FCC Test Report

Equipment	:	**Indoor 802.11a/g/b/n/ac Wireless AP**
Brand Name	:	**Open Mesh**
Model No.	:	**OM5P-AC**
FCC ID	:	**WT8OM5PAC2**
Standard	:	**47 CFR FCC Part 15.407**
Operating Band	:	**5150 MHz – 5250 MHz**
FCC Classification	:	**NII**
Applicant	:	**Open Mesh, Inc.** 7327 SW Barnes Rd #422, Portland, OR 97225
Manufacturer	:	**Senao Networks, Inc.** No. 500 Fusing 3rd Rd., Hwa-Ya Technology Park Kuei-Shan Hsiang, Taoyuan County 333, Taiwan

The product sample received on Apr. 27, 2015 and completely tested on May 09, 2015. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2009 and shown compliance with the applicable technical standards.

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

Reviewed by:

Vic Hsiao / Supervisor

Testing Laboratory
1190

Table of Contents

Summary of Test Result

Conformance Test Specifications					
Report Clause	**Ref. Std. Clause**	**Description**	**Measured**	**Limit**	**Result**
1.1.2	15.203	Antenna Requirement	Antenna connector mechanism complied	FCC 15.203	Complied
3.1	15.207	AC Power-line Conducted Emissions	[dBuV]: 10.070MHz 41.04(Margin 8.96dB) - AV 47.74 (Margin 12.26dB) - QP	FCC 15.207	Complied
3.2	15.407(a)	Emission Bandwidth	Bandwidth [MHz] 20M: 22.17/ 40M: 44.72 80M: 82.56	Information only	Complied
3.3	15.407(a)	RF Output Power (Maximum Conducted Output Power)	Power [dBm] 5150-5250MHz:15.34	Power [dBm] 5150-5250MHz:17	Complied
3.4	15.407(a)	Peak Power Spectral Density	PPSD [dBm/MHz] 5150-5250MHz: -0.50	PPSD [dBm/MHz] 5150-5250MHz:4	Complied
3.5	15.407(a)	Peak Excursion	10.05 dB	13 dB	Complied
3.6	15.407(b)	Transmitter Bandedge Emissions	Restricted Bands [dBuV/m at 3m]:5149.94MHz 67.91 (Margin 6.09dB) - PK 52.69 (Margin 1.31dB) - AV	Non-Restricted Bands: ≤ -27dBm (68.3dBuV/m@3m) Restricted Bands: FCC 15.209	Complied
3.7	15.407(b)	Transmitter Unwanted Emissions	Restricted Bands [dBuV/m at 3m]: 15600MHz 68.62 (Margin 5.38dB) - PK 52.97(Margin 1.03dB) - AV	Non-Restricted Bands: ≤ -27dBm (68.3dBuV/m@3m) Restricted Bands: FCC 15.209	Complied
3.8	15.407(g)	Frequency Stability	6.5442 ppm	Signal shall remain in-band	Complied

Revision History

Report No.	Version	Description	Issued Date
FR542230AN	Rev. 01	Initial issue of report	May 19, 2015

1 General Description

1.1 Information

1.1.1 RF General Information

RF General Information						
Frequency Range (MHz)	**IEEE Std. 802.11**	**Ch. Freq. (MHz)**	**Channel Number**	**Transmit Chains (N_{TX})**	**RF Output Power (dBm)**	**Co-location**
5150-5250	a	5180-5240	36-48 [4]	2	10.24	Yes
5150-5250	n (HT20)	5180-5240	36-48 [4]	2	10.65	Yes
5150-5250	n (HT40)	5190-5230	38-46 [2]	2	13.36	Yes
5150-5250	ac (VHT20)	5180-5240	36-48 [4]	2	10.66	Yes
5150-5250	ac (VHT40)	5190-5230	38-46 [2]	2	13.18	Yes
5150-5250	ac (VHT80)	5210	42 [1]	2	15.34	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.)						

1.1.2 Antenna Information

Antenna Category	
☒	Integral antenna (antenna permanently attached)
	☒ Temporary RF connector provided
	☐ 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.

Antenna General Information			
No.	**Ant. Cat.**	**Ant. Type**	**Gain (dBi)**
1	Integral	PIFA	7.1
2	Integral	PIFA	7.7

1.1.3 Type of EUT

Identify EUT	
EUT Serial Number	N/A
Presentation of Equipment	☐ Production ; ☐ Pre-Production ; ☒ Prototype

Type of EUT	
☒	Stand-alone
☐	Combined (EUT where the radio part is fully integrated within another device) Combined Equipment - Brand Name / Model No.: …
☐	Plug-in radio (EUT intended for a variety of host systems) Host System - Brand Name / Model No.: …
☐	Other:

1.1.4 Test Signal Duty Cycle

Operated Mode for Worst Duty Cycle	
☐ Operated normally mode for worst duty cycle	
☒ Operated test mode for worst duty cycle	
Test Signal Duty Cycle (x)	**Power Duty Factor [dB] – (10 log 1/x)**
☒ 97.62% - IEEE 802.11a	0.10
☒ 96.04% - IEEE 802.11n (HT20)	0.18
☒ 93.14% - IEEE 802.11n (HT40)	0.31
☒ 96.04% - IEEE 802.11ac (VHT20)	0.18
☒ 97.14% - IEEE 802.11ac (VHT40)	0.13
☒ 94.46% - IEEE 802.11ac (VHT80)	0.25

1.1.5 EUT Operational Condition

Supply Voltage	☒ AC mains	☒ DC	
Type of DC Source	☒ From adapter	☒ From PoE	☐ From Battery

1.2 Support Equipment

Support Equipment – RF Conducted				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Notebook	DELL	E5540	DoC
2	AC adaptor	Powertron Electronics Corp.	PA1024-2HUB PA1024-120HUB200	DoC
3	PoE	EnGenius	EPE-24R	DoC
4	PoE	EnGenius	EPE-48R	DoC

Support Equipment - AC Conduction and Radiated Emission				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	AC adaptor	Powertron Electronics Corp.	PA1024-2HUB PA1024-120HUB200	DoC
2	PoE	EnGenius	EPE-24R	DoC
3	PoE	EnGenius	EPE-48R	DoC

1.3 Testing Applied Standards

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

- 47 CFR FCC Part 15
- ANSI C63.10-2009
- FCC KDB 789033 D01 v01r04
- FCC KDB 644545 D01 v01r02
- FCC KDB 662911 D01 v02r01

1.4 Testing Location Information

Testing Location					
☒	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C.			
		TEL : 886-3-327-3456	FAX : 886-3-327-0973		
Test Condition		**Test Site No.**	**Test Engineer**	**Test Environment**	
AC Conduction		CO04-HY	Zeus	20°C / 48%	
RF Conducted		TH01-HY	Leo	22.1°C / 61%	
Radiated Emission		03CH03-HY	Daniel	25.8°C / 48%	

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, 6dB bandwidth		±0.6 %
RF output power, conducted		±0.1 dB
Power density, conducted		±0.6 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		±0.6 %

2 Test Configuration of EUT

2.1 The Worst Case Modulation Configuration

Worst Modulation Used for Conformance Testing			
Modulation Mode	**Transmit Chains (N_{TX})**	**Data Rate / MCS**	**Worst Data Rate / MCS**
11a	2	6-54Mbps	6 Mbps
HT20	2	MCS 0-15	MCS 0
HT40	2	MCS 0-15	MCS 0
VHT20	2	MCS 0-8	MCS 0
VHT40	2	MCS 0-9	MCS 0
VHT80	2	MCS 0-9	MCS 0

2.2 The Worst Case Power Setting Parameter

The Worst Case Power Setting Parameter (5150-5250MHz band)							
Test Software/Version	ART2-GUI_V2.3						
Modulation Mode	**N_{TX}**	**Test Frequency (MHz)**					
		NCB: 20MHz			**NCB: 40MHz**		**NCB: 80MHz**
		5180	**5200**	**5240**	**5190**	**5230**	**5210**
11a,6-54Mbps	2	8	8	8	-	-	-
HT20,M0-15	2	8.5	8.5	8.5	-	-	-
HT40,M0-15	2	-	-	-	11.5	11.5	-
VHT20,M0-8	2	8.5	8.5	8	-	-	-
VHT40,M0-9	2	-	-	-	11.5	11.5	-
VHT80,M0-9	2	-	-	-	-	-	14

2.3 The Worst Case Measurement Configuration

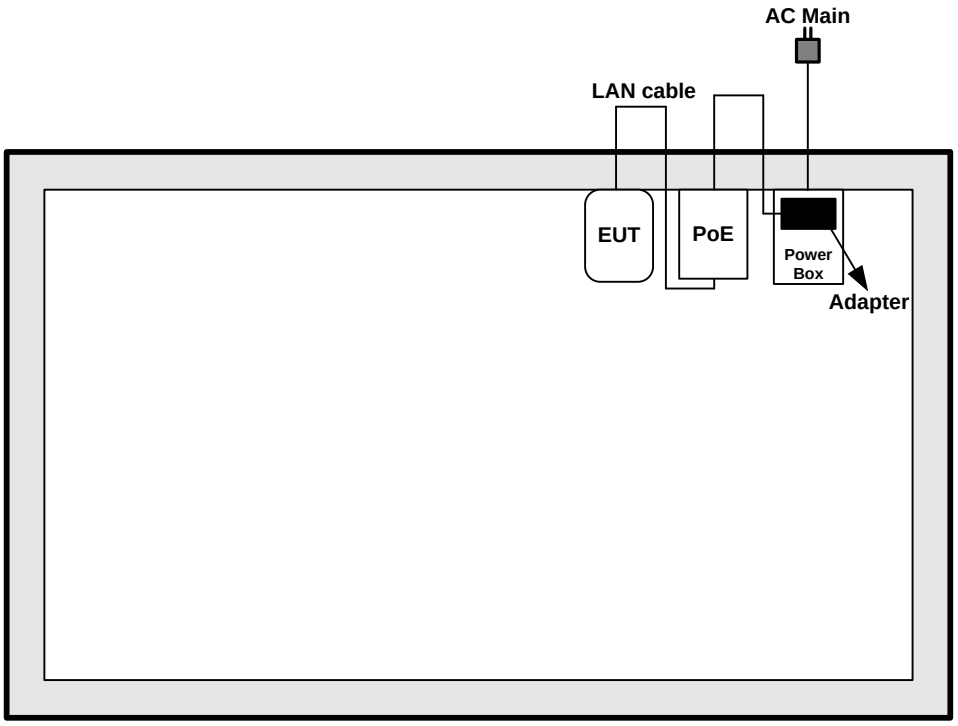
The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
Operating Mode	Operating Mode Description
1	Adapter mode and transmit
2	PoE (24V) mode and transmit
3	PoE (48V) mode and transmit
Operating mode 2 was the worst case and it is recorded in this test report.	

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

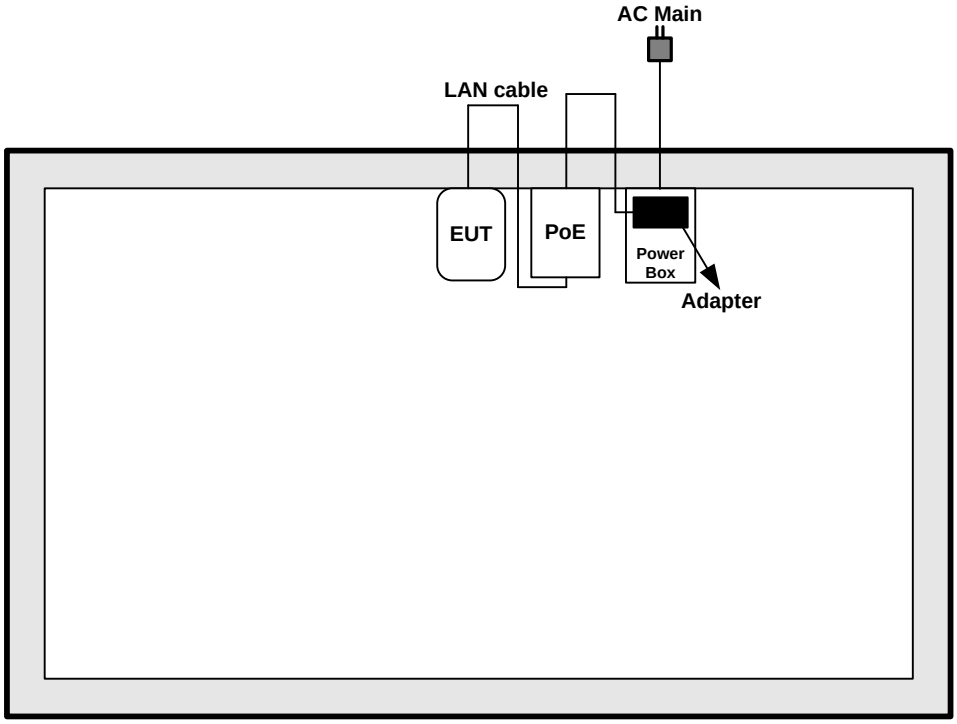
The Worst Case Mode for Following Conformance Tests			
Tests Item	Transmitter Radiated Unwanted Emissions Transmitter Radiated Bandedge Emissions		
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.		
User Position	☒ EUT will be placed in fixed position.		
	☐ EUT will be placed in mobile position and operating multiple positions.		
	☐ EUT will be a hand-held or body-worn battery-powered devices and operating multiple positions. EUT shall be performed three orthogonal planes.		
Operating Mode	Operating Mode Description		
< 1GHz	1. Adapter mode & Radio link (WLAN)		
	2. PoE (24V) & Radio link (WLAN)		
	3. PoE (48V) & Radio link (WLAN)		
Operating mode 2 was the worst case and it is recorded in this test report.			
> 1GHz	1. Adapter mode & Radio link (WLAN)		
Modulation Mode	11a, HT20, HT40, VHT20, VHT40, VHT80		
Orthogonal Planes of EUT	**X Plane**	**Y Plane**	**Z Plane**
			
Worst Planes of EUT			V

2.4 Test Setup Diagram

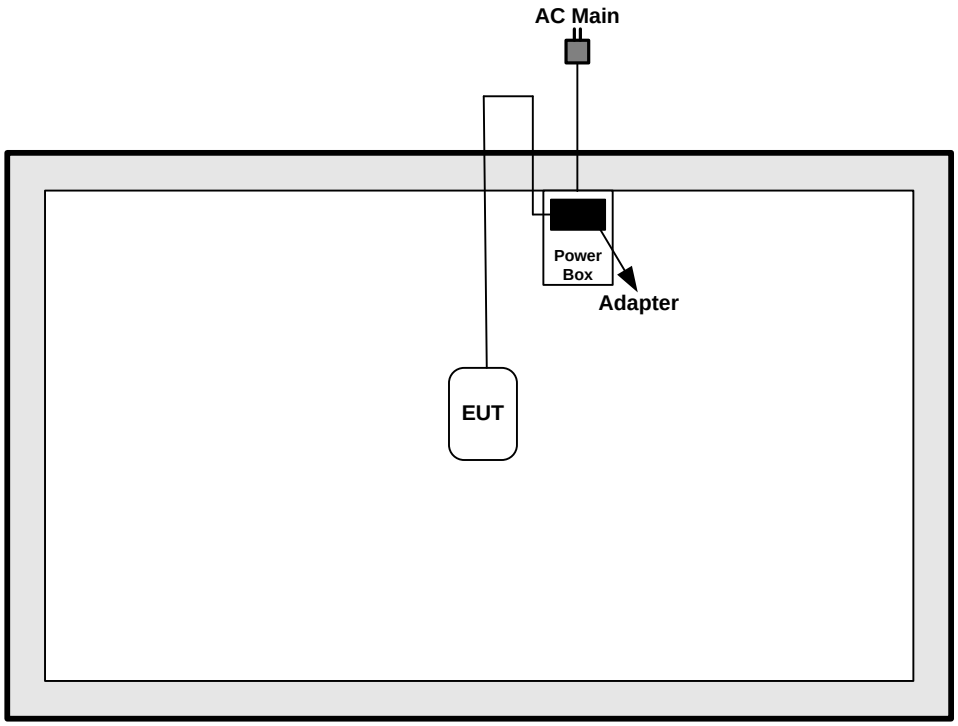
Test Setup Diagram – AC Line Conducted Emission Test - Mode 2



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



Test Setup Diagram - Radiated Test (Above 1GHz)



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

3.1.2 Measuring Instruments

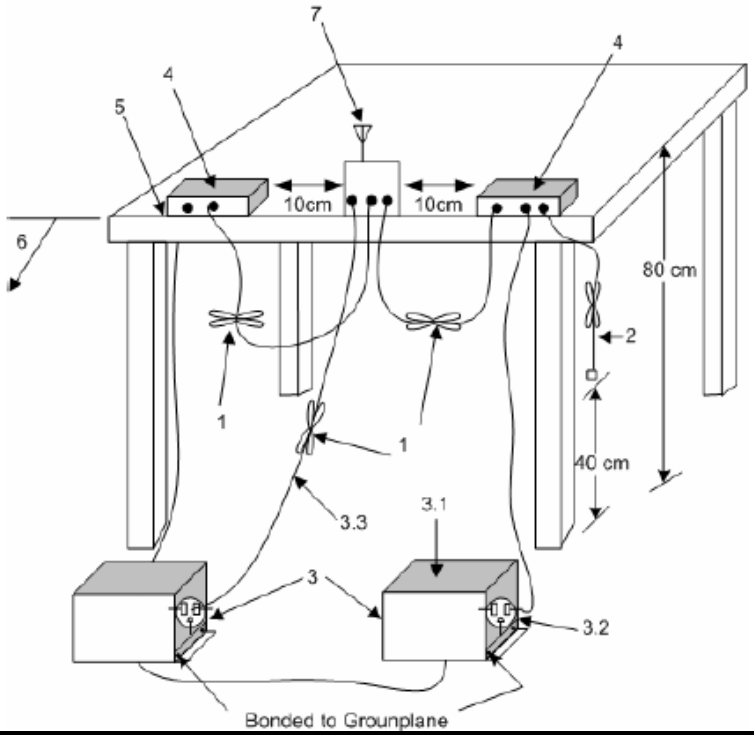
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

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

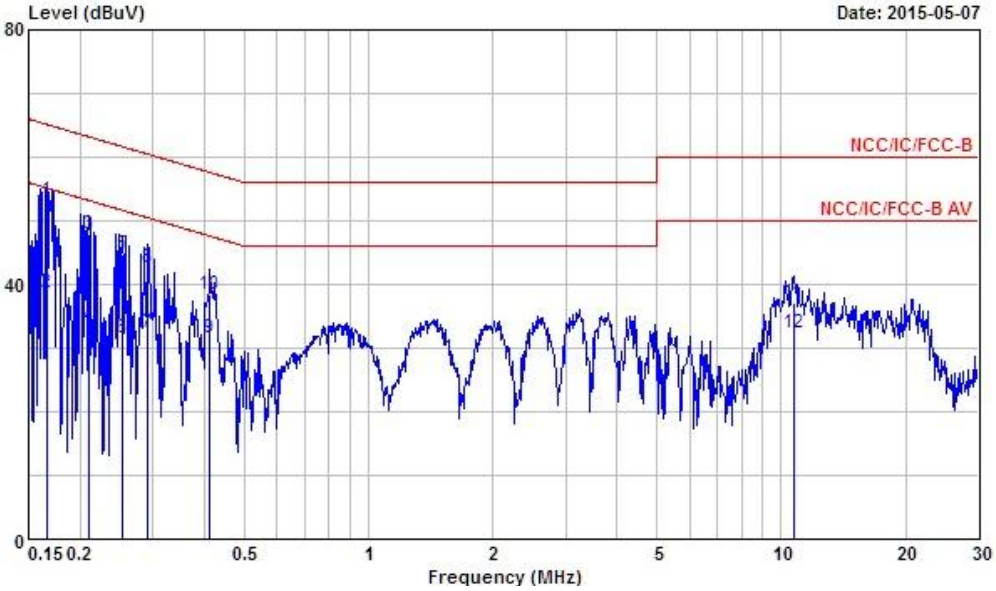
3.1.4 Test Setup

AC Power-line Conducted Emissions



3.1.5 Test Result of AC Power-line Conducted Emissions

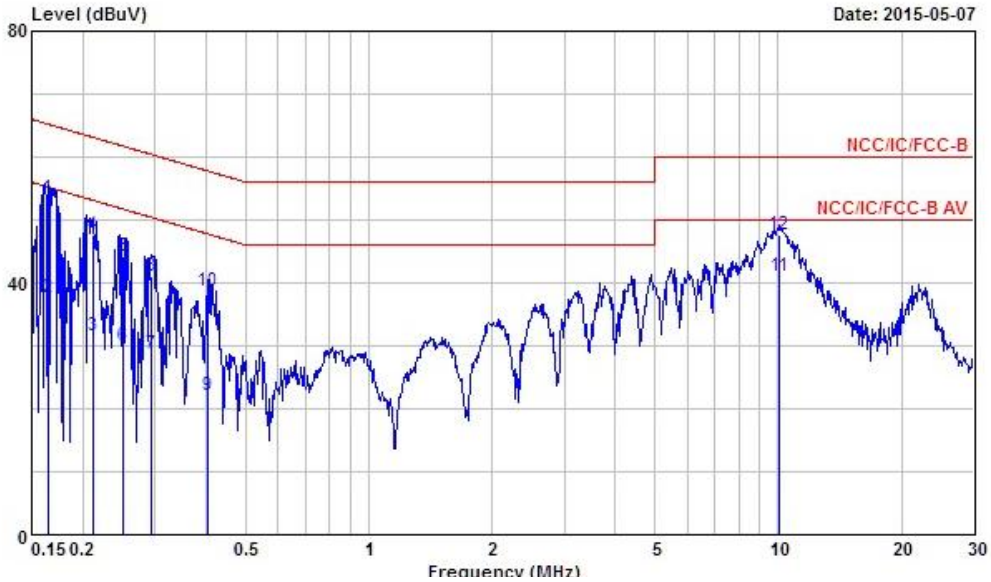
AC Power-line Conducted Emissions Result			
Operating Mode	2	**Power Phase**	Neutral
Operating Function	PoE (24V) mode and transmit		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	@0.1667680	53.28	-11.84	65.12	52.81	0.07	0.40	QP
2	@0.1667680	38.79	-16.33	55.12	38.32	0.07	0.40	Average
3	@0.2105510	47.88	-15.30	63.18	47.30	0.07	0.51	QP
4	@0.2105510	33.40	-19.78	53.18	32.82	0.07	0.51	Average
5	@0.2534510	44.71	-16.93	61.64	44.11	0.07	0.53	QP
6	@0.2534510	31.59	-20.05	51.64	30.99	0.07	0.53	Average
7	@0.2924290	32.45	-18.01	50.46	31.83	0.07	0.55	Average
8	@0.2924290	42.59	-17.87	60.46	41.97	0.07	0.55	QP
9	@0.4126560	31.45	-16.14	47.59	30.77	0.07	0.61	Average
10	@0.4126560	38.43	-19.16	57.59	37.75	0.07	0.61	QP
11	@ 10.730	37.24	-22.76	60.00	36.18	0.26	0.80	QP
12	@ 10.730	32.32	-17.68	50.00	31.26	0.26	0.80	Average

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

AC Power-line Conducted Emissions Result			
Operating Mode	2	**Power Phase**	Line
Operating Function	PoE (24V) mode and transmit		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	@0.1650100	53.49	-11.72	65.21	53.05	0.05	0.39	QP
2	@0.1650100	37.56	-17.65	55.21	37.12	0.05	0.39	Average
3	@0.2116700	31.46	-21.68	53.14	30.89	0.06	0.51	Average
4	@0.2116700	47.71	-15.43	63.14	47.14	0.06	0.51	QP
5	@0.2507790	44.13	-17.60	61.73	43.54	0.06	0.53	QP
6	@0.2507790	30.04	-21.69	51.73	29.45	0.06	0.53	Average
7	@0.2939830	28.65	-21.76	50.41	28.02	0.07	0.56	Average
8	@0.2939830	40.94	-19.47	60.41	40.31	0.07	0.56	QP
9	@0.4040020	22.00	-25.77	47.77	21.33	0.07	0.60	Average
10	@0.4040020	38.57	-19.20	57.77	37.90	0.07	0.60	QP
11	@ 10.070	41.04	-8.96	50.00	40.01	0.23	0.80	Average
12	@ 10.070	47.74	-12.26	60.00	46.71	0.23	0.80	QP

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

3.2 Emission Bandwidth

3.2.1 Emission Bandwidth (EBW) Limit

Emission Bandwidth (EBW) Limit	
UNII Devices	
☒	For the 5.15-5.25 GHz band, the maximum conducted output power shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
☐	For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
☐	For the 5.47-5.725 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
☐	For the 5.725-5.825 GHz band, the maximum conducted output power shall not exceed the lesser of 1 W or 17 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz
LE-LAN Devices	
☒	For the band 5.15-5.25 GHz, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
☐	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.725-5.825 GHz band, the maximum e.i.r.p. shall not exceed 4.0 W or 23 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

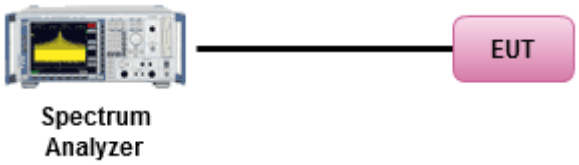
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

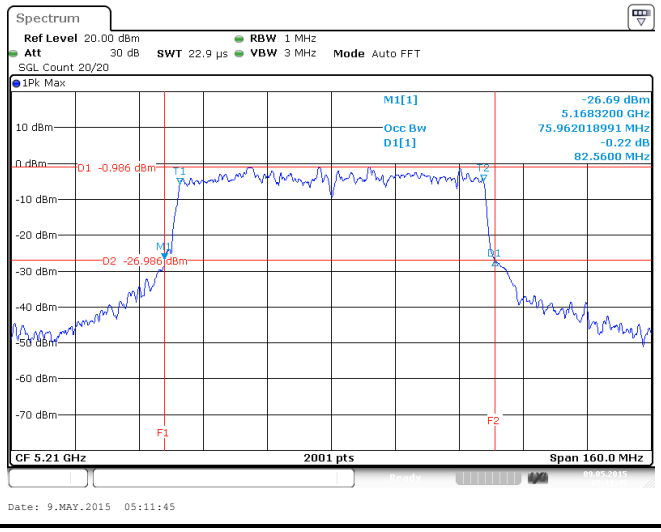
Test Method			
☒	For the emission bandwidth shall be measured using one of the options below:		
	☒	Refer as FCC KDB 789033, clause C for EBW and clause D for OBW measurement.	
	☐	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.	
	☐	Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.	
☒	For conducted measurement.		
	☐	The EUT supports single transmit chain and measurements performed on this transmit chain1.	
	☐	The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case.	
	☒	The EUT supports multiple transmit chains using options given below:	
		☐	Option 1: Multiple transmit chains measurements need to be performed on one of the active transmit chains (antenna outputs). All measurement had be performed on transmit chains 1.
		☒	Option 2: Multiple transmit chains measurements need to be performed on each transmit chains individually (antenna outputs). All measurement had be performed on all transmit chains.

3.2.4 Test Setup

Emission Bandwidth


3.2.5 Test Result of Emission Bandwidth

UNII Emission Bandwidth Result (5150-5250MHz band)								
Condition			Emission Bandwidth (MHz)					
Modulation Mode	N_{TX}	Freq. (MHz)	99% Bandwidth		26dB Bandwidth		Power Limit	
			Chain Port 1	Chain Port 2	Chain Port 1	Chain Port 2	99% BW	26dB BW
11a	2	5180	16.44	16.59	20.50	20.10	16.16	17.03
11a	2	5200	16.66	16.41	20.60	19.12	16.15	16.81
11a	2	5240	16.41	16.56	19.80	20.20	16.15	16.97
HT20	2	5180	17.81	17.84	21.77	20.77	16.51	17.17
HT20	2	5200	17.96	17.74	21.55	22.17	16.49	17.33
HT20	2	5240	17.64	17.71	20.72	21.52	16.46	17.16
HT40	2	5190	36.86	36.74	42.68	44.72	19.65	20.30
HT40	2	5230	36.82	36.78	42.80	42.60	19.66	20.29
VHT20	2	5180	17.74	17.79	22.32	20.72	16.49	17.16
VHT20	2	5200	17.79	17.79	21.32	21.35	16.50	17.29
VHT20	2	5240	17.76	17.76	20.77	20.20	16.49	17.05
VHT40	2	5190	36.42	36.50	40.40	41.08	19.61	20.06
VHT40	2	5230	36.46	36.30	39.72	40.20	19.60	19.99
VHT80	2	5210	75.72	75.96	82.32	82.56	22.79	23.16
Result			Complied					

5150-5250MHz - Worst Emission Bandwidth Plots


3.3 RF Output Power

3.3.1 RF Output Power Limit

Maximum Conducted Output Power Limit	
UNII Devices	
☒	For the 5.15-5.25 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If G_{TX} > 6 dBi, then P_{Out} = 17 – (G_{TX} – 6).
☐	For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If G_{TX} > 6 dBi, then P_{Out} = 24 – (G_{TX} – 6).
☐	For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If G_{TX} > 6 dBi, then P_{Out} = 24 – (G_{TX} – 6).
☐	For the 5.725-5.825 GHz band:
	☐ Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W or 17 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6).
	☐ Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W or 17 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If G_{TX} > 23 dBi, then P_{Out} = 30 – (G_{TX} – 23).
LE-LAN Devices	
☒	For the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
☐	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.725-5.825 GHz band, the maximum e.i.r.p. shall not exceed 4.0 W or 23 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
	☐ Point-to-multipoint systems (P2M): the maximum e.i.r.p. shall not exceed 4.0 W or 23 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
	☐ Point-to-point systems (P2P): the maximum e.i.r.p. shall not exceed 4.0 W or 23 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. If e.i.r.p. > 36 dBm, $G_{TX} \leq P_{Out}$
P_{Out} = maximum conducted output power in dBm, **G_{TX}** = the maximum transmitting antenna directional gain in dBi.	

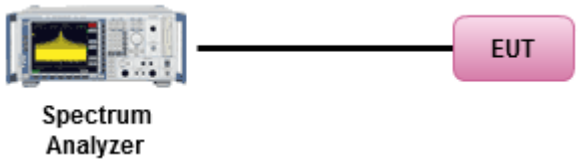
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
☒	Maximum Conducted Output Power
	[duty cycle ≥ 98% or external video / power trigger]
	☐ Refer as FCC KDB 789033, clause E Method SA-1 (spectral trace averaging).
	☐ Refer as FCC KDB 789033, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)
	duty cycle < 98% and average over on/off periods with duty factor
	☒ Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
	☐ Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
	Wideband RF power meter and average over on/off periods with duty factor
	☐ Refer as FCC KDB 789033, clause E Method PM (using an RF average power meter).
☒	For conducted measurement.
	☐ The EUT supports single transmit chain and measurements performed on this transmit chain1.
	☐ The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case.
	☒ The EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
	☒ If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \ldots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup

RF Output Power (Spectrum Analyzer)


3.3.5 Directional Gain for Power Measurement

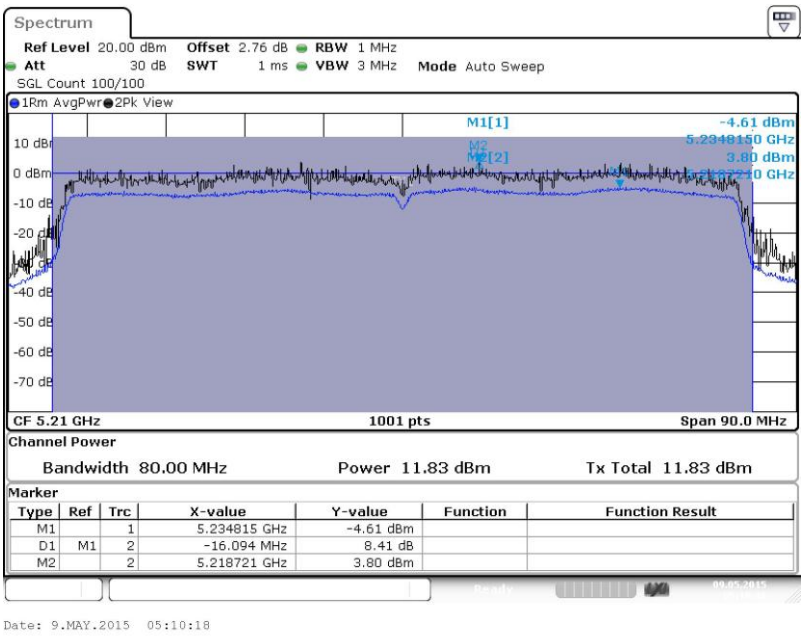
Directional Gain (DG) Result					
Transmit Chains No.		1	2	-	-
Maximum G_{ANT} (dBi)		7.1	7.7	-	-
Modulation Mode	**DG (dBi)**	**N_{TX}**	**N_{SS}**	**STBC**	**Array Gain (dB)**
11a,6-54Mbps	7.41	2	1	-	0 (Note 4)
HT20,M0-15	7.41	2	1	-	0 (Note 4)
HT40,M0-15	7.41	2	1	-	0 (Note 4)
VHT20,M0-8	7.41	2	1	-	0 (Note 4)
VHT40,M0-9	7.41	2	1	-	0 (Note 4)
VHT80,M0-9	7.41	2	1	-	0 (Note 4)

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 =$10 \log[(10^{G1/20} + \ldots + 10^{GN/20})^2 / N_{TX}]$
All transmit signals are completely uncorrelated, Directional Gain = $10 \log[(10^{G1/10} + \ldots + 10^{GN/10})/N_{TX}]$
Note 3: For Spatial Multiplexing, Directional Gain (DG) = $G_{ANT} + 10 \log(N_{TX}/N_{SS})$,
where Nss = the number of independent spatial streams data.
Note 4: For CDD transmissions, directional gain is calculated as power measurements:
Directional Gain (DG) = G_{ANT} + 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 ≥ 40 MHz for any N_{TX};

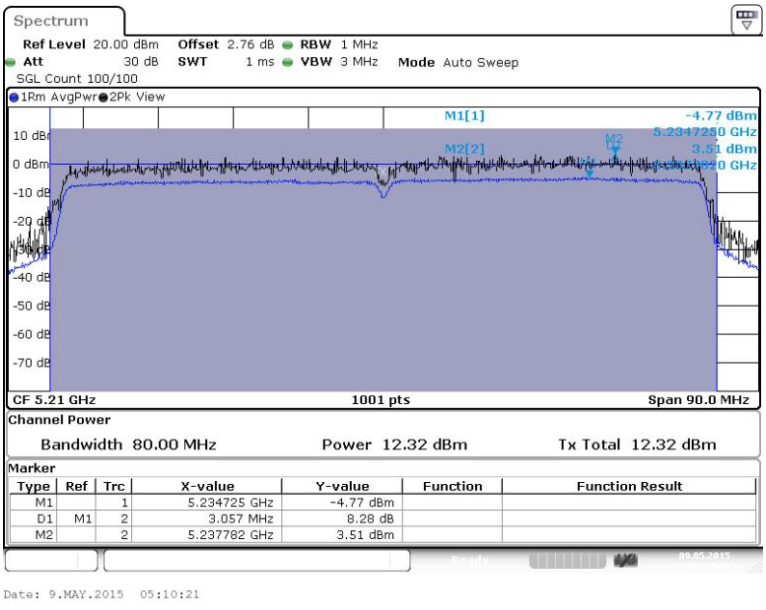
3.3.6 Test Result of Maximum Conducted Output Power

Maximum Conducted Output Power (5150-5250MHz band)									
Condition			RF Output Power (dBm)						
Modulation Mode	N_{TX}	Freq. (MHz)	RF Output Power			Power Limit	DG (dBi)	EIRP Power	EIRP Limit
			Chain Port 1	Chain Port 2	Sum Chain				
11a	2	5180	7.03	7.16	10.11	15.59	7.41	17.52	22.16
11a	2	5200	7.00	7.24	10.14	15.59	7.41	17.55	22.15
11a	2	5240	6.83	7.59	10.24	15.59	7.41	17.65	22.15
HT20	2	5180	7.53	7.69	10.62	15.59	7.41	18.03	22.51
HT20	2	5200	7.48	7.69	10.59	15.59	7.41	18.00	22.49
HT20	2	5240	7.25	8.00	10.65	15.59	7.41	18.06	22.46
HT40	2	5190	10.17	10.52	13.36	15.59	7.41	20.77	23.00
HT40	2	5230	10.00	10.61	13.32	15.59	7.41	20.74	23.00
VHT20	2	5180	7.49	7.82	10.66	15.59	7.41	18.07	22.49
VHT20	2	5200	7.37	7.77	10.58	15.59	7.41	17.99	22.50
VHT20	2	5240	6.78	7.60	10.22	15.59	7.41	17.63	22.49
VHT40	2	5190	9.97	10.36	13.18	15.59	7.41	20.59	23.00
VHT40	2	5230	9.81	10.43	13.14	15.59	7.41	20.55	23.00
VHT80	2	5210	12.08	12.57	15.34	15.59	7.41	22.75	23.00
Result			Complied						

5150-5250MHz - Worst RF Output Power Plots [Port 1]



5150-5250MHz - Worst RF Output Power Plots [Port 2]



Note 1: RF Output Power Plots w/o Duty Factor

3.4 Peak Power Spectral Density

3.4.1 Peak Power Spectral Density Limit

Peak Power Spectral Density Limit	
UNII Devices	
☒	For the 5.15-5.25 GHz band, the peak power spectral density (PPSD) ≤ 4 dBm/MHz. If G_{TX} > 6 dBi, then PPSD = 4 – (G_{TX} – 6).
☐	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If G_{TX} > 6 dBi, then PPSD= 11 – (G_{TX} – 6).
☐	For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If G_{TX} > 6 dBi, then PPSD= 11 – (G_{TX} – 6).
☐	For the 5.725-5.825 GHz band:
☐	Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 17 dBm/MHz. If G_{TX} > 6 dBi, then PPSD= 17 – (G_{TX} – 6).
☐	Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 17 dBm/MHz. If G_{TX} > 23 dBi, then PPSD = 17 – (G_{TX} – 23).
LE-LAN Devices	
☒	For the 5.15-5.25 GHz band, the peak power spectral density (PPSD) ≤ 4 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 10 dBm/MHz.
☐	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 17 dBm/MHz.
☐	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 17 dBm/MHz.
☐	For the 5.725-5.825 GHz band, the peak power spectral density (PPSD) ≤ 17 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 23 dBm/MHz.
PPSD = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz **G_{TX}** = the maximum transmitting antenna directional gain in dBi.	

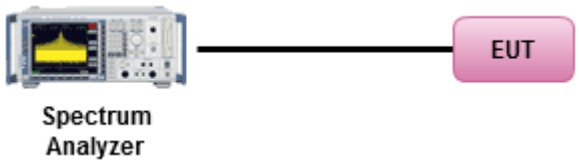
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

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

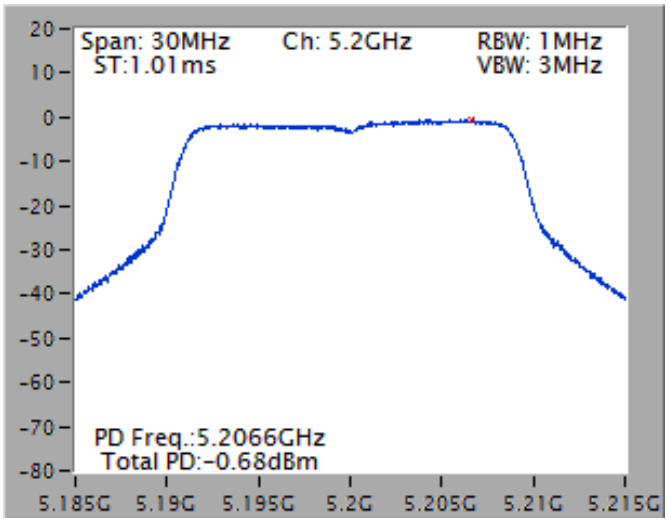
3.4.4 Test Setup

Power Spectral Density


3.4.5 Test Result of Peak Power Spectral Density

Peak Power Spectral Density Result (5150-5250MHz band)							
Condition			Peak Power Spectral Density (dBm/MHz)				
Modulation Mode	N_{TX}	Freq. (MHz)	Peak Power Spectral Density	PSD Limit	DG (dBi)	EIRP PSD	EIRP Limit
11a	2	5180	-0.89	-0.42	10.42	9.54	10.00
11a	2	5200	-0.90	-0.42	10.42	9.53	10.00
11a	2	5240	-0.71	-0.42	10.42	9.72	10.00
HT20	2	5180	-0.55	-0.42	10.42	9.87	10.00
HT20	2	5200	-0.50	-0.42	10.42	9.92	10.00
HT20	2	5240	-0.64	-0.42	10.42	9.78	10.00
HT40	2	5190	-0.61	-0.42	10.42	9.81	10.00
HT40	2	5230	-0.89	-0.42	10.42	9.53	10.00
VHT20	2	5180	-0.53	-0.42	10.42	9.89	10.00
VHT20	2	5200	-0.64	-0.42	10.42	9.78	10.00
VHT20	2	5240	-0.84	-0.42	10.42	9.58	10.00
VHT40	2	5190	-1.05	-0.42	10.42	9.37	10.00
VHT40	2	5230	-1.00	-0.42	10.42	9.42	10.00
VHT80	2	5210	-1.67	-0.42	10.42	8.75	10.00
Result			Complied				

5150-5250MHz - Worst Power Spectral Density Plots



Note 2: Worst Power Spectral Density Plots w/o Duty Factor

3.5 Peak Excursion

3.5.1 Peak Excursion Limit

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

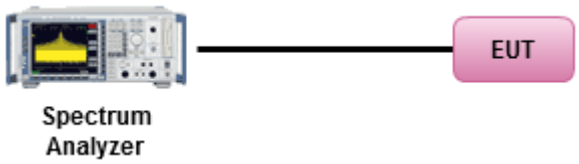
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

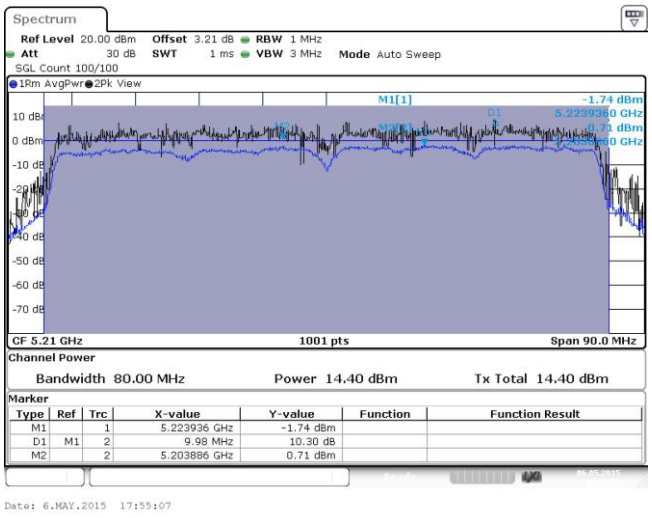
3.5.4 Test Setup

Peak Excursion


3.5.5 Test Result of Peak Excursion

UNII Peak Excursion Result								
Condition			Peak Excursion (dB)					
Modulation Mode	N_{TX}	Freq. (MHz)	BPSK	QPSK	16QAM	64QAM	256QAM	Limit
11a	2	5180	7.53	7.60	8.09	8.26	-	13
HT20	2	5180	7.21	7.57	7.76	8.13	-	13
HT40	2	5190	7.13	7.38	7.47	7.91	-	13
VHT20	2	5180	7.41	7.59	7.81	8.15	8.69	13
VHT40	2	5190	7.53	7.82	8.05	8.53	8.85	13
VHT80	2	5210	7.67	8.61	9.12	9.60	10.05	13
Result			Complied					

Peak Excursion Plots

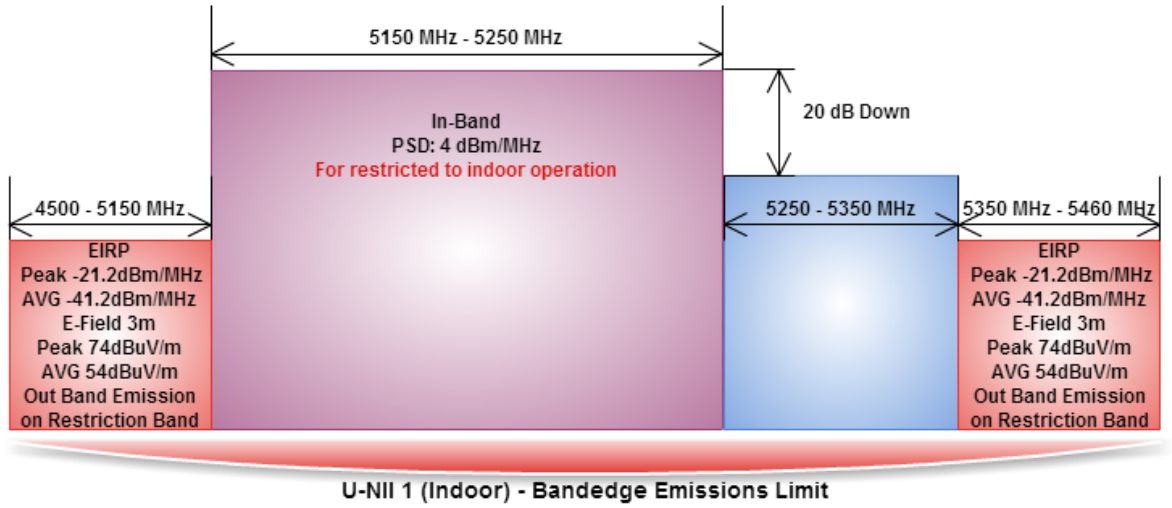


Note 3: Peak Excursion Plots w/o Duty Factor

3.6 Transmitter Radiated Bandedge Emissions

3.6.1 Transmitter Radiated Bandedge Emissions Limit

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



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

3.6.2 Measuring Instruments

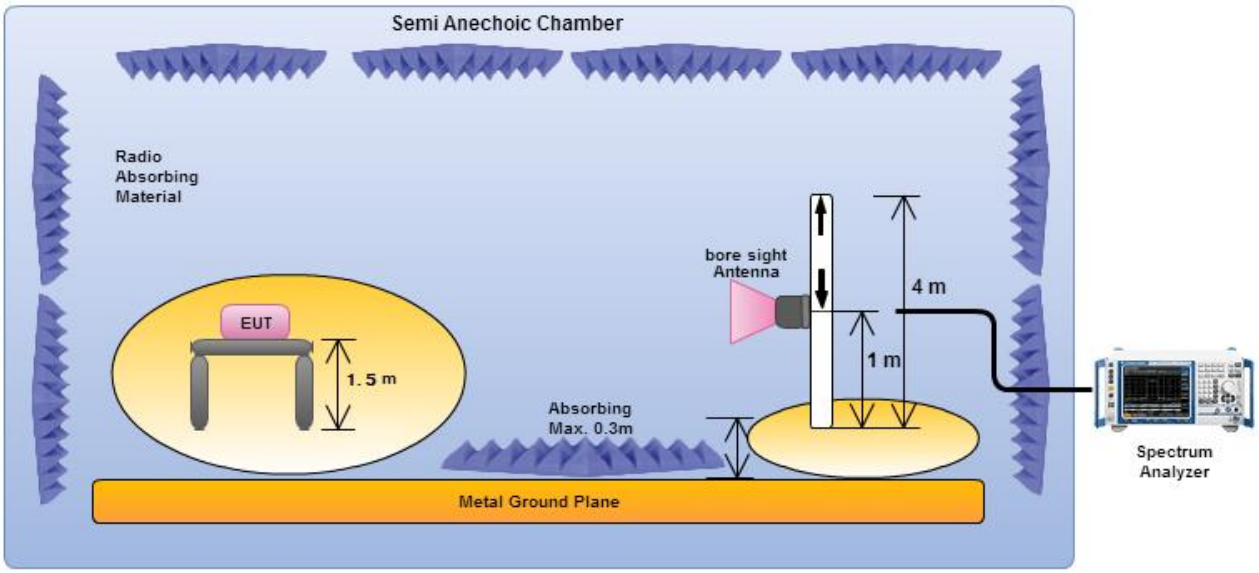
Refer a test equipment and calibration data table in this test report.

3.6.3 Test Procedures

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

3.6.4 Test Setup

Transmitter Radiated Bandedge Emissions



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

Note: FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 02, 2014.

3.6.5 Transmitter Radiated Bandedge Emissions (with Antenna)

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

Modulation Mode	N_{TX}	Freq. (MHz)	Measure Distance (m)	Freq. (MHz) PK	Level (dBuV/m) PK	Limit (dBuV/m) PK	Freq. (MHz) AV	Level (dBuV/m) AV	Limit (dBuV/m) AV	Pol.
11a	2	5180	3	5149.40	67.54	74	5149.60	52.37	54	H
11a	2	5240	3	5394.00	61.82	74	5392.20	48.32	54	H
HT20	2	5180	3	5148.20	66.09	74	5149.60	51.90	54	H
HT20	2	5240	3	5368.80	61.19	74	5398.20	47.98	54	H
HT40	2	5190	3	5149.28	67.16	74	5149.94	52.69	54	H
HT40	2	5230	3	5361.00	60.99	74	5352.00	48.00	54	H
VHT20	2	5180	3	5149.40	66.08	74	5149.80	51.85	54	H
VHT20	2	5240	3	5391.60	61.07	74	5372.40	47.98	54	H
VHT40	2	5190	3	5149.72	67.91	74	5149.94	52.69	54	H
VHT40	2	5230	3	5368.80	61.66	74	5350.20	47.86	54	H
VHT80	2	5210	3	5393.40	59.54	74	5393.40	46.13	54	H

Note 1: Measurement worst emissions of receive antenna polarization.

3.7 Transmitter Radiated Unwanted Emissions

3.7.1 Transmitter Radiated Unwanted Emissions Limit

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

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

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

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

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

3.7.2 Measuring Instruments

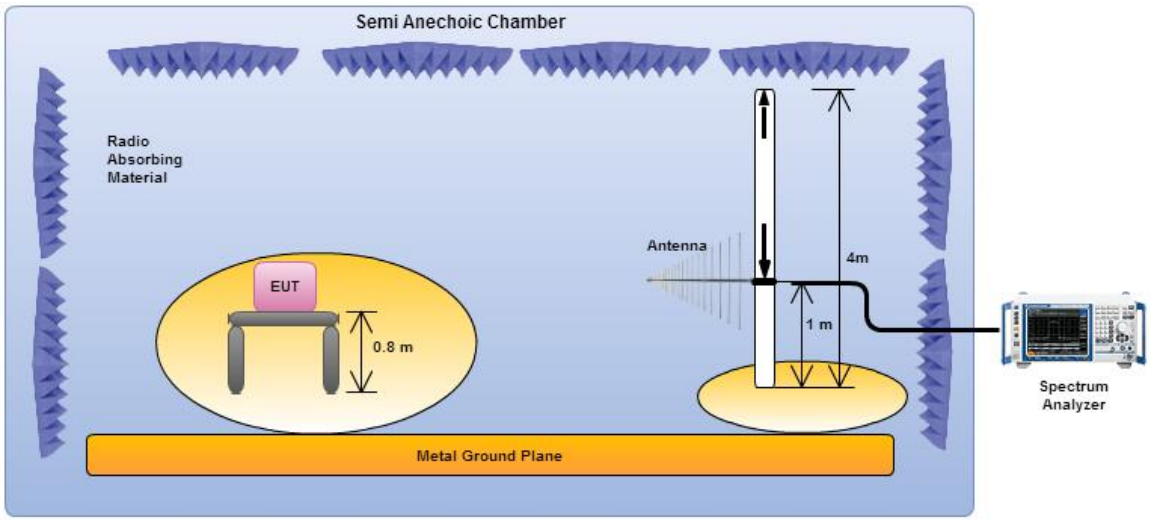
Refer a test equipment and calibration data table in this test report.

3.7.3 Test Procedures

Test Method		
☒	Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).	
☐	The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].	
☒	For the transmitter unwanted emissions shall be measured using following options below:	
	☒	Refer as FCC KDB 789033, clause H)2) for unwanted emissions into non-restricted bands.
	☒	Refer as FCC KDB 789033, clause H)1) for unwanted emissions into restricted bands.
		☐ Refer as FCC KDB 789033, H)6) Method AD (Trace Averaging).
		☐ Refer as FCC KDB 789033, H)6) Method VB (Reduced VBW).
		☒ Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.
		☐ Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
		☒ Refer as FCC KDB 789033, clause H)5) measurement procedure peak limit.
		☐ Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit.
☒	For radiated measurement.	
	☒	Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
	☒	Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
	☒	Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.For 1 GHz to 5 GHz, test distance is 3m; For 5 GHz to 40 GHz, test distance is 3m.
☒	The any unwanted emissions level shall not exceed the fundamental emission level.	
☒	All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.	

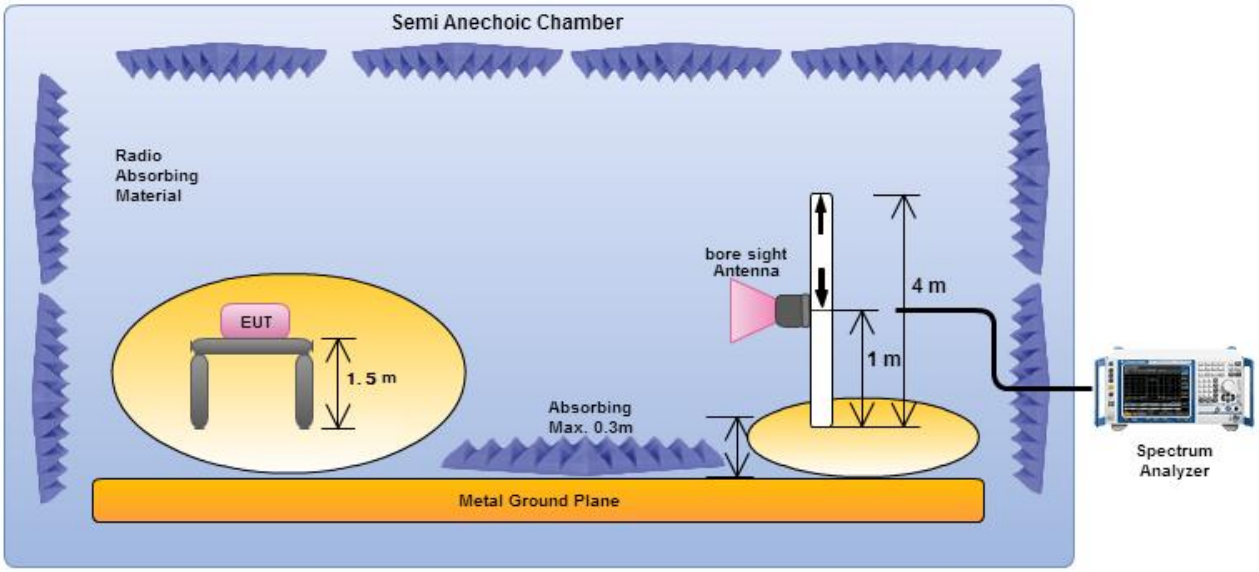
3.7.4 Test Setup

Transmitter Radiated Unwanted Emissions Below 1GHz



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

Transmitter Radiated Unwanted Emissions Above 1GHz



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

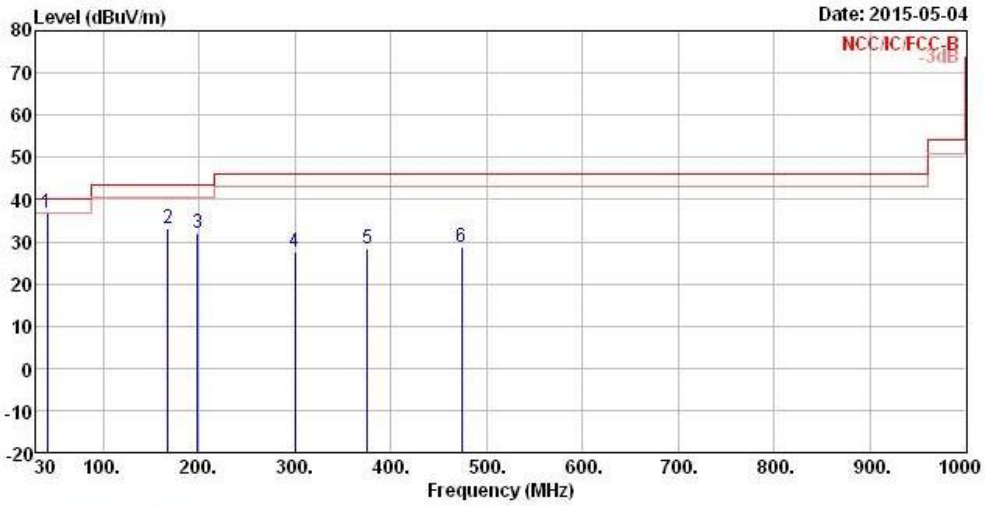
Note: FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 02, 2014.

3.7.5 Transmitter Radiated Unwanted Emissions (Below 30MHz)

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

3.7.6 Transmitter Radiated Unwanted Emissions (Below 1GHz)

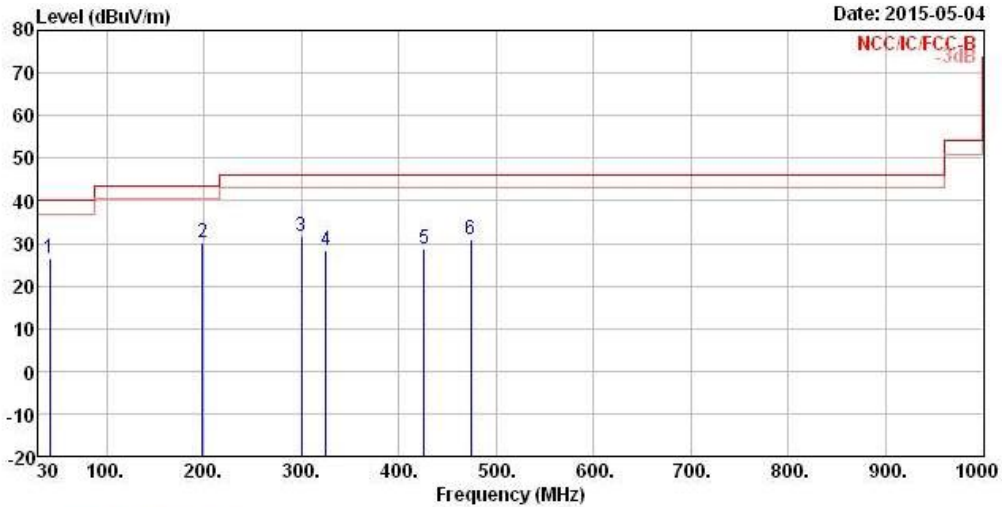
Transmitter Radiated Unwanted Emissions (Below 1GHz)			
Operating Mode	2	**Polarization**	V
Operating Function	PoE (24V) & Radio link (WLAN)		



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	41.64	36.75	-3.25	40.00	61.50	11.46	1.04	37.25	QP
2	167.74	33.09	-10.41	43.50	58.11	9.34	2.13	36.49	Peak
3	198.78	32.05	-11.45	43.50	57.07	9.03	2.32	36.37	Peak
4	299.66	27.79	-18.21	46.00	48.43	12.87	2.90	36.41	Peak
5	375.32	28.30	-17.70	46.00	47.14	14.45	3.23	36.52	Peak
6	474.26	28.76	-17.24	46.00	45.25	16.74	3.63	36.86	Peak

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

Transmitter Radiated Unwanted Emissions (Below 1GHz)			
Operating Mode	2	**Polarization**	V
Operating Function	PoE (24V) & Radio link (WLAN)		

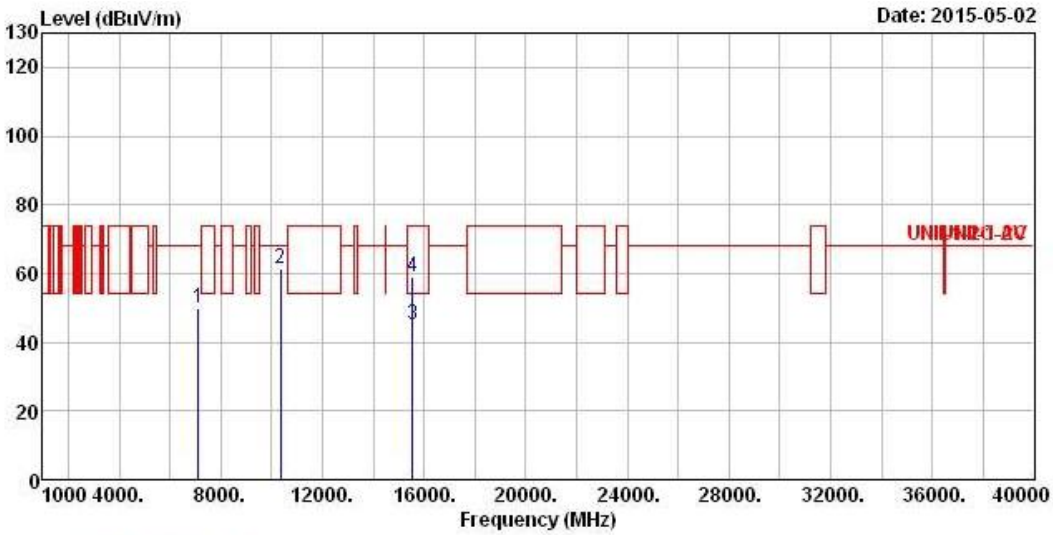


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	41.64	26.55	-13.45	40.00	51.30	11.46	1.04	37.25	Peak
2	198.78	30.24	-13.26	43.50	55.26	9.03	2.32	36.37	Peak
3	299.66	31.71	-14.29	46.00	52.35	12.87	2.90	36.41	Peak
4	324.88	28.28	-17.72	46.00	48.38	13.34	3.01	36.45	Peak
5	425.76	28.65	-17.35	46.00	45.93	15.96	3.42	36.66	Peak
6	474.26	30.88	-15.12	46.00	47.37	16.74	3.63	36.86	Peak

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

3.7.7 Transmitter Radiated Unwanted Emissions (Above 1GHz)

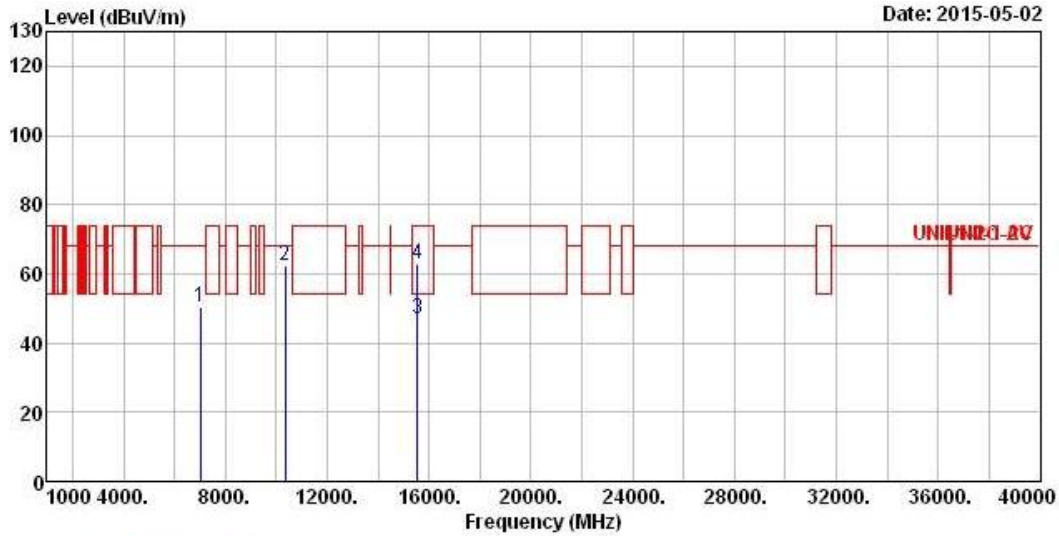
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11a	**Test Freq. (MHz)**	5180
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7120.00	50.03	-18.17	68.20	41.33	35.61	5.68	32.59	Peak
2	10360.00	61.57	-6.63	68.20	48.42	39.00	6.96	32.81	Peak
3	15540.00	45.18	-8.82	54.00	30.93	37.64	8.84	32.23	Average
4	15540.00	59.22	-14.78	74.00	44.97	37.64	8.84	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.

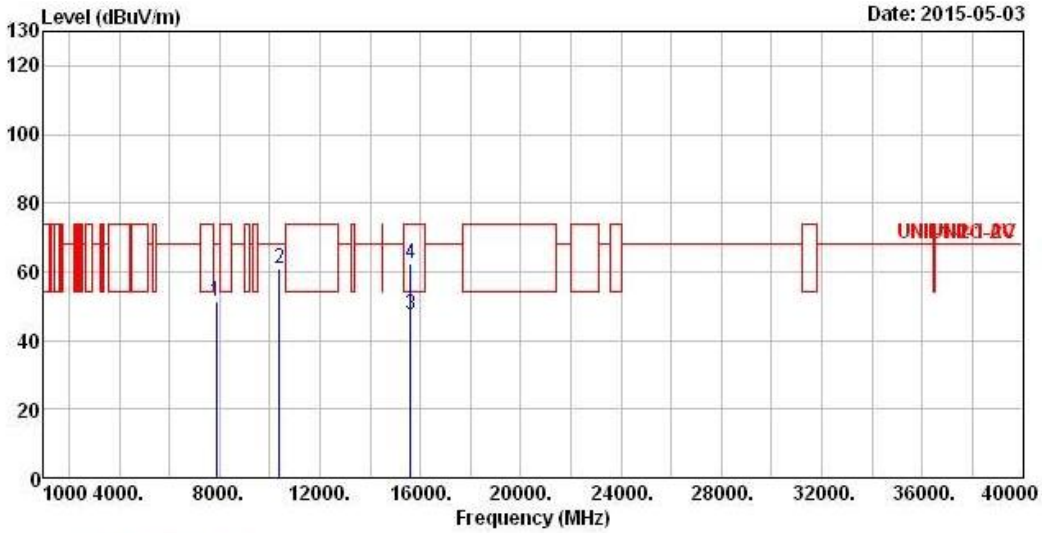
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11a	**Test Freq. (MHz)**	5180
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7020.00	50.37	-17.83	68.20	41.94	35.34	5.64	32.55	Peak
2	10360.00	62.25	-5.95	68.20	49.10	39.00	6.96	32.81	Peak
3	15540.00	47.13	-6.87	54.00	32.88	37.64	8.84	32.23	Average
4	15540.00	62.66	-11.34	74.00	48.41	37.64	8.84	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.

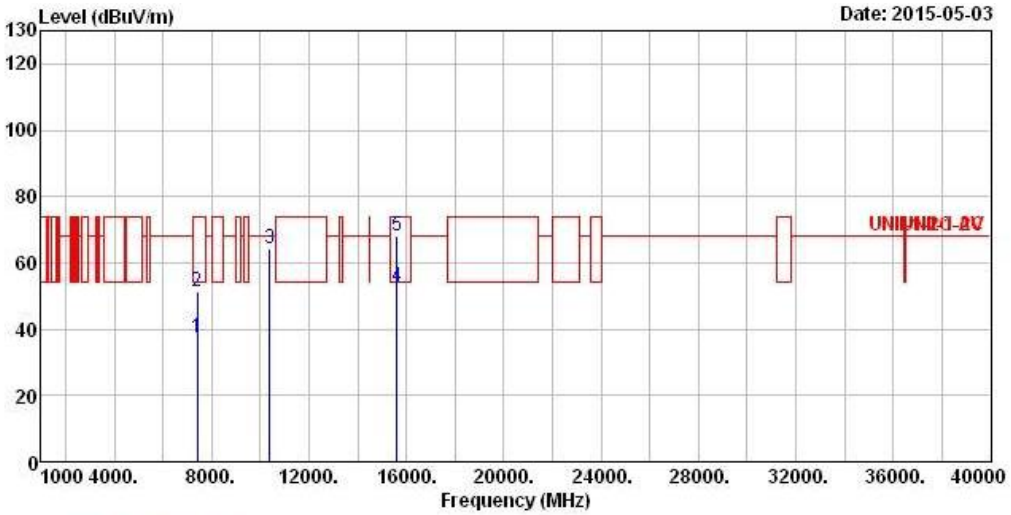
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11a	**Test Freq. (MHz)**	5200
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7887.00	51.25	-16.95	68.20	41.15	36.98	5.97	32.85	Peak
2	10400.00	60.99	-7.21	68.20	47.79	39.00	6.97	32.77	Peak
3	15600.00	47.47	-6.53	54.00	33.35	37.53	8.85	32.26	Average
4	15600.00	62.33	-11.67	74.00	48.21	37.53	8.85	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.

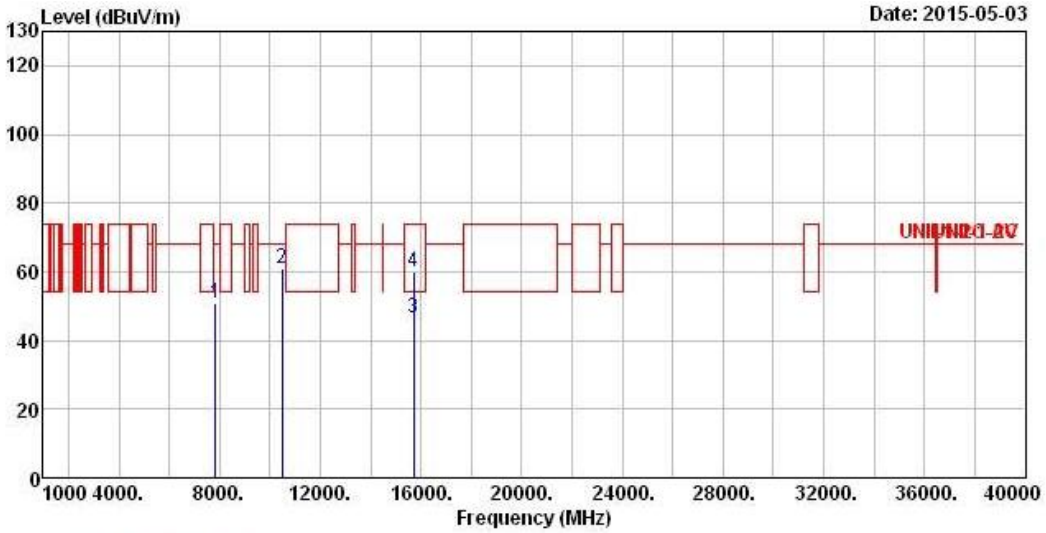
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11a	**Test Freq. (MHz)**	5200
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7398.00	37.50	-16.50	54.00	28.10	36.33	5.78	32.71	Average
2	7398.00	51.18	-22.82	74.00	41.78	36.33	5.78	32.71	Peak
3	10400.00	64.32	-3.88	68.20	51.12	39.00	6.97	32.77	Peak
4	15600.00	52.92	-1.08	54.00	38.80	37.53	8.85	32.26	Average
5	15600.00	68.28	-5.72	74.00	54.16	37.53	8.85	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.

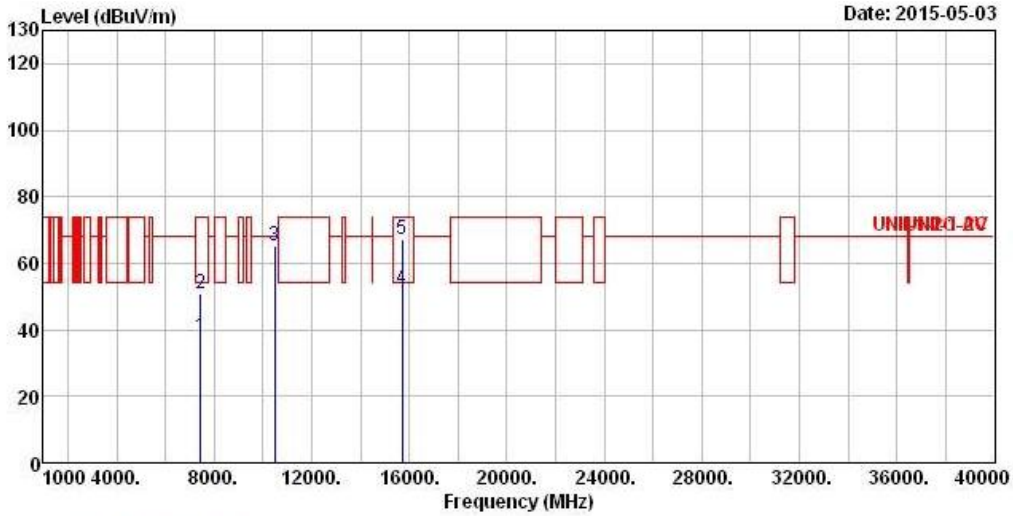
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11a	**Test Freq. (MHz)**	5240
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7854.00	51.05	-17.15	68.20	40.99	36.95	5.95	32.84	Peak
2	10480.00	60.71	-7.49	68.20	47.41	39.00	7.00	32.70	Peak
3	15720.00	46.39	-7.61	54.00	32.49	37.34	8.86	32.30	Average
4	15720.00	59.81	-14.19	74.00	45.91	37.34	8.86	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.

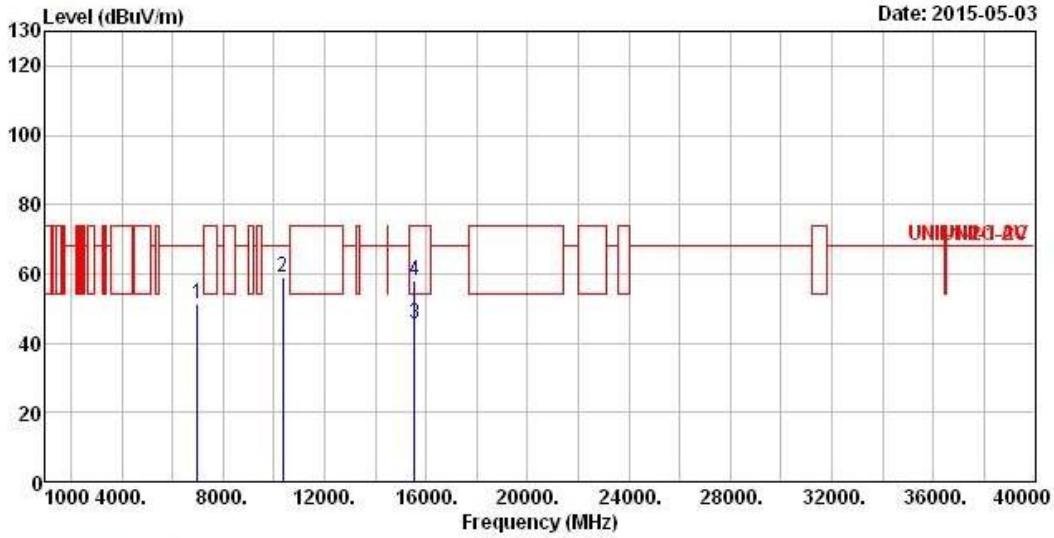
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11a	**Test Freq. (MHz)**	5240
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7440.00	37.74	-16.26	54.00	28.20	36.47	5.79	32.72	Average
2	7440.00	50.76	-23.24	74.00	41.22	36.47	5.79	32.72	Peak
3	10480.00	65.23	-2.97	68.20	51.93	39.00	7.00	32.70	Peak
4	15720.00	52.47	-1.53	54.00	38.57	37.34	8.86	32.30	Average
5	15720.00	67.06	-6.94	74.00	53.16	37.34	8.86	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.

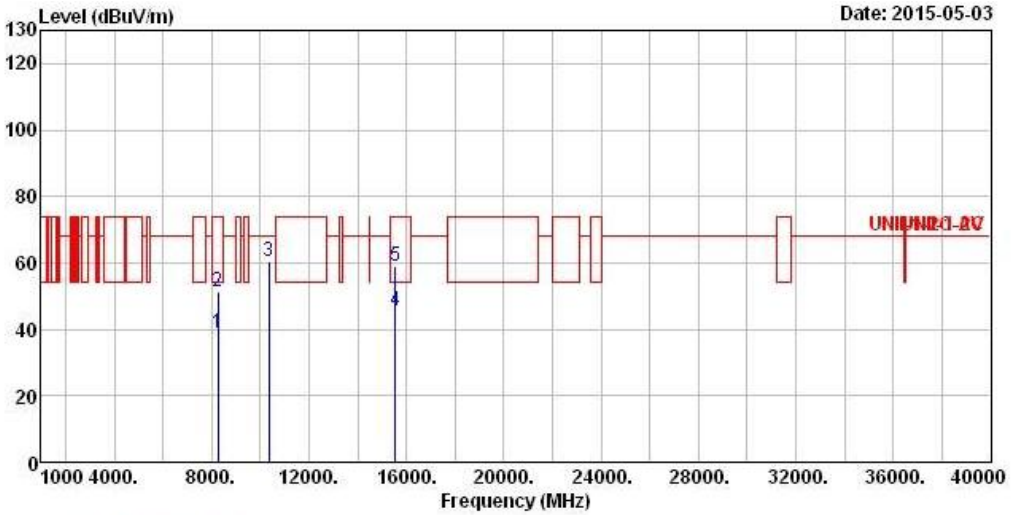
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	5180
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	6988.00	51.37	-16.83	68.20	43.00	35.27	5.64	32.54	Peak
2	10360.00	58.99	-9.21	68.20	45.84	39.00	6.96	32.81	Peak
3	15540.00	45.37	-8.63	54.00	31.12	37.64	8.84	32.23	Average
4	15540.00	57.94	-16.06	74.00	43.69	37.64	8.84	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.

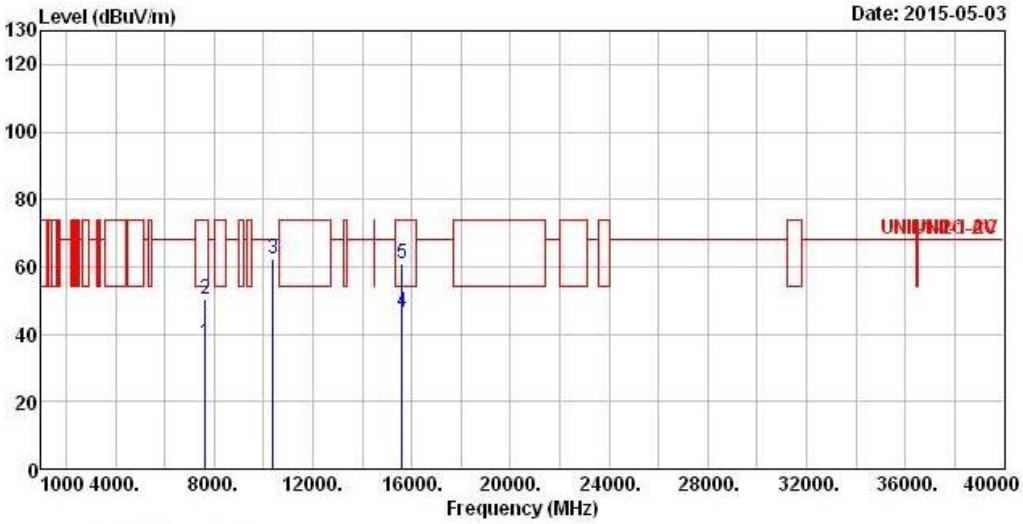
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	5180
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	8266.00	38.95	-15.05	54.00	28.11	37.62	6.12	32.90	Average
2	8266.00	51.35	-22.65	74.00	40.51	37.62	6.12	32.90	Peak
3	10360.00	60.41	-7.79	68.20	47.26	39.00	6.96	32.81	Peak
4	15540.00	45.50	-8.50	54.00	31.25	37.64	8.84	32.23	Average
5	15540.00	58.86	-15.14	74.00	44.61	37.64	8.84	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.

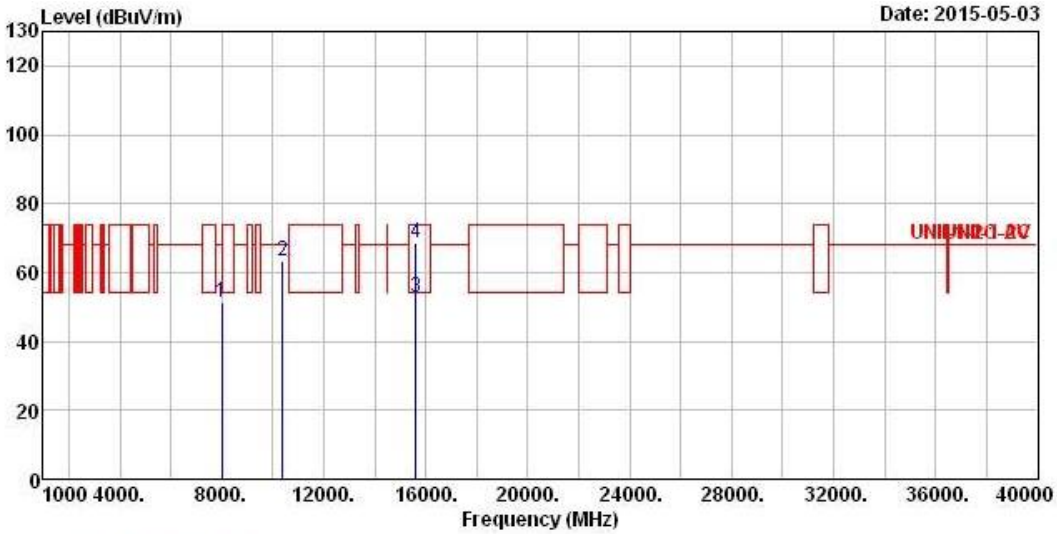
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	5200
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7638.00	37.37	-16.63	54.00	27.57	36.73	5.86	32.79	Average
2	7638.00	50.60	-23.40	74.00	40.79	36.73	5.87	32.79	Peak
3	10400.00	62.58	-5.62	68.20	49.38	39.00	6.97	32.77	Average
4	15600.00	46.52	-7.48	54.00	32.40	37.53	8.85	32.26	Average
5	15600.00	61.11	-12.89	74.00	46.99	37.53	8.85	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.

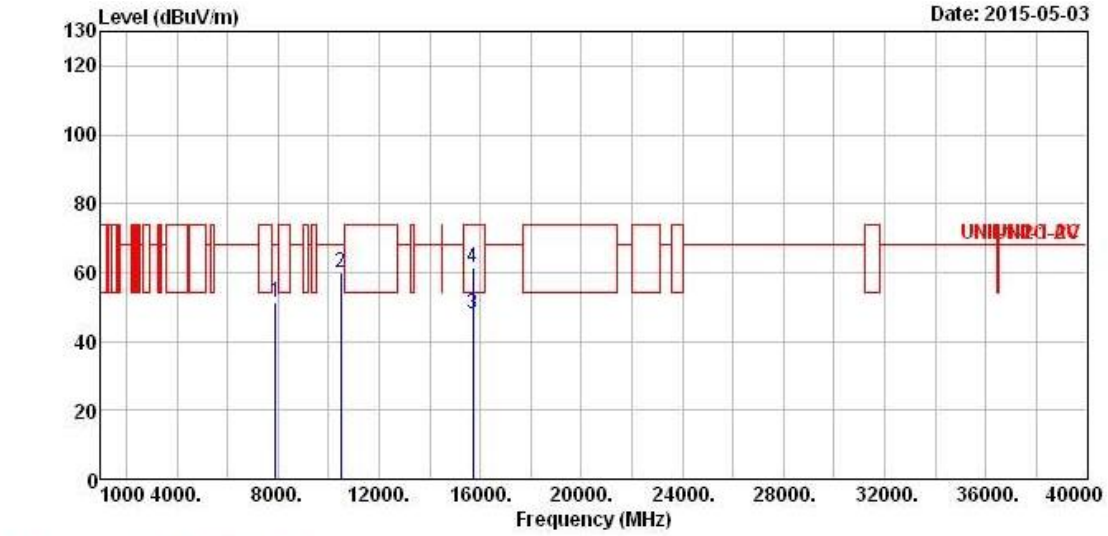
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	5200
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7988.00	51.46	-16.74	68.20	41.26	37.08	6.00	32.88	Peak
2	10400.00	63.31	-4.89	68.20	50.11	39.00	6.97	32.77	Peak
3	15600.00	52.97	-1.03	54.00	38.85	37.53	8.85	32.26	Average
4	15600.00	68.62	-5.38	74.00	54.50	37.53	8.85	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.

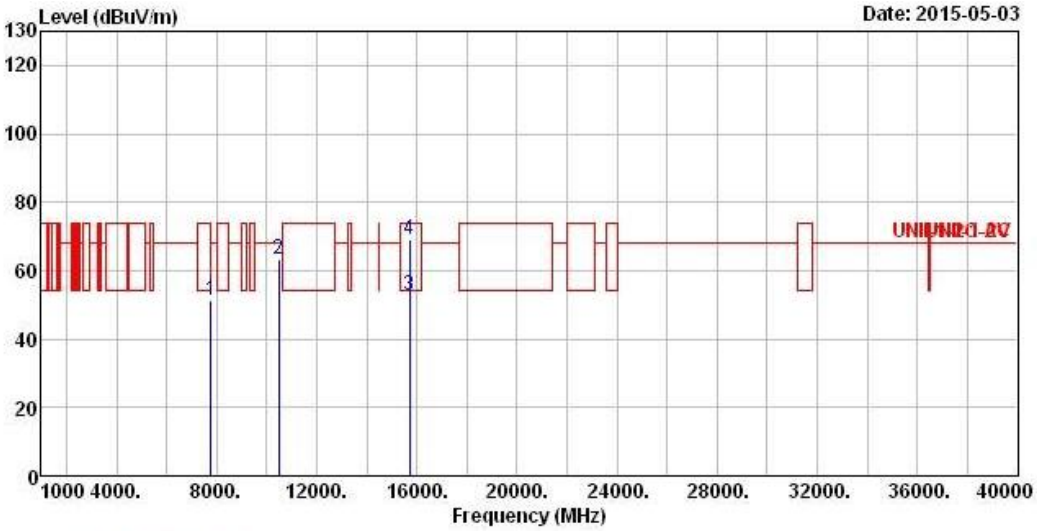
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	5240
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7890.00	51.40	-16.80	68.20	41.30	36.98	5.97	32.85	Peak
2	10480.00	60.09	-8.11	68.20	46.79	39.00	7.00	32.70	Peak
3	15720.00	47.78	-6.22	54.00	33.88	37.34	8.86	32.30	Average
4	15720.00	61.19	-12.81	74.00	47.29	37.34	8.86	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.

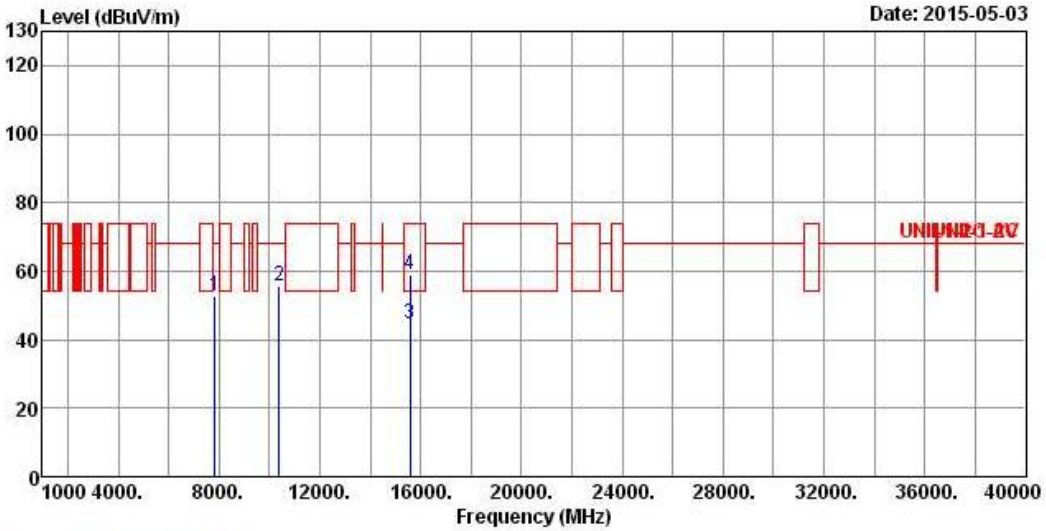
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	5240
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7764.00	51.25	-16.95	68.20	41.29	36.87	5.91	32.82	Peak
2	10480.00	63.27	-4.93	68.20	49.97	39.00	7.00	32.70	Peak
3	15720.00	52.55	-1.45	54.00	38.65	37.34	8.86	32.30	Average
4	15720.00	69.29	-4.71	74.00	55.39	37.34	8.86	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.

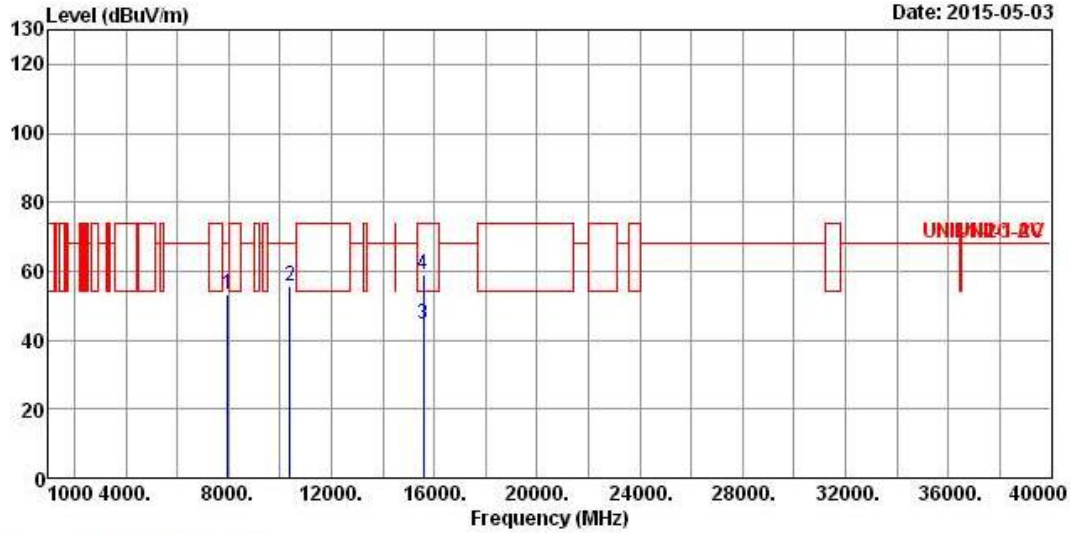
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT40	**Test Freq. (MHz)**	5190
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7842.00	52.82	-15.38	68.20	42.79	36.93	5.94	32.84	Peak
2	10380.00	55.63	-12.57	68.20	42.45	39.00	6.97	32.79	Peak
3	15570.00	44.61	-9.39	54.00	30.42	37.59	8.85	32.25	Average
4	15570.00	58.79	-15.21	74.00	44.60	37.59	8.85	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.

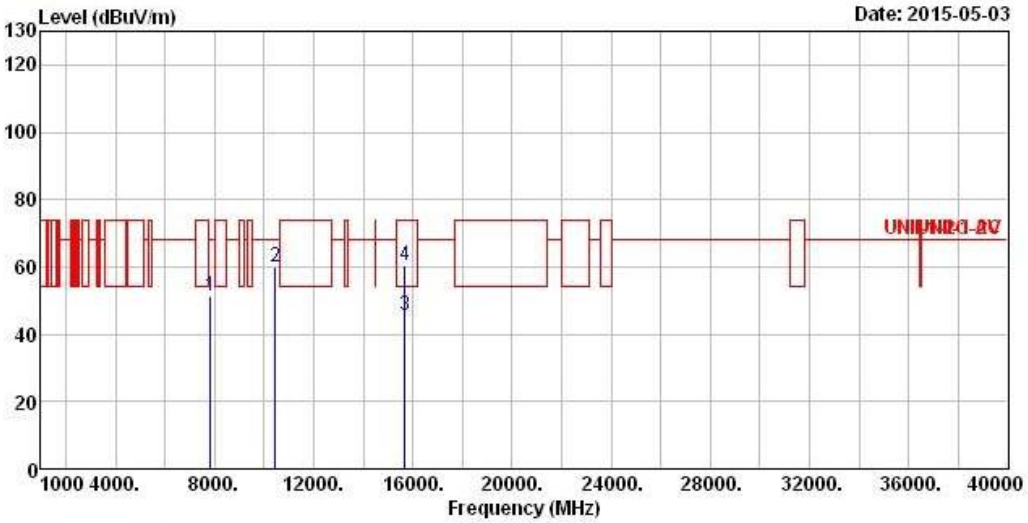
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT40	**Test Freq. (MHz)**	5190
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7968.00	53.15	-15.05	68.20	42.95	37.07	6.00	32.87	Peak
2	10380.00	55.67	-12.53	68.20	42.49	39.00	6.97	32.79	Peak
3	15570.00	44.84	-9.16	54.00	30.65	37.59	8.85	32.25	Average
4	15570.00	59.09	-14.91	74.00	44.90	37.59	8.85	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.

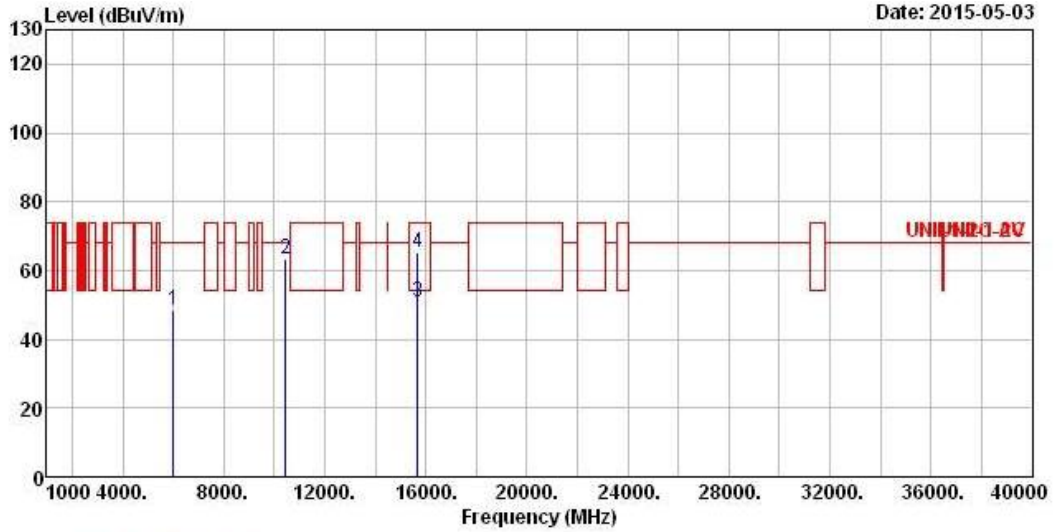
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT40	**Test Freq. (MHz)**	5230
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7842.00	51.39	-16.81	68.20	41.36	36.93	5.94	32.84	Peak
2	10460.00	59.86	-8.34	68.20	46.58	39.00	7.00	32.72	Peak
3	15690.00	45.64	-8.36	54.00	31.67	37.40	8.86	32.29	Average
4	15690.00	60.39	-13.61	74.00	46.42	37.40	8.86	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.

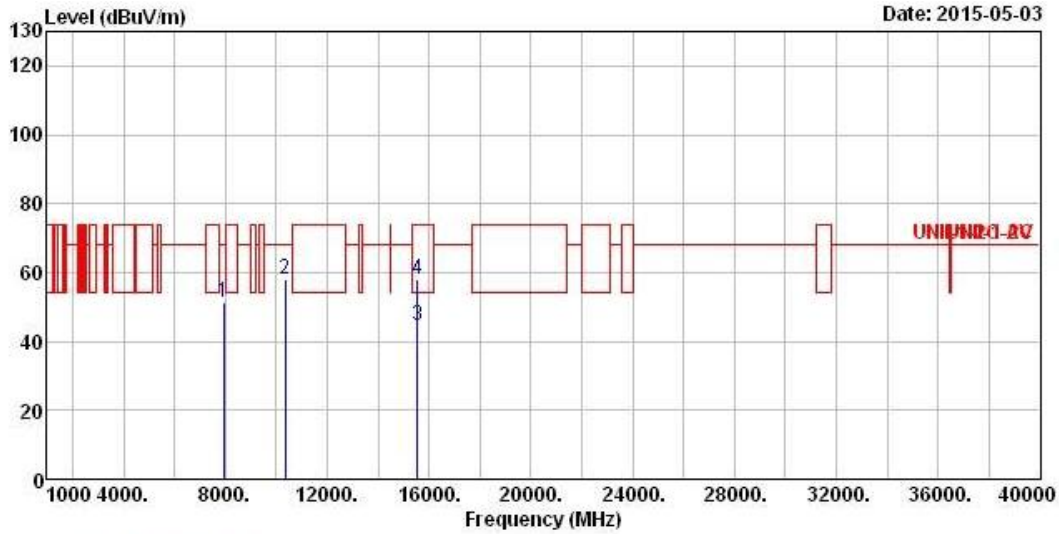
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT40	**Test Freq. (MHz)**	5230
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	6006.00	48.36	-19.84	68.20	41.45	34.30	5.07	32.46	Peak
2	10460.00	63.19	-5.01	68.20	49.91	39.00	7.00	32.72	Peak
3	15690.00	50.92	-3.08	54.00	36.95	37.40	8.86	32.29	Average
4	15690.00	65.43	-8.57	74.00	51.46	37.40	8.86	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.

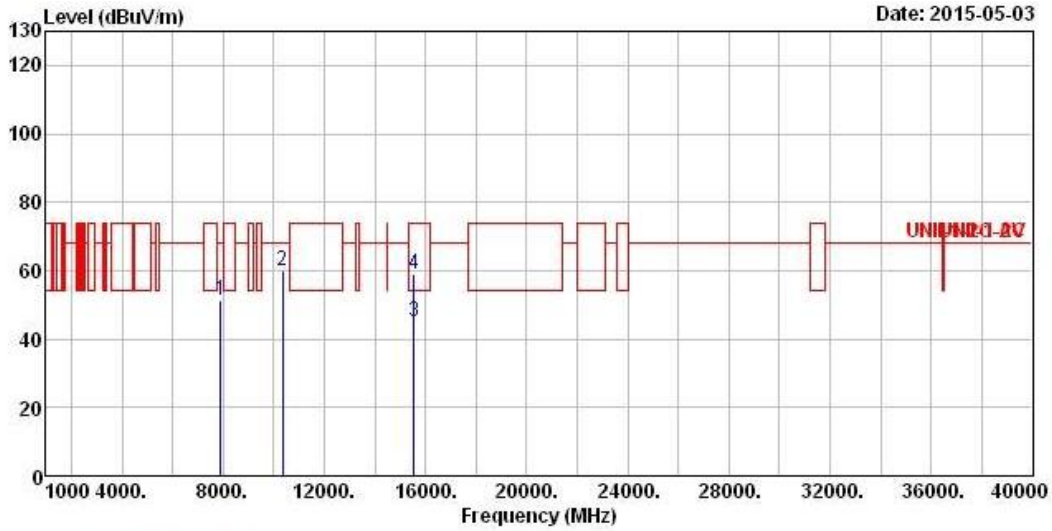
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT20	**Test Freq. (MHz)**	5180
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7926.00	51.37	-16.83	68.20	41.22	37.02	5.99	32.86	Peak
2	10360.00	58.19	-10.01	68.20	45.04	39.00	6.96	32.81	Peak
3	15540.00	44.79	-9.21	54.00	30.54	37.64	8.84	32.23	Average
4	15540.00	57.94	-16.06	74.00	43.69	37.64	8.84	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.

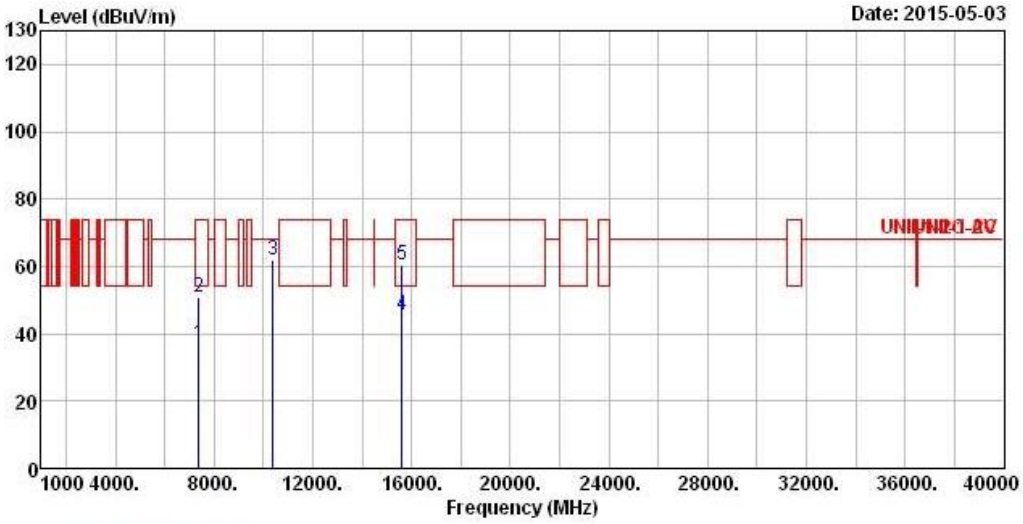
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT20	**Test Freq. (MHz)**	5180
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7898.00	51.35	-16.85	68.20	41.23	37.00	5.97	32.85	Peak
2	10360.00	59.98	-8.22	68.20	46.83	39.00	6.96	32.81	Peak
3	15540.00	45.09	-8.91	54.00	30.84	37.64	8.84	32.23	Average
4	15540.00	58.86	-15.14	74.00	44.61	37.64	8.84	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.

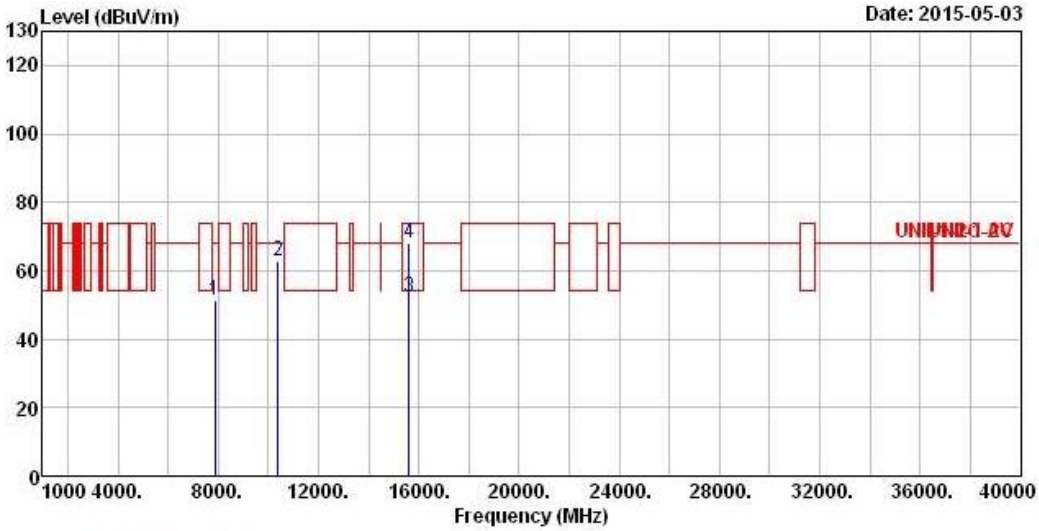
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT20	**Test Freq. (MHz)**	5200
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7368.00	36.92	-17.08	54.00	27.56	36.29	5.76	32.69	Average
2	7368.00	50.83	-23.17	74.00	41.47	36.29	5.76	32.69	Peak
3	10400.00	62.03	-6.17	68.20	48.83	39.00	6.97	32.77	Peak
4	15600.00	45.77	-8.23	54.00	31.65	37.53	8.85	32.26	Average
5	15600.00	60.56	-13.44	74.00	46.44	37.53	8.85	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.

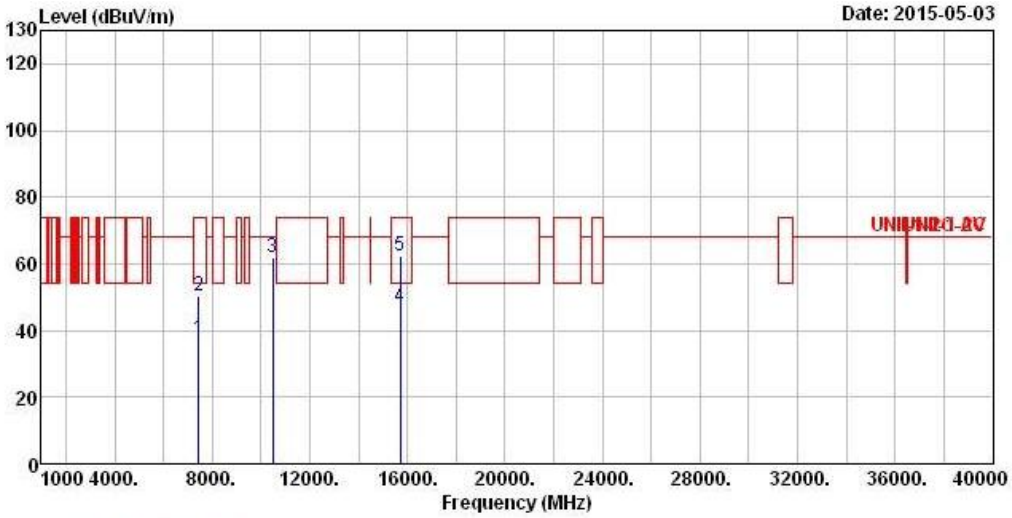
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT20	**Test Freq. (MHz)**	5200
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7866.00	51.48	-16.72	68.20	41.41	36.97	5.95	32.85	Peak
2	10400.00	62.64	-5.56	68.20	49.44	39.00	6.97	32.77	Peak
3	15600.00	52.24	-1.76	54.00	38.12	37.53	8.85	32.26	Average
4	15600.00	68.23	-5.77	74.00	54.11	37.53	8.85	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.

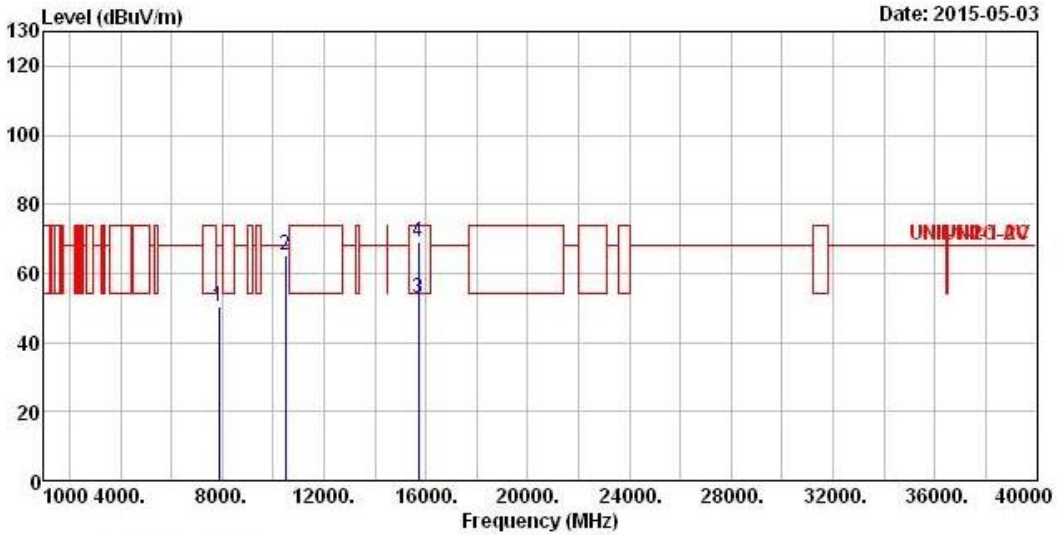
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT20	**Test Freq. (MHz)**	5240
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7440.00	37.37	-16.63	54.00	27.83	36.47	5.79	32.72	Average
2	7440.00	50.33	-23.67	74.00	40.79	36.47	5.79	32.72	Peak
3	10480.00	61.93	-6.27	68.20	48.63	39.00	7.00	32.70	Peak
4	15720.00	46.82	-7.18	54.00	32.92	37.34	8.86	32.30	Average
5	15720.00	62.14	-11.86	74.00	48.24	37.34	8.86	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.

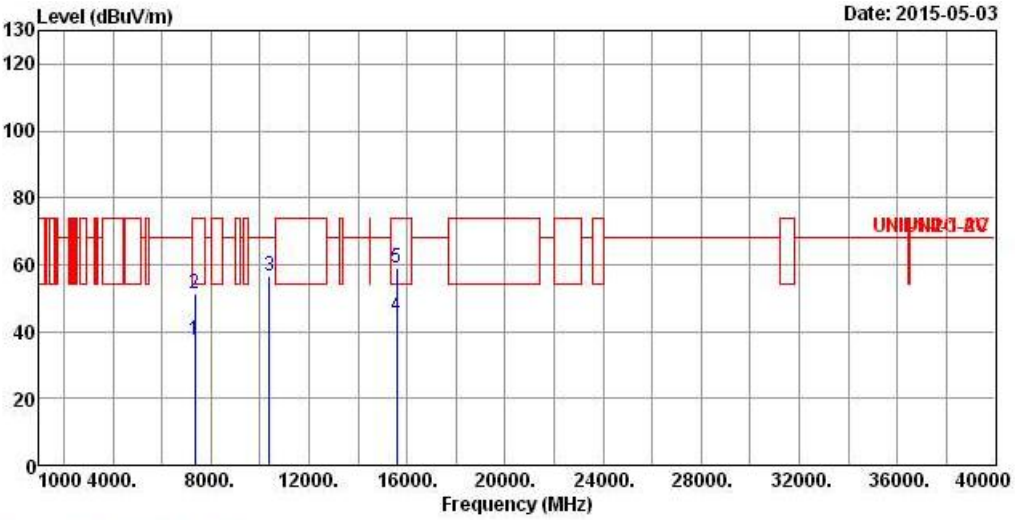
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT20	**Test Freq. (MHz)**	5240
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7878.00	50.46	-17.74	68.20	40.38	36.98	5.95	32.85	Peak
2	10480.00	65.26	-2.94	68.20	51.96	39.00	7.00	32.70	Peak
3	15713.52	52.81	-1.19	54.00	38.91	37.34	8.86	32.30	Average
4	15713.52	68.86	-5.14	74.00	54.96	37.34	8.86	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.

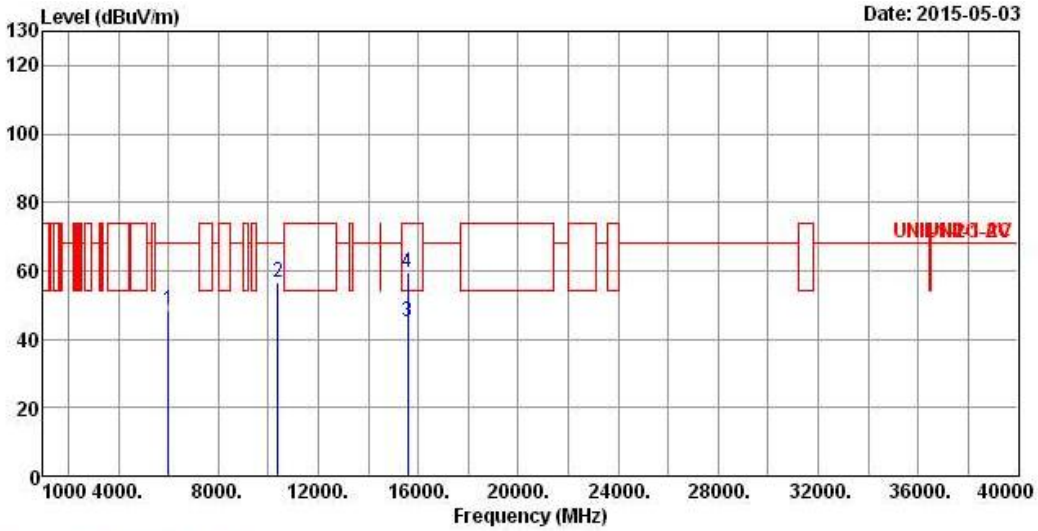
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT40	**Test Freq. (MHz)**	5190
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7362.00	37.37	-16.63	54.00	28.06	36.24	5.76	32.69	Average
2	7362.00	51.30	-22.70	74.00	41.99	36.24	5.76	32.69	Peak
3	10380.00	56.66	-11.54	68.20	43.48	39.00	6.97	32.79	Peak
4	15570.00	44.77	-9.23	54.00	30.58	37.59	8.85	32.25	Average
5	15570.00	58.94	-15.06	74.00	44.75	37.59	8.85	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.

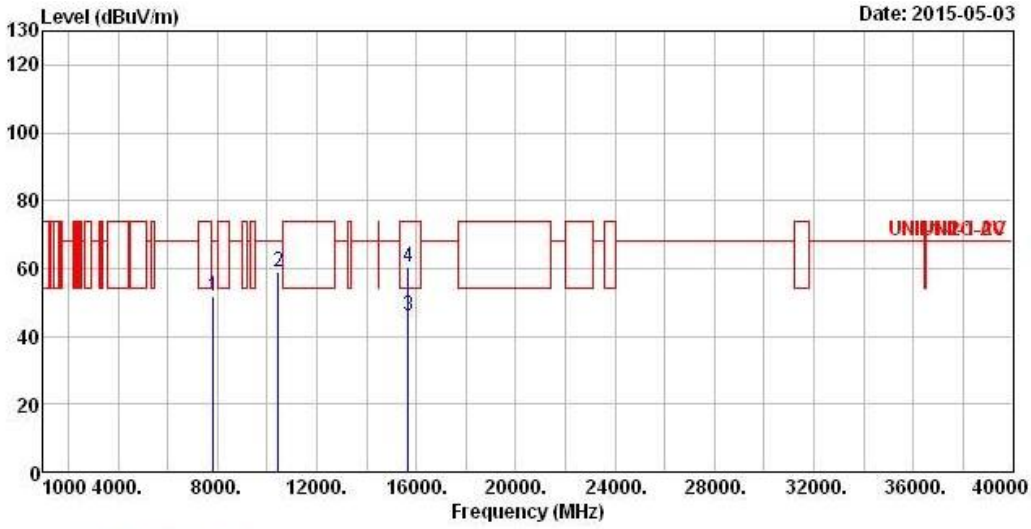
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT40	**Test Freq. (MHz)**	5190
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	6018.00	48.35	-19.85	68.20	41.42	34.30	5.09	32.46	Peak
2	10380.00	56.51	-11.69	68.20	43.33	39.00	6.97	32.79	Peak
3	15570.00	44.88	-9.12	54.00	30.69	37.59	8.85	32.25	Average
4	15570.00	59.71	-14.29	74.00	45.52	37.59	8.85	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.

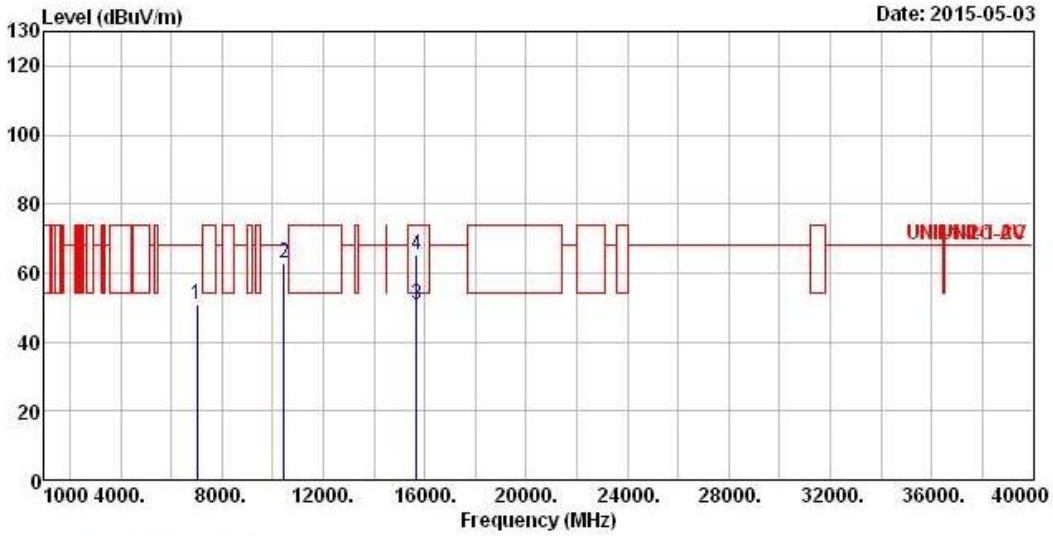
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT40	**Test Freq. (MHz)**	5230
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7842.00	51.61	-16.59	68.20	41.58	36.93	5.94	32.84	Peak
2	10460.00	58.84	-9.36	68.20	45.56	39.00	7.00	32.72	Peak
3	15690.00	46.02	-7.98	54.00	32.05	37.40	8.86	32.29	Average
4	15690.00	60.24	-13.76	74.00	46.27	37.40	8.86	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.

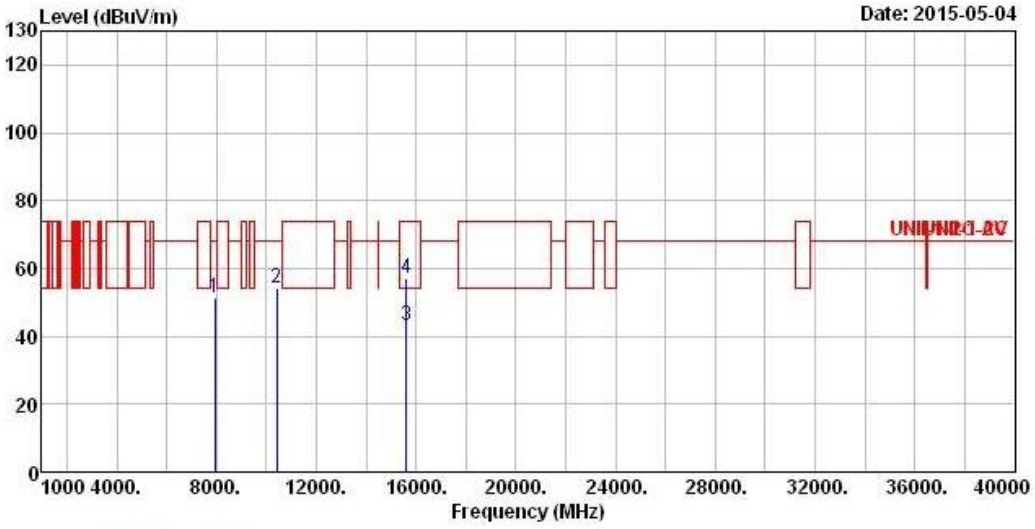
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT40	**Test Freq. (MHz)**	5230
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7038.00	50.85	-17.35	68.20	42.37	35.39	5.65	32.56	Peak
2	10460.00	62.95	-5.25	68.20	49.67	39.00	7.00	32.72	Peak
3	15690.00	50.96	-3.04	54.00	36.99	37.40	8.86	32.29	Average
4	15690.00	65.37	-8.63	74.00	51.40	37.40	8.86	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.

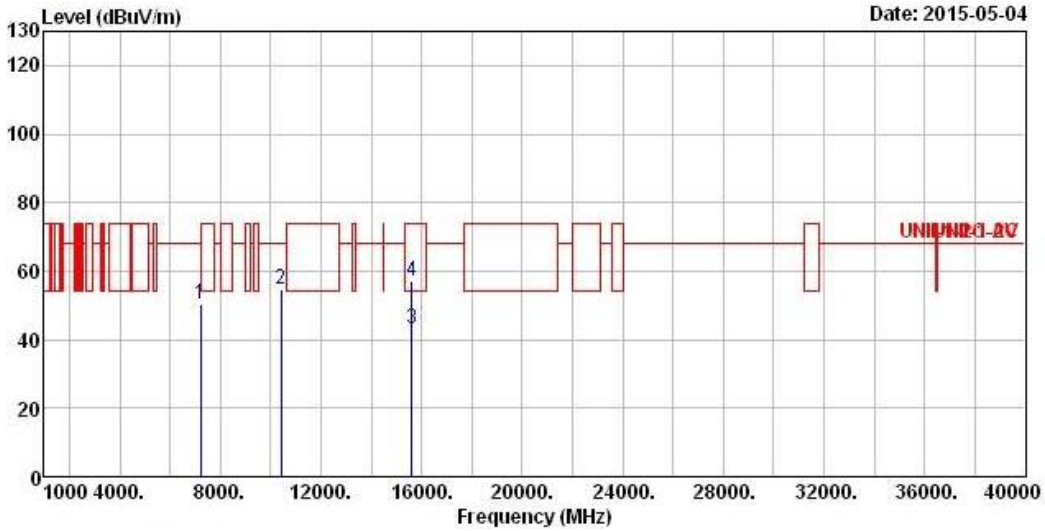
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT80	**Test Freq. (MHz)**	5210
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7941.00	51.28	-16.92	68.20	41.12	37.03	5.99	32.86	Peak
2	10420.00	54.08	-14.12	68.20	40.85	39.00	6.98	32.75	Peak
3	15630.00	43.11	-10.89	54.00	29.05	37.48	8.85	32.27	Average
4	15630.00	57.04	-16.96	74.00	42.98	37.48	8.85	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.

Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	VHT80	**Test Freq. (MHz)**	5210
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7220.00	50.30	-17.90	68.20	41.34	35.88	5.71	32.63	Peak
2	10420.00	54.63	-13.57	68.20	41.40	39.00	6.98	32.75	Peak
3	15630.00	43.21	-10.79	54.00	29.15	37.48	8.85	32.27	Average
4	15630.00	57.00	-17.00	74.00	42.94	37.48	8.85	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.

3.8 Frequency Stability

3.8.1 Frequency Stability Limit

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

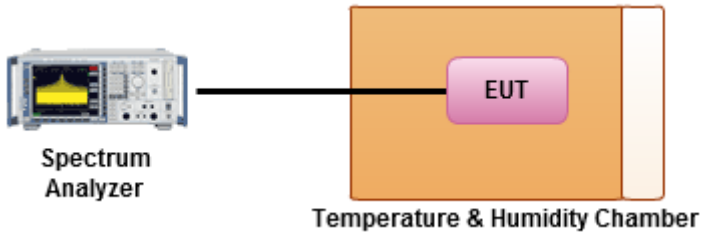
3.8.2 Measuring Instruments

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

3.8.3 Test Procedures

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

3.8.4 Test Setup

Frequency Stability


3.8.5 Test Result of Frequency Stability

Frequency Stability Result			
Mode		**Frequency Stability (ppm)**	
Condition	**Freq. (MHz)**	**Test Frequency (MHz)**	**Frequency Stability (ppm)**
$T_{20°C}$Vmax	5180	5199.97751	-4.3250
$T_{20°C}$Vmin	5180	5199.97669	-4.4827
$T_{50°C}$Vnom	5180	5200.03148	6.0538
$T_{40°C}$Vnom	5180	5200.01259	2.4212
$T_{30°C}$Vnom	5180	5199.98516	-2.8538
$T_{20°C}$Vnom	5180	5199.97586	-4.6423
$T_{10°C}$Vnom	5180	5199.97406	-4.9885
$T_{0°C}$Vnom	5180	5199.98636	-2.6231
$T_{-10°C}$Vnom	5180	5200.01364	2.6231
$T_{-20°C}$Vnom	5180	5200.03403	6.5442
Limit (ppm)		20	
Result		**Complied**	
Note 1: Measure at 85 % [Vmin] and 115 % [Vmax] of the nominal voltage [Vnom]. Note 2: The nominal voltage refer test report clause 1.1.5 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	07611832020001	9kHz ~ 30MHz	Oct. 31, 2014	AC Conduction
EMI Filter	LINDGREN	LRE-2030	2651	< 450 Hz	N/A	AC Conduction

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

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	R&S	FSV 40	101514	9KHz~40GHz	Jun. 13, 2014	RF Conducted
AC Power Source	G.W	APS-9102	EL920581	AC 0V ~ 300V	Jul. 15, 2014	RF Conducted
Temp. and Humidity Chamber	Giant Force	GTH-225-20-SP-SD	MAA1112-007	-20 ~ 100℃	Nov. 25, 2014	RF Conducted
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	Jul. 31, 2014	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
Amplifier	EMC	EMC9135	980232	9kHz ~ 1GHz	Jan. 27, 2015	Radiated Emission
Amplifier	Agilent	8449B	3008A02120	1GHz ~ 26.5GHz	Sep. 01, 2014	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. 11, 2014	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
Antenna Mast	MF	MF-7802	MF780208179	1 ~ 4 m	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	MITEQ	AMF-6F-260400 -33-8P	912372	26.5GHz ~ 40GHz	Apr. 18, 2015	Radiated Emission
Loop Antenna	TESEQ	HLA 6120	31244	9 kHz~30 MHz	Feb. 02, 2015	Radiated Emission

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