

TEST REPORT

Report No.: BCTC2307985156-4E

Applicant: Northeast Computer & Electronics Corporation

Product Name: Laptop

Model/Type
reference: S15

Tested Date: 2023-07-10 to 2023-07-24

Issued Date: 2023-08-17

Shenzhen BCTC Testing Co., Ltd.

FCC ID: 2BB8I-S15

Product Name: Laptop

Trademark: N/A

Model/Type Ref.: S15

Prepared For: Northeast Computer & Electronics Corporation

Address: 100 Matawan Road Suite 325 #1024, Matawan, NJ 07747 NEW JERSEY

Manufacturer: Northeast Computer & Electronics Corporation

Address: 100 Matawan Road Suite 325 #1024, Matawan, NJ 07747 NEW JERSEY

Prepared By: Shenzhen BCTC Testing Co., Ltd.

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Sample Received Date: 2023-07-10

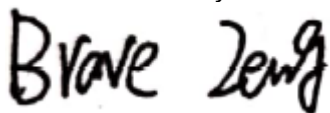
Sample tested Date: 2023-07-10 to 2023-07-24

Report No.: BCTC2307985156-4E

Test Standards: FCC Part15 15.407
ANSI C63.10-2013
KDB 662911 D01 v02r01
KDB 789033 D02 v02r01

Test Results: PASS

Tested by:



Brave Zeng/ Project Handler

Approved by:



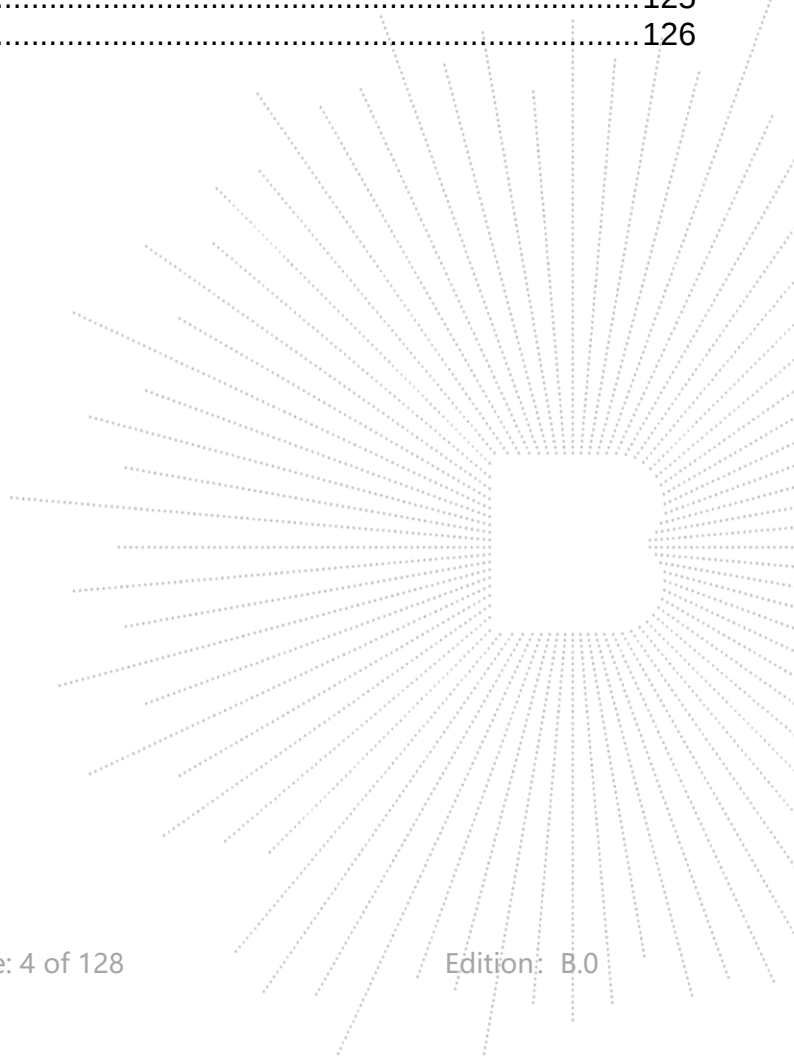
Zero Zhou/Reviewer

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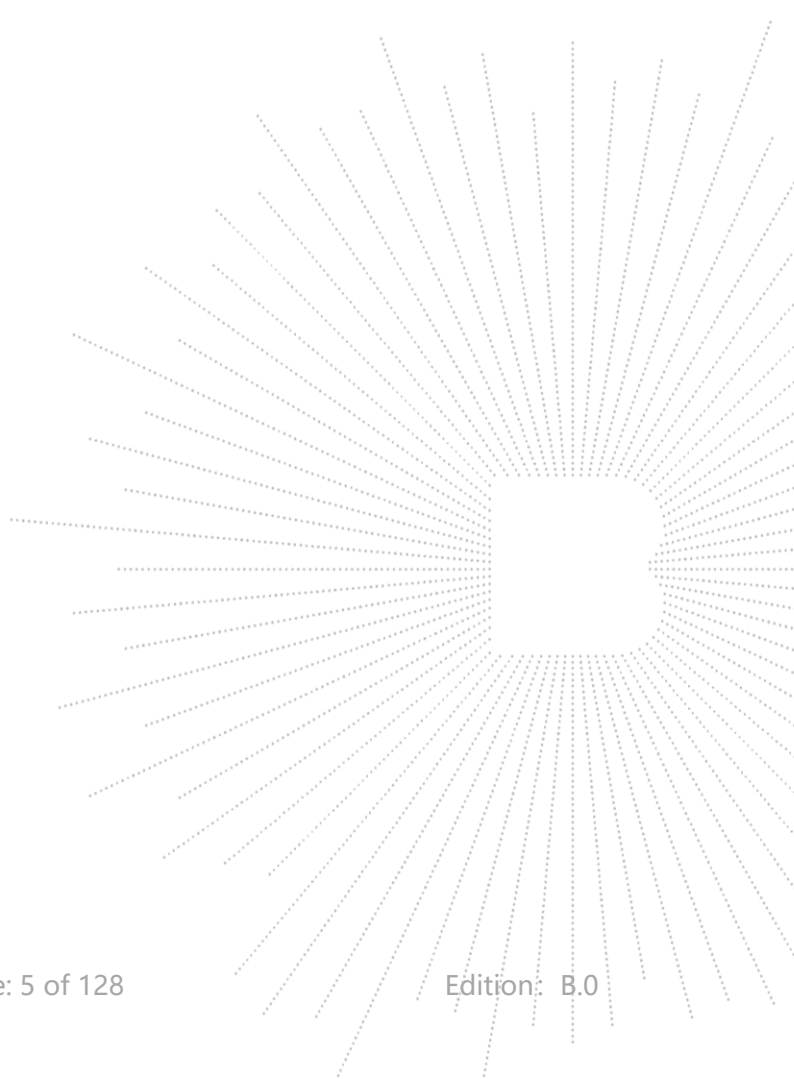
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1. Version

Report No.	Issue Date	Description	Approved
BCTC2307985156-4E	2023-08-17	Original	Valid



2. Test Summary

The Product has been tested according to the following specifications:

No.	Test Parameter	Clause No.	Results
1	Spurious Radiated Emissions	15.209(a), 15.407 (b)	PASS
2	Conducted Emission	15.207	PASS
3	26 dB and 99% Emission Bandwidth	15.407 (a)	PASS
4	Minimum 6 dB bandwidth	15.407(e)	PASS
5	Maximum Conducted Output Power	15.407 (a)	PASS
6	Band Edge	15.407(b)	PASS
7	Power Spectral Density	15.407 (a)	PASS
8	Spurious Emissions at Antenna Terminals	15.407(b)	PASS
9	Antenna Requirement	15.203	PASS

3. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

No.	Item	Uncertainty
1	3m chamber Radiated spurious emission(9kHz-30MHz)	U=3.7dB
2	3m chamber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
3	3m chamber Radiated spurious emission(1GHz-18GHz)	U=4.5dB
4	3m chamber Radiated spurious emission(18GHz-40GHz)	U=3.34dB
5	Conducted Emission(150kHz-30MHz)	U=3.20dB
6	Conducted Adjacent channel power	U=1.38dB
7	Conducted output power uncertainty Above 1G	U=1.576dB
8	Conducted output power uncertainty below 1G	U=1.28dB
9	humidity uncertainty	U=5.3%
10	Temperature uncertainty	U=0.59°C

4. Product Information and Test Setup

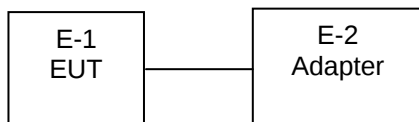
4.1 Product Information

Model/Type Ref.:	S15
Model differences:	N/A.
Hardware Version:	N/A
Software Version:	N/A
IEEE 802.11 WLAN Mode Supported	☒ 802.11a ☒ 802.11n(20MHz channel bandwidth) ☒ 802.11n(40MHz channel bandwidth) ☒ 802.11ac(20MHz channel bandwidth) ☒ 802.11ac(40MHz channel bandwidth) ☒ 802.11ac(80MHz channel bandwidth)
Operation Frequency:	5180-5240MHz for 802.11a/n/ac(HT20) 5190-5230MHz for 802.11n/ac(HT40) 5210MHz for 802.11 ac80; 5745-5825 MHz for 802.11a/n/ac(HT20) 5755-5795 MHz for 802.11n/ac(HT40) 5775MHz for 802.11 ac80
Type of Modulation:	☒ OFDM with BPSK/QPSK/16QAM/64QAM for 802.11a/n ☒ OFDM with BPSK/QPSK/16QAM/64QAM/256QAM for 802.11ac
Number Of Channel	4 channels for 802.11a/n20 in the 5180-5240MHz band ; 2 channels for 802.11 n40 in the 5190-5230MHz band ; 1 channels for 802.11 ac80 in the 5210MHz band ; 5 channels for 802.11a/n20 in the 5745-5825MHz band ; 2 channels for 802.11 n40 in the 5755-5795MHz band ; 1 channels for 802.11 ac80 in the 5775MHz band
Antenna installation:	built-in antenna
Antenna Gain:	2.82dBi
Ratings:	AC 100-240,50/60Hz
Adapter:	Input:100-240V,50/60Hz Output :DC 12V
Battery:	DC 7.6V 5000mAh

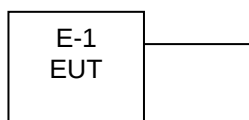
4.2 Test Setup Configuration

See test photographs attached in *EUT TEST SETUP PHOTOGRAPHS* for the actual connections between Product and support equipment.

Conducted Emission:



Radiated Spurious Emission:



4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	Laptop	N/A	S15	N/A	EUT
E-2	Adapter	N/A	N/A	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note
C-1	N/A	N/A	N/A	N/A

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Channel List

Frequency and Channel list for 802.11a/n/ac (20 MHz) band IV (5180-5240MHz):

802.11a/n/ac (20MHz) Carrier Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220	-	-	-	-
40	5200	48	5240	-	-	-	-

802.11n /ac (40MHz) Carrier Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	-	-	-	-	-	-
46	5230	-	-	-	-	-	-

802.11ac (80MHz) Carrier Frequency Channel	
Channel	Frequency (MHz)
42	5210

Frequency and Channel list for 802.11a/n/ac(20 MHz) band IV (5745-5825MHz):

802.11a/n/ac (20 MHz) Carrier Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	153	5765	157	5785	161	5805
165	5825	-	-	-	-	-	-

802.11n/ac 40MHz Carrier Frequency Channel					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795	-	-

802.11ac 80MHz Carrier Frequency Channel	
Channel	Frequency (MHz)
155	5775

4.5 Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	802.11a / n/ ac 20 CH36/ CH40/ CH 48 802.11a /n/ ac 20 CH149/ CH157/ CH 165
Mode 2	802.11n/ ac40 CH38/ CH 46 802.11n/ ac40 CH 151 / CH 159
Mode 3	802.11 ac80 CH 42/CH 155
Mode 4	Transmitting (Conducted emission & Radiated emission)

4.6 Table Of Parameters Of Text Software Setting

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters

Test software Version	CMD		
Parameters	DEF	DEF	DEF

5. Test Facility And Test Instrument Used

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address:1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuha i Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

FCC Test Firm Registration Number: 712850

A2LA certificate registration number is: CN1212

ISED Registered No.: 23583

ISED CAB identifier: CN0017

5.2 Test Instrument Used

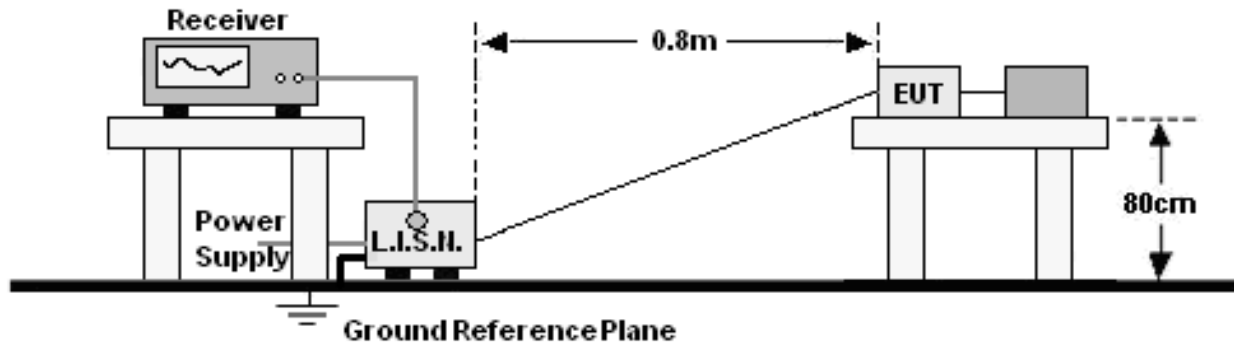
Conducted Emissions Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Receiver	R&S	ESR3	102075	May 15, 2023	May 14, 2024
LISN	R&S	ENV216	101375	May 15, 2023	May 14, 2024
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\
Attenuator	\	10dB DC-6GHz	1650	May 15, 2023	May 14, 2024

RF Conducted Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Power Metter	Keysight	E4419	\	May 15, 2023	May 14, 2024
Power Sensor (AV)	Keysight	E9300A	\	May 15, 2023	May 14, 2024
Signal Analyzer20kHz- 26.5GHz	Keysight	N9020A	MY49100060	May 15, 2023	May 14, 2024
Spectrum Analyzer9kHz- 40GHz	R&S	FSP40	\	May 15, 2023	May 14, 2024

Radiated Emissions Test (966 Chamber)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	May 15, 2023	May 14, 2026
Receiver	R&S	ESR3	102075	May 15, 2023	May 14, 2024
Receiver	R&S	ESRP	101154	May 15, 2023	May 14, 2024
Amplifier	SKET	LAPA_01G18 G-45dB	\	May 15, 2023	May 14, 2024
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 15, 2023	May 14, 2024
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	May 15, 2023	May 14, 2024
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 15, 2023	May 14, 2024
Horn Antenn(18GH z-40GHz)	Schwarzbeck	BBHA9170	00822	May 15, 2023	May 14, 2024
Amplifier(18G Hz-40GHz)	MITEQ	TTA1840-35- HG	2034381	May 15, 2023	May 14, 2024
Loop Antenna(9KHz -30MHz)	Schwarzbeck	FMZB1519B	00014	May 15, 2023	May 14, 2024
RF cables1(9kHz- 30MHz)	Huber+Suhnar	9kHz-30MHz	B1702988-000 8	May 15, 2023	May 14, 2024
RF cables2(30MH z-1GHz)	Huber+Suhnar	30MHz-1GHz	1486150	May 15, 2023	May 14, 2024
RF cables3(1GHz -40GHz)	Huber+Suhnar	1GHz-40GHz	1607106	May 15, 2023	May 14, 2024
Power Metter	Keysight	E4419	\	May 15, 2023	May 14, 2024
Power Sensor (AV)	Keysight	E9300A	\	May 15, 2023	May 14, 2024
Signal Analyzer20kH z-26.5GHz	Keysight	N9020A	MY49100060	May 15, 2023	May 14, 2024
Spectrum Analyzer9kHz- 40GHz	R&S	FSP40	\	May 15, 2023	May 14, 2024
Software	Frad	EZ-EMC	FA-03A2 RE	\	\

6. Conducted Emissions

6.1 Block Diagram Of Test Setup



6.2 Limit

Frequency (MHz)	Limit (dBuV)	
	Quas-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Notes:

- *Decreasing linearly with logarithm of frequency.
- The lower limit shall apply at the transition frequencies.

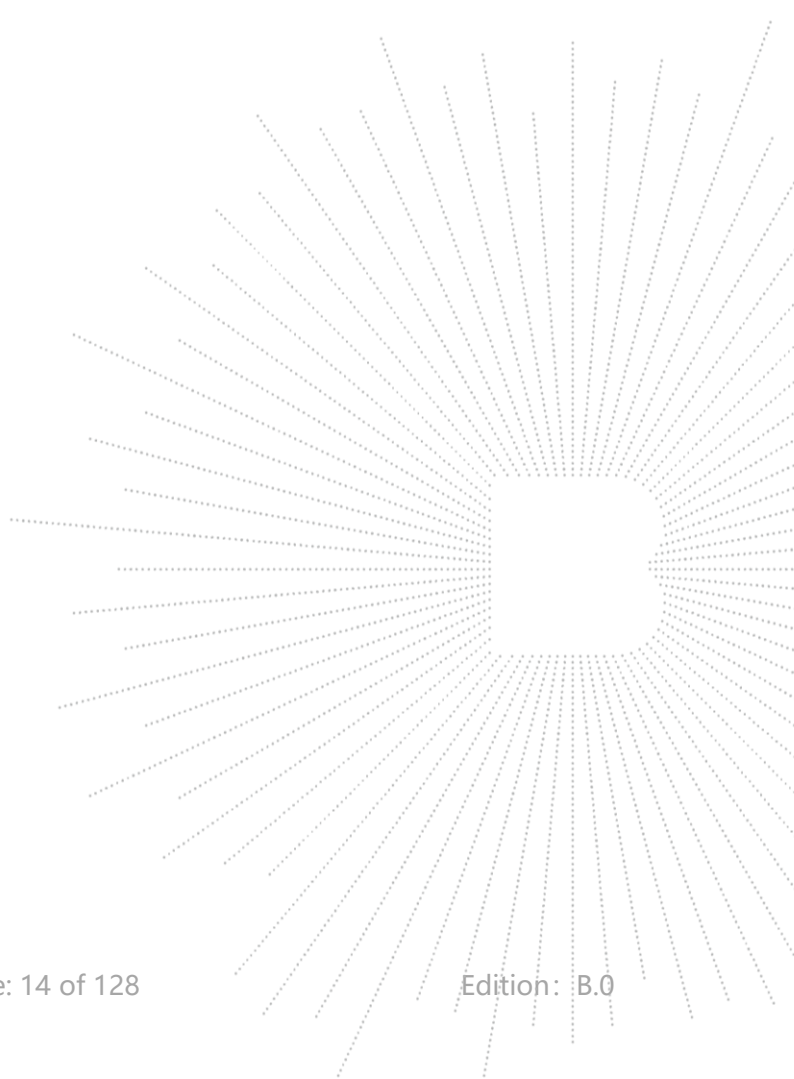
6.3 Test Procedure

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

- The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

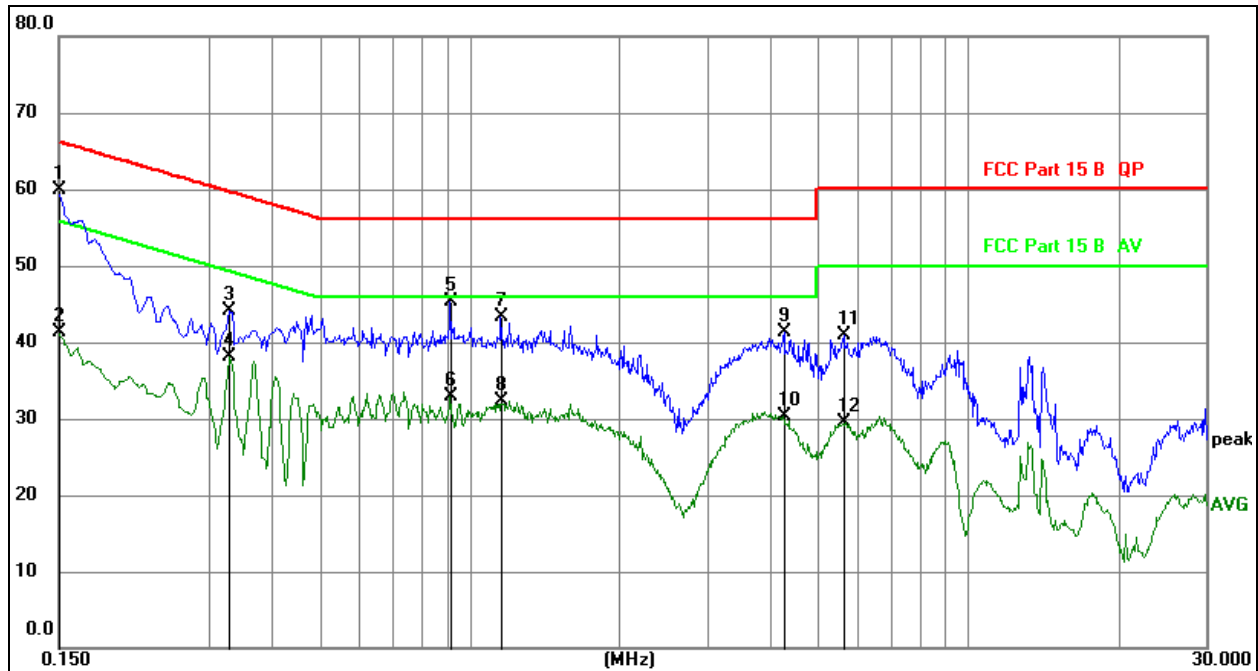
6.4 EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



6.5 Test Result

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC120V/60Hz
Test Mode:	Mode 4	Polarization :	L

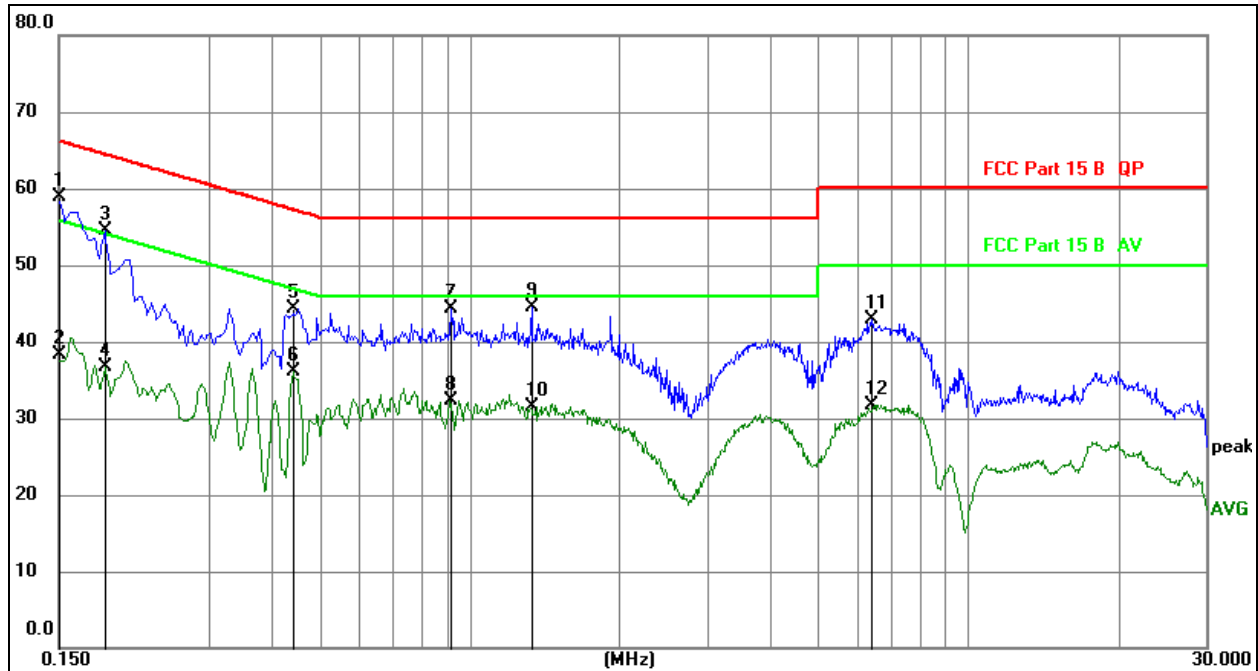


Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement=Reading Level+ Correct Factor
4. Over= Measurement-Limit

No. Mk.	Freq. MHz	Reading Level dB	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1 *	0.1500	49.64	10.23	59.87	66.00	-6.13	QP	
2	0.1500	31.06	10.23	41.29	56.00	-14.71	AVG	
3	0.3300	33.85	10.24	44.09	59.45	-15.36	QP	
4	0.3300	27.87	10.24	38.11	49.45	-11.34	AVG	
5	0.9150	35.09	10.15	45.24	56.00	-10.76	QP	
6	0.9150	22.79	10.15	32.94	46.00	-13.06	AVG	
7	1.1580	33.16	10.16	43.32	56.00	-12.68	QP	
8	1.1580	22.07	10.16	32.23	46.00	-13.77	AVG	
9	4.2810	31.07	10.25	41.32	56.00	-14.68	QP	
10	4.2810	19.99	10.25	30.24	46.00	-15.76	AVG	
11	5.6310	30.68	10.30	40.98	60.00	-19.02	QP	
12	5.6310	19.12	10.30	29.42	50.00	-20.58	AVG	

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC120V/60Hz
Test Mode:	Mode 4	Polarization :	N


Remark:

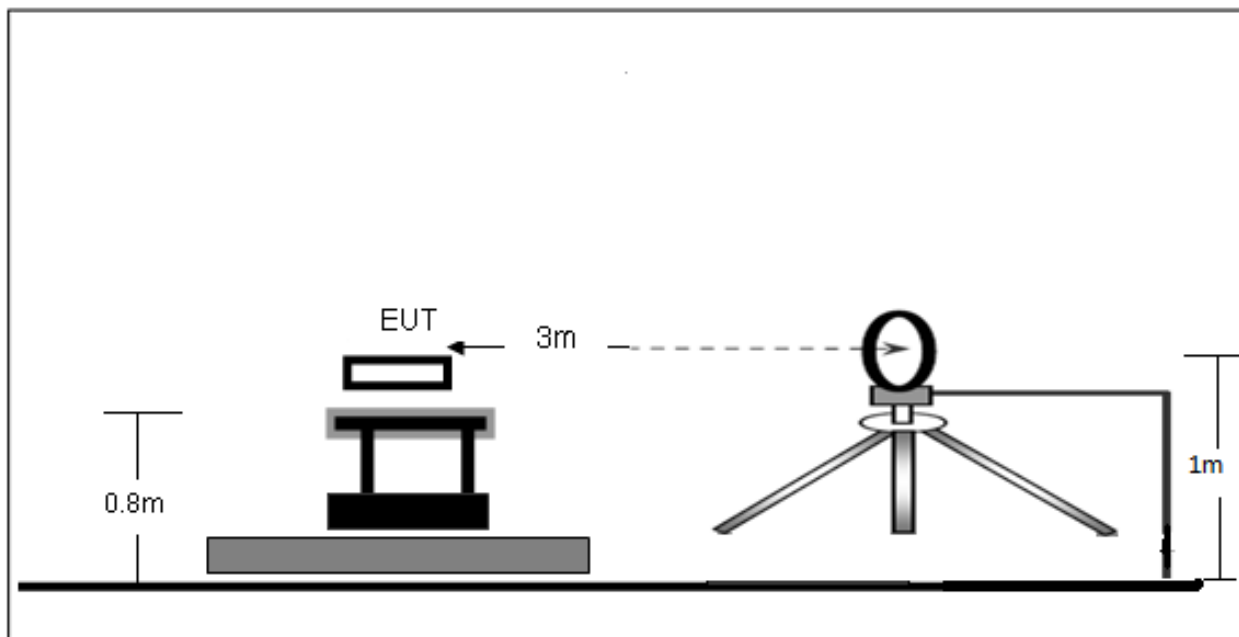
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement=Reading Level+ Correct Factor
4. Over= Measurement-Limit

No.	Mk.	Freq. MHz	Reading Level dB	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1500	48.72	10.23	58.95	66.00	-7.05	QP	
2		0.1500	28.05	10.23	38.28	56.00	-17.72	AVG	
3		0.1853	44.25	10.24	54.49	64.24	-9.75	QP	
4		0.1853	26.45	10.24	36.69	54.24	-17.55	AVG	
5		0.4420	34.15	10.23	44.38	57.02	-12.64	QP	
6		0.4420	25.89	10.23	36.12	47.02	-10.90	AVG	
7		0.9184	34.12	10.15	44.27	56.00	-11.73	QP	
8		0.9184	22.23	10.15	32.38	46.00	-13.62	AVG	
9		1.3308	34.42	10.16	44.58	56.00	-11.42	QP	
10		1.3308	21.35	10.16	31.51	46.00	-14.49	AVG	
11		6.4198	32.59	10.35	42.94	60.00	-17.06	QP	
12		6.4198	21.32	10.35	31.67	50.00	-18.33	AVG	

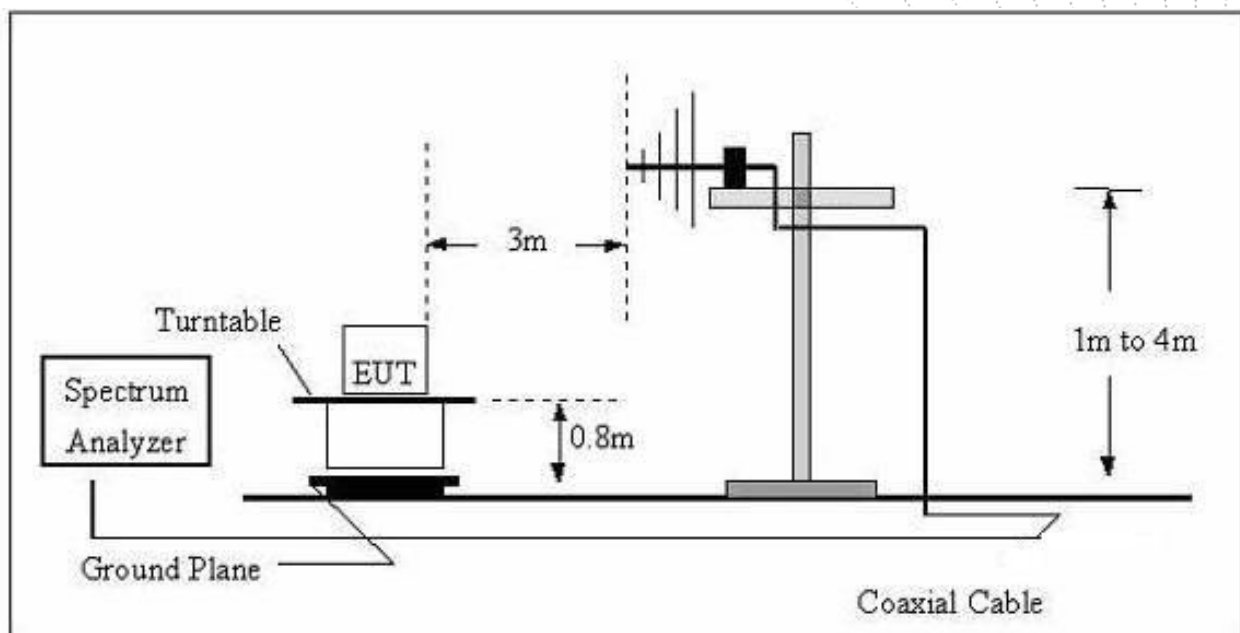
7. Radiated Emissions

7.1 Block Diagram Of Test Setup

(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



7.2 Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequency (MHz)	Field Strength uV/m	Distance (m)	Field Strength Limit at 3m Distance	
			uV/m	dBuV/m
0.009 ~ 0.490	$2400/F(\text{kHz})$	300	$10000 * 2400/F(\text{kHz})$	$20\log^{(2400/F(\text{kHz}))} + 80$
0.490 ~ 1.705	$24000/F(\text{kHz})$	30	$100 * 24000/F(\text{kHz})$	$20\log^{(24000/F(\text{kHz}))} + 40$
1.705 ~ 30	30	30	$100 * 30$	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

Limits Of Radiated Emission Measurement (Above 1000MHz)

Frequency (MHz)	Limit (dBuV/m) (at 3M)	
	Peak	Average
Above 1000	74	54

Notes:

- (1)The limit for radiated test was performed according to FCC PART 15C.
- (2)The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

7.3 Test Procedure

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10-2013. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 and CAN/CSA-CEI/IEC CISPR 22.

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205.

It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 m for below 1GHz and 1.5m for above 1GHz the ground at a 3 meter. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m for below 1GHz and 1.5m for above 1GHz; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	1 MHz
	Average	1 MHz	10 Hz

Note: for the frequency ranges below 30 MHz, a narrower RBW is used for these ranges but the measured value should add a RBW correction factor (RBWCF) where $RBWCF [dB] = 10 \cdot \lg(100 [kHz] / \text{narrower RBW} [kHz])$. , the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

7.4 EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

7.5 Test Result

Below 30MHz

Temperature:	26°C	Relative Humidity:	24%
Pressure:	101 kPa	Test Voltage:	DC 7.6V
Test Mode:	Mode 4	Polarization:	--

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

Note:

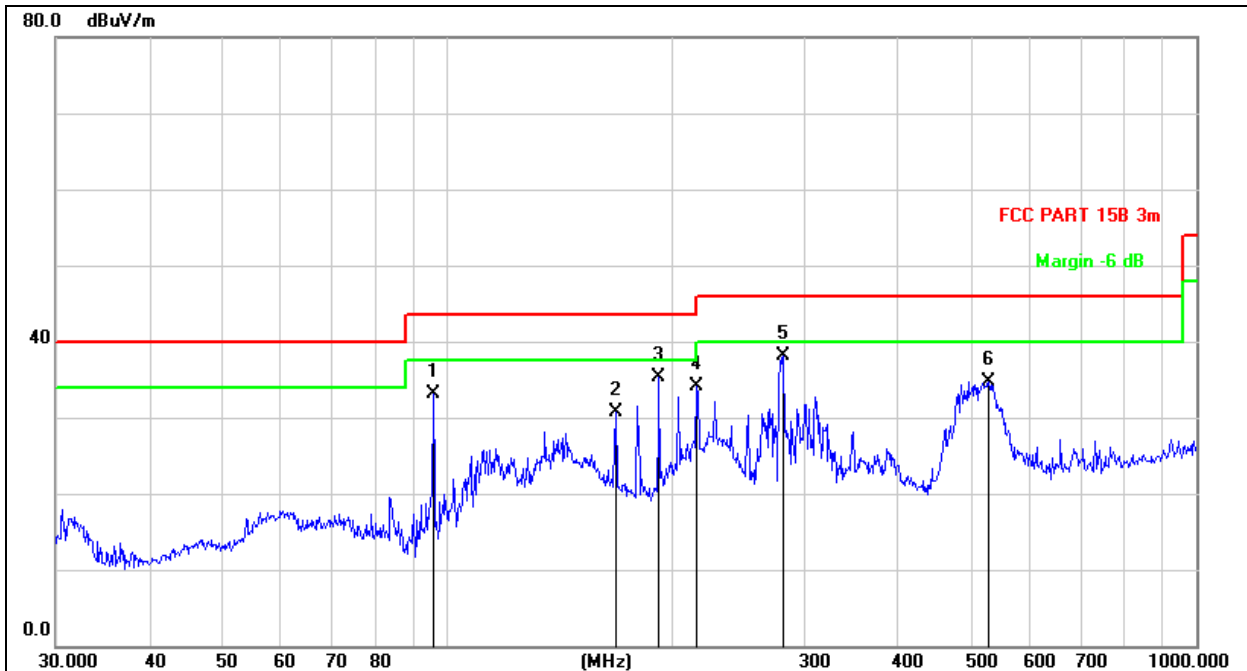
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance/test distance}) (dB)$;

Limit line = specific limits(dBuV) + distance extrapolation factor.

Between 30MHz – 1GHz

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Test Voltage :	DC 7.6V
Test Mode :	Mode 4	Polarization :	Horizontal

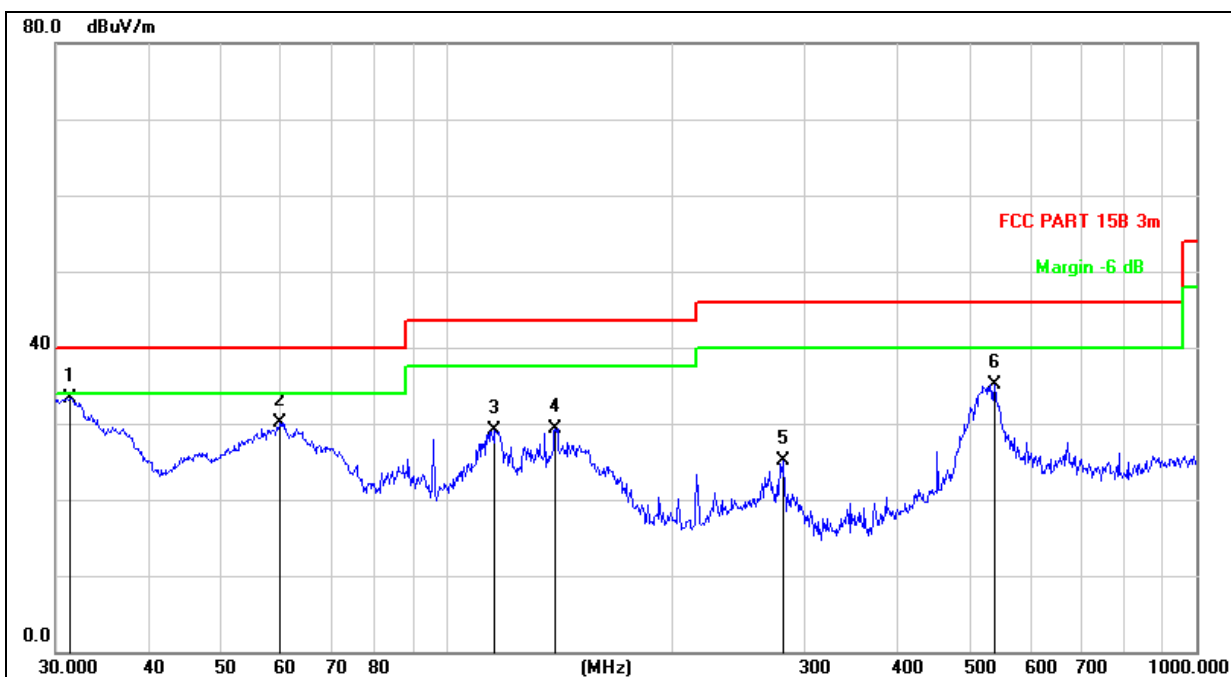


Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement=Reading Level+ Correct Factor
3. Over= Measurement-Limit

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
	MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree
1	95.7622	43.68	-10.59	33.09	43.50	-10.41	QP		
2	167.8243	37.54	-6.91	30.63	43.50	-12.87	QP		
3	191.7450	44.02	-8.72	35.30	43.50	-8.20	QP		
4	215.2678	42.80	-8.74	34.06	43.50	-9.44	QP		
5 *	281.0075	44.33	-6.30	38.03	46.00	-7.97	QP		
6	528.2458	34.83	-0.10	34.73	46.00	-11.27	QP		

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Test Voltage :	DC 7.6V
Test Mode :	Mode 4	Polarization :	Vertical



Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement=Reading Level+ Correct Factor
3. Over= Measurement-Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBm	dB	Detector	cm	degree
1	*	31.3992	41.55	-8.21	33.34	40.00	-6.66	QP		
2		59.8588	40.12	-9.92	30.20	40.00	-9.80	QP		
3		115.7256	37.72	-8.57	29.15	43.50	-14.35	QP		
4		139.3613	35.81	-6.50	29.31	43.50	-14.19	QP		
5		281.0075	31.44	-6.30	25.14	46.00	-20.86	QP		
6		537.5891	34.97	0.12	35.09	46.00	-10.91	QP		

Between 1GHz – 40GHz

Test Mode :	TX(5.1G) - 802.11a
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/ m)	Margin (dB)	Detector Type
Low Channel (5180 MHz)-Above 1G									
V	4434.114	61.51	5.94	35.40	44.00	58.85	68.2	-9.35	PK
V	4434.114	43.27	5.94	35.40	44.00	40.61	54	-13.39	AV
V	10360.029	60.23	8.46	39.75	44.50	63.94	68.2	-4.26	PK
V	10360.037	43.88	8.46	39.75	44.50	47.59	54	-6.41	AV
V	15540.116	62.31	10.12	38.80	44.10	67.13	74	-6.87	PK
V	15540.116	43.49	10.12	38.80	42.70	49.71	54	-4.29	AV
H	4434.004	62.16	5.94	35.18	44.00	59.28	68.2	-8.92	PK
H	4434.004	43.07	5.94	35.18	44.00	40.19	54	-13.81	AV
H	10360.200	50.41	8.46	38.71	44.50	53.08	68.2	-15.12	PK
H	10360.200	44.74	8.46	38.71	44.50	47.41	54	-6.59	AV
H	15540.109	51.65	10.12	38.38	44.10	56.05	74	-17.95	PK
H	15540.109	42.34	10.12	38.38	44.10	46.74	54	-7.26	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.133	64.51	6.48	36.35	44.05	63.29	74	-10.71	PK
V	4592.133	43.10	6.48	36.35	44.05	41.88	54	-12.12	AV
V	10400.094	60.22	8.47	37.88	44.51	62.06	68.2	-6.14	PK
V	10400.094	43.03	8.47	37.88	44.51	44.87	54	-9.13	AV
V	15600.166	61.60	10.12	38.80	44.10	66.42	74	-7.58	PK
V	15600.166	43.39	10.12	38.80	42.70	49.61	54	-4.39	AV
H	4592.198	64.40	6.48	36.37	44.05	63.20	74	-10.80	PK
H	4592.198	43.78	6.48	36.37	44.05	42.58	54	-11.42	AV
H	10400.151	53.85	8.47	38.64	44.50	56.46	68.2	-11.74	PK
H	10400.151	42.68	8.47	38.64	44.50	45.29	54	-8.71	AV
H	15600.188	51.97	10.12	38.38	44.10	56.37	74	-17.63	PK
H	15600.188	43.67	10.12	38.38	44.10	48.07	54	-5.93	AV
High Channel (5240 MHz)-Above 1G									
V	4739.013	60.81	7.10	37.24	43.50	61.65	74	-12.35	PK
V	4739.013	43.66	7.10	37.24	43.50	44.50	54	-9.50	AV
V	10480.007	63.40	8.46	37.68	44.50	65.04	68.2	-3.16	PK
V	10480.007	43.24	8.46	37.68	44.50	44.88	54	-9.12	AV
V	15720.033	60.44	10.12	38.80	44.10	65.26	74	-8.74	PK
V	15720.033	43.13	10.12	38.80	42.70	49.35	54	-4.65	AV
H	4739.096	64.64	7.10	37.24	43.50	65.48	74	-8.52	PK
H	4739.096	43.59	7.10	37.24	43.50	44.43	54	-9.57	AV
H	10480.048	53.33	8.46	38.57	44.50	55.86	68.2	-12.34	PK
H	10480.048	43.38	8.46	38.57	44.50	45.91	54	-8.09	AV
H	15720.042	54.27	10.12	38.38	44.10	58.67	74	-15.33	PK
H	15720.042	43.72	10.12	38.38	44.10	48.12	54	-5.88	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode :	TX(5.1G) - 802.11n-HT20
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5180 MHz)-Above 1G									
V	4434.138	63.13	5.94	35.40	44.00	60.47	68.2	-7.73	PK
V	4434.138	43.87	5.94	35.40	44.00	41.21	54	-12.79	AV
V	10360.058	61.56	8.46	39.75	44.50	65.27	68.2	-2.93	PK
V	10360.058	43.29	8.46	39.75	44.50	47.00	54	-7.00	AV
V	15540.042	64.97	10.12	38.80	44.10	69.79	74	-4.21	PK
V	15540.042	43.50	10.12	38.80	42.70	49.72	54	-4.28	AV
H	4434.076	60.17	5.94	35.18	44.00	57.29	68.2	-10.91	PK
H	4434.076	43.92	5.94	35.18	44.00	41.04	54	-12.96	AV
H	10360.109	50.25	8.46	38.71	44.50	52.92	68.2	-15.28	PK
H	10360.109	42.54	8.46	38.71	44.50	45.21	54	-8.79	AV
H	15540.119	53.95	10.12	38.38	44.10	58.35	74	-15.65	PK
H	15540.119	40.17	10.12	38.38	44.10	44.57	54	-9.43	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.191	62.37	6.48	36.35	44.05	61.15	74	-12.85	PK
V	4592.191	43.38	6.48	36.35	44.05	42.16	54	-11.84	AV
V	10400.015	64.97	8.47	37.88	44.51	66.81	68.2	-1.39	PK
V	10400.015	43.81	8.47	37.88	44.51	45.65	54	-8.35	AV
V	15600.025	60.38	10.12	38.80	44.10	65.20	74	-8.80	PK
V	15600.025	43.55	10.12	38.80	42.70	49.77	54	-4.23	AV
H	4592.109	62.57	6.48	36.37	44.05	61.37	74	-12.63	PK
H	4592.109	43.38	6.48	36.37	44.05	42.18	54	-11.82	AV
H	10400.169	50.44	8.47	38.64	44.50	53.05	68.2	-15.15	PK
H	10400.169	41.84	8.47	38.64	44.50	44.45	54	-9.55	AV
H	15600.184	51.51	10.12	38.38	44.10	55.91	74	-18.09	PK
H	15600.184	42.06	10.12	38.38	44.10	46.46	54	-7.54	AV
High Channel (5240 MHz)-Above 1G									
V	4739.147	61.05	7.10	37.24	43.50	61.89	74	-12.11	PK
V	4739.147	43.52	7.10	37.24	43.50	44.36	54	-9.64	AV
V	10480.160	63.32	8.46	37.68	44.50	64.96	68.2	-3.24	PK
V	10480.160	43.06	8.46	37.68	44.50	44.70	54	-9.30	AV
V	15720.032	64.61	10.12	38.80	44.10	69.43	74	-4.57	PK
V	15720.032	43.47	10.12	38.80	42.70	49.69	54	-4.31	AV
H	4739.118	64.09	7.10	37.24	43.50	64.93	74	-9.07	PK
H	4739.118	43.55	7.10	37.24	43.50	44.39	54	-9.61	AV
H	10480.083	54.88	8.46	38.57	44.50	57.41	68.2	-10.79	PK
H	10480.083	43.00	8.46	38.57	44.50	45.53	54	-8.47	AV
H	15720.043	50.76	10.12	38.38	44.10	55.16	74	-18.84	PK
H	15720.043	44.78	10.12	38.38	44.10	49.18	54	-4.82	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode :	TX(5.1G) - 802.11n-HT40
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/ m)	Margin (dB)	Detector Type
Low Channel (5190 MHz)-Above 1G									
V	4434.071	62.47	5.94	35.40	44.00	59.81	68.2	-8.39	PK
V	4434.071	43.44	5.94	35.40	44.00	40.78	54	-13.22	AV
V	10380.192	61.84	8.46	39.75	44.50	65.55	68.2	-2.65	PK
V	10380.192	43.78	8.46	39.75	44.50	47.49	54	-6.51	AV
V	15570.003	60.68	10.12	38.80	44.10	65.50	74	-8.50	PK
V	15570.003	43.32	10.12	38.80	42.70	49.54	54	-4.46	AV
H	4434.005	64.99	5.94	35.18	44.00	62.11	74	-11.89	PK
H	4434.005	43.04	5.94	35.18	44.00	40.16	54	-13.84	AV
H	10380.121	50.39	8.46	38.71	44.50	53.06	68.2	-15.14	PK
H	10380.121	43.63	8.46	38.71	44.50	46.30	54	-7.70	AV
H	15570.092	54.15	10.12	38.38	44.10	58.55	74	-15.45	PK
H	15570.092	44.56	10.12	38.38	44.10	48.96	54	-5.04	AV
middle Channel (5230 MHz)-Above 1G									
V	4739.092	61.44	6.48	36.35	44.05	60.22	68.2	-7.98	PK
V	4739.092	43.07	6.48	36.35	44.05	41.85	54	-12.15	AV
V	10460.103	64.17	8.47	37.88	44.51	66.01	68.2	-2.19	PK
V	10460.103	43.50	8.47	37.88	44.51	45.34	54	-8.66	AV
V	15690.097	61.45	10.12	38.80	44.10	66.27	74	-7.73	PK
V	15690.097	43.06	10.12	38.80	42.70	49.28	54	-4.72	AV
H	4739.110	63.24	6.48	36.37	44.05	62.04	68.2	-6.16	PK
H	4739.110	43.25	6.48	36.37	44.05	42.05	54	-11.95	AV
H	10460.074	51.83	8.47	38.64	44.50	54.44	68.2	-13.76	PK
H	10460.074	43.21	8.47	38.64	44.50	45.82	54	-8.18	AV
H	15690.038	53.17	10.12	38.38	44.10	57.57	74	-16.43	PK
H	15690.038	41.54	10.12	38.38	44.10	45.94	54	-8.06	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode:	TX(5.1G) - 802.11ac-HT20
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5180 MHz)-Above 1G									
V	4434.133	62.74	5.94	35.40	44.00	60.08	68.2	-8.12	PK
V	4434.133	43.20	5.94	35.40	44.00	40.54	54	-13.46	AV
V	10360.116	63.22	8.46	39.75	44.50	66.93	68.2	-1.27	PK
V	10360.116	43.76	8.46	39.75	44.50	47.47	54	-6.53	AV
V	15540.053	62.46	10.12	38.80	44.10	67.28	74	-6.72	PK
V	15540.053	43.44	10.12	38.80	42.70	49.66	54	-4.34	AV
H	4434.167	63.19	5.94	35.18	44.00	60.31	68.2	-7.89	PK
H	4434.167	43.87	5.94	35.18	44.00	40.99	54	-13.01	AV
H	10360.008	54.32	8.46	38.71	44.50	56.99	68.2	-11.21	PK
H	10360.008	42.49	8.46	38.71	44.50	45.16	54	-8.84	AV
H	15540.165	51.87	10.12	38.38	44.10	56.27	74	-17.73	PK
H	15540.165	40.62	10.12	38.38	44.10	45.02	54	-8.98	AV
Middle Channel (5200 MHz)-Above 1G									
V	4592.197	63.48	6.48	36.35	44.05	62.26	74	-11.74	PK
V	4592.197	43.23	6.48	36.35	44.05	42.01	54	-11.99	AV
V	10400.070	62.45	8.47	37.88	44.51	64.29	68.2	-3.91	PK
V	10400.070	43.60	8.47	37.88	44.51	45.44	54	-8.56	AV
V	15600.037	64.65	10.12	38.80	44.10	69.47	74	-4.53	PK
V	15600.037	43.06	10.12	38.80	42.70	49.28	54	-4.72	AV
H	4592.167	61.47	6.48	36.37	44.05	60.27	74	-13.73	PK
H	4592.167	43.75	6.48	36.37	44.05	42.55	54	-11.45	AV
H	10400.099	52.12	8.47	38.64	44.50	54.73	68.2	-13.47	PK
H	10400.099	44.45	8.47	38.64	44.50	47.06	54	-6.94	AV
H	15600.041	52.51	10.12	38.38	44.10	56.91	74	-17.09	PK
H	15600.041	40.97	10.12	38.38	44.10	45.37	54	-8.63	AV
High Channel (5240 MHz)-Above 1G									
V	4739.104	62.48	7.10	37.24	43.50	63.32	74	-10.68	PK
V	4739.104	43.82	7.10	37.24	43.50	44.66	54	-9.34	AV
V	10480.116	60.35	8.46	37.68	44.50	61.99	68.2	-6.21	PK
V	10480.116	43.03	8.46	37.68	44.50	44.67	54	-9.33	AV
V	15720.055	60.81	10.12	38.80	44.10	65.63	74	-8.37	PK
V	15720.055	43.58	10.12	38.80	42.70	49.80	54	-4.20	AV
H	4739.119	61.84	7.10	37.24	43.50	62.68	74	-11.32	PK
H	4739.119	43.77	7.10	37.24	43.50	44.61	54	-9.39	AV
H	10480.014	53.69	8.46	38.57	44.50	56.22	68.2	-11.98	PK
H	10480.014	41.14	8.46	38.57	44.50	43.67	54	-10.33	AV
H	15720.020	52.54	10.12	38.38	44.10	56.94	74	-17.06	PK
H	15720.020	42.81	10.12	38.38	44.10	47.21	54	-6.79	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode:	TX(5.1G) - 802.11ac-HT40
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5190 MHz)-Above 1G									
V	4434.172	64.82	5.94	35.40	44.00	62.16	68.2	-6.04	PK
V	4434.172	43.50	5.94	35.40	44.00	40.84	54	-13.16	AV
V	10380.012	61.99	8.46	39.75	44.50	65.70	68.2	-2.50	PK
V	10380.012	43.64	8.46	39.75	44.50	47.35	54	-6.65	AV
V	15570.065	61.65	10.12	38.80	44.10	66.47	74	-7.53	PK
V	15570.065	43.13	10.12	38.80	42.70	49.35	54	-4.65	AV
H	4434.199	64.82	5.94	35.18	44.00	61.94	74	-12.06	PK
H	4434.199	43.05	5.94	35.18	44.00	40.17	54	-13.83	AV
H	10380.004	51.11	8.46	38.71	44.50	53.78	68.2	-14.42	PK
H	10380.004	41.17	8.46	38.71	44.50	43.84	54	-10.16	AV
H	15570.100	53.04	10.12	38.38	44.10	57.44	74	-16.56	PK
H	15570.100	42.56	10.12	38.38	44.10	46.96	54	-7.04	AV
High Channel (5230 MHz)-Above 1G									
V	4739.109	60.76	6.48	36.35	44.05	59.54	68.2	-8.66	PK
V	4739.109	43.45	6.48	36.35	44.05	42.23	54	-11.77	AV
V	10460.171	63.77	8.47	37.88	44.51	65.61	68.2	-2.59	PK
V	10460.171	43.95	8.47	37.88	44.51	45.79	54	-8.21	AV
V	15690.023	63.84	10.12	38.80	44.10	68.66	74	-5.34	PK
V	15690.023	43.86	10.12	38.80	42.70	50.08	54	-3.92	AV
H	4739.106	62.29	6.48	36.37	44.05	61.09	68.2	-7.11	PK
H	4739.106	43.35	6.48	36.37	44.05	42.15	54	-11.85	AV
H	10460.145	51.47	8.47	38.64	44.50	54.08	68.2	-14.12	PK
H	10460.145	43.99	8.47	38.64	44.50	46.60	54	-7.40	AV
H	15690.111	53.70	10.12	38.38	44.10	58.10	74	-15.90	PK
H	15690.111	42.11	10.12	38.38	44.10	46.51	54	-7.49	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode:	TX(5.1G) - 802.11ac-HT80
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
(5210 MHz)-Above 1G									
V	4434.081	62.98	5.94	35.40	44.00	60.32	68.2	-7.88	PK
V	4434.081	43.32	5.94	35.40	44.00	40.66	54	-13.34	AV
V	10420.096	62.75	8.46	39.75	44.50	66.46	68.2	-1.74	PK
V	10420.096	43.34	8.46	39.75	44.50	47.05	54	-6.95	AV
V	15630.186	63.96	10.12	38.80	44.10	68.78	74	-5.22	PK
V	15630.186	43.86	10.12	38.80	42.70	50.08	54	-3.92	AV
H	4434.162	61.90	5.94	35.18	44.00	59.02	68.2	-9.18	PK
H	4434.162	43.03	5.94	35.18	44.00	40.15	54	-13.85	AV
H	10420.139	52.58	8.46	38.71	44.50	55.25	68.2	-12.95	PK
H	10420.139	41.81	8.46	38.71	44.50	44.48	54	-9.52	AV
H	15630.045	53.60	10.12	38.38	44.10	58.00	74	-16.00	PK
H	15630.045	43.67	10.12	38.38	44.10	48.07	54	-5.93	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode:	TX(5.8G) - 802.11a
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5745 MHz)-Above 1G									
V	4679.068	58.94	5.94	35.40	44.00	56.28	74	-17.72	PK
V	4679.068	43.94	5.94	35.40	44.00	41.28	54	-12.72	AV
V	11490.023	56.11	8.46	39.75	44.50	59.82	68.2	-8.38	PK
V	11490.023	43.98	8.46	39.75	44.50	47.69	54	-6.31	AV
V	17235.124	56.40	10.12	38.80	44.10	61.22	68.2	-6.98	PK
V	17235.124	43.10	10.12	38.80	42.70	49.32	54	-4.68	AV
H	4679.143	57.64	5.94	35.18	44.00	54.76	74	-19.24	PK
H	4679.143	43.47	5.94	35.18	44.00	40.59	54	-13.41	AV
H	11490.121	54.00	8.46	38.71	44.50	56.67	68.2	-11.53	PK
H	11490.121	41.50	8.46	38.71	44.50	44.17	54	-9.83	AV
H	17235.109	53.70	10.12	38.38	44.10	58.10	68.2	-10.10	PK
H	17235.109	43.97	10.12	38.38	44.10	48.37	54	-5.63	AV
Middle Channel (5785 MHz)-Above 1G									
V	4592.042	54.69	6.48	36.35	44.05	53.47	74	-20.53	PK
V	4592.042	43.46	6.48	36.35	44.05	42.24	54	-11.76	AV
V	11570.003	55.12	8.47	37.88	44.51	56.96	68.2	-11.24	PK
V	11570.003	43.24	8.47	37.88	44.51	45.08	54	-8.92	AV
V	17355.185	56.55	10.12	38.80	44.10	61.37	68.2	-6.83	PK
V	17355.185	39.15	10.12	38.80	42.70	45.37	54	-8.63	AV
H	4592.143	59.06	6.48	36.37	44.05	57.86	74	-16.14	PK
H	4592.143	43.03	6.48	36.37	44.05	41.83	54	-12.17	AV
H	11570.106	54.90	8.47	38.64	44.50	57.51	68.2	-10.69	PK
H	11570.106	42.74	8.47	38.64	44.50	45.35	54	-8.65	AV
H	17355.098	54.12	10.12	38.38	44.10	58.52	68.2	-9.68	PK
H	17355.098	42.91	10.12	38.38	44.10	47.31	54	-6.69	AV
High Channel (5825 MHz)-Above 1G									
V	6039.007	59.84	7.10	37.24	43.50	60.68	68.2	-7.52	PK
V	6039.007	43.80	7.10	37.24	43.50	44.64	54	-9.36	AV
V	11650.028	58.03	8.46	37.68	44.50	59.67	74	-14.33	PK
V	11650.028	43.16	8.46	37.68	44.50	44.80	54	-9.20	AV
V	17475.124	55.81	10.12	38.80	44.10	60.63	68.2	-7.57	PK
V	17475.124	43.72	10.12	38.80	42.70	49.94	54	-4.06	AV
H	6039.147	54.34	7.10	37.24	43.50	55.18	68.2	-13.02	PK
H	6039.147	43.99	7.10	37.24	43.50	44.83	54	-9.17	AV
H	11650.071	52.73	8.46	38.57	44.50	55.26	74	-18.74	PK
H	11650.071	41.55	8.46	38.57	44.50	44.08	54	-9.92	AV
H	17475.117	53.05	10.12	38.38	44.10	57.45	68.2	-10.75	PK
H	17475.117	40.26	10.12	38.38	44.10	44.66	54	-9.34	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode: TX(5.8G) - 802.11n-HT20

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/ m)	Margin (dB)	Detector Type
Low Channel (5745 MHz)-Above 1G									
V	4679.039	59.55	5.94	35.40	44.00	56.89	74	-17.11	PK
V	4679.039	43.19	5.94	35.40	44.00	40.53	54	-13.47	AV
V	11490.016	56.92	8.46	39.75	44.50	60.63	68.2	-7.57	PK
V	11490.016	43.24	8.46	39.75	44.50	46.95	54	-7.05	AV
V	17235.119	60.45	10.12	38.80	44.10	65.27	68.2	-2.93	PK
V	17235.119	43.90	10.12	38.80	42.70	50.12	54	-3.88	AV
H	4679.072	60.95	5.94	35.18	44.00	58.07	74	-15.93	PK
H	4679.072	43.56	5.94	35.18	44.00	40.68	54	-13.32	AV
H	11490.142	47.13	8.46	38.71	44.50	49.80	68.2	-18.40	PK
H	11490.142	41.74	8.46	38.71	44.50	44.41	54	-9.59	AV
H	17235.029	52.18	10.12	38.38	44.10	56.58	68.2	-11.62	PK
H	17235.029	41.93	10.12	38.38	44.10	46.33	54	-7.67	AV
Middle Channel (5785 MHz)-Above 1G									
V	4592.190	59.99	6.48	36.35	44.05	58.77	74	-15.23	PK
V	4592.190	43.52	6.48	36.35	44.05	42.30	54	-11.70	AV
V	11570.046	55.01	8.47	37.88	44.51	56.85	68.2	-11.35	PK
V	11570.046	43.32	8.47	37.88	44.51	45.16	54	-8.84	AV
V	17355.200	59.49	10.12	38.80	44.10	64.31	68.2	-3.89	PK
V	17355.200	43.05	10.12	38.80	42.70	49.27	54	-4.73	AV
H	4592.189	57.45	6.48	36.37	44.05	56.25	74	-17.75	PK
H	4592.189	43.31	6.48	36.37	44.05	42.11	54	-11.89	AV
H	11570.109	51.11	8.47	38.64	44.50	53.72	68.2	-14.48	PK
H	11570.109	40.21	8.47	38.64	44.50	42.82	54	-11.18	AV
H	17355.080	53.21	10.12	38.38	44.10	57.61	68.2	-10.59	PK
H	17355.080	40.59	10.12	38.38	44.10	44.99	54	-9.01	AV
High Channel (5825 MHz)-Above 1G									
V	6039.029	56.91	7.10	37.24	43.50	57.75	68.2	-10.45	PK
V	6039.029	43.67	7.10	37.24	43.50	44.51	54	-9.49	AV
V	11650.082	58.21	8.46	37.68	44.50	59.85	74	-14.15	PK
V	11650.082	43.40	8.46	37.68	44.50	45.04	54	-8.96	AV
V	17475.080	55.36	10.12	38.80	44.10	60.18	68.2	-8.02	PK
V	17475.080	43.13	10.12	38.80	42.70	49.35	54	-4.65	AV
H	6039.180	57.86	7.10	37.24	43.50	58.70	68.2	-9.50	PK
H	6039.180	43.17	7.10	37.24	43.50	44.01	54	-9.99	AV
H	11650.136	52.57	8.46	38.57	44.50	55.10	74	-18.90	PK
H	11650.136	42.40	8.46	38.57	44.50	44.93	54	-9.07	AV
H	17475.127	51.53	10.12	38.38	44.10	55.93	68.2	-12.27	PK
H	17475.127	43.10	10.12	38.38	44.10	47.50	54	-6.50	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode:	TX(5.8G) - 802.11n-HT40
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5755 MHz)-Above 1G									
V	4679.197	59.38	5.94	35.40	44.00	56.72	74	-17.28	PK
V	4679.197	43.83	5.94	35.40	44.00	41.17	54	-12.83	AV
V	11510.087	55.53	8.46	39.75	44.50	59.24	74	-14.76	PK
V	11510.087	43.90	8.46	39.75	44.50	47.61	54	-6.39	AV
V	17265.046	55.41	10.12	38.80	44.10	60.23	68.2	-7.97	PK
V	17265.046	43.34	10.12	38.80	42.70	49.56	54	-4.44	AV
H	4679.106	58.35	5.94	35.18	44.00	55.47	74	-18.53	PK
H	4679.106	43.61	5.94	35.18	44.00	40.73	54	-13.27	AV
H	11510.069	51.61	8.46	38.71	44.50	54.28	74	-19.72	PK
H	11510.069	41.81	8.46	38.71	44.50	44.48	54	-9.52	AV
H	17265.025	50.97	10.12	38.38	44.10	55.37	68.2	-12.83	PK
H	17265.025	44.50	10.12	38.38	44.10	48.90	54	-5.10	AV
High Channel (5795 MHz)-Above 1G									
V	6039.022	58.65	6.48	36.35	44.05	57.43	68.2	-10.77	PK
V	6039.022	43.13	6.48	36.35	44.05	41.91	54	-12.09	AV
V	11590.171	58.45	8.47	37.88	44.51	60.29	74	-13.71	PK
V	11590.171	43.52	8.47	37.88	44.51	45.36	54	-8.64	AV
V	17385.128	55.75	10.12	38.80	44.10	60.57	68.2	-7.63	PK
V	17385.128	41.17	10.12	38.80	42.70	47.39	54	-6.61	AV
H	6039.024	59.55	6.48	36.37	44.05	58.35	68.2	-9.85	PK
H	6039.024	43.22	6.48	36.37	44.05	42.02	54	-11.98	AV
H	11590.069	53.67	8.47	38.64	44.50	56.28	74	-17.72	PK
H	11590.069	42.91	8.47	38.64	44.50	45.52	54	-8.48	AV
H	17385.094	53.61	10.12	38.38	44.10	58.01	68.2	-10.19	PK
H	17385.094	41.24	10.12	38.38	44.10	45.64	54	-8.36	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode:	TX(5.8G) - 802.11ac-HT20
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5745 MHz)-Above 1G									
V	4679.056	60.08	5.94	35.40	44.00	57.42	74	-16.58	PK
V	4679.056	43.47	5.94	35.40	44.00	40.81	54	-13.19	AV
V	11490.117	53.85	8.46	39.75	44.50	57.56	68.2	-10.64	PK
V	11490.117	43.02	8.46	39.75	44.50	46.73	54	-7.27	AV
V	17235.175	58.31	10.12	38.80	44.10	63.13	68.2	-5.07	PK
V	17235.175	43.39	10.12	38.80	42.70	49.61	54	-4.39	AV
H	4679.180	57.81	5.94	35.18	44.00	54.93	74	-19.07	PK
H	4679.180	43.26	5.94	35.18	44.00	40.38	54	-13.62	AV
H	11490.135	48.06	8.46	38.71	44.50	50.73	68.2	-17.47	PK
H	11490.135	41.93	8.46	38.71	44.50	44.60	54	-9.40	AV
H	17235.002	52.28	10.12	38.38	44.10	56.68	68.2	-11.52	PK
H	17235.002	41.94	10.12	38.38	44.10	46.34	54	-7.66	AV
Middle Channel (5785 MHz)-Above 1G									
V	4592.192	58.21	6.48	36.35	44.05	56.99	74	-17.01	PK
V	4592.192	43.51	6.48	36.35	44.05	42.29	54	-11.71	AV
V	11570.024	57.27	8.47	37.88	44.51	59.11	68.2	-9.09	PK
V	11570.024	43.40	8.47	37.88	44.51	45.24	54	-8.76	AV
V	17355.118	59.22	10.12	38.80	44.10	64.04	68.2	-4.16	PK
V	17355.118	43.81	10.12	38.80	42.70	50.03	54	-3.97	AV
H	4592.180	57.19	6.48	36.37	44.05	55.99	74	-18.01	PK
H	4592.180	43.26	6.48	36.37	44.05	42.06	54	-11.94	AV
H	11570.048	52.99	8.47	38.64	44.50	55.60	68.2	-12.60	PK
H	11570.048	42.52	8.47	38.64	44.50	45.13	54	-8.87	AV
H	17355.025	50.14	10.12	38.38	44.10	54.54	68.2	-13.66	PK
H	17355.025	43.16	10.12	38.38	44.10	47.56	54	-6.44	AV
High Channel (5825 MHz)-Above 1G									
V	6039.027	56.21	7.10	37.24	43.50	57.05	68.2	-11.15	PK
V	6039.027	43.81	7.10	37.24	43.50	44.65	54	-9.35	AV
V	11650.110	56.32	8.46	37.68	44.50	57.96	74	-16.04	PK
V	11650.110	44.00	8.46	37.68	44.50	45.64	54	-8.36	AV
V	17475.006	57.78	10.12	38.80	44.10	62.60	68.2	-5.60	PK
V	17475.006	43.63	10.12	38.80	42.70	49.85	54	-4.15	AV
H	6039.194	56.01	7.10	37.24	43.50	56.85	68.2	-11.35	PK
H	6039.194	43.21	7.10	37.24	43.50	44.05	54	-9.95	AV
H	11650.147	53.64	8.46	38.57	44.50	56.17	74	-17.83	PK
H	11650.147	43.06	8.46	38.57	44.50	45.59	54	-8.41	AV
H	17475.152	50.87	10.12	38.38	44.10	55.27	68.2	-12.93	PK
H	17475.152	43.01	10.12	38.38	44.10	47.41	54	-6.59	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode:	TX(5.8G) - 802.11ac-HT40
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5755 MHz)-Above 1G									
V	4679.020	58.17	5.94	35.40	44.00	55.51	74	-18.49	Pk
V	4679.020	43.82	5.94	35.40	44.00	41.16	54	-12.84	AV
V	11510.138	56.06	8.46	39.75	44.50	59.77	74	-14.23	Pk
V	11510.138	43.19	8.46	39.75	44.50	46.90	54	-7.10	AV
V	17265.153	56.87	10.12	38.80	44.10	61.69	68.2	-6.51	Pk
V	17265.153	43.96	10.12	38.80	42.70	50.18	54	-3.82	AV
H	4679.023	56.56	5.94	35.18	44.00	53.68	74	-20.32	Pk
H	4679.023	43.81	5.94	35.18	44.00	40.93	54	-13.07	AV
H	11510.177	51.93	8.46	38.71	44.50	54.60	74	-19.40	Pk
H	11510.177	41.98	8.46	38.71	44.50	44.65	54	-9.35	AV
H	17265.184	53.93	10.12	38.38	44.10	58.33	68.2	-9.87	Pk
H	17265.184	42.69	10.12	38.38	44.10	47.09	54	-6.91	AV
High Channel (5795 MHz)-Above 1G									
V	6039.082	58.02	6.48	36.35	44.05	56.80	68.2	-11.40	Pk
V	6039.082	43.17	6.48	36.35	44.05	41.95	54	-12.05	AV
V	11590.112	59.37	8.47	37.88	44.51	61.21	74	-12.79	Pk
V	11590.112	43.29	8.47	37.88	44.51	45.13	54	-8.87	AV
V	17385.105	55.52	10.12	38.80	44.10	60.34	68.2	-7.86	Pk
V	17385.105	41.65	10.12	38.80	42.70	47.87	54	-6.13	AV
H	6039.091	59.46	6.48	36.37	44.05	58.26	68.2	-9.94	Pk
H	6039.091	43.42	6.48	36.37	44.05	42.22	54	-11.78	AV
H	11590.066	50.47	8.47	38.64	44.50	53.08	74	-20.92	Pk
H	11590.066	43.31	8.47	38.64	44.50	45.92	54	-8.08	AV
H	17385.195	52.85	10.12	38.38	44.10	57.25	68.2	-10.95	Pk
H	17385.195	40.80	10.12	38.38	44.10	45.20	54	-8.80	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode:	TX(5.8G) - 802.11ac-HT80
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
(5775 MHz)-Above 1G									
V	4679.178	59.90	5.94	35.40	44.00	57.24	74	-16.76	Pk
V	4679.178	43.88	5.94	35.40	44.00	41.22	54	-12.78	AV
V	11550.069	57.62	8.46	39.75	44.50	61.33	74	-12.67	Pk
V	11550.069	43.54	8.46	39.75	44.50	47.25	54	-6.75	AV
V	17325.034	59.59	10.12	38.80	44.10	64.41	68.2	-3.79	Pk
V	17325.034	41.61	10.12	38.80	42.70	47.83	54	-6.17	AV
H	4679.169	59.61	5.94	35.18	44.00	56.73	74	-17.27	Pk
H	4679.169	43.48	5.94	35.18	44.00	40.60	54	-13.40	AV
H	11550.078	53.01	8.46	38.71	44.50	55.68	74	-18.32	Pk
H	11550.078	40.95	8.46	38.71	44.50	43.62	54	-10.38	AV
H	17325.161	52.08	10.12	38.38	44.10	56.48	68.2	-11.72	Pk
H	17325.161	40.99	10.12	38.38	44.10	45.39	54	-8.61	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

8. Power Spectral Density Test

8.1 Block Diagram Of Test Setup



8.2 Limit

For the band 5.15-5.25 GHz,

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz

(3) For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

8.3 Test Procedure

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:

- a) Set $RBW \geq 1/T$, where T is defined in section II.B.I.a).
- b) Set $VBW \geq 3 RBW$.
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10\log(500\text{kHz}/RBW)$ to the measured result, whereas $RBW (< 500 \text{ KHz})$ is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add $10\log(1\text{MHz}/RBW)$ to the measured result, whereas $RBW (< 1 \text{ MHz})$ is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 KHz for the sections 5.c) and 5.d) above, since $RBW=100 \text{ KHz}$ is available on nearly all spectrum analyzers.

8.4 EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

8.5 Test Result

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 7.6V
Test Mode:	(5180-5240MHz)		

Condition	Mode	Frequency (MHz)	Conducted PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	a	5180	-5.62	11	Pass
NVNT	a	5200	-4.97	11	Pass
NVNT	a	5240	-5.14	11	Pass
NVNT	n20	5180	-5.85	11	Pass
NVNT	n20	5200	-5.14	11	Pass
NVNT	n20	5240	-5.81	11	Pass
NVNT	n40	5190	-10.94	11	Pass
NVNT	n40	5230	-6.97	11	Pass
NVNT	ac20	5180	-5.9	11	Pass
NVNT	ac20	5200	-5.16	11	Pass
NVNT	ac20	5240	-5.41	11	Pass
NVNT	ac40	5190	-10.85	11	Pass
NVNT	ac40	5230	-6.86	11	Pass
NVNT	ac80	5210	-12.12	11	Pass

