ANT2

1GHz~ 25 GHz (Horizontal), Channel 1 : 2412 MHz (RBW=1MHz VBW=1MHz)

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
3275.22	38.99	31.13	2.41	46.62	25.91	54.00	-28.09	100	99
3457.54	38.32	31.35	2.13	46.64	25.16	54.00	-28.84	100	323
4821.68	40.69	34.75	1.93	46.88	30.49	54.00	-23.51	100	158
6993.01	34.77	39.96	2.32	46.31	30.73	54.00	-23.27	101	222
7917.08	39.20	40.90	2.48	44.14	38.44	54.00	-15.56	102	338
8804.20	38.67	40.63	2.64	42.70	39.25	54.00	-14.75	101	208

'pk'---- peak, 'av'----average

1GHz~ 25 GHz (Vertical), Channel 1 : 2412 MHz (RBW=1MHz VBW=1MHz)

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
3342.66	39.91	31.21	2.31	46.63	26.80	54.00	-27.20	101	253
4000.00	44.82	32.00	1.68	46.11	32.39	54.00	-21.61	100	3
4821.68	43.90	34.75	1.93	46.88	33.70	54.00	-20.30	104	58
6944.06	34.50	39.68	2.31	46.34	30.15	54.00	-23.85	101	222
7953.05	39.00	41.03	2.49	43.97	38.55	54.00	-15.45	102	338
9631.37	37.06	39.20	2.77	42.11	36.93	54.00	-17.07	101	354

'pk'---- peak, 'av'----average

Note:

The Spectrum noise level + Correction Factor < Limit - 6 dB
Margin = Corrected Amplitude – Limit
Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
All frequencies from 1GHz to 25 GHz have been tested.

1GHz~ 25 GHz (Horizontal), Channel 6 : 2437 MHz (RBW=1MHz VBW=1MHz)

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
3292.71	39.79	31.15	2.38	46.62	26.70	54.00	-27.30	101	232
4314.69	41.30	32.88	1.79	46.42	29.56	54.00	-24.44	101	93
4870.63	40.70	34.96	1.94	46.93	30.67	54.00	-23.33	100	293
6951.05	33.73	39.72	2.31	46.33	29.42	54.00	-24.58	100	291
7947.05	39.20	41.01	2.49	44.00	38.70	54.00	-15.30	101	359
8792.21	38.18	40.65	2.64	42.69	38.78	54.00	-15.22	100	230

'pk'---- peak, 'av'----average

1GHz~ 25 GHz (Vertical), Channel 6 : 2437 MHz (RBW=1MHz VBW=1MHz)

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
3252.75	39.84	31.10	2.44	46.62	26.77	54.00	-27.23	102	39
3462.54	38.61	31.36	2.13	46.64	25.45	54.00	-28.55	101	147
4870.63	44.73	34.96	1.94	46.93	34.70	54.00	-19.30	100	18
6965.04	34.26	39.80	2.31	46.33	30.04	54.00	-23.96	102	191
7941.06	39.72	40.99	2.49	44.03	39.17	54.00	-14.83	104	345
8756.24	38.16	40.69	2.63	42.66	38.83	54.00	-15.17	102	11

'pk'---- peak, 'av'----average

Note:

The Spectrum noise level + Correction Factor < Limit - 6 dB

Margin = Corrected Amplitude – Limit

Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain

A margin of -8dB means that the emission is 8dB below the limit

All frequencies from 1GHz to 25 GHz have been tested.

1GHz~ 25 GHz (Horizontal), Channel 11: 2462 MHz (RBW=1MHz VBW=1MHz)

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
3167.83	38.78	31.00	2.57	46.60	25.75	54.00	-28.25	100	194
3497.50	39.95	31.40	2.07	46.65	26.77	54.00	-27.23	100	186
4923.08	41.30	35.18	1.95	46.97	31.45	54.00	-22.55	100	167
6951.05	34.55	39.72	2.31	46.33	30.25	54.00	-23.75	101	109
8192.81	38.05	41.12	2.53	43.26	38.45	54.00	-15.55	103	163
8768.23	38.78	40.68	2.64	42.67	39.42	54.00	-14.58	102	91

'pk'---- peak, 'av'----average

1GHz~ 25 GHz (Vertical), Channel 11 : 2462 MHz (RBW=1MHz VBW=1MHz)

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
3220.28	39.37	31.06	2.49	46.61	26.31	54.00	-27.69	100	139
3487.51	38.96	31.39	2.09	46.65	25.79	54.00	-28.21	100	147
4000.00	43.91	32.00	1.68	46.11	31.48	54.00	-22.52	100	118
4923.08	43.90	35.18	1.95	46.97	34.05	54.00	-19.95	102	191
6996.50	34.29	39.98	2.32	46.31	30.28	54.00	-23.72	103	139
8816.18	38.54	40.62	2.65	42.71	39.09	54.00	-14.91	104	345

'pk'---- peak, 'av'----averag

Note:

The Spectrum noise level + Correction Factor < Limit - 6 dB

Margin = Corrected Amplitude – Limit

Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain

A margin of -8dB means that the emission is 8dB below the limit

All frequencies from 1GHz to 25 GHz have been tested.

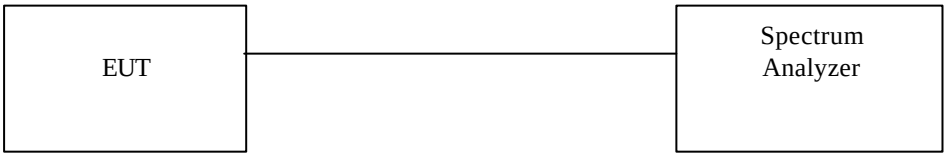
5.5 Band Edge Measurement

5.5.1 Test Procedure (Conducted)

1. The Transmitter output of EUT was connected to the spectrum analyzer.
   Equipment mode: Spectrum analyzer
   Detector function: Peak mode
   SPAN: 100MHz
   RBW: 100KHz
   VBW: 100KHz
   Center frequency: 2.4GHz, 2.4835GHz.

2. Using Peak Search to read the peak power of Carrier frequencies after Maximum Hold function is completed.
3. Find the next peak frequency outside the operation frequency band.

5.5.2 Test Setup (Conducted)



5.5.3 Test Data:

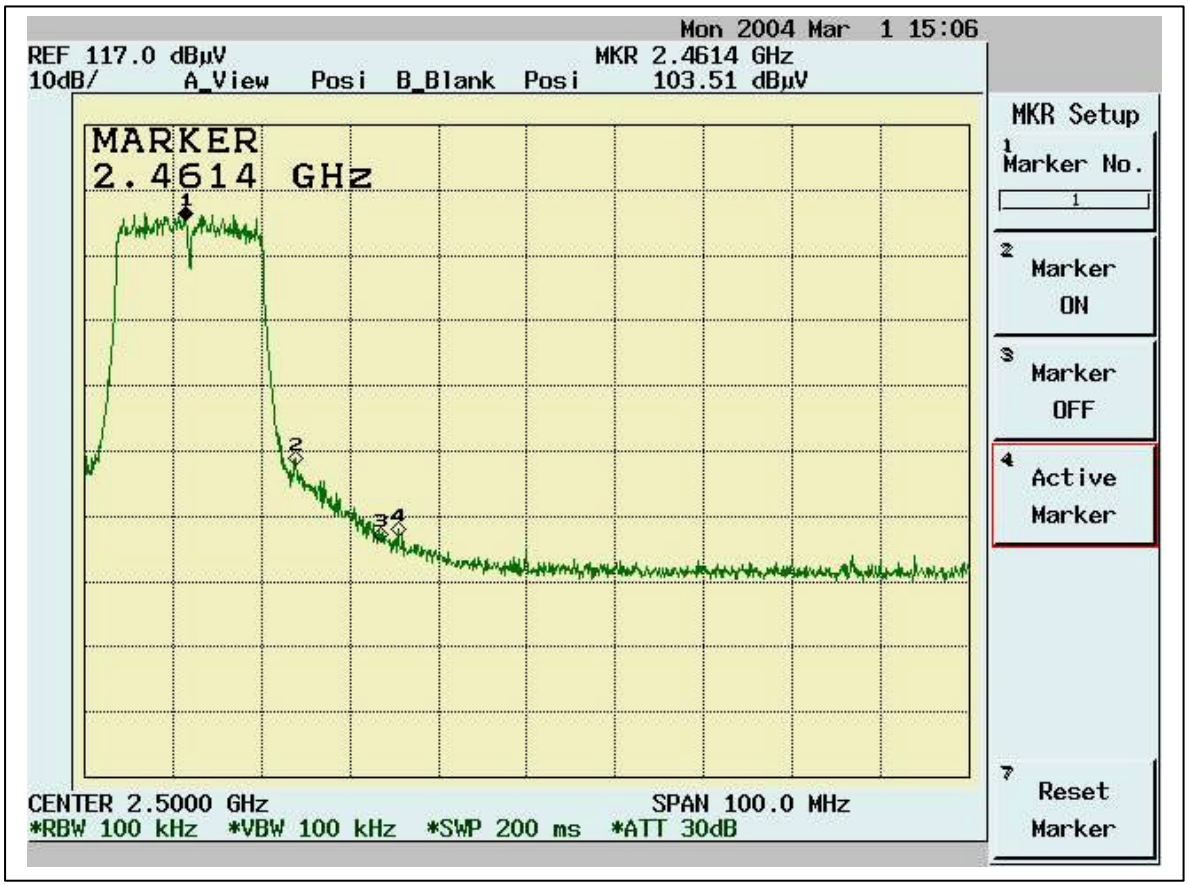
Band Edge measurement (Conducted)

Channel	Frequency (MHz)	Spectrum Reading (dBuV)	Carrier - Outsideband Limit: > 20dB (dB)	Pass/Fail
1	2414.9	104.89	---	---
Outside band	2400	67.79	37.10	Pass
11	2461.4	103.51	---	---
Outside band	2473.8	65.81	37.70	Pass

.

Band Edge Conducted measurement

Band Edge Conducted Measurement



5.5.4 Test Procedure (Radiated)

1. Antenna and Turntable test procedure same as Radiated Emission Measurement.
   Equipment mode: Spectrum analyzer
   Detector function: Peak mode
   SPAN: 100MHz
   RBW: 1MHz
   VBW: 1MHz
   Center frequency: 2.395GHz, 2.48 GHz.

2. Using Peak Search to read the peak power of Carrier frequencies after Maximum Hold function is completed.
3. Find the next peak frequency outside the operation frequency band.

4. For peak frequency emission level measurement in Restricted Band ,
   Change RBW: 1MHz ,
   VBW: 10Hz,
   Span: 100MHz.
5. Get the spectrum reading after Maximum Hold function is completed.

5.5.5 Test Setup (Radiated)

Same as *Radiated Emission Measurement*

5.5.6 Test Data:

ANT1

Table Band Edge measurement (Radiated)

Channel	Frequency (MHz)	Spectrum Reading (dBuV)	Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit: > 20dB (dBC)	Limit (dBuV/m)	Equip. Setup VBW	Pass or Fail
1(peak mode)	2406.8	67.83	31.67	99.5	---	-----	1MHz	-----
Outside band	2399.9	34.9	31.67	66.57	32.93	-----	1MHz	Pass
1(average mode)	2406.7	51.42	31.67	83.09	---	-----	10Hz	-----
Restricted band	2389.9	9.09	31.67	40.76	-----	54	10Hz	Pass
11(peak mode)	2465.8	69.16	31.64	100.8	----	-----	1MHz	-----
Outside band	2474.4	34.34	31.64	65.98	34.82	-----	1MHz	Pass
11(average mode)	2463.5	51.41	31.64	83.05	----	-----	10Hz	-----
Restricted band	2483.6	9.98	31.64	41.62	-----	54	10Hz	Pass

Note: The Spectrum plot of emission level measurement in Restricted band is attached.
Emission Level = Spectrum Reading + Correction Factor
Correction Factor = Antenna Factor + cable loss – amplifier gain
Both Horizontal and Vertical polarization have been tested and the worst data is listed above.

Band Edge measurement for radiated emission in Restricted Band(Radiated)

Peak Mode (Channel 1)

Band Edge measurement for radiated emission in Restricted Band(Radiated)

Average Mode (Channel 1)

Band Edge measurement for radiated emission in Restricted Band(Radiated)

Peak Mode (Channel 11)

Band Edge measurement for radiated emission in Restricted Band(Radiated)

Average Mode (Channel 11)

ANT2

Table Band Edge measurement (Radiated)

Channel	Frequency (MHz)	Spectrum Reading (dBuV)	Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit: > 20dB (dBC)	Limit (dBuV/m)	Equip. Setup VBW	Pass or Fail
1(peak mode)	2406.7	64.51	31.67	96.18	---	-----	1MHz	-----
Outside band	2399.4	31.51	31.67	63.18	33	-----	1MHz	Pass
1(average mode)	2405.7	47.24	31.67	78.91	---	-----	10Hz	-----
Restricted band	2389.9	6.77	31.67	38.44	-----	54	10Hz	Pass
11(peak mode)	2464.5	63.4	31.64	95.04	----	-----	1MHz	-----
Outside band	2476.9	25.7	31.64	57.34	37.7	-----	1MHz	Pass
11(average mode)	2466.3	47.8	31.64	79.44	----	-----	10Hz	-----
Restricted band	2483.6	6.53	31.64	38.17	-----	54	10Hz	Pass

Note: The Spectrum plot of emission level measurement in Restricted band is attached.
Emission Level = Spectrum Reading + Correction Factor
Correction Factor = Antenna Factor + cable loss – amplifier gain
Both Horizontal and Vertical polarization have been tested and the worst data is listed above.

Band Edge measurement for radiated emission in Restricted Band(Radiated)

Peak Mode (Channel 1)

Band Edge measurement for radiated emission in Restricted Band(Radiated)

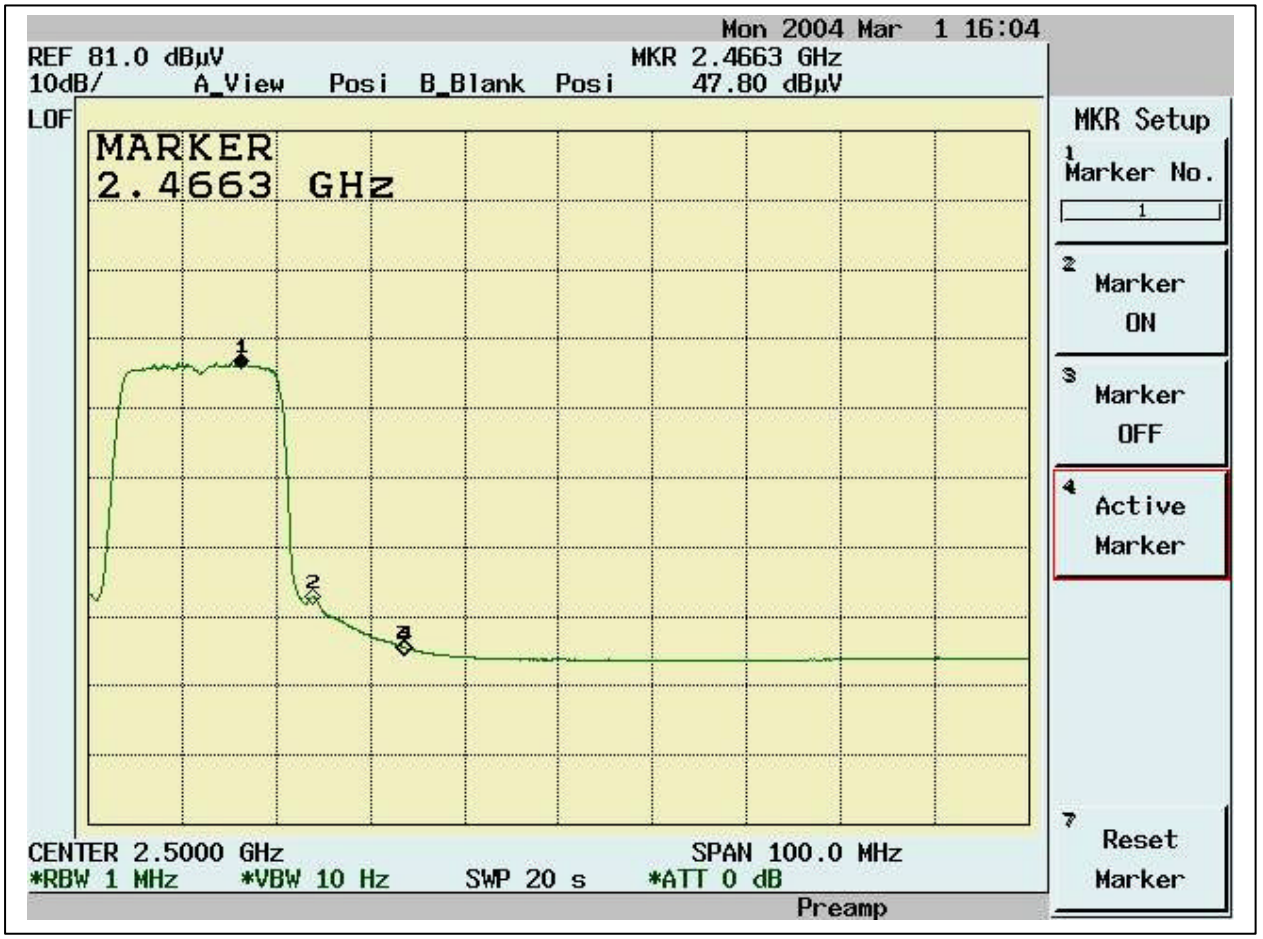
Average Mode (Channel 1)

Band Edge measurement for radiated emission in Restricted Band(Radiated)

Peak Mode (Channel 11)

Band Edge measurement for radiated emission in Restricted Band(Radiated)

Average Mode (Channel 11)



5.6 RF Exposure Measurement [Section 15.247(b)(4) & 1.1307(b)]

See the SAR report

5.7 DSSS Peak Power Spectral Density [Section 15.247(d)]

5.7.1 Test Procedure

1. The Transmitter output of EUT was connected to the spectrum analyzer.
   Equipment mode: Spectrum analyzer
   Detector function: Peak mode
   SPAN:1.5MHz
   RBW: 3KHz
   VBW: 30KHz
   Center frequency: fundamental frequency tested.
   Sweep time= 500 sec.

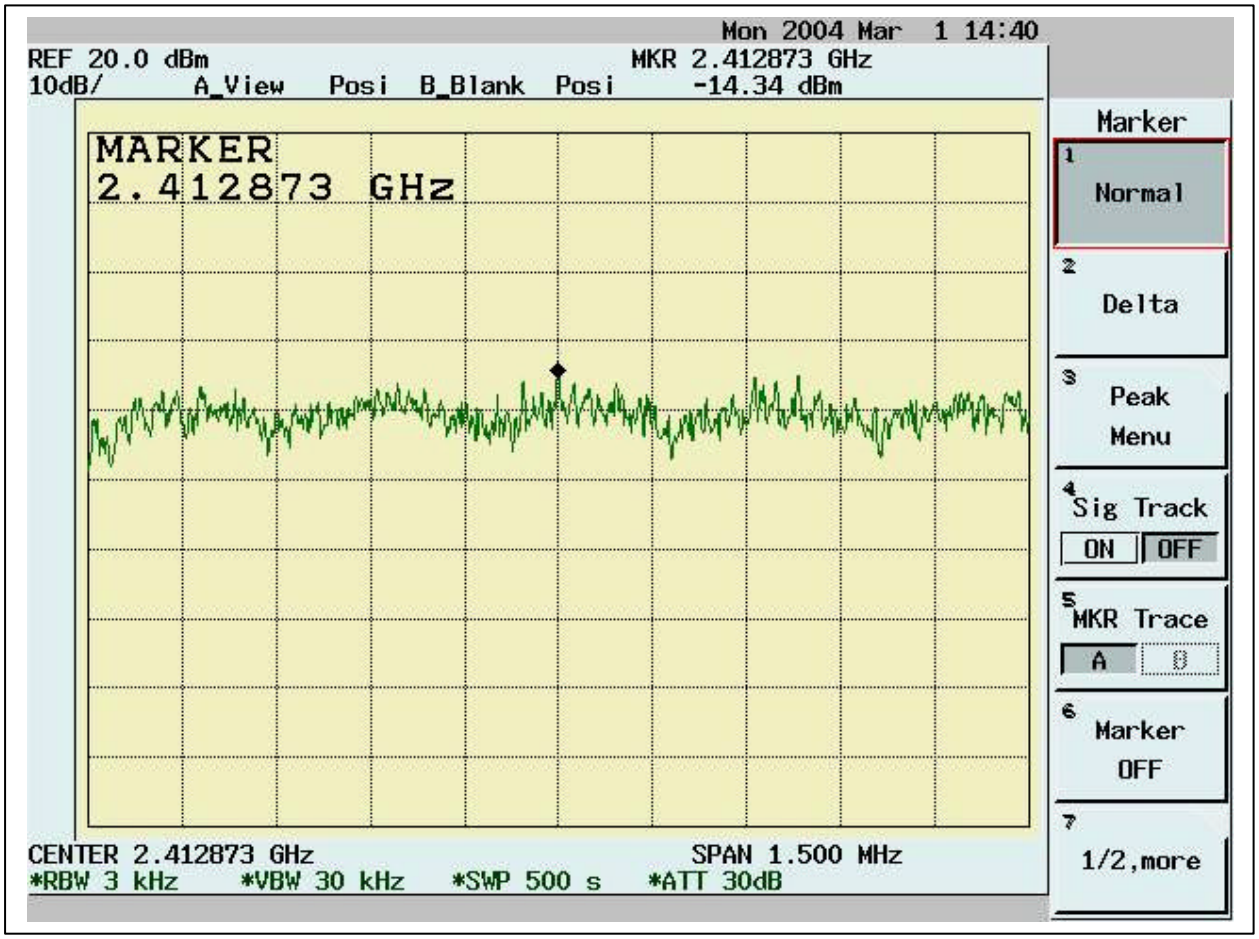
2. Using Peak Search to read the peak power after Maximum Hold function is completed.

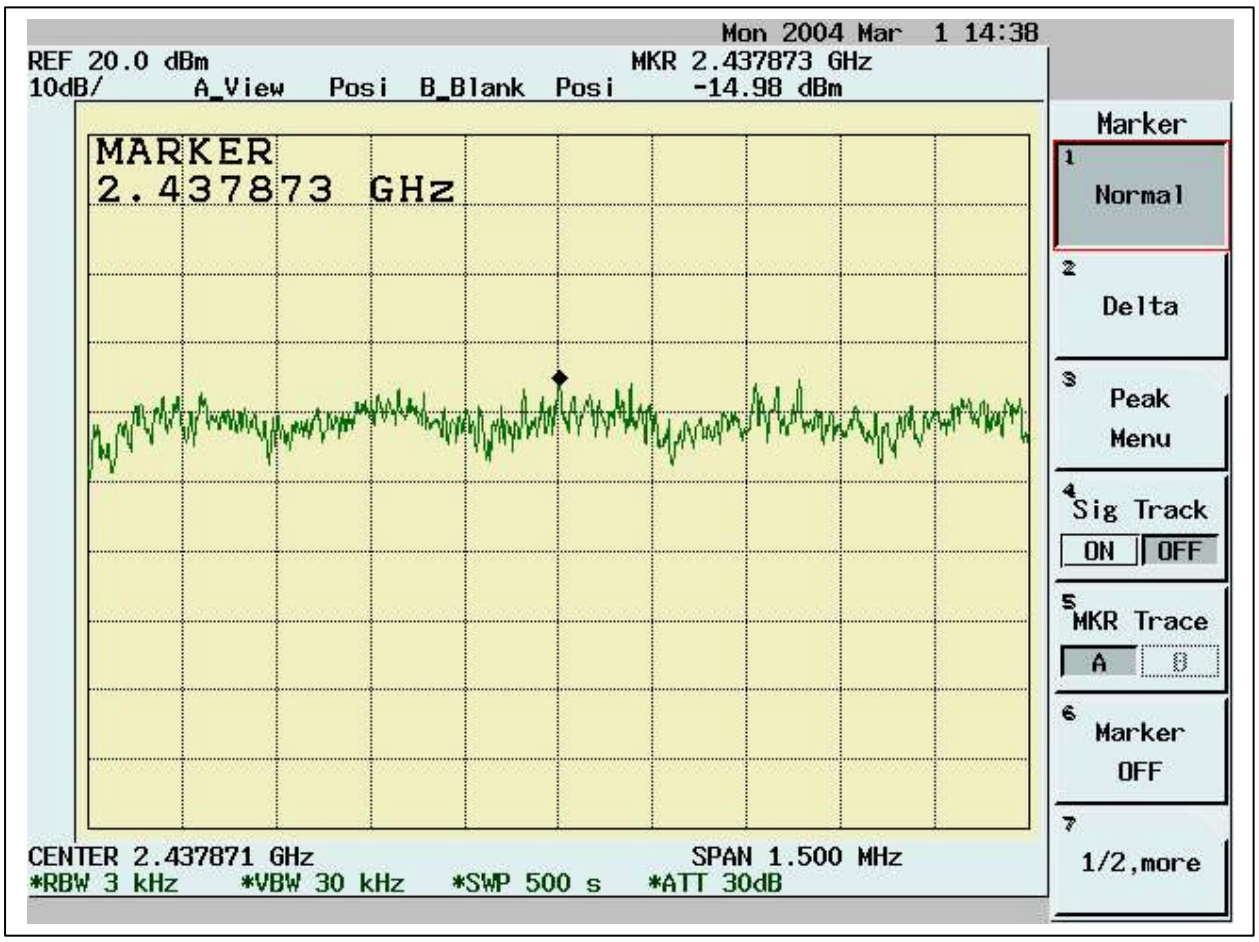
5.7.2 Test Setup

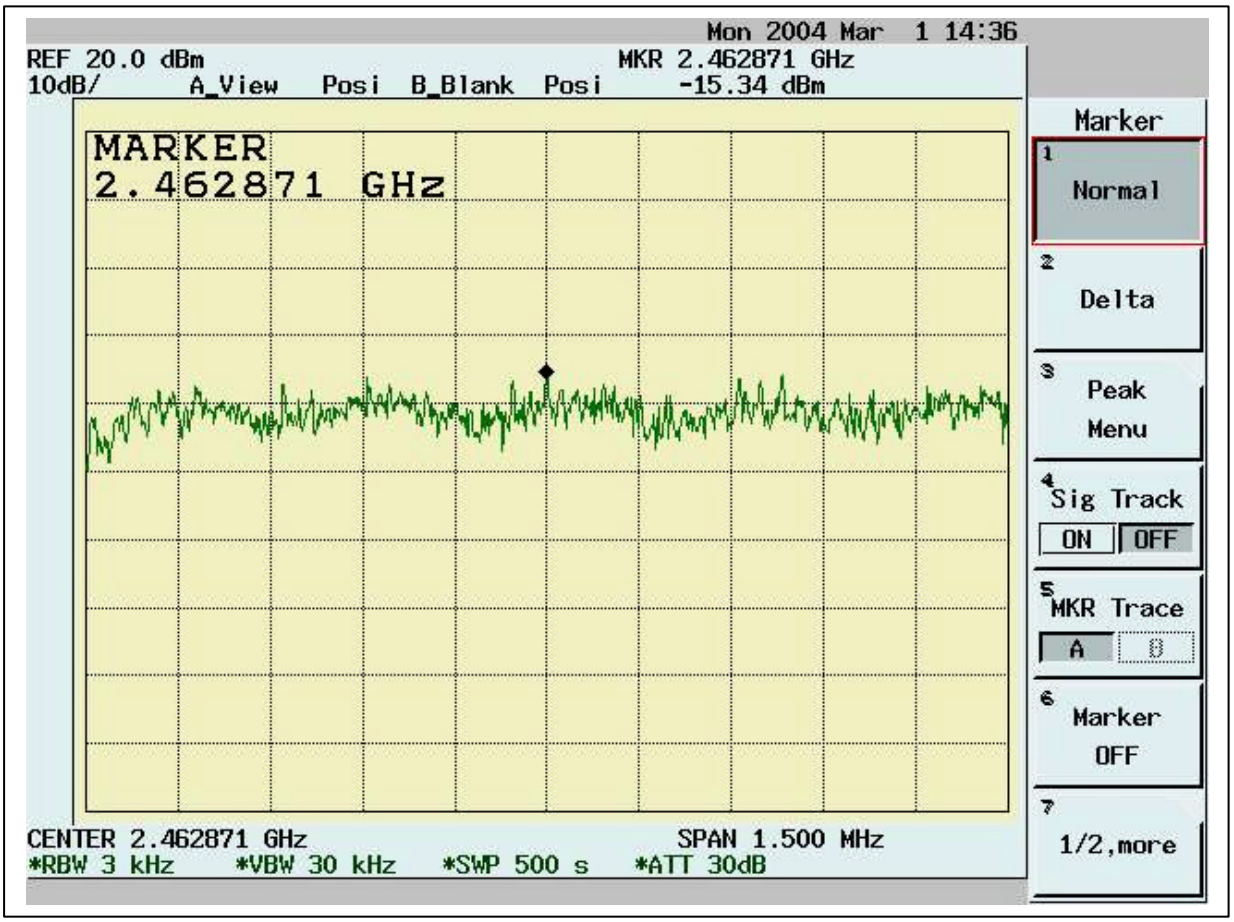
5.7.3 Test Data:

Table Maximum Peak Output Power Density

Chennel	Spectrum Reading (dBm/3KHz)	Cable Loss (dB)	Peak Power Output (dBm/3KHz)	Limit (dBm/3KHz)	Pass/Fail
1	-14.34	1.1	-13.24	8	Pass
6	-14.98	1.1	-13.88	8	Pass
11	-15.34	1.1	-14.24	8	Pass


Mon 2004 Mar 1 14:40
REF 20.0 dBm
MKR 2.412873 GHz
10dB/ A_View Posi B_Blank Posi -14.34 dBm
MARKER
2.412873 GHz
Marker
1 Normal
2 Delta
3 Peak Menu
4 Sig Track
ON OFF
5 MKR Trace
A B
6 Marker OFF
7 1/2,more
CENTER 2.412873 GHz
SPAN 1.500 MHz
*RBW 3 kHz *VBW 30 kHz *SWP 500 s *ATT 30dB


Mon 2004 Mar 1 14:38
REF 20.0 dBm
MKR 2.437873 GHz
10dB/ A_View Posi B_Blank Posi -14.98 dBm
MARKER
2.437873 GHz
Marker
1 Normal
2 Delta
3 Peak Menu
4 Sig Track
ON OFF
5 MKR Trace
A B
6 Marker OFF
7 1/2,more
CENTER 2.437871 GHz
SPAN 1.500 MHz
*RBW 3 kHz *VBW 30 kHz *SWP 500 s *ATT 30dB


Mon 2004 Mar 1 14:36
REF 20.0 dBm
MKR 2.462871 GHz
10dB/ A_View Posi B_Blank Posi -15.34 dBm
MARKER
2.462871 GHz
Marker
1 Normal
2 Delta
3 Peak Menu
4 Sig Track
ON OFF
5 MKR Trace
A B
6 Marker OFF
7 1/2,more
CENTER 2.462871 GHz
SPAN 1.500 MHz
*RBW 3 kHz *VBW 30 kHz *SWP 500 s *ATT 30dB

6. TEST RESULTS (Bluetooth)

6.1 Powerline Conducted Emissions [Section 15.207]

6.1.1 EUT Configuration

The EUT was set up on the non-conductive table that is 1.0 by 1.5 meter, 80cm above ground. The wall of the shielded room was located 40cm to the rear of the EUT.

Power to the EUT was provided through the LISN. The impedance vs. frequency characteristic of the LISN is complied with the limit shown on the figure 1 of ANSI C63.4-2001.

Both lines (neutral and hot) were connected to the LISN in series at testing. A coaxial-type connector which provides one 50 ohms terminating impedance was provided for connecting the test instrument. The excess length of the power cord was folded back and forth at the center of the lead so as to form a bundle not exceeding 40cm in length.

Any changes made to the configuration, or modifications made to the EUT, during testing are noted in the following test record.

If the EUT is a Personal Computer or a peripheral of personal computer, and the personal computer has an auxiliary AC outlet which can be used for providing power to an external monitor, then all measurements will be made with the monitor power from first the computer-mounted AC outlet and then a floor-mounted AC outlet.

6.1.2 Test Procedure

The system was set up as described above, with the EMI diagnostic software running. The main power line conducted EMI tests were run on the hot and neutral conductors of the power cord and the results were recorded. The effect of varying the position of the interface cables has been investigated to find the configuration that produces maximum emission.

At the frequencies where the peak values of the emissions were higher than 6dß below the applicable limits, the emissions were also measured with the quasi-peak detectors. At the frequencies where the quasi-peak values of the emissions were higher than 6dß below the applicable average limits, the emissions were also measured with the average detectors.

The highest emissions were analyzed in details by operating the spectrum analyzer in fixed tuned mode to determine the nature of the emissions and to provide information which could be useful in reducing their amplitude.

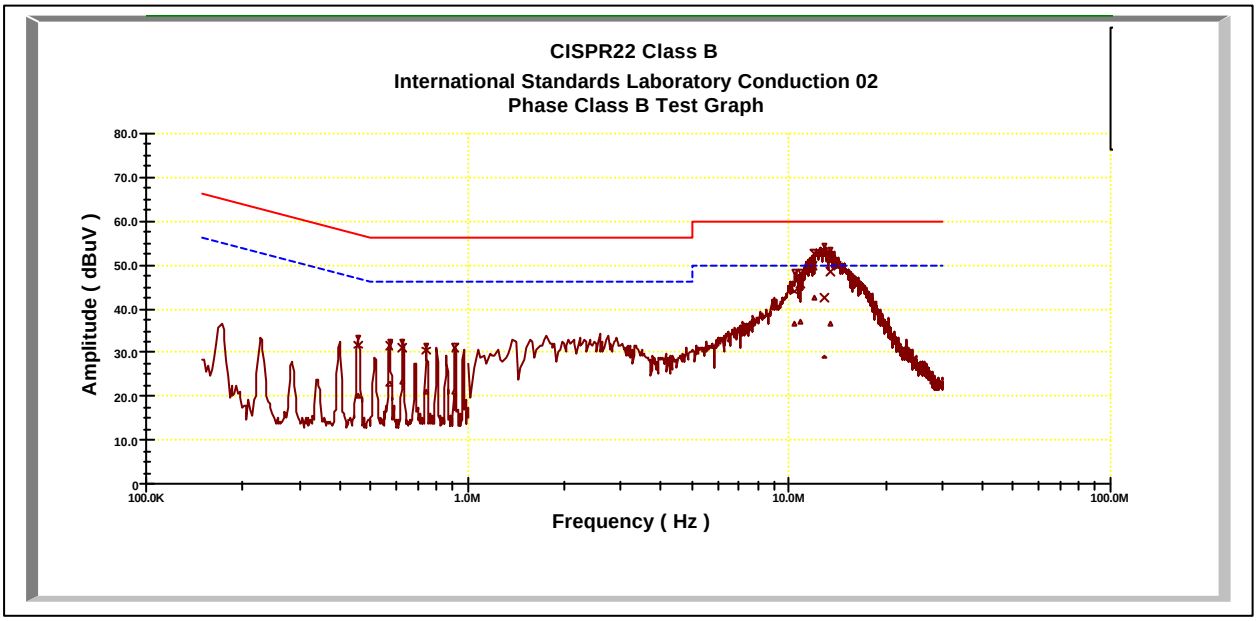
6.1.3 EMI Receiver/Spectrum Analyzer Configuration (for the frequencies tested)

Frequency Range:	150 KHz--30MHz
Detector Function:	Quasi-Peak/Average
Bandwidth (RBW):	9KHz

6.1.4 Test Data:

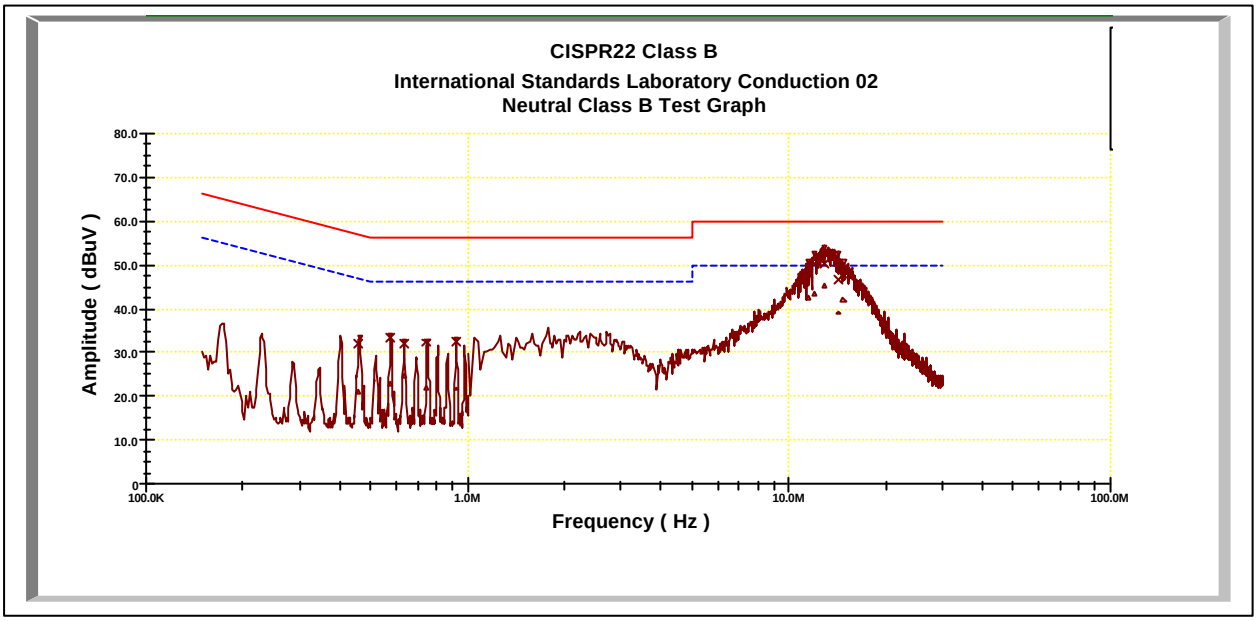
Power Line Conducted Emissions (Hot) Channel 1, 6, 11

	Corrective Factor		Quasi-Peak			Average		
Frequency (MHz)	LISN Loss (dB)	Cable Loss (dB)	Corrected Amplitude (dBuV)	Limit (dBuV)	Margin (dB)	Corrected Amplitude (dBuV)	Limit (dBuV)	Margin (dB)
0.45478	0.11	0.03	31.76	57.29	-25.54	19.95	47.29	-27.34
0.56988	0.13	0.04	31.49	56.00	-24.51	22.93	46.00	-23.07
0.62656	0.14	0.04	31.11	56.00	-24.89	23.33	46.00	-22.67
0.74206	0.16	0.05	30.48	56.00	-25.52	21.02	46.00	-24.98
0.91291	0.19	0.06	31.25	56.00	-24.75	21.03	46.00	-24.97
10.4471	0.53	0.19	44.07	60.00	-15.93	36.43	50.00	-13.57
10.9087	0.55	0.20	45.66	60.00	-14.34	37.08	50.00	-12.92
11.939	0.59	0.23	49.69	60.00	-10.31	42.39	50.00	-7.61
12.8781	0.62	0.25	42.35	60.00	-17.65	28.97	50.00	-21.03
13.4996	0.65	0.26	48.53	60.00	-11.47	36.34	50.00	-13.66



Power Line Conducted Emissions (Neutral) Channel 1, 6, 11

	Corrective Factor		Quasi-Peak			Average		
Frequency (MHz)	LISN Loss (dB)	Cable Loss (dB)	Corrected Amplitude (dBuV)	Limit (dBuV)	Margin (dB)	Corrected Amplitude (dBuV)	Limit (dBuV)	Margin (dB)
0.45793	0.11	0.03	32.09	57.20	-25.11	21.01	47.20	-26.19
0.57425	0.13	0.04	33.26	56.00	-22.74	22.99	46.00	-23.01
0.63163	0.14	0.04	32.16	56.00	-23.84	24.80	46.00	-21.20
0.74581	0.16	0.05	32.31	56.00	-23.69	21.77	46.00	-24.23
0.91855	0.19	0.06	32.59	56.00	-23.41	21.72	46.00	-24.28
11.5528	0.34	0.22	47.93	60.00	-12.07	42.27	50.00	-7.73
11.9486	0.34	0.23	50.03	60.00	-9.97	43.31	50.00	-6.69
12.8808	0.36	0.25	50.13	60.00	-9.87	45.26	50.00	-4.74
14.2718	0.39	0.28	46.71	60.00	-13.29	39.02	50.00	-10.98
14.7792	0.40	0.29	47.78	60.00	-12.22	41.99	50.00	-8.01



* NOTE: During the test, the EMI receiver was set to Max. Hold then switch the EUT Channel between 1 , 6, 11 to get the maximum reading of all these channels .
Margin = Amplitude + Insertion Loss- Limit
A margin of -8dB means that the emission is 8dB below the limit

6.2 Maximum Peak Output Power [Section 15.247 (b)(1)]

6.2.1 Test Procedure

The Transmitter output of EUT was connected to the peak power analyzer .

6.2.2 Test Setup

6.2.3 Test Data:

Maximum Peak Output Power

	Analyzer Reading (dBm)	Correction factor (dB)	Peak Power Output (dBm)	Limit(dBm)	Pass/Fail
Channel 00(2402MHz)	2.59	1.1	3.69	30	Pass
Channel 39(2441MHz)	2.92	1.1	4.02	30	Pass
Channel 78(2480MHz)	3.17	1.1	4.27	30	Pass

6.3 Radiated Emission Measurement [Section [15.247(c)(4)]

6.3.1 EUT Configuration

The equipment under test was set up on the 10 meter chamber with measurement distance of 3 meters. The EUT was placed on a non-conductive table 80cm above ground.

Any changes made to the configuration, or modifications made to the EUT, during testing are noted in the following test record.

6.3.2 Test Procedure

The system was set up as described above, with the EMI diagnostic software running. We found the maximum readings by varying the height of antenna and then rotating the turntable. Both polarization of antenna, horizontal and vertical, are measured.

30M to 1GHz: The highest emissions between 30 MHz to 1000 MHz were also analyzed in details by operating the spectrum analyzer and/or EMI receiver in quasi-peak mode to determine the precise amplitude of the emissions. While doing so, the interconnecting cables and major parts of the system were moved around, the antenna height was varied between one and four meters, its polarization was varied between vertical and horizontal, and the turntable was slowly rotated, to maximize the emission.

1GHz – 25GHz: The highest emissions were also analyzed in details by operating the spectrum analyzer and/or EMI receiver in peak mode to determine the precise amplitude of the emission. While doing so, the interconnecting cables and major parts of the system were moved around, the antenna height was varied between one and four meters, its polarization was varied between vertical and horizontal, and the turntable was slowly rotated, to maximize the emission. During test the EMI receiver and spectrum was setup according to *EMI Receiver/Spectrum Analyzer Configuration*.
For the test of 2^{nd} to 10^{th} harmonics frequencies , the equipment setup was also refer to *EMI Receiver/Spectrum Analyzer Configuration*. The frequencies were tested using Peak mode first, if the test data is higher than the emissions limit, an additional measurement using Average mode will be performed and the average reading will be compared to the limit and record in test report.

6.3.3 EMI Receiver/Spectrum Analyzer Configuration (for the frequencies tested)

Frequency Range Tested:	30MHz~1000MHz
Detector Function:	Quasi-Peak Mode
Resolution Bandwidth (RBW):	120KHz
Video Bandwidth (VBW)	1MHz

Frequency Range Tested:	1GHz – 25 GHz
Detector Function:	Peak Mode
Resolution Bandwidth (RBW):	1MHz
Video Bandwidth (VBW)	1MHz

Frequency Range Tested:	1GHz – 25 GHz
Detector Function:	Average Mode
Resolution Bandwidth (RBW):	1MHz
Video Bandwidth (VBW)	10 Hz

6.3.4 Test Data (30MHz – 1GHz) :.

30M – 1GHz Open Field Radiated Emissions (Horizontal) Channel 1, 6, 11

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
174.53	20.35	8.61	3.52	0.00	32.48	43.50	-11.02	150.00	8.00
199.75	25.77	8.89	3.78	0.00	38.44	43.50	-5.06	150.00	261.00
232.73	24.27	9.33	4.09	0.00	37.69	46.00	-8.31	100.00	261.00
332.64	20.16	14.06	4.77	0.00	38.99	46.00	-7.01	150.00	66.00
366.59	13.79	14.86	5.01	0.00	33.67	46.00	-12.33	100.00	228.00
398.6	13.01	15.95	5.20	0.00	34.16	46.00	-11.84	200.00	261.00
764.29	6.84	20.07	7.08	0.00	33.99	46.00	-12.01	100.00	208.00
832.19	5.87	20.39	7.40	0.00	33.65	46.00	-12.35	200.00	166.00
897.18	5.90	20.41	7.66	0.00	33.97	46.00	-12.03	100.00	166.00
913.67	5.45	20.62	7.72	0.00	33.79	46.00	-12.21	100.00	166.00

30M – 1GHz Open Field Radiated Emissions (Vertical) Channel 1, 6, 11

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
55.22	24.32	6.56	2.03	0.00	32.91	40.00	-7.09	250.00	184.00
77.53	23.80	6.35	2.35	0.00	32.51	40.00	-7.49	150.00	342.00
132.82	16.72	11.12	3.08	0.00	30.91	43.50	-12.59	200.00	35.00
165.8	18.94	8.78	3.44	0.00	31.16	43.50	-12.34	100.00	119.00
199.75	22.10	8.89	3.78	0.00	34.77	43.50	-8.73	200.00	324.00
456.8	17.09	16.58	5.53	0.00	39.19	46.00	-6.81	100.00	342.00
531.49	9.66	18.58	5.97	0.00	34.20	46.00	-11.80	100.00	250.00
651.77	8.91	19.10	6.56	0.00	34.56	46.00	-11.44	100.00	119.00
699.3	8.67	19.00	6.79	0.00	34.46	46.00	-11.54	200.00	184.00
717.73	7.72	19.39	6.85	0.00	33.96	46.00	-12.04	200.00	342.00

* NOTE:
During the test, the EUT was set to Channel 1 , 6, 11 respectively to get the maximum reading of all the critical emission frequencies.
Margin = Corrected Amplitude – Limit

Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain

A margin of -8dB means that the emission is 8dB below the limit

All frequencies from 30MHz to 1GHz have been tested

6.3.5 Test Data (1GHz – 25 GHz, Transmitting from Main antenna) .

1GHz~ 25 GHz (Horizontal), Channel 00 : 2402 MHz (RBW=1MHz VBW=1MHz)

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
2910.59	39.17	30.75	2.82	46.51	26.22	54.00	-27.78	101	113
3250.25	40.94	31.10	2.44	46.62	27.87	54.00	-26.13	100	143
4982.52	38.27	35.43	1.96	47.02	28.63	54.00	-25.37	101	54
6912.59	34.05	39.49	2.30	46.35	29.50	54.00	-24.50	100	19
7233.77	40.73	39.72	2.36	46.21	36.60	54.00	-17.40	104	98
8186.81	38.88	41.13	2.53	43.27	39.26	54.00	-14.74	104	276

'pk'---- peak, 'av'----average

1GHz~ 25 GHz (Vertical), Channel 00 : 2402 MHz (RBW=1MHz VBW=1MHz)

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
3297.70	41.34	31.16	2.37	46.62	28.25	54.00	-25.75	101	356
3475.02	39.39	31.37	2.11	46.65	26.22	54.00	-27.78	100	11
3657.34	45.63	31.59	1.57	46.48	32.31	54.00	-21.69	102	189
4010.49	46.73	32.03	1.69	46.12	34.33	54.00	-19.67	103	143
7983.02	39.84	41.14	2.50	43.83	39.65	54.00	-14.35	103	128
8804.20	38.98	40.63	2.64	42.70	39.55	54.00	-14.45	104	276

'pk'---- peak, 'av'----average

Note:

The Spectrum noise level + Correction Factor < Limit - 6 dB
Margin = Corrected Amplitude – Limit
Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
All frequencies from 1GHz to 25 GHz have been tested.

1GHz~ 25 GHz (Horizontal), Channel 39 : 2441 MHz (RBW=1MHz VBW=1MHz)

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
3245.25	41.27	31.09	2.45	46.61	28.21	54.00	-25.79	100	320
3437.56	38.97	31.33	2.16	46.64	25.82	54.00	-28.18	101	349
4339.16	42.02	32.95	1.80	46.44	30.33	54.00	-23.67	100	264
6905.59	34.13	39.45	2.30	46.36	29.52	54.00	-24.48	107	98
7965.04	40.15	41.07	2.49	43.91	39.80	54.00	-14.20	100	302
8468.53	38.11	41.01	2.58	42.55	39.15	54.00	-14.85	105	212

'pk'---- peak, 'av'----average

1GHz~ 25 GHz (Vertical), Channel 39 : 2441 MHz (RBW=1MHz VBW=1MHz)

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
3245.25	40.23	31.09	2.45	46.61	27.17	54.00	-26.83	100	42
3340.16	38.86	31.21	2.31	46.63	25.75	54.00	-28.25	101	349
3664.34	45.25	31.60	1.57	46.47	31.94	54.00	-22.06	100	264
4003.50	47.10	32.01	1.68	46.11	34.68	54.00	-19.32	101	79
7905.09	40.96	40.86	2.48	44.19	40.11	54.00	-13.89	100	23
8204.79	39.08	41.12	2.54	43.23	39.51	54.00	-14.49	107	212

'pk'---- peak, 'av'----average
Note:
The Spectrum noise level + Correction Factor < Limit - 6 dB
Margin = Corrected Amplitude – Limit
Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
All frequencies from 1GHz to 25 GHz have been tested.

1GHz~ 25 GHz (Horizontal), Channel 78: 2480 MHz (RBW=1MHz VBW=1MHz)

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
3272.73	40.43	31.13	2.41	46.62	27.35	54.00	-26.65	100	154
3430.07	39.56	31.32	2.17	46.64	26.41	54.00	-27.59	100	225
4293.71	42.26	32.82	1.78	46.40	30.46	54.00	-23.54	101	19
6975.52	33.61	39.86	2.32	46.32	29.46	54.00	-24.54	103	97
8096.90	38.84	41.16	2.52	43.50	39.01	54.00	-14.99	100	165
8816.18	38.87	40.62	2.65	42.71	39.42	54.00	-14.58	102	78

'pk'---- peak, 'av'----average

1GHz~ 25 GHz (Vertical), Channel 11 : 2462 MHz (RBW=1MHz VBW=1MHz)

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
3092.91	38.69	30.91	2.68	46.59	25.69	54.00	-28.31	100	111
3237.76	40.98	31.09	2.46	46.61	27.92	54.00	-26.08	100	225
3664.34	45.73	31.60	1.57	46.47	32.43	54.00	-21.57	101	192
3993.01	48.23	31.99	1.68	46.12	35.79	54.00	-18.21	106	89
7857.14	41.11	40.69	2.47	44.42	39.85	54.00	-14.15	101	55
8816.18	38.77	40.62	2.65	42.71	39.32	54.00	-14.68	102	278

'pk'---- peak, 'av'----averag

Note:

The Spectrum noise level + Correction Factor < Limit - 6 dB

Margin = Corrected Amplitude – Limit

Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain

A margin of -8dB means that the emission is 8dB below the limit

All frequencies from 1GHz to 25 GHz have been tested.

6.4 -20dB Bandwidth and Hopping Channel Separation

6.4.1 Test Procedure :

–20dB Bandwidth

The Transmitter output of EUT was connected to the spectrum analyzer. The -20 dB bandwidth of the fundamental frequency was measured. The setting of spectrum analyzer is as follows

Equipment mode: Spectrum analyzer
Detector function: Peak mode
RBW: 30KHz
VBW: 100KHz

Hopping Channel Separation

The Transmitter output of EUT was connected to the spectrum analyzer. The Hopping Channel Separation was measured. The setting of spectrum analyzer is as follows

Equipment mode: Spectrum analyzer
Detector function: Peak mode
RBW: 100KHz
VBW: 300KHz

6.4.2 Test Setup

6.4.3 Test Data

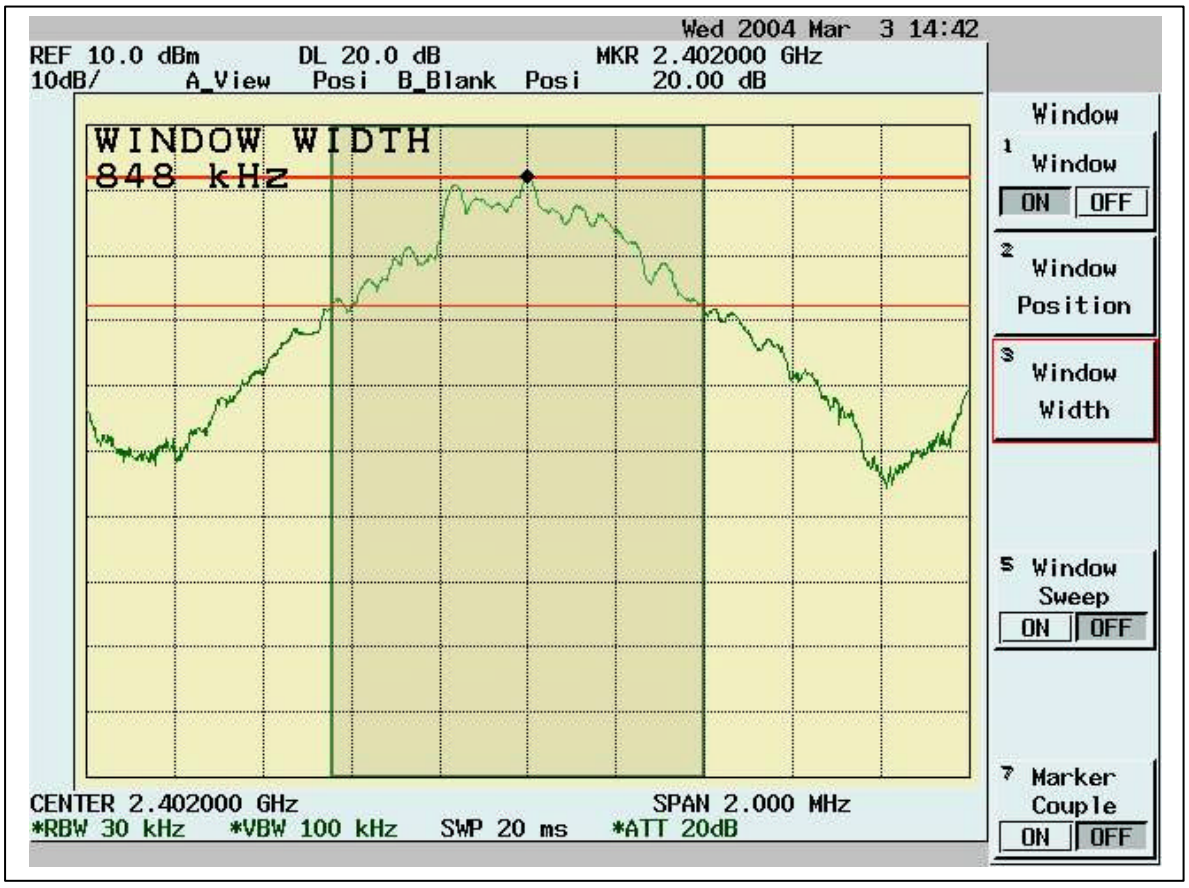
-20dBBandwidth

Chennel	Frequency (MHz)	-20dB Bandwidth (KHz)	Limit (MHz)	Pass/Fail
00	2402	848	≦1	Pass
39	2441	880	≦1	Pass
78	2480	860	≦1	Pass

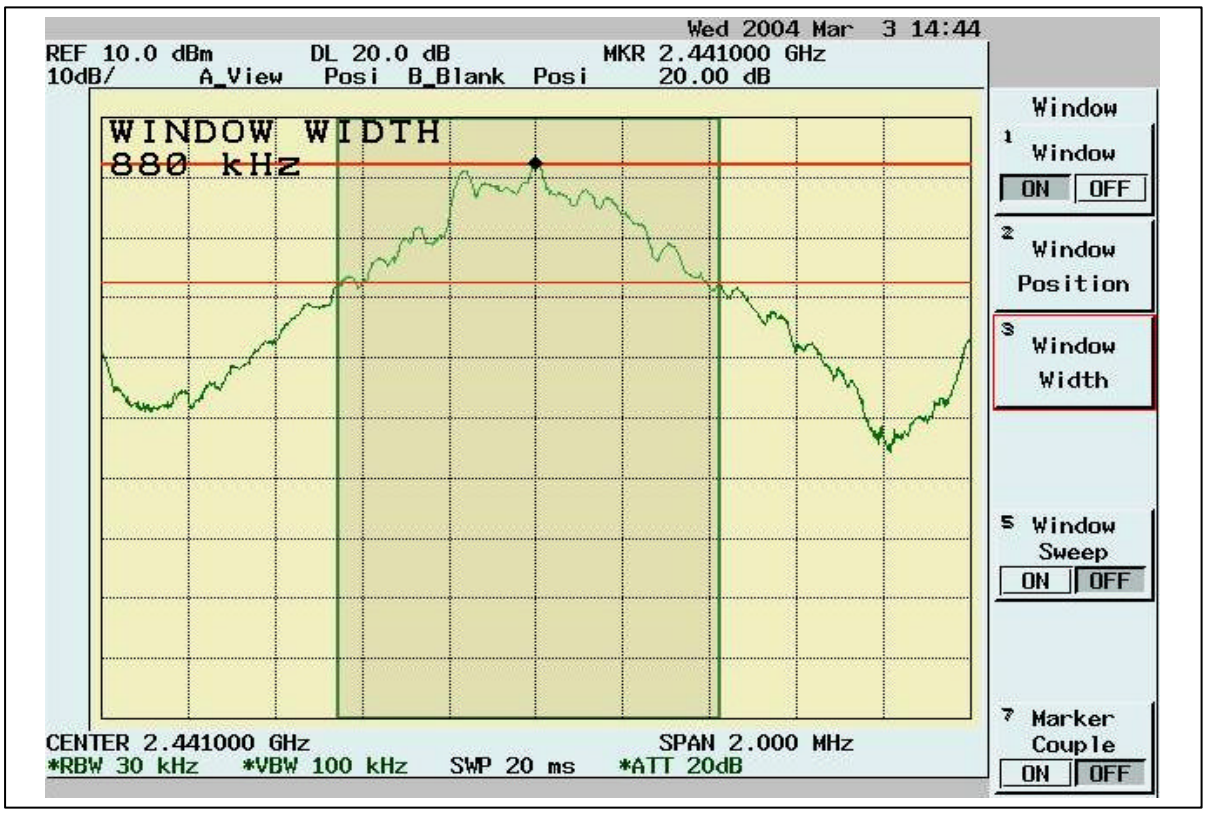
Hopping Channel Separation

Chennel	Frequency (MHz)	Hopping Channel Separation (KHz)	Limit (KHz)	Pass/Fail
00	2402	1002	>848	Pass
39	2441	1002	>880	Pass
78	2480	1002	>860	Pass

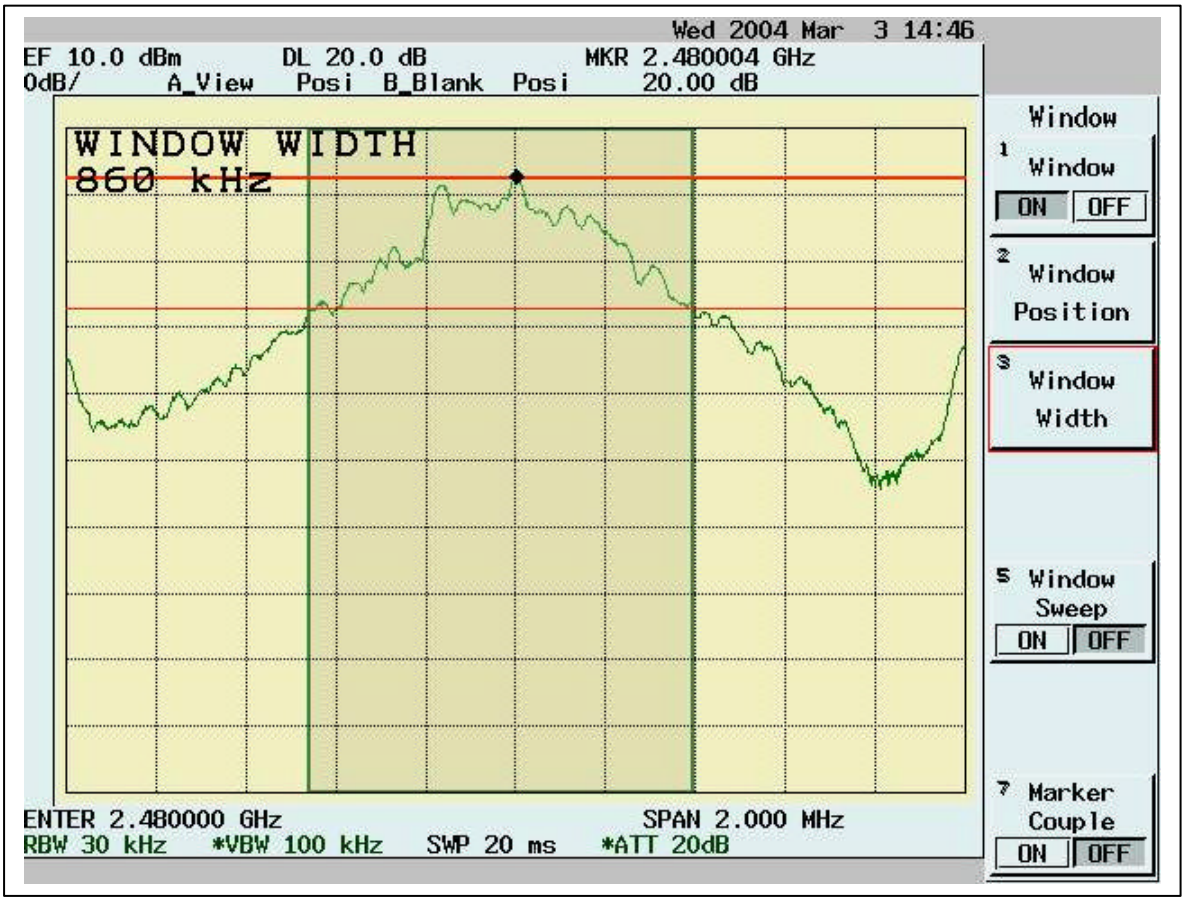
Channel 00 bandwidth:



Channel 39 bandwidth



Channel 78 bandwidth:



Channel 00 Hopping Channel Separation

Channel 39 Hopping Channel Separation

Channel 78 Hopping Channel Separation:

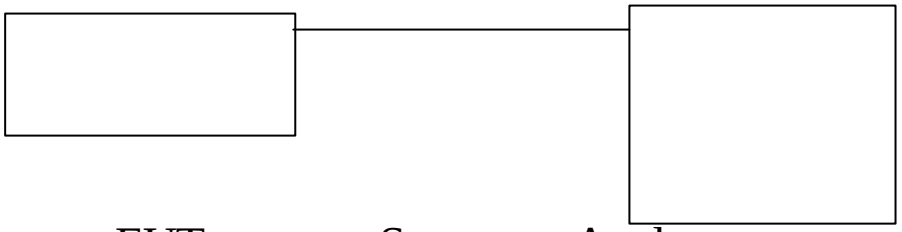
6.5 Number Of Hopping Frequency Used

6.5.1 Test Procedure:

The Transmitter output of EUT was connected to the spectrum analyzer. The Number Of Hopping Frequency Used was measured. The setting of spectrum analyzer is as follows

Equipment mode: Spectrum analyzer
Detector function: Peak mode
RBW: 300KHz
VBW: 1MHz

6.5.2 Test Setup:

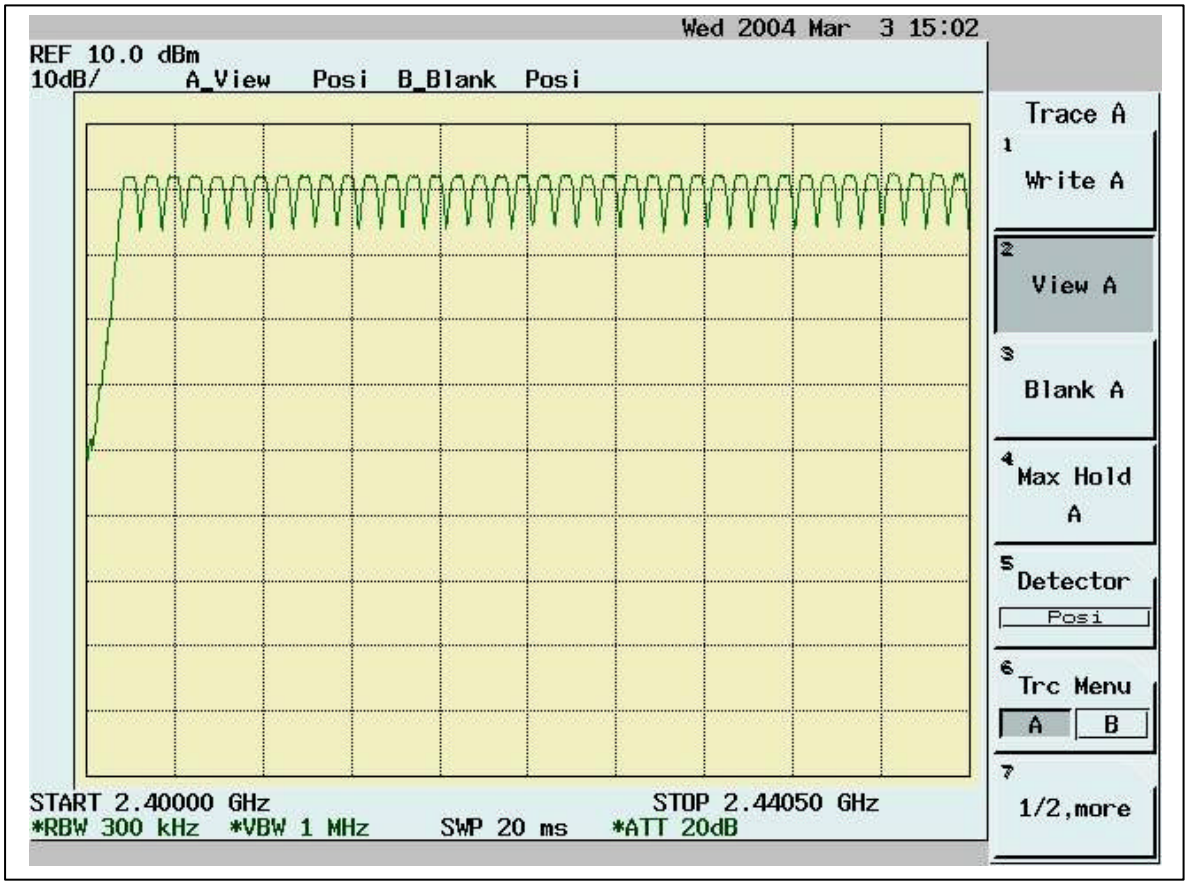


6.5.3 Test Data

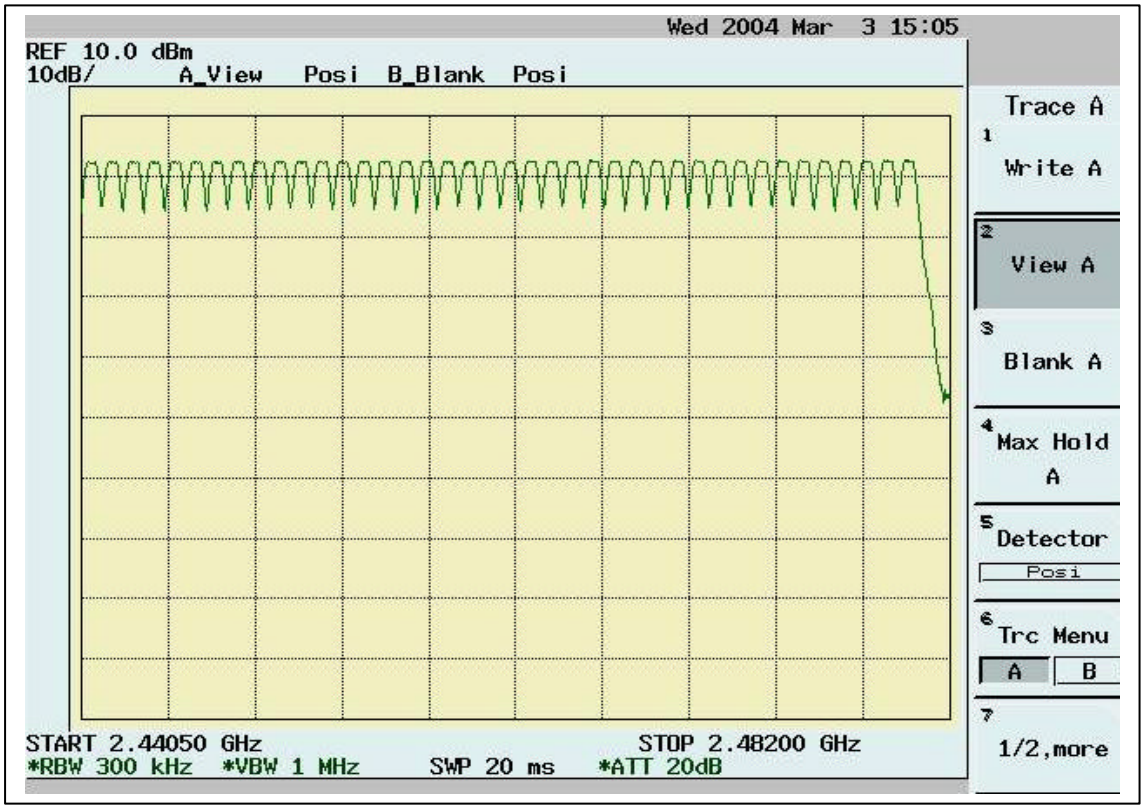
Number Of Hopping Frequency Used

Test result	Limit (KHz)	Pass/Fail
79	75	Pass

hopping number:



hopping number::



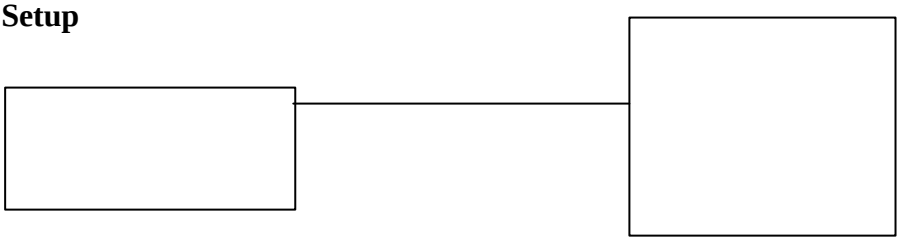
6.6 Dwell Time

6.6.1 Test Procedure:

The Transmitter output of EUT was connected to the spectrum analyzer. The Dwell Time was measured. The setting of spectrum analyzer is as follows

Equipment mode: Spectrum analyzer
Detector function: Peak mode
RBW: 1MHz
VBW: 1MHz

6.6.2 Test Setup



EUT Spectrum Analyzer

6.6.3 Test Data

Dwell Time

Channel	Frequency	Spectrum Reading (us)	Test result (ms)	Limit (ms)	Pass/Fail
00	2402	484	484(us)x639.9=309.7(ms)	<400	Pass
39	2441	480	480(us)x639.9=307.1(ms)	<400	Pass
78	2480	490	490us)x639.9=313.5(ms)	<400	Pass

Note:

(1). 1600(times)/79(channel)(sec)=20.25(times)/(channel)(sec), 79x0.4(sec)=31.6(sec), 20.25x31.6=639.9(times)