

FCC Test Report

Equipment : Wi-Fi Module
Brand Name : KAB
Model No. : ECO PLUGS
FCC ID : PAGECO-PLUGS
Standard : 47 CFR FCC Part 15.247
Operating Band : 2400 MHz – 2483.5 MHz
FCC Classification : DTS
Applicant : **KAB Enterprise Co., Ltd.**
21F, -1, No.33, Sec. 1, Minsheng Rd., Banqiao
Dist., New Taipei City 220, Taiwan (R.O.C)
Manufacturer : **Verdant Electronics(Dong Guan) Co., Ltd.**
Langxie Administrative District, Qiaotou,
Dongguan City, Guang Dong Sheng, China.

The product sample received on May 08, 2015 and completely tested on Jun. 01, 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

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APPENDIX A. TEST PHOTOS

APPENDIX B. PHOTOGRAPHS OF EUT

Summary of Test Result

Conformance Test Specifications					
Report Clause	Ref. Std. Clause	Description	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]: 16.230MHz 29.77 (Margin 30.23dB) - QP 25.74 (Margin 24.26dB) - AV	FCC 15.207	Complied
3.2	15.247(a)	6dB Bandwidth	6dB Bandwidth Unit [MHz] 20M: 9.82	≥500kHz	Complied
3.3	15.247(b)	RF Output Power (Maximum Peak Conducted Output Power)	Power [dBm]: 17.76	Power [dBm]:30	Complied
3.4	15.247(e)	Power Spectral Density	PSD [dBm/100kHz]: -17.07	PSD [dBm/3kHz]:8	Complied
3.5	15.247(d)	Transmitter Radiated Bandedge Emissions	Non-Restricted Bands: 2399.6 MHz: 29.09dB Restricted Bands [dBuV/m at 3m]: 2483.5MHz 72.66 (Margin 1.34dB) - PK 49.09 (Margin 4.91dB) - AV	Non-Restricted Bands: > 20 dBc Restricted Bands: FCC 15.209	Complied
3.6	15.247(d)	Transmitter Radiated Unwanted Emissions	[dBuV/m at 3m]: 4824 MHz 52.99 (Margin 1.01dB) –AV 55.80 (Margin 18.20dB) – PK	Non-Restricted Bands: > 20 dBc Restricted Bands: FCC 15.209	Complied



SPORTON INTERNATIONAL INC.
TEL : 886-3-327-3456
FAX : 886-3-327-0973

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)
2400-2483.5	b	2412-2462	1-11 [11]	1	7.08
2400-2483.5	g	2412-2462	1-11 [11]	1	17.76
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	1	17.74

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.

1.1.2 Antenna Information

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

Antenna General Information		
Ant. Cat.	Ant. Type	Gain (dBi)
External	Dipole	2.33
External	Printed	-4.88

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 Description

Module of EUT Description	
The EUT contains two types of antenna.	Type I: Module integrated with Printed antenna.
	Type II: Module with detachable dipole antenna.
Both modules are identical RF characteristics.	

1.1.5 Test Signal Duty Cycle

Operated Mode for Worst Duty Cycle	
☐ Operated normally mode for worst duty cycle	
☒ Operated test mode for worst duty cycle	
Test Signal Duty Cycle (x)	Power Duty Factor [dB] – (10 log 1/x)
☒ 100.00% - IEEE 802.11b	0.00
☒ 100.00% - IEEE 802.11g	0.00
☒ 100.00% - IEEE 802.11n (HT20)	0.00

1.1.6 EUT Operational Condition

Supply Voltage	☐ AC mains	☒ DC	- -
Type of DC Source	☐ Internal DC supply	☒ External DC adapter	☐ From Host System

1.2 Support Equipment

Support Equipment – RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5540	DoC
2	Fixture (Provide by Guest)	---	---	---

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 558074 D01 v03r02

1.4 Testing Location Information

Testing Location				
☒	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Taoyuan 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	23°C / 66%
RF Conducted		TH01-HY	Rory	22.3°C / 62%
Radiated Emission		03CH02-HY	Joe	25°C / 51%

1.5 Measurement Uncertainty

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

Measurement Uncertainty		
Test Item		Uncertainty
AC power-line conducted emissions		±2.2 dB
Emission bandwidth, 6dB bandwidth		±1.4 %
RF output power, conducted		±0.6 dB
Power density, conducted		±0.8 dB
Unwanted emissions, conducted	9 – 150 kHz	±0.3 dB
	0.15 – 30 MHz	±0.4 dB
	30 – 1000 MHz	±0.5 dB
	1 – 18 GHz	±0.6 dB
	18 – 40 GHz	±0.8 dB
	40 – 200 GHz	N/A
All emissions, radiated	9 – 150 kHz	±2.4 dB
	0.15 – 30 MHz	±2.2 dB
	30 – 1000 MHz	±2.5 dB
	1 – 18 GHz	±3.5 dB
	18 – 40 GHz	±3.8 dB
	40 – 200 GHz	N/A
Temperature		±0.8 °C
Humidity		±3 %
DC and low frequency voltages		±3 %
Time		±1.4 %
Duty Cycle		±1.4 %

2 Test Configuration of EUT

2.1 The Worst Case Modulation Configuration

Worst Modulation Used for Conformance Testing			
Modulation Mode	Transmit Chains (N _{TX})	Data Rate / MCS	Worst Data Rate / MCS
11b	1	1-11 Mbps	1 Mbps
11g	1	6-54 Mbps	6 Mbps
HT20	1	MCS 0-7	MCS 0

2.2 The Worst Case Power Setting Parameter

The Worst Case Power Setting Parameter (2400-2483.5MHz band)				
Test Software/Version	SecureCRT_6.6.0			
Modulation Mode	N _{TX}	Test Frequency (MHz)		
		NCB: 20MHz		
		2412	2437	2462
11b	1	36	40	40
11g	1	0	0	0
HT20	1	0	0	0

2.3 The Worst Case Measurement Configuration

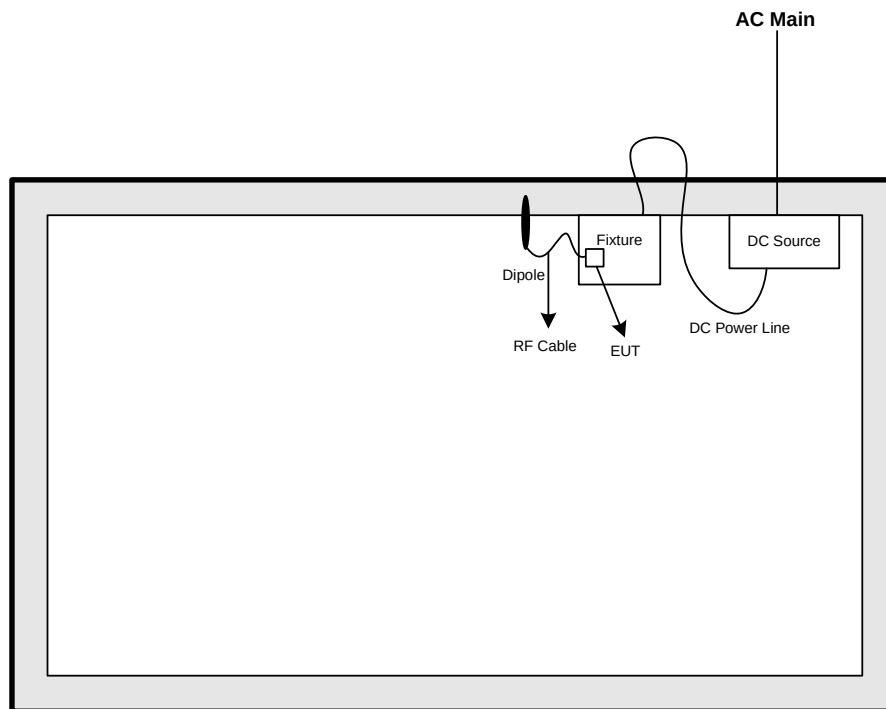
The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
Operating Mode	Operating Mode Description
1	EUT with Dipole Ant. for 11g
2	EUT with Printed Ant. for 11g

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

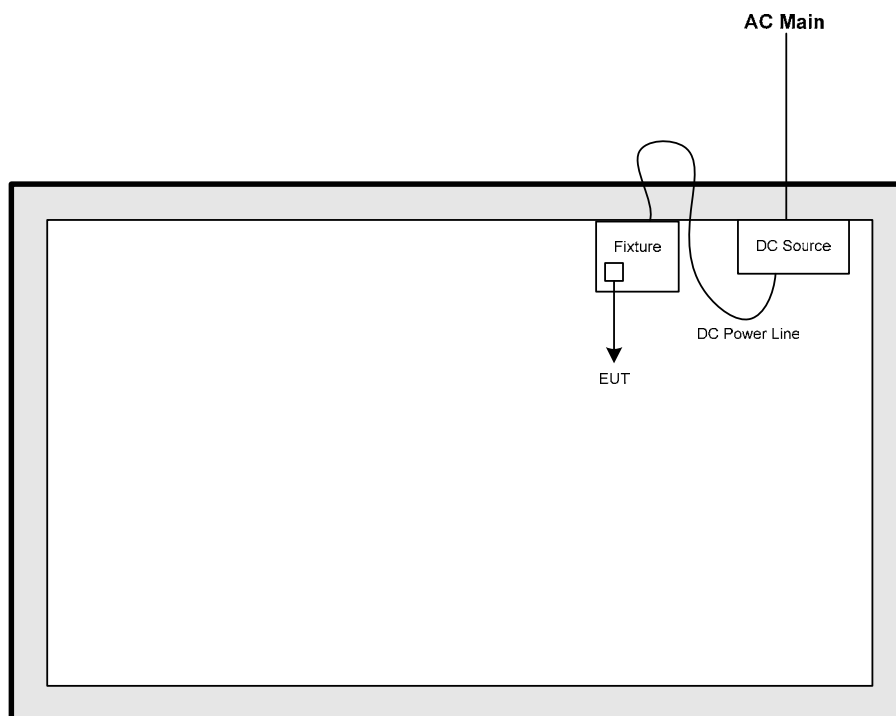
The Worst Case Mode for Following Conformance Tests			
Tests Item	Transmitter Radiated Unwanted Emissions Transmitter Radiated Bandedge Emissions		
Test Condition	Radiated measurement		
User Position	☐ EUT will be placed in fixed position.		
	☒ EUT will be placed in mobile position and operating multiple 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 (Below 1GHz)	Operating Mode Description		
1	EUT with Dipole Ant. for 11g		
2	EUT with Printed Ant. for 11g		
Modulation Mode (Above 1GHz)	11b, 11g, HT20		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			
Worst Planes of EUT	V		

2.4 Test Setup Diagram

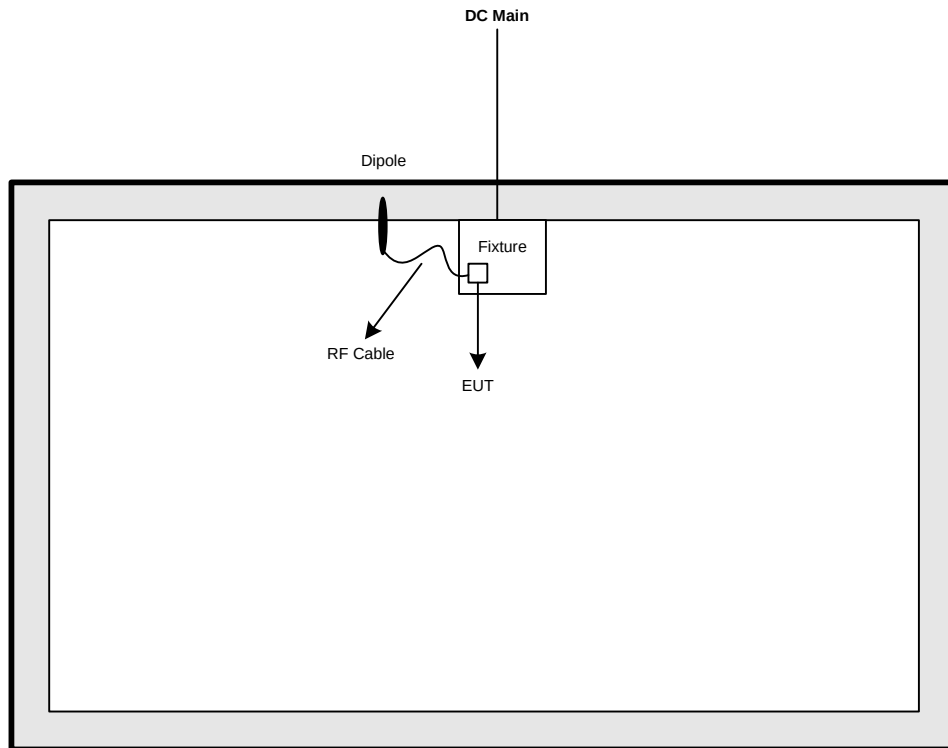
Test Setup Diagram – AC Line Conducted Emission Test (Mode 1)



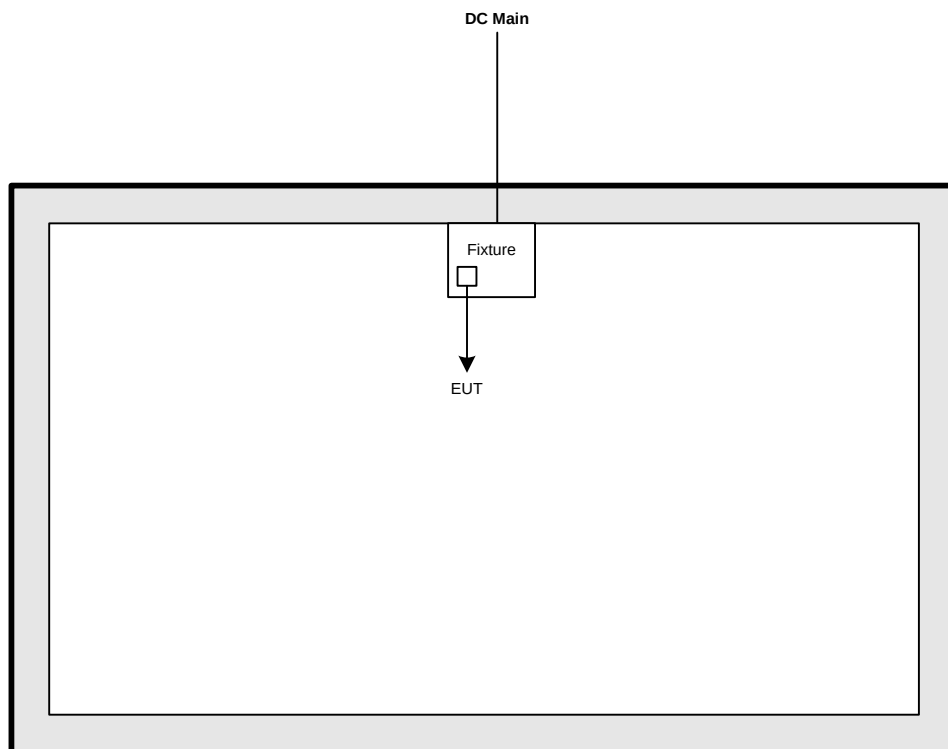
Test Setup Diagram – AC Line Conducted Emission Test (Mode 2)



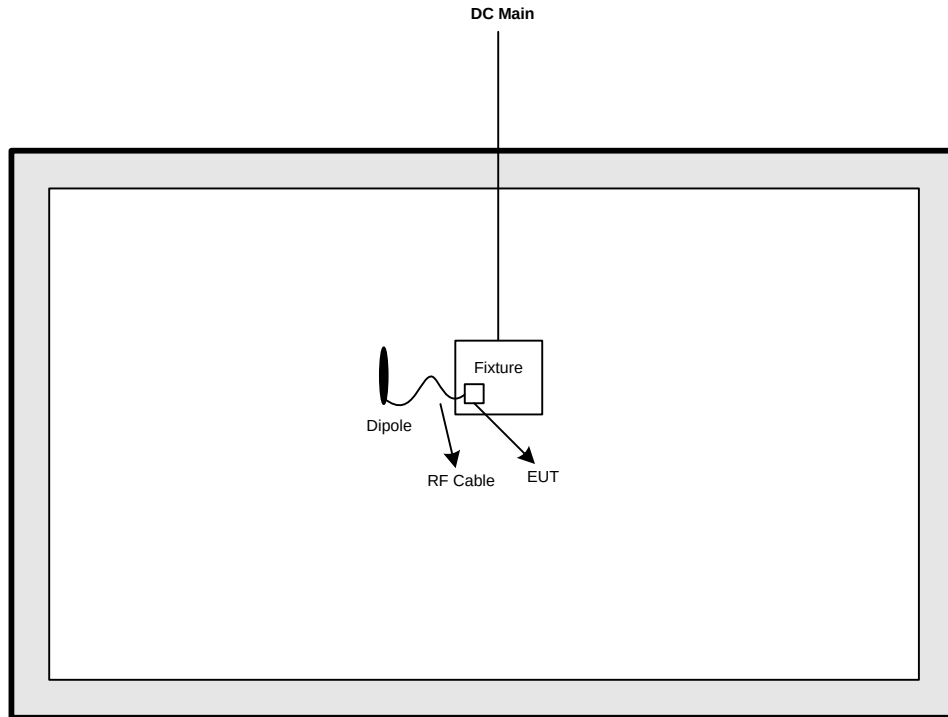
Test Setup Diagram - Radiated Emission (Below 1GHz) (Mode 1)



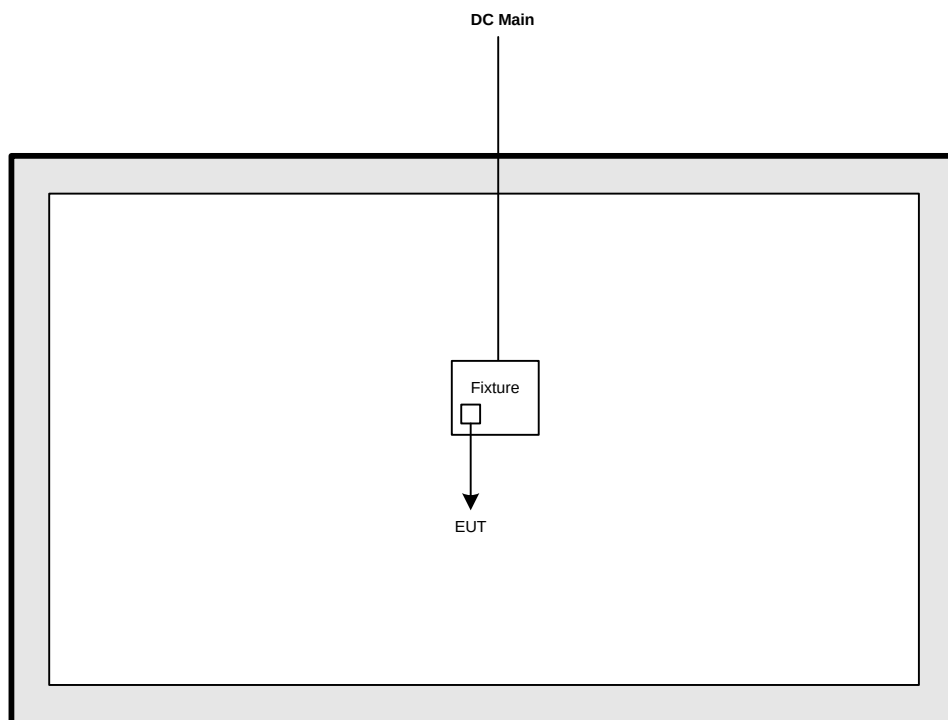
Test Setup Diagram - Radiated Emission (Below 1GHz) (Mode 2)



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



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



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: * Decreases with the logarithm of the frequency.

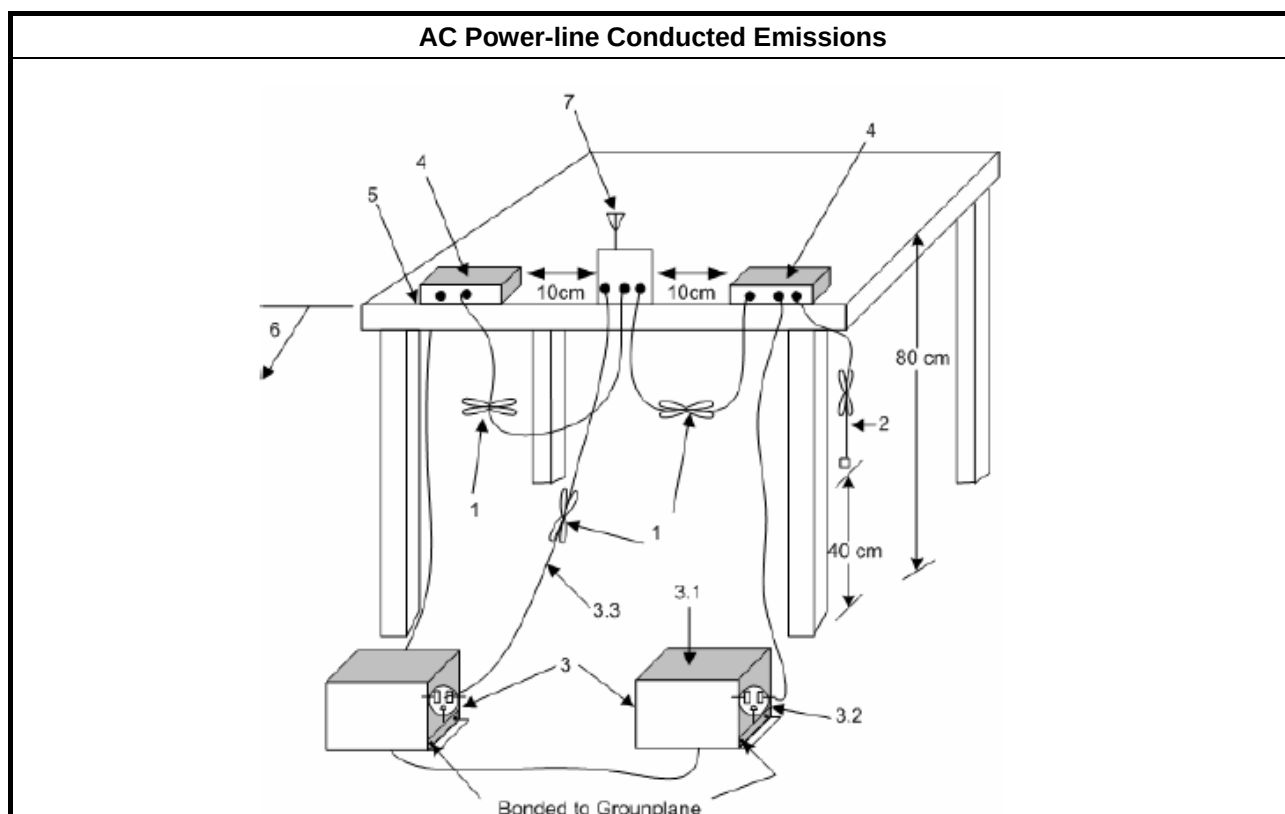
3.1.2 Measuring Instruments

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

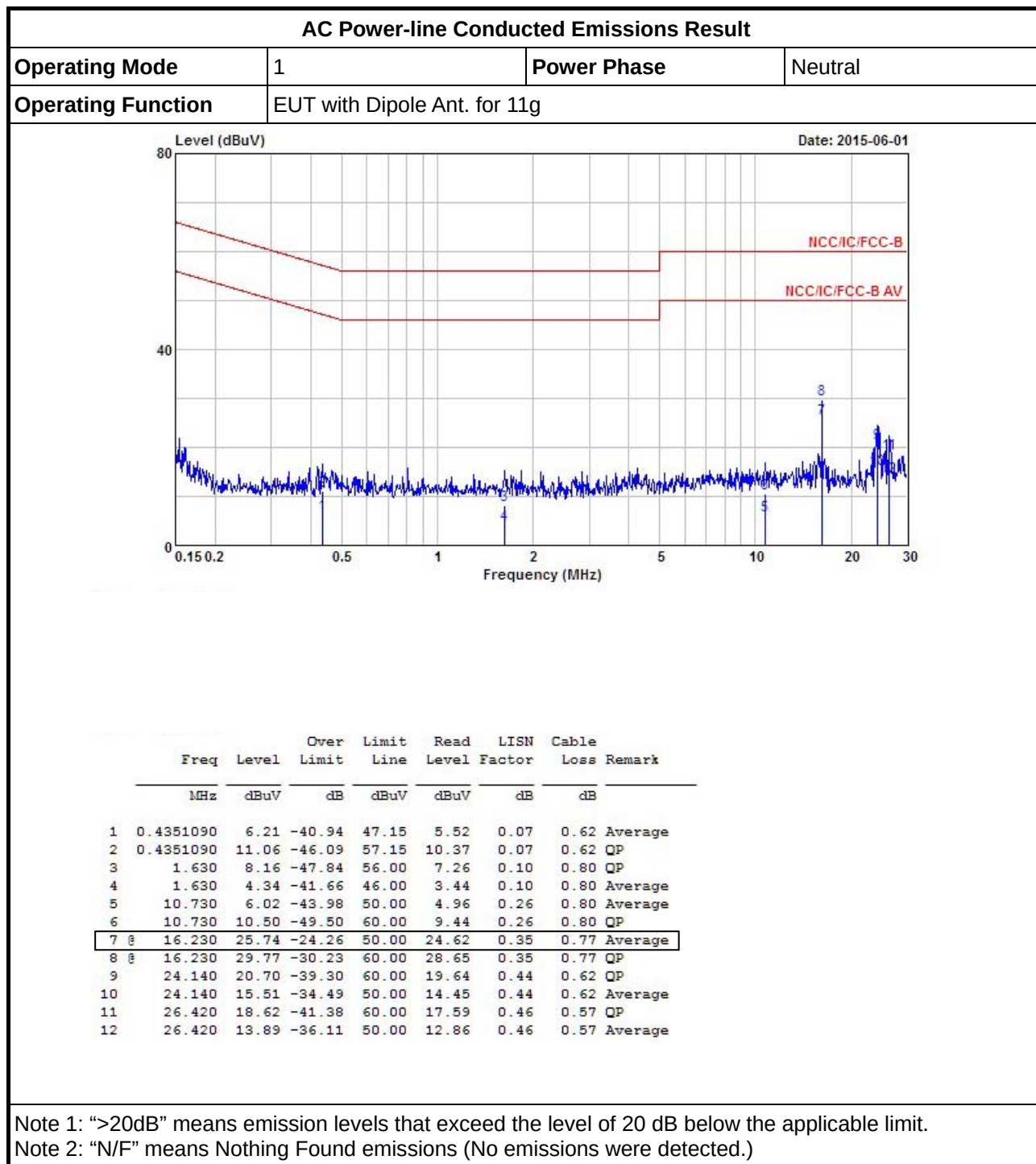
3.1.3 Test Procedures

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

3.1.4 Test Setup

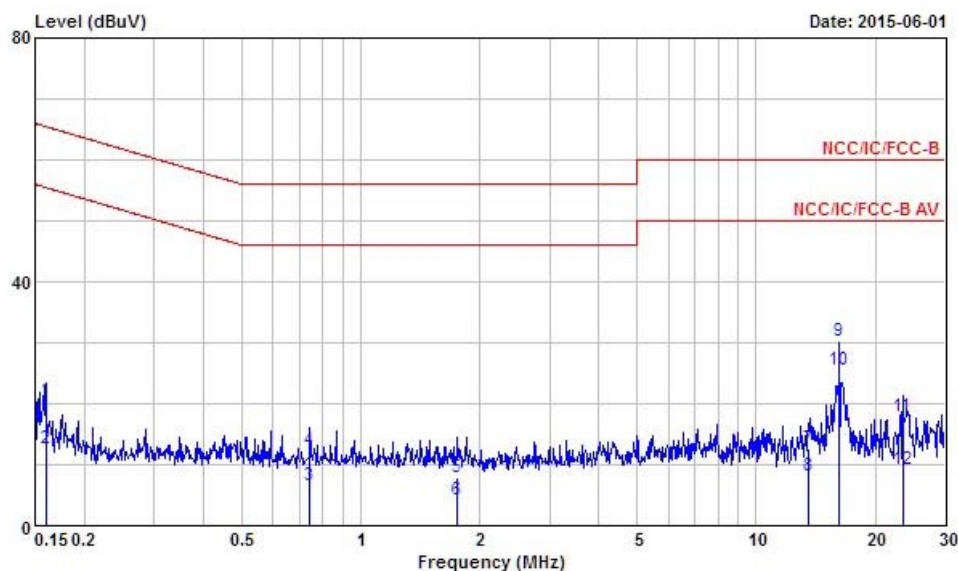


3.1.5 Test Result of AC Power-line Conducted Emissions



AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	EUT with Dipole Ant. for 11g		

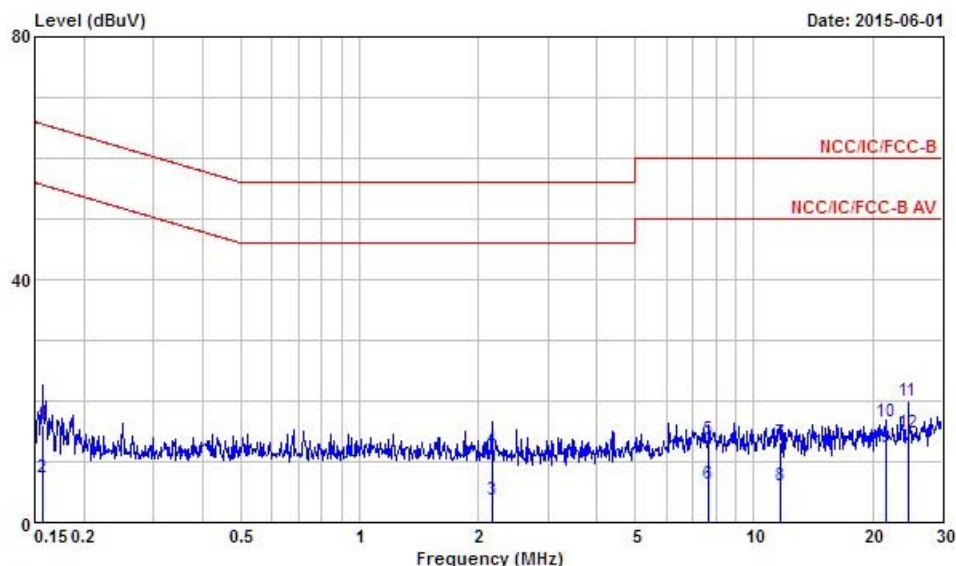


	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.1598470	20.48	-44.99	65.47	20.06	0.05	0.37	QP
2	0.1598470	12.66	-42.81	55.47	12.24	0.05	0.37	Average
3	0.7430230	6.69	-39.31	46.00	5.88	0.08	0.73	Average
4	0.7430230	12.28	-43.72	56.00	11.47	0.08	0.73	QP
5	1.750	8.03	-47.97	56.00	7.13	0.10	0.80	QP
6	1.750	4.19	-41.81	46.00	3.29	0.10	0.80	Average
7	13.620	12.68	-47.32	60.00	11.59	0.29	0.80	QP
8	13.620	8.06	-41.94	50.00	6.97	0.29	0.80	Average
9	16.230	30.25	-29.75	60.00	29.16	0.32	0.77	QP
10	16.230	25.42	-24.58	50.00	24.33	0.32	0.77	Average
11	23.510	17.94	-42.06	60.00	16.92	0.39	0.63	QP
12	23.510	9.34	-40.66	50.00	8.32	0.39	0.63	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	Neutral
Operating Function	EUT with Printed Ant. for 11g		



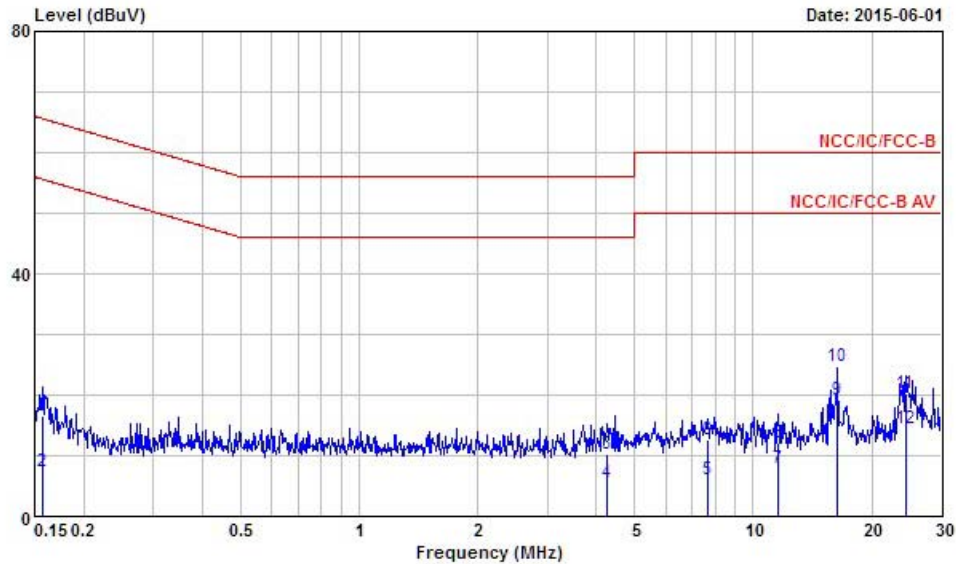
	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1573260	15.94	-49.66	65.60	15.51	0.07	0.36	QP
2	0.1573260	7.34	-48.26	55.60	6.91	0.07	0.36	Average
3	2.170	3.61	-42.39	46.00	2.72	0.10	0.79	Average
4	2.170	12.21	-43.79	56.00	11.32	0.10	0.79	QP
5	7.690	13.61	-46.39	60.00	12.63	0.21	0.77	QP
6	7.690	6.27	-43.73	50.00	5.29	0.21	0.77	Average
7	11.680	13.28	-46.72	60.00	12.20	0.28	0.80	QP
8	11.680	6.08	-43.92	50.00	5.00	0.28	0.80	Average
9	21.600	12.37	-37.63	50.00	11.29	0.42	0.66	Average
10	21.600	16.56	-43.44	60.00	15.48	0.42	0.66	QP
11	24.600	19.95	-40.05	60.00	18.89	0.45	0.61	QP
12	24.600	14.62	-35.38	50.00	13.56	0.45	0.61	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	EUT with Printed Ant. for 11g		



	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.1564950	16.48	-49.17	65.65	16.07	0.05	0.36	QP
2	0.1564950	7.45	-48.20	55.65	7.04	0.05	0.36	Average
3	4.270	10.20	-45.80	56.00	9.35	0.14	0.71	QP
4	4.270	5.58	-40.42	46.00	4.73	0.14	0.71	Average
5	7.690	6.09	-43.91	50.00	5.12	0.20	0.77	Average
6	7.690	12.50	-47.50	60.00	11.53	0.20	0.77	QP
7	11.560	7.93	-42.07	50.00	6.87	0.26	0.80	Average
8	11.560	12.08	-47.92	60.00	11.02	0.26	0.80	QP
9	16.310	19.23	-30.77	50.00	18.14	0.32	0.77	Average
10	16.310	24.76	-35.24	60.00	23.67	0.32	0.77	QP
11	24.400	20.19	-39.81	60.00	19.18	0.40	0.61	QP
12	24.400	14.44	-35.56	50.00	13.43	0.40	0.61	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 $\geq$ 500 kHz.

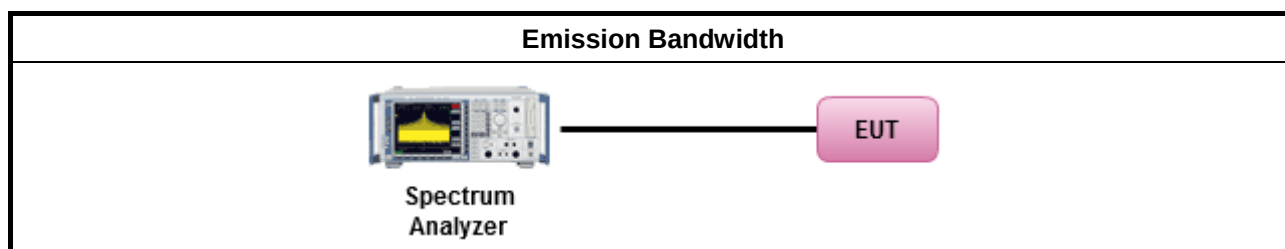
3.2.2 Measuring Instruments

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 D01 v03r02, clause 8.1 Option 1 for 6 dB bandwidth measurement. ☐ Refer as FCC KDB 558074 D01 v03r02, 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 performance of 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.

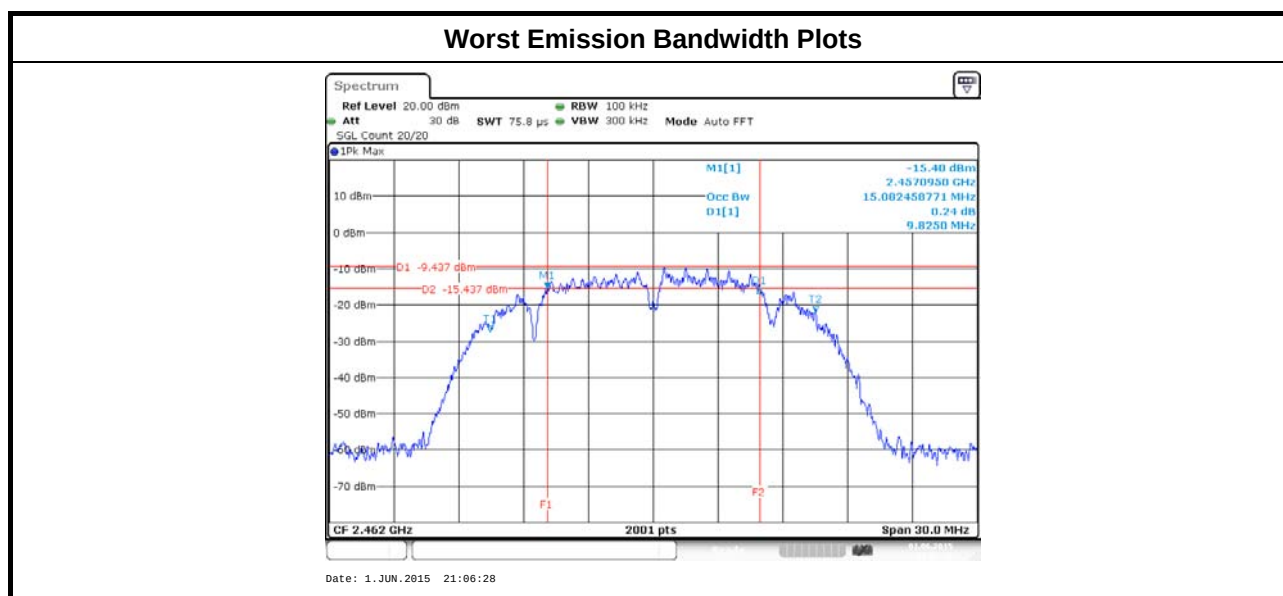
3.2.4 Test Setup



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
11b	1	2412	15.12	10.99
11b	1	2437	14.90	10.92
11b	1	2462	15.08	9.82
11g	1	2412	16.35	16.44
11g	1	2437	16.38	16.42
11g	1	2462	16.35	16.38
HT20	1	2412	17.51	17.56
HT20	1	2437	17.49	17.56
HT20	1	2462	17.51	17.58
Limit			N/A	≥500 kHz
Result			Complied	

Note 1: N_{TX} = Number of Transmit Chains



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): $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX}])$ dBm
☐	Smart antenna system (SAS)
☐	Single beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
☐	Overlap beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
☐	Aggregate power on all beams: $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX} + 8])$ 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.	

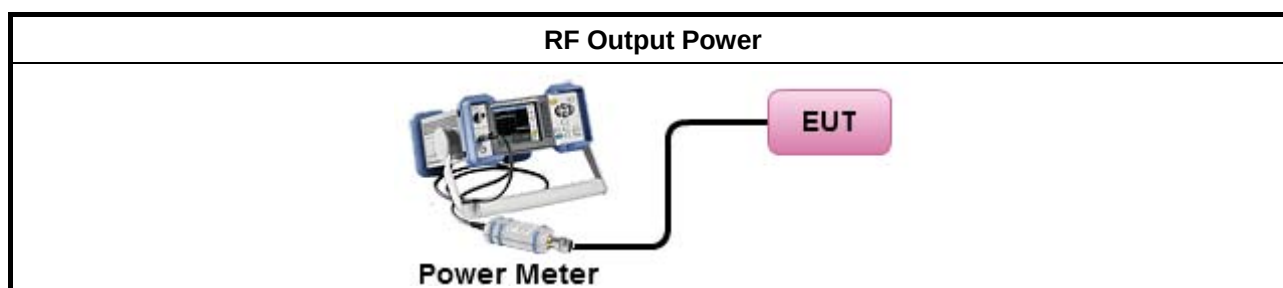
3.3.2 Measuring Instruments

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 D01 v03r02, clause 9.1.1 Option 1 (RBW ≥ EBW method).
☒	Refer as FCC KDB 558074 D01 v03r02, clause 9.1.2 (peak power meter for VBW ≥ DTS BW).
☒	Maximum Conducted Output Power
	[duty cycle ≥ 98% or external video / power trigger]
☐	Refer as FCC KDB 558074 D01 v03r02, clause 9.2.2.2 Method AVGSA-1 (spectral trace averaging).
☐	Refer as FCC KDB 558074 D01 v03r02, 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 D01 v03r02, clause 9.2.2.4 Method AVGSA-2 (spectral trace averaging).
☐	Refer as FCC KDB 558074 D01 v03r02, 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 D01 v03r02, clause 9.2.3 Method AVGPM (using an RF average power meter).
☒	For conducted measurement.
☒	The EUT supports single transmit chain and measurements performance of 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: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup



3.3.5 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)	RF Output Power(dBm)	Power Limit	Antenna Gain (dBi)	EIRP Power	EIRP Limit
11b	1	2412	7.08	30.00	2.33	9.41	36.00
11b	1	2437	6.19	30.00	2.33	8.52	36.00
11b	1	2462	5.91	30.00	2.33	8.24	36.00
11g	1	2412	17.60	30.00	2.33	19.93	36.00
11g	1	2437	17.76	30.00	2.33	20.09	36.00
11g	1	2462	17.49	30.00	2.33	19.82	36.00
HT20	1	2412	17.36	30.00	2.33	19.69	36.00
HT20	1	2437	17.74	30.00	2.33	20.07	36.00
HT20	1	2462	17.47	30.00	2.33	19.80	36.00
Result			Complied				

3.3.6 Test Result of Maximum Conducted Output Power

Maximum Conducted Output Power Result							
Condition			RF Output Power (dBm)				
Modulation Mode	N _{TX}	Freq. (MHz)	RF Output Power(dBm)	Power Limit	Antenna Gain (dBi)	EIRP Power	EIRP Limit
11b	1	2412	4.11	30.00	2.33	6.44	36.00
11b	1	2437	3.22	30.00	2.33	5.55	36.00
11b	1	2462	2.91	30.00	2.33	5.24	36.00
11g	1	2412	12.61	30.00	2.33	14.94	36.00
11g	1	2437	12.89	30.00	2.33	15.22	36.00
11g	1	2462	12.58	30.00	2.33	14.91	36.00
HT20	1	2412	12.41	30.00	2.33	14.74	36.00
HT20	1	2437	12.79	30.00	2.33	15.12	36.00
HT20	1	2462	12.47	30.00	2.33	14.80	36.00
Result			Complied				

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

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

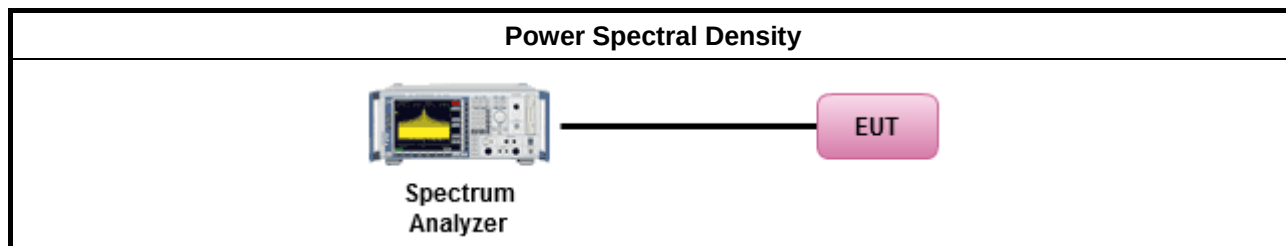
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

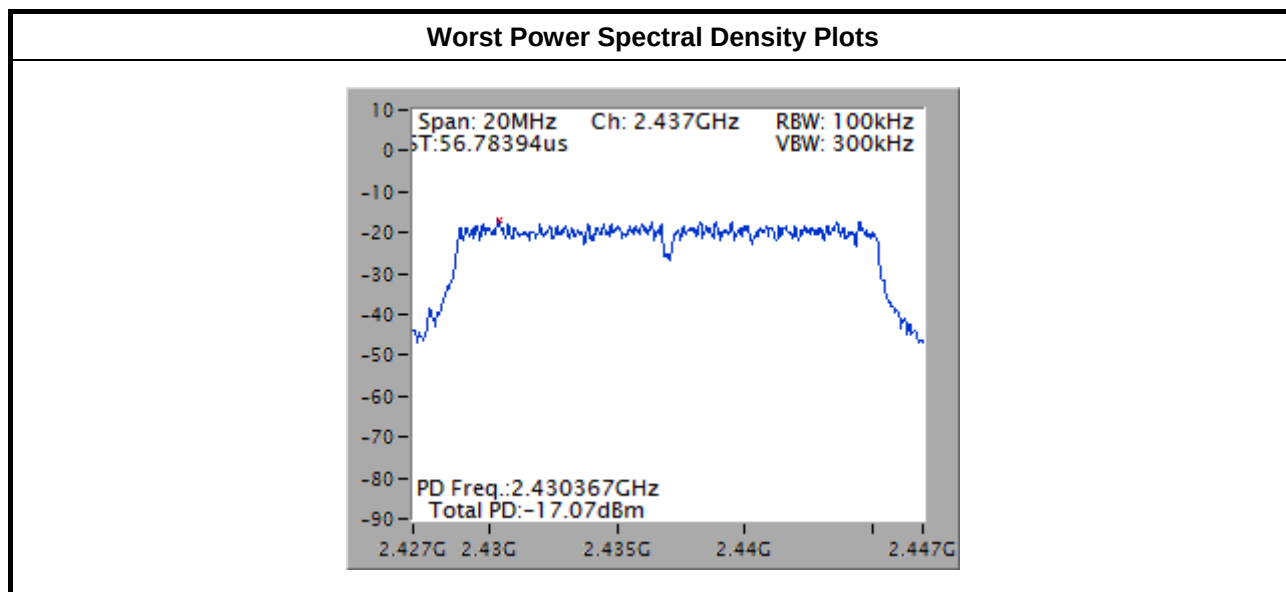
Test Method	
☒	Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum 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 D01 v03r02, clause 10.2 Method PKPSD (RBW=3-100kHz;detector=peak)..
	[duty cycle $\geq 98\%$ or external video / power trigger]
☒	Refer as FCC KDB 558074 D01 v03r02, clause 10.3 Method AVGPSD-1 (spectral trace averaging).
☐	Refer as FCC KDB 558074 D01 v03r02, 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 D01 v03r02, clause 10.5 Method AVGPSD-2 (spectral trace averaging).
☐	Refer as FCC KDB 558074 D01 v03r02, clause 10.6 Method AVGPSD-2 Alt. (slow sweep speed)
☒	For conducted measurement.
☒	The EUT supports single transmit chain and measurements performance of 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



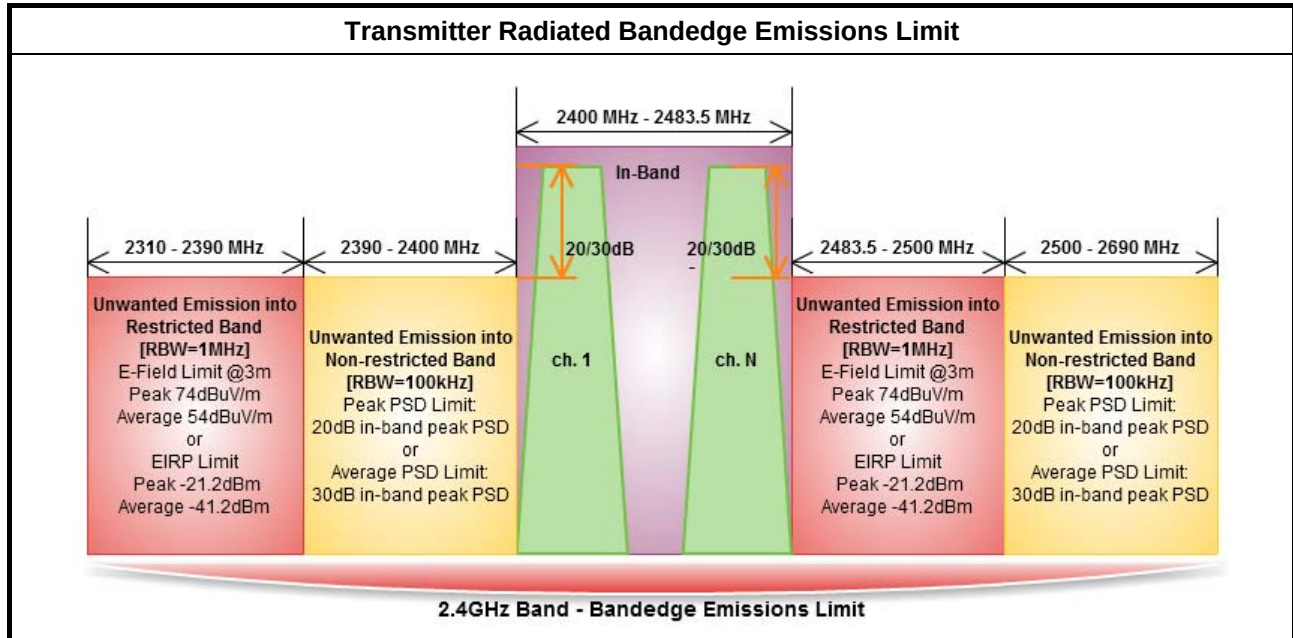
3.4.5 Test Result of Power Spectral Density

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	-23.64	8
11b	1	2437	-23.60	8
11b	1	2462	-23.24	8
11g	1	2412	-17.41	8
11g	1	2437	-17.07	8
11g	1	2462	-17.32	8
HT20	1	2412	-17.53	8
HT20	1	2437	-17.25	8
HT20	1	2462	-17.96	8
Result			Complied	



3.5 Transmitter Bandedge Emissions

3.5.1 Transmitter Radiated Bandedge Emissions Limit



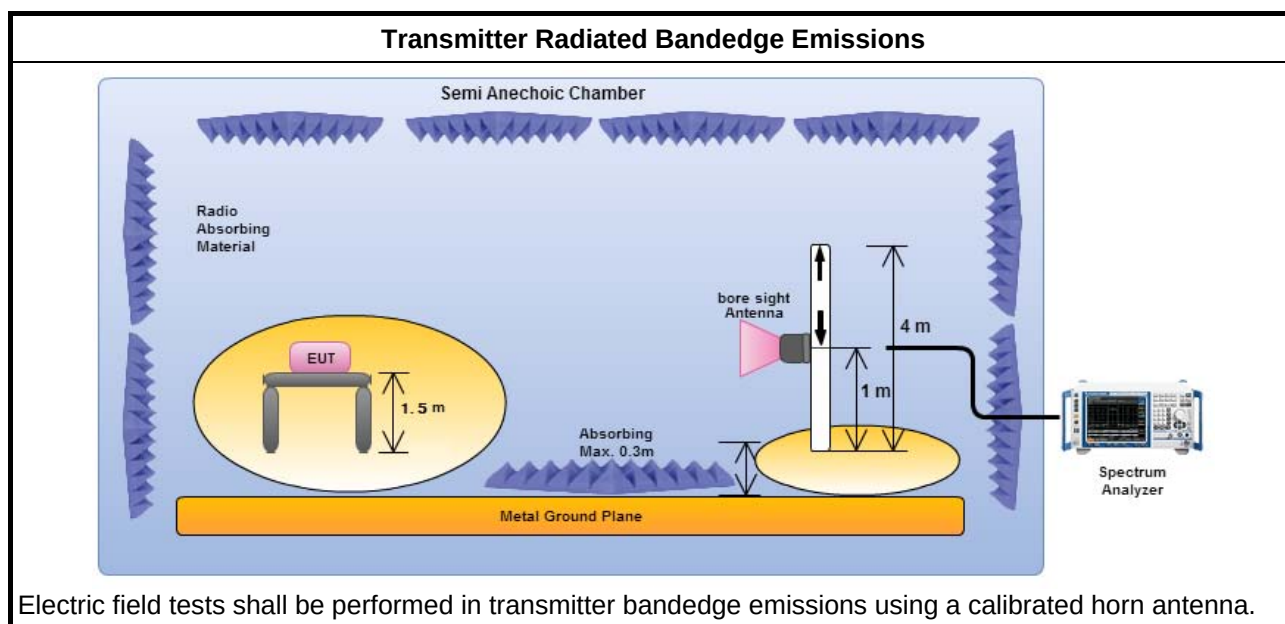
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method	
☒	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 D01 v03r02, clause 11 for unwanted emissions into non-restricted bands.
☒	Refer as FCC KDB 558074 D01 v03r02, clause 12 for unwanted emissions into restricted bands.
☐	Refer as FCC KDB 558074 D01 v03r02, clause 12.2.5.1 Option 1 (trace averaging for duty cycle $\geq 98\%$)
☐	Refer as FCC KDB 558074 D01 v03r02, clause 12.2.5.2 Option 2 (trace averaging + duty factor).
☐	Refer as FCC KDB 558074 D01 v03r02, clause 12.2.5.3 Option 3 (Reduced VBW $\geq 1/T$).
☒	Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW $\geq 1/T$, 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 D01 v03r02, 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 D01 v03r02, 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 and the test distance is 3m.
☐	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 D01 v03r02, clause 12.2.7.

3.5.4 Test Setup



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

3.5.5 Transmitter Radiated Bandedge Emissions

Mode1.

2400-2483.5MHz Transmitter Radiated Bandedge Emissions (Non-restricted Band)								
Modulation	N _{TX}	Test Freq. (MHz)	In-band PSD [i] (dBuV/100 kHz)	Freq. (MHz)	Out-band PSD [o] (dBuV/100 kHz)	[i] – [o] (dB)	Limit (dB)	Pol.
11b	1	2412	89.22	2397.136	45.50	43.72	20	V
11b	1	2462	89.71	2547.200	45.91	43.80	20	V
11g	1	2412	90.35	2399.152	59.40	30.95	20	V
11g	1	2462	94.97	2538.400	46.46	48.51	20	V
HT20	1	2412	89.45	2399.936	57.68	31.77	20	V
HT20	1	2462	94.99	2501.000	46.06	48.93	20	V
Note 1: Measurement worst emissions of receive antenna polarization								

Mode2.

2400-2483.5MHz Transmitter Radiated Bandedge Emissions (Non-restricted Band)								
Modulation	N _{TX}	Test Freq. (MHz)	In-band PSD [i] (dBuV/100 kHz)	Freq. (MHz)	Out-band PSD [o] (dBuV/100 kHz)	[i] – [o] (dB)	Limit (dB)	Pol.
11b	1	2412	77.76	2395.120	44.37	33.39	20	V
11b	1	2462	84.29	2536.200	54.16	30.13	20	V
11g	1	2412	80.89	2399.600	51.80	29.09	20	V
11g	1	2462	87.66	2549.400	45.58	42.08	20	V
HT20	1	2412	80.59	2397.808	47.39	33.20	20	V
HT20	1	2462	90.37	2511.200	51.02	39.35	20	V
Note 1: Measurement worst emissions of receive antenna polarization								

Mode1.

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	2383.696	53.37	74	2385.488	39.98	54	V
11b	1	2462	3	2492.200	53.46	74	2498.600	39.78	54	V
11g	1	2412	3	2389.968	65.72	74	2389.968	46.80	54	V
11g	1	2462	3	2483.500	69.27	74	2483.500	47.87	54	V
HT20	1	2412	3	2388.848	67.16	74	2389.968	47.44	54	V
HT20	1	2462	3	2483.500	72.66	74	2483.500	49.09	54	V
Note 1: Measurement worst emissions of receive antenna polarization.										

Mode2.

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	2323.664	59.82	74	2317.616	47.76	54	V
11b	1	2462	3	2489.000	59.15	74	2499.400	47.85	54	V
11g	1	2412	3	2389.520	60.63	74	2389.520	48.15	54	V
11g	1	2462	3	2483.500	70.09	74	2483.500	51.72	54	V
HT20	1	2412	3	2389.968	61.21	74	2388.848	47.93	54	V
HT20	1	2462	3	2484.000	69.20	74	2483.500	51.90	54	V
Note 1: Measurement worst emissions of receive antenna polarization.										

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.

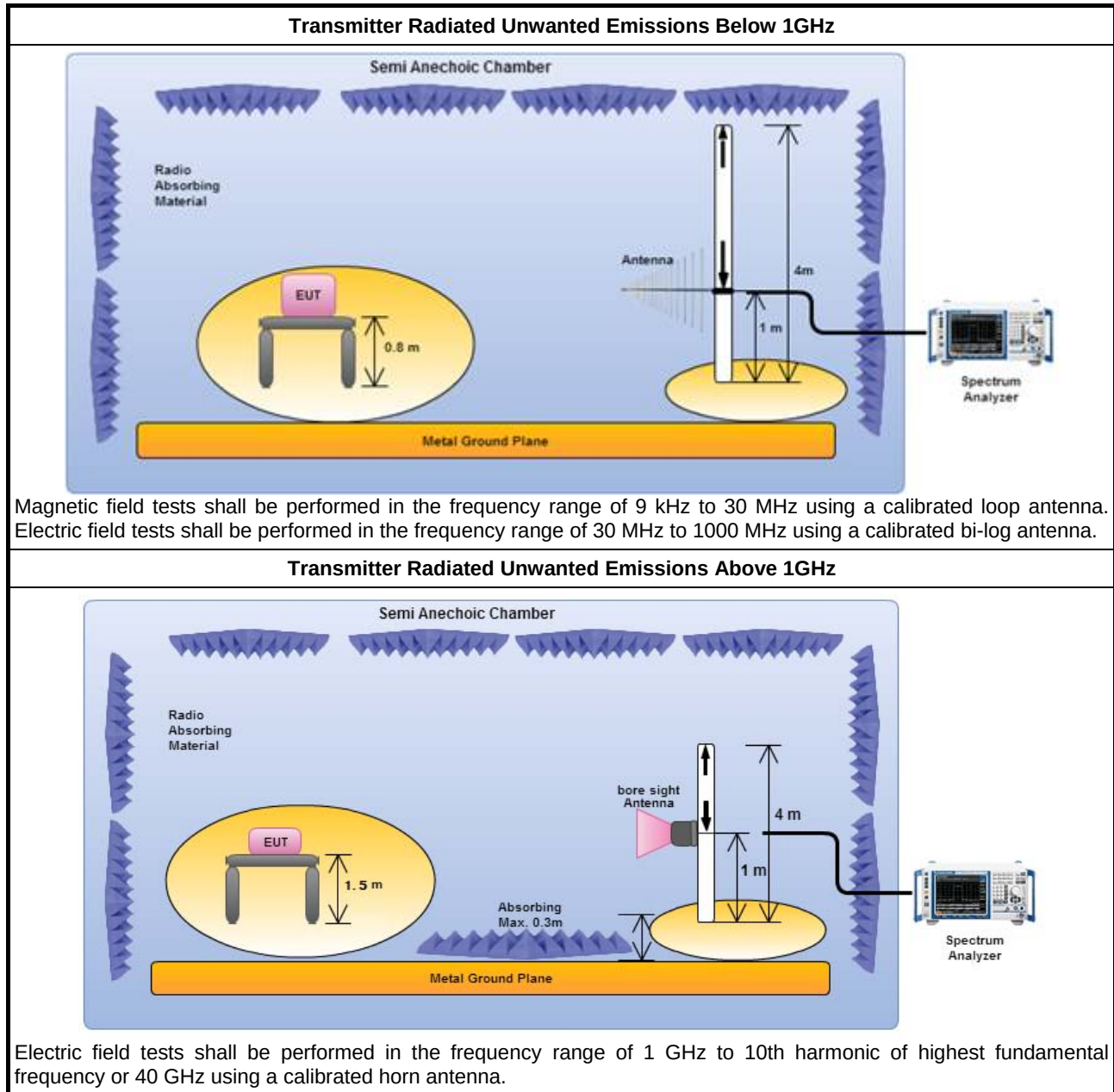
3.6.2 Measuring Instruments

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).
☒	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 D01 v03r02, clause 11 for unwanted emissions into non-restricted bands.
☒	Refer as FCC KDB 558074 D01 v03r02, clause 12 for unwanted emissions into restricted bands.
☐	Refer as FCC KDB 558074 D01 v03r02, clause 12.2.5.1 Option 1 (trace averaging for duty cycle $\geq 98\%$)
☐	Refer as FCC KDB 558074 D01 v03r02, clause 12.2.5.2 Option 2 (trace averaging + duty factor).
☐	Refer as FCC KDB 558074 D01 v03r02, clause 12.2.5.3 Option 3 (Reduced VBW $\geq 1/T$).
☒	Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW $\geq 1/T$, 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 D01 v03r02, clause 11.3 and 12.2.4 measurement procedure peak limit.
☒	Refer as FCC KDB 558074 D01 v03r02, clause 12.2.3 measurement procedure Quasi-Peak limit.
☒	For radiated measurement, refer as FCC KDB 558074 D01 v03r02, clause 12.2.7.
☒	Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
☒	Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
☒	Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1 GHz and test distance is 3m.

3.6.4 Test Setup

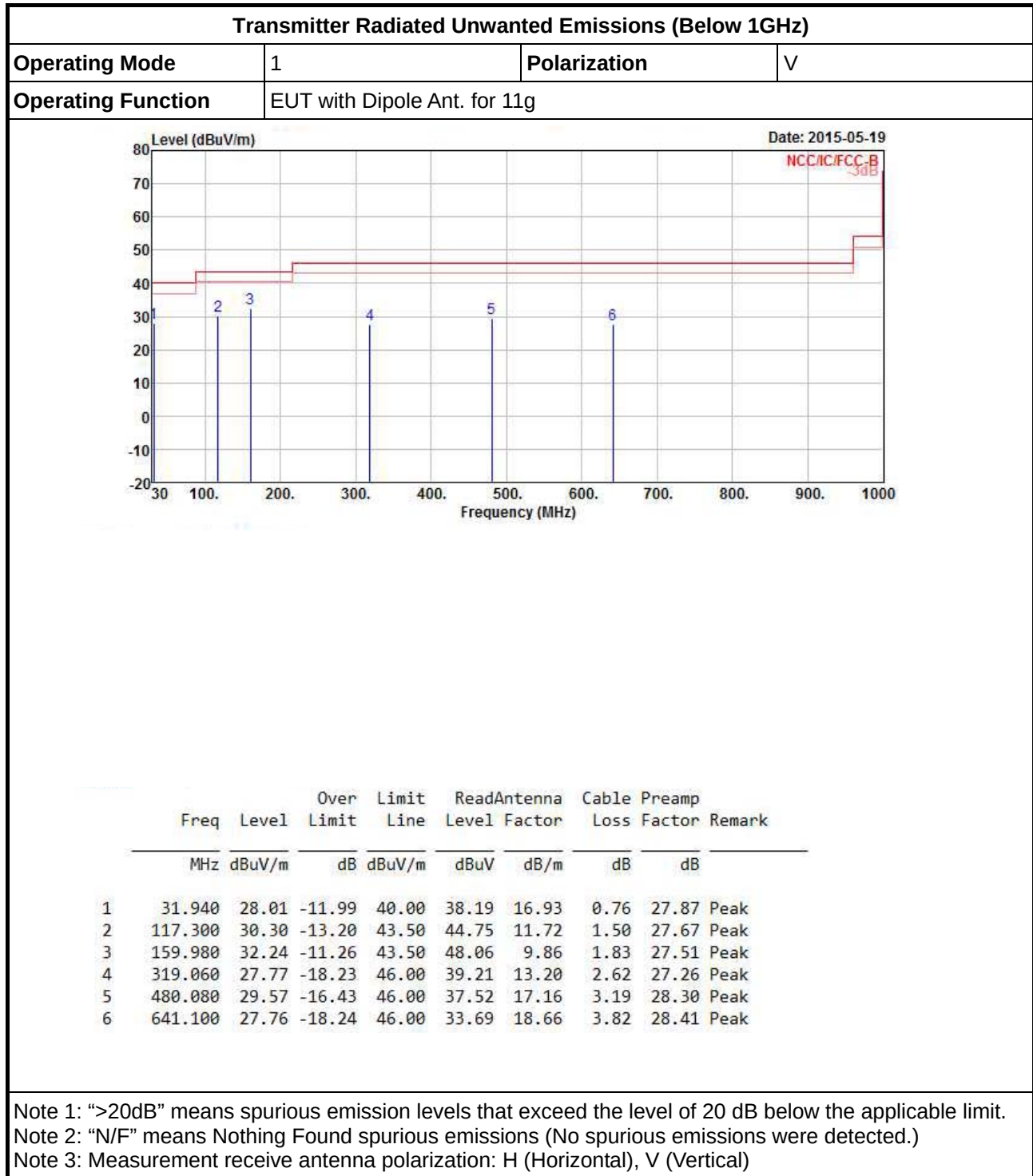


Note: FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 02, 2014.

3.6.5 Transmitter Radiated Unwanted Emissions (Below 30MHz)

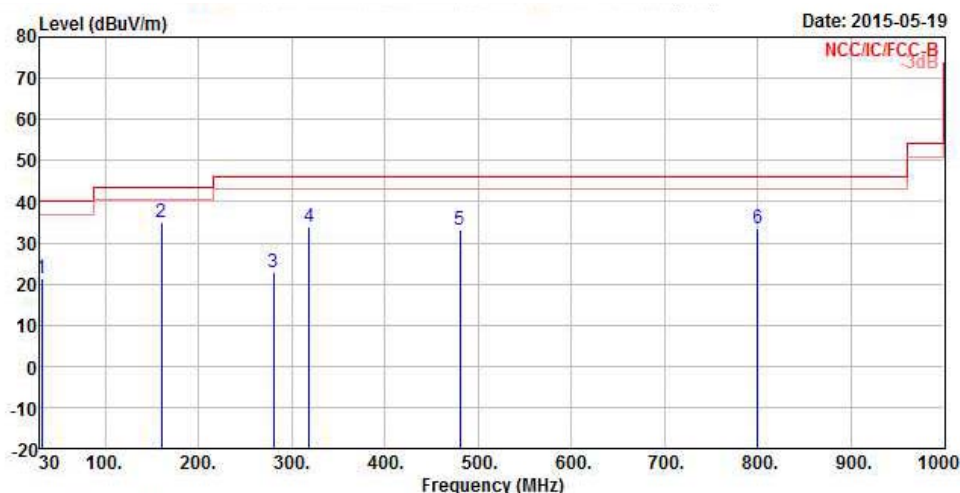
All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

3.6.6 Transmitter Radiated Unwanted Emissions (Below 1GHz)



Transmitter Radiated Unwanted Emissions (Below 1GHz)

Operating Mode	1	Polarization	H
Operating Function	EUT with Dipole Ant. for 11g		

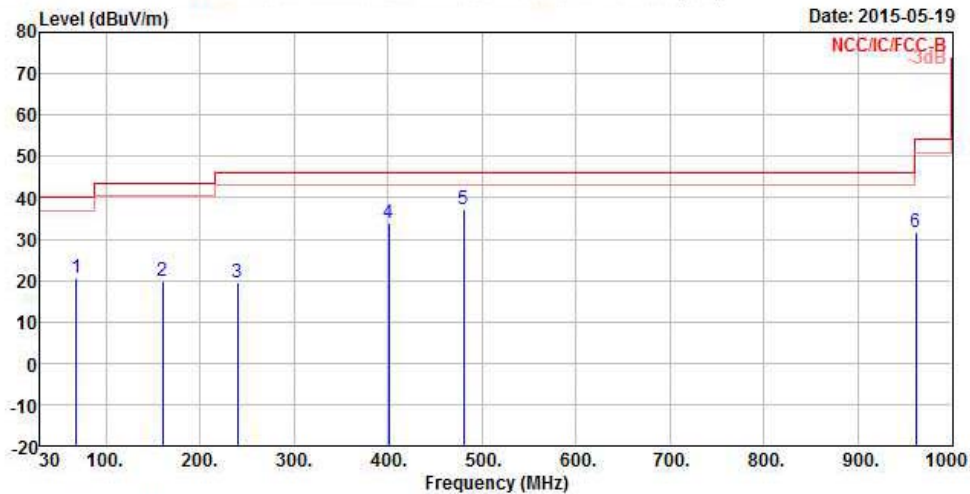


	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	31.940	21.41	-18.59	40.00	31.59	16.93	0.76	27.87 Peak
2	159.980	35.02	-8.48	43.50	50.84	9.86	1.83	27.51 Peak
3	280.260	22.76	-23.24	46.00	35.11	12.38	2.44	27.17 Peak
4	319.060	33.95	-12.05	46.00	45.39	13.20	2.62	27.26 Peak
5	480.080	33.05	-12.95	46.00	41.00	17.16	3.19	28.30 Peak
6	800.180	33.39	-12.61	46.00	37.59	19.48	4.33	28.01 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	EUT with Printed Ant. for 11g		



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	68.800	20.74	-19.26	40.00	41.17	6.15	1.13	27.71 Peak
2	159.980	19.92	-23.58	43.50	35.74	9.86	1.83	27.51 Peak
3	239.520	19.34	-26.66	46.00	33.22	11.12	2.27	27.27 Peak
4	400.540	34.00	-12.00	46.00	43.50	15.45	2.91	27.86 Peak
5	480.080	37.32	-8.68	46.00	45.27	17.16	3.19	28.30 Peak
6	961.200	31.48	-22.52	54.00	33.68	20.60	4.76	27.56 Peak

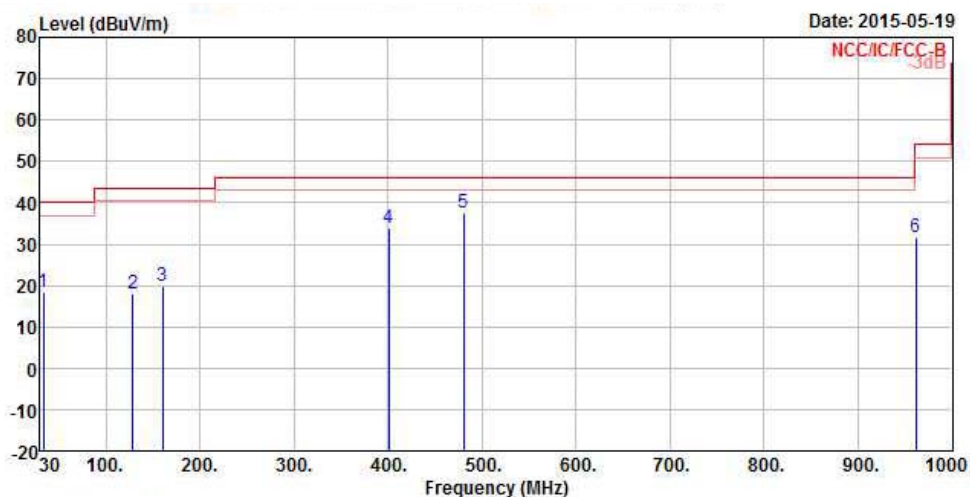
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

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	H
Operating Function	EUT with Printed Ant. for 11g		



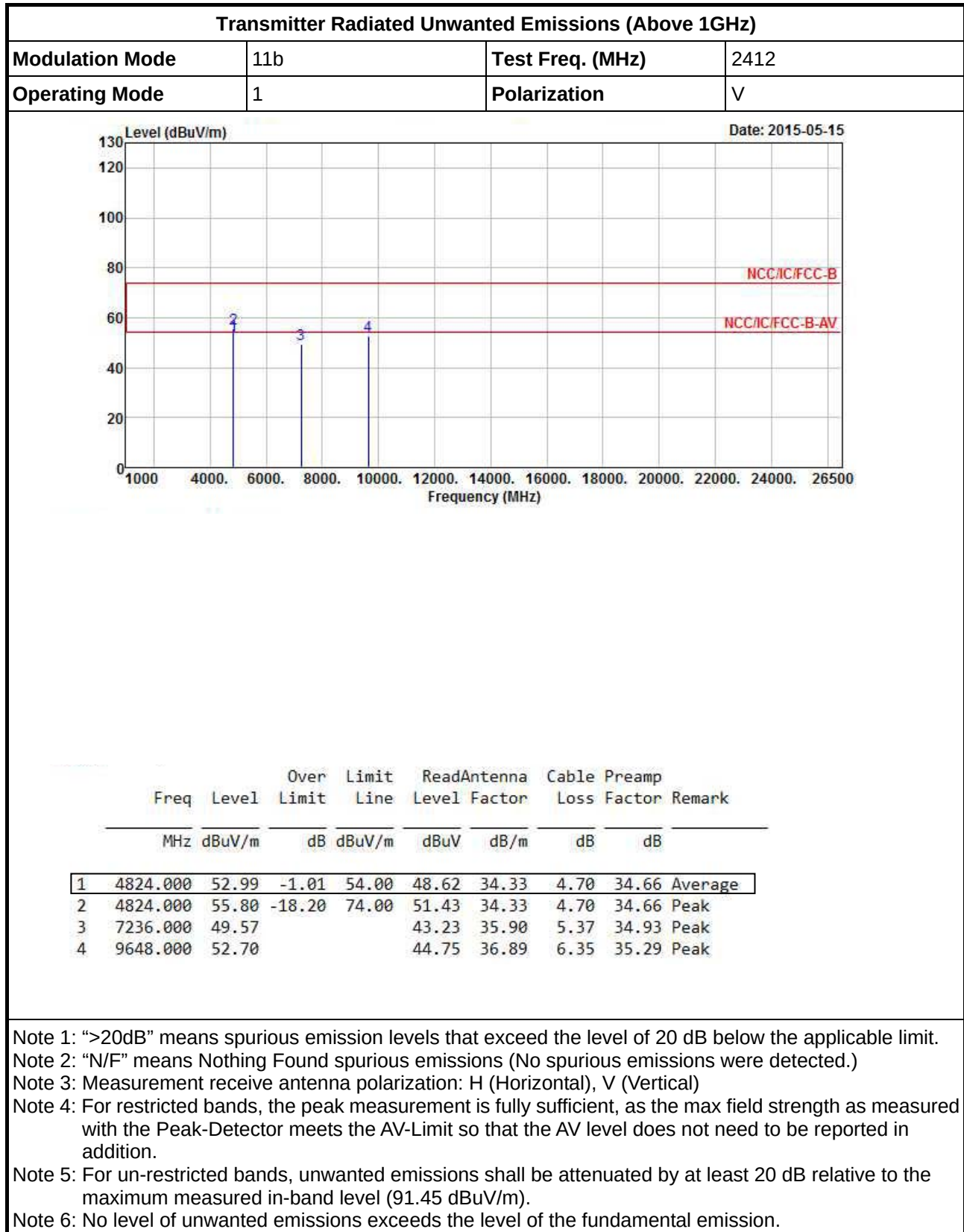
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	33.880	18.29	-21.71	40.00	29.15	16.20	0.79	27.85 Peak
2	128.940	17.89	-25.61	43.50	32.26	11.64	1.61	27.62 Peak
3	159.980	20.01	-23.49	43.50	35.83	9.86	1.83	27.51 Peak
4	400.540	33.72	-12.28	46.00	43.22	15.45	2.91	27.86 Peak
5	480.080	37.41	-8.59	46.00	45.36	17.16	3.19	28.30 Peak
6	961.200	31.84	-22.16	54.00	34.04	20.60	4.76	27.56 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.)

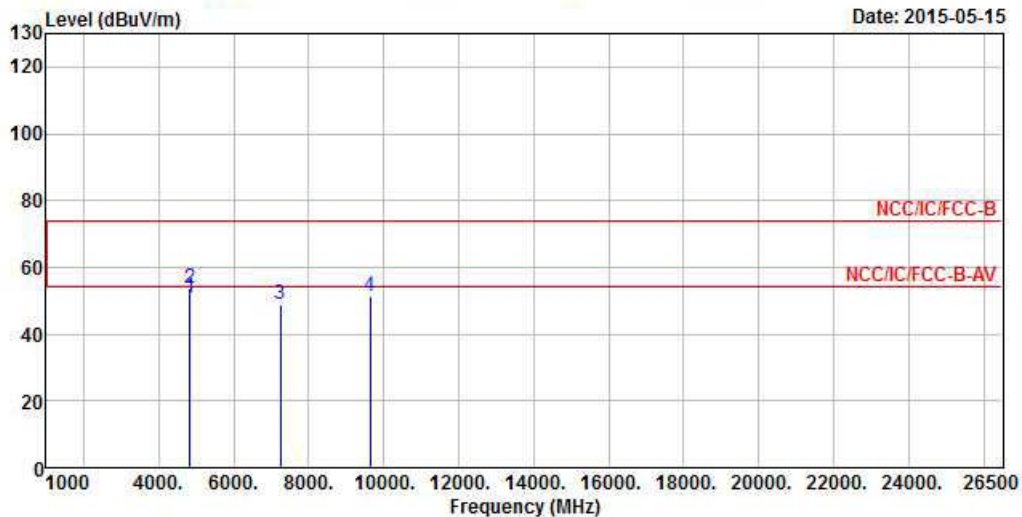
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

3.6.7 Transmitter Radiated Unwanted Emissions (Above 1GHz)



Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11b	Test Freq. (MHz)	2412
Operating Mode	1	Polarization	H



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	4824.000	50.65	-3.35	54.00	46.28	34.33	4.70	34.66 Average
2	4824.000	53.90	-20.10	74.00	49.53	34.33	4.70	34.66 Peak
3	7236.000	48.99			42.65	35.90	5.37	34.93 Peak
4	9648.000	51.35			43.40	36.89	6.35	35.29 Peak

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

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

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

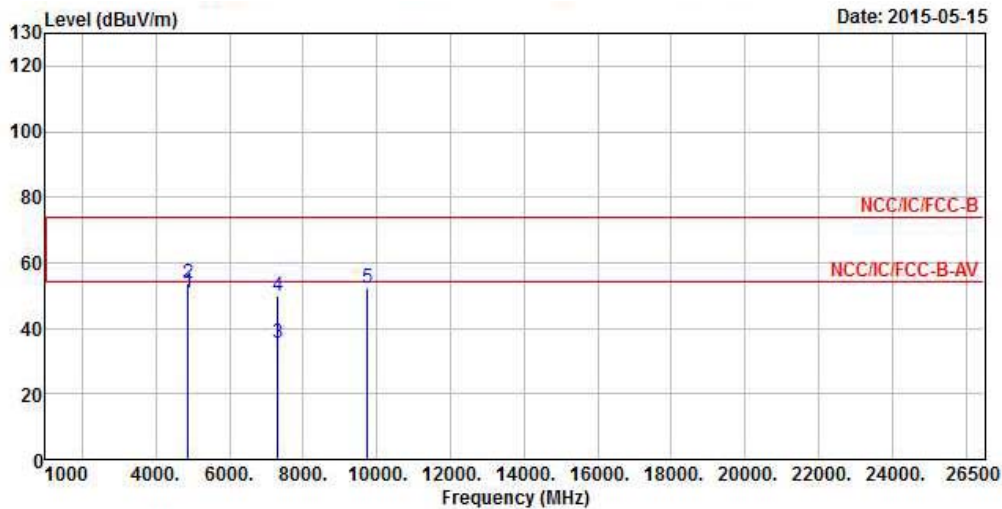
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (91.45 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11b	Test Freq. (MHz)	2437
Operating Mode	1	Polarization	V



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	4874.000	50.64	-3.36	54.00	46.24	34.32	4.73	34.65 Average
2	4874.000	53.55	-20.45	74.00	49.15	34.32	4.73	34.65 Peak
3	7311.000	35.57	-18.43	54.00	29.12	35.92	5.47	34.94 Average
4	7311.000	49.78	-24.22	74.00	43.33	35.92	5.47	34.94 Peak
5	9748.000	52.06			43.99	36.96	6.41	35.30 Peak

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

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

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

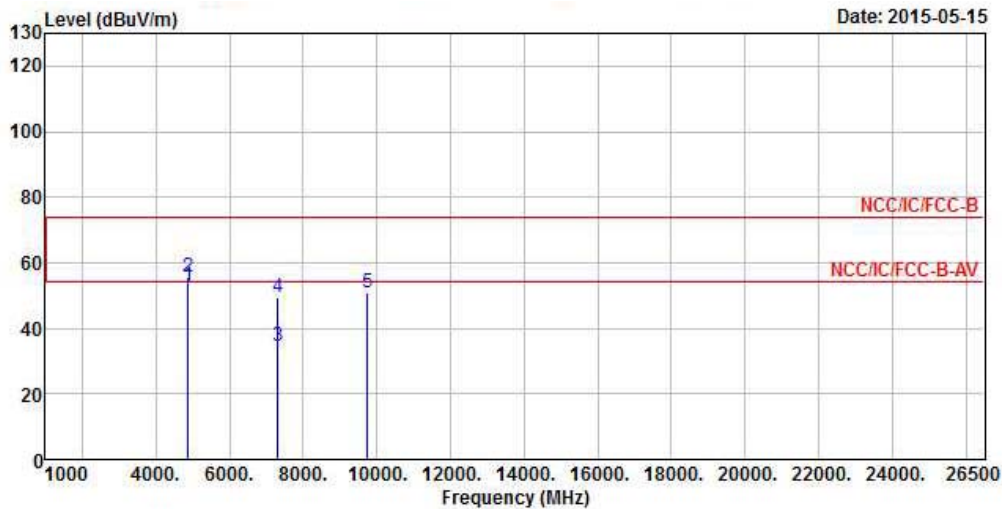
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (89.90 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11b	Test Freq. (MHz)	2437
Operating Mode	1	Polarization	H



	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB
1	4874.000	52.54	-1.46	54.00	48.14	34.32	4.73	34.65 Average
2	4874.000	55.73	-18.27	74.00	51.33	34.32	4.73	34.65 Peak
3	7311.000	34.74	-19.26	54.00	28.29	35.92	5.47	34.94 Average
4	7311.000	49.43	-24.57	74.00	42.98	35.92	5.47	34.94 Peak
5	9748.000	51.03			42.96	36.96	6.41	35.30 Peak

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

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

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

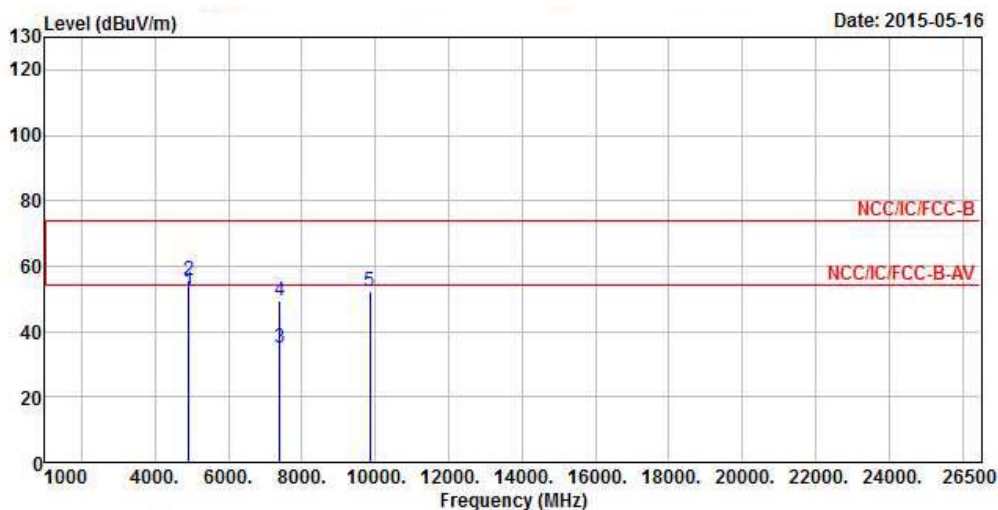
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (89.90 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11b	Test Freq. (MHz)	2462
Operating Mode	1	Polarization	V



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	4924.000	52.16	-1.84	54.00	47.69	34.31	4.79	34.63 Average
2	4924.000	55.44	-18.56	74.00	50.97	34.31	4.79	34.63 Peak
3	7386.000	35.08	-18.92	54.00	28.51	35.96	5.57	34.96 Average
4	7386.000	49.35	-24.65	74.00	42.78	35.96	5.57	34.96 Peak
5	9848.000	52.20			44.00	37.01	6.50	35.31 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)

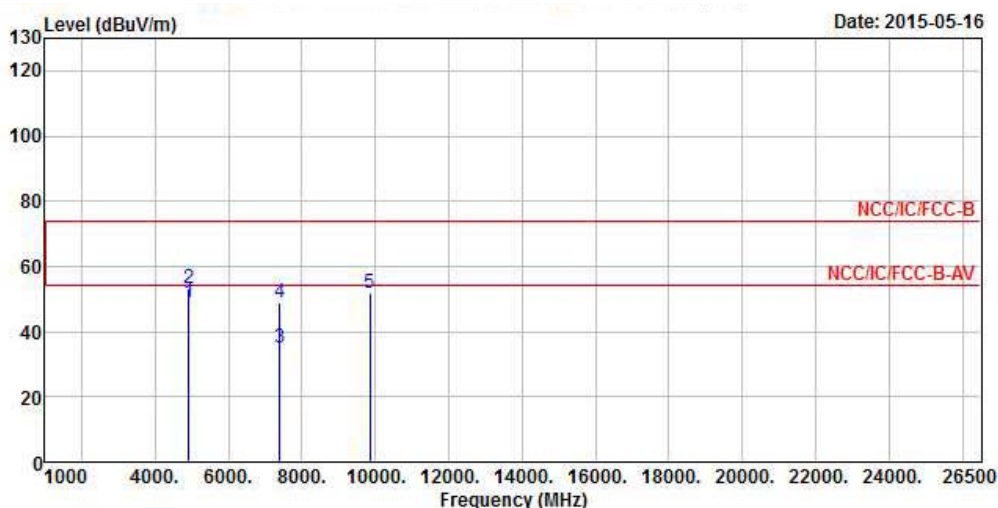
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (92.43 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11b	Test Freq. (MHz)	2462
Operating Mode	1	Polarization	H



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	4924.000	48.92	-5.08	54.00	44.45	34.31	4.79	34.63 Average
2	4924.000	53.38	-20.62	74.00	48.91	34.31	4.79	34.63 Peak
3	7386.000	34.84	-19.16	54.00	28.27	35.96	5.57	34.96 Average
4	7386.000	48.81	-25.19	74.00	42.24	35.96	5.57	34.96 Peak
5	9848.000	51.62			43.42	37.01	6.50	35.31 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)

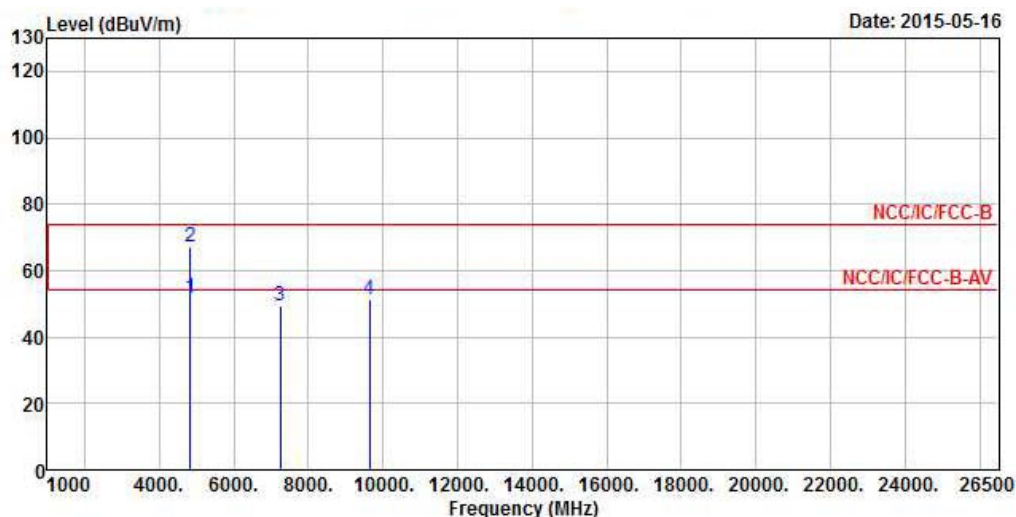
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (92.43 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11g	Test Freq. (MHz)	2412
Operating Mode	1	Polarization	V



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	4824.000	51.62	-2.38	54.00	47.25	34.33	4.70	34.66 Average
2	4824.000	67.16	-6.84	74.00	62.79	34.33	4.70	34.66 Peak
3	7236.000	49.33			42.99	35.90	5.37	34.93 Peak
4	9648.000	51.39			43.44	36.89	6.35	35.29 Peak

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

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

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

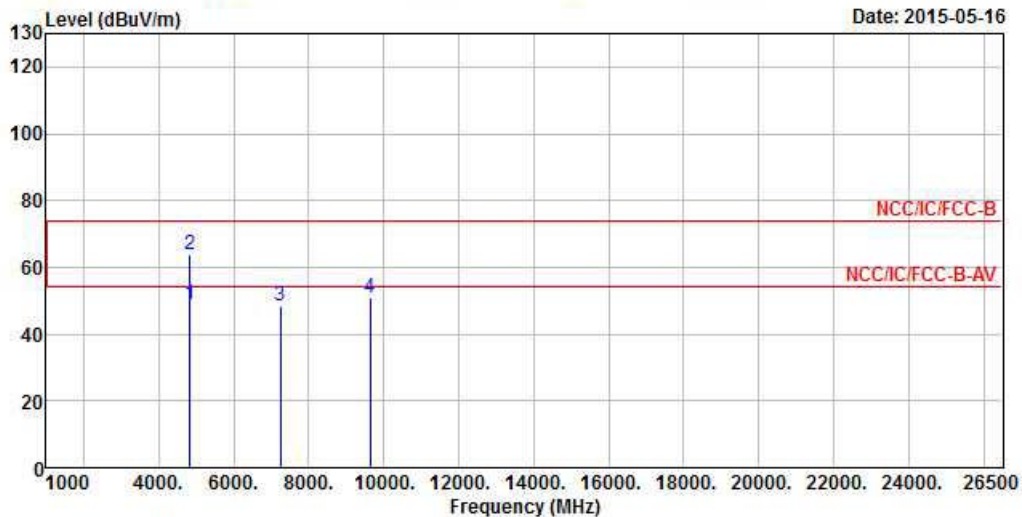
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (97.22 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11g	Test Freq. (MHz)	2412
Operating Mode	1	Polarization	H



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	4824.000	48.89	-5.11	54.00	44.52	34.33	4.70	34.66	Average
2	4824.000	63.73	-10.27	74.00	59.36	34.33	4.70	34.66	Peak
3	7236.000	48.32			41.98	35.90	5.37	34.93	Peak
4	9648.000	50.78			42.83	36.89	6.35	35.29	Peak

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

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

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

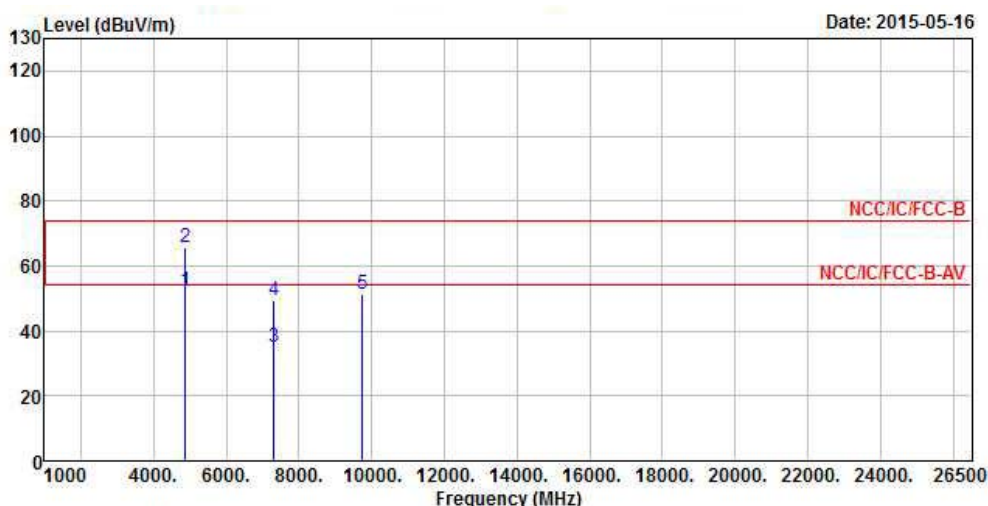
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (97.22 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11g	Test Freq. (MHz)	2437
Operating Mode	1	Polarization	V



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamplifier Loss	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	4874.000	52.13	-1.87	54.00	47.73	34.32	4.73	34.65 Average
2	4874.000	65.64	-8.36	74.00	61.24	34.32	4.73	34.65 Peak
3	7311.000	34.98	-19.02	54.00	28.53	35.92	5.47	34.94 Average
4	7311.000	49.23	-24.77	74.00	42.78	35.92	5.47	34.94 Peak
5	9748.000	51.51			43.44	36.96	6.41	35.30 Peak

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

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

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

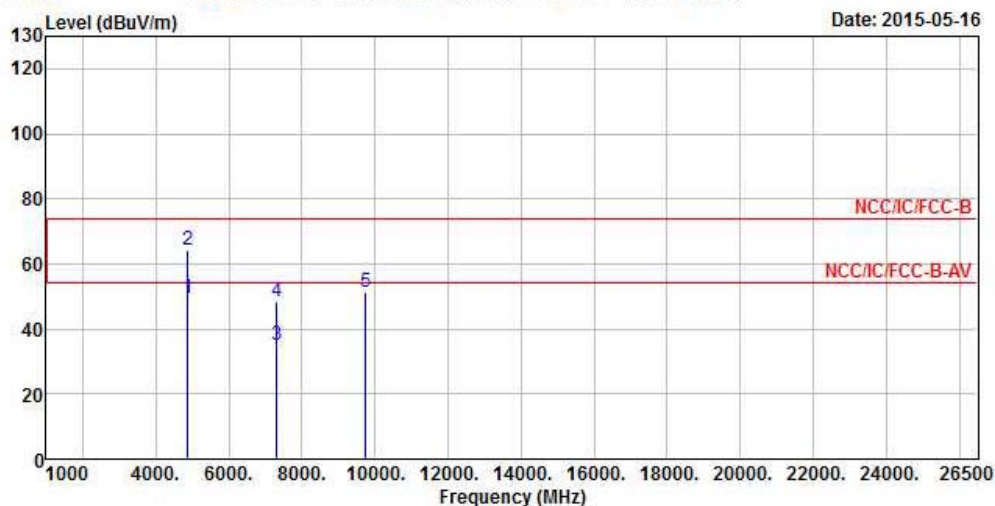
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (105.85 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11g	Test Freq. (MHz)	2437
Operating Mode	1	Polarization	H



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	4874.000	49.42	-4.58	54.00	45.02	34.32	4.73	34.65	Average
2	4874.000	64.31	-9.69	74.00	59.91	34.32	4.73	34.65	Peak
3	7311.000	35.01	-18.99	54.00	28.56	35.92	5.47	34.94	Average
4	7311.000	48.61	-25.39	74.00	42.16	35.92	5.47	34.94	Peak
5	9748.000	51.56			43.49	36.96	6.41	35.30	Peak

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

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

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

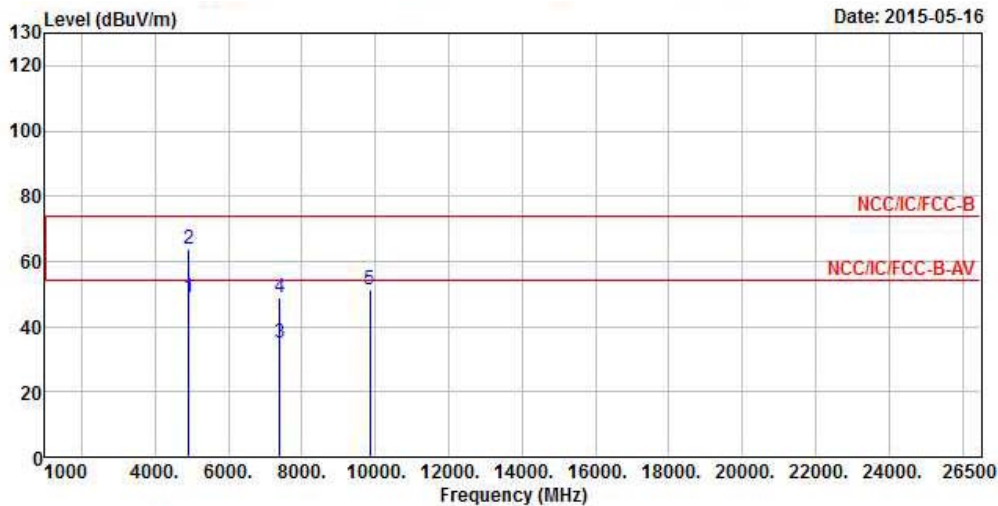
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (105.85 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11g	Test Freq. (MHz)	2462
Operating Mode	1	Polarization	V



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	4924.000	48.90	-5.10	54.00	44.43	34.31	4.79	34.63	Average
2	4924.000	63.60	-10.40	74.00	59.13	34.31	4.79	34.63	Peak
3	7386.000	34.86	-19.14	54.00	28.29	35.96	5.57	34.96	Average
4	7386.000	48.85	-25.15	74.00	42.28	35.96	5.57	34.96	Peak
5	9848.000	51.54			43.34	37.01	6.50	35.31	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)

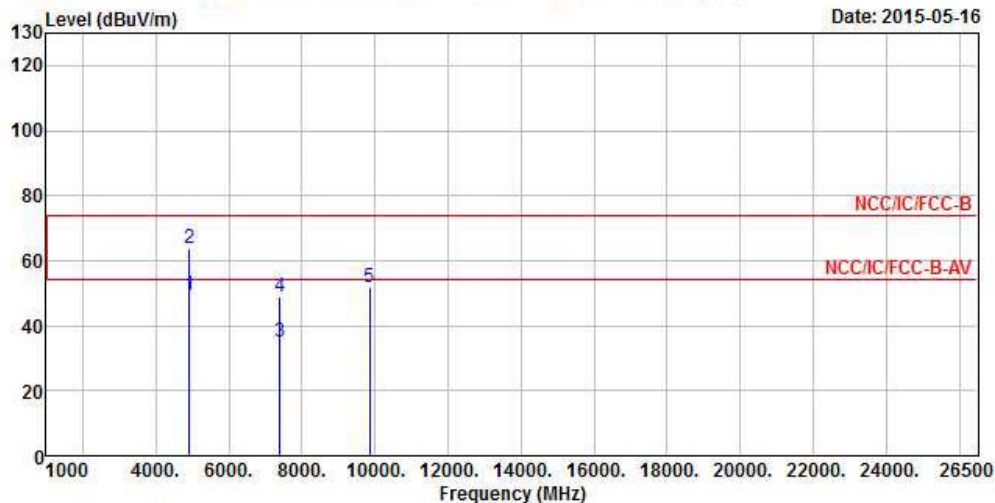
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (102.46 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11g	Test Freq. (MHz)	2462
Operating Mode	1	Polarization	H



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Remark
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB
1	4924.000	49.38	-4.62	54.00	44.91	34.31	4.79	34.63 Average
2	4924.000	63.99	-10.01	74.00	59.52	34.31	4.79	34.63 Peak
3	7386.000	34.91	-19.09	54.00	28.34	35.96	5.57	34.96 Average
4	7386.000	48.71	-25.29	74.00	42.14	35.96	5.57	34.96 Peak
5	9848.000	51.87			43.67	37.01	6.50	35.31 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)

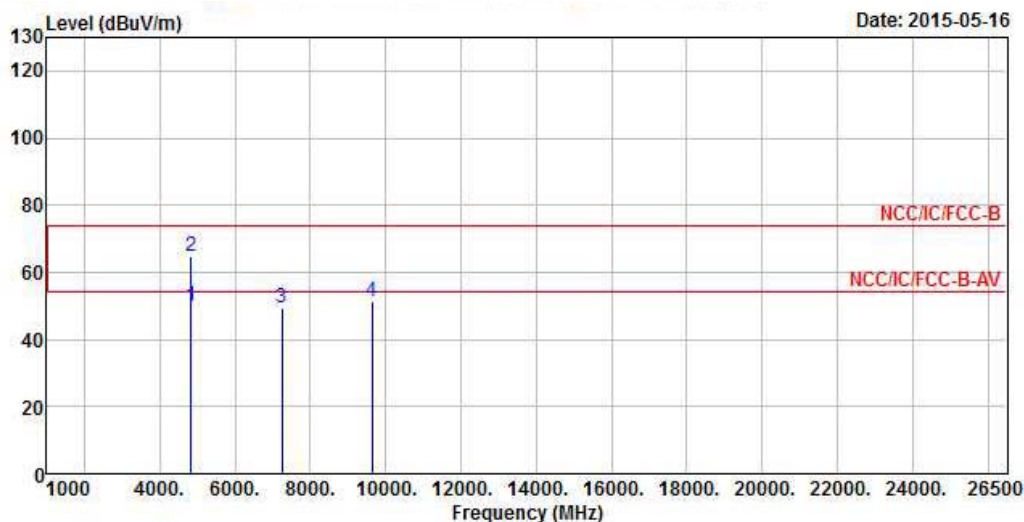
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (102.46 dBUV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT20	Test Freq. (MHz)	2412
Operating Mode	1	Polarization	V



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	4824.000	50.08	-3.92	54.00	45.71	34.33	4.70	34.66 Average
2	4824.000	64.66	-9.34	74.00	60.29	34.33	4.70	34.66 Peak
3	7236.000	49.35			43.01	35.90	5.37	34.93 Peak
4	9648.000	51.26			43.31	36.89	6.35	35.29 Peak

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

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

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

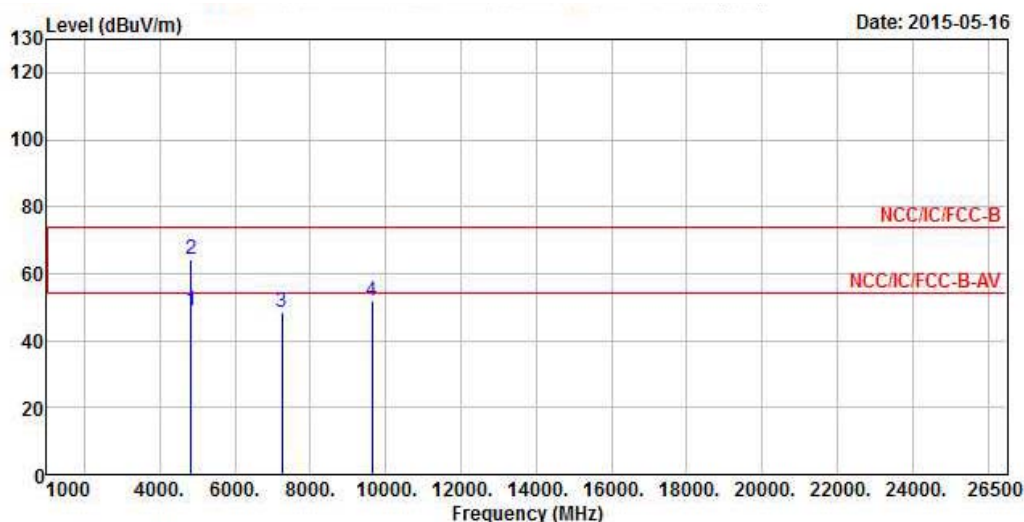
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (97.46dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT20	Test Freq. (MHz)	2412
Operating Mode	1	Polarization	H



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	4824.000	48.69	-5.31	54.00	44.32	34.33	4.70	34.66 Average
2	4824.000	64.12	-9.88	74.00	59.75	34.33	4.70	34.66 Peak
3	7236.000	48.43			42.09	35.90	5.37	34.93 Peak
4	9648.000	51.63			43.68	36.89	6.35	35.29 Peak

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

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

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

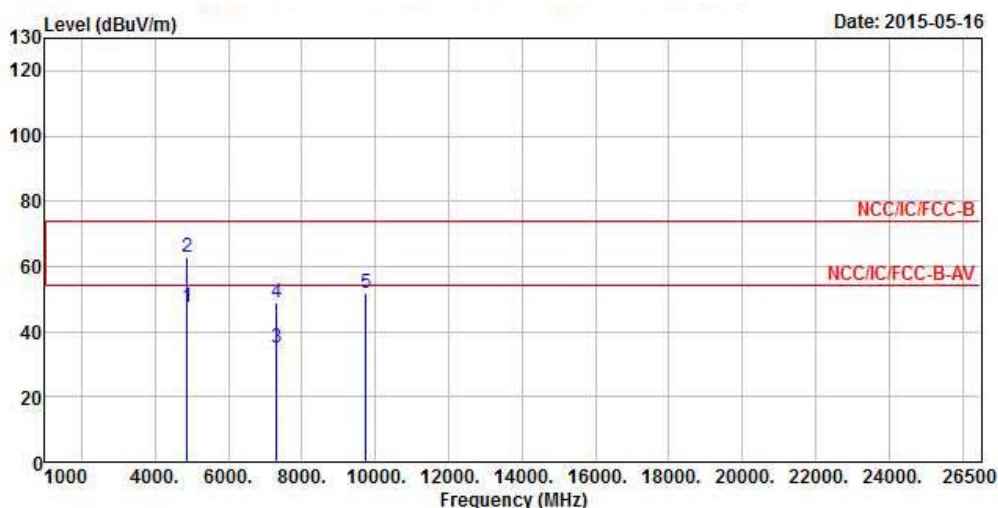
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (97.46 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT20	Test Freq. (MHz)	2437
Operating Mode	1	Polarization	V



	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB
1	4874.000	47.50	-6.50	54.00	43.10	34.32	4.73	34.65 Average
2	4874.000	62.61	-11.39	74.00	58.21	34.32	4.73	34.65 Peak
3	7311.000	34.87	-19.13	54.00	28.42	35.92	5.47	34.94 Average
4	7311.000	49.06	-24.94	74.00	42.61	35.92	5.47	34.94 Peak
5	9748.000	51.86			43.79	36.96	6.41	35.30 Peak

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

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

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

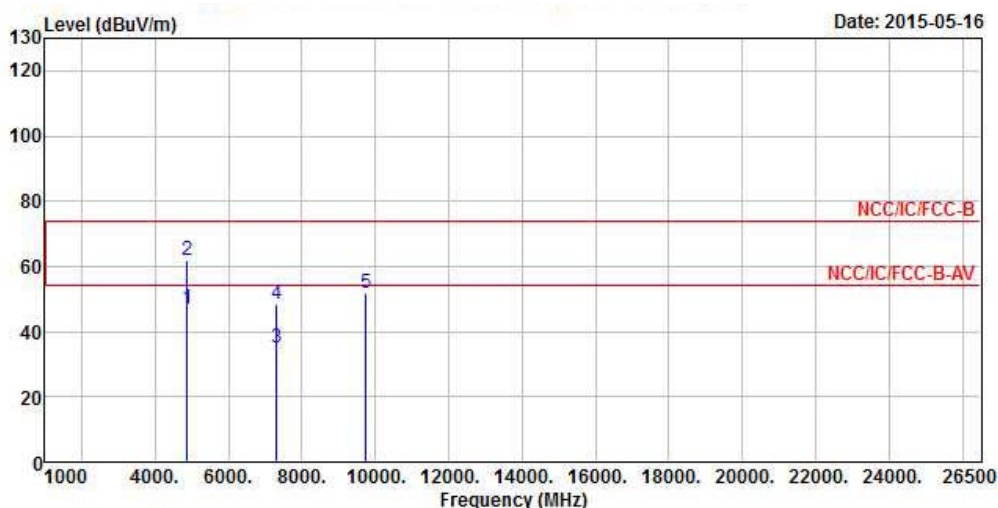
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (105.65 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT20	Test Freq. (MHz)	2437
Operating Mode	1	Polarization	H



	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor
			dB	dBuV/m	dBuV	dB/m	dB	dB
1	4874.000	47.02	-6.98	54.00	42.62	34.32	4.73	34.65
2	4874.000	61.91	-12.09	74.00	57.51	34.32	4.73	34.65
3	7311.000	34.85	-19.15	54.00	28.40	35.92	5.47	34.94
4	7311.000	48.64	-25.36	74.00	42.19	35.92	5.47	34.94
5	9748.000	52.01			43.94	36.96	6.41	35.30

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)

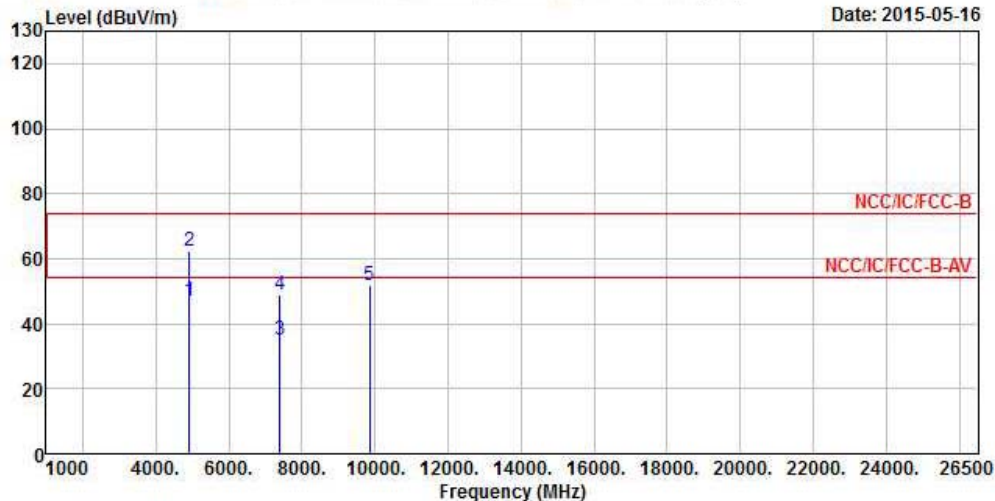
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (105.65 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT20	Test Freq. (MHz)	2462
Operating Mode	1	Polarization	V



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	4924.000	46.93	-7.07	54.00	42.46	34.31	4.79	34.63 Average
2	4924.000	62.20	-11.80	74.00	57.73	34.31	4.79	34.63 Peak
3	7386.000	34.98	-19.02	54.00	28.41	35.96	5.57	34.96 Average
4	7386.000	49.03	-24.97	74.00	42.46	35.96	5.57	34.96 Peak
5	9848.000	51.99			43.79	37.01	6.50	35.31 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)

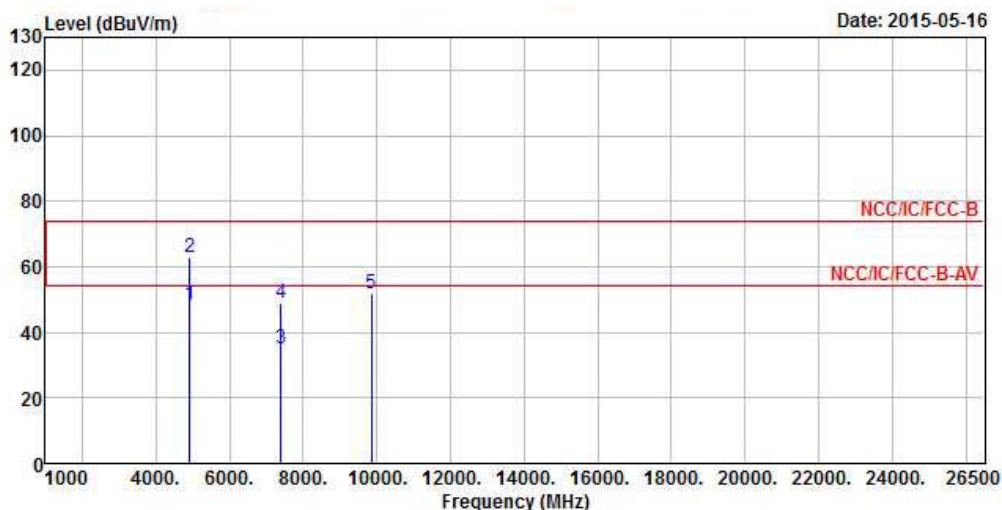
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (102.85 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT20	Test Freq. (MHz)	2462
Operating Mode	1	Polarization	H



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	4924.000	48.38	-5.62	54.00	43.91	34.31	4.79	34.63	Average
2	4924.000	62.86	-11.14	74.00	58.39	34.31	4.79	34.63	Peak
3	7386.000	34.96	-19.04	54.00	28.39	35.96	5.57	34.96	Average
4	7386.000	49.06	-24.94	74.00	42.49	35.96	5.57	34.96	Peak
5	9848.000	51.97			43.77	37.01	6.50	35.31	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)

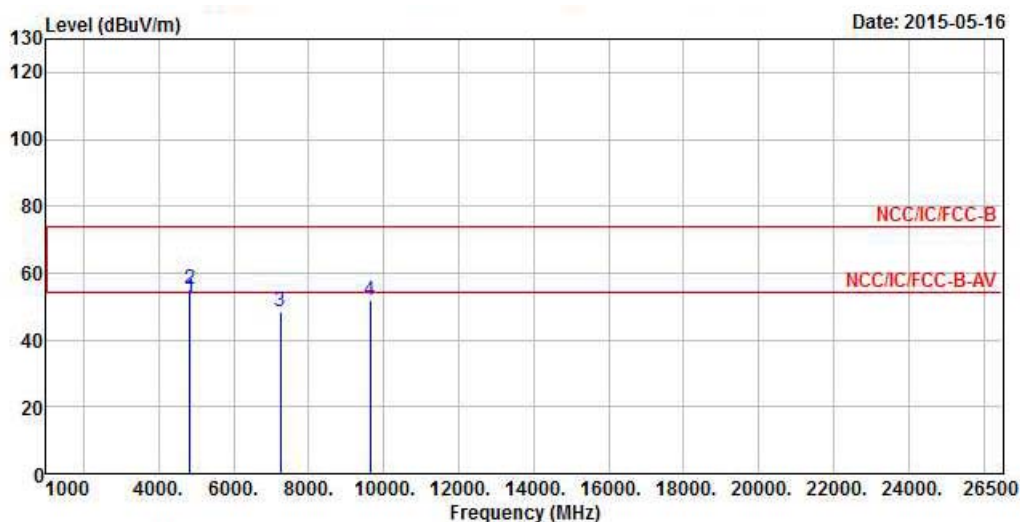
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (102.85 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11b	Test Freq. (MHz)	2412
Operating Mode	2	Polarization	V



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	4824.000	52.27	-1.73	54.00	47.90	34.33	4.70	34.66 Average
2	4824.000	55.12	-18.88	74.00	50.75	34.33	4.70	34.66 Peak
3	7236.000	48.68			42.34	35.90	5.37	34.93 Peak
4	9648.000	51.73			43.78	36.89	6.35	35.29 Peak

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

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

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

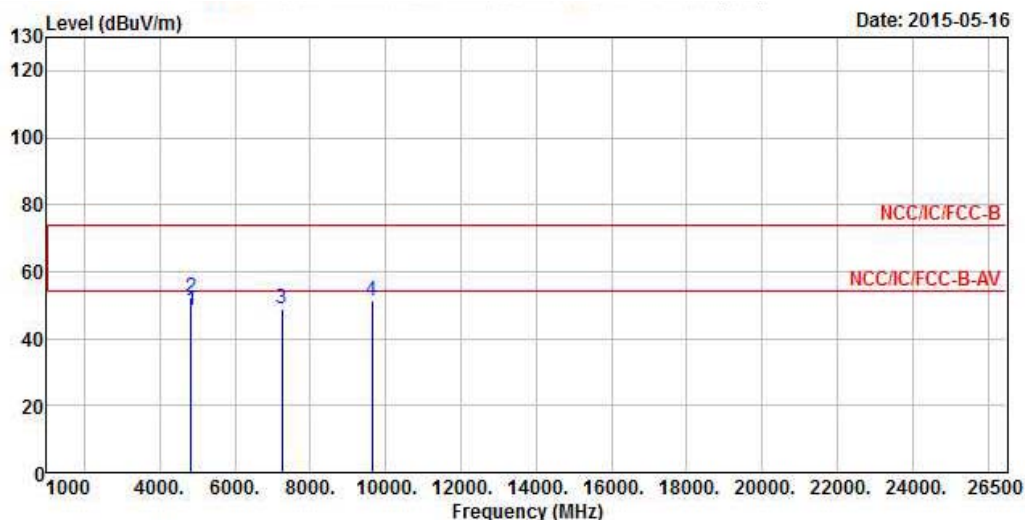
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (81.15 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11b	Test Freq. (MHz)	2412
Operating Mode	2	Polarization	H



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	4824.000	48.44	-5.56	54.00	44.07	34.33	4.70	34.66	Average
2	4824.000	52.41	-21.59	74.00	48.04	34.33	4.70	34.66	Peak
3	7236.000	48.95			42.61	35.90	5.37	34.93	Peak
4	9648.000	51.56			43.61	36.89	6.35	35.29	Peak

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

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

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

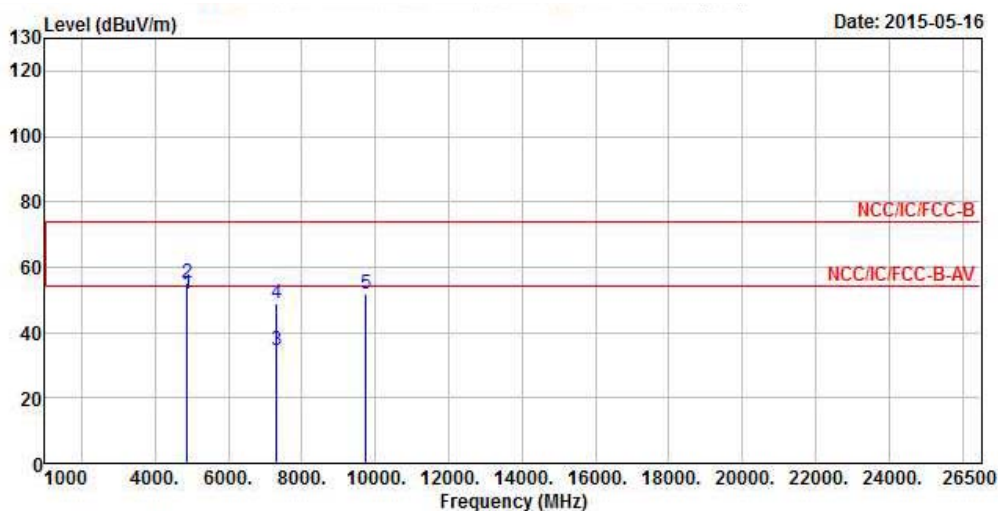
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (81.15 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11b	Test Freq. (MHz)	2437
Operating Mode	2	Polarization	V



	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB
1	4874.000	52.02	-1.98	54.00	47.62	34.32	4.73	34.65 Average
2	4874.000	55.20	-18.80	74.00	50.80	34.32	4.73	34.65 Peak
3	7311.000	34.66	-19.34	54.00	28.21	35.92	5.47	34.94 Average
4	7311.000	48.78	-25.22	74.00	42.33	35.92	5.47	34.94 Peak
5	9748.000	51.93			43.86	36.96	6.41	35.30 Peak

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

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

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

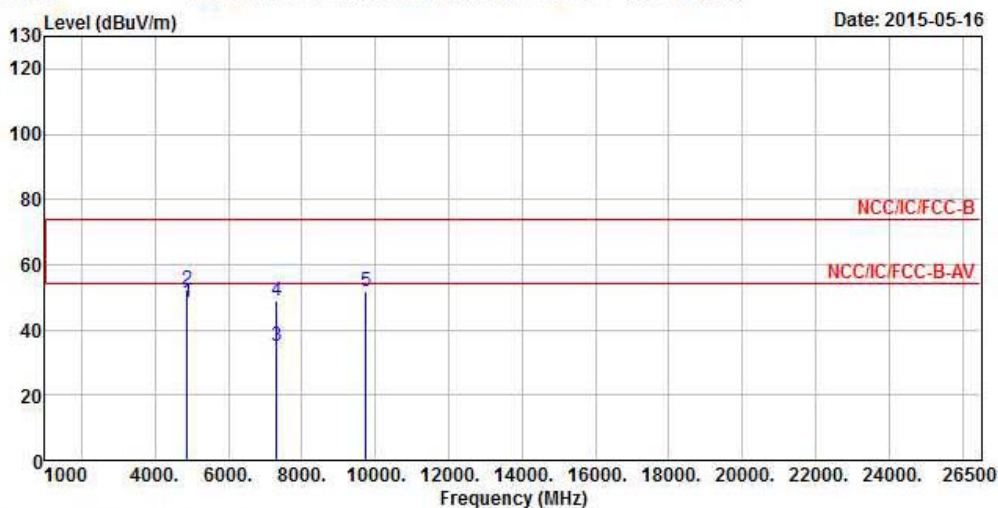
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (83.15 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11b	Test Freq. (MHz)	2437
Operating Mode	2	Polarization	H



	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB
1	4874.000	48.53	-5.47	54.00	44.13	34.32	4.73	34.65 Average
2	4874.000	52.44	-21.56	74.00	48.04	34.32	4.73	34.65 Peak
3	7311.000	34.88	-19.12	54.00	28.43	35.92	5.47	34.94 Average
4	7311.000	48.83	-25.17	74.00	42.38	35.92	5.47	34.94 Peak
5	9748.000	51.65			43.58	36.96	6.41	35.30 Peak

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

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

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

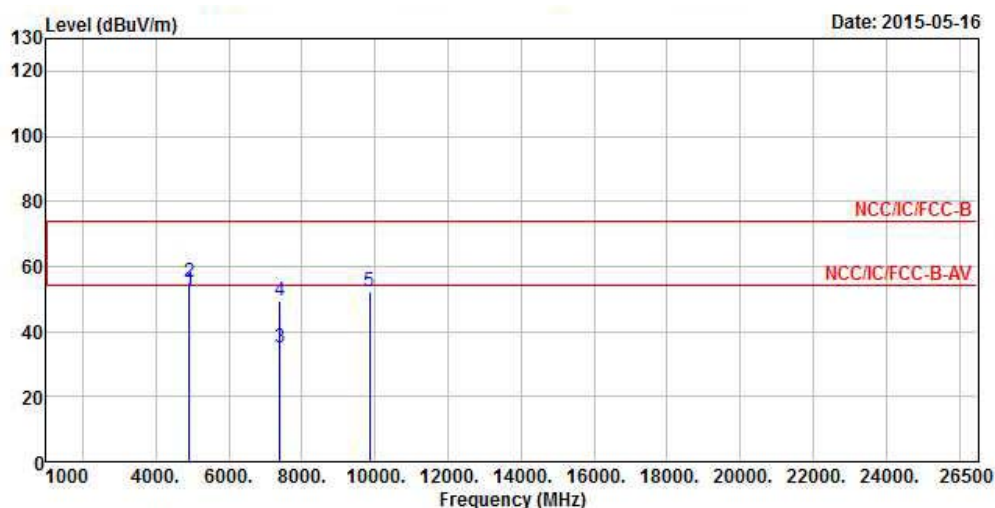
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (83.15 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11b	Test Freq. (MHz)	2462
Operating Mode	2	Polarization	V



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	4924.000	52.46	-1.54	54.00	47.99	34.31	4.79	34.63	Average
2	4924.000	55.32	-18.68	74.00	50.85	34.31	4.79	34.63	Peak
3	7386.000	34.89	-19.11	54.00	28.32	35.96	5.57	34.96	Average
4	7386.000	49.25	-24.75	74.00	42.68	35.96	5.57	34.96	Peak
5	9848.000	52.17			43.97	37.01	6.50	35.31	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)

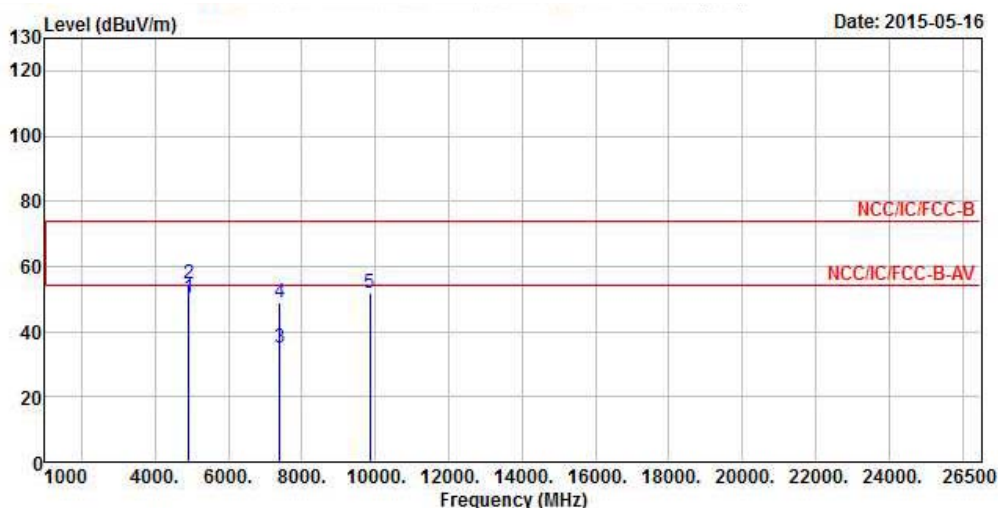
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (84.64 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11b	Test Freq. (MHz)	2462
Operating Mode	2	Polarization	H



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	4924.000	50.32	-3.68	54.00	45.85	34.31	4.79	34.63 Average
2	4924.000	54.60	-19.40	74.00	50.13	34.31	4.79	34.63 Peak
3	7386.000	34.93	-19.07	54.00	28.36	35.96	5.57	34.96 Average
4	7386.000	48.89	-25.11	74.00	42.32	35.96	5.57	34.96 Peak
5	9848.000	51.86			43.66	37.01	6.50	35.31 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)

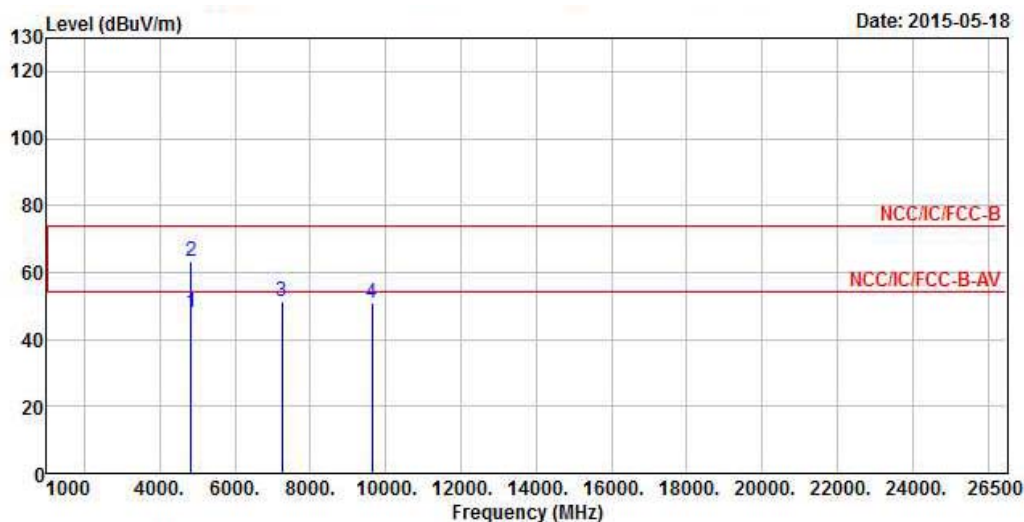
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (84.64 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11g	Test Freq. (MHz)	2412
Operating Mode	2	Polarization	V



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	4824.000	47.88	-6.12	54.00	43.51	34.33	4.70	34.66 Average
2	4824.000	63.22	-10.78	74.00	58.85	34.33	4.70	34.66 Peak
3	7236.000	51.35			45.01	35.90	5.37	34.93 Peak
4	9648.000	50.88			42.93	36.89	6.35	35.29 Peak

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

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

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

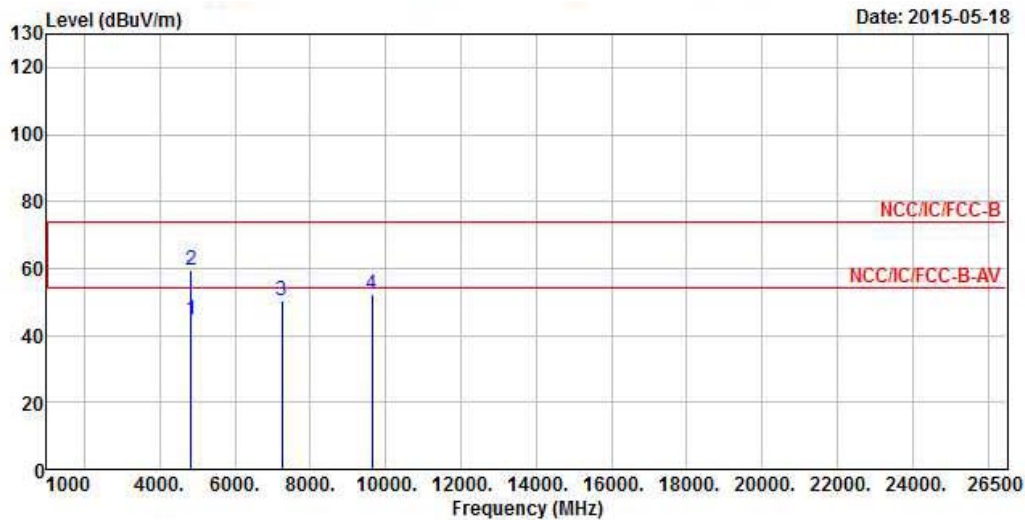
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (88.23 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11g	Test Freq. (MHz)	2412
Operating Mode	2	Polarization	H



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamplifier Loss	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	4824.000	44.83	-9.17	54.00	40.46	34.33	4.70	34.66 Average
2	4824.000	59.36	-14.64	74.00	54.99	34.33	4.70	34.66 Peak
3	7236.000	50.50			44.16	35.90	5.37	34.93 Peak
4	9648.000	52.26			44.31	36.89	6.35	35.29 Peak

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

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

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

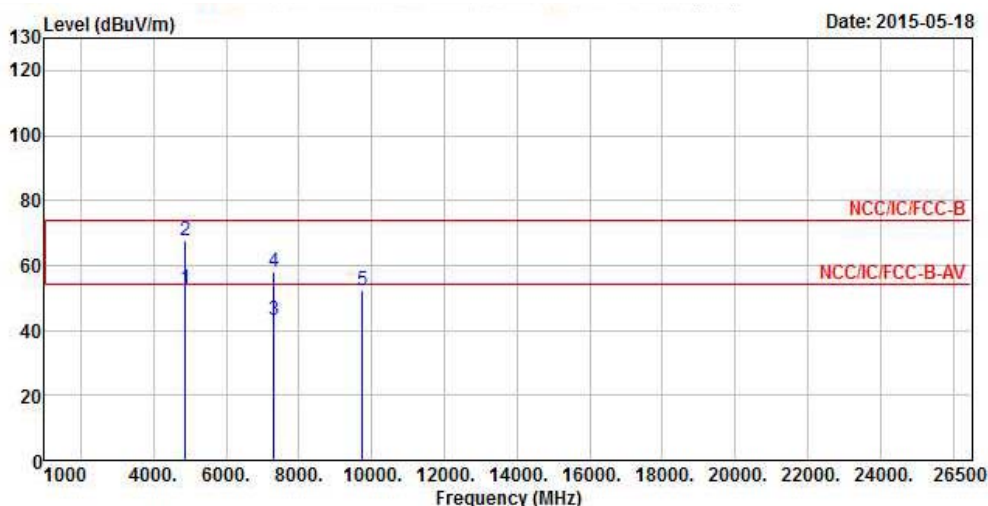
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (88.23 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11g	Test Freq. (MHz)	2437
Operating Mode	2	Polarization	V



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	4874.000	52.53	-1.47	54.00	48.13	34.32	4.73	34.65	Average
2	4874.000	67.77	-6.23	74.00	63.37	34.32	4.73	34.65	Peak
3	7311.000	43.01	-10.99	54.00	36.56	35.92	5.47	34.94	Average
4	7311.000	57.92	-16.08	74.00	51.47	35.92	5.47	34.94	Peak
5	9748.000	52.28			44.21	36.96	6.41	35.30	Peak

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

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

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

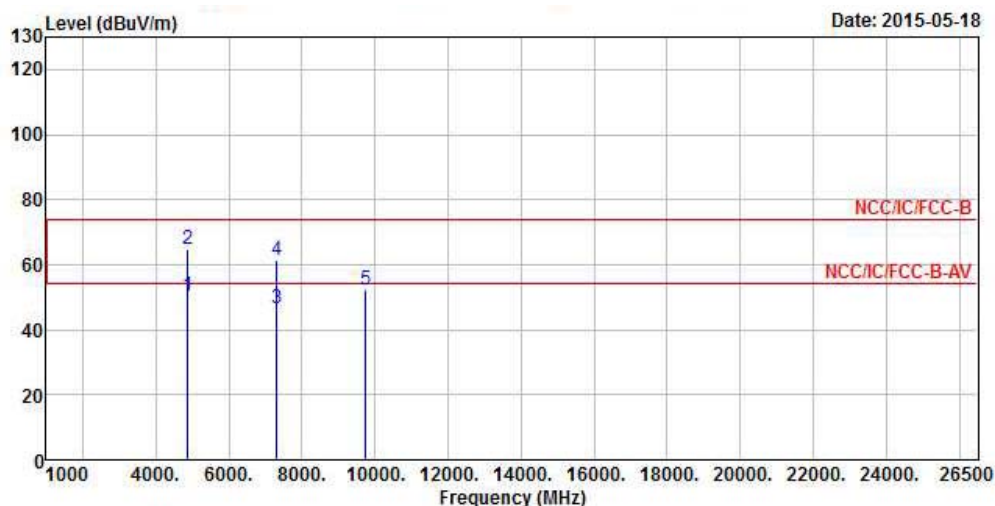
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (96.97 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11g	Test Freq. (MHz)	2437
Operating Mode	2	Polarization	H



	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB
1	4874.000	50.15	-3.85	54.00	45.75	34.32	4.73	34.65 Average
2	4874.000	64.80	-9.20	74.00	60.40	34.32	4.73	34.65 Peak
3	7311.000	46.62	-7.38	54.00	40.17	35.92	5.47	34.94 Average
4	7311.000	61.32	-12.68	74.00	54.87	35.92	5.47	34.94 Peak
5	9748.000	52.08			44.01	36.96	6.41	35.30 Peak

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

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

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

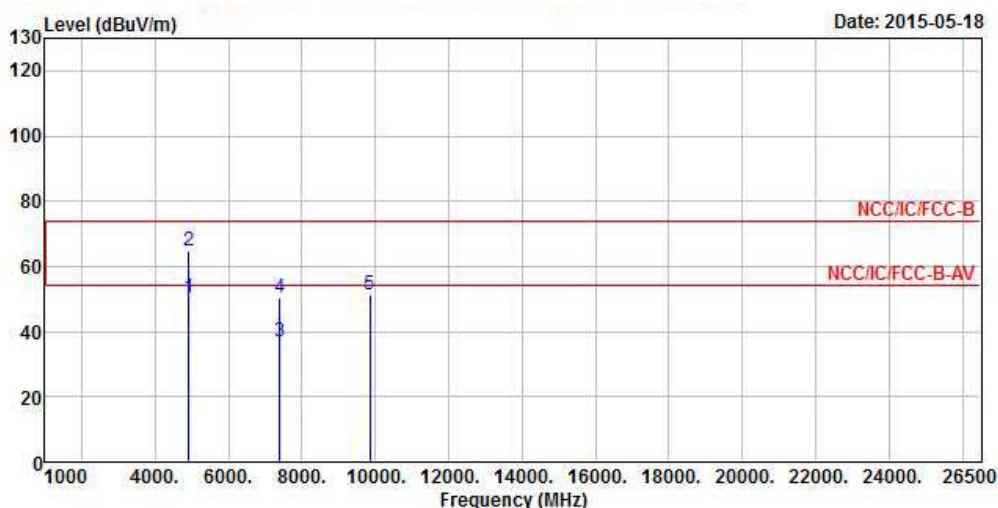
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (96.97 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11g	Test Freq. (MHz)	2462
Operating Mode	2	Polarization	V



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	4924.000	50.41	-3.59	54.00	45.94	34.31	4.79	34.63 Average
2	4924.000	64.78	-9.22	74.00	60.31	34.31	4.79	34.63 Peak
3	7386.000	36.73	-17.27	54.00	30.16	35.96	5.57	34.96 Average
4	7386.000	50.56	-23.44	74.00	43.99	35.96	5.57	34.96 Peak
5	9848.000	51.45			43.25	37.01	6.50	35.31 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)

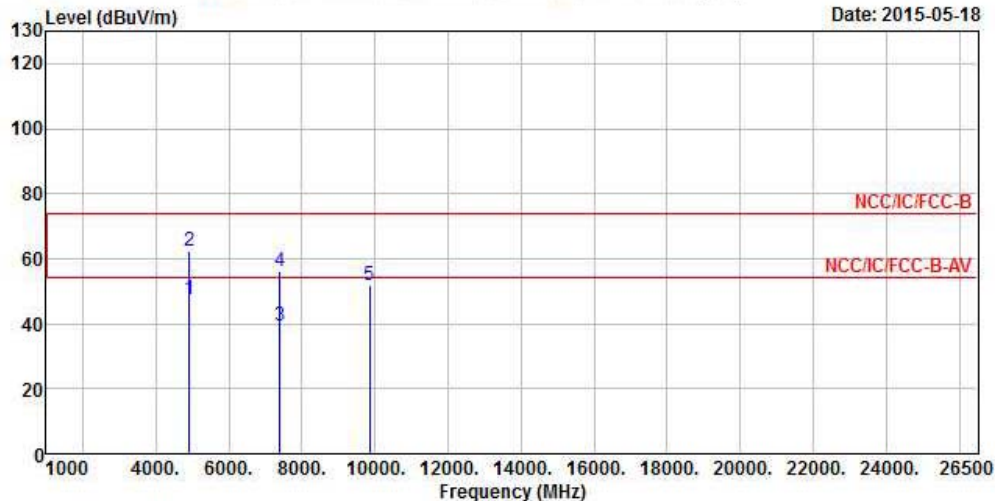
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (96.17 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11g	Test Freq. (MHz)	2462
Operating Mode	2	Polarization	H



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Remark
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB
1	4924.000	47.59	-6.41	54.00	43.12	34.31	4.79	34.63 Average
2	4924.000	62.59	-11.41	74.00	58.12	34.31	4.79	34.63 Peak
3	7386.000	39.31	-14.69	54.00	32.74	35.96	5.57	34.96 Average
4	7386.000	55.89	-18.11	74.00	49.32	35.96	5.57	34.96 Peak
5	9848.000	51.78			43.58	37.01	6.50	35.31 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)

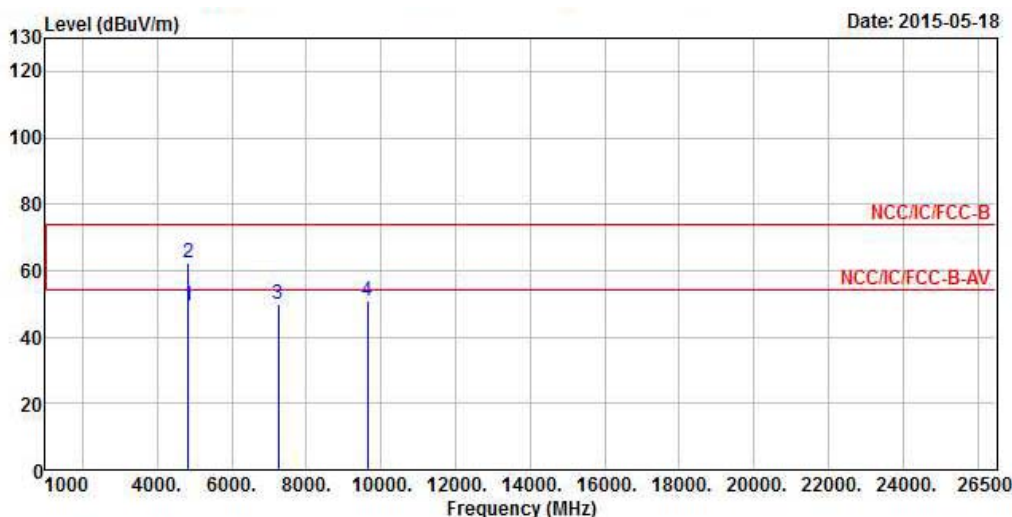
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (96.17 dBUV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT20	Test Freq. (MHz)	2412
Operating Mode	2	Polarization	V



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	4824.000	49.33	-4.67	54.00	44.96	34.33	4.70	34.66 Average
2	4824.000	62.48	-11.52	74.00	58.11	34.33	4.70	34.66 Peak
3	7236.000	49.79			43.45	35.90	5.37	34.93 Peak
4	9648.000	50.95			43.00	36.89	6.35	35.29 Peak

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

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

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

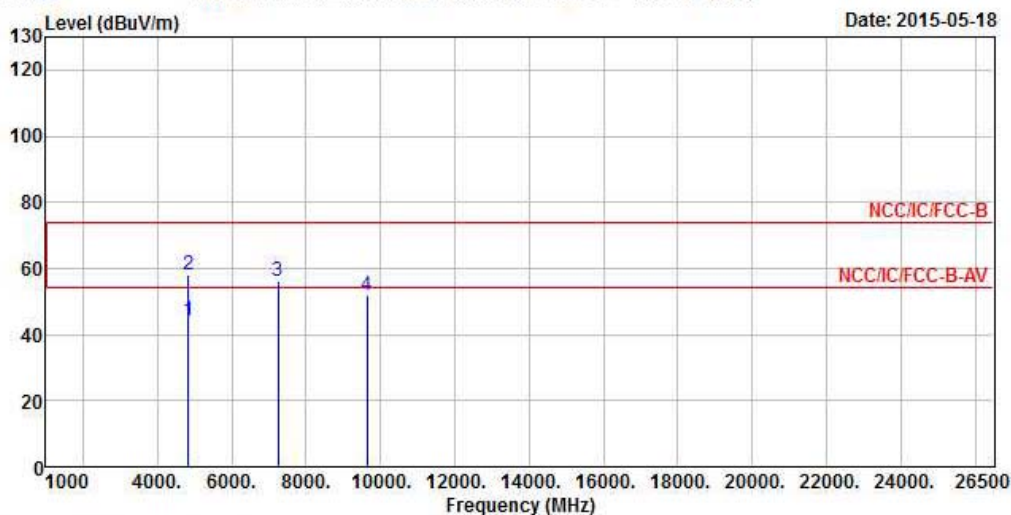
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (91.82dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT20	Test Freq. (MHz)	2412
Operating Mode	2	Polarization	H



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	4824.000	43.91	-10.09	54.00	39.54	34.33	4.70	34.66 Average
2	4824.000	58.16	-15.84	74.00	53.79	34.33	4.70	34.66 Peak
3	7236.000	56.34			50.00	35.90	5.37	34.93 Peak
4	9648.000	51.58			43.63	36.89	6.35	35.29 Peak

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

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

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

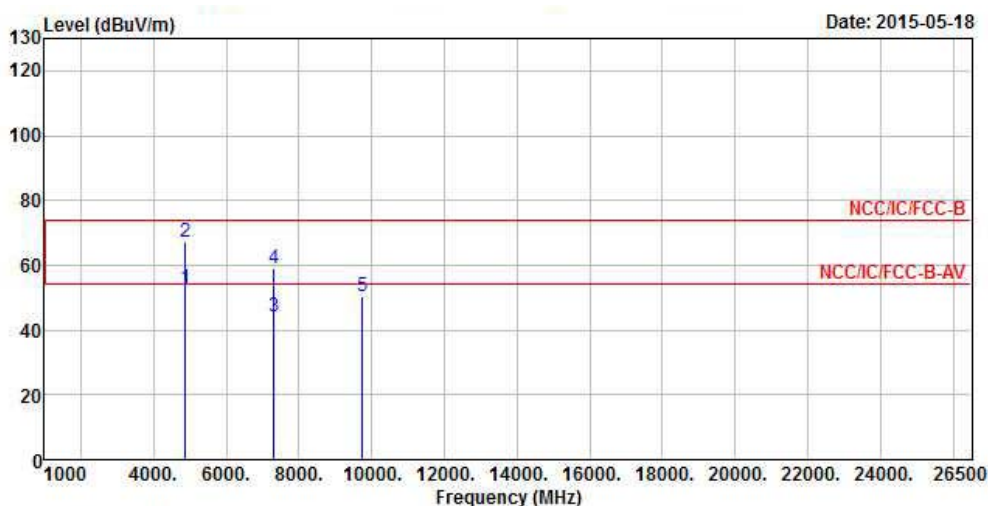
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (91.82 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT20	Test Freq. (MHz)	2437
Operating Mode	2	Polarization	V



	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB
1	4874.000	52.95	-1.05	54.00	48.55	34.32	4.73	34.65 Average
2	4874.000	67.19	-6.81	74.00	62.79	34.32	4.73	34.65 Peak
3	7311.000	44.37	-9.63	54.00	37.92	35.92	5.47	34.94 Average
4	7311.000	59.23	-14.77	74.00	52.78	35.92	5.47	34.94 Peak
5	9748.000	50.16			42.09	36.96	6.41	35.30 Peak

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

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

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

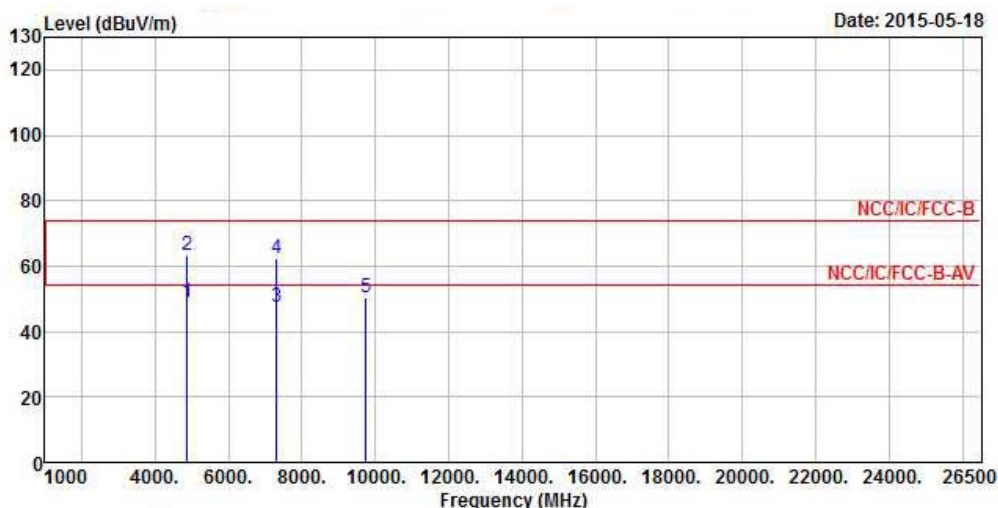
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (97.59 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT20	Test Freq. (MHz)	2437
Operating Mode	2	Polarization	H



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	4874.000	49.14	-4.86	54.00	44.74	34.32	4.73	34.65 Average
2	4874.000	63.25	-10.75	74.00	58.85	34.32	4.73	34.65 Peak
3	7311.000	47.69	-6.31	54.00	41.24	35.92	5.47	34.94 Average
4	7311.000	62.13	-11.87	74.00	55.68	35.92	5.47	34.94 Peak
5	9748.000	50.56			42.49	36.96	6.41	35.30 Peak

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

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

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

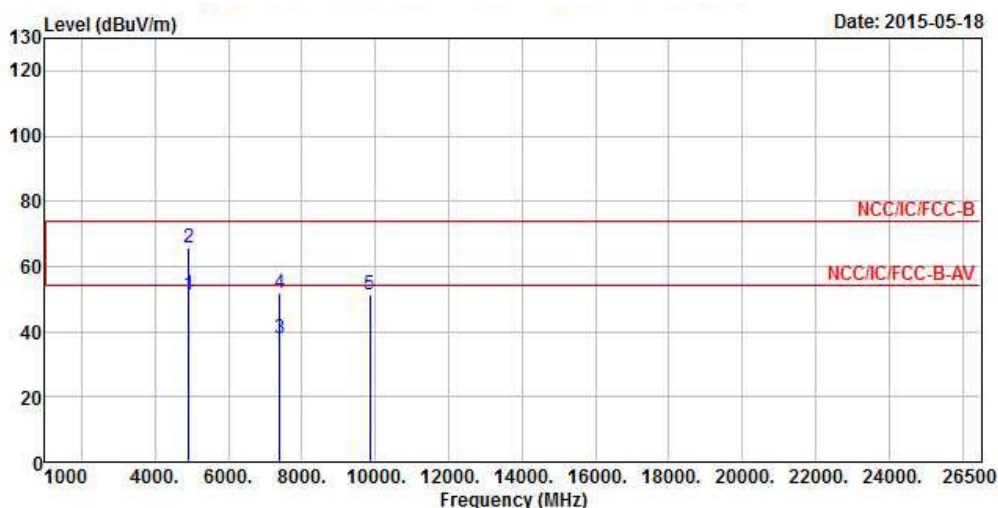
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (97.59 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT20	Test Freq. (MHz)	2462
Operating Mode	2	Polarization	V



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	4924.000	51.51	-2.49	54.00	47.04	34.31	4.79	34.63	Average
2	4924.000	65.57	-8.43	74.00	61.10	34.31	4.79	34.63	Peak
3	7386.000	37.92	-16.08	54.00	31.35	35.96	5.57	34.96	Average
4	7386.000	51.83	-22.17	74.00	45.26	35.96	5.57	34.96	Peak
5	9848.000	51.19			42.99	37.01	6.50	35.31	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)

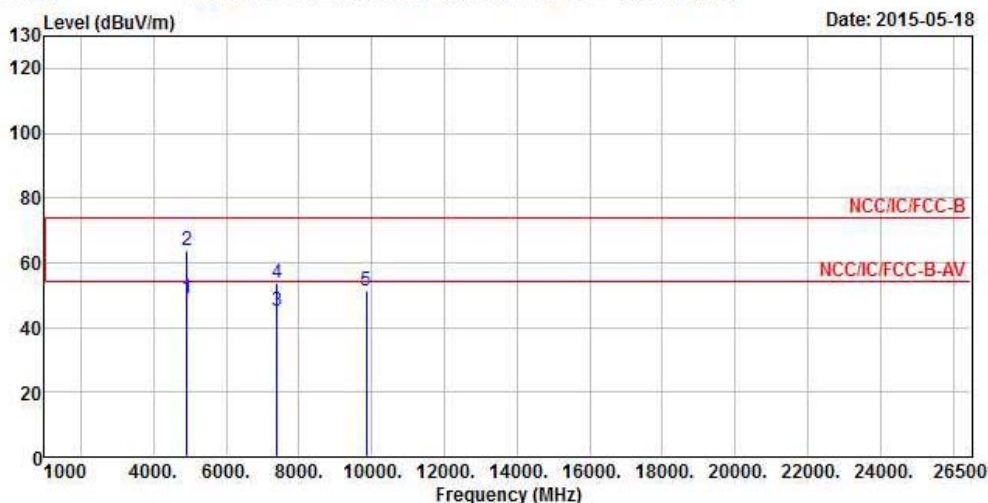
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (97.89 dBuV/m).

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

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT20	Test Freq. (MHz)	2462
Operating Mode	2	Polarization	H



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	4924.000	49.15	-4.85	54.00	44.68	34.31	4.79	34.63	Average
2	4924.000	63.92	-10.08	74.00	59.45	34.31	4.79	34.63	Peak
3	7386.000	45.03	-8.97	54.00	38.46	35.96	5.57	34.96	Average
4	7386.000	53.69	-20.31	74.00	47.12	35.96	5.57	34.96	Peak
5	9848.000	51.18			42.98	37.01	6.50	35.31	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 (97.89 dBuV/m).

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

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
DC Power Source	G.W.	GPC-6030D	C671845	DC 1V ~ 60V	Jul. 26, 2014	AC Conduction

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

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	R&S	FSV 40	101500	9KHz~40GHz	May 05, 2015	RF Conducted
DC Power Source	G.W.	GPC-6030D	C671845	DC 1V ~ 60V	Jul. 26, 2014	RF Conducted
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	Jul. 31, 2014	RF Conducted
Power Sensor	Anritsu	MA2411B	0917017	300MHz ~ 40GHz	Feb. 17, 2015	RF Conducted
Power Meter	Anritsu	ML2495A	0949003	300MHz ~ 40GHz	Feb. 17, 2015	RF Conducted

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

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	R&S	FSP40	100593	9kHz ~ 40GHz	Oct. 02, 2014	Radiated Emission
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz ~ 1GHz 3m	May 03, 2015	Radiated Emission
Amplifier	Agilent	8447D	2944A11149	100kHz ~ 1.3GHz	Jul. 22, 2014	Radiated Emission
Amplifier	Agilent	8449B	3008A02373	1GHz ~ 26.5GHz	Aug. 28, 2014	Radiated Emission
Horn Antenna	ETS-LINDGREN	3117	00091920	1GHz ~ 18GHz	Nov. 28, 2014	Radiated Emission
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170614	18GHz ~ 40GHz	Dec. 29, 2014	Radiated Emission
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	Nov. 08, 2014	Radiated Emission
RF Cable-high	SUHNER	SUCOFLEX106	03CH02-HY	1GHz ~ 40GHz	Mar. 04, 2015	Radiated Emission
Bilog Antenna	SCHAFFNER	CBL61128	2723	30MHz ~ 2GHz	Sep 20, 2014	Radiated Emission
Turn Table	Chaintek Instruments	3000	MF7802058	0~ 360 degree	N/A	Radiated Emission
Antenna Mast	MF	MF7802	MF780208205	1 ~ 4 m	N/A	Radiated Emission
DC Power Source	G.W.	GPC-6030D	C671845	DC 1V ~ 60V	Jul. 26, 2014	Radiated Emission

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

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Loop Antenna	TESEQ	HLA 6120	31244	9 kHz~30 MHz	Feb. 02, 2015	Radiation

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