

DATE 11/1/61	TMC SPECIFICATION NO. S -614	A
SHEET _____ OF _____		
COMPILED <i>R.H.</i>	CHECKED <i>[Signature]</i>	TITLE: TEST PROCEDURE FOR HFS-1 REGENERATIVE DIVIDER
APPROVED <i>[Signature]</i>		

TEST PROCEDURE

FOR

HFS-1 REGENERATIVE DIVIDER

AX389

DATE 11/1/61

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I. FUNCTION & DESCRIPTION

The function of the Regenerative Divider is to convert a 1 Mc standard signal into a standard 250 Kc source for the operation of the HFA-1.

This is accomplished by tuning the plate circuit of the 6U8 triode (pin 1) to the 750 Kc component of the noise spectrum present in the tube. This 750 Kc signal is then fed to the signal grid of the mixer tube, 6CS6 pin 7, where it beats with the 1 Mc input signal thereby generating a 250 Kc signal which is tuned in the mixer plate circuit and then fed into the output pentode stage of the 6U8 where it is further amplified and fed to an output jack (J3702).

II. REQUIRED TEST EQUIPMENT

- A. Oscilloscope, Tektronics Type 545A.
- B. Signal Generator, Measurements Model 82.
- C. R.F. Voltmeter, Hewlett-Packard 410B.
- D. Power Supply, Lambda Model 25 and Cable Assembly.
- E. Multimeter, Simpson #260 or equivalent.

III. D.C. VOLTAGE CHECK

- A. Inspect unit carefully see if unit is clear of short circuits, loose parts, etc.
- B. Check B+ line to ground with ohm meter--reading should be infinite.
- C. Connect to power supply through power cable assembly.
- D. Connect 56 ohm $\frac{1}{2}$ W. load across output jack J3702.
- E. Turn AC on, set D.C. output voltage to 200V. then turn D.C. switch on.

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F. D.C. voltages are shown below for reference. Voltages should be within $\pm 10\%$.

D.C. VOLTAGE CHART

SYMB.	TYPE	1	2	3	4	5	6	7	8	9
V3701	6AB4	+200	0	6.3 VAC	0	+25	+25	+27		
V3702	6CS6	-2.5	+1.5	6.3 AC	0	+190	+110	approx. -6.0		
V3703	6U8	+200	approx. -4.5	+85V	6.3 AC	0	+200V	+5V	+3.5	-26.0

IV. ALIGNMENT

A. 750Kc. Circuit, L3702

1. Connect Signal Generator to Pin 9 of V3703, 6U8 Tube.
2. Set Generator frequency to 750Kc. Output to .2V RMS.
3. Connect Oscilloscope to pin 1 of V3703 6U8 Tube.
4. Tune L3703 for maximum output on Oscilloscope, 1.8V PP Approx.

B. 250Kc. Circuit, L2601

1. Connect Signal Generator to input, J3701.
2. Set Generator frequency to 250Kc. Output to 50MV RMS.
3. Connect Oscilloscope to pin 5 of V3702 6CS6 Tube.
4. Tune L3702 for maximum output on Oscilloscope, 3.3V PP Approx.

C. Final Alignment and Gain Measurement

1. Connect Signal Generator to input J3701.
2. Set Generator frequency to 1 Mc.
3. Set Generator Attenuator to produce 3 volts RMS at TP3701.

Measure with R.F. Meter.

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4. Connect Oscilloscope to Test Point TP3702.
5. Tune L3704 for maximum output on Oscillograph, 3.5 V PP approx.
6. Retune (touch up) L3702, L3703, L3704, and lock tuning adjustments carefully.
7. Measure output voltage with RF Voltmeter--output shall be 1 to 1.5V RMS across 56 ohms at J3702.
8. Signal voltages as per table below for reference.

SYMBOL	TYPE	1	2	3	4	5	6	7	8	9
V3701	6AB4	0	0	0	0	2.5V	3.0V	2.8V		
V3702	6CS6	2.8	0	0	0	22.5	0	6.0V		
V3703	6U8	6.0V	3.8V	4.2V	0	0	20	0.7V	1.25V	21.5V

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TEST REPORT SHEET REGENERATIVE DIVIDER, HFS-1

1. Resistance B+ to ground. _____ check O.K.
2. Output frequency 250Kc + 20 Kc _____ Kcs.
3. Output Voltage across 56 ohms
minimum 1V maximum 1.5V RMS
for 3V input of 1 Mc + 50 Kc.
at TP3701 _____ V. RMS

TESTED BY: _____

ACCEPTED: _____

DATE: _____

APPROVED: _____

