FCC Test Report

Equipment	:	**Low Power 2x2 802.11a/b/g/n +BT SDIO-WLAN/UART-BT Card**
Brand Name	:	**Qualcomm Atheros**
Model No.	:	**QCSNFA282**
FCC ID	:	**PPD-QCSNFA282**
Standard	:	**47 CFR FCC Part 15.407**
Operating Band	:	**5150 MHz – 5250 MHz 5250 MHz – 5350 MHz 5470 MHz – 5725 MHz**
FCC Classification	:	**NII**
Applicant Manufacturer	:	**Dell Inc. One Dell Way, Round Rock, Texas 78682, USA**

The product sample received on Sep. 24, 2013 and completely tested on Oct. 11, 2013. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2009 and shown compliance with the applicable technical standards.

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

Reviewed by:

Wayne Hsu / Assistant Manager

Testing Laboratory
1190

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Summary of Test Result

Conformance Test Specifications					
Report Clause	**Ref. Std. Clause**	**Description**	**Measured**	**Limit**	**Result**
1.1.1	15.203	Antenna Requirement	Antenna connector mechanism complied	FCC 15.203	Complied
3.1	15.407(a)	RF Output Power (Maximum Conducted (Average) Output Power)	Power [dBm] 5150-5250MHz:13.82 5250-5350MHz:13.89 5470-5725MHz:13.82	Power [dBm] 5150-5250MHz:17 5250-5350MHz:24 5470-5725MHz:24	Complied
3.2	15.407(b)	Transmitter Bandedge Emissions	Restricted Bands [dBuV/m at 1m]: 5150.00MHz 81.65 (Margin 1.89dB) - PK 61.33 (Margin 2.21dB) - AV	Non-Restricted Bands: ≤ -27dBm (77.84dBuV/m@1m) Restricted Bands: FCC 15.209	Complied
3.3	15.407(b)	Transmitter Radiated Unwanted Emissions	Restricted Bands [dBuV/m at 1m]: 32.910MHz 37.90 (Margin 2.10dB) -QP	Non-Restricted Bands: ≤ -27dBm (68.3dBuV/m@3m) Restricted Bands: FCC 15.209	Complied

This report was verified the worst case that was according the module report of QCSNFA282.

Revision History

Report No.	Version	Description	Issued Date
FR381241-01AN	Rev. 01	Initial issue of report	Oct. 14, 2013

1 General Description

1.1 Information

1.1.1 RF General Information

RF General Information					
Frequency Range (MHz)	**IEEE Std. 802.11**	**Ch. Freq. (MHz)**	**Channel Number**	**Transmit Chains (N_{TX})**	**RF Output Power (dBm)**
5150-5250	a	5180-5240	36-48 [4]	2	13.66
5250-5350		5260-5320	52-64 [4]	2	13.89
5470-5725		5500-5700	100-140 [8]	2	13.72
5150-5250	n (HT20)	5180-5240	36-48 [4]	2	13.82
5250-5350		5260-5320	52-64 [4]	2	13.77
5470-5725		5500-5700	100-140 [8]	2	13.82
5150-5250	n (HT40)	5190-5230	38-46 [2]	2	11.27
5250-5350		5270-5310	54-62 [2]	2	12.66
5470-5725		5510-5670	102-134 [3]	2	13.67
Note 1: RF output power specifies that Maximum Conducted (Average) Output Power. Note 2: 802.11a/n uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.					

1.1.2 Antenna Information

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

Antenna General Information			
No.	**Ant. Cat.**	**Ant. Type**	**Gain (dBi)**
1	Integral	PIFA	3.00

1.1.3 EUT Operational Condition

Supply Voltage	☒ AC mains	☒ DC	
Type of DC Source	☐ Internal DC supply	☒ External DC adapter	☒ Li-on Battery

1.2 Support Equipment

Support Equipment- Radiated Emission Test			
No.	**Equipment**	**Brand Name**	**Model Name**
1	Tablet PC (Built in Qualcomm Atheros module)	DELL	T06G / T06G.. (The dots "." in the model name can be 0-9, A-Z, a-z, "/", - or blank, for marketing purpose only)

1.3 Testing Applied Standards

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

- 47 CFR FCC Part 15
- ANSI C63.10-2009
- FCC KDB 789033 v01r03
- FCC KDB 662911 v02

1.4 Testing Location Information

Testing Location					
☒	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-327-0973			
Test Condition		**Test Site No.**	**Test Engineer**	**Test Environment**	
Radiated Emission		03CH02-HY	Hsiao	23.1°C / 61%	

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**	**Limit**
All emissions, radiated	30 – 1000 MHz	±2.56 dB	N/A
	1 – 18 GHz	±3.59 dB	N/A
	18 – 40 GHz	±3.82 dB	N/A
	40 – 200 GHz	N/A	N/A
Duty Cycle		±1.42 %	N/A

2 Test Configuration of EUT

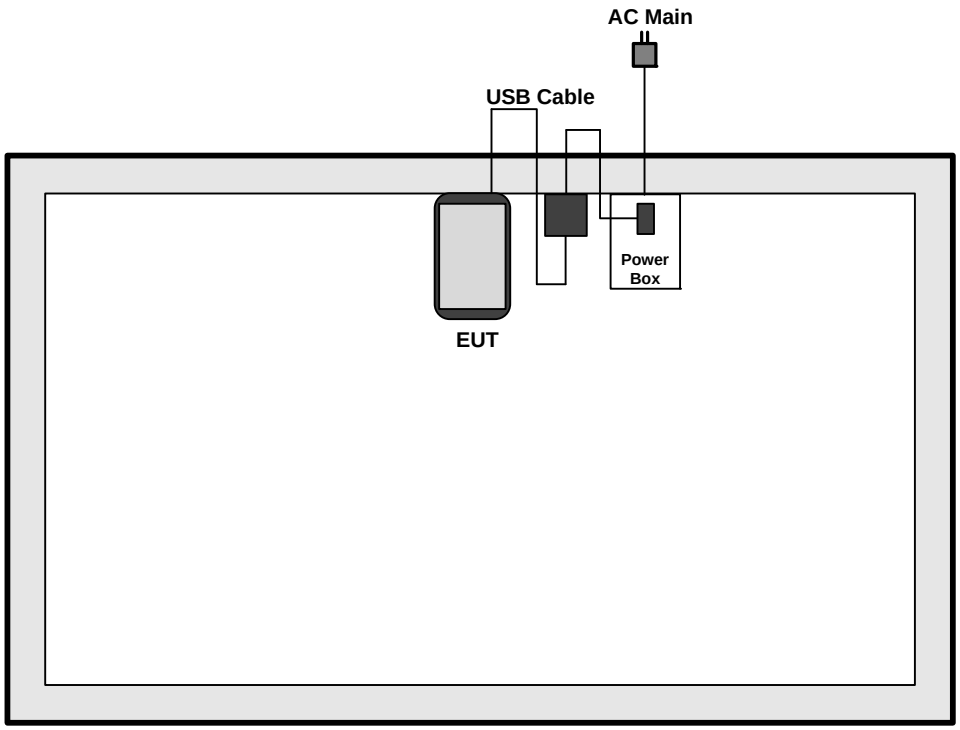
2.1 The Worst Case Measurement Configuration

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

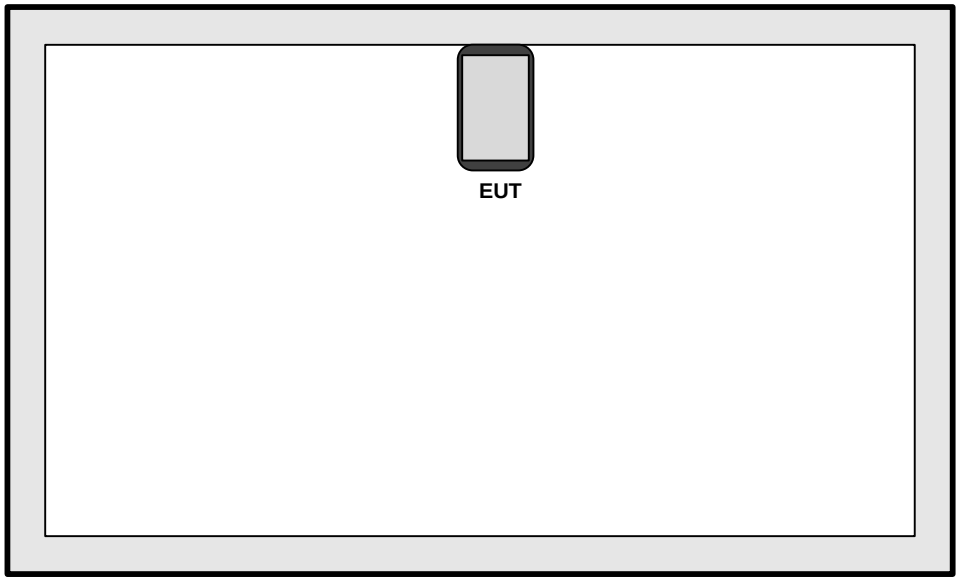
The Worst Case Mode for Following Conformance Tests			
Tests Item	Transmitter Radiated Unwanted Emissions Transmitter Radiated Bandedge Emissions		
Test Condition	Radiated measurement		
User Position	☐ EUT will be placed in fixed position.		
	☒ EUT will be placed in mobile position and operating multiple positions. EUT shall be performed three orthogonal planes. The worst planes is Y.		
	☐ 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	☒ 1. EUT with AC Power test		
Modulation Mode	11a, HT20, HT40		
Orthogonal Planes of EUT	**X Plane**	**Y Plane**	**Z Plane**
			

2.2 Test Setup Diagram

Test Setup Diagram - Radiated Below 1GHz Test



Test Setup Diagram - Radiated Above 1GHz Test



3 Transmitter Test Result

3.1 RF Output Power

3.1.1 RF Output Power Limit

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

3.1.2 Measuring Instruments

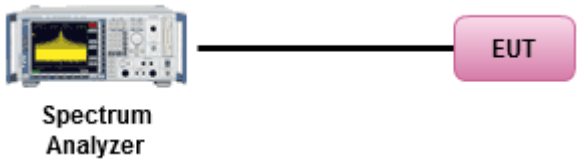
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

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

3.1.4 Test Setup

RF Output Power (Spectrum Analyzer)



3.1.5 Directional Gain for Power Measurement

Directional Gain (DG) Result				
Transmit Chains No.	1	2	-	-
Maximum G_{ANT} (dBi)	3.00	3.00	-	-
Modulation Mode	**N_{TX}**	**N_{SS} (Min.)**	**Array Gain (dB)**	**Power DG (dBi) Note3**
11a,6-54Mbps	2	1	-	3.00
HT20,M8-M15	2	1	-	3.00
HT40, M8-M15	2	1	-	3.00

Note 1: For all transmitter outputs with equal antenna gains, directional gain is to be computed as follows:
Any transmit signals are correlated, Directional Gain = G_{ANT} + 10 log(N_{TX})
All transmit signals are completely uncorrelated, Directional Gain = G_{ANT}
Note 2: For all transmitter outputs with unequal antenna gains, directional gain is to be computed as follows:
Any transmit signals are correlated, Directional Gain =10 log[($10^{G1/20}$ +… + $10^{GN/20}$)^2 /N_{TX}]
All transmit signals are completely uncorrelated, Directional Gain = 10 log[($10^{G1/10}$ +… + $10^{GN/10}$)/N_{TX}]
Note 3: For Spatial Multiplexing, Directional Gain (DG) = G_{ANT} + 10 log(N_{TX}/N_{SS}),
where Nss = the number of independent spatial streams data.
Note 4: For CDD transmissions, directional gain is calculated as power measurements:
Directional Gain (DG) = G_{ANT} + Array Gain, where Array Gain is as follows:
Array Gain = 0 dB (i.e., no array gain) for $N_{TX} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{TX};

3.1.6 Test Result of Maximum Conducted Output Power

Maximum Conducted Output Power Result								
Condition			RF Output Power (dBm)					
Modulation Mode	N_{TX}	Freq. (MHz)	Chain Port 1	Chain Port 2	Sum Chain	Power Limit	DG (dBi)	EIRP Power
11a	2	5180	10.47	10.83	13.66	17.00	3.00	16.66
HT20	2	5180	10.62	10.99	13.82	17.00	3.00	16.82
HT40	2	5190	8.31	8.20	11.27	17.00	3.00	14.27
Result			Complied					

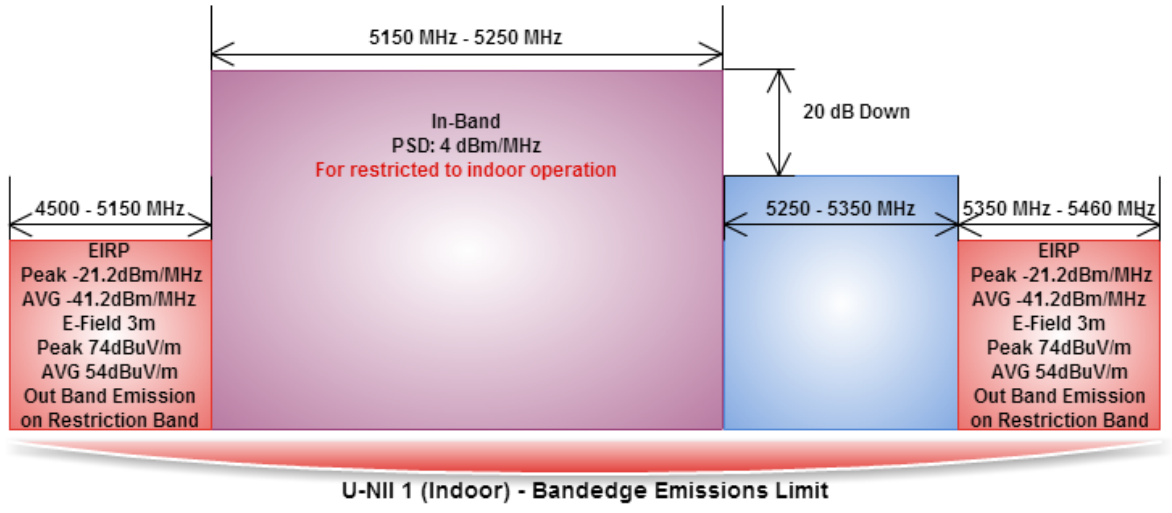
Maximum Conducted Output Power Result								
Condition			RF Output Power (dBm)					
Modulation Mode	N_{TX}	Freq. (MHz)	Chain Port 1	Chain Port 2	Sum Chain	Power Limit	DG (dBi)	EIRP Power
11a	2	5320	10.29	11.39	13.89	24.00	3.00	16.89
HT20	2	5320	10.24	11.23	13.77	24.00	3.00	16.77
HT40	2	5310	9.43	9.86	12.66	24.00	3.00	15.66
Result			Complied					

Maximum Conducted Output Power Result								
Condition			RF Output Power (dBm)					
Modulation Mode	N_{TX}	Freq. (MHz)	Chain Port 1	Chain Port 2	Sum Chain	Power Limit	DG (dBi)	EIRP Power
11a	2	5500	9.58	11.44	13.62	24.00	3.00	16.62
11a	2	5700	9.82	11.45	13.72	24.00	3.00	16.72
HT20	2	5500	9.59	11.59	13.71	24.00	3.00	16.71
HT20	2	5700	10.48	11.11	13.82	24.00	3.00	16.82
HT40	2	5510	8.28	10.37	12.46	24.00	3.00	15.46
HT40	2	5670	9.81	11.37	13.67	24.00	3.00	16.67
Result			Complied					

3.2 Transmitter Radiated Bandedge Emissions

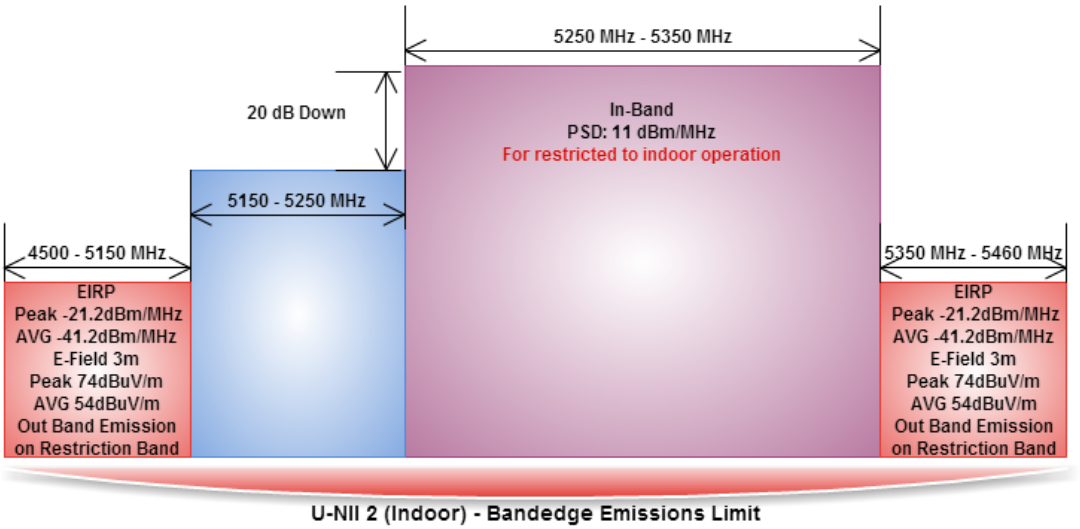
3.2.1 Transmitter Radiated Bandedge Emissions Limit

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



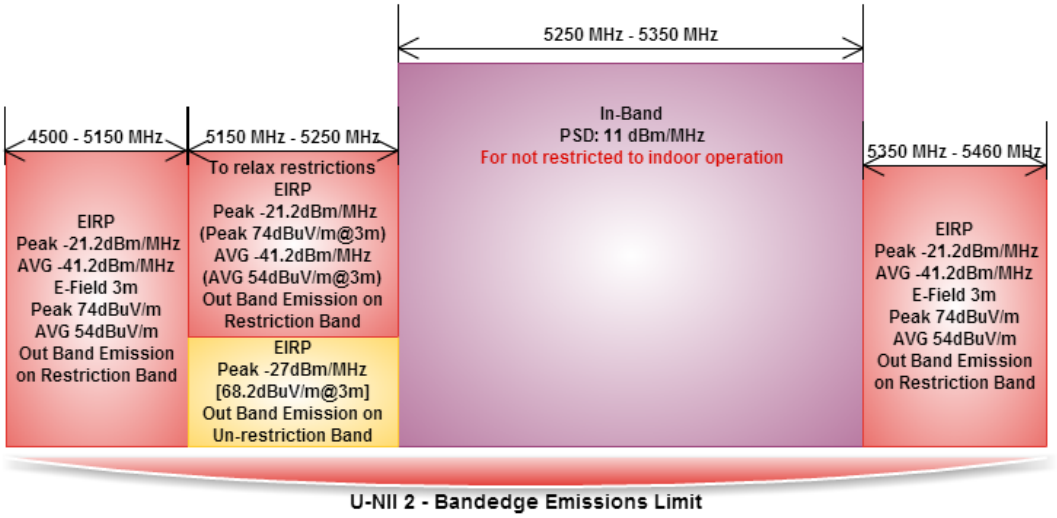
Refer as FCC KDB 789033, G)2)c)(i) specifying that if a non-restricted-band out-of-band emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm or -17 dBm peak emission limit. Reason for change: to ensure that emission requirements in the non-restricted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

Transmitter Radiated Bandedge Emissions Limit for Indoor: 5.25-5.35 GHz band



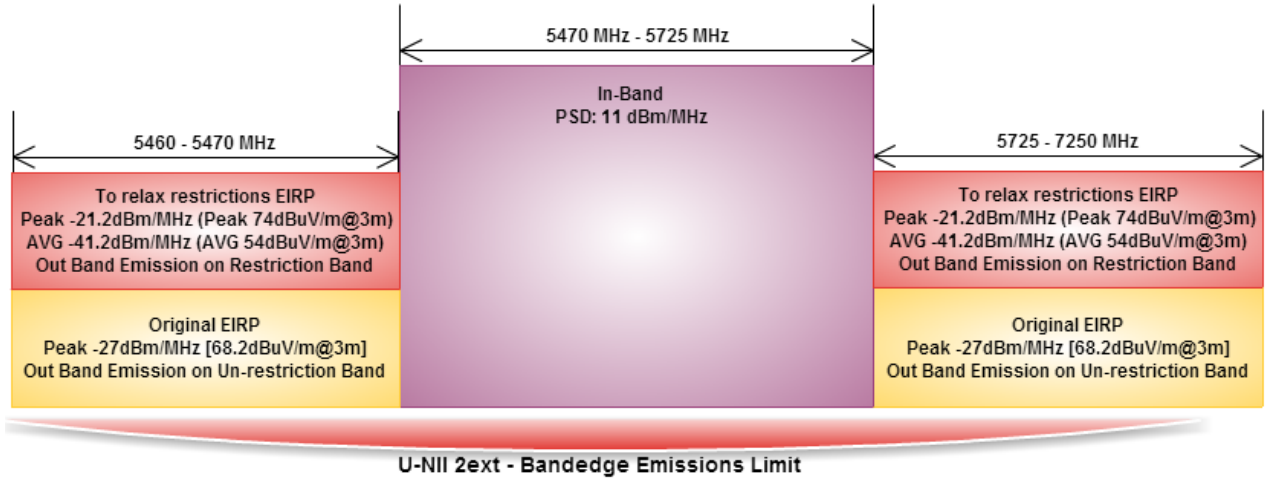
Refer as FCC KDB 789033, G)2)c)(i) specifying that if a non-restricted-band out-of-band emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm or -17 dBm peak emission limit. Reason for change: to ensure that emission requirements in the non-restricted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

Transmitter Radiated Bandedge Emissions Limit for indoor/outdoor: 5.25-5.35 GHz band



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

Transmitter Radiated Bandedge Emissions Limit: 5.47-5.725 GHz band



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

3.2.2 Measuring Instruments

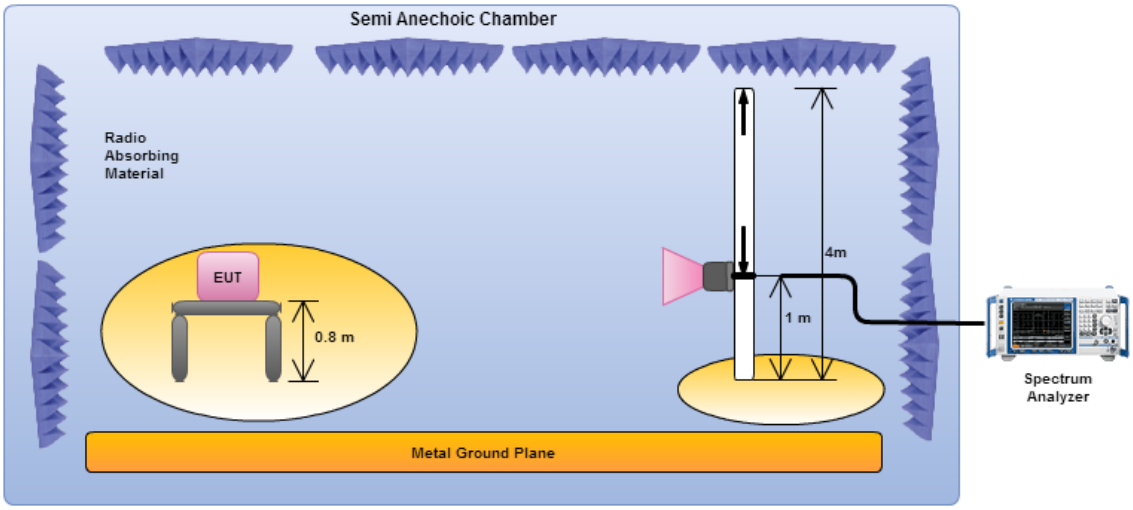
Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

Test Method			
☒	Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements). Measurements in the bandedge are typically made at a closer distance 1m, because the instrumentation noise floor is typically close to the radiated emission limit.		
☒	The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].		
☒	Refer as ANSI C63.10, clause 6.9.2.2 bandedge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.		
☐	If EUT operate in adjacent contiguous bands, bandedge testing performed at the lowest frequency channel at lower-band and highest frequency channel at higher-band. Transmitter in-band emissions will consist of adjacent contiguous bands (e.g., IEEE 802.11ac VHT160 The lowest frequency channel at lower-band and highest frequency channel at higher-band in-band emissions will consist of two adjacent contiguous bands.)		
	☐	Operating in 5.15-5.25 GHz band (lower-band) and 5.25-5.35 GHz band (higher-band).	
	☐	Operating in 5.47-5.725 GHz band (lower-band) and 5.725-5.825 GHz band (higher-band).	
☐	If EUT operate in individual non-contiguous bands, bandedge testing performed at the lowest frequency channel and highest frequency channel within lower-band and higher-band. (e.g., (e.g., IEEE 802.11ac VHT160)		
	☐	Operating in 5.25-5.35 GHz band (lower-band) and 5.47-5.725 GHz band (higher-band).	
	☐	Operating in 5.15-5.25 GHz band (lower-band) and 5.725-5.825 GHz band (higher-band).	
☒	For the transmitter unwanted emissions shall be measured using following options below:		
	☒	Refer as FCC KDB 789033, clause H)2) for unwanted emissions into non-restricted bands.	
	☒	Refer as FCC KDB 789033, clause H)1) for unwanted emissions into restricted bands.	
		☐	Refer as FCC KDB 789033, H)6) Method AD (Trace Averaging).
		☐	Refer as FCC KDB 789033, H)6) Method VB (Reduced VBW).
		☒	Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.
		☐	Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
		☒	Refer as FCC KDB 789033, clause H)5) measurement procedure peak limit.
		☐	Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit.
☒	For the transmitter bandedge emissions shall be measured using following options below:		
	☐	Refer as FCC KDB 789033, clause H)3)d) for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).	
	☒	Refer as ANSI C63.10, clause 6.9.2 for band-edge testing.	
	☐	Refer as ANSI C63.10, clause 6.9.3 for marker-delta method for band-edge measurements.	
☒	For radiated measurement, refer as ANSI C63.10, clause 6.5 for radiated emissions from above 1 GHz.		

3.2.4 Test Setup

Transmitter Radiated Bandedge Emissions



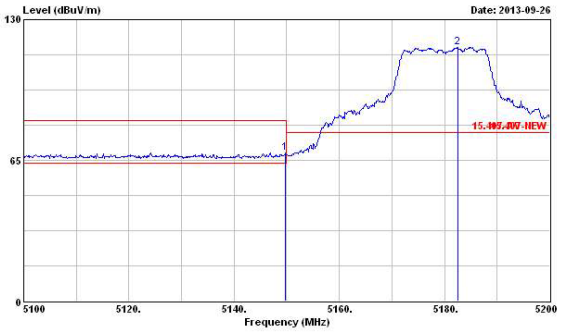
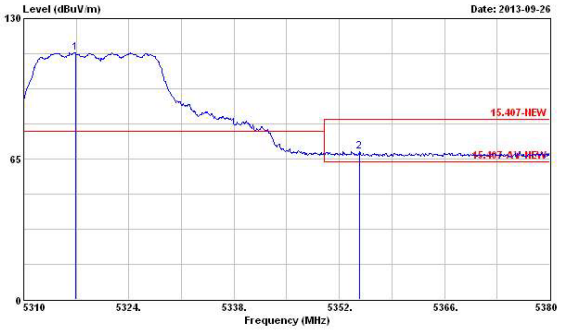
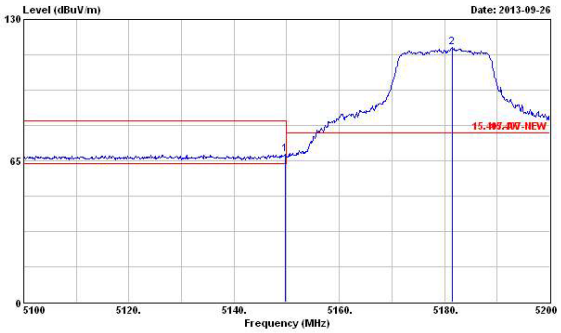
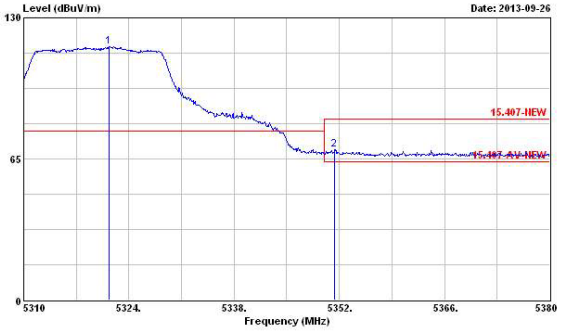
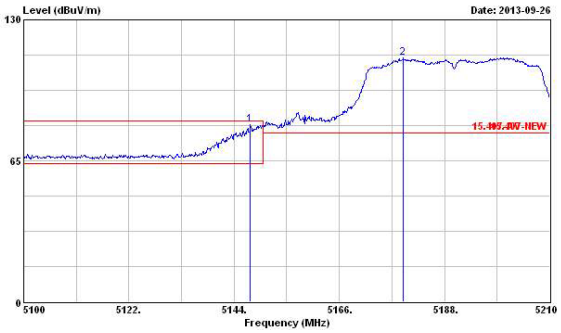
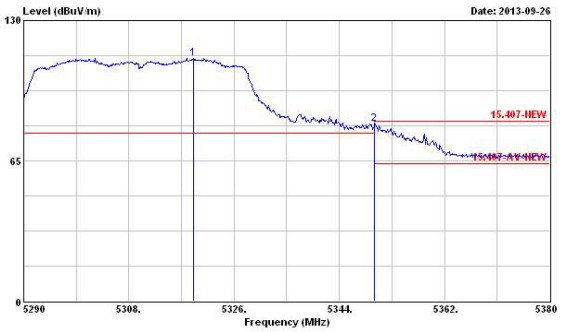
Electric field tests shall be performed in transmitter bandedge emissions using a calibrated horn antenna.

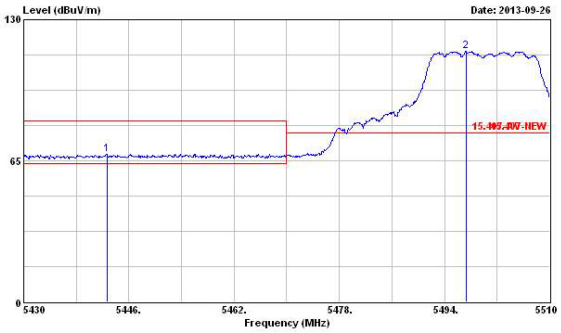
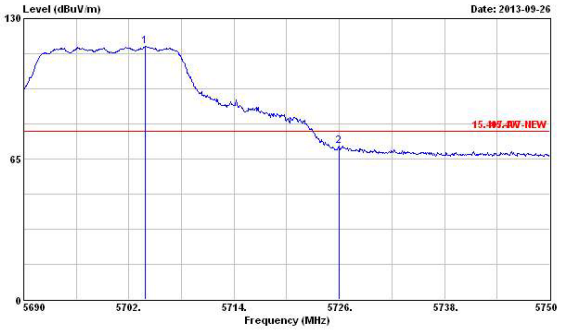
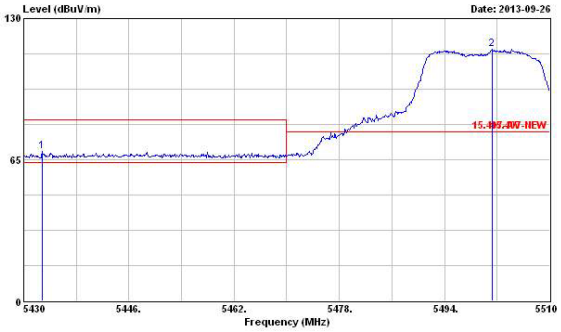
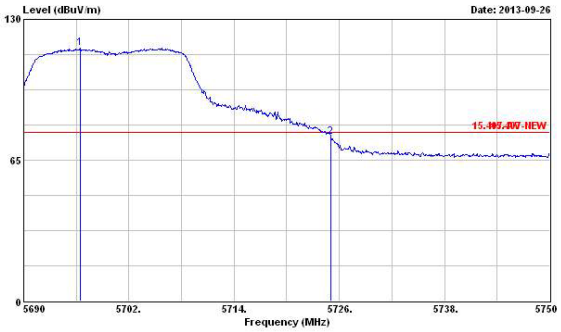
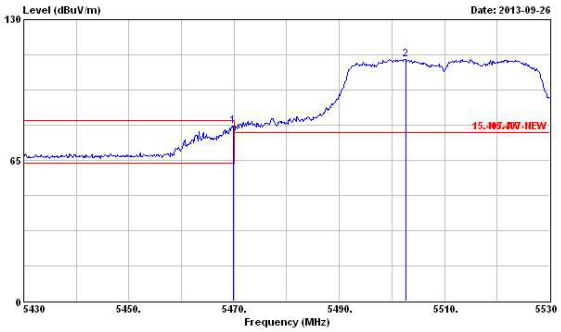
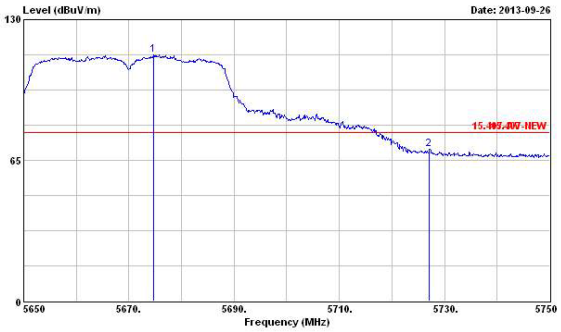
3.2.5 Transmitter Radiated Bandedge Emissions (with Antenna)

U-NII 5150-5250MHz Transmitter Radiated Bandedge (with Antenna)										
Modulation Mode	N_{TX}	Freq. (MHz)	Measure Distance (m)	Freq. (MHz) PK	Level (dBuV/m) PK	Limit (dBuV/m) PK	Freq. (MHz) AV	Level (dBuV/m) AV	Limit (dBuV/m) AV	Pol.
11a	2	5180	1	5149.80	68.40	83.54	5149.90	55.13	63.54	H
HT20, M8-15	2	5180	1	5149.80	67.95	83.54	5150.00	55.10	63.54	H
HT40, M8-15	2	5190	1	5147.41	81.65	83.54	5150.00	61.33	63.54	H
Note 1: Measurement worst emissions of receive antenna polarization.										

U-NII 5250-5350MHz Transmitter Radiated Bandedge (with Antenna)										
Modulation Mode	N_{TX}	Freq. (MHz)	Measure Distance (m)	Freq. (MHz) PK	Level (dBuV/m) PK	Limit (dBuV/m) PK	Freq. (MHz) AV	Level (dBuV/m) AV	Limit (dBuV/m) AV	Pol.
11a	2	5320	1	5354.73	68.38	83.54	5350.46	55.07	63.54	H
HT20, M8-15	2	5320	1	5351.37	69.43	83.54	5351.93	55.46	63.54	H
HT40, M8-15	2	5310	1	5350.03	82.20	83.54	5350.03	60.25	63.54	H
Note 1: Measurement worst emissions of receive antenna polarization.										

U-NII 5470-5725MHz Transmitter Radiated Bandedge (with Antenna)										
Modulation Mode	N_{TX}	Freq. (MHz)	Measure Distance (m)	Freq. (MHz) PK	Level (dBuV/m) PK	Limit (dBuV/m) PK	Freq. (MHz) AV	Level (dBuV/m) AV	Limit (dBuV/m) AV	Pol.
11a	2	5500	1	5436.000	64.07	83.54	5469.200	50.22	63.54	H
11a	2	5700	1	5725.94	70.99	77.84	-	-	-	H
HT20, M8-15	2	5500	1	5432.80	68.89	83.54	5441.68	54.95	63.54	H
HT20, M8-15	2	5700	1	5725.00	75.80	77.84	-	-	-	H
HT40, M8-15	2	5510	1	5469.80	80.75	83.54	5469.90	60.34	63.54	H
HT40, M8-15	2	5670	1	5727.10	70.32	77.84	-	-	-	H
Note 1: Measurement worst emissions of receive antenna polarization.										

5150-5350MHz - Transmitter Radiated Bandedge Emissions Plots (with Antenna)	
11a-(Lowest Ch.)	11a-(Highest Ch.)
	
HT20-(Lowest Ch.)	HT20-(Highest Ch.)
	
HT40-(Lowest Ch.)	HT40-(Highest Ch.)
	

5470-5725MHz - Transmitter Radiated Bandedge Emissions Plots (with Antenna)	
11a-(Lowest Ch.)	11a-(Highest Ch.)
	
HT20-(Lowest Ch.)	HT20-(Highest Ch.)
	
HT40-(Lowest Ch.)	HT40-(Highest Ch.)
	

3.3 Transmitter Radiated Unwanted Emissions

3.3.1 Transmitter Radiated Unwanted Emissions Limit

Unwanted emissions below 1 GHz and restricted band emissions above 1GHz limit			
Frequency Range (MHz)	**Field Strength (uV/m)**	**Field Strength (dBuV/m)**	**Measure Distance (m)**
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).			

Un-restricted band emissions above 1GHz Limit	
Operating Band	**Limit**
5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.725 - 5.825 GHz	5.715 5.725 GHz: e.i.r.p. -17 dBm [78.2 dBuV/m@3m] 5.825 5.835 GHz: e.i.r.p. -17 dBm [78.2 dBuV/m@3m] Other un-restricted band: e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
Note 1: Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).	

3.3.2 Measuring Instruments

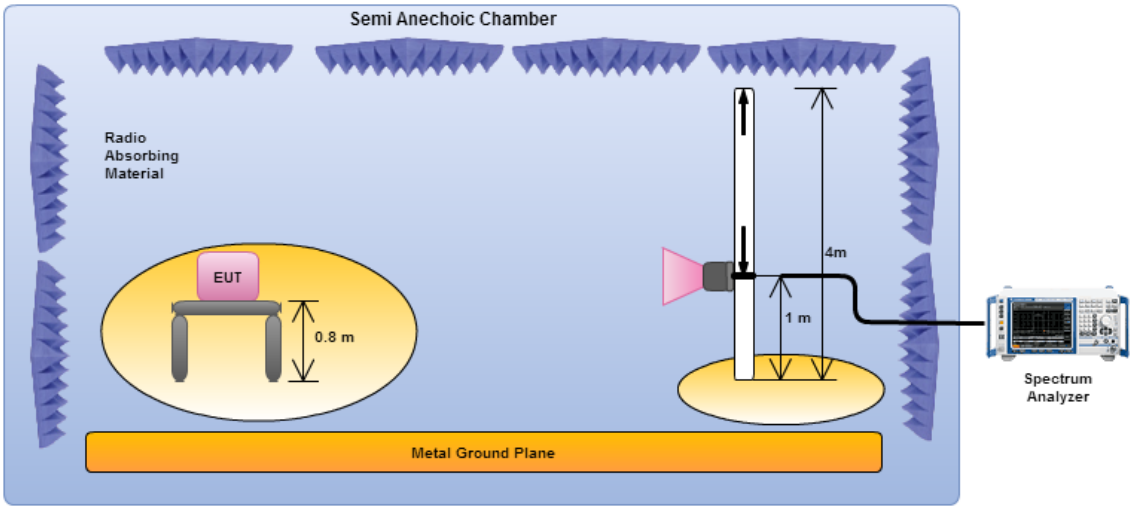
Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method			
☒	Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).		
	☒	Measurements in the frequency range 5 GHz - 10GHz are typically made at a closer distance 1m, because the instrumentation noise floor is typically close to the radiated emission limit.	
	☒	Measurements in the frequency range 10 GHz - 18GHz are typically made at a closer distance 1m, because the instrumentation noise floor is typically close to the radiated emission limit.	
	☒	Measurements in the frequency range above 18 GHz - 40GHz are typically made at a closer distance 0.5m, because the instrumentation noise floor is typically close to the radiated emission limit.	
☒	The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].		
☒	For the transmitter unwanted emissions shall be measured using following options below:		
	☒	Refer as FCC KDB 789033, clause H)2) for unwanted emissions into non-restricted bands.	
	☒	Refer as FCC KDB 789033, clause H)1) for unwanted emissions into restricted bands.	
		☒	Refer as FCC KDB 789033, H)6) Method AD (Trace Averaging).
		☐	Refer as FCC KDB 789033, H)6) Method VB (Reduced VBW).
		☐	Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.
		☐	Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
		☒	Refer as FCC KDB 789033, clause H)5) measurement procedure peak limit.
		☐	Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit.
☒	For radiated measurement.		
	☐	Refer as ANSI C63.10, clause 6.4 for radiated emissions from below 30 MHz.	
	☐	Refer as ANSI C63.10, clause 6.5 for radiated emissions from 30 MHz to 1000 MHz.	
	☒	Refer as ANSI C63.10, clause 6.6 for radiated emissions from above 1 GHz.	

3.3.4 Test Setup

Transmitter Radiated Unwanted Emissions



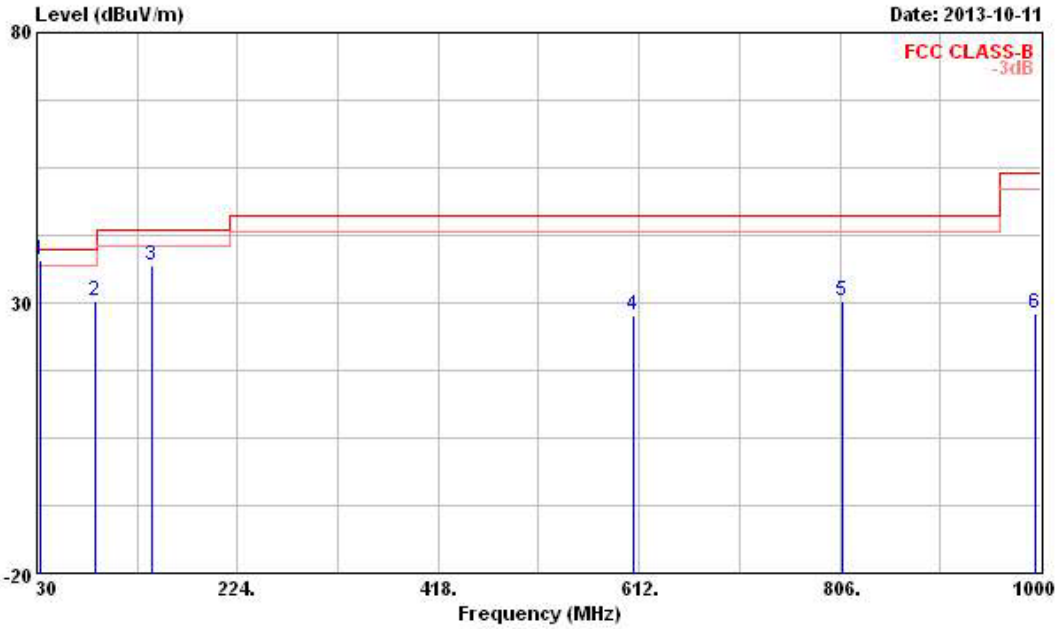
Magnetic field tests shall be performed in the frequency range of 9 kHz to 30 MHz using a calibrated loop antenna. Electric field tests shall be performed in the frequency range of 30 MHz to 1000 MHz using a calibrated bi-log antenna and the frequency range of 1 GHz to 40 GHz using a calibrated horn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

3.3.5 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)

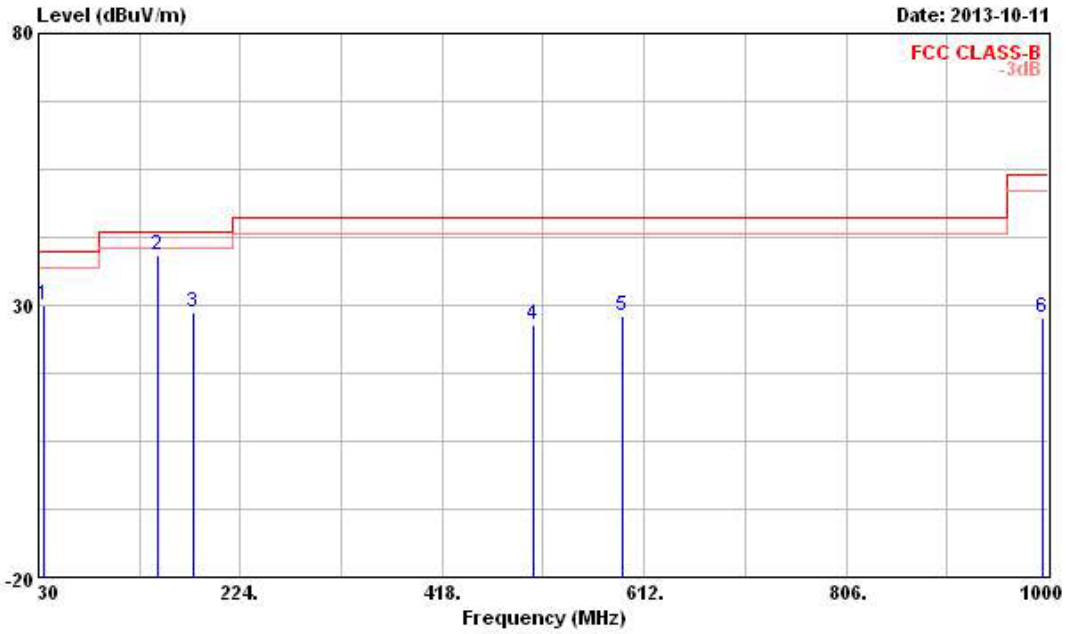
Transmitter Radiated Unwanted Emissions (Below 1GHz)			
Operating Mode	1	**Polarization**	V
Operating Function	EUT with AC Power test		



	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 !	32.910	37.90	-2.10	40.00	49.75	15.11	0.79	27.75	QP	---	---
2	86.260	30.23	-9.77	40.00	47.87	8.73	1.32	27.69	Peak	---	---
3	141.550	37.04	-6.46	43.50	51.17	11.78	1.71	27.62	Peak	---	---
4	607.150	27.73	-18.27	46.00	32.41	20.09	3.71	28.48	Peak	---	---
5	808.910	30.18	-15.82	46.00	33.53	20.25	4.44	28.04	Peak	---	---
6	994.180	28.00	-26.00	54.00	28.34	22.36	4.95	27.65	Peak	---	---

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

Transmitter Radiated Unwanted Emissions (Below 1GHz)			
Operating Mode	1	**Polarization**	H
Operating Function	EUT with AC Power test		

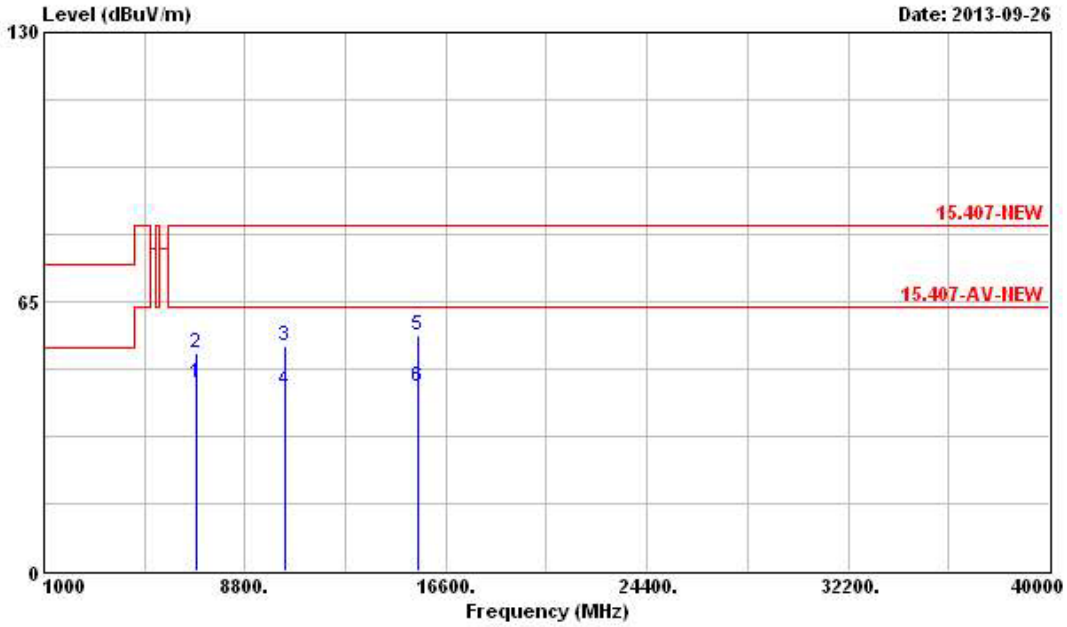


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	35.820	29.87	-10.13	40.00	42.62	14.15	0.82	27.72	Peak	---	---
2	144.460	39.22	-4.28	43.50	53.71	11.40	1.72	27.61	Peak	---	---
3	179.380	28.74	-14.76	43.50	44.39	9.90	1.95	27.50	Peak	---	---
4	506.270	26.48	-19.52	46.00	34.00	17.48	3.44	28.44	Peak	---	---
5	591.630	28.07	-17.93	46.00	32.98	19.93	3.66	28.50	Peak	---	---
6	994.180	27.73	-26.27	54.00	28.07	22.36	4.95	27.65	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)

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

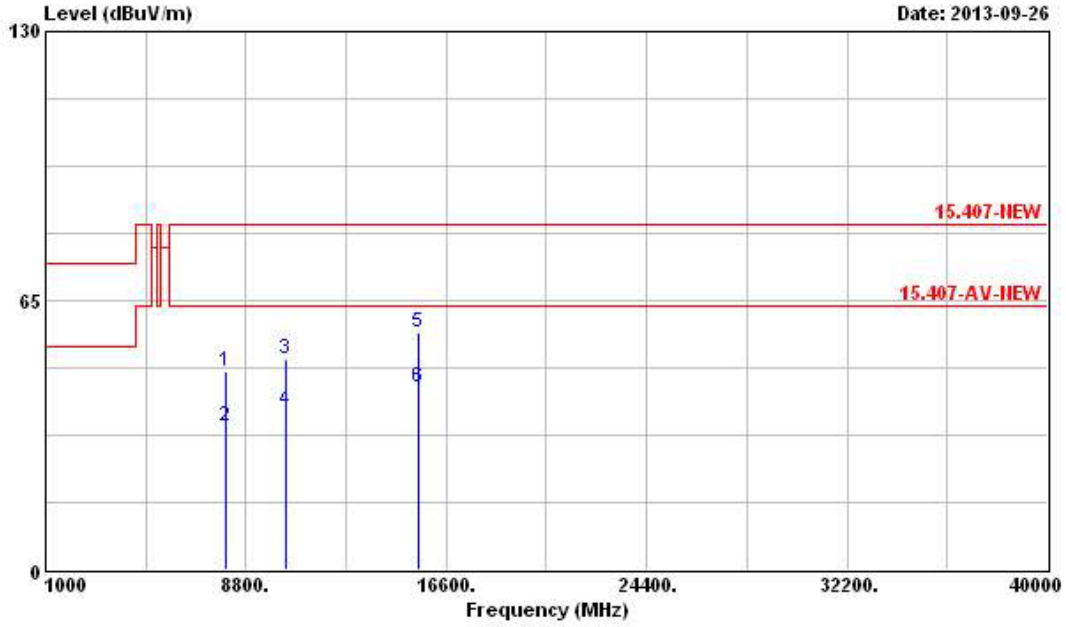
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11a	**Test Freq. (MHz)**	5180
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	6906.000	45.41	-18.13	63.54	39.87	35.28	5.13	34.87	Average	---	---
2	6906.000	52.53	-31.01	83.54	46.99	35.28	5.13	34.87	Peak	---	---
3	10360.000	54.50	-29.04	83.54	45.65	37.52	6.38	35.05	Peak	---	---
4	10360.000	43.52	-20.02	63.54	34.67	37.52	6.38	35.05	Average	---	---
5	15540.000	57.01	-26.53	83.54	43.42	40.43	7.99	34.83	Peak	---	---
6	15540.000	44.29	-19.25	63.54	30.70	40.43	7.99	34.83	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.

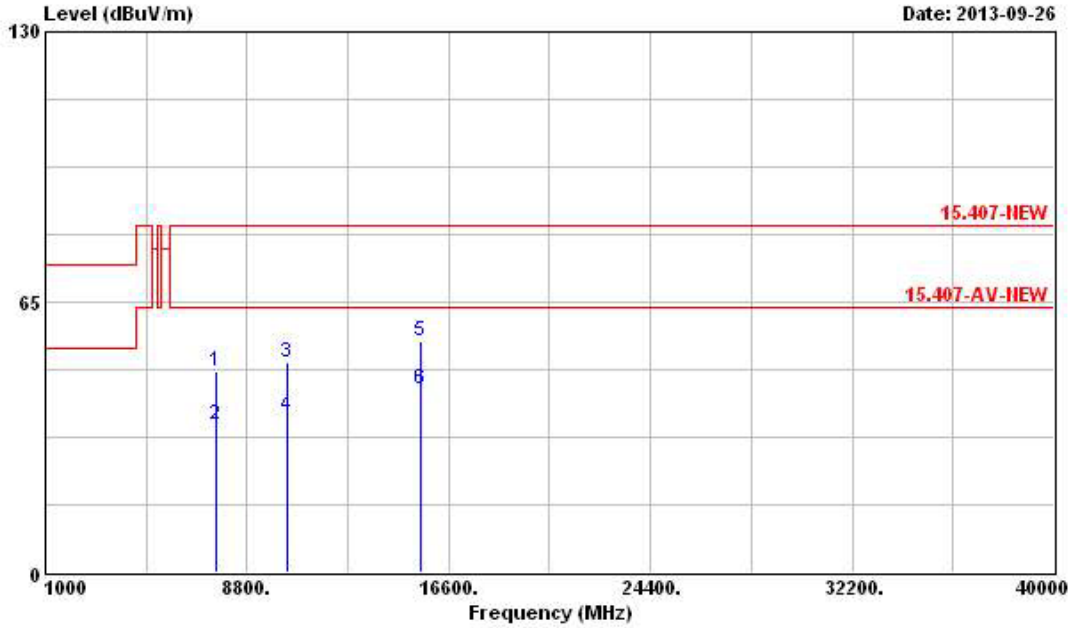
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11a	**Test Freq. (MHz)**	5180
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8048.000	47.78	-35.76	83.54	42.28	35.33	5.33	35.16	Peak	---	---
2	8048.000	34.49	-29.05	63.54	28.99	35.33	5.33	35.16	Average	---	---
3	10360.000	51.00	-32.54	83.54	42.15	37.52	6.38	35.05	Peak	---	---
4	10360.000	38.50	-25.04	63.54	29.65	37.52	6.38	35.05	Average	---	---
5	15540.000	57.16	-26.38	83.54	43.57	40.43	7.99	34.83	Peak	---	---
6	15540.000	44.20	-19.34	63.54	30.61	40.43	7.99	34.83	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.

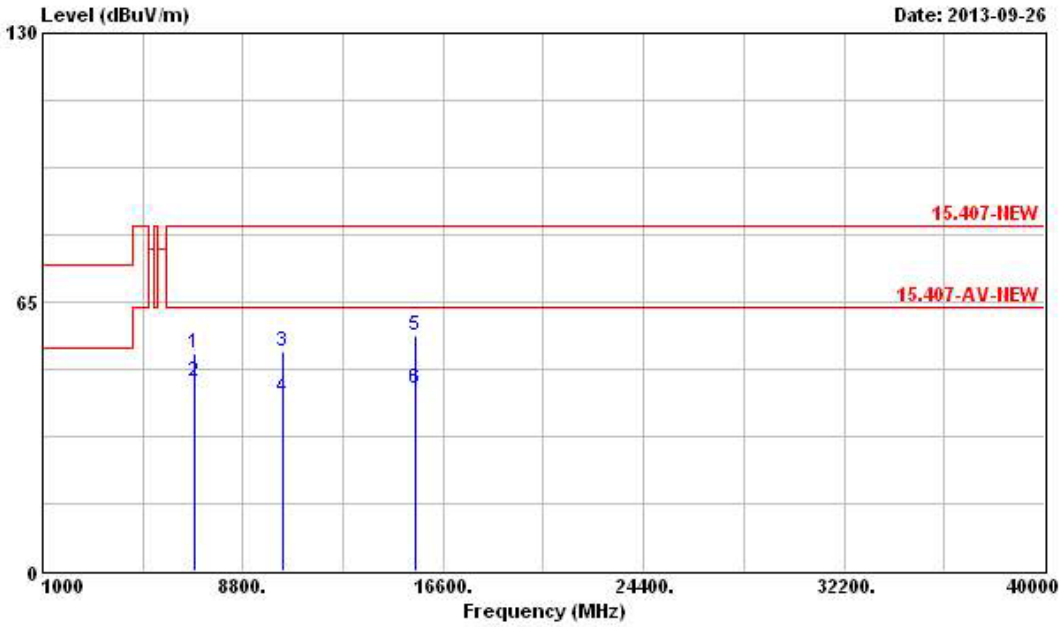
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	5180
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	7606.000	48.45	-35.09	83.54	42.53	35.30	5.64	35.02	Peak	---	---
2	7606.000	35.53	-28.01	63.54	29.61	35.30	5.64	35.02	Average	---	---
3	10360.000	50.56	-32.98	83.54	41.71	37.52	6.38	35.05	Peak	---	---
4	10360.000	37.78	-25.76	63.54	28.93	37.52	6.38	35.05	Average	---	---
5	15540.000	55.53	-28.01	83.54	41.94	40.43	7.99	34.83	Peak	---	---
6	15540.000	43.86	-19.68	63.54	30.27	40.43	7.99	34.83	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.

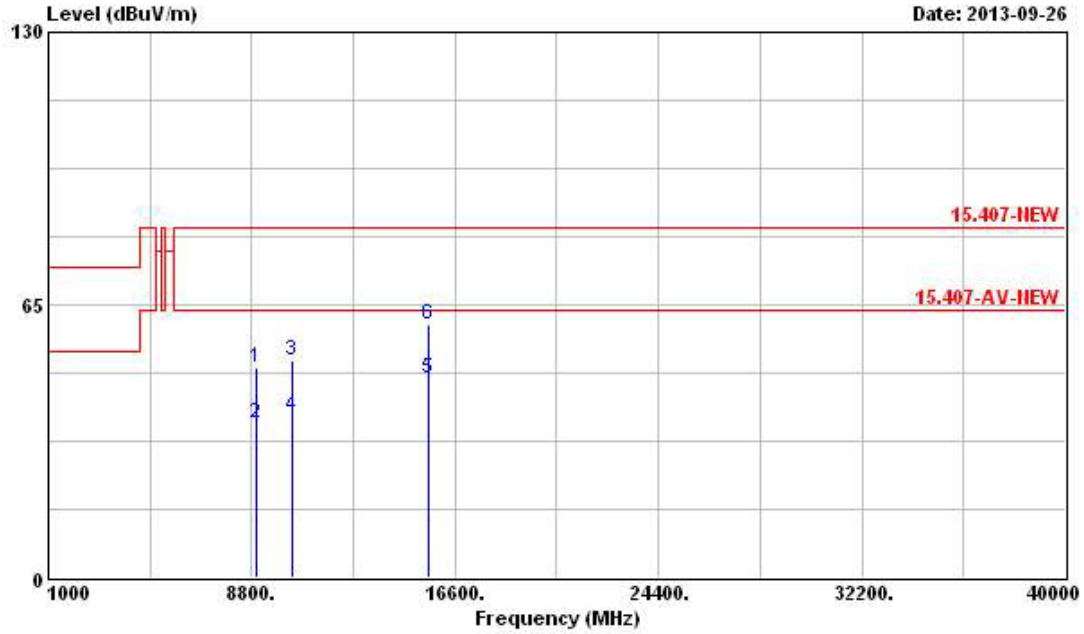
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	5180
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	6906.000	52.50	-31.04	83.54	46.96	35.28	5.13	34.87	Peak	---	---
2	6906.000	45.76	-17.78	63.54	40.22	35.28	5.13	34.87	Average	---	---
3	10360.000	53.17	-30.37	83.54	44.32	37.52	6.38	35.05	Peak	---	---
4	10360.000	41.74	-21.80	63.54	32.89	37.52	6.38	35.05	Average	---	---
5	15540.000	57.06	-26.48	83.54	43.47	40.43	7.99	34.83	Peak	---	---
6	15540.000	44.02	-19.52	63.54	30.43	40.43	7.99	34.83	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.

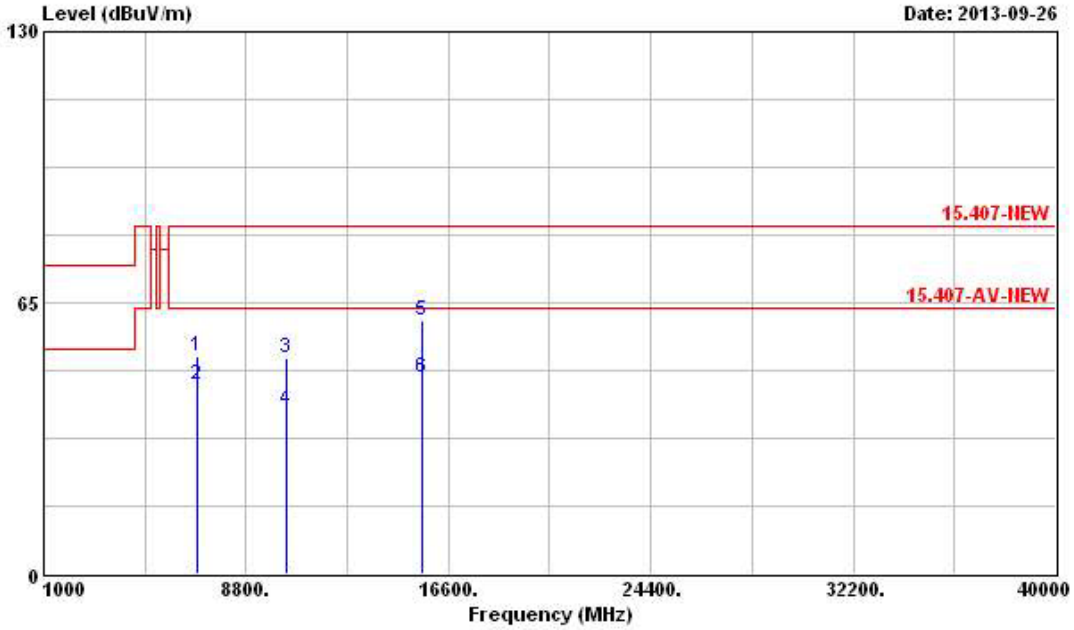
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT40	**Test Freq. (MHz)**	5190
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	8964.000	50.13	-33.41	83.54	43.51	35.87	5.94	35.19	Peak	---	---
2	8964.000	36.77	-26.77	63.54	30.15	35.87	5.94	35.19	Average	---	---
3	10380.000	51.56	-31.98	83.54	42.71	37.53	6.35	35.03	Peak	---	---
4	10380.000	38.30	-25.24	63.54	29.45	37.53	6.35	35.03	Average	---	---
5	15570.000	47.34	-16.20	63.54	33.77	40.47	7.96	34.86	Average	---	---
6	15570.000	60.24	-23.30	83.54	46.67	40.47	7.96	34.86	Peak	---	---

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

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

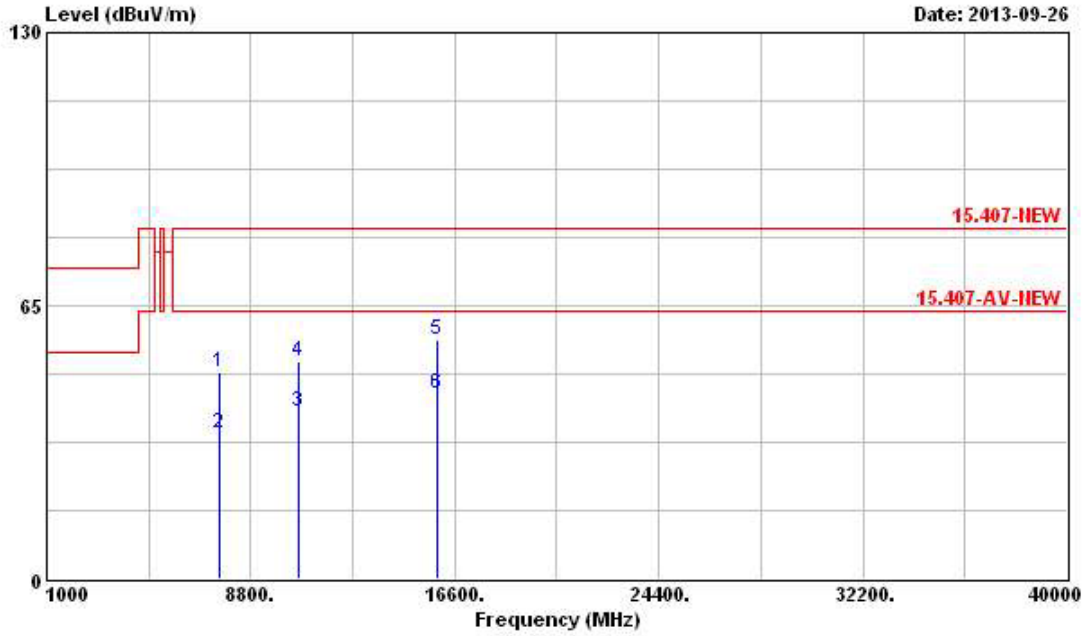


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	6900.000	52.08	-31.46	83.54	46.54	35.28	5.13	34.87	Peak	---	---
2	6900.000	45.19	-18.35	63.54	39.65	35.28	5.13	34.87	Average	---	---
3	10380.000	51.66	-31.88	83.54	42.81	37.53	6.35	35.03	Peak	---	---
4	10380.000	39.25	-24.29	63.54	30.40	37.53	6.35	35.03	Average	---	---
5	15570.000	60.69	-22.85	83.54	47.12	40.47	7.96	34.86	Peak	---	---
6	15570.000	47.24	-16.30	63.54	33.67	40.47	7.96	34.86	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.

3.3.8 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5250-5350MHz

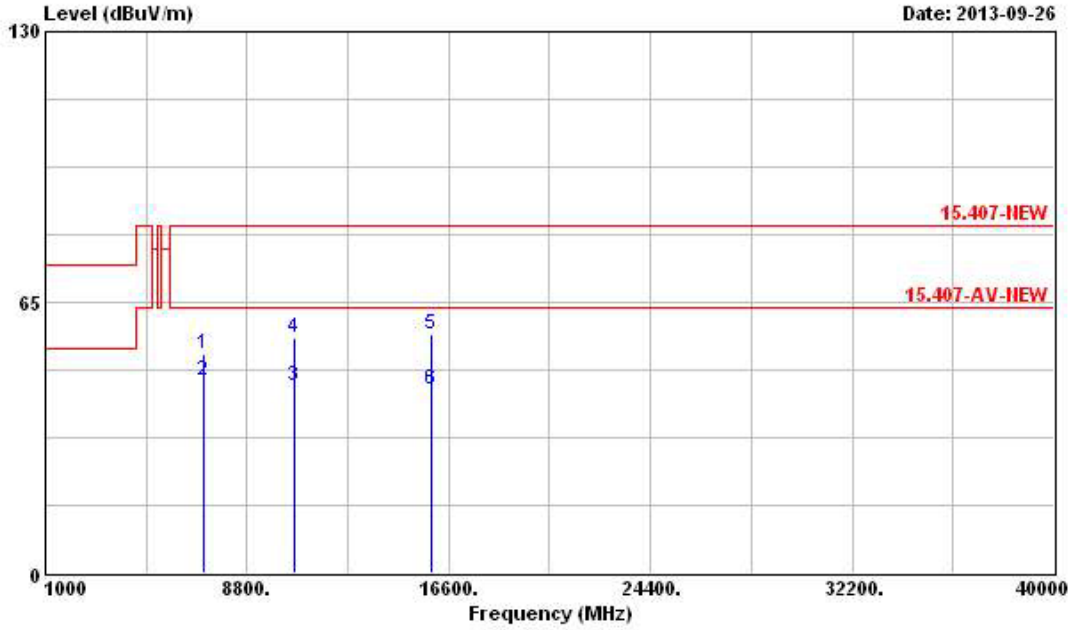
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11a	**Test Freq. (MHz)**	5320
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	7590.000	49.20	-34.34	83.54	43.28	35.30	5.64	35.02	Peak	---	---
2	7590.000	34.73	-28.81	63.54	28.81	35.30	5.64	35.02	Average	---	---
3	10640.000	39.64	-23.90	63.54	30.29	37.68	6.26	34.59	Average	---	---
4	10640.000	51.57	-31.97	83.54	42.22	37.68	6.26	34.59	Peak	---	---
5	15960.000	56.88	-26.66	83.54	43.71	40.87	7.62	35.32	Peak	---	---
6	15960.000	43.94	-19.60	63.54	30.77	40.87	7.62	35.32	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.

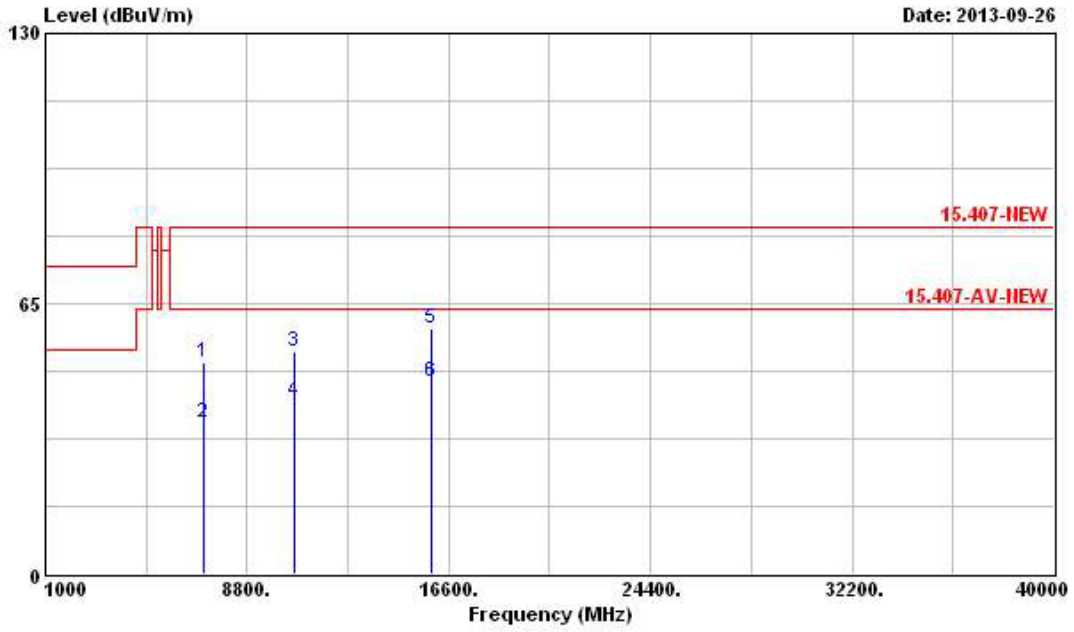
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11a	**Test Freq. (MHz)**	5320
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	7093.000	52.78	-30.76	83.54	47.21	35.30	5.18	34.91	Peak	---	---
2	7093.000	46.20	-17.34	63.54	40.63	35.30	5.18	34.91	Average	---	---
3	10630.000	44.97	-18.57	63.54	35.63	37.67	6.26	34.59	Average	---	---
4	10630.000	56.27	-27.27	83.54	46.93	37.67	6.26	34.59	Peak	---	---
5	15960.000	57.17	-26.37	83.54	44.00	40.87	7.62	35.32	Peak	---	---
6	15960.000	44.15	-19.39	63.54	30.98	40.87	7.62	35.32	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.

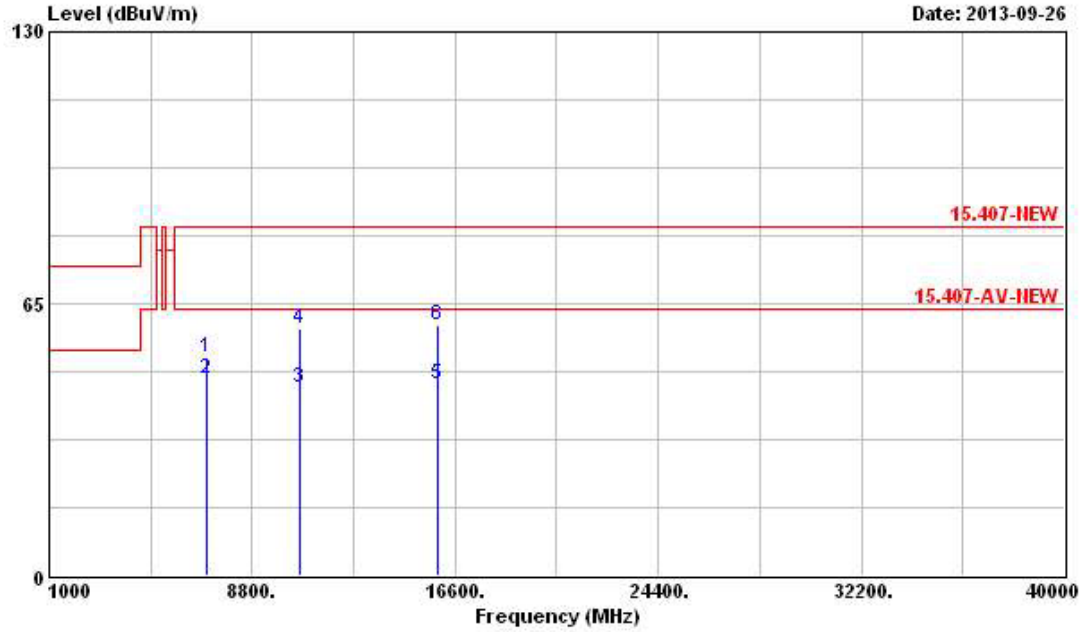
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	5320
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	7144.000	51.10	-32.44	83.54	45.44	35.30	5.28	34.92	Peak	---	---
2	7144.000	36.24	-27.30	63.54	30.58	35.30	5.28	34.92	Average	---	---
3	10640.000	53.29	-30.25	83.54	43.94	37.68	6.26	34.59	Peak	---	---
4	10640.000	41.39	-22.15	63.54	32.04	37.68	6.26	34.59	Average	---	---
5	15960.000	59.18	-24.36	83.54	46.01	40.87	7.62	35.32	Peak	---	---
6	15960.000	46.07	-17.47	63.54	32.90	40.87	7.62	35.32	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.

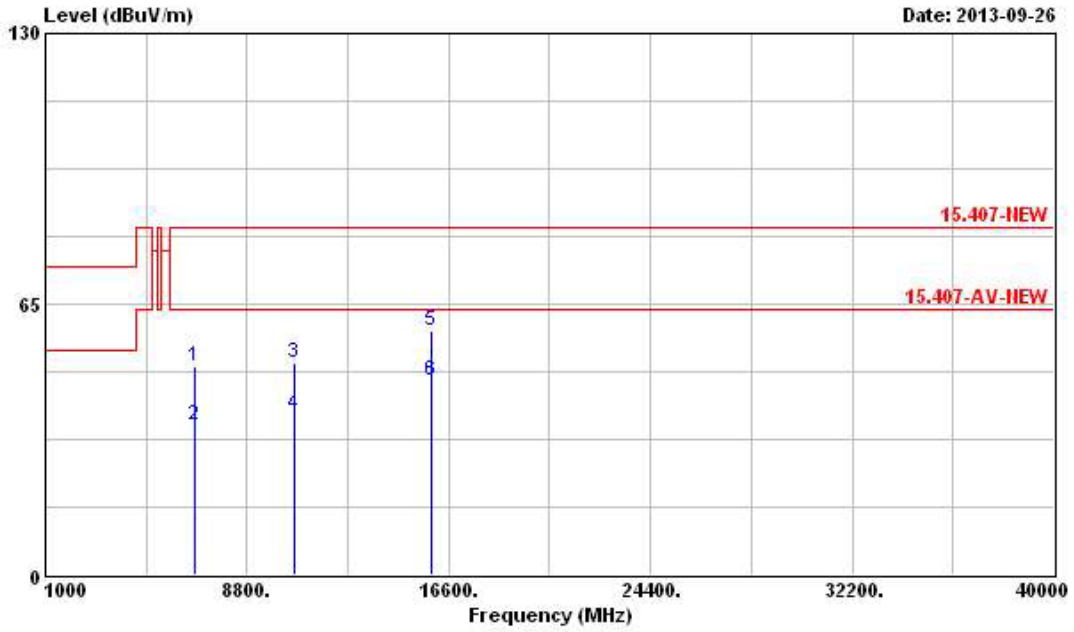
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	5320
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	7084.000	52.29	-31.25	83.54	46.72	35.30	5.18	34.91	Peak	---	---
2	7084.000	47.16	-16.38	63.54	41.59	35.30	5.18	34.91	Average	---	---
3	10640.000	44.77	-18.77	63.54	35.42	37.68	6.26	34.59	Average	---	---
4	10640.000	59.16	-24.38	83.54	49.81	37.68	6.26	34.59	Peak	---	---
5	15960.000	45.97	-17.57	63.54	32.80	40.87	7.62	35.32	Average	---	---
6	15960.000	60.08	-23.46	83.54	46.91	40.87	7.62	35.32	Peak	---	---

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

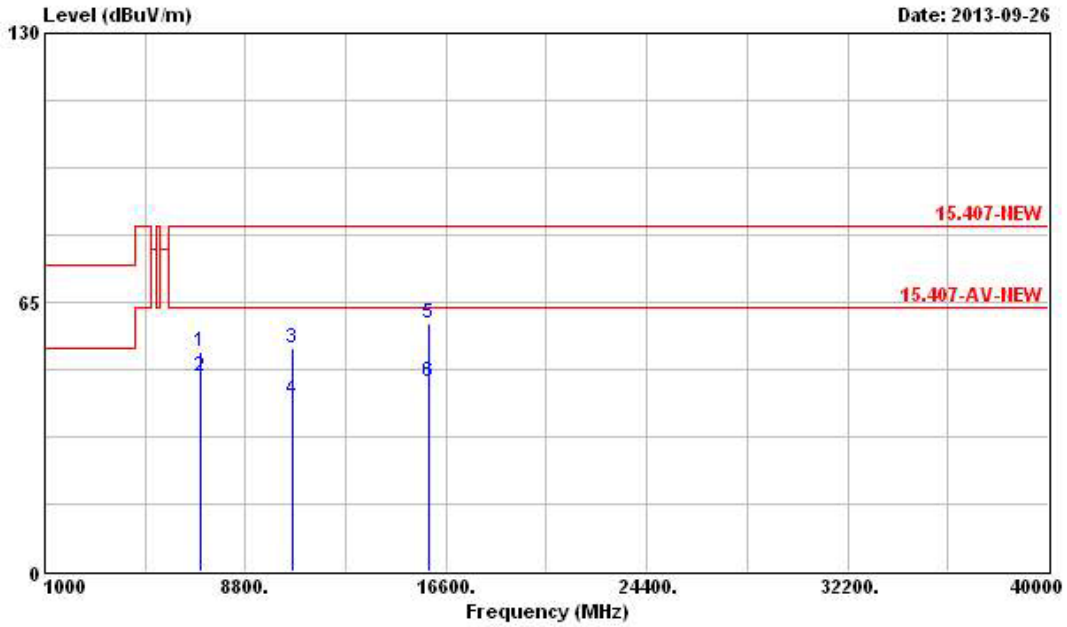
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT40	**Test Freq. (MHz)**	5310
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	6792.000	50.08	-33.46	83.54	44.50	35.26	5.16	34.84	Peak	---	---
2	6792.000	35.78	-27.76	63.54	30.20	35.26	5.16	34.84	Average	---	---
3	10620.000	50.89	-32.65	83.54	41.62	37.67	6.26	34.66	Peak	---	---
4	10620.000	38.66	-24.88	63.54	29.39	37.67	6.26	34.66	Average	---	---
5	15930.000	58.70	-24.84	83.54	45.47	40.83	7.66	35.26	Peak	---	---
6	15930.000	46.81	-16.73	63.54	33.58	40.83	7.66	35.26	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.

Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT40	**Test Freq. (MHz)**	5310
N_{TX}	2	**Polarization**	H

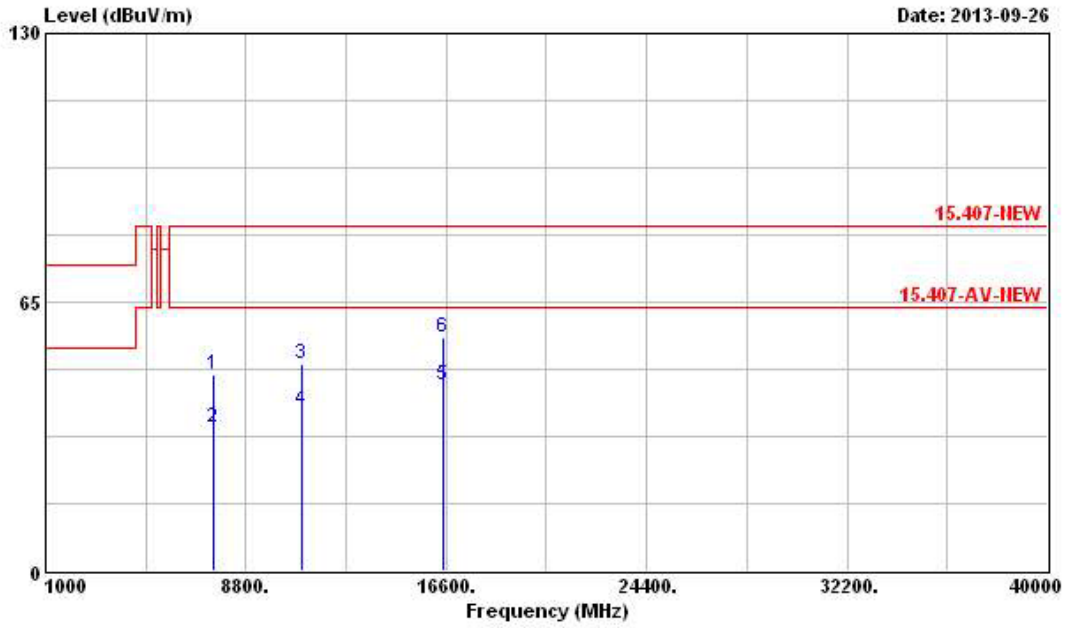


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	7080.000	52.83	-30.71	83.54	47.25	35.30	5.18	34.90	Peak	---	---
2	7080.000	47.10	-16.44	63.54	41.52	35.30	5.18	34.90	Average	---	---
3	10620.000	54.04	-29.50	83.54	44.77	37.67	6.26	34.66	Peak	---	---
4	10620.000	41.49	-22.05	63.54	32.22	37.67	6.26	34.66	Average	---	---
5	15930.000	59.78	-23.76	83.54	46.55	40.83	7.66	35.26	Peak	---	---
6	15930.000	45.94	-17.60	63.54	32.71	40.83	7.66	35.26	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.

3.3.9 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5470-5725MHz

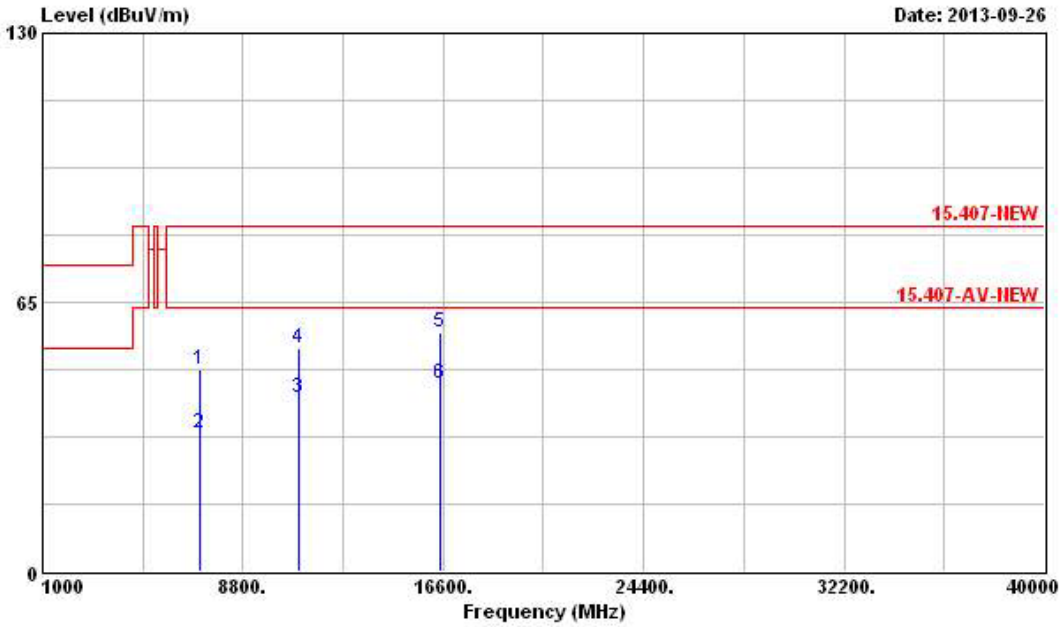
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11a	**Test Freq. (MHz)**	5500
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	7550.000	47.67	-35.87	83.54	41.70	35.30	5.68	35.01	Peak	---	---
2	7550.000	34.53	-29.01	63.54	28.56	35.30	5.68	35.01	Average	---	---
3	11000.000	49.98	-33.56	83.54	39.56	37.90	6.23	33.71	Peak	---	---
4	11000.000	38.93	-24.61	63.54	28.51	37.90	6.23	33.71	Average	---	---
5	16500.000	44.78	-18.76	63.54	30.02	40.90	8.70	34.84	Average	---	---
6	16500.000	56.31	-27.23	83.54	41.55	40.90	8.70	34.84	Peak	---	---

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

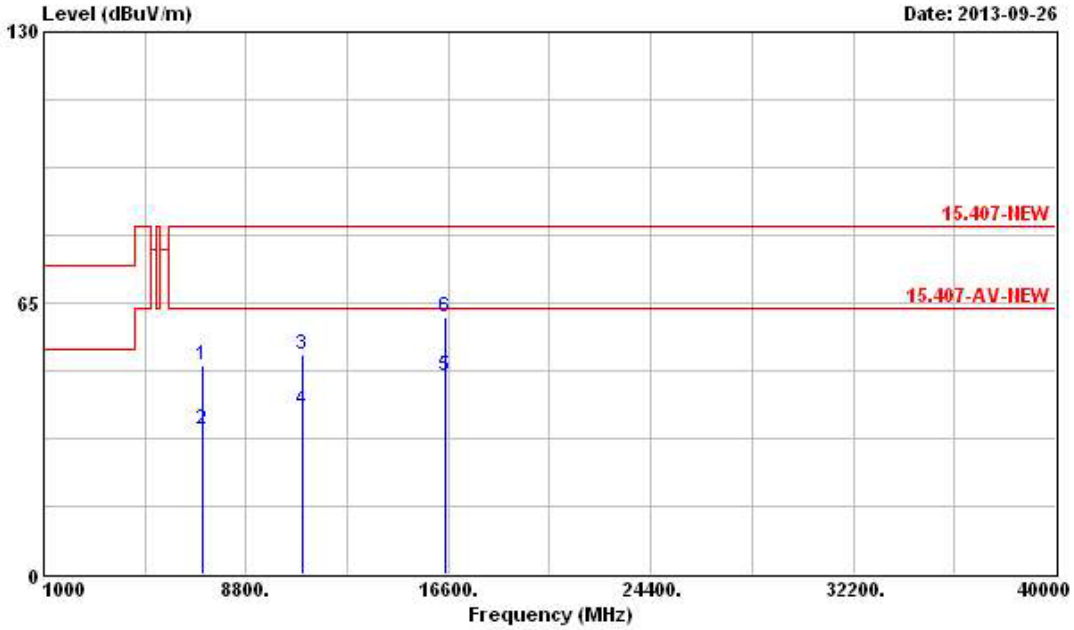
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11a	**Test Freq. (MHz)**	5500
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	7121.000	48.72	-34.82	83.54	43.11	35.30	5.23	34.92	Peak	---	---
2	7121.000	33.54	-30.00	63.54	27.93	35.30	5.23	34.92	Average	---	---
3	11000.000	41.88	-21.66	63.54	31.46	37.90	6.23	33.71	Average	---	---
4	11000.000	53.92	-29.62	83.54	43.50	37.90	6.23	33.71	Peak	---	---
5	16500.000	57.65	-25.89	83.54	42.89	40.90	8.70	34.84	Peak	---	---
6	16500.000	45.20	-18.34	63.54	30.44	40.90	8.70	34.84	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.

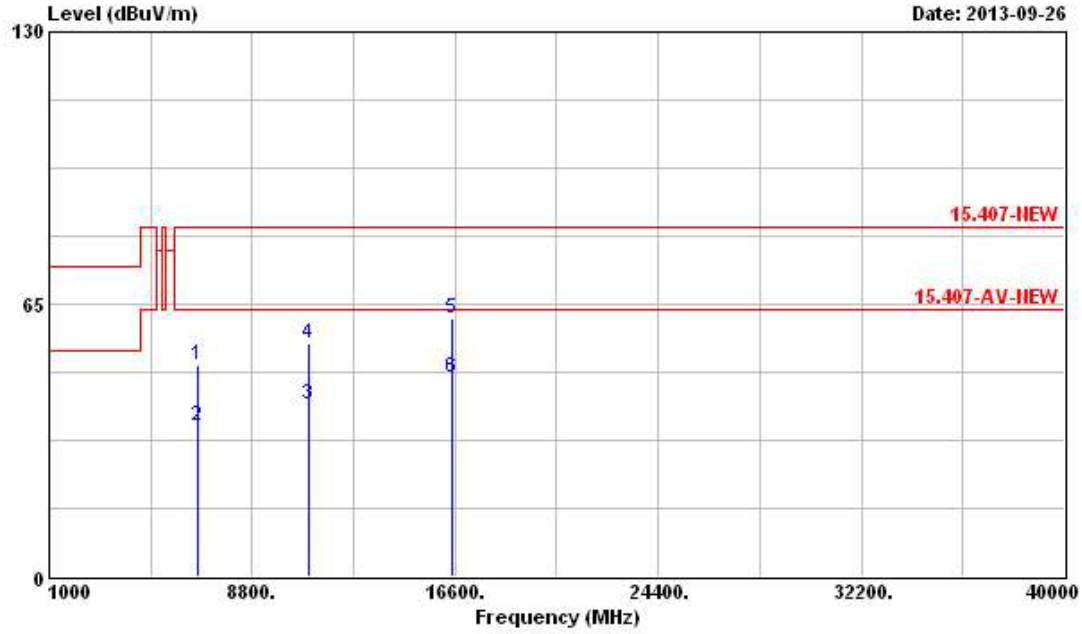
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	5500
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	7128.000	50.03	-33.51	83.54	44.42	35.30	5.23	34.92	Peak	---	---
2	7128.000	34.75	-28.79	63.54	29.14	35.30	5.23	34.92	Average	---	---
3	11000.000	52.45	-31.09	83.54	42.03	37.90	6.23	33.71	Peak	---	---
4	11000.000	39.55	-23.99	63.54	29.13	37.90	6.23	33.71	Average	---	---
5	16500.000	47.45	-16.09	63.54	32.69	40.90	8.70	34.84	Average	---	---
6	16500.000	61.43	-22.11	83.54	46.67	40.90	8.70	34.84	Peak	---	---

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

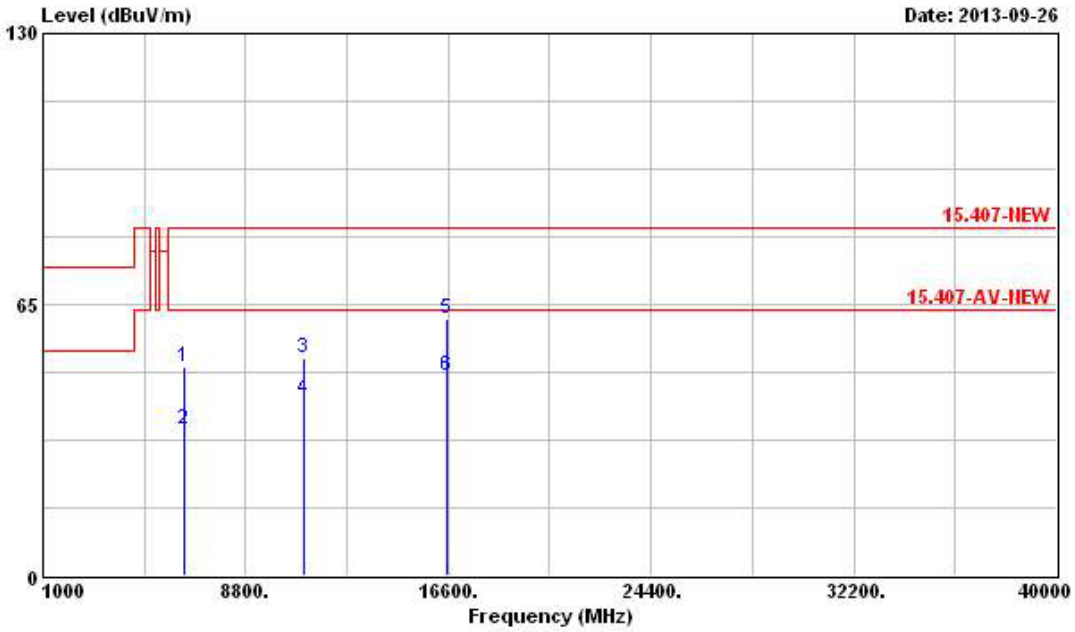
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT20	**Test Freq. (MHz)**	5500
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	6708.000	50.59	-32.95	83.54	44.98	35.24	5.20	34.83	Peak	---	---
2	6708.000	35.84	-27.70	63.54	30.23	35.24	5.20	34.83	Average	---	---
3	11000.000	40.91	-22.63	63.54	30.49	37.90	6.23	33.71	Average	---	---
4	11000.000	55.49	-28.05	83.54	45.07	37.90	6.23	33.71	Peak	---	---
5	16500.000	61.46	-22.08	83.54	46.70	40.90	8.70	34.84	Peak	---	---
6	@16500.000	47.49	-16.05	63.54	32.73	40.90	8.70	34.84	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.

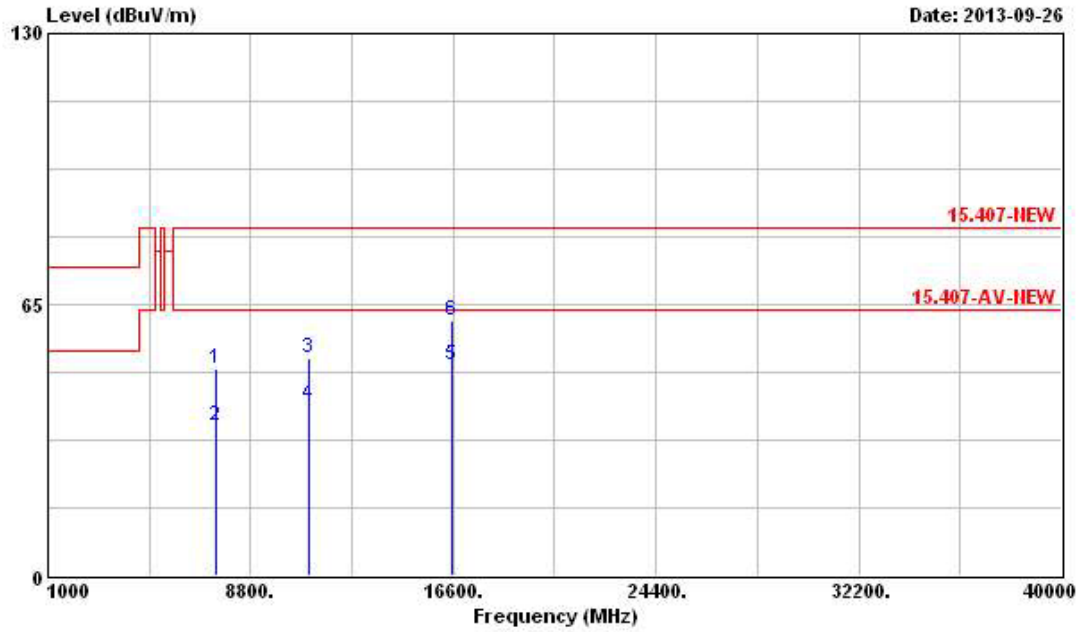
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT40	**Test Freq. (MHz)**	5510
N_{TX}	2	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	6468.000	50.14	-33.40	83.54	44.46	35.18	5.27	34.77	Peak	---	---
2	6468.000	35.15	-28.39	63.54	29.47	35.18	5.27	34.77	Average	---	---
3	11020.000	52.33	-31.21	83.54	41.93	37.91	6.24	33.75	Peak	---	---
4	11020.000	42.28	-21.26	63.54	31.88	37.91	6.24	33.75	Average	---	---
5	16530.000	61.39	-22.15	83.54	46.55	40.90	8.73	34.79	Peak	---	---
6	@16530.000	47.89	-15.65	63.54	33.05	40.90	8.73	34.79	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.

Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT40	**Test Freq. (MHz)**	5510
N_{TX}	2	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	7476.000	49.71	-33.83	83.54	43.74	35.30	5.66	34.99	Peak	---	---
2	7476.000	35.78	-27.76	63.54	29.81	35.30	5.66	34.99	Average	---	---
3	11020.000	52.26	-31.28	83.54	41.86	37.91	6.24	33.75	Peak	---	---
4	11020.000	41.16	-22.38	63.54	30.76	37.91	6.24	33.75	Average	---	---
5	@16530.000	50.30	-13.24	63.54	35.46	40.90	8.73	34.79	Average	---	---
6	16530.000	61.32	-22.22	83.54	46.48	40.90	8.73	34.79	Peak	---	---

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

4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	R&S	FSP40	100004	9kHz ~ 40GHz	Mar. 11, 2013	Radiation (03CH02-HY)
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz ~ 1GHz 3m	May 11, 2013	Radiation (03CH02-HY)
Amplifier	Agilent	8449B	3008A02373	1GHz ~ 26.5GHz	Aug. 28, 2013	Radiation (03CH02-HY)
Horn Antenna	ETS-LINDGREN	3117	00091920	1GHz ~ 18GHz	Nov. 16, 2012	Radiation (03CH02-HY)
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15GHz ~ 40GHz	Jan. 08, 2013	Radiation (03CH02-HY)
RF Cable-high	SUHNER	SUCOFLEX106	03CH02-HY	1GHz ~ 40GHz	Mar. 05, 2013	Radiation (03CH02-HY)
Turn Table	Chaintek Instruments	3000	MF7802058	0~ 360 degree	N/A	Radiation (03CH02-HY)
Antenna Mast	MF	MF7802	MF780208205	1 ~ 4 m	N/A	Radiation (03CH02-HY)

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

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Amplifier	EM	EM18G40G	060572	18GHz ~ 40GHz	Jan. 20, 2013	Radiation (03CH02-HY)
Loop Antenna	TESEQ	HLA 6120	31244	9 kHz - 30 MHz	Dec. 02, 2012	Radiation (03CH02-HY)

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