

Frequency Stability vs. Temperature / Primary Power Variation

The Data attached with this file shows the Frequency Stability vs. Temperature Variation from start up to unit stabilization at ambient temperatures from -30° ~ $+50^{\circ}$ degrees (C).

For this test, the transmitter is set up in the Temperature Chamber. At this point there is no primary power applied to the Radar System. The Chamber Temperature is set to -30° C. After the temperature in the Chamber stabilized, primary power was applied to the unit for Five (5) minutes for system warm-up. The unit was placed into a radiate mode and the frequency was recorded immediately. The frequency is then recorded in time increments shown on the attached data files. A block diagram showing test setup is attached.

For the Voltage Variation Test, a 120VAC Variac was inserted into the primary supply line and set to 115VAC output. After the Radar System warm up period, the radar was placed into a radiate mode and frequency measured. Primary power was raised to 30% (148VAC) above Radar System operating voltage and the frequency was measured. Primary power was then lowered to 30% (82VAC) below Radar System operating voltage and the frequency was measured. No Change in the Radars output Frequency was noted, as all system power supplies are regulated.

AMBIENT TEMPERATURE -30 C

BUVMINIMAX-100C FREQUENCY STABILITY VS TEMPERATURE

Time in Minutes
from Radiate On

Freq (Mhz) GHz

0	5.659
1	5.660
2	5.659
3	5.659
4	5.659
5	5.659
6	5.659
7	5.659
8	5.659
9	5.660
10	5.659
15	5.660
20	5.659
25	5.660
30	
35	
40	
45	
50	
55	
60	
65	
70	
75	
80	
85	
90	
95	
100	
105	
110	
115	
120	
125	
130	

AMBIENT TEMPERATURE -20 C

BUVMINIMAX-100C FREQUENCY STABILITY VS TEMPERATURE

Time in Minutes
from Radiate On

Freq (Mhz)

0	5.660
1	5.660
2	5.660
3	5.659
4	5.659
5	5.660
6	5.662
7	5.658
8	5.656
9	5.661
10	5.663
15	5.662
20	5.662
25	5.662
30	5.663
35	5.662
40	5.662
45	5.662
50	
55	
60	
65	
70	
75	
80	
85	
90	
95	
100	
105	
110	
115	
120	
125	
130	

AMBIENT TEMPERATURE -10 C

BUVMINIMAX-100C FREQUENCY STABILITY VS TEMPERATURE

Time in Minutes
from Radiate On

Freq (Mhz)

0	5.659
1	5.659
2	5.660
3	5.660
4	5.659
5	5.658
6	5.661
7	5.662
8	5.661
9	5.662
10	5.661
15	5.661
20	5.661
25	5.662
30	5.661
35	5.662
40	5.662
45	5.661
50	5.662
55	
60	
65	
70	
75	
80	
85	
90	
95	
100	
105	
110	
115	
120	
125	
130	

AMBIENT TEMPERATURE 0 C

BUVMINIMAX-100C FREQUENCY STABILITY VS TEMPERATURE

Time in Minutes
from Radiate On

Freq (Mhz)

0	5 6 5 6
1	5 6 5 6
2	5 6 6 0
3	5 6 6 0
4	5 6 6 0
5	5 6 6 0
6	5 6 6 0
7	5 6 6 0
8	5 6 6 0
9	5 6 6 0
10	5 6 6 0
15	5 6 6 0
20	
25	
30	
35	
40	
45	
50	
55	
60	
65	
70	
75	
80	
85	
90	
95	
100	
105	
110	
115	
120	
125	
130	

AMBIENT TEMPERATURE +10 C

BUVMINIMAX-100C FREQUENCY STABILITY VS TEMPERATURE

Time in Minutes
from Radiate On

Freq (Mhz)

0	56 59
1	56 59
2	56 59
3	56 59
4	56 59
5	56 59
6	56 59
7	56 59
8	56 59
9	56 59
10	56 59
15	56 59
20	
25	
30	
35	
40	
45	
50	
55	
60	
65	
70	
75	
80	
85	
90	
95	
100	
105	
110	
115	
120	
125	
130	

AMBIENT TEMPERATURE +20 C

BUVMINIMAX-100C FREQUENCY STABILITY VS TEMPERATURE

Time in Minutes
from Radiate On

Freq (Mhz)

0	5660
1	5659
2	5660
3	5659
4	5659
5	5660
6	5660
7	5659
8	5660
9	5659
10	5659
15	5660
20	
25	
30	
35	
40	
45	
50	
55	
60	
65	
70	
75	
80	
85	
90	
95	
100	
105	
110	
115	
120	
125	
130	

AMBIENT TEMPERATURE +30 C

BUVMINIMAX-100C FREQUENCY STABILITY VS TEMPERATURE

Time in Minutes
from Radiate On

Freq (Mhz)

0	5659
1	5659
2	5658
3	5658
4	5658
5	5658
6	5658
7	5658
8	5658
9	5659
10	5660
15	5659
20	
25	
30	
35	
40	
45	
50	
55	
60	
65	
70	
75	
80	
85	
90	
95	
100	
105	
110	
115	
120	
125	
130	

AMBIENT TEMPERATURE +40 C

BUVMINIMAX-100C FREQUENCY STABILITY VS TEMPERATURE

Time in Minutes
from Radiate On

Freq (Mhz)

0	5658
1	5659
2	5658
3	5659
4	5659
5	5659
6	5659
7	5659
8	5658
9	5658
10	5659
15	5660
20	
25	
30	
35	
40	
45	
50	
55	
60	
65	
70	
75	
80	
85	
90	
95	
100	
105	
110	
115	
120	
125	
130	

AMBIENT TEMPERATURE +50 C

BUVMINIMAX-100C FREQUENCY STABILITY VS TEMPERATURE

Time in Minutes
from Radiate On

Freq (Mhz)

0	5660
1	5660
2	5660
3	5660
4	5660
5	5660
6	5660
7	5660
8	5659
9	5660
10	5660
15	5660
20	
25	
30	
35	
40	
45	
50	
55	
60	
65	
70	
75	
80	
85	
90	
95	
100	
105	
110	
115	
120	
125	
130	