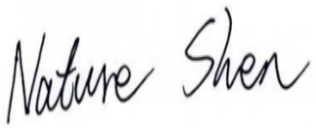
TEST REPORT

Application No.:	SUCR2506000572AT
Applicant:	Quectel Wireless Solutions Co., Ltd.
Address of Applicant:	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233
Manufacturer:	Quectel Wireless Solutions Co., Ltd.
Address of Manufacturer:	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233
EUT Description:	Multi-mode Smart LTE Module
Model No.:	SC206E-NA
Trade Mark:	Quectel
FCC ID:	XMR2022SC206ENA
Standards:	FCC 47 CFR Part 2, Subpart J FCC 47 CFR Part 15, Subpart E
Date of Receipt:	June 20, 2025
Date of Test:	July 14, 2025
Date of Issue:	July 24, 2025
Test Result :	**PASS ***

* In the configuration tested, the EUT detailed in this report complied with the standards specified above.

Version

Revision Record			
Version	**Description**	***Date***	***Remark***
01	Original	July 24, 2025	/

Authorized for issue by:				
Tested By				
		Nature Shen / Project Manager		
Approved By				
		Cloud Peng/Technical Manager		

Contents

1 Test Summary

Test Item	Band[1]	FCC rules No.	Test Requirements	Test Result	Result
Antenna Requirement	--	15.203/15.407(a)	--	Clause 5.1	Reference report SUCR250600057105
26dB Emission Bandwidth	Band I	15.407(a)(1)	No limit.	Clause 5.5	Reference report SEWM2209000164RG05
	Band II-A	15.407(a)(2)			
	Band II-C	15.407(a)(2)			
6dB Emission Bandwidth	Band III	15.407(e)	≥ 500 kHz.	Clause 5.6	
99% Occupied Bandwidth	Band I	KDB 789033 D02§ D	No limit.	Clause 5.7	
	Band II-A				
	Band II-C				
	Band III				
Duty Cycle	Band I Band II-A Band II-C Band III	--	No limit.	Clause 5.3	
Maximum Conducted Output Power	Band I	15.407(a)	< 250mW	Clause 5.4	Reference report SUCR250600057105
	Band II-A	15.407(a)(2)	<MIN{250mW, 11dBm+10*lg(EBW)}		
	Band II-C				
	Band III	15.407(a)(3)	< 1W		
Maximum Power Spectral Density	Band I	15.407(a)	<11dBm/MHz	Clause 5.8	Reference report SEWM2209000164RG05
	Band II-A	15.407(a)(2)	<11dBm/MHz		
	Band II-C				
	Band III	15.407(a)(3)	<30dBm/500KHz		
Unwanted Emissions that fall Out of the Restricted Bands (Radiated)	Band I	15.209 15.407(b)	F<1GHz: §15.209/§7.2.5 limit (QP). F≥1GHz & out-restricted: <-27dBm/MHz PK e.i.r.p. (exl. 5.15-5.35 GHz). F≥1GHz & in-restricted: §15.209/§7.2.5 limit (AV&PK).	Clause 5.9	Reference report SUCR250600057105
	Band II-A	15.407(b) 15.209	F<1GHz: §15.209/§7.2.5 limit (QP). F≥1GHz & out-restricted: <-27dBm/MHz PK e.i.r.p. (exl. 5.25-5.35 GHz). F≥1GHz & in-restricted: §15.209/§7.2.5 limit (AV&PK).		
	Band II-C	15.407(b) 15.209	F<1GHz: §15.209/§7.2.5 limit (QP). F≥1GHz & out-restricted: <-27dBm/MHz PK e.i.r.p. (exl. 5.47-5.725 GHz). F≥1GHz & in-restricted:		

			§15.209/§7.2.5 limit (AV&PK).		
	Band III	15.407(b) 15.209	F<1GHz: §15.209/§7.2.5 limit (QP) F≥1GHz &out-restricted:(QP) a) 27 dBm/MHz at frequencies from the band edges decreasing linearly to 15.6 dBm/MHz at 5 MHz above or below the band edges; b) 15.6 dBm/MHz at 5 MHz above or below the band edges decreasing linearly to 10 dBm/MHz at 25 MHz above or below the band edges; c) 10 dBm/MHz at 25 MHz above or below the band edges decreasing linearly to -27 dBm/MHz at 75 MHz above or below the band edges; and d) -27 dBm/MHz at frequencies more than 75 MHz above or below the band edges. F≥1GHz & in-restricted: §15.209/§7.2.5 limit (AV&PK).		
Unwanted Emissions in the Restricted Bands (Radiated)	Band I Band II-A Band II-C Band III	15.209	---	Clause 5.10	Reference report SUCR250600057105
AC Power Line Conducted Emissions	Band I Band II-A Band II-C Band III	15.207	---	Clause 5.2	
Dynamic Frequency Selection	Band II-A Band II-C	15.407	Channel Move Time:10 Seconds	Clause 3.11	Reference report KSCR2205000660AT
Frequency Stability	Band I Band II-A Band II-C Band III	15.407(g)	Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual	N/A	N/A

Note 1：
Band I: 5150-5250MHz
Band II-A: 5250-5350MHz
Band II-C: 5470-5725MHz
Band III: 5725-5850MHz

Remark:
This test report (Report No.: SUCR250600057205 issue on 2025/07/24) is a variant report based on the original test report (Report No.: SEWM2209000164RG05 issue on 2022/09/07), the detailed difference are refered to the model difference declaration letter from client, according to the difference, only Power and wor stcase RSE are verified.
Because this FCC ID is a change in FCC ID application, this C2PC report is also leveraged from the C2PC of original FCC ID (FCC ID:XMR2022SC200ENA), all the test results are leveraged from the C2PC of original FCC ID report(Report No.: SUCR250600057105 issue on 2025/07/21) .

2 General Information

2.1 Details of Client

Applicant:	Quectel Wireless Solutions Co., Ltd.
Address of Applicant:	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233
Manufacturer:	Quectel Wireless Solutions Co., Ltd.
Address of Manufacturer:	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233

2.2 Test Location

Company:	SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.
Address:	South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone
Post code:	215000
Test engineer:	King-p.Li

2.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **A2LA (Certificate No. 6336.01)**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6336.01.

- **Innovation, Science and Economic Development Canada**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0120.

IC#: 27594.

- **FCC –Designation Number: CN1312**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized as an accredited testing laboratory.

Designation Number: CN1312.

Test Firm Registration Number: 717327

2.4 General Description of EUT

Hardware Version:	LPDDR4X: R1.0	
Software Version:	SC206ENANAR60A03	
WLAN Mode Supported:	802.11a:	20 MHz channel bandwidth
	802.11n:	20 MHz / 40 MHz channel bandwidth
	802.11ac:	20 MHz / 40 MHz / 80 MHz channel bandwidth
Operation Frequency:	5150MHz to 5250MHz 5250MHz to 5350MHz 5470MHz to 5725MHz 5725MHz to 5850MHz	
Modulation Type:	802.11a:	OFDM (BPSK, QPSK, 16QAM, 64QAM)
	802.11n:	OFDM (BPSK, QPSK, 16QAM, 64QAM)
	802.11ac:	OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Channel Spacing:	20MHz:	802.11a/n(HT20)/ac(VHT20)
	40MHz:	802.11n(HT40)/ac(VHT40)
	80MHz:	802.11ac(VHT80)
Antenna Type:	☒ External, ☐ Integrated	
Antenna Gain*:	☒ Provided by client	
	5150MHz to 5250MHz: -0.67dBi(Ant0); 5250MHz to 5350MHz: -0.19dBi(Ant0); 5470MHz to 5725MHz: 1.28dBi(Ant0); 5725MHz to 5850MHz: 1.1dBi(Ant0);	
Smart System:	☒ SISO	802.11a/n/ac
	☐ MIMO	CDD: 802.11a/n/ac: Tx & Rx
		STBC: 802.11n/ac: Tx & Rx
		TXBF: 802.11n/ac: Tx & Rx
	☐ Diversity	802.11b/g: Tx & Rx
RF Cable*:	☒Provided by client	
	0.5dB	
Note: *Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information , SGS is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion. Remark: As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.		

Remark:
In FCC 15.31, for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table, and the selected channel to perform the test as below:

Frequency Range of Operation Operating Frequency Range (in each Band)	Number of Measurement Frequencies Required	Location of Measurement Frequency in Band of Operation
1 MHz or less	1	centre
1 MHz to 10 MHz	2	1 near high end, 1 near low end
Greater than 10 MHz	3	1 near high end, 1 near centre

For UNII Band I:

Mode	Channel	Frequency(MHz)
IEEE 802.11a/n/ac 20MHz	The Lowest channel	5180
	The Middle channel	5200
	The Highest channel	5240
IEEE 802.11n/ac 40MHz	The Lowest channel	5190
	The Highest channel	5230
IEEE 802.11ac 80MHz	The Middle channel	5210

For UNII Band II-A:

Mode	Channel	Frequency(MHz)
IEEE 802.11a/n/ac 20MHz	The Lowest channel	5260
	The Middle channel	5280
	The Highest channel	5320
IEEE 802.11n/ac 40MHz	The Lowest channel	5270
	The Highest channel	5310
IEEE 802.11ac 80MHz	The Middle channel	5290

For UNII Band II-C:		
Mode	Channel	Frequency(MHz)
IEEE 802.11a/n/ac 20MHz	The Lowest channel	5500
	The Middle channel	5580
	The Highest channel	5700
IEEE 802.11n/ac 40MHz	The Lowest channel	5510
	The Middle channel	5550
	The Highest channel	5670
IEEE 802.11ac 80MHz	The Lowest channel	5530
	The Highest channel	5610

For UNII Band III:		
Mode	Channel	Frequency(MHz)
IEEE 802.11a/n/ac 20MHz	The Lowest channel	5745
	The Middle channel	5785
	The Highest channel	5825
IEEE 802.11n/ac 40MHz	The Lowest channel	5755
	The Highest channel	5795
IEEE 802.11ac 80MHz	The Middle channel	5775

2.5 Test Environment and Mode

Environment Parameter	101.0 kPa Selected Values During Tests	
Relative Humidity	44~60 % RH Ambient	
Value	Temperature(℃)	Voltage(V)
NTNV	22~25	3.8
LTNV	-35	3.8
HTNV	75	3.8

Remark:
NV: Normal Voltage
NT: Normal Temperature
LT: Low Extreme Test Temperature
HT: High Extreme Test Temperature

2.6 Description of Support Units

Description	Manufacturer	Model No.
Mother board	Quectel	EVB-G2_V1.3

Remark: all above the information of table are provided by client.

2.7 Worst-case configuration and mode

Low data rate was used to test on antenna port conducted tests and radiated spurious emissions since it has the highest maximum power. Following are the worst-case data rates set for test:

Modulation Type	SISO - Data Rate	MIMO - Data Rate
802.11a	6 Mbps	/
802.11n (HT 20)	MCS0 (6.5 Mbps)	/
802.11n (HT 40)	MCS0 (13.5 Mbps)	/
802.11ac (VHT 20)	MCS0 (6.5 Mbps)	/
802.11ac (VHT 40)	MCS0 (13.5 Mbps)	/
802.11ac (VHT 80)	MCS0 (29.3 Mbps)	/

3 Equipment List

RF Test Equipment					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
Shielding Room	Brilliant-emc	N/A	SUWI-04-08-01	11/9/2022	11/8/2025
Temperature and humidity meter	MingGao	TH101B	SUWI-01-01-07	2/13/2025	2/12/2026
Measurement Software	Tonscend	TST272 V2.0	SUWI-03-55-03	NCR	NCR
Signal Analyzer	ROHDE&SCHWARZ	FSW43	SUWI-01-02-04	1/20/2025	1/19/2026
Temperature Chamber	ESPEC	SU-242	SUWI-01-13-02	5/7/2025	5/6/2026
Wideband Radio Communication Tester	ROHDE&SCHWARZ	CMW500	SUWI-01-16-05	1/21/2025	1/20/2026
DC Power Supply	HYELEC	HY3005B	SUWI-01-18-01	1/15/2025	1/14/2026
Power meter	Anritsu	ML2495A	SUWI-01-31-01	11/19/2024	11/18/2025
Pulse power sensor	Anritsu	MA2411B	SUWI-01-32-01	11/19/2024	11/18/2025
MXG Vector signal genitor	KEYSIGHT	N5182B	SUWI-01-38-01	1/15/2025	1/14/2026
Router	ASUS	GT-AXE11000(FCC ID MSQ-RTAXJF00)	SUWI-03-14-02	NCR	NCR
Signal Analyzer	KEYSIGHT	N9020A	SUWI-01-02-07	11/19/2024	11/18/2025

CE Test System					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
Test receiver	ROHDE&SCHWARZ	ESR7	SUWI-01-10-01	1/15/2025	1/14/2026
Temperature and humidity meter	MingGao	TH101B	SUWI-01-01-06	2/13/2025	2/12/2026
Artificial network	ROHDE&SCHWARZ	ENV216	SUWI-01-19-03	5/8/2025	5/7/2026
Artificial network	ROHDE&SCHWARZ	ENV216	SUWI-01-19-04	5/8/2025	5/7/2026
Measurement Software	Tonscend	JS32-CE 4.0.0.2	SUWI-02-09-05	NCR	NCR

RSE Test Equipment					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
Semi-Anechoic Chamber	Brilliant-emc	N/A	SUWI-04-02-01	6/3/2023	6/2/2026
Temperature and humidity meter	MingGao	TH101B	SUWI-01-01-05	2/13/2025	2/12/2026
Signal Analyzer	ROHDE&SCHWARZ	FSW43	SUWI-01-02-04	1/20/2025	1/19/2026
Signal Analyzer	KEYSIGHT	N9020A	SUWI-01-02-07	11/21/2024	11/20/2025
Test receiver	ROHDE&SCHWARZ	ESR7	SUWI-01-10-01	1/15/2025	1/14/2026
Receiving antenna	SCHWRZBECK MESS-ELEKTRONIK	VULB 9163	SUWI-01-11-01	5/7/2025	5/6/2027
Receiving antenna	SCHWRZBECK MESS-ELEKTRONIK	BBHA 9120D	SUWI-01-11-02	5/7/2025	5/6/2027
Receiving antenna	SCHWRZBECK MESS-ELEKTRONIK	BBHA 9170	SUWI-01-11-03	5/7/2025	5/6/2027
Active Loop Antenna	SCHWRZBECK MESS-ELEKTRONIK	FMZB 1519B	SUWI-01-21-01	5/7/2025	5/6/2027
Amplifier	Tonscend	TAP9K3G32	SUWI-01-14-06	11/19/2024	11/24/2025
Amplifier	Tonscend	TAP01018050	SUWI-01-14-04	11/19/2024	11/24/2025
Amplifier	Tonscend	TAP30M7G30	SUWI-01-14-05	11/19/2024	11/24/2025
Measurement Software	Tonscend	JS32-RE V4.0.0.0	SUWI-02-09-04	NCR	NCR

Remark: NCR=No Calibration Requirement.

4 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Total RF power, conducted	±0.54dB
2	Conduction Emission	± 2.90dB (150kHz to 30MHz)
3	Radiated Emission	± 3.13dB (9k -30MHz)
		± 4.88dB (30M -1GHz)
		± 4.75dB (1GHz to 18GHz)
		± 4.77dB (Above 18GHz)

Remark:
The U_{lab} (lab Uncertainty) is less than $U_{cispr/ETSI}$ (CISPR/ETSI Uncertainty), so the test results
– compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
– non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

5 Test results and Measurement Data

5.1 Antenna Requirement

Standard requirement:	47 CFR Part 15 Section 15.203

The antenna is external antenna on the main PCB and no consideration of replacement. The best case gain of the antenna is

5150MHz to 5250MHz: -0.67dBi(Ant0);

5250MHz to 5350MHz: -0.19dBi(Ant0);

5470MHz to 5725MHz: 1.28dBi(Ant0);

5725MHz to 5850MHz: 1.1dBi(Ant0);

Note:

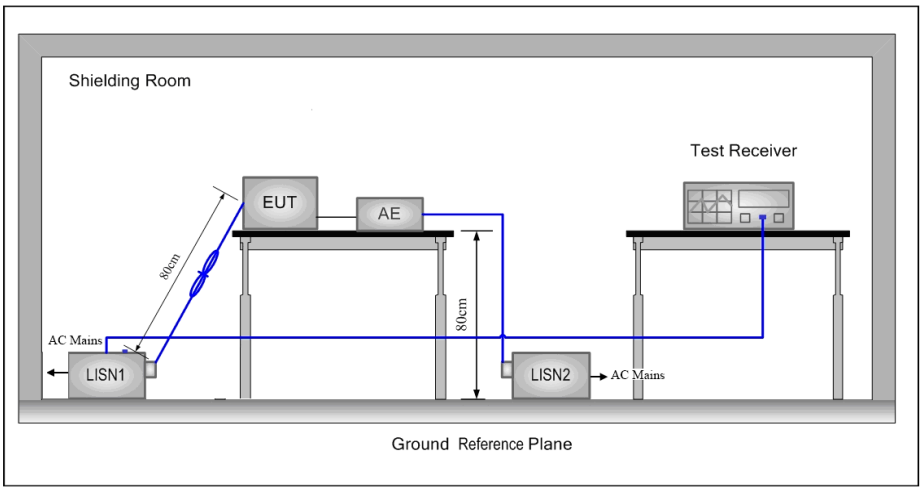
The antenna gain are derived from the gain information report provided by the manufacturer.

Remark:

As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

5.2 AC Power Line Conducted Emissions

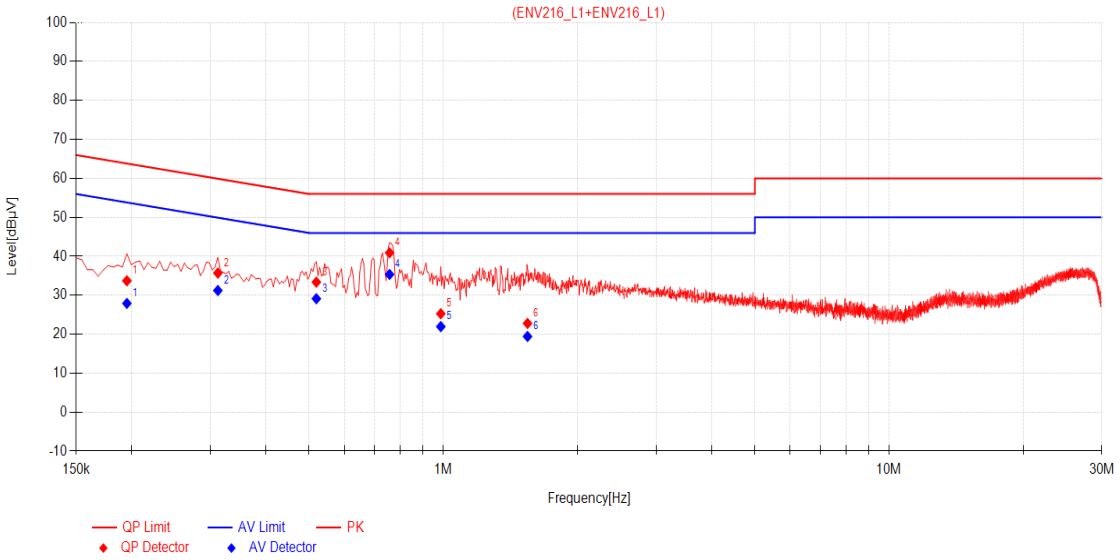
Test Requirement:	47 CFR Part 15 Section 15.407(b)		
Test Method:	ANSI C63.10: 2013 Section 6.2		
Test Frequency Range:	150kHz to 30MHz		
Receiver Setup:	RBW = 9kHz, VBW = 30kHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	* Decreases with the logarithm of the frequency.		
Test Procedure:	1) The mains terminal disturbance voltage test was conducted in a shielded room. 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded. 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2. 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.		

Test Setup:	
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.
Final Test Mode:	Refer to section 3.7 for details. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 3 for details.

Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Phase:	Line

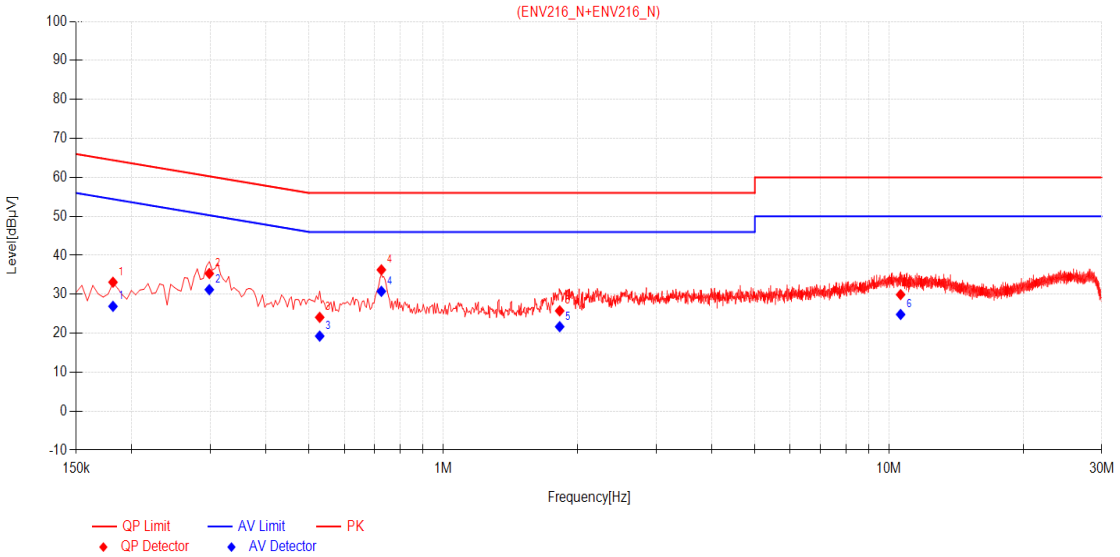


Final Data List

NO.	Frequency [MHz]	Factor [dB]	QP Reading [dBµV]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Reading [dBµV]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.1950	10.07	23.64	33.71	63.82	30.11	17.85	27.92	53.82	25.90	PASS
2	0.3120	10.07	25.63	35.70	59.92	24.22	21.15	31.22	49.92	18.70	PASS
3	0.5190	10.08	23.30	33.38	56.00	22.62	19.04	29.12	46.00	16.88	PASS
4	0.7575	10.05	30.85	40.90	56.00	15.10	25.30	35.35	46.00	10.65	PASS
5	0.9870	9.95	15.32	25.27	56.00	30.73	12.01	21.96	46.00	24.04	PASS
6	1.5450	9.89	12.89	22.78	56.00	33.22	9.54	19.43	46.00	26.57	PASS

Remark:
1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Value =Reading[dBµV] + Factor(Lisn factor[dB] + cable loss[dB]).
3. Margin = Limit[dBµV] – Value[dBµV]

Phase:	Neutral

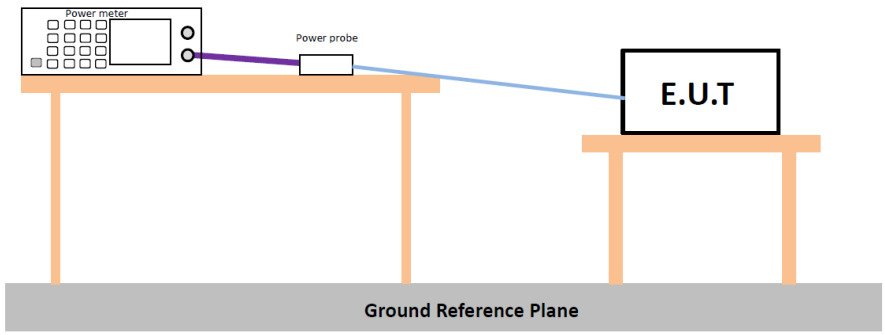


Final Data List

NO.	Frequency [MHz]	Factor [dB]	QP Reading [dBµV]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Reading [dBµV]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.1815	10.08	23.01	33.09	64.42	31.33	16.82	26.90	54.42	27.52	PASS
2	0.2985	10.05	25.28	35.33	60.28	24.95	21.13	31.18	50.28	19.10	PASS
3	0.5280	10.06	14.02	24.08	56.00	31.92	9.20	19.26	46.00	26.74	PASS
4	0.7260	10.07	26.20	36.27	56.00	19.73	20.68	30.75	46.00	15.25	PASS
5	1.8240	9.92	15.82	25.74	56.00	30.26	11.77	21.69	46.00	24.31	PASS
6	10.6170	9.79	20.12	29.91	60.00	30.09	15.02	24.81	50.00	25.19	PASS

Remark:
1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Value =Reading[dBµV] + Factor(Lisn factor[dB] + cable loss[dB]).
3. Margin = Limit[dBµV] – Value[dBµV]

5.3 Conducted Output Power

Test Requirement:	47 CFR Part 15 Section 15.407(a)	
Test Method:	ANSI C63.10 :2013 Section11.9.2.3	
Test Setup:	 * Test with power meter (Detector function: Peak)	
Test Instruments:	Refer to section 3 for details.	
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates	
Final Test Mode:	Refer to section 3.7 for details.	
Limit:	Frequency Band	Limit
	5150-5250MHz	Not exceed 250mW(24dBm)
	5250-5350MHz	The lesser of 250mW(24dBm) or 11+ 10logB
	5470-5725MHz	The lesser of 250mW(24dBm) or 11+ 10logB
	5725-5850MHz	Not exceed 1W(30dBm)
	*Where B is the 26dB emission bandwidth in MHz	
Test Results:	Pass	
The detailed test data see: **Appendix**		

5.4 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15 Section 15.205 and 15.209
Test Method:	ANSI C63.10: 2013 Section 6.4 / 6.5 / 6.6
Test Site:	Measurement Distance: 3m or 10m (Semi-Anechoic Chamber)
Test Setup:	

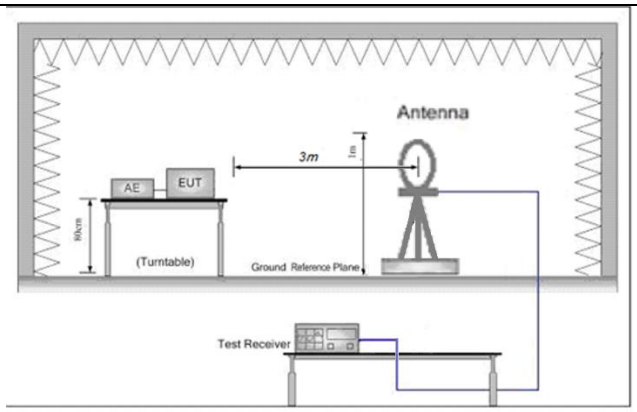


Figure 1. 9kHz to 30MHz

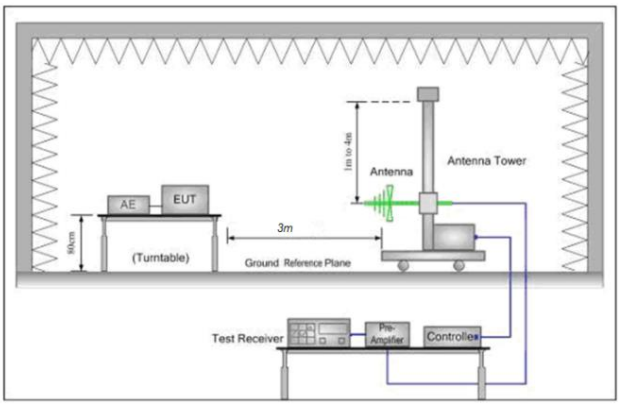


Figure 1. 30MHz to 1GHz

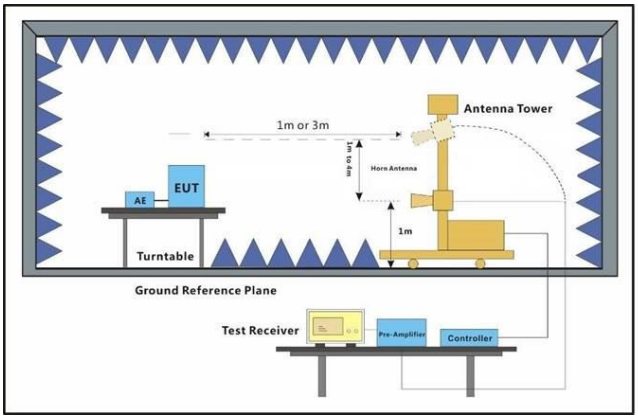
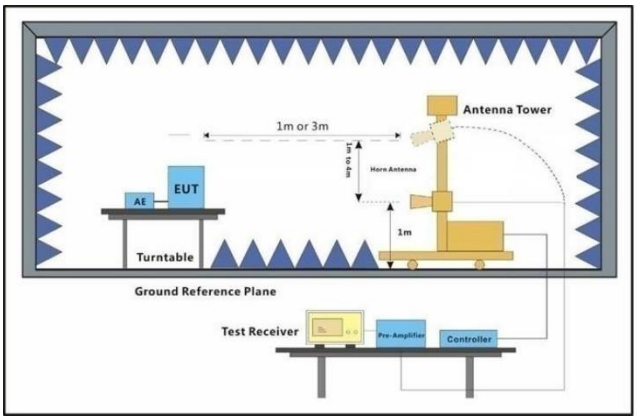


Figure 2. Above 1 GHz

Test Procedure:	a. For below 1GHz test, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation. b. For above 1GHz test, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation. (Distance from antenna to EUT is 1m for measurements >18GHz). c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the

	rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. g. Test the EUT in the outermost channels. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case. i. Repeat above procedures until all frequencies measured was complete. j. The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported k. The disturbance above 18GHz was very low, and the harmonics were the highest point could be found when testing, so only the harmonics had been displayed. l. At a measurement distance of 1 meter the limit line was increased by 20*LOG(3/1) = 9.54 dB.
Test Configuration:	Measurements Below 1000MHz • RBW = 120 kHz • VBW = 300 kHz • Detector = Peak • Trace mode = max hold Peak Measurements Above 1000 MHz • RBW = 1 MHz • VBW ≥ 3 MHz • Detector = Peak • Sweep time = auto • Trace mode = max hold Average Measurements Above 1000MHz • RBW = 1 MHz • VBW ≥ [3 *RBW] • Detector = RMS (power averaging), if span / (# of points in sweep) ≤ (RBW / 2). Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak. • Sweep time = auto • Perform a trace average of at least 100 traces. Value = Reading + Factor(Antenna Factor + Cable loss – Preamplifier Factor).
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates.
Final Test Mode:	Refer to section 3.7 for details.
Instruments Used:	Refer to section 3 for details.
Test Results:	Pass
The detailed test data see: **Appendix**	

5.5 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15 Section 15.407(b)		
Test Method:	ANSI C63.10: 2013 Section 11.12		
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)		
Limit:	Frequency	Limit (dBuV/m)	Remark
	30MHz-88MHz	40.0	Quasi-peak
	88MHz-216MHz	43.5	Quasi-peak
	216MHz-960MHz	46.0	Quasi-peak
	960MHz-1GHz	54.0	Quasi-peak
	Above 1GHz	54.0	Average Value
		74.0	Peak Value
Test Setup:			
Test Procedure:	a. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel g. Test the EUT in the outermost channels.		

	h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode,And found the X axis positioning which it is worse case. i. Repeat above procedures until all frequencies measured was complete.
Test Configuration:	Measurements Below 1000MHz • RBW = 120 kHz • VBW = 300 kHz • Detector = Peak • Trace mode = max hold Peak Measurements Above 1000 MHz • RBW = 1 MHz • VBW ≥ 3 MHz • Detector = Peak • Sweep time = auto • Trace mode = max hold Average Measurements Above 1000MHz • RBW = 1 MHz • VBW ≥ [3 *RBW] • Detector = RMS (power averaging), if span / (# of points in sweep) ≤ (RBW / 2). Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak. • Sweep time = auto • Perform a trace average of at least 100 traces. Value = Reading + Factor(Antenna Factor + Cable loss).
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates.
Final Test Mode:	Refer to section 3.7 for details.
Instruments Used:	Refer to section 3 for details.
Test Results:	Pass
The detailed test data see: **Appendix**	

6 Photographs - Setup Photos

Refer to Appendix A.2 BT&WLAN Setup Photos.

7 Appendix

Maximum conducted output power

Test Result Channel Power

Test Mode	Antenna	Frequency[MHz]	Conducted power [dBm]	Limit [dBm]	Verdict
11A	Ant0	5180	14.25	≤23.98	PASS
		5220	14.46	≤23.98	PASS
		5240	14.19	≤23.98	PASS
		5260	14.40	≤23.98	PASS
		5300	14.45	≤23.98	PASS
		5320	14.41	≤23.98	PASS
		5500	14.02	≤23.98	PASS
		5580	14.28	≤23.98	PASS
		5700	15.19	≤23.98	PASS
		5745	15.06	≤30.00	PASS
		5785	14.72	≤30.00	PASS
		5825	14.66	≤30.00	PASS
11N20SISO	Ant0	5180	14.47	≤23.98	PASS
		5220	14.47	≤23.98	PASS
		5240	13.94	≤23.98	PASS
		5260	14.41	≤23.98	PASS
		5300	14.54	≤23.98	PASS
		5320	13.77	≤23.98	PASS
		5500	14.07	≤23.98	PASS
		5580	14.28	≤23.98	PASS
		5700	13.85	≤23.98	PASS
		5745	15.14	≤30.00	PASS
		5785	14.69	≤30.00	PASS
		5825	14.12	≤30.00	PASS
11N40SISO	Ant0	5190	13.05	≤23.98	PASS
		5230	15.00	≤23.98	PASS
		5270	15.35	≤23.98	PASS
		5310	15.07	≤23.98	PASS
		5510	15.59	≤23.98	PASS
		5550	14.85	≤23.98	PASS
		5670	15.61	≤23.98	PASS
		5755	15.23	≤30.00	PASS
		5795	15.15	≤30.00	PASS
11AC20SISO	Ant0	5180	14.99	≤23.98	PASS
		5220	15.09	≤23.98	PASS
		5240	14.48	≤23.98	PASS
		5260	14.91	≤23.98	PASS
		5300	15.02	≤23.98	PASS
		5320	14.43	≤23.98	PASS
		5500	14.50	≤23.98	PASS
		5580	14.75	≤23.98	PASS
		5700	15.28	≤23.98	PASS
		5745	15.54	≤30.00	PASS
		5785	15.25	≤30.00	PASS
		5825	14.78	≤30.00	PASS
11AC40SISO	Ant0	5190	13.27	≤23.98	PASS

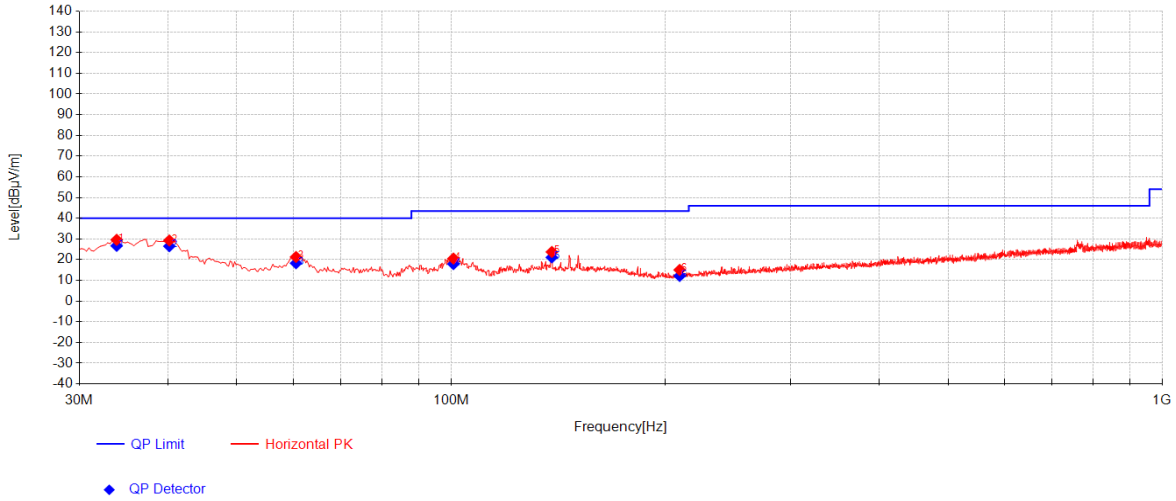
		5230	15.37	≤23.98	PASS
		5270	15.74	≤23.98	PASS
		5310	14.77	≤23.98	PASS
		5510	15.18	≤23.98	PASS
		5550	15.48	≤23.98	PASS
		5670	16.03	≤23.98	PASS
		5755	16.17	≤30.00	PASS
		5795	16.06	≤30.00	PASS
11AC80SISO	Ant0	5210	13.49	≤23.98	PASS
		5290	13.69	≤23.98	PASS
		5530	13.68	≤23.98	PASS
		5610	14.03	≤23.98	PASS
		5775	14.95	≤30.00	PASS

Note：The Duty Cycle Factor is compensated in the graph.

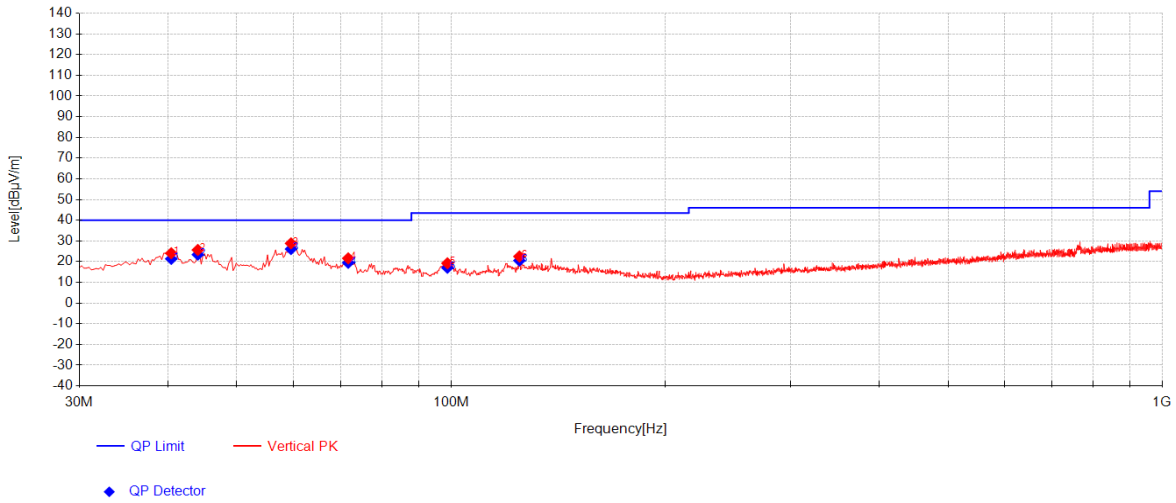
Radiated Spurious Emissions

Radiated emission below 1GHz

Worst case Mode: 11ac80_Channel 42



Final Data List										
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	33.88	42.67	18.19	-34.18	26.68	40.00	13.32	105	253	Horizontal
2	40.185	41.89	18.80	-34.18	26.51	40.00	13.49	113	74	Horizontal
3	60.555	34.88	17.50	-34.09	18.29	40.00	21.71	156	358	Horizontal
4	100.81	36.91	14.76	-33.79	17.88	43.50	25.62	207	360	Horizontal
5	138.64	36.24	18.46	-33.60	21.10	43.50	22.40	235	74	Horizontal
6	209.6925	29.85	15.39	-33.10	12.13	43.50	31.37	261	120	Horizontal



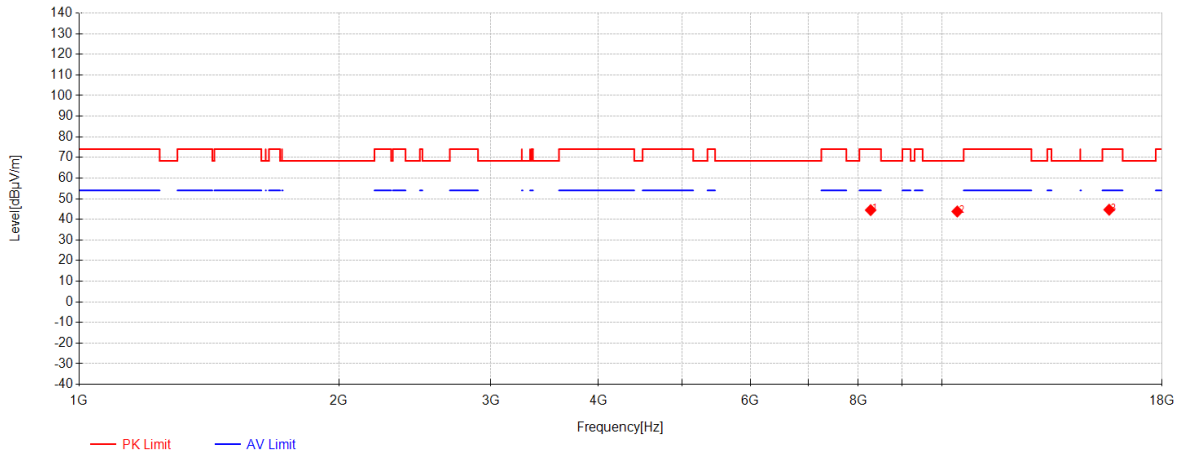
Final Data List										
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	40.4275	36.74	18.80	-34.18	21.36	40.00	18.64	115	0	Vertical
2	44.065	38.77	18.81	-34.18	23.40	40.00	16.60	126	218	Vertical
3	59.585	42.66	17.54	-34.10	26.10	40.00	13.90	164	102	Vertical
4	71.71	37.28	16.17	-34.00	19.46	40.00	20.54	197	125	Vertical
5	98.87	36.41	14.46	-33.80	17.07	43.50	26.43	215	25	Vertical
6	124.8175	36.72	17.50	-33.68	20.54	43.50	22.96	244	12	Vertical

Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier gain. The basic equation with a sample calculation is as follows:
   Value = Reading(dBµV) + AF(dB/m) + Factor(dB):
   AF = Antenna Factor(dB/m)
   Factor = Cable Factor(dB) - Preamplifier gain(dB)
   Margin = Limit(dBµV/m) – Value(dBµV/m)
2) All channels have been tested, but only the worst case data displayed in this report.

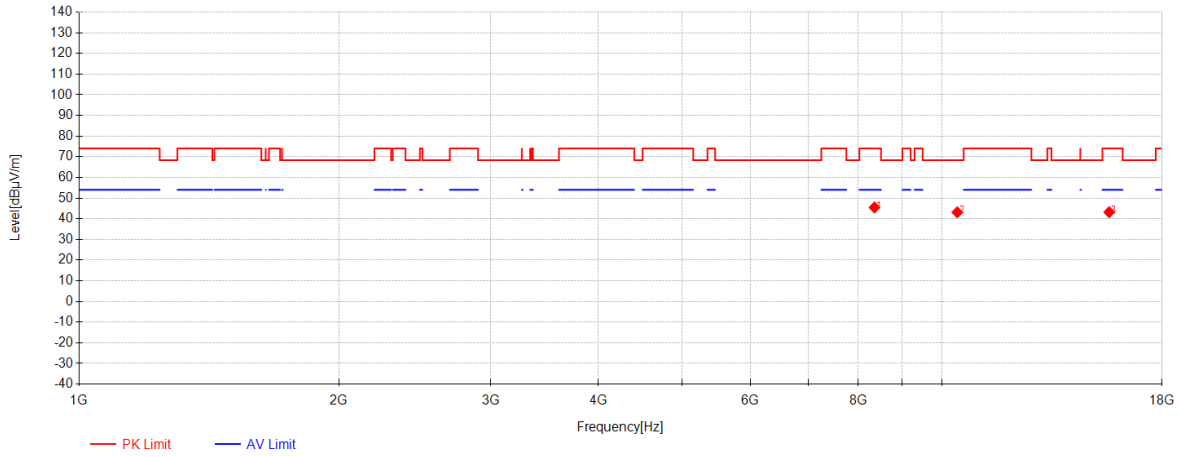
Transmitter emission Above 1GHz

802.11ac80_Channel 42



Data List								
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	8269.4667	43.28	37.23	-36.05	44.47	74.00	29.53	Horizontal
2	10420	36.84	38.11	-31.13	43.82	68.30	24.48	Horizontal
3	15630	33.36	38.90	-27.60	44.66	74.00	29.34	Horizontal

802.11ac80_Channel 42



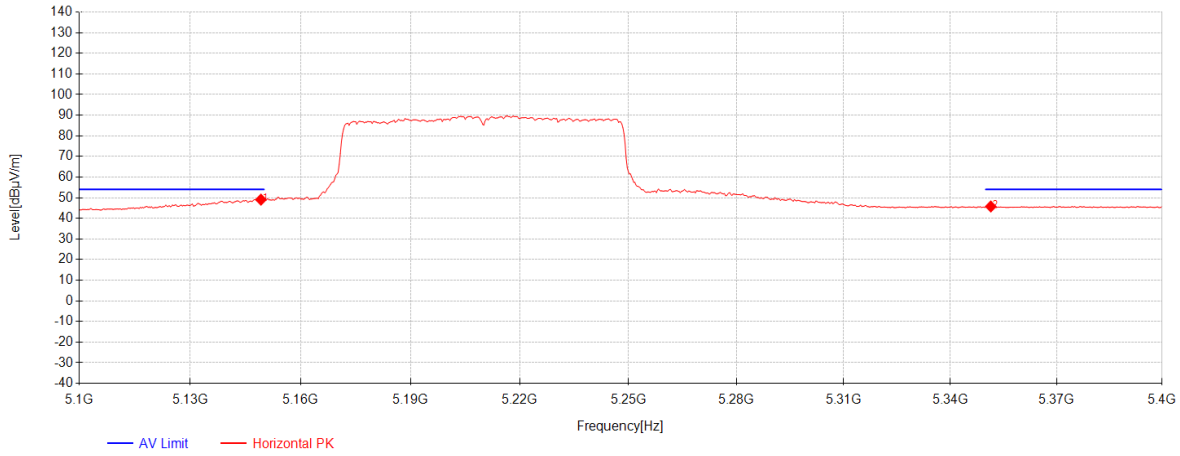
Data List								
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	8354.95	44.08	37.28	-35.87	45.49	74.00	28.51	Vertical
2	10420	36.17	38.11	-31.13	43.15	68.30	25.15	Vertical
3	15630	31.91	38.90	-27.60	43.21	74.00	30.79	Vertical

Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier gain. The basic equation with a sample calculation is as follows:
   Level = Reading(dBµV) + AF(dB/m) + Factor(dB):
   AF = Antenna Factor(dB/m)
   Factor = Cable Factor(dB) - Preamplifier gain(dB)
   Margin = Limit(dBµV/m) – Level(dBµV/m)
2) All channels have been tested, but only the worst case data displayed in this report.
3) Both peak and average measured complies with the limit line, so test result is "PASS"

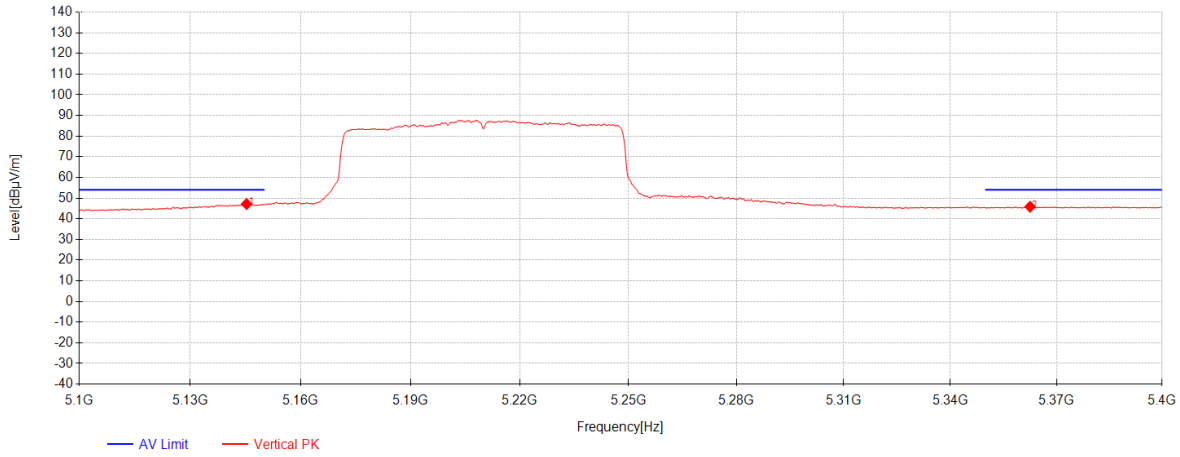
Restricted bands around fundamental frequency

802.11ac80_Channel 42



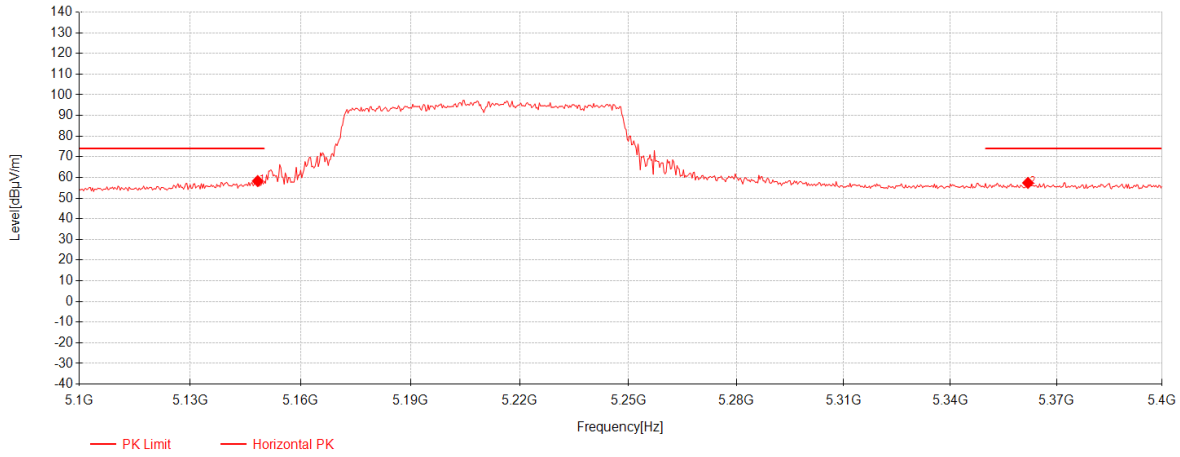
Data List								
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	5149.2	31.97	33.17	-16.07	49.07	54.00	4.93	Horizontal
2	5351.4	28.43	33.13	-15.80	45.76	54.00	8.24	Horizontal

802.11ac80_Channel 42



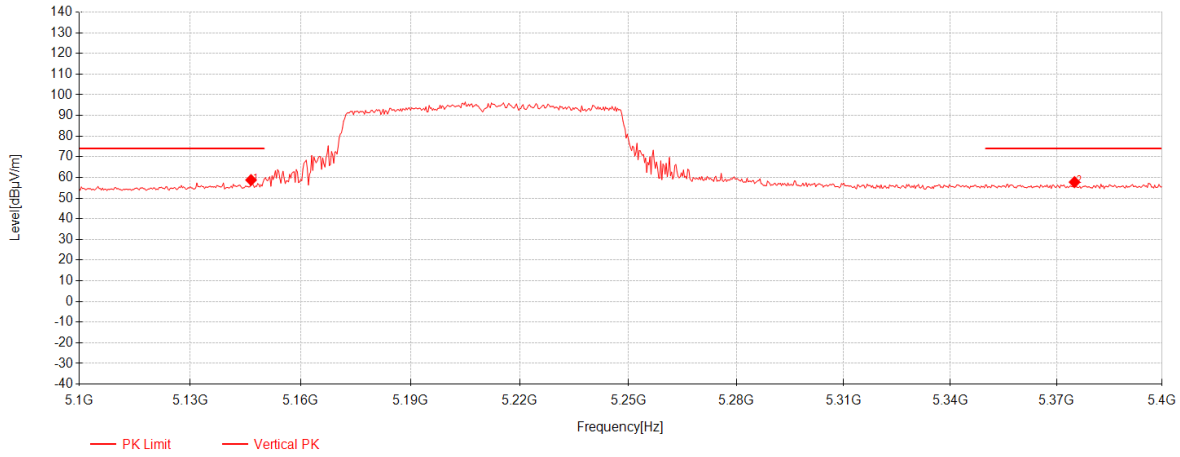
Data List								
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	5145.3	30.05	33.17	-16.07	47.15	54.00	6.85	Vertical
2	5362.5	28.50	33.13	-15.80	45.83	54.00	8.17	Vertical

802.11ac80_Channel 42



Data List								
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	5148.3	41.18	33.17	-16.07	58.28	74.00	15.72	Horizontal
2	5361.9	40.03	33.13	-15.80	57.36	74.00	16.64	Horizontal

802.11ac80_Channel 42



Data List								
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	5146.5	41.66	33.17	-16.07	58.76	74.00	15.24	Vertical
2	5375.1	40.42	33.12	-15.81	57.74	74.00	16.26	Vertical

Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier gain. The basic equation with a sample calculation is as follows:
   Level = Reading(dBµV) + AF(dB/m) + Factor(dB):
   AF = Antenna Factor(dB/m)
   Factor = Cable Factor(dB) - Preamplifier gain(dB)
   Margin = Limit(dBµV/m) – Level(dBµV/m)
2) Both peak and average measured complies with the limit line, so test result is "PASS"

---End of Report---