



# FCC Test Report

**Equipment** : AC1900 Wireless Dual Band Gigabit Router  
**Brand Name** : TP-LINK  
**Model No.** : Archer C9  
**FCC ID** : TE7C9V2  
**Standard** : 47 CFR FCC Part 15.407  
**Operating Band** : 5150 MHz – 5250 MHz  
**FCC Classification** : NII  
**Applicant** : TP-LINK TECHNOLOGIES CO., LTD.  
**Manufacturer** : Building 24 (floors 1,3,4,5) and 28 (floors 1-4)  
Central Science and Technology Park, Shennan Rd,  
Nanshan, Shenzhen, China  
**Function** :  Outdoor AP  Indoor AP  
 Fixed P2P AP  Portable Client

The product sample received on Aug. 05, 2015 and completely tested on Sep. 16, 2015. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 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:



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Kevin Liang / Assistant Manager





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### APPENDIX A. TEST PHOTOS

### APPENDIX B. PHOTOGRAPHS OF EUT



## Summary of Test Result

Conformance Test Specifications			
Report Clause	Ref. Std. Clause	Description	Result
1.1.2	15.203	Antenna Requirement	Complied
3.1	15.207	AC Power-line Conducted Emissions	Complied
3.2	15.407(a)	Emission Bandwidth	Complied
3.3	15.407(a)	RF Output Power (Maximum Conducted Output Power)	Complied
3.4	15.407(a)	Peak Power Spectral Density	Complied
3.5	15.407(b)	Transmitter Bandedge Emissions	Complied
3.6	15.407(b)	Transmitter Unwanted Emissions	Complied
3.6.9	15.407(g)	Frequency Stability	Complied



## Revision History



## 1 General Description

### 1.1 Information

#### 1.1.1 RF General Information

RF General Information (non-beamforming)						
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N <sub>TX</sub> )	RF Output Power (dBm)	Co-location
5150-5250	a	5180-5240	36-48 [4]	3	25.45	Yes
5150-5250	n (HT20)	5180-5240	36-48 [4]	3	26.16	Yes
5150-5250	n (HT40)	5190-5230	38-46 [2]	3	26.51	Yes
5150-5250	ac (VHT20)	5180-5240	36-48 [4]	3	26.11	Yes
5150-5250	ac (VHT40)	5190-5230	38-46 [2]	3	26.59	Yes
5150-5250	ac (VHT80)	5210	42 [1]	3	18.80	Yes

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.)

RF General Information (beamforming)					
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N <sub>TX</sub> )	RF Output Power (dBm)
5150-5250	ac (VHT20)	5180-5240	36-48 [4]	3	26.67
5150-5250	ac (VHT40)	5190-5230	38-46 [2]	3	26.51
5150-5250	ac (VHT80)	5210	42 [1]	3	17.83

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.



### 1.1.2 Antenna Information

Antenna Category	
<input type="checkbox"/>	Integral antenna (antenna permanently attached)
	<input type="checkbox"/> Temporary RF connector provided
	<input type="checkbox"/> No temporary RF connector provided Transmit chains bypass antenna and soldered temporary RF connector provided for connected measurement. In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator and correct for all losses in the RF path.
<input checked="" type="checkbox"/>	External antenna (dedicated antennas)
	<input type="checkbox"/> Single power level with corresponding antenna(s).
	<input checked="" type="checkbox"/> Multiple power level and corresponding antenna(s).

Antenna General Information (non-beamforming)				
No.	Ant. Cat.	Ant. Type	Ant. Connector	Gain (dBi)
1	External	Dipole	Reverse SMA	1.68
2	External	Dipole	Reverse SMA	1.68
3	External	Dipole	Reverse SMA	1.68

Remark: 11a/n/ac only includes 3TX to emission. IEEE 802.11n/ac has the CDD function.

Antenna General Information (beamforming)				
No.	Ant. Cat.	Ant. Type	Ant. Connector	Gain (dBi)
1	External	Dipole	Reverse SMA	6.45
2	External	Dipole	Reverse SMA	6.45
3	External	Dipole	Reverse SMA	6.45

Remark: 11a/n/ac only includes 3TX to emission. IEEE 802.11n/ac has the CDD function.



### 1.1.3 Type of EUT

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

### 1.1.4 Test Signal Duty Cycle

Operated Mode for Worst Duty Cycle (non-beamforming)	
<input type="checkbox"/> Operated normally mode for worst duty cycle	
<input checked="" type="checkbox"/> Operated test mode for worst duty cycle	
Test Signal Duty Cycle (x)	Power Duty Factor [dB] – (10 log 1/x)
<input checked="" type="checkbox"/> 100.00% - IEEE 802.11a	0.00
<input checked="" type="checkbox"/> 100.00% - IEEE 802.11n (HT20)	0.00
<input checked="" type="checkbox"/> 100.00% - IEEE 802.11n (HT40)	0.00
<input checked="" type="checkbox"/> 100.00% - IEEE 802.11ac (VHT20)	0.00
<input checked="" type="checkbox"/> 100.00% - IEEE 802.11ac (VHT40)	0.00
<input checked="" type="checkbox"/> 100.00% - IEEE 802.11ac (VHT80)	0.00

Operated Mode for Worst Duty Cycle (beamforming)	
<input type="checkbox"/> Operated normally mode for worst duty cycle	
<input checked="" type="checkbox"/> Operated test mode for worst duty cycle	
Test Signal Duty Cycle (x)	Power Duty Factor [dB] – (10 log 1/x)
<input checked="" type="checkbox"/> 95.08% - IEEE 802.11ac (VHT20)	0.22
<input checked="" type="checkbox"/> 94.93% - IEEE 802.11ac (VHT40)	0.23
<input checked="" type="checkbox"/> 93.34% - IEEE 802.11ac (VHT80)	0.30

### 1.1.5 EUT Operational Condition

Supply Voltage	<input checked="" type="checkbox"/> AC mains	<input type="checkbox"/> DC	
Type of DC Source	<input type="checkbox"/> Internal DC supply	<input checked="" type="checkbox"/> External AC adapter	<input type="checkbox"/> Battery



## 1.2 Accessories and Support Equipment

Accessories Information				
AC Adapter	Brand Name	TEN PAO	Model Name	S048CU1200330
	Power Rating	I/P:100 - 240Vac, 1.5A, O/P:12Vdc, 3.3A		
	Power Cord	1.5meter, non-shielded cable, w/o ferrite core		

Note: Regarding to more detail and other information, please refer to user manual.

### (non-beamforming)

Support Equipment - RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5540	DoC
2	Adapter for Notebook	DELL	HA65NM130	DoC

### (beamforming)

Support Equipment - RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5540	DoC
2	Adapter for Notebook	DELL	HA65NM130	DoC
3	PC	HP	Z201	NA

Note : The PC provides is by customer.

Support Equipment - AC Conduction and Radiated Emission				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook (Remote)	DELL	E5530	DoC
2	Adapter for Notebook (Remote)	DELL	LA65NS2-01	DoC
3	PC (Remote)	HP	Z201	NA

Note : The PC provides is by customer.



## 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 C63.10-2013
- ♦ FCC KDB 789033 D02 v01
- ♦ FCC KDB 644545 D03 v01
- ♦ FCC KDB 662911 v02r01
- ♦ FCC-14-30A1-UNII

## 1.4 Testing Location Information

Testing Location			
	HWA YA	ADD	TEL : 886-3-327-3456 FAX : 886-3-327-0973
Test Condition	Test Site No.	Test Engineer	Test Environment
AC Conduction	CO04-HY	Zeus	22°C / 62%
RF Conducted	TH06-HY	Leo	25.4°C / 63% (non-beamforming)
RF Conducted	TH06-HY	Rory	22.8°C / 63% (beamforming)
Radiated Emission	03CH03-HY	Hunter	26°C / 64.1%



## 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	±2.3 dB	
Emission bandwidth, 26dB bandwidth	±0.5%	
RF output power, conducted	±0.1 dB	
Power density, conducted	±0.5 dB	
Unwanted emissions, conducted	9 – 150 kHz	±0.4 dB
	0.15 – 30 MHz	±0.4 dB
	30 – 1000 MHz	±0.6 dB
	1 – 18 GHz	±0.5 dB
	18 – 40 GHz	±0.5 dB
	40 – 200 GHz	N/A
All emissions, radiated	9 – 150 kHz	±2.5 dB
	0.15 – 30 MHz	±2.3 dB
	30 – 1000 MHz	±2.6 dB
	1 – 18 GHz	±3.6 dB
	18 – 40 GHz	±3.8 dB
	40 – 200 GHz	N/A
Temperature	±0.8 °C	
Humidity	±5 %	
DC and low frequency voltages	±0.9%	
Time	±1.4 %	
Duty Cycle	±0.5 %	



## 2 Test Configuration of EUT

### 2.1 The Worst Case Modulation Configuration

Worst Modulation Used for Conformance Testing (non-beamforming)			
Modulation Mode	Transmit Chains (N <sub>TX</sub> )	Data Rate / MCS	Worst Data Rate / MCS
11a	3	6-54Mbps	6 Mbps
HT20	3	MCS 0-23	MCS 0
HT40	3	MCS 0-23	MCS 0
VHT20	3	MCS 0-8	MCS 0
VHT40	3	MCS 0-9	MCS 0
VHT80	3	MCS 0-9	MCS 0

Worst Modulation Used for Conformance Testing (beamforming)			
Modulation Mode	Transmit Chains (N <sub>TX</sub> )	Data Rate / MCS	Worst Data Rate / MCS
VHT20	3	MCS 0-8	MCS 0
VHT40	3	MCS 0-9	MCS 0
VHT80	3	MCS 0-9	MCS 0



## 2.2 The Worst Case Power Setting Parameter

The Worst Case Power Setting Parameter (5150-5250MHz band) (non-beamforming)							
Test Software Version	MTool_2.0.1.1						
Modulation Mode	N <sub>TX</sub>	Test Frequency (MHz)					
		NCB: 20MHz		NCB: 40MHz		NCB: 80MHz	
		5180	5200	5240	5190	5230	5210
11a	3	77	77	77	-	-	-
HT20	3	73	80	80	-	-	-
HT40	3	-	-	-	60	82	-
VHT20	3	73	80	80	-	-	-
VHT40	3	-	-	-	60	82	-
VHT80	3	-	-	-	-	-	50

The Worst Case Power Setting Parameter (5150-5250MHz band) (beamforming)							
Test Software Version	DOS						
Modulation Mode	N <sub>TX</sub>	Test Frequency (MHz)					
		NCB: 20MHz		NCB: 40MHz		NCB: 80MHz	
		5180	5200	5240	5190	5230	5210
VHT20	3	75	82	82	-	-	-
VHT40	3	-	-	-	56	82	-
VHT80	3	-	-	-	-	-	44



## 2.3 The Worst Case Measurement Configuration

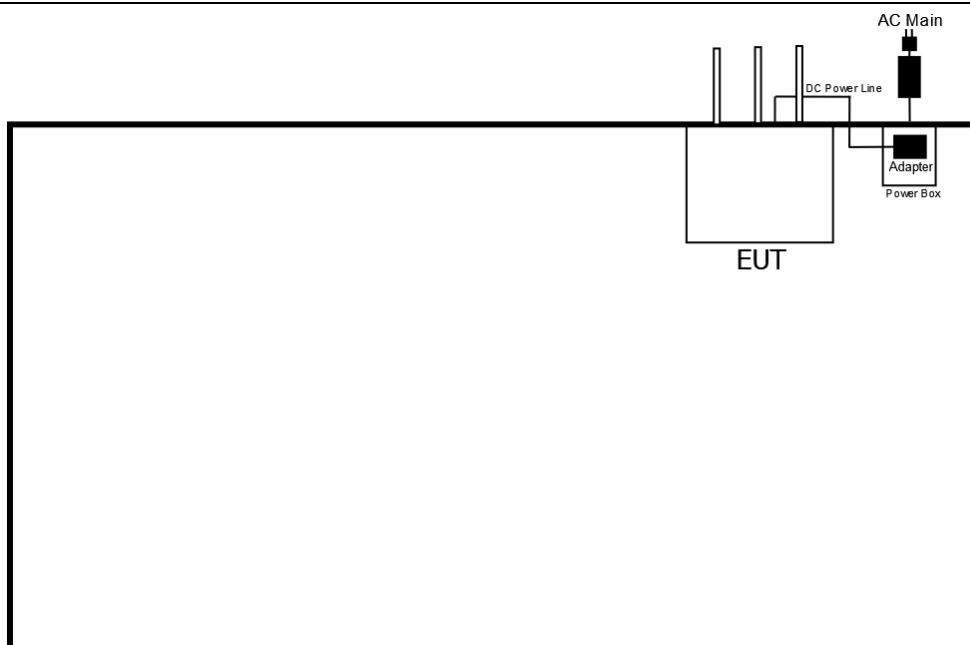
The Worst Case Mode for Following Conformance Tests	
<b>Tests Item</b>	AC power-line conducted emissions
<b>Condition</b>	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
<b>Operating Mode</b>	Operating Mode Description
1	Adapter Mode and Transmit (non-beamforming)
2	Adapter Mode and Transmit (beamforming)

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

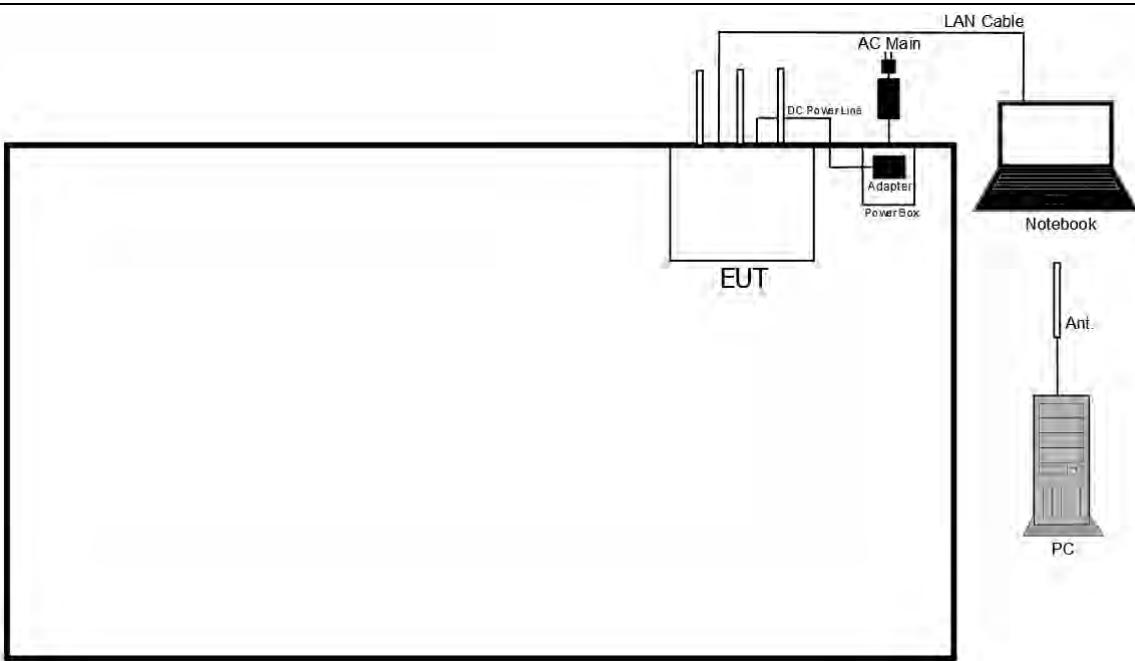
The Worst Case Mode for Following Conformance Tests							
<b>Tests Item</b>	Transmitter Radiated Unwanted Emissions Transmitter Radiated Bandedge Emissions						
<b>Test Condition</b>	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.						
<b>User Position</b>	<input type="checkbox"/> EUT will be placed in fixed position. <input checked="" type="checkbox"/> EUT will be placed in mobile position and operating multiple positions. EUT shall be performed three orthogonal planes. <input type="checkbox"/> EUT will be a hand-held or body-worn battery-powered devices and operating multiple positions.						
<b>Operating Mode</b>	Operating Mode Description						
1	Adapter Mode and Transmit (non-beamforming)						
2	Adapter Mode and Transmit (beamforming)						
<b>Modulation Mode</b>	11a, HT20, HT40, VHT20, VHT40, VHT80						
<b>Orthogonal Planes of EUT</b>	<table border="1"><thead><tr><th>X Plane</th><th>Y Plane</th><th>Z Plane</th></tr></thead><tbody><tr><td></td><td></td><td></td></tr></tbody></table>	X Plane	Y Plane	Z Plane			
X Plane	Y Plane	Z Plane					
<b>Worst Planes of EUT</b>	V						

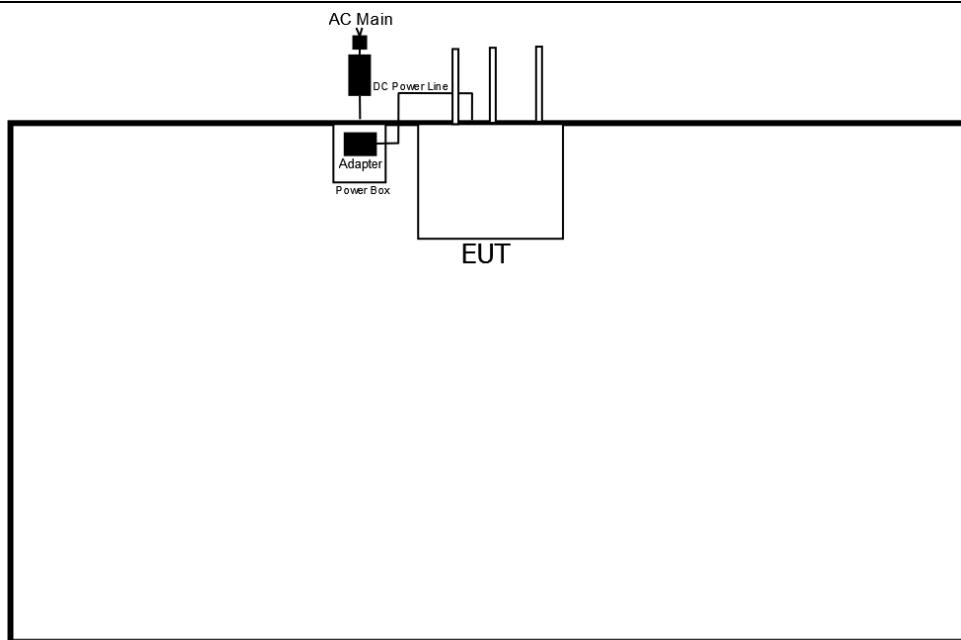
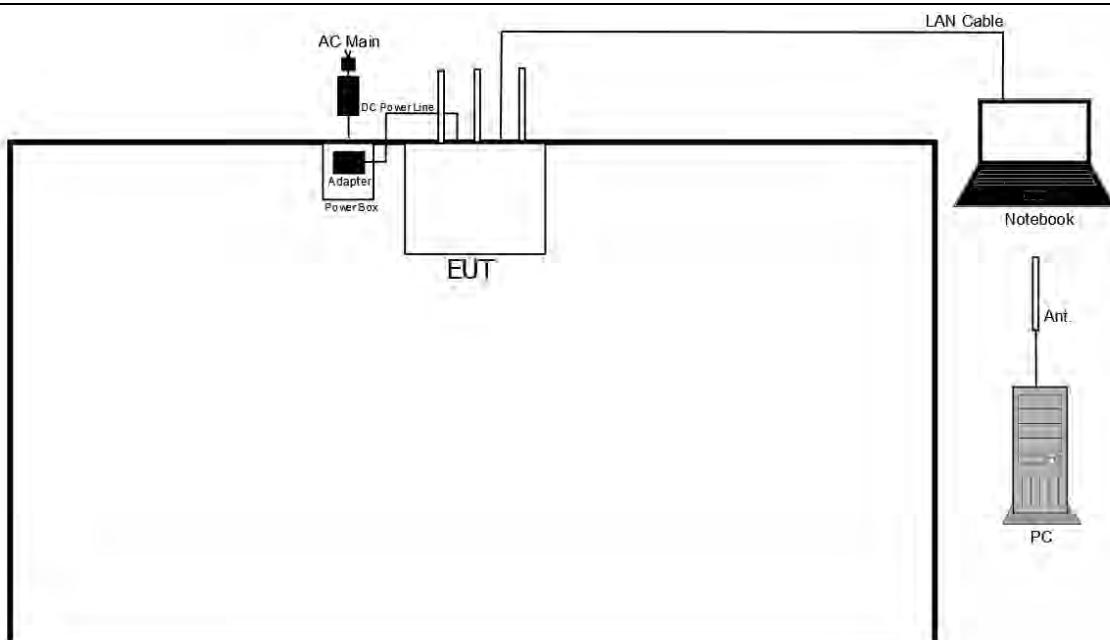
## 2.4 Test Setup Diagram

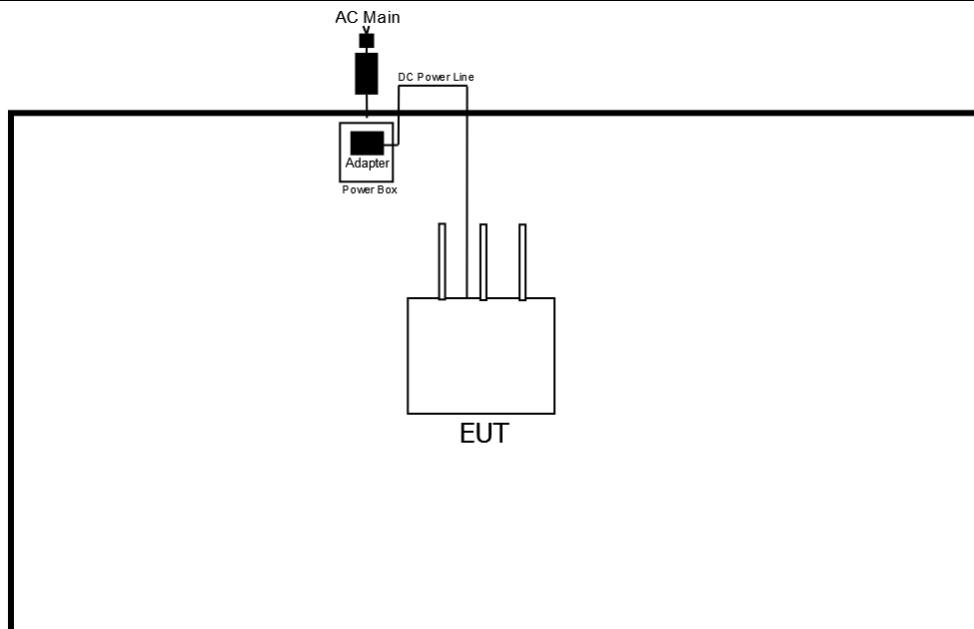
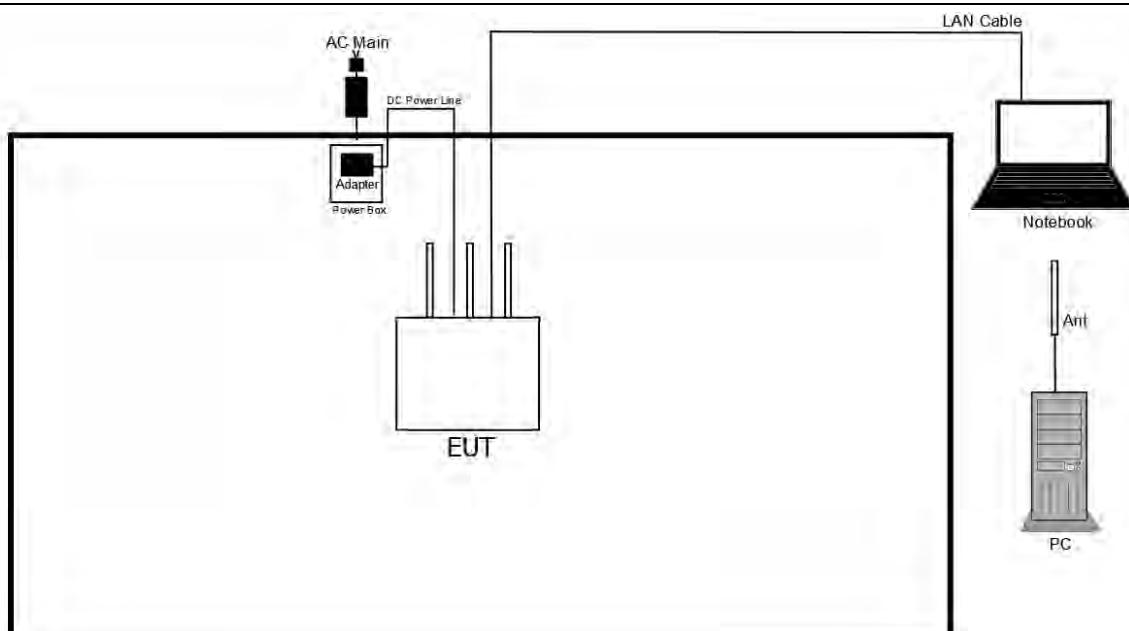
**Test Setup Diagram – AC Line Conducted Emission Test - Mode 1**



**Test Setup Diagram – AC Line Conducted Emission Test - Mode 2**



**Test Setup Diagram - Radiated Emission (Below 1GHz) - Mode 1****Test Setup Diagram - Radiated Emission (Below 1GHz) - Mode 2**

**Test Setup Diagram - Radiated Emission (Above 1GHz) - Mode 1****Test Setup Diagram - Radiated Emission (Above 1GHz) - Mode 2**

### 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.

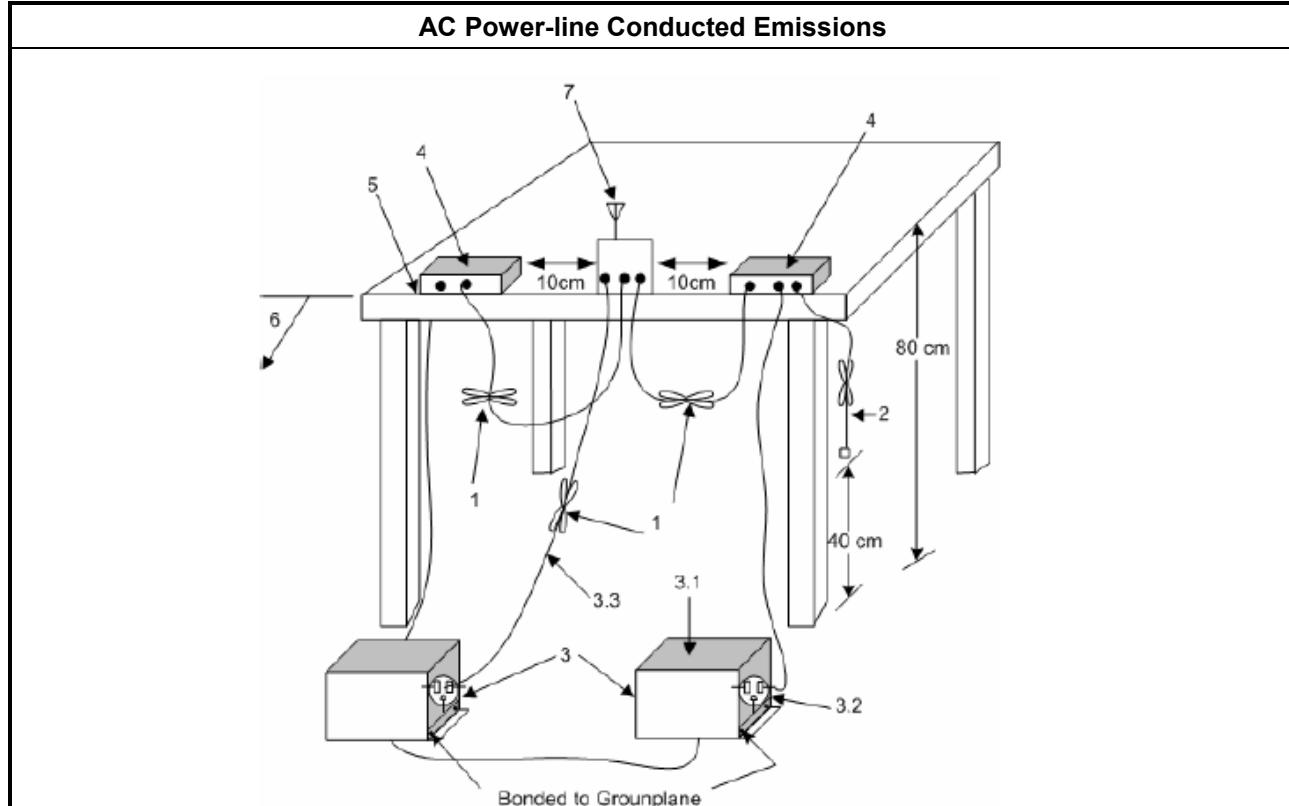
##### 3.1.2 Measuring Instruments

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

##### 3.1.3 Test Procedures

Test Method
<input checked="" type="checkbox"/> Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

##### 3.1.4 Test Setup



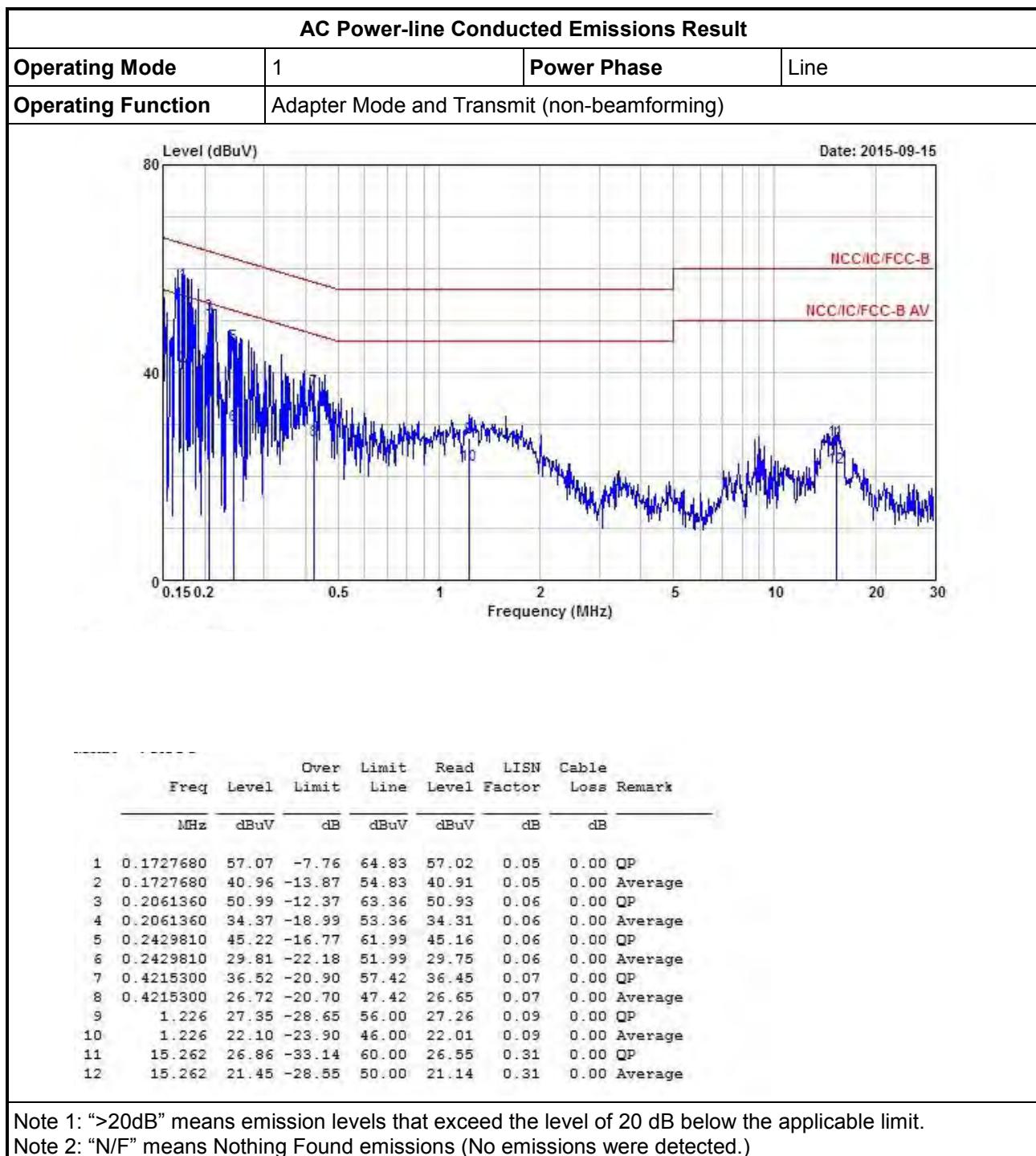


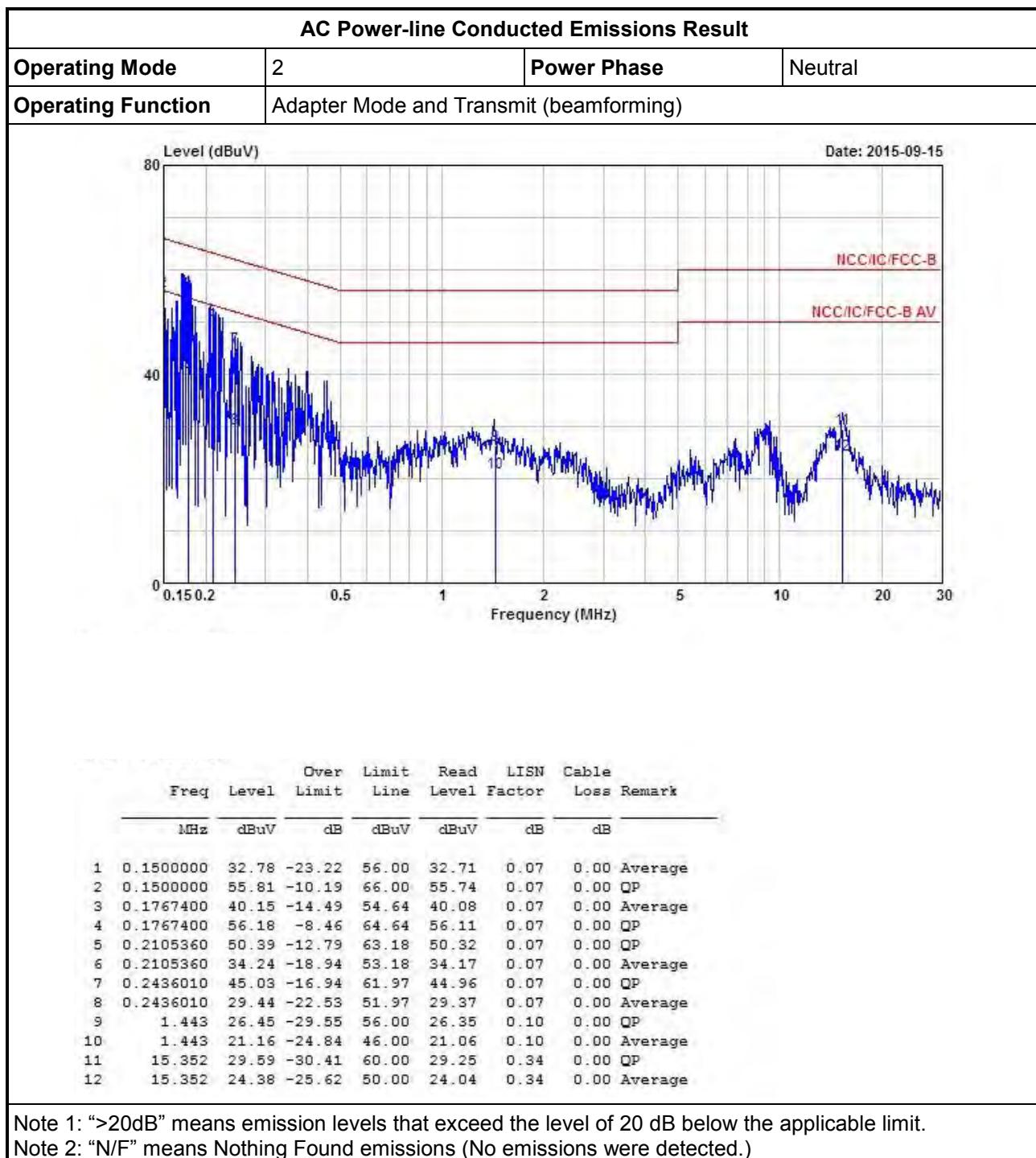
## 3.1.5 Test Result of AC Power-line Conducted Emissions

AC Power-line Conducted Emissions Result							
Operating Mode	1	Power Phase	Neutral				
Operating Function	Adapter Mode and Transmit (non-beamforming)						
Level (dBuV)							Date: 2015-09-15
Freq							
MHz		Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		dB	dBuV	dBuV	dB	dB	
1	0.1500000	55.30	-10.70	66.00	55.23	0.07	0.00 QP
2	0.1500000	32.34	-23.66	56.00	32.27	0.07	0.00 Average
3	0.1730690	57.37	-7.44	64.81	57.30	0.07	0.00 QP
4	0.1730690	41.70	-13.11	54.81	41.63	0.07	0.00 Average
5	0.2061360	51.10	-12.26	63.36	51.03	0.07	0.00 QP
6	0.2061360	34.88	-18.48	53.36	34.81	0.07	0.00 Average
7	0.4547500	34.61	-22.18	56.79	34.54	0.07	0.00 QP
8	0.4547500	21.68	-25.11	46.79	21.61	0.07	0.00 Average
9	1.400	26.60	-29.40	56.00	26.51	0.09	0.00 QP
10	1.400	21.39	-24.61	46.00	21.30	0.09	0.00 Average
11	14.998	27.99	-32.01	60.00	27.66	0.33	0.00 QP
12	14.998	22.20	-27.80	50.00	21.87	0.33	0.00 Average

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.

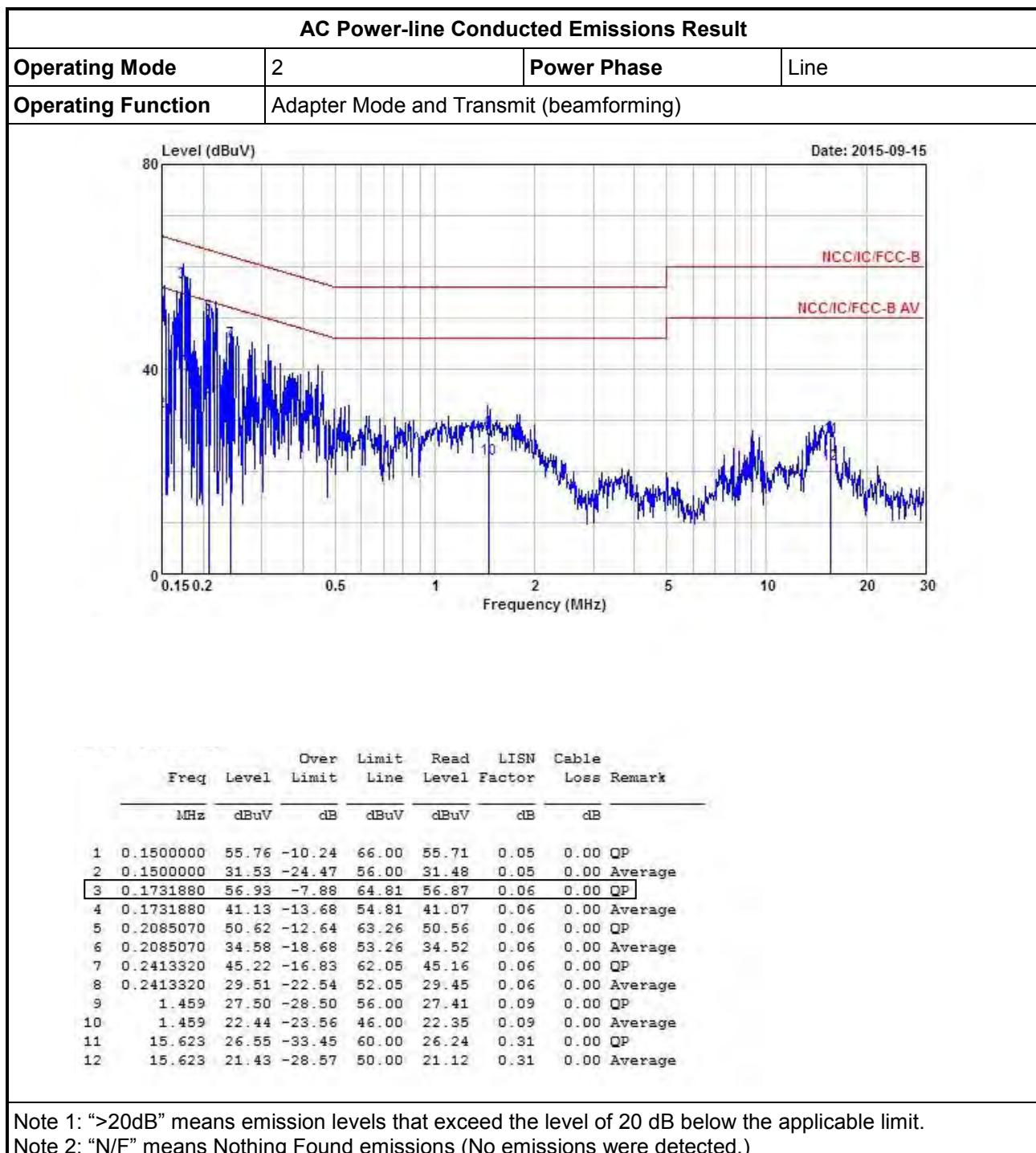
Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)





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.)



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 Limit

Emission Bandwidth Limit	
<b>UNII Devices</b>	
<input checked="" type="checkbox"/>	For the 5.15-5.25 GHz band
<input type="checkbox"/>	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.
<input type="checkbox"/>	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.
<input type="checkbox"/>	For the 5.725-5.85 GHz band, 6 dB emission bandwidth $\geq$ 500kHz.

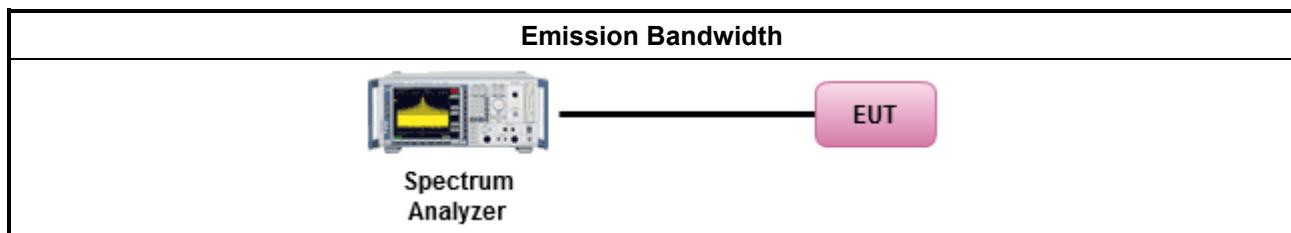
### 3.2.2 Measuring Instruments

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

### 3.2.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	For the emission bandwidth shall be measured using one of the options below:
	<input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02 v01, clause C for EBW and clause D for OBW measurement.
	<input type="checkbox"/> Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.
	<input type="checkbox"/> Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.
<input checked="" type="checkbox"/>	For conducted measurement.
	<input type="checkbox"/> The EUT supports single transmit chain and measurements performed on this transmit chain.
	<input type="checkbox"/> The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case.
	<input checked="" type="checkbox"/> The EUT supports multiple transmit chains using options given below:
	<input type="checkbox"/> 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.
	<input checked="" type="checkbox"/> 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





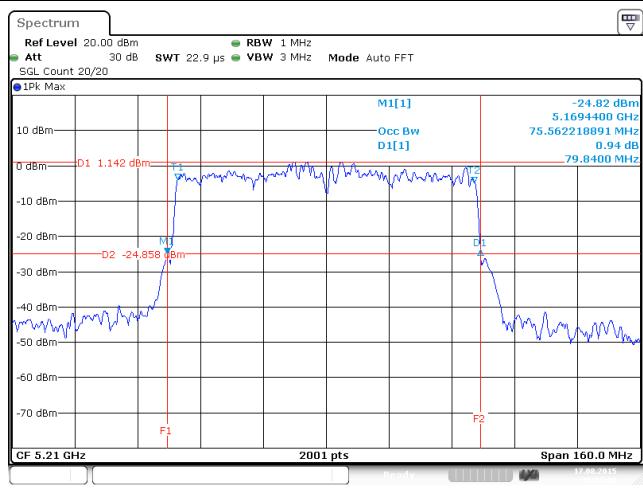
## 3.2.5 Test Result of Emission Bandwidth

UNII Emission Bandwidth Result (5150-5250MHz band) (non-beamforming)								
Condition			Emission Bandwidth (MHz)					
Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	99% Bandwidth(MHz)			26dB Bandwidth(MHz)		
			Chain Port 1	Chain Port 2	Chain Port 3	Chain Port 1	Chain Port 2	Chain Port 3
11a	3	5180	16.56	16.49	16.49	19.82	19.67	19.57
11a	3	5200	16.41	16.59	16.76	19.57	20.00	19.90
11a	3	5240	16.81	16.61	16.49	20.30	19.80	19.30
HT20	3	5180	17.86	17.91	18.01	20.17	20.17	20.70
HT20	3	5200	17.81	17.69	17.71	20.32	19.45	19.62
HT20	3	5240	17.94	17.66	17.76	20.22	20.10	20.00
HT40	3	5190	36.18	36.34	36.42	39.20	39.24	38.84
HT40	3	5230	36.46	36.86	36.34	39.48	39.44	39.12
VHT20	3	5180	18.01	17.86	17.76	20.42	20.22	19.85
VHT20	3	5200	18.06	17.69	18.06	20.92	19.90	20.65
VHT20	3	5240	17.66	17.76	17.74	19.60	20.22	20.27
VHT40	3	5190	36.26	36.46	36.46	39.80	39.00	39.00
VHT40	3	5230	36.50	36.62	36.50	39.44	38.84	39.40
VHT80	3	5210	75.56	75.72	75.64	79.84	79.20	79.44
Result			Complied					

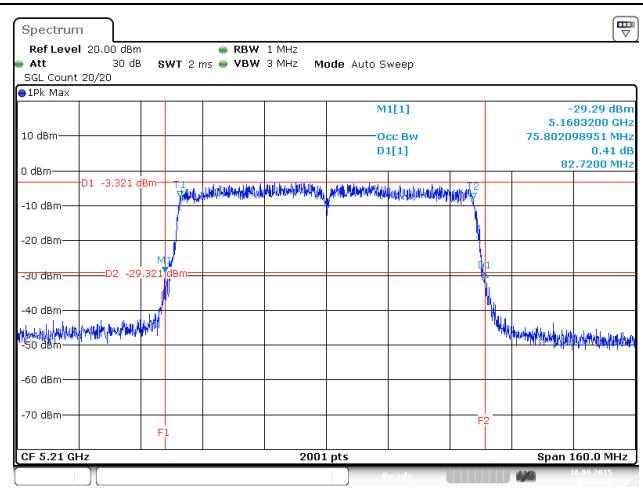
UNII Emission Bandwidth Result (5150-5250MHz band) (beamforming)								
Condition			Emission Bandwidth (MHz)					
Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	99% Bandwidth(MHz)			26dB Bandwidth(MHz)		
			Chain Port 1	Chain Port 2	Chain Port 3	Chain Port 1	Chain Port 2	Chain Port 3
VHT20	3	5180	17.76	17.71	17.81	19.85	19.75	19.92
VHT20	3	5200	17.89	17.84	17.71	19.97	20.85	19.80
VHT20	3	5240	17.74	18.01	17.64	20.27	20.57	19.62
VHT40	3	5190	36.46	36.46	36.46	40.20	40.64	40.64
VHT40	3	5230	36.50	36.62	36.66	43.52	42.44	43.88
VHT80	3	5210	75.80	75.64	75.64	82.72	81.44	82.32
Result			Complied					



## 5150-5250MHz - Worst Emission 99% / 26dB Bandwidth Plots (non-beamforming)



## 5150-5250MHz - Worst Emission 99% / 26dB Bandwidth Plots (beamforming)





### 3.3 RF Output Power

#### 3.3.1 RF Output Power Limit

Maximum Conducted Output Power Limit	
<b>UNII Devices</b>	
<input checked="" type="checkbox"/> For the 5.15-5.25 GHz band:	
<input type="checkbox"/> 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 $\leq 125$ mW [21dBm]	
<input checked="" type="checkbox"/> Indoor AP: the maximum conducted output power ( $P_{Out}$ ) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$	
<input type="checkbox"/> 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 $P_{Out} = 30 - (G_{TX} - 23)$ .	
<input type="checkbox"/> 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 $P_{Out} = 24 - (G_{TX} - 6)$ .	
<input type="checkbox"/> 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 $P_{Out} = 24 - (G_{TX} - 6)$ .	
<input type="checkbox"/> 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 $P_{Out} = 24 - (G_{TX} - 6)$ .	
<input type="checkbox"/> For the 5.725-5.85 GHz band:	
<input type="checkbox"/> 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 $P_{Out} = 30 - (G_{TX} - 6)$ .	
<input type="checkbox"/> 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.	

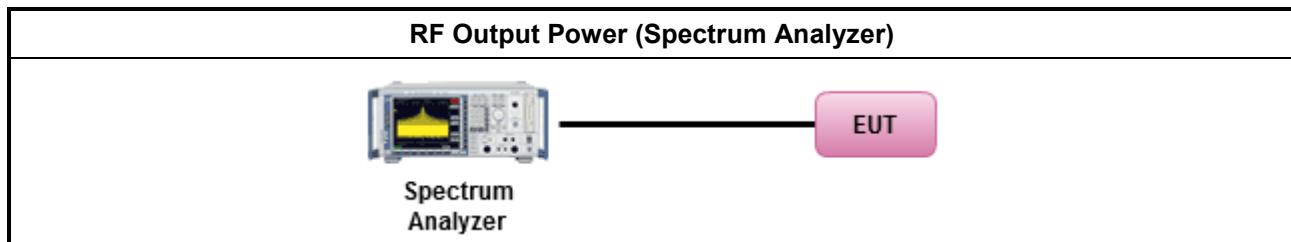
#### 3.3.2 Measuring Instruments

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

### 3.3.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/> Maximum Conducted Output Power	
	[duty cycle $\geq$ 98% or external video / power trigger]
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033 D02 v01, clause E Method SA-1 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033 D02 v01, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)
	duty cycle $<$ 98% and average over on/off periods with duty factor
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033 D02 v01, clause E Method SA-2 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033 D02 v01, 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
<input type="checkbox"/>	Refer as FCC KDB 789033 D02 v01, clause E Method PM (using an RF average power meter).
<input checked="" type="checkbox"/> For conducted measurement.	
<input type="checkbox"/>	The EUT supports single transmit chain and measurements performed on this transmit chain
<input type="checkbox"/>	The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case.
<input checked="" type="checkbox"/>	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.
<input checked="" type="checkbox"/>	If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

### 3.3.4 Test Setup





### 3.3.5 Directional Gain for Power Measurement

Directional Gain (DG) Result (non-beamforming)					
Transmit Chains No.		1	2	3	-
Maximum $G_{ANT}$ (dBi)		1.68	1.68	1.68	-
Modulation Mode	DG (dBi) (See the Note 3)	$N_{TX}$	$N_{SS}$ (Min.)	STBC	Array Gain (dB)
11a	1.68	3	1	-	0.00
HT20	1.68	3	1	-	0.00
HT40	1.68	3	1	-	0.00
VHT20	1.68	3	1	-	0.00
VHT40	1.68	3	1	-	0.00
VHT80	1.68	3	1	-	0.00

Note 1: For all transmitter outputs with equal antenna gains, directional gain is to be computed as follows:  
 Any transmit signals are correlated, Directional Gain =  $G_{ANT} + 10 \log(N_{TX})$   
 All transmit signals are completely uncorrelated, Directional Gain =  $G_{ANT}$

Note 2: For all transmitter outputs with unequal antenna gains, directional gain is to be computed as follows:  
 Any transmit signals are correlated, Directional Gain =  $10 \log[(10^{G_{1/20}} + \dots + 10^{G_{N/20}})^2 / N_{TX}]$   
 All transmit signals are completely uncorrelated, Directional Gain =  $10 \log[(10^{G_{1/10}} + \dots + 10^{G_{N/10}}) / N_{TX}]$

Note 3: For Spatial Multiplexing, Directional Gain (DG) =  $G_{ANT} + 10 \log(N_{TX}/N_{SS})$ ,  
 where  $N_{SS}$  = the number of independent spatial streams data.

Note 4: For CDD transmissions, directional gain is calculated as power measurements:  
 Directional Gain (DG) =  $G_{ANT} + \text{Array Gain}$ , where Array Gain is as follows:  
 Array Gain = 0 dB (i.e., no array gain) for  $N_{TX} \leq 4$ ;  
 Array Gain = 0 dB (i.e., no array gain) for channel widths  $\geq 40$  MHz for any  $N_{TX}$ ;

Directional Gain (DG) Result (beamforming)					
Transmit Chains No.		1	2	3	-
Maximum $G_{ANT}$ (dBi)		6.45	6.45	6.45	-
Modulation Mode	DG (dBi) (See the Note 3)	$N_{TX}$	$N_{SS}$ (Min.)	STBC	Array Gain (dB)
VHT20	6.45	3	1	-	0.00
VHT40	6.45	3	1	-	0.00
VHT80	6.45	3	1	-	0.00

Note 1: For all transmitter outputs with equal antenna gains, directional gain is to be computed as follows:  
 Any transmit signals are correlated, Directional Gain =  $G_{ANT} + 10 \log(N_{TX})$   
 All transmit signals are completely uncorrelated, Directional Gain =  $G_{ANT}$

Note 2: For all transmitter outputs with unequal antenna gains, directional gain is to be computed as follows:  
 Any transmit signals are correlated, Directional Gain =  $10 \log[(10^{G_{1/20}} + \dots + 10^{G_{N/20}})^2 / N_{TX}]$   
 All transmit signals are completely uncorrelated, Directional Gain =  $10 \log[(10^{G_{1/10}} + \dots + 10^{G_{N/10}}) / N_{TX}]$

Note 3: For Spatial Multiplexing, Directional Gain (DG) =  $G_{ANT} + 10 \log(N_{TX}/N_{SS})$ ,  
 where  $N_{SS}$  = the number of independent spatial streams data.

Note 4: For CDD transmissions, directional gain is calculated as power measurements:  
 Directional Gain (DG) =  $G_{ANT} + \text{Array Gain}$ , where Array Gain is as follows:  
 Array Gain = 0 dB (i.e., no array gain) for  $N_{TX} \leq 4$ ;  
 Array Gain = 0 dB (i.e., no array gain) for channel widths  $\geq 40$  MHz for any  $N_{TX}$ ;



## 3.3.6 Test Result of Maximum Conducted Output Power

Maximum Conducted Output Power (5150-5250MHz band) (non-beamforming)								
Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	Output Power (dBm)				Antenna Gain (dBi)	Power Limit
			Chain Port 1	Chain Port 2	Chain Port 3	Sum Chain		
11a	3	5180	20.38	19.90	19.67	24.76	1.68	30.00
11a	3	5200	21.11	20.52	20.38	25.45	1.68	30.00
11a	3	5240	20.91	20.60	20.27	25.37	1.68	30.00
HT20	3	5180	19.95	19.67	19.26	24.41	1.68	30.00
HT20	3	5200	21.58	21.33	20.84	26.03	1.68	30.00
HT20	3	5240	21.75	21.34	21.04	26.16	1.68	30.00
HT40	3	5190	17.00	16.69	16.25	21.43	1.68	30.00
HT40	3	5230	22.08	21.81	21.29	26.51	1.68	30.00
VHT20	3	5180	19.78	19.58	19.22	24.30	1.68	30.00
VHT20	3	5200	21.53	21.28	20.96	26.03	1.68	30.00
VHT20	3	5240	21.53	21.39	21.07	26.11	1.68	30.00
VHT40	3	5190	17.08	16.76	16.30	21.50	1.68	30.00
VHT40	3	5230	22.02	21.82	21.61	26.59	1.68	30.00
VHT80	3	5210	14.25	13.93	13.90	18.80	1.68	30.00
<b>Result</b>			<b>Complied</b>					

Maximum Conducted Output Power (5150-5250MHz band) (beamforming)								
Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	Output Power (dBm)				Antenna Gain (dBi)	Power Limit
			Chain Port 1	Chain Port 2	Chain Port 3	Sum Chain		
VHT20	3	5180	21.17	17.95	20.71	24.93	6.45	29.55
VHT20	3	5200	22.58	19.90	22.30	26.52	6.45	29.55
VHT20	3	5240	22.86	20.10	22.29	26.67	6.45	29.55
VHT40	3	5190	16.67	14.05	16.27	20.57	6.45	29.55
VHT40	3	5230	22.66	20.06	22.11	26.51	6.45	29.55
VHT80	3	5210	14.04	11.15	13.48	17.83	6.45	29.55
<b>Result</b>			<b>Complied</b>					



## 3.4 Peak Power Spectral Density

### 3.4.1 Peak Power Spectral Density Limit

Peak Power Spectral Density Limit	
<b>UNII Devices</b>	
<input checked="" type="checkbox"/> For the 5.15-5.25 GHz band:	
<input type="checkbox"/> Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$ .	
<input checked="" type="checkbox"/> Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$ .	
<input type="checkbox"/> Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 23$ dBi, then $P_{Out} = 17 - (G_{TX} - 23)$ .	
<input type="checkbox"/> Mobile or Portable Client: the peak power spectral density (PPSD) $\leq 11$ dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$ .	
<input type="checkbox"/> For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) $\leq 11$ dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$ .	
<input type="checkbox"/> For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) $\leq 11$ dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$ .	
<input type="checkbox"/> For the 5.725-5.85 GHz band:	
<input type="checkbox"/> Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) $\leq 30$ dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$ .	
<input type="checkbox"/> Point-to-point systems (P2P): the peak power spectral density (PPSD) $\leq 30$ dBm/500kHz.	
<b>PPSD</b> = peak power spectral density that the 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 <b>G<sub>TX</sub></b> = the maximum transmitting antenna directional gain in dBi.	

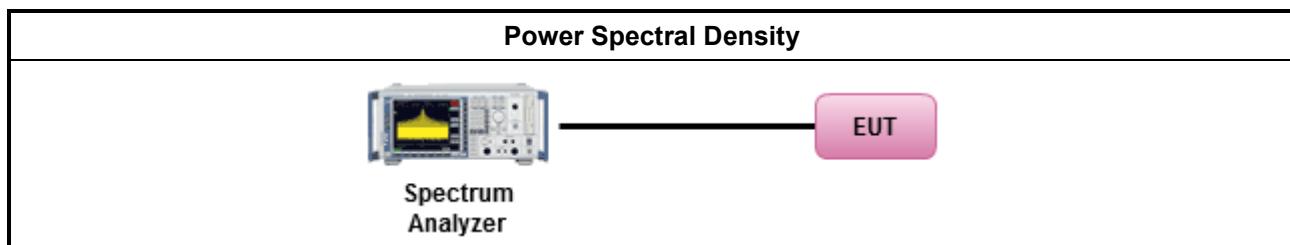
### 3.4.2 Measuring Instruments

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

### 3.4.3 Test Procedures

<b>Test Method</b>
<input checked="" type="checkbox"/> 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:
<input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02 v01, F5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth [duty cycle $\geq$ 98% or external video / power trigger]
<input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02 v01, clause E Method SA-1 (spectral trace averaging).
<input type="checkbox"/> Refer as FCC KDB 789033 D02 v01, clause E Method SA-1 Alt. (RMS detection with slow sweep speed) duty cycle $<$ 98% and average over on/off periods with duty factor
<input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02 v01, clause E Method SA-2 (spectral trace averaging).
<input type="checkbox"/> Refer as FCC KDB 789033 D02 v01, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
<input checked="" type="checkbox"/> For conducted measurement.
<input type="checkbox"/> The EUT supports single transmit chain and measurements performed on this transmit chain
<input type="checkbox"/> The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case.
<input checked="" type="checkbox"/> The EUT supports multiple transmit chains using options given below:
<input checked="" type="checkbox"/> 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.
<input type="checkbox"/> 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.
<input type="checkbox"/> If multiple transmit chains, EIRP PPSD calculation could be following as methods: $PPSD_{total} = PPSD_1 + PPSD_2 + \dots + PPSD_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = PPSD_{total} + DG$
<input type="checkbox"/> Each individually PPSD plots refer as test report clause 3.3.5 with each individually PPSD plots.

### 3.4.4 Test Setup



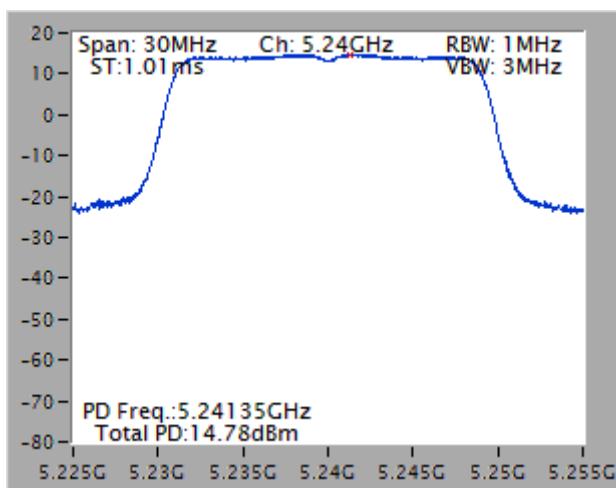


### 3.4.5 Test Result of Peak Power Spectral Density

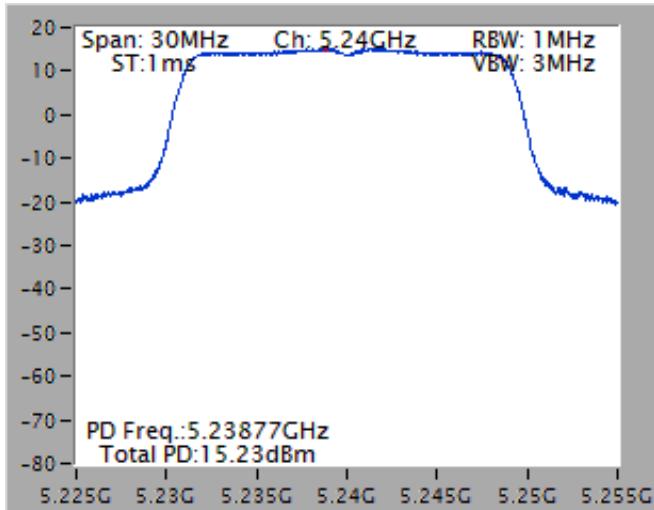
Peak Power Spectral Density Result (5150-5250MHz band) (non-beamforming)					
Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	Peak Power Spectral Density (dBm/1MHz)	PSD Limit	Antenna Gain (dBi)
11a	3	5180	13.82	16.55	6.45
11a	3	5200	14.37	16.55	6.45
11a	3	5240	14.34	16.55	6.45
HT20	3	5180	13.06	16.55	6.45
HT20	3	5200	14.73	16.55	6.45
HT20	3	5240	14.78	16.55	6.45
HT40	3	5190	7.20	16.55	6.45
HT40	3	5230	12.23	16.55	6.45
VHT20	3	5180	12.89	16.55	6.45
VHT20	3	5200	14.59	16.55	6.45
VHT20	3	5240	14.61	16.55	6.45
VHT40	3	5190	7.35	16.55	6.45
VHT40	3	5230	12.42	16.55	6.45
VHT80	3	5210	1.43	16.55	6.45
Result		Complied			

Peak Power Spectral Density Result (5150-5250MHz band) (beamforming)					
Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	Peak Power Spectral Density (dBm/1MHz)	PSD Limit	Antenna Gain (dBi)
VHT20	3	5180	13.67	16.55	6.45
VHT20	3	5200	15.20	16.55	6.45
VHT20	3	5240	15.45	16.55	6.45
VHT40	3	5190	6.34	16.55	6.45
VHT40	3	5230	12.36	16.55	6.45
VHT80	3	5210	0.46	16.55	6.45
Result		Complied			

## 5150-5250MHz - Worst Power Spectral Density Plots (non-beamforming)

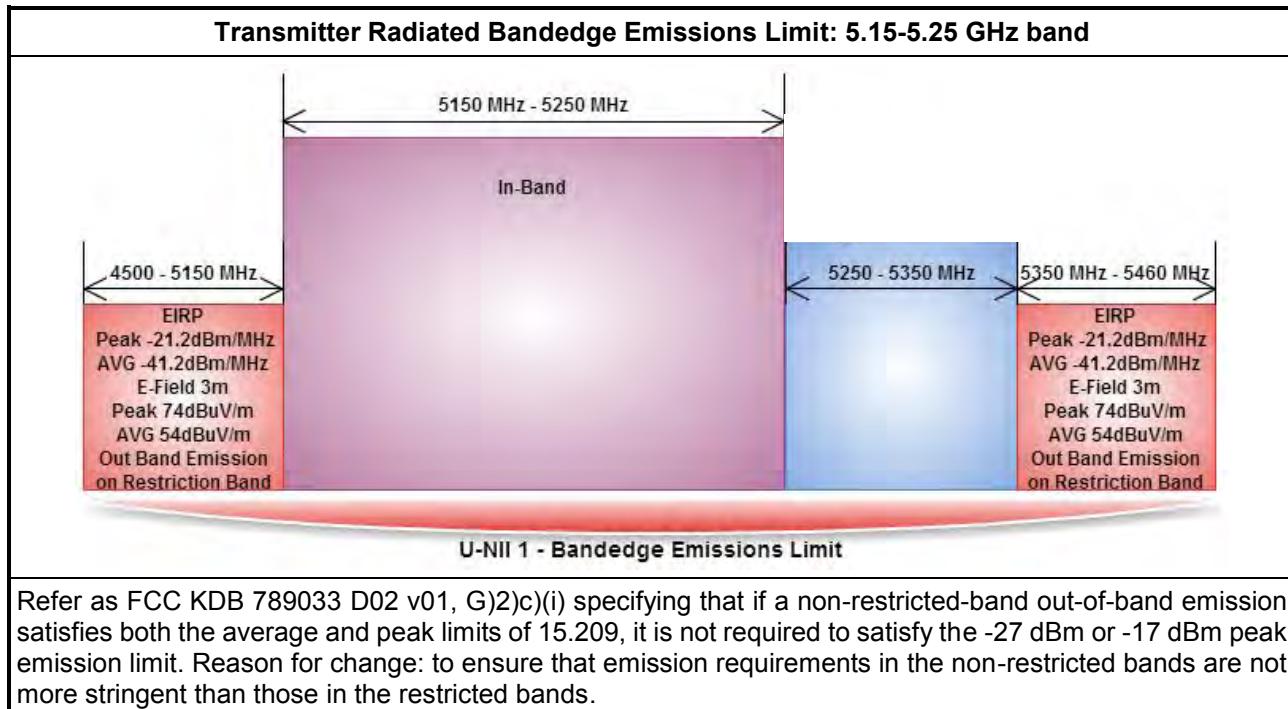


## 5150-5250MHz - Worst Power Spectral Density Plots (beamforming)



## 3.5 Transmitter Bandedge Emissions

### 3.5.1 Transmitter Radiated Bandedge Emissions Limit



### 3.5.2 Measuring Instruments

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

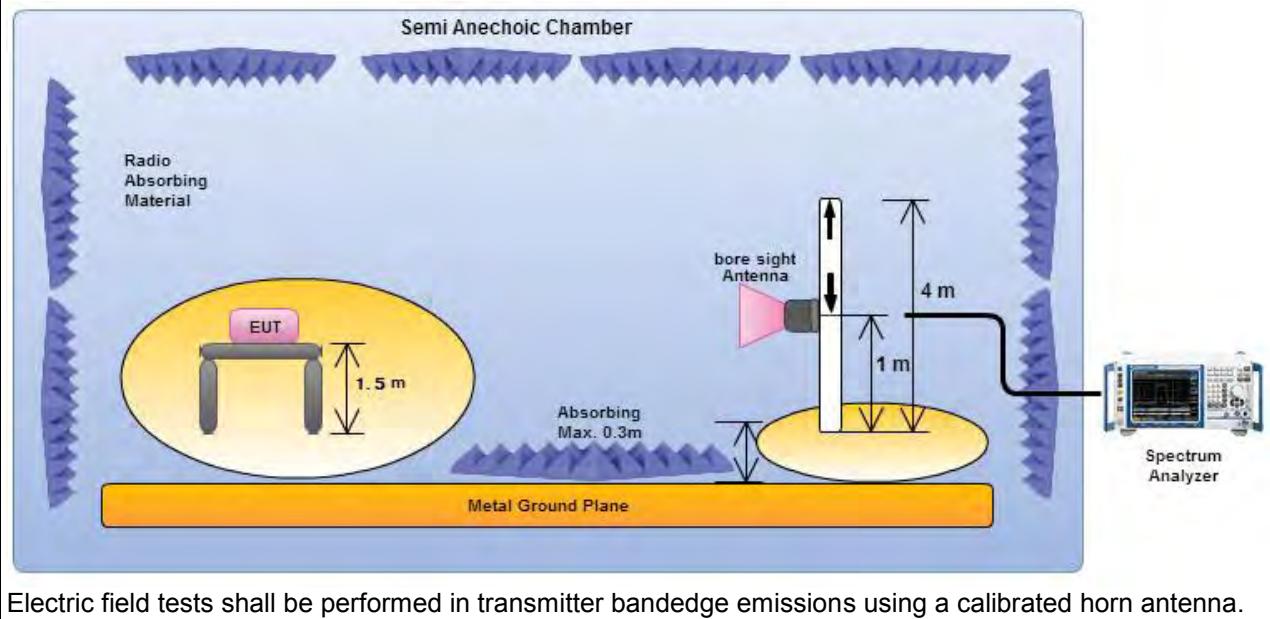


### 3.5.3 Test Procedures

Test Method
<input checked="" type="checkbox"/> The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].
<input checked="" type="checkbox"/> Refer as ANSI C63.10, clause 6.10 bandedge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.
<input type="checkbox"/> 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.) <ul style="list-style-type: none"><li><input type="checkbox"/> Operating in 5.15-5.25 GHz band (lower-band) and 5.25-5.35 GHz band (higher-band).</li><li><input type="checkbox"/> Operating in 5.47-5.725 GHz band (lower-band) and 5.725-5.85 GHz band (higher-band).</li></ul>
<input type="checkbox"/> 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) <ul style="list-style-type: none"><li><input type="checkbox"/> Operating in 5.25-5.35 GHz band (lower-band) and 5.47-5.725 GHz band (higher-band).</li><li><input type="checkbox"/> Operating in 5.15-5.25 GHz band (lower-band) and 5.725-5.85 GHz band (higher-band).</li></ul>
<input checked="" type="checkbox"/> For the transmitter unwanted emissions shall be measured using following options below: <ul style="list-style-type: none"><li><input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02 v01, clause G)2) for unwanted emissions into non-restricted bands.</li><li><input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02 v01, clause G)1) for unwanted emissions into restricted bands.<ul style="list-style-type: none"><li><input type="checkbox"/> Refer as FCC KDB 789033 D02 v01, G)6) Method AD (Trace Averaging).</li><li><input type="checkbox"/> Refer as FCC KDB 789033 D02 v01, G)6) Method VB (Reduced VBW).</li><li><input checked="" type="checkbox"/> Refer as ANSI C63.10, clause 4.1.4.2.3 (Reduced VBW). <math>VBW \geq 1/T</math>, where T is pulse time.</li><li><input type="checkbox"/> Refer as ANSI C63.10, clause 4.1.4.2.4 average value of pulsed emissions.</li><li><input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02 v01, clause G)5) measurement procedure peak limit.</li><li><input type="checkbox"/> Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.</li></ul></li></ul>
<input checked="" type="checkbox"/> For the transmitter bandedge emissions shall be measured using following options below: <ul style="list-style-type: none"><li><input type="checkbox"/> Refer as FCC KDB 789033 D02 v01, clause G)3)d) for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).</li><li><input checked="" type="checkbox"/> Refer as ANSI C63.10, clause 6.10 for band-edge testing.</li><li><input type="checkbox"/> Refer as ANSI C63.10, clause 6.10.6.2 for marker-delta method for band-edge measurements.</li></ul>
<input checked="" type="checkbox"/> For radiated measurement, refer as ANSI C63.10, clause 6.6. Test distance is 3m.
<input checked="" type="checkbox"/> 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 3m, because the instrumentation noise floor is typically close to the radiated emission limit.

### 3.5.4 Test Setup

#### Transmitter Radiated Bandedge Emissions



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



## 3.5.5 Transmitter Radiated Bandedge Emissions

U-NII 5150-5250MHz Transmitter Radiated Bandedge (non-beamforming)										
Modulation Mode	N <sub>TX</sub>	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	3	5180	3	5149.680	70.53	74	5149.680	52.98	54	V
11a	3	5240	3	5123.040	62.63	74	5132.400	48.92	54	V
HT20	3	5180	3	5148.960	72.36	74	5149.680	51.85	54	V
HT20	3	5240	3	5124.480	62.58	74	5132.400	49.26	54	V
HT40	3	5190	3	5145.120	67.86	74	5149.920	52.53	54	V
HT40	3	5230	3	5148.240	69.57	74	5148.240	52.02	54	V
VHT20	3	5180	3	5149.680	71.99	74	5149.680	52.16	54	V
VHT20	3	5240	3	5144.640	62.67	74	5136.000	49.29	54	V
VHT40	3	5190	3	5145.360	70.05	74	5149.920	52.58	54	V
VHT40	3	5230	3	5148.240	70.61	74	5148.240	52.14	54	V
VHT80	3	5210	3	5146.080	69.10	74	5146.440	52.81	54	V

Note 1: Measurement worst emissions of receive antenna polarization.

U-NII 5150-5250MHz Transmitter Radiated Bandedge (beamforming)										
Modulation Mode	N <sub>TX</sub>	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.
VHT20	3	5180	3	5147.400	72.82	74	5149.900	53.39	54	V
VHT20	3	5240	3	5126.640	63.18	74	5127.360	49.09	54	V
VHT40	3	5190	3	5149.060	65.71	74	5149.940	53.50	54	V
VHT40	3	5230	3	5143.800	71.22	74	5149.800	53.35	54	V
VHT80	3	5210	3	5146.200	66.92	74	5145.000	53.63	54	V

Note 1: Measurement worst emissions of receive antenna polarization.



## 3.6 Transmitter Unwanted Emissions

### 3.6.1 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]
5.725 - 5.85 GHz	5.715 5.725 GHz: e.i.r.p. -17 dBm [78.2 dBuV/m@3m] 5.85 5.86 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).

### 3.6.2 Measuring Instruments

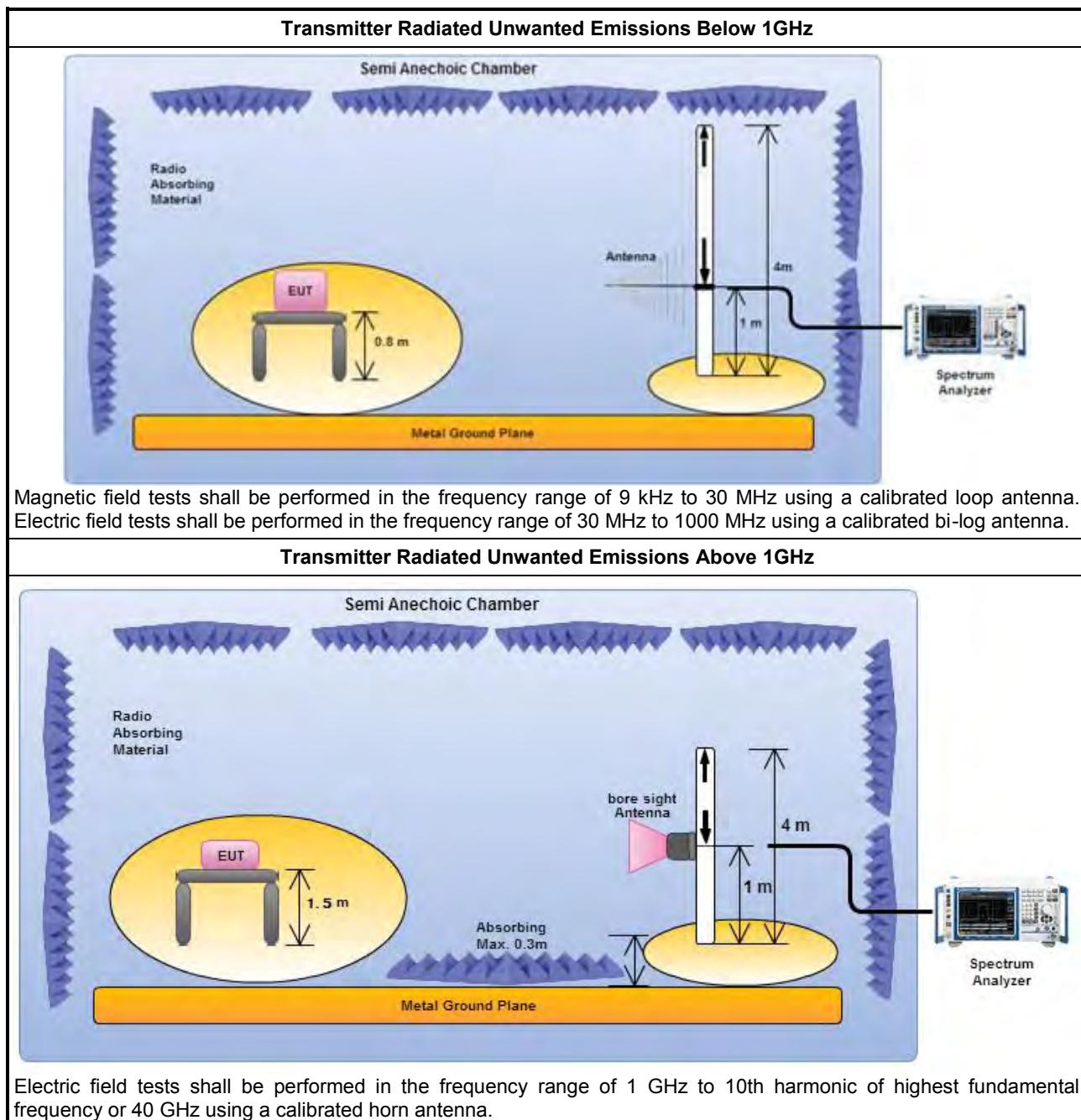
Refer a test equipment and calibration data table in this test report.



### 3.6.3 Test Procedures

Test Method
<input checked="" type="checkbox"/> 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).
<input checked="" type="checkbox"/> The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].
<input checked="" type="checkbox"/> For the transmitter unwanted emissions shall be measured using following options below:
<input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02 v01, clause G2) for unwanted emissions into non-restricted bands.
<input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02 v01, clause G1) for unwanted emissions into restricted bands.
<input type="checkbox"/> Refer as FCC KDB 789033 D02 v01, G6) Method AD (Trace Averaging).
<input type="checkbox"/> Refer as FCC KDB 789033 D02 v01, G6) Method VB (Reduced VBW).
<input checked="" type="checkbox"/> Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). $VBW \geq 1/T$ , where T is pulse time.
<input type="checkbox"/> Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
<input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02 v01, clause G5) measurement procedure peak limit.
<input type="checkbox"/> Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit.
<input checked="" type="checkbox"/> For radiated measurement.
<input checked="" type="checkbox"/> Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
<input checked="" type="checkbox"/> Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
<input checked="" type="checkbox"/> Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz. For 1 GHz to 5 GHz, test distance is 3m; For 5 GHz to 40 GHz, test distance is 3m.
<input checked="" type="checkbox"/> The any unwanted emissions level shall not exceed the fundamental emission level.
<input checked="" type="checkbox"/> All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

### 3.6.4 Test Setup

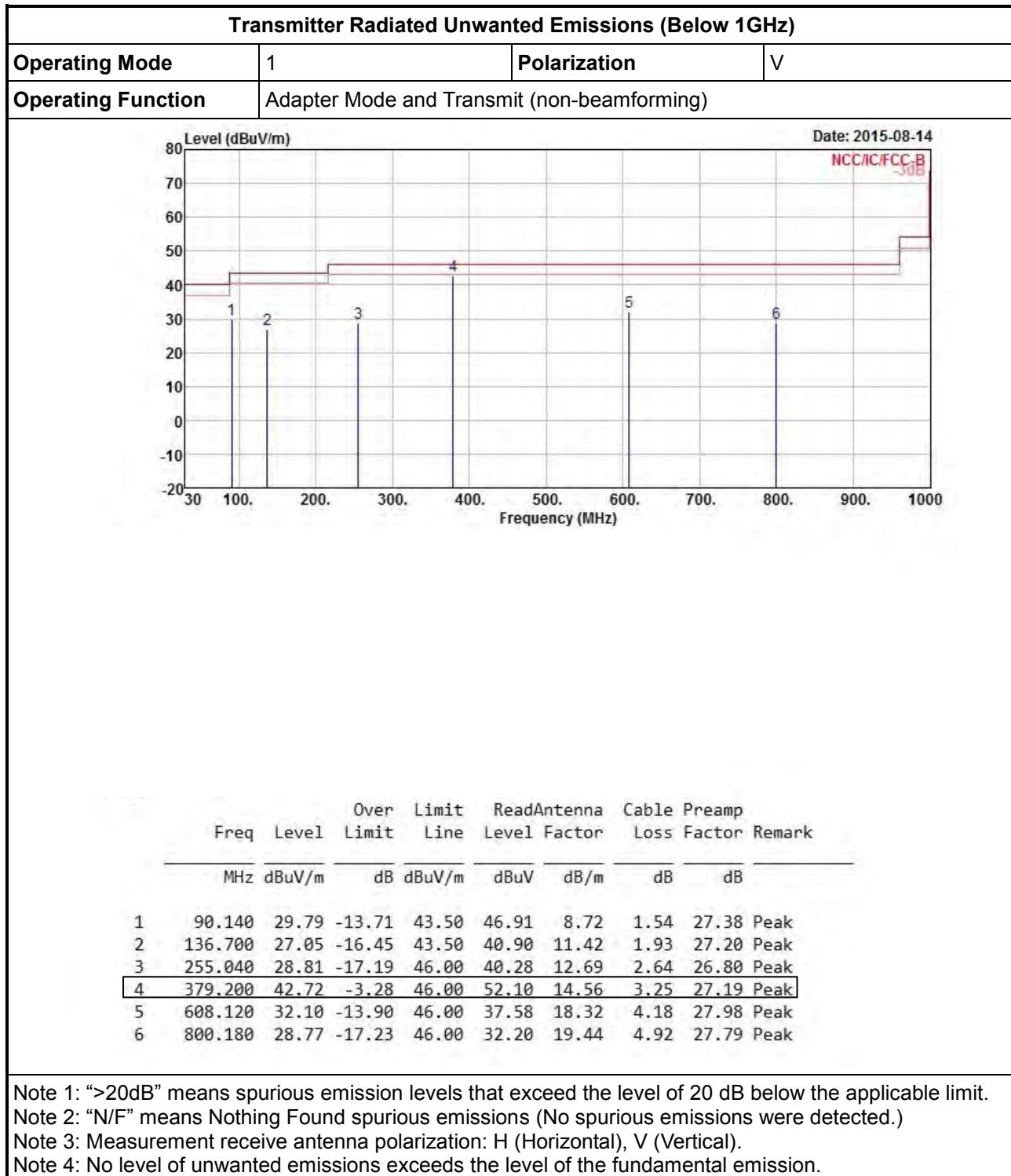


### 3.6.5 Transmitter Radiated Unwanted Emissions-with Antenna (Below 30MHz)

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

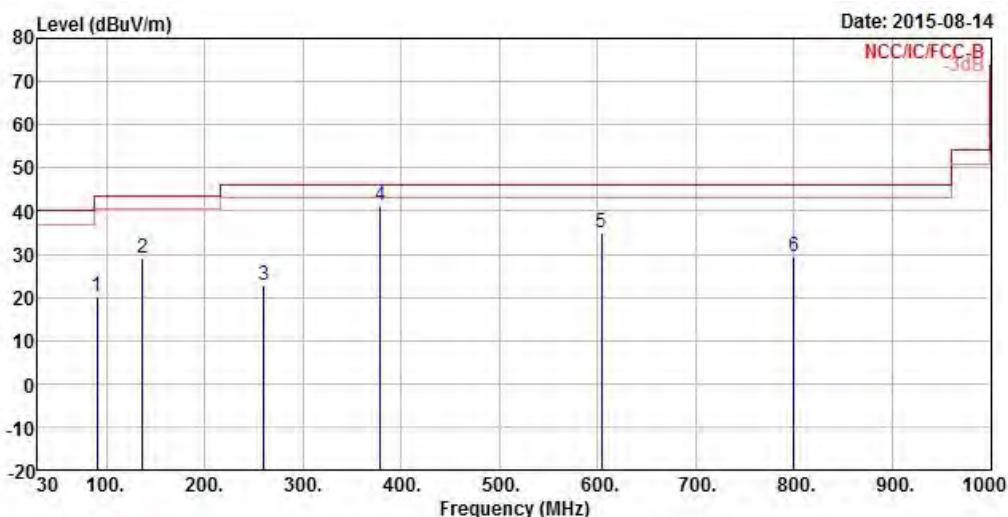


## 3.6.6 Transmitter Radiated Unwanted Emissions (Below 1GHz)





## Transmitter Radiated Unwanted Emissions (Below 1GHz)

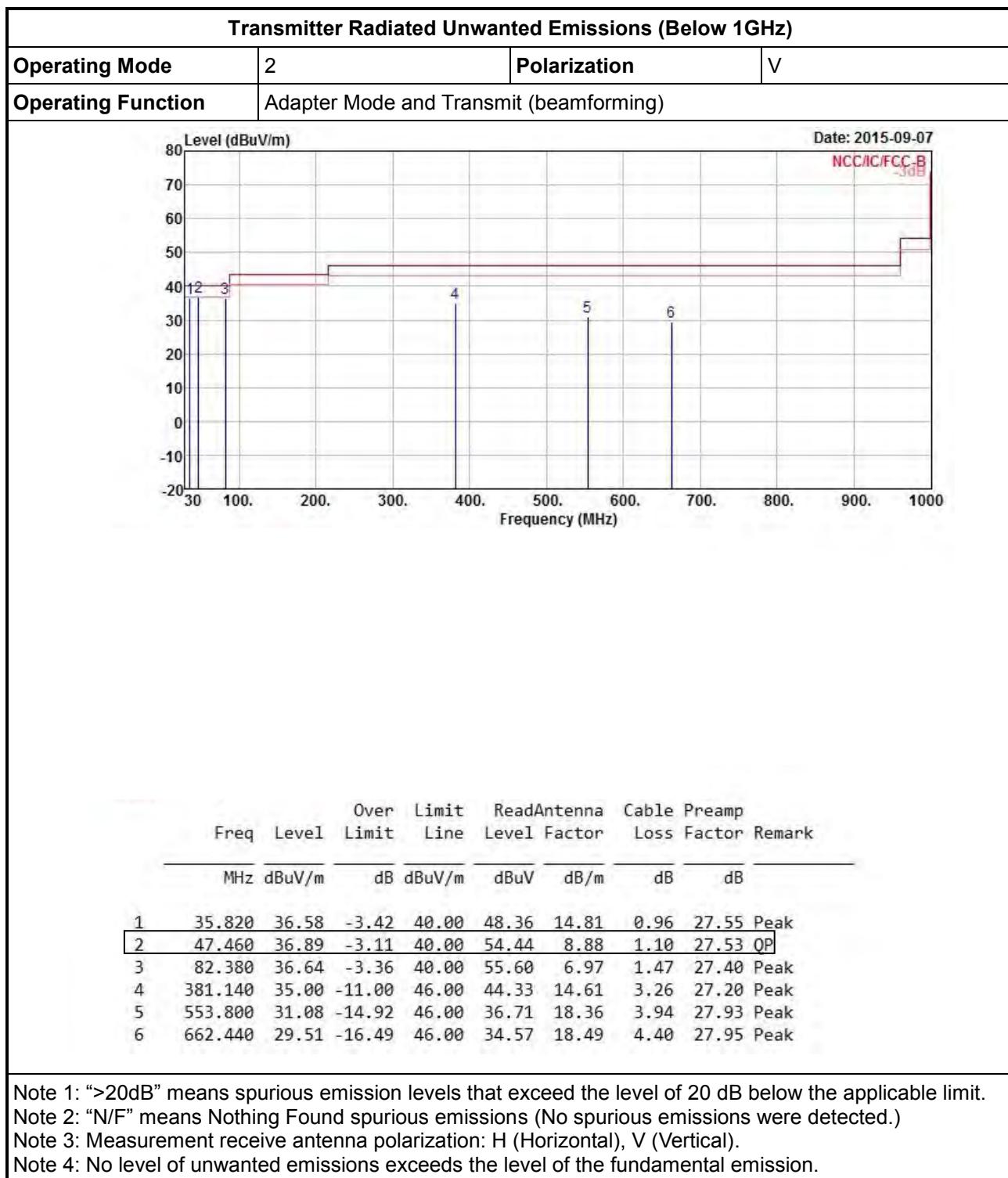
Operating Mode	1	Polarization	H																																																																												
Operating Function	Adapter Mode and Transmit (non-beamforming)																																																																														
			Date: 2015-08-14 NCC/IC/FCC-B -30dB																																																																												
<table><thead><tr><th></th><th>Over Limit</th><th>Line</th><th>Read</th><th>Antenna</th><th>Cable</th><th>Preamp</th><th></th></tr><tr><th>Freq</th><th>Level</th><th>Limit</th><th>Line</th><th>Level</th><th>Factor</th><th>Loss</th><th>Factor</th></tr></thead><tbody><tr><td>1</td><td>90.140</td><td>20.33</td><td>-23.17</td><td>43.50</td><td>37.45</td><td>8.72</td><td>1.54</td><td>27.38</td><td>Peak</td></tr><tr><td>2</td><td>136.700</td><td>29.15</td><td>-14.35</td><td>43.50</td><td>43.00</td><td>11.42</td><td>1.93</td><td>27.20</td><td>Peak</td></tr><tr><td>3</td><td>259.890</td><td>22.68</td><td>-23.32</td><td>46.00</td><td>33.52</td><td>13.27</td><td>2.67</td><td>26.78</td><td>Peak</td></tr><tr><td>4</td><td>379.200</td><td>41.09</td><td>-4.91</td><td>46.00</td><td>50.47</td><td>14.56</td><td>3.25</td><td>27.19</td><td>Peak</td></tr><tr><td>5</td><td>604.240</td><td>35.11</td><td>-10.89</td><td>46.00</td><td>40.68</td><td>18.25</td><td>4.17</td><td>27.99</td><td>Peak</td></tr><tr><td>6</td><td>800.180</td><td>29.34</td><td>-16.66</td><td>46.00</td><td>32.77</td><td>19.44</td><td>4.92</td><td>27.79</td><td>Peak</td></tr></tbody></table>				Over Limit	Line	Read	Antenna	Cable	Preamp		Freq	Level	Limit	Line	Level	Factor	Loss	Factor	1	90.140	20.33	-23.17	43.50	37.45	8.72	1.54	27.38	Peak	2	136.700	29.15	-14.35	43.50	43.00	11.42	1.93	27.20	Peak	3	259.890	22.68	-23.32	46.00	33.52	13.27	2.67	26.78	Peak	4	379.200	41.09	-4.91	46.00	50.47	14.56	3.25	27.19	Peak	5	604.240	35.11	-10.89	46.00	40.68	18.25	4.17	27.99	Peak	6	800.180	29.34	-16.66	46.00	32.77	19.44	4.92	27.79	Peak	Remark
	Over Limit	Line	Read	Antenna	Cable	Preamp																																																																									
Freq	Level	Limit	Line	Level	Factor	Loss	Factor																																																																								
1	90.140	20.33	-23.17	43.50	37.45	8.72	1.54	27.38	Peak																																																																						
2	136.700	29.15	-14.35	43.50	43.00	11.42	1.93	27.20	Peak																																																																						
3	259.890	22.68	-23.32	46.00	33.52	13.27	2.67	26.78	Peak																																																																						
4	379.200	41.09	-4.91	46.00	50.47	14.56	3.25	27.19	Peak																																																																						
5	604.240	35.11	-10.89	46.00	40.68	18.25	4.17	27.99	Peak																																																																						
6	800.180	29.34	-16.66	46.00	32.77	19.44	4.92	27.79	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.)

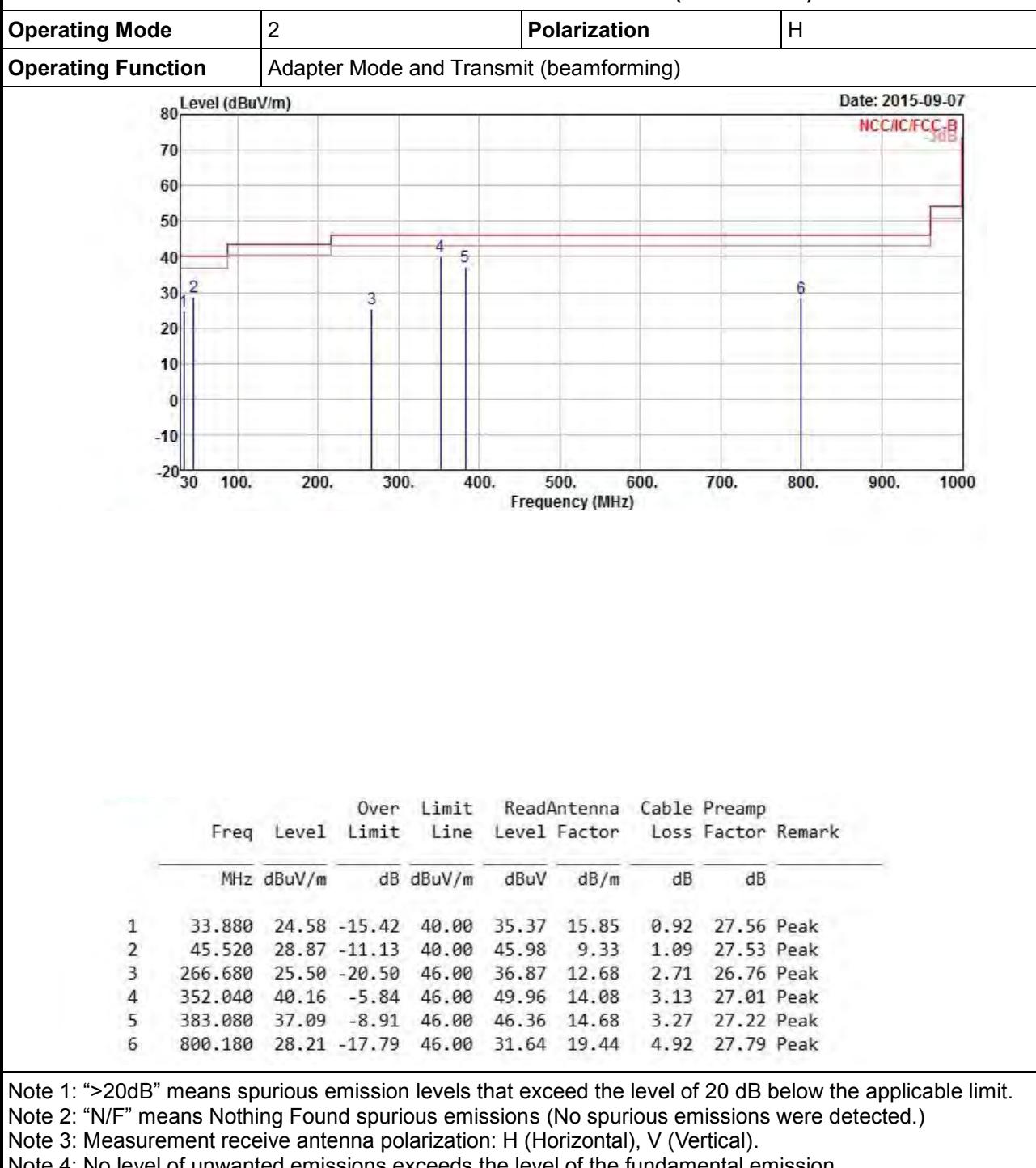
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical).

Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.





## Transmitter Radiated Unwanted Emissions (Below 1GHz)





## 3.6.7 Transmitter Radiated Unwanted Emissions (Above 1GHz) non-beamforming

## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

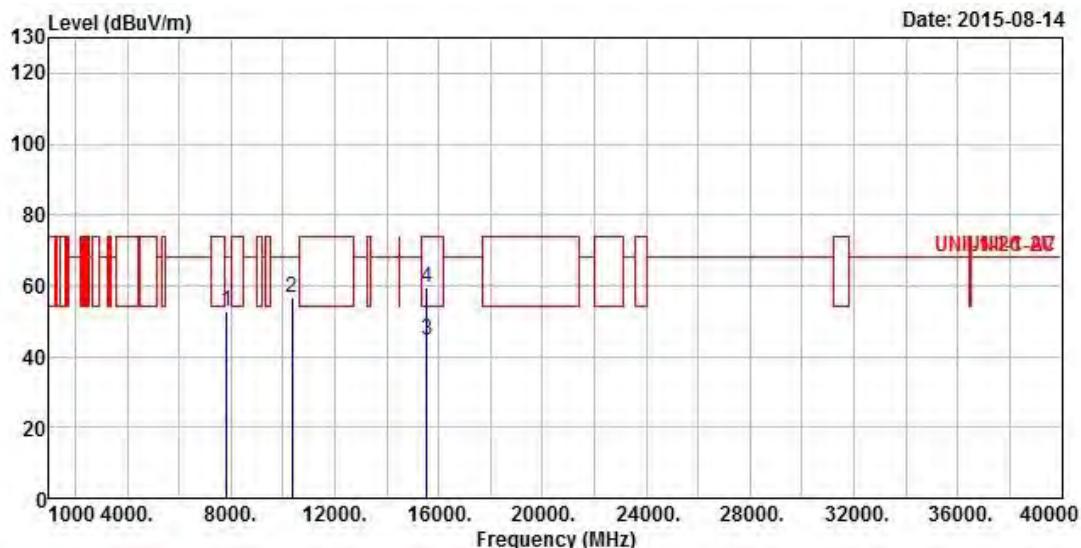
Modulation Mode	11a	Test Freq. (MHz)	5180																								
N <sub>TX</sub>	3	Polarization	V																								
<table border="1"> <thead> <tr> <th></th><th>Over Limit</th><th>Read</th><th>Antenna</th><th>Cable</th><th>Preamp</th><th></th></tr> <tr> <th>Freq</th><th>Level</th><th>Limit</th><th>Line</th><th>Antenna</th><th>Loss</th><th>Factor</th></tr> </thead> <tbody> <tr> <td>MHz</td><td>dBuV/m</td><td>dB</td><td>dBuV/m</td><td>dBuV</td><td>dB/m</td><td>dB</td></tr> </tbody> </table>								Over Limit	Read	Antenna	Cable	Preamp		Freq	Level	Limit	Line	Antenna	Loss	Factor	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB
	Over Limit	Read	Antenna	Cable	Preamp																						
Freq	Level	Limit	Line	Antenna	Loss	Factor																					
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB																					
1	6906.000	51.71	-16.49	68.20	41.43	35.01	7.80	32.53	Peak																		
2	10360.000	56.78	-11.42	68.20	41.83	38.90	8.86	32.81	Peak																		
3	15540.000	44.72	-9.28	54.00	29.73	37.83	9.39	32.23	Average																		
4	15540.000	60.27	-13.73	74.00	45.28	37.83	9.39	32.23	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) for 5150-5250MHz

Modulation Mode	11a	Test Freq. (MHz)	5180
N <sub>TX</sub>	3	Polarization	H



Freq	Level	Over Limit	Limit Line	ReadAntenna		Cable Loss	Preamp Factor	Remark
				Level	Factor			
1	7852.000	52.58	-15.62	68.20	40.44	36.92	8.06	32.84 Peak
2	10360.000	56.49	-11.71	68.20	41.54	38.90	8.86	32.81 Peak
3	15540.000	44.66	-9.34	54.00	29.67	37.83	9.39	32.23 Average
4	15540.000	59.28	-14.72	74.00	44.29	37.83	9.39	32.23 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) for 5150-5250MHz

Modulation Mode	11a	Test Freq. (MHz)	5200					
N <sub>TX</sub>	3	Polarization	V					
Level (dBuV/m)			Date: 2015-08-14					
Freq	Level	Over Limit	Limit	Read	Antenna	Cable	Preamp	
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	Remark
1 8621.000	54.25	-13.95	68.20	41.53	37.72	7.94	32.94	Peak
2 10400.000	56.68	-11.52	68.20	41.70	38.90	8.85	32.77	Peak
3 15600.000	45.02	-8.98	54.00	30.18	37.69	9.41	32.26	Average
4 15600.000	59.10	-14.90	74.00	44.26	37.69	9.41	32.26	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) for 5150-5250MHz

Modulation Mode	11a	Test Freq. (MHz)	5200					
N <sub>TX</sub>	3	Polarization	H					
Level (dBuV/m)			Date: 2015-08-14					
Freq	Level	Over Limit	Line	Read	Antenna	Cable	Preamp	
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	Remark
1	7941.000	53.36	-14.84	68.20	41.11	37.02	8.09	32.86 Peak
2	10400.000	57.31	-10.89	68.20	42.33	38.90	8.85	32.77 Peak
3	15600.000	45.17	-8.83	54.00	30.33	37.69	9.41	32.26 Average
4	15600.000	58.76	-15.24	74.00	43.92	37.69	9.41	32.26 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) for 5150-5250MHz

Modulation Mode	11a	Test Freq. (MHz)	5240																																																													
N <sub>TX</sub>	3	Polarization	V																																																													
Level (dBuV/m)			Date: 2015-08-14																																																													
<table border="1"> <thead> <tr> <th></th> <th>Over Limit</th> <th>Read</th> <th>Antenna</th> <th>Cable</th> <th>Preamp</th> <th></th> </tr> <tr> <th>Freq</th> <th>Level</th> <th>Line</th> <th>Level</th> <th>Factor</th> <th>Loss</th> <th>Factor</th> </tr> </thead> <tbody> <tr> <td>MHz</td> <td>dBuV/m</td> <td>dB</td> <td>dBuV/m</td> <td>dBuV</td> <td>dB/m</td> <td>dB</td> </tr> <tr> <td>1</td> <td>8002.000</td> <td>53.10</td> <td>-15.10</td> <td>68.20</td> <td>40.79</td> <td>37.10</td> <td>8.09</td> <td>32.88</td> <td>Peak</td> </tr> <tr> <td>2</td> <td>10480.000</td> <td>57.46</td> <td>-10.74</td> <td>68.20</td> <td>42.44</td> <td>38.90</td> <td>8.82</td> <td>32.70</td> <td>Peak</td> </tr> <tr> <td>3</td> <td>15720.000</td> <td>43.54</td> <td>-10.46</td> <td>54.00</td> <td>28.93</td> <td>37.45</td> <td>9.46</td> <td>32.30</td> <td>Average</td> </tr> <tr> <td>4</td> <td>15720.000</td> <td>57.77</td> <td>-16.23</td> <td>74.00</td> <td>43.16</td> <td>37.45</td> <td>9.46</td> <td>32.30</td> <td>Peak</td> </tr> </tbody> </table>				Over Limit	Read	Antenna	Cable	Preamp		Freq	Level	Line	Level	Factor	Loss	Factor	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	1	8002.000	53.10	-15.10	68.20	40.79	37.10	8.09	32.88	Peak	2	10480.000	57.46	-10.74	68.20	42.44	38.90	8.82	32.70	Peak	3	15720.000	43.54	-10.46	54.00	28.93	37.45	9.46	32.30	Average	4	15720.000	57.77	-16.23	74.00	43.16	37.45	9.46	32.30	Peak	
	Over Limit	Read	Antenna	Cable	Preamp																																																											
Freq	Level	Line	Level	Factor	Loss	Factor																																																										
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB																																																										
1	8002.000	53.10	-15.10	68.20	40.79	37.10	8.09	32.88	Peak																																																							
2	10480.000	57.46	-10.74	68.20	42.44	38.90	8.82	32.70	Peak																																																							
3	15720.000	43.54	-10.46	54.00	28.93	37.45	9.46	32.30	Average																																																							
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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) for 5150-5250MHz

Modulation Mode	11a	Test Freq. (MHz)	5240					
N <sub>TX</sub>	3	Polarization	H					
Level (dBuV/m)			Date: 2015-08-14					
Freq	Level	Over Limit	Read	Antenna	Cable	Preamp		
MHz	dBuV/m	dB	Line	Level	Factor	Loss	Factor	
1	7932.000	53.54	-14.66	68.20	41.29	37.02	8.09	32.86 Peak
2	10480.000	56.61	-11.59	68.20	41.59	38.90	8.82	32.70 Peak
3	15720.000	43.77	-10.23	54.00	29.16	37.45	9.46	32.30 Average
4	15720.000	57.89	-16.11	74.00	43.28	37.45	9.46	32.30 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.

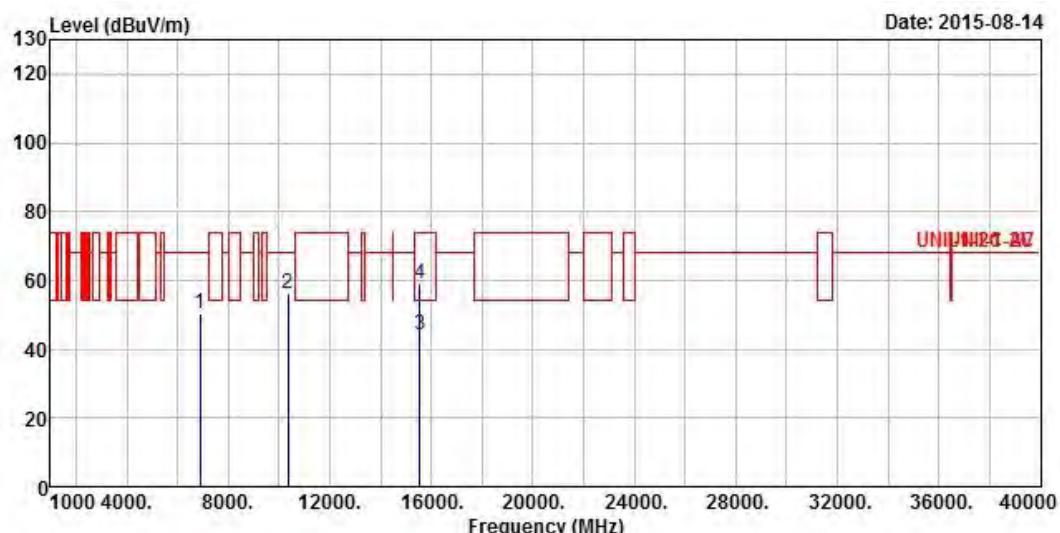
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	HT20	Test Freq. (MHz)	5180
N <sub>TX</sub>	3	Polarization	V



Freq	Level	Over Limit		ReadAntenna	Cable	Preamp	Remark
		Limit	Line				
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1 6906.000	50.32	-17.88	68.20	40.04	35.01	7.80	32.53 Peak
2 10360.000	56.07	-12.13	68.20	41.12	38.90	8.86	32.81 Peak
3 15540.000	44.21	-9.79	54.00	29.22	37.83	9.39	32.23 Average
4 15540.000	59.14	-14.86	74.00	44.15	37.83	9.39	32.23 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.

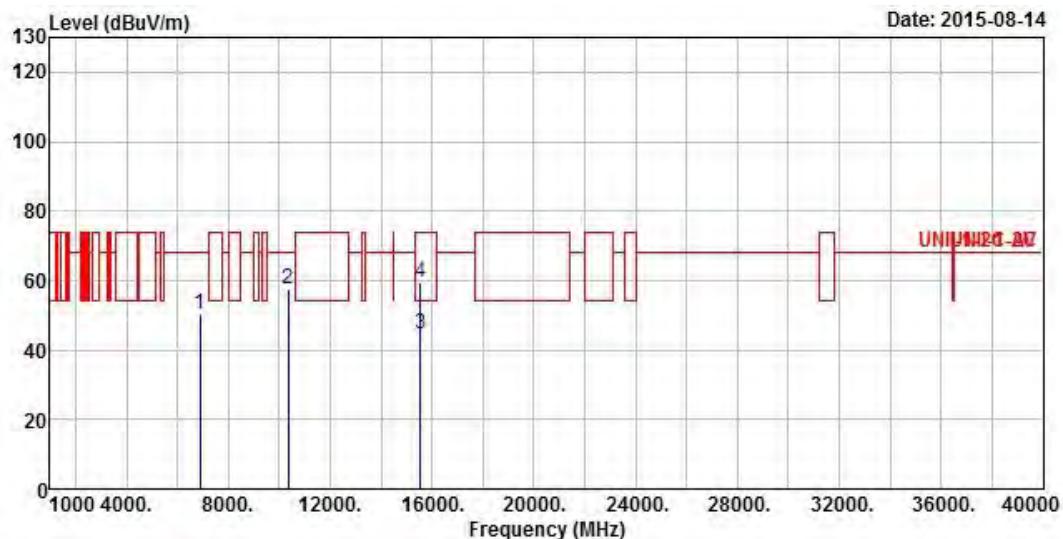
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	HT20	Test Freq. (MHz)	5180
N <sub>TX</sub>	3	Polarization	H



Freq	Level	Over Limit		ReadAntenna	Cable	Preamp	Remark
		MHz	dBuV/m	dB	dBuV/m	dB	dB
1	6887.000	50.50	-17.70	68.20	40.24	34.98	7.80 32.52 Peak
2	10360.000	57.59	-10.61	68.20	42.64	38.90	8.86 32.81 Peak
3	15540.000	44.81	-9.19	54.00	29.82	37.83	9.39 32.23 Average
4	15540.000	59.43	-14.57	74.00	44.44	37.83	9.39 32.23 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) for 5150-5250MHz

Modulation Mode	HT20	Test Freq. (MHz)	5200					
N <sub>TX</sub>	3	Polarization	V					
Date: 2015-08-14								
Level (dBuV/m)								
1000 4000. 8000. 12000. 16000. 20000. 24000. 28000. 32000. 36000. 40000	0 20 40 60 80 100 120 130	Frequency (MHz)	Level (dBuV/m)					
1	53.52	-14.68	68.20	41.47	36.84	8.03	32.82	Peak
2	57.10	-11.10	68.20	42.12	38.90	8.85	32.77	Peak
3	44.74	-9.26	54.00	29.90	37.69	9.41	32.26	Average
4	58.43	-15.57	74.00	43.59	37.69	9.41	32.26	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.

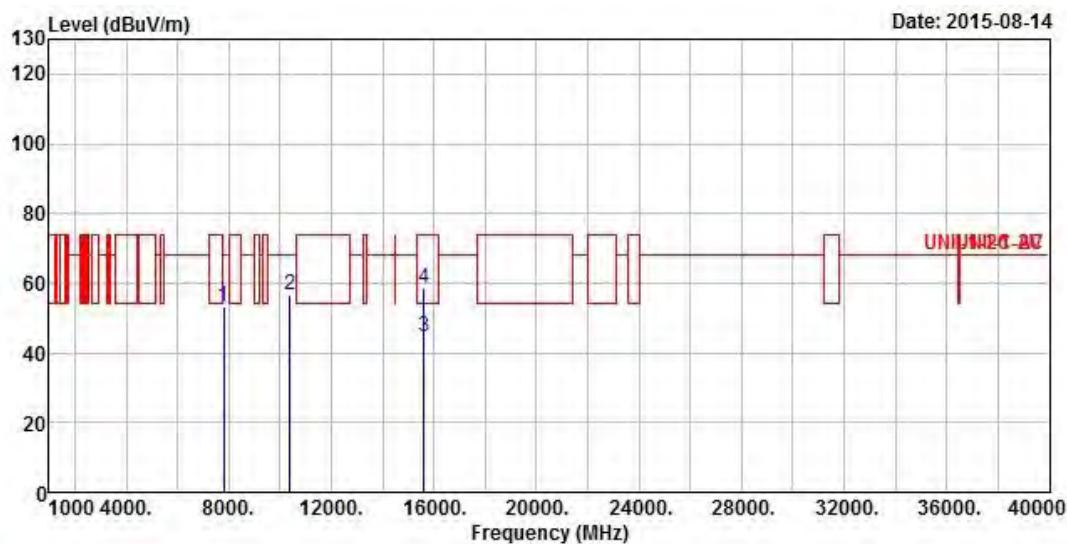
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	HT20	Test Freq. (MHz)	5200
N <sub>TX</sub>	3	Polarization	H



Freq MHz	Level dBuV/m	Over Limit		Read Line Level dBuV	Antenna Factor dB/m	Cable Loss dB	Preamp Factor dB	Remark
		Limit dB	Line dBuV/m					
1 7812.000	53.39	-14.81	68.20	41.29	36.88	8.05	32.83	Peak
2 10400.000	56.52	-11.68	68.20	41.54	38.90	8.85	32.77	Peak
3 15600.000	44.68	-9.32	54.00	29.84	37.69	9.41	32.26	Average
4 15600.000	58.66	-15.34	74.00	43.82	37.69	9.41	32.26	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)

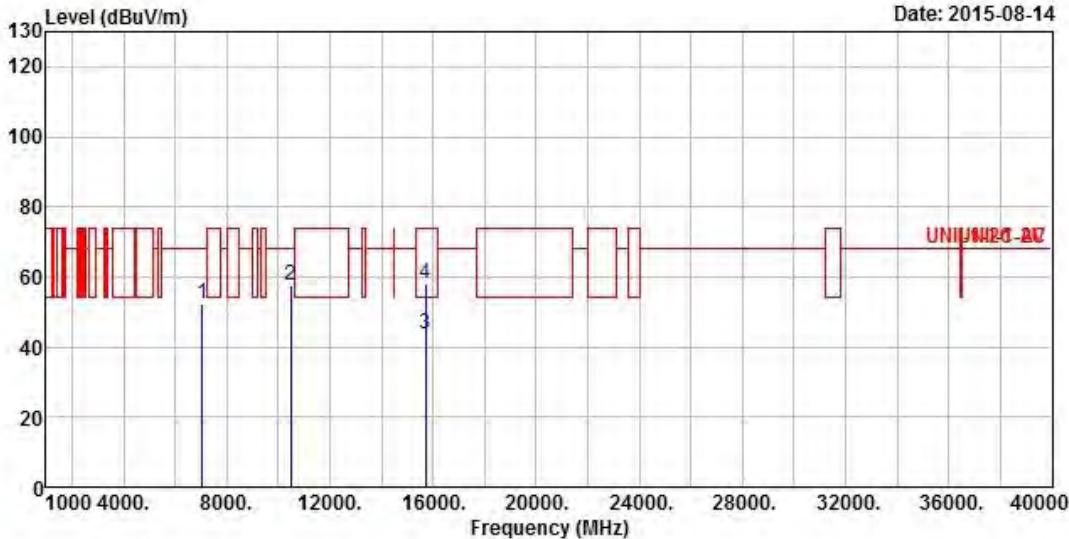
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

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) for 5150-5250MHz

Modulation Mode	HT20	Test Freq. (MHz)	5240																																																
N <sub>TX</sub>	3	Polarization	V																																																
			Date: 2015-08-14																																																
<table border="1"> <thead> <tr> <th>Freq</th> <th>Over Level</th> <th>Limit</th> <th>Read Line</th> <th>Antenna Factor</th> <th>Cable</th> <th>Preamp</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>MHz</td> <td>dBuV/m</td> <td>dB</td> <td>dBuV/m</td> <td>dBuV</td> <td>dB/m</td> <td>dB</td> <td></td> </tr> <tr> <td>1 7049.000</td> <td>52.11</td> <td>-16.09</td> <td>68.20</td> <td>41.46</td> <td>35.33</td> <td>7.88</td> <td>32.56 Peak</td> </tr> <tr> <td>2 10480.000</td> <td>57.68</td> <td>-10.52</td> <td>68.20</td> <td>42.66</td> <td>38.90</td> <td>8.82</td> <td>32.70 Peak</td> </tr> <tr> <td>3 15720.000</td> <td>43.84</td> <td>-10.16</td> <td>54.00</td> <td>29.23</td> <td>37.45</td> <td>9.46</td> <td>32.30 Average</td> </tr> <tr> <td>4 15720.000</td> <td>58.27</td> <td>-15.73</td> <td>74.00</td> <td>43.66</td> <td>37.45</td> <td>9.46</td> <td>32.30 Peak</td> </tr> </tbody> </table>			Freq	Over Level	Limit	Read Line	Antenna Factor	Cable	Preamp	Remark	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB		1 7049.000	52.11	-16.09	68.20	41.46	35.33	7.88	32.56 Peak	2 10480.000	57.68	-10.52	68.20	42.66	38.90	8.82	32.70 Peak	3 15720.000	43.84	-10.16	54.00	29.23	37.45	9.46	32.30 Average	4 15720.000	58.27	-15.73	74.00	43.66	37.45	9.46	32.30 Peak	
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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)

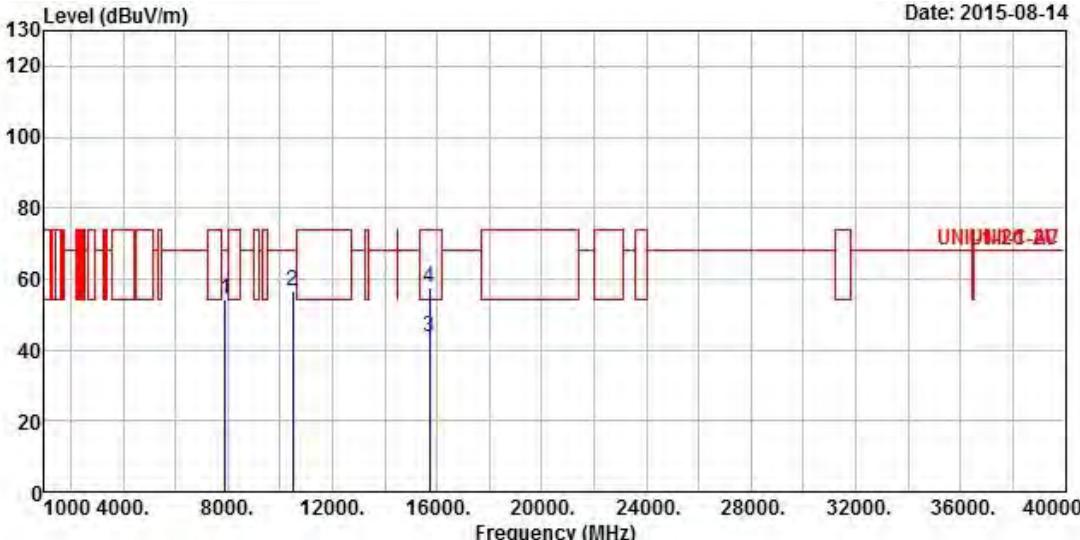
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

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) for 5150-5250MHz

Modulation Mode	HT20	Test Freq. (MHz)	5240																																																						
N <sub>TX</sub>	3	Polarization	H																																																						
			Date: 2015-08-14																																																						
<table border="1"> <thead> <tr> <th>Freq</th> <th>Level</th> <th>Over Limit</th> <th>Line</th> <th>Read</th> <th>Antenna</th> <th>Cable</th> <th>Preamp</th> <th>Remark</th> </tr> <tr> <th>MHz</th> <th>dBuV/m</th> <th>dB</th> <th>dBuV/m</th> <th>dBuV</th> <th>dB/m</th> <th>dB</th> <th>dB</th> <th></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>7920.000</td> <td>54.07</td> <td>-14.13</td> <td>68.20</td> <td>41.86</td> <td>37.00</td> <td>8.07</td> <td>32.86 Peak</td> </tr> <tr> <td>2</td> <td>10480.000</td> <td>56.45</td> <td>-11.75</td> <td>68.20</td> <td>41.43</td> <td>38.90</td> <td>8.82</td> <td>32.70 Peak</td> </tr> <tr> <td>3</td> <td>15720.000</td> <td>43.46</td> <td>-10.54</td> <td>54.00</td> <td>28.85</td> <td>37.45</td> <td>9.46</td> <td>32.30 Average</td> </tr> <tr> <td>4</td> <td>15720.000</td> <td>57.72</td> <td>-16.28</td> <td>74.00</td> <td>43.11</td> <td>37.45</td> <td>9.46</td> <td>32.30 Peak</td> </tr> </tbody> </table>			Freq	Level	Over Limit	Line	Read	Antenna	Cable	Preamp	Remark	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		1	7920.000	54.07	-14.13	68.20	41.86	37.00	8.07	32.86 Peak	2	10480.000	56.45	-11.75	68.20	41.43	38.90	8.82	32.70 Peak	3	15720.000	43.46	-10.54	54.00	28.85	37.45	9.46	32.30 Average	4	15720.000	57.72	-16.28	74.00	43.11	37.45	9.46	32.30 Peak	
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MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB																																																		
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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.

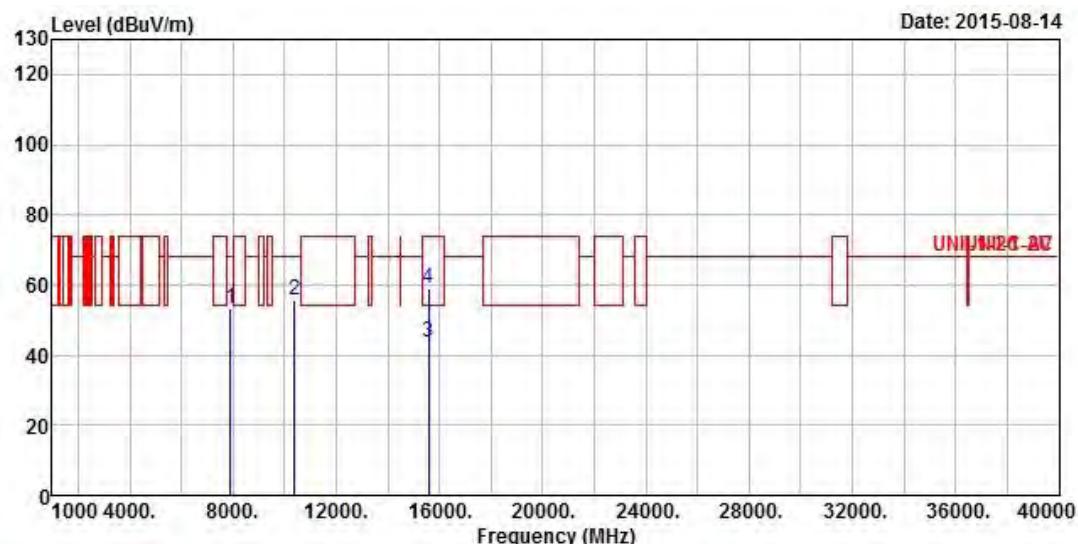
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	HT40	Test Freq. (MHz)	5190
N <sub>TX</sub>	3	Polarization	V



Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	
		Line	Limit	Antenna	Level	Factor	Loss		
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	7896.000	53.40	-14.80	68.20	41.20	36.98	8.07	32.85	Peak
2	10380.000	55.67	-12.53	68.20	40.71	38.90	8.85	32.79	Peak
3	15570.000	43.64	-10.36	54.00	28.72	37.76	9.41	32.25	Average
4	15570.000	59.20	-14.80	74.00	44.28	37.76	9.41	32.25	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.

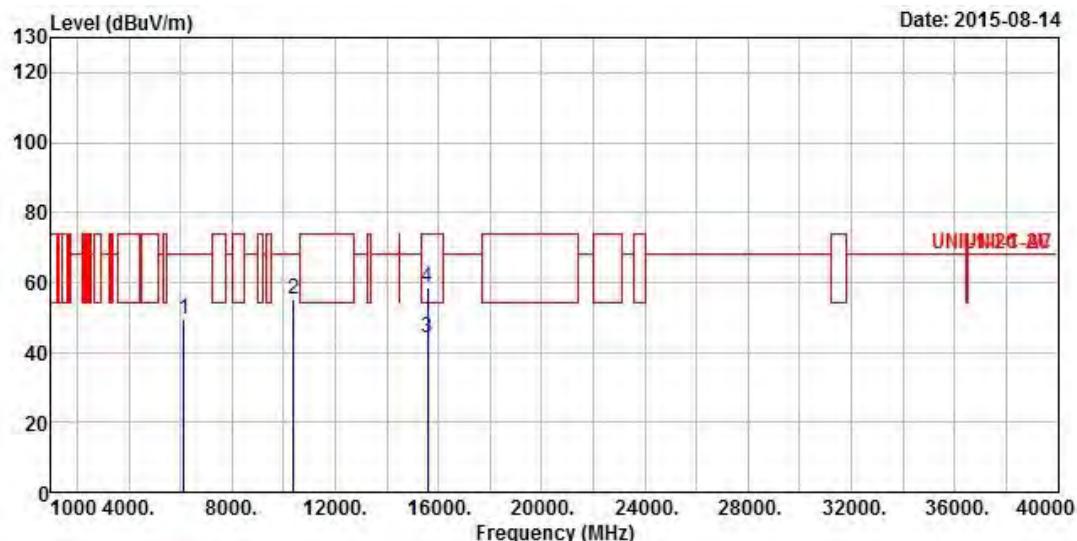
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	HT40	Test Freq. (MHz)	5190
N <sub>TX</sub>	3	Polarization	H



Freq	Level	Over Limit		ReadAntenna		Cable Preamp		Remark
		Line	Limit	Level	Factor	Loss	Factor	
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 6144.000	49.35	-18.85	68.20	40.10	34.23	7.48	32.46	Peak
2 10380.000	55.26	-12.94	68.20	40.30	38.90	8.85	32.79	Peak
3 15570.000	44.08	-9.92	54.00	29.16	37.76	9.41	32.25	Average
4 15570.000	58.70	-15.30	74.00	43.78	37.76	9.41	32.25	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) for 5150-5250MHz

Modulation Mode	HT40	Test Freq. (MHz)	5230					
N <sub>TX</sub>	3	Polarization	V					
Level (dBuV/m)			Date: 2015-08-14					
Freq	Level	Over Limit	Limit	Read	Antenna	Cable	Preamp	Remark
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 6972.000	53.19	-15.01	68.20	42.74	35.14	7.85	32.54	Peak
2 10460.000	56.10	-12.10	68.20	41.10	38.90	8.82	32.72	Peak
3 15690.000	43.58	-10.42	54.00	28.89	37.52	9.46	32.29	Average
4 15690.000	57.96	-16.04	74.00	43.27	37.52	9.46	32.29	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.

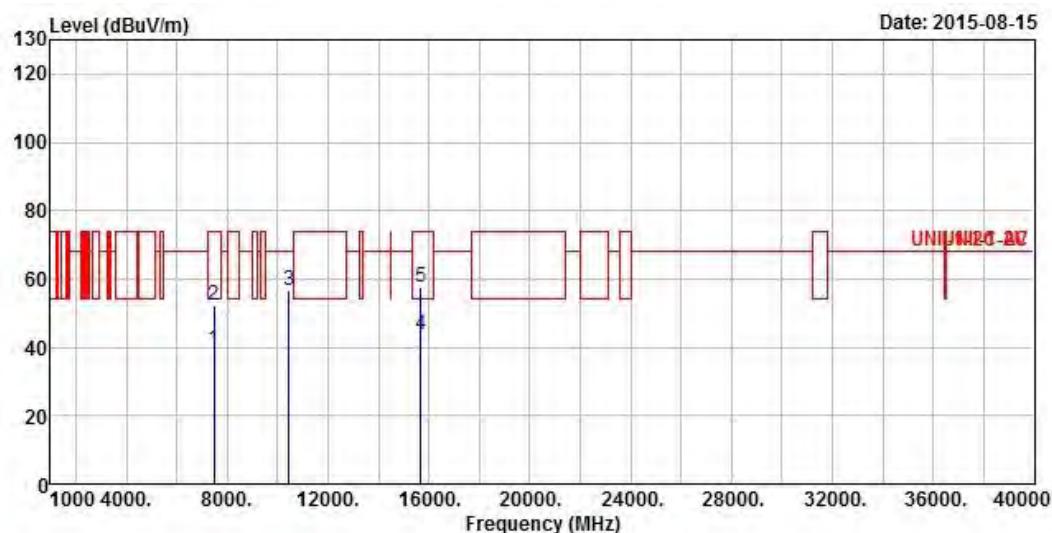
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	HT40	Test Freq. (MHz)	5230
N <sub>TX</sub>	3	Polarization	H



Freq	Level	Over Limit		Read	Antenna	Cable	Preamp	Remark
		Line	Limit					
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7488.000	39.35	-14.65	54.00	27.66	36.50	7.93	32.74 Average
2	7488.000	52.43	-21.57	74.00	40.74	36.50	7.93	32.74 Peak
3	10460.000	56.45	-11.75	68.20	41.45	38.90	8.82	32.72 Peak
4	15690.000	43.43	-10.57	54.00	28.74	37.52	9.46	32.29 Average
5	15690.000	57.45	-16.55	74.00	42.76	37.52	9.46	32.29 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) for 5150-5250MHz

Modulation Mode	VHT20	Test Freq. (MHz)	5180					
N <sub>TX</sub>	3	Polarization	V					
Level (dBuV/m)			Date: 2015-08-15					
Freq	Level	Over Limit	Limit	Read	Antenna	Cable	Preamp	Remark
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 6986.000	51.72	-16.48	68.20	41.24	35.17	7.85	32.54	Peak
2 10360.000	56.25	-11.95	68.20	41.30	38.90	8.86	32.81	Peak
3 15540.000	45.04	-8.96	54.00	30.05	37.83	9.39	32.23	Average
4 15540.000	58.84	-15.16	74.00	43.85	37.83	9.39	32.23	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.

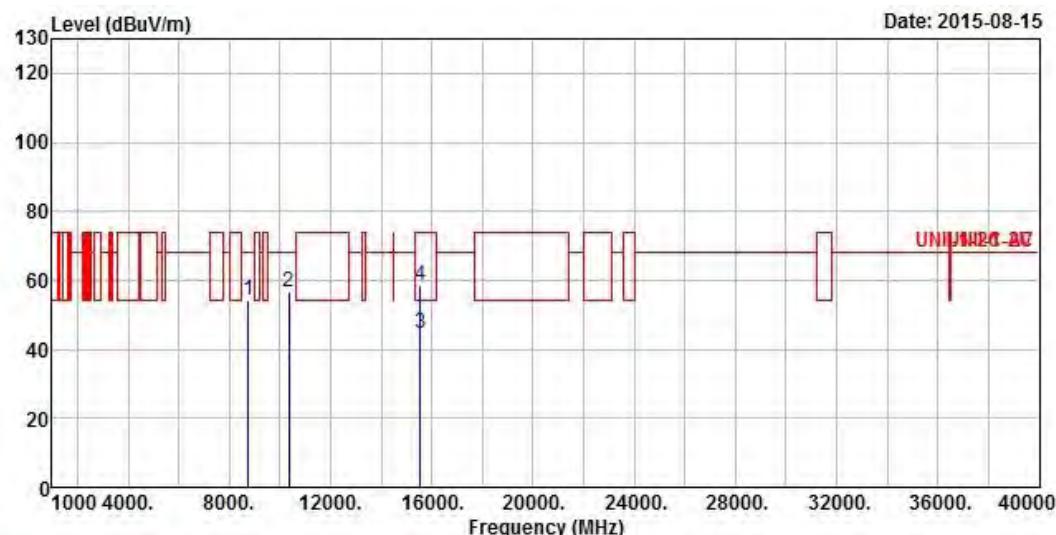
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	VHT20	Test Freq. (MHz)	5180
N <sub>TX</sub>	3	Polarization	H



Freq	Level	Over Limit		ReadAntenna	Cable	Preamp	Remark
		Limit	Line				
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1 8756.000	54.42	-13.78	68.20	41.70	37.75	7.94	32.97 Peak
2 10360.000	56.73	-11.47	68.20	41.78	38.90	8.86	32.81 Peak
3 15540.000	44.76	-9.24	54.00	29.77	37.83	9.39	32.23 Average
4 15540.000	58.56	-15.44	74.00	43.57	37.83	9.39	32.23 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.

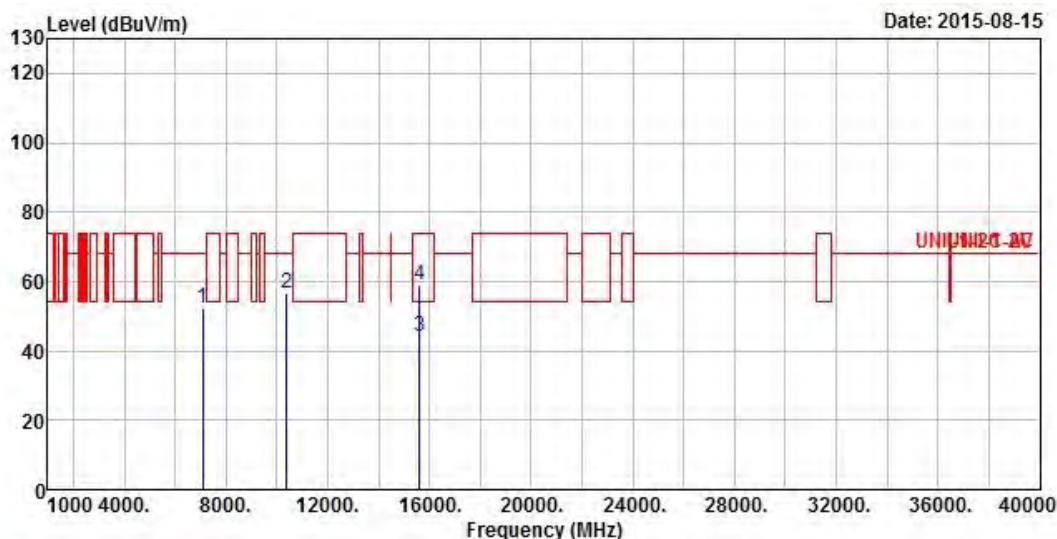
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	VHT20	Test Freq. (MHz)	5200
N <sub>TX</sub>	3	Polarization	V



Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark
		Line	Limit	Antenna	Level	Factor	Loss	
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 7089.000	52.43	-15.77	68.20	41.71	35.42	7.88	32.58	Peak
2 10400.000	56.43	-11.77	68.20	41.45	38.90	8.85	32.77	Peak
3 15600.000	44.31	-9.69	54.00	29.47	37.69	9.41	32.26	Average
4 15600.000	58.79	-15.21	74.00	43.95	37.69	9.41	32.26	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) for 5150-5250MHz

Modulation Mode	VHT20	Test Freq. (MHz)	5200																																																				
N <sub>TX</sub>	3	Polarization	H																																																				
			Date: 2015-08-15																																																				
<table border="1"> <thead> <tr> <th>Freq</th> <th>Level</th> <th>Over Limit</th> <th>Line</th> <th>Read</th> <th>Antenna</th> <th>Cable</th> <th>Preamp</th> </tr> <tr> <th>MHz</th> <th>dBuV/m</th> <th>dB</th> <th>dBuV/m</th> <th>dBuV</th> <th>dB/m</th> <th>dB</th> <th>dB</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>6951.000</td> <td>51.29</td> <td>-16.91</td> <td>68.20</td> <td>40.86</td> <td>35.11</td> <td>7.85</td> <td>32.53 Peak</td> </tr> <tr> <td>2</td> <td>10400.000</td> <td>56.61</td> <td>-11.59</td> <td>68.20</td> <td>41.63</td> <td>38.90</td> <td>8.85</td> <td>32.77 Peak</td> </tr> <tr> <td>3</td> <td>15600.000</td> <td>44.29</td> <td>-9.71</td> <td>54.00</td> <td>29.45</td> <td>37.69</td> <td>9.41</td> <td>32.26 Average</td> </tr> <tr> <td>4</td> <td>15600.000</td> <td>58.25</td> <td>-15.75</td> <td>74.00</td> <td>43.41</td> <td>37.69</td> <td>9.41</td> <td>32.26 Peak</td> </tr> </tbody> </table>			Freq	Level	Over Limit	Line	Read	Antenna	Cable	Preamp	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	1	6951.000	51.29	-16.91	68.20	40.86	35.11	7.85	32.53 Peak	2	10400.000	56.61	-11.59	68.20	41.63	38.90	8.85	32.77 Peak	3	15600.000	44.29	-9.71	54.00	29.45	37.69	9.41	32.26 Average	4	15600.000	58.25	-15.75	74.00	43.41	37.69	9.41	32.26 Peak	Remark
Freq	Level	Over Limit	Line	Read	Antenna	Cable	Preamp																																																
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB																																																
1	6951.000	51.29	-16.91	68.20	40.86	35.11	7.85	32.53 Peak																																															
2	10400.000	56.61	-11.59	68.20	41.63	38.90	8.85	32.77 Peak																																															
3	15600.000	44.29	-9.71	54.00	29.45	37.69	9.41	32.26 Average																																															
4	15600.000	58.25	-15.75	74.00	43.41	37.69	9.41	32.26 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.

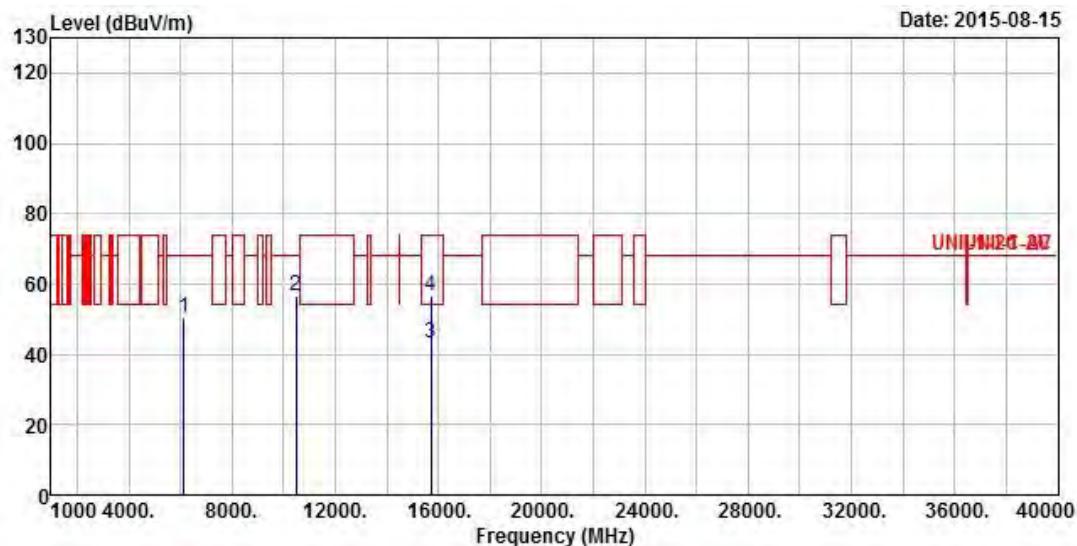
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	VHT20	Test Freq. (MHz)	5240
N <sub>TX</sub>	3	Polarization	V



Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark
		Line	Limit	Antenna	Level	Factor	Loss	
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 6144.000	50.51	-17.69	68.20	41.26	34.23	7.48	32.46	Peak
2 10480.000	56.61	-11.59	68.20	41.59	38.90	8.82	32.70	Peak
3 15720.000	43.07	-10.93	54.00	28.46	37.45	9.46	32.30	Average
4 15720.000	56.83	-17.17	74.00	42.22	37.45	9.46	32.30	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.

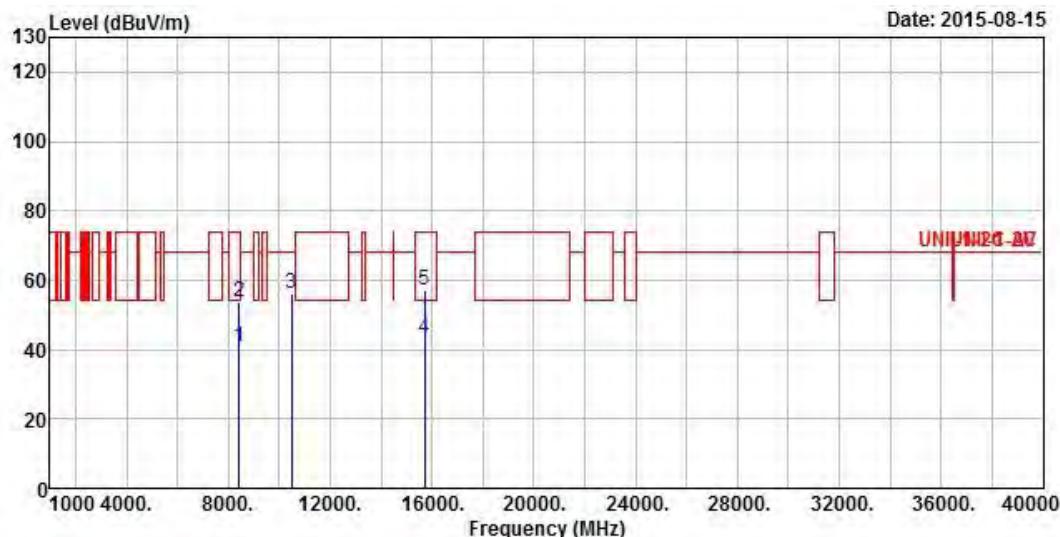
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	VHT20	Test Freq. (MHz)	5240
N <sub>TX</sub>	3	Polarization	H



Freq	Level	Over Limit		ReadAntenna	Cable	Preamp	Remark	
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB
1	8415.000	40.61	-13.39	54.00	27.96	37.60	7.96	32.91 Average
2	8415.000	53.85	-20.15	74.00	41.20	37.60	7.96	32.91 Peak
3	10480.000	56.20	-12.00	68.20	41.18	38.90	8.82	32.70 Peak
4	15720.000	43.32	-10.68	54.00	28.71	37.45	9.46	32.30 Average
5	15720.000	57.14	-16.86	74.00	42.53	37.45	9.46	32.30 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.

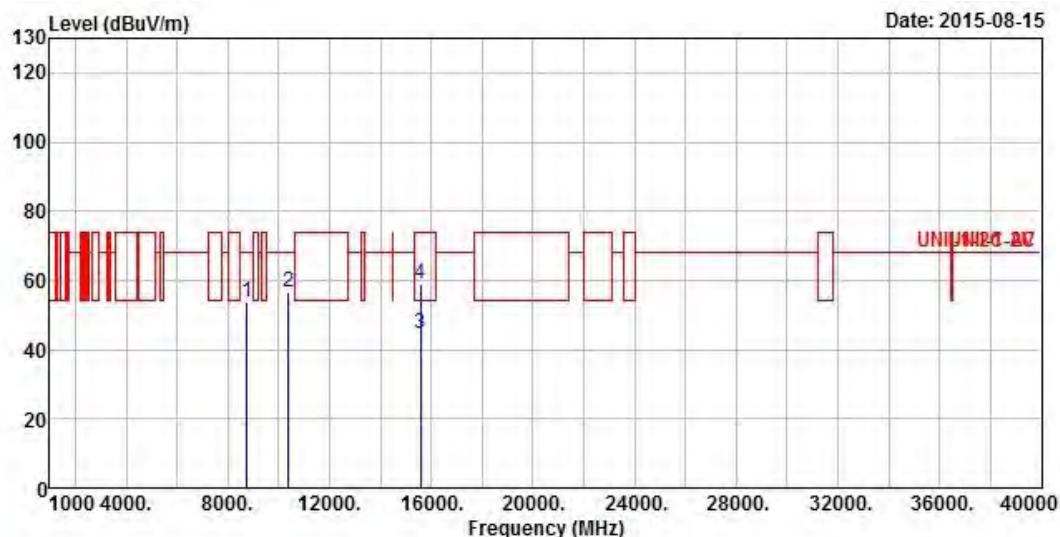
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	VHT40	Test Freq. (MHz)	5190
N <sub>TX</sub>	3	Polarization	V



Freq	Level	Over Limit		ReadAntenna	Cable	Preamp	Remark		
		Line	Limit						
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	8744.000	53.96	-14.24	68.20	41.24	37.75	7.94	32.97	Peak
2	10380.000	56.78	-11.42	68.20	41.82	38.90	8.85	32.79	Peak
3	15570.000	44.67	-9.33	54.00	29.75	37.76	9.41	32.25	Average
4	15570.000	58.84	-15.16	74.00	43.92	37.76	9.41	32.25	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.

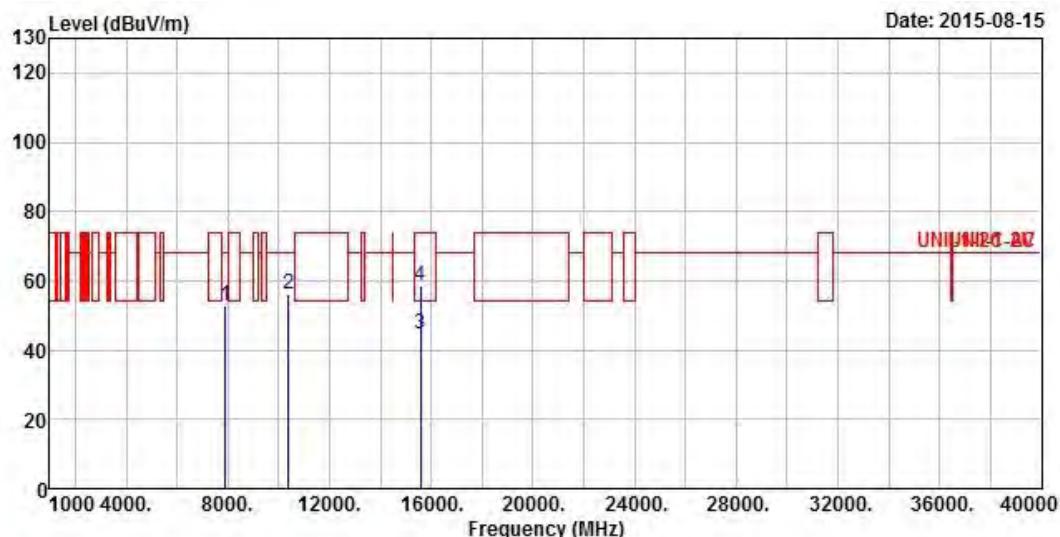
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	VHT40	Test Freq. (MHz)	5190
N <sub>TX</sub>	3	Polarization	H



Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark
		Limit	Line	Antenna	Level	Factor	Loss	
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 7914.000	52.97	-15.23	68.20	40.76	37.00	8.07	32.86	Peak
2 10380.000	56.25	-11.95	68.20	41.29	38.90	8.85	32.79	Peak
3 15570.000	44.69	-9.31	54.00	29.77	37.76	9.41	32.25	Average
4 15570.000	58.61	-15.39	74.00	43.69	37.76	9.41	32.25	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.

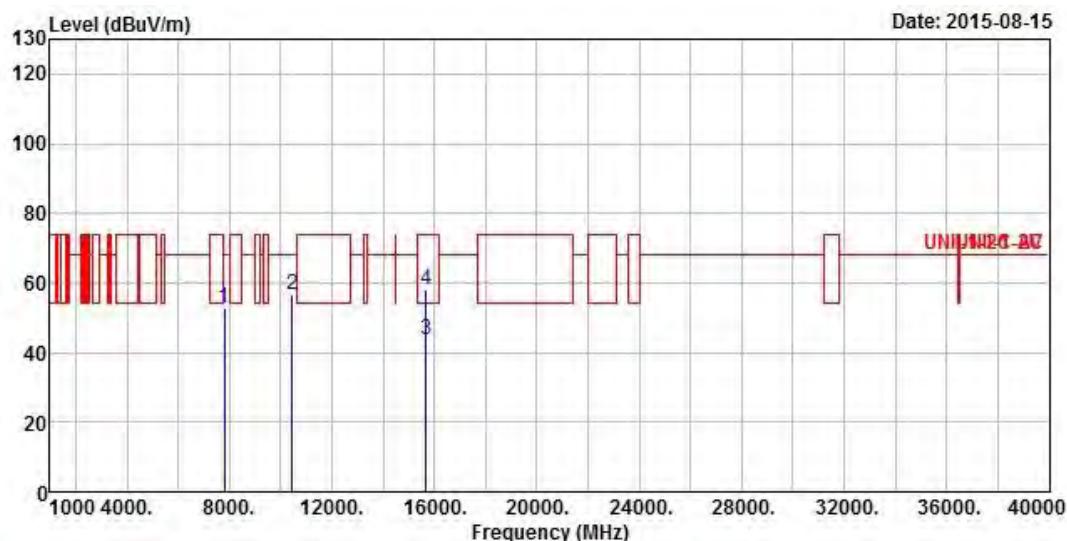
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	VHT40	Test Freq. (MHz)	5230
N <sub>TX</sub>	3	Polarization	V



Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	
		Limit	Line	Antenna	Level	Factor	Loss		
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	7816.000	52.64	-15.56	68.20	40.54	36.88	8.05	32.83	Peak
2	10460.000	56.68	-11.52	68.20	41.68	38.90	8.82	32.72	Peak
3	15690.000	43.63	-10.37	54.00	28.94	37.52	9.46	32.29	Average
4	15690.000	58.20	-15.80	74.00	43.51	37.52	9.46	32.29	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.

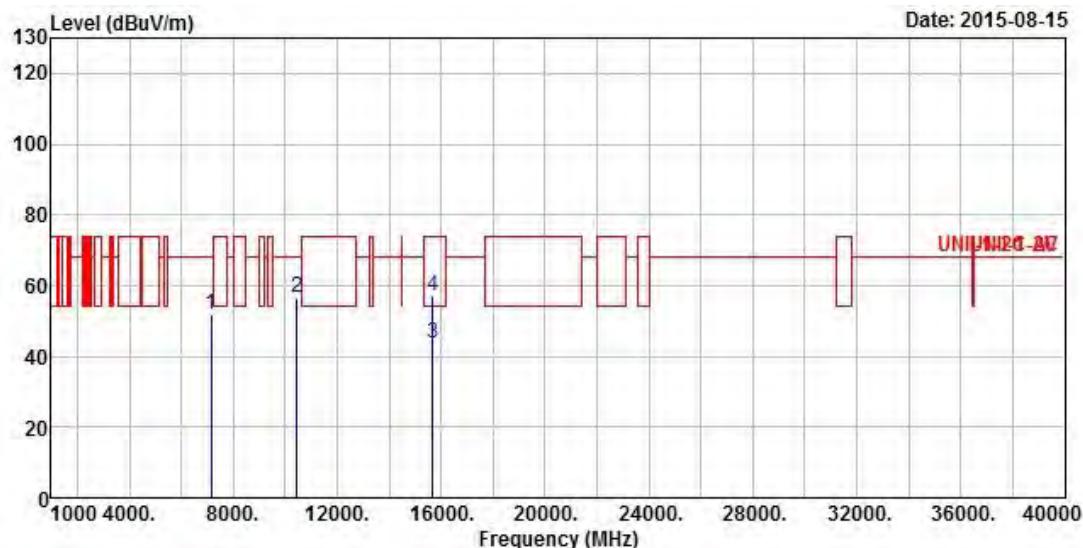
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	VHT40	Test Freq. (MHz)	5230
N <sub>TX</sub>	3	Polarization	H



Freq	Level	Over Limit		ReadAntenna		Cable Preamp		Remark
		MHz	dBuV/m	dB	Line	Level	Factor	
1	7144.000	51.74	-16.46	68.20	40.89	35.56	7.89	32.60 Peak
2	10460.000	56.77	-11.43	68.20	41.77	38.90	8.82	32.72 Peak
3	15690.000	43.48	-10.52	54.00	28.79	37.52	9.46	32.29 Average
4	15690.000	57.20	-16.80	74.00	42.51	37.52	9.46	32.29 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.

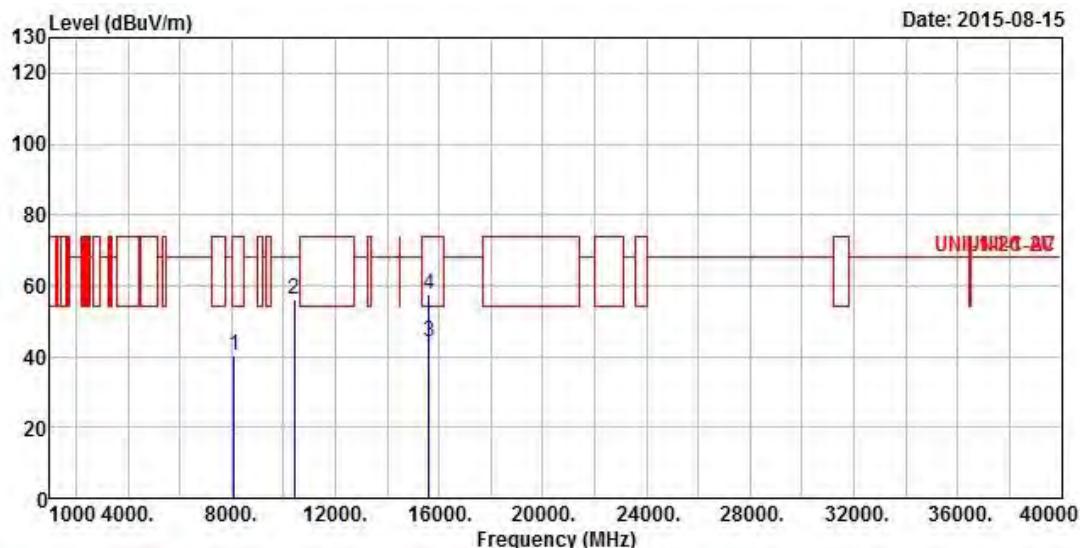
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	VHT80	Test Freq. (MHz)	5210
N <sub>TX</sub>	3	Polarization	V



Freq	Level	Over Limit	Line	ReadAntenna		Cable Loss	Preamp Factor	Remark	
				MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m
1	8112.000	40.14	-33.86	74.00	27.75	37.22	8.06	32.89	Peak
2	10420.000	56.13	-12.07	68.20	41.15	38.90	8.83	32.75	Peak
3	15630.000	43.95	-10.05	54.00	29.18	37.62	9.42	32.27	Average
4	15630.000	57.57	-16.43	74.00	42.80	37.62	9.42	32.27	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) for 5150-5250MHz

Modulation Mode	VHT80	Test Freq. (MHz)	5210
N <sub>TX</sub>	3	Polarization	H
Level (dBuV/m)			Date: 2015-08-15
Freq			
MHz		Over Limit	ReadAntenna
Freq		Level	Line
MHz		dBuV/m	dB
		dB	dBuV/m
1	7098.000	51.51	-16.69
2	10420.000	56.78	-11.42
3	15630.000	43.87	-10.13
4	15630.000	58.15	-15.85
Limit			
Line			
ReadAntenna			
Cable Loss			
Preamp Factor			
Remark			

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.



## 3.6.8 Transmitter Radiated Unwanted Emissions (Above 1GHz) beamforming

## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	VHT20	Test Freq. (MHz)	5180
N <sub>TX</sub>	3	Polarization	V
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) for 5150-5250MHz

Modulation Mode	VHT20	Test Freq. (MHz)	5180																																																																													
N <sub>TX</sub>	3	Polarization	H																																																																													
			Date: 2015-09-05																																																																													
<table border="1"> <thead> <tr> <th>Freq</th> <th>Level</th> <th>Over Limit</th> <th>Limit</th> <th>Read</th> <th>Antenna</th> <th>Cable</th> <th>Preamp</th> <th>Loss</th> <th>Factor</th> <th>Remark</th> </tr> <tr> <th>MHz</th> <th>dBuV/m</th> <th>dB</th> <th>dBuV/m</th> <th>dBuV</th> <th>dB/m</th> <th>dB</th> <th>dB</th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>7400.000</td> <td>38.55</td> <td>-15.45</td> <td>54.00</td> <td>27.11</td> <td>36.23</td> <td>7.92</td> <td>32.71</td> <td>32.71</td> <td>Average</td> </tr> <tr> <td>2</td> <td>7400.000</td> <td>52.58</td> <td>-21.42</td> <td>74.00</td> <td>41.14</td> <td>36.23</td> <td>7.92</td> <td>32.71</td> <td>32.71</td> <td>Peak</td> </tr> <tr> <td>3</td> <td>10360.000</td> <td>55.44</td> <td>-12.76</td> <td>68.20</td> <td>40.49</td> <td>38.90</td> <td>8.86</td> <td>32.81</td> <td>32.81</td> <td>Peak</td> </tr> <tr> <td>4</td> <td>15540.000</td> <td>44.39</td> <td>-9.61</td> <td>54.00</td> <td>29.40</td> <td>37.83</td> <td>9.39</td> <td>32.23</td> <td>32.23</td> <td>Average</td> </tr> <tr> <td>5</td> <td>15540.000</td> <td>58.87</td> <td>-15.13</td> <td>74.00</td> <td>43.88</td> <td>37.83</td> <td>9.39</td> <td>32.23</td> <td>32.23</td> <td>Peak</td> </tr> </tbody> </table>			Freq	Level	Over Limit	Limit	Read	Antenna	Cable	Preamp	Loss	Factor	Remark	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB				1	7400.000	38.55	-15.45	54.00	27.11	36.23	7.92	32.71	32.71	Average	2	7400.000	52.58	-21.42	74.00	41.14	36.23	7.92	32.71	32.71	Peak	3	10360.000	55.44	-12.76	68.20	40.49	38.90	8.86	32.81	32.81	Peak	4	15540.000	44.39	-9.61	54.00	29.40	37.83	9.39	32.23	32.23	Average	5	15540.000	58.87	-15.13	74.00	43.88	37.83	9.39	32.23	32.23	Peak	
Freq	Level	Over Limit	Limit	Read	Antenna	Cable	Preamp	Loss	Factor	Remark																																																																						
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB																																																																									
1	7400.000	38.55	-15.45	54.00	27.11	36.23	7.92	32.71	32.71	Average																																																																						
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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) for 5150-5250MHz

Modulation Mode	VHT20	Test Freq. (MHz)	5200																										
N <sub>TX</sub>	3	Polarization	V																										
			Date: 2015-09-05																										
			UNINTEN20-AU																										
<table border="1"> <thead> <tr> <th rowspan="2">Freq</th> <th rowspan="2">Level</th> <th>Over</th> <th>Limit</th> <th>Read</th> <th>Antenna</th> <th>Cable</th> <th>Preamp</th> <th rowspan="2">Remark</th> </tr> <tr> <th>Limit</th> <th>Line</th> <th>Level</th> <th>Factor</th> <th>Loss</th> <th>Factor</th> </tr> </thead> <tbody> <tr> <td>MHz</td> <td>dBuV/m</td> <td>dB</td> <td>dBuV/m</td> <td>dBuV</td> <td>dB/m</td> <td>dB</td> <td>dB</td> <td></td> </tr> </tbody> </table>						Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	Limit	Line	Level	Factor	Loss	Factor	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
Freq	Level	Over	Limit	Read	Antenna			Cable	Preamp	Remark																			
		Limit	Line	Level	Factor	Loss	Factor																						
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB																						
1	7908.000	53.85	-14.35	68.20	41.66	36.98	8.07	32.86 Peak																					
2	10400.000	54.46	-13.74	68.20	39.48	38.90	8.85	32.77 Peak																					
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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.

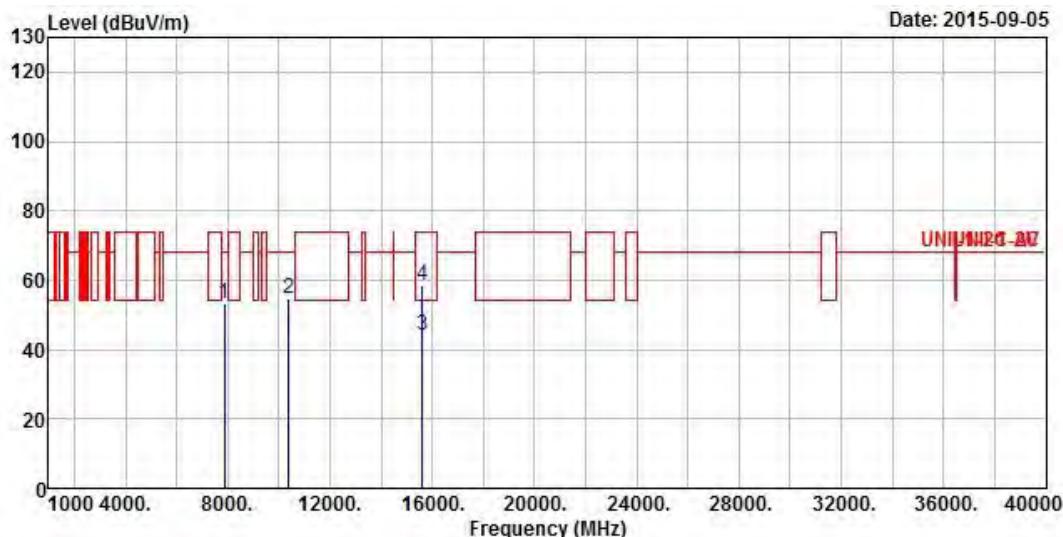
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	VHT20	Test Freq. (MHz)	5200
N <sub>TX</sub>	3	Polarization	H



Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark
		Limit	Line	Level	Factor	Loss	Factor	
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 7876.000	53.21	-14.99	68.20	41.06	36.94	8.06	32.85	Peak
2 10400.000	54.70	-13.50	68.20	39.72	38.90	8.85	32.77	Peak
3 15600.000	44.28	-9.72	54.00	29.44	37.69	9.41	32.26	Average
4 15600.000	58.32	-15.68	74.00	43.48	37.69	9.41	32.26	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.

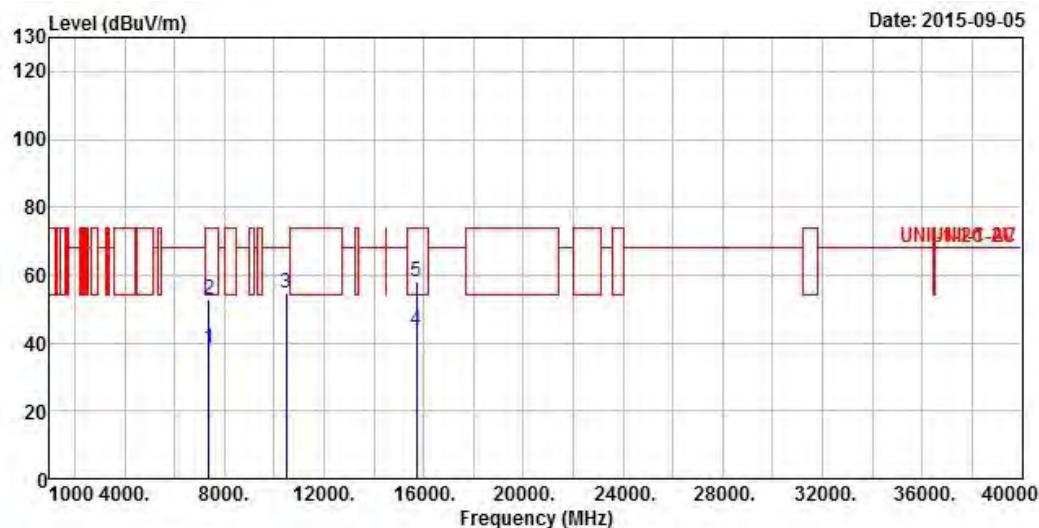
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	VHT20	Test Freq. (MHz)	5240
N <sub>TX</sub>	3	Polarization	V



Freq	Level	Over Limit	Line	Read		Cable	Preamp	Remark
				Antenna	Level Factor			
	MHz	dBuV/m		dB	dBuV/m	dBuV	dB/m	dB
1	7368.000	38.28	-15.72	54.00	26.86	36.19	7.92	32.69 Average
2	7368.000	52.74	-21.26	74.00	41.32	36.19	7.92	32.69 Peak
3	10480.000	54.86	-13.34	68.20	39.84	38.90	8.82	32.70 Peak
4	15720.000	43.51	-10.49	54.00	28.90	37.45	9.46	32.30 Average
5	15720.000	57.83	-16.17	74.00	43.22	37.45	9.46	32.30 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.

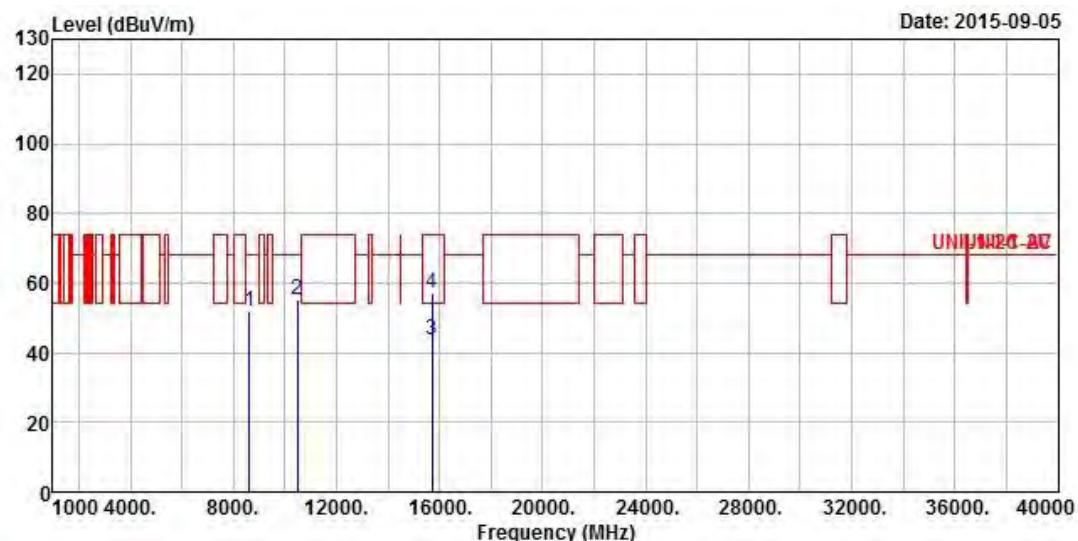
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	VHT20	Test Freq. (MHz)	5240
N <sub>TX</sub>	3	Polarization	H



Freq	Level	Over Limit	Limit Line	ReadAntenna		Cable Loss	Preamp Factor	Remark	
				MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m
1	8622.000	51.82	-16.38	68.20	39.10	37.72	7.94	32.94	Peak
2	10480.000	55.24	-12.96	68.20	40.22	38.90	8.82	32.70	Peak
3	15720.000	43.77	-10.23	54.00	29.16	37.45	9.46	32.30	Average
4	15720.000	57.19	-16.81	74.00	42.58	37.45	9.46	32.30	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) for 5150-5250MHz

Modulation Mode	VHT40	Test Freq. (MHz)	5190						
N <sub>TX</sub>	3	Polarization	V						
Level (dBuV/m)			Date: 2015-09-05						
Freq	Level	Over Limit	Limit	Read	Antenna	Cable	Preamp		
	MHz	dBuV/m	dB	Line	Level	Factor	Loss	Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7904.000	52.57	-15.63	68.20	40.38	36.98	8.07	32.86	Peak
2	10380.000	54.32	-13.88	68.20	39.36	38.90	8.85	32.79	Peak
3	15570.000	44.46	-9.54	54.00	29.54	37.76	9.41	32.25	Average
4	15570.000	57.93	-16.07	74.00	43.01	37.76	9.41	32.25	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) for 5150-5250MHz

Modulation Mode	VHT40	Test Freq. (MHz)	5190					
N <sub>TX</sub>	3	Polarization	H					
Level (dBuV/m)			Date: 2015-09-05					
Freq	Level	Over Limit	Line	Read	Antenna	Cable	Preamp	Remark
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 7364.000	38.58	-15.42	54.00	27.21	36.14	7.92	32.69	Average
2 7364.000	51.23	-22.77	74.00	39.86	36.14	7.92	32.69	Peak
3 10380.000	54.99	-13.21	68.20	40.03	38.90	8.85	32.79	Peak
4 15570.000	44.52	-9.48	54.00	29.60	37.76	9.41	32.25	Average
5 15570.000	58.50	-15.50	74.00	43.58	37.76	9.41	32.25	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.

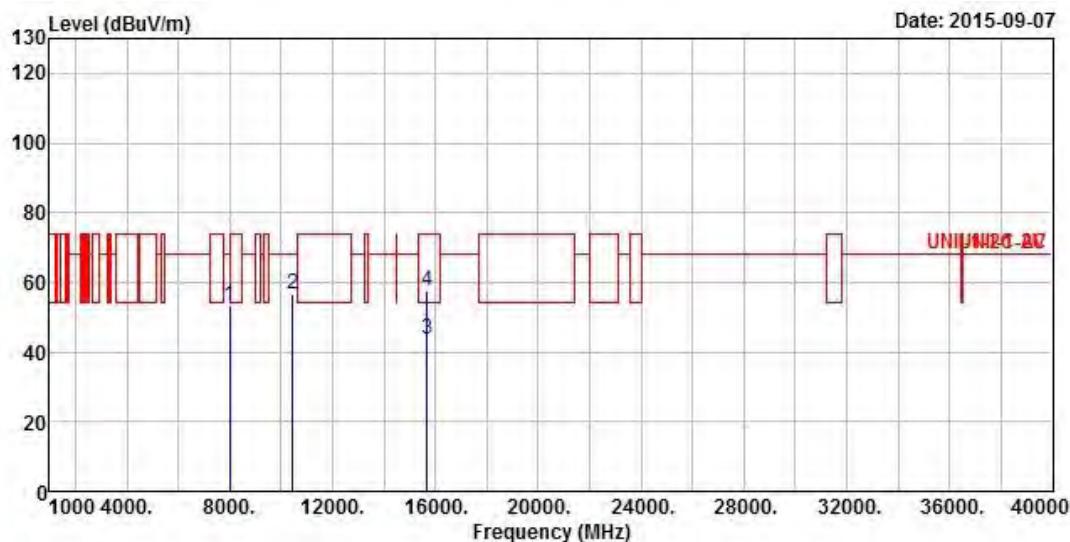
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	VHT40	Test Freq. (MHz)	5230
N <sub>TX</sub>	3	Polarization	V



Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark
		Limit	Line	Level	Factor	Loss	Factor	
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 7988.000	53.42	-14.78	68.20	41.12	37.08	8.10	32.88	Peak
2 10460.000	56.82	-11.38	68.20	41.82	38.90	8.82	32.72	Peak
3 15690.000	43.86	-10.14	54.00	29.17	37.52	9.46	32.29	Average
4 15690.000	57.76	-16.24	74.00	43.07	37.52	9.46	32.29	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.

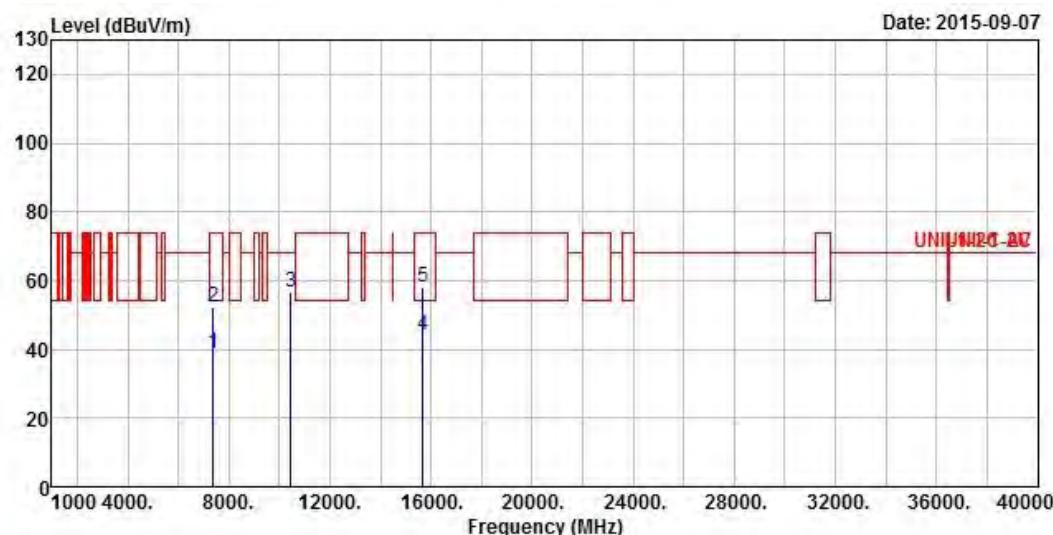
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	VHT40	Test Freq. (MHz)	5230
N <sub>TX</sub>	3	Polarization	H



Freq	Level	Over Limit		Read Antenna Level	Antenna Factor	Cable Preamp		Remark
		MHz	dBuV/m	dB	dBuV/m	dB	dB	
1	7384.000	38.66	-15.34	54.00	27.21	36.23	7.92	32.70 Average
2	7384.000	52.11	-21.89	74.00	40.66	36.23	7.92	32.70 Peak
3	10460.000	56.53	-11.67	68.20	41.53	38.90	8.82	32.72 Peak
4	15690.000	44.07	-9.93	54.00	29.38	37.52	9.46	32.29 Average
5	15690.000	58.21	-15.79	74.00	43.52	37.52	9.46	32.29 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.

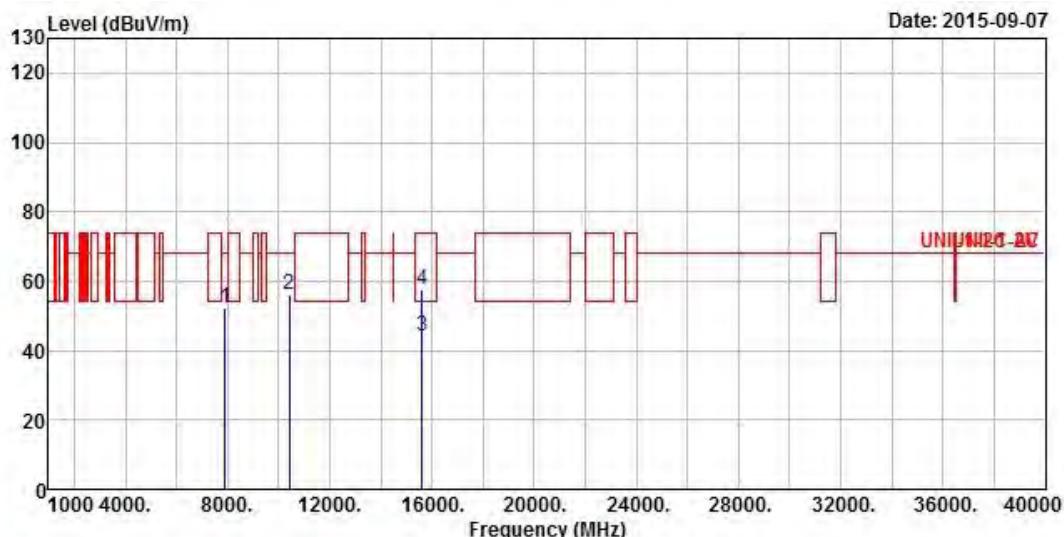
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	VHT80	Test Freq. (MHz)	5210
N <sub>TX</sub>	3	Polarization	V



Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark
		Line	Limit	Antenna	Level	Factor	Loss	
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 7920.000	52.33	-15.87	68.20	40.12	37.00	8.07	32.86	Peak
2 10420.000	56.18	-12.02	68.20	41.20	38.90	8.83	32.75	Peak
3 15630.000	44.29	-9.71	54.00	29.52	37.62	9.42	32.27	Average
4 15630.000	57.62	-16.38	74.00	42.85	37.62	9.42	32.27	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.

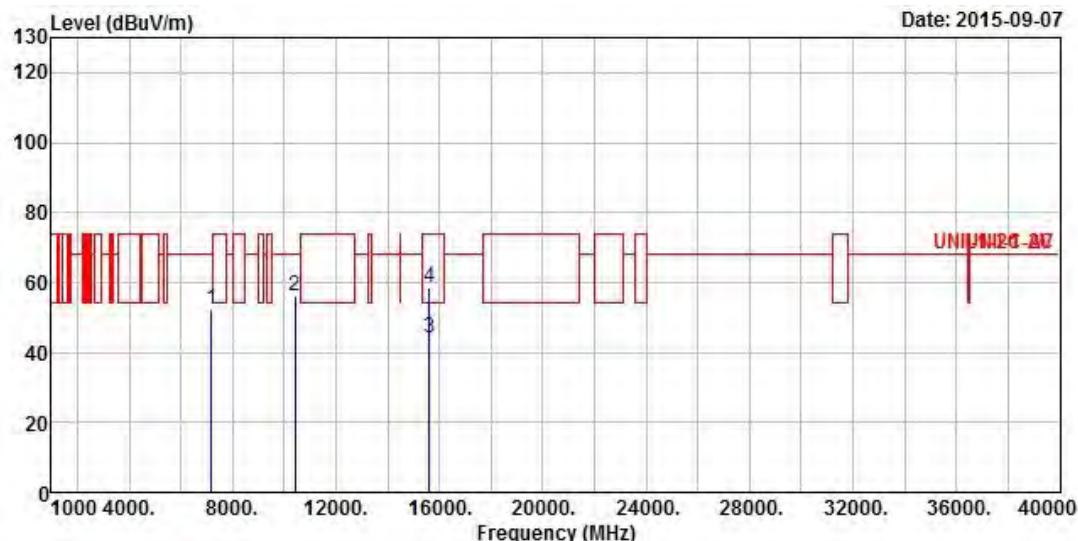
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



## Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

Modulation Mode	VHT80	Test Freq. (MHz)	5210
N <sub>TX</sub>	3	Polarization	H



Freq	Level	Over Limit		Read	Antenna	Cable	Preamp	Loss	Factor	Remark
		Line	Limit							
		MHz	dBuV/m			dB	dBuV/m		dB	
1	7188.000	52.37	-15.83	68.20	41.40	35.69	7.90	32.62		Peak
2	10420.000	56.17	-12.03	68.20	41.19	38.90	8.83	32.75		Peak
3	15630.000	44.32	-9.68	54.00	29.55	37.62	9.42	32.27		Average
4	15630.000	58.37	-15.63	74.00	43.60	37.62	9.42	32.27		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.

### 3.6.9 Frequency Stability

### 3.6.10 Frequency Stability Limit

Frequency Stability Limit	
<b>UNII Devices</b>	
<input checked="" type="checkbox"/>	In-band emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.
<b>IEEE Std. 802.11n-2009</b>	
<input checked="" type="checkbox"/>	The transmitter center frequency tolerance shall be $\pm 20$ ppm maximum for the 5 GHz band and $\pm 25$ ppm maximum for the 2.4 GHz band.

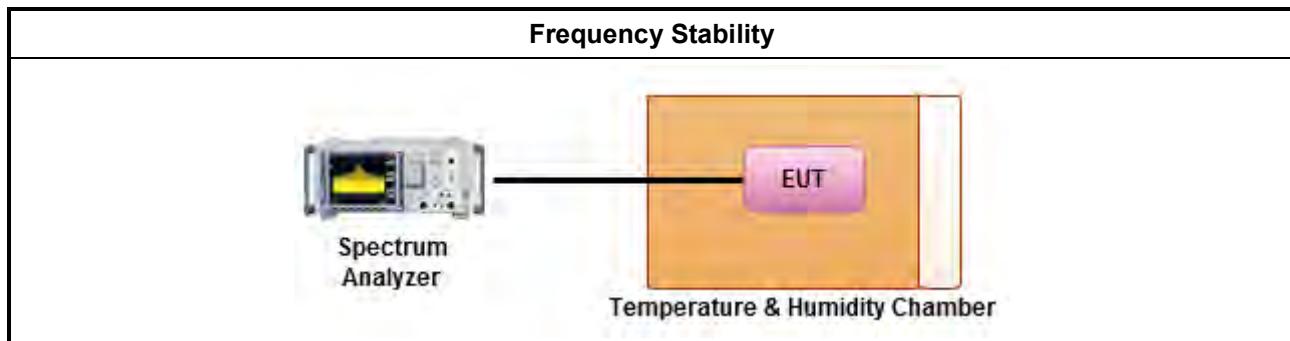
### 3.6.11 Measuring Instruments

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

### 3.6.12 Test Procedures

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

### 3.6.13 Test Setup





### 3.6.14 Test Result of Frequency Stability

Frequency Stability Result (only for non-beamforming mode)					
Mode		Frequency Stability (ppm)			
Condition	Freq. (MHz)	0 min	2 min	5 min	10 min
T <sub>20°C</sub> Vmax	5200	7.9942	7.9538	7.9250	7.7212
T <sub>20°C</sub> Vmin	5200	7.9558	7.9192	7.8923	7.8019
T <sub>50°C</sub> Vnom	5200	-0.7519	-0.9192	-0.6673	-0.4173
T <sub>40°C</sub> Vnom	5200	1.5635	0.5000	-0.1673	-0.5000
T <sub>30°C</sub> Vnom	5200	4.8423	3.9250	3.2558	2.5885
T <sub>20°C</sub> Vnom	5200	8.0154	7.1981	6.5115	5.8442
T <sub>10°C</sub> Vnom	5200	10.9365	10.2692	9.6019	9.1846
T <sub>0°C</sub> Vnom	5200	13.1923	12.8577	12.4404	12.1058
T <sub>-10°C</sub> Vnom	5200	17.3423	17.0019	16.0308	15.8635
T <sub>-20°C</sub> Vnom	5200	16.9481	17.1154	17.4500	18.2019
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 0 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	Apr. 15. 2015	AC Conduction
LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	8127-477	9kHz ~ 30MHz	Jan. 22, 2015	AC Conduction
RF Cable-CON	HUBER+SUHNER	RG213/U	076118320200 01	9kHz ~ 30MHz	Oct. 31, 2014	AC Conduction
EMI Filter	LINDGREN	LRE-2030	2651	< 450 Hz	NA	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	101500	9KHz~40GHz	May. 06, 2015	RF Conducted
Temp. and Humidity Chamber	Giant Force	GTH-225-20-S	MAB0103-001	-20 ~ 100°C	Jun. 12, 2015	RF Conducted
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	Jul. 28, 2015	RF Conducted
AC Power Source	G.W	APS-9102	EL920581	AC 0V ~ 300V	Jun. 22, 2015	RF Conducted

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



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz ~ 1GHz 3m	Nov. 29, 2014	Radiated Emission
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz ~ 6GHz 3m	Dec. 17, 2014	Radiated Emission
Amplifier	HP	8447D	2944A08033	10kHz ~ 1.3GHz	May 11, 2015	Radiated Emission
Amplifier	Agilent	8449B	3008A02120	1GHz ~ 26.5GHz	Sep. 01, 2015	Radiated Emission
Spectrum	R&S	FSP40	100004	9kHz ~ 40GHz	Apr. 02, 2015	Radiated Emission
Bilog Antenna	SCHAFFNER	CBL 6112D	22237	30MHz ~ 1GHz	Sep. 20, 2014	Radiated Emission
Horn Antenna	ETS • LINDGREN	3115	6741	1GHz ~ 18GHz	Jul. 15, 2015	Radiated Emission
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	18GHz ~ 40GHz	Jan. 27, 2015	Radiated Emission
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	Nov. 15, 2014	Radiated Emission
RF Cable-high	SUHNER	SUCOFLEX 106	03CH03-HY	1GHz ~ 40GHz	Dec. 12, 2014	Radiated Emission
Turn Table	EM Electronics	EM Electronics	060615	0 ~ 360 degree	N/A	Radiated Emission

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

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Amplifier	EMC INSTRUMENTS	EMC184045B	980192	18GHz ~ 40GHz	Aug. 25.2014	Radiated Emission
Loop Antenna	R&S	HFH2-Z2	100330	9 kHz~30 MHz	Nov. 10, 2014	Radiated Emission

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