DATE 11/2/50	TMC SPECIFICATION NO. S 694	B
SHEET 1 OF 6		
JNS COMPILED / CHECKED	TITLE: AX-385 TEST PROCEDURE	
APPROVED	(HFS) 1KC SELECTOR DECK	

AX-385 TEST PROCEDURE
(HFS) 1KC SELECTOR DECK

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

DATE 11/9/62 SHEET 2 OF 6	TMC SPECIFICATION NO. S 694	B
JNS COMPILED / N.P. CHECKED	TITLE: AX-385 TEST PROCEDURE	
APPROVED	(HFS) 1KC SELECTOR DECK	

I FUNCTION & DESCRIPTION:

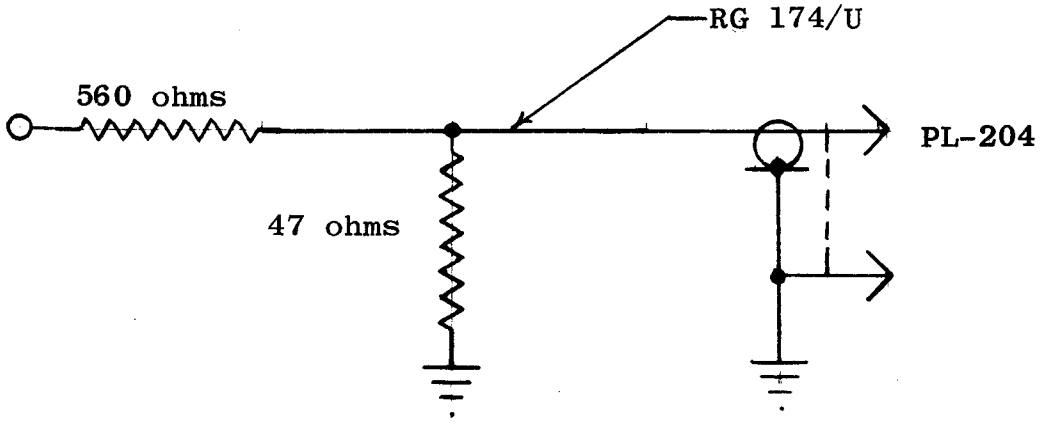
The function of the 1KC selector deck is to furnish a signal of 30.1KC through 40.0KC to the 10KC selector deck (AX386) and divide a 10KC pulse down to 1KC. The signal is derived by mixing the output from the .1KC selector deck (AX384) which may vary from 3.1KC through 4.0KC in .1KC inincrements with the 27.0KC through 36.0KC signal generated within the 1KC selector deck. A 1KC pulse is converted into 10 signals 1KC apart, in the frequency range of 27.0KC through 36.0KC.

The incoming 10KC pulse is fed into a phantastron divider which provides a 1KC pulse with sharp rise time and rich harmonic content. The crystals select the 27th through 36th harmonic of this pulse. The selected signal is applied to a single stage high Q amplifier where the spurious pulse is attenuated and the signal is amplified. The mixing is accomplished in a balanced modulator which feeds the signals into a two stage amplifier with 1KC bandwidth tuned to amplify only the sum of the mixed frequencies.

II TEST EQUIPMENT REQUIRED:

A. Oscilloscope, Tektronix 504 or equivalent.
B. VOM Simpson Model 260 or equivalent.
C. Power supply Lambda model 26 or equivalent.
D. Test cable (Fig. B)
E. TMC Modified CHL (15V peak-to-peak output of sync. pulse).
F. 56 ohm ½ watt load mounted in PL204 - 2 req'd.
G. Burroughs Nixie (B5031) with TMC cable CA668.
H. Audio Generator -Heath Model AF-1 or equivalent.
I. Matching Pad, 560 ohms & 47 ohm resistors - connection to be made as shown. (Fig. A)

FIG. A.



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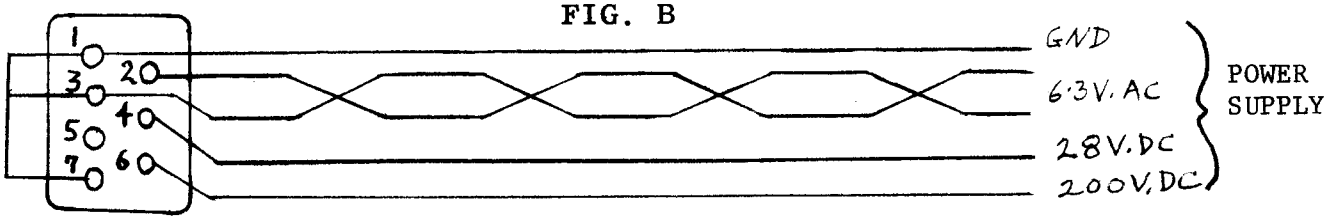
TMC JJ216

FIG. B



To mate with J3205

III PRELIMINARY:

A. Inspect unit carefully, see that unit is clear of short circuits and has no loose or missing parts.

B.* Check Resistance of B+ line to ground, reading should be greater than 70K ohm.

C. Connect unit to power supply through test cable. Turn on A-C. Turn on B+ and set level to 200VDC. Allow 5 minutes to warm up before continuing tests.

IV ALIGNMENT PROCEDURE:

A. Phantastron Divider

1. Connect 10KC pulse output from modified CHL to J3201.
2. Attach scope probe to TP3201 and check amplitude of incoming pulse. Pulse should be approximately 8 to 12V peak-to-peak.
3. Connect scope probe to TP3202.
* 4. Adjust potentiometer R3203 for 1KC pulse at TP3202. Set potentiometer in middle of 1KC range and lock.
* 5. Remove scope from TP3202 & attach to J3202. 1KC pulse should be approximately 8 to 10V peak-to-peak.

B. Harmonic Selector Bank

1. Insert crystals in their respective sockets.
2. Insert indicator cable assembly in J3206.
3. Remove scope probe from J3202 & connect to TP3203.
4. Set switch so that nixie light reads "0".
5. Adjust C3232 first and then C3272 for maximum amplitude at TP3203.
6. Set switch so that indicator reads "1" and adjust C3233 for maximum amplitude at TP3203.
7. Repeat step 6 for positions "2" thru "9" adjusting C3234 thru C3241.
* 8. Set switch back at "0" again and run through positions "0" through "9" noting the amplitude on each position. Adjust C3272 so that amplitudes of all positions are within 3db of one another.

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C. Balanced Modulator and Sum Amplifiers

1. Attach scope probe to J3203 and adjust R3219 for minimum amplitude. Lock R3219.
2. Remove scope probe from J3203 and attach audio generator thru "T" pad to J3203.
3. Place 56 ohm load on J3204.
4. Set audio generator at frequency of 3.2KC and adjust output to .2Vvolts RMS across 47 ohm input load on J3203.
5. Attach scope probe to TP3204.
6. Set switch so that indicator reads "0".
7. Adjust C3273 for maximum reading in this position.
8. Run switch through remaining positions and, if necessary, re-adjust C3273 to make amplitudes in all positions within 3db of each other.
9. Remove scope probe from TP3204 and attach it to TP3205.
10. Set audio generator to 3.9KC and adjust output level to .2 volts RMS across 47 ohm input load on J3203.
11. Repeat steps 6, 7 and 8 using C3274 instead of C3273 to adjust amplitude.
12. Attach VTVM to J3204 across 56 ohm load and set selector switch to "0" position.
13. Vary frequency of audio generator between 3.1KC to 4KC. The output voltage must be between .18V and .25V RMS for the entire range.
14. Repeat step 13 for all selector switch positions through "9".

TMC SPECIFICATION NO. S 694

B

JNS COMPILED | N.P. CHECKED | APPROVED

TITLE: AX-385 TEST PROCEDURE

(HFS) 1KC SELECTOR DECK

The DC voltages in the voltage chart are for reference only. These voltages should be within ± 10%, no signal applied.

D-C VOLTAGE CHART

TUBE	TYPE	1	2	3	4	5	6	7	8	9
V3201	6AS6	16	17	-	0	185	72	6		
V3202	6AB4	180	-	-	0	-	0	6		
V3203	6AH6	0	.66	-	0	110	90	.66		
V3204	6AU6	0	1	-	0	125	105	1		

\- INDICATES NO MEASUREMENT TO BE TAKEN

The voltages shown below, are with signal applied and for reference only.

TP3201	8 to 12V peak-to-peak
TP3202	80V peak-to-peak.
TP3203	3.5 to 6V peak-to-peak.
TP3204	.3 to .4V peak-to-peak.
J3202	8 to 12V peak-to-peak.
J3204	.18V to .25V RMS.

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THE TECHNICAL MATERIEL CORPORATION

MAMARONECK, N.Y.

AX-385 TEST DATA SHEET

MFG. NO._____

III B. Resistance B+ to ground, greater than 70K. _____ Ohms

IV A. 4. Output of 10KC divider to be locked in at 1KC. _____ OK

5. Voltage at J3202 should be between 8 to 12 V peak-to-peak _____ V.

B. 8. Harmonic Selector output at TP-3203, switch positions "0" through "9", no more than 3db change in amplitude _____ OK

C. 13. Summing amplifier output voltage at J3204 with 56 ohm load attached. Should be between .18V and .25V RMS. for positions listed below.

Position	0	39.1	40KC	_____ VRMS
	1	38.1	39	_____
	2	37.1	38	_____
	3	36.1	37	_____
	4	35.1	36	_____
	5	34.1	35	_____
	6	33.1	34	_____
	7	32.1	33	_____
	8	31.1	32	_____
	9	30.1	31	_____

DATE_____

TESTER_____

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REVISION SHEET

THE TECHNICAL MATERIEL CORP.
MAMARONECK NEW YORK

S694
LIST NO.

DATE	REV.	SHEET	EMN #	DESCRIPTION	APP.
4/23/64	A	2,3,6	11283	Revised Shts. 2,3,6 per EMN	
11/2/66	B	3,5,6	17185	Revised per EMN	