

DATE 6-27-61  
SH. 1 OF 6

**TMC SPECIFICATION NO. S -586**

COMPILED BY  
*[Signature]*

TITLE: TEST PROCEDURE FOR CHG-2 REGENERATIVE DIVIDER

JOB

APPROVED

TEST PROCEDURE FOR CHG-2/DIVIDER

DATE 6-27-61

SH. 2 OF 6

COMPILED BY

*Janger*

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## A. 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 CBE.

This is accomplished by tuning the plate circuit of the 6U8 triode (pin 1) to the 750Kc component of the noise spectrum present in the tube. This 750Kc signal is then fed to the signal grid of the mixer tube, 6BE6 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. (J2602)

## B. REQUIRED TEST EQUIPMENT

Oscilloscope, Tektronics Type 545A.

Signal Generator, Measurements Model 82.

R.F. Voltmeter, Hewlett-Packard 410B.

Power Supply, Lambda Model 25 and Cable Ass'y.

Multimeter, Simpson #260 or equivalent.

Pulse Transformer (10:1 step up) cable assembly.

## C. D.C. VOLTAGE

1. Inspect unit carefully see if unit is clear of short circuits, loose parts, etc.

2. Check B+ line pin H of J2603 to ground with ohm meter--reading should be infinite.

3. Connect to power supply through power cable ass'y.

4. Connect 68 ohm  $\frac{1}{2}$ W. load across output jack J2602.

5. Turn AC on, set DC output voltage to 200V. then turn DC switch on.

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6. Measure D.C. voltages as per chart voltages should be within  $\pm 10\%$ .

## D.C. VOLTAGE CHART

SYMB.	TYPE	1	2	3	4	5	6	7	8	9
V2601	6BE6	-.2	+1.7	6.3AC	0	+170	+85	approx. 0		
V2602	6U8	+195	-.6 approx.	+50V	6.3AC	0	+200V	+0.8V	+5.3	0

\* This voltage varies with the noise present in tube, by pass plate pin 1 with .01 Mf. capacitor to obtain voltages shown.

## D. ALIGNMENT

### 1. 750Kc. circuit, L2602

- 1.1-Connect Signal Generator to Pin 9 of V2602, 6U8 Tube.
- 1.2-Set Generator frequency to 750Kc. Output to .2V RMS.
- 1.3-Connect Oscilloscope to pin 1 of V2602 6U8 Tube.
- 1.4-Tune L2602 for maximum output on Oscillograph, 1.8V PP Approx.

### 2. 250Kc. CIRCUIT, L2601

- 2.1-Connect Signal Generator to input, J2601.
- 2.2-Set Generator frequency to 250Kc. Output to 50MV RMS.
- 2.3-Connect Oscilloscope to pin 5 of V2601 6BE6 Tube.
- 2.4-Tune L2601 for maximum output on Oscilloscope, 3.3V PP approx.

### 3. Final Alignment and Gain Measurement

- 3.1-Connect Signal Generator through 10:1 step-up transformer and cable assembly to input J2601.
- 3.2-Set Generator frequency to 1 Mc.
- 3.3-Set Generator Attenuator to produce 6 volts RMS at J2601.

Measure with RF Meter.

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- 3.4-Connect Oscilloscope to output jack J1602 across 68 ohm load.
- 3.5-Tune L2603 for maximum output on Oscillograph, 3.3V PP approx.
- 3.6-Retune (touch up) L2601, L2602, L2603 and lock tuning adjustments carefully.
- 3.7-Measure output voltage with RF Voltmeter--output shall be 1 to 1.5V RMS across 68 ohms at J2602.
- 3.8-Signal voltages as per table below for reference.

SYMBOL	TYPE	1	2	5	6	7	9	J2602
V2601	6BE6	INPUT 6V		21.5		6.		
V2602	6U3		4.2		17		20.	
								1.2

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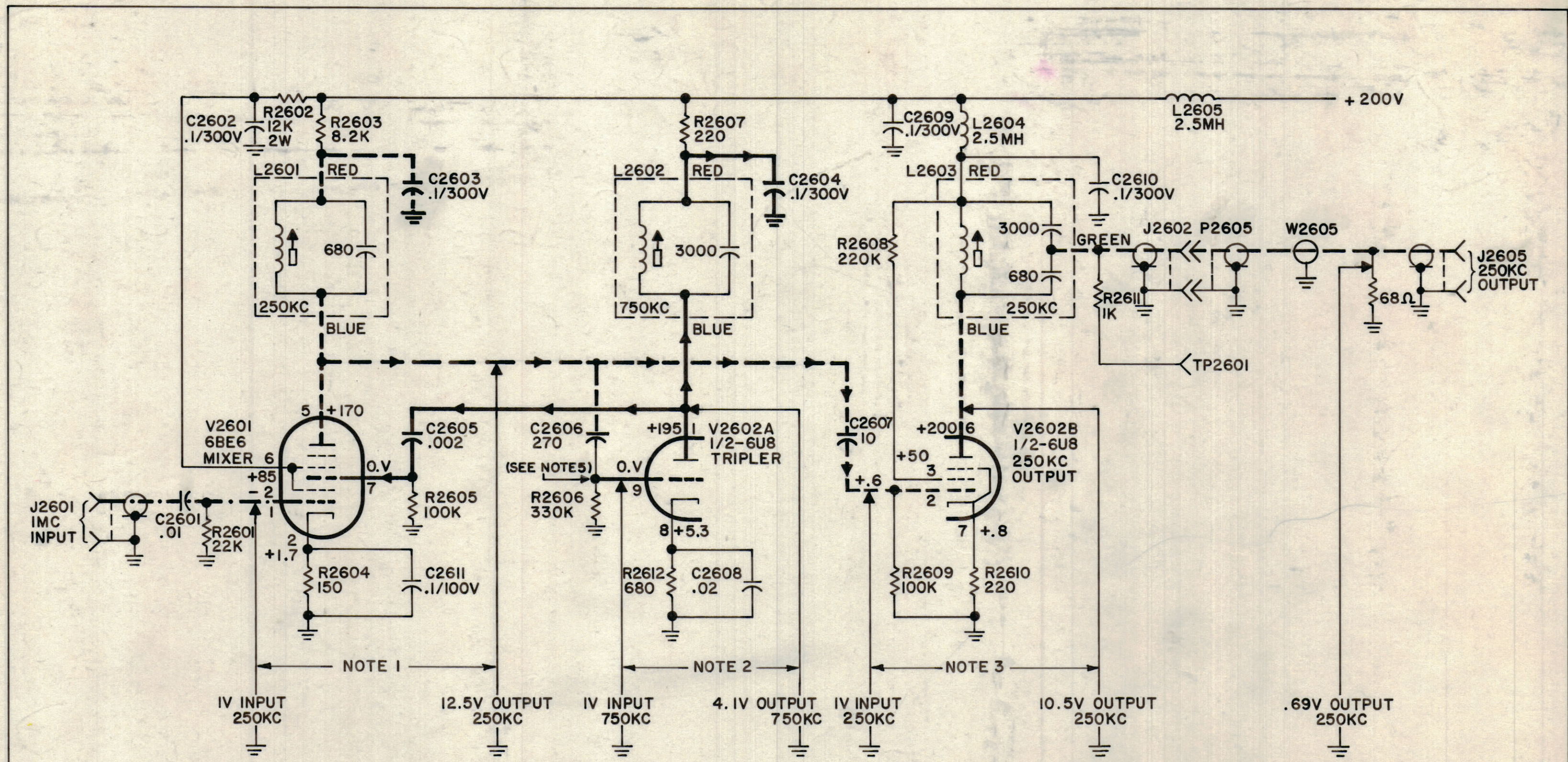
JOB

TEST REPORT SHEET REGENERATIVE DIVIDER, CHG.-1

1. D.C. Voltage check within  $\pm 10\%$  \_\_\_\_\_ check O.K.
2. Output frequency 250Kc  $\pm 20$  Kc \_\_\_\_\_ Kcs.
3. Output Voltage across 68 ohms  
minimum 1V maximum 1.5V \_\_\_\_\_ V.RMS  
for 6V input of 1 Mc  $\pm 50$  Kc.

TESTED BY: \_\_\_\_\_ ACCEPTED: \_\_\_\_\_

DATE: \_\_\_\_\_ APPROVED: \_\_\_\_\_



LEGEND	
---	250KC SIGNAL PATH
—	750KC SIGNAL PATH
- · - · -	1000KC SIGNAL PATH

- NOTES :
- 1- ALIGNMENT OF L2601 TO OBTAIN INPUT/OUTPUT VOLTAGES SHOWN.
  - 2- ALIGNMENT OF L2602 TO OBTAIN INPUT/OUTPUT VOLTAGES SHOWN.
  - 3- ALIGNMENT OF L2603 TO OBTAIN INPUT/OUTPUT VOLTAGES SHOWN.
  - 4- OVERALL ALIGNMENT SHOULD GIVE 0.69V OUTPUT (250KC) FOR IV INPUT (IMC)
  - 5- INITIAL INPUT TO V2602A IS NOISE SPECTRUM. SUBSEQUENTLY BY REGENERATION INPUT IS 250KC AND V2602A AMPLIFIES THIRD HARMONIC (750KC)

FIGURE III (G)-2b  
INFORMATION SCHEMATIC OF REGENERATIVE DIVIDER (P/O CHG-2 UNIT)

SYM	ZONE	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
UNLESS OTHERWISE SPECIFIED:							
DIMENSIONS ARE IN INCHES			SCALE				
TOLERANCES ON FRACTIONS ± 1/64			MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION. REMOVE ALL BURRS & SHARP EDGES				
DECIMALS ± .005							
ANGLES ± 1/2°							

REQ. PER UNIT	MODEL	SECTION	ASSY. NO.	DATE
				6-28-61

REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK			
REGENERATIVE DIVIDER			
DRAWN		CHECKED	FINAL APPROVAL
TYPE & TEMPER		HEAT TREAT. SPEC.	
FINISH & SPEC. NO.		ELEC. DES. APP.	MECH. DES. APP.
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