CFR 47 FCC PART 15 SUBPART C
ISED RSS-247 Issue 2

CERTIFICATION TEST REPORT

For

Smart Cordless Vacuum & Washer

MODEL NUMBER: FW103200US

PROJECT NUMBER: 4790554902

REPORT NUMBER: 4790554902-4

FCC ID: 2AV7A-FS12

IC: 26039- FS12

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Prepared for

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Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	12/07/2022	Initial Issue	

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1. ATTESTATION OF TEST RESULTS

Company Name:	Tineco Intelligent Technology Co., Ltd.
Address:	No. 108 Shihu Road West, Wuzhong Zone, Suzhou, 215168 P.R.China
Factory Information	
Company Name:	Tineco Intelligent Technology Co., Ltd.
Address:	No. 108 Shihu Road West, Wuzhong Zone, Suzhou, 215168 P.R.China
EUT Description	
Product Name:	Smart Cordless Vacuum & Washer
Model Number:	FW103200US
Sample Number:	5487085
Data of Receipt Sample:	Dec.01, 2022
Date Tested:	Dec.01, 2022 –Dec.06, 2022

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	PASS
ISED RSS-247 Issue 2	PASS
ISED RSS-GEN Issue 5	PASS

Summary of Test Results			
Clause	Test Items	FCC Rules	Test Results
1	6db DTS Bandwidth and 99% Bandwidth	FCC 15.247 (a) (2) RSS-247 Clause 5.2 (a) RSS-Gen Clause 6.7	Complied
2	Conducted (average)Output Power	FCC 15.247 (b) (3) RSS-247 Clause 5.4 (d) RSS-Gen Clause 6.12	Complied
3	Power Spectral Density	FCC 15.247 (e) RSS-247 Clause 5.2 (b)	Complied
4	Conducted Band edge And Spurious emission	FCC 15.247 (d) RSS-247 Clause 5.5 RSS-GEN Clause 6.13	Complied
5	Radiated Band edges and Spurious emission	FCC 15.247 (d) FCC 15.209 FCC 15.205 RSS-247 Clause 5.5 RSS-GEN Clause 8.9 RSS-GEN Clause 6.13	Complied
6	Conducted Emission Test For AC Power Port	FCC 15.207 RSS-GEN Clause 8.8	Complied
7	Antenna Requirement	FCC 15.203 RSS-GEN Clause 6.8	Complied
Remark: 1) The measurement result for the sample received is <Pass> according to < ANSI C63.10-2013, FCC CFR 47 Part 2, FCC CFR 47 Part 15C, ISED RSS-GEN ISSUE 5, ISED RSS-247 ISSUE2> when <Accuracy Method> decision rule is applied.			

Prepared By:

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Tom Tang

Reviewed By:

Leon Wu

Leon Wu

Authorized By:

Chris Zhong

Chris Zhong
EMC&RF Lab Operations Manager

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, ANSI C63.10-2013, FCC CFR 47 Part 2, FCC CFR 47 Part 15, ISED RSS-GEN ISSUE 5, ISED RSS-247 ISSUE 2.

3. FACILITIES AND ACCREDITATION

Test Location	**UL-CCIC Company Limited, EMC&RF Lab**
Address	**No. 2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122 ,China**
Accreditation Certificate	**A2LA (Certificate No.: 4829.01)** **UL-CCIC COMPANY LIMITED has been assessed and proved to be in compliance with A2LA.** **FCC (FCC Designation No.: CN1247)** **UL-CCIC COMPANY LIMITED has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules.** **IC (IC Designation No.: 25056; CAB No.:CN0073)** **UL-CCIC COMPANY LIMITED has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules.**

Note 1: All tests measurement facilities use to collect the measurement data are located at No. 2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122, People's Republic of China

Note 2: For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. These measurements below 30MHz had been correlated to measurements performed on an OFS.

Note 3: The test anechoic chamber in UL-CCIC COMPANY LIMITED had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty
Conduction emission	3.1dB
Radiation Emission test(include Fundamental emission) (9KHz-30MHz)	3.4dB
Radiation Emission test(include Fundamental emission) (30MHz-1GHz)	3.4dB
Radiation Emission test (1GHz to 26GHz)(include Fundamental emission)	3.7dB (1GHz-18Gz)
	4.0dB (18GHz-26.5Gz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

Product Name:	Smart Cordless Vacuum & Washer
Model No.:	FW103200US
Operating Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz
Type of Modulation:	IEEE for 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE for 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n HT20: OFDM (64QAM, 16QAM, QPSK, BPSK)
Channels Step:	Channels with 5MHz step
Test software of EUT:	EspRFtestTool_2.0 (manufacturer declare)
Antenna Type:	PCB antenna
Antenna Gain:	2dBi
	Remark: This data is provided by customer and our lab isn't responsible for this data
Test Voltage	AC120V

5.2. MAXIMUM OUTPUT POWER

Number of Transmit Chains (NTX)	IEE Std. 802.11	Channel Number	Max AV Conducted Power (dBm)
1	IEEE 802.11B SISO	1-11[11]	11.62
1	IEEE 802.11G SISO	1-11[11]	11.06
1	IEEE 802.11nHT20	1-11[11]	10.85

5.3. CHANNEL LIST

Channel List for 802.11b/g/n (20 MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	4	2427	7	2442	10	2457
2	2417	5	2432	8	2447	11	2462
3	2422	6	2437	9	2452		

5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency
WiFi TX(802.11b)	CH 1, CH 6, CH 11	2412MHz, 2437MHz, 2462MHz
WiFi TX(802.11g)	CH 1, CH 6, CH 11	2412MHz, 2437MHz, 2462MHz
WiFi TX(802.11n HT20)	CH 1, CH 6, CH 11	2412MHz, 2437MHz, 2462MHz

5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band							
Test Software		EspRFtestTool					
Modulation Mode	Transmit Antenna Number	Test Channel					
		NCB: 20MHz			NCB: 40MHz		
		CH 1	CH 6	CH 11	CH 3	CH 6	CH 9
802.11b	1	Default	Default	Default	/		
802.11g	1	Default	Default	Default			
802.11n HT20	1	Default	Default	Default			

Remark: The value list above is the setting of att in the software.

5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	2400-2483.5	PCB antenna	2

Test Mode	Transmit and Receive Mode	Description
IEEE 802.11b	☒1TX, 1RX	Antenna1 can be used as transmitting/receiving antenna independently.
IEEE 802.11g	☒1TX, 1RX	Antenna1 can be used as transmitting/receiving antenna independently.
IEEE 802.11N (HT20)	☒1TX, 1RX	Antenna1 can be used as transmitting/receiving antenna independently.

5.7. THE WORSE CASE CONFIGURATIONS

Worst-case data rates as provided by the client were:

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20 mode: MCS0

5.8. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Description
1	Laptop	ThinkPad	E590	N/A
2	Fixed Frequency Board	N/A	N/A	Supply by Customer
3	USB Cable	N/A	N/A	Supply by UL Lab(100cm length)

I/O PORT

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	N/A	N/A	N/A	N/A	N/A

ACCESSORY

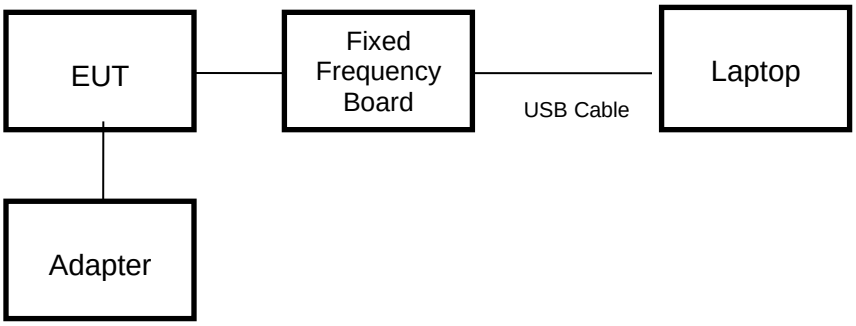
Item	Accessory	Brand Name	Model Name	Description
1	AC/DC ADAPTOR	Class 2 Power Supply	KL-WA260100-A3	INPUT:100-240V~, 50/60Hz, 1.2A OUTPUT:26.0V⎓1.0A
2	AC/DC ADAPTOR	Class 2 Power Supply	S030-1B260100HU	INPUT:100-240V~, 50/60Hz, 0.8A OUTPUT:26.0V⎓1.0A

Remark: Pre-testing both models of the adapters and find the model: S030-1B260100HU which is worse, so only the data of worse model: S030-1B260100HU is included in this report.

TEST SETUP

The EUT can work in an engineer mode with a software through a table PC.

SETUP DIAGRAM FOR TESTS



5.9. MEASURING INSTRUMENT AND SOFTWARE USED

Conducted Emissions (Instrument)							
Used	Equipment	Manufacturer	Model No.	Serial No.	Upper Last Cal.	Last Cal.	Next Cal.
☑	EMI Test Receiver	R&S	ESR3	126700	2021-12-04	2022-12-03	2023-12-02
☑	Two-Line V-Network	R&S	ENV216	126701	2021-12-04	2022-12-03	2023-12-02

Software					
Used	Description	Manufacturer	Name	Version	
☑	Test Software for Conducted disturbance	R&S	EMC32	Ver. 9.25	

Radiated Emissions (Instrument)							
Used	Equipment	Manufacturer	Model No.	Serial No.	Upper Last Cal.	Last Cal.	Next Cal.
☑	Spectrum Analyzer	Keysight	N9010B	155727	2021-05-09	2022-04-09	2023-04-08
☑	EMI test receiver	R&S	ESR7	221694	/	2022-05-20	2023-05-19
☑	EMI test receiver	R&S	ESR26	126703	2021-12-04	2022-12-03	2023-12-02
☑	Receiver Antenna (9kHz-30MHz)	Schwarzbeck	FMZB 1513	155456	2018-06-15	2021-06-03	2024-06-02
☑	Receiver Antenna (30MHz-1GHz)	Schwarzbeck	VULB 9163	126704	2019-02-15	2022-01-18	2025-01-17
☑	Receiver Antenna (1GHz-18GHz)	R&S	HF907	126705	2018-01-29	2022-02-28	2025-02-27
☑	Receiver Antenna (18GHz-26.5GHz)	ETS	3160-10	155565	2019-01-05	2021-07-15	2024-07-14
☑	Pre-amplification (To 18GHz)	R&S	SCU-18D	134667	2021-12-04	2022-12-03	2023-12-02
☑	Pre-amplification (To 18GHz)	Tonsend	TAP01018050	224539	/	2022-10-20	2023-10-19
☑	Pre-amplification (To 26.5GHz)	R&S	SCU-26D	135391	2021-12-04	2022-12-03	2023-12-02
☑	Band Reject Filter	Wainwright	WRCJV8-2350-2400-2483.5-2533.5-40SS	1	2021-05-09	2022-04-09	2023-04-08
☑	Highpass Filter	Wainwright	WHKX10-2700-3000-18000-40SS	2	2021-05-09	2022-04-09	2023-04-08
☑	Attenuator	Wainwright	BW-N1-W5+	3	2021-05-09	2022-05-08	2023-05-07

Software					
Used	Description	Manufacturer	Name	Version	
☑	Test Software for Radiated disturbance	Tonscend	JS36-RSE	4.0.0.1	

Other Instruments							
Used	Equipment	Manufacturer	Model No.	Serial No.	Upper Last Cal.	Last Cal.	Next Cal.
☑	Spectrum Analyzer	Keysight	N9010B	155368	2021-05-09	2022-04-09	2023-04-08
☑	Attenuator	PASTERNACK	PE7087-6	1624	/	2022-05-23	2023-05-22

6. MEASUREMENT METHODS

No.	Test Item	KDB Name	Section
1	6dB Bandwidth and 99% Bandwidth	KDB 558074 D01 15.247 Meas Guidance v05r02	8.2
2	Conducted (average)Output Power	KDB 558074 D01 15.247 Meas Guidance v05r02	8.3.2.2 (Method AVGSA-2)
3	Power Spectral Density	KDB 558074 D01 15.247 Meas Guidance v05r02	8.4 (Method PKPSD)
4	Out-of-band emissions in non-restricted bands	KDB 558074 D01 15.247 Meas Guidance v05r02	8.5
5	Out-of-band emissions in restricted bands	KDB 558074 D01 15.247 Meas Guidance v05r02	8.6
6	Band-edge	KDB 558074 D01 15.247 Meas Guidance v05r02	8.7
7	Conducted Emission Test For AC Power Port	ANSI C63.10-2013	6.2

7. ANTENNA PORT TEST RESULTS

7.1. TEST ENVIRONMENT

Environment Parameter	Selected Values During Tests
Relative Humidity	56.5%
Atmospheric Pressure:	102.1kPa
Temperature	22°C
Test Voltage	AC120V

7.2. ON TIME AND DUTY CYCLE

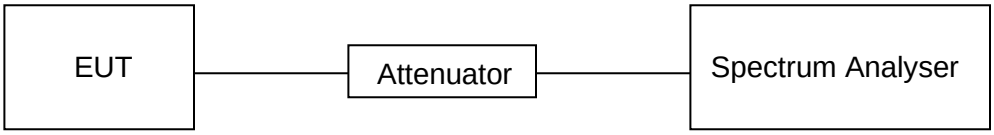
LIMITS

None; for reporting purposes only

PROCEDURE

FCC KDB 558074 Zero-Span Spectrum Analyzer Method

TEST SETUP

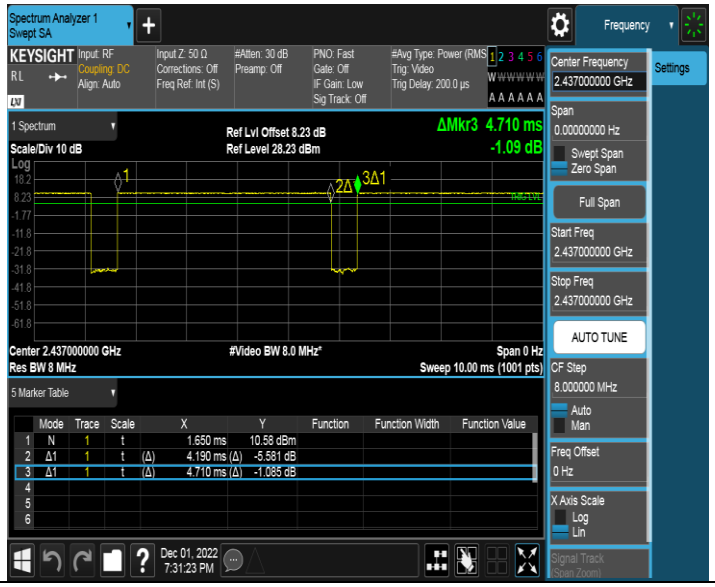


RESULTS

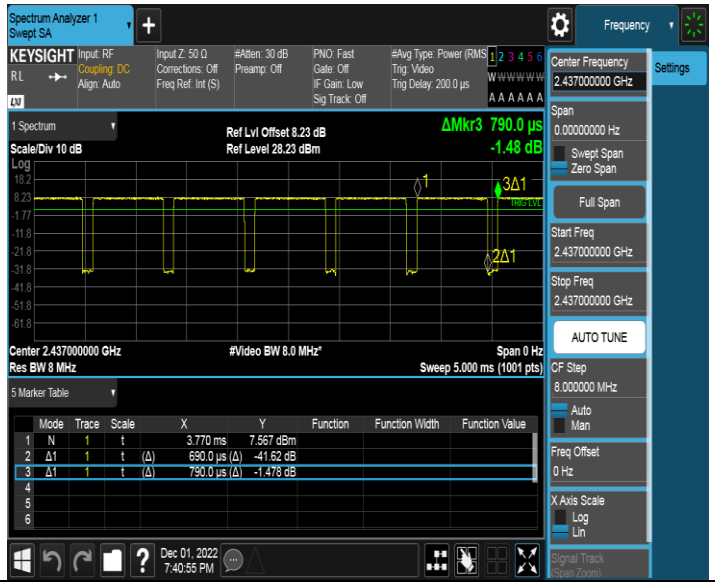
Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (db)	1/T Minimum VBW (KHz)	Final Minimum VBW (KHz)
11B	4.19	4.71	0.89	89	0.51	0.239	1
11G	0.69	0.79	0.87	87	0.60	1.449	2
11N HT20	0.66	0.76	0.87	87	0.60	1.515	2

Note: 1) Duty Cycle Correction Factor=10log(1/x).
2) Where: x is Duty Cycle(Linear)
3) Where: T is On Time (transmit duration)

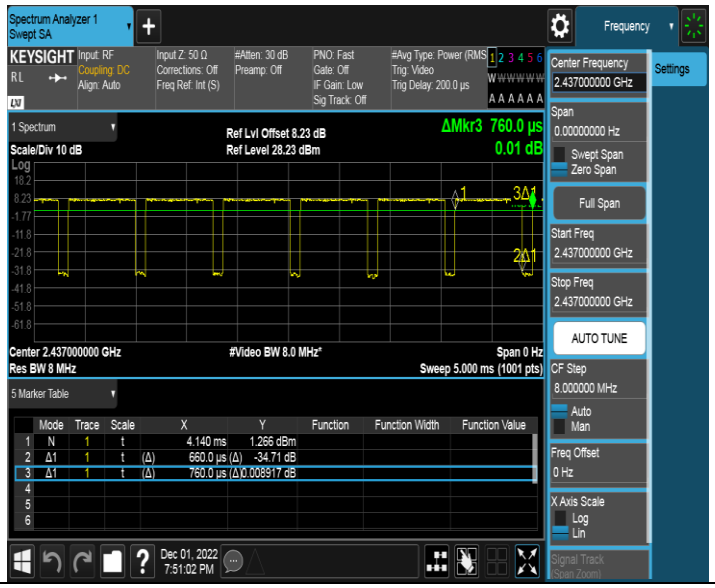
11B ON TIME AND DUTY CYCLE MID CH (WORSE CASE)



11G ON TIME AND DUTY CYCLE MID CH (WORSE CASE)



11N HT20 ON TIME AND DUTY CYCLE MID CH (WORSE CASE)



7.3. 6 dB BANDWIDTH AND 99% BANDWIDTH

LIMITS

FCC Part15 (15.247) Subpart C, ISED RSS-247 Issue 2			
Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.247(a)(2)	6dB Bandwidth	>= 500KHz	2400-2483.5
ISED RSS-Gen Clause 6.7	99% Occupied Bandwidth	For reporting purposes only.	2400-2483.5

TEST PROCEDURE

Refer to FCC KDB 558074, connect the UUT to the spectrum analyzer and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	For 6dB Bandwidth :100K For 99% Occupied Bandwidth :1% to 5% of the occupied bandwidth
VBW	For 6dB Bandwidth : ≥3 × RBW For 99% Occupied Bandwidth : approximately 3×RBW
Trace	Max hold
Sweep	Auto couple

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

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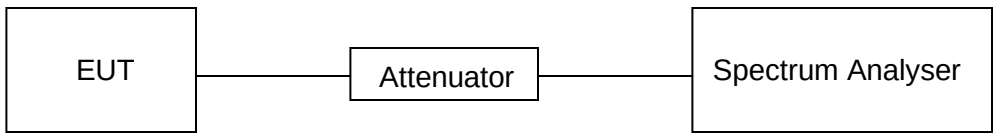
TEST SETUP



RESULTS

Test Mode	Test Channel	6dB bandwidth (MHz)	99% bandwidth (MHz)	Result
11B	LCH	8.553	10.598	Pass
	MCH	8.075	10.551	Pass
	HCH	8.096	10.541	Pass
11G	LCH	15.776	16.414	Pass
	MCH	15.815	16.386	Pass
	HCH	15.807	16.405	Pass
11N HT20	LCH	15.969	17.332	Pass
	MCH	16.035	17.311	Pass
	HCH	16.043	17.339	Pass

Test Graphs
For 6dB Bandwidth part:

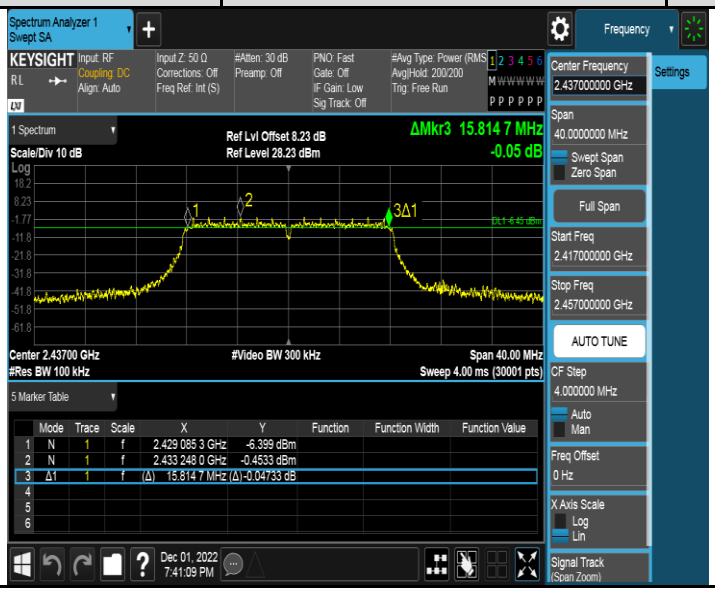
Test Mode	Test Channel	Verdict
11B	LCH	PASS

Test Mode	Test Channel	Verdict
11B	MCH	PASS

Test Mode	Test Channel	Verdict
11B	HCH	PASS

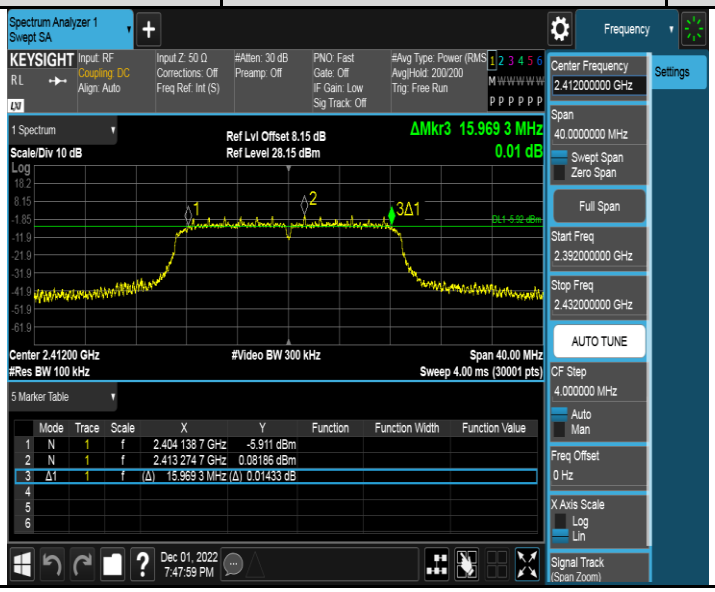
Test Mode	Test Channel	Verdict
11G	LCH	PASS

Test Mode	Test Channel	Verdict
11G	MCH	PASS

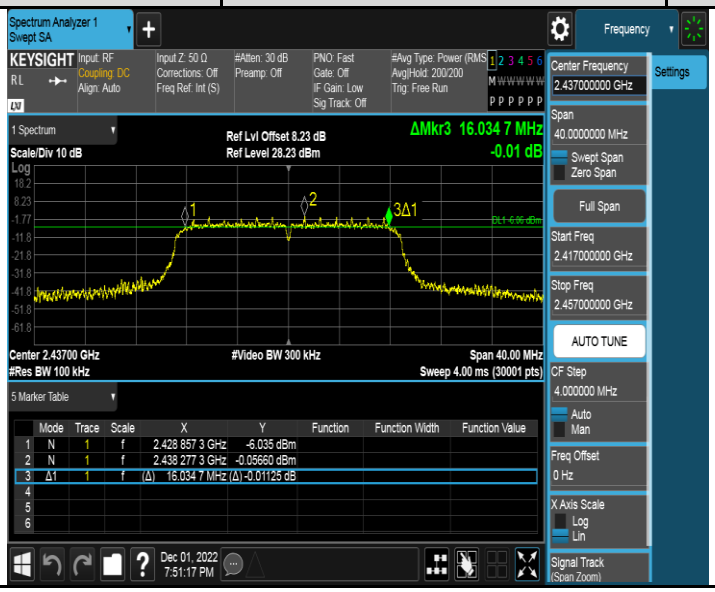


Test Mode	Test Channel	Verdict
11G	HCH	PASS

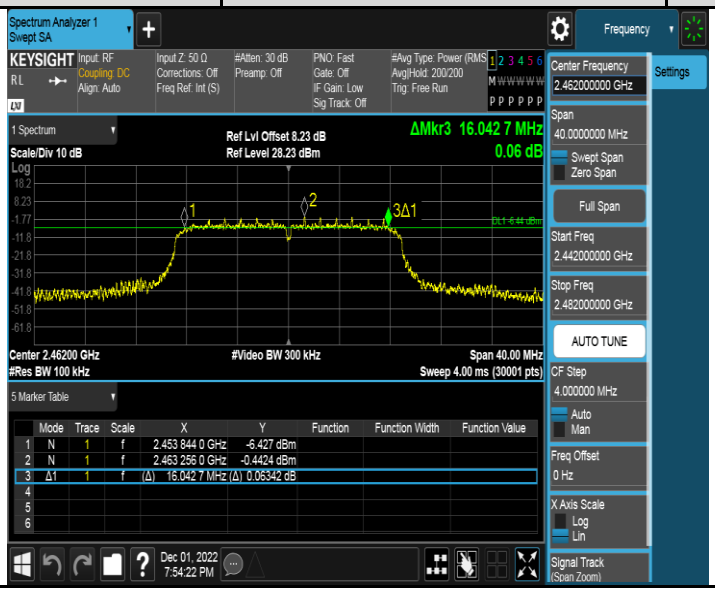
Test Mode	Test Channel	Verdict
11N HT20	LCH	PASS



Test Mode	Test Channel	Verdict
11N HT20	MCH	PASS

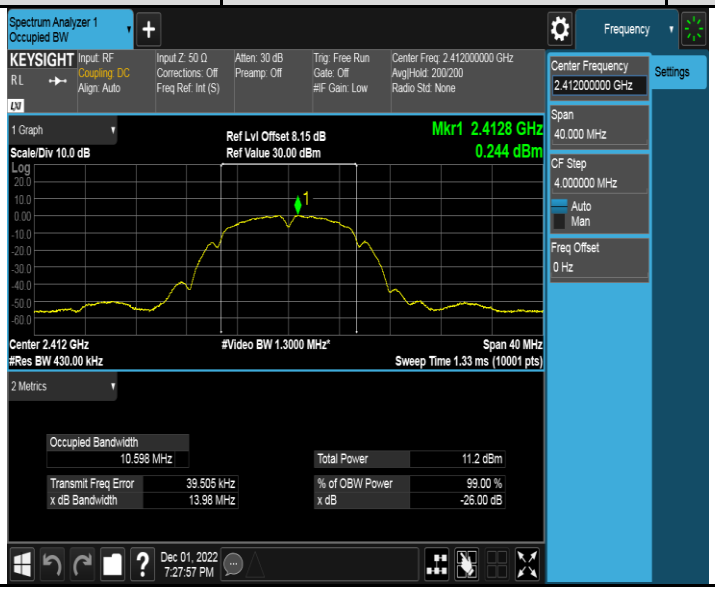


Test Mode	Test Channel	Verdict
11N HT20	HCH	PASS

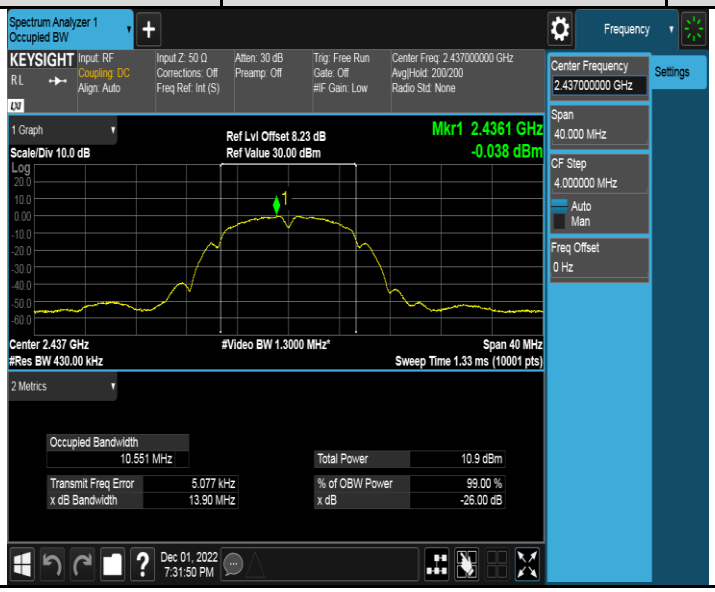


For 99% Bandwidth part:

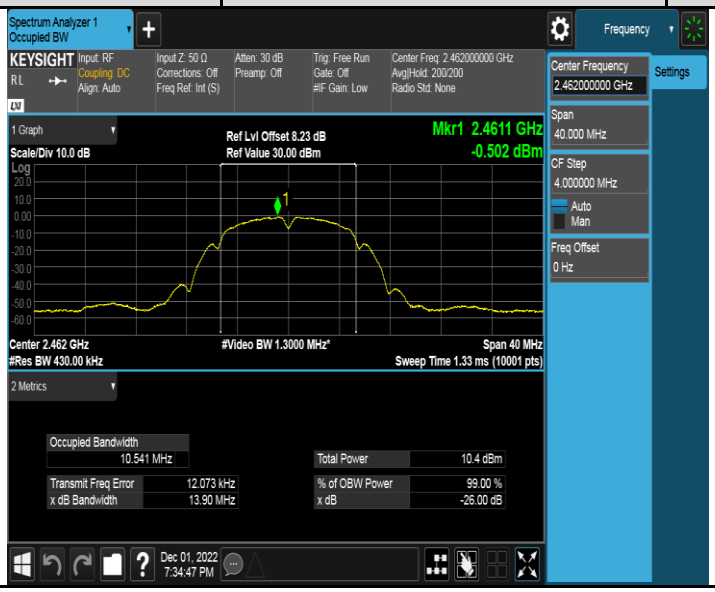
Test Mode	Test Channel	Verdict
11B	LCH	PASS



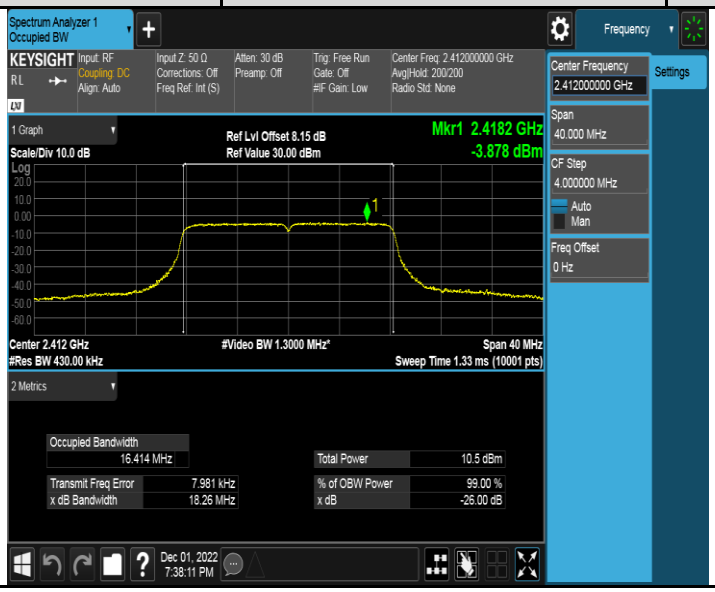
Test Mode	Test Channel	Verdict
11B	MCH	PASS



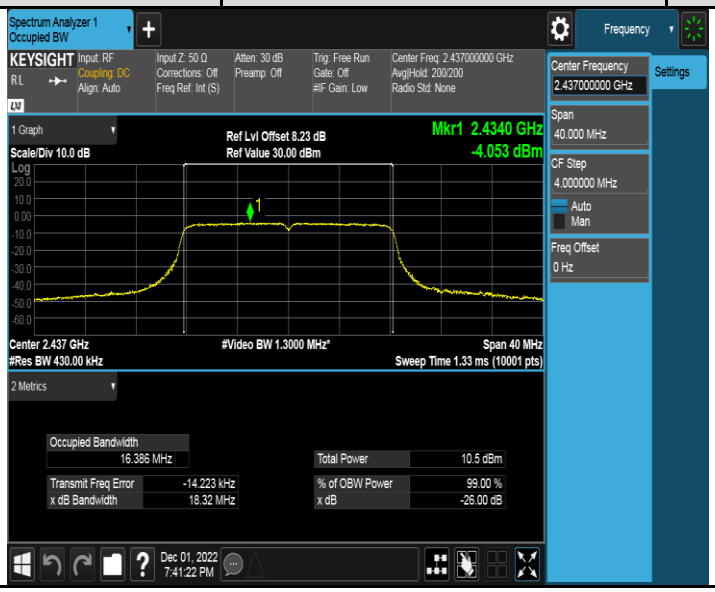
Test Mode	Test Channel	Verdict
11B	HCH	PASS



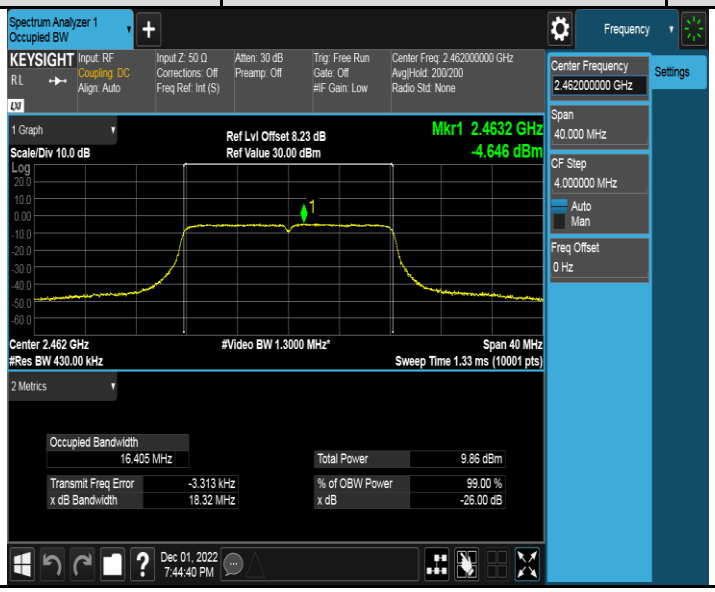
Test Mode	Test Channel	Verdict
11G	LCH	PASS



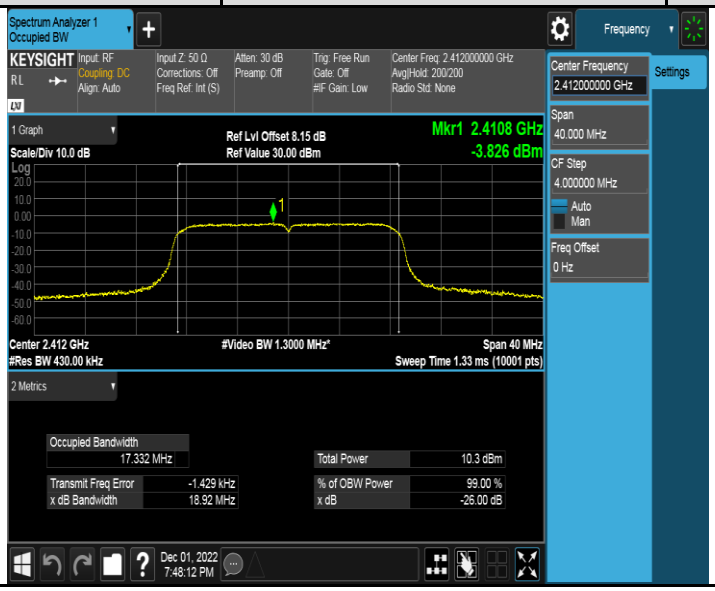
Test Mode	Test Channel	Verdict
11G	MCH	PASS



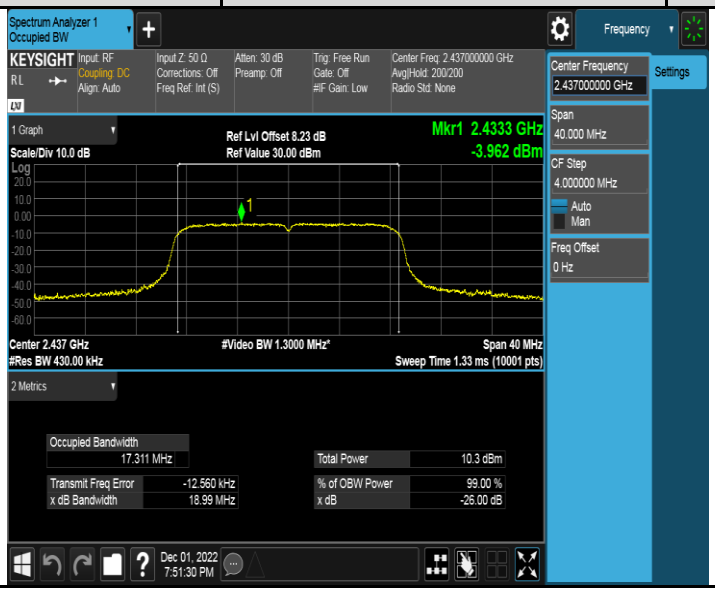
Test Mode	Test Channel	Verdict
11G	HCH	PASS



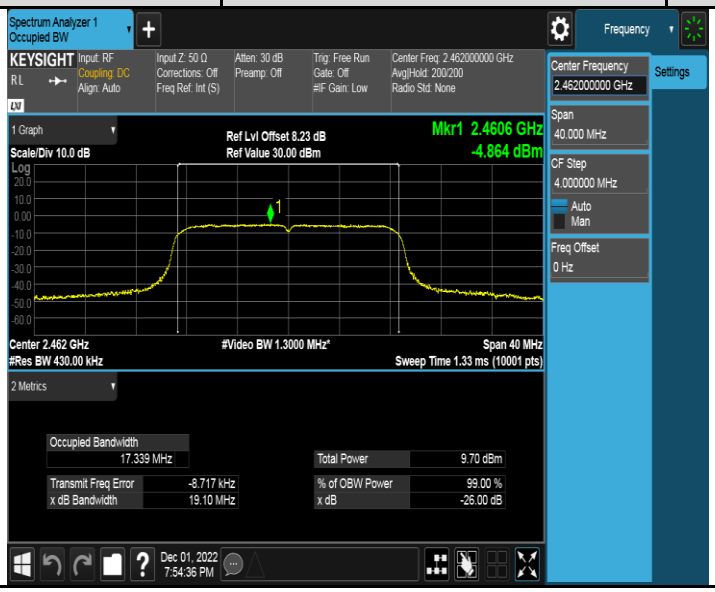
Test Mode	Test Channel	Verdict
11N HT20	LCH	PASS



Test Mode	Test Channel	Verdict
11N HT20	MCH	PASS



Test Mode	Test Channel	Verdict
11N HT20	HCH	PASS



7.4. CONDUCTED (AVERAGE) OUTPUT POWER

LIMITS

FCC Part15 (15.247) Subpart C , ISED RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.247(b)(3) ISED RSS-247 5.4 (d) RSS-Gen Clause 6.12	Output Power	1 watt or 30dBm	2400-2483.5

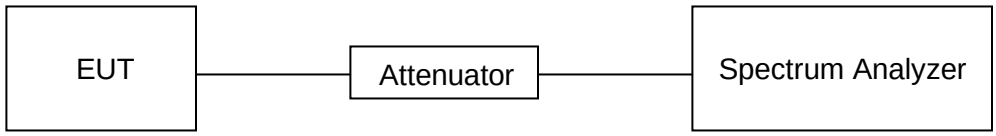
TEST PROCEDURE

KDB 558074 D01 15.247 Meas Guidance v05r02 Section 8.3.2.2 (Refer Section 11.9.2.2.4 in ANSI C63.10-2013):

Method AVGSA-2 uses trace averaging across ON and OFF times of the EUT transmissions, followed by duty cycle correction. The procedure for this method is as follows:

a) Measure the duty cycle D of the transmitter output signal as described in 11.6.
b) Set span to at least 1.5 times the OBW.
c) Set RBW = 1% to 5% of the OBW, not to exceed 1 MHz.
d) Set VBW ⩾ [3 × RBW].
e) Number of points in sweep ⩾ [2 × span / RBW]. (This gives bin-to-bin spacing ⩽ RBW / 2, so that narrowband signals are not lost between frequency bins.)
f) Sweep time = auto.
g) Detector = RMS (i.e., power averaging), if available. Otherwise, use the sample detector mode.
h) Do not use sweep triggering. Allow the sweep to "free run."
i) Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed such that the average accurately represents the true average over the ON and OFF periods of the transmitter.
j) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function with band limits set equal to the OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.
k) 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 dB if the duty cycle is 25%.

TEST SETUP



RESULTS

For Normal Testing Part:

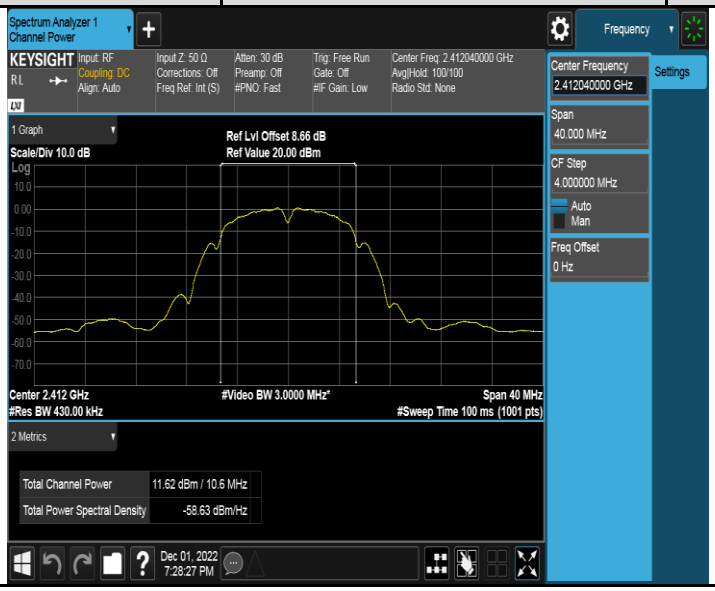
Test Mode	Test Channel	Measurement Output Power (AV)	10log(1/x) Factor	Maximum Conducted Output Power (AV)	Result
		dBm	dB	dBm	
11B	LCH	11.11	0.51	11.62	Pass
	MCH	10.97	0.51	11.48	Pass
	HCH	10.30	0.51	10.81	Pass
11G	LCH	10.45	0.60	11.05	Pass
	MCH	10.46	0.60	11.06	Pass
	HCH	9.84	0.60	10.44	Pass
11N HT20	LCH	10.24	0.60	10.84	Pass
	MCH	10.25	0.60	10.85	Pass
	HCH	9.72	0.60	10.32	Pass

Remark:

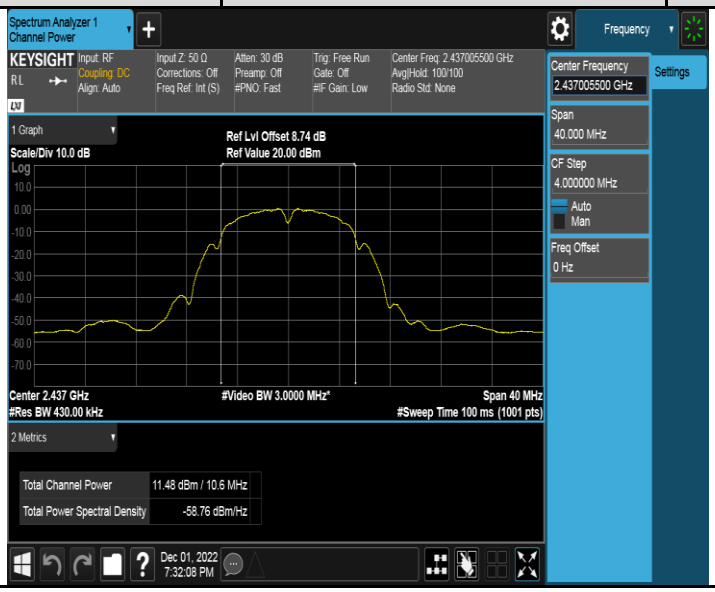
1) For all the test results has been adjusted the duty cycle factor.
2) For Correction Factor is refer to the result in section 7.2

Test Graphs:

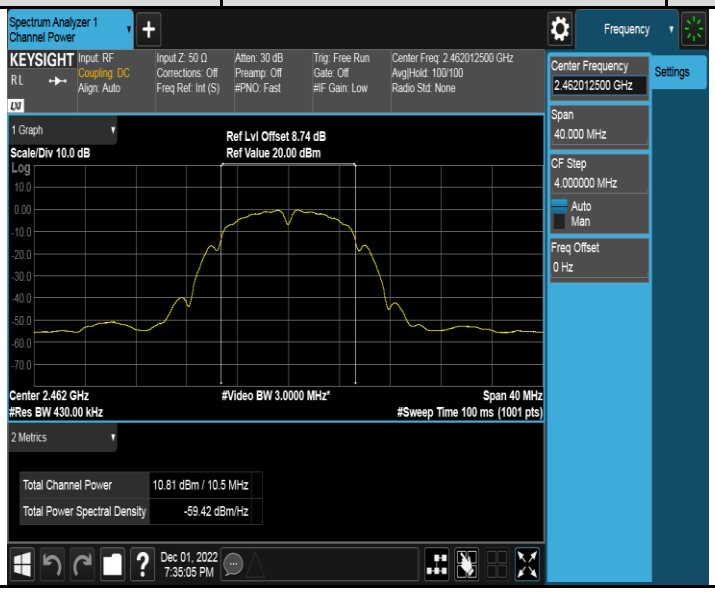
Test Mode	Test Channel	Verdict
11B	LCH	PASS



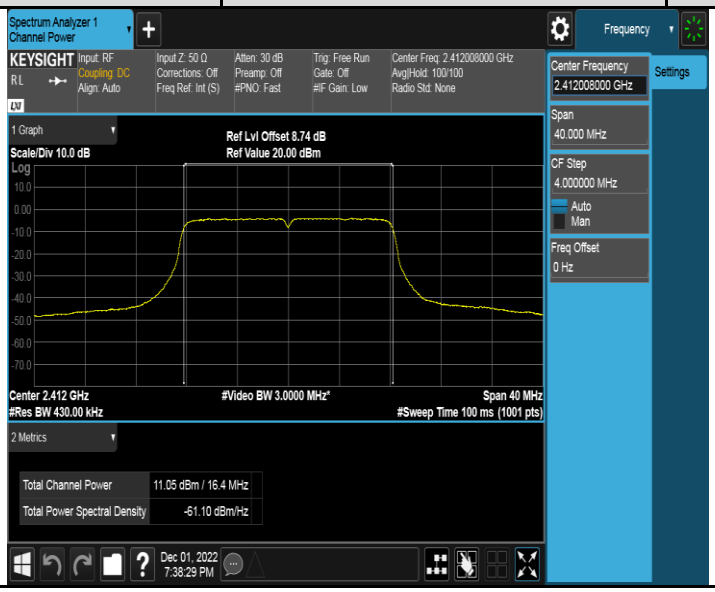
Test Mode	Test Channel	Verdict
11B	MCH	PASS



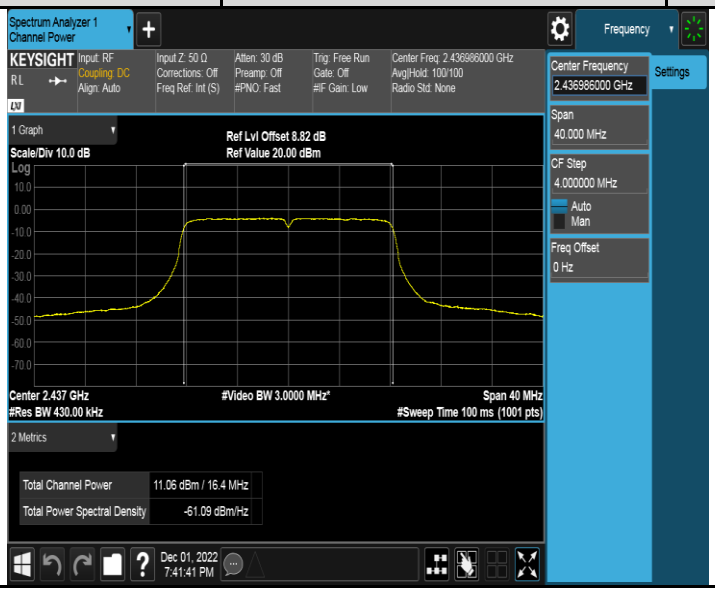
Test Mode	Test Channel	Verdict
11B	HCH	PASS



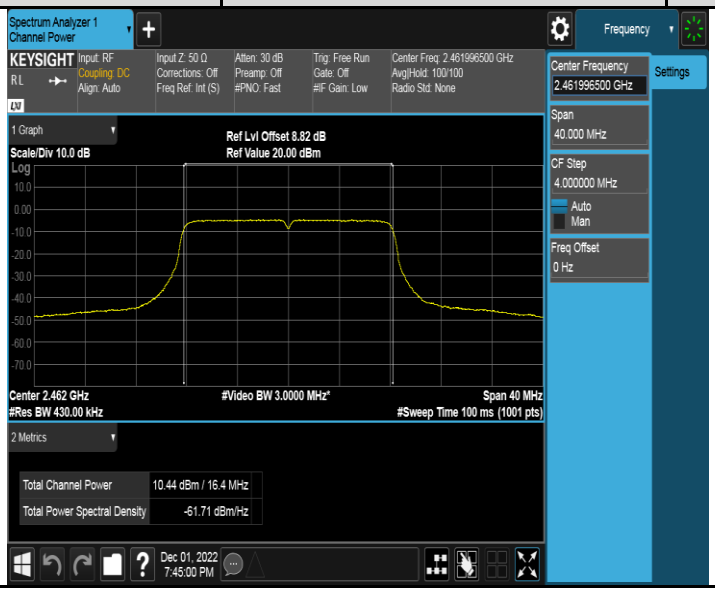
Test Mode	Test Channel	Verdict
11G	LCH	PASS



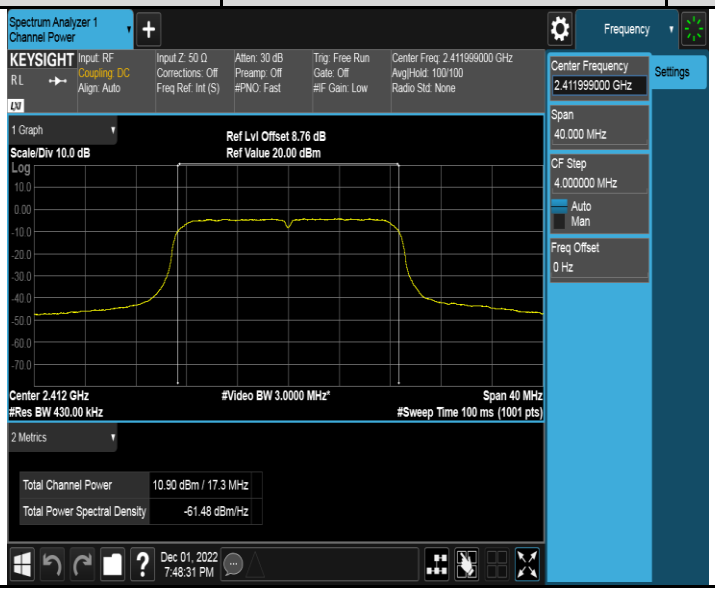
Test Mode	Test Channel	Verdict
11G	MCH	PASS



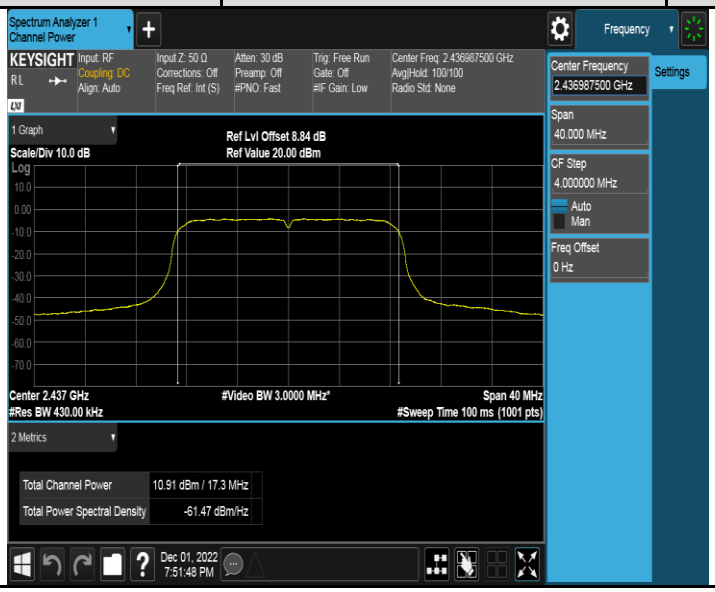
Test Mode	Test Channel	Verdict
11G	HCH	PASS



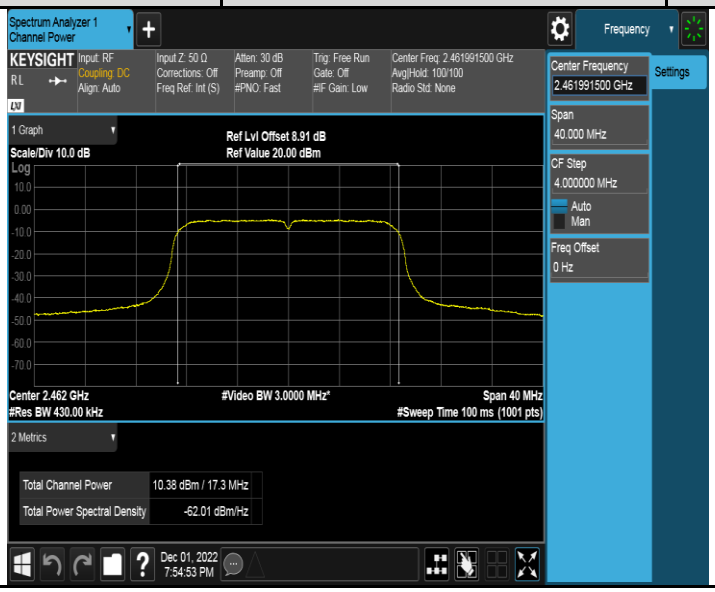
Test Mode	Test Channel	Verdict
11N HT20	LCH	PASS



Test Mode	Test Channel	Verdict
11N HT20	MCH	PASS



Test Mode	Test Channel	Verdict
11N HT20	HCH	PASS



7.5. POWER SPECTRAL DENSITY

LIMITS

FCC Part15 (15.247) Subpart C, ISED RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
FCC §15.247 (e) ISED RSS-247 5.2 (b)	Power Spectral Density	8 dBm in any 3 kHz band	2400-2483.5

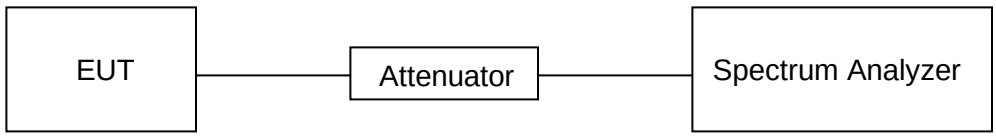
TEST PROCEDURE

Refer to FCC KDB 558074, connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	3 kHz ≤ RBW ≤100 kHz
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.
If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

TEST SETUP



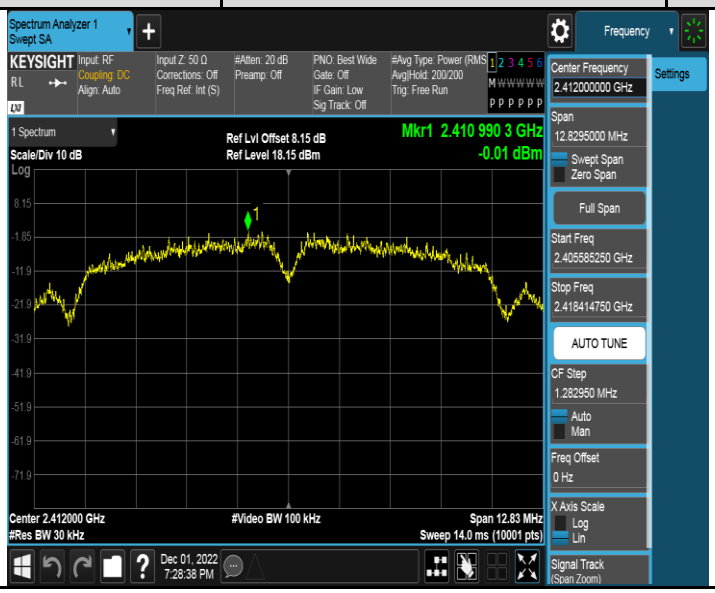
RESULTS

For Normal Testing Part:

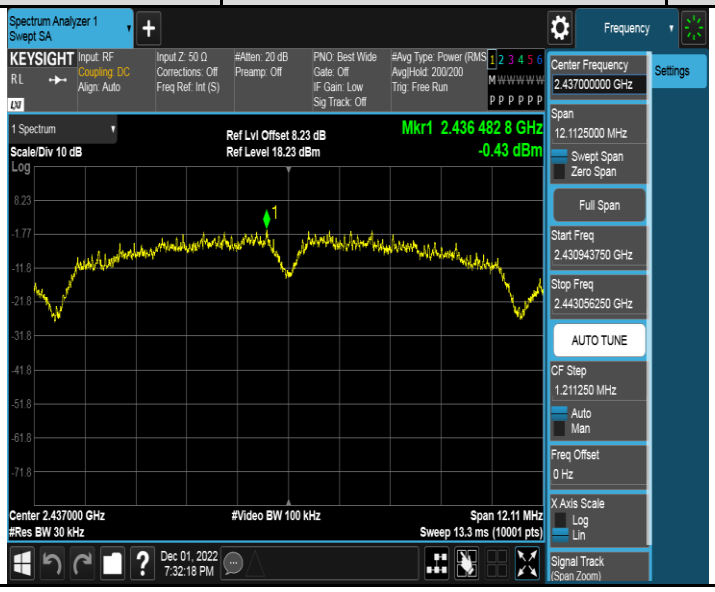
Test Mode	Test Channel	Maximum Peak power spectral density (dBm/30kHz)	Result
11B	LCH	-0.01	Pass
	MCH	-0.43	Pass
	HCH	-1.18	Pass
11G	LCH	-5.16	Pass
	MCH	-5.15	Pass
	HCH	-5.73	Pass
11N HT20	LCH	-4.26	Pass
	MCH	-4.47	Pass
	HCH	-5.12	Pass

Test Graphs:

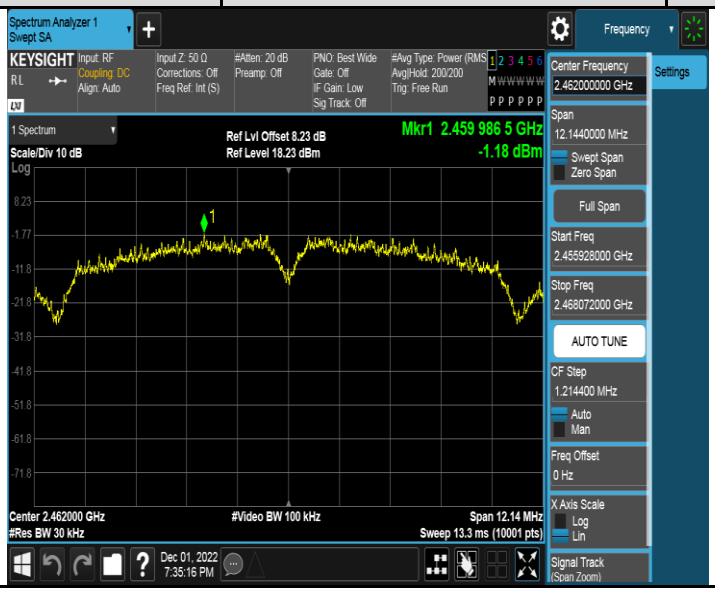
Test Mode	Test Channel	Verdict
11B	LCH	PASS



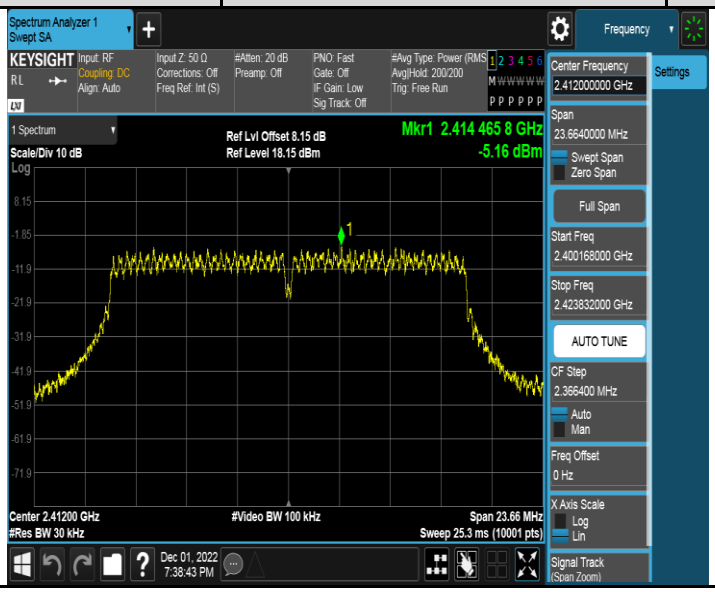
Test Mode	Test Channel	Verdict
11B	MCH	PASS



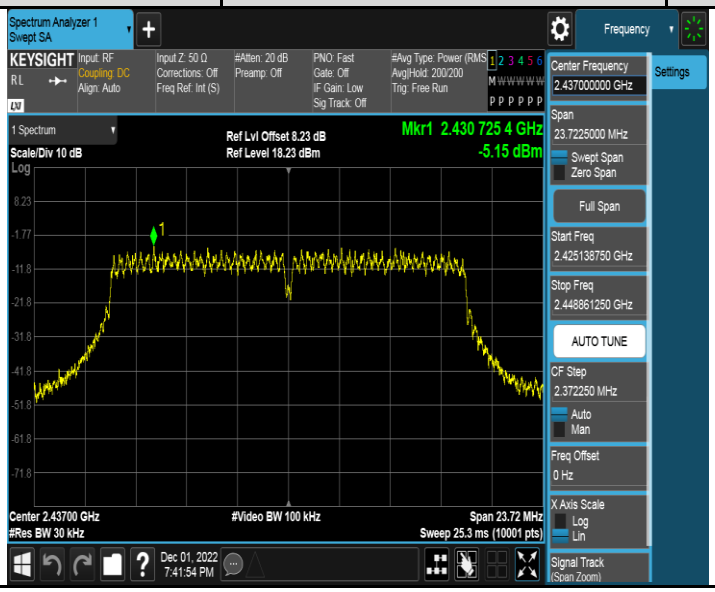
Test Mode	Test Channel	Verdict
11B	HCH	PASS



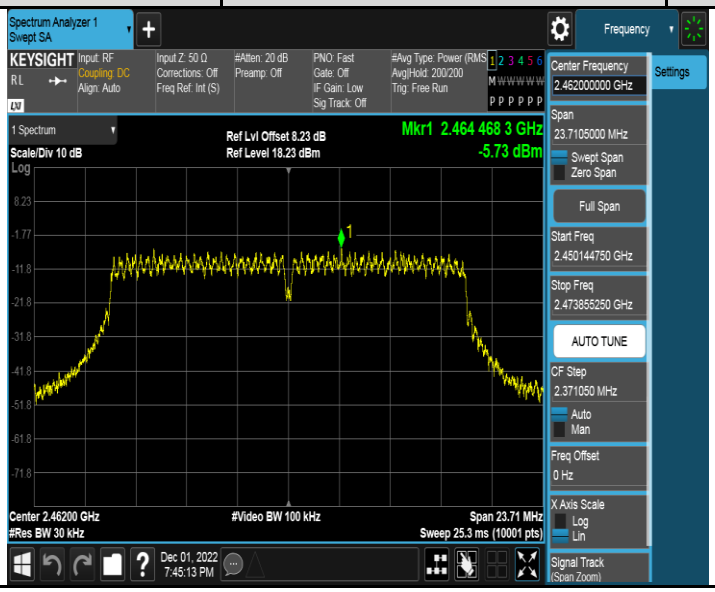
Test Mode	Test Channel	Verdict
11G	LCH	PASS



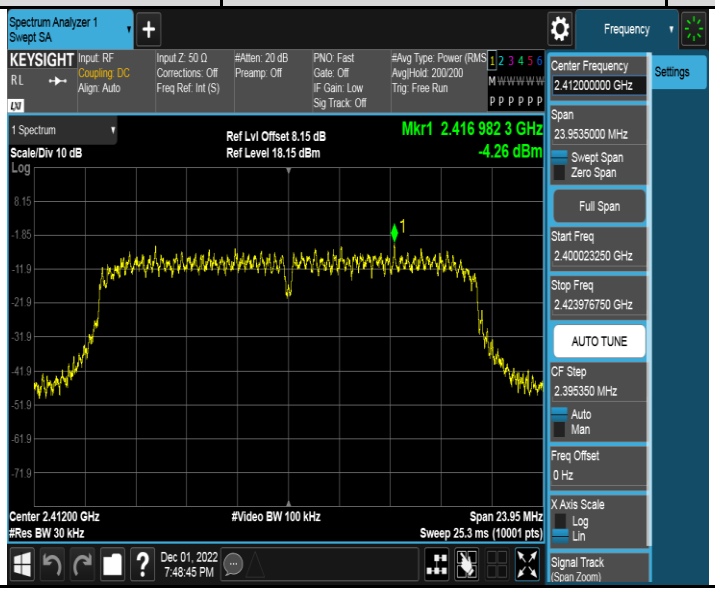
Test Mode	Test Channel	Verdict
11G	MCH	PASS



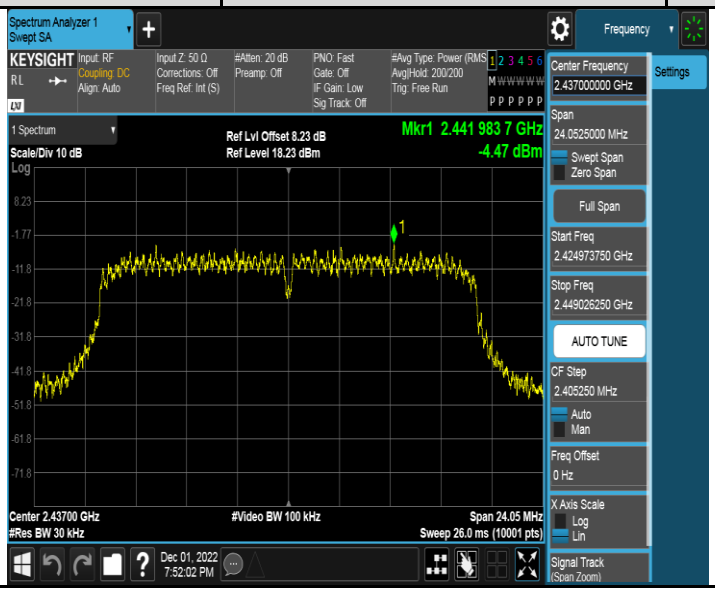
Test Mode	Test Channel	Verdict
11G	HCH	PASS



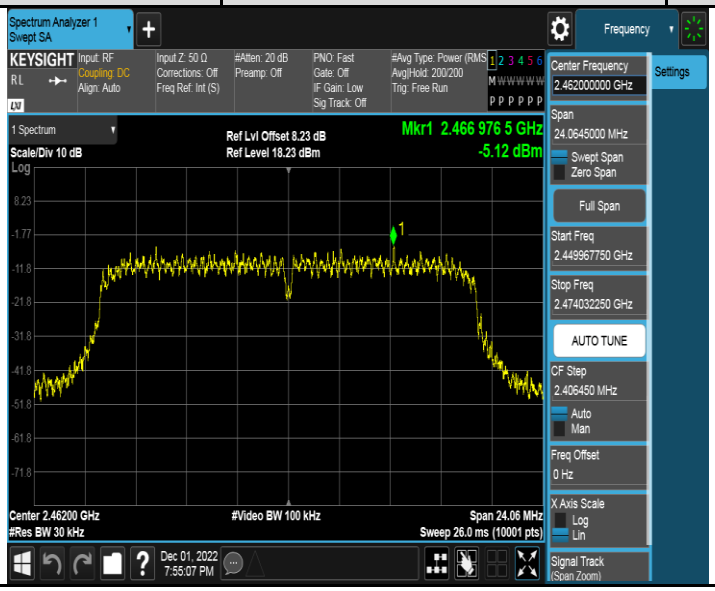
Test Mode	Test Channel	Verdict
11N HT20	LCH	PASS



Test Mode	Test Channel	Verdict
11N HT20	MCH	PASS



Test Mode	Test Channel	Verdict
11N HT20	HCH	PASS



7.6. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

LIMITS

FCC Part15 (15.247) Subpart C, ISED RSS-247 ISSUE 2		
Section	Test Item	Limit
FCC §15.247 (d) RSS-247 Clause 5.5 RSS-GEN Clause 6.13	Conducted Bandedge and Spurious Emissions	At least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

TEST PROCEDURE

Refer to FCC KDB 558074, connect the UUT to the spectrum analyser and use the following

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	100K
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

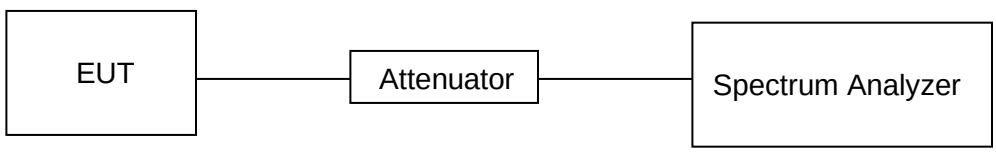
settings:

Use the peak marker function to determine the maximum PSD level.

Span	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100K
VBW	≥3 × RBW
measurement points	≥span/RBW
Trace	Max hold
Sweep time	Auto couple.

Use the peak marker function to determine the maximum amplitude level**.**

TEST SETUP



Part I :Conducted Bandedge

RESULTS TABLE

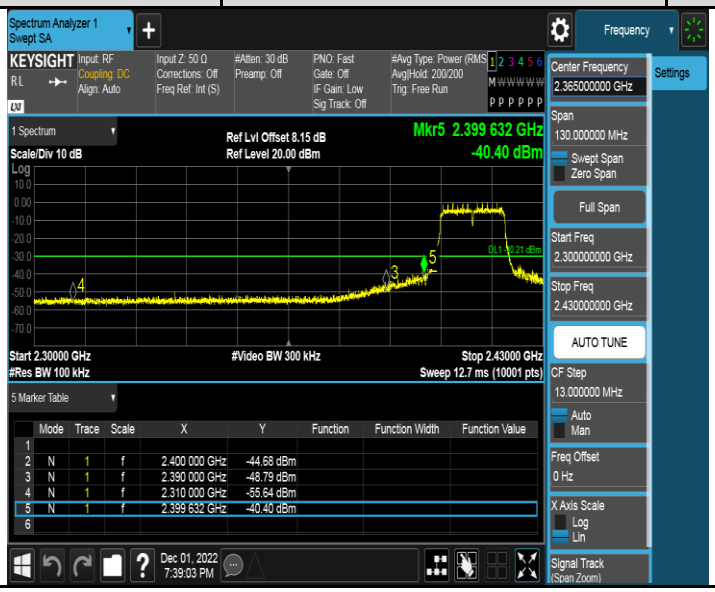
Test Mode	Test Antenna	Test Channel	Test Result	Verdict
11B	Antenna 1	LCH	See the test graphs	PASS
		HCH	See the test graphs	PASS
11G	Antenna 1	LCH	See the test graphs	PASS
		HCH	See the test graphs	PASS
11N HT20	Antenna 1	LCH	See the test graphs	PASS
		HCH	See the test graphs	PASS

TEST GRAPHS

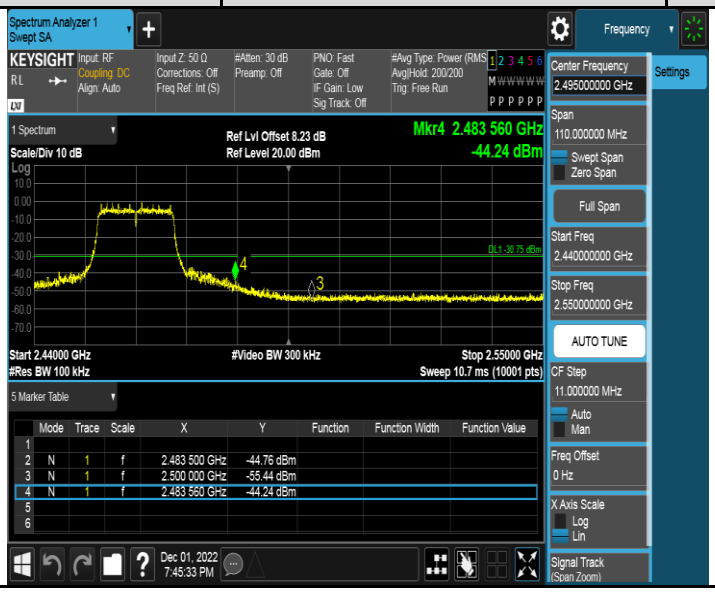
Test Mode	Test Channel	Verdict
11B	LCH	PASS

Test Mode	Test Channel	Verdict
11B	HCH	PASS

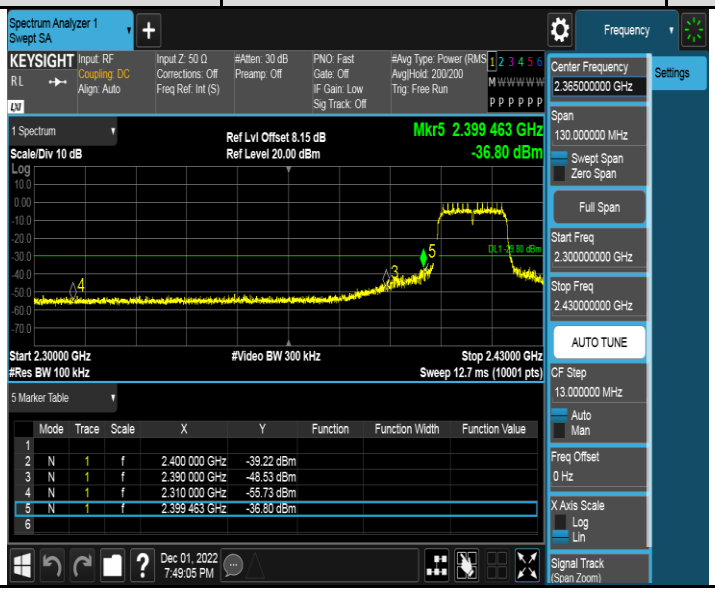
Test Mode	Test Channel	Verdict
11G	LCH	PASS



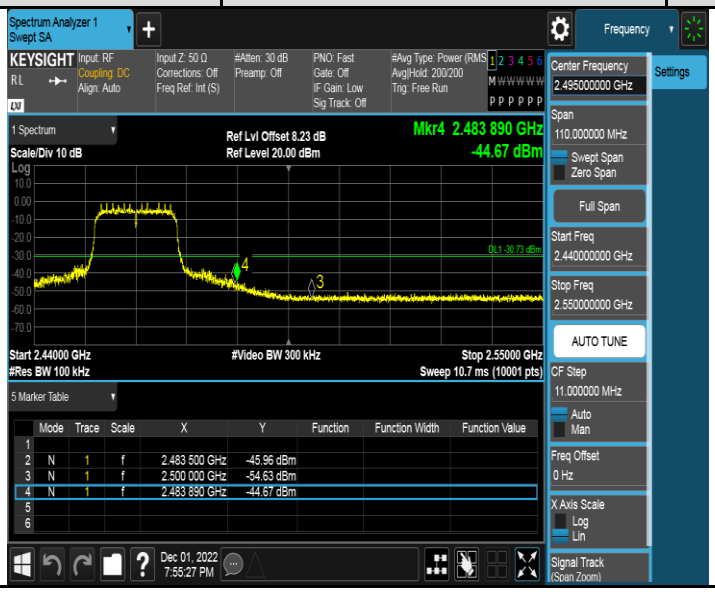
Test Mode	Test Channel	Verdict
11G	HCH	PASS



Test Mode	Test Channel	Verdict
11N HT20	LCH	PASS



Test Mode	Test Channel	Verdict
11N HT20	HCH	PASS



Part II :Conducted Emission

Test Result Table

Test Mode	Test Antenna	Channel	Pref(dBm)	Puw(dBm)	Verdict
11B SISO	Antenna 1	LCH	See the test graphs	<Limit	PASS
		MCH	See the test graphs	<Limit	PASS
		HCH	See the test graphs	<Limit	PASS
11G SISO	Antenna 1	LCH	See the test graphs	<Limit	PASS
		MCH	See the test graphs	<Limit	PASS
		HCH	See the test graphs	<Limit	PASS
11N HT20	Antenna 1	LCH	See the test graphs	<Limit	PASS
		MCH	See the test graphs	<Limit	PASS
		HCH	See the test graphs	<Limit	PASS

Test Plots

Test Mode	Channel	Verdict
11B	LCH	PASS

Pref test Plot

LCH SPURIOUS EMISSION