TEST REPORT

Report No.:	BCTC2011000679-3E
Applicant:	Shenzhen Viofo Technology Co., Ltd
Product Name:	Car Dash Camera
Model/Type Ref.:	A139
Tested Date:	2020-12-5 to 2020-12-29
Issued Date:	2020-12-30

Shenzhen BCTC Testing Co., Ltd.

FCC ID: 2AMBW-A139

Product Name:	Car Dash Camera
Trademark:	VIOFO
Model/Type Ref.:	A139 A139 3CH, A139 2CH, A139 Pro
Prepared For:	Shenzhen Viofo Technology Co., Ltd
Address:	Room201, Second Floor, Factory Building NO.1, Guanghui Science and Technology Park, Minqing Rd, Longhua Street, Longhua District, Shenzhen, China.
Manufacturer:	Shenzhen Viofo Technology Co., Ltd
Address:	Room201, Second Floor, Factory Building NO.1, Guanghui Science and Technology Park, Minqing Rd, Longhua Street, Longhua District, Shenzhen, China.
Prepared By:	Shenzhen BCTC Testing Co., Ltd.
Address:	1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date:	2020-12-5
Sample tested Date:	2020-12-5 to 2020-12-29
Issue Date:	2020-12-30
Report No.:	BCTC2011000679-3E
Test Standards	FCC Part15 15.407 ANSI C63.10-2013 KDB 789033 D02 v02r01
Test Results	PASS

Tested by:

Eric Yang/Project Handler

Approved by:

Zero Zhou/Reviewer

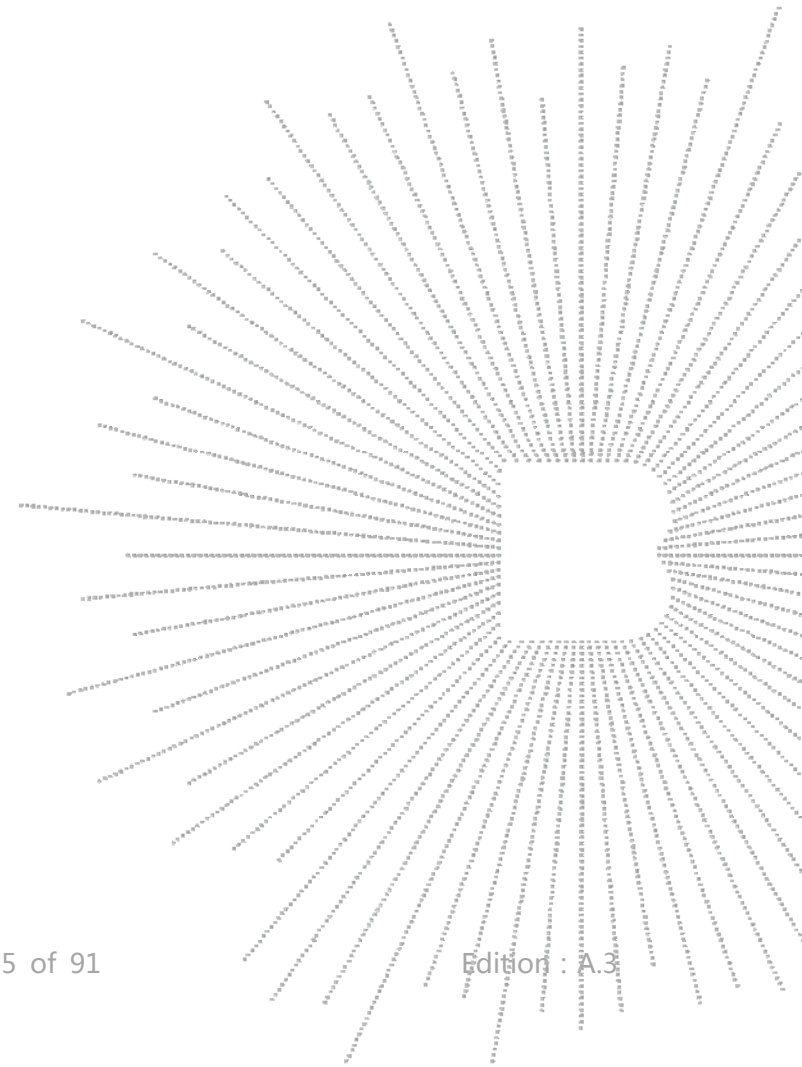
The test report is effective only with both signature and specialized stamp.This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full.The tested sample(s) and the sample information are provided by the client.

TABLE OF CONTENT

(Note: N/A means not applicable)

1. VERSION

Report No.	Issue Date	Description	Approved
BCTC2011000679-3E	2020-12-30	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 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 camber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
2	3m chamber Radiated spurious emission(1GHz-18GHz)	U=4.5dB
3	3m chamber Radiated spurious emission(18GHz-40GHz)	U=3.34dB
4	Conducted Adjacent channel power	U=1.38dB
5	Conducted output power uncertainty Above 1G	U=1.576dB
6	Conducted output power uncertainty below 1G	U=1.28dB
7	humidity uncertainty	U=5.3%
8	Temperature uncertainty	U=0.59℃

4. PRODUCT INFORMATION AND TEST SETUP

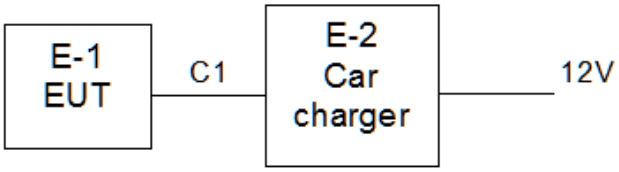
4.1 Product Information

Model/Type Ref.:	A139
Model differences:	A139 3CH, A139 2CH, A139 Pro All the model are the same circuit and RF module, except model names.
IEEE 802.11 WLAN Mode Supported	802.11a/n/ac(20MHz channel bandwidth) 802.11n/ac(40MHz channel bandwidth)
Operation Frequency:	5180-5240MHz for 802.11a/n(HT20)/ac20; 5190-5230MHz for 802.11n(HT40)/ac40; 5745-5825 MHz for 802.11a/n(HT20)/ac20; 5755-5795 MHz for 802.11a/n(HT40)/ac40;
Data Rate	802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n(HT20/HT40):MCS0-MCS15; 802.11ac(VHT20): NSS1, MCS0-MCS8 802.11ac(VHT40):NSS1, MCS0-MCS
Type of Modulation:	OFDM with BPSK/QPSK/16QAM/64QAM/256QAM for 802.11a/n/ac;
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 ; 5 channels for 802.11a/n20 in the 5745-5825MHz band ; 2 channels for 802.11 n40 in the 5755-5795MHz band ;
Antenna installation:	FPC antenna
Antenna Gain:	1dBi
Ratings:	DC 5V 2A
Car charger:	Input: DC 12V Output: DC 5V 3A

4.2 Test Setup Configuration

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

Radiated Spurious Emission



4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	Car Dash Camera	VIOFO	A139	N/A	EUT
E-1	Car charger	N/A	CC-030	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C1	NO	NO	2M	DC cable unshielded

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

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
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)	Channel	Frequency (MHz)
38	5190	46	5230	-	-	-	-
151	5755	159	5795	-	-	-	-

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
Mode 2	802.11a /n/ ac 20 CH149/ CH157/ CH 165
Mode 3	802.11n/ ac40 CH38/ CH 46
Mode 4	802.11n/ ac40 CH 151 / CH 159
Mode 5	Link Mode

Note:

(1) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.

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, Tangwei, Fuhai 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

IC Registered No.: 23583

5.2 Test Instrument Used

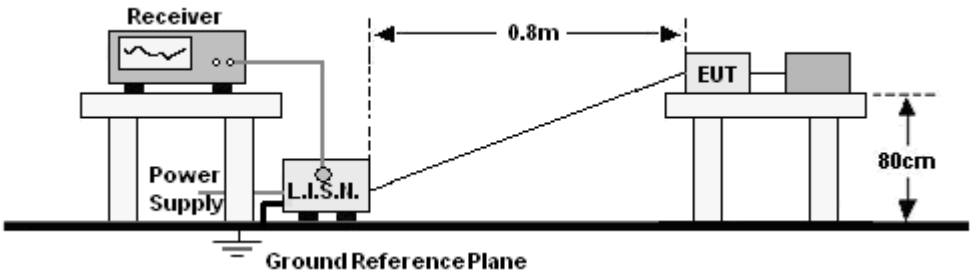
Conducted emissions Test					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
Receiver	R&S	ESR3	102075	Jun. 08, 2020	Jun. 07, 2021
LISN	R&S	ENV216	101375	Jun. 04, 2020	Jun. 03, 2021
ISN	HPX	ISN T800	S1509001	Jun. 04, 2020	Jun. 03, 2021
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\

RF Conducted Test					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
Signal Analyzer 20kHz-26.5GHz	KEYSIGHT	N9020A	MY49100060	Jun. 04, 2020	Jun. 03, 2021

Radiated emissions Test (966 chamber)					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
966 chamber	ChengYu	966 Room	966	Jun. 06. 2020	Jun. 05, 2023
Receiver	R&S	ESR3	102075	Jun. 08, 2020	Jun. 07, 2021
Receiver	R&S	ESRP	101154	Jun. 08, 2020	Jun. 07, 2021
Amplifier	Schwarzbeck	BBV9718	9718-309	Jun. 04, 2020	Jun. 03, 2021
Amplifier	Schwarzbeck	BBV9744	9744-0037	Jun. 04, 2020	Jun. 03, 2021
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	VULB9163-942	Jun. 08, 2020	Jun. 07, 2021
Horn Antenna	SCHWARZBECK	BBHA9120D	1201	Jun. 10, 2020	Jun. 09, 2021
Horn Antenna (18GHz-40GHz)	SCHWARZBECK	BBHA9170	822	Jun. 10, 2020	Jun. 09, 2021
Amplifier (18GHz-40GHz)	MITEQ	TTA1840-35-HG	2034381	Jun. 08, 2020	Jun. 07, 2021
Loop Antenna (9KHz-30MHz)	SCHWARZBECK	FMZB1519B	014	Jun. 08, 2020	Jun. 07, 2021
RF cables1 (9kHz-30MHz)	Huber+Suhnar	9kHz-30MHz	B1702988-0008	Jun. 08, 2020	Jun. 07, 2021
RF cables2 (30MHz-1GHz)	Huber+Suhnar	30MHz-1GHz	1486150	Jun. 08, 2020	Jun. 07, 2021
RF cables3 (1GHz-40GHz)	Huber+Suhnar	1GHz-40GHz	1607106	Jun. 08, 2020	Jun. 07, 2021
Power Metter	Keysight	E4419B	\	Jun. 08, 2020	Jun. 07, 2021
Power Sensor (AV)	Keysight	E9 300A	\	Jun. 08, 2020	Jun. 07, 2021
Signal Analyzer 20kHz-26.5GHz	KEYSIGHT	N9020A	MY491000600	Jun. 04, 2020	Jun. 03, 2021
Spectrum Analyzer 9kHz-40GHz	Agilent	FSP40	100363	Jun. 13, 2020	Jun. 12, 2021
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: 1. *Decreasing linearly with logarithm of frequency. 2. 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

a. 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).

b. 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.

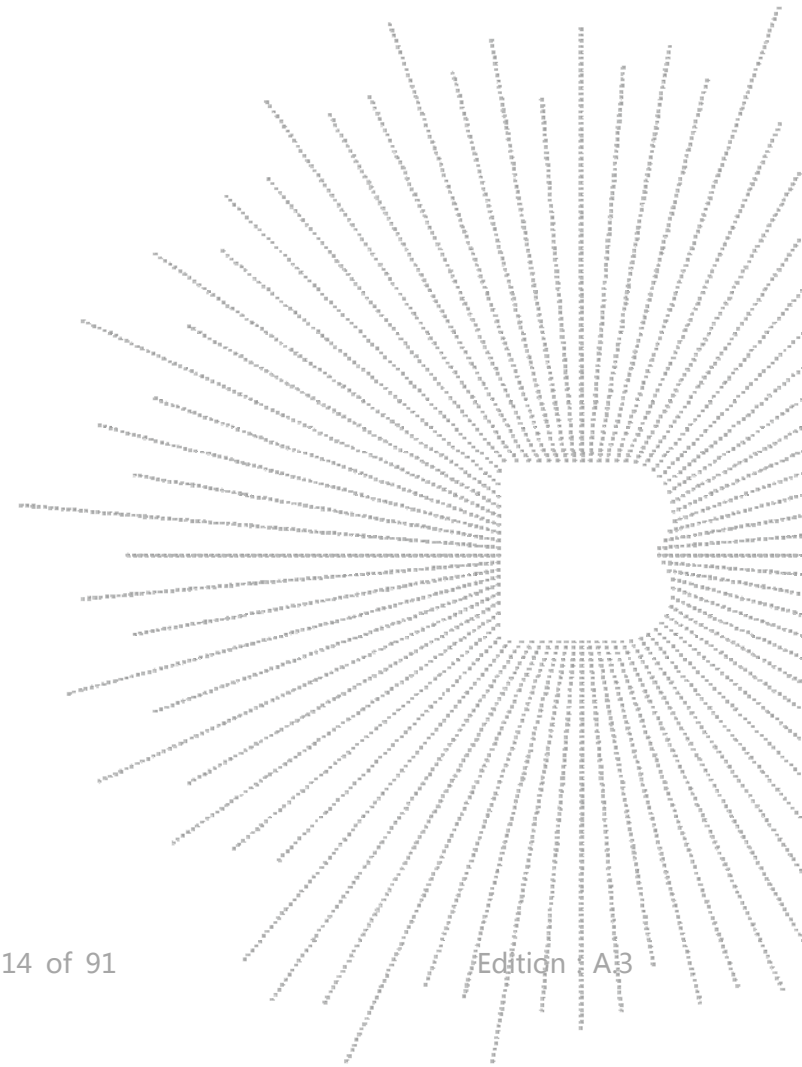
c. For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

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

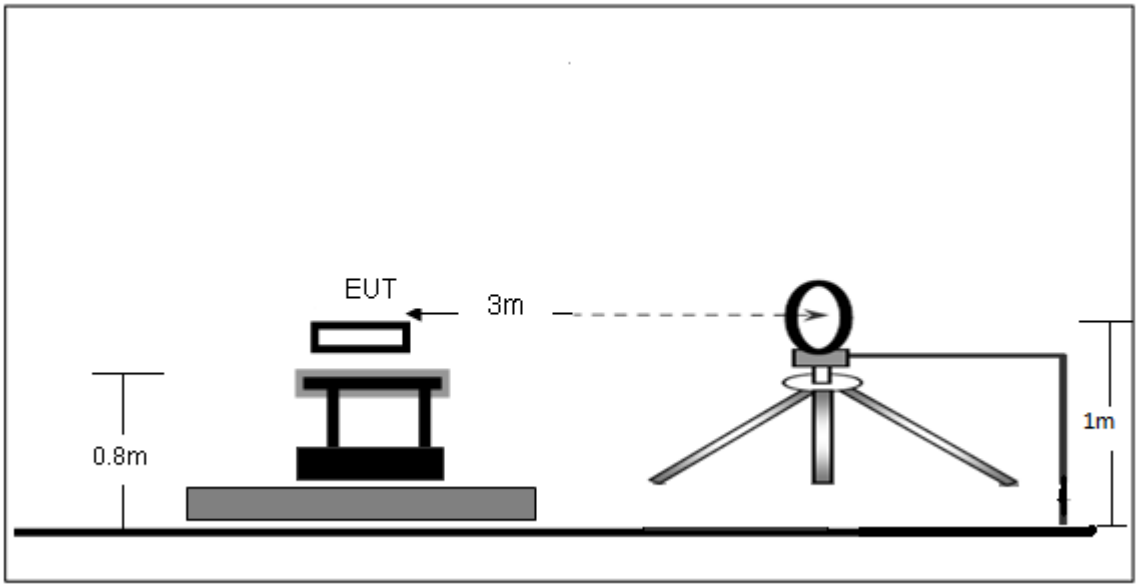
The EUT is powered by the DC only, the test item is not applicable.



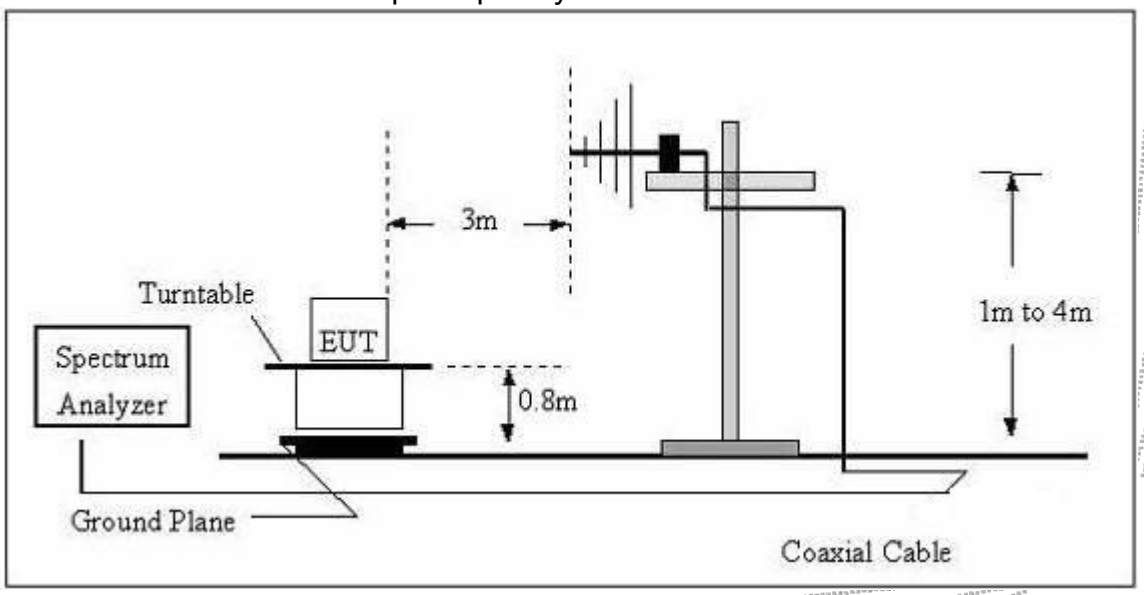
7. RADIATED EMISSIONS

7.1 Block Diagram Of Test Setup

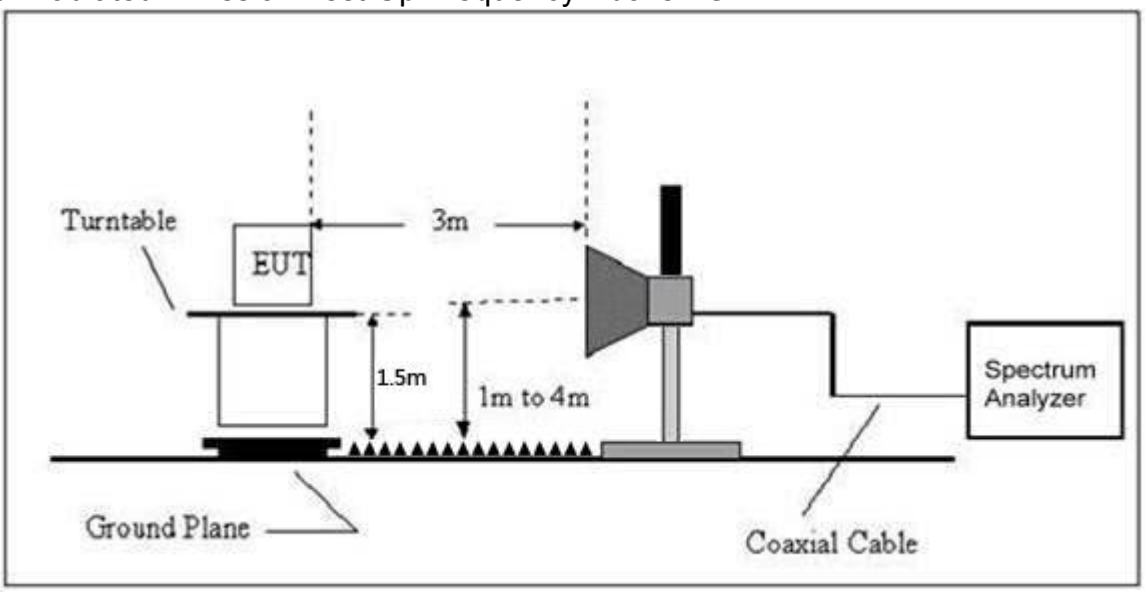
（A）Radiated Emission Test-Up Frequency Below 30MHz



（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	Field Strength	Distance	Field Strength Limit at 3m Distance	
(MHz)	uV/m	(m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))}$ + 80
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))}$ + 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.

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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*lg(100 [kHz]/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.

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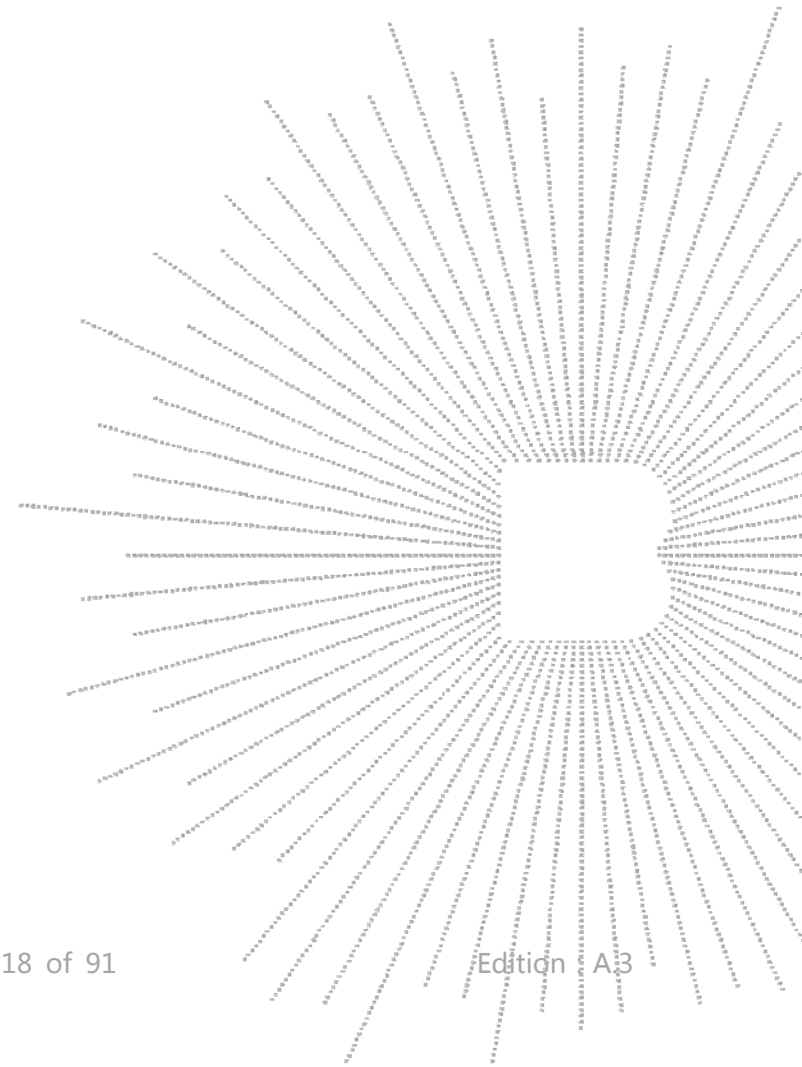
7.4 EUT operating Conditions

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

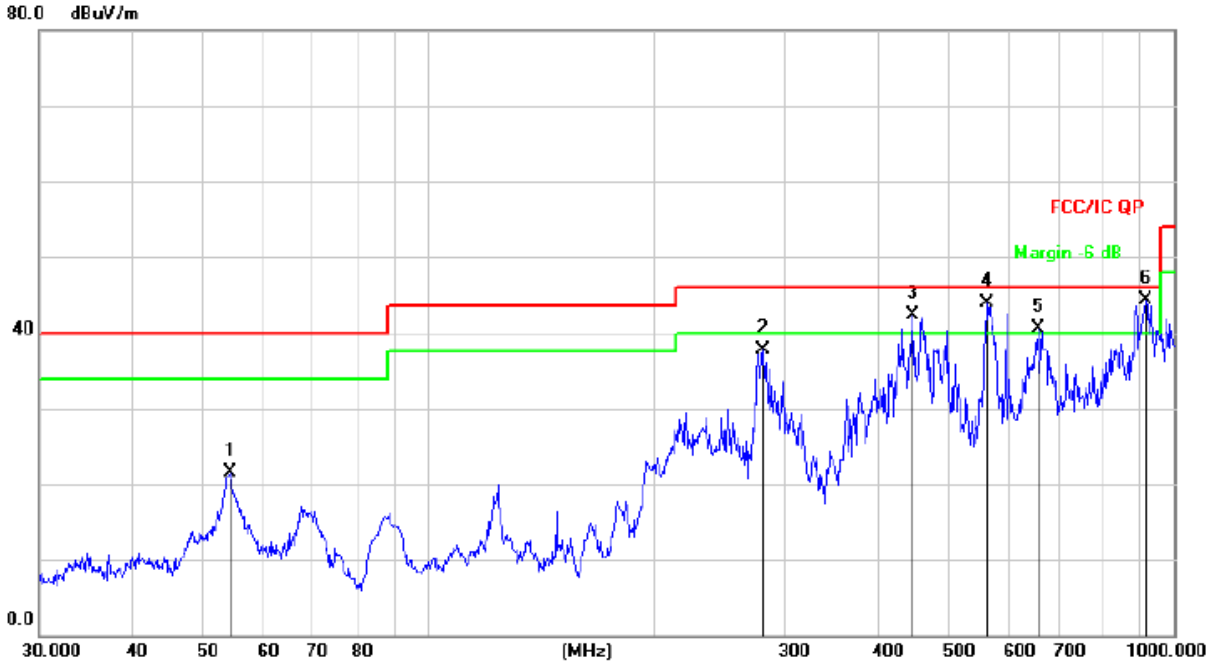
Temperature：	26℃	Relative Humidtity：	24%
Pressure：	101 kPa	Test Voltage ：	DC 12V
Test Mode ：	Mode 4	Polarization :	--

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 (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

Between 30MHz – 1GHz

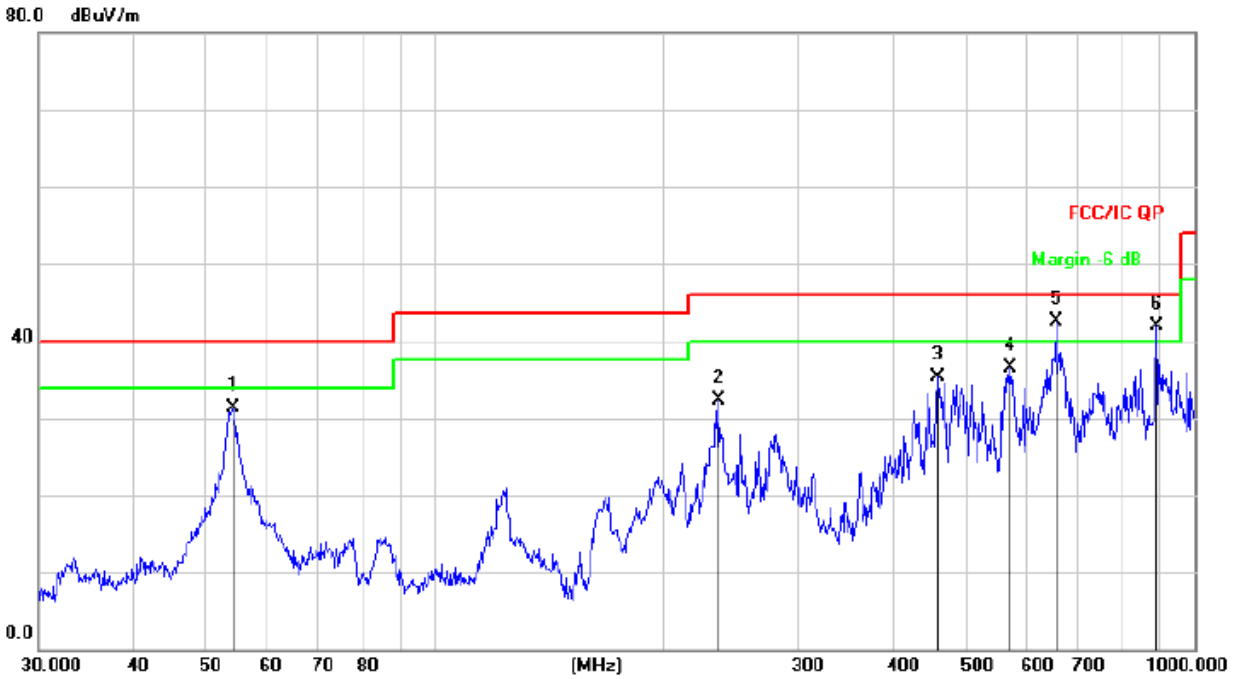
Temperature：	26℃	Relative Humidtity：	54%
Pressure：	101 kPa	Test Voltage ：	DC 12V
Test Mode ：	Mode 5	Polarization :	Horizontal



Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		54.0711	35.75	-14.32	21.43	40.00	-18.57	QP
2		281.0075	50.82	-13.10	37.72	46.00	-8.28	QP
3	!	446.4141	50.91	-8.70	42.21	46.00	-3.79	QP
4	!	560.6928	49.88	-6.04	43.84	46.00	-2.16	QP
5	!	656.5300	44.66	-4.24	40.42	46.00	-5.58	QP
6	*	916.0687	44.41	-0.19	44.22	46.00	-1.78	QP

Temperature：	26℃	Relative Humidtity：	54%
Pressure：	101 kpa	Test Voltage ：	DC 12V
Test Mode ：	Mode 5	Polarization :	Vertical



Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		54.0711	45.59	-14.32	31.27	40.00	-8.73	QP
2		235.8164	46.79	-14.52	32.27	46.00	-13.73	QP
3		459.1144	43.67	-8.43	35.24	46.00	-10.76	QP
4		572.6144	42.31	-5.74	36.57	46.00	-9.43	QP
5	*	656.5300	46.76	-4.24	42.52	46.00	-3.48	QP
6	!	890.7278	42.14	-0.20	41.94	46.00	-4.06	QP

Between 1GHz – 40GHz

Test Mode :	TX(5.1G) - 802.11a

Polar (H/V)	Frequency	Meter Reading	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5180 MHz)-Above 1G									
V	4434.133	62.73	5.94	35.40	44.00	60.07	68.20	-8.13	PK
V	4434.133	43.14	5.94	35.40	44.00	40.48	54.00	-13.52	AV
V	10360.177	60.78	8.46	39.75	44.50	64.49	74.00	-9.51	PK
V	10360.177	43.27	8.46	39.75	44.50	46.98	54.00	-7.02	AV
V	15540.046	62.45	10.12	38.80	44.10	67.27	74.00	-6.73	PK
V	15540.046	43.31	10.12	38.80	42.70	49.53	54.00	-4.47	AV
H	4434.154	64.48	5.94	35.18	44.00	61.60	68.20	-6.60	PK
H	4434.154	43.29	5.94	35.18	44.00	40.41	54.00	-13.59	AV
H	10360.079	50.97	8.46	38.71	44.50	53.64	74.00	-20.36	PK
H	10360.079	40.39	8.46	38.71	44.50	43.06	54.00	-10.94	AV
H	15540.175	51.61	10.12	38.38	44.10	56.01	74.00	-17.99	PK
H	15540.175	42.57	10.12	38.38	44.10	46.97	54.00	-7.03	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.034	64.14	6.48	36.35	44.05	62.92	74.00	-11.08	PK
V	4592.034	43.86	6.48	36.35	44.05	42.64	54.00	-11.36	AV
V	10400.076	63.55	8.47	37.88	44.51	65.39	68.20	-2.81	PK
V	10400.076	43.15	8.47	37.88	44.51	44.99	54.00	-9.01	AV
V	15600.022	60.10	10.12	38.80	44.10	64.92	74.00	-9.08	PK
V	15600.022	43.12	10.12	38.80	42.70	49.34	54.00	-4.66	AV
H	4592.006	60.32	6.48	36.37	44.05	59.12	74.00	-14.88	PK
H	4592.006	43.47	6.48	36.37	44.05	42.27	54.00	-11.73	AV
H	10400.131	52.30	8.47	38.64	44.50	54.91	68.20	-13.29	PK
H	10400.131	44.40	8.47	38.64	44.50	47.01	54.00	-6.99	AV
H	15600.114	53.20	10.12	38.38	44.10	57.60	74.00	-16.40	PK
H	15600.114	43.53	10.12	38.38	44.10	47.93	54.00	-6.07	AV
High Channel (5240 MHz)-Above 1G									
V	4739.051	62.08	7.10	37.24	43.50	62.92	74.00	-11.08	PK
V	4739.051	43.79	7.10	37.24	43.50	44.63	54.00	-9.37	AV
V	10480.023	62.81	8.46	37.68	44.50	64.45	68.20	-3.75	PK
V	10480.023	43.94	8.46	37.68	44.50	45.58	54.00	-8.42	AV
V	15720.183	60.26	10.12	38.80	44.10	65.08	74.00	-8.92	PK
V	15720.183	43.92	10.12	38.80	42.70	50.14	54.00	-3.86	AV
H	4739.136	62.46	7.10	37.24	43.50	63.30	74.00	-10.70	PK
H	4739.136	43.30	7.10	37.24	43.50	44.14	54.00	-9.86	AV
H	10480.026	53.19	8.46	38.57	44.50	55.72	68.20	-12.48	PK
H	10480.026	41.06	8.46	38.57	44.50	43.59	54.00	-10.41	AV
H	15720.180	50.15	10.12	38.38	44.10	54.55	74.00	-19.45	PK
H	15720.180	44.89	10.12	38.38	44.10	49.29	54.00	-4.71	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

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	4434.038	61.88	5.94	35.40	44.00	59.22	68.20	-8.98	PK
V	4434.038	43.40	5.94	35.40	44.00	40.74	54.00	-13.26	AV
V	10360.092	61.70	8.46	39.75	44.50	65.41	68.20	-2.79	PK
V	10360.092	43.61	8.46	39.75	44.50	47.32	54.00	-6.68	AV
V	15540.148	62.35	10.12	38.80	44.10	67.17	74.00	-6.83	PK
V	15540.148	43.58	10.12	38.80	42.70	49.80	54.00	-4.20	AV
H	4434.092	63.55	5.94	35.18	44.00	60.67	68.20	-7.53	PK
H	4434.092	43.79	5.94	35.18	44.00	40.91	54.00	-13.09	AV
H	10360.111	54.25	8.46	38.71	44.50	56.92	68.20	-11.28	PK
H	10360.111	40.59	8.46	38.71	44.50	43.26	54.00	-10.74	AV
H	15540.169	53.52	10.12	38.38	44.10	57.92	74.00	-16.08	PK
H	15540.169	42.81	10.12	38.38	44.10	47.21	54.00	-6.79	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.019	64.59	6.48	36.35	44.05	63.37	74.00	-10.63	PK
V	4592.019	43.00	6.48	36.35	44.05	41.78	54.00	-12.22	AV
V	10400.082	64.19	8.47	37.88	44.51	66.03	68.20	-2.17	PK
V	10400.082	43.22	8.47	37.88	44.51	45.06	54.00	-8.94	AV
V	15600.169	62.34	10.12	38.80	44.10	67.16	74.00	-6.84	PK
V	15600.169	43.83	10.12	38.80	42.70	50.05	54.00	-3.95	AV
H	4592.104	63.53	6.48	36.37	44.05	62.33	74.00	-11.67	PK
H	4592.104	43.27	6.48	36.37	44.05	42.07	54.00	-11.93	AV
H	10400.075	54.69	8.47	38.64	44.50	57.30	68.20	-10.90	PK
H	10400.075	44.92	8.47	38.64	44.50	47.53	54.00	-6.47	AV
H	15600.030	51.45	10.12	38.38	44.10	55.85	74.00	-18.15	PK
H	15600.030	42.22	10.12	38.38	44.10	46.62	54.00	-7.38	AV
High Channel (5240 MHz)-Above 1G									
V	4739.057	61.05	7.10	37.24	43.50	61.89	74.00	-12.11	PK
V	4739.057	43.74	7.10	37.24	43.50	44.58	54.00	-9.42	AV
V	10480.038	64.09	8.46	37.68	44.50	65.73	68.20	-2.47	PK
V	10480.038	43.38	8.46	37.68	44.50	45.02	54.00	-8.98	AV
V	15720.022	61.68	10.12	38.80	44.10	66.50	74.00	-7.50	PK
V	15720.022	43.96	10.12	38.80	42.70	50.18	54.00	-3.82	AV
H	4739.188	62.38	7.10	37.24	43.50	63.22	74.00	-10.78	PK
H	4739.188	43.74	7.10	37.24	43.50	44.58	54.00	-9.42	AV
H	10480.108	53.14	8.46	38.57	44.50	55.67	68.20	-12.53	PK
H	10480.108	44.67	8.46	38.57	44.50	47.20	54.00	-6.80	AV
H	15720.198	52.75	10.12	38.38	44.10	57.15	74.00	-16.85	PK
H	15720.198	40.22	10.12	38.38	44.10	44.62	54.00	-9.38	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

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	4434.138	63.57	5.94	35.40	44.00	60.91	74.00	-13.09	PK
V	4434.138	43.04	5.94	35.40	44.00	40.38	54.00	-13.62	AV
V	10380.105	61.31	8.46	39.75	44.50	65.02	68.20	-3.18	PK
V	10380.105	43.80	8.46	39.75	44.50	47.51	54.00	-6.49	AV
V	15570.197	60.96	10.12	38.80	44.10	65.78	74.00	-8.22	PK
V	15570.197	43.57	10.12	38.80	42.70	49.79	54.00	-4.21	AV
H	4434.153	61.51	5.94	35.18	44.00	58.63	74.00	-15.37	PK
H	4434.153	43.09	5.94	35.18	44.00	40.21	54.00	-13.79	AV
H	10380.159	51.89	8.46	38.71	44.50	54.56	68.20	-13.64	PK
H	10380.159	40.25	8.46	38.71	44.50	42.92	54.00	-11.08	AV
H	15570.054	51.94	10.12	38.38	44.10	56.34	74.00	-17.66	PK
H	15570.054	44.30	10.12	38.38	44.10	48.70	54.00	-5.30	AV
middle Channel (5230 MHz)-Above 1G									
V	4739.108	62.62	6.48	36.35	44.05	61.40	74.00	-12.60	PK
V	4739.108	43.84	6.48	36.35	44.05	42.62	54.00	-11.38	AV
V	10460.002	60.13	8.47	37.88	44.51	61.97	68.20	-6.23	PK
V	10460.002	43.46	8.47	37.88	44.51	45.30	54.00	-8.70	AV
V	15690.047	63.48	10.12	38.80	44.10	68.30	74.00	-5.70	PK
V	15690.047	43.96	10.12	38.80	42.70	50.18	54.00	-3.82	AV
H	4739.172	63.37	6.48	36.37	44.05	62.17	74.00	-11.83	PK
H	4739.172	43.55	6.48	36.37	44.05	42.35	54.00	-11.65	AV
H	10460.095	54.99	8.47	38.64	44.50	57.60	68.20	-10.60	PK
H	10460.095	42.93	8.47	38.64	44.50	45.54	54.00	-8.46	AV
H	15690.184	53.69	10.12	38.38	44.10	58.09	74.00	-15.91	PK
H	15690.184	41.41	10.12	38.38	44.10	45.81	54.00	-8.19	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) - 802.11 AC20

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	4434.158	63.45	5.94	35.40	44.00	60.79	68.20	-7.41	PK
V	4434.158	43.28	5.94	35.40	44.00	40.62	54.00	-13.38	AV
V	10360.001	63.95	8.46	39.75	44.50	67.66	68.20	-0.54	PK
V	10360.001	43.93	8.46	39.75	44.50	47.64	54.00	-6.36	AV
V	15540.183	64.22	10.12	38.80	44.10	69.04	74.00	-4.96	PK
V	15540.183	43.20	10.12	38.80	42.70	49.42	54.00	-4.58	AV
H	4434.133	61.16	5.94	35.18	44.00	58.28	68.20	-9.92	PK
H	4434.133	43.13	5.94	35.18	44.00	40.25	54.00	-13.75	AV
H	10360.040	51.88	8.46	38.71	44.50	54.55	68.20	-13.65	PK
H	10360.040	44.04	8.46	38.71	44.50	46.71	54.00	-7.29	AV
H	15540.017	54.98	10.12	38.38	44.10	59.38	74.00	-14.62	PK
H	15540.017	42.08	10.12	38.38	44.10	46.48	54.00	-7.52	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.195	63.58	6.48	36.35	44.05	62.36	74.00	-11.64	PK
V	4592.195	43.37	6.48	36.35	44.05	42.15	54.00	-11.85	AV
V	10400.073	60.71	8.47	37.88	44.51	62.55	68.20	-5.65	PK
V	10400.073	43.83	8.47	37.88	44.51	45.67	54.00	-8.33	AV
V	15600.095	64.01	10.12	38.80	44.10	68.83	74.00	-5.17	PK
V	15600.095	43.90	10.12	38.80	42.70	50.12	54.00	-3.88	AV
H	4592.152	62.41	6.48	36.37	44.05	61.21	74.00	-12.79	PK
H	4592.152	43.76	6.48	36.37	44.05	42.56	54.00	-11.44	AV
H	10400.014	53.53	8.47	38.64	44.50	56.14	68.20	-12.06	PK
H	10400.014	41.62	8.47	38.64	44.50	44.23	54.00	-9.77	AV
H	15600.039	53.07	10.12	38.38	44.10	57.47	74.00	-16.53	PK
H	15600.039	43.23	10.12	38.38	44.10	47.63	54.00	-6.37	AV
High Channel (5240 MHz)-Above 1G									
V	4739.054	64.32	7.10	37.24	43.50	65.16	74.00	-8.84	PK
V	4739.054	43.40	7.10	37.24	43.50	44.24	54.00	-9.76	AV
V	10480.122	61.21	8.46	37.68	44.50	62.85	68.20	-5.35	PK
V	10480.122	43.01	8.46	37.68	44.50	44.65	54.00	-9.35	AV
V	15720.199	61.90	10.12	38.80	44.10	66.72	74.00	-7.28	PK
V	15720.199	43.89	10.12	38.80	42.70	50.11	54.00	-3.89	AV
H	4739.028	60.44	7.10	37.24	43.50	61.28	74.00	-12.72	PK
H	4739.028	43.90	7.10	37.24	43.50	44.74	54.00	-9.26	AV
H	10480.040	53.00	8.46	38.57	44.50	55.53	68.20	-12.67	PK
H	10480.040	41.94	8.46	38.57	44.50	44.47	54.00	-9.53	AV
H	15720.013	52.17	10.12	38.38	44.10	56.57	74.00	-17.43	PK
H	15720.013	43.31	10.12	38.38	44.10	47.71	54.00	-6.29	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) - 802.11 AC40

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	4434.119	61.77	5.94	35.40	44.00	59.11	74.00	-14.89	PK
V	4434.119	43.82	5.94	35.40	44.00	41.16	54.00	-12.84	AV
V	10380.112	61.80	8.46	39.75	44.50	65.51	68.20	-2.69	PK
V	10380.112	43.02	8.46	39.75	44.50	46.73	54.00	-7.27	AV
V	15570.145	60.51	10.12	38.80	44.10	65.33	74.00	-8.67	PK
V	15570.145	43.90	10.12	38.80	42.70	50.12	54.00	-3.88	AV
H	4434.190	60.68	5.94	35.18	44.00	57.80	74.00	-16.20	PK
H	4434.190	43.55	5.94	35.18	44.00	40.67	54.00	-13.33	AV
H	10380.160	53.29	8.46	38.71	44.50	55.96	68.20	-12.24	PK
H	10380.160	44.60	8.46	38.71	44.50	47.27	54.00	-6.73	AV
H	15570.111	52.71	10.12	38.38	44.10	57.11	74.00	-16.89	PK
H	15570.111	42.33	10.12	38.38	44.10	46.73	54.00	-7.27	AV
middle Channel (5230 MHz)-Above 1G									
V	4739.100	63.02	6.48	36.35	44.05	61.80	74.00	-12.20	PK
V	4739.100	43.35	6.48	36.35	44.05	42.13	54.00	-11.87	AV
V	10460.102	61.16	8.47	37.88	44.51	63.00	68.20	-5.20	PK
V	10460.102	43.22	8.47	37.88	44.51	45.06	54.00	-8.94	AV
V	15690.095	63.83	10.12	38.80	44.10	68.65	74.00	-5.35	PK
V	15690.095	43.24	10.12	38.80	42.70	49.46	54.00	-4.54	AV
H	4739.151	61.66	6.48	36.37	44.05	60.46	74.00	-13.54	PK
H	4739.151	43.56	6.48	36.37	44.05	42.36	54.00	-11.64	AV
H	10460.116	50.03	8.47	38.64	44.50	52.64	68.20	-15.56	PK
H	10460.116	44.99	8.47	38.64	44.50	47.60	54.00	-6.40	AV
H	15690.118	52.79	10.12	38.38	44.10	57.19	74.00	-16.81	PK
H	15690.118	43.21	10.12	38.38	44.10	47.61	54.00	-6.39	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

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	4679.148	60.73	5.94	35.40	44.00	58.07	74.00	-15.93	PK
V	4679.148	43.31	5.94	35.40	44.00	40.65	54.00	-13.35	AV
V	11490.191	63.45	8.46	39.75	44.50	67.16	68.20	-1.04	PK
V	11490.191	43.25	8.46	39.75	44.50	46.96	54.00	-7.04	AV
V	17235.167	60.38	10.12	38.80	44.10	65.20	68.20	-3.00	PK
V	17235.167	43.16	10.12	38.80	42.70	49.38	54.00	-4.62	AV
H	4679.005	63.63	5.94	35.18	44.00	60.75	74.00	-13.25	PK
H	4679.005	43.52	5.94	35.18	44.00	40.64	54.00	-13.36	AV
H	11490.123	54.75	8.46	38.71	44.50	57.42	68.20	-10.78	PK
H	11490.123	41.60	8.46	38.71	44.50	44.27	54.00	-9.73	AV
H	17235.199	54.17	10.12	38.38	44.10	58.57	68.20	-9.63	PK
H	17235.199	43.61	10.12	38.38	44.10	48.01	54.00	-5.99	AV
middle Channel (5785 MHz)-Above 1G									
V	4592.160	64.55	6.48	36.35	44.05	63.33	74.00	-10.67	PK
V	4592.160	43.07	6.48	36.35	44.05	41.85	54.00	-12.15	AV
V	11570.067	63.26	8.47	37.88	44.51	65.10	68.20	-3.10	PK
V	11570.067	43.60	8.47	37.88	44.51	45.44	54.00	-8.56	AV
V	17355.139	62.64	10.12	38.80	44.10	67.46	68.20	-0.74	PK
V	17355.139	43.48	10.12	38.80	42.70	49.70	54.00	-4.30	AV
H	4592.020	63.33	6.48	36.37	44.05	62.13	74.00	-11.87	PK
H	4592.020	43.99	6.48	36.37	44.05	42.79	54.00	-11.21	AV
H	11570.197	51.93	8.47	38.64	44.50	54.54	68.20	-13.66	PK
H	11570.197	40.87	8.47	38.64	44.50	43.48	54.00	-10.52	AV
H	17355.017	50.79	10.12	38.38	44.10	55.19	68.20	-13.01	PK
H	17355.017	40.86	10.12	38.38	44.10	45.26	54.00	-8.74	AV
High Channel (5825 MHz)-Above 1G									
V	6039.100	62.58	7.10	37.24	43.50	63.42	68.20	-4.78	PK
V	6039.100	43.95	7.10	37.24	43.50	44.79	54.00	-9.21	AV
V	11650.068	61.10	8.46	37.68	44.50	62.74	74.00	-11.26	PK
V	11650.068	43.96	8.46	37.68	44.50	45.60	54.00	-8.40	AV
V	17475.075	63.18	10.12	38.80	44.10	68.00	68.20	-0.20	PK
V	17475.075	43.18	10.12	38.80	42.70	49.40	54.00	-4.60	AV
H	6039.073	62.11	7.10	37.24	43.50	62.95	68.20	-5.25	PK
H	6039.073	43.93	7.10	37.24	43.50	44.77	54.00	-9.23	AV
H	11650.200	50.88	8.46	38.57	44.50	53.41	74.00	-20.59	PK
H	11650.200	44.25	8.46	38.57	44.50	46.78	54.00	-7.22	AV
H	17475.095	52.07	10.12	38.38	44.10	56.47	68.20	-11.73	PK
H	17475.095	41.43	10.12	38.38	44.10	45.83	54.00	-8.17	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	4679.096	64.60	5.94	35.40	44.00	61.94	74.00	-12.06	PK
V	4679.096	43.30	5.94	35.40	44.00	40.64	54.00	-13.36	AV
V	11490.027	61.39	8.46	39.75	44.50	65.10	68.20	-3.10	PK
V	11490.027	43.40	8.46	39.75	44.50	47.11	54.00	-6.89	AV
V	17235.038	61.82	10.12	38.80	44.10	66.64	68.20	-1.56	PK
V	17235.038	43.61	10.12	38.80	42.70	49.83	54.00	-4.17	AV
H	4679.126	63.51	5.94	35.18	44.00	60.63	74.00	-13.37	PK
H	4679.126	43.03	5.94	35.18	44.00	40.15	54.00	-13.85	AV
H	11490.153	52.65	8.46	38.71	44.50	55.32	68.20	-12.88	PK
H	11490.153	44.36	8.46	38.71	44.50	47.03	54.00	-6.97	AV
H	17235.030	53.42	10.12	38.38	44.10	57.82	68.20	-10.38	PK
H	17235.030	44.89	10.12	38.38	44.10	49.29	54.00	-4.71	AV
middle Channel (5785 MHz)-Above 1G									
V	4592.152	64.08	6.48	36.35	44.05	62.86	74.00	-11.14	PK
V	4592.152	43.84	6.48	36.35	44.05	42.62	54.00	-11.38	AV
V	11570.176	62.83	8.47	37.88	44.51	64.67	68.20	-3.53	PK
V	11570.176	43.62	8.47	37.88	44.51	45.46	54.00	-8.54	AV
V	17355.123	61.37	10.12	38.80	44.10	66.19	68.20	-2.01	PK
V	17355.123	43.04	10.12	38.80	42.70	49.26	54.00	-4.74	AV
H	4592.159	61.33	6.48	36.37	44.05	60.13	74.00	-13.87	PK
H	4592.159	43.19	6.48	36.37	44.05	41.99	54.00	-12.01	AV
H	11570.155	51.32	8.47	38.64	44.50	53.93	68.20	-14.27	PK
H	11570.155	43.57	8.47	38.64	44.50	46.18	54.00	-7.82	AV
H	17355.074	50.79	10.12	38.38	44.10	55.19	68.20	-13.01	PK
H	17355.074	43.00	10.12	38.38	44.10	47.40	54.00	-6.60	AV
High Channel (5825 MHz)-Above 1G									
V	6039.121	62.94	7.10	37.24	43.50	63.78	68.20	-4.42	PK
V	6039.121	43.24	7.10	37.24	43.50	44.08	54.00	-9.92	AV
V	11650.151	62.82	8.46	37.68	44.50	64.46	74.00	-9.54	PK
V	11650.151	43.80	8.46	37.68	44.50	45.44	54.00	-8.56	AV
V	17475.160	61.41	10.12	38.80	44.10	66.23	68.20	-1.97	PK
V	17475.160	43.89	10.12	38.80	42.70	50.11	54.00	-3.89	AV
H	6039.156	64.22	7.10	37.24	43.50	65.06	68.20	-3.14	PK
H	6039.156	43.28	7.10	37.24	43.50	44.12	54.00	-9.88	AV
H	11650.196	53.06	8.46	38.57	44.50	55.59	74.00	-18.41	PK
H	11650.196	44.90	8.46	38.57	44.50	47.43	54.00	-6.57	AV
H	17475.054	54.39	10.12	38.38	44.10	58.79	68.20	-9.41	PK
H	17475.054	44.33	10.12	38.38	44.10	48.73	54.00	-5.27	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

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	4679.117	64.37	5.94	35.40	44.00	61.71	74.00	-12.29	PK
V	4679.117	43.50	5.94	35.40	44.00	40.84	54.00	-13.16	AV
V	11510.072	61.05	8.46	39.75	44.50	64.76	68.20	-3.44	PK
V	11510.072	43.80	8.46	39.75	44.50	47.51	54.00	-6.49	AV
V	17265.008	61.10	10.12	38.80	44.10	65.92	68.20	-2.28	PK
V	17265.008	43.39	10.12	38.80	42.70	49.61	54.00	-4.39	AV
H	4679.091	63.36	5.94	35.18	44.00	60.48	74.00	-13.52	PK
H	4679.091	43.87	5.94	35.18	44.00	40.99	54.00	-13.01	AV
H	11510.040	53.03	8.46	38.71	44.50	55.70	68.20	-12.50	PK
H	11510.040	43.78	8.46	38.71	44.50	46.45	54.00	-7.55	AV
H	17265.036	54.42	10.12	38.38	44.10	58.82	68.20	-9.38	PK
H	17265.036	41.43	10.12	38.38	44.10	45.83	54.00	-8.17	AV
middle Channel (5795 MHz)-Above 1G									
V	6039.093	62.45	6.48	36.35	44.05	61.23	68.20	-6.97	PK
V	6039.093	43.51	6.48	36.35	44.05	42.29	54.00	-11.71	AV
V	11590.087	62.30	8.47	37.88	44.51	64.14	74.00	-9.86	PK
V	11590.087	43.46	8.47	37.88	44.51	45.30	54.00	-8.70	AV
V	17385.001	60.50	10.12	38.80	44.10	65.32	68.20	-2.88	PK
V	17385.001	43.86	10.12	38.80	42.70	50.08	54.00	-3.92	AV
H	6039.110	64.39	6.48	36.37	44.05	63.19	68.20	-5.01	PK
H	6039.110	43.45	6.48	36.37	44.05	42.25	54.00	-11.75	AV
H	11590.098	53.41	8.47	38.64	44.50	56.02	74.00	-17.98	PK
H	11590.098	42.17	8.47	38.64	44.50	44.78	54.00	-9.22	AV
H	17385.079	51.18	10.12	38.38	44.10	55.58	68.20	-12.62	PK
H	17385.079	44.22	10.12	38.38	44.10	48.62	54.00	-5.38	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) --802.11AC20

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	4679.078	63.09	5.94	35.40	44.00	60.43	74.00	-13.57	PK
V	4679.078	43.42	5.94	35.40	44.00	40.76	54.00	-13.24	AV
V	11490.037	62.29	8.46	39.75	44.50	66.00	68.20	-2.20	PK
V	11490.037	43.30	8.46	39.75	44.50	47.01	54.00	-6.99	AV
V	17235.154	62.78	10.12	38.80	44.10	67.60	68.20	-0.60	PK
V	17235.154	43.55	10.12	38.80	42.70	49.77	54.00	-4.23	AV
H	4679.194	64.33	5.94	35.18	44.00	61.45	74.00	-12.55	PK
H	4679.194	43.48	5.94	35.18	44.00	40.60	54.00	-13.40	AV
H	11490.089	51.52	8.46	38.71	44.50	54.19	68.20	-14.01	PK
H	11490.089	40.94	8.46	38.71	44.50	43.61	54.00	-10.39	AV
H	17235.012	53.46	10.12	38.38	44.10	57.86	68.20	-10.34	PK
H	17235.012	40.20	10.12	38.38	44.10	44.60	54.00	-9.40	AV
middle Channel (5785 MHz)-Above 1G									
V	4592.024	63.35	6.48	36.35	44.05	62.13	74.00	-11.87	PK
V	4592.024	43.62	6.48	36.35	44.05	42.40	54.00	-11.60	AV
V	11570.069	62.13	8.47	37.88	44.51	63.97	68.20	-4.23	PK
V	11570.069	43.59	8.47	37.88	44.51	45.43	54.00	-8.57	AV
V	17355.034	60.42	10.12	38.80	44.10	65.24	68.20	-2.96	PK
V	17355.034	43.41	10.12	38.80	42.70	49.63	54.00	-4.37	AV
H	4592.059	63.09	6.48	36.37	44.05	61.89	74.00	-12.11	PK
H	4592.059	43.50	6.48	36.37	44.05	42.30	54.00	-11.70	AV
H	11570.109	54.75	8.47	38.64	44.50	57.36	68.20	-10.84	PK
H	11570.109	43.65	8.47	38.64	44.50	46.26	54.00	-7.74	AV
H	17355.014	51.53	10.12	38.38	44.10	55.93	68.20	-12.27	PK
H	17355.014	44.55	10.12	38.38	44.10	48.95	54.00	-5.05	AV
High Channel (5825 MHz)-Above 1G									
V	6039.159	61.39	7.10	37.24	43.50	62.23	68.20	-5.97	PK
V	6039.159	43.82	7.10	37.24	43.50	44.66	54.00	-9.34	AV
V	11650.136	60.45	8.46	37.68	44.50	62.09	74.00	-11.91	PK
V	11650.136	43.87	8.46	37.68	44.50	45.51	54.00	-8.49	AV
V	17475.108	60.74	10.12	38.80	44.10	65.56	68.20	-2.64	PK
V	17475.108	43.39	10.12	38.80	42.70	49.61	54.00	-4.39	AV
H	6039.146	61.27	7.10	37.24	43.50	62.11	68.20	-6.09	PK
H	6039.146	43.56	7.10	37.24	43.50	44.40	54.00	-9.60	AV
H	11650.128	53.41	8.46	38.57	44.50	55.94	74.00	-18.06	PK
H	11650.128	44.11	8.46	38.57	44.50	46.64	54.00	-7.36	AV
H	17475.125	53.65	10.12	38.38	44.10	58.05	68.20	-10.15	PK
H	17475.125	42.93	10.12	38.38	44.10	47.33	54.00	-6.67	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) -- 802.11AC40

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	4679.078	60.25	5.94	35.40	44.00	57.59	74.00	-16.41	PK
V	4679.078	43.37	5.94	35.40	44.00	40.71	54.00	-13.29	AV
V	11510.196	61.99	8.46	39.75	44.50	65.70	68.20	-2.50	PK
V	11510.196	43.86	8.46	39.75	44.50	47.57	54.00	-6.43	AV
V	17265.191	61.49	10.12	38.80	44.10	66.31	68.20	-1.89	PK
V	17265.191	43.56	10.12	38.80	42.70	49.78	54.00	-4.22	AV
H	4679.048	63.02	5.94	35.18	44.00	60.14	74.00	-13.86	PK
H	4679.048	43.35	5.94	35.18	44.00	40.47	54.00	-13.53	AV
H	11510.132	51.13	8.46	38.71	44.50	53.80	68.20	-14.40	PK
H	11510.132	41.34	8.46	38.71	44.50	44.01	54.00	-9.99	AV
H	17265.105	53.56	10.12	38.38	44.10	57.96	68.20	-10.24	PK
H	17265.105	40.94	10.12	38.38	44.10	45.34	54.00	-8.66	AV
middle Channel (5795 MHz)-Above 1G									
V	6039.120	63.33	6.48	36.35	44.05	62.11	68.20	-6.09	PK
V	6039.120	43.81	6.48	36.35	44.05	42.59	54.00	-11.41	AV
V	11590.066	63.62	8.47	37.88	44.51	65.46	74.00	-8.54	PK
V	11590.066	43.30	8.47	37.88	44.51	45.14	54.00	-8.86	AV
V	17385.161	60.72	10.12	38.80	44.10	65.54	68.20	-2.66	PK
V	17385.161	43.18	10.12	38.80	42.70	49.40	54.00	-4.60	AV
H	6039.161	62.73	6.48	36.37	44.05	61.53	68.20	-6.67	PK
H	6039.161	43.10	6.48	36.37	44.05	41.90	54.00	-12.10	AV
H	11590.174	53.27	8.47	38.64	44.50	55.88	74.00	-18.12	PK
H	11590.174	43.53	8.47	38.64	44.50	46.14	54.00	-7.86	AV
H	17385.085	53.42	10.12	38.38	44.10	57.82	68.20	-10.38	PK
H	17385.085	43.19	10.12	38.38	44.10	47.59	54.00	-6.41	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 ≥ 1/T, where T is defined in section II.B.I.a).

b) Set VBW ≥ 3 RBW.

c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (< 500 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 10log(1MHz/RBW) to the measured result, whereas RBW (< 1 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 KHZ is available on nearly all spectrum analyzers.

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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 ℃	Relative Humidity：	54%
Pressure：	101kPa	Test Voltage ：	DC 12V
Test Mode ：	TX Frequency U-NII-1 (5180-5240MHz)		

Mode	Frequency	Measured Power Density (dBm/MHz)	Limit (dBm/MHz)	Result
802.11 a	5180 MHz	3.041	11	PASS
	5200 MHz	2.541	11	PASS
	5240 MHz	1.683	11	PASS
802.11 n20	5180 MHz	2.693	11	PASS
	5200 MHz	2.431	11	PASS
	5240 MHz	2.029	11	PASS
802.11 n40	5190 MHz	-1.209	11	PASS
	5230 MHz	-1.127	11	PASS
802.11 AC20	5180 MHz	1.960	11	PASS
	5200 MHz	1.844	11	PASS
	5240 MHz	1.267	11	PASS
802.11 AC40	5190 MHz	-0.576	11	PASS
	5230 MHz	-1.970	11	PASS

(802.11a) PSD plot on channel 36

(802.11n20) PSD plot on channel 36

(802.11a) PSD plot on channel 40

(802.11n20) PSD plot on channel 40

(802.11a) PSD plot on channel 48

(802.11n20) PSD plot on channel 48

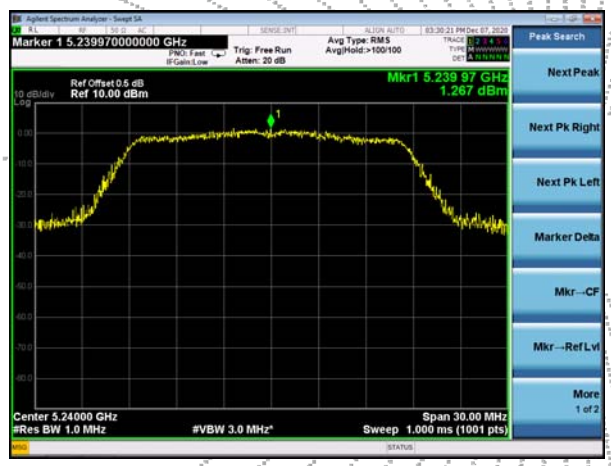
(802.11n40) PSD plot on channel 38

(802.11ac20) PSD plot on channel 36

(802.11n40) PSD plot on channel 46

(802.11ac20) PSD plot on channel 40

(802.11ac20) PSD plot on channel 48



(802.11ac40) PSD plot on channel 38

(802.11ac40) PSD plot on channel 46

Temperature :	26 ℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 12V
Test Mode :	TX Frequency U-NII-3 (5745-5825MHz)		

Mode	Frequency	Measured Power Density (dBm/500kHz)	Limit (dBm/500kHz)	Result
802.11 a	5745 MHz	-0.595	30	PASS
	5785 MHz	-1.226	30	PASS
	5825 MHz	0.033	30	PASS
802.11 n20	5745 MHz	-0.493	30	PASS
	5785 MHz	-1.276	30	PASS
	5825 MHz	0.242	30	PASS
802.11 n40	5755 MHz	-4.235	30	PASS
	5795 MHz	-3.109	30	PASS
802.11 AC20	5745 MHz	-0.925	30	PASS
	5785 MHz	-1.228	30	PASS
	5825 MHz	-0.375	30	PASS
802.11 AC40	5755 MHz	-3.412	30	PASS
	5795 MHz	-3.558	30	PASS

(802.11a) PSD plot on channel 149

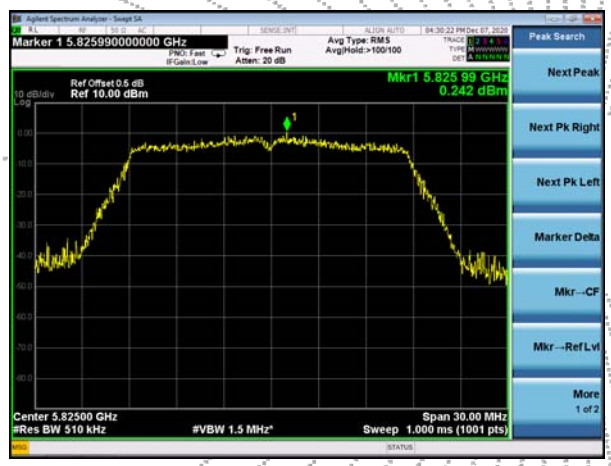
(802.11n20) PSD plot on channel 149

(802.11a) PSD plot on channel 157

(802.11n20) PSD plot on channel 157

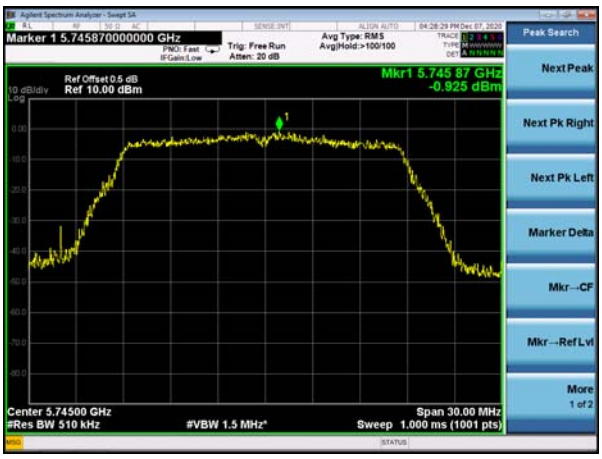
(802.11a) PSD plot on channel 165

(802.11n20) PSD plot on channel 165



(802.11n40) PSD plot on channel 151

(802.11ac20) PSD plot on channel 149



(802.11n40) PSD plot on channel 159

(802.11ac20) PSD plot on channel 157

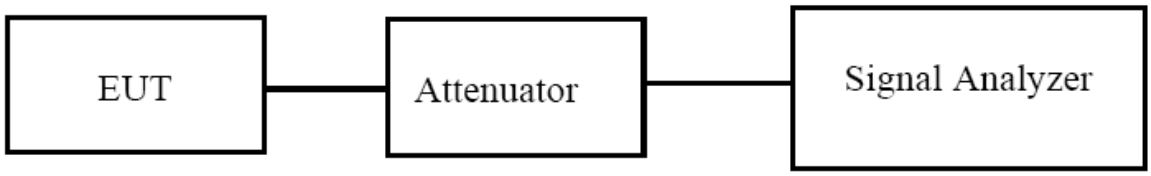
(802.11ac20) PSD plot on channel 165

(802.11ac40) PSD plot on channel 151

(802.11ac40) PSD plot on channel 159

9. 26DB & 6DB & 99% EMISSION BANDWIDTH

9.1 Block Diagram Of Test Setup



9.2 Limit

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power
is integrated over the full reference bandwidth.

9.3 Test procedure

a) Set RBW = approximately 1% of the emission bandwidth.
b) Set the VBW > RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW ≥ 3 · RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is

the difference between these two frequencies.

9.4 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.

9.5 Test Result

Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	101kPa	Test Voltage ：	DC 12V
Test Mode ：	TX Frequency U-NII-1 (5180-5240MHz)		

Mode	Channel	Frequency (MHz)	99% bandwidth (MHz)	26dB bandwidth (MHz)	Limit MHz	Result
802.11a	CH36	5180	16.916	21.32	N/A	Pass
	CH40	5200	16.912	21.44	N/A	Pass
	CH48	5240	16.998	23.24	N/A	Pass
802.11 n20	CH36	5180	17.973	21.92	N/A	Pass
	CH40	5200	17.988	21.95	N/A	Pass
	CH48	5240	18.033	21.80	N/A	Pass
802.11 n40	CH 38	5190	36.411	40.84	N/A	Pass
	CH 46	5230	36.416	40.78	N/A	Pass
802.11 AC20	CH36	5180	18.032	22.03	N/A	Pass
	CH40	5200	17.987	21.74	N/A	Pass
	CH48	5240	18.035	21.42	N/A	Pass
802.11 AC40	CH 38	5190	36.329	46.88	N/A	Pass
	CH 46	5230	36.538	41.23	N/A	Pass

Test plot

(802.11a) 26dB&99%Bandwidth plot on channel 36

(802.11 n20) 26dB&99%Bandwidth plot on channel 36

(802.11a) 26dB&99%Bandwidth plot on channel 40

(802.11 n20) 26dB&99%Bandwidth plot on channel 40

(802.11a) 26dB&99%Bandwidth plot on channel 48

(802.11 n20) 26dB&99%Bandwidth plot on channel 48