

TEST REPORT

Report No.: BCTC2308886988-2E

Applicant: REOLINK INNOVATION LIMITED

Product Name: WiFi IP Camera

Model/Type reference: Argus Eco Pro

Tested Date: 2023-08-17 to 2023-09-22

Issued Date: 2023-09-25


Shenzhen BCTC Testing Co., Ltd.



SHENZHEN

FCC ID: 2AYHE-2306A

Product Name: WiFi IP Camera

Trademark: 

Model/Type reference: Argus Eco Pro
Argus Eco Plus

Prepared For: REOLINK INNOVATION LIMITED

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Manufacturer: REOLINK INNOVATION LIMITED

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Sample Received Date: 2023-08-17

Sample tested Date: 2023-08-17 to 2023-09-22

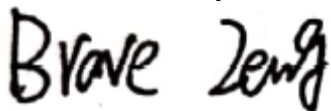
Issue Date: 2023-09-25

Report No.: BCTC2308886988-2E

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

Test Results: PASS

Tested by:



Brave Zeng/ Project Handler

Approved by:



Zero Zhou/Reviewer

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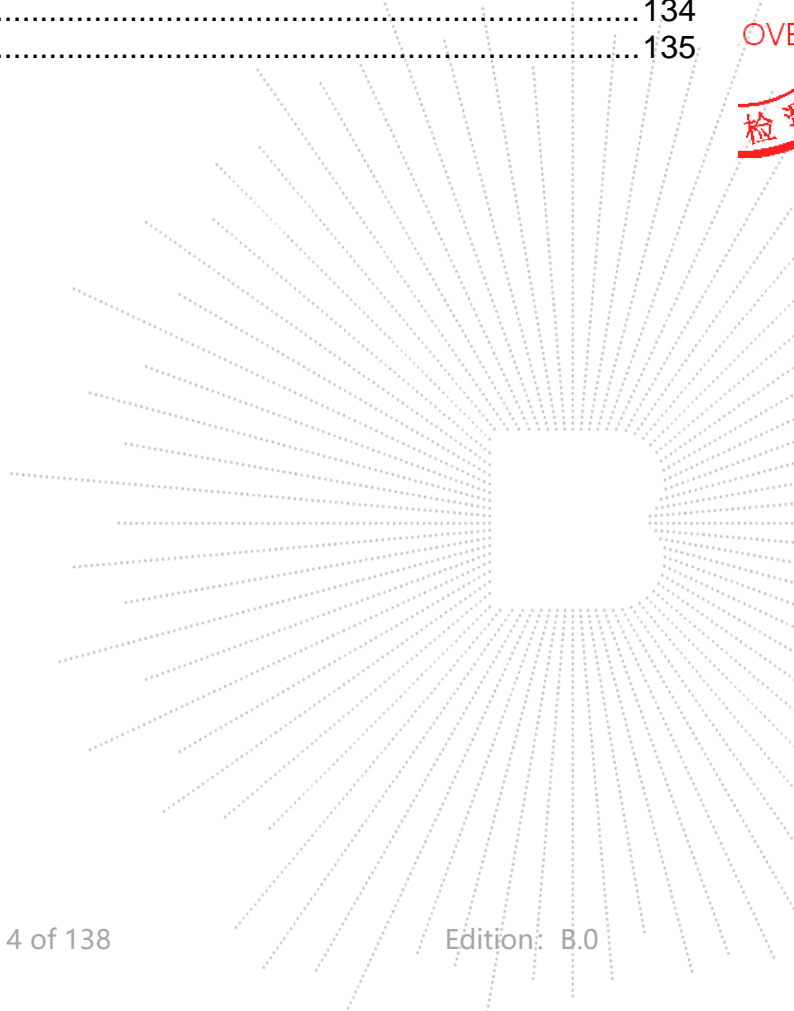
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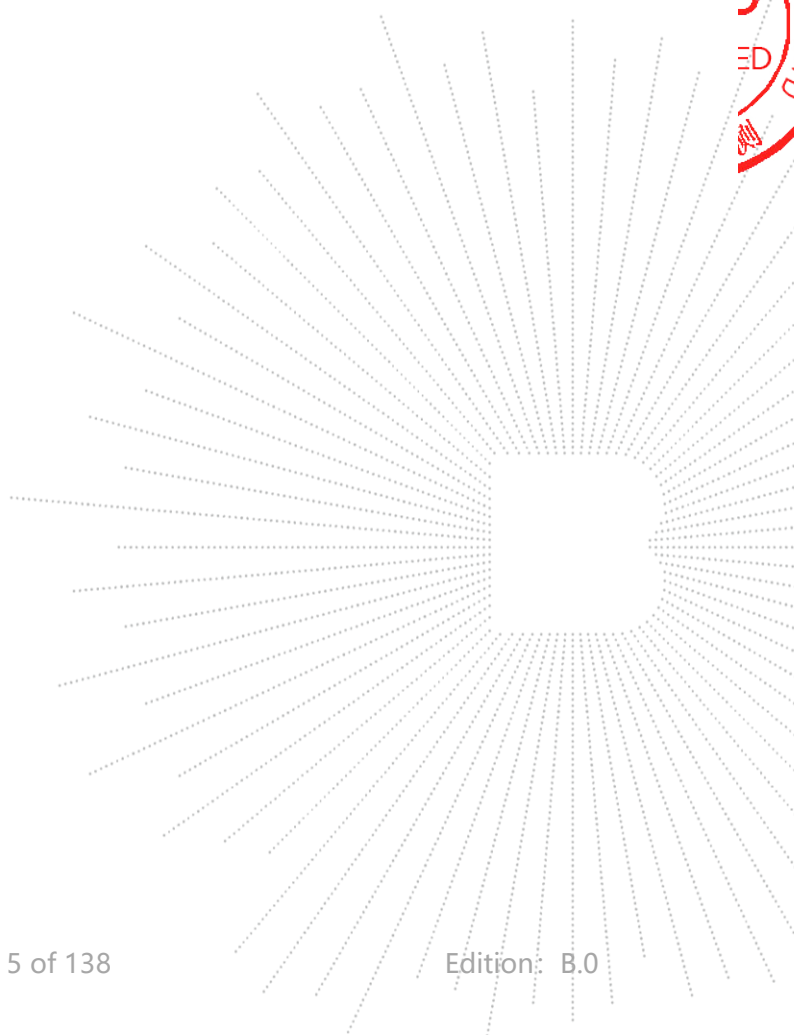
(Note: N/A Means Not Applicable)

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1. Version

Report No.	Issue Date	Description	Approved
BCTC2308886988-2E	2023-09-25	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 a	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

Note: The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure.


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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	Bandwidth	U=2.38KHz
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

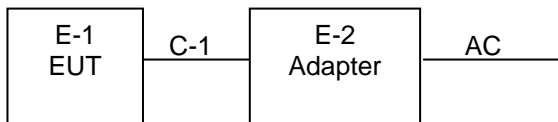
4.1 Product Information

Model/Type reference:	Argus Eco Pro Argus Eco Plus
Model differences:	All the model are the same circuit and RF module, except model names and appearance of the color.
Hardware Version:	V1.0
Software Version:	V1.0
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/256QAM for 802.11a/n
Antenna installation:	Internal antenna
Antenna Gain:	5.1G: 4.60 dBi 5.3G: 4.60 dBi 5.6G: 4.60 dBi 5.8G: 4.60 dBi
Ratings:	AC120V/60Hz

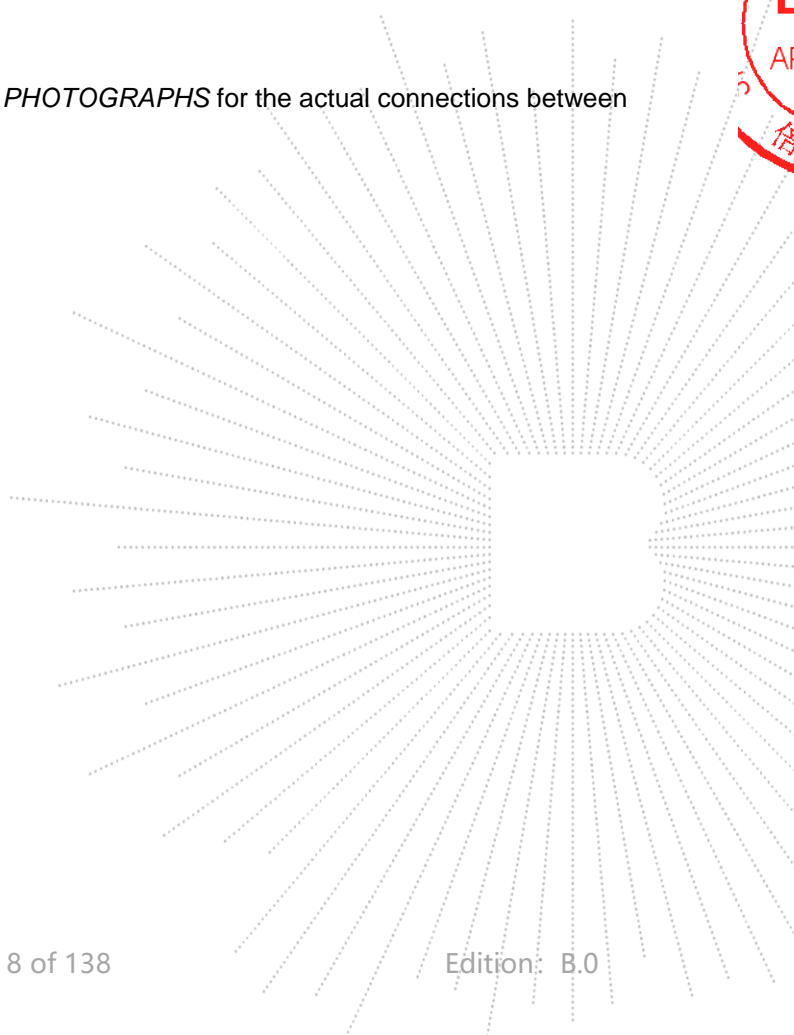
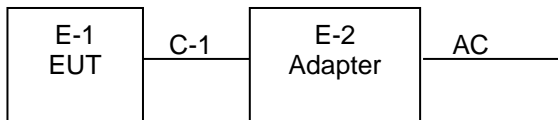
4.2 Test Setup Configuration

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		Argus Eco Pro	N/A	EUT
E-2	Adpater 1	N/A	N18	N/A	Auxiliary
E-3	Adpater 2	N/A	HW-11060 0C02	N/A	Auxiliary

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

Notes:

- All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- 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

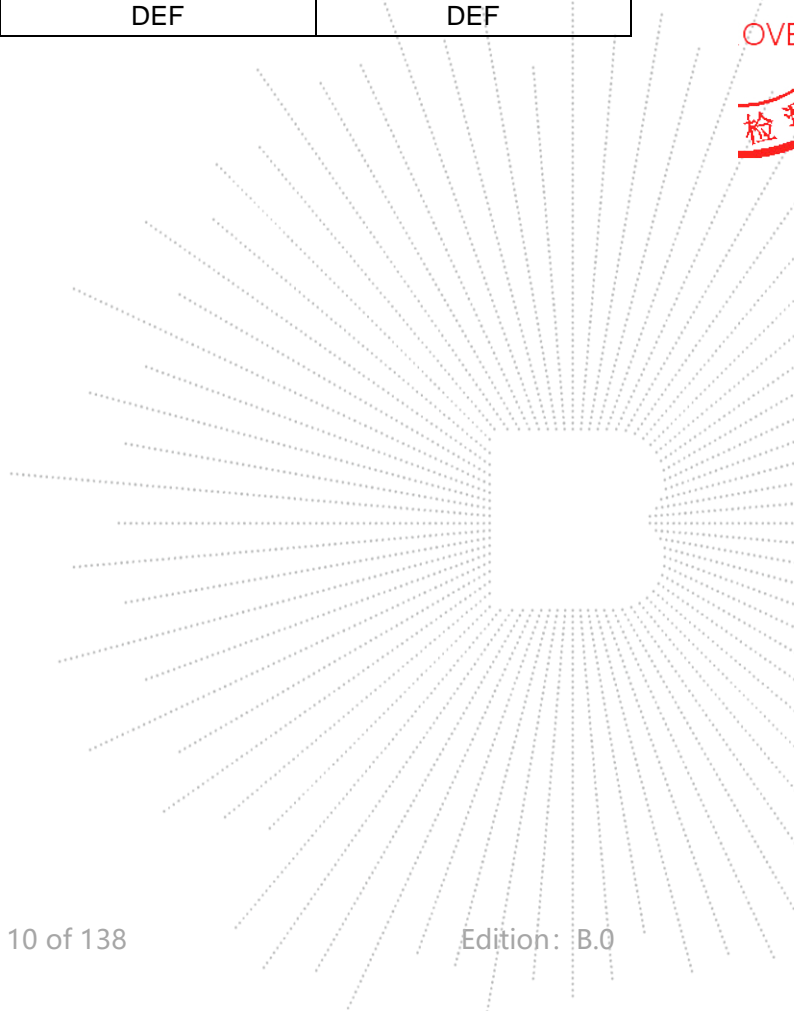
Note:

(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

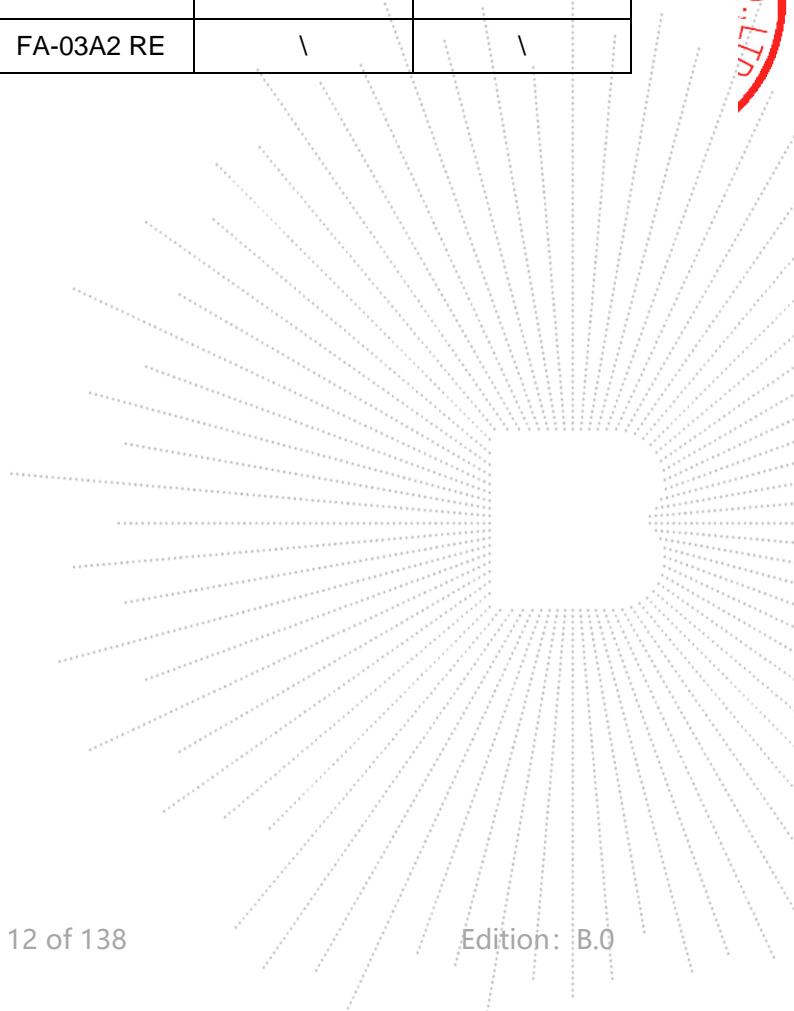
5.2 Test Instrument Used

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

RF Conducted Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Power Meter	Keysight	E4419	\	May 15, 2023	May 14, 2024
Power Sensor (AV)	Keysight	E9300A	\	May 15, 2023	May 14, 2024
Signal Analyzer20kHz- z-26.5GHz	Keysight	N9020A	MY49100060	May 15, 2023	May 14, 2024
Spectrum Analyzer9kHz- 40GHz	R&S	FSP40	100363	May 15, 2023	May 14, 2024
Radio frequency control box	MAIWEI	MW100-RFC B	\	\	\
Software	MAIWEI	MTS 8310	\	\	\

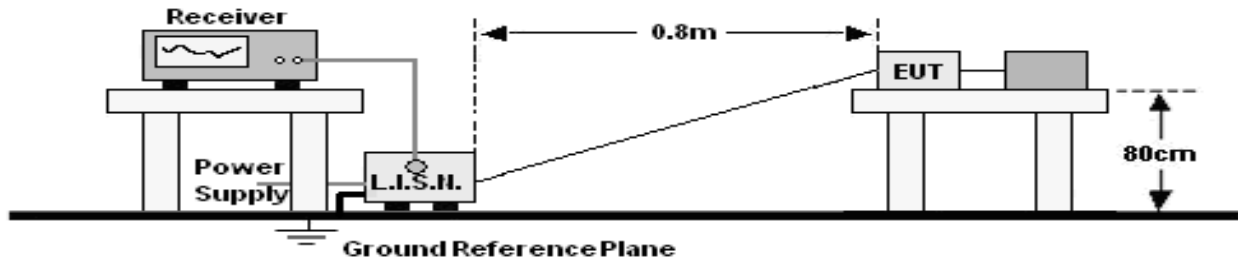
Radiated Emissions Test (966 Chamber01)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	May. 06. 2023	May. 05, 2026
Receiver	R&S	ESR3	102075	May 15, 2023	May 14, 2024
Receiver	R&S	ESRP	101154	May 15, 2023	May 14, 2024
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 15, 2023	May 14, 2024
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	May 15, 2023	May 14, 2024
Loop Antenna(9KHz -30MHz)	Schwarzbeck	FMZB1519B	00014	May 15, 2023	May 14, 2024
Amplifier	SKET	LAPA_01G18 G-45dB	\	May 15, 2023	May 14, 2024
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 15, 2023	May 14, 2024
Amplifier(18G Hz-40GHz)	MITEQ	TTA1840-35- HG	2034381	May 15, 2023	May 14, 2024
Horn Antenna(18G Hz-40GHz)	Schwarzbeck	BBHA9170	00822	May 15, 2023	May 14, 2024
Spectrum Analyzer9kHz- 40GHz	R&S	FSP40	100363	May 15, 2023	May 14, 2024
Software	Frad	EZ-EMC	FA-03A2 RE	\	\

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6. Conducted Emissions

6.1 Block Diagram Of Test Setup



6.2 Limit

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

Notes:
 1. *Decreasing linearly with logarithm of frequency.
 2. The lower limit shall apply at the transition frequencies.

6.3 Test Procedure

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

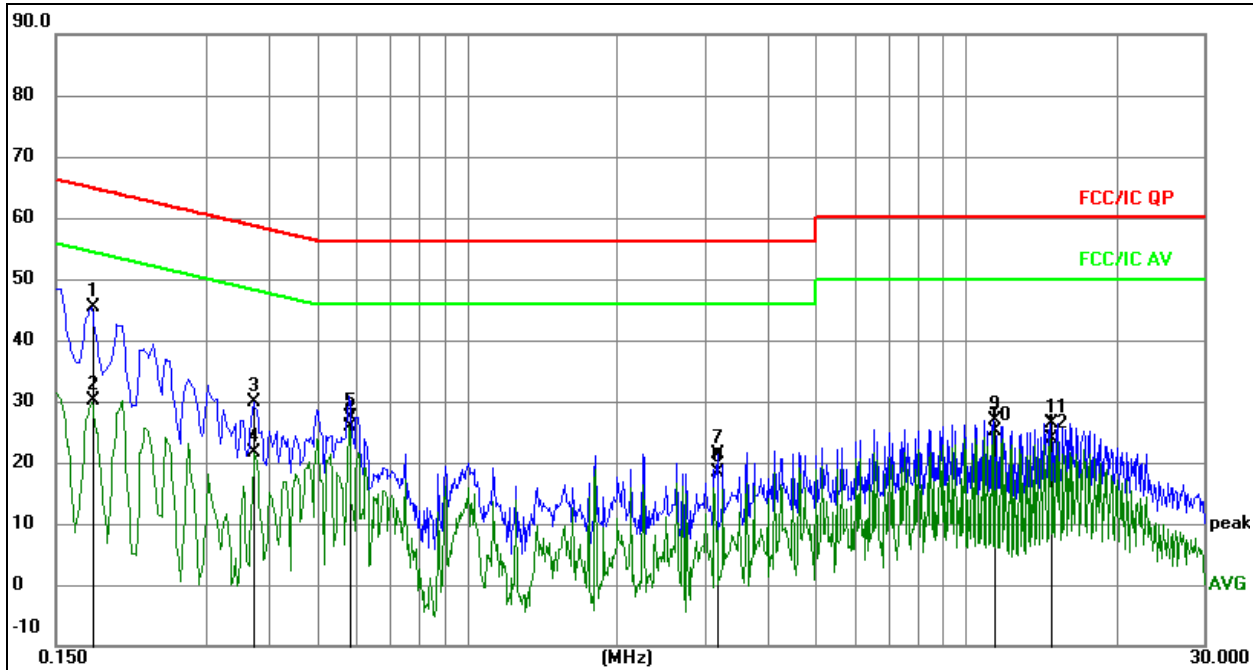
- The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak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

6.4 EUT Operating Conditions

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

6.5 Test Result

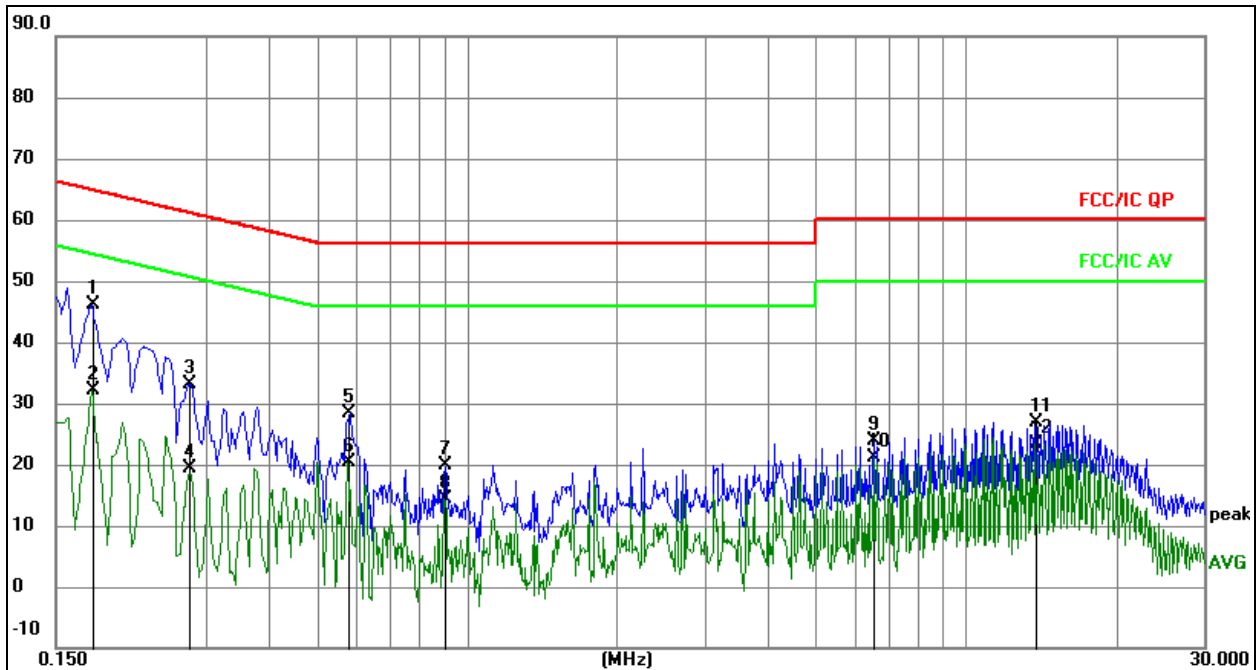
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC 120V/60Hz
Test Mode:	Mode 2	Polarization :	L


Remark:

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

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz		dB	dBuV	dBuV	dB	
1	*	0.1770	35.89	9.56	45.45	64.63	-19.18	QP
2		0.1770	20.47	9.56	30.03	54.63	-24.60	AVG
3		0.3750	20.16	9.62	29.78	58.39	-28.61	QP
4		0.3750	12.02	9.62	21.64	48.39	-26.75	AVG
5		0.5820	17.79	9.62	27.41	56.00	-28.59	QP
6		0.5820	16.15	9.62	25.77	46.00	-20.23	AVG
7		3.1740	11.52	9.79	21.31	56.00	-34.69	QP
8		3.1740	8.52	9.79	18.31	46.00	-27.69	AVG
9		11.4225	17.32	9.66	26.98	60.00	-33.02	QP
10		11.4225	15.51	9.66	25.17	50.00	-24.83	AVG
11		14.8110	16.75	9.66	26.41	60.00	-33.59	QP
12		14.8110	14.14	9.66	23.80	50.00	-26.20	AVG

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC 120V/60Hz
Test Mode:	Mode 2	Polarization :	N


Remark:

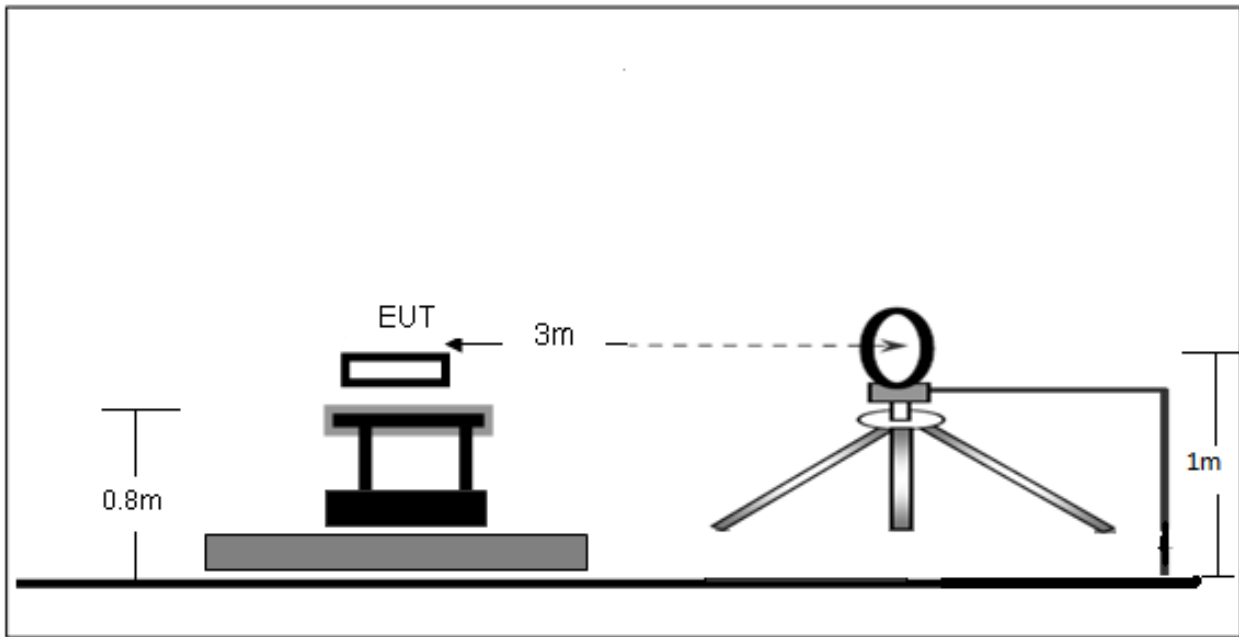
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq. MHz	Reading Level	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1	*	0.1768	36.59	9.56	46.15	64.63	-18.48	QP
2		0.1768	22.61	9.56	32.17	54.63	-22.46	AVG
3		0.2759	23.62	9.61	33.23	60.94	-27.71	QP
4		0.2759	9.71	9.61	19.32	50.94	-31.62	AVG
5		0.5762	18.66	9.62	28.28	56.00	-27.72	QP
6		0.5762	10.66	9.62	20.28	46.00	-25.72	AVG
7		0.8992	10.16	9.69	19.85	56.00	-36.15	QP
8		0.8992	4.67	9.69	14.36	46.00	-31.64	AVG
9		6.5227	14.12	9.76	23.88	60.00	-36.12	QP
10		6.5227	11.36	9.76	21.12	50.00	-28.88	AVG
11		13.7680	17.34	9.66	27.00	60.00	-33.00	QP
12		13.7680	13.80	9.66	23.46	50.00	-26.54	AVG

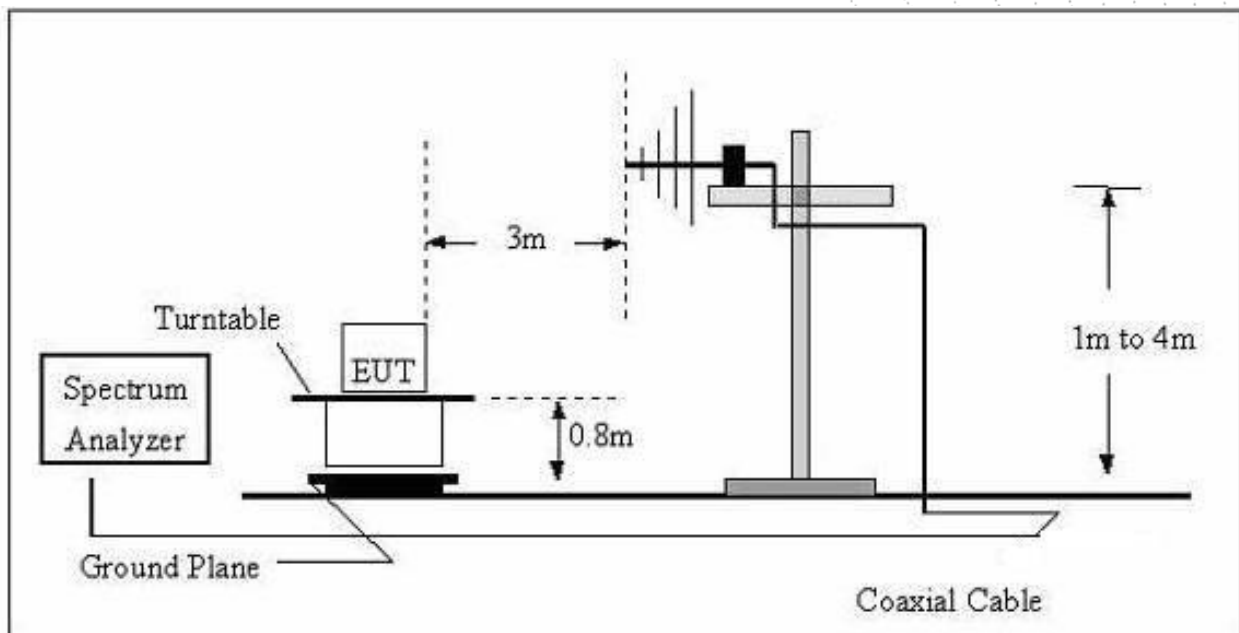
7. Radiated Emissions

7.1 Block Diagram Of Test Setup

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

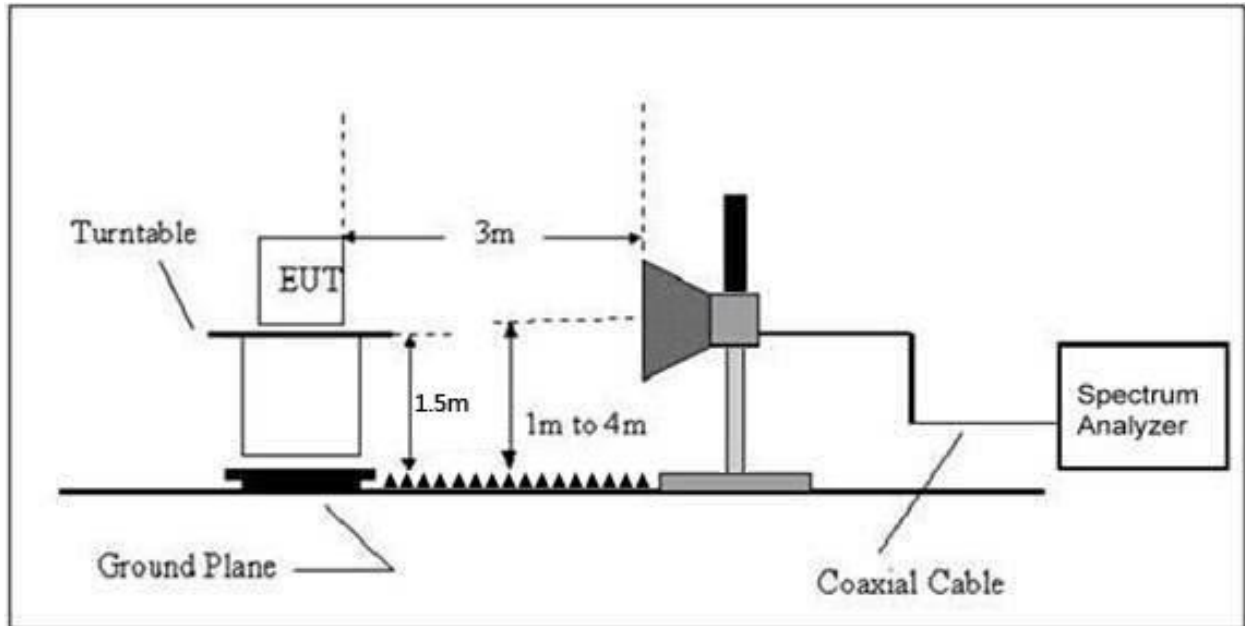


(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



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(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) = $20\log$ 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:	26℃	Relative Humidity:	24%
Pressure:	101 kPa	Test Voltage :	AC 120V/60Hz
Test Mode:	Mode 2	Polarization:	--

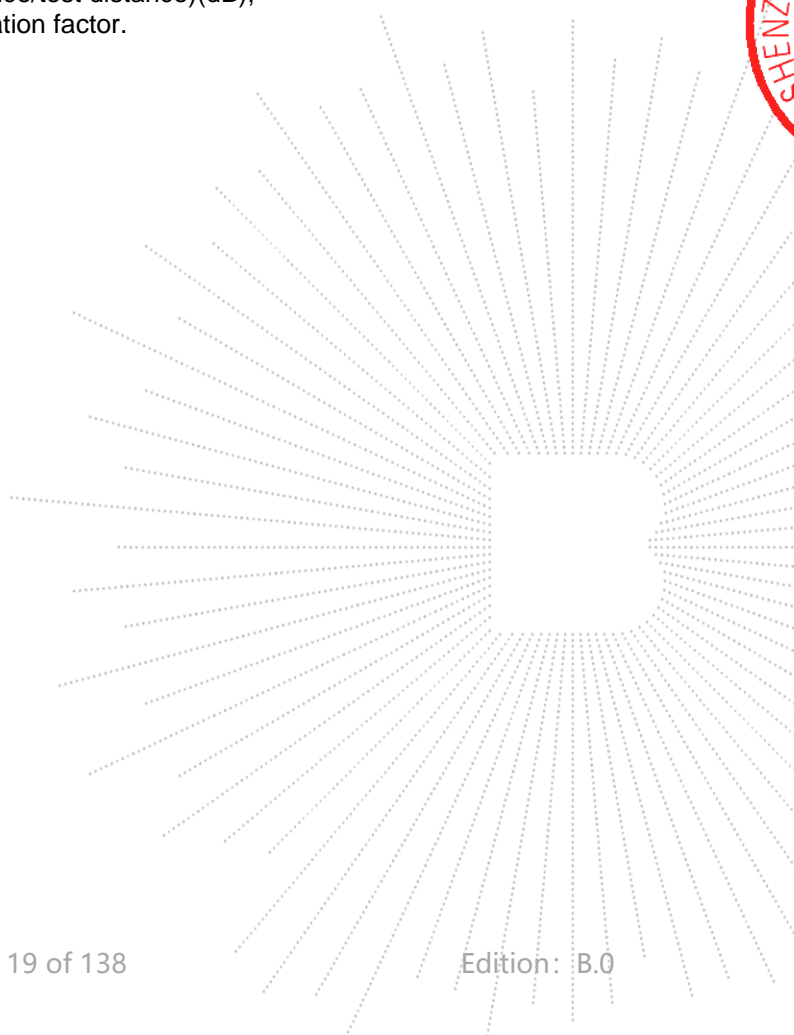
Freq. (MHz)	Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	State P/F
--	--	--	--	PASS
--	--	--	--	PASS

Note:

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

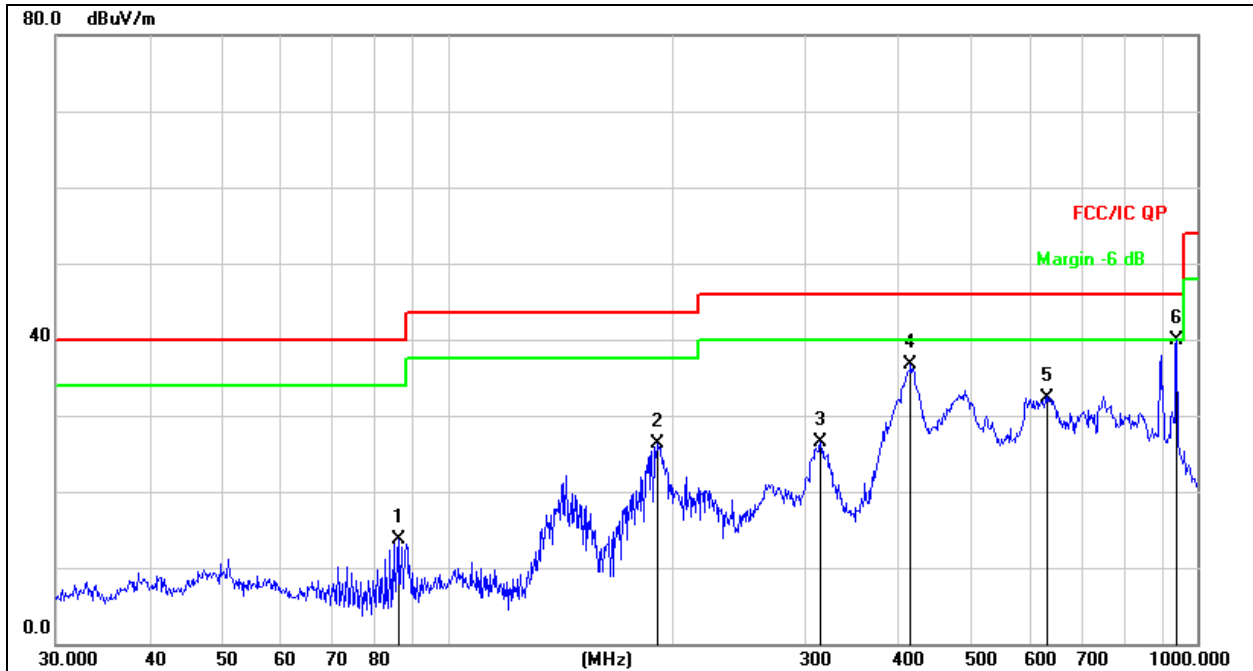
Distance extrapolation factor = $40 \log(\text{specific distance/test distance})(\text{dB})$;

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

Between 30MHz – 1GHz

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC 120V/60Hz
Test Mode:	Mode 2	Polarization :	Horizontal

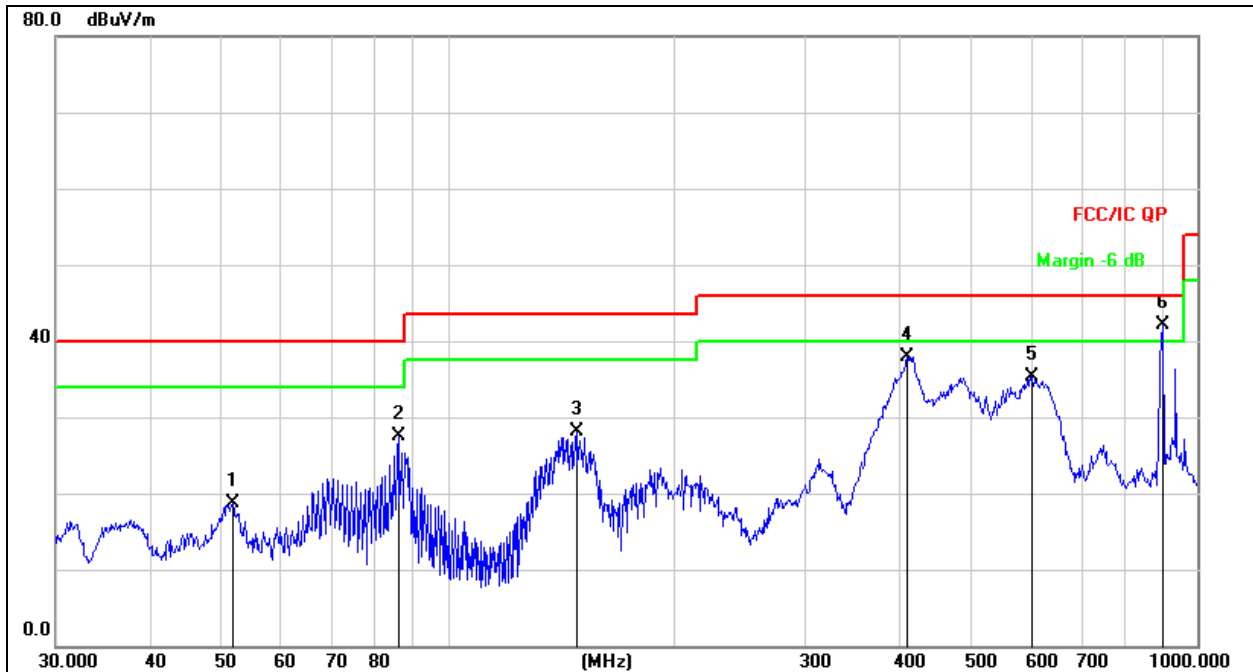


Remark:

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	Detector
		MHz	dBuV	dB	dBuV/m	dB/m	dB	
1		85.8984	33.80	-20.19	13.61	40.00	-26.39	QP
2		190.4050	44.37	-18.08	26.29	43.50	-17.21	QP
3		314.3765	40.59	-14.07	26.52	46.00	-19.48	QP
4		414.7223	48.71	-12.00	36.71	46.00	-9.29	QP
5		629.4772	40.39	-7.99	32.40	46.00	-13.60	QP
6	*	938.8326	44.03	-4.17	39.86	46.00	-6.14	QP

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC 120V/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. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		51.6616	34.53	-15.84	18.69	40.00	-21.31	QP
2		85.8984	47.62	-20.19	27.43	40.00	-12.57	QP
3		148.9625	49.06	-20.98	28.08	43.50	-15.42	QP
4		410.3825	49.93	-12.06	37.87	46.00	-8.13	QP
5		601.4265	43.68	-8.38	35.30	46.00	-10.70	QP
6	*	900.1474	46.68	-4.59	42.09	46.00	-3.91	QP

BCTC
 3C
 PPR
 检测

Test Mode:	TX(5.1G) - 802.11a
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Polar (H/V)	Frequency (MHz)	Reading Level (dBuV/m)	Correct Factor (dB)	Measurement (dBuV/m)	Limits (dBuV/m)	Over (dB)	Detector Type
Low Channel (5180 MHz)-Above 1G							
Vertical	4434.100	71.28	-20.73	50.55	68.2	-17.65	Pk
Vertical	4434.100	59.52	-20.73	38.79	54	-15.21	AV
Vertical	10360.195	63.70	-9.36	54.34	68.2	-13.86	Pk
Vertical	10360.195	49.65	-9.36	40.29	54	-13.71	AV
Vertical	15540.141	62.29	-7.84	54.45	74	-19.55	Pk
Vertical	15540.141	49.40	-7.84	41.56	54	-12.44	AV
Horizontal	4434.121	71.64	-20.73	50.91	68.2	-17.29	Pk
Horizontal	4434.121	59.09	-20.73	38.36	54	-15.64	AV
Horizontal	10360.107	64.98	-9.36	55.62	68.2	-12.58	Pk
Horizontal	10360.107	49.62	-9.36	40.26	54	-13.74	AV
Horizontal	15540.009	62.87	-7.84	55.03	74	-18.97	Pk
Horizontal	15540.009	49.99	-7.84	42.15	54	-11.85	AV
Middle Channel (5200 MHz)-Above 1G							
Vertical	4592.070	71.55	-20.42	51.13	74	-22.87	Pk
Vertical	4592.070	59.74	-20.42	39.33	54	-14.67	AV
Vertical	10400.105	64.88	-9.30	55.58	68.2	-12.62	Pk
Vertical	10400.105	49.30	-9.30	40.00	54	-14.00	AV
Vertical	15600.022	62.23	-7.82	54.41	74	-19.59	Pk
Vertical	15600.022	49.46	-7.82	41.64	54	-12.36	AV
Horizontal	4592.151	70.60	-20.42	50.18	74	-23.82	Pk
Horizontal	4592.151	59.79	-20.42	39.37	54	-14.63	AV
Horizontal	10400.172	64.03	-9.30	54.73	68.2	-13.47	Pk
Horizontal	10400.172	49.26	-9.30	39.96	54	-14.04	AV
Horizontal	15600.091	60.16	-7.82	52.34	74	-21.66	Pk
Horizontal	15600.091	49.68	-7.82	41.86	54	-12.14	AV
High Channel (5240 MHz)-Above 1G							
Vertical	4739.116	74.15	-20.12	54.03	74	-19.97	Pk
Vertical	4739.116	59.51	-20.12	39.39	54	-14.61	AV
Vertical	10480.069	64.89	-9.18	55.71	68.2	-12.49	Pk
Vertical	10480.069	49.47	-9.18	40.29	54	-13.71	AV
Vertical	15720.139	64.86	-7.78	57.08	74	-16.92	Pk
Vertical	15720.139	49.52	-7.78	41.74	54	-12.26	AV
Horizontal	4739.060	74.06	-20.12	53.94	74	-20.06	Pk
Horizontal	4739.060	59.67	-20.12	39.54	54	-14.46	AV
Horizontal	10480.045	63.42	-9.18	54.24	68.2	-13.96	Pk
Horizontal	10480.045	49.87	-9.18	40.69	54	-13.31	AV
Horizontal	15720.096	60.15	-7.78	52.37	74	-21.63	Pk
Horizontal	15720.096	49.14	-7.78	41.36	54	-12.64	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)	Reading Level (dBuV/m)	Correct Factor (dB)	Measurement (dBuV/m)	Limits (dBuV/m)	Over (dB)	Detector Type
Low Channel (5180 MHz)-Above 1G							
Vertical	4434.187	71.34	-20.73	50.60	68.2	-17.60	Pk
Vertical	4434.187	59.67	-20.73	38.94	54	-15.06	AV
Vertical	10360.038	61.36	-9.36	52.00	68.2	-16.20	Pk
Vertical	10360.038	49.93	-9.36	40.57	54	-13.43	AV
Vertical	15540.040	63.86	-7.84	56.02	74	-17.98	Pk
Vertical	15540.040	49.91	-7.84	42.07	54	-11.93	AV
Horizontal	4434.181	70.63	-20.73	49.90	68.2	-18.30	Pk
Horizontal	4434.181	59.73	-20.73	39.00	54	-15.00	AV
Horizontal	10360.122	62.11	-9.36	52.75	68.2	-15.45	Pk
Horizontal	10360.122	49.12	-9.36	39.76	54	-14.24	AV
Horizontal	15540.089	60.83	-7.84	52.99	74	-21.01	Pk
Horizontal	15540.089	49.03	-7.84	41.19	54	-12.81	AV
Middle Channel (5200 MHz)-Above 1G							
Vertical	4592.150	72.09	-20.42	51.67	74	-22.33	Pk
Vertical	4592.150	59.86	-20.42	39.44	54	-14.56	AV
Vertical	10400.062	61.01	-9.30	51.71	68.2	-16.49	Pk
Vertical	10400.062	49.59	-9.30	40.29	54	-13.71	AV
Vertical	15600.165	64.02	-7.82	56.20	74	-17.80	Pk
Vertical	15600.165	49.09	-7.82	41.27	54	-12.73	AV
Horizontal	4592.061	71.69	-20.42	51.27	74	-22.73	Pk
Horizontal	4592.061	59.41	-20.42	39.00	54	-15.00	AV
Horizontal	10400.119	61.89	-9.30	52.59	68.2	-15.61	Pk
Horizontal	10400.119	49.49	-9.30	40.19	54	-13.81	AV
Horizontal	15600.174	64.64	-7.82	56.82	74	-17.18	Pk
Horizontal	15600.174	49.45	-7.82	41.63	54	-12.37	AV
High Channel (5240 MHz)-Above 1G							
Vertical	4739.126	72.50	-20.12	52.38	74	-21.62	Pk
Vertical	4739.126	59.37	-20.12	39.25	54	-14.75	AV
Vertical	10480.189	64.37	-9.18	55.19	68.2	-13.01	Pk
Vertical	10480.189	49.72	-9.18	40.54	54	-13.46	AV
Vertical	15720.171	60.08	-7.78	52.30	74	-21.70	Pk
Vertical	15720.171	49.90	-7.78	42.12	54	-11.88	AV
Horizontal	4739.065	73.28	-20.12	53.16	74	-20.84	Pk
Horizontal	4739.065	59.82	-20.12	39.70	54	-14.30	AV
Horizontal	10480.102	62.21	-9.18	53.03	68.2	-15.17	Pk
Horizontal	10480.102	49.92	-9.18	40.74	54	-13.26	AV
Horizontal	15720.177	61.84	-7.78	54.06	74	-19.94	Pk
Horizontal	15720.177	49.53	-7.78	41.75	54	-12.25	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)	Reading Level (dBuV/m)	Correct Factor (dB)	Measurement (dBuV/m)	Limits (dBuV/m)	Over (dB)	Detector Type
Low Channel (5260 MHz)-Above 1G							
Vertical	4434.165	73.62	-20.73	52.89	68.2	-15.31	Pk
Vertical	4434.165	59.07	-20.73	38.34	54	-15.66	AV
Vertical	10520.158	61.26	-9.12	52.14	68.2	-16.06	Pk
Vertical	10520.158	49.18	-9.12	40.06	54	-13.94	AV
Vertical	15780.070	63.56	-7.77	55.79	74	-18.21	Pk
Vertical	15780.070	49.16	-7.77	41.39	54	-12.61	AV
Horizontal	4434.182	70.61	-20.73	49.88	68.2	-18.32	Pk
Horizontal	4434.182	59.11	-20.73	38.38	54	-15.62	AV
Horizontal	10520.074	62.76	-9.12	53.64	68.2	-14.56	Pk
Horizontal	10520.074	49.40	-9.12	40.28	54	-13.72	AV
Horizontal	15780.146	60.70	-7.77	52.93	74	-21.07	Pk
Horizontal	15780.146	49.44	-7.77	41.67	54	-12.33	AV
Middle Channel (5280 MHz)-Above 1G							
Vertical	4592.139	73.53	-20.42	53.11	74	-20.89	Pk
Vertical	4592.139	59.64	-20.42	39.23	54	-14.77	AV
Vertical	10560.025	61.25	-9.06	52.19	68.2	-16.01	Pk
Vertical	10560.025	49.74	-9.06	40.68	54	-13.32	AV
Vertical	15840.180	60.20	-7.75	52.45	74	-21.55	Pk
Vertical	15840.180	49.96	-7.75	42.21	54	-11.79	AV
Horizontal	4592.185	72.44	-20.42	52.02	74	-21.98	Pk
Horizontal	4592.185	59.70	-20.42	39.29	54	-14.71	AV
Horizontal	10560.111	60.82	-9.06	51.76	68.2	-16.44	Pk
Horizontal	10560.111	49.99	-9.06	40.93	54	-13.07	AV
Horizontal	15840.095	61.19	-7.75	53.44	74	-20.56	Pk
Horizontal	15840.095	49.31	-7.75	41.56	54	-12.44	AV
High Channel (5320 MHz)-Above 1G							
Vertical	4739.123	72.63	-20.12	52.51	74	-23.66	Pk
Vertical	4739.123	59.07	-20.12	38.95	54	-14.93	AV
Vertical	10640.059	61.15	-8.94	52.21	68.2	-15.71	Pk
Vertical	10640.059	49.52	-8.94	40.58	54	-13.21	AV
Vertical	15960.156	62.36	-7.71	54.65	74	-17.39	Pk
Vertical	15960.156	49.27	-7.71	41.56	54	-12.47	AV
Horizontal	4739.109	74.61	-20.12	54.49	74	-19.29	Pk
Horizontal	4739.109	59.45	-20.12	39.33	54	-14.96	AV
Horizontal	10640.109	60.97	-8.94	52.03	68.2	-16.07	Pk
Horizontal	10640.109	49.66	-8.94	40.72	54	-14.08	AV
Horizontal	15960.142	64.18	-7.71	56.47	74	-21.51	Pk
Horizontal	15960.142	49.14	-7.71	41.43	54	-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.

CO.LTD

Test Mode:	TX(5.3G) - 802.11n-HT20
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Polar (H/V)	Frequency (MHz)	Reading Level (dBuV/m)	Correct Factor (dB)	Measurement (dBuV/m)	Limits (dBuV/m)	Over (dB)	Detector Type
Low Channel (5260 MHz)-Above 1G							
Vertical	4434.086	73.78	-20.73	53.05	68.2	-15.15	Pk
Vertical	4434.086	59.64	-20.73	38.91	54	-15.09	AV
Vertical	10520.192	61.37	-9.12	52.25	68.2	-15.95	Pk
Vertical	10520.192	49.40	-9.12	40.28	54	-13.72	AV
Vertical	15780.168	61.92	-7.77	54.15	74	-19.85	Pk
Vertical	15780.168	49.19	-7.77	41.42	54	-12.58	AV
Horizontal	4434.091	71.63	-20.73	50.90	68.2	-17.30	Pk
Horizontal	4434.091	59.48	-20.73	38.75	54	-15.25	AV
Horizontal	10520.044	63.06	-9.12	53.94	68.2	-14.26	Pk
Horizontal	10520.044	49.65	-9.12	40.53	54	-13.47	AV
Horizontal	15780.164	61.56	-7.77	53.79	74	-20.21	Pk
Horizontal	15780.164	49.31	-7.77	41.54	54	-12.46	AV
Middle Channel (5280 MHz)-Above 1G							
Vertical	4592.010	74.25	-20.42	53.83	74	-20.17	Pk
Vertical	4592.010	59.42	-20.42	39.00	54	-15.00	AV
Vertical	10560.163	61.29	-9.06	52.23	68.2	-15.97	Pk
Vertical	10560.163	49.67	-9.06	40.61	54	-13.39	AV
Vertical	15840.034	61.47	-7.75	53.72	74	-20.28	Pk
Vertical	15840.034	49.81	-7.75	42.06	54	-11.94	AV
Horizontal	4592.019	72.76	-20.42	52.35	74	-21.65	Pk
Horizontal	4592.019	59.10	-20.42	38.69	54	-15.31	AV
Horizontal	10560.188	63.18	-9.06	54.12	68.2	-14.08	Pk
Horizontal	10560.188	49.83	-9.06	40.77	54	-13.23	AV
Horizontal	15840.172	61.52	-7.75	53.77	74	-20.23	Pk
Horizontal	15840.172	49.00	-7.75	41.25	54	-12.75	AV
High Channel (5320 MHz)-Above 1G							
Vertical	4739.073	72.44	-20.12	52.32	74	-21.68	Pk
Vertical	4739.073	59.74	-20.12	39.62	54	-14.38	AV
Vertical	10640.061	62.91	-8.94	53.97	68.2	-14.23	Pk
Vertical	10640.061	49.08	-8.94	40.14	54	-13.86	AV
Vertical	15960.113	60.32	-7.71	52.61	74	-21.39	Pk
Vertical	15960.113	49.46	-7.71	41.75	54	-12.25	AV
Horizontal	4739.038	72.89	-20.12	52.76	74	-21.24	Pk
Horizontal	4739.038	59.99	-20.12	39.86	54	-14.14	AV
Horizontal	10640.167	60.85	-8.94	51.91	68.2	-16.29	Pk
Horizontal	10640.167	49.93	-8.94	40.99	54	-13.01	AV
Horizontal	15960.041	63.09	-7.71	55.38	74	-18.62	Pk
Horizontal	15960.041	49.21	-7.71	41.50	54	-12.50	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.

SHENZHEN

Test Mode:	TX(5.6G) - 802.11a
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Polar (H/V)	Frequency (MHz)	Reading Level (dBuV/m)	Correct Factor (dB)	Measurement (dBuV/m)	Limits (dBuV/m)	Over (dB)	Detector Type
Low Channel (5500 MHz)-Above 1G							
Vertical	4434.018	74.33	-20.73	53.60	68.2	-14.60	Pk
Vertical	4434.018	59.40	-20.73	38.66	54	-15.34	AV
Vertical	11000.108	62.43	-8.40	54.03	68.2	-14.17	Pk
Vertical	11000.108	49.39	-8.40	40.99	54	-13.01	AV
Vertical	16500.099	64.88	-6.09	58.79	74	-15.21	Pk
Vertical	16500.099	49.54	-6.09	43.45	54	-10.55	AV
Horizontal	4434.024	71.91	-20.73	51.18	68.2	-17.02	Pk
Horizontal	4434.024	59.94	-20.73	39.21	54	-14.79	AV
Horizontal	11000.008	60.20	-8.40	51.80	68.2	-16.40	Pk
Horizontal	11000.008	49.34	-8.40	40.94	54	-13.06	AV
Horizontal	16500.003	61.96	-6.09	55.87	74	-18.13	Pk
Horizontal	16500.003	49.83	-6.09	43.74	54	-10.26	AV
Middle Channel (5580 MHz)-Above 1G							
Vertical	4592.032	73.12	-20.42	52.70	74	-21.30	Pk
Vertical	4592.032	59.79	-20.42	39.37	54	-14.63	AV
Vertical	11160.061	61.10	-8.53	52.57	68.2	-15.63	Pk
Vertical	11160.061	49.89	-8.53	41.36	54	-12.64	AV
Vertical	16740.170	61.66	-5.31	56.35	74	-17.65	Pk
Vertical	16740.170	49.55	-5.31	44.24	54	-9.76	AV
Horizontal	4592.126	70.04	-20.42	49.63	74	-24.37	Pk
Horizontal	4592.126	59.26	-20.42	38.85	54	-15.15	AV
Horizontal	11160.080	62.78	-8.53	54.25	68.2	-13.95	Pk
Horizontal	11160.080	49.60	-8.53	41.07	54	-12.93	AV
Horizontal	16740.119	60.57	-5.31	55.26	74	-18.74	Pk
Horizontal	16740.119	49.51	-5.31	44.20	54	-9.80	AV
High Channel (5700 MHz)-Above 1G							
Vertical	4739.120	73.07	-20.12	52.95	74	-21.05	Pk
Vertical	4739.120	59.57	-20.12	39.45	54	-14.55	AV
Vertical	11400.037	62.32	-8.72	53.60	68.2	-14.60	Pk
Vertical	11400.037	49.37	-8.72	40.65	54	-13.35	AV
Vertical	17100.062	62.90	-3.92	58.98	74	-15.02	Pk
Vertical	17100.062	49.30	-3.92	45.38	54	-8.62	AV
Horizontal	4739.122	71.36	-20.12	51.24	74	-22.76	Pk
Horizontal	4739.122	59.08	-20.12	38.95	54	-15.05	AV
Horizontal	11400.192	60.07	-8.72	51.35	68.2	-16.85	Pk
Horizontal	11400.192	49.11	-8.72	40.39	54	-13.61	AV
Horizontal	17100.036	63.62	-3.92	59.70	74	-14.30	Pk
Horizontal	17100.036	49.18	-3.92	45.26	54	-8.74	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	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5500 MHz)-Above 1G							
Vertical	4434.011	71.13	-20.73	50.39	68.2	-17.81	Pk
Vertical	4434.011	59.59	-20.73	38.86	54	-15.14	AV
Vertical	11000.133	61.97	-8.40	53.57	68.2	-14.63	Pk
Vertical	11000.133	49.97	-8.40	41.57	54	-12.43	AV
Vertical	16500.093	62.20	-6.09	56.11	74	-17.89	Pk
Vertical	16500.093	49.10	-6.09	43.01	54	-10.99	AV
Horizontal	4434.168	70.90	-20.73	50.17	68.2	-18.03	Pk
Horizontal	4434.168	59.74	-20.73	39.00	54	-15.00	AV
Horizontal	11000.041	63.50	-8.40	55.10	68.2	-13.10	Pk
Horizontal	11000.041	49.95	-8.40	41.55	54	-12.45	AV
Horizontal	16500.063	61.80	-6.09	55.71	74	-18.29	Pk
Horizontal	16500.063	49.84	-6.09	43.75	54	-10.25	AV
Middle Channel (5580 MHz)-Above 1G							
Vertical	4592.011	70.29	-20.42	49.88	74	-24.12	Pk
Vertical	4592.011	59.38	-20.42	38.96	54	-15.04	AV
Vertical	11160.058	61.69	-8.53	53.16	68.2	-15.04	Pk
Vertical	11160.058	49.83	-8.53	41.30	54	-12.70	AV
Vertical	16740.199	62.19	-5.31	56.88	74	-17.12	Pk
Vertical	16740.199	49.60	-5.31	44.29	54	-9.71	AV
Horizontal	4592.130	71.09	-20.42	50.68	74	-23.32	Pk
Horizontal	4592.130	59.97	-20.42	39.56	54	-14.44	AV
Horizontal	11160.084	63.99	-8.53	55.46	68.2	-12.74	Pk
Horizontal	11160.084	49.03	-8.53	40.50	54	-13.50	AV
Horizontal	16740.148	60.28	-5.31	54.97	74	-19.03	Pk
Horizontal	16740.148	49.66	-5.31	44.35	54	-9.65	AV
High Channel (5700 MHz)-Above 1G							
Vertical	4739.098	70.89	-20.12	50.77	74	-23.23	Pk
Vertical	4739.098	59.55	-20.12	39.43	54	-14.57	AV
Vertical	11400.151	60.08	-8.72	51.36	68.2	-16.84	Pk
Vertical	11400.151	49.95	-8.72	41.23	54	-12.77	AV
Vertical	17100.134	64.53	-3.92	60.61	74	-13.39	Pk
Vertical	17100.134	49.86	-3.92	45.94	54	-8.06	AV
Horizontal	4739.161	71.75	-20.12	51.63	74	-22.37	Pk
Horizontal	4739.161	59.46	-20.12	39.34	54	-14.66	AV
Horizontal	11400.146	64.76	-8.72	56.04	68.2	-12.16	Pk
Horizontal	11400.146	49.42	-8.72	40.70	54	-13.30	AV
Horizontal	17100.003	64.63	-3.92	60.71	74	-13.29	Pk
Horizontal	17100.003	49.05	-3.92	45.13	54	-8.87	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.

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Test Mode:	TX (5.8G) -- 802.11a
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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	4679.089	71.30	-20.24	51.06	74	-22.94	Pk
Vertical	4679.089	59.84	-20.24	39.60	54	-14.40	AV
Vertical	11490.167	63.25	-8.79	54.46	68.2	-13.74	Pk
Vertical	11490.167	49.56	-8.79	40.77	54	-13.23	AV
Vertical	17235.050	58.31	-3.18	55.13	68.2	-13.07	Pk
Vertical	17235.050	44.58	-3.18	41.40	54	-12.60	AV
Horizontal	4679.051	70.96	-20.73	50.23	74	-23.77	Pk
Horizontal	4679.051	59.34	-20.73	38.61	54	-15.39	AV
Horizontal	11490.171	61.43	-8.79	52.64	68.2	-15.56	Pk
Horizontal	11490.171	49.72	-8.79	40.93	54	-13.07	AV
Horizontal	17235.179	58.14	-3.18	54.96	68.2	-13.24	Pk
Horizontal	17235.179	44.61	-3.18	41.43	54	-12.57	AV
Middle Channel (5785 MHz)-Above 1G							
Vertical	4592.142	74.65	-20.42	54.23	74	-19.77	Pk
Vertical	4592.142	59.53	-20.42	39.11	54	-14.89	AV
Vertical	11570.008	63.75	-8.86	54.89	68.2	-13.31	Pk
Vertical	11570.008	49.78	-8.86	40.92	54	-13.08	AV
Vertical	17355.059	59.53	-2.52	57.01	68.2	-11.19	Pk
Vertical	17355.059	44.24	-2.52	41.72	54	-12.28	AV
Horizontal	4592.064	71.69	-20.42	51.28	74	-22.72	Pk
Horizontal	4592.064	59.06	-20.42	38.65	54	-15.35	AV
Horizontal	11570.121	61.60	-8.86	52.74	68.2	-15.46	Pk
Horizontal	11570.121	49.88	-8.86	41.02	54	-12.98	AV
Horizontal	17355.140	59.69	-2.52	57.17	68.2	-11.03	Pk
Horizontal	17355.140	44.84	-2.52	42.32	54	-11.68	AV
High Channel (5825 MHz)-Above 1G							
Vertical	6039.100	72.35	-18.93	53.41	68.2	-14.79	Pk
Vertical	6039.100	59.65	-18.93	40.72	54	-13.28	AV
Vertical	11650.200	61.52	-8.92	52.60	74	-21.40	Pk
Vertical	11650.200	49.23	-8.92	40.31	54	-13.69	AV
Vertical	17475.088	59.75	-1.86	57.89	68.2	-10.31	Pk
Vertical	17475.088	44.56	-1.86	42.70	54	-11.30	AV
Horizontal	6039.057	70.82	-18.93	51.89	68.2	-16.31	Pk
Horizontal	6039.057	59.29	-18.93	40.36	54	-13.64	AV
Horizontal	11650.133	61.74	-8.92	52.82	74	-21.18	Pk
Horizontal	11650.133	49.99	-8.92	41.07	54	-12.93	AV
Horizontal	17475.052	58.82	-1.86	56.96	68.2	-11.24	Pk
Horizontal	17475.052	44.21	-1.86	42.35	54	-11.65	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.

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Test Mode:	TX (5.8G) --802.11n-HT20
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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	4679.077	74.44	-20.24	54.20	74	-19.80	Pk
Vertical	4679.077	59.23	-20.24	38.99	54	-15.01	AV
Vertical	11490.063	63.68	-8.79	54.89	68.2	-13.31	Pk
Vertical	11490.063	49.45	-8.79	40.66	54	-13.34	AV
Vertical	17235.104	58.32	-3.18	55.14	68.2	-13.06	Pk
Vertical	17235.104	44.01	-3.18	40.83	54	-13.17	AV
Horizontal	4679.179	71.27	-20.24	51.03	74	-22.97	Pk
Horizontal	4679.179	59.98	-20.24	39.74	54	-14.26	AV
Horizontal	11490.155	62.07	-8.79	53.28	68.2	-14.92	Pk
Horizontal	11490.155	49.15	-8.79	40.36	54	-13.64	AV
Horizontal	17235.019	57.55	-3.18	54.37	68.2	-13.83	Pk
Horizontal	17235.019	44.13	-3.18	40.95	54	-13.05	AV
Middle Channel (5785 MHz)-Above 1G							
Vertical	4592.044	73.11	-20.42	52.70	74	-21.30	Pk
Vertical	4592.044	59.16	-20.42	38.75	54	-15.25	AV
Vertical	11570.145	64.64	-8.86	55.78	68.2	-12.42	Pk
Vertical	11570.145	49.38	-8.86	40.52	54	-13.48	AV
Vertical	17355.174	55.03	-2.52	52.51	68.2	-15.69	Pk
Vertical	17355.174	44.11	-2.52	41.59	54	-12.41	AV
Horizontal	4592.008	70.87	-20.42	50.45	74	-23.55	Pk
Horizontal	4592.008	59.67	-20.42	39.26	54	-14.74	AV
Horizontal	11570.095	61.76	-8.86	52.90	68.2	-15.30	Pk
Horizontal	11570.095	49.30	-8.86	40.44	54	-13.56	AV
Horizontal	17355.142	57.90	-2.52	55.38	68.2	-12.82	Pk
Horizontal	17355.142	44.20	-2.52	41.68	54	-12.32	AV
High Channel (5825 MHz)-Above 1G							
Vertical	6039.154	72.64	-18.93	53.71	68.2	-14.49	Pk
Vertical	6039.154	59.51	-18.93	40.58	54	-13.42	AV
Vertical	11650.160	64.68	-8.92	55.76	74	-18.24	Pk
Vertical	11650.160	49.22	-8.92	40.30	54	-13.70	AV
Vertical	17475.047	55.60	-1.86	53.74	68.2	-14.46	Pk
Vertical	17475.047	44.28	-1.86	42.42	54	-11.58	AV
Horizontal	6039.030	72.22	-18.93	53.28	68.2	-14.92	Pk
Horizontal	6039.030	59.89	-18.93	40.96	54	-13.04	AV
Horizontal	11650.059	62.14	-8.92	53.22	74	-20.78	Pk
Horizontal	11650.059	49.17	-8.92	40.25	54	-13.75	AV
Horizontal	17475.088	57.64	-1.86	55.78	68.2	-12.42	Pk
Horizontal	17475.088	44.94	-1.86	43.08	54	-10.92	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

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.

(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 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 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

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

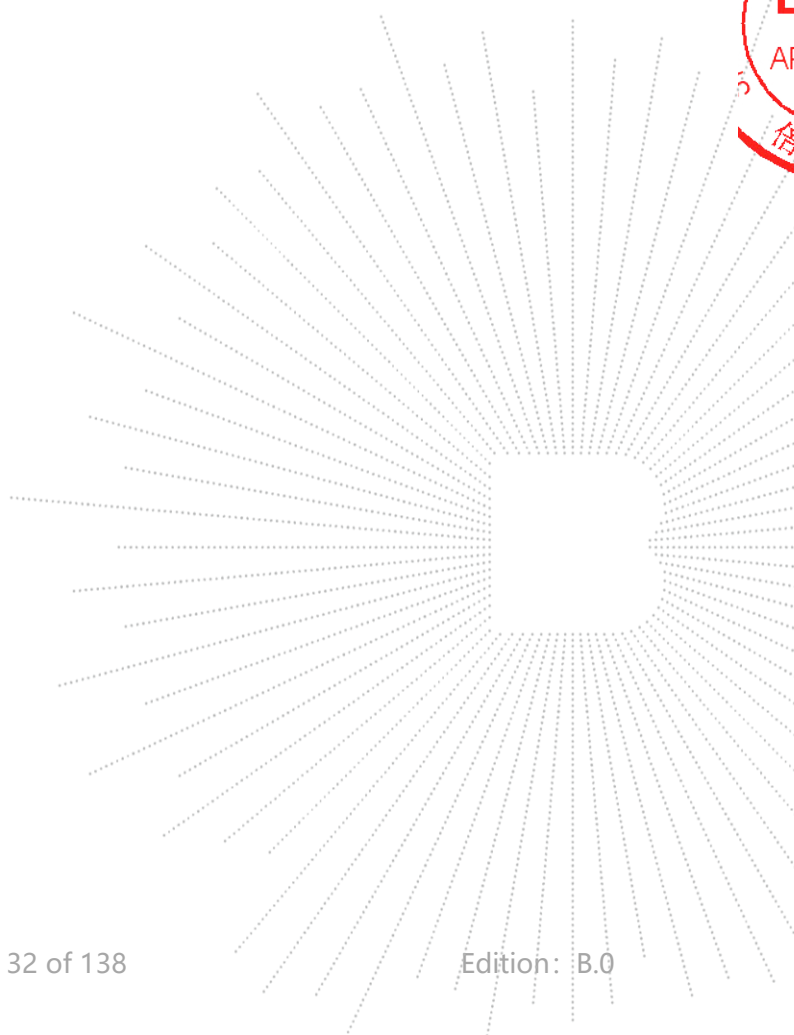
8.4 EUT Operating Conditions

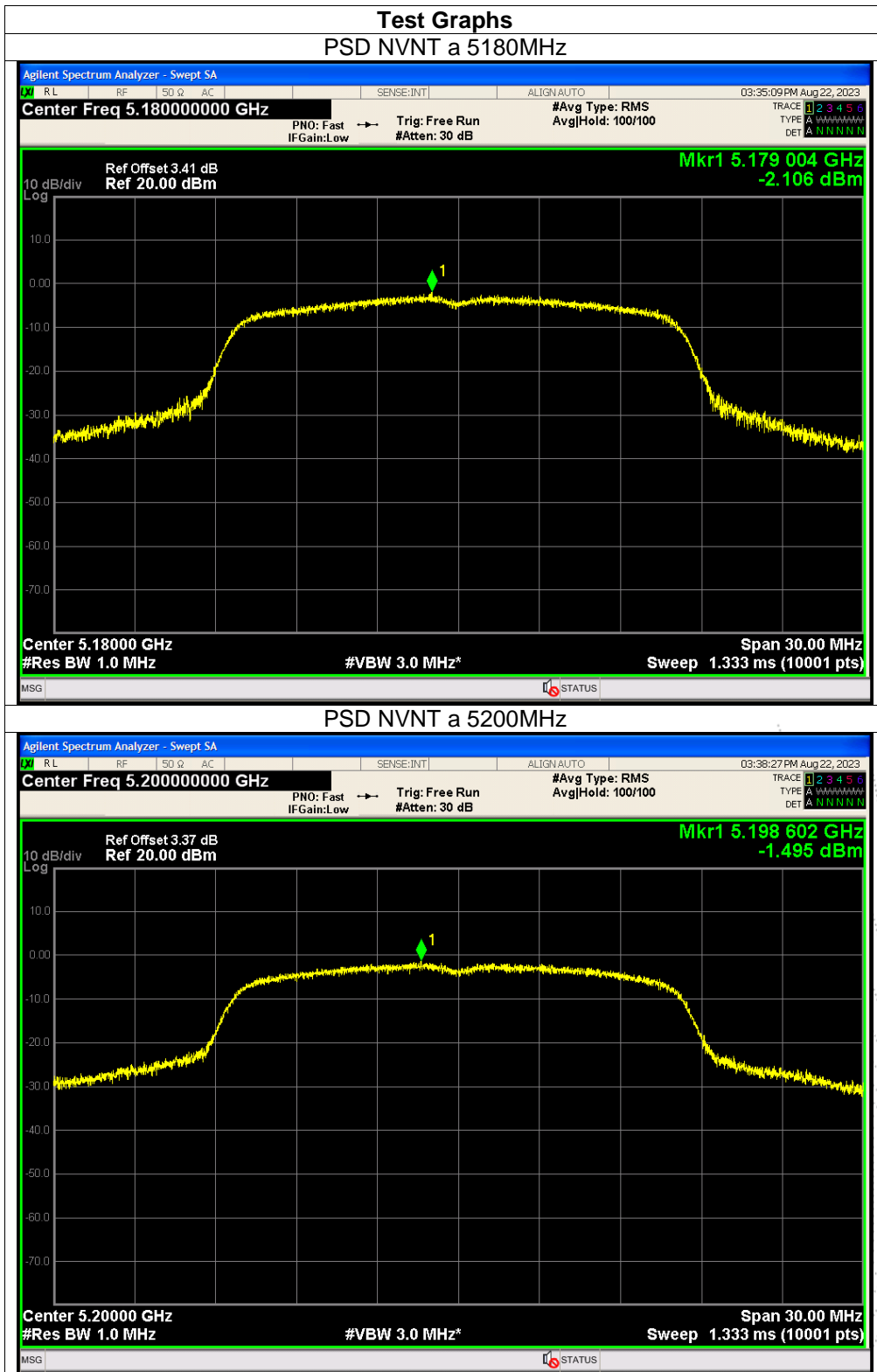
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

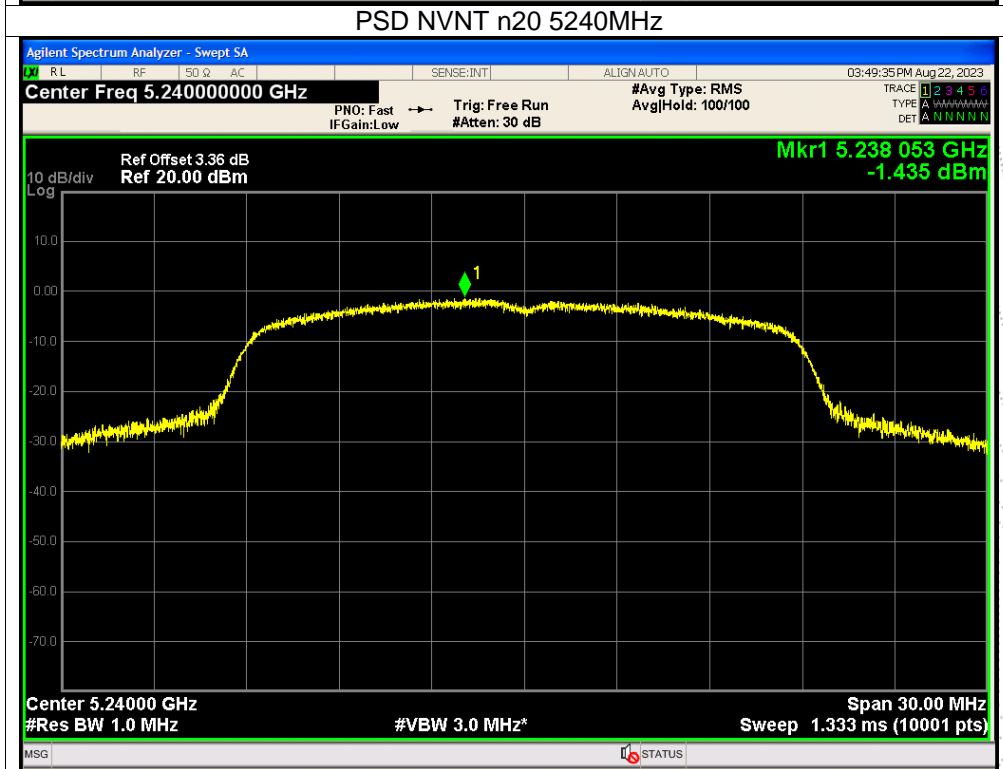
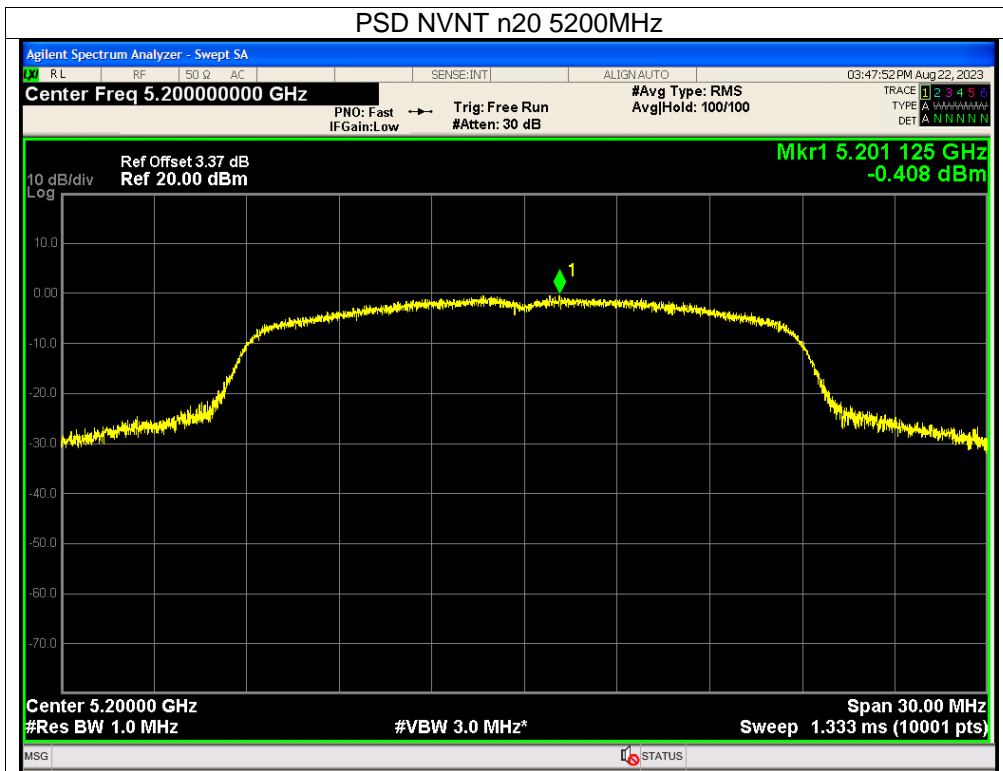
8.5 Test Result

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC 120V/60Hz
Test Mode:	(5180-5240MHz)		

Condition	Mode	Frequency (MHz)	Conducted PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	-2.11	11	Pass
NVNT	a	5200	-1.5	11	Pass
NVNT	a	5240	-1.55	11	Pass
NVNT	n20	5180	-1.94	11	Pass
NVNT	n20	5200	-0.41	11	Pass
NVNT	n20	5240	-1.44	11	Pass

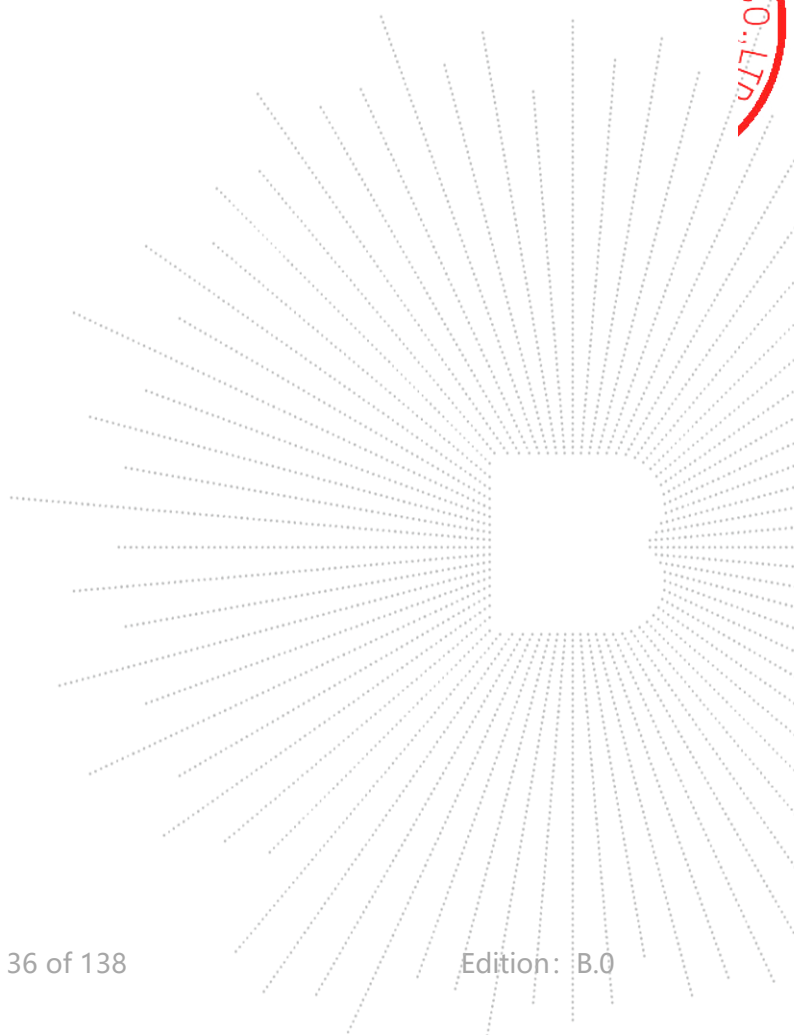


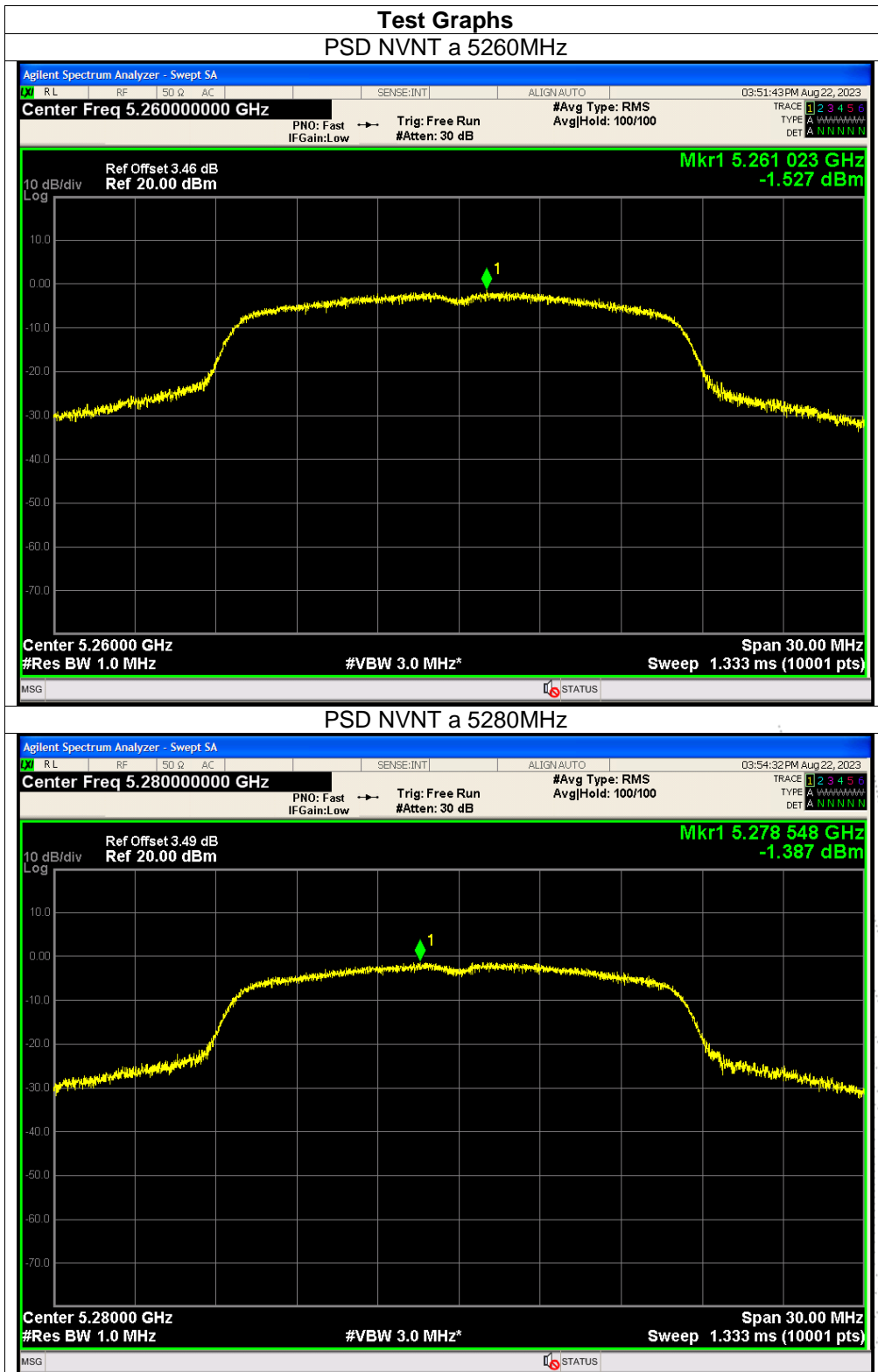




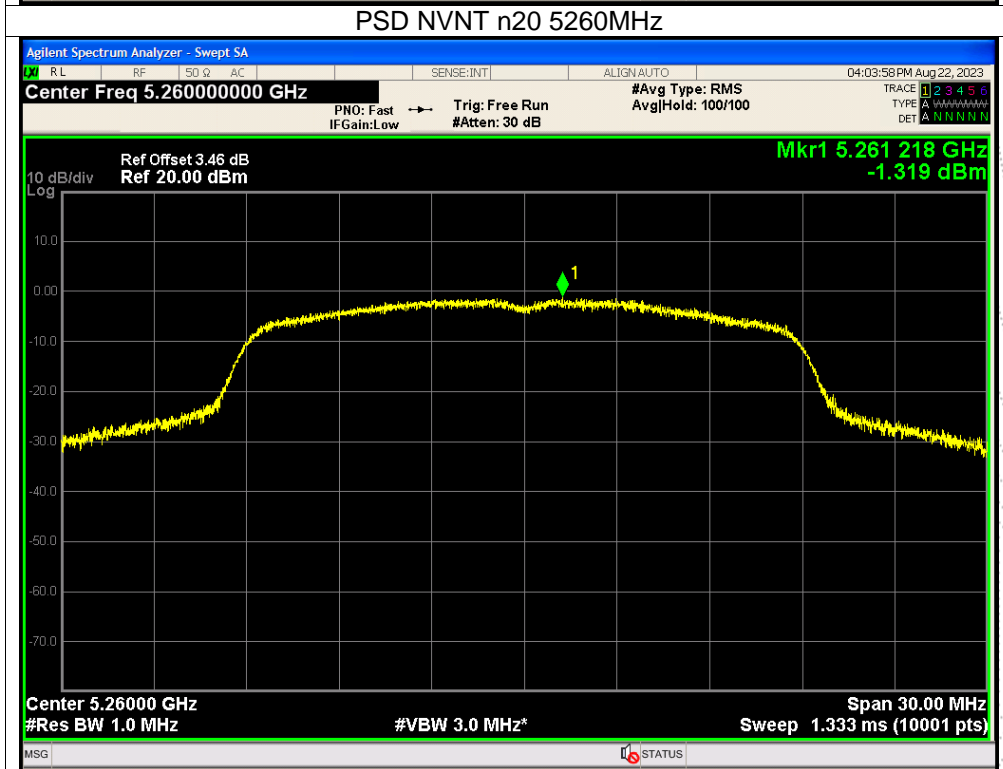
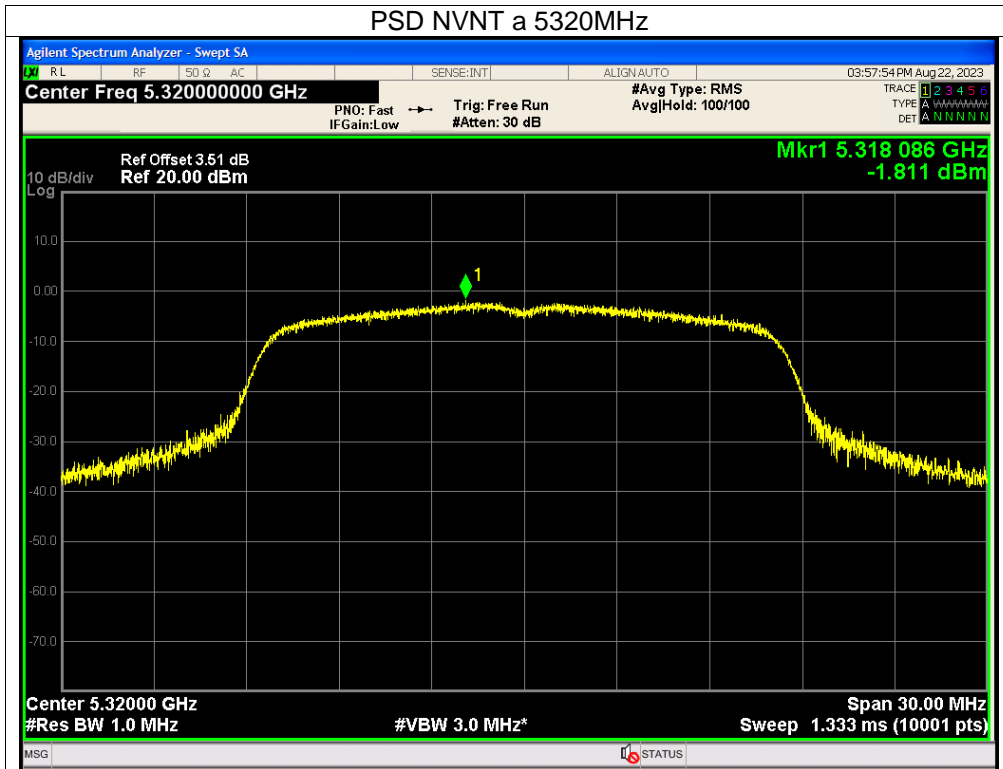
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC 120V/60Hz
Test Mode:	(5260-5320MHz)		

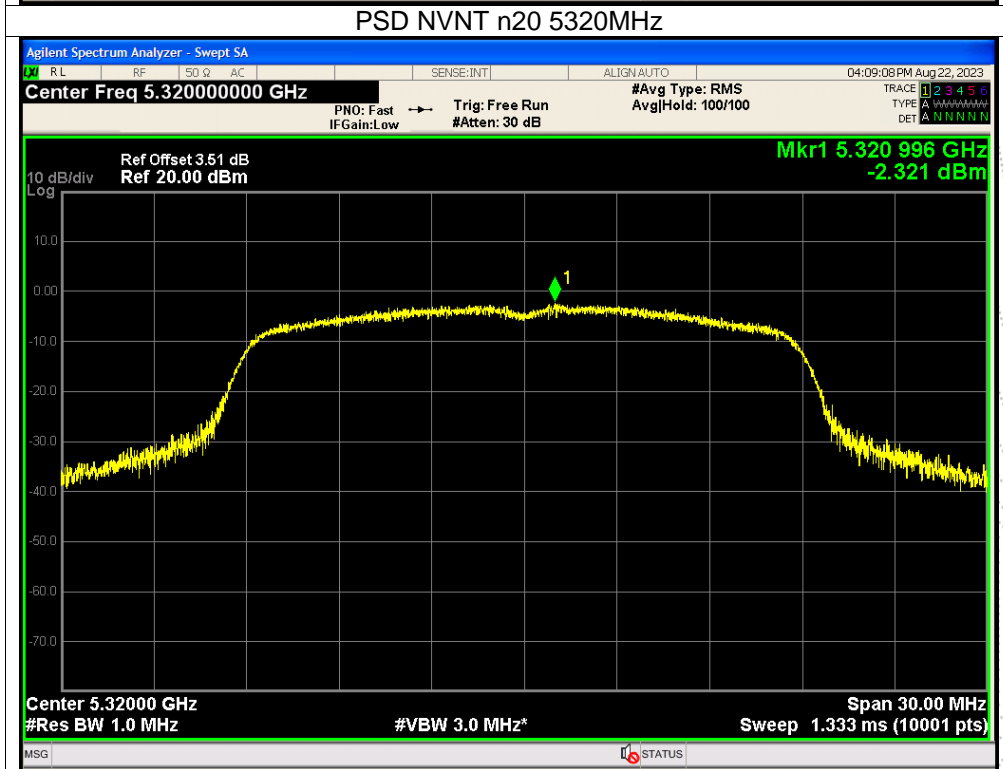
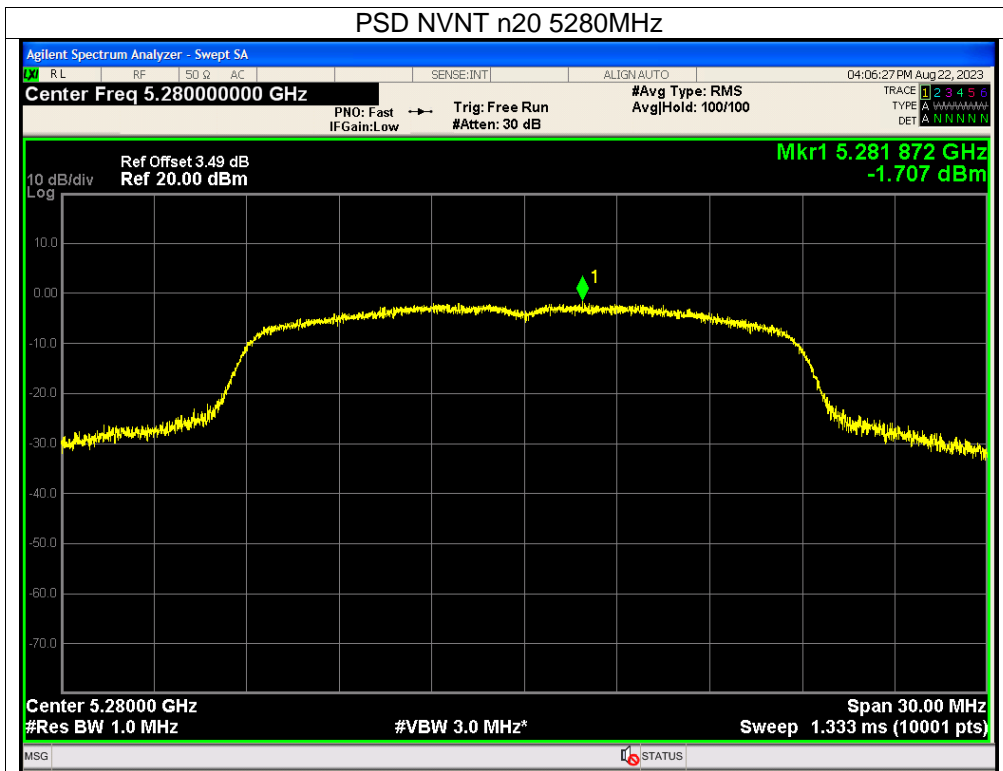
Condition	Mode	Frequency (MHz)	Conducted PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5260	-1.53	11	Pass
NVNT	a	5280	-1.39	11	Pass
NVNT	a	5320	-1.81	11	Pass
NVNT	n20	5260	-1.32	11	Pass
NVNT	n20	5280	-1.71	11	Pass
NVNT	n20	5320	-2.32	11	Pass



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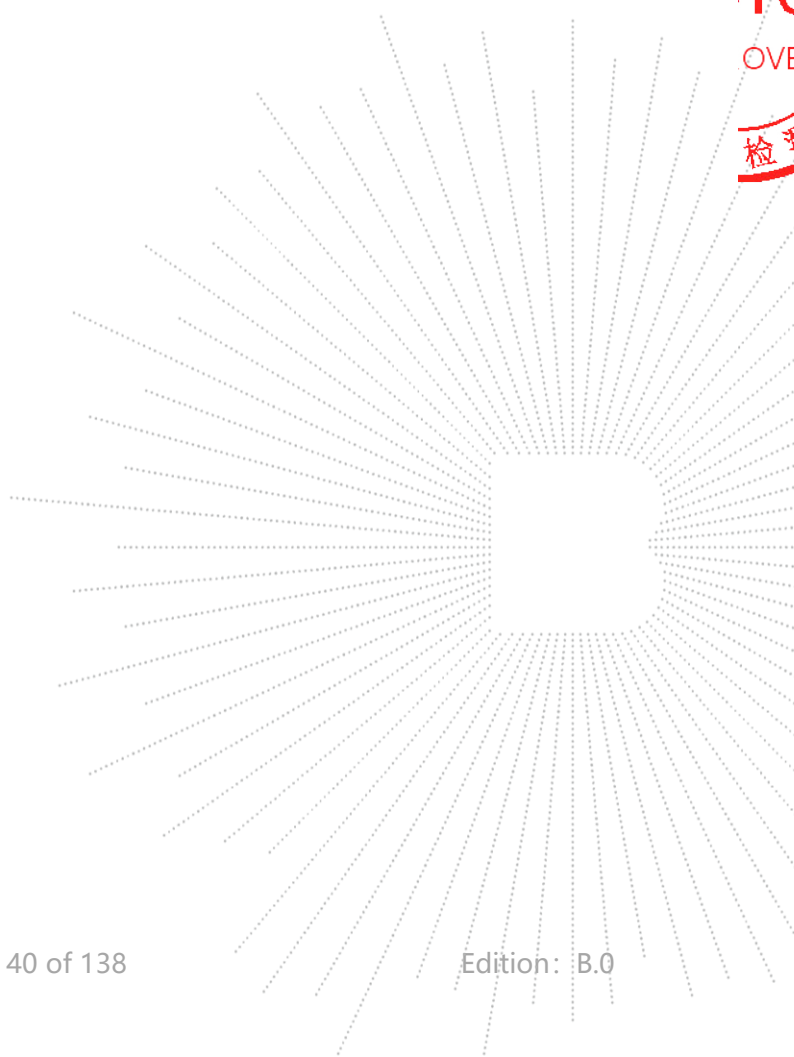


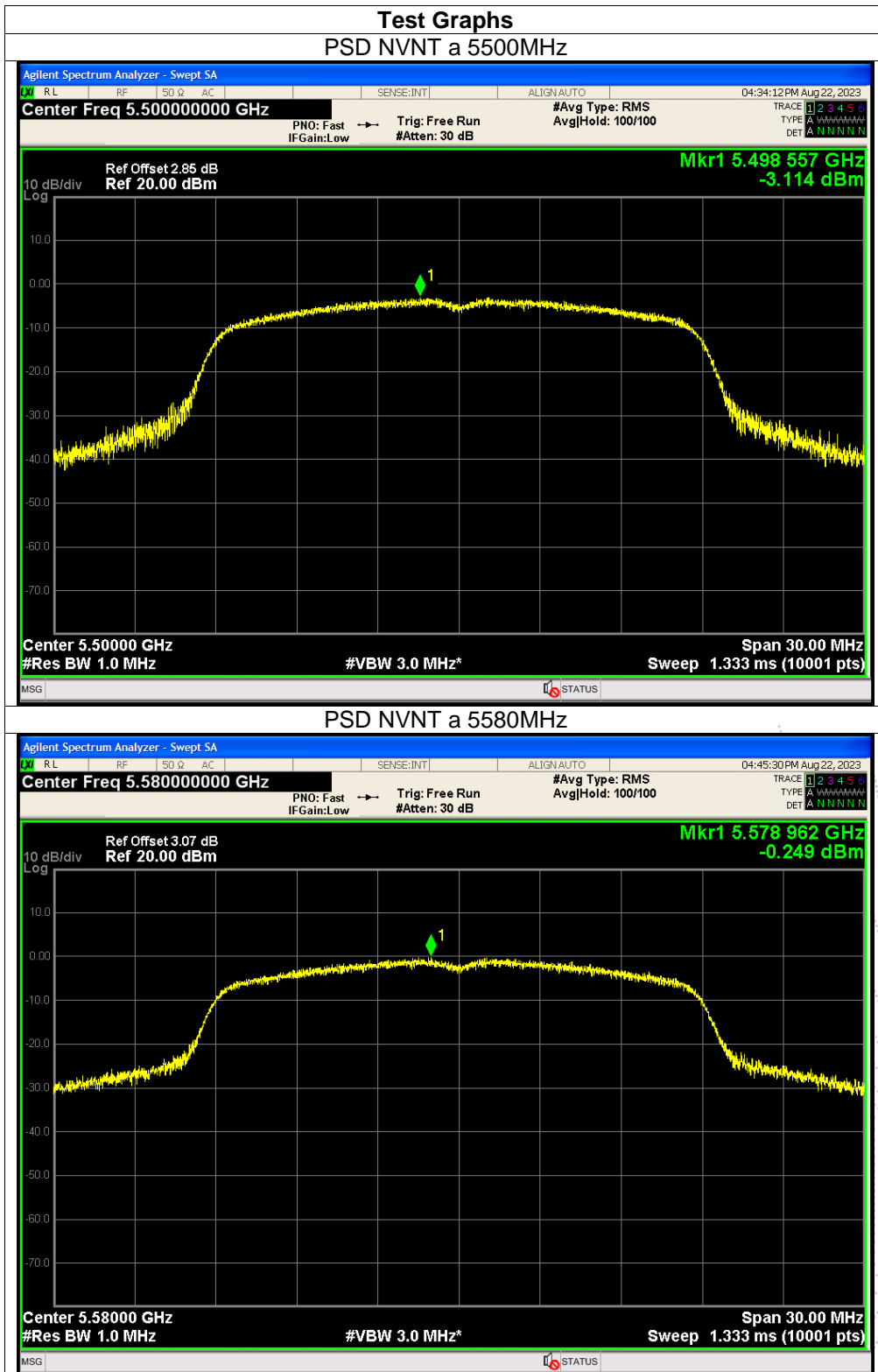


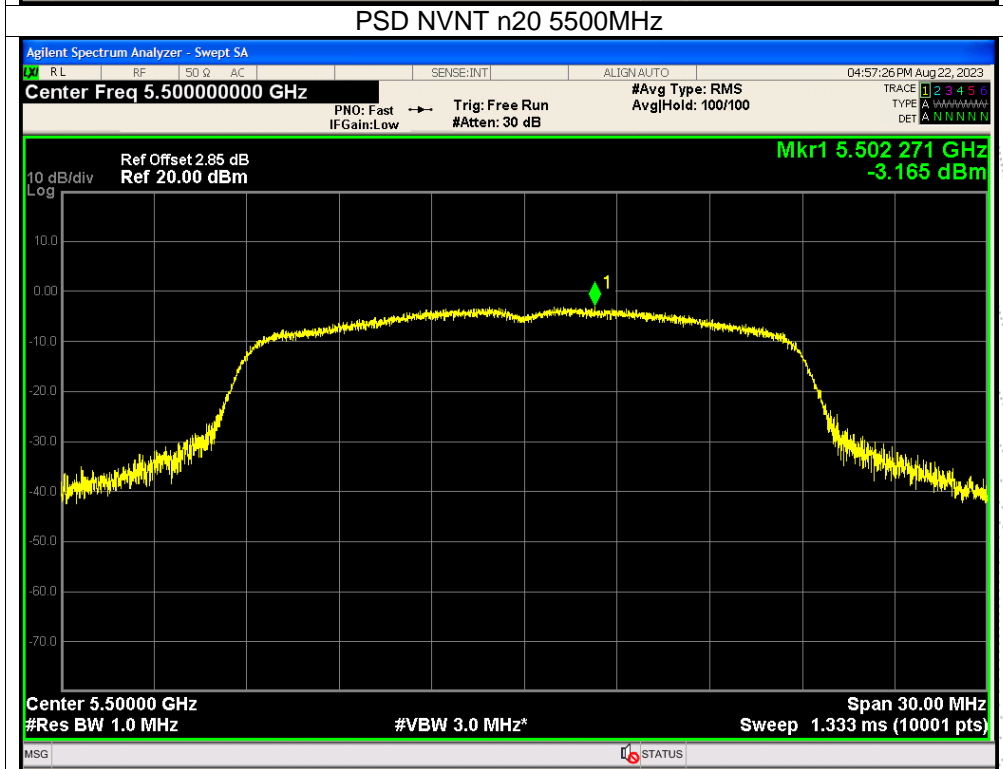
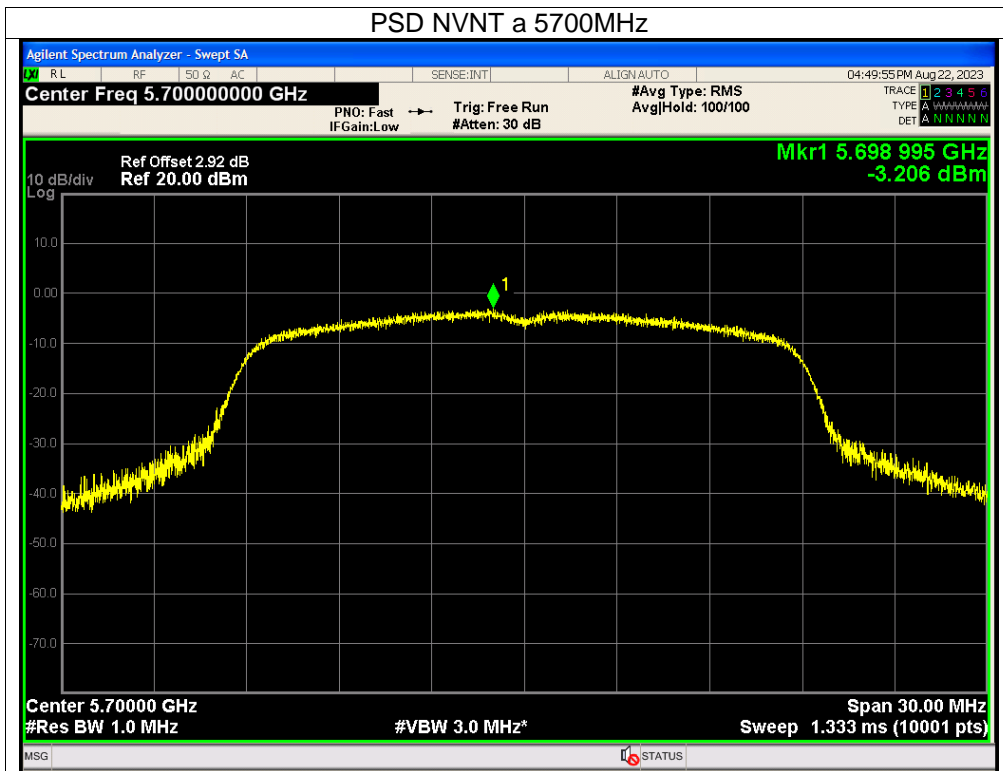
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC 120V/60Hz
Test Mode:	(5500-5700MHz)		

Condition	Mode	Frequency (MHz)	Conducted PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5500	-3.11	11	Pass
NVNT	a	5580	-0.25	11	Pass
NVNT	a	5700	-3.21	11	Pass
NVNT	n20	5500	-3.17	11	Pass
NVNT	n20	5580	0.38	11	Pass
NVNT	n20	5700	-2.83	11	Pass

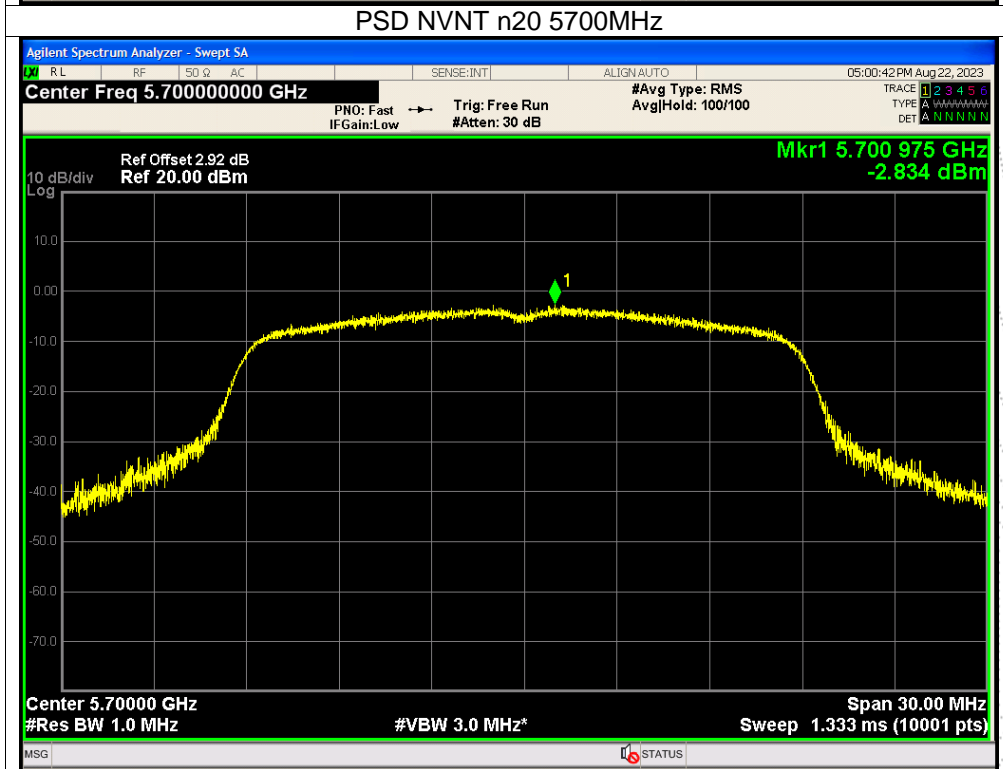
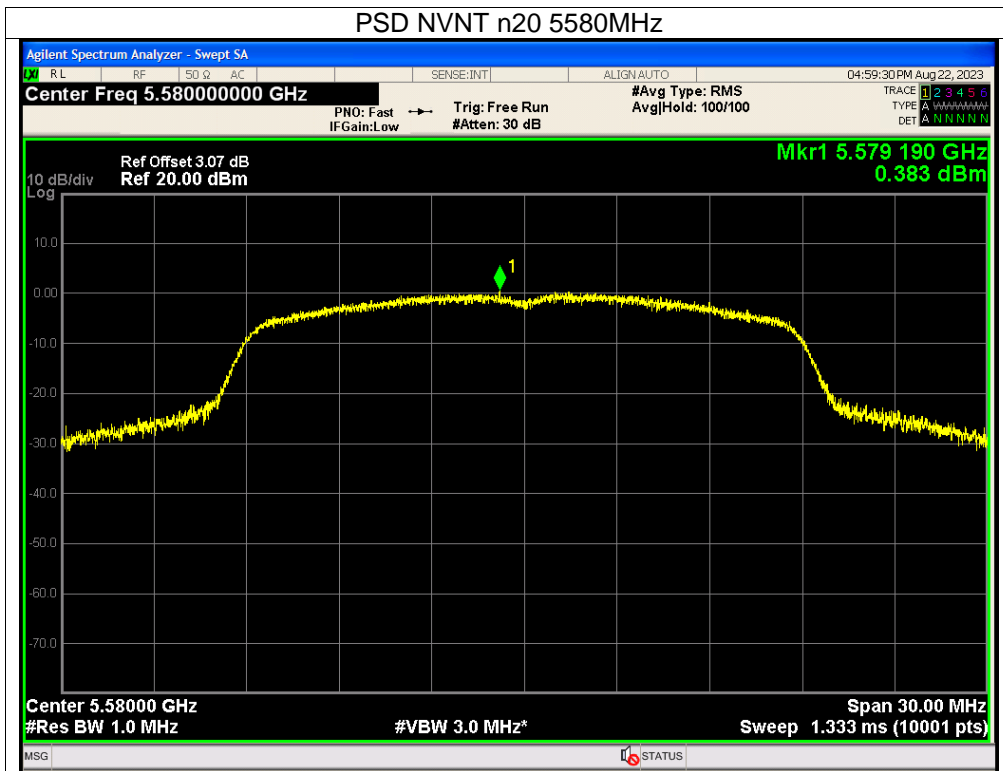
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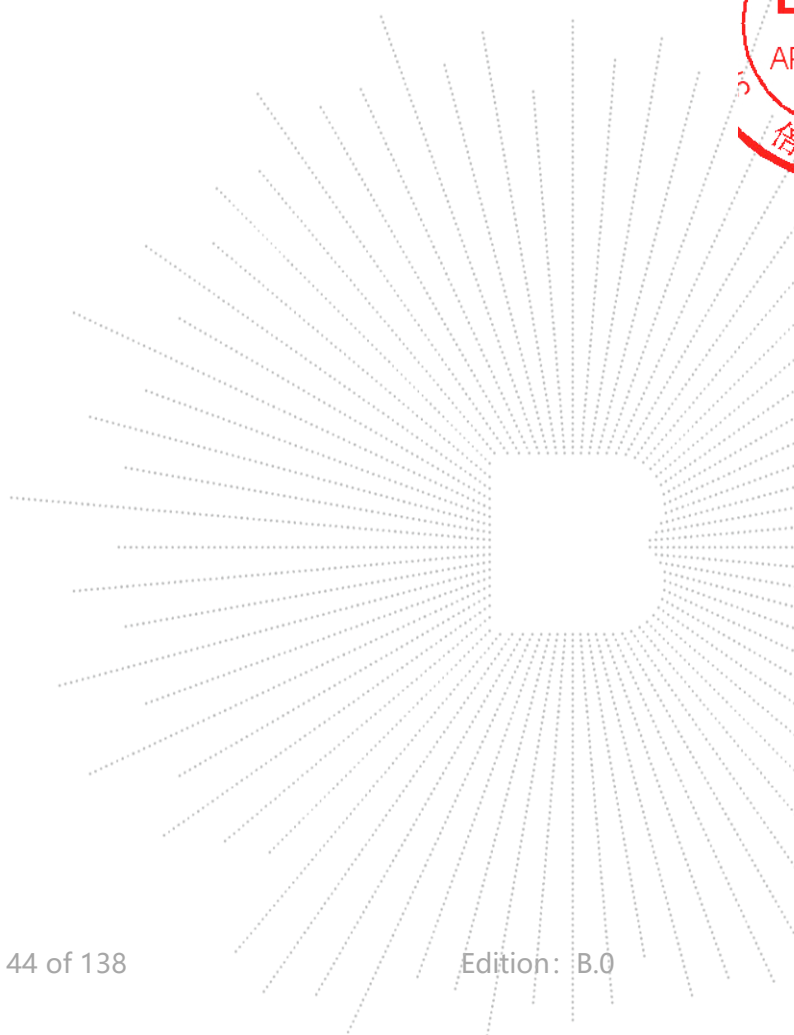
CO. LTD

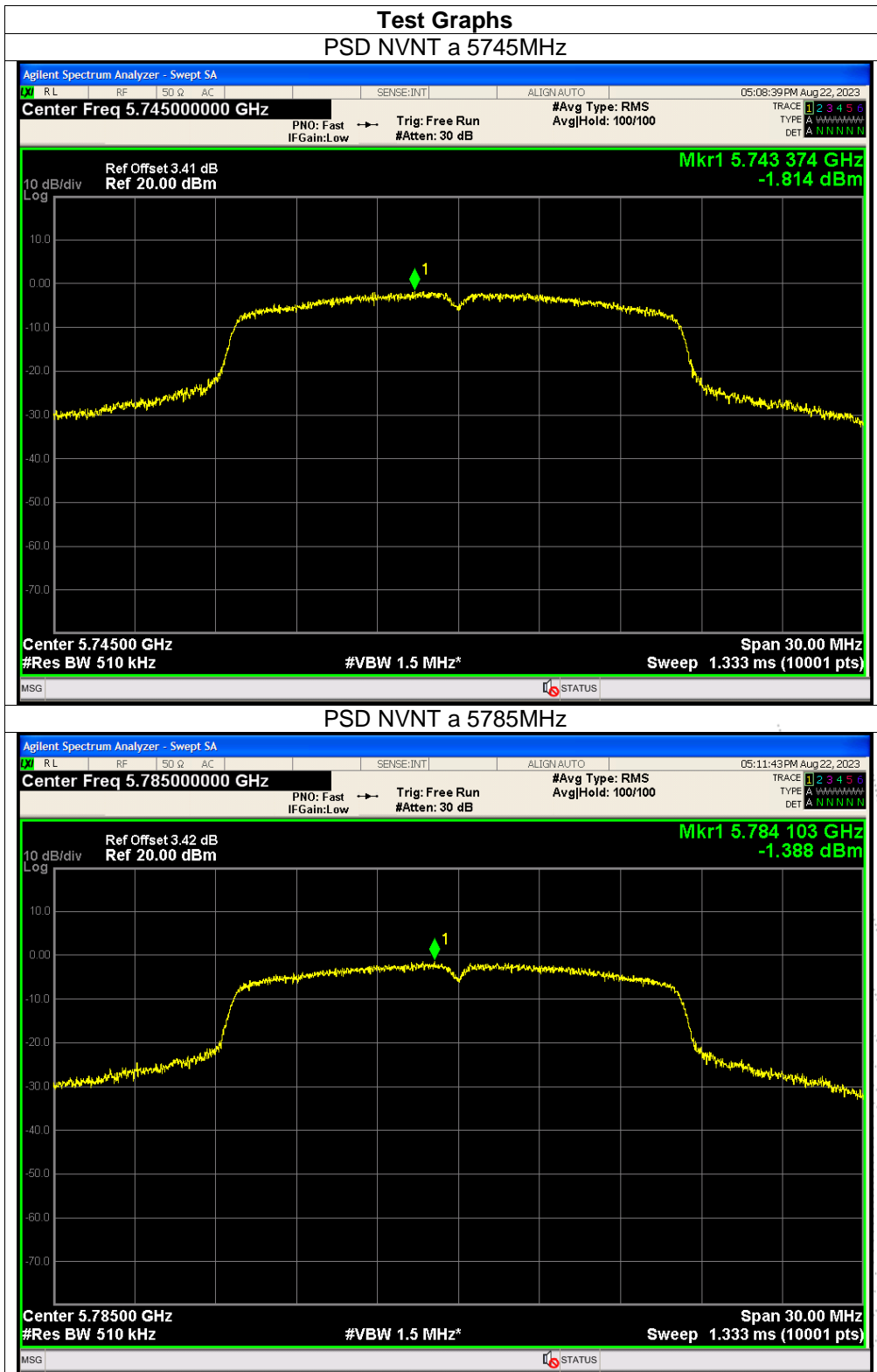


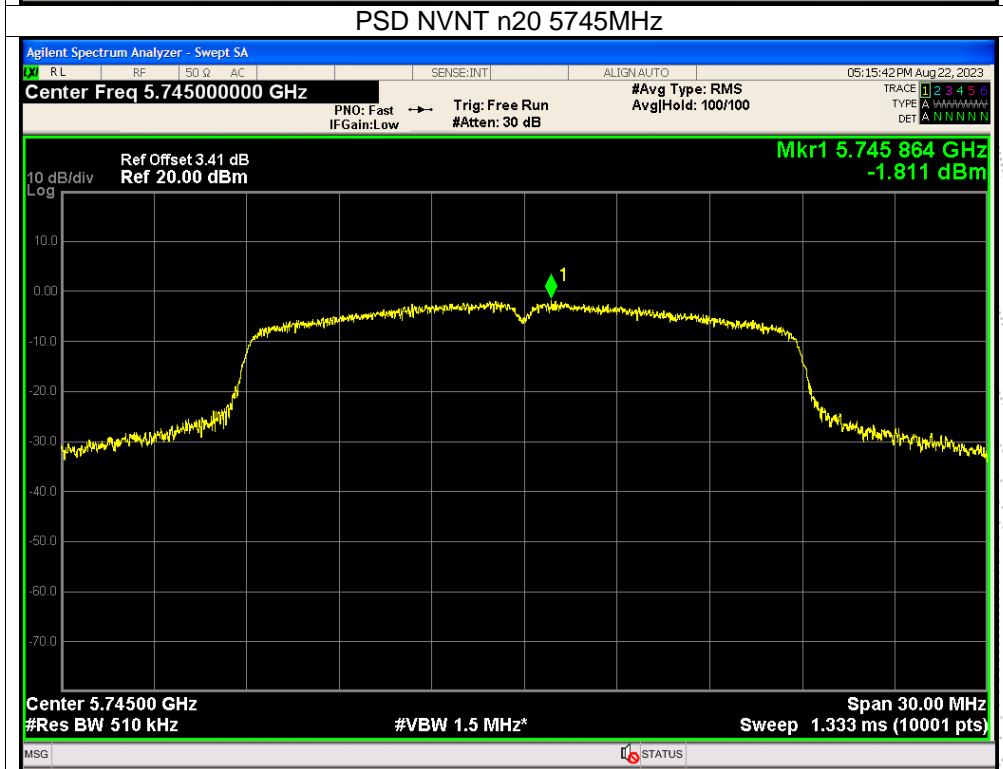
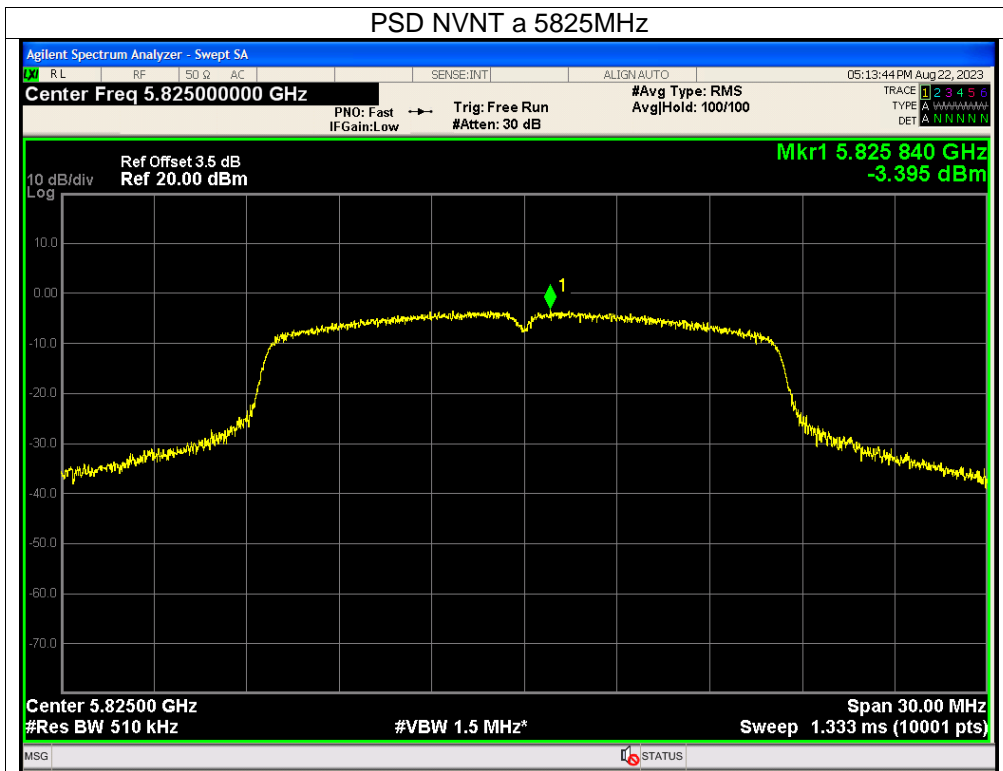
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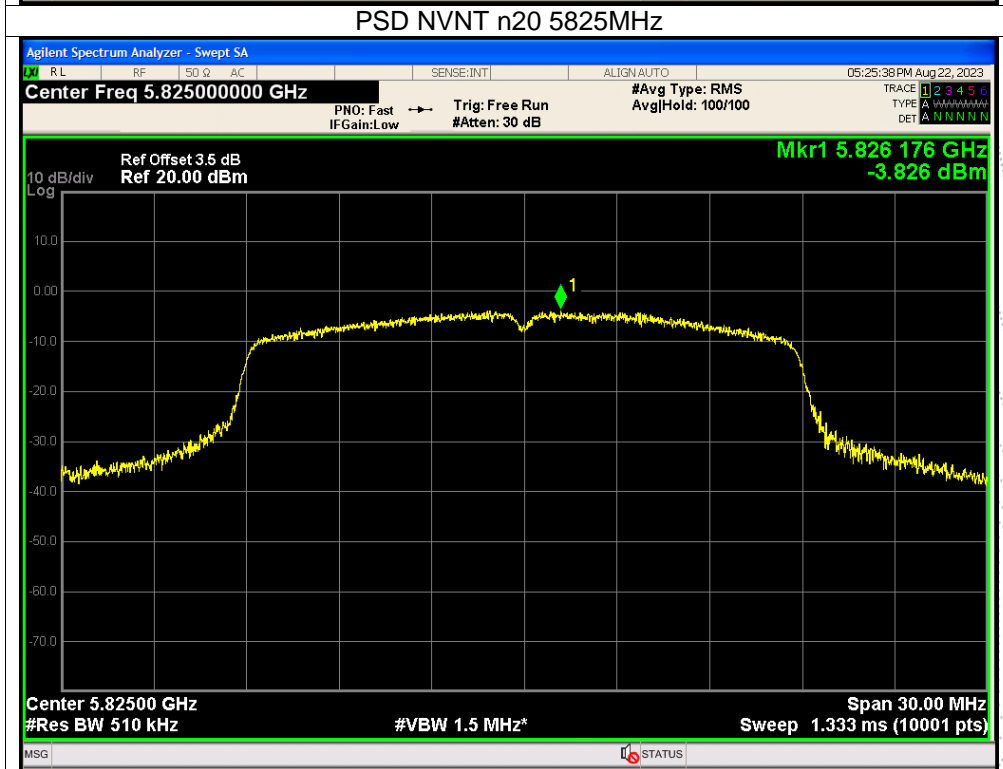
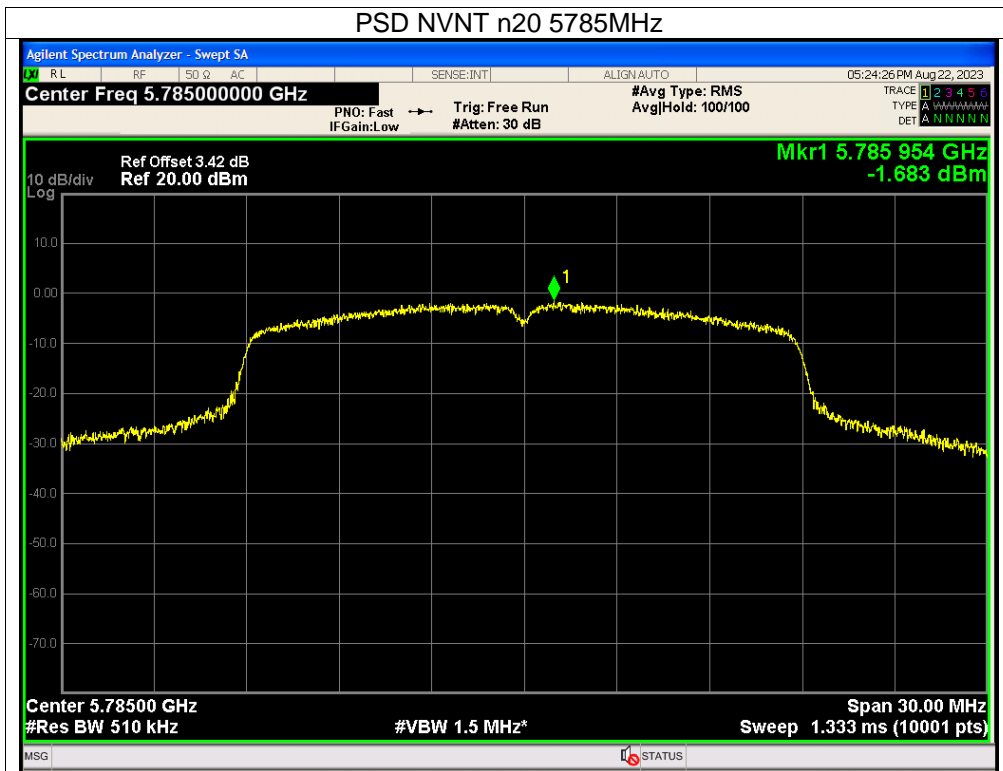
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC 120V/60Hz
Test Mode:	(5745-5825MHz)		

Condition	Mode	Frequency (MHz)	Conducted PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	-1.81	30	Pass
NVNT	a	5785	-1.39	30	Pass
NVNT	a	5825	-3.4	30	Pass
NVNT	n20	5745	-1.81	30	Pass
NVNT	n20	5785	-1.68	30	Pass
NVNT	n20	5825	-3.83	30	Pass



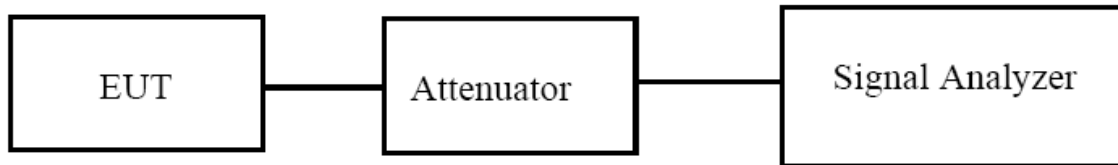






9. 26dB & 6dB & 99% Emission Bandwidth

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 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%.

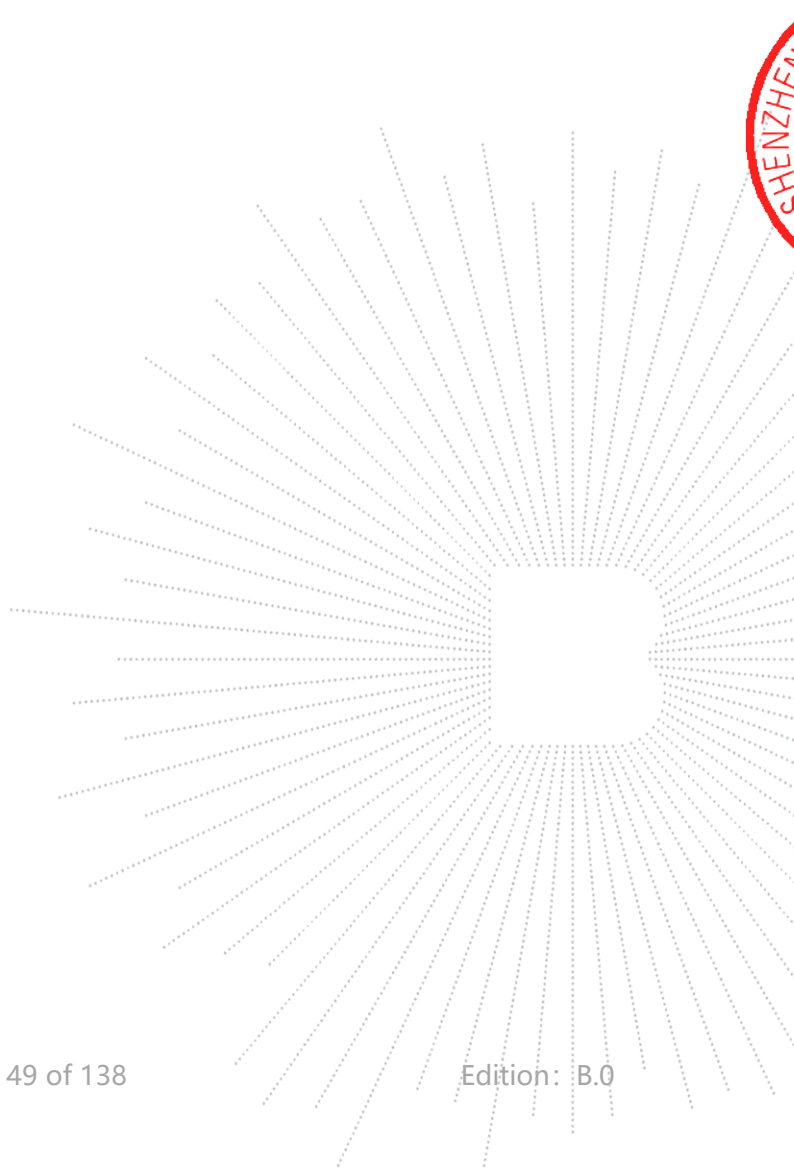
The following procedure shall be used for measuring (99 %) power bandwidth:

- 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

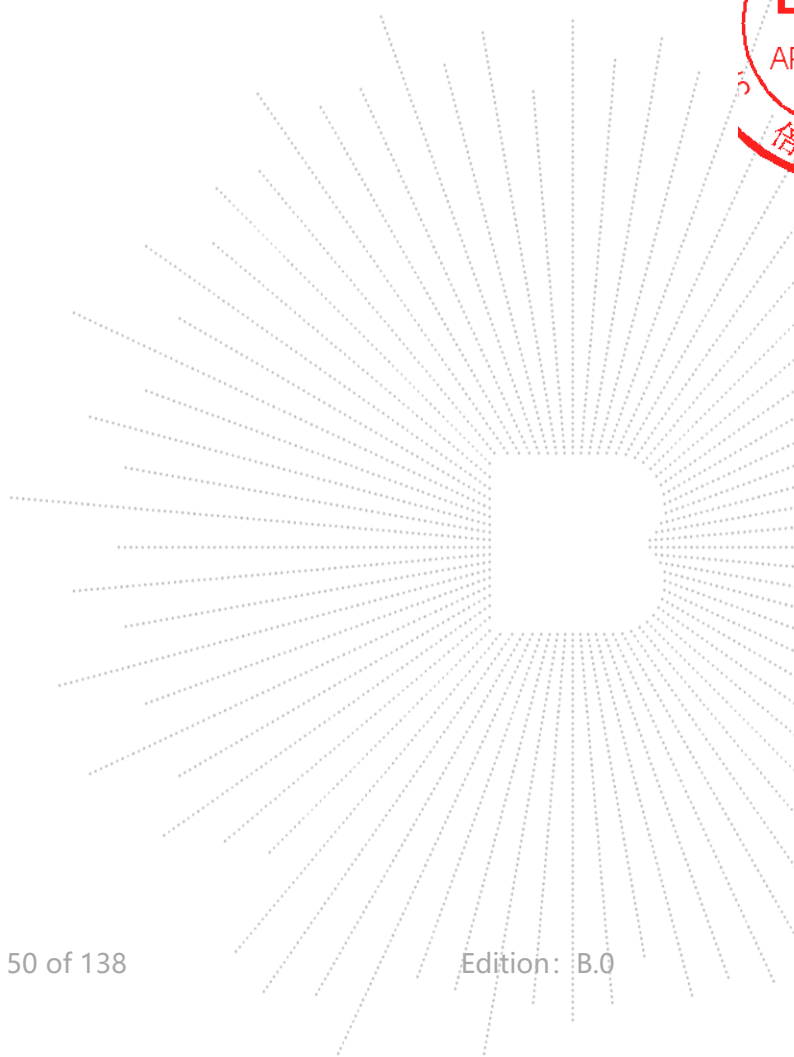
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

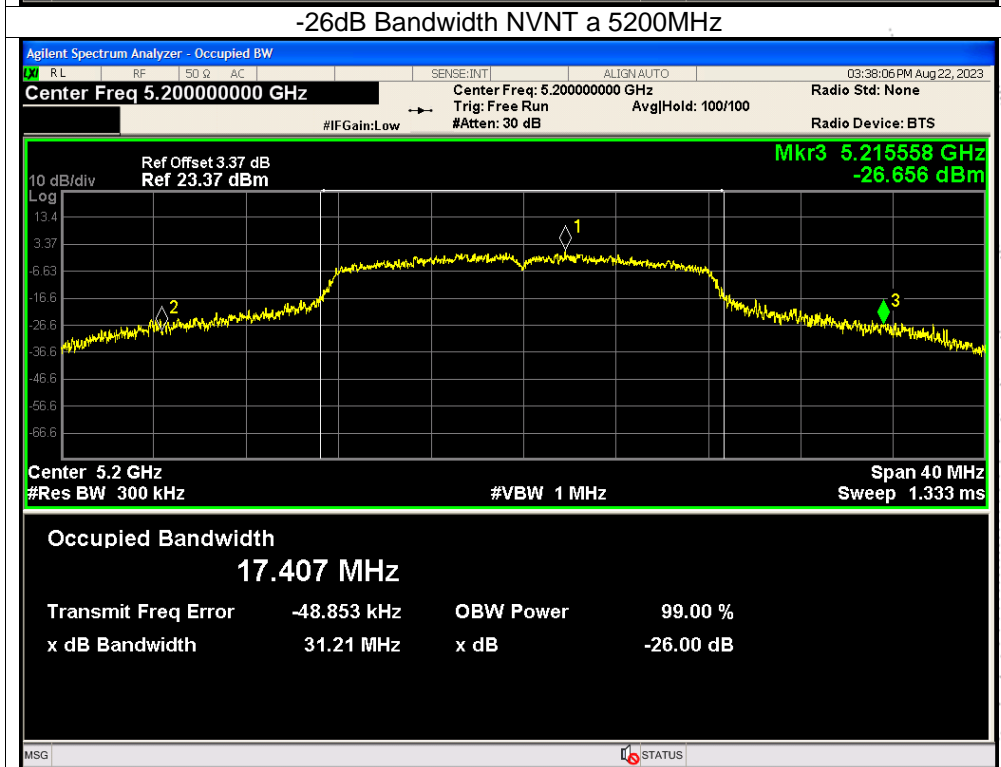
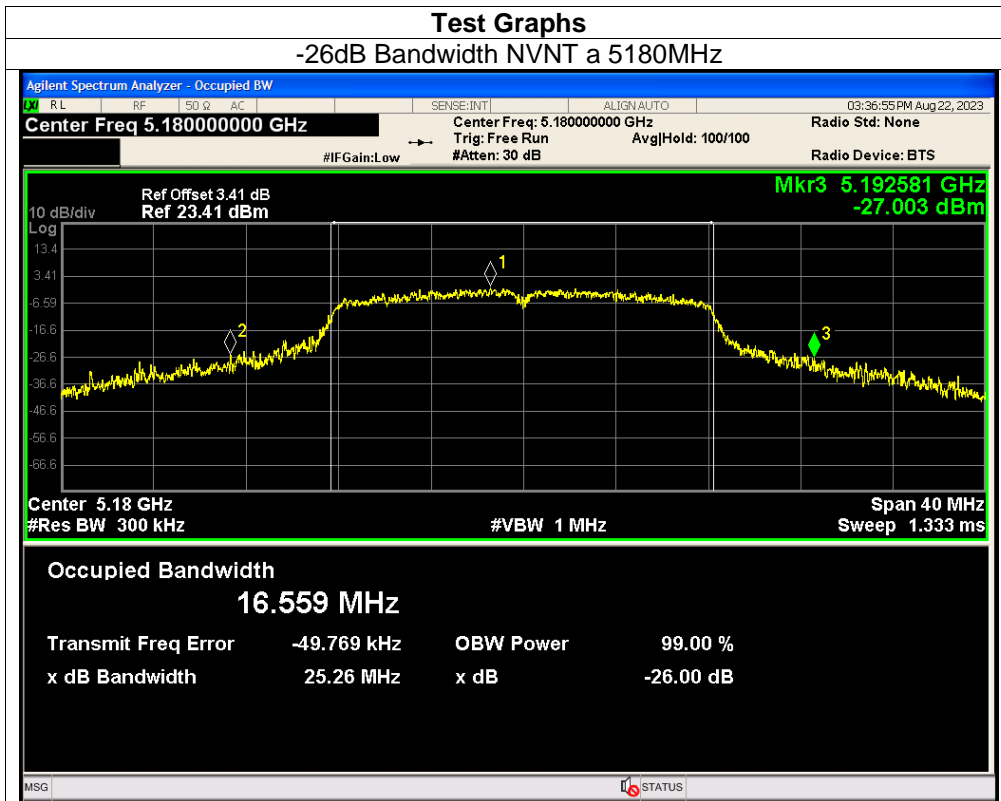


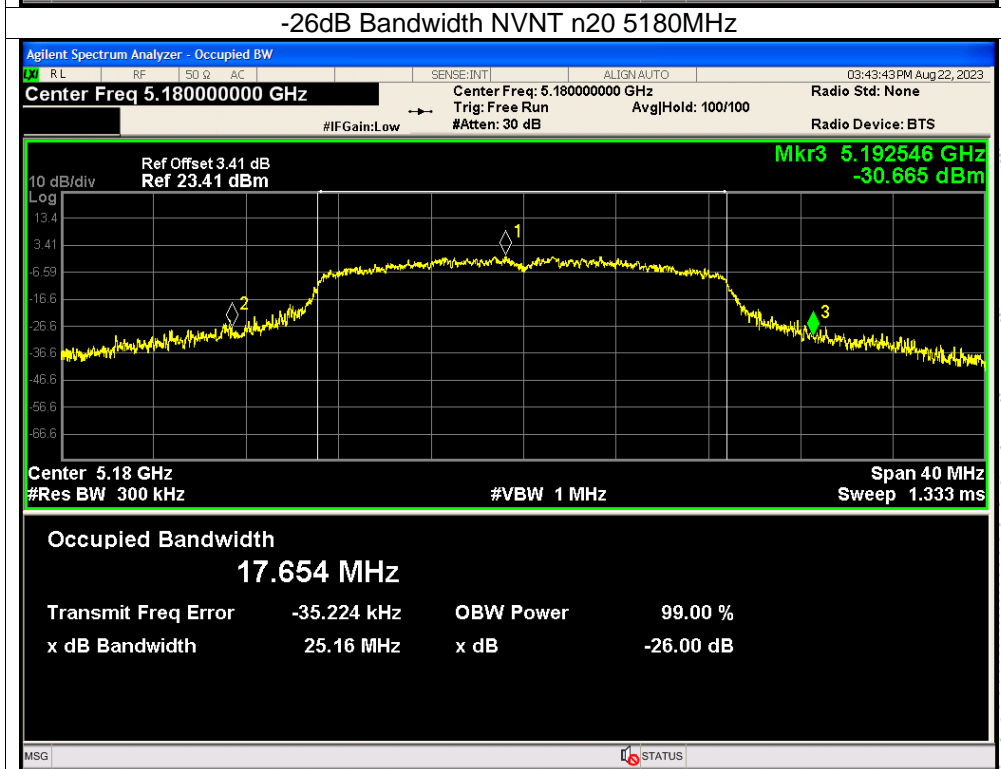
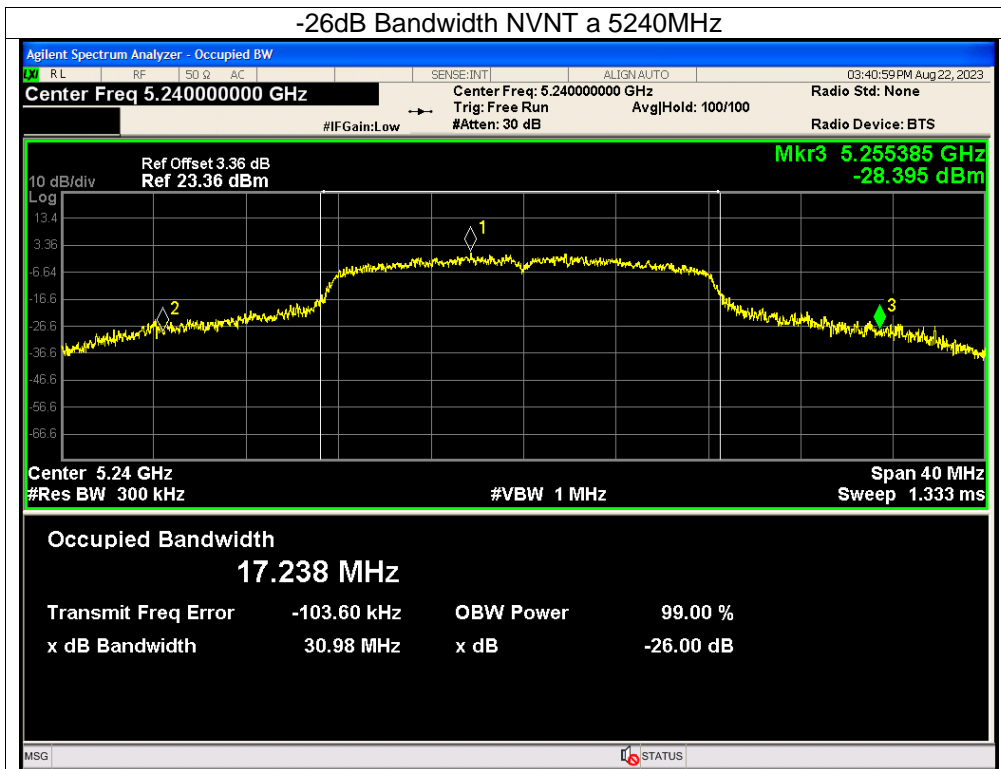
9.5 Test Result

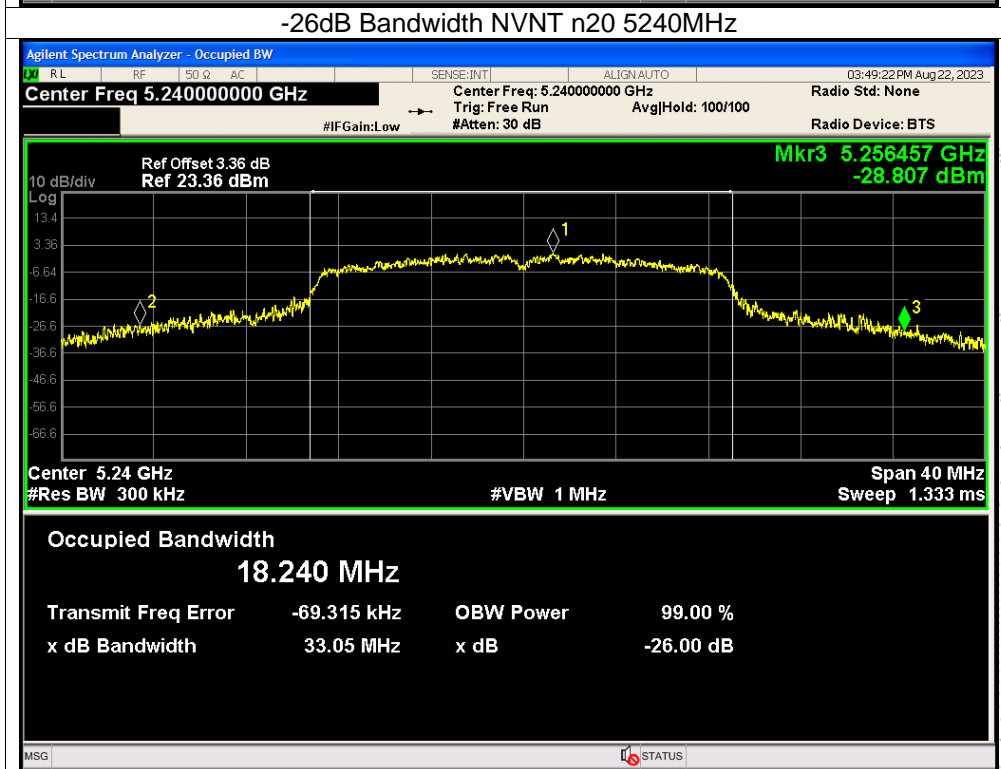
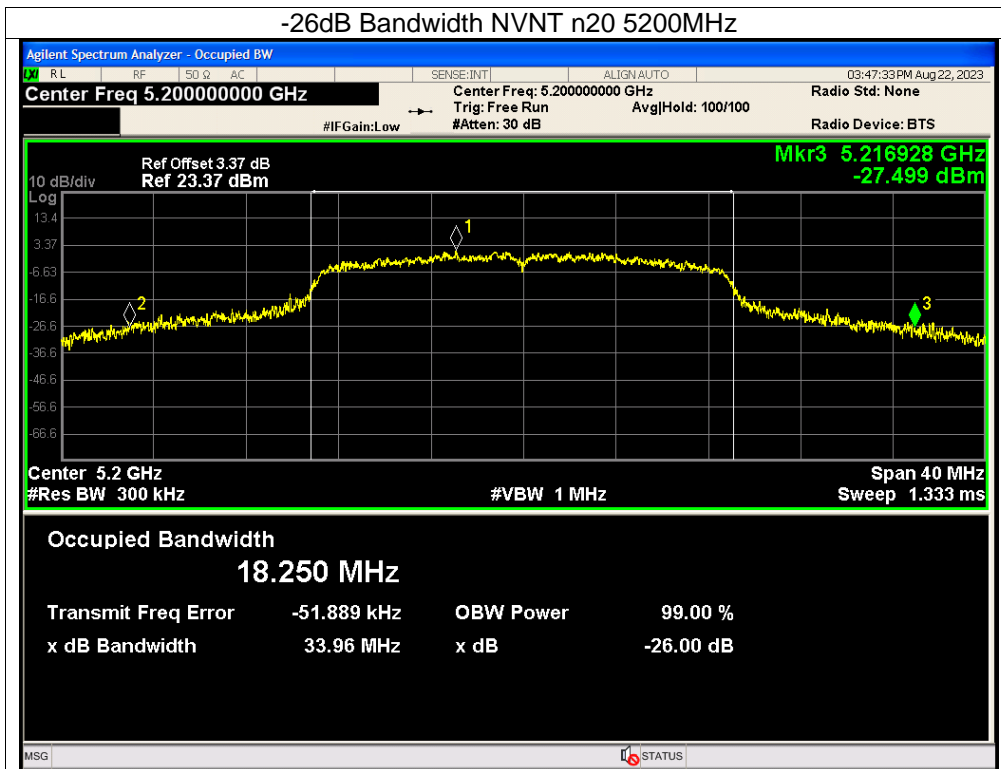
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC 120V/60Hz
Test Mode:	(5180-5240MHz)		

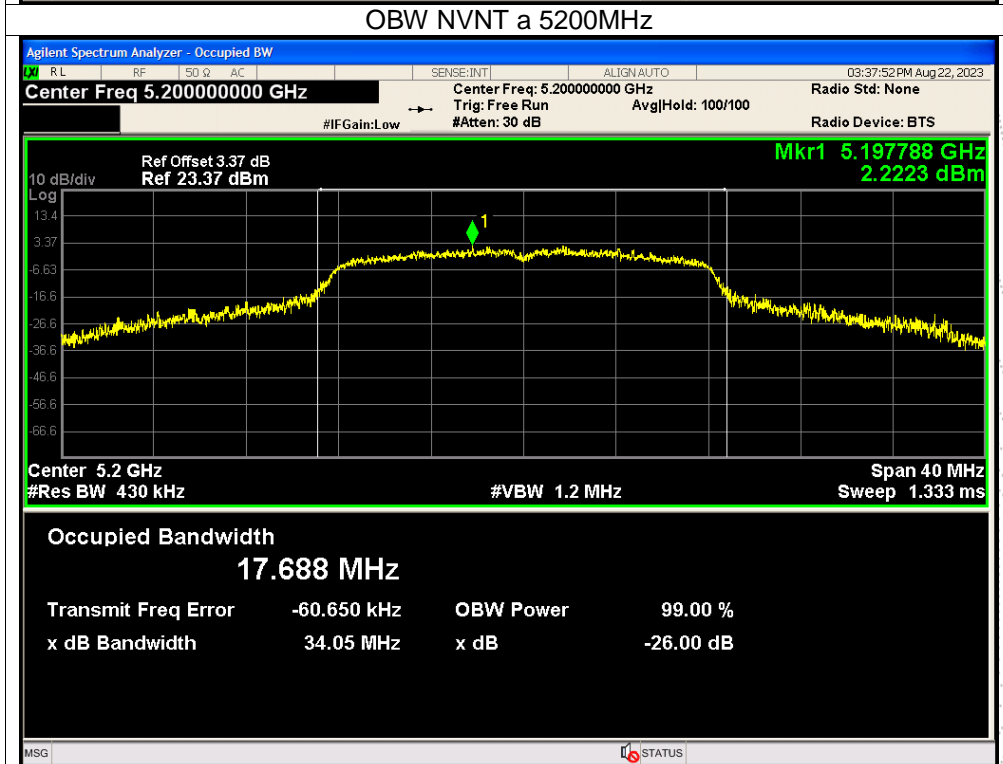
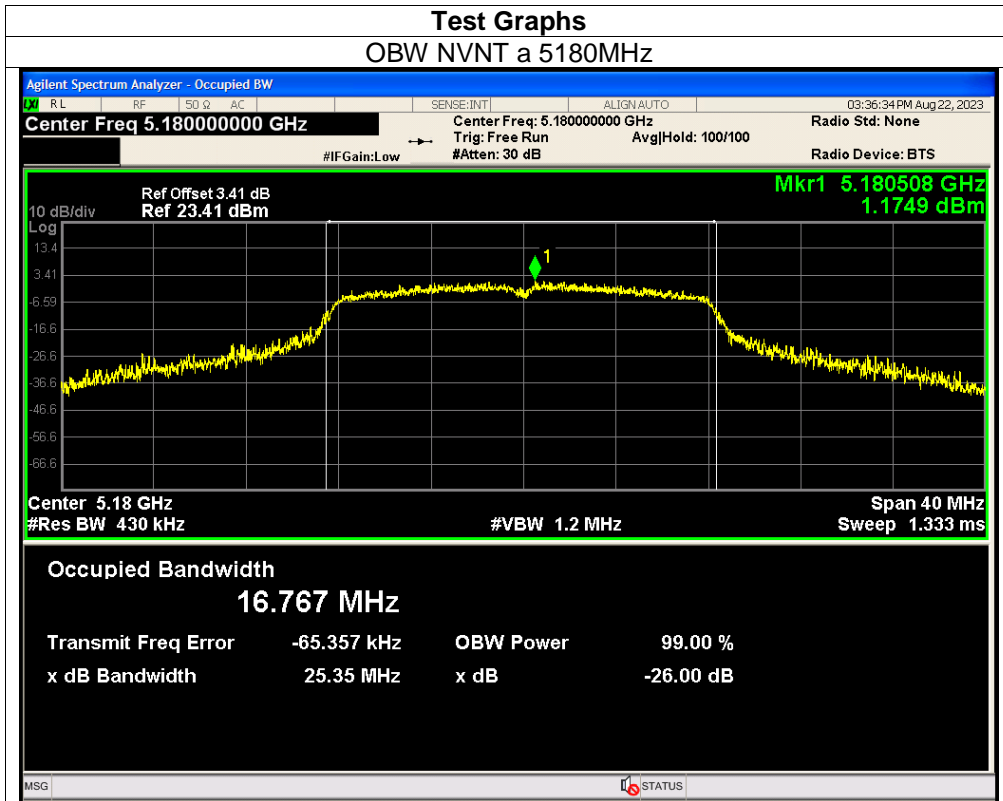
Condition	Mode	Frequency (MHz)	99% bandwidth (MHz)	-26dB bandwidth (MHz)	Result
NVNT	a	5180	16.767	25.262	Pass
NVNT	a	5200	17.688	31.213	Pass
NVNT	a	5240	17.703	30.978	Pass
NVNT	n20	5180	17.857	25.162	Pass
NVNT	n20	5200	18.524	33.959	Pass
NVNT	n20	5240	18.567	33.052	Pass



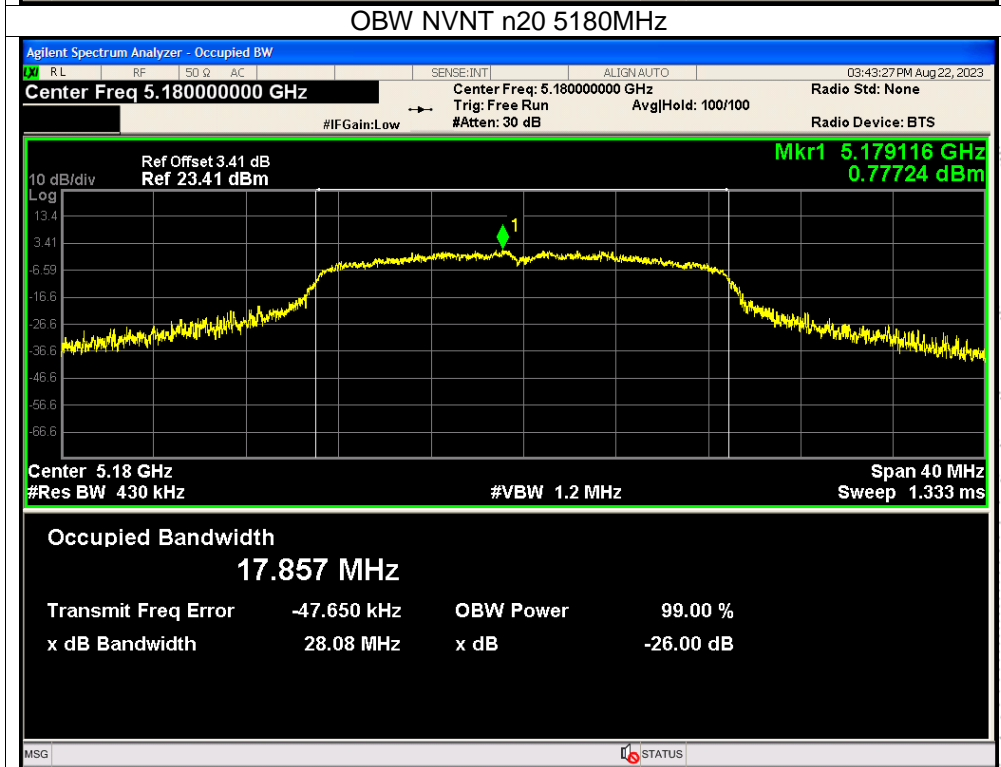
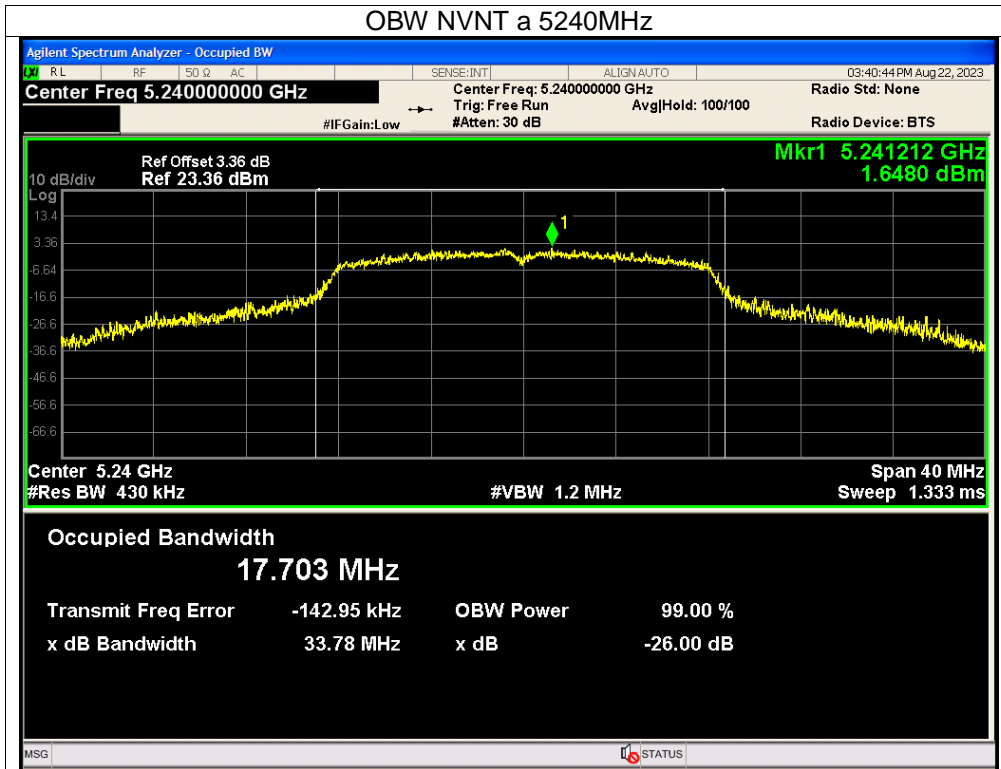


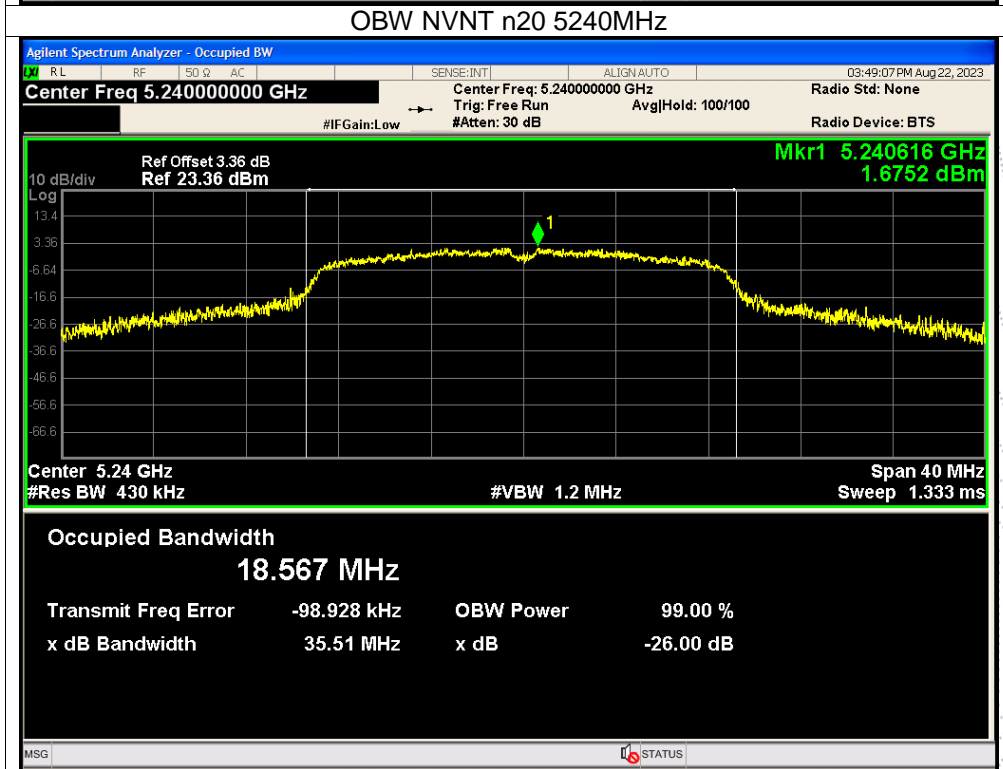
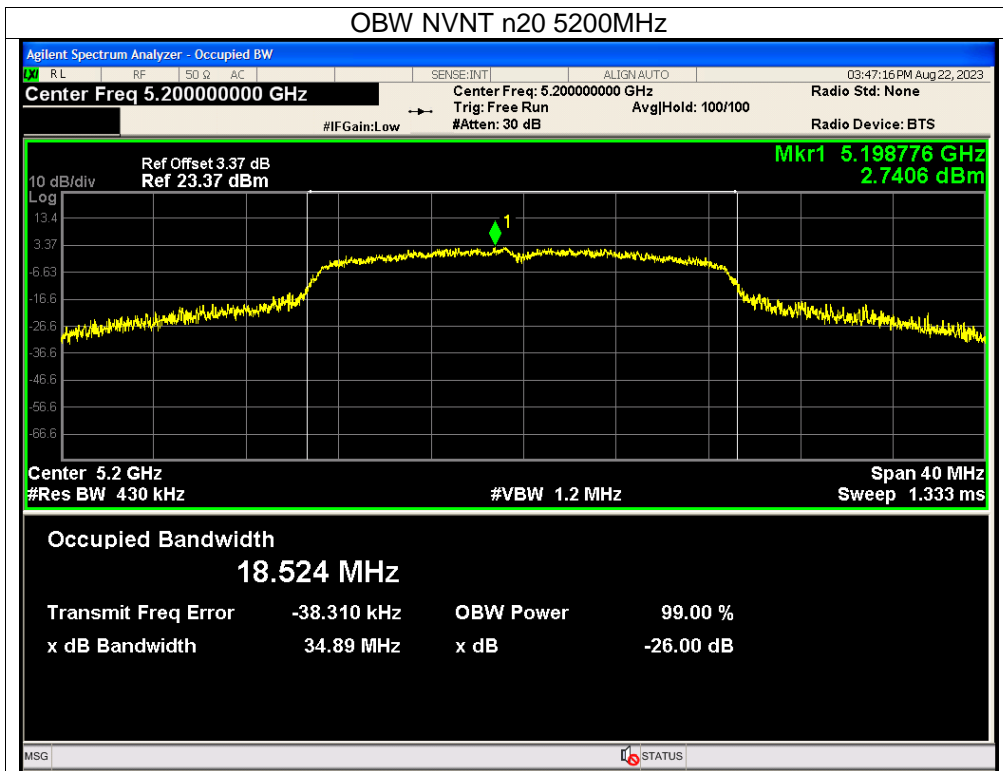






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Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC 120V/60Hz
Test Mode:	(5260-5320MHz)		

Condition	Mode	Frequency (MHz)	99% bandwidth (MHz)	-26dB bandwidth (MHz)	Result
NVNT	a	5260	17.384	29.46	Pass
NVNT	a	5280	17.757	33.989	Pass
NVNT	a	5320	16.764	23.469	Pass
NVNT	n20	5260	18.429	31.889	Pass
NVNT	n20	5280	18.5	31.933	Pass
NVNT	n20	5320	17.833	26.24	Pass

