

DATE 12-28-60

SH. 1 OF 5

TMC SPECIFICATION NO. S -528

COMPILED BY

Kanger

TITLE:

JOB

APPROVED

TEST PROCEDURE FOR CHG-1 I.F. CHASSIS

DATE 12-28-60

SH. 2 OF 5

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A. DESCRIPTION & FUNCTION

The I.F. chassis consists of a harmonic generator (V1201) that is tuned to amplify the 9th harmonic (18Mc.) of a 2Mc. input, amplified (V1202) then fed into a balanced modulator thereby furnishing a carrier. A signal of 1.75 - 3.75Mc from the mid frequency amplifier is also fed into the balanced modulator which mixes with the 18Mc. The difference frequency is then selected, and amplified by a wide band amplifier, 14.25 to 16.25Mc, flat within 3 db, to furnish an output to a 47 ohm (R1220) load, thereby serving as an intermediate amplifier in the overall CHG system.

B. TEST EQUIPMENT REQUIRED

1. Two Signal Generators, Measurements Model 82.
2. R.F. Voltmeter, Hewlett Packard 410B.
3. Oscilloscope, Tektronics 545A with Type L plug in unit.
4. Multimeter, Simpson #260 or equivalent.
5. Power Supply, Lambda Model 25.
6. Electronic Counter, Hewlett Packard 524C.
7. Cables for dc supply, generator output, etc.

C. DC VOLTAGE CHECK

1. Inspect unit carefully; see if unit is clear of short circuits, loose parts and debris.
2. Check B+ line pin H of J1204 to ground with ohmmeter. Reading should be infinite.
3. Connect to power supply through power cable assembly.
4. Turn AC on, set DC output voltage to 200 volts, then turn DC switch on.
5. Measure DC voltages as per chart. Voltages should be within $\pm 10\%$.

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0 Signal DC Voltages

SYM	TYPE	1	2	3	4	5	6	7
					AC			
V1201	6AH6	0	0	0	6.3	+183	+70	0
V1202	6AU6	0	+1.2	0	6.3	+160	+120	+1.2
V1203	6AH6	0	+1.2	0	6.3	+200	+145	+1.2
V1204	6AH6	0	+1.2	0	6.3	+200	+145	+1.2
V1205	6AH6	0	+1.2	0	6.3	+200	+145	+1.2
V1206	6AH6	0	+1.2	0	6.3	+200	+145	+1.2

D. ALIGNMENT

1. 18 MC Circuits

- 1.1. Connect signal generator to input jack J1201 set for 18 Mc \pm 50 cps with a counter, set attenuator for approximately 1 v.
- 1.2. Connect R.F. voltmeter to one side of Bal. Adj. R1208, set Bal. Adj. to approximately in the middle. Set R.F. meter to 1 volt scale AC.
- 1.3. Tune circuits T1201 and T1202 for maximum output progressively decreasing output of Signal Generator as required. The resultant output should be .4V RMS for an input of 25,000 UV.
- 1.4. Connect Oscilloscope to pin 1 of V1203 -- set Volt/CM scale to .005
- 1.5. Adjust Balance Adjust (R1208) for min. output on Oscilloscope, then lock carefully without disturbing adjustment. Output shall be not more than .04V RMS when .4V RMS appears either side of R1208 to ground (10:1 voltage ratio or 20db)

2. 14.25 - 16.25 Circuits

- 2.1. Connect Signal Generator to one side of Bal. Adj., R1208 set for 14.3 Mcs., set attenuator approximately 1 v.
- 2.2. Connect probe of Oscilloscope to output jack J1203, volt/CM scale to .005, X10 gain AC; time/CM scale to .1 u sec.
- 2.3. Tune 14.3 circuits of T1205 thru T1208 for maximum output— progressively decreasing Signal Generator output as required.
- 2.4. Reset Signal Generator to 16.2 and tune 16.2 circuits of T1205 thru T1208 for maximum output.
- 2.5. Reset Signal Generator to 15.1 Mcs and tune T1204 for maximum output.
- 2.6. Repeat steps 3,4 and 5 - lock tuning slugs carefully while observing output on Oscilloscope.

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2.7. Bandwidth check - output shall be within 3 db from 14.25 to 16.25 Mcs.

2.71. Determine the maximum response point of amplifier by slowly turning Signal Generator from 14.25 to 16.25 Mc., and observe maximum output on Oscilloscope. Use this point as 0 db reference. Set Oscilloscope to read 20 small divisions (4 Cm).

2.72. Sweep Signal Generator thru 14.25 to 16.25 Mc slowly - output shall be between 14 division (-3 db) and 20 division (0 db).

E. GAIN MEASUREMENT

1. Connect No. 1 Signal Generator to J1201.

- 1.1. Adjust Signal Generator frequency to 18 Mc \pm 25 cps, use counter.
- 1.2. Adjust attenuator to produce .5V RMS from one side of R1208 ground.

2. Connect No. 2 Signal Generator to J1202.

- 2.1. Adjust Signal Generator frequency to 2 Mc \pm 100 kc.
- 2.2. Adjust Attenuator to .1 V input at J1202.

3. Connect R.F. Voltmeter to J1203, set on 1 v scale (AC).

4. Read output - Output should be at least .15 volts RMS.

5. Attenuation of 18Mc. at pin 1 of V1203 shall be at least 20 db or .05V maximum.

F. PERFORMANCE (Report on test report sheet)

1. 18Mc. output shall be between .35 to .6V RMS.
2. 18Mc. attenuation at pin 1 V1203. Output shall not be more than .05V.
3. 14.25 to 16.25 Mc output shall be .14V minimum, .28V maximum.
4. 14.25 to 16.25 Mc amplifier bandwidth shall be within 3 db (14 to 20 divisions as viewed on Oscillograph).

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TEST REPORT SHEET FOR CHG-1 I.F. CHASSIS

- 1. D.C. Voltage check, within $\pm 10\%$ _____ check O.K.
- 2. 18 Mc. Output; .35V to .6V RMS _____ volts
- 3. 18 Mc. Attenuation in Balanced Modulator
 .05 volts or less _____ volts
- 4. 14.25 to 16.25 Mc. Output; .14V to .28V _____ volts
- 5. 14.25 to 16.25 amplifier bandwidth shall
 be flat within 3 db. _____ check O.K.

TESTED BY: _____

ACCEPTED: _____

DATE: _____

APPROVED: _____