

# FCC Test Report

**Applicant** : BROADCOM CORPORATION  
**Equipment** : 802.11abgn WLAN + BLUETOOTH PCI-E MINICARD  
**Brand Name** : Broadcom  
**Model No.** : BCM943228HMB  
**FCC ID** : QDS-BRCM1058  
**Standard** : FCC Part 15 Subpart C §15.247  
**CLASSIFICATION** : (DTS) Digital Transmission System  
**Filling Type** : Class II Permissive Change

The product sample received on Dec. 19, 2013 and completely tested on Jan. 24, 2014. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2009 and shown compliance with the applicable technical standards.

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

Reviewed by:

  
**Wayne Hsu / Assistant Manager**



## Table of Contents

<b>1</b>	<b>GENERAL DESCRIPTION .....</b>	<b>5</b>
1.1	Information.....	5
1.2	Testing Applied Standards .....	8
1.3	Testing Location Information .....	8
1.4	Measurement Uncertainty .....	9
<b>2</b>	<b>TEST CONFIGURATION OF EUT .....</b>	<b>10</b>
2.1	The Worst Case Modulation Configuration .....	10
2.2	The Worst Case Measurement Configuration.....	10
2.3	Test Setup Diagram .....	11
<b>3</b>	<b>TRANSMITTER TEST RESULT .....</b>	<b>12</b>
3.1	RF Output Power.....	12
3.2	Transmitter Bandedge Emissions .....	15
3.3	Transmitter Unwanted Emissions.....	19
<b>4</b>	<b>TEST EQUIPMENT AND CALIBRATION DATA .....</b>	<b>40</b>
<b>APPENDIX A. TEST PHOTOS</b>		
<b>APPENDIX B. PHOTOGRAPHS OF EUT</b>		



### Summary of Test Result

Conformance Test Specifications					
Report Clause	Ref. Std. Clause	Description	Measured	Limit	Result
1.1.3	15.203	Antenna Requirement	Antenna connector mechanism complied	FCC 15.203	Complied
3.1	15.247(b)	RF Output Power (Maximum Peak Conducted Output Power)	Power [dBm]:25.75	Power [dBm]:30	Complied
3.2	15.247(c)	Transmitter Bandedge Emissions	Non-Restricted Bands: 5718.60MHz: 29.95dB	Non-Restricted Bands: > 20 dBc Restricted Bands: FCC 15.209	Complied
3.3	15.247(c)	Transmitter Radiated Unwanted Emissions	Restricted Bands [dBuV/m at 3m]: 17475.000MHz 58.31 (Margin 5.23dB) - Average 72.55 (Margin 10.99dB) - Peak	Non-Restricted Bands: > 20 dBc Restricted Bands: FCC 15.209	Complied



# 1 General Description

## 1.1 Information

### 1.1.1 Feature of Equipment Under Test

Product Feature	
Equipment	802.11abgn WLAN + BLUETOOTH PCI-E MINICARD
Brand Name	Broadcom
Model Name.	BCM943228HMB
FCC ID	QDS-BRCM1058
Installed into host	Equipment: Tablet PC Brand Name: Lenovo Marketing name: Lenovo Miix 2 11
EUT supports Radios application	WLAN 11a/b/g/n HT20 HT40 Bluetooth v2.1 + EDR Bluetooth v4.0
EUT Stage	Production Unit

### 1.1.2 RF General Information

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N <sub>TX</sub> )	RF Output Power (dBm)
5725-5850	a	5745-5825	149-165 [5]	1	23.80
5725-5850	n(HT20)	5745-5825	149-165 [5]	2	25.75
5725-5850	n(HT40)	5755-5795	151-159 [2]	2	24.63

Note 1: RF output power specifies that Maximum Peak Conducted Output Power.  
 Note 2: 802.11a/n uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.  
 Note 3: 802.11ac uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.



1.1.3 Antenna Information

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

Antenna Information			
Antenna 1	Manufacturer	WNC	
	P/N	Main:025.9000X.001	Aux: 025.9000Y.001
	Antenna Type	Main: PIFA Antenna	Aux: PIFA Antenna
	Peak gain	Main Antenna : WLAN(2.4G):1.87 dBi WLAN(5G):-0.16 dBi	Aux Antenna : Bluetooth:0.69 dBi WLAN(2.4G):0.69 dBi WLAN(5G):2.73 dBi
Antenna 2	Manufacturer	HT	
	P/N	Main:025.9000X.0011	Aux:025.9000Y.0011
	Antenna Type	Main:PIFA Antenna	Aux:PIFA Antenna
	Peak gain	Main Antenna : WLAN(2.4G):-1.63dBi WLAN(5G):1.84 dBi	Aux Antenna : Bluetooth:-0.35 dBi WLAN(2.4G):-0.35 dBi WLAN(5G):1.07dBi

Note: Performed the worst configuration for higher gain was test in final test report.

Directional Gain (DG) Result				
Modulation Mode	N <sub>TX</sub>	N <sub>SS</sub>	Array Gain (dB)	Power DG (dBi)
11a,6-54Mbps	1	1	0	-0.16
HT20,M0-15	2	1/2	0	1.52
HT40,M0-15	2	1/2	0	1.52

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



1.1.4 Test Signal Duty Cycle

Operated Mode for Worst Duty Cycle	
<input type="checkbox"/> Operated normally mode for worst duty cycle	
<input checked="" type="checkbox"/> Operated test mode for worst duty cycle	
Test Signal Duty Cycle (x)	Power Duty Factor [dB] – (10 log 1/x)
<input checked="" type="checkbox"/> 95.03% - IEEE 802.11a	0.22
<input checked="" type="checkbox"/> 90.56% - IEEE 802.11n (HT20)	0.43
<input checked="" type="checkbox"/> 83.56% - IEEE 802.11n (HT40)	0.78

1.1.5 EUT Operational Condition

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

## 1.2 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 789033
- ◆ FCC KDB 644545 D01
- ◆ FCC KDB 644545 D02
- ◆ FCC KDB 662911

## 1.3 Testing Location Information

Testing Location			
<input checked="" type="checkbox"/>	HWA YA	ADD : No. 52, Hwa Ya 1 <sup>st</sup> 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
RF Conducted	TH02-HY	Alex	24~26°C / 45~49%
Radiated Emission	03CH03-HY	Leo	21.4°C / 35%



### 1.4 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
RF output power, conducted		±0.63 dB
Unwanted emissions, conducted	9 – 150 kHz	±0.38 dB
	0.15 – 30 MHz	±0.42 dB
	30 – 1000 MHz	±0.51 dB
	1 – 18 GHz	±0.67 dB
	18 – 40 GHz	±0.83 dB
	40 – 200 GHz	N/A
All emissions, radiated	9 – 150 kHz	±2.49 dB
	0.15 – 30 MHz	±2.28 dB
	30 – 1000 MHz	±2.56 dB
	1 – 18 GHz	±3.59 dB
	18 – 40 GHz	±3.82 dB
	40 – 200 GHz	N/A
Temperature		±0.8 °C
Humidity		±3 %
DC and low frequency voltages		±3 %
Time		±1.42 %
Duty Cycle		±1.42 %




## 2 Test Configuration of EUT

### 2.1 The Worst Case Modulation Configuration

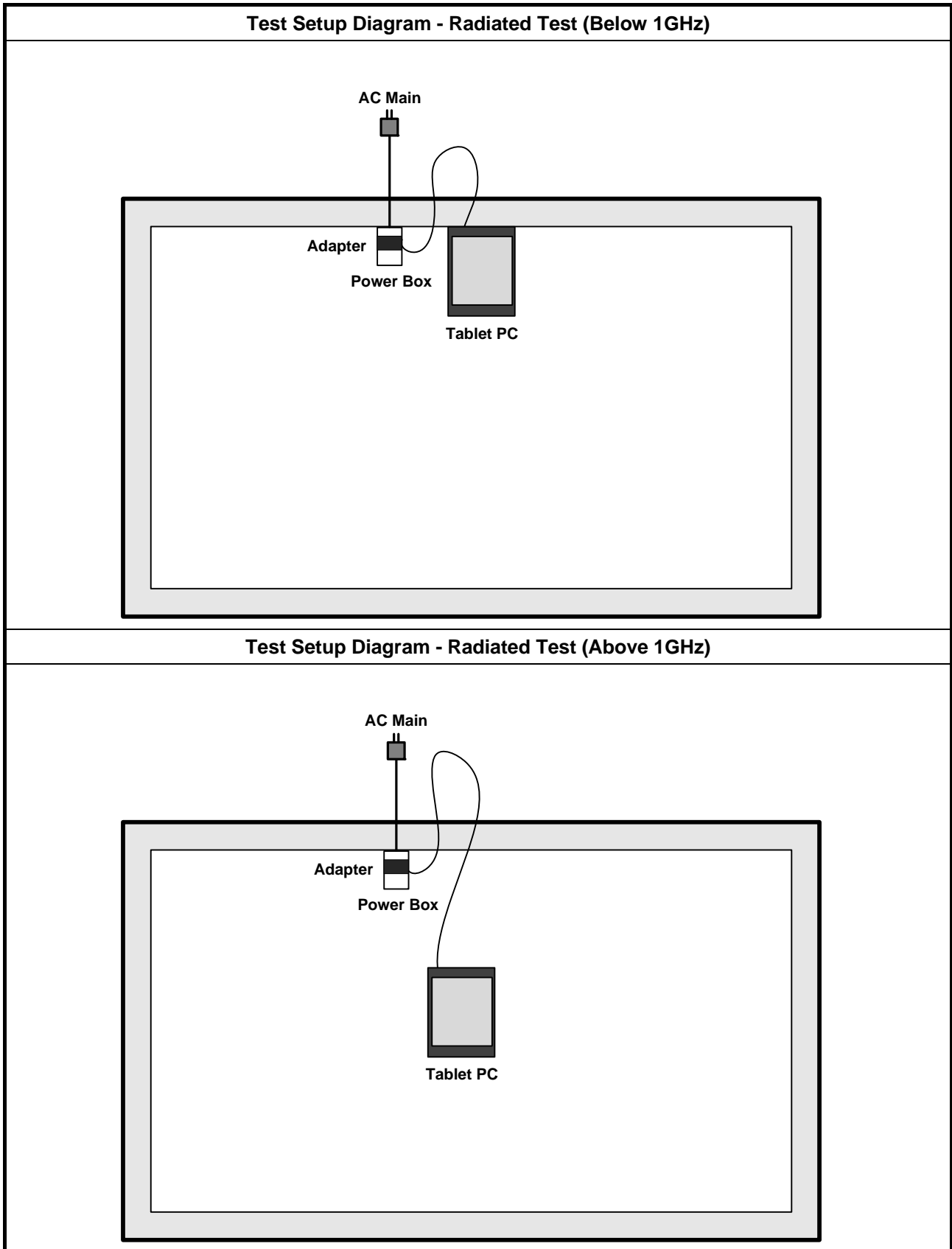
Worst Modulation Used for Conformance Testing			
Modulation Mode	Transmit Chains (N <sub>TX</sub> )	Data Rate / MCS	Worst Data Rate / MCS
11a,6-54Mbps	1	6-54 Mbps	6 Mbps
HT20,M0-15	2	M0-15	MCS 0
HT40,M0-15	2	M0-15	MCS 0

### 2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	RF Output Power
Test Condition	Conducted measurement at transmit chains
Modulation Mode	11a, HT20, HT40

The Worst Case Mode for Following Conformance Tests			
Tests Item	Transmitter Radiated Unwanted Emissions Transmitter Radiated Bandedge Emissions		
Test Condition	Radiated measurement		
User Position	<input type="checkbox"/> EUT will be placed in fixed position.		
	<input checked="" type="checkbox"/> EUT will be placed in mobile position and operating multiple positions. EUT shall be performed two orthogonal planes. The worst planes is Z.		
	<input type="checkbox"/> 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	<input checked="" type="checkbox"/> 1. AC Power & Radio link (WLAN)		
Modulation Mode	11a, HT20, HT40		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			

## 2.3 Test Setup Diagram





### 3 Transmitter Test Result

#### 3.1 RF Output Power

##### 3.1.1 RF Output Power Limit

RF Output Power Limit	
<b>Maximum Peak Conducted Output Power or Maximum Conducted Output Power Limit</b>	
<input checked="" type="checkbox"/>	5725-5850 MHz Band:
<input checked="" type="checkbox"/>	If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)
<input checked="" type="checkbox"/>	Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm
<input type="checkbox"/>	Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30$ dBm
<b>e.i.r.p. Power Limit:</b>	
<input checked="" type="checkbox"/>	5725-5850 MHz Band
<input checked="" type="checkbox"/>	Point-to-multipoint systems (P2M): $P_{eirp} \leq 36$ dBm (4 W)
<input type="checkbox"/>	Point-to-point systems (P2P): N/A
$P_{Out}$ = 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.	

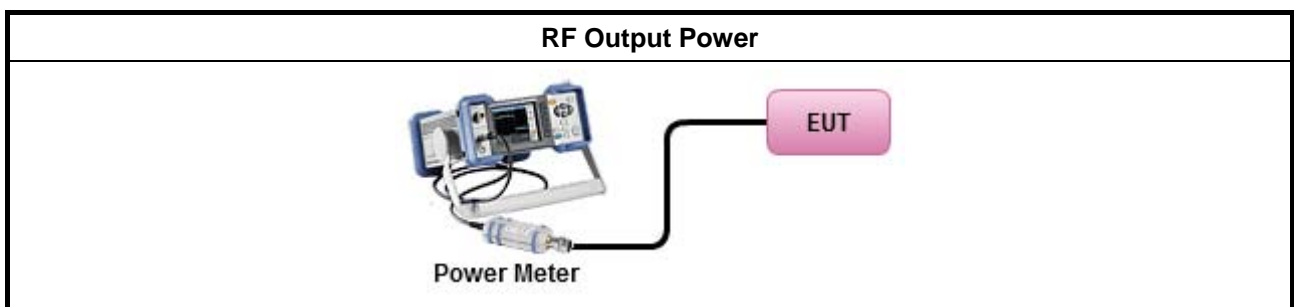
##### 3.1.2 Measuring Instruments

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

### 3.1.3 Test Procedures

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

### 3.1.4 Test Setup





3.1.5 Test Result of Maximum Peak Conducted Output Power

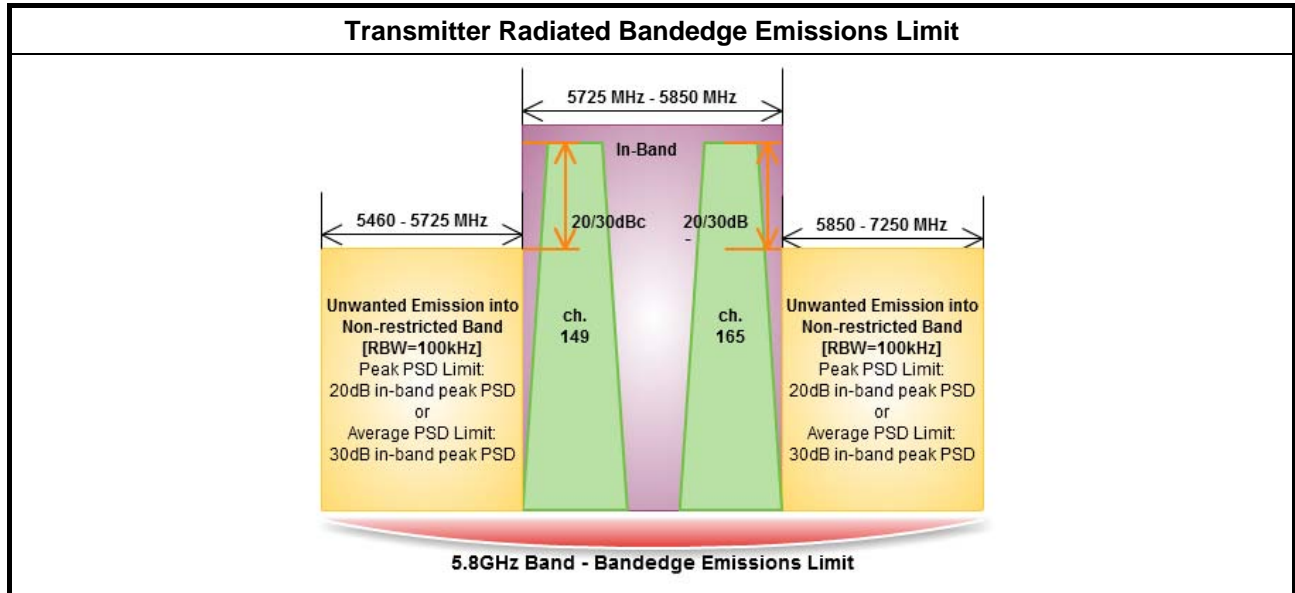
Maximum Peak Conducted Output Power Result									
Condition			RF Output Power (dBm)						
Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	Chain Port 1	Chain Port 2	Sum Chain	Power Limit	DG (dBi)	EIRP Power	EIRP Limit
11a	1	5745	23.55	-	23.55	30	-0.16	23.39	36
11a	1	5785	23.65	-	23.65	30	-0.16	23.49	36
11a	1	5825	23.80	-	23.80	30	-0.16	23.64	36
HT20	2	5745	22.03	22.36	25.21	30	1.52	26.73	36
HT20	2	5785	22.86	22.52	25.70	30	1.52	27.22	36
HT20	2	5825	22.87	22.61	25.75	30	1.52	27.27	36
HT40	2	5755	21.45	21.53	24.50	30	1.52	26.02	36
HT40	2	5795	21.57	21.67	24.63	30	1.52	26.15	36
Result			Complied						

3.1.6 Test Result of Maximum Conducted Output Power

Maximum Conducted Output Power									
Condition			RF Output Power (dBm)						
Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	Chain Port 1	Chain Port 2	Sum Chain	Power Limit	DG (dBi)	EIRP Power	EIRP Limit
11a	1	5745	16.93	-	16.93	30	-0.16	16.77	36
11a	1	5785	16.63	-	16.63	30	-0.16	16.47	36
11a	1	5825	16.77	-	16.77	30	-0.16	16.61	36
HT20	2	5745	14.31	12.77	16.62	30	1.52	18.14	36
HT20	2	5785	14.79	13.11	17.04	30	1.52	18.56	36
HT20	2	5825	14.68	13.24	17.03	30	1.52	18.55	36
HT40	2	5755	13.46	12.13	15.86	30	1.52	17.38	36
HT40	2	5795	13.36	12.19	15.82	30	1.52	17.35	36
Result			Complied						

### 3.2 Transmitter Bandedge Emissions

#### 3.2.1 Transmitter Radiated Bandedge Emissions Limit



#### 3.2.2 Measuring Instruments

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

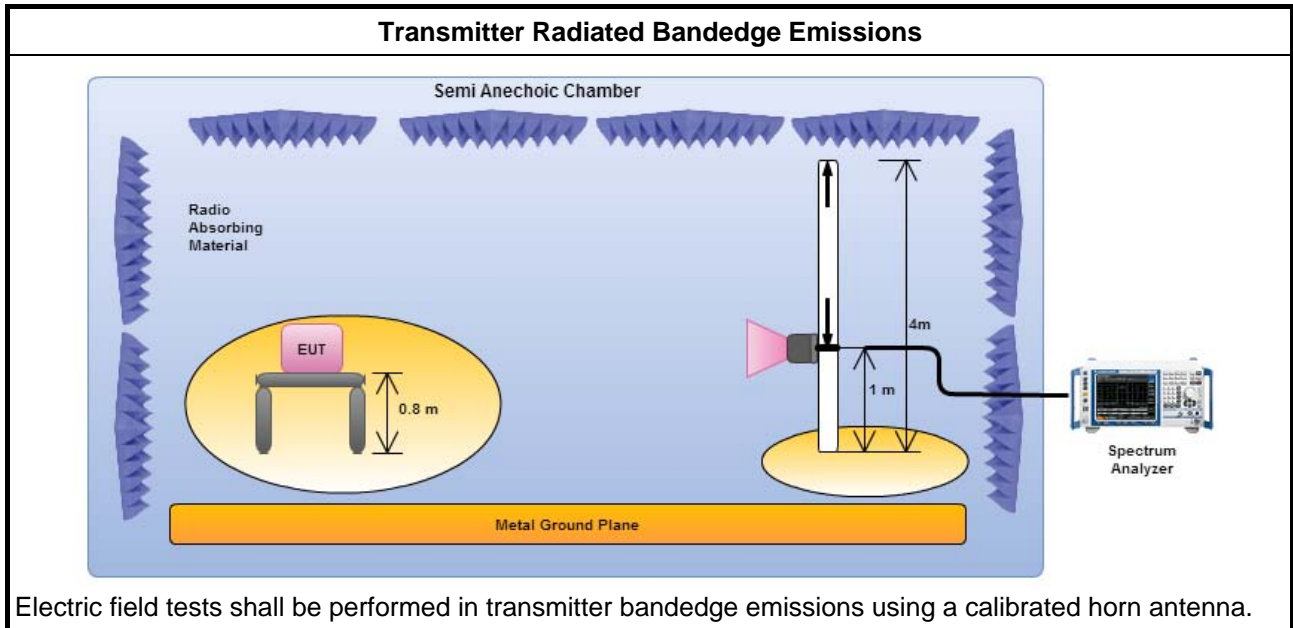


3.2.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 6.9.2.2 bandedge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.
<input checked="" type="checkbox"/>	For the transmitter unwanted emissions shall be measured using following options below:
<input checked="" type="checkbox"/>	Refer as FCC KDB 558074, clause 11 for unwanted emissions into non-restricted bands.
<input checked="" type="checkbox"/>	Refer as FCC KDB 558074, clause 12 for unwanted emissions into restricted bands.
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 12.2.5.1 Option 1 (trace averaging for duty cycle $\geq$ 98%)
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 12.2.5.2 Option 2 (trace averaging + duty factor).
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 12.2.5.3 Option 3 (Reduced VBW $\geq$ 1/T).
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW $\geq$ 1/T, where T is pulse time.
<input type="checkbox"/>	Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
<input checked="" type="checkbox"/>	Refer as FCC KDB 558074, clause 11.3 and 12.2.4 measurement procedure peak limit.
<input checked="" type="checkbox"/>	For the transmitter bandedge emissions shall be measured using following options below:
<input type="checkbox"/>	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).
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 6.9.2 for band-edge testing.
<input type="checkbox"/>	Refer as ANSI C63.10, clause 6.9.3 for marker-delta method for band-edge measurements.
<input checked="" type="checkbox"/>	For radiated measurement, refer as FCC KDB 558074, clause 12.2.7 and ANSI C63.10, clause 6.6. Test distance is 1m.
<input checked="" type="checkbox"/>	Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements). Measurements in the bandedge are typically made at a closer distance 1m, because the instrumentation noise floor is typically close to the radiated emission limit.



### 3.2.4 Test Setup





### 3.2.5 Transmitter Radiated Bandedge Emissions

5725-5850MHz Transmitter Radiated Bandedge Emissions								
Modulation	N <sub>TX</sub>	Test Freq. (MHz)	In-band PSD [i] (dBuV/100kHz)	Freq. (MHz)	Out-band PSD [o] (dBuV/100kHz)	[i] – [o] (dB)	Limit (dB)	Pol.
11a	1	5745	115.18	5724.90	82.30	32.88	20	H
11a	1	5825	114.40	5851.19	75.67	38.73	20	H
HT20	2	5745	112.37	5850.53	74.64	37.73	20	H
HT20	2	5825	112.24	5724.90	77.42	34.82	20	H
HT40	2	5755	108.67	5718.60	78.72	29.95	20	H
HT40	2	5795	108.33	5853.80	71.65	36.68	20	H

Note 1: Measurement worst emissions of receive antenna polarization

### 3.3 Transmitter Unwanted Emissions

#### 3.3.1 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.

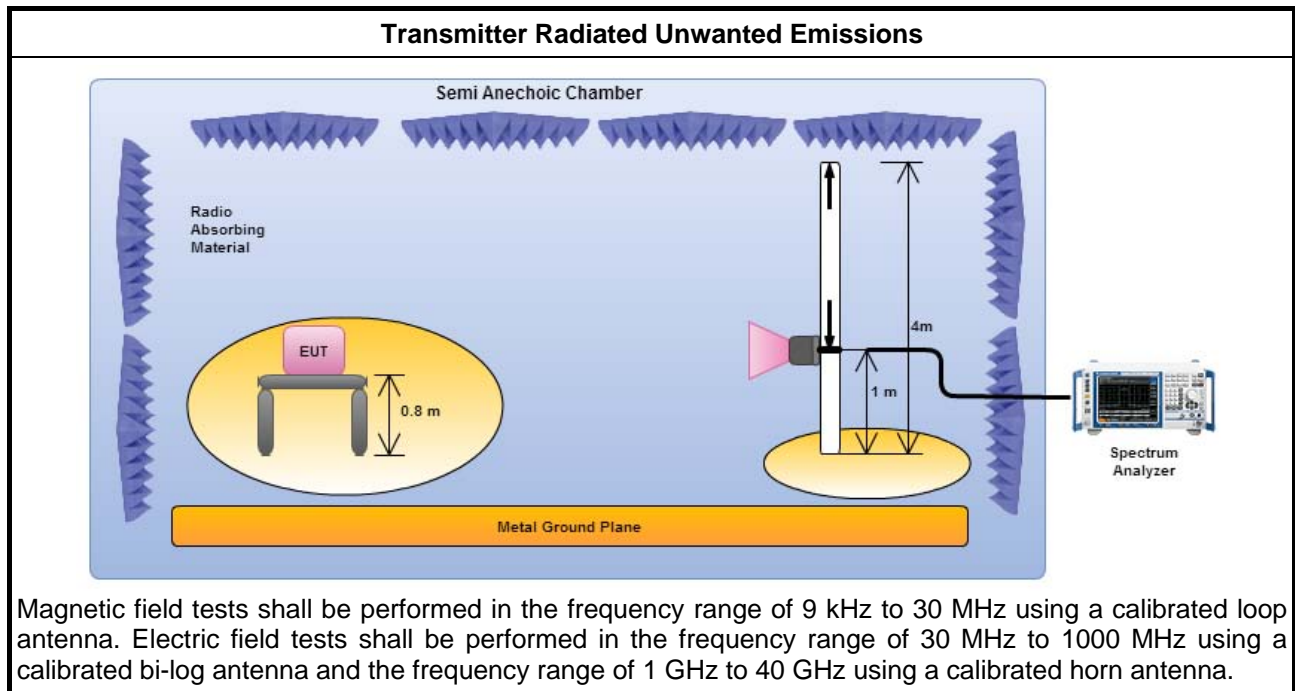
#### 3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	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).
<input checked="" type="checkbox"/>	The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].
<input checked="" type="checkbox"/>	For the transmitter unwanted emissions shall be measured using following options below:
<input checked="" type="checkbox"/>	Refer as FCC KDB 558074, clause 11 for unwanted emissions into non-restricted bands.
<input checked="" type="checkbox"/>	Refer as FCC KDB 558074, clause 12 for unwanted emissions into restricted bands.
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 12.2.5.1 Option 1 (trace averaging for duty cycle $\geq$ 98%)
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 12.2.5.2 Option 2 (trace averaging + duty factor).
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 12.2.5.3 Option 3 (Reduced VBW $\geq$ 1/T).
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW $\geq$ 1/T, where T is pulse time.
<input type="checkbox"/>	Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
<input checked="" type="checkbox"/>	Refer as FCC KDB 558074, clause 11.3 and 12.2.4 measurement procedure peak limit.
<input checked="" type="checkbox"/>	Refer as FCC KDB 558074, clause 12.2.3 measurement procedure Quasi-Peak limit.
<input checked="" type="checkbox"/>	For radiated measurement, refer as FCC KDB 558074, clause 12.2.7.
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz. For 1 GHz to 5 GHz, test distance is 3m; For 5 GHz to 40 GHz, test distance is 1m.
<input checked="" type="checkbox"/>	The any unwanted emissions level shall not exceed the fundamental emission level.
<input checked="" type="checkbox"/>	All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

### 3.3.4 Test Setup

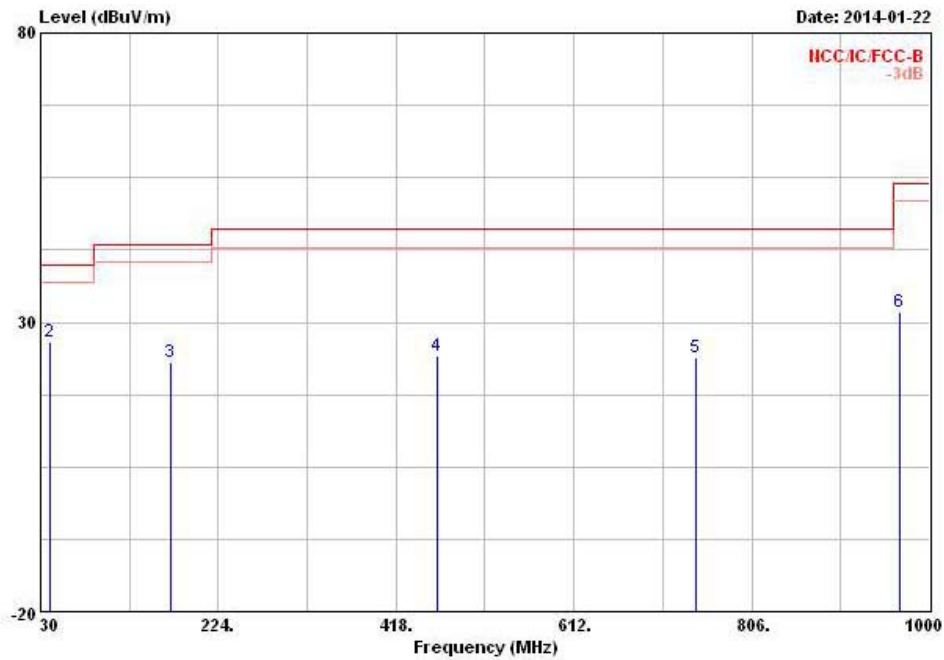


### 3.3.5 Transmitter Radiated Unwanted Emissions (Below 30MHz)

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

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

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

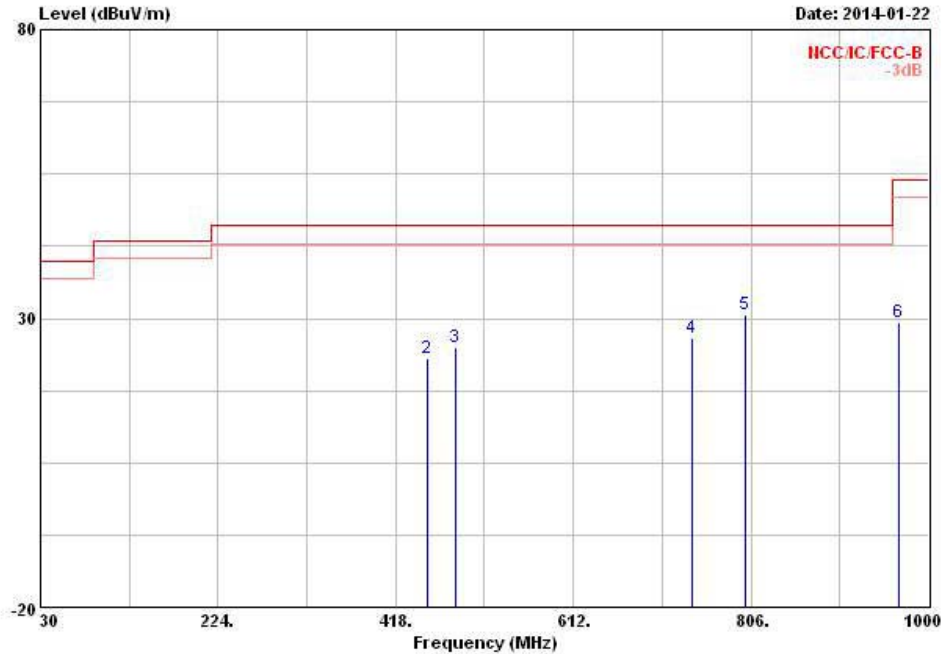


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	30.000	34.01	-5.99	40.00	41.95	18.85	0.82	27.61	Peak	---	---
2	40.670	26.60	-13.40	40.00	40.64	12.52	1.03	27.59	Peak	---	---
3	172.590	23.01	-20.49	43.50	38.31	9.64	2.16	27.10	Peak	---	---
4	462.620	24.06	-21.94	46.00	31.38	16.79	3.57	27.68	Peak	---	---
5	745.860	24.01	-21.99	46.00	27.68	19.55	4.65	27.87	Peak	---	---
6	967.990	31.82	-22.18	54.00	32.61	21.18	5.39	27.36	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: No level of unwanted emissions exceeds the level of the fundamental emission.



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



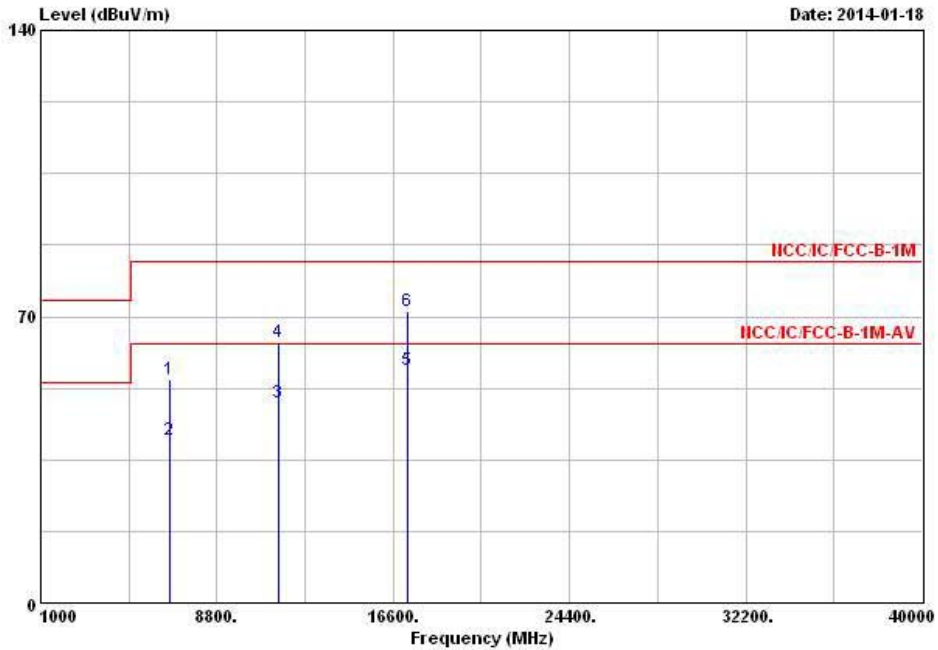
	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	30.000	18.96	-21.04	40.00	26.90	18.85	0.82	27.61	Peak	---	---
2	451.950	23.02	-22.98	46.00	30.61	16.52	3.51	27.62	Peak	---	---
3	482.990	25.12	-20.88	46.00	32.12	17.10	3.68	27.78	Peak	---	---
4	741.980	26.52	-19.48	46.00	30.20	19.56	4.64	27.88	Peak	---	---
5	800.180	30.78	-15.22	46.00	34.02	19.64	4.92	27.80	Peak	---	---
6	967.990	29.27	-24.73	54.00	30.06	21.18	5.39	27.36	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: No level of unwanted emissions exceeds the level of the fundamental emission.



3.3.7 Transmitter Radiated Unwanted Emissions (Above 1GHz)

Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11a	Test Freq. (MHz)	5745
N <sub>TX</sub>	1	Polarization	V



Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table				
Limit	Line	Level	Loss	Factor	Pos	Pos				
dB	dBuV/m	dBuV	dB	dB	cm	deg				
1 @ 6738.000	54.60	-28.94	83.54	44.32	35.98	6.83	32.53	Peak	---	---
2 @ 6738.000	39.68	-23.86	63.54	29.40	35.98	6.83	32.53	Average	---	---
3 @ 11490.000	49.02	-14.52	63.54	31.25	40.07	10.04	32.34	Average	---	---
4 @ 11490.000	63.64	-19.90	83.54	45.87	40.07	10.04	32.34	Peak	---	---
5 @ 17235.000	57.00	-6.54	63.54	32.98	43.81	11.59	31.38	Average	---	---
6 @ 17235.000	71.18	-12.36	83.54	47.16	43.81	11.59	31.38	Peak	---	---

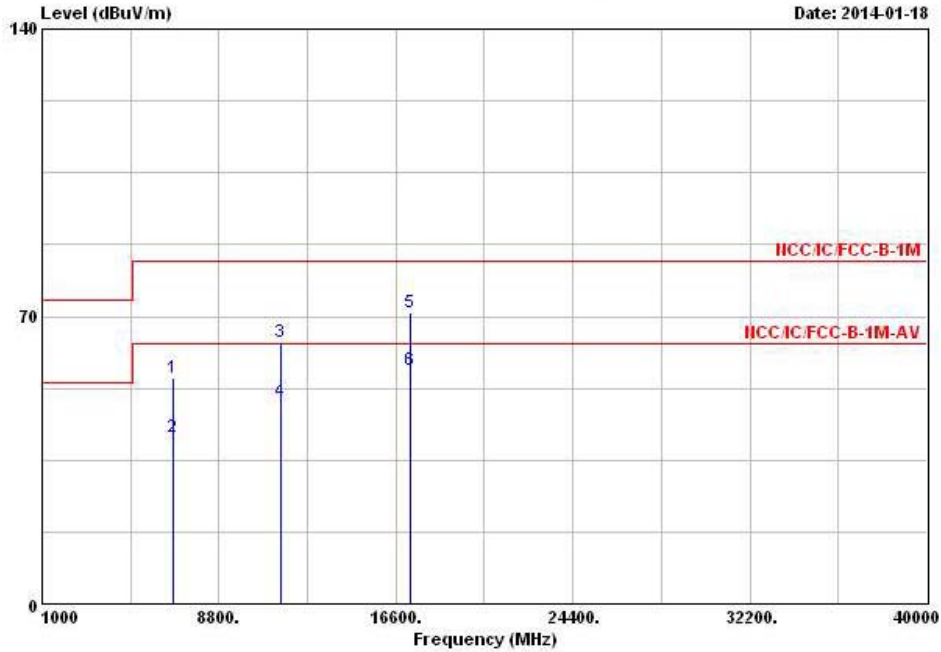
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)  
 Note 4: For restricted 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 (125.94 dBuV/m).





Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11a	Test Freq. (MHz)	5745
N <sub>TX</sub>	1	Polarization	H



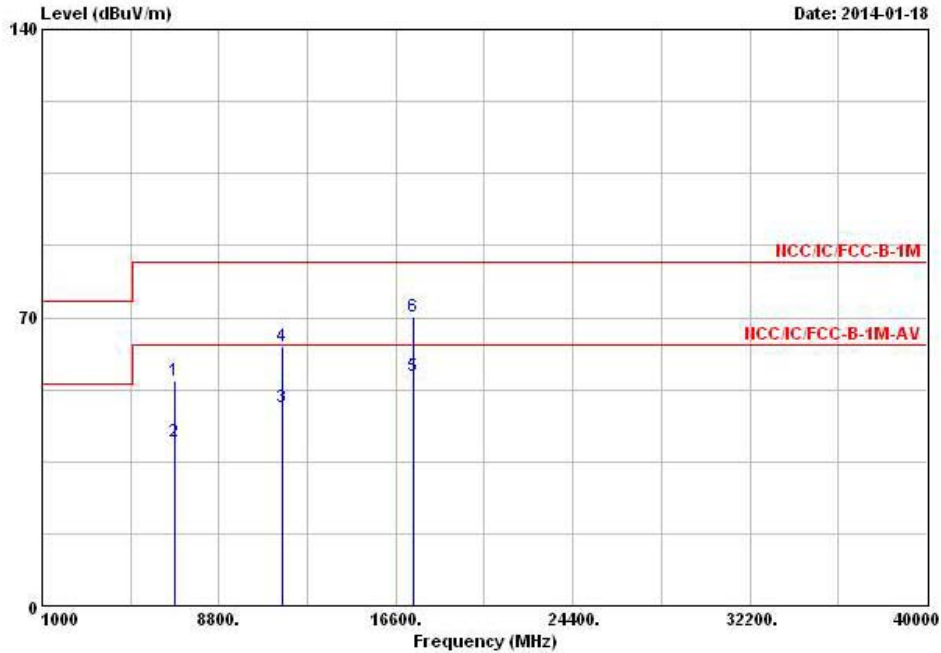
	Over	Limit	Read	Antenna	Cable	Preamp		Ant	Table
Freq	Level	Limit	Level	Factor	Loss	Factor	Remark	Pos	Pos
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB		cm	deg
1 @ 6798.000	55.00	-28.54	83.54	44.55	36.10	6.89	32.54 Peak	---	---
2 @ 6798.000	40.47	-23.07	63.54	30.02	36.10	6.89	32.54 Average	---	---
3 @ 11490.000	63.85	-19.69	83.54	46.08	40.07	10.04	32.34 Peak	---	---
4 @ 11490.000	49.25	-14.29	63.54	31.48	40.07	10.04	32.34 Average	---	---
5 @ 17235.000	70.90	-12.64	83.54	46.88	43.81	11.59	31.38 Peak	---	---
6 @ 17235.000	56.86	-6.68	63.54	32.84	43.81	11.59	31.38 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 (125.94 dBuV/m).



Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11a	Test Freq. (MHz)	5785
N <sub>TX</sub>	1	Polarization	V



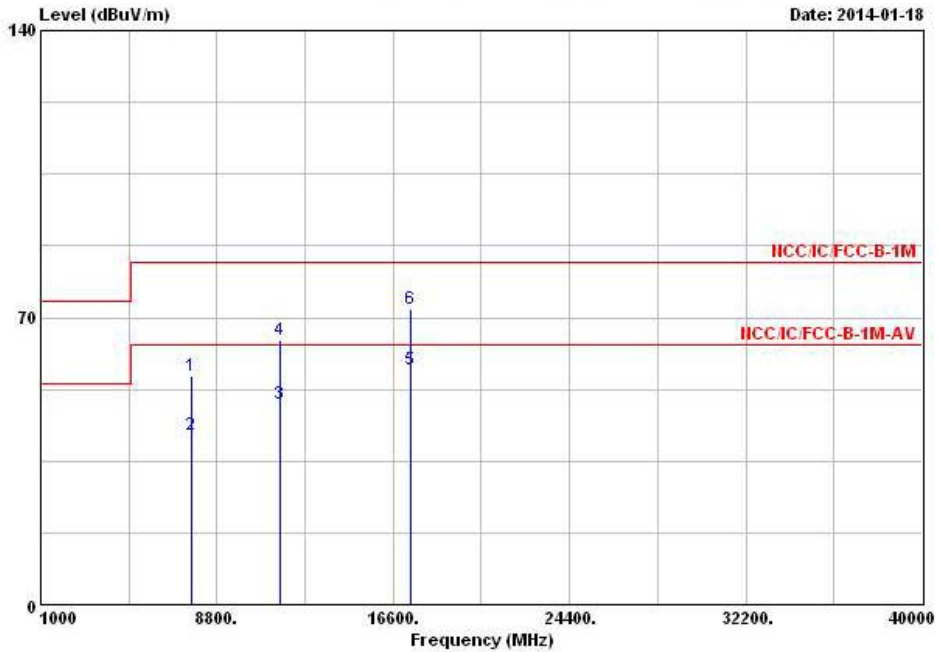
	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	@ 6816.000	54.53	-29.01	83.54	44.04	36.14	6.89	32.54	Peak	---	---
2	@ 6816.000	39.89	-23.65	63.54	29.40	36.14	6.89	32.54	Average	---	---
3	@ 11570.000	48.35	-15.19	63.54	30.62	40.04	10.04	32.35	Average	---	---
4	@ 11570.000	63.06	-20.48	83.54	45.33	40.04	10.04	32.35	Peak	---	---
5	@ 17355.000	55.77	-7.77	63.54	30.52	44.81	11.85	31.41	Average	---	---
6	@ 17355.000	70.27	-13.27	83.54	45.02	44.81	11.85	31.41	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 (125.96 dBuV/m).



Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11a	Test Freq. (MHz)	5785
N <sub>TX</sub>	1	Polarization	H



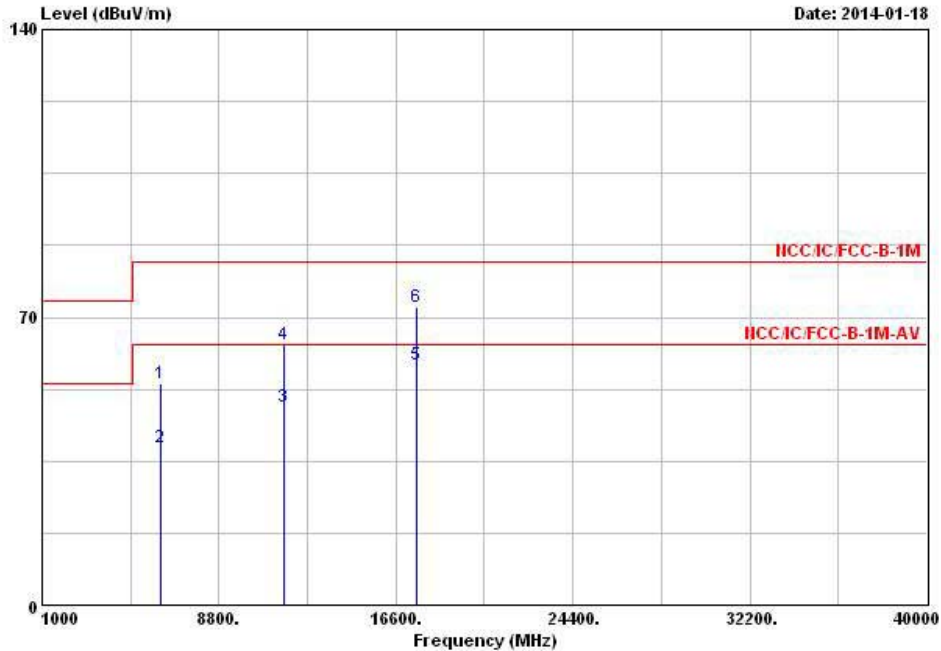
	Over	Limit	Read	Antenna	Cable	Preamp		Ant	Table
Freq	Level	Limit	Level	Factor	Loss	Factor	Remark	Pos	Pos
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB		cm	deg
1 @ 7644.000	55.76	-27.78	83.54	43.41	37.45	7.64	32.74 Peak	---	---
2 @ 7644.000	41.40	-22.14	63.54	29.05	37.45	7.64	32.74 Average	---	---
3 @ 11570.000	48.99	-14.55	63.54	31.26	40.04	10.04	32.35 Average	---	---
4 @ 11570.000	64.58	-18.96	83.54	46.85	40.04	10.04	32.35 Peak	---	---
5 @ 17355.000	57.46	-6.08	63.54	32.21	44.81	11.85	31.41 Average	---	---
6 @ 17355.000	71.98	-11.56	83.54	46.73	44.81	11.85	31.41 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 (125.96 dBuV/m).



Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11a	Test Freq. (MHz)	5825
N <sub>TX</sub>	1	Polarization	V



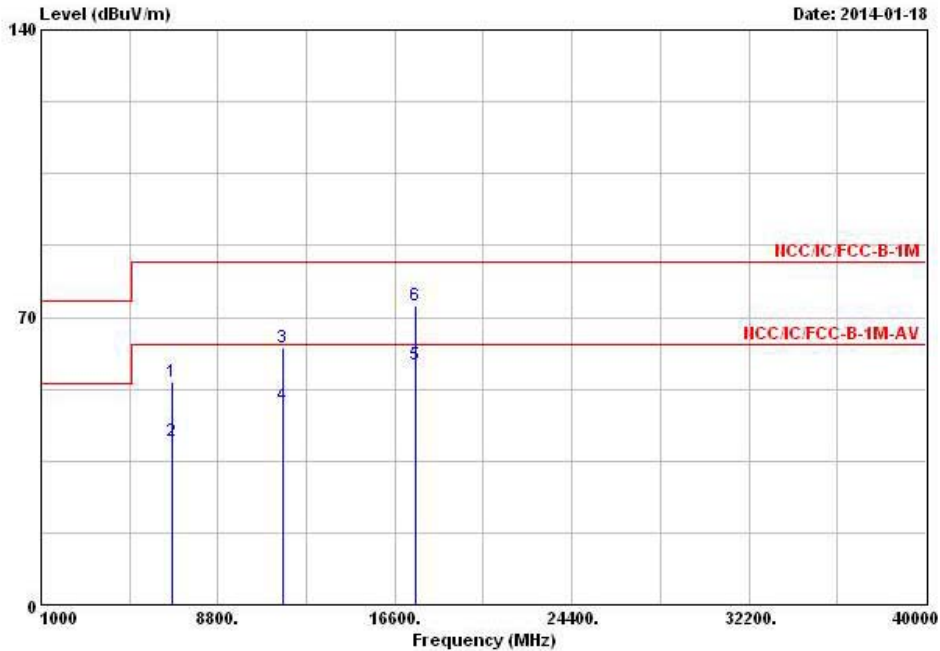
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB		cm	deg
1	6222.000	53.75	-29.79	83.54	44.41	35.17	6.63	32.46 Peak	---	---
2	6222.000	38.43	-25.11	63.54	29.09	35.17	6.63	32.46 Average	---	---
3	11650.000	48.02	-15.52	63.54	30.36	39.99	10.03	32.36 Average	---	---
4	11650.000	63.52	-20.02	83.54	45.86	39.99	10.03	32.36 Peak	---	---
5	17475.000	58.31	-5.23	63.54	31.84	45.81	12.11	31.45 Average	---	---
6	17475.000	72.55	-10.99	83.54	46.08	45.81	12.11	31.45 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 (126.25 dBuV/m).



Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	11a	Test Freq. (MHz)	5825
N <sub>TX</sub>	1	Polarization	H



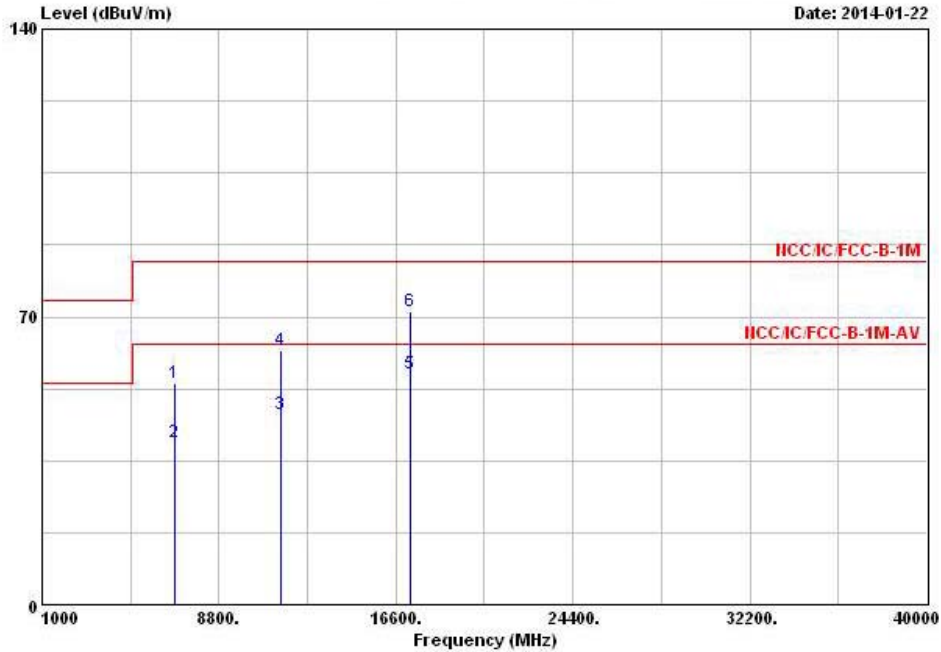
	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	@ 6810.000	54.25	-29.29	83.54	43.76	36.14	6.89	32.54	Peak	---	---
2	@ 6810.000	39.71	-23.83	63.54	29.22	36.14	6.89	32.54	Average	---	---
3	@ 11650.000	62.64	-20.90	83.54	44.98	39.99	10.03	32.36	Peak	---	---
4	@ 11650.000	48.42	-15.12	63.54	30.76	39.99	10.03	32.36	Average	---	---
5	@ 17475.000	58.25	-5.29	63.54	31.78	45.81	12.11	31.45	Average	---	---
6	@ 17475.000	72.99	-10.55	83.54	46.52	45.81	12.11	31.45	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 (126.25 dBuV/m).



Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT20	Test Freq. (MHz)	5745
N <sub>TX</sub>	2	Polarization	V



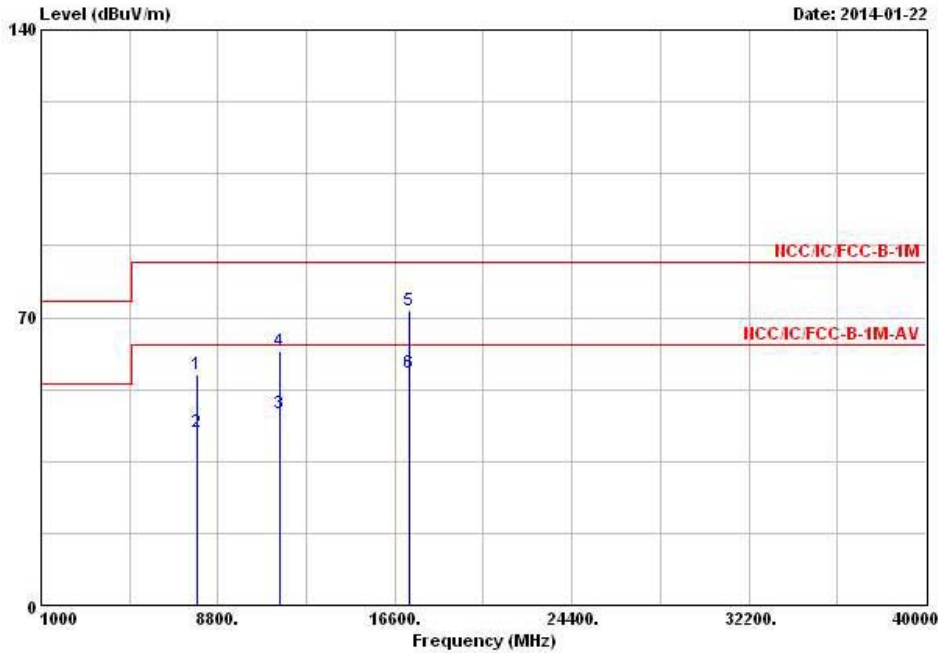
	Over	Limit	Read	Antenna	Cable	Preamp		Ant	Table
Freq	Level	Limit	Level	Factor	Loss	Factor	Remark	Pos	Pos
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB		cm	deg
1 @ 6816.000	53.87	-29.67	83.54	43.38	36.14	6.89	32.54	Peak	---
2 @ 6816.000	39.36	-24.18	63.54	28.87	36.14	6.89	32.54	Average	---
3 @ 11490.000	46.23	-17.31	63.54	28.46	40.07	10.04	32.34	Average	---
4 @ 11490.000	61.79	-21.75	83.54	44.02	40.07	10.04	32.34	Peak	---
5 @ 17235.000	56.30	-7.24	63.54	32.28	43.81	11.59	31.38	Average	---
6 @ 17235.000	71.29	-12.25	83.54	47.27	43.81	11.59	31.38	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 (122.70 dBuV/m).



Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT20	Test Freq. (MHz)	5745
N <sub>TX</sub>	2	Polarization	H



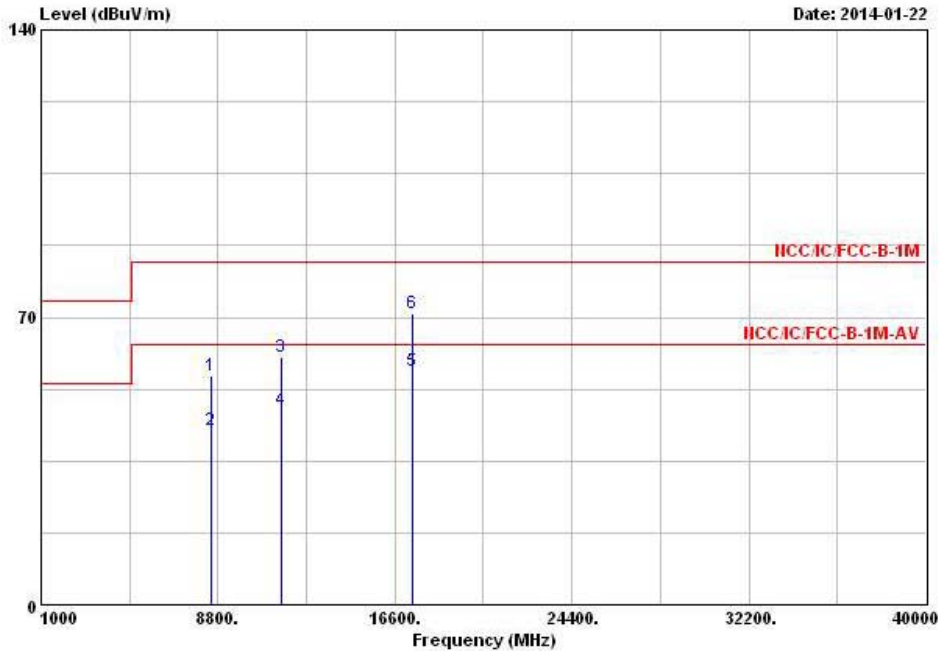
	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		Pos	Pos
			dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	@ 7878.000	56.06	-27.48	83.54	43.09	37.68	8.07	32.78	Peak	---	---
2	@ 7878.000	41.94	-21.60	63.54	28.97	37.68	8.07	32.78	Average	---	---
3	@ 11490.000	46.79	-16.75	63.54	29.02	40.07	10.04	32.34	Average	---	---
4	@ 11490.000	61.94	-21.60	83.54	44.17	40.07	10.04	32.34	Peak	---	---
5	@ 17235.000	71.53	-12.01	83.54	47.51	43.81	11.59	31.38	Peak	---	---
6	@ 17235.000	56.39	-7.15	63.54	32.37	43.81	11.59	31.38	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 (122.70 dBuV/m).



Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT20	Test Freq. (MHz)	5785
N <sub>TX</sub>	2	Polarization	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8484.000	55.90	-27.64	83.54	42.03	38.67	8.01	32.81	Peak	---	---
2	8484.000	42.48	-21.06	63.54	28.61	38.67	8.01	32.81	Average	---	---
3	11570.000	60.39	-23.15	83.54	42.66	40.04	10.04	32.35	Peak	---	---
4	11570.000	47.37	-16.17	63.54	29.64	40.04	10.04	32.35	Average	---	---
5	@17355.000	56.78	-6.76	63.54	31.53	44.81	11.85	31.41	Average	---	---
6	@17355.000	70.85	-12.69	83.54	45.60	44.81	11.85	31.41	Peak	---	---

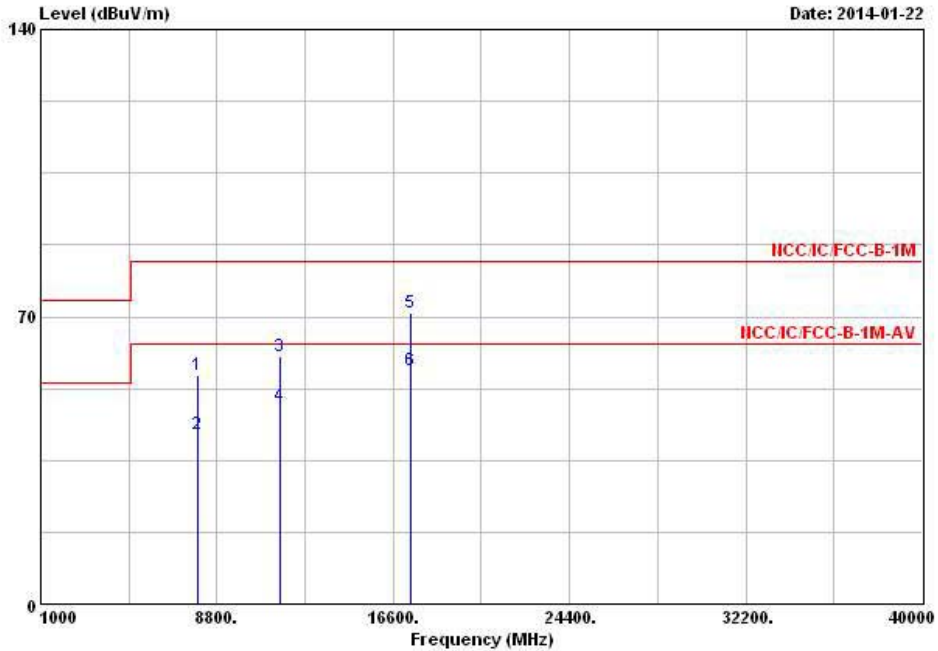
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)  
 Note 4: For restricted 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 (123.36 dBuV/m).





Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT20	Test Freq. (MHz)	5785
N <sub>TX</sub>	2	Polarization	H



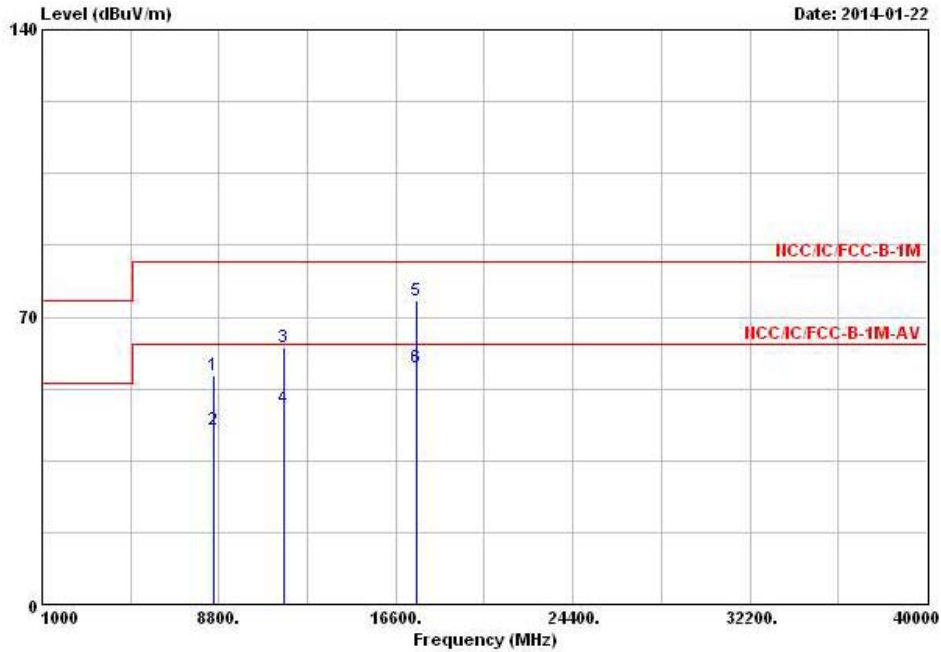
Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Remark	Ant Pos	Table Pos
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB		cm	deg
1 @ 7956.000	55.60	-27.94	83.54	42.43	37.75	8.21	32.79 Peak	---	---
2 @ 7956.000	41.52	-22.02	63.54	28.35	37.75	8.21	32.79 Average	---	---
3 @ 11570.000	60.50	-23.04	83.54	42.77	40.04	10.04	32.35 Peak	---	---
4 @ 11570.000	48.04	-15.50	63.54	30.31	40.04	10.04	32.35 Average	---	---
5 @ 17355.000	70.78	-12.76	83.54	45.53	44.81	11.85	31.41 Peak	---	---
6 @ 17355.000	56.84	-6.70	63.54	31.59	44.81	11.85	31.41 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 (123.36 dBuV/m).



Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT20	Test Freq. (MHz)	5825
N <sub>TX</sub>	2	Polarization	V



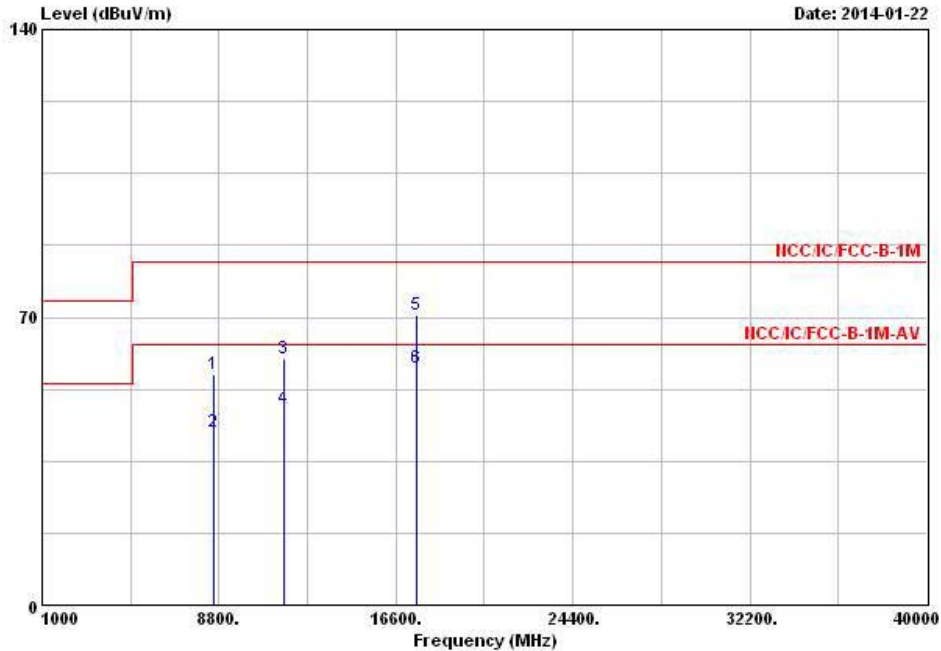
	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8568.000	55.60	-27.94	83.54	41.85	38.62	7.97	32.84	Peak	---	---
2	8568.000	42.37	-21.17	63.54	28.62	38.62	7.97	32.84	Average	---	---
3	11650.000	62.57	-20.97	83.54	44.91	39.99	10.03	32.36	Peak	---	---
4	11650.000	47.77	-15.77	63.54	30.11	39.99	10.03	32.36	Average	---	---
5	17475.000	73.80	-9.74	83.54	47.33	45.81	12.11	31.45	Peak	---	---
6	17475.000	57.73	-5.81	63.54	31.26	45.81	12.11	31.45	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 (123.93 dBuV/m).



Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT20	Test Freq. (MHz)	5825
N <sub>TX</sub>	2	Polarization	H



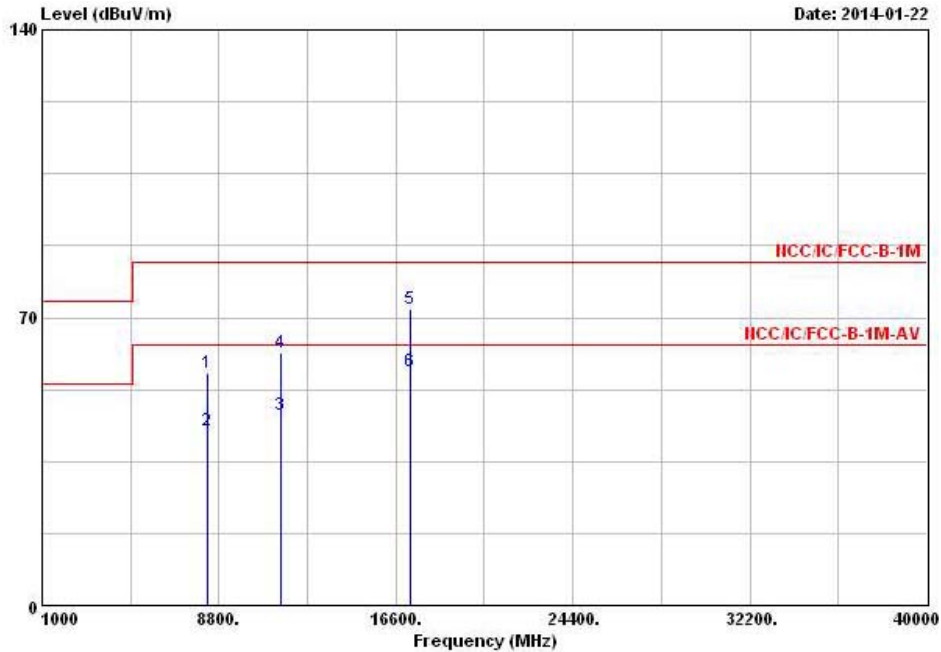
	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8580.000	56.34	-27.20	83.54	42.61	38.60	7.97	32.84	Peak	---	---
2	8580.000	42.12	-21.42	63.54	28.39	38.60	7.97	32.84	Average	---	---
3	11650.000	60.13	-23.41	83.54	42.47	39.99	10.03	32.36	Peak	---	---
4	11650.000	47.78	-15.76	63.54	30.12	39.99	10.03	32.36	Average	---	---
5	@17475.000	70.74	-12.80	83.54	44.27	45.81	12.11	31.45	Peak	---	---
6	@17475.000	57.62	-5.92	63.54	31.15	45.81	12.11	31.45	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 (123.93 dBuV/m).



Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT40	Test Freq. (MHz)	5755
N <sub>TX</sub>	2	Polarization	V



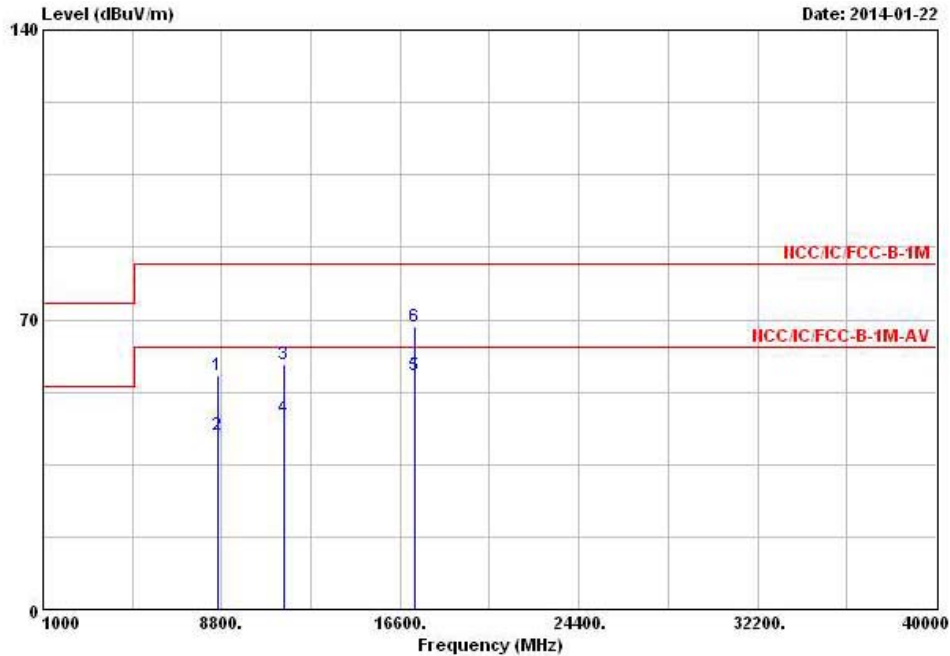
	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8292.000	56.56	-26.98	83.54	42.93	38.33	8.11	32.81	Peak	---	---
2	8292.000	42.32	-21.22	63.54	28.69	38.33	8.11	32.81	Average	---	---
3	11510.000	46.23	-17.31	63.54	28.43	40.10	10.04	32.34	Average	---	---
4	11510.000	61.28	-22.26	83.54	43.48	40.10	10.04	32.34	Peak	---	---
5	17265.000	72.02	-11.52	83.54	47.64	44.09	11.68	31.39	Peak	---	---
6	17265.000	57.07	-6.47	63.54	32.69	44.09	11.68	31.39	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 (119.58 dBuV/m).



Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT40	Test Freq. (MHz)	5755
N <sub>TX</sub>	2	Polarization	H



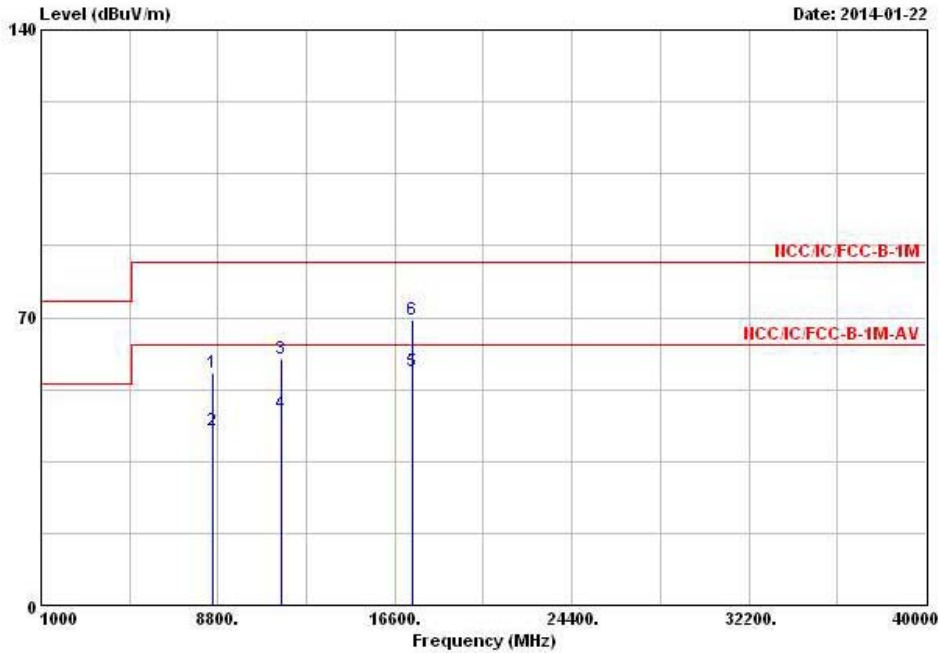
	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	@ 8628.000	56.62	-26.92	83.54	43.00	38.54	7.93	32.85	Peak	---	---
2	@ 8628.000	42.08	-21.46	63.54	28.46	38.54	7.93	32.85	Average	---	---
3	@ 11510.000	59.11	-24.43	83.54	41.31	40.10	10.04	32.34	Peak	---	---
4	@ 11510.000	46.43	-17.11	63.54	28.63	40.10	10.04	32.34	Average	---	---
5	@ 17265.000	56.59	-6.95	63.54	32.21	44.09	11.68	31.39	Average	---	---
6	@ 17265.000	68.37	-15.17	83.54	43.99	44.09	11.68	31.39	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 (119.58 dBuV/m).



Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT40	Test Freq. (MHz)	5795
N <sub>TX</sub>	2	Polarization	V



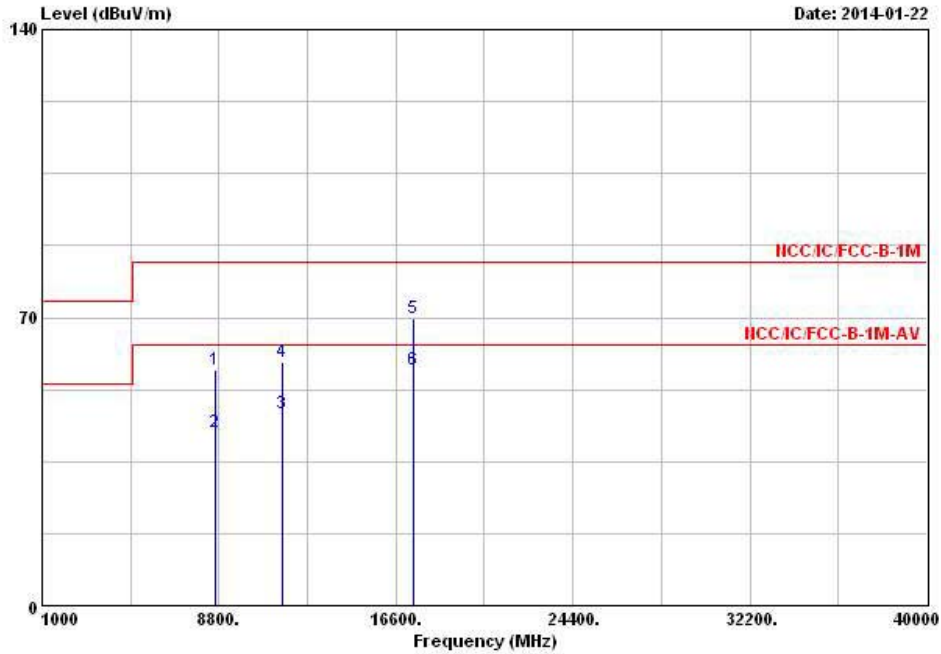
	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	@ 8568.000	56.58	-26.96	83.54	42.83	38.62	7.97	32.84	Peak	---	---
2	@ 8568.000	42.41	-21.13	63.54	28.66	38.62	7.97	32.84	Average	---	---
3	@ 11590.000	59.76	-23.78	83.54	42.05	40.03	10.03	32.35	Peak	---	---
4	@ 11590.000	46.53	-17.01	63.54	28.82	40.03	10.03	32.35	Average	---	---
5	@ 17385.000	56.96	-6.58	63.54	31.35	45.10	11.94	31.43	Average	---	---
6	@ 17385.000	69.62	-13.92	83.54	44.01	45.10	11.94	31.43	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 (119.96 dBuV/m).



Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT40	Test Freq. (MHz)	5795
N <sub>TX</sub>	2	Polarization	H



	Over	Limit	Read	Antenna	Cable	Preamp		Ant	Table
Freq	Level	Limit	Level	Factor	Loss	Factor	Remark	Pos	Pos
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB		cm	deg
1 @ 8664.000	57.28	-26.26	83.54	43.74	38.50	7.91	32.87	Peak	---
2 @ 8664.000	42.03	-21.51	63.54	28.49	38.50	7.91	32.87	Average	---
3 @ 11590.000	46.73	-16.81	63.54	29.02	40.03	10.03	32.35	Average	---
4 @ 11590.000	59.22	-24.32	83.54	41.51	40.03	10.03	32.35	Peak	---
5 @ 17385.000	69.70	-13.84	83.54	44.09	45.10	11.94	31.43	Peak	---
6 @ 17385.000	57.14	-6.40	63.54	31.53	45.10	11.94	31.43	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 (119.96 dBuV/m).



## 4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9KHz ~ 40GHz	Jun. 07, 2013	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	1036004	300MHz ~ 40GHz	Aug. 17, 2013	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz ~ 40GHz	Aug. 17, 2013	Conducted (TH02-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	03CH03-HY	30MHz ~ 1GHz 3m	Nov. 30, 2013	Radiation (03CH03-HY)
Amplifier	HP	8447D	2944A08033	10kHz ~ 1.3GHz	May 03, 2013	Radiation (03CH03-HY)
Amplifier	Agilent	8449B	3008A02120	1GHz ~ 26.5GHz	Aug. 20, 2013	Radiation (03CH03-HY)
Spectrum	R&S	FSP40	100004	9kHz ~ 40GHz	Mar. 11, 2013	Radiation (03CH03-HY)
Bilog Antenna	SCHAFFNER	CBL 6112D	22237	30MHz ~ 1GHz	Sep. 21, 2013	Radiation (03CH03-HY)
Horn Antenna	EMCO	3115	6741	1GHz ~ 18GHz	May 31, 2013	Radiation (03CH03-HY)
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15GHz ~ 40GHz	Jan. 10, 2014	Radiation (03CH03-HY)
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	Nov. 16, 2013	Radiation (03CH03-HY)
RF Cable-high	SUHNER	SUCOFLEX 106	03CH03-HY	1GHz ~ 40GHz	Dec. 11, 2013	Radiation (03CH03-HY)
Turn Table	EM Electronics	EM Electronics	060615	0 ~ 360 degree	N/A	Radiation (03CH03-HY)
Antenna Mast	MF	MF-7802	MF780208179	1 ~ 4 m	N/A	Radiation (03CH03-HY)

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

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Amplifier	EM	EM18G40G	060604	18GHz ~ 40GHz	Oct. 17, 2013	Radiation (03CH03-HY)
Loop Antenna	TESEQ	HLA 6120	31244	9kHz ~ 30MHz	Dec. 02, 2012	Radiation (03CH03-HY)

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