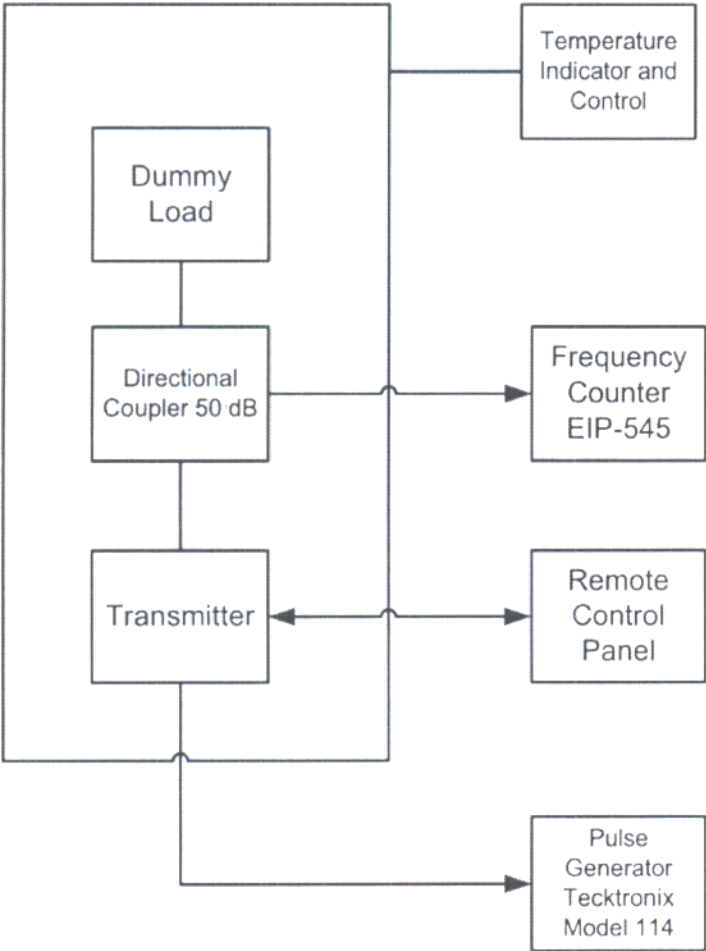
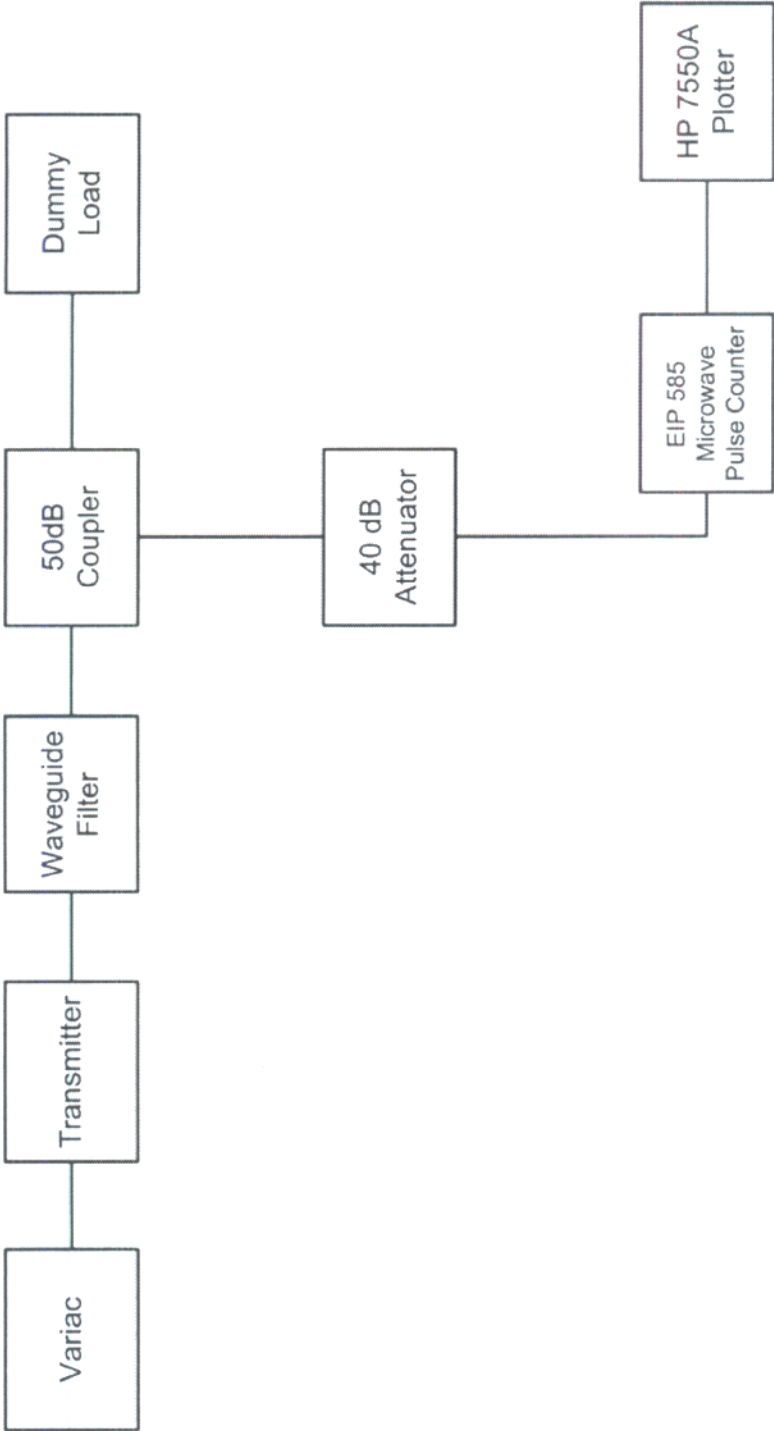


Test Setup for Frequency Stability vs. Temperature Test



Enviromental Chamber
Thermontron Model 310EC10WM

Test Setup for Frequency vs. Voltage Variation Test



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 -40° to +50°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 is set at -40°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 5 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 5 minutes, system was put in radiate mode and frequency measured. Primary power was then raised to 253 VAC and frequency measured. Primary was then lowered to 187 VAC and frequency measured. No change in frequency was noted as the power supplies are regulated.

Frequency Stability vs. Temperature
Temperature -40°C

Time in Minutes From Radiate On	Frequency (MHz)
0	5553.457
1	5553.277
2	5553.053
3	5552.939
4	5552.725
5	5552.514
6	5552.499
7	5552.359
8	5552.255
9	5552.191
10	5552.159
15	5551.941
20	5551.919
25	5551.904
30	5551.977
35	5551.997
40	5552.013
45	5552.044
50	5552.022
55	5552.000
60	5552.005
65	5552.039
70	5552.073
75	5552.134
80	5552.357
85	5552.411
90	5552.395
95	5552.401
100	5552.438
105	5552.490
110	5552.555
115	5552.570
120	5552.575

Frequency Stability vs. Temperature
Temperature -30°C

Time in Minutes From Radiate On	Frequency (MHz)
0	5553.382
1	5553.293
2	5552.915
3	5552.799
4	5552.549
5	5552.457
6	5552.359
7	5552.232
8	5552.203
9	5552.093
10	5552.033
15	5551.724
20	5551.590
25	5551.553
30	5551.535
35	5551.540
40	5551.559
45	5551.571
50	5551.575
55	5551.597
60	5551.581
65	5551.587
70	5551.592
75	5551.599
80	5551.611
85	5551.620
90	5551.623
95	5551.637
100	5551.620
105	5551.631
110	5551.627
115	5551.627
120	5551.629

Frequency Stability vs. Temperature
Temperature -20°C

Time in Minutes From Radiate On	Frequency (MHz)
0	5552.594
1	5552.515
2	5552.253
3	5552.033
4	5551.953
5	5551.705
6	5551.553
7	5551.449
8	5551.353
9	5551.205
10	5551.145
15	5550.949
20	5550.733
25	5550.551
30	5550.542
35	5550.590
40	5550.722
45	5550.791
50	5550.905
55	5550.967
60	5550.999
65	5550.993
70	5550.999
75	5550.995
80	5550.997
85	5550.999
90	5550.999
95	5551.002
100	5551.010
105	5551.001
110	5550.998
115	5551.001
120	5551.004

Frequency Stability vs. Temperature
Temperature -10°C

Time in Minutes From Radiate On	Frequency (MHz)
0	5551.947
1	5551.719
2	5551.594
3	5551.354
4	5551.101
5	5551.055
6	5550.950
7	5550.750
8	5550.553
9	5550.522
10	5550.479
15	5550.159
20	5550.003
25	5549.973
30	5549.991
35	5549.993
40	5550.014
45	5550.047
50	5550.090
55	5550.095
60	5550.112
65	5550.141
70	5550.153
75	5550.172
80	5550.229
85	5550.214
90	5550.259
95	5550.305
100	5550.299
105	5550.277
110	5550.295
115	5550.295
120	5550.293