JXBLMDSXP4-8T

EA94961

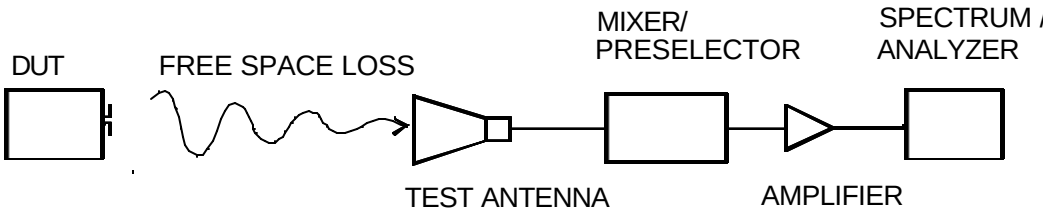
Questions # 3 (measurement procedure and sample of calculation)

The calibration for spurious is shown on the following page. The Spectrum analyzer is calibrated by adding all the gain factors for each of the measurement bands. The bands are determined by the frequency range of the various elements of the test system. Essentially, the analyzer's reference is calibrated to the power level of the transmitter under test. The limit line is placed below the reference at the required specification.

Spurious, Cabinet Radiation Limit Line, Calculation Table

Frequency Band	26MHz-2GHz	2-18 GHz	18-26.5 GHz	26.5-40 GHz	40-50 GHz	50-75 GHz	75-110 GHz	110-170 GHz
** Space Loss db	-48.0	-67.15	-70.5	-74.0	-76.02	-79.55	-82.87	-110.0
** Horn Gain db	5.5	8.2	24.0	15.0	24.0	25.0	24.1	25.0
Dipole Gain db	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Mixer Loss db	N/A	N/A	N/A	N/A	N/A	N/A	-34	-46
Carrier Level dbm	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Cable Loss db		-3.9	-4.3	-4.7	-5.6	N/A	N/A	N/A
Pre Sel Cal db	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A
Amplifier Gain db	N/A	N/A	N/A	N/A	N/A	N/A	N/A	72.0

Net Power @ Spec/Amp dbm	-25.9	-43.7	-31.6	-44.6	-38.8	-35.43	-52.6	-40.9
Reference Level Offset db	25.9	43.7	31.6	44.6	38.8	35.43	52.6	40.9



Procedure:

1. Set up DUT on rotating table and place test antenna to the appropriate distance.
2. Assemble test equipment for frequency range required.
3. Fill in calibration table for values as required, with test antenna gain and space loss for worst case with in the band being tested.
4. Set up spectrum analyzer for necessary parameters with offset and specification limits determined by table #1, pass fail read directly from display at -29dbm.
5. Activate DUT and rotate table at a rate not to exceed 2deg per sweep time of spectrum analyzer.
6. Perform test for both the vertical and horizontal polarizations.

7. Note significant frequency values and record in table # 2.

Radiated Emissions Analysis – 0 to 170 GHz

Frequency (Mhz)	Polarity	Level (dBm)	Spec. (dBm)	Margin (dBm)	Pass Fail
36.0	Horizontal	-52.0	-29.0	23.0	Pass
43.0	Horizontal	-50.0	-29.0	21.0	Pass
148.0	Horizontal	-41.0	-29.0	12.0	Pass
172.0	Horizontal	-52.0	-29.0	23.0	Pass
188.0	Horizontal	-39.0	-29.0	10.0	Pass
197.0	Horizontal	-48.0	-29.0	19.0	Pass
199.0	Horizontal	-47.0	-29.0	18.0	Pass
222.0	Horizontal	-48.0	-29.0	19.0	Pass
232.0	Horizontal	-53.0	-29.0	24.0	Pass
246.0	Horizontal	-54.0	-29.0	25.0	Pass
271.0	Horizontal	-52.0	-29.0	23.0	Pass
344.0	Horizontal	-53.0	-29.0	24.0	Pass
369.0	Horizontal	-52.0	-29.0	23.0	Pass
443.0	Horizontal	-56.0	-29.0	27.0	Pass
463.0	Horizontal	-55.0	-29.0	26.0	Pass
482.0	Horizontal	-56.0	-29.0	27.0	Pass
492.0	Horizontal	-52.0	-29.0	23.0	Pass
519.0	Horizontal	-51.0	-29.0	22.0	Pass
699.0	Horizontal	-50.0	-29.0	21.0	Pass
43.0	Vertical	-45.0	-29.0	16.0	Pass
75.0	Vertical	-49.0	-29.0	20.0	Pass
80.0	Vertical	-48.0	-29.0	19.0	Pass
120.0	Vertical	-45.0	-29.0	16.0	Pass
145.0	Vertical	-46.0	-29.0	17.0	Pass
165.0	Vertical	-40.0	-29.0	21.0	Pass
190.0	Vertical	-47.0	-29.0	18.0	Pass
201.0	Vertical	-48.0	-29.0	19.0	Pass
203.0	Vertical	-45.0	-29.0	16.0	Pass
303.0	Vertical	-46.0	-29.0	17.0	Pass
305.0	Vertical	-44.0	-29.0	15.0	Pass
500.0	Vertical	-49.0	-29.0	20.0	Pass
500 MHz to 170 GHz No spurious with in 20 db of the limit					
Data collected - July 99 by AB					