



RF TEST REPORT

Number 16-057085-01-1

Be based on
FCC CFR 47 Part 15C, section 15.247
ANSI C63.10-2013

For

Applicant	H3 SYSTEM Co. Ltd.
Manufacturer	H3 SYSTEM Co. Ltd.
Model or Type	BA-300
Final HW Version	0.2
Final SW Version	0.1
Test result	Pass

Issue To: H3 SYSTEM Co. Ltd. 1F, 283, Baeul 1-ro, Yuseong-gu, Daejeon, Korea	Date of Application	2016-09-30
	Date of Report	2016-10-25
	Date of Issue	2016-10-25

This Test Report consists of 36 pages

The above test certificate is the accredited test results by Korea Laboratory Accreditation Scheme, which signed the ILAC-MRA.

Korea Testing Laboratory

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Test Report revision History

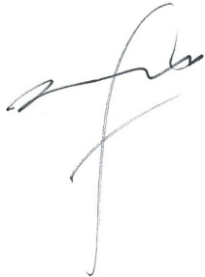
Revision	Date	Comments
00	2016-10-10	Initial Version
01	2016-10-12	Page 1, Page 7, Page 23, Page 32 modified. Page 25, 26 added.
02	2016-10-13	Page 23, Page 31, Page 33, Page 36 modified Page 30 added.
03	2016-10-24	Page 23, Page 30, Page 31, Page 33 modified
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Signature

This Test Report is issued under the authority as below

Date: 25 OCT, 2016

Test Engineer : Hyung-ki Ahn



Reviewed/Approved by : Hoon-geun Song



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1. Administrative Information

1.1. Applicant (Client)

Company Name	H3 SYSTEM Co. Ltd.
Address	1F, 283, Baeul 1-ro, Yuseong-gu, Daejeon, Korea
Contact Person	
Name	Kim, Min Joon
E-mail	lsw@h3system.co.kr
Phone	+82-10-9210-5794

1.2. Manufacturer Data (only if different from Applicant)

Company Name	-
Address	-
Contact Person	
Name	-
E-mail	-
Phone	-

1.3. Testing Laboratory Data

The following list shows all places and laboratories involved for test result generation.

Company Name	Korea Testing Laboratory
Address	723 Haeon-ro, Sangnok-Gu, Ansan-Si, Gyeonggi-Do, KOREA (15588)
Contact Person	
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2. EUT Information

2.1. General Description of the EUT

The following section lists all specifications of EUT (Equipment Under Test) involved in test. Additionally, KTL has received sufficient documentation from the client and/or manufacturer to perform the tests

General Information	
FCC ID & Model Number	FCC ID: X59-BA-300 , Model Number: BA-300
Antenna Type	Internal Antenna
Type of Radio transmission	Bluetooth Low Energy
Frequency Range	2402 ~ 2480 MHz
Channel Numbers	40
Antenna Gain	2400 MHz: -3.02 dBi, 2460 MHz: -4.44 dBi, 2500 MHz: -5.25 dBi
Battery options	AA 1.5V Battery
Date(s) tested	2016. 09. 30. ~ 2016. 10. 07.

2.2. Maximum Output Power

Modulation	Conducted Output Power (dBm)
GFSK	0.39 dBm (1.09 mW)

3. SUMMARY OF TEST RESULTS

Company Name: H3 SYSTEM Co. Ltd.

FCC ID: X59-BA-300

FCC Classification: Digital Transmission System (DTS)

Number of Channels: 40

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Results	Reference
<u>TRANSMITTER MODE(TX)</u>					
15.247(a)(2)	6 dB Bandwidth	> 500 kHz	Conducted	Pass	Section 4.1
15.247(b)(3)	Transmitter Output Power	< 1 Watt		Pass	Section 4.2
15.247(e)	Transmitter Power Spectral Density	< 8 dBm / 3 kHz Band		Pass	Section 4.3
15.247(d)	Band Edge / Out-of-Band Emissions	≥ 20 dBc		Pass	Section 4.4, 4.5
15.205 15.209	General Field Strength Limits (Restricted Band and Radiated Emission Limits)	Emissions in restricted bands must the radiated limits detailed in 15.209 (Rss-247, 5.5 Unwanted Emissions)	Radiated	Pass	Section 4.6

Summary of Test Results

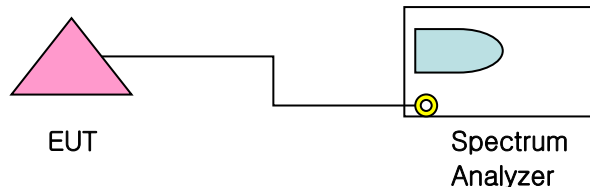
Notes:

1. All modes of operation were investigated. The test results shown in the following sections represent the worst case emissions.
2. The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
3. All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables and attenuators.

4. Measurement & Results

4.1. 6dB Bandwidth Measurement (15.247(a.2))

4.1.1. Test Setup Layout



4.1.2. Test Condition & Limit

■ Test Overview and Limit

The bandwidth at 6dB down from the highest in band spectral density is measured a spectrum analyzer connected to the transmitter antenna terminal of the EUT is operating at maximum power and at the appropriate frequencies. All modes of operation were investigated and the worst case configuration results are reported in this section.

The minimum permissible 6dB bandwidth is 500 kHz.

■ Test Procedure Used

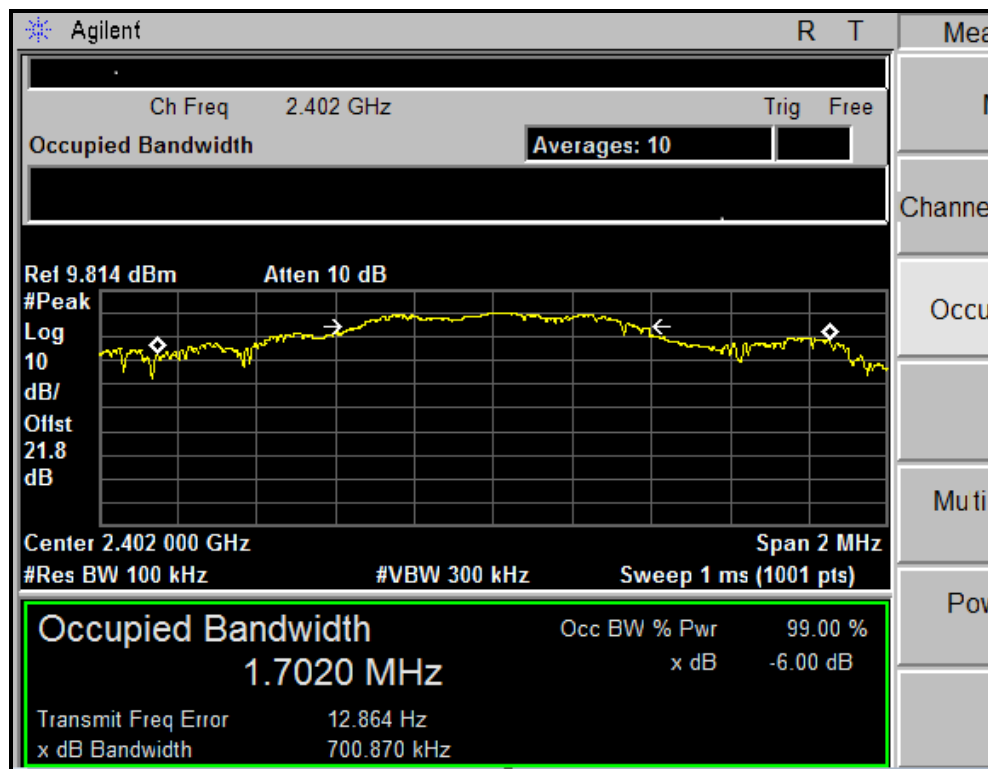
KDB 558074 v03r05 – Section 8.2 Option 2

■ Test Setting

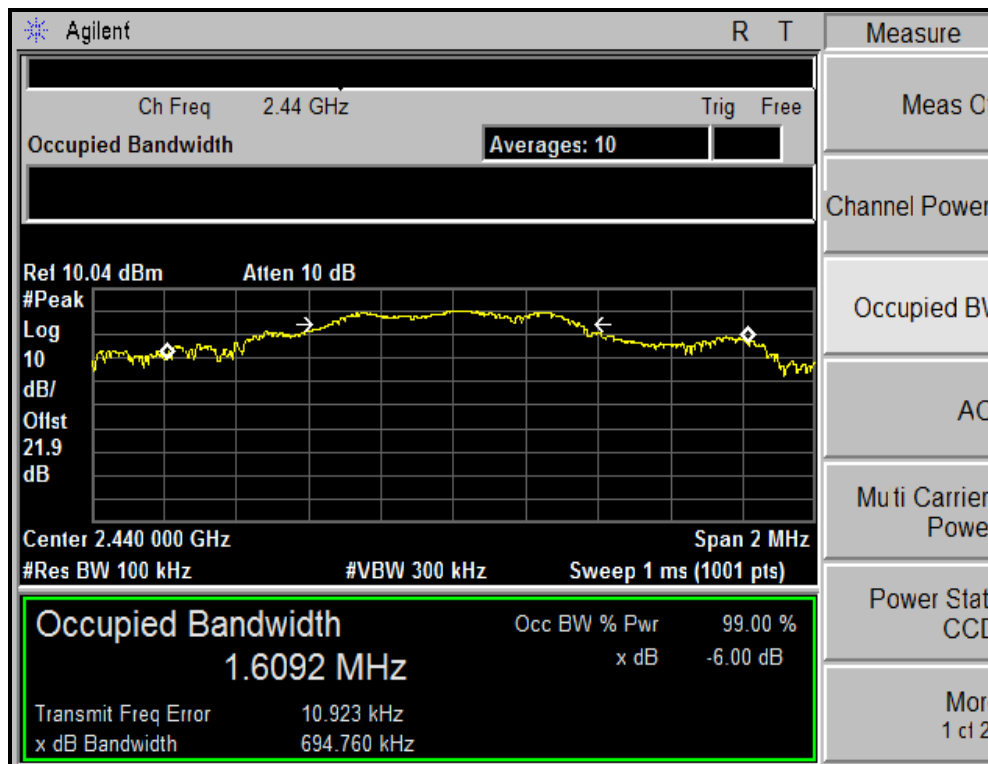
1. The signal analyzers' automatic bandwidth measurement capability of the spectrum analyzer was used to perform the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to $X = 6$. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emissionk.
2. RBW = 100 kHz
3. VBW $\geq 3 \times$ RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize

4.1.3. Test result

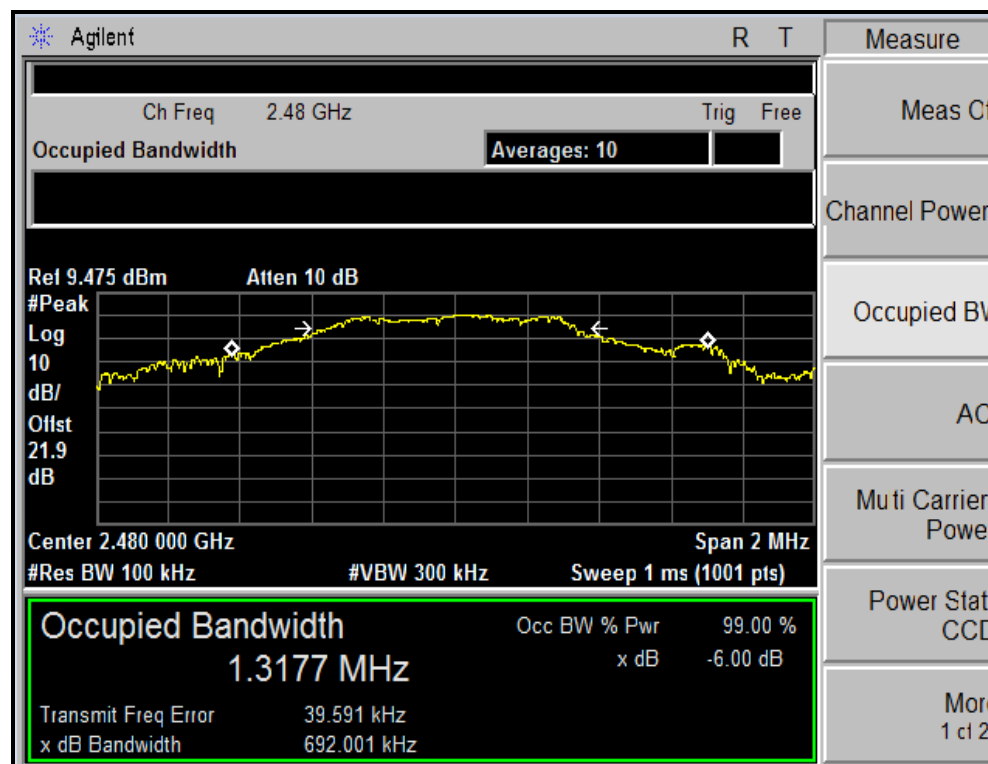
Channels	Frequency (MHz)	Channel No.	Measured Bandwidth [kHz]	Minimum Bandwidth [kHz]	Verdict
Low	2402	0	700.87	500	Pass
Middle	2440	19	694.76	500	Pass
High	2480	39	692.00	500	Pass



6dB Bandwidth Plot (CH. 0)



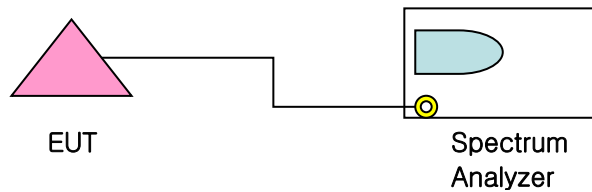
6dB Bandwidth Plot (CH. 19)



6dB Bandwidth Plot (CH. 39)

4.2. Output Power Measurement (15.247(b.3))

4.2.1. Test Setup Layout



4.2.2. Test Condition & Limit

■ Test Overview and Limits

The transmitter antenna terminal of the ETU is connected to the input of a spectrum analyzer. Measurements are made while the ETU is operating at maximum power and at the appropriate frequencies.

The maximum permissible conducted output power is 1 Watt.

■ Test Procedure Used

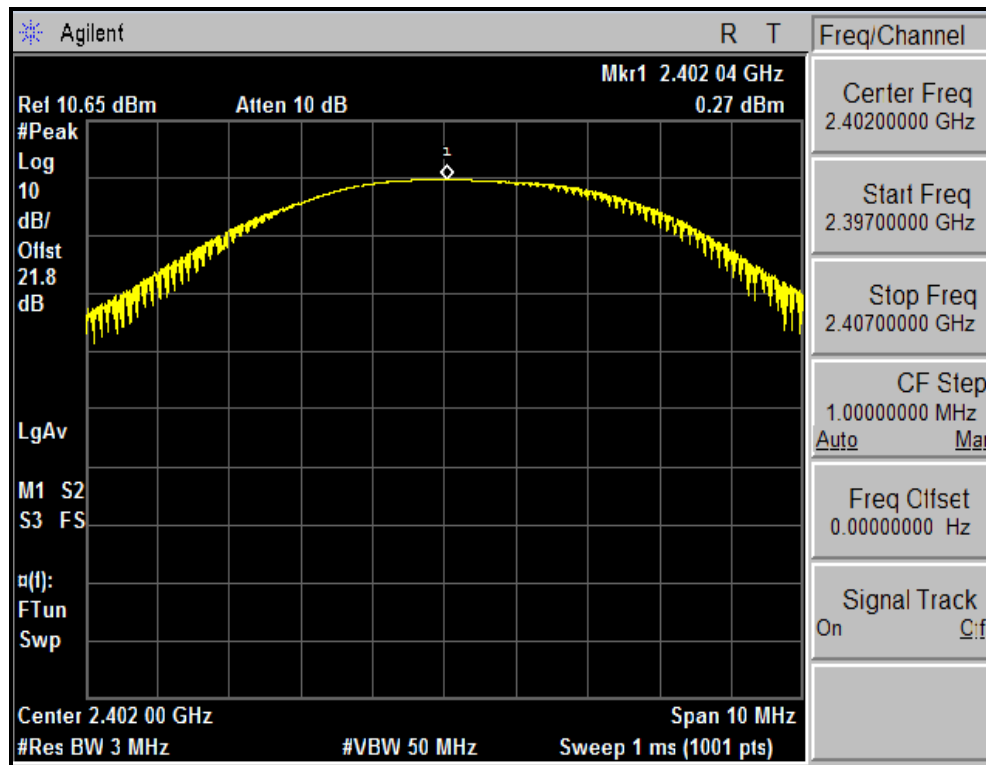
KDB 558074 v03r05 – Section 9.1.1

■ Test Settings

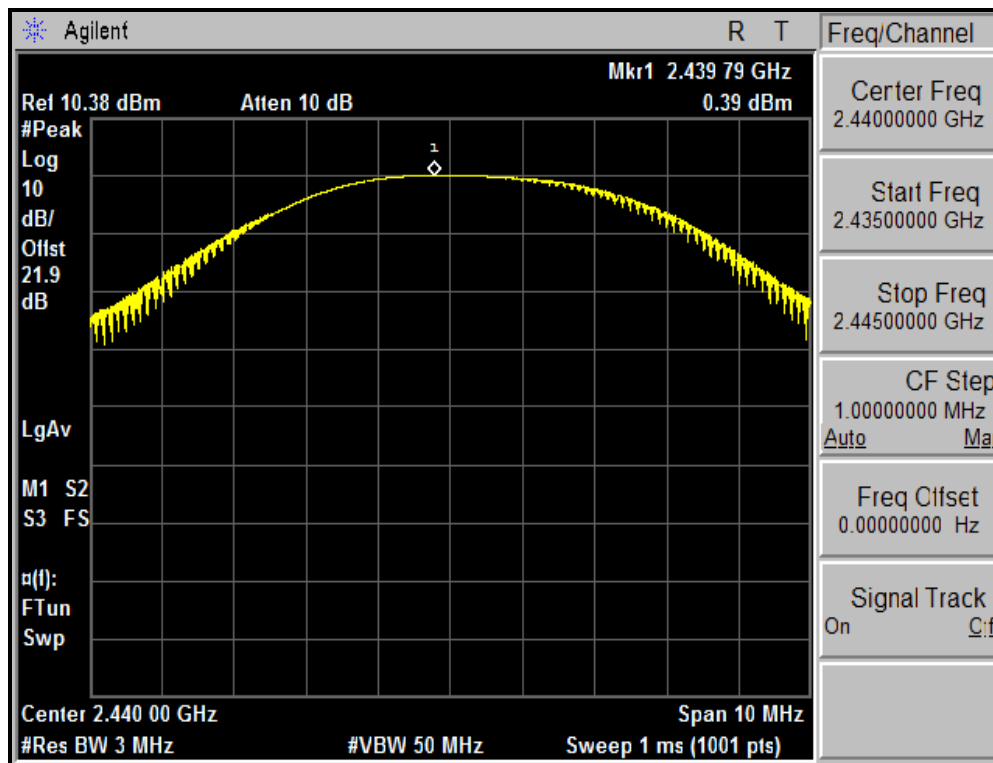
1. RBW = 3 MHz
2. VBW = 50 MHz
3. Span $\geq 3 \times$ RBW
4. Sweep = auto couple
5. Detector = Peak
6. Trace mode = max hold
7. The trace was allowed to stabilize

4.2.3. Test result

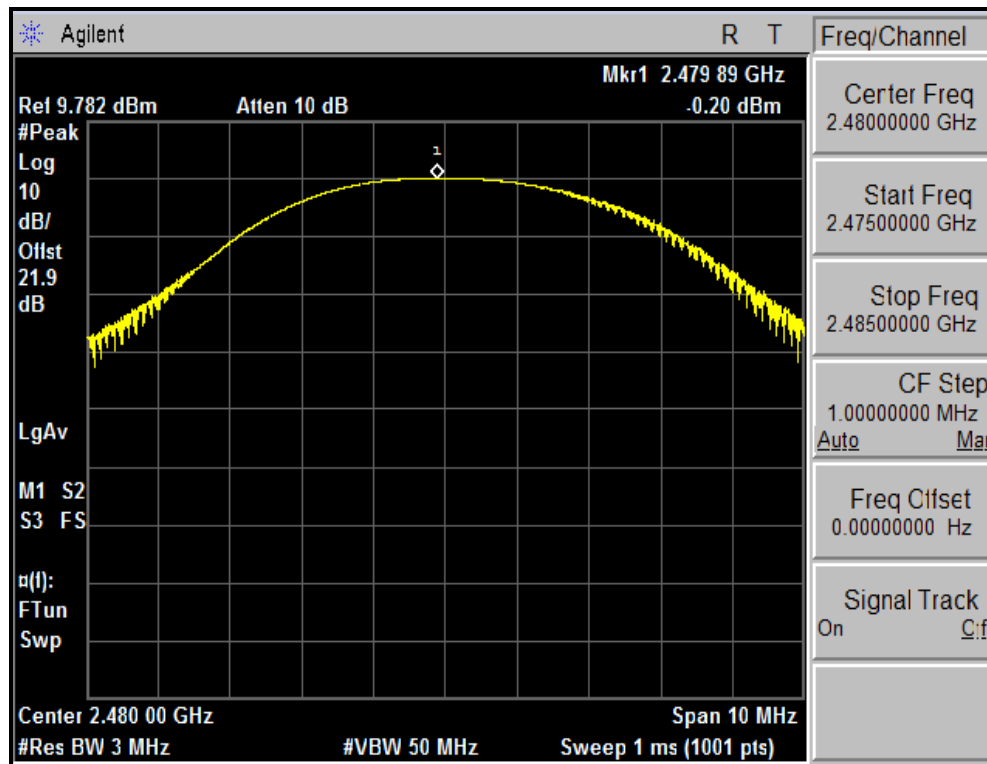
Channels	Frequency (MHz)	Channel No.	Peak Conducted Power	
			[dBm]	[mW]
Low	2402	0	0.27	1.06
Middle	2440	19	0.39	1.09
High	2480	39	-0.21	0.95



Peak Power Plot (CH. 0)



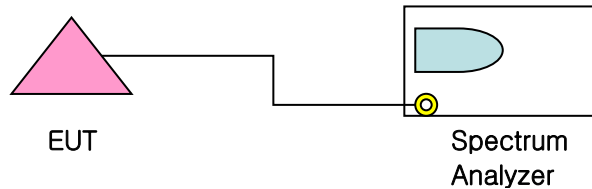
Peak Power Plot (CH. 19)



Peak Power Plot (CH. 39)

4.3. Power Spectral Density (15.247(e))

4.3.1. Test Setup Layout



4.3.2. Test Condition & Limit

■ Test Overview and Limits

The peak power density is measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at maximum power and at the appropriate frequencies.

The maximum permissible power spectral density is 8 dBm in any 3 kHz band.

■ Test Procedure Used

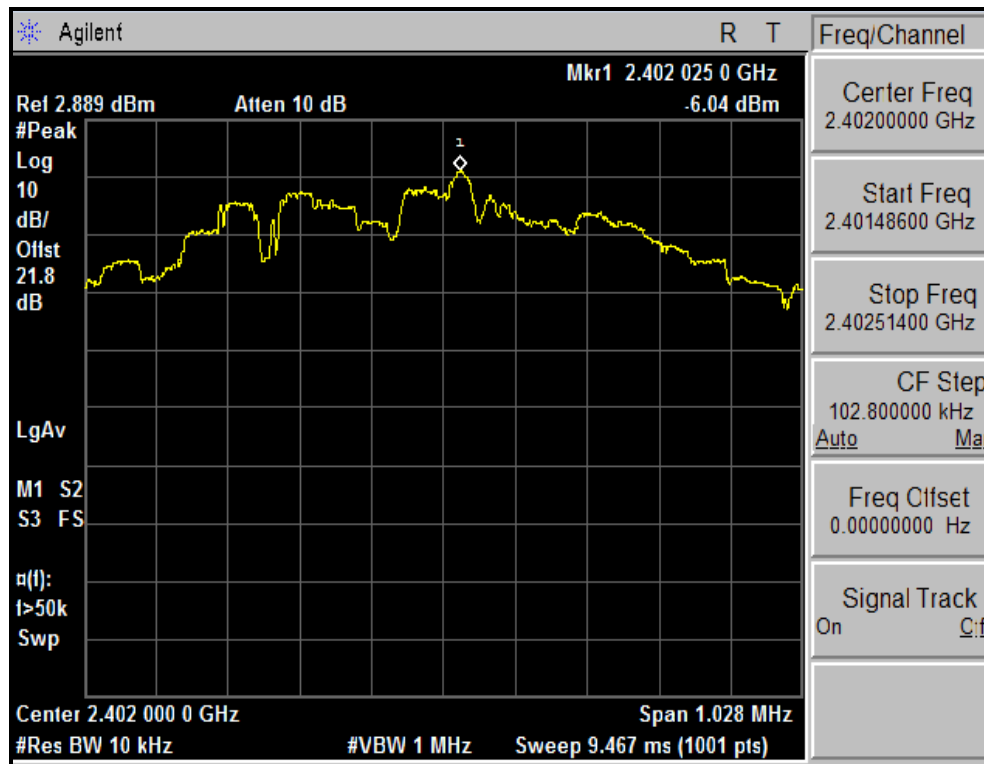
KDB 558074 v03r05 – Section 10.2 Method PKPSD

■ Test Settings

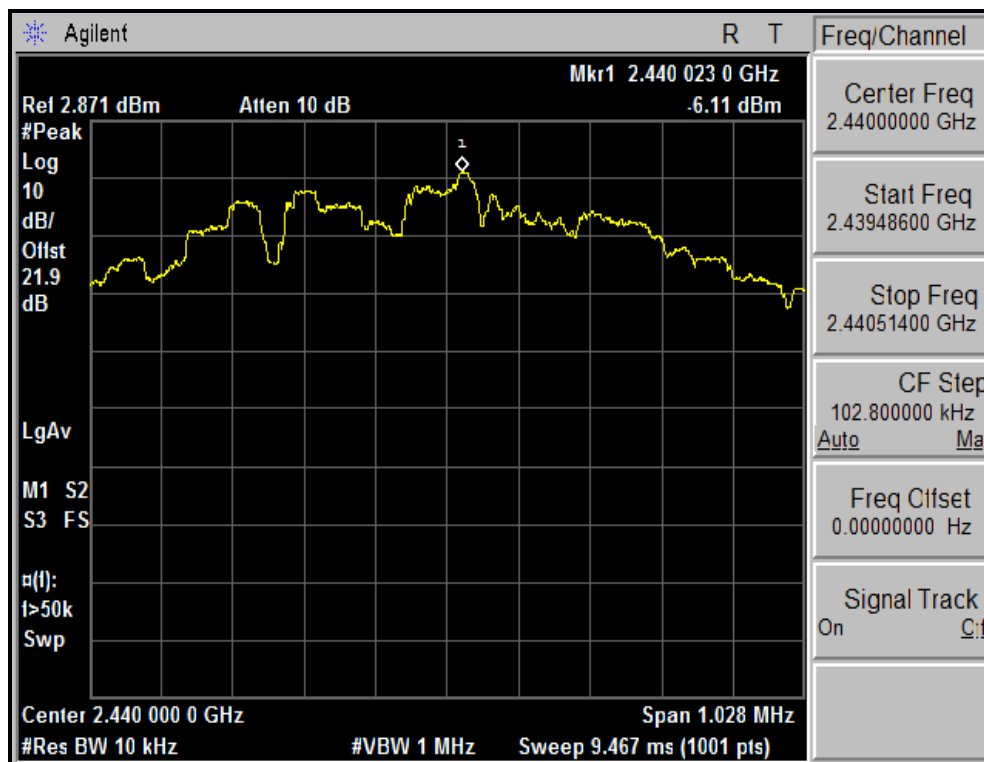
1. Analyzer was set to the center frequency of the DTS channel under investigation
2. Span = 1.5 times the DTS channel bandwidth
3. RBW = 10 kHz
4. VBW = 1 MHz
5. Detector = Peak
6. Sweep time = auto couple
7. Trace mode = max hold
8. Trace was allowed to stabilize

4.3.3. Test result

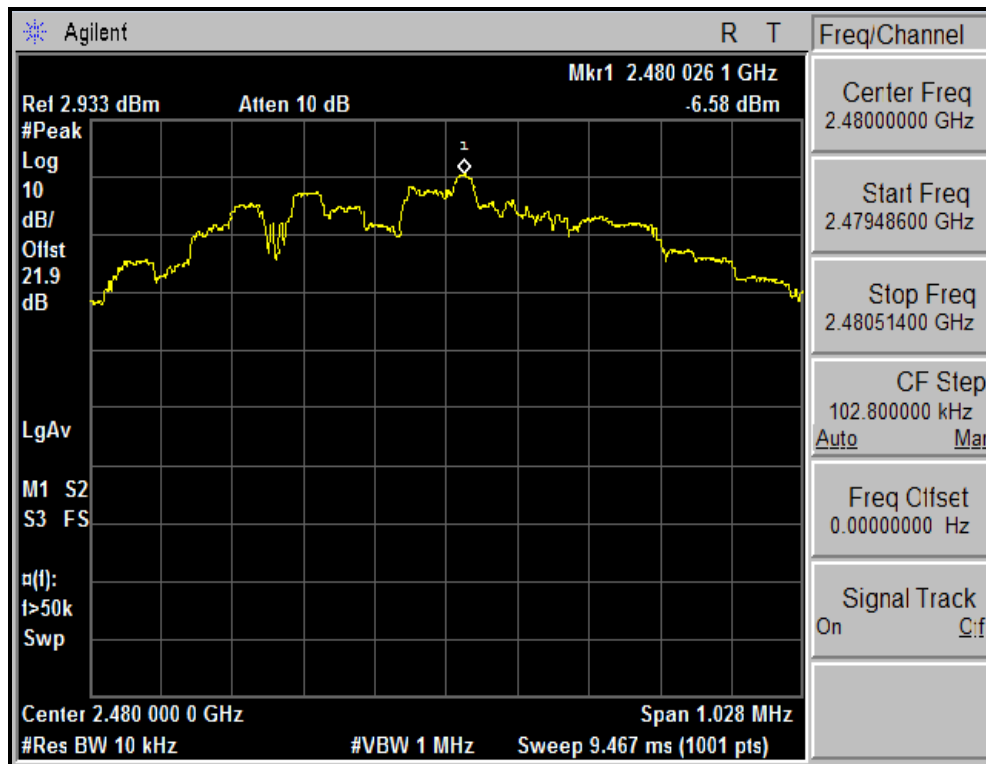
Channels	Frequency (MHz)	Channel No.	Measured Power Spectral Density [dBm]	Maximum Permissible Power Density [dBm/3kHz]	Margin [dB]
Low	2402	0	-6.04	8.0	-14.04
Middle	2440	19	-6.11	8.0	-14.11
High	2480	39	-6.58	8.0	-14.58



Power Spectral Density Plot (CH. 0)



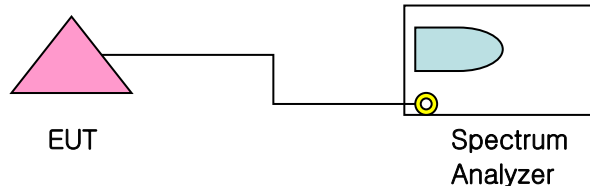
Power Spectral Density Plot (CH. 19)



Power Spectral Density Plot (CH. 39)

4.4. Conducted Emissions at the Band Edge (15.247(d))

4.4.1. Test Setup Layout



4.4.2. Test Condition & Limit

■ Test Overview and Limit

For the following out of band conducted spurious emissions plots at the band edge, the EUT was set to transmit at maximum power with the largest packet size available. These settings produced the worst-case emissions.

The limit for out-of-band spurious emissions at the band edge is 20dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100kHz bandwidth.

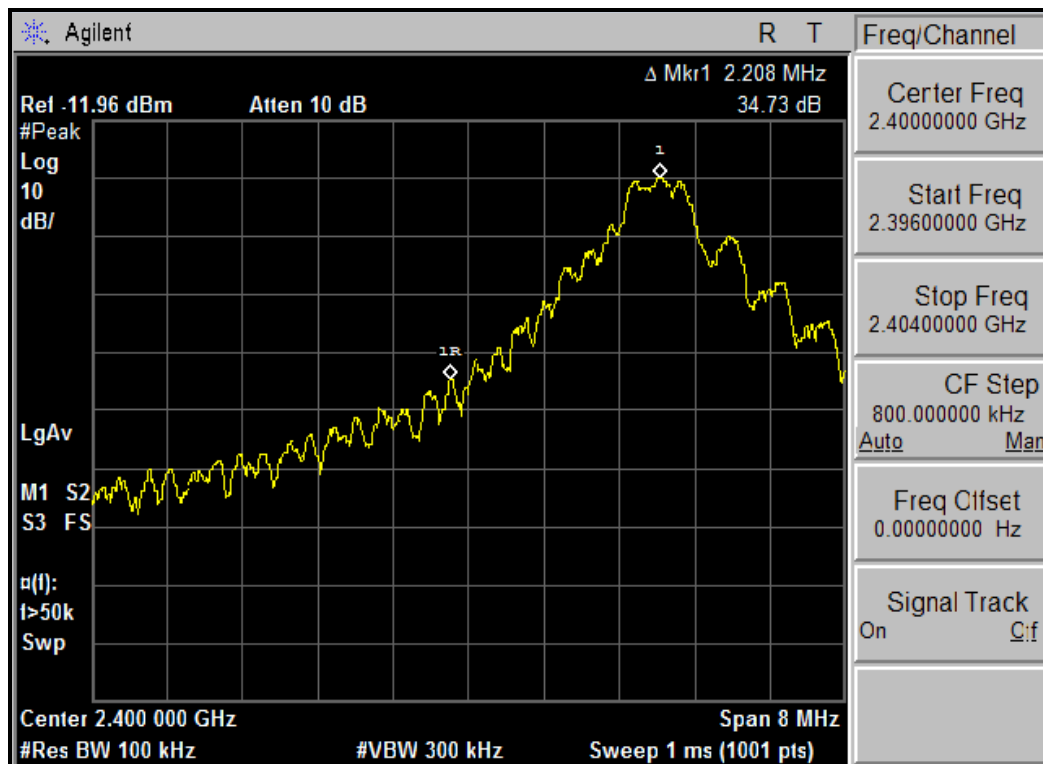
■ Test Procedure Used

KDB 558074 v03r05 – Section 11.3

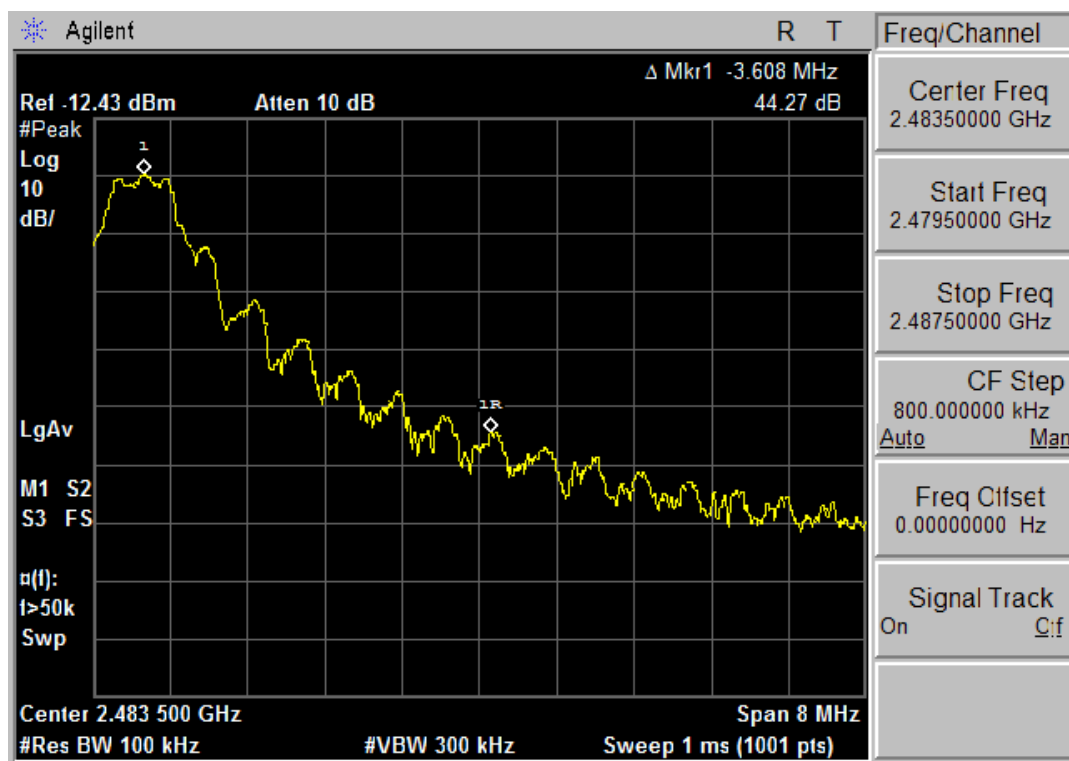
■ Test Setting

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW = 100 kHz
4. VBW = 300 kHz
5. Detector = Peak
6. Number of sweep points $\geq 2 \times \text{Span/RBW}$
7. Trace mode = max hold
8. Sweep time = auto couple

4.4.3. Test result



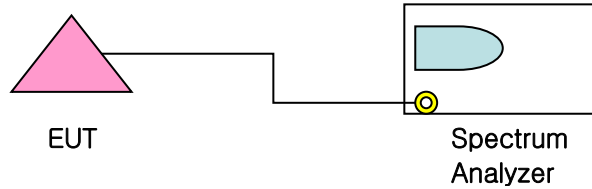
Band Edge Plot (CH. 0)



Band Edge Plot (CH. 39)

4.5. Conducted Spurious Emission (15.247(d))

4.5.1. Test Setup Layout



4.5.2. Test Condition & Limit

■ Test Overview and Limit

For the following out of band conducted spurious emissions plots, the EUT was set to transmit at maximum power with the largest packet size available. The worst case spurious emissions were found in this configuration.

The limit for out-of-band spurious emissions at the band edge is 20dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100 kHz bandwidth per the procedure in Section 11.1 of KDB 558074 v03r05.

■ Test Procedure Used

KDB 558074 v03r05 – Section 11.3

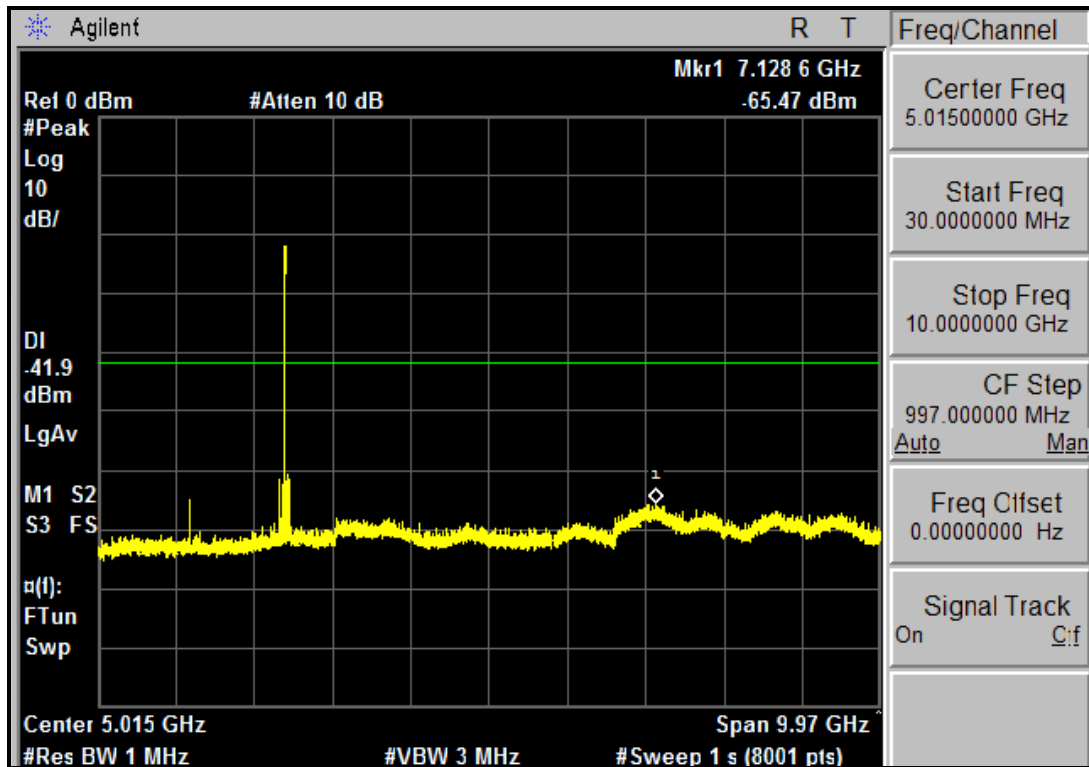
■ Test Settings

1. Start frequency was set to 30 MHz and stop frequency was set to 25 GHz (separated into two plots per channel)
2. RBW = 1 MHz
3. VBW = 3 MHz
4. Detector = Peak
5. Trace mode = max hold
6. Sweep time = auto couple
7. The trace was allowed to stabilize

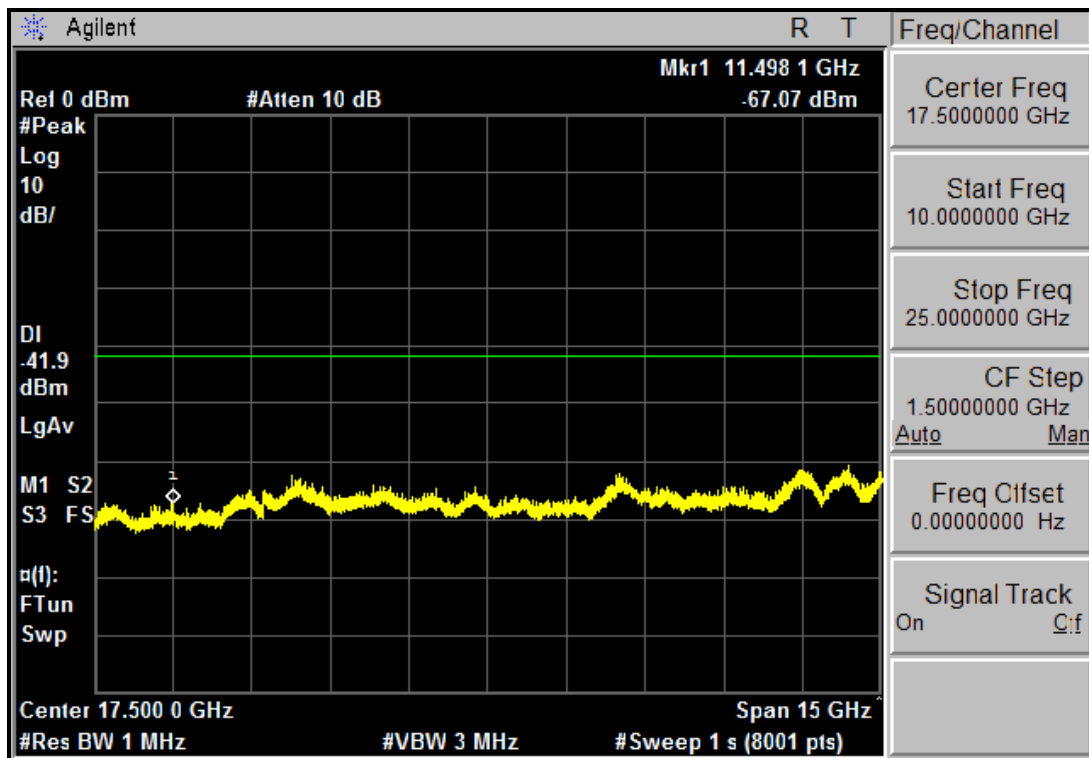
Notes:

1. RBW was set to 1 MHz rather than 100 kHz in order to increase the measurement speed.
2. The display line shown in the following plots denotes the limit at 20 dB below the fundamental emission level measured in a 100 kHz bandwidth. However, since the traces in the following plots are measured with a 1 MHz RBW, the display line may not necessarily appear to be 20 dB below the level of the fundamental in a 1 MHz bandwidth.
3. For plots showing conducted spurious emissions near the limit, the frequencies were investigated with a reduced RBW to ensure that no emissions were present.

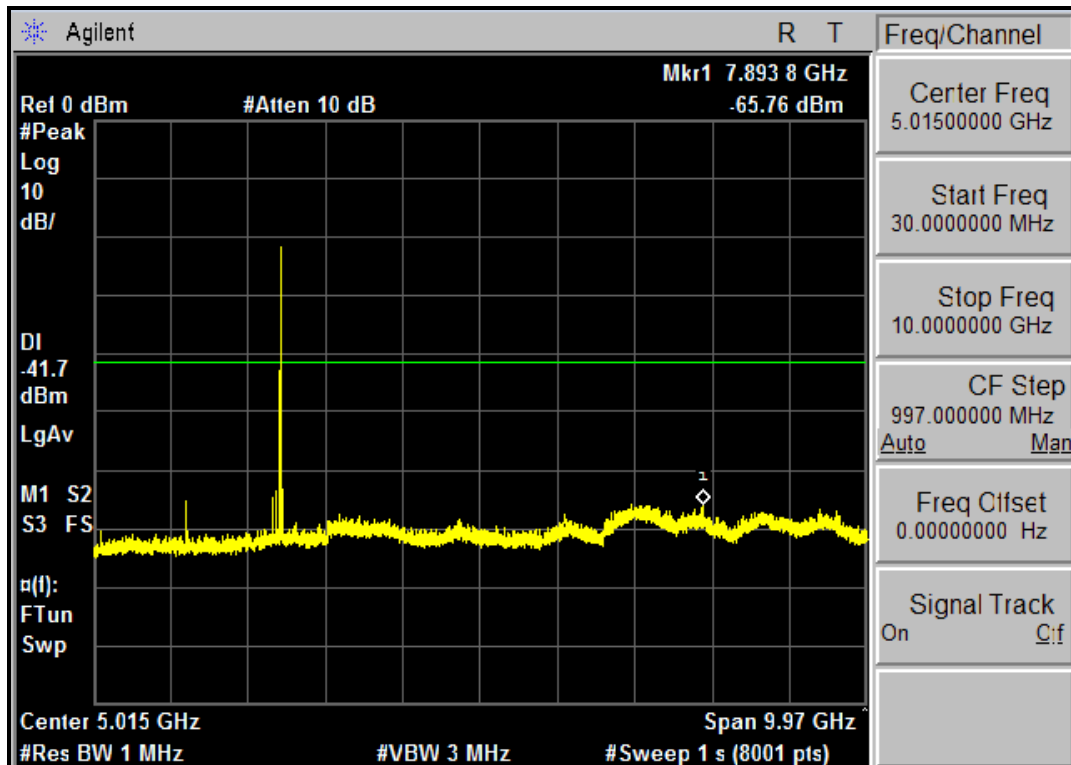
4.5.3. Test result



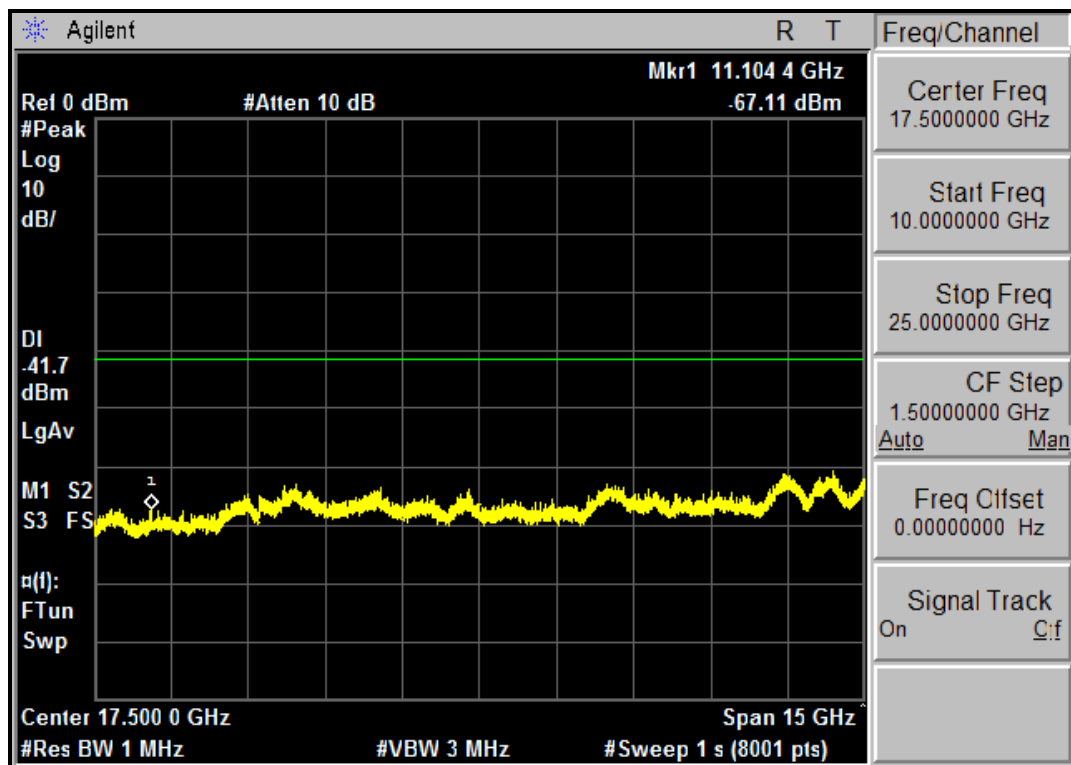
Conducted Spurious Plot (CH. 0)



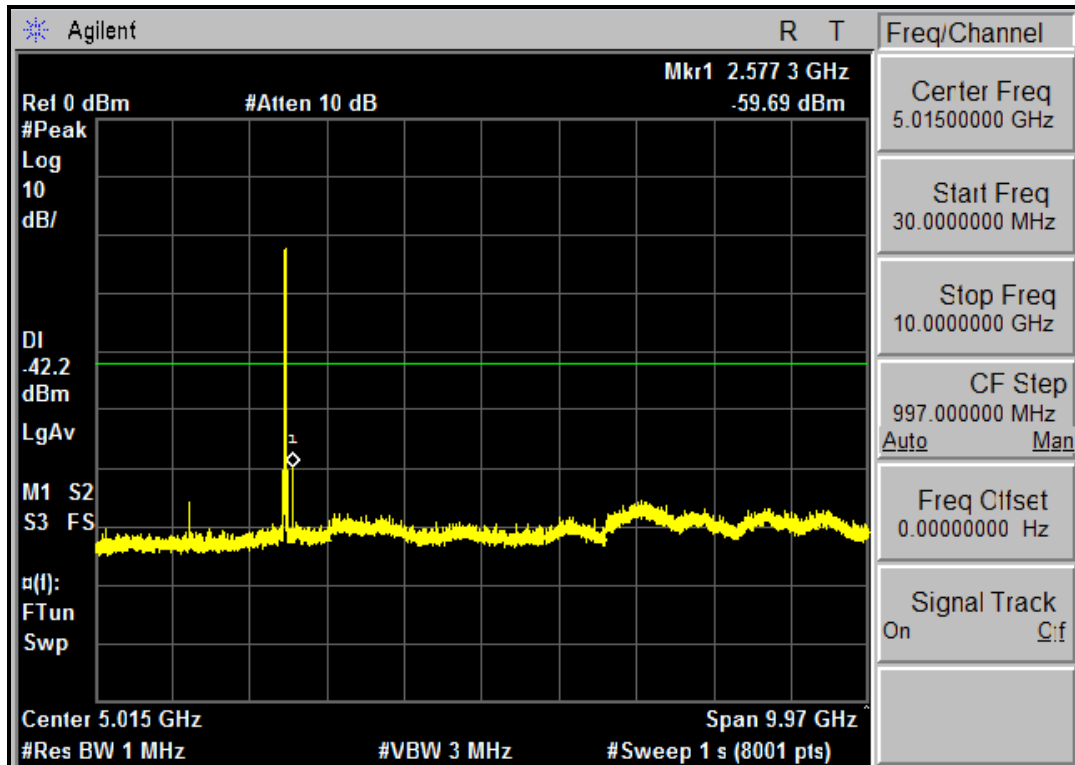
Conducted Spurious Plot (CH. 0)



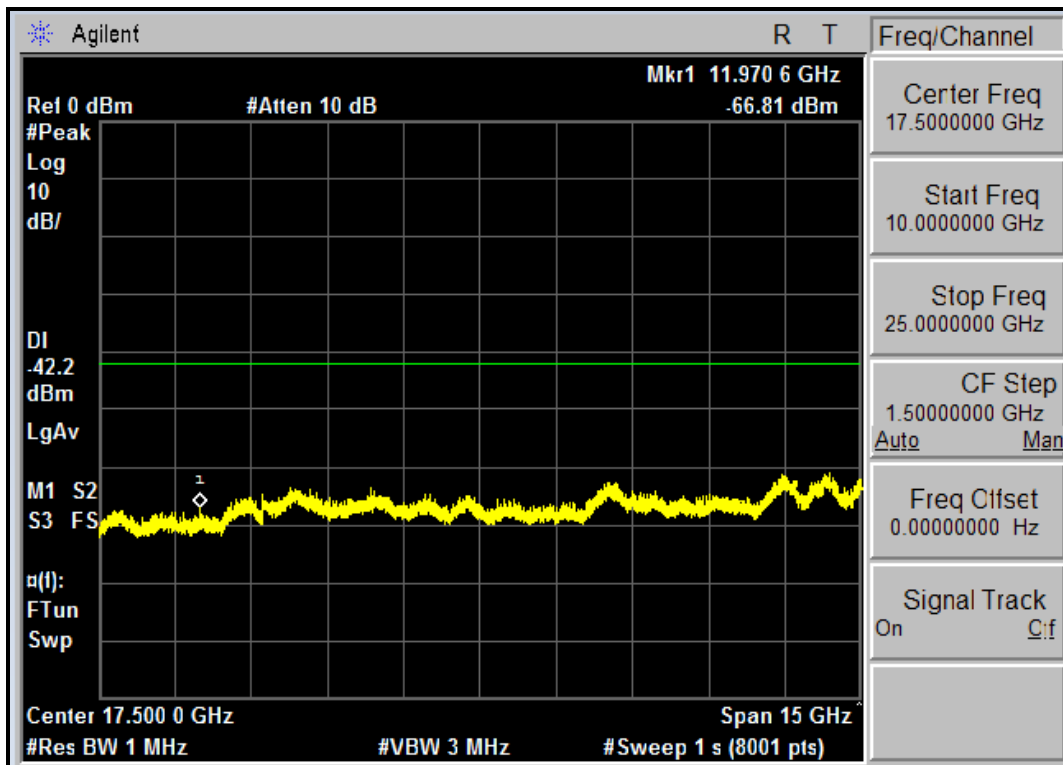
Conducted Spurious Plot (CH. 19)



Conducted Spurious Plot (CH. 19)



Conducted Spurious Plot (CH. 39)



Conducted Spurious Plot (CH. 39)

4.6. Radiated Spurious Emissions

4.6.1. Test Procedure

4.6.1.1 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 table which is 0.8 meters in height for receiving antenna (Biconi-Log antenna: 30 to 1000 MHz) and 1.5 meters in height for Horn Antenna: 1 to 40 GHz. These antennas were placed at the distance of 3 meters 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.

4.6.1.2 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 C63.10.

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 25 GHz is investigated with the transmitter.

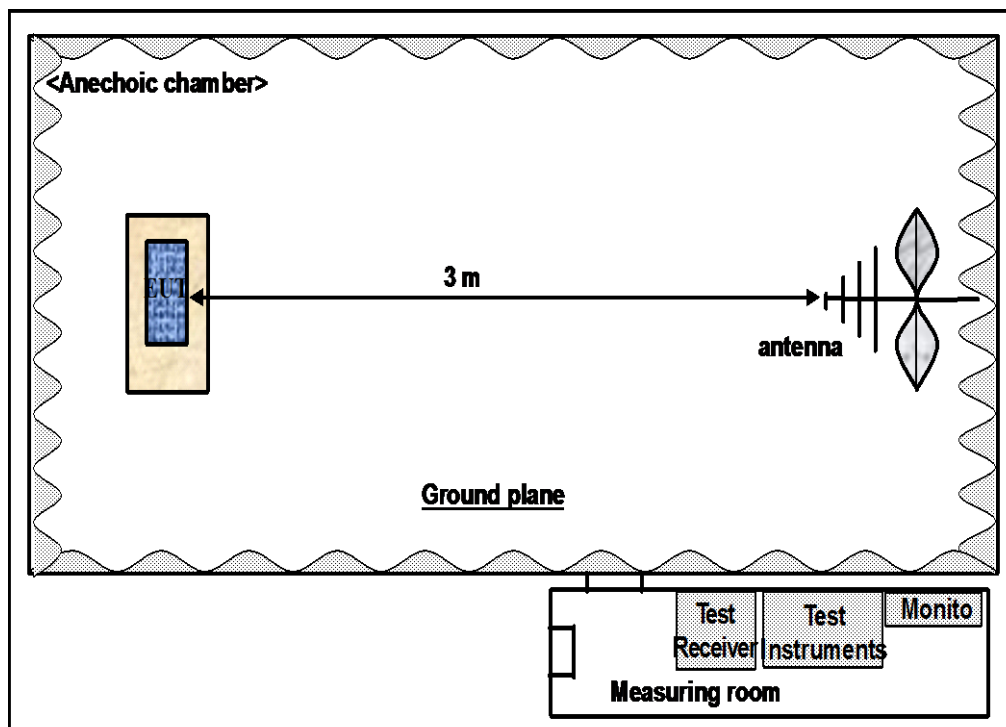
4.6.2. Sample Calculation

The emission level measured in decibels above one microvolt (dBuV) was following sample calculation.

For example;

Measured Value at	2332.50 MHz	37.69 dBuV
Antenna Factor, Cable loss & Preamplifier		26.33 dB
= Radiated Emission		64.02 uV/m

4.6.3. Measurement Configuration



4.6.4. Restricted Band-edge Test Results

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

The amplitude offset shown in the following plots for average measurements was calculated using the formula:

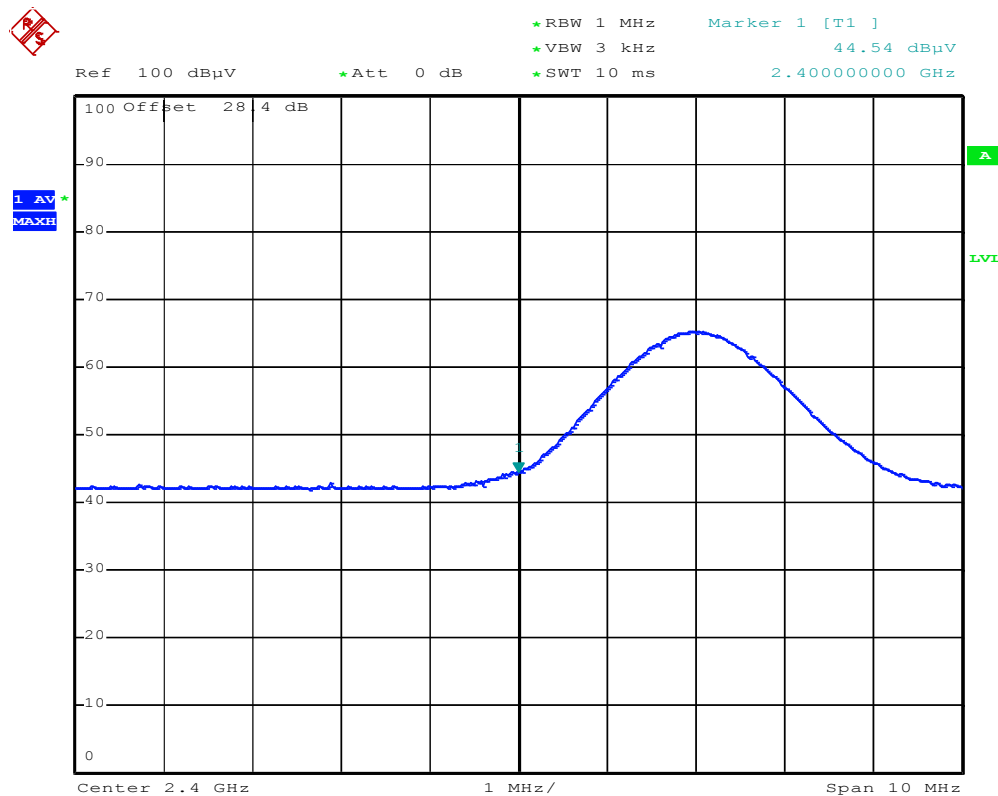
$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss}) - \text{Pre-amplifier Gain}$$

Test mode: LE

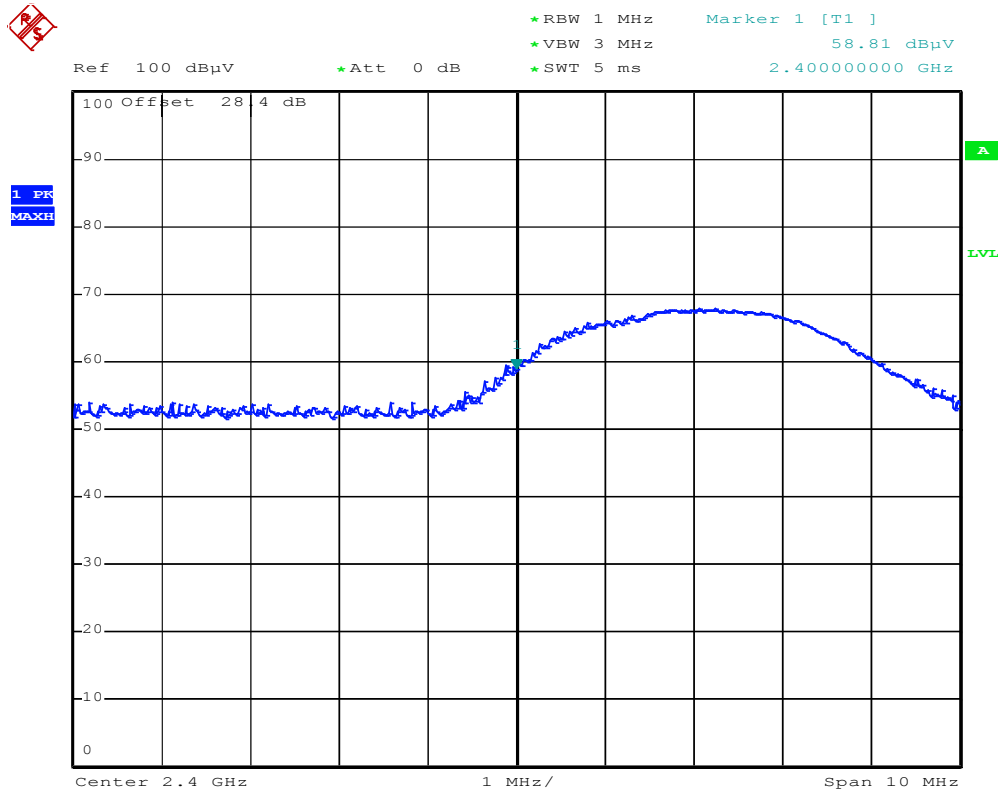
Distance of Measurement: 3 meters

Operating Frequency: 2402 MHz

Channel: 1



Radiated Restricted Lower Band Edge Measurement (Ch.1 – Average)



Radiated Restricted Lower Band Edge Measurement (Ch.1 – Peak)

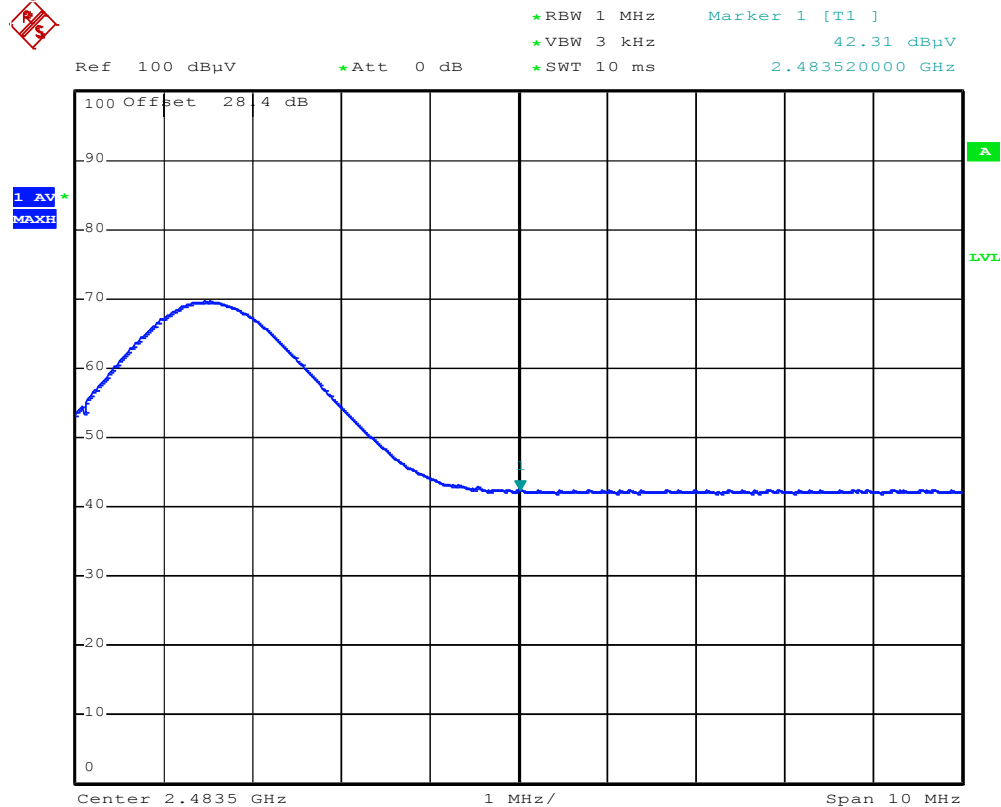
Test mode: LE

Distance of Measurement: 3 meters

Operating Frequency: 2480 MHz

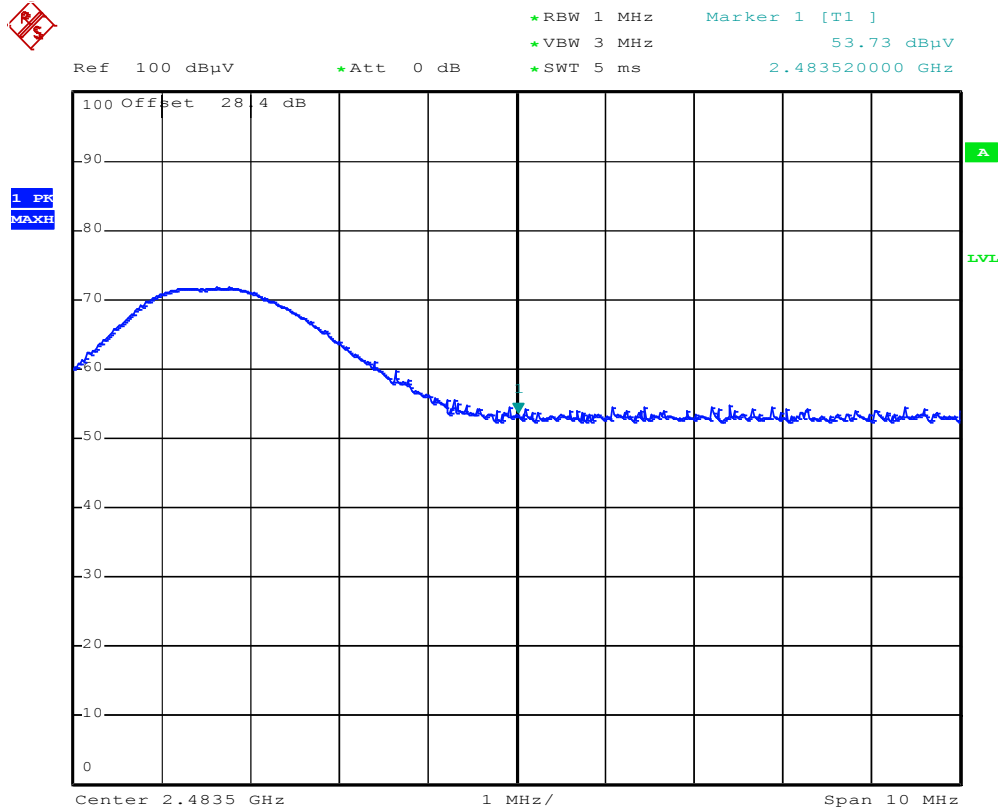
Channel: 39

Test distance : 3m



Radiated Restricted Upper Band Edge Measurement (Ch.39 – Average)

Test distance : 3m



Radiated Restricted Upper Band Edge Measurement (Ch.39 – Peak)

4.6.5. Spurious Emission Test Results

4.6.5.1 Spurious Radiated Emission (Below 1 GHz)

Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at maximum power and at the appropriate frequencies. All data rates and modes were investigated for radiated spurious emissions. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table 6-5 per Section 15.209.

Frequency (MHz)	Field Strength (uV/m)	Measured Distance (meters)
0.009 ~ 0.490	2400/F (kHz)	300
0.490 ~ 1.705	24000/F (kHz)	30
1.705 ~ 30.00	30	30
30.00 ~ 88.00	100	3
88.00 ~ 216.00	150	3
216.0 ~ 960.0	200	3
Above 960	500	3

Test mode: LE

Distance of Measurement: 3 meters

Operating Frequency: 2402 MHz

Channel: 0

Measurement Frequency: 9 kHz ~ 30 MHz

Frequency (MHz)	Polarization	Reading (dBuV)	Correction factor (dB/m)	Result [dBuV/m]	Limit (dB/m)	Margin (dB)	Height (cm)	Angle (°)
It was not observed any emissions from the EUT.								

Radiated Spurious Plot 9 kHz ~ 30 MHz (Pol. V/H)

Result = Reading + Correction factor

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

Margin = Result – Limit

Note 1. Resolution bandwidth: 200 Hz (from 9 kHz to 0.15 MHz), 9 kHz (from 0.15 MHz to 30 MHz)
 2. The test is conducted at the open area site.

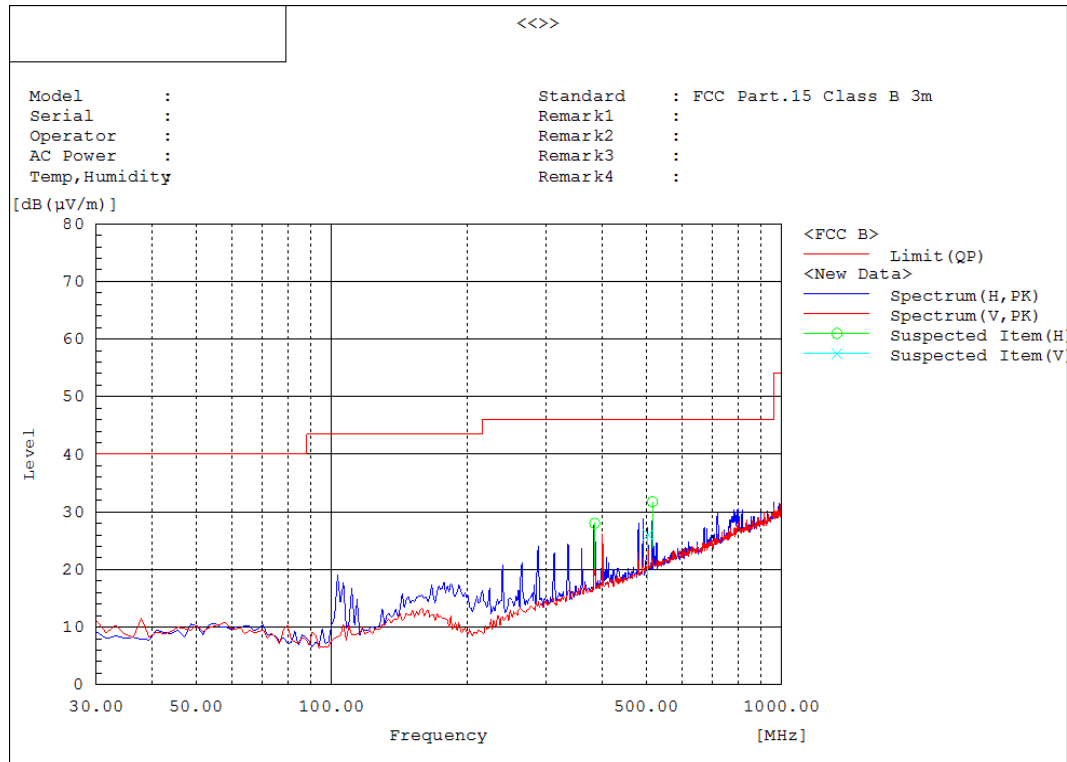
Test mode: LE

Distance of Measurement: 3 meters

Operating Frequency: 2402 MHz

Channel: 0

Measurement Frequency: 30 MHz ~ 1 GHz



Spectrum Selection

No.	Frequency [MHz]	(P)	Reading [dB (μV)]	c.f [dB (1/m)]	Result PK [dB (μV/m)]	Limit QP [dB (μV/m)]	Margin QP [dB]	Height [cm]	Angle [°]
1	516.555	H	40.3	-8.5	31.8	46.0	14.2	202.0	13.6
2	384.423	H	40.2	-12.2	28.0	46.0	18.0	100.0	45.3
3	504.119	V	34.7	-8.7	26.0	46.0	20.0	198.0	261.9

Radiated Spurious Plot 30 MHz ~ 1 GHz (Pol. V/H)

Result = Reading + Correction factor

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

Margin = Result – Limit

- Note**
1. Measurement was done over the frequency range from 30 MHz to 1 GHz. 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. Testing is include the rotation of the EUT through three orthogonal axes to determine the maximum emission.
 3. Any emission values 20 dB lower than the limit are not recorded.
 4. RBW/VBW settings for Quasi-Peak Detection: RBW/VBW = 120 kHz

- 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

4.6.5.2 Spurious Radiated Emission (1 GHz ~ 25 GHz)

Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at maximum power and at the appropriate frequencies. All data rates and modes were investigated for radiated spurious emissions. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table 6-5 per Section 15.209.

Frequency (MHz)	Field Strength (uV/m)	Measured Distance (meters)
Above 960	500	3

Test mode: LE

Distance of Measurement: 3 meters

Operating Frequency: 2402 MHz

Channel: 0

Frequency (MHz)	Analyzer Level (dBm)	Detector	Ant. Pol. (H/V)	AFCL	Field Strength (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4801.75	-96.54	AVG	H	34.9	45.36	53.98	-8.62
4801.75	-87.78	PEAK	V	34.9	54.12	73.98	-19.86
7239.37	-96.11	AVG	H	30.4	41.29	53.98	-12.69
7239.37	-71.77	PEAK	H	30.4	65.63	73.98	-8.35

Test mode: LE

Distance of Measurement: 3 meters

Operating Frequency: 2440 MHz

Channel: 19

Frequency (MHz)	Analyzer Level (dBm)	Detector	Ant. Pol. (H/V)	AFCL	Field Strength (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4878.75	-101.23	AVG	H	35.1	40.87	53.98	-13.11
4878.75	-88.26	PEAK	H	35.1	53.83	73.98	-20.14
7320.00	-97.95	AVG	H	30.6	38.95	53.98	-15.03
7320.00	-76.96	PEAK	H	30.6	60.64	73.98	-13.34

Test mode: LE

Distance of Measurement: 3 meters

Operating Frequency: 2480 MHz

Channel: 39

Frequency (MHz)	Analyzer Level (dBm)	Detector	Ant. Pol. (H/V)	AFCL	Field Strength (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4792.50	-103.32	AVG	H	34.8	38.48	53.98	-15.50
4792.50	-88.82	PEAK	H	34.8	52.98	73.98	-21.00
7440.00	-96.00	AVG	H	30.9	40.50	53.98	-13.48
7440.00	-76.82	PEAK	H	30.9	45.33	73.98	-12.90

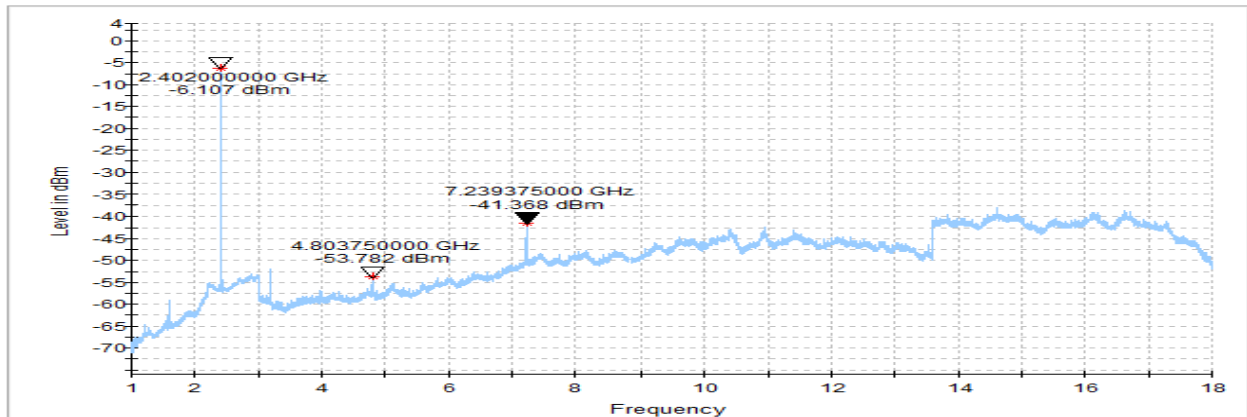
AFCL (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)

Field Strength Level (dBuV/m) = Analyzer Level (dBm/m) + 107 + AFCL (dB/m)

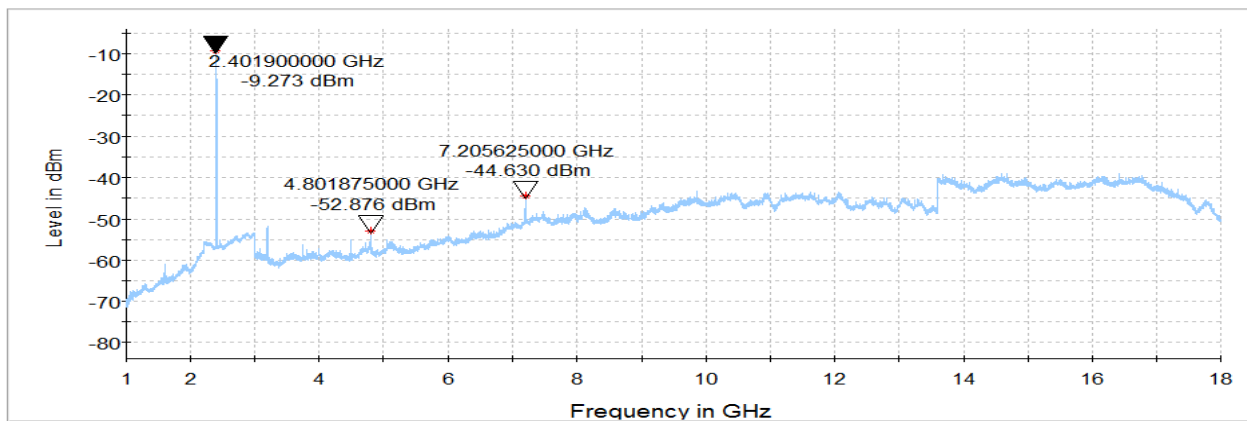
Margin (dB) = Field Strength Level (dBuV/m) – Limit (dBuV/m)

- Note**
1. Measurement was done over the frequency range from 1GHz 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. Test results include the rotation of the EUT through three orthogonal axes to determine the maximum emission.
 4. If the peak measured values are lower than average limits, average measurements are not performed.
 5. Any emission values 20dB lower than the limit are not recorded.
 6. RBW/VBW settings for Peak Detection: RBW = 1 MHz, VBW= 1 MHz
 7. RBW/VBW settings for Average Detection: RBW = 1 MHz, VBW= 3 kHz
[VBW ≥ 1/T(on time) for average measurement, 1/T = 1/0.000358 s = 2.80 kHz, VBW ≥ 2.80 kHz]
 8. Average measurements were recorded using a VBW of 3 kHz, per section 12.2.4.3 of KDB 558074 v03r02, since 1/T(on time) is equal to just under 3 kHz. This method was used because the EUT could not be configured to operate with a duty cycle > 98 %. Both average and peak measurements were made using a peak detector.
 9. The radiated spurious was measured up to 25 GHz; range between 18 GHz ~ 25 GHz, no emissions were detected above the noise floor which was at least 20 dB below the specification limit.

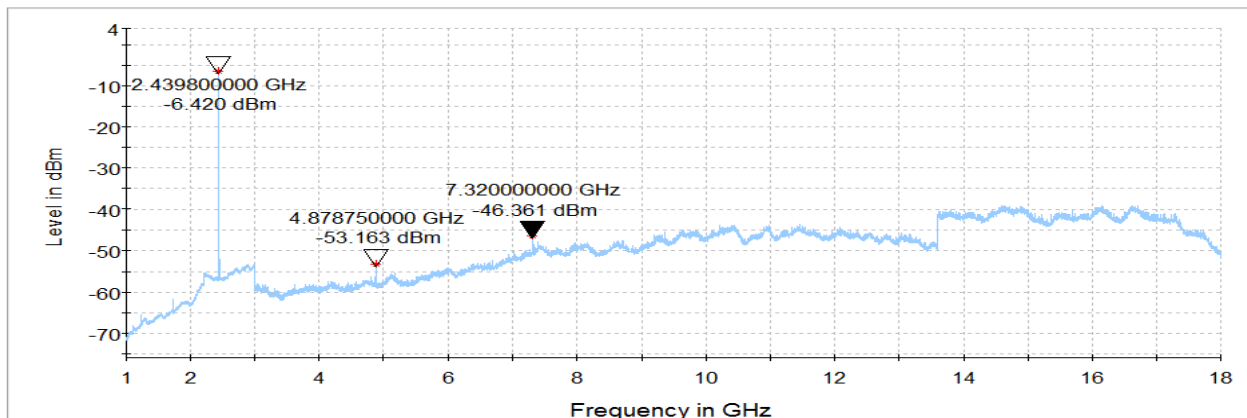
- Remark**
1. Noise floor of 30 ~ 1000 MHz: < 20 dBuV at 3m distance
 2. Noise floor of 1000 ~ 5000 MHz: < 40 dBuV at 3m distance
 3. Noise floor of 5000 ~ 25000 MHz: < 45 dBuV at 3m distance



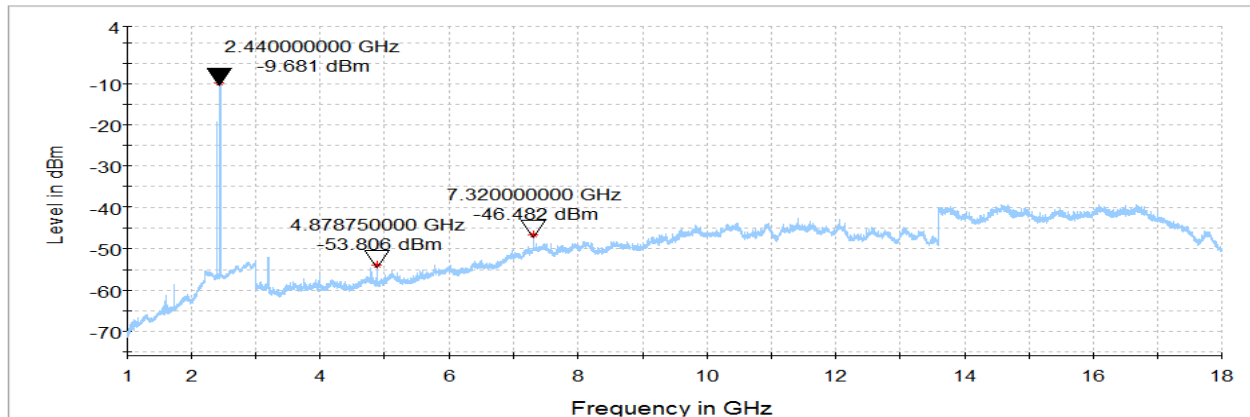
Radiated Spurious Plot above 1 GHz (Ch.0, Ant. Pol. H)



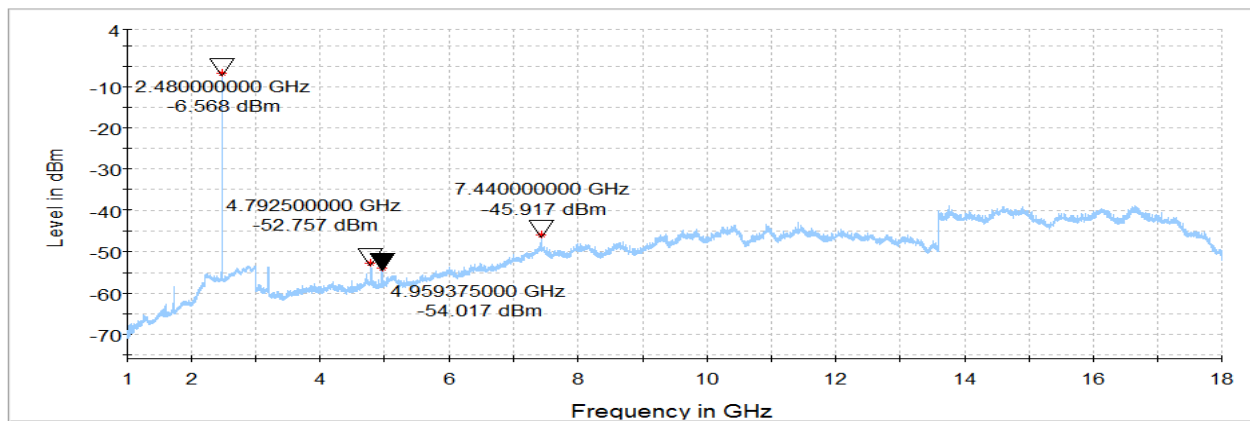
Radiated Spurious Plot above 1 GHz (Ch.0, Ant. Pol. V)



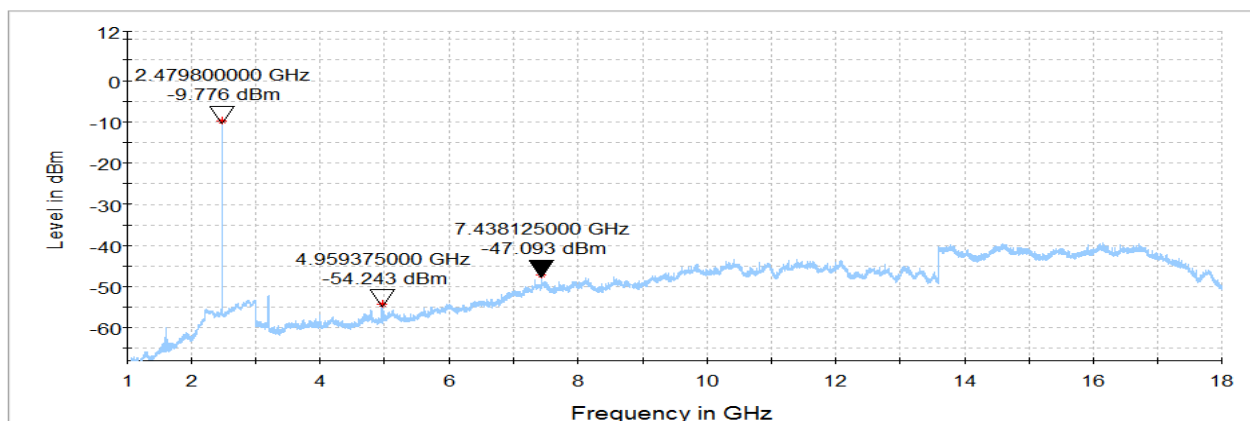
Radiated Spurious Plot above 1 GHz (Ch.19, Ant. Pol. H)



Radiated Spurious Plot above 1 GHz (Ch.19, Ant. Pol. V)



Radiated Spurious Plot above 1 GHz (Ch.39, Ant. Pol. H)



Radiated Spurious Plot above 1 GHz (Ch.39, Ant. Pol. V)

5. TEST EQUIPMENTS

No.	Equipment	Manufacturer	Model	S/N	Calibration Due date
1	Spectrum Analyzer	Agilent	E4407B	US41443316	02/05/2017
2	Synthesized Sweeper	HP	83620A	3250A01653	01/12/2017
3	Digital RF Signal Generator	Agilent	E4438C	US41460859	01/19/2017
4	Signal Generator	R&S	SMBV100A	259341	01/11/2017
5	PSA Series Spectrum Analyzer	Agilent	E4448A	US44300484	01/08/2017
6	DC Power Supply	Agilent	E3645A	MY55466008	03/21/2017
7	DC Power Supply	Agilent	E3645A	MY54086747	01/07/2017
8	AC Power Supply	Agilent	6811B	MY41000446	01/07/2017
9	Oscilloscope	Tektronix	TDS2014	C050079	01/15/2017
10	Directional Coupler	Agilent	87300C	MY44300126	01/19/2017
11	Directional Coupler	Agilent	773D	MY28390213	01/20/2017
12	VHF Attenuator	HP	355D	2522A45959	01/05/2017
13	Coaxial Attenuator	Weinschel	56-20	N8527	01/20/2017
14	Coaxial Attenuator	Agilent	8491B	50109	01/20/2017
15	Power Divider	HP	11636A	09084	02/04/2017
16	Power Splitter	HP	11667A	21063	01/20/2017
17	Temp/Humidity Chamber	ESPEC	SH-641	92007483	01/21/2017
18	Function/Arbitrary Waveform Generator	Agilent	33250A	MY40015646	01/29/2017
19	EMI Receiver	R&S	ESIB26	100280	05/20/2017
20	Pre-Amplifier	Agilent	8449B	3008A02080	01/20/2017
21	Pre-Amplifier	SONA INSTRUMENT	310	284609	01/27/2017
22	Active Loop Antenna	EMCO	6502	9011-2541	01/19/2018
23	Biconi-Log Antenna	Schwarzbeck	VULB9168	397	03/06/2017
24	Double Ridged Horn Antenna	Schwarzbeck	BBHA9120D	653	06/09/2017
25	Double Ridged Horn Antenna	ETS-Lindgren	3116	2662	08/26/2018