DATE 8/[illegible]/62 SHEET 1 OF 8	TMC SPECIFICATION NO. S -587	A
NP COMPILED / N.P. CHECKED	TITLE: DDR-6E TEST PROCEDURE DDR-5	
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DDR-6E TEST PROCEDURE

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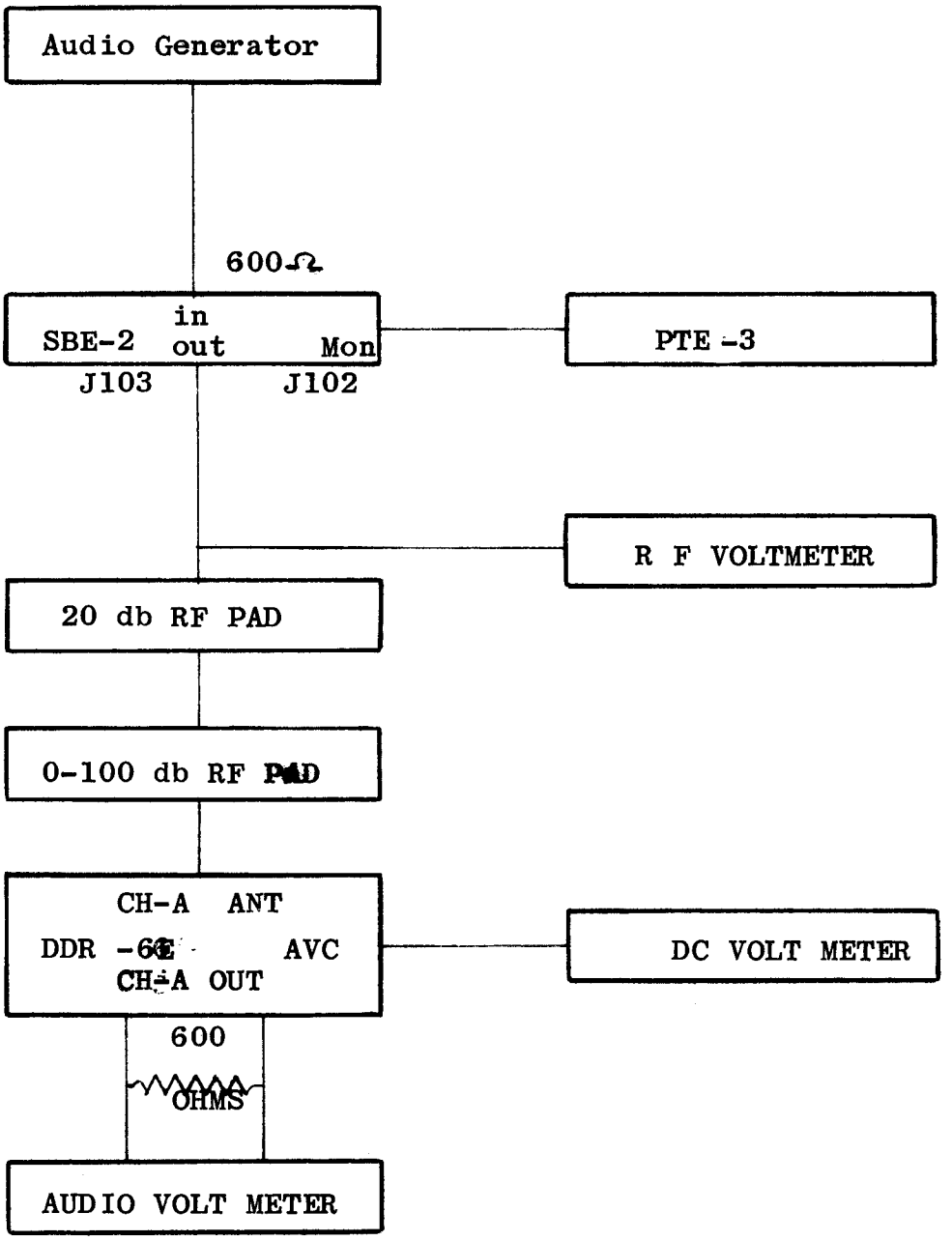
SET-UP Diagram



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TEST EQUIPMENT REQUIRED:

1. Audio Generator Hewlett Packard 200 AB (or equivalent)
2. AC VTVM, Heathkit AV-3 (or equivalent)
3. SBE-2, Sideband Exciter
4. PTE-3, RF Spectrum Analyzer
5. RF. VTVM Hewlett Packard 410B (or equivalent)
6. Frequency Counter Hewlett Packard 523C (or equivalent)
7. 20 DB 70 OHM RF PAD
8. DAVEN TYPE 651-73 PAD
9. SIMPSON 260 VOM (or equivalent)
10. 2270 XTAL
11. 3270 XTAL

PRELIMINARY:

Connect equipment as shown on set-up diagram

1. Connect AV-3 meter across terminals of Audio Generator and adjust for 0 db output at 1000 cps.
2. Adjust SBE-2 for 2 MC output, 0 db carrier attenuation, 1v output, modulation on USB.
3. Adjust 651-73 PAD for 100 db attenuation.
4. Set up controls on DDR-6E as follows:
   AFC-POWER Switch on
   CARRIER COMPENSATOR to O DB
   A.G.C. SELECTOR to MANUAL
   FADE ALARM LEVEL, fully counter clockwise

   MSR-6 POWER Switch on
   AUDIO GAIN, full clockwise
   BFO to ON
   BANDSPREAD Selector
   SIDEBAND Selector to U
   MANUAL/XTAL to XTAL

   GPR-90-RXD
   POWER switch on
   BFO to EXT

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R.F. SELECTIVITY to NON XTAL
AUDIO GAIN, fully counter clockwise
SEND/REC to REC
MANUAL/AVC to Manual
LIMITER/OFF to OFF

BFO/OFF to OFF
RF GAIN, full clockwise
RANGE SELECTOR to 1.4-3.3
MAIN TUNING to 2.0 MC
BANDSPREAD to 100 (LOG SCALE)

VOX-3 POWER SWITCH to ON
BEAT Switch off
METER Switch to HFO
HFO SWITCH to ON
IFO SWITCH, off
BFO Switch, off
MOF to 2455.000
BAND MCS to 2-4
Peak Tuning control & adjust OUTPUT for 1 volt out. (On all test frequencies).
Adjust MOF on VOX, ANTENNA TRIMMER and MAIN TUNING on GPR for maximum audio signal across the 600 ohm load.

I.

Turn XTAL/MANUAL switch on MSR-6 to MANUAL. Press AFC RESET button on AFC-1 and adjust BANDSPREAD control on MSR-6 for maximum carrier indication on AFC-1. BANDSPREAD control should be ± 1 dial division of. Adjust the AUDIO GAIN control on the MSR-6 for 0 db across the 600 ohm load. Remove the audio input to the SBE-2. The output across the 600 ohm load must fall at least 10 db. Record results in S+N/N column on test data sheet. Replace audio input to SBE-2.

II.

On AFC-1, set AGC SELECTOR to FAST position. On GPR, set MANUAL/AVC switch to AVC. Adjust RF GAIN control for 0 db audio output. Adjust DAVEN 651-73 PAD from 100 db to 0 db attenuation in 20 db steps (1 micro volt to 100,000 micro volts input to receiver). Record the AUDIO OUTPUT level and AVC voltage at each 20db step of attenuation. The audio output must not rise above + 10 db with ATTENUATOR set at 20 db (10,000 micro volts input to receiver). The AVC voltage must show a constant rise between 100 db attenuation and 20 db attenuation points. (1 micro volt to 10,000 micro volts input to receiver). Adjustment of AGC GAIN control in the AFC-1 is necessary if the above limitations are not met.

III.

Set RF PAD to 100 db ATTENUATION. Set CARRIER COMPENSATOR on AFC-1 and CARRIER INSERT ON SBE-2 from 0 db to -30 db in 10 db steps. Maintain the SBE-2 output level at 1v. Record the CARRIER LEVEL meter readings of the AFC-1 on the test data sheet.

IV.

Return CARRIER INSERT to 0 db on SBE-2. Maintain 1v output level. Set CARRIER COMPENSATOR on AFC-1 to 0 db. Vary audio input to SBE-2 from 350 cps to 3200 cps. Maintain constant level at output of SBE-2. Record the output level at 600 ohm load, on the test data sheet. The output level must remain between +3 db and -3 db.

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V.

Switch SBE-2 to LSB modulation and the SIDEBAND selector on the MSR-6 to L. Repeat step IV and record on test data sheet. Switch SBE-2 to USB modulation and the MSR-6 SIDEBAND selector to U.

VI.

Return audio input of SBE-2 to 1000 cps. Adjust CARRIER INSERT on SBE-2 until CARRIER LEVEL meter on AFC-1 reads approximately 5. Adjust FADE ALARM LEVEL to activate at this point. Return CARRIER INSERT to 0 db. Slowly vary the MSR-6 BANDSPREAD 1 KC higher and lower than its present setting. The AFC INDICATOR on the AFC-1 should move in the same direction as the BANDSPREAD is rotated. The FADE ALARM must remain off. Record on test data sheet.

VII.

Set the SEND/REC switch on the GPR to the SEND position for 60 seconds and then return to REC position. The FADE ALARM must go on during the 60 second period and then go off. Disconnect the signal input to the GPR.

VIII.

Set the BFO/OFF switches on both receivers to the BFO position. Using a FREQUENCY COUNTER, adjust the BFO PITCH CONTROLS on the GPR'S for an IF output between 454 and 456 KC, but exactly 10 cps difference in frequ ncy b tw en the

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two IF outputs. Connect both receiver IF OUTPUTS to the MSR-6 INPUT. Press the AFC RESET button, and adjust the MSR-6 BANDSPREAD for maximum CARRIER LEVEL indication. Set CARRIER COMPENSATOR for normal CARRIER LEVEL indication. Alternately set the BFO switches on the two receivers to the OFF position. The FADE ALARM and AFC INDICATOR should indicate that the AFC-1 "LOCKS ON" both IF signals. Record on test data sheet.

IX.

Return the IF connection to its normal condition. On the GPR, set the BFO/OFF switch to OFF, MANUAL/AVC switch to MANUAL , RANGE SELECTOR to .54-1.4. On the MSR-6, set the XTAL/MANUAL switch to XTAL, BFO switch to OFF, AVC switches to ON-SLOW. Set the LSP-7 control fully clockwise. Connect a short length of insulated wire to the GPR ANT terminal. Tune in a standard broadcast signal, and adjust GPR RF GAIN, and MSR-6 AUDIO GAIN for best intelligibility. It must be remembered that the MSR-6 has excessive selectivity for pleasing musical quality, but voice signals should be of good communications quality. Repeat steps I and II on all TEST FREQUENCIES, shown on test data sheet and record. Perform all tests on CHANNEL A and CHANNEL B equipment.

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THE TECHNICAL MATERIEL CORPORATION
MAMARONECK, N.Y.
DDR-6E TEST DATA SHEET #_____

SERIAL NO._____
MFG. NO._____ CHANNEL_____

II.

Test Freq.	2 MC	5MC	6MC	13MC	30 MC
VOX MOF	2455.000	2727.500	2488.750	2119.375	2122.1875
VOX BAND	2-4	4-8	8-16	16-32	32-64
GPR TUNING	2.0 MC	5.0 MC	6.0 MC	13.0 MC	30.0 MC
GPR BAND	1.4-3.3	3.3-5.4	5.4-9.6	9.6-17.8	17.8-31.5
S+N/N DB					
(100 db) AUDIO AVC	0 db	0 db	0 db	0 db	0 db
(80 db) AUDIO AVC					
(60 db) AUDIO AVC					
(40 db) AUDIO AVC					
(20 db) AUDIO AVC					
(0 db) AUDIO AVC					

III. CARRIER SUPPRESSION SBE-2 & CARRIER COMPENSATOR AFC-1

	0db	10 db	20 db	30 db
CARRIER LEVEL METER AFC-1				

IV. and V.

USB	BANDPASS		LSB	BANDPASS	
350 cps	1000 cps	3200 cps	350 cps	1000 cps	3200 cps
	0 db			0 db	

VI. DRIFT RANGE + 1 KC_____O.K.
VII. MEMORY HOLD 60 SEC._____O.K.
VIII. LOCK IN RANGE + 10 cps_____O.K.
IX. LSP-7 OPERATION _____O.K.
AM OPERATION _____O.K.

DATE_____

TESTER_____

TWO DATA SHEETS ARE REQUIRED. ONE FOR CHANNEL A & ONE FOR CHANNEL B.

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REVISION SHEET

THE TECHNICAL MATERIEL CORP.
MAMARONECK NEW YORK

S-587

MODEL DDR-6E PROJECT NO. ____________

DATE	REV.	PAGE	EMN #	DESCRIPTION	CHK.	APP.
8/30/62	A	ALL	7177	Completely revised & rewritten; Added Revision Sheet		[illegible]