

Test Report

Verified code: 462595

Report No.: E202501107526-8EN

Customer: Huizhou Desay SV Automotive Co., Ltd.

Address: No.103,Hechang 5th Road West, Zhongkai National Hi-tech Industrial Development Zone, Huizhou, Guangdong, P.R. China.

Sample Name: Remote Controller

Sample Model: CL595

Receive Sample Date: Jan.23,2025

Test Date: Feb.06,2025 ~ Feb.12,2025

Reference Document: 47 CFR, FCC Parts 15 Subpart E Unlicensed National Information Infrastructure Devices

Test Result: Pass

Prepared by: Huang Lifang
Huang Lifang

Reviewed by: Wu Haoting
Wu Haoting

Approved by: Xiao Liang
Xiao Liang



GRG METROLOGY & TEST GROUP CO., LTD.

Issued Date: 2025-03-11

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REPORT ISSUED HISTORY

Report Version	Report No.	Description	Compile Date
1.0	E202501107526-8EN	Original Issue	2025-02-26

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1. TEST RESULT SUMMARY

Standard	Item	Limit / Severity	Result
47 CFR, FCC Parts 15 Subpart E (§15.407)	6dB Bandwidth & 99% Occupied Bandwidth	15.407(a) 15.407(e)	PASS
	AC Power Line Conducted Emissions	15.207 15.407(b)(9)	N/A ²⁾
	Unwanted Emissions and Band Edge	15.205 15.209 15.407(b)	PASS
	Output Power	15.407(a)	PASS
	Peak Power Spectral Density	15.407(a)	PASS
	Frequency Stability	15.407(g)	PASS
	Antenna Requirement	15.203	PASS ¹⁾

Note:¹⁾ The antenna is metal antenna. The max gain of antenna is -3.3dBi, which accordance 15.203 is considered sufficient to comply with the provisions of this section.

²⁾Test is not applicable to this Equipment. This EUT is no AC mains power ports.

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2. GENERAL DESCRIPTION OF EUT

2.1 APPLICANT

Name: Huizhou Desay SV Automotive Co., Ltd.
Address: No.103,Hechang 5th Road West, Zhongkai National Hi-tech Industrial Development Zone, Huizhou, Guangdong, P.R. China.

2.2 MANUFACTURER

Name: Huizhou Desay SV Automotive Co., Ltd.
Address: No.103,Hechang 5th Road West, Zhongkai National Hi-tech Industrial Development Zone, Huizhou, Guangdong, P.R. China.

2.3 FACTORY

Name : Huizhou Desay SV Automotive Co., Ltd.
Address : No.103,Hechang 5th Road West, Zhongkai National Hi-tech Industrial Development Zone, Huizhou, Guangdong, P.R. China.

2.4 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Product Name: Remote Controller
Product Model: CL595
Adding Model: /
Model difference description: /
FCC ID: 2AEQT-CL595
Trade Mark: DESAY SV
Power Supply: DC 3.7V power supplied by Rechargeable Li-ion Battery; DC 5V power supplied by Charging base.
Frequency Band: U-NII-3: 5745MHz~5825MHz
Modulation Type: IEEE 802.11a: OFDM
IEEE 802.11n: OFDM
Antenna Specification: U-NII-3: Metal antenna with -3.3dBi antenna gain(max)
Channels Spacing: IEEE 802.11a: 20MHz
IEEE 802.11n HT20: 20MHz
IEEE 802.11n HT40: 40MHz
Transmit Power: U-NII-3:
9.19dBm for IEEE 802.11a
9.28dBm for IEEE 802.11n HT20
9.03dBm for IEEE 802.11n HT40
Temperature Range: -20℃~+60℃
Hardware Version: HW003

Software i3E218

Version:

Sample submitting way: ☒ Provided by customer ☐ Sampling

Sample No: E202501107526-0004,E202501107526-0005

Note : 1.The EUT antenna gain is provided by the applicant. This report is made solely on the basis of such data and/or information. We accept no responsibility for the authenticity and completeness of the above data and information and the validity of the results and/or conclusions.

2.5 CHANNEL LIST AND POWER SETTING

Mode	Frequency (MHz)	Power Setting	Mode	Frequency (MHz)	Power Setting
IEEE 802.11a	5745	7	IEEE 802.11n HT20	5745	7
	5785	7		5785	7
	5825	7		5825	7

Mode	Frequency (MHz)	Power Setting
IEEE 802.11n HT40	5755	7
	5795	7

Test software:

Software version
QRCT

2.6 TEST OPERATION MODE

Mode No.	Description of the modes
1	5GHz Wi-Fi fixed frequency transmitting

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2.7 LOCAL SUPPORTIVE INSTRUMENTS

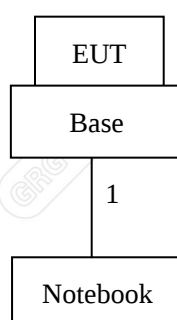
Name of equipment	Manufacturer	Model	Serial number	Note
Notebook	DELL	Latitude3300	2C6CFW2	/
Base	/	/	/	/

No.	Cable Type	Qty.	Shielded Type	Ferrite Core(Qty.)	Length
1	USB cable	1	No	0	1.2m

Note: ⁽¹⁾ The notebook is just used to produce fixed frequency transmitting.

2.8 CONFIGURATION OF SYSTEM UNDER TEST

For 99% Bandwidth & 6 dB Bandwidth & Peak power spectral density & Duty cycle & Output Power & Frequency Stability:



For Unwanted Emissions & Band Edge:



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2.9 DUTY CYCLE

Environment: 23.8℃/51%RH 101.0kPa
Tested By: Qin Tingting

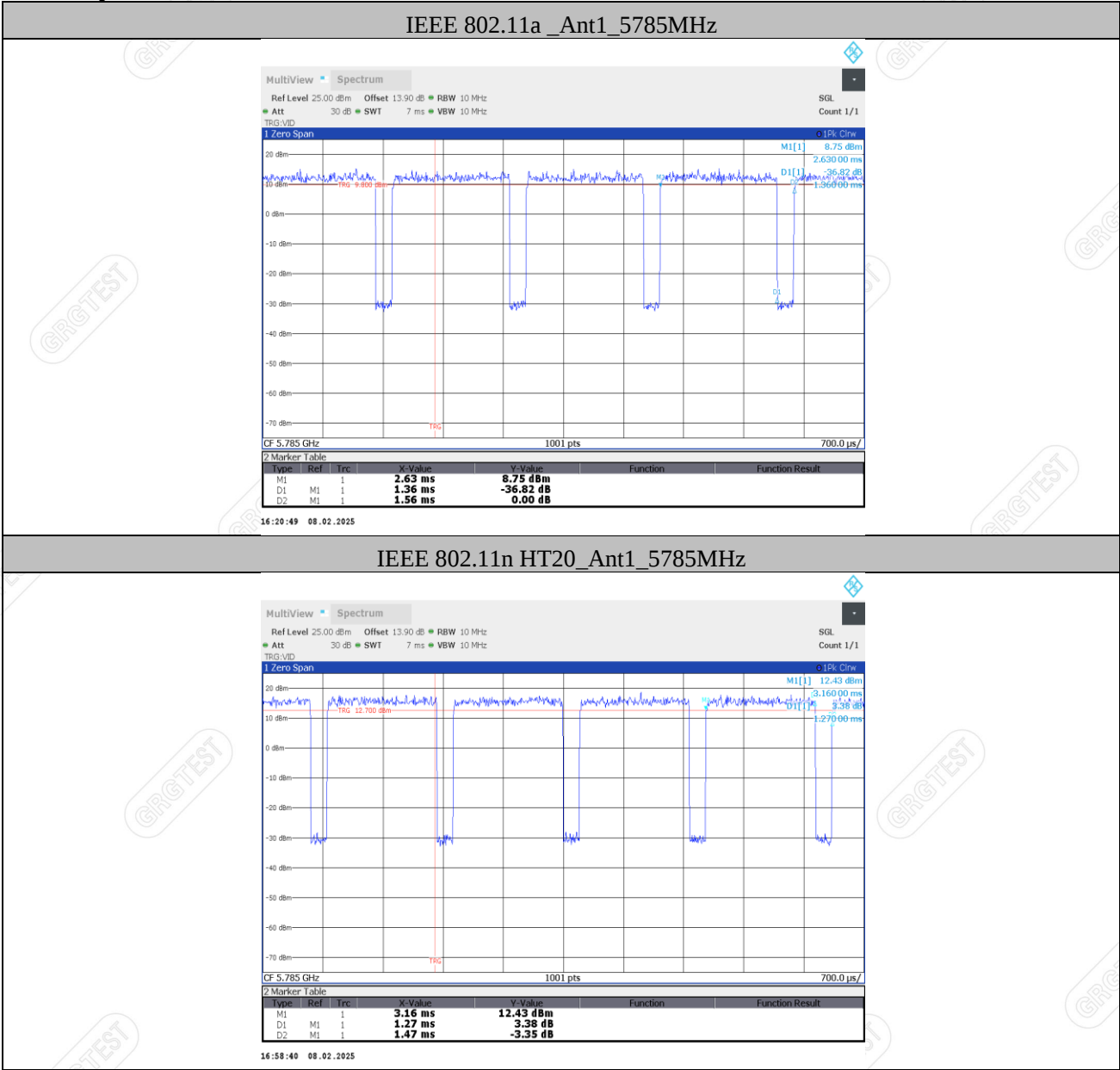
Voltage:DC 3.7V
Date: 2025-02-08

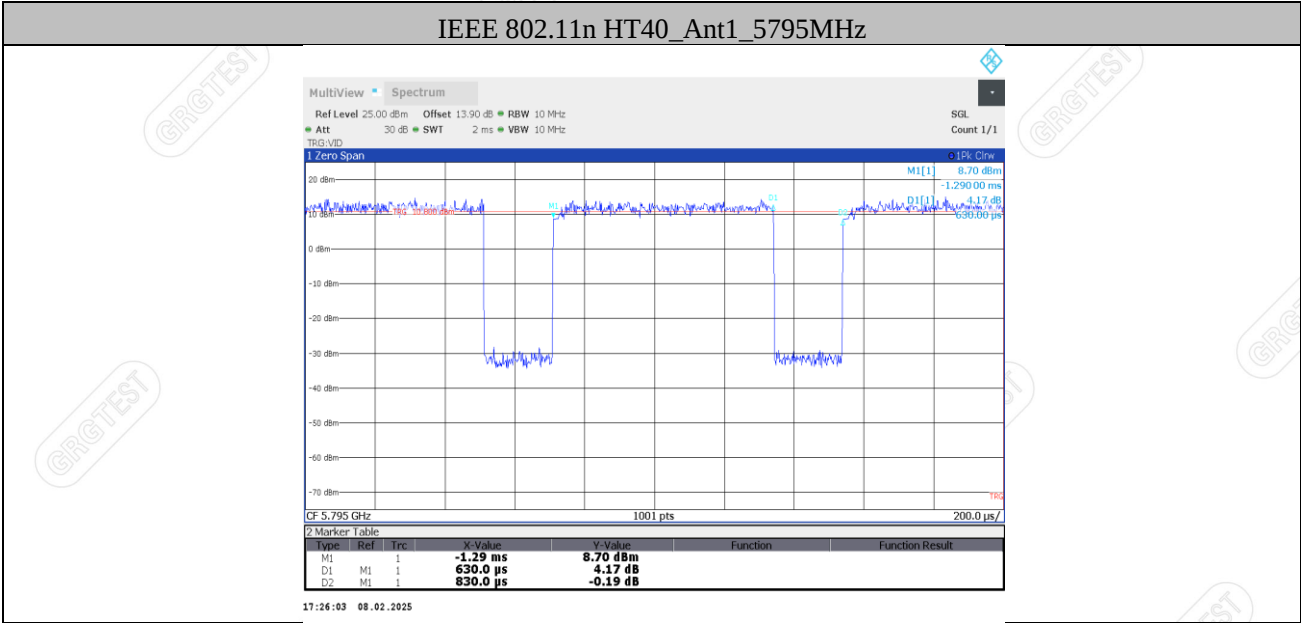
Test Mode	Antenna	Freq (MHz)	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Duty Factor	T(s)
IEEE 802.11a	Ant1	5785	1.36	1.56	87.18	0.60	0.00136
IEEE 802.11n HT20	Ant1	5785	1.27	1.47	86.39	0.64	0.00127
IEEE 802.11n HT40	Ant1	5795	0.63	0.83	75.90	1.20	0.00063

Note:Duty Factor=10log(1/Duty Cycle).

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Test Graphs





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3. LABORATORY AND ACCREDITATIONS AND MEASUREMENT UNCERTAINTY

3.1 LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of GRG METROLOGY & TEST GROUP CO., LTD.

Add.: No.1301 Guanguang Road Xinlan Community, Guanlan Street, Longhua District
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P.C.: 518110

Tel : 0755-61180008

Fax: 0755-61180008

3.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA	A2LA(Certificate #2861.01)
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The measuring facility of laboratories has been authorized or registered by the following approval agencies.

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USA	FCC (Registration Number: 759402, Designation Number:CN1198)

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3.3 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement		Frequency	Uncertainty
Radiated Emission	X	9kHz~30MHz	4.4dB ¹⁾
	Y	9kHz~30MHz	4.4dB ¹⁾
	Z	9kHz~30MHz	4.4dB ¹⁾
	Horizontal	30MHz~200MHz	4.6dB ¹⁾
		200MHz~1000MHz	4.8dB ¹⁾
		1GHz~18GHz	5.0dB ¹⁾
		18GHz~40GHz	5.2dB ¹⁾
	Vertical	30MHz~200MHz	4.7dB ¹⁾
		200MHz~1000MHz	4.7dB ¹⁾
		1GHz~18GHz	5.1dB ¹⁾
		18GHz~40GHz	5.4dB ¹⁾

Measurement	Uncertainty
RF frequency	6.0×10^{-6}
RF power conducted	0.78dB
Power spectral density	0.78dB
Occupied channel bandwidth	0.40dB
Unwanted emission, conducted	0.68dB
Humidity	6.0%
Temperature	2.0°C

Note:

¹⁾ This uncertainty represents an expanded uncertainty expressed at approximately the 95%.

This uncertainty represents an expanded uncertainty factor of $k=2$.

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4. LIST OF USED TEST EQUIPMENT AT GRGT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Unwanted Emissions & Band Edge				
Test Receiver	R&S	ESR26	101758	2025-09-10
Spectrum Analyzer	R&S	FSV3044	101184	2025-07-19
Bi-log Antenna	Schwarzbeck	VULB9160	VULB9160-3402	2025-09-11
Loop Antenna	Schwarzbeck	FMZB 1513-60	1513-60-56	2025-05-07
Horn Antenna	Schwarzbeck	BBHA9120D	02143	2025-09-07
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	BBHA 9170-497	2025-08-30
Amplifier	Tonscend	TAP01018048	AP20E8060075	2025-03-01
Amplifier	Tonscend	TAP184050	AP20E806071	2025-03-01
Amplifier	SHIRONG ELECTRONIC	DLNA-1G18G-G40	20200928005	2025-07-19
Test software	FARAD	EZ_EMC	CCS-03A1	/
Preamplifier	EMEC	EM330	060662	2025-06-14
Test S/W	Tonscend	JS32-RE/5.0.0		
99% Bandwidth & 6 dB Bandwidth & Peak power spectral density & Duty cycle				
Automatic power measuring unit	TONSCEND	JS0806-2	21B8060365	2025-11-15
Spectrum Analyzer	R&S	FSW43	102072	2025-06-14
BT/WIFI System	Tonscend	JS1120-3		
Output Power				
Pulse power sensor	Anritsu	MA2411B	1126150	2025-12-07
Power meter	Anritsu	ML2495A	1204003	2025-12-07

Frequency Stability				
Automatic power measuring unit	TONSCEND	JS0806-2	21B8060365	2025-11-15
Spectrum Analyzer	R&S	FSW43	102072	2025-06-14
Programmable constant temperature and humidity test chamber	FC	FPHC-23AW-40	FD202306015	2025-08-26
BT/WIFI System	TONSCEND	JS1120-3	/	/

Note: 1.The calibration interval of the above test instruments is 12 months.

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5. UNWANTED EMISSIONS

5.1 LIMITS

The maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) 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.
- (2) For transmitters operating in the 5.25-5.35 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.
- (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

The unwanted emissions which fall in Restricted bands shall not exceed the field strength levels specified in the following table:

15.209 Radiated emission limits

Frequency (MHz)	Field Strength(μ V/m)	Distance(m)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

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5.2 TEST PROCEDURES

- EUT was placed on a turn table, which is 0.8 meter high above ground for below 1GHz test, and which is 1.5 meter high above ground for above 1GHz test.
- EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower.
- Set the EUT transmit continuously with maximum output power.
- The turn table can rotate 360 degrees to determine the position of the maximum emission level.
- The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.
- Spectrum analyzer setting parameters please see the below table.
- Repeat above procedures until all channels were measured.
- Record the results in the test report.

For 9kHz-150kHz

Spectrum Parameters	Setting
RBW	300Hz(for Peak&AVG)/CISPR 200Hz(for QP)
VBW	300Hz(for Peak&AVG)/CISPR 200Hz(for QP)
Start frequency	9kHz
Stop frequency	150kHz
Sweep Time	Auto
Detector	PEAK/QP/AVG
Trace Mode	Max Hold

Note : For 9kHz-90kHz&110kHz-150kHz,the detector is average,other frequency is CISPR QP detector.

For 150kHz-30MHz

Spectrum Parameters	Setting
RBW	9kHz
VBW	9kHz
Start frequency	150kHz
Stop frequency	30MHz
Sweep Time	Auto
Detector	QP
Trace Mode	Max Hold

Note : For 150kHz-490kHz,the detector is average,other frequency is CISPR QP detector.

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For 30MHz-1GHz

Spectrum Parameters	Setting
RBW	120kHz
VBW	300kHz
Start frequency	30MHz
Stop frequency	1GHz
Sweep Time	Auto
Detector	QP
Trace Mode	Max Hold

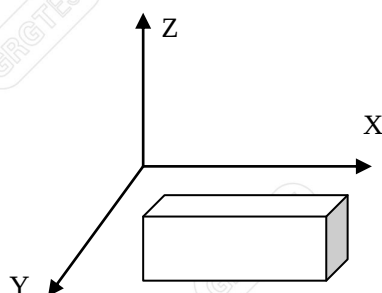
For Above 1GHz

Spectrum Parameters	Setting	
RBW	1MHz	
VBW	PEAK Measurement	AVG Measurement
	3MHz	Duty cycle $\geq 98\%$, VBW=10Hz Duty cycle $< 98\%$, VBW $\geq 1/T$ Video bandwidth mode=RMS (power averaging)
Start frequency	1GHz	
Stop frequency	40GHz	
Sweep Time	Auto	
Detector	PEAK	
Trace Mode	Max Hold	

Note :

- (1) T is the on-time time of the duty cycle, when EUT transmit continuously with maximum output power, unit is seconds. reference section 2.9 for the on-time time.
- (2) Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:

$$E = \text{EIRP} - 20\log D + 104.8$$
 where:
 E = electric field strength in dB μ V/m,
 EIRP = equivalent isotropic radiated power in dBm
 D = specified measurement distance in meters.
 So: $E = -27 - 20\log 3 + 104.8 = 68.3$ (dB μ V/m).
- (3) The unwanted emissions which fall in Restricted bands shall not exceed the field strength, Above 18G test distance is 1m, so the Peak Limit = $74 + 20\log(3/1) = 83.54$ (dB μ V/m).
 The Avg Limit = $54 + 20\log(3/1) = 63.54$ (dB μ V/m).
- (4) The maximum emissions of the operation frequency bands, Above 18G test distance is 1m, so the Peak Limit = $68.3 + 20\log(3/1) = 77.84$ (dB μ V/m).
- (5) The EUT was tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes horizontal stand and Z denotes vertical stand), After pre-test, It was found that the worst case radiated spurious emissions was both the EUT at the Y position. So the data shown was the Y position only.



5.3 TEST SETUP

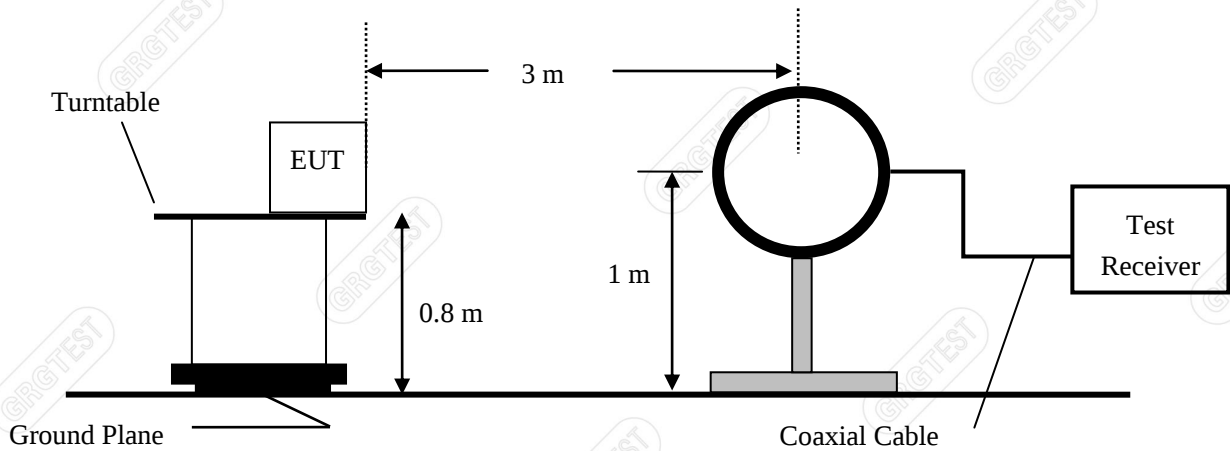


Figure 1. 9kHz to 30MHz radiated emissions test configuration

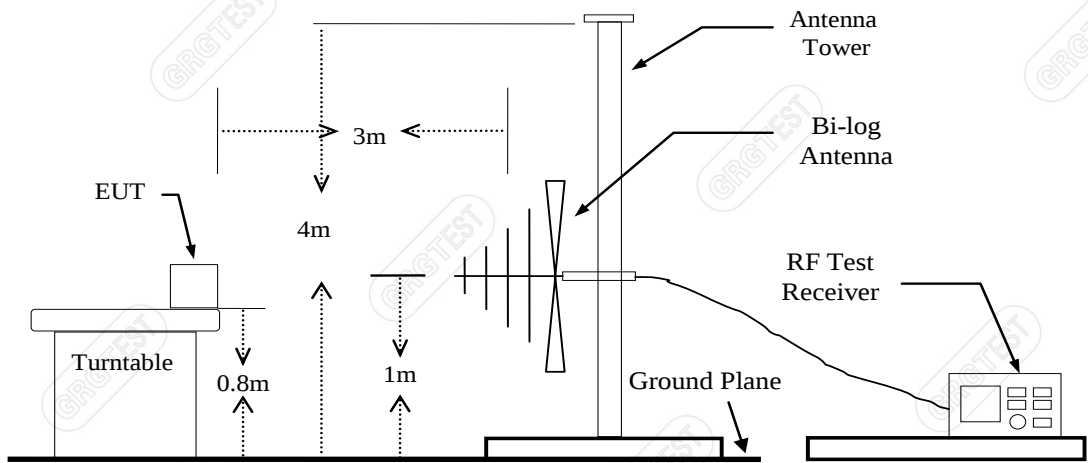


Figure 2. 30MHz to 1GHz radiated emissions test configuration

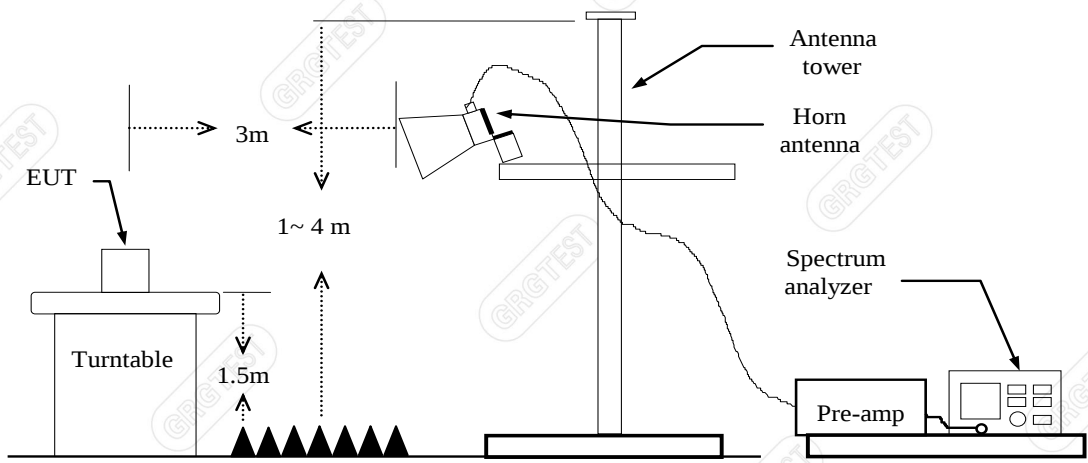


Figure 3. 1GHz to 18GHz radiated emissions test configuration

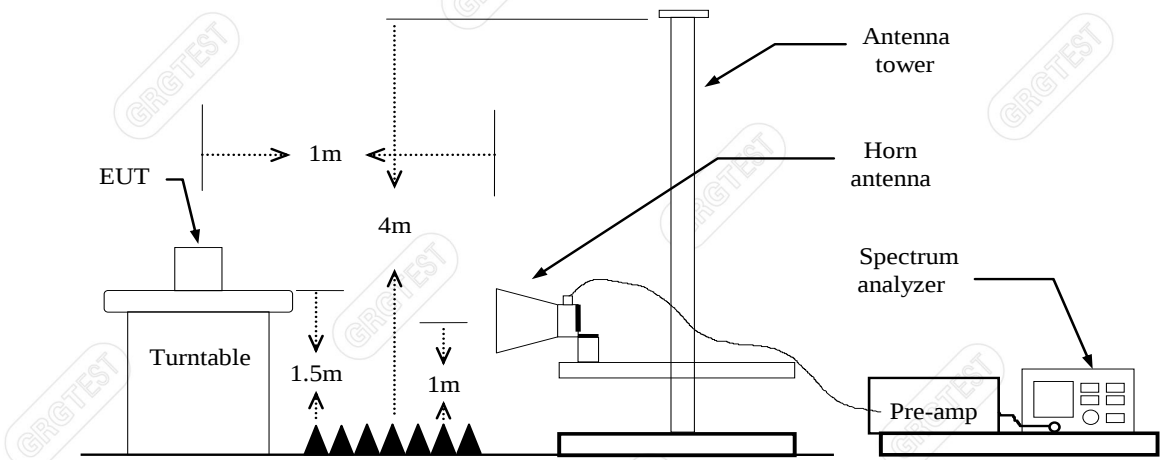


Figure 4. Above 18GHz radiated emissions test configuration

5.4 DATA SAMPLE

Below 1GHz

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
XXXX	63.53	-27.15	36.38	43.50	-7.12	0	100	QP

- Frequency (MHz)
- = Emission frequency in MHz
- Reading (dBuV)
- = Uncorrected Analyzer / Receiver reading
- Result (dBuV/m)
- = Reading (dBuV) + Corr. Factor (dB/m)
- Limit (dBuV/m)
- = Limit stated in standard
- Margin (dB)
- = Result (dBuV/m) – Limit(dBuV/m)
- QP
- = Quasi-peak Reading

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1GHz-18GHz

No.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Remark
xxx	xxxx	78.01	55.30	-22.71	74.00	18.70	100	50	Horizontal	Peak
xxx	xxxx	66.37	43.66	-22.71	54.00	10.34	100	50	Horizontal	AVG

Above 18GHz**Suspected Data List**

NO.	Freq. [MHz]	Reading [dBμV/m]	Level for 1m [dBμV/m]	Level for 3m [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Remark
xxx	xxxx	54.49	42.38	32.84	-12.11	74.00	41.16	100	211	Horizontal	Peak
xxx	xxxx	43.99	31.88	22.34	-12.11	54.00	31.66	100	211	Horizontal	AVG

Frequency (MHz)

= Emission frequency in MHz

Reading (dBuV/m)

= Uncorrected Analyzer / Receiver reading

Factor (dB)

= Antenna factor + Cable loss – Amplifier gain

Level for 1m (dBuV/m)

= Reading (dBuV/m) + Factor (dB)

Level for 3m (dBuV/m)

= Level for 1m (dBuV/m) + 20*log(1/3)

Limit (dBuV/m)

= Limit stated in standard

Margin (dB)

= Limit (dBuV/m) – Level (dBuV/m)

Polarity

= Antenna polarization

Peak

= Peak Reading

AVG

= Average Reading

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5.5 TEST RESULTS

Below 1GHz

All models were pretested and only the worst modes and channels were recorded in this report.
(IEEE 802.11n HT20 5745MHz)

Mode: IEEE 802.11n HT20

Environment: 21.9°C/42%RH/101.0kPa

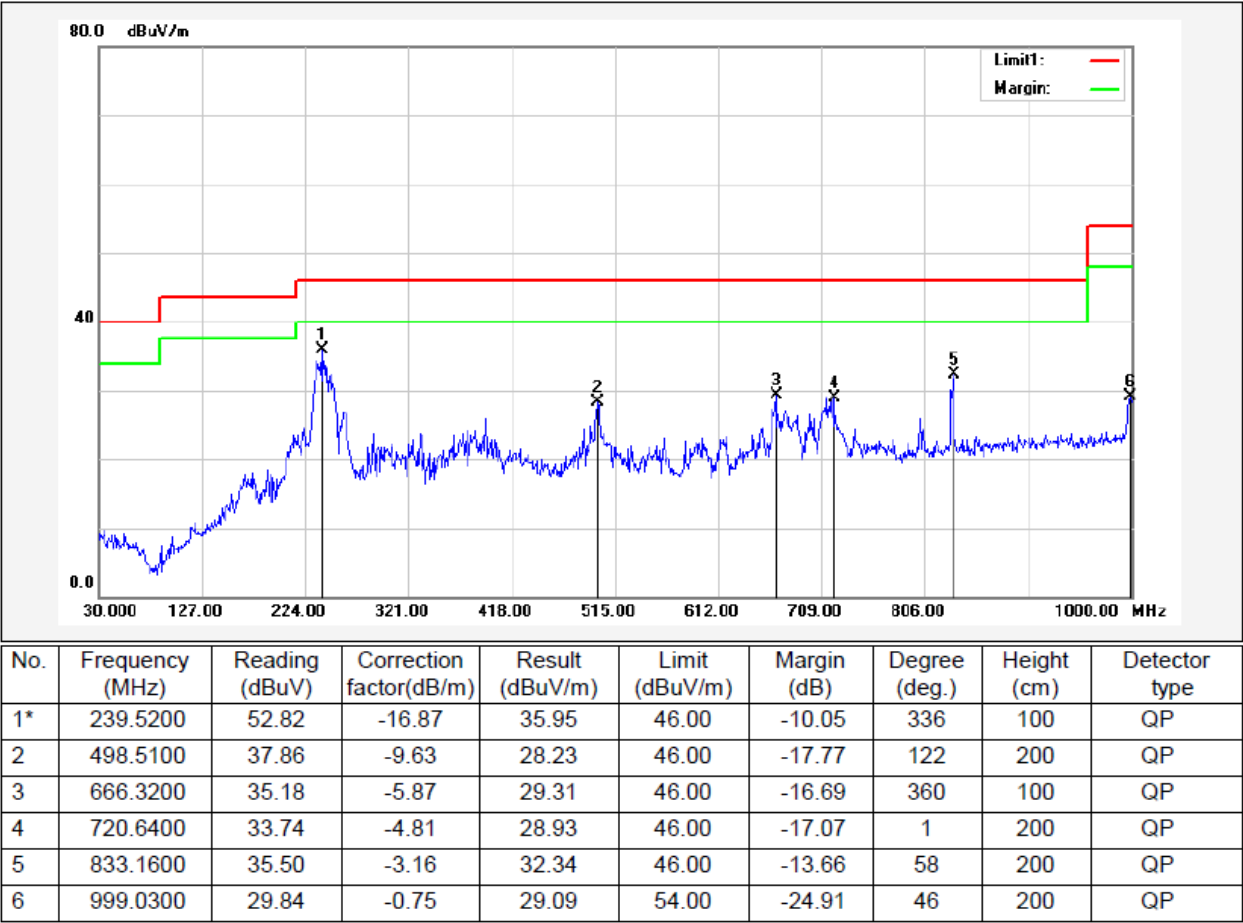
Test Engineer: Qin Tingting

Probe : Horizontal

Frequency:5745MHz

Power supply: DC 3.7V

Test Date: 2025-02-07



Mode: IEEE 802.11n HT20

Environment: 21.9°C/42%RH/101.0kPa

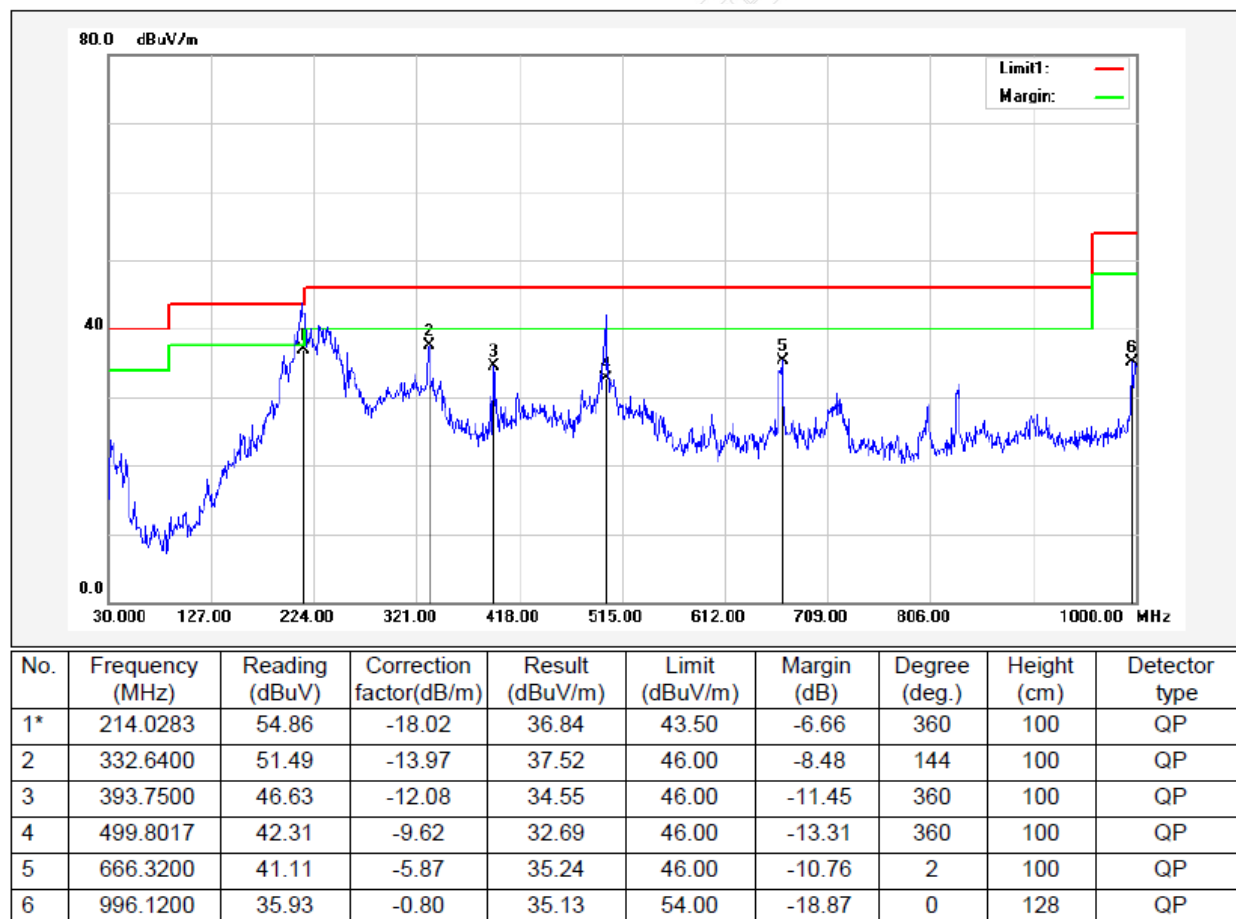
Test Engineer: Qin Tingting

Probe : Vertical

Frequency:5745MHz

Power supply: DC 3.7V

Test Date: 2025-02-07

**Remark:**

- 1 No emission found between lowest internal used/generated frequency to 30MHz.
- 2 Radiated emissions measured in frequency range from 9kHz to 1GHz were made with an instrument using Quasi-peak detector mode.
- 3 Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 4 The IF bandwidth of Receiver between 30MHz to 1GHz was 120 kHz.
- 5 If the margin of the pre test results is greater than 6db, it meets the requirements of quasipeak or average values, and final testing is no longer required.

1GHz-18GHz:

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

Mode: IEEE 802.11a

Frequency (5745MHz)

Environment: 21.5°C/49%RH/101.0kPa

Tested By:Qin Tingting

Date: 2025-02-12

Voltage:DC 3.7V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1317.3500	53.99	34.03	-19.96	74.00	39.97	100	324	Horizontal
2	2982.7500	51.51	39.27	-12.24	68.30	29.03	100	300	Horizontal
3	5061.2000	47.77	49.18	1.41	74.00	24.82	100	7	Horizontal
4	13098.7000	34.81	53.66	18.85	68.30	14.64	200	358	Horizontal
5	14767.3500	35.96	54.14	18.18	68.30	14.16	100	336	Horizontal
6	17997.7000	36.68	56.00	19.32	74.00	18.00	200	20	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	5060.8765	1.41	36.05	37.46	54.00	16.54	100	7	Horizontal
2	17996.9785	19.32	26.75	46.07	54.00	7.93	200	20	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1498.8500	53.71	34.41	-19.30	74.00	39.59	100	74	Vertical
2	3420.0000	51.08	39.91	-11.17	68.30	28.39	100	156	Vertical
3	5062.8500	47.69	49.35	1.66	74.00	24.65	100	193	Vertical
4	13103.3000	35.21	52.52	17.31	68.30	15.78	200	139	Vertical
5	14705.2500	34.79	56.42	21.63	68.30	11.88	100	246	Vertical
6	17878.1000	36.93	57.91	20.98	74.00	16.09	100	140	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	5062.0247	1.66	35.55	37.21	54.00	16.79	100	114	Vertical
2	17878.0364	20.98	25.82	46.80	54.00	7.20	100	140	Vertical

Mode: IEEE 802.11a

Frequency (5785MHz)

Environment: 21.5°C/49%RH/101.0kPa

Tested By:Qin Tingting

Date: 2025-02-12

Voltage:DC 3.7V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1894.3000	53.73	34.76	-18.97	68.30	33.54	200	167	Horizontal
2	2458.6000	52.35	37.89	-14.46	68.30	30.41	100	221	Horizontal
3	5061.2000	47.81	49.22	1.41	74.00	24.78	100	128	Horizontal
4	13120.5500	34.77	53.29	18.52	68.30	15.01	200	142	Horizontal
5	14660.4000	36.61	53.65	17.04	68.30	14.65	100	89	Horizontal
6	17990.8000	36.81	56.04	19.23	74.00	17.96	200	102	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	5061.2113	1.41	35.26	36.67	54.00	17.33	100	232	Horizontal
2	17990.8028	19.25	26.11	45.36	54.00	8.64	100	129	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1465.8500	53.85	34.31	-19.54	74.00	39.69	200	19	Vertical
2	3151.0500	51.38	40.28	-11.10	68.30	28.02	200	125	Vertical
3	5114.0000	46.86	48.56	1.70	74.00	25.44	100	336	Vertical
4	10077.6500	39.41	49.99	10.58	68.30	18.31	100	191	Vertical
5	14702.9500	35.22	56.91	21.69	68.30	11.39	200	127	Vertical
6	17911.4500	36.15	57.26	21.11	74.00	16.74	100	60	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	5114.0000	1.70	35.41	37.11	54.00	16.89	100	336	Vertical
2	17911.4500	21.11	25.55	46.66	54.00	7.34	100	60	Vertical

Mode: IEEE 802.11a

Frequency (5825MHz)

Environment: 21.5°C/49%RH/101.0kPa

Tested By:Qin Tingting

Date: 2025-02-12

Voltage:DC 3.7V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1635.8000	53.96	34.47	-19.49	68.30	33.83	100	340	Horizontal
2	3898.5000	49.74	42.98	-6.76	74.00	31.02	200	312	Horizontal
3	5115.6500	48.05	49.40	1.35	74.00	24.60	100	143	Horizontal
4	13097.5500	33.99	52.78	18.79	68.30	15.52	200	126	Horizontal
5	14712.1500	35.14	53.41	18.27	68.30	14.89	100	324	Horizontal
6	17974.7000	37.24	56.28	19.04	74.00	17.72	100	126	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	5115.6474	1.35	35.86	37.21	54.00	16.79	100	143	Horizontal
2	17974.7024	19.04	26.83	45.87	54.00	8.13	200	360	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1505.4500	54.48	35.10	-19.38	74.00	38.90	100	247	Vertical
2	3915.5500	49.41	42.12	-7.29	74.00	31.88	200	340	Vertical
3	5114.5500	47.21	48.90	1.69	74.00	25.10	100	141	Vertical
4	9223.2000	40.58	47.47	6.89	68.30	20.83	100	138	Vertical
5	14689.1500	35.51	56.54	21.03	68.30	11.76	100	20	Vertical
6	17890.7500	35.54	56.83	21.29	74.00	17.17	100	177	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	5114.5510	1.69	36.04	37.73	54.00	16.27	100	340	Vertical
2	17890.7487	21.29	25.67	46.96	54.00	7.04	100	177	Vertical

Mode: IEEE 802.11n HT20

Frequency (5745MHz)

Environment: 21.5°C/49%RH/101.0kPa

Tested By:Qin Tingting

Date: 2025-02-12

Voltage:DC 3.7V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1854.7000	53.93	34.70	-19.23	68.30	33.60	200	11	Horizontal
2	3129.6000	52.41	40.44	-11.97	68.30	27.86	100	298	Horizontal
3	5061.2000	47.60	49.01	1.41	74.00	24.99	100	10	Horizontal
4	13088.3500	35.16	53.47	18.31	68.30	14.83	100	295	Horizontal
5	14708.7000	35.15	53.42	18.27	68.30	14.88	100	282	Horizontal
6	17997.7000	37.61	56.93	19.32	74.00	17.07	200	359	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	5060.9952	1.41	35.47	36.88	54.00	17.12	100	10	Horizontal
2	17997.7043	19.33	26.31	45.64	54.00	8.36	100	242	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1950.4000	54.99	35.95	-19.04	68.30	32.35	100	237	Vertical
2	3895.7500	50.67	43.33	-7.34	74.00	30.67	200	235	Vertical
3	5120.0500	47.59	49.24	1.65	74.00	24.76	200	87	Vertical
4	10101.8000	38.79	49.90	11.11	68.30	18.40	100	21	Vertical
5	14700.6500	35.44	57.19	21.75	68.30	11.11	200	84	Vertical
6	17919.5000	36.75	57.58	20.83	74.00	16.42	200	360	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	5121.9875	1.64	36.13	37.77	54.00	16.23	100	79	Vertical
2	17919.5128	20.79	25.18	45.97	54.00	8.03	200	21	Vertical

Mode: IEEE 802.11n HT20

Frequency (5785 MHz)

Environment: 21.5°C/49%RH/101.0kPa

Tested By:Qin Tingting

Date: 2025-02-12

Voltage:DC 3.7V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1297.5500	54.57	34.47	-20.10	68.30	33.83	100	194	Horizontal
2	2975.6000	52.19	39.82	-12.37	68.30	28.48	100	338	Horizontal
3	5118.9500	48.69	50.02	1.33	74.00	23.98	200	357	Horizontal
4	5783.9000	48.44	48.85	0.41	68.30	19.45	200	269	Horizontal
5	13103.3000	35.07	53.93	18.86	68.30	14.37	200	62	Horizontal
6	17994.2500	38.30	57.58	19.28	74.00	16.42	200	37	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	5118.9450	1.33	35.33	36.66	54.00	17.34	200	357	Horizontal
2	17993.8516	19.28	26.21	45.51	54.00	8.49	200	37	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1785.9500	55.52	35.86	-19.66	68.30	32.44	100	298	Vertical
2	2447.0500	53.73	38.63	-15.10	68.30	29.67	200	33	Vertical
3	5115.1000	48.26	49.95	1.69	74.00	24.05	100	176	Vertical
4	5651.9000	47.73	48.34	0.61	68.30	19.96	200	247	Vertical
5	14701.8000	34.64	56.36	21.72	68.30	11.94	200	341	Vertical
6	17899.9500	35.92	57.43	21.51	74.00	16.57	100	49	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	5115.3150	1.69	35.84	37.53	54.00	16.47	100	205	Vertical
2	17899.9237	21.51	25.33	46.84	54.00	7.16	100	49	Vertical

Mode: IEEE 802.11n HT20
Frequency (5825MHz)
Environment: 21.5°C/49%RH/101.0kPa
Tested By:Qin Tingting

Date: 2025-02-12
Voltage:DC 3.7V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1381.7000	54.48	34.61	-19.87	74.00	39.39	200	301	Horizontal
2	2489.9500	52.71	37.60	-15.11	74.00	36.40	200	132	Horizontal
3	5046.9000	47.83	49.24	1.41	74.00	24.76	200	66	Horizontal
4	13090.6500	35.11	53.54	18.43	68.30	14.76	200	227	Horizontal
5	14790.3500	35.27	53.31	18.04	68.30	14.99	100	165	Horizontal
6	17997.7000	36.74	56.06	19.32	74.00	17.94	100	264	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	5046.8674	1.41	36.22	37.63	54.00	16.37	200	66	Horizontal
2	17997.6948	19.32	25.86	45.18	54.00	8.82	100	264	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2010.9000	52.69	34.88	-17.81	68.30	33.42	100	124	Vertical
2	2898.0500	52.18	39.25	-12.93	74.00	34.75	100	30	Vertical
3	5065.6000	47.40	49.07	1.67	74.00	24.93	200	312	Vertical
4	10135.1500	38.85	49.87	11.02	68.30	18.43	100	307	Vertical
5	14699.5000	34.84	56.56	21.72	68.30	11.74	200	202	Vertical
6	17895.3500	35.70	57.09	21.39	74.00	16.91	100	320	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	5065.4886	1.67	35.52	37.19	54.00	16.81	200	312	Vertical
2	17895.3511	21.43	25.51	46.94	54.00	7.06	100	176	Vertical

Mode: IEEE 802.11n HT40

Frequency (5755MHz)

Environment: 21.5°C/49%RH/101.0kPa

Tested By:Qin Tingting

Date: 2025-02-12

Voltage:DC 3.7V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1298.1000	54.59	34.50	-20.09	68.30	33.80	100	339	Horizontal
2	3889.1500	49.39	42.30	-7.09	74.00	31.70	200	193	Horizontal
3	5122.2500	47.59	48.92	1.33	74.00	25.08	200	272	Horizontal
4	10572.1500	38.63	49.75	11.12	68.30	18.55	100	59	Horizontal
5	13102.1500	34.29	53.17	18.88	68.30	15.13	100	18	Horizontal
6	17977.0000	37.11	56.17	19.06	74.00	17.83	200	72	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	5117.1354	1.33	35.76	37.09	54.00	16.91	148	31.2	Horizontal
2	17999.5450	19.06	26.64	45.70	54.00	8.30	169	42.9	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1785.4000	54.87	35.22	-19.65	68.30	33.08	100	103	Vertical
2	3904.5500	50.11	42.88	-7.23	74.00	31.12	200	127	Vertical
3	5116.7500	47.80	49.48	1.68	74.00	24.52	200	193	Vertical
4	10443.3500	38.40	49.40	11.00	68.30	18.90	200	296	Vertical
5	14713.3000	35.57	57.00	21.43	68.30	11.30	200	336	Vertical
6	17880.4000	37.27	58.30	21.03	74.00	15.70	200	164	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	5117.1571	1.68	35.77	37.45	54.00	16.55	180	43	Vertical
2	17899.6790	21.03	25.18	46.21	54.00	7.79	200	224.3	Vertical

Mode: IEEE 802.11n HT40
Frequency (5795MHz)
Environment: 21.5°C/49%RH/101.0kPa
Tested By:Qin Tingting

Date: 2025-02-12
Voltage:DC 3.7V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1414.7000	54.34	34.36	-19.98	74.00	39.64	200	282	Horizontal
2	5046.9000	48.11	49.52	1.41	74.00	24.48	200	215	Horizontal
3	10972.3500	39.54	50.46	10.92	74.00	23.54	200	339	Horizontal
4	13096.4000	34.49	53.22	18.73	68.30	15.08	200	134	Horizontal
5	14789.2000	35.68	53.72	18.04	68.30	14.58	100	46	Horizontal
6	17980.4500	36.56	55.67	19.11	74.00	18.33	200	326	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	5047.2648	1.41	35.40	36.81	54.00	17.19	190	286.9	Horizontal
2	10979.0981	10.92	25.84	36.76	54.00	17.24	200	269.3	Horizontal
3	17999.8078	19.11	26.64	45.75	54.00	8.25	178	326.1	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1557.7000	54.39	34.26	-20.13	74.00	39.74	100	282	Vertical
2	4263.7000	50.77	45.90	-4.87	74.00	28.10	200	224	Vertical
3	5050.7500	47.91	49.52	1.61	74.00	24.48	200	354	Vertical
4	13112.5000	35.00	52.28	17.28	68.30	16.02	200	262	Vertical
5	14696.0500	36.09	57.58	21.49	68.30	10.72	100	299	Vertical
6	17901.1000	35.44	56.91	21.47	74.00	17.09	200	339	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	5048.1921	1.61	35.28	36.89	54.00	17.11	127	244.2	Vertical
2	17897.2173	21.47	24.67	46.14	54.00	7.86	199	246.6	Vertical

18GHz-40GHz:

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

Note: Pre-scan all modes, only the worst case(IEEE 802.11n HT20 _5745MHz) is recorded in this report.

Mode: IEEE 802.11n HT20

Frequency (5745MHz)

Environment: 23.3°C/48%RH/101.0kPa

Test Engineer: Qin Tingting

Test Date: 2025-02-07

Power supply: DC 3.7V

Suspected Data List										
NO.	Freq. [MHz]	Reading [dBμV/m]	Level for 1m [dBμV/m]	Level for 3m [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	19944.8000	47.19	50.84	41.30	3.65	74	32.70	100	298	Horizontal
2	21018.4000	45.43	49.49	39.95	4.06	74	34.05	100	57	Horizontal
3	27020.0000	44.37	49.73	40.19	5.36	74	33.81	100	99	Horizontal
4	32482.6000	45.05	52.41	42.87	7.36	74	31.13	100	178	Horizontal
5	34729.9000	44.86	53.72	44.18	8.86	74	29.82	100	38	Horizontal
6	39717.3000	40.50	56.94	47.40	16.44	74	26.60	100	99	Horizontal

Suspected Data List										
NO.	Freq. [MHz]	Reading [dBμV/m]	Level for 1m [dBμV/m]	Level for 3m [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	19413.5000	47.07	50.76	41.22	3.69	74	32.78	100	339	Vertical
2	20923.8000	45.58	49.88	40.34	4.30	74	33.66	100	219	Vertical
3	22979.7000	46.68	51.68	42.14	5.00	74	31.86	100	58	Vertical
4	28188.2000	44.84	50.74	41.20	5.90	74	32.80	100	320	Vertical
5	34726.6000	44.16	52.93	43.39	8.77	74	30.61	100	179	Vertical
6	39533.6000	42.16	57.80	48.26	15.64	74	25.74	100	20	Vertical

Remark:

- 1 Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2 Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Above 18G test distance is 1m, so the Level for 3m= Level for 1m + 20*log(1/3)

6. RESTRICTED BANDS OF OPERATION

6.1 LIMITS

Section 15.407(b)(10) The provisions of §15.205 apply to intentional radiators operating under this section.

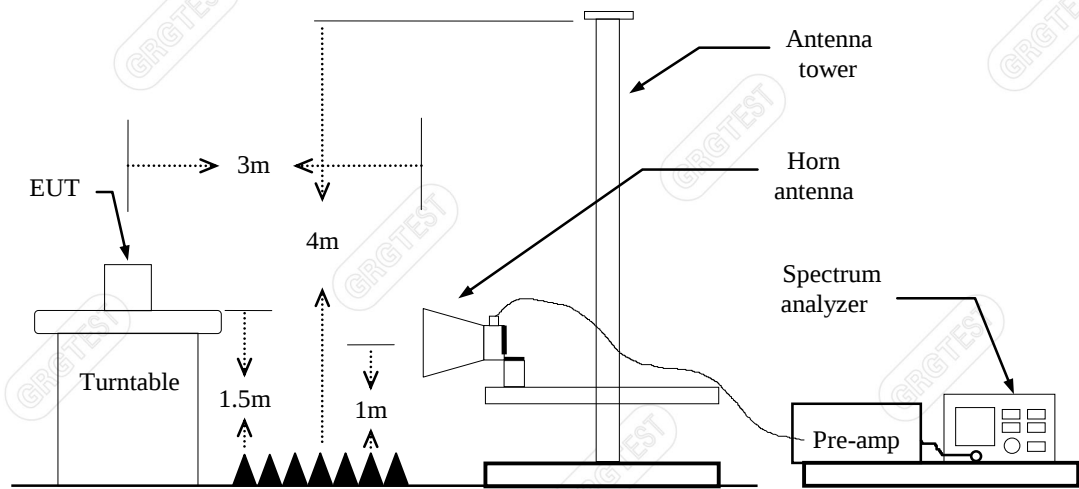
15.205(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

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	2655 - 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)

6.2 TEST PROCEDURES

- The EUT is placed on a turntable, which is 1.5m above the ground plane.
- The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
- Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
 - PEAK Measurement: RBW=1MHz / VBW=3MHz / Sweep=AUTO
 - AVERAGE Measurement: RBW=1MHz, Sweep=AUTO, There are two cases of VBW.
If the EUT is configured to transmit with duty cycle $\geq 98\%$, set VBW=10Hz. If the EUT duty cycle is $< 98\%$, set $VBW \geq 1/T$, Where T is defined in section 2.9.
- Repeat the procedures until all the PEAK and AVERAGE versus polarization are measured.
- The EUT was tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes horizontal stand and Z denotes vertical stand), After pre-test, It was found that the worst case radiated spurious emissions was both the EUT at the Y position. So the data shown was the Y position only.

6.3 TEST SETUP

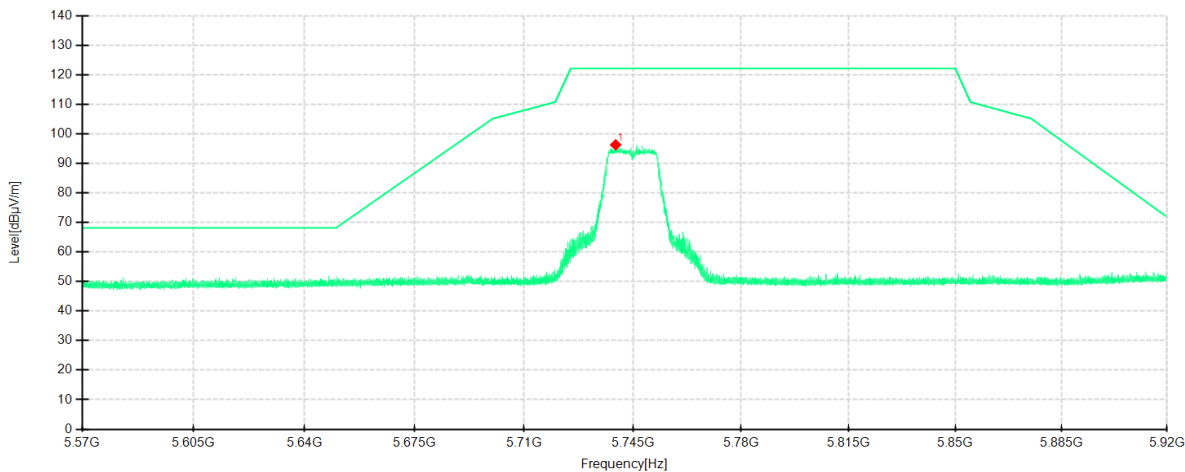


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6.4 TEST RESULTS

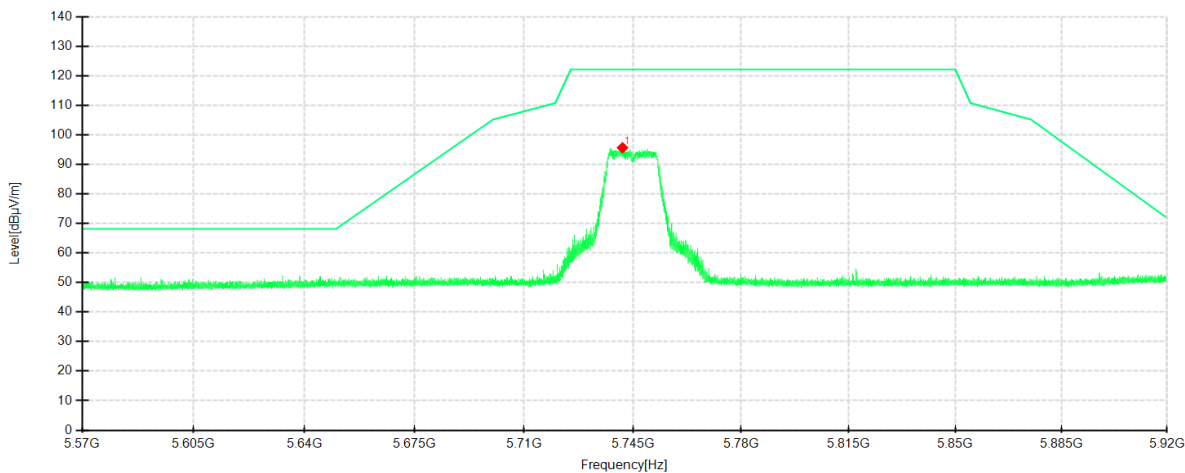
IEEE 802.11a mode
Frequency 5745MHz
Environment: 21.5°C/49%RH/101.0kPa
Tested By: Qin Tingting
Detector mode: Peak

Voltage: DC 3.7V
Date: 2025-02-12
Polarity: Horizontal



Detector mode: Peak

Polarity: Vertical

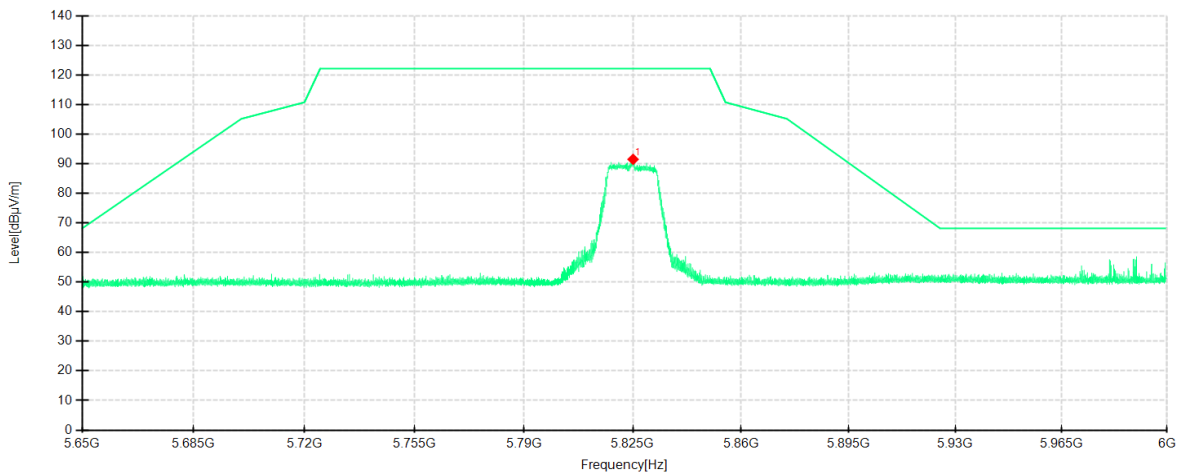


No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	5739.4525	88.55	96.31	7.76	122.20	25.89	200	341	Horizontal	/
1	5741.6575	87.79	95.66	7.87	122.20	26.54	100	212	Vertical	/

IEEE 802.11a mode

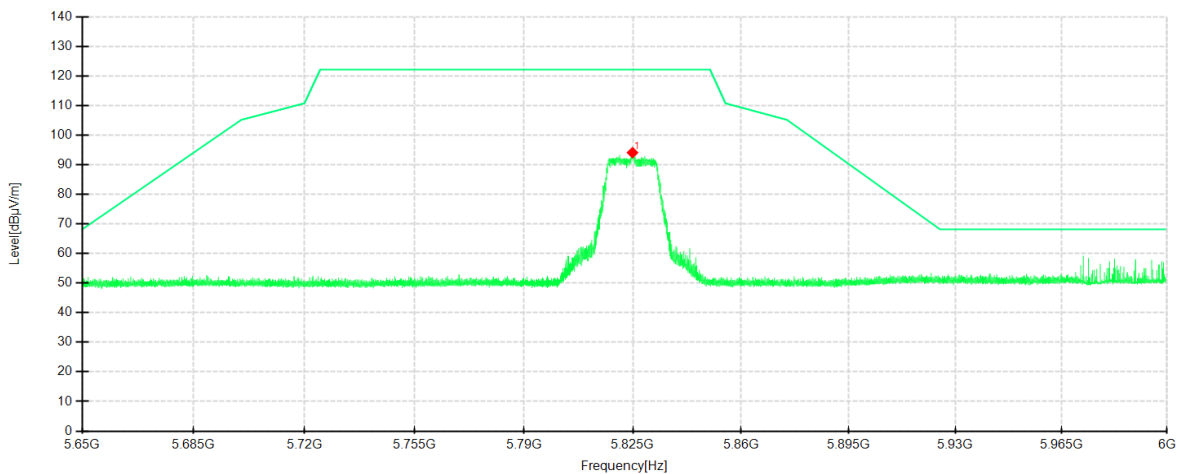
Frequency 5825MHz
Environment: 21.5°C/49%RH/101.0kPa
Tested By: Qin Tingting
Detector mode: Peak

Voltage: DC 3.7V
Date: 2025-02-12
Polarity: Horizontal



Detector mode: Peak

Polarity: Vertical

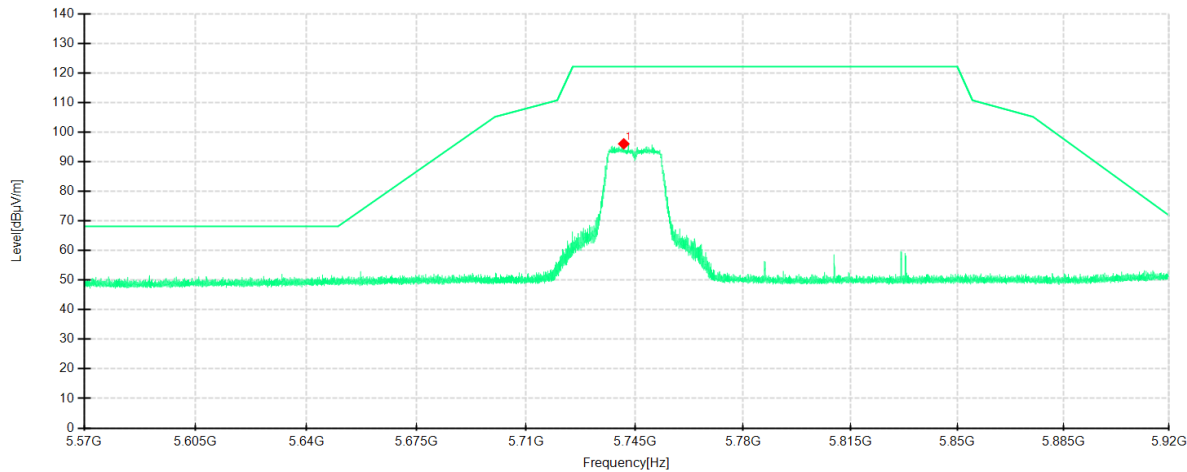


No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	5825.1050	83.73	91.51	7.78	122.20	30.69	200	339	Horizontal	/
1	5824.9300	86.38	94.11	7.73	122.20	28.09	100	206	Vertical	/

IEEE 802.11n HT20 mode

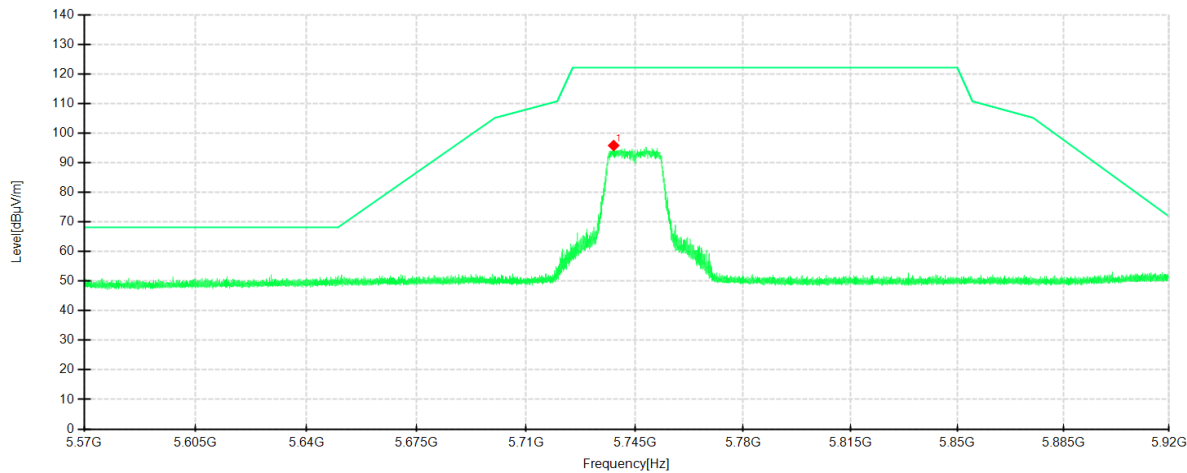
Frequency 5745MHz
Environment: 21.5°C/49%RH/101.0kPa
Tested By: Qin Tingting
Detector mode: Peak

Voltage: DC 3.7V
Date: 2025-02-12
Polarity: Horizontal



Detector mode: Peak

Polarity: Vertical

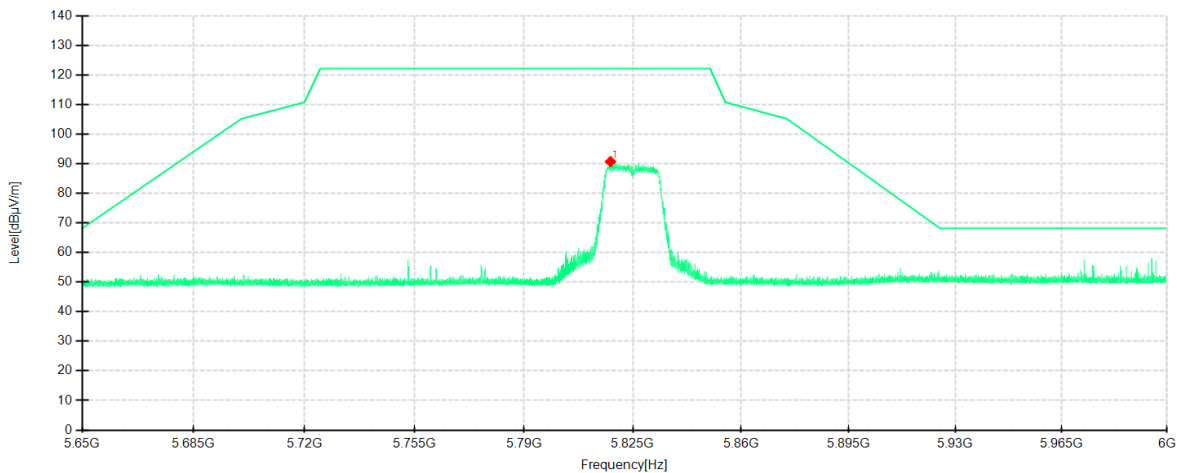


No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	5741.4125	88.31	96.08	7.77	122.20	26.12	200	340	Horizontal	/
1	5738.1575	87.99	95.84	7.85	122.20	26.36	100	217	Vertical	/

IEEE 802.11n HT20 mode

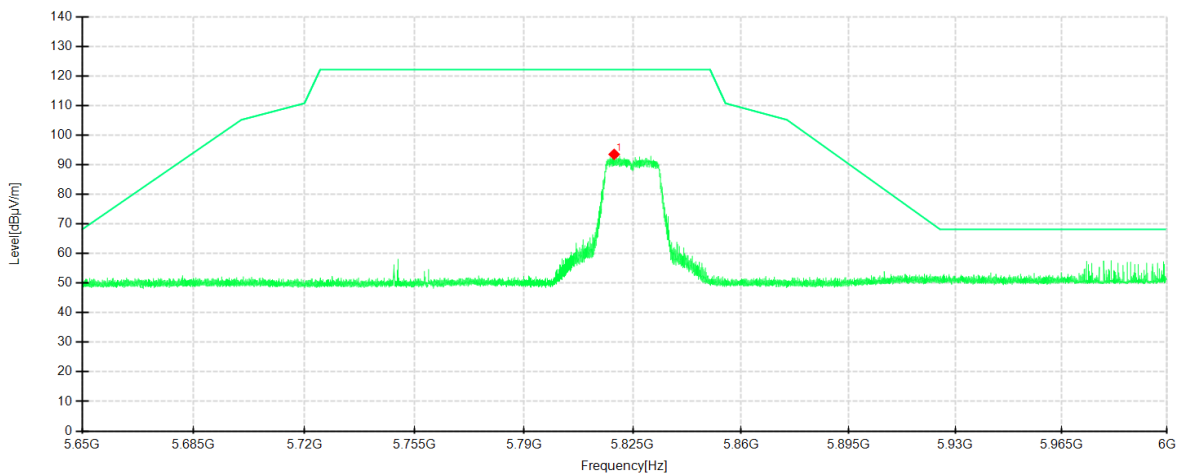
Frequency 5825MHz
Environment: 21.5°C/49%RH/101.0kPa
Tested By: Qin Tingting
Detector mode: Peak

Voltage: DC 3.7V
Date: 2025-02-12
Polarity: Horizontal



Detector mode: Peak

Polarity: Vertical

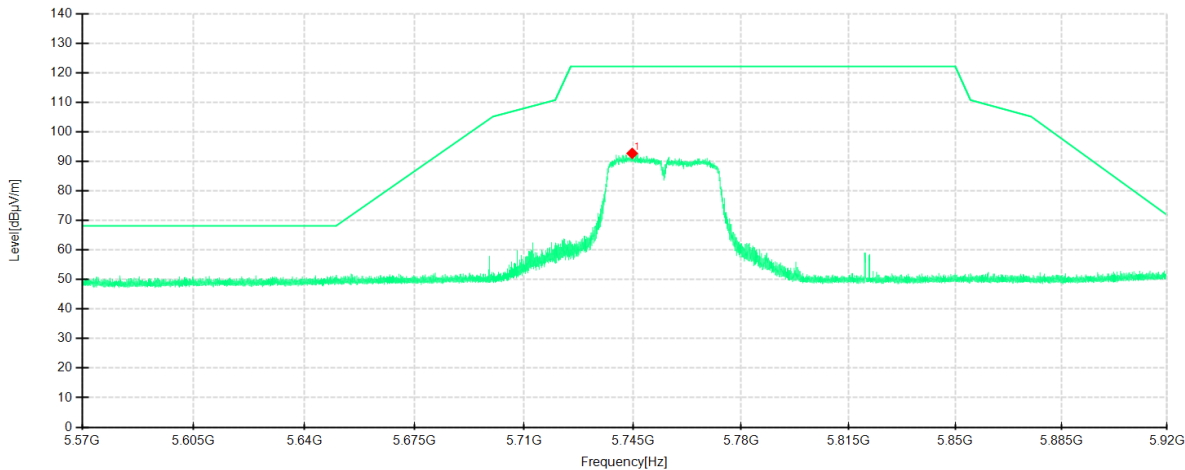


No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	5817.8075	83.00	90.75	7.75	122.20	31.45	200	337	Horizontal	/
1	5818.9975	85.82	93.54	7.72	122.20	28.66	100	216	Vertical	/

IEEE 802.11n HT40 mode

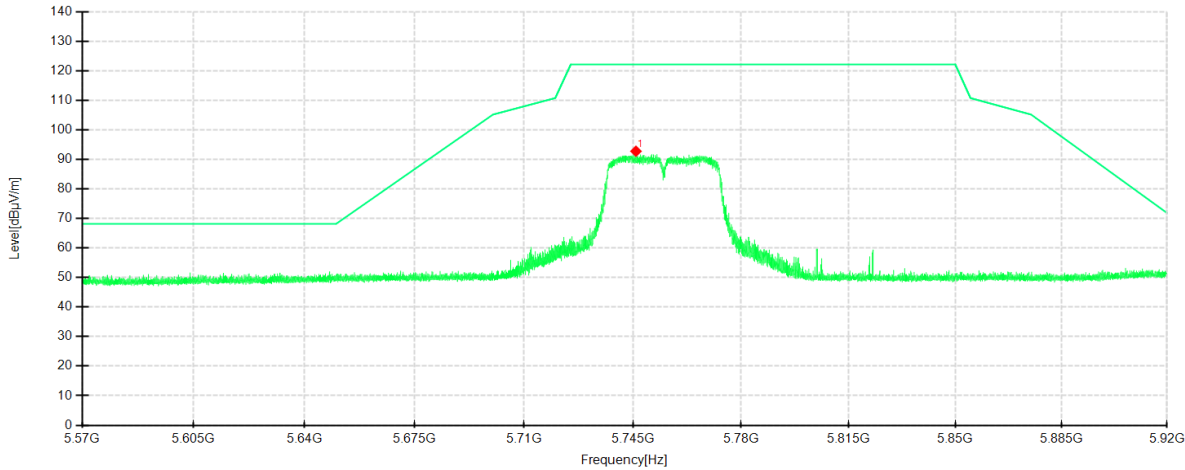
Frequency 5755MHz
Environment: 21.5°C/49%RH/101.0kPa
Tested By: Qin Tingting
Detector mode: Peak

Voltage: DC 3.7V
Date: 2025-02-12
Polarity: Horizontal



Detector mode: Peak

Polarity: Vertical

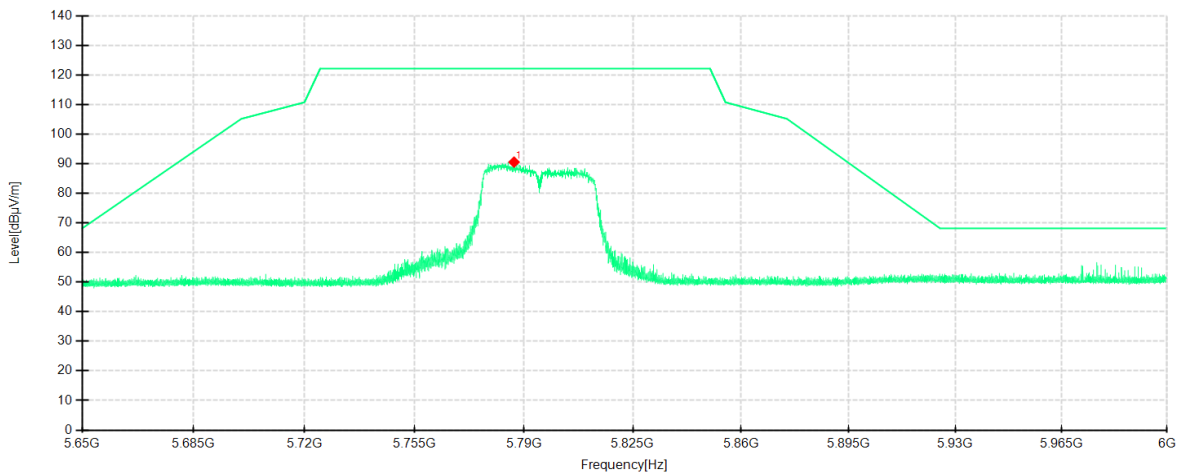


No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	5744.7725	84.96	92.74	7.78	122.20	29.46	200	2	Horizontal	/
1	5745.9975	84.90	92.79	7.89	122.20	29.41	100	218	Vertical	/

IEEE 802.11n HT40 mode

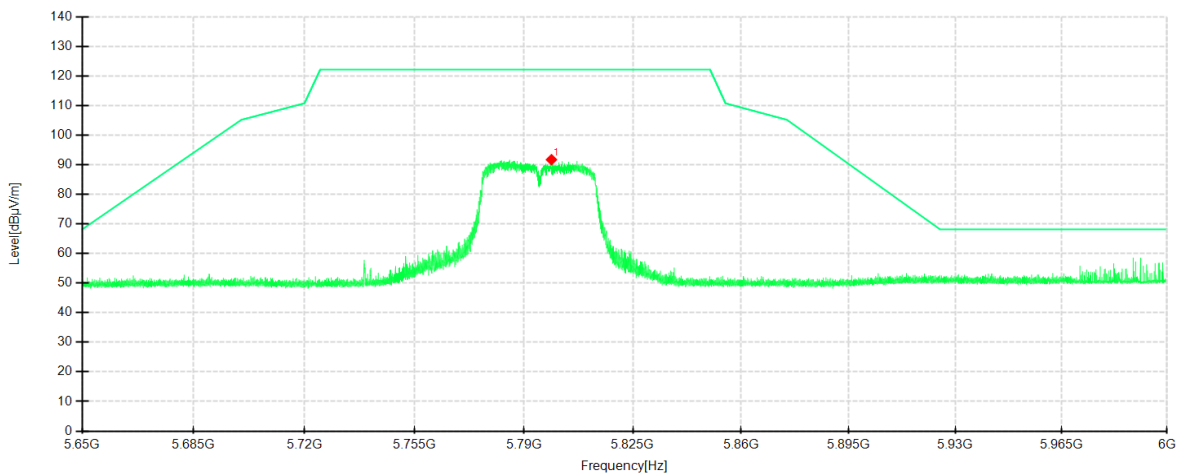
Frequency 5795MHz
Environment: 21.5°C/49%RH/101.0kPa
Tested By: Qin Tingting
Detector mode: Peak

Voltage: DC 3.7V
Date: 2025-02-12
Polarity: Horizontal



Detector mode: Peak

Polarity: Vertical



No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	5786.8150	82.88	90.58	7.70	122.20	31.62	200	1	Horizontal	/
1	5798.8200	84.06	91.74	7.68	122.20	30.46	100	219	Vertical	/

7. 6dB BANDWIDTH & 99% OCCUPIED BANDWIDTH

7.1 LIMITS

Band	Frequency (MHz)	Test Item	Limit
U-NII-3	5725-5850	6dB Bandwidth&99% Occupied Bandwidth	6dB Bandwidth $\geq$ 500kHz

7.2 TEST PROCEDURES

For 6dB Bandwidth Measurement :

- Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- Spectrum analyzer setting parameters in accordance with table 1.
- Set the EUT transmit continuously with maximum output power.
- Allow trace to stabilize,measure the maximum width of the emission that is constrained by the frequencies associatedwith the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.
- Repeat above procedures until all modes and channels were measured.
- Record the results in the test report.

For 99% Occupied BandwidthMeasurement :

- Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- Spectrum analyzer setting parameters in accordance with table 2.
- Set the EUT transmit continuously with maximum output power.
- Allow trace to stabilize,use the 99% power bandwidth function to measure bandwidth.
- Repeat above procedures until all modes and channels were measured.

Record the results in the test report.

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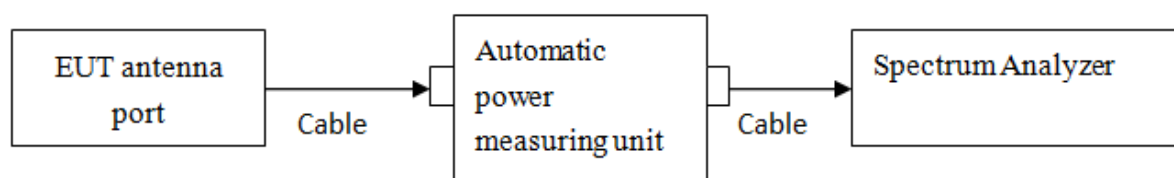
Table 1:

6dB Bandwidth	
Spectrum Parameters	Setting
RBW	100kHz
VBW	300kHz
Span	40MHz(20MHz Bandwidth mode) 60MHz(40MHz Bandwidth mode) 120MHz(80MHz Bandwidth mode)
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

Table 2:

99% Occupied Bandwidth	
Spectrum Parameters	Setting
RBW	1% to 5% of the OBW
VBW	approximately three times the RBW
Span	between 1.5 times and 5.0 times the OBW
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

7.3 TEST SETUP



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7.4 TEST RESULTS

Environment: 23.8℃/51%RH 101.0kPa

Tested By: Qin Tingting

Voltage:DC 3.7V

Date: 2025-02-08

6dB Bandwidth

Test Mode	Antenna	Freq(MHz)	6dB EBW [MHz]	F _L [MHz]	F _H [MHz]	Limit[MHz]	Verdict
IEEE 802.11a	Ant1	5745	16.32	5736.88	5753.20	0.5	PASS
		5785	16.36	5776.88	5793.24	0.5	PASS
		5825	16.36	5816.88	5833.24	0.5	PASS
IEEE 802.11n HT20	Ant1	5745	17.56	5736.28	5753.84	0.5	PASS
		5785	17.56	5776.28	5793.84	0.5	PASS
		5825	17.56	5816.28	5833.84	0.5	PASS
IEEE 802.11n HT40	Ant1	5755	34.88	5737.48	5772.36	0.5	PASS
		5795	35.12	5777.48	5812.60	0.5	PASS

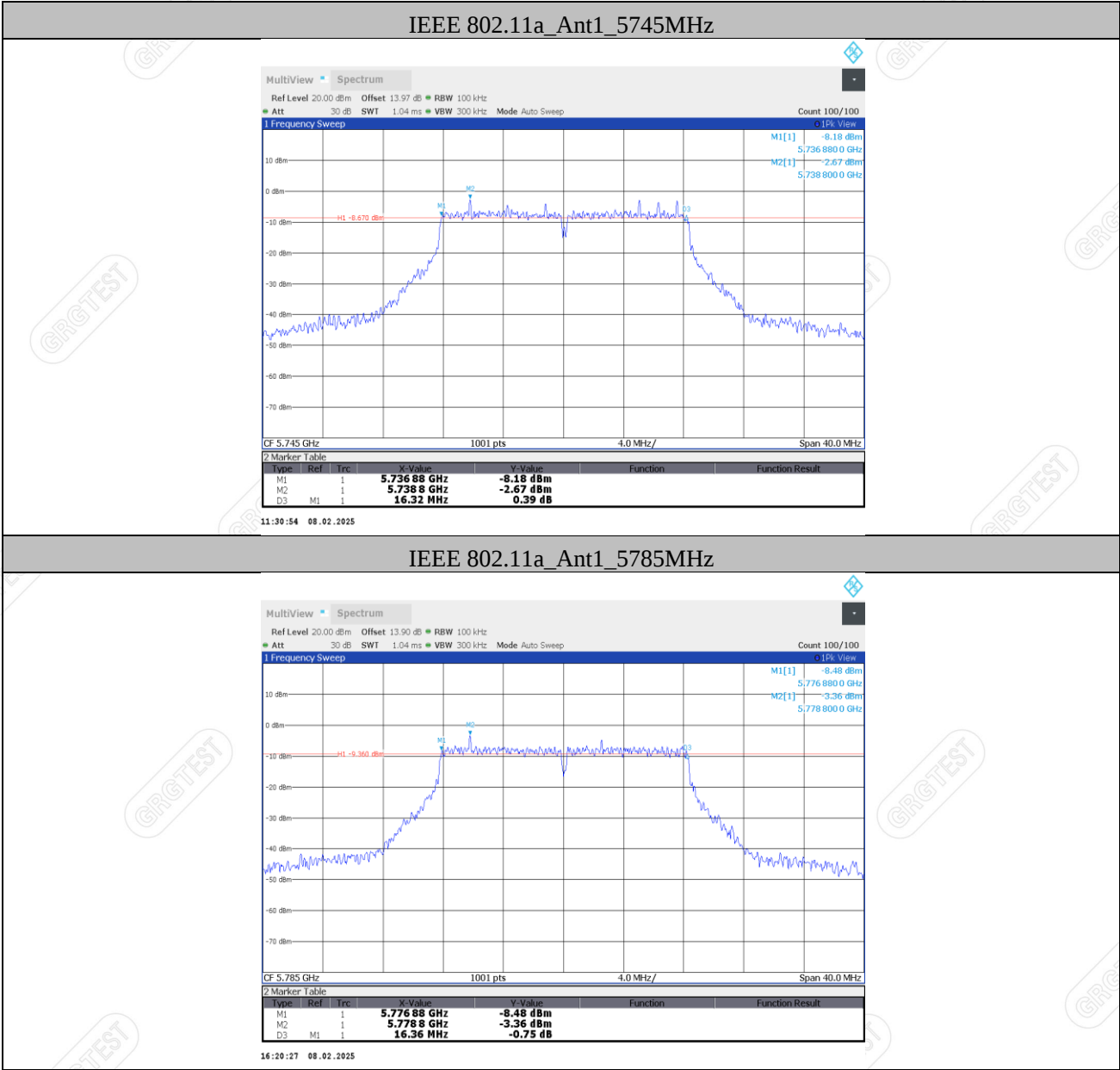
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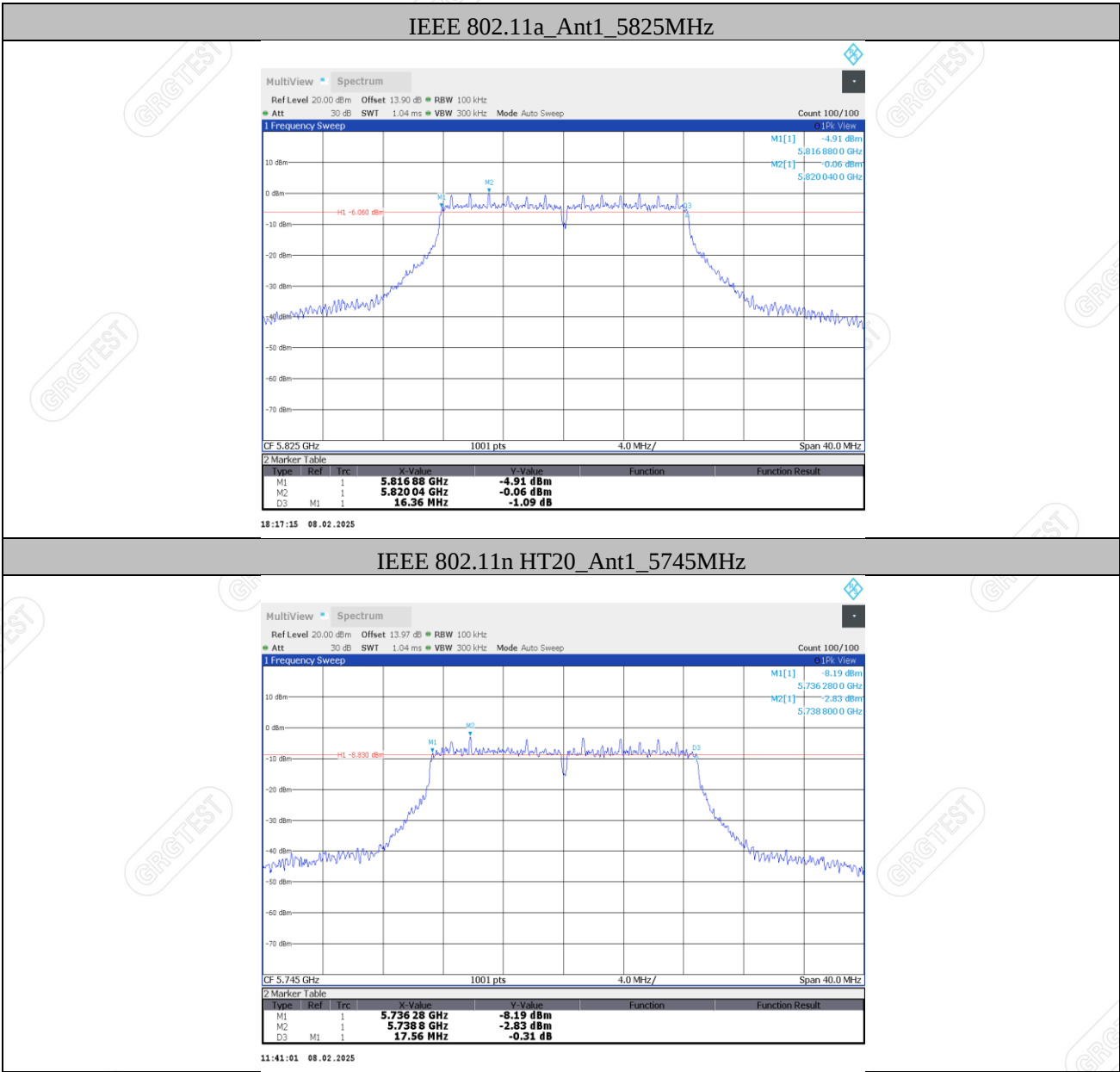
99% OCCUPIED BANDWIDTH

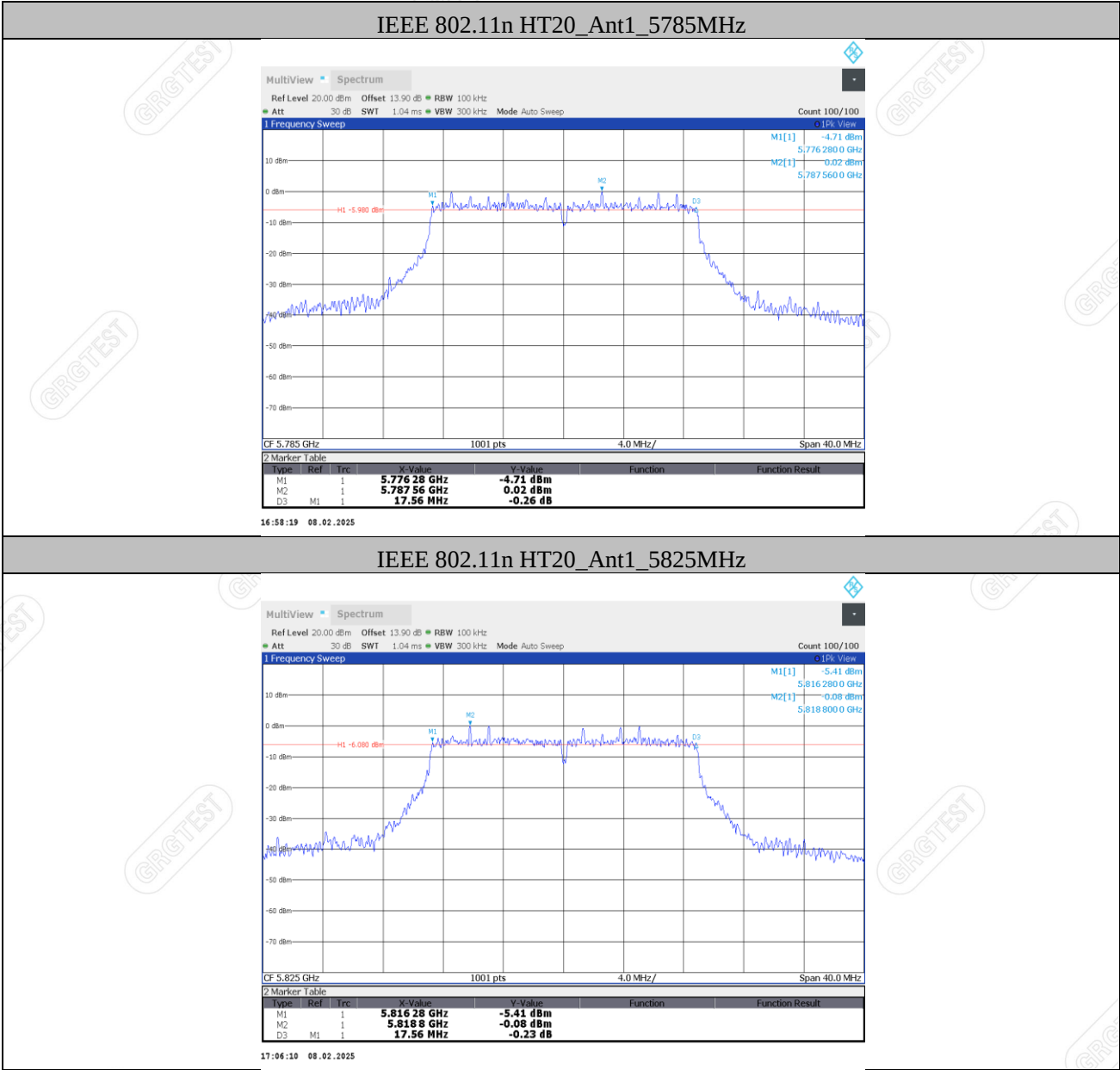
Test Mode	Antenna	Freq(MHz)	OCB [MHz]	F _L [MHz]	F _H [MHz]	Limit[MHz]	Verdict
IEEE 802.11a	Ant1	5745	17.711	5736.1946	5753.9056	---	---
		5785	17.671	5776.2449	5793.9161	---	---
		5825	17.741	5816.1446	5833.8861	---	---
IEEE 802.11n HT20	Ant1	5745	18.555	5735.7745	5754.3299	---	---
		5785	18.599	5775.7486	5794.3475	---	---
		5825	18.463	5815.8075	5834.2702	---	---
IEEE 802.11n HT40	Ant1	5755	37.015	5736.4845	5773.4996	---	---
		5795	37.099	5776.4683	5813.5673	---	---

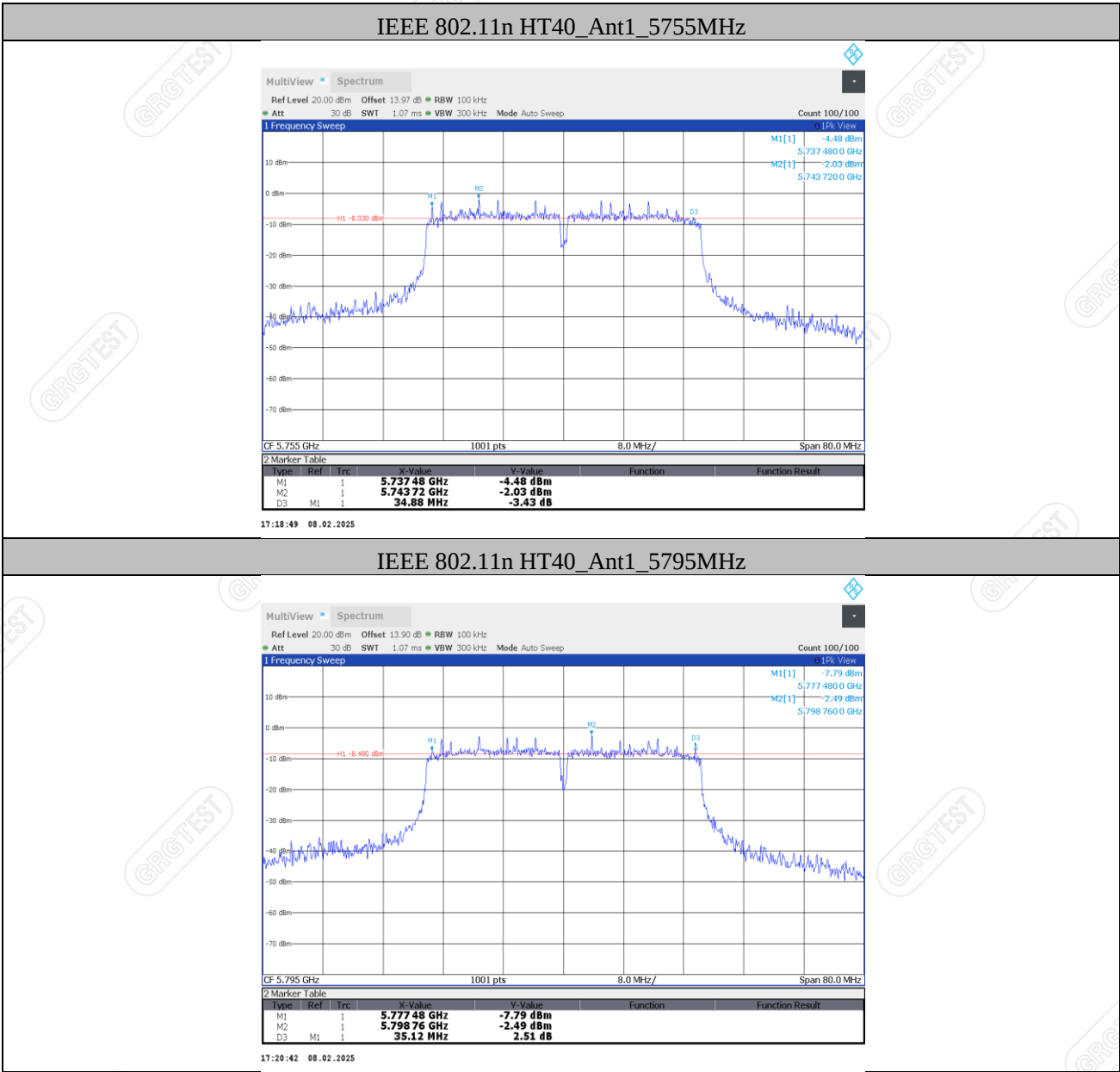
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Test Graphs
6dB Bandwidth









IEEE 802.11n HT40_Ant1_5795MHz

MultiView Spectrum

Ref Level 20.00 dBm Offset 13.90 dB RBW 100 kHz
Att 30 dB SWI 1.07 ms VBW 300 kHz Mode Auto Sweep Count 100/100

1 Frequency Sweep

10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm

M1

M2

D3

M1[1] -7.79 dBm
5.7774800 GHz

M2[1] -2.49 dBm
5.7987600 GHz

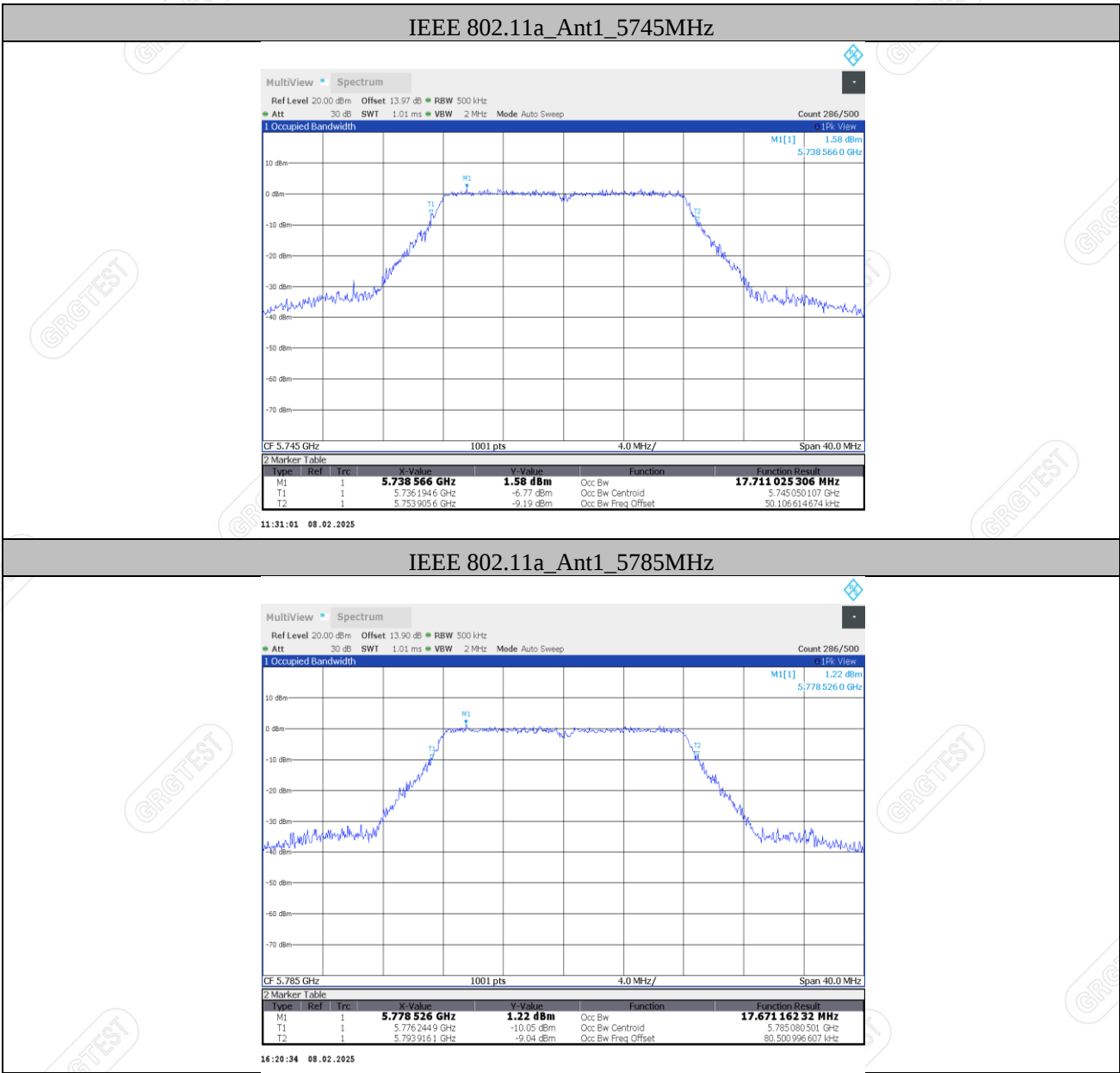
CF 5.795 GHz 1001 pts 8.0 MHz/ Span 80.0 MHz

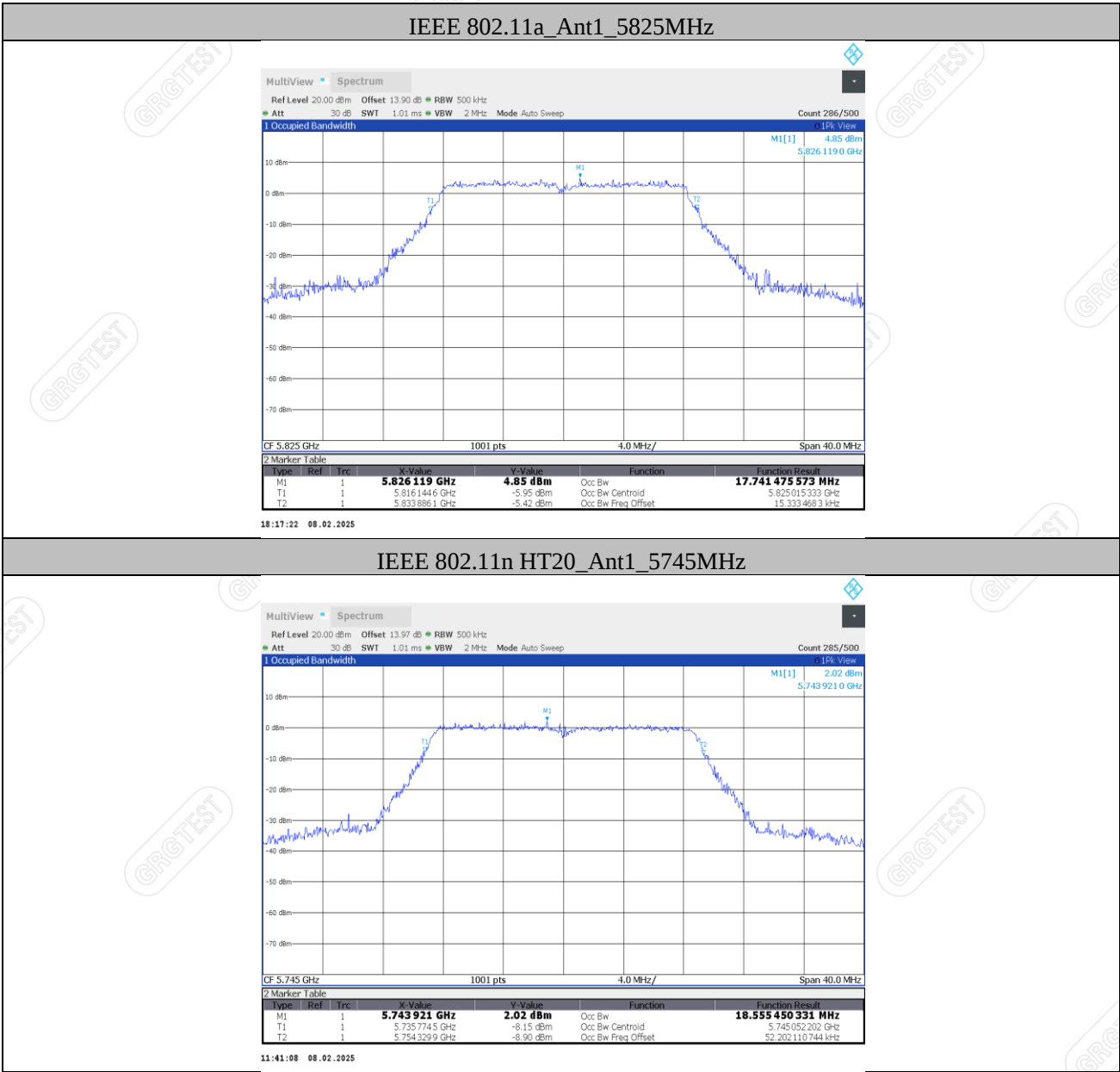
2 Marker Table

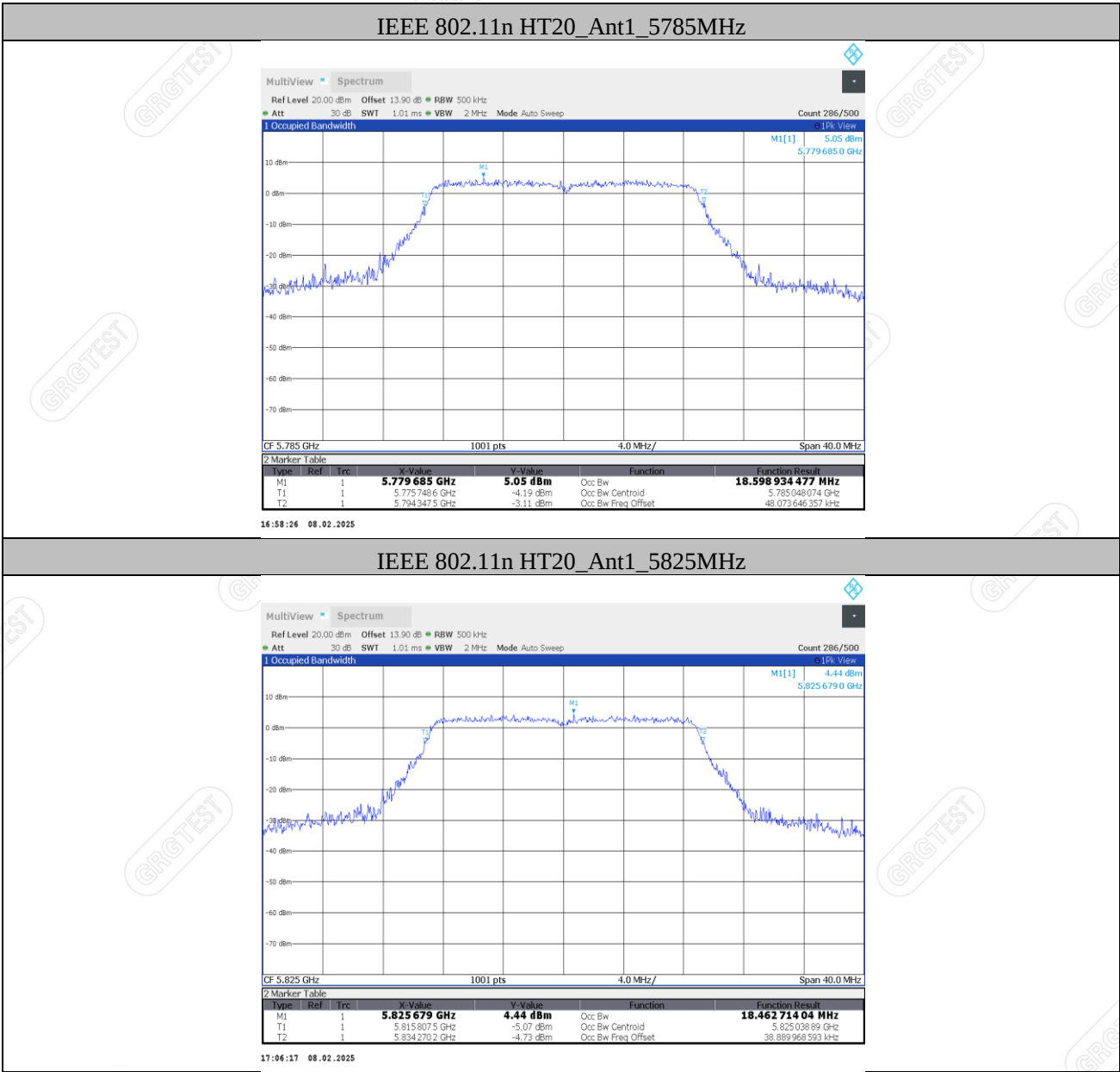
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1	1		5.77748 GHz	-7.79 dBm		
M2	1		5.79876 GHz	-2.49 dBm		
D3	M1		35.12 MHz	2.51 dB		

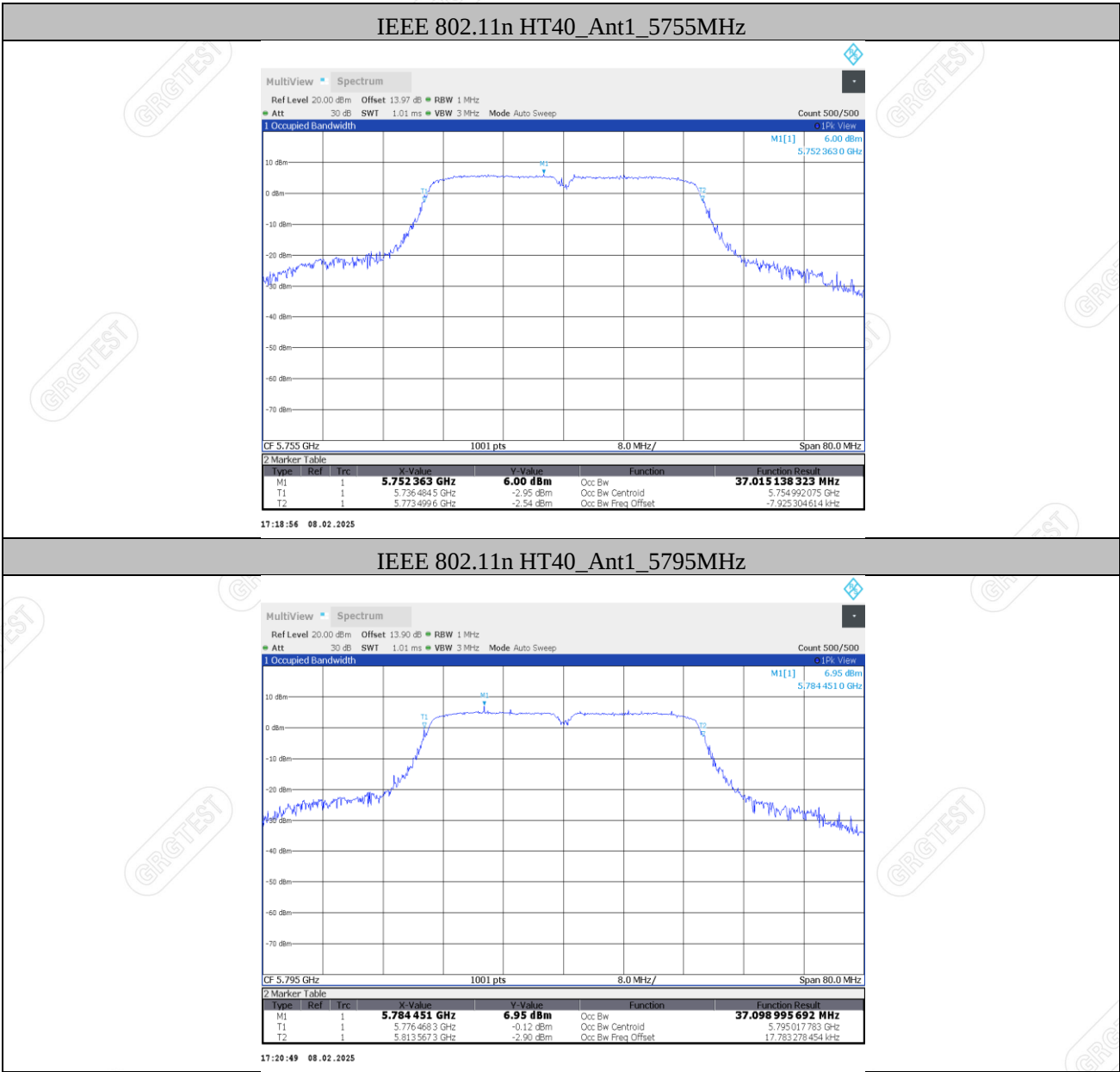
17:20:42 08.02.2025

99% OCCUPIED BANDWIDTH









8. OUTPUT POWER

8.1 LIMITS

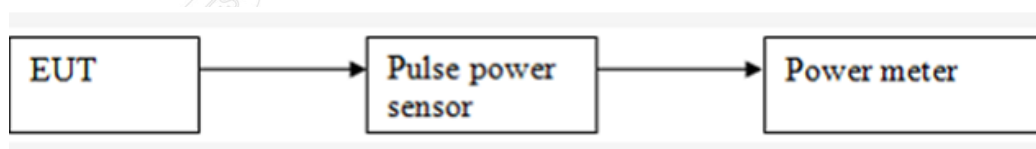
The FCC 15.407(a), The maximum conducted output power should not exceed:

Band	EUT Type	Limit
U-NII-3	All Device	1W(30dBm)

8.2 TEST PROCEDURES

- The RF output of EUT was connected to the broadband average RF power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- Set to the maximum power setting and enable the EUT transmit continuously.
- Measure the conducted output power and record the results in the test report.

8.3 TEST SETUP



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8.4 TEST RESULTS

Environment: Temperature: 23.2℃ ~ 23.8℃
 Humidness: 48%RH ~ 51%RH
 Atmospheric pressure: 101.0kPa

Voltage:DC 3.7V
Tested By:Qin Tingting Date: 2025-02-06 ~ 2025-02-08

U-NII-3:

Test Mode	Antenna	Frequency [MHz]	AVG Conducted Output Power with Duty Factor (dBm)	Limit [dBm]	Verdict
IEEE 802.11a	Ant1	5745	9.19	≤ 30	PASS
	Ant1	5785	8.48	≤ 30	PASS
	Ant1	5825	7.55	≤ 30	PASS
IEEE 802.11n HT20	Ant1	5745	9.28	≤ 30	PASS
	Ant1	5785	8.48	≤ 30	PASS
	Ant1	5825	7.57	≤ 30	PASS
IEEE 802.11n HT40	Ant1	5755	9.03	≤ 30	PASS
	Ant1	5795	8.32	≤ 30	PASS

Note: 1. Result already includes duty factor, 5745MHz~5825MHz antenna gain is -3.3dBi.

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9. POWER SPECTRAL DENSITY

9.1 LIMITS

Section 15.407(a)

The maximum power spectral density should not exceed:

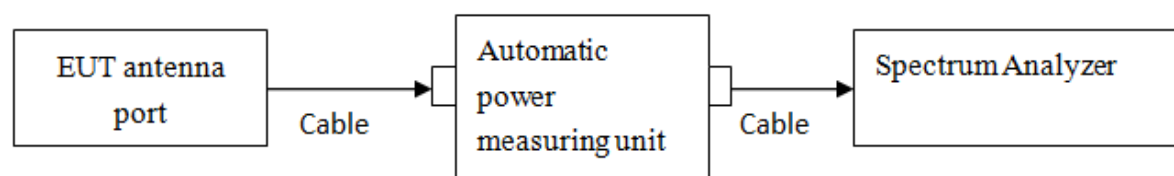
Band	EUT Type	Limit
U-NII-3	All Device	30dBm/500kHz

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.

9.2 TEST PROCEDURES

Spectrum Parameters	Setting
RBW	500kHz(For U-NII-3)
VBW	2MHz(For U-NII-3)
Span	encompass the entire 26 dB EBW or 99% OBW of the signal
Sweep Time	Auto
Number of Sweep Point	$\geq 2 \times \text{SPAN/RBW}$
Detector	RMS(power averaging)
Trace Average	≥ 100 traces

9.3 TEST SETUP



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9.4 TEST RESULTS

Environment: 23.8℃/51%RH 101.0kPa
Tested By: Qin Tingting

Voltage:DC 3.7V
Date: 2025-02-08

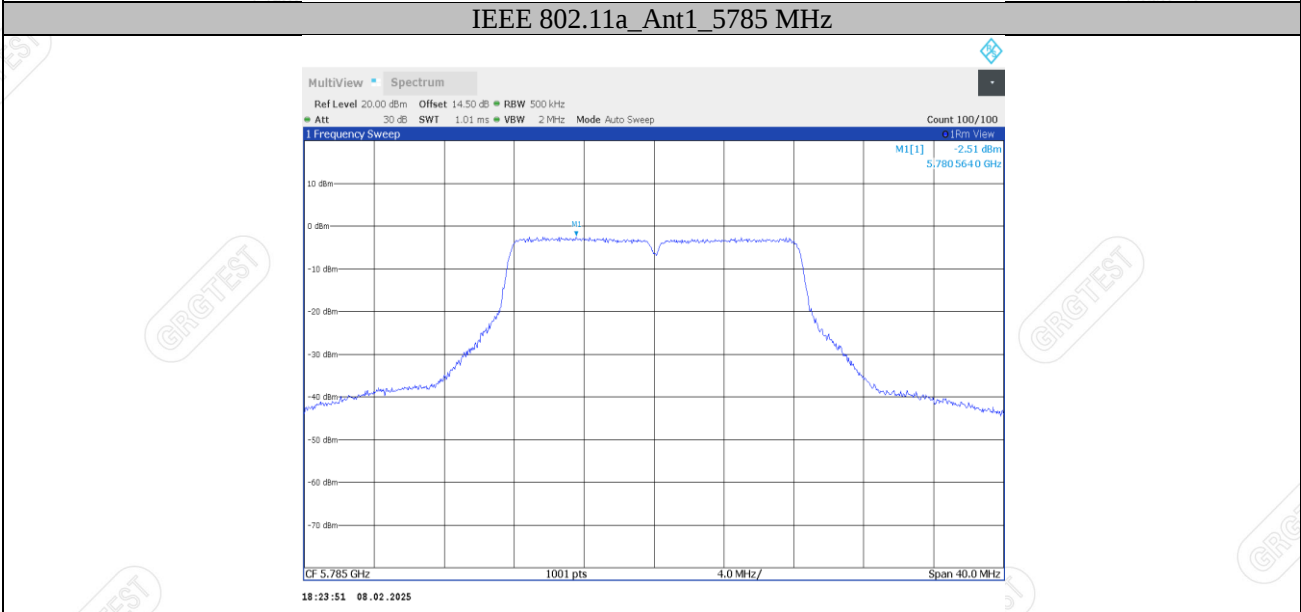
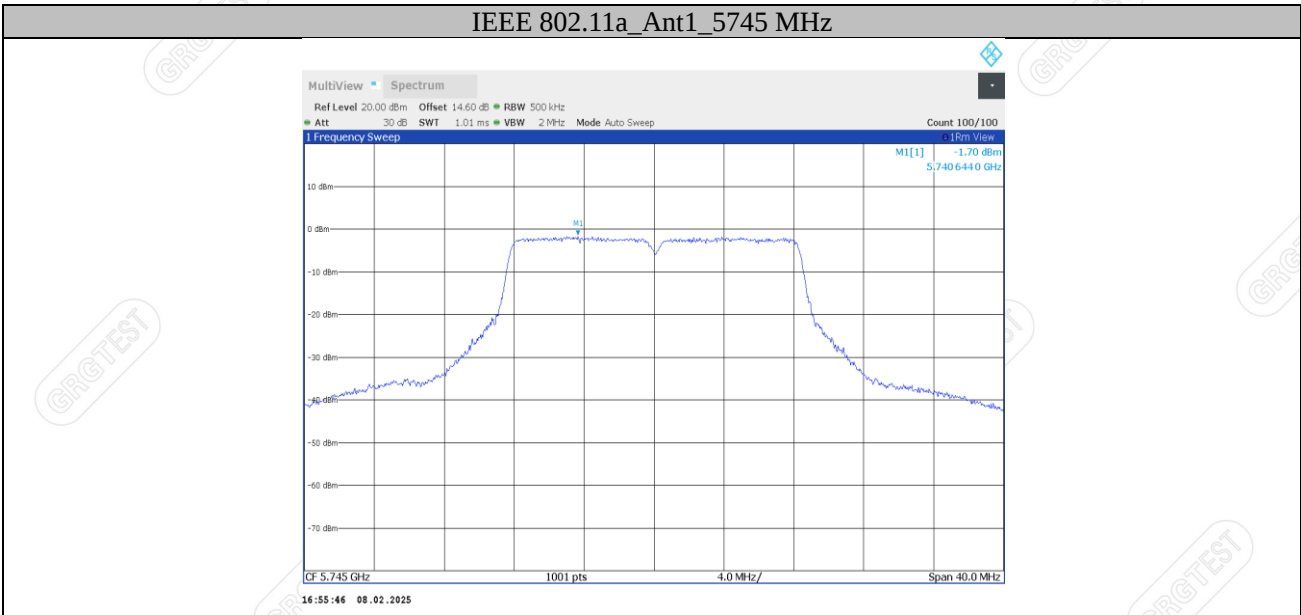
U-NII-3:

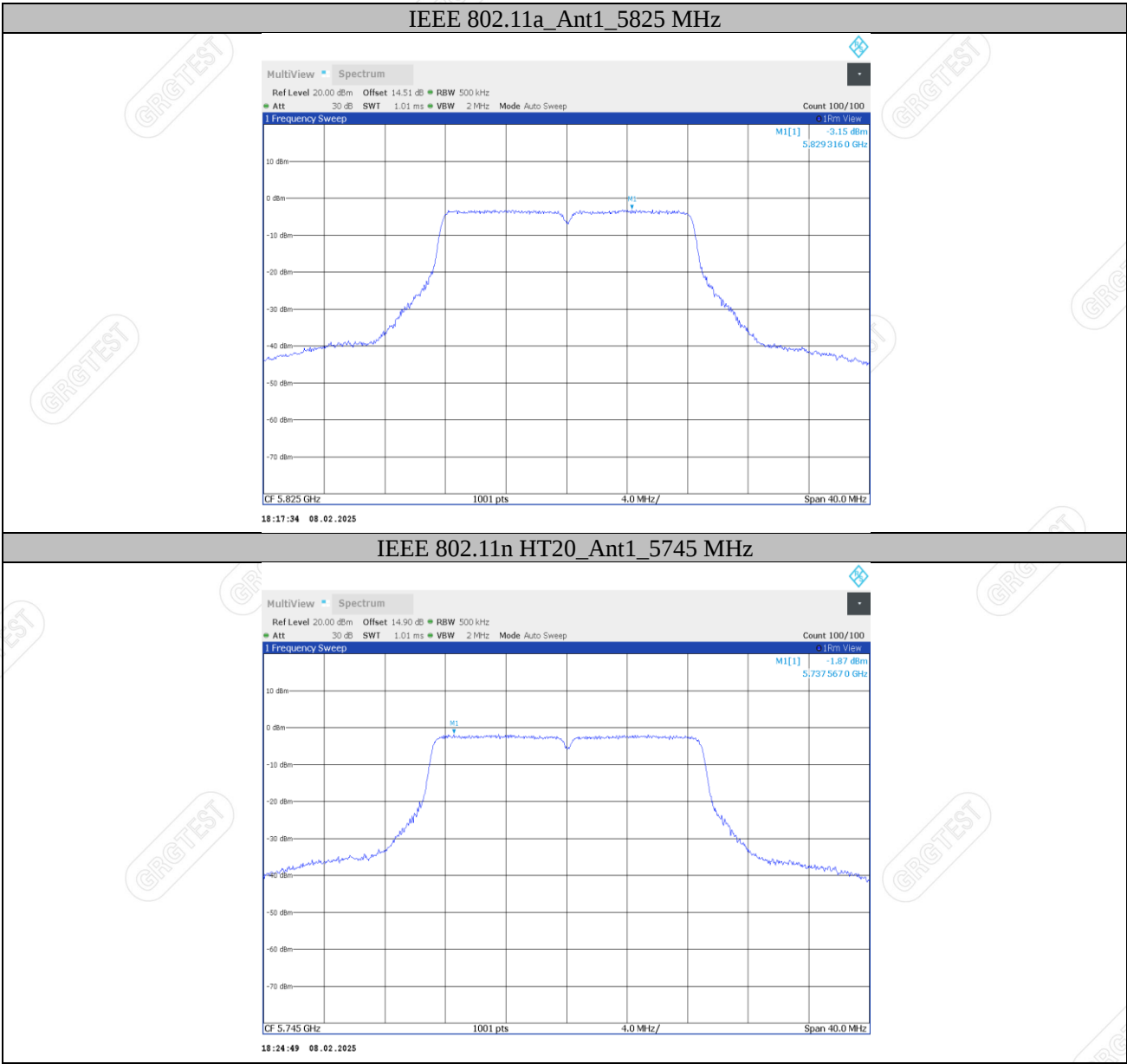
Test Mode	Antenna	Frequency [MHz]	Result [dBm/500kHz]	Limit [dBm/500kHz]	Verdict
IEEE 802.11a	Ant1	5745	-1.70	≤ 30	PASS
	Ant1	5785	-2.51	≤ 30	PASS
	Ant1	5825	-3.15	≤ 30	PASS
IEEE 802.11n HT20	Ant1	5745	-1.87	≤ 30	PASS
	Ant1	5785	-2.92	≤ 30	PASS
	Ant1	5825	-3.19	≤ 30	PASS
IEEE 802.11n HT40	Ant1	5755	-4.73	≤ 30	PASS
	Ant1	5795	-5.65	≤ 30	PASS

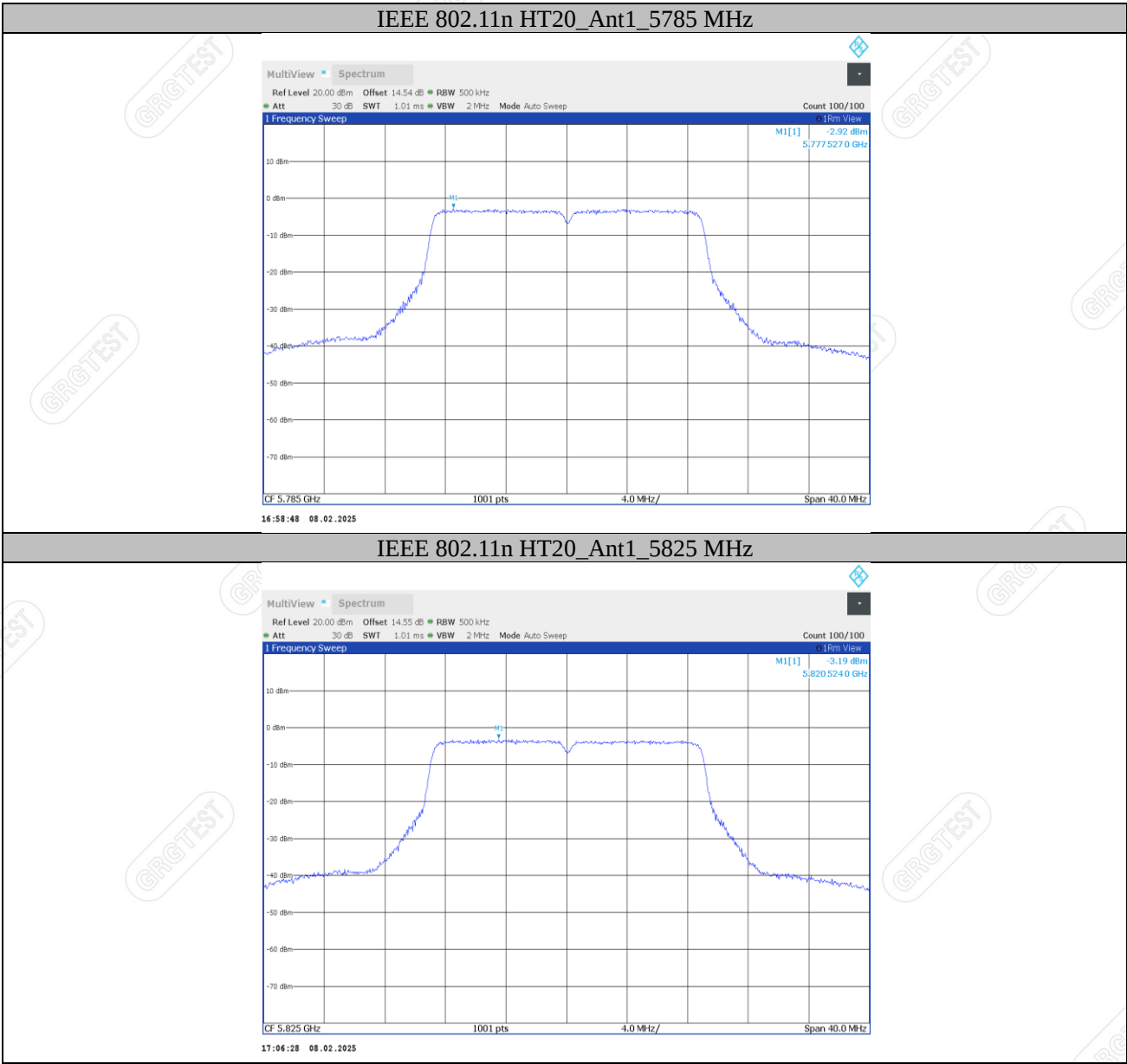
Note: 1. Result already includes duty factor, 5745MHz~5825MHz antenna gain is -3.3dBi.

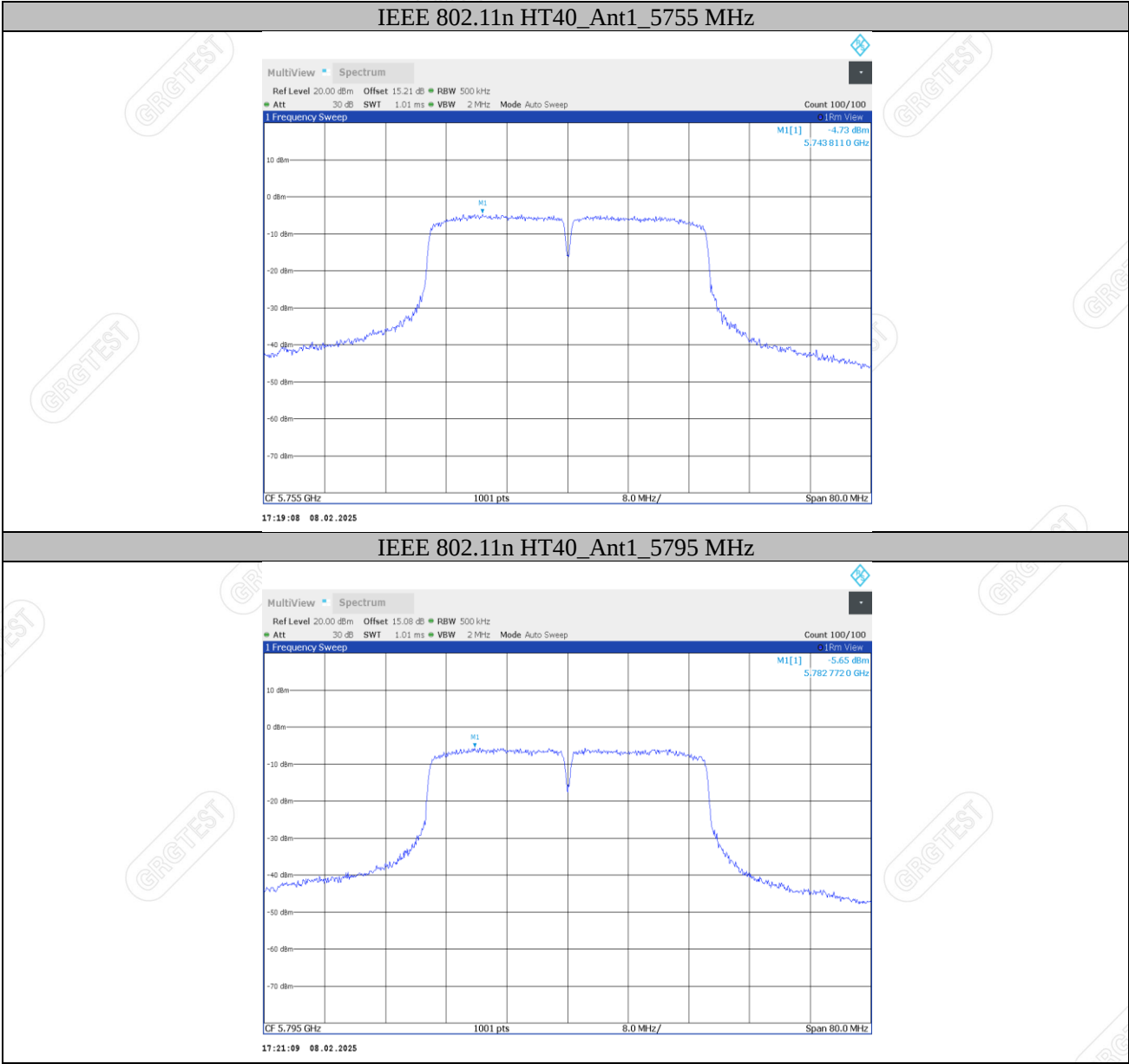
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Test Graphs









10. FREQUENCY STABILITY

10.1 LIMITS

According to §15.407(g), manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

10.2 TEST PROCEDURES

(1) Frequency stability with respect to ambient temperature

- a) Supply the EUT with a nominal ac voltage or install a new or fully charged battery in the EUT. If possible, a dummy load shall be connected to the EUT because an antenna near the metallic walls of an environmental test chamber could affect the output frequency of the EUT. If the EUT is equipped with a permanently attached, adjustable-length antenna, then the EUT shall be placed in the center of the chamber with the antenna adjusted to the shortest length possible. Turn ON the EUT and tune it to one of the number of frequencies shown in §ANSI C63.10-2020(5.6).
- b) Couple the unlicensed wireless device output to the measuring instrument by connecting an antenna to the measuring instrument with a suitable length of coaxial cable and placing the measuring antenna near the EUT (e.g., 15 cm away), or by connecting a dummy load to the measuring instrument, through an attenuator if necessary.

NOTE—An instrument that has an adequate level of accuracy as specified by the procuring or regulatory agency is the recommended measuring instrument.

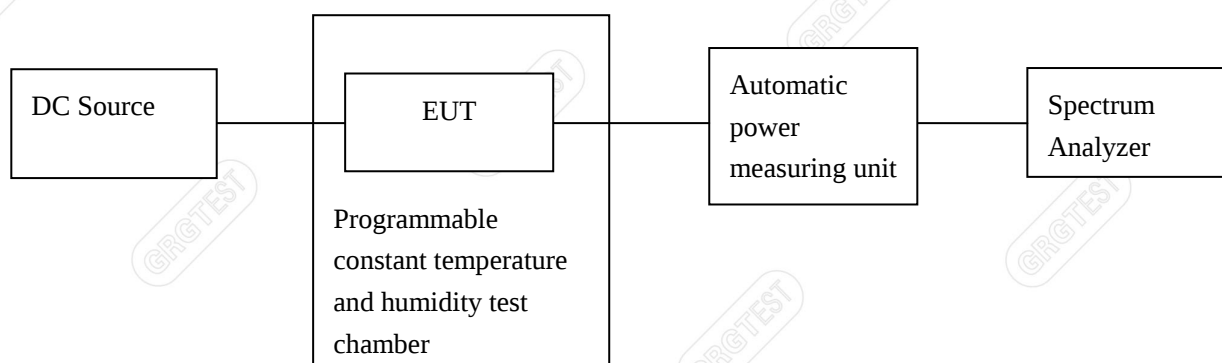
- c) Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).
- d) Turn the EUT OFF and place it inside the environmental temperature chamber. For devices that have oscillator heaters, energize only the heater circuit.
- e) Set the temperature control on the chamber to the highest specified in the regulatory requirements for the type of device and allow the oscillator heater and the chamber temperature to stabilize.
- f) While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.
- g) Measure the frequency at each of frequencies specified in §ANSI C63.10-2020(5.6).
- h) Switch OFF the EUT but do not switch OFF the oscillator heater.
- i) Lower the chamber temperature by not more than 10°C, and allow the temperature inside the chamber to stabilize.
- j) Repeat step f) through step i) down to the lowest specified temperature.

(2) Frequency stability when varying supply voltage

- a) Supply the EUT with nominal voltage or install a new or fully charged battery in the EUT. Turn ON the EUT and couple its output to a frequency counter or other frequency-measuring instrument.

NOTE—An instrument that has an adequate level of accuracy as specified by the procuring or regulatory agency is the recommended measuring instrument.

- b) Tune the EUT to one of the number of frequencies required in §ANSI C63.10-2020(5.6). Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).
- c) Measure the frequency at each of the frequencies specified in §ANSI C63.10-2020(5.6).
- d) Repeat the above procedure at 85% and 115% of the nominal supply voltage as described in §ANSI C63.10-2020(5.13).

10.3 TEST SETUP

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10.4 TEST RESULTS

Environment: 23.8℃/51%RH 101.0kPa

Voltage:DC 3.7V

Tested By: Qin Tingting

Date: 2025-02-08

Voltage								
Test Mode	Antenna	Freq (MHz)	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
IEEE 802.11a	Ant1	5745	NV	NT	58900.00	10.252393	20	PASS
			LV	NT	58900.00	10.252393	20	PASS
			HV	NT	58900.00	10.252393	20	PASS
		5785	NV	NT	59900.00	10.354365	20	PASS
			LV	NT	58900.00	10.181504	20	PASS
			HV	NT	58900.00	10.181504	20	PASS
		5825	NV	NT	58900.00	10.111588	20	PASS
			LV	NT	58900.00	10.111588	20	PASS
			HV	NT	58900.00	10.111588	20	PASS
IEEE 802.11n HT20	Ant1	5745	NV	NT	57900.00	10.078329	20	PASS
			LV	NT	57900.00	10.078329	20	PASS
			HV	NT	57900.00	10.078329	20	PASS
		5785	NV	NT	57900.00	10.008643	20	PASS
			LV	NT	57900.00	10.008643	20	PASS
			HV	NT	57900.00	10.008643	20	PASS
		5825	NV	NT	57900.00	9.939914	20	PASS
			LV	NT	57900.00	9.939914	20	PASS
			HV	NT	57900.00	9.939914	20	PASS
IEEE 802.11n HT40	Ant1	5755	NV	NT	61900.00	10.755864	20	PASS
			LV	NT	61900.00	10.755864	20	PASS
			HV	NT	61900.00	10.755864	20	PASS
		5795	NV	NT	60900.00	10.509060	20	PASS
			LV	NT	59900.00	10.336497	20	PASS
			HV	NT	59900.00	10.336497	20	PASS

Temperature								
Test Mode	Antenna	Freq (MHz)	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
IEEE 802.11a	Ant1	5745	NV	-20	58900.00	10.252393	20	PASS
			NV	-10	58900.00	10.252393	20	PASS
			NV	0	58900.00	10.252393	20	PASS
			NV	10	58900.00	10.252393	20	PASS
			NV	20	57900.00	10.078329	20	PASS
			NV	30	58900.00	10.252393	20	PASS
			NV	40	57900.00	10.078329	20	PASS
			NV	50	57900.00	10.078329	20	PASS
		5785	NV	-20	58900.00	10.181504	20	PASS
			NV	-10	58900.00	10.181504	20	PASS
			NV	0	57900.00	10.008643	20	PASS
			NV	10	57900.00	10.008643	20	PASS
			NV	20	57900.00	10.008643	20	PASS
			NV	30	57900.00	10.008643	20	PASS
			NV	40	57900.00	10.008643	20	PASS
			NV	50	57900.00	10.008643	20	PASS

		5825	NV	-20	57900.00	9.939914	20	PASS
			NV	-10	57900.00	9.939914	20	PASS
			NV	0	57900.00	9.939914	20	PASS
			NV	10	57900.00	9.939914	20	PASS
			NV	20	57900.00	9.939914	20	PASS
			NV	30	57900.00	9.939914	20	PASS
			NV	40	57900.00	9.939914	20	PASS
			NV	50	57900.00	9.939914	20	PASS
IEEE 802.11n HT20	Ant1	5745	NV	-20	57900.00	10.078329	20	PASS
			NV	-10	57900.00	10.078329	20	PASS
			NV	0	57900.00	10.078329	20	PASS
			NV	10	57900.00	10.078329	20	PASS
			NV	20	57900.00	10.078329	20	PASS
			NV	30	57900.00	10.078329	20	PASS
			NV	40	57900.00	10.078329	20	PASS
			NV	50	57900.00	10.078329	20	PASS
		5785	NV	-20	57900.00	10.008643	20	PASS
			NV	-10	57900.00	10.008643	20	PASS
			NV	0	57900.00	10.008643	20	PASS
			NV	10	57900.00	10.008643	20	PASS
			NV	20	57900.00	10.008643	20	PASS
			NV	30	57900.00	10.008643	20	PASS
			NV	40	57900.00	10.008643	20	PASS
			NV	50	57900.00	10.008643	20	PASS
		5825	NV	-20	57900.00	9.939914	20	PASS
			NV	-10	57900.00	9.939914	20	PASS
			NV	0	57900.00	9.939914	20	PASS
			NV	10	57900.00	9.939914	20	PASS
			NV	20	57900.00	9.939914	20	PASS
			NV	30	57900.00	9.939914	20	PASS
			NV	40	57900.00	9.939914	20	PASS
			NV	50	57900.00	9.939914	20	PASS
IEEE 802.11n HT40	Ant1	5755	NV	-20	61900.00	10.755864	20	PASS
			NV	-10	61900.00	10.755864	20	PASS
			NV	0	61900.00	10.755864	20	PASS
			NV	10	61900.00	10.755864	20	PASS
			NV	20	61900.00	10.755864	20	PASS
			NV	30	61900.00	10.755864	20	PASS
			NV	40	60900.00	10.582103	20	PASS
			NV	50	60900.00	10.582103	20	PASS
		5795	NV	-20	59900.00	10.336497	20	PASS
			NV	-10	59900.00	10.336497	20	PASS
			NV	0	59900.00	10.336497	20	PASS
			NV	10	59900.00	10.336497	20	PASS
			NV	20	58900.00	10.163934	20	PASS
			NV	30	59900.00	10.336497	20	PASS
			NV	40	59900.00	10.336497	20	PASS
			NV	50	59900.00	10.336497	20	PASS

Note: 1. This report records the worst case of temperature change test observation time 0/2/5/10min .

2. Test Voltage-NV:DC 3.7V, Test Voltage-LV:DC 3.145V, Test Voltage-HV:DC 4.255V.

3. Test Temperature Range:-20℃~50℃, Temperature-NT: 23.8℃.

APPENDIX A. PHOTOGRAPH OF THE TEST CONNECTION DIAGRAM

Please refer to the attached document E202501107526-Test Photo.

APPENDIX B. PHOTOGRAPH OF THE EUT

Please refer to the attached document E202501107526-EUT photo.

----- End of Report -----