

A.1.1 Enter Diagnostics Mode

To enter Diagnostics Mode, turn the test set off.
Depress the "LEVEL" button and hold.
Turn the Test Set ON.
Release "LEVEL" button.

A.1.2 Exit Diagnostics Mode

In general, diagnostics mode can be exited by RESET TO NORMAL MODE (see section A.2.7) (not available in Version 1.1) or by switching the test set off and on again. The notable exception is AUTO-SET-LEVEL CALIBRATE (Section A.2.5) which can ONLY be exited by switching the test set off and on again.

A.1.3 Diagnostics Selection

The required diagnostic is selected using the main front panel push buttons. These are arranged in numerical order including currently unused pushbutton location as shown in Figure A.1.1.

Following entry to DIAGNOSTICS MODE, one of these pushbuttons is depressed to select the DIAGNOSTICS GROUP, then another is depressed to select a TEST within the group. Thus DIAGNOSTICS are designated as follows:-

Select DIAGNOSTIC GROUP X TEST Y.

For example to select DIAGNOSTIC GROUP 2 TEST 3 first enter diagnostics mode, then depress button 2 (THD+N) to enter group 2, followed by button 3 (IMD) to reach TEST 3.

A listing of tests available from various software versions is shown in paragraph A.1.5 with detailed explanation in the following paragraphs.

A.1.4 Leaving a Particular Test

To leave most diagnostics tests depress any button 9-16.

To leave GROUP 1 TEST 05 it is necessary to turn off the test set and restart.

To leave GROUP 1 TEST 02, push buttons 18 and 20 (PPM and dB NORM) simultaneously.

A.1.5 List of Diagnostics

GROUP	TEST	NAME	SOFTWARE VERSION			
			1.1	2.0	4.2	4.3
1	1	Strobe microcomputer outputs	X	X	X	X
1	2	Panel pushbutton test	X	X	X	X
1	3	Calibrate spare rectifier	X	X	X	X
1	4	ADC calibrate	X	X	X	X
1	5	Auto-Set-Level calibrate	X	X	X	X
1	6	N/A				
1	7	Reset to normal mode		X	X	X
1	8	W & F osc 3.150 kHz enable		X	X	X
2	1	W & F osc 3.000 kHz enable		X	X	X
2	2	IMD 1 osc 60 Hz + 7 kHz 4:1		X	X	X
2	3	IMD 2 osc 250 Hz + 8 kHz 4:1		X	X	X
2	4	IMD 3 osc 14 kHz + 15 kHz 1:1		X	X	X
2	5	IMD 4 osc 15 k sine + 3k18 square		X	X	X
2	6	N/A				
2	7	IMD 5 osc 15 k sine + 3k18 square		X	X	X
2	8	Show version number			X	X

X = Available.

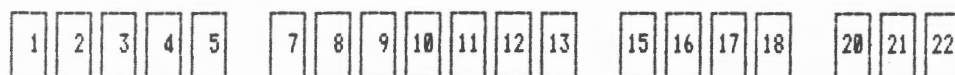


Figure A.1.1 Push button Numbering for Diagnostics

A.2 Diagnostic Tests - Short Description

A.2.1 Group 1 Test 1 - Strobe Microcomputer Outputs

This test strobes each output line of each of the output latches between addresses 14 hex and 1E hex inclusive once every 16.3 ms. It is used to confirm correct operation of the microcomputer system and latches. It can also be used to confirm the connections through the motherboard to PCB subsystems.

Connect a 'scope between the output ports and ground to see repeated single short pulses at logic levels of +5 V and 0 V.

A.2.2 Group 1 Test 2 - Panel Pushbutton Test

Selecting this test allows checking on most panel pushbuttons. Depressing a button illuminates the LED above it momentarily.

To end the test, depress buttons 18 and 20 (PPM and dB NORM) simultaneously.

A.2.3 Group 1 Test 3 - Calibrate Spare Rectifier Input

See section 13 of this manual.

This is used to set system gain for option sub-systems.

A.2.4 Group 1 Test 4 - ADC Calibrate

See section 3 of this manual.

This is used to set up the A/D converter gain and offset on the microcomputer PCB.

A.2.5 Group 1 Test 5 - Auto-Set-Level Calibrate

See section 6 of this manual.

This is used to set the time constant of the ASL rectifier system.

To end the test, it is necessary to turn off the test set and restart.

A.2.6 Group 1 Test 6 - N/A

Not available on MJS401D.

A.2.7 Group 1 Test 7 - Reset To Normal Mode

Returns from "DIAGNOSTICS" to normal test set operation.

A.2.8 Group 1 Test 8 and Group 2 Test 1 - W & F Osc Enable, 3k15 Hz and 3k00 Hz Respectively

Used to test the MD404B Wow and Flutter oscillator function.

A.2.9 Group 2 Test 2 - 5, 7 IMD Osc

Used to test the function of the various IMD/DIM oscillator twin-tone outputs.

A.2.10 Group 2 Test 8 - Show Version Number

Shows the version of the operating software in the display.