

TEST REPORT

Report No.: BCTC2505272294-4E

Applicant: SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD

Product Name: Smart Phone

Test Model: WP53 S

Tested Date: 2025-05-06 to 2025-05-20
2025-05-24 to 2025-07-04

Issued Date: 2025-07-04

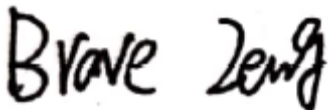
Shenzhen **BCTC** Testing Co., Ltd.



FCC ID: 2ANMU-WP53

Product Name: Smart Phone
Trademark: OUKITEL
Model/Type reference: WP53 S
WP53, WP53 E, WP53 Pro, WP53 Plus, WP53 Ultra, WP53 TITAN, WP53 GT
Prepared For: SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD
Address: A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU INDUSTRIAL ZONE,
GUANLAN, LONGHUA SHENZHEN, China
Manufacturer: SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD
Address: A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU INDUSTRIAL ZONE,
GUANLAN, LONGHUA SHENZHEN, China
Prepared By: 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
Sample Received Date: 2025-05-06
Sample tested Date: 2025-05-06 to 2025-05-20
2025-05-24 to 2025-07-04
Issue Date: 2025-07-04
Report No.: BCTC2505272294-4E
Test Standards: FCC Part15 15.407
ANSI C63.10-2013
KDB 789033 D02 v02r01
Test Results: PASS

Tested by:



Brave Zeng/ Project Handler

Approved by:



Zero Zhou/Reviewer

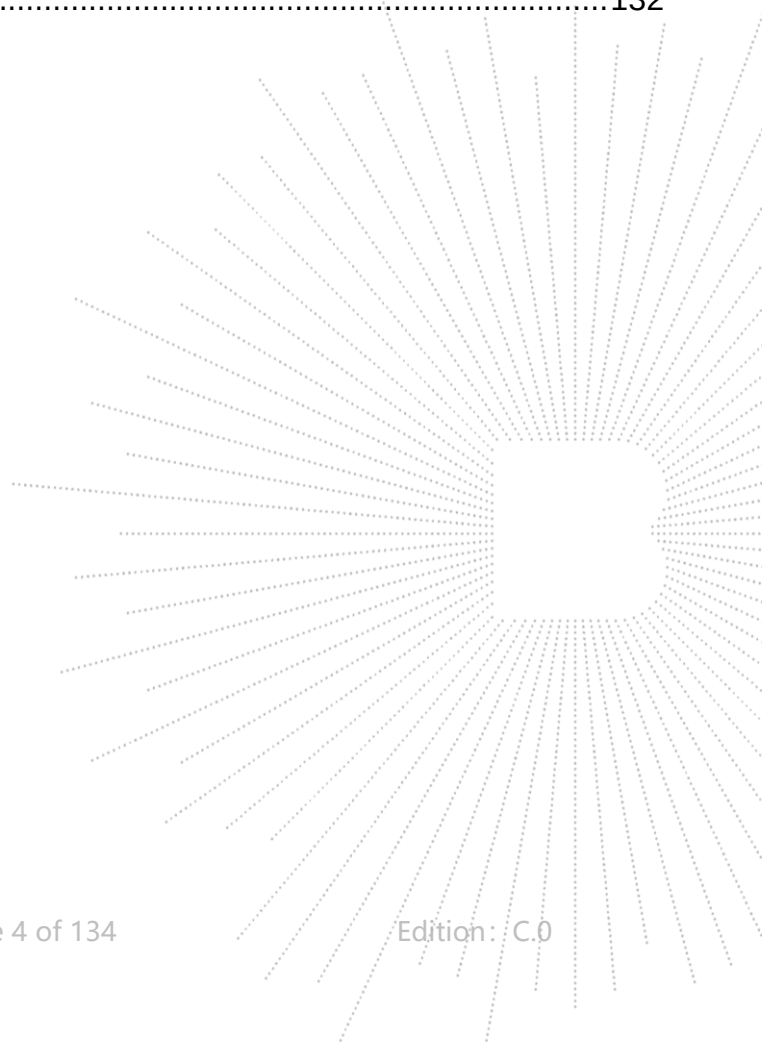
The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information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

Table Of Content

Test Report Declaration	Page
1. Version	5
2. Test Summary	6
3. Measurement Uncertainty	7
4. Product Information And Test Setup	8
4.1 Product Information	8
4.2 Test Setup Configuration	8
4.3 Support Equipment	9
4.4 Channel List	9
4.5 Test Mode	10
5. Test Facility And Test Instrument Used	11
5.1 Test Facility	11
5.2 Test Instrument Used	11
6. Conducted Emissions	14
6.1 Block Diagram Of Test Setup	14
6.2 Limit	14
6.3 Test Procedure	14
6.4 EUT Operating Conditions	14
6.5 Test Result	15
7. Radiated Emissions	17
7.1 Block Diagram Of Test Setup	17
7.2 Limit	18
7.3 Test Procedure	19
7.4 EUT Operating Conditions	20
7.5 Test Result	20
8. Power Spectral Density Test	35
8.1 Block Diagram Of Test Setup	35
8.2 Limit	35
8.3 Test Procedure	36
8.4 EUT Operating Conditions	36
8.5 Test Result	37
9. 26dB & 6dB & 99% Emission Bandwidth	52
9.1 Block Diagram Of Test Setup	52
9.2 Limit	52
9.3 Test Procedure	52
9.4 EUT Operating Conditions	53
9.5 Test Result	53
10. Maximum Conducted Output Power	83
10.1 Block Diagram Of Test Setup	83
10.2 Limit	83
10.3 Test Procedure	83
10.4 EUT Operating Conditions	84
10.5 Test Result	85
11. Out Of Band Emissions	86

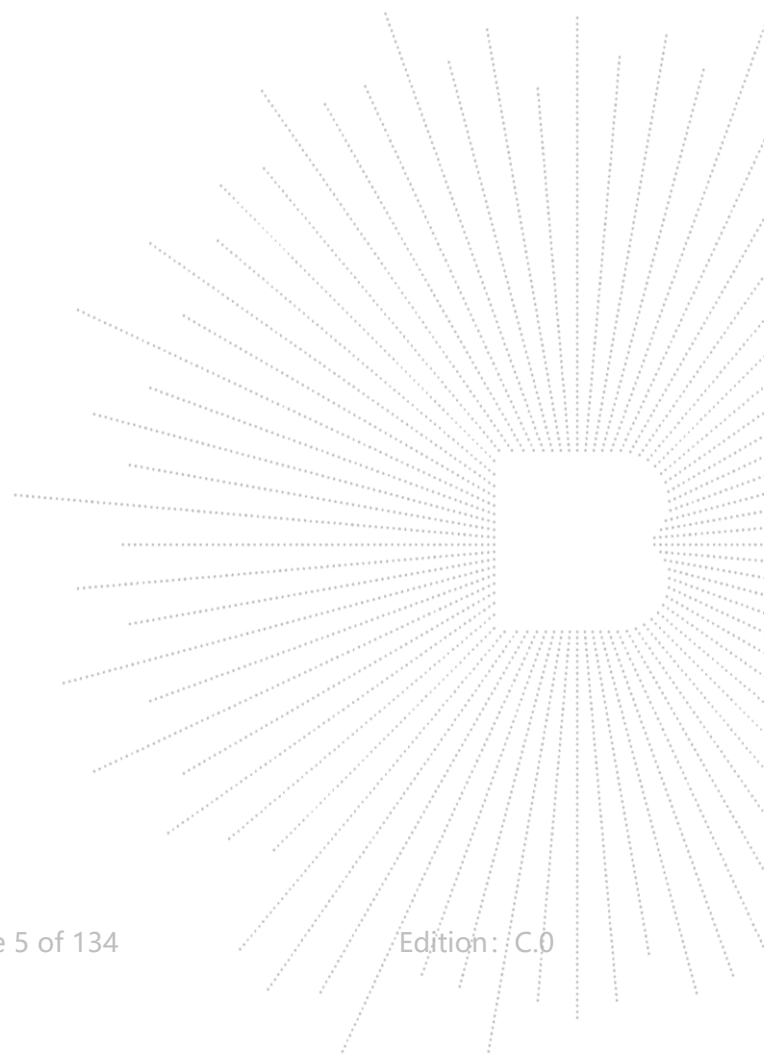
11.1	Block Diagram Of Test Setup.....	86
11.2	Limit	86
11.3	Test Procedure	86
11.4	EUT Operating Conditions	86
11.5	Test Result.....	87
12.	Spurious RF Conducted Emissions.....	99
12.1	Block Diagram Of Test Setup.....	99
12.2	Limit	99
12.3	Test Procedure	99
12.4	Test Result.....	99
13.	Frequency Stability Measurement.....	114
13.1	Block Diagram Of Test Setup.....	114
13.2	Limit	114
13.3	Test Procedure	114
13.4	Test Result.....	115
14.	Duty Cycle Of Test Signal	121
14.1	Standard Requirement	121
14.2	Formula.....	121
14.3	Test Procedure	121
14.4	Test Result.....	121
15.	Antenna Requirement	130
15.1	Limit	130
15.2	Test Result.....	130
16.	EUT Photographs.....	131
17.	EUT Test Setup Photographs.....	132

(Note: N/A Means Not Applicable)



1. Version

Report No.	Issue Date	Description	Approved
BCTC2505272294-4E	2025-07-04	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)(1) 15.407 (b)(4) 15.407 (b)(8)	PASS
2	Conducted Emission	15.207	PASS
3	26 dB and 99% Emission Bandwidth	15.407 (a)(12) 15.1049	PASS
4	Minimum 6 dB bandwidth	15.407(e)	PASS
5	Maximum Conducted Output Power	15.407 (a)(1) 15.407 (a)(3)	PASS
6	Band Edge	2.1051, 15.407(b)(1) 15.407(b)(4)	PASS
7	Power Spectral Density	15.407 (a)(1) 15.407 (a)(3)	PASS
8	Spurious Emissions at Antenna Terminals	2.1051, 15.407(b)	PASS
9	Antenna Requirement	15.203	PASS

Note: "N/A" means not applicable in this report.

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:	WP53 S WP53, WP53 E, WP53 Pro, WP53 Plus, WP53 Ultra, WP53 TITAN, WP53 GT
Model differences:	All the model are the same circuit and RF module, except model names.
Hardware Version:	J557A_9230TMB_D4XUF_V1.1
Software Version:	V05
IEEE 802.11 WLAN Mode Supported	802.11a/n/ac(20MHz channel bandwidth) 802.11n/ac(40MHz channel bandwidth) 802.11ac(80MHz channel bandwidth)
Operation Frequency:	5180-5240MHz for 802.11a/n(HT20)/ac(HT20); 5190-5230MHz for 802.11n(HT40)/ac(HT40); 5210MHz for 802.11 ac(HT80); 5745-5825 MHz for 802.11a/n(HT20)/ac(HT20); 5755-5795 MHz for 802.11n(HT40)/ac(HT40); 5775MHz for 802.11 ac(HT80);
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/VHT80):NSS1, MCS0-MCS
Type of Modulation:	OFDM with BPSK/QPSK/16QAM/64QAM/256QAM for 802.11a/n/ac; 4 channels for 802.11a/n20/ac20 in the 5180-5240MHz band ; 2 channels for 802.11 n40/ac40 in the 5190-5230MHz band ;
Number Of Channel	1 channels for 802.11 ac80 in the 5210MHz band ; 5 channels for 802.11a/n20/ac20 in the 5745-5825MHz band ; 2 channels for 802.11 n40/ac40 in the 5755-5795MHz band ; 1 channels for 802.11 ac80 in the 5775MHz band
Antenna installation:	Internal antenna 0.30 dBi
Antenna Gain:	Remark: ☐ The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information. ☒ The antenna gain of the product is provided by the customer, and the test data is affected by the customer information.
Ratings:	DC 9V from adapter/DC 3.87V from battery Model: HJ-PD18W-US Input: 100-240V~50/60Hz 0.6A
Adapter Information:	Output: DC 5.0V 3.0A 15.0W OR DC 9.0V 2.0A 18.0W OR DC 12.0V 1.5A 18.0W MAX

4.2 Test Setup Configuration

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

4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	Smart Phone	OUKITEK	WP53 S	N/A	EUT
E-2	Adapter	/	HJ-PD18W-US	N/A	Auxiliary
E-3	TF card	SanDisk	32G	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	0M	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

5.1G

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

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

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

5.8G

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

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

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

4.5 Test Mode

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

Pretest Mode	Description
Mode 1	802.11a / n/ ac 20 CH36/ CH40/ CH 48 802.11a /n/ ac 20 CH149/ CH157/ CH 165
Mode 2	802.11n/ ac40 CH38/ CH 46 802.11n/ ac40 CH 151 / CH 159
Mode 3	802.11 ac80 CH 42/CH 155
Mode 4	Link

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

A2LA certificate registration number is: CN1212

ISED Registered No.: 23583

ISED CAB identifier: CN0017

5.2 Test Instrument Used

Conducted Emissions Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Receiver	R&S	ESR3	102075	May 16, 2024	May 15, 2025
LISN	R&S	ENV216	101375	May 16, 2024	May 15, 2025
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\
Pulse limiter	Schwarzbeck	VTSD9561-F	01323	May 16, 2024	May 15, 2025

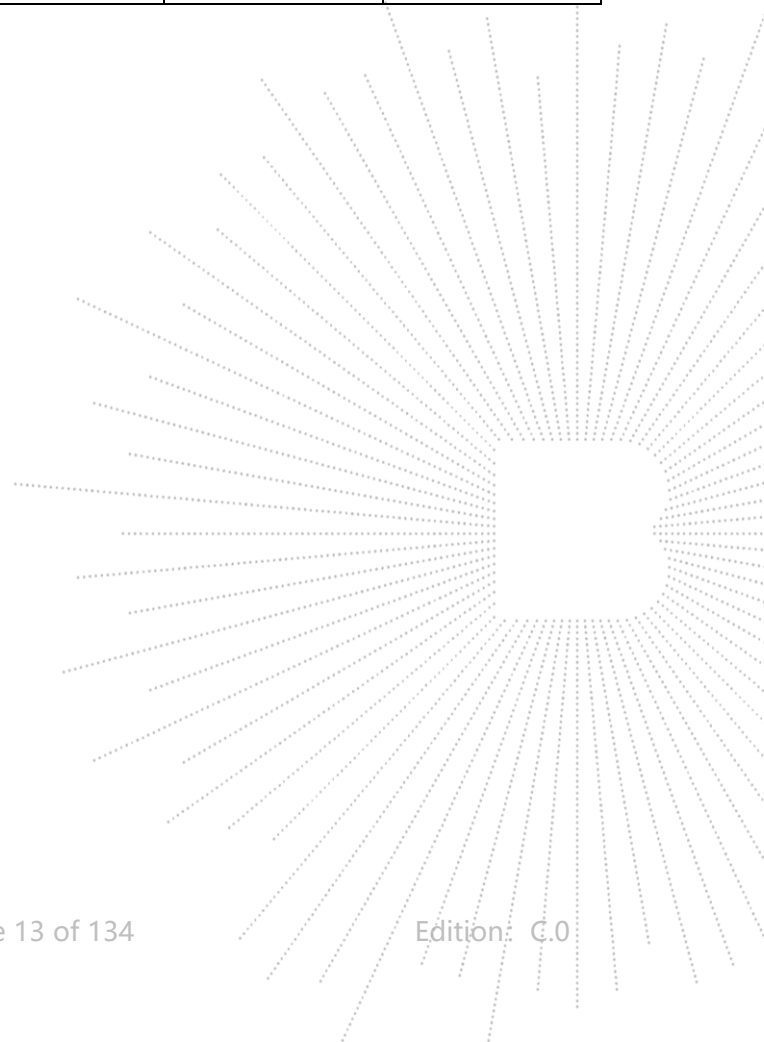
Conducted Emissions Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Receiver	R&S	ESR3	102075	May 08, 2025	May 07, 2026
LISN	R&S	ENV216	101375	May 14, 2025	May 13, 2026
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\
Pulse limiter	Schwarzbeck	VTSD9561-F	01323	May 14, 2025	May 13, 2026

RF Conducted Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Power meter	Keysight	E4419	\	May 16, 2024	May 15, 2025
Power Sensor (AV)	Keysight	E9300A	\	May 16, 2024	May 15, 2025
Signal Analyzer 20kHz-26.5GHz	Keysight	N9020A	MY49100060	May 16, 2024	May 15, 2025
Spectrum Analyzer 9kHz-40GHz	R&S	FSP40	100363	May 16, 2024	May 15, 2025
Communication test set	R&S	CMW500	126173	Nov. 11, 2024	Nov. 10, 2025
Radio frequency control box	MAIWEI	MW200-RFC B	\	\	\
Software	MAIWEI	MTS 8200	\	\	\

RF Conducted Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Power meter	Keysight	E4419	\	May 14, 2025	May 13, 2026
Power Sensor (AV)	Keysight	E9300A	\	May 14, 2025	May 13, 2026
Signal Analyzer20kHz-26.5GHz	Keysight	N9020A	MY49100060	May 14, 2025	May 13, 2026
Spectrum Analyzer9kHz-40GHz	R&S	FSP40	100363	May 14, 2025	May 13, 2026
Communication test set	R&S	CMW500	126173	May 14, 2025	May 13, 2026
Radio frequency control box	MAIWEI	MW200-RFC B	\	\	\
Software	MAIWEI	MTS 8200	\	\	\

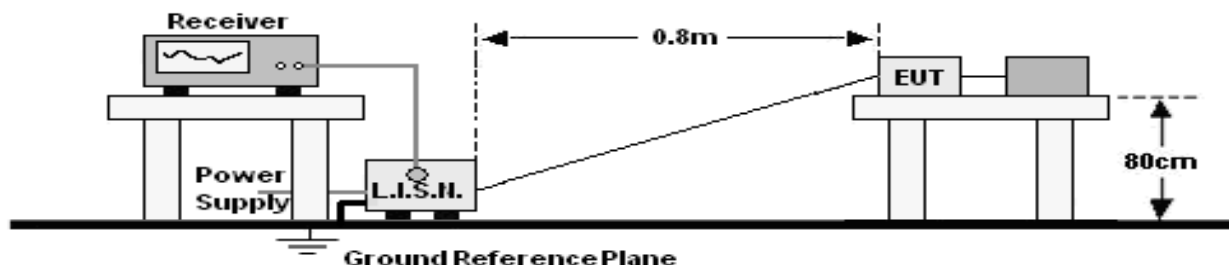
Radiated Emissions Test (966 Chamber01)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	May 15, 2023	May 14, 2026
Receiver	R&S	ESR3	102075	May 16, 2024	May 15, 2025
Receiver	R&S	ESRP	101154	May 16, 2024	May 15, 2025
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 16, 2024	May 15, 2025
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	May 21, 2024	May 20, 2025
Loop Antenna(9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	May 21, 2024	May 20, 2025
Amplifier	SKET	LAPA_01G18 G-45dB	SK2021040901	May 16, 2024	May 15, 2025
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 21, 2024	May 20, 2025
Amplifier(18G Hz-40GHz)	MITEQ	TTA1840-35-HG	2034381	May 16, 2024	May 15, 2025
Horn Antenna(18G Hz-40GHz)	Schwarzbeck	BBHA9170	00822	May 21, 2024	May 20, 2025
Spectrum Analyzer9kHz-40GHz	R&S	FSP40	100363	May 16, 2024	May 15, 2025
Communication test set	R&S	CMW500	126173	Nov. 11, 2024	Nov. 10, 2025
Software	Frad	EZ-EMC	FA-03A2 RE	\	\

Radiated Emissions Test (966 Chamber01)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	May 15, 2023	May 14, 2026
Receiver	R&S	ESR3	102075	May 08, 2025	May 07, 2026
Receiver	R&S	ESRP	101154	May 14, 2025	May 13, 2026
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 14, 2025	May 13, 2026
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	May 24, 2025	May 23, 2026
Loop Antenna(9KHz -30MHz)	Schwarzbeck	FMZB1519B	00014	May 24, 2025	May 23, 2026
Amplifier	SKET	LAPA_01G18 G-45dB	SK2021040901	May 14, 2025	May 13, 2026
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 24, 2025	May 23, 2026
Amplifier(18G Hz-40GHz)	MITEQ	TTA1840-35-HG	2034381	May 14, 2025	May 13, 2026
Horn Antenna(18G Hz-40GHz)	Schwarzbeck	BBHA9170	00822	May 24, 2025	May 23, 2026
Spectrum Analyzer9kHz-40GHz	R&S	FSP40	100363	May 14, 2025	May 13, 2026
Communication test set	R&S	CMW500	126173	Nov. 11. 2024	Nov. 10, 2025
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

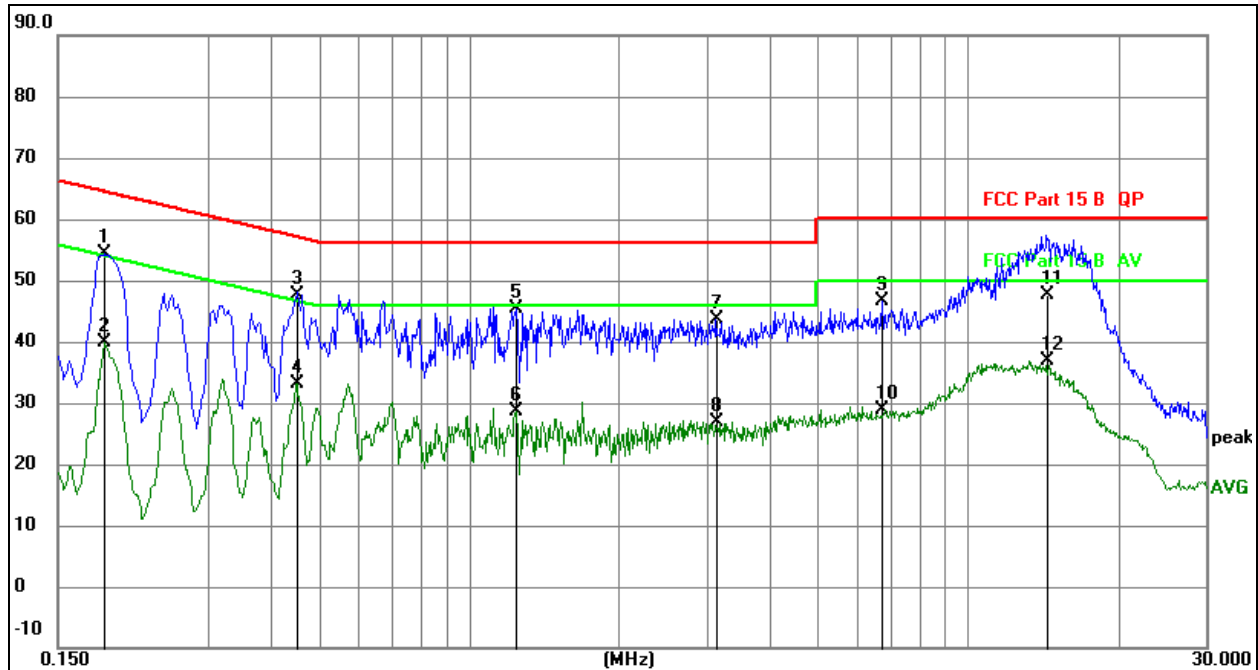
- The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak 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:	23 °C	Relative Humidity:	53 %
Pressure:	101KPa	Phase :	L
Test Mode:	Mode 4	Test Voltage :	AC 120V/60Hz

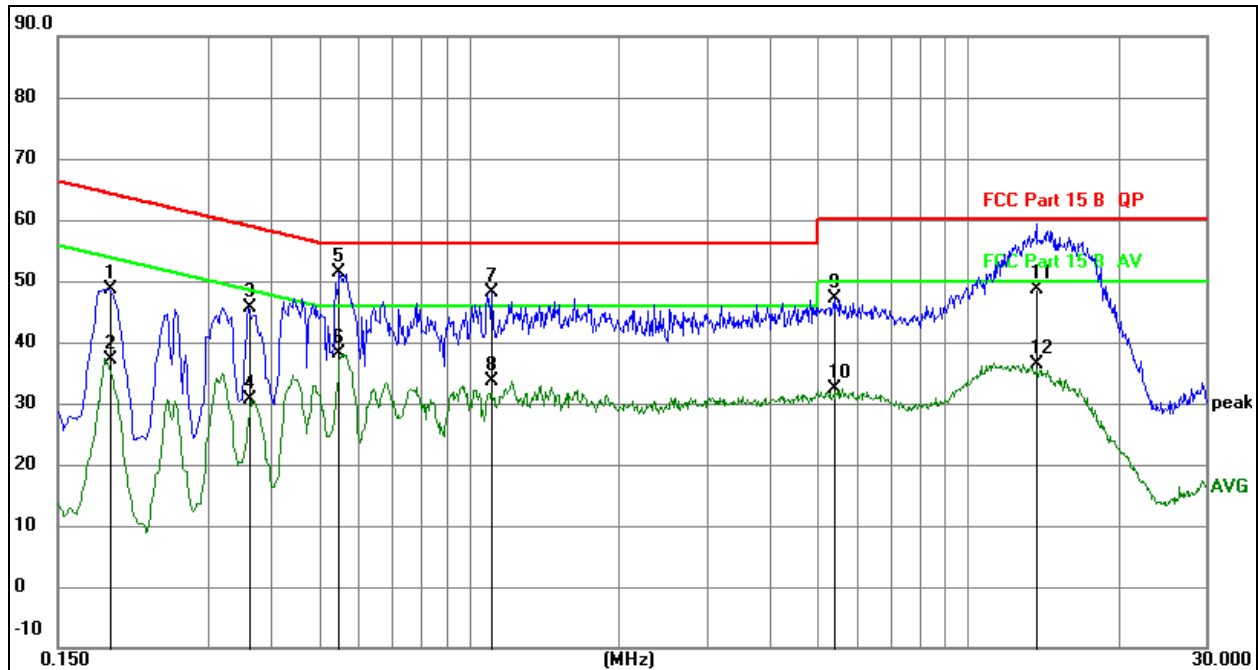


Remark:

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	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1853	34.21	20.07	54.28	64.24	-9.96	QP
2		0.1853	19.92	20.07	39.99	54.24	-14.25	AVG
3	*	0.4539	27.48	20.08	47.56	56.80	-9.24	QP
4		0.4539	13.16	20.08	33.24	46.80	-13.56	AVG
5		1.2422	25.29	20.09	45.38	56.00	-10.62	QP
6		1.2422	8.58	20.09	28.67	46.00	-17.33	AVG
7		3.1231	23.42	20.12	43.54	56.00	-12.46	QP
8		3.1231	6.83	20.12	26.95	46.00	-19.05	AVG
9		6.7333	26.42	20.16	46.58	60.00	-13.42	QP
10		6.7333	8.61	20.16	28.77	50.00	-21.23	AVG
11		14.4340	27.36	20.29	47.65	60.00	-12.35	QP
12		14.4340	16.65	20.29	36.94	50.00	-13.06	AVG

Temperature:	23 °C	Relative Humidity:	53 %
Pressure:	101KPa	Phase :	N
Test Mode:	Mode 4	Test Voltage :	AC 120V/60Hz


Remark:

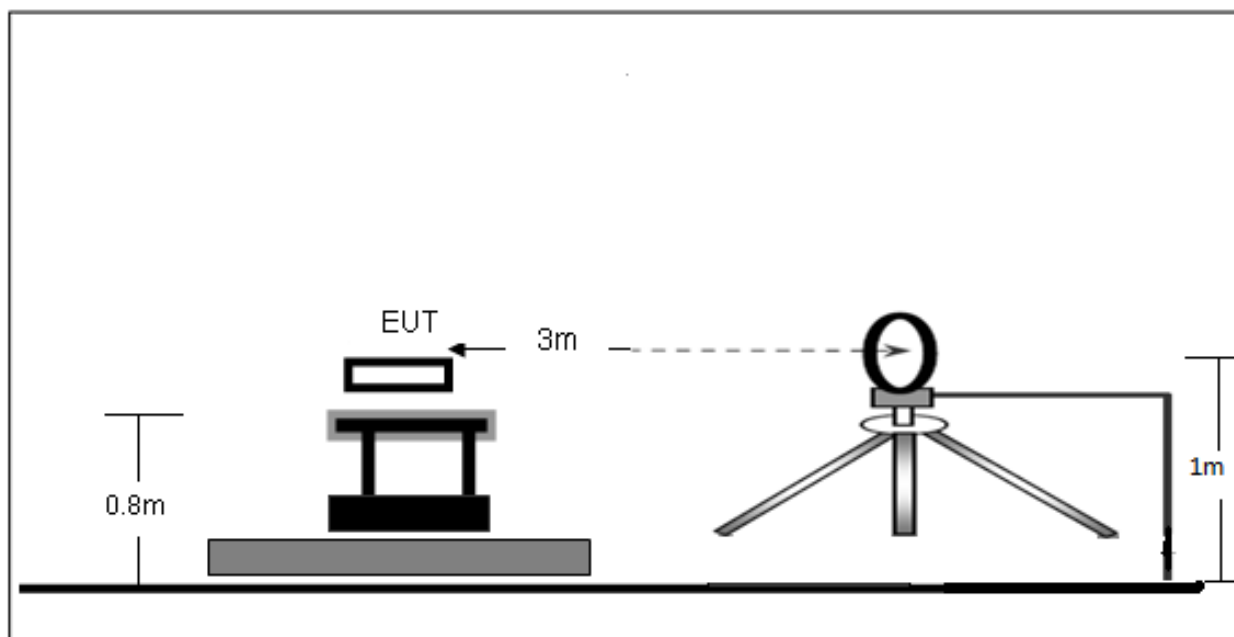
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq. MHz	Reading Level dB	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1904	28.53	20.07	48.60	64.02	-15.42	QP
2		0.1904	17.18	20.07	37.25	54.02	-16.77	AVG
3		0.3615	25.60	20.08	45.68	58.69	-13.01	QP
4		0.3615	10.49	20.08	30.57	48.69	-18.12	AVG
5	*	0.5493	31.31	20.08	51.39	56.00	-4.61	QP
6		0.5493	18.10	20.08	38.18	46.00	-7.82	AVG
7		1.1114	28.07	20.09	48.16	56.00	-7.84	QP
8		1.1114	13.43	20.09	33.52	46.00	-12.48	AVG
9		5.4186	27.04	20.15	47.19	60.00	-12.81	QP
10		5.4186	12.16	20.15	32.31	50.00	-17.69	AVG
11		13.7180	28.25	20.27	48.52	60.00	-11.48	QP
12		13.7180	16.03	20.27	36.30	50.00	-13.70	AVG

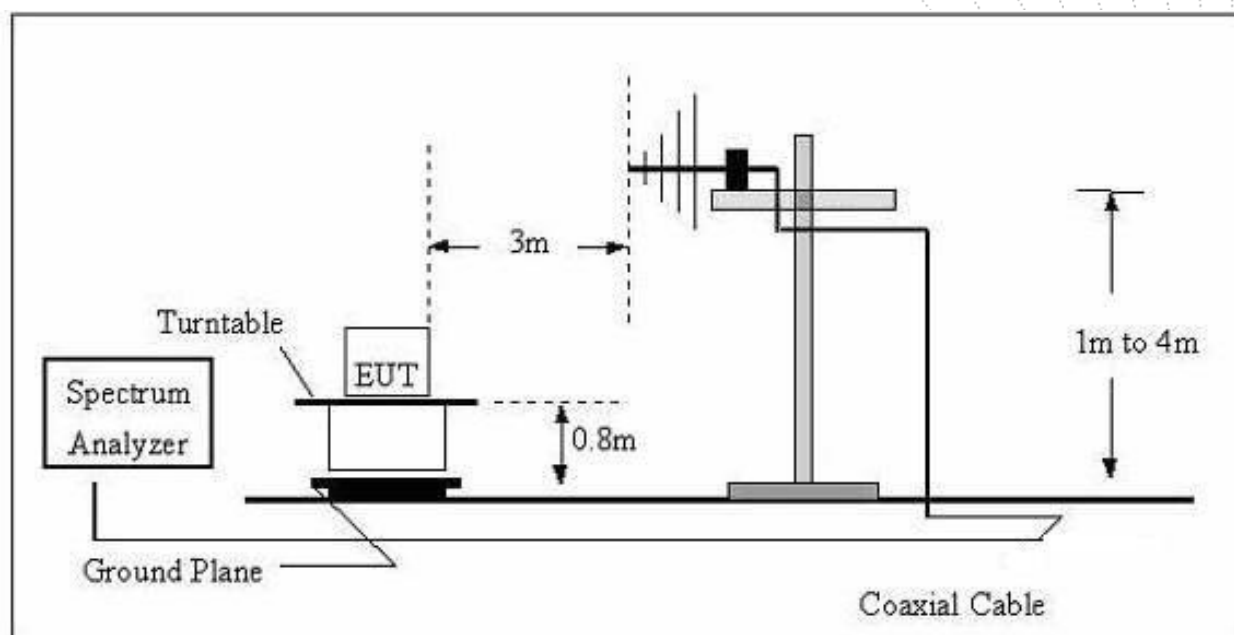
7. Radiated Emissions

7.1 Block Diagram Of Test Setup

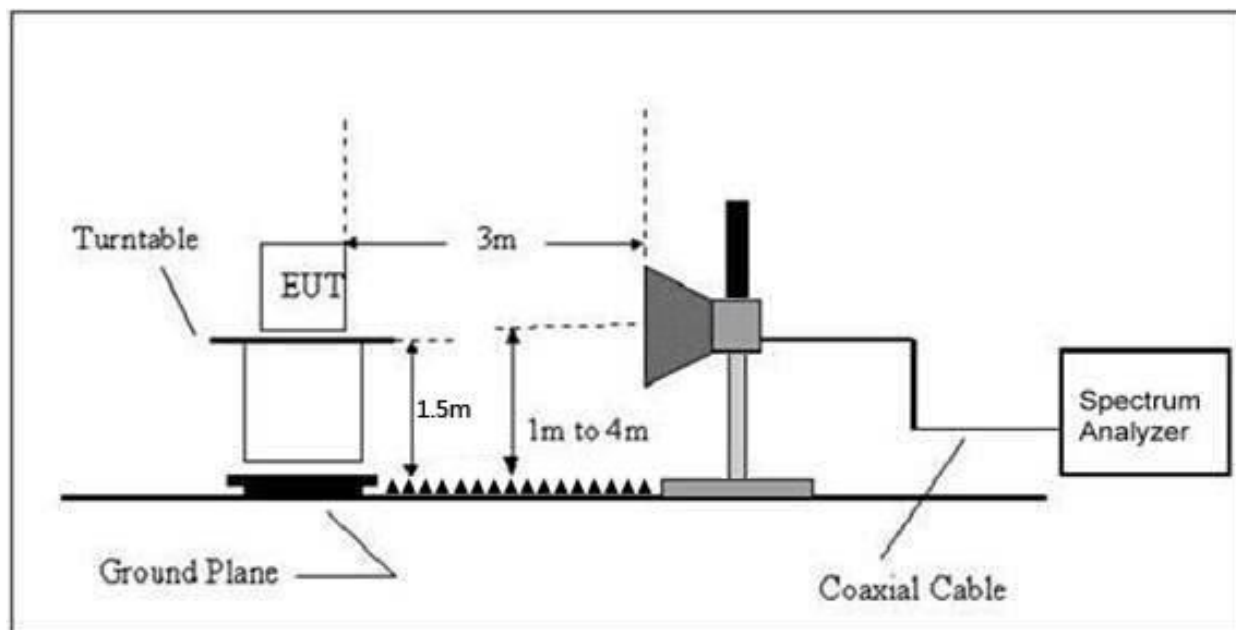
(A) Radiated Emission Test-Up Frequency Below 30MHz



(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

- 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.
- 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.
- 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.
- 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.
- 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.
- 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:	24 °C	Relative Humidity:	51 %
Pressure:	101KPa	Test Voltage:	AC 120V/60Hz
Test Mode:	Mode 4	Polarization :	--

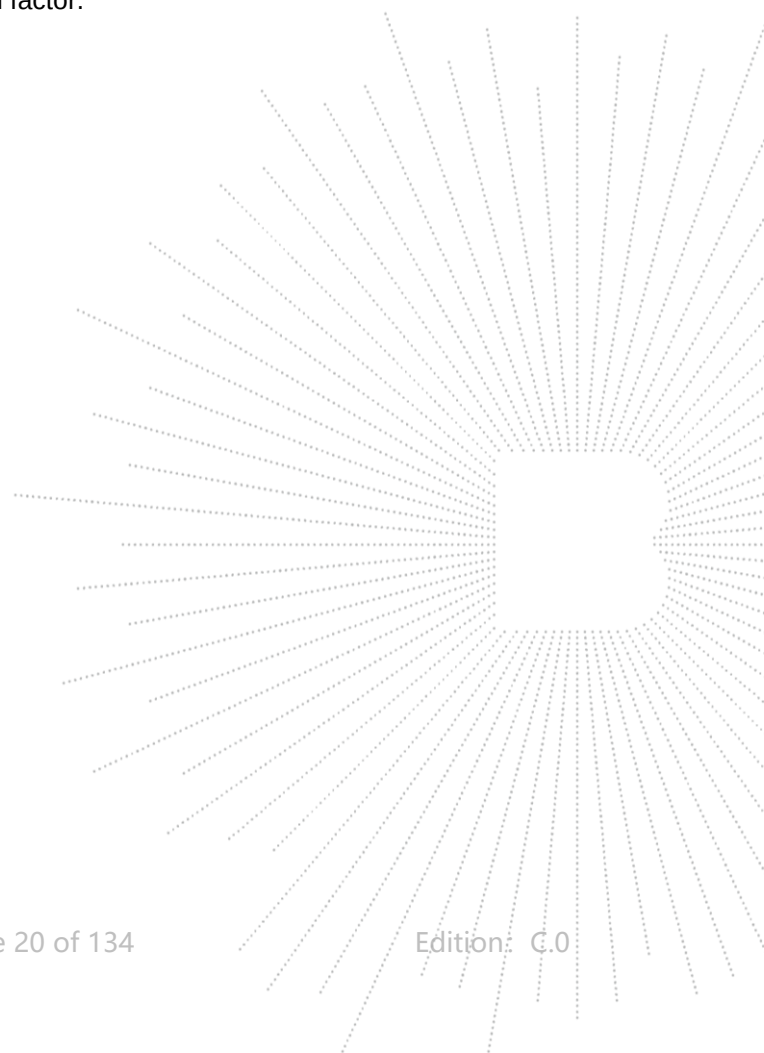
Freq. (MHz)	Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	State P/F
--	--	--	--	PASS
--	--	--	--	PASS

Note:

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

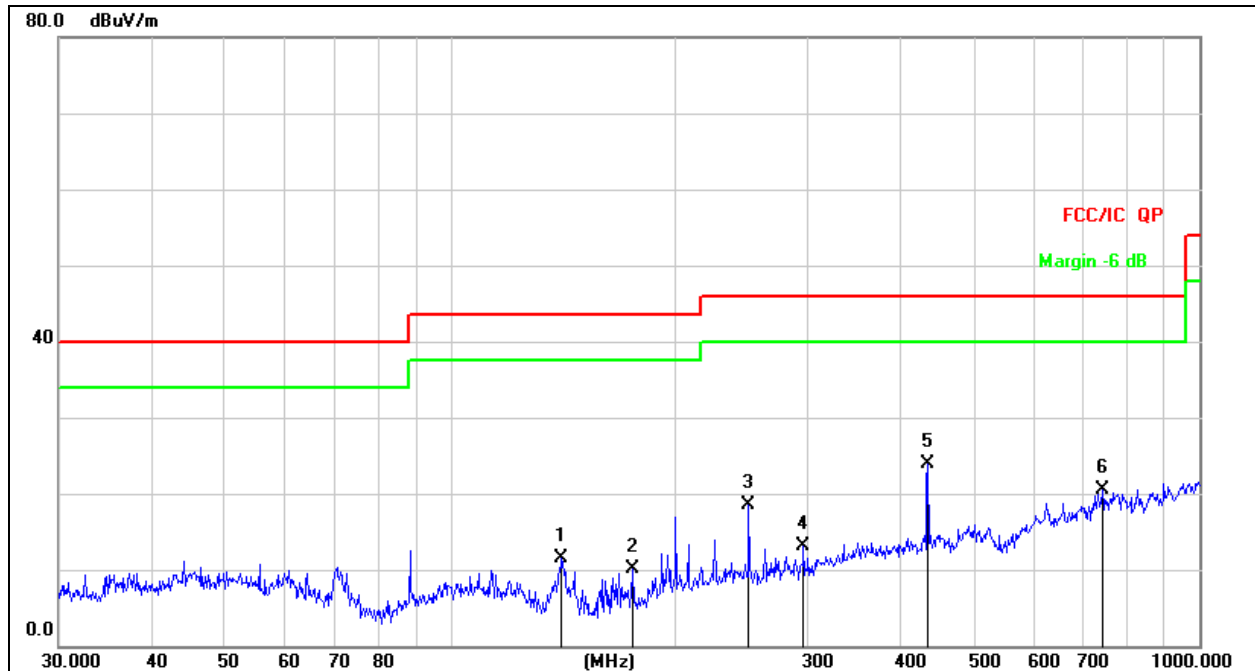
Distance extrapolation factor = $40 \log (\text{specific distance/test distance})$ (dB);

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



Between 30MHz – 1GHz

Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	101KPa	Phase :	Horizontal
Test Mode:	Mode 4	Test Voltage:	AC 120V/60Hz

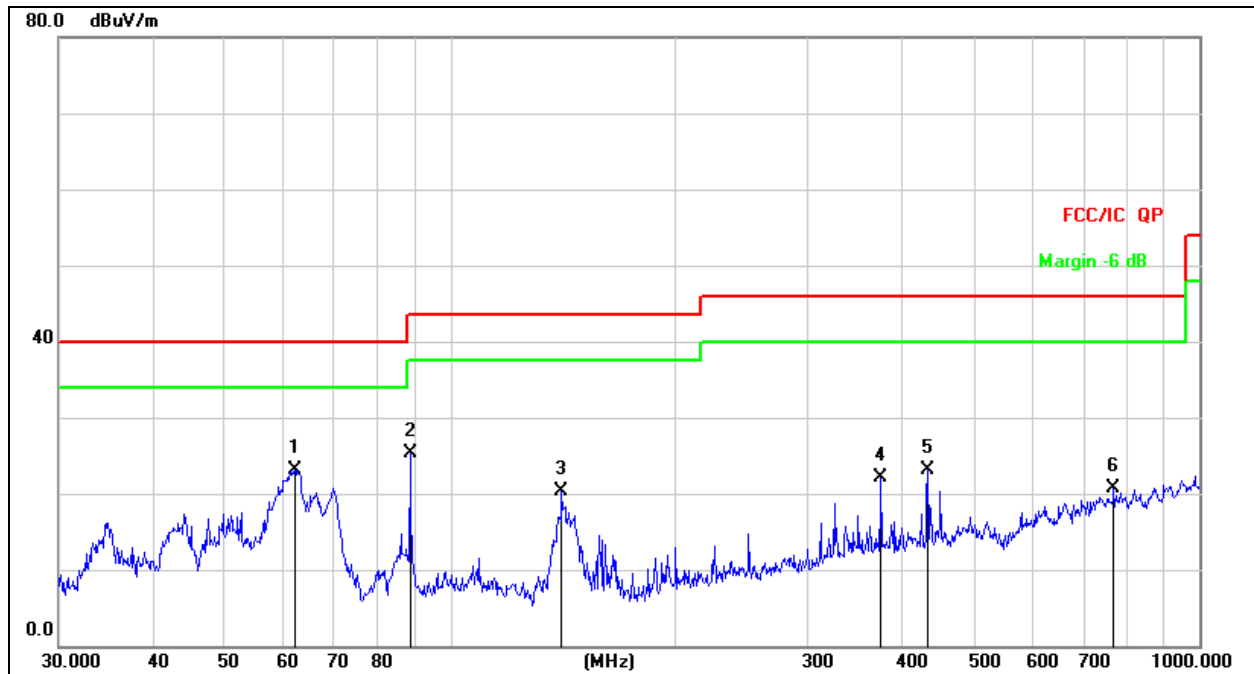


Remark:

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		140.8351	30.23	-18.79	11.44	43.50	-32.06	QP
2		175.0368	27.58	-17.57	10.01	43.50	-33.49	QP
3		250.3012	32.75	-14.28	18.47	46.00	-27.53	QP
4		296.1836	26.46	-13.32	13.14	46.00	-32.86	QP
5	*	434.0651	34.11	-10.17	23.94	46.00	-22.06	QP
6		742.2587	25.57	-5.10	20.47	46.00	-25.53	QP

Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	101KPa	Phase :	Vertical
Test Mode:	Mode 4	Test Voltage:	AC 120V/60Hz



Remark:

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

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1	*	61.9951	38.97	-15.80	23.17	40.00	-16.83	QP
2		88.3421	43.18	-17.79	25.39	43.50	-18.11	QP
3		140.8351	39.15	-18.79	20.36	43.50	-23.14	QP
4		375.9385	33.27	-11.15	22.12	46.00	-23.88	QP
5		434.0651	33.37	-10.17	23.20	46.00	-22.80	QP
6		768.7481	25.41	-4.77	20.64	46.00	-25.36	QP

Between 1GHz – 40GHz

Test Mode:	TX(5.1G) - 802.11a
------------	--------------------

Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5180 MHz)-Above 1G							
Vertical	4434.101	73.02	-20.73	52.29	68.20	-15.91	PK
Vertical	4434.101	59.68	-20.73	38.95	54.00	-15.05	AV
Vertical	10360.180	64.53	-9.36	55.17	68.20	-13.03	PK
Vertical	10360.180	49.33	-9.36	39.97	54.00	-14.03	AV
Vertical	15540.120	62.19	-7.84	54.35	74.00	-19.65	PK
Vertical	15540.120	49.29	-7.84	41.45	54.00	-12.55	AV
Horizontal	4434.115	73.65	-20.73	52.92	68.20	-15.28	PK
Horizontal	4434.115	59.24	-20.73	38.51	54.00	-15.49	AV
Horizontal	10360.155	64.52	-9.36	55.16	68.20	-13.04	PK
Horizontal	10360.155	49.04	-9.36	39.68	54.00	-14.32	AV
Horizontal	15540.122	64.36	-7.84	56.52	74.00	-17.48	PK
Horizontal	15540.122	49.22	-7.84	41.38	54.00	-12.62	AV
Middle Channel (5200 MHz)-Above 1G							
Vertical	4592.039	71.82	-20.42	51.40	74.00	-22.60	PK
Vertical	4592.039	59.08	-20.42	38.66	54.00	-15.34	AV
Vertical	10400.065	62.66	-9.30	53.36	68.20	-14.84	PK
Vertical	10400.065	49.84	-9.30	40.54	54.00	-13.46	AV
Vertical	15600.164	60.14	-7.82	52.32	74.00	-21.68	PK
Vertical	15600.164	49.26	-7.82	41.44	54.00	-12.56	AV
Horizontal	4592.168	74.50	-20.42	54.09	74.00	-19.91	PK
Horizontal	4592.168	59.78	-20.42	39.36	54.00	-14.64	AV
Horizontal	10400.158	61.46	-9.30	52.16	68.20	-16.04	PK
Horizontal	10400.158	49.81	-9.30	40.51	54.00	-13.49	AV
Horizontal	15600.087	61.29	-7.82	53.47	74.00	-20.53	PK
Horizontal	15600.087	49.59	-7.82	41.77	54.00	-12.23	AV
High Channel (5240 MHz)-Above 1G							
Vertical	4739.078	73.79	-20.12	53.67	74.00	-20.33	PK
Vertical	4739.078	59.09	-20.12	38.97	54.00	-15.03	AV
Vertical	10480.086	60.74	-9.18	51.56	68.20	-16.64	PK
Vertical	10480.086	49.87	-9.18	40.69	54.00	-13.31	AV
Vertical	15720.056	64.25	-7.78	56.47	74.00	-17.53	PK
Vertical	15720.056	49.33	-7.78	41.55	54.00	-12.45	AV
Horizontal	4739.076	73.67	-20.12	53.54	74.00	-20.46	PK
Horizontal	4739.076	59.83	-20.12	39.71	54.00	-14.29	AV
Horizontal	10480.104	62.79	-9.18	53.61	68.20	-14.59	PK
Horizontal	10480.104	49.79	-9.18	40.61	54.00	-13.39	AV
Horizontal	15720.086	60.62	-7.78	52.84	74.00	-21.16	PK
Horizontal	15720.086	49.47	-7.78	41.69	54.00	-12.31	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	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5180 MHz)-Above 1G							
Vertical	4434.040	71.15	-20.73	50.42	68.20	-17.78	PK
Vertical	4434.040	59.97	-20.73	39.23	54.00	-14.77	AV
Vertical	10360.160	60.73	-9.36	51.37	68.20	-16.83	PK
Vertical	10360.160	49.70	-9.36	40.34	54.00	-13.66	AV
Vertical	15540.082	60.86	-7.84	53.02	74.00	-20.98	PK
Vertical	15540.082	49.25	-7.84	41.41	54.00	-12.59	AV
Horizontal	4434.151	72.36	-20.73	51.62	68.20	-16.58	PK
Horizontal	4434.151	59.67	-20.73	38.94	54.00	-15.06	AV
Horizontal	10360.118	63.54	-9.36	54.18	68.20	-14.02	PK
Horizontal	10360.118	49.19	-9.36	39.83	54.00	-14.17	AV
Horizontal	15540.016	62.83	-7.84	54.99	74.00	-19.01	PK
Horizontal	15540.016	49.69	-7.84	41.85	54.00	-12.15	AV
Middle Channel (5200 MHz)-Above 1G							
Vertical	4592.136	71.04	-20.42	50.62	74.00	-23.38	PK
Vertical	4592.136	59.53	-20.42	39.12	54.00	-14.88	AV
Vertical	10400.184	63.14	-9.30	53.84	68.20	-14.36	PK
Vertical	10400.184	49.05	-9.30	39.75	54.00	-14.25	AV
Vertical	15600.067	64.09	-7.82	56.27	74.00	-17.73	PK
Vertical	15600.067	49.02	-7.82	41.20	54.00	-12.80	AV
Horizontal	4592.041	72.65	-20.42	52.23	74.00	-21.77	PK
Horizontal	4592.041	59.11	-20.42	38.70	54.00	-15.30	AV
Horizontal	10400.187	62.72	-9.30	53.42	68.20	-14.78	PK
Horizontal	10400.187	49.23	-9.30	39.93	54.00	-14.07	AV
Horizontal	15600.101	60.92	-7.82	53.10	74.00	-20.90	PK
Horizontal	15600.101	49.40	-7.82	41.58	54.00	-12.42	AV
High Channel (5240 MHz)-Above 1G							
Vertical	4739.195	71.63	-20.12	51.51	74.00	-22.49	PK
Vertical	4739.195	59.12	-20.12	39.00	54.00	-15.00	AV
Vertical	10480.080	63.98	-9.18	54.80	68.20	-13.40	PK
Vertical	10480.080	49.94	-9.18	40.76	54.00	-13.24	AV
Vertical	15720.167	63.71	-7.78	55.93	74.00	-18.07	PK
Vertical	15720.167	49.87	-7.78	42.09	54.00	-11.91	AV
Horizontal	4739.018	73.85	-20.12	53.73	74.00	-20.27	PK
Horizontal	4739.018	59.60	-20.12	39.47	54.00	-14.53	AV
Horizontal	10480.096	61.36	-9.18	52.18	68.20	-16.02	PK
Horizontal	10480.096	49.90	-9.18	40.72	54.00	-13.28	AV
Horizontal	15720.013	63.75	-7.78	55.97	74.00	-18.03	PK
Horizontal	15720.013	49.17	-7.78	41.39	54.00	-12.61	AV

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

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

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

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

Test Mode:	TX(5.1G) - 802.11n-HT40
------------	-------------------------

Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5190 MHz)-Above 1G							
Vertical	4434.179	71.18	-20.73	50.45	68.20	-17.75	PK
Vertical	4434.179	59.75	-20.73	39.02	54.00	-14.98	AV
Vertical	10380.186	62.05	-9.33	52.72	68.20	-15.48	PK
Vertical	10380.186	49.47	-9.33	40.14	54.00	-13.86	AV
Vertical	15570.150	63.29	-7.83	55.46	74.00	-18.54	PK
Vertical	15570.150	49.21	-7.83	41.38	54.00	-12.62	AV
Horizontal	4434.125	70.49	-20.73	49.76	74.00	-24.24	PK
Horizontal	4434.125	59.31	-20.73	38.58	54.00	-15.42	AV
Horizontal	10380.049	62.66	-9.33	53.33	68.20	-14.87	PK
Horizontal	10380.049	49.53	-9.33	40.20	54.00	-13.80	AV
Horizontal	15570.196	61.79	-7.83	53.96	74.00	-20.04	PK
Horizontal	15570.196	49.88	-7.83	42.05	54.00	-11.95	AV
Middle Channel (5230 MHz)-Above 1G							
Vertical	4739.018	70.40	-20.12	50.28	68.20	-17.92	PK
Vertical	4739.018	59.16	-20.12	39.04	54.00	-14.96	AV
Vertical	10460.158	62.77	-9.21	53.56	68.20	-14.64	PK
Vertical	10460.158	49.31	-9.21	40.10	54.00	-13.90	AV
Vertical	15690.114	63.01	-7.79	55.22	74.00	-18.78	PK
Vertical	15690.114	49.58	-7.79	41.79	54.00	-12.21	AV
Horizontal	4739.084	71.08	-20.12	50.96	68.20	-17.24	PK
Horizontal	4739.084	59.67	-20.12	39.55	54.00	-14.45	AV
Horizontal	10460.072	60.05	-9.21	50.84	68.20	-17.36	PK
Horizontal	10460.072	49.14	-9.21	39.93	54.00	-14.07	AV
Horizontal	15690.119	63.36	-7.79	55.57	74.00	-18.43	PK
Horizontal	15690.119	49.38	-7.79	41.59	54.00	-12.41	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.

Test Mode:	TX(5.1G) - 802.11ac-HT20
------------	--------------------------

Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5180 MHz)-Above 1G							
Vertical	4434.040	72.40	-20.73	51.66	68.20	-16.54	PK
Vertical	4434.040	59.63	-20.73	38.90	54.00	-15.10	AV
Vertical	10360.195	62.58	-9.36	53.22	68.20	-14.98	PK
Vertical	10360.195	49.54	-9.36	40.18	54.00	-13.82	AV
Vertical	15540.004	62.05	-7.84	54.21	74.00	-19.79	PK
Vertical	15540.004	49.87	-7.84	42.03	54.00	-11.97	AV
Horizontal	4434.184	70.67	-20.73	49.93	68.20	-18.27	PK
Horizontal	4434.184	59.28	-20.73	38.55	54.00	-15.45	AV
Horizontal	10360.127	64.15	-9.36	54.79	68.20	-13.41	PK
Horizontal	10360.127	49.74	-9.36	40.38	54.00	-13.62	AV
Horizontal	15540.149	64.15	-7.84	56.31	74.00	-17.69	PK
Horizontal	15540.149	49.69	-7.84	41.85	54.00	-12.15	AV
Middle Channel (5200 MHz)-Above 1G							
Vertical	4592.040	72.33	-20.42	51.92	74.00	-22.08	PK
Vertical	4592.040	59.07	-20.42	38.65	54.00	-15.35	AV
Vertical	10400.189	62.44	-9.30	53.14	68.20	-15.06	PK
Vertical	10400.189	49.01	-9.30	39.71	54.00	-14.29	AV
Vertical	15600.018	63.99	-7.82	56.17	74.00	-17.83	PK
Vertical	15600.018	49.25	-7.82	41.43	54.00	-12.57	AV
Horizontal	4592.024	75.00	-20.42	54.58	74.00	-19.42	PK
Horizontal	4592.024	59.37	-20.42	38.96	54.00	-15.04	AV
Horizontal	10400.150	61.11	-9.30	51.81	68.20	-16.39	PK
Horizontal	10400.150	49.48	-9.30	40.18	54.00	-13.82	AV
Horizontal	15600.014	60.95	-7.82	53.13	74.00	-20.87	PK
Horizontal	15600.014	49.07	-7.82	41.25	54.00	-12.75	AV
High Channel (5240 MHz)-Above 1G							
Vertical	4739.083	71.54	-20.12	51.42	74.00	-22.58	PK
Vertical	4739.083	59.19	-20.12	39.07	54.00	-14.93	AV
Vertical	10480.128	64.77	-9.18	55.59	68.20	-12.61	PK
Vertical	10480.128	49.66	-9.18	40.48	54.00	-13.52	AV
Vertical	15720.094	60.46	-7.78	52.68	74.00	-21.32	PK
Vertical	15720.094	49.19	-7.78	41.41	54.00	-12.59	AV
Horizontal	4739.087	73.53	-20.12	53.41	74.00	-20.59	PK
Horizontal	4739.087	59.02	-20.12	38.90	54.00	-15.10	AV
Horizontal	10480.114	63.61	-9.18	54.43	68.20	-13.77	PK
Horizontal	10480.114	49.36	-9.18	40.18	54.00	-13.82	AV
Horizontal	15720.180	60.64	-7.78	52.86	74.00	-21.14	PK
Horizontal	15720.180	49.95	-7.78	42.17	54.00	-11.83	AV

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

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

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

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

Test Mode:	TX(5.1G) - 802.11ac-HT40
------------	--------------------------

Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5190 MHz)-Above 1G							
Vertical	4434.001	70.62	-20.73	49.88	68.20	-18.32	PK
Vertical	4434.001	59.33	-20.73	38.60	54.00	-15.40	AV
Vertical	10380.048	63.65	-9.33	54.32	68.20	-13.88	PK
Vertical	10380.048	49.77	-9.33	40.44	54.00	-13.56	AV
Vertical	15570.015	61.83	-7.83	54.00	74.00	-20.00	PK
Vertical	15570.015	49.32	-7.83	41.49	54.00	-12.51	AV
Horizontal	4434.175	74.13	-20.73	53.40	74.00	-20.60	PK
Horizontal	4434.175	59.31	-20.73	38.57	54.00	-15.43	AV
Horizontal	10380.169	64.79	-9.33	55.46	68.20	-12.74	PK
Horizontal	10380.169	49.41	-9.33	40.08	54.00	-13.92	AV
Horizontal	15570.080	60.75	-7.83	52.92	74.00	-21.08	PK
Horizontal	15570.080	49.47	-7.83	41.64	54.00	-12.36	AV
Middle Channel (5230 MHz)-Above 1G							
Vertical	4739.093	71.41	-20.12	51.29	68.20	-16.91	PK
Vertical	4739.093	59.19	-20.12	39.07	54.00	-14.93	AV
Vertical	10460.074	60.45	-9.21	51.24	68.20	-16.96	PK
Vertical	10460.074	49.13	-9.21	39.92	54.00	-14.08	AV
Vertical	15690.189	62.06	-7.79	54.27	74.00	-19.73	PK
Vertical	15690.189	49.17	-7.79	41.38	54.00	-12.62	AV
Horizontal	4739.014	73.49	-20.12	53.37	68.20	-14.83	PK
Horizontal	4739.014	59.98	-20.12	39.86	54.00	-14.14	AV
Horizontal	10460.011	64.59	-9.21	55.38	68.20	-12.82	PK
Horizontal	10460.011	49.52	-9.21	40.31	54.00	-13.69	AV
Horizontal	15690.142	62.24	-7.79	54.45	74.00	-19.55	PK
Horizontal	15690.142	49.80	-7.79	42.01	54.00	-11.99	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(5.1G) - 802.11ac 80
------------	------------------------

Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5210 MHz)-Above 1G							
Vertical	4434.149	71.85	-20.73	51.12	68.20	-17.08	PK
Vertical	4434.149	59.63	-20.73	38.90	54.00	-15.10	AV
Vertical	10420.044	63.97	-9.27	54.70	68.20	-13.50	PK
Vertical	10420.044	49.23	-9.27	39.96	54.00	-14.04	AV
Vertical	15630.054	64.49	-7.81	56.68	74.00	-17.32	PK
Vertical	15630.054	49.14	-7.81	41.33	54.00	-12.67	AV
Horizontal	4434.030	72.59	-20.73	51.86	68.20	-16.34	PK
Horizontal	4434.030	59.39	-20.73	38.66	54.00	-15.34	AV
Horizontal	10420.169	42.57	9.27	51.84	68.20	-16.36	PK
Horizontal	10420.169	29.54	9.27	38.81	54.00	-15.19	AV
Horizontal	15630.117	62.03	-7.81	54.22	74.00	-19.78	PK
Horizontal	15630.117	49.85	-7.81	42.04	54.00	-11.96	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	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5745 MHz)-Above 1G							
Vertical	4679.156	70.61	-20.24	50.37	74.00	-23.63	PK
Vertical	4679.156	59.72	-20.24	39.48	54.00	-14.52	AV
Vertical	11490.101	64.83	-8.79	56.04	68.20	-12.16	PK
Vertical	11490.101	49.80	-8.79	41.01	54.00	-12.99	AV
Vertical	17235.128	55.29	-3.18	52.11	68.20	-16.09	PK
Vertical	17235.128	44.88	-3.18	41.70	54.00	-12.30	AV
Horizontal	4679.056	72.73	-20.73	52.00	74.00	-22.00	PK
Horizontal	4679.056	59.77	-20.73	39.04	54.00	-14.96	AV
Horizontal	11490.037	60.89	-8.79	52.10	68.20	-16.10	PK
Horizontal	11490.037	49.21	-8.79	40.42	54.00	-13.58	AV
Horizontal	17235.105	57.83	-3.18	54.65	68.20	-13.55	PK
Horizontal	17235.105	44.18	-3.18	41.00	54.00	-13.00	AV
Middle Channel (5785 MHz)-Above 1G							
Vertical	4592.042	73.85	-20.42	53.44	74.00	-20.56	PK
Vertical	4592.042	59.92	-20.42	39.51	54.00	-14.49	AV
Vertical	11570.155	64.96	-8.86	56.10	68.20	-12.10	PK
Vertical	11570.155	49.14	-8.86	40.28	54.00	-13.72	AV
Vertical	17355.022	56.73	-2.52	54.21	68.20	-13.99	PK
Vertical	17355.022	44.95	-2.52	42.43	54.00	-11.57	AV
Horizontal	4592.160	72.75	-20.42	52.34	74.00	-21.66	PK
Horizontal	4592.160	59.78	-20.42	39.36	54.00	-14.64	AV
Horizontal	11570.133	62.80	-8.86	53.94	68.20	-14.26	PK
Horizontal	11570.133	49.93	-8.86	41.07	54.00	-12.93	AV
Horizontal	17355.153	59.17	-2.52	56.65	68.20	-11.55	PK
Horizontal	17355.153	44.08	-2.52	41.56	54.00	-12.44	AV
High Channel (5825 MHz)-Above 1G							
Vertical	6039.028	71.42	-18.93	52.48	68.20	-15.72	PK
Vertical	6039.028	59.74	-18.93	40.81	54.00	-13.19	AV
Vertical	11650.007	62.84	-8.92	53.92	74.00	-20.08	PK
Vertical	11650.007	49.16	-8.92	40.24	54.00	-13.76	AV
Vertical	17475.029	55.37	-1.86	53.51	68.20	-14.69	PK
Vertical	17475.029	44.91	-1.86	43.05	54.00	-10.95	AV
Horizontal	6039.136	71.09	-18.93	52.16	68.20	-16.04	PK
Horizontal	6039.136	59.75	-18.93	40.82	54.00	-13.18	AV
Horizontal	11650.042	60.04	-8.92	51.12	74.00	-22.88	PK
Horizontal	11650.042	49.06	-8.92	40.14	54.00	-13.86	AV
Horizontal	17475.049	57.29	-1.86	55.43	68.20	-12.77	PK
Horizontal	17475.049	44.59	-1.86	42.73	54.00	-11.27	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-HT20

Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5745 MHz)-Above 1G							
Vertical	4679.106	74.64	-20.24	54.40	74.00	-19.60	PK
Vertical	4679.106	59.64	-20.24	39.40	54.00	-14.60	AV
Vertical	11490.004	62.28	-8.79	53.49	68.20	-14.71	PK
Vertical	11490.004	49.12	-8.79	40.33	54.00	-13.67	AV
Vertical	17235.151	56.44	-3.18	53.26	68.20	-14.94	PK
Vertical	17235.151	44.27	-3.18	41.09	54.00	-12.91	AV
Horizontal	4679.189	71.93	-20.24	51.68	74.00	-22.32	PK
Horizontal	4679.189	59.12	-20.24	38.88	54.00	-15.12	AV
Horizontal	11490.114	62.98	-8.79	54.19	68.20	-14.01	PK
Horizontal	11490.114	49.63	-8.79	40.84	54.00	-13.16	AV
Horizontal	17235.004	59.78	-3.18	56.60	68.20	-11.60	PK
Horizontal	17235.004	44.54	-3.18	41.36	54.00	-12.64	AV
Middle Channel (5785 MHz)-Above 1G							
Vertical	4592.186	70.48	-20.42	50.06	74.00	-23.94	PK
Vertical	4592.186	59.64	-20.42	39.23	54.00	-14.77	AV
Vertical	11570.075	60.87	-8.86	52.01	68.20	-16.19	PK
Vertical	11570.075	49.92	-8.86	41.06	54.00	-12.94	AV
Vertical	17355.142	56.88	-2.52	54.36	68.20	-13.84	PK
Vertical	17355.142	44.64	-2.52	42.12	54.00	-11.88	AV
Horizontal	4592.005	73.01	-20.42	52.59	74.00	-21.41	PK
Horizontal	4592.005	59.75	-20.42	39.34	54.00	-14.66	AV
Horizontal	11570.129	60.47	-8.86	51.61	68.20	-16.59	PK
Horizontal	11570.129	49.12	-8.86	40.26	54.00	-13.74	AV
Horizontal	17355.104	57.14	-2.52	54.62	68.20	-13.58	PK
Horizontal	17355.104	44.01	-2.52	41.49	54.00	-12.51	AV
High Channel (5825 MHz)-Above 1G							
Vertical	6039.100	71.94	-18.93	53.00	68.20	-15.20	PK
Vertical	6039.100	59.04	-18.93	40.11	54.00	-13.89	AV
Vertical	11650.096	63.88	-8.92	54.96	74.00	-19.04	PK
Vertical	11650.096	49.34	-8.92	40.42	54.00	-13.58	AV
Vertical	17475.189	56.75	-1.86	54.89	68.20	-13.31	PK
Vertical	17475.189	44.41	-1.86	42.55	54.00	-11.45	AV
Horizontal	6039.122	72.52	-18.93	53.59	68.20	-14.61	PK
Horizontal	6039.122	59.62	-18.93	40.69	54.00	-13.31	AV
Horizontal	11650.081	61.27	-8.92	52.35	74.00	-21.65	PK
Horizontal	11650.081	49.78	-8.92	40.86	54.00	-13.14	AV
Horizontal	17475.105	58.52	-1.86	56.66	68.20	-11.54	PK
Horizontal	17475.105	44.88	-1.86	43.02	54.00	-10.98	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 (5.8G) -- 802.11n-HT40
------------	---------------------------

Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5755 MHz)-Above 1G							
Vertical	4679.123	74.07	-20.24	53.83	74.00	-20.17	PK
Vertical	4679.123	59.29	-20.24	39.04	54.00	-14.96	AV
Vertical	11510.161	64.04	-8.81	55.23	74.00	-18.77	PK
Vertical	11510.161	49.73	-8.81	40.92	54.00	-13.08	AV
Vertical	17265.065	57.42	-3.01	54.41	68.20	-13.79	PK
Vertical	17265.065	44.91	-3.01	41.90	54.00	-12.10	AV
Horizontal	4679.124	74.20	-20.24	53.95	74.00	-20.05	PK
Horizontal	4679.124	59.92	-20.24	39.68	54.00	-14.32	AV
Horizontal	11510.197	61.19	-8.81	52.38	74.00	-21.62	PK
Horizontal	11510.197	49.58	-8.81	40.77	54.00	-13.23	AV
Horizontal	17265.054	57.63	-3.01	54.62	68.20	-13.58	PK
Horizontal	17265.054	44.16	-3.01	41.15	54.00	-12.85	AV
Middle Channel (5795 MHz)-Above 1G							
Vertical	6039.014	70.11	-18.93	51.18	68.20	-17.02	PK
Vertical	6039.014	59.20	-18.93	40.27	54.00	-13.73	AV
Vertical	11590.139	61.69	-8.87	52.82	74.00	-21.18	PK
Vertical	11590.139	49.26	-8.87	40.39	54.00	-13.61	AV
Vertical	17385.159	57.12	-2.35	54.77	68.20	-13.43	PK
Vertical	17385.159	44.01	-2.35	41.66	54.00	-12.34	AV
Horizontal	6039.061	71.46	-18.93	52.53	68.20	-15.67	PK
Horizontal	6039.061	59.27	-18.93	40.34	54.00	-13.66	AV
Horizontal	11590.031	61.20	-8.87	52.33	74.00	-21.67	PK
Horizontal	11590.031	49.31	-8.87	40.44	54.00	-13.56	AV
Horizontal	17385.140	55.27	-2.35	52.92	68.20	-15.28	PK
Horizontal	17385.140	44.73	-2.35	42.38	54.00	-11.62	AV

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

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

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

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

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

Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5745 MHz)-Above 1G							
Vertical	4679.186	72.16	-20.24	51.92	74.00	-22.08	PK
Vertical	4679.186	59.23	-20.24	38.99	54.00	-15.01	AV
Vertical	11490.106	64.14	-8.79	55.35	68.20	-12.85	PK
Vertical	11490.106	49.94	-8.79	41.15	54.00	-12.85	AV
Vertical	17235.112	59.88	-3.18	56.70	68.20	-11.50	PK
Vertical	17235.112	44.41	-3.18	41.23	54.00	-12.77	AV
Horizontal	4679.109	74.67	-20.24	54.43	74.00	-19.57	PK
Horizontal	4679.109	59.17	-20.24	38.92	54.00	-15.08	AV
Horizontal	11490.172	64.89	-8.79	56.10	68.20	-12.10	PK
Horizontal	11490.172	49.29	-8.79	40.50	54.00	-13.50	AV
Horizontal	17235.017	59.47	-3.18	56.29	68.20	-11.91	PK
Horizontal	17235.017	44.34	-3.18	41.16	54.00	-12.84	AV
Middle Channel (5785 MHz)-Above 1G							
Vertical	4592.052	70.06	-20.42	49.64	74.00	-24.36	PK
Vertical	4592.052	59.91	-20.42	39.49	54.00	-14.51	AV
Vertical	11570.098	60.41	-8.86	51.55	68.20	-16.65	PK
Vertical	11570.098	49.45	-8.86	40.59	54.00	-13.41	AV
Vertical	17355.132	58.39	-2.52	55.87	68.20	-12.33	PK
Vertical	17355.132	44.93	-2.52	42.41	54.00	-11.59	AV
Horizontal	4592.081	71.12	-20.42	50.71	74.00	-23.29	PK
Horizontal	4592.081	59.97	-20.42	39.56	54.00	-14.44	AV
Horizontal	11570.070	62.04	-8.86	53.18	68.20	-15.02	PK
Horizontal	11570.070	49.37	-8.86	40.51	54.00	-13.49	AV
Horizontal	17355.152	57.48	-2.52	54.96	68.20	-13.24	PK
Horizontal	17355.152	44.37	-2.52	41.85	54.00	-12.15	AV
High Channel (5825 MHz)-Above 1G							
Vertical	6039.172	70.43	-18.93	51.50	68.20	-16.70	PK
Vertical	6039.172	59.44	-18.93	40.51	54.00	-13.49	AV
Vertical	11650.112	60.29	-8.92	51.37	74.00	-22.63	PK
Vertical	11650.112	49.69	-8.92	40.77	54.00	-13.23	AV
Vertical	17475.099	57.02	-1.86	55.16	68.20	-13.04	PK
Vertical	17475.099	44.69	-1.86	42.83	54.00	-11.17	AV
Horizontal	6039.180	73.31	-18.93	54.38	68.20	-13.82	PK
Horizontal	6039.180	59.26	-18.93	40.33	54.00	-13.67	AV
Horizontal	11650.188	61.94	-8.92	53.02	74.00	-20.98	PK
Horizontal	11650.188	49.40	-8.92	40.48	54.00	-13.52	AV
Horizontal	17475.090	56.90	-1.86	55.04	68.20	-13.16	PK
Horizontal	17475.090	44.36	-1.86	42.50	54.00	-11.50	AV

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

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

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

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

Test Mode :	TX (5.8G) -- 802.11ac-HT40
-------------	----------------------------

Polar (H/V)	Frequency (MHz)	Reading Level (dBuV/m)	Correct Factor (dB)	Measure- ment (dBuV/m)	Limits (dBuV/m)	Over (dB)	Detector Type
Low Channel (5755 MHz)-Above 1G							
Vertical	4679.178	74.54	-20.24	54.29	74.00	-19.71	PK
Vertical	4679.178	59.45	-20.24	39.21	54.00	-14.79	AV
Vertical	11510.113	62.16	-8.81	53.35	74.00	-20.65	PK
Vertical	11510.113	49.08	-8.81	40.27	54.00	-13.73	AV
Vertical	17265.014	57.56	-3.01	54.55	68.20	-13.65	PK
Vertical	17265.014	44.89	-3.01	41.88	54.00	-12.12	AV
Horizontal	4679.108	73.00	-20.24	52.75	74.00	-21.25	PK
Horizontal	4679.108	59.19	-20.24	38.95	54.00	-15.05	AV
Horizontal	11510.103	64.24	-8.81	55.43	74.00	-18.57	PK
Horizontal	11510.103	49.76	-8.81	40.95	54.00	-13.05	AV
Horizontal	17265.087	57.86	-3.01	54.85	68.20	-13.35	PK
Horizontal	17265.087	44.24	-3.01	41.23	54.00	-12.77	AV
Middle Channel (5795 MHz)-Above 1G							
Vertical	6039.130	71.00	-18.93	52.06	68.20	-16.14	PK
Vertical	6039.130	59.32	-18.93	40.39	54.00	-13.61	AV
Vertical	11590.076	64.51	-8.87	55.64	74.00	-18.36	PK
Vertical	11590.076	49.52	-8.87	40.65	54.00	-13.35	AV
Vertical	17385.157	56.98	-2.35	54.63	68.20	-13.57	PK
Vertical	17385.157	44.20	-2.35	41.85	54.00	-12.15	AV
Horizontal	6039.162	70.15	-18.93	51.22	68.20	-16.98	PK
Horizontal	6039.162	59.97	-18.93	41.04	54.00	-12.96	AV
Horizontal	11590.182	63.94	-8.87	55.07	74.00	-18.93	PK
Horizontal	11590.182	49.87	-8.87	41.00	54.00	-13.00	AV
Horizontal	17385.021	56.04	-2.35	53.69	68.20	-14.51	PK
Horizontal	17385.021	44.56	-2.35	42.21	54.00	-11.79	AV

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

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

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

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

Test Mode :	TX (5.8G) -- 802.11ac 80
-------------	--------------------------

Polar (H/V)	Frequency (MHz)	Reading Level (dBuV/m)	Correct Factor (dB)	Measure- ment (dBuV/m)	Limits (dBuV/m)	Over (dB)	Detector Type
Low Channel (5775 MHz)-Above 1G							
Vertical	4679.010	73.72	-20.24	53.47	74.00	-20.53	PK
Vertical	4679.010	59.29	-20.24	39.05	54.00	-14.95	AV
Vertical	11550.102	64.21	-8.84	55.37	74.00	-18.63	PK
Vertical	11550.102	49.95	-8.84	41.11	54.00	-12.89	AV
Vertical	17325.198	55.40	-2.68	52.72	68.20	-15.48	PK
Vertical	17325.198	44.76	-2.68	42.08	54.00	-11.92	AV
Horizontal	4679.094	73.36	-20.24	53.12	74.00	-20.88	PK
Horizontal	4679.094	59.11	-20.24	38.86	54.00	-15.14	AV
Horizontal	11550.111	64.99	-8.84	56.15	74.00	-17.85	PK
Horizontal	11550.111	49.02	-8.84	40.18	54.00	-13.82	AV
Horizontal	17325.003	56.67	-2.68	53.99	68.20	-14.21	PK
Horizontal	17325.003	44.31	-2.68	41.63	54.00	-12.37	AV

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

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

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

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

8. Power Spectral Density Test

8.1 Block Diagram Of Test Setup



8.2 Limit

For the band 5.15-5.25 GHz,

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

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

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

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

For the band 5.725-5.85 GHz

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

8.3 Test Procedure

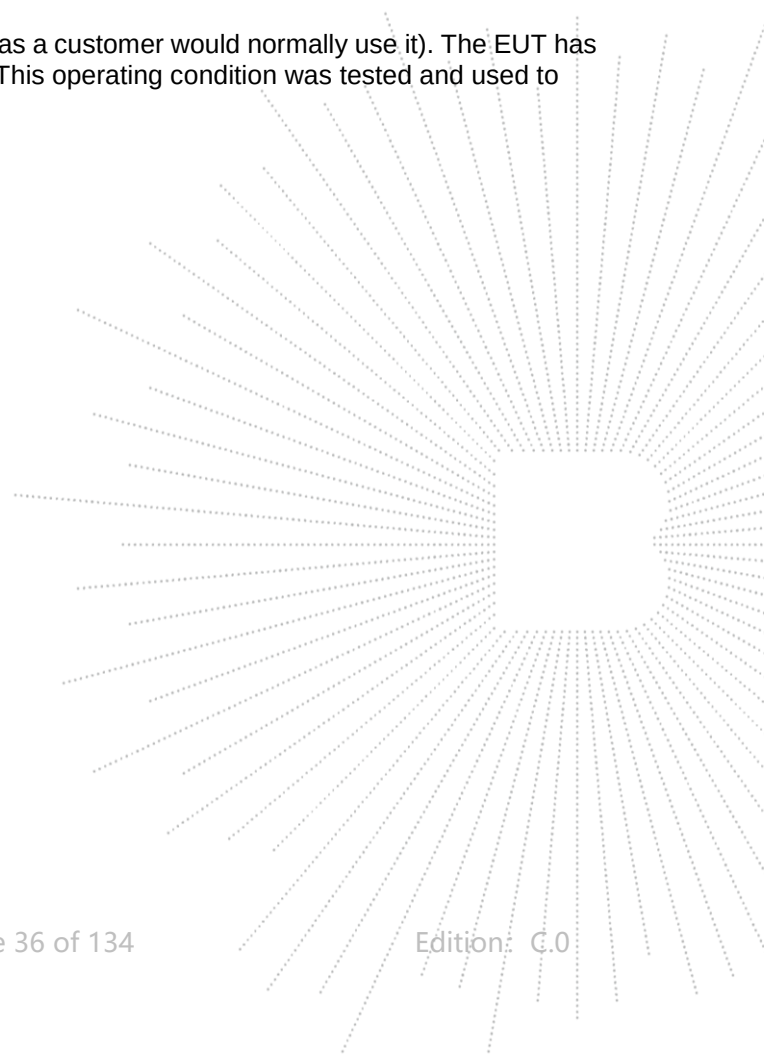
For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of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

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

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

8.4 EUT Operating Conditions

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



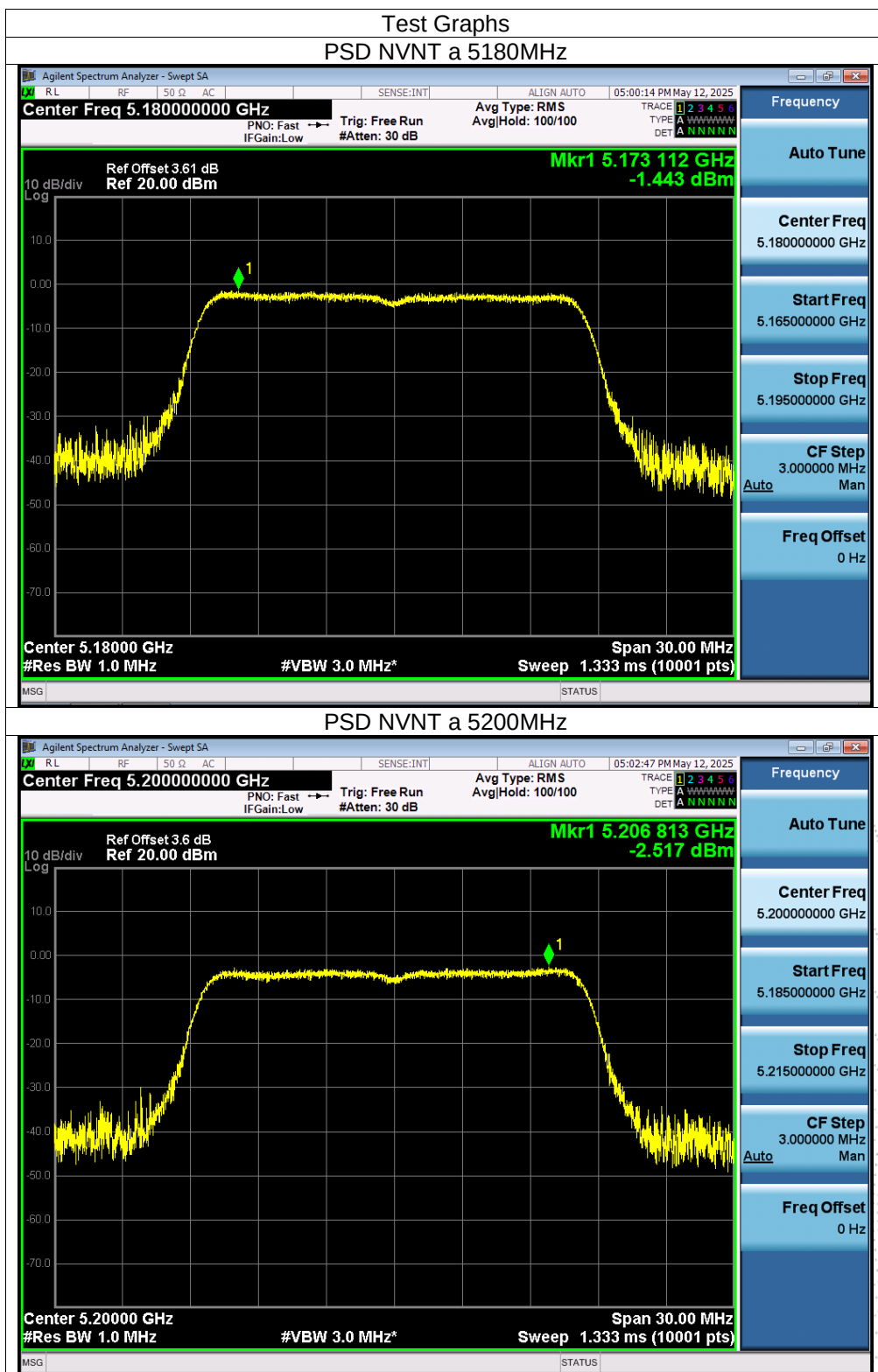
8.5 Test Result

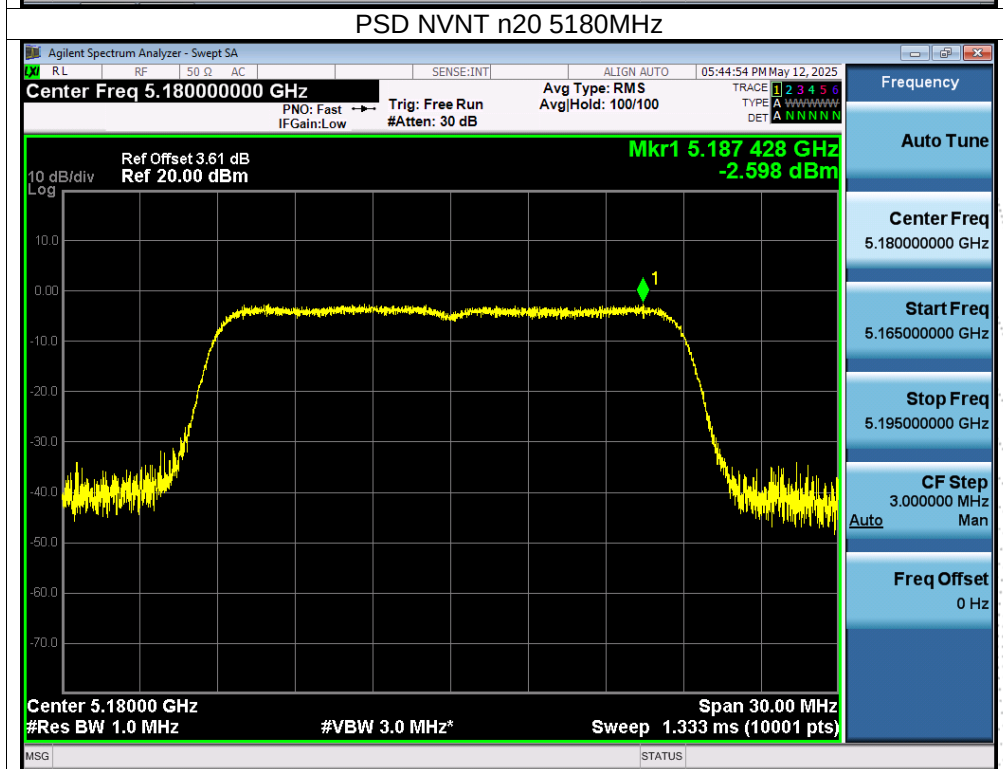
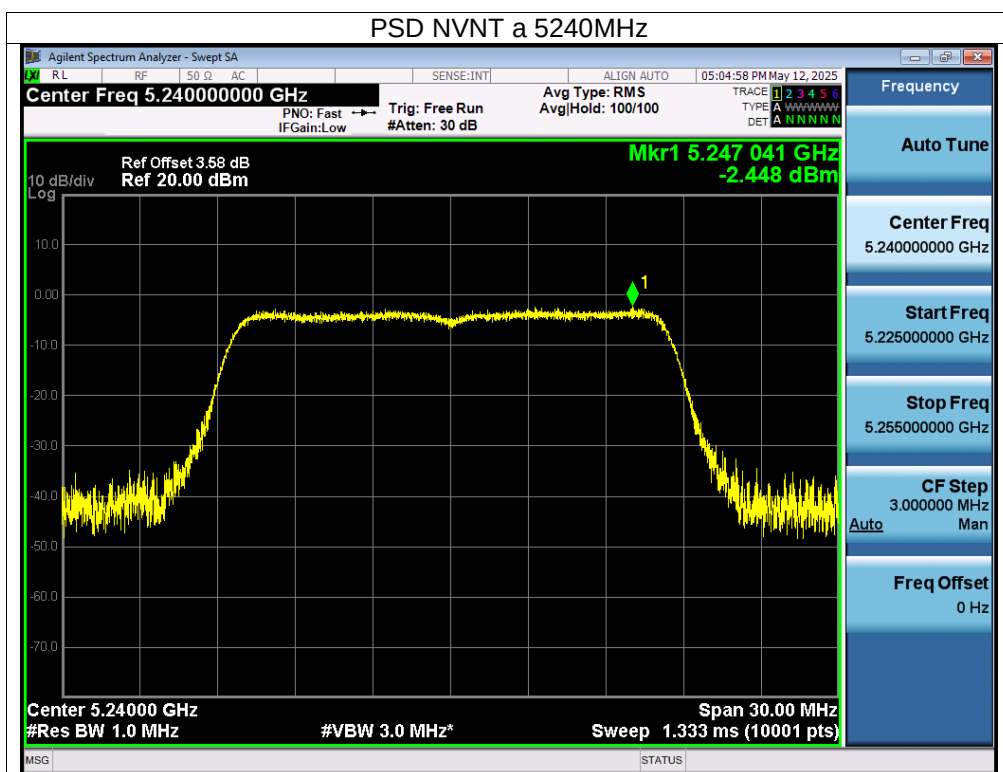
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Test Voltage:	DC 3.87V
Test Mode:	(U-NII-1) 5180MHz-5240MHz (U-NII-3) 5745MHz-5825MHz		

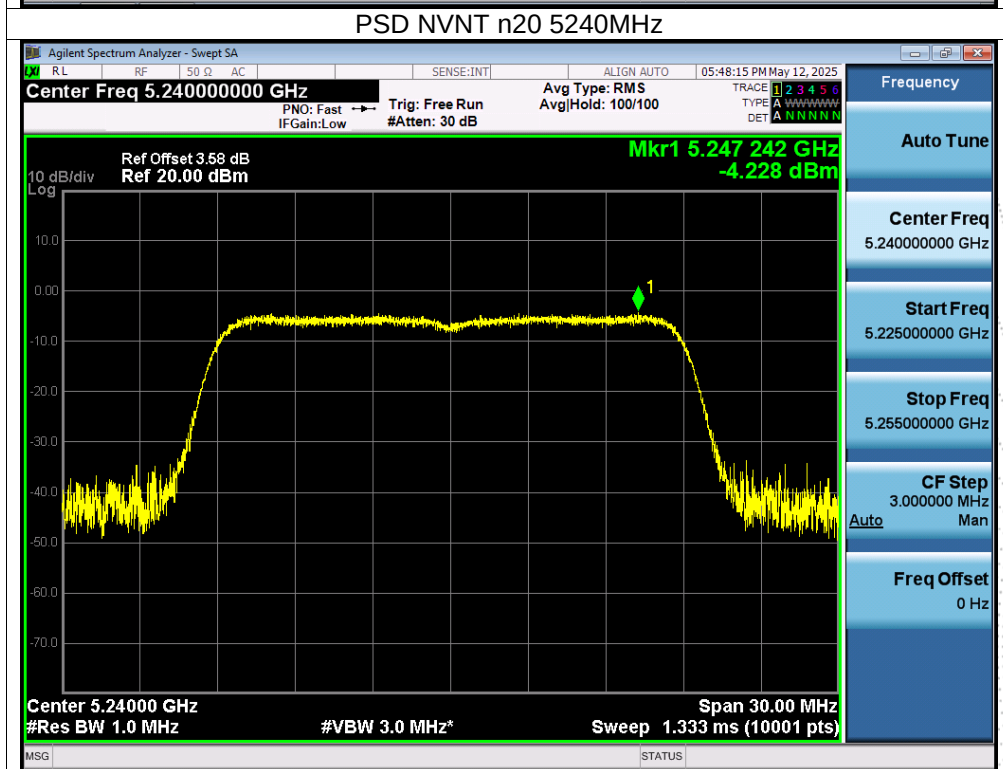
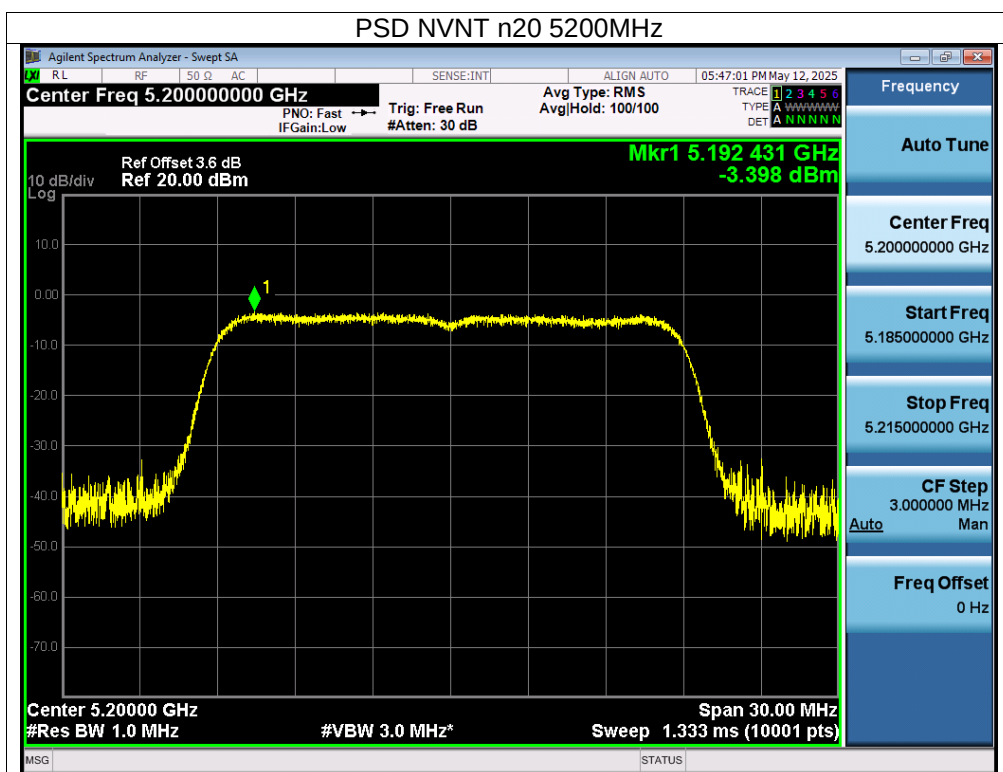
Condition	Mode	Frequency (MHz)	Conducted PSD (dBm/1MHz)	Limit (dBm/1MHz)	Verdict
NVNT	a	5180	-1.44	11	Pass
NVNT	a	5200	-2.52	11	Pass
NVNT	a	5240	-2.45	11	Pass
NVNT	n20	5180	-2.6	11	Pass
NVNT	n20	5200	-3.4	11	Pass
NVNT	n20	5240	-4.23	11	Pass
NVNT	n40	5190	-6.58	11	Pass
NVNT	n40	5230	-7.79	11	Pass
NVNT	ac20	5180	-2.51	11	Pass
NVNT	ac20	5200	-3.46	11	Pass
NVNT	ac20	5240	-4.76	11	Pass
NVNT	ac40	5190	-6.17	11	Pass
NVNT	ac40	5230	-8.21	11	Pass
NVNT	ac80	5210	-11.21	11	Pass

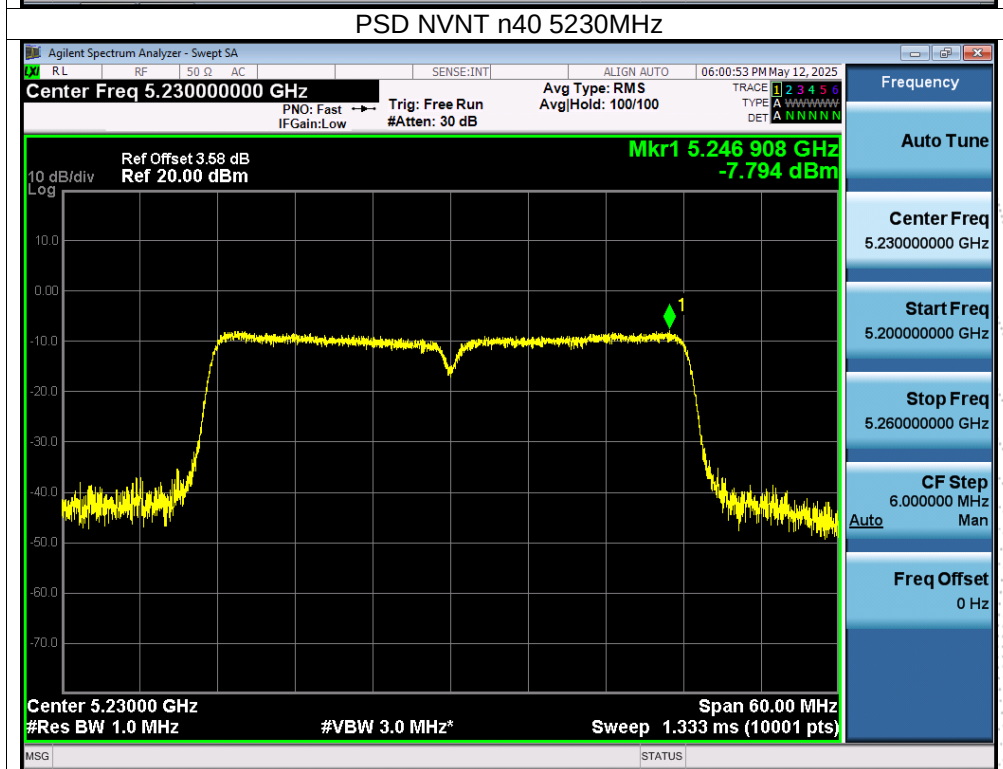
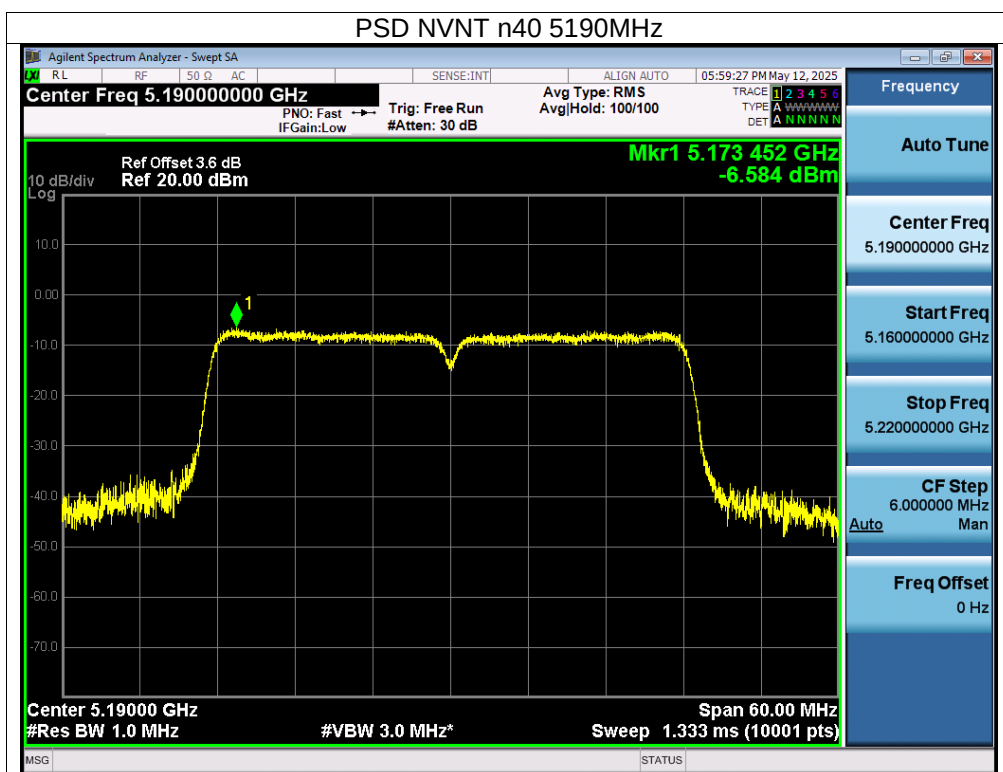
Condition	Mode	Frequency (MHz)	Conducted PSD (dBm/510KHz)	Conducted PSD (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
NVNT	a	5745	-7.23	-7.316	30	Pass
NVNT	a	5785	-7.5	-7.586	30	Pass
NVNT	a	5825	-7.95	-8.036	30	Pass
NVNT	n20	5745	-8.71	-8.796	30	Pass
NVNT	n20	5785	-8.53	-8.616	30	Pass
NVNT	n20	5825	-9.28	-9.366	30	Pass
NVNT	n40	5755	-11.85	-11.936	30	Pass
NVNT	n40	5795	-12.1	-12.186	30	Pass
NVNT	ac20	5745	-8.66	-8.746	30	Pass
NVNT	ac20	5785	-8.87	-8.956	30	Pass
NVNT	ac20	5825	-8.93	-9.016	30	Pass
NVNT	ac40	5755	-11.95	-12.036	30	Pass
NVNT	ac40	5795	-12.15	-12.236	30	Pass
NVNT	ac80	5775	-15.97	-16.056	30	Pass

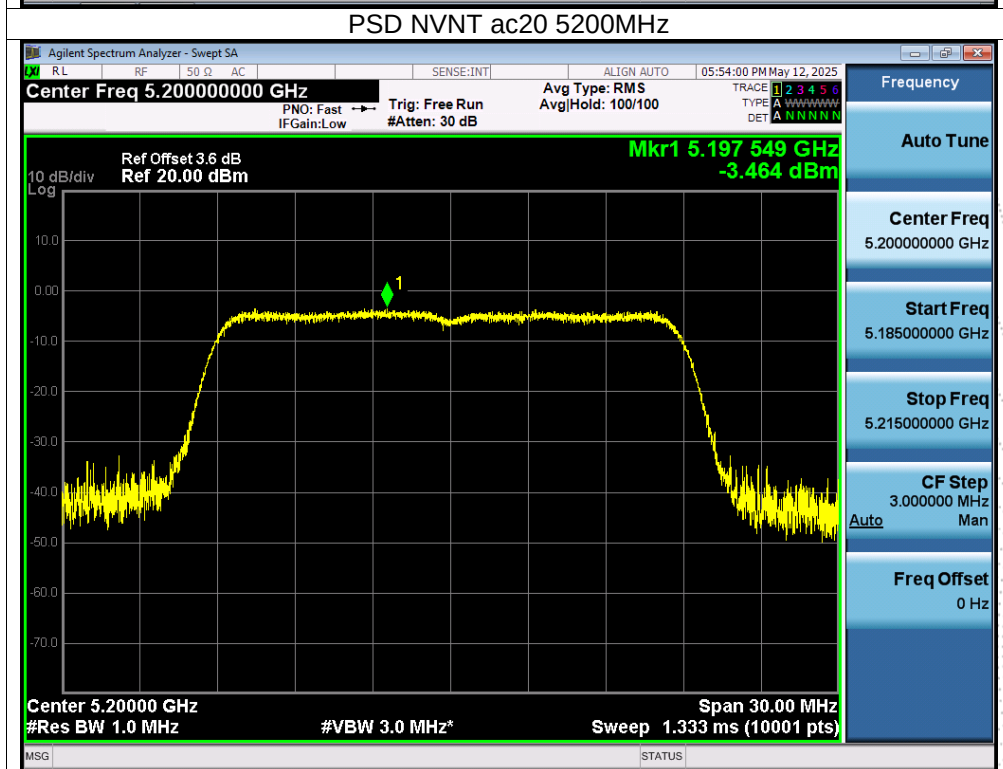
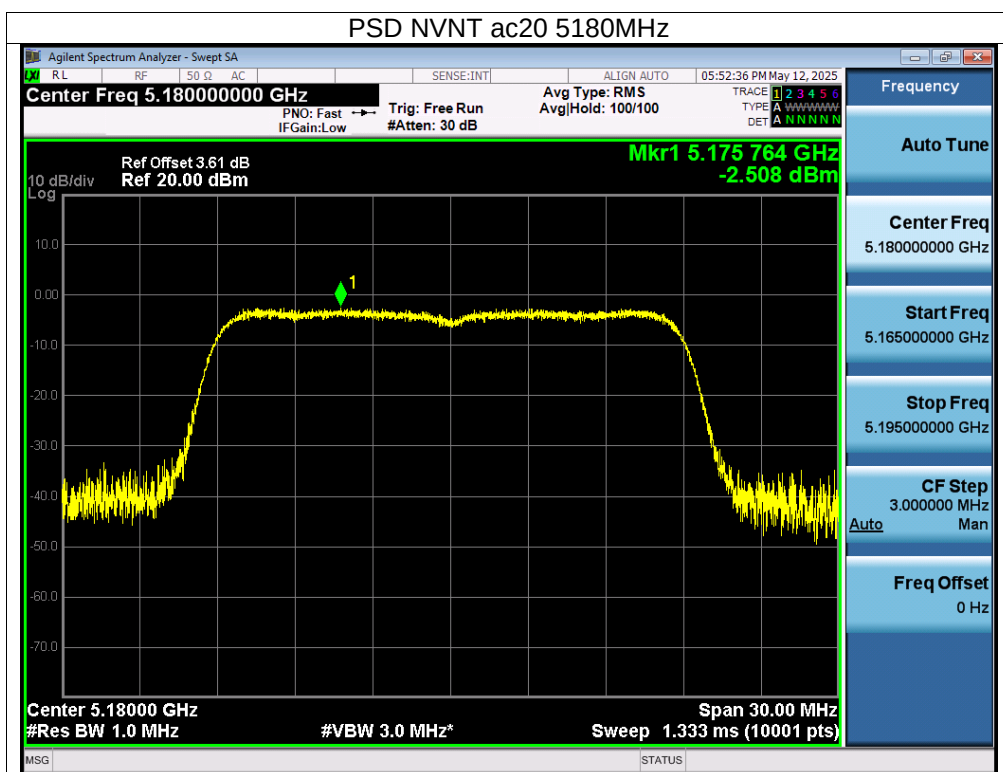
Note: Correction Factor = $10\log(500\text{KHz}/\text{RBW in measurement}) = -0.086$

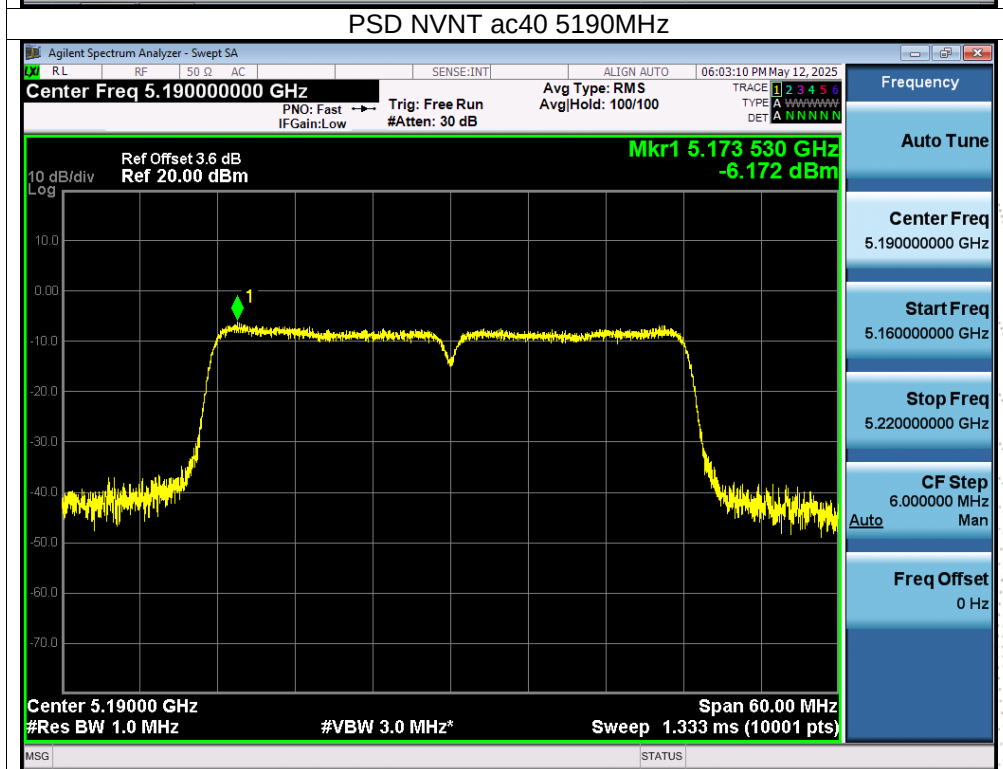
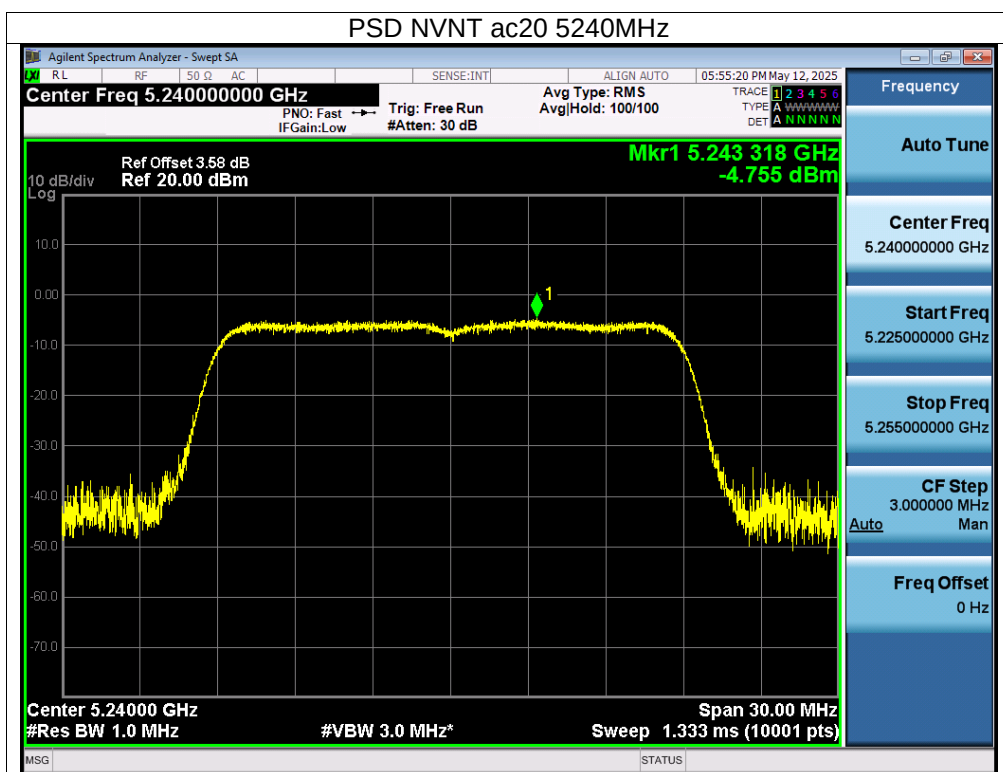


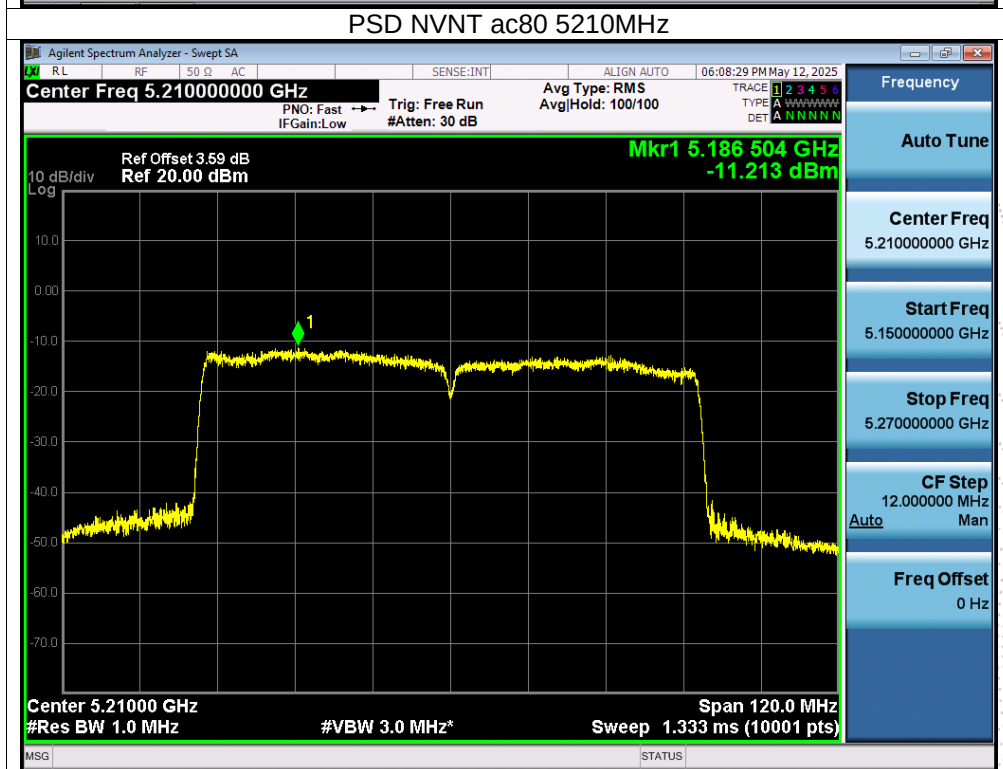
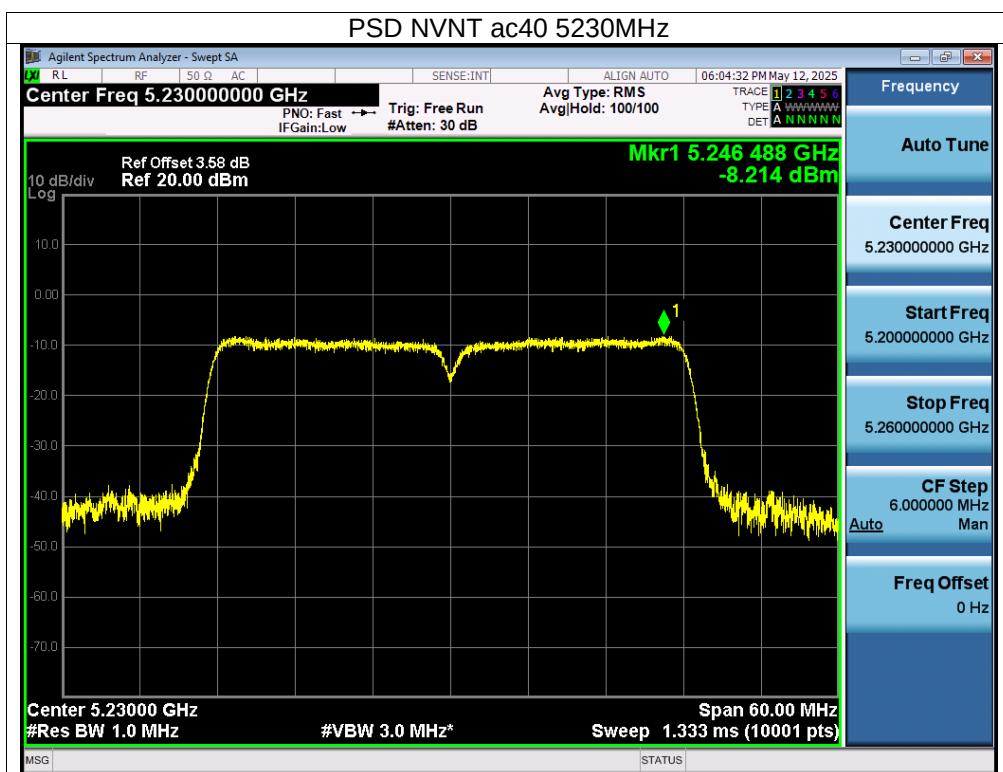


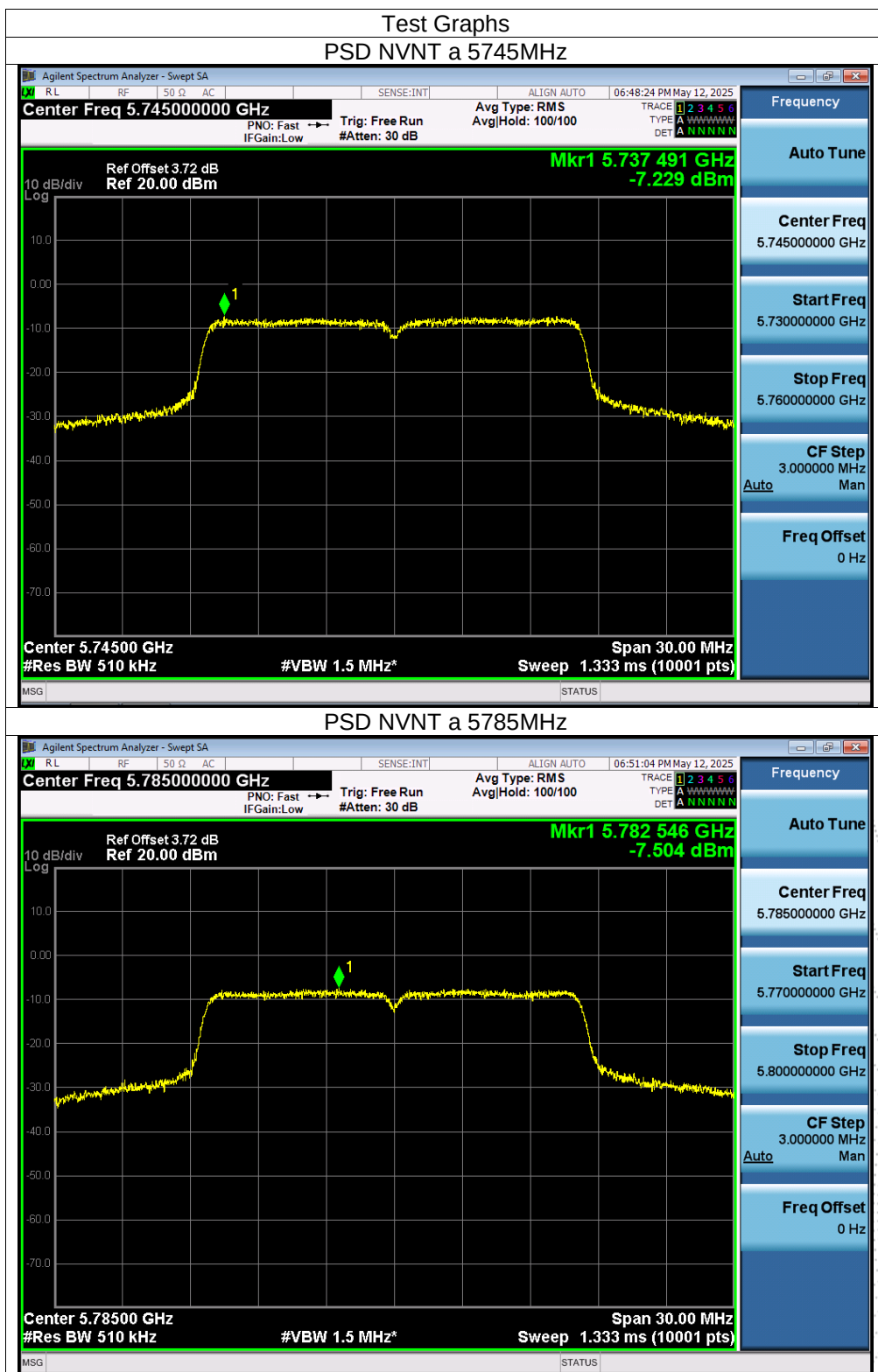


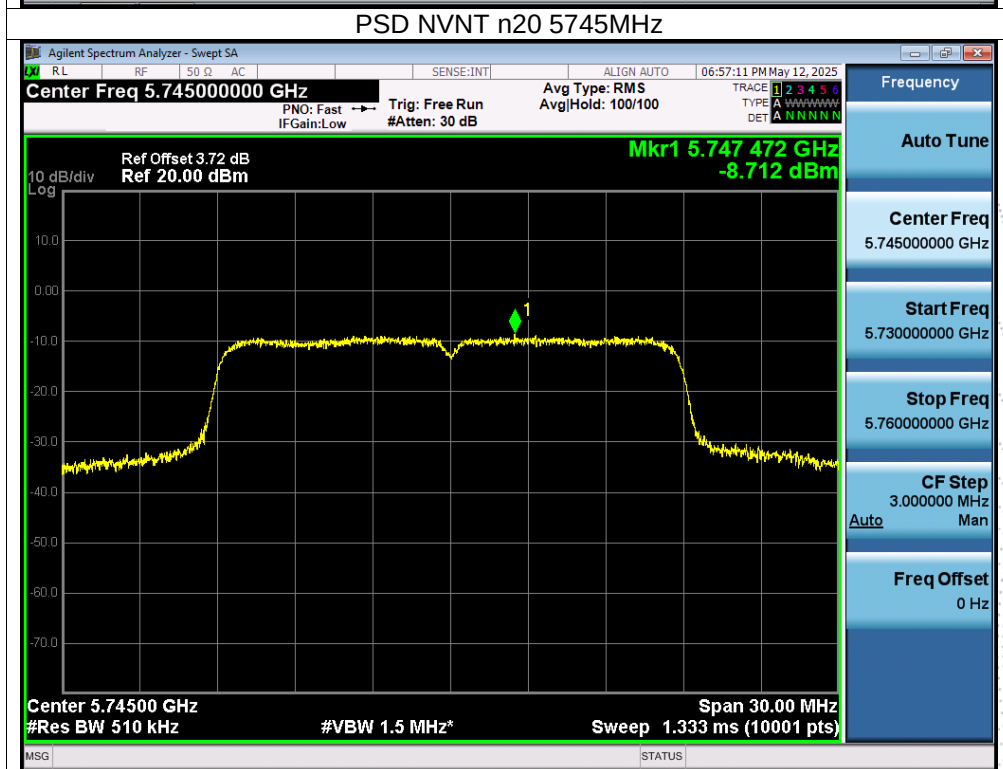
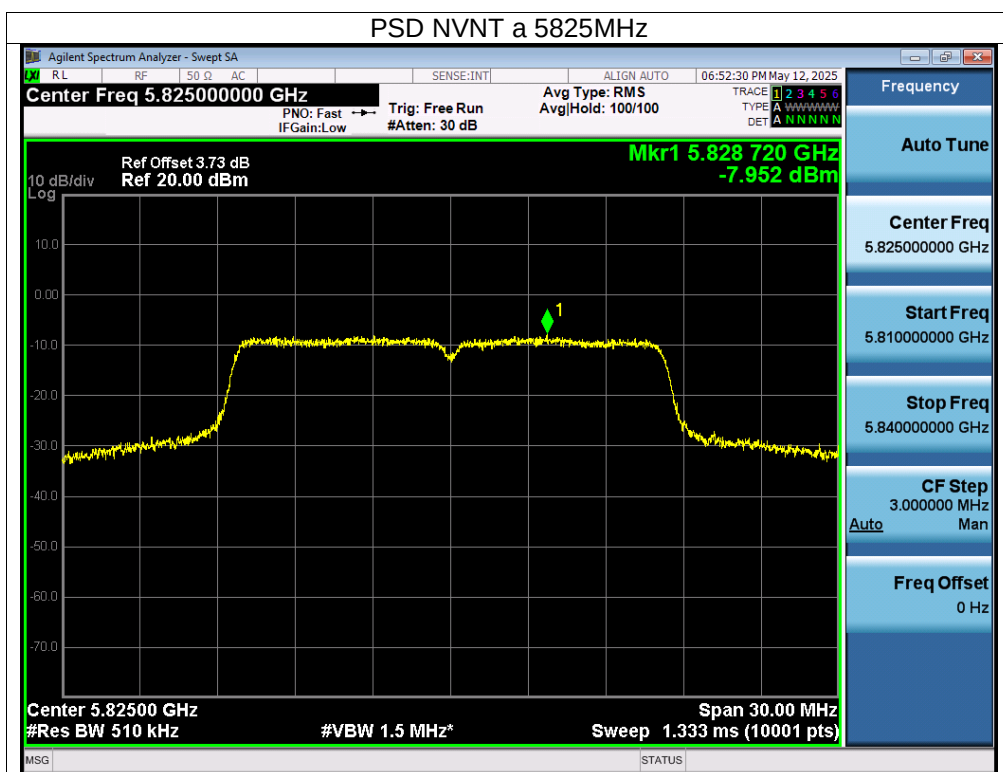


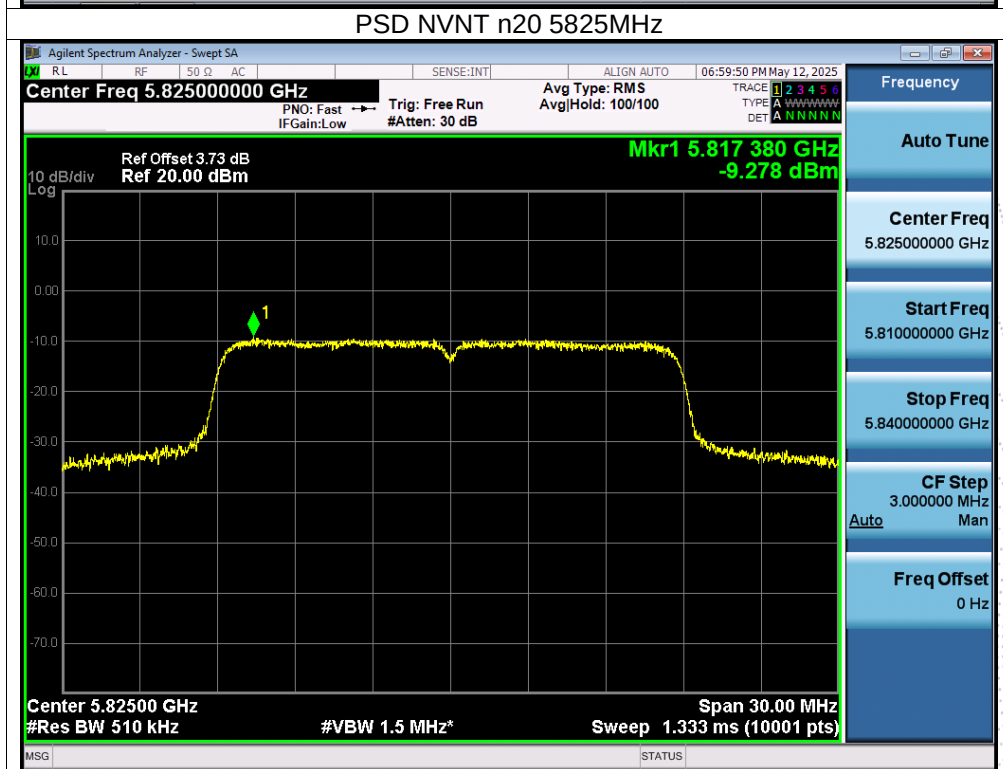
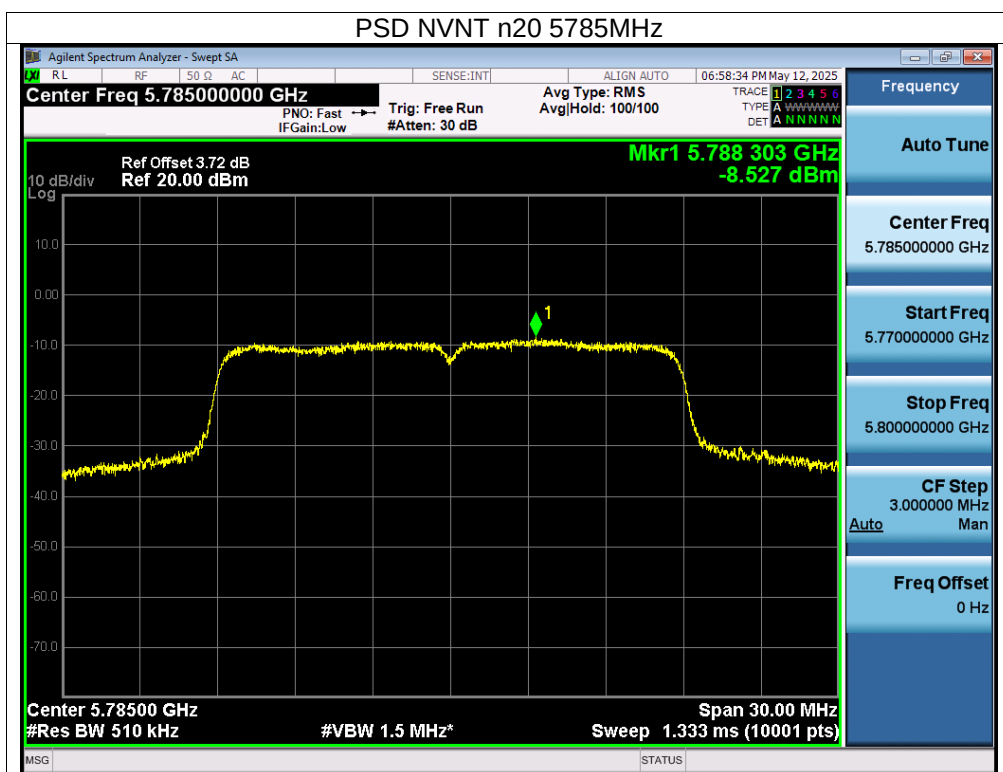


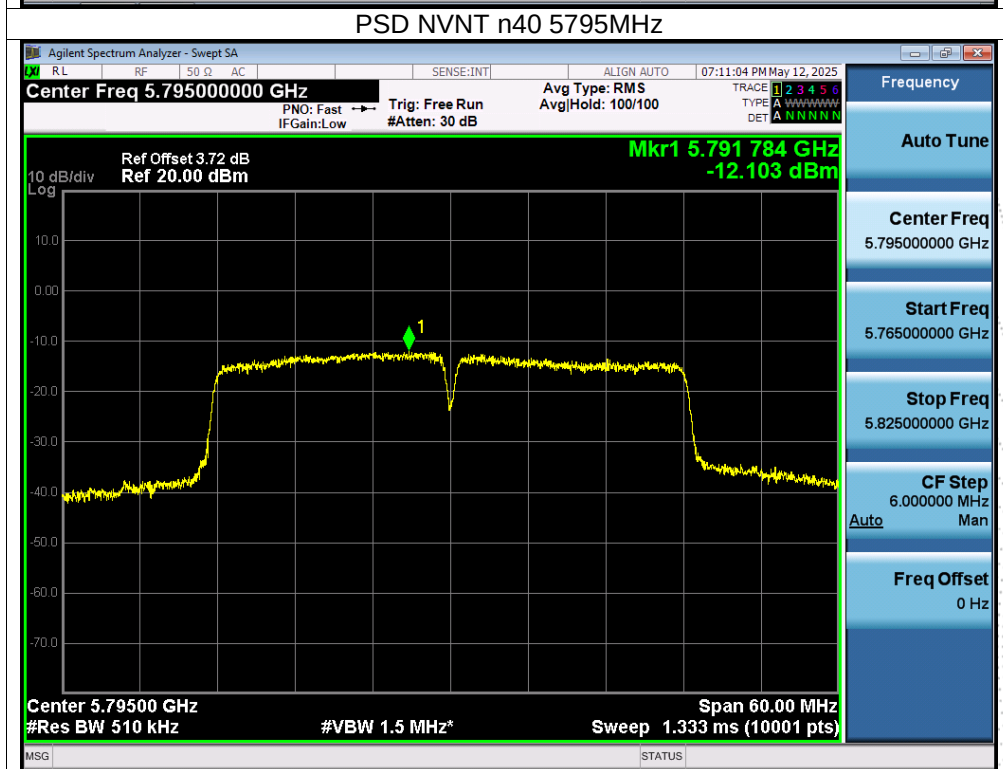
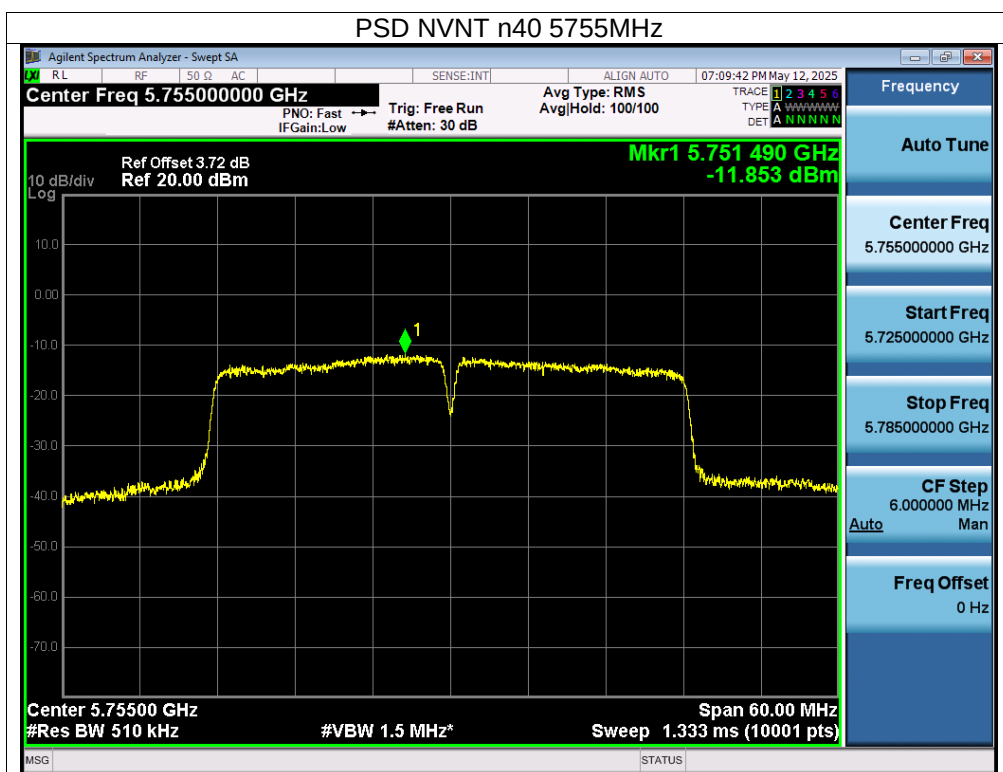


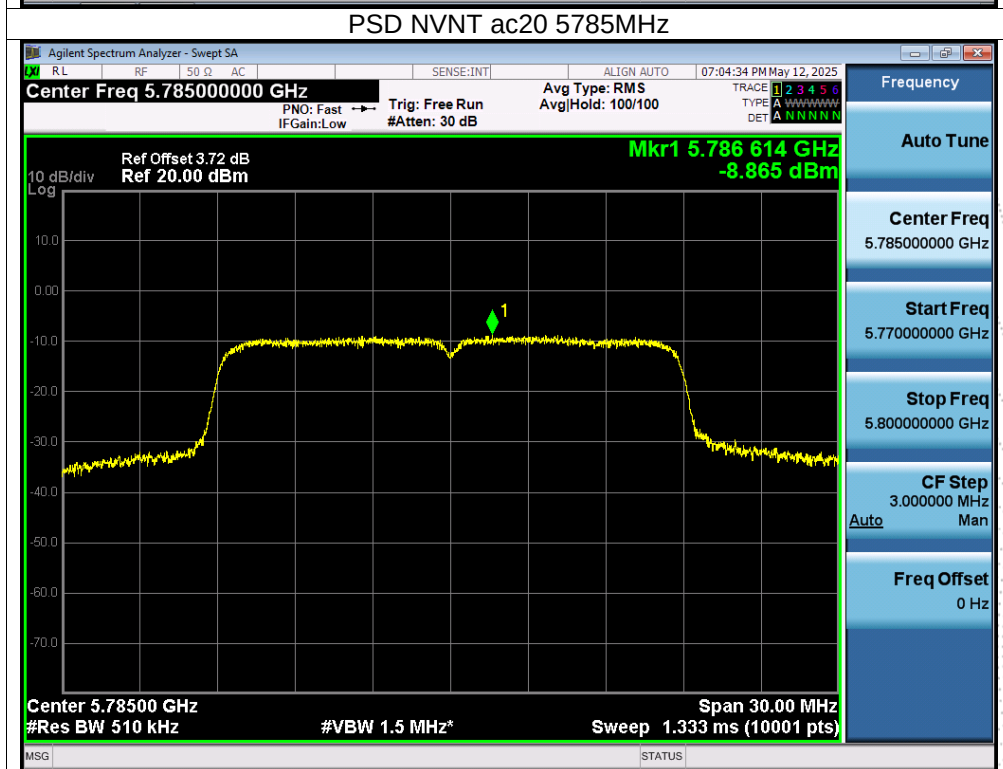
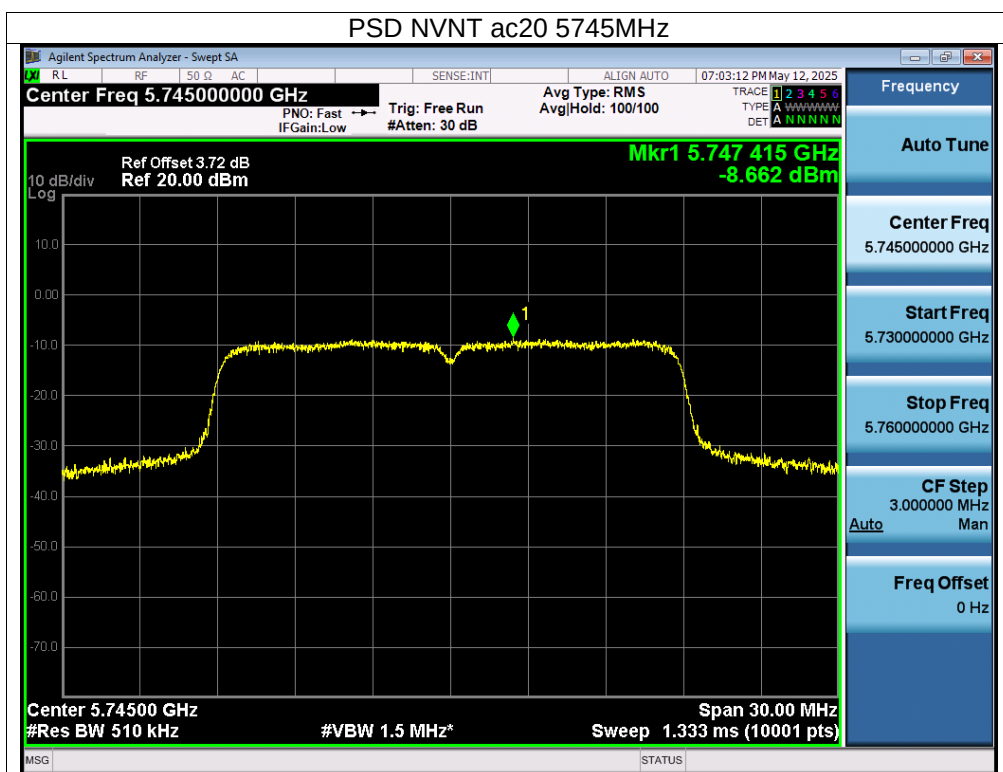


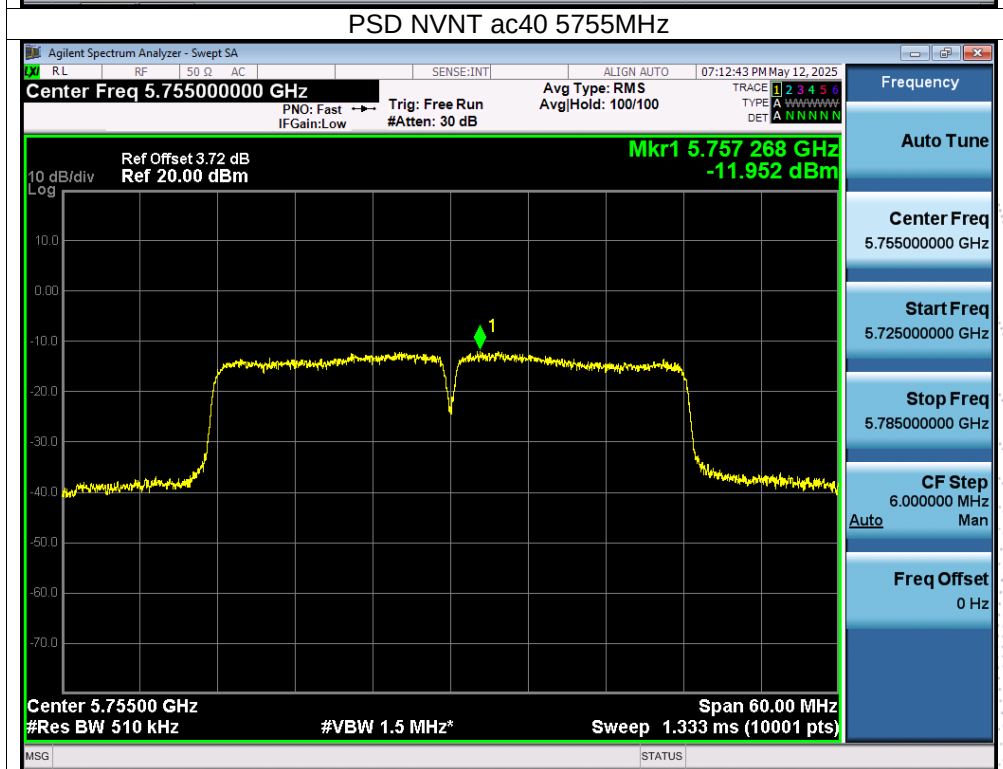
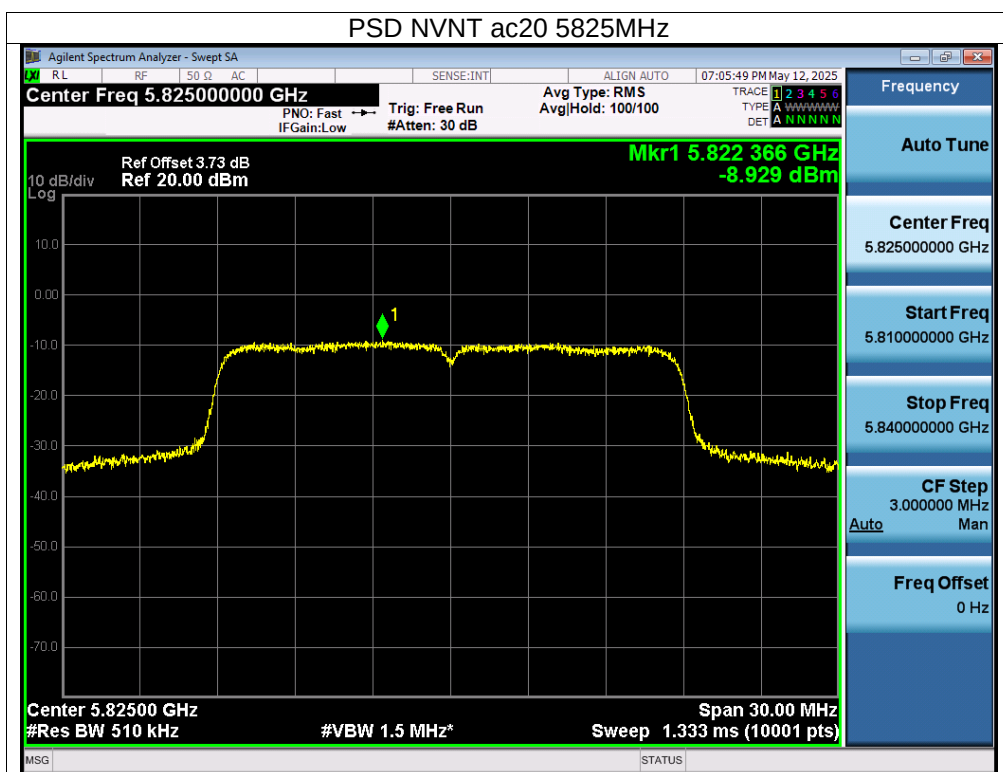


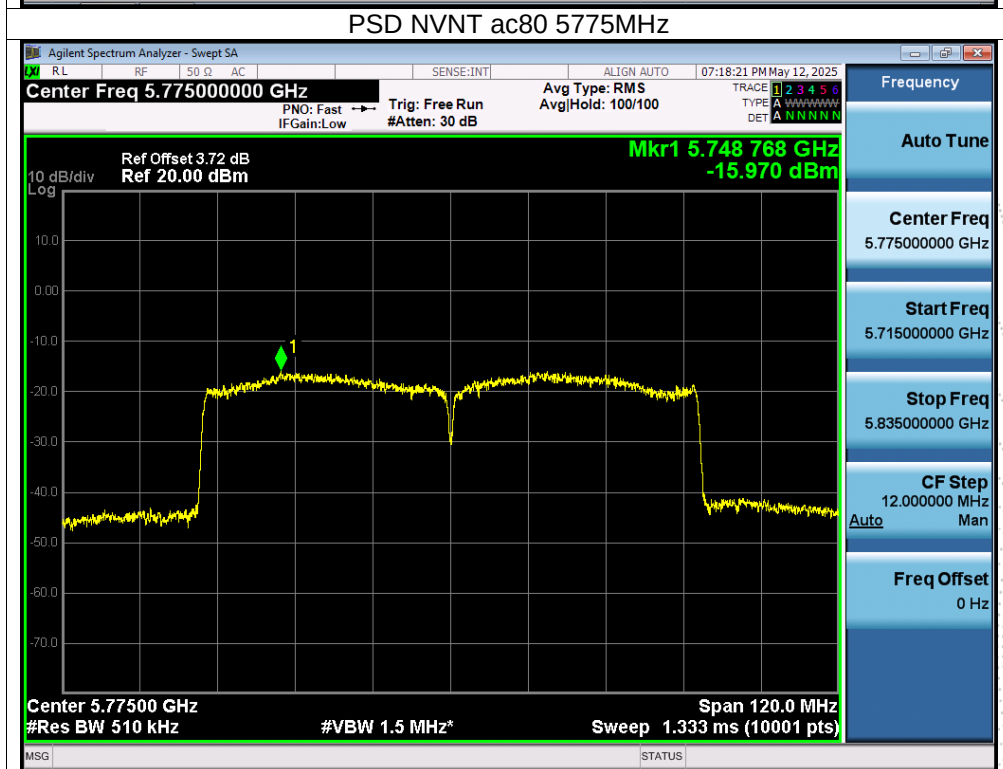
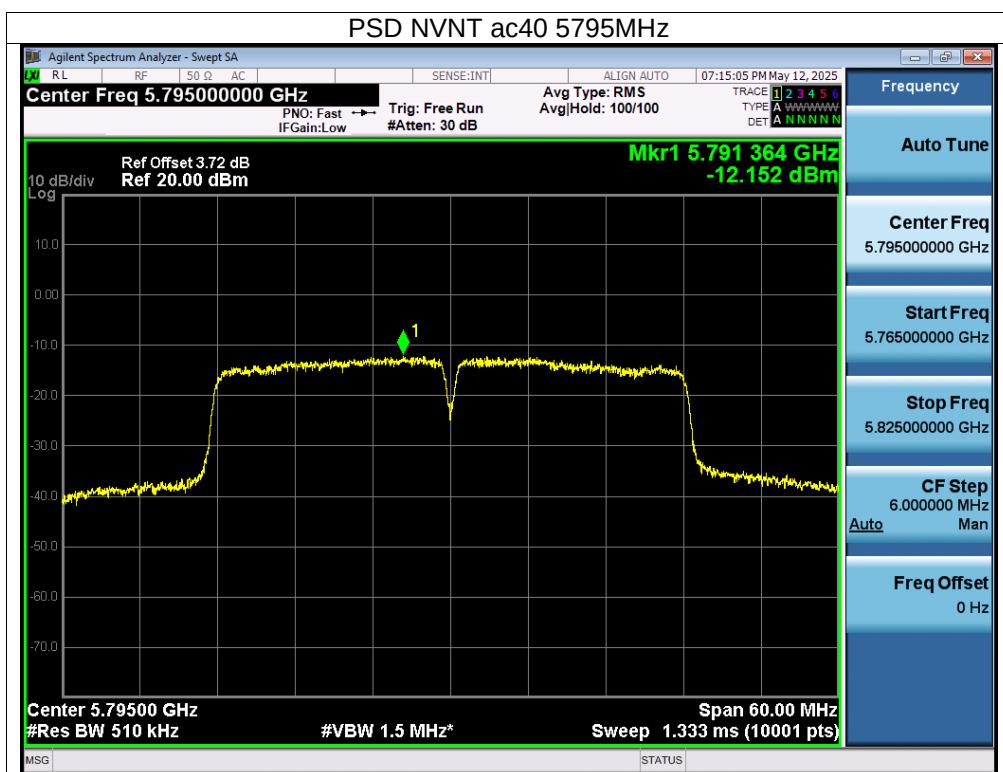






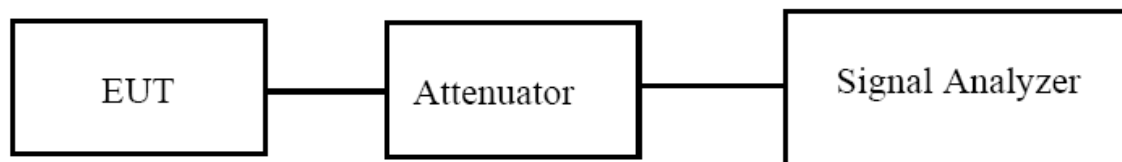






9. 26dB & 6dB & 99% Emission Bandwidth

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.
(6dB bandwidth)>500kHz

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
- Set $VBW \geq 3 \cdot RBW$
- 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.
- Use the 99 % power bandwidth function of the instrument (if available).
- 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.

6dB

- Set RBW = 100 kHz.
- Set the video bandwidth (VBW) $\geq 3 \times RBW$.
- Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.

6. Allow the trace to stabilize.

7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

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:	DC 3.87V
Test Mode:	TX Frequency U-NII-1 (5180-5240MHz)		

Condition	Mode	Frequency (MHz)	99% bandwidth (MHz)	-26dB bandwidth (MHz)	Result
NVNT	a	5180	16.54	24.233	Pass
NVNT	a	5200	16.557	24.775	Pass
NVNT	a	5240	16.544	21.93	Pass
NVNT	n20	5180	17.611	26.422	Pass
NVNT	n20	5200	17.609	25.345	Pass
NVNT	n20	5240	17.623	23.296	Pass
NVNT	n40	5190	36.332	52.98	Pass
NVNT	n40	5230	36.373	48.319	Pass
NVNT	ac20	5180	17.616	25.6	Pass
NVNT	ac20	5200	17.629	22.074	Pass
NVNT	ac20	5240	17.622	27.131	Pass
NVNT	ac40	5190	36.329	52.399	Pass
NVNT	ac40	5230	36.399	54.066	Pass
NVNT	ac80	5210	75.612	81.04	Pass