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-	Initial release	R M Leier	October 23, 2008

STANDARD OSCILLATOR, FILTER AND MULTIPLIER DRIVER ADJUSTMENT PROCEDURE



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Note: Before you turn on this precision microwave product, be sure you have connected the power supplies correctly and have mounted the YIG device on an adequate heat sink. Frequency calibration may be required prior to system use. See installation instructions (document # 201.201) and appropriate outline drawing before proceeding with any calibration !



Description: This procedure has been developed to help the user reset the frequency end points (limits) on integrated driver products. The need for this procedure shall be determined by the user depending on the wire sizes and length of wires used by the user in any wire harness that will be connected to the input DC connector of the YIG device in question.

From time to time, differences in ground potential between the final test station and where the product to be used, will generate a slight offset in the frequency end points for a given YIG device from the factory settings. Every effort has been made to minimize these effects, but should the need arise for the user to compensate for any differences, this procedure will be required.

The recommended wire sizes to be used in any wire harness that will mate with the input DC connector for all Micro Lambda Wireless drivers are:

- 1) DC supply wires – 20-22 gauge
- 2) Ground wires – 20-22 gauge
- 3) All other wires – 24-26 gauge

Integrated Drivers:

Digital Driver (12, 14 and 16 bit TTL) : Models PD, PG, MD & MG
Adjustment cover plate found mounted on top of the driver housing. Figure 1.

Serial Digital Driver (16 bit) : Models SD, SG, MS, MF
Adjustment cover plate found mounted on top of the driver housing. Figure 1.

Analog Driver (0 to +10 Volts) : Models PA, PF
Adjustment plate found mounted on the side of the driver housing directly above the 9 Pin DC input connector. Figure 2

Digital Driver (12, 14 and 16 bit TTL) : Models CD & CG (1" Cube and Mini's)
Adjustment pots found mounted on top of uncovered PC Board. Figure 3a & 3b.

Serial Digital Driver (16 bit) : Models SD & SG (1" Cube and Mini's)
Adjustment pots found mounted on top of Uncovered PC Board. Figure 3a & 3b.

Analog Driver (0 to +10 Volts) : Models CA & CF (1" Cube and Mini's)
Adjustment pots found mounted on top of uncovered PC Board. Figure 4a & 4b.

Digital Driver (12, 14 and 16 bit TTL) & (16 Bit Serial)

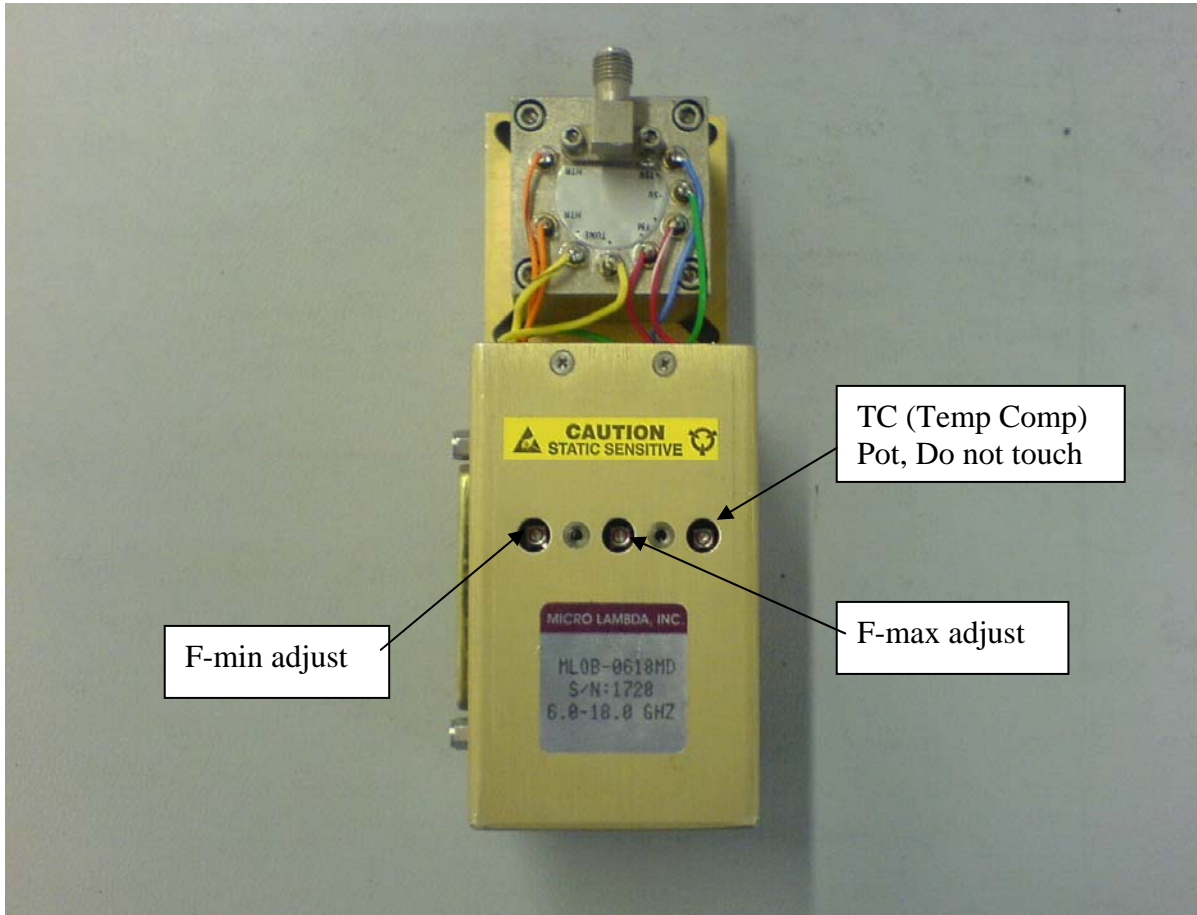


Figure 1

Analog Driver (0 to +10 Volts):

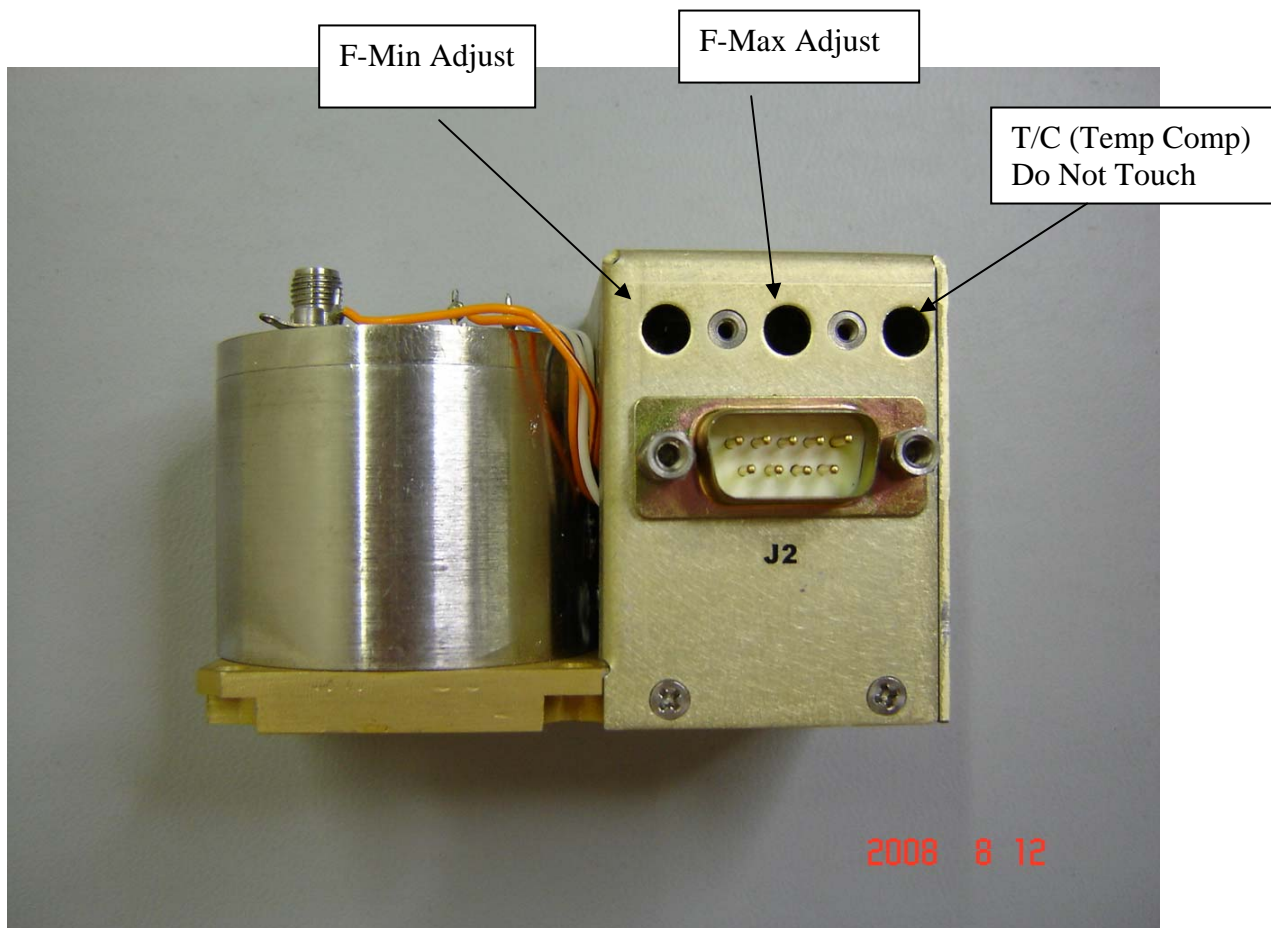


Figure 2

Digital Driver (12, 14 and 16 bit TTL) & (16 bit Serial) 1” Cubes:

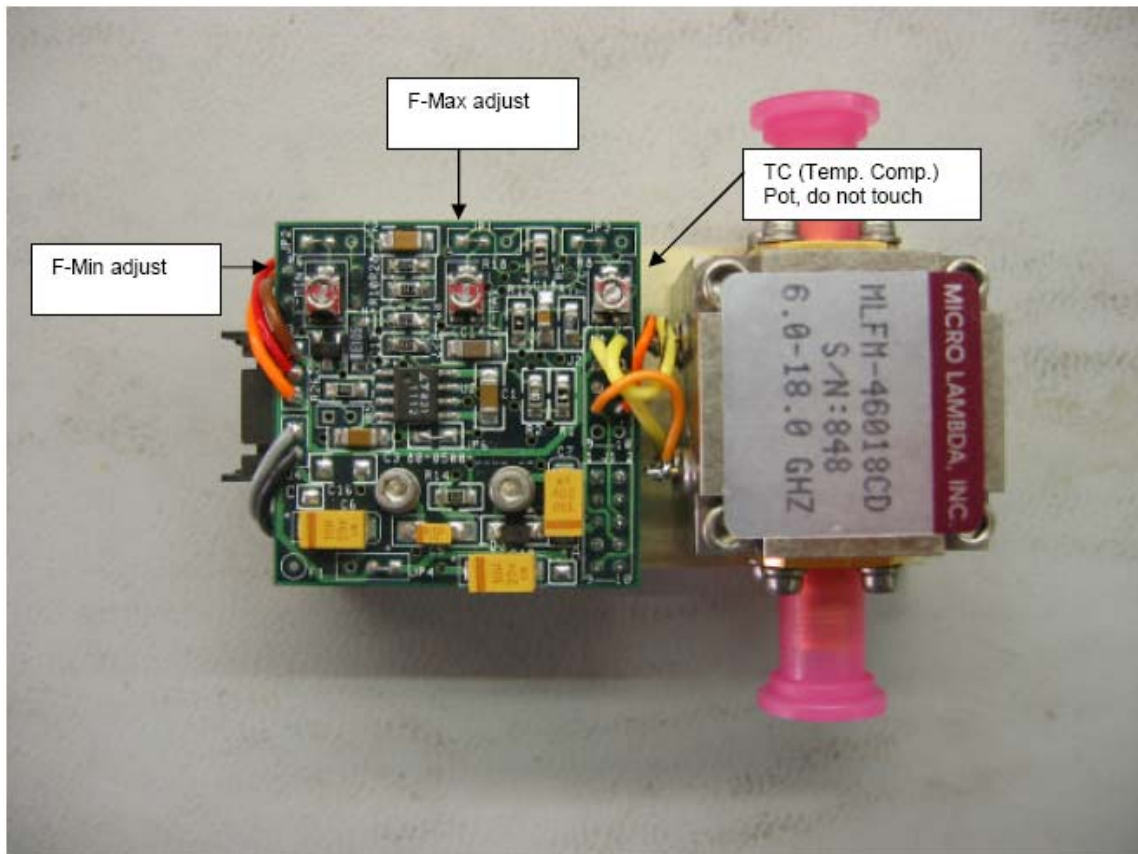


Figure 3a

Digital Driver (12, 14 & 16 bit TTL) & (16 bit Serial) Mini's:

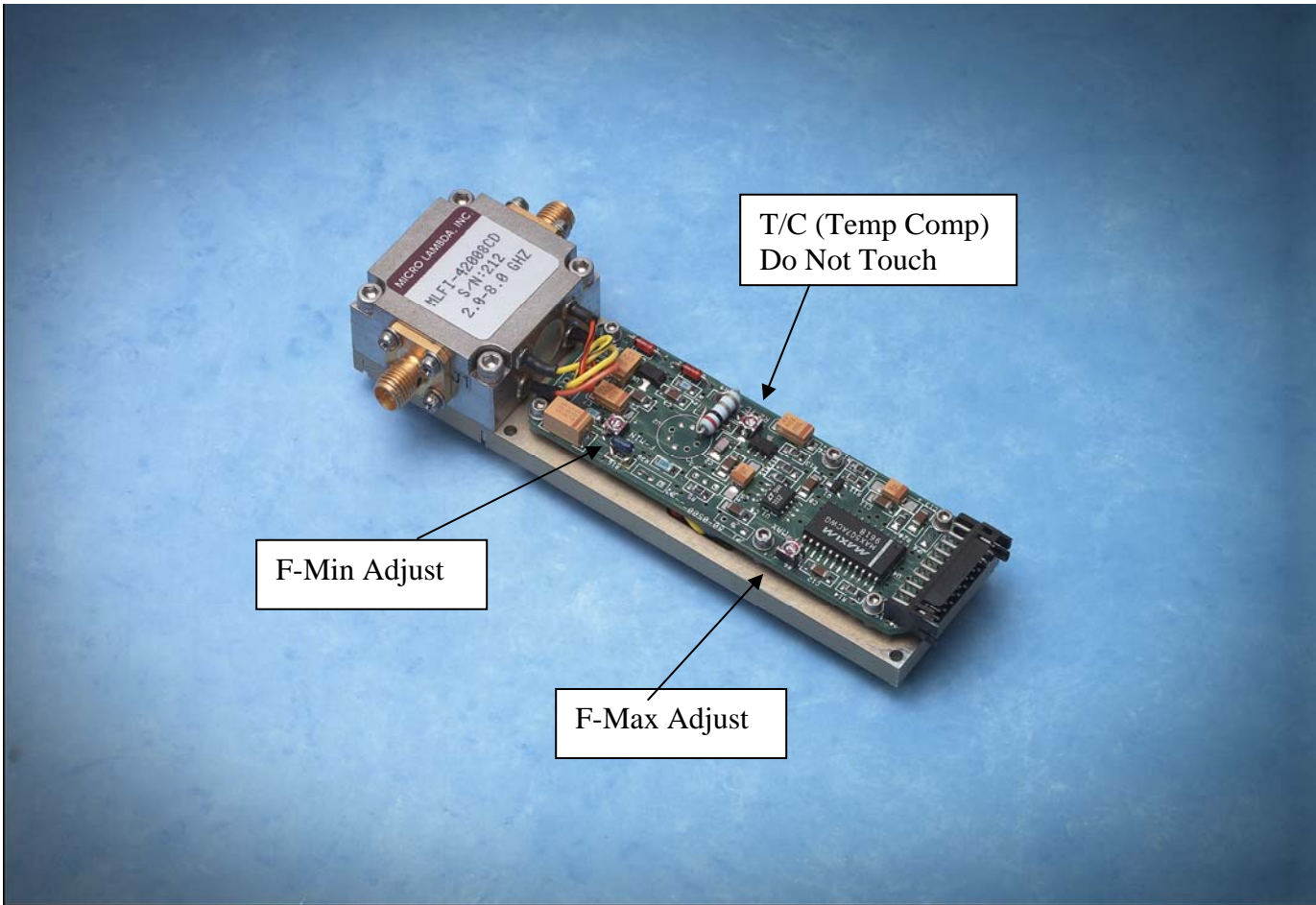


Figure 3b

Analog Driver (0 to +10 Volts) 1”Cubes:

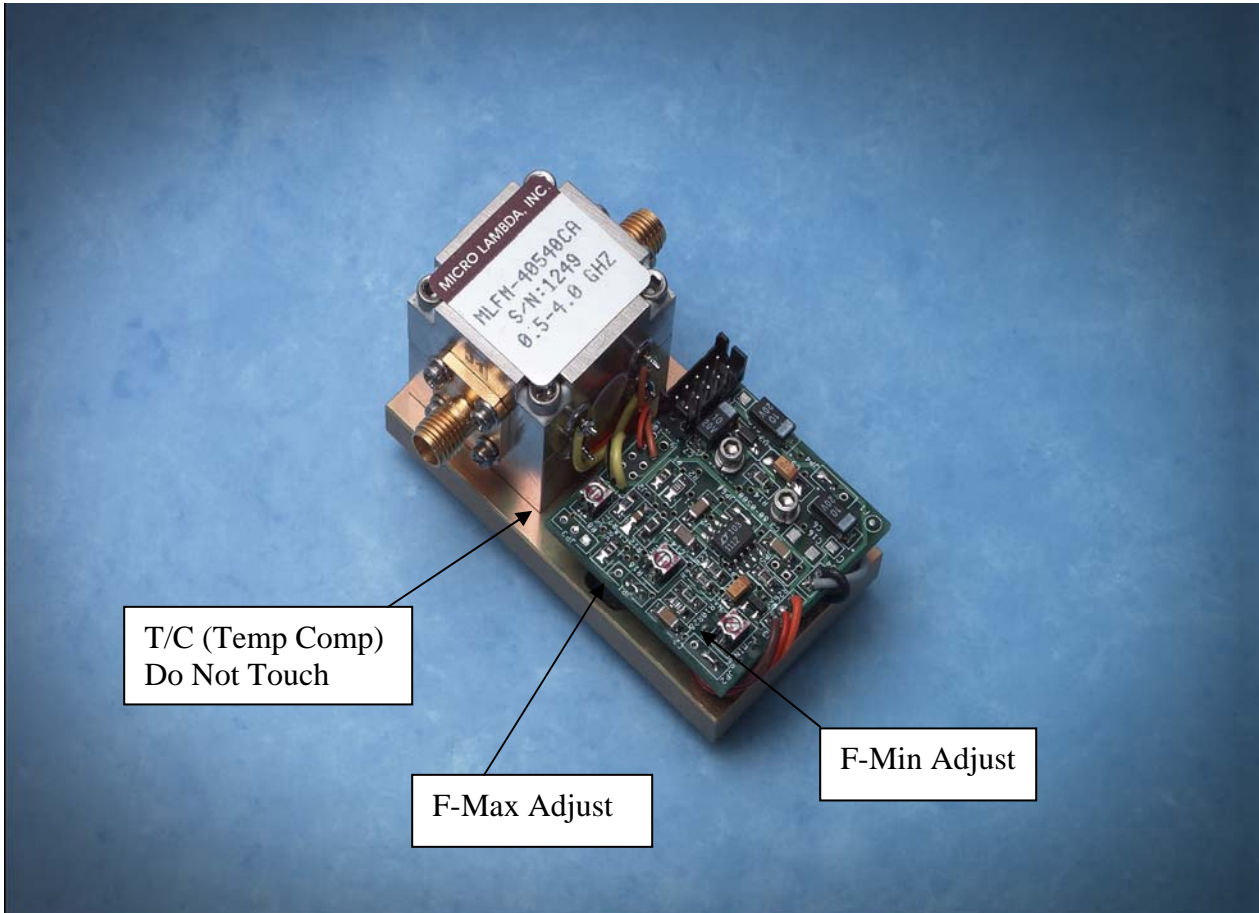


Figure 4a

Analog Driver (0 to +10 Volts) Mini's:

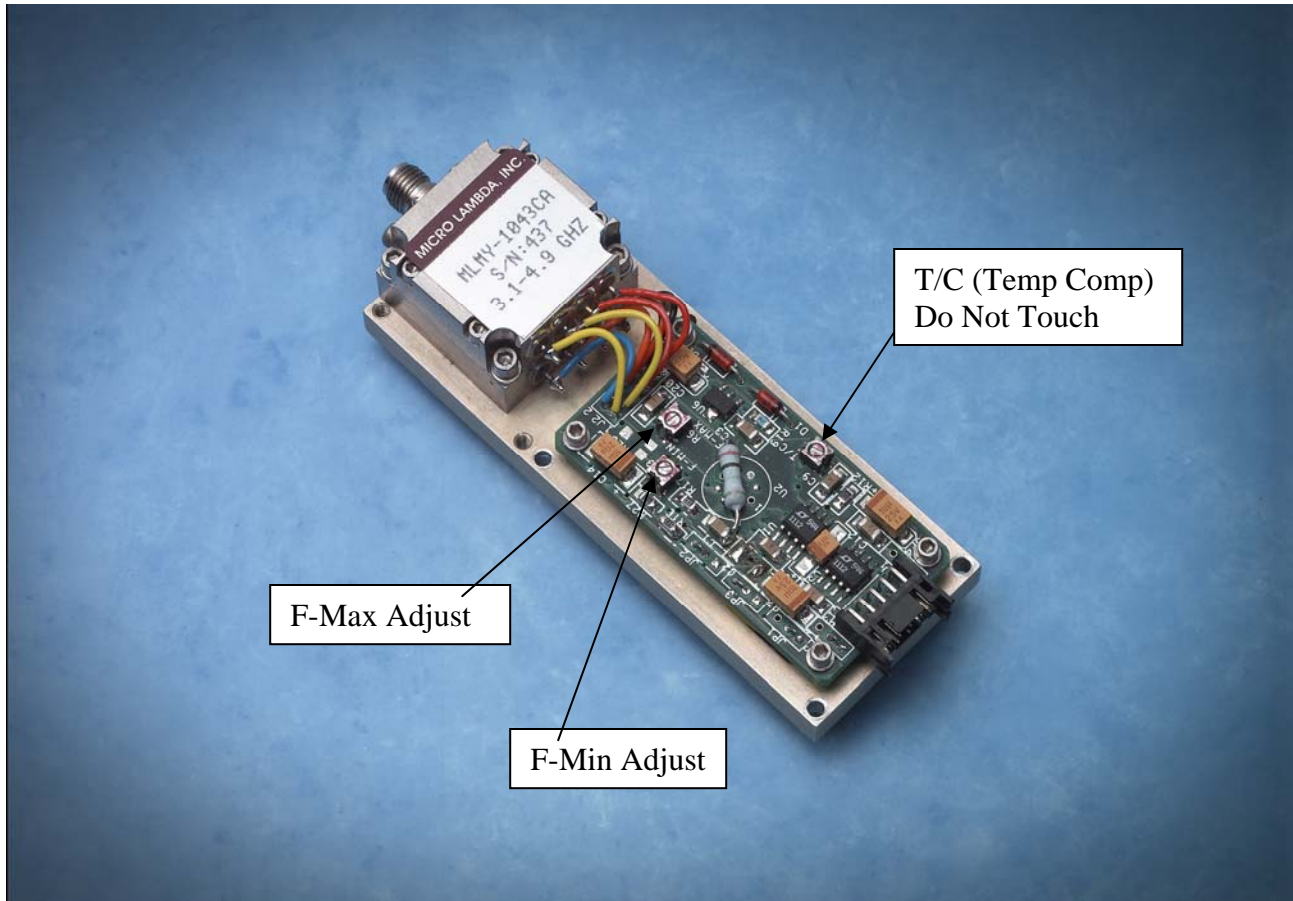


Figure 4b

Set-Up and Calibration Procedure (all integrated drivers):

- A) It is assumed that the user has the necessary microwave test station and or test equipment to make the necessary RF microwave measurements. Please see installation instructions document # 201.201 for further assistance. If you need help in setting up your YIG device for proper testing, call your Micro Lambda Wireless representative or the Micro Lambda Wireless factory immediately.
- B) Turn on the DC power supplies to the driver and heater as required by the particular YIG device specification. These values are given on the test data sheet report shipped with every item. Make sure you have provided for the maximum amount of DC current that is required for the particular YIG device. Verify that the current levels (mA) are within specification limits before continuing.
- C) Test the YIG device over the frequency range of operation at 25 degrees C and verify the frequency readings with the test data sheet supplied with the unit. At this point, if there is a frequency offset of more than +/- 10 MHz from the factory readings, a re-calibration of the frequencies will be required. If the off-set is more than +/- 100 MHz, contact your Micro Lambda Wireless Representative or the Factory immediately for further support.
- D) Set the frequency of the YIG device to the low end of the tuning range.
- For Digital drivers set the unit at all 0's.
 - For Analog drivers set the unit to 0.000 volts.
- E) Find the adjustment cover plate as indicated previously in these instructions for the type of driver that you have purchased. Remove the two # 2-56 screws holding the plate to the driver housing and remove the cover plate.
- F) See the appropriate figure for your driver type and find the two adjustment locations. NOTE ! There is a third adjustment pot which sets the temperature compensation of the driver circuit. Figure 1, 3 and 5 indicate T/C. This pot should never be adjusted by the customer or user at any time. Failure to comply will void the warranty on the YIG device and driver.
- G) Monitor the frequency output (Low Frequency) of the unit under test and adjust the F-Min pot for the lowest operating frequency +/- 2 MHz. This is best accomplished with a frequency counter for oscillators and a scalar network analyzer for filters to insure a good accuracy measurement.
- H) Set the frequency of the YIG device to the high end of the tuning range.
- For Digital drivers set the unit to all 1's.
 - For Analog drivers set the voltage to +10.000 volts.

- I) Monitor the frequency output (High Frequency) of the unit under test and adjust the F-Max pot for the highest operating frequency +/- 2 MHz.
- J) Repeating steps E and G may have to be done a couple of times due to the interaction of the internal driver circuits. Once a stable set of output frequencies is obtained at both the Low and High frequency points you are finished.
- K) Adjustment is now complete. This procedure should yield precise frequencies as required for normal operation, taken into account the users wire sizes, length of wire and or ground effects.