

Self test

44. Pressing the MODE key arrowed by SELF TEST causes the instrument to implement the self test procedures. At the end of each of the three tests either TEST PASSED or TEST FAILED appears against the test number. In the case of a failed test, the error code for the failure may be obtained using the procedure given under 'Test routines' below. At any time, the self test may be terminated by pressing the key arrowed by ABORT. At the end of the tests the instrument automatically returns to the HELP menu.

TEST ROUTINES

45. When TEST FAILED appears during SELF TEST, the error code defining the source of error may be obtained as follows:-

(1) Press HELP then the key arrowed by CHANGE PARAMETERS. The CHANGE PARAMETERS menu is displayed.

(2) Press the TX key. The SELF TEST menu is displayed.

(3) Press the key arrowed by NEXT TEST to start the testing process. During each test, ACTIVE is displayed.

(4) When each test is completed, the test number is shown together with PASS or FAIL. If failure has occurred, the appropriate error code additionally appears. For the meaning of the code, refer to Tables 2a to 2c.

(5) To single step to the next test, press the key again (causing ACTIVE to reappear) or - to cause a sequence of tests - press the key repeatedly. Test numbers range from 1.0 to 3.3 in steps of 0.1. Selecting NEXT TEST following test 3.3 will restart the test sequence from 1.0.

TABLE 2a ERROR CODES FOR TEST 1:
CHECK RF COUNTER AGAINST SIG. GEN. FREQUENCY

<u>CODE</u> (hex.)	
10	- Test passed
11	- FREQ 0* fails - HIGH FREQ**
12	- FREQ 0 fails - LOW FREQ
13	- FREQ 1 fails - HIGH FREQ
14	- FREQ 1 fails - LOW FREQ
15	- FREQ 2 fails - HIGH FREQ
16	- FREQ 2 fails - LOW FREQ
17	- FREQ 3 fails - HIGH FREQ
18	- FREQ 3 fails - LOW FREQ
19	- FREQ 4 fails - HIGH FREQ
1A	- FREQ 4 fails - LOW FREQ
1B	- Frequency read fails
FREQ 0 = 20 MHz (sig. gen. mixed range)	
FREQ 1 = 111 MHz (sig. gen. divided range)	
*	FREQ 2 = 218 MHz (sig. gen oscillator 1)
FREQ 3 = 340 MHz (sig. gen oscillator 2)	
FREQ 4 = 480 MHz (sig. gen oscillator 3)	
HIGH FREQ:- Measured frequency above that	
set by more than 50 Hz.	
**	LOW FREQ:- Measured frequency below that
set by more than 50 Hz.	

TABLE 2b ERROR CODES FOR TEST 2:
CHECK RF POWER METER AGAINST SIG. GEN.

CODE (hex.)				
20	-	Test passed		
21	-	FREQ 0* fails	-	LOW POWER**
22	-	FREQ 0 fails	-	HIGH POWER
23	-	FREQ 1 fails	-	LOW POWER
24	-	FREQ 1 fails	-	HIGH POWER
25	-	FREQ 2 fails	-	LOW POWER
26	-	FREQ 2 fails	-	HIGH POWER
27	-	FREQ 3 fails	-	LOW POWER
28	-	FREQ 3 fails	-	HIGH POWER
			Sig. gen. setting	Power meter reading
		FREQ 0 = 300 MHz	0.25 mW	79 mW
*		FREQ 1 = 849 MHz	0.25 mW	79 mW
		FREQ 2 = 20 MHz	0.25 mW	79 mW
		FREQ 3 = 20 MHz	0.125 mW	40 mW
Note ...				
The difference in setting and reading is due to 1 port duplex selection for the test.				
LOW POWER:- Measured power more than 2 dB below that set by r.f. level routine.				
**	HIGH POWER:- Measured power more than 2 dB above that set by r.f. level routine.			

TABLE 2c ERROR CODES FOR TEST 3:
CHECK MODULATION FREQUENCY AND LEVEL

<u>CODE (hex.)</u>	
30	Test passed
	<u>Test 3.0 - Mod. freq. 400 Hz, level 5 kHz</u>
31	Mod. freq. fails
33	Mod. level fails - low
34	Mod. level fails - high
	<u>Test 3.1 - Mod. freq. 1 kHz, level 5 kHz</u>
32	Mod. freq. fails
35	Mod. level fails - low
36	Mod. level fails - high
	<u>Test 3.2 - Mod. freq. 1 kHz, level 50%</u>
37	Mod. level fails - low
38	Mod. level fails - high
	<u>Test 3.3 - Mod. freq. 1 kHz, level 5 rads.</u>
39	Mod. level fails - low
3A	Mod. level fails - high
	<u>Fails mod. freq.</u> - Measured freq. more than 1 Hz away from setting.
	<u>Fails mod. level</u> - Measured mod. level more than 10% away from setting.
	RF frequency set to 210 MHz.