

TMC SPECIFICATION

NO. S 1240

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TITLE:

TEST PROCEDURE FOR VOX()-7

TEST PROCEDURE

FOR

VOX()-7

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TITLE: TEST PROCEDURE FOR VOX()-7

1. Equipment Used

- A. Signal Generator H.P. Model 606A.
- B. Scope Tektronix Model 541A, or equivalent.
- C. Spectrum Analyzer Lavoie Laboratoires Inc., Model LA-40A
- D. Audio Generator H.P. 200CD, or equivalent.
- F. 30V , DC Power Supply
- G. Telonic D-550 Attenuator, or equivalent.
- H. Millivolt Meter, Millivac MV-28B, or equivalent.
- J. VTVM Hewlett-Packard Model 410B.

2. Preliminary Test (LMC Oscillator Inserted)

- A. With AC line cord removed, no cards inserted and power switch to "ON" position, measure resistance from Pin 1 J101 to ground. (150 ohms minimum)
- B. Measure resistance from J115 Pin F to ground. (5K ohms minimum).
- C. Measure resistance from J114 Pin 9 to ground. (5K ohms minimum)
- D. Turn power switch to "STANDBY" position and insert PC-329 and PC-330 into unit. (before inserting PC-330, turn R3 and R12 fully cw)
- E. Check for any visible shorts.
- F. Plug in AC line cord. The standby lamp should light.
- G. Turn power switch to "ON" position. The red "POWER" lamp should light.
- H. Measure DC voltage at Pin 6 at J304 (approximately 50V)
- I. Allow fifteen (15) minutes warm-up.

NOTE: In Test Procedure all pin numbers refer to their respective connectors.

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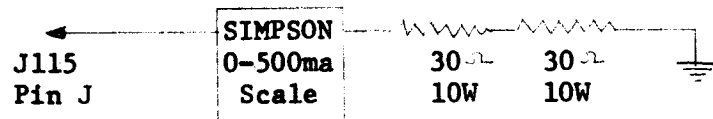
TEST PROCEDURE FOR VOX()-7

I. PC-329 Power Supply Board "A"

- A. Using Simpson 260A, measure DC voltage level at J304 Pin A (approximately +50V)

II. PC-330 Power Supply Board "B"

- A. Measure DC voltage level at J303 Pin E (approximately +30V).
- B. Measure DC voltage level at Pin A (approximately +50V). Turn R3 and R12 fully cw.
- C. Measure DC voltage at Pin F. Adjust R8 for exactly 12.0V (all cards tested and inserted*). Connect scope to Pin F. Maximum AC ripple should be 5mv. Adjust R3 until voltage level just starts to drop. Back off slightly to full voltage.
- D. Measure DC voltage at Pin 4. Adjust R18 for exactly 24.0V. Connect scope to Pin 4. Maximum AC ripple should be 2mv. Adjust R12 until voltage level just starts to drop. Back off slightly to full voltage.
- E. Measure DC voltage at J301 Pin E (30V \pm 1V).
- F. Turn power switch to standby position and meter switch to Q1 position. Adjust R106 meter adjust control (located at rear of meter switch) for equal readings on front panel meter and Simpson Model 260, in following set-up:



- * Do not insert RF output card PC-391 unit, XIII of test procedure has been followed.

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III. PC-383 (J101) Spectrum Generator Card (Z101)

- 1 MC A. Set lmc switch (S108) on rear panel to internal position. Place scope between Pin A and ground and adjust T1 for maximum output. (Place cards PC-304, PC-300 and PC-302 into unit for lmc load).
- 1 MC B. Place scope between Pin 3 and ground and adjust R60 for 0.6vpp output.
- C. Measure level at collector of Q3 with scope (lmc spectrum of 1.5vpp).
- D. Measure level at Pin D of J101. (100Kc spectrum of 1.0vpp).
- 12 MC E. Place scope to TP3 and ground. Adjust T2 and C12 for maximum output. (PC-324 inserted and 10mc switch of front panel set to position 21-30. All other switches on front panel set to 0 position.)
- 12 MC F. Place scope to Pin 8 and ground lead to Pin J. Adjust T3 for maximum output. (.3vpp minimum) Switch position 11-20MHz.
- 13 MC G. Place scope between TP6 and ground. Adjust C50 and T8 for maximum signal.
- 13 MC H. Place scope between Pin P and ground lead to Pin R. Adjust T9 for maximum output. (.3vpp minimum)
- 8 MC I. Place scope between TP9 and ground. Adjust C73 and T10 for maximum output.
- 8 MC J. Place scope between Pin S and ground lead to Pin 15. Adjust T11 for maximum output.
- 14 MC K. Place scope between TP5 and ground. Adjust C36 and T6 for maximum output. (PC-301 inserted and 10mc switch on front panel set to Position 0-10).
- 14 MC L. Place scope between Pin 13 and ground lead to Pin 12. Adjust T7 for maximum output. Output level should be approximately .4 minimum.

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- 1.8MC K. Place scope on TP1. Adjust C10 and T2 for maximum output.
- 1.8MC L. Place scope on Pin 4. Adjust T1 for maximum output. Adjust R3 for 0.7vpp.
- V. PC-304, Comb Filter B (J103) Set 100Hz, 1KHz, 10KHz and 100KHz Switches in Blank Position. Comb Filter A Into Unit.
- .9MC A. Follow same procedure as IV A and B. Substitute 0.9MC.
- 1.1MC B. Follow same procedure as IV C and D. Substitute 1.1MC.
- 1.3MC C. Follow same procedure as IV E and F. Substitute 1.3MC.
- 1.5MC D. Follow same procedure as IV G and H. Substitute 1.5MC.
- 1.7MC E. Follow same procedure as IV I and J. Substitute 1.7MC.
- 1.9MC F. Follow same procedure as IV K and L. Substitute 1.9MC.

VI. PC-300 (J104, J105) Double Mixer Divider Cards (Z104)

- 8 MC A. Place scope probe from cathode side of CR1 to ground. Adjust the 100Hz switch to a blank position. Adjust T1 for maximum output. Place scope on TP1. Adjust R9 for minimum output. Output at cathode of CR1 should be 0.5vpp minimum.
- 9-9.09MC B. Place the scope probe on cathode side of CR3 and ground lead to ground. Set 1Kc switch to blank position. Adjust 100Hz switch to position.5. Adjust T2, T3, T4, T5 and T6 for maximum output. Place probe on TP5 and adjust R23 for minimum output. Output at cathode of CR3 should be 0.5vpp minimum in 10 Hz switch position from 0 through 9.
- 10-10.99MC C. Rotate 100Hz switch to the blank position. Place signal generator through a 220 ohm resistor to TP5. Adjust generator output for 10.4mc and terminate generator line with a 47 ohm resistor.
1. Place scope probe at TP5. Ground lead to ground. Short TP6 to ground and adjust T7 for maximum output. Remove short from TP6 and adjust T8 for minimum output.

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2. Place scope probe at TP7 with a ground lead grounded near this point. Short TP8 to ground. Adjust T9 for maximum output. Remove short from TP8 and adjust T10 for minimum output.
3. Place scope probe between TP9 and ground. Adjust T11 for maximum indication. With a generator input of 10mv rms the output should be 0.2vpp minimum for the range of 10mc to 11mc.

1-1.099MC

- D. Disconnect generator. Place scope probe on the junction of L4 and R46. With the 100Hz switch in position 5, rotate the 10Hz switch from position 0 to position 9. The output should be 0.6vpp.

8 MC

- E. Rotate the 1KHz switch to a blank position. Place the scope probe between the cathode end of CR6 and ground. Adjust T12 for maximum output. Place scope probe at TP10. Adjust R54 for minimum output. Output at cathode of CR6 should be 0.5vpp minimum.

9-9.099MC

- F. Place scope probe between cathode side of CR4 and ground. Rotate the 1KHz switch to position 5. Adjust T13, T14, T15, T16 and T17 for maximum output. With the 1KHz switch in position 5, place the scope probe between TP14 and ground. Adjust R69 for minimum indication. Output at cathode of CR8 should be 0.5vpp minimum with the 100Hz switch in positions 0 through 9.

10-10.999MC

- G. Rotate the 1KHz switch to the blank position. Connect the signal generator through 220 ohm resistor to TP14 and connect the ground lead to ground. Make sure the signal generator lead is terminated with 47 ohms.

1. Place scope probe between TP14 and ground. Adjust signal generator for 10.4mc. Short TP15 to ground. Adjust T18 for maximum output. Remove short from TP15 and adjust T19 for minimum output.
2. Place scope probe between TP16 and ground. Short TP17 to ground. Adjust T20 for maximum output. Remove short from TP17. Adjust T21 for minimum output.

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3. Place scope probe between TP18 and ground. Adjust T22 for maximum output. With a generator input of 10mv rms in, the output should be 0.2vpp minimum for the range of 10mc to 11mc.

1.0-1.0999MC

H. Disconnect generator and rotate 1KHz switch to position 5. Place scope probe at Pin 15 and ground lead to Pin R. Rotate 100Hz & 10Hz switch from position 0 through position 9. Output should be 0.6vpp over a frequency variation from 1.0 to 1.0999mc.

I. J105 (Z105) Repeat A thru H using 10KHz & 1KHz switches

VII. PC-302 (J106) Final Mixer Card (Z106)

8 MC

A. Place scope probe from cathode end of CR2 to ground. Rotate 10KHz switch to the blank position. Rotate the 100KHz switch to position 5. Adjust T1 for maximum output. Place scope probe at TP1 and adjust R7 for minimum output. Place short between Pin H and Pin E. Output at cathode of CR2 should be 0.5vpp minimum.

9-9.0999MC

B. Rotate the 1KHz and 10KHz switches to position 5. Place the scope probe between the cathode of CR3 and ground. Adjust T2, T3, T4, T5, T6 and T13 for maximum output. Place scope probe between junction CR4 and CR3 and ground. Adjust R18 for minimum output. Output at cathode of CR3 should be 0.5vpp minimum.

10-10.9999MC

C. Rotate 10KHz switch to a blank position. Connect generator through a 220 ohm resistor to TP5. Connect ground lead to ground. Adjust signal generator for 10.4mc. Rotate 100KHz switch to position 4.

1. Connect probe to TP5. Short TP7 to ground. Adjust T7 for maximum output. Remove short from TP7 and adjust T8 for minimum output.

2. Place scope probe between TP8 and ground. Short TP9 to ground. Adjust T9 for maximum output. Remove short from TP9 and adjust T10 for minimum output.

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3. Remove PC-323, the translator card, from unit. Place a 47 ohm resistor between Pin 12 and 13 of J106. Place scope probe on TP10. Place short across secondary of T12. Rotate the 100KHz switch to position 5. Adjust generator for a frequency of 10.75mc. Adjust T11 for maximum output. Remove short from T12 and adjust T12 for minimum output.

4. Rotate 100KHz switch to position 4. Adjust generator frequency for 10.1mc. Short secondary of T12. Adjust C36 for maximum output. Remove short from T12 and adjust C48 for minimum output.

10-10.9999MC

5. Place scope across 47 ohm resistor. Set generator for 10.5mc 100mv rms out. With 100KHz, switch in position 4, output should be at least 0.2vpp with generator frequency of 10mc to 10.5mc. With the 100KHz switch in position 5, output should be at least 0.2vpp with a frequency input of 10.5mc to 11mc.

10-10.9999MC

D. Remove generator input and set 10KHz switch to position 5. Remove short from Pin H and E. Rotate 100KHz switch from position 0 to position 9. Output should be a minimum of 0.2vpp. Remove 47 ohm resistor from Pin 12 and 13. Replace PC-323 the translator card to J112.

VIII. PC-307 (J109) BFO and PC- (J108) IFO

A. Turn BFO and meter switches to BFO positions. Adjust C1 for maximum output indication on both meter and scope.

B. Adjust IFO in the same manner except use IFO switch positions and IFO circuit.

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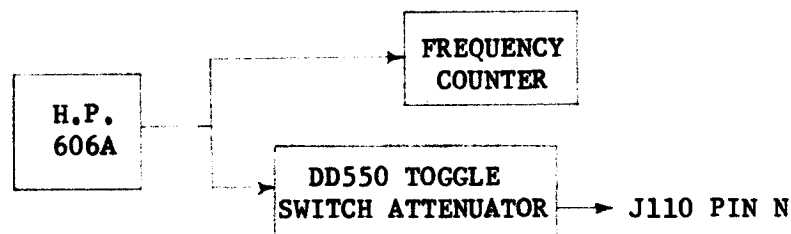
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IX. PC-301 Step Generator "A" (Z110)

- A. Remove both PC-304 cards (comb filters) from unit and set frequency selector switches on front panel to 03.0000mc.
- B. Place scope on collector of Q1 and adjust R1 for maximum level.
- C. Place scope at junction of CR1 and T1. Adjust T1 for maximum level.
- D. Place scope on collector of Q1 and adjust R1 for a level of 2vpp.
- E. Place scope at junction of CR1 and CR2. Adjust R7 for minimum level.
- F. Connect Hewlett-Packard Model 606/A signal generator to Pin N of J110. Set frequency to 1.05mc and output level to 100mvpp. Use following set-up:



- G. Place scope at Pin R of J110 and adjust R28 for a level of .4vpp.
- H. Connect short jumper across secondary of T3 and place Millivac Model MV-28B millivoltmeter at junction of R8 and C8.
- I. Adjust T2 for maximum level indication on meter.
- J. Remove jumper and adjust T3 for dip or minimum indication on meter.

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K. Repeat Steps H thru J using:

1. T5 and Q2 collector for Step H.
2. T4 for Step I.
3. T5 for Step J.

L. Repeat Steps H thru J using:

1. T7 and Q3 collector for Step H.
2. T6 for Step I.
3. T7 for Step J.

M. Place scope at Pin 5 of J110 and adjust T8 for maximum level indication.

N. Vary frequency of 606A generator from .8mc to 1.2mc. Output level on scope should be approximately 2vpp minimum at frequency of 13.2mc to 12.8mc correspondingly.

O. Adjust 606A generator to 1.55mc and change frequency selector on front panel to 07.0000mc.

P. Repeat Steps H thru J using:

1. T11 and junction of R9 and C9 for Step H.
2. T10 for Step I.
3. T11 for Step J.

Q. Repeat Steps H thru J using:

1. T13 and Q6 collector for Step H.
2. T12 for Step I.
3. T13 for Step J.

R. Repeat Steps H thru J using:

1. T15 and Q7 collector for Step H.
2. T14 for Step I.
3. T15 for Step J.

S. Repeat Steps M and N using:

1. T16 for Step M.
2. 1.3mc to 1.7mc and 12.7mc to 11.3mc for Step N.

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T. Remove 606A generator from Pin N of J110 and adjust frequency selector switches on front panel to 13.0000mc.

U. Repeat Steps B thru F using:

1. R61 and Q9 collector for Step B.
2. CR3 and T17 for Step C.
3. R61 and Q9 collector for Step D.
4. CR3 and CR4 junction and R67 for Step E.

V. Repeat Steps H thru J using:

1. T19 and junction of R68 and C80 for Step H.
2. T18 for Step I.
3. T19 for Step J.

W. Repeat Steps H thru J using:

1. T21 and Q10 collector for Step H.
2. T20 for Step I.
3. T21 for Step J.

X. Repeat Steps H thru J using:

1. T23 and Q11 collector for Step H.
2. T22 for Step I.
3. T23 for Step J.

Y. Repeat Steps M and N using:

1. Pin 4 of J110 and T24 for Step M.
2. .8mc to 1.2mc and 12.2mc to 11.8mc for Step N.

Z. Repeat Step O using 17.0000mc.

AA. Repeat Steps H thru J using:

1. T26 and junction of R69 and C81 for Step H.
2. T25 for Step I.
3. T26 for Step J.

BB. Repeat Steps H thru J using:

1. T28 and Q13 collector for Step H.
2. T27 for Step I.
3. T28 for Step J.

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TEST PROCEDURE FOR VOX()-7

CC. Repeat Steps H thru J using:

1. T30 and Q14 collector for Step H.
2. T29 for Step I.
3. T30 for Step J.

DD. Repeat Steps M and N using:

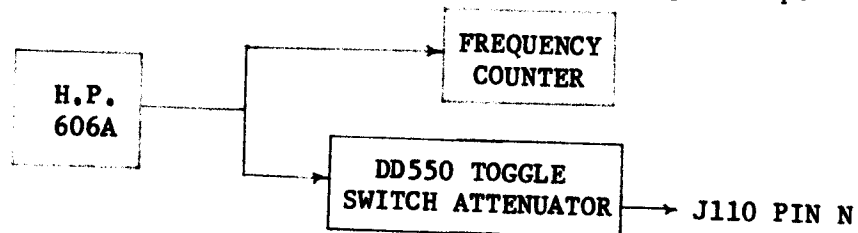
1. Pin 4 of J110 and T31 for Step M.
2. 1.3mc to 1.7mc and 11.7mc to 11.3mc for Step N.

EE. Replace PC-304 cards into unit.

X. PC-322 Step Generator "B" and PC-324 Step Generator "C" (Z111 & Z113)

PC-324 Part 1

- A. Remove both PC-304 cards (comb filters) from unit and set frequency selector switches on front panel to 28.0000mc.
- B. Place scope at collector fo Q14 and adjust R78 for maximum level.
- C. Place scope at junction of T11 and CR1 and adjust T11 for maximum level.
- D. Place scope at junction of C104 and R88 and adjust C101 and R84 alternately until minimum level is obtained.
- E. Place scope at collector of Q14 and adjust R78 for 2vpp level.
- F. Connect Hewlett-Packard Model 606A signal generator to Pin N of J110. Set frequency to 1.6mc and output level to 100mvpp. Use following set-up:



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- G. Connect short jumper across secondary of T13 and place Millivac Model MV-28B millivolt meter at junction of R88 and C104.
- H. Adjust T12 for maximum level indication on meter.
- I. Remove jumper and adjust T13 for dip or minimum indication on meter.
- J. Repeat Steps G thru I using:
1. T15 and Q15 collector for Step G.
 2. T14 for Step H.
 3. T15 for Step I.
- K. Repeat Steps G thru I using:
1. T17 and Q16 collector for Step G.
 2. T16 for Step H.
 3. T17 for Step I.
- L. Place scope at Pin N of J113 and adjust T18 for maximum level indication.
- M. Vary frequency of 606A generator from 1.4mc to 1.8mc. Output level on scope should be approximately .1vpp minimum at frequency of 10.6mc to 10.2mc correspondingly.
- N. Adjust 606A generator to 1.075mc with output level set at .4vpp and change frequency selector switches on front panel to 23.0000mc.
- O. Repeat Steps G thru I using:
1. T20 and junction of R87 and C103 for Step G.
 2. T19 for Step H.
 3. T20 for Step I.
- P. Repeat Steps G thru I using:
1. T22 and Q18 collector for Step G.
 2. T21 for Step H.
 3. T22 for Step I.

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Q. Repeat Steps G thru I using:

1. T24 and Q19 collector for Step G.
2. T23 for Step H.
3. T24 for Step I.

R. Repeat Steps L and M using:

1. T25 for Step L.
2. .8mc to 1.3mc and 11.2mc to 10.7mc for Step M.

S. Replace PC-304 cards into unit.

XI. PC-322 Step Generator "B" and PC-324 Step Generator "C" (Part 2)

A. Set frequency selector switches on front panel to 25.0000mc and place millivac Model MV-28B millivolt meter on Pin 1 of J111.

B. Adjust C3, C9 and C19 for maximum level on meter.

C. Vary frequency selector switches on front panel from 21.0000mc to 31.0000mc in 1mc steps. Minimum level indication on meter should be .04v rms. If necessary, stagger tune capacitors in Step B.

D. Repeat Steps A thru C using:

1. 15.0000mc and Pin 2 of J111 for Step A.
2. C25, C30 and C41 for Step B.
3. 11.0000mc to 20.0000mc for Step C.

E. Repeat Steps A thru C using:

1. 05.0000mc and Pin 3 of J111 for Step A.
2. C45, C49 and C62 for Step B.
3. 01.0000mc to 10.0000mc for Step C.

PC-324 Part 2

F. Repeat Steps A and B using:

1. 25.0000mc and Pin 1 -of J113 for Step A.
2. C10, C16, C22 and C28 for Step B.

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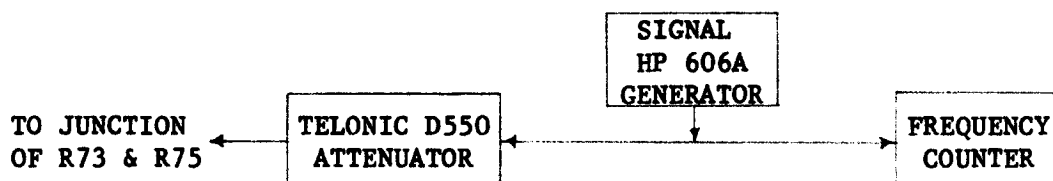
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- G. There should be a minimum of .4v rms on meter.
- H. Repeat Steps A and B using:
 - 1. 15.0000mc and Pin 1 of J113 for Step A.
 - 2. C39, C45, C51 and C56 for Step B.
- I. Repeat Step G.
- J. Repeat Steps A and B using:
 - 1. 0.50000mc and Pin 1 of J113 for Step A.
 - 2. C68, C75, C81 and C87 for Step B.
- K. Repeat Step G.

XII. PC-323 (J112) Translator Card (Z112)

- A. Remove RF output card PC-306 from unit. Set all frequency dials on front panel to blank positions and remove PC-324 step generator "C" card from unit.
- B. Connect Signal Generator 606A between junction of R73 and R75 and ground. Set-up as indicated below:



- C. With full attenuation on the toggle switch attenuator, adjust generator for 1 volt output at frequency of 13.3000mc. Set 100KHz switch on front panel to Position 3.
- D. Connect short jumper across secondary of T15 and Millivac MV-28B across primary of T13 observing proper ground. Set meter to .01 volt range.
- E. Remove attenuation from telonic attenuator until midscale reading is observed on meter. (Maintain reading on .01 scale of meter using attenuator for the following steps).
- F. Adjust T13 for peak indication on meter.

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- G. Remove jumper from T15 and adjust T15 for dip on meter.
- H. Connect short jumper across secondary of T17 and re-connect millivac meter across secondary of T16 observing proper ground.
- I. Change attenuation of telonic attenuator for mid-scale reading on meter and adjust T16 for peak reading on meter.
- J. Remove jumper from T17 and adjust T17 for dip on meter.
- K. Reconnect meter to TP7 and adjust for maximum indication on meter.
- L. Repeat Steps C thru K using:
 - 1. 13.8000mc and Position 8 for Step C.
 - 2. T20 and T19 respectively for Step D.
 - 3. T19 for Step F.
 - 4. T20 for Step G.
 - 5. T22 and T21 respectively for Step H.
 - 6. T21 for Step I.
 - 7. T22 for Step J.
 - 8. TP9 for Step K.
- M. Remove 606A generator and set frequency dials on front panel to 05.5000mc.
- N. Using scope check for 10.5mc signal at level of .2vpp minimum on J112 Pin H and for 3mc signal of approximately 90mvpp on J112 Pin D.
- O. Adjust R71 to mid-position and tune T12 for maximum indication on meter. (meter still on TP7 or TP9).
- P. Unsolder lead from J112 Pin D.
Connect Millivac meter to junction of R73 and R75 observing proper ground.
- Q. Adjust R71 for minimum indication on meter, and return all frequency dials on front panel to blank positions.

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- R. Using Millivac meter, check for 40mc signal at approximately 50mv rms level on J112 Pin B.
- S. Connect meter to T3 secondary, observing proper ground, and tune T1, T2 and T3 for maximum indication.
- T. Connect Lavoie LA-40 Spectrum Analyzer to TP7 and adjust R36 to one extreme position. Tune C20, C26 and C31 for maximum 120mc indication on analyzer.
- U. Connect Lavoie LA-40 analyzer to TP3 and adjust R36 for minimum 120mc indication. Reconnect lead to J112, Pin D and adjust frequency dials on front panel to 05.5000mc.
- V. Adjust C37 and C42 for maximum 133.5mc indication on analyzer.
- W. Connect analyzer to TP4 and adjust C48, C42 and C37 for maximum 133.5mc indication. Connect analyzer to TP5 and adjust C54, C48, C42 and C37 for maximum 133.5mc indication. Connect analyzer to TP6 and adjust C60, C54, C48, C42 and C37 for maximum 133.5mc indication.
- X. Replace PC-324 Step Generator "C" card and connect scope to J112 Pin R. There should be an output level of .2v minimum at a frequency corresponding to the front panel frequency controls.

XIII. PC-306 RF Output Card* (Z115)

- A. Before inserting card into unit, adjust R1, R2 and R4 for maximum resistance. Turn RF output control on front panel fully ccw. Re-check power supply voltages and readjust as per section II of Test Procedure.
- B. Turn meter switch to Q1 position. On RF output card, adjust R4 until meter on front panel reads in the center of the green region marked Q1.
- C. Turn meter switch on front panel to Q2 and adjust R2 until meter on front panel reads in the center of the green region marked Q2.

*NOTE: Do not attempt to adjust RF card without first having followed Section II F of Test Procedure

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- D. Turn meter switch on front panel to Q3 and adjust R1 until meter on front panel reads in the center of the green region Marked Q3.
- E. Connect 50 ohm load to RF output connector on rear panel of unit and a Hewlett-Packard Model 410 B VTVM across the load. Set frequency of unit to 29.9999mc. Place short jumper from Pin S of J115 to Pin B of J114.
- F. Connect scope to Pin B of J115. Turn RF control on front panel until scope reads 100 mvpp. Hewlett-Packard Meter should read 3.55V rms. Remove jumper and insert PC-325 into J114. Output should not change more than 0.2V.

XIV. PC-325 Output Filter Card (Optional Equipment) (Z114)

This card cannot be aligned in the unit. Use appropriate test jig.

- A. Plug filter card into test jig for PC-325.
- B. Connect 30VDC to test jig terminals and rotate selector switch to 20-33 position.
- C. Connect 608E HF signal generator to input connector and the 50 ohm termination for the Millivac MV28B, to the output connector of the test jig.
- D. Set signal generator output to 1.0 volt level and adjust Millivac to 1 volt range. Connect Millivac to its 50 ohm termination.
- E. Set signal generator to 31mc and tune C60 for lowest dip indication on Millivac meter.
- F. Set signal generator to 54mc and tune C61 for lowest dip indication on Millivac meter.
- G. Repeat Steps E and F twice. Replace 608E HF signal generator with 606A signal generator.
- H. Rotate selector switch to 12-20 position.

TMC SPECIFICATION

NO. S 1240

REV: 0

COMPILED:

FP

CHECKED: FP

APPD:

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TITLE: TEST PROCEDURE FOR VOX()-7

- I. Leaving 50 ohm termination on test jig output connector, connect Millivac meter (using probe tip) to junction of C49 and C50.
- J. Set signal generator to 44.5mc and tune C54 for lowest dip on Millivac meter.
- K. Connect Millivac meter to its 50 ohm termination and set signal generator to 24.5mc. Tune C51 for lowest dip on Millivac meter.
- L. Set signal generator to 28mc and tune C48 for lowest dip on Millivac meter.
- M. Repeat Steps I thru L twice.
- N. Repeat Steps H thru M using:
 1. (7-12) position for Step H.
 2. C38 and C39 for Step I.
 3. 25.5mc and C43 for Step J.
 4. 14.5mc and C40 for Step K.
 5. 16mc and C37 for Step L.
- O. Repeat Steps H thru M using:
 1. (4-7) position for Step H.
 2. C27 and C38 for Step I.
 3. 14mc and C32 for Step J.
 4. 8mc and C29 for Step K.
 5. 9mc and C26 for Step L.
- P. Rotate selector switch to 1-2.5 position. Set generator to 1.5mc. Note db level on Millivac.
- Q. Set generator to 3.0mc. Level should drop a minimum of 25db.
- R. Set generator to 5.0mc. Level should have dropped a minimum of 30db.
- S. Repeat Steps P thru R using:
 1. (2.5-4) position and 2.5mc for Step P.
 2. 5.0mc and 30db for Step Q.
 3. 8.0mc and 18db for Step R.

TMC SPECIFICATION

NO. S 1240

REV: \emptyset

COMPILED:

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CHECKED:

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APPD:

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TITLE:

TEST PROCEDURE FOR VOX()-7

T. Repeat Steps P thru R using:

1. (4-7) position and 4mc for Step P.
2. 8mc and 25db for Step Q.
3. 14mc and 30db for Step R.

U. Repeat Steps P thru R using:

1. (7-12) position and 7mc for Step P.
2. 14mc and 25db for Step Q.
3. 24mc and 30db for Step R.

V. Repeat Steps P thru R using:

1. (12-20) position and 12mc for Step P.
2. 24mc and 25db for Step Q.
3. 40mc and 25db for Step R.

W. Repeat Steps P thru R using:

1. (20-33) position and 20mc for Step P.
2. 40mc and 1db for Step Q.
3. 65mc and 8db for Step R.

TMC SPECIFICATION

NO. S 1240

REV: \emptyset

COMPILED:

FP

CHECKED:

FP

APPD:

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TITLE:

TEST PROCEDURE FOR VOX()-7

VOX()-7 FINAL TEST SPEC.

Preliminary Setting:

1. Check power supply voltages and readjust if necessary as per Part II of Test Procedure
2. All cards aligned and inserted.
3. RF control fully ccw.
4. Output frequency set to 29.9999mc.
5. Meter switch to Q1 position.

PART I With Lavoie Analyzer, neutralize spectrum generator card and comb filter cards as follows:

- A. Place PC-383 (J101) on extender card and connect Lavoie Model LA-40 spectrum analyzer to J101 Pin 8, and ground lead to Pin J. Adjust analyzer for 12mc display. Adjust C56 so that 11mc and 13mc are at least -80db from 12mc level.
- B. Set frequency on front panel to 0.99999mc and connect analyzer to J101 Pin P and ground lead to Pin R. Display 13mc. Adjust C80 so that 12mc and 14mc are at least -80db from 13mc level. Return frequency to 1.99999mc.
- C. Connect analyzer to J101 Pin S and ground lead to Pin 15. Display 8mc. Adjust C64 so that 7mc and 9mc are at least -80db from 8mc level.
- D. Place PC-383 into unit and place PC-304 comb filter "A" on extender card. Remove PC-304 comb filter "B" from unit. Connect analyzer to J102 Pin J and ground lead to Pin 8. Display 1mc. Adjust C68 so that 100Kc spurs above and below 1mc are at least -80db from 1mc level.
- E. Repeat Step D using:
1.2mc, Pin P and ground lead to Pin 13, and C69.
- F. Repeat Step D using:
1.4mc, Pin F and ground lead to Pin 5, and C70.

TMC SPECIFICATION

NO. s 1240

REV: \emptyset

COMPILED:

FP

CHECKED: FP

APPD:

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TITLE:

TEST PROCEDURE FOR VOX()-7

G. Repeat Step D using:

1.6mc, Pin L and ground lead to Pin 10, and C71.

H. Repeat Step D using:

1.8mc, Pin 4 and ground lead to Pin D, and C72.

I. Place RC-304 comb filter "B" on extender card and remove comb filter "A" from unit. Connect analyzer to J103 Pin J and ground lead to Pin 8. Display 1.1mc. Adjust C68 so that 100Kc spurs above and below 1.1mc are at least -80db from 1.1mc level.

J. Repeat Step I using:

1.3mc, Pin P and ground lead to Pin 13, and C69.

K. Repeat Step I using:

1.5mc, Pin F and ground lead to Pin 5, and C70.

L. Repeat Step I using:

1.7mc, Pin L and ground lead to Pin 10, and C71.

M. Repeat Step I using:

1.9mc, Pin 4 and ground lead to Pin D, and C72.

N. Front panel meter should read in the green region marked Q1.

O. Turn meter switch to Q2 position. Front panel meter should read in the green region marked Q2.

P. Turn meter switch to Q3 position. Front panel meter should read in the green region marked Q3.

Q. Connect RF VTVM Hewlett-Packard 410B to RF output jack across 47 ohm load resistor and adjust RF output control on front panel for 7.0 volts on VTVM.

R. Connect scope to output of unit. Displayed waveform should be sharp undistorted sine wave with no modulation signal appearing in any position of the time/cm dial of the scope.

TMC SPECIFICATION

NO. s 1240

REV:

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COMPILED:

FP

CHECKED:

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APPD:

SHEET 23

OF

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TITLE:

TEST PROCEDURE FOR VOX()-7

- S. Connect Lavoie spectrum analyzer (LA-40) to monitor jack on rear panel of unit and measure distortion at frequencies indicated in Test Data Sheet. Must be -60db or less.
- T. Fill out Test Data Sheet at end of procedure as per customer requirement and unit operation.

