FCC Test Report

Equipment	:	**300N Wireless LAN Repeater**
Brand Name	:	**EDIMAX**
Model No.	:	**EW-7438RPN / GRP-438N / EW-7438RPn v2**
FCC ID	:	**NDD9574381304**
Standard	:	**47 CFR FCC Part 15.247**
Operating Band	:	**2400 MHz – 2483.5 MHz**
FCC Classification	:	**DTS**
Applicant **Manufacturer**	:	**EDIMAX TECHNOLOGY CO., LTD.** **No. 3, Wu-Chuan 3rd Road, Wu-Ku Industrial Park,** **New Taipei City, Taiwan**

The product sample received on Jul. 21, 2013 and completely tested on Sep. 12, 2013. 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:

Wayne Hsu / Assistant Manager

Testing Laboratory
1190

Table of Contents

1 GENERAL DESCRIPTION 5

1.1 Information 5
1.2 Product Details 7
1.3 Support Equipment 7
1.4 Testing Applied Standards 7
1.5 Testing Location Information 8
1.6 Measurement Uncertainty 8

2 TEST CONFIGURATION OF EUT 9

2.1 The Worst Case Modulation Configuration 9
2.2 The Worst Case Power Setting Parameter 9
2.3 The Worst Case Measurement Configuration 10
2.4 Test Setup Diagram 11

3 TRANSMITTER TEST RESULT 13

3.1 AC Power-line Conducted Emissions 13
3.2 6dB Bandwidth 16
3.3 RF Output Power 18
3.4 Power Spectral Density 23
3.5 Transmitter Bandedge Emissions 25
3.6 Transmitter Unwanted Emissions 30

4 TEST EQUIPMENT AND CALIBRATION DATA 59

APPENDIX A. TEST PHOTOS

APPENDIX B. PHOTOGRAPHS OF EUT

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]: 0.4863180MHz 36.21 (10.02) - AV 42.93 (3.30) - QP	FCC 15.207	Complied
3.2	15.247(a)	6dB Bandwidth	6dB Bandwidth Unit [MHz] 20M: 9.45 / 40M: 34.48	≥500kHz	Complied
3.3	15.247(b)	RF Output Power (Maximum Peak Conducted Output Power)	Power [dBm]: 29.58	Power [dBm]:30	Complied
3.4	15.247(d)	Power Spectral Density	PSD [dBm/100kHz]: -4.59	PSD [dBm/3kHz]:8	Complied
3.5	15.247(c)	Transmitter Radiated Bandedge Emissions	Non-Restricted Bands: 2426.420MHz: 27.72dB Restricted Bands [dBuV/m at 3m]: 2390.000MHz 68.56 (Margin 5.44dB) - PK 52.52 (Margin 1.48dB) - AV	Non-Restricted Bands: > 20 dBc Restricted Bands: FCC 15.209	Complied
3.6	15.247(c)	Transmitter Radiated Unwanted Emissions	[dBuV/m at 3m]: 4874.000MHz 55.62 (Margin 18.38dB) - PK 52.55 (Margin 1.45dB) - AV	Non-Restricted Bands: > 20 dBc Restricted Bands: FCC 15.209	Complied

Revision History

Report No.	Version	Description	Issued Date
FR370531	Rev. 01	Initial issue of report	Oct. 15, 2013

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**
2400-2483.5	b	2412-2462	1-11 [11]	1	22.35	N/A
2400-2483.5	g	2412-2462	1-11 [11]	1	26.52	N/A
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	2	29.58	N/A
2400-2483.5	n (HT40)	2422-2452	3-9 [7]	2	29.21	N/A

Note 1: RF output power specifies that Maximum Peak Conducted Output Power.
Note 2: 802.11b uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
Note 3: 802.11g/n uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM 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	2.43

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)**
☒ 99.65% - IEEE 802.11b	0.02
☒ 89.94% - IEEE 802.11g	0.46
☒ 83.53% - IEEE 802.11n (HT20)	0.78
☒ 69.81% - IEEE 802.11n (HT40)	1.56

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

1.1.5 EUT Operational Condition

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

1.2 Product Details

The equipment is 300N Wireless LAN Repeater. There are two types of this product. One is device equipped with switch and the other is not. The EUT have with switch is tested in this report. For more detailed features description, please refer to the manufacturer's specifications or user's manual.

1.3 Support Equipment

Support Equipment-Conducted Emission				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Notebook	DELL	E5500	DoC
2	(USB) Mouse	Microsoft	1113	DoC
3	(USB) Printer	EPSON	C61	DoC
4	Notebook (Remote Workstation)	DELL	PP32LB	DoC

Support Equipment- Radiated Emission				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Notebook	DELL	E5520	DoC
2	(USB) Mouse	Microsoft	1004	DoC
3	(USB) Printer	EPSON	C61	DoC
4	Notebook (Remote Workstation)	DELL	D5500	DoC
5	AP (Remote Workstation)	D-LINK	DNS-G120	--

1.4 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 558074
- FCC KDB 662911

1.5 Testing Location Information

Testing Location					
☒	HWA YA	ADD :	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.		
		TEL :	886-3-327-3456	FAX :	886-3-327-0973

Test Condition	Test Site No.	Test Engineer	Test Environment
AC Conduction	CO04-HY	Zeus	22°C / 50%
RF Conducted	TH01-HY	Wei	25°C / 65%
Radiated Emission	03CH02-HY	Daniel	23.9°C / 56%

1.6 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	Limit
AC power-line conducted emissions		±2.26 dB	N/A
Emission bandwidth, 6dB bandwidth		±1.42 %	N/A
RF output power, conducted		±0.63 dB	N/A
Power density, conducted		±0.81 dB	N/A
Unwanted emissions, conducted	30 – 1000 MHz	±0.51 dB	N/A
	1 – 18 GHz	±0.67 dB	N/A
	18 – 40 GHz	±0.83 dB	N/A
	40 – 200 GHz	N/A	N/A
All emissions, radiated	30 – 1000 MHz	±2.56 dB	N/A
	1 – 18 GHz	±3.59 dB	N/A
	18 – 40 GHz	±3.82 dB	N/A
	40 – 200 GHz	N/A	N/A
Temperature		±0.8 °C	N/A
Humidity		±3 %	N/A
DC and low frequency voltages		±3 %	N/A
Time		±1.42 %	N/A
Duty Cycle		±1.42 %	N/A

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**
11b,1-11Mbps	1	1-11 Mbps	1 Mbps
11g,6-54Mbps	1	6-54 Mbps	6 Mbps
HT20,M8-15	2	MCS 8-15	MCS 8
HT40,M8-15	2	MCS 8-15	MCS 8

2.2 The Worst Case Power Setting Parameter

The Worst Case Power Setting Parameter (2400-2483.5MHz band)							
Test Software Version	RTL819x_ 2.3						
Modulation Mode	**N_{TX}**	**Test Frequency (MHz)**					
		NCB: 20MHz			**NCB: 40MHz**		
		2412	**2437**	**2462**	**2422**	**2437**	**2452**
11b	1	45	45	43	-	-	-
11g	1	45	63	45	-	-	-
HT-20	2	47/47	63/63	47/47	-	-	-
HT-40	2	-	-	-	47/47	63/63	48/48

2.3 The Worst Case Measurement Configuration

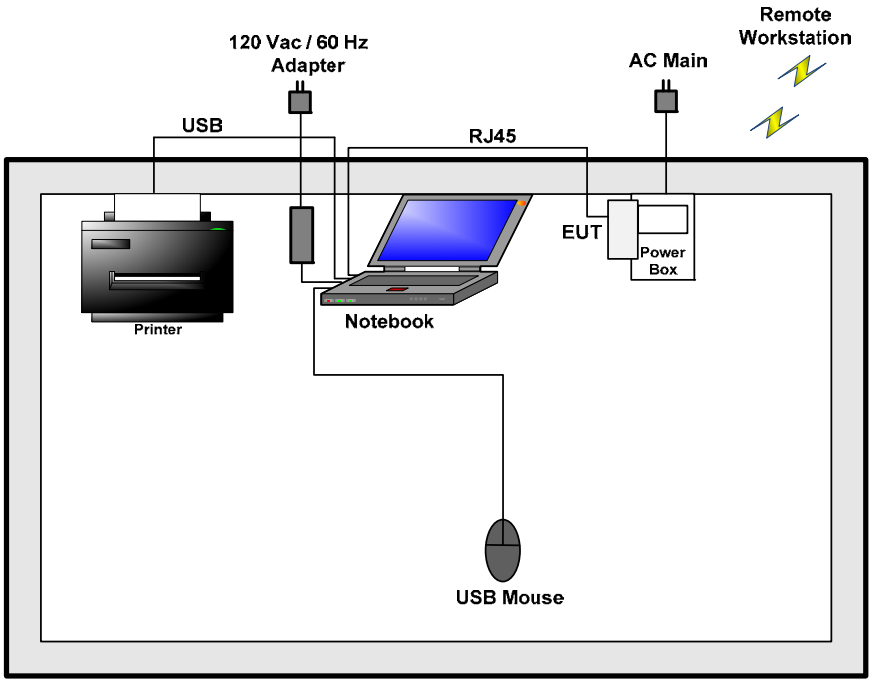
The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
Operating Mode	Operating Mode Description
1	AC Power & Radio link

The Worst Case Mode for Following Conformance Tests	
Tests Item	RF Output Power, Power Spectral Density, 6 dB Bandwidth
Test Condition	Conducted measurement at transmit chains
Modulation Mode	11b, 11g, HT20, HT40

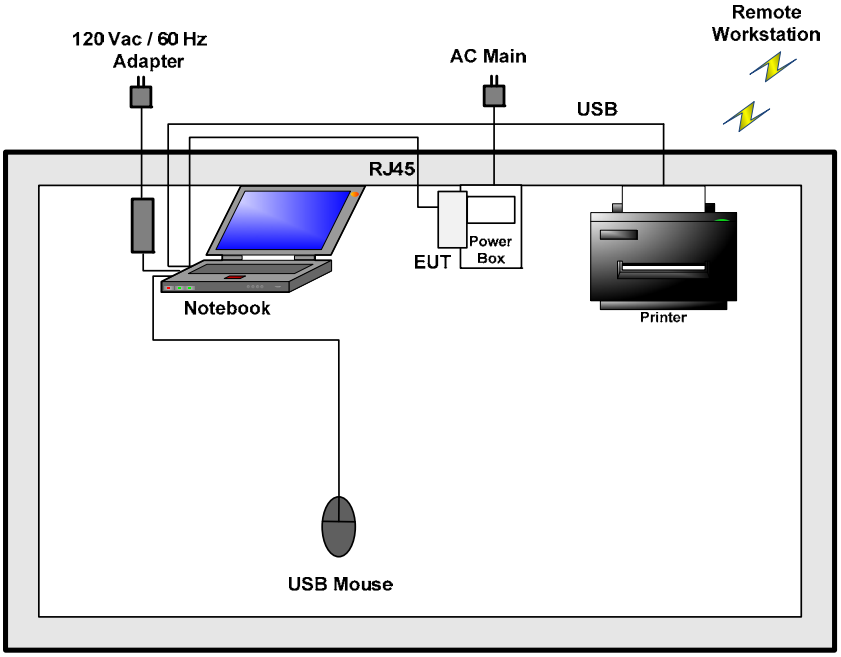
The Worst Case Mode for Following Conformance Tests			
Tests Item	Transmitter Radiated Unwanted Emissions Transmitter Radiated Bandedge Emissions		
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO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

2.4 Test Setup Diagram

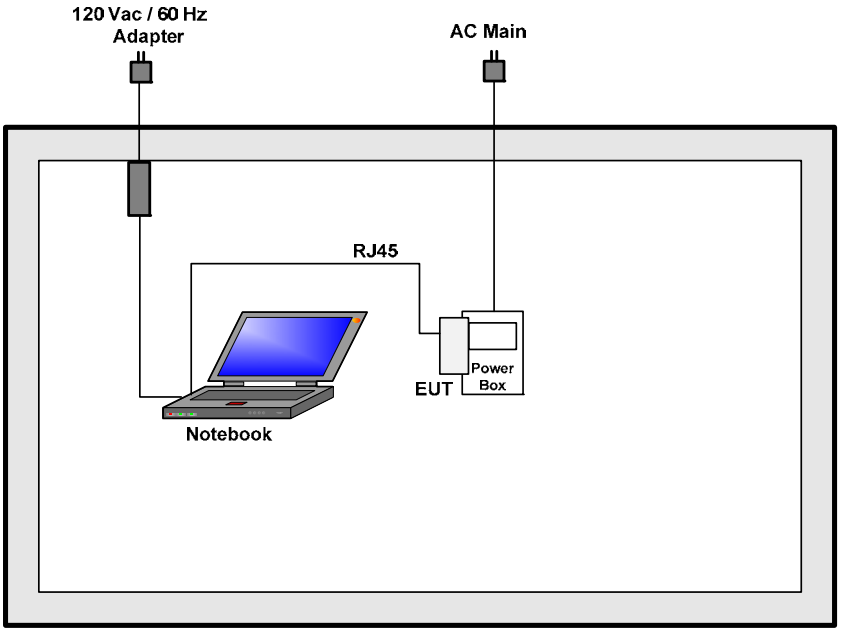
Test Setup Diagram – AC Line Conducted Emission Test



Test Setup Diagram - Radiated Test (Below 1GHz)



Test Setup Diagram - Radiated Test (Above 1GHz)



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

3.1.2 Measuring Instruments

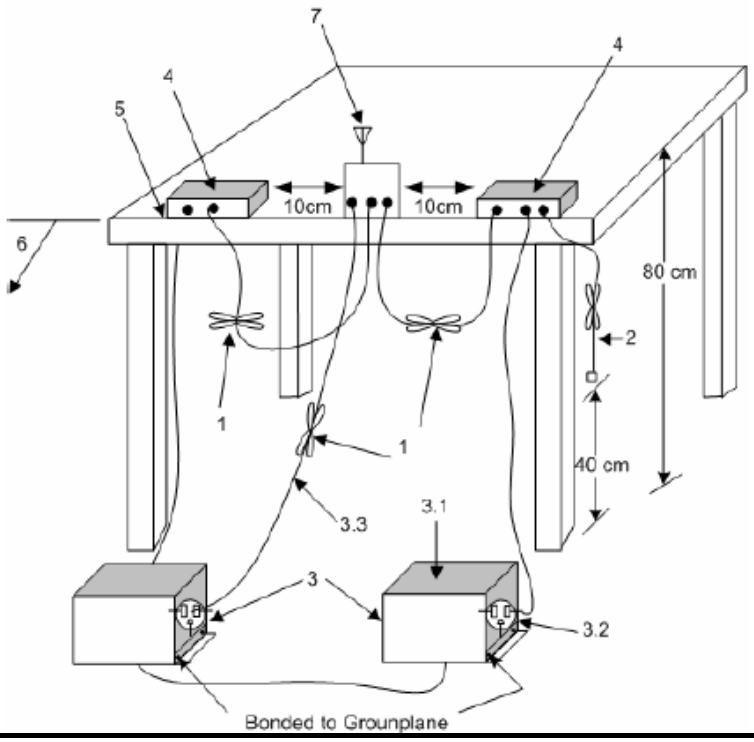
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

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

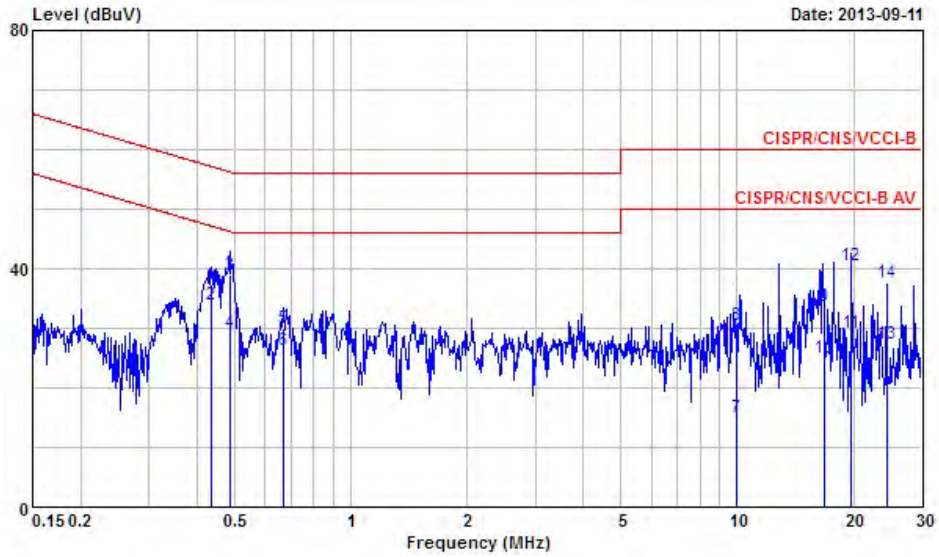
3.1.4 Test Setup

AC Power-line Conducted Emissions



3.1.5 Test Result of AC Power-line Conducted Emissions

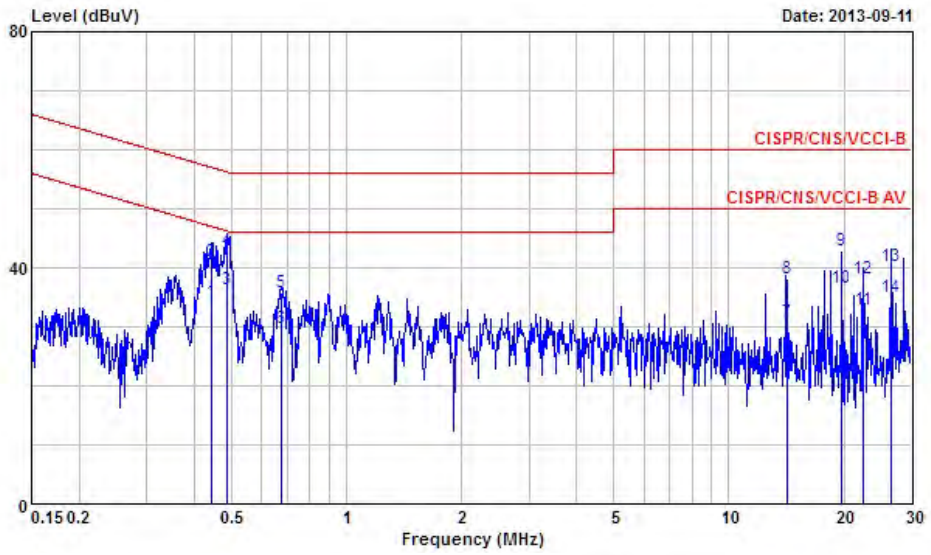
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Neutral
Operating Function	AC Power & Radio link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.4351090	37.30	-19.85	57.15	36.97	0.22	0.11	QP
2	0.4351090	33.87	-13.28	47.15	33.54	0.22	0.11	Average
3	0.4863180	38.96	-17.27	56.23	38.62	0.22	0.12	QP
4	0.4863180	29.19	-17.04	46.23	28.85	0.22	0.12	Average
5	0.6718660	30.10	-25.90	56.00	29.71	0.23	0.16	QP
6	0.6718660	26.29	-19.71	46.00	25.90	0.23	0.16	Average
7	9.934	15.11	-34.89	50.00	14.59	0.42	0.10	Average
8	9.934	30.40	-29.60	60.00	29.88	0.42	0.10	QP
9	16.774	33.65	-26.35	60.00	32.93	0.52	0.20	QP
10	16.774	25.03	-24.97	50.00	24.31	0.52	0.20	Average
11	19.708	29.20	-20.80	50.00	28.44	0.56	0.20	Average
12	19.708	40.48	-19.52	60.00	39.72	0.56	0.20	QP
13	24.531	27.31	-22.69	50.00	26.65	0.64	0.02	Average
14	24.531	37.74	-22.26	60.00	37.08	0.64	0.02	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.)

AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Line
Operating Function	AC Power & Radio link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	@0.4444290	34.33	-12.65	46.98	34.12	0.10	0.11	Average
2	0.4444290	41.08	-15.90	56.98	40.87	0.10	0.11	QP
3	@0.4863180	36.21	-10.02	46.23	35.99	0.10	0.12	Average
4	0.4863180	42.93	-13.30	56.23	42.71	0.10	0.12	QP
5	0.6754350	35.74	-20.26	56.00	35.47	0.11	0.16	QP
6	0.6754350	29.73	-16.27	46.00	29.46	0.11	0.16	Average
7	14.154	30.88	-19.12	50.00	30.43	0.27	0.18	Average
8	14.154	38.16	-21.84	60.00	37.71	0.27	0.18	QP
9	19.707	42.81	-17.19	60.00	42.30	0.31	0.20	QP
10	19.707	36.51	-13.49	50.00	36.00	0.31	0.20	Average
11	22.458	32.96	-17.04	50.00	32.53	0.33	0.10	Average
12	22.458	38.09	-21.91	60.00	37.66	0.33	0.10	QP
13	26.549	40.13	-19.87	60.00	39.75	0.35	0.03	QP
14	26.549	35.07	-14.93	50.00	34.69	0.35	0.03	Average

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

3.2 6dB Bandwidth

3.2.1 6dB Bandwidth Limit

6dB Bandwidth Limit
Systems using digital modulation techniques:
☒ 6 dB bandwidth ≥ 500 kHz.

3.2.2 Measuring Instruments

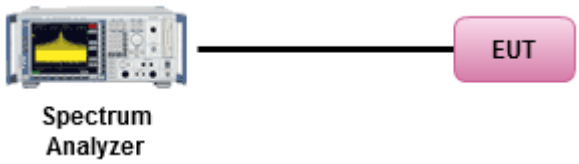
Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

Test Method			
☒	For the emission bandwidth shall be measured using one of the options below:		
	☒	Refer as FCC KDB 558074, clause 8.1 Option 1 for 6 dB bandwidth measurement.	
	☐	Refer as FCC KDB 558074, clause 8.2 Option 2 for 6 dB bandwidth measurement.	
	☐	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.	
☒	For conducted measurement.		
	☐	The EUT supports single transmit chain and measurements performed on this transmit chain.	
	☒	The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case.	
	☒	The EUT supports multiple transmit chains using options given below:	
		☐	Option 1: Multiple transmit chains measurements need to be performed on one of the active transmit chains (antenna outputs). All measurement had be performed on transmit chains 1.
		☒	Option 2: Multiple transmit chains measurements need to be performed on each transmit chains individually (antenna outputs). All measurement had be performed on all transmit chains.

3.2.4 Test Setup

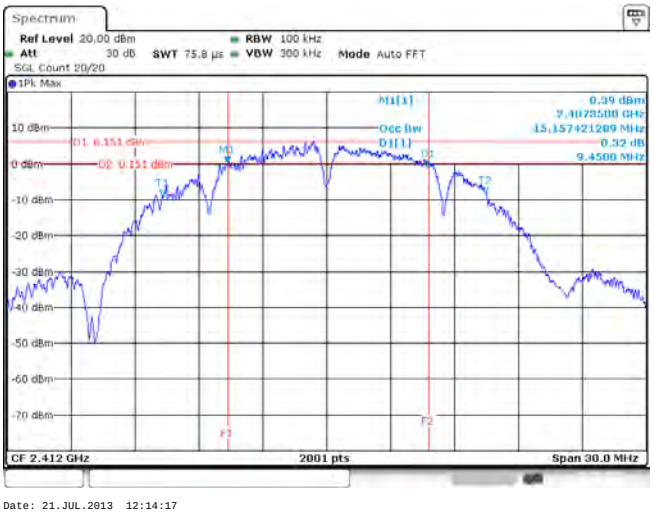
Emission Bandwidth



3.2.5 Test Result of Emission Bandwidth

Emission Bandwidth Result						
Condition			Emission Bandwidth (MHz)			
Modulation Mode	N_{TX}	Freq. (MHz)	99% Bandwidth		6dB Bandwidth	
			Chain Port 1	Chain Port 2	Chain Port 1	Chain Port 2
11b	1	2412	15.15	-	9.45	-
11b	1	2437	15.17	-	9.76	-
11b	1	2462	14.72	-	9.54	-
11g	1	2412	16.40	-	16.45	-
11g	1	2437	19.73	-	16.47	-
11g	1	2462	16.40	-	16.32	-
HT20	2	2412	17.64	17.67	17.61	17.61
HT20	2	2437	18.68	17.70	17.22	17.62
HT20	2	2462	17.58	17.57	17.55	17.59
HT40	2	2422	36.06	36.10	35.00	34.88
HT40	2	2437	36.90	36.22	35.52	34.68
HT40	2	2452	36.10	36.14	34.48	35.04
Limit			N/A		≥500 kHz	
Result			Complied			
Note 1: N_{TX} = Number of Transmit Chains						

Worst Emission Bandwidth Plots



3.3 RF Output Power

3.3.1 RF Output Power Limit

RF Output Power Limit			
Maximum Peak Conducted Output Power or Maximum Conducted Output Power Limit			
☒	2400-2483.5 MHz Band:		
	☒	If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)	
	☒	Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)$ dBm	
	☐	Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)/3$ dBm	
	☐	Smart antenna system (SAS):	
		☐	Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)/3$ dBm
		☐	Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)/3$ dBm
		☐	Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)/3 + 8$dB dBm
e.i.r.p. Power Limit:			
☒	2400-2483.5 MHz Band		
	☒	Point-to-multipoint systems (P2M): $P_{eirp} \leq 36$ dBm (4 W)	
	☐	Point-to-point systems (P2P): $P_{eirp} \leq MAX(36, [P_{Out} + G_{TX}])$ dBm	
	☐	Smart antenna system (SAS)	
		☐	Single beam: $P_{eirp} \leq MAX(36, P_{Out} + G_{TX})$ dBm
		☐	Overlap beam: $P_{eirp} \leq MAX(36, P_{Out} + G_{TX})$ dBm
		☐	Aggregate power on all beams: $P_{eirp} \leq MAX(36, [P_{Out} + G_{TX} + 8])$ dBm
P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, **G_{TX}** = the maximum transmitting antenna directional gain in dBi. **P_{eirp}** = e.i.r.p. Power in dBm.			

3.3.2 Measuring Instruments

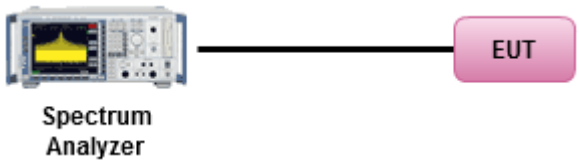
Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method	
☒	Maximum Peak Conducted Output Power
	☐ Refer as FCC KDB 558074, clause 9.1.1 Option 1 (RBW ≥ EBW method).
	☐ Refer as FCC KDB 558074, clause 9.1.2 Option 2 (integrated band power method).
	☒ Refer as FCC KDB 558074, clause 9.1.3 Option 2 (peak power meter for VBW ≥ DTS BW)
☒	Maximum Conducted Output Power
	[duty cycle ≥ 98% or external video / power trigger]
	☒ Refer as FCC KDB 558074, clause 9.2.2.2 Method AVGSA-1 (spectral trace averaging).
	☐ Refer as FCC KDB 558074, clause 9.2.2.3 Method AVGSA-1 Alt. (slow sweep speed)
	duty cycle < 98% and average over on/off periods with duty factor
	☐ Refer as FCC KDB 558074, clause 9.2.2.4 Method AVGSA-2 (spectral trace averaging).
	☐ Refer as FCC KDB 558074, clause 9.2.2.5 Method AVGSA-2 Alt. (slow sweep speed)
	RF power meter and average over on/off periods with duty factor or gated trigger
	☐ Refer as FCC KDB 558074, clause 9.2.3 Method AVGPM (using an RF average power meter).
☒	For conducted measurement.
	☐ The EUT supports single transmit chain and measurements performed on this transmit chain.
	☒ The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case.
	☐ The EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
	☒ If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \ldots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup

RF Output Power (Spectrum Analyzer)



3.3.5 Directional Gain for Power Measurement

Directional Gain (DG) Result					
Transmit Chains No.		1	2	-	-
Maximum G_{ANT} (dBi)		2.43	2.43	-	-
Modulation Mode	**DG (dBi)**	**N_{TX}**	**N_{SS} (Min.)**	**STBC**	**Array Gain (dB)**
11b,1-11Mbps	-	1	1	-	-
11g,6-54Mbps	-	1	1	-	-
HT20,M8-15	2.43	2	2	-	-
HT40,M8-15	2.43	2	2	-	-

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};

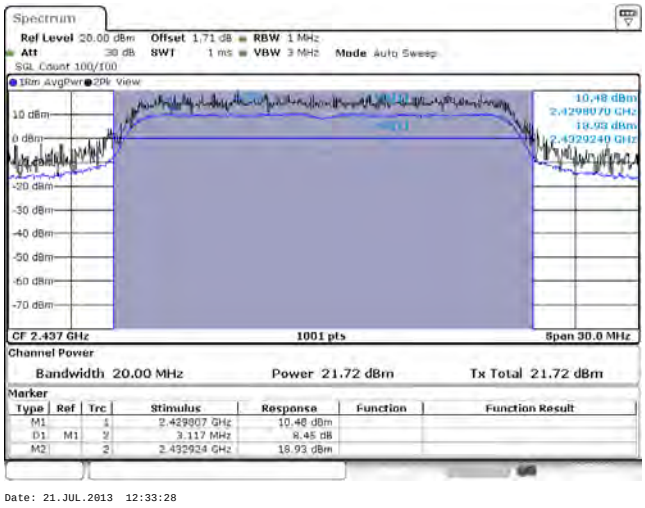
3.3.6 Test Result of Maximum Peak Conducted Output Power

Maximum Peak Conducted Output Power Result									
Condition			RF Output Power (dBm)						
Modulation Mode	N_{TX}	Freq. (MHz)	Chain Port 1	Chain Port 2	Sum Chain	Power Limit	DG (dBi)	EIRP Power	EIRP Limit
11b	1	2412	22.13	-	22.13	30	2.43	24.56	36
11b	1	2437	22.35	-	22.35	30	2.43	24.78	36
11b	1	2462	21.40	-	21.40	30	2.43	23.83	36
11g	1	2412	20.52	-	20.52	30	2.43	22.95	36
11g	1	2437	26.52	-	26.52	30	2.43	28.95	36
11g	1	2462	20.30	-	20.30	30	2.43	22.73	36
HT20	2	2412	20.89	21.28	24.10	30	2.43	26.53	36
HT20	2	2437	25.65	27.33	29.58	30	2.43	32.01	36
HT20	2	2462	20.17	20.84	23.53	30	2.43	25.96	36
HT40	2	2422	19.38	20.15	22.79	30	2.43	25.22	36
HT40	2	2437	25.43	26.85	29.21	30	2.43	31.64	36
HT40	2	2452	19.71	20.50	23.13	30	2.43	25.56	36
Result			Complied						

3.3.7 Test Result of Maximum Conducted Output Power

Maximum Conducted Output Power									
Condition			RF Output Power (dBm)						
Modulation Mode	N_{TX}	Freq. (MHz)	Chain Port 1	Chain Port 2	Sum Chain	Power Limit	DG (dBi)	EIRP Power	EIRP Limit
11b	1	2412	19.14	-	19.14	30	2.43	21.57	36
11b	1	2437	19.32	-	19.32	30	2.43	21.75	36
11b	1	2462	18.38	-	18.38	30	2.43	20.81	36
11g	1	2412	15.69	-	15.69	30	2.43	18.12	36
11g	1	2437	21.72	-	21.72	30	2.43	24.15	36
11g	1	2462	15.59	-	15.59	30	2.43	18.02	36
HT20	2	2412	16.20	16.74	19.49	30	2.43	21.92	36
HT20	2	2437	20.94	22.50	24.80	30	2.43	27.23	36
HT20	2	2462	15.51	16.07	18.81	30	2.43	21.24	36
HT40	2	2422	15.04	15.64	18.36	30	2.43	20.79	36
HT40	2	2437	21.11	22.36	24.79	30	2.43	27.22	36
HT40	2	2452	15.30	16.08	18.72	30	2.43	21.15	36
Result			Complied						

2400-2483.5MHz - Worst RF Output Power Plots
HT20 [Port 2]



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

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

Power Spectral Density Limit
☒ Power Spectral Density (PSD) ≤ 8 dBm/3kHz

3.4.2 Measuring Instruments

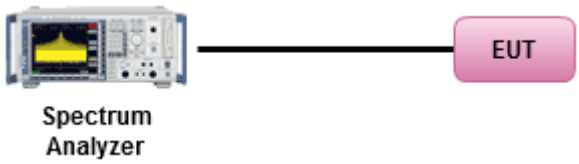
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method			
☒	Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).		
	☒ Refer as FCC KDB 558074, clause 10.2 Method PKPSD (RBW=3-100kHz;detector=peak)..		
	[duty cycle ≥ 98% or external video / power trigger]		
	☐ Refer as FCC KDB 558074, clause 10.3 Method AVGPSD-1 (spectral trace averaging).		
	☐ Refer as FCC KDB 558074, clause 10.4 Method AVGPSD-1 Alt. (slow sweep speed)		
	duty cycle < 98% and average over on/off periods with duty factor		
	☐ Refer as FCC KDB 558074, clause 10.5 Method AVGPSD-2 (spectral trace averaging).		
	☐ Refer as FCC KDB 558074, clause 10.6 Method AVGPSD-2 Alt. (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 spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the N_{TX} output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.	
		☐ 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.	

3.4.4 Test Setup

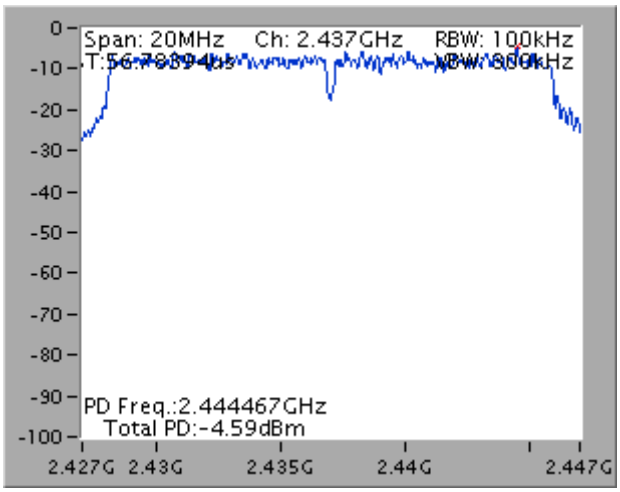
Power Spectral Density



3.4.5 Test Result of Power Spectral Density

Power Spectral Density Result				
Condition			Power Spectral Density	
Modulation Mode	N_{TX}	Freq. (MHz)	Sum Chain (dBm/100kHz)	PSD Limit (dBm/3kHz)
11b	1	2412	-6.30	8
11b	1	2437	-6.07	8
11b	1	2462	-8.41	8
11g	1	2412	-13.84	8
11g	1	2437	-7.53	8
11g	1	2462	-14.45	8
HT20	2	2412	-8.27	8
HT20	2	2437	-4.59	8
HT20	2	2462	-10.56	8
HT40	2	2422	-11.92	8
HT40	2	2437	-6.09	8
HT40	2	2452	-12.52	8
Result			Complied	

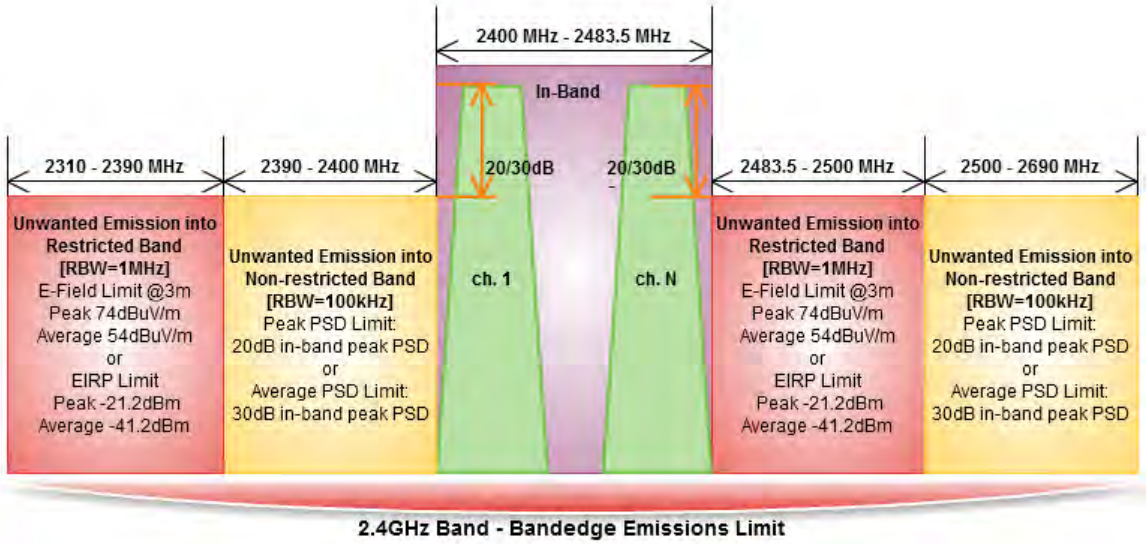
Worst Power Spectral Density Plots



3.5 Transmitter Bandedge Emissions

3.5.1 Transmitter Radiated Bandedge Emissions Limit

Transmitter Radiated Bandedge Emissions Limit



3.5.2 Measuring Instruments

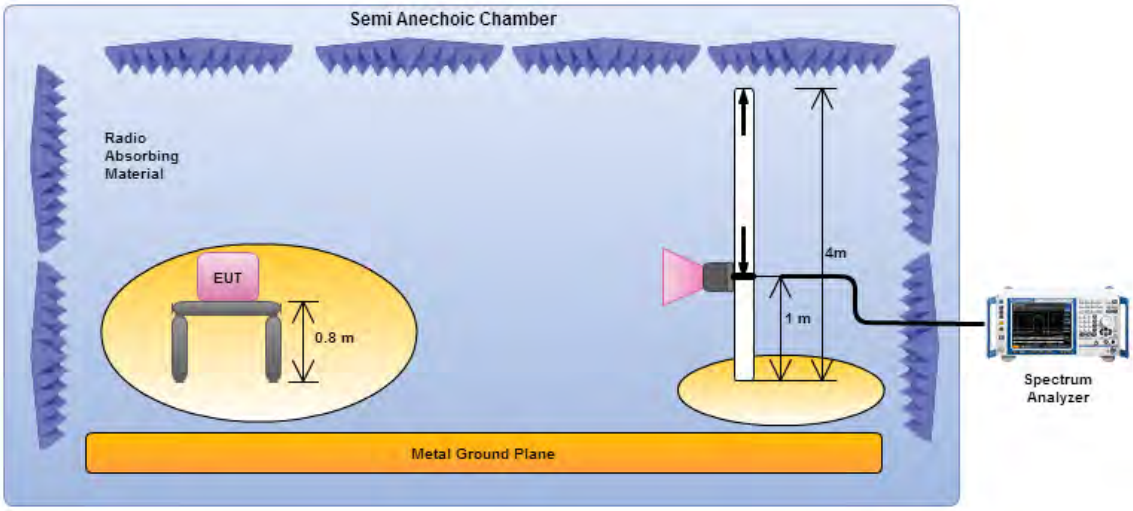
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method			
☒	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.		
☒	For the transmitter unwanted emissions shall be measured using following options below:		
	☒	Refer as FCC KDB 558074, clause 11 for unwanted emissions into non-restricted bands.	
	☒	Refer as FCC KDB 558074, clause 12 for unwanted emissions into restricted bands.	
		☐	Refer as FCC KDB 558074, clause 12.2.5.1 Option 1 (trace averaging for duty cycle ≥98%)
		☐	Refer as FCC KDB 558074, clause 12.2.5.2 Option 2 (trace averaging + duty factor).
		☐	Refer as FCC KDB 558074, clause 12.2.5.3 Option 3 (Reduced VBW≥1/T).
		☒	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 558074, clause 11.3 and 12.2.4 measurement procedure peak limit.
☒	For the transmitter bandedge emissions shall be measured using following options below:		
	☐	Refer as FCC KDB 558074, clause 13.3 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 FCC KDB 558074, clause 12.2.7.		

3.5.4 Test Setup

Transmitter Radiated Bandedge Emissions

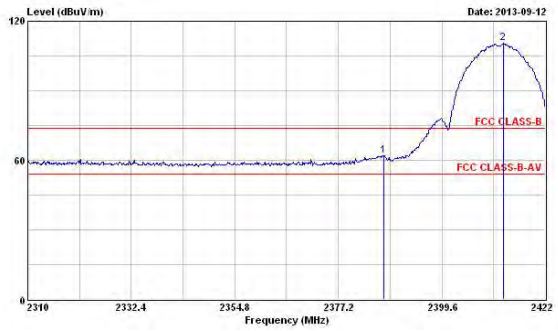
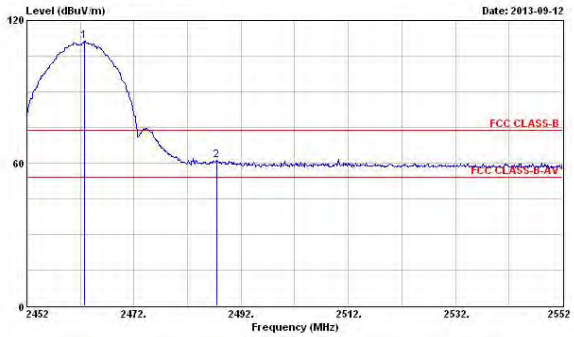
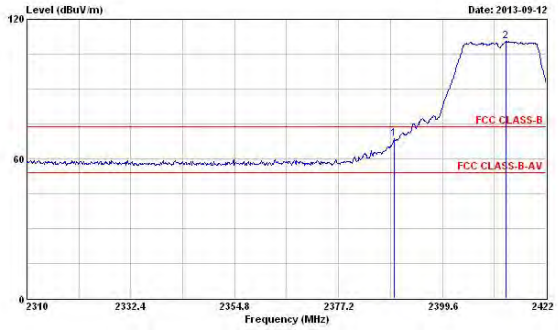
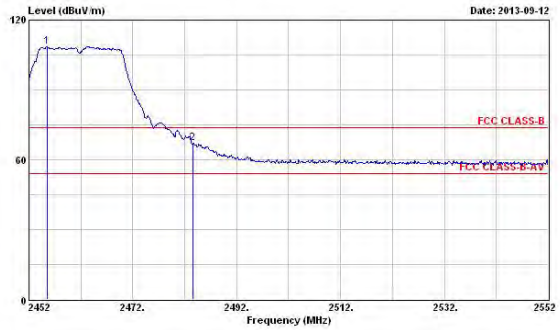


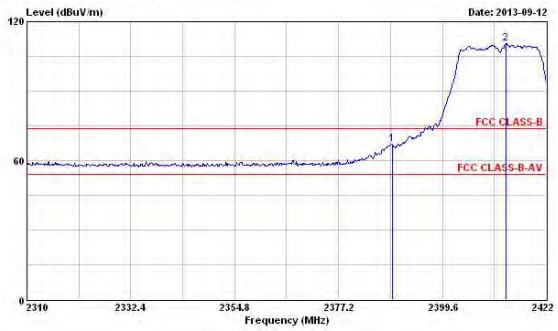
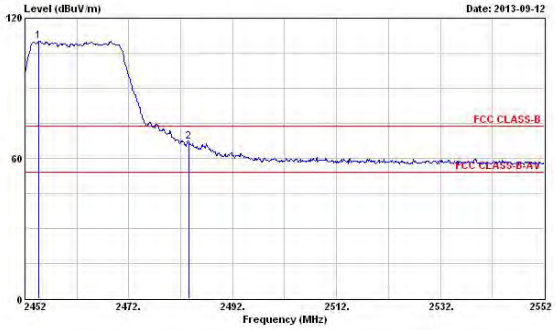
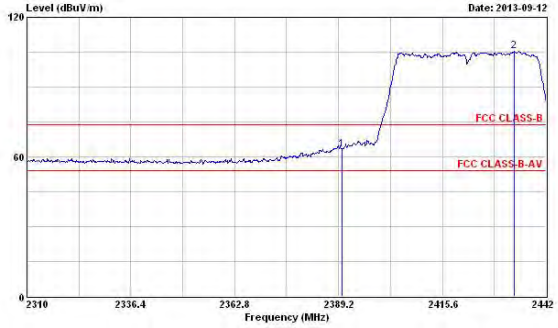
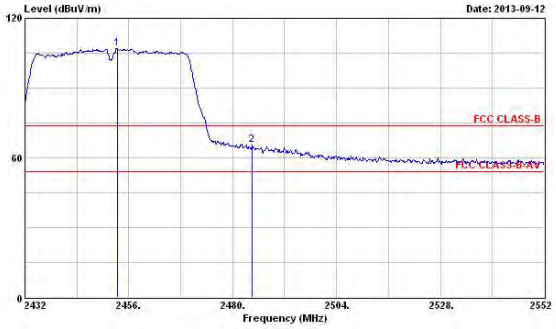
Electric field tests shall be performed in transmitter bandedge emissions using a calibrated horn antenna.

3.5.5 Transmitter Radiated Bandedge Emissions

2400-2483.5MHz Transmitter Radiated Bandedge Emissions (Non-restricted Band)								
Modulation	**N_{TX}**	**Test Freq. (MHz)**	**In-band PSD [i] (dBuV/100kHz)**	**Freq. (MHz)**	**Out-band PSD [o] (dBuV/100kHz)**	**[i] – [o] (dB)**	**Limit (dB)**	**Pol.**
11b	1	2412	106.18	2412.480	74.18	32.00	20	H
11b	1	2462	106.79	2462.300	64.25	42.54	20	H
11g	1	2412	101.53	2414.270	68.97	32.56	20	H
11g	1	2462	99.54	2464.200	63.42	36.12	20	H
HT20,M8-15	2	2412	101.52	2415.170	69.10	34.42	20	H
HT20,M8-15	2	2462	101.51	2455.900	64.79	36.72	20	H
HT40,M8-15	2	2422	96.93	2426.420	67.21	27.72	20	H
HT40,M8-15	2	2452	98.62	2454.920	63.41	35.21	20	H
Note 1: Measurement worst emissions of receive antenna polarization								

2400-2483.5MHz Transmitter Radiated Bandedge Emissions (Restricted Band)										
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.**
11b	1	2412	3	2386.940	62.03	74	2386.050	51.55	54	H
11b	1	2462	3	2487.500	61.15	74	2487.500	49.48	54	H
11g	1	2412	3	2389.180	68.56	74	2390.000	52.52	54	H
11g	1	2462	3	2483.500	67.06	74	2483.500	52.45	54	H
HT20,M8-15	2	2412	3	2388.740	67.29	74	2390.000	52.51	54	H
HT20,M8-15	2	2462	3	2483.500	67.18	74	2483.500	52.03	54	H
HT40,M8-15	2	2422	3	2390.00	63.31	74	2390.00	51.84	54	H
HT40,M8-15	2	2452	3	2484.560	65.41	74	2483.500	52.46	54	H
Note 1: Measurement worst emissions of receive antenna polarization.										

2400-2483.5MHz - Transmitter Radiated Bandedge Emissions Plots	
11b-(Lowest Ch.)	11b-(Highest Ch.)
	
11g-(Lowest Ch.)	11g-(Highest Ch.)
	

2400-2483.5MHz - Transmitter Radiated Bandedge Emissions Plots	
HT20-(Lowest Ch.)	HT20-(Highest Ch.)
	
HT40-(Lowest Ch.)	HT40-(Highest Ch.)
	

3.6 Transmitter Unwanted Emissions

3.6.1 Transmitter Radiated Unwanted Emissions Limit

Restricted Band Emissions 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 Limit	
RF output power procedure	**Limit (dB)**
Peak output power procedure	20
Average output power procedure	30

Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.

Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.

3.6.2 Measuring Instruments

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

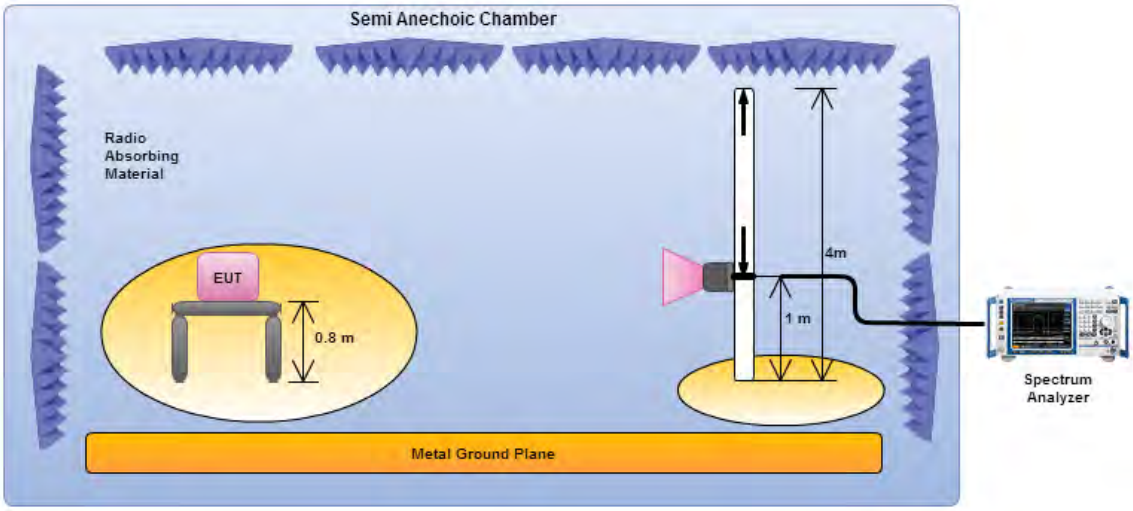
3.6.3 Test Procedures

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. 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 frequency range 10 GHz - 18GHz are typically made at a closer distance 1m, because the instrumentation noise floor is typically close to the radiated emission limit.	
	☒	Measurements in the frequency range above 18 GHz - 25GHz are typically made at a closer distance 0.5m, because the instrumentation noise floor is typically close to the radiated emission limit.	
☒	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 558074, clause 11 for unwanted emissions into non-restricted bands.	
	☒	Refer as FCC KDB 558074, clause 12 for unwanted emissions into restricted bands.	
		☐	Refer as FCC KDB 558074, clause 12.2.5.1 Option 1 (trace averaging for duty cycle ≥98%)
		☐	Refer as FCC KDB 558074, clause 12.2.5.2 Option 2 (trace averaging + duty factor).
		☐	Refer as FCC KDB 558074, clause 12.2.5.3 Option 3 (Reduced VBW≥1/T).
		☒	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 558074, clause 11.3 and 12.2.4 measurement procedure peak limit.
		☒	Refer as FCC KDB 558074, clause 12.2.3 measurement procedure Quasi-Peak limit.
☒	For radiated measurement, refer as FCC KDB 558074, clause 12.2.7.		
	☒	Refer as ANSI C63.10, clause 6.4 for radiated emissions from below 30 MHz.	
	☒	Refer as ANSI C63.10, clause 6.5 for radiated emissions from 30 MHz to 1000 MHz.	
	☒	Refer as ANSI C63.10, clause 6.6 for radiated emissions from above 1 GHz.	

Test Method		
☐	For conducted and cabinet radiation measurement, refer as FCC KDB 558074, clause 12.2.2.	
	☐	For conducted unwanted emissions into non-restricted bands (relative emission limits). Devices with multiple transmit chains: Refer as FCC KDB 662911, when testing out-of-band and spurious emissions against relative emission limits, tests may be performed on each output individually without summing or adding 10 log(N) if the measurements are made relative to the in-band emissions on the individual outputs.
	☐	For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB
	☐	For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.

3.6.4 Test Setup

Transmitter Radiated Unwanted Emissions



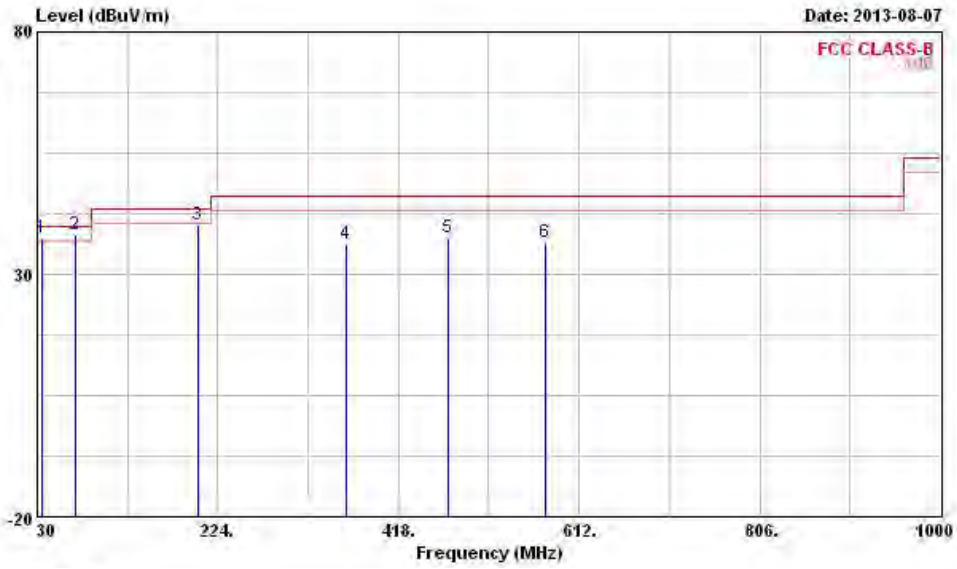
Magnetic field tests shall be performed in the frequency range of 9 kHz to 30 MHz using a calibrated loop antenna. Electric field tests shall be performed in the frequency range of 30 MHz to 1000 MHz using a calibrated bi-log antenna and the frequency range of 1 GHz to 40 GHz using a calibrated horn antenna.

3.6.5 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.

3.6.6 Transmitter Radiated Unwanted Emissions (Below 1GHz)

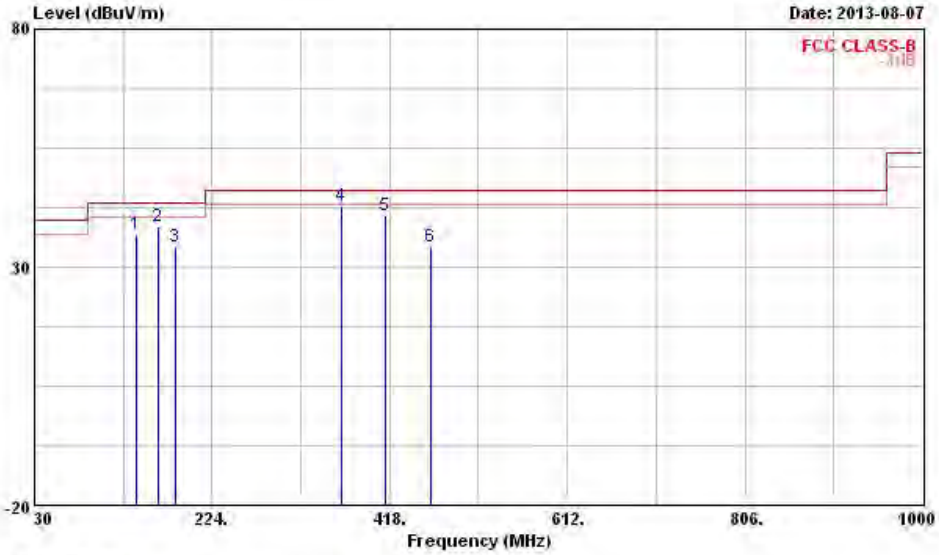
Transmitter Radiated Unwanted Emissions (Below 1GHz)			
Operating Mode	1	**Polarization**	V
Operating Function	AC Power & Radio link		



		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	!	35.820	37.68	-2.32	40.00	50.43	14.15	0.82	27.72	QP	---	---
2	!	70.740	38.27	-1.73	40.00	57.92	6.78	1.18	27.61	QP	---	---
3		203.630	40.23	-3.27	43.50	54.07	11.48	2.10	27.42	Peak	---	---
4		361.740	36.16	-9.84	46.00	46.26	14.66	2.86	27.62	Peak	---	---
5		471.350	37.42	-8.58	46.00	45.72	16.71	3.28	28.29	Peak	---	---
6		576.110	36.63	-9.37	46.00	42.02	19.48	3.62	28.49	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	1	**Polarization**	H
Operating Function	AC Power & Radio link		

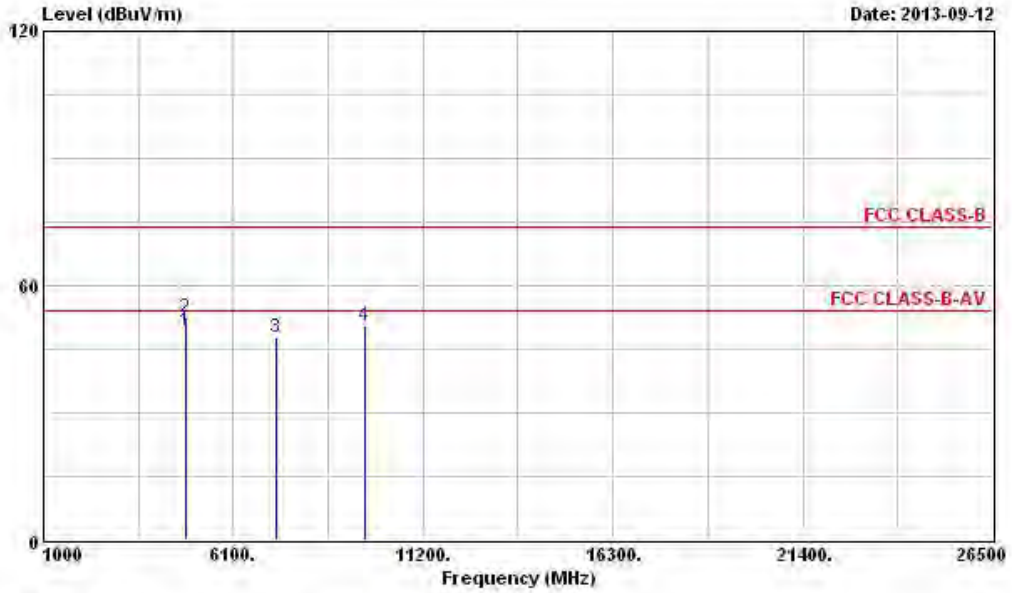


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	141.550	36.92	-6.58	43.50	51.05	11.78	1.71	27.62	Peak	---	---
2	164.830	38.69	-4.81	43.50	54.07	10.34	1.82	27.54	Peak	---	---
3	183.260	34.39	-9.11	43.50	49.77	10.12	1.98	27.48	Peak	---	---
4	365.620	42.82	-3.18	46.00	52.88	14.72	2.87	27.65	Peak	---	---
5	413.150	40.87	-5.13	46.00	50.28	15.53	3.03	27.97	Peak	---	---
6	463.590	34.34	-11.66	46.00	42.79	16.55	3.24	28.24	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)

3.6.7 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 2400-2483.5MHz

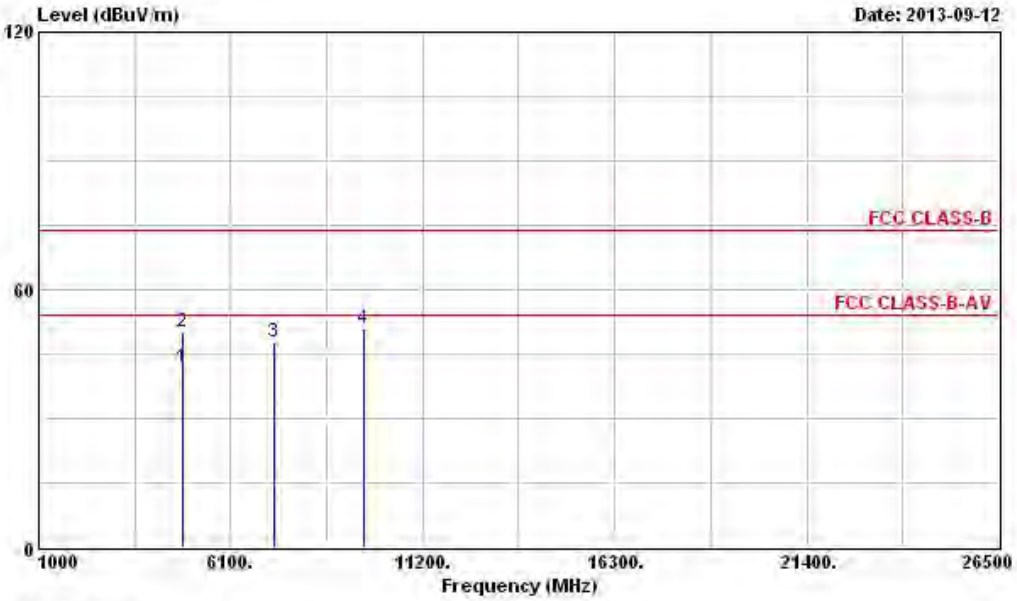
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11b	**Test Freq. (MHz)**	2412
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4824.000	49.27	-4.73	54.00	44.45	34.80	4.70	34.68	Average	---	---
2	4824.000	52.41	-21.59	74.00	47.59	34.80	4.70	34.68	Peak	---	---
3	7236.000	47.86	-26.14	74.00	41.53	35.90	5.37	34.94	Peak	---	---
4	9648.000	50.60			42.65	36.95	6.35	35.35	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

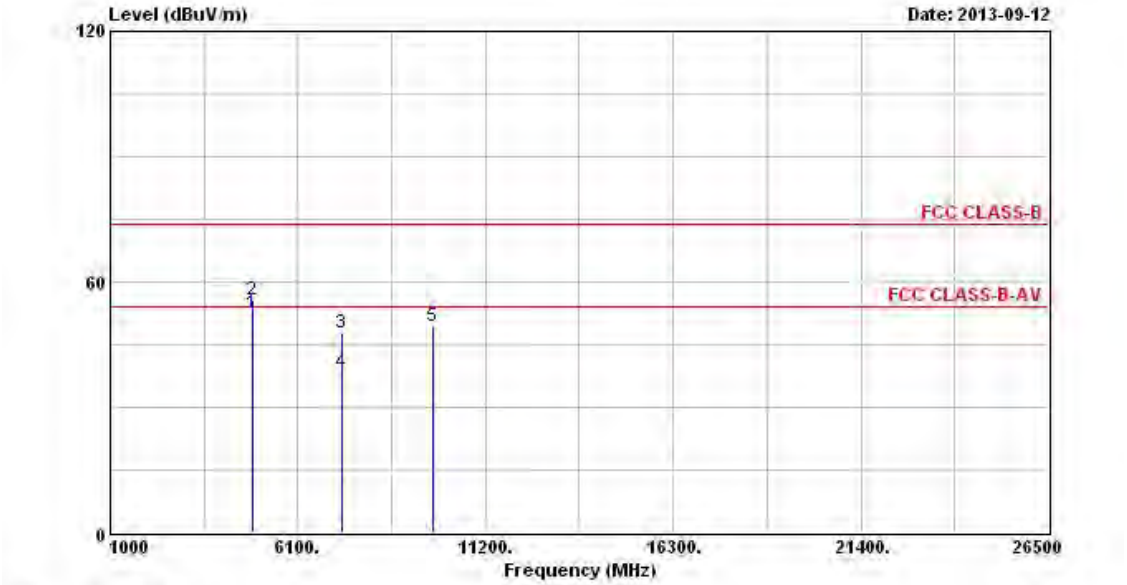
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11b	**Test Freq. (MHz)**	2412
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4824.000	41.96	-12.04	54.00	37.14	34.80	4.70	34.68	Average	---	---
2	4824.000	50.06	-23.94	74.00	45.24	34.80	4.70	34.68	Peak	---	---
3	7236.000	47.62	-26.38	74.00	41.29	35.90	5.37	34.94	Peak	---	---
4	9648.000	50.96			43.01	36.95	6.35	35.35	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

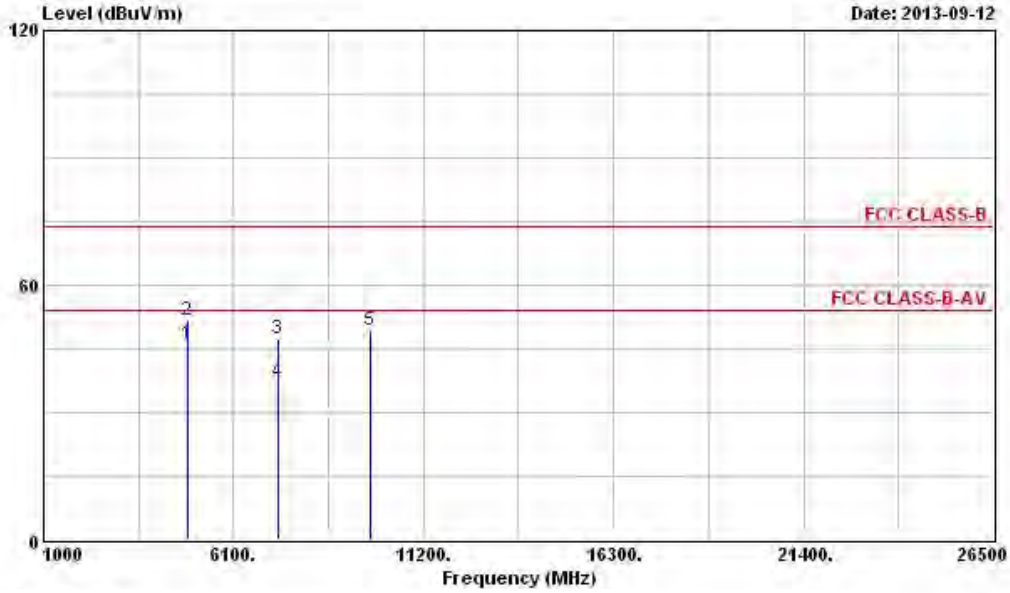
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11b	**Test Freq. (MHz)**	2437
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4874.000	52.55	-1.45	54.00	47.72	34.77	4.73	34.67	Average	---	---
2	4874.000	55.62	-18.38	74.00	50.79	34.77	4.73	34.67	Peak	---	---
3	7311.000	47.83	-26.17	74.00	41.41	35.90	5.47	34.95	Peak	---	---
4	7311.000	38.22	-15.78	54.00	31.80	35.90	5.47	34.95	Average	---	---
5	9748.000	49.44			41.28	37.11	6.41	35.36	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

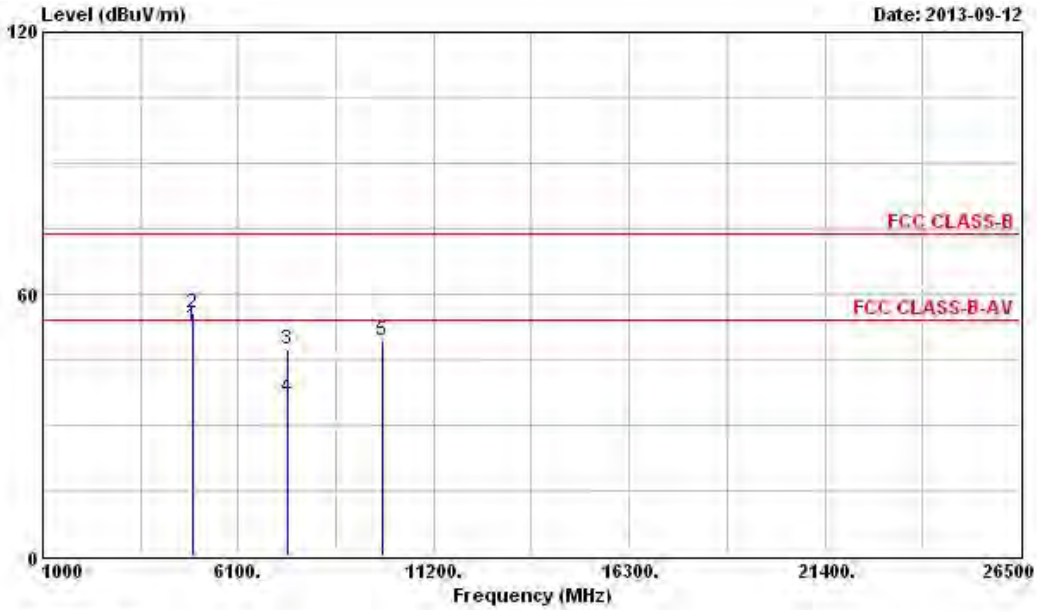
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11b	**Test Freq. (MHz)**	2437
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4874.000	46.27	-7.73	54.00	41.44	34.77	4.73	34.67	Average	---	---
2	4874.000	51.68	-22.32	74.00	46.85	34.77	4.73	34.67	Peak	---	---
3	7311.000	47.30	-26.70	74.00	40.88	35.90	5.47	34.95	Peak	---	---
4	7311.000	37.29	-16.71	54.00	30.87	35.90	5.47	34.95	Average	---	---
5	9748.000	49.49			41.33	37.11	6.41	35.36	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

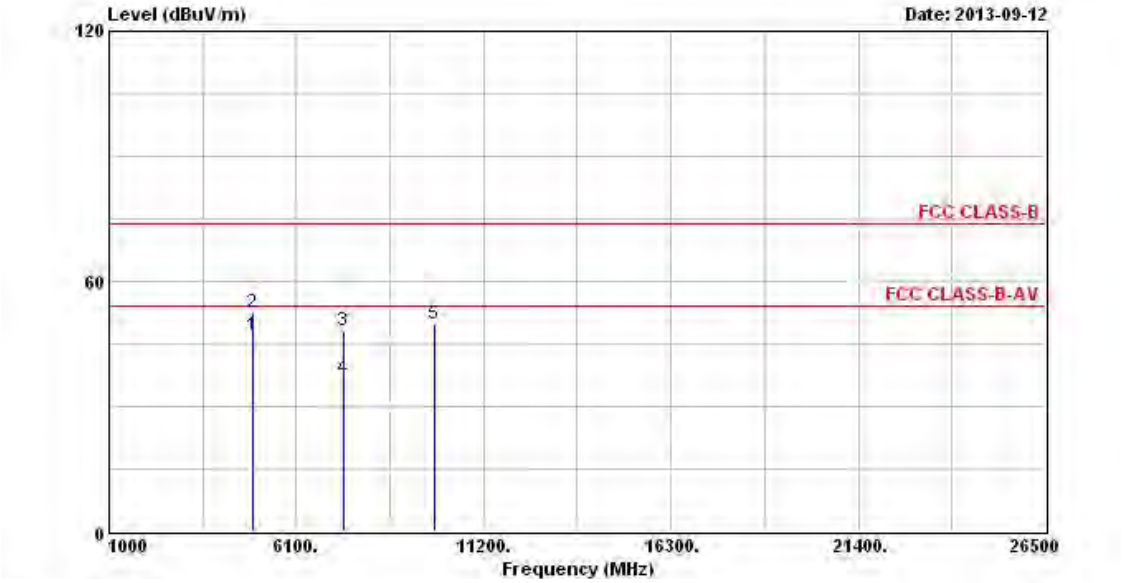
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11b	**Test Freq. (MHz)**	2462
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4924.000	52.36	-1.64	54.00	47.49	34.74	4.79	34.66	Average	---	---
2	4924.000	55.61	-18.39	74.00	50.74	34.74	4.79	34.66	Peak	---	---
3	7386.000	47.42	-26.58	74.00	40.92	35.90	5.57	34.97	Peak	---	---
4	7386.000	36.26	-17.74	54.00	29.76	35.90	5.57	34.97	Average	---	---
5	9848.000	49.26			40.88	37.25	6.50	35.37	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

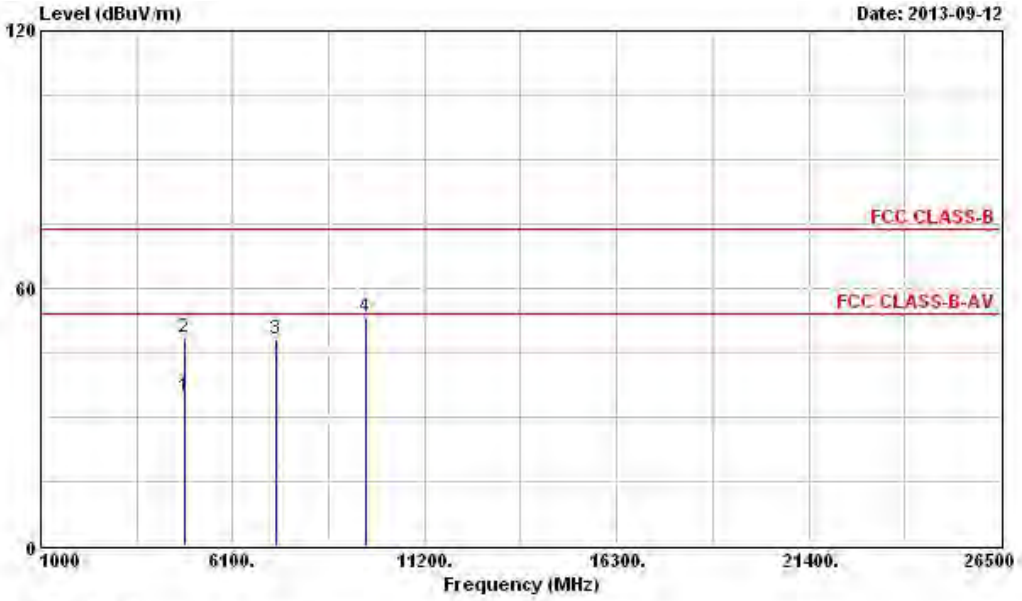
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11b	**Test Freq. (MHz)**	2462
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4924.000	47.13	-6.87	54.00	42.26	34.74	4.79	34.66	Average	---	---
2	4924.000	52.47	-21.53	74.00	47.60	34.74	4.79	34.66	Peak	---	---
3	7386.000	48.23	-25.77	74.00	41.73	35.90	5.57	34.97	Peak	---	---
4	7386.000	36.83	-17.17	54.00	30.33	35.90	5.57	34.97	Average	---	---
5	9848.000	49.57			41.19	37.25	6.50	35.37	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

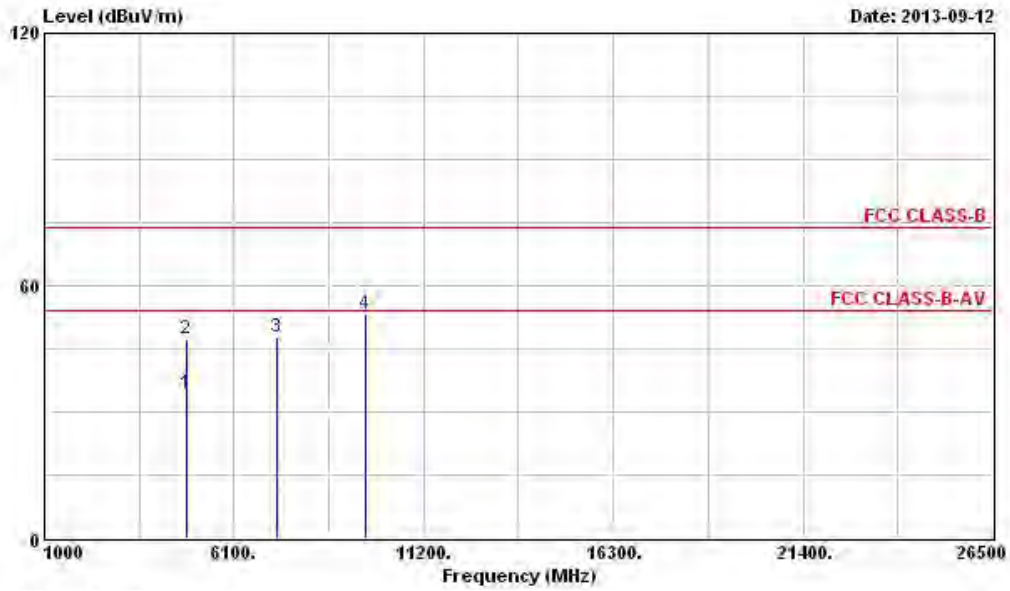
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11g	**Test Freq. (MHz)**	2412
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4824.000	34.81	-19.19	54.00	30.18	34.80	4.70	34.87	Average	---	---
2	4824.000	48.57	-25.43	74.00	43.94	34.80	4.70	34.87	Peak	---	---
3	7236.000	48.19	-25.81	74.00	42.07	35.90	5.37	35.15	Peak	---	---
4	9648.000	53.29			45.56	36.95	6.35	35.57	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

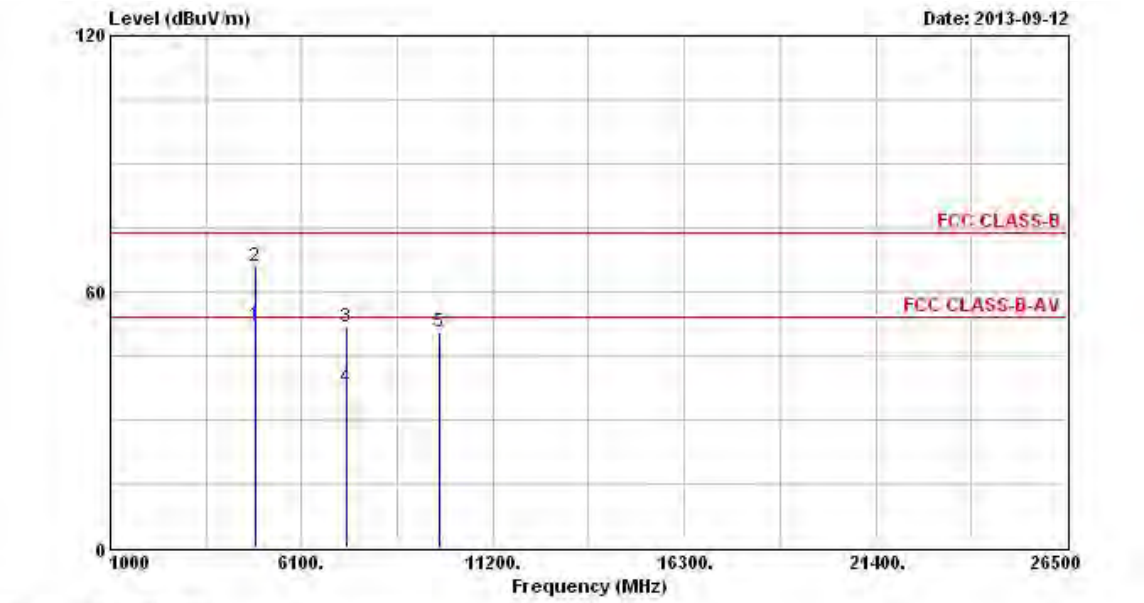
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11g	**Test Freq. (MHz)**	2412
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4824.000	34.53	-19.47	54.00	29.90	34.80	4.70	34.87	Average	---	---
2	4824.000	47.23	-26.77	74.00	42.60	34.80	4.70	34.87	Peak	---	---
3	7236.000	47.89	-26.11	74.00	41.77	35.90	5.37	35.15	Peak	---	---
4	9648.000	53.47			45.74	36.95	6.35	35.57	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

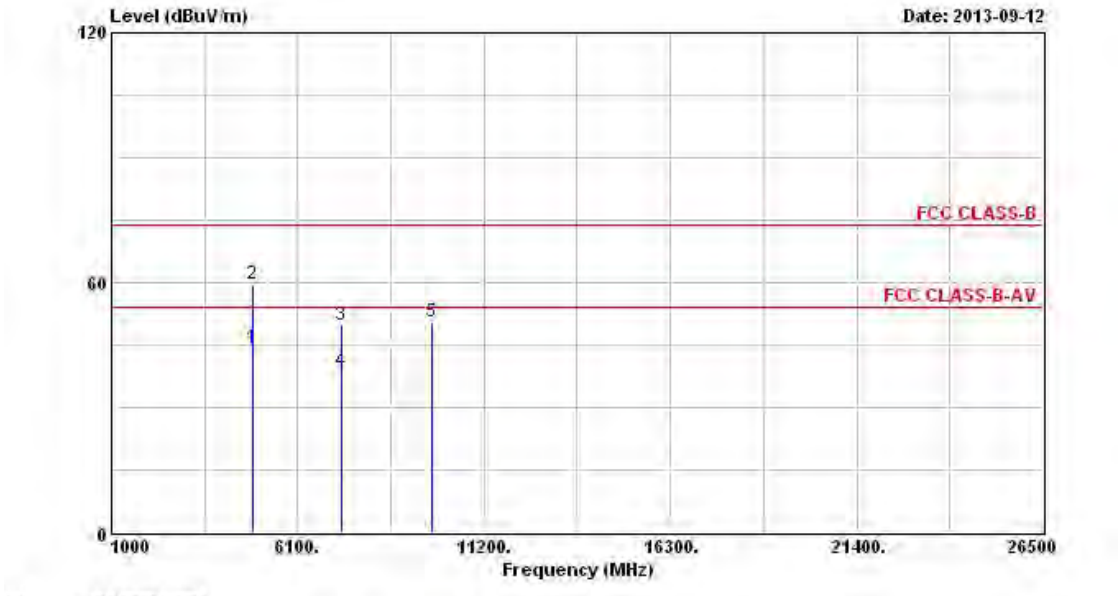
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11g	**Test Freq. (MHz)**	2437
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4874.000	52.18	-1.82	54.00	47.35	34.77	4.73	34.67	Average	---	---
2	4874.000	65.86	-8.14	74.00	61.03	34.77	4.73	34.67	Peak	---	---
3	7311.000	51.68	-22.32	74.00	45.26	35.90	5.47	34.95	Peak	---	---
4	7311.000	37.51	-16.49	54.00	31.09	35.90	5.47	34.95	Average	---	---
5	9748.000	50.44			42.28	37.11	6.41	35.36	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

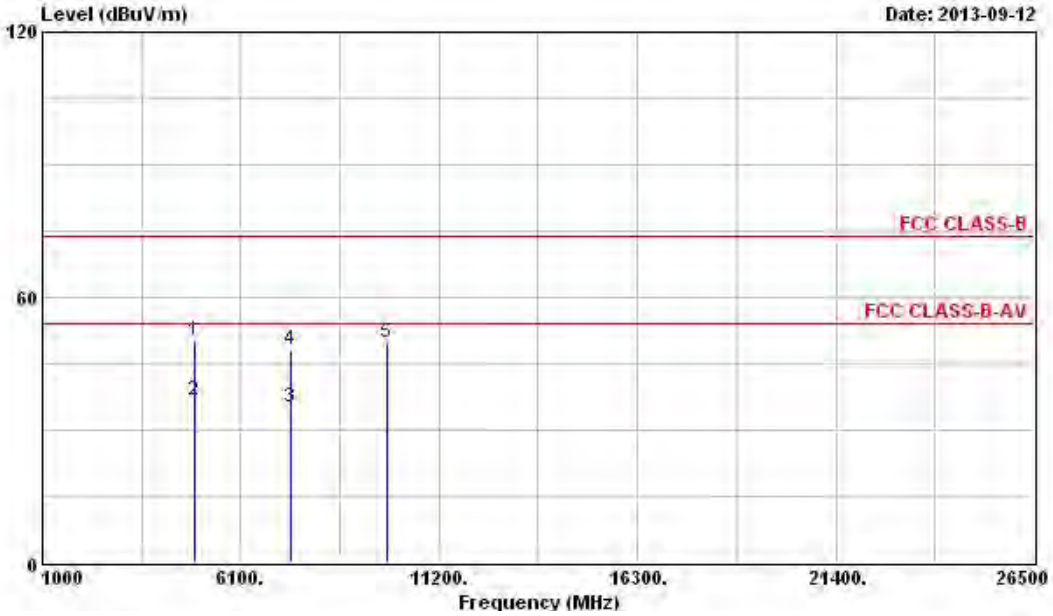
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11g	**Test Freq. (MHz)**	2437
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4874.000	44.18	-9.82	54.00	39.35	34.77	4.73	34.67	Average	---	---
2	4874.000	59.46	-14.54	74.00	54.63	34.77	4.73	34.67	Peak	---	---
3	7311.000	49.73	-24.27	74.00	43.31	35.90	5.47	34.95	Peak	---	---
4	7311.000	38.62	-15.38	54.00	32.20	35.90	5.47	34.95	Average	---	---
5	9748.000	50.52			42.36	37.11	6.41	35.36	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

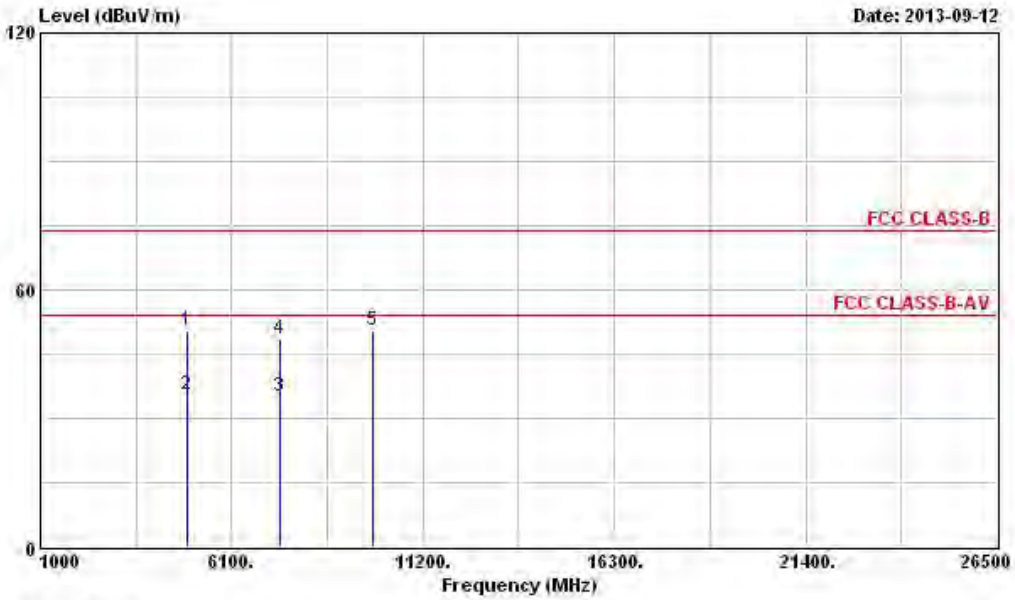
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11g	**Test Freq. (MHz)**	2462
N_{TX}	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4924.000	50.16	-23.84	74.00	45.48	34.74	4.79	34.85	Peak	---	---
2	4924.000	36.63	-17.37	54.00	31.95	34.74	4.79	34.85	Average	---	---
3	7386.000	35.12	-18.88	54.00	28.84	35.90	5.57	35.19	Average	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

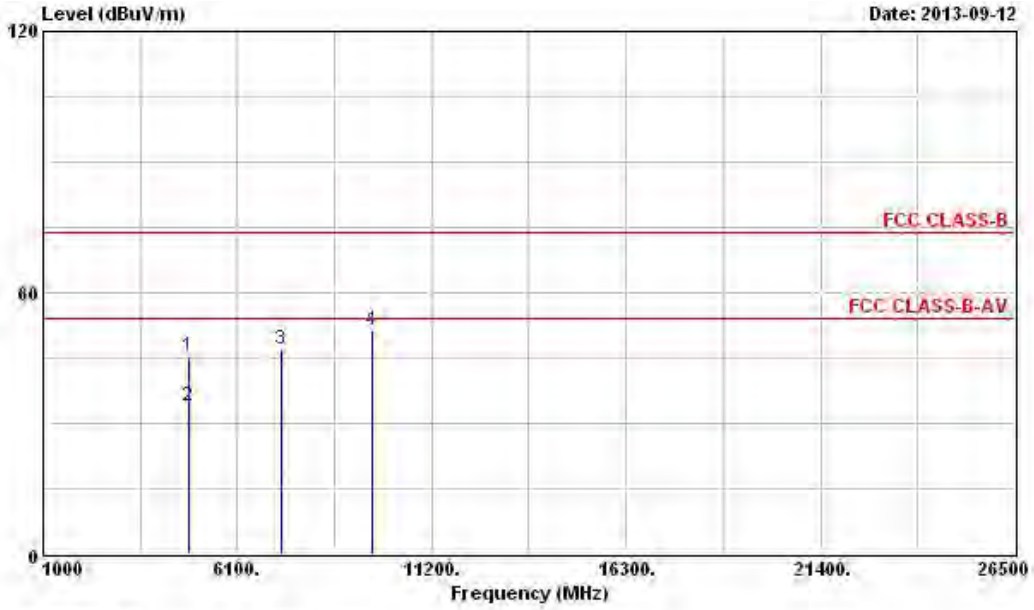
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11g	**Test Freq. (MHz)**	2462
N_{TX}	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4924.000	50.59	-23.41	74.00	45.91	34.74	4.79	34.85	Peak	---	---
2	4924.000	35.41	-18.59	54.00	30.73	34.74	4.79	34.85	Average	---	---
3	7386.000	35.23	-18.77	54.00	28.95	35.90	5.57	35.19	Average	---	---
4	7386.000	48.68	-25.32	74.00	42.40	35.90	5.57	35.19	Peak	---	---
5	9848.000	50.36			42.19	37.25	6.50	35.58	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

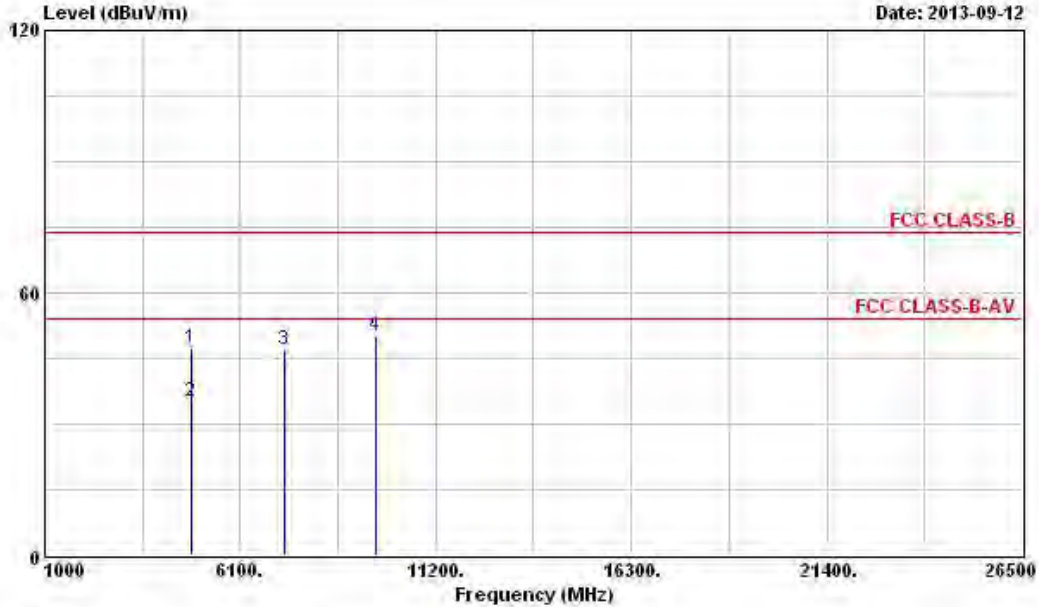
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	2412
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4824.000	45.35	-28.65	74.00	40.72	34.80	4.70	34.87	Peak	---	---
2	4824.000	34.05	-19.95	54.00	29.42	34.80	4.70	34.87	Average	---	---
3	7236.000	47.09			40.97	35.90	5.37	35.15	Peak	---	---
4	9648.000	51.13			43.40	36.95	6.35	35.57	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

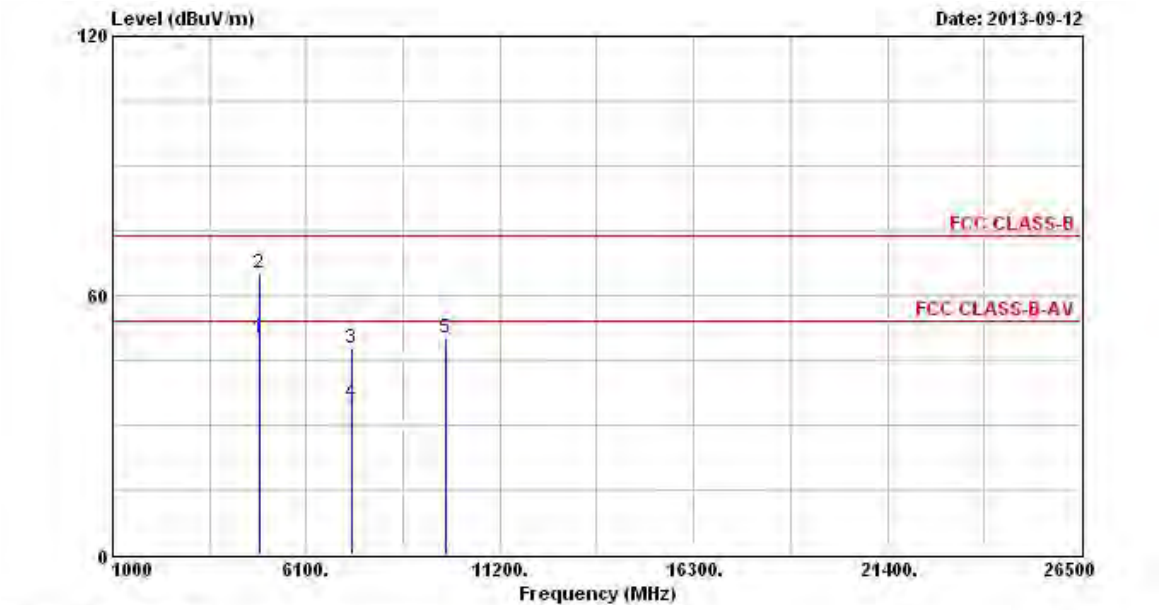
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	2412
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4824.000	47.39	-26.61	74.00	42.76	34.80	4.70	34.87	Peak	---	---
2	4824.000	35.05	-18.95	54.00	30.42	34.80	4.70	34.87	Average	---	---
3	7236.000	46.86			40.74	35.90	5.37	35.15	Peak	---	---
4	9648.000	50.01			42.28	36.95	6.35	35.57	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

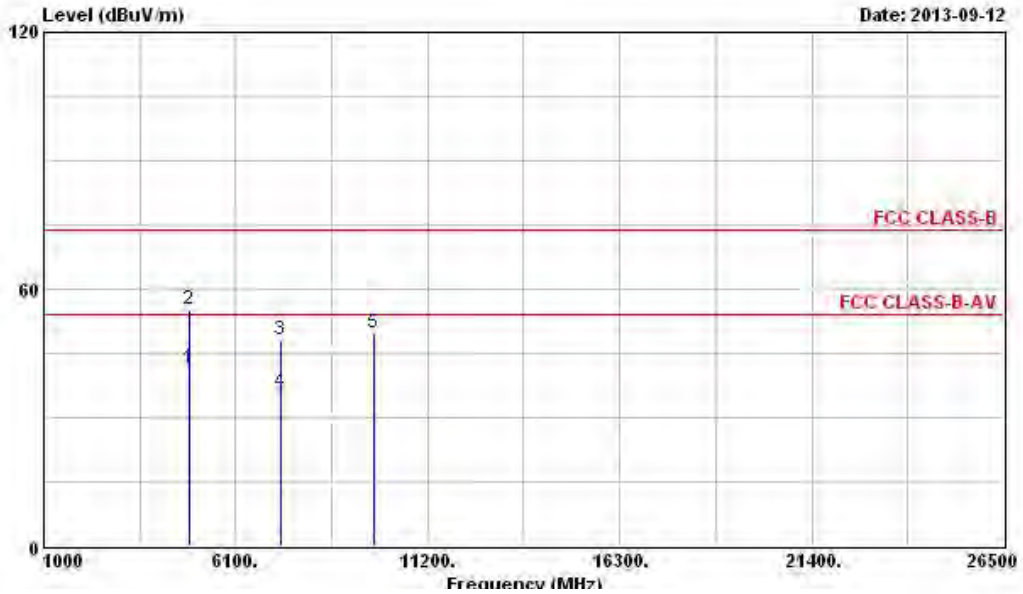
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	2437
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4874.000	50.22	-3.78	54.00	45.39	34.77	4.73	34.67	Average	---	---
2	4874.000	65.11	-8.89	74.00	60.28	34.77	4.73	34.67	Peak	---	---
3	7311.000	47.96	-26.04	74.00	41.54	35.90	5.47	34.95	Peak	---	---
4	7311.000	35.10	-18.90	54.00	28.68	35.90	5.47	34.95	Average	---	---
5	9748.000	50.23			42.07	37.11	6.41	35.36	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

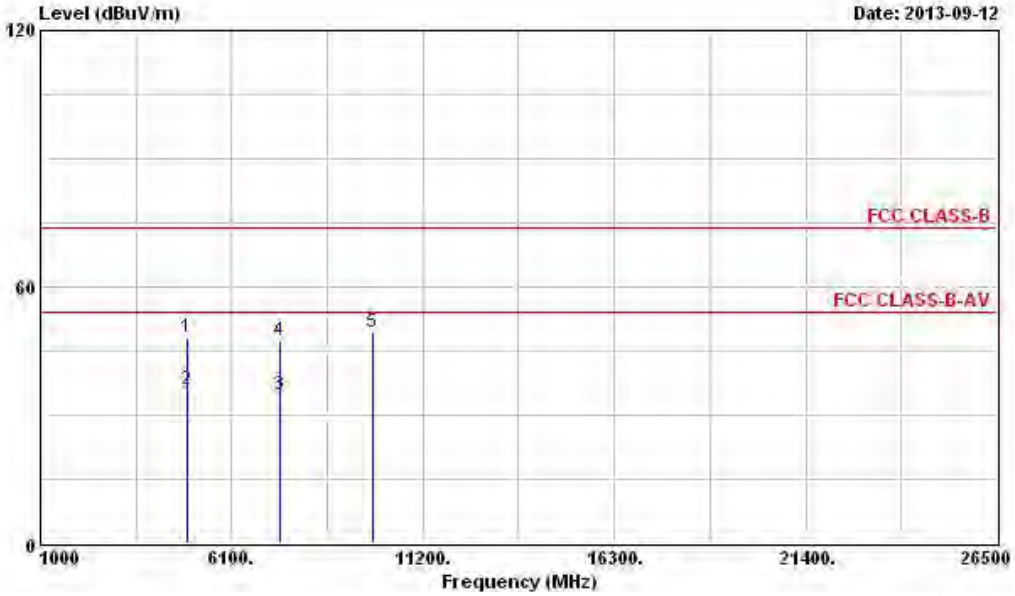
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	2437
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4874.000	41.35	-12.65	54.00	36.52	34.77	4.73	34.67	Average	---	---
2	4874.000	55.40	-18.60	74.00	50.57	34.77	4.73	34.67	Peak	---	---
3	7311.000	48.23	-25.77	74.00	41.81	35.90	5.47	34.95	Peak	---	---
4	7311.000	36.00	-18.00	54.00	29.58	35.90	5.47	34.95	Average	---	---
5	9748.000	49.92			41.76	37.11	6.41	35.36	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

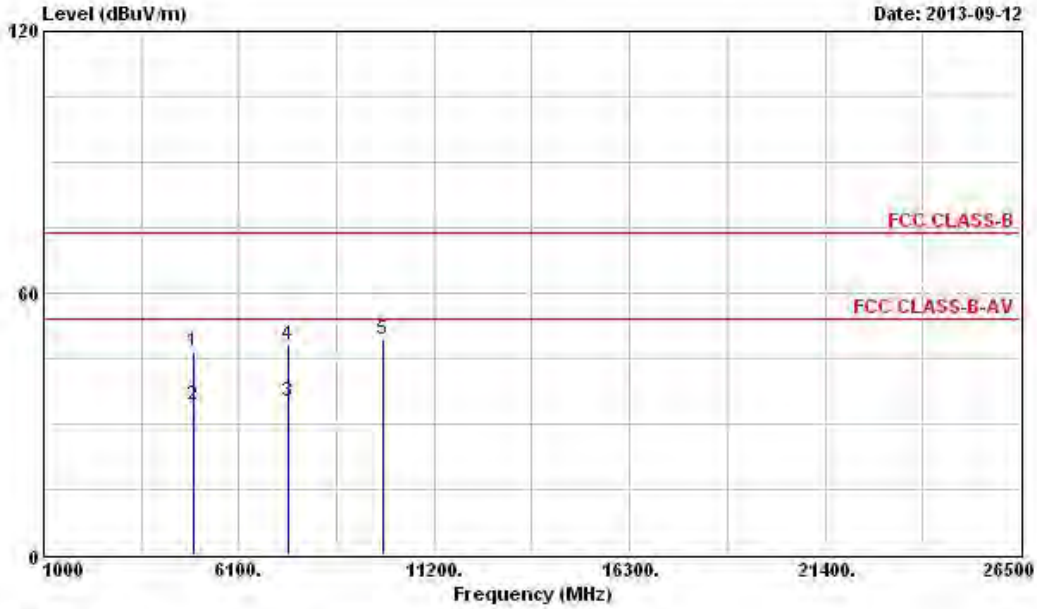
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	2462
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4924.000	48.03	-25.97	74.00	43.35	34.74	4.79	34.85	Peak	---	---
2	4924.000	35.97	-18.03	54.00	31.29	34.74	4.79	34.85	Average	---	---
3	7386.000	34.92	-19.08	54.00	28.64	35.90	5.57	35.19	Average	---	---
4	7386.000	47.22	-26.78	74.00	40.94	35.90	5.57	35.19	Peak	---	---
5	9848.000	49.16			40.99	37.25	6.50	35.58	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

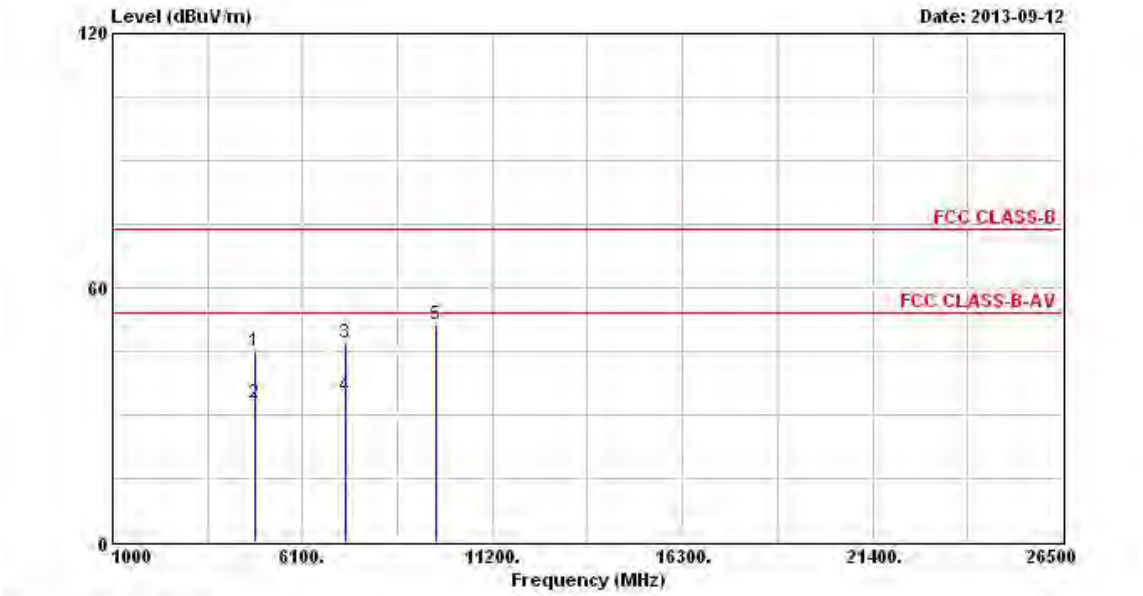
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	2462
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4924.000	46.63	-27.37	74.00	41.95	34.74	4.79	34.85	Peak	---	---
2	4924.000	34.53	-19.47	54.00	29.85	34.74	4.79	34.85	Average	---	---
3	7386.000	34.96	-19.04	54.00	28.68	35.90	5.57	35.19	Average	---	---
4	7386.000	48.33	-25.67	74.00	42.05	35.90	5.57	35.19	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

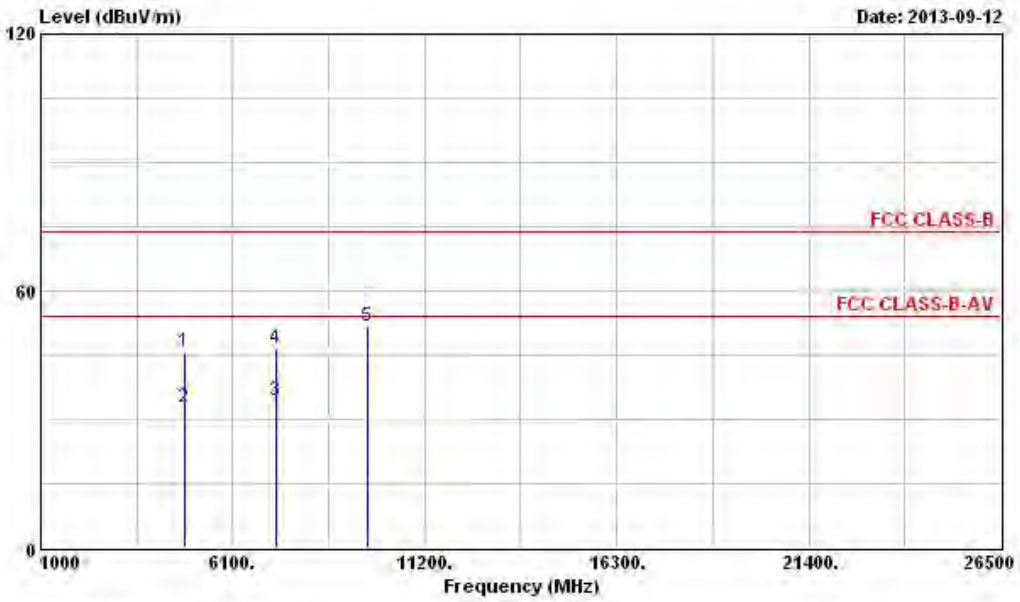
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT40	**Test Freq. (MHz)**	2422
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4844.000	45.19	-28.81	74.00	40.54	34.79	4.73	34.87	Peak	---	---
2	4844.000	32.90	-21.10	54.00	28.25	34.79	4.73	34.87	Average	---	---
3	7266.000	46.89	-27.11	74.00	40.73	35.90	5.42	35.16	Peak	---	---
4	7266.000	34.35	-19.65	54.00	28.19	35.90	5.42	35.16	Average	---	---
5	9688.000	51.46			43.65	37.00	6.38	35.57	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

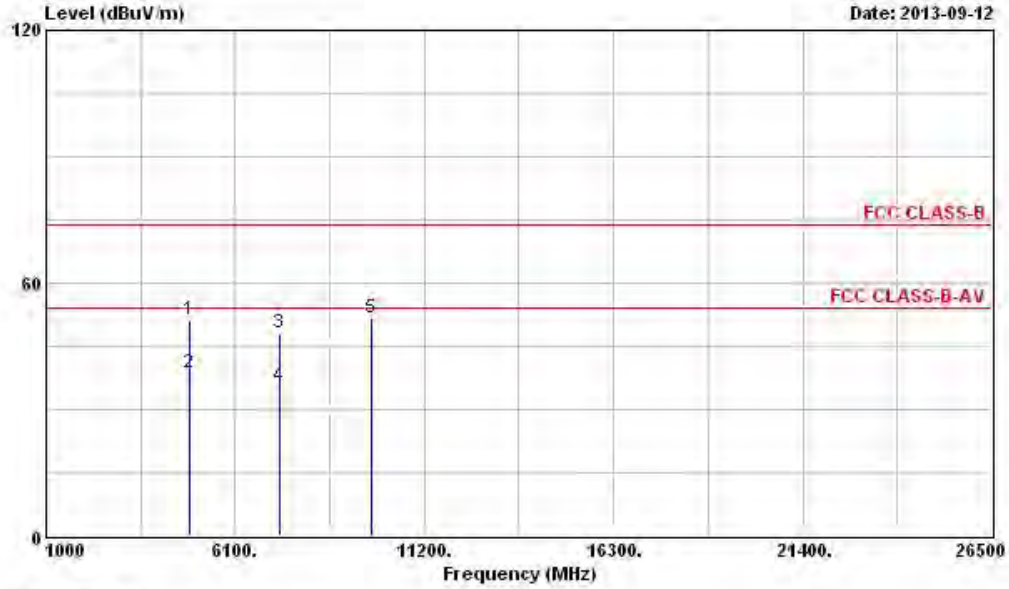
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT40	**Test Freq. (MHz)**	2422
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4844.000	45.70	-28.30	74.00	41.05	34.79	4.73	34.87	Peak	---	---
2	4844.000	32.94	-21.06	54.00	28.29	34.79	4.73	34.87	Average	---	---
3	7266.000	34.18	-19.82	54.00	28.02	35.90	5.42	35.16	Average	---	---
4	7266.000	46.53	-27.47	74.00	40.37	35.90	5.42	35.16	Peak	---	---
5	9688.000	51.68			43.87	37.00	6.38	35.57	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

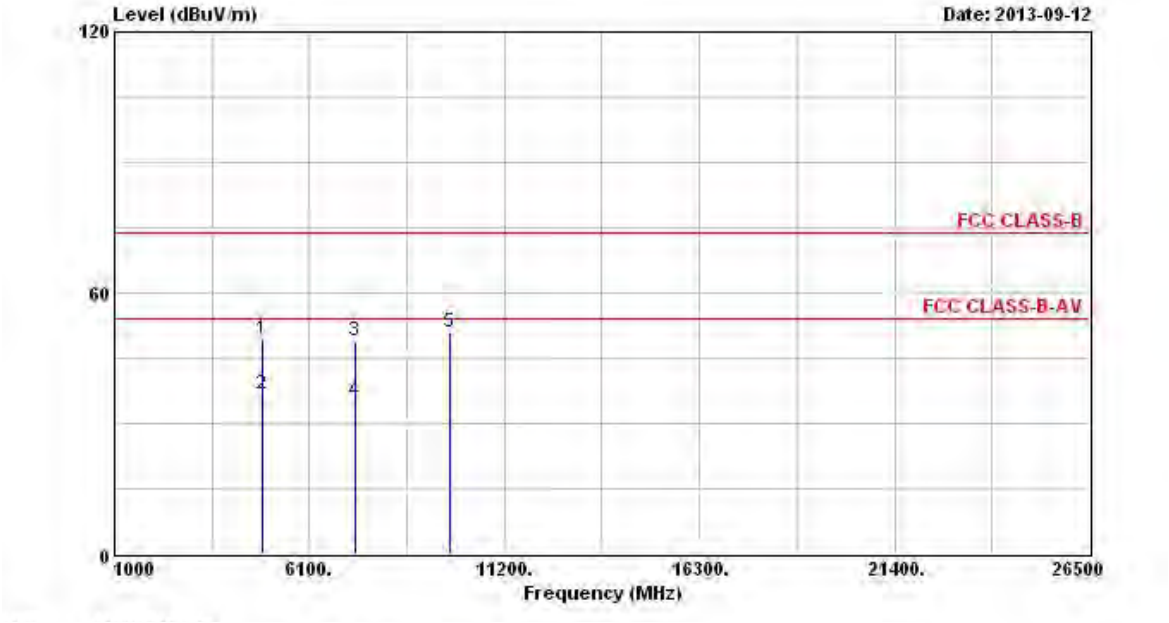
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT40	**Test Freq. (MHz)**	2437
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4874.000	51.35	-22.65	74.00	46.71	34.77	4.73	34.86	Peak	---	---
2	4874.000	38.57	-15.43	54.00	33.93	34.77	4.73	34.86	Average	---	---
3	7311.000	48.24	-25.76	74.00	42.04	35.90	5.47	35.17	Peak	---	---
4	7311.000	35.52	-18.48	54.00	29.32	35.90	5.47	35.17	Average	---	---
5	9748.000	51.66			43.72	37.11	6.41	35.58	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

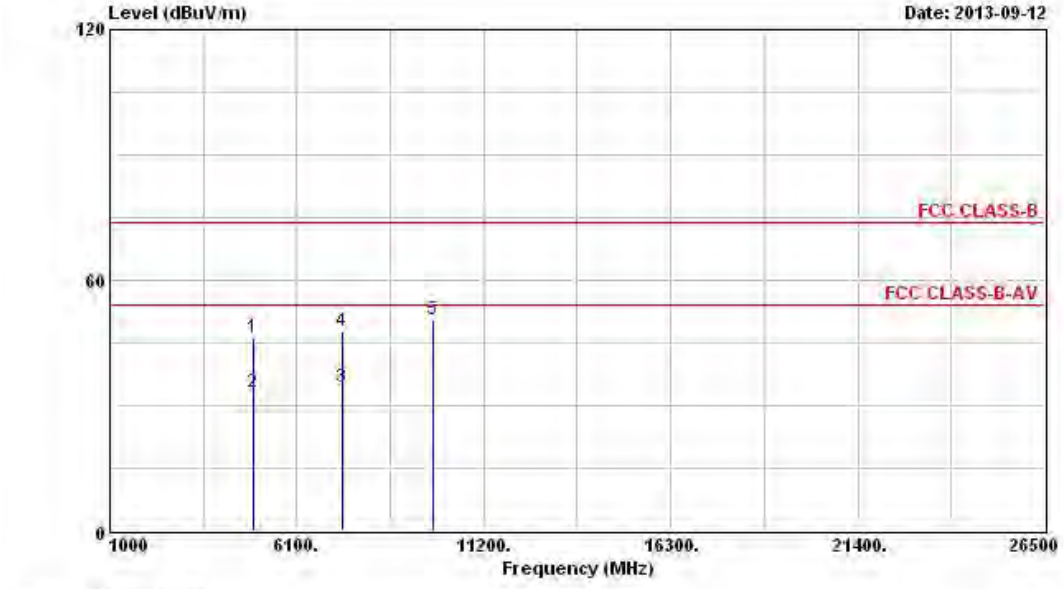
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT40	**Test Freq. (MHz)**	2437
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4874.000	49.29	-24.71	74.00	44.65	34.77	4.73	34.86	Peak	---	---
2	4874.000	36.89	-17.11	54.00	32.25	34.77	4.73	34.86	Average	---	---
3	7311.000	49.04	-24.96	74.00	42.84	35.90	5.47	35.17	Peak	---	---
4	7311.000	35.30	-18.70	54.00	29.10	35.90	5.47	35.17	Average	---	---
5	9748.000	50.74			42.80	37.11	6.41	35.58	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

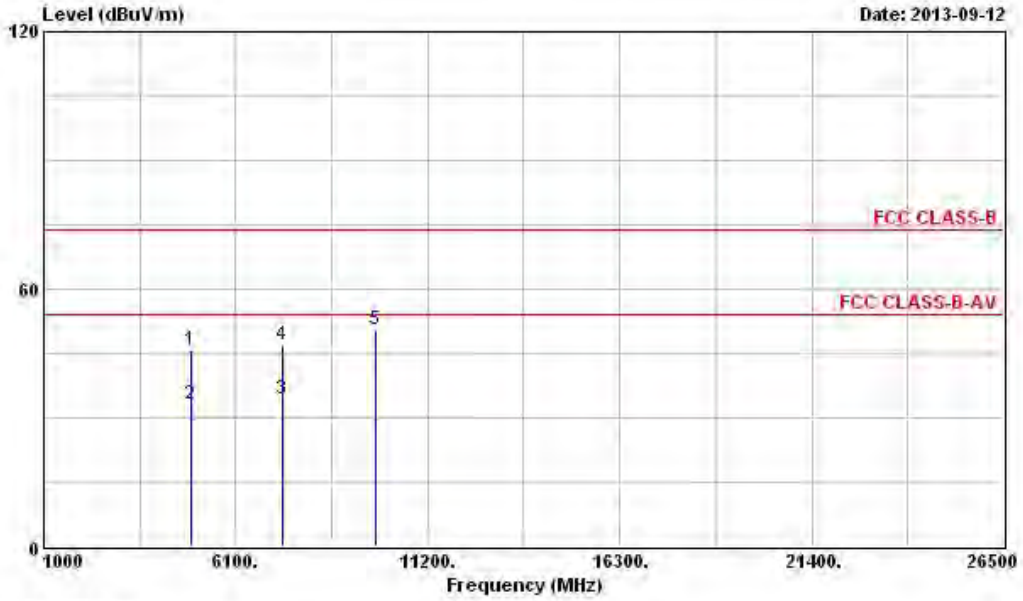
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT40	**Test Freq. (MHz)**	2452
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4904.000	46.00	-28.00	74.00	41.34	34.75	4.76	34.85	Peak	---	---
2	4904.000	33.27	-20.73	54.00	28.61	34.75	4.76	34.85	Average	---	---
3	7356.000	34.38	-19.62	54.00	28.14	35.90	5.52	35.18	Average	---	---
4	7356.000	47.94	-26.06	74.00	41.70	35.90	5.52	35.18	Peak	---	---
5	9808.000	50.64			42.55	37.20	6.47	35.58	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT40	**Test Freq. (MHz)**	2452
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4904.000	45.80	-28.20	74.00	41.14	34.75	4.76	34.85	Peak	---	---
2	4904.000	33.17	-20.83	54.00	28.51	34.75	4.76	34.85	Average	---	---
3	7356.000	34.47	-19.53	54.00	28.23	35.90	5.52	35.18	Average	---	---
4	7356.000	46.84	-27.16	74.00	40.60	35.90	5.52	35.18	Peak	---	---
5	9808.000	50.59			42.50	37.20	6.47	35.58	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, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMC Receiver	R&S	ESCS 30	100174	9kHz ~ 2.75GHz	Mar. 26, 2013	Conduction (CO04-HY)
LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	8127-477	9kHz ~ 30MHz	Jan. 21, 2013	Conduction (CO04-HY)
LISN (Support Unit)	EMCO	3810/2NM	9703-1839	9kHz ~ 30MHz	Apr. 18, 2013	Conduction (CO04-HY)
RF Cable-CON	HUBER+SUHNER	RG213/U	7.61183201e+012	9kHz ~ 30MHz	Nov. 09, 2012	Conduction (CO04-HY)

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

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	R&S	FSV 40	101013	10Hz ~ 40GHz	Jan. 29, 2013	Conducted (TH01-HY)
AC Power Source	G.W	APS-9102	EL920581	AC 0V ~ 300V	Jul. 16, 2013	Conducted (TH01-HY)
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	Jun. 27, 2013	Conducted (TH01-HY)
Temp. and Humidity Chamber	Giant Force	GTH-225-20-SP-SD	MAA1112-007	-20 ~ 100℃	Nov. 21, 2012	Conducted (TH01-HY)
Power Sensor	Anritsu	MA2411B	0917017	300MHz ~ 40GHz	Feb. 02, 2013	Conducted (TH01-HY)
Power Meter	Anritsu	ML2495A	0949003	300MHz ~ 40GHz	Feb. 02, 2013	Conducted (TH01-HY)
RF Cable-2m	HUBER+SUHNER	SUCOFLEX_104	SN 345675/4 SN 345674/4	1GHz ~ 26.5GHz	Dec. 04, 2012	Conducted (TH01-HY)
RF Cable-0.5m	HUBER+SUHNER	SUCOFLEX_103	10714/4 10713/4 52133/3	1GHz ~ 33GHz	Dec. 04, 2012	Conducted (TH01-HY)

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	03CH02-HY	30MHz ~ 1GHz 3m	May 11, 2013	Radiation (03CH02-HY)
Spectrum Analyzer	R&S	FSP40	100004	9kHz ~ 40GHz	Mar. 11, 2013	Radiation (03CH02-HY)
Amplifier	Agilent	8447D	2944A11146	100kHz ~ 1.3GHz	Jul 17, 2013	Radiation (03CH02-HY)
Amplifier	Agilent	8449B	3008A02373	1GHz ~ 26.5GHz	Aug. 28, 2013	Radiation (03CH02-HY)
Horn Antenna	ETS-LINDGREN	3117	00091920	1GHz ~ 18GHz	Nov. 16, 2012	Radiation (03CH02-HY)
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15GHz ~ 40GHz	Jan. 08, 2013	Radiation (03CH02-HY)
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	Nov. 10, 2012	Radiation (03CH02-HY)
RF Cable-high	SUHNER	SUCOFLEX106	03CH02-HY	1GHz ~ 40GHz	Mar. 05, 2013	Radiation (03CH02-HY)
Bilog Antenna	SCHAFFNER	CBL61128	2723	30MHz ~ 2GHz	Oct. 22, 2012	Radiation (03CH02-HY)
Turn Table	Chaintek Instruments	3000	MF7802058	0~ 360 degree	N/A	Radiation (03CH02-HY)
Antenna Mast	MF	MF7802	MF780208205	1 ~ 4 m	N/A	Radiation (03CH02-HY)

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

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Magnetic Loop Antenna	TESEQ	HLA 6120	31244	9 kHz - 30 MHz	Dec. 02, 2012	Radiation (03CH02-HY)

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