
FCC Test Report

Report No.: AGC14659230204FR02

FCC ID : 2A9205GV0-1B
APPLICATION PURPOSE : Original Equipment
PRODUCT DESIGNATION : Vibration Monitor
BRAND NAME : 5GV-W01, Inzwa VEVA III-W01
MODEL NAME : 5GV0-1B
APPLICANT : Global Sensing Solutions Limited
DATE OF ISSUE : Aug. 23, 2023
STANDARD(S) : FCC Part 15 Subpart C §15.247
REPORT VERSION : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd



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REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Aug. 23, 2023	Valid	Initial Release

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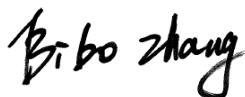
1. VERIFICATION OF CONFORMITY

Applicant	Global Sensing Solutions Limited
Address	Room 605 Bonham Commercial Centre, 44-46 Bonham Strand West, Sheung Wan, Hong Kong 999077, China
manufacturer	Global Sensing Solutions Limited
Address	Room 605 Bonham Commercial Centre, 44-46 Bonham Strand West, Sheung Wan, Hong Kong 999077, China
Factory	Global Sensing Solutions Limited
Address	Room 605 Bonham Commercial Centre, 44-46 Bonham Strand West, Sheung Wan, Hong Kong 999077, China
Product Designation	Vibration Monitor
Brand Name	5GV-W01, Inzwa VEVA III-W01
Test Model	5GV0-1B
Date of receipt of test item	Feb. 07, 2023
Date of test	Jul. 17, 2023~Aug. 08, 2023 and Aug. 23, 2023
Deviation	No any deviation from the test method
Condition of Test Sample	Normal
Test Result	Pass
Report Template	AGCRT-US-BGN/RF

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rules Part 15.247.

Prepared By



Bibo Zhang
(Project Engineer)

Aug. 23, 2023

Reviewed By



Calvin Liu
(Reviewer)

Aug. 23, 2023

Approved By



Max Zhang
Authorized Officer

Aug. 23, 2023

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2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

Equipment Type	WLAN 2.4G
Frequency Band	2400MHz ~ 2483.5MHz
Operation Frequency	2412MHz ~ 2462MHz
Output Power (Average)	IEEE 802.11b:16.43dBm; IEEE 802.11g:14.22dBm; IEEE 802.11n(HT20):14.19dBm
Output Power (Peak)	IEEE 802.11b:17.31dBm; IEEE 802.11g:16.62dBm; IEEE 802.11n(HT20):16.54dBm
Modulation	802.11b:(DQPSK, DBPSK,CCK)DSSS 802.11g/n:(64-QAM,16-QAM,QPSK, BPSK)OFDM
Data Rate	802.11b:1/2/5.5/11Mbps 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 300Mbps
Number of channels	11
Hardware Version	1.1
Software Version	5.0.34
Antenna Designation	SMA Plug antenna (Comply with requirements of the FCC part 15.203)
Antenna Gain	3.0dBi
Power Supply	DC 3.6V by battery or DC 5V by adapter

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2.2. TABLE OF CARRIER FREQUENCIES

For 2412-2462MHz:

11 channels are provided for 802.11b/g/n(HT20):

Channel	Frequency	Channel	Frequency	Channel	Frequency
01	2412 MHz	02	2417 MHz	03	2422 MHz
04	2427 MHz	05	2432 MHz	06	2437 MHz
07	2442 MHz	08	2447 MHz	09	2452 MHz
10	2457 MHz	11	2462 MHz		

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2.3. IEEE 802.11N MODULATION SCHEME

MCS Index	Nss	Modulation	R	NBPSC	NCBPS		NDBPS		Data rate(Mbps)	
									800nsGI	
					20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5
1	1	QPSK	1/2	2	104	216	52	108	13.0	27.0
2	1	QPSK	3/4	2	104	216	78	162	19.5	40.5
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0
4	1	16-QAM	3/4	4	208	432	156	324	39.0	81.0
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0
6	1	64-QAM	3/4	6	312	648	234	489	58.5	121.5
7	1	64-QAM	5/6	6	312	648	260	540	65.0	135.0

Symbol	Explanation
NSS	Number of spatial streams
R	Code rate
NBPSC	Number of coded bits per single carrier
NCBPS	Number of coded bits per symbol
NDBPS	Number of data bits per symbol
GI	Guard interval

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2.5. RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2A92O5GV0-1B** filing to comply with the FCC Part 15 requirements.

2.6. TEST METHODOLOGY

The tests were performed according to following standards:

No.	Identity	Document Title
1	FCC 47 CFR Part 2	Frequency allocations and radio treaty matters; general rules and regulations
2	FCC 47 CFR Part 15	Radio Frequency Devices
3	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices
4	KDB 662911	KDB 662911 D01 Multiple Transmitter Output v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band (e.g., MIMO, Smart Antenna, etc)

2.7. SPECIAL ACCESSORIES

Refer to section 5.2.

2.8. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

2.9. ANTENNA REQUIREMENT

The intentional radiator is designed with an external detachable antenna, using a non-standard reverse SMA port RF signal to ensure that it is uniquely fixed on the module PCB to ensure that the device cannot use any antenna other than the antenna provided by the responsible party. For more information on the antenna, see APPENDIX II: PHOTOS OF THE EUT.

2.10. DUTY CYCLE

2.4GHz WLAN (DTS) operation is possible in 20MHz, and 40MHz channel bandwidths. The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz, and detector = Peak. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration. and the number of sweep points across I was greater than 100. The duty cycles are as follows.

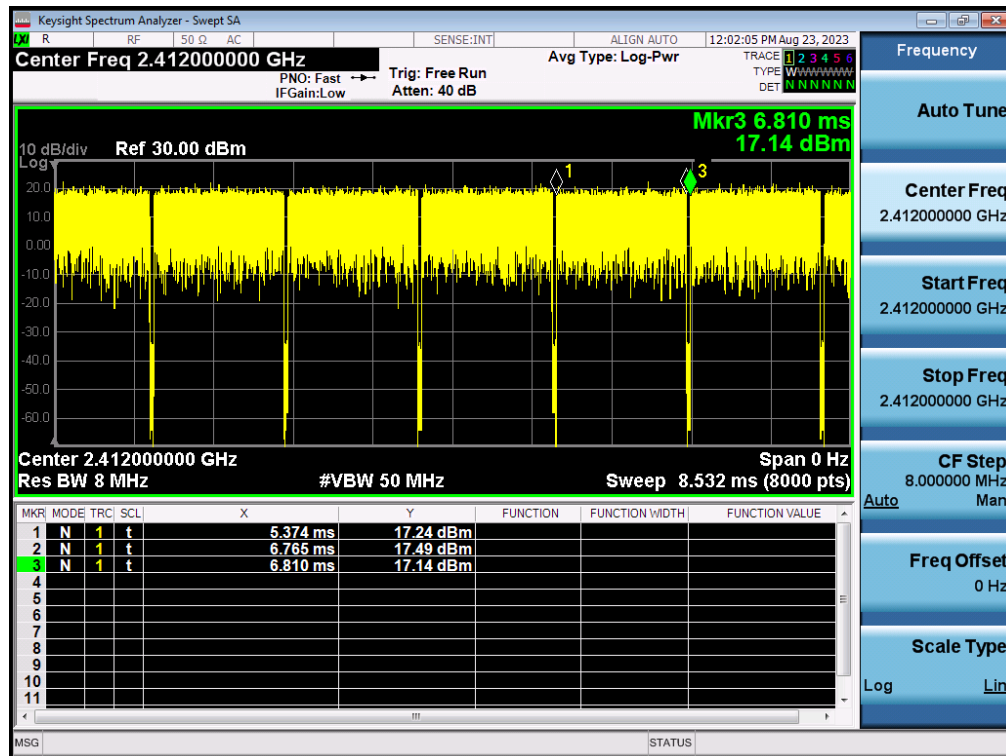
Operating mode.	Data rates (Mbps)	Duty Cycle (%)	Duty Cycle Factor (dB)	1/T Minimum VBW(kHz)	Average Factor (dB)
IEEE 802.11b	1	97	0.13	0.72	-0.26
IEEE 802.11g	6	97	0.32	0.48	-0.63
IEEE 802.11n-HT20	MCS0	97	0.36	0.52	-0.72

Remark:

1. Duty Cycle factor = $10 * \log (1/ \text{Duty cycle})$
2. Average factor = $20 \log_{10} \text{Duty Cycle}$

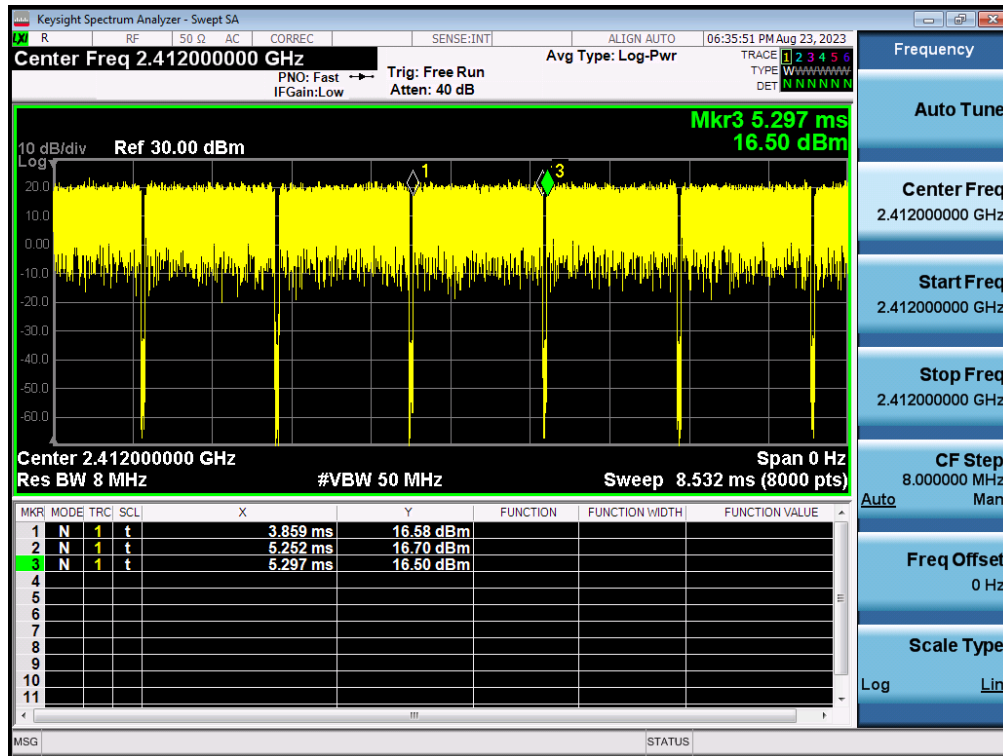
The duty cycle of each frequency band mode reflects the determination requirements of the low channel measurement value.

IEEE 802.11b

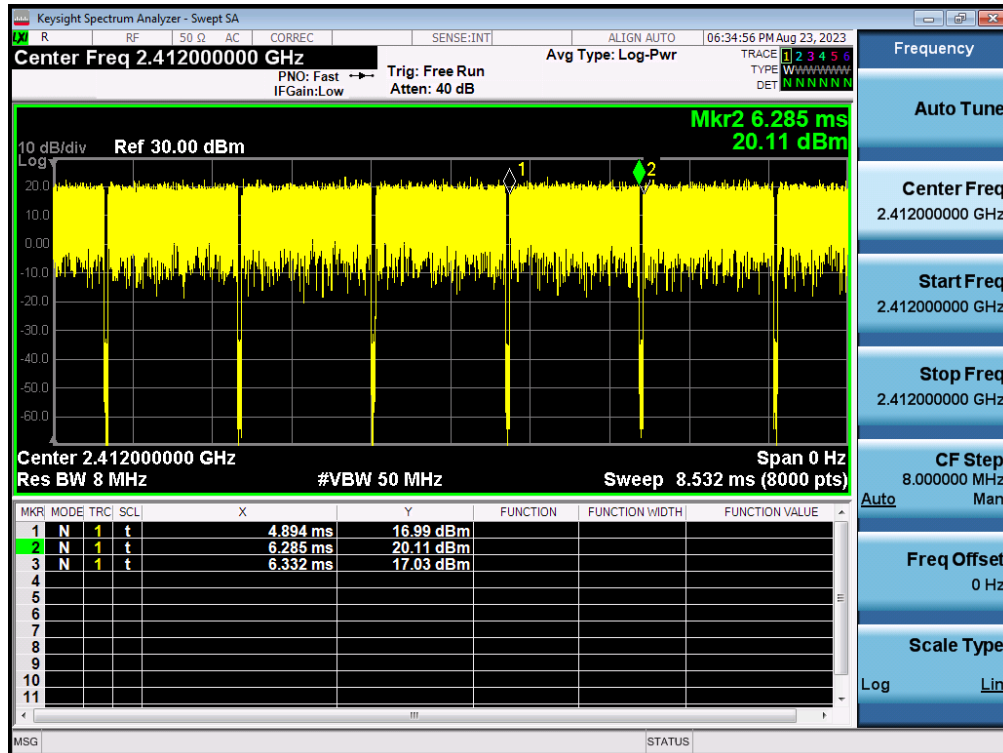


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IEEE 802.11g



IEEE 802.11n-HT20



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3. MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, 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%.

Item	Measurement Uncertainty
Uncertainty of Conducted Emission for AC Port	$U_c = \pm 3.1 \text{ dB}$
Uncertainty of Radiated Emission below 1GHz	$U_c = \pm 4.0 \text{ dB}$
Uncertainty of Radiated Emission above 1GHz	$U_c = \pm 4.8 \text{ dB}$
Uncertainty of total RF power, conducted	$U_c = \pm 0.8 \text{ dB}$
Uncertainty of RF power density, conducted	$U_c = \pm 2.6 \text{ dB}$
Uncertainty of spurious emissions, conducted	$U_c = \pm 2 \%$
Uncertainty of Occupied Channel Bandwidth	$U_c = \pm 2 \%$

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4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION
1	Low channel transmitting (TX)
2	Middle channel transmitting (TX)
3	High channel transmitting (TX)

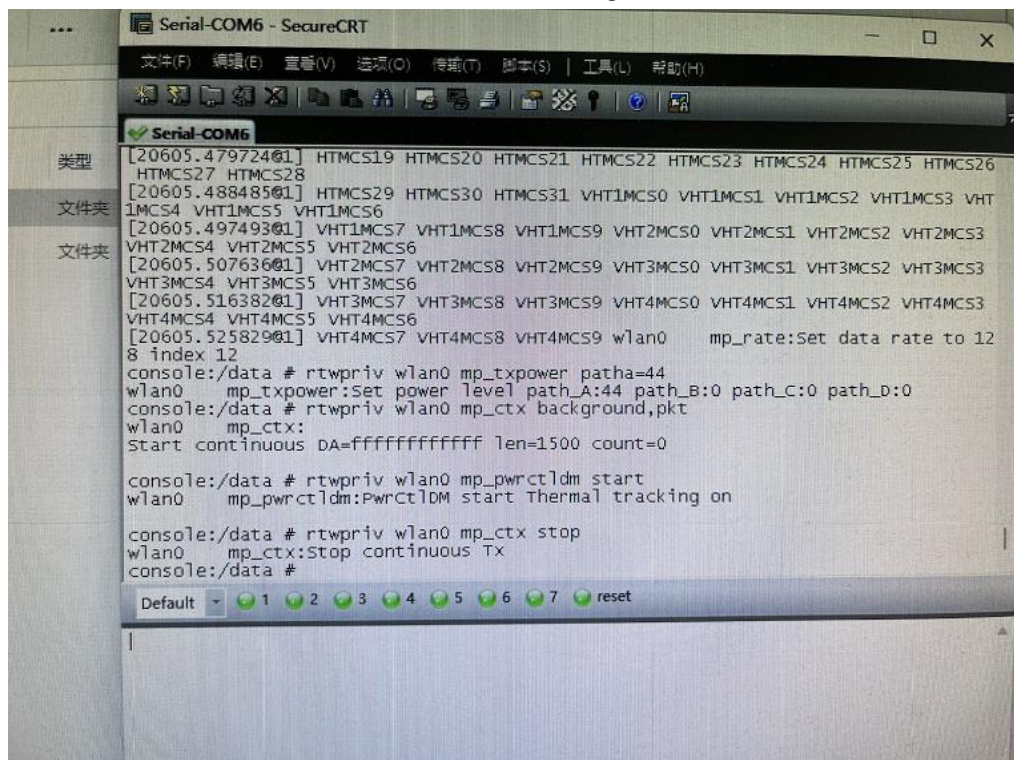
Note:

- 1) Transmit by 802.11b with Data rate (1/2/5.5/11)
- 2) Transmit by 802.11g with Data rate (6/9/12/18/24/36/48/54)
- 3) Transmit by 802.11n (20MHz) with Data rate (6.5/13/19.5/26/39/52/58.5/65)
- 4) The test channel for 20MHz bandwidth system is channel 1, 6 and 11.

Note:

1. The EUT has been set to operate continuously on the lowest, middle and highest operation frequency Individually, and the EUT is operating at its maximum duty cycle>or equal 98%
2. All modes under which configure applicable have been tested and the worst mode test data recording in the test report, if no other mode data.

Software Setting



```

Serial-COM6 - SecureCRT
文件(F) 编辑(E) 查看(V) 选项(O) 传输(T) 脚本(S) | 工具(L) 帮助(H)

Serial-COM6
类型 [20605.47972401] HTMCS19 HTMCS20 HTMCS21 HTMCS22 HTMCS23 HTMCS24 HTMCS25 HTMCS26
HTMCS27 HTMCS28
[20605.48848501] HTMCS29 HTMCS30 HTMCS31 VHT1MCS0 VHT1MCS1 VHT1MCS2 VHT1MCS3 VHT
1MCS4 VHT1MCS5 VHT1MCS6
[20605.49749301] VHT1MCS7 VHT1MCS8 VHT1MCS9 VHT2MCS0 VHT2MCS1 VHT2MCS2 VHT2MCS3
VHT2MCS4 VHT2MCS5 VHT2MCS6
[20605.50763601] VHT2MCS7 VHT2MCS8 VHT2MCS9 VHT3MCS0 VHT3MCS1 VHT3MCS2 VHT3MCS3
VHT3MCS4 VHT3MCS5 VHT3MCS6
[20605.51638201] VHT3MCS7 VHT3MCS8 VHT3MCS9 VHT4MCS0 VHT4MCS1 VHT4MCS2 VHT4MCS3
VHT4MCS4 VHT4MCS5 VHT4MCS6
[20605.52582901] VHT4MCS7 VHT4MCS8 VHT4MCS9 wlan0 mp_rate:Set data rate to 12
8 index 12
console:/data # rtwpriv wlan0 mp_txpower patha=44
wlan0 mp_txpower:Set power level path_A:44 path_B:0 path_C:0 path_D:0
console:/data # rtwpriv wlan0 mp_ctx background,pkt
wlan0 mp_ctx:
Start continuous DA=ffffffffffff len=1500 count=0

console:/data # rtwpriv wlan0 mp_pwrctrl start
wlan0 mp_pwrctrl:PwrCtrl start Thermal tracking on

console:/data # rtwpriv wlan0 mp_ctx stop
wlan0 mp_ctx:Stop continuous Tx
console:/data #

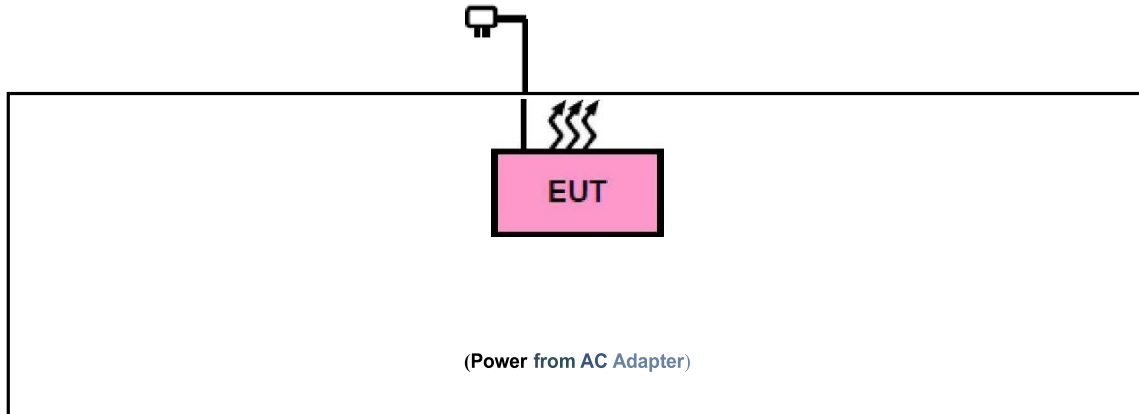
Default 1 2 3 4 5 6 7 reset

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5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF EUT SYSTEM



5.2. EQUIPMENT USED IN EUT SYSTEM

The Following Peripheral Devices And Interface Cables Were Connected During The Measurement:

☒ Test Accessories Come From The Laboratory

Item	Equipment	Model No.	ID or Specification	Remark
1	Battery	ER34615M	DC 3.6V	Accessories
2	Adapter	K-T10E0502000E	Input: AC 100-240V 50/60Hz, 0.35A Output: DC 5V 2A	Accessories

☒ Test Accessories Come From The Manufacturer

Item	Equipment	Model No.	Identifier	Note
1	Vibration Monitor	5GV0-1A	FCC ID: 2A92O5GV0-1B	EUT
2	Signal line	N/A	N/A	Accessories

5.3. SUMMARY OF TEST RESULTS

Item	FCC Rules	Description Of Test	Result
1	§15.203&15.247(b)(4)	Antenna Equipment	Pass
2	§15.247 (b)(1)	RF Output Power	Pass
3	§15.247 (a)(1)	6 dB Bandwidth	Pass
4	§15.247 (e)	Power Spectral Density	Pass
4	§15.247 (d)	Conducted Spurious Emission	Pass
5	§15.209	Radiated Emission& Band Edge	Pass
6	§15.207	AC Power Line Conducted Emission	Pass

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6. TEST FACILITY

Test Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Designation Number	CN1259
FCC Test Firm Registration Number	975832
A2LA Cert. No.	5054.02
Description	Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by A2LA

TEST EQUIPMENT OF CONDUCTED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESPI	101206	Jun. 03, 2023	Jun. 02, 2024
LISN	R&S	ESH2-Z5	100086	Jun. 03, 2023	Jun. 02, 2024
Test software	R&S	ES-K1 (Ver.V1.71)	N/A	N/A	N/A

TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	Feb. 18, 2023	Feb. 17, 2024
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Aug. 04, 2022	Aug. 03, 2023
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Aug. 02, 2023	Aug. 01, 2024
2.4GHz Filter	EM Electronics	2400-2500MHz	N/A	N/A	N/A
USB Wideband Power Sensor	Agilent	U2021XA	MY54110007	Mar. 03, 2023	Mar. 02, 2024
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Oct. 31, 2021	Oct. 30, 2023
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	Mar. 12, 2022	Mar. 11, 2024
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	Mar. 03, 2023	Mar. 02, 2024
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	N/A	N/A
ANTENNA	SCHWARZBECK	VULB9168	494	Jan. 05, 2023	Jan. 04, 2025
Test software	FARA	EZ-EMC (Ver.AGC-CON03 A1)	N/A	N/A	N/A

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7. RF OUTPUT POWER MEASUREMENT

7.1 MEASUREMENT LIMITS

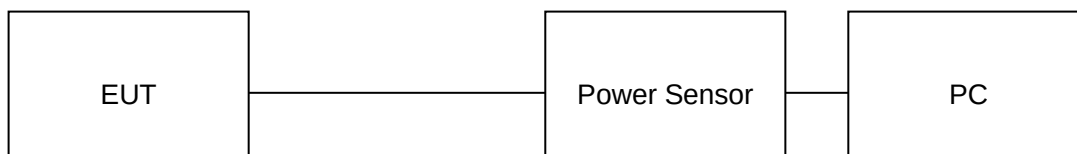
For DTSSs employing digital modulation techniques operating in the bands 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1 W.

7.2 MEASUREMENT PROCEDURE

1. Connect EUT RF output port to power sensor through.
2. Connect the power sensor to the PC.
3. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
4. Set the gated average detector for average power measurement and peak detector for peak power measurement.
5. Record the maximum power from the software.

Note : The EUT was tested according to ANSI C63.10 (2013) for compliance to FCC 47CFR 15.247 requirements.

7.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)



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7.4 MEASUREMENT RESULT

Test Data of Conducted Output Power					
Test Mode	Test Channel (MHz)	Average Power (dBm)	Peak Power (dBm)	Limits (dBm)	Pass or Fail
802.11b	2412	16.36	17.31	≤30	Pass
	2437	16.43	17.27	≤30	Pass
	2462	15.97	17.10	≤30	Pass
802.11g	2412	13.42	16.62	≤30	Pass
	2437	14.11	16.46	≤30	Pass
	2462	14.22	16.58	≤30	Pass
802.11n20	2412	14.12	16.49	≤30	Pass
	2437	14.19	16.54	≤30	Pass
	2462	13.92	16.27	≤30	Pass

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8. 6DB BANDWIDTH MEASUREMENT

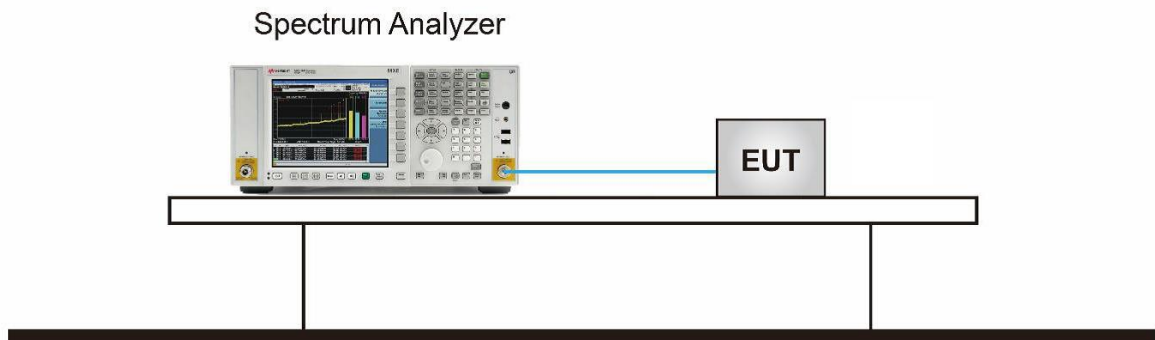
8.1 MEASUREMENT LIMITS

The minimum 6 dB bandwidth shall be 500 kHz.

8.2 MEASUREMENT PROCEDURE

- 1) The testing follows the ANSI C63.10 Section 6.9.3 (OBW) and 11.8.1 (6dB BW).
- 2) The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
- 3) Set to the maximum power setting and enable the EUT transmit continuously.
- 4) For 6dB Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement.
- 5) For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1-5% of the emission bandwidth and set the Video bandwidth (VBW) $\geq 3 * \text{RBW}$.
- 6) Detector = peak
- 7) Trace mode = max hold.
- 8) Sweep = auto couple.
- 9) Allow the trace to stabilize.
- 10) Measure and record the results in the test report.

8.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)



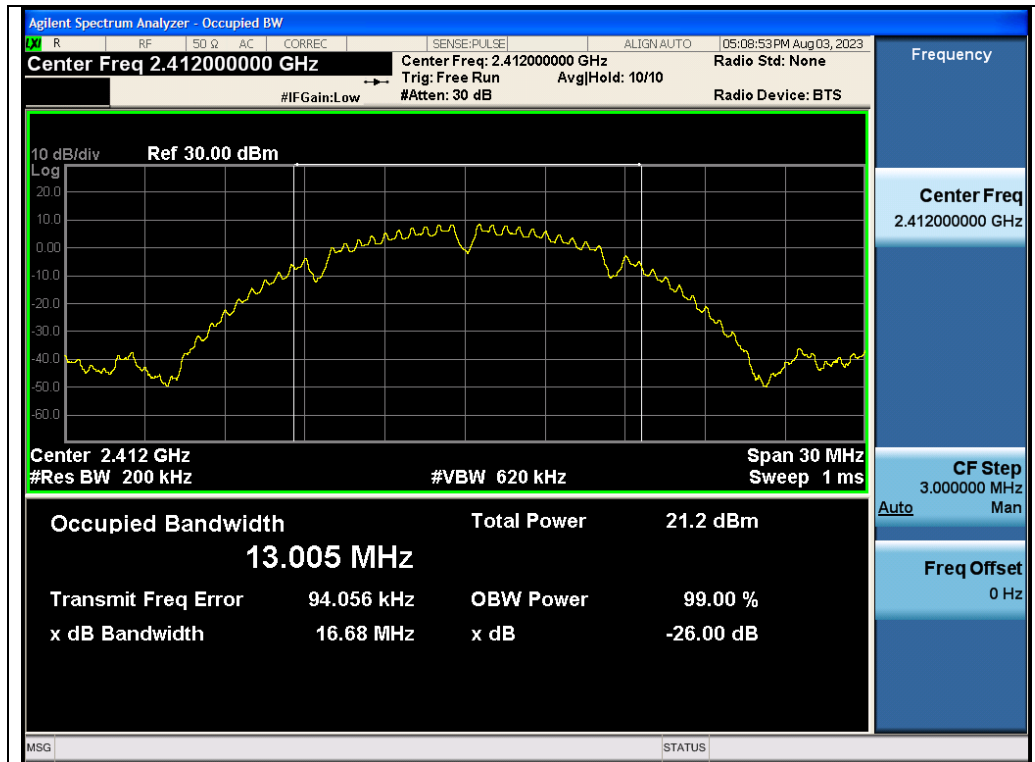
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8.4 MEASUREMENT RESULTS

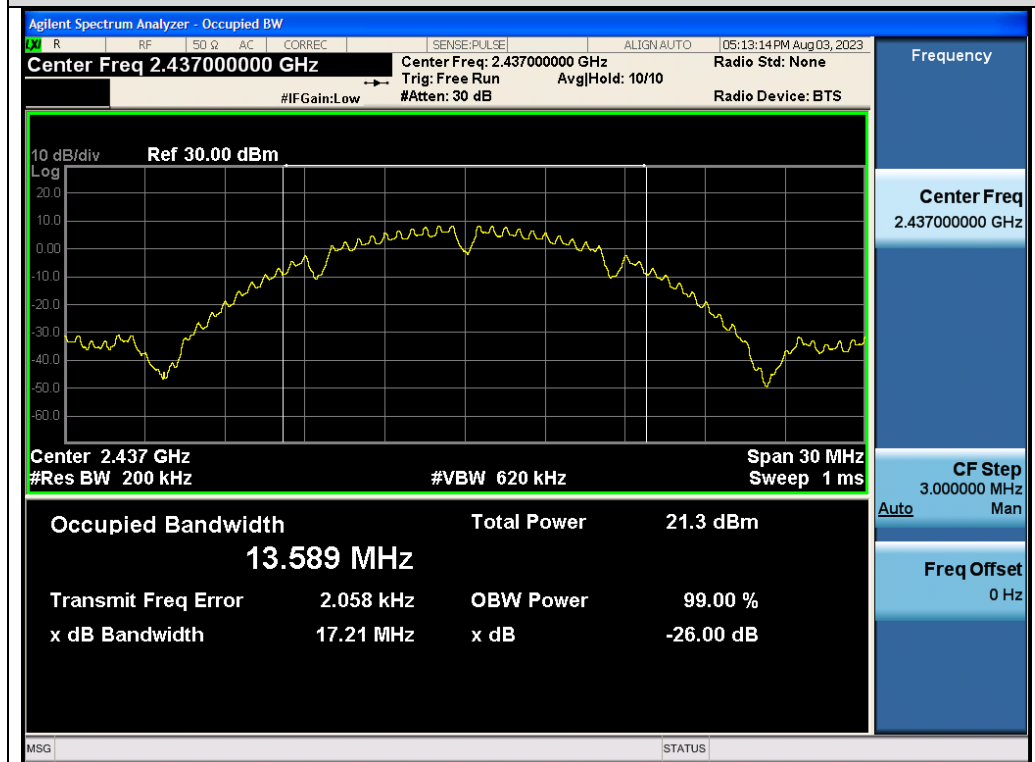
Test Data of Occupied Bandwidth and DTS Bandwidth-ANT 1					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	-6dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail
802.11b	2412	13.005	8.541	≥0.5	Pass
	2437	13.589	8.111	≥0.5	Pass
	2462	12.955	8.081	≥0.5	Pass
802.11g	2412	16.398	15.111	≥0.5	Pass
	2437	16.557	15.345	≥0.5	Pass
	2462	16.415	15.088	≥0.5	Pass
802.11n20	2412	17.482	15.105	≥0.5	Pass
	2437	17.610	16.274	≥0.5	Pass
	2462	17.481	15.069	≥0.5	Pass

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Test Graphs of Occupied Bandwidth

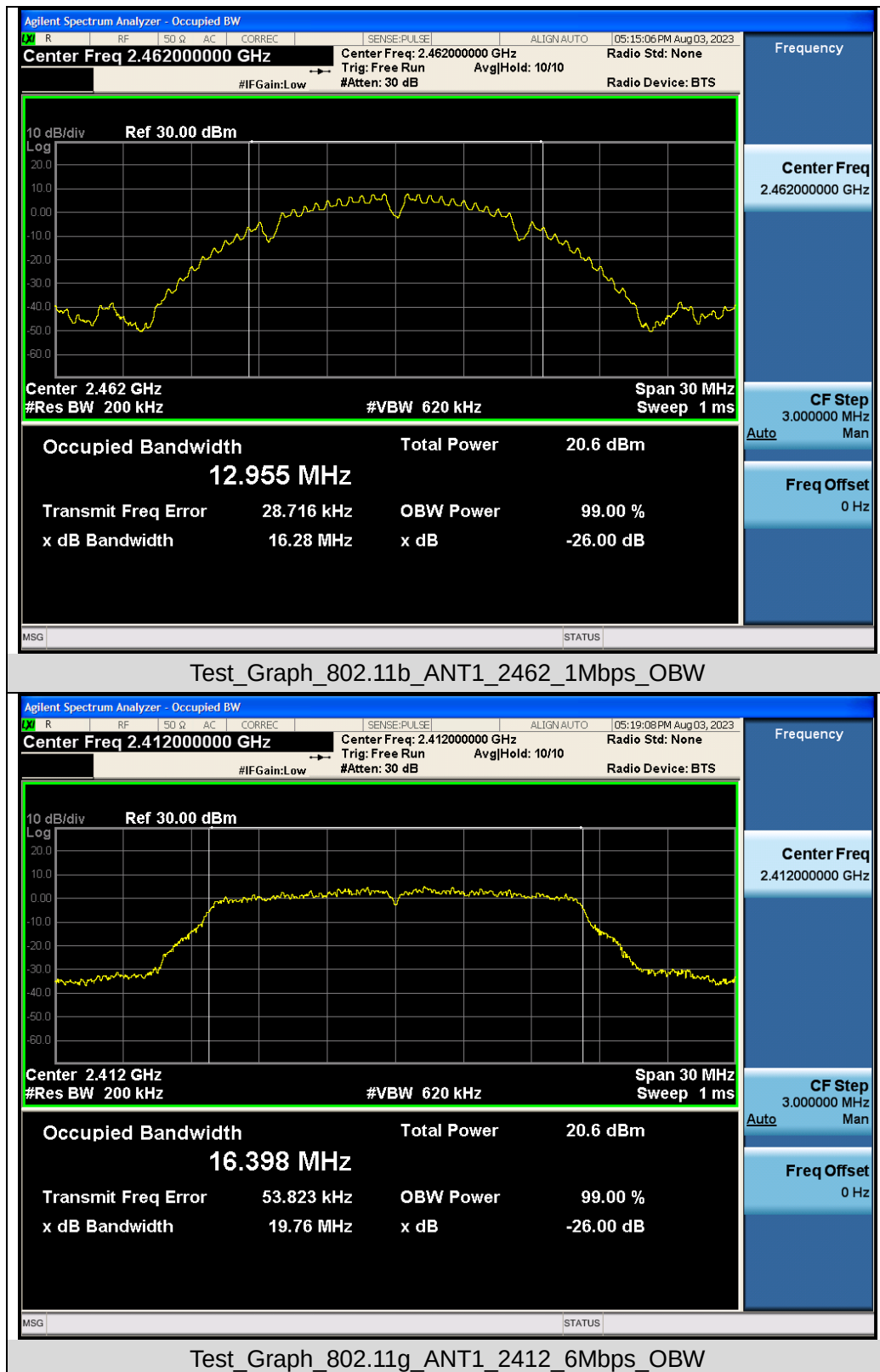


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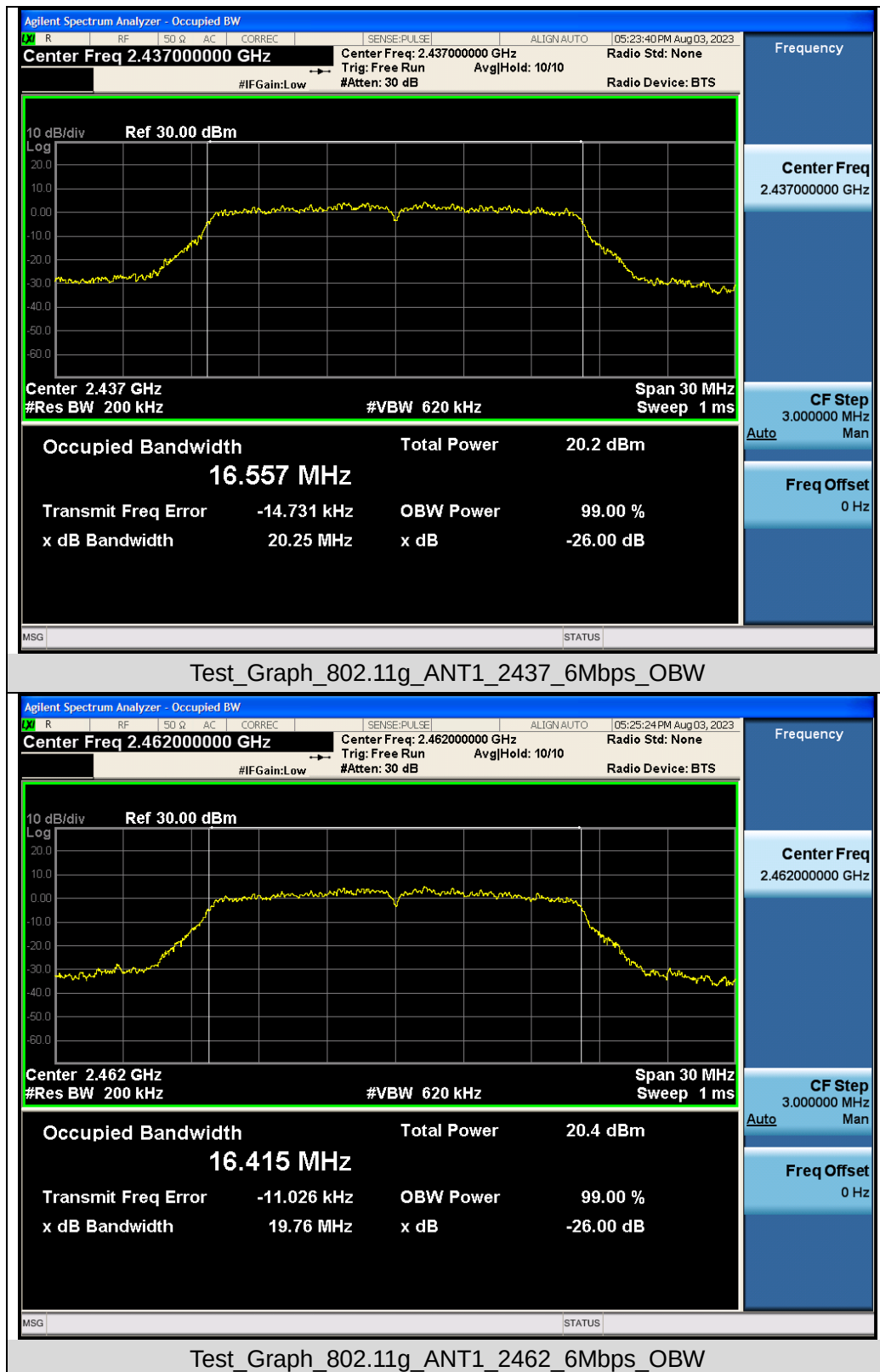


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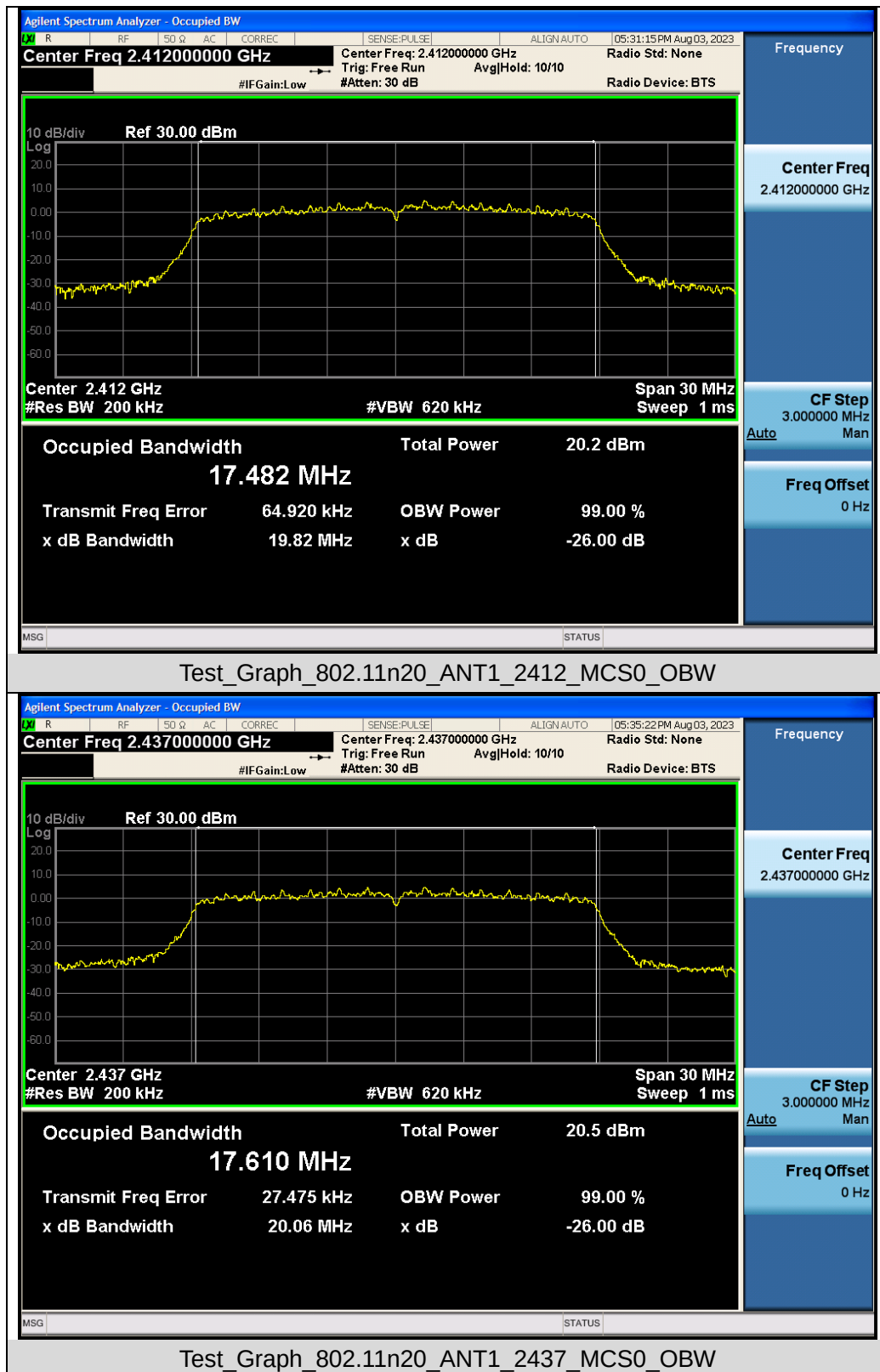
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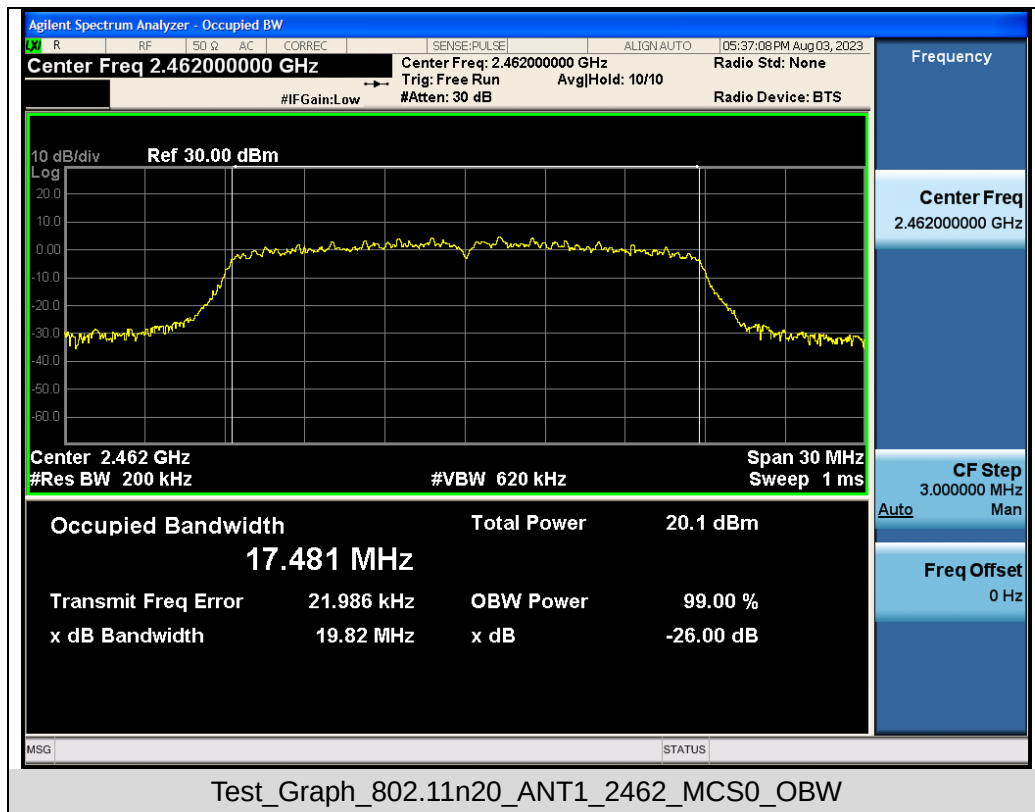
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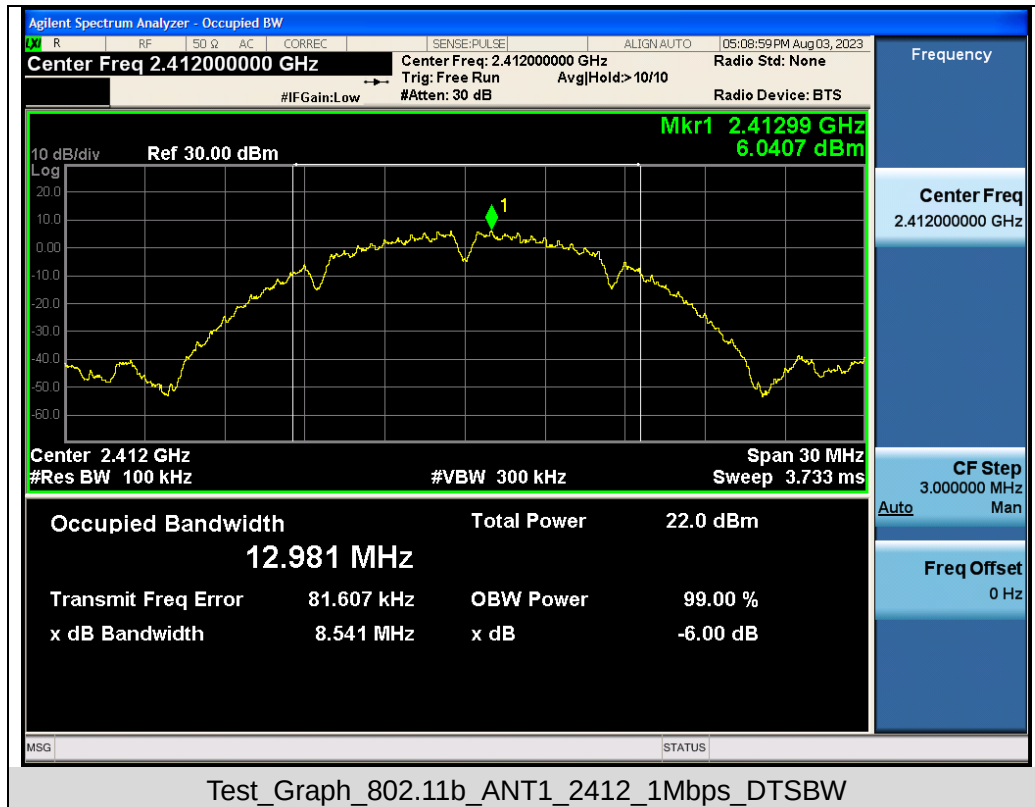
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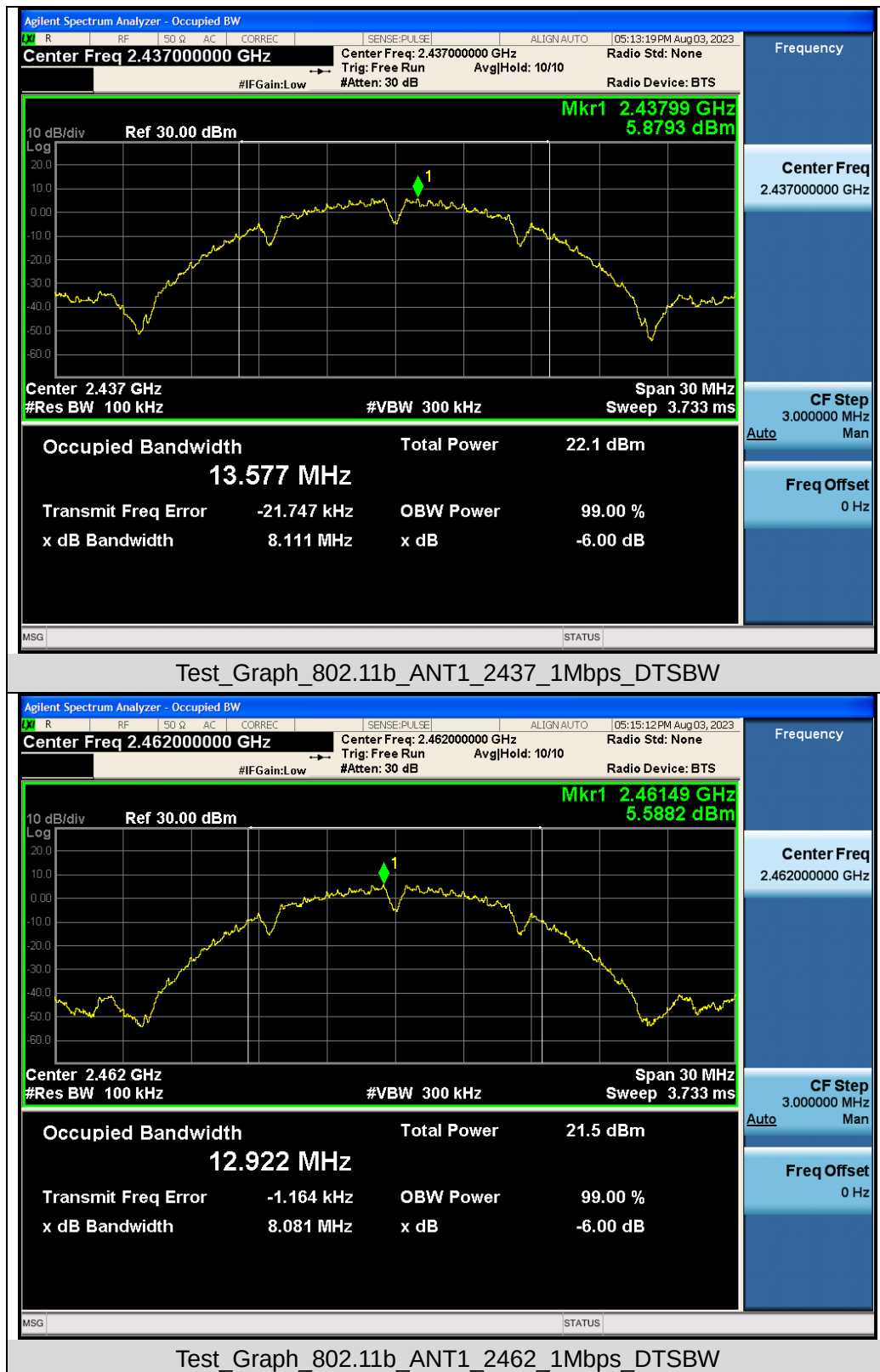
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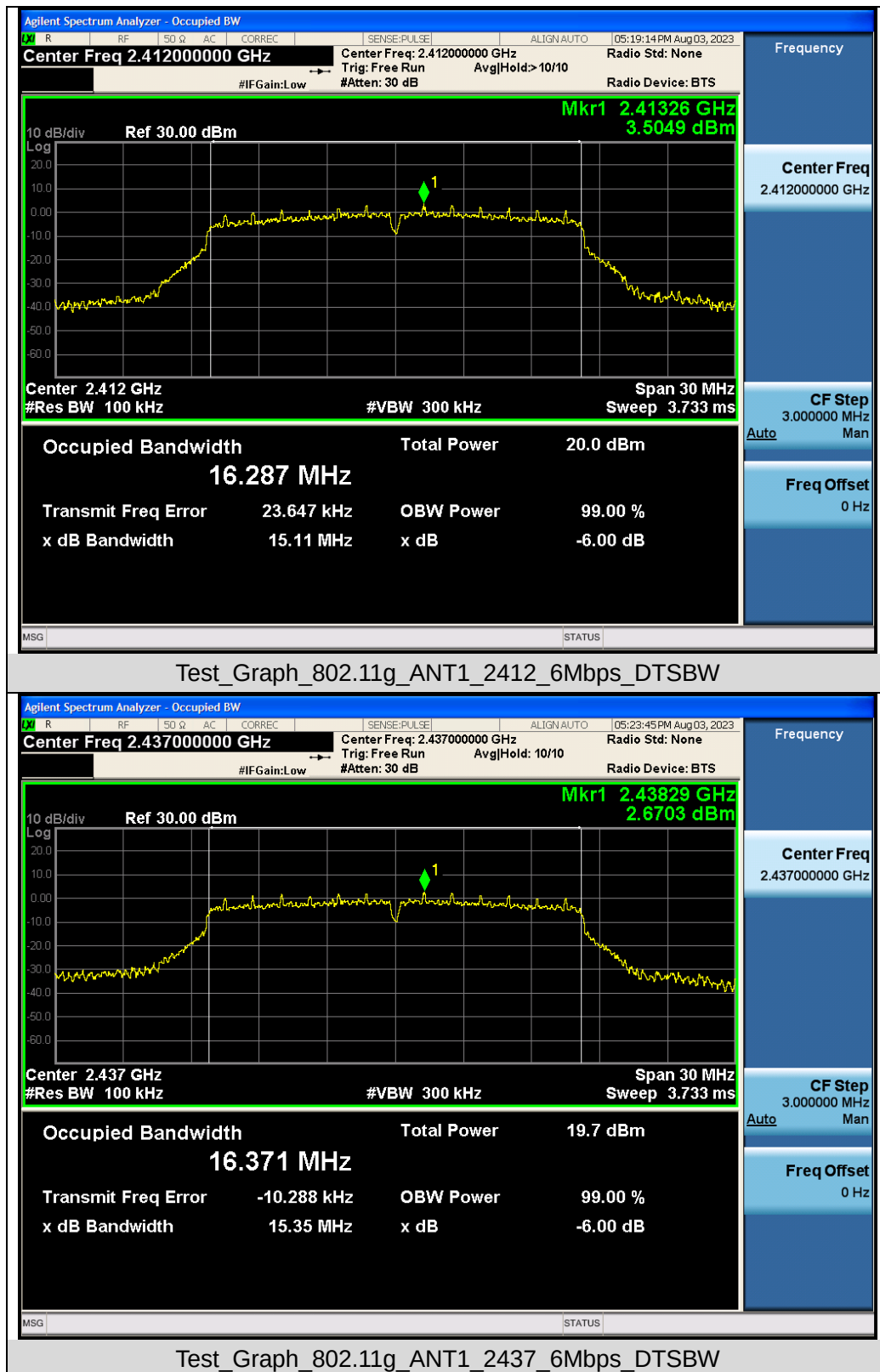
Test Graphs of DTS Bandwidth



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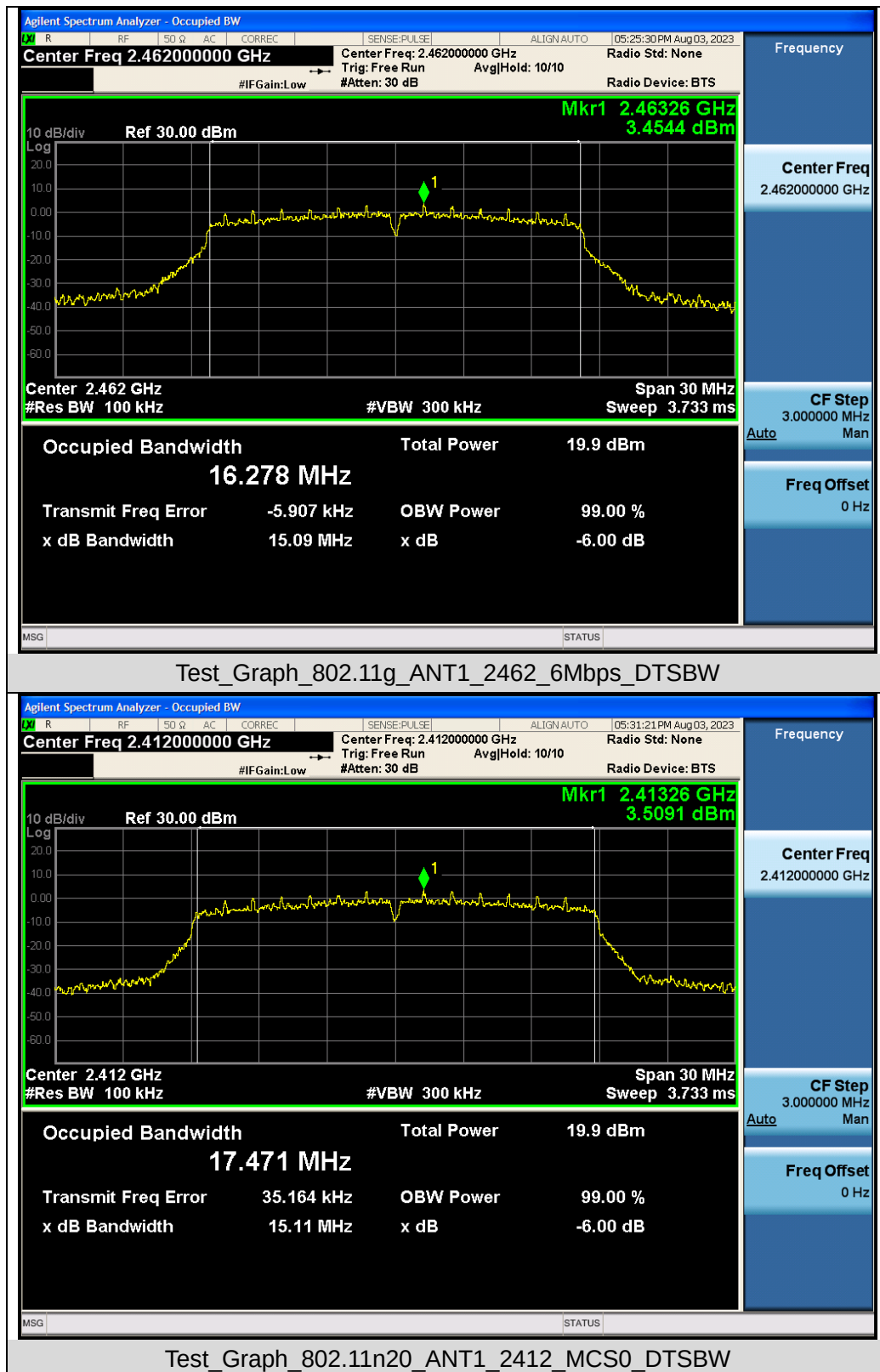


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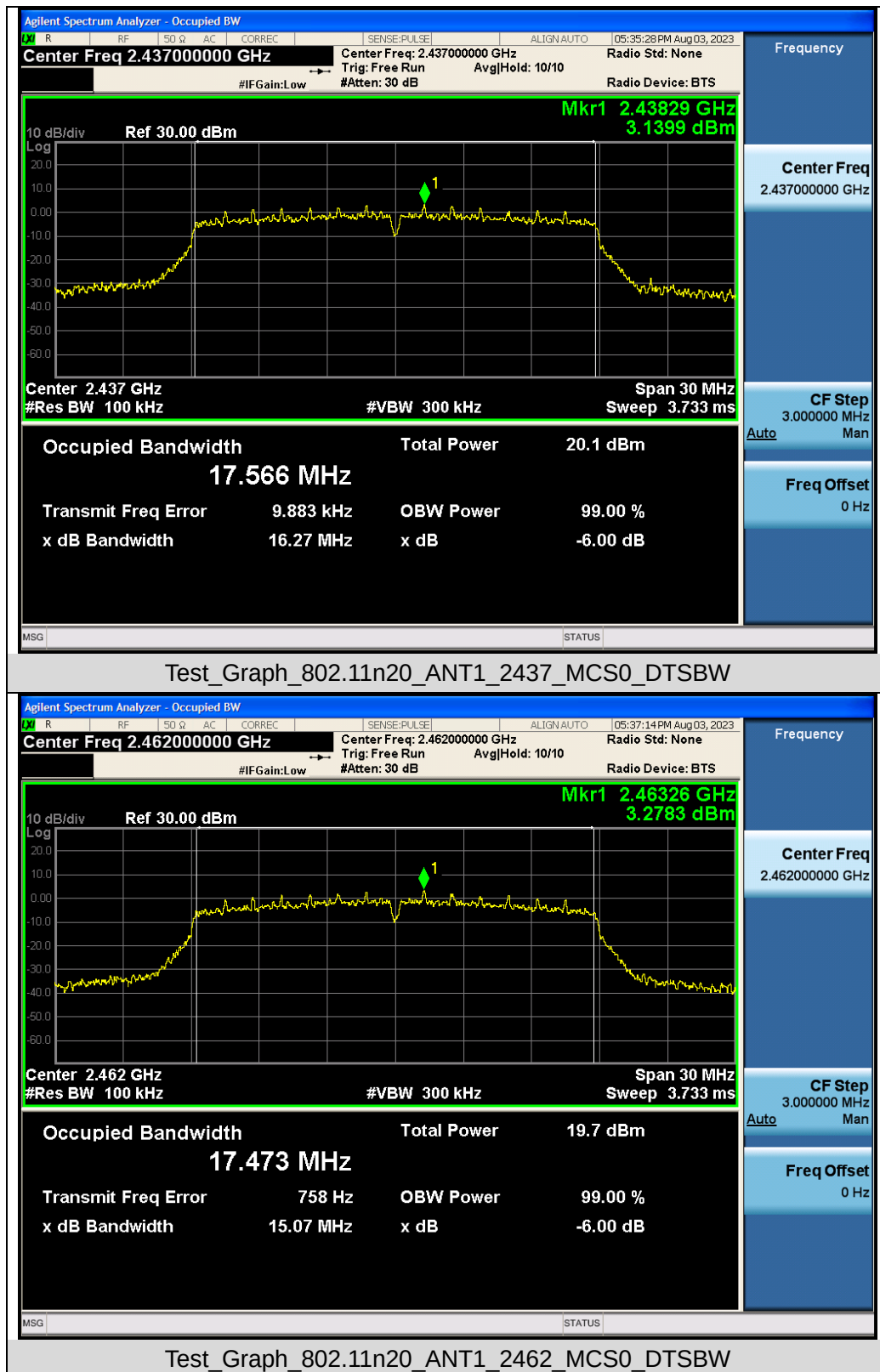


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9. CONDUCTED SPURIOUS EMISSION

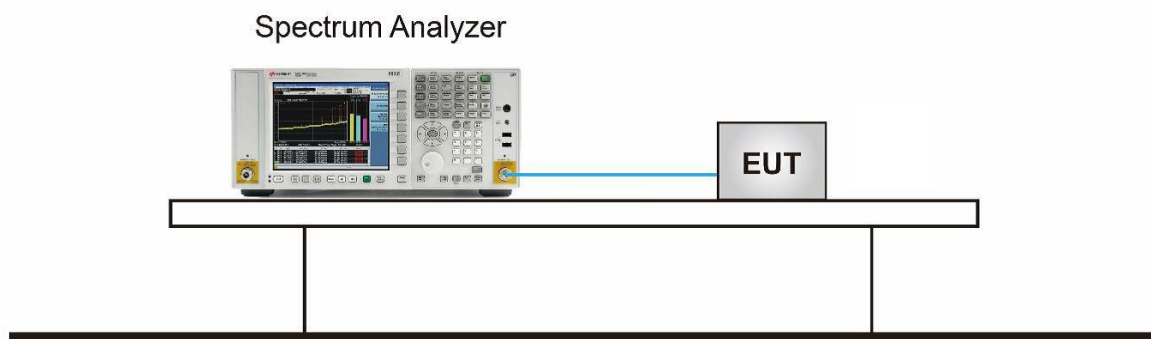
9.1 MEASUREMENT LIMIT

Limits and Measurement Result		
Applicable Limits	Measurement Result	
	Test Data	Criteria
In any 100 kHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in 100kHz bandwidth within the band that contains the highest level of the desired power. In addition, radiation emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a)	At least -20dBc than the limit Specified on the Bottom Channel	PASS
	At least -20dBc than the limit Specified on the Top Channel	PASS

9.2 MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through.
2. Set the EUT Work on the top, the Middle and the bottom operation frequency individually.
3. Set the Span = wide enough to capture the peak level of the in-band emission and all spurious emissions from the lowest frequency generated in the EUT up through the 10th harmonic.
4. RBW = 100 kHz; VBW= 300 kHz; Sweep = auto; Detector function = peak.(Test frequency below 1GHz)
5. RBW = 1 MHz; VBW= 3 MHz; Sweep = auto; Detector function = peak.(Test frequency Above 1GHz)
6. Set SPA Trace 1 Max hold, then View.
7. Mark the maximum useless stray point and compare it with the limit value to record the result.

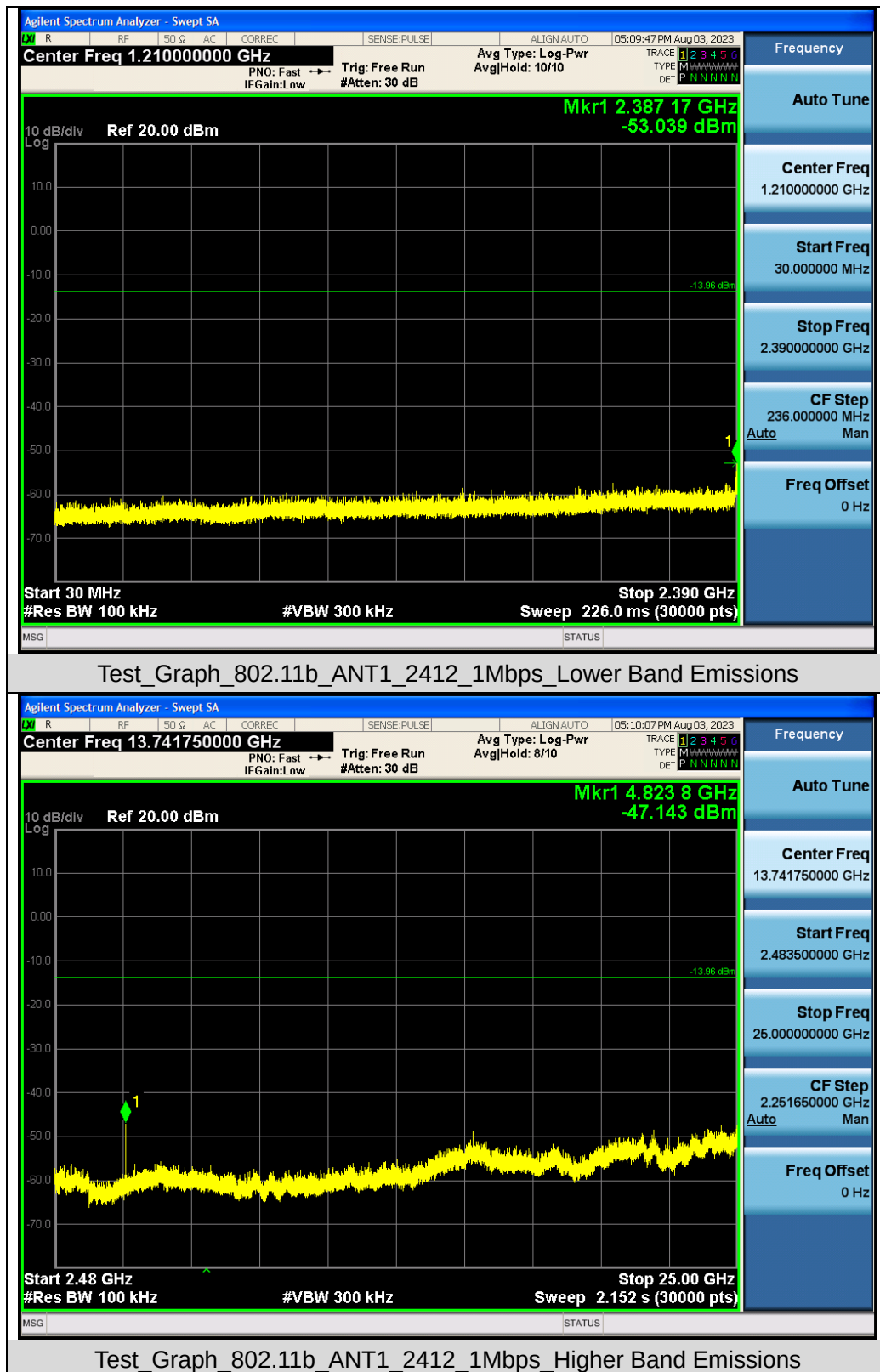
9.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)



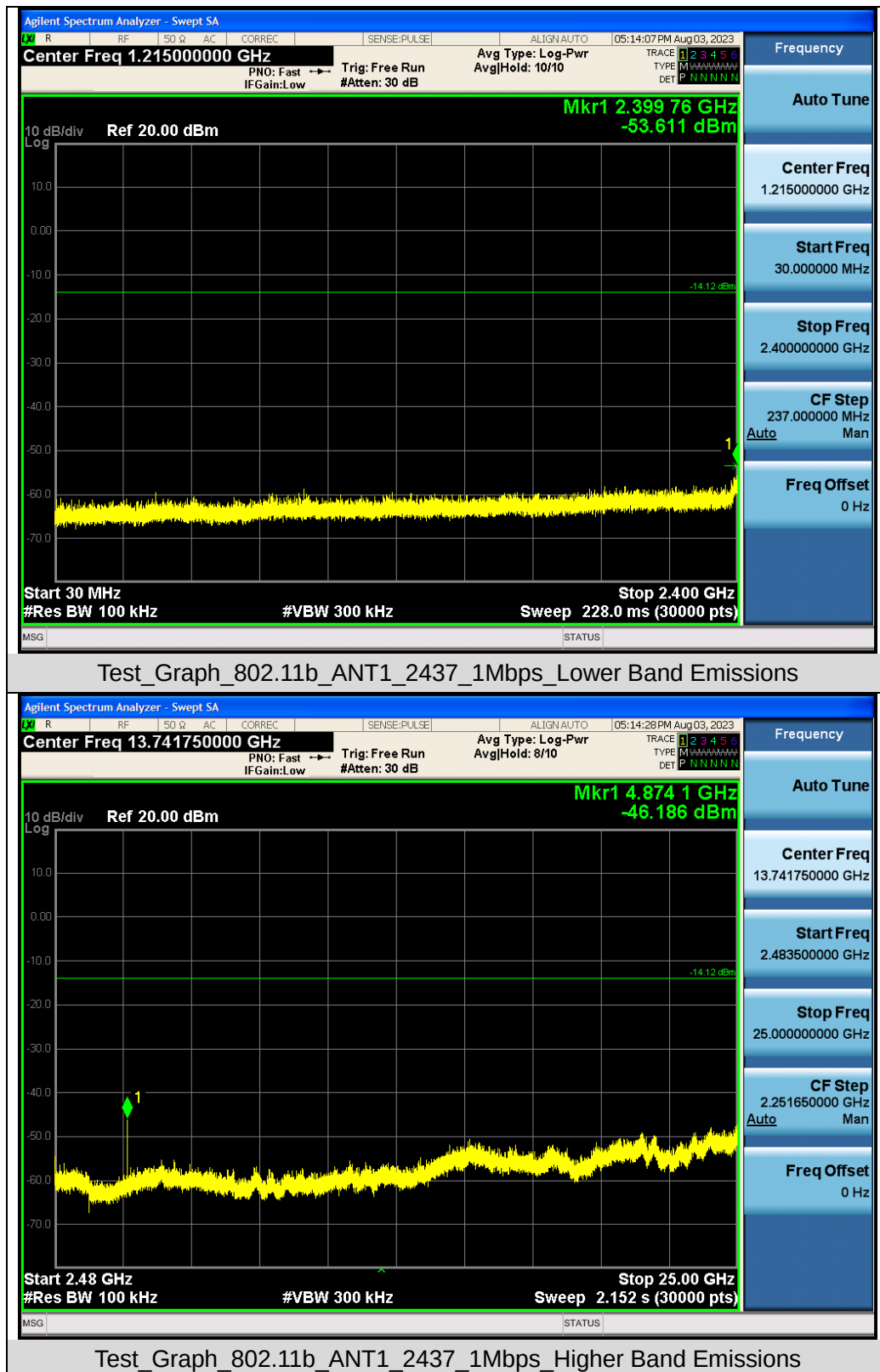
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9.4 MEASUREMENT RESULTS

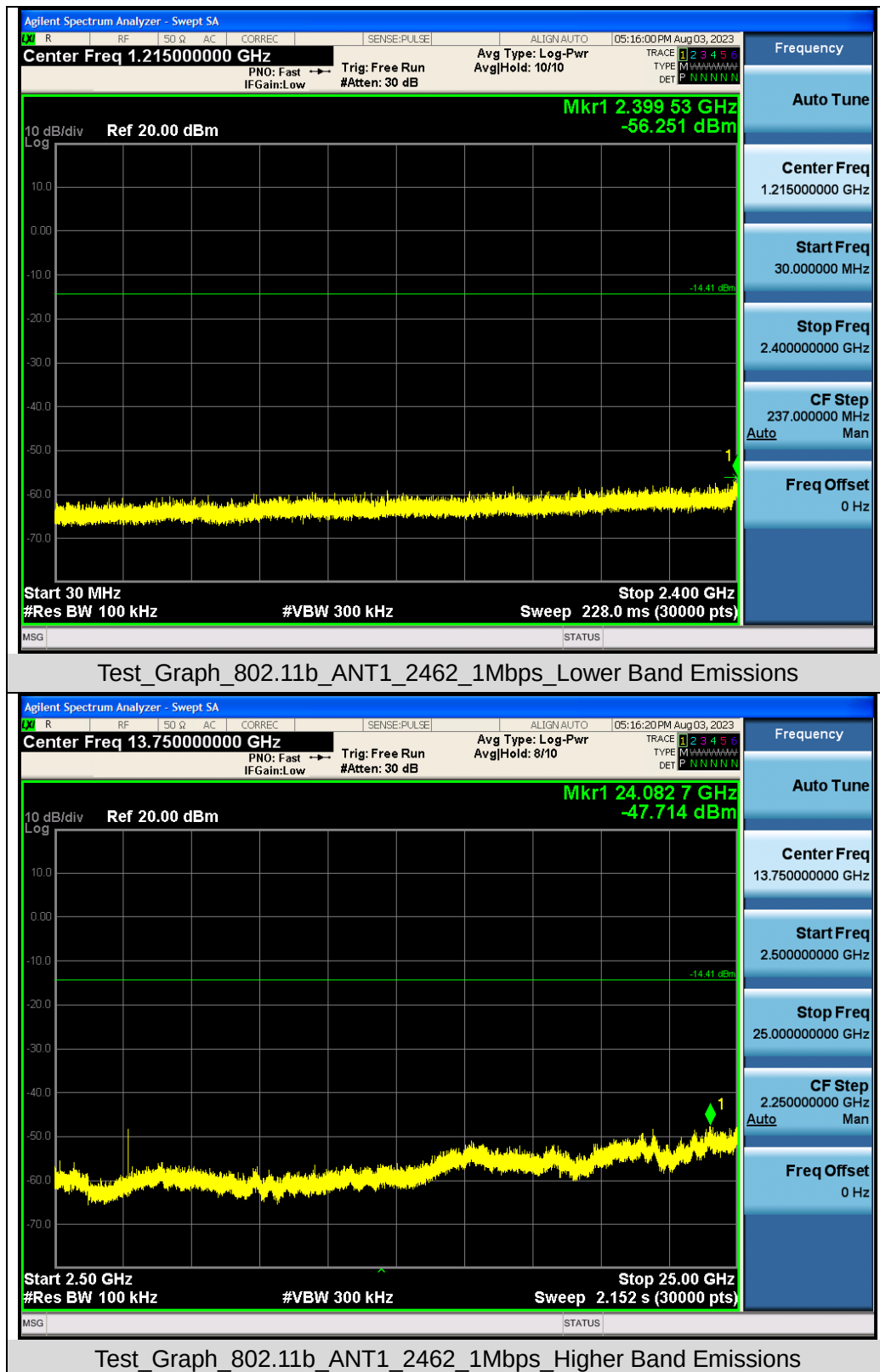
Test Graphs of Spurious Emissions in Non-Restricted Frequency Bands



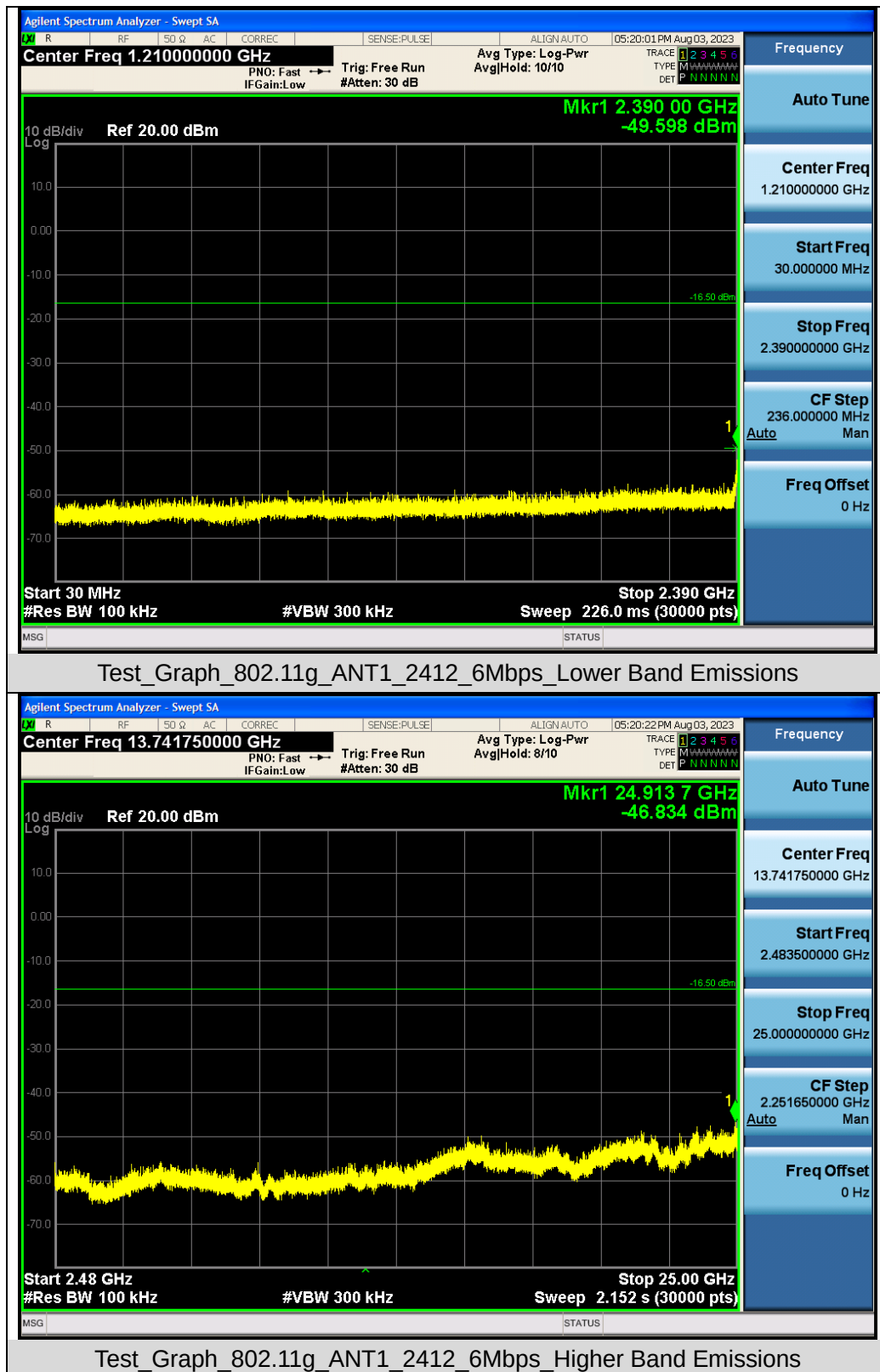
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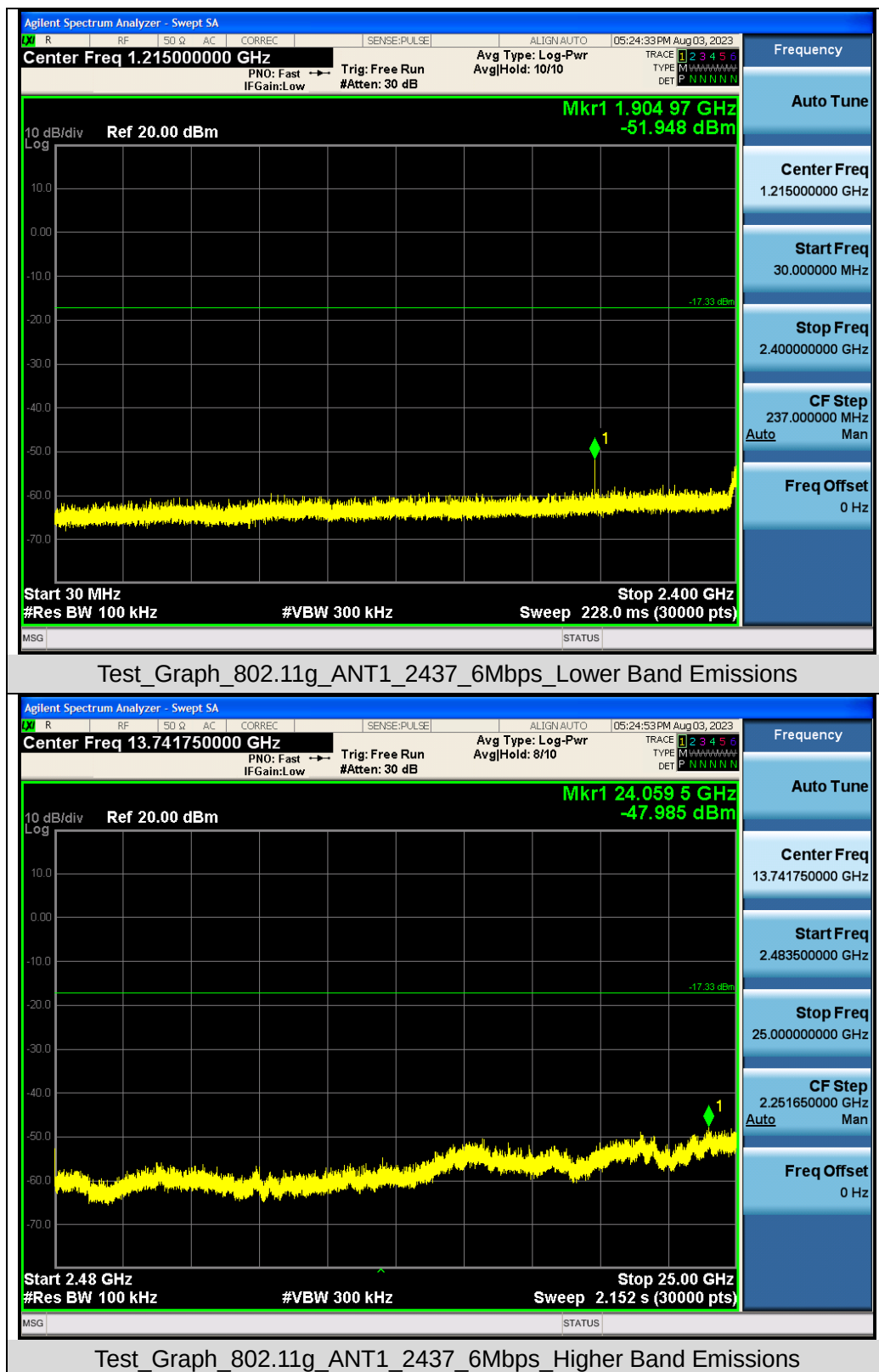
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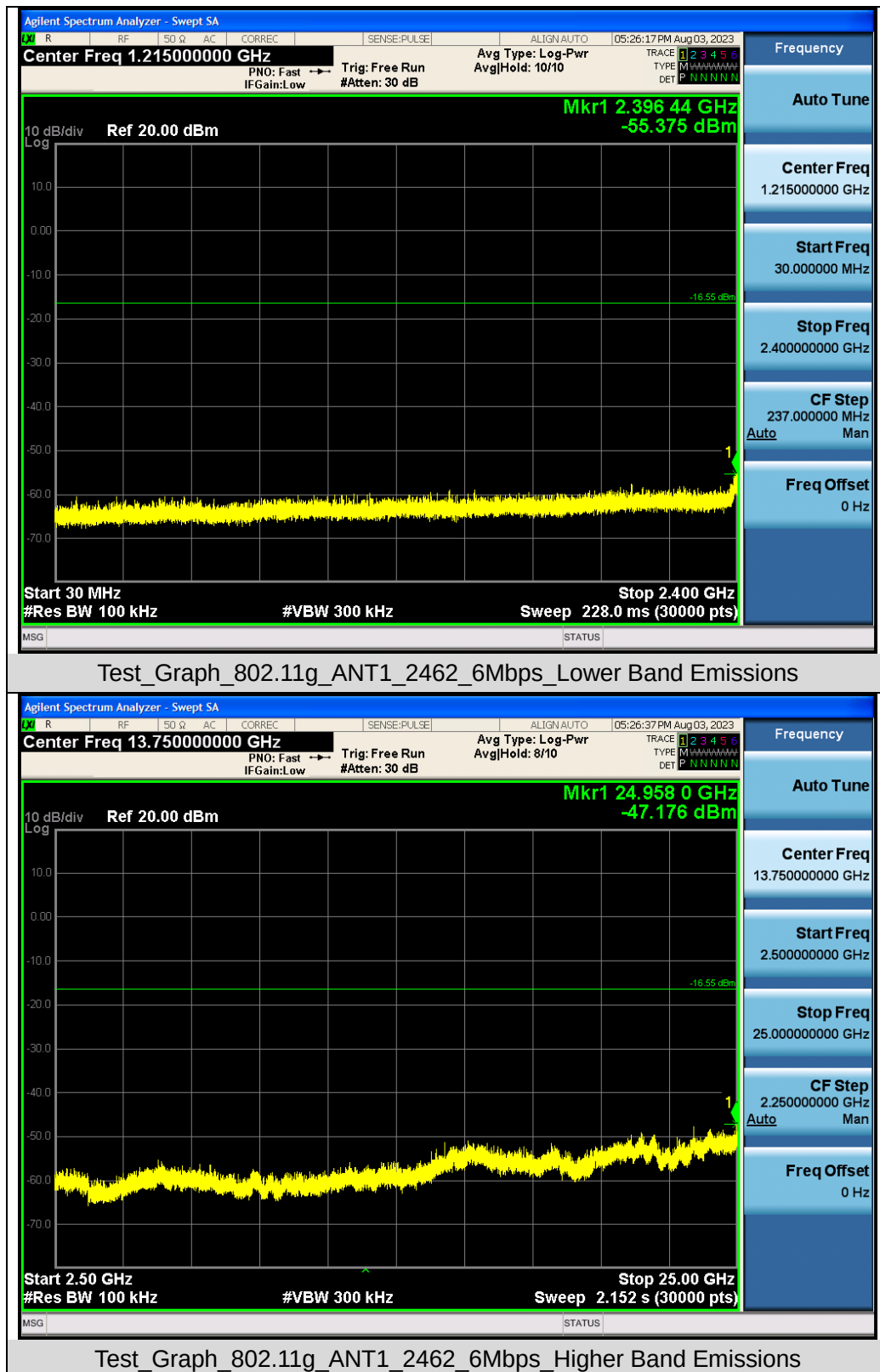
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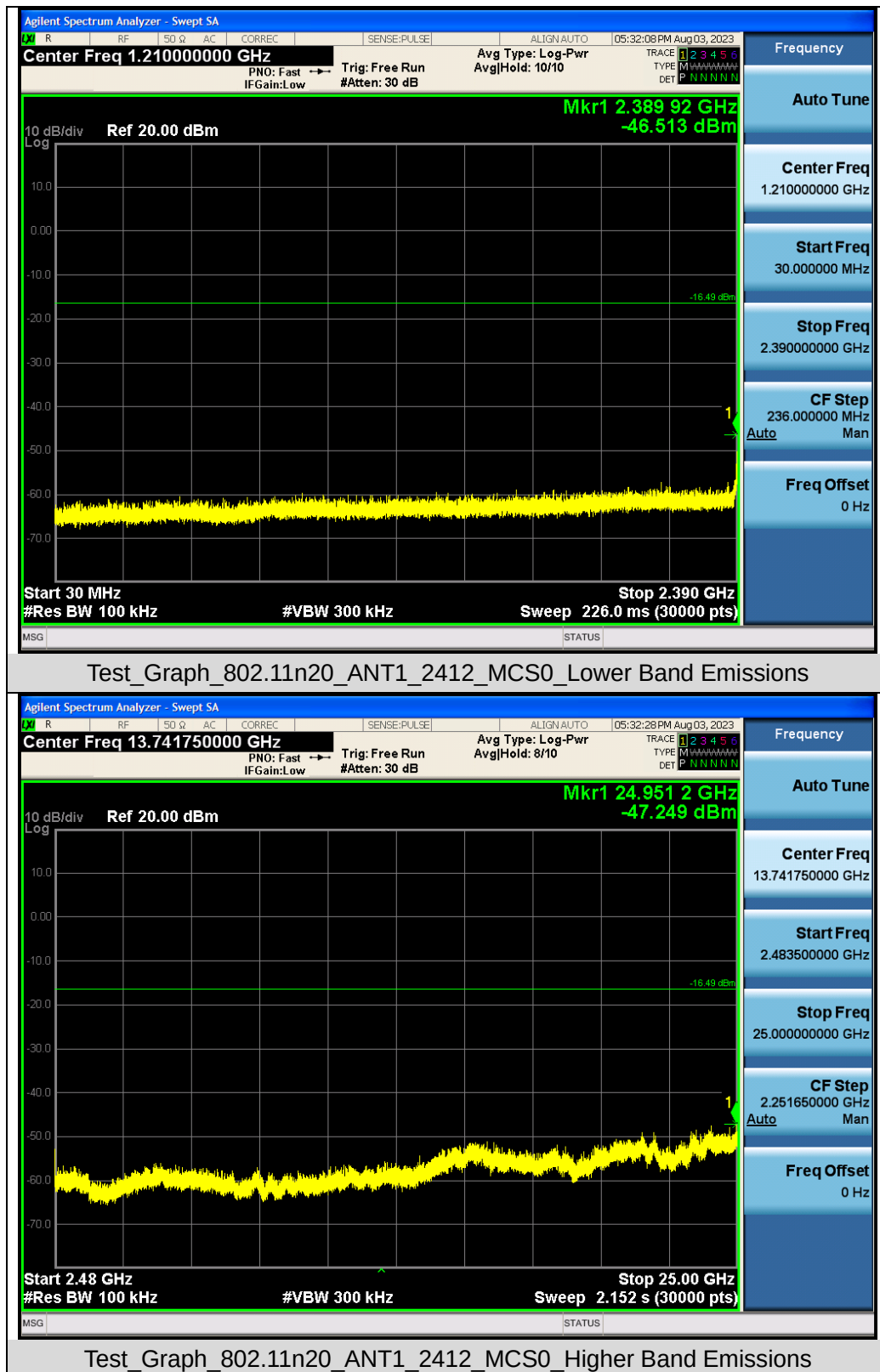
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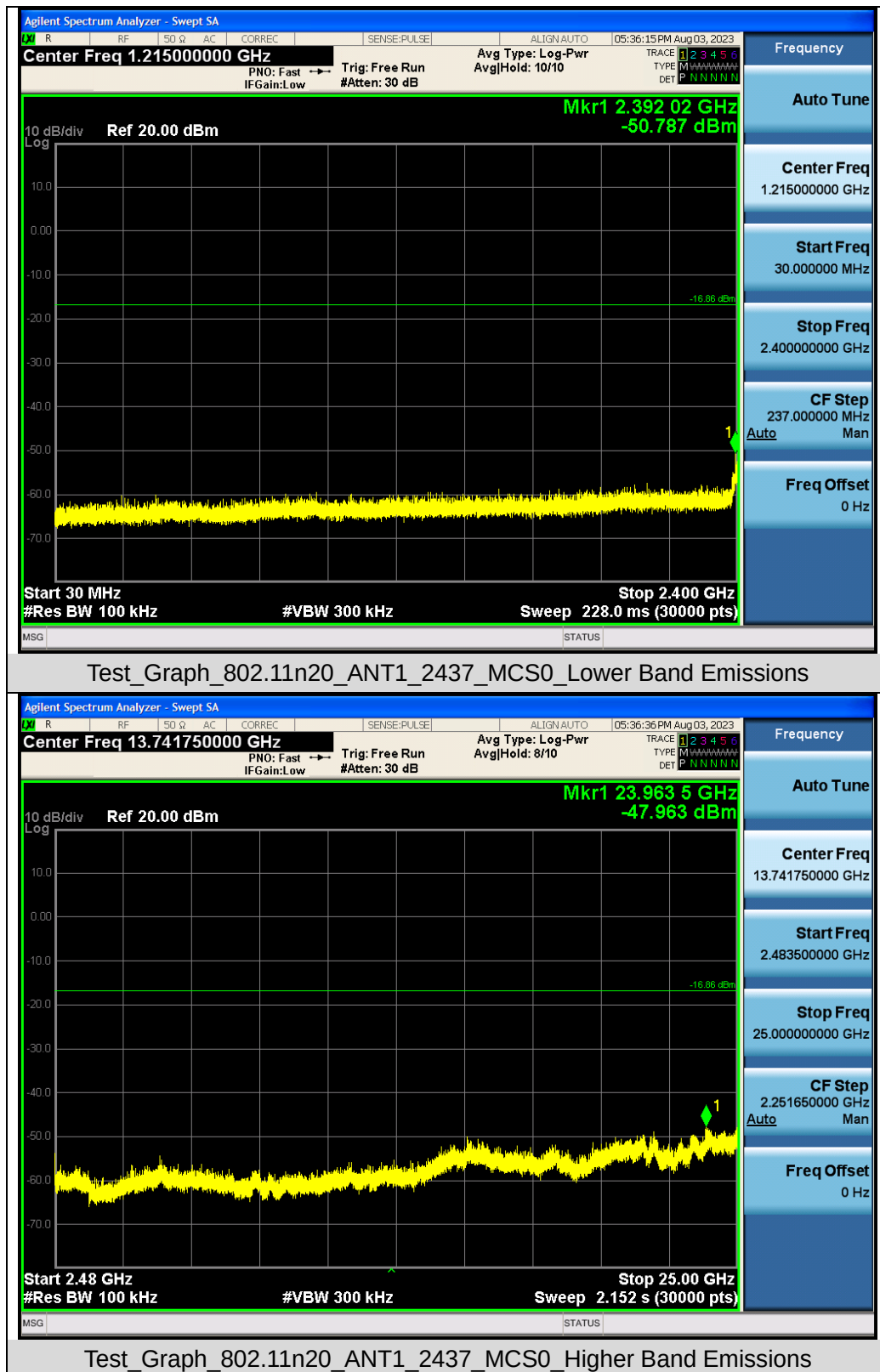
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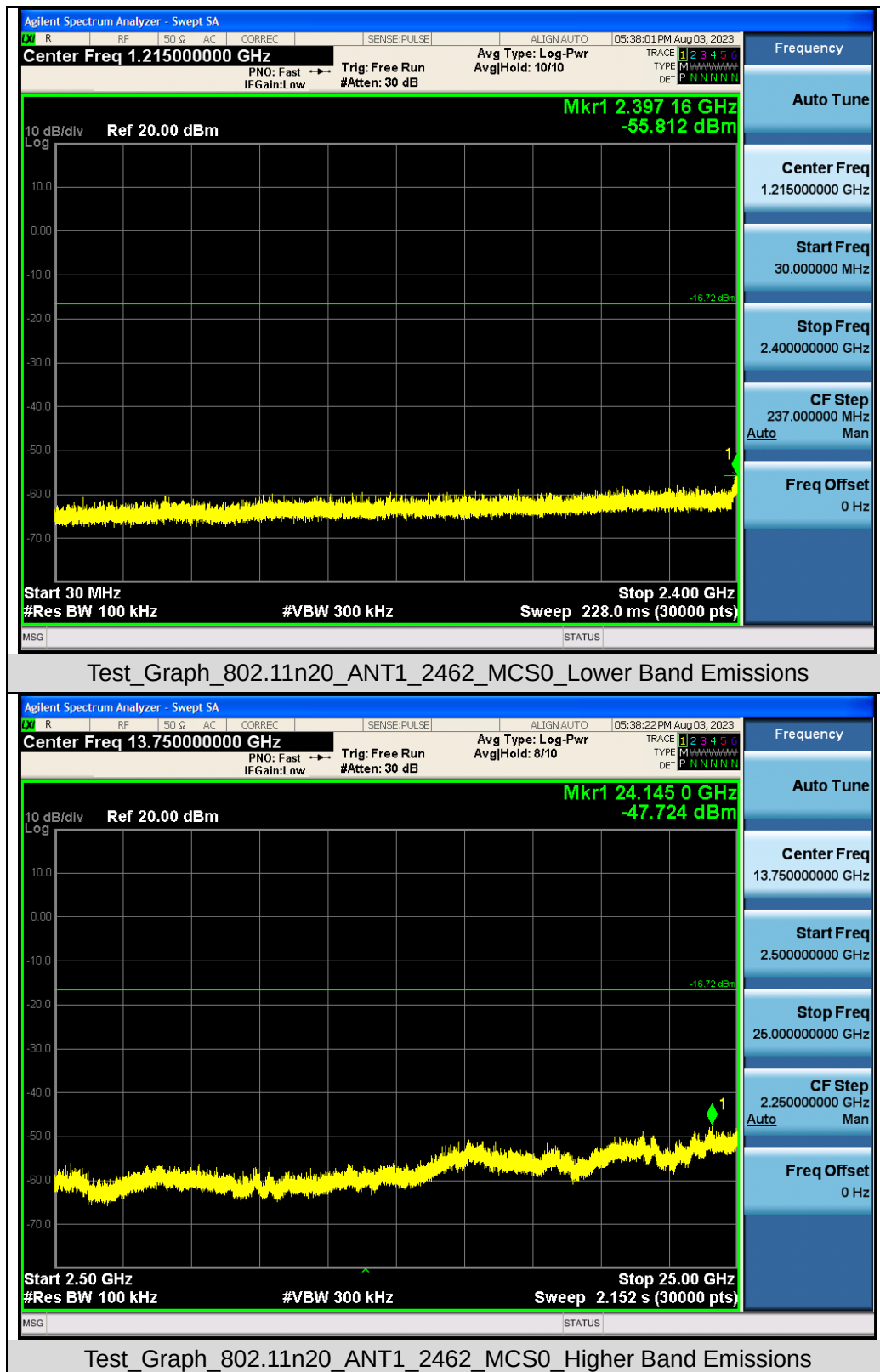
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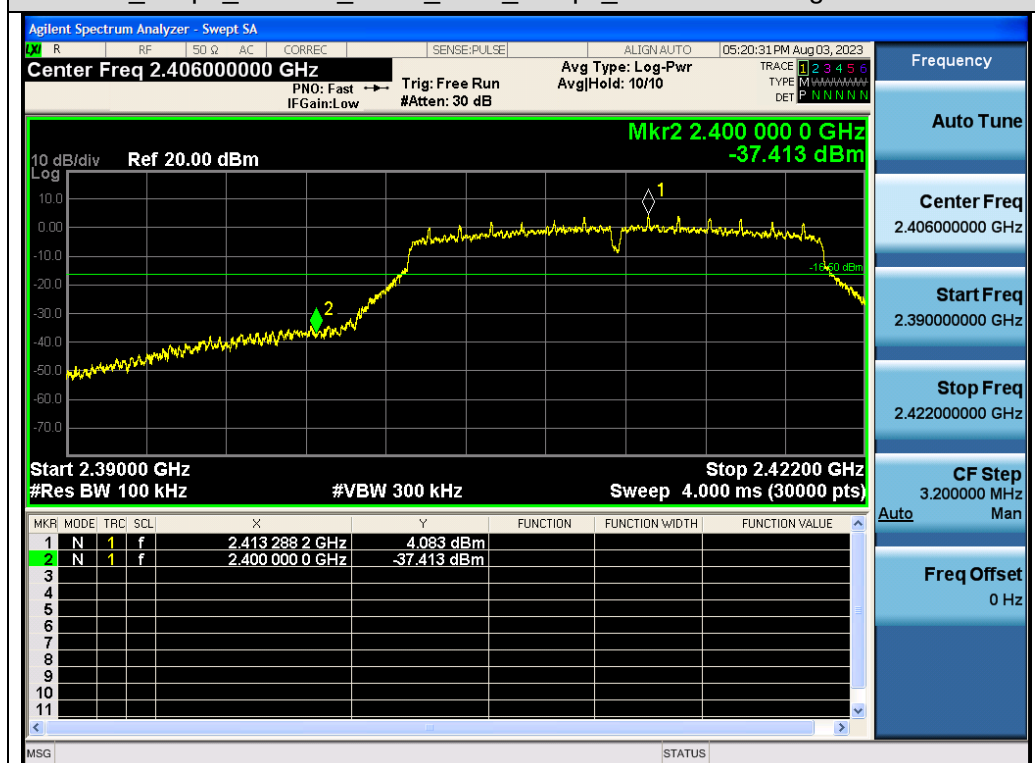


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Test Graphs of Band Edge Emissions in Non-Restricted Frequency Bands



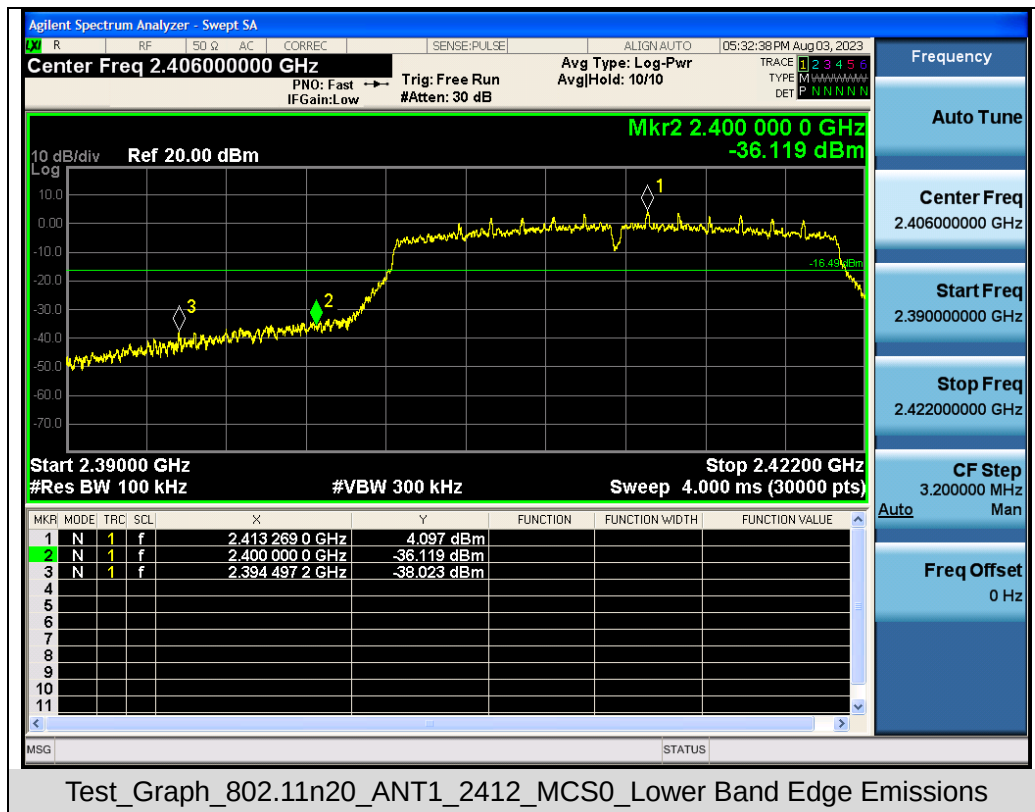
Test_Graph_802.11b_ANT1_2412_1Mbps_Lower Band Edge Emissions



Test_Graph_802.11g_ANT1_2412_6Mbps_Lower Band Edge Emissions

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Note: Emissions from 2483.5-2500MHz which fall in the restricted bands had been considered with the radiated emission limits specified.

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10. POWER SPECTRAL DENSITY

10.1 MEASUREMENT LIMITS

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

10.2 MEASUREMENT PROCEDURE

☒ For Peak power spectral density test:

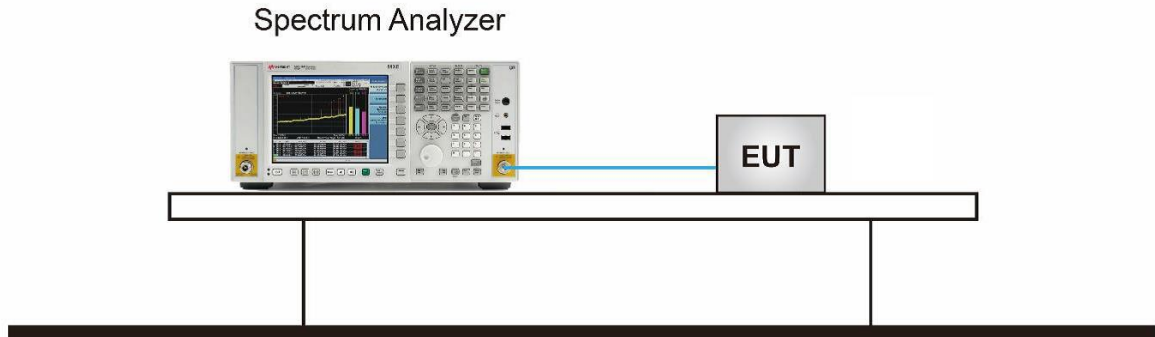
1. The testing follows the ANSI C63.10 Section 11.10.2 Method PKPSD.
2. Connect EUT RF output port to the Spectrum Analyzer through
3. Set the RBW = 20 kHz.
4. Set the VBW $\geq [3 \times \text{RBW}]$.
5. Set the Span $\geq [1.5 \times \text{DTS bandwidth}]$.
6. Sweep time=Auto couple.
7. Detector function=Peak.
8. Trace Mode=Max hold.
9. When the measurement bandwidth of Maximum PSD is specified in 3 kHz, add a constant factor $10 \cdot \log(3\text{kHz}/20\text{kHz}) = -8.23 \text{ dB}$ to the measured result.
10. Allow trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission.
11. The indicated level is the peak output power, after any corrections for cables.

☐ For Average power spectral density test:

1. The testing follows the ANSI C63.10 Section 11.10.5 Method AVPSD.
2. Connect EUT RF output port to the Spectrum Analyzer through.
3. Set Span to at least 1.5 times the OBW.
4. Set RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
5. Set $\text{VBW} \geq [3 \times \text{RBW}]$.
6. Sweep Time=Auto couple.
7. Detector function=RMS (i.e., power averaging).
8. Trace average at least 100 traces in power averaging (rms) mode.
9. When the measurement bandwidth of Maximum PSD is specified in 3 kHz, add a constant factor $10 \cdot \log(3\text{kHz}/20\text{kHz}) = -8.23 \text{ dB}$ to the measured result.
10. Determine according to the duty cycle of the equipment: when it is less than 98%, follow the steps below.
11. Add $[10 \log (1 / D)]$, where D is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the ON and OFF times of the transmission). For example, add $[10 \log (1/0.25)] = 6 \text{ dB}$ if the duty cycle is 25%.
12. Record the test results in the report.

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10.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)

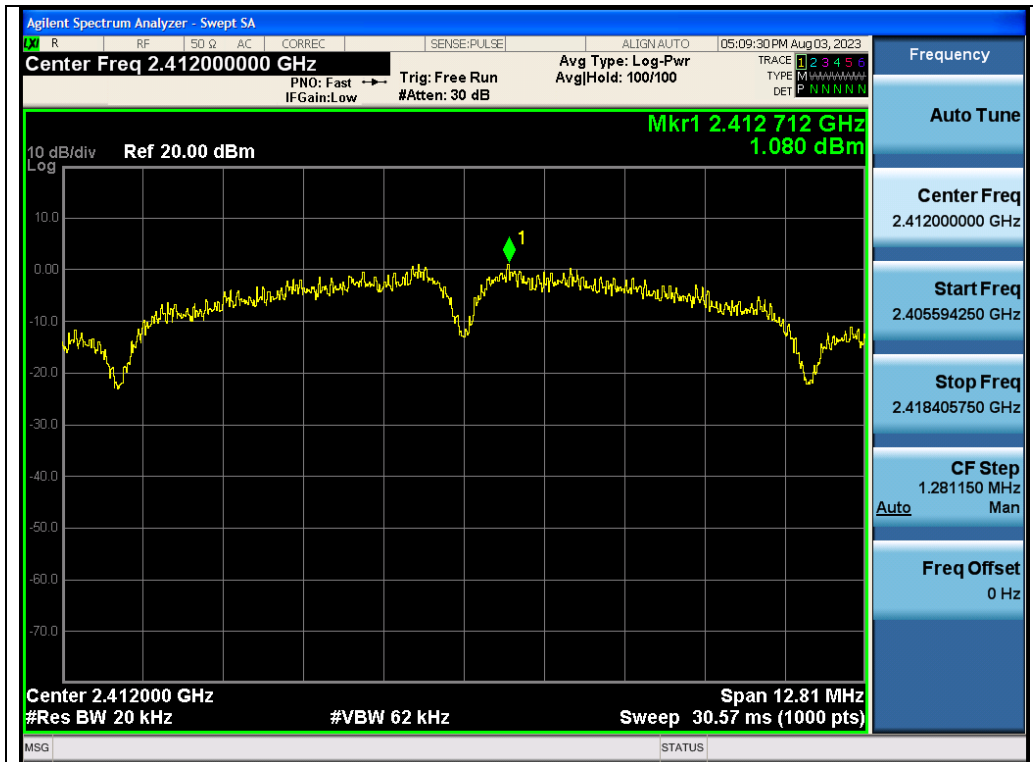


10.4 MEASUREMENT RESULT

Test Data of Conducted Output Power Spectral Density					
Test Mode	Test Channel (MHz)	Power density (dBm/20kHz)	Power density (dBm/3kHz)	Limit (dBm/3kHz)	Pass or Fail
802.11b	2412	1.080	-7.159	≤ 8	Pass
	2437	1.201	-7.038	≤ 8	Pass
	2462	0.970	-7.269	≤ 8	Pass
802.11g	2412	-1.782	-10.021	≤ 8	Pass
	2437	-2.841	-11.08	≤ 8	Pass
	2462	-2.769	-11.008	≤ 8	Pass
802.11n20	2412	-2.312	-10.551	≤ 8	Pass
	2437	-2.043	-10.282	≤ 8	Pass
	2462	-2.006	-10.245	≤ 8	Pass

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Test Graphs of Conducted Output Power Spectral Density

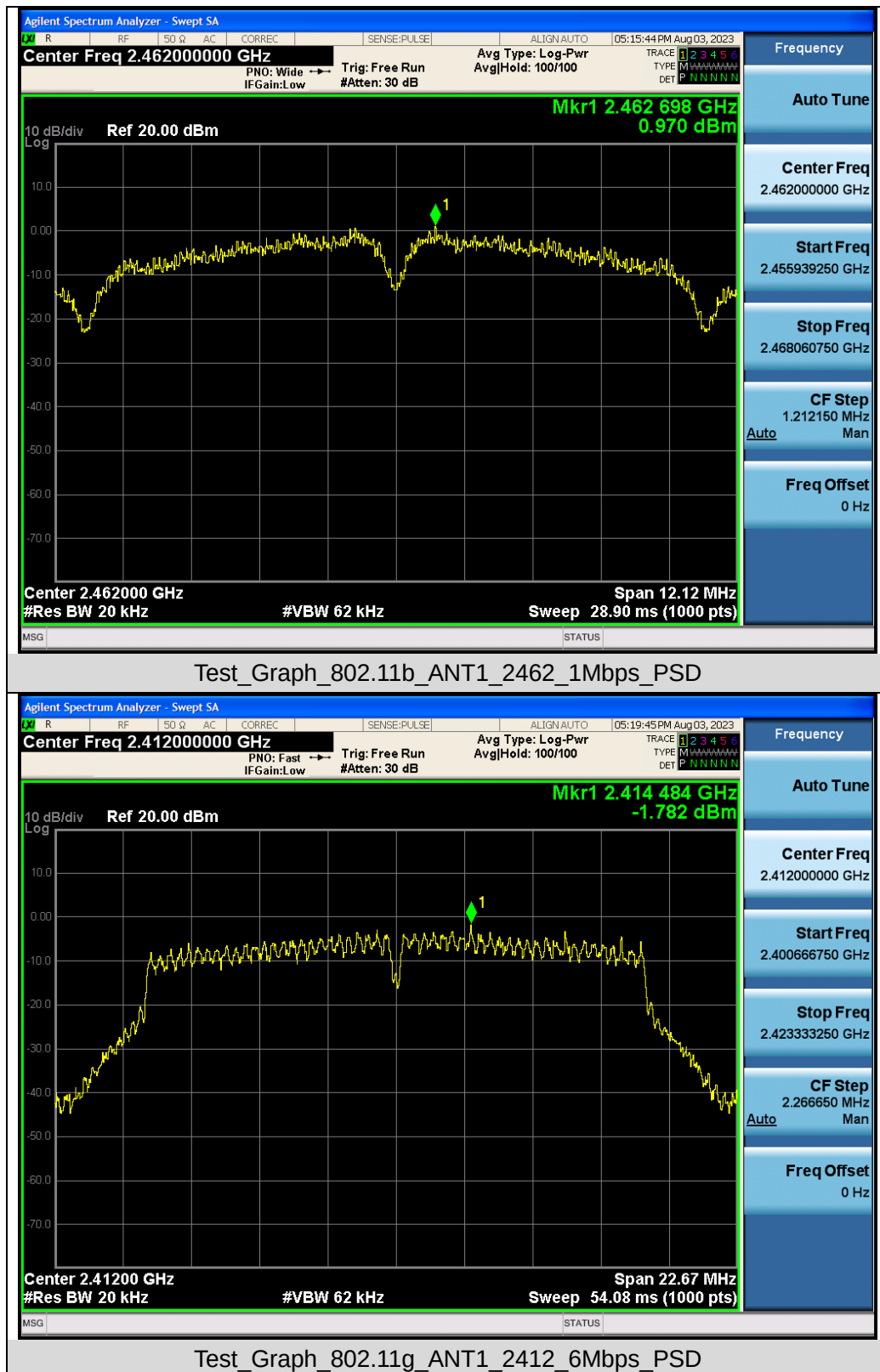


Test_Graph_802.11b_ANT1_2412_1Mbps_PSD

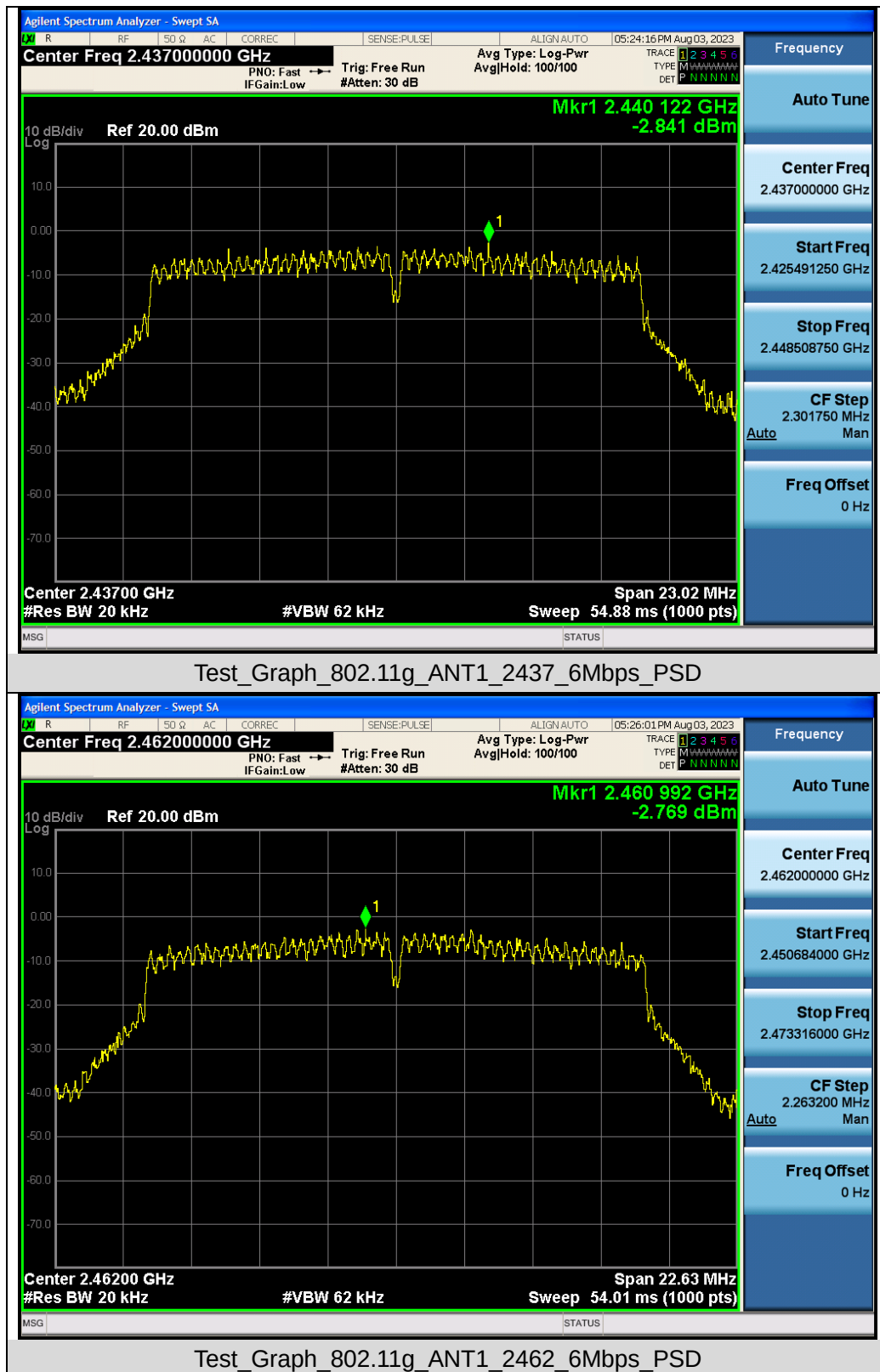


Test_Graph_802.11b_ANT1_2437_1Mbps_PSD

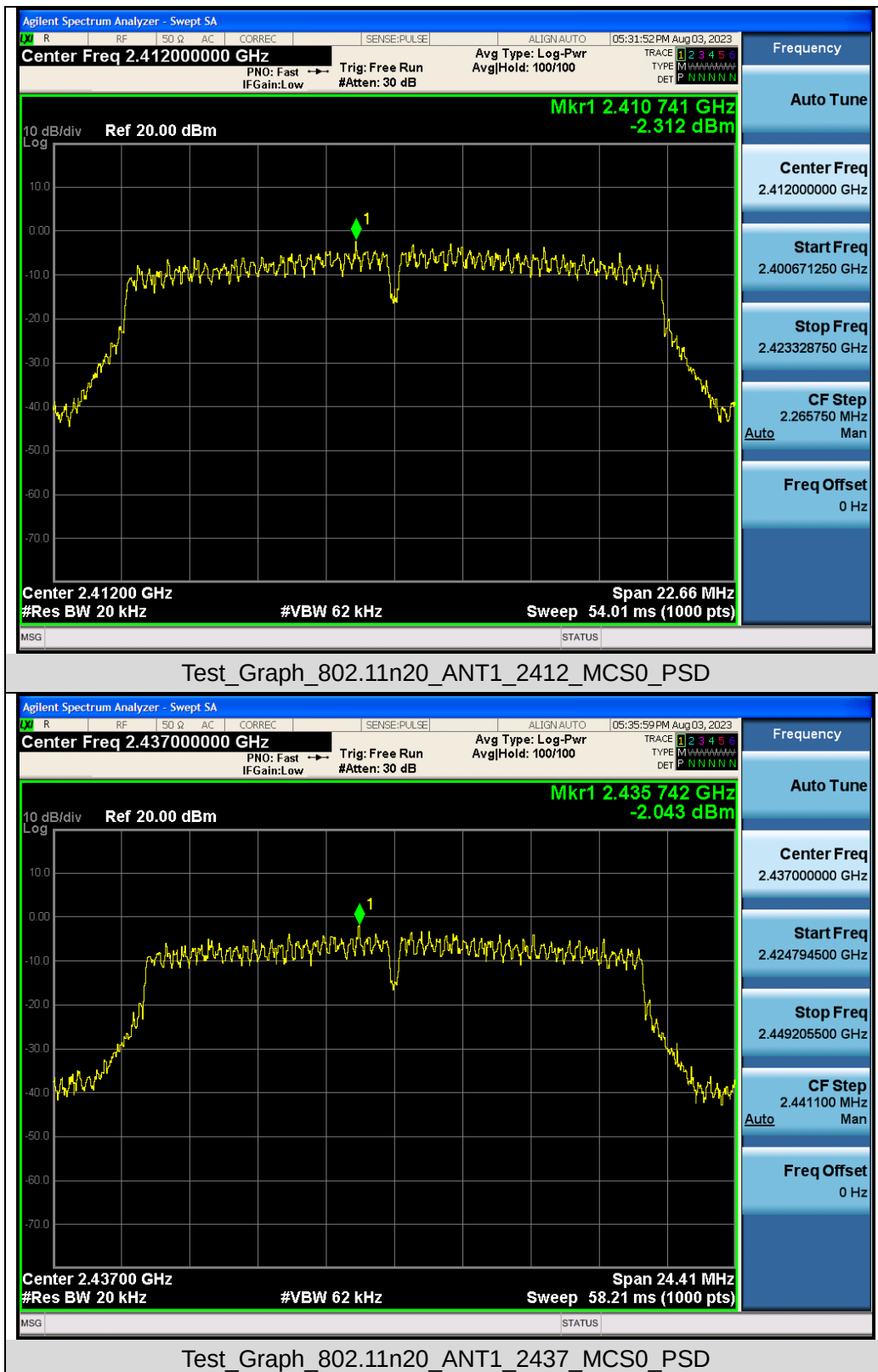
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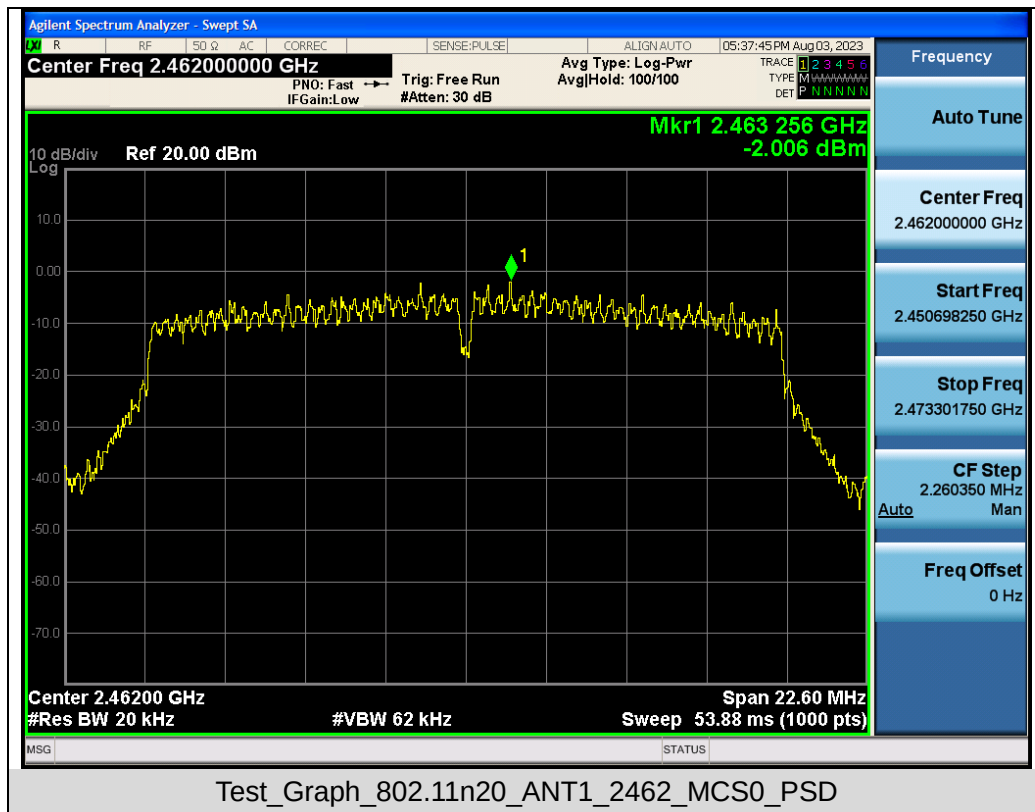
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11. RADIATED EMISSION

11.1 MEASUREMENT LIMITS

15.209(a) Limit in the below table has to be followed

Frequencies (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

Note: All modes were tested for restricted band radiated emission, the test records reported below are the worst result compared to other modes.

11.2 MEASUREMENT PROCEDURE

1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emission, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz RBW and 3MHz VBW for peak reading. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds.

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As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.

8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

The following table is the setting of spectrum analyzer and receiver.

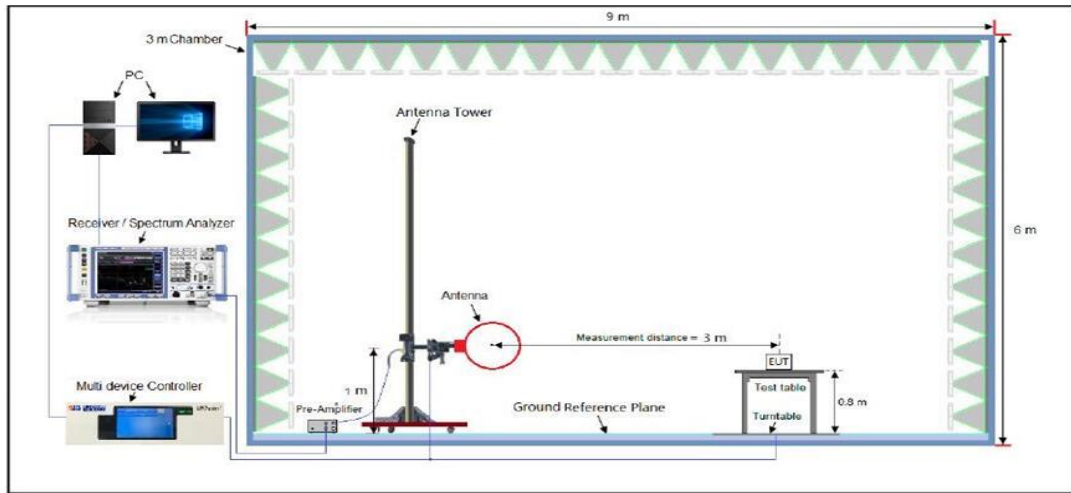
Spectrum Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP
Start ~Stop Frequency	1GHz~26.5GHz 1MHz/3MHz for Peak, 1MHz/3MHz for Average

Receiver Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP

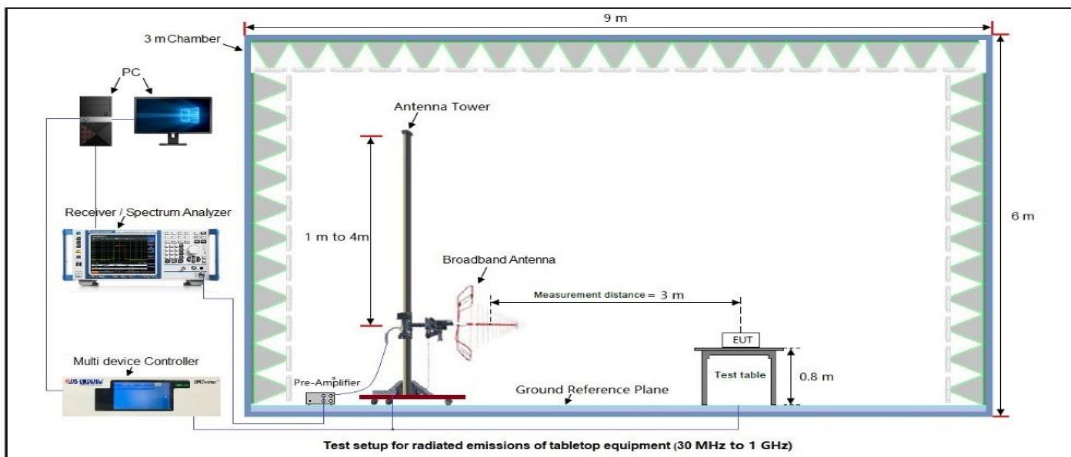
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11.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)

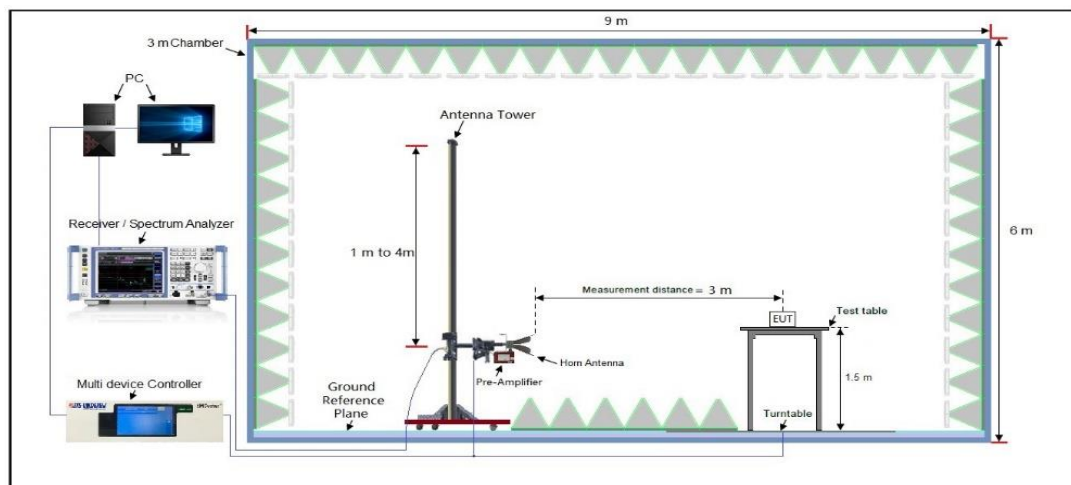
RADIATED EMISSION TEST SETUP 9KHz-30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



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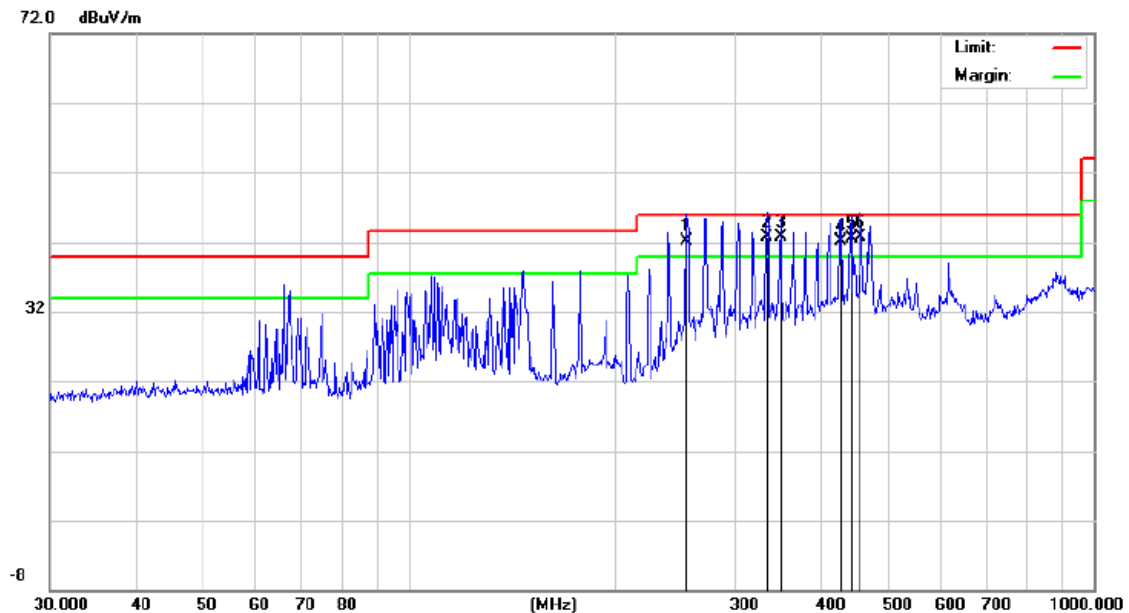
11.4 MEASUREMENT RESULT

Radiated emission below 30MHz

The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.

Radiated emission from 30MHz to 1000MHz

EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with 2412MHz	Antenna	Horizontal

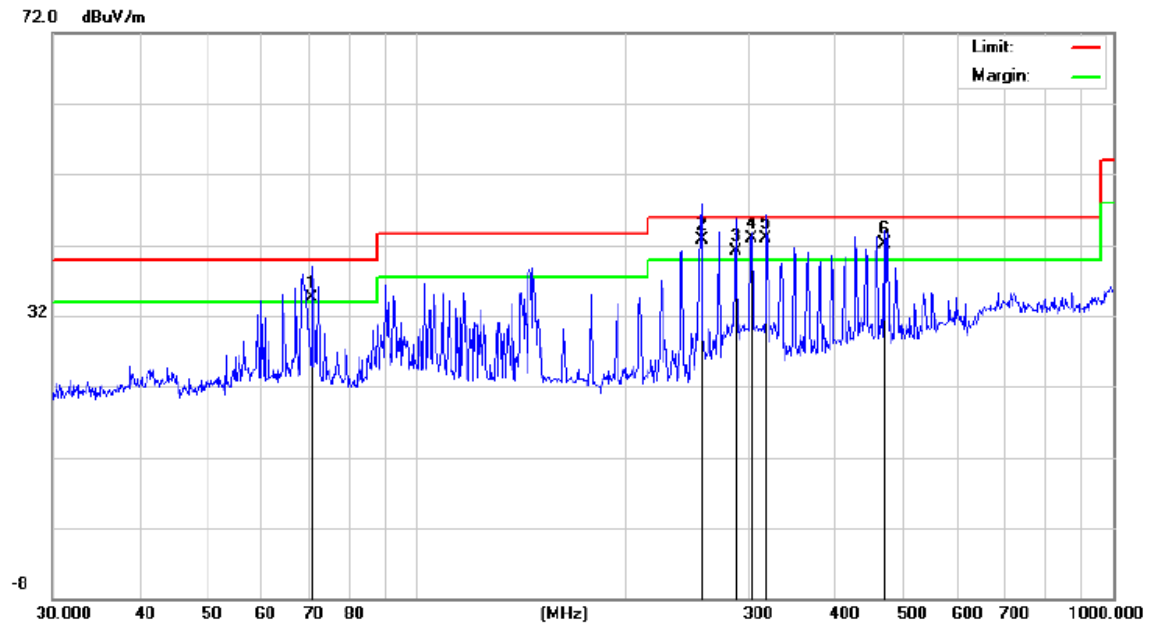


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1	!	254.7283	26.15	15.96	42.11	46.00	-3.89	QP
2	!	333.6865	22.39	20.23	42.62	46.00	-3.38	QP
3	*	349.2500	22.41	20.33	42.74	46.00	-3.26	QP
4	!	428.0192	15.23	26.92	42.15	46.00	-3.85	QP
5	!	443.2943	15.28	27.15	42.43	46.00	-3.57	QP
6	!	457.5072	15.36	27.36	42.72	46.00	-3.28	QP

RESULT: PASS

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EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with 2412MHz	Antenna	Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1	!	70.8315	18.05	16.45	34.50	40.00	-5.50	QP
2	!	256.5211	26.75	15.96	42.71	46.00	-3.29	QP
3	!	286.9823	22.19	18.92	41.11	46.00	-4.89	QP
4	*	302.4812	23.01	19.95	42.96	46.00	-3.04	QP
5	!	317.7011	22.64	20.25	42.89	46.00	-3.11	QP
6	!	468.8761	18.58	23.47	42.05	46.00	-3.95	QP

RESULT: PASS

Note: 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. The “Factor” value can be calculated automatically by software of measurement system.

3. All test modes had been pre-tested. The 802.11b mode is the worst case and recorded in the report.

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Radiated emission above 1GHz

EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1_2412MHz	Antenna	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4824.000	53.26	0.08	53.34	74.00	-20.66	peak
4824.000	46.20	0.08	46.28	54.00	-7.72	AVG
7236.000	48.33	2.21	50.54	74.00	-23.46	peak
7236.000	41.22	2.21	43.43	54.00	-10.57	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1_2412MHz	Antenna	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4824.000	52.31	0.08	52.39	74.00	-21.61	peak
4824.000	45.22	0.08	45.30	54.00	-8.70	AVG
7236.000	48.12	2.21	50.33	74.00	-23.67	peak
7236.000	40.27	2.21	42.48	54.00	-11.52	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

RESULT: PASS

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EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1_2437MHz	Antenna	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4874.000	56.21	0.14	56.35	74.00	-17.65	peak
4874.000	42.12	0.14	42.26	54.00	-11.74	AVG
7311.000	51.11	2.36	53.47	74.00	-20.53	peak
7311.000	40.25	2.36	42.61	54.00	-11.39	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1_2437MHz	Antenna	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4874.000	52.12	0.14	52.26	74.00	-21.74	peak
4874.000	43.01	0.14	43.15	54.00	-10.85	AVG
7311.000	52.05	2.36	54.41	74.00	-19.59	peak
7311.000	41.31	2.36	43.67	54.00	-10.33	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

RESULT: PASS

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EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1_2462MHz	Antenna	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.000	51.21	0.22	51.43	74.00	-22.57	peak
4924.000	41.52	0.22	41.74	54.00	-12.26	AVG
7386.000	48.24	2.64	50.88	74.00	-23.12	peak
7386.000	41.16	2.64	43.80	54.00	-10.20	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1_2462MHz	Antenna	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.000	52.61	0.22	52.83	74.00	-21.17	peak
4924.000	42.31	0.22	42.53	54.00	-11.47	AVG
7386.000	49.51	2.64	52.15	74.00	-21.85	peak
7386.000	39.77	2.64	42.41	54.00	-11.59	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

RESULT: PASS

Note:

The amplitude of other spurious emissions from 1G to 25 GHz which are attenuated more than 20 dB below the permissible value need not be reported.

Factor = Antenna Factor + Cable loss - Amplifier gain, Over= Limit-Measure.

The “Factor” value can be calculated automatically by software of measurement system.

All test modes had been pre-tested. The 802.11b mode is the worst case and recorded in the report.

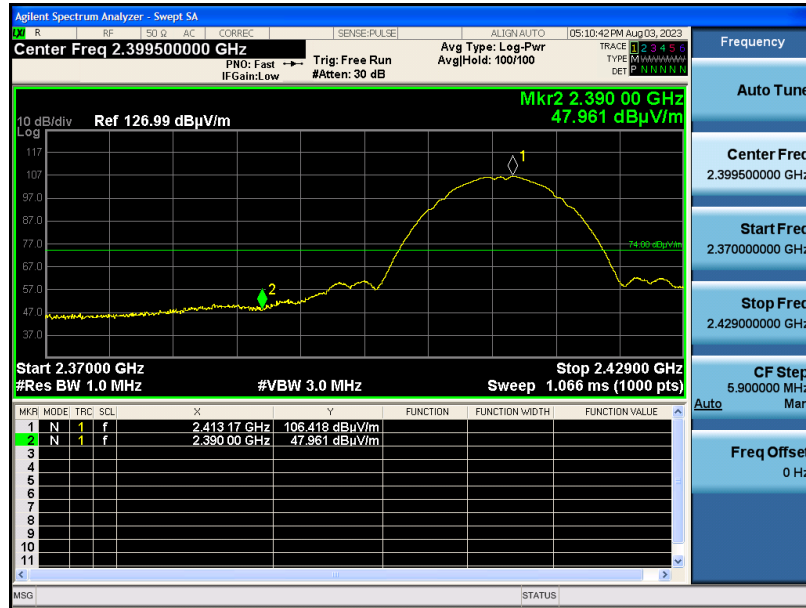
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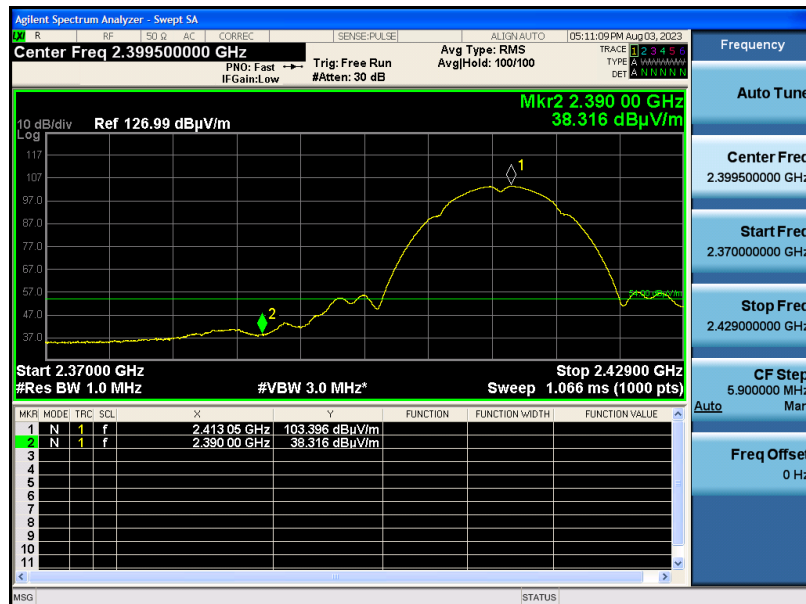
Test result for band edge emission at restricted bands

EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1_2412MHz	Antenna	Horizontal

Test Graph for Peak Measurement



Test Graph for Average Measurement



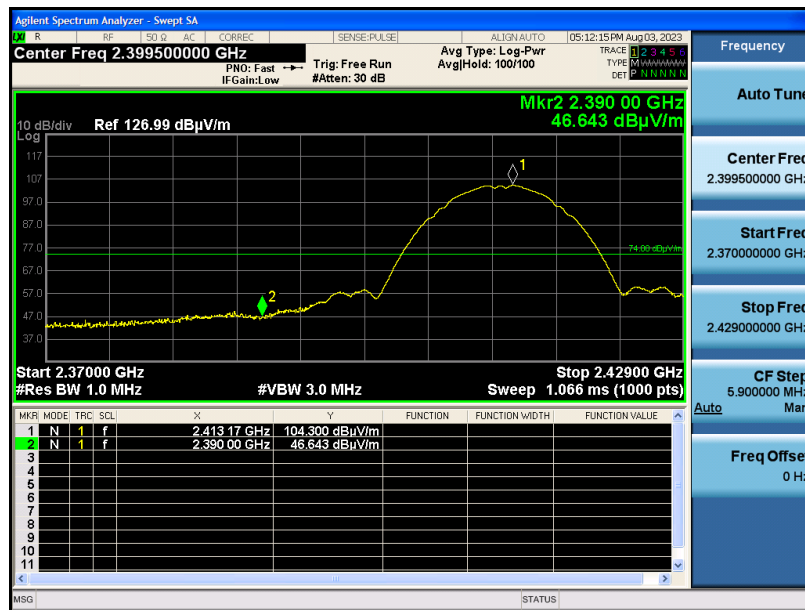
RESULT: PASS

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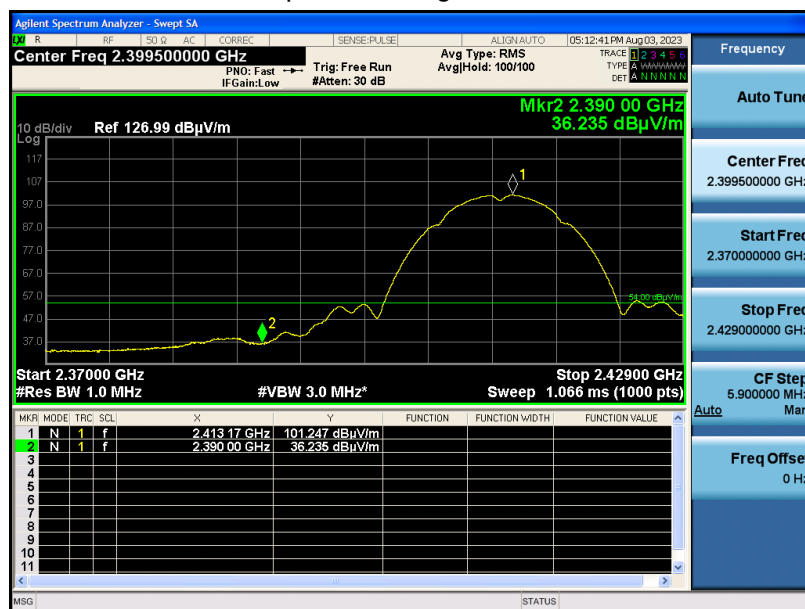
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Tel: +86-755 2523 4088 E-mail: agc@agccert.com Web: http://www.agccert.com/

EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1_2412MHz	Antenna	Vertical

Test Graph for Peak Measurement



Test Graph for Average Measurement



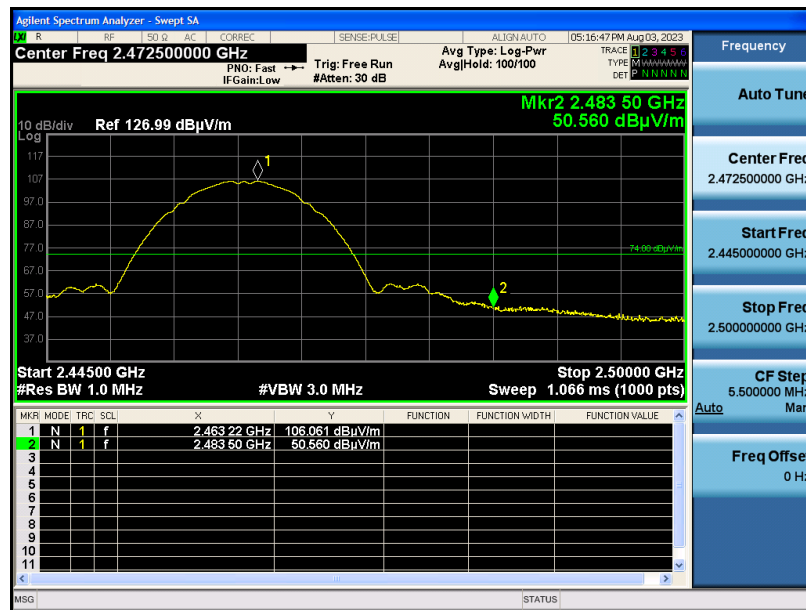
RESULT: PASS

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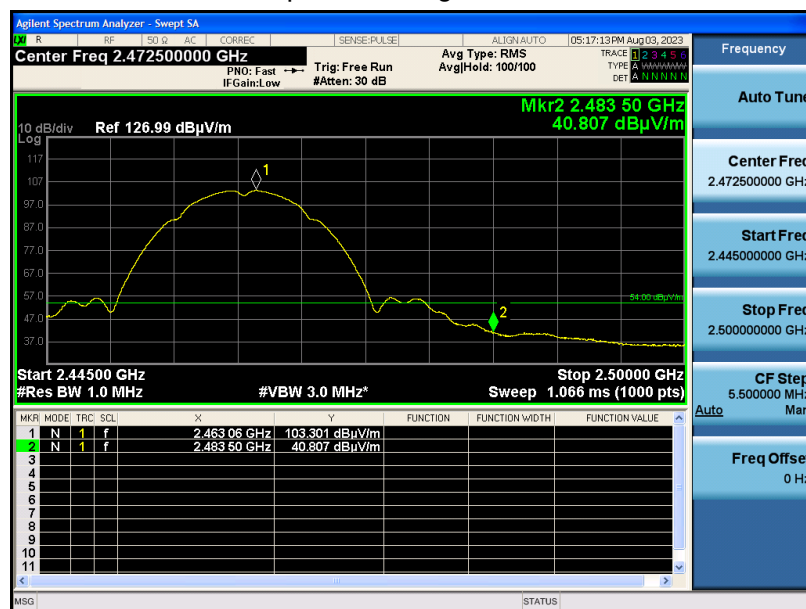
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Tel: +86-755 2523 4088 E-mail: agc@agccert.com Web: http://www.agccert.com/

EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1_2462MHz	Antenna	Horizontal

Test Graph for Peak Measurement



Test Graph for Average Measurement



RESULT: PASS

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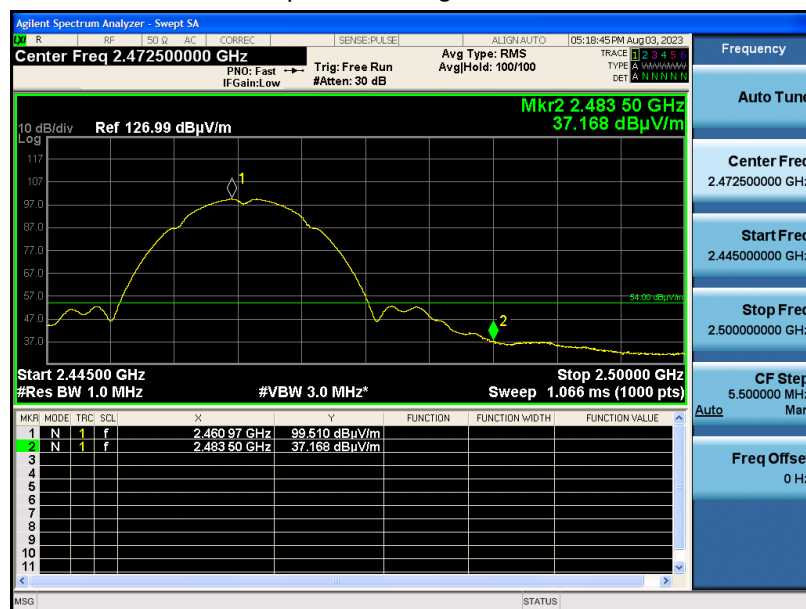
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EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1_2462MHz	Antenna	Vertical

Test Graph for Peak Measurement



Test Graph for Average Measurement



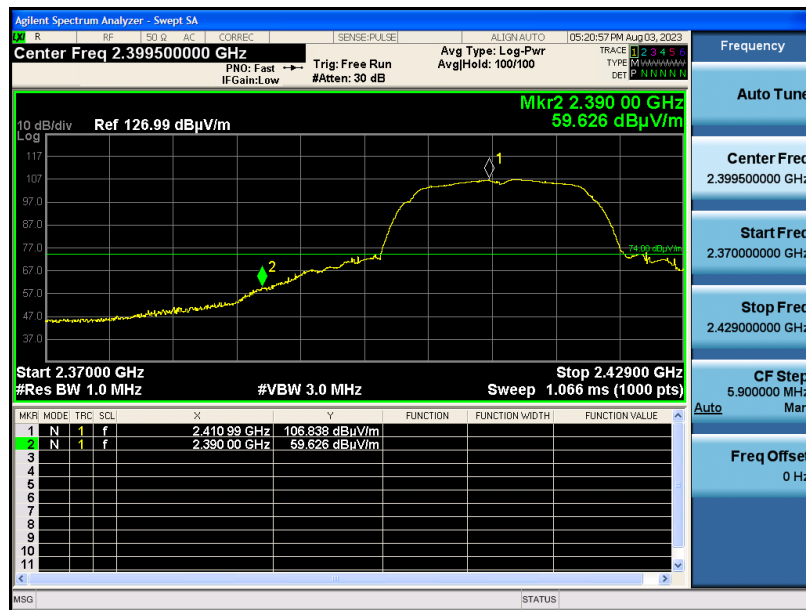
RESULT: PASS

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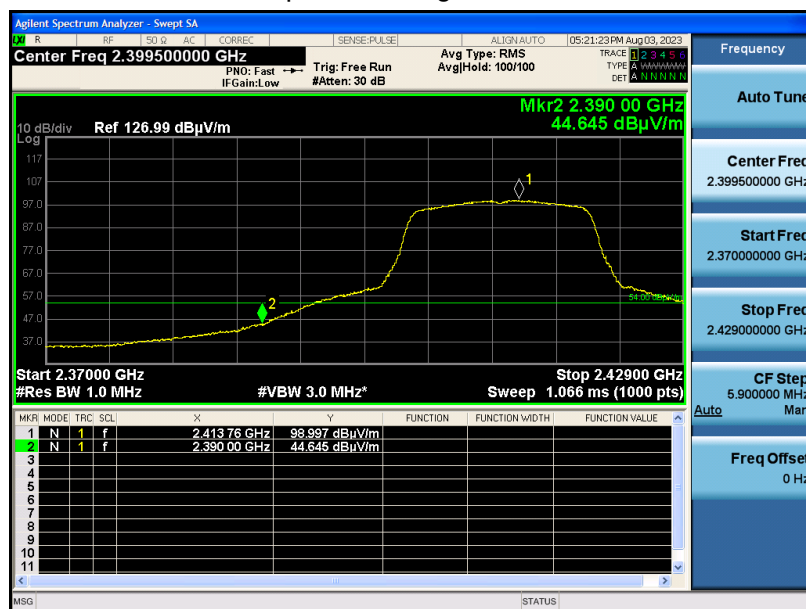
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EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6_2412MHz	Antenna	Horizontal

Test Graph for Peak Measurement



Test Graph for Average Measurement



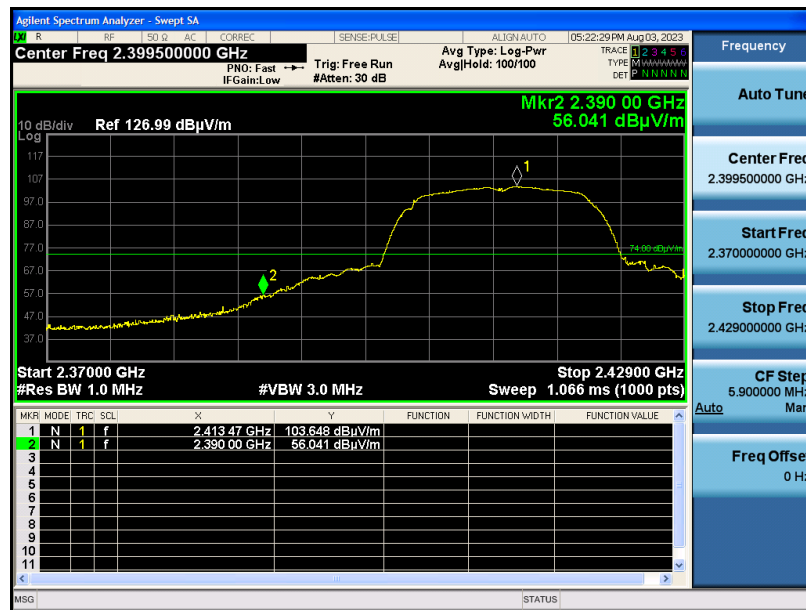
RESULT: PASS

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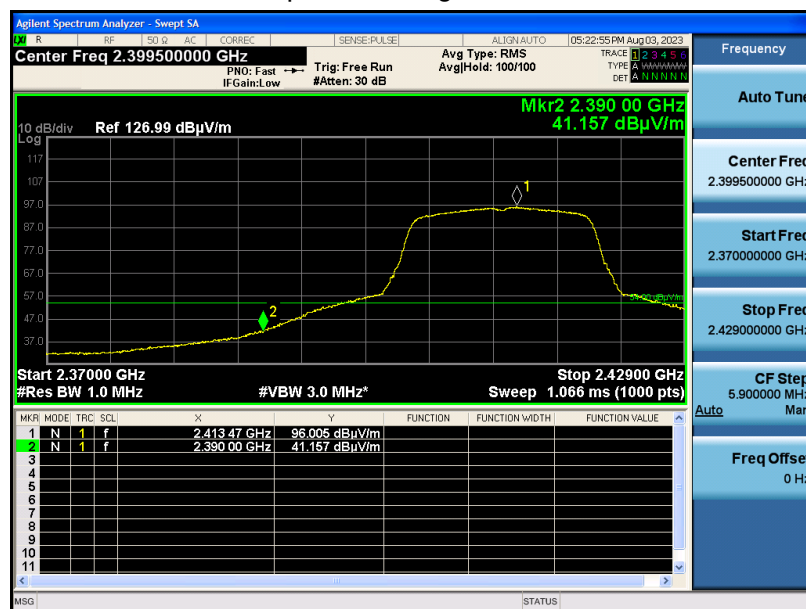
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EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6_2412MHz	Antenna	Vertical

Test Graph for Peak Measurement



Test Graph for Average Measurement



RESULT: PASS

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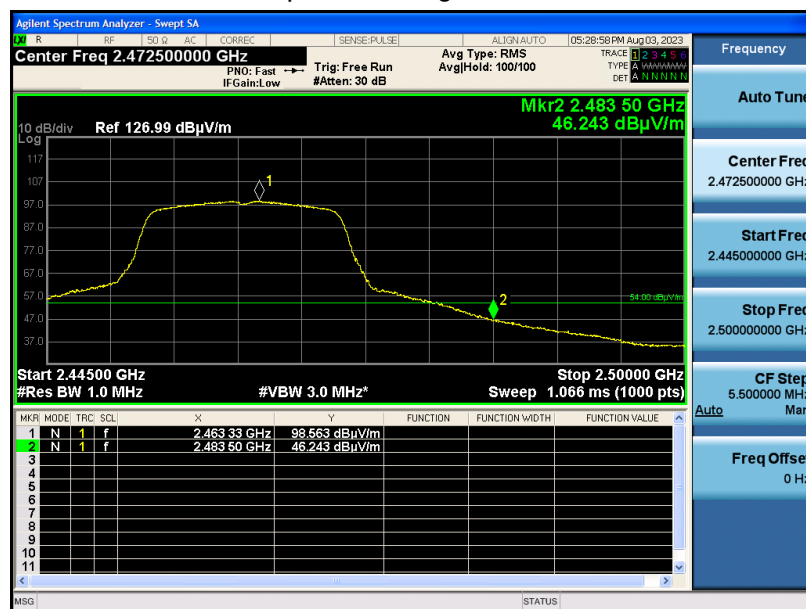
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EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6_2462MHz	Antenna	Horizontal

Test Graph for Peak Measurement



Test Graph for Average Measurement



RESULT: PASS

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

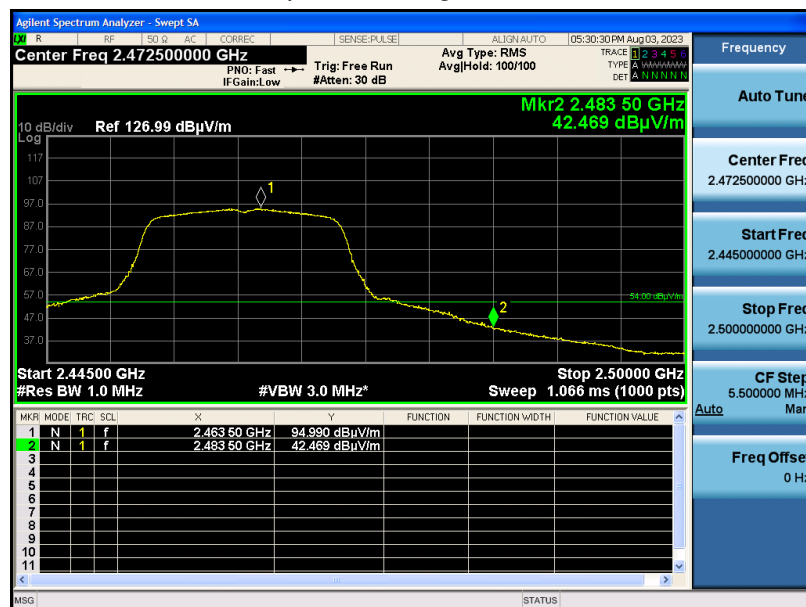
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EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2462MHz	Antenna	Vertical

Test Graph for Peak Measurement



Test Graph for Average Measurement



RESULT: PASS

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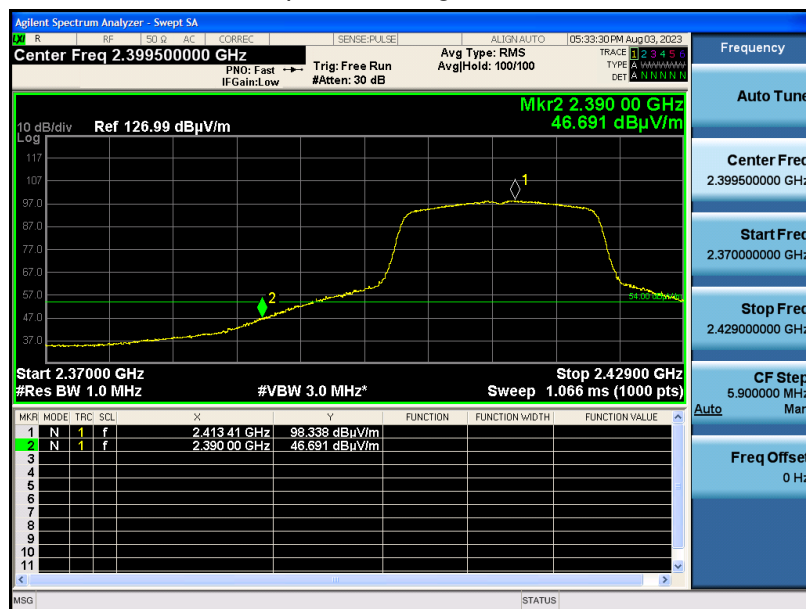
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EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n20 with data rate 6.5 2412MHz	Antenna	Horizontal

Test Graph for Peak Measurement



Test Graph for Average Measurement



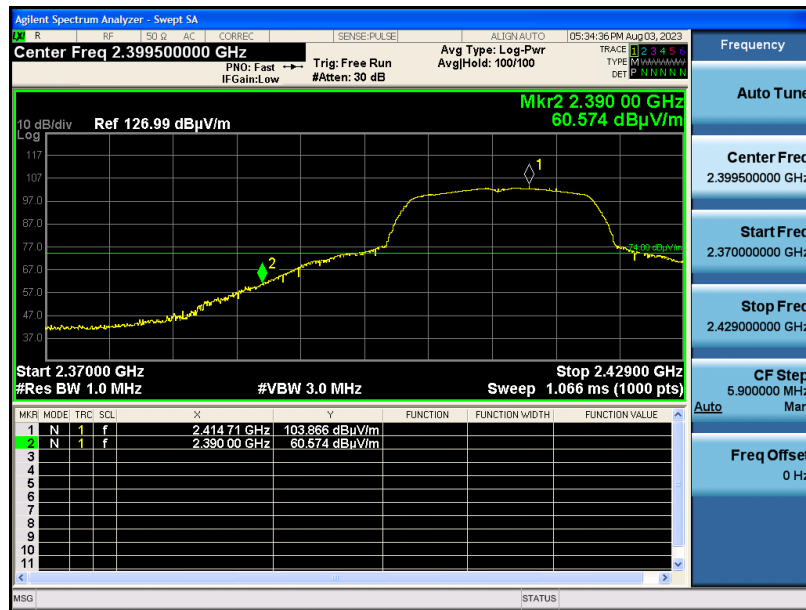
RESULT: PASS

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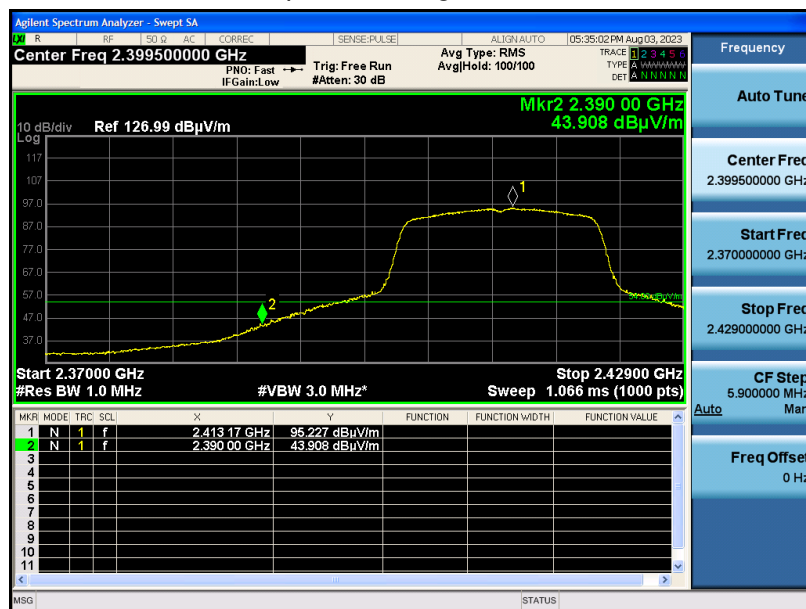
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EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n20 with data rate 6.5 2412MHz	Antenna	Vertical

Test Graph for Peak Measurement



Test Graph for Average Measurement



RESULT: PASS

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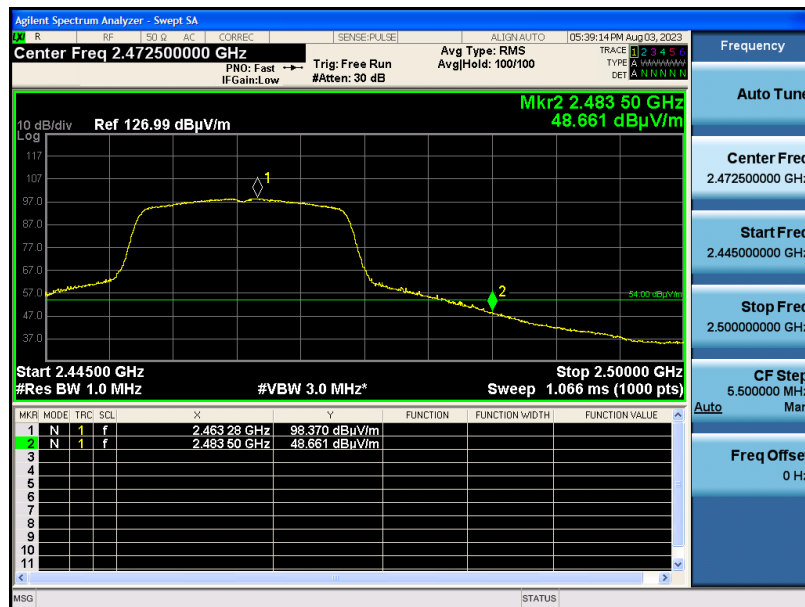
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EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n20 with data rate 6.5 2462MHz	Antenna	Horizontal

Test Graph for Peak Measurement



Test Graph for Average Measurement



RESULT: PASS

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

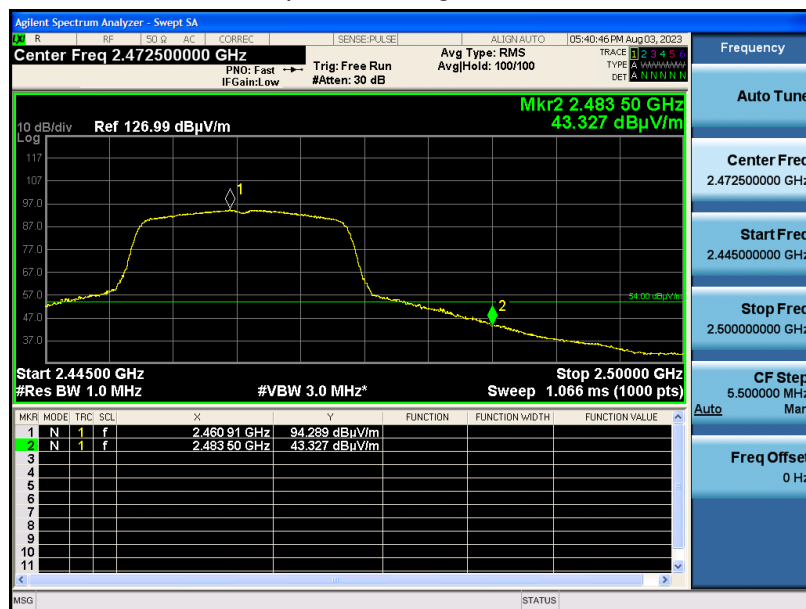
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EUT	Vibration Monitor	Model Name	5GV0-1B
Temperature	25°C	Relative Humidity	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n20 with data rate 6.5 2462MHz	Antenna	Vertical

Test Graph for Peak Measurement



Test Graph for Average Measurement



RESULT: PASS

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12. LINE CONDUCTED EMISSION TEST

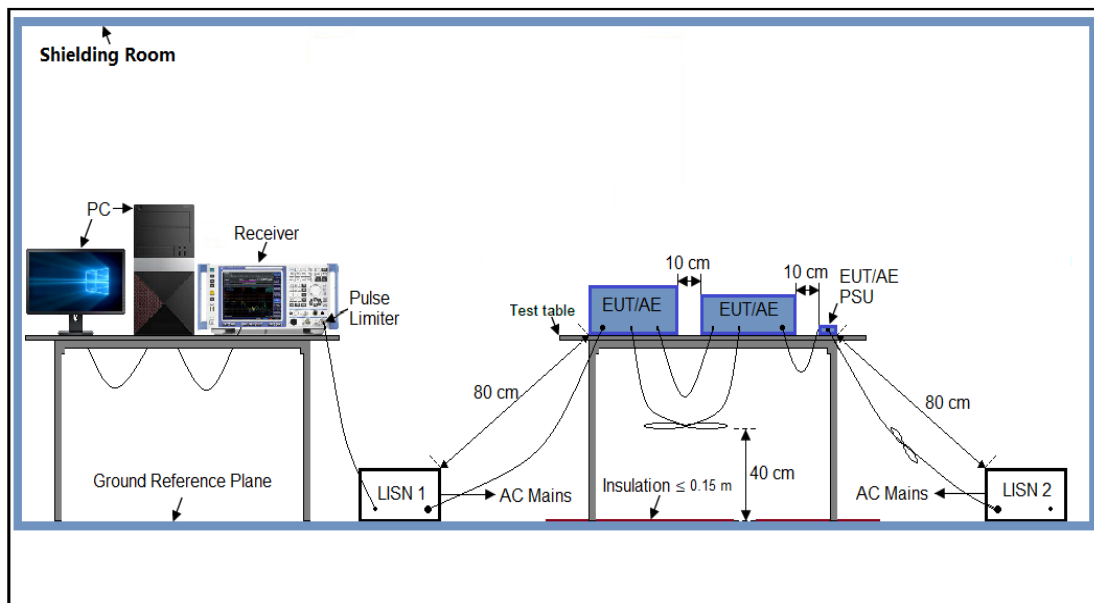
12.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P (dB μ V)	Average (dB μ V)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Note:

1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

12.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



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12.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2. Support equipment, if needed, was placed as per ANSI C63.10.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
4. All support equipment received AC120V/60Hz power from a LISN, if any.
5. The EUT received DC 5V power from adapter which received AC120V/60Hz power from a LISN.
6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 Ohm load; the second scan had Line 1 connected to a 50 Ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.
9. The test mode(s) were scanned during the preliminary test.

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

12.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

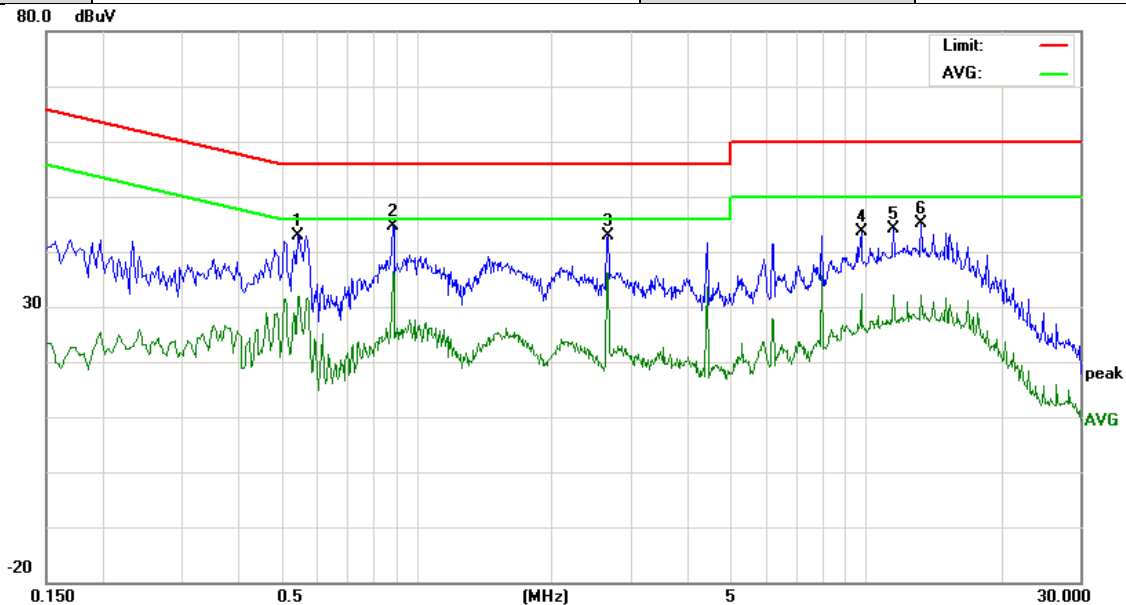
1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less – 2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
3. The test data (mode 1) of the worst case condition(s) was reported on the Summary Data page.

12.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

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AC POWER LINE CONDUCTED EMISSION TEST

Test Mode	802.11b_2412MHz-ANT 1	LISN line	Hot Side
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No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F
		Peak	QP	AVG		Peak	QP	AVG	QP	AVG	QP	AVG	
1	0.5460	29.20	26.30	15.42	13.78	42.98	40.08	29.20	56.00	46.00	-15.92	-16.80	P
2	0.8860	30.75	27.77	21.47	13.83	44.58	41.60	35.30	56.00	46.00	-14.40	-10.70	P
3	2.6660	29.52	28.07	22.80	13.45	42.97	41.52	36.25	56.00	46.00	-14.48	-9.75	P
4	9.7580	30.67	21.60	11.85	12.95	43.62	34.55	24.80	60.00	50.00	-25.45	-25.20	P
5	11.5380	31.02	22.30	12.69	13.12	44.14	35.42	25.81	60.00	50.00	-24.58	-24.19	P
6	13.3220	31.63	23.75	14.24	13.46	45.09	37.21	27.70	60.00	50.00	-22.79	-22.30	P

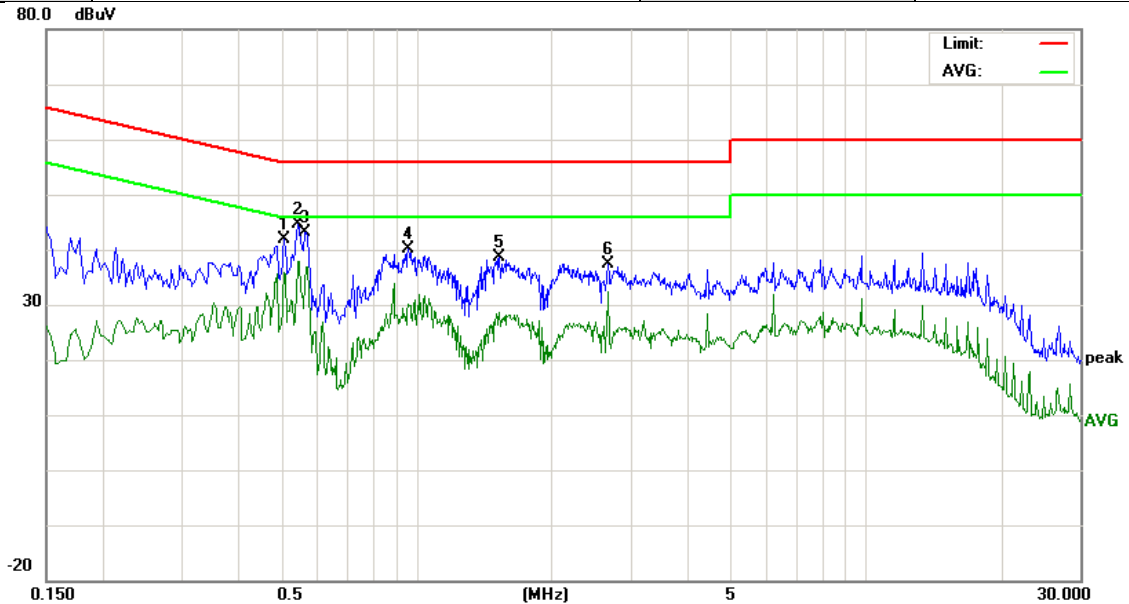
RESULT: PASS

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AC POWER LINE CONDUCTED EMISSION TEST

Test Mode	802.11b_2412MHz-ANT 1	LISN line	Neutral Side
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No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F
		Peak	QP	AVG		Peak	QP	AVG	QP	AVG	QP	AVG	
1	0.5100	28.04	25.59	17.57	13.75	41.79	39.34	31.32	56.00	46.00	-16.66	-14.68	P
2	0.5460	30.90	28.46	22.58	13.78	44.68	42.24	36.36	56.00	46.00	-13.76	-9.64	P
3	0.5660	29.28	26.28	19.30	13.79	43.07	40.07	33.09	56.00	46.00	-15.93	-12.91	P
4	0.9620	26.39	22.38	15.37	13.82	40.21	36.20	29.19	56.00	46.00	-19.80	-16.81	P
5	1.5339	24.81	20.13	13.47	13.74	38.55	33.87	27.21	56.00	46.00	-22.13	-18.79	P
6	2.6660	23.98	18.01	12.18	13.45	37.43	31.46	25.63	56.00	46.00	-24.54	-20.37	P

RESULT: PASS

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APPENDIX I: PHOTOGRAPHS OF TEST SETUP

Refer to the Report No.: AGC14659230204AP02

APPENDIX II: PHOTOGRAPHS OF EUT

Refer to the Report No.: AGC14659230204AP03

-----END OF REPORT-----

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Conditions of Issuance of Test Reports

1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the “Company”) solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the “Clients”).
2. Any report issued by Company as a result of this application for testing services (the “Report”) shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.
3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
7. Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

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