

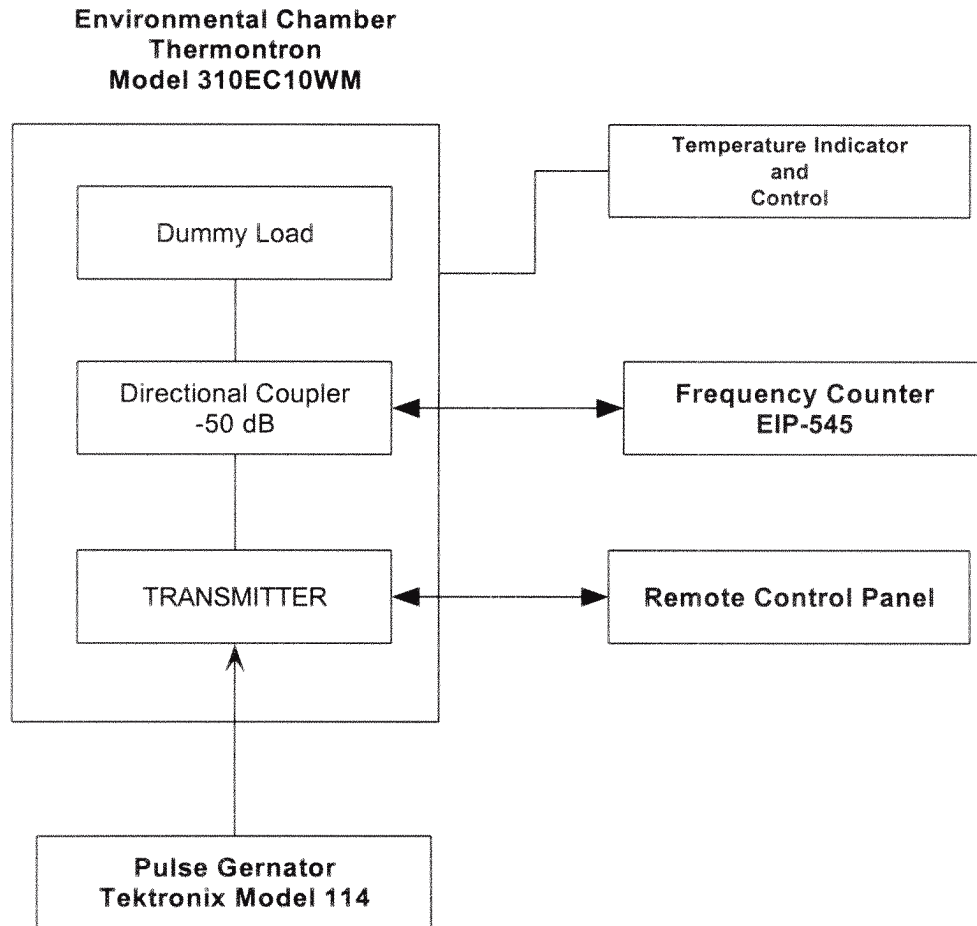
## Temperature vs. Frequency Stability Test and Voltage Variation

The attached data sheets show the frequency drift versus temperature from start-up to stabilization, at ambient temperatures varying from  $-10^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ .

For this test, the transmitter was set up in the temperature chamber and ready to run. At that time, the power was totally removed, and chamber temperature was set to  $-30^{\circ}\text{C}$ . After the temperature stabilized and the magnetron was down to temperature, a temperature probe was attached to the magnetron body to determine when temperature stabilized. Primary power was applied, and the magnetron filaments were warmed for three minutes. The system then was remotely placed in Radiate mode from outside the chamber, and the current frequency was recorded immediately. The frequency was then recorded in the increments shown in the attached data. A block diagram depicting the test setup is attached.

For the voltage variation test, a 200 VAC Variac was inserted into the primary supply line and then was set to 200 VAC output. After the magnetron filament warmed for three minutes, the system was put in Radiate mode and the frequency was measured. Primary power was then raised to 253 VAC, and the frequency was measured. Primary power was then lowered to 187 VAC, and the frequency was measured. No change in frequency was noted because the power supplies were regulated.

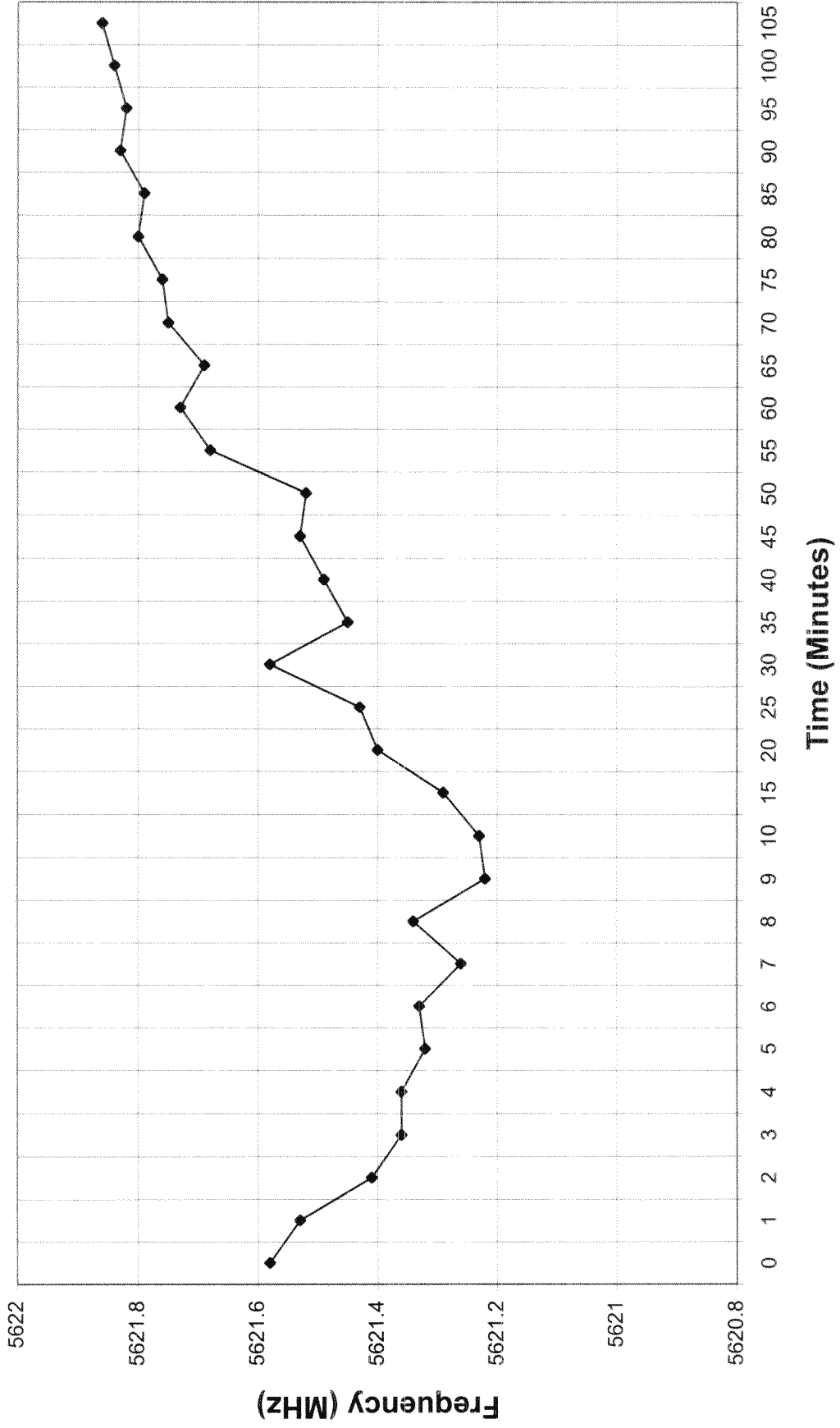
## Test Setup for Frequency Stability vs. Temperature



**Frequency Stability vs. Temperature**  
**Temperature: -30° C**

<b>Time, in Minutes, from Radiate ON</b>	<b>Frequency (MHz)</b>
0	5621.58
1	5621.53
2	5621.41
3	5621.36
4	5621.36
5	5621.32
6	5621.33
7	5621.26
8	5621.34
9	5621.22
10	5621.23
15	5621.29
20	5621.40
25	5621.43
30	5621.58
35	5621.45
40	5621.49
45	5621.53
50	5621.52
55	5621.68
60	5621.73
65	5621.69
70	5621.75
75	5621.76
80	5621.80
85	5621.79
90	5621.83
95	5621.82
100	5621.84
105	5621.86

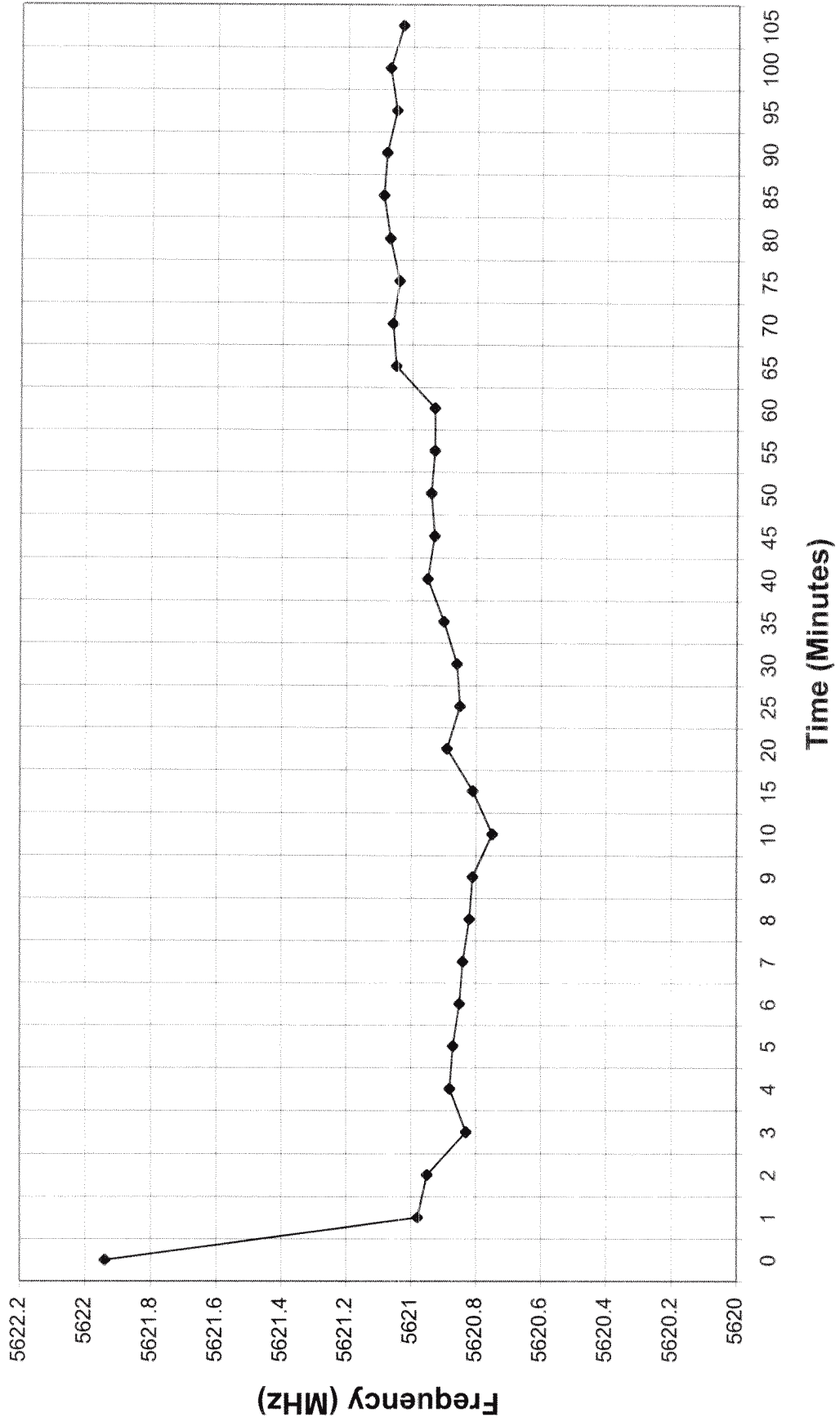
Frequency vs. Time @ -30 Degrees C



**Frequency Stability vs. Temperature**  
**Temperature: -20° C**

<b>Time, in Minutes, from Radiate ON</b>	<b>Frequency (MHz)</b>
0	5621.94
1	5620.98
2	5620.95
3	5620.83
4	5620.88
5	5620.87
6	5620.85
7	5620.84
8	5620.82
9	5620.81
10	5620.75
15	5620.81
20	5620.89
25	5620.85
30	5620.86
35	5620.90
40	5620.95
45	5620.93
50	5620.94
55	5620.93
60	5620.93
65	5621.05
70	5621.06
75	5621.04
80	5621.07
85	5621.09
90	5621.08
95	5621.05
100	5621.07
105	5621.03

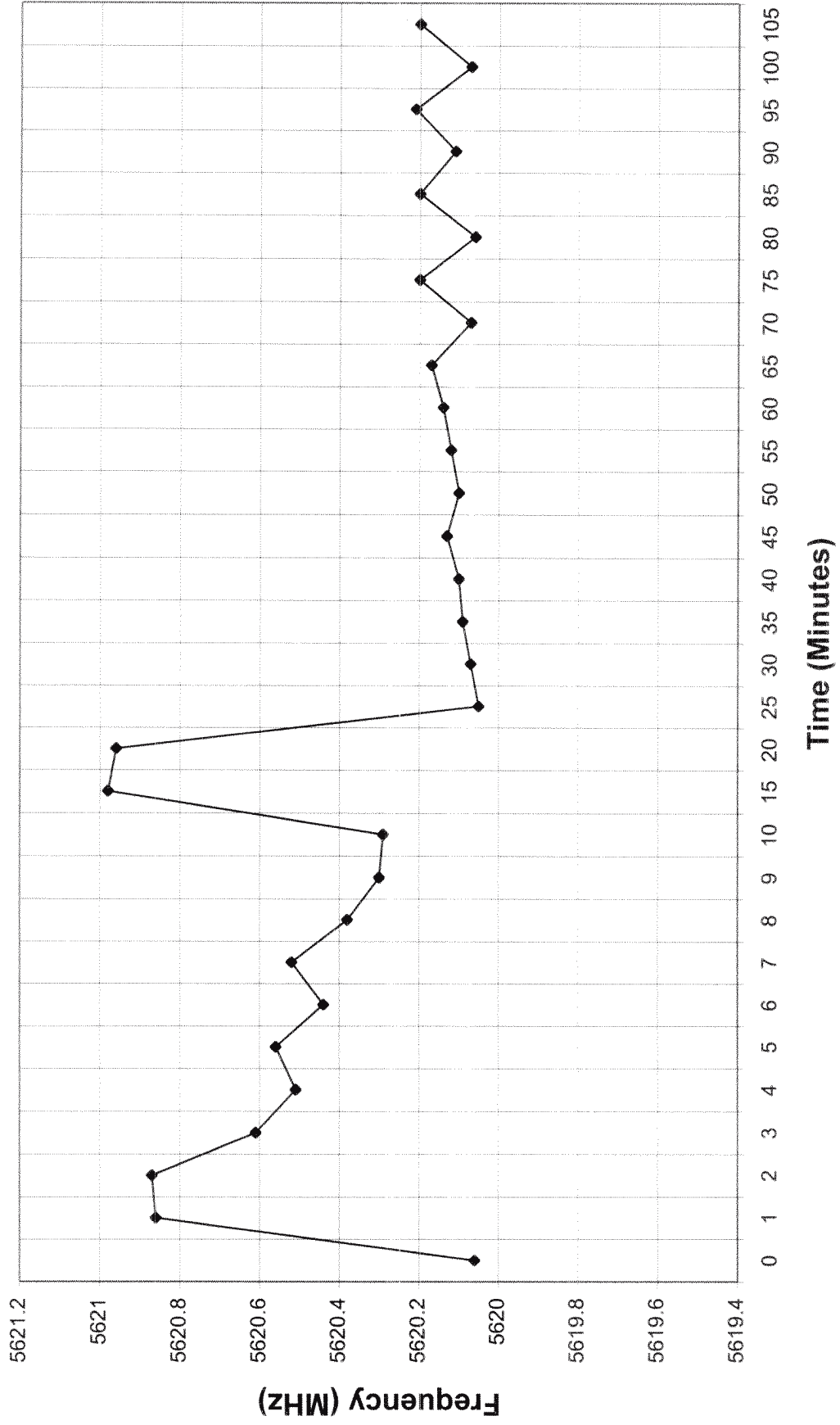
Frequency vs. Time @ -20 Degrees C



**Frequency Stability vs. Temperature**  
**Temperature: -10° C**

<b>Time, in Minutes, from Radiate ON</b>	<b>Frequency (MHz)</b>
0	5620.06
1	5620.86
2	5620.87
3	5620.61
4	5620.51
5	5620.56
6	5620.44
7	5620.52
8	5620.38
9	5620.30
10	5620.29
15	5620.98
20	5620.96
25	5620.05
30	5620.07
35	5620.09
40	5620.10
45	5620.13
50	5620.10
55	5620.12
60	5620.14
65	5620.17
70	5620.07
75	5620.20
80	5620.06
85	5620.20
90	5620.11
95	5620.21
100	5620.07
105	5620.20

Time vs. Frequency @ -10 Degrees C

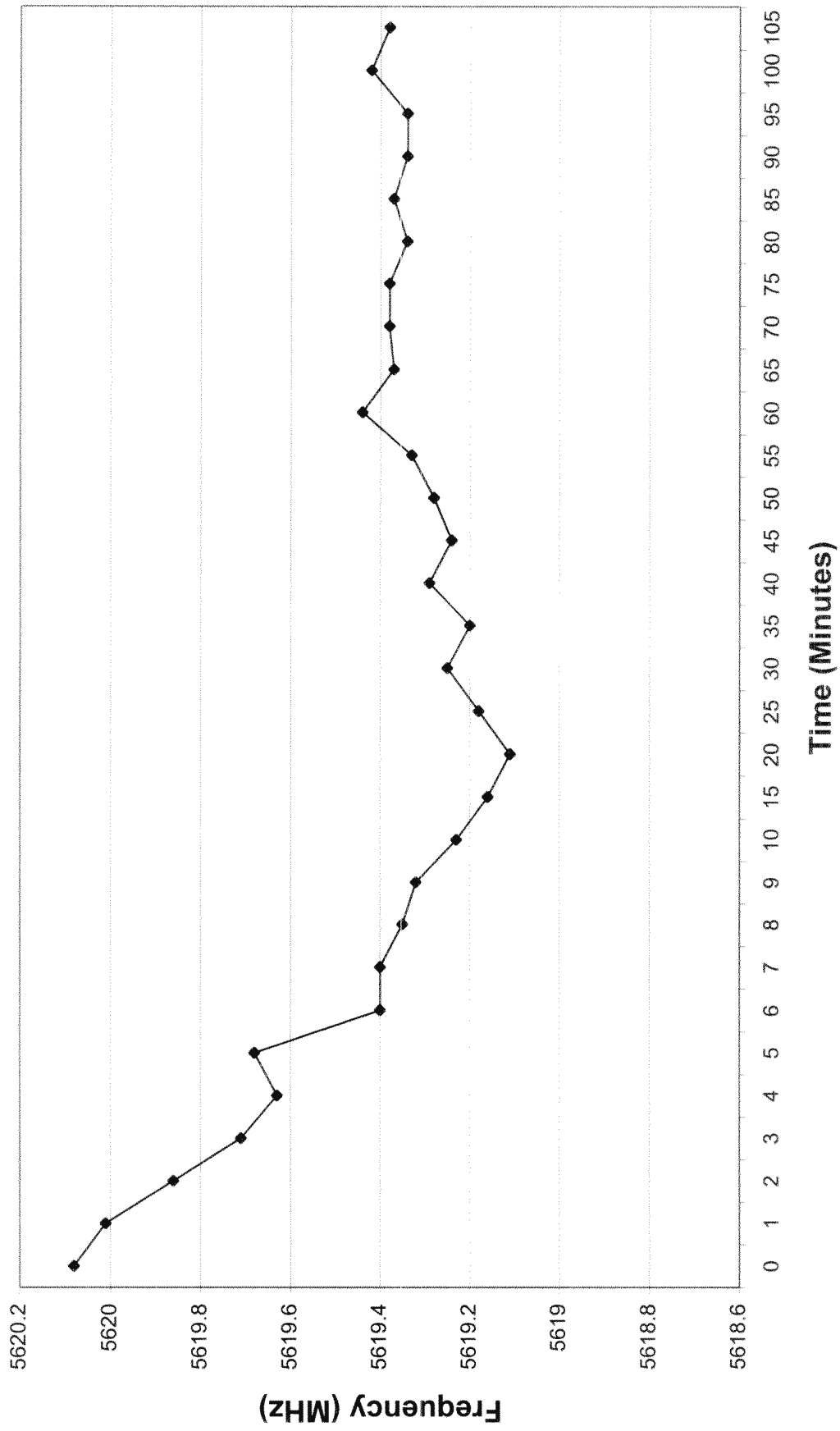




**Frequency Stability vs. Temperature**  
**Temperature: 0° C**

<b>Time, in Minutes, from Radiate ON</b>	<b>Frequency (MHz)</b>
0	5620.08
1	5620.01
2	5619.86
3	5619.71
4	5619.63
5	5619.68
6	5619.40
7	5619.40
8	5619.35
9	5619.32
10	5619.23
15	5619.16
20	5619.11
25	5619.18
30	5619.25
35	5619.20
40	5619.29
45	5619.24
50	5619.28
55	5619.33
60	5619.44
65	5619.37
70	5619.38
75	5619.38
80	5619.34
85	5619.37
90	5619.34
95	5619.34
100	5619.42
105	5619.38

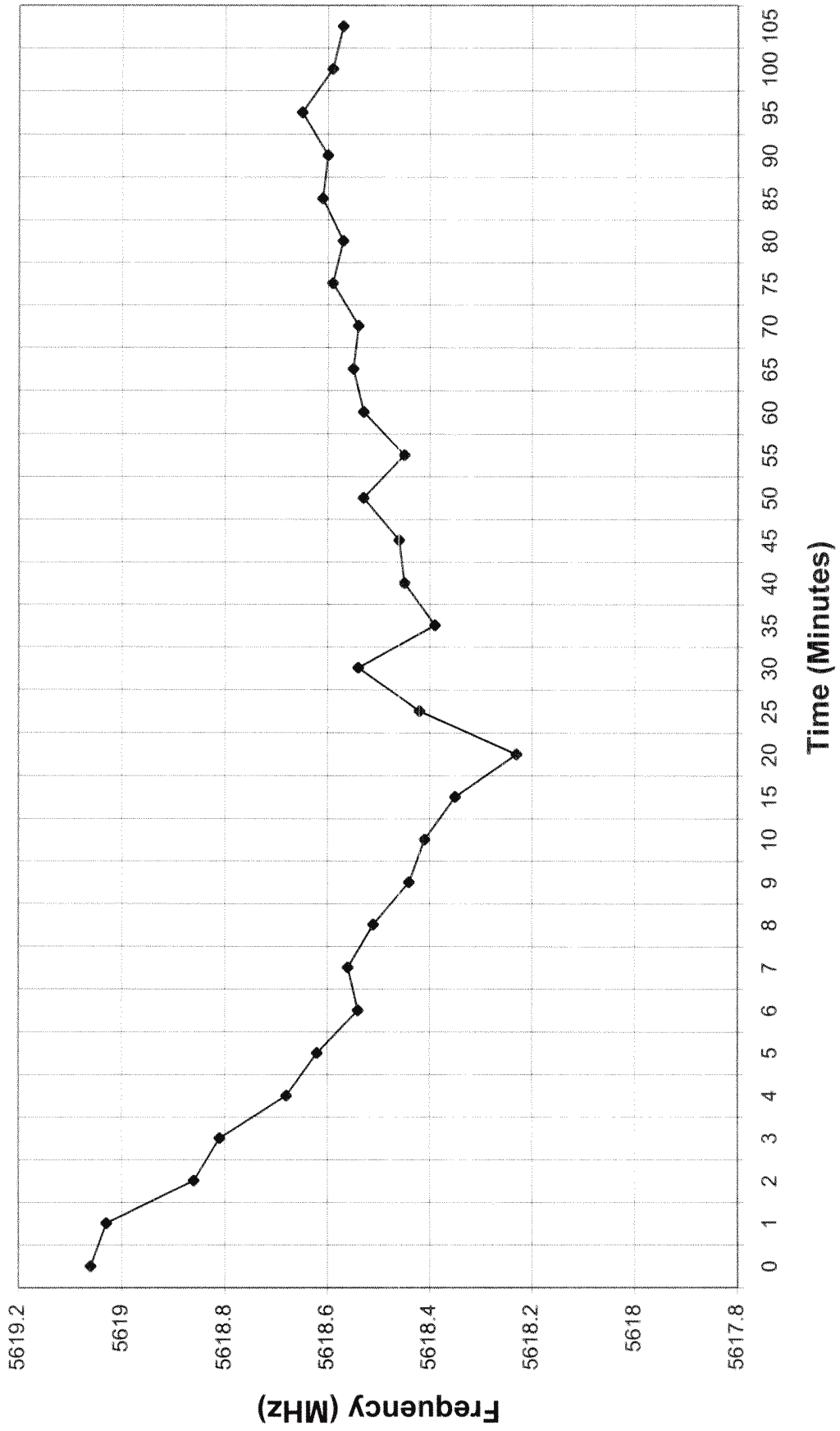
# Time vs. Frequency @ 0 Degrees C



**Frequency Stability vs. Temperature**  
**Temperature: +10° C**

<b>Time, in Minutes, from Radiate ON</b>	<b>Frequency (MHz)</b>
0	5619.06
1	5619.03
2	5618.86
3	5618.81
4	5618.68
5	5618.62
6	5618.54
7	5618.56
8	5618.51
9	5618.44
10	5618.41
15	5618.35
20	5618.23
25	5618.42
30	5618.54
35	5618.39
40	5618.45
45	5618.46
50	5618.53
55	5618.45
60	5618.53
65	5618.55
70	5618.54
75	5618.59
80	5618.57
85	5618.61
90	5618.60
95	5618.65
100	5618.59
105	5618.57

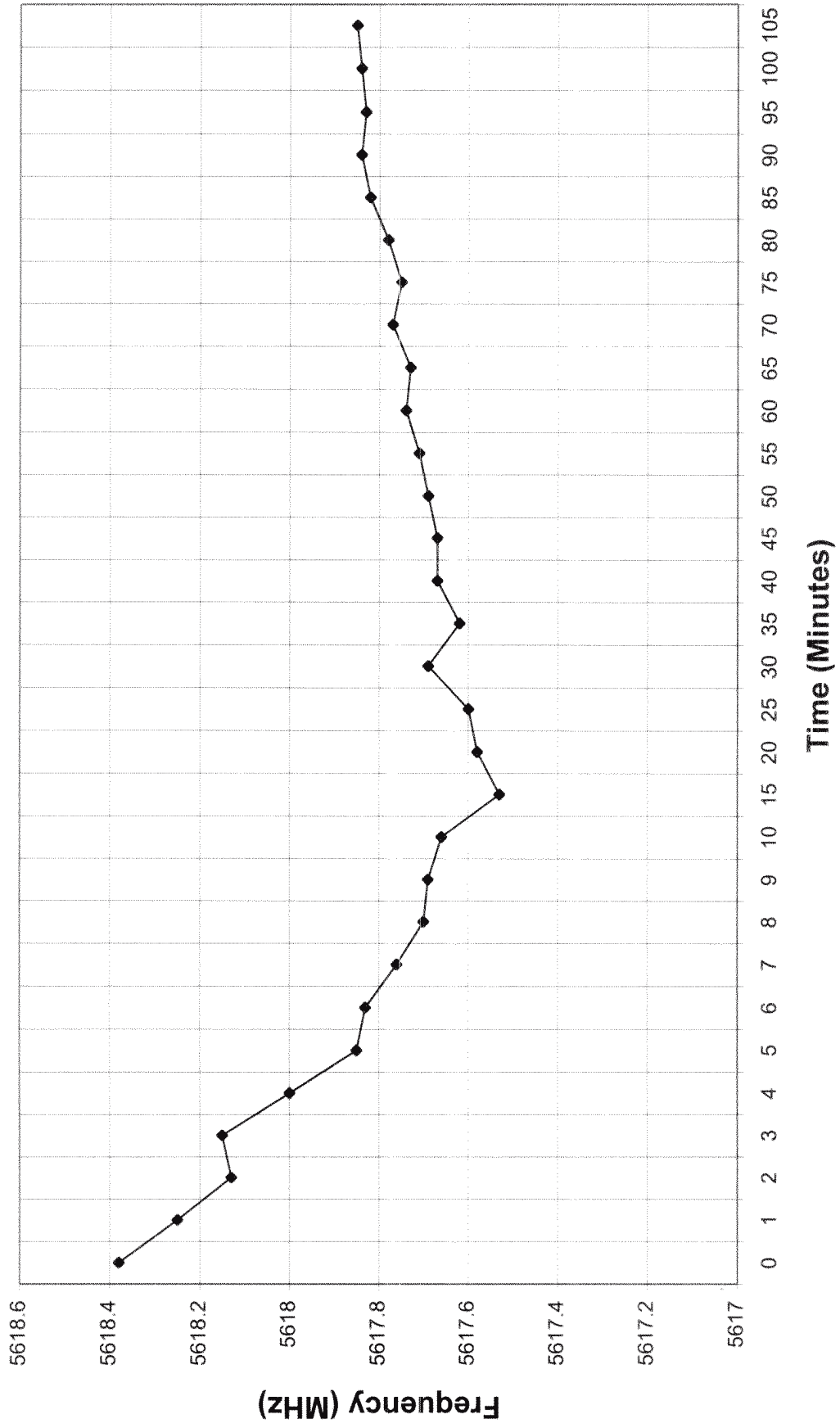
Frequency vs. Time @ +10 Degrees C



**Frequency Stability vs. Temperature**  
**Temperature: +20° C**

<b>Time, in Minutes, from Radiate ON</b>	<b>Frequency (MHz)</b>
0	5618.38
1	5618.25
2	5618.13
3	5618.15
4	5618.00
5	5617.85
6	5617.83
7	5617.76
8	5617.70
9	5617.69
10	5617.66
15	5617.53
20	5617.58
25	5617.60
30	5617.69
35	5617.62
40	5617.67
45	5617.67
50	5617.69
55	5617.71
60	5617.74
65	5617.73
70	5617.77
75	5617.75
80	5617.78
85	5617.82
90	5617.84
95	5617.83
100	5617.84
105	5617.85

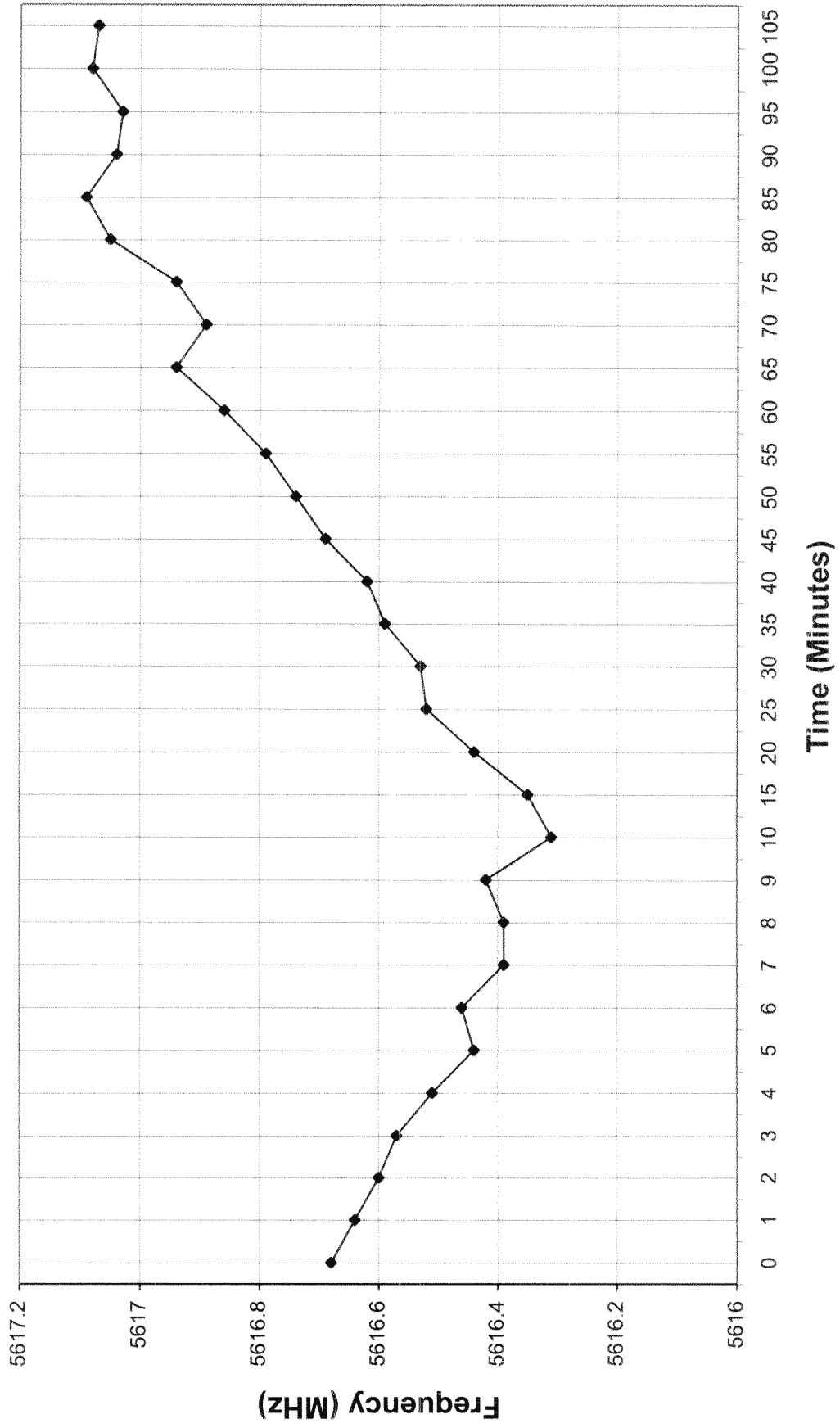
Frequency vs. Time @ +20 Degrees C



**Frequency Stability vs. Temperature**  
**Temperature: +30° C**

<b>Time, in Minutes, from Radiate ON</b>	<b>Frequency (MHz)</b>
0	5616.68
1	5616.64
2	5616.60
3	5616.57
4	5616.51
5	5616.44
6	5616.46
7	5616.39
8	5616.39
9	5616.42
10	5616.31
15	5616.35
20	5616.44
25	5616.52
30	5616.53
35	5616.59
40	5616.62
45	5616.69
50	5616.74
55	5616.79
60	5616.86
65	5616.94
70	5616.89
75	5616.94
80	5617.05
85	5617.09
90	5617.04
95	5617.03
100	5617.08
105	5617.07

Frequency vs. Time @ +30 Degrees C

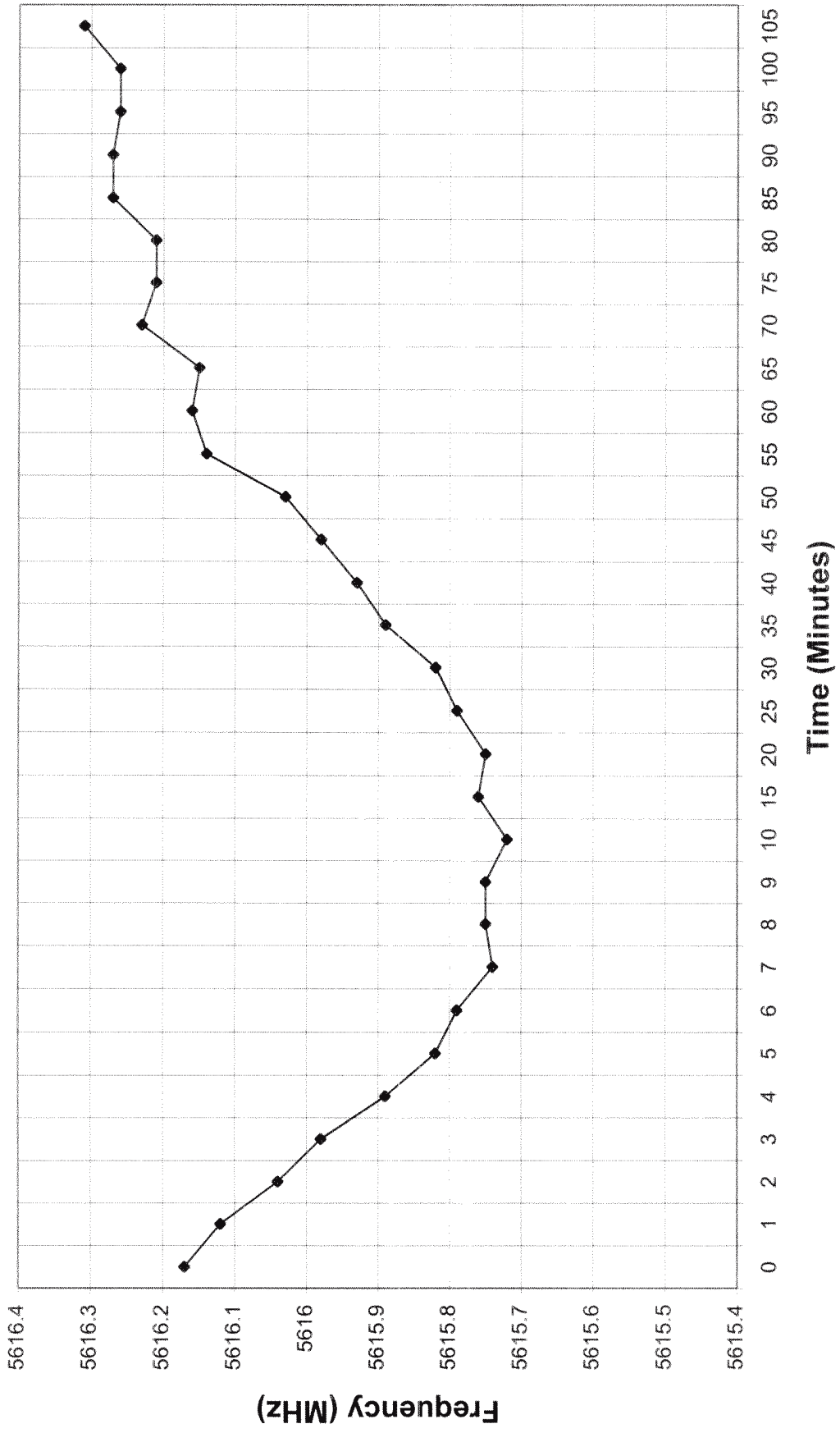




**Frequency Stability vs. Temperature**  
**Temperature: +40° C**

<b>Time, in Minutes, from Radiate ON</b>	<b>Frequency (MHz)</b>
0	5616.17
1	5616.12
2	5616.04
3	5615.98
4	5615.89
5	5615.82
6	5615.79
7	5615.74
8	5615.75
9	5615.75
10	5615.72
15	5615.76
20	5615.75
25	5615.79
30	5615.82
35	5615.89
40	5615.93
45	5615.98
50	5616.03
55	5616.14
60	5616.16
65	5616.15
70	5616.23
75	5616.21
80	5616.21
85	5616.27
90	5616.27
95	5616.26
100	5616.26
105	5616.31

Frequency vs. Time @ +40 Degrees C



**Frequency Stability vs. Temperature**  
**Temperature: +50° C**

<b>Time, in Minutes, from Radiate ON</b>	<b>Frequency (MHz)</b>
0	5616.18
1	5616.12
2	5615.97
3	5615.80
4	5615.75
5	5615.63
6	5615.60
7	5615.54
8	5615.51
9	5615.50
10	5615.44
15	5615.39
20	5615.26
25	5615.31
30	5615.29
35	5615.28
40	5615.39
45	5615.42
50	5615.50
55	5615.48
60	5615.54
65	5615.58
70	5615.56
75	5615.46
80	5615.57
85	5615.54
90	5615.62
95	5615.57
100	5615.54
105	5615.59

Frequency vs. Time @ +50 Degrees C

