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Description This document relates to Signa 8x systems with ACGD Gradients. This test is the primary means for functionally testing the Digital Tuning. This test uncovers other problems in the Gradient Driver subsystem, but focuses on the Digital Tuning hardware on the Gradient Processor (GP) Board.

1- INTRODUCTION

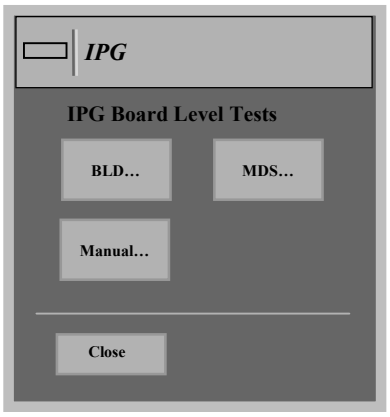
The Digital Tuning Test is invoked via the Diagnostics Menu found on the Service Desktop. This button is available only if the `MRconfig.cfg` file indicates digiTuningBoard = "yes". Normal calibration (ECMT, Grafidy, etc.) must be performed prior to executing this test.

2- INVOKING THE DIGITAL TUNING TEST

1. Click on **[Diagnostics]** on the Service Desktop; then click **[Start]**.

2. On the Diagnostics Main Menu Screen, click on **IPG** board level box.

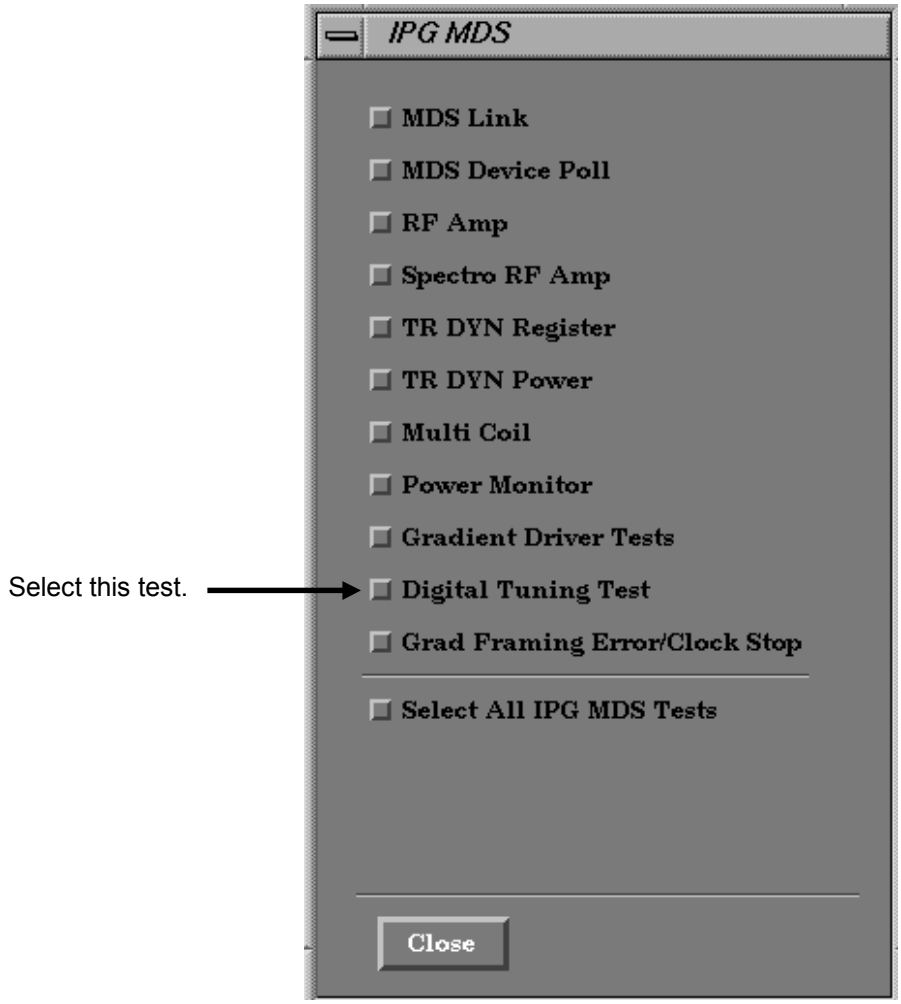
3. On the IPG menu click on **[MDS...]** (see Illustration 2-1).



IPG SCREEN
ILLUSTRATION 2-1

4. On the IPG MDS screen select **[Digital Tuning Test]** (see Illustration 2-2) Then click on **[Close]** for each menu screen.

5. Click on **[Run Diags]** to start the diagnostic.



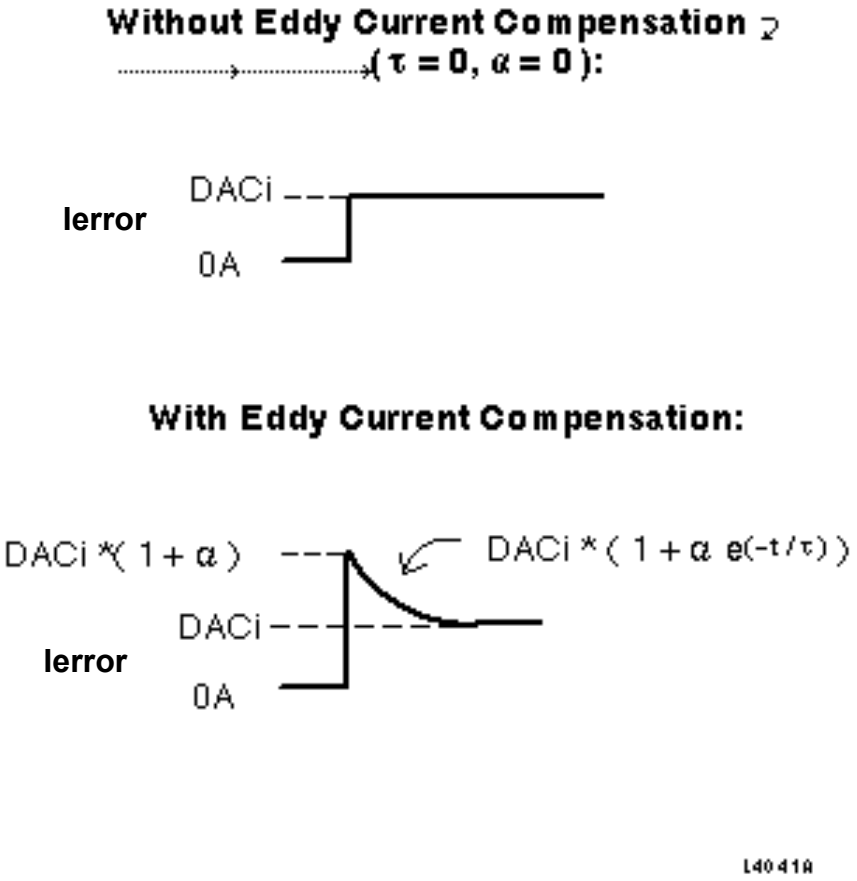
IPG MDS SCREEN
ILLUSTRATION 2-2

3- DIAGNOSTIC TEST RESULTS

Once the diagnostics have completed, data will appear indicating the faults or test failures that have occurred, if any. If a failure has occurred, remember to use the system error log to identify a recommended service strategy.

4- TEST DESCRIPTION

By cycling through a series of Digital Tuning time constants (t) and gains (a), the exponential response of the ACGD System *Ierror* signal, is examined. Illustration 4-1 shows the Exponential Response of the *Ierror* signal with and without eddy current compensation.



EXPONENTIAL RESPONSE FOR EDDY CURRENT COMPENSATION
ILLUSTRATION 4-1

The overall time constant (t) is actually composed of the summation of seven time constants. Together, these time constants provide greater resolution and overall range. Likewise, the overall gain (a) is actually composed of the summation of seven gains. Together, these gains also provide greater resolution and range.

REVISION HISTORY

REV	DATE	AUTHOR	PRIMARY REASONS FOR CHANGE
A	Sept. 18, 2000	K.Keshena	Preliminary release.
0	Oct. 20, 2000	K. Keshena	Initial release.