

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° to $+50^{\circ}$ degrees C.

For this test, the transmitter is set up in the temperature chamber ready to run. At this point there is no primary power applied to the Radar. The chamber temperature is set to -30° C. After the temperature in the chamber and magnetron stabilized, primary power was applied to the unit and to the magnetron filaments for 3 minute warm up. The unit was placed into the radiate mode remotely and the frequency is then recorded immediately. The frequency is then recorded in increments shown on the attached data files. A block diagram showing the equipment setup is attached.

For the voltage variation test, a 220VAC variac was inserted into the primary supply line and set to 220VAC output. After the magnetron filament warm up period, the unit is placed into the radiate mode and frequency measured. Primary power was then raised to 253VAC and frequency measured. Primary power was then lowered to 187VAC and frequency measured. No change in the units output frequency was noted, as all power supplies are regulated.

AMBIENT TEMPERATURE -30 C**BUVDTWR-10000C FREQUENCY STABILITY VS TEMPERATURE**Time in minutes
from Radiate On

Freq (Mhz)

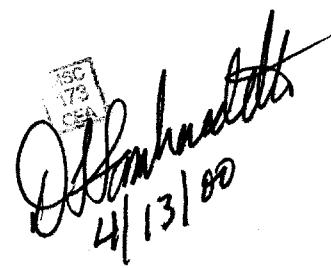
0	<u>5692.698</u>
1	.722
2	.777
3	.699
4	.656
5	.621
6	.610
7	.596
8	.609
9	.587
10	.605
15	.658
20	.659
25	5692.758
30	.771
35	.832
40	.895
45	.922
50	.936
55	.982
60	<u>5693.002</u>
65	.003
70	.004
75	.054
80	.057
85	.108
90	.075
95	.058
100	
105	
110	
115	
120	
125	
130	

MSC
173
CEA

Glanchonatt
A13/00

AMBIENT TEMPERATURE -20 C**BUVDTWR-10000C FREQUENCY STABILITY VS TEMPERATURE**

Time in minutes from Radiate On	Freq (Mhz)
0	5692.889
1	.744
2	.733
3	.704
4	.702
5	.656
6	.632
7	.603
8	.612
9	.601
10	.595
15	.597
20	.585
30	.583
35	.599
40	.597
45	.623
50	.608
55	.583
60	.584
65	.600
70	.555
75	.582
80	.502
85	.540
90	.566
95	
100	
105	
110	
115	
120	
125	
130	


4/13/00

AMBIENT TEMPERATURE -10 C**BUVDTWR-10000C FREQUENCY STABILITY VS TEMPERATURE**Time in minutes
from Radiate On

Freq (Mhz)

0	5692.419
1	.586
2	.437
3	.342
4	.270
5	.191
6	.179
7	.133
8	.127
9	.119
10	.110
15	.097
20	.050
25	5692.015
30	.035
35	.008
40	5691.973
45	.953
50	.940
55	.930
60	.929
65	.915
70	
75	
80	
85	
90	
95	
100	
105	
110	
115	
120	
125	
130	


Ottomanhaeupt
4/13/00

AMBIENT TEMPERATURE 0 C**BUVDTWR-10000C FREQUENCY STABILITY VS TEMPERATURE**Time in minutes
from Radiate On

Freq (Mhz)

0

5692.063

1

5691.981

2

.947

3

.914

4

.800

5

.767

6

.734

7

.702

8

.673

9

.644

10

.600

15

.567

20

.535

25

→ 5691.475

30

.439

35

.407

40

.389

45

.335

50

.318

55

.308

60

.285

65

70

75

80

85

90

95

100

105

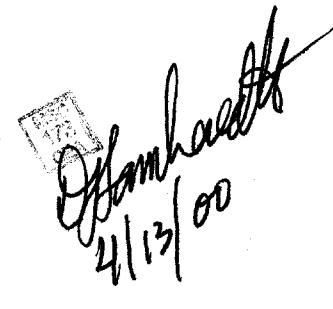
110

115

120

125

130


D. J. Bambach
4/13/00

AMBIENT TEMPERATURE +10 C

BUVDTWR-10000C FREQUENCY STABILITY VS TEMPERATURE

Time in minutes
from Radiate On

Freq (Mhz)

0	<u>5691.496</u>
1	.345
2	.265
3	.220
4	.110
5	.090
6	.039
7	.001
8	<u>5690.962</u>
9	.938
10	.920
15	.879
20	.869
25	→ 5690.842
30	.780
35	.730
40	.704
45	.684
50	.646
55	.625
60	.608
65	.572
70	.561
75	.549
80	
85	
90	
95	
100	
105	
110	
115	
120	
125	
130	

Off Airhead 4/13/00

AMBIENT TEMPERATURE +20 C

BUVDTWR-10000C FREQUENCY STABILITY VS TEMPERATURE

Time in minutes
from Radiate On

Freq (Mhz)

0	5690.801
1	.780
2	.611
3	.521
4	.456
5	.430
6	.361
7	.328
8	.274
9	.267
10	.222
15	.156
20	.138
25	5690.113
30	.058
35	.035
40	.009
45	5689.965
50	.950
55	.950
60	.921
65	.915
70	.909
75	.875
80	
85	
90	
95	
100	
105	
110	
115	
120	
125	
130	



G. Hanrahan
4/13/02

AMBIENT TEMPERATURE +30 C

BUVDTWR-10000C FREQUENCY STABILITY VS TEMPERATURE

Time in minutes
from Radiate On

Freq (Mhz)

0	5690.155
1	5689.934
2	.949
3	.853
4	.823
5	.787
6	.767
7	.716
8	.730
9	.668
10	.667
15	.621
20	.626
25 >	5689.609
30	.596
35	.563
40	.557
45	.507
50	.489
55	.456
60	.443
65	.415
70	
75	
80	
85	
90	
95	
100	
105	
110	
115	
120	
125	
130	

MSC
173
CEA

Hamidullah
4/14/00

AMBIENT TEMPERATURE +40 C

BUVDTWR-10000C FREQUENCY STABILITY VS TEMPERATURE

Time in minutes
from Radiate On

Freq (Mhz)

0	5689.226
1	.120
2	.056
3	5688.962
4	.904
5	.881
6	.840
7	.780
8	.784
9	.759
10	.735
15	.684
20	.654
25	→ 5688.659
30	.667
35	.644
40	.656
45	.626
50	.602
55	.584
60	.575
65	.554
70	.537
75	.545
80	
85	
90	
95	
100	
105	
110	
115	
120	
125	
130	



Al Sanderoff
4/14/00

AMBIENT TEMPERATURE +50 C

BUVDTWR-10000C FREQUENCY STABILITY VS TEMPERATURE

Time in minutes
from Radiate On

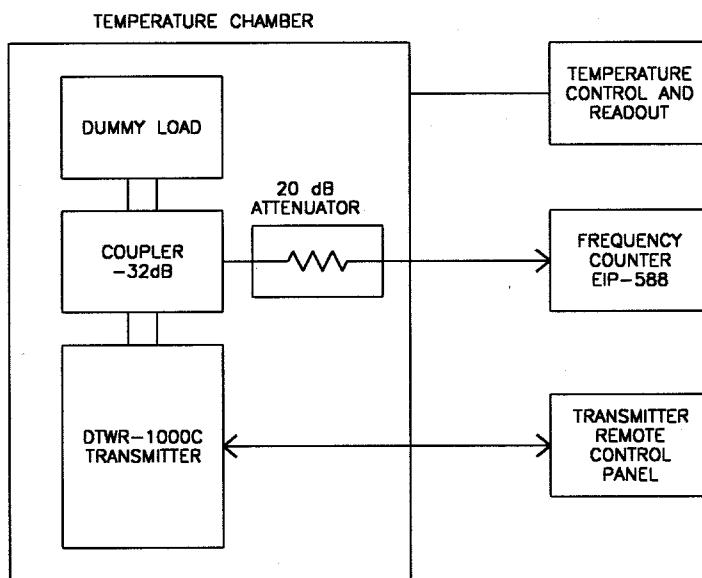
Freq (Mhz)

0	5688.261
1	.256
2	.150
3	5687.939
4	.916
5	.869
6	.842
7	.815
8	.790
9	.777
10	.755
15	.748
20	.746
25	5687.753
30	.743
35	.755
40	.726
45	.744
50	.745
55	.711
60	.728
65	.715
70	.722
75	
80	
85	
90	
95	
100	
105	
110	
115	
120	
125	
130	

MSC
173
CEA

Deb Marshall
4/14/00

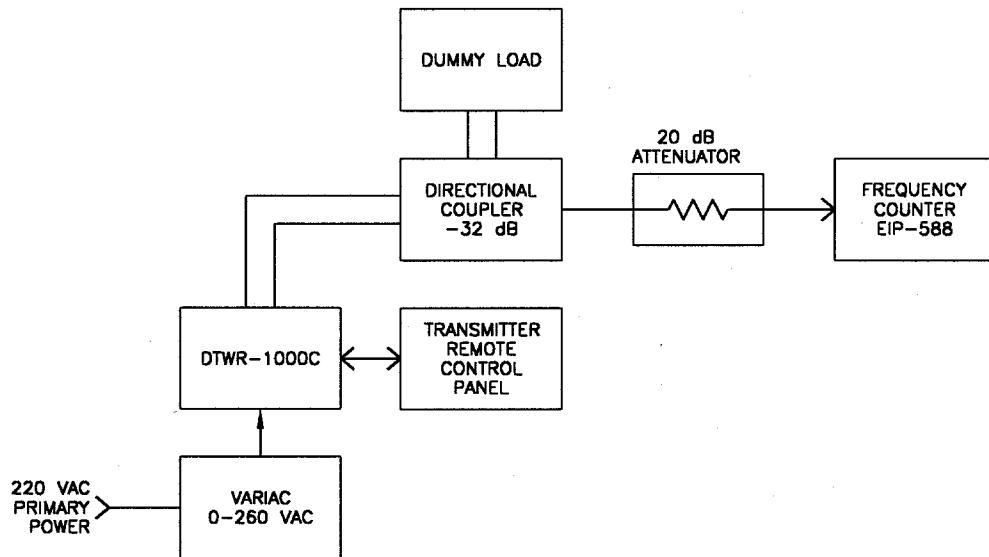
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



TEST SETUP FOR
TEMPERATURE VARIATION

SIZE	CODE IDENT NO.	DRAWING NO.
A	50187	SK-1763
APPR./DATE	SCALE	5718

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



TEST SETUP FOR
PRIMARY POWER VARIATION

SIZE	CODE IDENT NO.	DRAWING NO.
	A 50187	SK-1764
APPR./DATE	SCALE	5718
		SHEET 1 OF 1