-1042-0		CAP, CER, AX, 101, 10%, 50V, NPO
030-2103-0		CAP, CER, AX, 103, 10%, 50V
030-2104-0		CAP, CER, AX, 104, 10%, 50V
030-2104-0		CAP, CER, AX, 151, 10%, 50V
030-2180-0		CAP, CER, AX, 18 pf, 10%, 50V, NPO
030-2222-0		CAP, CER, AX, 222, 10%, 50V
030-2224-0		CAP, CER, AX, 224, 10%, 50V
030-2332-0		CAP, CER, AX, 332, 10%, 50V
030-2334-0		CAP, CER, AX, 334, 10%, 50V
038-0106-0		CAP, ELEC, AX TR, 106, 20%, 16V
038-0107-0		CAP, ELEC, AX TR, 107, 20%, 6.3V, 5X11M
038-0336-0		CAP, ELEC, AX TR, 336, 20%, 25V
038-2106-0		CAP, ELEC, AX, 106, -10/+50%, 50V
038-1107-0		CAP, ELEC, AX, 107, -10/+50%, 50V
039-7102-0		CAP, MET PAPER Y-CAP, 102, 20%, 250V
039-7474-0		CAP, MET PAPER Y-CAP, 474, 20%, 250V
032-3105-0		CAP, PE, 105, 5%, 25V (LOW V FILTER)
031-1339-0		CAP,ELEC, RAD, 339, 20%, 50V (FILTER)
020-2105-0	620-2002-000	DIODE, 1N4002
020-1103-0	620-2914-000	DIODE, 1N914, 75ma, 100V
020-1103-0	620-5819-000	DIODE, SHOTTKY, 1N5819, 1A, 40V
020-0120-0	620-2599-000	DIODE, ZENER, 1N759A, 12V, 5OOmw
020-0030-0		DIODE, ZENER,1N4372, 3.0V, 500mw
020-0050-0	620-2597-000	DIODE, ZENER,1N751, 5.0V, 500mw
	780-0600-051	END CAP, LEFT
	780-0600-050	END CAP, RIGHT
101-0000-0	720-2500-010	FOOT SNAP IN GOLD
091-0016-0	664-2210-000	FUSE, 5MM, 10A, SB
	664-2208-000	FUSE, 5MM, 8A, SB
091-0017-0		FUSE, PICO, 7A
	605-7712-000	IC, 5532N BI-POLAR OP-AMP
001-1195-0	605-0339-000	IC, LM339A, QUAD COMPARATOR
081-0030-0		INDUCTOR, 1 UH W/ 10 OHM 2W RES
081-0057-0		INDUCTOR, 2 UH, 7A FERRITE
092-0007-0		JACK, RCAX4, HORIZ, GOLD, RD/WT
025-010-0		LED, GRN, 3MM
025-0009-0		LED, RED/GRN
025-0023-0	621-2009-000	LED, YEL
022-2079-0		MOV, 130V, 6500A, 1500pf
070-0520-0		POT, 500 OHM TRIM
AA132-003-0	760-4600-003	PX-612 FRONT PANEL
AA206-0005-C		PX-612 INPUT BOARD (COMPLETE ASSY)
AA145-0003-D		PX-612 POWER BOARD (BLANK)
AA145-0003-D		PX-612 POWER BOARD (COMPLETE ASSY)
AA132-001-0	760-4600-008	PX-612 TOP COVER
014-0066-0	633-7812-002	REGULATOR, LM7812, +12V, 1A

014-1065-0	633-7912-002	PX-612		REGULATOR, LM7912, -12V, 1A
081-0009-0				RELAY, JW2EN, DC12V
050-1302-0				RES, CARBON FILM, 1.3K OHM, 1/8W, 5%
050-1001-0				RES, CARBON FILM, 100 OHM, 1/8W, 5%
050-1004-0	654-0040-100			RES, CARBON FILM, 100K OHM, 1/8W, 5%
050-1203-0				RES, CARBON FILM, 12K OHM, 1/8W, 5%
050-1501-0				RES, CARBON FILM, 150 OHM, 1/8W, 5%
050-1801-0				RES, CARBON FILM, 180 OHM, 1/8W, 5%
053-1002-0				RES, CARBON FILM, 1K OHM, 1/2W, 5%
050-1002-0	654-0020-100			RES, CARBON FILM, 1K OHM, 1/8W, 5%
050-1005-0				RES, CARBON FILM, 1M OHM, 1/8W, 5%
050-2204-0				RES, CARBON FILM, 220K OHM, 1/8W, 5%
050-2203-0				RES, CARBON FILM, 22K OHM, 1/8W, 5%
050-3301-0				RES, CARBON FILM, 330 OHM, 1/8W, 5%
050-3303-0				RES, CARBON FILM, 33K OHM, 1/8W, 5%
053-0470-0				RES, CARBON FILM, 4.7 OHM, 1/8W, 5%
054-0470-0	650-2348-005			RES, CARBON FILM, 4.7 OHM, 1W, 5%
050-4702-0				RES, CARBON FILM, 4.7K OHM, 1/8W, 5%
053-4701-0				RES, CARBON FILM, 470 OHM, 1/8W, 5%
050-4704-0				RES, CARBON FILM, 470K OHM, 1/8W, 5%
050-4703-0				RES, CARBON FILM, 47K OHM, 1/8W, 5%
050-6801-0				RES, CARBON FILM, 680 OHM, 1/8W, 5%
055-.100-1				RES, CERAMIC WW, .10 OHM, 2W, 5%
060-1003-0				RES, METAL FILM, 10K 1/8W, 1%
060-4992-0				RES, METAL FILM, 4.99K 1/8W, 1%
050-0000-0	651-0000-000			RES, METAL WIRE, 0 OHM, 1/8W
090-0022-0				SW, ROCKER, DPST, 10A, 250V
090-0033-0				SW, SLIDE, DPDT, PC MOUNT (BRIDGE SW)
022-0043-0				THERMISTOR, PTC, 70 DEG C
080-0067-A				TRANSFORMER 115/230V, SEMKO
012-1001-0	**211-21302-00**		**720108**	**TRANSISTOR, 2SA1302, PNP**
012-1002-0			**720130**	**TRANSISTOR, 2SA1837, PNP**
012-0001-0	**210-43281-00**		**720107**	**TRANSISTOR, 2SC3281, NPN**
012-0002-0			**720131**	**TRANSISTOR, 2SC4793, NPN**
010-0012-0	624-0006-000			TRANSISTOR, MPSA06 NPN, TO-92
010-1013-0	624-0056-000			TRANSISTOR, MPSA56 PNP, TO-92

PX612 PARTS LIST	
AASWH/3	3M SPEAKER WIRE HARNESS
700-1000-256	48" SPEAKER WIRE HARNESS
AA145-004-D	POWER BOARD COMPLETE ASSEMBLY
800-3160-000-00	600/612/603 BOX
805-3000-007	600/612/603 FOAM SET
	B Stock Replacement Amp/ with trade
350206	5 AMP 250 VOLT SLO BLO FUSE

PX612

PX-612
Rear Connector



Bottom Row All gnd.

612 PC Board

AA145-0004-D

LED (green) 025-0101-0

Rolay: 081-0009-0

612 Grim

12.5

612

Mode Sw: 090-0033-0

XFR PX-612 230V

080-0003-A

PX-612

B-Stock: $225.00

New Board: $300.00
+1 hour

612 PC Board

- as of -
8/1/02
$300.00 +1 hour
($350.00)

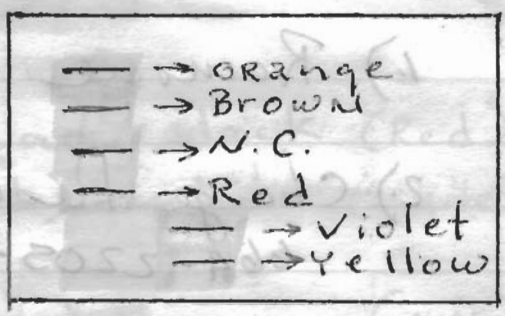
- PX-612 -

PX 612

Power Relay PCB 220V X-fmr

Secondary 2-3 ≈ 780VAC Primary

GREEN LED

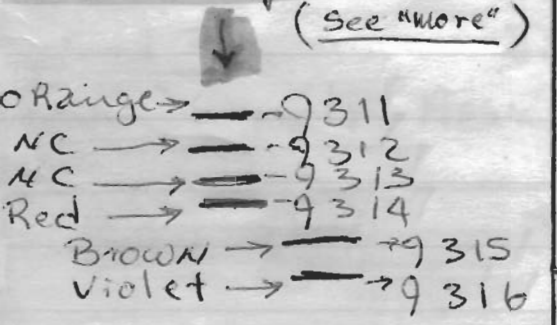


PWR Input PCB

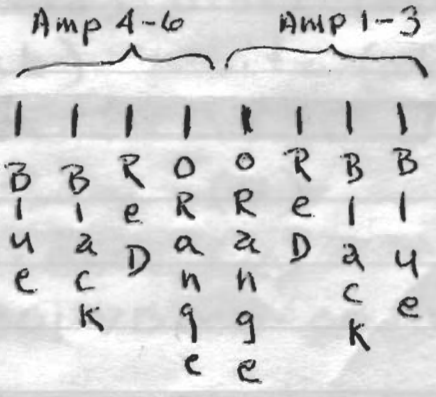
old NUS:

Power Input Board:

(See "more")

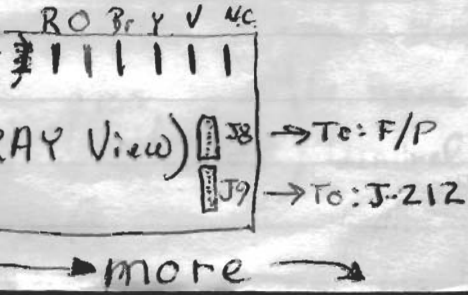


Note: Yellow wire from x-former is not used for NUS/220V systems. (w/ old Input PWR Bd.)



X-fmr Termination

AC Power Relay PCB



PX-612
Continued

Old Power Input Board for Non US Use !!

1.) Remove M300 Component

2.) Change fuse to:
664-2205-000