DATE 7/22/63	TMC SPECIFICATION NO. S -777	A
SHEET 1 OF 5		
RDV COMPILED / N.P. CHECKED	TITLE:	
APPROVED BP		

AX-431 TEST PROCEDURE
(VER-1) AUDIO MODULE

OGILVIE PRESS, INC., BROOKLYN 17, N. Y. STOCK NO. 459M

DATE 7/22/63 SHEET 2 OF 5	TMC SPECIFICATION NO. S-777	A
RDV COMPILED / N.P. CHECKED	TITLE: AX-431 TEST PROCEDURE (VLR-1) AUDIO MODULE	
APPROVED		

A. TEST EQUIPMENT

1. Audio Signal Generator HP200AB or equivalent.
2. AC Ballantine Voltmeter Model 314A or equivalent.
3. Heathkit VTVM Model V-7A or equivalent.
4. Scope Dumont 304-H or equivalent.
5. Test Jig (See page 3).
6. (2) Power Supplys(12V.) - Harrison Labs #855B or equivalent.

B. PRELIMINARY

*1. Inspect the unit for mechanical imperfections such as loose screws, printed circuit board, cold solder joints, etc.
2. Connect test jig to audio module as shown on page 3.

C. POWER AMPLIFIER

1. Set Signal Generator to 1KC at an output of 70MV.
2. Turn Speaker and line gain controls to CCW position.
3. Connect the AC Ballantine meter and scope. Switch to 4 ohm speaker load resistor, using load switch on test jig.
4. Turn Power Supply on.
*5. Measure +12V.±5% at Pin 15, and -12V.±5% at Pin 5, on the connector.
*6. Turn Speaker gain CW until AC meter reads 1.414V=.5W and observe a clean sine wave on the scope. Disconnect generator. The AC meter should read -40db or more. This is the hum level. Reconnect generator.
*7. Headphone output: Switch AC Voltmeter across 3K headphone load and read 1VRMS ±10%. Switch AC Voltmeter across 4 ohm speaker load.
*8. Turn speaker gain control further CW (approx, 3/4 fully CW) until AC meter reads 2V=1W and observe a clean sine wave on the scope.
9. Return speaker gain to 1.414V.
*10. Frequency response: Vary Signal Generator frequency from 50cps to 10KC; the output should not change more than 3db over this range.

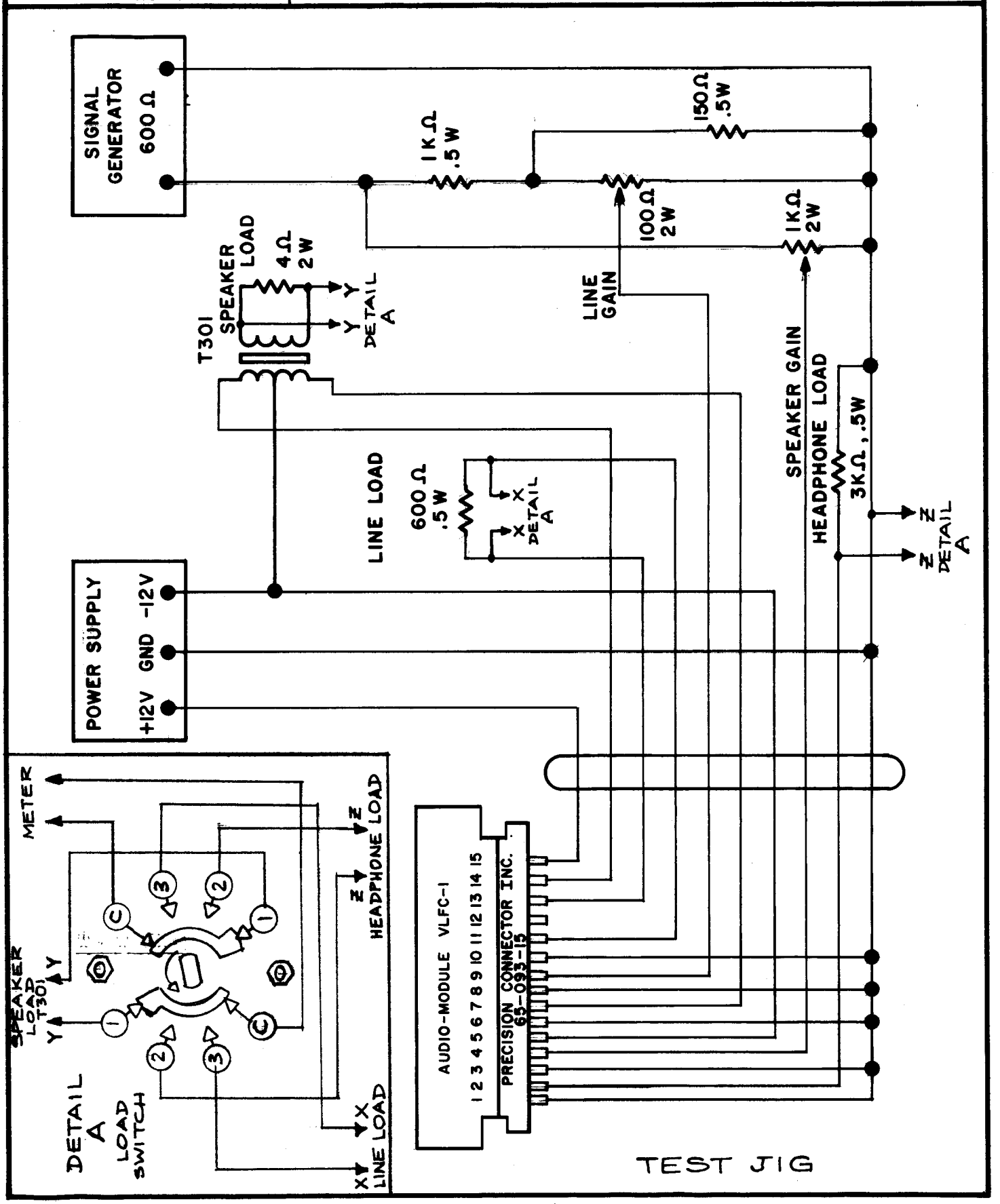
D. LINE AMPLIFIER

1. Turn speaker gain control to CCW position.
2. Switch AC Voltmeter and scope across the 600 ohm line load resistor.
*3. Turn line gain CW until AC meter reads .78V=0.DBM and observe clean sine wave on scope. (Approx.½ fully CW). Disconnect generator. The AC meter should read -40db or more. This is the hum l v l. Reconnect generator.
*4. Turn line gain control further CW until AC meter reads 1.75V and observe clean sine wave on scope.R turn line gain to .78V.
*5. Frequency Response: Vary Signal Generator frequ ncy from 100 CPS to 6KC; the output should not change more than 3db over this range.

*RECORD ON TEST DATA SHEET

OGILVIE PRESS, INC., BROOKLYN 17, N. Y. STOCK NO. 459M

DATE JULY 30, 1963 SHEET 3 OF 5	TMC SPECIFICATION NO. S -777	A
RVD COMPILED / NP CHECKED	TITLE: AX-431 TEST PROCEDURE	
APPROVED	(VLR-1) AUDIO MODULE	



OGILVIE PRESS, INC., BROOKLYN 17, N. Y. STOCK NO. 459M

TMC SPECIFICATION NO. S -777 A

RDV COMPILED | N.P. CHECKED | APPROVED

TITLE: AX-431 TEST PROCEDURE
(VLR-1) AUDIO MODULE

DC AND SIGNAL GAIN VOLTAGE CHART (FOR INFORMATION ONLY)

Q		EMITTER	BASE	COLLECTOR	
20	DC	-.3V	-.43V	-1.V	POWER AMPLIFIER
	AC	50MV	6.5MV	.24V	
21	DC	+.32V	+.18V	-11.5	
	AC	.23V	.23V	3.5V	
22	DC	+.32V	+.18V	-11.5V	
	AC	10MV	0.V	3.5V	
23	DC	+11.V	+11.2V	-11.5V	
	AC	.56V	1.V	9.V	
24	DC	+11.V	11.2V	-11.5V	
	AC	.56V	1.V	9.V	
25	DC	0.V	0.V	-11.7V	LINE AMPLIFIER
	AC	0.V	1.5MV	40MV	
26	DC	+.16V	0.V	-11.5V	
	AC	0.V	6MV	1.3V	
27	DC	+.16V	0.V	-11.5V	
	AC	0.V	6MV	1.3V	

NOTE:

1. The input signal is 1KC.
2. The DC voltages are ±5%. Measured with HP VTVM Model 410B.
3. The AC voltages are ±10%. Measured with AC Ballantine Voltmeter Model 314.
4. Input and output impedances to be terminated with proper impedance (See Test Procedure).

DATE 7/22/63 SHEET 5 OF 5	TMC SPECIFICATION NO. S -777	A
N.P. COMPILED / N.P. CHECKED	TITLE: AX-431 TEST PROCEDURE	
APPROVED	((VLR-1) AUDIO MODULE	

THE TECHNICAL MATERIEL CORPORATION
MAMARONECK, N.Y.

AX-431 TEST DATA SHEET
(VLR-1) AUDIO MODULE

SERIAL NO._____
MFG. NO._____

B.1.	Mechanical and Wiring check	OK.
C.5.	B+ and B- check	OK.
6.	Hum level, -40db down and lower	db.
7.	Headphone output, 1VRMS±10%	Volt.
8.	Sine wave at 2 volts output	OK.
10.	Frequency response between 50cps & 10KC, within 3db	db.
D.3.	Hum level, -40db down and lower	db.
5.	Frequency response between 100cps & 6KC, within 3db	db.
4.	Sine wave at 1.75 volts output	OK.

DATE_____

TESTER_____

OGILVIE PRESS, INC., BROOKLYN 17, N. Y. STOCK NO. 459M

REVISION SHEET

THE TECHNICAL MATERIEL CORP.
MAMARONECK NEW YORK

S777
LIST NO.

DATE	REV.	SHEET	EMN #	DESCRIPTION	APP.
10/30/64	A	all	12792	Revised all shts. per EMN	LB