

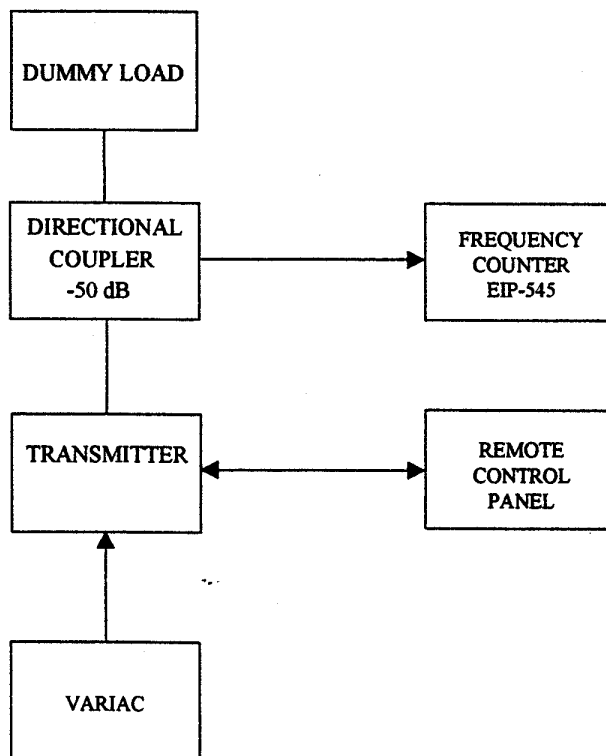
## Temperature VS Frequency Stability Test and Voltage Variation

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

For this test, the transmitter is set up in the temperature chamber ready to run. At that time the power is totally removed and chamber temperature set at  $-30^{\circ}\text{C}$ . After the temperature stabilizes, and the magnetron is down to temperature, (A temperature probe was attached to the magnetron body to determine when temperature stabilized) primary power is applied and the magnetron filaments warmed for 3 minutes. The system is then placed into radiate (remotely from outside the chamber) and the frequency recorded immediately. The frequency is then recorded in increments shown in the attached data. A block diagram showing the test setup is attached.

For the voltage variation test, a 220 VAC variac was inserted into the primary supply line and set to 220 VAC output. After the magnetron filament warmed 3 minutes, system was put in radiate mode and frequency measured. Primary power was then raised to 253 VAC and frequency measured. Primary power was then lowered to 187 VAC and frequency measured. No change in frequency was noted as the power supplies are regulated.

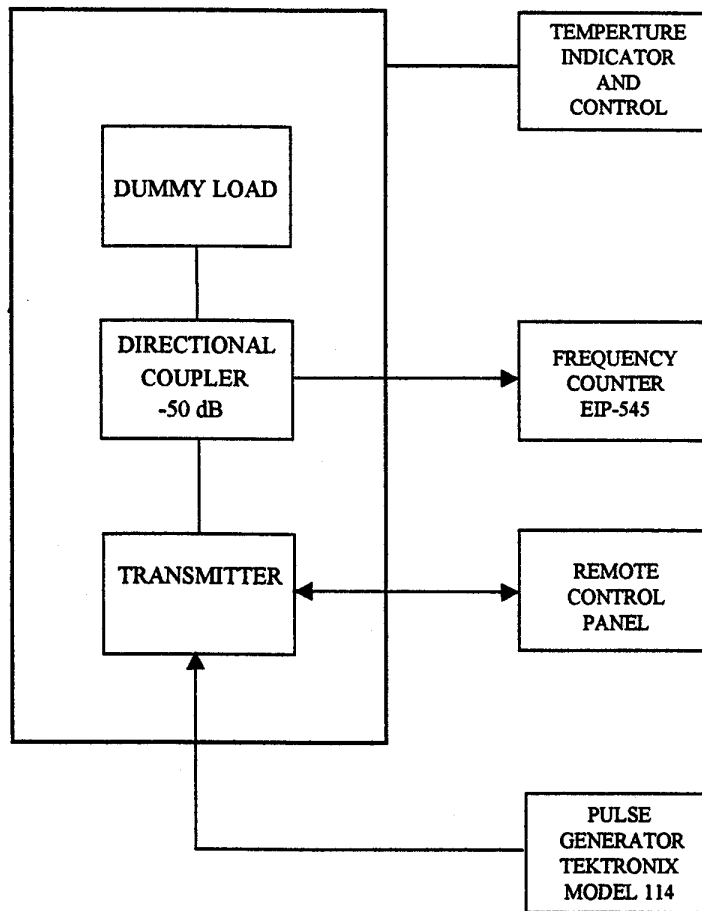
## TEST SETUP FOR FREQUENCY VS VOLTAGE VARIATION TEST



	SIZE A	CODE IDENT NO.	DRAWING NO. SK1874-12
APPR./DATE	SCALE	52005	SHEET 1 OF 1

# TEST SETUP FOR FREQUENCY STABILITY VS TEMPERATURE TEST

**ENVIRONMENTAL CHAMBER  
THERMONTRON  
MODEL 310EC10WM**

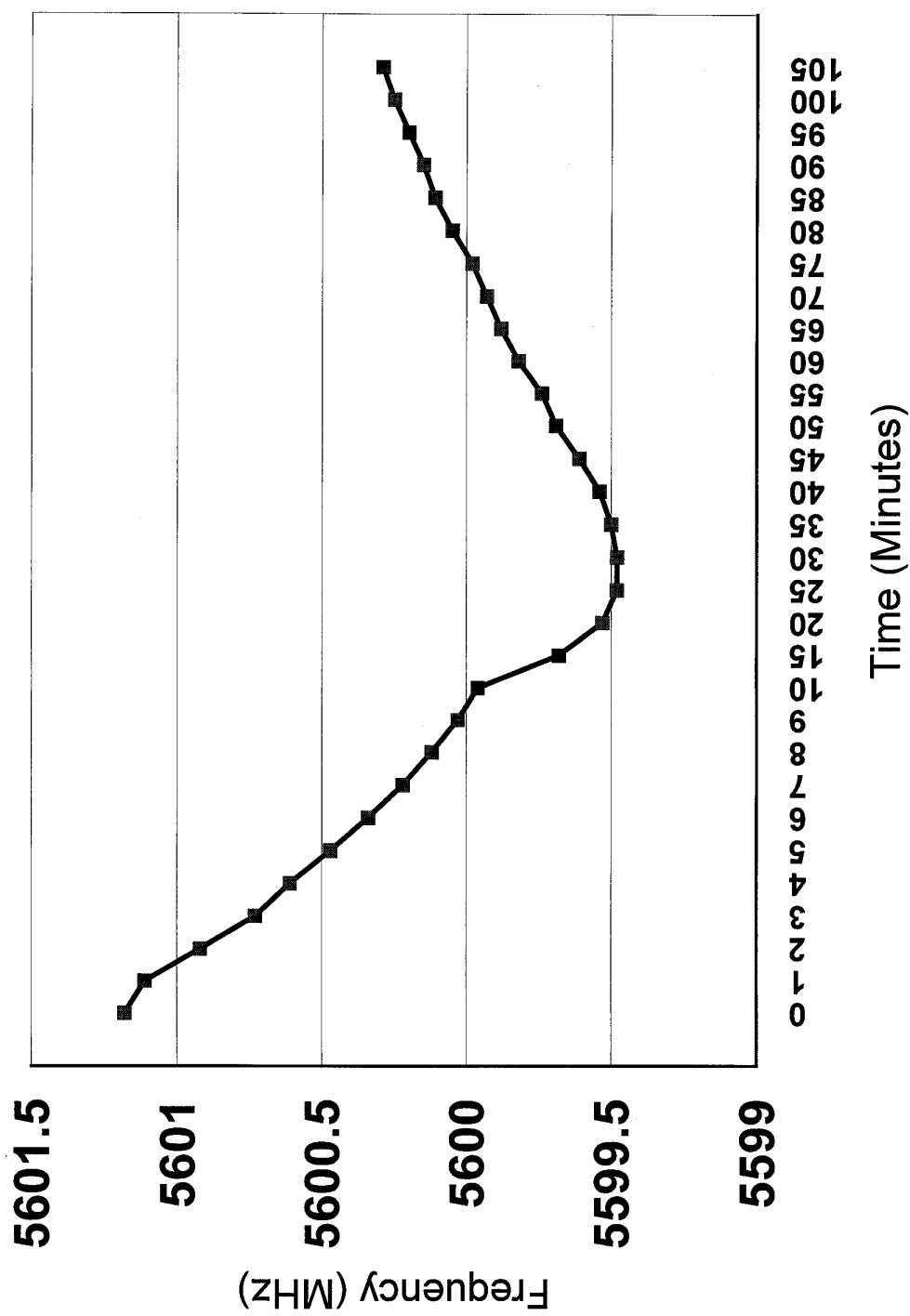


	SIZE A	CODE IDENT NO.	DRAWING NO. SK1874-11
APPR./DATE	SCALE	52005	SHEET 1 OF 1

Frequency Stability VS Temperature  
Temperature +50°C

Time in Minutes From Radiate On	Frequency (MHz)
0	5,601.18
1	5,601.11
2	5,600.92
3	5,600.73
4	5,600.61
5	5,600.47
6	5,600.34
7	5,600.22
8	5,600.12
9	5,600.03
10	5,599.96
15	5,599.68
20	5,599.53
25	5,599.48
30	5,599.48
35	5,599.5
40	5,599.54
45	5,599.61
50	5,599.69
55	5,599.74
60	5,599.82
65	5,599.88
70	5,599.93
75	5,599.98
80	5,600.05
85	5,600.11
90	5,600.15
95	5,600.2
100	5,600.25
105	5,600.29

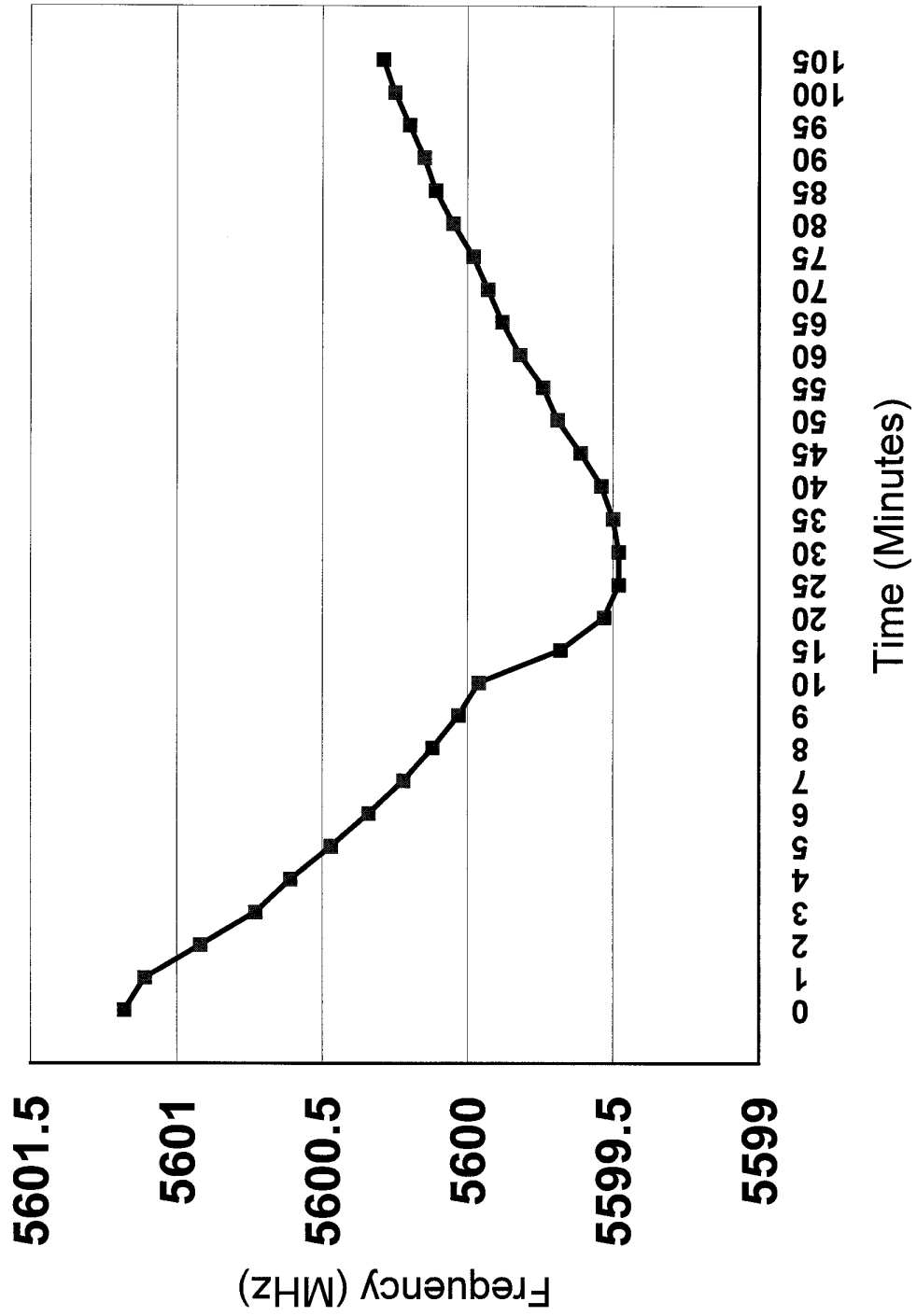
# Frequency vs Time @ +50C



Frequency Stability VS Temperature  
Temperature +40°C

Time in Minutes From Radiate On	Frequency (MHz)
0	5,601.18
1	5,601.11
2	5,600.92
3	5,600.73
4	5,600.61
5	5,600.47
6	5,600.34
7	5,600.22
8	5,600.12
9	5,600.03
10	5,599.96
15	5,599.68
20	5,599.53
25	5,599.48
30	5,599.48
35	5,599.5
40	5,599.54
45	5,599.61
50	5,599.69
55	5,599.74
60	5,599.82
65	5,599.88
70	5,599.93
75	5,599.98
80	5,600.05
85	5,600.11
90	5,600.15
95	5,600.2
100	5,600.25
105	5,600.29

# Frequency vs Time @ +40C

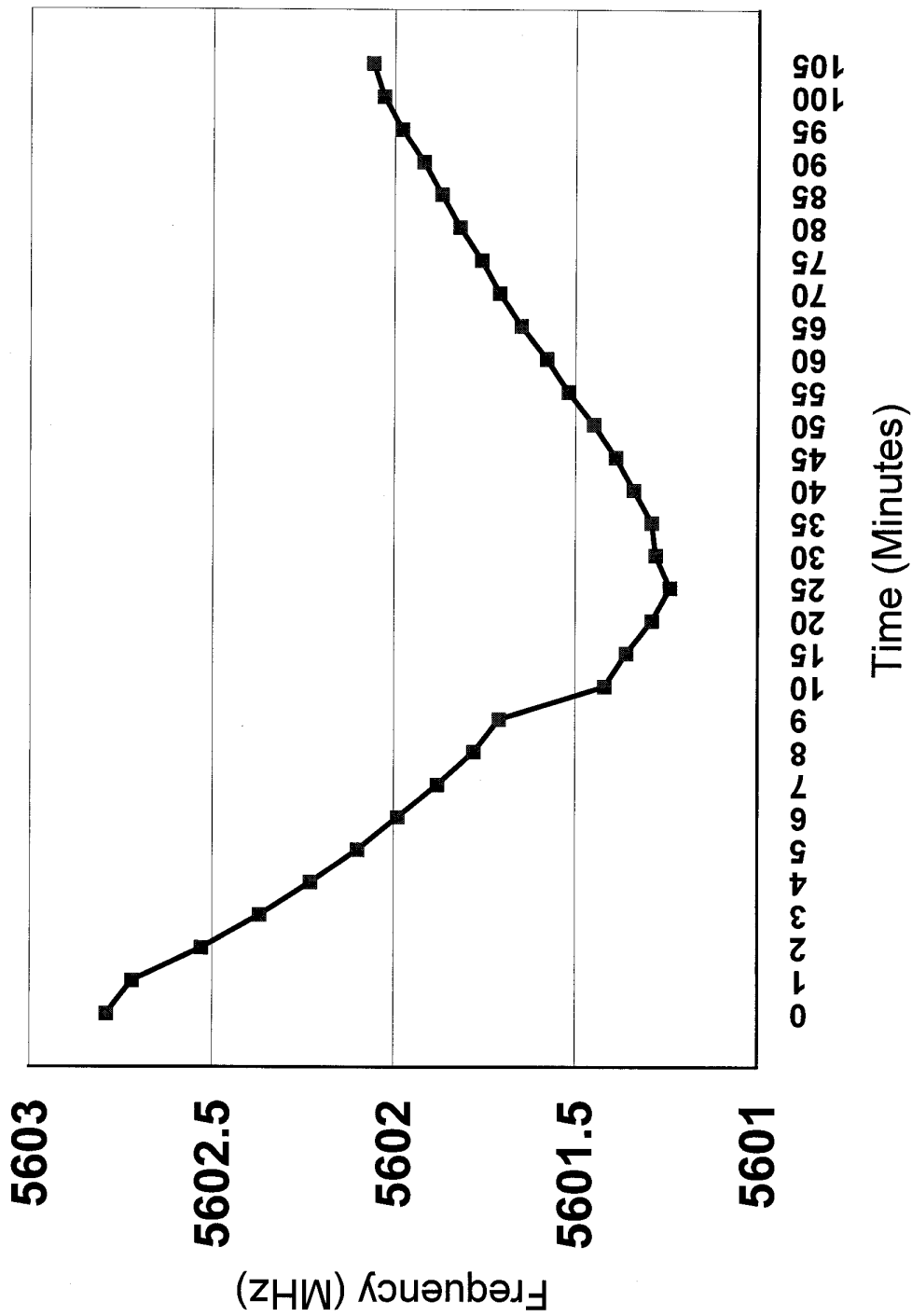


Frequency Stability VS Temperature  
Temperature +30°C

Time in Minutes From Radiate On	Frequency (MHz)
0	5,602.79
1	5,602.72
2	5,602.53
3	5,602.37
4	5,602.23
5	5,602.1
6	5,601.99
7	5,601.88
8	5,601.78
9	5,601.71
10	5,601.42
15	5,601.36
20	5,601.29
25	5,601.24
30	5,601.28
35	5,601.29
40	5,601.34
45	5,601.39
50	5,601.45
55	5,601.52
60	5,601.58
65	5,601.65
70	5,601.71
75	5,601.76
80	5,601.82
85	5,601.87
90	5,601.92
95	5,601.98
100	5,602.03
105	5,602.06



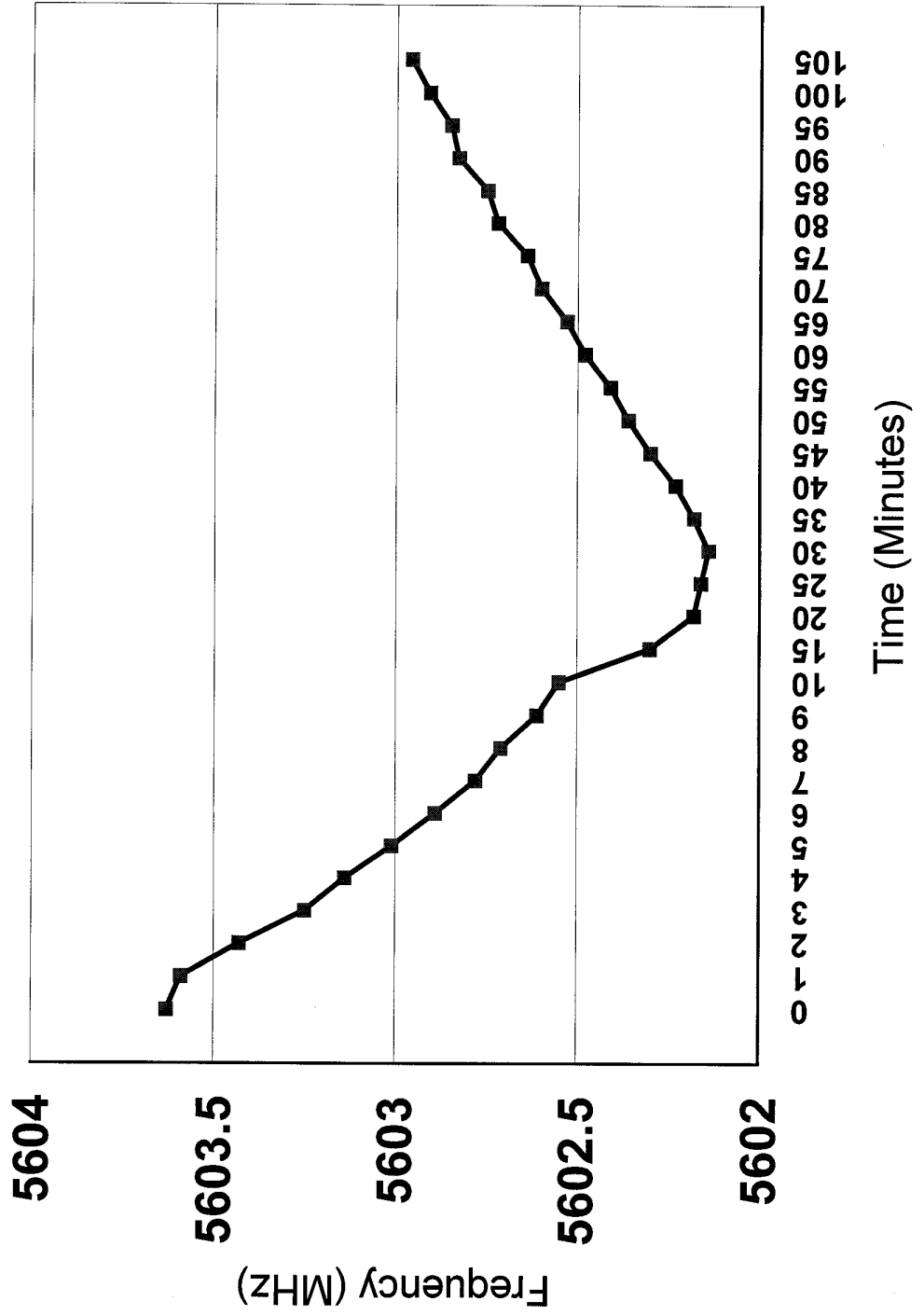
Frequency vs Time @ +30C



Frequency Stability VS Temperature  
Temperature +20°C

Time in Minutes From Radiate On	Frequency (MHz)
0	5,603.63
1	5,603.59
2	5,603.43
3	5,603.25
4	5,603.14
5	5,603.01
6	5,602.89
7	5,602.78
8	5,602.71
9	5,602.61
10	5,602.55
15	5,602.3
20	5,602.18
25	5,602.16
30	5,602.14
35	5,602.18
40	5,602.23
45	5,602.3
50	5,602.36
55	5,602.41
60	5,602.48
65	5,602.53
70	5,602.6
75	5,602.64
80	5,602.72
85	5,602.75
90	5,602.83
95	5,602.85
100	5,602.91
105	5,602.96

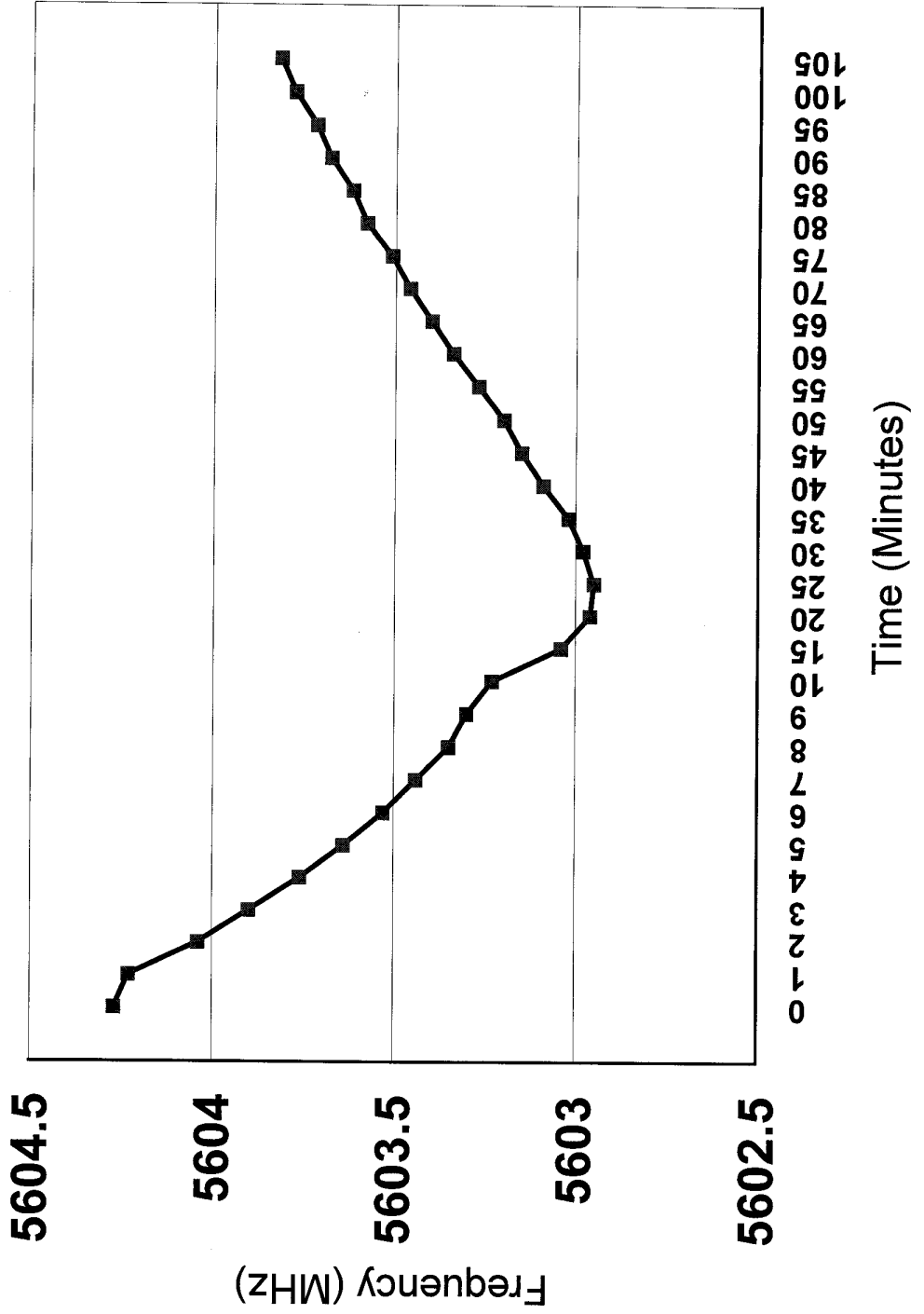
# Frequency vs Time @ +20C



Frequency Stability VS Temperature  
Temperature +10°C

Time in Minutes From Radiate On	Frequency (MHz)
0	5,604.27
1	5,604.23
2	5,604.04
3	5,603.9
4	5,603.76
5	5,603.64
6	5,603.53
7	5,603.44
8	5,603.35
9	5,603.3
10	5,603.23
15	5,603.04
20	5,602.96
25	5,602.95
30	5,602.98
35	5,603.02
40	5,603.09
45	5,603.15
50	5,603.2
55	5,603.27
60	5,603.34
65	5,603.4
70	5,603.46
75	5,603.51
80	5,603.58
85	5,603.62
90	5,603.68
95	5,603.72
100	5,603.78
105	5,603.82

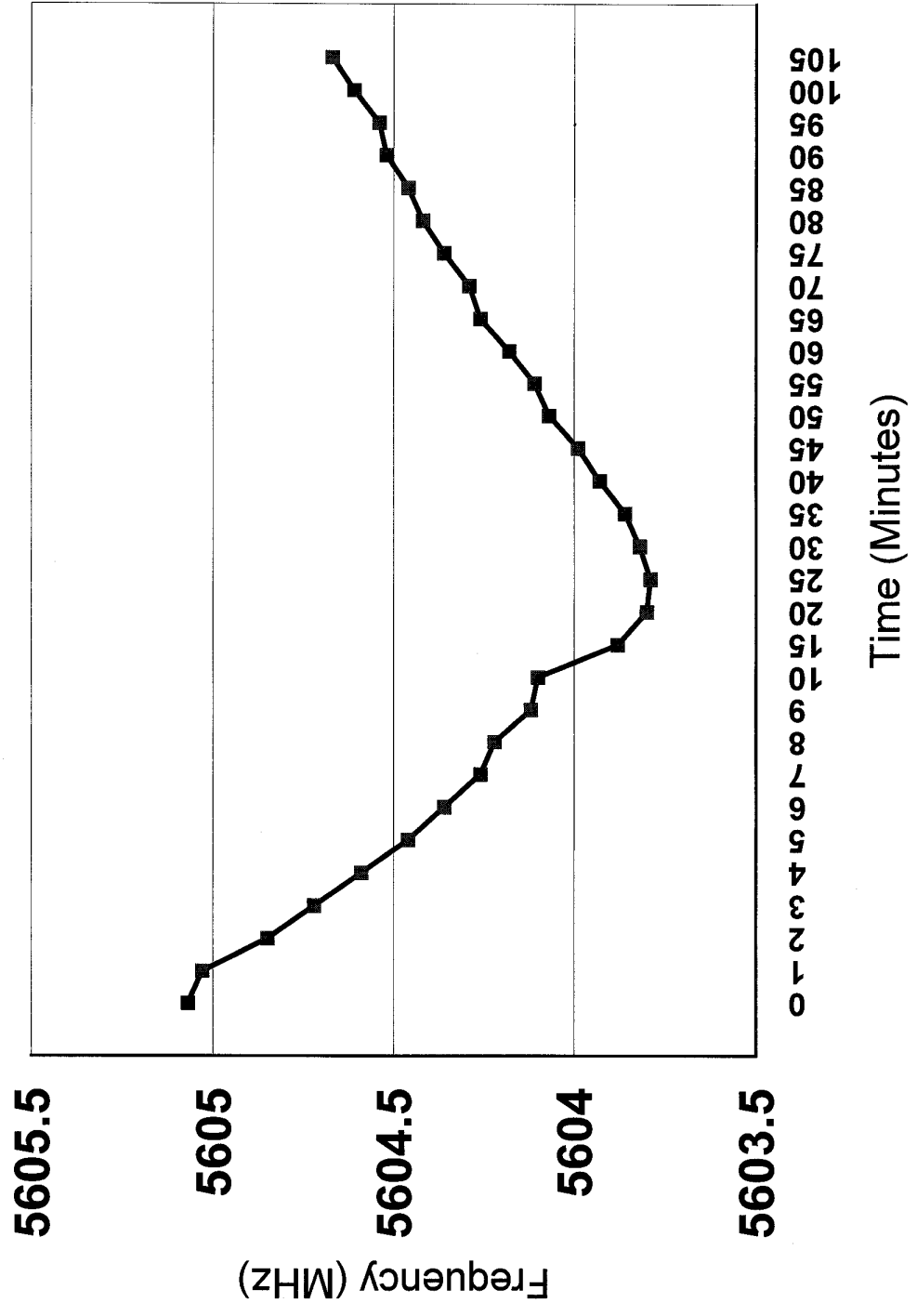
# Frequency vs Time @ +10C



Frequency Stability VS Temperature  
Temperature 0°C

Time in Minutes From Radiate On	Frequency (MHz)
0	5,605.07
1	5,605.03
2	5,604.85
3	5,604.72
4	5,604.59
5	5,604.46
6	5,604.36
7	5,604.26
8	5,604.22
9	5,604.12
10	5,604.1
15	5,603.88
20	5,603.8
25	5,603.79
30	5,603.82
35	5,603.86
40	5,603.93
45	5,603.99
50	5,604.07
55	5,604.11
60	5,604.18
65	5,604.26
70	5,604.29
75	5,604.36
80	5,604.42
85	5,604.46
90	5,604.52
95	5,604.54
100	5,604.61
105	5,604.67

# Frequency vs Time @ 0C

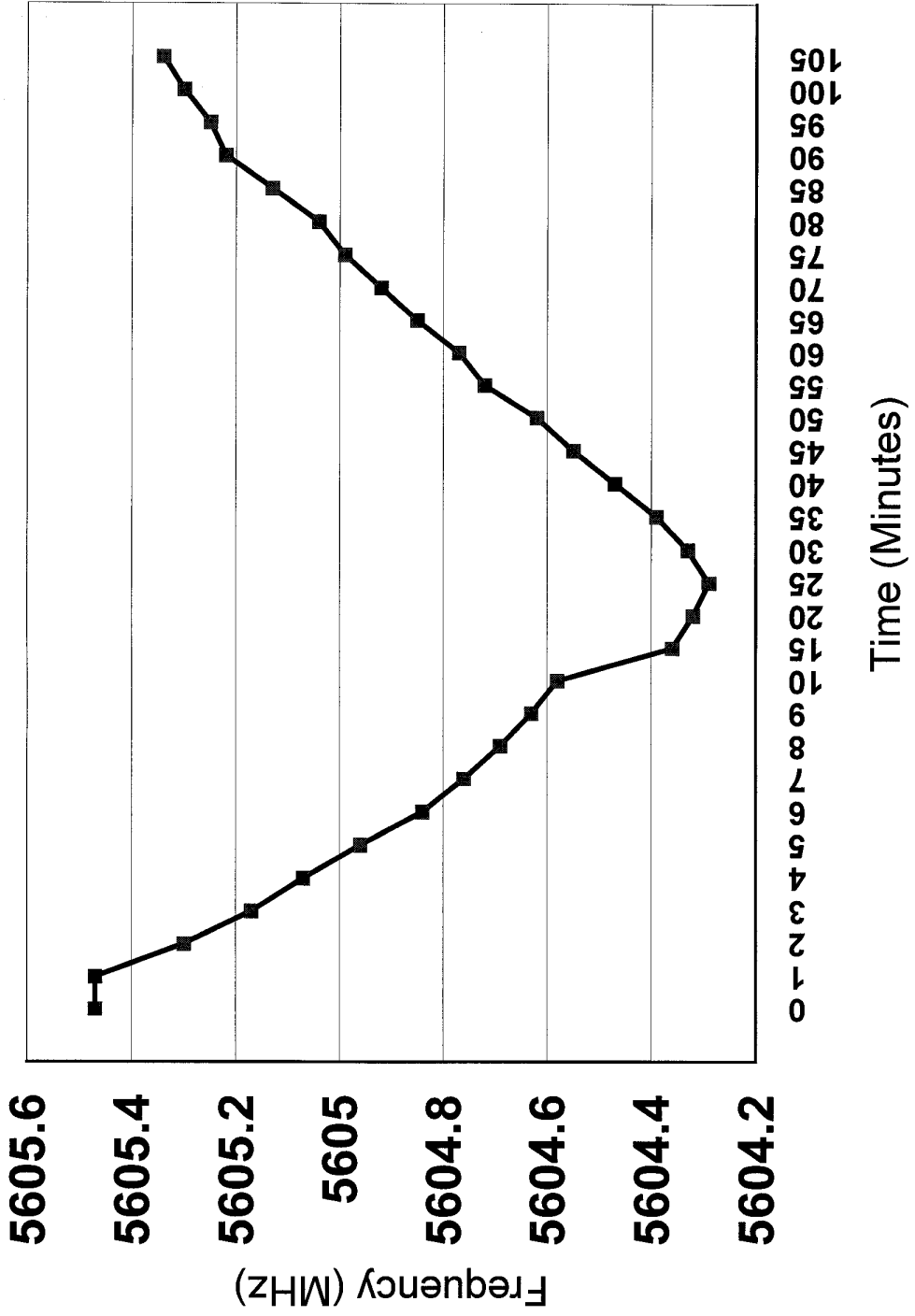


Frequency Stability VS Temperature  
Temperature -10°C

Time in Minutes From Radiate On	Frequency (MHz)
0	5,605.47
1	5,605.47
2	5,605.3
3	5,605.17
4	5,605.07
5	5,604.96
6	5,604.84
7	5,604.76
8	5,604.69
9	5,604.63
10	5,604.58
15	5,604.36
20	5,604.32
25	5,604.29
30	5,604.33
35	5,604.39
40	5,604.47
45	5,604.55
50	5,604.62
55	5,604.72
60	5,604.77
65	5,604.85
70	5,604.92
75	5,604.99
80	5,605.04
85	5,605.13
90	5,605.22
95	5,605.25
100	5,605.3
105	5,605.34



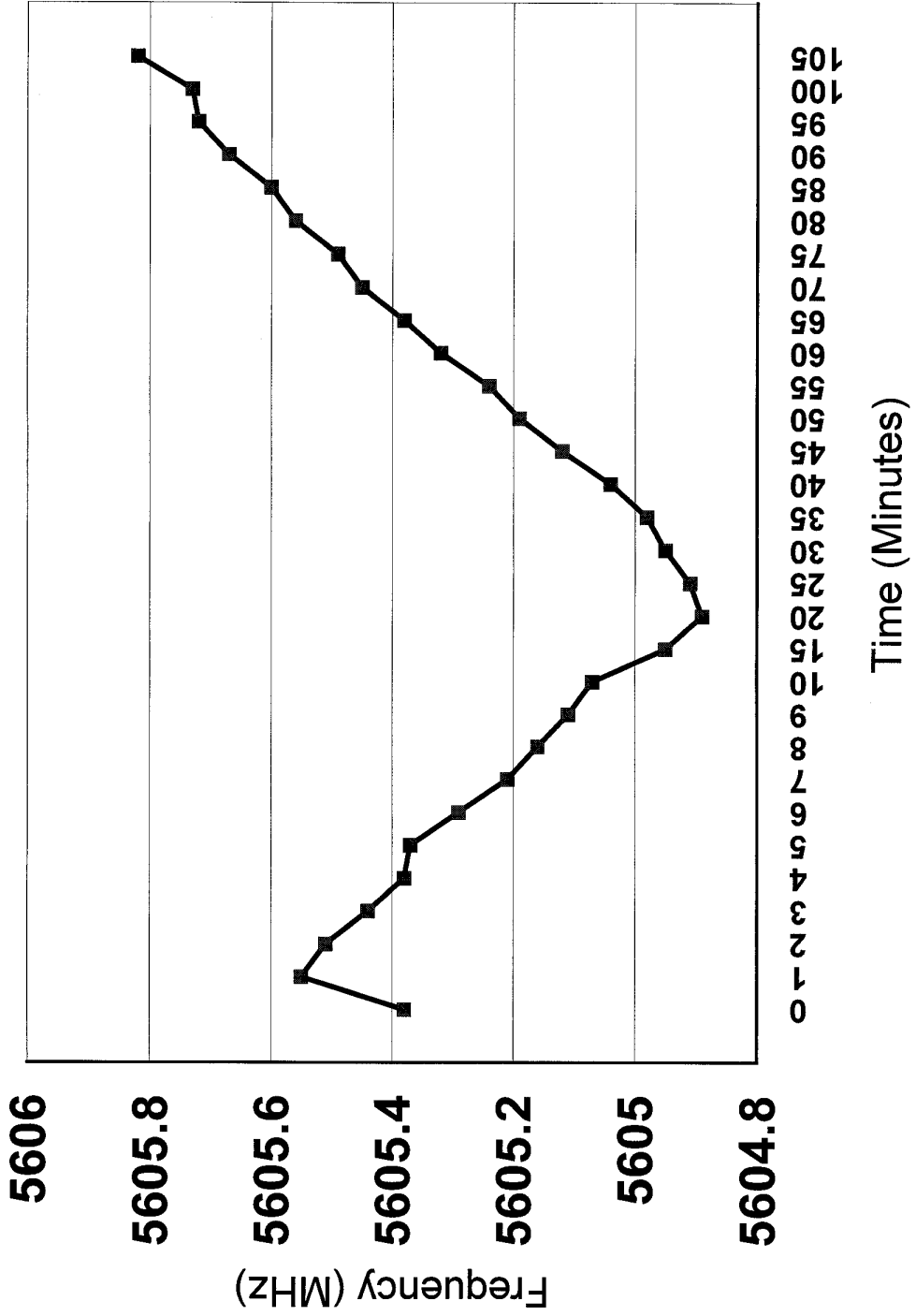
# Frequency vs Time @-10C



Frequency Stability VS Temperature  
Temperature -20°C

Time in Minutes From Radiate On	Frequency (MHz)
0	5,605.38
1	5,605.55
2	5,605.51
3	5,605.44
4	5,605.38
5	5,605.37
6	5,605.29
7	5,605.21
8	5,605.16
9	5,605.11
10	5,605.07
15	5,604.95
20	5,604.89
25	5,604.91
30	5,604.95
35	5,604.98
40	5,605.04
45	5,605.12
50	5,605.19
55	5,605.24
60	5,605.32
65	5,605.38
70	5,605.45
75	5,605.49
80	5,605.56
85	5,605.6
90	5,605.67
95	5,605.72
100	5,605.73
105	5,605.82

# Frequency vs Time @ -20C



Frequency Stability VS Temperature  
Temperature -30°C

Time in Minutes From Radiate On	Frequency (MHz)
0	5,606.66
1	5,606.85
2	5,606.85
3	5,606.84
4	5,606.77
5	5,606.72
6	5,606.66
7	5,606.64
8	5,606.59
9	5,606.57
10	5,606.56
15	5,606.53
20	5,606.53
25	5,606.5
30	5,606.55
35	5,606.58
40	5,606.6
45	5,606.62
50	5,606.68
55	5,606.71
60	5,606.73
65	5,606.77
70	5,606.83
75	5,606.85
80	5,606.9
85	5,606.94
90	5,606.93
95	5,606.99
100	5,607.02
105	5,607.02

Frequency vs Time @ -30C

