

FREQUENCY STABILITY

Frequency Stability Test Data

Temperature (in degrees C)	Frequency (In MHz)	Change from Baseline (In Hz)
-20	131.64984	0
-10	131.64982	2
0	131.64981	3
10	131.64981	3
20	131.64981	3
30	131.64984	0
40	131.64983	1
50	131.64972	12

The total variation is ± 6 Hz over the temperature range. This equates to ± 0.045 ppm.
The requirement is ± 5 ppm.

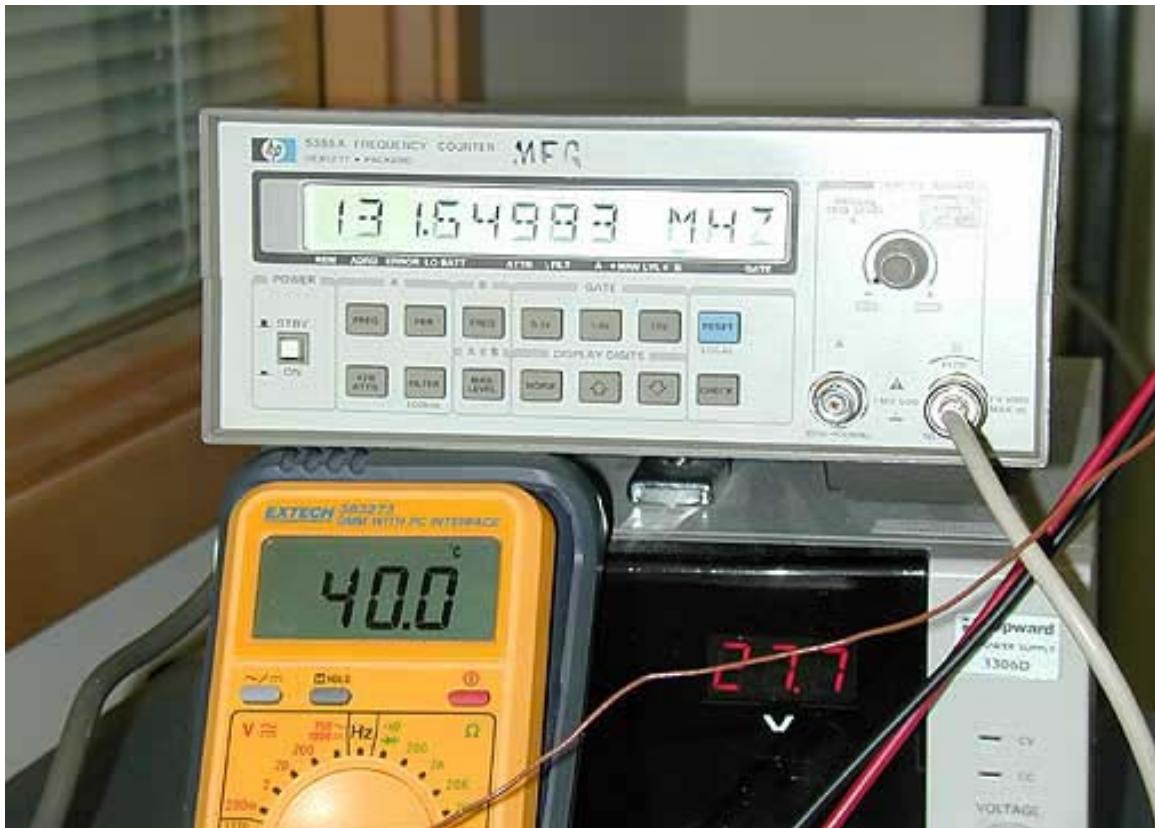
Unit in Chamber Prior to Test



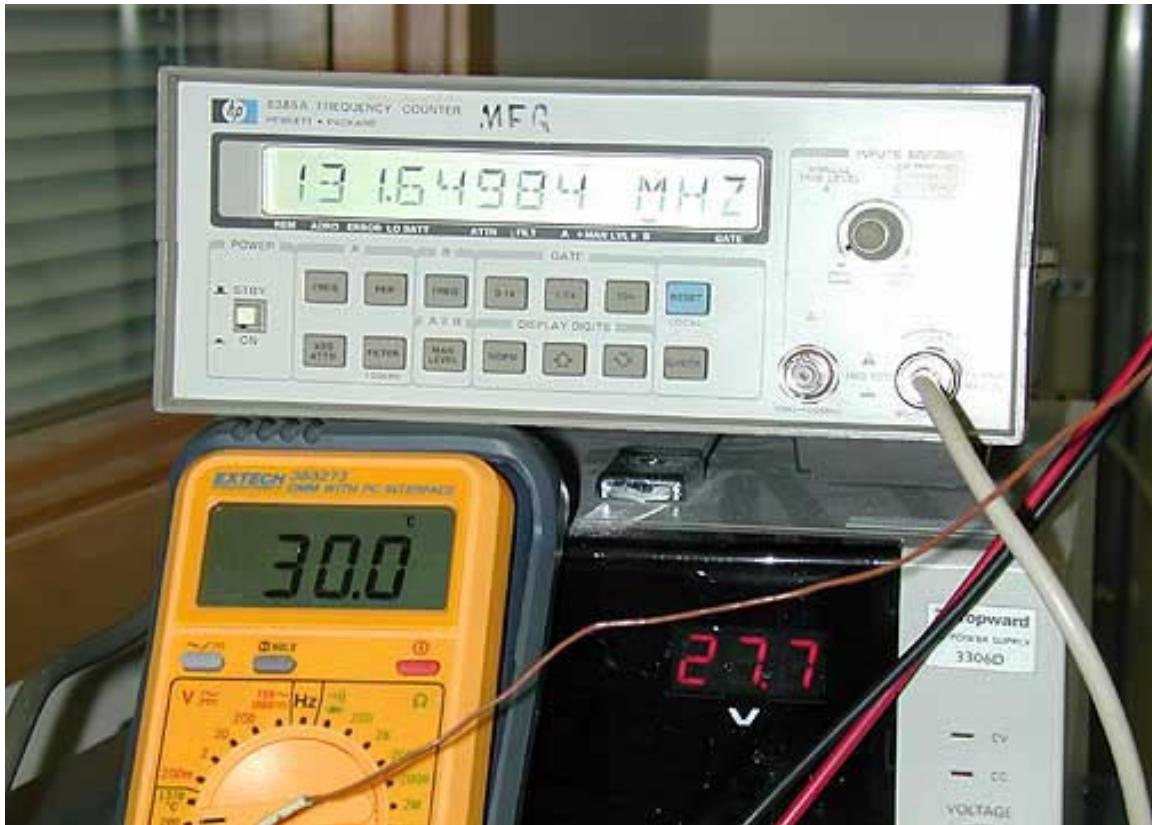
50°C Measurement



40°C Measurement



30°C Measurement



20°C Measurement



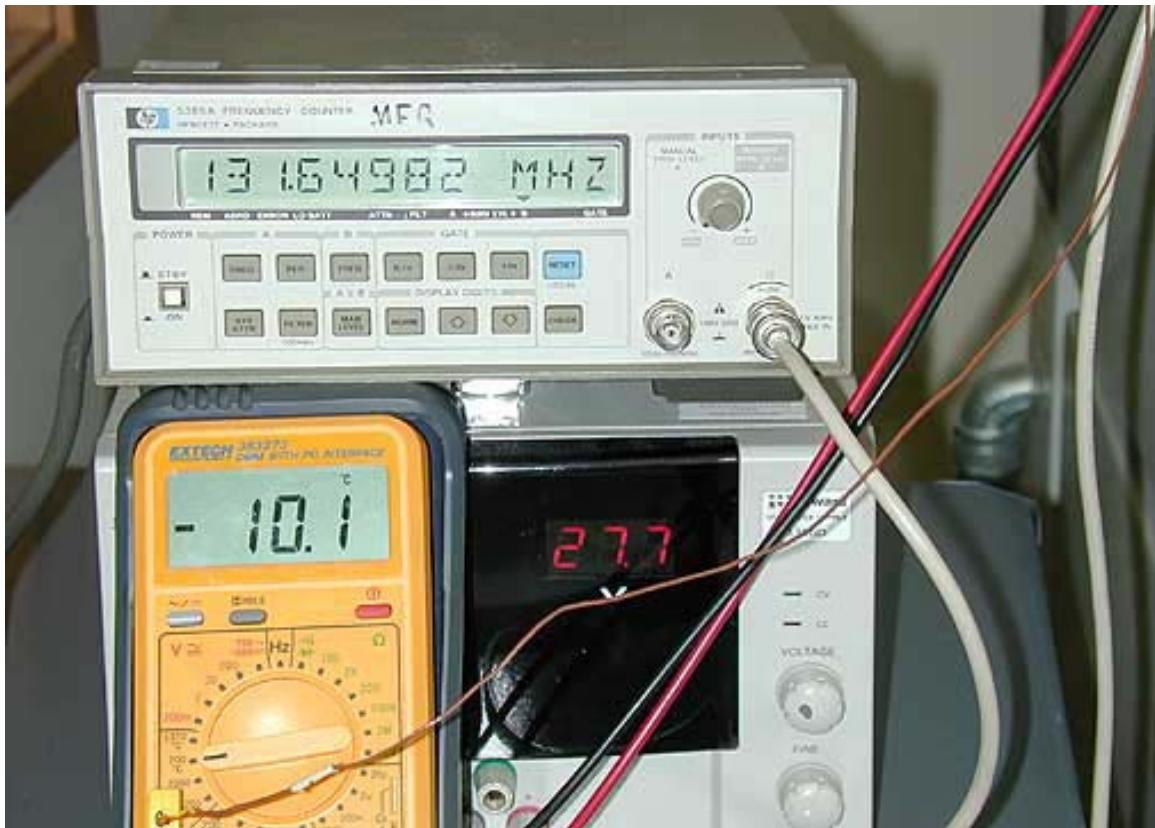
10°C Measurement



0°C Measurement



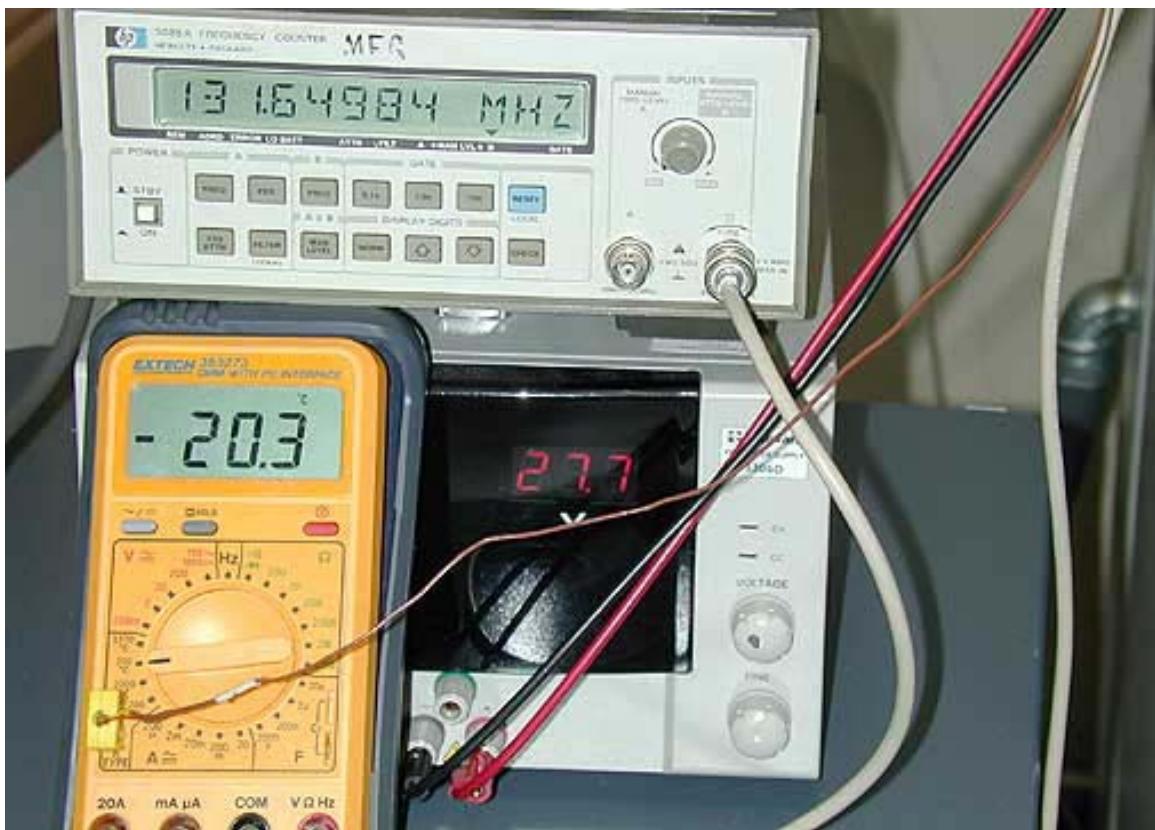
-10°C Measurement



Initial Setup Prior to Setting Chamber to -20°C



20°C Measurment



1.1 Test Procedure for Frequency Stability

1.1.1 Test Setup

Equip the DLink+ so that the LO frequency can be monitored via an RF connection. Place the DLink+ into the temperature chamber. Connect the DLink+'s LO output to the RF input port on the HP5385A Frequency Counter located outside of the temperature chamber. Connect the DLink+ to the 28 Vdc power supply located outside of the temperature chamber. Tape a thermocouple to the case of the unit and connect the thermocouple to a digital multi-meter (located outside of the chamber) that has the capability to monitor the thermocouple resistance and determine the equivalent temperature.

1.1.2 Procedure

Close the chamber door. Verify that the frequency counter is displaying a constant frequency near 131 MHz. Set the chamber temperature to -20 degrees C. Once at -20 degrees C, dwell for $\frac{1}{2}$ hour. Verify that the thermocouple reads -20 ± 1 degrees C. Record the frequency. Set the chamber temperature to -10 degrees C. When the thermocouple reads -10 ± 1 degrees C, record the frequency. Continue in this fashion (10 degree C increments) until the frequency has been recorded at +50 degrees C. This concludes the test.

Frequency Stability Test List of Test Equipment

Frequency Counter
Model HP5385A
S/N 3206A07117
Calibration Date: 4/5/2004
Calibration Due: 4/5/2005

Digital Multimeter with Type K Temperature Probe
Extech Model 383273
S/N 970705042
Calibration Date: 5/14/2004
Calibration Due: 5/14/2005

DC Power Supply
Topward Model 3306D
SN 665496
No Calibration Required

Temperature Chamber
Thermotron Model SE-600-3-3
SN 001421
No Calibration Required