

TEST REPORT

Report No.: BCTC2207877673-2E

Applicant: Reolink Innovation Limited

Product Name: WiFi IP Camera

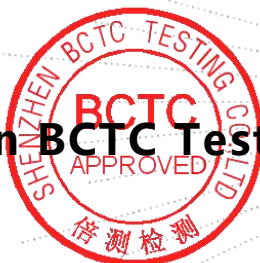
Model/Type
reference: Reolink Argus 3 Pro

Tested Date: 2022-07-14 to 2022-08-08

Issued Date: 2022-08-08



Shenzhen BCTC Testing Co., Ltd.



FCC ID:2AYHE-2204G

Product Name: WiFi IP Camera

Trademark: 

Model/Type reference: Reolink Argus 3 Pro
Reolink Argus 3 Plus

Prepared For: Reolink Innovation Limited

Address: FLAT/RM 705 7/F FA YUEN COMMERCIAL BUILDING 75-77 FA YUEN STREET
MONG KOK KL HONG KONG

Manufacturer: Reolink Innovation Limited

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Sample Received Date: 2022-07-14

Sample tested Date: 2022-07-14 to 2022-08-08

Issue Date: 2022-08-08

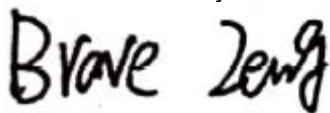
Report No.: BCTC2207877673-2E

FCC Part15 15.407

Test Standards: 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

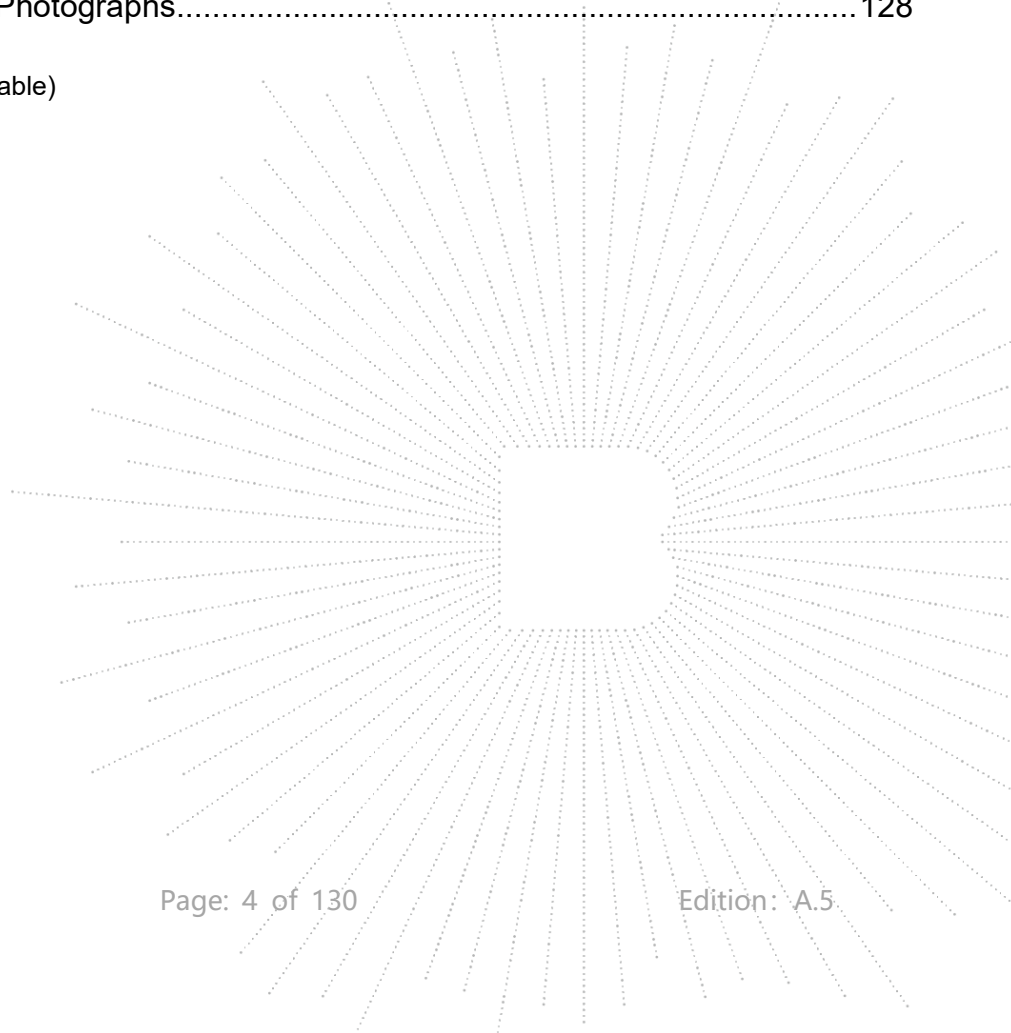
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(Note: N/A Means Not Applicable)



1. Version

Report No.	Issue Date	Description	Approved
BCTC2207877673-2E	2022-08-08	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 15.1049	PASS
4	Minimum 6 dB bandwidth	15.407(e)	PASS
5	Maximum Conducted Output Power	15.407 a	PASS
6	Band Edge	2.1051, 15.407 b	PASS
7	Power Spectral Density	15.407 a	PASS
8	Spurious Emissions at Antenna Terminals	2.1051, 15.407 b	PASS
9	Antenna Requirement	15.203	PASS

3. Measurement Uncertainty

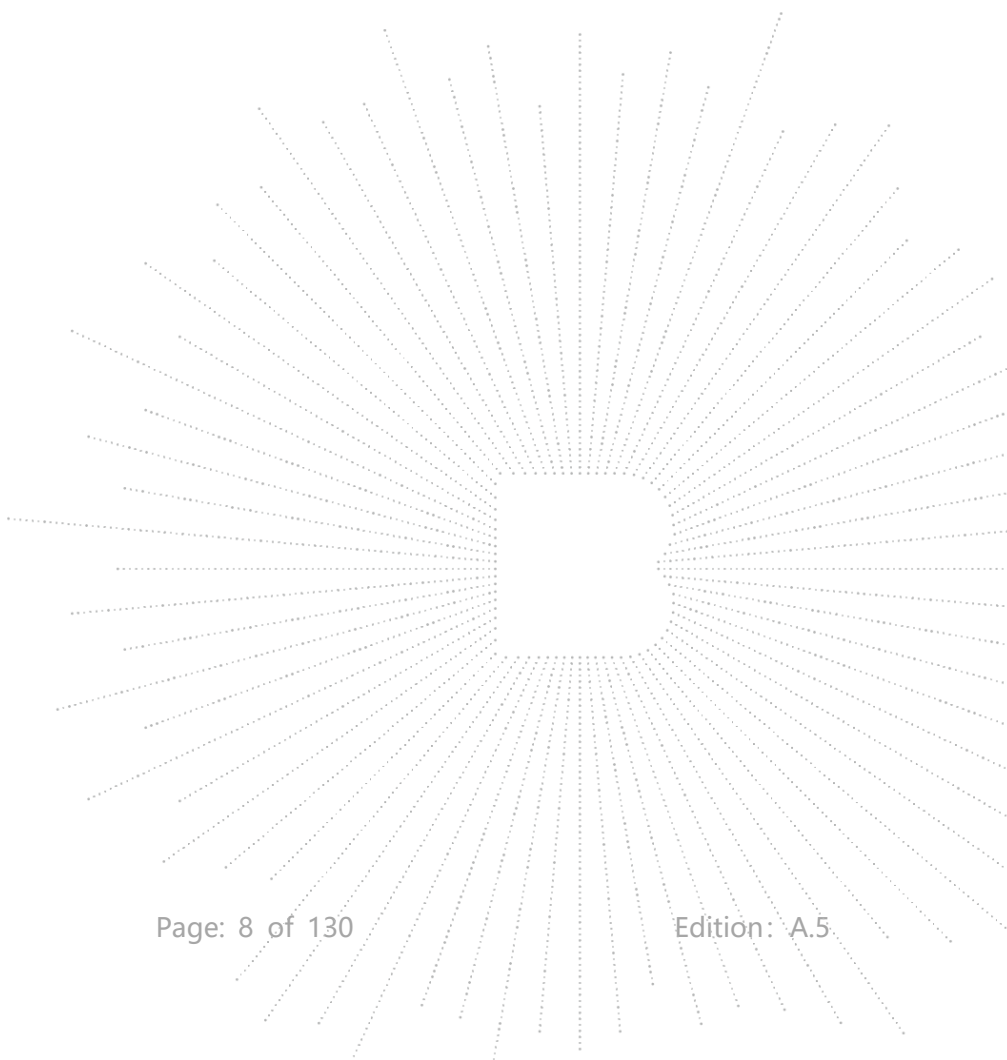
Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

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

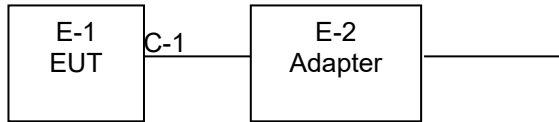
Model/Type reference:	Reolink Argus 3 Pro Reolink Argus 3 Plus
Model differences:	All the model are the same circuit and RF module, except model names.
Hardware Version:	N/A
Software Version:	N/A
IEEE 802.11 WLAN Mode Supported:	802.11a/n(20MHz channel bandwidth)
Operation Frequency:	5180-5240MHz for 802.11a/n (HT20); 5260-5320MHz for 802.11a/n (HT20); 5500-5700MHz for 802.11a/n (HT20); 5745-5825 MHz for 802.11a/n (HT20);
Data Rate:	802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n(HT20):MCS0-MCS15
Type of Modulation:	OFDM with BPSK/QPSK/16QAM/64QAM for 802.11a/n;
Antenna installation:	Internal antenna
Antenna Gain:	5GHz: 4.34 dBi
Ratings:	AC 120V/60Hz



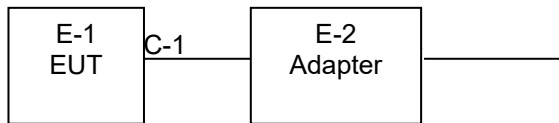
4.2 Test Setup Configuration

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	WiFi IP Camera		Reolink Argus 3 Pro	N/A	EUT
E-2	Adapter	N/A	BCTC001	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C-1	N/A	N/A	3M	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

(U-NII-1) 5180MHz-5240MHz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	36	5180	40	5200
	44	5220	48	5240
(U-NII-2A) 5260MHz-5320MHz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	52	5260	56	5280
	60	5300	64	5320
(U-NII-2C) 5500MHz-5700MHz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	100	5500	105	5520
	108	5540	112	5560
	116	5580	120	5600
	124	5620	128	5640
	132	5660	136	5680
	140	5700		
(U-NII-3) 5745MHz-5825MHz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	149	5745	153	5765
	157	5785	161	5805
	165	5825		

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 20 CH36/ CH40/ CH 48 802.11a / n 20 CH52/ CH56/ CH 64 802.11a / n 20 CH100/ CH116/ CH 140 802.11a / n 20 CH149/ CH157/ CH 165
Mode 2	Link Mode

Conducted Emission	
Final Test Mode	Description
Mode 2	Link Mode

Note:

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

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, 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	May 24, 2022	May 23, 2023
LISN	R&S	ENV216	101375	May 24, 2022	May 23, 2023
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\
Attenuator	\	10dB DC-6GHz	1650	May 24, 2022	May 23, 2023

RF Conducted Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Power Metter	Keysight	E4419	\	May 24, 2022	May 23, 2023
Power Sensor (AV)	Keysight	E9300A	\	May 24, 2022	May 23, 2023
Signal Analyzer20kHz-26.5GHz	Keysight	N9020A	MY49100060	May 24, 2022	May 23, 2023
Spectrum Analyzer9kHz-40GHz	R&S	FSP40	\	May 24, 2022	May 23, 2023

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	May 24, 2022	May 23, 2023
Receiver	R&S	ESRP	101154	May 24, 2022	May 23, 2023
Amplifier	SKET	LAPA_01G18 G-45dB	\	May 24, 2022	May 23, 2023
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 24, 2022	May 23, 2023
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	May 26, 2022	May 25, 2023
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 24, 2022	May 23, 2023
Horn Antenn(18GHz -40GHz)	Schwarzbeck	BBHA9170	00822	Jun. 06, 2022	Jun. 05, 2023
Amplifier(18G Hz-40GHz)	MITEQ	TTA1840-35- HG	2034381	May 24, 2022	May 23, 2023
Loop Antenna(9KHz -30MHz)	Schwarzbeck	FMZB1519B	00014	May 26, 2022	May 25, 2023
RF cables1(9kHz- 30MHz)	Huber+Suhnar	9kHz-30MHz	B1702988-00 08	May 26, 2022	May 25, 2023
RF cables2(30MH z-1GHz)	Huber+Suhnar	30MHz-1GH z	1486150	May 26, 2022	May 25, 2023
RF cables3(1GHz- 40GHz)	Huber+Suhnar	1GHz-40GHz	1607106	May 28, 2021	May 27, 2022
Power Metter	Keysight	E4419	\	May 26, 2022	May 25, 2023
Power Sensor (AV)	Keysight	E9300A	\	May 26, 2022	May 25, 2023
Signal Analyzer20kHz -26.5GHz	Keysight	N9020A	MY49100060	May 26, 2022	May 25, 2023
Spectrum Analyzer9kHz- 40GHz	R&S	FSP40	\	May 26, 2022	May 25, 2023
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

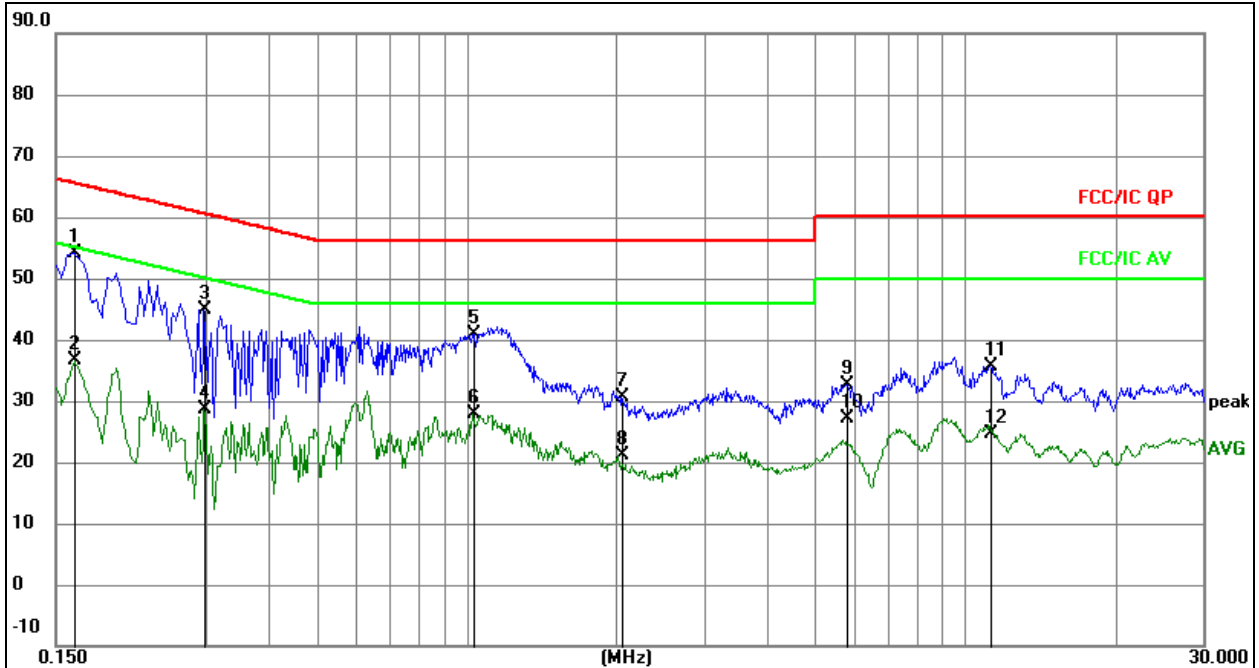
- The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak 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	Phase:	L
Test Voltage:	AC120V/60Hz	Test Mode:	Mode 2

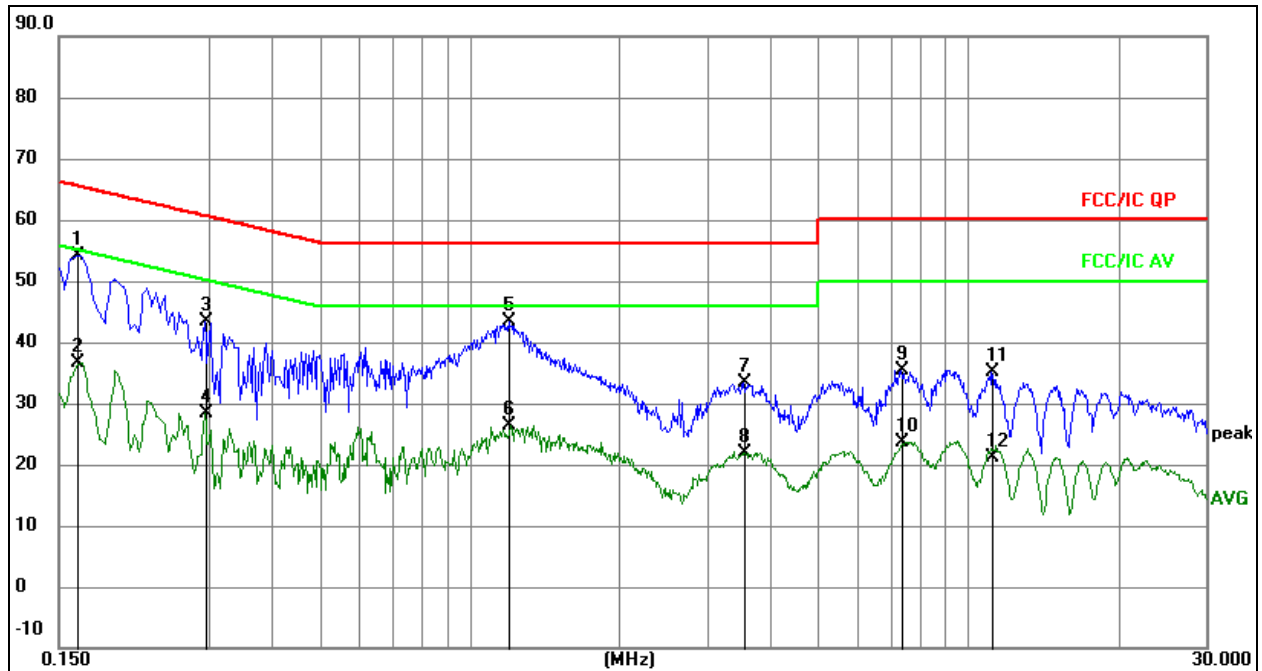


Remark:

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
1	*	0.1635	34.42	19.71	54.13	65.28	-11.15	QP
2		0.1635	16.89	19.71	36.60	55.28	-18.68	AVG
3		0.2985	25.21	19.77	44.98	60.28	-15.30	QP
4		0.2985	8.84	19.77	28.61	50.28	-21.67	AVG
5		1.0275	21.09	19.76	40.85	56.00	-15.15	QP
6		1.0275	8.18	19.76	27.94	46.00	-18.06	AVG
7		2.0535	10.78	19.89	30.67	56.00	-25.33	QP
8		2.0535	1.23	19.89	21.12	46.00	-24.88	AVG
9		5.7930	12.60	20.15	32.75	60.00	-27.25	QP
10		5.7930	6.99	20.15	27.14	50.00	-22.86	AVG
11		11.2470	15.41	20.28	35.69	60.00	-24.31	QP
12		11.2470	4.23	20.28	24.51	50.00	-25.49	AVG

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Phase:	N
Test Voltage:	AC120V/60Hz	Test Mode:	Mode 2



Remark:

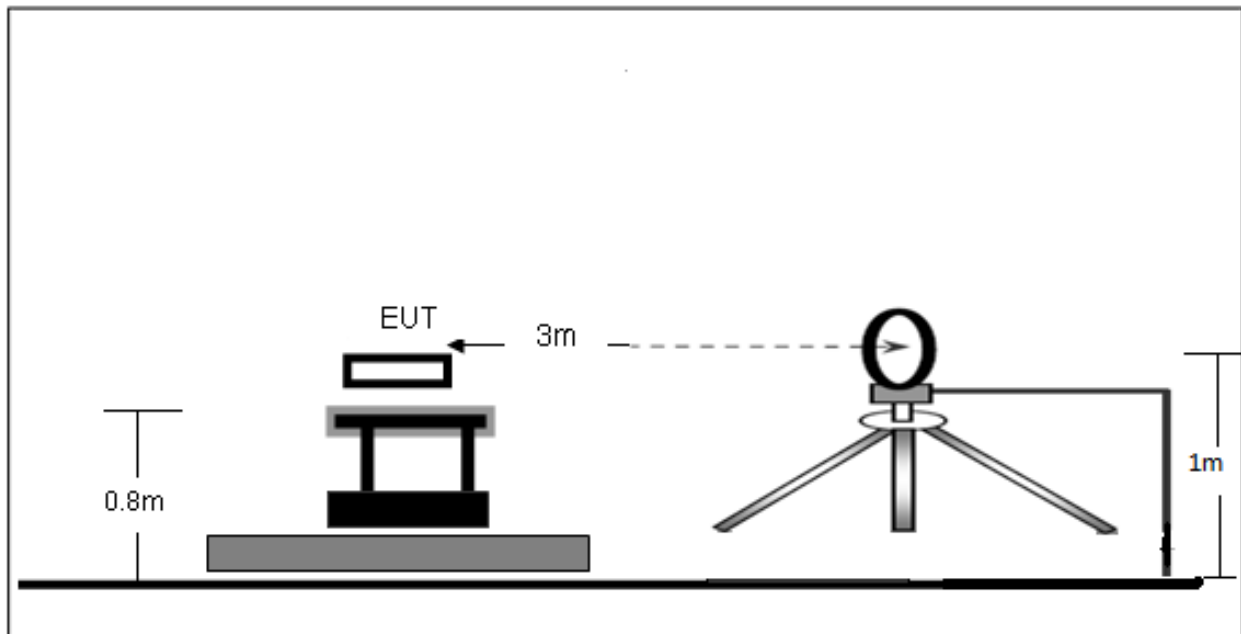
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement=Reading Level+ Correct Factor
4. Over= Measurement-Limit

No.	Mk.	Freq. MHz	Reading Level dB	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1	*	0.1635	34.43	19.71	54.14	65.28	-11.14	QP
2		0.1635	16.95	19.71	36.66	55.28	-18.62	AVG
3		0.2940	23.70	19.77	43.47	60.41	-16.94	QP
4		0.2940	8.61	19.77	28.38	50.41	-22.03	AVG
5		1.1985	23.56	19.78	43.34	56.00	-12.66	QP
6		1.1985	6.53	19.78	26.31	46.00	-19.69	AVG
7		3.5475	13.44	20.05	33.49	56.00	-22.51	QP
8		3.5475	1.82	20.05	21.87	46.00	-24.13	AVG
9		7.3545	15.31	20.19	35.50	60.00	-24.50	QP
10		7.3545	3.48	20.19	23.67	50.00	-26.33	AVG
11		11.1840	14.93	20.28	35.21	60.00	-24.79	QP
12		11.1840	0.80	20.28	21.08	50.00	-28.92	AVG

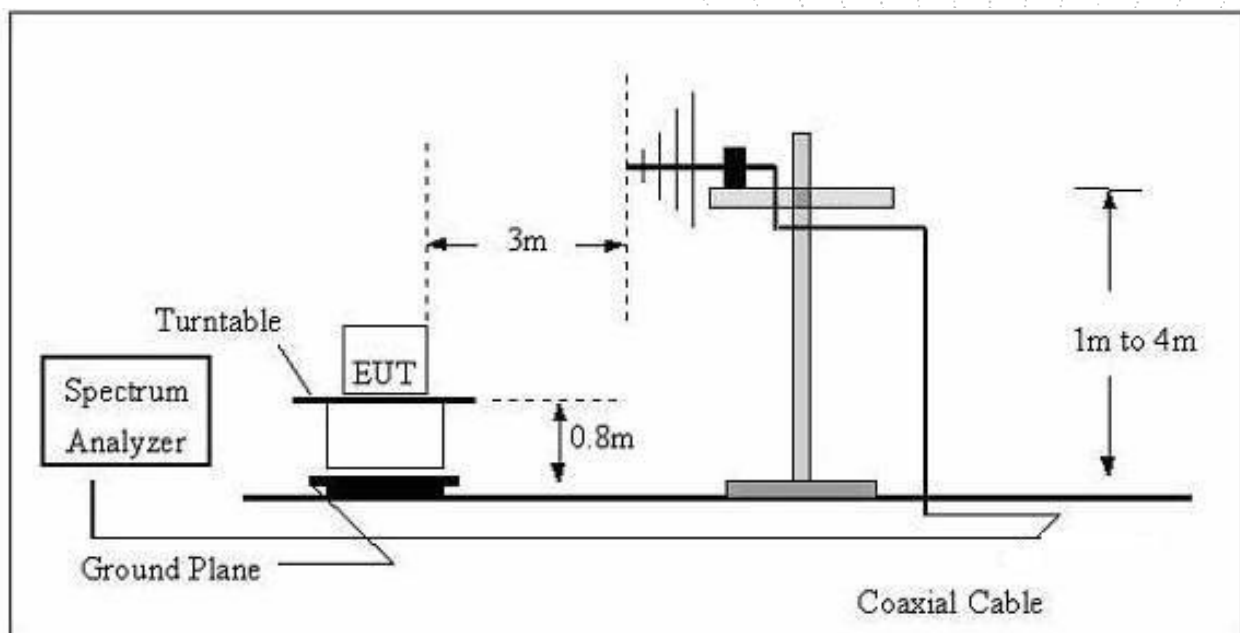
7. Radiated Emissions

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:	AC120V/60Hz
Test Mode:	Mode 2	Polarization:	--

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

Note:

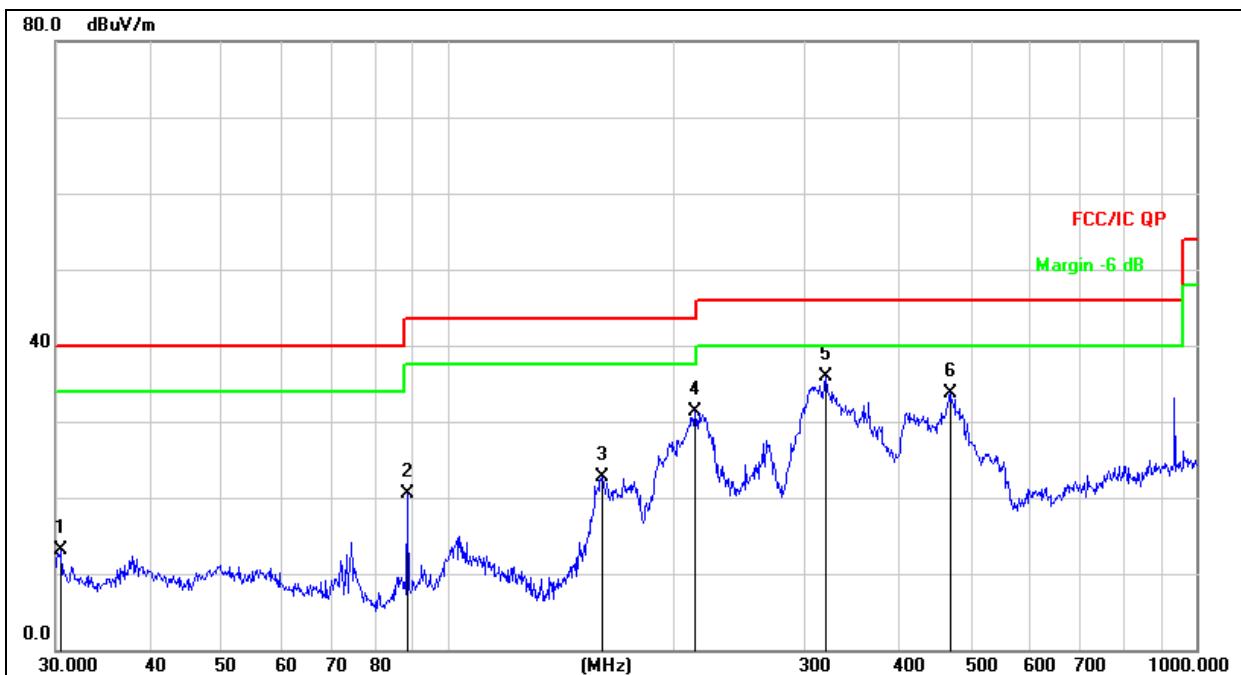
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

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

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

Between 30MHz – 1GHz

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Test Voltage :	AC120V/60Hz
Test Mode :	Mode 2	Polarization :	Horizontal

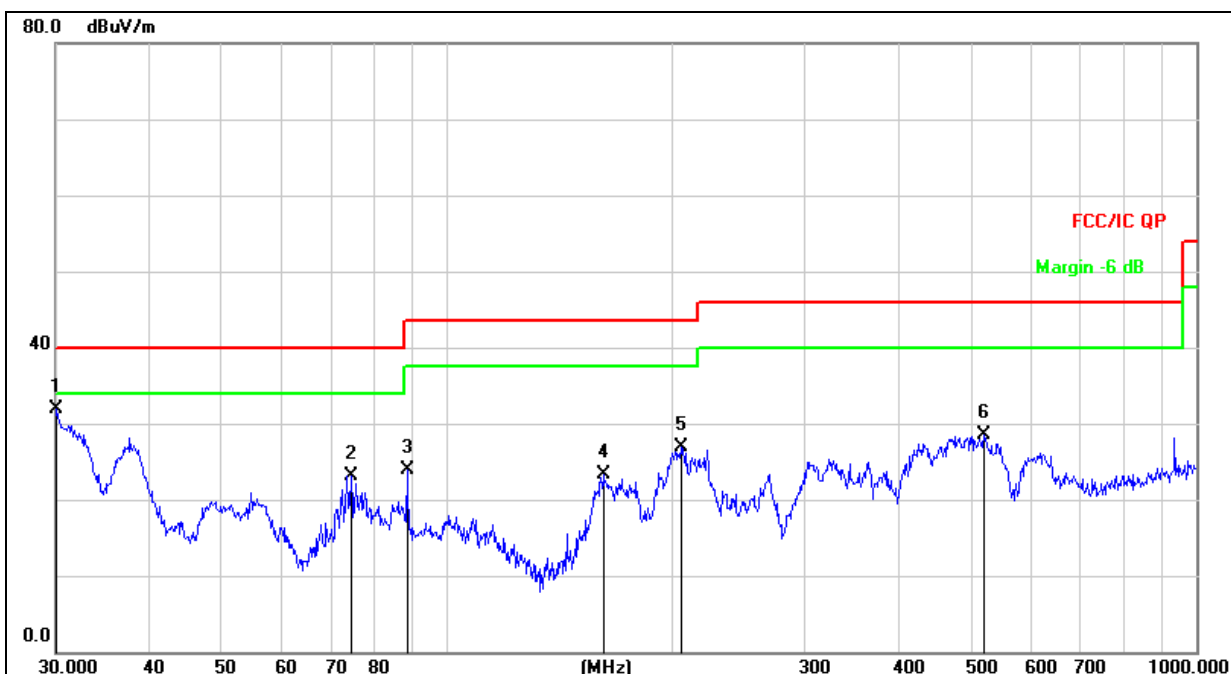


Remark:

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	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		30.5306	31.21	-18.06	13.15	40.00	-26.85	QP
2		88.3421	39.31	-18.74	20.57	43.50	-22.93	QP
3		160.9089	41.80	-19.01	22.79	43.50	-20.71	QP
4		214.5143	46.71	-15.44	31.27	43.50	-12.23	QP
5	*	319.9370	48.00	-12.15	35.85	46.00	-10.15	QP
6		468.8762	42.33	-8.71	33.62	46.00	-12.38	QP

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Test Voltage :	AC120V/60Hz
Test Mode :	Mode 2	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	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	30.0000	50.03	-18.16	31.87	40.00	-8.13	QP
2		74.3955	42.96	-19.85	23.11	40.00	-16.89	QP
3		88.3421	42.65	-18.74	23.91	43.50	-19.59	QP
4		161.4742	42.22	-18.96	23.26	43.50	-20.24	QP
5		204.9551	42.70	-15.78	26.92	43.50	-16.58	QP
6		520.8882	35.91	-7.41	28.50	46.00	-17.50	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	4434.002	63.06	5.94	35.40	44.00	60.40	68.2	-7.80	PK
V	4434.002	43.56	5.94	35.40	44.00	40.90	54	-13.10	AV
V	10360.162	60.07	8.46	39.75	44.50	63.78	68.2	-4.42	PK
V	10360.162	43.72	8.46	39.75	44.50	47.43	54	-6.57	AV
V	15540.083	60.38	10.12	38.80	44.10	65.20	74	-8.80	PK
V	15540.083	43.49	10.12	38.80	42.70	49.71	54	-4.29	AV
H	4434.047	60.93	5.94	35.18	44.00	58.05	68.2	-10.15	PK
H	4434.047	43.54	5.94	35.18	44.00	40.66	54	-13.34	AV
H	10360.003	53.84	8.46	38.71	44.50	56.51	68.2	-11.69	PK
H	10360.003	40.80	8.46	38.71	44.50	43.47	54	-10.53	AV
H	15540.018	50.61	10.12	38.38	44.10	55.01	74	-18.99	PK
H	15540.018	41.02	10.12	38.38	44.10	45.42	54	-8.58	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.141	63.62	6.48	36.35	44.05	62.40	74	-11.60	PK
V	4592.141	43.36	6.48	36.35	44.05	42.14	54	-11.86	AV
V	10400.110	64.90	8.47	37.88	44.51	66.74	68.2	-1.46	PK
V	10400.110	43.60	8.47	37.88	44.51	45.44	54	-8.56	AV
V	15600.089	62.83	10.12	38.80	44.10	67.65	74	-6.35	PK
V	15600.089	43.11	10.12	38.80	42.70	49.33	54	-4.67	AV
H	4592.159	63.04	6.48	36.37	44.05	61.84	74	-12.16	PK
H	4592.159	43.31	6.48	36.37	44.05	42.11	54	-11.89	AV
H	10400.022	54.50	8.47	38.64	44.50	57.11	68.2	-11.09	PK
H	10400.022	42.98	8.47	38.64	44.50	45.59	54	-8.41	AV
H	15600.185	52.53	10.12	38.38	44.10	56.93	74	-17.07	PK
H	15600.185	42.82	10.12	38.38	44.10	47.22	54	-6.78	AV
High Channel (5240 MHz)-Above 1G									
V	4739.022	62.37	7.10	37.24	43.50	63.21	74	-10.79	PK
V	4739.022	43.65	7.10	37.24	43.50	44.49	54	-9.51	AV
V	10480.160	61.89	8.46	37.68	44.50	63.53	68.2	-4.67	PK
V	10480.160	43.97	8.46	37.68	44.50	45.61	54	-8.39	AV
V	15720.053	61.13	10.12	38.80	44.10	65.95	74	-8.05	PK
V	15720.053	43.34	10.12	38.80	42.70	49.56	54	-4.44	AV
H	4739.078	60.17	7.10	37.24	43.50	61.01	74	-12.99	PK
H	4739.078	43.86	7.10	37.24	43.50	44.70	54	-9.30	AV
H	10480.067	52.40	8.46	38.57	44.50	54.93	68.2	-13.27	PK
H	10480.067	44.89	8.46	38.57	44.50	47.42	54	-6.58	AV
H	15720.010	53.18	10.12	38.38	44.10	57.58	74	-16.42	PK
H	15720.010	42.62	10.12	38.38	44.10	47.02	54	-6.98	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	4434.087	60.78	5.94	35.40	44.00	58.12	68.2	-10.08	PK
V	4434.087	43.36	5.94	35.40	44.00	40.70	54	-13.30	AV
V	10360.163	63.47	8.46	39.75	44.50	67.18	68.2	-1.02	PK
V	10360.163	43.88	8.46	39.75	44.50	47.59	54	-6.41	AV
V	15540.091	60.58	10.12	38.80	44.10	65.40	74	-8.60	PK
V	15540.091	43.96	10.12	38.80	42.70	50.18	54	-3.82	AV
H	4434.032	64.81	5.94	35.18	44.00	61.93	68.2	-6.27	PK
H	4434.032	43.44	5.94	35.18	44.00	40.56	54	-13.44	AV
H	10360.086	52.40	8.46	38.71	44.50	55.07	68.2	-13.13	PK
H	10360.086	43.13	8.46	38.71	44.50	45.80	54	-8.20	AV
H	15540.043	54.07	10.12	38.38	44.10	58.47	74	-15.53	PK
H	15540.043	44.35	10.12	38.38	44.10	48.75	54	-5.25	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.061	60.73	6.48	36.35	44.05	59.51	74	-14.49	PK
V	4592.061	43.64	6.48	36.35	44.05	42.42	54	-11.58	AV
V	10400.162	62.11	8.47	37.88	44.51	63.95	68.2	-4.25	PK
V	10400.162	43.00	8.47	37.88	44.51	44.84	54	-9.16	AV
V	15600.130	60.39	10.12	38.80	44.10	65.21	74	-8.79	PK
V	15600.130	43.61	10.12	38.80	42.70	49.83	54	-4.17	AV
H	4592.075	60.76	6.48	36.37	44.05	59.56	74	-14.44	PK
H	4592.075	43.80	6.48	36.37	44.05	42.60	54	-11.40	AV
H	10400.066	51.70	8.47	38.64	44.50	54.31	68.2	-13.89	PK
H	10400.066	43.97	8.47	38.64	44.50	46.58	54	-7.42	AV
H	15600.022	52.66	10.12	38.38	44.10	57.06	74	-16.94	PK
H	15600.022	41.45	10.12	38.38	44.10	45.85	54	-8.15	AV
High Channel (5240 MHz)-Above 1G									
V	4739.091	60.67	7.10	37.24	43.50	61.51	74	-12.49	PK
V	4739.091	43.42	7.10	37.24	43.50	44.26	54	-9.74	AV
V	10480.054	61.51	8.46	37.68	44.50	63.15	68.2	-5.05	PK
V	10480.054	43.56	8.46	37.68	44.50	45.20	54	-8.80	AV
V	15720.019	63.42	10.12	38.80	44.10	68.24	74	-5.76	PK
V	15720.019	43.34	10.12	38.80	42.70	49.56	54	-4.44	AV
H	4739.119	60.12	7.10	37.24	43.50	60.96	74	-13.04	PK
H	4739.119	43.26	7.10	37.24	43.50	44.10	54	-9.90	AV
H	10480.066	52.82	8.46	38.57	44.50	55.35	68.2	-12.85	PK
H	10480.066	42.93	8.46	38.57	44.50	45.46	54	-8.54	AV
H	15720.068	51.37	10.12	38.38	44.10	55.77	74	-18.23	PK
H	15720.068	44.62	10.12	38.38	44.10	49.02	54	-4.98	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(5.3G) - 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 (5260 MHz)-Above 1G									
V	4434.142	61.18	5.94	35.40	44.00	58.52	68.2	-9.68	PK
V	4434.142	43.51	5.94	35.40	44.00	40.85	54	-13.15	AV
V	10520.087	60.61	8.46	39.75	44.50	64.32	68.2	-3.88	PK
V	10520.087	43.73	8.46	39.75	44.50	47.44	54	-6.56	AV
V	15780.176	62.62	10.12	38.80	44.10	67.44	74	-6.56	PK
V	15780.176	43.89	10.12	38.80	42.70	50.11	54	-3.89	AV
H	4434.153	61.98	5.94	35.18	44.00	59.10	68.2	-9.10	PK
H	4434.153	43.36	5.94	35.18	44.00	40.48	54	-13.52	AV
H	10520.129	51.71	8.46	38.71	44.50	54.38	68.2	-13.82	PK
H	10520.129	43.93	8.46	38.71	44.50	46.60	54	-7.40	AV
H	15780.132	53.78	10.12	38.38	44.10	58.18	74	-15.82	PK
H	15780.132	41.26	10.12	38.38	44.10	45.66	54	-8.34	AV
middle Channel (5280 MHz)-Above 1G									
V	4592.010	63.05	6.48	36.35	44.05	61.83	74	-12.17	PK
V	4592.010	43.36	6.48	36.35	44.05	42.14	54	-11.86	AV
V	10560.144	61.61	8.47	37.88	44.51	63.45	68.2	-4.75	PK
V	10560.144	43.22	8.47	37.88	44.51	45.06	54	-8.94	AV
V	15840.007	61.41	10.12	38.80	44.10	66.23	74	-7.77	PK
V	15840.007	43.56	10.12	38.80	42.70	49.78	54	-4.22	AV
H	4592.049	64.93	6.48	36.37	44.05	63.73	74	-10.27	PK
H	4592.049	43.17	6.48	36.37	44.05	41.97	54	-12.03	AV
H	10560.121	54.44	8.47	38.64	44.50	57.05	68.2	-11.15	PK
H	10560.121	40.72	8.47	38.64	44.50	43.33	54	-10.67	AV
H	15840.102	50.56	10.12	38.38	44.10	54.96	74	-19.04	PK
H	15840.102	43.82	10.12	38.38	44.10	48.22	54	-5.78	AV
High Channel (5320 MHz)-Above 1G									
V	4739.056	60.43	7.10	37.24	43.50	61.27	74	-12.73	PK
V	4739.056	43.97	7.10	37.24	43.50	44.81	54	-9.19	AV
V	10640.029	61.60	8.46	37.68	44.50	63.24	68.2	-4.96	PK
V	10640.029	43.21	8.46	37.68	44.50	44.85	54	-9.15	AV
V	15960.081	61.12	10.12	38.80	44.10	65.94	74	-8.06	PK
V	15960.081	43.26	10.12	38.80	42.70	49.48	54	-4.52	AV
H	4739.023	64.96	7.10	37.24	43.50	65.80	74	-8.20	PK
H	4739.023	43.00	7.10	37.24	43.50	43.84	54	-10.16	AV
H	10640.087	53.25	8.46	38.57	44.50	55.78	68.2	-12.42	PK
H	10640.087	41.64	8.46	38.57	44.50	44.17	54	-9.83	AV
H	15960.041	51.38	10.12	38.38	44.10	55.78	74	-18.22	PK
H	15960.041	43.46	10.12	38.38	44.10	47.86	54	-6.14	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(5.3G) - 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 (5260 MHz)-Above 1G									
V	4434.066	64.72	5.94	35.40	44.00	62.06	68.2	-6.14	PK
V	4434.066	43.57	5.94	35.40	44.00	40.91	54	-13.09	AV
V	10520.040	62.48	8.46	39.75	44.50	66.19	68.2	-2.01	PK
V	10520.040	43.11	8.46	39.75	44.50	46.82	54	-7.18	AV
V	15780.060	61.55	10.12	38.80	44.10	66.37	74	-7.63	PK
V	15780.060	43.69	10.12	38.80	42.70	49.91	54	-4.09	AV
H	4434.006	60.93	5.94	35.18	44.00	58.05	68.2	-10.15	PK
H	4434.006	43.63	5.94	35.18	44.00	40.75	54	-13.25	AV
H	10520.079	52.61	8.46	38.71	44.50	55.28	68.2	-12.92	PK
H	10520.079	41.34	8.46	38.71	44.50	44.01	54	-9.99	AV
H	15780.068	54.19	10.12	38.38	44.10	58.59	74	-15.41	PK
H	15780.068	44.92	10.12	38.38	44.10	49.32	54	-4.68	AV
middle Channel (5280 MHz)-Above 1G									
V	4592.027	62.52	6.48	36.35	44.05	61.30	74	-12.70	PK
V	4592.027	43.43	6.48	36.35	44.05	42.21	54	-11.79	AV
V	10560.081	61.17	8.47	37.88	44.51	63.01	68.2	-5.19	PK
V	10560.081	43.90	8.47	37.88	44.51	45.74	54	-8.26	AV
V	15840.094	61.05	10.12	38.80	44.10	65.87	74	-8.13	PK
V	15840.094	43.23	10.12	38.80	42.70	49.45	54	-4.55	AV
H	4592.184	64.14	6.48	36.37	44.05	62.94	74	-11.06	PK
H	4592.184	43.81	6.48	36.37	44.05	42.61	54	-11.39	AV
H	10560.034	51.50	8.47	38.64	44.50	54.11	68.2	-14.09	PK
H	10560.034	43.96	8.47	38.64	44.50	46.57	54	-7.43	AV
H	15840.160	54.98	10.12	38.38	44.10	59.38	74	-14.62	PK
H	15840.160	42.71	10.12	38.38	44.10	47.11	54	-6.89	AV
High Channel (5320 MHz)-Above 1G									
V	4739.059	61.04	7.10	37.24	43.50	61.88	74	-12.12	PK
V	4739.059	43.07	7.10	37.24	43.50	43.91	54	-10.09	AV
V	10640.067	61.57	8.46	37.68	44.50	63.21	68.2	-4.99	PK
V	10640.067	43.79	8.46	37.68	44.50	45.43	54	-8.57	AV
V	15960.170	60.17	10.12	38.80	44.10	64.99	74	-9.01	PK
V	15960.170	43.13	10.12	38.80	42.70	49.35	54	-4.65	AV
H	4739.000	61.53	7.10	37.24	43.50	62.37	74	-11.63	PK
H	4739.000	43.10	7.10	37.24	43.50	43.94	54	-10.06	AV
H	10640.149	53.68	8.46	38.57	44.50	56.21	68.2	-11.99	PK
H	10640.149	44.35	8.46	38.57	44.50	46.88	54	-7.12	AV
H	15960.011	51.24	10.12	38.38	44.10	55.64	74	-18.36	PK
H	15960.011	40.61	10.12	38.38	44.10	45.01	54	-8.99	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(5.6G) - 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 (5500 MHz)-Above 1G									
V	4434.058	62.36	5.94	35.40	44.00	59.70	68.2	-8.50	PK
V	4434.058	43.30	5.94	35.40	44.00	40.64	54	-13.36	AV
V	11000.022	60.32	8.46	39.75	44.50	64.03	68.2	-4.17	PK
V	11000.022	43.78	8.46	39.75	44.50	47.49	54	-6.51	AV
V	16500.159	60.41	10.12	38.80	44.10	65.23	74	-8.77	PK
V	16500.159	43.33	10.12	38.80	42.70	49.55	54	-4.45	AV
H	4434.001	63.24	5.94	35.18	44.00	60.36	68.2	-7.84	PK
H	4434.001	43.03	5.94	35.18	44.00	40.15	54	-13.85	AV
H	11000.102	52.46	8.46	38.71	44.50	55.13	68.2	-13.07	PK
H	11000.102	44.05	8.46	38.71	44.50	46.72	54	-7.28	AV
H	16500.159	51.09	10.12	38.38	44.10	55.49	74	-18.51	PK
H	16500.159	44.22	10.12	38.38	44.10	48.62	54	-5.38	AV
Middle Channel (5580 MHz)-Above 1G									
V	4592.065	63.27	6.48	36.35	44.05	62.05	74	-11.95	PK
V	4592.065	43.05	6.48	36.35	44.05	41.83	54	-12.17	AV
V	11160.064	63.11	8.47	37.88	44.51	64.95	68.2	-3.25	PK
V	11160.064	43.70	8.47	37.88	44.51	45.54	54	-8.46	AV
V	16740.060	60.48	10.12	38.80	44.10	65.30	74	-8.70	PK
V	16740.060	43.78	10.12	38.80	42.70	50.00	54	-4.00	AV
H	4592.154	62.24	6.48	36.37	44.05	61.04	74	-12.96	PK
H	4592.154	43.94	6.48	36.37	44.05	42.74	54	-11.26	AV
H	11160.188	54.52	8.47	38.64	44.50	57.13	68.2	-11.07	PK
H	11160.188	43.98	8.47	38.64	44.50	46.59	54	-7.41	AV
H	16740.065	52.89	10.12	38.38	44.10	57.29	74	-16.71	PK
H	16740.065	42.57	10.12	38.38	44.10	46.97	54	-7.03	AV
High Channel (5700 MHz)-Above 1G									
V	4739.101	63.61	7.10	37.24	43.50	64.45	74	-9.55	PK
V	4739.101	43.41	7.10	37.24	43.50	44.25	54	-9.75	AV
V	11400.085	62.05	8.46	37.68	44.50	63.69	68.2	-4.51	PK
V	11400.085	43.57	8.46	37.68	44.50	45.21	54	-8.79	AV
V	17100.178	64.88	10.12	38.80	44.10	69.70	74	-4.30	PK
V	17100.178	43.32	10.12	38.80	42.70	49.54	54	-4.46	AV
H	4739.138	64.18	7.10	37.24	43.50	65.02	74	-8.98	PK
H	4739.138	43.56	7.10	37.24	43.50	44.40	54	-9.60	AV
H	11400.047	54.48	8.46	38.57	44.50	57.01	68.2	-11.19	PK
H	11400.047	41.33	8.46	38.57	44.50	43.86	54	-10.14	AV
H	17100.016	53.96	10.12	38.38	44.10	58.36	74	-15.64	PK
H	17100.016	43.97	10.12	38.38	44.10	48.37	54	-5.63	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(5.6G) - 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 (5500 MHz)-Above 1G									
V	4434.080	61.21	5.94	35.40	44.00	58.55	68.2	-9.65	PK
V	4434.080	43.63	5.94	35.40	44.00	40.97	54	-13.03	AV
V	11000.043	62.28	8.46	39.75	44.50	65.99	68.2	-2.21	PK
V	11000.043	43.34	8.46	39.75	44.50	47.05	54	-6.95	AV
V	16500.185	61.86	10.12	38.80	44.10	66.68	74	-7.32	PK
V	16500.185	43.73	10.12	38.80	42.70	49.95	54	-4.05	AV
H	4434.027	60.09	5.94	35.18	44.00	57.21	68.2	-10.99	PK
H	4434.027	43.07	5.94	35.18	44.00	40.19	54	-13.81	AV
H	11000.195	52.15	8.46	38.71	44.50	54.82	68.2	-13.38	PK
H	11000.195	40.32	8.46	38.71	44.50	42.99	54	-11.01	AV
H	16500.027	50.76	10.12	38.38	44.10	55.16	74	-18.84	PK
H	16500.027	43.36	10.12	38.38	44.10	47.76	54	-6.24	AV
Middle Channel (5580 MHz)-Above 1G									
V	4592.137	63.48	6.48	36.35	44.05	62.26	74	-11.74	PK
V	4592.137	43.43	6.48	36.35	44.05	42.21	54	-11.79	AV
V	11160.144	63.03	8.47	37.88	44.51	64.87	68.2	-3.33	PK
V	11160.144	43.05	8.47	37.88	44.51	44.89	54	-9.11	AV
V	16740.134	61.94	10.12	38.80	44.10	66.76	74	-7.24	PK
V	16740.134	43.55	10.12	38.80	42.70	49.77	54	-4.23	AV
H	4592.156	60.40	6.48	36.37	44.05	59.20	74	-14.80	PK
H	4592.156	43.04	6.48	36.37	44.05	41.84	54	-12.16	AV
H	11160.044	52.94	8.47	38.64	44.50	55.55	68.2	-12.65	PK
H	11160.044	44.97	8.47	38.64	44.50	47.58	54	-6.42	AV
H	16740.016	50.46	10.12	38.38	44.10	54.86	74	-19.14	PK
H	16740.016	42.37	10.12	38.38	44.10	46.77	54	-7.23	AV
High Channel (5700 MHz)-Above 1G									
V	4739.095	62.20	7.10	37.24	43.50	63.04	74	-10.96	PK
V	4739.095	43.68	7.10	37.24	43.50	44.52	54	-9.48	AV
V	11400.093	63.11	8.46	37.68	44.50	64.75	68.2	-3.45	PK
V	11400.093	43.43	8.46	37.68	44.50	45.07	54	-8.93	AV
V	17100.109	64.15	10.12	38.80	44.10	68.97	74	-5.03	PK
V	17100.109	43.01	10.12	38.80	42.70	49.23	54	-4.77	AV
H	4739.041	61.33	7.10	37.24	43.50	62.17	74	-11.83	PK
H	4739.041	43.88	7.10	37.24	43.50	44.72	54	-9.28	AV
H	11400.164	52.01	8.46	38.57	44.50	54.54	68.2	-13.66	PK
H	11400.164	42.41	8.46	38.57	44.50	44.94	54	-9.06	AV
H	17100.179	51.74	10.12	38.38	44.10	56.14	74	-17.86	PK
H	17100.179	40.54	10.12	38.38	44.10	44.94	54	-9.06	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(5.8G) - 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	4679.154	57.39	5.94	35.40	44.00	54.73	74	-19.27	PK
V	4679.154	43.27	5.94	35.40	44.00	40.61	54	-13.39	AV
V	11490.129	54.09	8.46	39.75	44.50	57.80	68.2	-10.40	PK
V	11490.129	43.52	8.46	39.75	44.50	47.23	54	-6.77	AV
V	17235.049	60.94	10.12	38.80	44.10	65.76	68.2	-2.44	PK
V	17235.049	43.48	10.12	38.80	42.70	49.70	54	-4.30	AV
H	4679.134	54.07	5.94	35.18	44.00	51.19	74	-22.81	PK
H	4679.134	43.55	5.94	35.18	44.00	40.67	54	-13.33	AV
H	11490.005	54.99	8.46	38.71	44.50	57.66	68.2	-10.54	PK
H	11490.005	43.15	8.46	38.71	44.50	45.82	54	-8.18	AV
H	17235.151	50.93	10.12	38.38	44.10	55.33	68.2	-12.87	PK
H	17235.151	43.42	10.12	38.38	44.10	47.82	54	-6.18	AV
Middle Channel (5785 MHz)-Above 1G									
V	4592.162	55.51	6.48	36.35	44.05	54.29	74	-19.71	PK
V	4592.162	43.33	6.48	36.35	44.05	42.11	54	-11.89	AV
V	11570.044	59.72	8.47	37.88	44.51	61.56	68.2	-6.64	PK
V	11570.044	43.47	8.47	37.88	44.51	45.31	54	-8.69	AV
V	17355.054	57.00	10.12	38.80	44.10	61.82	68.2	-6.38	PK
V	17355.054	39.76	10.12	38.80	42.70	45.98	54	-8.02	AV
H	4592.005	59.79	6.48	36.37	44.05	58.59	74	-15.41	PK
H	4592.005	43.83	6.48	36.37	44.05	42.63	54	-11.37	AV
H	11570.046	52.93	8.47	38.64	44.50	55.54	68.2	-12.66	PK
H	11570.046	40.62	8.47	38.64	44.50	43.23	54	-10.77	AV
H	17355.033	52.13	10.12	38.38	44.10	56.53	68.2	-11.67	PK
H	17355.033	43.44	10.12	38.38	44.10	47.84	54	-6.16	AV
High Channel (5825 MHz)-Above 1G									
V	6039.099	57.69	7.10	37.24	43.50	58.53	68.2	-9.67	PK
V	6039.099	43.02	7.10	37.24	43.50	43.86	54	-10.14	AV
V	11650.142	62.72	8.46	37.68	44.50	64.36	74	-9.64	PK
V	11650.142	43.95	8.46	37.68	44.50	45.59	54	-8.41	AV
V	17475.097	53.41	10.12	38.80	44.10	58.23	68.2	-9.97	PK
V	17475.097	43.99	10.12	38.80	42.70	50.21	54	-3.79	AV
H	6039.005	56.35	7.10	37.24	43.50	57.19	68.2	-11.01	PK
H	6039.005	43.44	7.10	37.24	43.50	44.28	54	-9.72	AV
H	11650.164	50.88	8.46	38.57	44.50	53.41	74	-20.59	PK
H	11650.164	41.62	8.46	38.57	44.50	44.15	54	-9.85	AV
H	17475.107	54.59	10.12	38.38	44.10	58.99	68.2	-9.21	PK
H	17475.107	41.87	10.12	38.38	44.10	46.27	54	-7.73	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
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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	4679.150	60.04	5.94	35.40	44.00	57.38	74	-16.62	PK
V	4679.150	43.87	5.94	35.40	44.00	41.21	54	-12.79	AV
V	11490.193	54.17	8.46	39.75	44.50	57.88	68.2	-10.32	PK
V	11490.193	43.45	8.46	39.75	44.50	47.16	54	-6.84	AV
V	17235.070	60.71	10.12	38.80	44.10	65.53	68.2	-2.67	PK
V	17235.070	43.73	10.12	38.80	42.70	49.95	54	-4.05	AV
H	4679.032	59.32	5.94	35.18	44.00	56.44	74	-17.56	PK
H	4679.032	43.26	5.94	35.18	44.00	40.38	54	-13.62	AV
H	11490.026	49.89	8.46	38.71	44.50	52.56	68.2	-15.64	PK
H	11490.026	43.52	8.46	38.71	44.50	46.19	54	-7.81	AV
H	17235.037	54.01	10.12	38.38	44.10	58.41	68.2	-9.79	PK
H	17235.037	42.42	10.12	38.38	44.10	46.82	54	-7.18	AV
Middle Channel (5785 MHz)-Above 1G									
V	4592.172	58.05	6.48	36.35	44.05	56.83	74	-17.17	PK
V	4592.172	43.45	6.48	36.35	44.05	42.23	54	-11.77	AV
V	11570.031	58.48	8.47	37.88	44.51	60.32	68.2	-7.88	PK
V	11570.031	43.79	8.47	37.88	44.51	45.63	54	-8.37	AV
V	17355.098	58.40	10.12	38.80	44.10	63.22	68.2	-4.98	PK
V	17355.098	43.49	10.12	38.80	42.70	49.71	54	-4.29	AV
H	4592.050	59.93	6.48	36.37	44.05	58.73	74	-15.27	PK
H	4592.050	43.12	6.48	36.37	44.05	41.92	54	-12.08	AV
H	11570.147	54.09	8.47	38.64	44.50	56.70	68.2	-11.50	PK
H	11570.147	44.44	8.47	38.64	44.50	47.05	54	-6.95	AV
H	17355.045	51.73	10.12	38.38	44.10	56.13	68.2	-12.07	PK
H	17355.045	43.93	10.12	38.38	44.10	48.33	54	-5.67	AV
High Channel (5825 MHz)-Above 1G									
V	6039.159	58.60	7.10	37.24	43.50	59.44	68.2	-8.76	PK
V	6039.159	43.48	7.10	37.24	43.50	44.32	54	-9.68	AV
V	11650.019	59.47	8.46	37.68	44.50	61.11	74	-12.89	PK
V	11650.019	43.68	8.46	37.68	44.50	45.32	54	-8.68	AV
V	17475.003	59.28	10.12	38.80	44.10	64.10	68.2	-4.10	PK
V	17475.003	43.32	10.12	38.80	42.70	49.54	54	-4.46	AV
H	6039.169	59.82	7.10	37.24	43.50	60.66	68.2	-7.54	PK
H	6039.169	43.11	7.10	37.24	43.50	43.95	54	-10.05	AV
H	11650.142	53.48	8.46	38.57	44.50	56.01	74	-17.99	PK
H	11650.142	40.28	8.46	38.57	44.50	42.81	54	-11.19	AV
H	17475.117	54.41	10.12	38.38	44.10	58.81	68.2	-9.39	PK
H	17475.117	41.04	10.12	38.38	44.10	45.44	54	-8.56	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 5.25-5.35 GHz and 5.47-5.725 GHz bands

(b) (2) The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, 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

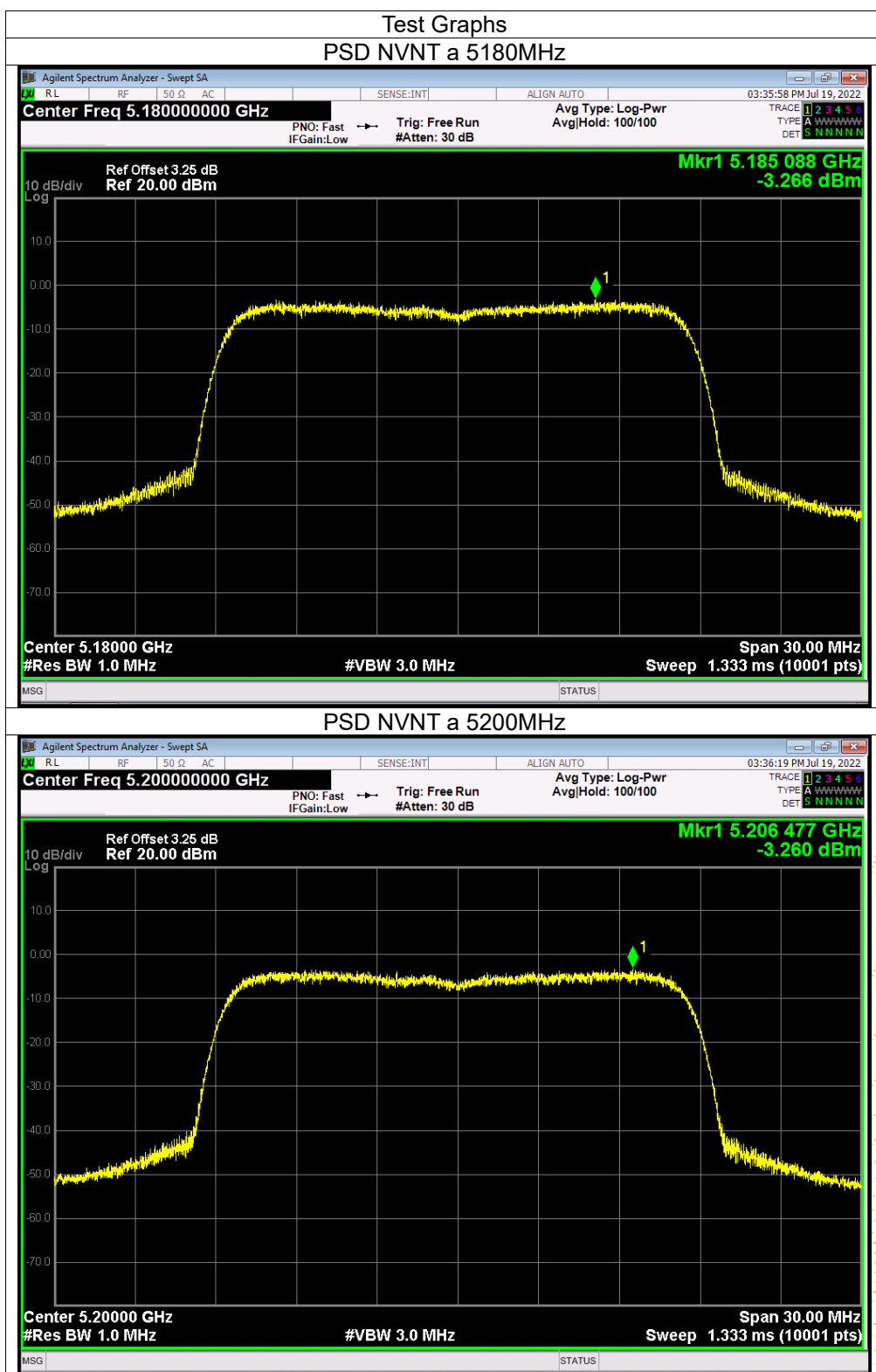
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC120V/60Hz
Test Mode:	(U-NII-1, U-NII-2A, U-NII-2C, U-NII-3)		

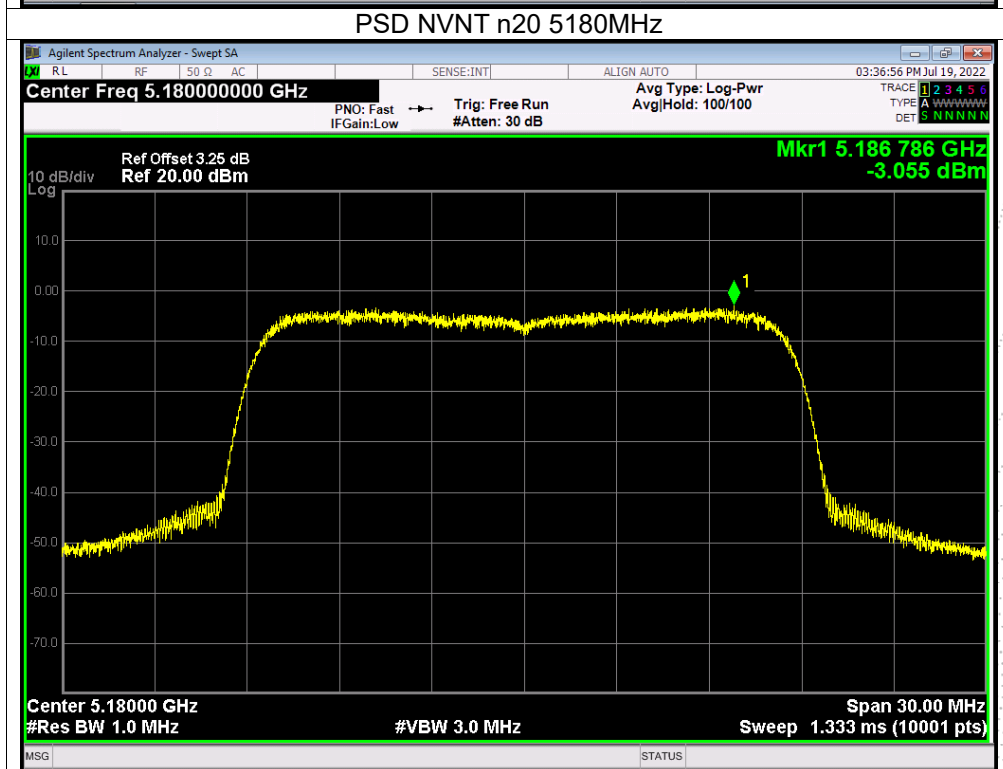
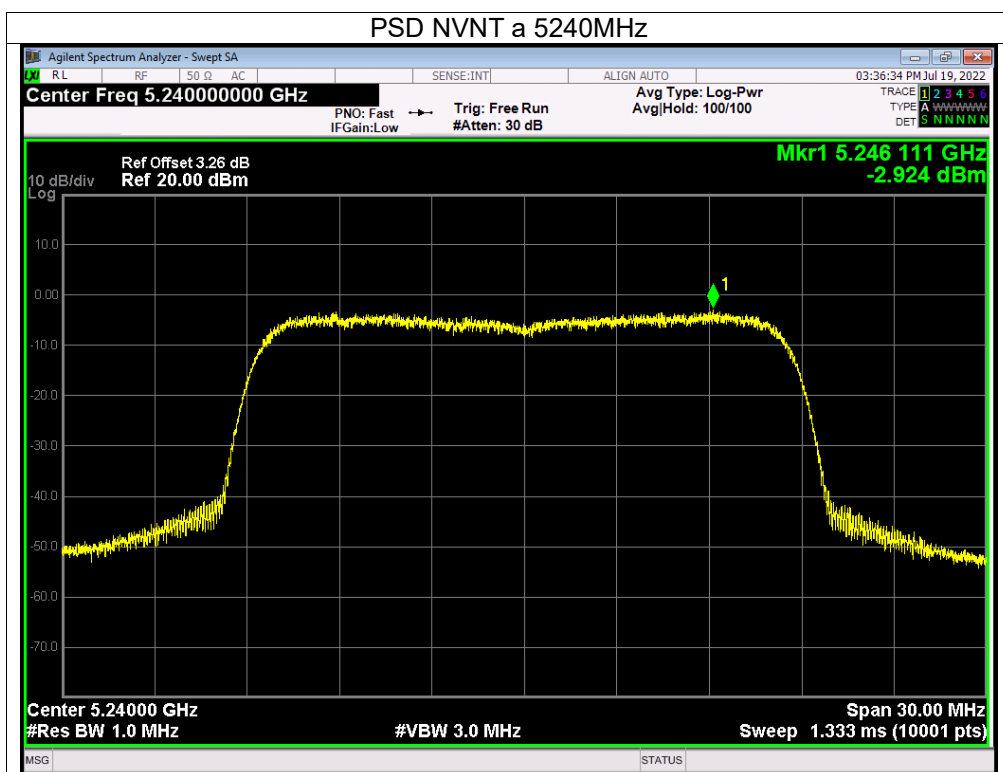
Condition	Mode	Frequency (MHz)	Conducted PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	-3.27	11	Pass
NVNT	a	5200	-3.26	11	Pass
NVNT	a	5240	-2.92	11	Pass
NVNT	n20	5180	-3.06	11	Pass
NVNT	n20	5200	-3.39	11	Pass
NVNT	n20	5240	-2.61	11	Pass

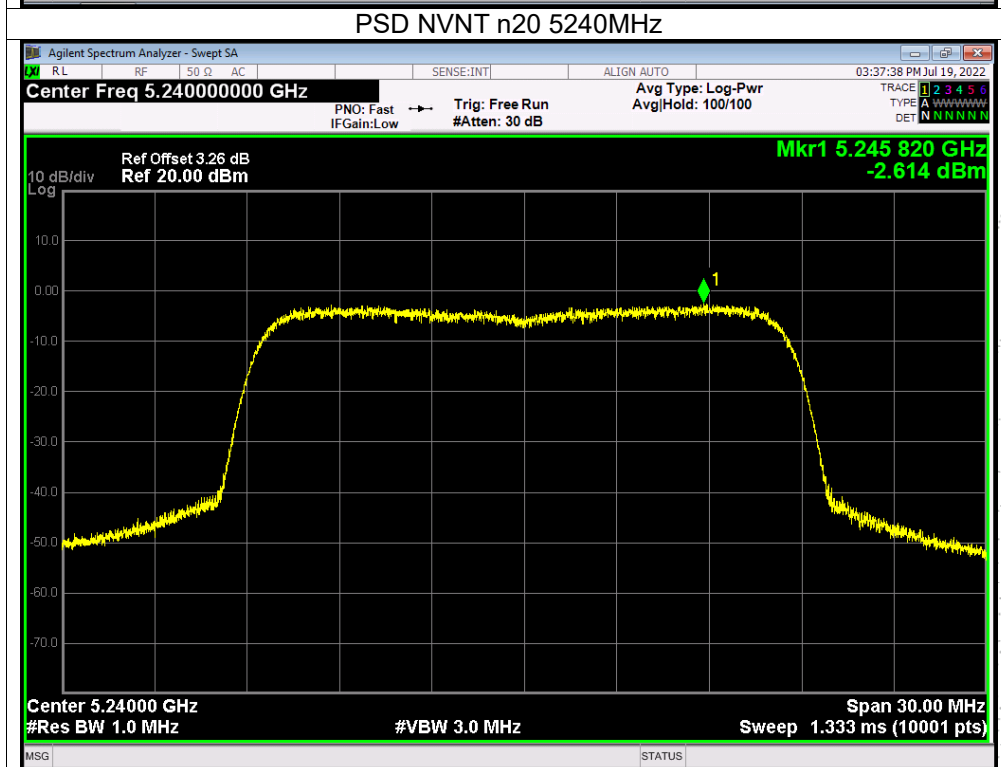
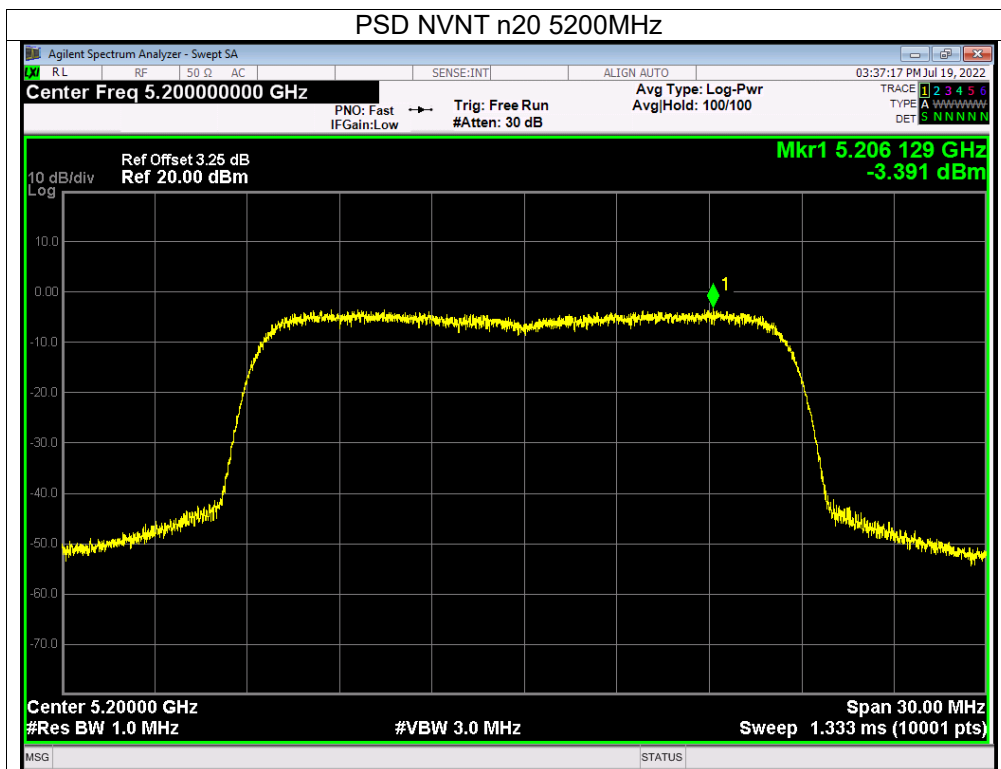
Condition	Mode	Frequency (MHz)	Conducted PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5260	-2.98	11	Pass
NVNT	a	5280	-3.35	11	Pass
NVNT	a	5320	-3.48	11	Pass
NVNT	n20	5260	-4.36	11	Pass
NVNT	n20	5280	-4.46	11	Pass
NVNT	n20	5320	-5.08	11	Pass

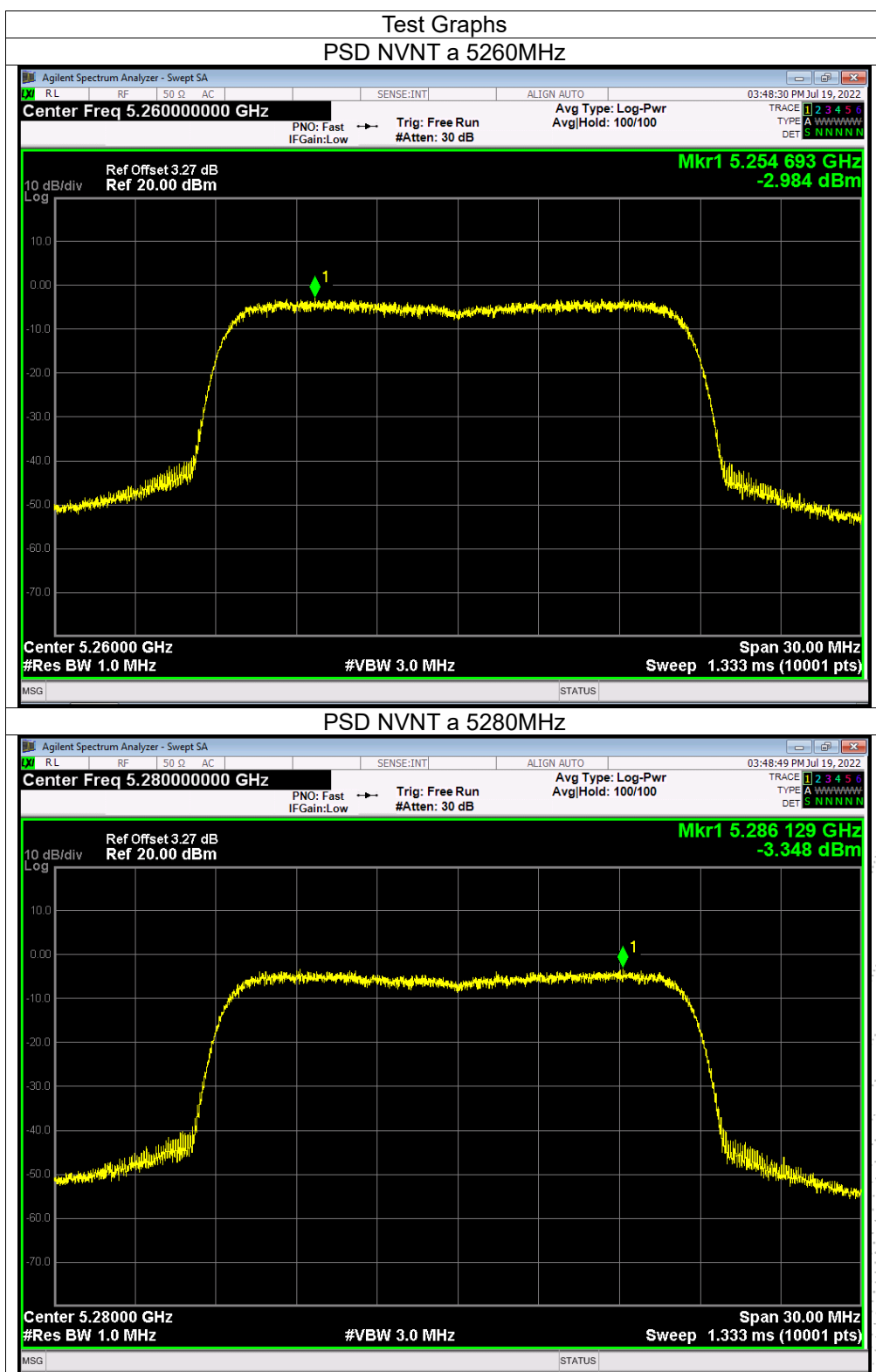
Condition	Mode	Frequency (MHz)	Conducted PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5500	-3.45	11	Pass
NVNT	a	5580	-3.30	11	Pass
NVNT	a	5700	-1.77	11	Pass
NVNT	n20	5500	-5.19	11	Pass
NVNT	n20	5580	-4.94	11	Pass
NVNT	n20	5700	-2.93	11	Pass

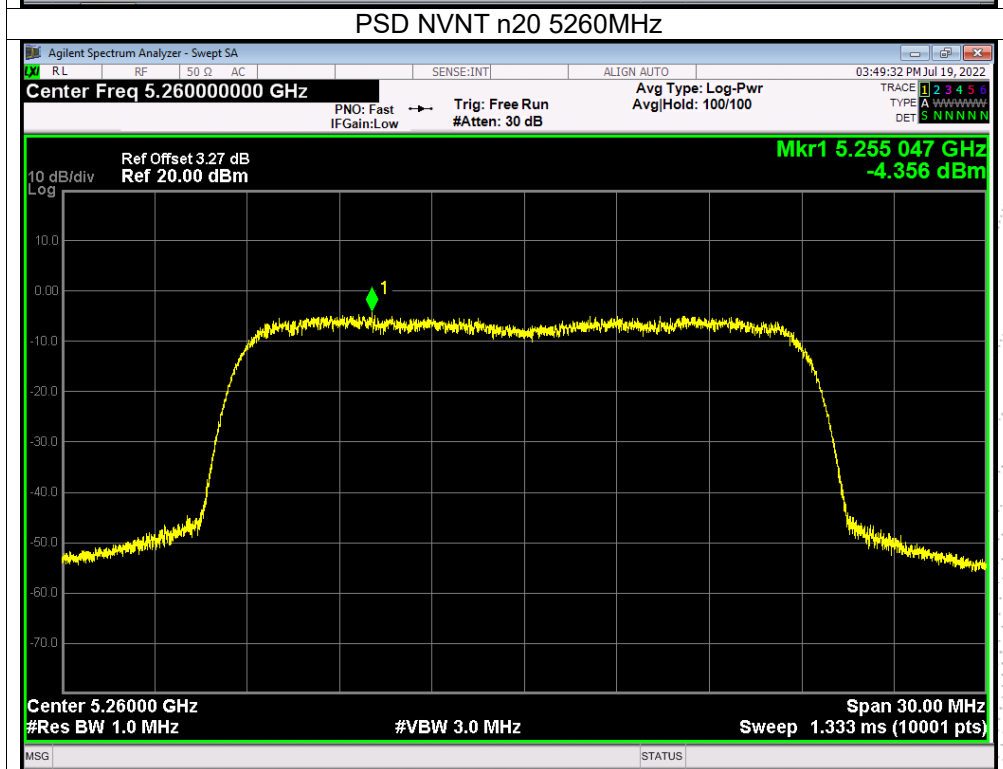
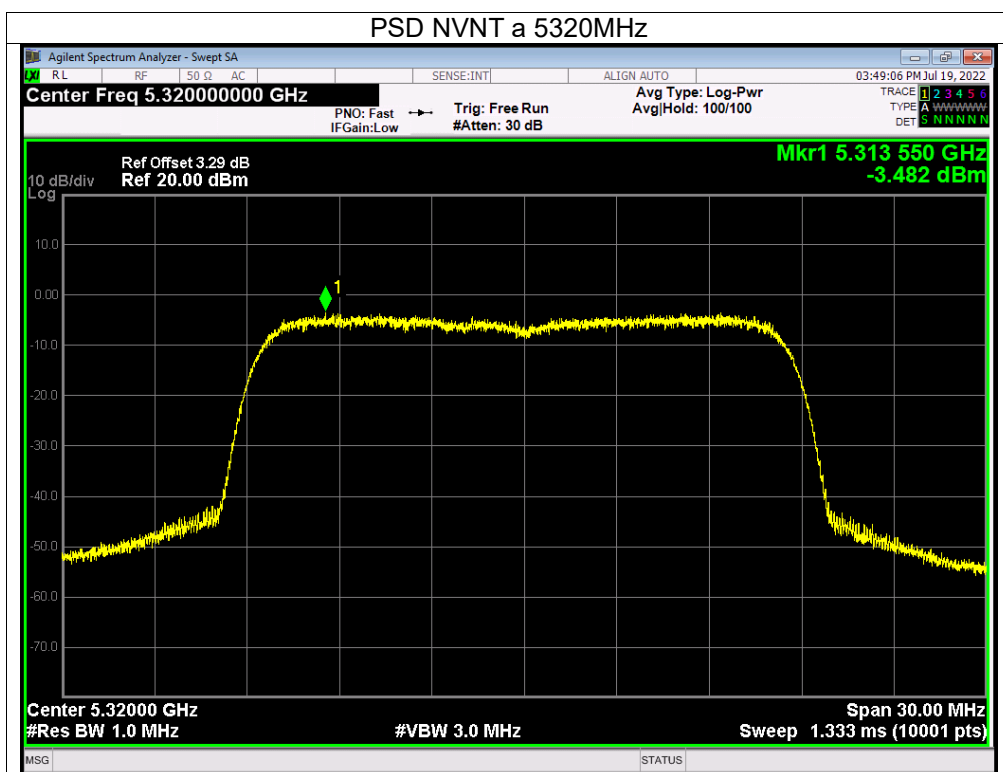
Condition	Mode	Frequency (MHz)	Conducted PSD (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
NVNT	a	5745	-4.76	30	Pass
NVNT	a	5785	-4.88	30	Pass
NVNT	a	5825	-5.57	30	Pass
NVNT	n20	5745	-5.07	30	Pass
NVNT	n20	5785	-5.00	30	Pass
NVNT	n20	5825	-5.92	30	Pass

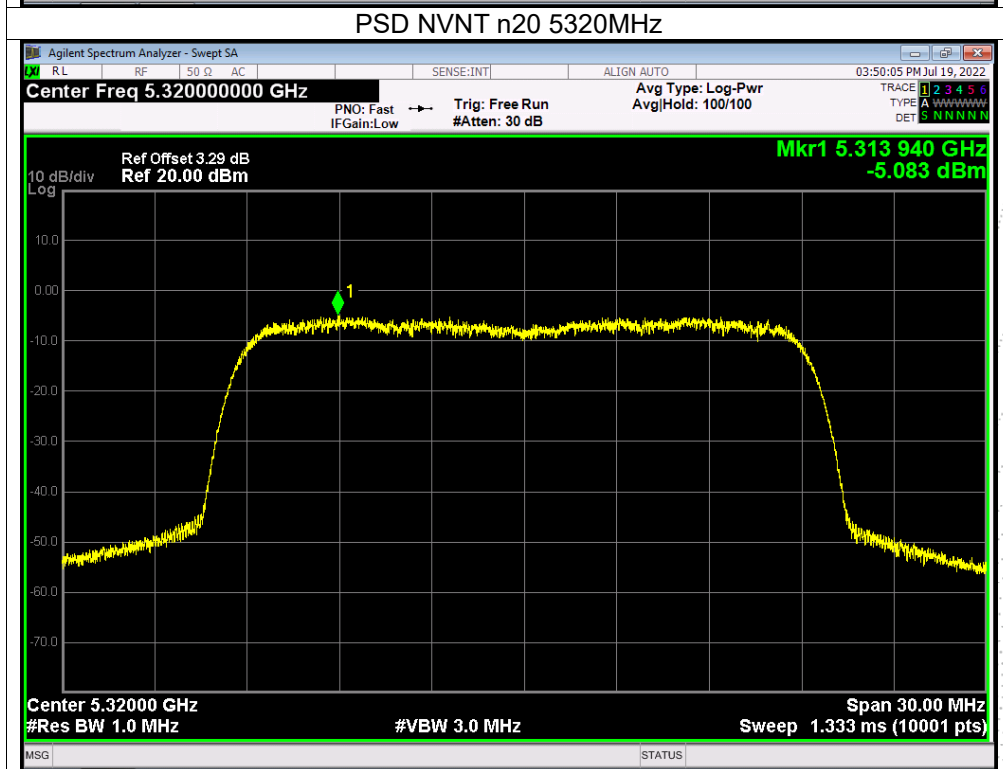
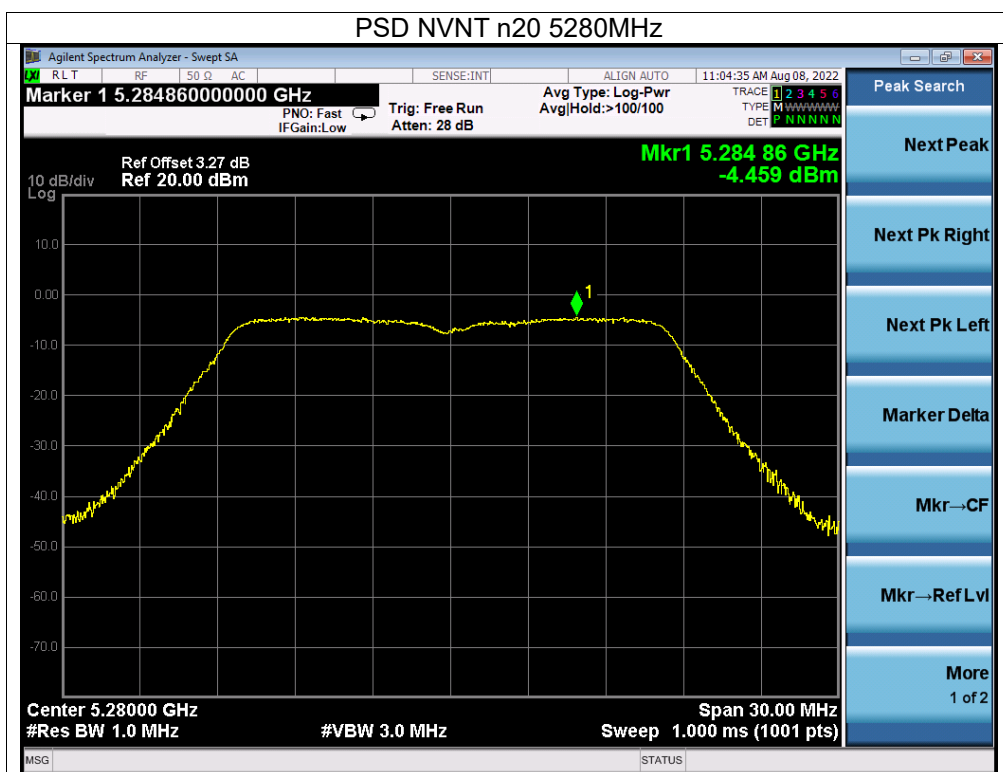


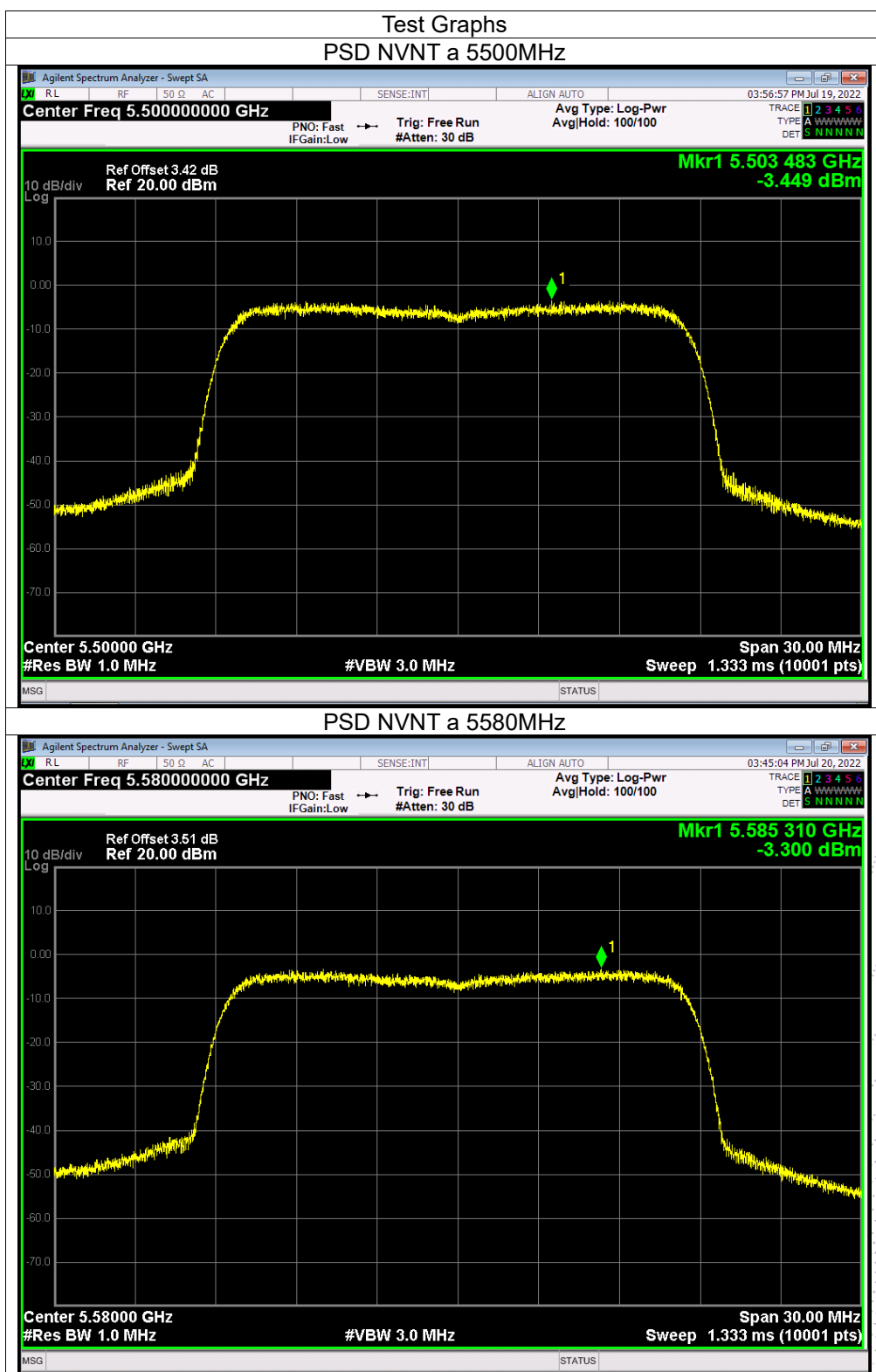


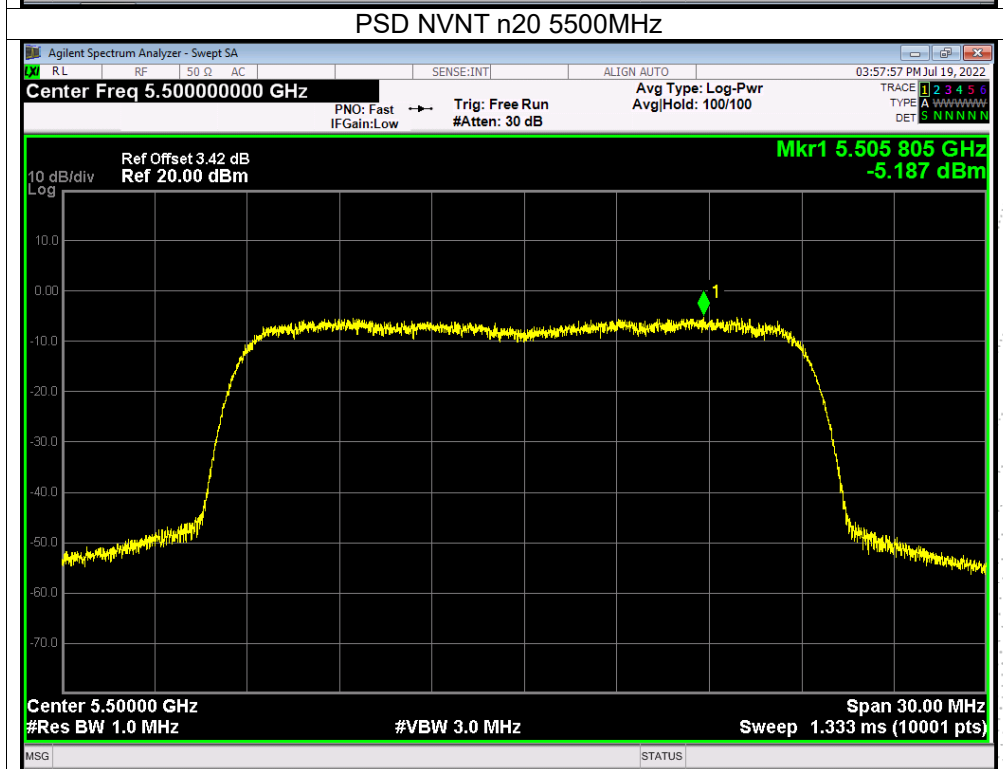
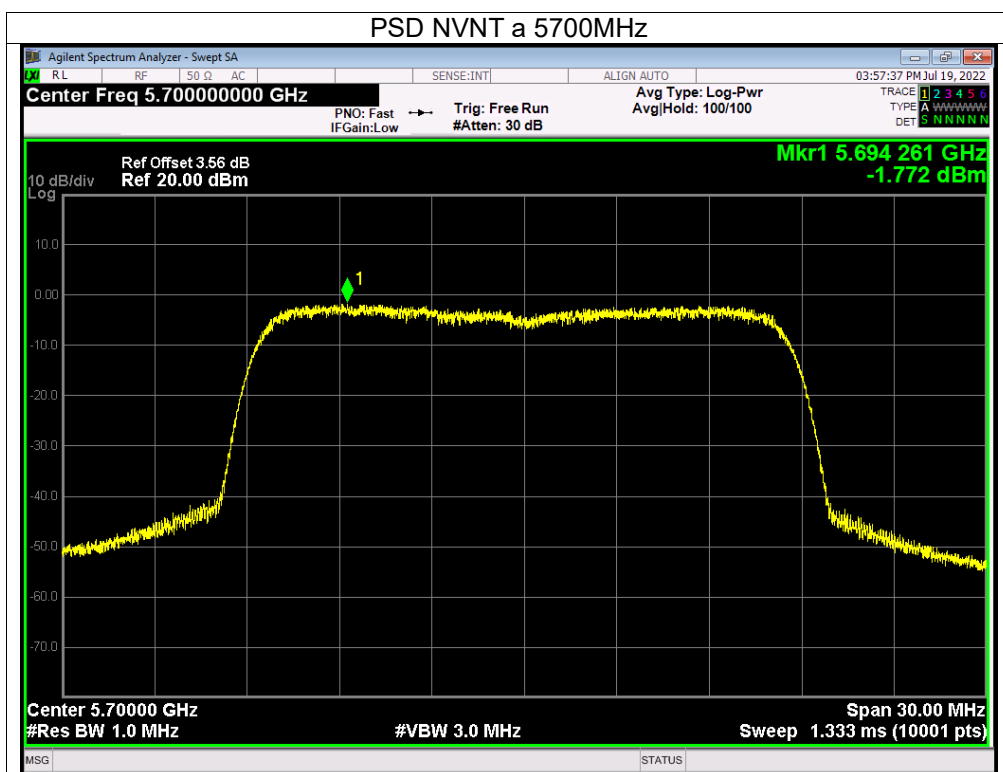


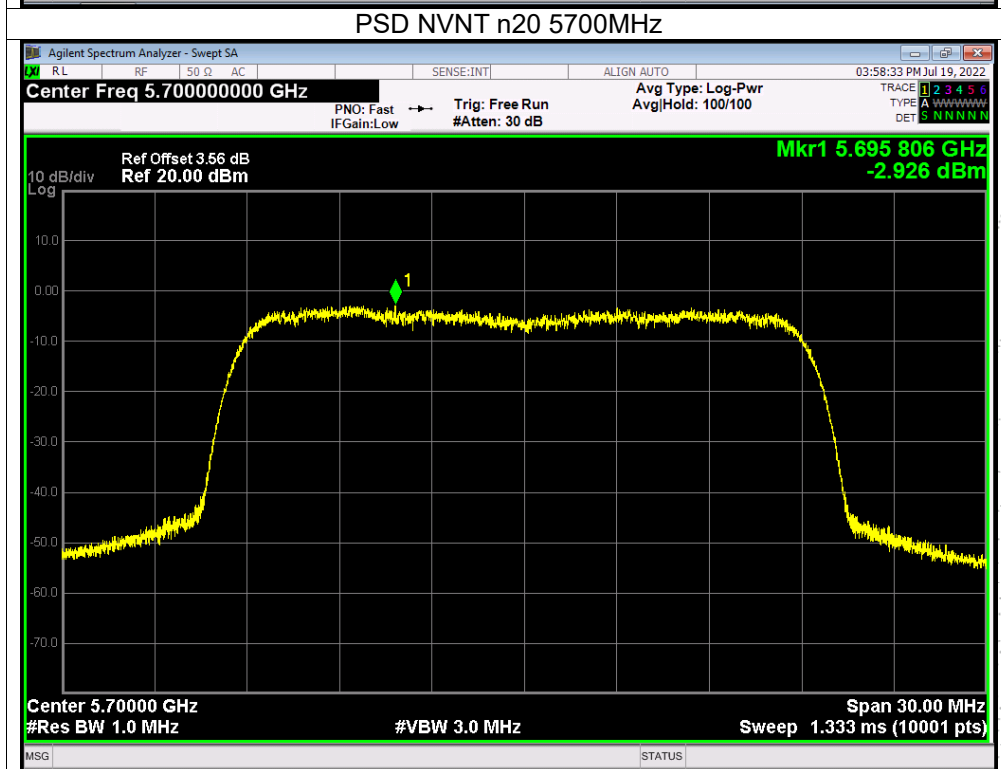
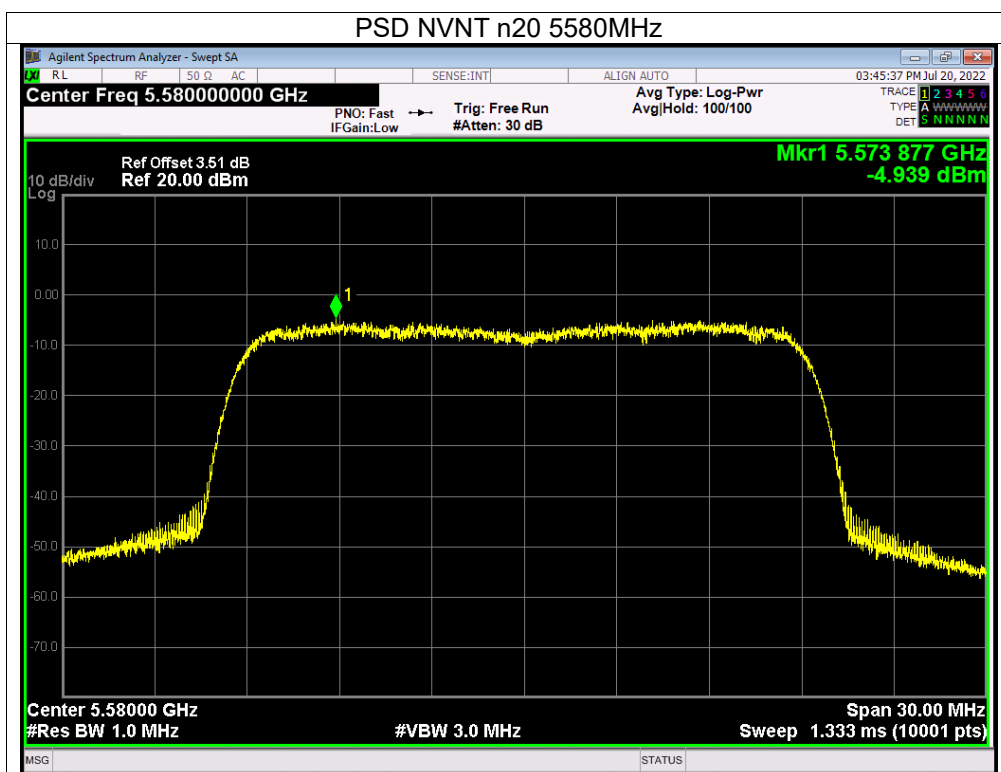


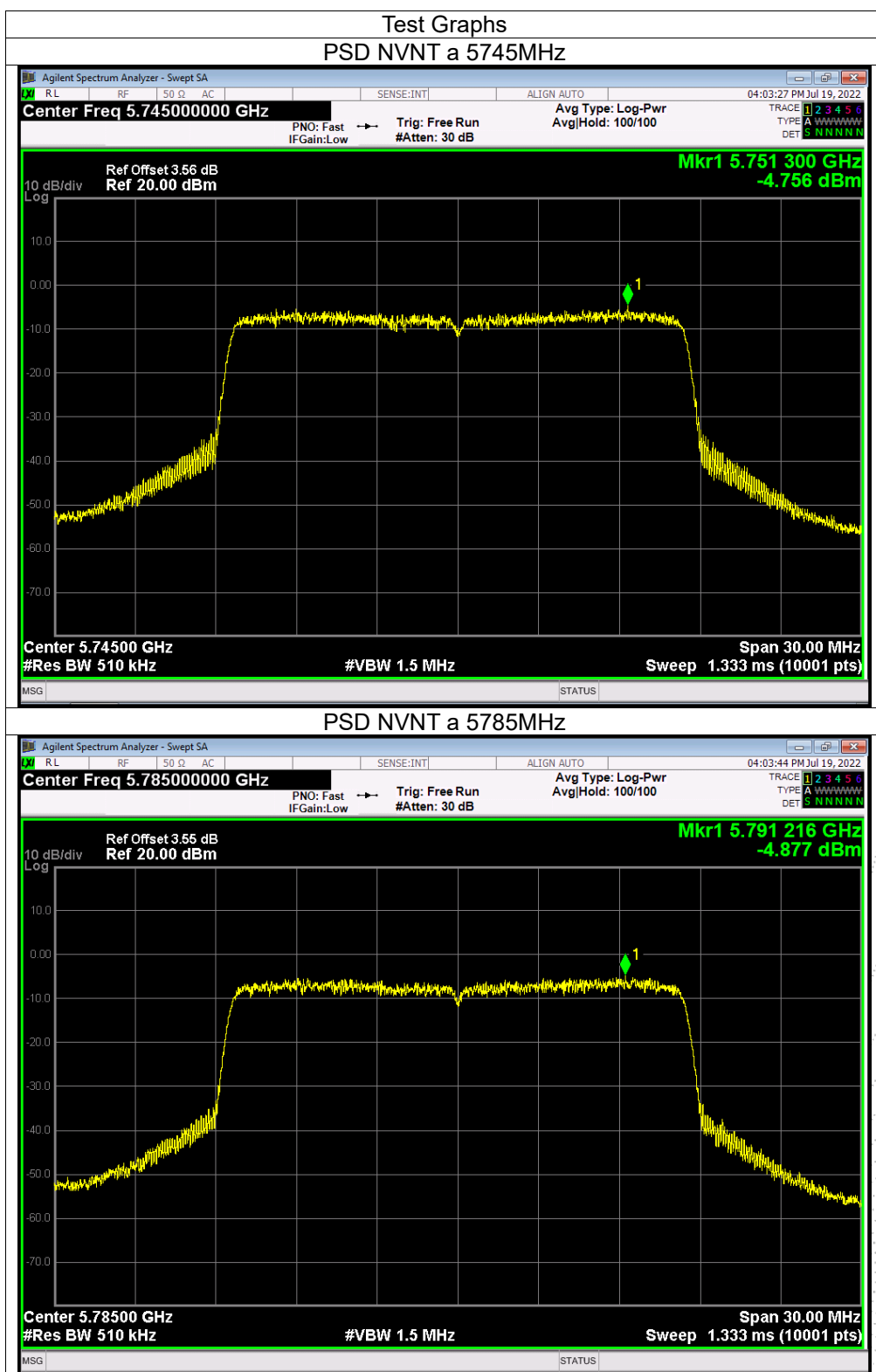


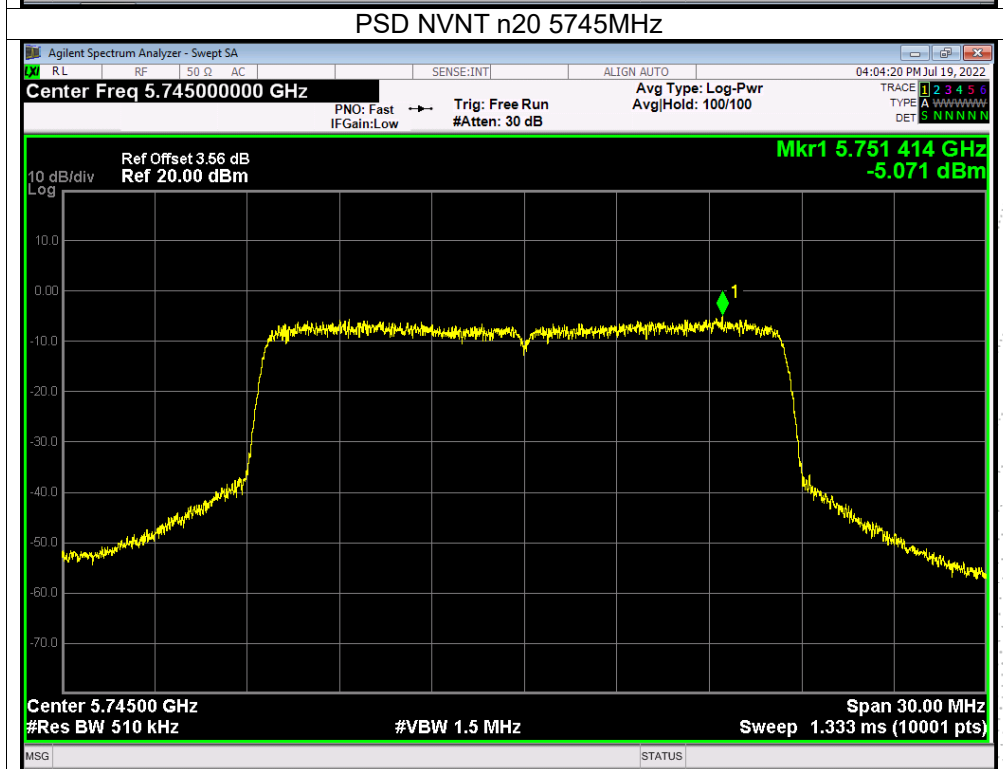
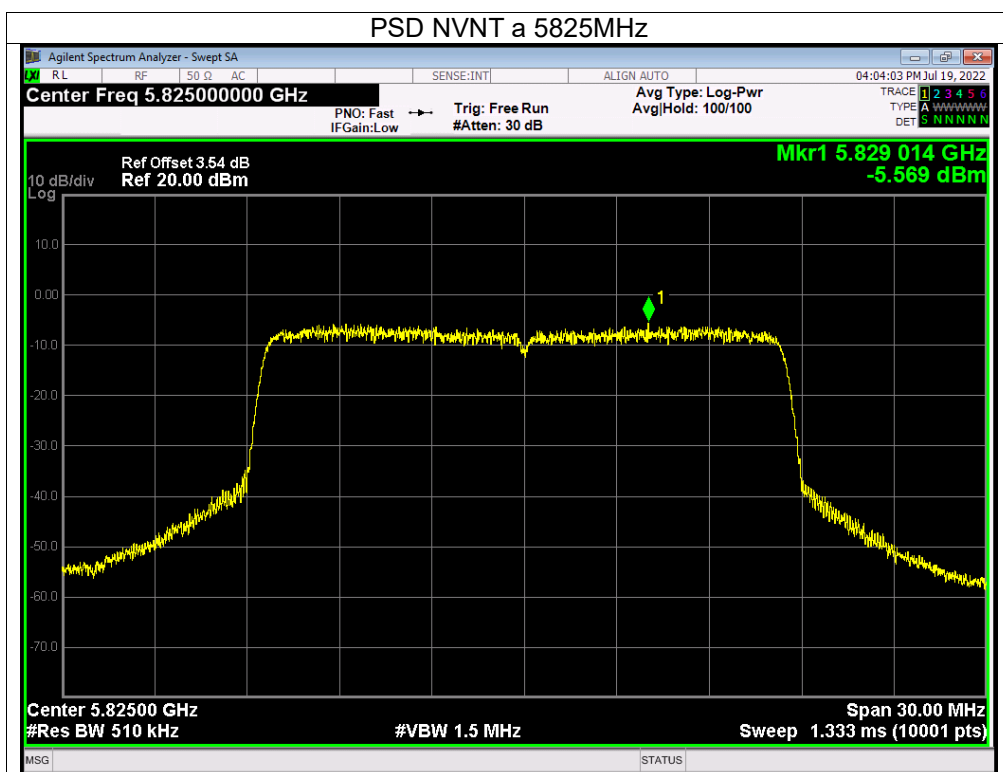


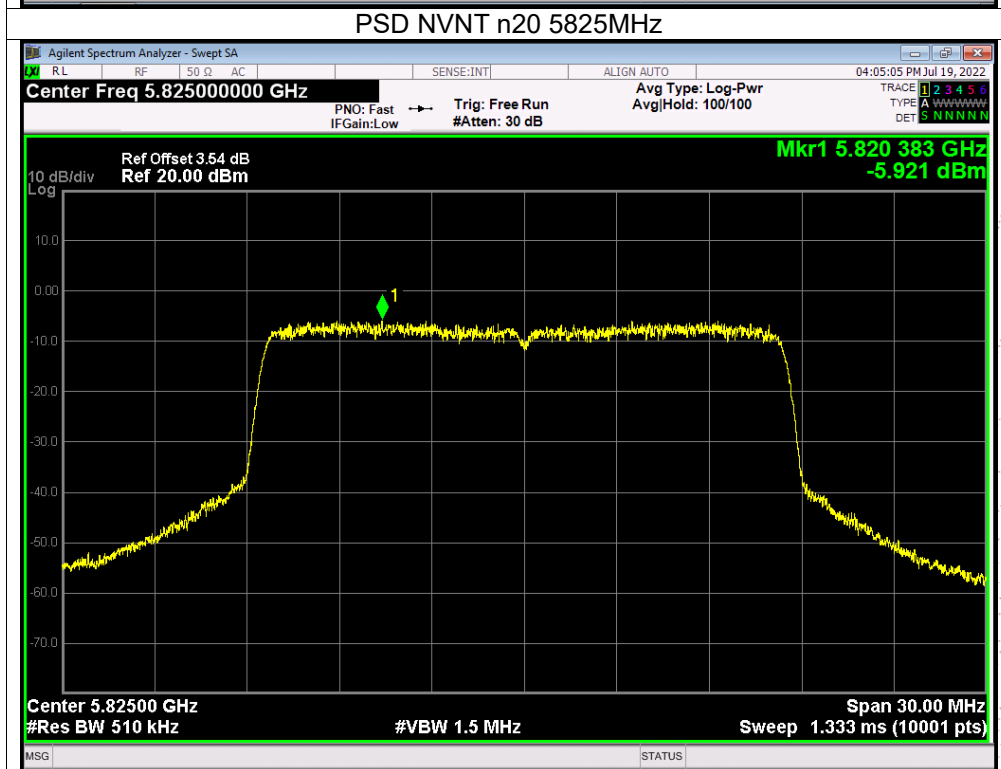
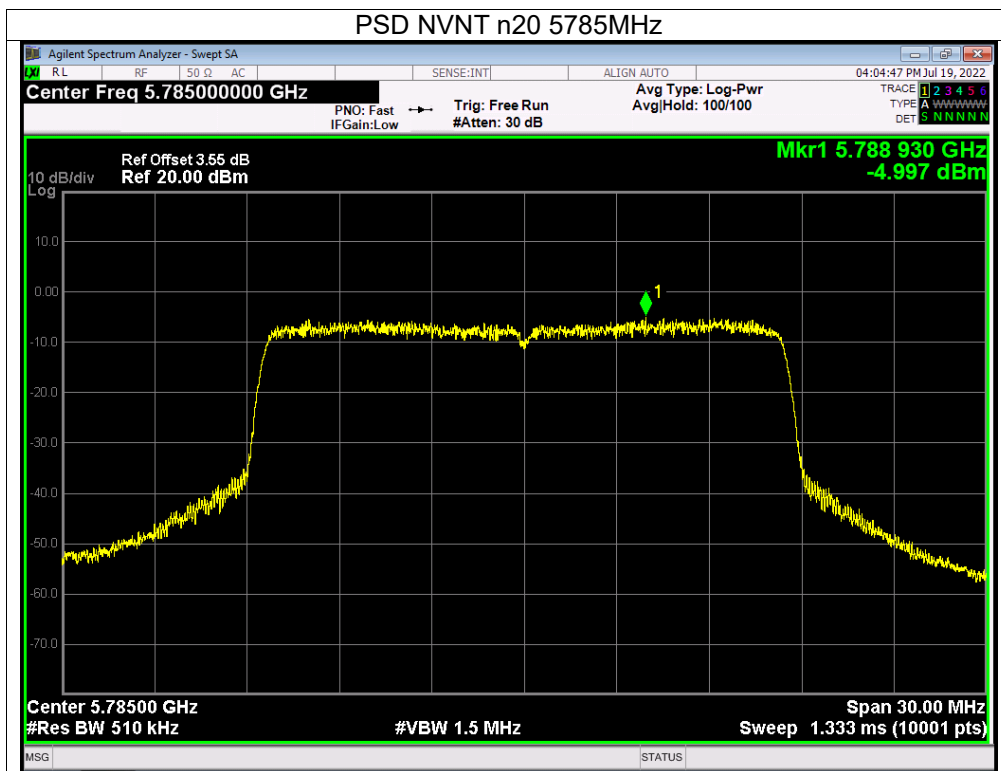






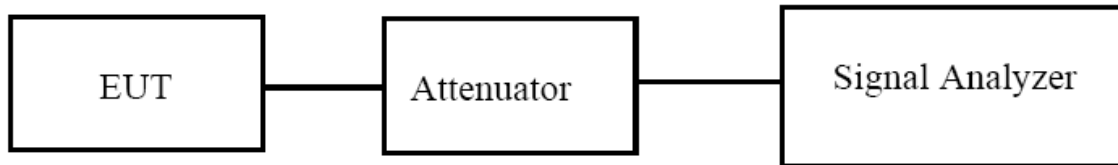






9. 26dB & 6dB & 99% Emission Bandwidth

9.1 Block Diagram Of Test Setup



9.2 Limit

(1) For the band 5.15-5.25 GHz.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, 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.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, 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.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, 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. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. 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.

9.3 Test Procedure

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- 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:

- Set center frequency to the nominal EUT channel center frequency.
- Set span = 1.5 times to 5.0 times the OBW.
- Set RBW = 1 % to 5 % of the OBW

4. Set VBW $\geq 3 \cdot$ 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

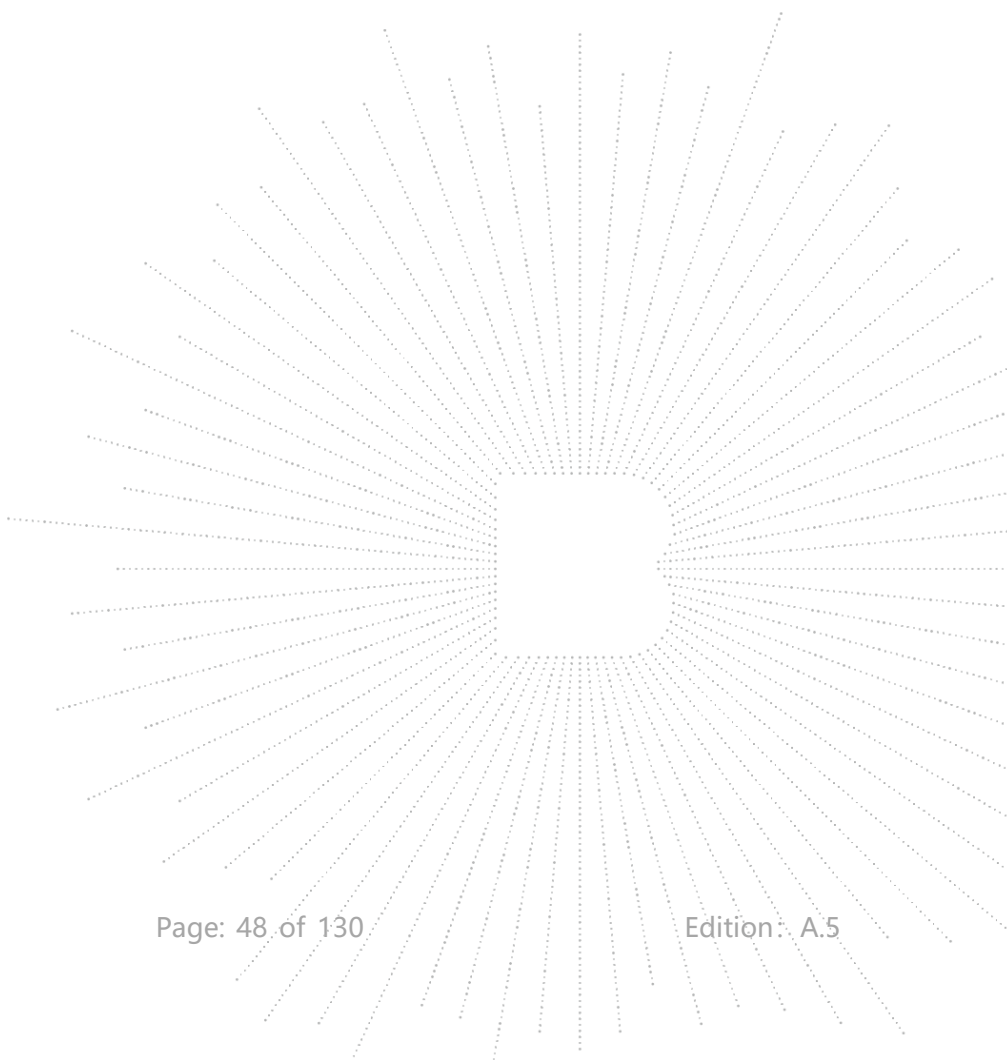
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC120V/60Hz
Test Mode:	(U-NII-1, U-NII-2A, U-NII-2C, U-NII-3)		

Condition	Mode	Frequency (MHz)	-26 dB Bandwidth (MHz)	Verdict
NVNT	a	5180	24.927	Pass
NVNT	a	5200	27.807	Pass
NVNT	a	5240	28.797	Pass
NVNT	n20	5180	24.367	Pass
NVNT	n20	5200	28.516	Pass
NVNT	n20	5240	29.417	Pass

Condition	Mode	Frequency (MHz)	-26 dB Bandwidth (MHz)	Verdict
NVNT	a	5260	28.216	Pass
NVNT	a	5280	26.696	Pass
NVNT	a	5320	24.478	Pass
NVNT	n20	5260	29.337	Pass
NVNT	n20	5280	29.623	Pass
NVNT	n20	5320	24.167	Pass

Condition	Mode	Frequency (MHz)	-26 dB Bandwidth (MHz)	Verdict
NVNT	a	5500	23.738	Pass
NVNT	a	5580	29.903	Pass
NVNT	a	5700	21.723	Pass
NVNT	n20	5500	22.327	Pass
NVNT	n20	5580	29.798	Pass
NVNT	n20	5700	23.232	Pass

Condition	Mode	Frequency (MHz)	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	a	5745	15.037	0.5	Pass
NVNT	a	5785	15.044	0.5	Pass
NVNT	a	5825	15.065	0.5	Pass
NVNT	n20	5745	15.036	0.5	Pass
NVNT	n20	5785	15.022	0.5	Pass
NVNT	n20	5825	15.061	0.5	Pass



Condition	Mode	Frequency (MHz)	99% OBW (MHz)
NVNT	a	5180	16.359
NVNT	a	5200	16.623
NVNT	a	5240	16.509
NVNT	n20	5180	17.467
NVNT	n20	5200	17.654
NVNT	n20	5240	17.662

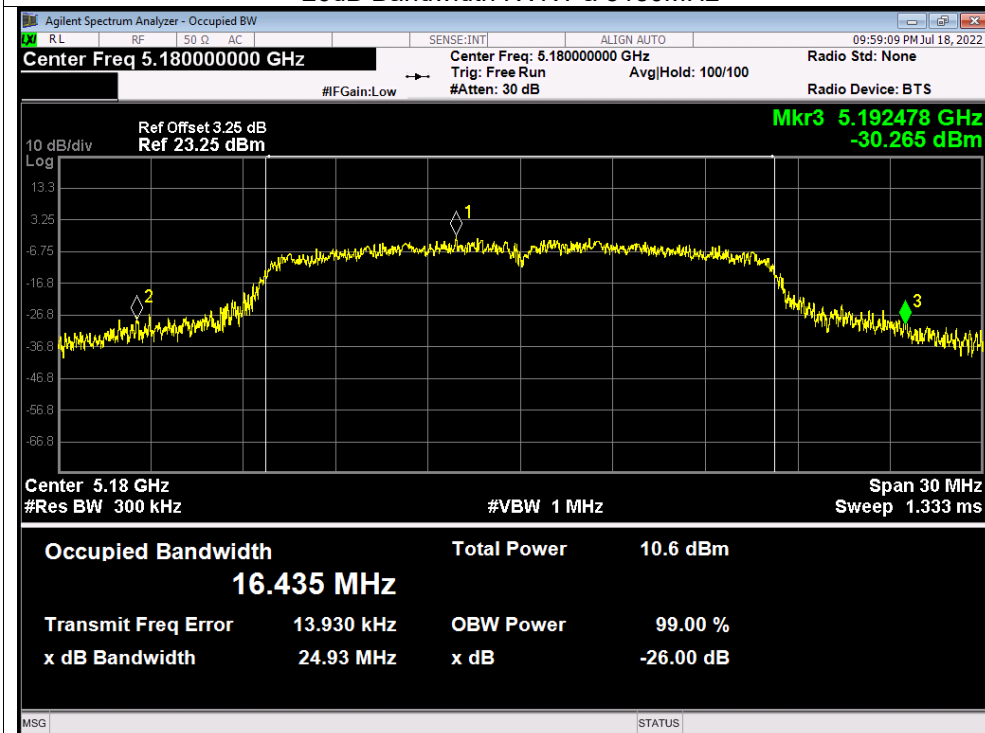
Condition	Mode	Frequency (MHz)	99% OBW (MHz)
NVNT	a	5260	16.587
NVNT	a	5280	16.564
NVNT	a	5320	16.344
NVNT	n20	5260	17.656
NVNT	n20	5280	17.571
NVNT	n20	5320	17.473

Condition	Mode	Frequency (MHz)	99% OBW (MHz)
NVNT	a	5500	16.329
NVNT	a	5580	16.645
NVNT	a	5700	16.233
NVNT	n20	5500	17.448
NVNT	n20	5580	17.712
NVNT	n20	5700	17.421

Condition	Mode	Frequency (MHz)	99% OBW (MHz)
NVNT	a	5745	16.585
NVNT	a	5785	16.531
NVNT	a	5825	16.297
NVNT	n20	5745	17.651
NVNT	n20	5785	17.613
NVNT	n20	5825	17.469

Test Graphs

-26dB Bandwidth NVNT a 5180MHz



-26dB Bandwidth NVNT a 5200MHz

