FCC 47 CFR PART 15 SUBPART C
TEST REPORT

For

Product Name: Mobile Phone

Brand Name: DMD Mobile

Model No.: M3

Series Model: M5, M8

Test Report Number:
KS120820A02-RPB

Issued for

Instant Communication Sdn Bhd

L3-1 SME Technopreneur Centre III, Block 3740, Persiaran APEC, Cyber 8, 63000 Cyberjaya, Selangor, Malaysia

Issued by

Compliance Certification Services Inc.

Kun shan Laboratory

**No.10 Weiye Rd., Innovation park, Eco&Tec,
Development Zone, Kunshan City, Jiangsu, China**

TEL: 86-512-57355888

FAX: 86-512-57370818

ACCREDITED
TESTING CERT #2541.01

TABLE OF CONTENTS

1 TEST RESULT CERTIFICATION

Product Name:	Mobile Phone
Trade Name:	DMD Mobile
Model Name.:	M3
Series Model:	M5, M8
Applicant Discrepancy:	Initial
Device Category:	PORTABLE DEVICES
Exposure Category:	GENERAL POPULATION/UNCONTROLLED EXPOSURE
Date of Test:	August 26, 2012
Applicant:	**Instant Communication Sdn Bhd** L3-1 SME Technopreneur Centre III, Block 3740, Persiaran APEC, Cyber 8, 63000 Cyberjaya, Selangor, Malaysia
Manufacturer:	**Instant Communication Sdn Bhd** L3-1 SME Technopreneur Centre III, Block 3740, Persiaran APEC, Cyber 8, 63000 Cyberjaya, Selangor, Malaysia
Application Type:	Certification

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
FCC 47 CFR Part 15 Subpart C	No non-compliance noted

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4:2009 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247.

The test results of this report relate only to the tested sample EUT identified in this report.

Approved by: ***Tested by:***

Hadiif Hoo
RF Manager
Compliance Certification Services Inc.

Sean Yu
Test Engineer
Compliance Certification Services Inc.

2 EUT DESCRIPTION

Product Name:	Mobile Phone
Trade Name:	DMD Mobile
Model Name.:	M3
Series Model:	M5, M8
Model Discrepancy:	Only model name different.
Power Adapter Power Rating :	Power supply and ADP（rating）: Model name:KY-252<IC> INPUT: AC 110-240V 50/60Hz 0.1A OUTPUT: DC 5V 1000mA Battery（rating）: Model name: BP-M3-01 Capacitance: 1200mAh 3.7V 4.2V
Frequency Range :	GSM/GPRS/EDGE 850: 824.20 ~ 848.80 MHz GSM/GPRS/EDGE1900: 1850.20 ~ 1909.80 MHz WCDMA/HSUPA Band V:826.40 ~ 846.60 MHz Bluetooth:2402 ~ 2480 MHz 802.11B/G:2412~2462 MHz 802.11N（20Mhz）:2412~2462 MHz 802.11N（40Mhz）:2422~2452 MHz
Transmit Power :	5.47dBm
Modulation Technique :	FHSS
Transmit Data Rate :	GFSK(1 Mbps),π/4-DQPSK(2 Mbps),8-DPSK(3 Mbps)
Number of Channels :	79 Channels
Antenna Specification :	Max Gain: 1.22 dBi

Remark: *This submittal(s) (test report) is intended for* ***FCC ID: Q3GDMDM3 t****o comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.*

3 TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4 and FCC CFR 47 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, 15.207, 15.209 and 15.247.

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

3.2 EXERCISEEUT

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4.

3.4 MODIFICATION

N/A

3.5 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

(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	GHz
0.0900 - 0.1100	16.420 - 16.423	399.9 - 410.0	4.50 - 5.15
0.4950 - 0.505(1)	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960.0 - 1240	7.25 - 7.75
4.1250 - 4.1280	25.50 - 25.67	1300 - 1427	8.025 - 8.500
4.17725 - 4.17775	37.50 - 38.25	1435.0 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73.0 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.2150 - 6.2180	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108.00 - 121.94	1718.8 - 1722.2	13.25 - 13.40
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.50
8.2910 - 8.2940	149.90 - 150.05	2310 - 2390	15.35 - 16.20
8.3620 - 8.3660	156.52475 - 156.52525	2483.5 - 2500.0	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.1700	3260 - 3267	23.6 - 24.0
12.2900 - 12.2930	167.72 - 173.20	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345 - 3358	36.43 - 36.5 (2)
12.57675 - 12.57725	322.0 - 335.4	3600 - 4400	
13.3600 - 13.4100			

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

[2] Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

3.6 DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

After verification, all tests were carried out with the worst case test modes as shown below GFSK(1M) and 8-DPSK(3 Mbps) Channel Low (2402MHz)、Mid (2441MHz) and High (2480MHz), these were chosen for full testing.

4 INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.facilities and accreditations

5 FACILITIES AND ACCREDITATIONS

5.1 FACILTIES

All measurement facilities used to collect the measurement data are located at
CCS China Kunshan Lab at 10#Weiye Rd, Innovation Park Eco. & Tec. Development Zone Kunshan city JiangSu, (215300), CHINA.

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22.

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, “Radio Interference Measuring Apparatus and Measurement Methods.”

5.3 LABORATORY ACCREDITATIONS AND LISTING

The test facilities used to perform radiated and conducted emissions tests are accredited by American Association for Laboratory Accreditation Program for the specific scope accreditation under Lab Code: 200581-0 to perform Electromagnetic Interference tests according to FCC Part 15 and CISPR 22 requirements. In addition, the test facilities are listed with Industry Canada, Certification and Engineering Bureau, IC5743 for 10m chamber 10m, IC5743 for 10m chamber 3m.

5.4 TABLE OF ACCREDITATIONS

Our laboratories are accredited and approved by the following accreditation body according to ISO/IEC 17025.

Taiwan	TAF
USA	A2LA

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada	Industry Canada
Japan	VCCI
Taiwan	BSMI
USA	FCC

Copies of granted accreditation certificates are available for downloading from our web site, http:///www.ccsrf.com

5.5 LIST OF MEASURING EQUIPMENT

Conducted Emissions Test Site				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	MY44020154	2013-5-12
DETECTOR NEGATIVE	Agilent	8473B	MY42240176	2013-5-12
OSCILLOSCOPE	Agilent	DSO6104A	MY44002585	2013-3-25
Peak and Avg Power Sensor	Agilent	E9327A	US40441788	2013-3-25
EPM-P Series Power Meter	Agilent	E4416A	GB41292714	2013-5-12
Power SPLITTER	Mini-Circuits	ZN2PD-9G	SF078500430	2013-5-12
DC POWER SUPPLY	GW instek	GPS-3303C	E903131	2013-5-12
Temp. / Humidity Chamber	Kingson	THS-M1	242	2013-3-13
Test Software	EZ-EMC			

977 Chamber				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	MY44020154	2013-5-12
EMI Test Receiver	R&S	ESPI3	101026	2013-3-15
Pre-Amplfier	MINI	ZFL-1000VH2	d041703	2013-6-30
Pre-Amplfier	Miteq	NSP4000-NF	870629	2013-6-30
Bilog Antenna	Sunol	JB1	A110204-2	2013-6-24
Horn-antenna	SCHWARZBECK	BBHA9120D	D:266	2013-5-12
Turn Table	CT	CT123	4165	N.C.R
Antenna Tower	CT	CTERG23	3256	N.C.R
Controller	CT	CT1OO	95637	N.C.R
Test Software	EZ-EMC			

Conducted Emission				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
EMI TEST RECEIVER	R&S	ESCI3	100781	2013-3-15
V (V-LISN)	Schwarzbeck	NNLK 8129	8129-143	2013-3-15
LISN (EUT)	FCC	FCC-LISN-50/250-50-2-02	SN:05012	2013-3-15
TRANSIENT LIMITER	SCHAFFNER	CFL9206	1710	2013-4-9
Test Software	EZ-EMC			

Remark: *Each piece of equipment is scheduled for calibration once a year.*

5.6 SETUP CONFIGURATION

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

5.7 SUPPORT EQUIPMENT

No.	Equipment	Model No.	Serial No.	FCC ID	Trade Name	Data Cable	Power Cord
1	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Remark:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

6 FCC PART 15.247 REQUIREMENTS

6.1 PEAK POWER

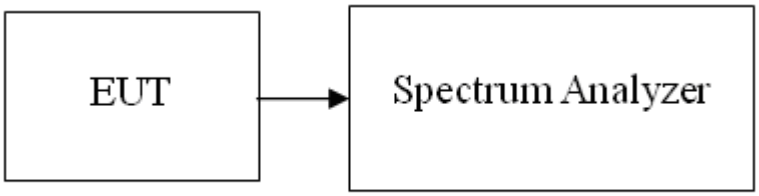
LIMIT

The maximum peak output power of the intentional radiator shall not exceed the following:

1. According to §15.247(a)(1), 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. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.
2. According to §15.247(b)(3), for systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 Watt.
3. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Remark: *Each piece of equipment is scheduled for calibration once a year.*

Test Configuration



TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. Set the RBW = 3MHz , VBW = 3MHz, Detector = Peak, Trace mode = max hold, Sweep = auto couple. Record the max reading.
Repeat the above procedure until the measurements for all frequencies are completed.

TEST RESULTS

No non-compliance noted

Test RESULTS

1M GFSK Modulation mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Limit (mW)	Result
Low	2402	**5.47**	3.524	125	PASS
Mid	2441	3.02	2.004		PASS
High	2480	5.39	3.460		PASS

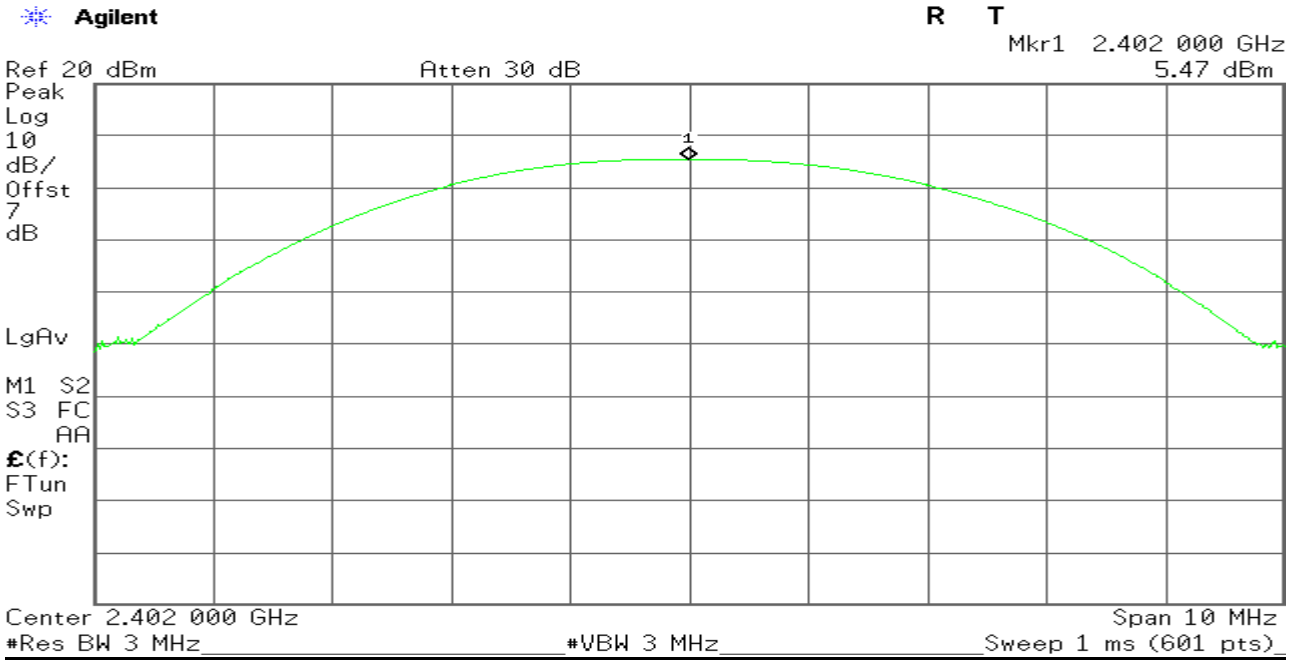
3M 8-DPSK Modulation mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Limit (mW)	Result
Low	2402	4.42	2.767	125	PASS
Mid	2441	1.35	1.365		PASS
High	2480	4.41	2.761		PASS

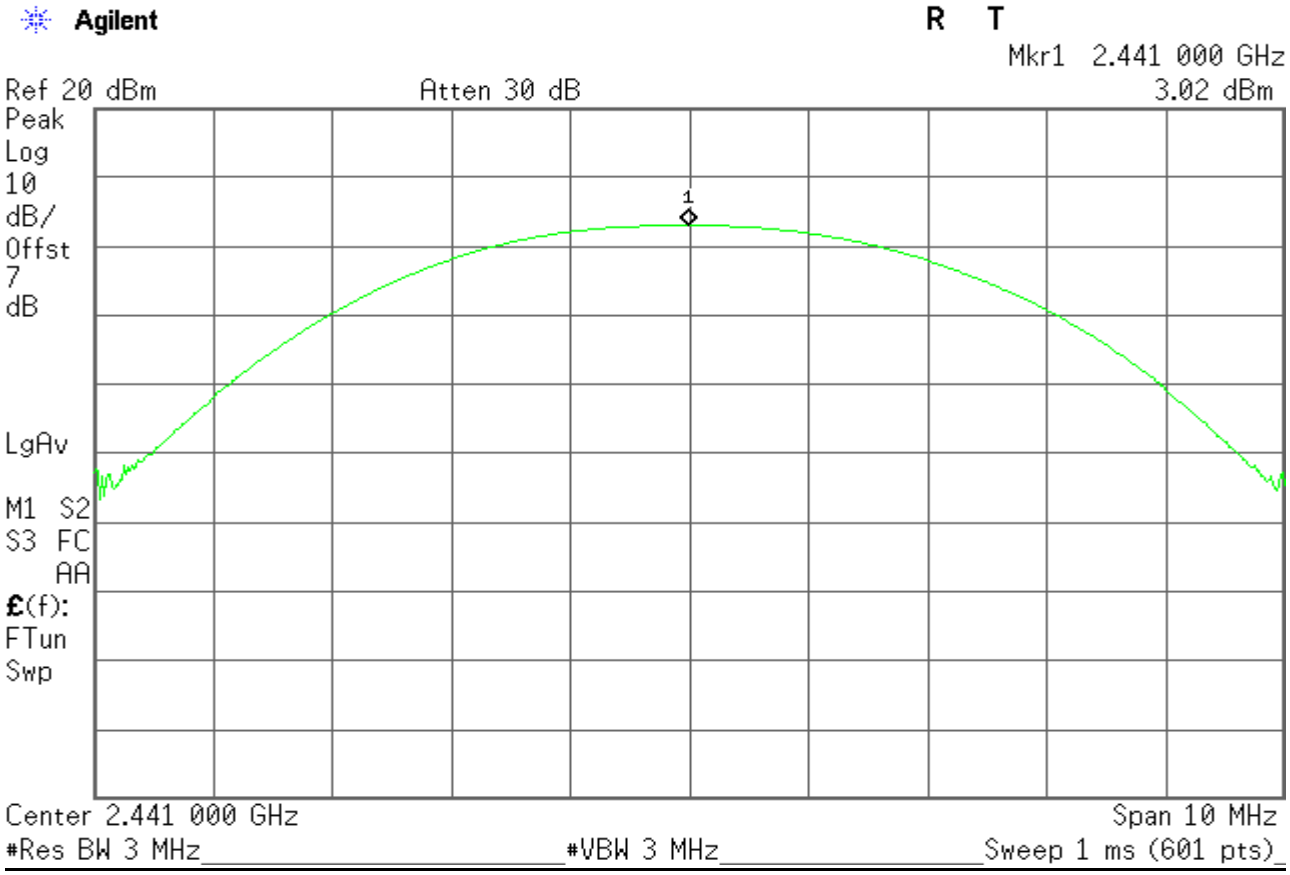
Test Data

1M

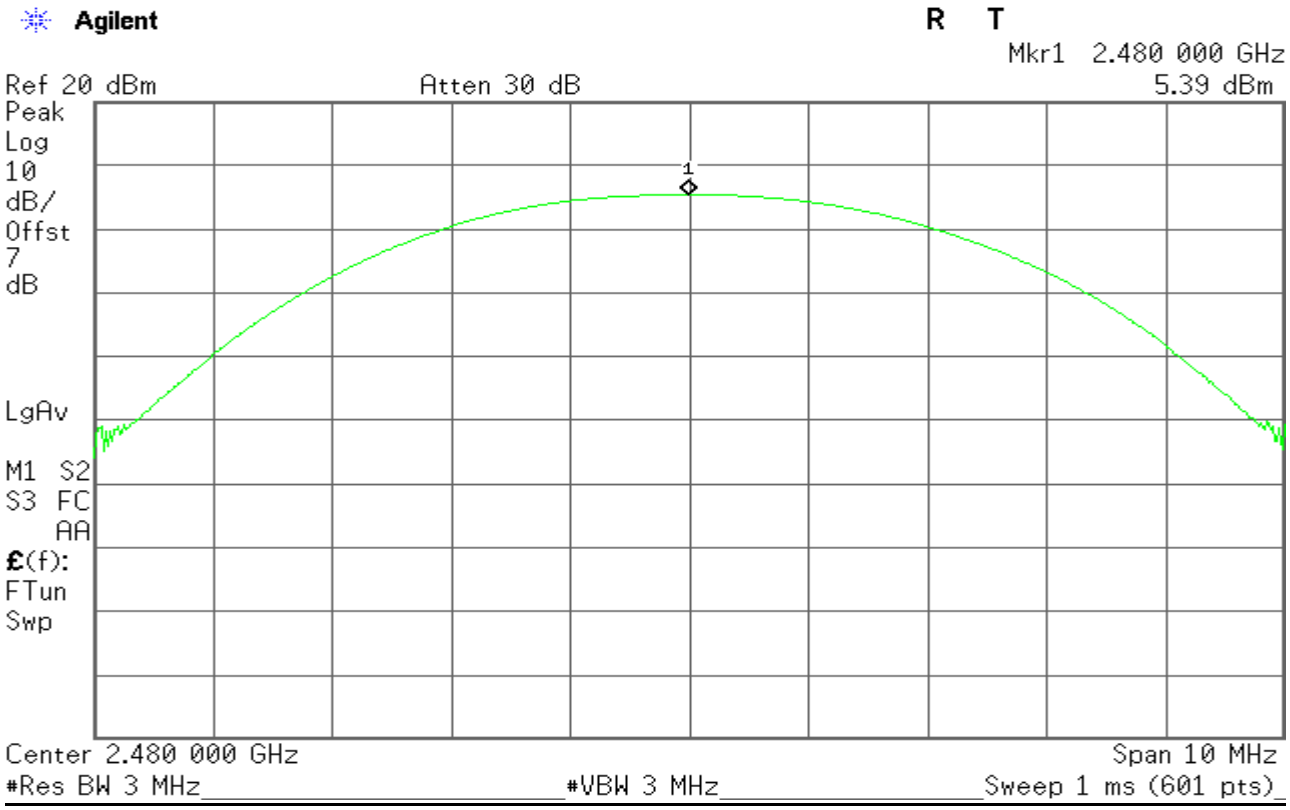
Ch low



Ch mid

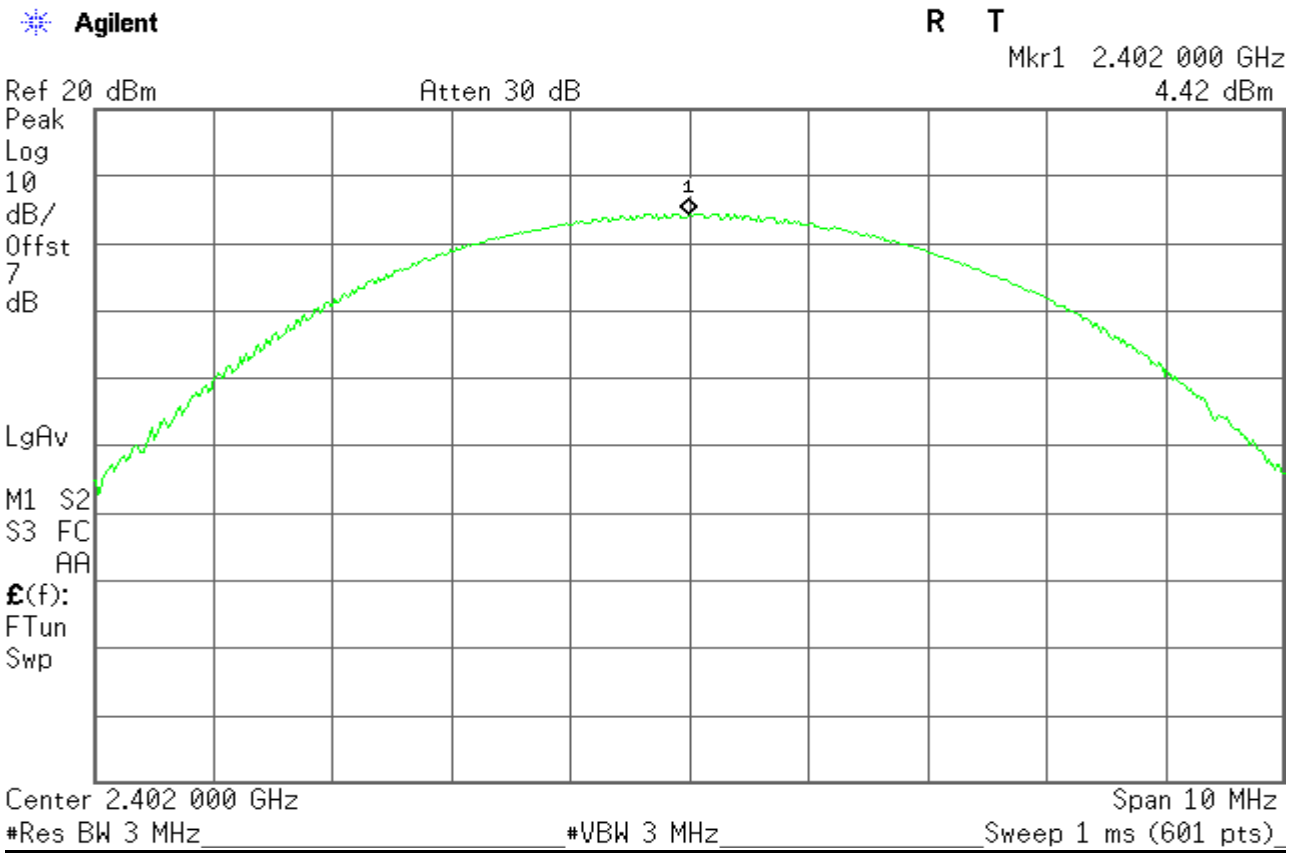


Ch High

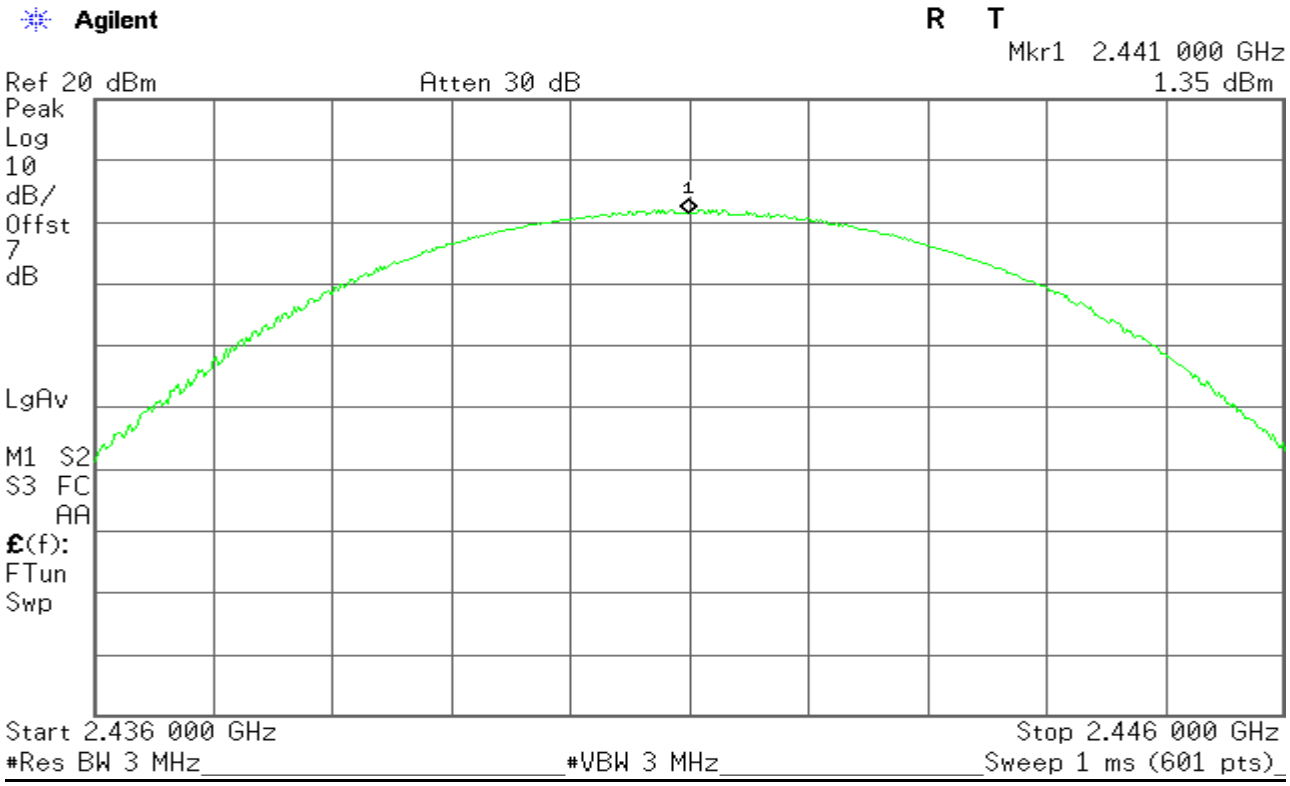


3M

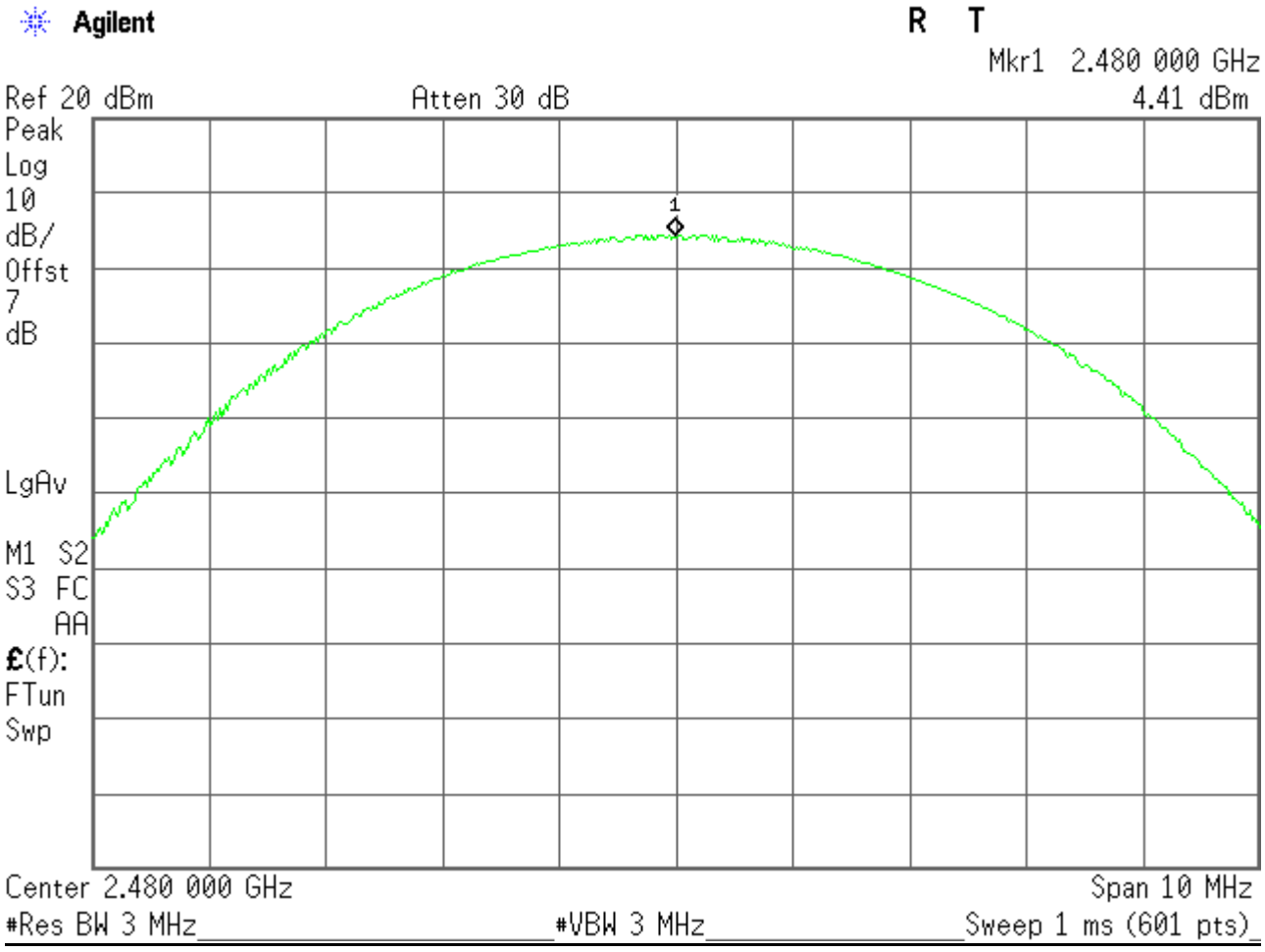
Ch low



CH Mid



CH High



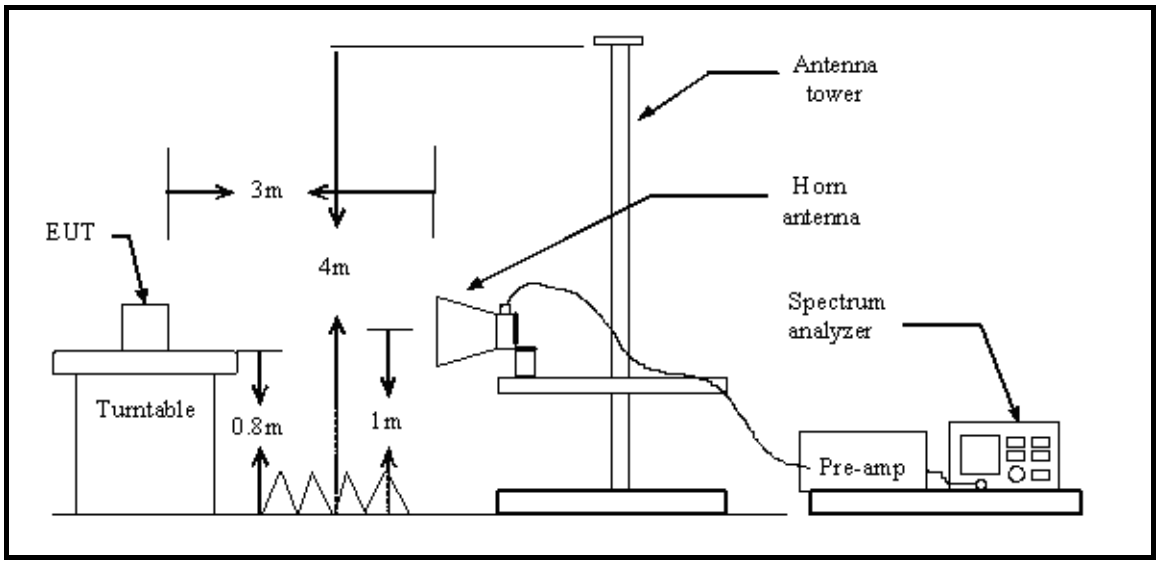
6.2 BAND EDGES MEASUREMENT

LIMIT

According to §15.247(c), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in15.209(a).

Test Configuration

Above 1 GHz



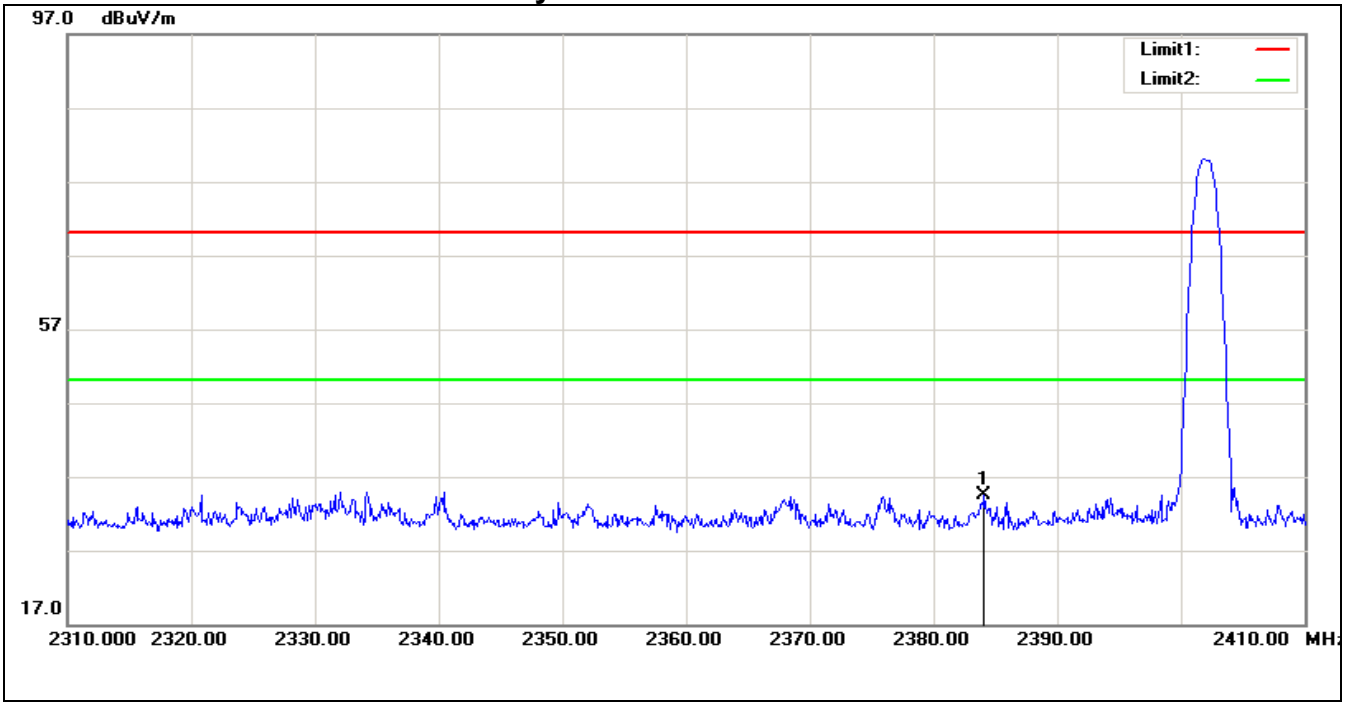
TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
   (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
   (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

TEST RESULTS

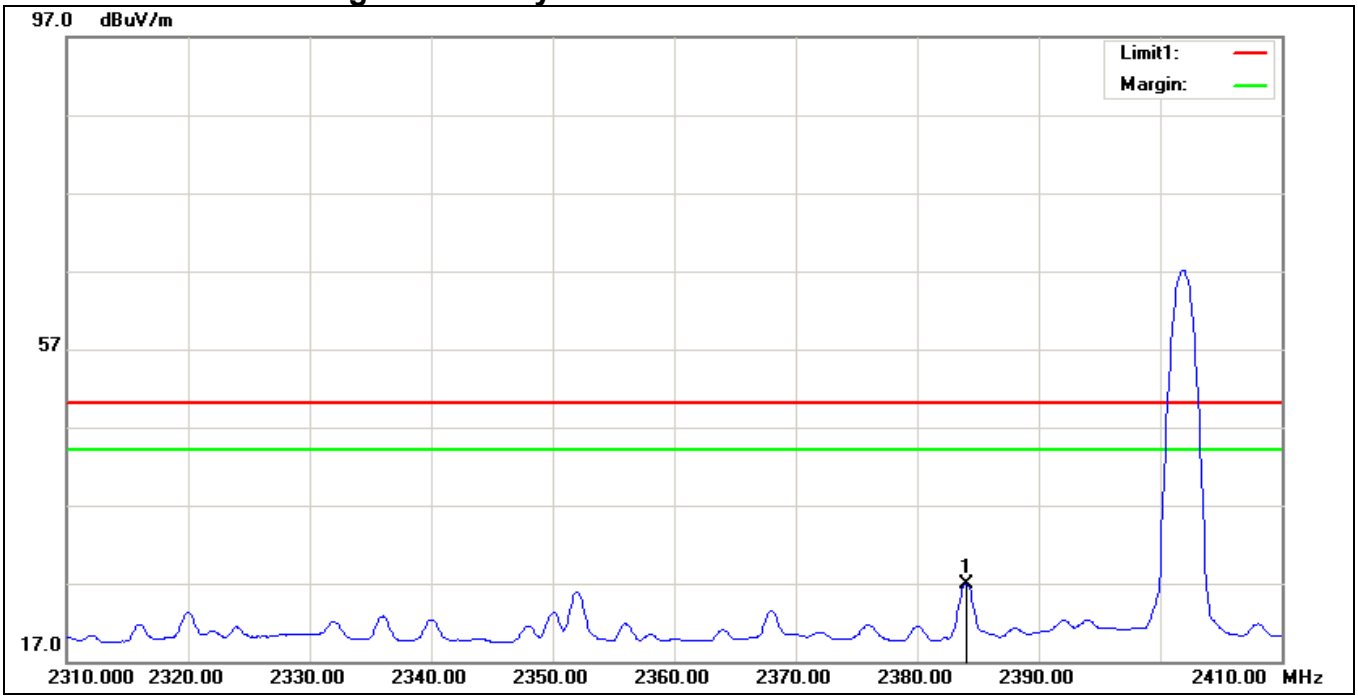
1M Band Edges (CH Low)

Detector mode: Peak Polarity: Vertical



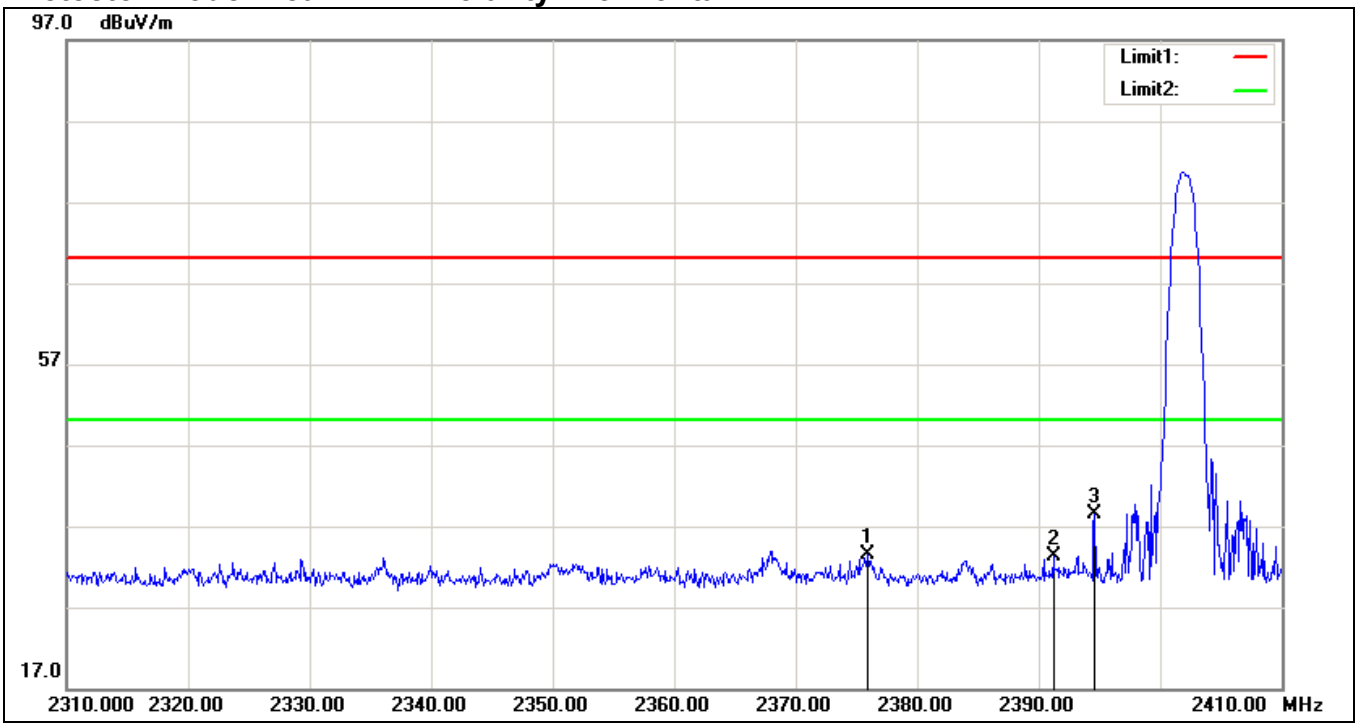
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2384.100	48.40	-13.98	34.42	70.00	-35.58	100	204	peak

Detector mode: Average Polarity: Vertical



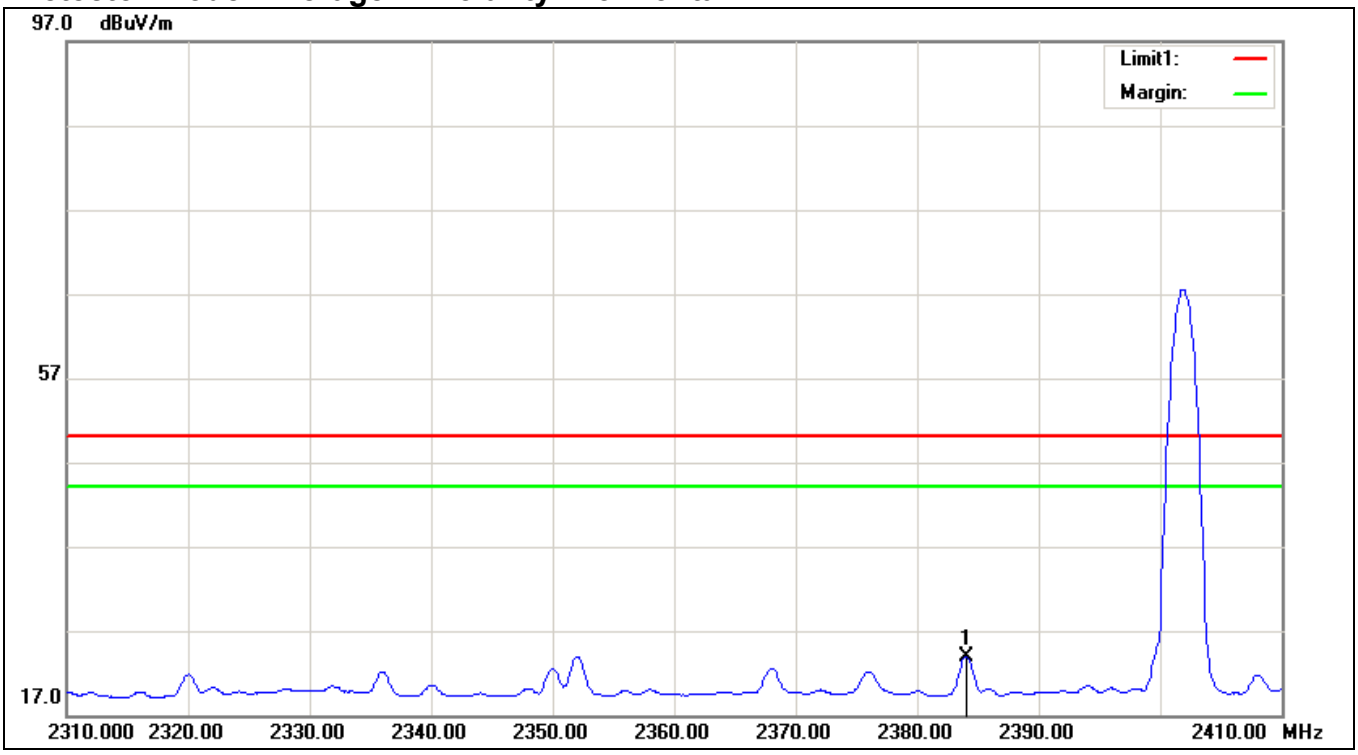
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2384.100	40.89	-13.98	26.91	50.00	-23.09	100	187	peak

Detector mode: Peak Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2375.900	47.46	-14.01	33.45	70.00	-36.55	100	205	peak
2	2391.200	47.18	-13.95	33.23	70.00	-36.77	100	357	peak
3	2394.600	52.38	-13.94	38.44	70.00	-31.56	100	39	peak

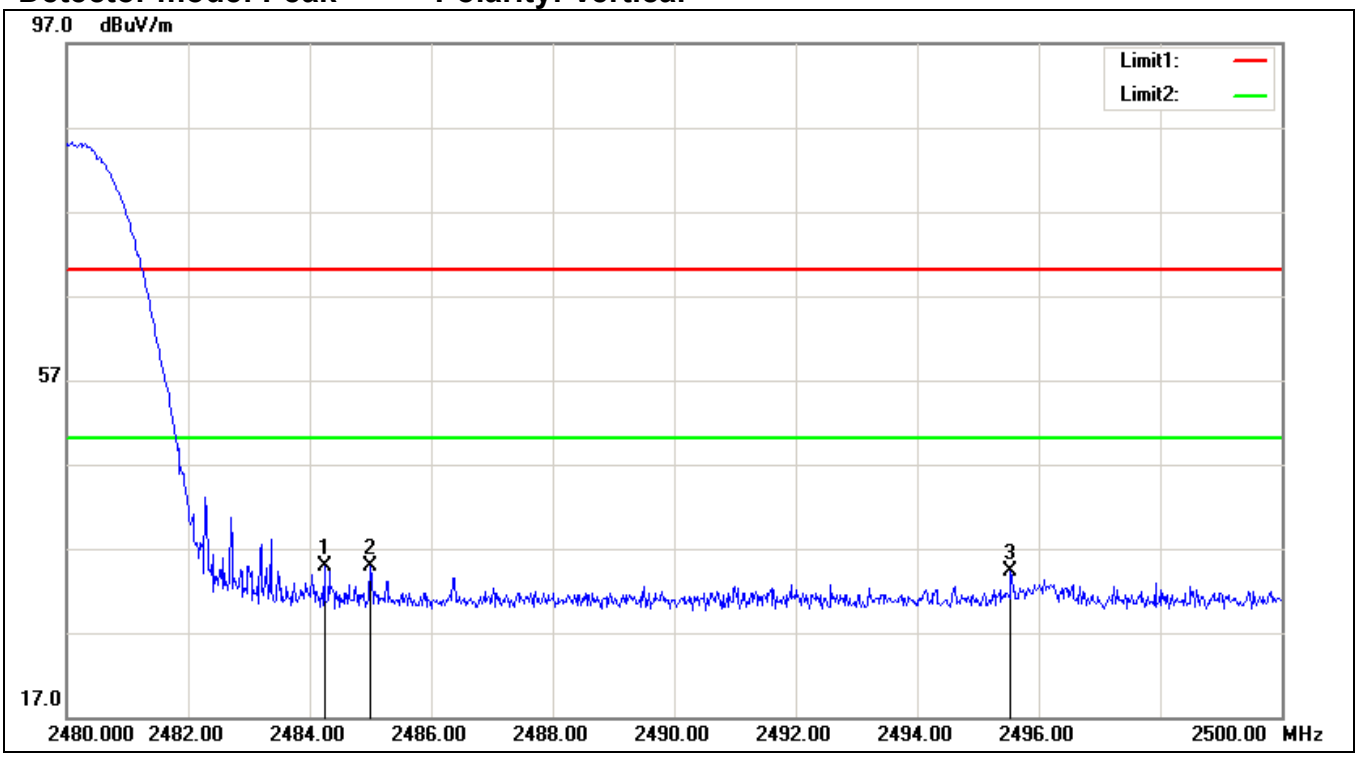
Detector mode: Average Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2384.000	37.86	-13.98	23.88	50.00	-26.12	100	119	peak

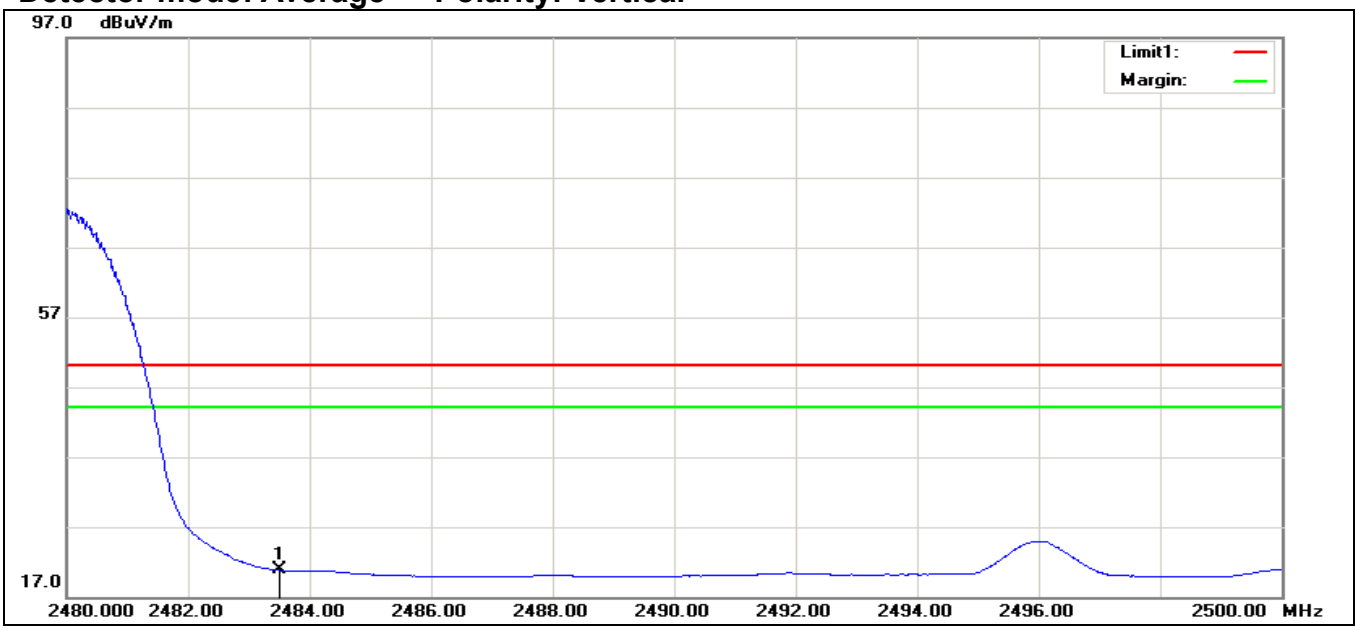
Band Edges (CH High)

Detector mode: Peak Polarity: Vertical



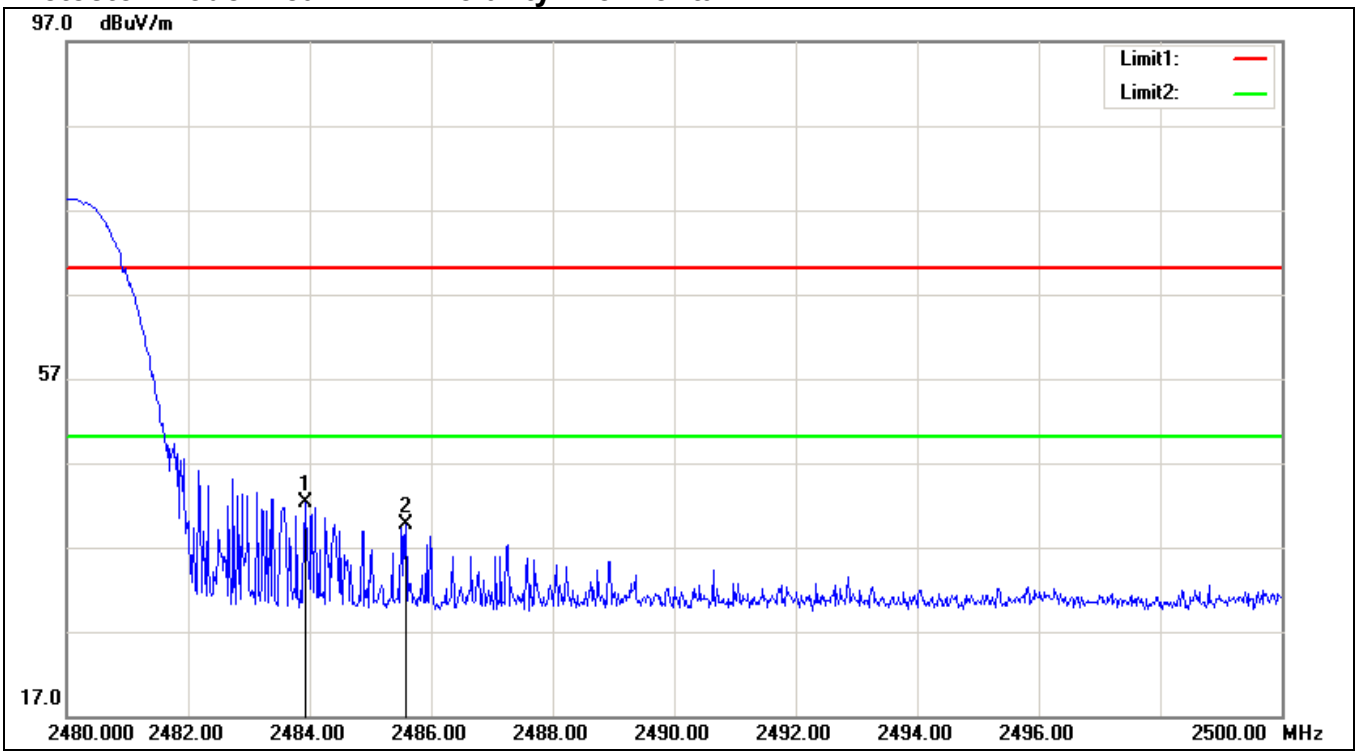
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2484.240	48.55	-13.62	34.93	70.00	-35.07	100	8	peak
2	2485.000	48.41	-13.62	34.79	70.00	-35.21	100	0	peak
3	2495.540	47.79	-13.58	34.21	70.00	-35.79	100	186	peak

Detector mode: Average Polarity: Vertical



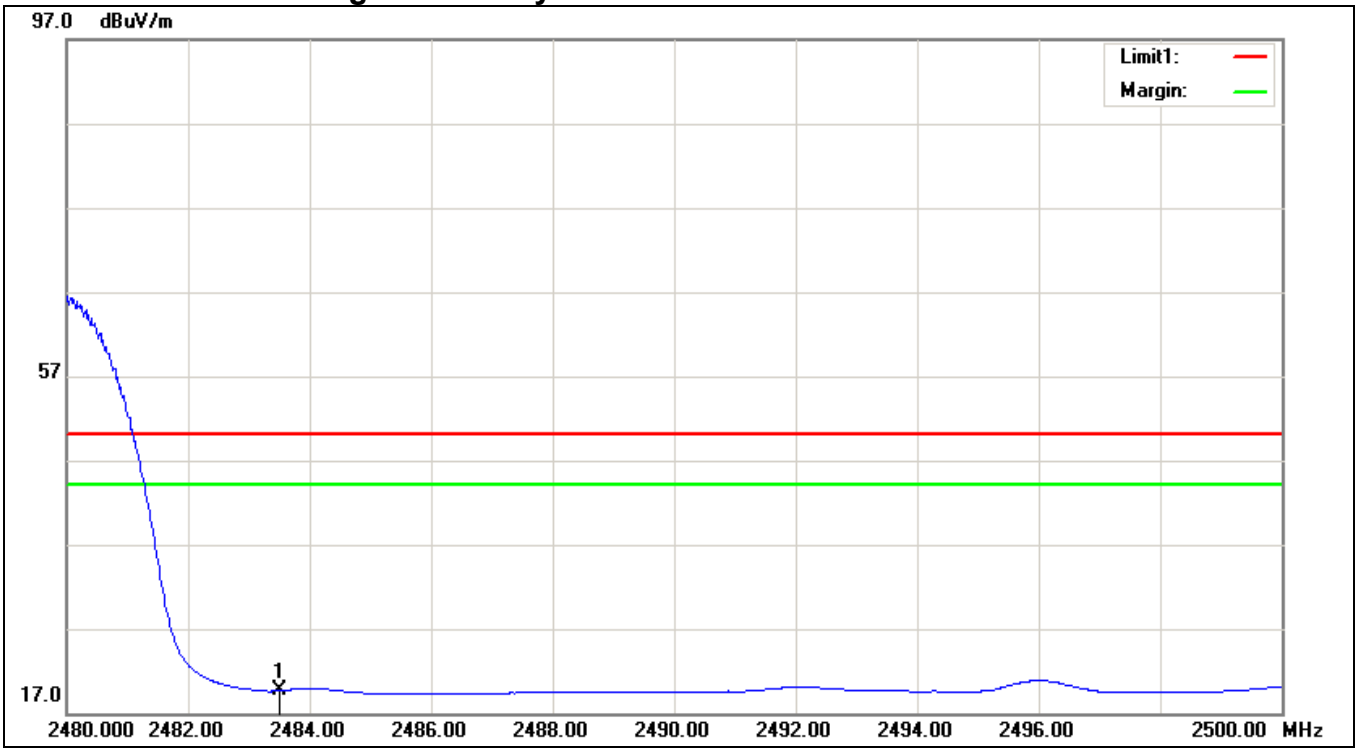
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	34.43	-13.62	20.81	50.00	-29.19	360	0	peak

Detector mode: Peak Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.940	55.84	-13.62	42.22	70.00	-27.78	100	62	peak
2	2485.580	53.25	-13.62	39.63	70.00	-30.37	100	62	peak

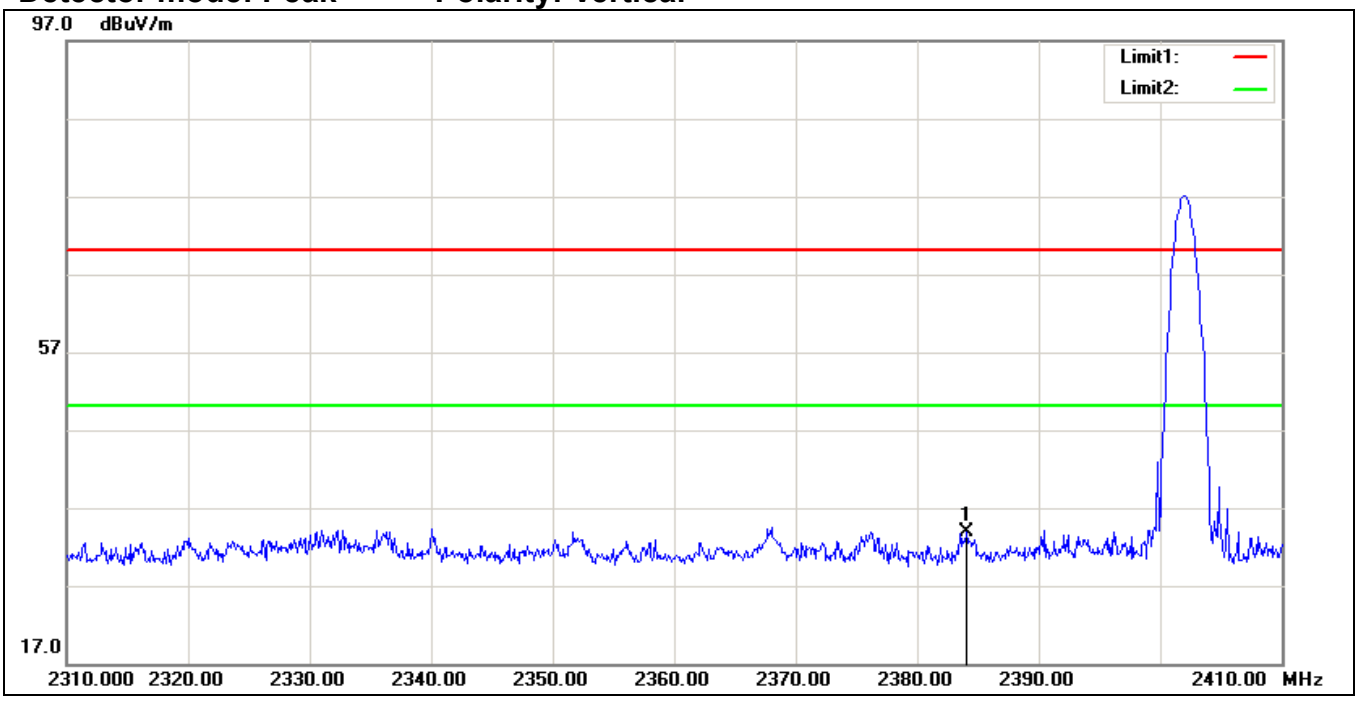
Detector mode: Average Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	33.26	-13.62	19.64	50.00	-30.36	253		peak

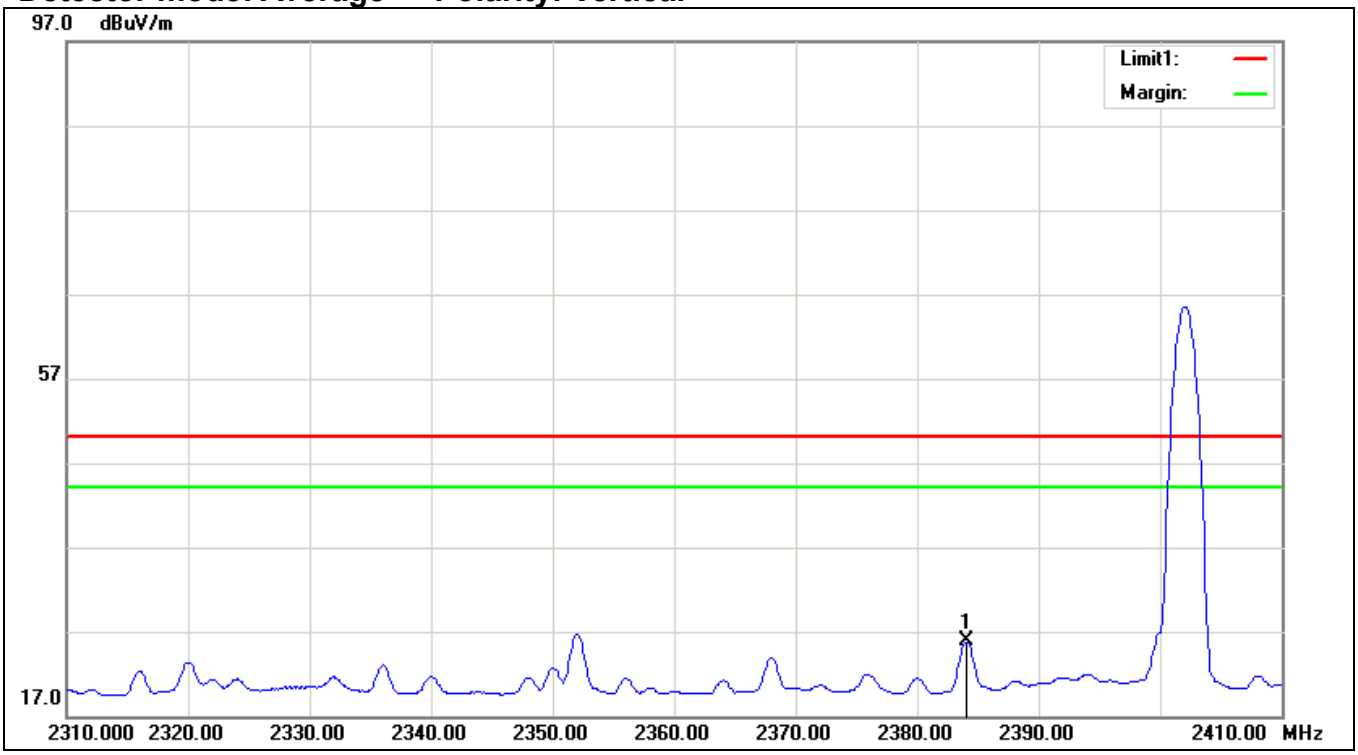
3M Band Edges (CH Low)

Detector mode: Peak Polarity: Vertical



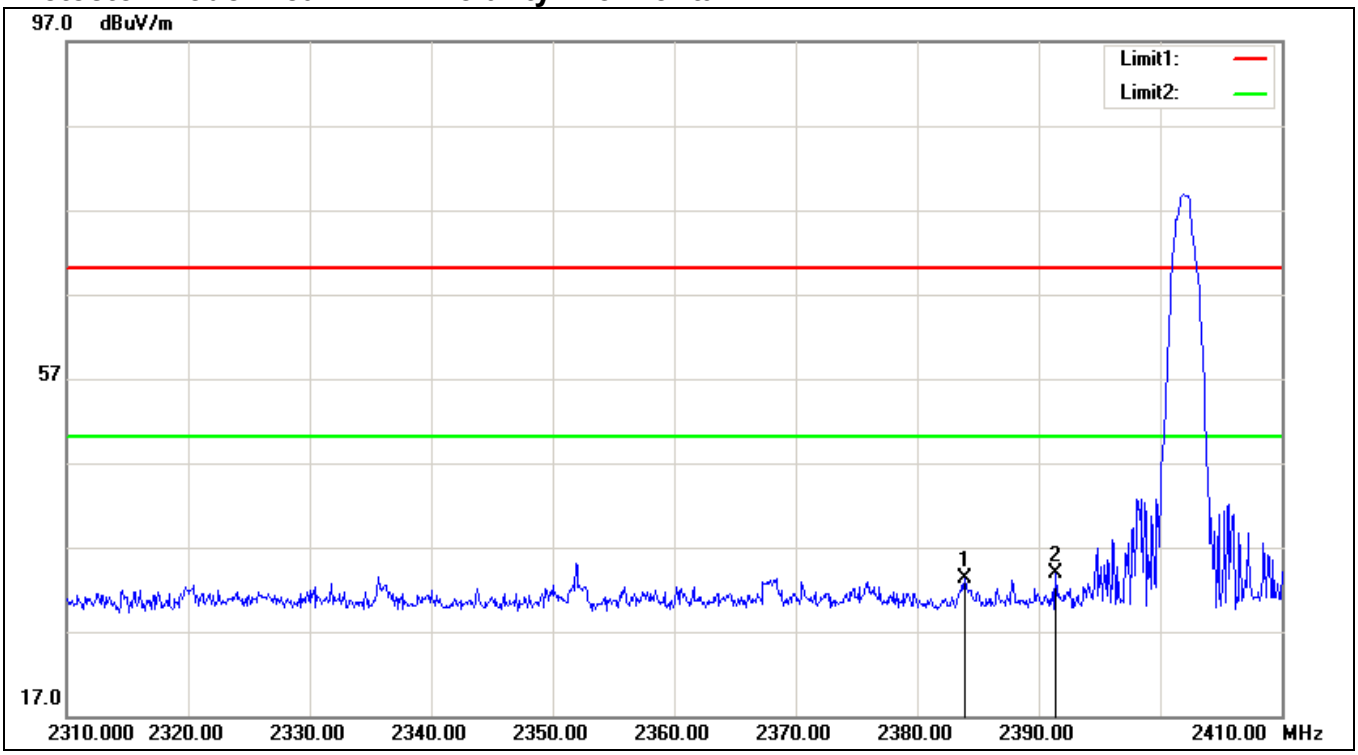
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2384.100	47.91	-13.98	33.93	70.00	-36.07	100	188	peak

Detector mode: Average Polarity: Vertical



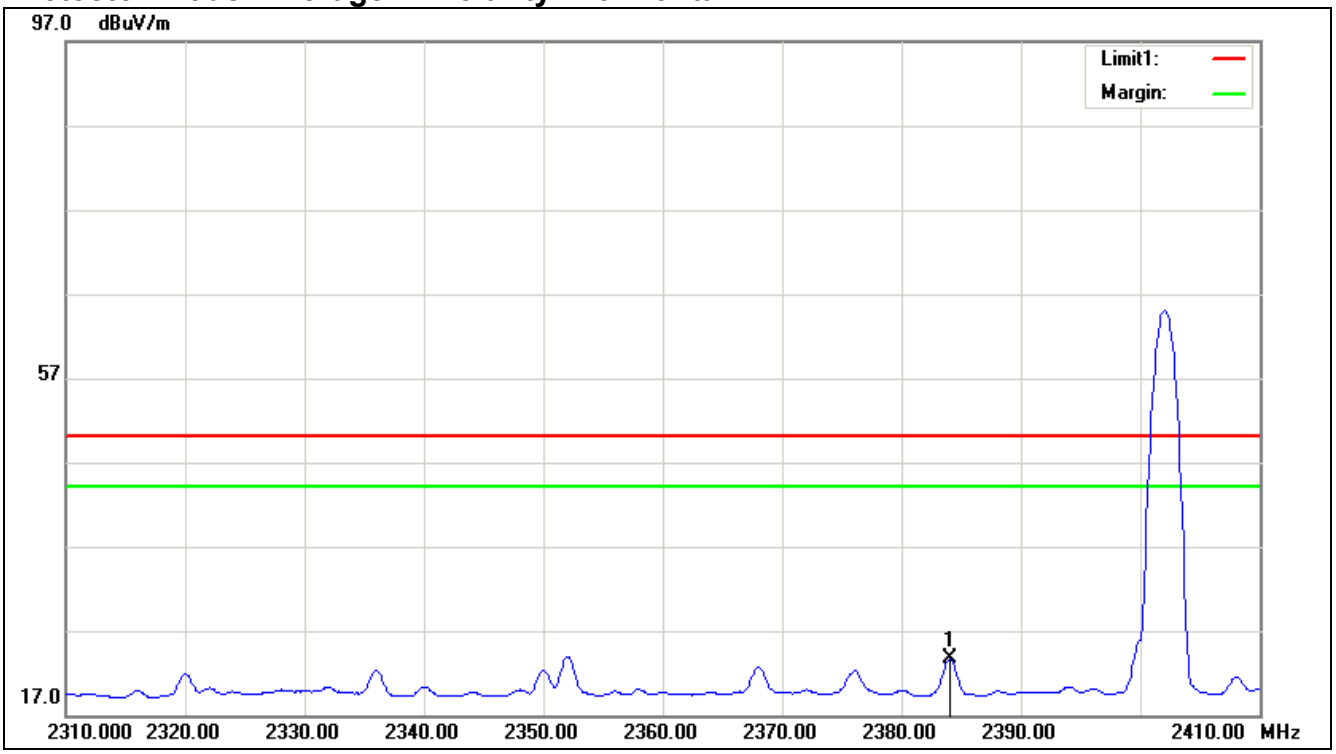
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2384.000	39.77	-13.98	25.79	50.00	-24.21	100	186	peak

Detector mode: Peak Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2383.900	47.36	-13.98	33.38	70.00	-36.62	100	164	peak
2	2391.400	47.83	-13.95	33.88	70.00	-36.12	100	30	peak

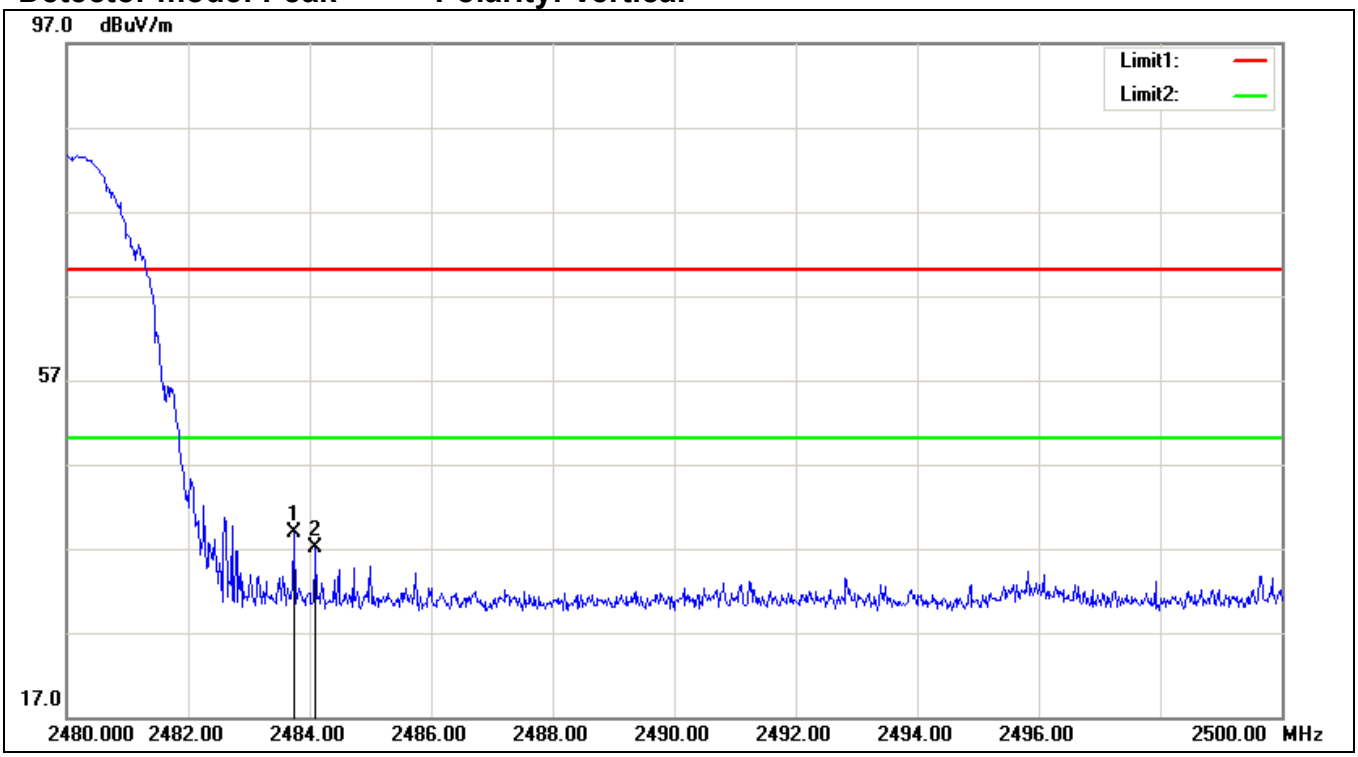
Detector mode: Average Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2384.000	37.59	-13.98	23.61	50.00	-26.39	100	119	peak

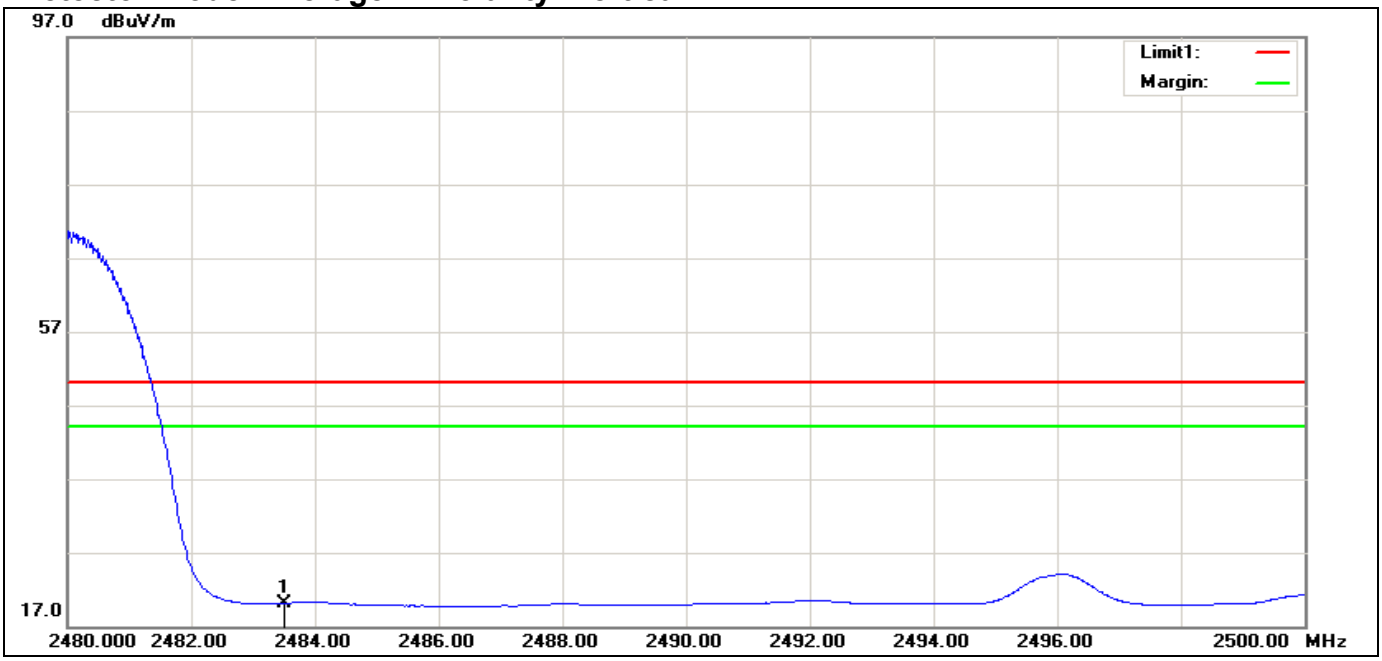
Band Edges (CH High)

Detector mode: Peak Polarity: Vertical



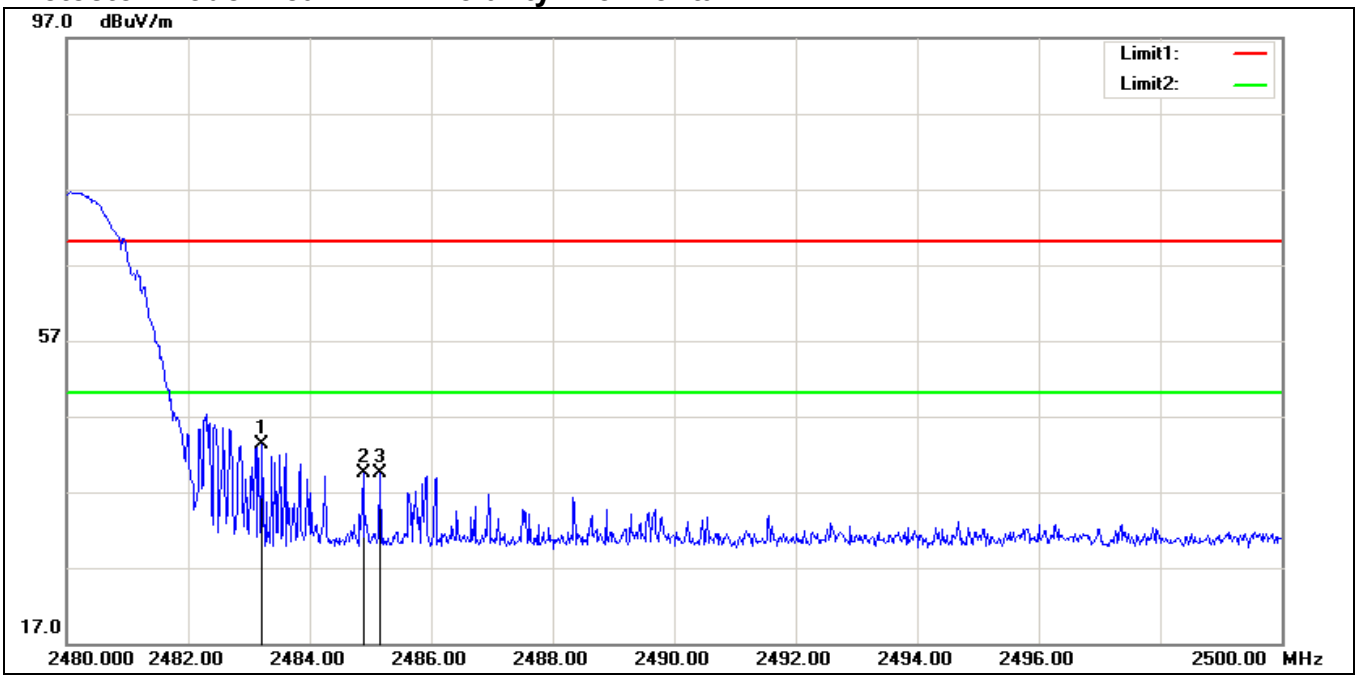
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.740	52.47	-13.62	38.85	70.00	-31.15	100	0	peak
2	2484.100	50.70	-13.62	37.08	70.00	-32.92	100	351	peak

Detector mode: Average Polarity: Vertical



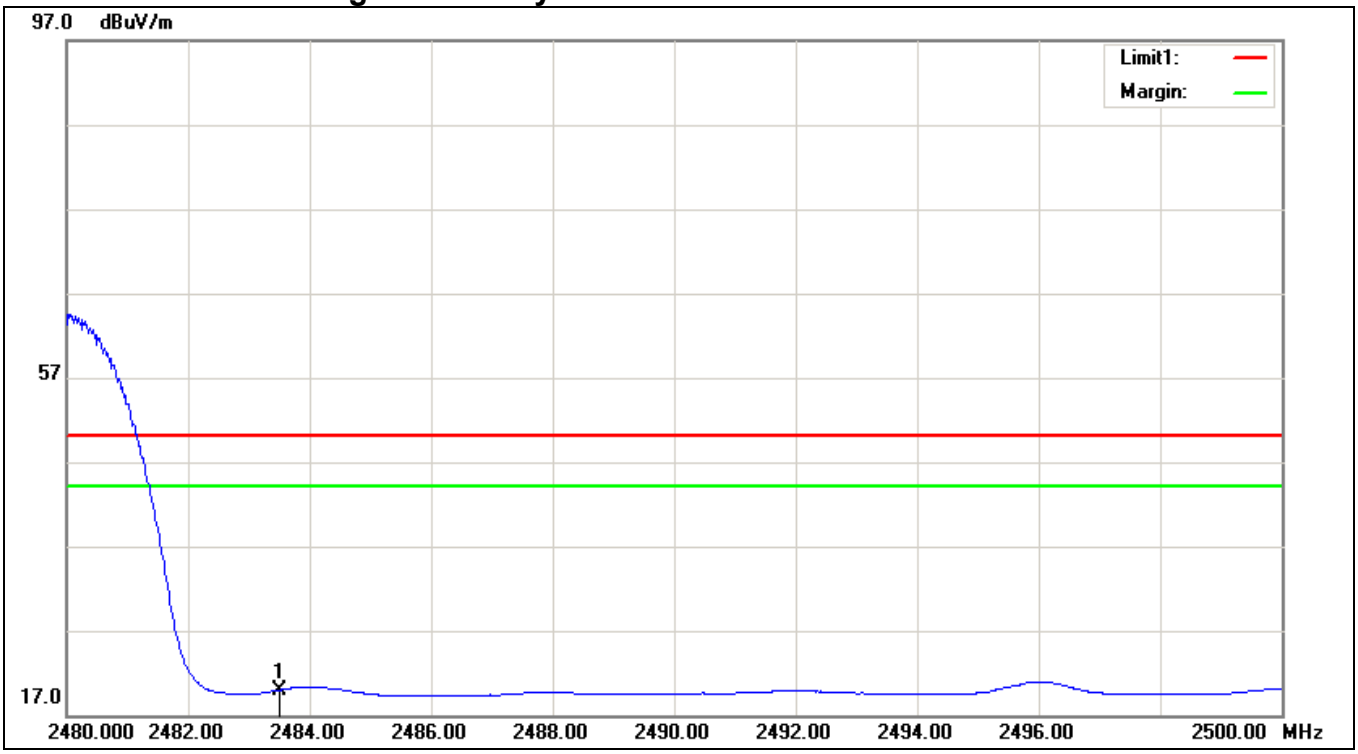
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	33.76	-13.62	20.14	50.00	-29.86	190		peak

Detector mode: Peak Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.220	56.94	-13.62	43.32	70.00	-26.68	100	66	peak
2	2484.880	53.15	-13.62	39.53	70.00	-30.47	100	66	peak
3	2485.160	53.05	-13.62	39.43	70.00	-30.57	100	53	peak

Detector mode: Average Polarity: Horizontal



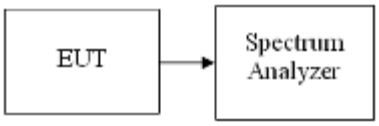
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	33.56	-13.62	19.94	50.00	-30.06	155		peak

6.3 PEAK POWER SPECTRAL DENSITY

LIMIT

1. For direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.
2. The direct sequence operating of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 3kHz, VBW = 10kHz, Span = 300kHz, Sweep=100s
4. Record the max. reading.
5. Repeat the above procedure until the measurements for all frequencies are completed.

TEST RESULTS

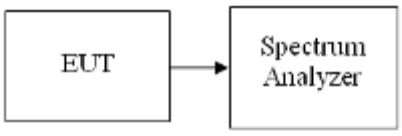
NA（this test item is not required for FHSS modulation technical）

6.4 HOPPING CHANNEL BANDWIDTH

LIMIT

According to §15.247(a)(1), 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. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 300kHz, VBW = 900kHz, Span = 3MHz, Sweep = auto.
4. Max hold, mark 2 peaks of hopping channel and record the 2 peaks frequency.

TEST RESULTS

No non-compliance noted

Test Data 1M

Channel	Frequency	20dB Bandwith	99%
	(MHz)	(MHz)	(MHz)
00	2402	1.353	1.0925
39	2441	1.346	1.0836
78	2480	1.345	1.0800

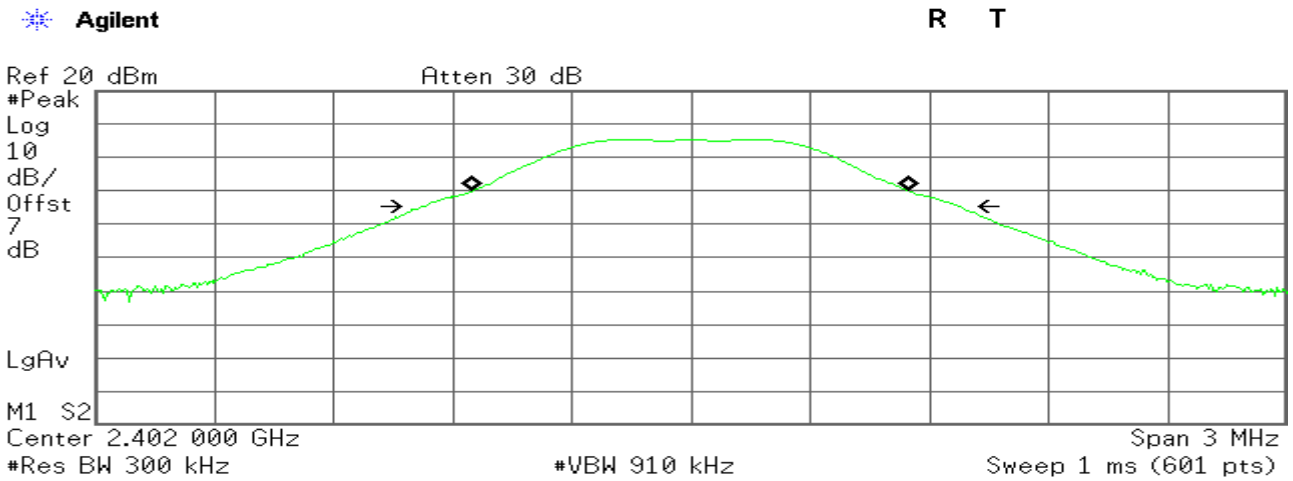
Test Data 3M

Channel	Frequency	20dB Bandwith	99%
	(MHz)	(MHz)	(MHz)
00	2402	1.406	1.4252
39	2441	1.500	1.4212
78	2480	1.403	1.4324

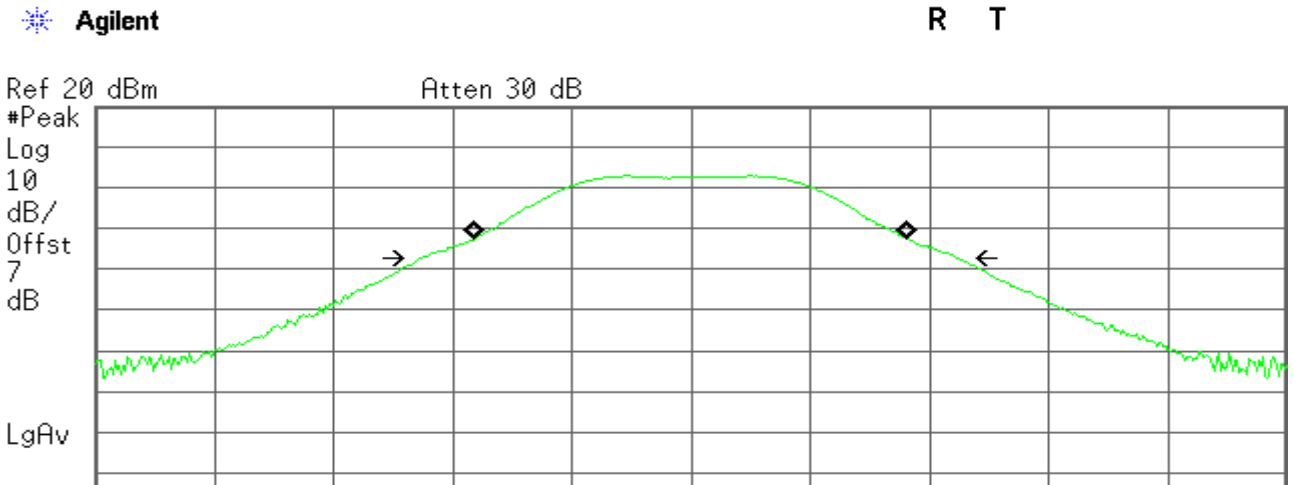
Test Plot

Measurement of 20dB Bandwidth

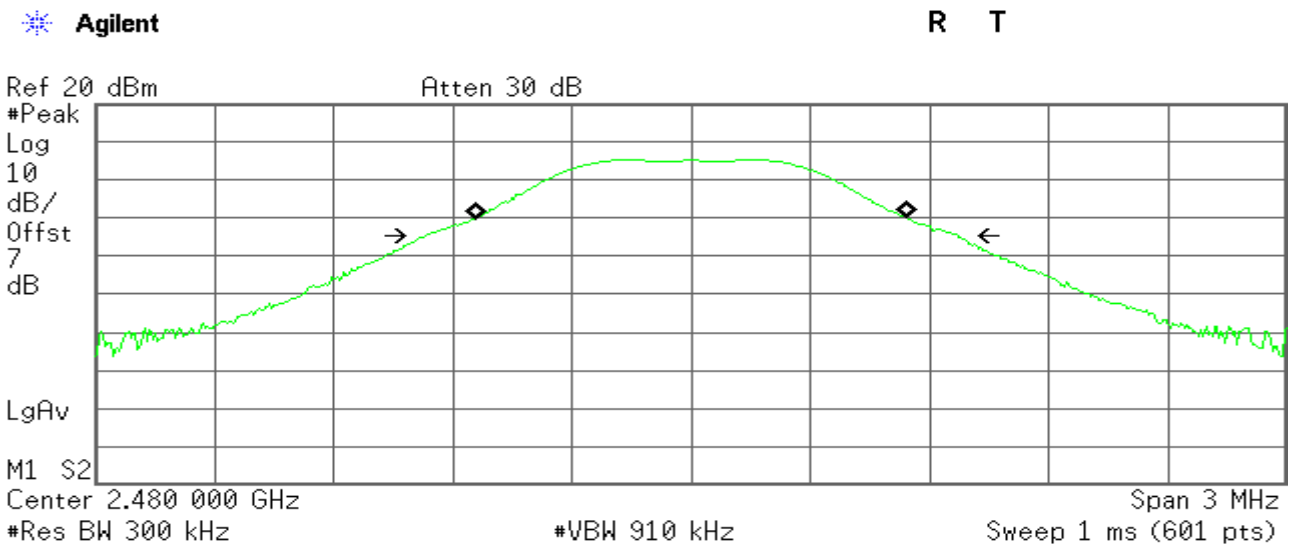
Channel low



Channel middle



Channel high

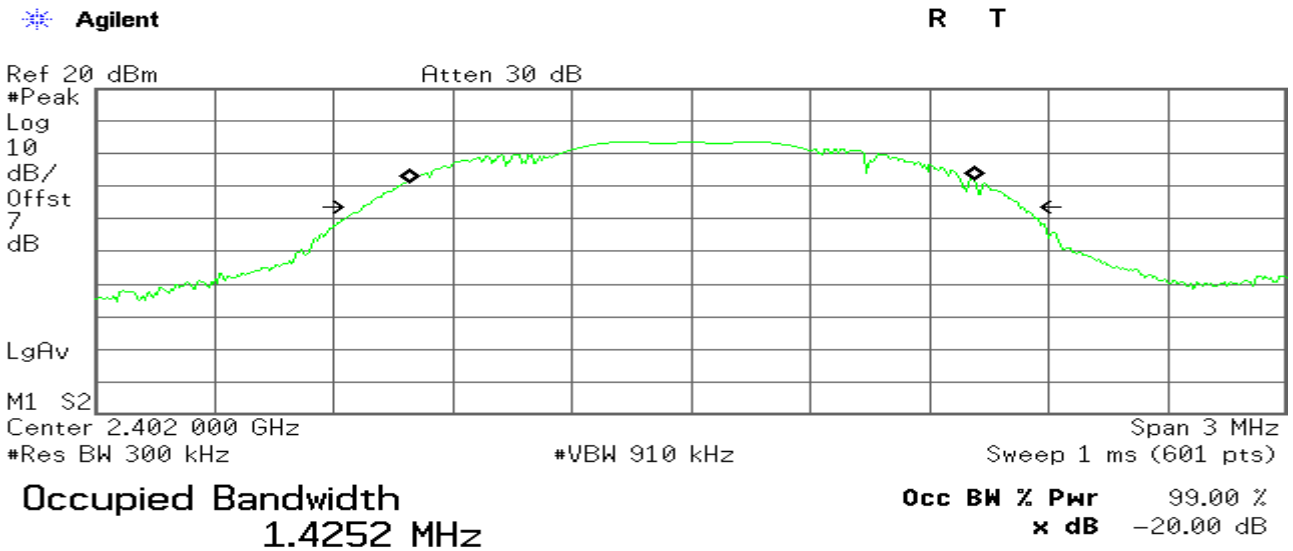


3M

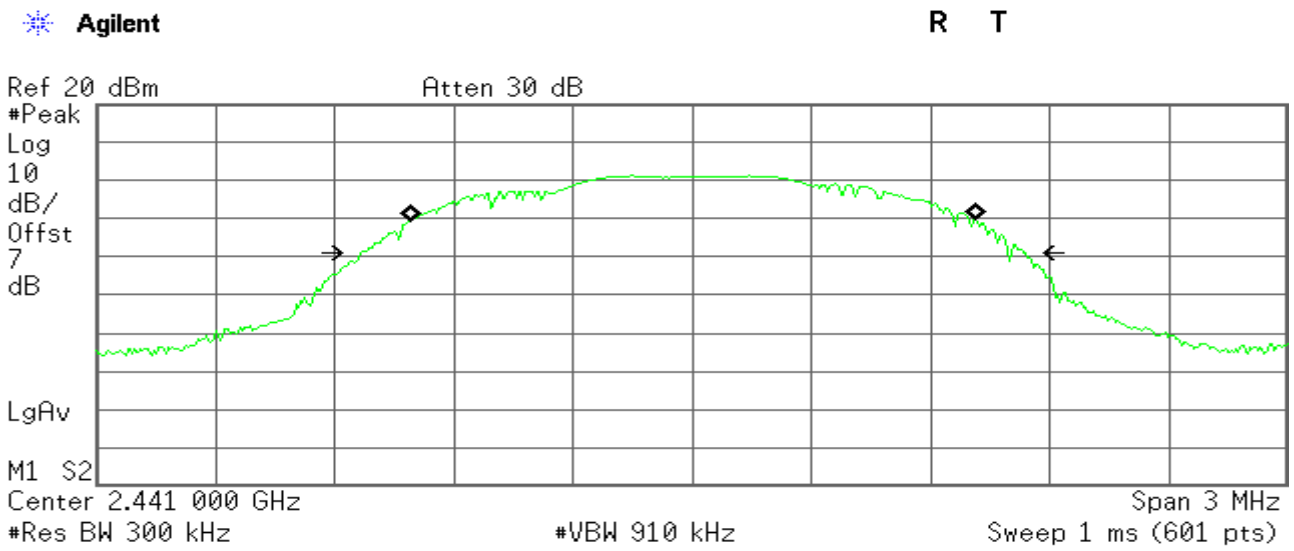
Test Plot

Measurement of 20dB Bandwidth

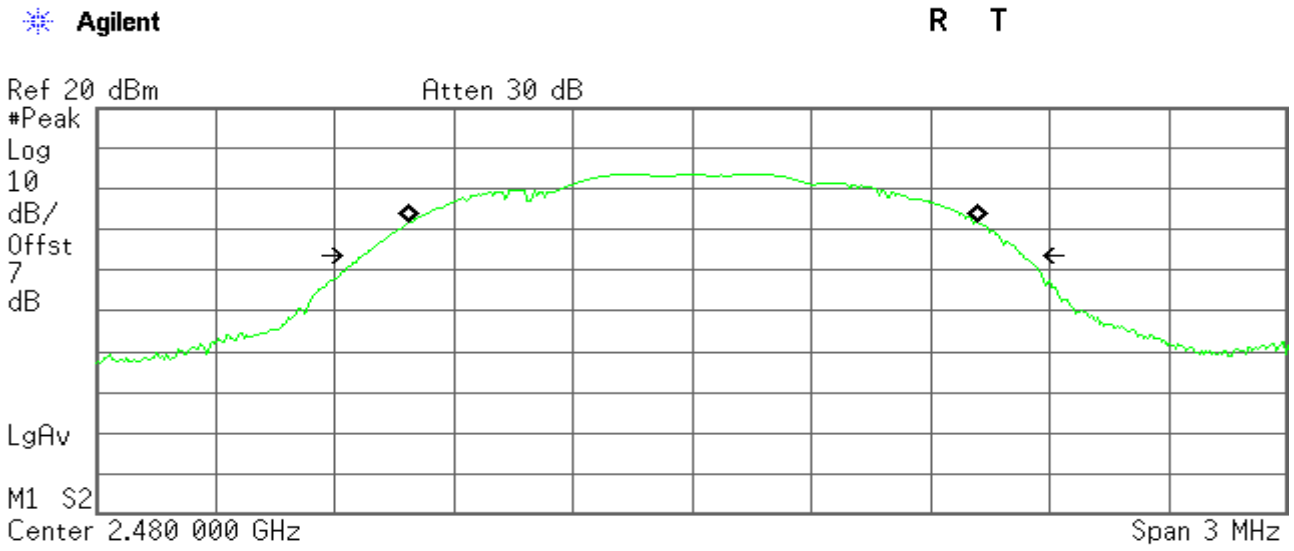
Channel low



Channel middle



Channel high

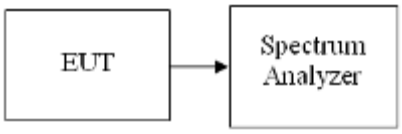


6.5 HOPPING CHANNEL SEPARATION

LIMIT

According to §15.247(a)(1)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. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set center frequency of spectrum analyzer = middle of hopping channel.
4. Set the spectrum analyzer as RBW = 30kHz, VBW = 100kHz, Span = 3MHz, Sweep = auto.
5. Max hold, mark 2 peaks of hopping channel and record the 2 peaks frequency.

TEST RESULTS

No non-compliance noted

Test Data **1M**

Channel	Frequency (MHz)	Separation (MHz)	Limits (MHz)	Result
0~1	2402~2403	1.000	0.902	Pass
38~39	2440~2441	1.000	0.902	Pass
77~78	2479~2480	1.000	0.902	Pass

3M

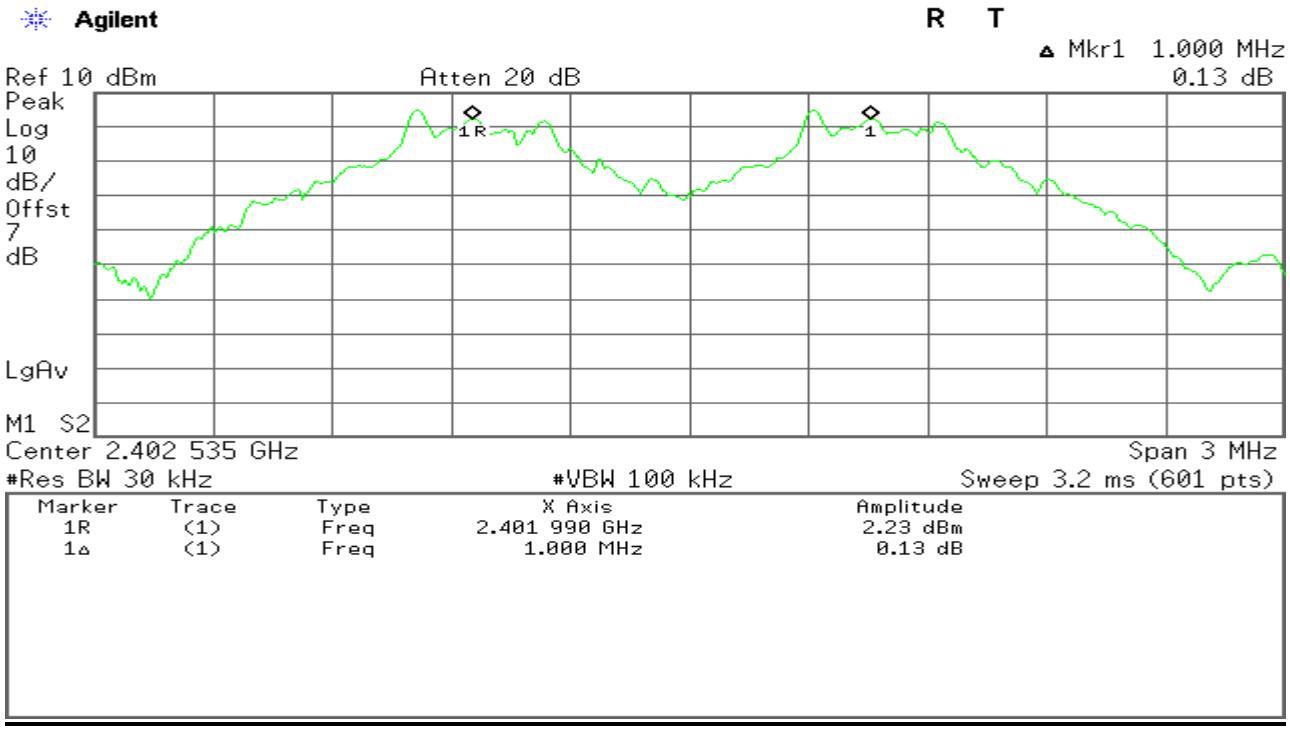
Channel	Frequency (MHz)	Separation (MHz)	Limits (MHz)	Result
0~1	2402~2403	1.000	0.937	Pass
38~39	2440~2441	1.000	1.000	Pass
77~78	2479~2480	1.000	0.935	Pass

Note: Hopping channel separation shall be greater 2/3 of 20dB bandwidth. Refer the result of 20dB bandwidth to Section 6.4

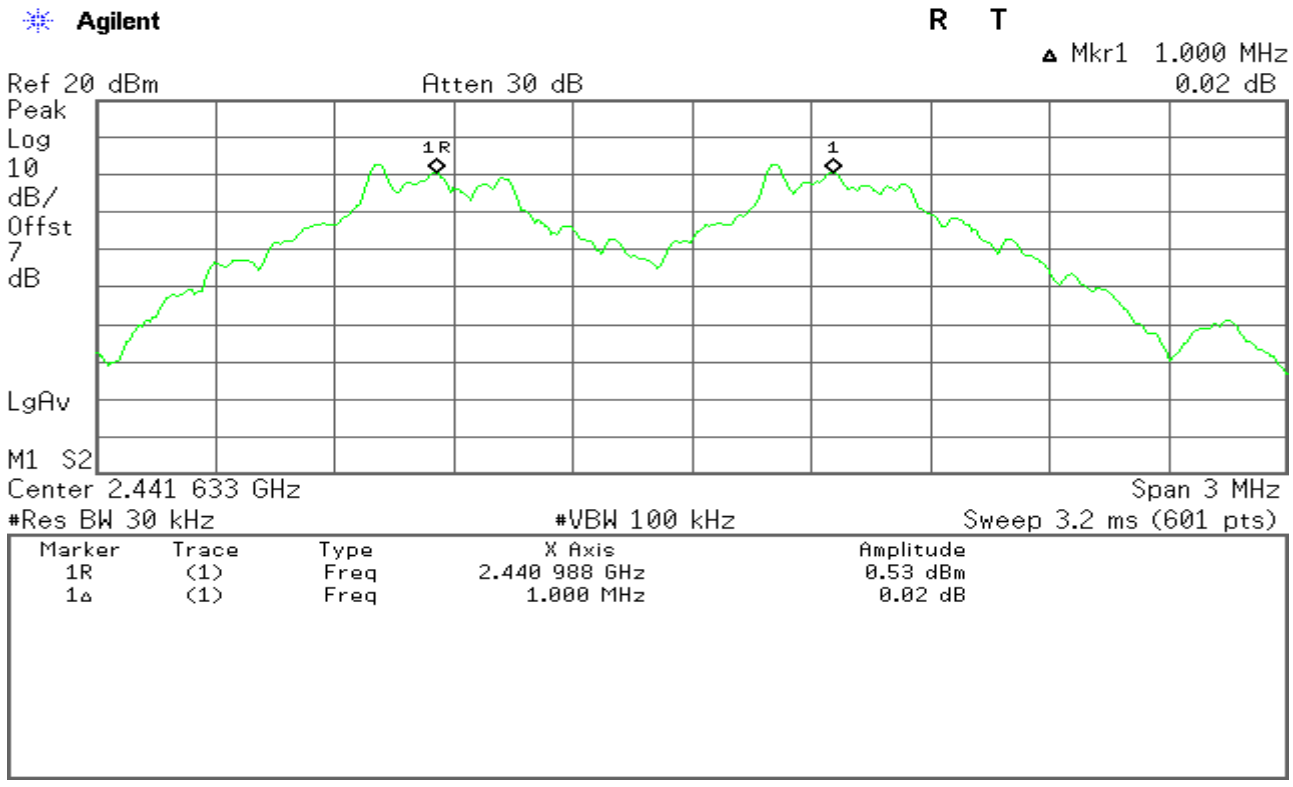
Test Data **1M**

Measurement of Channel Separation

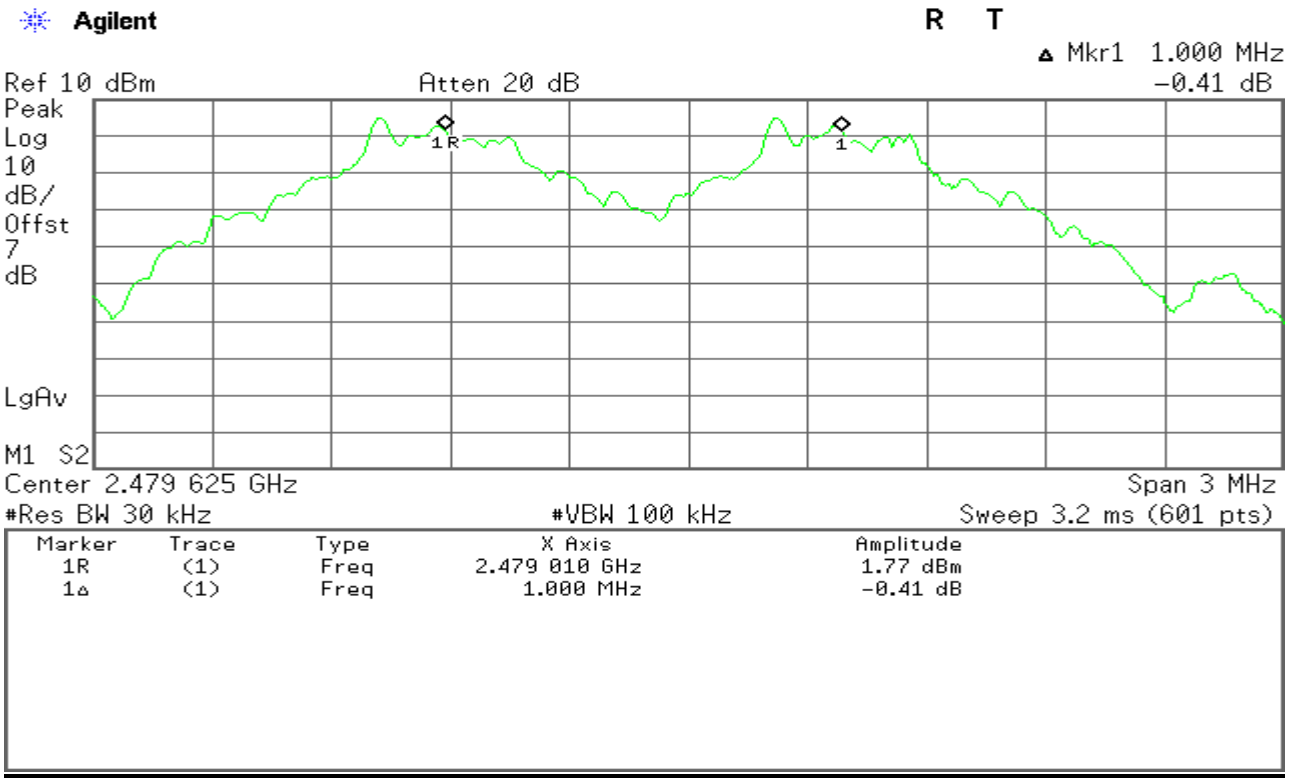
CH 0~CH1



CH 39~CH40



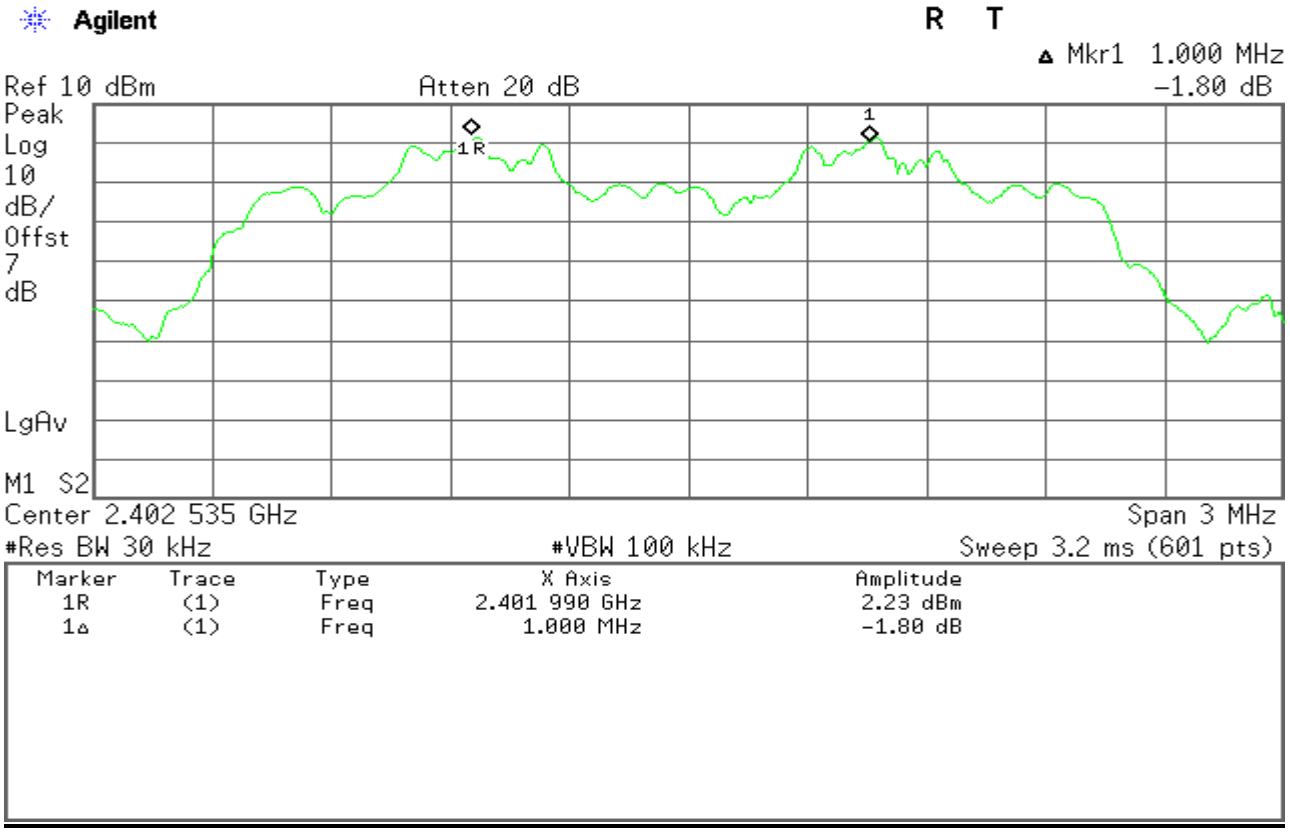
CH 77~CH78



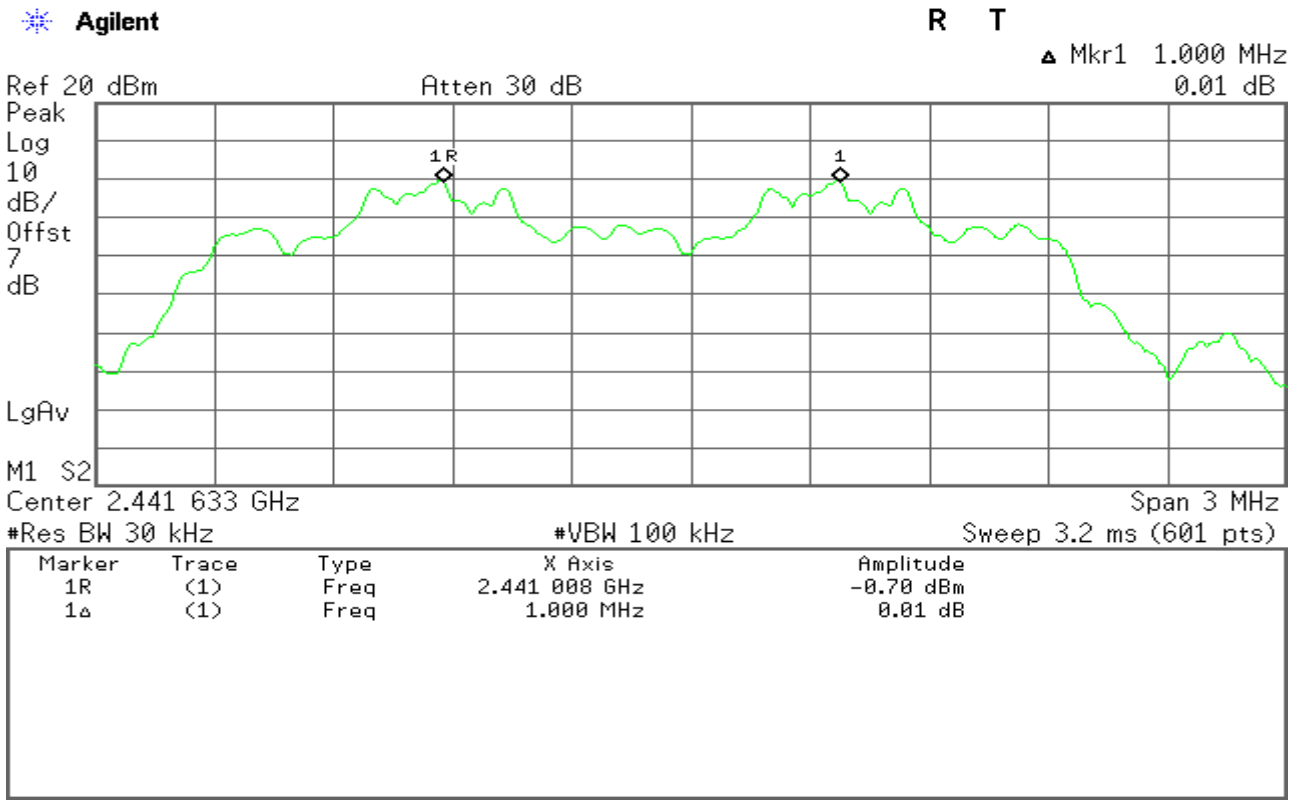
Test Data **3M**

Measurement of Channel Separation

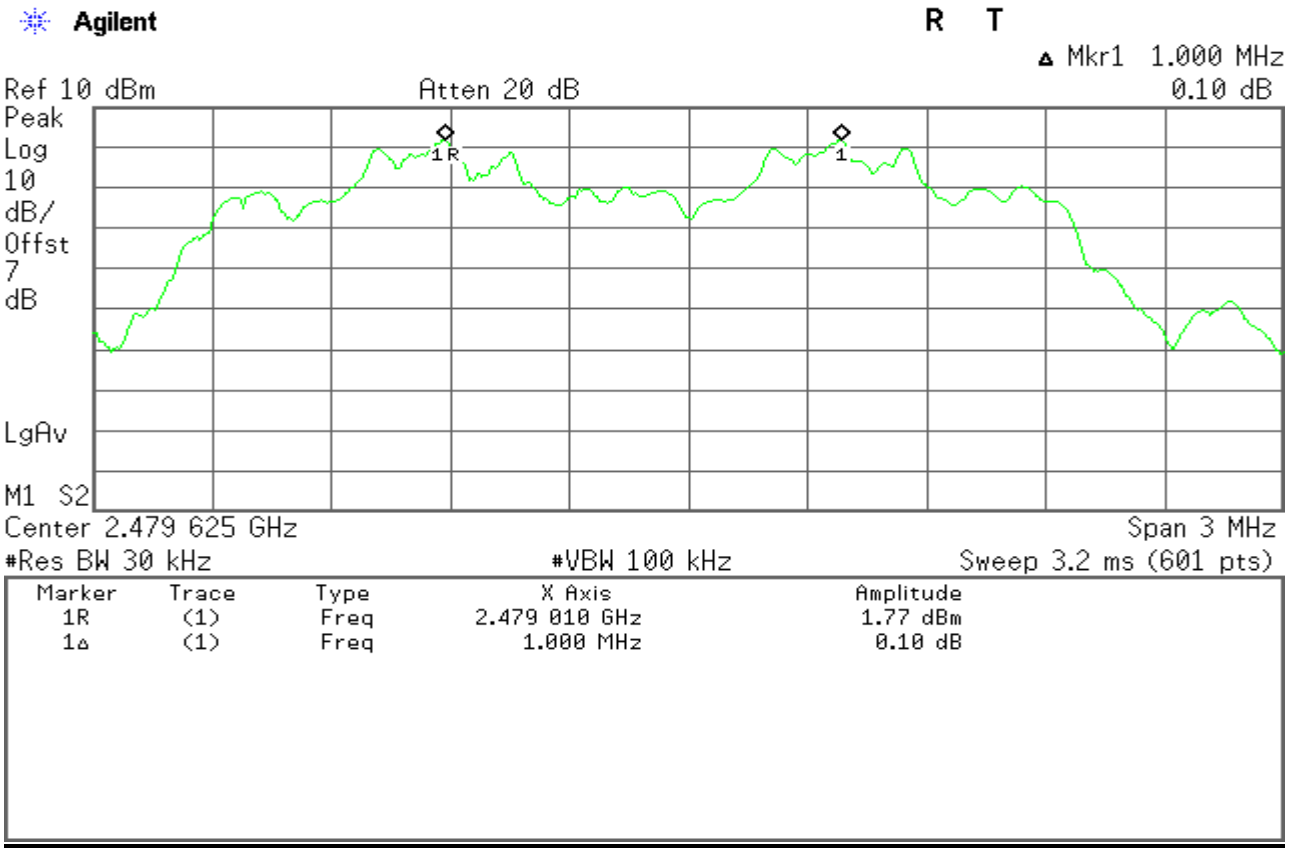
CH 0~CH1



CH 39~CH40



CH 77~CH78

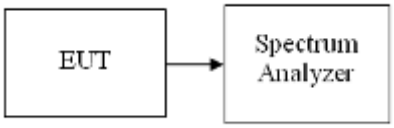


6.6 NUMBER OF HOPPING FREQUENCY

LIMIT

According to §15.247(a)(1)(iii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz bands shall use at least 15 hopping frequencies.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set spectrum analyzer Start=2400MHz, Stop = 2441.5MHz, Sweep = auto and Start=2441.5MHz, Stop = 2483.5MHz, Sweep = auto.
4. Set the spectrum analyzer as RBW, VBW=100kHz.
5. Max hold, view and count how many channel in the band.

TEST RESULTS

No non-compliance noted

Test Data

1M

Result (No. of CH)	Limit (No. of CH)	Result
79	>15	PASS

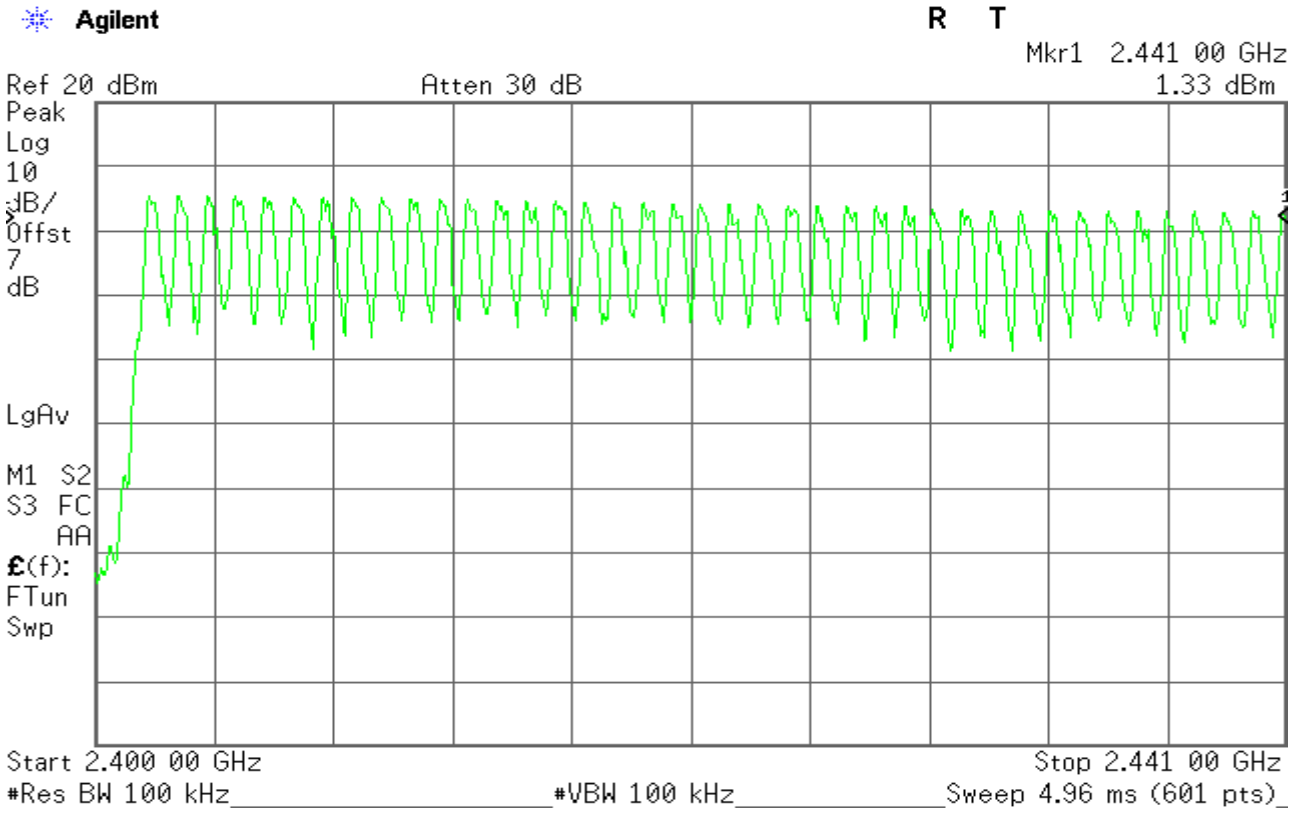
3M

Result (No. of CH)	Limit (No. of CH)	Result
79	>15	PASS

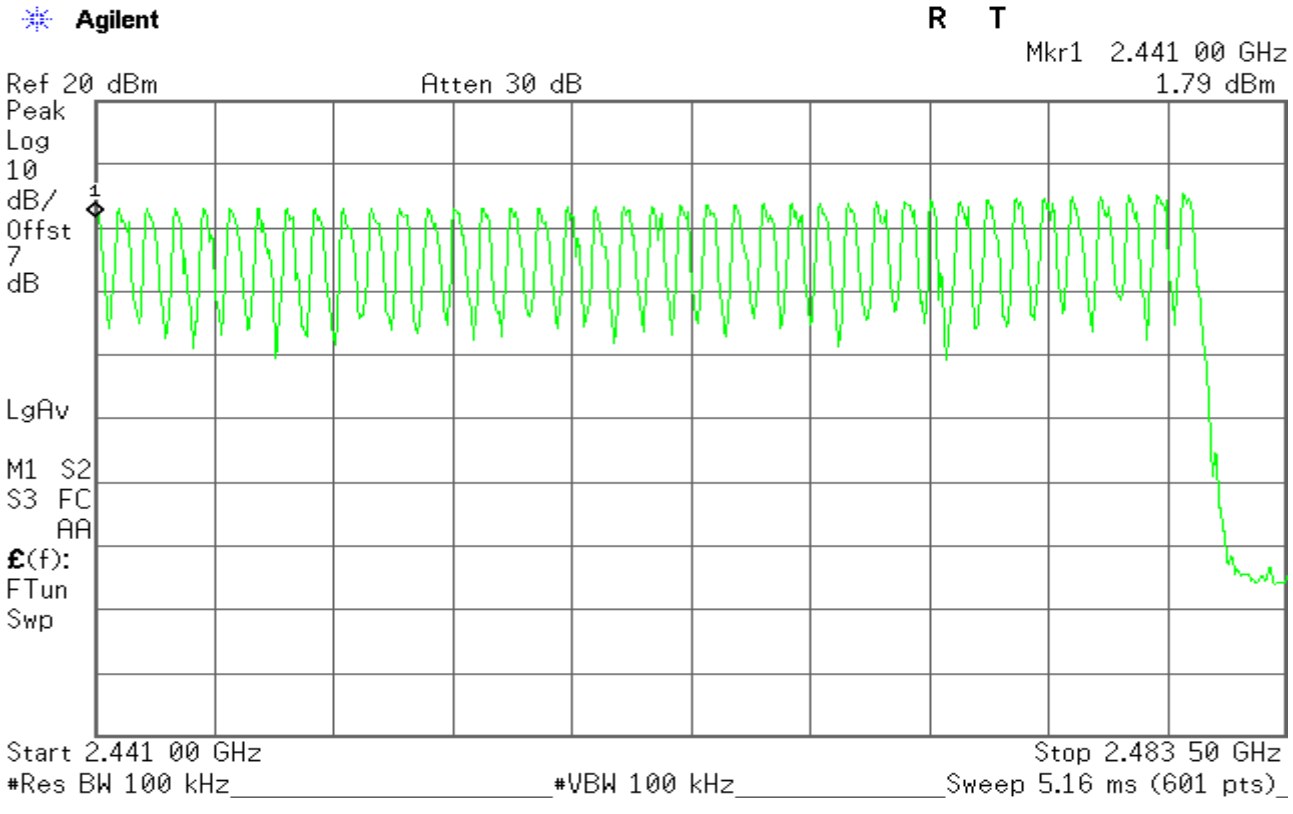
Test Plot

Channel Number

2.4 GHz – 2.4415 GHz



2.4415 GHz – 2.4835 GHz

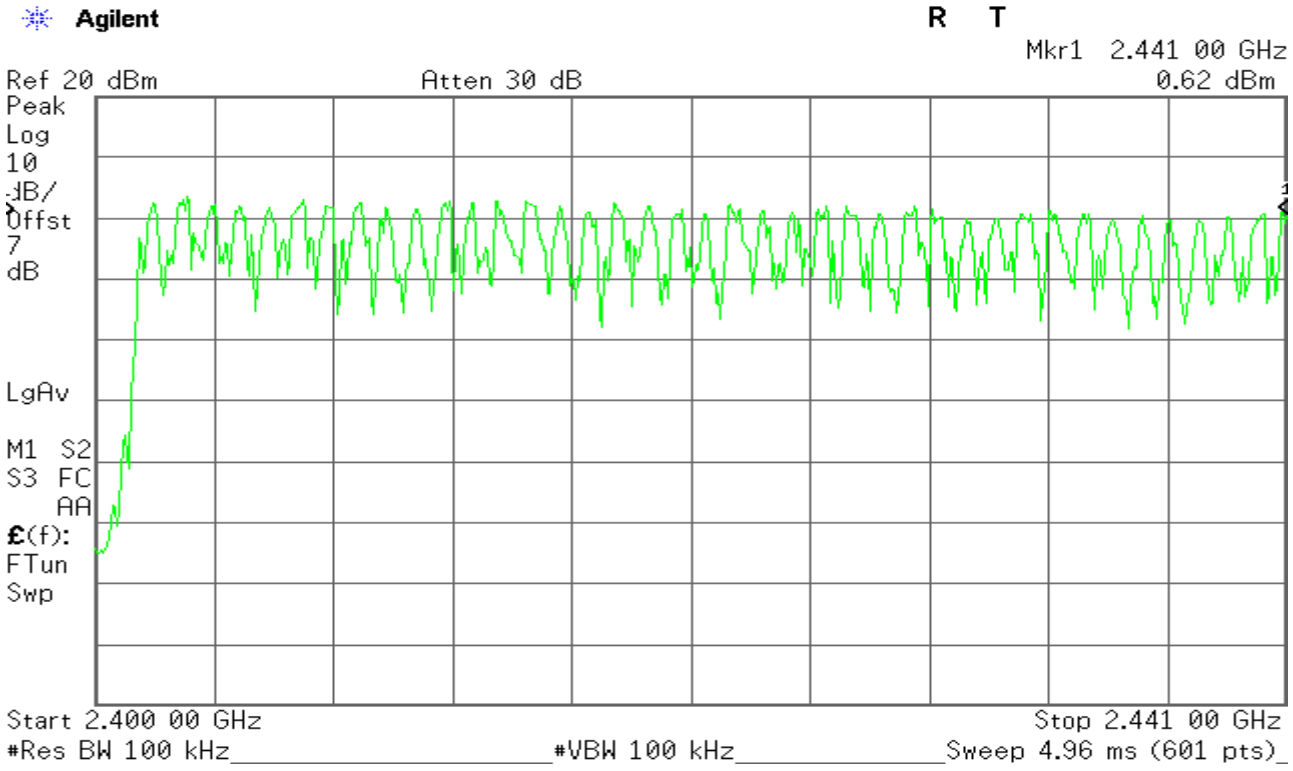


3M

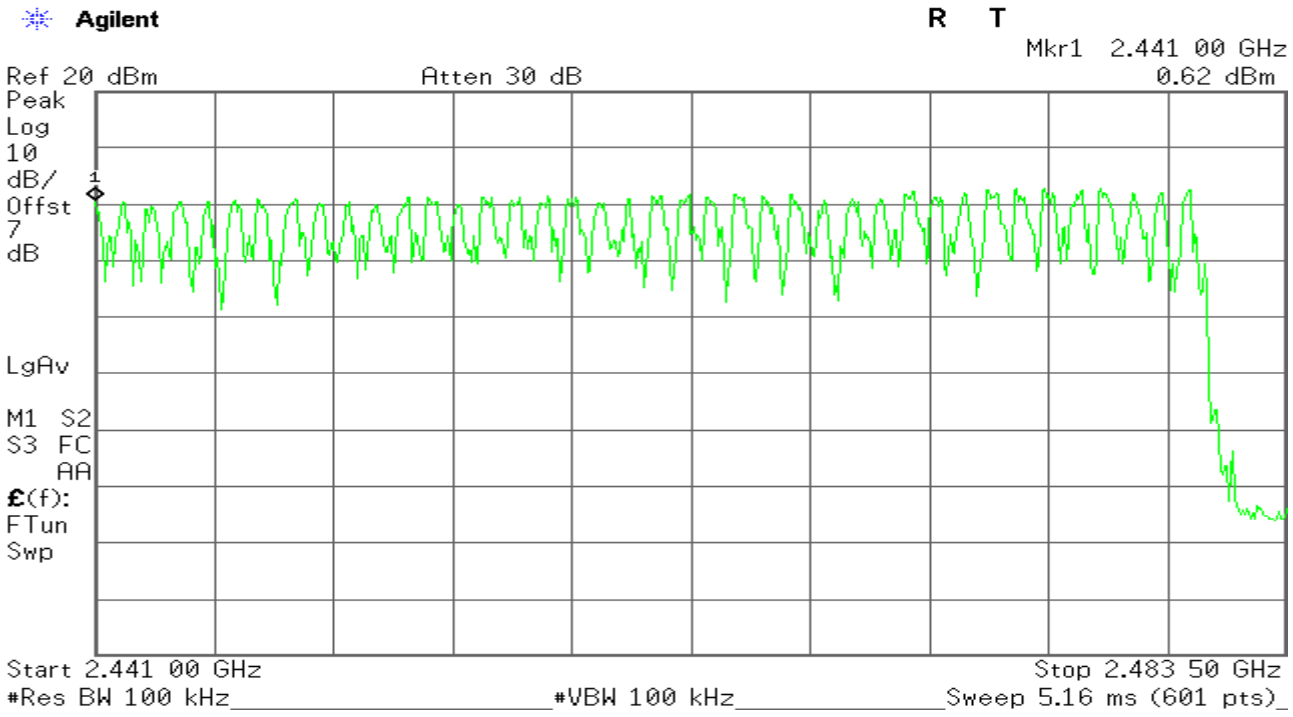
Test Plot

Channel Number

2.4 GHz – 2.4415 GHz



2.4415 GHz – 2.4835 GHz



6.7 Pseudorandom Frequency Hopping Sequence

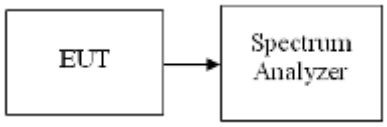
The generation of the hopping sequence is determined by the Bluetooth core specification and complies with the FCC requirements.

6.8 TIME OF OCCUPANCY (DWELL TIME)

LIMIT

According to §15.247(a)(1)(iii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz bands. The average time of occupancy on any channels shall not greater than 0.4 s within a period 0.4 s multiplied by the number of hopping channels employed.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set center frequency of spectrum analyzer = operating frequency.
4. Set the spectrum analyzer as RBW, VBW=1MHz, Span = 0Hz, Sweep = auto.
5. Repeat above procedures until all frequency measured were complete.

TEST RESULTS

No non-compliance noted

Test Data

1 M

DH 1

0.400 * (1600/2)/79 * 31.6 = 128.00 (ms)

Pulse Time(ms)	Total of Dwell(ms)	Period Time (s)	Limit (ms)	Result
0.400	128.00	31.60	400	PASS

DH 3

1.542 * (1600/4)/79 * 31.6 = 246.72 (ms)

Pulse Time(ms)	Total of Dwell(ms)	Period Time (s)	Limit (ms)	Result
1.542	246.72	31.60	400	PASS

DH 5

2.892* (1600/6)/79 * 31.6 = 308.48 (ms)

Pulse Time(ms)	Total of Dwell(ms)	Period Time (s)	Limit (ms)	Result
2.892	308.48	31.60	400	PASS

3 M

DH 1

0.40 * (1600/2)/79 * 31.6 = 128.00 (ms)

Pulse Time(ms)	Total of Dwell(ms)	Period Time (s)	Limit (ms)	Result
0.400	128.00	31.60	400	PASS

DH 3

1.607 * (1600/4)/79 * 31.6 = 257.12 (ms)

Pulse Time(ms)	Total of Dwell(ms)	Period Time (s)	Limit (ms)	Result
1.607	257.12	31.60	400	PASS

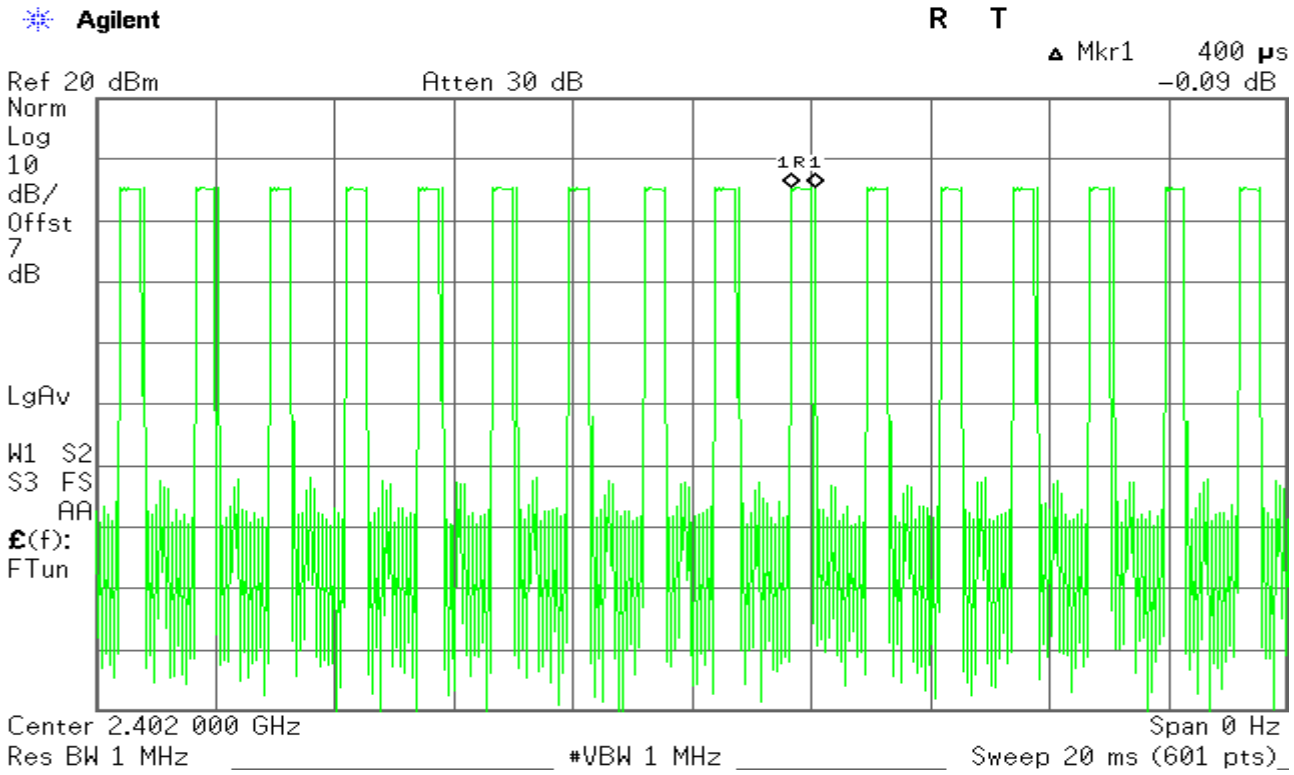
DH 5

2.892* (1600/6)/79 * 31.6 = 309.33(ms)

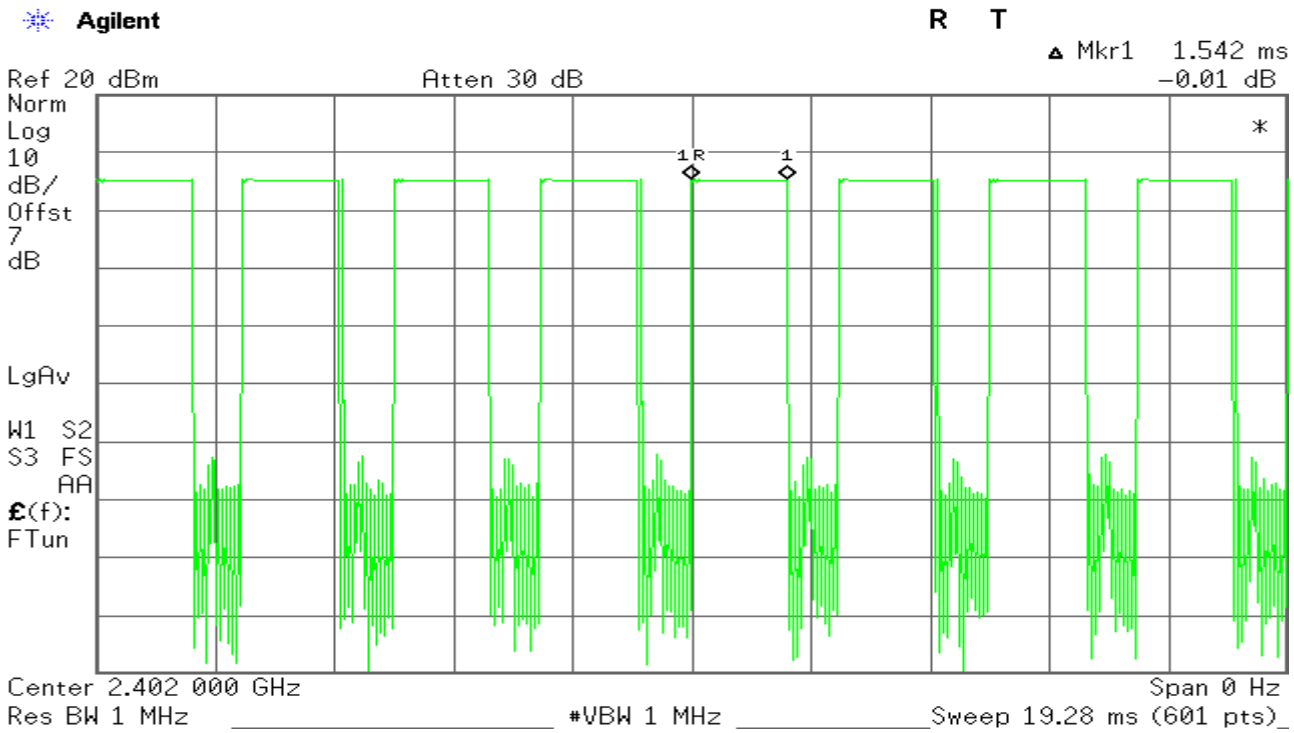
Pulse Time(ms)	Total of Dwell(ms)	Period Time (s)	Limit (ms)	Result
2.892	308.48	31.60	400	PASS

Test Plot

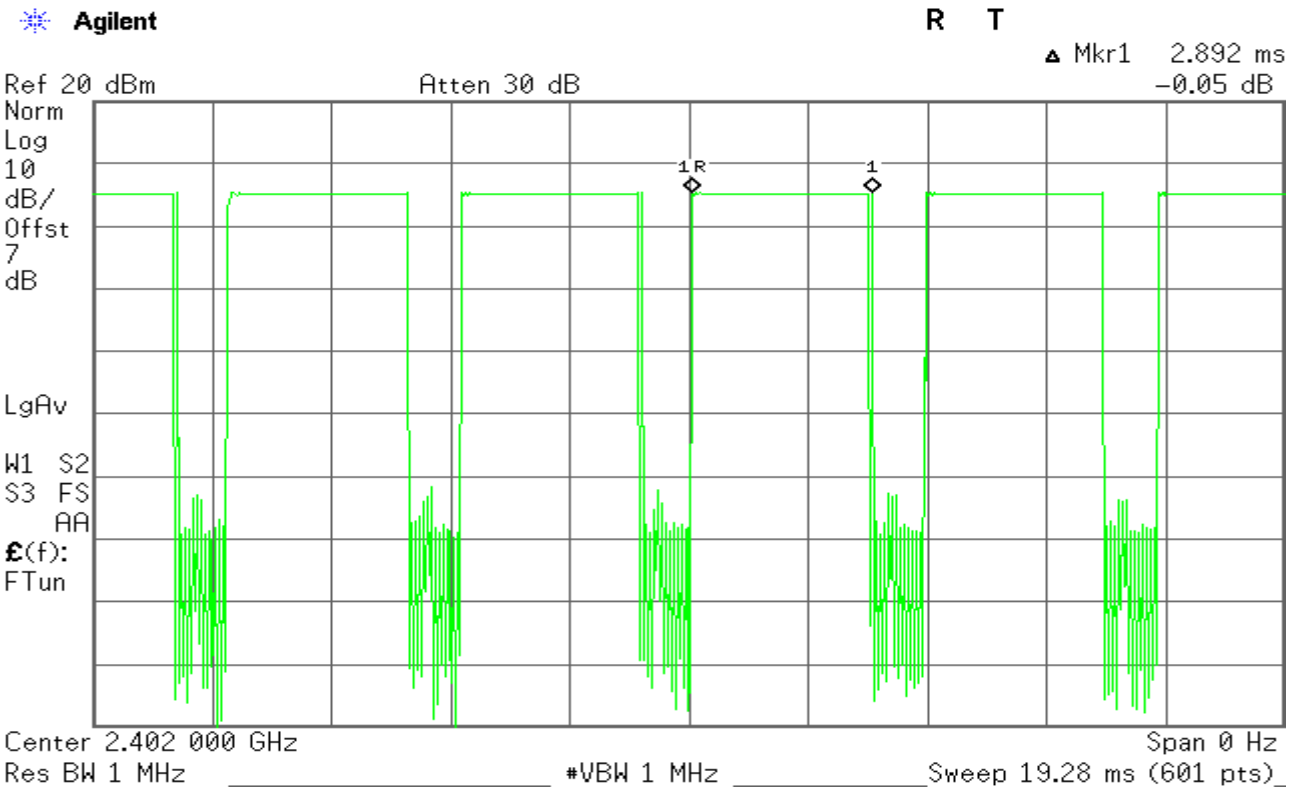
DH 1



DH 3



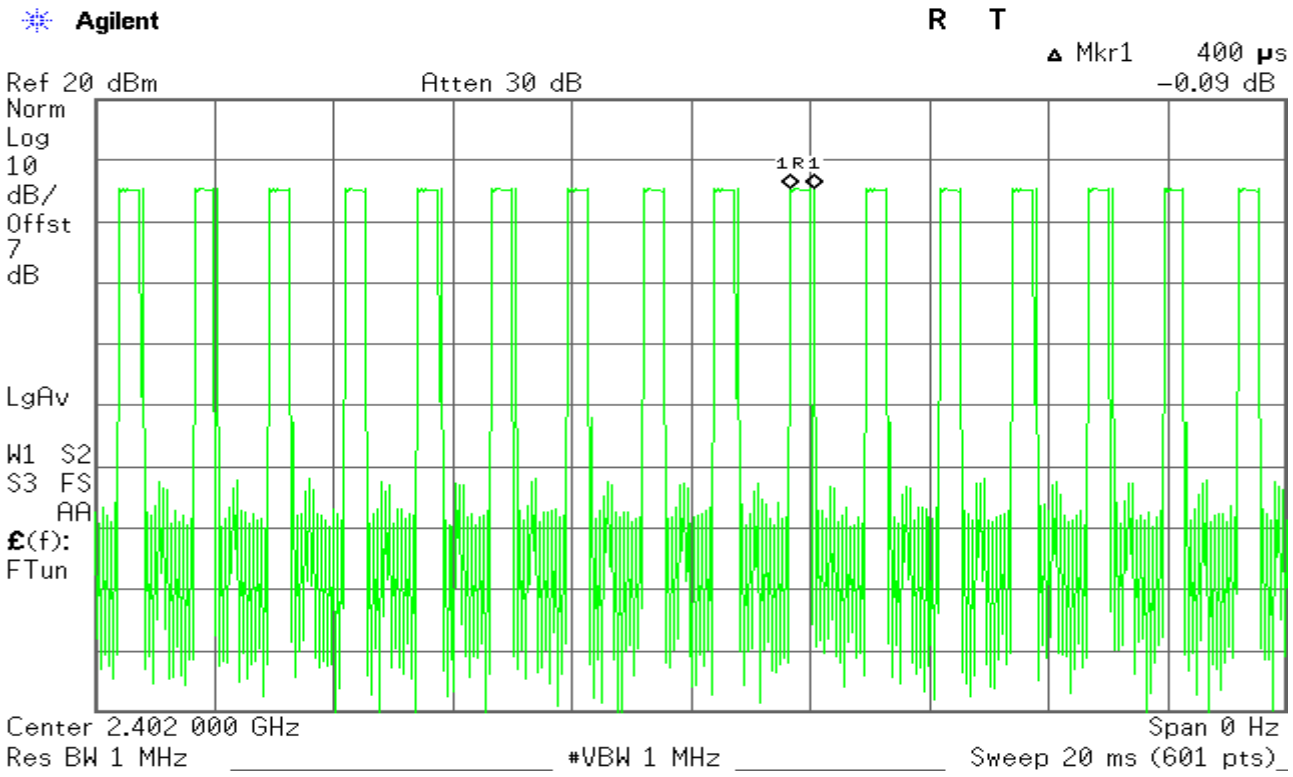
DH 5



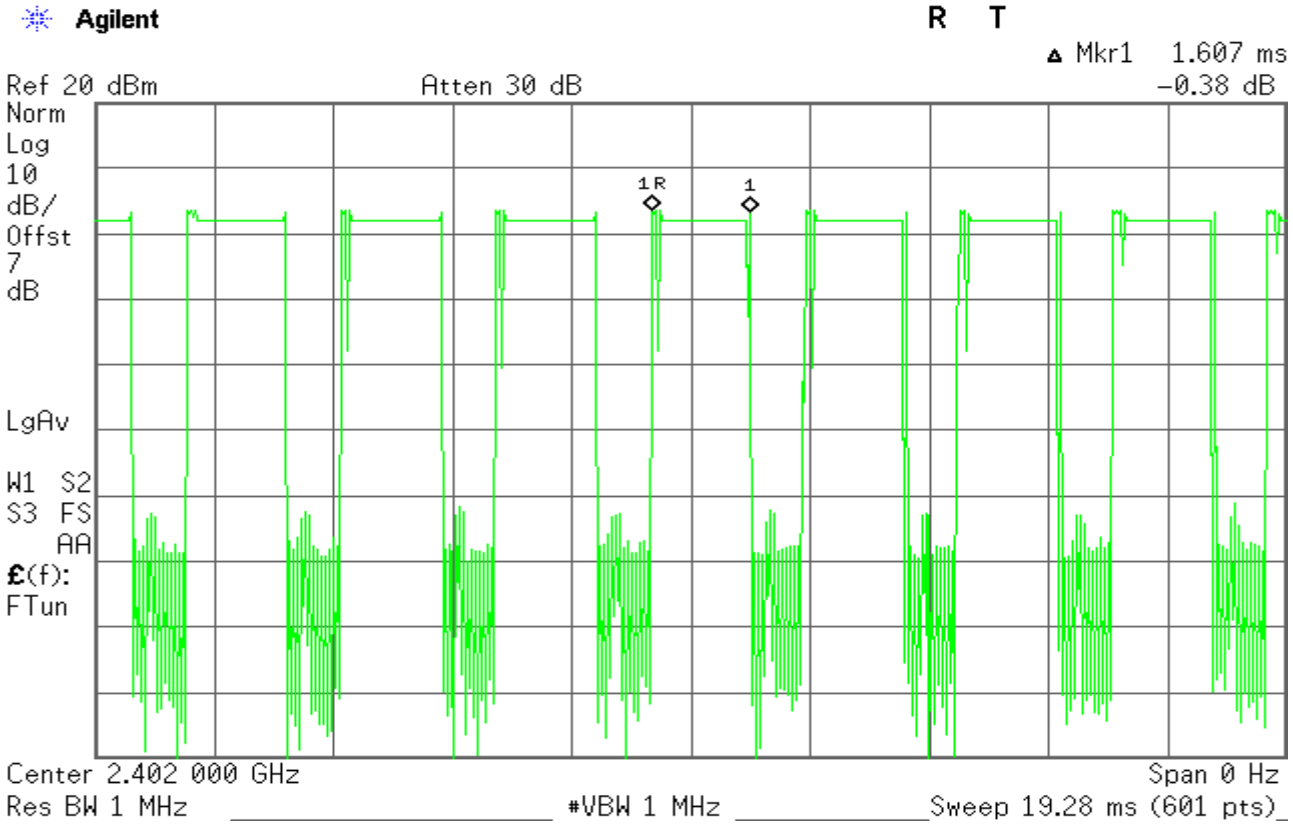
3M

Test Plot

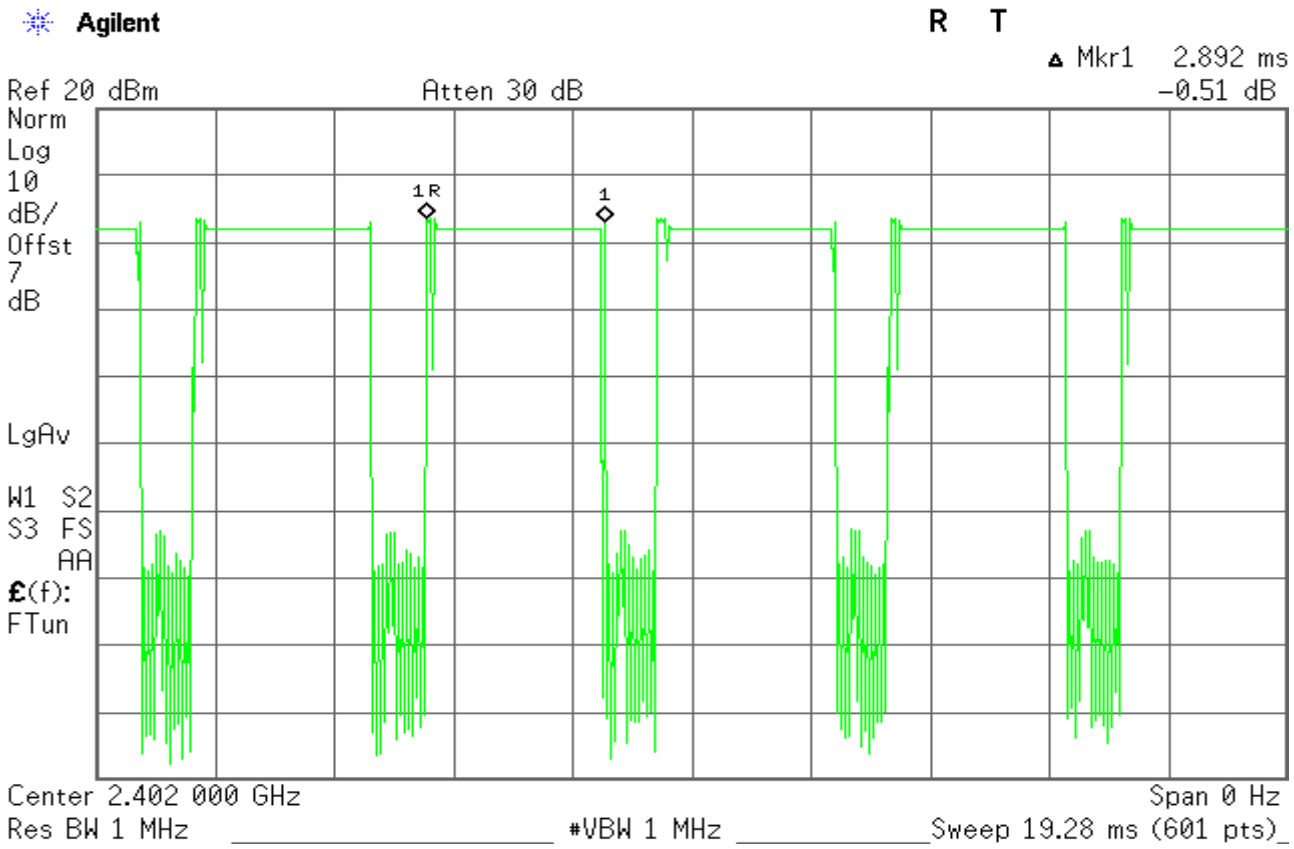
DH 1



DH 3



DH 5



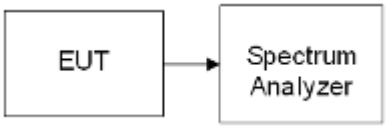
6.9 SPURIOUS EMISSION

Conducted Measurement

LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

Test Configuration



TEST PROCEDURE

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100 KHz. The video bandwidth is set to 100 KHz.

Measurements are made over the 30MHz to 26GHz range with the transmitter set to the lowest, middle, and highest channels.

TEST RESULTS

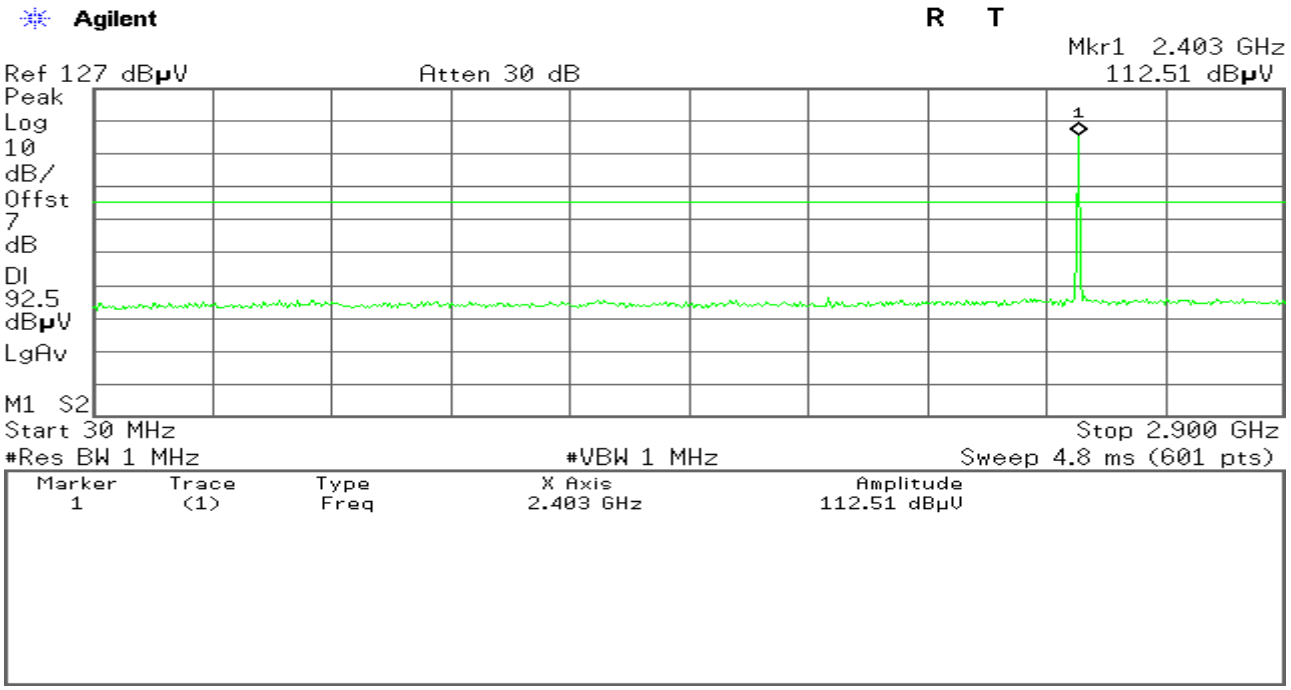
No non-compliance noted

Test Plot

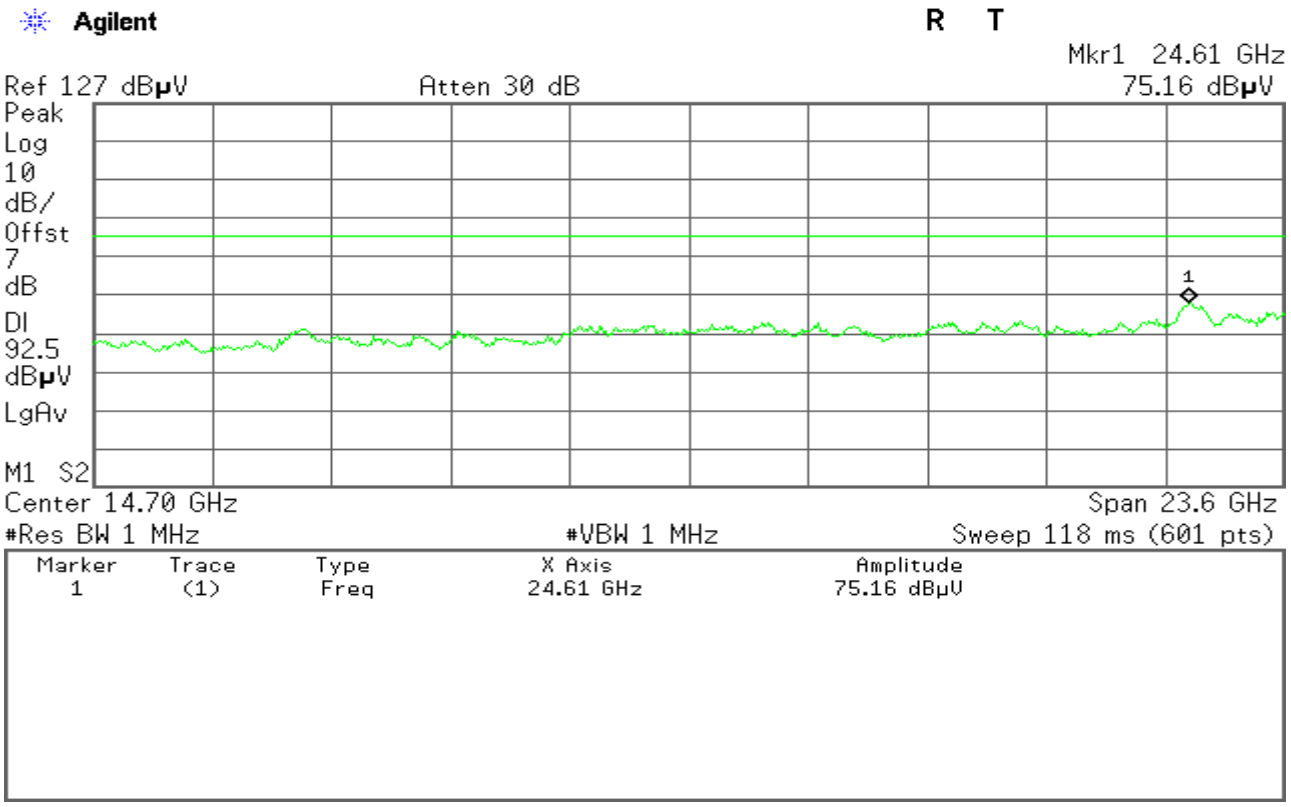
1M

CH Low

30MHz ~ 2.9GHz

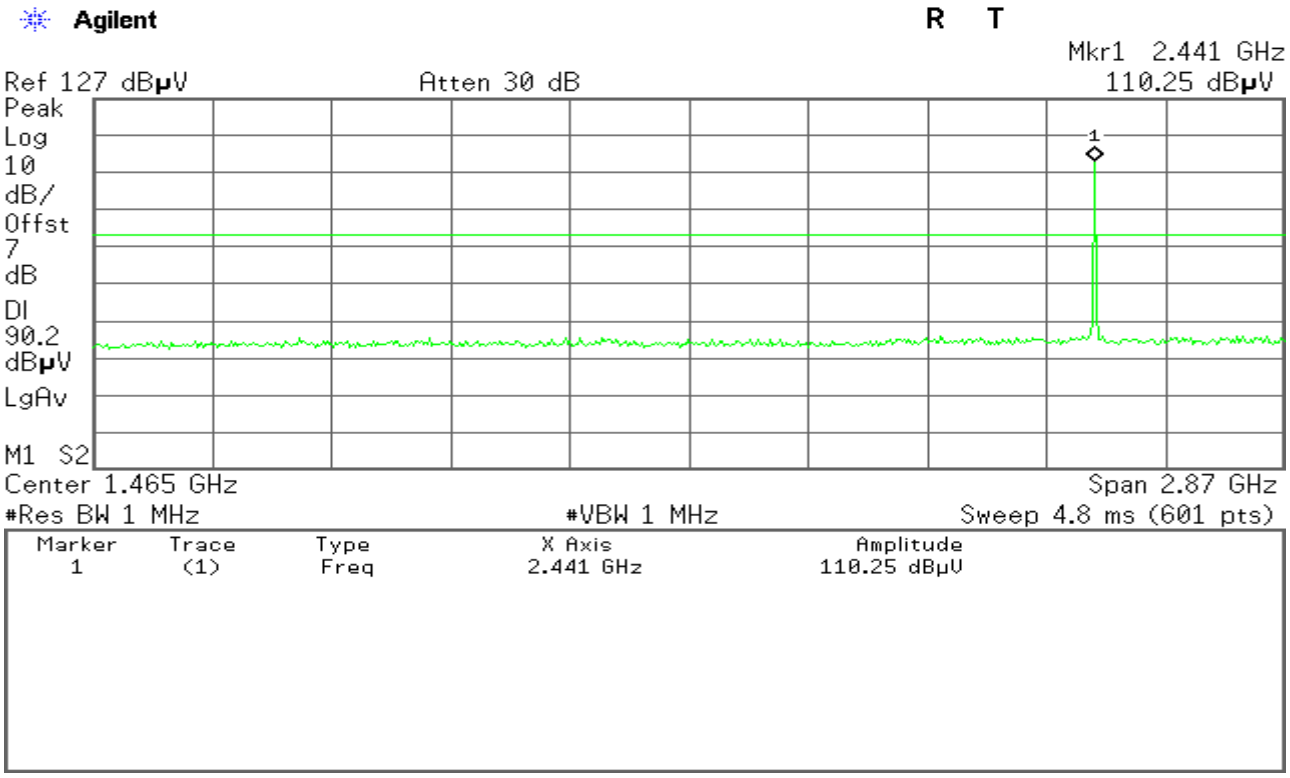


2.9GHz ~ 26.5GHz

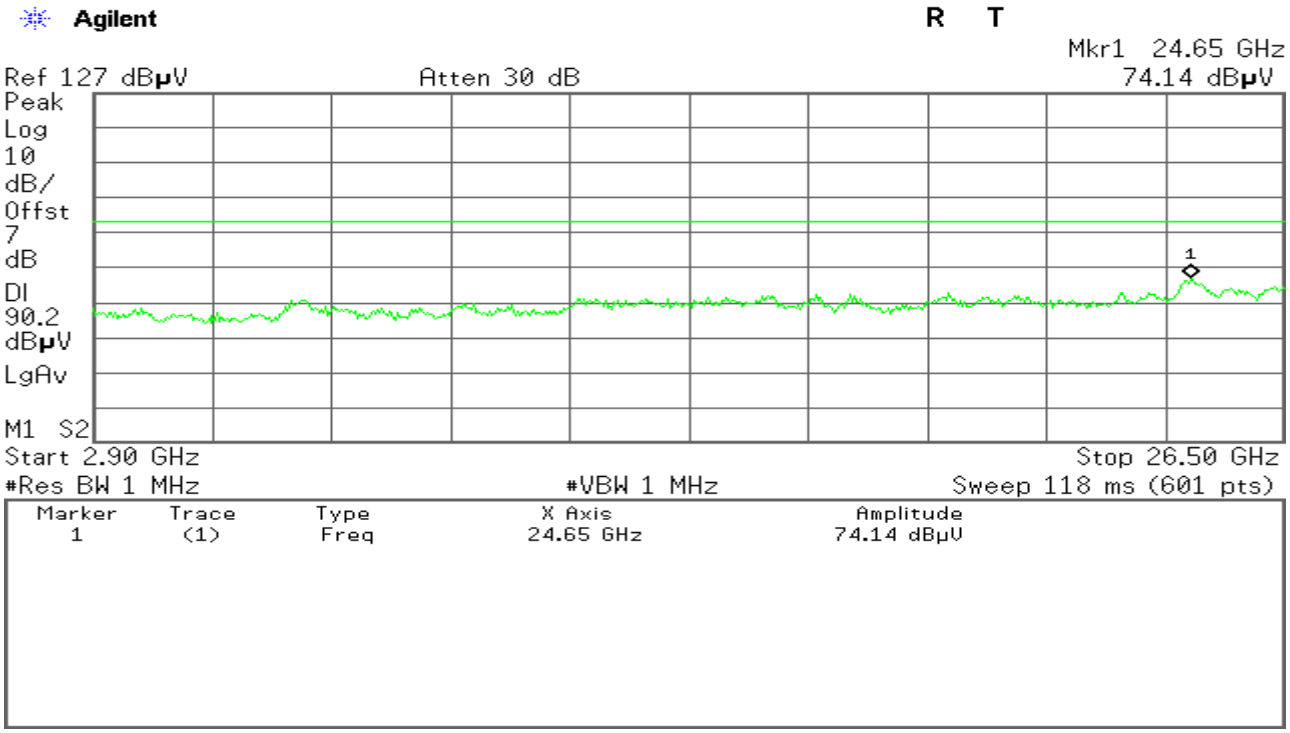


CH Mid

30MHz ~ 2.9GHz

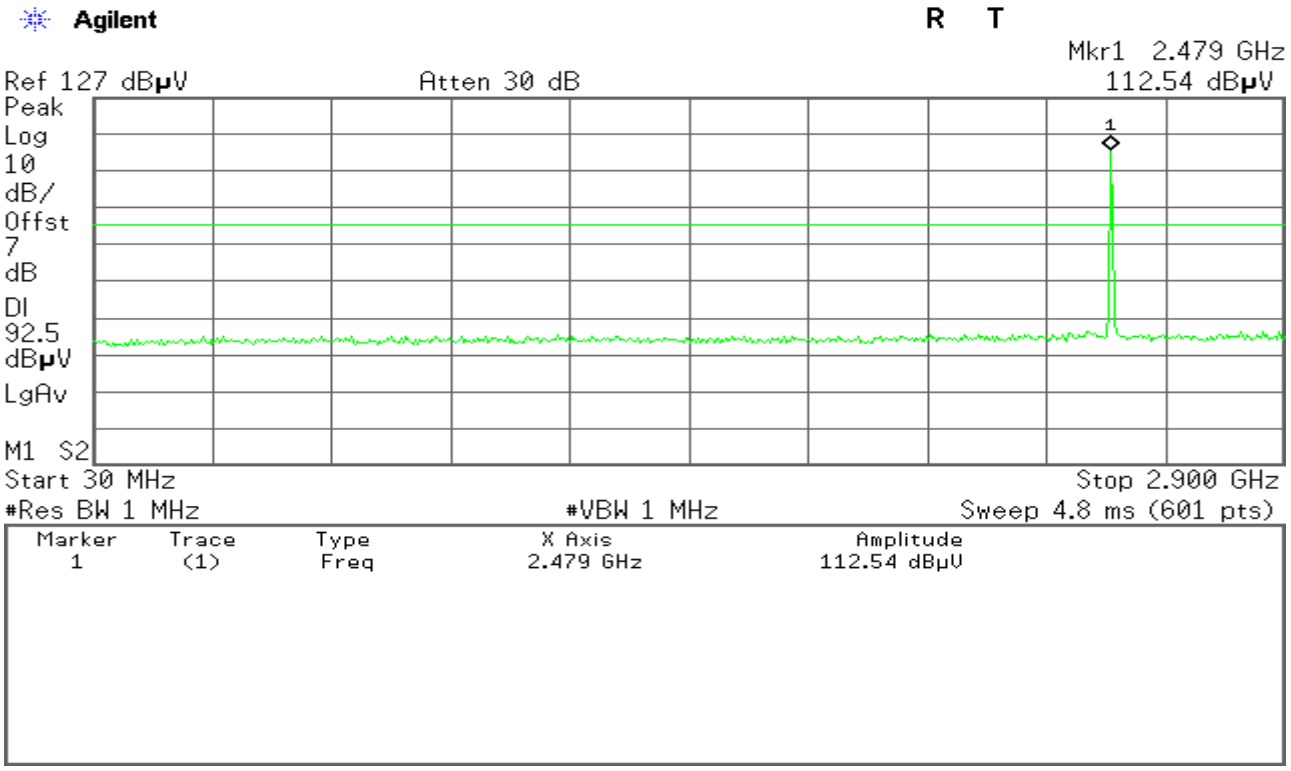


2.9GHz ~ 26.5GHz

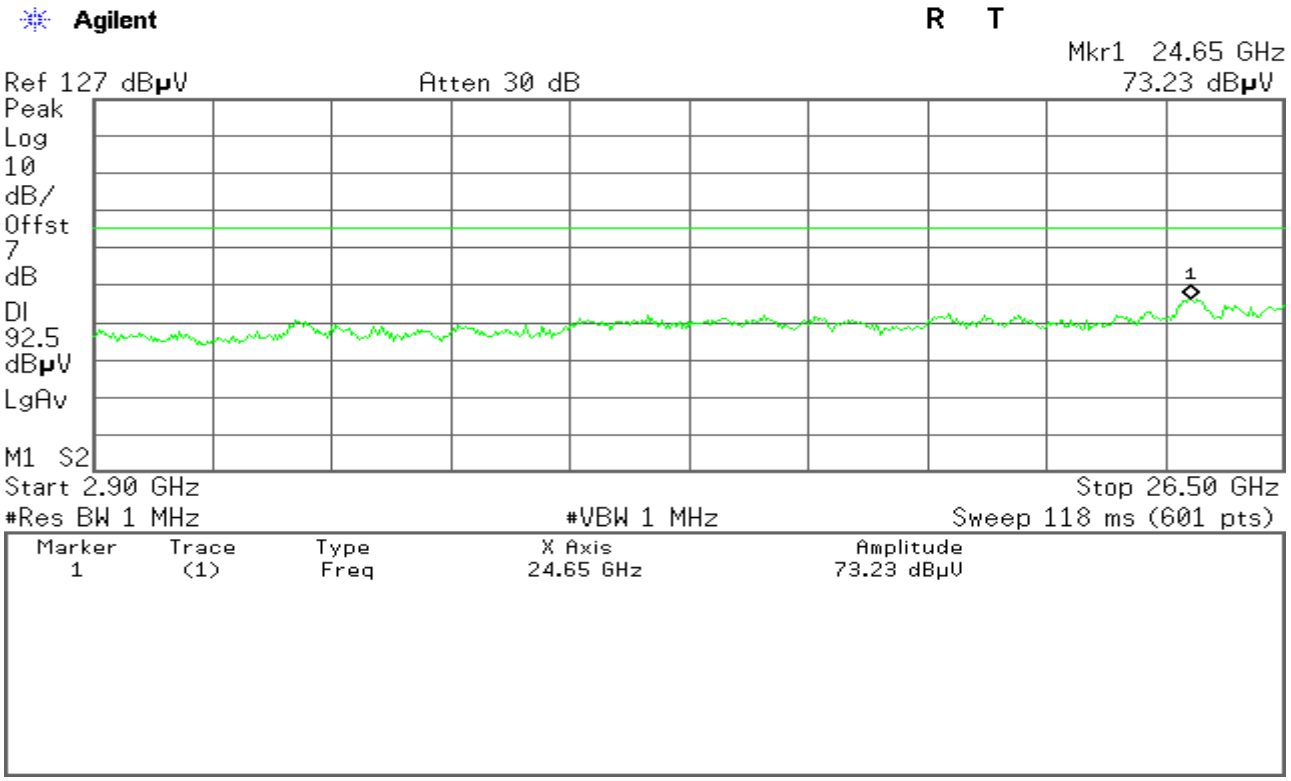


CH High

30MHz ~ 2.9GHz



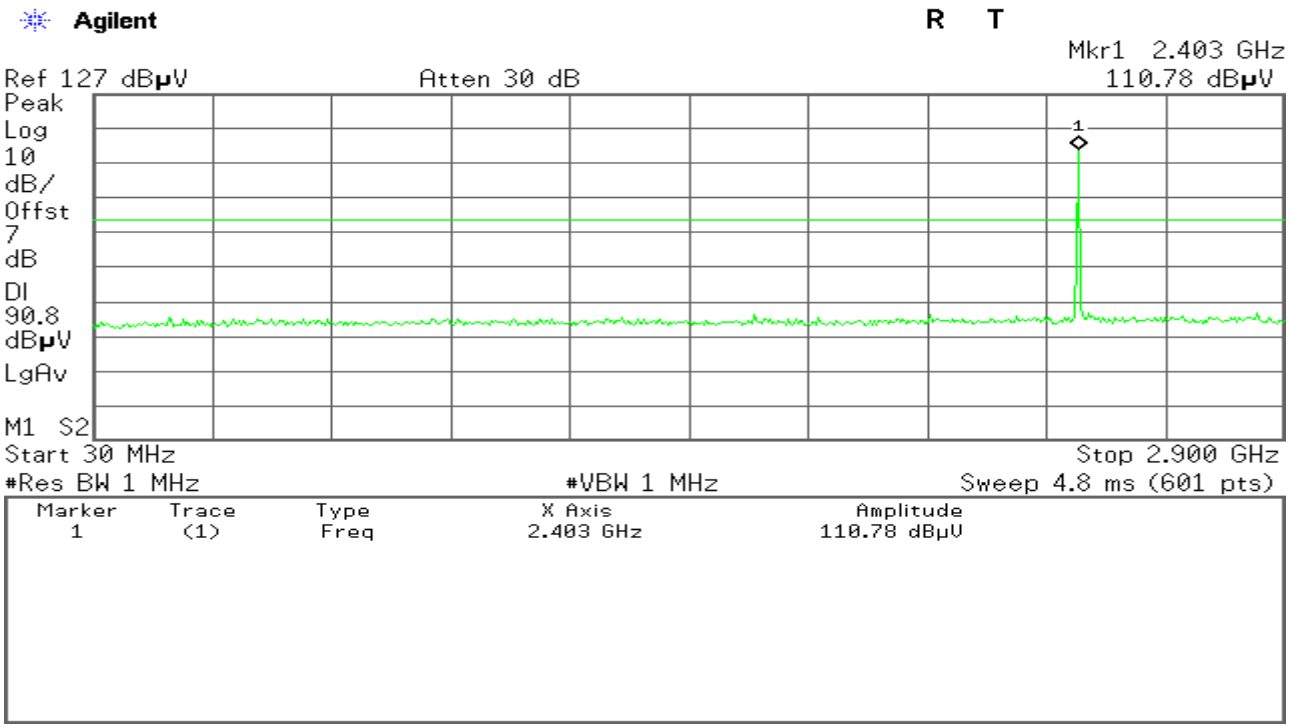
2.9GHz ~ 26.5GHz



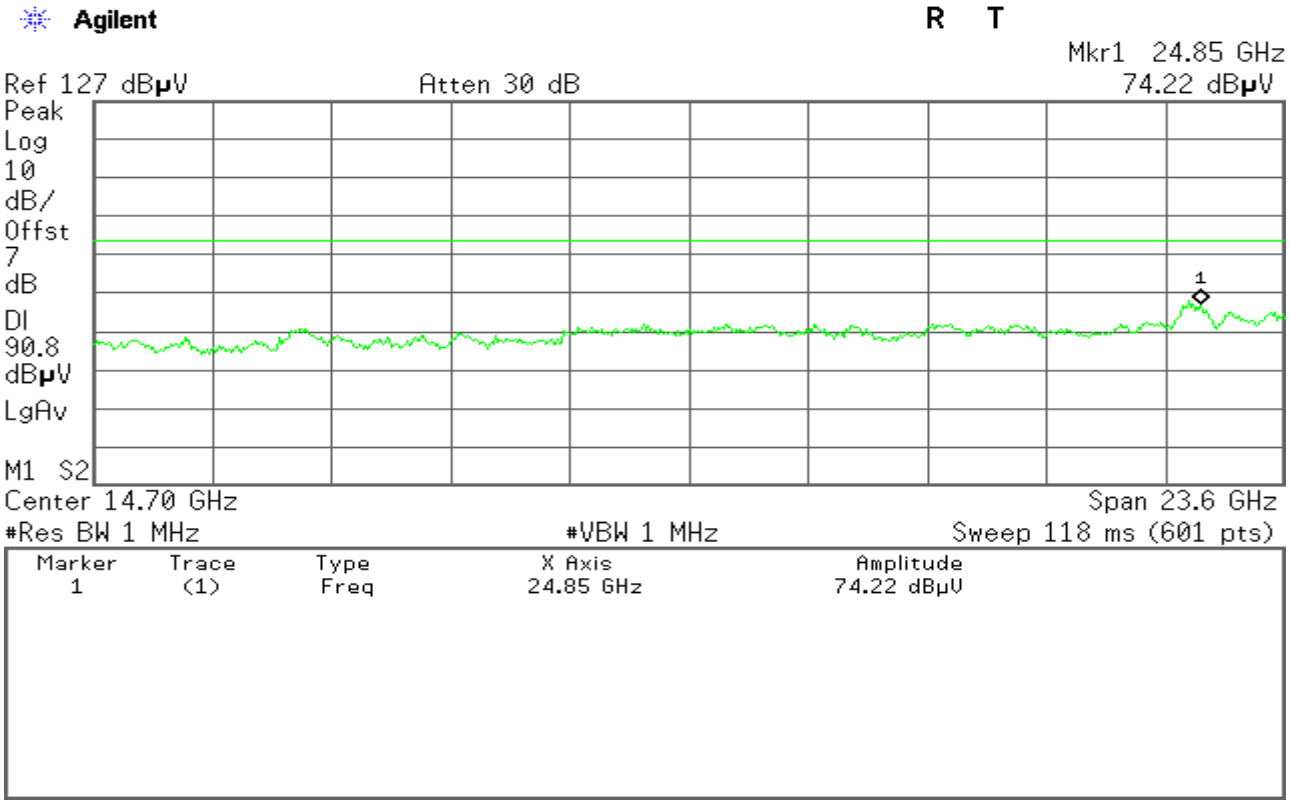
3M

CH Low

30MHz ~ 2.9GHz

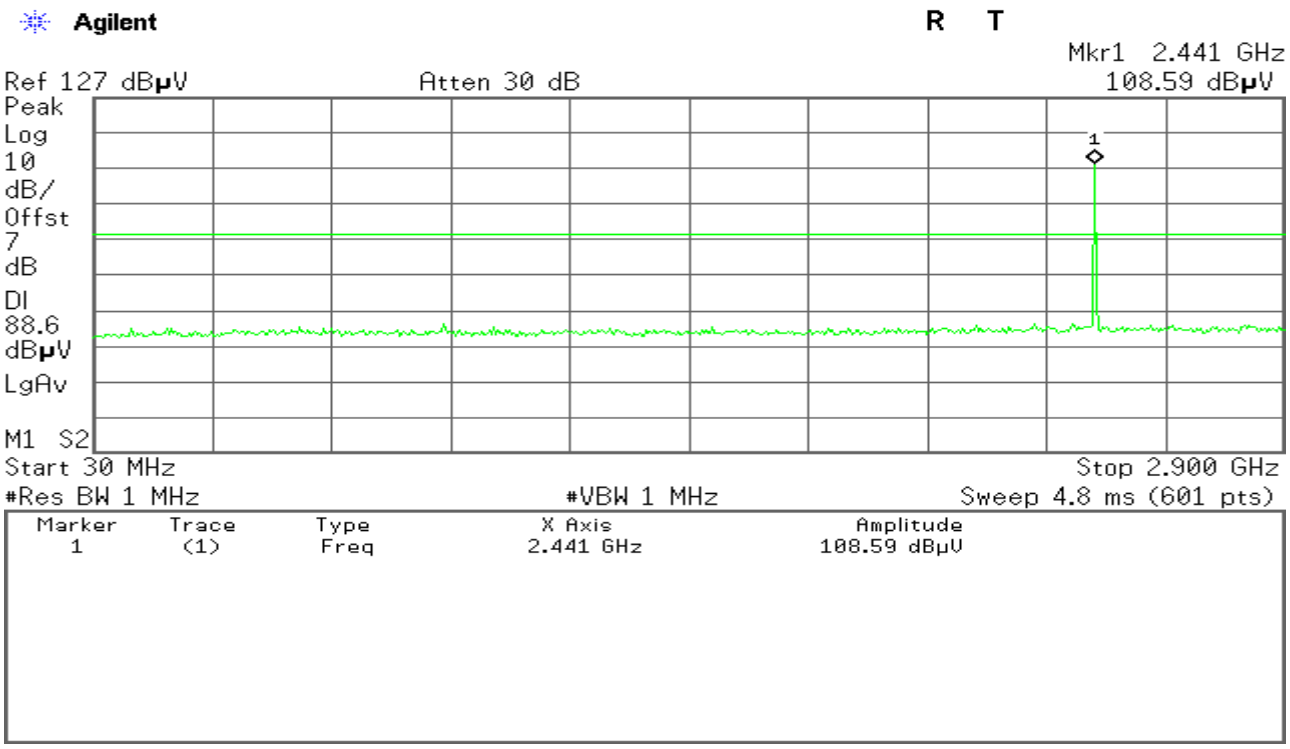


2.9GHz ~ 26.5GHz

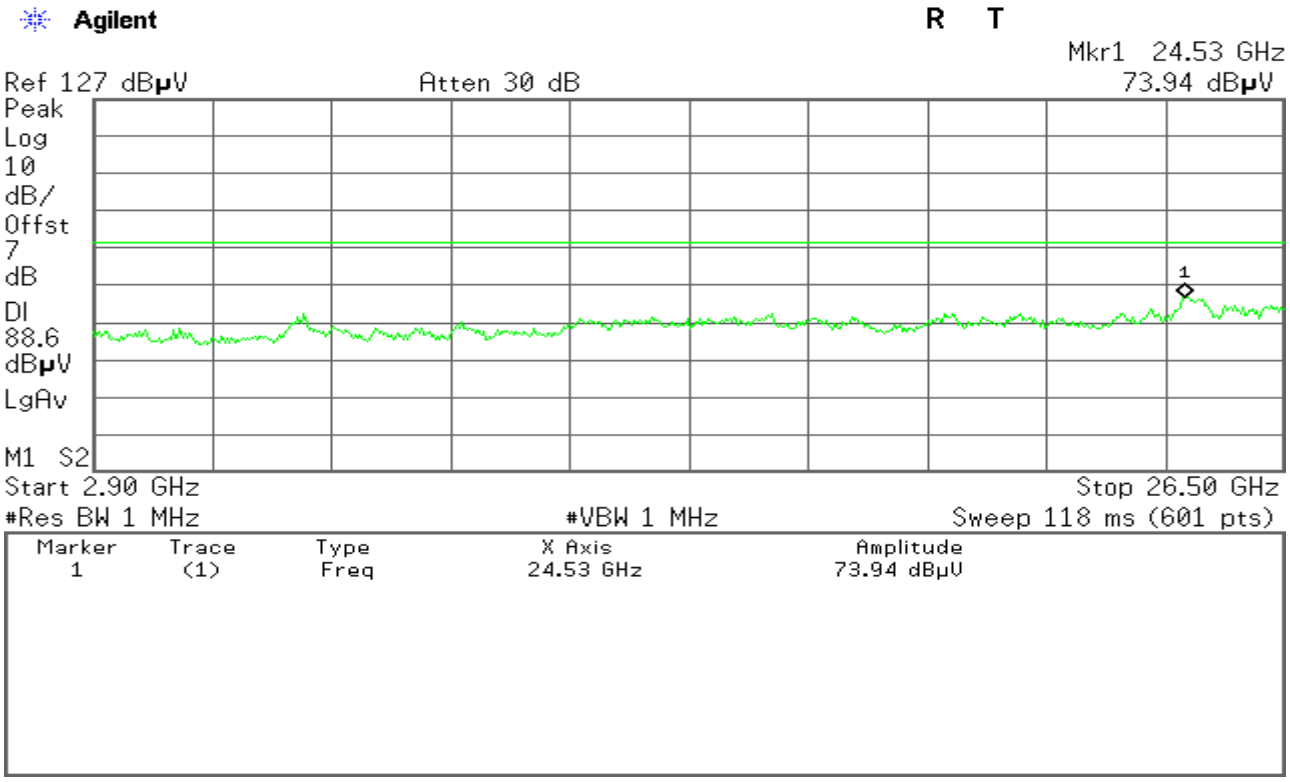


CH Mid

30MHz ~ 2.9GHz

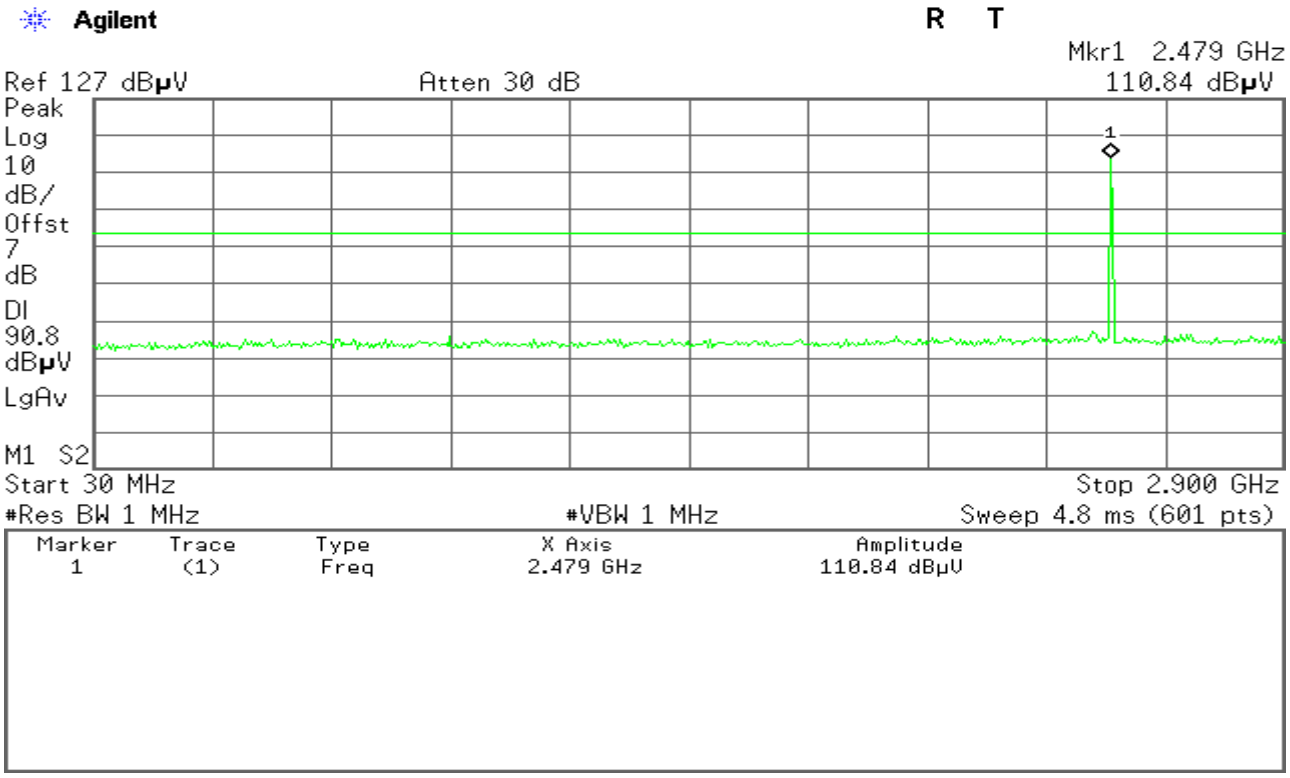


2.9GHz ~ 26.5GHz

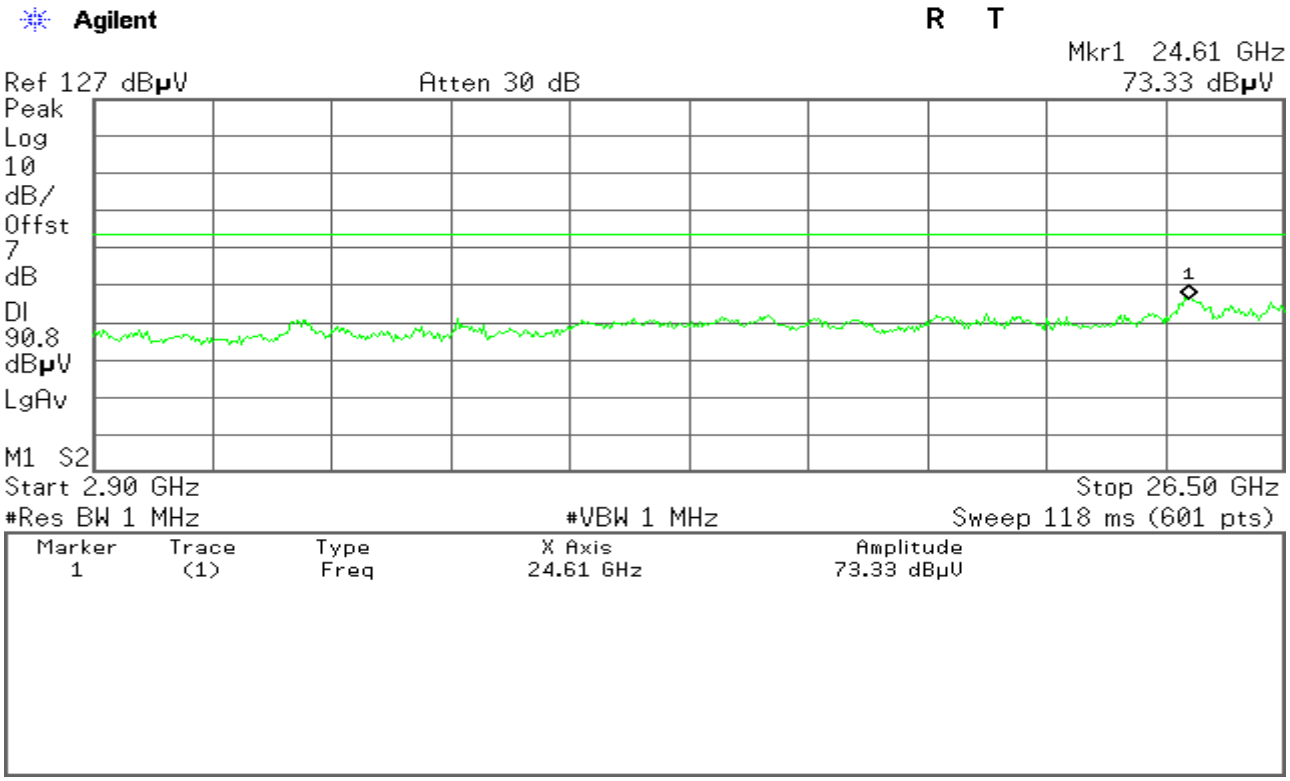


CH High

30MHz ~ 2.9GHz



2.9GHz ~ 26.5GHz



6.10 RADIATED EMISSIONS

LIMIT

1. Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (mV/m)	Measurement Distance (m)
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

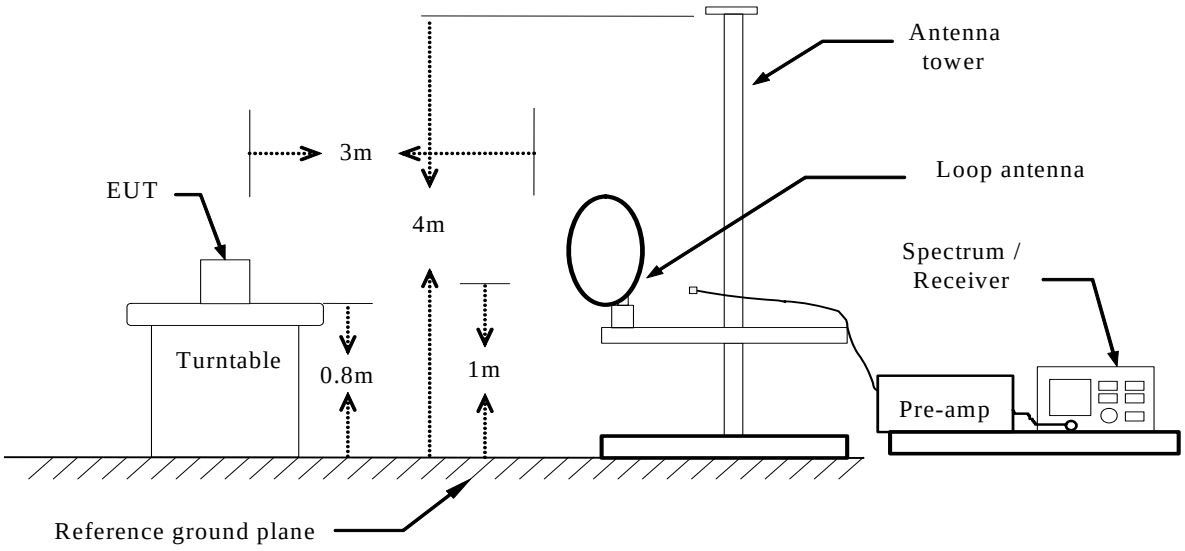
Remark: *Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.*

2. In the above emission table, the tighter limit applies at the band edges.

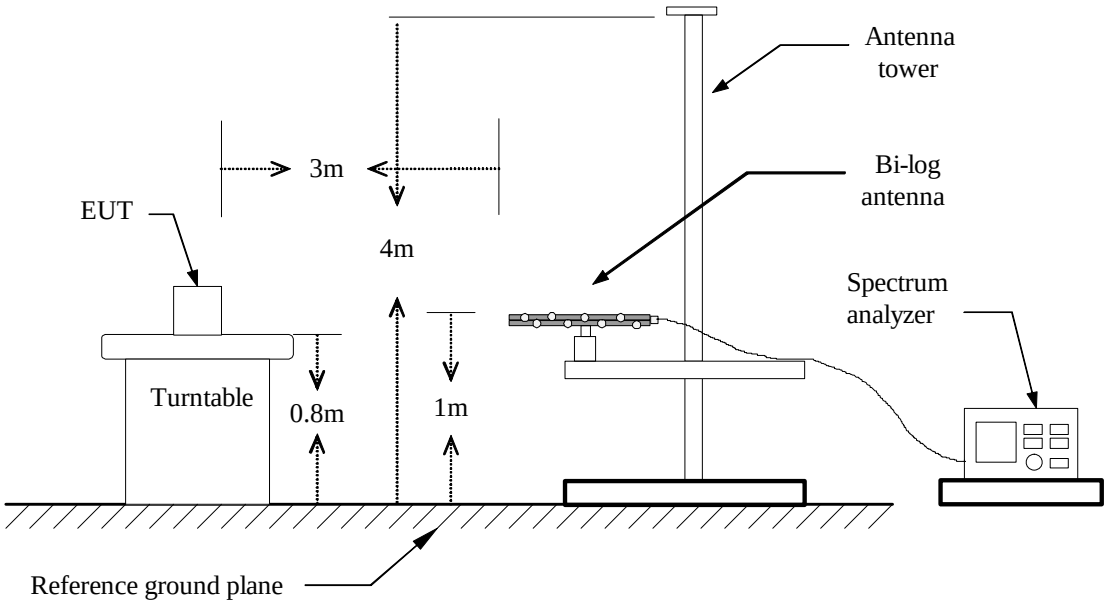
Frequency (Hz)	Field Strength (μV/m at 3-meter)	Field Strength (dBμV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Test Configuration

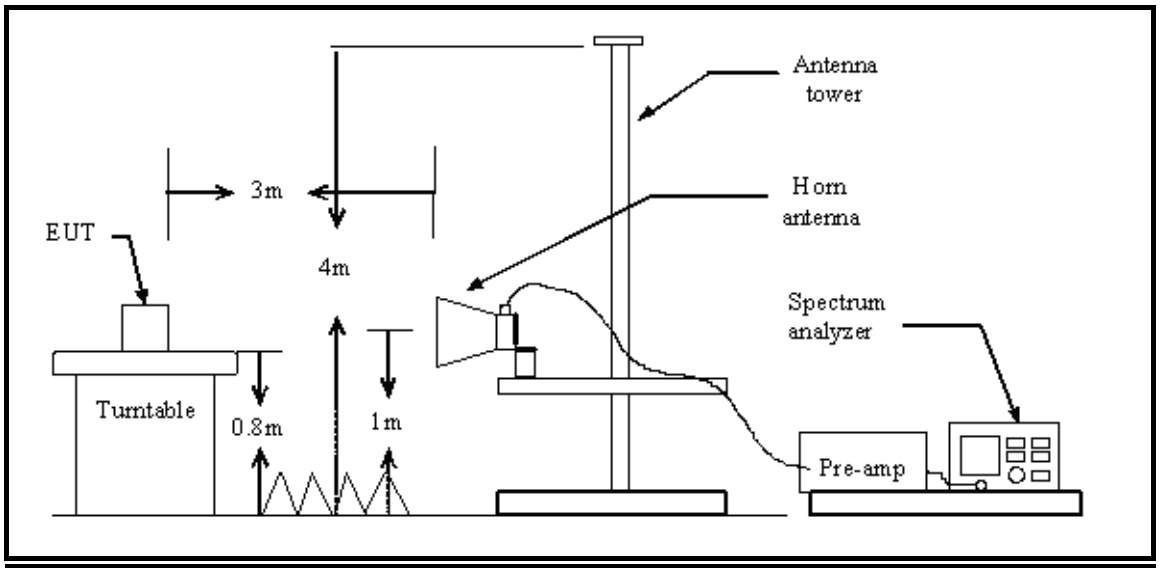
Below 30MHz



Below 1 GHz



Above 1 GHz



TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:

   Below 1GHz:

   RBW=100kHz / VBW=300kHz / Sweep=AUTO

   Above 1GHz:

   (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

   (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
7. Repeat above procedures until the measurements for all frequencies are complete.

TEST RESULTS

Below 1 GHz

Operation Mode:	Normal Link（with WIFI On）	Test Date:	August 27,2012
Temperature:	24°C	Tested by:	Sean Yu
Humidity:	52 % RH	Polarity:	Ver. / Hor.

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)
40.46	V	Peak	34.66	-8.2	26.46	40.0	-13.54
72.29	V	Peak	39.13	-13.7	25.43	40.0	-14.57
132.00	V	Peak	30.29	-7.03	23.26	43.5	-20.24
265.59	V	Peak	30.16	-7.19	22.97	46.0	-23.03
667.23	V	Peak	25.49	2.18	27.67	46.0	-18.33
731.16	V	Peak	25.26	2.95	28.21	46.0	-17.79
71.19	H	Peak	31.28	-13.67	17.61	43.5	-25.89
136.29	H	Peak	25.19	-7.13	18.06	43.5	-25.44
221.19	H	Peak	29.49	-8.73	20.76	46.0	-25.24
825.24	H	Peak	25.29	4.12	29.41	46.0	-16.59
934.13	H	Peak	24.19	6.42	30.61	46.0	-15.39
980.16	H	Peak	24.75	6.98	31.73	54.0	-22.27

Notes:

1. Measuring frequencies from 9 KHz to the 1GHz, No emission found between lowest internal used/generated frequency to 30 MHz.

2. Radiated emissions measured in frequency range from 9 KHz to 1000MHz were made with an instrument using Peak detector mode.

3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4. The IF bandwidth of SPA between 30MHz to 1GHz was 100kHz.

Above 1 GHz

1M

Operation Mode:	TX/ CH Low（with WIFI On）	Test Date:	August 27,2012
Temperature:	24°C	Tested by:	Sean Yu
Humidity:	52 % RH	Polarity:	Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
4804.65	V	45.46	32.78	10.85	56.31	43.63	74	54	-10.37	average
7204.97	V	42.46	26.26	18.37	60.83	44.63	74	54	-9.37	average
4804.29	H	46.28	33.79	10.85	57.13	44.64	74	54	-9.36	average
7205.19	H	41.19	26.19	18.37	59.56	44.56	74	54	-9.44	average

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
3. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.*
4. *Spectrum setting:*
   a. *Peak Setting 1GHz to 10th harmonics of fundamental, RBW = 1MHz, VBW = 1MHz, Sweep time = Auto.*
   b. *AV Setting 1GH z to 10th harmonics of fundamental, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.*

Operation Mode:	TX/ CH Mid（with WIFI On）	**Test Date:**	August 27,2012
Temperature:	24°C	**Tested by:**	Sean Yu
Humidity:	52 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
4885.46	V	43.49	25.16	11.26	54.75	36.42	74	54	-17.58	average
7235.93	V	42.49	24.19	19.28	61.77	43.47	74	54	-10.53	average
4885.46	H	44.49	26.49	11.26	55.75	37.75	74	54	-16.25	average
7236.26	H	43.87	25.28	19.28	63.15	44.56	74	54	-9.44	average

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
3. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.*
4. *Spectrum setting:*
   a. *Peak Setting 1GHz to 10th harmonics of fundamental, RBW = 1MHz, VBW = 1MHz, Sweep time = Auto.*
   b. *AV Setting 1GH z to 10th harmonics of fundamental, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.*

Operation Mode:	TX/ CH High（with WIFI On）	**Test Date:**	August 27,2012
Temperature:	24°C	**Tested by:**	Sean Yu
Humidity:	52 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
4958.01	V	44.45	30.52	11.32	55.77	41.84	74	54	-12.16	average
7325.25	V	42.26	24.85	19.56	61.82	44.41	74	54	-9.59	average
4958.45	H	46.88	31.46	11.32	58.2	42.78	74	54	-11.22	average
7326.33	H	41.79	26.59	19.56	61.35	46.15	74	54	-7.85	average

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
3. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.*
4. *Spectrum setting:*
   a. *Peak Setting 1GHz to 10th harmonics of fundamental, RBW = 1MHz, VBW = 1MHz, Sweep time = Auto.*
   b. *AV Setting 1GH z to 10th harmonics of fundamental, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.*

3M

Operation Mode:	TX/ CH Low（with WIFI On）	**Test Date:**	August 27,2012
Temperature:	24°C	**Tested by:**	Sean Yu
Humidity:	52 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
4805.46	V	42.14	27.26	10.85	52.99	38.11	74	54	-15.89	average
7205.75	V	41.56	26.16	18.37	59.93	44.53	74	54	-9.47	average
4804.59	H	43.69	27.16	10.85	54.54	38.01	74	54	-15.99	average
7206.16	H	42.13	26.32	18.37	60.50	44.69	74	54	-9.31	average

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
3. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.*
4. *Spectrum setting:*
   a. *Peak Setting 1GHz to 10th harmonics of fundamental, RBW = 1MHz, VBW = 1MHz, Sweep time = Auto.*
   b. *AV Setting 1GH z to 10th harmonics of fundamental, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.*

Operation Mode:	TX/ CH Mid（with WIFI On）	**Test Date:**	August 27,2012
Temperature:	24°C	**Tested by:**	Sean Yu
Humidity:	52 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
4886.49	V	43.69	26.25	11.26	54.95	37.51	74	54	-16.49	average
7325.78	V	41.56	25.25	19.28	60.84	44.53	74	54	-9.47	average
4885.59	H	44.46	27.44	11.26	55.72	38.7	74	54	-15.3	average
7326.59	H	41.29	23.65	19.28	60.57	42.93	74	54	-11.07	average

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
3. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.*
4. *Spectrum setting:*
   a. *Peak Setting 1GHz to 10th harmonics of fundamental, RBW = 1MHz, VBW = 1MHz, Sweep time = Auto.*
   b. *AV Setting 1GH z to 10th harmonics of fundamental, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.*

Operation Mode:	TX/ CH High（with WIFI On）	**Test Date:**	August 27,2012
Temperature:	24°C	**Tested by:**	Sean Yu
Humidity:	52 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
4958.77	V	43.58	28.26	11.32	54.9	39.58	74	54	-14.42	average
7324.23	V	39.58	25.46	19.56	59.14	45.02	74	54	-8.98	average
4959.26	H	44.02	29.61	11.32	55.34	40.93	74	54	-13.07	average
7325.62	H	40.65	25.01	19.56	60.21	44.57	74	54	-9.43	average

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
3. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.*
4. *Spectrum setting:*
   a. *Peak Setting 1GHz to 10th harmonics of fundamental, RBW = 1MHz, VBW = 1MHz, Sweep time = Auto.*
   b. *AV Setting 1GH z to 10th harmonics of fundamental, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.*

6.11 POWERLINE CONDUCTED EMISSIONS

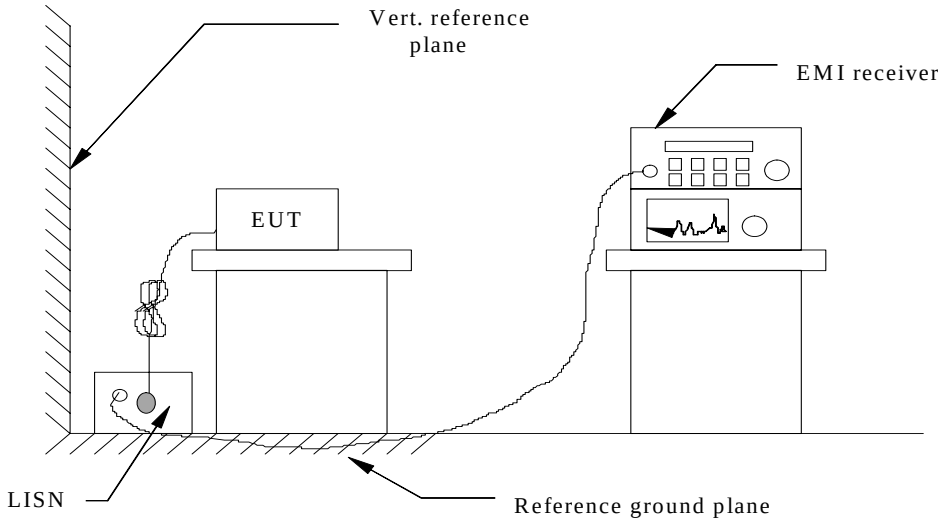
LIMIT

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

Test Configuration



See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

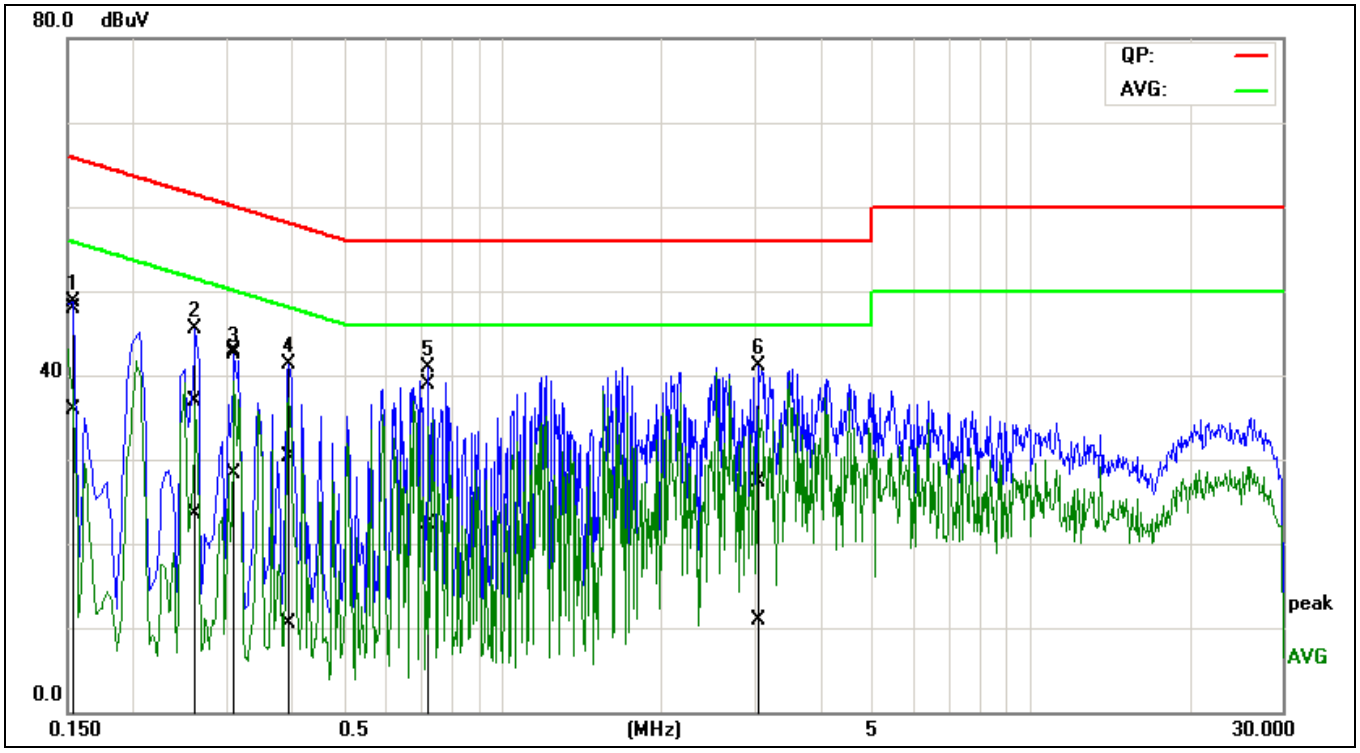
TEST RESULTS

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

Test Data

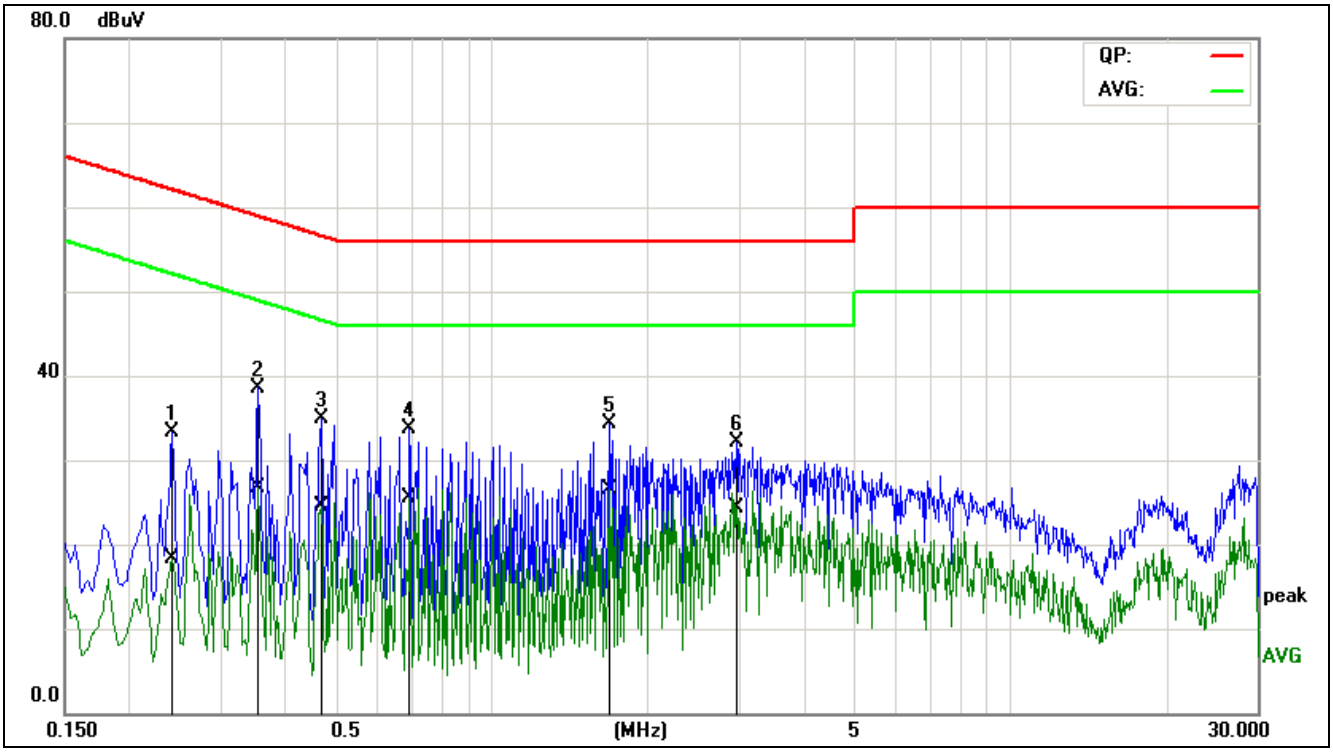
Model: M3	**Test Mode:** Normal Link（with WIFI On）
Temperature: 23°C	**Humidity:** 51% RH
Tested by: Sean Yu	**Test Results:** Pass

L1



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.1511	37.75	25.58	10.25	48.00	35.83	65.94	55.94	-17.94	-20.11	Pass
2	0.2640	26.58	13.18	10.24	36.82	23.42	61.30	51.30	-24.48	-27.88	Pass
3*	0.3122	32.56	18.03	10.29	42.85	28.32	59.91	49.91	-17.06	-21.59	Pass
4	0.3925	20.10	0.22	10.30	30.40	10.52	58.01	48.01	-27.61	-37.49	Pass
5	0.7247	28.61	12.01	10.29	38.90	22.30	56.00	46.00	-17.10	-23.70	Pass
6	3.0059	17.09	0.67	10.29	27.38	10.96	56.00	46.00	-28.62	-35.04	Pass

L2



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.2420	22.91	7.97	10.38	33.29	18.35	62.03	52.03	-28.74	-33.68	Pass
2	0.3540	28.04	16.05	10.56	38.60	26.61	58.87	48.87	-20.27	-22.26	Pass
3	0.4700	24.09	13.77	10.73	34.82	24.50	56.51	46.51	-21.69	-22.01	Pass
4	0.6940	22.95	14.64	10.81	33.76	25.45	56.00	46.00	-22.24	-20.55	Pass
5*	1.6860	23.43	15.50	10.91	34.34	26.41	56.00	46.00	-21.66	-19.59	Pass
6	2.9740	21.06	13.45	10.95	32.01	24.40	56.00	46.00	-23.99	-21.60	Pass

Remark:

1.The measuring frequencies range between 0.15 MHz and 30 MHz.

2.The emissions measured in the frequency range between 0.15 MHz and 30MHz were made with an instrument using Quasi-peak detector and Average detector.

3."---" denotes the emission level was or more than 2dB below the Average limit, and no re-check was made.

4.The IF bandwidth of SPA between 0.15MHz and 30MHz was 10KHz. The IF bandwidth of Test Receiver between 0.15MHz and 30MHz was 9kHz.

6.12 Antenna requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply
with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can
be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This
requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

Note: This PIFA antenna is integral antenna which passes antenna requirement.

The equipment meets the requirements yes

APPENDIX I RADIO FREQUENCY EXPOSURE

LIMIT

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See §15.247(b)(4) and §1.1307(b)(1) of this chapter.

EUT Specification

EUT	Mobile Phone
Frequency band (Operating)	☐ WLAN: 2.412GHz ~ 2.462GHz ☐ WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz ☐ WLAN: 5.745GHz ~ 5.825GHz ☒ Others: Bluetooth: 2.402GHz ~ 2.480GHz
Device category	☒ Portable (<20cm separation) ☐ Mobile (>20cm separation) ☐ Others _____
Exposure classification	☐ Occupational/Controlled exposure *(S = 5mW/cm^2)* ☐ General Population/Uncontrolled exposure *(S=1mW/cm^2)*
Antenna diversity	☒ Single antenna ☐ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☐ Tx/Rx diversity
Max. output power	5.47dBm (3.523mW)
Antenna gain (Max)	1.22dBi (Numeric gain: 1.324)
Evaluation applied	☐ MPE Evaluation ☒ SAR Evaluation ☐ N/A
Remark: Reference SAR test Report	

TEST RESULTS

Non-compliance

END OF REPORT