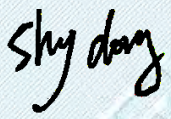
TEST REPORT

Report No. ..... :	KS2310S5164E02
FCC ID ..... :	2BA2D-RJ25A
Applicant ..... :	Shenzhen Shi Han Song Ke Ji You Xian Gong Si
Address ..... :	Shenzhen Shi Long Hua Qu Long Hua Jie Dao Qing Xiang Lu QingHu Ke Ji Yuan C Dong 11 Lou 1160
Manufacturer ..... :	Shenzhen Shi Han Song Ke Ji You Xian Gong Si
Address ..... :	Shenzhen Shi Long Hua Qu Long Hua Jie Dao Qing Xiang Lu QingHu Ke Ji Yuan C Dong 11 Lou 1160
Product Name ..... :	Computer
Trademark ..... :	HUNSN
Model/Type reference ..... :	RJ25a, RJ25
Standard ..... :	47 CFR Part 15E
Date of Receipt ..... :	October 10, 2023
Date of Test Date ..... :	October 10, 2023 to October 19, 2023
Date of issue ..... :	October 19, 2023
Test result ..... :	**Pass**
Conclusion ..... :	When determining of test conclusion, measurement uncertainty of tests have been considered.

Prepared by: (Printed name + Signature)	Pai Zheng	
Approved by: (Printed name + Signature)	Sky Dong	

Testing Laboratory Name . :	**KSIGN(Guangdong) Testing Co., Ltd.**
Address ..... :	West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China

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1. TEST SUMMARY

1.1. Test Standards

The tests were performed according to following standards:

47 CFR Part 15E: Unlicensed National Information Infrastructure Devices

1.2. Report Version

Revised No.	Date of issue	Description
01	October 19, 2023	Original

Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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1.3. Test Description

Test Item	Standard	Requirement	Result
Antenna requirement	47 CFR Part 15E	Part 15.203	Pass
Conducted Emission at AC power line	47 CFR Part 15E	47 CFR Part 15.207(a)	Pass
Duty Cycle	47 CFR Part 15E		Pass
Maximum conducted output power	47 CFR Part 15E	47 CFR Part 15.407(a)(1)(ii) 47 CFR Part 15.407(a)(1)(iv)	Pass
Power spectral density	47 CFR Part 15E	47 CFR Part 15.407(a)(1)(ii) 47 CFR Part 15.407(a)(1)(iv)	Pass
Emission bandwidth and occupied bandwidth	47 CFR Part 15E	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use.	Pass
Band edge emissions (Radiated)	47 CFR Part 15E	47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(10)	Pass
Undesirable emission limits (below 1GHz)	47 CFR Part 15E	47 CFR Part 15.407(b)(9)	Pass
Undesirable emission limits (above 1GHz)	47 CFR Part 15E	47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(10)	Pass

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1.4. Test Facility

KSIGN(Guangdong) Testing Co., Ltd.
West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu,Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China

The test facility is recognized, certified, or accredited by the following organizations:
CNAS-Lab Code: L13261
KSIGN(Guangdong) Testing Co., Ltd. has been assessed and proved to be in Compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.
A2LA-Lab Cert. No.: 5457.01
KSIGN(Guangdong) Testing Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirementsfor the Competence of Testing and Calibration Laboratories and any additional program requirements in the
identified field of testing
ISED#: 25693 CAB identifier.: CN0096
KSIGN(Guangdong) Testing Co., Ltd. has been listed by Innovation, Science and Economic Development Canada to perform electromagnetic emission measurement.
FCC-Registration No.: 294912 Designation Number: CN1328
KSIGN(Guangdong) Testing Co., Ltd. EMC Laboratory has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

1.5. Measurement Uncertainty

Test Items	Measurement Uncertainty
Conducted Emission (150k-30MHz)	± 3.34dB
Output Power, Conducted	± 1.4dB
PSD, Conducted	± 1.0dB
RSE (1-18GHz)	± 4.68dB
RSE (30-1000MHz)	± 5.7dB
RSE (18-40GHz)	± 5.18dB

The reported uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

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2. GENERAL INFORMATION

2.1. General Description Of EUT

Test Sample Number:	1-1(Normal Sample), 1-2(Engineering Sample)
Product Name:	Computer
Trademark:	HUNSN
Model / Type reference:	RJ25a, RJ25
Model Difference:	The difference product models is model names and appearance of color. Different model names are available to meet market demands. Other power supply methods, internal structures, circuits and key components are the same, and do not affect safety and electromagnetic compatibility performance.
Power Supply:	DC 12V from adapter
Operation Frequency:	802.11a/n(HT20) U-NII Band 1: 5180MHz to 5240MHz; 802.11n(HT40) U-NII Band 1: 5190MHz to 5230MHz;
Number of Channels:	802.11a/n(HT20) U-NII Band 1: 4; 802.11n(HT40) U-NII Band 1: 2;
Modulation Type:	802.11a: OFDM(BPSK, QPSK, 16QAM, 64QAM); 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM);
Antenna Type:	External
Antenna Gain:	2.13dBi
Max TX Power:	14.75dBm
Hardware Version:	94V-0
Software Version:	V1.0.3

Note: Antenna gain provided by the applicant Can affect the validity of results

2.2. Accessory Equipment Information

Title	Manufacturer	Model No.	Technical Parameters	Provided by
Mouse	DELL	MS116T	/	/
Keyboard	DELL	/	/	/
computer monitors	DELL	/	/	/

2.3. Description of Test Modes

No.	Title	Description of Mode
Test Mode1	802.11a mode	Keep the EUT in continuously transmitting mode with 802.11a modulation type. All data rates has been tested and found the data rate @ 6Mbps is the worst case. Only the data of worst case is recorded in the report.
Test Mode2	802.11n mode	Keep the EUT in continuously transmitting mode with 802.11n modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.

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2.4. Operation channel list

U-NII Band 1

Bandwidth:	20MHz	Bandwidth:	40MHz	Bandwidth:	80MHz
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	38	5190	42	5210
40	5200	46	5230	/	/
44	5220	/	/	/	/
48	5240	/	/	/	/

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2.5. Measurement Instruments List

Conducted Emission at AC power line				
Test Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
LISN	R&S	ENV432	1326.6105.02	2024-02-17
EMI Test Receiver	R&S	ESR	102524	2024-02-17
Manual RF Switch	JS TOYO	/	MSW-01/002	2024-02-17
ISN CAT6	Schwarzbeck	CAT5 8158	227	2024-02-17
Color Signal Generator	Philips	PM5418	672926	2024-02-17
Power Absorbing Clamp	R&S	MDS-21	100925	2024-02-19

Duty Cycle Maximum conducted output power Power spectral density Emission bandwidth and occupied bandwidth				
Test Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
Wideband Radio Communication Tester	R&S	CMU200	115297	2024-02-17
Audio Analyzer	R&S	UPL16	100001	2024-02-17
Shielding box	Gxiong	GX-5915A	2201113	2024-02-17
High Pass Filter	COM-MW Technology Co., Ltd	ZHPF-M1.2-9G-187	09203403	2024-02-17
Band Stop Filter	COM-MW Technology Co., Ltd	ZBSF6-C820-920-188	09203401	2024-02-17
Splitter	COM-MW Technology Co., Ltd	ZPD-M1-8-2103	09203407	2024-02-17
Coaxial Cable	BEBES	A40-2.92M2.92F-4.5M	1907021	2024-02-17
Hygrothermograph	Anymetre	JB913	/	2024-02-17
Climate Chamber	Angul	AGNH80L	1903042120	2024-02-17
Spectrum Analyzer	HP	8593E	3831U02087	2024-02-17
Dual Output DC Power Supply	Agilent	E3646A	MY40009992	2024-02-17
RF Control Unit	Tonscend	JS0806-2	/	2024-02-17
Analog Signal Generator	HP	83752A	3344A00337	2024-02-17
Vector Signal Generator	Agilent	N5182A	MY50142520	2024-02-17
Wideband Radio Communication Tester	R&S	CMW500	157282	2024-02-17
Spectrum Analyzer	R&S	FSV40-N	101798	2024-02-17

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Band edge emissions (Radiated) Undesirable emission limits (below 1GHz) Undesirable emission limits (above 1GHz)				
Test Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
Color Signal Generator	Philips	PM5418	672926	2024-02-17
Ultra-Broadband logarithmic period Antenna	Schwarzbeck	VULB 9163	1230	2025-02-18
Pre-Amplifier	Schwarzbeck	BBV 9745	9745#129	2024-02-17
Broadcast Television Signal Generator	R&S	SFE100	141038	2024-02-17
Analog Signal Generator	Agilent	8648A	3847M00445	2024-02-17
EMI Test Receiver	R&S	ESR	102525	2024-02-17
Loop Antenna	Beijin ZHINAN	ZN30900C	18050	2024-02-19
Horn Antenna	Schwarzbeck	BBHA 9120 D	2023	2026-02-19
Pre-Amplifier	EMCI	EMC051835SE	980662	2024-02-17
Spectrum Analyzer	Keysight	N9020A	MY46471971	2024-02-17

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3. Evaluation Results (Evaluation)

3.1. Antenna requirement

Test Requirement:	Refer to 47 CFR Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.
Conclusion:	The directional gain of the antenna less than 6dBi. It comply with the standard requirement. In case of replacement of broken antenna the same antenna type must be used. Antenna structure please refer to the EUT internal photographs antenna photo.

4. Radio Spectrum Matter Test Results (RF)

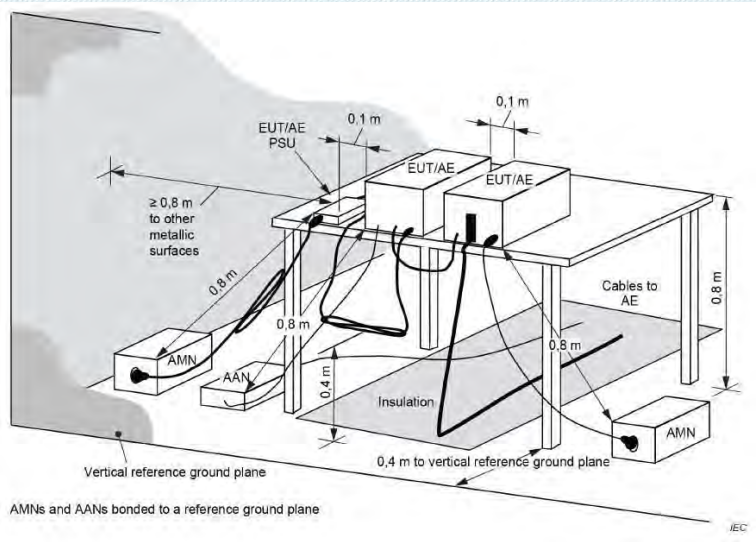
4.1. Conducted Emission at AC power line

Test Requirement:	47 CFR Part 15.207(a)		
Test Limit:	Frequency of emission (MHz)	Conducted limit (dBμV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	*Decreases with the logarithm of the frequency.		
Test Method:	Refer to ANSI C63.10-2013 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices		

4.1.1. E.U.T. Operation:

Operating Environment:	
Temperature:	25.7 °C
Humidity:	49.5 %
Atmospheric Pressure:	101 kPa
Final test mode:	Test Mode1

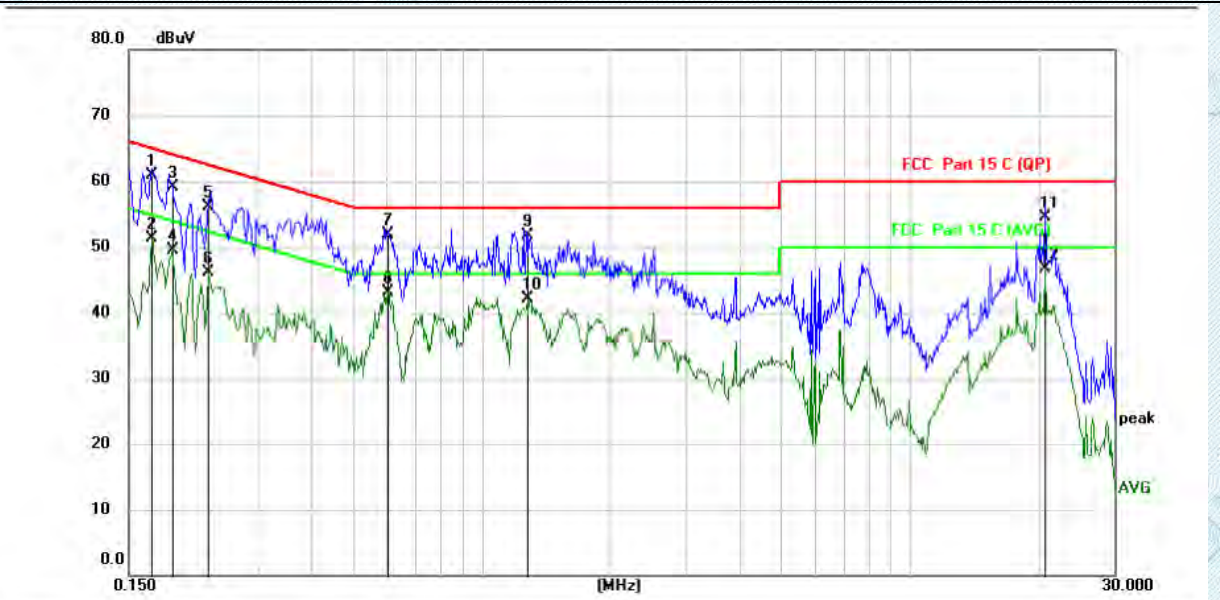
4.1.2. Test Setup Diagram:



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4.1.3. Test Data:

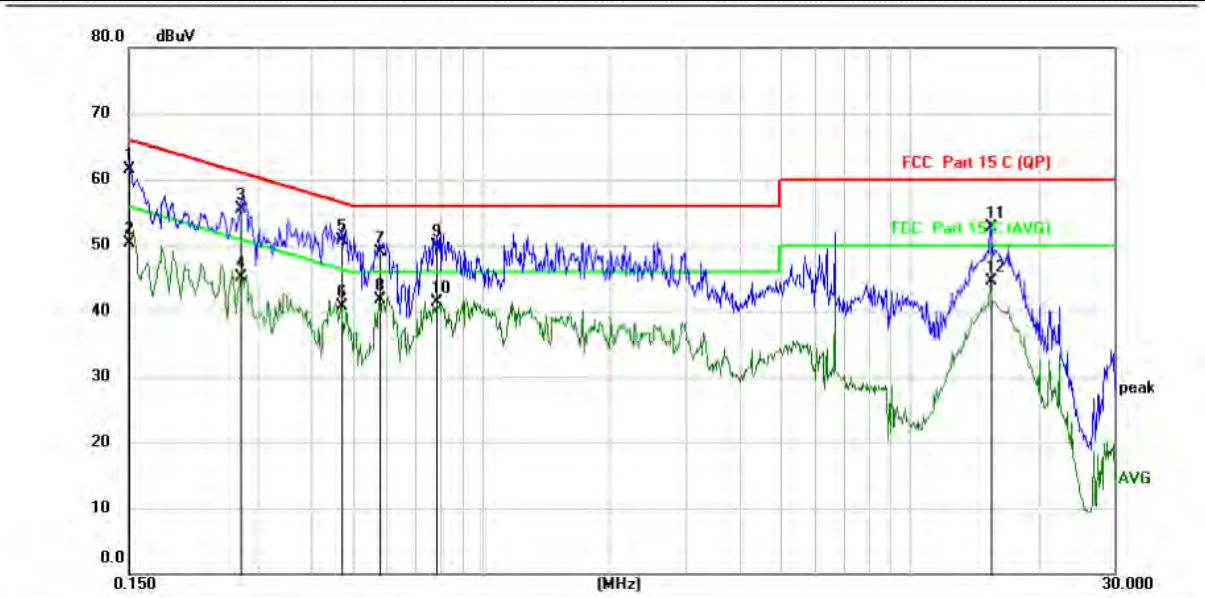
Test Mode1 / Line: Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1693	50.46	10.42	60.88	64.99	-4.11	QP	
2		0.1693	40.87	10.42	51.29	54.99	-3.70	AVG	
3		0.1892	48.60	10.41	59.01	64.07	-5.06	QP	
4		0.1892	39.19	10.41	49.60	54.07	-4.47	AVG	
5		0.2290	45.66	10.41	56.07	62.49	-6.42	QP	
6		0.2290	35.67	10.41	46.08	52.49	-6.41	AVG	
7		0.6039	41.38	10.45	51.83	56.00	-4.17	QP	
8	*	0.6039	32.72	10.45	43.17	46.00	-2.83	AVG	
9		1.2755	41.26	10.47	51.73	56.00	-4.27	QP	
10		1.2755	31.54	10.47	42.01	46.00	-3.99	AVG	
11		20.7037	43.03	11.44	54.47	60.00	-5.53	QP	
12		20.7037	35.34	11.44	46.78	50.00	-3.22	AVG	

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Test Mode1 / Line: Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	51.10	10.42	61.52	66.00	-4.48	QP	
2		0.1500	39.93	10.42	50.35	56.00	-5.65	AVG	
3		0.2741	45.05	10.41	55.46	60.99	-5.53	QP	
4		0.2741	34.78	10.41	45.19	50.99	-5.80	AVG	
5		0.4700	40.22	10.44	50.66	56.51	-5.85	QP	
6		0.4700	30.25	10.44	40.69	46.51	-5.82	AVG	
7		0.5777	38.40	10.45	48.85	56.00	-7.15	QP	
8	*	0.5777	31.17	10.45	41.62	46.00	-4.38	AVG	
9		0.7860	39.43	10.46	49.89	56.00	-6.11	QP	
10		0.7860	30.88	10.46	41.34	46.00	-4.66	AVG	
11		15.4539	41.67	11.08	52.75	60.00	-7.25	QP	
12		15.4539	33.46	11.08	44.54	50.00	-5.46	AVG	

Note:
1.Measurement = Reading level + Correct Factor
2.Correct Factor=Antenna Factor + Cable Loss -Preamplifier Factor

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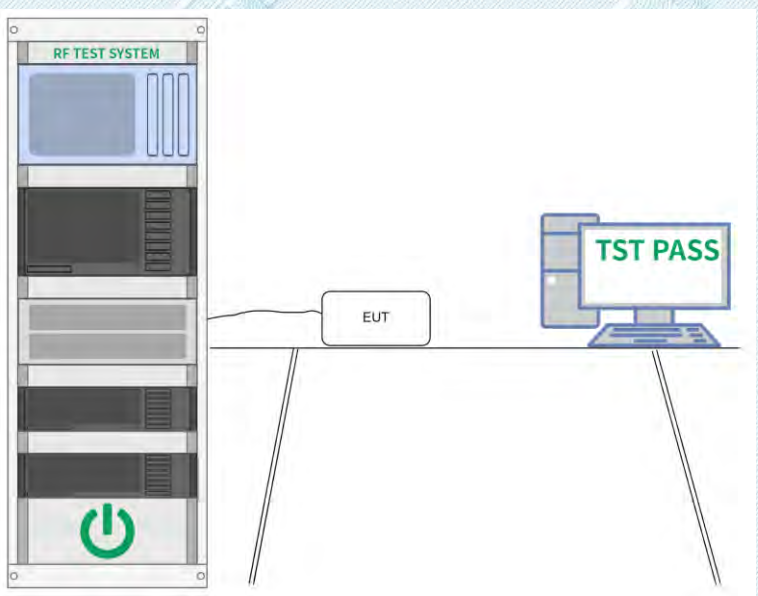
4.2. Duty Cycle

Test Requirement:	All measurements are to be performed with the EUT transmitting at 100% duty cycle at its maximum power control level; however, if 100% duty cycle cannot be achieved, measurements of duty cycle, x, and maximum-power transmission duration, T, are required for each tested mode of operation.
Test Limit:	No limits, only for report use.
Test Method:	ANSI C63.10-2013 section 12.2 (b)
Procedure:	i) Set the center frequency of the instrument to the center frequency of the transmission. ii) Set RBW >= EBW if possible; otherwise, set RBW to the largest available value. iii) Set VBW >= RBW. iv) Set detector = peak. v) The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T, where T is defined in item a1) of 12.2, and the number of sweep points across duration T exceeds 100.

4.2.1. E.U.T. Operation:

Operating Environment:	
Temperature:	25.7 °C
Humidity:	49.5 %
Atmospheric Pressure:	101 kPa
Final test mode:	Test Mode1, Test Mode2

4.2.2. Test Setup Diagram:



4.2.3. Test Data:

Please Refer to Appendix for Details.

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4.3. Maximum conducted output power

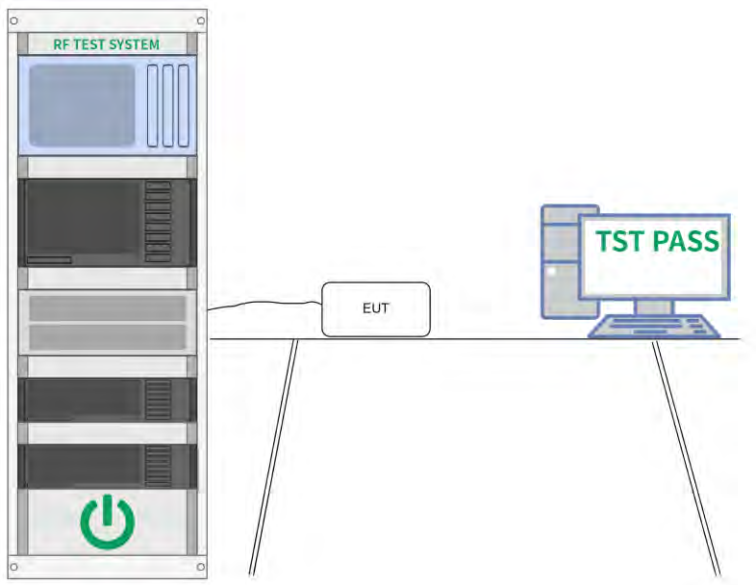
Test Requirement:	47 CFR Part 15.407(a)(1)(ii) 47 CFR Part 15.407(a)(1)(iv)
Test Limit:	For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. For 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. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
Test Method:	ANSI C63.10-2013, section 12.3
Procedure:	Method SA-1 a) Set span to encompass the entire 26 dB EBW or 99% OBW of the signal. b) Set RBW = 1 MHz. c) Set VBW >= 3 MHz. d) Number of points in sweep >= [2 × span / RBW]. (This gives bin-to-bin spacing <= RBW / 2, so that narrowband signals are not lost between frequency bins.) e) Sweep time = auto. f) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode. g) If transmit duty cycle < 98%, use a video trigger with the trigger level set to enable triggering only on full power pulses. The transmitter shall operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no OFF intervals) or at duty cycle >= 98%, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run.” h) Trace average at least 100 traces in power averaging (rms) mode. i) Compute power by integrating the spectrum across the 26 dB EBW or 99% OBW of the signal using the instrument’s band power measurement function, with band limits set equal to the EBW or OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at 1 MHz intervals extending across the 26 dB EBW or 99% OBW of the spectrum.

4.3.1. E.U.T. Operation:

Operating Environment:	
Temperature:	25.7 °C
Humidity:	49.5 %
Atmospheric Pressure:	101 kPa
Final test mode:	Test Mode1, Test Mode2

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4.3.2. Test Setup Diagram:



4.3.3. Test Data:

Please Refer to Appendix for Details.

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4.4. Power spectral density

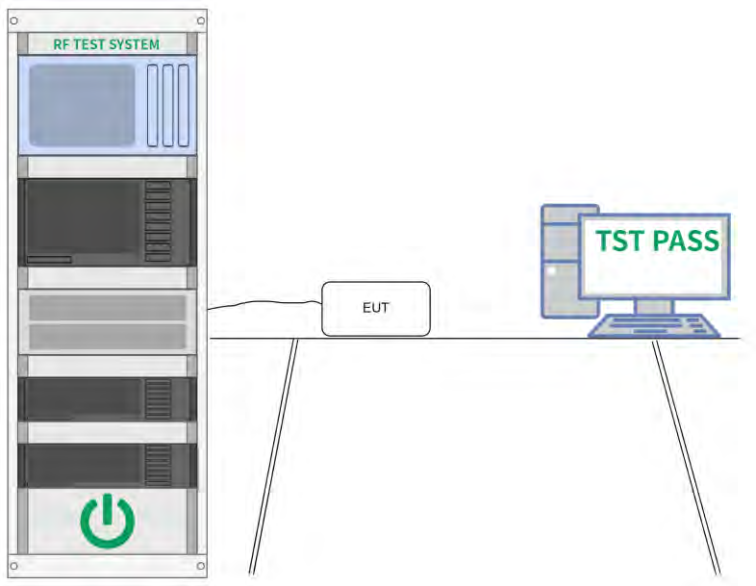
Test Requirement:	47 CFR Part 15.407(a)(1)(ii) 47 CFR Part 15.407(a)(1)(iv)
Test Limit:	For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. 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, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
Test Method:	ANSI C63.10-2013, section 12.5
Procedure:	a) Create an average power spectrum for the EUT operating mode being tested by following the instructions in 12.3.2 for measuring maximum conducted output power using a spectrum analyzer or EMI receiver; that is, select the appropriate test method (SA-1, SA-2, SA-3, or their respective alternatives) and apply it up to, but not including, the step labeled, “Compute power….” (This procedure is required even if the maximum conducted output power measurement was performed using the power meter method PM.) b) Use the peak search function on the instrument to find the peak of the spectrum. c) Make the following adjustments to the peak value of the spectrum, if applicable: 1) If method SA-2 or SA-2A was used, then add [10 log (1 / D)], where D is the duty cycle, to the peak of the spectrum. 2) If method SA-3A was used and the linear mode was used in step h) of 12.3.2.7, add 1 dB to the final result to compensate for the difference between linear averaging and power averaging. d) The result is the PPSD. e) The procedure in item a) through item c) requires the use of 1 MHz resolution bandwidth to satisfy the 1 MHz measurement bandwidth specified by some regulatory authorities.This requirement also permits use of resolution bandwidths less than 1 MHz “provided that the measured power is integrated to show the total power over the measurement bandwidth” (i.e., 1 MHz). If measurements are performed using a reduced resolution bandwidth and integrated over 1 MHz bandwidth, the following adjustments to the procedures apply: 1) Set RBW >= 1 / T, where T is defined in 12.2 a). 2) Set VBW >= [3 × RBW]. 3) Care shall be taken such that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

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4.4.1. E.U.T. Operation:

Operating Environment:	
Temperature:	25.7 °C
Humidity:	49.5 %
Atmospheric Pressure:	101 kPa
Final test mode:	Test Mode1, Test Mode2

4.4.2. Test Setup Diagram:



4.4.3. Test Data:

Please Refer to Appendix for Details.

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4.5. Emission bandwidth and occupied bandwidth

Test Requirement:	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use.
Test Limit:	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use.
Test Method:	ANSI C63.10-2013, section 6.9.3 & 12.4
Procedure:	Emission bandwidth: a) Set RBW = approximately 1% of the emission bandwidth. b) Set the VBW > RBW. c) Detector = peak. d) Trace mode = max hold. e) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the instrument. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%. Occupied bandwidth: a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW. b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement. c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2. d) Step a) through step c) might require iteration to adjust within the specified range. e) 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. f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth. g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. 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% power bandwidth is the difference between these two frequencies. h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled.

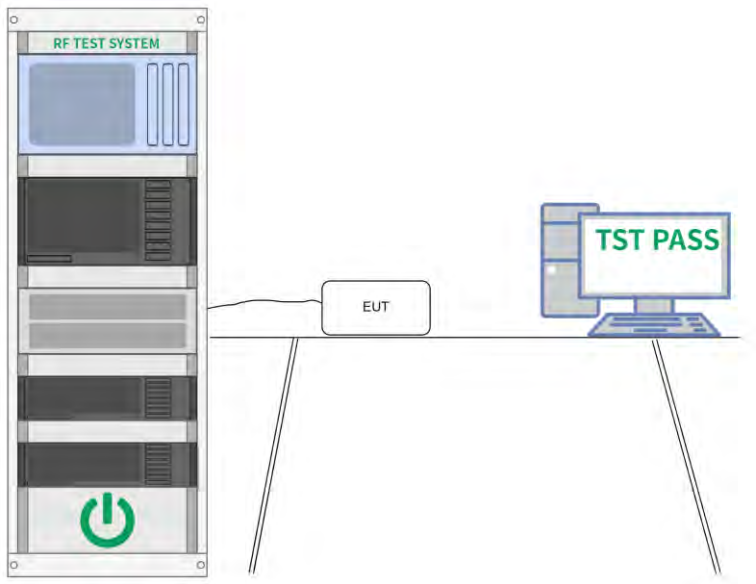
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	Tabular data may be reported in addition to the plot(s).

4.5.1. E.U.T. Operation:

Operating Environment:	
Temperature:	25.7 °C
Humidity:	49.5 %
Atmospheric Pressure:	101 kPa
Final test mode:	Test Mode1, Test Mode2

4.5.2. Test Setup Diagram:



4.5.3. Test Data:

Please Refer to Appendix for Details.

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4.6. Band edge emissions (Radiated)

Test Requirement:	47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(10)
Test Limit:	For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

[1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2]Above 38.6

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in § 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in § 15.209shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in § 15.209shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35apply to these measurements.

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100 **	3
88-216	150 **	3
216-960	200 **	3
Above 960	500	3

Test Method:	ANSI C63.10-2013, section 12.7.4, 12.7.5, 12.7.6
Procedure:	Above 1GHz:

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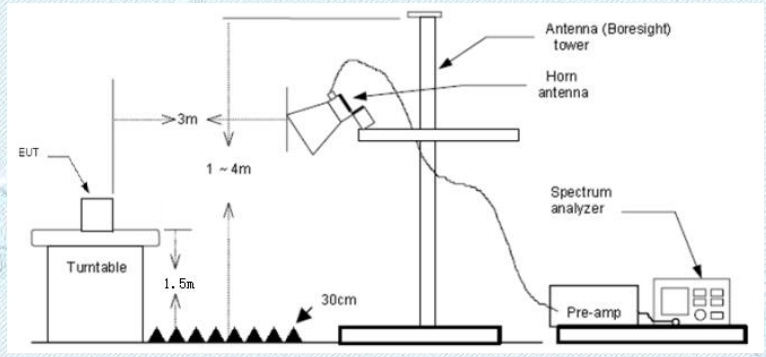
	a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. i. Repeat above procedures until all frequencies measured was complete. Remark: 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor 2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. 3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report. 4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

4.6.1. E.U.T. Operation:

Operating Environment:	
Temperature:	25.7 °C
Humidity:	49.5 %
Atmospheric Pressure:	101 kPa
Final test mode:	Test Mode1, Test Mode2

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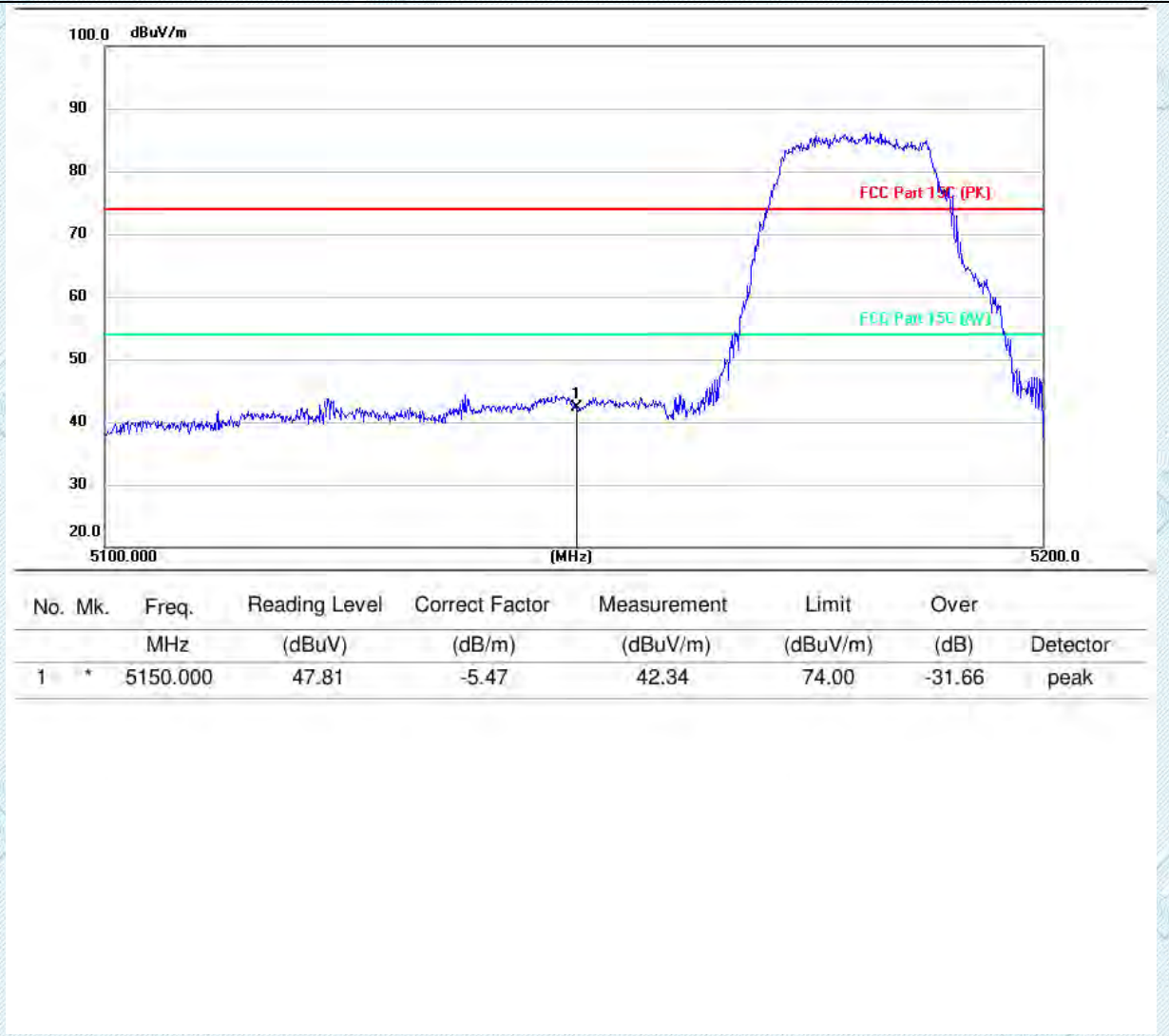
4.6.2. Test Setup Diagram:



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4.6.3. Test Data:

Test Mode1 / Polarization: Horizontal / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1	*	5150.000	47.81	-5.47	42.34	74.00	-31.66	peak

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Test Mode1 / Polarization: Vertical / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1	*	5150.000	51.67	-5.47	46.20	74.00	-27.80	peak

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Test Mode1 / Polarization: Horizontal / CH: H



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		5350.000	40.78	-5.48	35.30	74.00	-38.70	peak
2	*	5394.294	44.31	-5.46	38.85	74.00	-35.15	peak

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Test Mode1 / Polarization: Vertical / CH: H



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		5350.000	40.10	-5.48	34.62	74.00	-39.38	peak
2	*	5358.978	43.99	-5.47	38.52	74.00	-35.48	peak

Note:
1.Measurement = Reading level + Correct Factor
Correct Factor=Antenna Factor + Cable Loss - Preamplifier Factor
2.Pre-scan 802.11a, 802.11n(HT20) and 802.11n (HT40) mode, and found the 802.11a mode which it is worse case, so only show the test data for worse case.
3.Since the peak value is less than the limit of the AVG value, there is no AVG data.

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4.7. Undesirable emission limits (below 1GHz)

<table>
<tr><td>Test Requirement:</td><td>47 CFR Part 15.407(b)(9)</td></tr>
<tr><td>Test Limit:</td><td>Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209.

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:
<table>
<tr><th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr>
<tr><td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr>
<tr><td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr>
<tr><td>1.705-30.0</td><td>30</td><td>30</td></tr>
<tr><td>30-88</td><td>100 **</td><td>3</td></tr>
<tr><td>88-216</td><td>150 **</td><td>3</td></tr>
<tr><td>216-960</td><td>200 **</td><td>3</td></tr>
<tr><td>Above 960</td><td>500</td><td>3</td></tr>
</table></td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10-2013, section 12.7.4, 12.7.5, 12.7.6</td></tr>
<tr><td>Procedure:</td><td>Below 1GHz:
a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet.
g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
i. Repeat above procedures until all frequencies measured was complete.
Remark:
1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
2. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
3. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.</td></tr>
</table>

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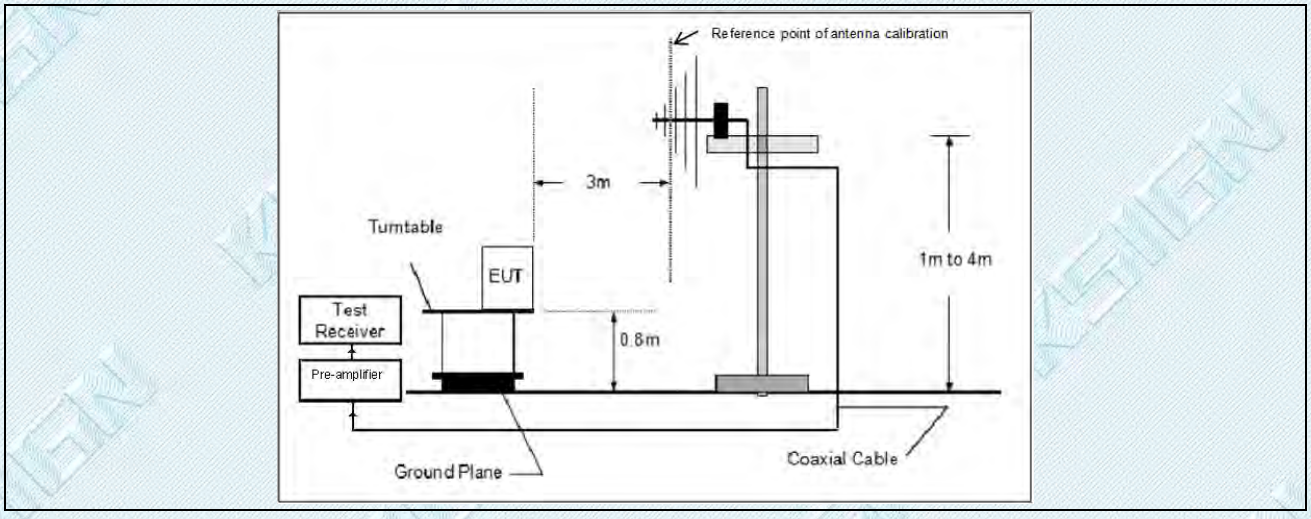
	Above 1GHz: a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. i. Repeat above procedures until all frequencies measured was complete. Remark: 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor 2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. 3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report. 4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

4.7.1. E.U.T. Operation:

Operating Environment:	
Temperature:	25.7 °C
Humidity:	49.5 %
Atmospheric Pressure:	101 kPa
Final test mode:	Test Mode1, Test Mode2

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4.7.2. Test Setup Diagram:



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4.7.3. Test Data:

9 KHz - 30 MHz:

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

30MHz – 1GHz

Test Mode1 / Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1	!	30.1158	53.37	-18.29	35.08	40.00	-4.92	QP
2	!	35.2017	53.28	-17.66	35.62	40.00	-4.38	QP
3	!	41.5959	52.94	-16.49	36.45	40.00	-3.55	QP
4	!	65.3889	52.76	-17.07	35.69	40.00	-4.31	QP
5	*	127.5750	61.15	-20.77	40.38	43.50	-3.12	QP
6		166.7683	57.08	-20.55	36.53	43.50	-6.97	QP

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Test Mode1 / Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		46.9125	47.62	-15.81	31.81	40.00	-8.19	QP
2	*	76.4852	52.79	-20.65	32.14	40.00	-7.86	QP
3		134.6064	55.72	-21.16	34.56	43.50	-8.94	QP
4		164.5609	54.15	-20.53	33.62	43.50	-9.88	QP
5		627.7138	40.99	-7.11	33.88	46.00	-12.12	QP
6		696.1240	42.58	-6.41	36.17	46.00	-9.83	QP

Note:
1.Measurement = Reading level + Correct Factor
Correct Factor=Antenna Factor + Cable Loss - Preamplifier Factor
2.Pre-scan 802.11a, 802.11n(HT20) and 802.11n (HT40) mode, and found the 802.11a mode which it is worse case, so only show the test data for worse case.

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4.8. Undesirable emission limits (above 1GHz)

Test Requirement:	47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(10)
Test Limit:	For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

[1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2]Above 38.6

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in § 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in § 15.209shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in § 15.209shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35apply to these measurements.

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100 **	3
88-216	150 **	3
216-960	200 **	3
Above 960	500	3

Test Method:	ANSI C63.10-2013, section 12.7.4, 12.7.5, 12.7.6
Procedure:	Above 1GHz:

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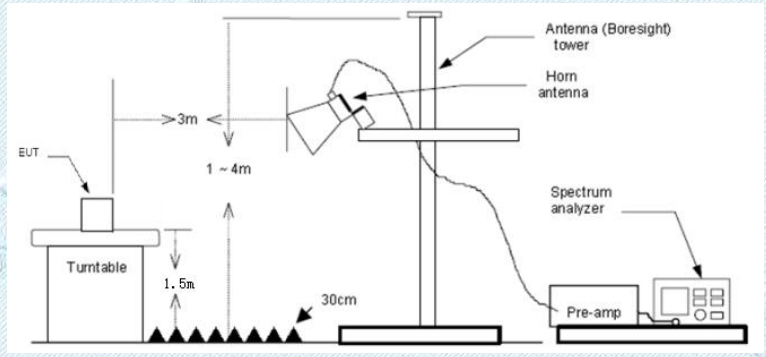
	a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. i. Repeat above procedures until all frequencies measured was complete. Remark: 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor 2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. 3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report. 4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

4.8.1. E.U.T. Operation:

Operating Environment:	
Temperature:	25.7 °C
Humidity:	49.5 %
Atmospheric Pressure:	101 kPa
Final test mode:	Test Mode1, Test Mode2

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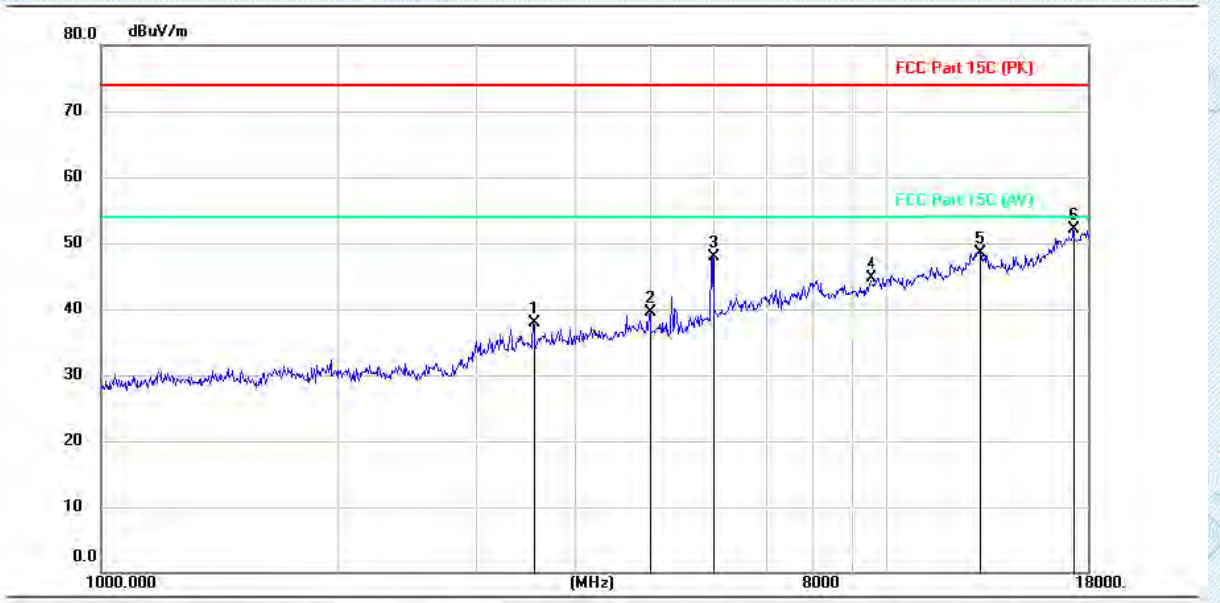
4.8.2. Test Setup Diagram:



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4.8.3. Test Data:

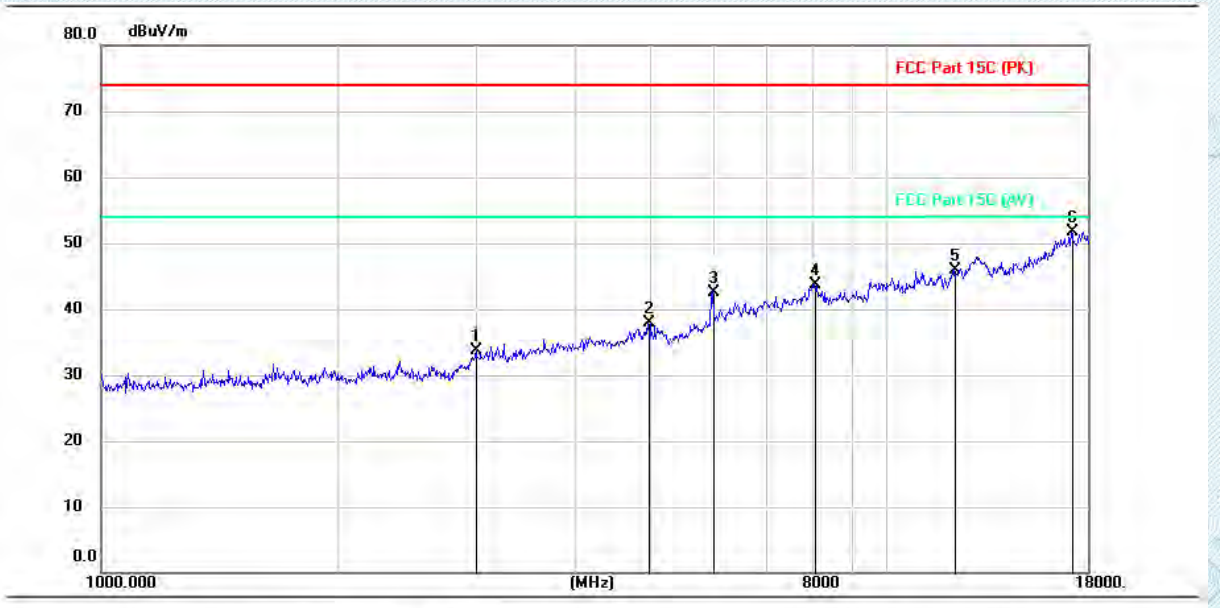
Test Mode1 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 20 / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		3550.000	46.23	-8.28	37.95	74.00	-36.05	peak
2		4995.000	43.95	-4.50	39.45	74.00	-34.55	peak
3		5989.500	49.63	-1.68	47.95	74.00	-26.05	peak
4		9542.500	39.95	4.75	44.70	74.00	-29.30	peak
5		13122.700	36.94	11.57	48.51	74.00	-25.49	peak
6	*	17286.000	37.25	14.79	52.04	74.00	-21.96	peak

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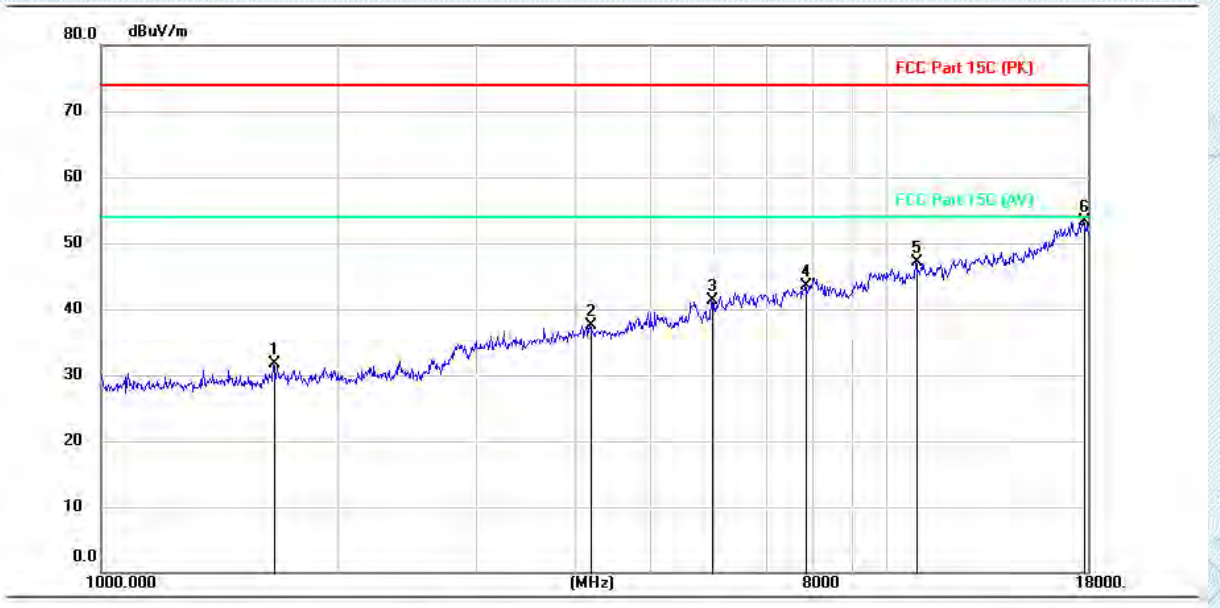
Test Mode1 / Polarization: Vertical / Band: 5150-5250 MHz / BW: 20 / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		2999.200	43.02	-9.39	33.63	74.00	-40.37	peak
2		4962.700	43.39	-5.43	37.96	74.00	-36.04	peak
3		5998.000	44.97	-2.42	42.55	74.00	-31.45	peak
4		8066.900	40.78	2.92	43.70	74.00	-30.30	peak
5		12194.500	37.77	8.13	45.90	74.00	-28.10	peak
6	*	17156.800	37.12	14.54	51.66	74.00	-22.34	peak

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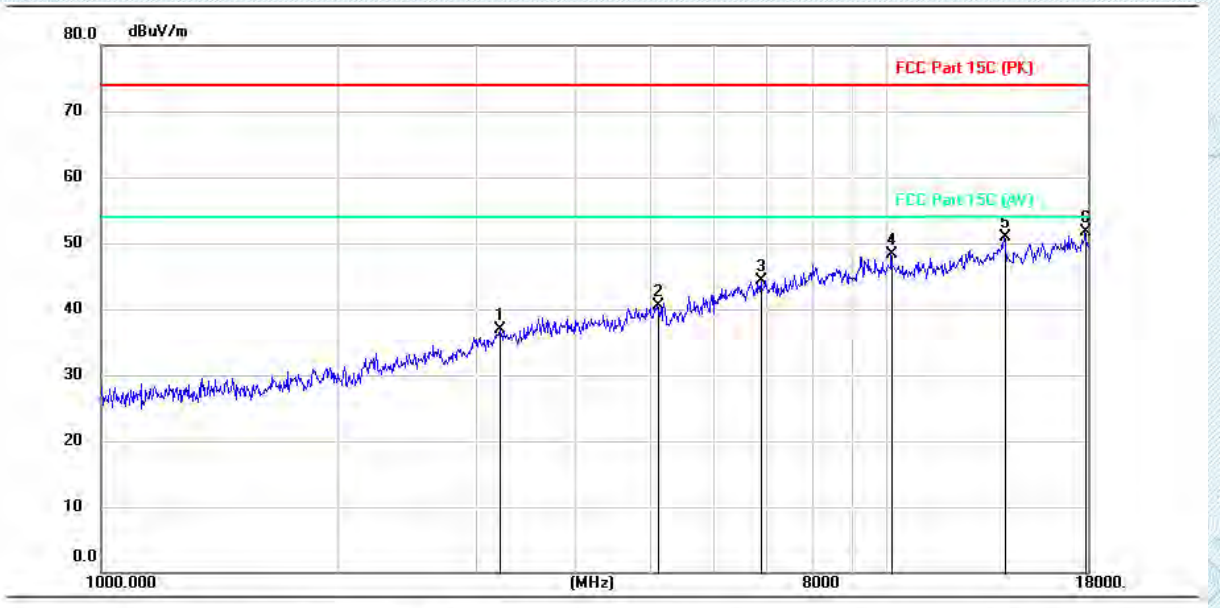
Test Mode1 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 20 / CH: M



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		1657.900	42.97	-11.21	31.76	74.00	-42.24	peak
2		4184.100	44.77	-7.29	37.48	74.00	-36.52	peak
3		5982.700	43.79	-2.55	41.24	74.00	-32.76	peak
4		7866.300	41.19	2.41	43.60	74.00	-30.40	peak
5		10892.300	41.25	5.91	47.16	74.00	-26.84	peak
6	*	17743.300	38.37	14.91	53.28	74.00	-20.72	peak

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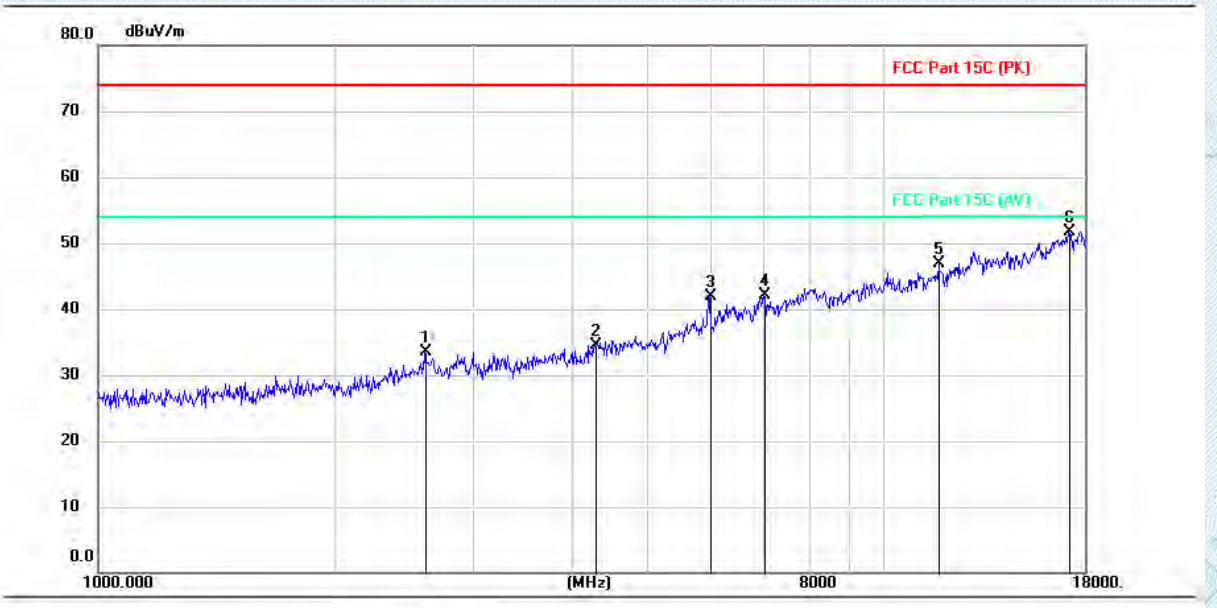
Test Mode1 / Polarization: Vertical / Band: 5150-5250 MHz / BW: 20 / CH: M



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		3215.100	46.06	-9.21	36.85	74.00	-37.15	peak
2		5102.100	45.99	-5.42	40.57	74.00	-33.43	peak
3		6895.600	43.86	0.36	44.22	74.00	-29.78	peak
4		10132.400	43.33	4.96	48.29	74.00	-25.71	peak
5		14090.000	41.01	9.87	50.88	74.00	-23.12	peak
6	*	17884.400	36.69	14.97	51.66	74.00	-22.34	peak

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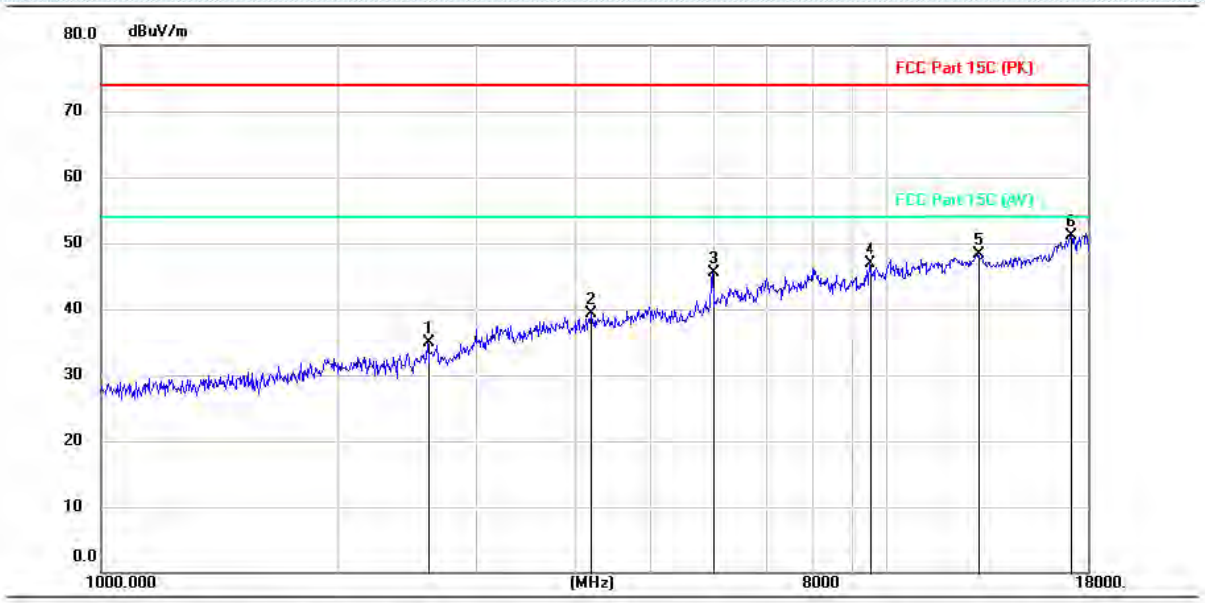
Test Mode1 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 20 / CH: H



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		2609.900	43.50	-10.05	33.45	74.00	-40.55	peak
2		4286.100	41.76	-7.20	34.56	74.00	-39.44	peak
3		5998.000	44.40	-2.42	41.98	74.00	-32.02	peak
4		7019.700	41.38	0.79	42.17	74.00	-31.83	peak
5		11757.600	39.50	7.38	46.88	74.00	-27.12	peak
6	*	17178.900	37.06	14.56	51.62	74.00	-22.38	peak

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Test Mode1 / Polarization: Vertical / Band: 5150-5250 MHz / BW: 20 / CH: H



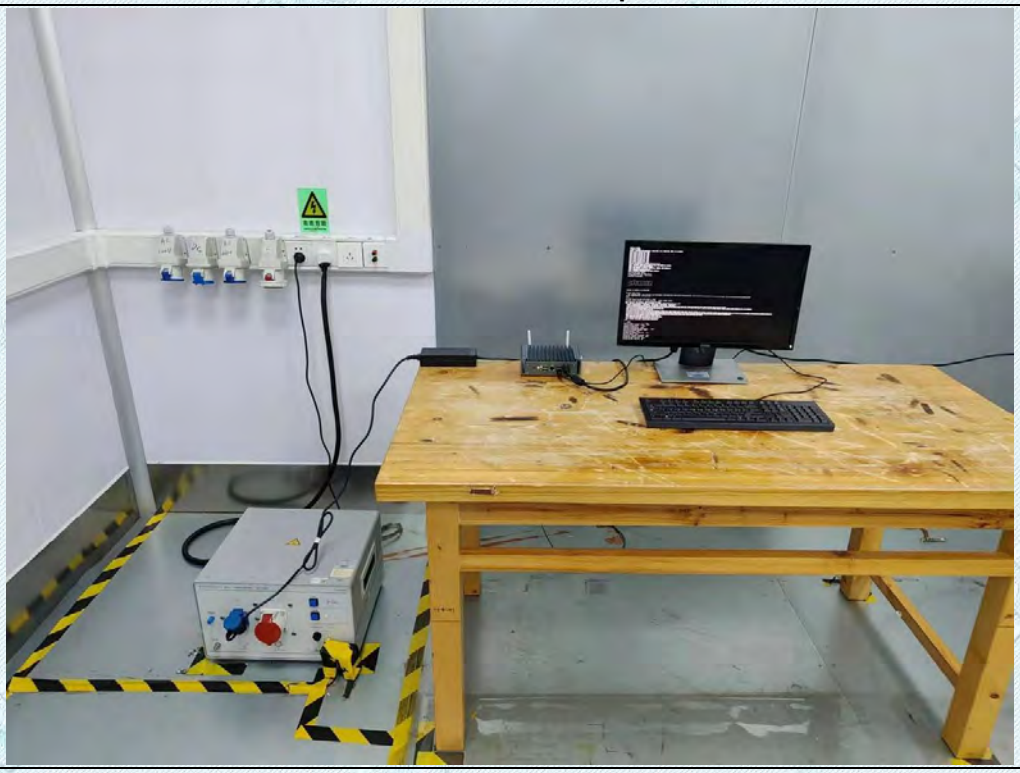
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		2609.900	45.00	-10.05	34.95	74.00	-39.05	peak
2		4202.800	46.47	-7.25	39.22	74.00	-34.78	peak
3		5998.000	47.90	-2.42	45.48	74.00	-28.52	peak
4		9479.600	42.97	3.88	46.85	74.00	-27.15	peak
5		13073.400	37.25	10.99	48.24	74.00	-25.76	peak
6	*	17095.600	36.70	14.50	51.20	74.00	-22.80	peak

Note:
1.Measurement = Reading level + Correct Factor
Correct Factor=Antenna Factor + Cable Loss - Preamplifier Factor
2.Pre-scan 802.11a, 802.11n(HT20) and 802.11n (HT40) mode, and found the 802.11a mode which it is worse case, so only show the test data for worse case.
3.Since the peak value is less than the limit of the AVG value, there is no AVG data.
4. 18GHz-40GHz is the background of the site, there is no radiated spurious.

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5. EUT TEST PHOTOS

Conducted Emission at AC power line



Undesirable emission limits (below 1GHz)



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Undesirable emission limits (above 1GHz)

RF measurements


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6. PHOTOGRAPHS OF EUT CONSTRUCTIONAL

Refer to Appendix - EUT Photos for KS2310S5164E.

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Appendix

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6.1. Appendix A1: Emission Bandwidth

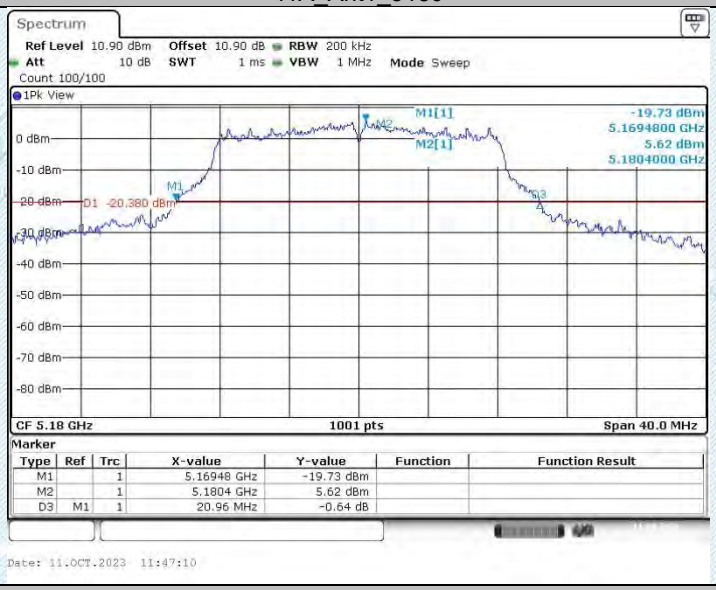
6.1.1. Test Result

TestMode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	20.96	5169.48	5190.44	---	PASS
		5220	23.00	5207.48	5230.48	---	PASS
		5240	20.88	5229.52	5250.40	---	PASS
11N20SISO	Ant1	5180	21.48	5169.20	5190.68	---	PASS
		5220	21.20	5209.28	5230.48	---	PASS
		5240	21.60	5229.40	5251.00	---	PASS
11N40SISO	Ant1	5190	40.16	5169.84	5210.00	---	PASS
		5230	40.16	5209.92	5250.08	---	PASS

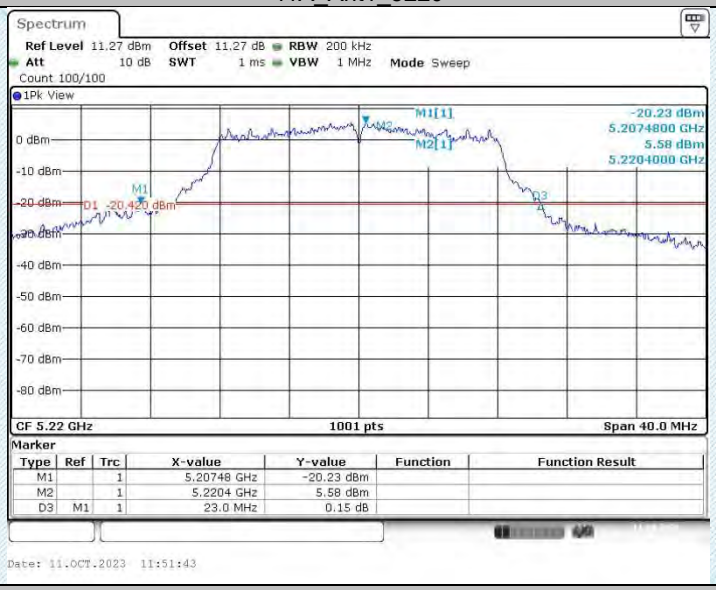
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6.1.2. Test Graphs

11A_Ant1_5180

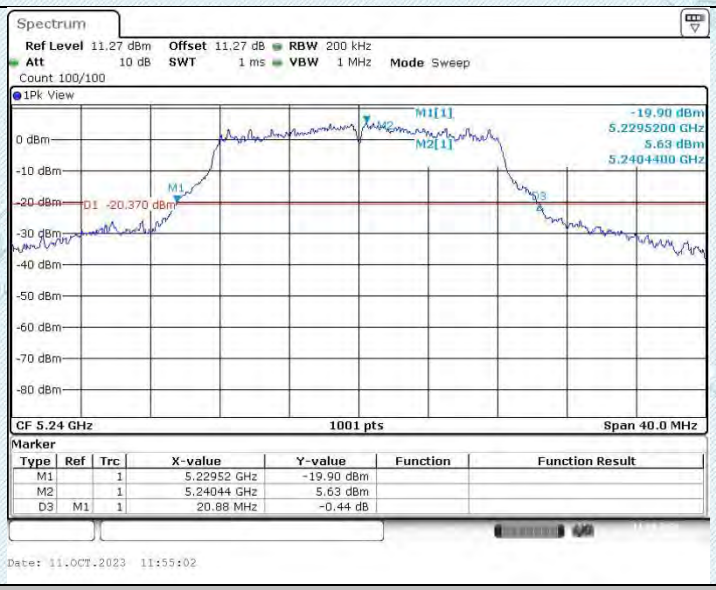


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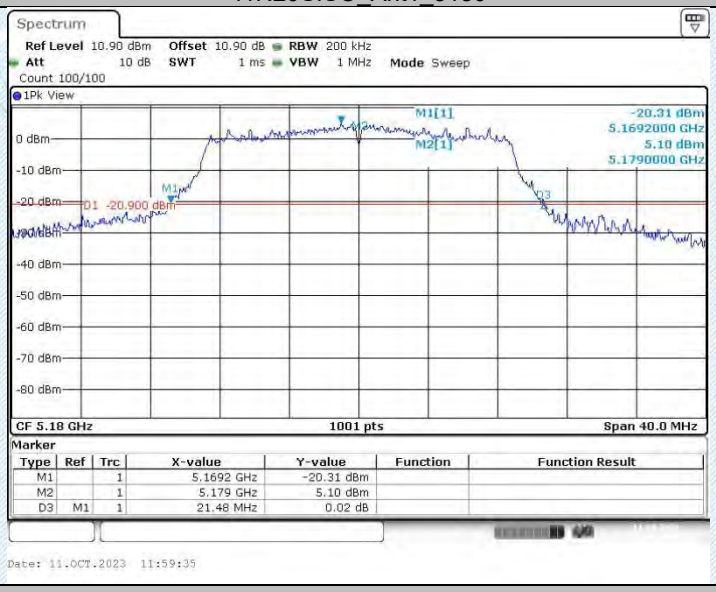


11A_Ant1_5240

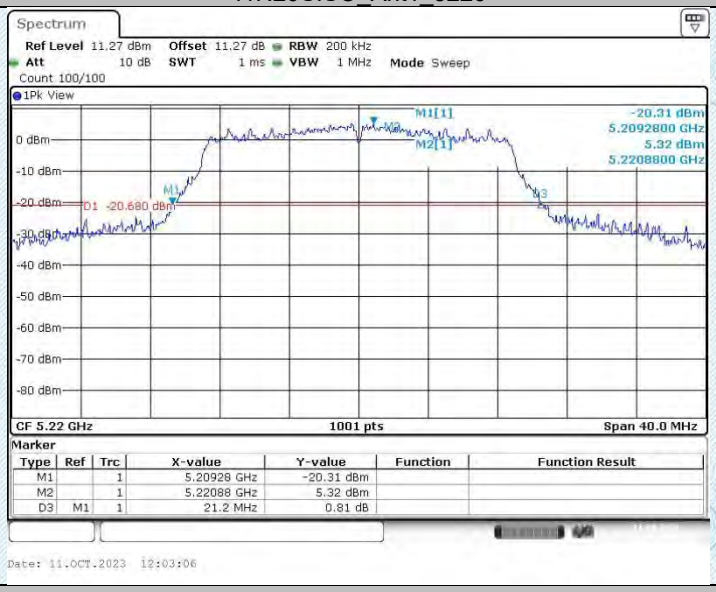
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11N20SISO_Ant1_5180

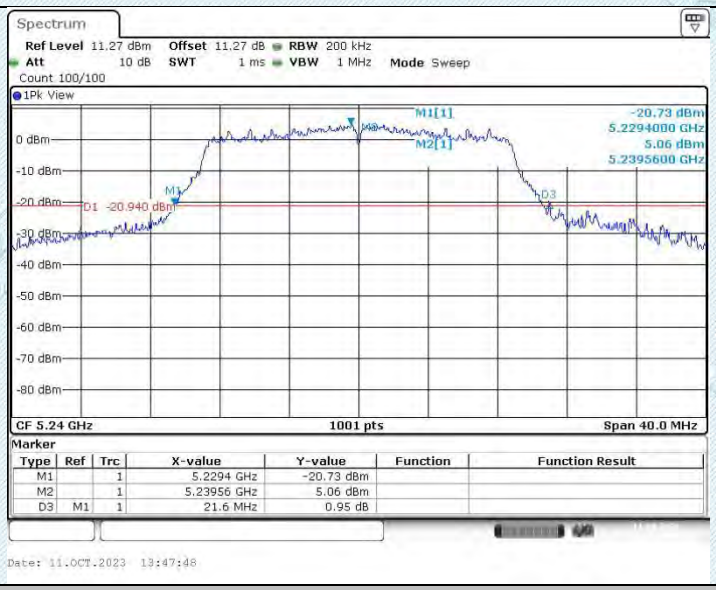


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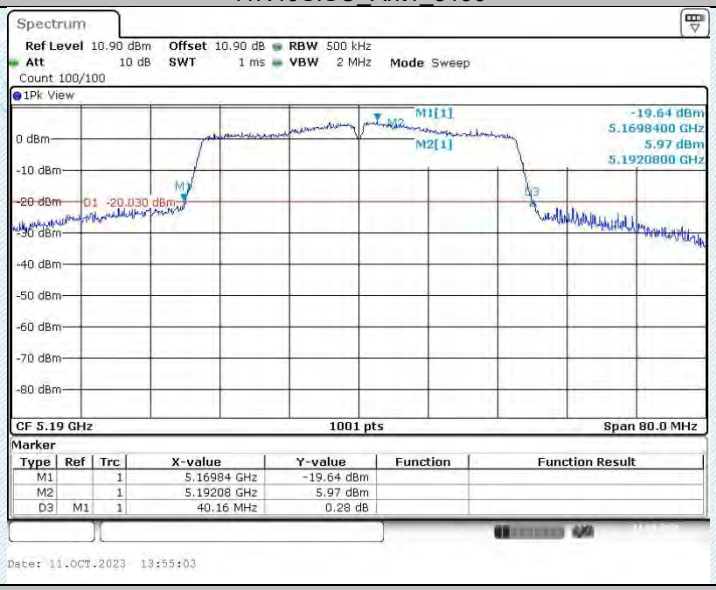


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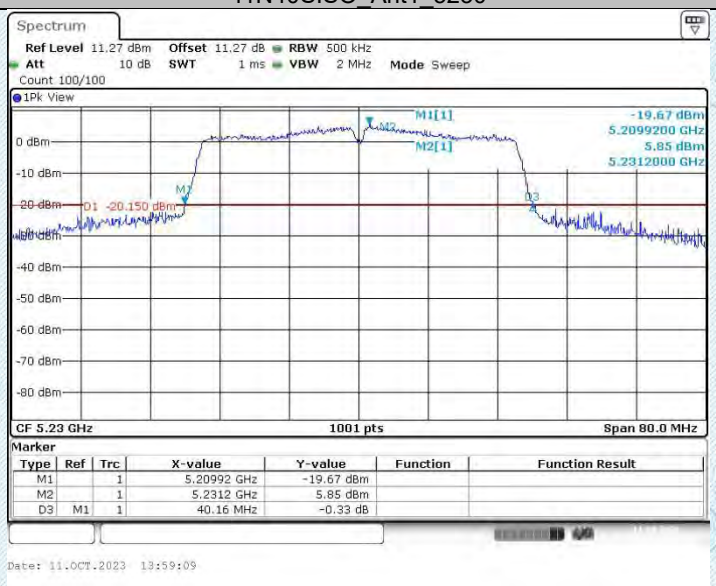
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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11N40SISO_Ant1_5190



11N40SISO_Ant1_5230



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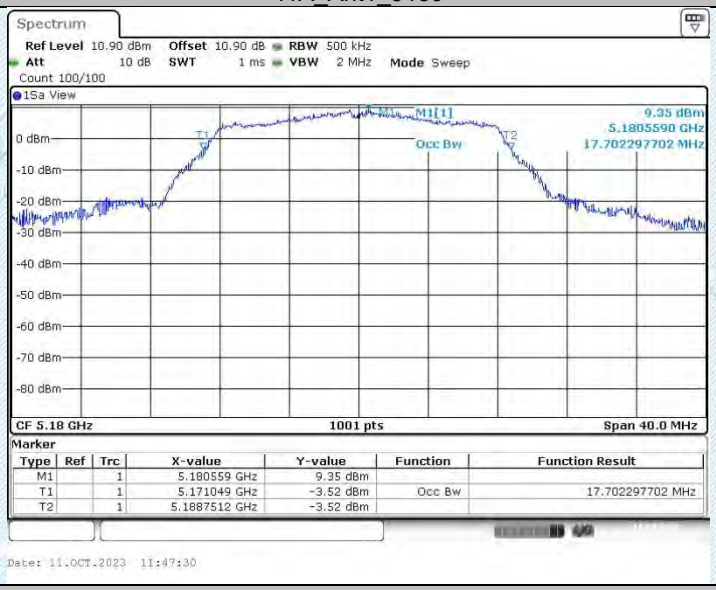
6.2. Appendix A2: Occupied channel bandwidth

6.2.1. Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	17.702	5171.049	5188.751	---	PASS
		5220	17.942	5210.729	5228.671	---	PASS
		5240	17.622	5231.129	5248.751	---	PASS
11N20SISO	Ant1	5180	18.621	5170.649	5189.271	---	PASS
		5220	18.541	5210.689	5229.231	---	PASS
		5240	18.581	5230.729	5249.311	---	PASS
11N40SISO	Ant1	5190	36.603	5171.698	5208.302	---	PASS
		5230	36.603	5211.698	5248.302	---	PASS

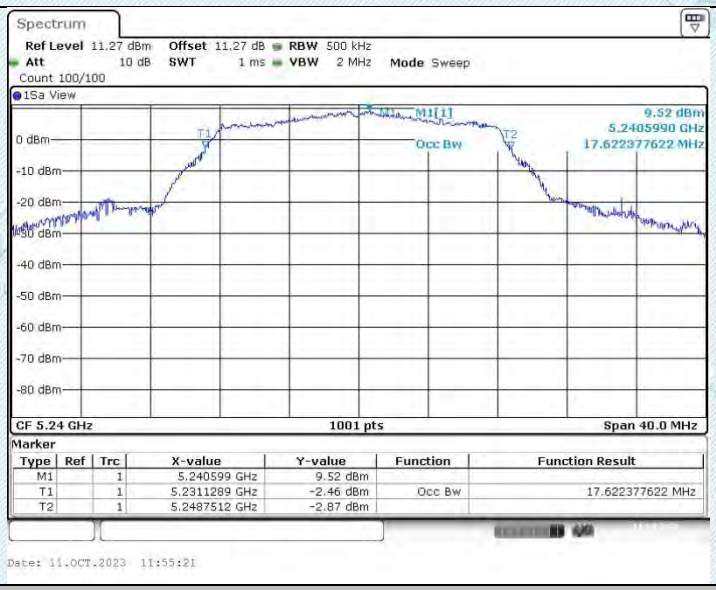
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com

6.2.2. Test Graphs

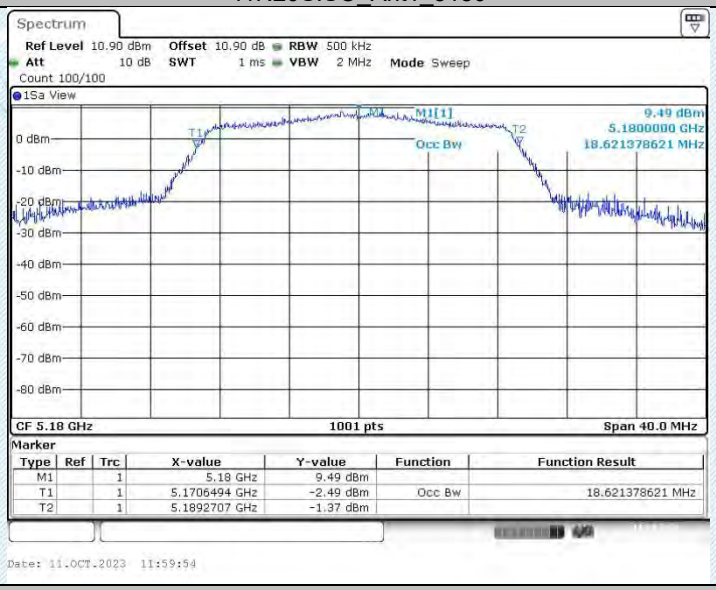
11A_Ant1_5180

11A_Ant1_5220

11A_Ant1_5240

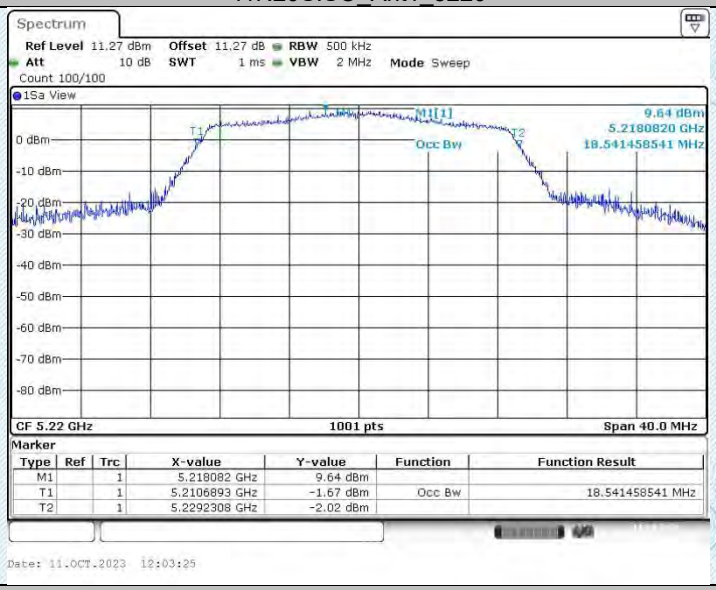
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



11N20SISO_Ant1_5180

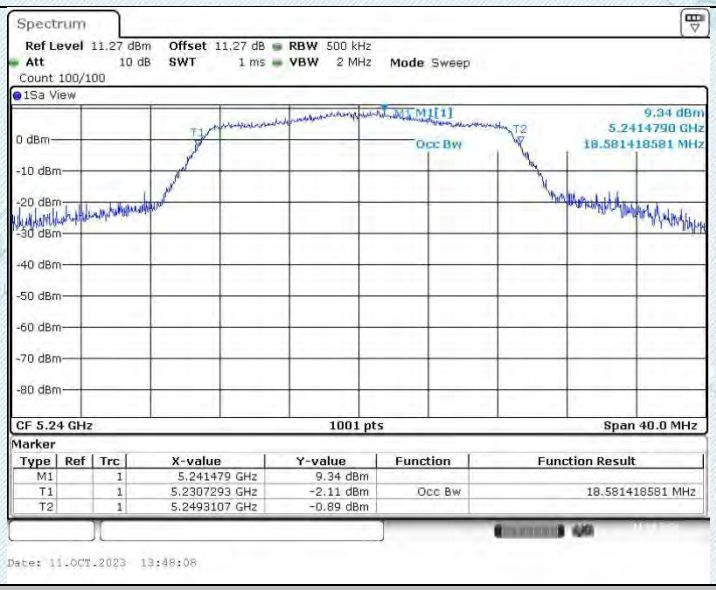


11N20SISO_Ant1_5220

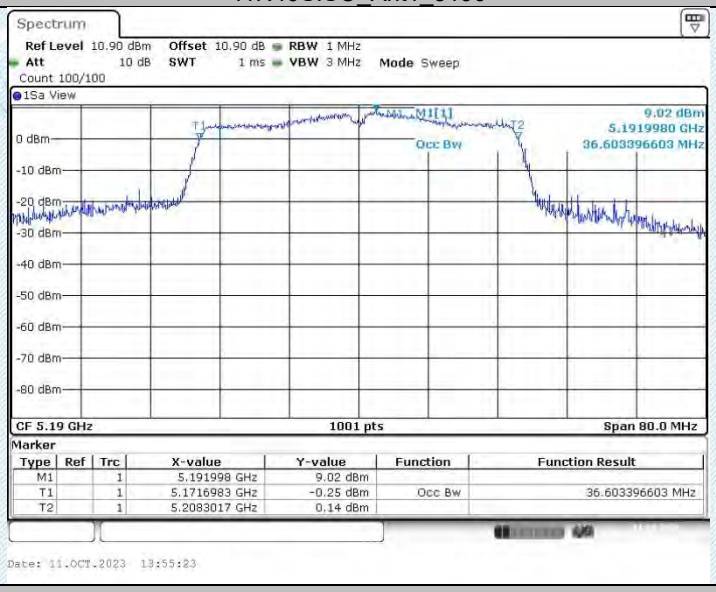


11N20SISO_Ant1_5240

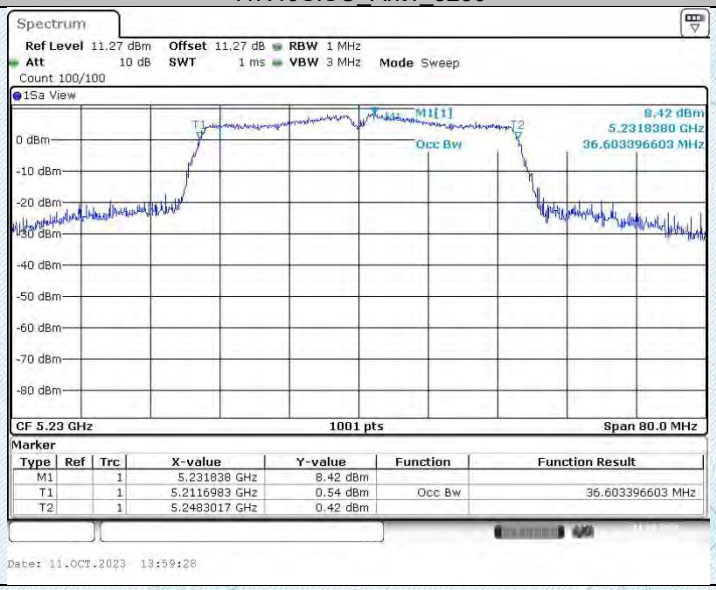
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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11N40SISO_Ant1_5190



11N40SISO_Ant1_5230



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6.3. Appendix B: Duty Cycle

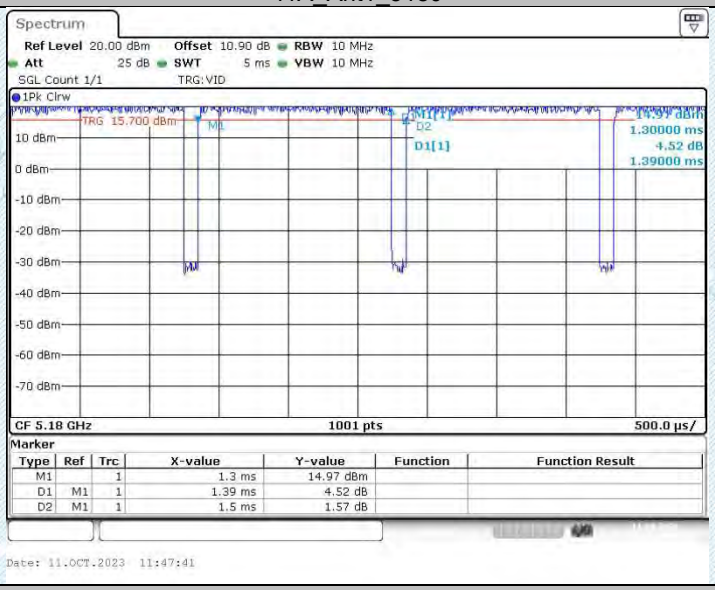
6.3.1. Test Result

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11A	Ant1	5180	1.39	1.50	92.67
		5220	1.40	1.50	93.33
		5240	1.39	1.50	92.67
11N20SISO	Ant1	5180	1.30	1.41	92.20
		5220	1.31	1.41	92.91
		5240	1.30	1.41	92.20
11N40SISO	Ant1	5190	0.64	0.75	85.33
		5230	0.64	0.75	85.33

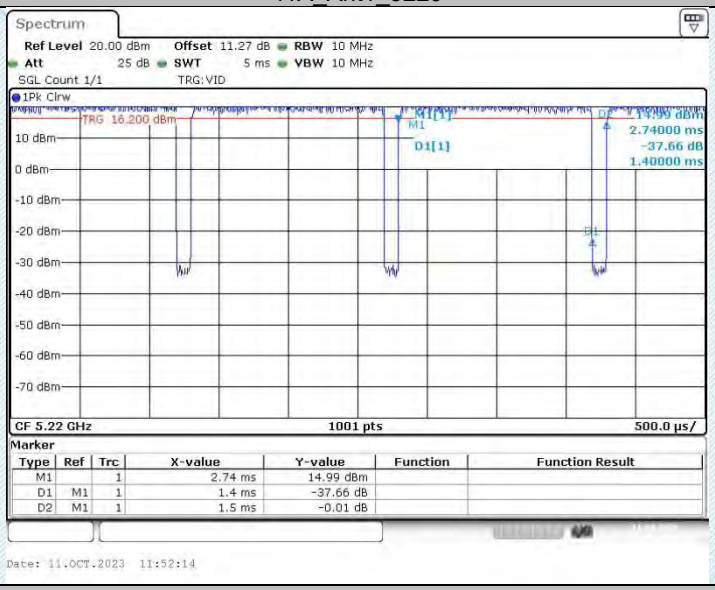
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com

6.3.2. Test Graphs

11A_Ant1_5180

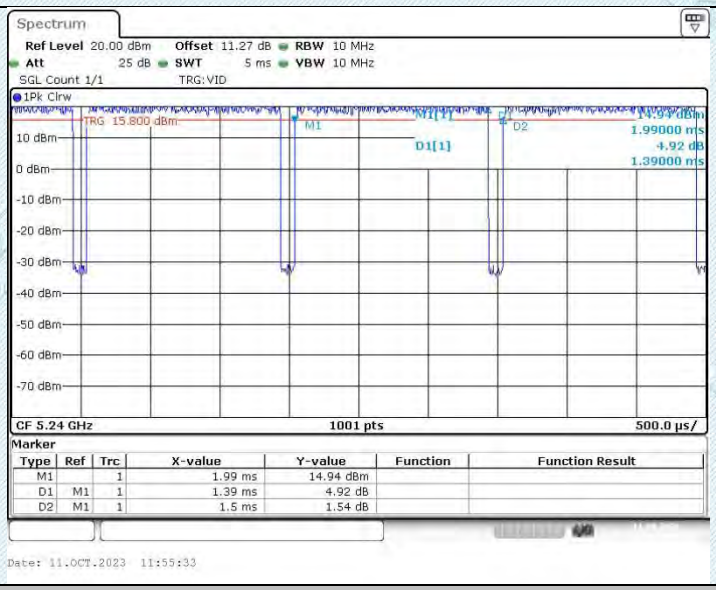


11A_Ant1_5220

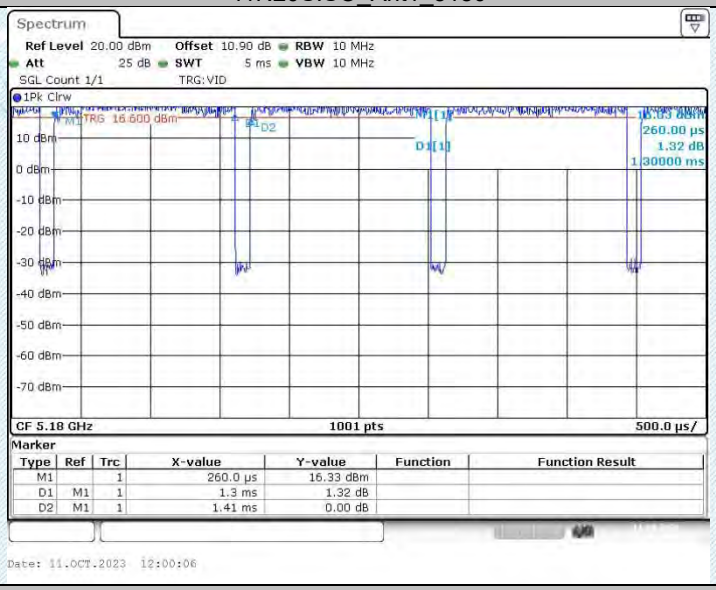


11A_Ant1_5240

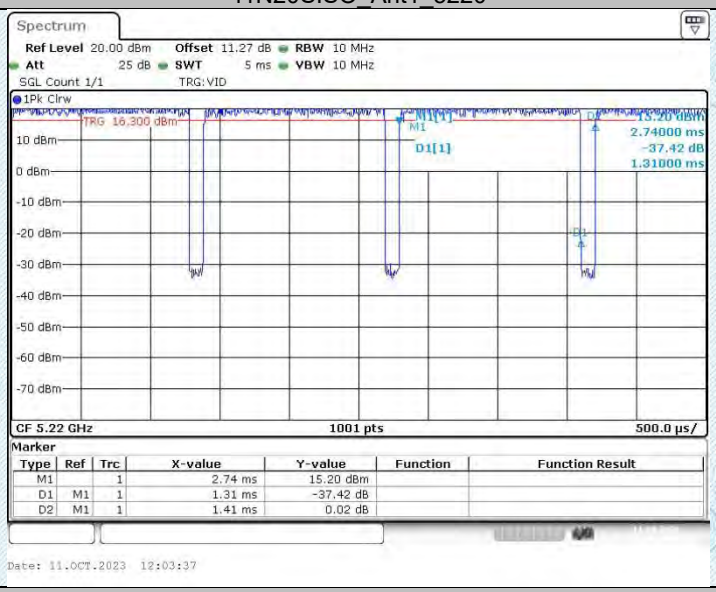
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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11N20SISO_Ant1_5180

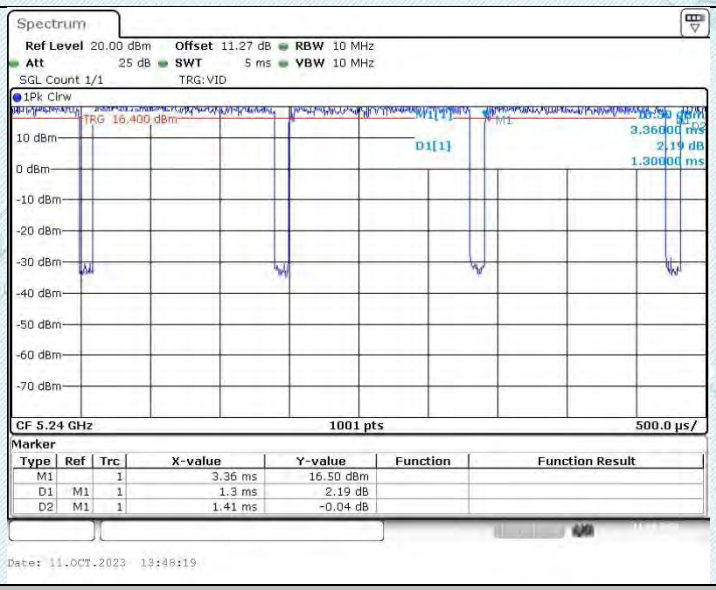


11N20SISO_Ant1_5220

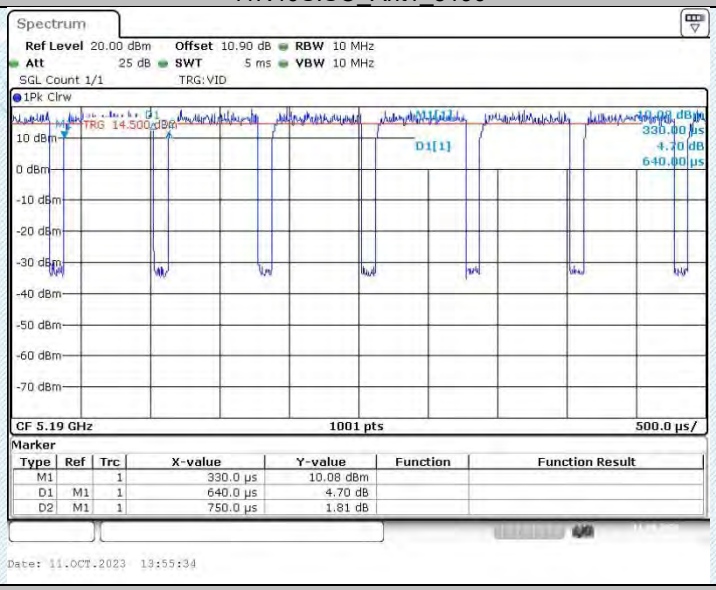


11N20SISO_Ant1_5240

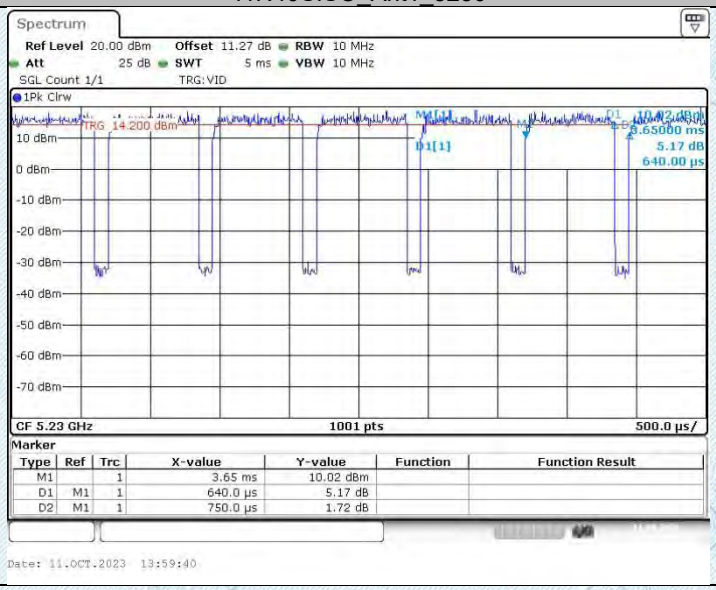
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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11N40SISO_Ant1_5190



11N40SISO_Ant1_5230



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6.4. Appendix C: Maximum conducted output power

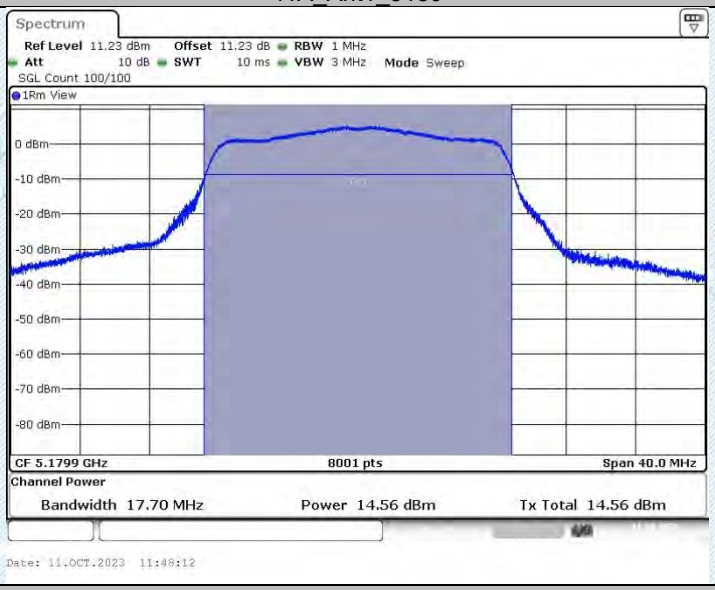
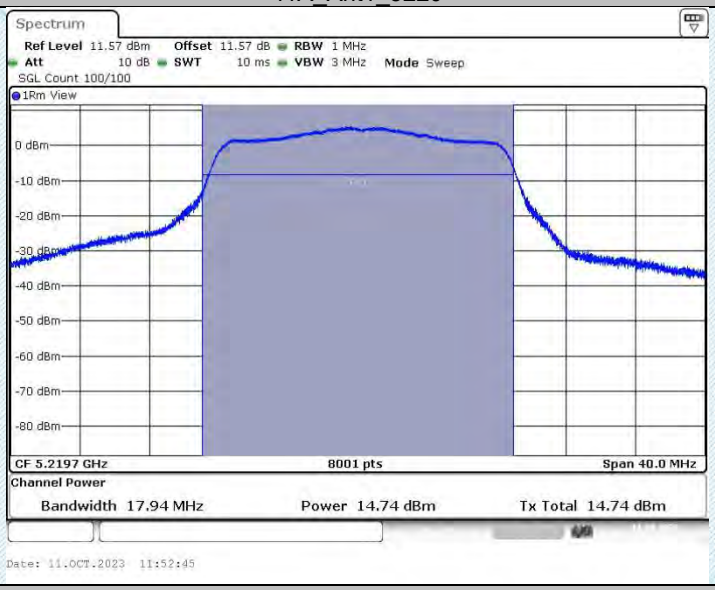
6.4.1. Test Result Channel Power

Test Mode	Antenna	Frequency [MHz]	Channel Powert [dBm]	Duty Cycle [%]	DC Factor [dBm]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	14.23	92.67	0.33	14.56	≤23.98	PASS
		5220	14.44	93.33	0.30	14.74	≤23.98	PASS
		5240	14.28	92.67	0.33	14.61	≤23.98	PASS
11N20SISO	Ant1	5180	13.96	92.20	0.35	14.31	≤23.98	PASS
		5220	14.40	92.91	0.32	14.72	≤23.98	PASS
		5240	14.40	92.20	0.35	14.75	≤23.98	PASS
11N40SISO	Ant1	5190	12.73	85.33	0.69	13.42	≤23.98	PASS
		5230	12.70	85.33	0.69	13.39	≤23.98	PASS

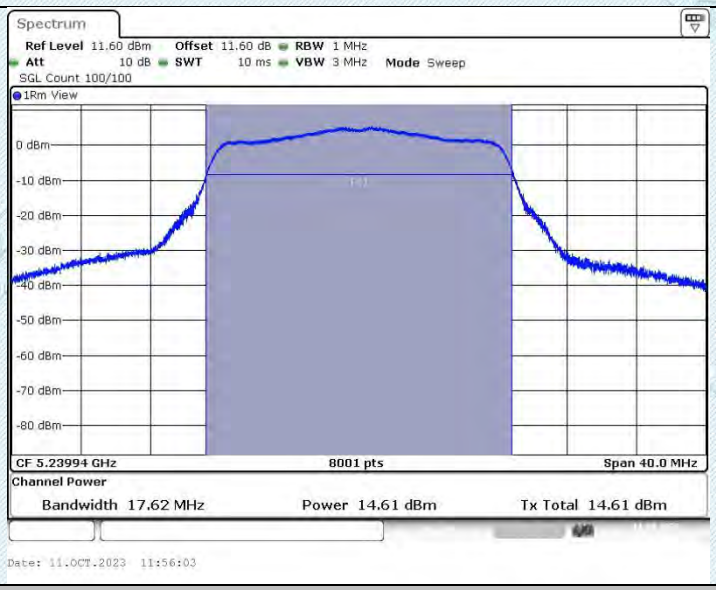
Note：The Duty Cycle Factor is compensated in the graph.

Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com

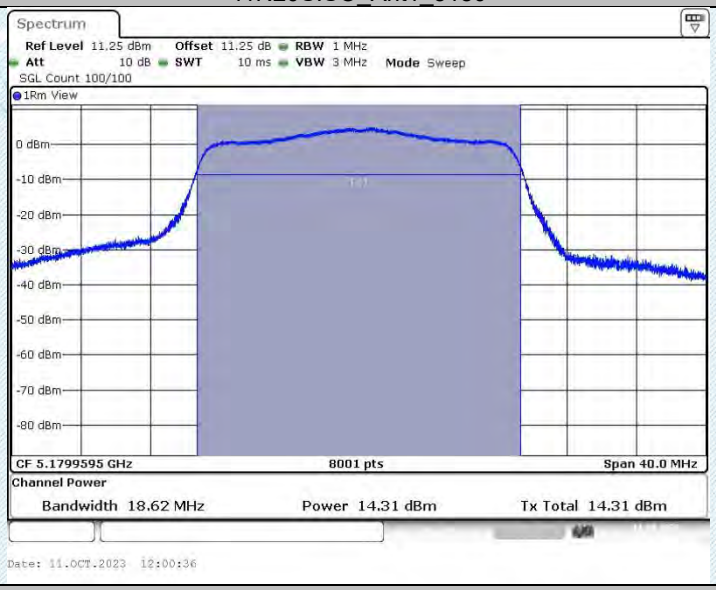
6.4.2. Test Graphs Channel Power

11A_Ant1_5180

11A_Ant1_5220

11A_Ant1_5240

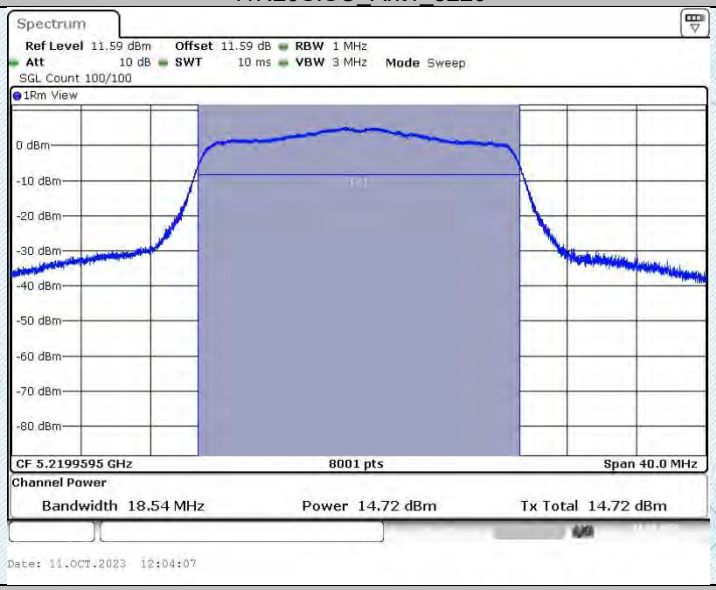
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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11N20SISO_Ant1_5180

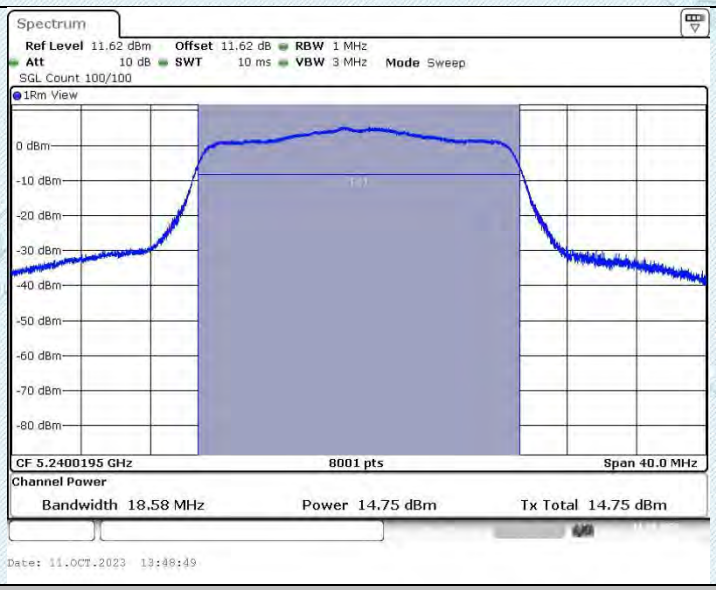


11N20SISO_Ant1_5220

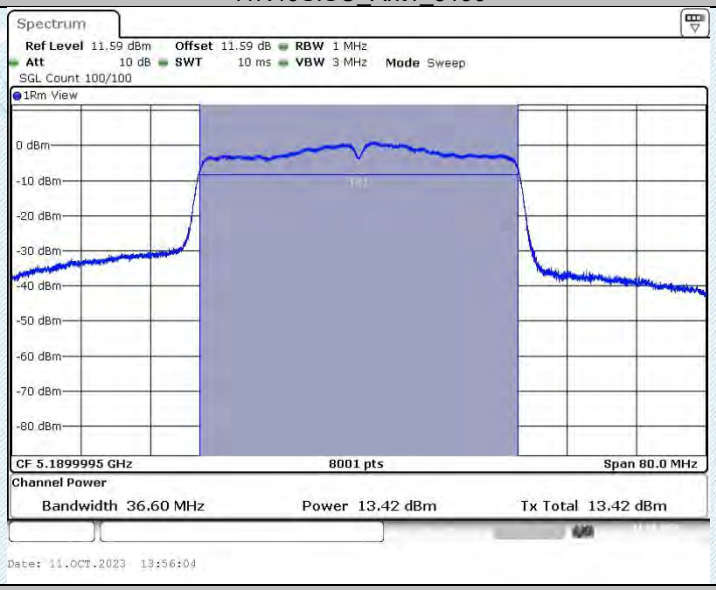


11N20SISO_Ant1_5240

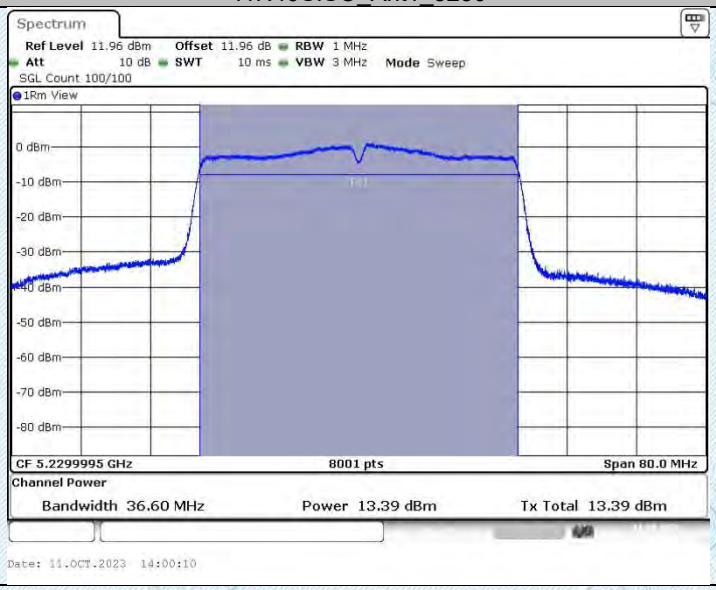
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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11N40SISO_Ant1_5190



11N40SISO_Ant1_5230



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6.5. Appendix D: Maximum power spectral density

6.5.1. Test Result

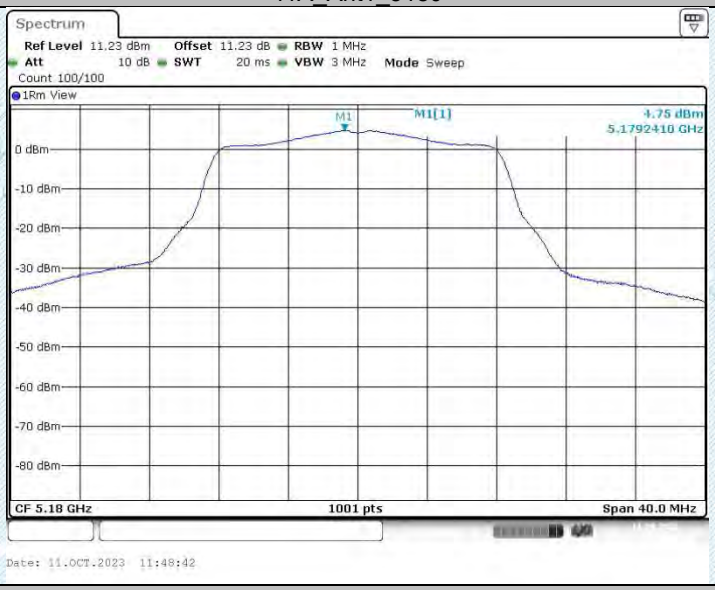
TestMode	Antenna	Frequency [MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Verdict
11A	Ant1	5180	4.75	≤11.00	PASS
		5220	4.96	≤11.00	PASS
		5240	4.81	≤11.00	PASS
11N20SISO	Ant1	5180	4.53	≤11.00	PASS
		5220	4.74	≤11.00	PASS
		5240	4.77	≤11.00	PASS
11N40SISO	Ant1	5190	0.78	≤11.00	PASS
		5230	0.38	≤11.00	PASS

Note：1.The Duty Cycle Factor and RBW Factor is compensated in the graph.

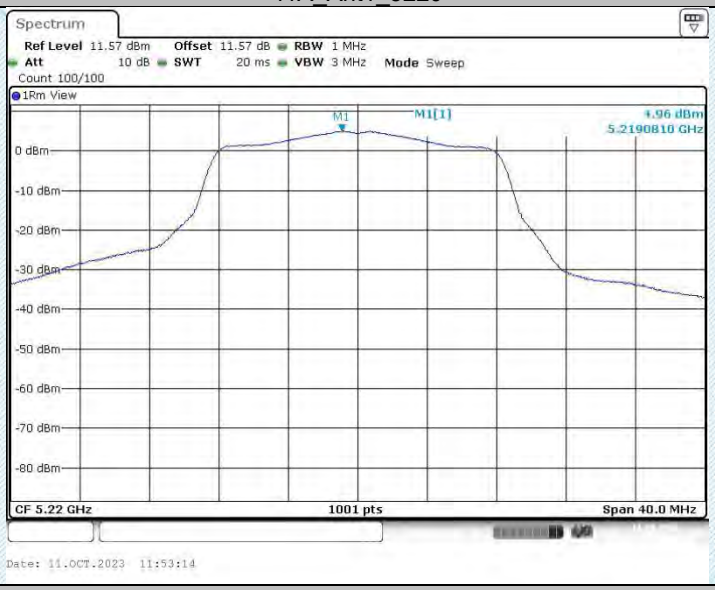
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com

6.5.2. Test Graphs

11A_Ant1_5180



11A_Ant1_5220

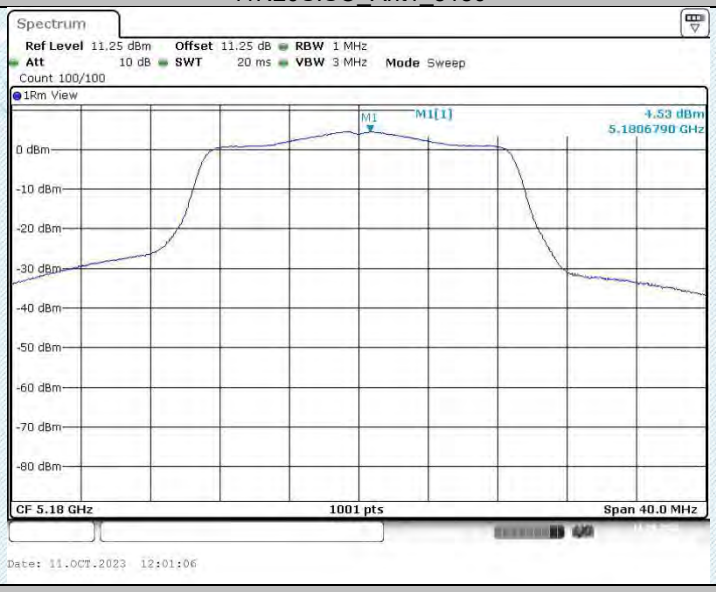


11A_Ant1_5240

Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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11N20SISO_Ant1_5180



11N20SISO_Ant1_5220

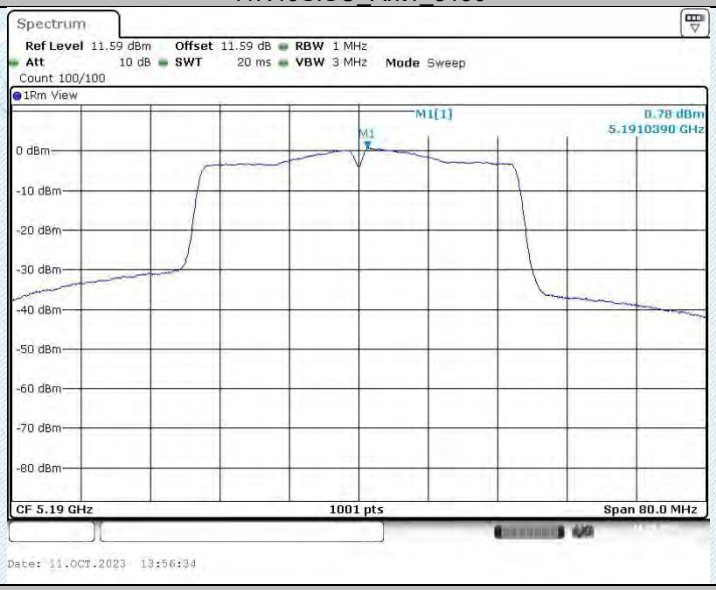


11N20SISO_Ant1_5240

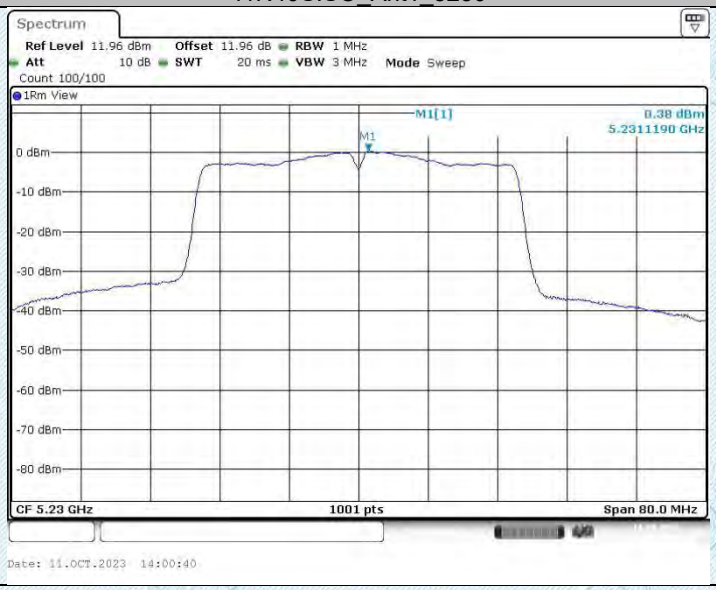
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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11N40SISO_Ant1_5190



11N40SISO_Ant1_5230



Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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6.6. Appendix E: Band edge measurements

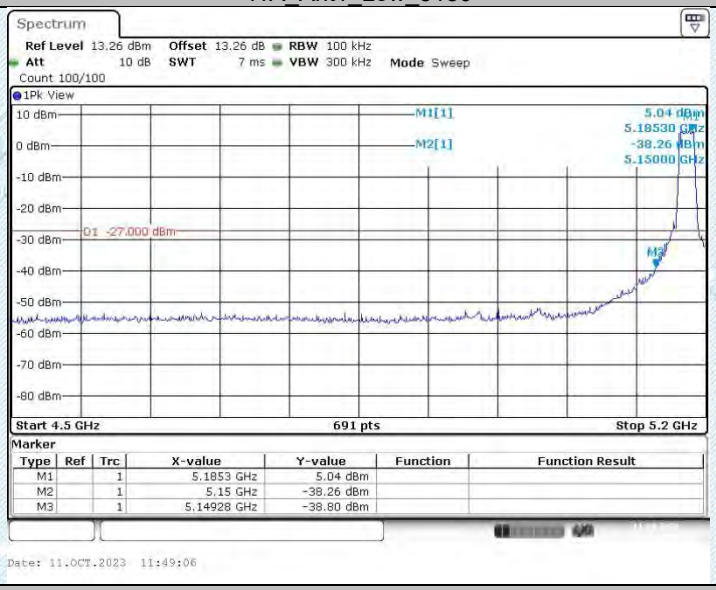
6.6.1. Test Result

TestMode	Antenna	ChName	Frequency[MHz]	Result[dBm]	Limit[dBm]	Verdict
11A	Ant1	Low	5180	-38.8	≤-27	PASS
		High	5240	-48.29	≤-27	PASS
11N20SISO	Ant1	Low	5180	-36.44	≤-27	PASS
		High	5240	-48	≤-27	PASS
11N40SISO	Ant1	Low	5190	-35.29	≤-27	PASS
		High	5230	-49.81	≤-27	PASS

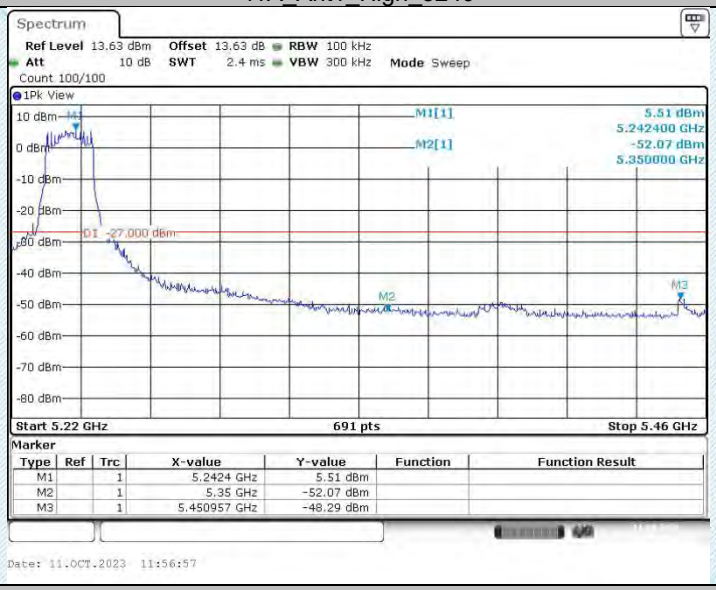
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com

6.6.2. Test Graphs

11A_Ant1_Low_5180

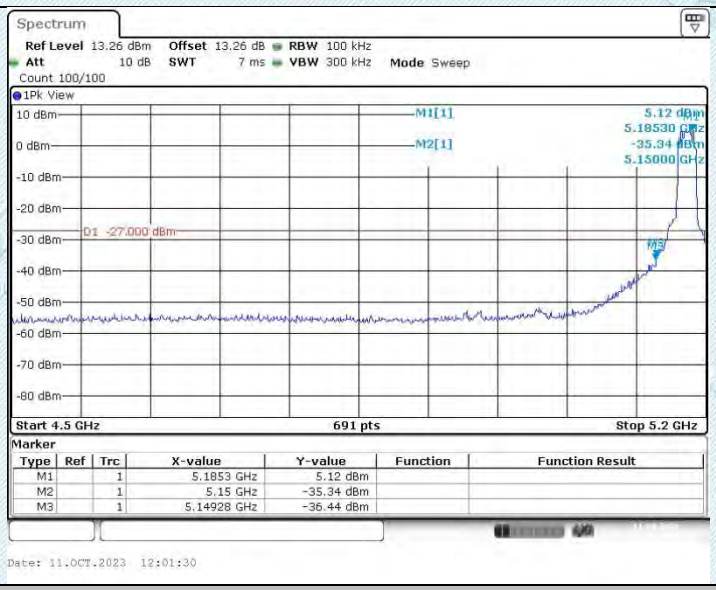


11A_Ant1_High_5240

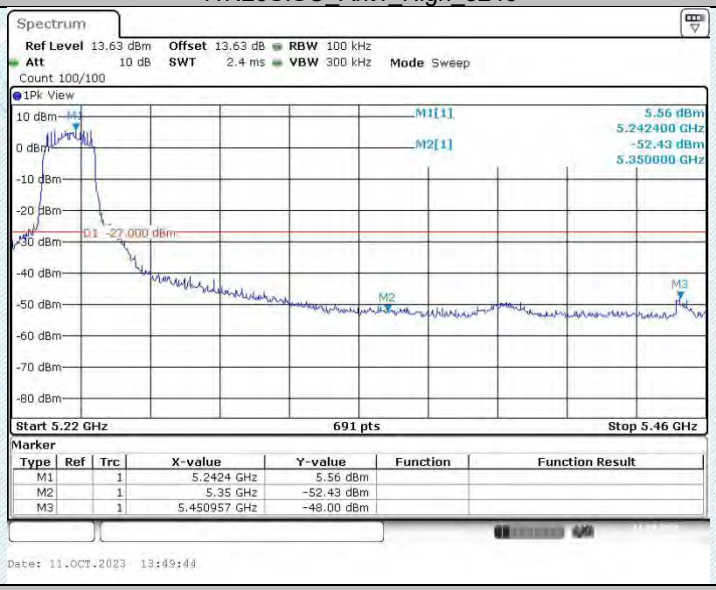


11N20SISO_Ant1_Low_5180

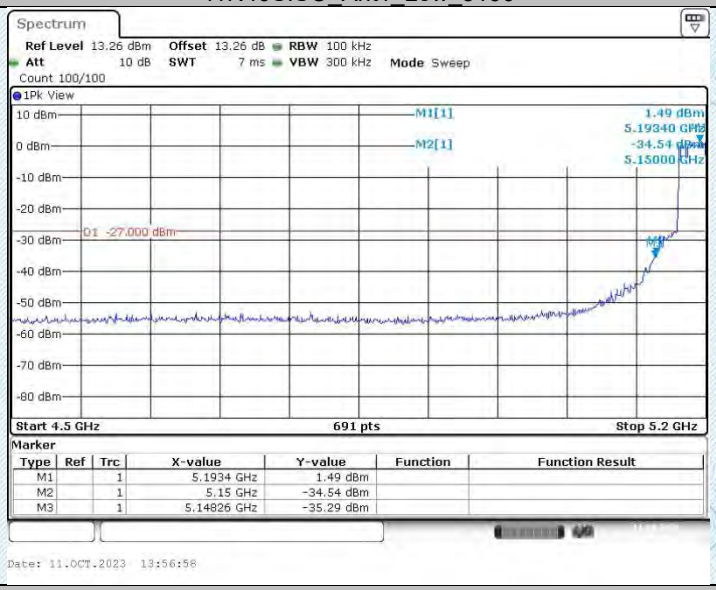
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



11N20SISO_Ant1_High_5240



11N40SISO_Ant1_Low_5190



11N40SISO_Ant1_High_5230

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6.7. Appendix F: Conducted Spurious Emission

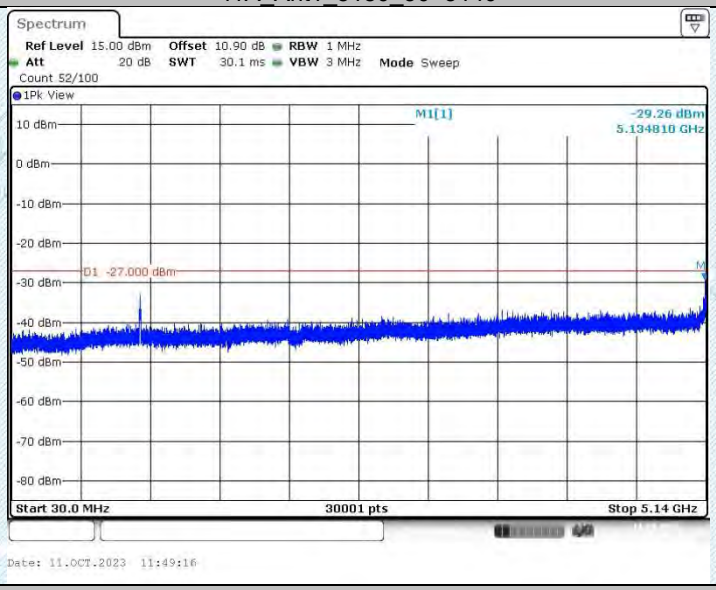
6.7.1. Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	Max. Fre [MHz]	Max. Level [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	30~5140	5134.81	-29.26	≤-27	PASS
			5360~40000	39216.6	-32.25	≤-27	PASS
		5220	30~5140	1015.26	-33.14	≤-27	PASS
			5360~40000	39799.7	-31.41	≤-27	PASS
		5240	30~5140	1034.68	-32.06	≤-27	PASS
			5360~40000	39192.3	-31.71	≤-27	PASS
11N20SISO	Ant1	5180	30~5140	5137.02	-27.99	≤-27	PASS
			5360~40000	39807.8	-32.55	≤-27	PASS
		5220	30~5140	1014.92	-34.39	≤-27	PASS
			5360~40000	39233.9	-31.92	≤-27	PASS
		5240	30~5140	1035.02	-34.46	≤-27	PASS
			5360~40000	39240.8	-32.3	≤-27	PASS
11N40SISO	Ant1	5190	30~5140	5139.91	-30.14	≤-27	PASS
			5360~40000	39297.4	-32.11	≤-27	PASS
		5230	30~5140	5139.4	-31.94	≤-27	PASS
			5360~40000	39625.3	-31.75	≤-27	PASS

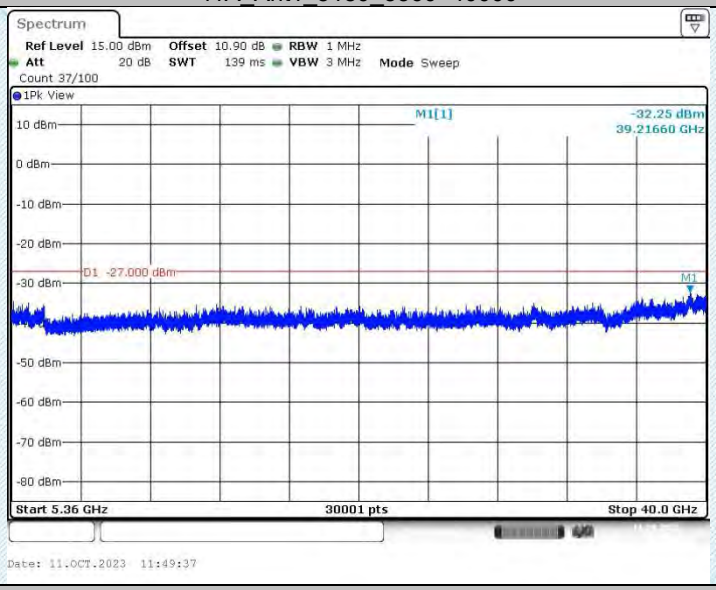
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6.7.2. Test Graphs

11A_Ant1_5180_30~5140

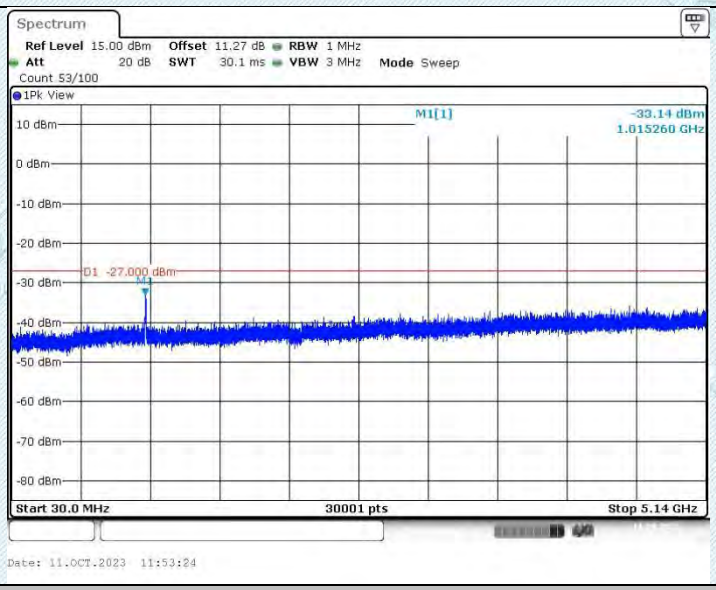


11A_Ant1_5180_5360~40000

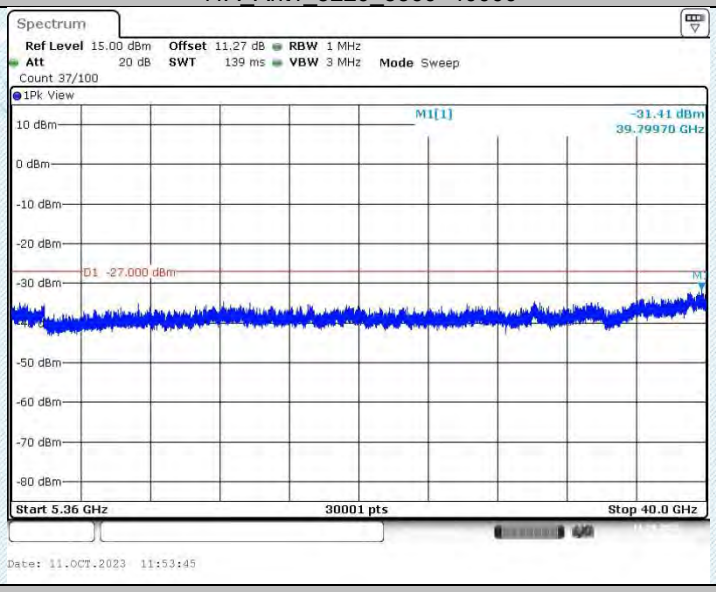


11A_Ant1_5220_30~5140

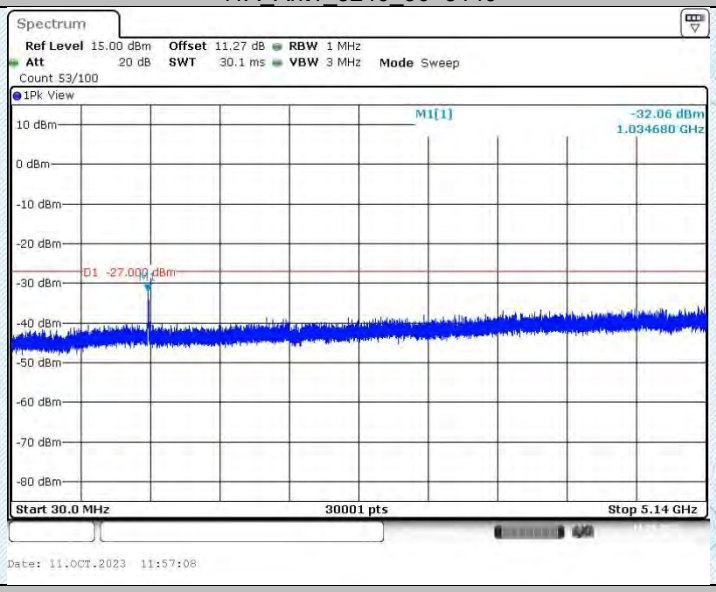
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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11A_Ant1_5220_5360~40000

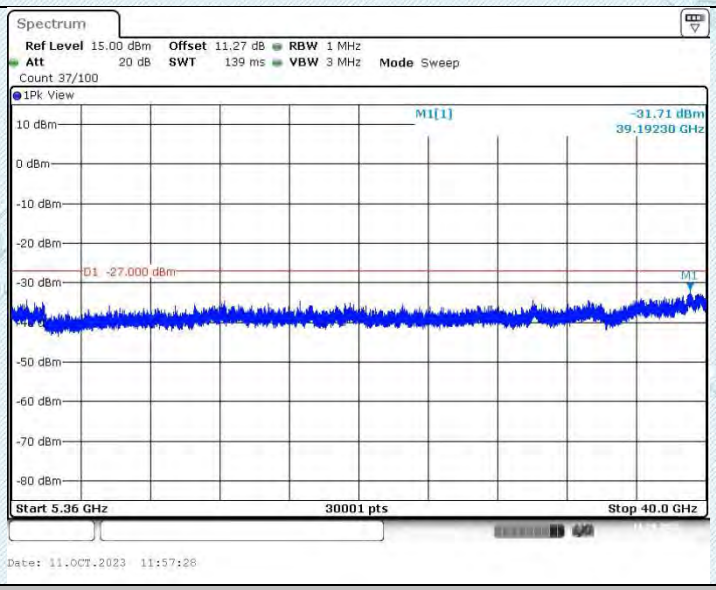


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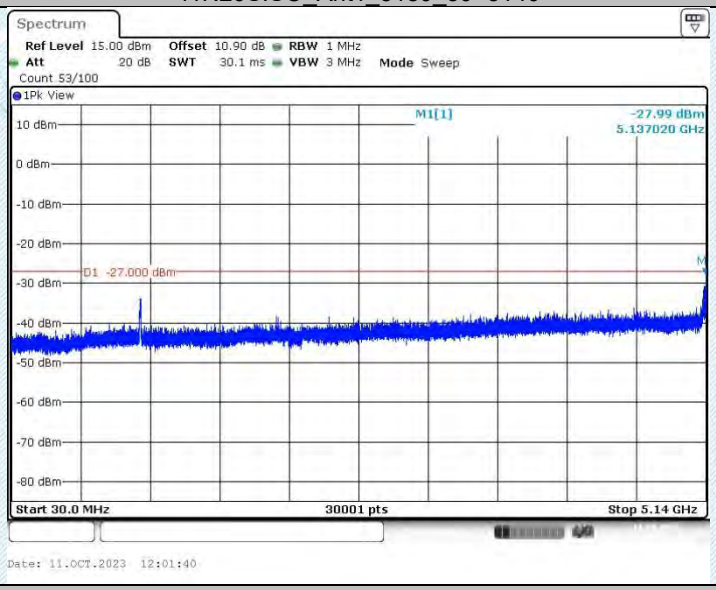


11A_Ant1_5240_5360~40000

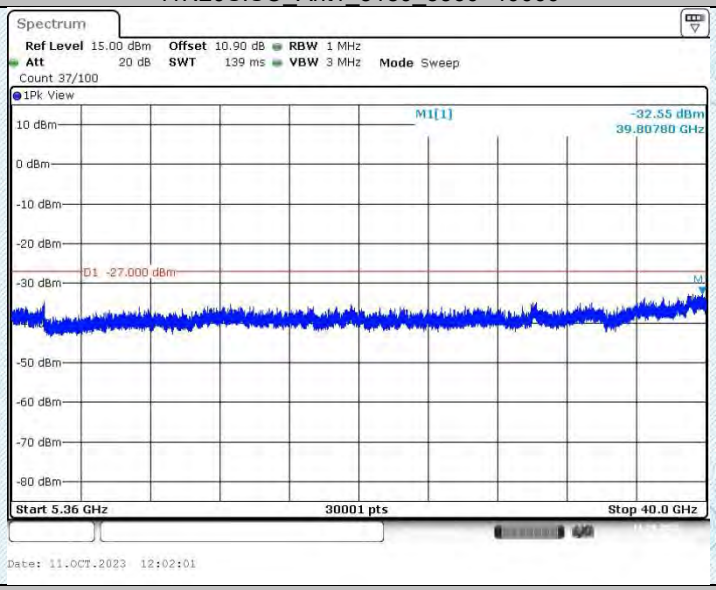
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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11N20SISO_Ant1_5180_30~5140

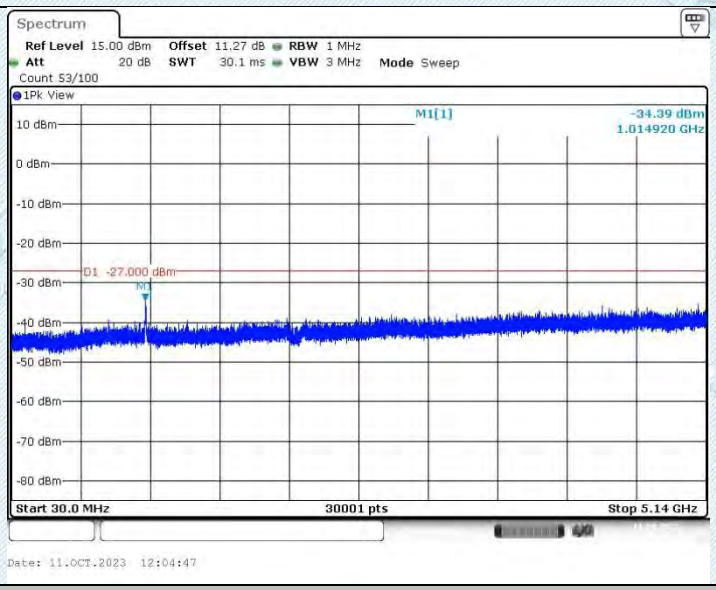


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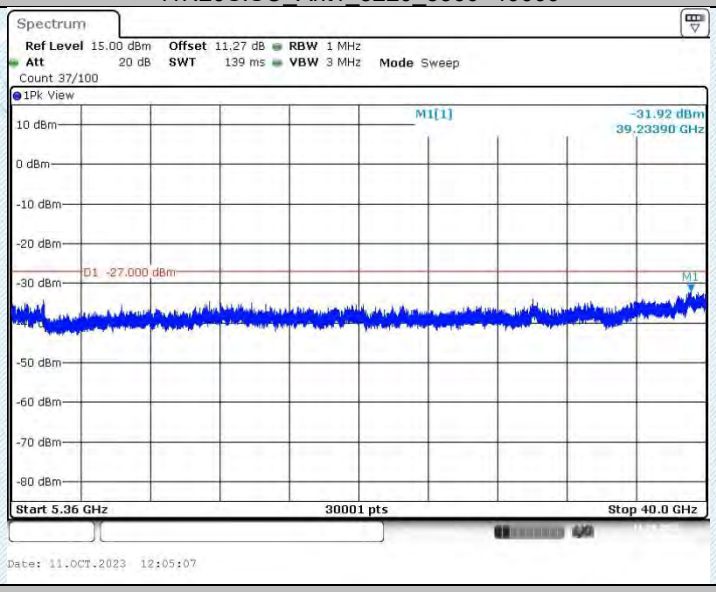


11N20SISO_Ant1_5220_30~5140

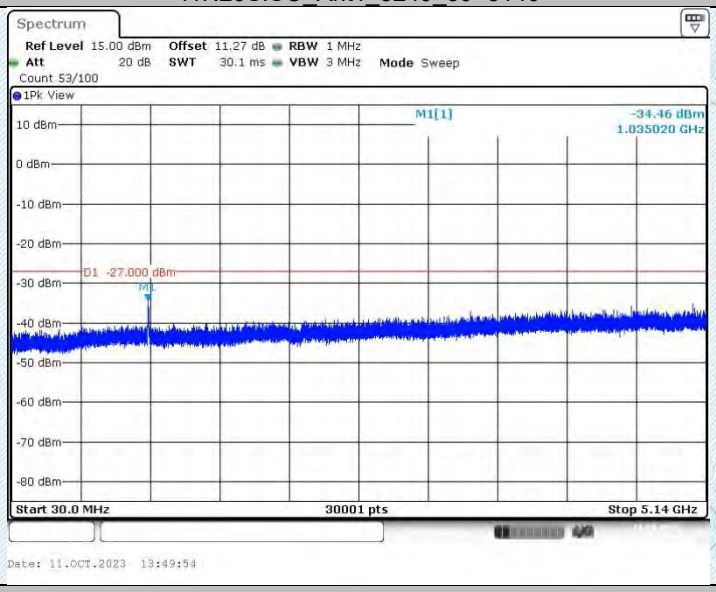
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11N20SISO_Ant1_5220_5360~40000

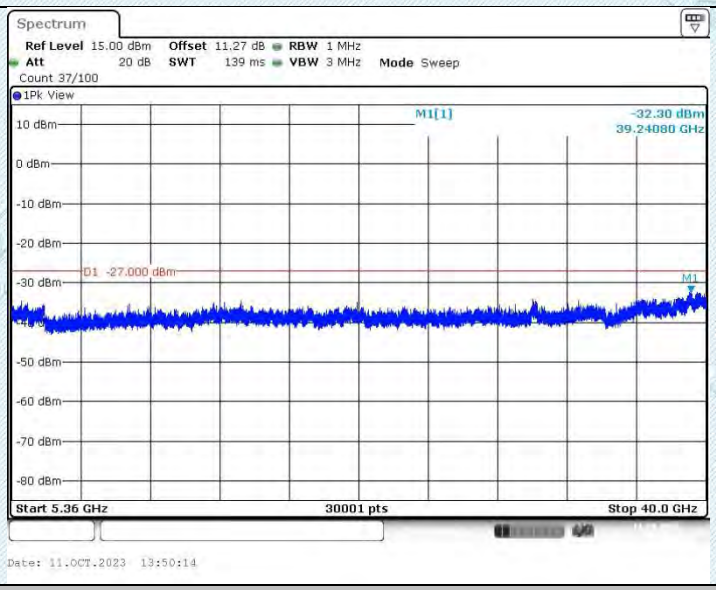


11N20SISO_Ant1_5240_30~5140

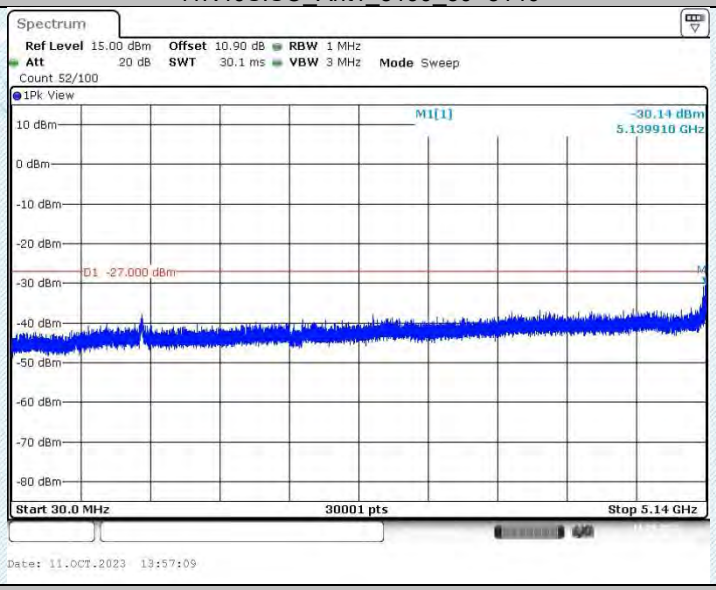


11N20SISO_Ant1_5240_5360~40000

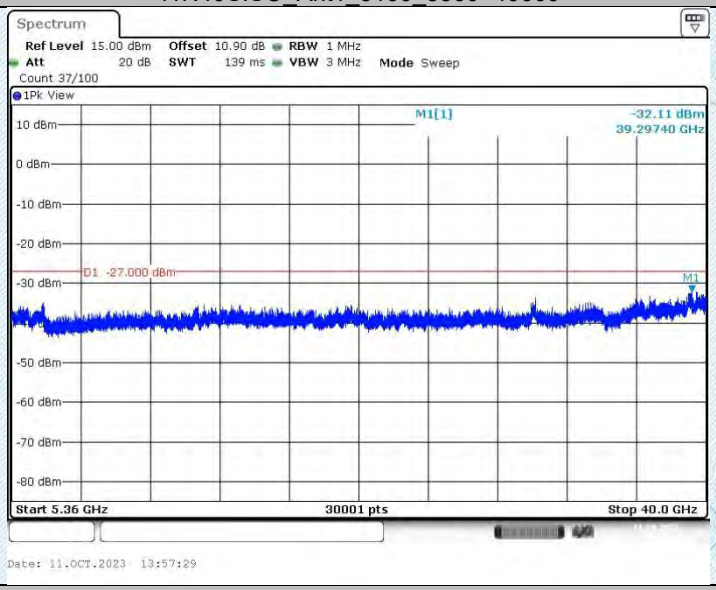
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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11N40SISO_Ant1_5190_30~5140

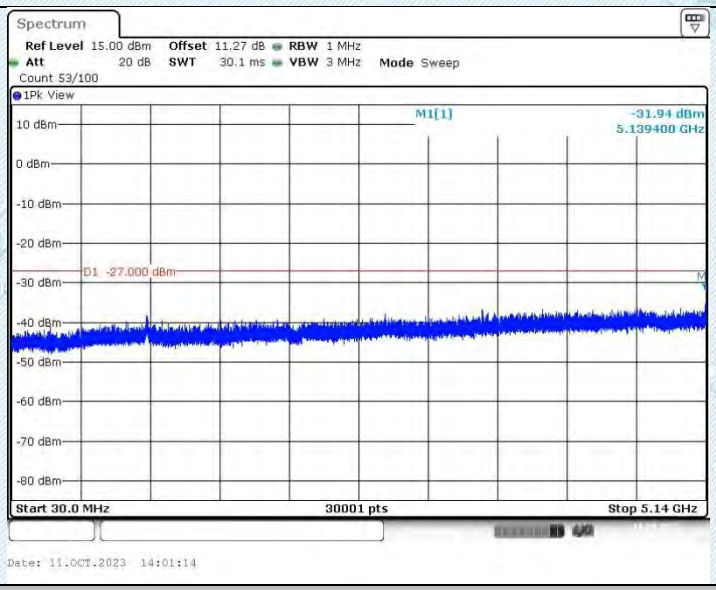


11N40SISO_Ant1_5190_5360~40000

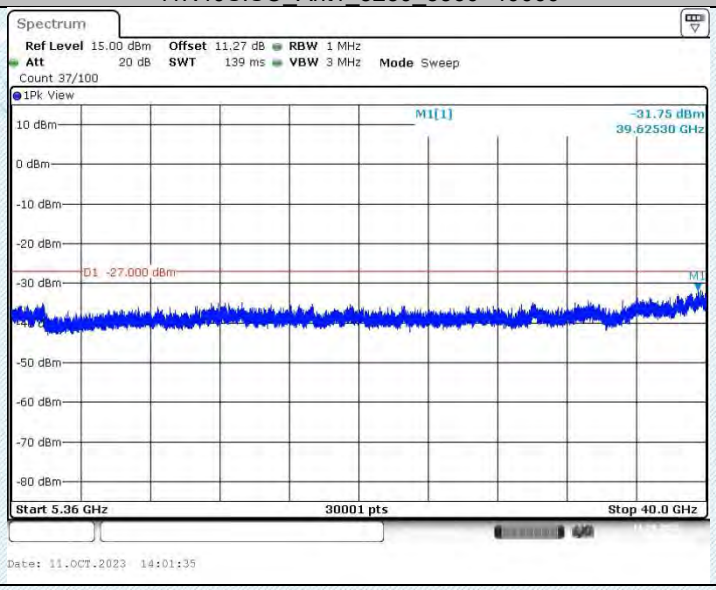


11N40SISO_Ant1_5230_30~5140

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11N40SISO_Ant1_5230_5360~40000



--THE END--

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