

DATE 12/7/60
SH. 1 OF 7

TMC SPECIFICATION NO. S - 10056

COMPILED BY
R.W.T.

TITLE: ADDENDUM TO FFR TEST PROCEDURE

JOB

APPROVED *R.W.J.*

1 AC

ADDENDUM
TO
FFR TEST PROCEDURE

DATE 12/7/60
SH. 2 OF 7

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1. TEST EQUIPMENT REQUIRED

QTY.

- | | | |
|-----|---|--|
| 1.1 | 1 | Signal Generator. Measurements Corp. Model 82 |
| 1.2 | 2 | 6 db, 50 ohm pads. Measurements Corp. Model 80-ZH3 |
| 1.3 | 1 | Vacuum Tube Voltmeter. Heath kit, Model AV2 |
| 1.4 | 1 | Variac and AC Voltmeter panel. |
| 1.5 | 1 | T - junction. |
| 1.6 | 1 | Loose coupler. |
| 1.7 | 1 | Electronic Counter, Hewlett Packard Model 524D |
| 1.8 | 1 | Frequency Converter Unit, Hewlett Packard Model 525A |

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2. TEST INSTRUCTIONS

2.1. Overall Selectivity

2.1.1. Arrange the test apparatus as shown in Fig.I.

2.1.2. Set the FFR receiver controls as follows:

EXT.HFO/XTAL/HFO switch	- 'HFO'
TUNING	- mid-band
AUDIO GAIN	- maximum
BFO PITCH	- '0'
EXT.BFO/XTAL/BFO	- 'BFO'
AVC switch	- 'MANUAL'
NOISE LIMITER switch	- 'OFF'
BFO switch	- on

2.1.3. Set the signal generator to deliver an unmodulated carrier of 100k μ V at its output socket independent of frequency.
Tune the signal generator to the receiver frequency until a peak indication is obtained on the V.T.V.M. and adjust this indication to + 30 dbm by means of the RF gain control.

2.1.4. Detune the signal generator in each direction in turn and then re-tune until the output rises to + 24 dbm (ie. 6 db below the datum level) and measure the two frequencies at which this occurs, using the counter.

2.1.5. Repeat the measurements for output levels of + 20, + 15, and + 10 dbm.

2.1.6. Leave the tuning of the signal generator as it was for the latter of the two + 10 dbm readings through steps 2.1.7 and 2.1.8.

2.1.7. Switch off the receiver BFO and switch on the signal generator to 30% modulation at 1 kc/s.

2.1.8. Re-adjust the R.F. gain control until the output meter again reads + 10 dbm.

2.1.9. Continue the measurements as before for output levels of 0, -10, -20 and -30 dbm.

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2.1.10 The above measurements should show that the bandwidth between the 6 db down points (+ 24 dbm points) does not exceed 5 kc/s and the bandwidth between the 60 db down points (+ 30 dbm points) does not exceed 25 kc/s.

2.2. HFO stability with power supply variation.

2.2.1. Arrange the test apparatus as shown in Fig II

2.2.2. Set the receiver controls as follows:

EXT.HFO/XTAL/HFO switch	-	'HFO'
TUNING	-	mid-band
AUDIO GAIN	-	minimum
R.F. GAIN	-	minimum
AVC switch	-	'MANUAL'
BFO switch	-	'OFF'
NOISE LIMITER switch	-	'OFF'

2.2.3. Permit the receiver to warm up for one hour on a line voltage of 117V and then take six HFO frequency readings over a period of one minute. Compute the mean value and take this as the datum frequency.

2.2.4. Increase the line voltage by 10% to 128.7V and permit the HFO frequency to stabilize. The final frequency should not differ from the datum frequency by more than 0.1%.

2.2.5. Reduce the line voltage to 105.3V which is 10% below the nominal 117V. Permit the HFO to stabilize. The final frequency should not differ from the datum frequency by more the 0.1%.

2.3 Spurious Internal Signals

2.3.1. Connect the apparatus as shown in Fig III

2.3.2. Set the receiver controls as follows:

EXT HFO/XTAL/HFO switch	-	'HFO'
AUDIO GAIN	-	maximum
R.F. GAIN	-	maximum
AVC switch	-	'MANUAL'
BFO switch	-	on
EXT BFO/XTAL/BFO switch	-	'BFO'
BFO pitch	-	clockwise two divisions

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- 2.3.3. Short-circuit the antenna input terminals of the receiver and terminate the external I.F. cathode follower unit in 50 ohms.
- 2.3.4. Slowly tune the receiver across its entire band. Spurious signals should not exceed noise level by more than 6 db.

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3.

ARRANGEMENT OF APPARATUS

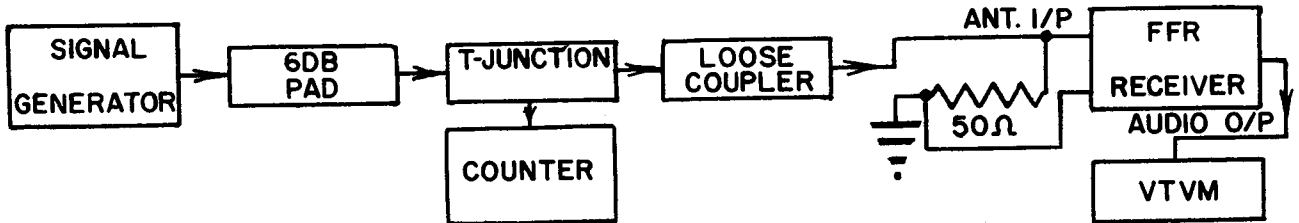


Fig. I

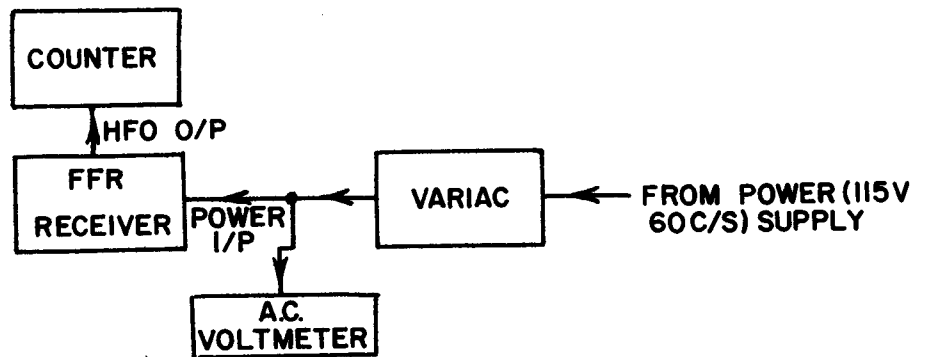


Fig. II



Fig. III