

# INSTRUCTION

# MANUAL

## MODIFICATION INSERT

Serial Number \_\_\_\_\_

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**L.O. GENERATOR**

**067-0976-99**

(COMPANY CONFIDENTIAL)

L.O. GENERATOR  
FOR TDC1 OR TDC2

GENERAL INFORMATION

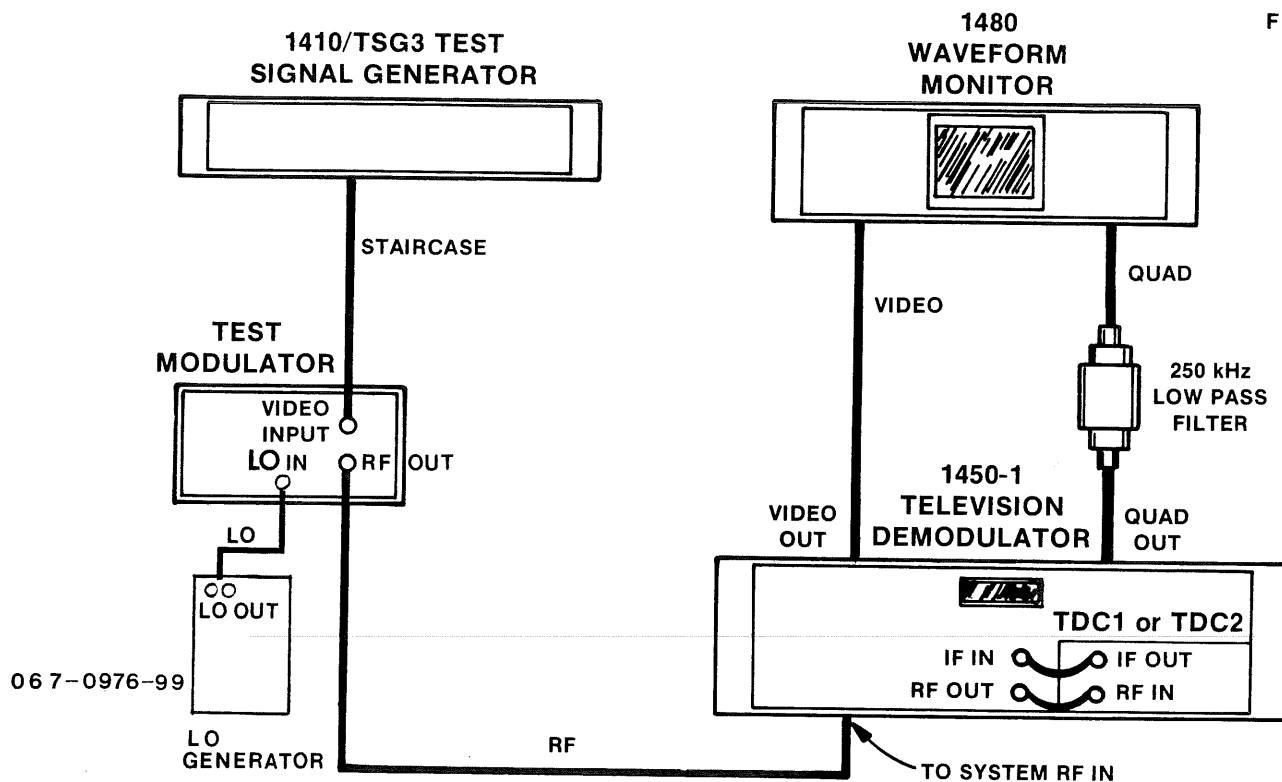
The L.O. Generator is used to provide a L.O. source to the Test Modulator so that performance checks, and the calibration procedure (including Phase Noise) on the 1450 can be made.

The L.O. Generator has nine separate channel boards located inside to provide U.S.A. channel 2,6,8,13,W,14,44,69, and 83 L.O. outputs. By changing the crystals on the individual channel boards, the L.O. Generator can provide further L.O. output signals so that a variety of I.F. options can be checked out. Further on in the manual there is a chart that states the frequency of the crystals to be used for specific I.F. options.

The L.O. Generator has two front panel output jacks, one for VHF frequencies (J30), the other one for UHF frequencies (J31). Only one channel board is enabled at a time. When one channel is selected, the other eight channel boards are disabled. The front panel switch will determine which channel is selected and which output jack that should be connected up to the 1450 Test Modulator. When the front panel switch is in either of the off positions all nine channel boards will be disabled, and there will be no output from the L.O. Generator. Switch positions 1 through 5 will enable channels 2,6,8,13, and W (output jack J30 is used). Switch positions 6 through 9 will enable channels 14,44,69, and 83 (output jack J31 is used). Working in conjunction with the front panel switch is a row of nine "LEDS", which will indicate which channel has been selected.

L.O. GENERATOR  
TEST SETUP FOR MEASURING LOW FREQUENCY PHASE NOISE

FIG 4-9



**Check Low Frequency Phase Noise ( $0.5^\circ$  rms or less)**

- a. Refer to Fig. 4-9. Drive the test modulator with a linearity staircase signal from a video test signal generator such as a TEKTRONIX 1410/TSG3/SPG combination. Connect the test modulator rf output to the 1450-1 (SYSTEM) rf input, and make the appropriate front-panel connections on the 1450-1 to complete the SYSTEM.
- b. Connect the 1450-1 Quadrature output to a 1480 Waveform Monitor External Horiz In through a 250-kHz Low-Pass Filter (Tektronix Part No. 015-0532-00), and the Video Output to the 1480 A Input. Install an external phase graticule (Tektronix Part No. 331-0393-12) in the 1480 Waveform Monitor.
- c. Set the 1480 Response switch to Low Pass, Input to A DC CPL'D, Magnifier to X25 ( $2^\circ$ ), and Display to Ext.
- d. Tune the down converter to the specific channel to be tested, and phase-lock.
- e. Check that the 1480 display does not have any peak-to-peak swings of more than 2.5 major divisions, that its rms position does not move more than one half of a major division.

## ORDERING, REPLACING COILS

The following coils will, in most cases, have to be modified before being installed on boards: L72, L76, L82, L87. Under the description column of the parts list for each channel, the information will say: 3TLH, 2TRH, 1TLH, etc. The coil ordered in most cases will have to have a turn(s) cut off before being installed on the board. If a coil with wrong number of turns is installed on a board, the board will not calibrate or operate properly.

NOTE: If a coil in the tank circuits is changed, the board will have to be recalibrated.

CRYSTALS FOR IF OPTIONS

<u>MULTIPLIER</u>	<u>CHANNEL</u>	<u>37.0</u>	<u>38.9</u>	<u>45.75</u>
1	2	92.25 MHZ	94.15 MHZ	101 MHZ
1	6	120.25 MHZ	122.15 MHZ	129 -MHZ
3	8	72.75 MHZ	73.383 MHZ	75.667 MHZ
3	13	82.75 MHZ	83.383 MHZ	85.667 MHZ
3	W	110.75 MHZ	111.383 MHZ	113.667 MHZ
6	14	84.708 MHZ	85.025 MHZ	86.167 MHZ
6	44	114.708 MHZ	115.025 MHZ	116.167 MHZ
9	69	93.139 MHZ	93.35 MHZ	94.111 MHZ
9	83	102.472 MHZ	102.683 MHZ	103.444 MHZ

L.O. GENERATOR  
PARTS LIST FOR CHASSIS

<u>COMPONENT NO.</u>	<u>PART NO.</u>	<u>NAME &amp; DESCRIPTION</u>
DS101	150-1055-00	LED, GREEN, PANEL MT
DS102	150-1055-00	LED, GREEN, PANEL MT
DS103	150-1055-00	LED, GREEN, PANEL MT
DS104	150-1055-00	LED, GREEN, PANEL MT
DS105	150-1055-00	LED, GREEN, PANEL MT
DS106	150-1055-00	LED, GREEN, PANEL MT
DS107	150-1055-00	LED, GREEN, PANEL MT
DS108	150-1055-00	LED, GREEN, PANEL MT
DS109	150-1055-00	LED, GREEN, PANEL MT
J30	131-2136-00	SMA, FEMALE, CABLE END
S1	260-1919-00	SWITCH, 11 POSITION

MISC.

<u>QTY.</u>	<u>PART NO.</u>	<u>NAME &amp; DESCRIPTION</u>
1	105-0718-01	BAR, LATCH RELEASE
1	105-0719-00	LATCH, RETAINING
3	211-0193-00	172X1/8 PAN HEAD
4	211-0214-00	SCREW, 4-40X1/4, TRUSSHEAD
4	213-0192-00	SCREW, 6-32X1/2, FALISTER HEAD, THREAD FORMING
4	213-0227-00	SCREW, 6-32X1/2, FLAT HEAD, THREAD FORMING
1	366-1207-00	KNOB, FOR 1/8" SHAFT
1	366-1690-00	KNOB, LATCH
2	352-0169-00	BLK, HOLDER, TERMINAL CONN.
2	352-0169-01	BRN, HOLDER, TERMINAL CONN.
2	352-0169-02	RED, HOLDER, TERMINAL CONN.
2	352-0169-03	ORA, HOLDER, TERMINAL CONN.
2	352-0169-04	YEL, HOLDER, TERMINAL CONN.
2	352-0169-05	GRN, HOLDER, TERMINAL CONN.
2	352-0169-06	BLU, HOLDER, TERMINAL CONN.
2	352-0169-07	VIO, HOLDER, TERMINAL CONN.
2	352-0169-08	GRY, HOLDER, TERMINAL CONN.
2	352-0169-09	WH, HOLDER, TERMINAL CONN.
2	352-0171-01	BRN, HOLDER, TERMINAL CONN.
2	352-0171-02	RED, HOLDER, TERMINAL CONN.
2	352-0171-03	ORA, HOLDER, TERMINAL CONN.
2	352-0171-04	YEL, HOLDER, TERMINAL CONN.
2	352-0171-05	GRN, HOLDER, TERMINAL CONN.
2	352-0171-06	BLU, HOLDER, TERMINAL CONN.
2	352-0171-07	VIO, HOLDER, TERMINAL CONN.
2	352-0171-08	GRY, HOLDER, TERMINAL CONN.
2	352-0171-09	WH, HOLDER, TERMINAL CONN.

L.O. GENERATOR  
PARTS LIST FOR CHASSIS (CONT.)

THE FOLLOWING CHASSIS PARTS WILL HAVE TO BE ORDERED DIRECT FROM FACTORY.  
WHEN ORDERING, INCLUDE ALL INFORMATION.

<u>QTY.</u>	<u>DESCRIPTION</u>	<u>TO ORDER</u>
1	FRONT PANEL	SHEET 1, 2-1450-0099
1	FRONT SUB PANEL	SHEET 2, 2-1450-0099
1	REAR PANEL	SHEET 7, 2-000-0091
1	FRAME SECTION	SHEET 3, 2-1450-0099
1	FRAME SECTION	SHEET 4, 2-1450-0099
1	WINDOW	SHEET 7, 2-1450-0099
2	MAIN SHIELD	SHEET 5, 2-1450-0099 (CM2878)
10	MAIN SHIELD DIVIDERS	SHEET 5, 2-1450-0099 (CM2879)
9	TOP R.F. SHIELD	CM2992B

PACKING MATERIAL

<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	004-1390-00	FOAM
1	004-1674-00	BOX
1	004-1176-01	INSIDE BOX
1	006-2395-02	PLASTIC BAG