

TEST REPORT

1. Applicant

Name : Trinus Systmes Inc
Address : Unitech-Ville 8F 803, #1141-2 Beakseok-Dong, Ilsandong-Gu,
Goyang City, Gyeonggi-Do, Korea 410-722

2. Products

Name : Wireless Microphone System
Model/Type : CCR24RMOT
FCC ID : ROYCCR24RMOT
Manufacturer : Trinus Systmes Inc

3. Test Standard

: FCC CFR 47 Part 15, Subpart C section 15.247
RSS-210 Issue 7

4. Test Method

: ANSI C63.4-2009

5. Test Result

: Positive

6. Date of Application

: October. 06, 2010

7. Date of Issue

: October. 22, 2010

Tested by

Sung-kyu Cho

Sung-kyu Cho

Telecommunication Team
Engineer

Approved by

Jeong-min Kim

Jeong-min Kim

Telecommunication Team
Manager

The test results contained apply only to the test sample(s) supplied by the applicant, and this test report shall not be reproduced in full or in part without approval of the KTL in advance.

Korea Testing Laboratory

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1. GENERAL INFORMATION

1.1. Applicant (Client)

Name	Trinus Systems Inc
Address	Unitech-Ville 8F 803, #1141-2 Beakseok-Dong, Ilsandong-Gu, Goyang City, Gyeonggi-Do, Korea 410-722
Contact Person	Park Ki Hwan
Telephone No.	031-904-5588
Facsimile No.	031-904-5696
E-mail address	kevin@trinus.co.kr
Manufacturer Name	Trinus Systems Inc
Manufacturer Address	Unitech-Ville 8F 803, #1141-2 Beakseok-Dong, Ilsandong-Gu, Goyang City, Gyeonggi-Do, Korea 410-722

1.2. Equipment (EUT)

FCC Classification	DSS – Part 15 Spread Spectrum Transmitter
Model Name	CCR24RMOT
FCC ID	ROYCCR24RMOT
IC Number	5479A-CCR24RMOT
Frequency Band	2401.056 ~ 2482.272 MHz
Method / System	Frequency Hopping System
Max RF Output Power	24.88 dBm
Antenna Type	Whip
Antenna Gain	2.51 dBi
Type of Modulation	GFSK
Number of Channels	95
Antenna Gain	2.51 dBi

1.3. Testing Laboratory

Testing Place	Korea Testing Laboratory (KTL) 693, Haeam-ro, Sangnok-Gu, Ansan-si, Gyeonggi-Do, Korea (426-901)
FCC registration number	408324
Industry Canada filing number	6298
Test Engineer	Sung-kyu Cho
Telephone number	+82 31 5000 132
Facsimile number	+82 31 5000 149
E-mail address	skcho@ktl.re.kr
Other Comments	-

1.4. Channel Frequency Table

CH	Freq ¹ (MHz)	CH	Freq ¹ (MHz)	CH	Freq ¹ (MHz)	CH	Freq ¹ (MHz)
0	2,401.056	25	2,422.656	50	2,444.256	75	2,465.856
1	2,401.920	26	2,423.520	51	2,445.120	76	2,466.720
2	2,402.784	27	2,424.384	52	2,445.984	77	2,467.584
3	2,403.648	28	2,425.248	53	2,446.848	78	2,468.448
4	2,404.512	29	2,426.112	54	2,447.712	79	2,469.312
5	2,405.376	30	2,426.976	55	2,448.576	80	2,470.176
6	2,406.240	31	2,427.840	56	2,449.440	81	2,471.040
7	2,407.104	32	2,428.704	57	2,450.304	82	2,471.904
8	2,407.968	33	2,429.568	58	2,451.168	83	2,472.768
9	2,408.832	34	2,430.432	59	2,452.032	84	2,473.632
10	2,409.696	35	2,431.296	60	2,452.896	85	2,474.496
11	2,410.560	36	2,432.160	61	2,453.760	86	2,475.360
12	2,411.424	37	2,433.024	62	2,454.624	87	2,476.224
13	2,412.288	38	2,433.888	63	2,455.488	88	2,477.088
14	2,413.152	39	2,434.752	64	2,456.352	89	2,477.952
15	2,414.016	40	2,435.616	65	2,457.216	90	2,478.816
16	2,414.880	41	2,436.480	66	2,458.080	91	2,479.680
17	2,415.744	42	2,437.344	67	2,458.944	92	2,480.544
18	2,416.608	43	2,438.208	68	2,459.808	93	2,481.408
19	2,417.472	44	2,439.072	69	2,460.672	94	2,482.272
20	2,418.336	45	2,439.936	70	2,461.536		
21	2,419.200	46	2,440.800	71	2,462.400		
22	2,420.064	47	2,441.664	72	2,463.264		
23	2,420.928	48	2,442.528	73	2,464.128		
24	2,421.792	49	2,443.392	74	2,464.992		

2. SUMMARY OF TEST RESULTS

Testing performed for : Trinus Systems Inc

Equipment Under Test : Wireless Microphone

Receipt of Test Sample : 2010. 10. 05

Test Start Date : 2010. 10. 06

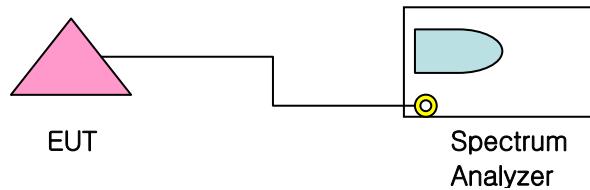
Test End Date : 2010. 10. 22

FCC Rules	IC Rules	Test Requirements	Result	Comments
15.247 (a)(1)	RSS-210 A8.4(2)	20dB Bandwidth	Pass	See Data sheets
15.247 (b)(1)	RSS-210 A8.1(a)	Maximum Peak Power	Pass	See Data sheets
15.247(d)	RSS-210 A8.5	100 KHz Bandwidth of Frequency Band Edges	Pass	See Data sheets
15.247 (a)(1)	RSS-210 A8.1(b)	Hopping channel separation	Pass	See Data sheets
15.247 (a)(1)(iii)	RSS-210 A8.4(2)	Number of hopping channels	Pass	See Data sheets
15.247 (a)(1)(iii)	RSS-210 A8.1(d)	Dwell time	Pass	See Data sheets
15.247(d)	RSS-210 A8.5	Conducted Spurious Emission	Pass	See Data sheets
15.209	RSS-Gen 7.2.2	Radiated Spurious Emissions	Pass	See Data sheets

3. Measurement & Results

3.1. 20 dB Bandwidth

3.1.1. Test Setup Layout



3.1.2. Test Procedure

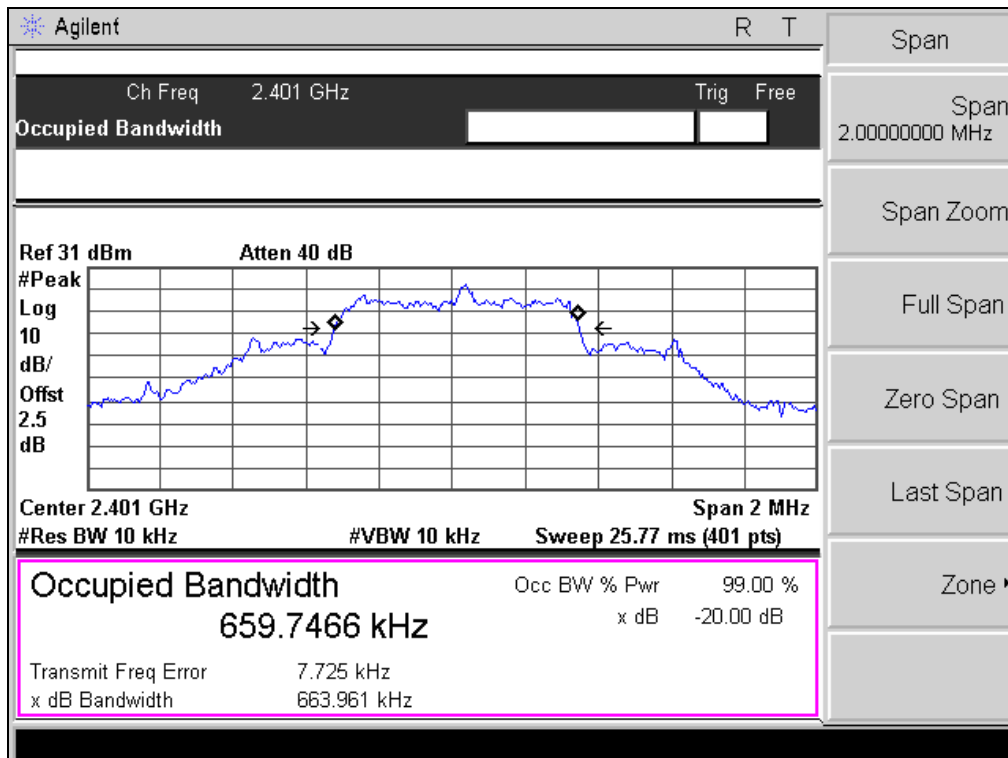
The transmitter output of EUT was connected to the Spectrum analyzer. The spectrum analyzer span was set to 2 to 3 times the estimated 20 dB bandwidth of the emission. The RBW was to $\geq 1\%$ of the estimated 20 dB bandwidth. The trace was set to max hold with a peak detector active. The span and RBW were examined and re-adjusted if necessary to meet the requirements of 2 to 3 time the 20 bandwidth for the span and $\geq 1\%$ of the 20 dB bandwidth for the RBW.

3.1.3. Limits

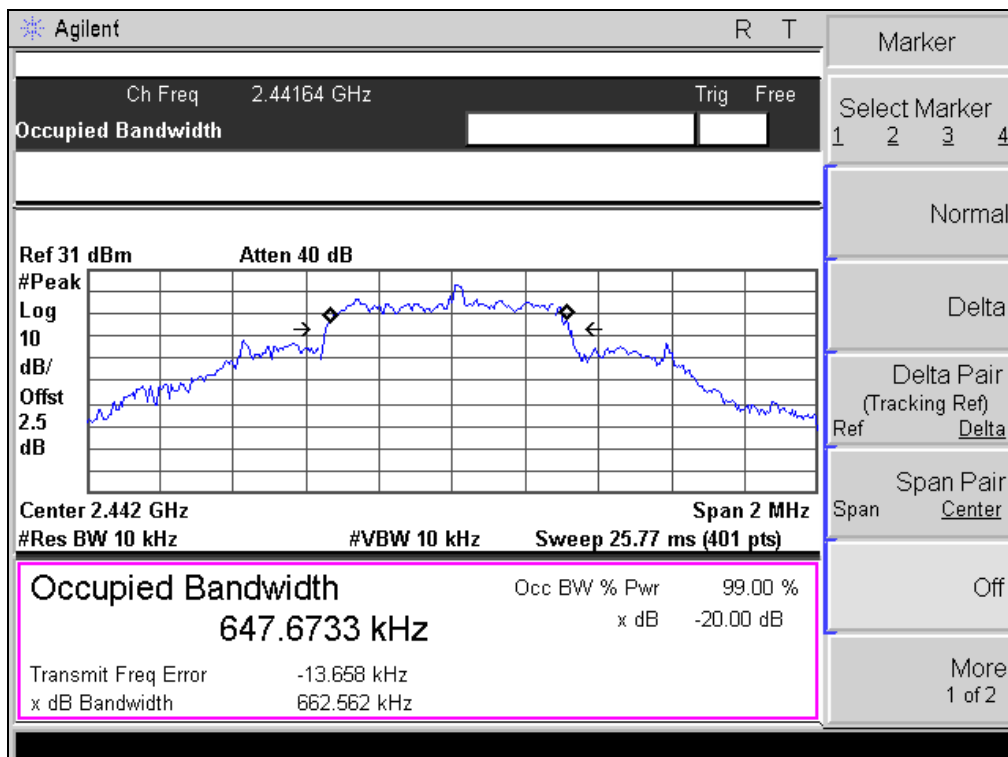
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

3.1.4. Test result

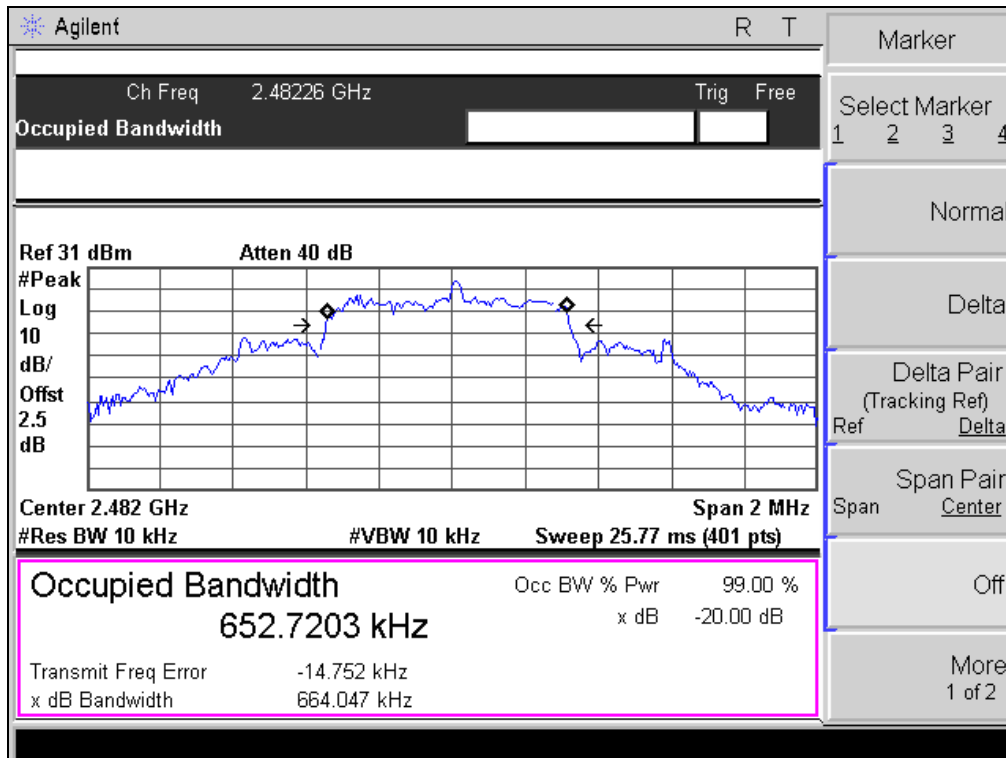
Channel Number	Result (kHz)	Verdict
0	664.0	Pass
47	662.6	Pass
94	664.1	Pass



– Occupied Bandwidth CH 0 –



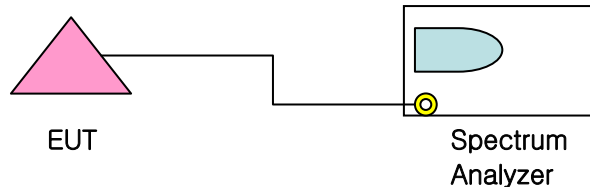
– Occupied Bandwidth CH 47 –



– Occupied Bandwidth CH 94 –

3.2. Maximum Peak Power

3.2.1. Test Setup Layout



3.2.2. Test Procedure

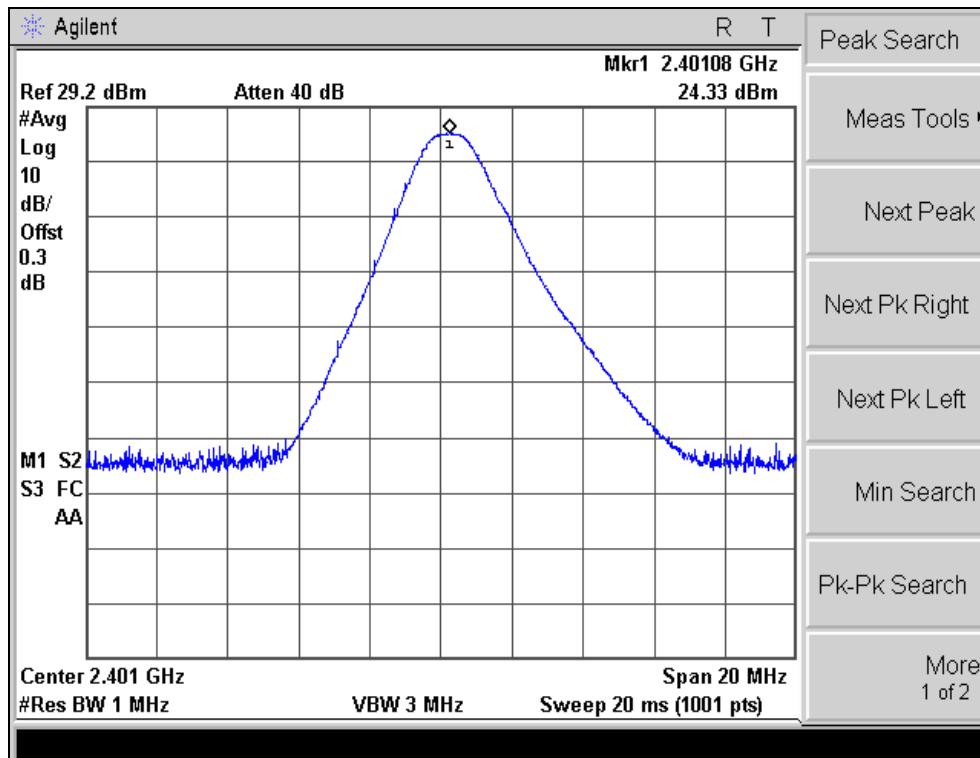
The transmitter output of EUT was connected to the Spectrum analyzer. The 20dB bandwidth of the EUT was within the resolution bandwidth of spectrum analyzer, therefore the power measurement was made using the spectrum analyzer method. The resolution and video bandwidth were set to > 20 dB bandwidth of the emission measured.

3.2.3. Limits

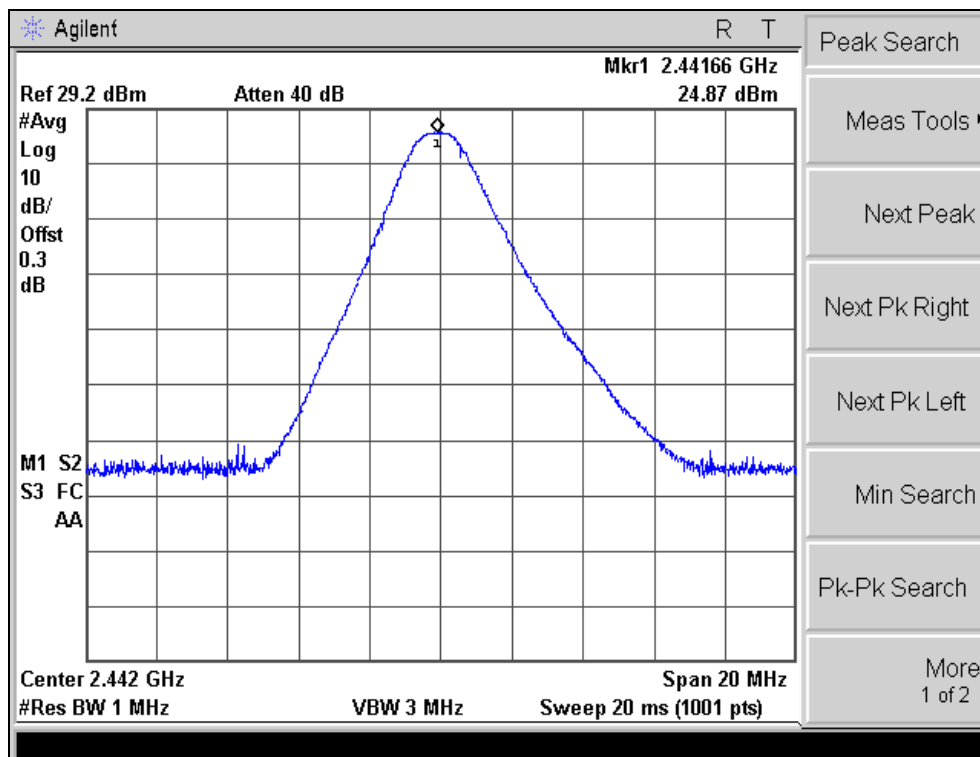
For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non overlapping hopping channels : 1 watt.

3.2.4. Test result

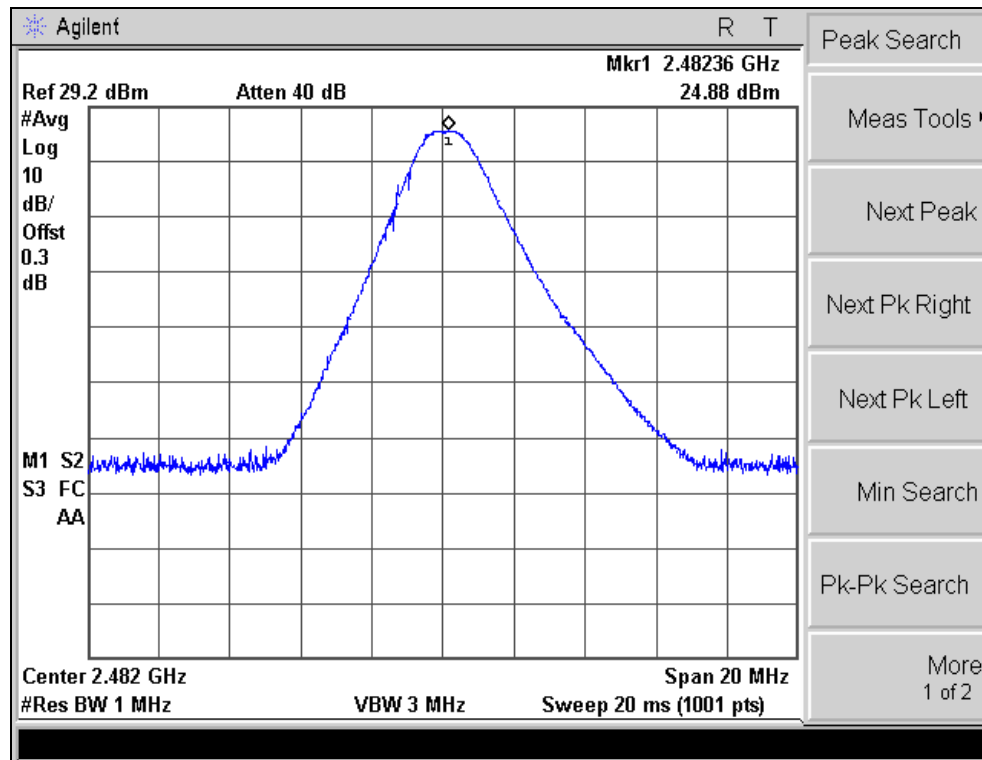
Channel Number	Result (dBm)	Limit (dBm)	Verdict
0	24.33	30	pass
47	24.87	30	pass
94	24.88	30	pass



– Output Power of CH 0 –



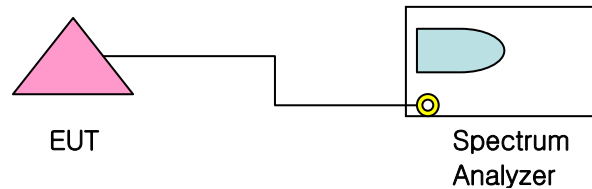
– Output Power of CH 47 –



– Output Power of CH 94 –

3.3. 100 KHz Bandwidth of Frequency Band Edges

3.3.1. Test Setup Layout



3.3.2. Test Procedure

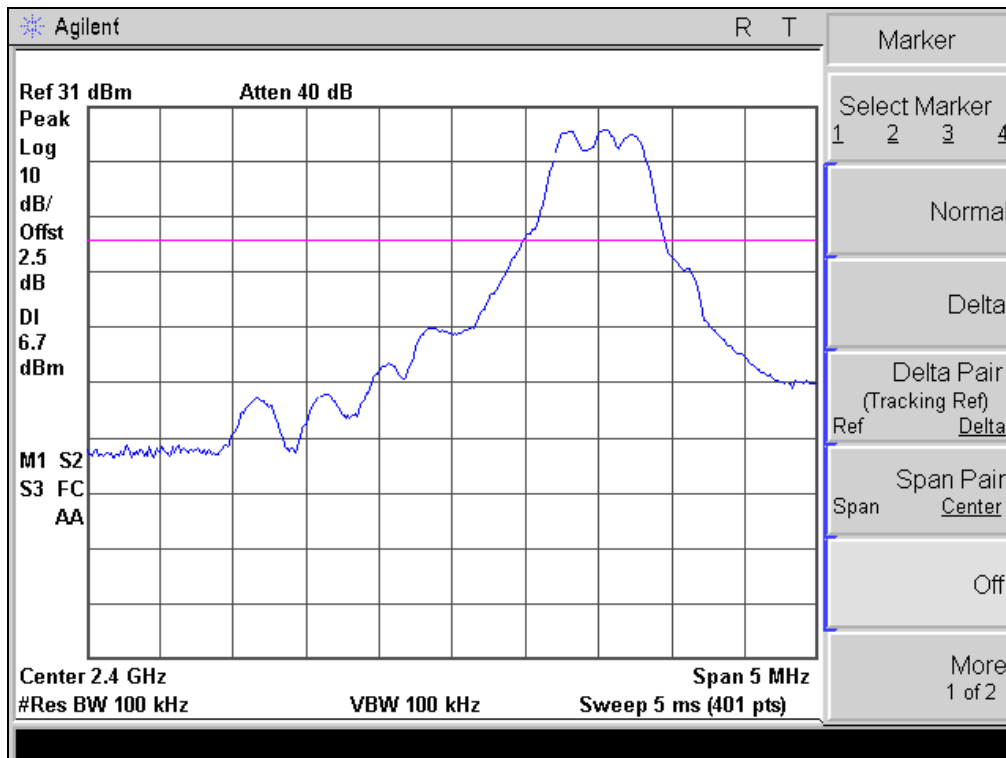
The transmitter output of EUT was connected to the Spectrum analyzer. The EUT was investigated at the lowest and highest channel available to determine band-edge compliance. For each measurement the spectrum analyzer's RBW was set to 100 kHz, which is $\geq 1\%$ of the span.

3.3.3. Limits

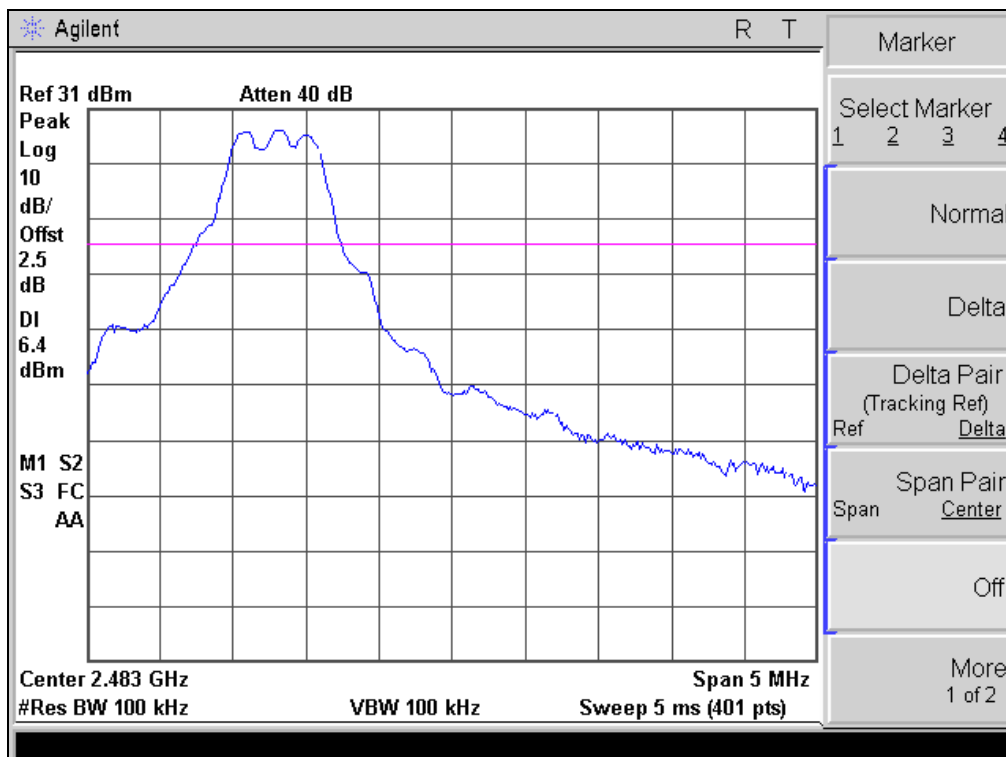
In a 100 kHz bandwidth at the lower and upper band-edge, the radio frequency power that was produced by the EUT is at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of desired power.

3.3.4. Test result

Channel Number	Result (dBc)	Limit (dBc)	Verdict
0	35 >	20	Pass
94	35 >	20	Pass



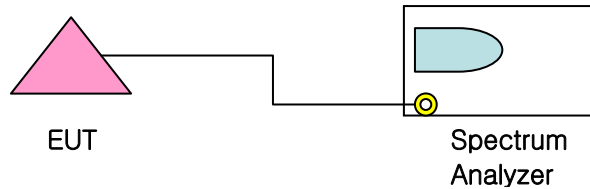
– Lower side band edge –



– Upper side band edge –

3.4. Hopping Channel Separation

3.4.1. Test Setup Layout



3.4.2. Test Procedure

The transmitter output of EUT was connected to the Spectrum analyzer. The span of the spectrum analyzer was set wide enough to capture two adjacent peaks and the RBW and VBW were set to $\geq 1\%$ of the span.

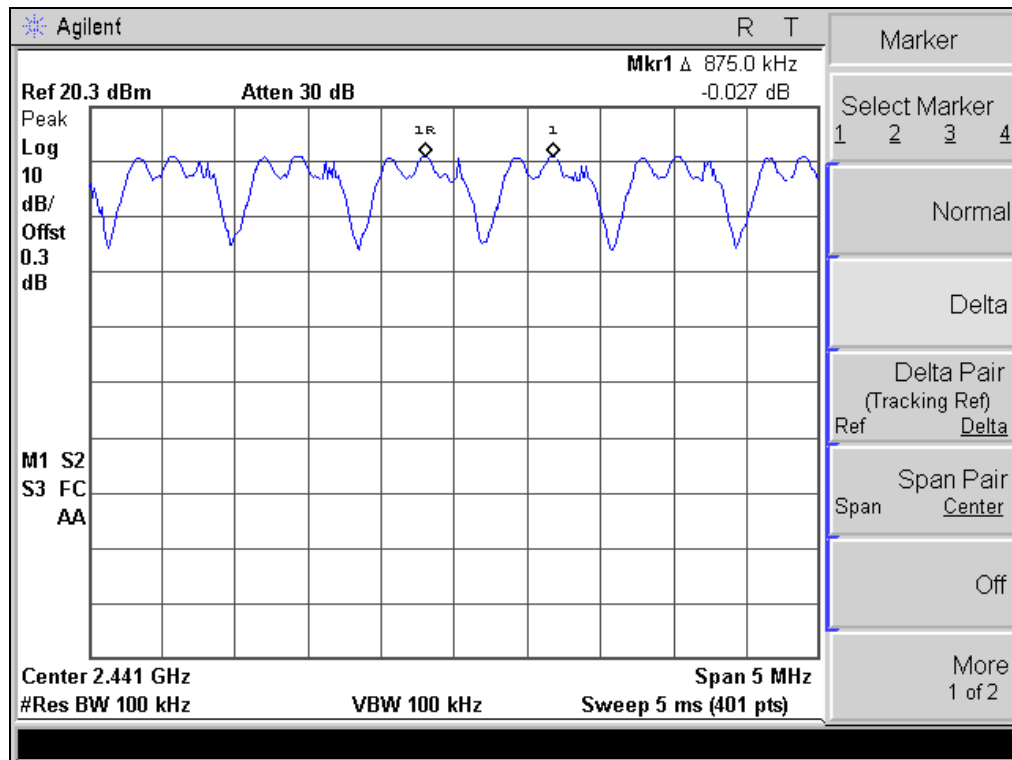
3.4.3. Limits

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

3.4.4. Test result

Mode	Result (kHz)	Limit (kHz)	Verdict
Hopping mode	875	664	Pass

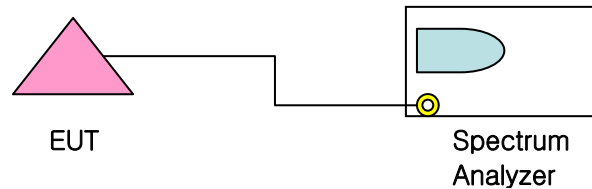
※ Remark : 20dB bandwidth is 664 kHz



– Hopping Channel Separation –

3.5. Number of Hopping Channels

3.5.1. Test Setup Layout



3.5.2. Test Condition

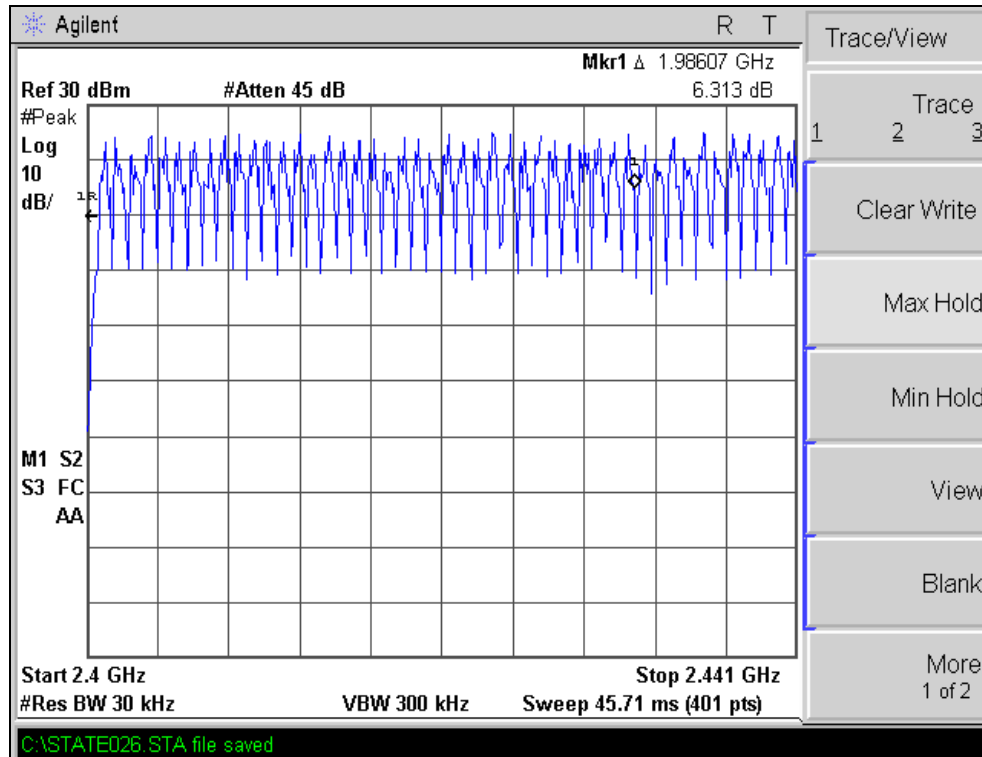
The transmitter output of EUT was connected to the Spectrum analyzer. The span of the spectrum analyzer was set wide enough to capture number of hopping channels.

3.5.3. Limits

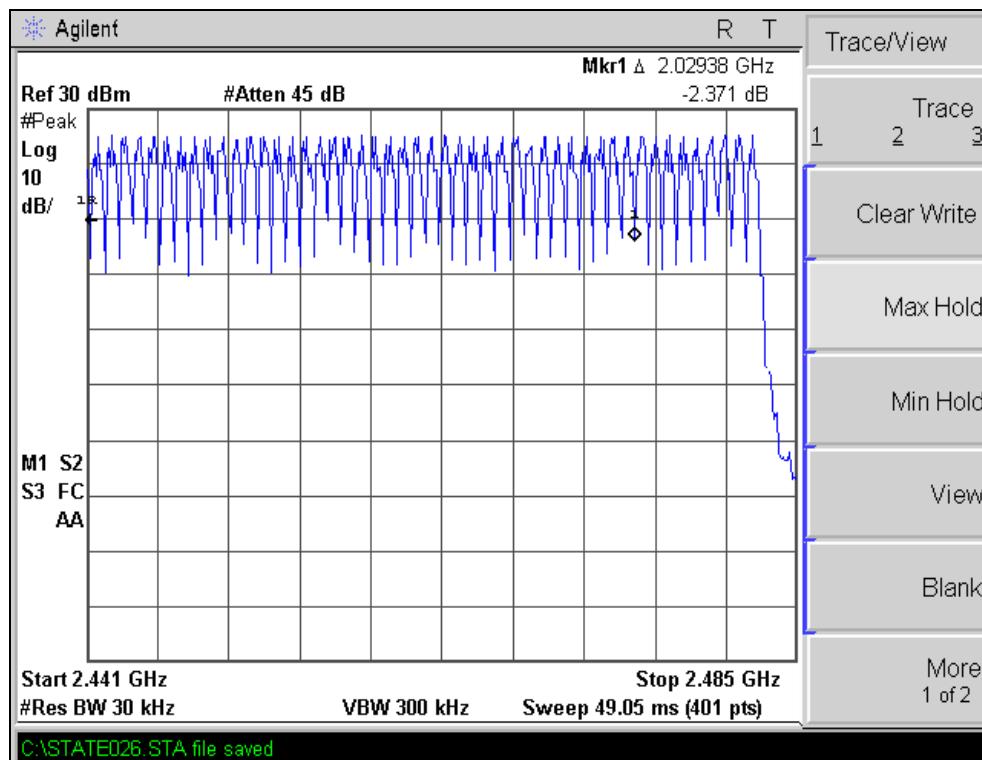
For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels.

3.5.4. Test result

Mode	Result	Limit	Verdict
Hopping mode	95	75	Pass



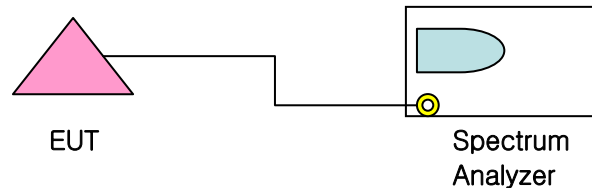
– Number of hopping channels 2400~2441 MHz –



– Number of hopping channels 2441~2483.5 MHz –

3.6. Dwell Time

3.6.1. Test Setup Layout



3.6.2. Test Procedure

The transmitter output of EUT was connected to the Spectrum analyzer. The analyzer is centered on the measured emission's center frequency and the span set to 0 Hz. The RBW was set to 1 MHz and the VBW to 1 MHz. Sweep time was set to 10 s to capture the burst of the emission. The marker delta function of the analyzer was employed to measure the burst duration.

The occupancy time is calculated by:

Test time period : $0.4 \times 95 = 38 \text{ sec}$

Hopping Time which in 1 sec : $10/10 \text{ sec} = 1/\text{sec}$

The Maximum occupancy time within 38 sec

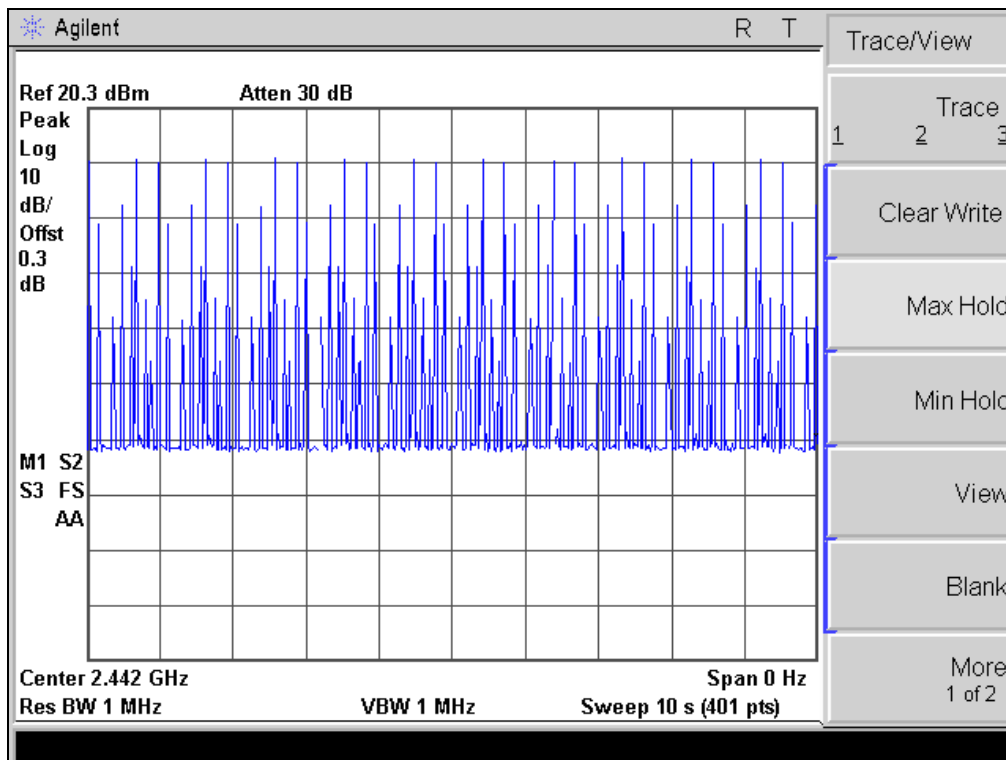
$= (808 \text{ us} \times 1000) / (95 \times 38) = 323.2 \text{ ms}$

3.6.3. Limits

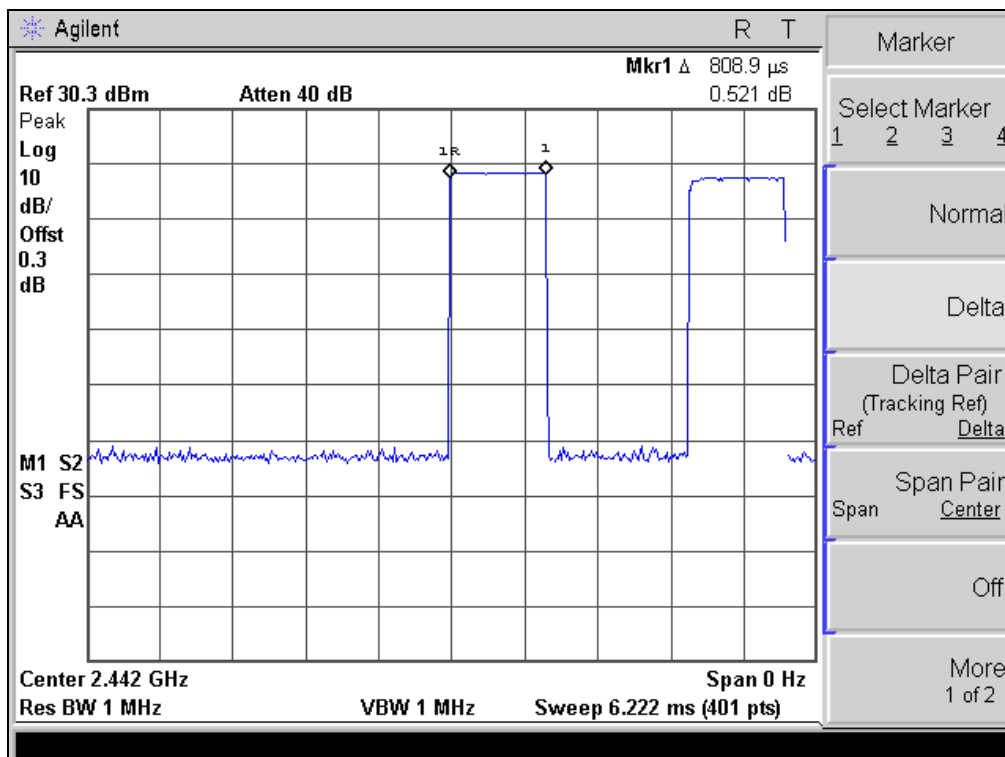
The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

3.6.4. Test result

Mode	Result (ms)	Limit (ms)	Verdict
Hopping mode	323.2	400	Pass



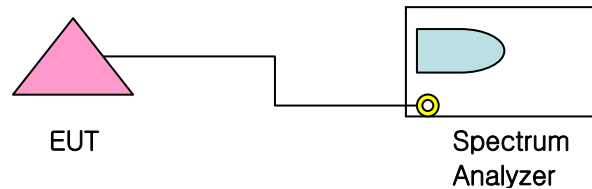
– The Number of channels in 10 s –



– Type slot length –

3.7. Conducted Spurious Emission

3.7.1. Test Setup Layout



3.7.2. Test Procedure

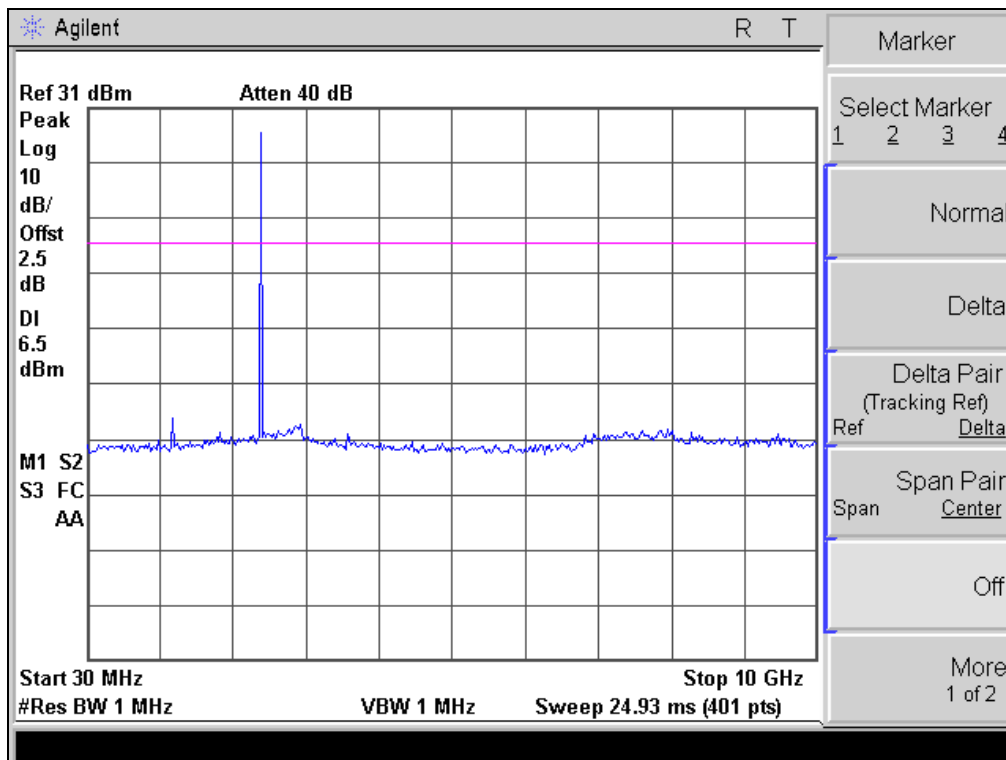
The EUT was investigated for conducted spurious emissions from 30 MHz to 10 times the highest fundamental frequency. Measurements were made at the low, center and high channels of the EUT. For each measurement, the spectrum analyzer's VBW was set to 1 MHz and the RBW was set to 1MHz. A peak detector function was used with the trace set to max hold.

3.7.3. Limits

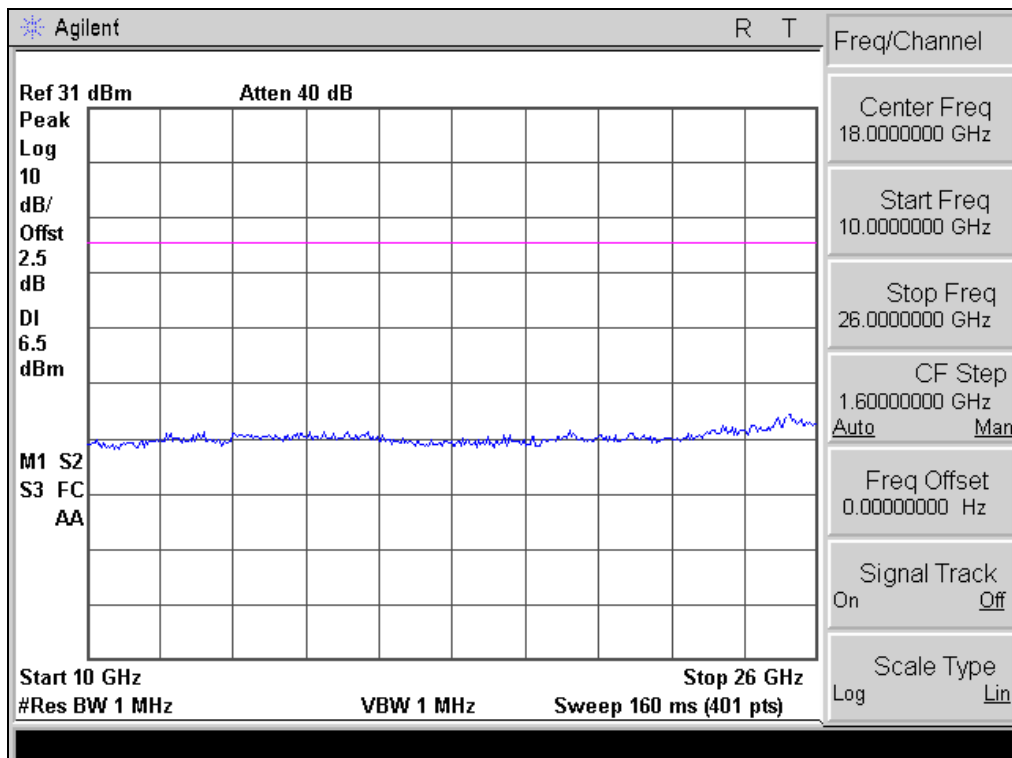
In a 100 kHz bandwidth at the lower and upper band-edge, the radio frequency power that was produced by the EUT is at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of desired power.

3.7.4. Test result

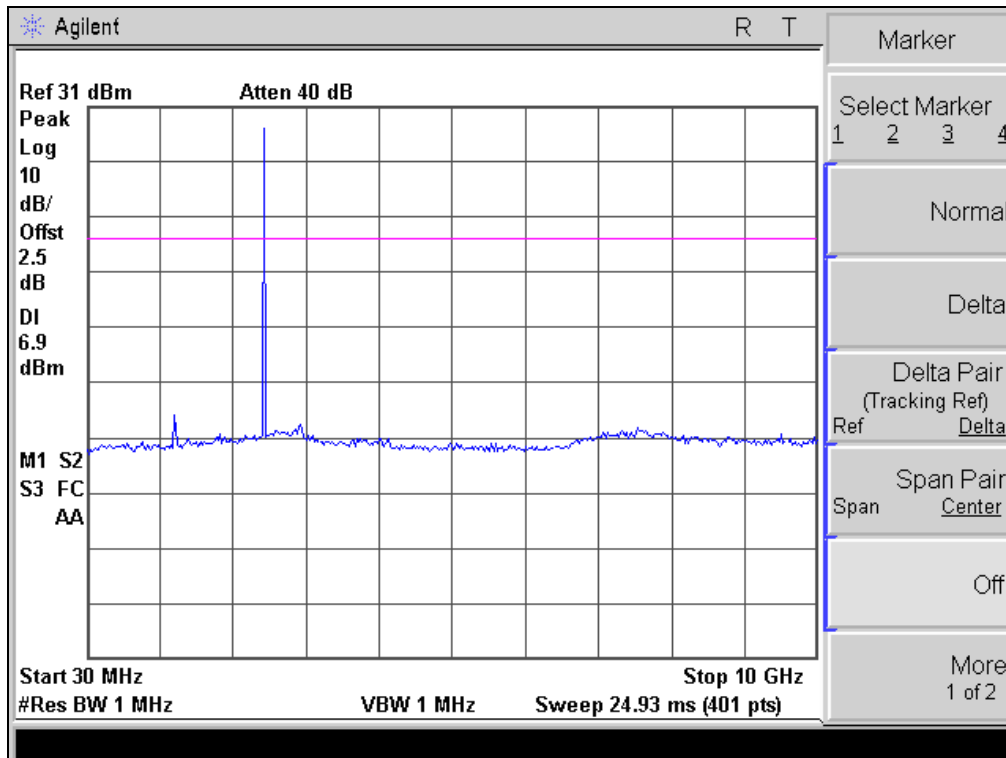
Channel Number	Result (dBc)	Limit (dBc)	Verdict
0	40 >	20	Pass
47	40 >	20	Pass
94	40 >	20	Pass



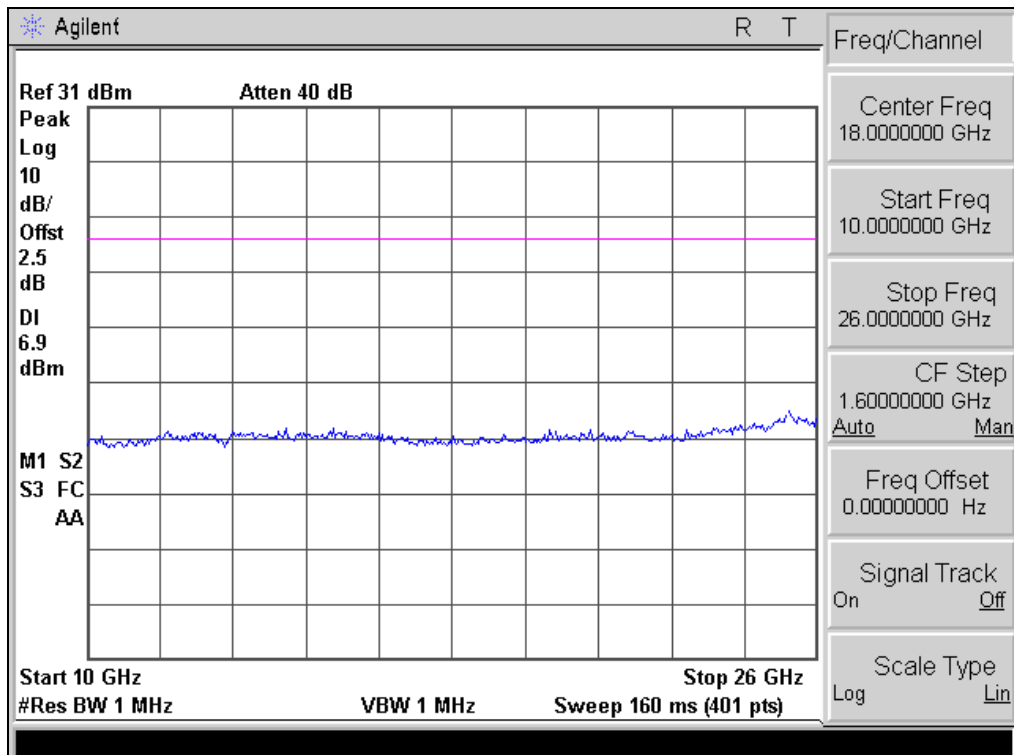
– Spurious emission of CH 0 –



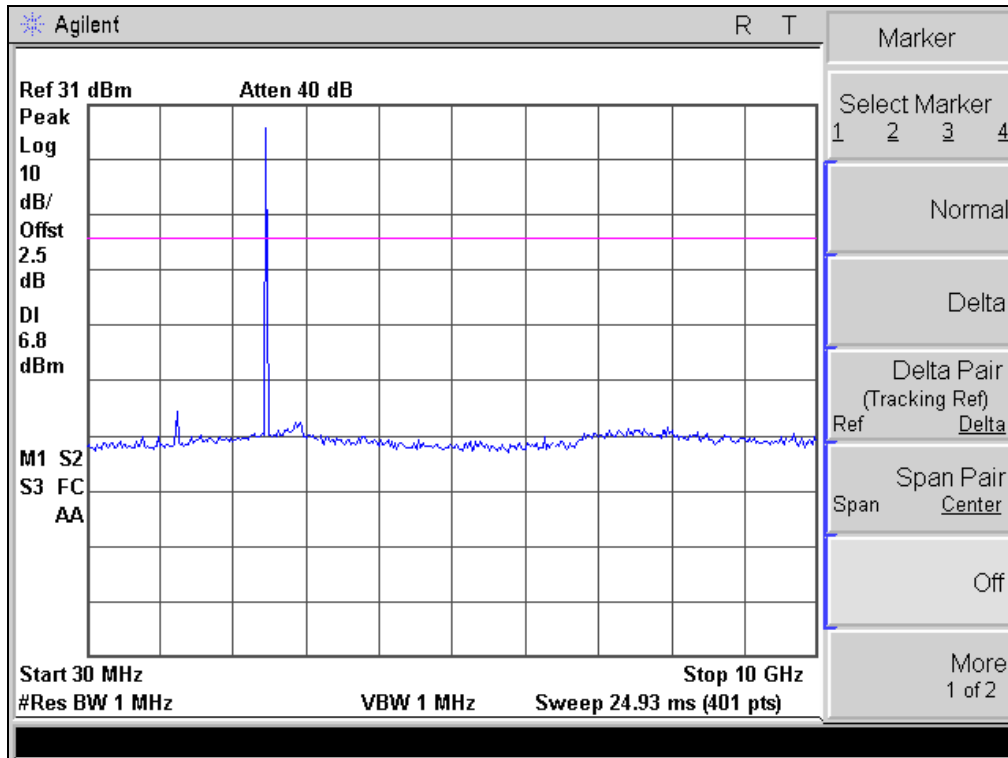
– Spurious emission of CH 0 –



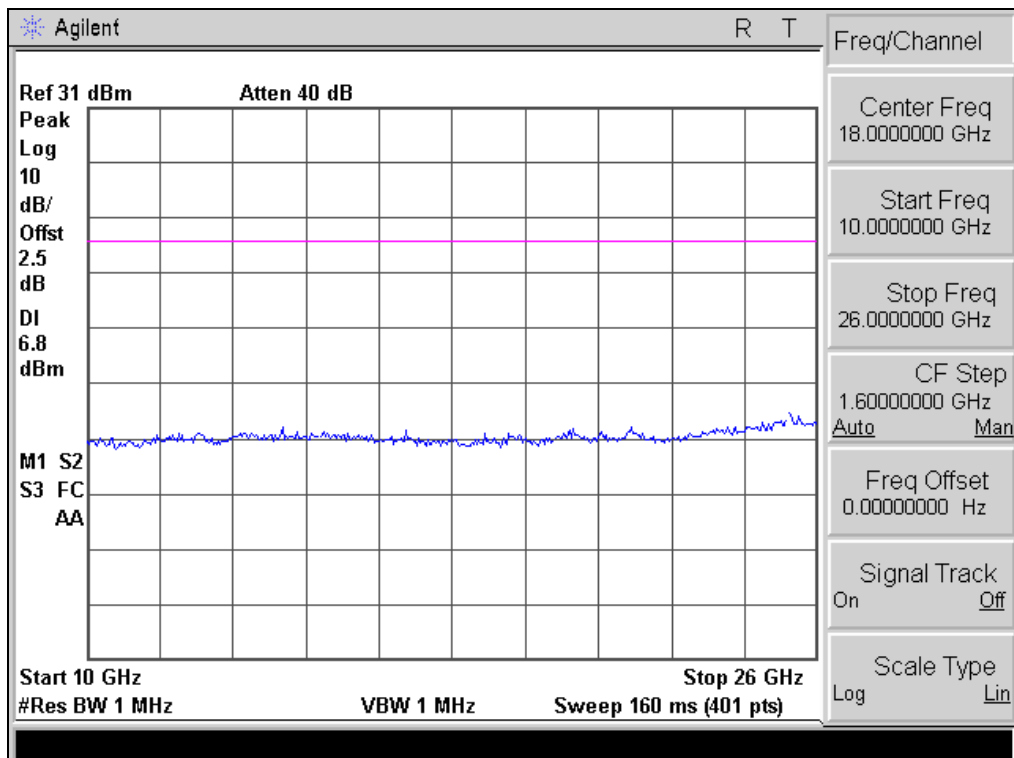
– Spurious emission of CH 47 –



– Spurious emission of CH 47 –



– Spurious emission of CH 94 –



– Spurious emission of CH 94 –

3.8. Radiated Spurious Emissions

3.8.1. Test Procedure

3.8.1.1 Preliminary Testing for Reference

Preliminary testing was performed in a KTL absorber-lined room to determine the emission characteristics of the EUT. The EUT was placed on the wooden table which has dimensions of 0.8 meters in height, 1 meter in length and 1.5 meters in width. Receiving antenna (Biconi-Log antenna : 30 to 1000 MHz or Horn Antenna : 1 to 40 GHz) was placed at the distance of 3 meter from the EUT.

An attempt was made to maximize the emission level with the various configurations of the EUT. Emission levels from the EUT with various configurations were examined on a spectrum analyzer connected with a RF amplifier and graphed.

The emission was within the illumination area of the 3 dB beam width of the antenna so that the maximum emission from the EUT is measured.

3.8.1.2 Final Radiated Emission Test at an Absorber-Lined Room

The final measurement of radiated field strength was carried out in a KTL Absorber-Lined Room that was listed up at FCC according to the "Radiated Emissions Testing" procedure specified by ANSI C63.4.

Based on the test results in preliminary test, measurement was made in same test set up and configuration which produced maximum emission level. Receiving antenna was installed at 3-meter distance from the EUT, and was connected to an EMI receiver.

Turntable was rotated through 360 degrees and receiving antenna height was varied from 1 to 4 meters above the ground plane to read maximum emission level. Receiving antenna polarization was changed vertical and horizontal. The worst value was recorded.

If necessary, the radiated emission measurements could be performed at a closer distance than specified distance to ensure higher accuracy and their results were extrapolated to the specified distance using an inverse linear distance extrapolation factor (20 dB/decade) as per Section 15.31(f).

The maximum emission level from the EUT occurred in such configuration as shown in the following photograph.

Tested in x, y, z axis and worst case results are reported

The maximum frequency range measuring with the spectrum from 30 MHz to 26 GHz is investigated with the transmitter.

3.8.2. Limits

Emissions that fall in the restricted bands (FCC Part 15.205) must be less than or equal to 500 $\mu\text{V/m}$.

Spurious not in a restricted band must be 20 dBc.

* FCC Part 15.205

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	MHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(2)
13.36 - 13.41			

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

² Above 38.6

3.8.3. Calculation of Duty Cycle Correction Factor

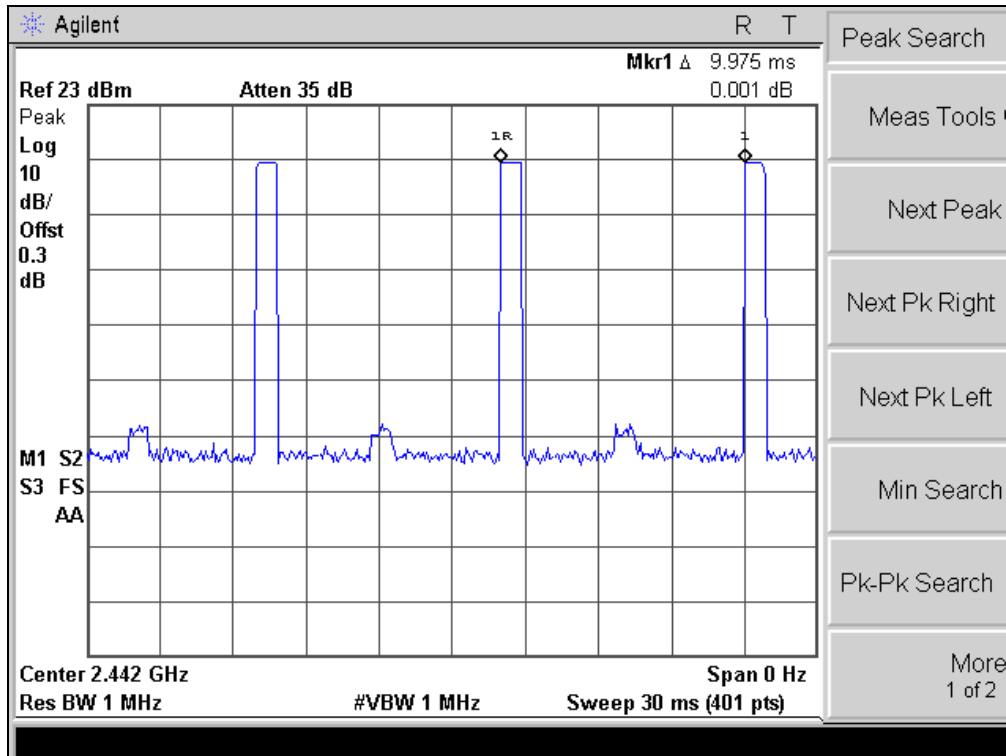
The period of the pulse train is determined by observing it on a spectrum analyzer with zero frequency span. A plot is then made of the pulse train with a sweep time of 30 milliseconds. This sweep determines the duration of the pulse train, which in this case is millisecond.

Duty cycle correction factor

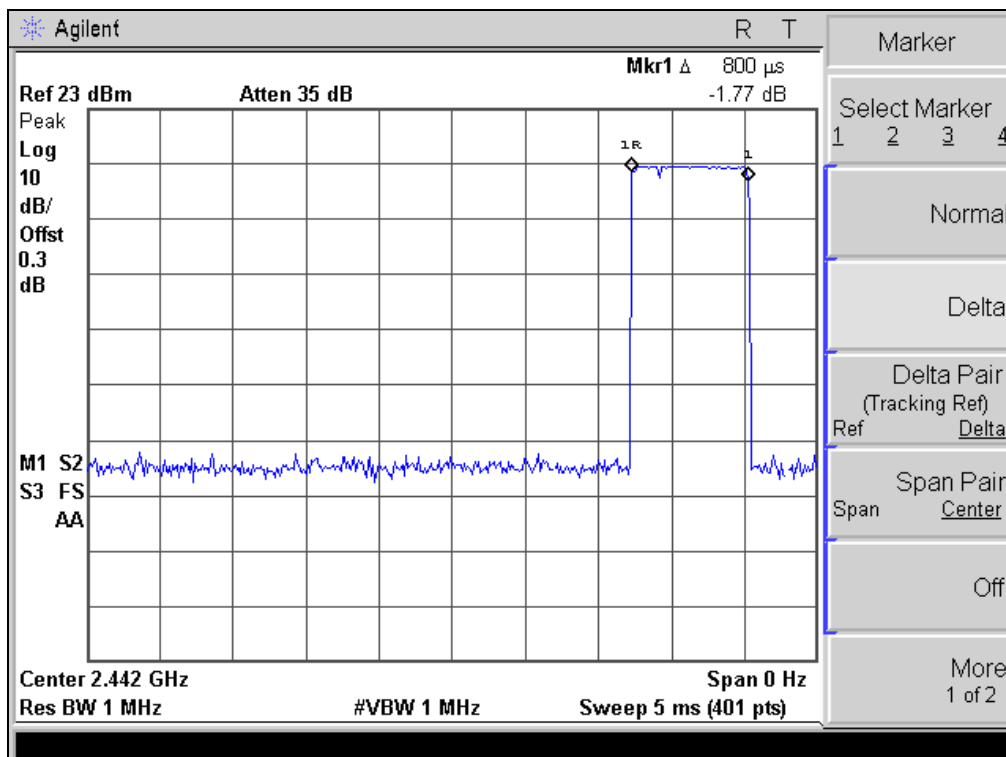
= $20 * \log (\text{ON TIME}) / \text{PERIOD}$

= $20 * \log (0.8 \text{ ms} / 9.975 \text{ ms}) = -21.9 \text{ dB}$

Duty Cycle correction factor = -21.9 dB



– The period of pulse train –



– The pulse ON TIME –

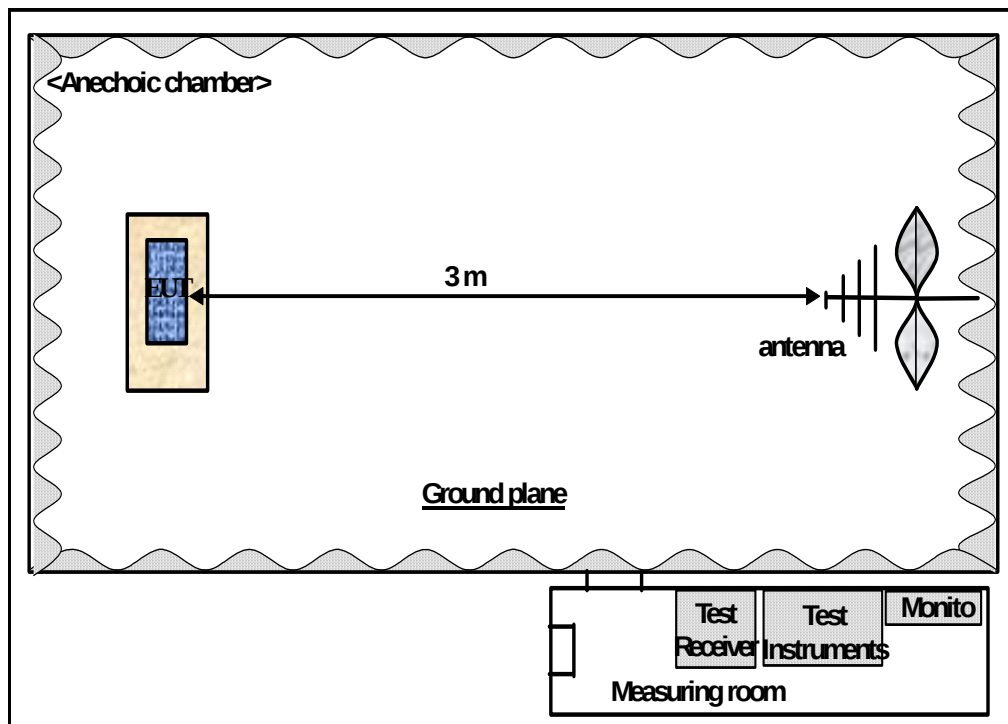
3.8.4. Sample Calculation

The emission level measured in decibels above one microvolt ($\text{dB}\mu\text{V}$) was following sample calculation.

For example ;

Measured Value at 4802 MHz	55.1 $\text{dB}\mu\text{V}$
Antenna Factor & Cable loss + Preamp	15.3 dB
- Duty Cycle Correction factor	- 22.0 dB
= Average	48.4 $\text{dB}\mu\text{V}/\text{m}$

3.8.5. Photograph for the test configuration



3.8.5.1 Radiated Spurious Emission

Model No. : CCR24RMOT
 Test distance : 3m
 Test mode : Continuous TX

Frequency (MHz)	Antenna Pol	Bandwidth Detector	Reading level	Correction factor	Duty Cycle Factor	Level Corrected	Limit	Margin	Remark
Lowest channel Ch. 0									
3601.584	H	1000, Peak	56.2	2.9	0.00	59.1	74.0	14.9	Peak
3601.584	V	1000, Peak	53.1	2.9	0.00	56.0	74.0	18.0	Peak
4802.112	H	1000, Peak	46.8	0.7	0.00	47.5	74.0	26.5	Peak
7203.168	H	1000, Peak	54.4	6.2	0.00	60.6	74.0	13.4	Peak
7203.168	V	1000, Peak	53.4	6.2	0.00	59.6	74.0	14.4	Peak
12005.280	H	1000, Peak	47.0	7.9	0.00	54.9	74.0	19.1	Peak
12005.280	V	1000, Peak	46.1	7.9	0.00	54.0	74.0	20.0	Peak
3601.584	H	1000, Peak	56.2	2.9	21.9	37.2	54.0	16.8	Average
3601.584	V	1000, Peak	53.1	2.9	21.9	34.1	54.0	19.9	Average
4802.112	H	1000, Peak	46.8	0.7	21.9	25.6	54.0	28.4	Average
7203.168	H	1000, Peak	54.4	6.2	21.9	38.7	54.0	15.3	Average
7203.168	V	1000, Peak	53.4	6.2	21.9	37.7	54.0	16.3	Average
12005.280	H	1000, Peak	47.0	7.9	21.9	33	54.0	21	Average
12005.280	V	1000, Peak	46.1	7.9	21.9	32.1	54.0	21.9	Average

Level Corrected = Reading level + Correction factor (dB/m)

Correction factor = Antenna factor + Cable loss – Pre-amplifier (when using a pre-amplifier)

- Note**
1. Measurement was done over the frequency range from 30 MHz to 10th harmonic. The EUT was rotated and the antenna was changed to a range of height of from 1 m to 4 m above the ground plane for maximum response.
 2. Pre-amplifier was used in the range between 1 ~ 25 GHz.
 3. Testing includes the rotation of the EUT through three orthogonal axes to determine the maximum emission.

- Remark**
1. Noise floor of 30 ~ 1000 MHz : <20 dBuV at 3m distance
 2. Noise floor of 1000 ~ 5000 MHz : <40 dBuV at 3m distance
 3. Noise floor of 5000 ~ 25000 MHz : <45 dBuV at 3m distance

Model No. : CCR24RMOT
Test distance : 3m
Test mode : Continuous TX

Frequency (MHz)	Antenna Pol	Bandwidth Detector	Reading level	Correction factor	Duty Cycle Factor	Level Corrected	Limit	Margin	Remark
Middle channel Ch. 47									
3662.496	H	1000, Peak	46.4	0.1	0.00	46.5	74.0	27.5	Peak
4883.328	H	1000, Peak	47.5	1.3	0.00	48.8	74.0	25.2	Peak
7324.992	H	1000, Peak	56.0	6.6	0.00	62.6	74.0	11.4	Peak
7324.992	V	1000, Peak	60.3	6.6	0.00	66.9	74.0	7.1	Peak
12208.320	H	1000, Peak	48.8	9.5	0.00	58.3	74.0	15.7	Peak
12208.320	V	1000, Peak	50.4	9.5	0.00	59.9	74.0	14.1	Peak
3662.496	H	1000, Peak	46.4	0.1	21.9	24.6	54.0	29.4	Average
4883.328	H	1000, Peak	47.5	1.3	21.9	26.9	54.0	27.1	Average
4883.328	V	1000, Peak	56.0	6.6	21.9	40.7	54.0	13.3	Average
7324.992	H	1000, Peak	60.3	6.6	21.9	45.0	54.0	9.0	Average
7324.992	V	1000, Peak	48.8	9.5	21.9	36.4	54.0	17.6	Average
12208.320	H	1000, Peak	50.4	9.5	21.9	38.0	54.0	16.0	Average

Level Corrected = Reading level + Correction factor (dB/m)

Correction factor = Antenna factor + Cable loss – Pre-amplifier (when using a pre-amplifier)

- Note**
1. Measurement was done over the frequency range from 30 MHz to 10th harmonic. The EUT was rotated and the antenna was changed to a range of height of from 1 m to 4 m above the ground plane for maximum response.
 2. Pre-amplifier was used in the range between 1 ~ 25 GHz.
 3. Testing is include the rotation of the EUT through three orthogonal axes to determine the maximum emission.

- Remark**
1. Noise floor of 30 ~ 1000 MHz : <20 dBuV at 3m distance
 2. Noise floor of 1000 ~ 5000 MHz : <40 dBuV at 3m distance
 3. Noise floor of 5000 ~ 25000 MHz : <45 dBuV at 3m distance

Model No. : CCR24RMOT
Test distance : 3m
Test mode : Continuous TX

Frequency (MHz)	Antenna Pol	Bandwidth Detector	Reading level	Correction factor	Duty Cycle Factor	Level Corrected	Limit	Margin	Remark
Lowest channel Ch. 94									
4964.544	H	1000, Peak	48.8	1.4	0.00	50.2	74.0	23.8	Peak
4964.544	V	1000, Peak	47.4	1.4	0.00	48.8	74.0	25.2	Peak
7446.816	H	1000, Peak	50.1	10.2	0.00	60.3	74.0	13.7	Peak
7446.816	V	1000, Peak	49.6	10.2	0.00	59.8	74.0	14.2	Peak
12411.360	H	1000, Peak	48.8	5.8	0.00	54.6	74.0	19.4	Peak
12411.360	V	1000, Peak	50.4	5.8	0.00	56.2	74.0	17.8	Peak
4964.544	H	1000, Peak	55.3	1.4	21.9	34.8	54.0	19.2	Average
4964.544	V	1000, Peak	55.9	1.4	21.9	35.4	54.0	18.6	Average
7446.816	H	1000, Peak	47.1	10.2	21.9	35.4	54.0	18.6	Average
7446.816	V	1000, Peak	46.7	10.2	21.9	35	54.0	19	Average
12411.360	H	1000, Peak	49.1	5.8	21.9	33	54.0	21	Average
12411.360	V	1000, Peak	48.9	5.8	21.9	32.8	54.0	21.2	Average

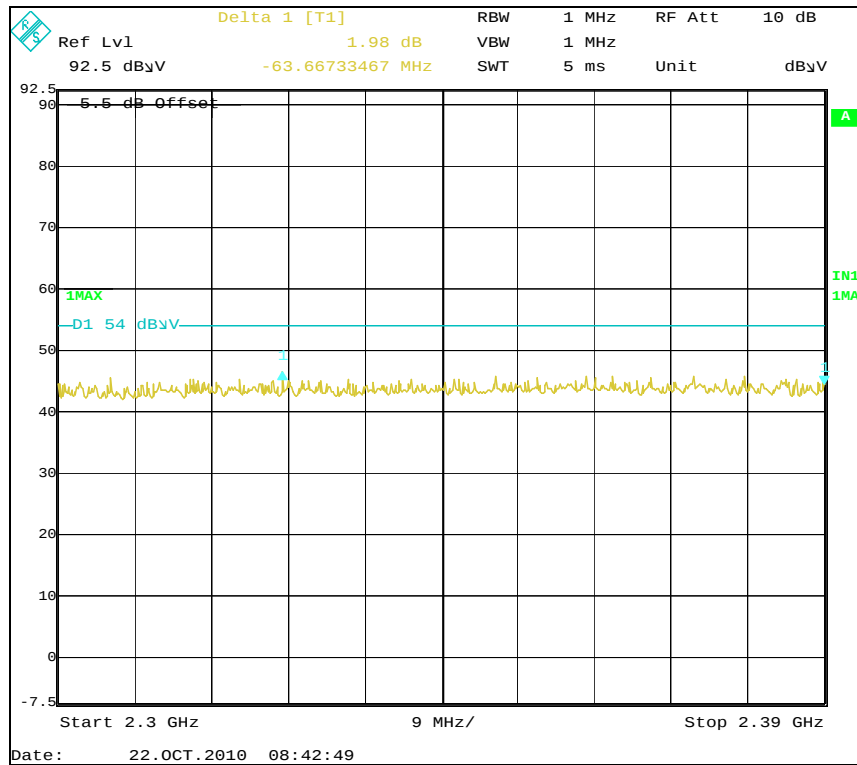
Level Corrected = Reading level + Correction factor (dB/m)

Correction factor = Antenna factor + Cable loss – Pre-amplifier (when using a pre-amplifier)

- Note**
1. Measurement was done over the frequency range from 30 MHz to 10th harmonic. The EUT was rotated and the antenna was changed to a range of height of from 1 m to 4 m above the ground plane for maximum response.
 2. Pre-amplifier was used in the range between 1 ~ 25 GHz.
 3. Testing includes the rotation of the EUT through three orthogonal axes to determine the maximum emission.

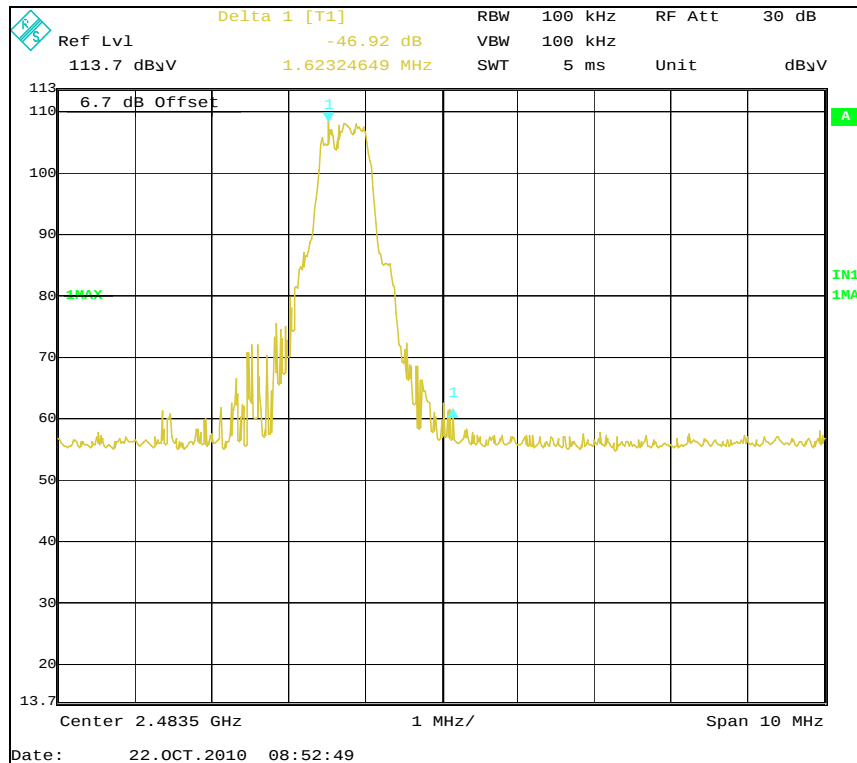
- Remark**
1. Noise floor of 30 ~ 1000 MHz : <20 dBuV at 3m distance
 2. Noise floor of 1000 ~ 5000 MHz : <40 dBuV at 3m distance
 3. Noise floor of 5000 ~ 25000 MHz : <45 dBuV at 3m distance

3.8.5.2 Restricted Bandedge



– Lower side band (peak) –

3.8.5.3 Delta Marker Method



Measured Fundamental Field Strength = 114.4 dBuV/m at 3 m

Field strength delta marker :

Peak : 113.9 dBuV/m – 46.92 = 66.98 dBuV/m at 3 m

Average : 66.98 – 21.9 = 45.08 dBuV/m at 3 m

4. TEST EQUIPMENTS

No.	Equipment	Manufacturer	Model	S/N	Effective Cal.Duration
1	EMI Receiver (20 Hz ~ 26.5 GHz)	R&S	ESIB	100280	08/17/2008 ~ 08/17/2009
2	Spectrum Analyzer (100 Hz ~ 26.5 GHz)	Agilent	E4407B	US41443316	12/01/2008 ~ 12/01/2009
3	Spectrum Analyzer (3 Hz ~ 50 GHz)	Agilent	E4448A	MY43360322	08/30/2008 ~ 08/30/2009
4	Pre-Amplifier (100 kHz ~ 1 GHz)	SONOMA.	310N	186270	08/25/2008 ~ 08/25/2009
5	Pre-Amplifier (0.5 GHz ~ 26.5 GHz)	Agilent	83017A	MY39500982	04/02/2008 ~ 04/02/2009
6	LISN(50 Ω , 50 μ H) (10 kHz ~ 100 MHz)	R&S	ESH3-Z5	826789009	07/05/2008 ~ 07/05/2009
7	Biconi-Log Ant. (30 MHz ~ 1000 MHz)	Schwarzbeck	VULB9168	9168-180	08/24/2008 ~ 08/24/2009
8	Horn Ant. (1 GHz ~ 18 GHz)	EMCO	3115	9012-3595	03/26/2007 ~ 03/26/2009
9	Horn Ant. (18 GHz ~ 40 GHz)	EMCO	3116	2664	03/26/2007 ~ 03/26/2009
10	Active Loop Ant. (9 kHz ~ 30 MHz)	EMCO	6502	2532	06/08/2008 ~ 06/08/2009
11	DC Power Supply	Agilent	E4356A	MY41000296	10/01/2008 ~ 10/01/2009
12	Power Meter	Agilent	E4417A	GB4129075	09/17/2008 ~ 09/17/2009
13	Bluetooth tester	anrisu	MT8852B	6K00006994	03/03/2008 ~ 03/03/2009

Appendix.1 Test setup photo



<Radiated Emission>