243 Jubug-Ri,Yangji-Myeon, Yongin-Si, Gyeonggi-Do, Korea 449-822
Tel: +82-31-323-6008 Fax: +82-31-323-6010
http://www.ltalab.com

Dates of Tests: November 14 ~ 23, 2016
Test Report S/N: LR500111611H
Test Site : LTA CO., LTD.

CERTIFICATION OF COMPLIANCE

FCC ID. **PBNET30KH-BT**

APPLICANT **ENTERMEDIA CO., LTD.**

Equipment Class	:	**Digital Transmission System (DTS)**
Manufacturing Description	:	**Karaoke device**
Manufacturer	:	**ENTERMEDIA CO., LTD.**
Model name	:	**ET30KH-BT**
Variant model	:	**ET30KH**
Test Device Serial No.:	:	**Identical prototype**
Rule Part(s)	:	**FCC Part 15.247 Subpart C ; ANSI C-63.4-2014**
Frequency Range	:	**2402 MHz ~ 2480 MHz(Bluetooth BLE)** **2412 MHz ~ 2462 MHz(802.11 b/g/n)**
Max. Output Power	:	**Max 6.82 dBm – Conducted(Bluetooth BLE)** **Max 22.05 dBm – Conducted(802.11 b/g/n)**
Data of issue	:	**December 05, 2016**

This test report is issued under the authority of:

Yong-Cheol, Wang / Manager

The test was supervised by:

Jung-won, Seo / Test Engineer

This test result only responds to the tested sample. It is not allowed to copy this report even partly without the allowance of the test laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

NVLAP LAB Code.: 200723-0

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APPENDIX TEST EQUIPMENT USED FOR TESTS ---------- 83

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1. General information

1-1 Test Performed

Company name : LTA Co., Ltd.

Address : 243, Jubug-ri,Yangji-Myeon,Youngin-Si, Kyunggi-Do, Korea. 449-822

Web site : http://www.ltalab.com

E-mail : chahn@ltalab.com

Telephone : +82-31-323-6008

Facsimile +82-31-323-6010

Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the "General requirements for the competents of calibration and testing laboratory".

1-2 Accredited agencies

LTA Co., Ltd. is approved to perform EMC testing by the following agencies:

Agency	Country	Accreditation No.	Validity	Reference
NVLAP	U.S.A	200723-0	2016-09-30	ECT accredited Lab.
RRA	KOREA	KR0049	-	EMC accredited Lab.
FCC	U.S.A	610755	2017-04-21	FCC filing
FCC	U.S.A	649054	2017-04-13	FCC CAB
VCCI	JAPAN	R2133(10 m), C2307	2017-06-21	VCCI registration
VCCI	JAPAN	T-2009	2016-12-23	VCCI registration
VCCI	JAPAN	G-563	2018-12-13	VCCI registration
IC	CANADA	5799A-1	2019-11-07	IC filing
KOLAS	KOREA	NO.551	2017-01-08	KOLAS accredited Lab.

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2. Information about test item

2-1 Client & Manufacturer

Company name	:	ENTERMEDIA CO., LTD.
Address	:	Enter Bldg, 157-1, Seongo-ro, Ojeong-gu, Bucheon-si, Gyeonggi-do, Korea
Tel / Fax	:	TEL No : +82-02-680-9139 / FAX No : +82-32-673-0868

2-2 Secondary Manufacturer

Company name	:	ASSA TECHNOLOGY JOINT STOCK COMPANY
Address	:	Thanh Hoa Hamlet, Ho Nai 3 ward, Trang Bom District, Dong Nai province, Vietnam

2-3 Equipment Under Test (EUT)

Model name	:	ET30KH-BT
Variant model name	:	ET30KH
Serial number	:	Identical prototype
Date of receipt	:	November 11, 2016
EUT condition	:	Pre-production, not damaged
Antenna type	:	IFA antenna - Max Gain 4.75 dBi
Frequency Range	:	2402 MHz ~ 2480 MHz (Bluetooth BLE) 2412 MHz ~ 2462 MHz (802.11 b/g/n)
RF output power	:	Max 6.82 dBm – Conducted (Bluetooth BLE) Max 22.05 dBm – Conducted (802.11 b/g/n)
Number of channels	:	40 (Bluetooth BLE) 11 (802.11 b/g/n)
Type of Modulation	:	QPSK, Direct Sequence Spread Spectrum(DSSS)
Power Source	:	AC 110 V
Firmware Version	:	V1.0.0

2-4 Tested frequency

Bluetooth BLE	LOW	MID	HIGH
Frequency (MHz)	2402	2442	2480

802.11 b/g/n	LOW	MID	HIGH
Frequency (MHz)	2412	2442	2462

2-5 Ancillary Equipment

Equipment	Model No.	Serial No.	Manufacturer
Monitor	VA703	8171340UV160R	ViewSonic

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3. Test Report

3.1 Summary of tests

FCC Part Section(s)	Parameter	Limit	Test Condition	Status (note 1)
15.247(a)	6 dB Bandwidth	> 500 kHz	Conducted	C
15.247(b)	Transmitter Peak Output Power	< 1 Watt		C
15.247(d)	Transmitter Power Spectral Density	< 8 dBm @ 3 kHz		C
15.247(d)	Band Edge	> 20 dBc		C
15.209	Field Strength of Harmonics	Emission	Radiated	C
15.207	AC Conducted Emissions	Emissions	Conducted	C
15.203	Antenna requirement	-	-	C

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note 2: The data in this test report are traceable to the national or international standards.

→ Antenna Requirement
The ENTERNEDIA CO.,LTD. FCC ID: PBNET30KH-BT unit complies with the requirement of §15.203.
The antenna type is IFA Antenna

The sample was tested according to the following specification:
*FCC Parts 15.247; ANSI C-63.4-2014
*FCC KDB Publication No. 558074 v03r05
*FCC TCB Workshop 2012, April

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3.2 Technical Characteristics Test

3.2.1 6 dB Bandwidth

Procedure:

The bandwidth at 6 dB below the highest in-band spectral density was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate frequencies.

After the trace being stable, Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 6 dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is the 6 dB bandwidth of the emission.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW = 100 kHz

Span = 5 MHz, 30 MHz

VBW = 100 kHz (VBW ≥ RBW)

Sweep = auto

Trace = max hold

Detector function = peak

Measurement Data : Complies

(Bluetooth BLE)

Frequency (MHz)	Test Results	
	Measured Bandwidth (MHz)	Result
2402	**0.608**	Complies
2442	**0.601**	Complies
2480	**0.608**	Complies

(802.11 b)

Frequency (MHz)	Test Results	
	Measured Bandwidth (MHz)	Result
2412	**10.810**	Complies
2442	**11.027**	Complies
2462	**10.767**	Complies

(802.11 g)

Frequency (MHz)	Test Results	
	Measured Bandwidth (MHz)	Result
2412	**17.062**	Complies
2442	**17.192**	Complies
2462	**17.106**	Complies

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(802.11 n)

Frequency (MHz)	Test Results	
	Measured Bandwidth (MHz)	Result
2412	**18.755**	Complies
2442	**18.408**	Complies
2462	**18.452**	Complies

- See next pages for actual measured spectrum plots.

Minimum Standard:

6 dB Bandwidth > 500 kHz

Measurement Setup

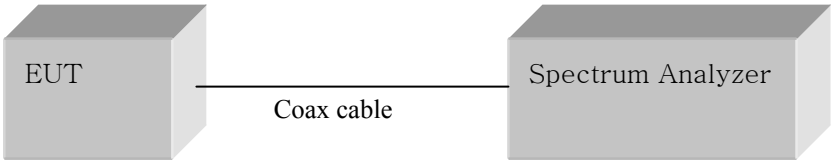

Figure 1: Measurement setup for the carrier frequency separation

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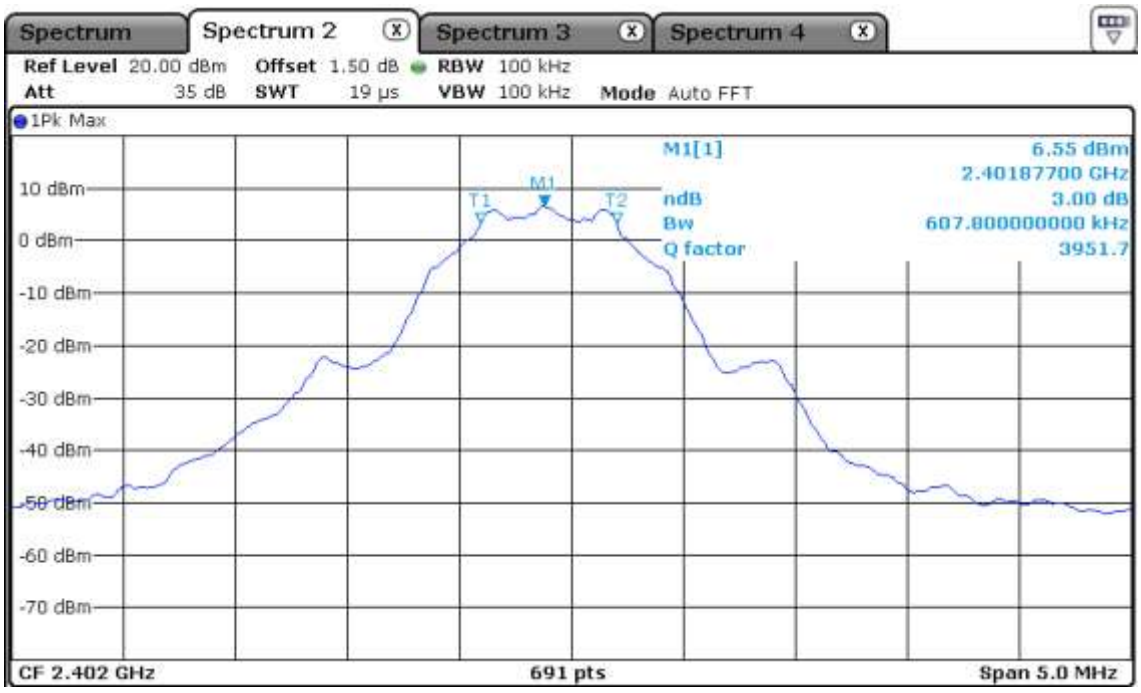
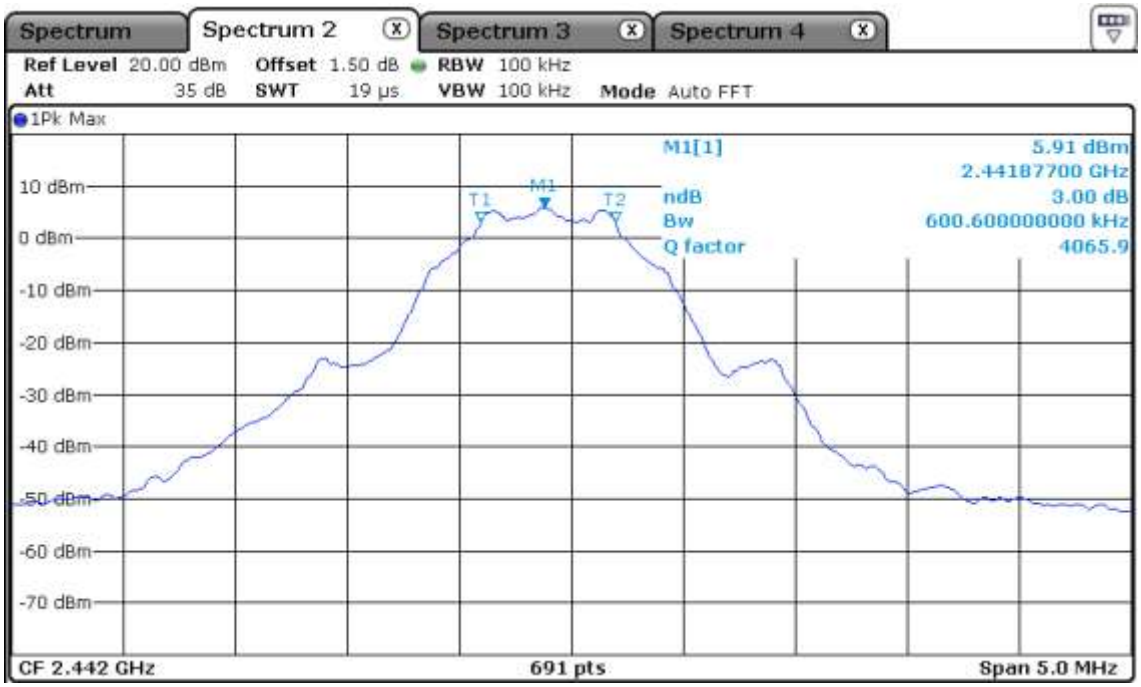
Low Channel – Bluetooth BLE



Middle Channel – Bluetooth BLE



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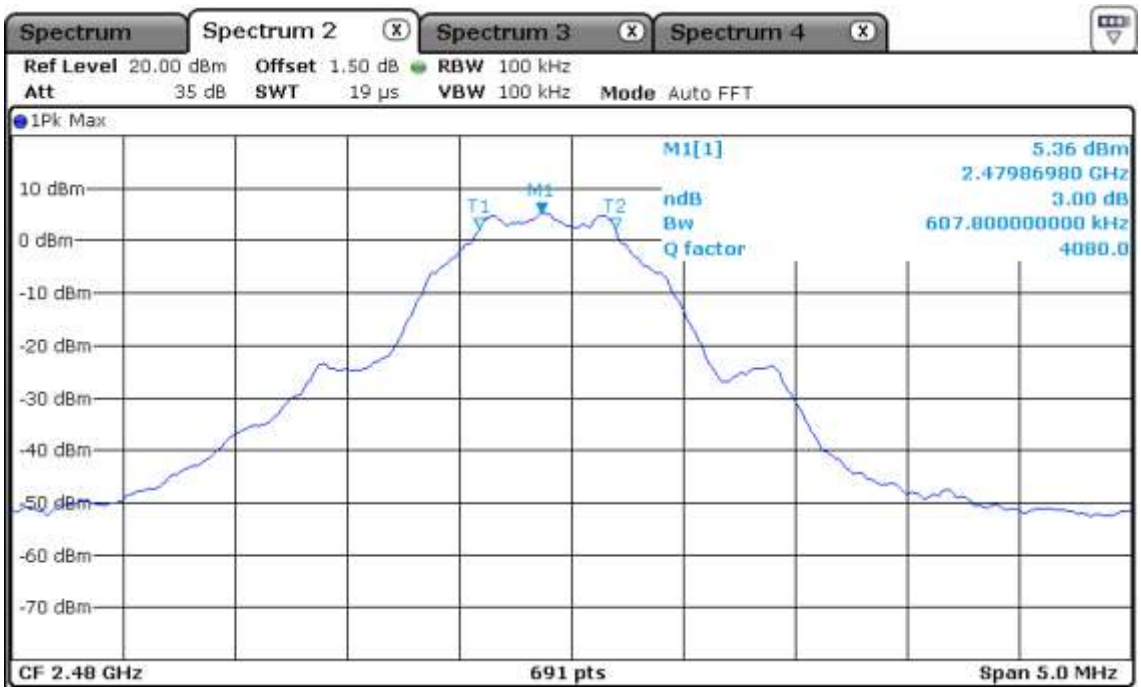
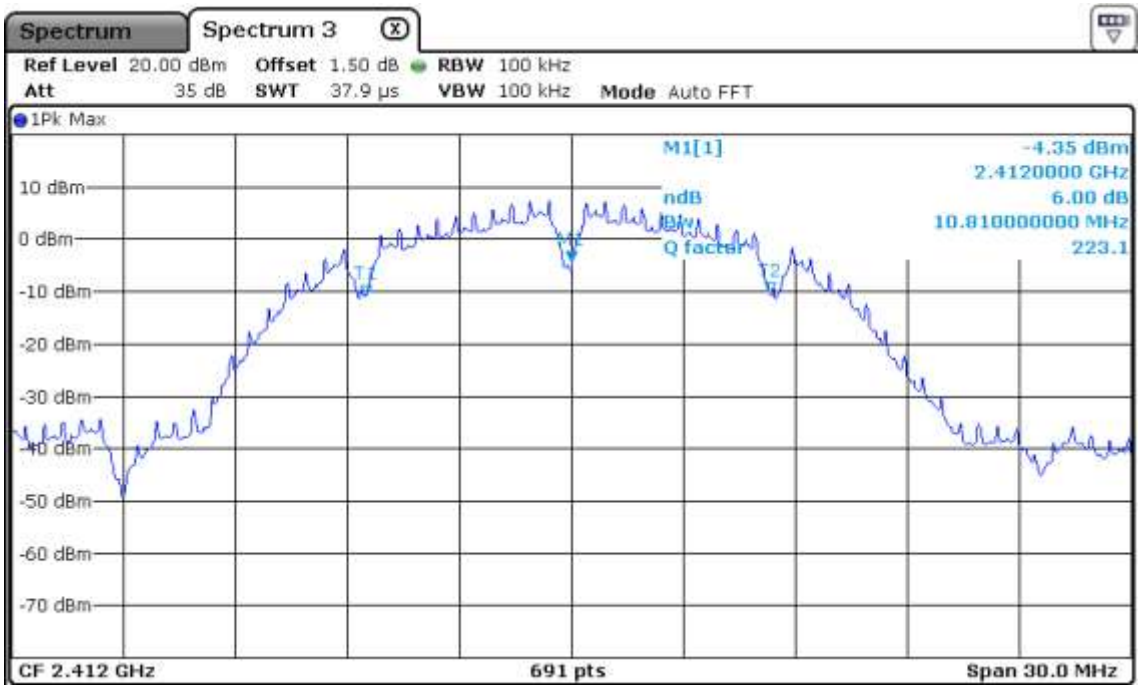
High Channel – Bluetooth BLE



Low Channel – 802.11 b



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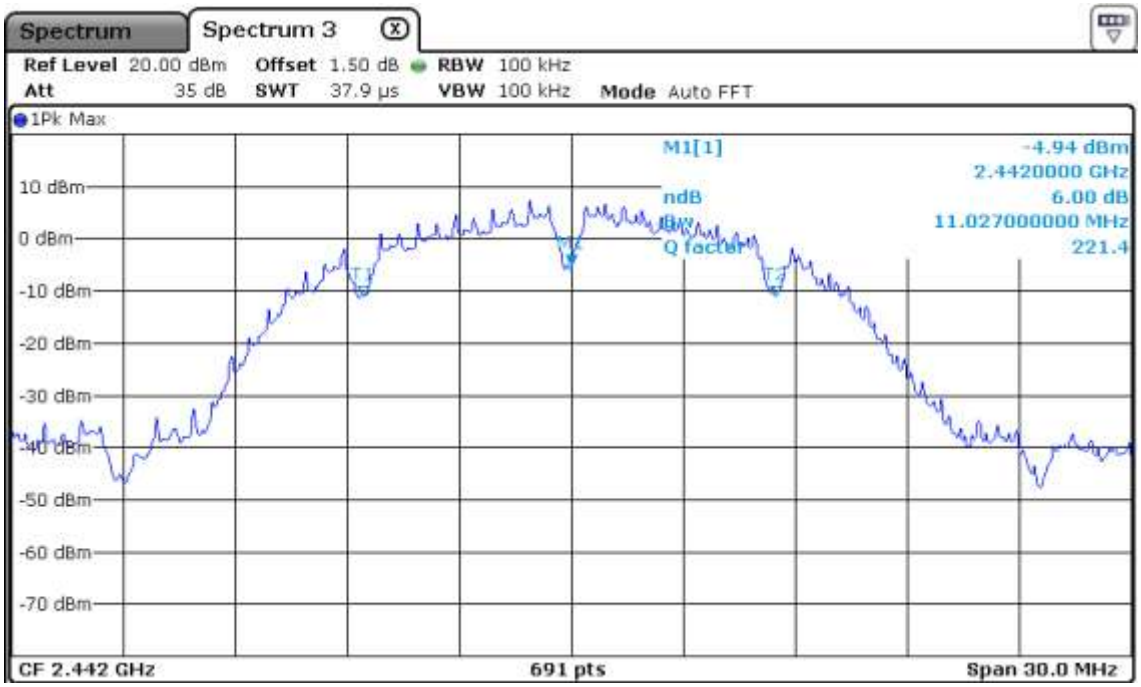
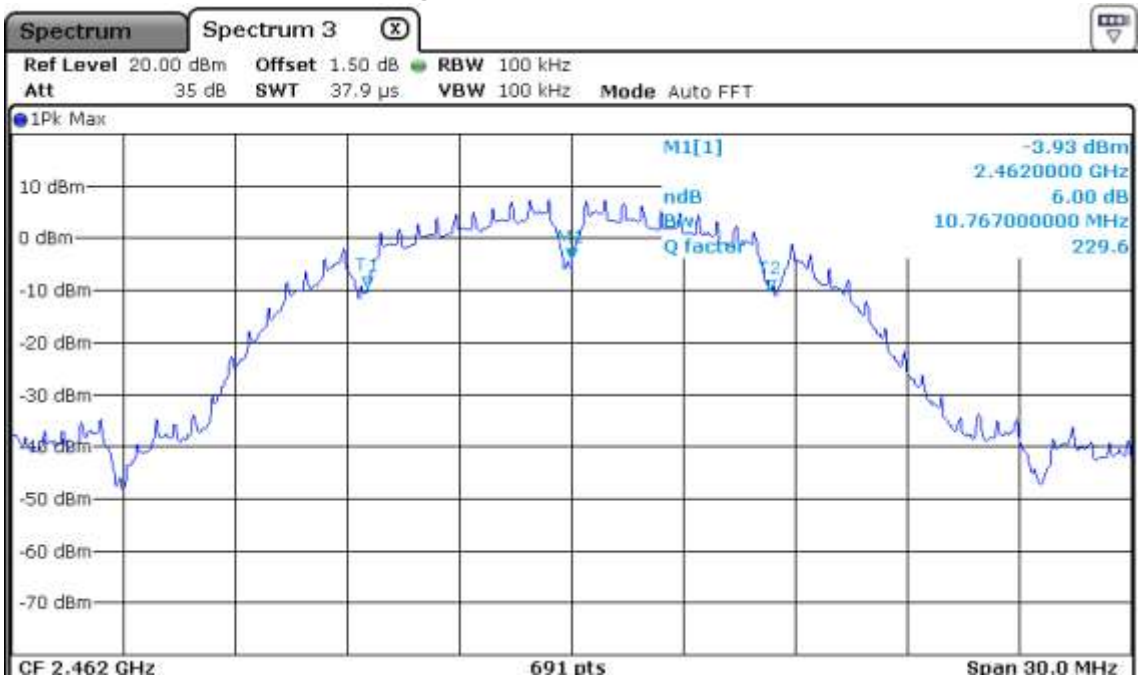
Middle Channel – 802.11 b



High Channel – 802.11 b



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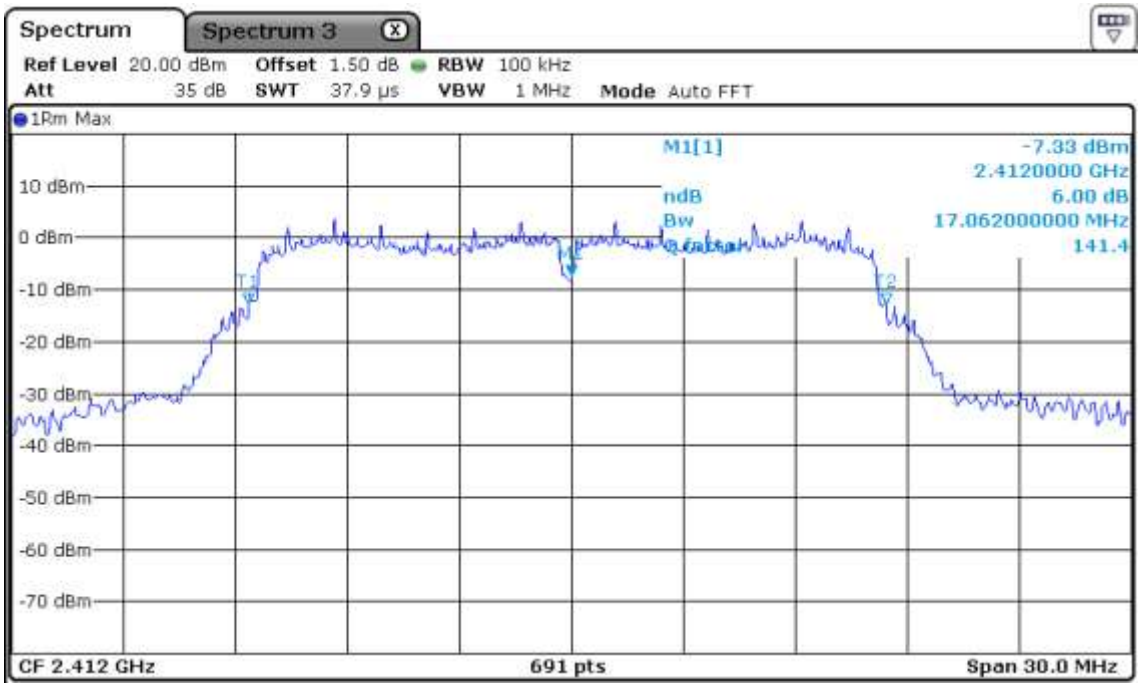
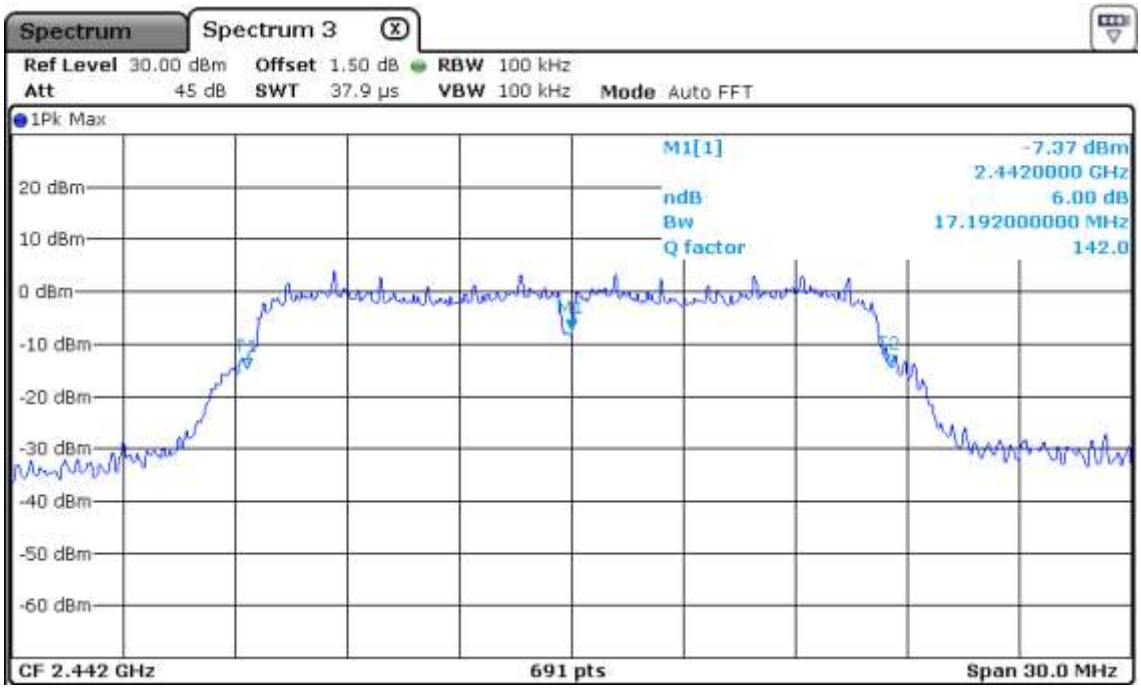
Low Channel – 802.11 g



Middle Channel – 802.11 g



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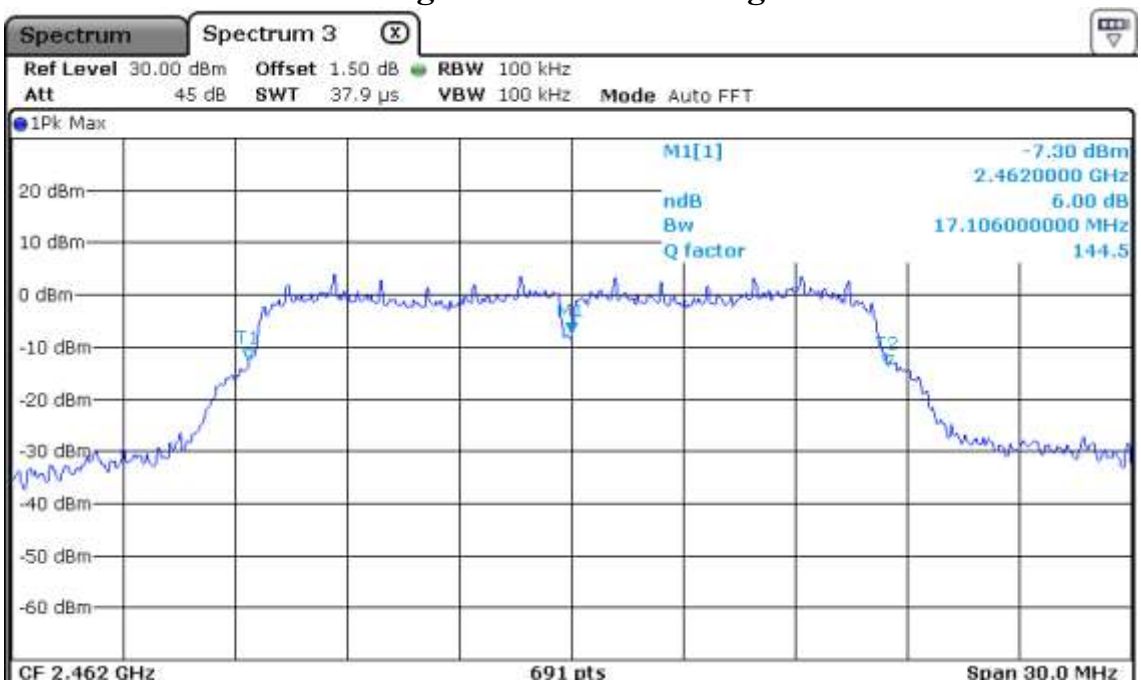
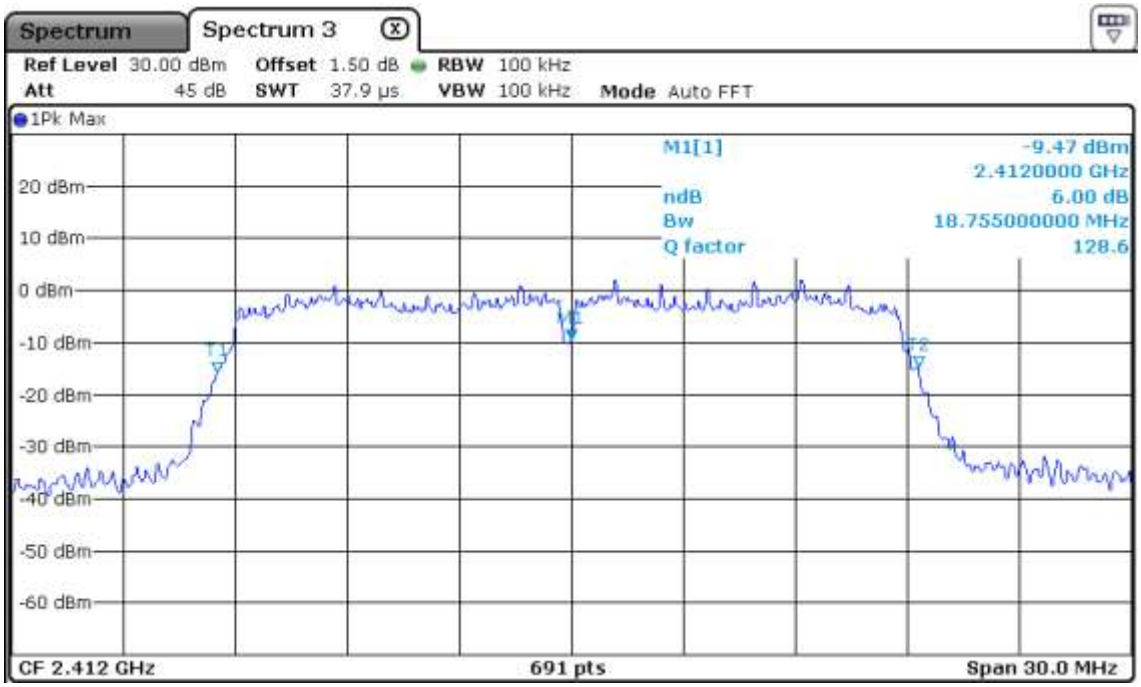
High Channel – 802.11 g



Low Channel – 802.11 n



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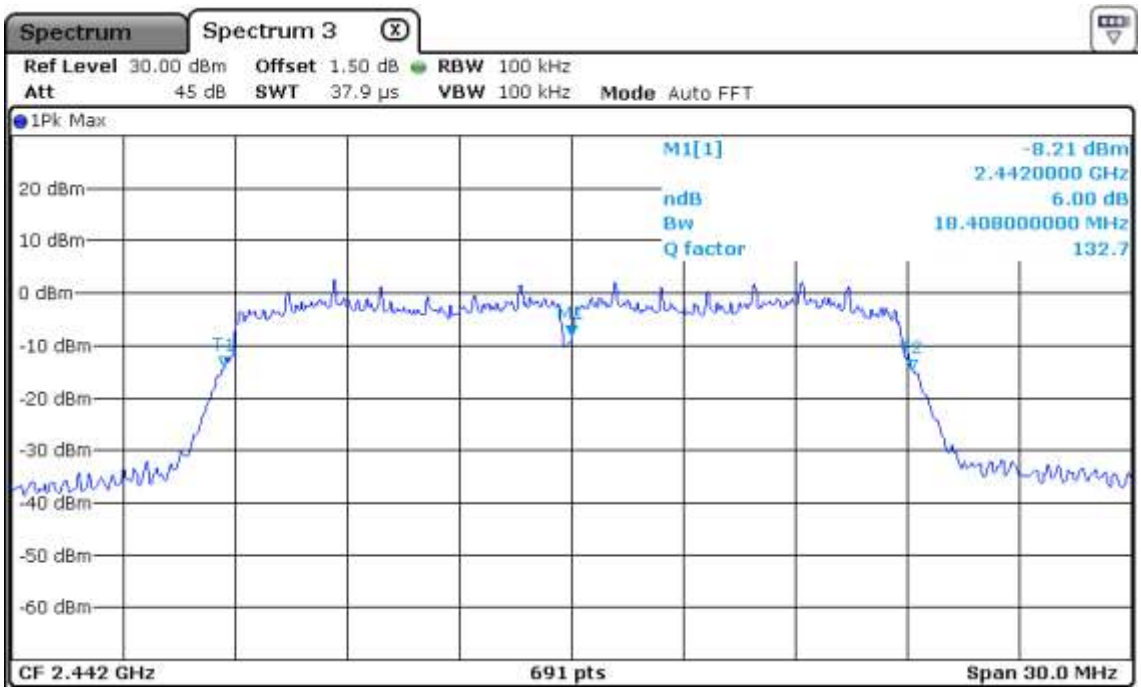
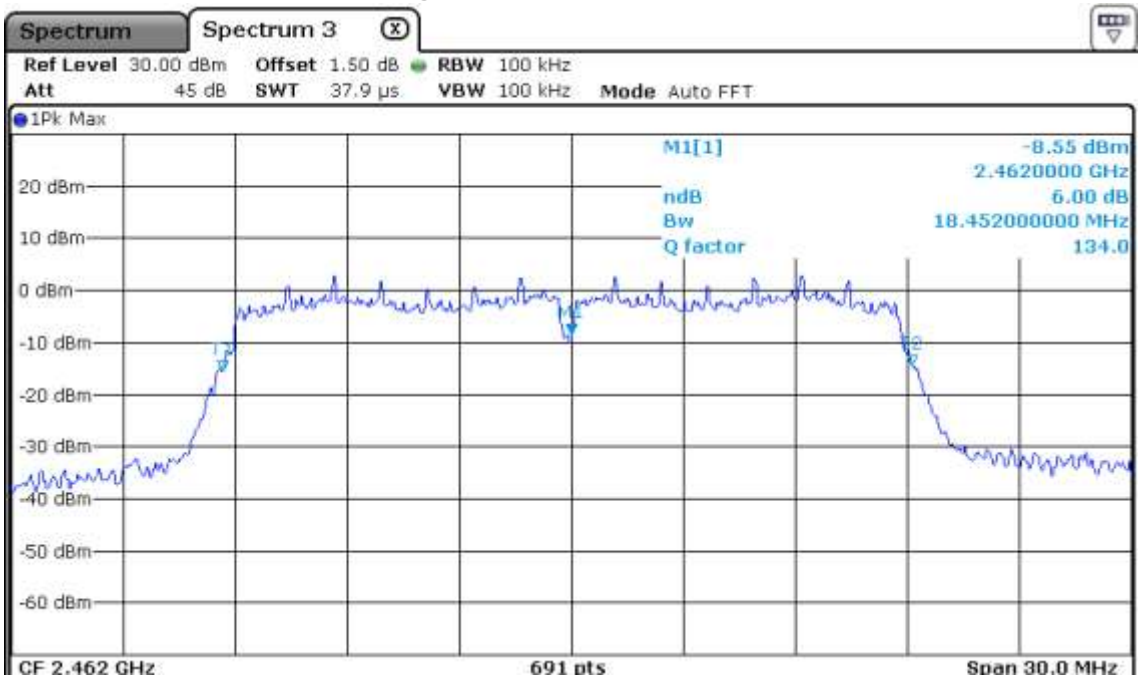
Middle Channel – 802.11 n



High Channel – 802.11 n



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3.2.2 Peak Output Power Measurement

Procedure:

The maximum peak output power was measured with the spectrum analyzer connected to the antenna output of the EUT. The spectrum analyzer's internal channel power integration function is used to integrate the power over a bandwidth greater than or equal to the 99% bandwidth. The EUT was operating in transmit mode at the appropriate center frequency.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW = 1MHz Span = auto

VBW = 1MHz (VBW ≥ RBW) Sweep = auto

Detector function = peak

Measurement Data : Complies

(Bluetooth BLE)

Frequency (MHz)	Test Results		
	dBm	W	Result
2402	6.82	0.0048	Complies
2442	6.15	0.0041	Complies
2480	5.62	0.0036	Complies

(802.11 b)

Frequency (MHz)	Test Results		
	dBm	W	Result
2412	18.92	0.0780	Complies
2442	17.64	0.0581	Complies
2462	20.51	0.1125	Complies

(802.11 g)

Frequency (MHz)	Test Results		
	dBm	W	Result
2412	22.05	0.1603	Complies
2442	21.75	0.1496	Complies
2462	22.05	0.1603	Complies

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(802.11 n)

Frequency (MHz)	Test Results		
	dBm	W	Result
2412	**20.74**	**0.1186**	Complies
2442	**20.38**	**0.1091**	Complies
2462	**20.61**	**0.1151**	Complies

- See next pages for actual measured spectrum plots.

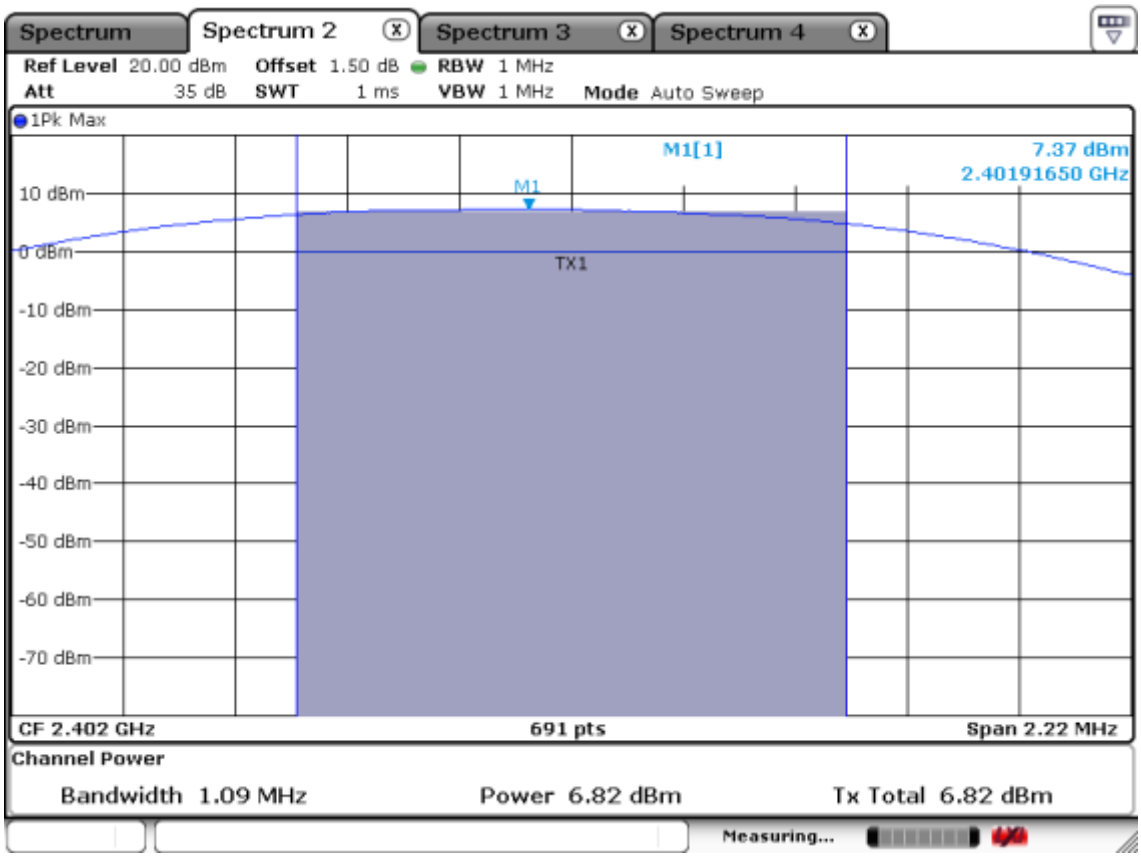
Minimum Standard:

Peak output power	< 1 W

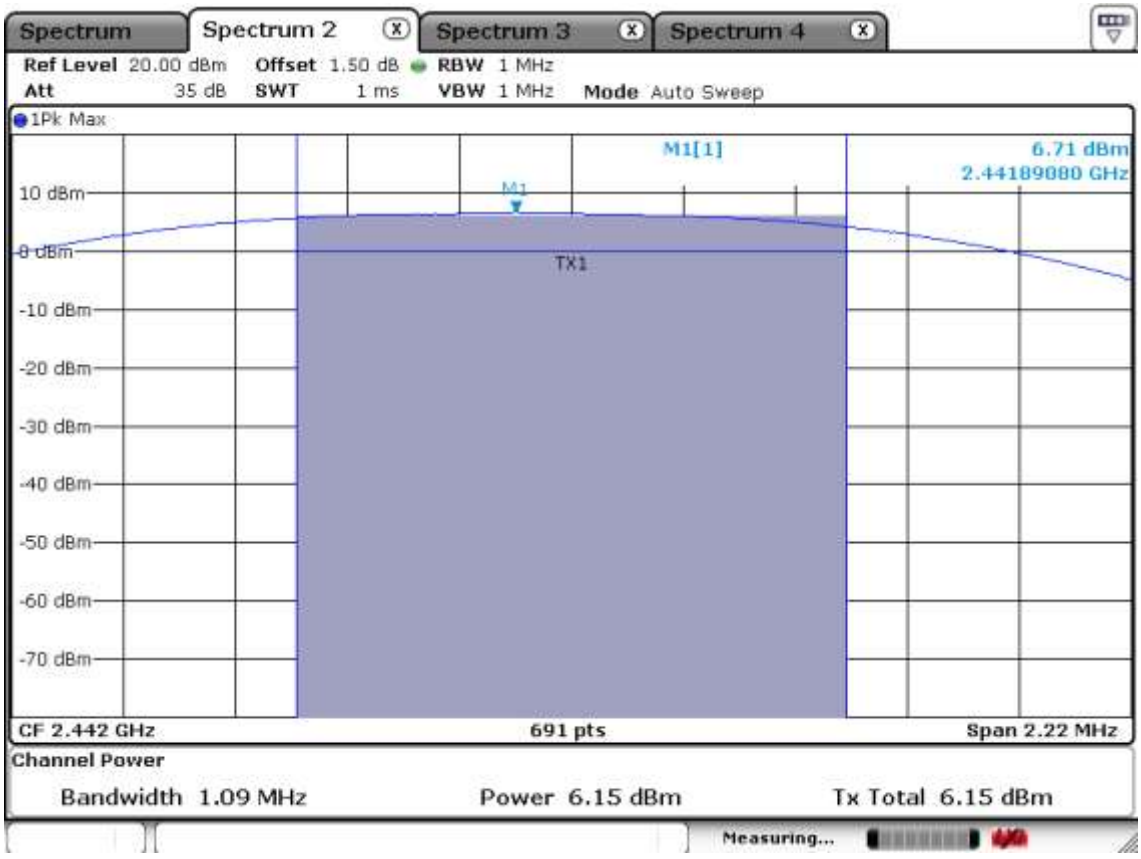
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

Low Channel – Bluetooth BLE



Middle Channel – Bluetooth BLE



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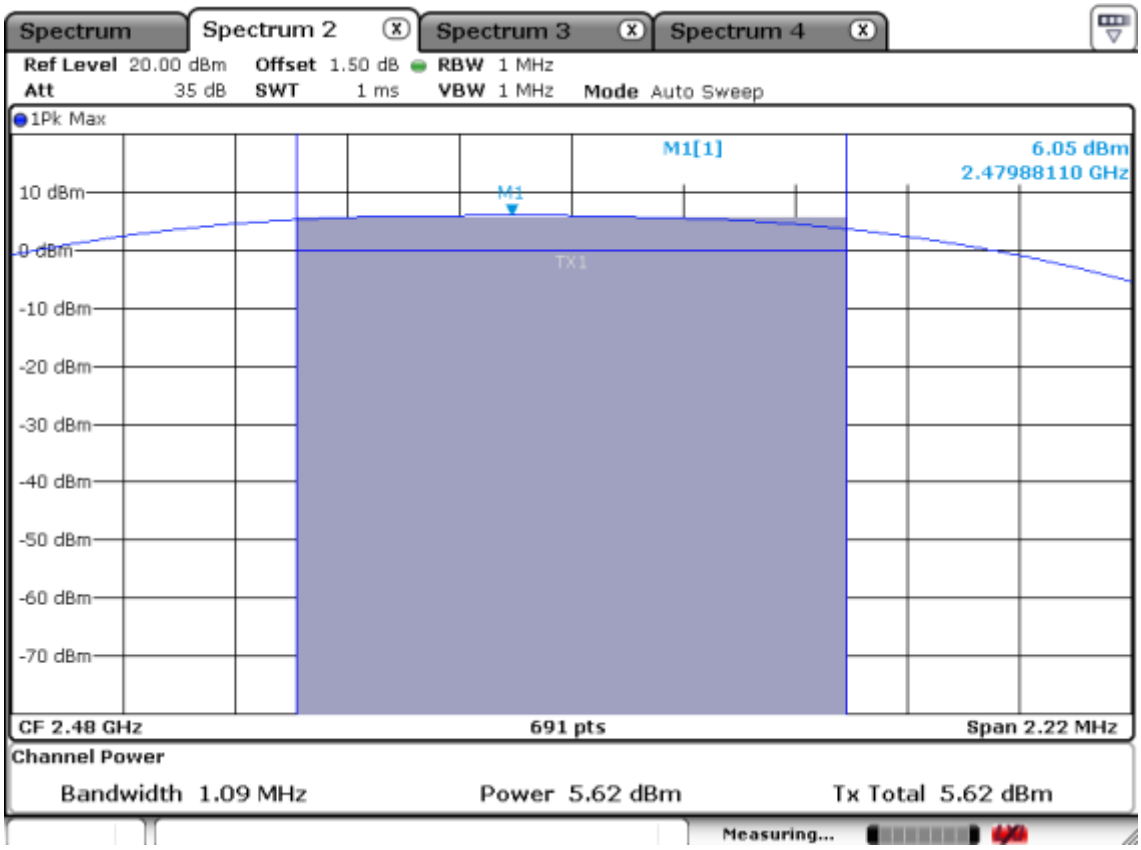
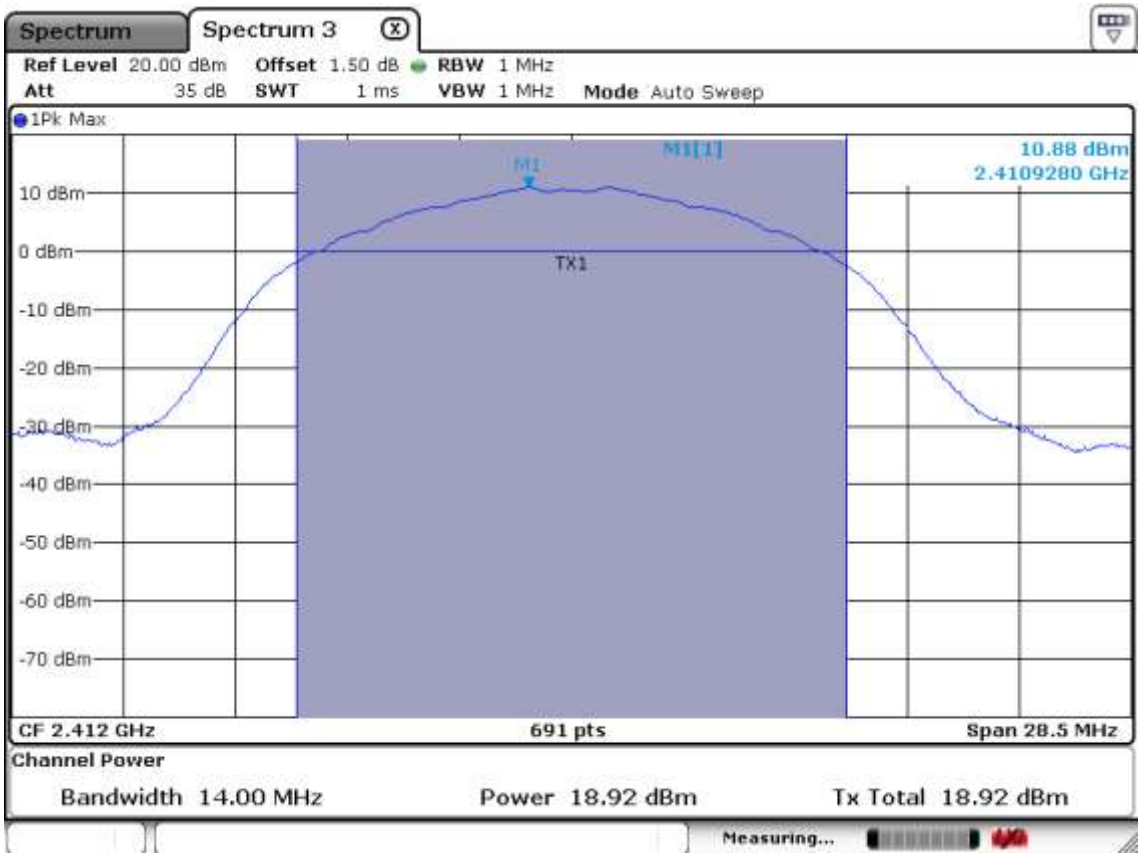
High Channel – Bluetooth BLE



Low Channel – 802.11 b



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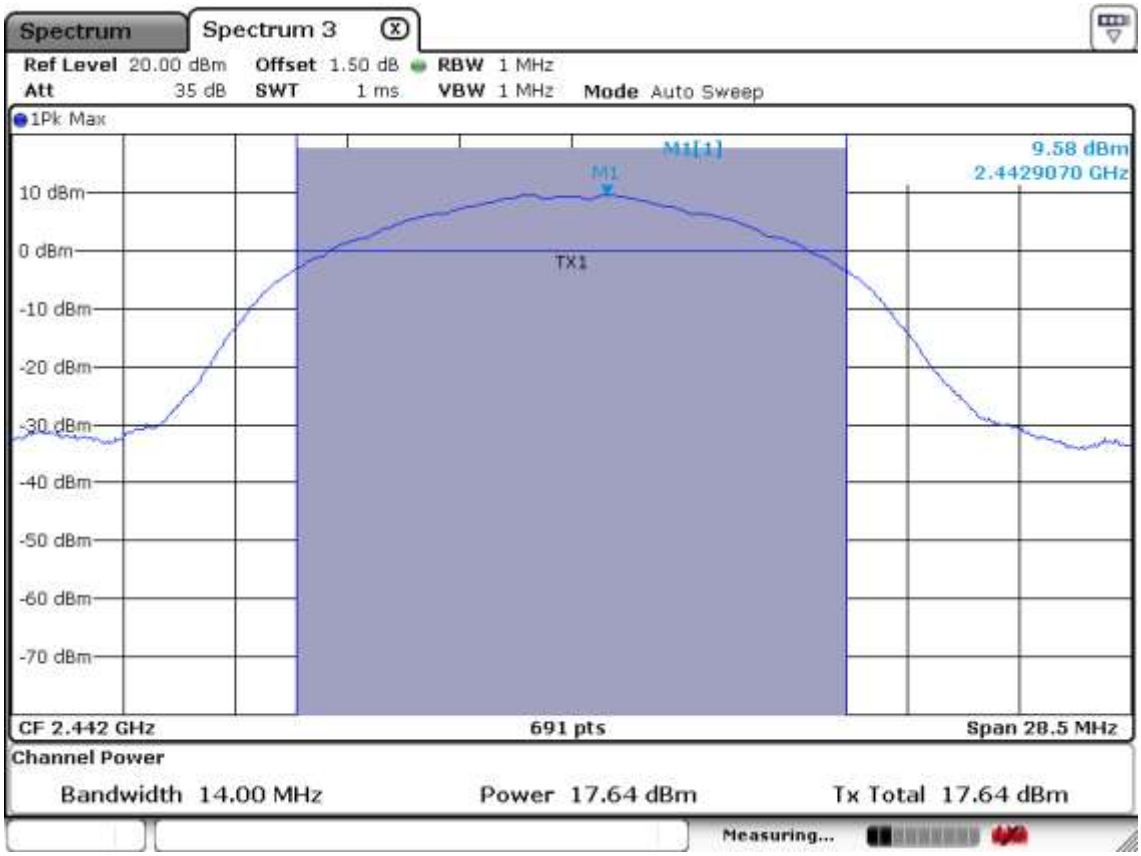
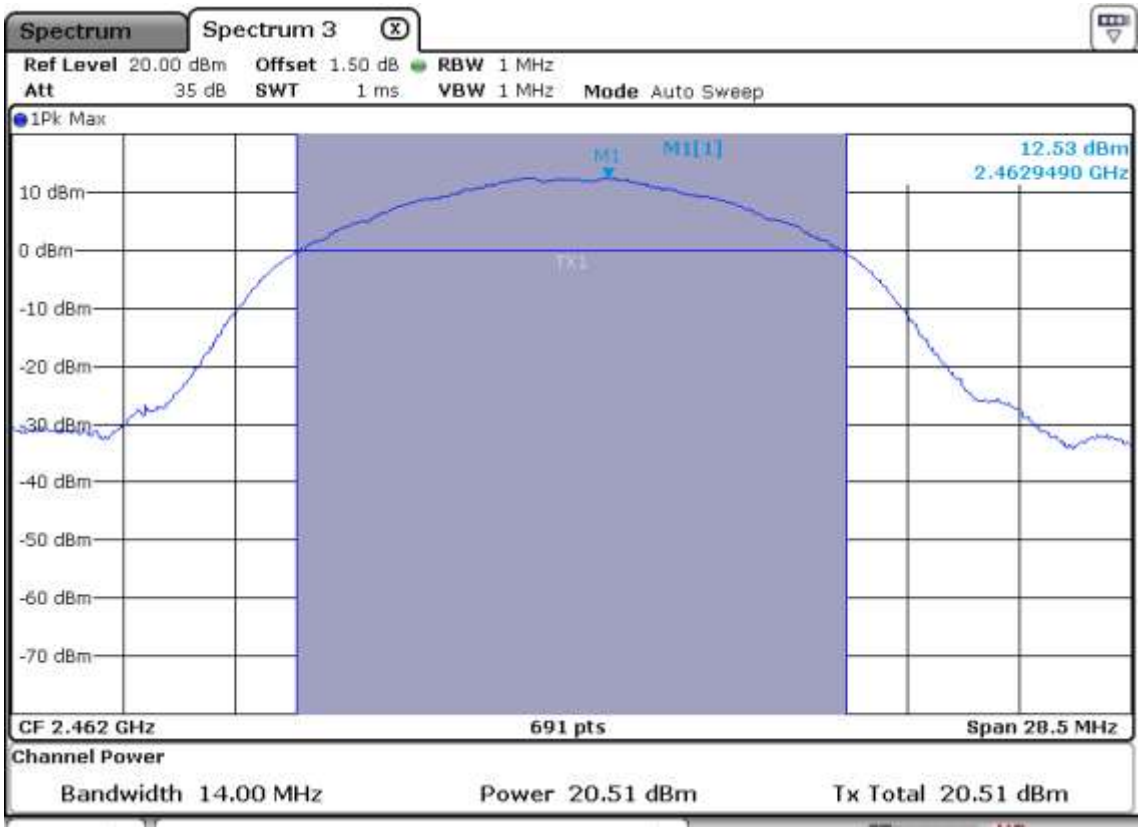
Middle Channel – 802.11 b



High Channel – 802.11 b



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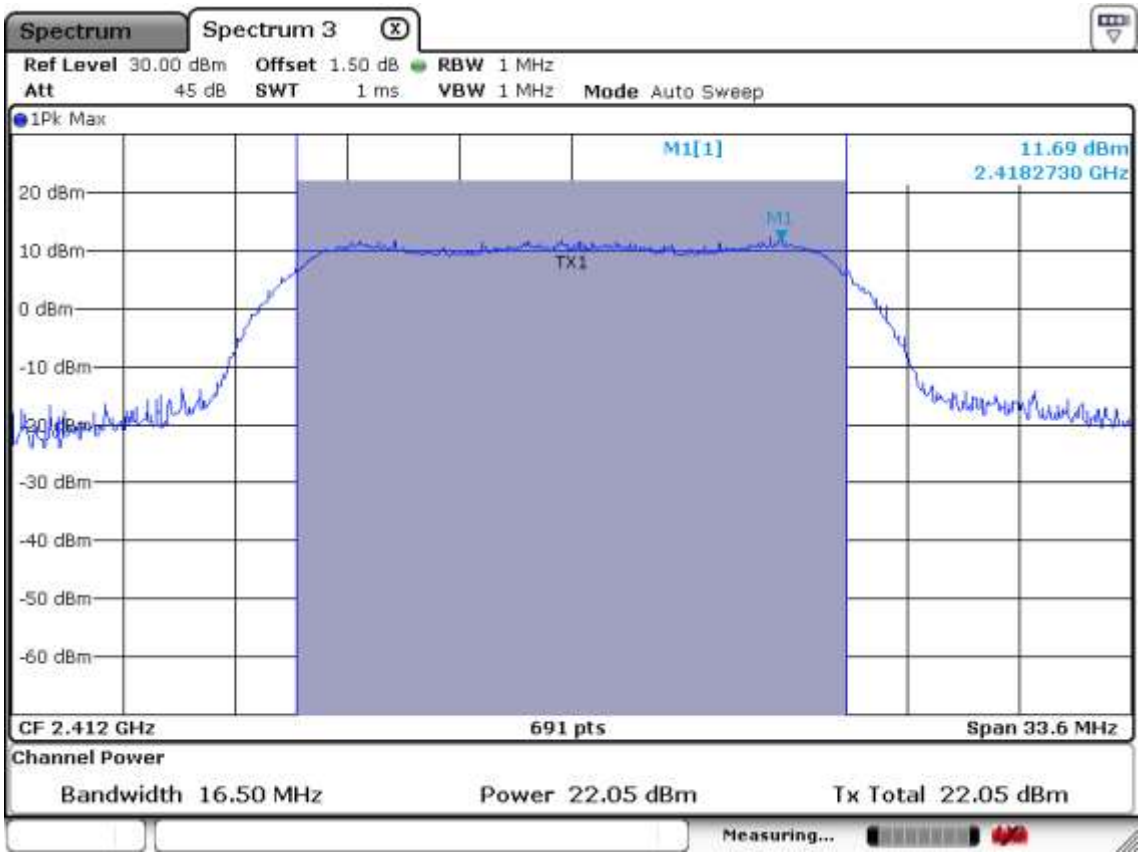
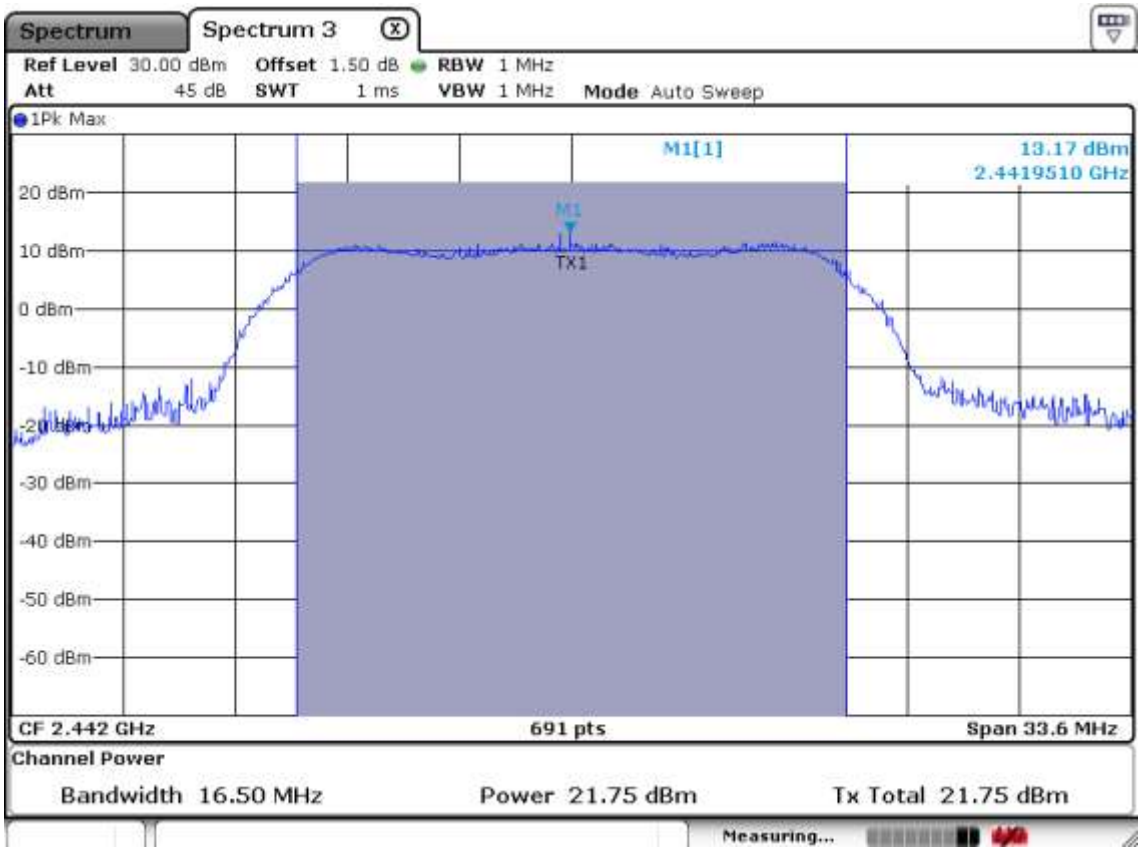
Low Channel – 802.11 g



Middle Channel – 802.11 g



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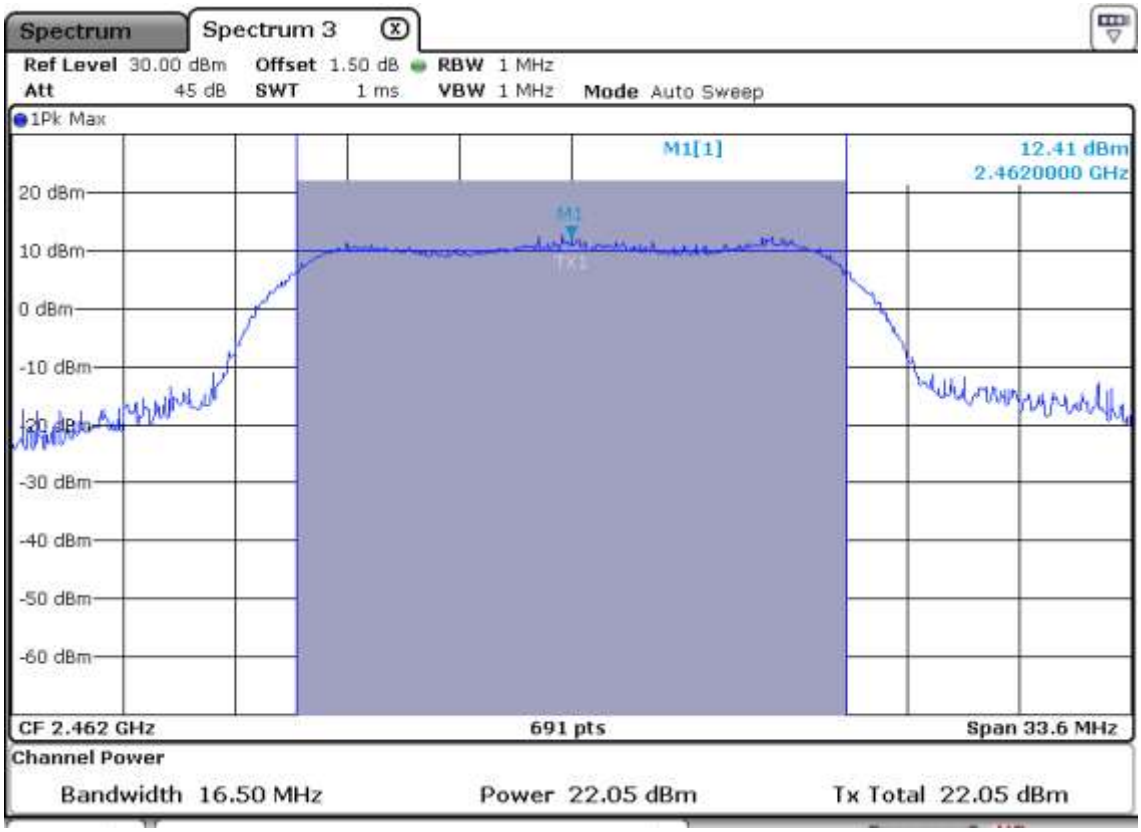
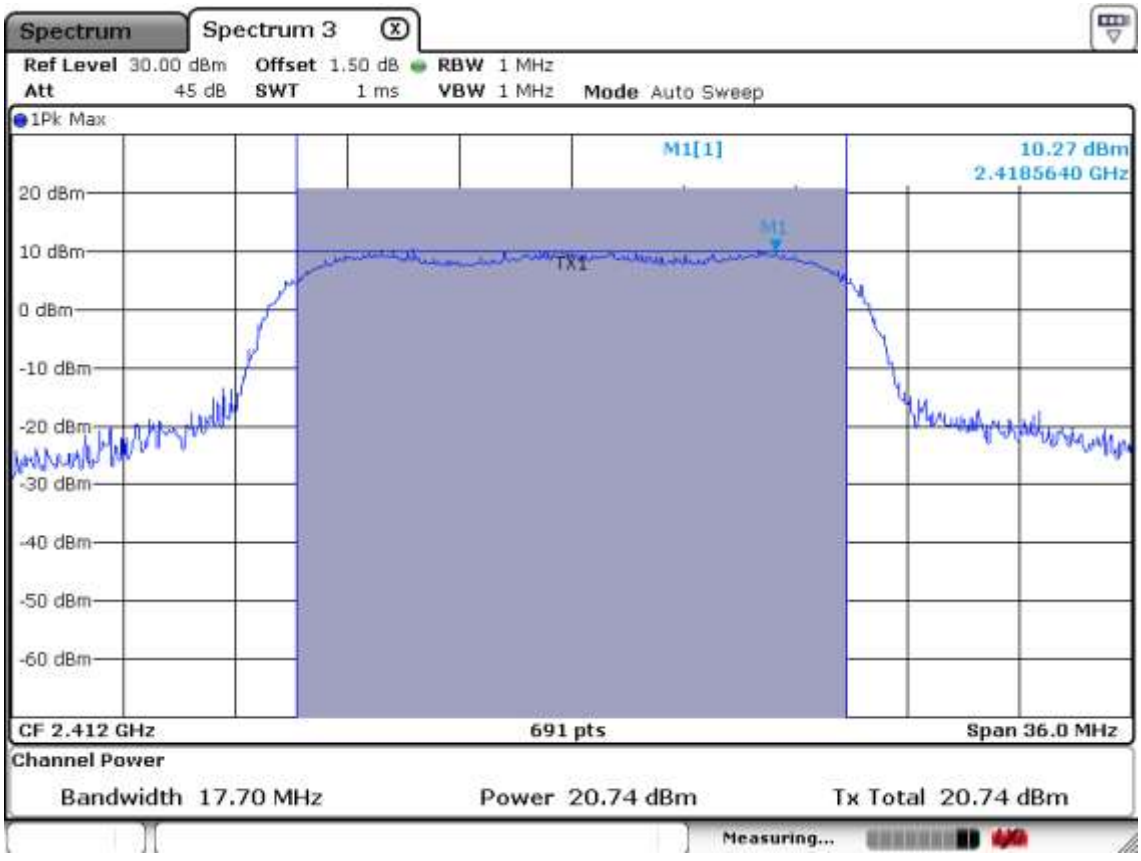
High Channel – 802.11 g



Low Channel – 802.11 n



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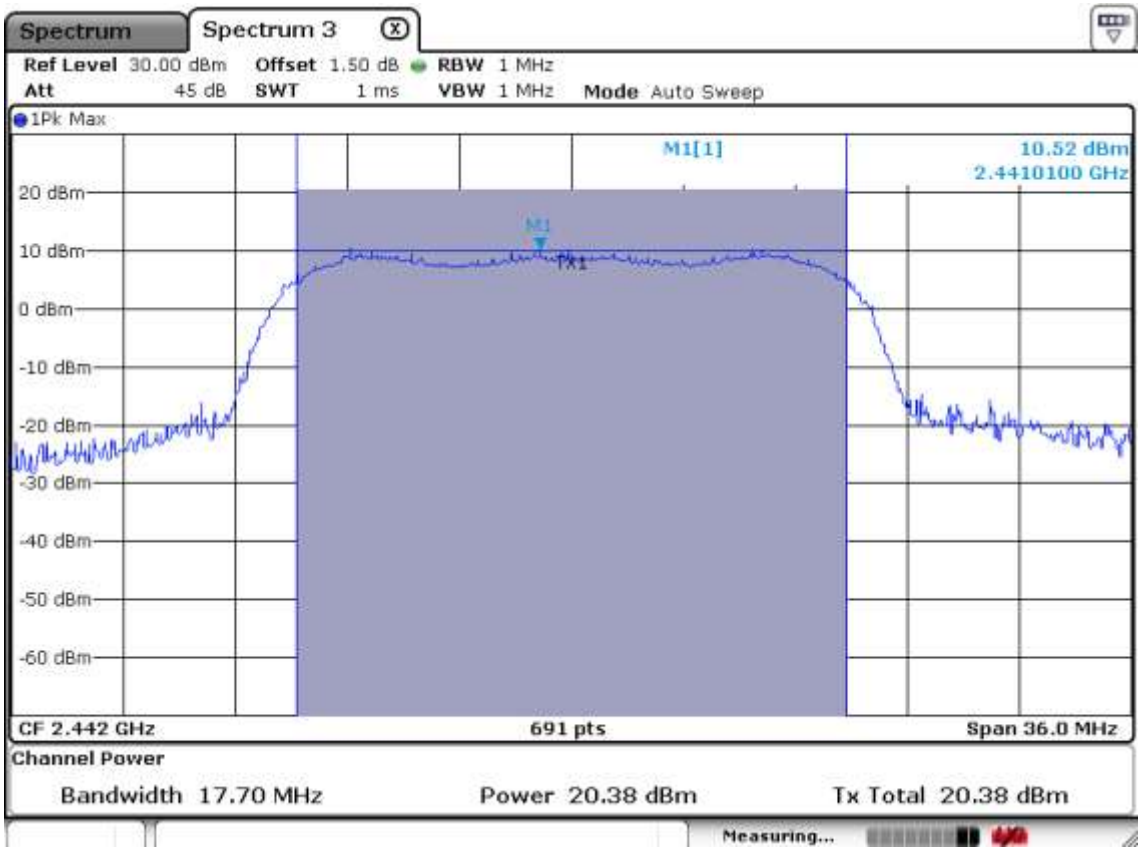
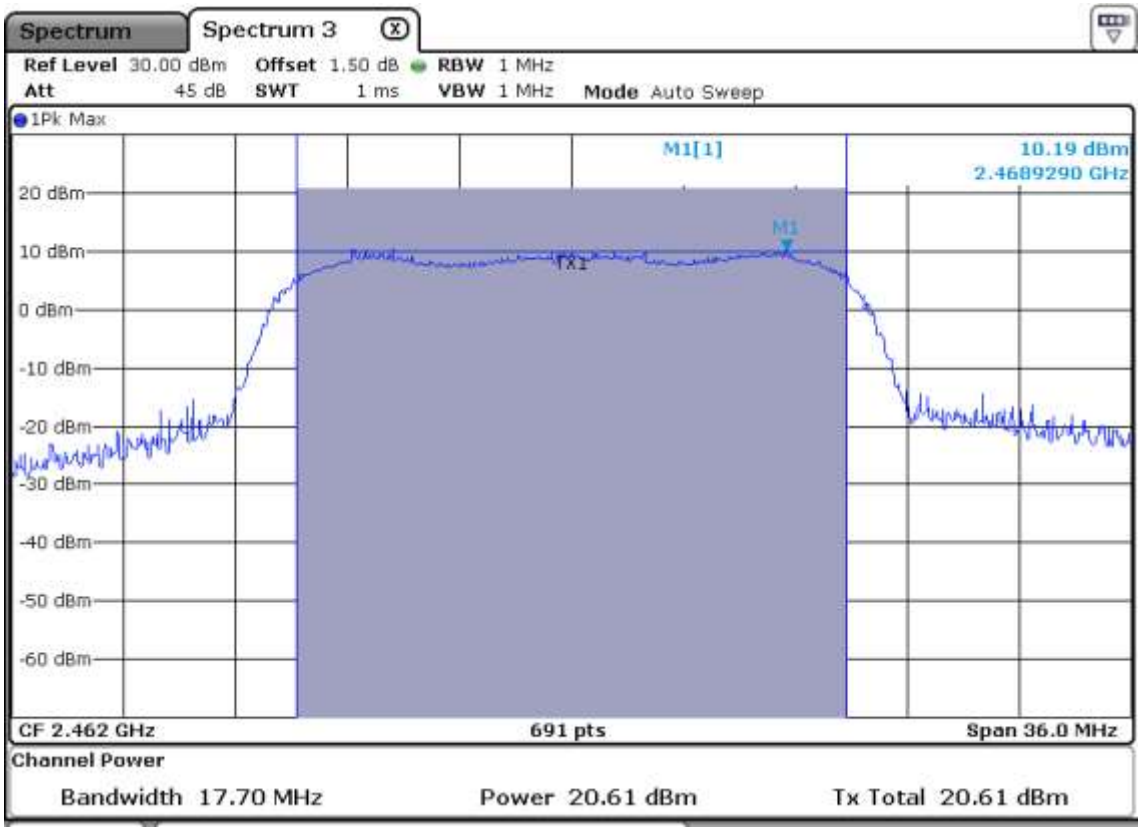
Middle Channel – 802.11 n



High Channel – 802.11 n



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3.2.3 Power Spectral Density

Procedure:

The peak power density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

The spectrum analyzer is set to:

RBW = 3 kHz Span = 300 kHz

VBW = 3 kHz Sweep = auto

Detector function = peak Trace = max hold

Measurement Data : Complies

(Bluetooth BLE)

Frequency (MHz)	Test Results	
	dBm	Result
2402	-7.15	Complies
2442	-7.84	Complies
2480	-8.40	Complies

(802.11 b)

Frequency (MHz)	Test Results	
	dBm	Result
2412	-9.96	Complies
2442	-9.35	Complies
2462	-10.31	Complies

(802.11 g)

Frequency (MHz)	Test Results	
	dBm	Result
2412	-11.04	Complies
2442	-10.93	Complies
2462	-11.08	Complies

(802.11 n)

Frequency (MHz)	Test Results	
	dBm	Result
2412	-12.29	Complies
2442	-12.80	Complies
2462	-12.44	Complies

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- See next pages for actual measured spectrum plots.

Minimum Standard:

Power Spectral Density	< 8 dBm @ 3 kHz BW

Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

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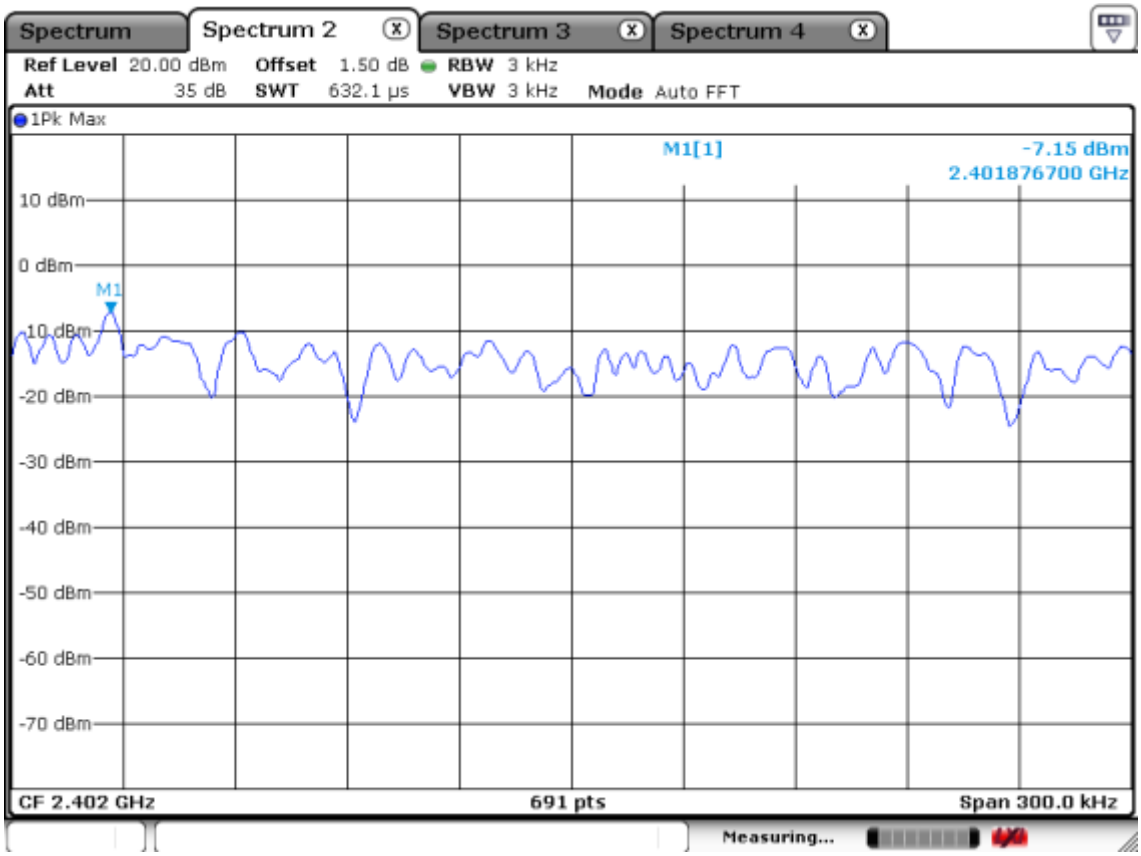
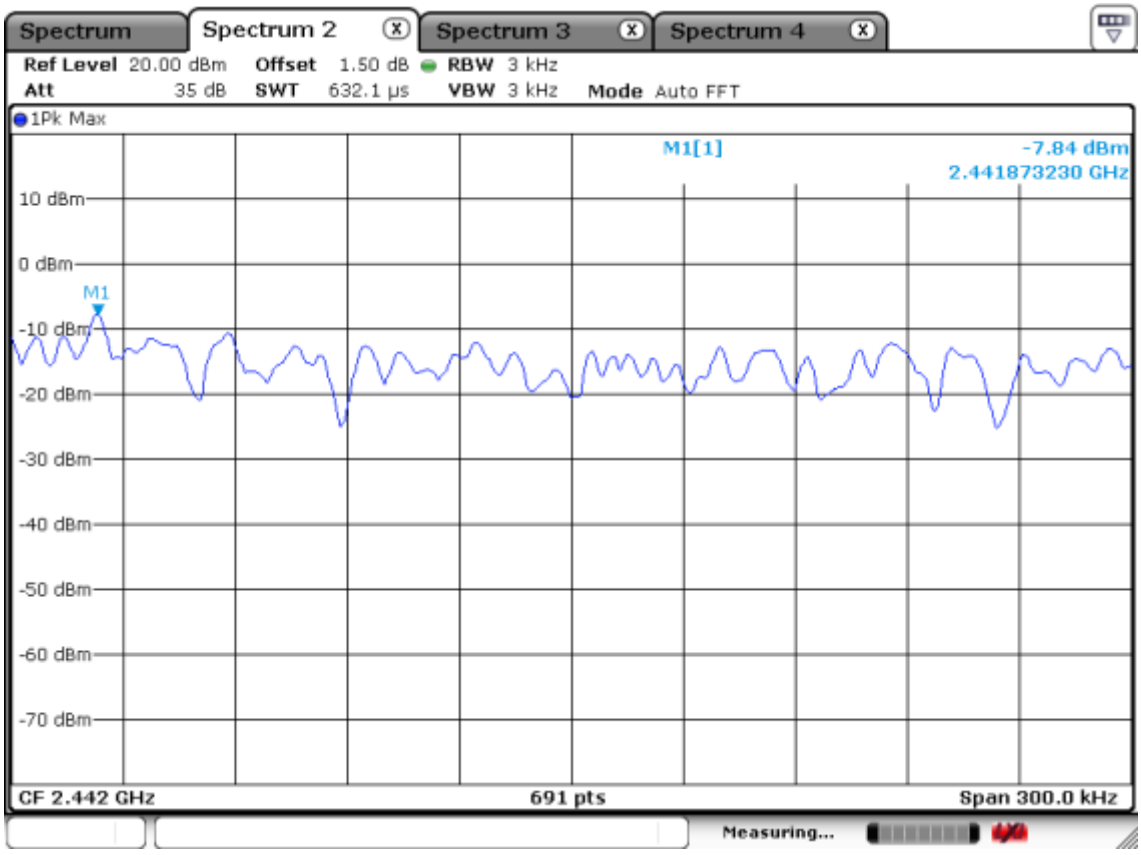
Low Channel – Bluetooth BLE



Middle Channel – Bluetooth BLE



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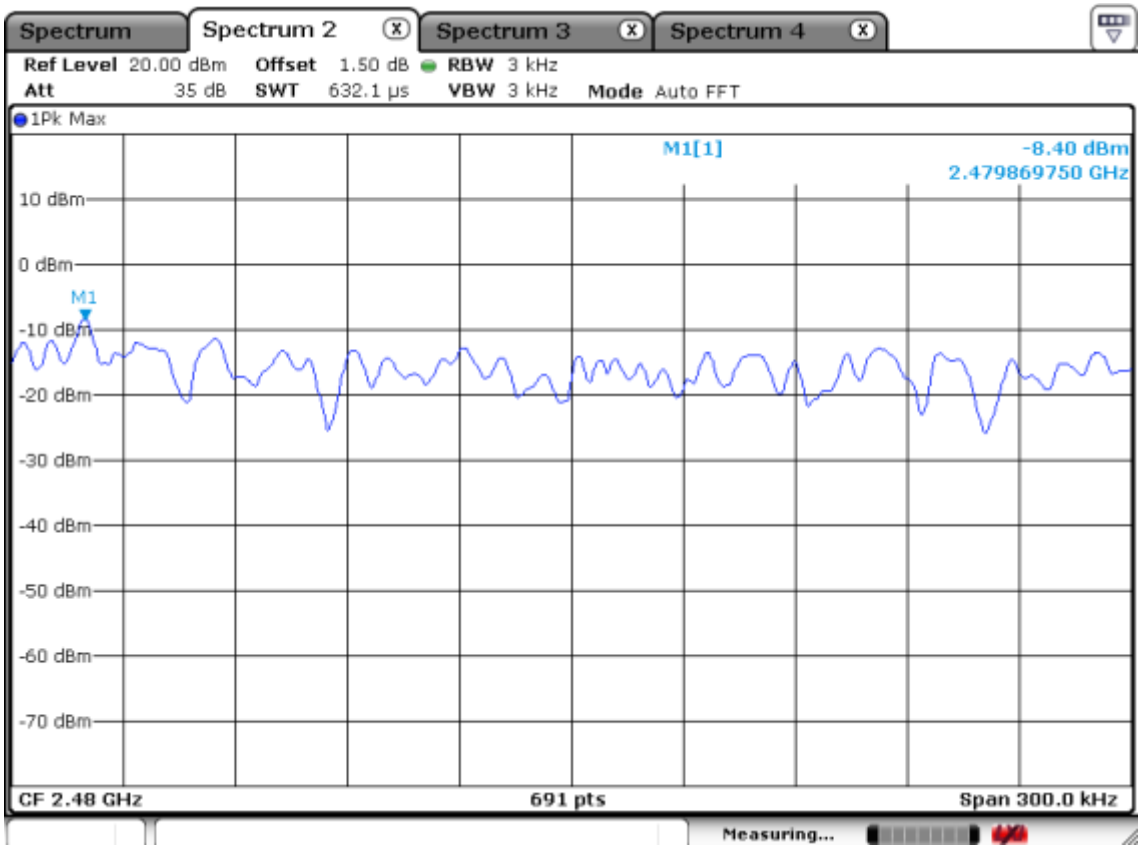
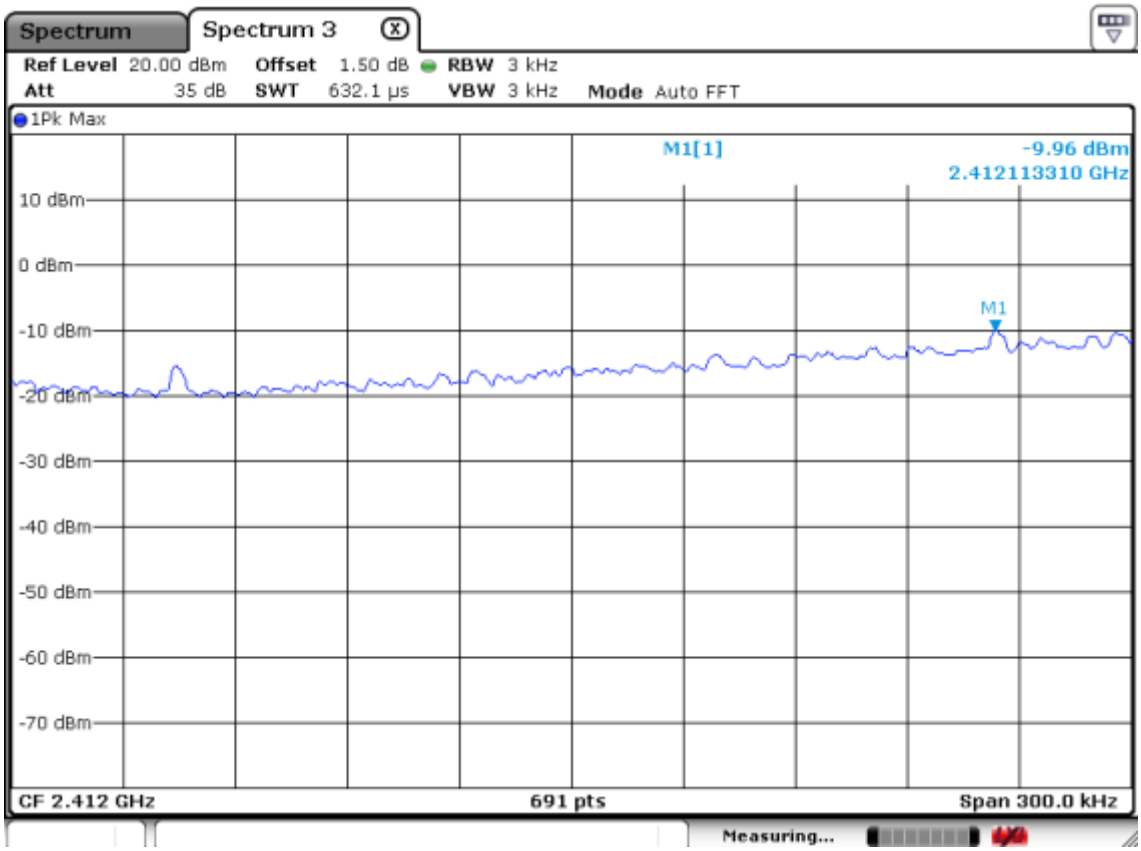
High Channel – Bluetooth BLE



Low Channel – 802.11 b



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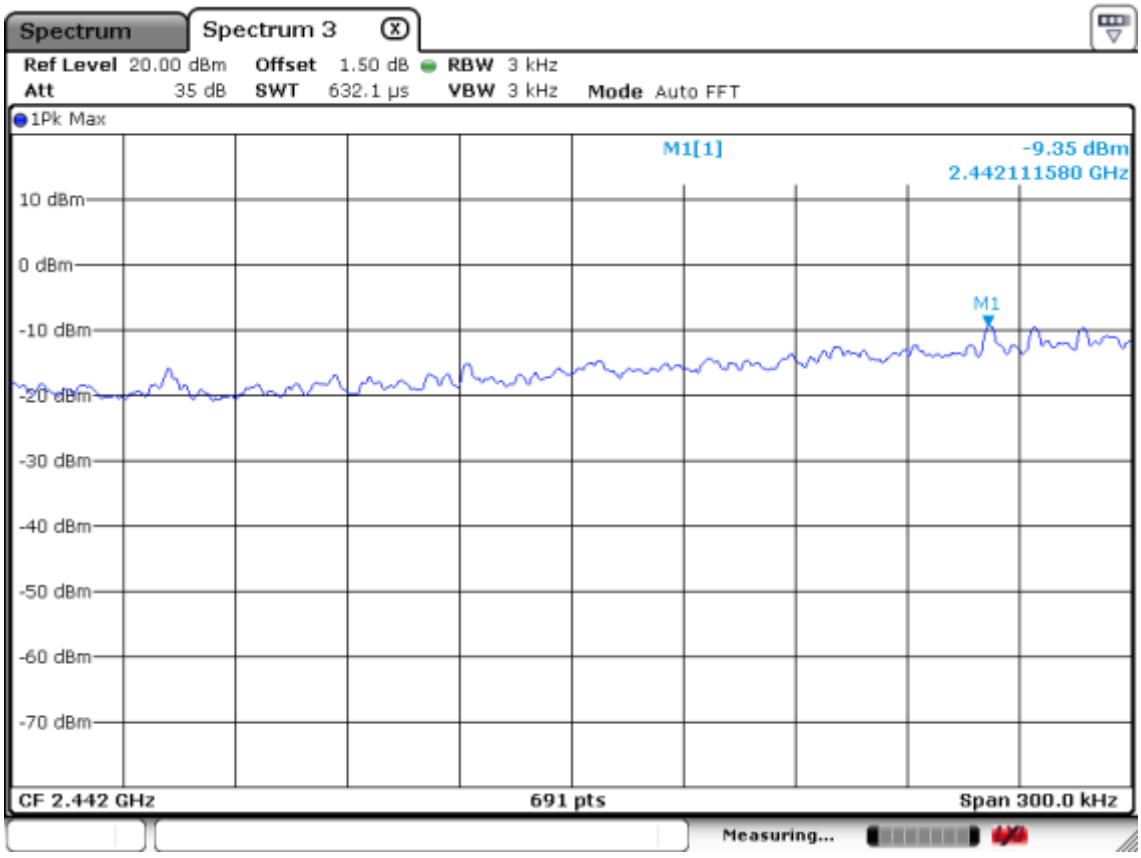
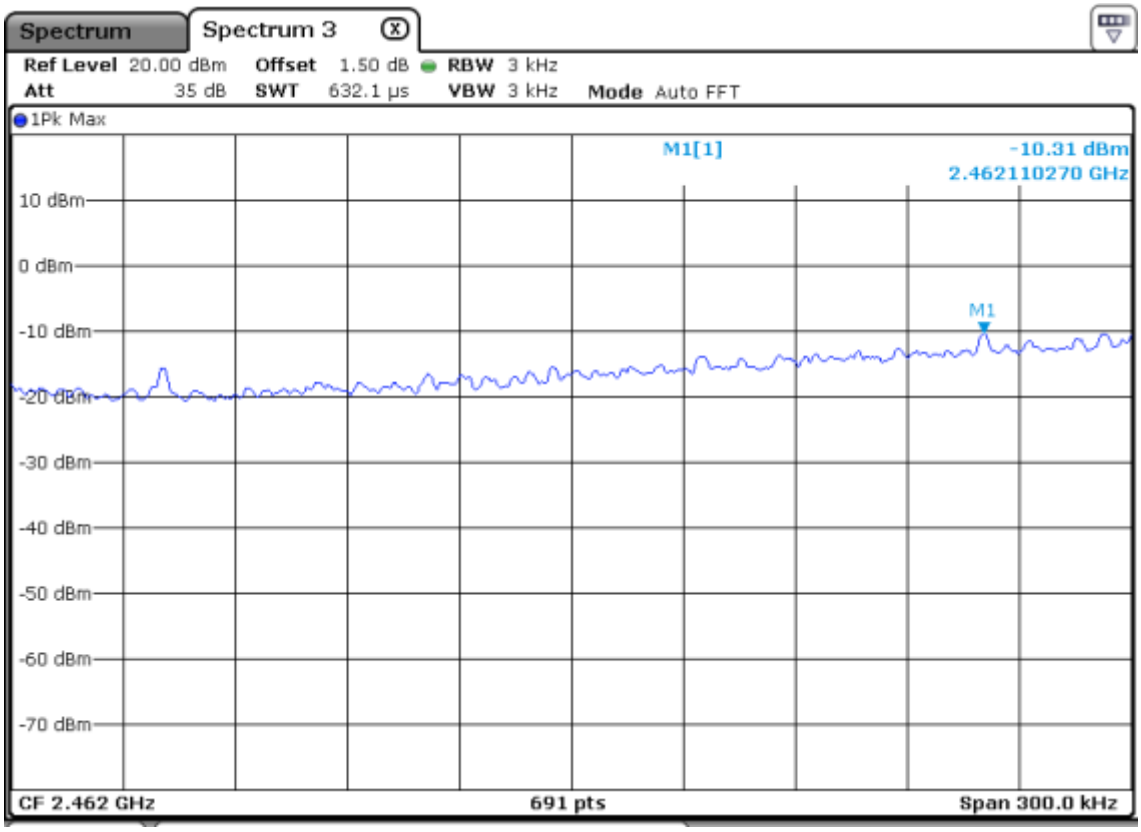
Middle Channel – 802.11 b



High Channel – 802.11 b



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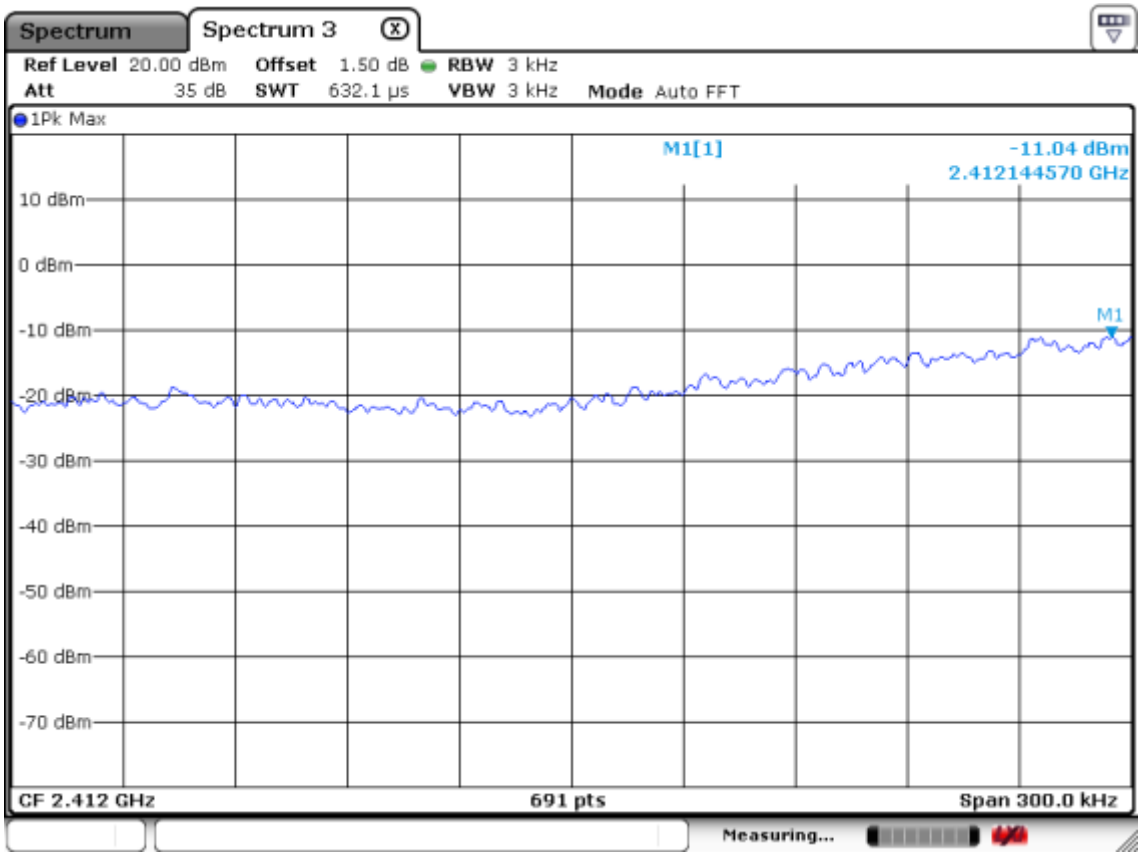
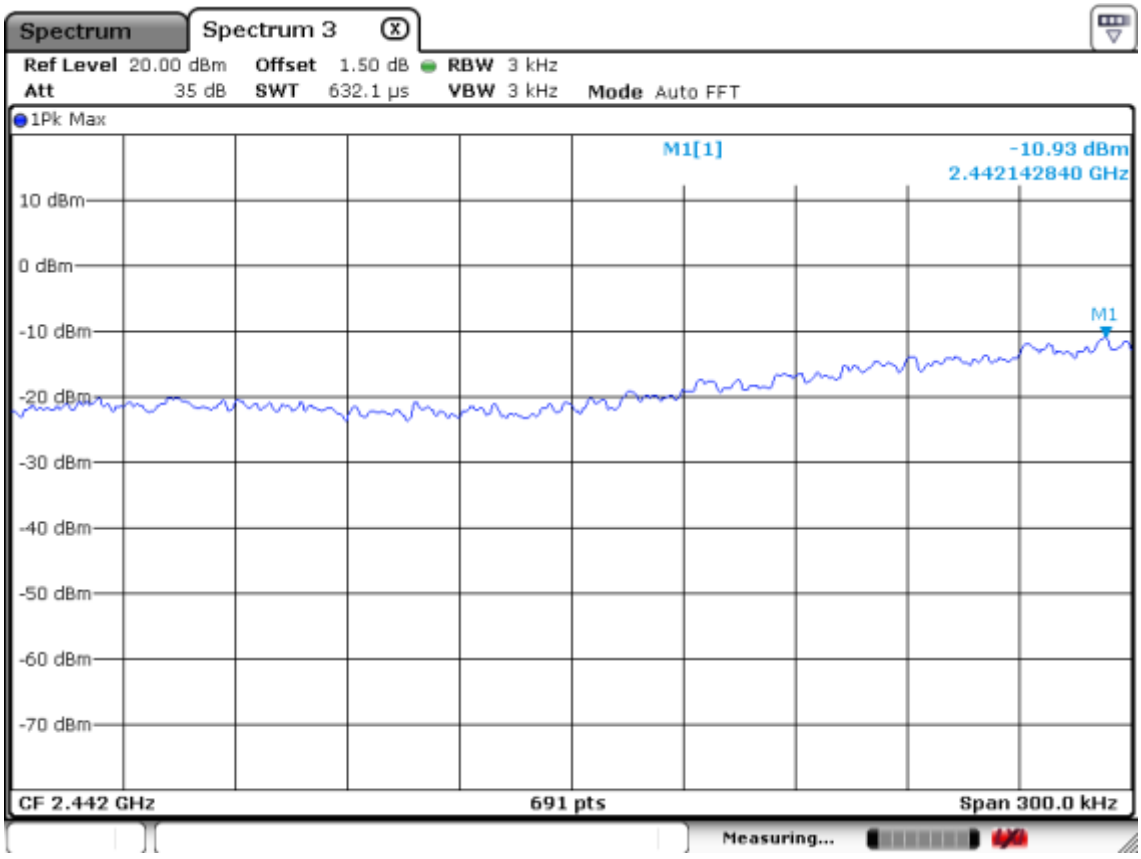
Low Channel – 802.11 g



Middle Channel – 802.11 g



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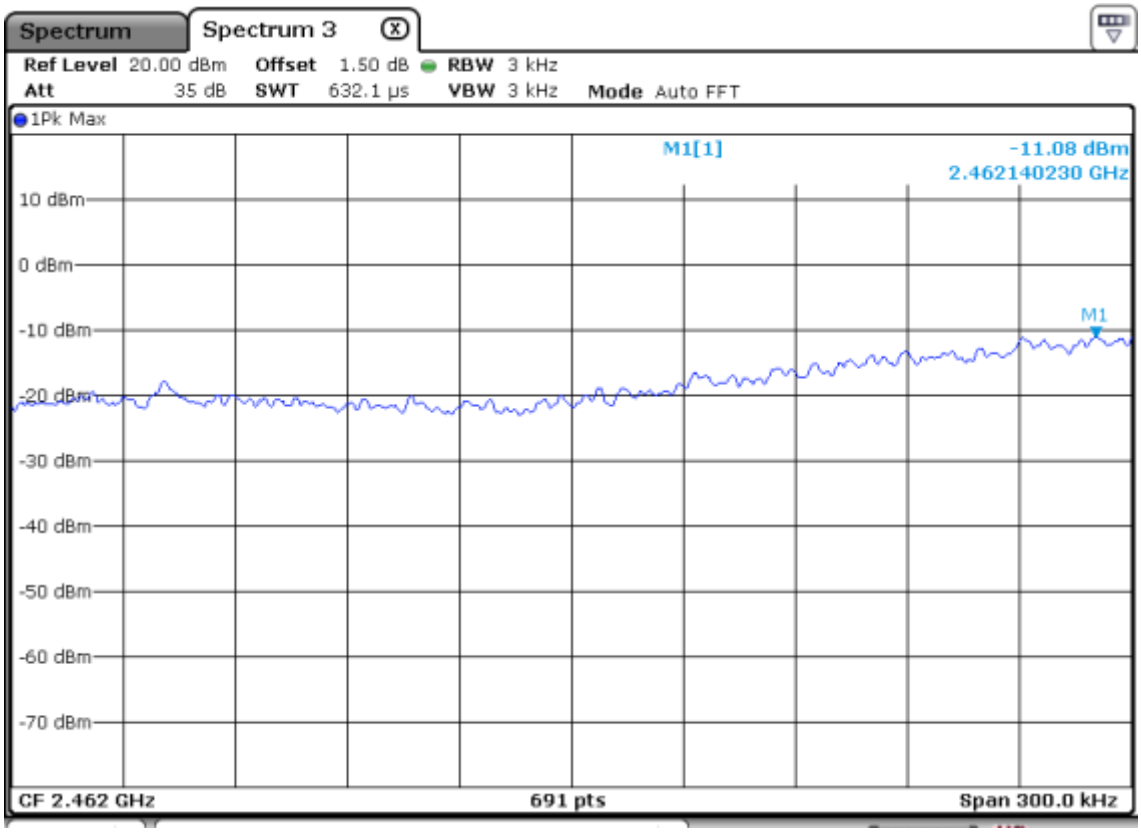
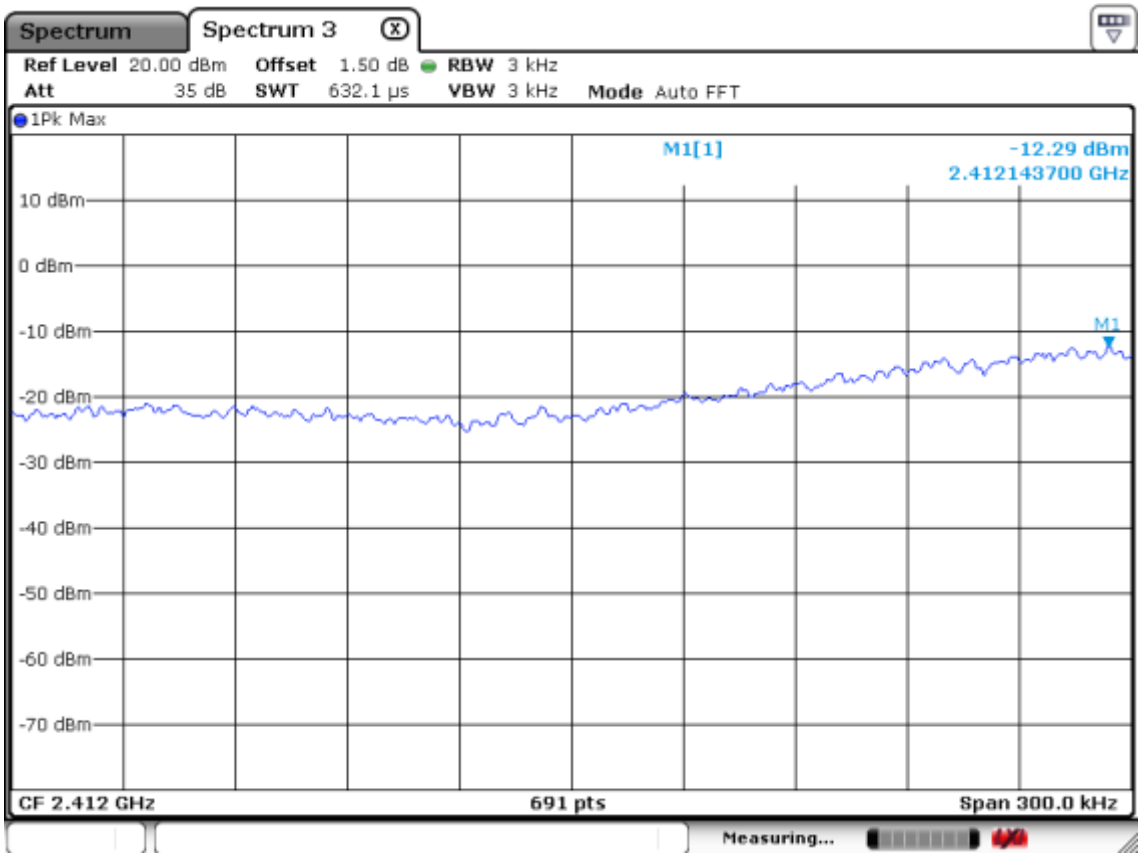
High Channel – 802.11 g



Low Channel – 802.11 n



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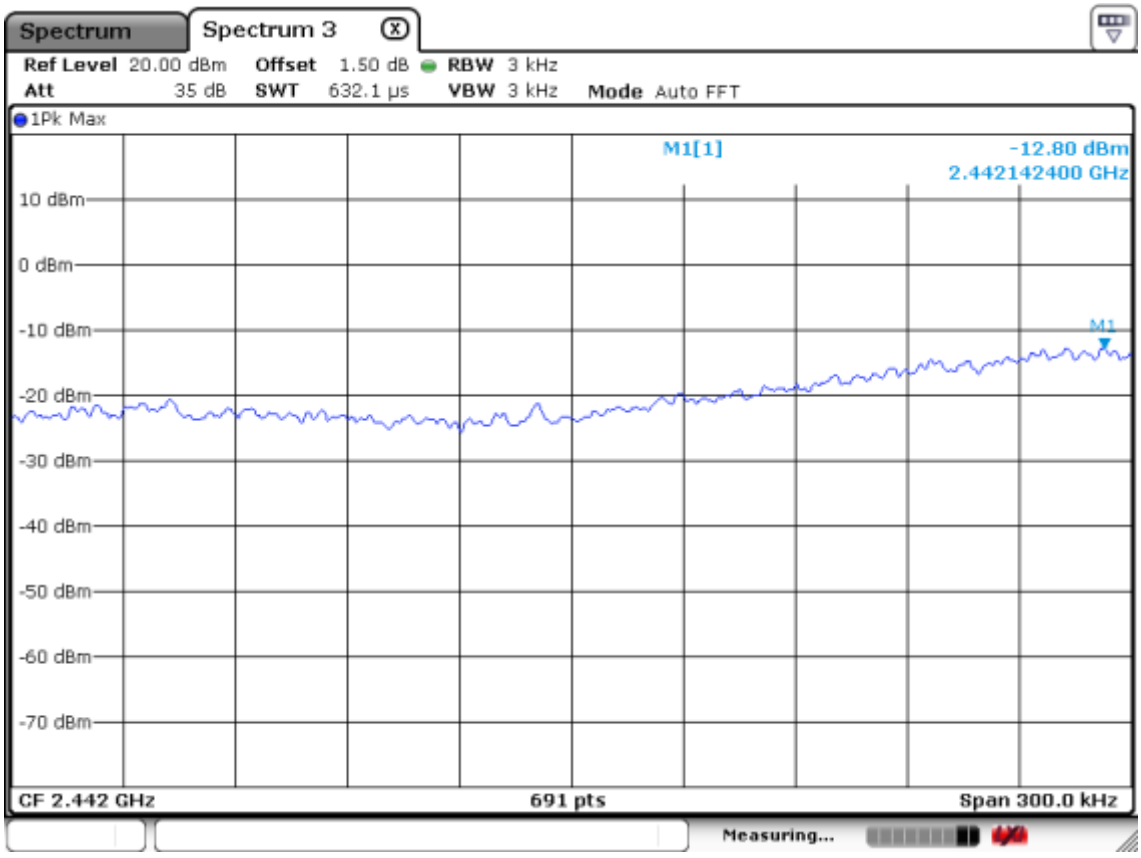
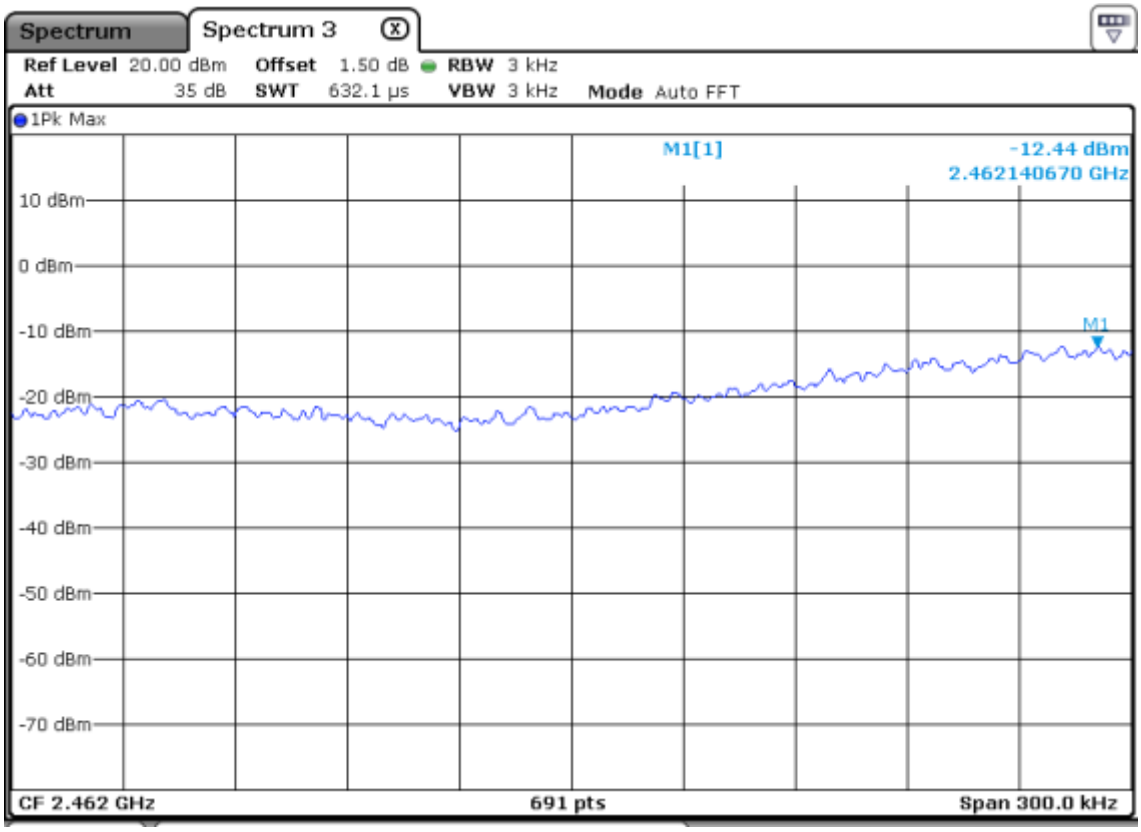
Middle Channel – 802.11 n



High Channel – 802.11 n



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3.2.4 Band - edge

Procedure:

The bandwidth at 20 dB down from the highest inband spectral density is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate frequencies.

After the trace being stable, Use the marker-to-peak function to measure 20 dB down both sides of the intentional emission.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW = 100 kHz	VBW = 100 kHz
Span = 40 MHz, 80 MHz	Detector function = peak
Trace = max hold	Sweep = auto

Radiated emissions which fall in the restricted bands, as defined in 15.205(a), must also comply with the radiated emission limits specified in 15.209(a)

The spectrum analyzer is set to:

Center frequency = the highest, the lowest channels

PEAK:	RBW = VBW = 1 MHz, Sweep=Auto
Average:	RBW = 1 MHz, VBW=10 Hz, Sweep=Auto
Measurement Distance:	3 m
Polarization:	Horizontal / Vertical

Measurement Data: Complies

- All conducted emission in any 100 kHz bandwidth outside of the spread spectrum band was at least 20 dB lower than the highest inband spectral density. Therefore the applying equipment meets the require ment.
- See next pages for actual measured spectrum plots.

Minimum Standard:	> 20 dBc

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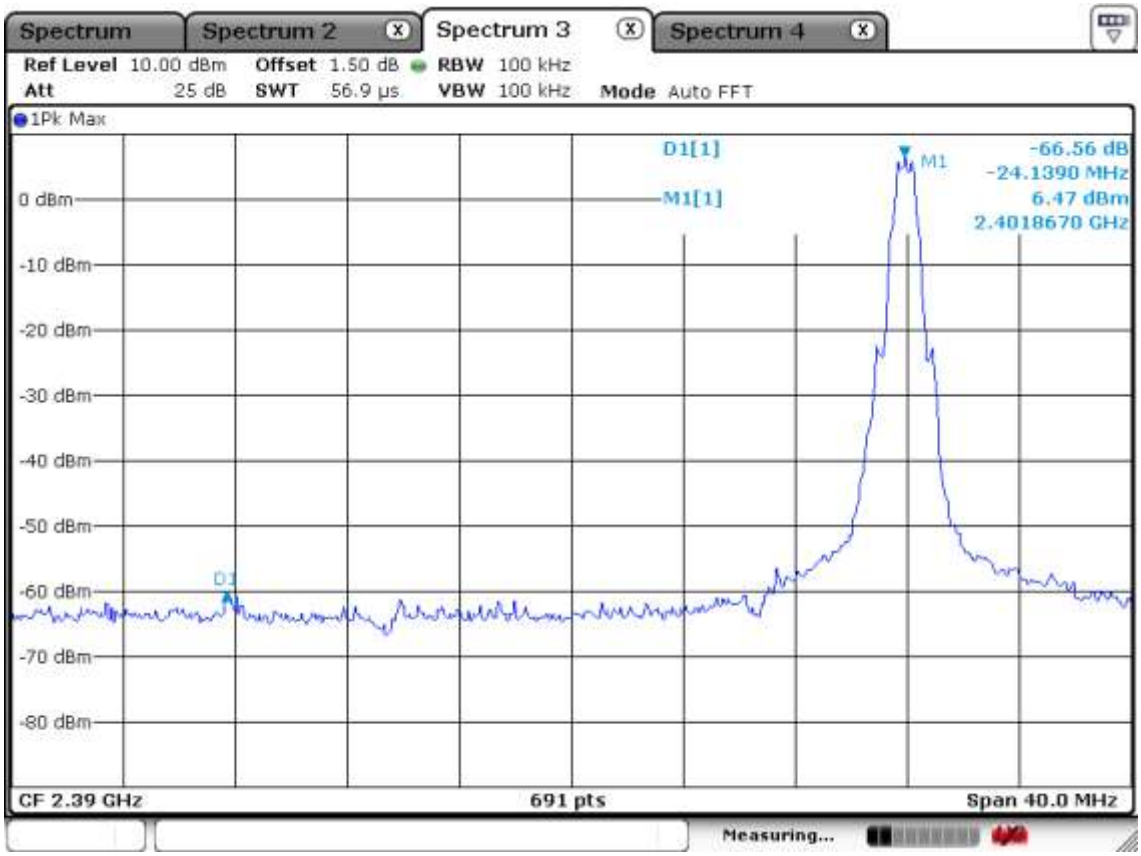
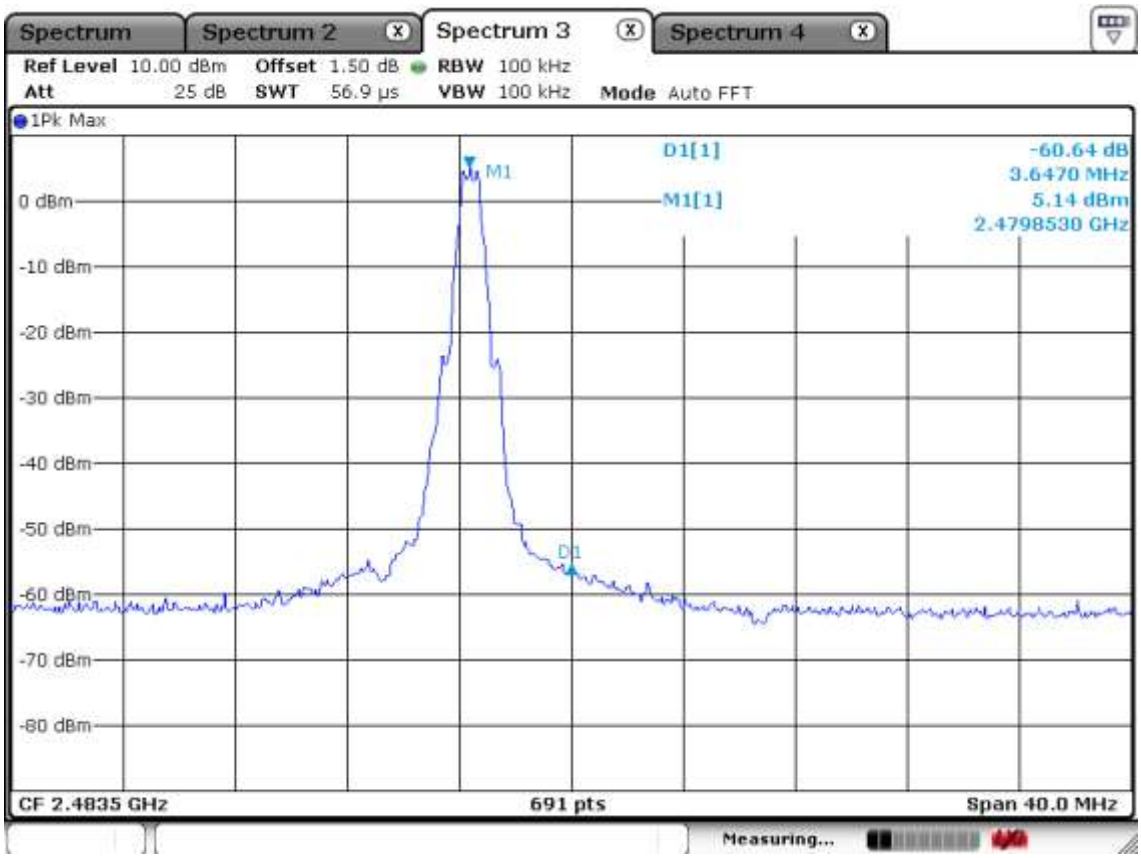
Band edge – Bluetooth BLE

Lower edge



Upper edge



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Radiated Band-edges in the restricted band 2310-2390 MHz measurement

Frequency [MHz]	Reading [dBuV/m] AV / Peak		Pol.	Correction Factor		Limits [dBuV/m] AV / Peak		Result [dBuV/m] AV / Peak		Margin [dB] AV / Peak	
				Antenna	Amp. Gain + Cable Loss						
2383.7	12.7	24.5	V	27.86	22.92	54.0	74.0	17.64	29.44	36.36	44.56

Radiated Band-edges in the restricted band 2483.5-2500 MHz measurement

Frequency [MHz]	Reading [dBuV/m] AV / Peak		Pol.	Correction Factor		Limits [dBuV/m] AV / Peak		Result [dBuV/m] AV / Peak		Margin [dB] AV / Peak	
				Antenna	Amp. Gain + Cable Loss						
2483.5	20.2	38.9	V	27.86	22.92	54.0	74.0	25.14	43.84	28.86	30.16

Note : This EUT was tested in 3 orthogonal positions and the worst-case data was presented

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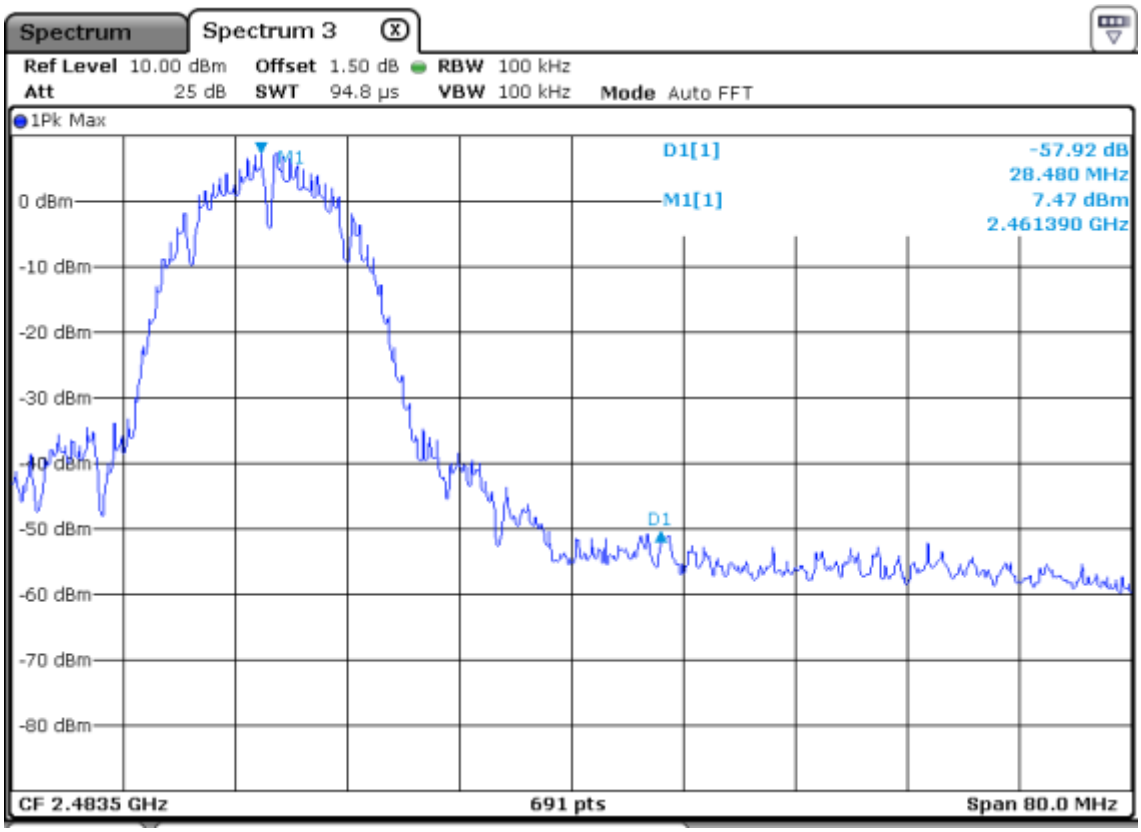
Band edge – 802.11b

Lower edge

Upper edge



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Radiated Band-edges in the restricted band 2310-2390 MHz measurement

Frequency [MHz]	Reading [dBuV/m] AV / Peak		Pol.	Correction Factor		Limits [dBuV/m] AV / Peak		Result [dBuV/m] AV / Peak		Margin [dB] AV / Peak	
				Antenna	Amp. Gain + Cable Loss						
2383.7	15.1	35.6	V	27.86	22.92	54.0	74.0	33.96	33.46	33.96	33.46

Radiated Band-edges in the restricted band 2483.5-2500 MHz measurement

Frequency [MHz]	Reading [dBuV/m] AV / Peak		Pol.	Correction Factor		Limits [dBuV/m] AV / Peak		Result [dBuV/m] AV / Peak		Margin [dB] AV / Peak	
				Antenna	Amp. Gain + Cable Loss						
2483.5	31.2	59.8	V	27.86	22.92	54.0	74.0	17.86	9.26	17.86	9.26

Note : This EUT was tested in 3 orthogonal positions and the worst-case data was presented

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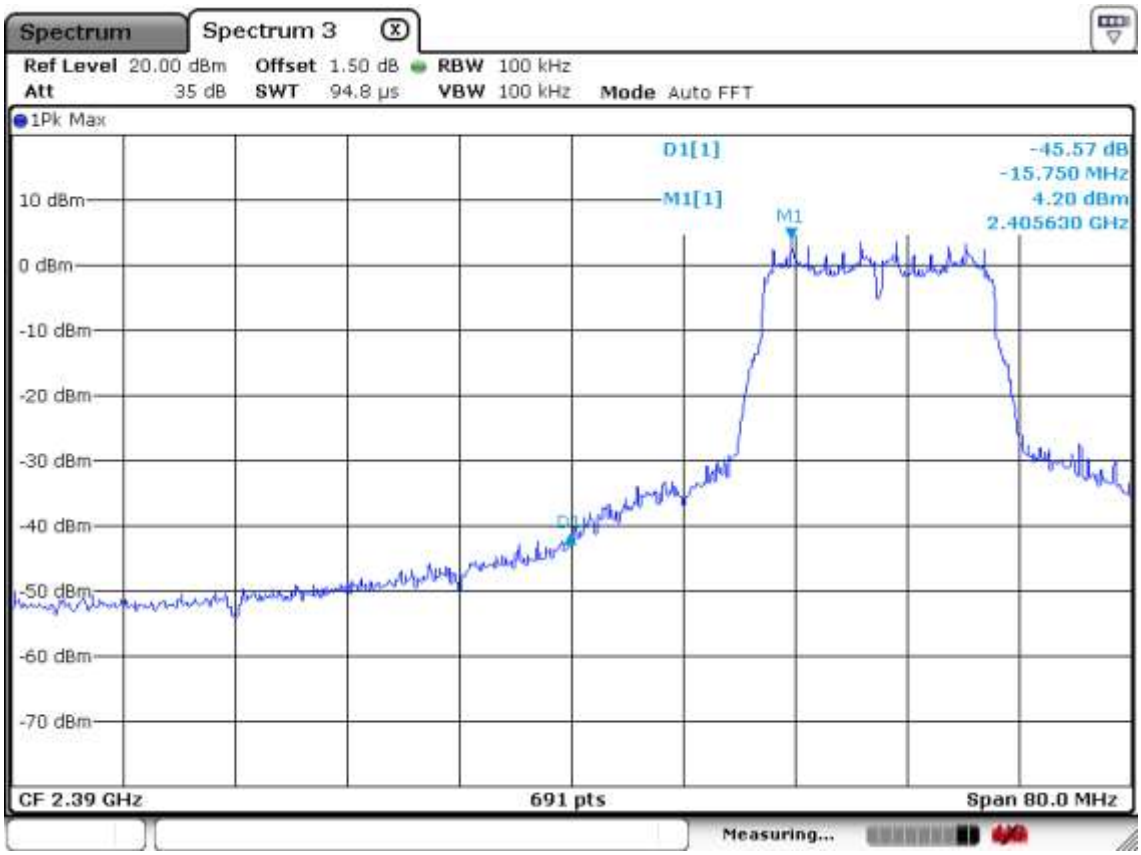
Band edge – 802.11g

Lower edge



Upper edge

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Radiated Band-edges in the restricted band 2310-2390 MHz measurement

Frequency [MHz]	Reading [dBuV/m] AV / Peak		Pol.	Correction Factor		Limits [dBuV/m] AV / Peak		Result [dBuV/m] AV / Peak		Margin [dB] AV / Peak	
				Antenna	Amp. Gain + Cable Loss						
2389.7	29.8	44.5	V	27.86	22.92	54.0	74.0	34.74	49.44	19.26	24.56

Radiated Band-edges in the restricted band 2483.5-2500 MHz measurement

Frequency [MHz]	Reading [dBuV/m] AV / Peak		Pol.	Correction Factor		Limits [dBuV/m] AV / Peak		Result [dBuV/m] AV / Peak		Margin [dB] AV / Peak	
				Antenna	Amp. Gain + Cable Loss						
2483.5	41.5	60.3	V	27.86	22.92	54.0	74.0	46.44	65.24	7.56	8.76

Note : This EUT was tested in 3 orthogonal positions and the worst-case data was presented

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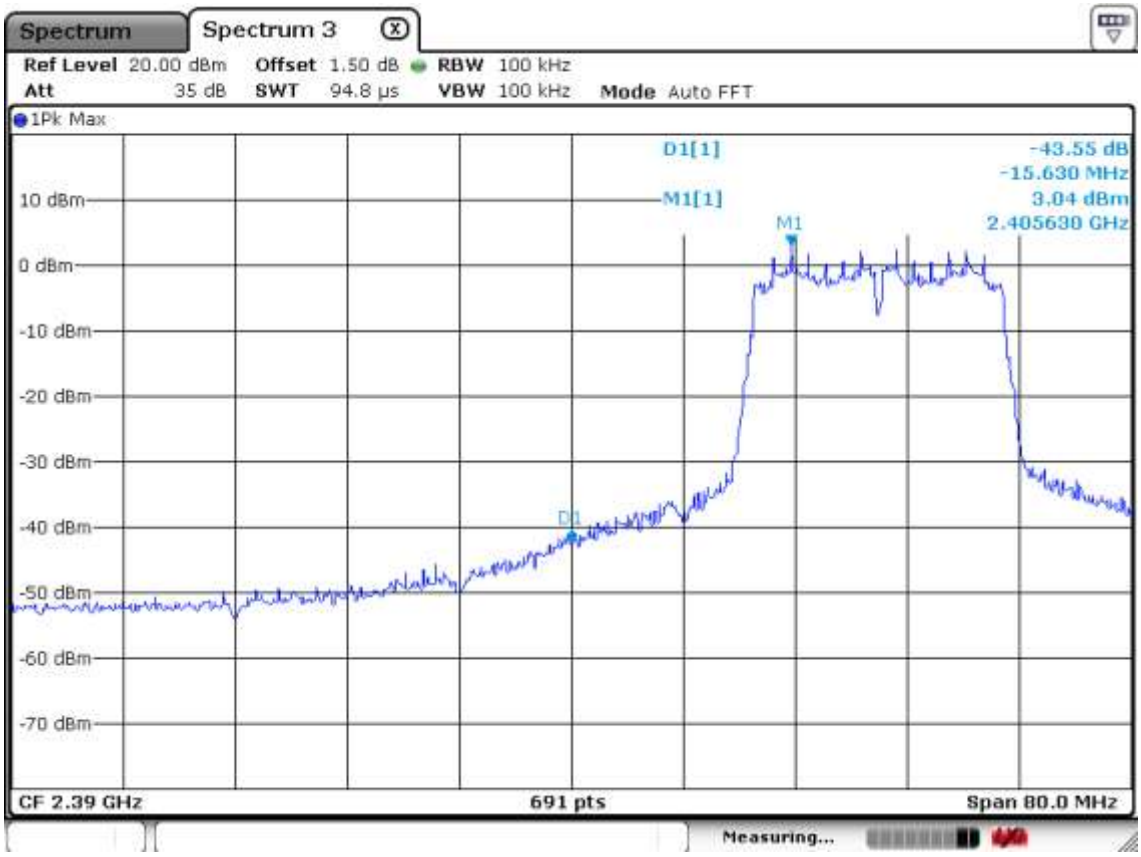
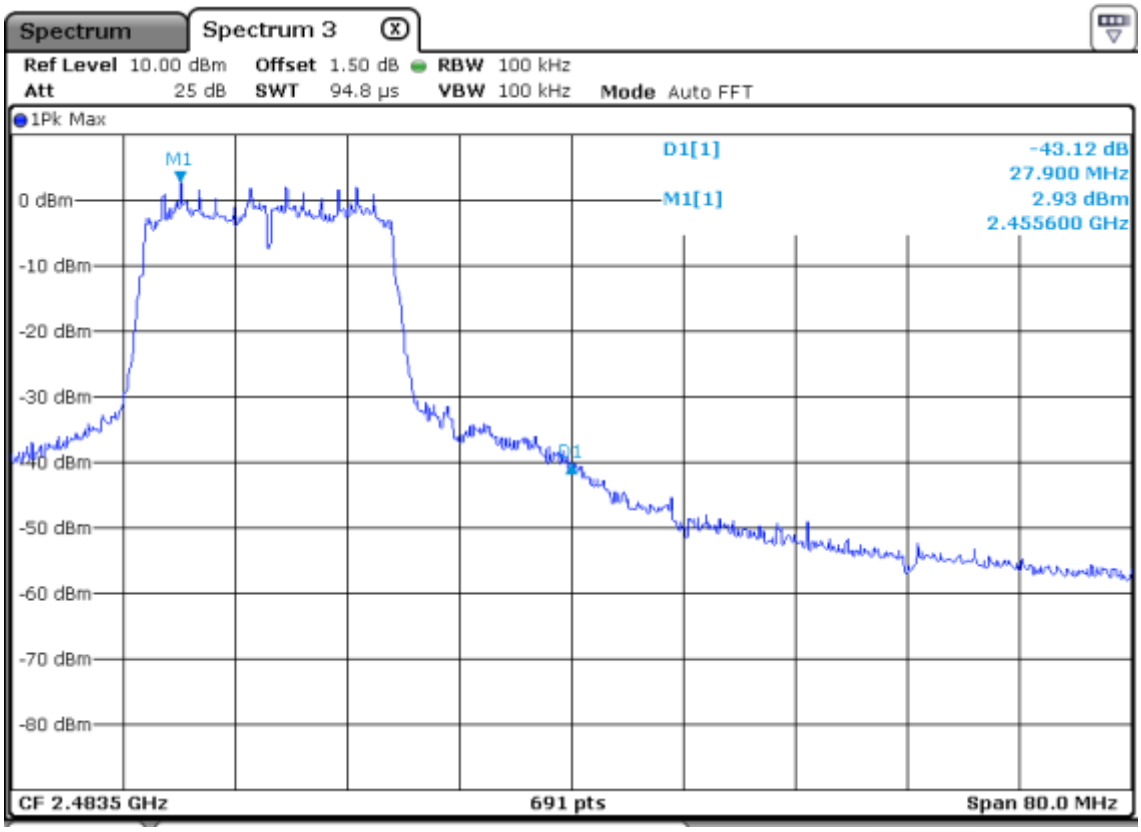
Band edge – 802.11n

Lower edge



Upper edge



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Radiated Band-edges in the restricted band 2310-2390 MHz measurement

Frequency [MHz]	Reading [dBuV/m] AV / Peak		Pol.	Correction Factor		Limits [dBuV/m] AV / Peak		Result [dBuV/m] AV / Peak		Margin [dB] AV / Peak	
				Antenna	Amp. Gain + Cable Loss						
2389.7	25.8	42.1	V	27.86	22.92	54.0	74.0	30.74	47.04	23.26	26.96

Radiated Band-edges in the restricted band 2483.5-2500 MHz measurement

Frequency [MHz]	Reading [dBuV/m] AV / Peak		Pol.	Correction Factor		Limits [dBuV/m] AV / Peak		Result [dBuV/m] AV / Peak		Margin [dB] AV / Peak	
				Antenna	Amp. Gain + Cable Loss						
2484.9	28.6	46.4	V	27.86	22.92	54.0	74.0	33.54	51.34	20.46	22.66

Note : This EUT was tested in 3 orthogonal positions and the worst-case data was presented

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3.2.5 Conducted Spurious Emissions

Procedure:

The test follows KDB558074. The conducted spurious emissions were measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function disabled at the highest, middle and the lowest available channels..

After the trace being stable, set the marker on the peak of any spurious emission recorded.

The spectrum analyzer is set to:

Span = wide enough to capture the peak level of the in-band emission and all spurious emissions

RBW = 100 kHz Sweep = auto

VBW = 100 kHz Detector function = peak

Trace = max hold

Measurement Data: Complies

- All conducted emission in any 100 kHz bandwidth outside of the spread spectrum band was at least 20 dB lower than the highest inband spectral density. Therefore the applying equipment meets the require ment.
- See next pages for actual measured spectrum plots.

Minimum Standard:	> 20 dBc

Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

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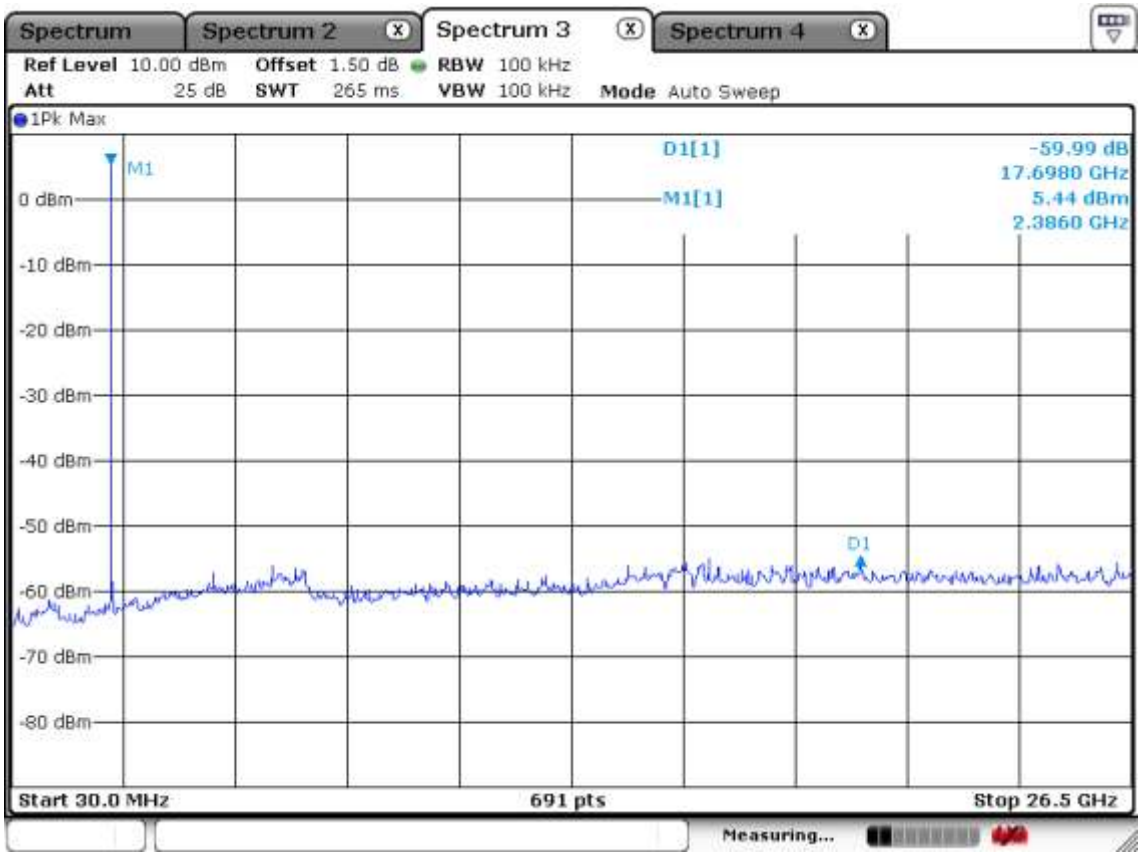
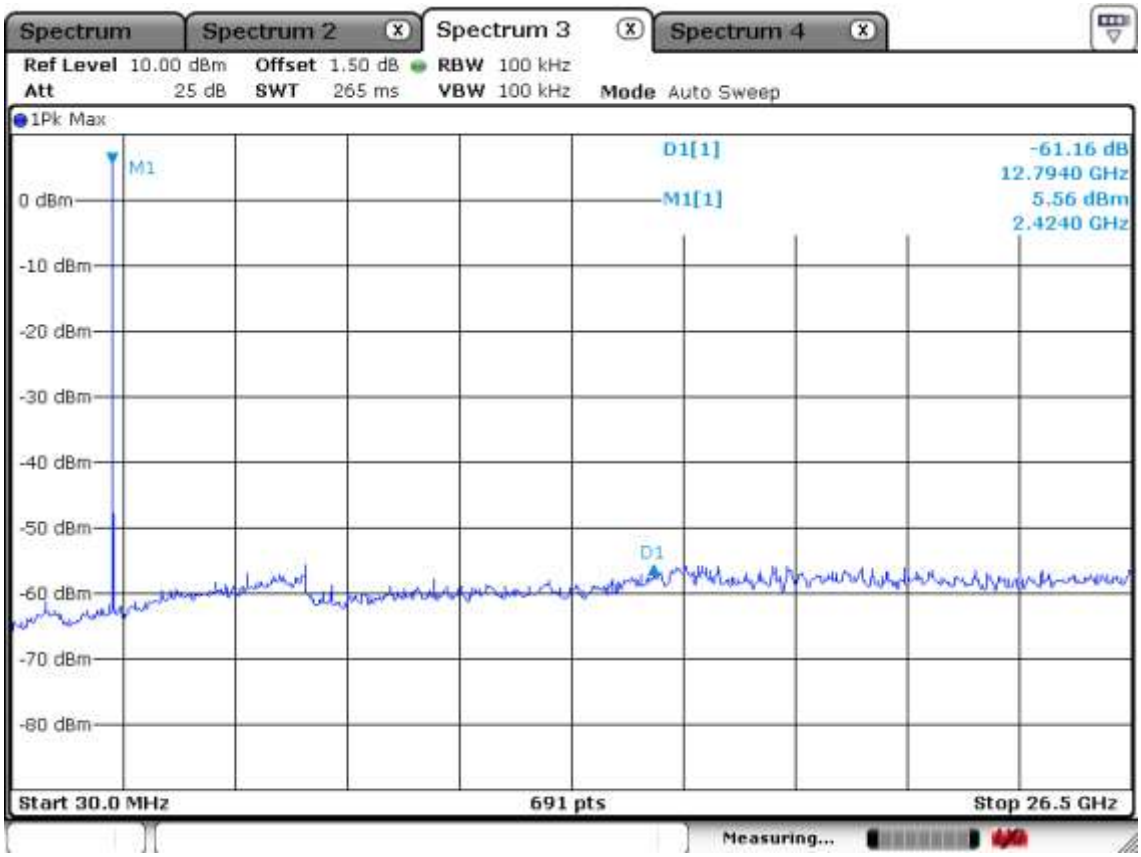
Unwanted Emission – Low Channel – Bluetooth BLE

Frequency Range = 30 MHz ~ 26.5 GHz



Middle Channel – Bluetooth BLE



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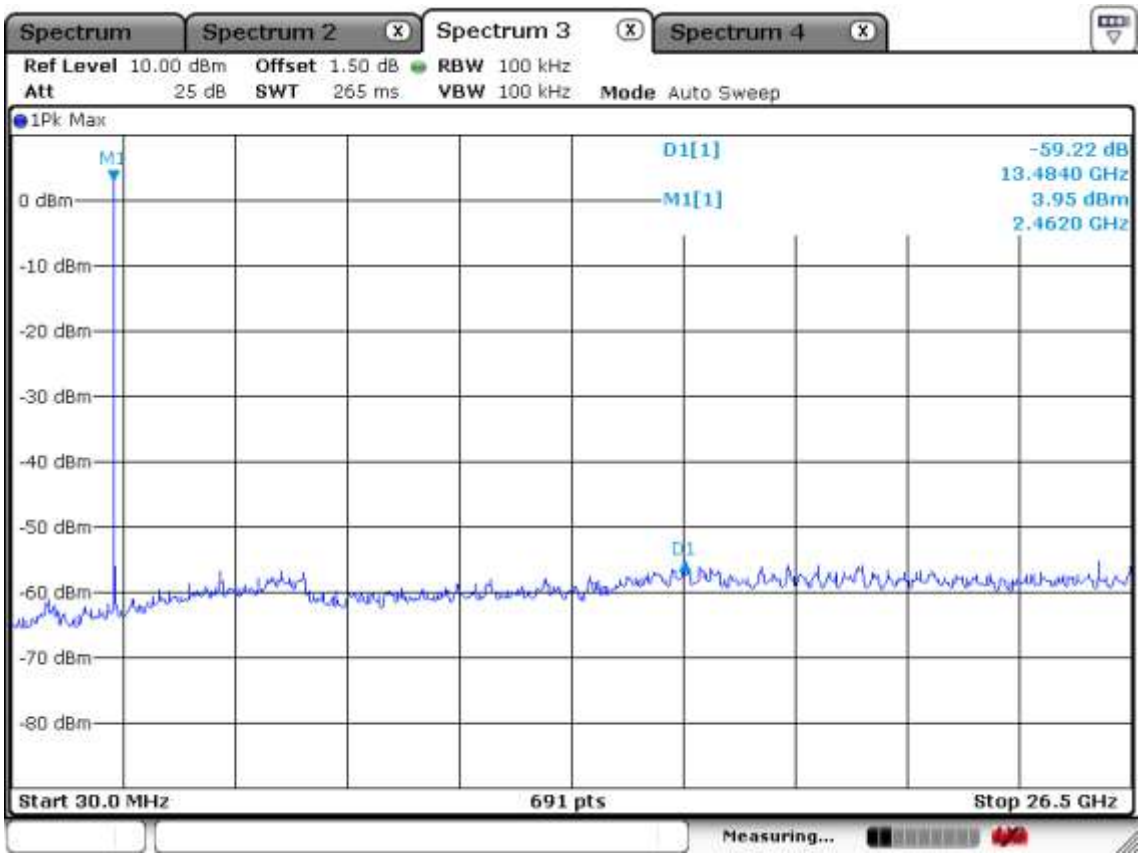
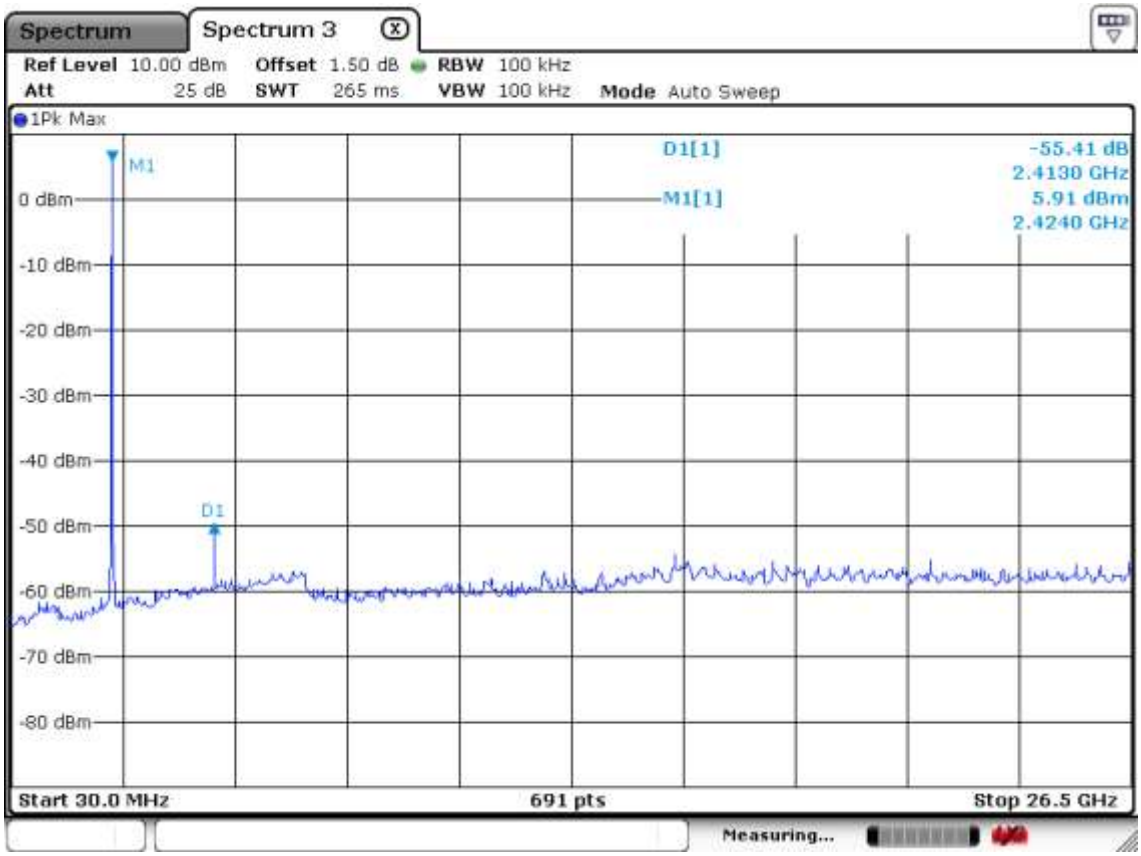
High Channel – Bluetooth BLE

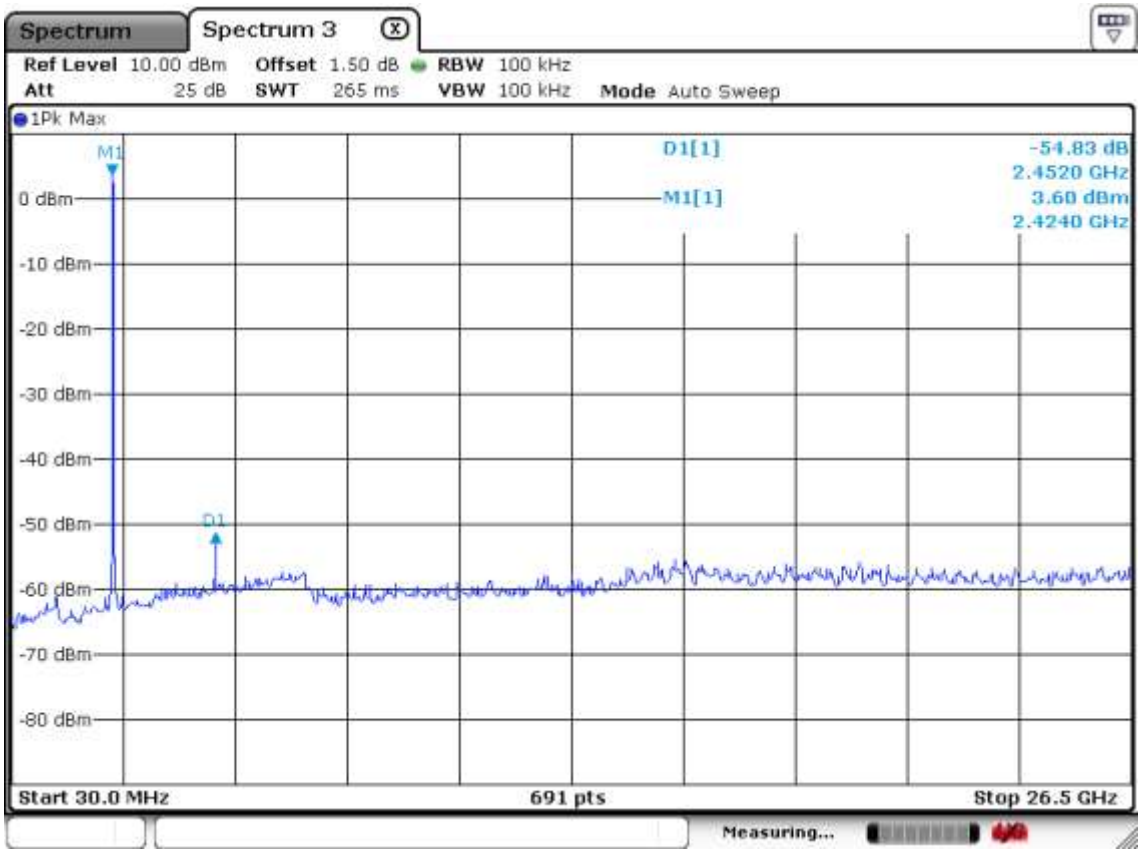


Unwanted Emission – Low Channel – 802.11 b

Frequency Range = 30 MHz ~ 26.5 GHz



Middle Channel – 802.11 b



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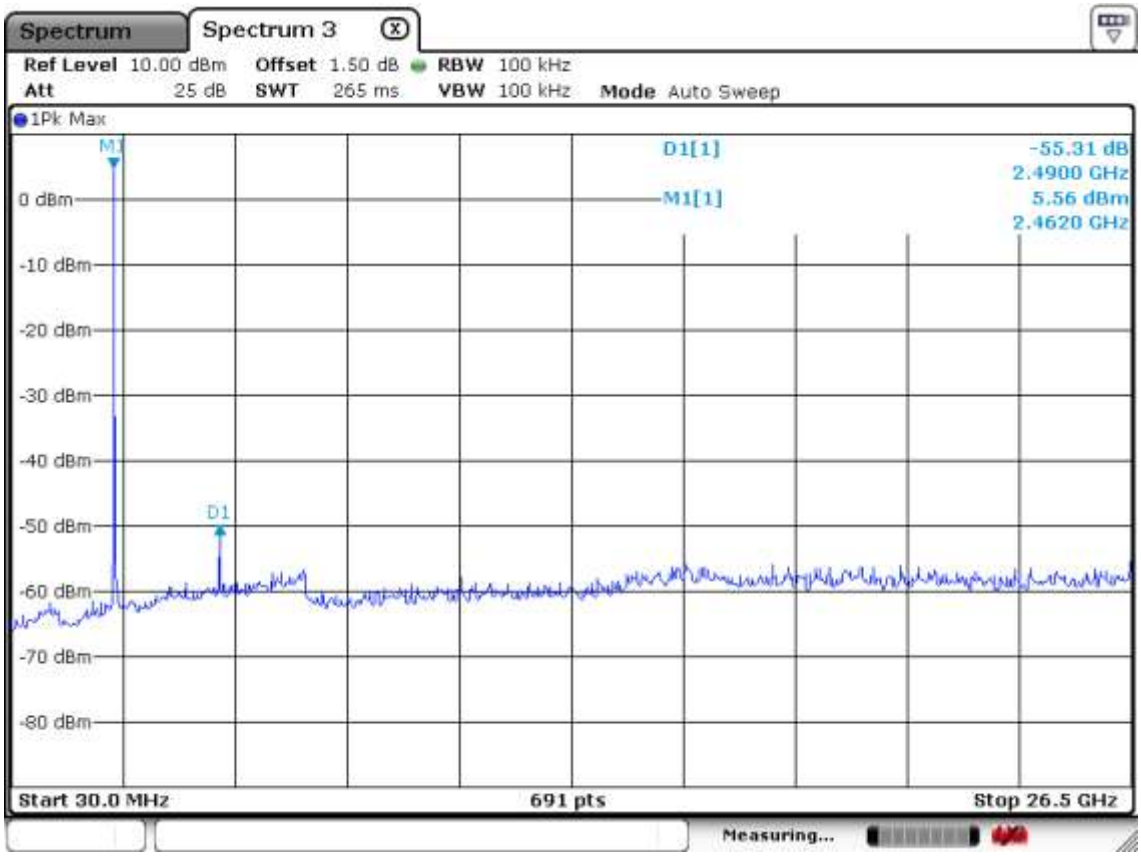
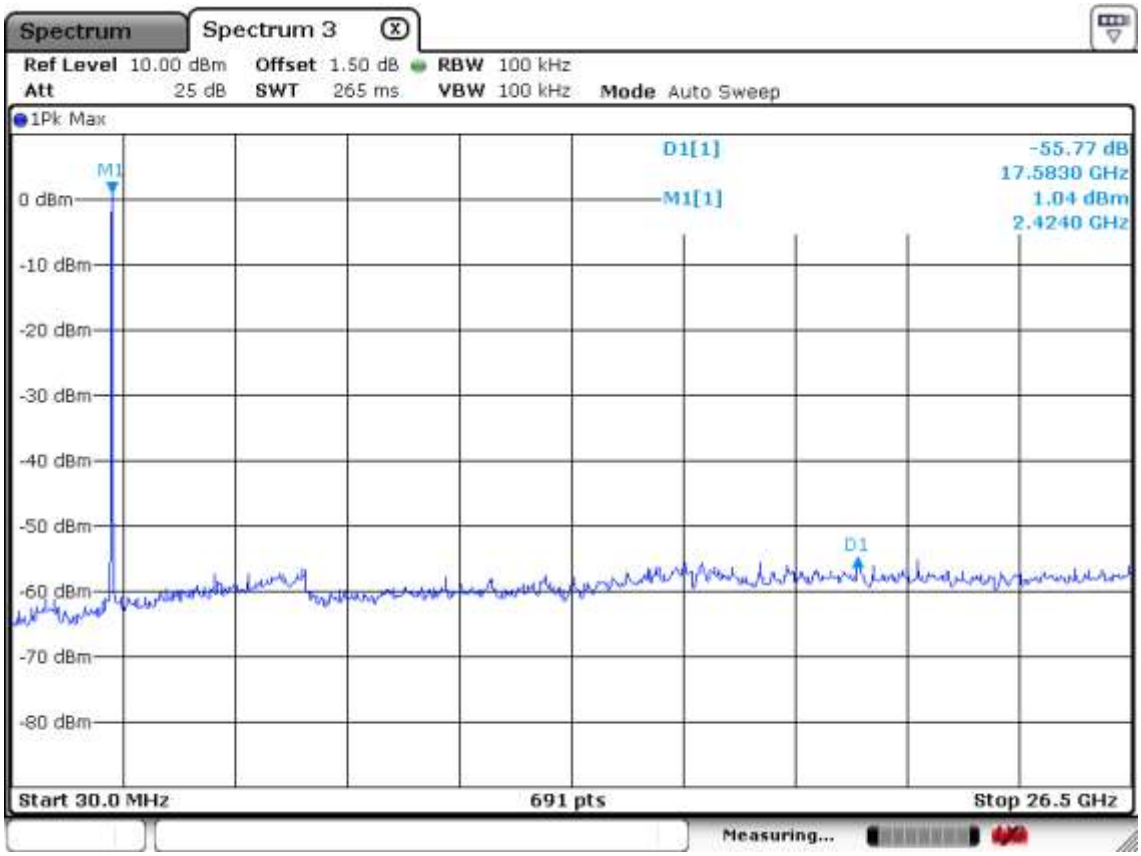
High Channel – 802.11 b

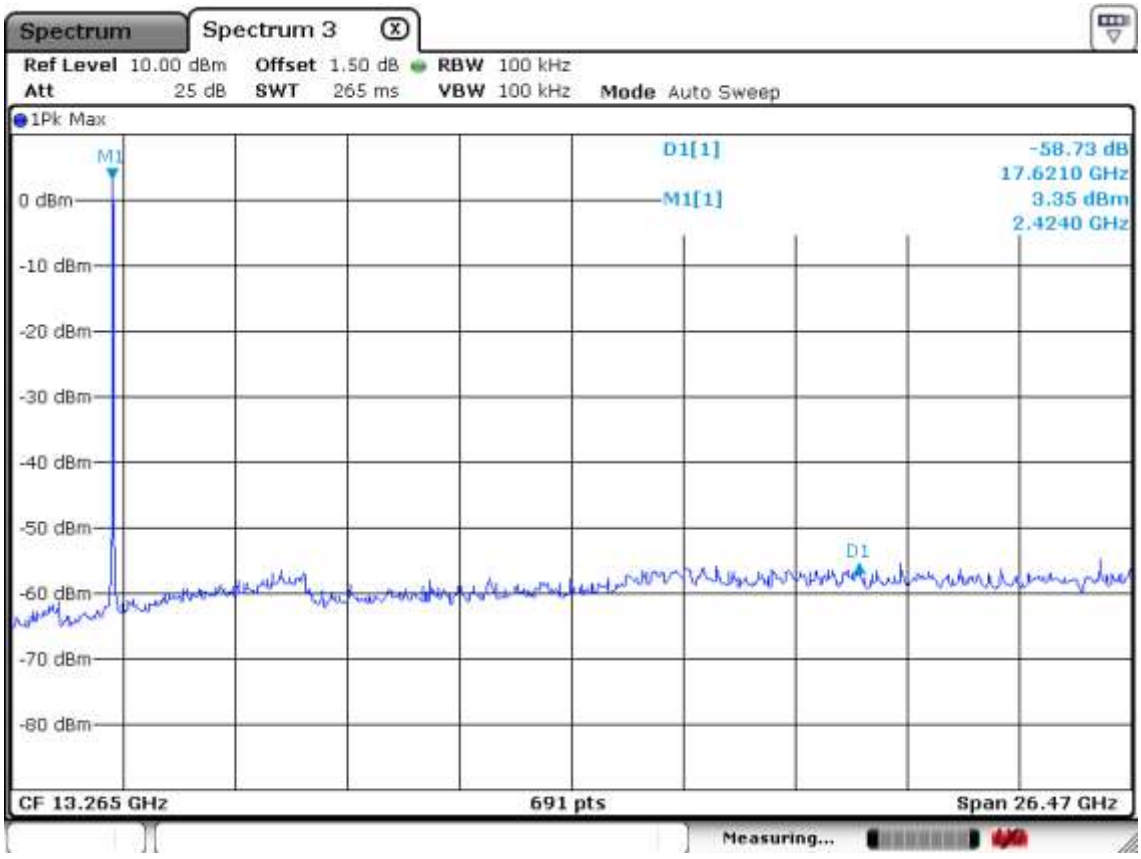


Unwanted Emission – Low Channel – 802.11 g

Frequency Range = 30 MHz ~ 26.5 GHz



Middle Channel – 802.11 g



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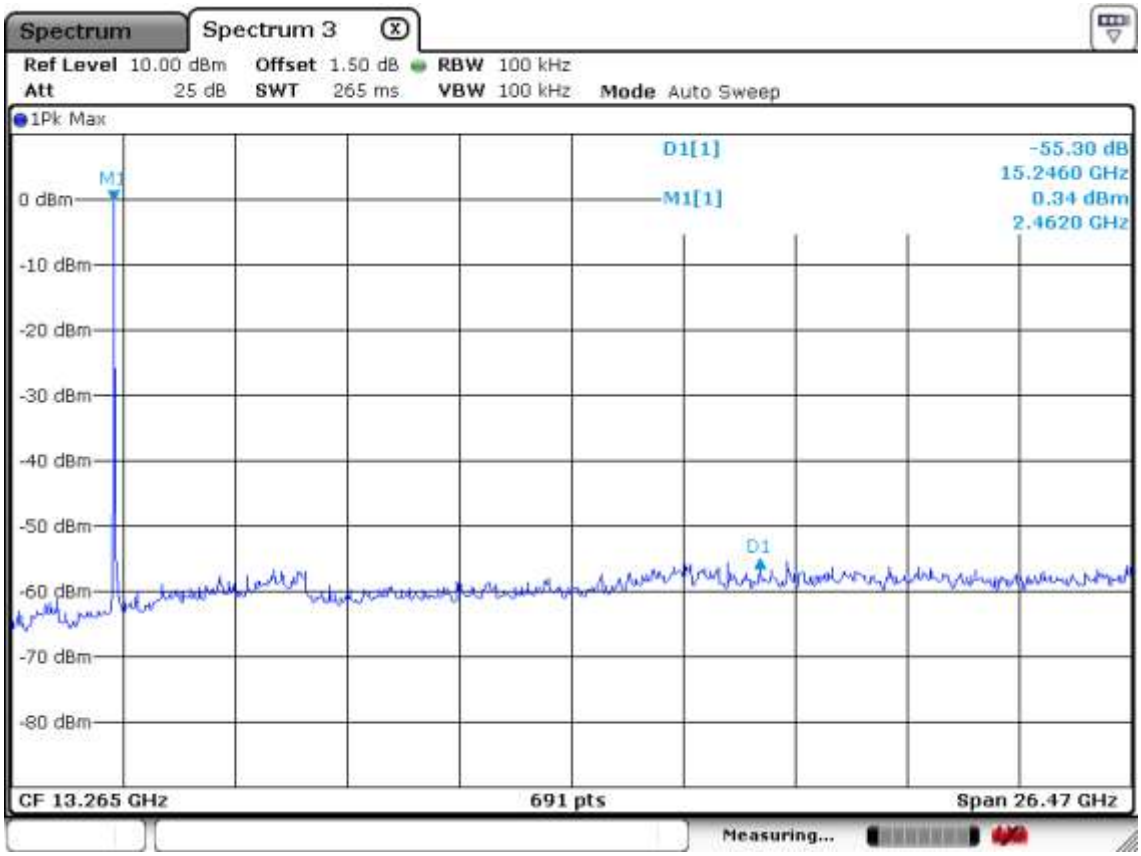
High Channel – 802.11 g



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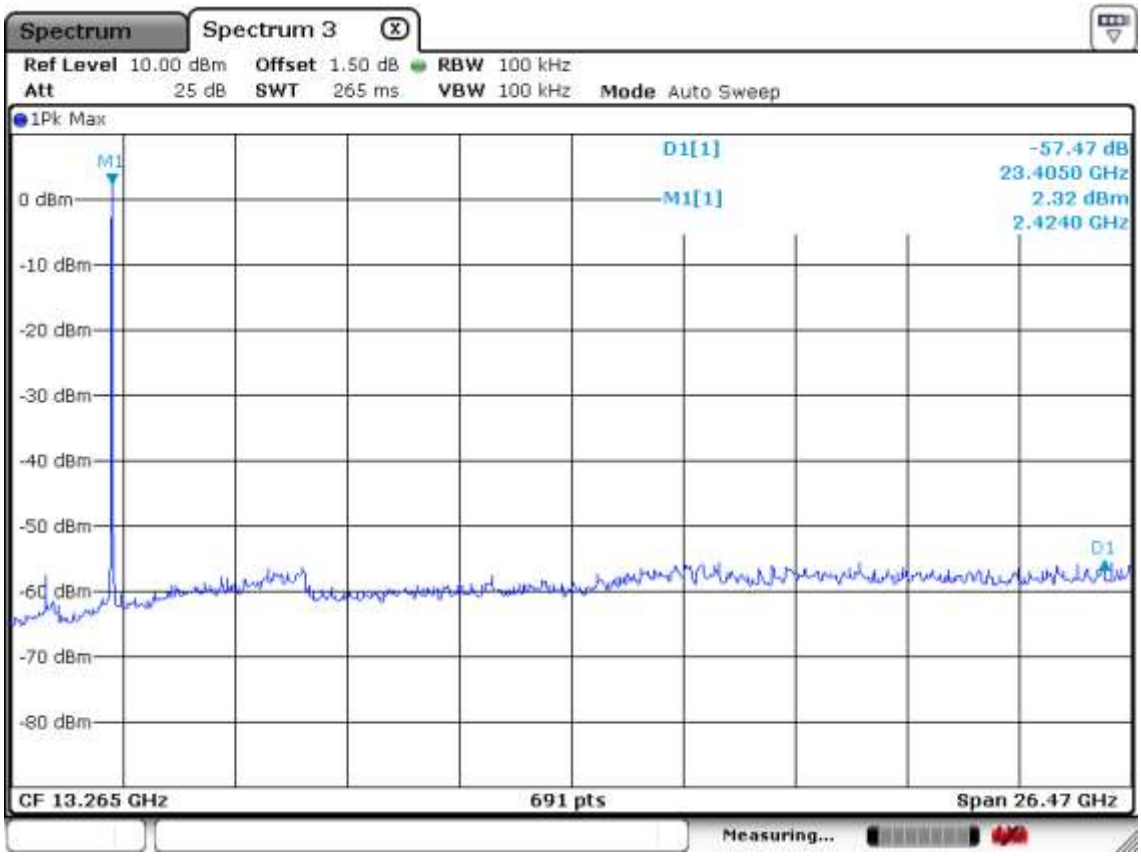
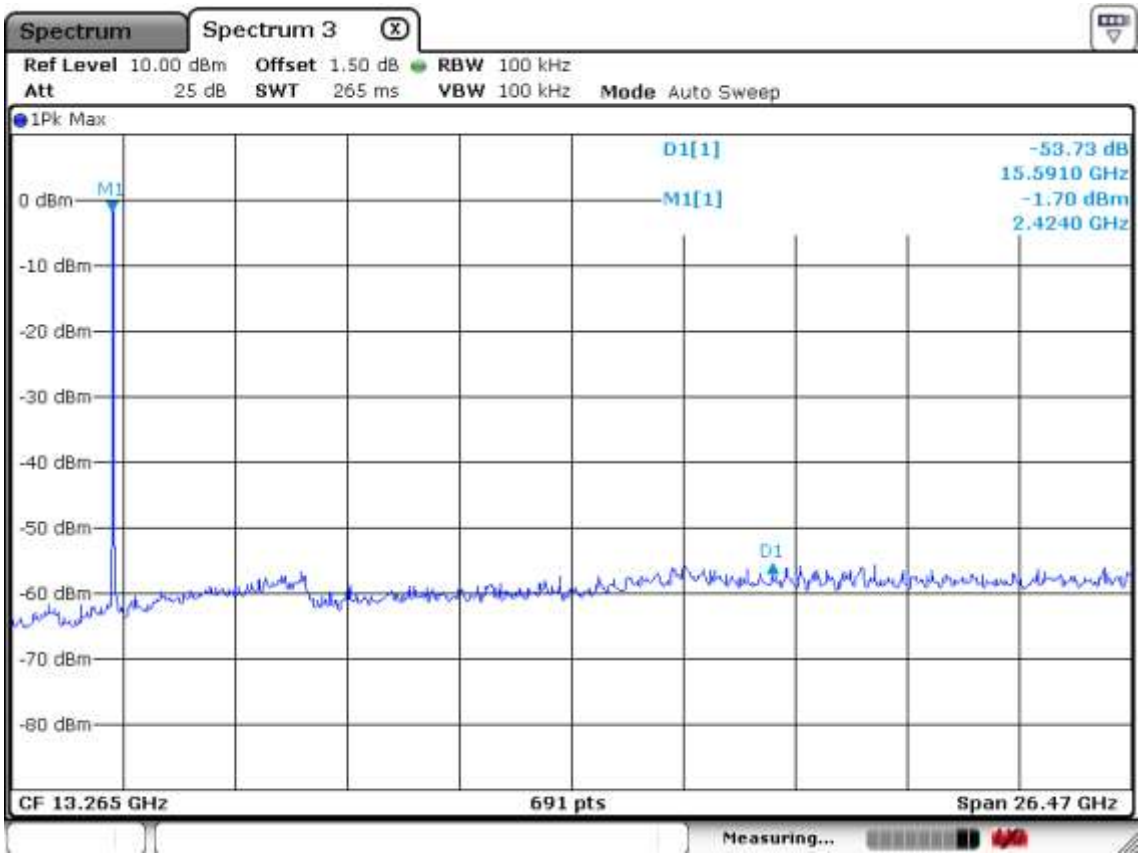
Unwanted Emission – Low Channel – 802.11 n

Frequency Range = 30 MHz ~ 26.5 GHz



Middle Channel – 802.11 n



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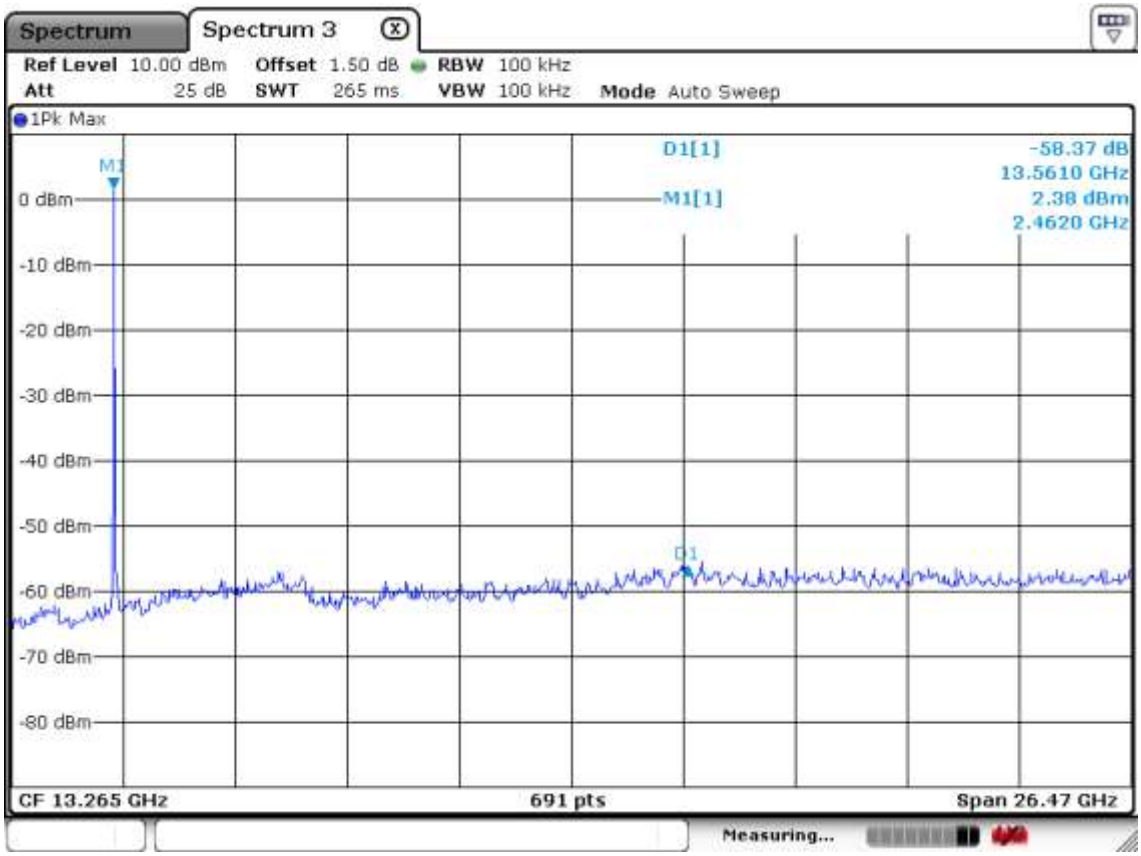
High Channel – 802.11 n



3.2.6 Radiated Spurious Emissions

Procedure:

The EUT was placed on a 0.8 m high wooden table inside a shielded enclosure. An antenna was placed near the EUT and measurements of frequencies and amplitudes of field strengths were recorded for reference during final measurements. For final radiated testing, measurements were performed in OATS. Measurements were performed with the EUT oriented in 3 orthogonal axis and rotated 360 degrees to determine worst-case orientation for maximum emissions.

The spectrum analyzer is set to:

Center frequency = the worst channel

Frequency Range = 9 kHz ~ 10th harmonic.

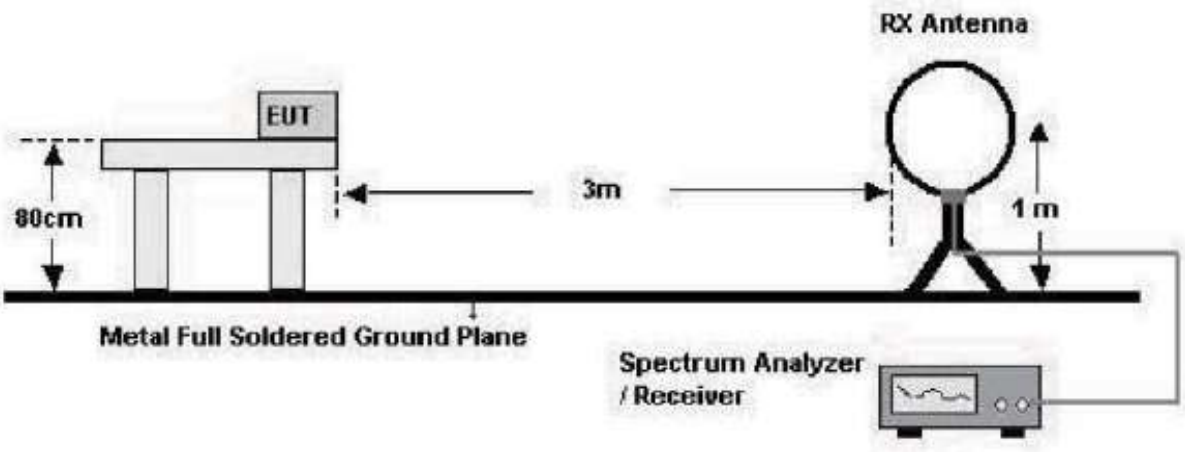
RBW = 100 kHz (30 MHz ~ 1 GHz) VBW ≥ RBW

= 1 MHz (1 GHz ~ 10th harmonic)

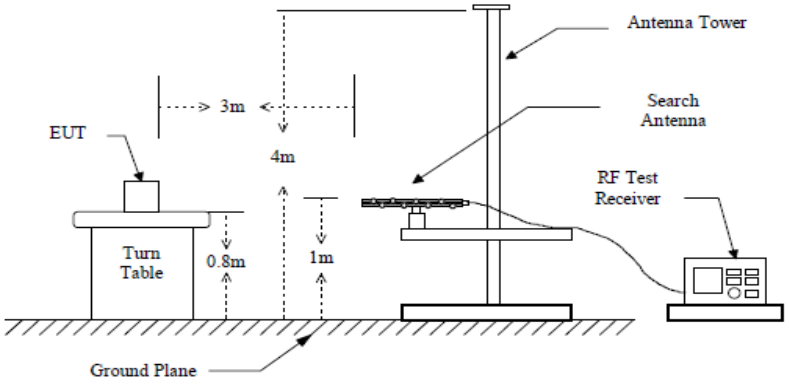
Span = 100 MHz Detector function = peak

Trace = max hold Sweep = auto

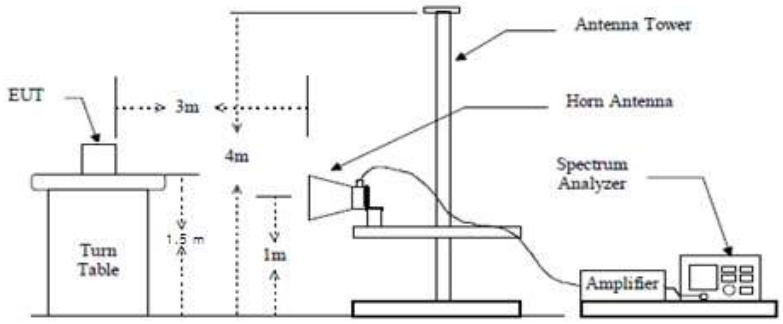
below 30 MHz



below 1 GHz (30 MHz to 1 GHz)



above 1 GHz



Measurement Data: Complies

- See next pages for actual measured data.
- No other emissions were detected at a level greater than 20 dB below limit include from 9 kHz to 30 MHz.

Minimum Standard: FCC Part 15.209(a)

Frequency (MHz)	Limit (uV/m) @ 3 m
0.009 ~ 0.490	2400/F(kHz) **(@ 300 m)**
0.490 ~ 1.705	24000/F(kHz) **(@ 30 m)**
1.705 ~ 30	30**(@ 30 m)**
30 ~ 88	100 **
88 ~ 216	150 **
216 ~ 960	200 **
Above 960	500

** Except as provided in 15.209(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 470-80 6 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

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Measurement Data: (9 kHz – 30 MHz)

Frequency [MHz]	Reading [dBuV/m] AV / Peak		Pol.	Correction Factor		Limits [dBuV/m] AV / Peak		Result [dBuV/m] AV / Peak		Margin [dB] AV / Peak	
				Antenna	Amp.Gain+Cable						
-	-	-	-	-	-	-	-	-	-	-	-
No emissions were detected at a level greater than 20 dB below limit.											
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-

*No emissions were detected at a level greater than 20 dB below limit.

Measurement Data : Bluetooth (Above 1 GHz)

Frequency [MHz]	Reading [dBuV/m] AV / Peak		Pol.	Correction Factor		Limits [dBuV/m] AV/Peak		Result [dBuV/m] AV/Peak		Margin [dB] AV / Peak	
				Antenna	Amp.Gain+Cable						
4834.2	22.62	55.84	V	32.85	22.92	54.0	74.0	32.55	65.77	21.45	8.23
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-

- No other emissions were detected at a level greater than 20 dB below limit.

Measurement Data : 802.11 b (Above 1 GHz)

Frequency [MHz]	Reading [dBuV/m] AV / Peak		Pol.	Correction Factor		Limits [dBuV/m] AV/Peak		Result [dBuV/m] AV/Peak		Margin [dB] AV / Peak	
				Antenna	Amp.Gain+Cable						
6984.5	42.9	54.5	V	32.85	22.92	54.0	74.0	52.83	64.43	1.17	9.57
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-

- No other emissions were detected at a level greater than 20 dB below limit.

Measurement Data : 802.11 g (Above 1 GHz)

Frequency [MHz]	Reading [dBuV/m] AV / Peak		Pol.	Correction Factor		Limits [dBuV/m] AV/Peak		Result [dBuV/m] AV/Peak		Margin [dB] AV / Peak	
				Antenna	Amp.Gain+Cable						
4703	39.5	52.1	V	32.85	22.92	54.0	74.0	49.43	62.03	4.57	11.97
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-

- No other emissions were detected at a level greater than 20 dB below limit.

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Measurement Data : 802.11 n (Above 1 GHz)

Frequency [MHz]	Reading [dBuV/m] AV / Peak		Pol.	Correction Factor		Limits [dBuV/m] AV/Peak		Result [dBuV/m] AV/Peak		Margin [dB] AV / Peak	
				Antenna	Amp.Gain+Cable						
6875.1	39.6	53	V	32.85	22.92	54.0	74.0	49.53	62.93	4.47	11.07
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-

- No other emissions were detected at a level greater than 20 dB below limit.

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Radiated Emissions (Below 1 GHz) – Bluetooth(LOW) mode

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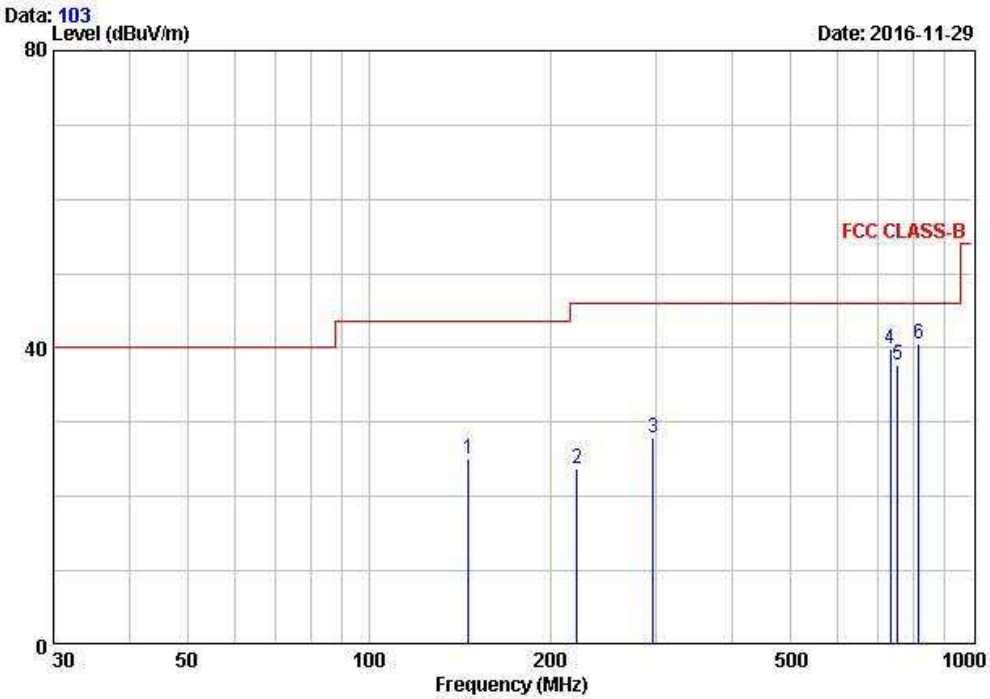
Tel :+82-31-3236008,9
Fax:+82-31-3236010

EUT/Model No.: ET30KH-BT TEST MODE: Bluetooth(LOW) mode

Temp Humi : 13 / 36 Tested by: LEE S H



	Freq	Reading	C.F	Result	Limit QP	Margin	Height	Angle	Polarity
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	deg	
1	146.30	39.80	-14.82	24.98	43.50	18.52	100	165	VERTICAL
2	221.50	39.70	-15.94	23.76	46.00	22.24	100	315	VERTICAL
3	295.80	40.60	-12.70	27.90	46.00	18.10	100	282	VERTICAL
4	734.00	41.30	-1.47	39.83	46.00	6.17	180	163	HORIZONTAL
5	753.50	38.60	-0.88	37.72	46.00	8.28	100	65	VERTICAL
6	816.60	40.20	0.28	40.48	46.00	5.52	230	185	HORIZONTAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

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Bluetooth(MID) mode

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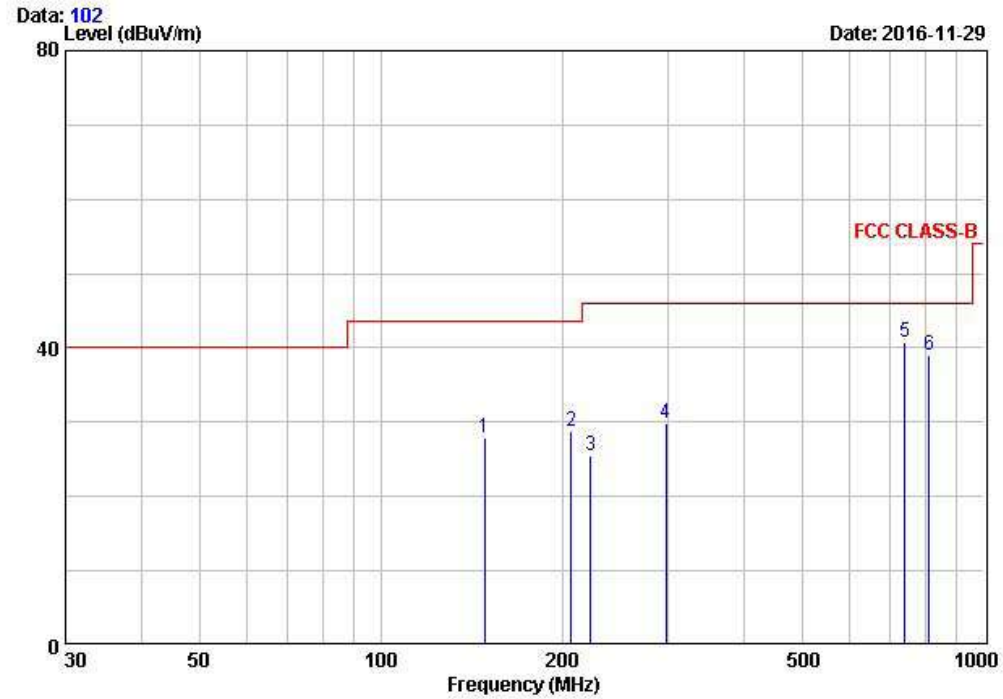
EUT/Model No.: ET30KH-BT TEST MODE: Bluetooth(MID) mode

Temp Humi : 13 / 36 Tested by: LEE S H



	Freq	Reading	C.F	Result	Limit QP	Margin	Height	Angle	Polarity
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	deg	
1	148.70	42.60	-14.72	27.88	43.50	15.62	100	156	VERTICAL
2	206.80	45.60	-16.75	28.85	43.50	14.65	200	284	HORIZONTAL
3	222.70	41.30	-15.87	25.43	46.00	20.57	100	84	VERTICAL
4	296.80	42.60	-12.66	29.94	46.00	16.06	150	239	HORIZONTAL
5	738.60	42.00	-1.32	40.68	46.00	5.32	100	152	VERTICAL
6	811.30	38.80	0.16	38.96	46.00	7.04	140	295	HORIZONTAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

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Bluetooth(HIGH) mode

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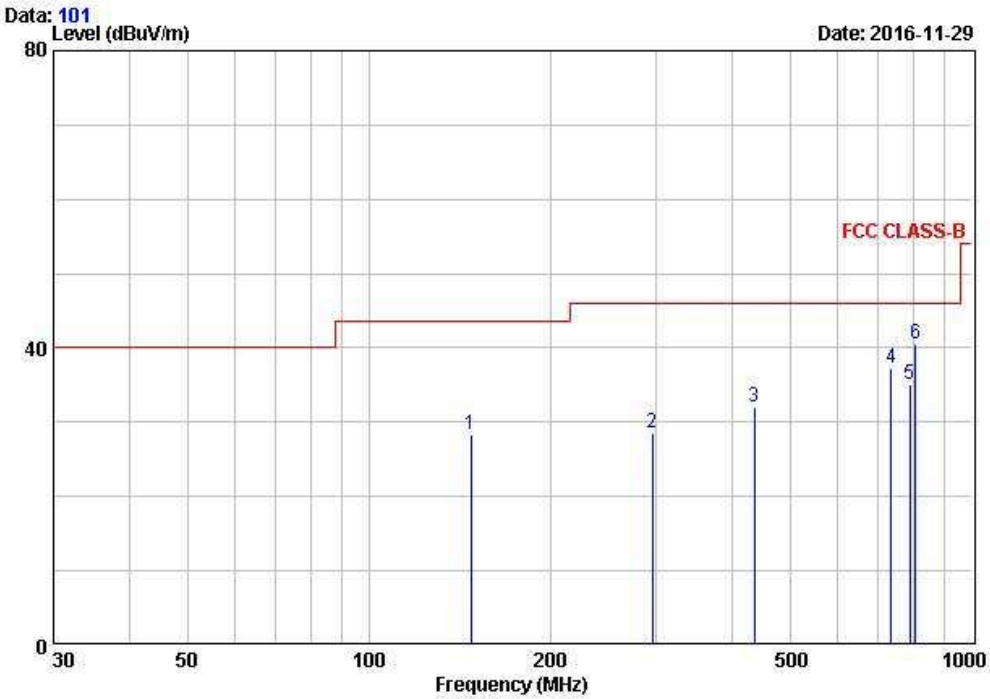
EUT/Model No.: ET30KH-BT TEST MODE: Bluetooth(HIGH) mode

Temp Humi : 13 / 36 Tested by: LEE S H



	Freq	Reading	C.F	Result	Limit QP	Margin	Height	Angle	Polarity
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	deg	
1	147.80	43.20	-14.76	28.44	43.50	15.06	100	263	VERTICAL
2	295.50	41.30	-12.71	28.59	46.00	17.41	100	207	VERTICAL
3	436.50	40.80	-8.81	31.99	46.00	14.01	100	165	VERTICAL
4	735.80	38.60	-1.41	37.19	46.00	8.81	100	81	HORIZONTAL
5	788.60	35.30	-0.28	35.02	46.00	10.98	100	142	VERTICAL
6	807.60	40.50	0.08	40.58	46.00	5.42	220	322	HORIZONTAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

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Wifi (LOW) mode

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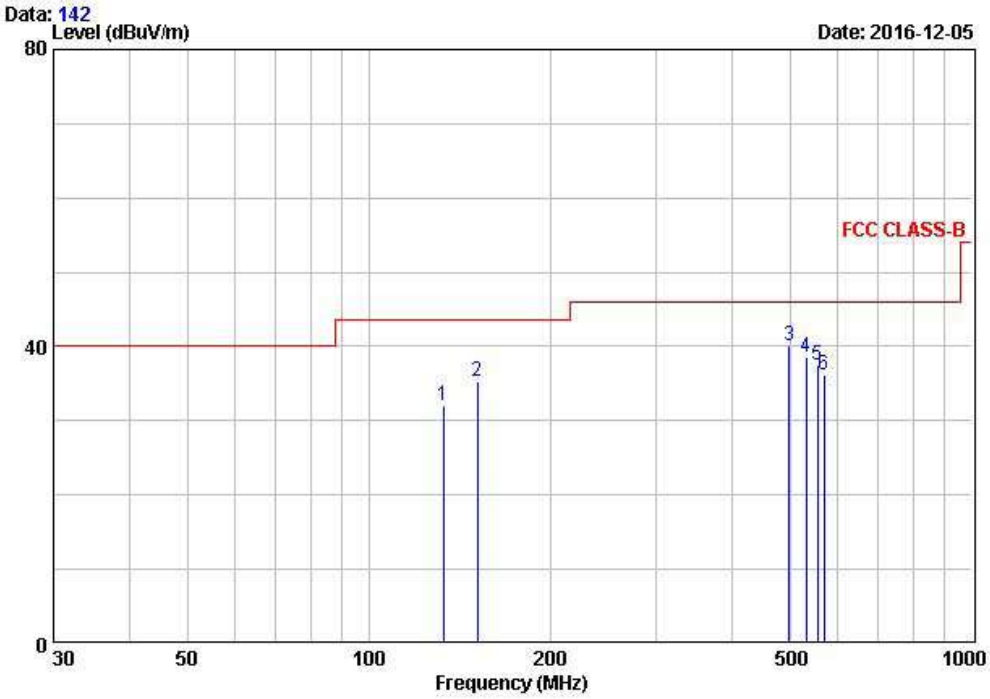
EUT/Model No.: ET30KH-BT TEST MODE: Wifi(LOW) mode

Temp Humi : 18 / 39 Tested by: LEE S H



	Freq	Reading	C.F	Result	Limit QP	Margin	Height	Angle	Polarity
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	deg	
1	132.80	48.20	-16.20	32.00	43.50	11.50	100	250	HORIZONTAL
2	151.20	50.60	-15.27	35.33	43.50	8.17	100	178	VERTICAL
3	498.40	48.80	-8.63	40.17	46.00	5.83	250	65	HORIZONTAL
4	531.60	46.50	-7.94	38.56	46.00	7.44	200	132	HORIZONTAL
5	554.80	45.00	-7.42	37.59	46.00	8.42	100	293	HORIZONTAL
6	568.80	43.20	-7.00	36.20	46.00	9.80	280	96	HORIZONTAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

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Wifi (MID) mode

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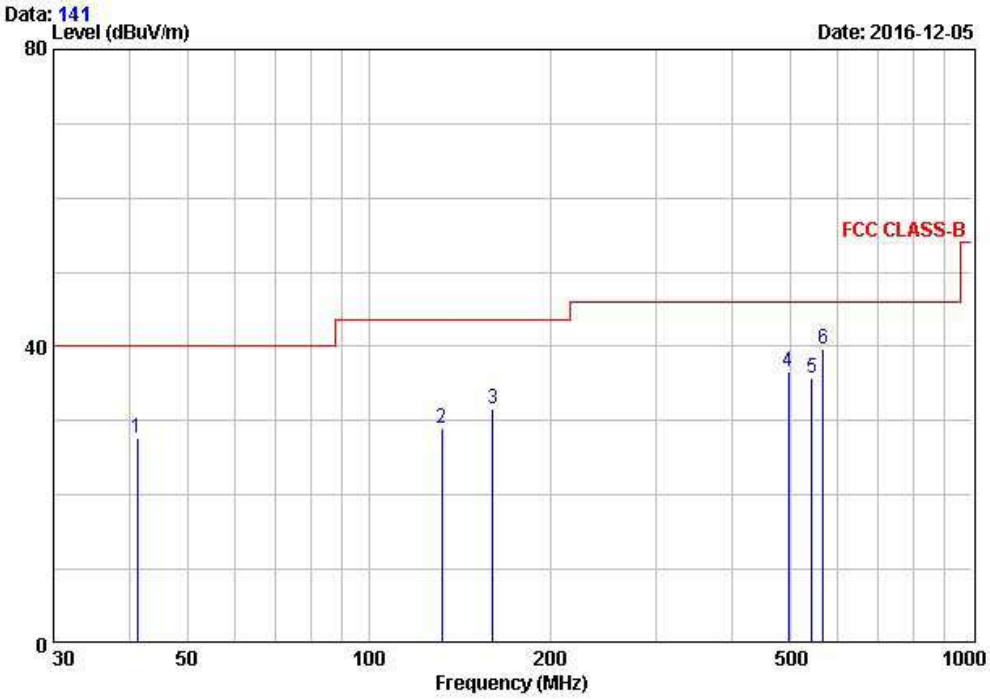
EUT/Model No.: ET30KH-BT TEST MODE: Wifi(MID) mode

Temp Humi : 18 / 39 Tested by: LEE S H



	Freq	Reading	C.F	Result	Limit QP	Margin	Height	Angle	Polarity
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	deg	
1	41.30	45.60	-17.97	27.63	40.00	12.37	100	84	VERTICAL
2	132.10	45.20	-16.25	28.95	43.50	14.55	100	109	VERTICAL
3	160.80	46.60	-15.00	31.60	43.50	11.90	120	137	HORIZONTAL
4	496.00	45.20	-8.67	36.53	46.00	9.47	220	312	HORIZONTAL
5	542.80	43.50	-7.71	35.79	46.00	10.21	300	248	HORIZONTAL
6	566.50	46.70	-7.06	39.64	46.00	6.36	200	157	HORIZONTAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

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Wifi (HIGH) mode

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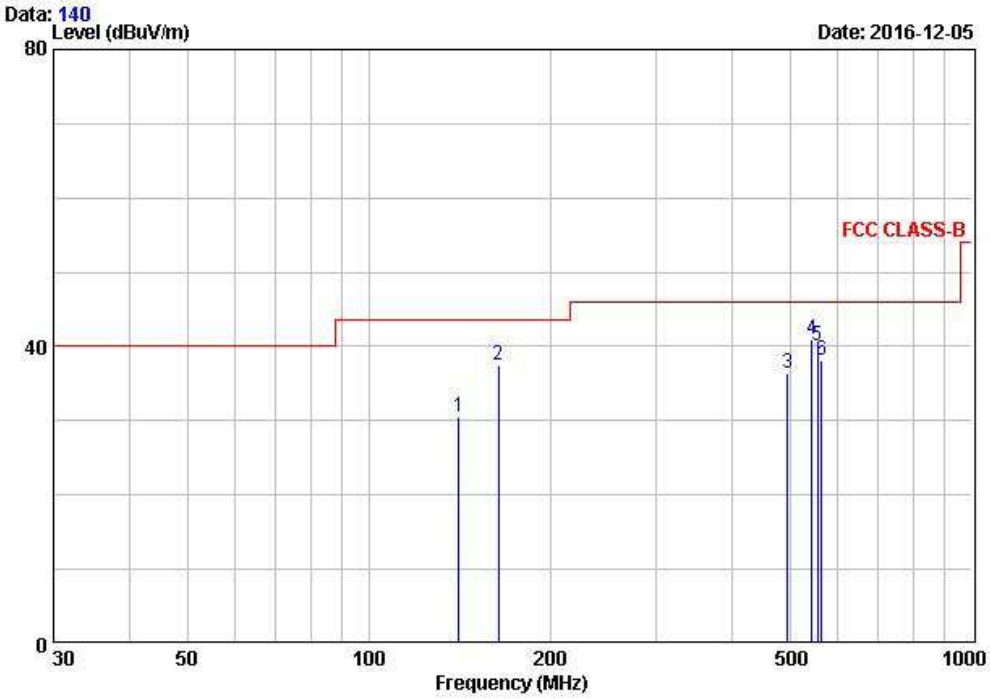
EUT/Model No.: ET30KH-BT TEST MODE: Wifi(HIGH) mode

Temp Humi : 18 / 39 Tested by: LEE S H



	Freq	Reading	C.F	Result	Limit QP	Margin	Height	Angle	Polarity
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	deg	
1	141.20	46.20	-15.64	30.56	43.50	12.94	100	114	VERTICAL
2	164.20	52.80	-15.26	37.54	43.50	5.96	100	154	VERTICAL
3	495.30	45.10	-8.68	36.42	46.00	9.58	100	208	VERTICAL
4	542.60	48.60	-7.71	40.89	46.00	5.11	200	162	HORIZONTAL
5	554.80	47.50	-7.42	40.09	46.00	5.92	100	210	HORIZONTAL
6	562.70	45.30	-7.18	38.12	46.00	7.88	320	158	HORIZONTAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

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Radiated Emissions (Above 1 GHz) – Bluetooth(LOW) mode

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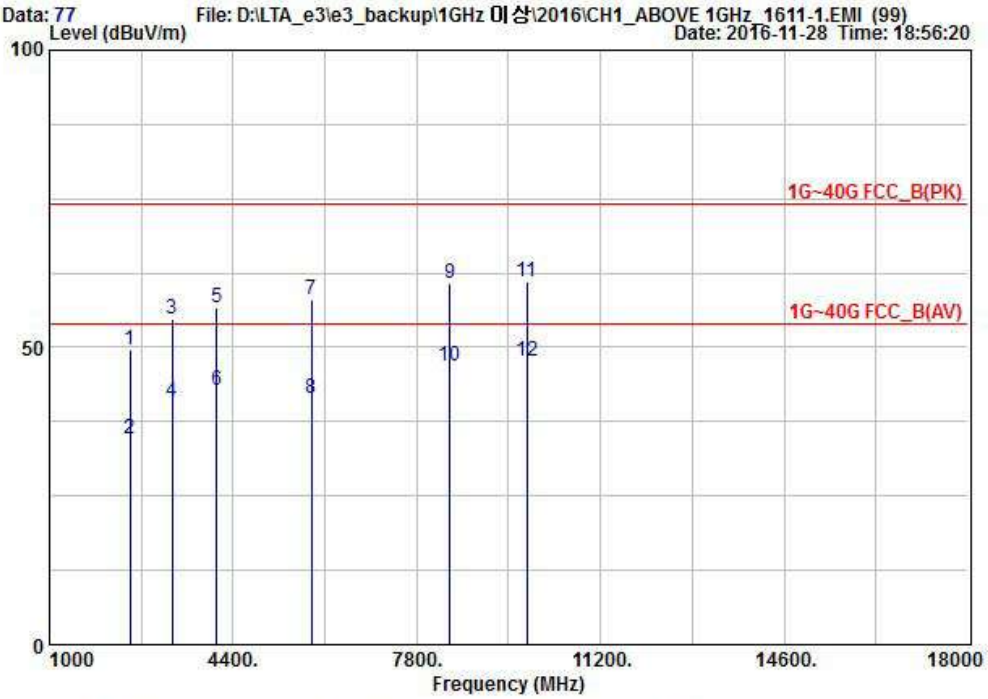
EUT/Model No.: ET30KH-BT Test Mode: Bluetooth(Low) mode
Tested by : LEE S H Temp/Humi: 20 / 48



	Freq	Reading	C.F	Result PK	Limit	Margin	Polarity
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	2486.60	46.10	3.50	49.60	74.00	24.40	HORIZONTAL
2	2486.60	31.20	3.50	34.70	54.00	19.30	HORIZONTAL
3	3267.20	44.90	9.79	54.69	74.00	19.31	HORIZONTAL
4	3267.20	31.20	9.79	40.99	54.00	13.01	HORIZONTAL
5	4088.60	42.10	14.58	56.68	74.00	17.32	HORIZONTAL
6	4088.60	28.30	14.58	42.88	54.00	11.12	HORIZONTAL
7	5843.50	35.80	22.28	58.08	74.00	15.92	VERTICAL
8	5843.50	19.20	22.28	41.48	54.00	12.52	VERTICAL
9	8415.60	32.30	28.33	60.63	74.00	13.37	HORIZONTAL
10	8415.60	18.60	28.33	46.93	54.00	7.07	HORIZONTAL
11	9844.20	31.60	29.55	61.15	74.00	12.85	HORIZONTAL
12	9844.20	18.20	29.55	47.75	54.00	6.25	HORIZONTAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain
Blue : Vertical Black : Horizontal

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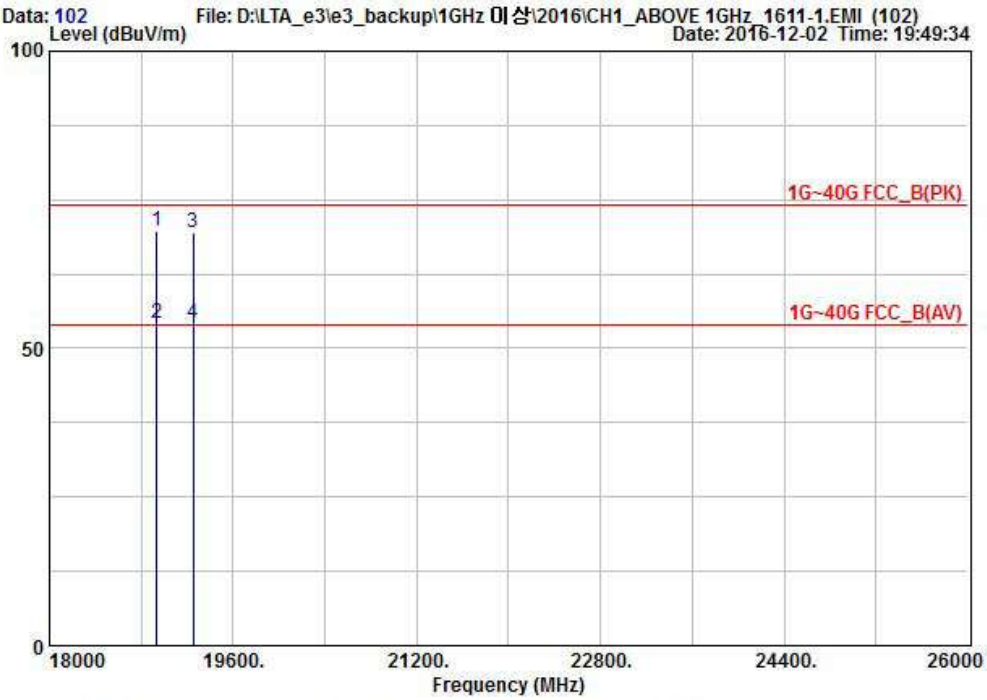
EUT/Model No.: ET30KH-BT Test Mode: Bluetooth(LOW) mode

Tested by : LEE S H Temp/Humi: 20 / 48



Freq	Reading	C.F	Result PK	Limit	Margin	Polarity
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
118935.50	21.10	48.70	69.80	74.00	4.20	VERTICAL
218935.50	5.60	48.70	54.30	74.00	19.70	VERTICAL
319255.60	20.30	49.15	69.45	74.00	4.55	VERTICAL
419255.60	5.10	49.15	54.25	74.00	19.75	VERTICAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain
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Bluetooth(LOW) mode

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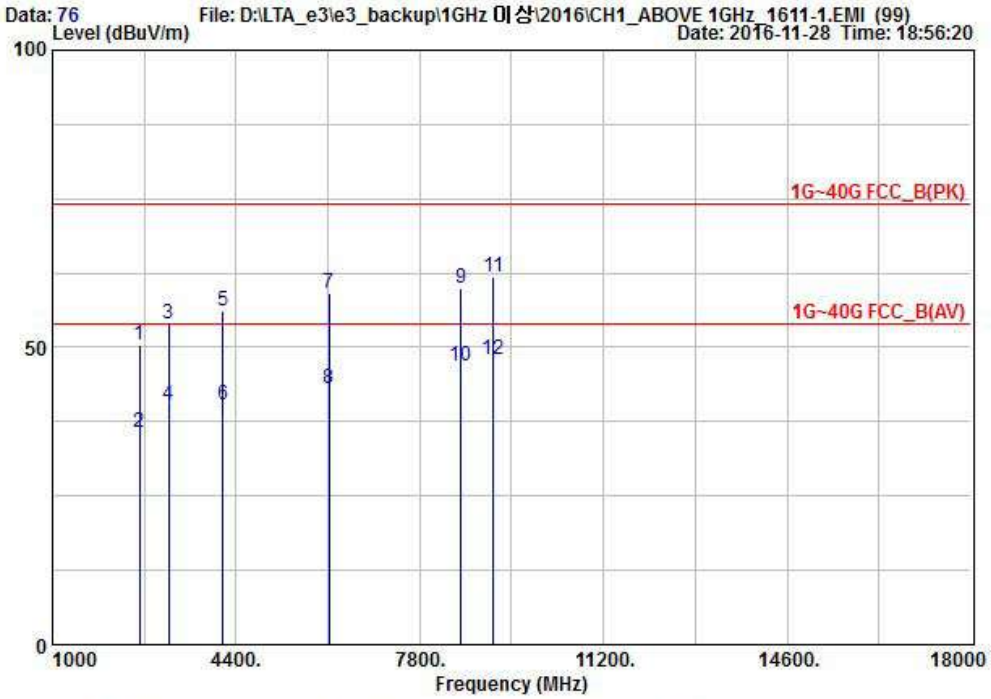
EUT/Model No.: ET30KH-BT Test Mode: Bluetooth(MID) mode

Tested by : LEE S H Temp/Humi: 20 / 48



	Freq	Reading	C.F	Result PK	Limit	Margin	Polarity
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	2612.80	45.90	4.52	50.42	74.00	23.58	HORIZONTAL
2	2612.80	31.10	4.52	35.62	54.00	18.38	HORIZONTAL
3	3156.30	44.80	9.04	53.84	74.00	20.16	HORIZONTAL
4	3156.30	31.20	9.04	40.24	54.00	13.76	HORIZONTAL
5	4154.30	41.10	14.99	56.09	74.00	17.91	HORIZONTAL
6	4154.30	25.40	14.99	40.39	54.00	13.61	HORIZONTAL
7	6124.20	35.80	23.30	59.10	74.00	14.90	VERTICAL
8	6124.20	19.80	23.30	43.10	54.00	10.90	VERTICAL
9	8563.20	31.50	28.34	59.84	74.00	14.16	HORIZONTAL
10	8563.20	18.60	28.34	46.94	54.00	7.06	HORIZONTAL
11	9157.40	33.80	28.19	61.99	74.00	12.01	HORIZONTAL
12	9157.40	19.90	28.19	48.09	54.00	5.91	HORIZONTAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain
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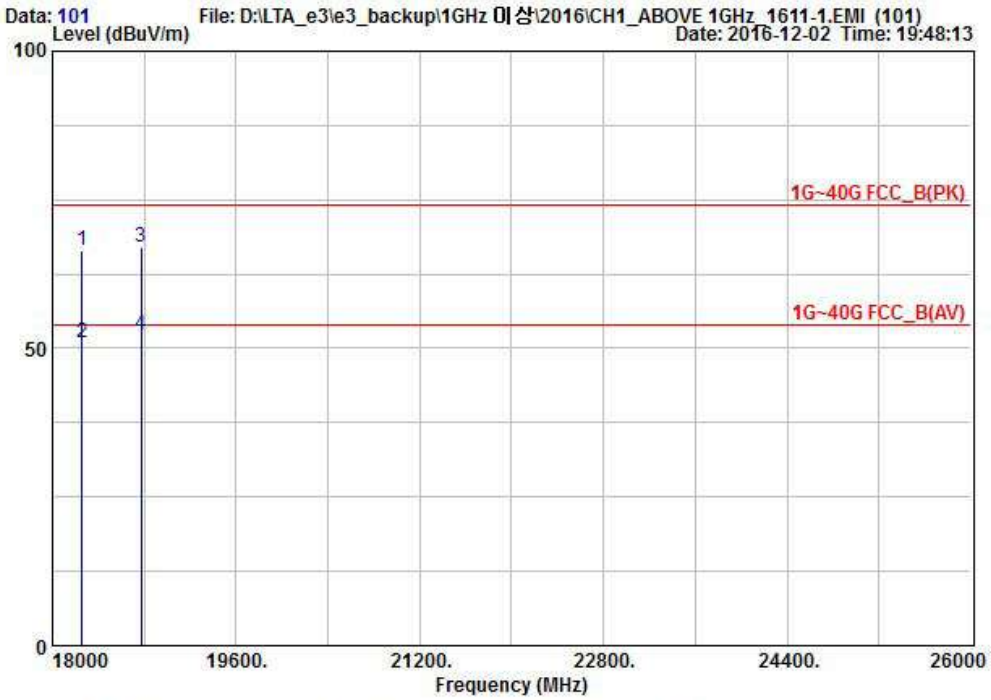
EUT/Model No.: ET30KH-BT Test Mode: Bluetooth(MID) mode

Tested by : LEE S H Temp/Humi: 20 / 48



Freq	Reading	C.F	Result PK	Limit	Margin	Polarity
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
118260.00	21.30	45.10	66.40	74.00	7.60	VERTICAL
218260.00	5.80	45.10	50.90	74.00	23.10	VERTICAL
318773.50	19.80	47.23	67.03	74.00	6.97	HORIZONTAL
418773.50	5.10	47.23	52.33	74.00	21.67	HORIZONTAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain
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Bluetooth(HIGH) mode

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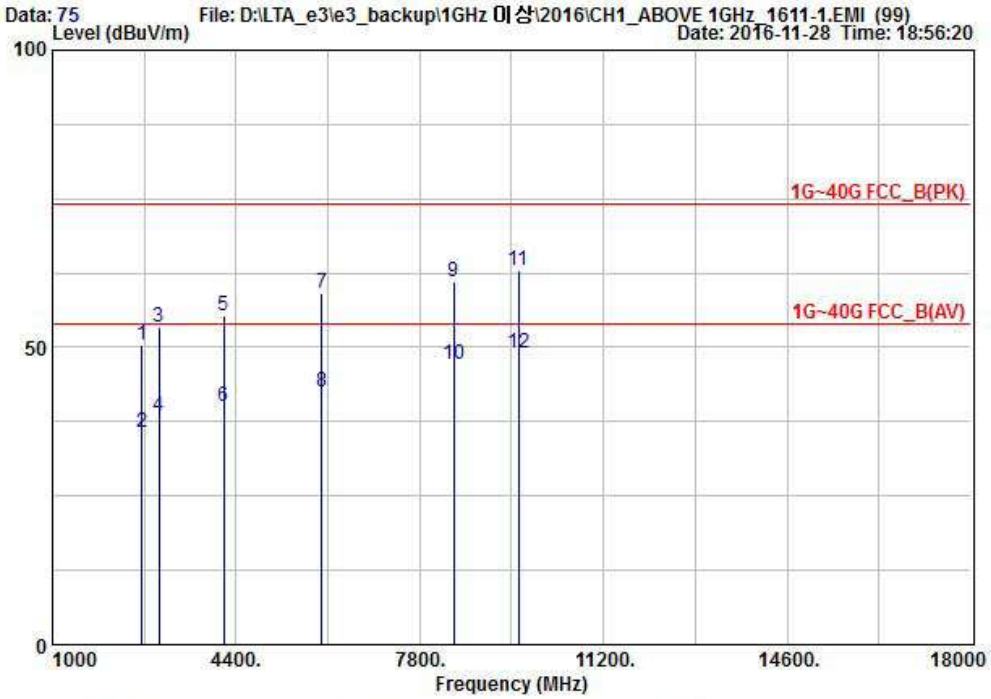
EUT/Model No.: ET30KH-BT Test Mode: Bluetooth(High) mode
Tested by : LEE S H Temp/Humi: 20 / 48



	Freq	Reading	C.F	Result PK	Limit	Margin	Polarity
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	2654.30	45.60	4.89	50.49	74.00	23.51	HORIZONTAL
2	2654.30	30.80	4.89	35.69	54.00	18.31	HORIZONTAL
3	2965.60	45.60	7.68	53.28	74.00	20.72	HORIZONTAL
4	2965.60	30.80	7.68	38.48	54.00	15.52	HORIZONTAL
5	4165.30	40.30	15.06	55.36	74.00	18.64	HORIZONTAL
6	4165.30	25.10	15.06	40.16	54.00	13.84	HORIZONTAL
7	5984.60	36.10	23.01	59.11	74.00	14.89	VERTICAL
8	5984.60	19.60	23.01	42.61	54.00	11.39	VERTICAL
9	8433.50	32.60	28.35	60.95	74.00	13.05	HORIZONTAL
10	8433.50	18.90	28.35	47.25	54.00	6.75	HORIZONTAL
11	9633.50	33.50	29.33	62.83	74.00	11.17	HORIZONTAL
12	9633.50	19.60	29.33	48.93	54.00	5.07	HORIZONTAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain
Blue : Vertical Black : Horizontal

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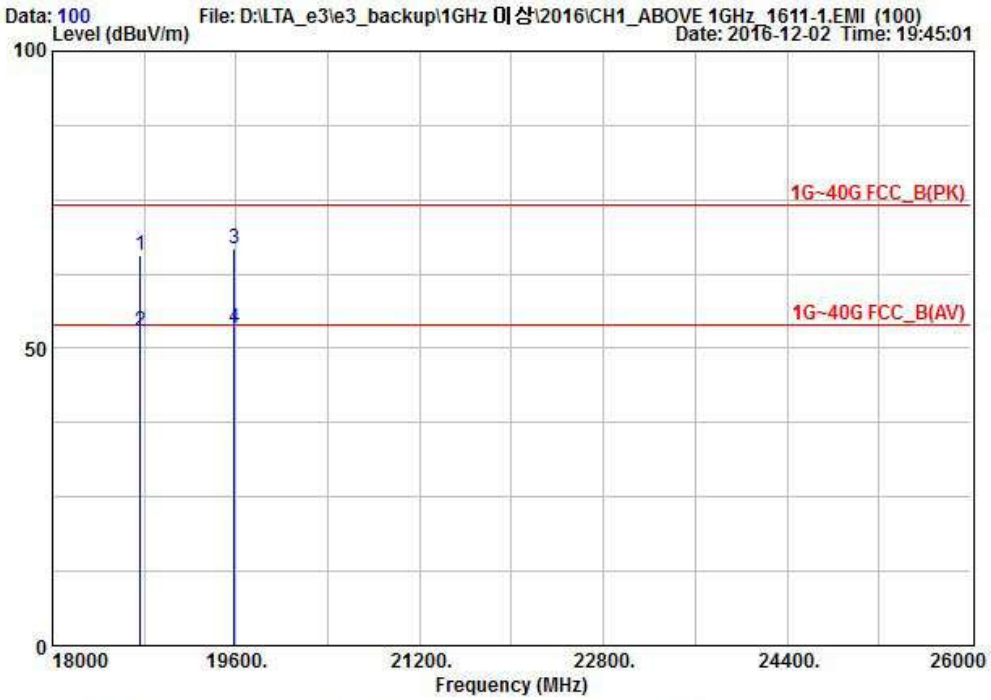
EUT/Model No.: ET30KH-BT Test Mode: Bluetooth(HIGH) mode

Tested by : LEE S H Temp/Humi: 20 / 48



Freq	Reading	C.F	Result PK	Limit	Margin	Polarity
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
118763.50	18.60	47.14	65.74	74.00	8.26	VERTICAL
218763.50	5.60	47.14	52.74	74.00	21.26	VERTICAL
319583.30	17.90	48.86	66.76	74.00	7.24	VERTICAL
419583.30	4.50	48.86	53.36	74.00	20.64	VERTICAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain
Blue : Vertical Black : Horizontal

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Wifi(LOW) mode

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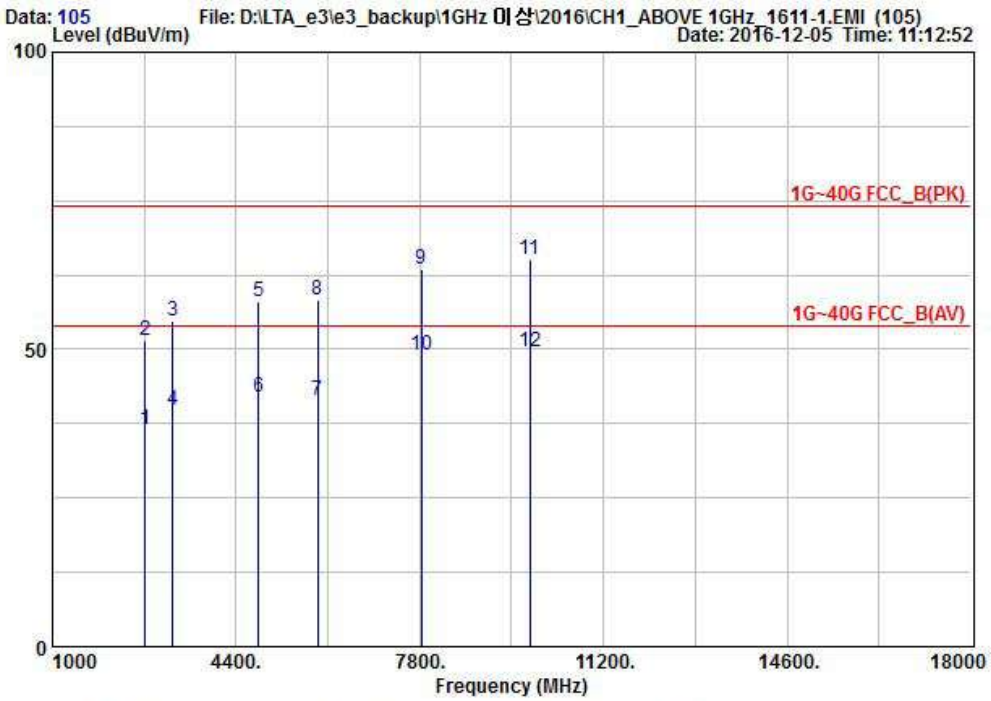
EUT/Model No.: ET30KH-BT Test Mode: Wifi (LOW) mode

Tested by : LEE S H Temp/Humi: 20 / 48



	Freq	Reading	C.F	Result PK	Limit	Margin	Polarity
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	2711.20	31.10	5.40	36.50	54.00	17.50	VERTICAL
2	2711.20	46.20	5.40	51.60	74.00	22.40	VERTICAL
3	3220.80	45.20	9.47	54.67	74.00	19.33	HORIZONTAL
4	3220.80	30.30	9.47	39.77	54.00	14.23	HORIZONTAL
5	4812.00	40.10	17.82	57.92	74.00	16.08	HORIZONTAL
6	4812.00	24.20	17.82	42.02	54.00	11.98	HORIZONTAL
7	5902.60	18.90	22.59	41.49	54.00	12.51	VERTICAL
8	5902.60	35.80	22.59	58.39	74.00	15.61	VERTICAL
9	7821.20	33.50	29.91	63.41	74.00	10.59	VERTICAL
10	7821.20	19.20	29.91	49.11	54.00	4.89	VERTICAL
11	9844.20	35.50	29.55	65.05	74.00	8.95	HORIZONTAL
12	9844.20	20.10	29.55	49.65	54.00	4.35	HORIZONTAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain
Blue : Vertical Black : Horizontal

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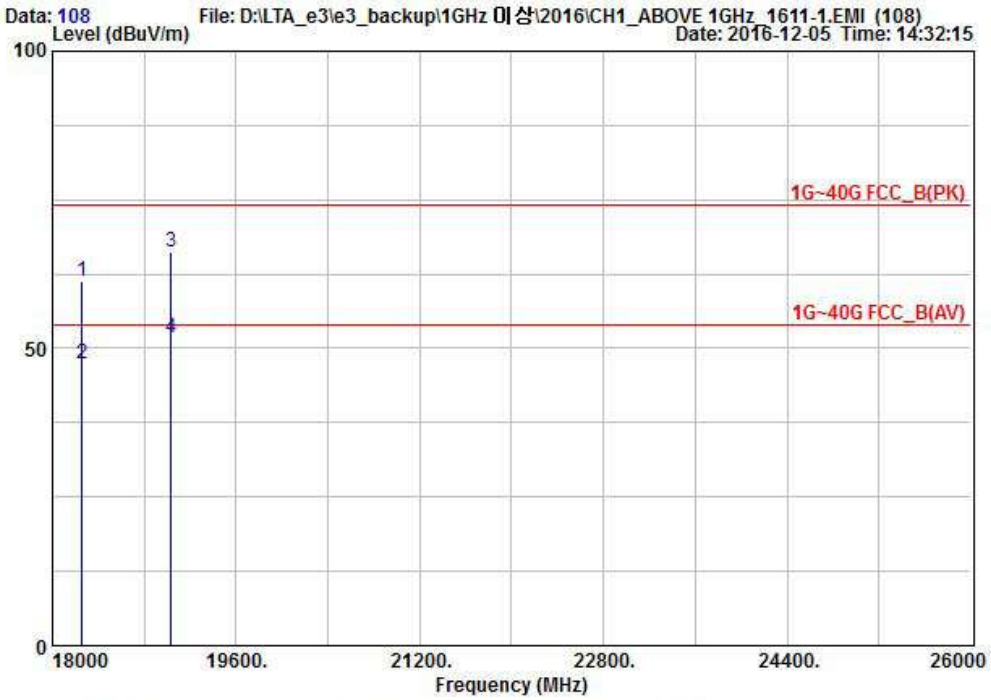
EUT/Model No.: ET30KH-BT Test Mode: Wifi (LOW) mode
Tested by : LEE S H Temp/Humi: 20 / 48



Freq	Reading	C.F	Result PK	Limit	Margin	Polarity
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
118255.60	16.20	45.11	61.31	74.00	12.69	HORIZONTAL
218255.60	2.30	45.11	47.41	54.00	6.59	HORIZONTAL
319032.70	16.90	49.27	66.17	74.00	7.83	VERTICAL
419032.70	2.60	49.27	51.87	54.00	2.13	VERTICAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain
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Wifi(MID) mode

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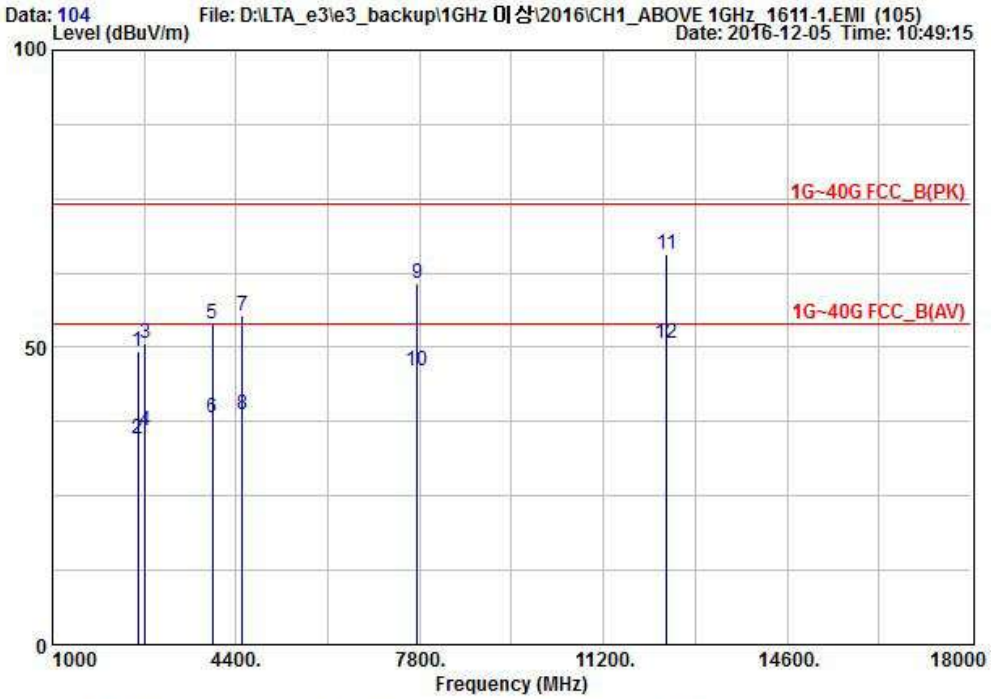
EUT/Model No.: ET30KH-BT Test Mode: Wifi (MID) mode

Tested by : LEE S H Temp/Humi: 20 / 48



	Freq	Reading	C.F	Result PK	Limit	Margin	Polarity
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	2581.30	45.10	4.24	49.34	74.00	24.66	VERTICAL
2	2581.30	30.50	4.24	34.74	54.00	19.26	VERTICAL
3	2711.20	45.30	5.40	50.70	74.00	23.30	VERTICAL
4	2711.20	30.60	5.40	36.00	54.00	18.00	VERTICAL
5	3954.20	40.10	13.77	53.87	74.00	20.13	HORIZONTAL
6	3954.20	24.50	13.77	38.27	54.00	15.73	HORIZONTAL
7	4511.60	38.10	17.21	55.31	74.00	18.69	VERTICAL
8	4511.60	21.60	17.21	38.81	54.00	15.19	VERTICAL
9	7750.60	30.10	30.72	60.82	74.00	13.18	VERTICAL
10	7750.60	15.20	30.72	45.92	54.00	8.08	VERTICAL
11	12375.20	25.10	40.53	65.63	74.00	8.37	HORIZONTAL
12	12375.20	10.20	40.53	50.73	54.00	3.27	HORIZONTAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain
Blue : Vertical Black : Horizontal

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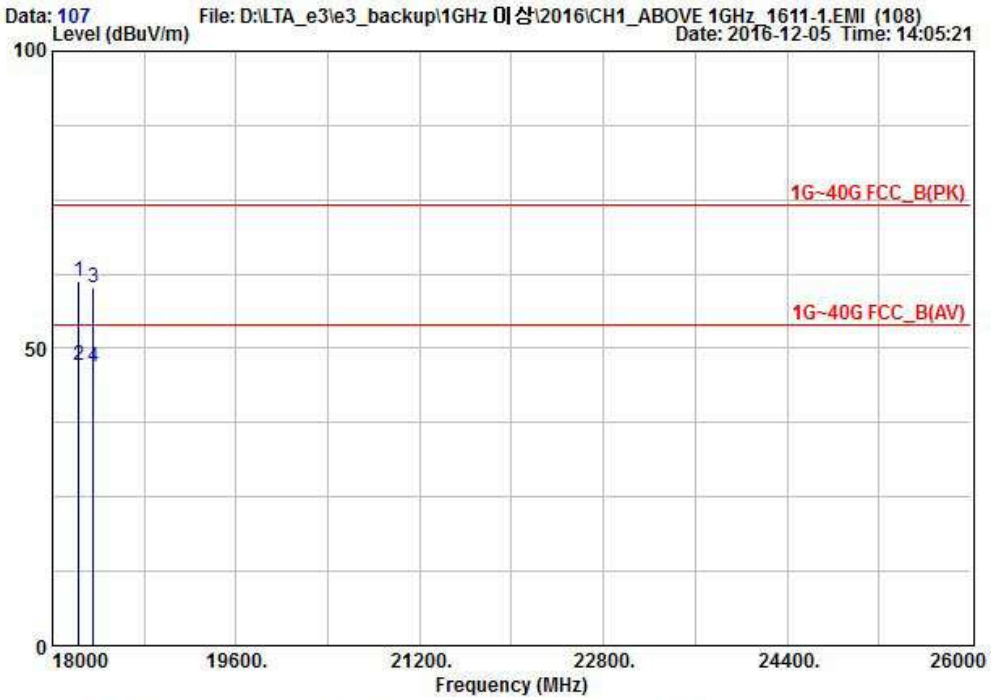
EUT/Model No.: ET30KH-BT Test Mode: Wifi (MID) mode
Tested by : LEE S H Temp/Humi: 20 / 48



Freq	Reading	C.F	Result PK	Limit	Margin	Polarity
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
118226.20	16.20	45.15	61.35	74.00	12.65	VERTICAL
218226.20	2.10	45.15	47.25	54.00	6.75	VERTICAL
318356.80	15.30	44.96	60.26	74.00	13.74	VERTICAL
418356.80	1.90	44.96	46.86	54.00	7.14	VERTICAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain
Blue : Vertical Black : Horizontal

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Wifi(HIGH) mode

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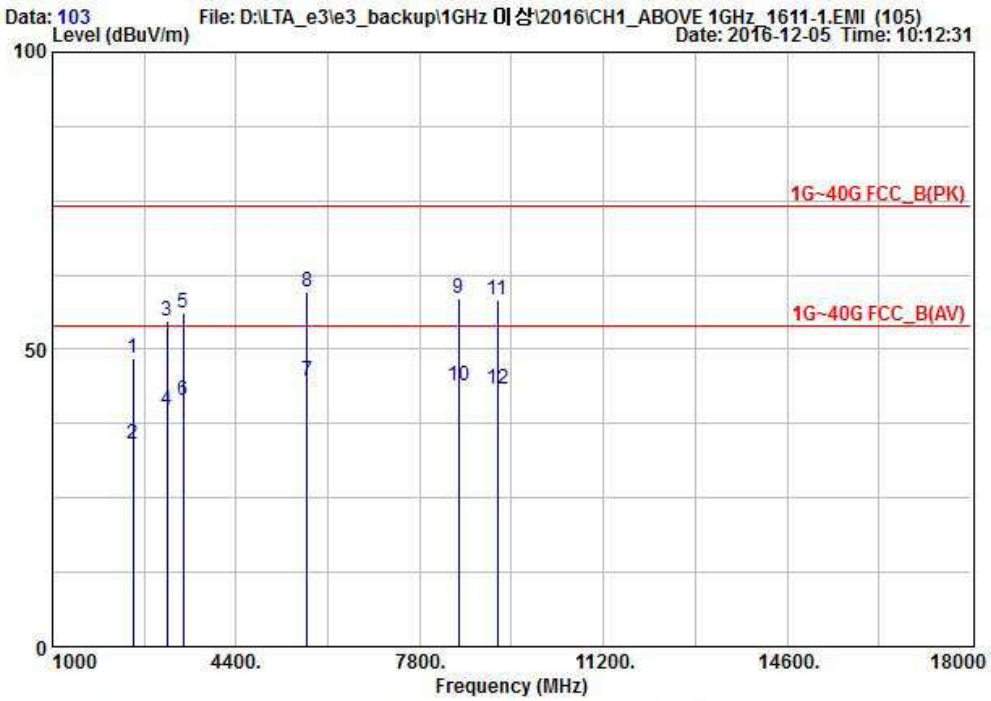
EUT/Model No.: ET30KH-BT Test Mode: Wifi (High) mode
Tested by : LEE S H Temp/Humi: 20 / 48



	Freq	Reading	C.F	Result PK	Limit	Margin	Polarity
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	2484.20	45.10	3.49	48.59	74.00	25.41	HORIZONTAL
2	2484.20	30.50	3.49	33.99	54.00	20.01	HORIZONTAL
3	3115.70	46.10	8.77	54.87	74.00	19.13	HORIZONTAL
4	3115.70	31.10	8.77	39.87	54.00	14.13	HORIZONTAL
5	3421.60	45.30	10.83	56.13	74.00	17.87	HORIZONTAL
6	3421.60	30.50	10.83	41.33	54.00	12.67	HORIZONTAL
7	5711.50	23.10	21.61	44.71	54.00	9.29	VERTICAL
8	5711.50	38.20	21.61	59.81	74.00	14.19	VERTICAL
9	8512.60	30.20	28.41	58.61	74.00	15.39	HORIZONTAL
10	8512.60	15.50	28.41	43.91	54.00	10.09	HORIZONTAL
11	9235.10	29.80	28.41	58.21	74.00	15.79	HORIZONTAL
12	9235.10	14.80	28.41	43.21	54.00	10.79	HORIZONTAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain
Blue : Vertical Black : Horizontal

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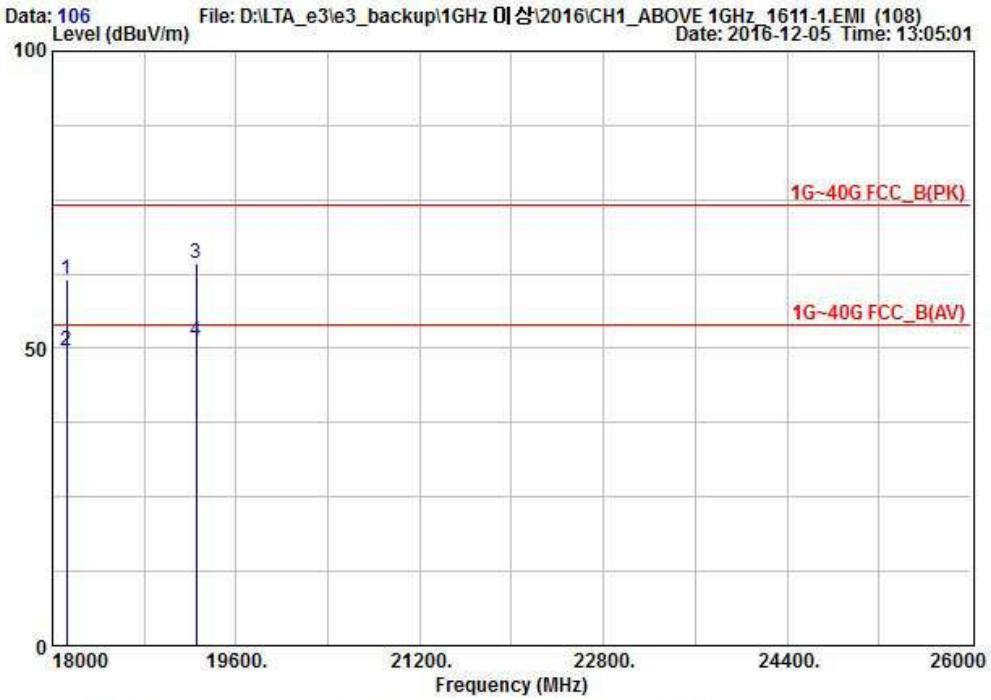
EUT/Model No.: ET30KH-BT Test Mode: WIFI (HIGH) mode
Tested by : LEE S H Temp/Humi: 20 / 48



Freq	Reading	C.F	Result PK	Limit	Margin	Polarity
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
118122.30	16.20	45.31	61.51	74.00	12.49	HORIZONTAL
218122.30	4.21	45.31	49.52	54.00	4.48	HORIZONTAL
319253.20	15.20	49.15	64.35	74.00	9.65	VERTICAL
419253.20	2.10	49.15	51.25	54.00	2.75	VERTICAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain
Blue : Vertical Black : Horizontal

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3.2.6 AC Conducted Emissions

Procedure:

The conducted emissions are measured in the shielded room with a spectrum analyzer in peak hold. While the measurement, EUT had its hopping function disabled at the middle channels in line with Section 15.31(m). Emissions closest to the limit are measured in the quasi-peak mode (QP) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation and Exerciser operation. The highest emissions relative to the limit are listed.

Measurement Data: Complies

- See next pages for actual measured spectrum plots.
- No emissions were detected at a level greater than 20 dB below limit.

Minimum Standard: FCC Part 15.207(a) / EN 55022

Class B

Frequency Range	quasi-peak	Average
0.15 ~ 0.5	66 to 56 *	56 to 46 *
0.5 ~ 5	56	46
5 ~ 30	60	50

* Decreases with the logarithm of the frequency

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Conducted Emissions - Bluetooth(LOW) mode + LINE

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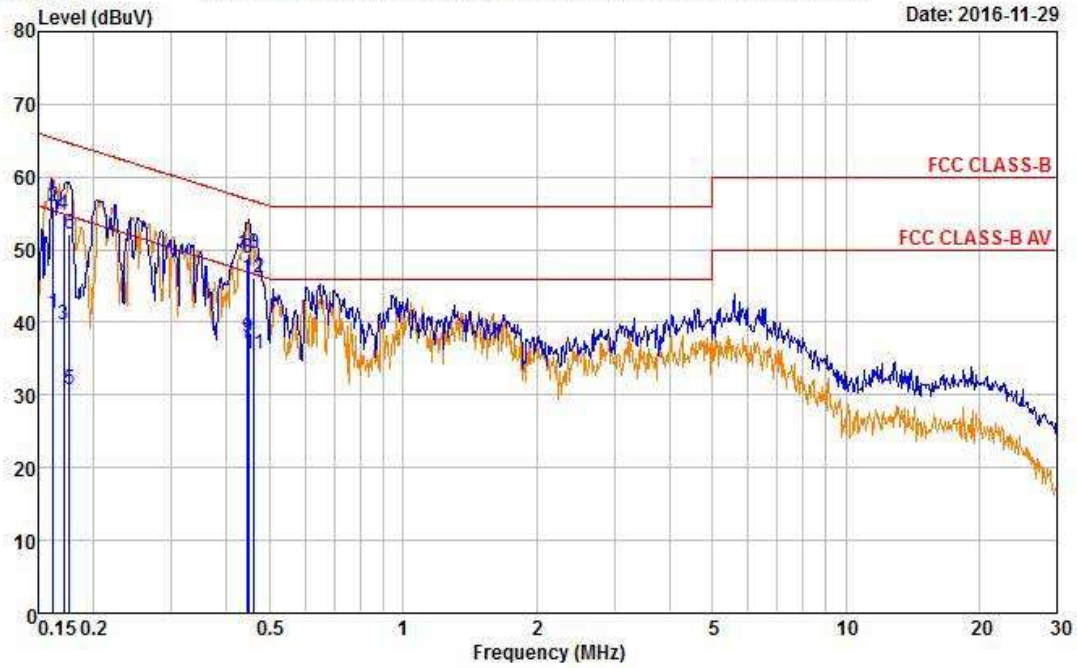
EUT / Model No.	: ET30KH-BT	Phase	: LINE
Test Mode	: Bluetooth(LOW) mode	Test Power	: 120 / 60
Temp. / Humi.	: 20 / 37	Test Engineer	: LEE S H

Data: 1996 File: D:\Conducted Data\2015\2016\LTA_Conduction_2016_11.EM6 (2004)



Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
MHz	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
0.162	36.48	21.72	19.47	55.95	41.19	65.35	55.35	9.40	14.16
0.171	35.31	20.26	19.48	54.79	39.74	64.90	54.90	10.11	15.16
0.177	32.68	11.20	19.48	52.16	30.68	64.64	54.64	12.48	23.96
0.446	29.27	17.67	19.56	48.83	37.23	56.94	46.94	8.11	9.71
0.447	29.97	18.38	19.56	49.53	37.94	56.94	46.94	7.41	9.00
0.462	26.64	16.00	19.58	46.22	35.58	56.66	46.66	10.44	11.08

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

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Conducted Emissions - Bluetooth(LOW) mode + NEUTAL

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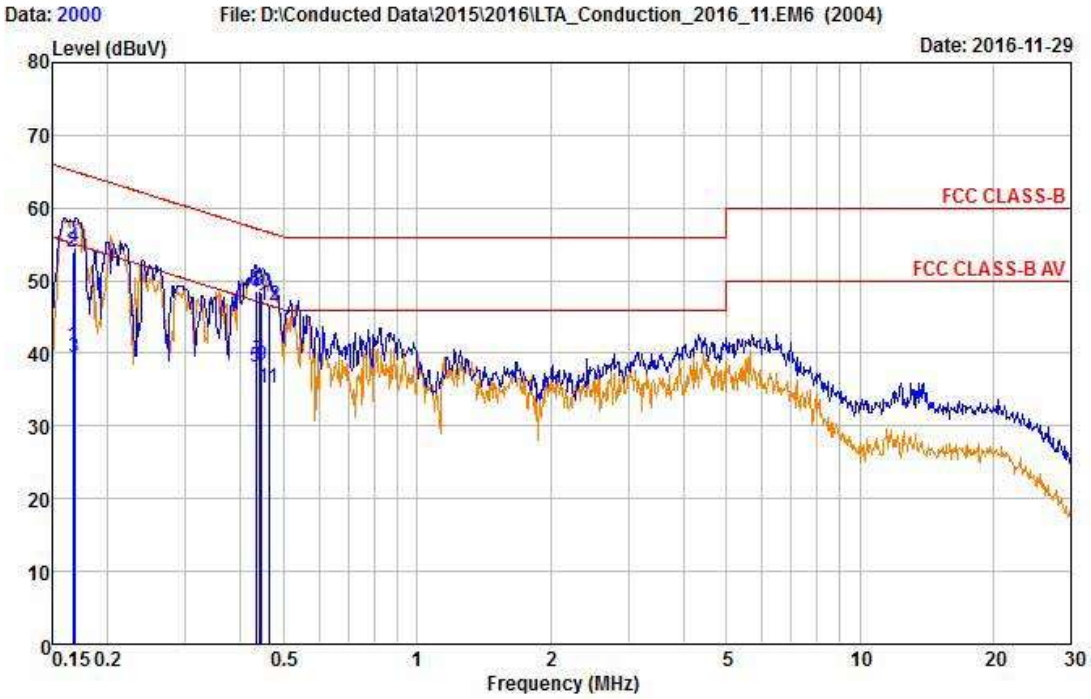
EUT / Model No.	: ET30KH-BT	Phase	: NEUTRAL
Test Mode	: Bluetooth(LOW) mode	Test Power	: 120 / 60
Temp. / Humi.	: 20 / 37	Test Engineer	: LEE S H



Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
MHz	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
0.167	34.45	21.57	19.48	53.93	41.05	65.12	55.12	11.19	14.07
0.169	35.05	19.90	19.48	54.53	39.38	65.03	55.03	10.50	15.65
0.432	28.93	18.64	19.55	48.48	38.19	57.22	47.22	8.74	9.03
0.439	29.09	19.41	19.56	48.65	38.97	57.07	47.07	8.42	8.10
0.446	28.80	18.73	19.56	48.36	38.29	56.95	46.95	8.59	8.66
0.463	26.93	15.67	19.57	46.50	35.24	56.64	46.64	10.14	11.40

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

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Conducted Emissions - Bluetooth(MID) mode + LINE

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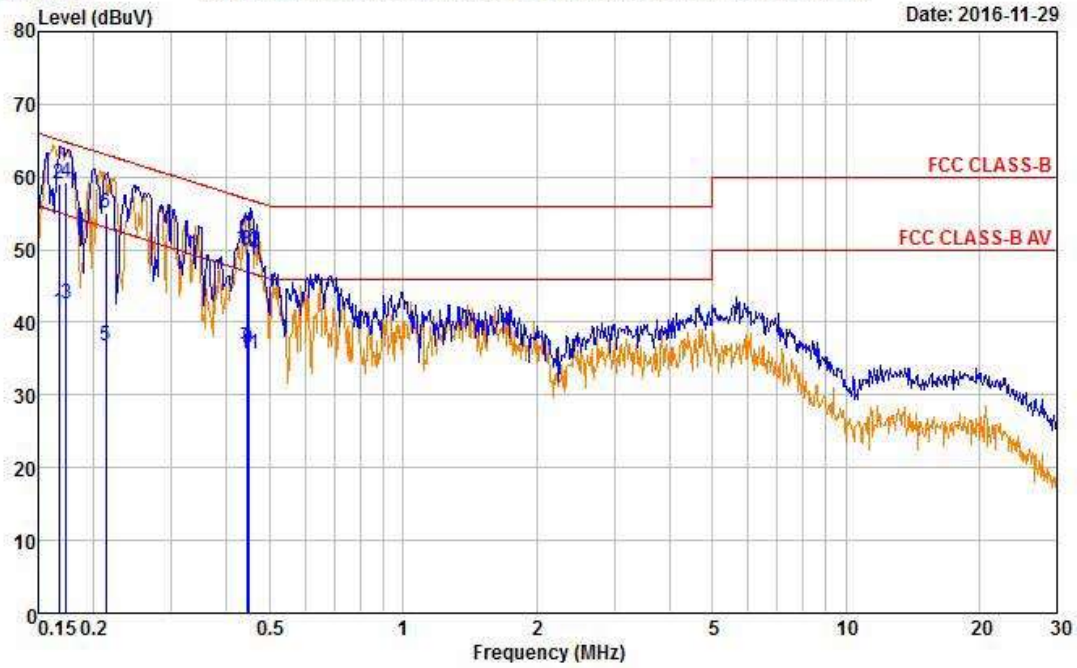
EUT / Model No.	: ET30KH-BT	Phase	: LINE
Test Mode	: Bluetooth(MID) mode	Test Power	: 120 / 60
Temp. / Humi.	: 20 / 37	Test Engineer	: LEE S H

Data: 1988 File: D:\Conducted Data\2015\2016\LTA_Conduction_2016_11.EM6 (2004)



Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
MHz	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
0.167	39.58	21.96	19.48	59.06	41.44	65.12	55.12	6.06	13.68
0.173	39.76	23.03	19.48	59.24	42.51	64.81	54.81	5.57	12.30
0.213	35.44	17.33	19.50	54.94	36.83	63.09	53.09	8.15	16.26
0.444	30.29	16.94	19.56	49.85	36.50	56.98	46.98	7.13	10.48
0.446	30.60	16.70	19.56	50.16	36.26	56.95	46.95	6.79	10.69
0.450	30.07	16.00	19.57	49.64	35.57	56.88	46.88	7.24	11.31

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

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Conducted Emissions - Bluetooth(MID) mode + NEUTAL

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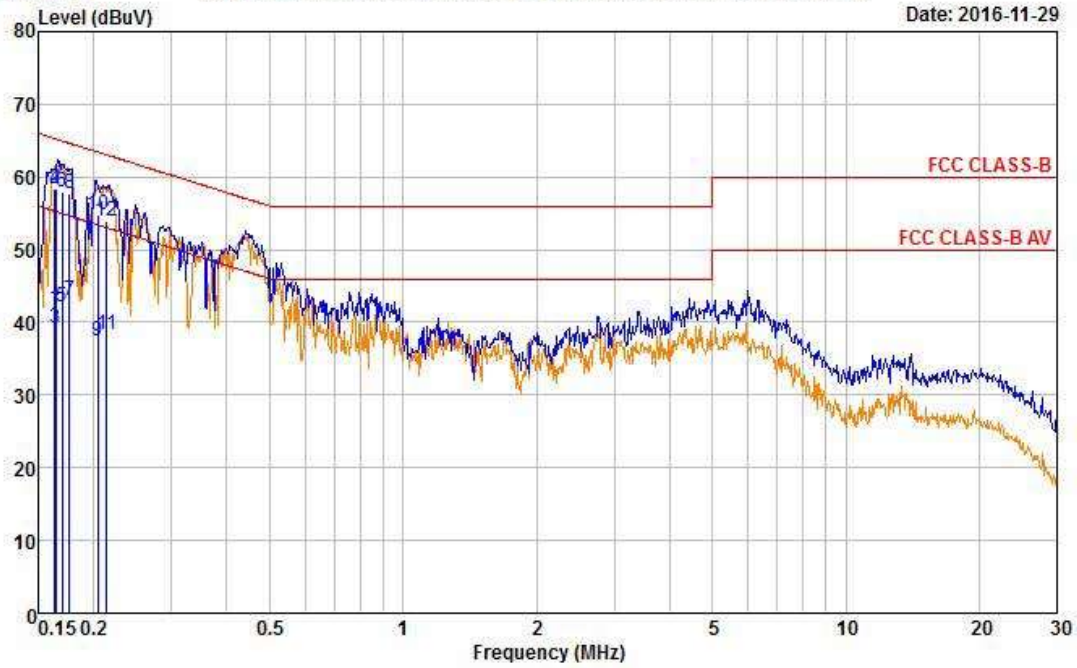
EUT / Model No.	: ET30KH-BT	Phase	: NEUTRAL
Test Mode	: Bluetooth(MID) mode	Test Power	: 120 / 60
Temp. / Humi.	: 20 / 37	Test Engineer	: LEE S H

Data: 1992 File: D:\Conducted Data\2015\2016\LTA_Conduction_2016_11.EM6 (2004)



Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
MHz	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
0.163	38.89	22.52	19.47	58.36	41.99	65.30	55.30	6.94	13.31
0.164	38.90	19.81	19.47	58.37	39.28	65.25	55.25	6.88	15.97
0.170	38.51	22.71	19.48	57.99	42.19	64.96	54.96	6.97	12.77
0.177	38.33	23.45	19.48	57.81	42.93	64.64	54.64	6.83	11.71
0.204	35.25	17.83	19.50	54.75	37.33	63.43	53.43	8.68	16.10
0.214	34.44	18.92	19.50	53.94	38.42	63.05	53.05	9.11	14.63

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

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Conducted Emissions - Bluetooth(HIGH) mode + LINE

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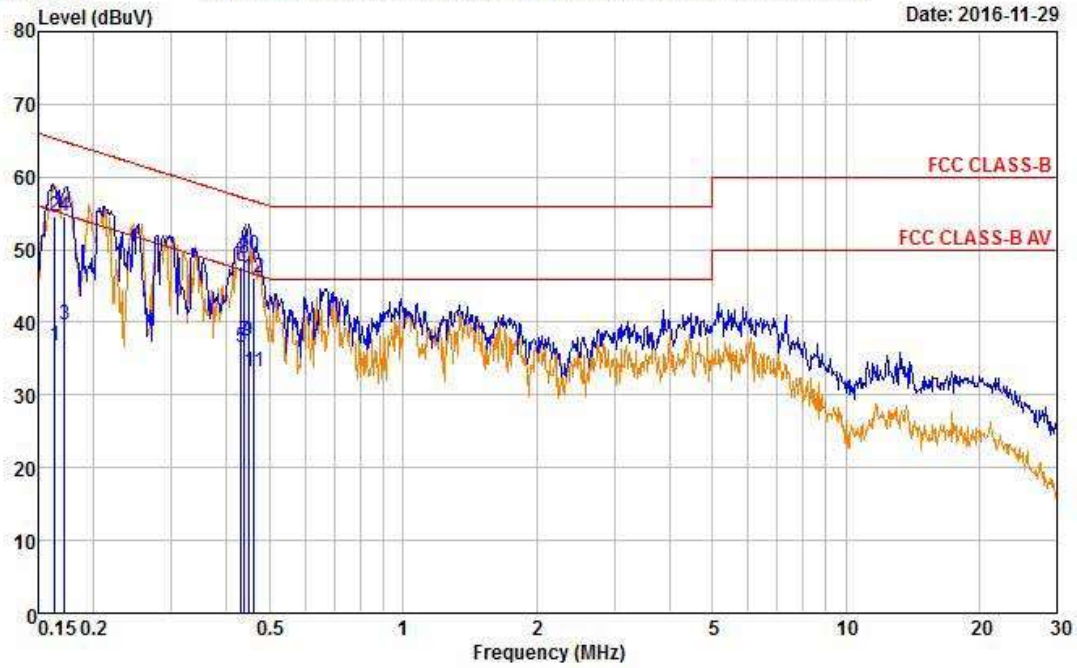
EUT / Model No.	: ET30KH-BT	Phase	: LINE
Test Mode	: Bluetooth(HIGH) mode	Test Power	: 120 / 60
Temp. / Humi.	: 20 / 37	Test Engineer	: LEE S H

Data: 2004 File: D:\Conducted Data\2015\2016\LTA_Conduction_2016_11.EM6 (2004)



Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
MHz	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
0.163	35.17	17.20	19.47	54.64	36.67	65.30	55.30	10.66	18.63
0.172	35.16	20.28	19.48	54.64	39.76	64.85	54.85	10.21	15.09
0.430	28.04	16.99	19.55	47.59	36.54	57.25	47.25	9.66	10.71
0.438	29.20	17.78	19.55	48.75	37.33	57.10	47.10	8.35	9.77
0.448	29.57	17.78	19.57	49.14	37.35	56.91	46.91	7.77	9.56
0.461	26.47	13.55	19.58	46.05	33.13	56.67	46.67	10.62	13.54

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

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Conducted Emissions - Bluetooth(HIGH) mode + NEUTAL

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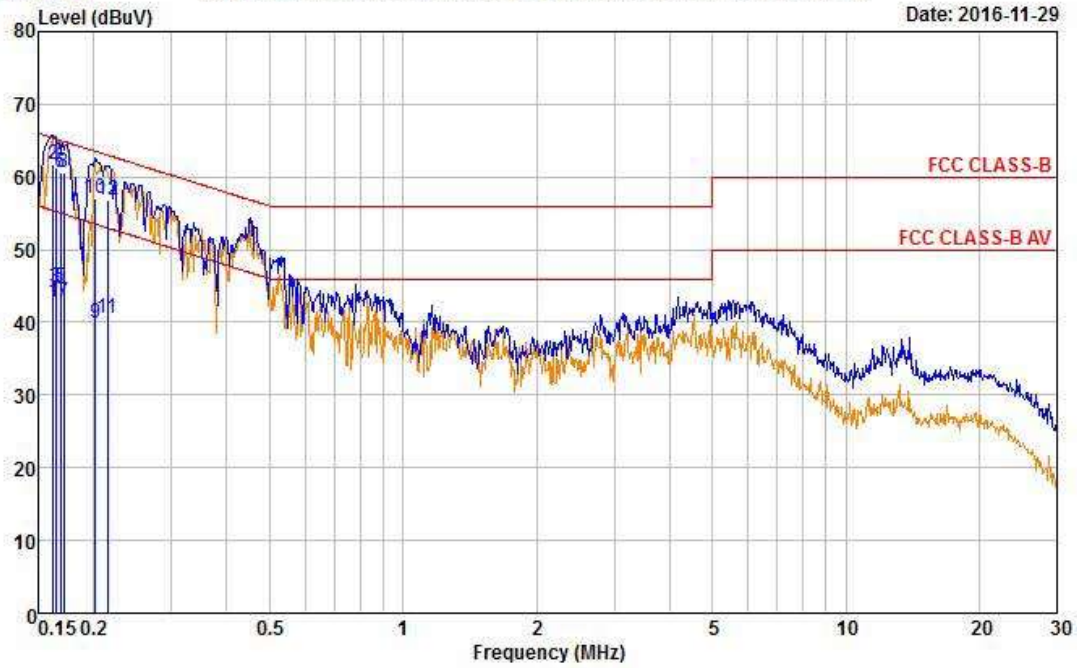
EUT / Model No.	: ET30KH-BT	Phase	: NEUTRAL
Test Mode	: Bluetooth(HIGH) mode	Test Power	: 120 / 60
Temp. / Humi.	: 20 / 37	Test Engineer	: LEE S H

Data: 1984 File: D:\Conducted Data\2015\2016\LTA_Conduction_2016_11.EM6 (2004)



Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
MHz	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
0.162	42.18	23.38	19.47	61.65	42.85	65.35	55.35	3.70	12.50
0.164	41.81	25.24	19.47	61.28	44.71	65.25	55.25	3.97	10.54
0.169	41.10	25.24	19.48	60.58	44.72	65.03	55.03	4.45	10.31
0.171	41.03	23.35	19.48	60.51	42.83	64.90	54.90	4.39	12.07
0.202	37.45	20.28	19.50	56.95	39.78	63.54	53.54	6.59	13.76
0.215	37.36	20.96	19.50	56.86	40.46	63.00	53.00	6.14	12.54

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

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Conducted Emissions - Wifi(LOW) mode + LINE

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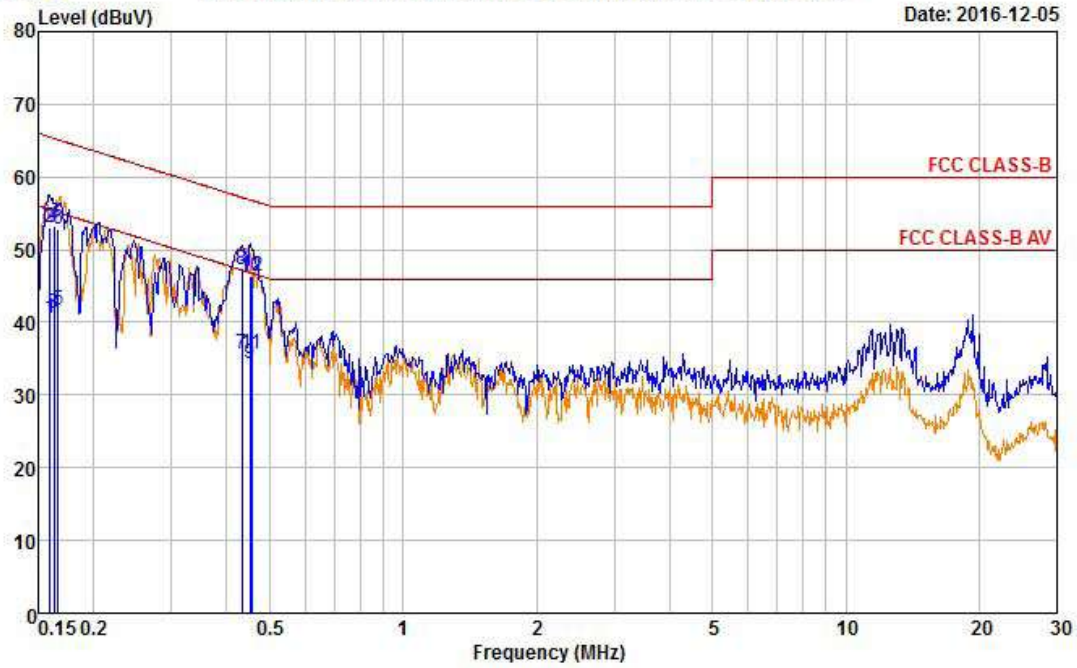
EUT / Model No.	: ET30KH-BT	Phase	: LINE
Test Mode	: Wifi (LOW) mode	Test Power	: 120 / 60
Temp. / Humi.	: 23 / 39	Test Engineer	: LEE S H

Data: 62 File: D:\Conducted Data\2015\2016\LTA_Conduction_2016_12.EM6 (66)



Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
MHz	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
0.160	33.48	21.13	19.47	52.95	40.60	65.48	55.48	12.53	14.88
0.163	33.82	21.86	19.47	53.29	41.33	65.30	55.30	12.01	13.97
0.166	33.26	22.10	19.48	52.74	41.58	65.16	55.16	12.42	13.58
0.432	27.80	16.00	19.55	47.35	35.55	57.20	47.20	9.85	11.65
0.451	26.68	14.86	19.57	46.25	34.43	56.86	46.86	10.61	12.43
0.454	26.78	16.10	19.58	46.36	35.68	56.80	46.80	10.44	11.12

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

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Conducted Emissions - Wifi(LOW) mode + NEUTAL

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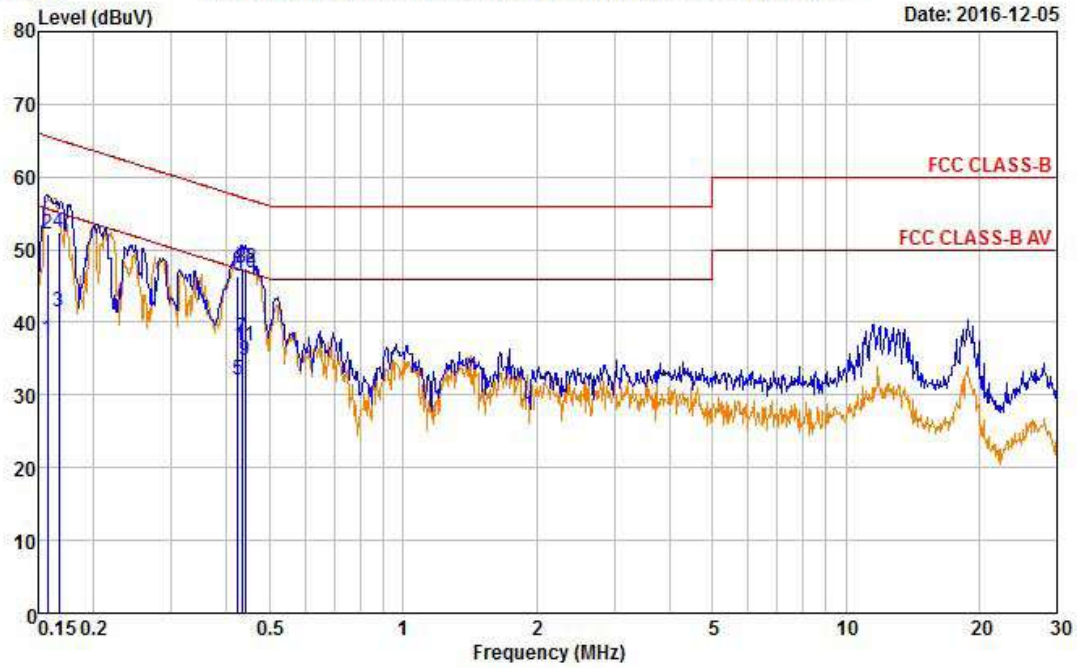
EUT / Model No.	: ET30KH-BT	Phase	: NEUTRAL
Test Mode	: Wifi (LOW) mode	Test Power	: 120 / 60
Temp. / Humi.	: 23 / 39	Test Engineer	: LEE S H

Data: 66 File: D:\Conducted Data\2015\2016\LTA_Conduction_2016_12.EM6 (66)



Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
MHz	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
0.157	32.66	18.26	19.46	52.12	37.72	65.59	55.59	13.47	17.87
0.167	32.84	22.06	19.48	52.32	41.54	65.12	55.12	12.80	13.58
0.423	26.72	12.63	19.55	46.27	32.18	57.38	47.38	11.11	15.20
0.432	27.83	18.33	19.55	47.38	37.88	57.22	47.22	9.84	9.34
0.440	27.25	15.29	19.56	46.81	34.85	57.06	47.06	10.25	12.21
0.441	27.89	17.20	19.56	47.45	36.76	57.05	47.05	9.60	10.29

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

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Conducted Emissions - Wifi(MID) mode + LINE

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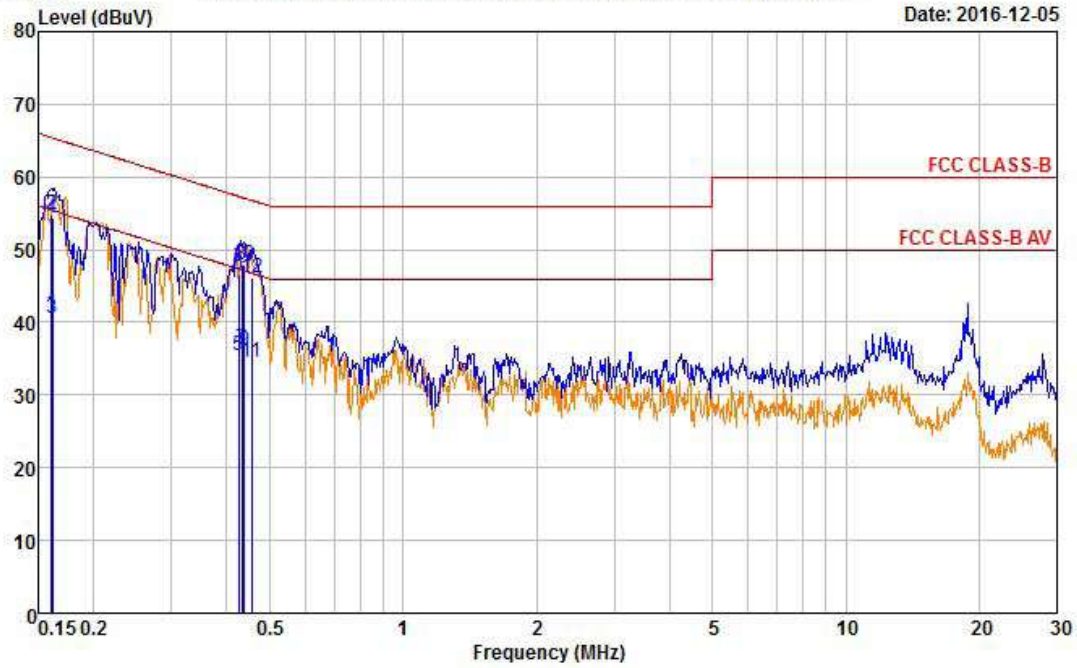
EUT / Model No.	: ET30KH-BT	Phase	: LINE
Test Mode	: Wifi (MID) mode	Test Power	: 120 / 60
Temp. / Humi.	: 23 / 39	Test Engineer	: LEE S H

Data: 54 File: D:\Conducted Data\2015\2016\LTA_Conduction_2016_12.EM6 (66)



Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
MHz	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
0.161	35.37	21.86	19.47	54.84	41.33	65.41	55.41	10.57	14.08
0.162	34.92	21.06	19.47	54.39	40.53	65.38	55.38	10.99	14.85
0.426	27.06	15.87	19.55	46.61	35.42	57.34	47.34	10.73	11.92
0.433	28.36	16.66	19.55	47.91	36.21	57.20	47.20	9.29	10.99
0.438	28.31	16.60	19.55	47.86	36.15	57.10	47.10	9.24	10.95
0.454	26.55	15.06	19.58	46.13	34.64	56.80	46.80	10.67	12.16

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

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Conducted Emissions - Wifi(MID) mode + NEUTAL

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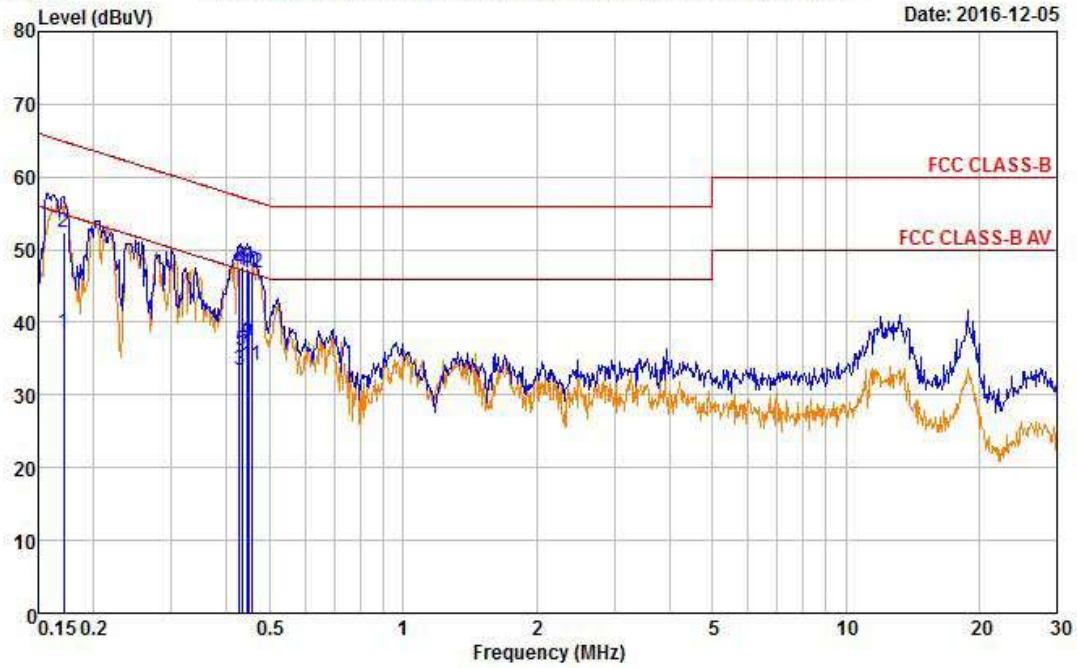
EUT / Model No.	: ET30KH-BT	Phase	: NEUTRAL
Test Mode	: Wifi (MID) mode	Test Power	: 120 / 60
Temp. / Humi.	: 23 / 39	Test Engineer	: LEE S H

Data: 58 File: D:\Conducted Data\2015\2016\LTA_Conduction_2016_12.EM6 (66)



Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
MHz	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
0.171	32.98	19.14	19.48	52.46	38.62	64.90	54.90	12.44	16.28
0.428	27.60	13.95	19.55	47.15	33.50	57.29	47.29	10.14	13.79
0.432	28.19	16.61	19.55	47.74	36.16	57.21	47.21	9.47	11.05
0.446	27.88	17.36	19.56	47.44	36.92	56.96	46.96	9.52	10.04
0.448	27.53	17.68	19.56	47.09	37.24	56.92	46.92	9.83	9.68
0.454	27.20	14.42	19.57	46.77	33.99	56.79	46.79	10.02	12.80

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

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Conducted Emissions - Wifi(HIGH) mode + LINE

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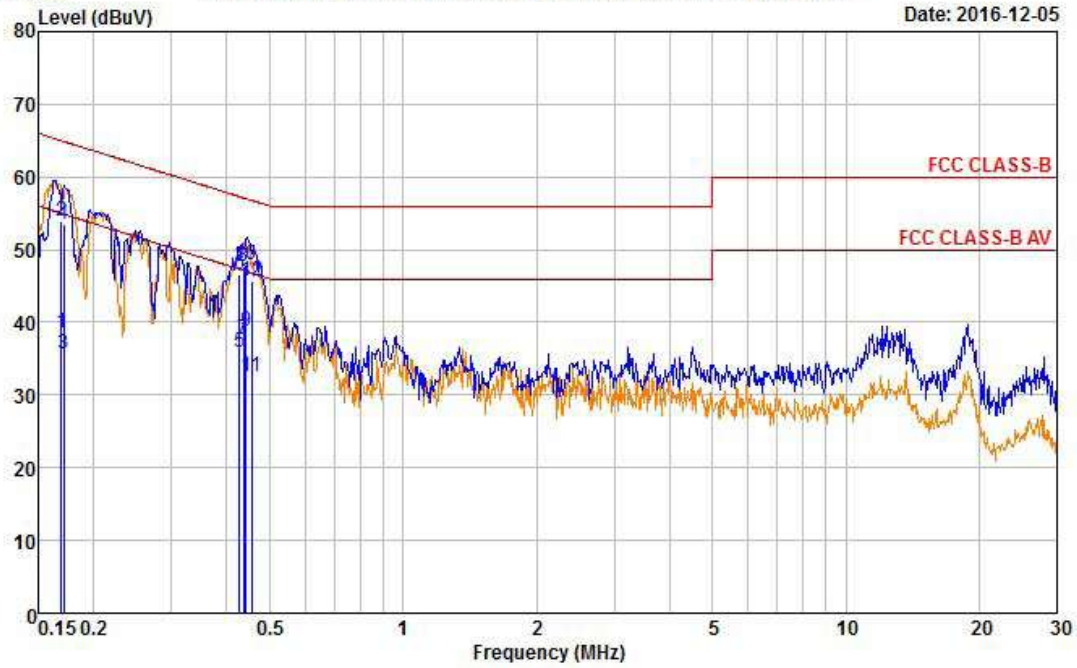
EUT / Model No.	: ET30KH-BT	Phase	: LINE
Test Mode	: Wifi (HIGH) mode	Test Power	: 120 / 60
Temp. / Humi.	: 23 / 39	Test Engineer	: LEE S H

Data: 46 File: D:\Conducted Data\2015\2016\LTA_Conduction_2016_12.EM6 (66)



Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
MHz	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
0.169	34.52	19.03	19.48	54.00	38.51	64.99	54.99	10.99	16.48
0.171	33.93	16.06	19.48	53.41	35.54	64.91	54.91	11.50	19.37
0.428	27.10	16.34	19.55	46.65	35.89	57.30	47.30	10.65	11.41
0.437	28.07	18.10	19.55	47.62	37.65	57.12	47.12	9.50	9.47
0.442	28.24	19.29	19.56	47.80	38.85	57.03	47.03	9.23	8.18
0.455	26.08	13.05	19.58	45.66	32.63	56.78	46.78	11.12	14.15

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

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Conducted Emissions - Wifi(HIGH) mode + NEUTAL

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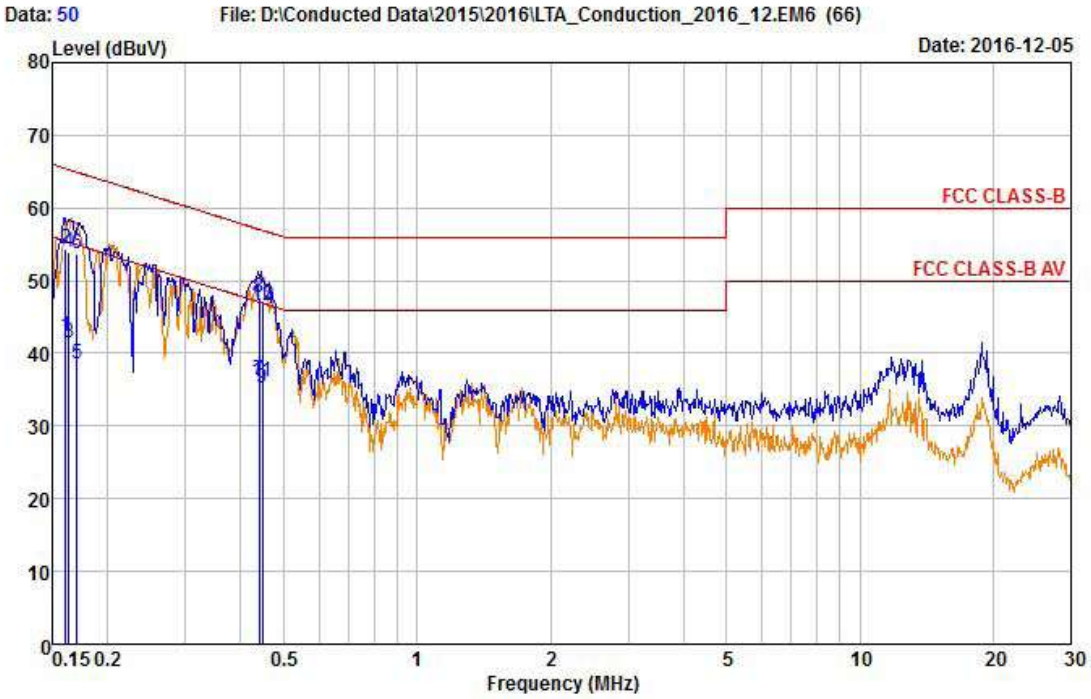
EUT / Model No.	: ET30KH-BT	Phase	: NEUTRAL
Test Mode	: Wifi (HIGH) mode	Test Power	: 120 / 60
Temp. / Humi.	: 23 / 39	Test Engineer	: LEE S H



Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
MHz	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
0.161	34.98	22.82	19.47	54.45	42.29	65.42	55.42	10.97	13.13
0.164	34.44	22.01	19.47	53.91	41.48	65.28	55.28	11.37	13.80
0.170	34.13	18.99	19.48	53.61	38.47	64.94	54.94	11.33	16.47
0.441	28.05	16.78	19.56	47.61	36.34	57.05	47.05	9.44	10.71
0.447	27.27	15.75	19.56	46.83	35.31	56.93	46.93	10.10	11.62
0.448	27.09	16.54	19.56	46.65	36.10	56.92	46.92	10.27	10.82

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

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APPENDIX

TEST EQUIPMENT USED FOR TESTS

	Description	Model No.	Serial No.	Manufacturer	Interval	Last Cal. Date
1	Signal Analyzer (9 kHz ~ 30 GHz)	FSV30	100757	R&S	1 year	2016-03-22
2	Signal Generator (~ 3.2 GHz)	8648C	3623A02597	HP	1 year	2016-03-21
3	SYNTHESIZED CW GENERATOR	83711B	US34490456	HP	1 year	2016-03-21
4	Attenuator (3 dB)	8491A	37822	HP	1 year	2016-09-12
5	Attenuator (10 dB)	8491A	63196	HP	1 year	2016-09-12
6	Test Receiver (~ 30 MHz)	ESHS10	828404/009	R&S	1 year	2016-03-21
7	EMI Test Receiver (~ 7 GHz)	ESCI7	100722	R&S	1 year	2016-09-12
8	RF Amplifier (~ 1.3 GHz)	8447D OPT 010	2944A07684	HP	-	-
9	RF Amplifier (1 ~ 26.5 GHz)	8449B	3008A02126	HP	1 year	2016-03-22
10	Horn Antenna (1 ~ 18 GHz)	3115	00114105	ETS	1 year	2016-04-21
11	DRG Horn (Small)	3116B	81109	ETS-Lindgren	1 year	2016-02-26
12	DRG Horn (Small)	3116B	133350	ETS-Lindgren	1 year	2016-02-26
13	TRILOG Antenna	VULB 9160	9160-3237	SCHWARZBECK	2 year	2015-04-21
14	Temp.Humidity Data Logger	SK-L200TH II A	00801	SATO	1 year	2016-03-22
15	Splitter (SMA)	ZFSC-2-2500	SF617800326	Mini-Circuits	-	-
16	Power Divider	11636A	06243	HP	1 year	2016-09-12
17	DC Power Supply	6674A	3637A01657	Agilent	-	-
18	Frequency Counter	5342A	2826A12411	HP	1 year	2016-03-21
19	Power Meter	EPM-441A	GB32481702	HP	1 year	2016-03-22
20	Power Sensor	8481A	3318A94972	HP	1 year	2016-01-05
21	Audio Analyzer	8903B	3729A18901	HP	1 year	2016-09-12
22	Modulation Analyzer	8901B	3749A05878	HP	1 year	2016-09-12
23	TEMP & HUMIDITY Chamber	YJ-500	LTAS06041	JinYoung Tech	1 year	2016-09-12
24	Stop Watch	HS-3	812Q08R	CASIO	2 year	2016-03-22
25	LISN	KNW-407	8-1430-1	Kyoritsu	1 year	2016-09-12
26	Two-Lime V-Network	ESH3-Z5	893045/017	R&S	1 year	2016-03-21
27	UNIVERSAL RADIO COMMUNICATION TESTER	CMU200	106243	R&S	1 year	2016-03-21
28	Highpass Filter	WHKX1.5/15G-10SS	74	Wainwright Instruments	1 year	2016-03-21
29	Highpass Filter	WHKX3.0/18G-10SS	118	Wainwright Instruments	1 year	2016-03-21
30	Active Loop Antenna	FMZB1519	1519-031	SCHWARZBECK	2 year	2016-01-12
31	OSP120 BASE UNIT	OSP120	101230	R&S	1 year	2016-03-22
32	Signal Generator(100 kHz ~ 40 GHz)	SMB100A	177621	R&S	1 year	2016-03-22
33	Signal Analyzer (10 Hz ~ 40 GHz)	FSV40	101367	R&S	1 year	2016-03-22

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