FCC Test Report

Equipment	:	**11ac Wireless Dual-Band USB Adapter**
Brand Name	:	**EDIMAX**
Model No.	:	**EW-7811USC**
FCC ID	:	**NDD9578111407**
Standard	:	**47 CFR FCC Part 15.407**
Operating Band	:	**5150 MHz – 5250 MHz**
FCC Classification	:	**NII**
Applicant **Manufacturer**	:	**EDIMAX TECHNOLOGY CO., LTD.** No.3,Wu-Chuan 3rd Road,Wu-Ku Industrial Park, New Taipei City, Taiwan
Function	:	☐ **Outdoor AP;** ☐ **Indoor AP;** ☐ **Fixed P2P AP** ☒ **Portable Client**

The product sample received on May 21, 2014 and completely tested on Jun. 6, 2014. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2009 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:

Kevin Liang / Assistant Manager

Testing Laboratory
1190

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APPENDIX A. TEST PHOTOS

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Summary of Test Result

Conformance Test Specifications					
Report Clause	**Ref. Std. Clause**	**Description**	**Measured**	**Limit**	**Result**
1.1.3	15.203	Antenna Requirement	Antenna connector mechanism complied	FCC 15.203	Complied
3.1	15.207	AC Power-line Conducted Emissions	[dBuV]: 17.750MHz 40.26 (Margin 19.74dB) – QP 32.60 (Margin 17.40dB) - AV	FCC 15.207	Complied
3.2	15.407(a)	Emission Bandwidth	Bandwidth [MHz] 20M:21.50 / 40M:40.68 80M: 82.32	Information only	Complied
3.3	15.407(a)	RF Output Power (Maximum Conducted Output Power)	Power [dBm] 5150-5250MHz:14.37	Power [dBm] 5150-5250MHz:24	Complied
3.4	15.407(a)	Peak Power Spectral Density	PPSD [dBm/MHz] 5150-5250MHz:3.63	PPSD [dBm/MHz] 5150-5250MHz:11	Complied
3.5	15.407(a)	Peak Excursion	8.76dB	13 dB	Complied
3.6	15.407(b)	Transmitter Bandedge Emissions	Restricted Bands [dBuV/m at 3m]: 5144.10MHz 65.88 (Margin 8.12dB) - PK 51.62 (Margin 2.38dB) - AV	Non-Restricted Bands: ≤ -27dBm (83.54dBuV/m@1m) Restricted Bands: FCC 15.209	Complied
3.7	15.407(b)	Transmitter Unwanted Emissions	Restricted Bands [dBuV/m at 3m]: 15720.000MHz 58.14 (Margin 15.86dB) – PK 46.71 (Margin 7.29dB) – AV	Non-Restricted Bands: ≤ -27dBm (83.54dBuV/m@1m) Restricted Bands: FCC 15.209	Complied
3.8	15.407(g)	Frequency Stability	11.2992 ppm	Signal shall remain in-band	Complied

Revision History

Report No.	Version	Description	Issued Date
FR380666-06AN	Rev. 01	Initial issue of report	Aug. 14, 2014
FR380666-17AN	Rev. 01	Update UNII-band1 to 15.407 limit	May 17, 2016

1 General Description

1.1 Information

1.1.1 Table for Multiple Listing

Brand and models that are exactly the same EUT, products with different models only because of market segmentation.

NO.	Brand Name	Model Name
1	Edimax	EW-7811UTC, EW-7811UAC, EW-7811DAC, GWU-H811UTC, GWU-H811UAC
2	Rosewill	AC600UB (#33-166-105)

1.1.2 RF General Information

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N_{TX})	RF Output Power (dBm)
5150-5250	a	5180-5240	36-48 [4]	1	14.37
5150-5250	n(HT20)	5180-5240	36-48 [4]	1	14.35
5150-5250	n(HT40)	5190-5230	38-46 [2]	1	14.22
5150-5250	ac(VHT20)	5180-5240	36-48 [4]	1	14.30
5150-5250	ac(VHT40)	5190-5230	38-46 [2]	1	14.36
5150-5250	ac(VHT80)	5210	42 [1]	1	14.30

Note 1: RF output power specifies that Maximum Conducted Output Power.
Note 2: 802.11a/n uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
Note 3: 802.11ac uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
Note 4: Co-location, Co-location is generally defined as simultaneously transmitting (co-transmitting) antennas within 20 cm of each other. (i.e., EUT has simultaneously co-transmitting that operating 2.4GHz and 5GHz.)

1.1.3 Antenna Information

Antenna Category			
☒	External antenna (dedicated antennas)		
	☒	Single power level with corresponding antenna(s).	
	☐	Multiple power level and corresponding antenna(s).	
	☒	RF connector provided	
		☒	Unique antenna connector. (e.g., MMCX, U.FL, IPX, and RP-SMA, RP-N type…)
		☐	Standard antenna connector. (e.g., SMA, N, BNC, and TNC type…)

Antenna General Information		
Ant. Cat.	Ant. Type	Gain (dBi)
External	Dipole	3.59

1.1.4 Type of EUT

Identify EUT	
EUT Serial Number	N/A
Presentation of Equipment	☐ Production ; ☐ Pre-Production ; ☒ Prototype
Type of EUT	
☒	Stand-alone
☐	Combined (EUT where the radio part is fully integrated within another device) Combined Equipment - Brand Name / Model No.:
☐	Plug-in radio (EUT intended for a variety of host systems) Host System - Brand Name / Model No.:
☐	Other:

1.1.5 Test Signal Duty Cycle

Operated Mode for Worst Duty Cycle	
☐ Operated normally mode for worst duty cycle	
☒ Operated test mode for worst duty cycle	
Test Signal Duty Cycle (x)	**Power Duty Factor [dB] – (10 log 1/x)**
☒ 100% - IEEE 802.11a	0
☒ 100% - IEEE 802.11n (HT20)	0
☒ 100% - IEEE 802.11n (HT40)	0
☒ 100% - IEEE 802.11ac (VHT20)	0
☒ 100% - IEEE 802.11ac (VHT40)	0
☒ 100% - IEEE 802.11ac (VHT80)	0

1.1.6 EUT Operational Condition

Supply Voltage	☐ AC mains	☒ DC	
Type of DC Source	☐ Internal DC supply	☒ From System	☐ Battery

1.2 Support Equipment

Support Equipment - AC Conduction and Radiated Emission				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Notebook	DELL	E5520	DoC

Support Equipment - RF Conducted				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Notebook	DELL	E5500	DoC

1.3 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR FCC Part 15
- ANSI C63.10-2009
- FCC KDB 789033 D02 v01r02
- FCC KDB 644545 D03 v01
- FCC KDB 662911 D01 v02r01

1.4 Testing Location Information

Testing Location					
☒	HWA YA	ADD :	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.		
		TEL :	886-3-327-3456	FAX :	886-3-327-0973
Test Condition		**Test Site No.**		**Test Engineer**	**Test Environment**
AC Conduction		CO04-HY		Zeus	25.6°C / 64%
RF Conducted		TH01-HY		Ian	21.9°C / 63%
Radiated Emission		03CH02-HY		Hunter	24.6°C / 55%

1.5 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Measurement Uncertainty		
Test Item		**Uncertainty**
AC power-line conducted emissions		±2.2 dB
Emission bandwidth, 26dB bandwidth		±1.4 %
RF output power, conducted		±0.6 dB
Power density, conducted		±0.8 dB
Unwanted emissions, conducted	9 – 150 kHz	±0.3 dB
	0.15 – 30 MHz	±0.4 dB
	30 – 1000 MHz	±0.5 dB
	1 – 18 GHz	±0.6 dB
	18 – 40 GHz	±0.8 dB
	40 – 200 GHz	N/A
All emissions, radiated	9 – 150 kHz	±2.4 dB
	0.15 – 30 MHz	±2.2 dB
	30 – 1000 MHz	±2.5 dB
	1 – 18 GHz	±3.5 dB
	18 – 40 GHz	±3.8 dB
	40 – 200 GHz	N/A
Temperature		±0.8 °C
Humidity		±3 %
DC and low frequency voltages		±3 %
Time		±1.4 %
Duty Cycle		±1.4 %

2 Test Configuration of EUT

2.1 The Worst Case Modulation Configuration

Worst Modulation Used for Conformance Testing			
Modulation Mode	**Transmit Chains (N_{TX})**	**Data Rate / MCS**	**Worst Data Rate / MCS**
11a	1	6-54Mbps	6 Mbps
HT20	1	MCS0-7	MCS 0
HT40	1	MCS0-7	MCS 0
VHT20	1	MCS0-8	MCS 0
VHT40	1	MCS0-9	MCS 0
VHT80	1	MCS0-9	MCS 0

2.2 The Worst Case Power Setting Parameter

The Worst Case Power Setting Parameter (5150-5250MHz band)							
Test Software Version	Realtek 11ac 8811A USB WLAN MP_ 0.0033.20130401						
Modulation Mode	**N_{TX}**	**Test Frequency (MHz)**					
		NCB: 20MHz			**NCB: 40MHz**		**NCB: 80MHz**
		5180	**5200**	**5240**	**5190**	**5230**	**5210**
11a	1	48	48	46	-	-	-
HT20	1	50	49	47	-	-	-
HT40	1	-	-	-	50	49	-
VHT20	1	50	48	46	-	-	-
VHT40	1	-	-	-	50	49	-
VHT80	1	-	-	-	-	-	50

2.3 The Worst Case Measurement Configuration

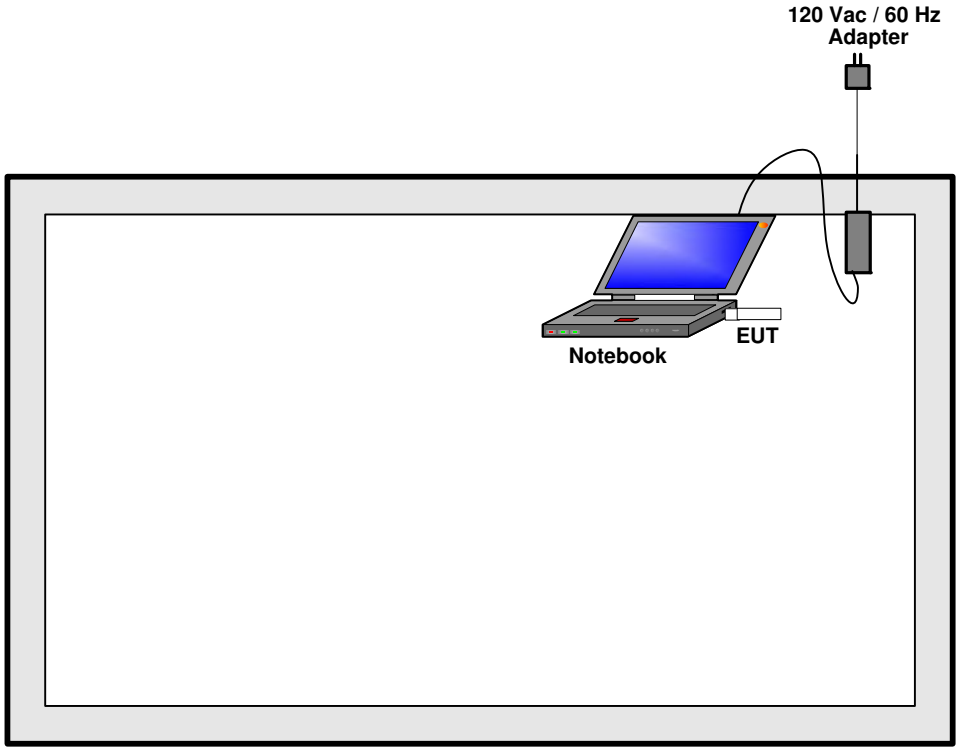
The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
Operating Mode	Operating Mode Description
1	Transmitting

The Worst Case Mode for Following Conformance Tests	
Tests Item	RF Output Power, Peak Power Spectral Density, Emission Bandwidth, Peak Excursion
Test Condition	Conducted measurement at transmit chains
Modulation Mode	11a, HT20, HT40, VHT20, VHT40, VHT80

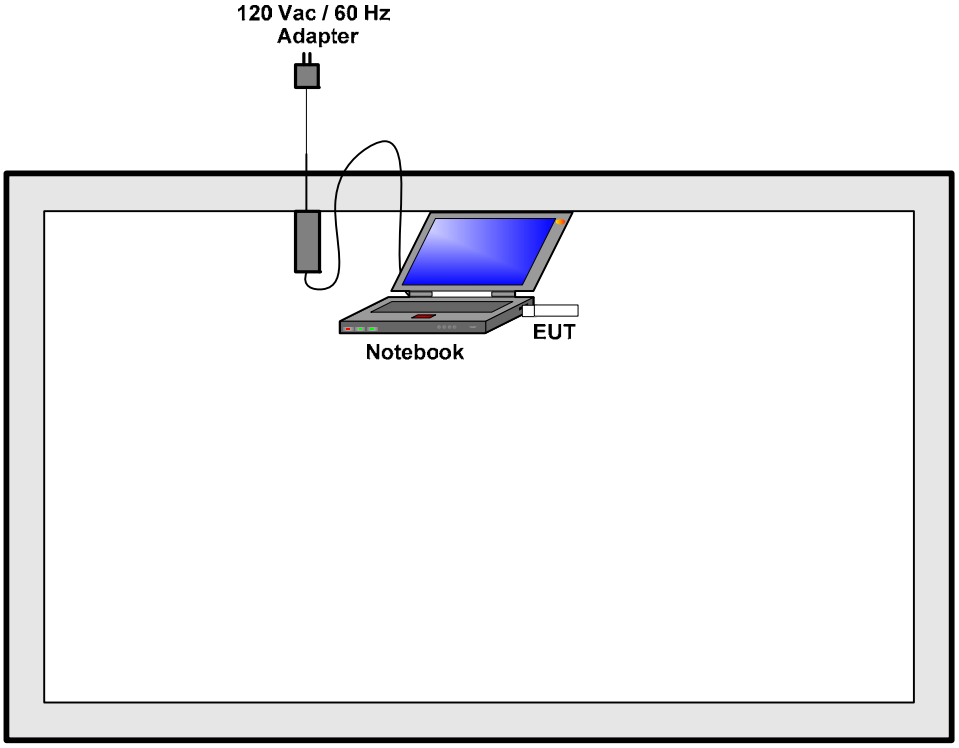
The Worst Case Mode for Following Conformance Tests			
Tests Item	Transmitter Radiated Unwanted Emissions Transmitter Radiated Bandedge Emissions		
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.		
User Position	☐ EUT will be placed in fixed position.		
	☒ EUT will be placed in mobile position and operating multiple positions. EUT shall be performed three orthogonal planes. The worst planes is X.		
	☐ EUT will be a hand-held or body-worn battery-powered devices and operating multiple positions.		
Operating Mode	Operating Mode Description		
1	Transmitting		
Modulation Mode	11a, HT20, HT40, VHT20, VHT40, VHT80		
Orthogonal Planes of EUT	**X Plane**	**Y Plane**	**Z Plane**

2.4 Test Setup Diagram

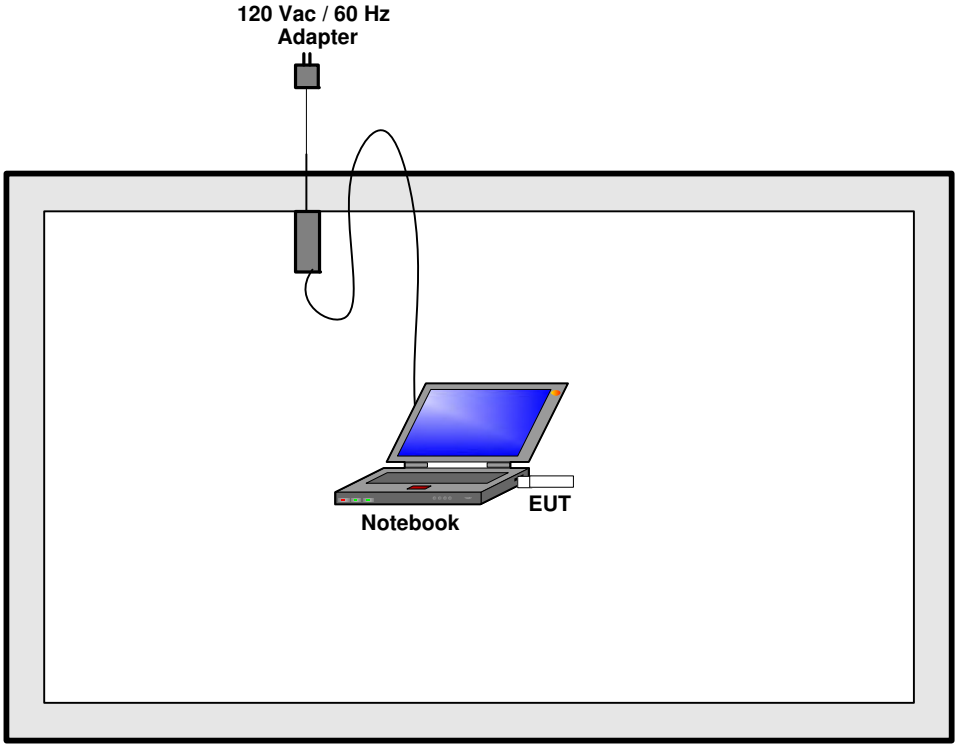
Test Setup Diagram – AC Line Conducted Emission Test



Test Setup Diagram - Radiated Test (9kHz~1GHz)



Test Setup Diagram - Radiated Test (Above 1GHz)



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	**Quasi-Peak**	**Average**
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

3.1.2 Measuring Instruments

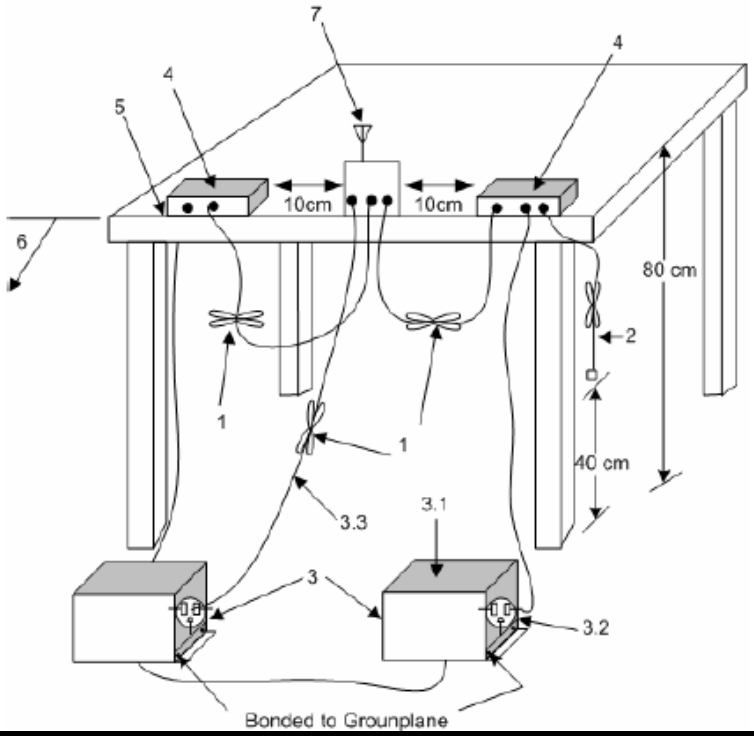
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
☒ Refer as ANSI C63.10-2009, clause 6.2 for AC power-line conducted emissions.

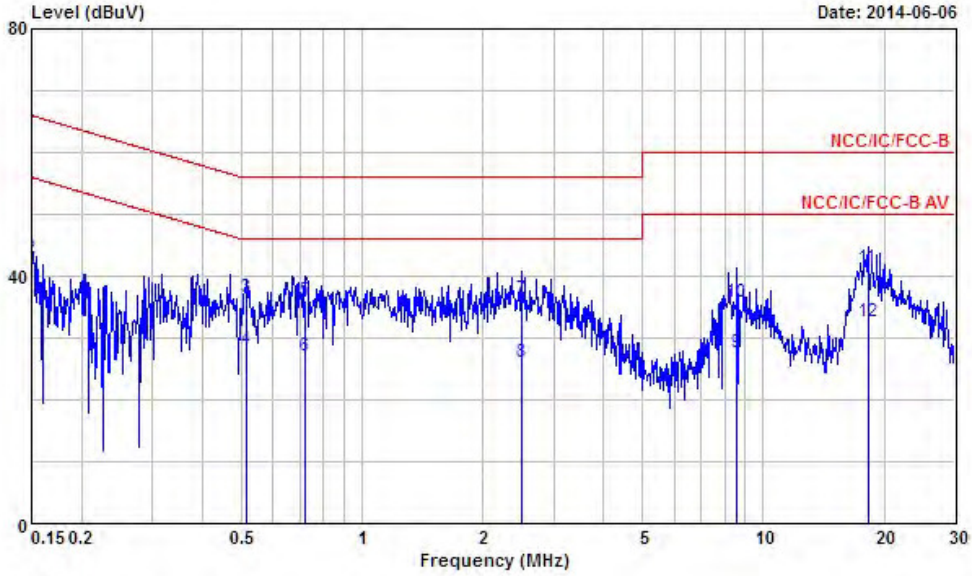
3.1.4 Test Setup

AC Power-line Conducted Emissions



3.1.5 Test Result of AC Power-line Conducted Emissions

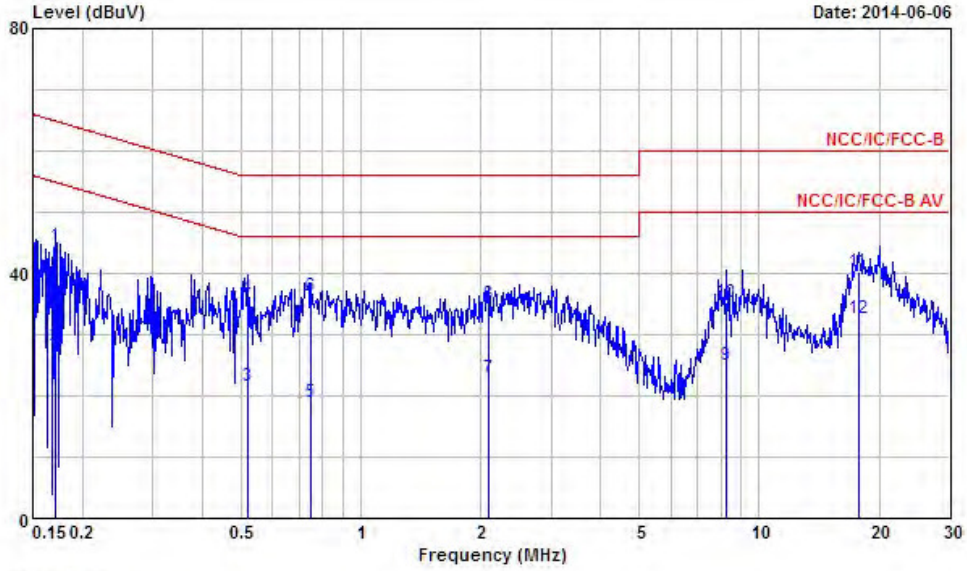
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Neutral
Operating Function	Transmitting		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1500000	28.60	-27.40	56.00	28.24	0.02	0.34	Average
2	0.1500000	42.86	-23.14	66.00	42.50	0.02	0.34	QP
3	0.5127790	36.56	-19.44	56.00	35.87	0.04	0.65	QP
4	0.5127790	28.06	-17.94	46.00	27.37	0.04	0.65	Average
5	0.7197740	36.10	-19.90	56.00	35.33	0.04	0.73	QP
6	0.7197740	27.02	-18.98	46.00	26.25	0.04	0.73	Average
7	2.490	36.42	-19.58	56.00	35.58	0.07	0.77	QP
8	2.490	26.18	-19.82	46.00	25.34	0.07	0.77	Average
9	8.590	27.69	-22.31	50.00	26.74	0.17	0.78	Average
10	8.590	35.83	-24.17	60.00	34.88	0.17	0.78	QP
11	18.230	41.33	-18.67	60.00	40.30	0.30	0.73	QP
12	18.230	32.54	-17.46	50.00	31.51	0.30	0.73	Average

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Line
Operating Function	Transmitting		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1703400	44.59	-20.35	64.94	44.15	0.03	0.41	QP
2	0.1703400	28.09	-26.85	54.94	27.65	0.03	0.41	Average
3	0.5182420	21.71	-24.29	46.00	21.01	0.04	0.66	Average
4	0.5182420	36.07	-19.93	56.00	35.37	0.04	0.66	QP
5	0.7509390	18.91	-27.09	46.00	18.12	0.05	0.74	Average
6	0.7509390	36.21	-19.79	56.00	35.42	0.05	0.74	QP
7	2.090	22.95	-23.05	46.00	22.09	0.07	0.79	Average
8	2.090	35.09	-20.91	56.00	34.23	0.07	0.79	QP
9	8.280	24.97	-25.03	50.00	24.02	0.17	0.78	Average
10	8.280	35.32	-24.68	60.00	34.37	0.17	0.78	QP
11	17.750	40.26	-19.74	60.00	39.23	0.29	0.74	QP
12	17.750	32.60	-17.40	50.00	31.57	0.29	0.74	Average

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

3.2 Emission Bandwidth

3.2.1 Emission Bandwidth (EBW) Limit

Emission Bandwidth Limit	
UNII Devices	
☒	For the 5.15-5.25 GHz band, N/A
☐	For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
☐	For the 5.47-5.725 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
☐	For the 5.725-5.85 GHz band, 6 dB emission bandwidth ≥ 500kHz.

3.2.2 Measuring Instruments

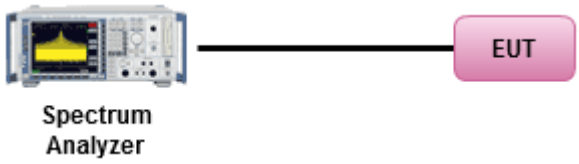
Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

Test Method			
☒	For the emission bandwidth shall be measured using one of the options below:		
	☒	Refer as FCC KDB 789033 D02 v01r02, clause C for EBW and clause D for OBW measurement.	
	☐	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.	
	☒	Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.	
☒	For conducted measurement.		
	☒	The EUT supports single transmit chain and measurements performed on this transmit chain.	
	☐	The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case.	
	☐	The EUT supports multiple transmit chains using options given below:	
		☐	Option 1: Multiple transmit chains measurements need to be performed on one of the active transmit chains (antenna outputs). All measurement had be performed on transmit chains 1.
		☐	Option 2: Multiple transmit chains measurements need to be performed on each transmit chains individually (antenna outputs). All measurement had be performed on all transmit chains.

3.2.4 Test Setup

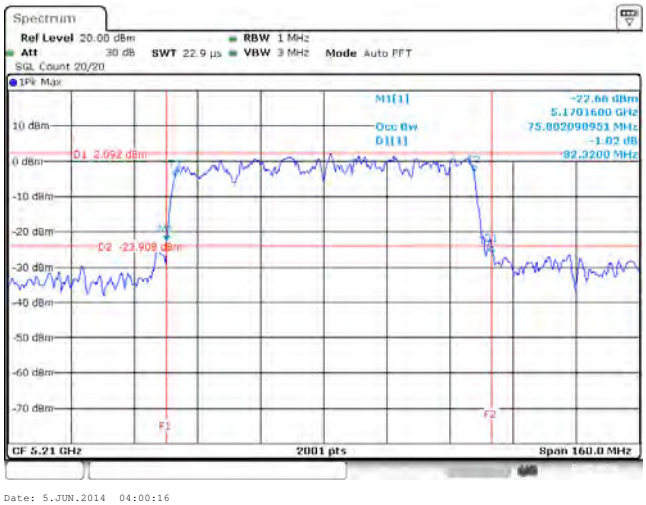
Emission Bandwidth



3.2.5 Test Result of Emission Bandwidth

UNII Emission Bandwidth Result (5150-5250MHz band)						
Condition			Emission Bandwidth (MHz)			
Modulation Mode	N_{TX}	Freq. (MHz)	99% Bandwidth	26dB Bandwidth	Power Limit	
					99% BW	26dB BW
11a	1	5180	16.89	20.77	16.28	17.00
11a	1	5200	16.44	19.55	16.16	16.91
11a	1	5240	16.79	19.87	16.25	16.98
HT20	1	5180	17.59	20.22	16.45	17.00
HT20	1	5200	17.69	20.57	16.48	17.00
HT20	1	5240	17.86	21.50	16.52	17.00
HT40	1	5190	36.26	38.88	17.00	17.00
HT40	1	5230	36.34	40.64	17.00	17.00
VHT20	1	5180	17.56	20.20	16.45	17.00
VHT20	1	5200	17.89	21.17	16.53	17.00
VHT20	1	5240	17.64	20.80	16.46	17.00
VHT40	1	5190	36.38	40.24	17.00	17.00
VHT40	1	5230	36.42	40.68	17.00	17.00
VHT80	1	5210	75.80	82.32	17.00	17.00
Result			Complied			

5150-5250MHz - Worst Emission Bandwidth Plots



3.3 RF Output Power

3.3.1 RF Output Power Limit

Maximum Conducted Output Power Limit		
UNII Devices		
☒	For the 5.15-5.25 GHz band:	
	☐	Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6). e.i.r.p. at any elevation angle above 30 degrees ≤ 125mW [21dBm]
	☐	Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6)
	☐	Point-to-point AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W If G_{TX} > 23 dBi, then P_{Out} = 30 – (G_{TX} – 23).
	☒	Mobile or Portable Client: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW. If G_{TX} > 6 dBi, then P_{Out} = 24 – (G_{TX} – 6).
☐	For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If G_{TX} > 6 dBi, then P_{Out} = 24 – (G_{TX} – 6).	
☐	For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If G_{TX} > 6 dBi, then P_{Out} = 24 – (G_{TX} – 6).	
☐	For the 5.725-5.85 GHz band:	
	☐	Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6).
	☐	Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
P_{Out} = maximum conducted output power in dBm, **G_{TX}** = the maximum transmitting antenna directional gain in dBi.		

3.3.2 Measuring Instruments

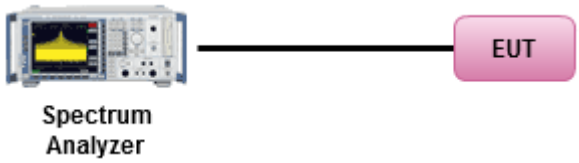
Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method	
☒	Maximum Conducted Output Power
	[duty cycle ≥ 98% or external video / power trigger]
	☒ Refer as FCC KDB 789033 D02 v01r02, clause E Method SA-1 (spectral trace averaging).
	☐ Refer as FCC KDB 789033 D02 v01r02, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)
	duty cycle < 98% and average over on/off periods with duty factor
	☐ Refer as FCC KDB 789033 D02 v01r02, clause E Method SA-2 (spectral trace averaging).
	☐ Refer as FCC KDB 789033 D02 v01r02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
	Wideband RF power meter and average over on/off periods with duty factor
	☐ Refer as FCC KDB 789033 D02 v01r02, clause E Method PM (using an RF average power meter).
☒	For conducted measurement.
	☒ The EUT supports single transmit chain and measurements performed on this transmit chain.
	☐ The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case.
	☐ The EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
	☐ If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \ldots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup

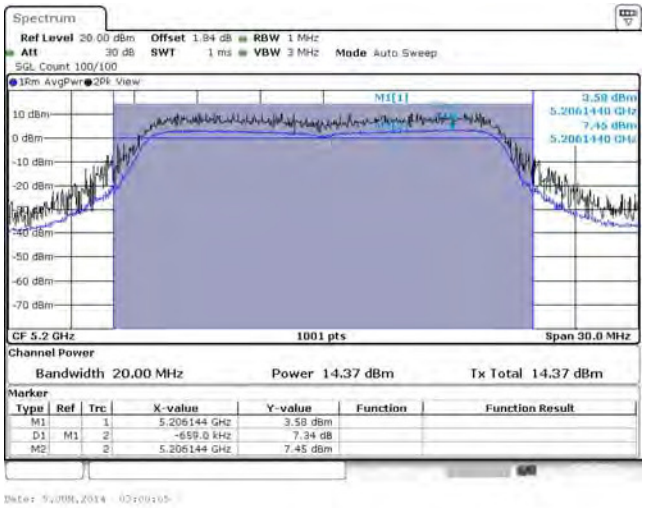
RF Output Power (Spectrum Analyzer)



3.3.5 Test Result of Maximum Conducted Output Power

Maximum Conducted Output Power (5150-5250MHz band)						
Condition			RF Output Power (dBm)			
Modulation Mode	N_{TX}	Freq. (MHz)	RF Output Power	Power Limit	Antenna Gain (dBi)	EIRP Power
11a	1	5180	14.36	24.00	3.59	17.95
11a	1	5200	14.37	24.00	3.59	17.96
11a	1	5240	13.85	24.00	3.59	17.44
HT20	1	5180	14.18	24.00	3.59	17.77
HT20	1	5200	14.35	24.00	3.59	17.94
HT20	1	5240	14.06	24.00	3.59	17.65
HT40	1	5190	14.22	24.00	3.59	17.81
HT40	1	5230	14.12	24.00	3.59	17.71
VHT20	1	5180	14.30	24.00	3.59	17.89
VHT20	1	5200	14.01	24.00	3.59	17.60
VHT20	1	5240	13.52	24.00	3.59	17.11
VHT40	1	5190	14.26	24.00	3.59	17.85
VHT40	1	5230	14.36	24.00	3.59	17.95
VHT80	1	5210	14.30	24.00	3.59	17.89
Result			Complied			

5150-5250MHz - Worst RF Output Power Plots



3.4 Peak Power Spectral Density

3.4.1 Peak Power Spectral Density Limit

Peak Power Spectral Density Limit		
UNII Devices		
☒	For the 5.15-5.25 GHz band:	
	☐	Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If G_{TX} > 6 dBi, then P_{Out} = 17 – (G_{TX} – 6).
	☐	Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If G_{TX} > 6 dBi, then P_{Out} = 17 – (G_{TX} – 6).
	☐	Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If G_{TX} > 23 dBi, then P_{Out} = 17 – (G_{TX} – 23).
	☒	Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If G_{TX} > 6 dBi, then PPSD= 11 – (G_{TX} – 6)..
☐	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If G_{TX} > 6 dBi, then PPSD= 11 – (G_{TX} – 6).	
☐	For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If G_{TX} > 6 dBi, then PPSD= 11 – (G_{TX} – 6).	
☐	For the 5.725-5.85 GHz band:	
	☐	Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If G_{TX} > 6 dBi, then PPSD= 30 – (G_{TX} – 6).
	☐	Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
PPSD = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz **G_{TX}** = the maximum transmitting antenna directional gain in dBi.		

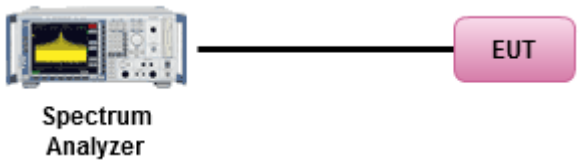
3.4.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method			
☒	Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall be measured using below options:		
	☐	Refer as FCC KDB 789033 D02 v01r02, F)5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth	
	[duty cycle ≥ 98% or external video / power trigger]		
	☒	Refer as FCC KDB 789033 D02 v01r02, clause E Method SA-1 (spectral trace averaging).	
	☐	Refer as FCC KDB 789033 D02 v01r02, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)	
	duty cycle < 98% and average over on/off periods with duty factor		
	☐	Refer as FCC KDB 789033 D02 v01r02, clause E Method SA-2 (spectral trace averaging).	
	☐	Refer as FCC KDB 789033 D02 v01r02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)	
☒	For conducted measurement.		
	☒	The EUT supports single transmit chain and measurements performed on this transmit chain.	
	☐	The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case.	
	☐	The EUT supports multiple transmit chains using options given below:	
		☐	Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
		☐	Option 2: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.
	☐	If multiple transmit chains, EIRP PPSD calculation could be following as methods: $PPSD_{total} = PPSD_1 + PPSD_2 + \ldots + PPSD_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = PPSD_{total} + DG$	
	☐	Each individually PPSD plots refer as test report clause 3.3.5 with each individually PPSD plots.	

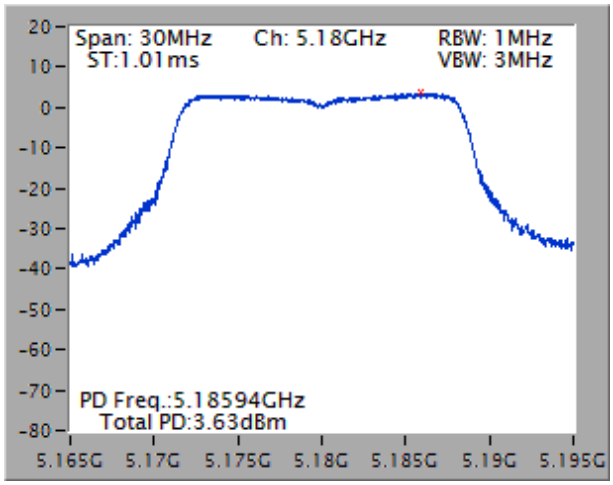
3.4.4 Test Setup

Power Spectral Density


3.4.5 Test Result of Peak Power Spectral Density

Peak Power Spectral Density Result (5150-5250MHz band)						
Condition			Peak Power Spectral Density (dBm/MHz)			
Modulation Mode	N_{TX}	Freq. (MHz)	Power Spectral Density	PSD Limit	DG (dBi)	EIRP PSD
11a	1	5180	3.57	11.00	3.59	7.16
11a	1	5200	3.58	11.00	3.59	7.17
11a	1	5240	3.19	11.00	3.59	6.78
HT20	1	5180	3.63	11.00	3.59	7.22
HT20	1	5200	3.34	11.00	3.59	6.93
HT20	1	5240	3.29	11.00	3.59	6.88
HT40	1	5190	0.22	11.00	3.59	3.81
HT40	1	5230	-0.19	11.00	3.59	3.40
VHT20	1	5180	3.25	11.00	3.59	6.84
VHT20	1	5200	2.88	11.00	3.59	6.47
VHT20	1	5240	2.61	11.00	3.59	6.20
VHT40	1	5190	0.29	11.00	3.59	3.88
VHT40	1	5230	0.23	11.00	3.59	3.82
VHT80	1	5210	-1.94	11.00	3.59	1.65
Result			Complied			

5150-5250MHz - Worst Power Spectral Density Plots



3.5 Peak Excursion

3.5.1 Peak Excursion Limit

Peak Excursion Limit
UNII Devices
☒ Peak excursion ≤ 13 dB. The ratio of the maximum of the peak-max-hold spectrum to the maximum of the average spectrum for continuous transmission does not exceed 13 dB. (Earlier procedures that required computing the ratio of the two spectra at each frequency across the emission bandwidth can lead to unintended failures at band edges and will no longer be required.)
LE-LAN Devices
☒ N/A

3.5.2 Measuring Instruments

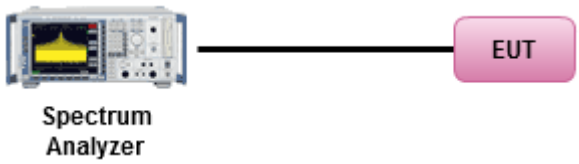
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method	
☒	Refer as FCC KDB 789033 D02 v01r02, clause G peak excursion method.
☒	Testing each modulation mode on a single channel is sufficient to demonstrate compliance with the peak excursion requirement
☒	For conducted measurement.
	☒ Testing a single output port is sufficient to demonstrate compliance with the peak excursion.

3.5.4 Test Setup

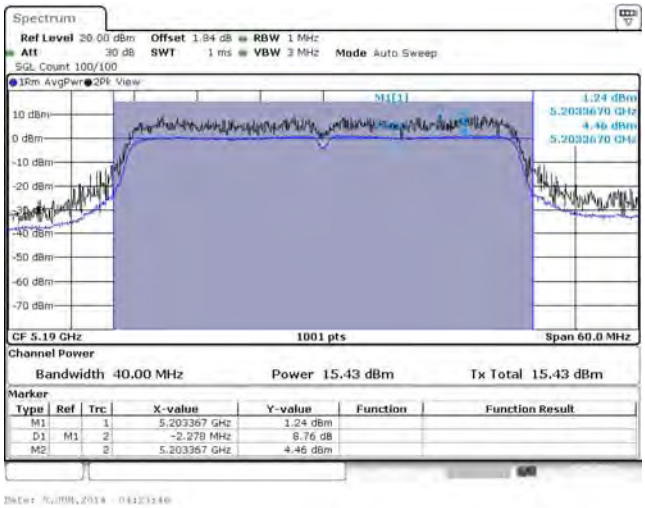
Peak Excursion



3.5.5 Test Result of Peak Excursion

UNII Peak Excursion Result								
Condition			Peak Excursion (dB)					
Modulation Mode	N_{TX}	Freq. (MHz)	BPSK	QPSK	16QAM	64QAM	256QAM	Limit
11a	1	5180	7.47	7.34	6.78	8.28	-	13.0
HT20,M0-7	1	5180	7.40	8.02	7.42	7.25	-	13.0
HT40,M0-7	1	5190	7.50	8.18	7.79	8.76	-	13.0
VHT20,M0-8	1	5180	7.71	8.11	7.98	7.44	7.47	13.0
VHT40,M0-9	1	5190	7.63	7.95	7.79	7.63	7.57	13.0
VHT80,M0-9	1	5210	7.00	6.38	7.56	7.70	7.48	13.0
Result			Complied					

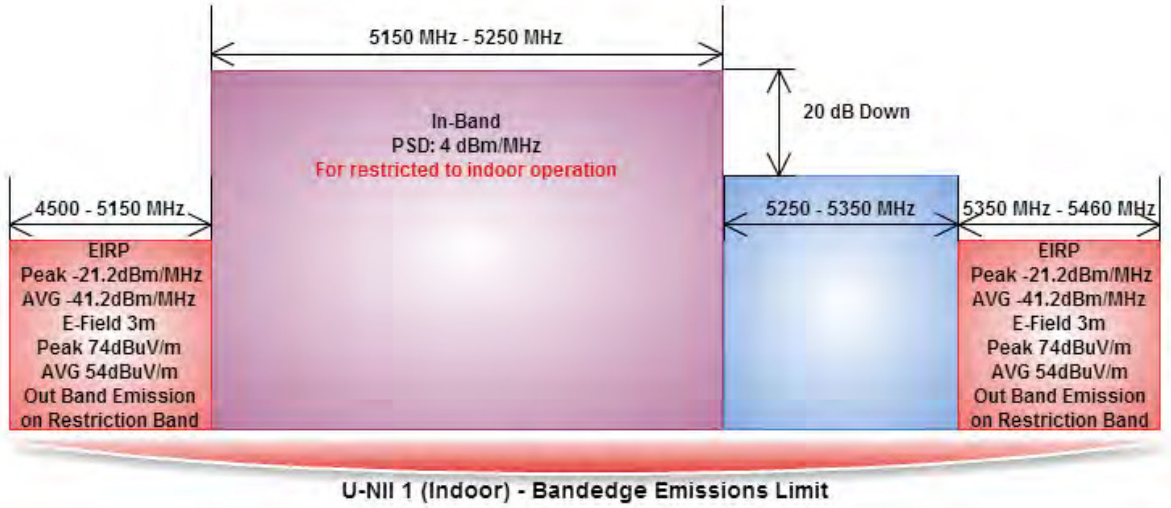
Peak Excursion Plots



3.6 Transmitter Bandedge Emissions

3.6.1 Transmitter Radiated Bandedge Emissions Limit

Transmitter Radiated Bandedge Emissions Limit for Indoor: 5.15-5.25 GHz band



Refer as FCC KDB 789033 D02 v01r02, G)2)c)(i) specifying that if a non-restricted-band out-of-band emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm or -17 dBm peak emission limit. Reason for change: to ensure that emission requirements in the non-restricted bands are not more stringent than those in the restricted bands.

3.6.2 Measuring Instruments

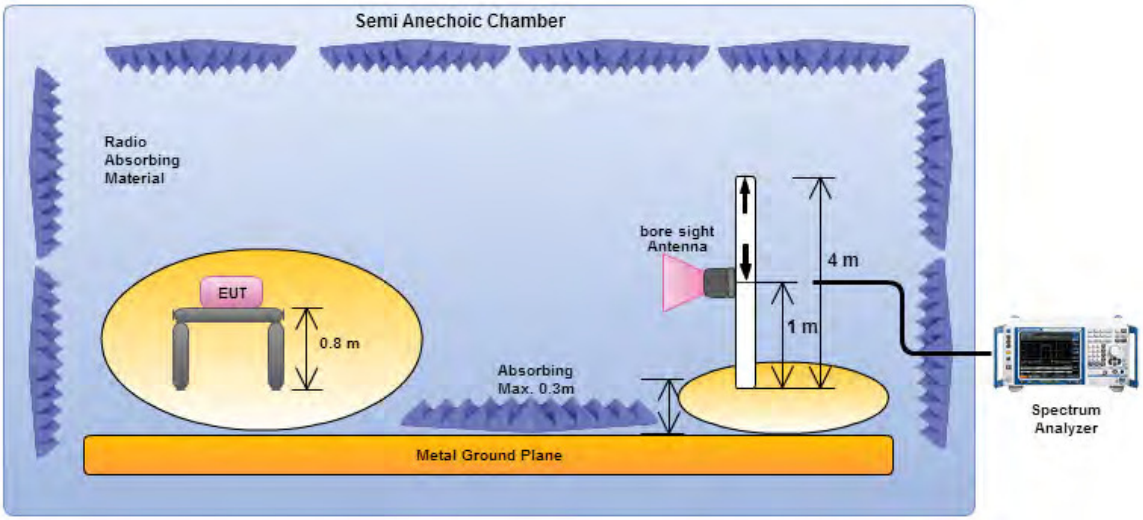
Refer a test equipment and calibration data table in this test report.

3.6.3 Test Procedures

Test Method			
☒	The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].		
☒	Refer as ANSI C63.10, clause 6.9.2.2 bandedge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.		
☐	If EUT operate in adjacent contiguous bands, bandedge testing performed at the lowest frequency channel at lower-band and highest frequency channel at higher-band. Transmitter in-band emissions will consist of adjacent contiguous bands (e.g., IEEE 802.11ac VHT160 The lowest frequency channel at lower-band and highest frequency channel at higher-band in-band emissions will consist of two adjacent contiguous bands.)		
	☐	Operating in 5.15-5.25 GHz band (lower-band) and 5.25-5.35 GHz band (higher-band).	
	☐	Operating in 5.47-5.725 GHz band (lower-band) and 5.725-5.825 GHz band (higher-band).	
☐	If EUT operate in individual non-contiguous bands, bandedge testing performed at the lowest frequency channel and highest frequency channel within lower-band and higher-band. (e.g., (e.g., IEEE 802.11ac VHT160)		
	☐	Operating in 5.25-5.35 GHz band (lower-band) and 5.47-5.725 GHz band (higher-band).	
	☐	Operating in 5.15-5.25 GHz band (lower-band) and 5.725-5.825 GHz band (higher-band).	
☒	For the transmitter unwanted emissions shall be measured using following options below:		
	☒	Refer as FCC KDB 789033 D02 v01r02, clause H)2) for unwanted emissions into non-restricted bands.	
	☒	Refer as FCC KDB 789033 D02 v01r02, clause H)1) for unwanted emissions into restricted bands.	
		☐	Refer as FCC KDB 789033 D02 v01r02, H)6) Method AD (Trace Averaging).
		☐	Refer as FCC KDB 789033 D02 v01r02, H)6) Method VB (Reduced VBW).
		☒	Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.
		☐	Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
		☒	Refer as FCC KDB 789033 D02 v01r02, clause H)5) measurement procedure peak limit.
		☐	Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit.
☒	For the transmitter bandedge emissions shall be measured using following options below:		
	☐	Refer as FCC KDB 789033 D02 v01r02, clause H)3)d) for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).	
	☒	Refer as ANSI C63.10, clause 6.9.2 for band-edge testing.	
	☐	Refer as ANSI C63.10, clause 6.9.3 for marker-delta method for band-edge measurements.	
☒	For radiated measurement, refer as ANSI C63.10, clause 6.6. Test distance is 3m.		
☒	Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements). Measurements in the bandedge are typically made at a closer distance 1m, because the instrumentation noise floor is typically close to the radiated emission limit.		

3.6.4 Test Setup

Transmitter Radiated Bandedge Emissions



Electric field tests shall be performed in transmitter bandedge emissions using a calibrated horn antenna.

3.6.5 Transmitter Radiated Bandedge Emissions (with Antenna)

U-NII 5150-5250MHz Transmitter Radiated Bandedge (with Antenna)

Modulation Mode	N_{TX}	Freq. (MHz)	Measure Distance (m)	Freq. (MHz) PK	Level (dBuV/m) PK	Limit (dBuV/m) PK	Freq. (MHz) AV	Level (dBuV/m) AV	Limit (dBuV/m) AV	Pol.
11a	1	5180	3	5125.50	56.99	74	5103.98	43.05	54	H
11a	1	5240	3	5355.00	57.17	74	5352.90	43.28	54	H
HT20	1	5180	3	5122.20	56.78	74	5100.20	42.83	54	H
HT20	1	5240	3	5398.50	57.17	74	5350.50	42.92	54	H
HT40	1	5190	3	5149.61	63.15	74	5149.94	48.50	54	H
HT40	1	5230	3	5351.70	57.07	74	5372.10	43.15	54	H
VHT20	1	5180	3	5113.00	56.52	74	5100.00	42.92	54	H
VHT20	1	5240	3	5379.00	56.54	74	5352.90	43.05	54	H
VHT40	1	5190	3	5149.99	63.69	74	5149.99	49.07	54	H
VHT40	1	5230	3	5356.20	57.12	74	5373.00	43.20	54	H
VHT80	1	5210	3	5145.00	65.88	74	5144.10	51.62	54	H
VHT80	1	5210	3	5356.20	56.97	74	5350.20	43.58	54	H

Note 1: Measurement worst emissions of receive antenna polarization.

3.7 Transmitter Unwanted Emissions

3.7.1 Transmitter Radiated Unwanted Emissions Limit

Unwanted emissions below 1 GHz and restricted band emissions above 1GHz limit			
Frequency Range (MHz)	**Field Strength (uV/m)**	**Field Strength (dBuV/m)**	**Measure Distance (m)**
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Un-restricted band emissions above 1GHz Limit	
Operating Band	**Limit**
5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.725 - 5.825 GHz	5.715 5.725 GHz: e.i.r.p. -17 dBm [78.2 dBuV/m@3m] 5.825 5.835 GHz: e.i.r.p. -17 dBm [78.2 dBuV/m@3m] Other un-restricted band: e.i.r.p. -27 dBm [68.2 dBuV/m@3m]

Note 1: Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

3.7.2 Measuring Instruments

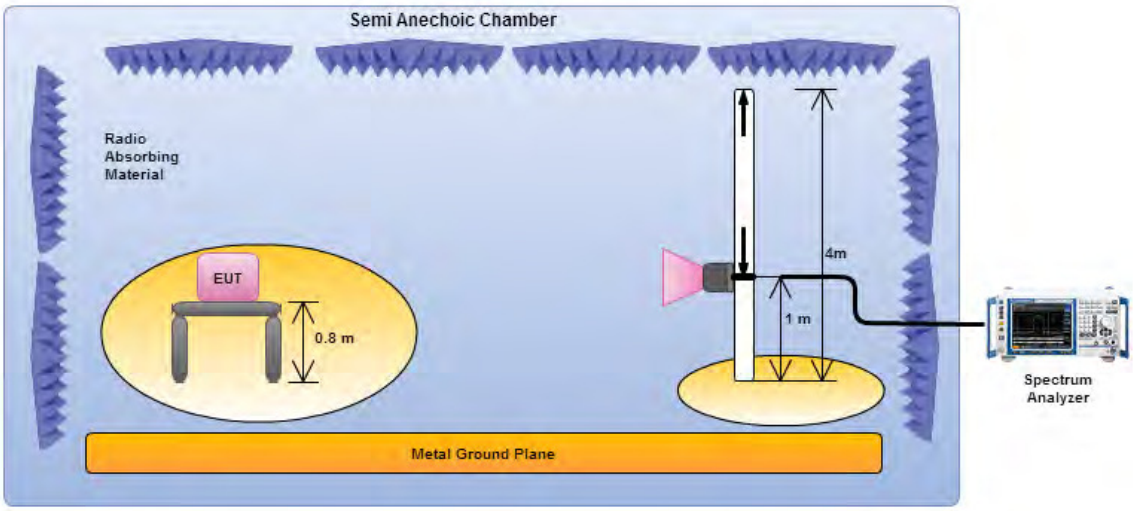
Refer a test equipment and calibration data table in this test report.

3.7.3 Test Procedures

Test Method			
☒	Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).		
☒	The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].		
☒	For the transmitter unwanted emissions shall be measured using following options below:		
	☒	Refer as FCC KDB 789033 D02 v01r02, clause H)2) for unwanted emissions into non-restricted bands.	
	☒	Refer as FCC KDB 789033 D02 v01r02, clause H)1) for unwanted emissions into restricted bands.	
		☐	Refer as FCC KDB 789033 D02 v01r02, H)6) Method AD (Trace Averaging).
		☐	Refer as FCC KDB 789033 D02 v01r02, H)6) Method VB (Reduced VBW).
		☒	Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.
		☐	Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
		☒	Refer as FCC KDB 789033 D02 v01r02, clause H)5) measurement procedure peak limit.
		☐	Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit.
☒	For radiated measurement.		
	☒	Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.	
	☒	Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.	
	☒	Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1 GHz and test distance is 3m, above 5GHz and test distance is 1m.	
☒	The any unwanted emissions level shall not exceed the fundamental emission level.		
☒	All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.		

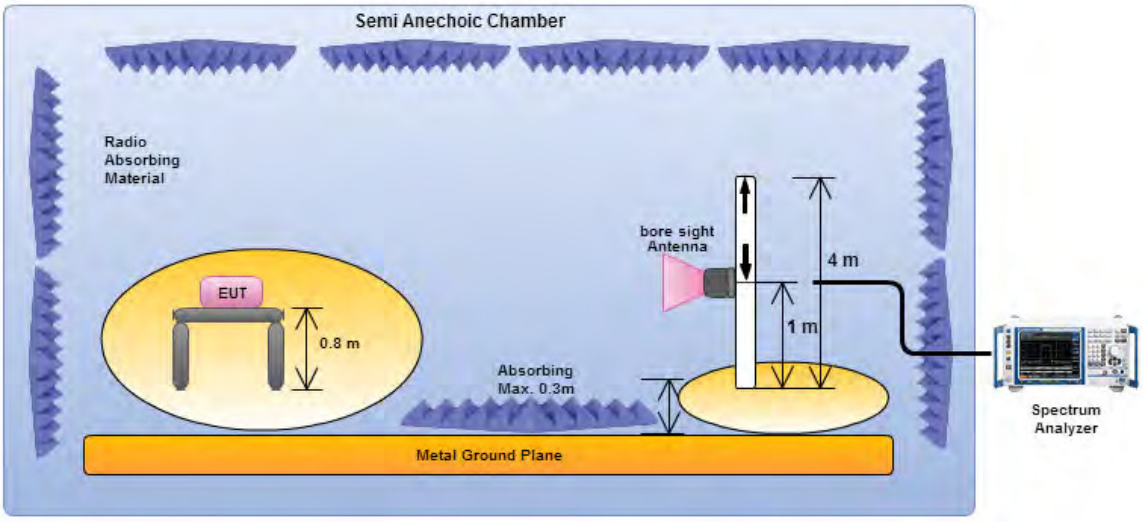
3.7.4 Test Setup

Transmitter Radiated Unwanted Emissions Below 1GHz



Magnetic field tests shall be performed in the frequency range of 9 kHz to 30 MHz using a calibrated loop antenna. Electric field tests shall be performed in the frequency range of 30 MHz to 1000 MHz using a calibrated bi-log antenna.

Transmitter Radiated Unwanted Emissions Above 1GHz



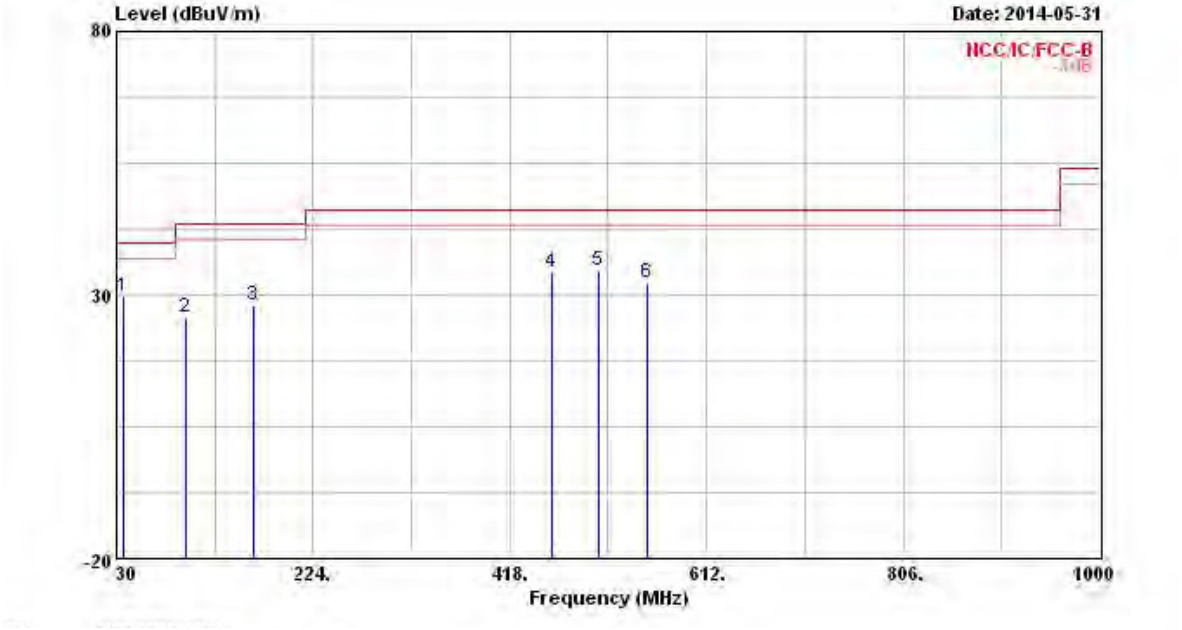
Electric field tests shall be performed in the frequency range of 1 GHz to 10th harmonic of highest fundamental frequency or 40 GHz using a calibrated horn antenna.

3.7.5 Transmitter Radiated Unwanted Emissions (Below 30MHz)

All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

3.7.6 Transmitter Radiated Unwanted Emissions (Below 1GHz)

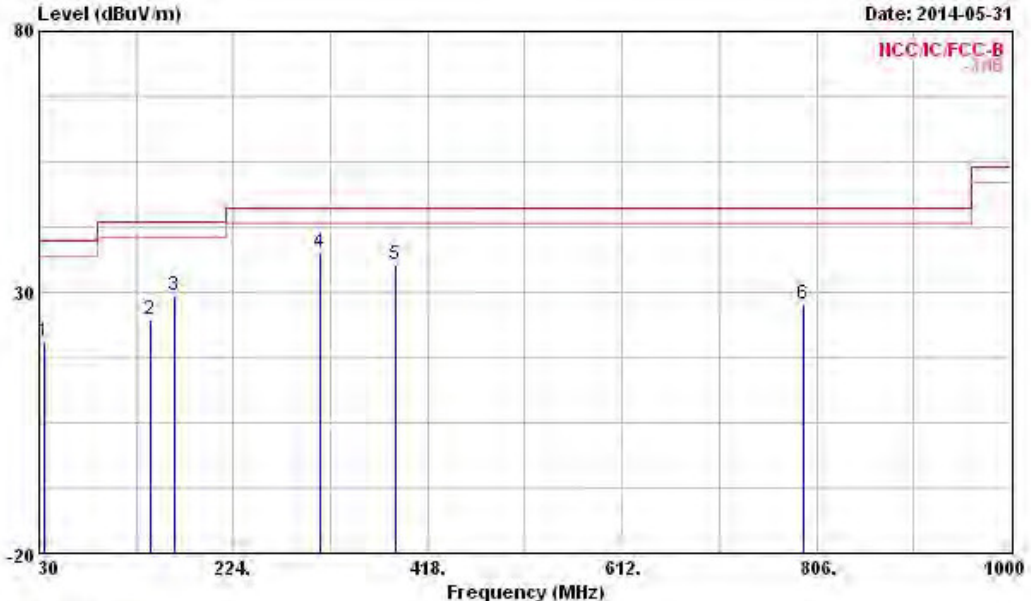
Radiated Emissions (Below 1GHz)			
Operating Mode	1	**Polarization**	V
Operating Function	Transmitting		



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	36.790	29.57	-10.43	40.00	41.48	14.97	0.82	27.70	Peak	---	---
2	98.870	25.86	-17.64	43.50	41.58	10.63	1.39	27.74	Peak	---	---
3	164.830	28.02	-15.48	43.50	43.76	9.95	1.85	27.54	Peak	---	---
4	459.710	34.16	-11.84	46.00	42.04	17.19	3.15	28.22	Peak	---	---
5	506.270	34.51	-11.49	46.00	42.13	17.55	3.27	28.44	Peak	---	---
6	552.830	32.46	-13.54	46.00	38.60	18.79	3.54	28.47	Peak	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical).
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.

Radiated Emissions (Below 1GHz)			
Operating Mode	1	**Polarization**	H
Operating Function	Transmitting		

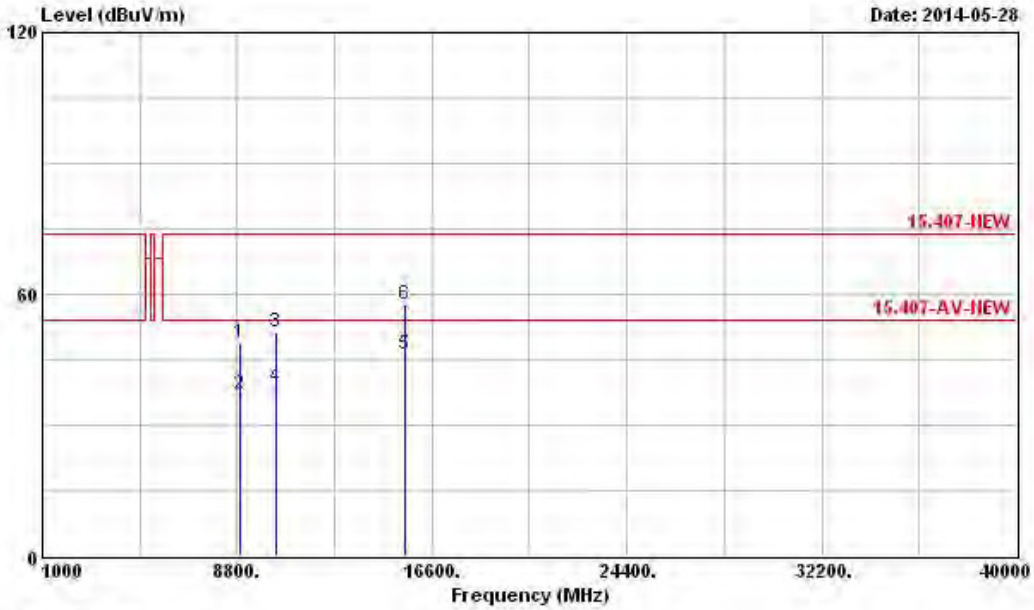


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	35.820	20.48	-19.52	40.00	31.79	15.59	0.82	27.72	Peak	---	---
2	141.550	24.72	-18.78	43.50	39.64	10.98	1.72	27.62	Peak	---	---
3	164.830	29.20	-14.30	43.50	44.94	9.95	1.85	27.54	Peak	---	---
4 @	311.300	37.65	-8.35	46.00	48.76	13.55	2.58	27.24	Peak	---	---
5	385.020	35.27	-10.73	46.00	44.94	15.24	2.88	27.79	Peak	---	---
6	793.390	27.63	-18.37	46.00	31.45	19.95	4.31	28.08	Peak	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical).
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.

3.7.7 Transmitter Radiated Unwanted Emissions (Above 1GHz)

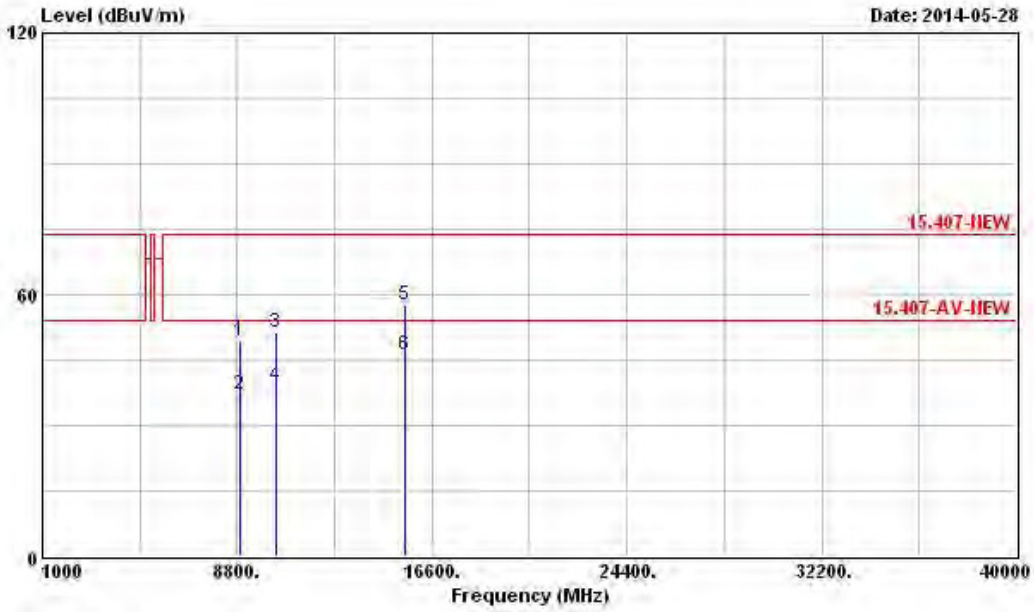
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11a	**Test Freq. (MHz)**	5180
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8916.000	48.87	-25.13	74.00	42.08	36.07	5.90	35.18	Peak	---	---
2	8916.000	37.12	-16.88	54.00	30.33	36.07	5.90	35.18	Average	---	---
3	10360.000	51.26	-22.74	74.00	42.78	37.15	6.38	35.05	Peak	---	---
4	10360.000	38.83	-15.17	54.00	30.35	37.15	6.38	35.05	Average	---	---
5	@15540.000	46.17	-7.83	54.00	32.85	40.16	7.99	34.83	Average	---	---
6	15540.000	57.66	-16.34	74.00	44.34	40.16	7.99	34.83	Peak	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

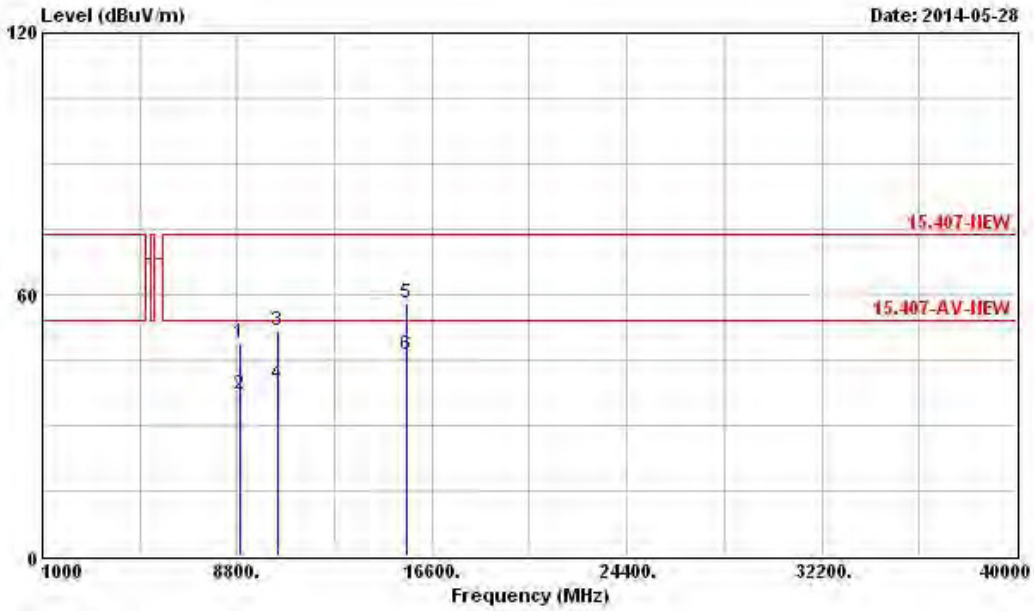
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11a	**Test Freq. (MHz)**	5180
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8916.000	49.16	-24.84	74.00	42.37	36.07	5.90	35.18	Peak	---	---
2	8916.000	37.09	-16.91	54.00	30.30	36.07	5.90	35.18	Average	---	---
3	10360.000	51.12	-22.88	74.00	42.64	37.15	6.38	35.05	Peak	---	---
4	10360.000	39.21	-14.79	54.00	30.73	37.15	6.38	35.05	Average	---	---
5	15540.000	57.77	-16.23	74.00	44.45	40.16	7.99	34.83	Peak	---	---
6	@15540.000	46.10	-7.90	54.00	32.78	40.16	7.99	34.83	Average	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

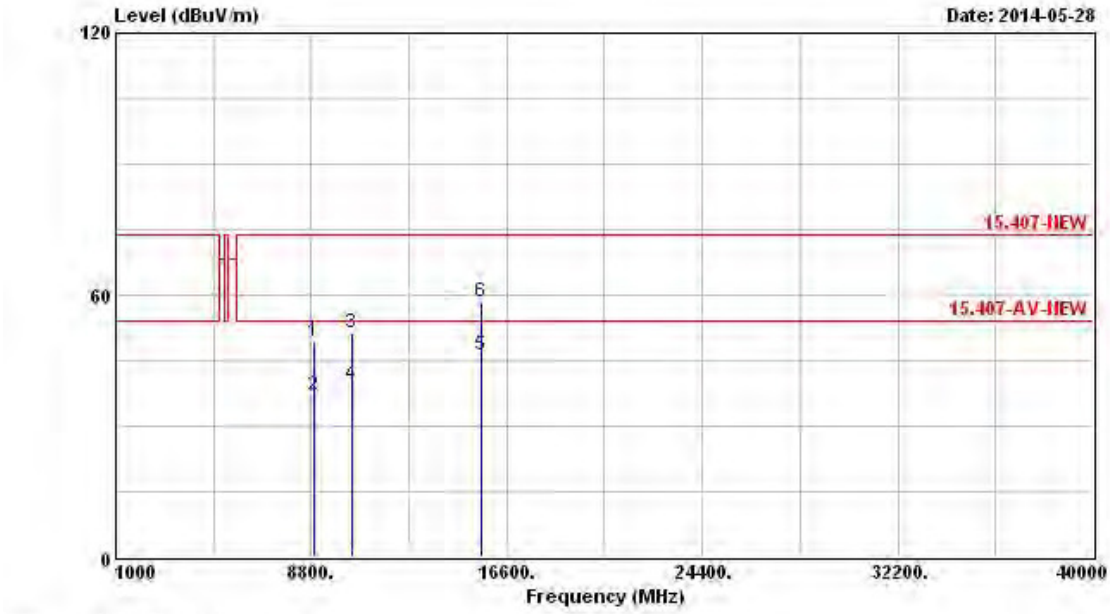
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11a	**Test Freq. (MHz)**	5200
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8904.000	49.09	-24.91	74.00	42.31	36.06	5.90	35.18	Peak	---	---
2	8904.000	37.12	-16.88	54.00	30.34	36.06	5.90	35.18	Average	---	---
3	10400.000	51.55	-22.45	74.00	43.04	37.16	6.35	35.00	Peak	---	---
4	10400.000	39.38	-14.62	54.00	30.87	37.16	6.35	35.00	Average	---	---
5	15600.000	57.90	-16.10	74.00	44.57	40.29	7.96	34.92	Peak	---	---
6	@15600.000	46.30	-7.70	54.00	32.97	40.29	7.96	34.92	Average	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

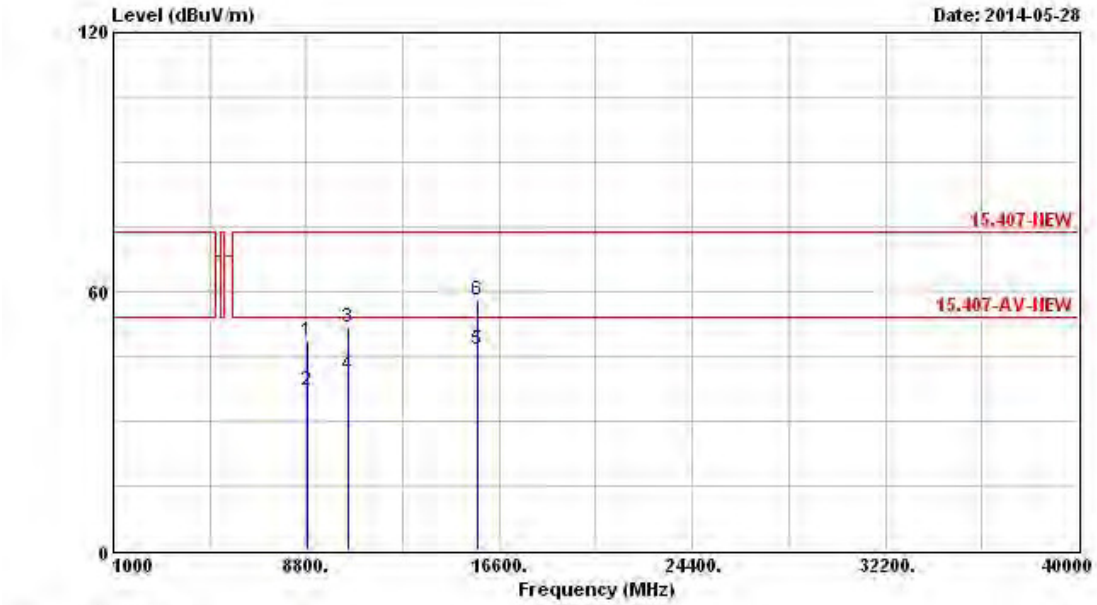
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11a	**Test Freq. (MHz)**	5200
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8904.000	49.40	-24.60	74.00	42.62	36.06	5.90	35.18	Peak	---	---
2	8904.000	37.11	-16.89	54.00	30.33	36.06	5.90	35.18	Average	---	---
3	10400.000	51.29	-22.71	74.00	42.78	37.16	6.35	35.00	Peak	---	---
4	10400.000	39.34	-14.66	54.00	30.83	37.16	6.35	35.00	Average	---	---
5	@15600.000	46.30	-7.70	54.00	32.97	40.29	7.96	34.92	Average	---	---
6	15600.000	58.32	-15.68	74.00	44.99	40.29	7.96	34.92	Peak	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

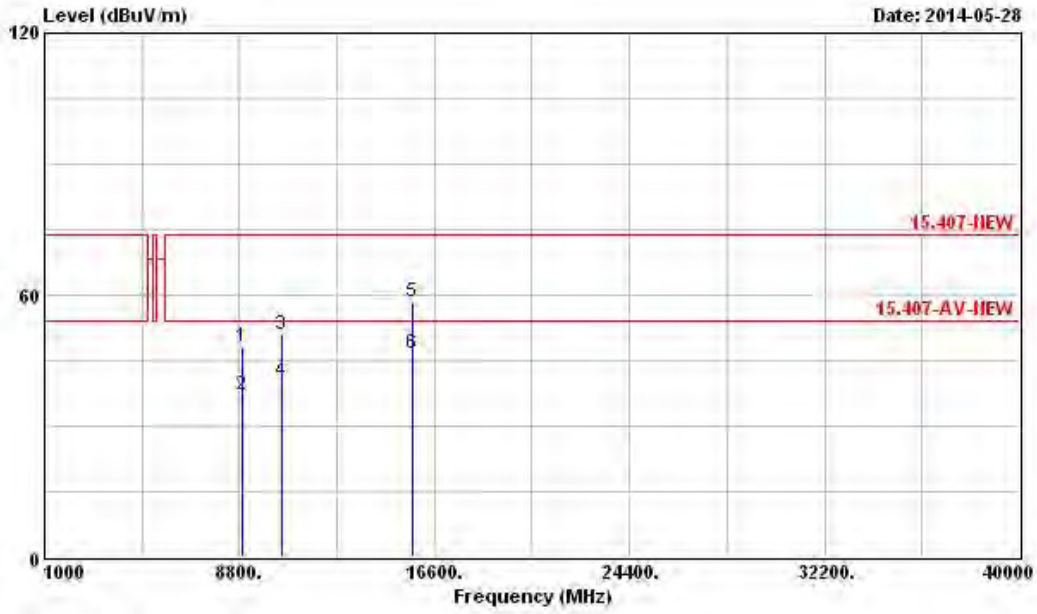
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11a	**Test Freq. (MHz)**	5240
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8808.000	48.73	-25.27	74.00	42.09	36.02	5.78	35.16	Peak	---	---
2	8808.000	36.94	-17.06	54.00	30.30	36.02	5.78	35.16	Average	---	---
3	10480.000	51.55	-22.45	74.00	42.99	37.19	6.30	34.93	Peak	---	---
4	10480.000	40.67	-13.33	54.00	32.11	37.19	6.30	34.93	Average	---	---
5	@15720.000	46.64	-7.36	54.00	33.31	40.50	7.86	35.03	Average	---	---
6	15720.000	58.07	-15.93	74.00	44.74	40.50	7.86	35.03	Peak	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

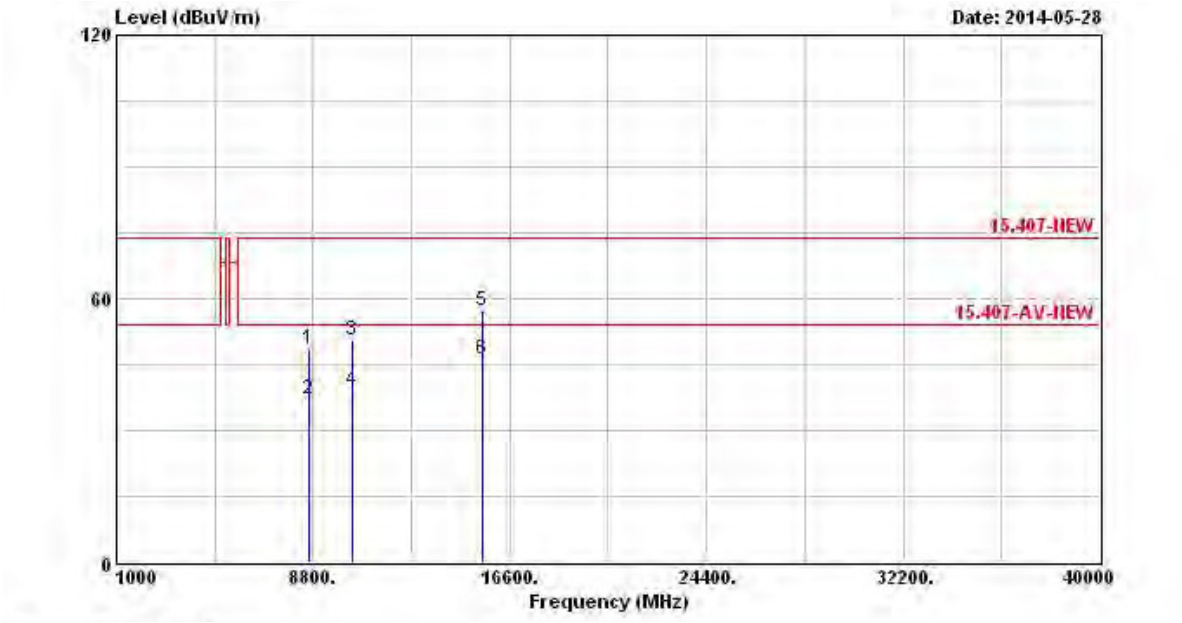
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11a	**Test Freq. (MHz)**	5240
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8904.000	48.32	-25.68	74.00	41.54	36.06	5.90	35.18	Peak	---	---
2	8904.000	37.09	-16.91	54.00	30.31	36.06	5.90	35.18	Average	---	---
3	10480.000	50.96	-23.04	74.00	42.40	37.19	6.30	34.93	Peak	---	---
4	10480.000	40.30	-13.70	54.00	31.74	37.19	6.30	34.93	Average	---	---
5	15720.000	58.32	-15.68	74.00	44.99	40.50	7.86	35.03	Peak	---	---
6	@15720.000	46.63	-7.37	54.00	33.30	40.50	7.86	35.03	Average	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

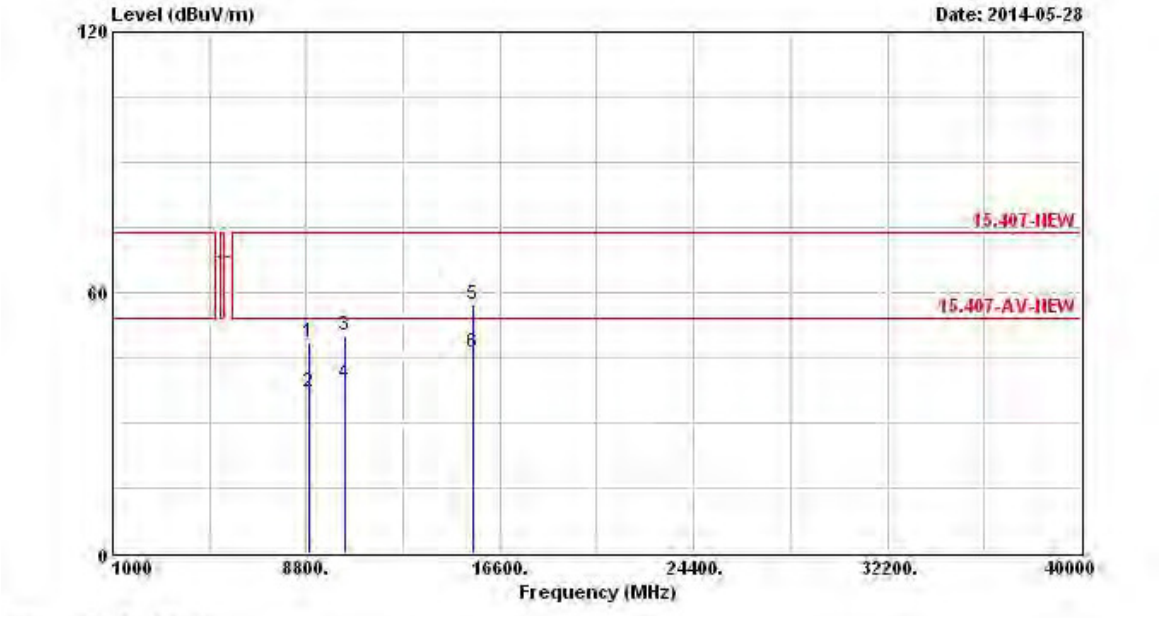
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	5180
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8628.000	48.51	-25.49	74.00	42.06	35.95	5.62	35.12	Peak	---	---
2	8628.000	37.07	-16.93	54.00	30.62	35.95	5.62	35.12	Average	---	---
3	10360.000	50.72	-23.28	74.00	42.24	37.15	6.38	35.05	Peak	---	---
4	10360.000	38.99	-15.01	54.00	30.51	37.15	6.38	35.05	Average	---	---
5	15540.000	57.28	-16.72	74.00	43.96	40.16	7.99	34.83	Peak	---	---
6	@15540.000	46.10	-7.90	54.00	32.78	40.16	7.99	34.83	Average	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

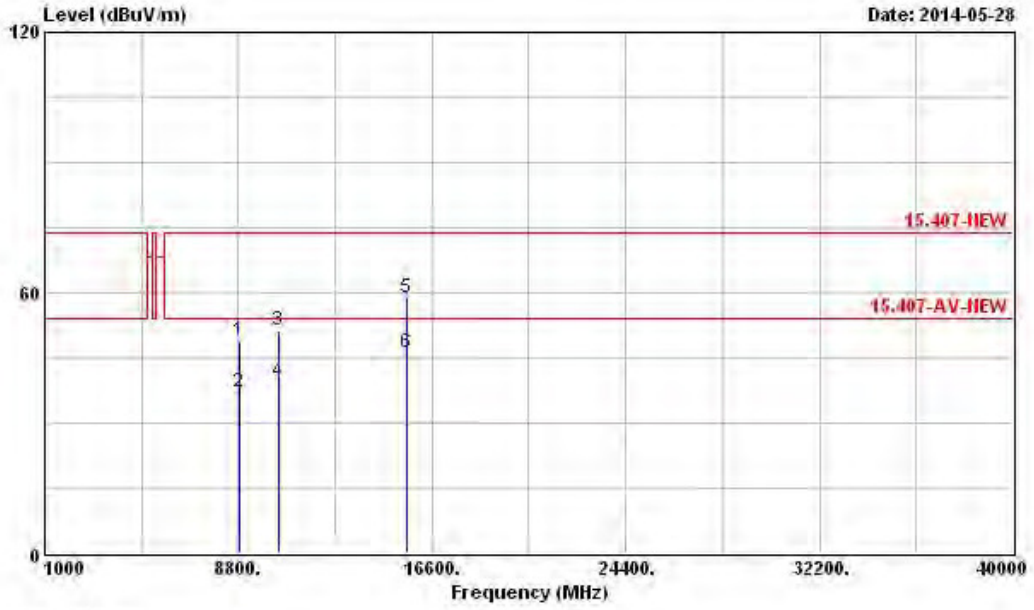
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	5180
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8916.000	48.63	-25.37	74.00	41.84	36.07	5.90	35.18	Peak	---	---
2	8916.000	37.12	-16.88	54.00	30.33	36.07	5.90	35.18	Average	---	---
3	10360.000	50.09	-23.91	74.00	41.61	37.15	6.38	35.05	Peak	---	---
4	10360.000	39.16	-14.84	54.00	30.68	37.15	6.38	35.05	Average	---	---
5	15540.000	57.32	-16.68	74.00	44.00	40.16	7.99	34.83	Peak	---	---
6	@15540.000	46.15	-7.85	54.00	32.83	40.16	7.99	34.83	Average	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

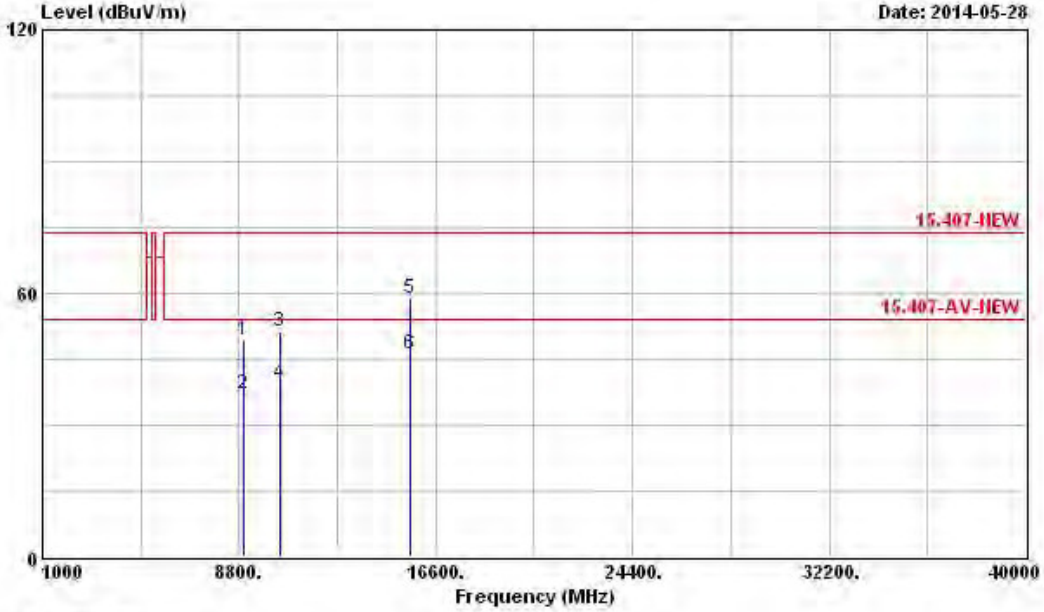
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	5200
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8856.000	48.87	-25.13	74.00	42.18	36.04	5.82	35.17	Peak	---	---
2	8856.000	37.02	-16.98	54.00	30.33	36.04	5.82	35.17	Average	---	---
3	10400.000	51.38	-22.62	74.00	42.87	37.16	6.35	35.00	Peak	---	---
4	10400.000	39.67	-14.33	54.00	31.16	37.16	6.35	35.00	Average	---	---
5	15600.000	58.82	-15.18	74.00	45.49	40.29	7.96	34.92	Peak	---	---
6	@15600.000	46.31	-7.69	54.00	32.98	40.29	7.96	34.92	Average	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

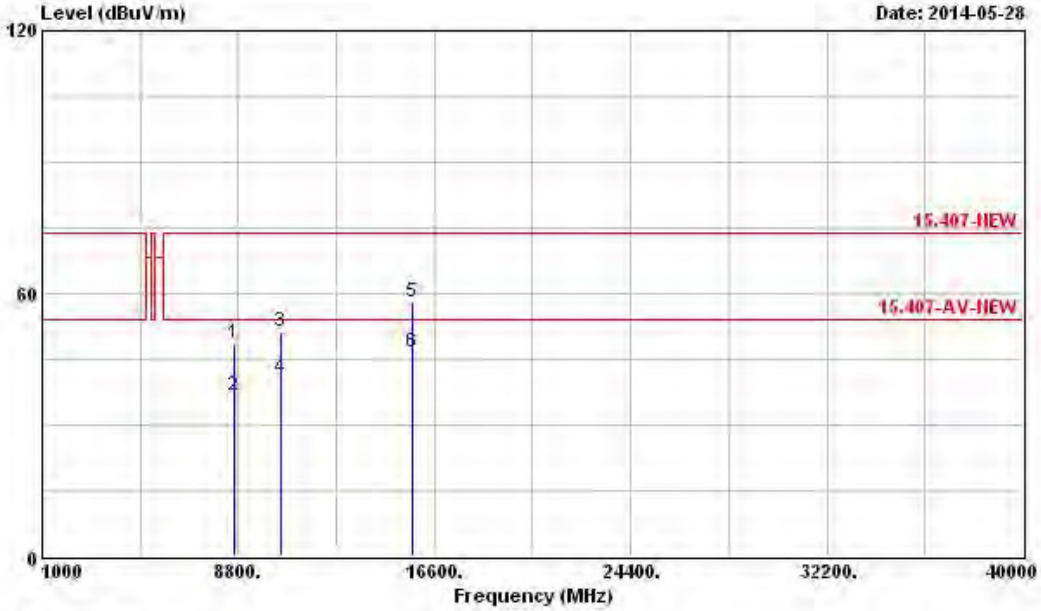
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	5200
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8964.000	49.22	-24.78	74.00	42.39	36.08	5.94	35.19	Peak	---	---
2	8964.000	37.17	-16.83	54.00	30.34	36.08	5.94	35.19	Average	---	---
3	10400.000	51.15	-22.85	74.00	42.64	37.16	6.35	35.00	Peak	---	---
4	10400.000	39.48	-14.52	54.00	30.97	37.16	6.35	35.00	Average	---	---
5	15600.000	58.82	-15.18	74.00	45.49	40.29	7.96	34.92	Peak	---	---
6	@15600.000	46.34	-7.66	54.00	33.01	40.29	7.96	34.92	Average	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

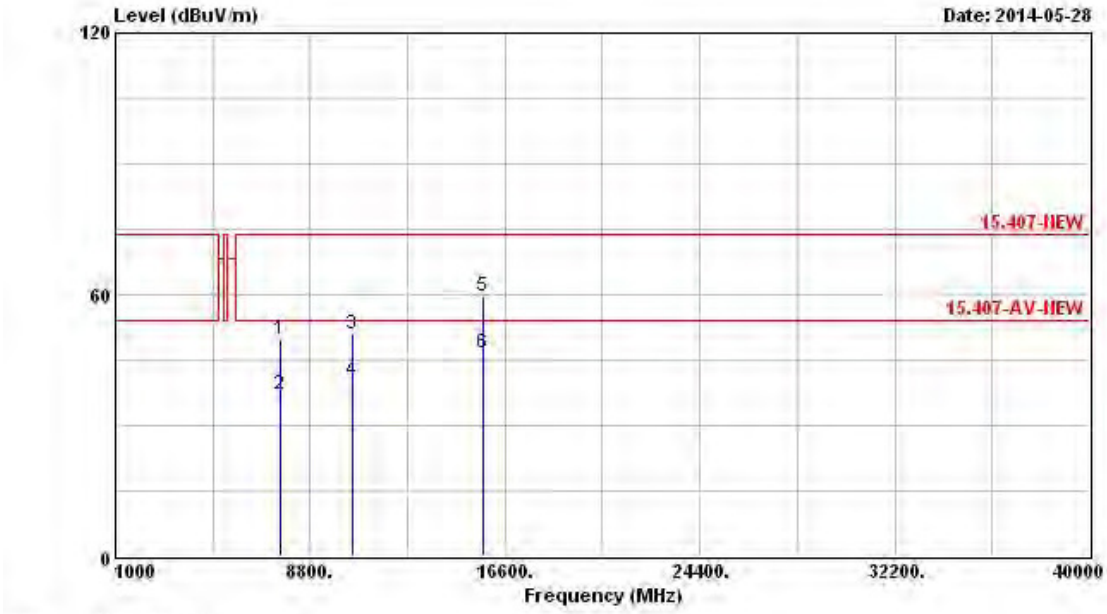
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	5240
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8628.000	48.60	-25.40	74.00	42.15	35.95	5.62	35.12	Peak	---	---
2	8628.000	36.77	-17.23	54.00	30.32	35.95	5.62	35.12	Average	---	---
3	10480.000	51.17	-22.83	74.00	42.61	37.19	6.30	34.93	Peak	---	---
4	10480.000	40.63	-13.37	54.00	32.07	37.19	6.30	34.93	Average	---	---
5	15720.000	58.14	-15.86	74.00	44.81	40.50	7.86	35.03	Peak	---	---
6	@15720.000	46.71	-7.29	54.00	33.38	40.50	7.86	35.03	Average	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

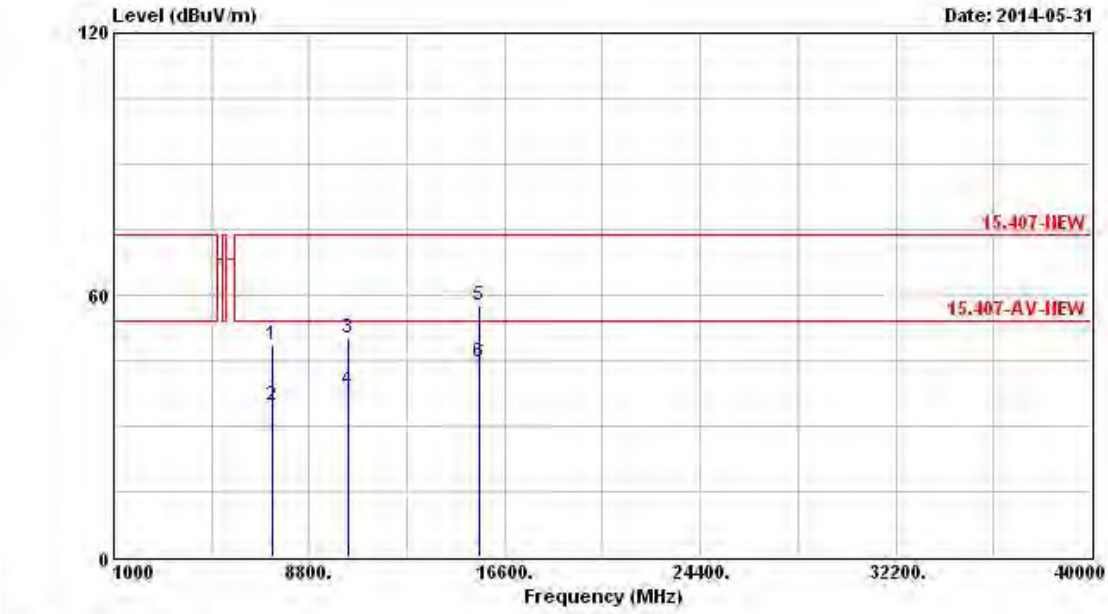
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	5240
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	7572.000	49.84	-24.16	74.00	43.44	35.78	5.64	35.02	Peak	---	---
2	7572.000	37.13	-16.87	54.00	30.73	35.78	5.64	35.02	Average	---	---
3	10480.000	51.09	-22.91	74.00	42.53	37.19	6.30	34.93	Peak	---	---
4	10480.000	40.21	-13.79	54.00	31.65	37.19	6.30	34.93	Average	---	---
5	15720.000	59.79	-14.21	74.00	46.46	40.50	7.86	35.03	Peak	---	---
6	@15720.000	46.65	-7.35	54.00	33.32	40.50	7.86	35.03	Average	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

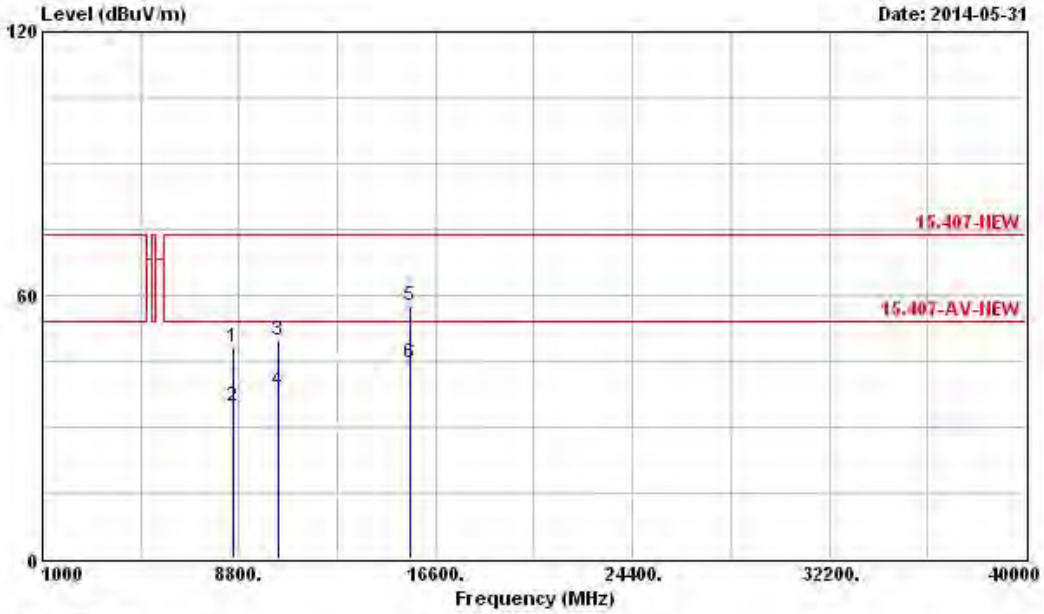
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT40	**Test Freq. (MHz)**	5190
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	7300.000	48.65	-25.35	74.00	42.25	35.88	5.47	34.95	Peak	---	---
2	7300.000	34.64	-39.36	74.00	28.24	35.88	5.47	34.95	Average	---	---
3	10380.000	50.12	-23.88	74.00	41.65	37.15	6.35	35.03	Peak	---	---
4	10380.000	38.25	-35.75	74.00	29.78	37.15	6.35	35.03	Average	---	---
5	15570.000	57.72	-16.28	74.00	44.40	40.22	7.96	34.86	Peak	---	---
6	15570.000	44.45	-29.55	74.00	31.13	40.22	7.96	34.86	Average	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

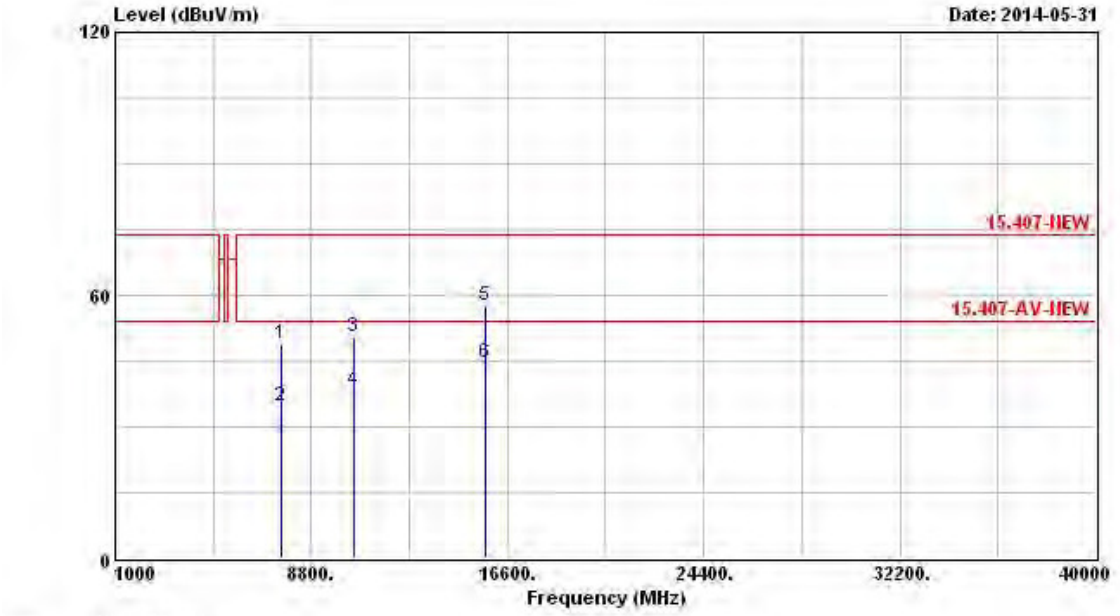
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT40	**Test Freq. (MHz)**	5190
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8600.000	48.34	-25.66	74.00	41.93	35.94	5.58	35.11	Peak	---	---
2	8600.000	34.77	-39.23	74.00	28.36	35.94	5.58	35.11	Average	---	---
3	10380.000	49.87	-24.13	74.00	41.40	37.15	6.35	35.03	Peak	---	---
4	10380.000	38.13	-35.87	74.00	29.66	37.15	6.35	35.03	Average	---	---
5	15570.000	57.45	-16.55	74.00	44.13	40.22	7.96	34.86	Peak	---	---
6	15570.000	44.52	-29.48	74.00	31.20	40.22	7.96	34.86	Average	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

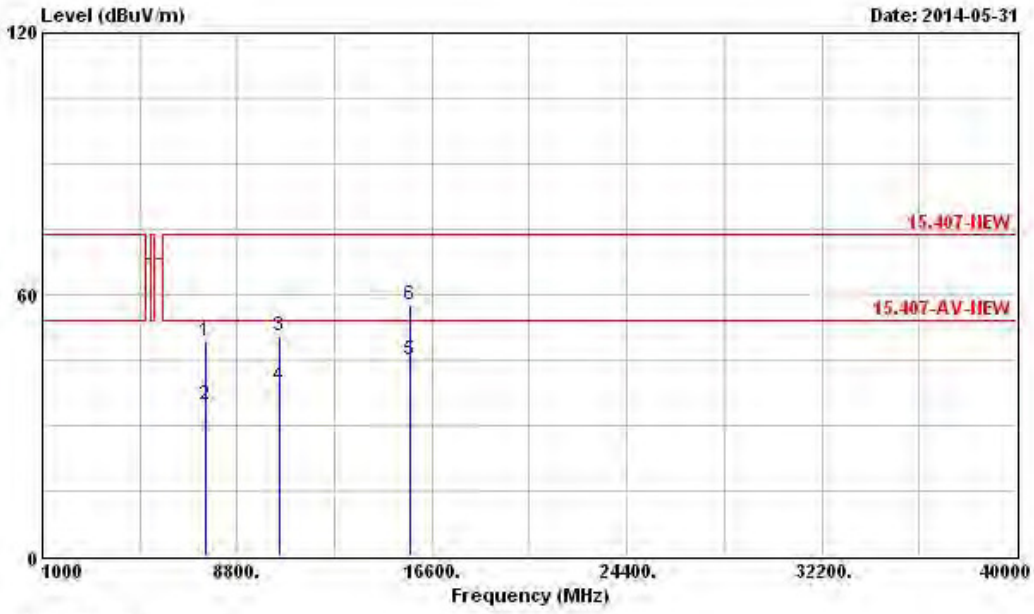
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT40	**Test Freq. (MHz)**	5230
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	7620.000	49.07	-24.93	74.00	42.71	35.78	5.61	35.03	Peak	---	---
2	7620.000	34.93	-39.07	74.00	28.57	35.78	5.61	35.03	Average	---	---
3	10460.000	50.52	-23.48	74.00	42.00	37.18	6.30	34.96	Peak	---	---
4	10460.000	38.47	-35.53	74.00	29.95	37.18	6.30	34.96	Average	---	---
5	15690.000	57.57	-16.43	74.00	44.27	40.44	7.86	35.00	Peak	---	---
6	15690.000	44.78	-29.22	74.00	31.48	40.44	7.86	35.00	Average	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

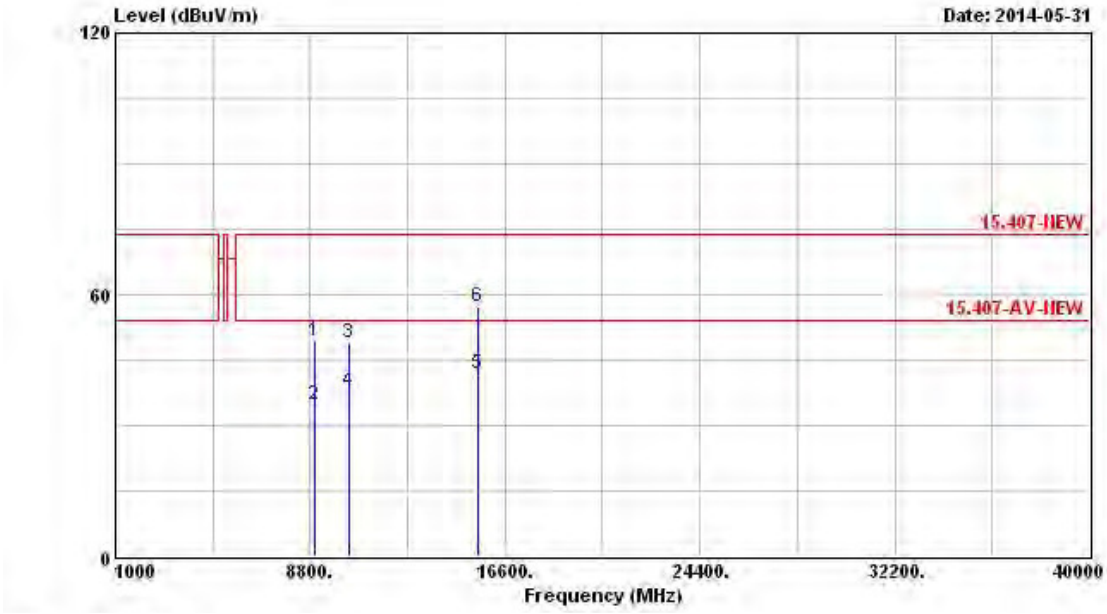
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT40	**Test Freq. (MHz)**	5230
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	7520.000	49.53	-24.47	74.00	43.03	35.79	5.71	35.00	Peak	---	---
2	7520.000	34.76	-19.24	54.00	28.26	35.79	5.71	35.00	Average	---	---
3	10460.000	50.51	-23.49	74.00	41.99	37.18	6.30	34.96	Peak	---	---
4	10460.000	39.01	-14.99	54.00	30.49	37.18	6.30	34.96	Average	---	---
5	15690.000	44.81	-9.19	54.00	31.51	40.44	7.86	35.00	Average	---	---
6	15690.000	57.69	-16.31	74.00	44.39	40.44	7.86	35.00	Peak	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

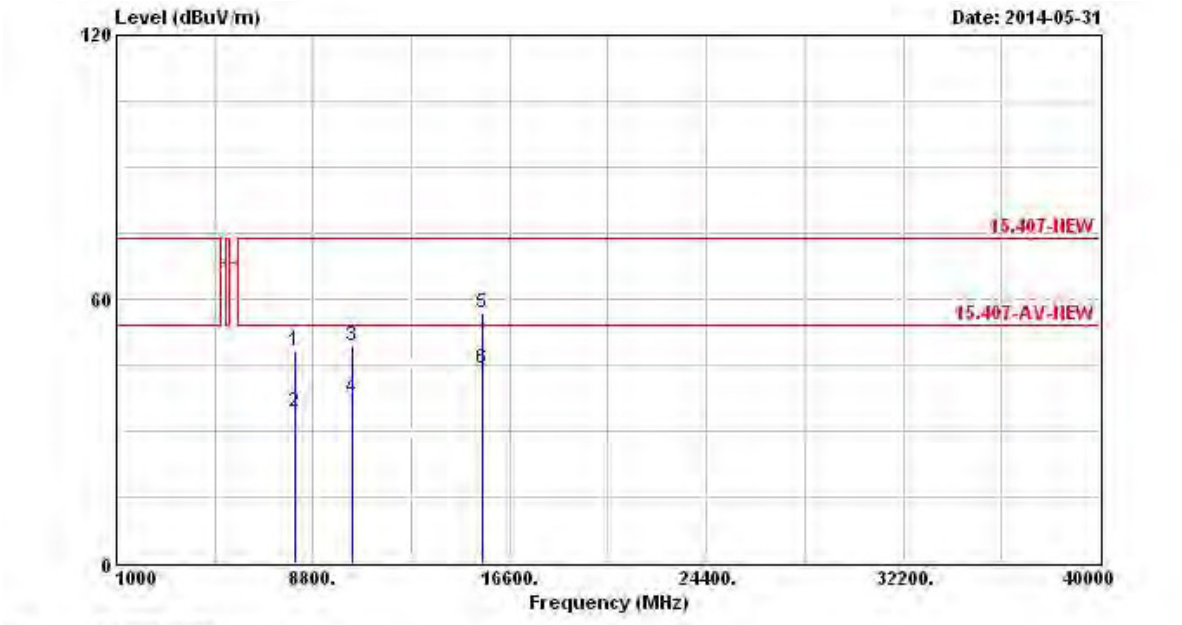
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT20	**Test Freq. (MHz)**	5180
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8976.000	49.48	-24.52	74.00	42.60	36.09	5.98	35.19	Peak	---	---
2	8976.000	34.83	-19.17	54.00	27.95	36.09	5.98	35.19	Average	---	---
3	10360.000	48.99	-25.01	74.00	40.51	37.15	6.38	35.05	Peak	---	---
4	10360.000	37.98	-16.02	54.00	29.50	37.15	6.38	35.05	Average	---	---
5	15540.000	42.00	-12.00	54.00	28.68	40.16	7.99	34.83	Average	---	---
6	15540.000	57.05	-16.95	74.00	43.73	40.16	7.99	34.83	Peak	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

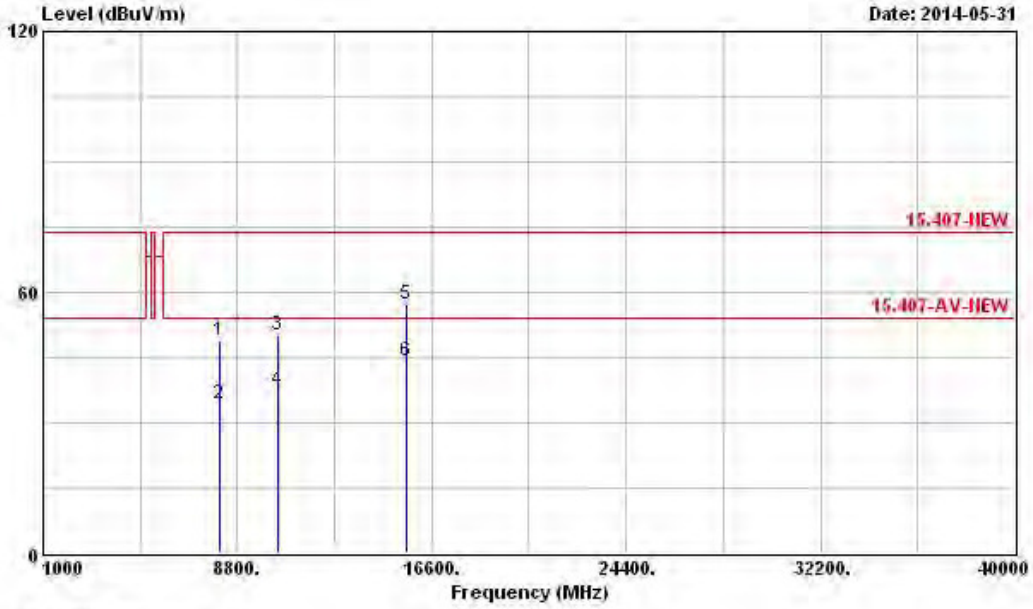
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT20	**Test Freq. (MHz)**	5180
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8112.000	48.25	-25.75	74.00	42.31	35.74	5.35	35.15	Peak	---	---
2	8112.000	34.46	-19.54	54.00	28.52	35.74	5.35	35.15	Average	---	---
3	10360.000	49.41	-24.59	74.00	40.93	37.15	6.38	35.05	Peak	---	---
4	10360.000	37.49	-16.51	54.00	29.01	37.15	6.38	35.05	Average	---	---
5	15540.000	57.03	-16.97	74.00	43.71	40.16	7.99	34.83	Peak	---	---
6	15540.000	44.30	-9.70	54.00	30.98	40.16	7.99	34.83	Average	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

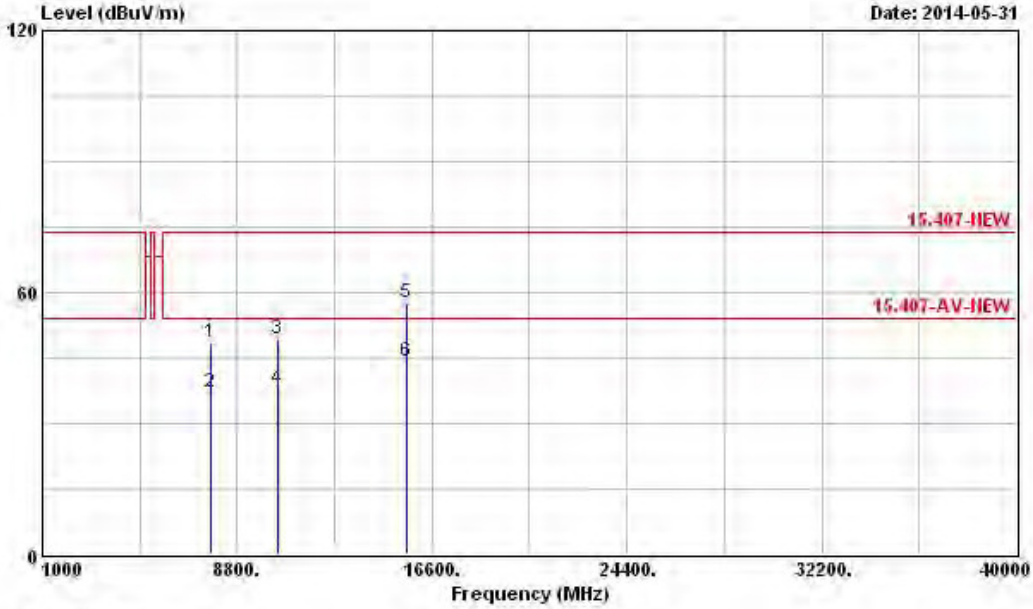
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT20	**Test Freq. (MHz)**	5200
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8098.000	48.90	-25.10	74.00	42.96	35.74	5.35	35.15	Peak	---	---
2	8098.000	34.23	-19.77	54.00	28.29	35.74	5.35	35.15	Average	---	---
3	10400.000	49.94	-24.06	74.00	41.43	37.16	6.35	35.00	Peak	---	---
4	10400.000	37.61	-16.39	54.00	29.10	37.16	6.35	35.00	Average	---	---
5	15600.000	57.08	-16.92	74.00	43.75	40.29	7.96	34.92	Peak	---	---
6	15600.000	44.36	-9.64	54.00	31.03	40.29	7.96	34.92	Average	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

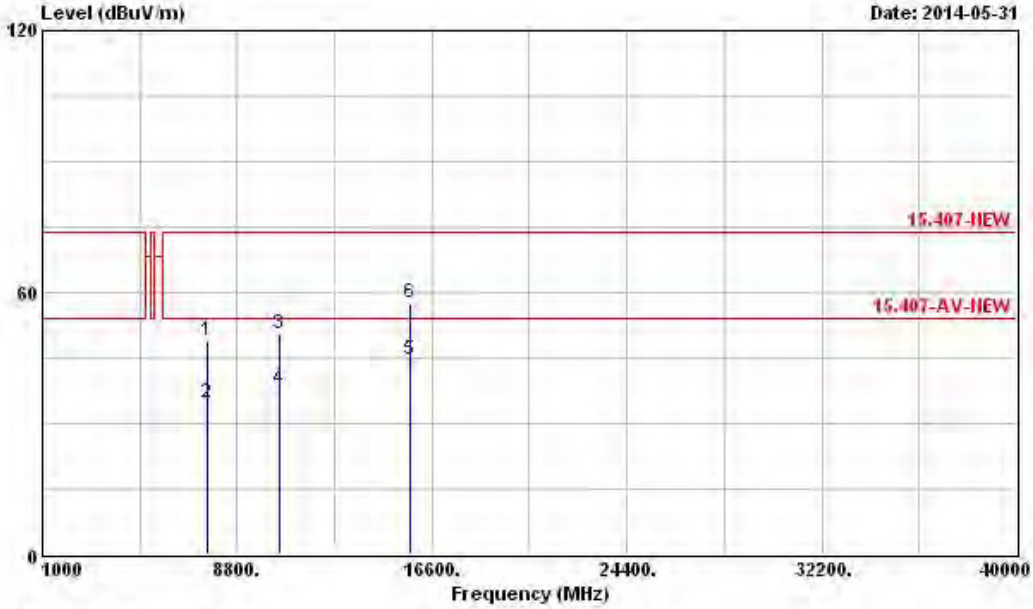
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT20	**Test Freq. (MHz)**	5200
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	7774.000	48.62	-25.38	74.00	42.47	35.75	5.48	35.08	Peak	---	---
2	7774.000	37.15	-16.85	54.00	31.00	35.75	5.48	35.08	Average	---	---
3	10400.000	49.41	-24.59	74.00	40.90	37.16	6.35	35.00	Peak	---	---
4	10400.000	37.81	-16.19	54.00	29.30	37.16	6.35	35.00	Average	---	---
5	15600.000	57.50	-16.50	74.00	44.17	40.29	7.96	34.92	Peak	---	---
6	15600.000	44.36	-9.64	54.00	31.03	40.29	7.96	34.92	Average	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

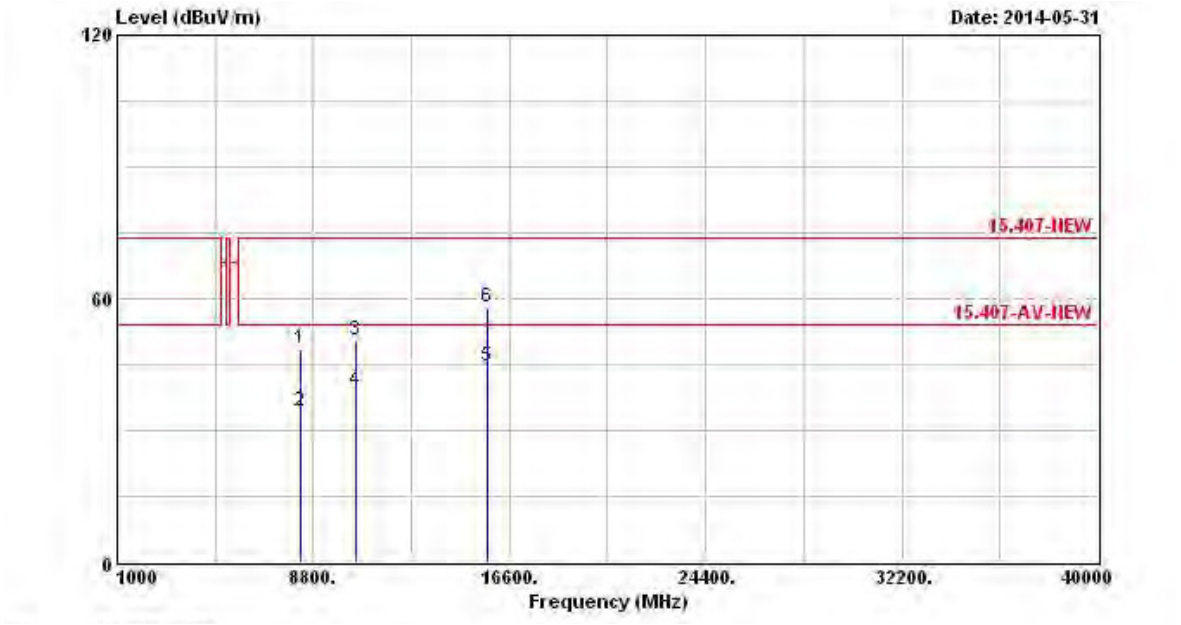
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT20	**Test Freq. (MHz)**	5240
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	7608.000	48.98	-25.02	74.00	42.58	35.78	5.64	35.02	Peak	---	---
2	7608.000	34.86	-19.14	54.00	28.46	35.78	5.64	35.02	Average	---	---
3	10480.000	50.45	-23.55	74.00	41.89	37.19	6.30	34.93	Peak	---	---
4	10480.000	37.84	-16.16	54.00	29.28	37.19	6.30	34.93	Average	---	---
5	15720.000	44.49	-9.51	54.00	31.16	40.50	7.86	35.03	Average	---	---
6	15720.000	57.74	-16.26	74.00	44.41	40.50	7.86	35.03	Peak	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

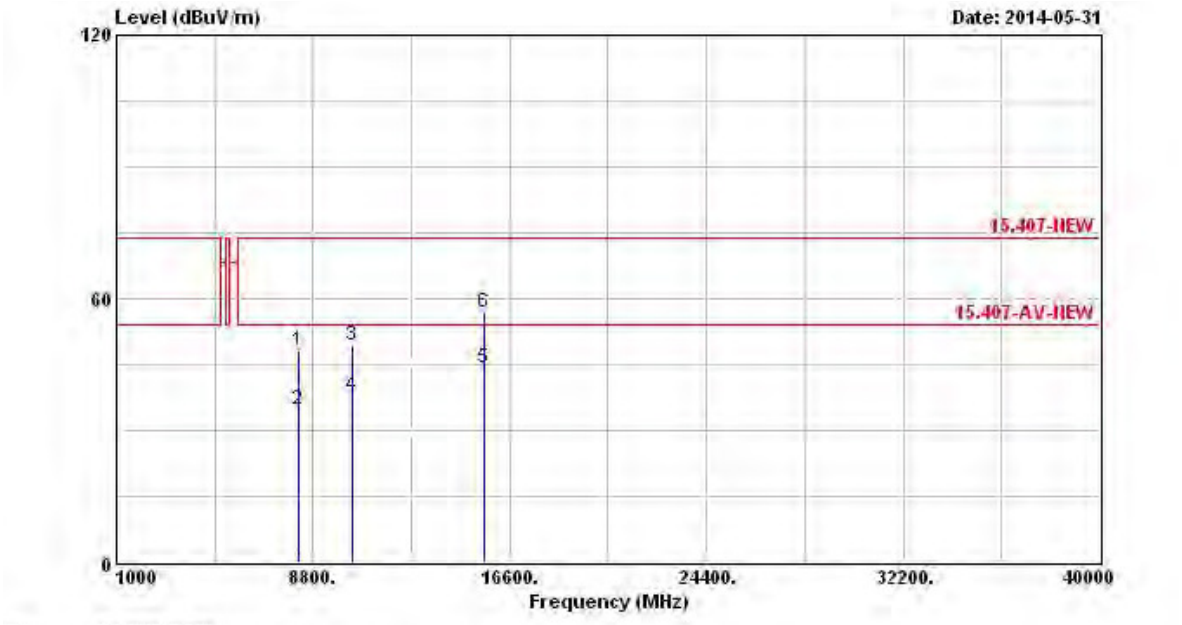
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT20	**Test Freq. (MHz)**	5240
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8276.000	48.58	-25.42	74.00	42.49	35.81	5.40	35.12	Peak	---	---
2	8276.000	34.40	-19.60	54.00	28.31	35.81	5.40	35.12	Average	---	---
3	10480.000	50.49	-23.51	74.00	41.93	37.19	6.30	34.93	Peak	---	---
4	10480.000	38.93	-15.07	54.00	30.37	37.19	6.30	34.93	Average	---	---
5	15720.000	44.64	-9.36	54.00	31.31	40.50	7.86	35.03	Average	---	---
6	15720.000	57.98	-16.02	74.00	44.65	40.50	7.86	35.03	Peak	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

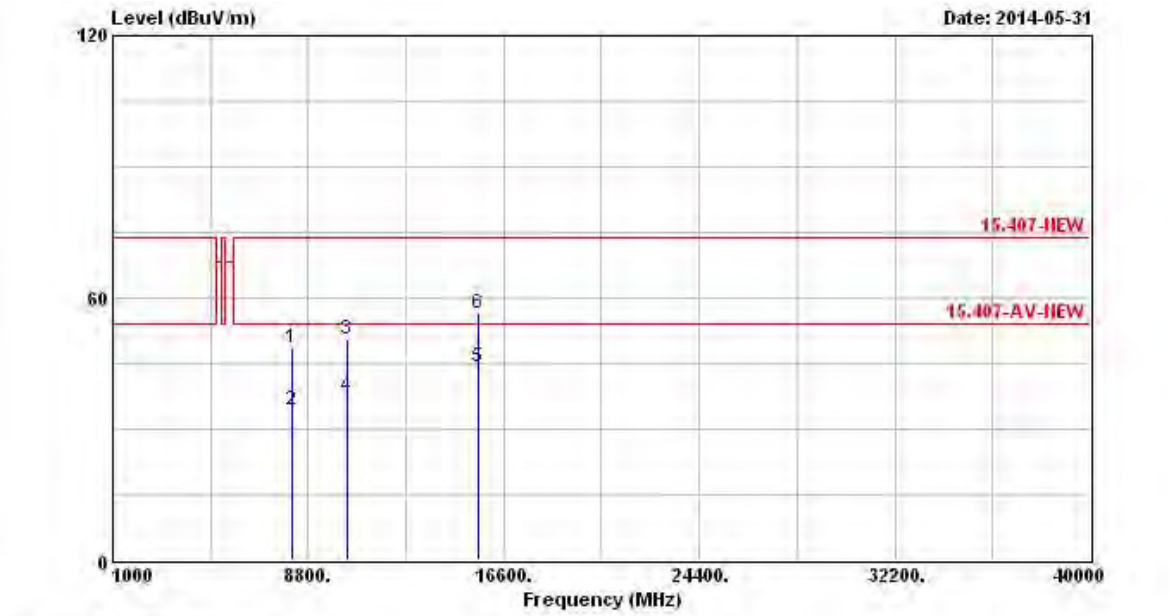
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT40	**Test Freq. (MHz)**	5190
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8224.000	48.19	-25.81	74.00	42.15	35.79	5.38	35.13	Peak	---	---
2	8224.000	34.54	-19.46	54.00	28.50	35.79	5.38	35.13	Average	---	---
3	10380.000	49.35	-24.65	74.00	40.88	37.15	6.35	35.03	Peak	---	---
4	10380.000	37.92	-16.08	54.00	29.45	37.15	6.35	35.03	Average	---	---
5	15570.000	44.20	-9.80	54.00	30.88	40.22	7.96	34.86	Average	---	---
6	15570.000	56.81	-17.19	74.00	43.49	40.22	7.96	34.86	Peak	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

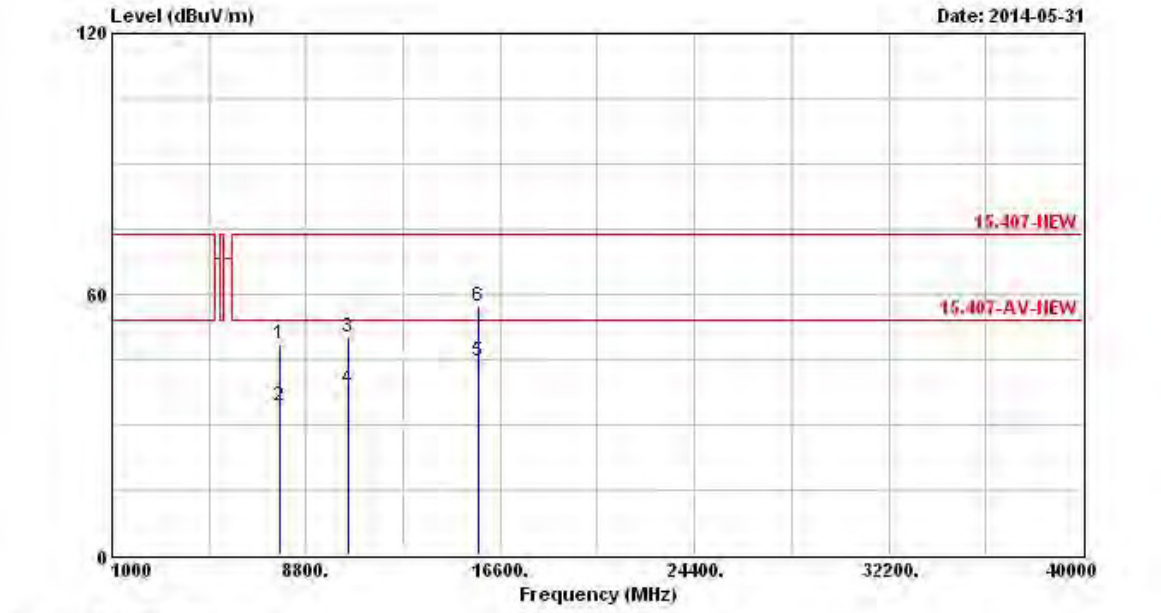
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT40	**Test Freq. (MHz)**	5190
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8176.000	48.45	-25.55	74.00	42.45	35.77	5.37	35.14	Peak	---	---
2	8176.000	34.52	-19.48	54.00	28.52	35.77	5.37	35.14	Average	---	---
3	10380.000	50.45	-23.55	74.00	41.98	37.15	6.35	35.03	Peak	---	---
4	10380.000	37.49	-16.51	54.00	29.02	37.15	6.35	35.03	Average	---	---
5	15570.000	44.20	-9.80	54.00	30.88	40.22	7.96	34.86	Average	---	---
6	15570.000	56.52	-17.48	74.00	43.20	40.22	7.96	34.86	Peak	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

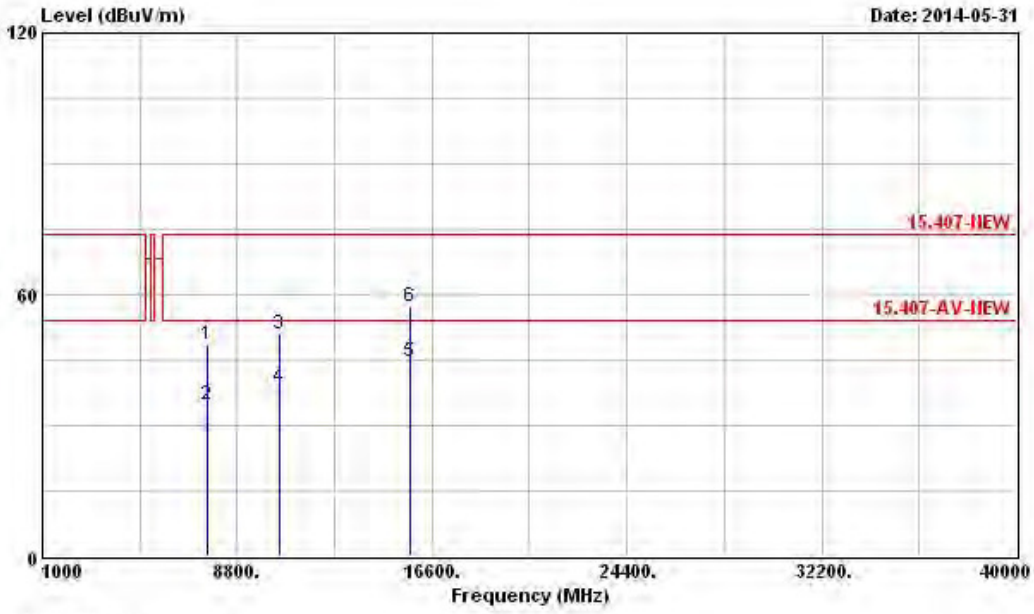
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT40	**Test Freq. (MHz)**	5230
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	7738.000	48.47	-25.53	74.00	42.28	35.75	5.51	35.07	Peak	---	---
2	7738.000	34.47	-19.53	54.00	28.28	35.75	5.51	35.07	Average	---	---
3	10460.000	50.20	-23.80	74.00	41.68	37.18	6.30	34.96	Peak	---	---
4	10460.000	38.11	-15.89	54.00	29.59	37.18	6.30	34.96	Average	---	---
5	15690.000	44.56	-9.44	54.00	31.26	40.44	7.86	35.00	Average	---	---
6	15690.000	57.05	-16.95	74.00	43.75	40.44	7.86	35.00	Peak	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

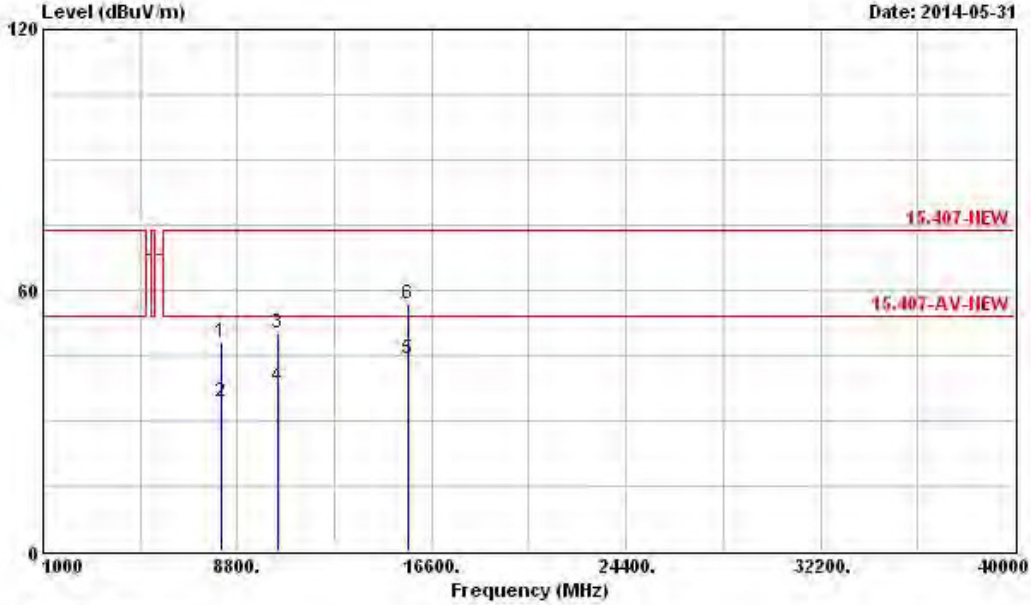
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT40	**Test Freq. (MHz)**	5230
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	7572.000	48.45	-25.55	74.00	42.05	35.78	5.64	35.02	Peak	---	---
2	7572.000	34.61	-19.39	54.00	28.21	35.78	5.64	35.02	Average	---	---
3	10460.000	50.75	-23.25	74.00	42.23	37.18	6.30	34.96	Peak	---	---
4	10460.000	38.75	-15.25	54.00	30.23	37.18	6.30	34.96	Average	---	---
5	15690.000	44.59	-9.41	54.00	31.29	40.44	7.86	35.00	Average	---	---
6	15690.000	57.05	-16.95	74.00	43.75	40.44	7.86	35.00	Peak	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

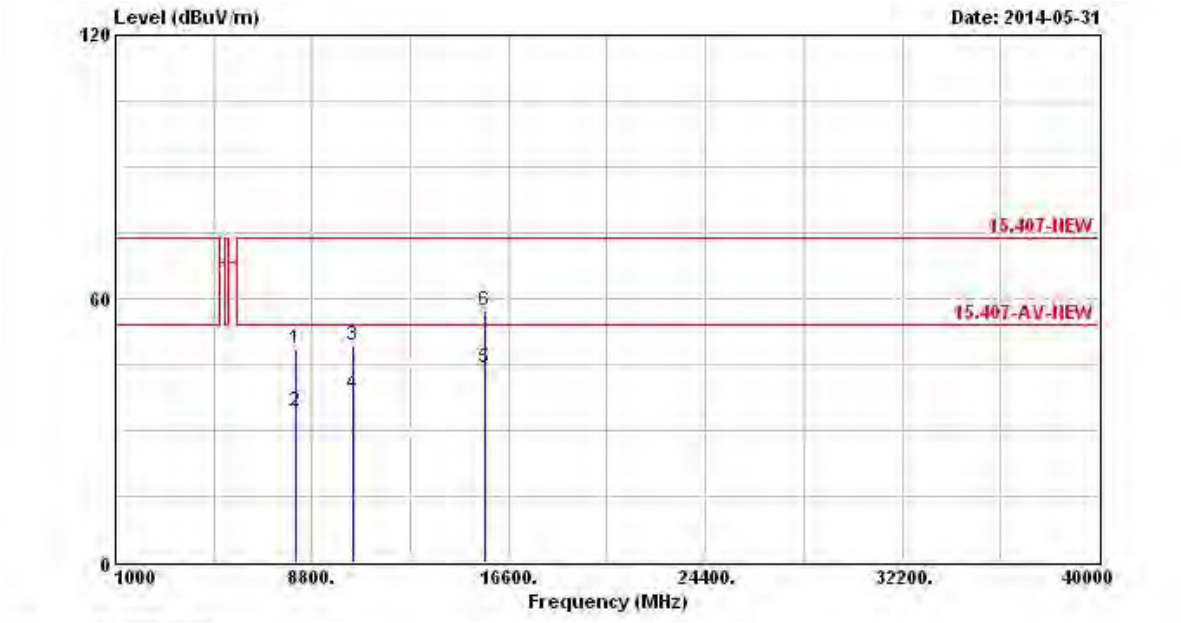
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT80	**Test Freq. (MHz)**	5210
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8122.000	48.17	-25.83	74.00	42.21	35.75	5.36	35.15	Peak	---	---
2	8122.000	34.34	-19.66	54.00	28.38	35.75	5.36	35.15	Average	---	---
3	10420.000	50.30	-23.70	74.00	41.80	37.17	6.33	35.00	Peak	---	---
4	10420.000	38.09	-15.91	54.00	29.59	37.17	6.33	35.00	Average	---	---
5	15630.000	44.39	-9.61	54.00	31.06	40.35	7.92	34.94	Average	---	---
6	15630.000	57.01	-16.99	74.00	43.68	40.35	7.92	34.94	Peak	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT80	**Test Freq. (MHz)**	5210
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8130.000	48.52	-25.48	74.00	42.55	35.75	5.36	35.14	Peak	---	---
2	8130.000	34.38	-19.62	54.00	28.41	35.75	5.36	35.14	Average	---	---
3	10420.000	49.42	-24.58	74.00	40.92	37.17	6.33	35.00	Peak	---	---
4	10420.000	38.38	-15.62	54.00	29.88	37.17	6.33	35.00	Average	---	---
5	15630.000	44.33	-9.67	54.00	31.00	40.35	7.92	34.94	Average	---	---
6	15630.000	57.43	-16.57	74.00	44.10	40.35	7.92	34.94	Peak	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

3.8 Frequency Stability

3.8.1 Frequency Stability Limit

Frequency Stability Limit
UNII Devices
☒ In-band emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.
LE-LAN Devices
☒ N/A
IEEE Std. 802.11n-2009
☒ The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band and ± 25 ppm maximum for the 2.4 GHz band.

3.8.2 Measuring Instruments

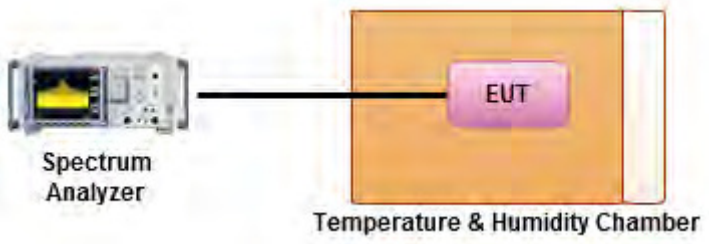
Refer a test equipment and calibration data table in this test report.

3.8.3 Test Procedures

Test Method	
☒ Refer as ANSI C63.10, clause 6.8 for frequency stability tests	
	☒ Frequency stability with respect to ambient temperature
	☒ Frequency stability when varying supply voltage
☒ For conducted measurement.	
	☒ For conducted measurements on devices with multiple transmit chains: Measurements need only to be performed on one of the active transmit chains (antenna outputs)
☐ For radiated measurement. The equipment to be measured and the test antenna shall be oriented to obtain the maximum emitted power level.	

3.8.4 Test Setup

Frequency Stability



3.8.5 Test Result of Frequency Stability

Frequency Stability Result			
Mode		**Frequency Stability (ppm)**	
Condition	**Freq. (MHz)**	**Test Frequency (MHz)**	**Frequency Stability (ppm)**
T20°CVmax	5180	5179.95745	-8.2143
T20°CVmin	5180	5179.95745	-8.2143
T50°CVnom	5180	5179.94147	-11.2992
T40°CVnom	5180	5179.94269	-11.0637
T30°CVnom	5180	5179.94616	-10.3938
T20°CVnom	5180	5179.95745	-8.2143
T10°CVnom	5180	5179.97178	-5.4479
T0°CVnom	5180	5179.99609	-0.7548
T-10°CVnom	5180	5180.01997	3.8552
T-20°CVnom	5180	5180.03256	6.2857
Limit (ppm)		20	
Result		**Complied**	
Note 1: Measure at 85 % [Vmin] and 115 % [Vmax] of the nominal voltage [Vnom]. Note 2: The nominal voltage refer test report clause 1.1.6 for EUT operational condition.			

4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMC Receiver	R&S	ESCS 30	100174	9kHz ~ 2.75GHz	Mar. 26, 2014	AC Conduction
LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	8127-477	9kHz ~ 30MHz	Jan. 21, 2014	AC Conduction
RF Cable-CON	HUBER+SUHNER	RG213/U	0-7611832020001	9kHz ~ 30MHz	Oct. 30, 2013	AC Conduction
EMI Filter	LINDGREN	LRE-2030	2651	< 450 Hz	N/A	AC Conduction

Note: Calibration Interval of instruments listed above is one year.

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	R&S	FSV 40	101013	9kHz ~ 40GHz	Jan. 28, 2014	RF Conducted
Temp. and Humidity Chamber	Giant Force	GTH-225-20-SP-SD	MAA1112-007	-20 ~ 100℃	Nov. 21, 2013	RF Conducted
Generator	R&S	SMB 100A	175727	100kHz ~ 40GHz	Jan. 07, 2014	RF Conducted

Note: Calibration Interval of instruments listed above is one year.

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	R&S	FSP40	100593	9kHz ~ 40GHz	Oct. 03, 2013	Radiation
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz ~ 1GHz 3m	May 11, 2014	Radiation
Amplifier	Agilent	8447D	2944A11149	100kHz ~ 1.3GHz	Jul. 18, 2013	Radiation
Amplifier	Agilent	8449B	3008A02373	1GHz ~ 26.5GHz	Aug. 28, 2013	Radiation
Horn Antenna	ETS-LINDGREN	3117	00091920	1GHz ~ 18GHz	Nov. 25, 2013	Radiation
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15GHz ~ 40GHz	Jan. 10, 2014	Radiation
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	Nov. 09, 2013	Radiation
RF Cable-high	SUHNER	SUCOFLEX106	03CH02-HY	1GHz ~ 40GHz	Mar. 05, 2014	Radiation
Bilog Antenna	SCHAFFNER	CBL61128	2723	30MHz ~ 2GHz	Oct. 10, 2013	Radiation
Turn Table	Chaintek Instruments	3000	MF7802058	0~ 360 degree	N/A	Radiation
Antenna Mast	MF	MF7802	MF780208205	1 ~ 4 m	N/A	Radiation

Note: Calibration Interval of instruments listed above is one year.

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Amplifier	MITEQ	AMF-6F-260400	9121372	26.5GHz ~ 40GHz	Apr. 19, 2013	Radiation
Loop Antenna	TESEQ	HLA 6120	31244	9 kHz - 30 MHz	Dec. 02, 2012	Radiation

Note: Calibration Interval of instruments listed above is two year.