

## ***RCEICELL1900P-1 Frequency Stability over Temperature***

### **Equipment Configuration**

Thermotron S-4C S/N: 30678

- unit was set to appropriate temperature manually via the control interface
- temperature was verified to be within 2 degrees of set point temperature as verified by the oven's internal thermocouples as well as 2 spatially diverse dry bulb thermometers
- after reaching appropriate temperature the device was allowed to soak for 20-30 minutes as required

Rohde&Schwarz FSQ26 S/N:1027369 Cal Due: 25-APR-2004

- personality option K82 was installed in order to make frequency measurements on a complete CDMA waveform
- attenuation (45dB) and reference level settings (-2dBm) were adjusted so that the code domain channels could clearly be viewed
- 25 power control groups were captured for each result provided by the instrument
- several (more than 10) results were observed and the worst case frequency offset (greatest error) was recorded

(DUT) Telos Technology iCell1900 Pico Base Station. S/N: 00000203

- unit was set to the center channel (675) which has a transmit frequency of 1963.75MHz
- the frequency determining device is controlled by an OCXO
- the unit is not able to transmit until the OCXO has stabilized and is within specification

### **Procedure**

- 1) with the DUT off, the oven was set to the appropriate temperature and sufficient time was allowed for the temperature of the DUT to stabilize (20 to 30 minutes)
- 2) DUT was turned on, configured and a frequency measurement was recorded immediately and then again 1 minute after power-up
- 3) Steps 1 and 2 were repeated for each set point shown in the table below

## Results

Temperature (degrees C)	Transient Frequency Error (Hz)	Transient Frequency Error (ppm)	Frequency Error 1 minute after turn on (Hz)	Frequency Error 1 minute after turn on (ppm)	Frequency Error Limit (ppm)
-30	-3947	-2.01	-255	-0.13	+/- 2.5
-20	-3653	-1.86	-216	-0.11	+/- 2.5
-10	-3305	-1.68	138	0.07	+/- 2.5
0	-723	-0.37	-202	-0.10	+/- 2.5
10	575	0.29	230	0.12	+/- 2.5
20	2760	1.41	690	0.35	+/- 2.5
25	2250	1.15	393	0.20	+/- 2.5
30	2230	1.14	127	0.06	+/- 2.5
40	-575	-0.29	-449	-0.23	+/- 2.5
50	-552	-0.28	-575	-0.29	+/- 2.5

## Frequency Stability over Voltage

### Equipment Configuration

as above

### Procedure

- 1) power supply was set to nominal voltage of 48.0V at room temperature and a reference error frequency was recorded
- 2) power supply was adjusted to +/- 15% (7.2V) and error frequencies were recorded again

## Results

Operating Voltage (V)	Recorded Frequency (Hz)	Frequency Error (Hz)	Frequency Error (ppm)	Frequency Error Limit (ppm)
40.8	1963749902	-98	-0.05	+/- 2.5
<b>48</b>	<b>1963749941</b>	<b>-59</b>	<b>-0.03</b>	<b>+/- 2.5</b>
55.2	1963750079	79	0.04	+/- 2.5