

Prüfbericht-Nr.: <i>Test Report No.:</i>	50080308 001	Auftrags-Nr.: <i>Order No.:</i>	154243386	Seite 1 von 62 <i>Page 1 of 62</i>
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	52195766	Auftragsdatum: <i>Order date:</i>	04.25.2017	
Auftraggeber: <i>Client:</i>	Lightcomm Technology Co.,Ltd. RM 1808 18/F, FO TAN INDUSTRIAL CENTRE, NOS. 26-28 AU PUI WAN STREET, FO TAN SHATIN NEW TERRITORIES, HONGKONG			
Prüfgegenstand: <i>Test item:</i>	MID			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	MID8006-L, DL8006, DL80XXXXXX (x=0-9, A-Z, a-z, - or blank, for market purpose only, all models are identical except the model number, brand or color) FCC ID: XMF-MID8006L			
Auftrags-Inhalt: <i>Order content:</i>	Complete test			
Prüfgrundlage: <i>Test specification:</i>	FCC CFR47 Part 15, Subpart C Section 15.247 ANSI C63.10: 2013			
Wareneingangsdatum: <i>Date of receipt:</i>	04.01.2017			
Prüfmuster-Nr.: <i>Test sample No.:</i>	A000567056-003			
Prüfzeitraum: <i>Testing period:</i>	04.01.2017 to 07.04.2017			
Ort der Prüfung: <i>Place of testing:</i>	MRT Technology(Suzhou) Co., Ltd.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shanghai) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von / tested by:		kontrolliert von / reviewed by:		
07.06.2017 Elliot Zhang / Assistant Project Manager		07.06.2017 Shi Li / Department Manager		
Datum <i>Date</i>	Name / Stellung <i>Name / Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name / Stellung <i>Name / Position</i>
				
Sonstiges / Other				
Only evaluate the Bluetooth v3.0 function in this test report. FCC ID: XMF-MID8006L				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

TEST SUMMARY

5.1.1 ANTENNA REQUIREMENT*RESULT: Pass***5.1.2 PEAK OUTPUT POWER***RESULT: Pass***5.1.3 20dB BANDWIDTH***RESULT: Pass***5.1.4 CONDUCTED SPURIOUS EMISSIONS***RESULT: Pass***5.1.5 FREQUENCY SEPARATION***RESULT: Pass***5.1.6 NUMBER OF HOPPING FREQUENCY***RESULT: Pass***5.1.7 TIME OF OCCUPANCY***RESULT: Pass***5.2.1 CONDUCTED EMISSION***RESULT: Pass***5.3.1 RADIATED SPURIOUS EMISSION***RESULT: Pass*

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1. General Remarks

1.1 Complementary Materials

Null.

2. Test Sites

2.1 Test Facilities

MRT Technology (Suzhou) Co., Ltd.

D8 Building, Youxin Industrial Park, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China

The used test equipment is in accordance with CISPR 16 for measurement of radio interference.

The Federal Communications Commission has reviewed the technical characteristics of the radiated and conducted emission facility, and has found these test facilities to be in compliance with the requirements of section 2.948 of the FCC rules. The description of the test facility is listed under FCC registration number 809388.

The Industry Canada has reviewed the technical characteristics of the radiated and conducted emission facility, and has found these test facilities to be in compliance. The description of the test facility is listed under chambers filing number 11384A.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Conducted Emissions

Instrument	Manufacturer	Type No.	Serial No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2017/06/20
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2018/06/20
Two-Line V-Network	R&S	ENV216	MRTSUE06002	1 year	2017/06/20
Two-Line V-Network	R&S	ENV216	MRTSUE06002	1 year	2018/06/20
Two-Line V-Network	R&S	ENV216	MRTSUE06003	1 year	2017/06/20
Two-Line V-Network	R&S	ENV216	MRTSUE06003	1 year	2018/06/20
Temperature/ Meter Humidity	Ouleinuo	N/A	MRTSUE06114	1 year	2017/12/20

Radiated Emission

Spectrum Analyzer	Agilent	E4447A	MRTSUE06028	1 year	2017/12/08
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2017/11/03
Preamplifier	Agilent	83017A	MRTSUE06020	1 year	2018/03/29
Preamplifier	Schwarzbeck	BBV9721	MRTSUE06121	1 year	2018/04/16
Loop Antenna	Schwarzbeck	FMZB1519	MRTSUE06025	1 year	2017/11/07
TRILOG Antenna	Schwarzbeck	VULB9162	MRTSUE06022	1 year	2017/11/07
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	MRTSUE06023	1 year	2017/11/07
Broadband Horn Antenna	Schwarzbeck	BBHA9170	MRTSUE06024	1 year	2018/01/05
Temperature/Humidity Meter	Ouleinuo	N/A	MRTSUE06115	1 year	2017/11/20

Conducted Test Equipment

Spectrum Analyzer	Agilent	N9020A	MRTSUE06106	1 year	2018/05/08
USB Wideband Power Sensor	Boonton	55006	MRTSUE06109	1 year	2018/05/08
Temperature/Humidity Meter	Ouleinuo	N/A	MRTSUE06114	1 year	2017/11/20

2.3 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

Table 2: Measurement Uncertainty

Measurement Type	Frequency	Uncertainty
Antenna Port Conducted Emission	< 1GHz	±0.39dB
	> 1GHz	±0.68dB
Radiated Emission	30MHz - 1GHz	±4.18dB
	> 1GHz	±4.76dB

3. General Product Information

3.1 Product Function and Intended Use

The EUT (Equipment Under Test) is a 'Tablet PC' device. It supports Bluetooth 4.0 (Dual mode) & 2.4GHz Wi-Fi 802.11 b/g/n(HT20)/n(HT40) & 5GHz Wi-Fi 802.11 a wireless technology.

The 2.4GHz WIFI, 5GHz WIFI and Bluetooth can TX simultaneously

For details refer to the User Manual and Circuit Diagram.

3.2 Ratings and System Details

Table 3: Technical Specification of EUT

General Description of EUT	
Product Name:	MID
Brand Name:	digiland
Model No.:	MID8006-L, DL8006, DL80XXXXXX(x=0-9, A-Z, a-z, - or blank, for market purpose only, all models are identical except the model number, brand or color)
Rated Voltage:	DC 3.7V 6000mAh via internal rechargeable Li-Poly battery DC 5.0V 2.5A via AC/DC adapter for charging
Type of Product:	Tablet PC
Bluetooth Classical	
Frequency Range:	2402 ~ 2480MHz
Channel Separation	1MHz
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Antenna Type:	PIFA Antenna
Antenna Gain:	1.28 dBi
Bluetooth Low Energy	
Frequency Range:	2402 ~ 2480MHz
Channel Separation	2MHz
Modulation Type:	GFSK
Antenna Type:	PIFA Antenna
Antenna Gain:	1.28 dBi

3.3 Independent Operation Modes

Test Mode	Data Rate	Channel
TM1	1-DH5	00
TM2	1-DH5	39
TM3	1-DH5	78
TM4	2-DH5	00
TM5	2-DH5	39
TM6	2-DH5	78
TM7	3-DH5	00
TM8	3-DH5	39
TM9	3-DH5	78
TM10	1-DH5	Hopping
TM11	2-DH5	Hopping
TM12	3-DH5	Hopping
TM13	3-DH3	Hopping
TM14	3-DH1	Hopping

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- Application Form
- Circuit Diagram
- ID Label and Location Info
- Photo Document
- Operation Description
- Block Diagram
- PCB Layout
- Model Difference Letter
- Schematics
- User Manual

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.10: 2013.

4.3 Special Accessories and Auxiliary Equipment

Null.

4.4 Countermeasures to achieve EMC Compliance

Null.

5. Test Results

5.1 Conducted Testing at Antenna Port

5.1.1 Antenna Requirement

RESULT:**Pass**

According to the manufacturer declared, the EUT has one internal antenna, the directional gain of antenna is 1.28dBi and the antenna is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Table 4: Antenna Requirement

FCC 15.203 – Antenna Requirement 1		
Requirement:	No antenna other than that furnished by the responsible party shall be used with the device	
Results:	Antenna type:	PIFA antenna
Verdict:	PASS	

FCC 15.204 – Antenna Requirement 2		
Requirement:	An intentional radiator may be operated only with the antenna with which it is authorized. If an antenna is marketed with the intentional radiator, it shall be of a type which is authorized with the intentional radiator.	
Results:	Only one integral antenna can be used	
Verdict:	PASS	

5.1.2 Peak Output Power

RESULT:
Pass

Date of testing : 2017-04-01
 Test standard : FCC Part 15.247(b)(1)
 Test procedure : ANSI C63.10: 2013
 Limit : FCC Part 15.247(b)(1)
 Kind of test site : Shielded room

Test setup

Test Channel : Low/ Middle/ High
 Operation Mode : TM1 to TM9
 Ambient temperature : 25°C
 Relative humidity : 52%
 Atmospheric pressure : 101kPa

Table 5: Peak Output Power, TM1 to TM9

Mode	Antenna Gain [dBi]	CH.	Freq. [MHz]	Maximum Peak Conducted Output Power [dBm]	Peak Conducted Output Power Limit [dBm]
TM1	1.28	00	2402	2.30	30
TM2		39	2441	2.08	30
TM3		78	2480	1.76	30
TM4		00	2402	2.04	30
TM5		39	2441	1.97	30
TM6		78	2480	1.56	30
TM7		00	2402	2.20	30
TM8		39	2441	2.11	30
TM9		78	2480	1.71	30

Note:

EIRP=Peak Conducted Output Power + Antenna Gain

5.1.3 20dB Bandwidth**RESULT:****Pass**

Date of testing : 2017-04-02
Test standard : FCC Part 15.247(a)(1)
Test procedure : ANSI C63.10: 2013
Kind of test site : Shielded room

Test setup

Test Channel : Low/ Middle/ High
Operation Mode : TM1 to TM9
Ambient temperature : 25°C
Relative humidity : 52%
Atmospheric pressure : 101kPa

Table 6: 20dB Bandwidth, TM1 to TM9

Mode	Frequency [MHz]	20dB Bandwidth [kHz]
TM1	2402	924.6
TM2	2441	924.1
TM3	2480	924.0
TM4	2402	1254.0
TM5	2441	1254.0
TM6	2480	1281.0
TM7	2402	1265.0
TM8	2441	1267.0
TM9	2480	1266.0

Note:

For frequency hopping systems operating in the 2400 – 2483.5MHz band, no bandwidth limit is specified. The test data is provide for reference.

And according to FCC, when the occupied bandwidth limit is not stated in the applicable FCC or reference measurement method, the transmitted signal band width shall be reported as the 99% emission bandwidth.

Figure 1: 20dB Bandwidth, TM1

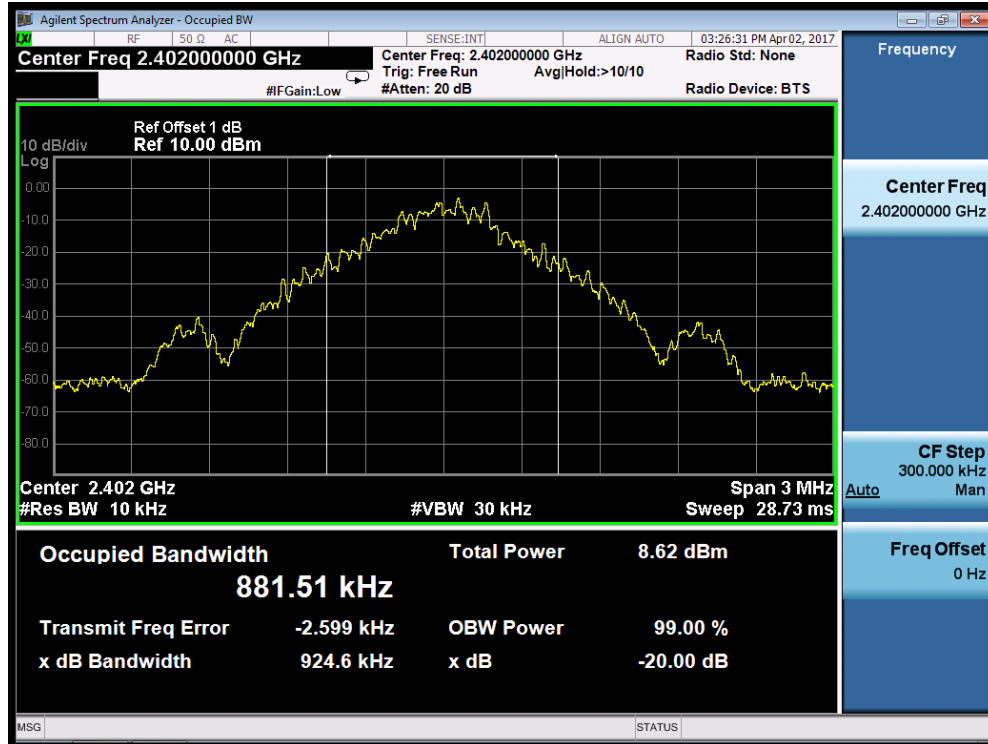


Figure 2: 20dB Bandwidth, TM2

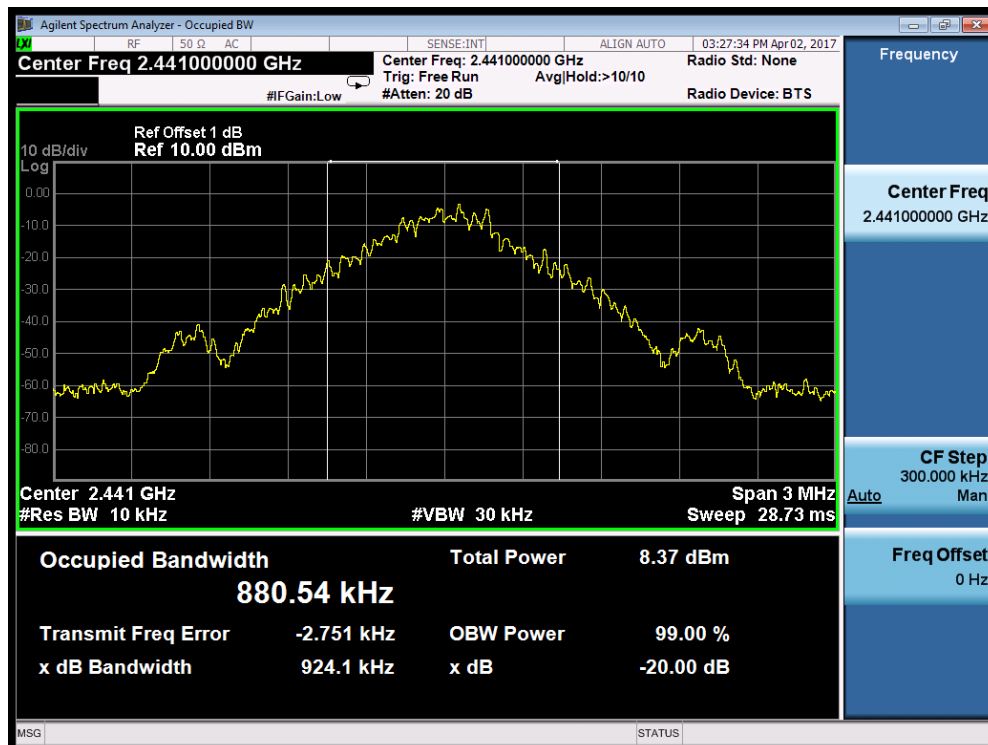


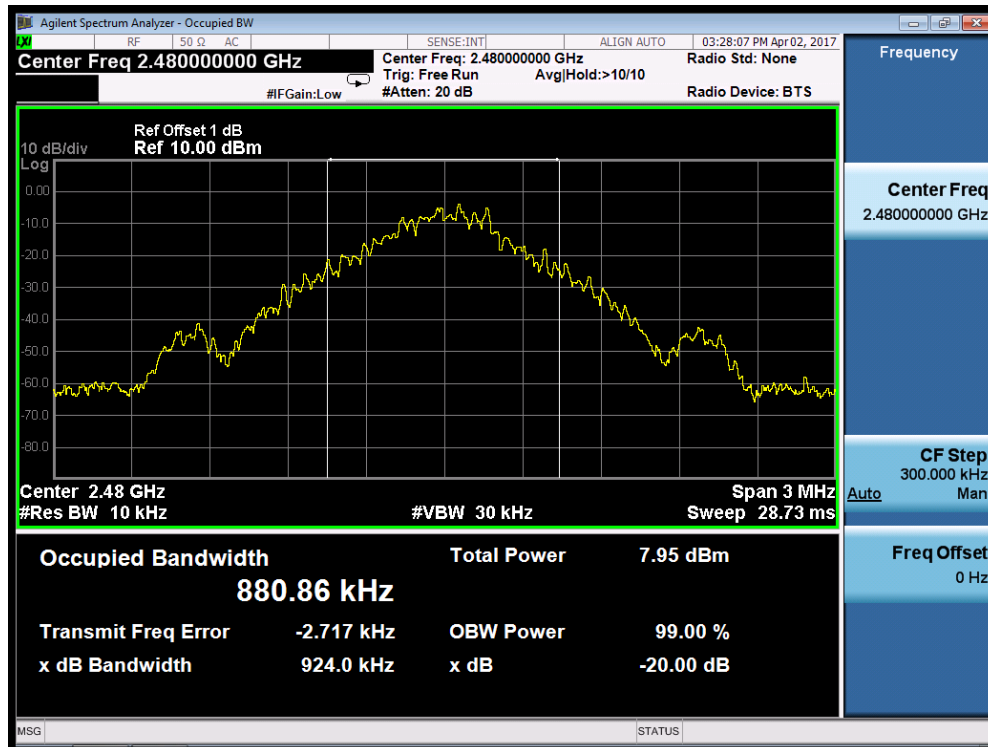
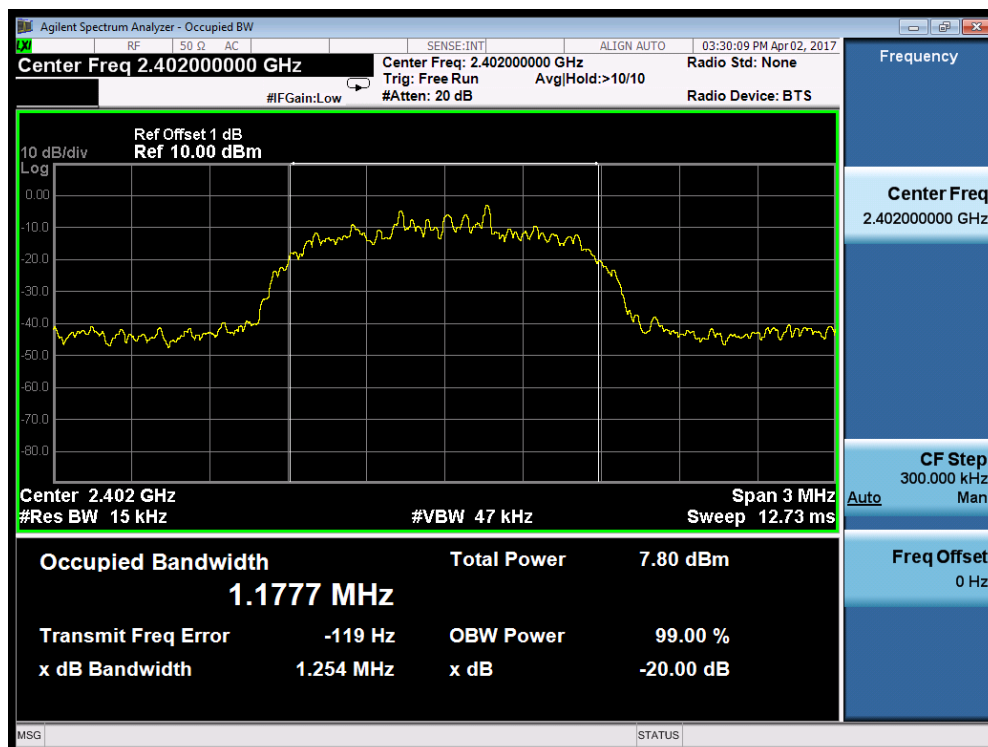
Figure 3: 20dB Bandwidth, TM3

Figure 4: 20dB Bandwidth, TM4


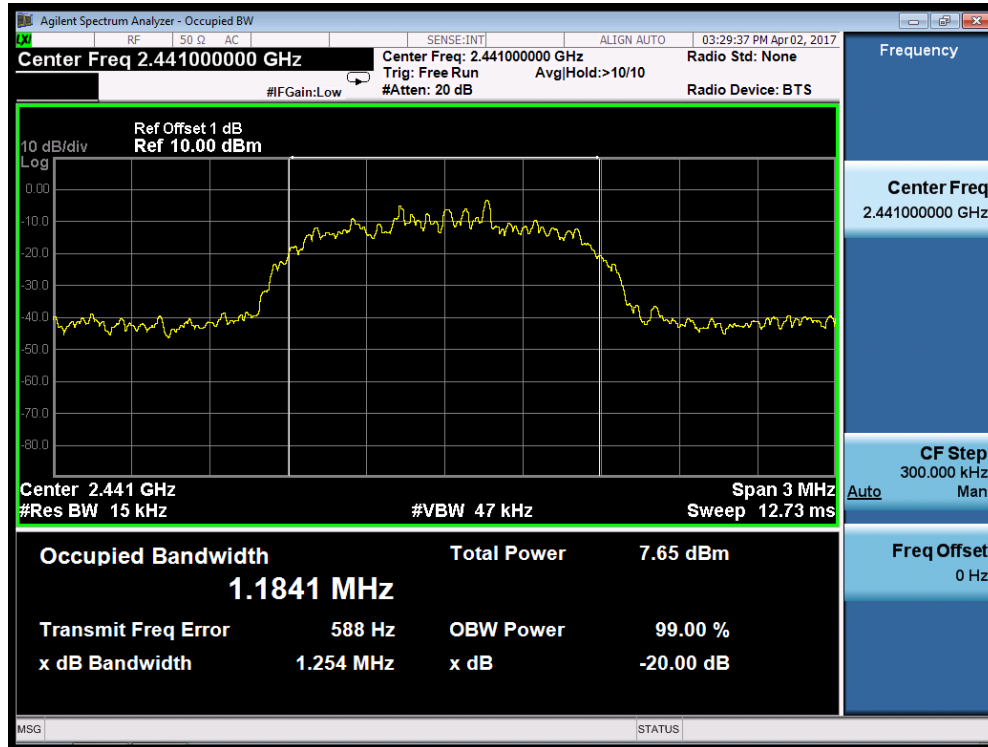
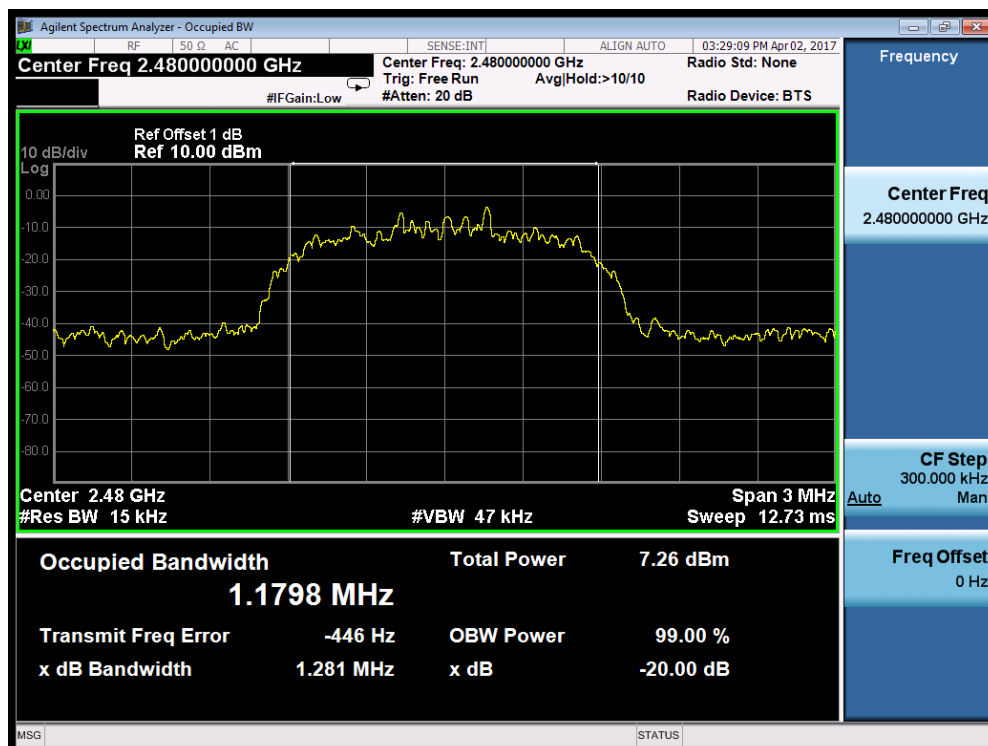
Figure 5: 20dB Bandwidth, TM5

Figure 6: 20dB Bandwidth, TM6


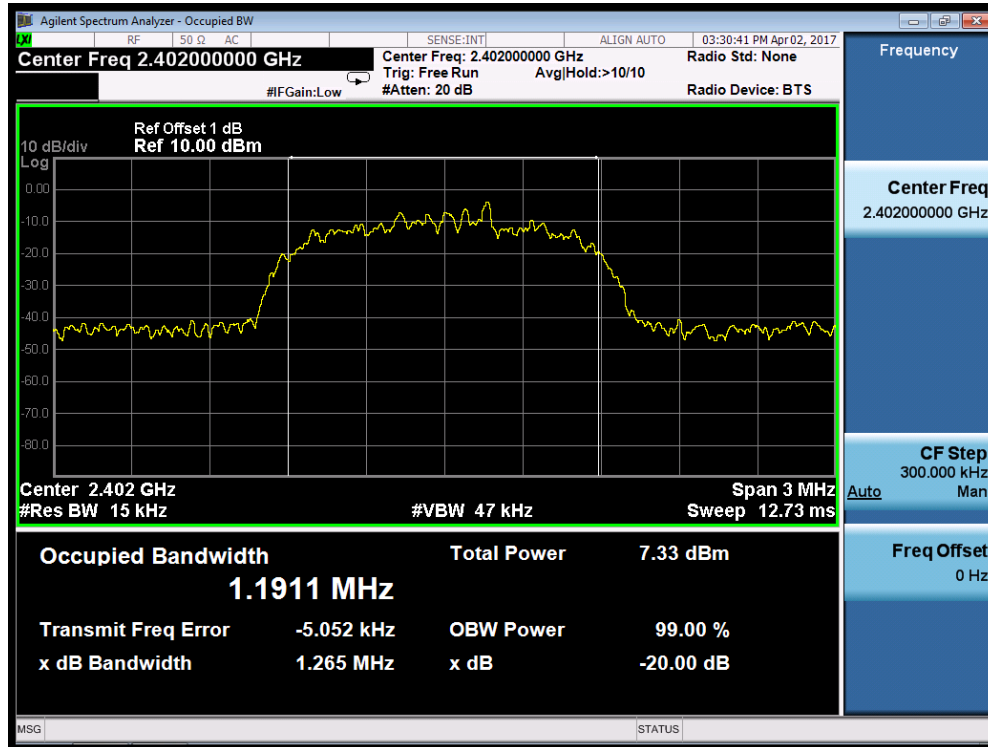
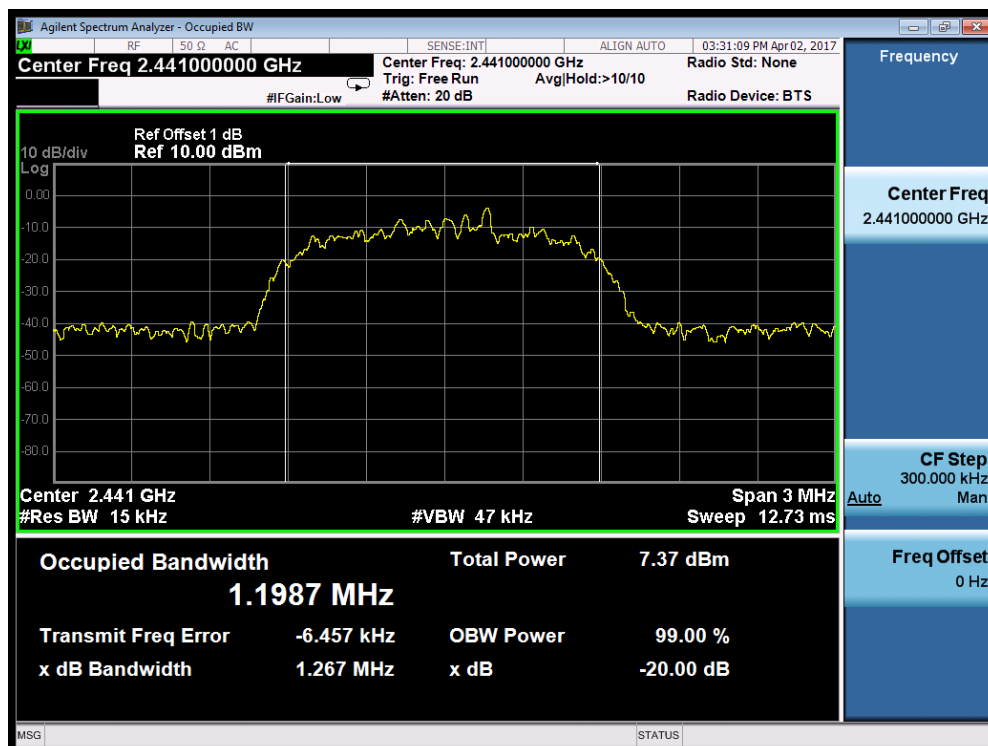
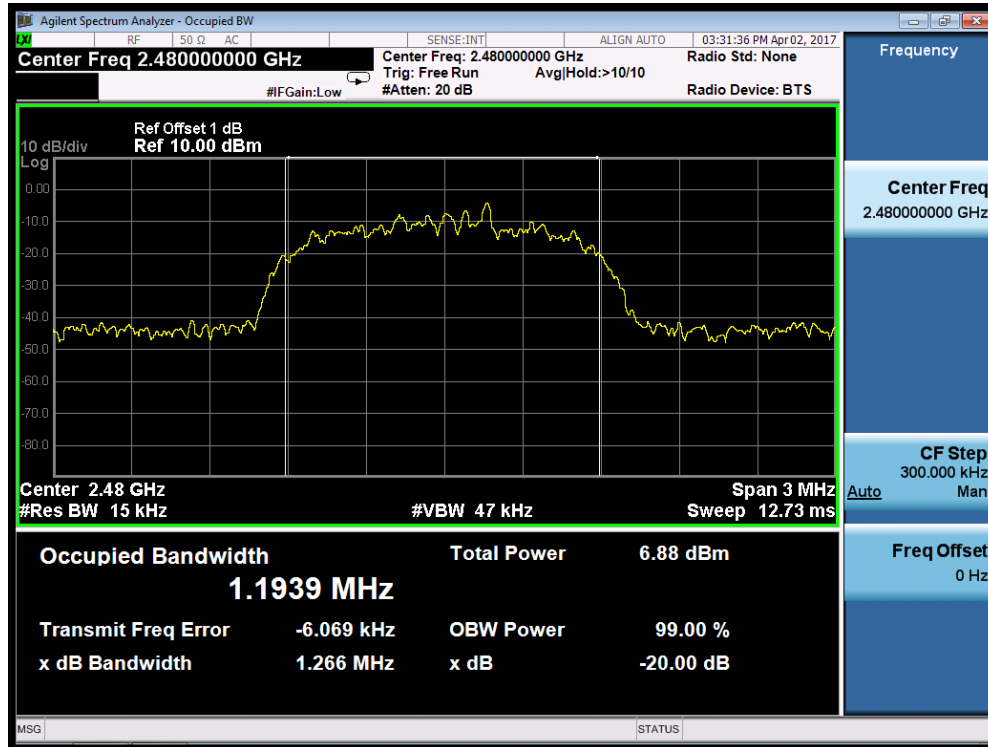
Figure 7: 20dB Bandwidth, TM7

Figure 8: 20dB Bandwidth, TM8


Figure 9: 20dB Bandwidth, TM9



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5.1.4 Conducted Spurious Emissions**RESULT:****Pass**

Date of testing : 2017-04-02
Test standard : FCC Part 15.247(d)
Test procedure : ANSI C63.10: 2013
Limit : FCC Part 15.247(d)
Kind of test site : Shielded room

Test setup

Test Channel : Low/ Middle/ High
Operation Mode : TM1 to TM9
Ambient temperature : 25°C
Relative humidity : 52%
Atmospheric pressure : 101kPa

Figure 10: Conducted Spurious Emission, TM1

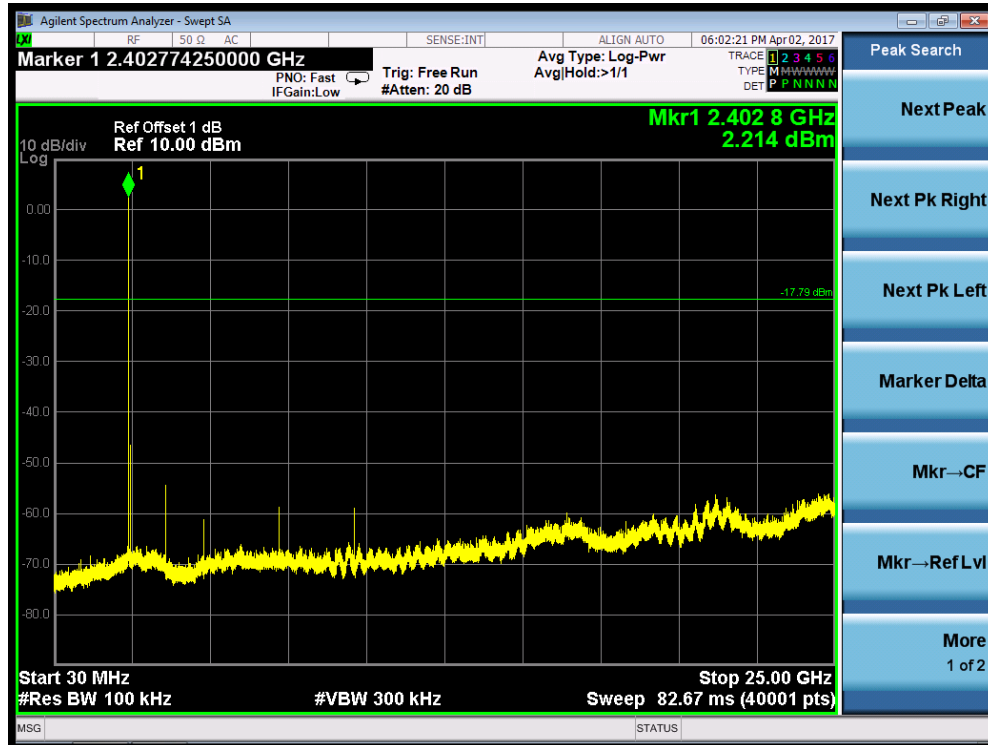


Figure 11: Conducted Spurious Emission, TM2

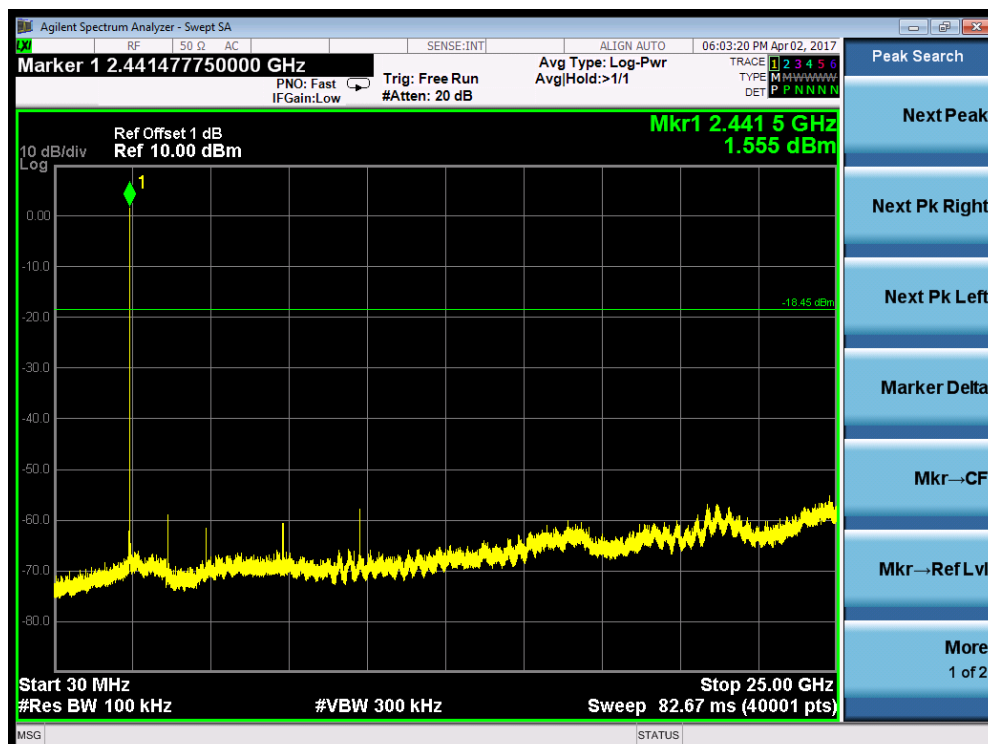


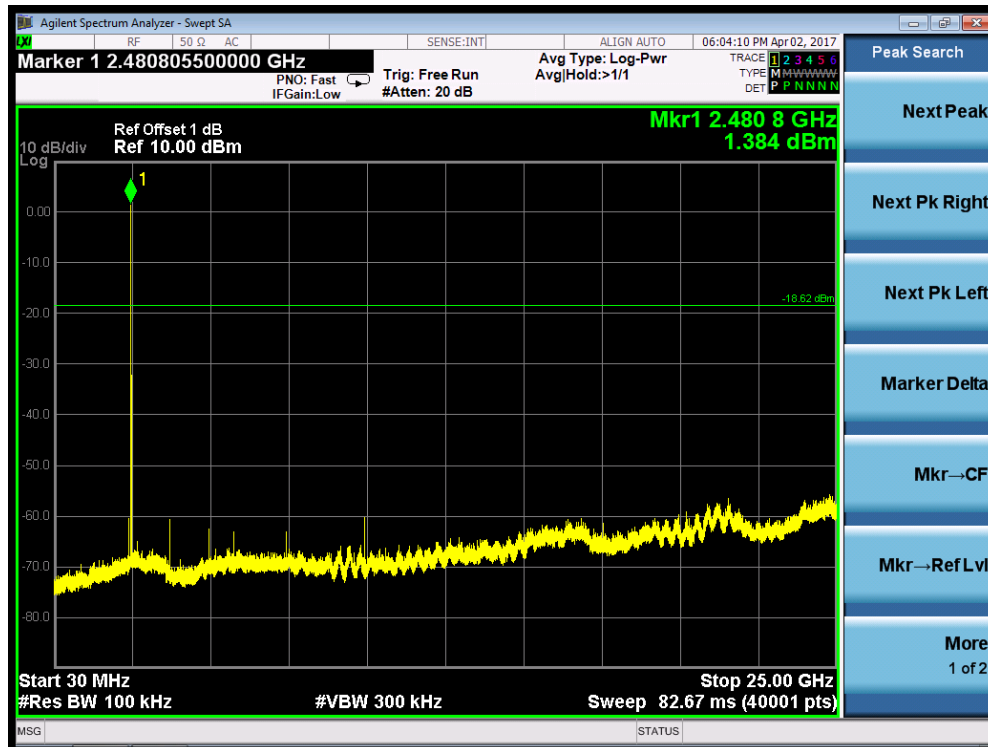
Figure 12: Conducted Spurious Emission, TM3

Figure 13: Conducted Spurious Emission, TM4


Figure 14: Conducted Spurious Emission, TM5

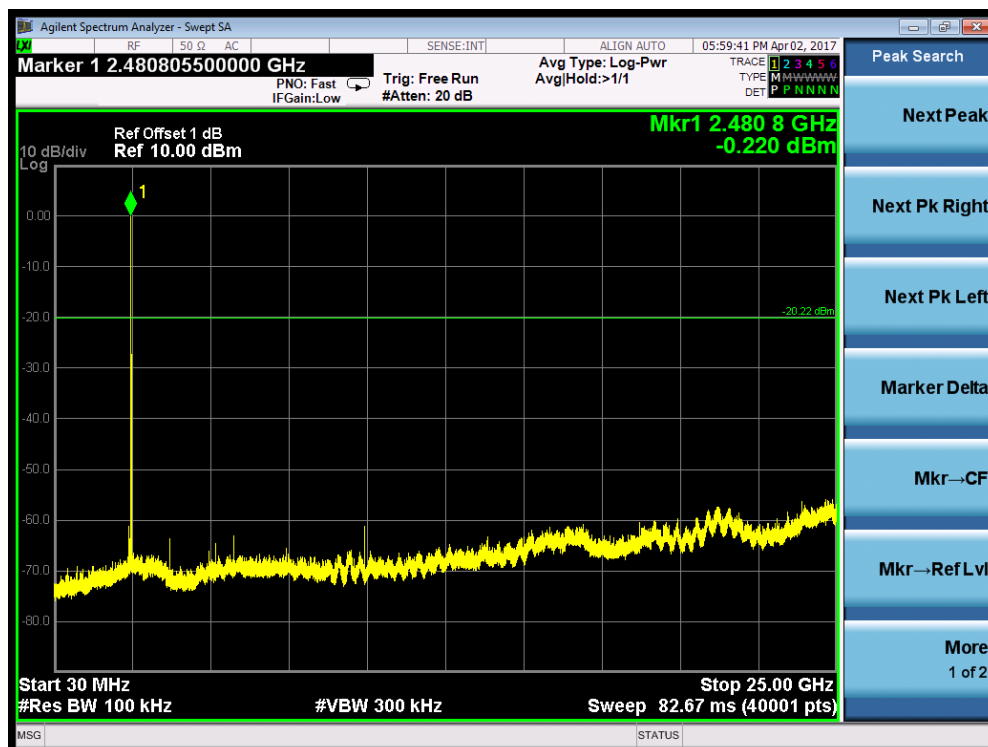
Figure 15: Conducted Spurious Emission, TM6


Figure 16: Conducted Spurious Emission, TM7

Figure 17: Conducted Spurious Emission, TM8


Figure 18: Conducted Spurious Emission, TM9

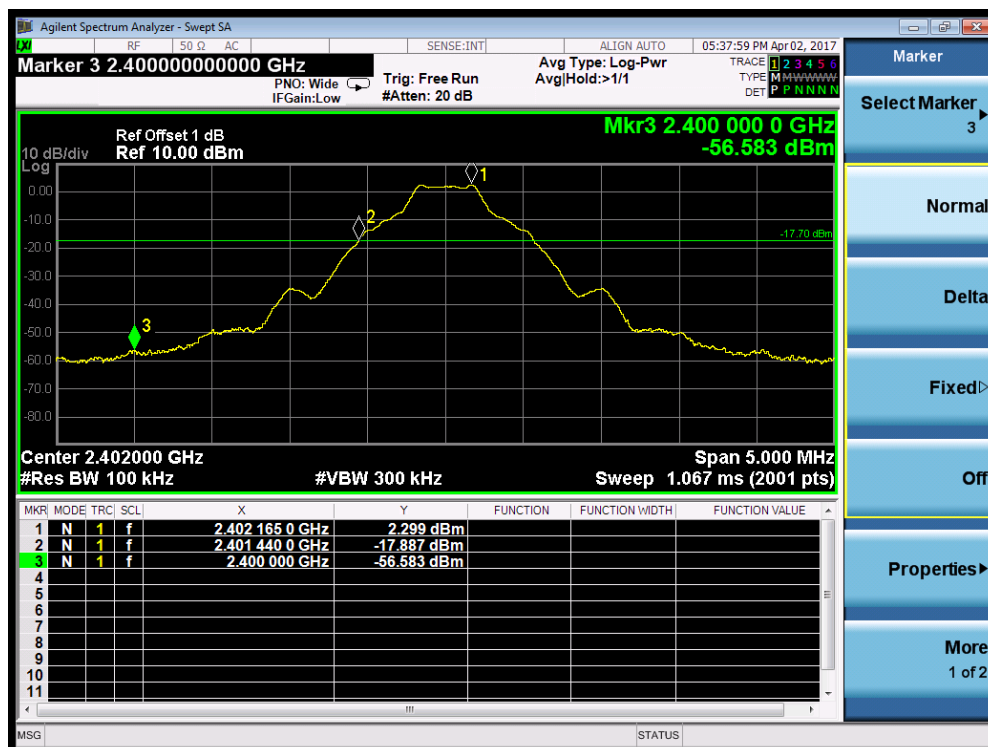
Figure 19: Band Edge, TM1


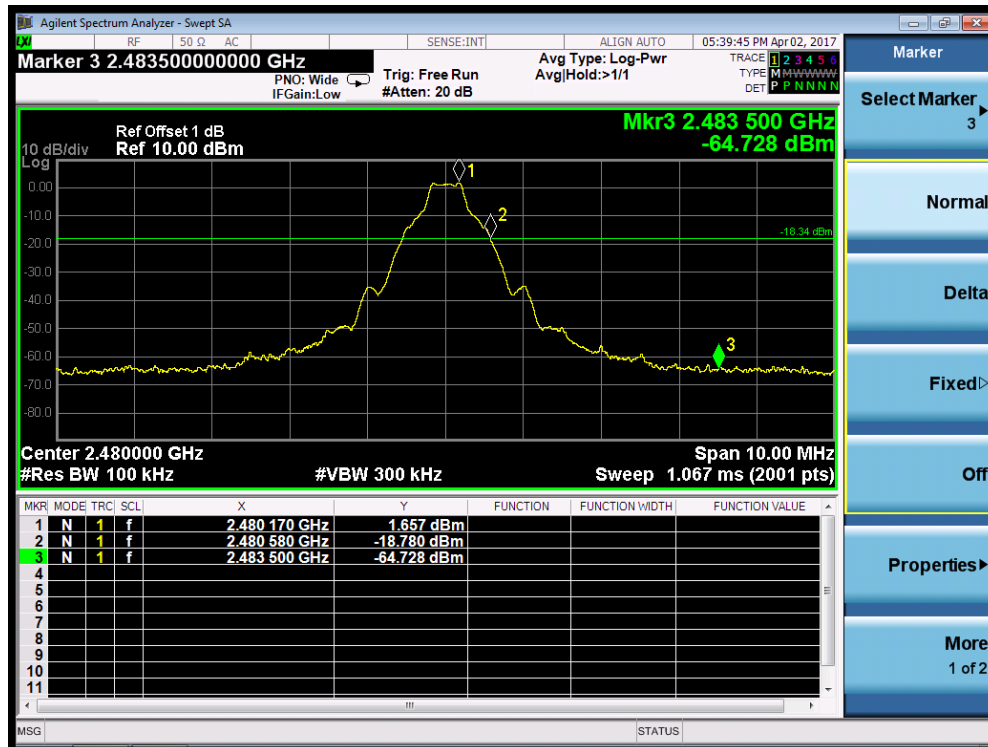
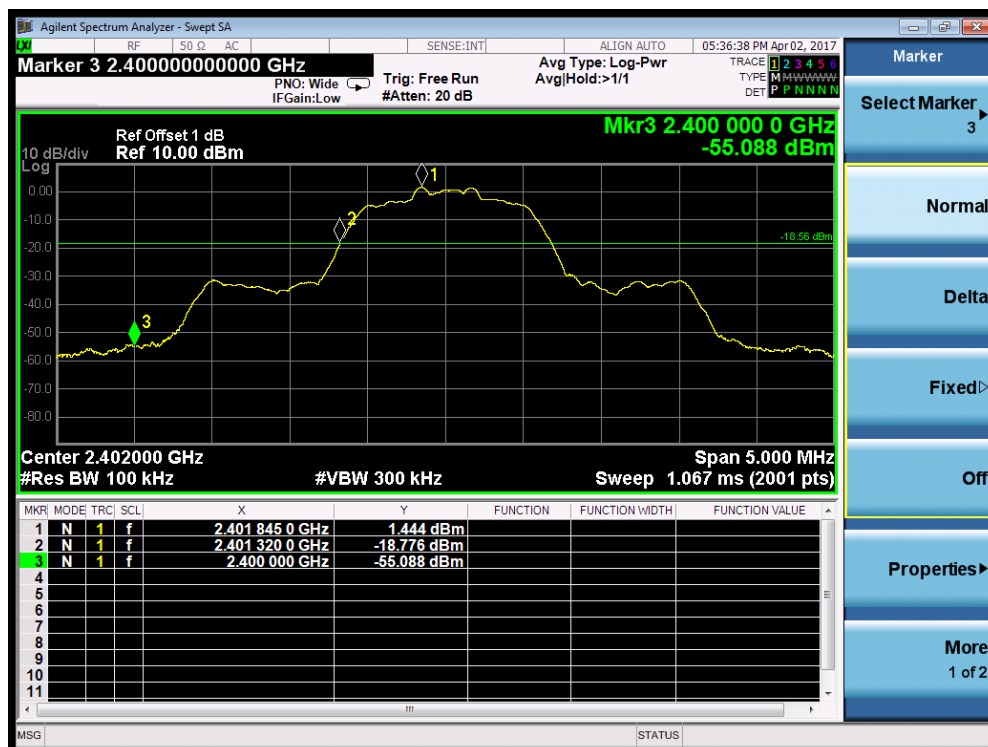
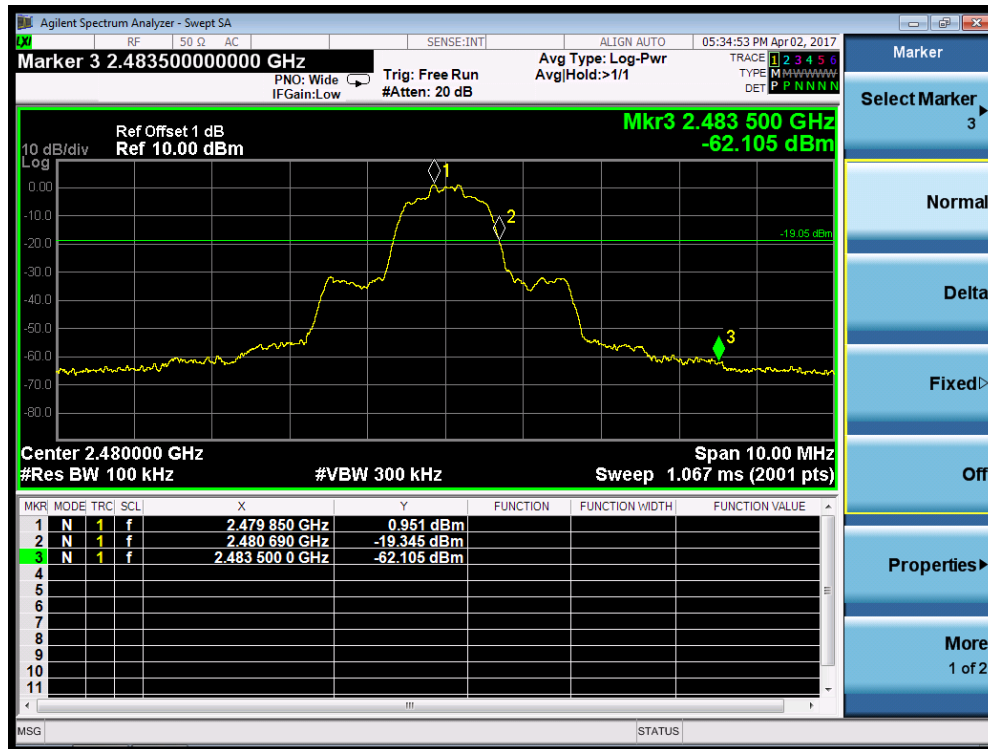
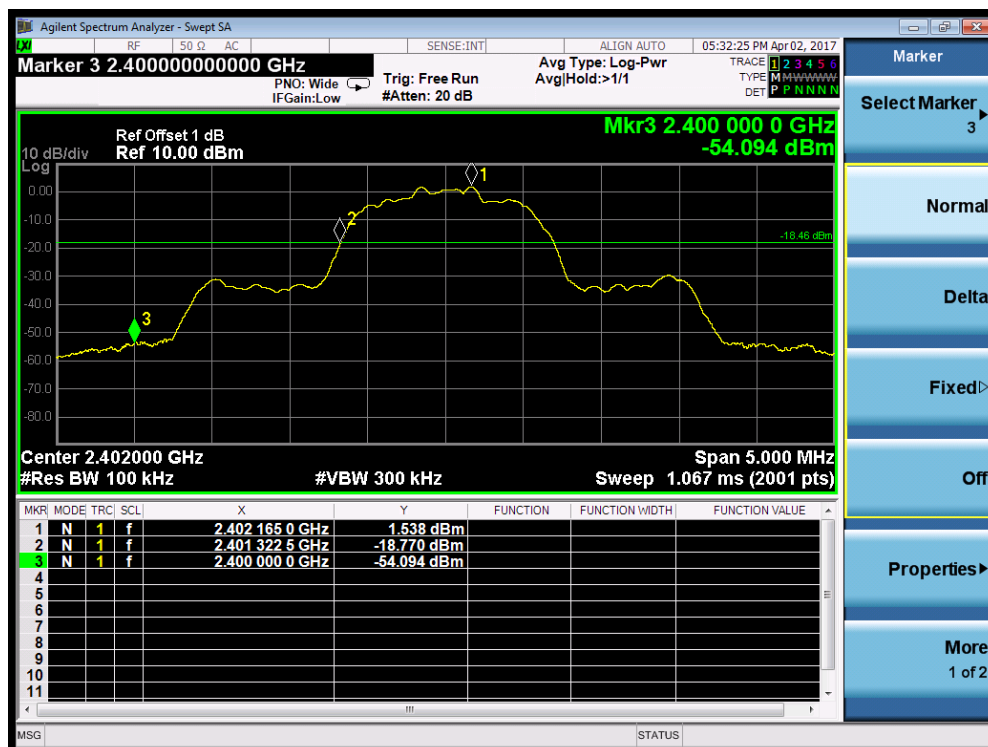
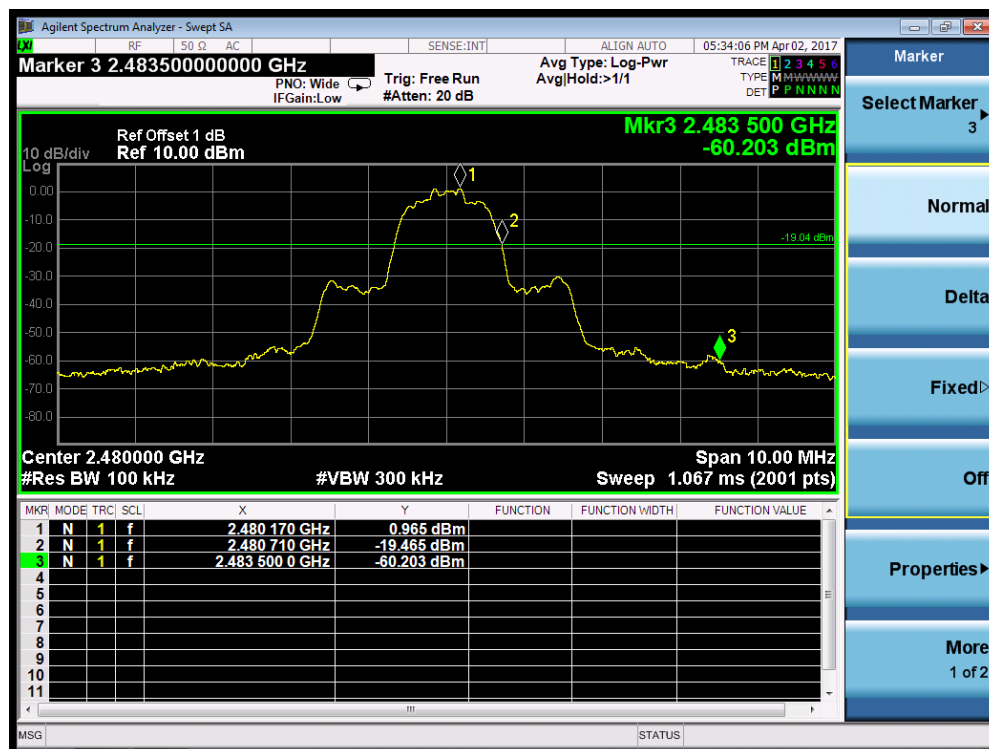
Figure 20: Band Edge, TM3

Figure 21: Band Edge, TM4


Figure 22: Band Edge, TM6

Figure 23: Band Edge, TM7




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5.1.5 Frequency Separation

RESULT:**Pass**

Date of testing : 2017-04-02
Test standard : FCC Part 15.247(a)(1)
Test procedure : ANSI C63.10: 2013
Limit : FCC Part 15.247(a)(1)
Kind of test site : Shielded room

Test setup

Test Channel : Low/ Middle/ High
Operation Mode : TM10 to TM12
Ambient temperature : 25°C
Relative humidity : 52%
Atmospheric pressure : 101kPa

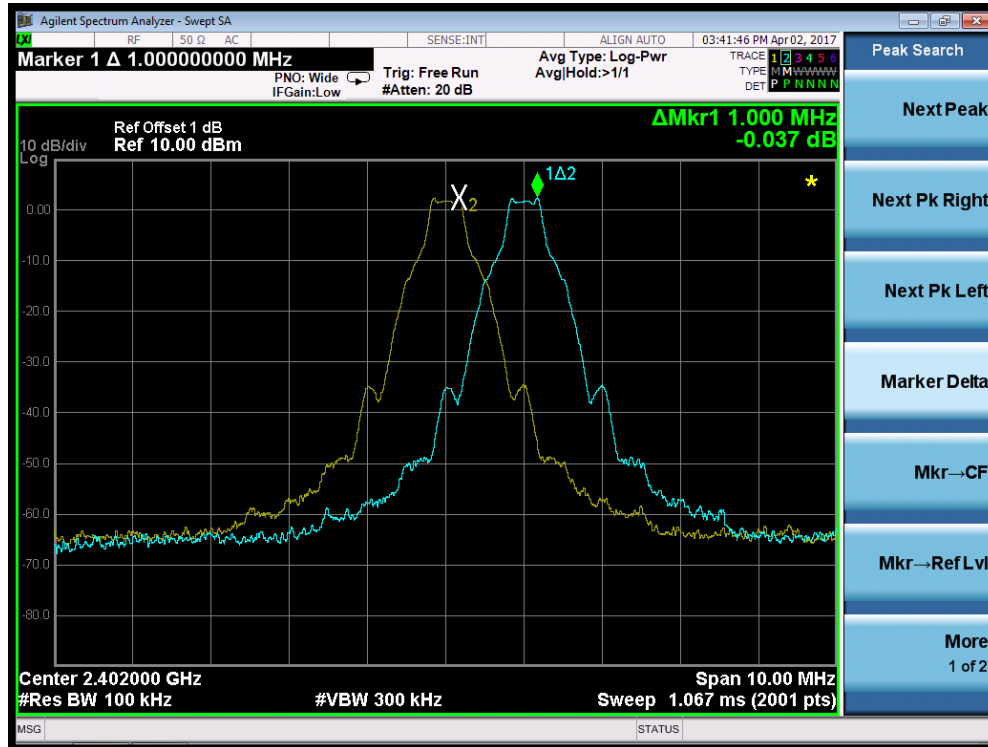
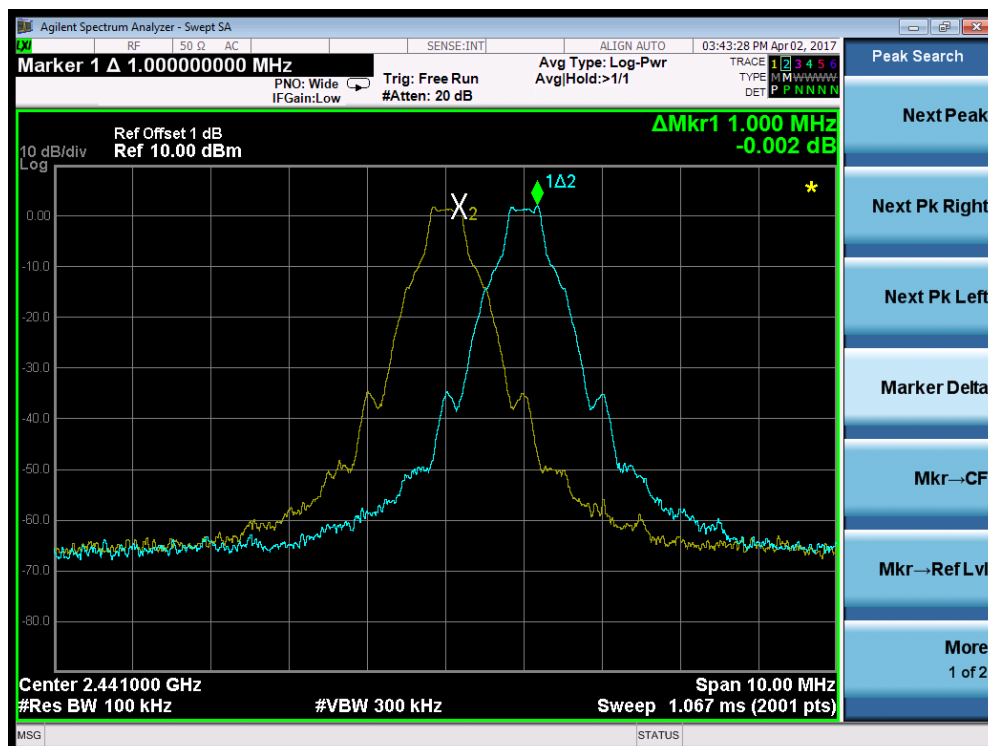
Figure 25: Frequency Separation, TM10, observation Frequency 2402MHz

Figure 26: Frequency Separation, TM10, observation Frequency 2441MHz


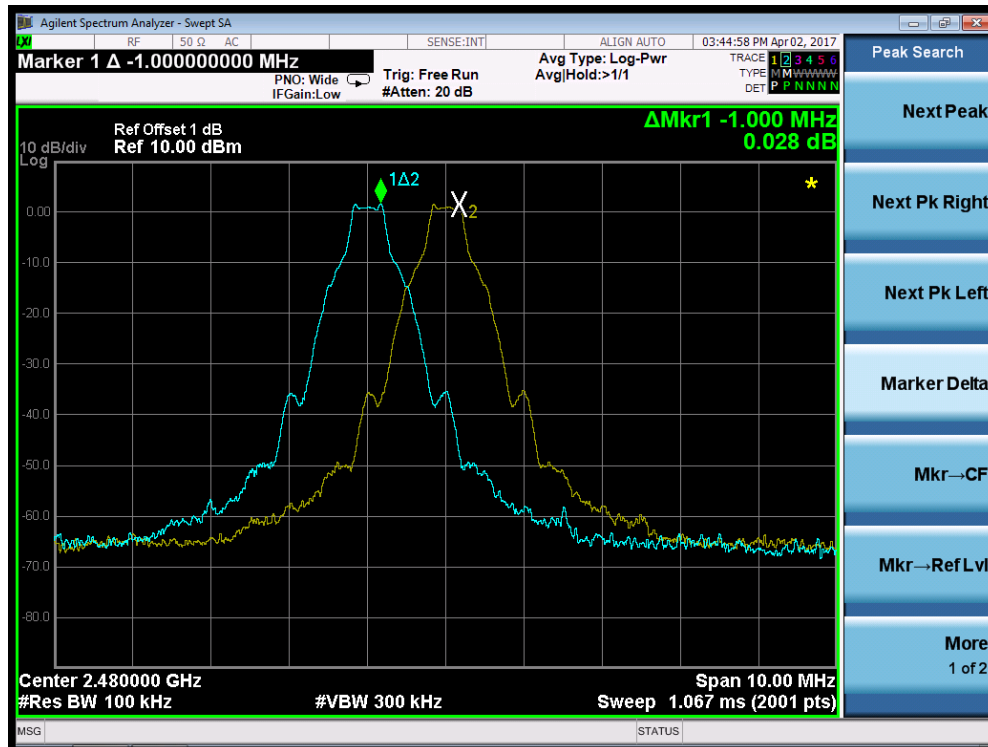
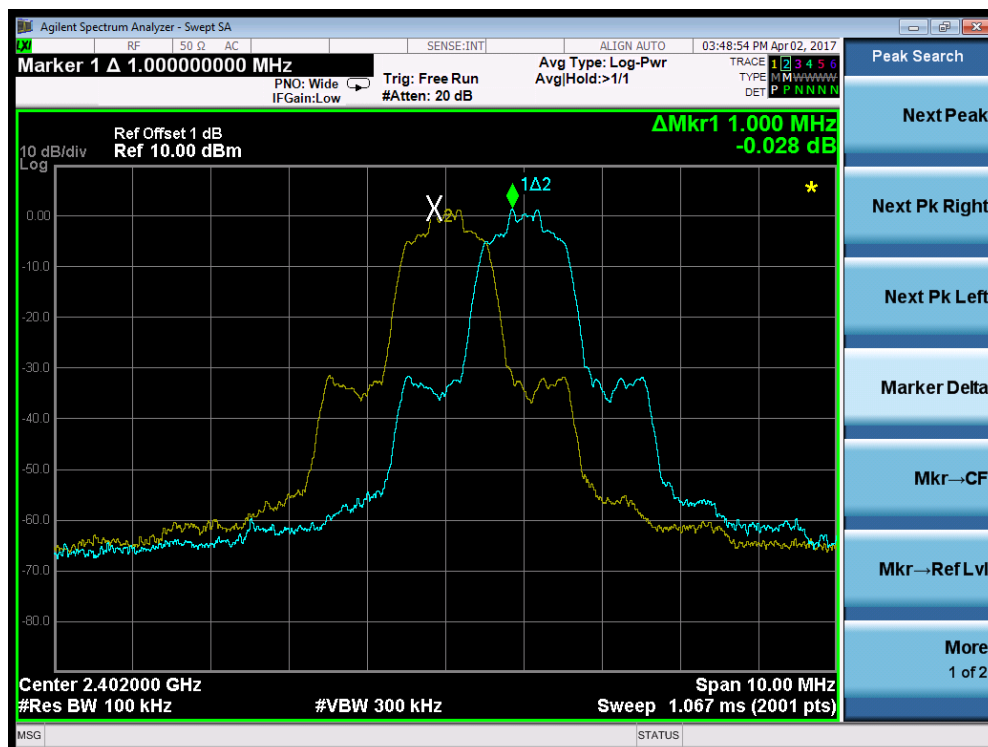
Figure 27: Frequency Separation, TM10, observation Frequency 2480MHz

Figure 28: Frequency Separation, TM11, observation Frequency 2402MHz


Figure 29: Frequency Separation, TM11, observation Frequency 2441MHz

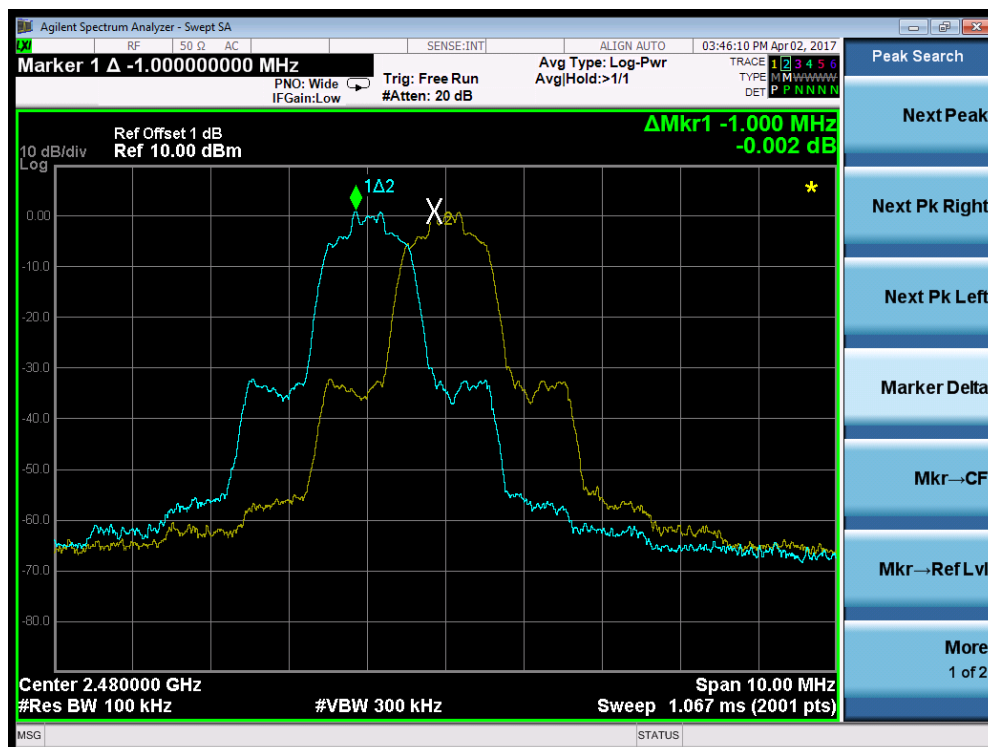
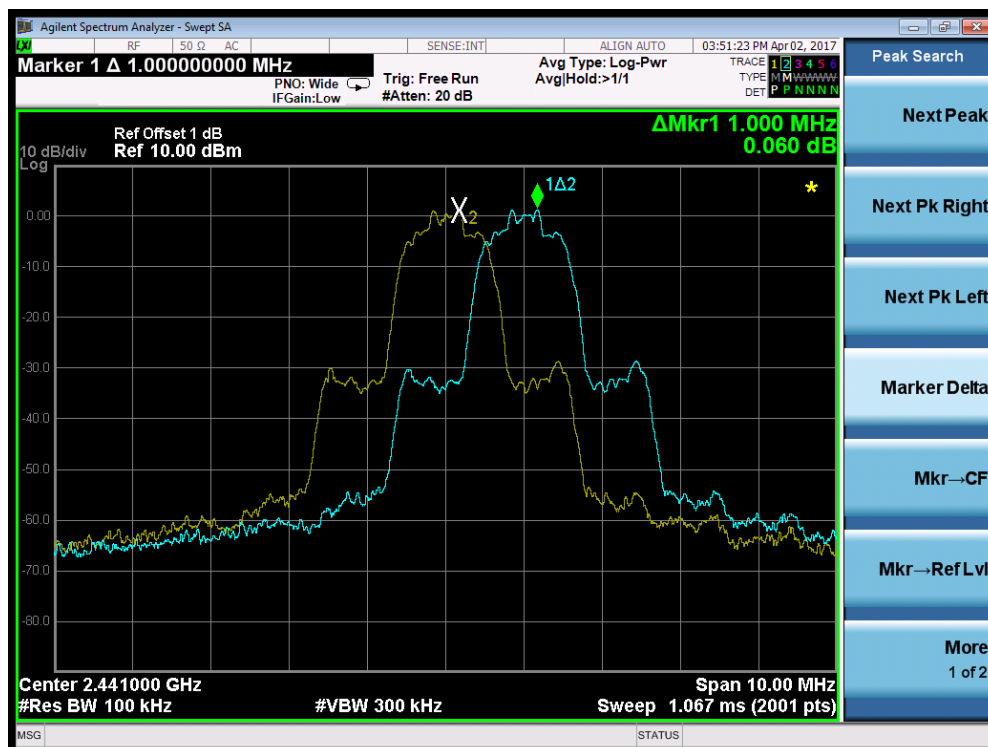
Figure 30: Frequency Separation, TM11, observation Frequency 2480MHz


Figure 31: Frequency Separation, TM12, observation Frequency 2402MHz

Figure 32: Frequency Separation, TM12, observation Frequency 2441MHz




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5.1.6 Number of Hopping Frequency**RESULT:****Pass**

Date of testing : 2017-04-02
Test standard : FCC 15.247(a)(1)(iii)
Test procedure : ANSI C63.10: 2013
Limit : FCC 15.247(a)(1)(iii)
Kind of test site : Shielded room

Test setup

Operation Mode : TM10 to TM12
Ambient temperature : 25°C
Relative humidity : 52%
Atmospheric pressure : 101kPa

Table 7: Number of Hopping Frequency

Frequency Range	Measured Quantity of Hopping Channel	Limit
2402 to 2480	79	≥15

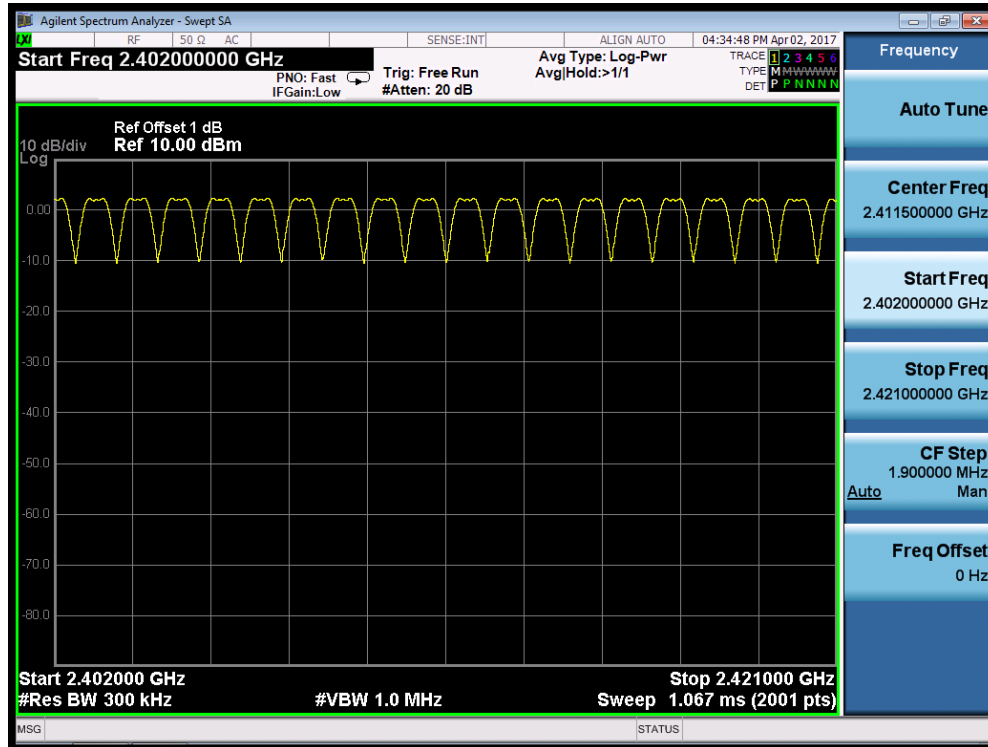
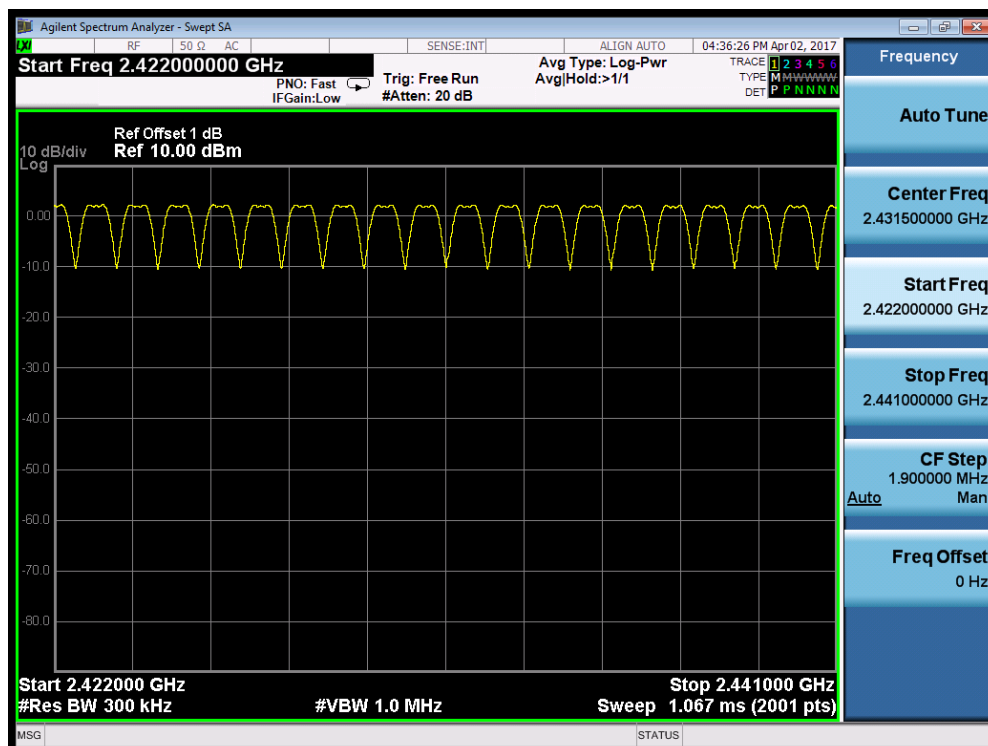
Figure 34: Number of Hopping Frequency, TM10, part 1

Figure 35: Number of Hopping Frequency, TM10, part 2


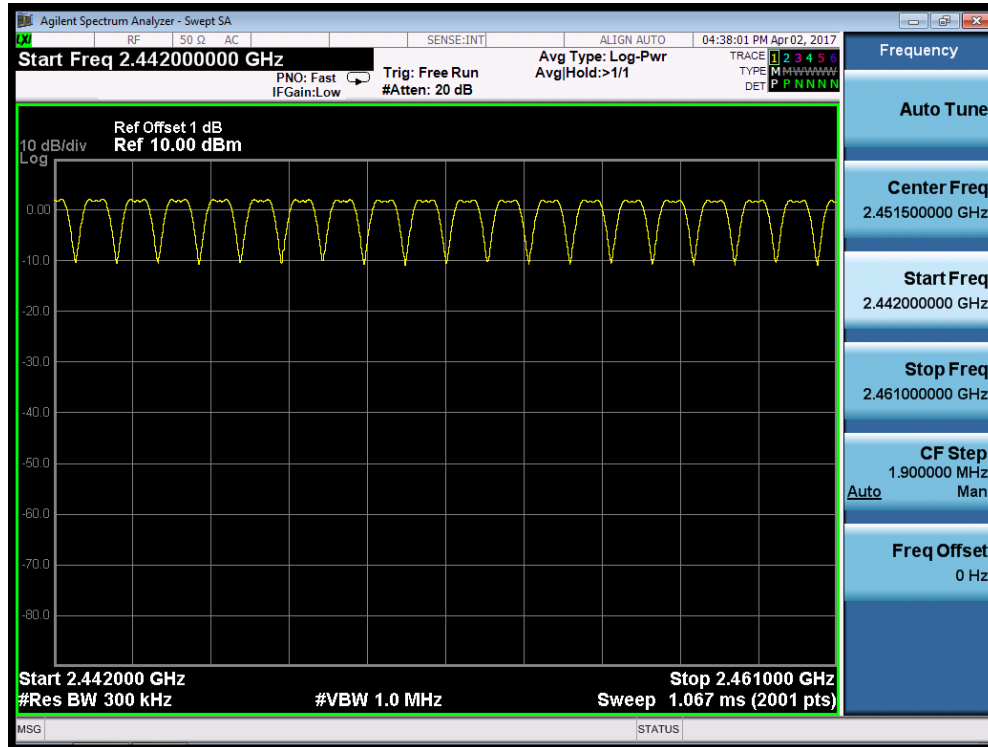
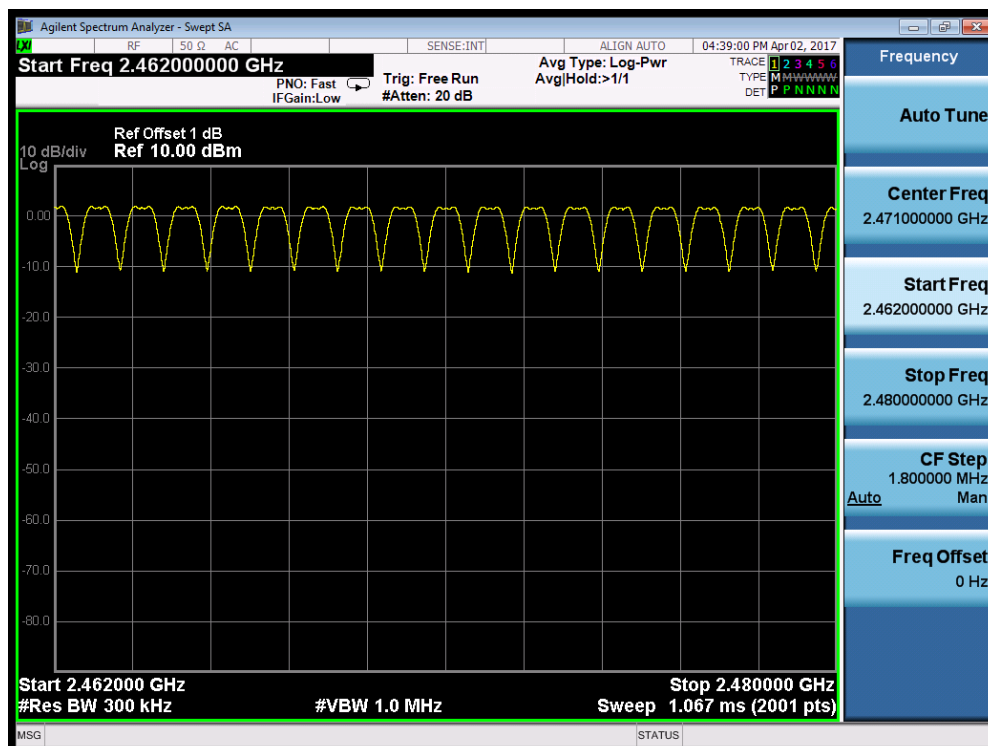
Figure 36: Number of Hopping Frequency, TM10, part 3

Figure 37: Number of Hopping Frequency, TM10, part 4


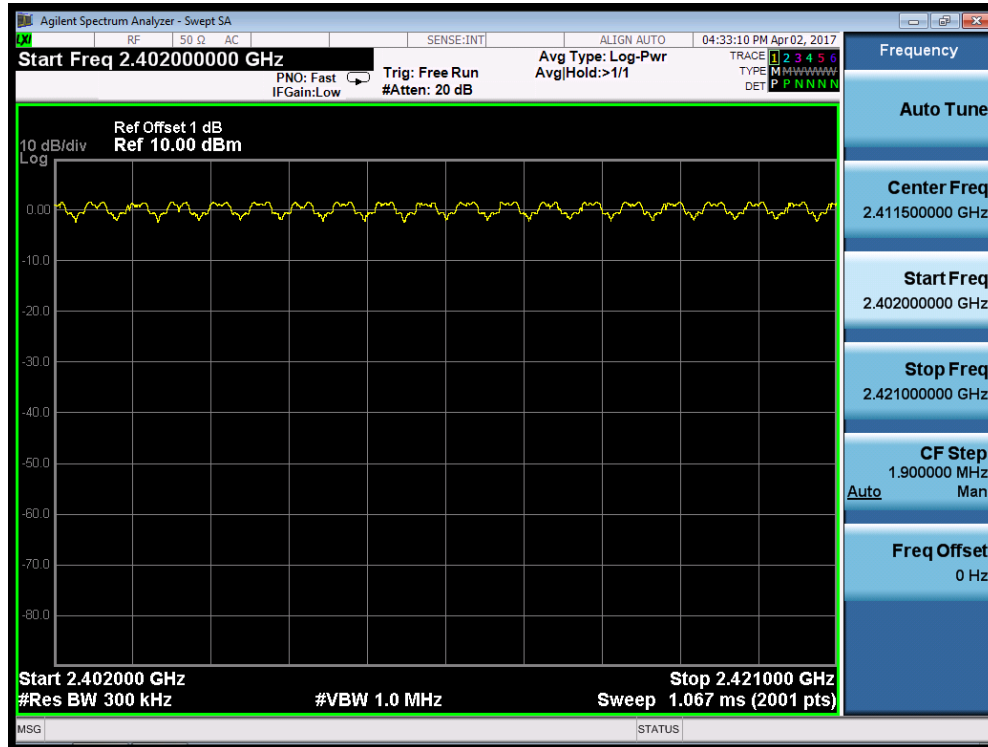
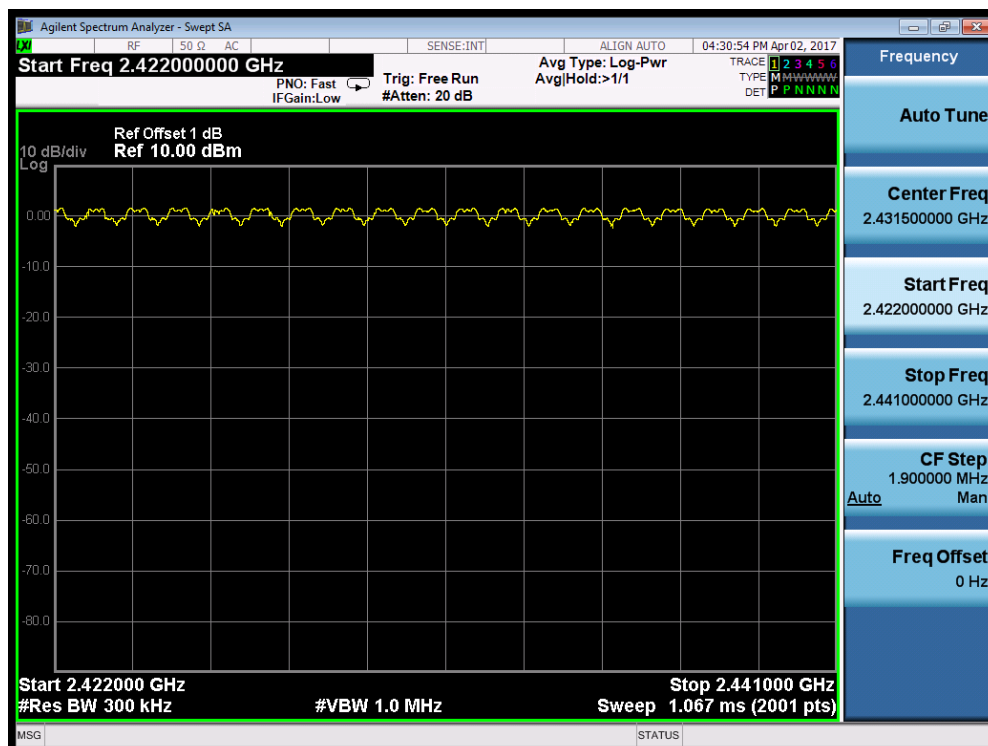
Figure 38: Number of Hopping Frequency, TM11, part 1

Figure 39: Number of Hopping Frequency, TM11, part 2


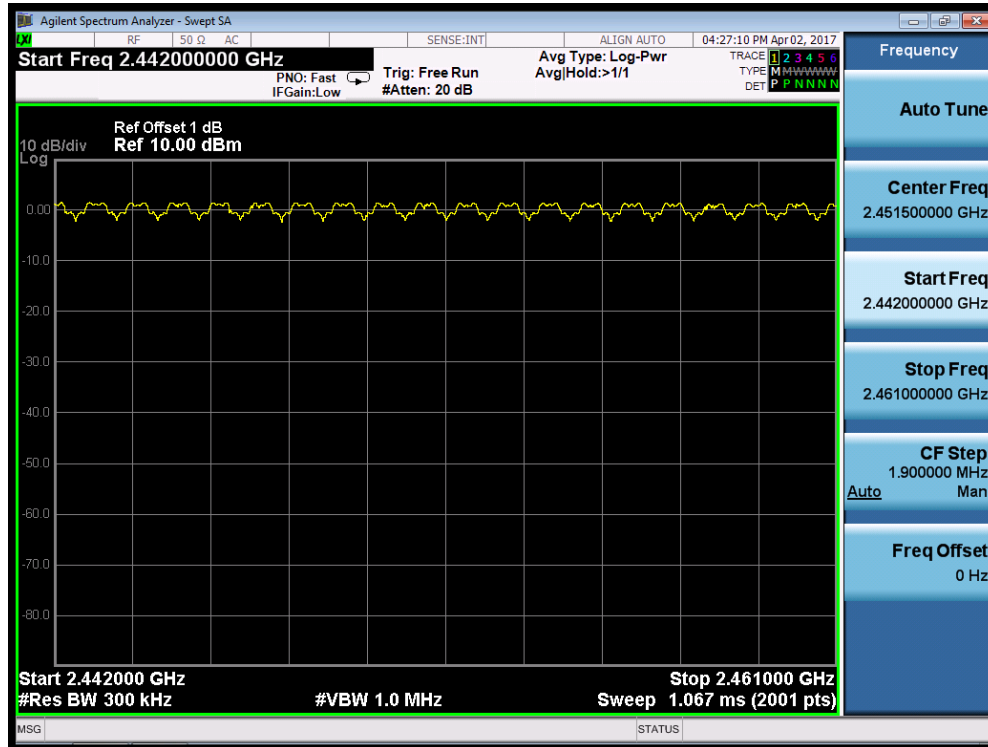
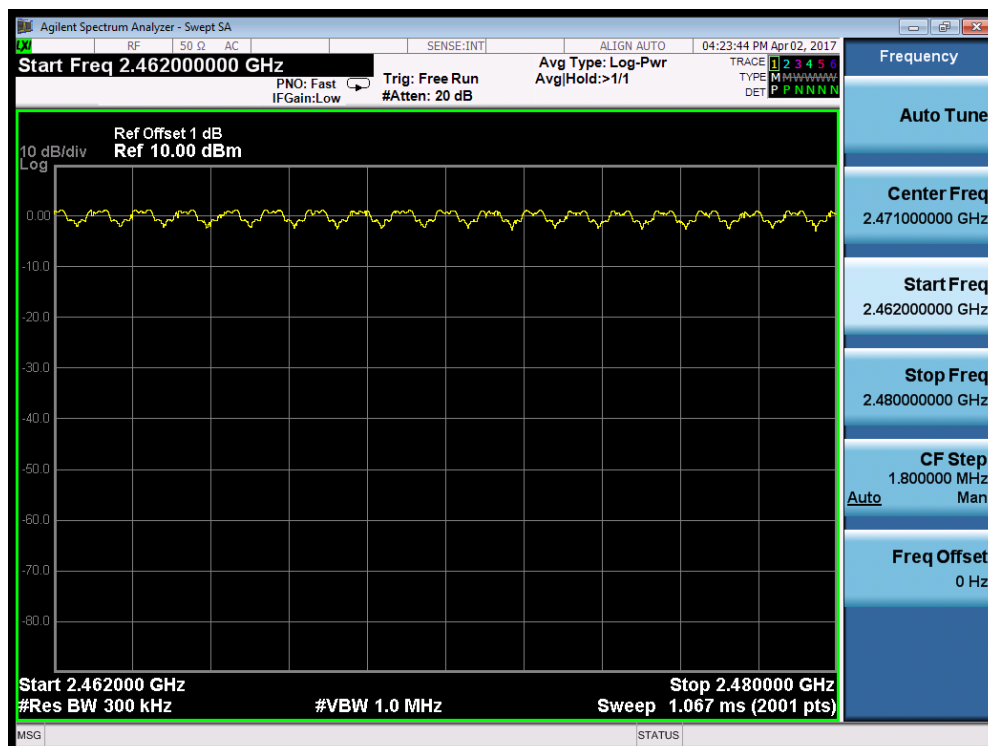
Figure 40: Number of Hopping Frequency, TM11, part 3

Figure 41: Number of Hopping Frequency, TM11, part 4


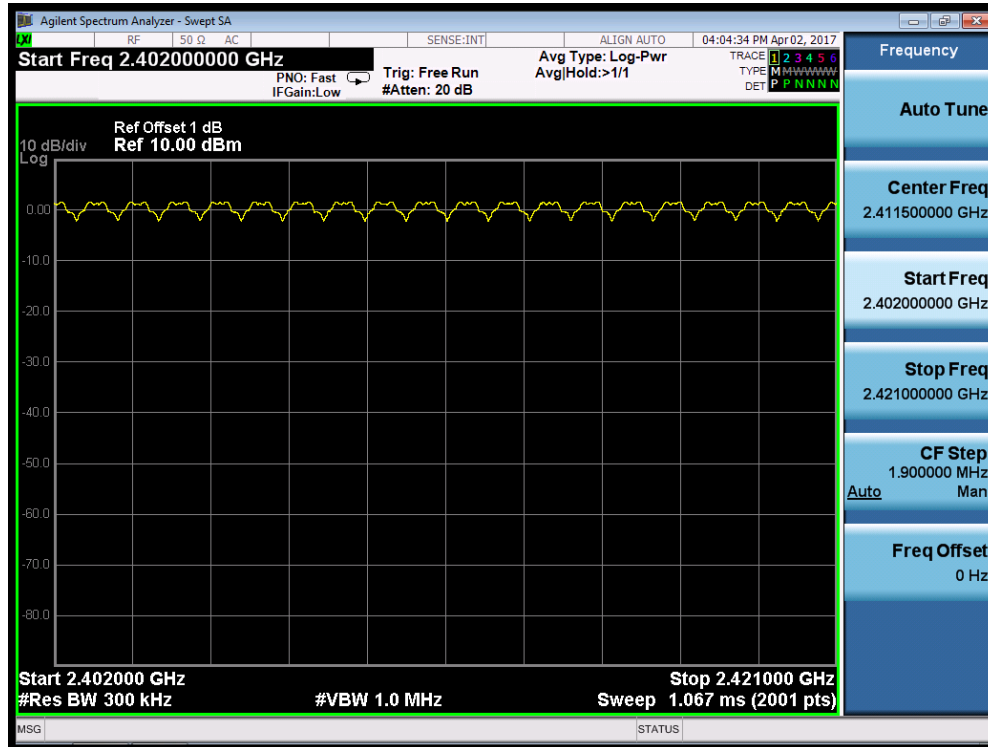
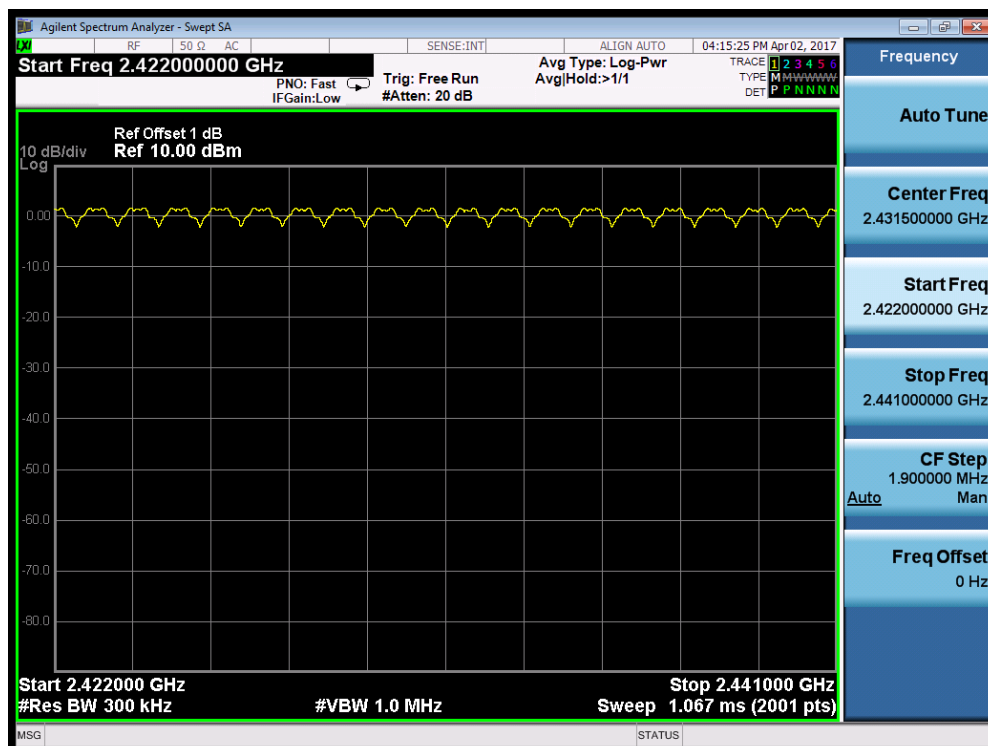
Figure 42: Number of Hopping Frequency, TM12, part 1

Figure 43: Number of Hopping Frequency, TM12, part 2


Figure 44: Number of Hopping Frequency, TM12, part 3

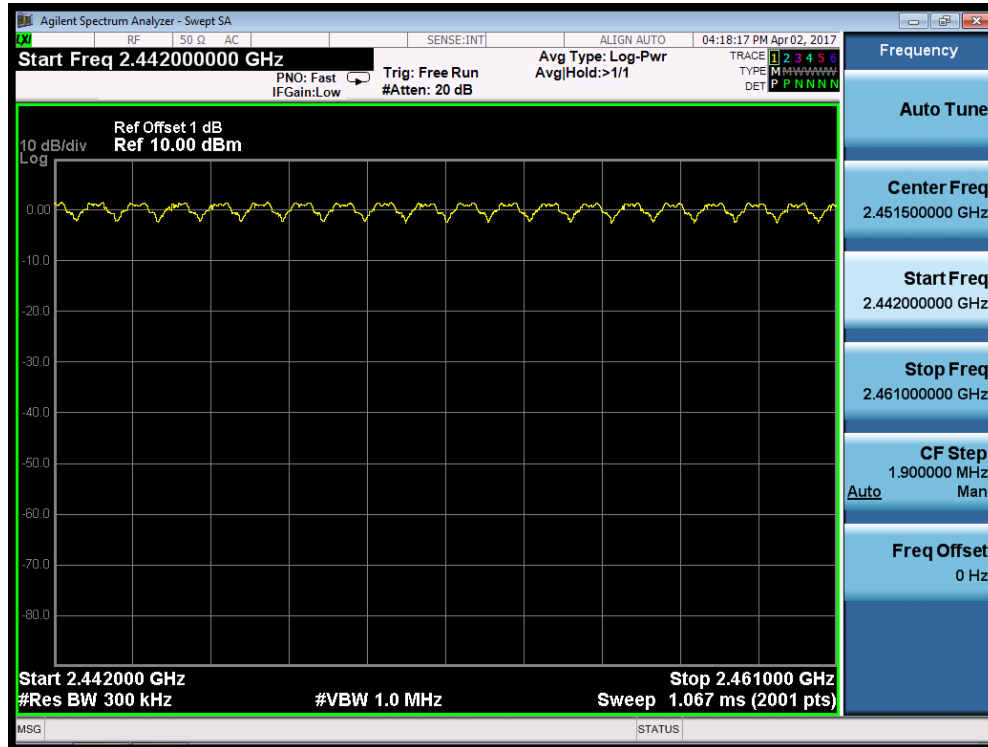
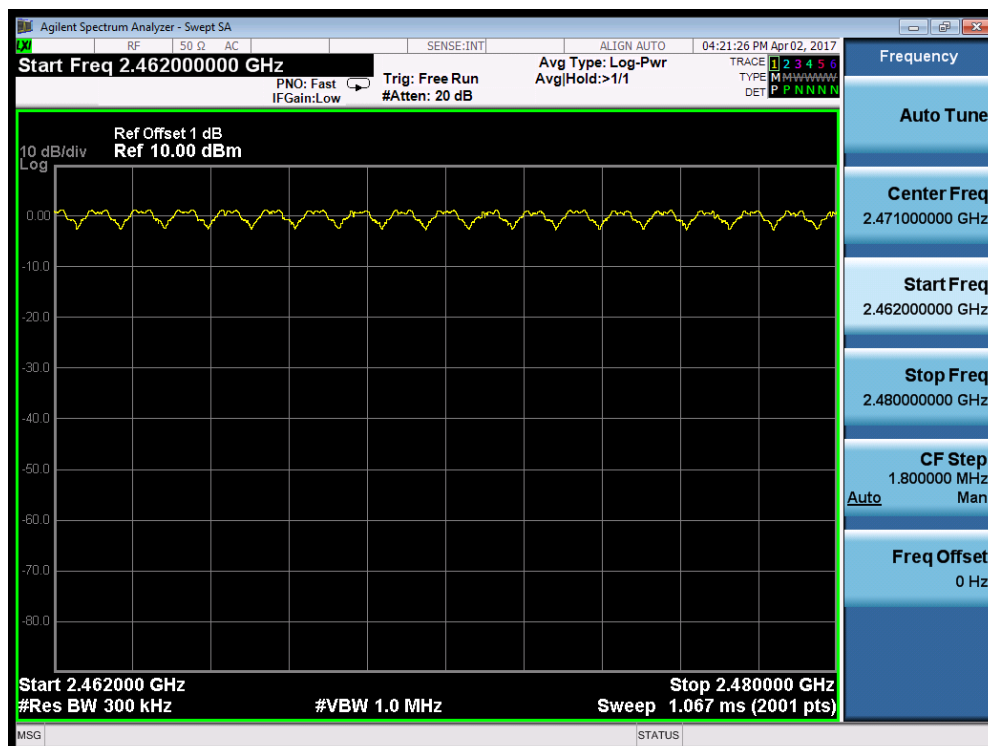


Figure 45: Number of Hopping Frequency, TM12, part 4



5.1.7 Time of Occupancy

RESULT:
Pass

Date of testing : 2017-04-02
 Test standard : FCC 15.247(a)(1)(iii)
 Test procedure : ANSI C63.10: 2013
 Limit : FCC 15.247(a)(1)(iii)
 Kind of test site : Shielded room

Test setup

Operation Mode : TM12 to TM14
 Ambient temperature : 25°C
 Relative humidity : 52%
 Atmospheric pressure : 101kPa

Table 8: Time of Occupancy, TM12 to TM14

Mode	Frequency [MHz]	Packet Duration [ms]	maximum number of hopping channels	Average Time of Occupancy [ms]	Limit [ms]
TM14	2441	0.380	320	121.60	400
TM13	2441	1.630	160	260.80	400
TM12	2441	2.880	107	308.16	400

Note: Average time of occupancy = [(Packet duration * Number of hops per channel in a 31.6s period).

The spectrum analyzer center frequency was set to one of the known hopping channel. The SWEEP TIME was set to 10ms, the SPAN was set to ZERO SPAN, and the TRIGGER was set to VIDEO. The time duration of the transmissions so captured was measured with the MARKER DELTA function.

According the BLUETOOTH STANDARD SPECIFICATION, the nominal hop rate is 1600 hops/s. All Bluetooth units participating in the piconet are time- and hop-synchronized to the channel.

The maximum number of hopping channels in 31.6s for 3DH1 = $1600 / 2 / 79 * 31.6 = 320$
 The maximum number of hopping channels in 31.6s for 3DH3 = $1600 / 4 / 79 * 31.6 = 160$
 The maximum number of hopping channels in 31.6s for 3DH5 = $1600 / 6 / 79 * 31.6 = 107$

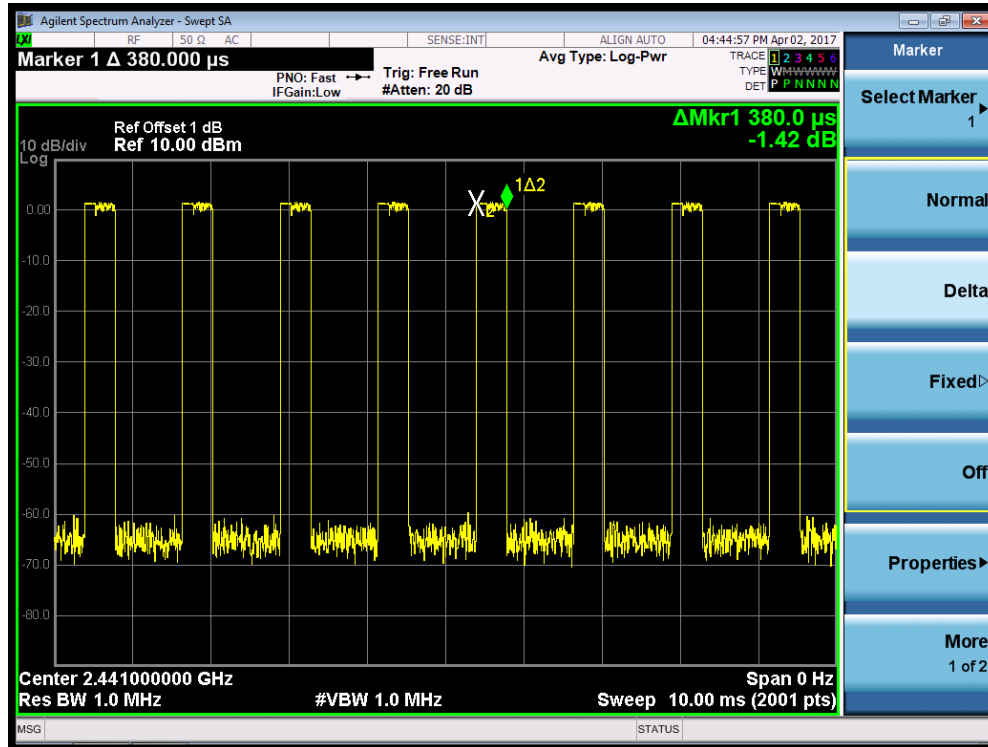
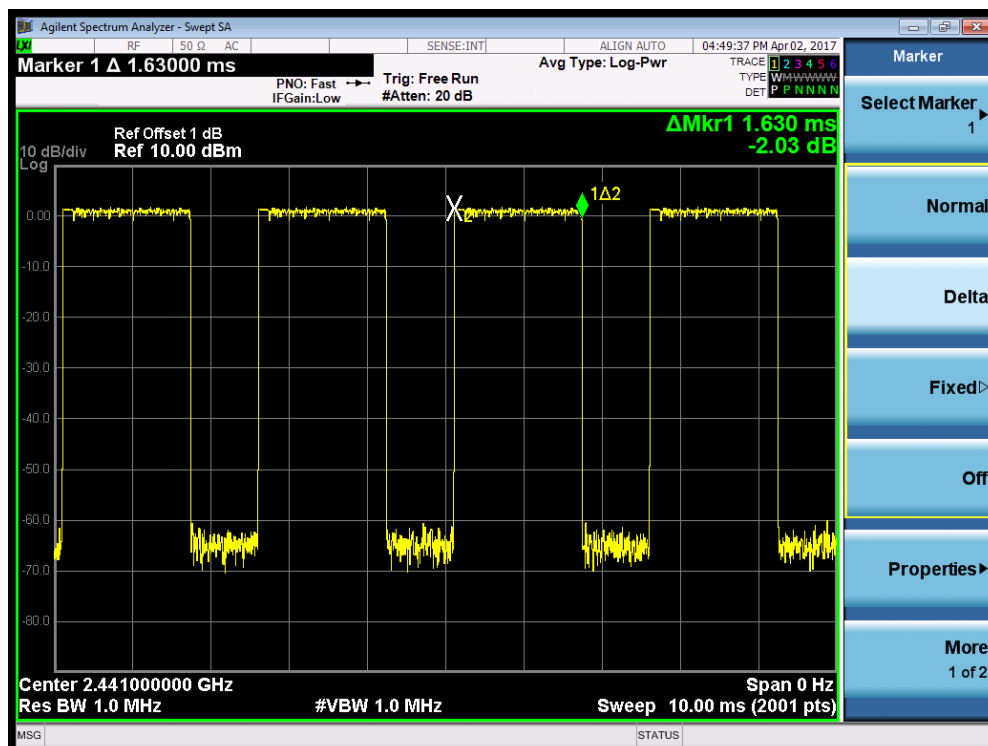
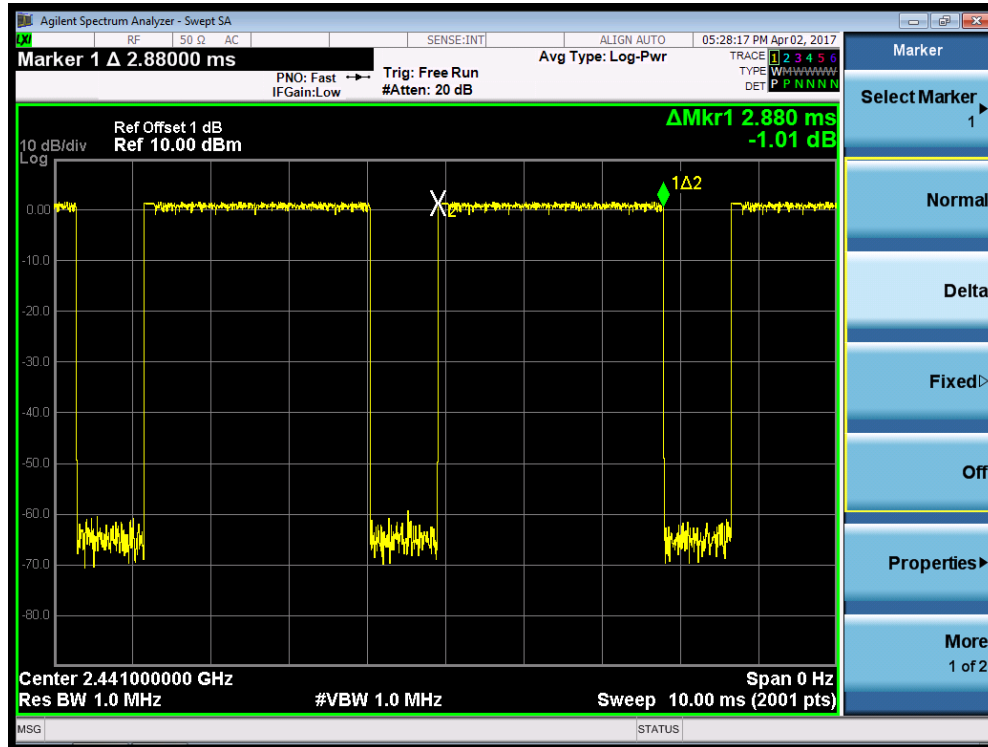
Figure 46: Time of Occupancy, TM14, observation Frequency 2441MHz

Figure 47: Time of Occupancy, TM13, observation Frequency 2441MHz


Figure 48: Time of Occupancy, TM12, observation Frequency 2441MHz


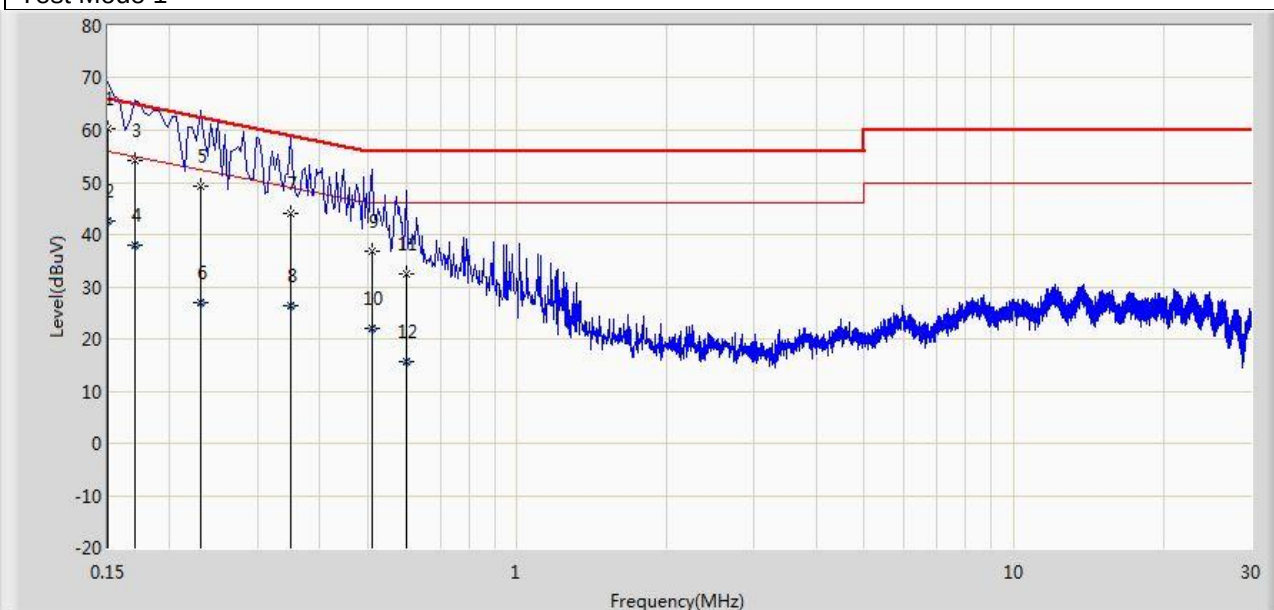
5.2 Emission in the Frequency Range up to 30MHz

5.2.1 Conducted Emission

RESULT:
PASS

Date of testing : 2017/07/04
 Test standard : FCC Part 15.207 (a)
 Test procedure : ANSI C63.10: 2013
 Limit : FCC Part 15.207 (a)
 Kind of test site : Shielded room

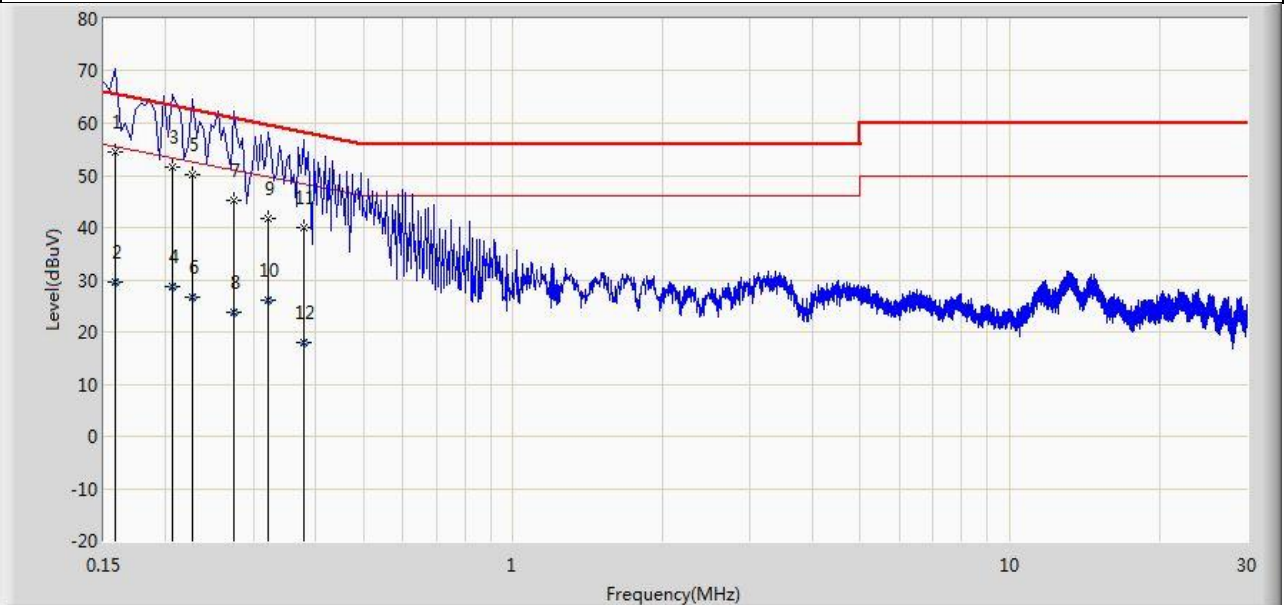
Limit: FCC_Part15.207_CE_AC Power	Engineer: Bacon Dong
Probe: ENV216_101683_Filter On	Polarity: Line
EUT: MID	Power: AC 120V/60Hz
Test Mode 1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.150	60.296	49.128	-5.704	66.000	11.168	QP
2			0.150	42.479	31.310	-13.521	56.000	11.168	AV
3			0.170	54.104	44.027	-10.856	64.960	10.078	QP
4			0.170	38.066	27.988	-16.895	54.960	10.078	AV
5			0.230	49.370	39.422	-13.080	62.450	9.947	QP
6		*	0.230	26.926	16.978	-25.524	52.450	9.947	AV
7			0.350	43.930	33.885	-15.033	58.962	10.044	QP
8			0.350	26.516	16.471	-22.447	48.962	10.044	AV
9			0.510	36.710	26.554	-19.290	56.000	10.157	QP
10			0.510	21.976	11.819	-24.024	46.000	10.157	AV
11			0.598	32.379	22.263	-23.621	56.000	10.116	QP
12			0.598	15.782	5.666	-30.218	46.000	10.116	AV

Note: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB)
 Factor (dB) = Cable Loss (dB) + LISN Factor (dB).

Limit: FCC_Part15.207_CE_AC Power	Engineer: Bacon Dong
Probe: ENV216_101683_Filter On	Polarity: Neutral
EUT: MID	Power: AC 120V/60Hz
Test Mode 1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		*	0.158	54.634	44.344	-10.935	65.568	10.290	QP
2			0.158	29.589	19.299	-25.979	55.568	10.290	AV
3			0.206	51.688	41.687	-11.677	63.365	10.001	QP
4			0.206	28.753	18.752	-24.612	53.365	10.001	AV
5			0.226	50.100	40.117	-12.495	62.595	9.982	QP
6			0.226	26.561	16.578	-26.035	52.595	9.982	AV
7			0.274	45.191	35.172	-15.805	60.996	10.019	QP
8			0.274	23.697	13.678	-27.299	50.996	10.019	AV
9			0.322	41.794	31.740	-17.861	59.655	10.054	QP
10			0.322	26.069	16.015	-23.586	49.655	10.054	AV
11			0.378	40.142	30.047	-18.181	58.323	10.096	QP
12			0.378	17.981	7.885	-30.343	48.323	10.096	AV

Note: Measure Level (dBuV) = Reading Level (dBuV) + Factor (dB)
 Factor (dB) = Cable Loss (dB) + LISN Factor (dB).

5.3 Emission in the Frequency Range above 30MHz

5.3.1 Radiated Spurious Emission

RESULT:
Pass

Date of testing : 2017-04-02 – 2017-04-08
 Test standard : FCC 15.247(d)
 Test procedure : ANSI C63.10: 2013
 Limit : FCC 15.247(d)
 FCC 15.209(a)
 Kind of test site : 3m Semi-Anechoic Chamber

Test setup

Test Channel : Low/ Middle/ High
 Operation Mode : TM1 to TM9
 Ambient temperature : 25°C
 Relative humidity : 52%
 Atmospheric pressure : 101kPa

Note: There is no additional emission generated due to simultaneous-transmission operations compared to standalone operations testing

Table 9: Radiated Spurious Emission, below 1GHz, TM1

Mode	Freq. [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [Db]	Limit [dBuV/m]	Factor [dB]	Type	Ant. Pol.
TM1	102.750	10.414	-2.762	-33.086	43.500	13.176	QP	H
	203.145	12.568	0.236	-30.932	43.500	12.333	QP	
	272.500	13.585	-0.517	-32.415	46.000	14.103	QP	
	377.260	16.325	0.065	-29.675	46.000	16.260	QP	
	555.255	17.921	-1.349	-28.079	46.000	19.271	QP	
	809.880	21.397	-1.645	-24.603	46.000	23.042	QP	
	37.275	23.591	10.270	-16.409	40.000	13.321	QP	V
	45.520	21.826	6.890	-18.174	40.000	14.936	QP	
	61.525	17.519	3.890	-22.481	40.000	13.630	QP	
	92.565	18.368	6.490	-25.132	43.500	11.878	QP	
	232.730	17.468	4.290	-28.532	46.000	13.178	QP	
	534.885	17.239	-1.616	-28.761	46.000	18.855	QP	

Note:

All the modes were performed, only the worst case was listed in the table above.

Table 10: Radiated Spurious Emission, above 1GHz, TM1 to TM3

Mode	Freq. [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [Db]	Limit [dBuV/m]	Factor [dB]	Type	Ant. Pol.
TM1	4799.500	38.005	35.307	-35.995	74.000	2.698	PK	H
	7519.500	43.613	35.318	-30.387	74.000	8.295	PK	
	8837.000	45.620	36.504	-32.780	78.400	9.116	PK	
	10095.000	46.717	35.115	-31.683	78.400	11.602	PK	
	4051.500	37.072	36.561	-36.928	74.000	0.511	PK	V
	4808.000	41.092	38.398	-32.908	74.000	2.694	PK	
	7205.000	45.030	37.225	-33.370	78.400	7.805	PK	
	8658.500	45.646	36.810	-32.754	78.400	8.837	PK	
TM2	4774.000	38.496	35.852	-35.504	74.000	2.644	PK	H
	7502.500	44.060	35.805	-29.940	74.000	8.254	PK	
	8599.000	44.548	35.831	-36.852	81.400	8.717	PK	
	10197.000	47.025	35.268	-34.375	81.400	11.757	PK	
	3830.500	40.019	40.077	-33.981	74.000	-0.058	PK	V
	4884.500	41.259	38.574	-32.741	74.000	2.684	PK	
	8658.500	44.829	35.993	-36.571	81.400	8.837	PK	
	10027.000	46.365	34.886	-35.035	81.400	11.479	PK	
TM3	4799.500	38.348	35.650	-35.652	74.000	2.698	PK	H
	7630.000	44.238	36.199	-29.762	74.000	8.039	PK	
	8624.500	45.727	36.947	-35.273	81.000	8.780	PK	
	10214.000	46.684	34.873	-34.316	81.000	11.811	PK	
	4961.000	39.839	36.927	-34.161	74.000	2.912	PK	V
	7519.500	43.793	35.498	-30.207	74.000	8.295	PK	
	8684.000	44.892	35.890	-36.108	81.000	9.002	PK	
	10154.500	46.995	35.386	-34.005	81.000	11.609	PK	

Table 11: Radiated Spurious Emission, above 1GHz, TM4 to TM6

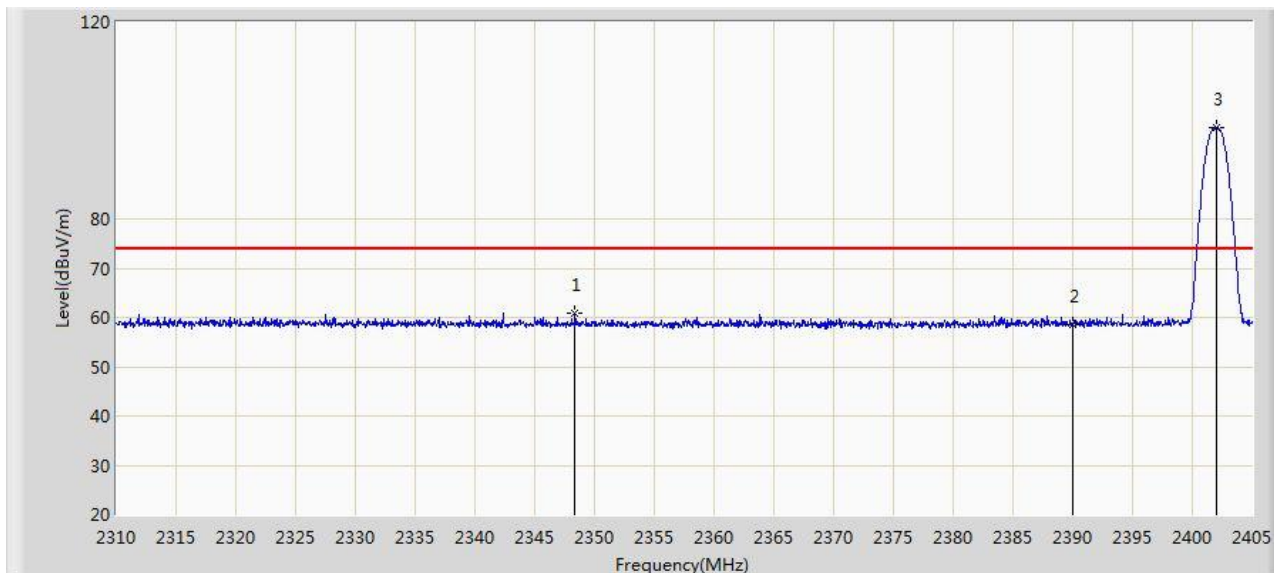
Mode	Freq. [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type	Ant. Pol.
TM4	4799.500	37.775	35.077	-36.225	74.000	2.698	PK	H
	7366.500	43.896	35.969	-30.104	74.000	7.927	PK	
	8641.500	45.555	36.776	-32.445	78.000	8.779	PK	
	10129.000	46.826	35.266	-31.174	78.000	11.560	PK	
	4799.500	39.001	36.303	-34.999	74.000	2.698	PK	V
	7613.000	43.304	35.244	-30.696	74.000	8.060	PK	
	8616.000	45.382	36.591	-32.618	78.000	8.791	PK	
	10290.500	46.722	34.708	-31.278	78.000	12.014	PK	
TM5	4816.500	38.025	35.328	-35.975	74.000	2.697	PK	H
	7485.500	44.003	35.802	-29.997	74.000	8.201	PK	
	8845.500	44.849	35.748	-36.351	81.200	9.101	PK	
	10197.000	47.809	36.052	-33.391	81.200	11.757	PK	
	3898.500	43.323	43.138	-30.677	74.000	0.185	PK	V
	4884.500	38.831	36.146	-35.169	74.000	2.684	PK	
	5955.500	42.177	37.890	-39.023	81.200	4.287	PK	
	8837.000	45.404	36.288	-35.796	81.200	9.116	PK	
TM6	4799.500	38.564	35.866	-35.436	74.000	2.698	PK	H
	7579.000	44.159	35.952	-29.841	74.000	8.207	PK	
	8616.000	45.087	36.296	-35.613	80.700	8.791	PK	
	10171.500	46.576	34.868	-34.124	80.700	11.707	PK	
	4961.000	38.094	35.182	-35.906	74.000	2.912	PK	V
	7579.000	43.679	35.472	-30.321	74.000	8.207	PK	
	8633.000	45.223	36.455	-35.477	80.700	8.768	PK	
	10052.500	45.840	34.302	-34.860	80.700	11.538	PK	

Table 12: Radiated Spurious Emission, above 1GHz, TM7 to TM9

Mode	Freq. [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type	Ant. Pol.
TM7	4893.000	37.299	34.604	-36.701	74.000	2.695	PK	H
	7468.500	43.588	35.448	-30.412	74.000	8.140	PK	
	8633.000	44.964	36.196	-33.136	78.100	8.768	PK	
	10163.000	46.745	35.072	-31.355	78.100	11.673	PK	
	4799.500	39.396	36.698	-34.604	74.000	2.698	PK	V
	7545.000	44.038	35.749	-29.962	74.000	8.289	PK	
	8505.500	45.509	37.151	-32.591	78.100	8.358	PK	
	10052.500	46.626	35.088	-31.474	78.100	11.538	PK	
TM8	4901.500	38.036	35.320	-35.964	74.000	2.716	PK	H
	7553.500	44.686	36.428	-29.314	74.000	8.259	PK	
	8658.500	44.968	36.132	-36.332	81.300	8.837	PK	
	10188.500	46.406	34.657	-34.894	81.300	11.750	PK	
	4884.500	38.907	36.222	-35.093	74.000	2.684	PK	V
	7477.000	43.021	34.840	-30.979	74.000	8.181	PK	
	8675.500	44.400	35.458	-36.900	81.300	8.942	PK	
	10146.000	46.805	35.260	-34.495	81.300	11.545	PK	
TM9	4842.000	37.888	35.191	-36.112	74.000	2.697	PK	H
	7536.500	42.071	33.776	-31.929	74.000	8.296	PK	
	8956.000	44.858	35.852	-35.942	80.800	9.006	PK	
	10137.500	46.382	34.829	-34.418	80.800	11.553	PK	
	4961.000	38.924	36.012	-35.076	74.000	2.912	PK	V
	7621.500	43.807	35.758	-30.193	74.000	8.048	PK	
	8854.000	44.435	35.350	-36.365	80.800	9.085	PK	
	10078.000	46.566	35.072	-34.234	80.800	11.494	PK	

Notes:

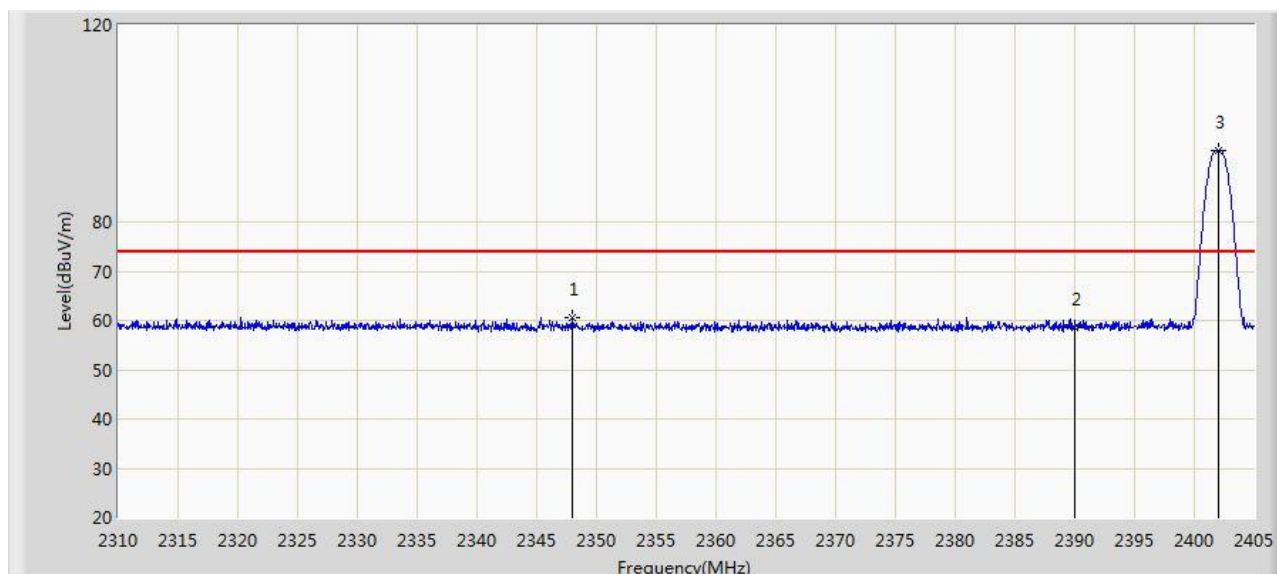
1. Transmit mode comply with the field strength within the restricted bands. There is no spurious found below 30MHz.
2. There is the ambient noise within frequency range 9kHz~30MHz and 18GHz~40GHz, the permissible value is not show in the report.
3. Due to the peak measure values also meet the average limit (54dBm), the average measurement is not tested based on technical judgment.

Figure 49: Band Edge, TM1, Horizontal, PK


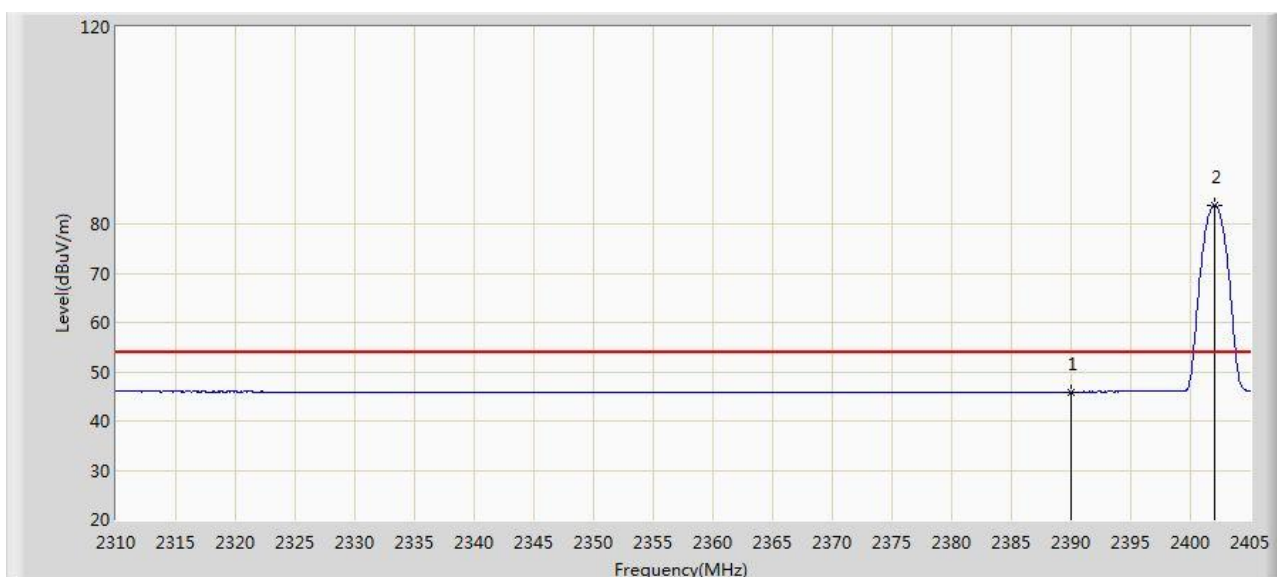
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2348.333	60.913	28.628	-13.087	74.000	32.285	PK
2390.000	58.445	26.167	-15.555	74.000	32.278	PK
2402.008	98.449	66.175	N/A	N/A	32.274	PK

Figure 50: Band Edge, TM1, Horizontal, AV

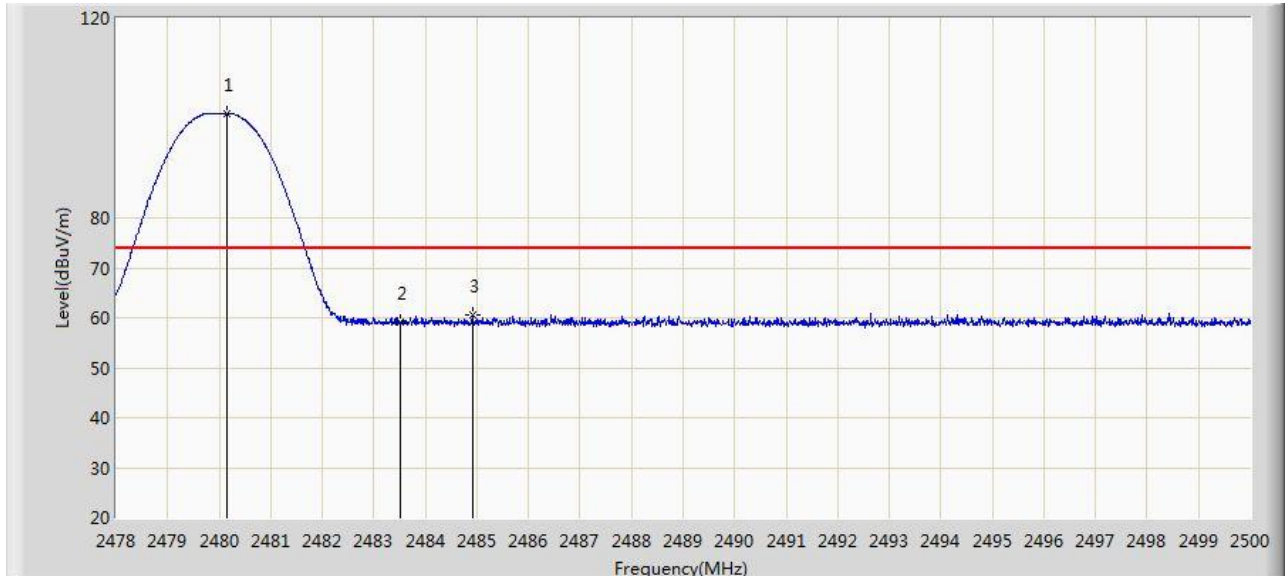

Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2390.000	45.871	13.593	-8.129	54.000	32.278	AV
2402.008	86.902	54.628	N/A	N/A	32.274	AV

Figure 51: Band Edge, TM1, Vertical, PK


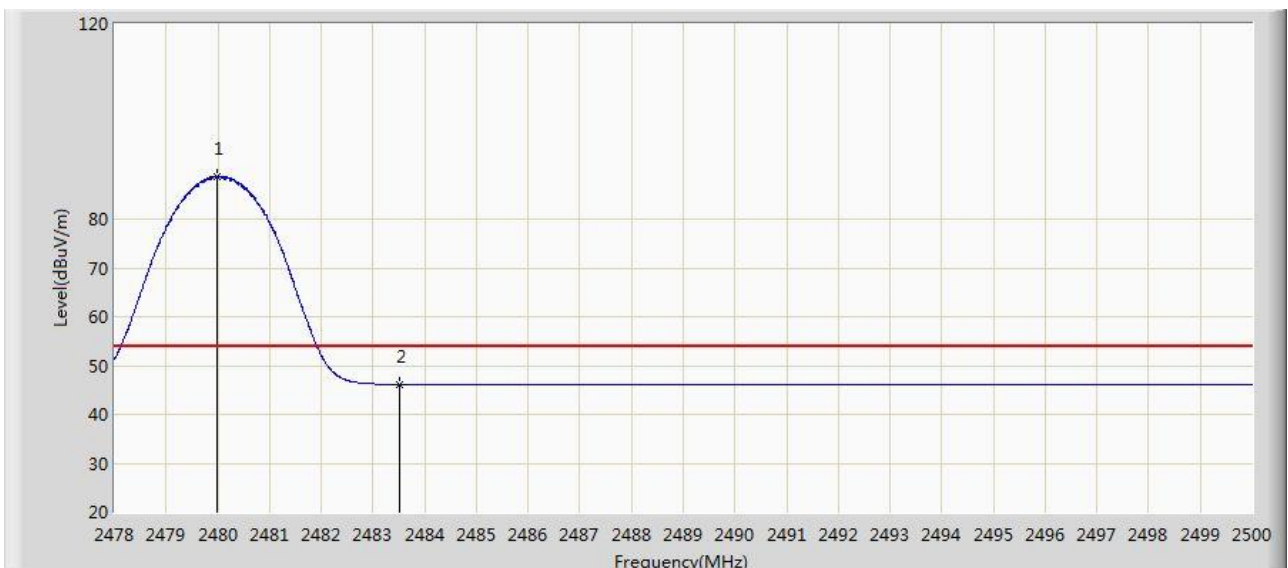
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2347.952	60.599	28.313	-13.401	74.000	32.286	PK
2390.000	58.458	26.180	-15.542	74.000	32.278	PK
2402.008	94.631	62.357	N/A	N/A	32.274	PK

Figure 52: Band Edge, TM1, Vertical, AV


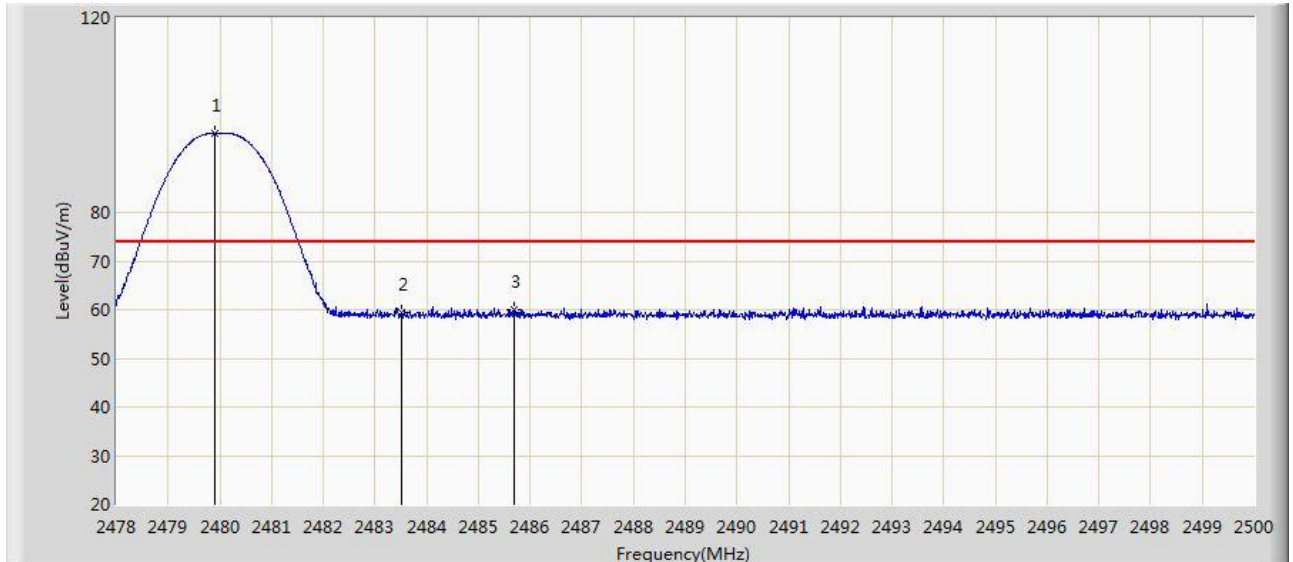
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2390.000	45.899	13.621	-8.101	54.000	32.278	AV
2402.055	83.781	51.507	N/A	N/A	32.273	AV

Figure 53: Band Edge, TM3, Horizontal, PK


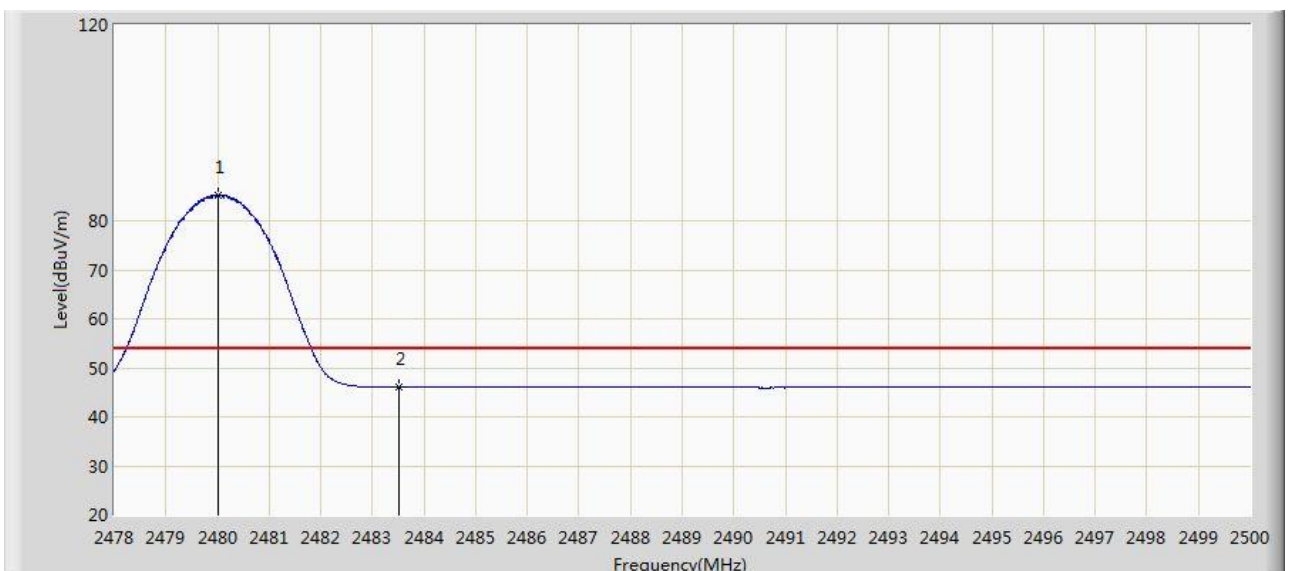
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2480.156	101.002	68.732	N/A	74.000	32.270	PK
2483.500	59.222	26.941	-14.778	74.000	32.282	PK
2484.908	60.568	28.282	-13.432	74.000	32.286	PK

Figure 54: Band Edge, TM3, Horizontal, AV


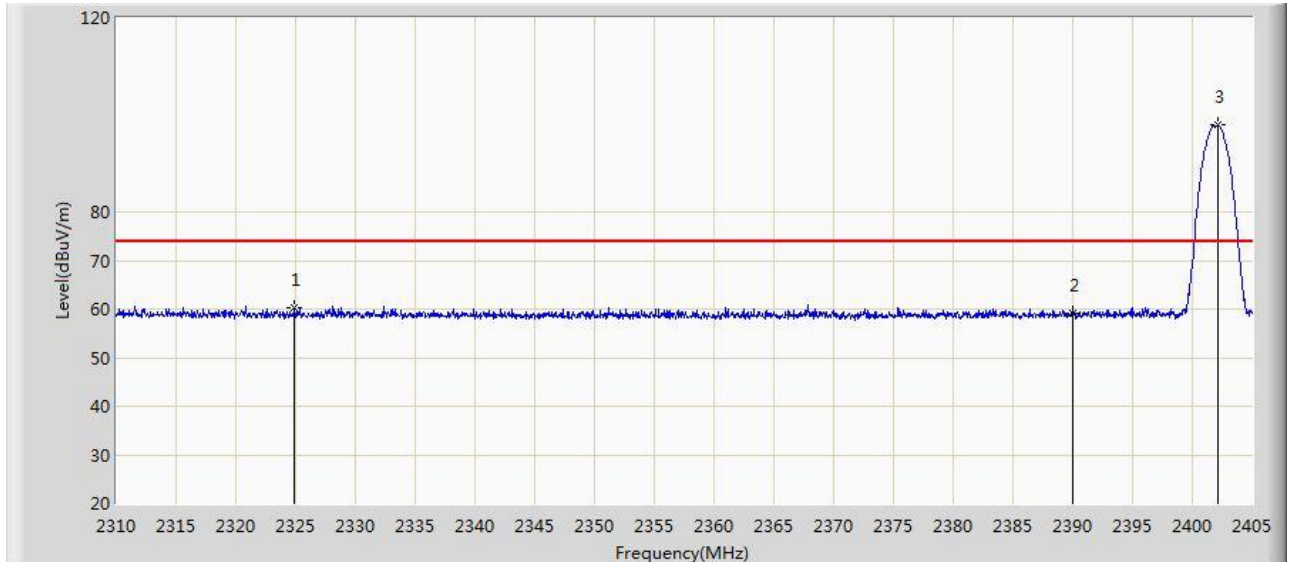
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2479.991	88.827	56.558	N/A	54.000	32.269	AV
2483.500	46.117	13.836	-7.883	54.000	32.282	AV

Figure 55: Band Edge, TM3, Vertical, PK


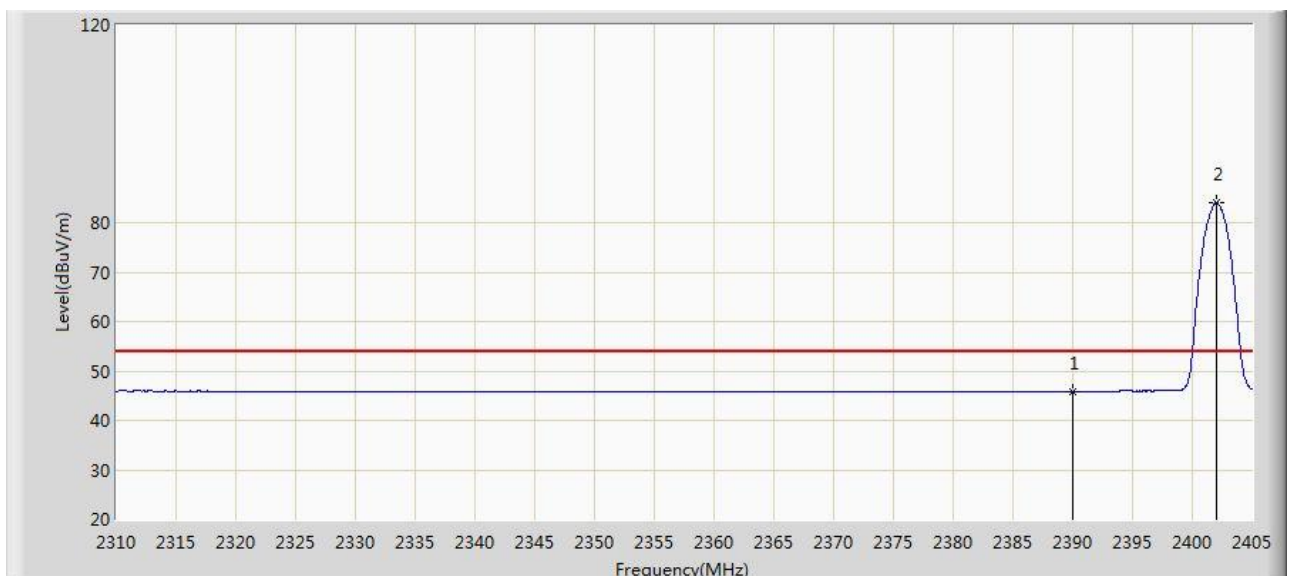
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2479.914	96.216	63.947	N/A	N/A	32.269	PK
2483.500	59.314	27.033	-14.686	74.000	32.282	PK
2485.700	60.141	27.852	-13.859	74.000	32.289	PK

Figure 56: Band Edge, TM3, Vertical, AV


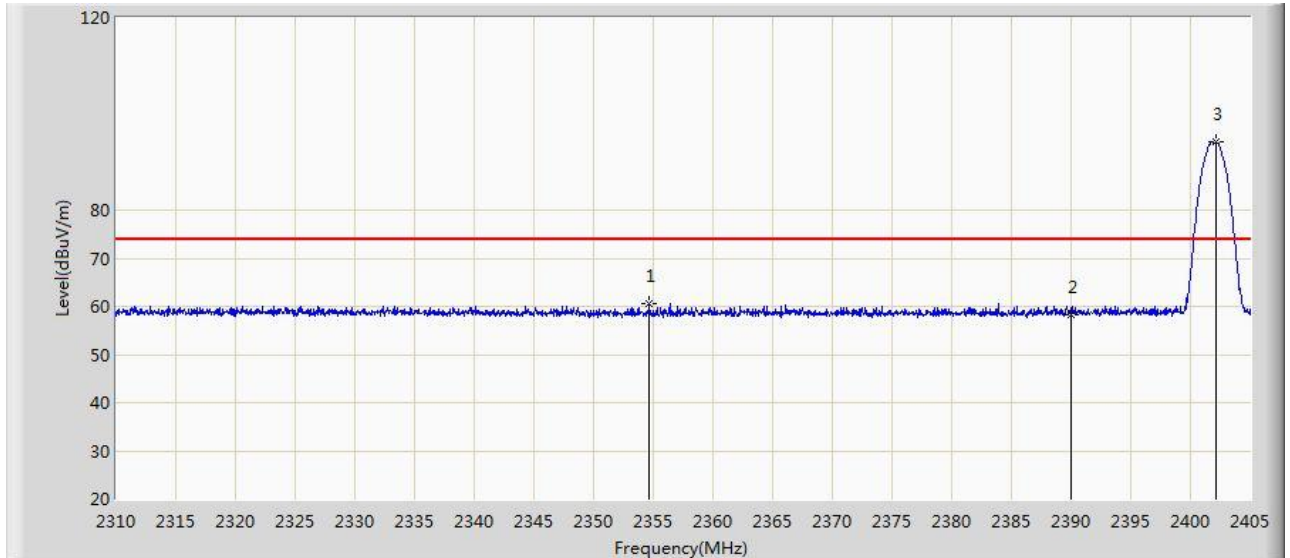
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2480.002	85.310	53.041	N/A	N/A	32.269	AV
2483.500	46.023	13.742	-7.977	54.000	32.282	AV

Figure 57: Band Edge, TM4, Horizontal, PK


Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2324.915	60.228	27.843	-13.772	74.000	32.384	PK
2390.000	59.246	26.968	-14.754	74.000	32.278	PK
2402.150	97.964	65.691	N/A	N/A	32.273	PK

Figure 58: Band Edge, TM4, Horizontal, AV


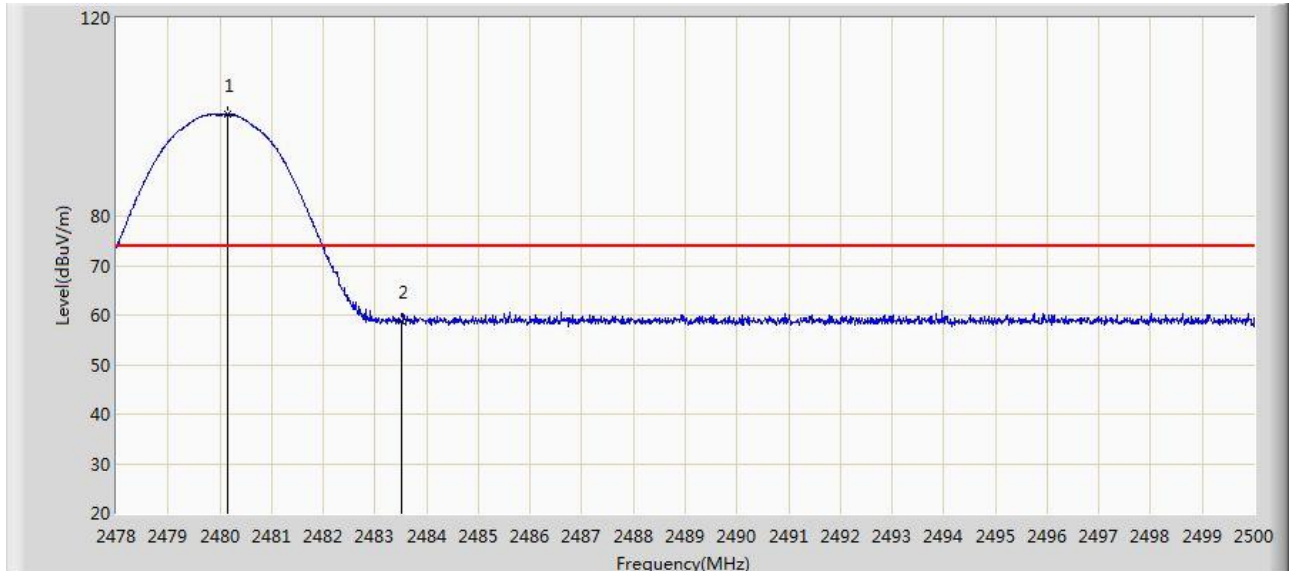
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2390.000	45.856	13.578	-8.144	54.000	32.278	AV
2402.055	84.000	51.726	N/A	N/A	32.273	AV

Figure 59: Band Edge, TM4, Vertical, PK


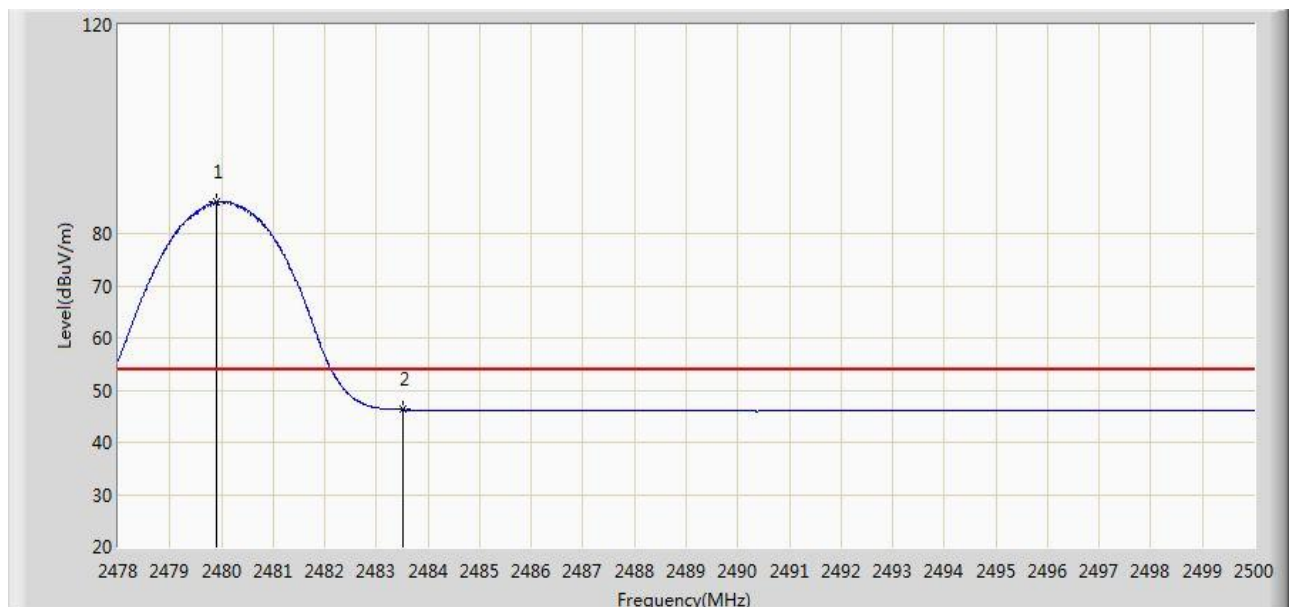
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2354.698	60.532	28.268	-13.468	74.000	32.263	PK
2390.000	58.143	25.865	-15.857	74.000	32.278	PK
2402.103	94.331	62.058	N/A	N/A	32.273	PK

Figure 60: Band Edge, TM4, Vertical, AV

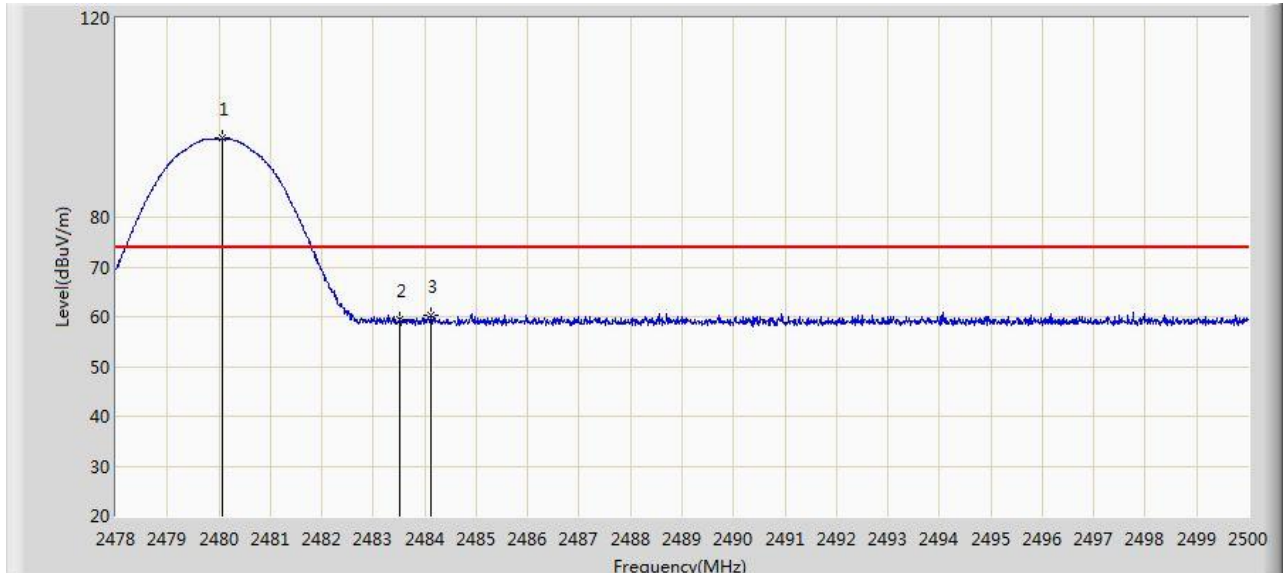

Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2390.000	45.901	13.623	-8.099	54.000	32.278	AV
2402.008	81.280	49.006	N/A	N/A	32.274	AV

Figure 61: Band Edge, TM6, Horizontal, PK


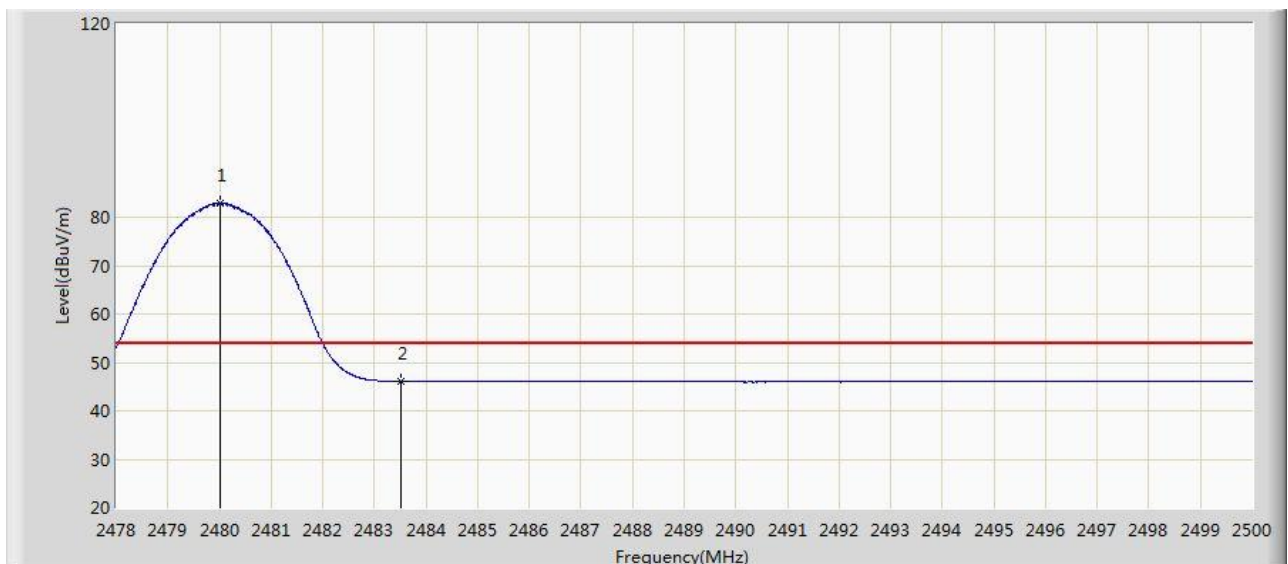
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2480.156	100.655	68.385	N/A	N/A	32.270	PK
2483.500	58.959	26.678	-15.041	74.000	32.282	PK

Figure 62: Band Edge, TM6, Horizontal, AV


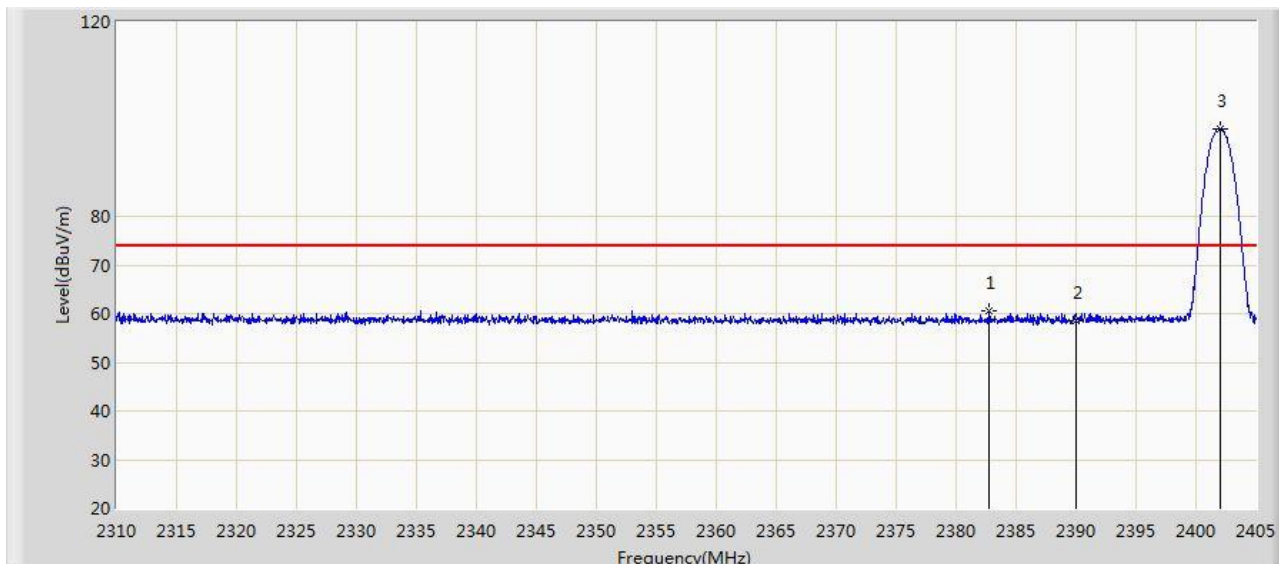
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2479.903	86.042	53.773	N/A	N/A	32.269	AV
2483.500	46.253	13.972	-7.747	54.000	32.282	AV

Figure 63: Band Edge, TM6, Vertical, PK


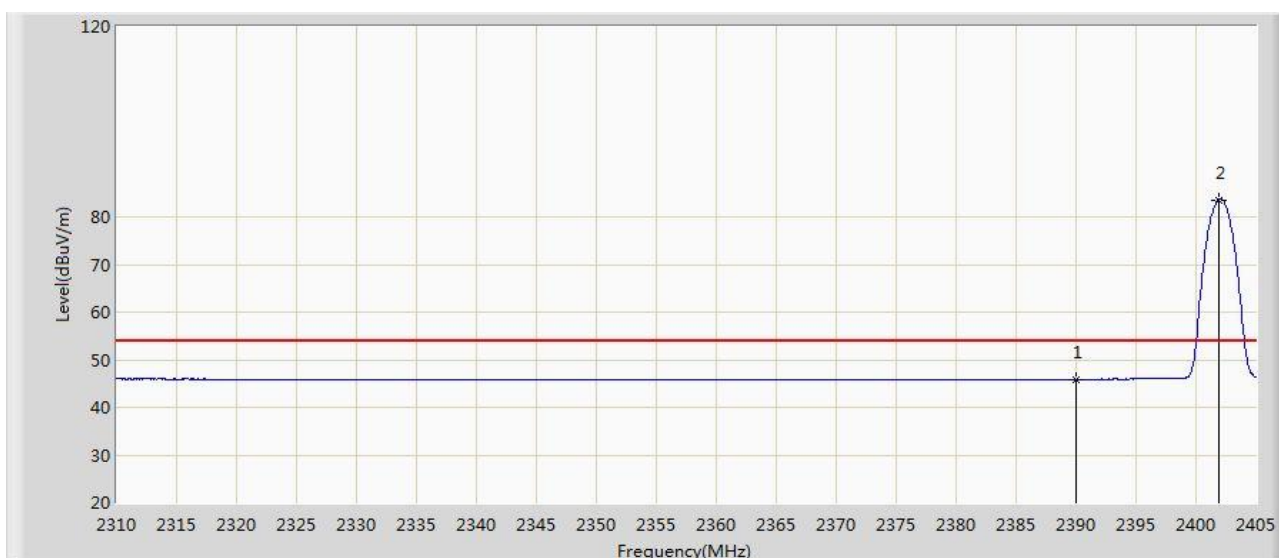
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2480.079	95.846	63.577	N/A	N/A	32.269	PK
2483.500	59.495	27.214	-14.505	74.000	32.282	PK
2484.127	60.365	28.082	-13.635	74.000	32.284	PK

Figure 64: Band Edge, TM6, Vertical, AV


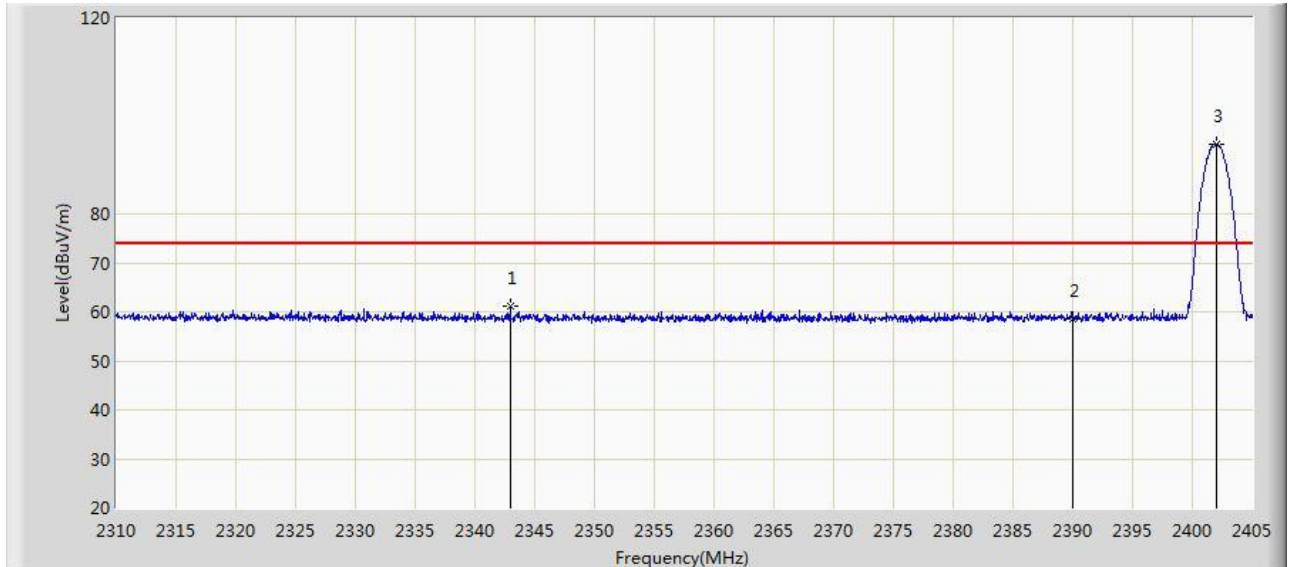
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2480.024	82.880	50.611	N/A	N/A	32.269	AV
2483.500	46.074	13.793	-7.926	54.000	32.282	AV

Figure 65: Band Edge, TM7, Horizontal, PK


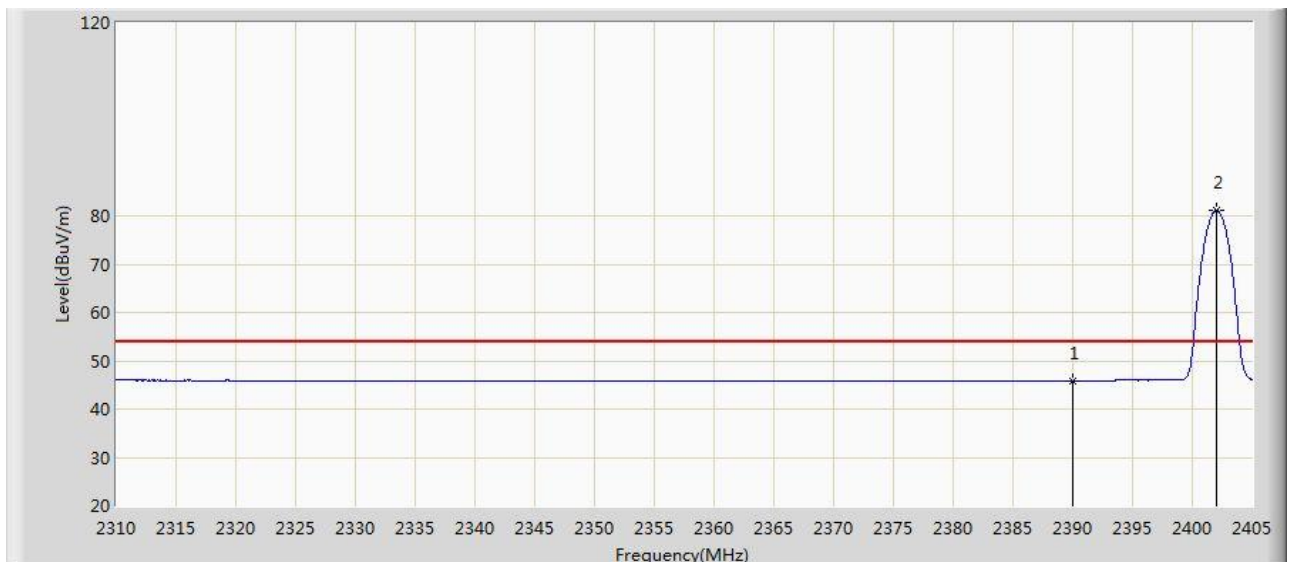
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2382.770	60.535	28.297	-13.465	74.000	32.238	PK
2390.000	58.544	26.266	-15.456	74.000	32.278	PK
2402.008	98.077	65.803	N/A	N/A	32.274	PK

Figure 66: Band Edge, TM7, Horizontal, AV


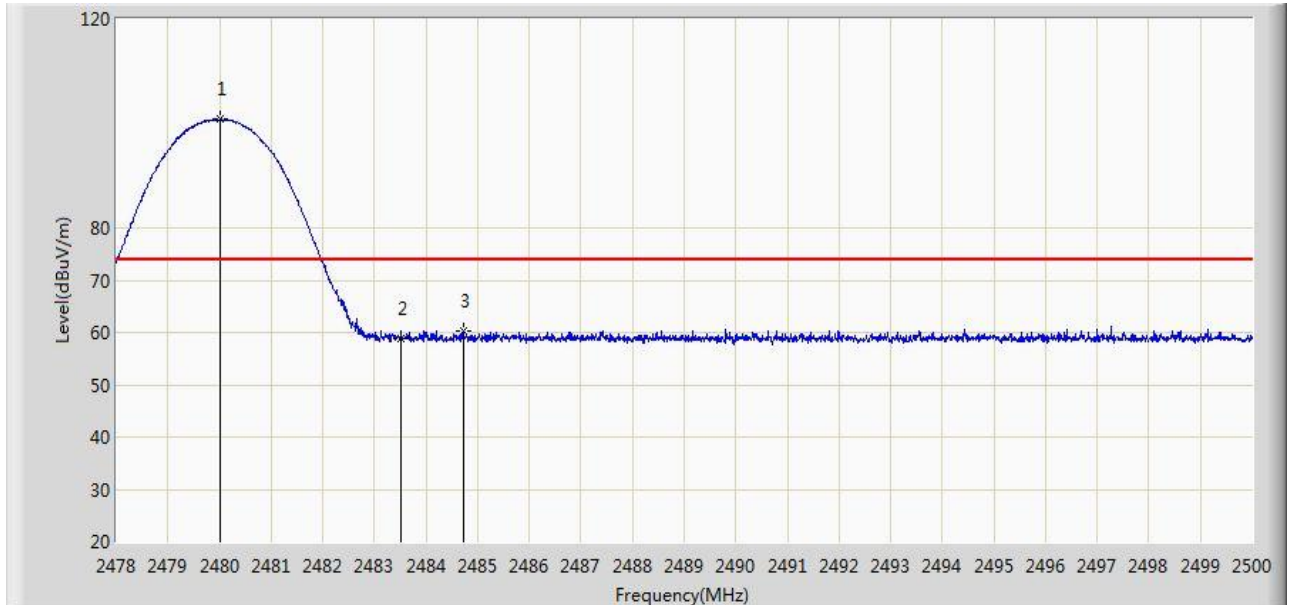
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2390.000	45.871	13.593	-8.129	54.000	32.278	AV
2401.865	83.577	51.303	N/A	N/A	32.274	AV

Figure 67: Band Edge, TM7, Vertical, PK


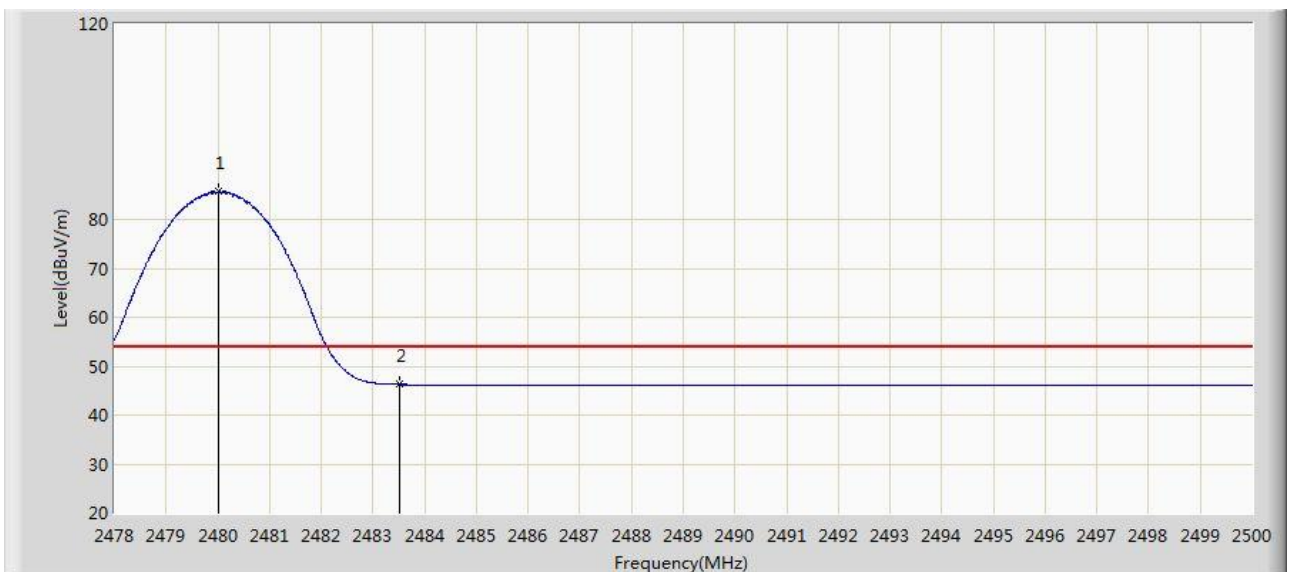
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2342.965	61.184	28.881	-12.816	74.000	32.303	PK
2390.000	58.427	26.149	-15.573	74.000	32.278	PK
2402.055	94.199	61.925	N/A	N/A	32.273	PK

Figure 68: Band Edge, TM7, Vertical, AV


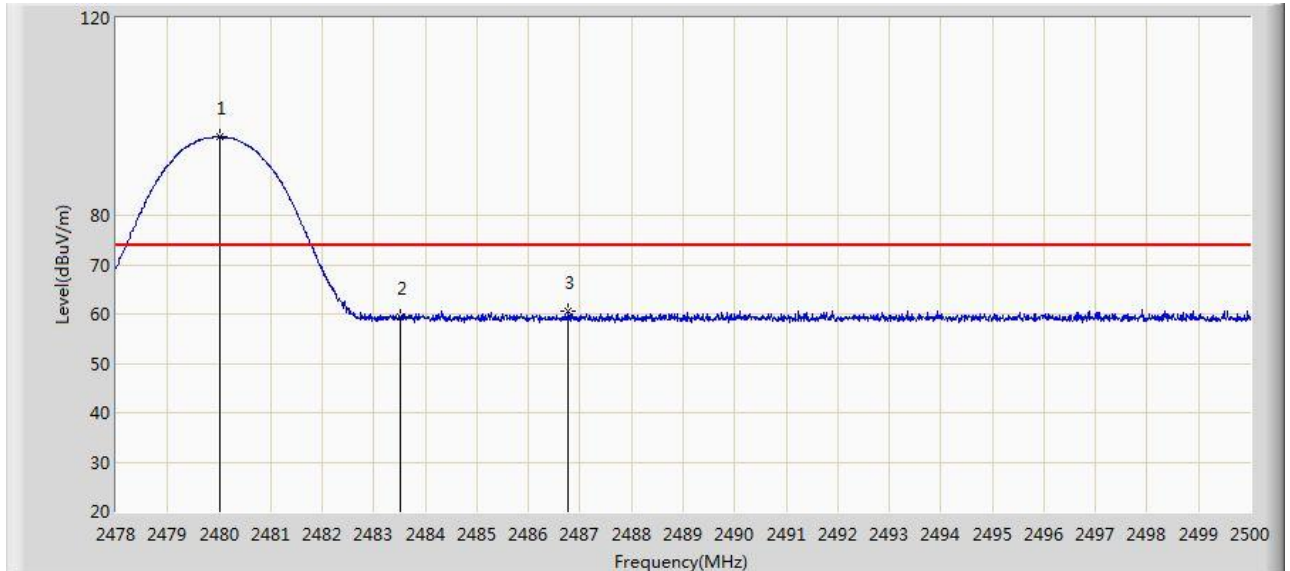
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2390.000	45.873	13.595	-8.127	54.000	32.278	AV
2402.055	81.062	48.788	N/A	N/A	32.273	AV

Figure 69: Band Edge, TM9, Horizontal, PK


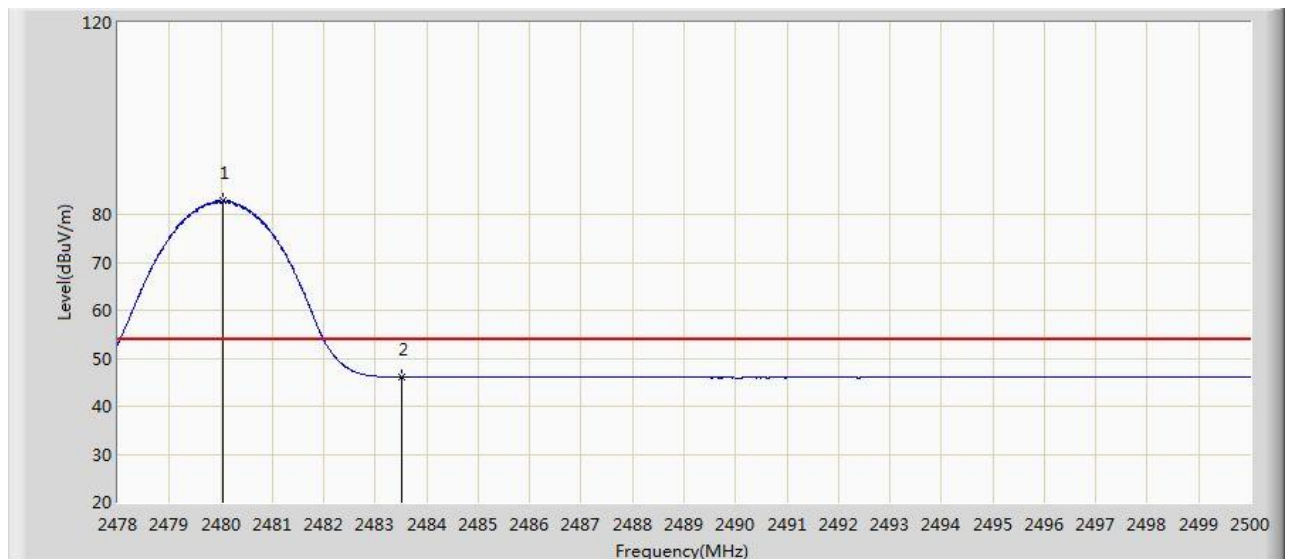
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2480.002	100.794	68.525	N/A	N/A	32.269	PK
2483.500	58.776	26.495	-15.224	74.000	32.282	PK
2484.721	60.228	27.943	-13.772	74.000	32.286	PK

Figure 70: Band Edge, TM9, Horizontal, AV


Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2480.002	85.660	53.391	N/A	N/A	32.269	AV
2483.500	46.260	13.979	-7.740	54.000	32.282	AV

Figure 71: Band Edge, TM9, Vertical, PK


Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2480.002	95.883	63.614	N/A	N/A	32.269	PK
2483.500	59.358	27.077	-14.642	74.000	32.282	PK
2486.778	60.608	28.315	-13.392	74.000	32.293	PK

Figure 72: Band Edge, TM9, Vertical, AV


Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor [dB]	Type
2480.035	82.775	50.506	N/A	N/A	32.269	AV
2483.500	46.114	13.833	-7.886	54.000	32.282	AV

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