

FCC 47 CFR PART 15 SUBPART C ISED RSS-247 Issue 3

TEST REPORT

For

Smart Cordless Steam Floor Washer

FCC MODEL NUMBER: SW110100US

FCC ADDITIONAL MODEL NUMBER: SW11******

("*" = 0-9, A-Z or blank used to denote different countries, customers, colors or minor cosmetic changes, or for indicate factory identification)

IC MODEL NUMBER: SW110100US

PROJECT NUMBER: 4790935097

REPORT NUMBER: 4790935097-1

FCC ID: 2AV7A-SW11

IC: 26039-SW11

ISSUE DATE: Sep. 26, 2023

Prepared for

Tineco Intelligent Technology Co., Ltd.

Prepared by

UL-CCIC COMPANY LIMITED

No. 2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122, China

Tel: +86 512-6808 6400 Fax: +86 512-6808 4099 Website: www.ul.com



Report No.: 4790935097-1 Page 2 of 152

Revision History

Rev.	Issue Date	Revisions	Revised By
V0	09/26/2023	Initial Issue	



TABLE OF CONTENTS

1.	APPL	ICANT INFORMATION	4
2.	TEST	METHODOLOGY	6
3.	FACI	LITIES AND ACCREDITATION	6
4.	CALI	BRATION AND UNCERTAINTY	7
	4.1.	MEASURING INSTRUMENT CALIBRATION	7
	4.2.	MEASUREMENT UNCERTAINTY	7
5.	EQUI	PMENT UNDER TEST	8
	5.1.	DESCRIPTION OF EUT	8
	5.2.	MAXIMUM OUTPUT POWER	9
	5.3.	CHANNEL LIST	9
	5.4.	TEST CHANNEL CONFIGURATION	10
	5.5.	THE WORSE CASE POWER SETTING PARAMETER	10
	5.6.	DESCRIPTION OF AVAILABLE ANTENNAS	11
	5.7.	THE WORSE CASE CONFIGURATIONS	11
	5.8.	TEST ENVIRONMENT	
	5.9.	DESCRIPTION OF TEST SETUP	12
	5.10.	MEASURING INSTRUMENT AND SOFTWARE USED	14
6.	MEAS	SUREMENT METHODS	15
7.	ANTE	ENNA PORT TEST RESULTS	16
	7.1.	ON TIME AND DUTY CYCLE	16
	7.2.	6 dB BANDWIDTH AND 99% OCCUPIED BANDWIDTH	19
	7.3.	CONDUCTED OUTPUT POWER	33
	7.4.	POWER SPECTRAL DENSITY	35
	7.5.	CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS	43
8.	RADI	ATED TEST RESULTS	69
	8.1.	LIMITS AND PROCEDURE	69
	8.2.	TEST ENVIRONMENT	76
	8.3.	RESTRICTED BANDEDGE	76
	8.4.	SPURIOUS EMISSIONS	93
9.	AC P	OWER LINE CONDUCTED EMISSIONS	149
10.	ANTE	NNA REQUIREMENTS	152
			Form-ULID-008536-9 V3.0



Page 4 of 152

1. APPLICANT INFORMATION

Applicant Information

Company Name: Tineco Intelligent Technology Co., Ltd.

Address: No. 108 Shihu Road West, Wuzhong Zone Suzhou, Jiangsu,

China 215128

Manufacturer Information

Company Name: Tineco Intelligent Technology Co., Ltd.

Address: No. 108 Shihu Road West, Wuzhong Zone Suzhou, Jiangsu,

China 215128

EUT Description

Product Name: Smart Cordless Steam Floor Washer

FCC Model Name: SW110100US FCC Additional No.: SW11******

("*" = 0-9, A-Z or blank used to denote different countries, customers, colors or minor cosmetic changes, or for indicate

factory identification)

IC Model Name: SW110100US

IC Additional No.:

Model Difference: Their electrical circuit design, layout, components used and

internal wiring are identical, only the color and model name is different. The model SW110100US was selected as the

representative model for compliance test.

Sample Number: 6268076
Data of Receipt Sample: Jul. 14, 2023

Test Date: Jul. 14, 2023~ Aug. 14, 2023

APPLICABLE STANDARDS				
STANDARD	TEST RESULTS			
CFR 47 Part 15 Subpart C	PASS			
ISED RSS-247 Issue 3	PASS			
ISED RSS-GEN Issue 5	PASS			



Page 5 of 152

	Summary of Test Results					
Clause	Test Items	Test Results				
1	6 dB Bandwidth and 99% Occupied Bandwidth	FCC 15.247 (a) (2) RSS-247 Clause 5.2 (a) RSS-Gen Clause 6.7	PASS			
2	Conducted Power	FCC 15.247 (b) (3) RSS-247 Clause 5.4 (d) RSS-Gen Clause 6.12	PASS			
3	Power Spectral Density	FCC 15.247 (e) RSS-247 Clause 5.2 (b)	PASS			
4	Conducted Band edge And Spurious emission	FCC 15.247 (d) RSS-247 Clause 5.5 RSS-GEN Clause 6.13	PASS			
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 6.13 RSS-GEN Clause 8.9 RSS-GEN Clause 8.10	PASS			
6	Conducted Emission Test for AC Power Port	FCC 15.207 RSS-GEN Clause 8.8	PASS			
7	Antenna Requirement	FCC 15.203 RSS-GEN Clause 6.8	PASS			

Note

The measurement result for the sample received is <Pass> according to < ANSI C63.10-2013, FCC 47 CFR Part 2, FCC 47 CFR Part 15C, ISED RSS-247, ISED RSS-Gen > when <Accuracy Method> decision rule is applied.

Prepared By:	Reviewed By:		
Tom Tang	Leun. Shen		
Tom Tang	Kevin Shen		
Authorized By:			
Leon Wu			
Leon Wu			



Page 6 of 152

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 558074 D01 15.247 Meas Guidance v05r02, 414788 D01 Radiated Test Site v01r01, CFR 47 FCC Part 2, CFR 47 FCC Part 15, ANSI C63.10-2013, ISED RSS-247 Issue 3 and ISED RSS-GEN Issue 5.

3. FACILITIES AND ACCREDITATION

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, 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.



Page 7 of 152

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
Maximum Conduct Output Power	± 1.3dB
DTS Bandwidth	±1.9 %
Maximum Conducted Output Power	± 0.69dB
Maximum Power Spectral Density Level	±1.5 dB
Band-edge Compliance	± 1.9%
Unwanted Emissions in Non-restricted Freq Bands	9kHz-30MHz: ±0.90dB 30MHz-1GHz: ±1.5 dB 1GHz-12.75GHz: ±1.9dB 12.75GHz-26.5GHz: ±2.1dB
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)	3.5dB (1GHz-18GHz)
Note: This uncertainty represents an expanded unc	3.9dB (18GHz-26.5GHz)

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



Page 8 of 152

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

Product Name:	Smart Cordless Steam Floor Washer			
Model No.:	SW110100US			
Operating Frequency:	IEEE 802.11B/G/N(HT20): 2412MHz to 2462MHz IEEE 802.11N(HT40): 2422MHz to 2452MHz			
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 and HT40): OFDM (64QAM, 16QAM, QPSK, BPSK)			
Channels Step:	Channels with 5MHz step			
Test software of EUT:	EspRFTestTool (manufacturer declare)			
Antenna Type:	PCB Antenna			
Antenna Gain:	2.87 dBi Note: This data is provided by customer and our lab isn't responsible for this data.			
	Adapter 1: Model: YLJX2I-T300100 INPUT: 100-240V~ 50/60Hz 1.0A Max OUTPUT:30.0V-1.0A			
Power Supply:	Adapter 2: Model: KL-WA300100-X INPUT: 100-240V~ 50/60Hz 1.2A OUTPUT:30.0V=1.0A			
	Note: Two models of adapter will be collocated to the EUT, both of them have been test, the model KL-WA300100-X is the worse case and recorded in this test report.			



Report No.: 4790935097-1 Page 9 of 152

MAXIMUM OUTPUT POWER 5.2.

Number of Transmit Chains (NTX)	IEE Std. 802.11	Channel Number	Max AVG Conducted Power (dBm)
1	IEEE 802.11B	1-11[11]	17.82
1	IEEE 802.11G	1-11[11]	16.04
1	IEEE 802.11N HT20	1-11[11]	15.87
1	IEEE 802.11N HT40	3-9[7]	15.44

5.3. CHANNEL LIST

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

Channel List for 802.11N(40 MHz)							
Channel					Frequency (MHz)		
3	2422	5	2432	7	2442	9	2452
4	2427	6	2437	8	2447		



Page 10 of 152

5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel (MHz)
	LCH: CH01 2412
IEEE 802.11B	MCH: CH06 2437
	HCH: CH11 2462
	LCH: CH01 2412
IEEE 802.11G	MCH: CH06 2437
	HCH: CH11 2462
	LCH: CH01 2412
IEEE 802.11N HT20	MCH: CH06 2437
	HCH: CH11 2462
	LCH: CH03 2422
IEEE 802.11N HT40	MCH: CH06 2437
	HCH: CH09 2452

5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band								
Test Softw	vare			EspRF	TestTool			
	Transmit			Test C	Channel			
Modulation Mode	Antenna		NCB: 20MHz			NCB: 40MHz		
Wiode	Number	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				
802.11N HT40	1		1		default	default	default	



Page 11 of 152

5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	2400-2483.5	PCB Antenna	2.87

Note: This data is provided by customer and our lab isn't responsible for this data.

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.
IEEE 802.11N HT40	⊠1TX, 1RX	Antenna1 can be used as transmitting/receiving antenna independently.

5.7. THE WORSE CASE CONFIGURATIONS

For WIFI module, the 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 802.11N HT40 mode: MCS0

5.8. TEST ENVIRONMENT

Environment Parameter	Selected Values During Tests				
Relative Humidity:	55 ~ 65%				
Atmospheric Pressure:	1025Pa				
Temperature:	TN	23 ~ 28°C			
Voltage:	VL	N/A			
	VN	AC 120V			
	VH	N/A			

Note: VL= Lower Extreme Test Voltage

VN= Nominal Voltage

VH= Upper Extreme Test Voltage

TN= Normal Temperature



Report No.: 4790935097-1 Page 12 of 152

5.9. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Description
1	Laptop	ThinkPad	E590	/

I/O PORT

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	USB	USB to TTL	USB	100cm Length	/
2	USB	USB	USB	100cm Length	/

ACCESSORY

Item	Accessory	Brand Name	Model Name	Description
1	AC/DC ADAPTOR	Yinli	YLJX21- T300100	INPUT: 100-240V~ 50/60Hz 1.0A Max OUTPUT:30.0V=1.0A
2	AC/DC ADAPTOR	KELI	KL- WA300100-X	INPUT: 100-240V~ 50/60Hz 1.2A OUTPUT:30.0V=1.0A



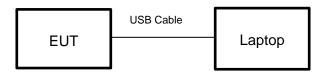
Page 13 of 152

TEST SETUP

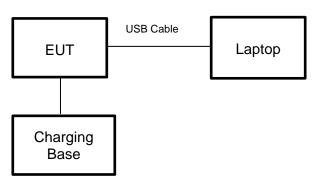
The EUT can work in an engineer mode with a software through a laptop.

SETUP DIAGRAM FOR TESTS

For Antenna Port test and Radiated Test:



For Conducted Emission Test:





Page 14 of 152

5.10. MEASURING INSTRUMENT AND SOFTWARE USED

	Conducted Emissions (Instrument)								
Used	Equipment	Manufacturer	Mode	el No.	Seri	al No.	Upper Last Cal.	Last Cal.	Next Cal.
$\overline{\checkmark}$	EMI Test Receiver	R&S	ES	R3	12	6700	2021-12-04	2022-12-03	2023-12-02
$\overline{\checkmark}$	Two-Line V-Network	R&S	ENV	′216	12	6701	2021-12-04	2022-12-03	2023-12-02
V	Artificial Mains Networks	R&S	EN	Y 81	12	6712	2021-10-12	2022-10-09	2023-10-08
				Soft	ware				
Used	Des	cription		Ma	nufac	turer	Name	Version	
\checkmark	Test Software for 0	Conducted distur	bance		R&S	}	EMC32	Ver. 9.25	
		Ra	diated	Emissi	ions (Instrum	ent)		
Used	Equipment	Manufacturer	Mode	el No.	Seri	al No.	Upper Last Cal.	Last Cal.	Next Cal.
$\overline{\checkmark}$	EMI test receiver	R&S	ES			2993	2022-05-20	2023-04-08	2024-04-07
$\overline{\square}$	EMI test receiver	R&S	ESF			6703	2021-12-04	2022-12-03	2023-12-02
V	Spectrum Analyzer	R&S	FSV3	3044	22	2992	2022-05-20	2023-04-08	2024-04-07
V	Receiver Antenna (9kHz-30MHz)	Schwarzbeck	FMZB	1513	15	5456	2018-06-04	2021-06-03	2024-06-02
V	Receiver Antenna (30MHz-1GHz)	Schwarzbeck	VULB	9163	12	6704	2019-01-19	2022-01-18	2025-01-17
V	Receiver Antenna (1GHz-18GHz)	R&S	HF9	907	12	6705	2019-01-27	2022-02-28	2025-02-27
V	Receiver Antenna (18GHz-26.5GHz)	Schwarzbeck	ВВНА	9170	12	6706	2019-02-29	2022-02-28	2025-02-27
V	Pre-amplification (To 18GHz)	Tonscned	TAP010	018050	22	4539	/	2022-10-20	2023-10-19
V	Pre-amplification (To 18GHz)	R&S	SCU-	-18D	13	4667	2021-12-04	2022-12-03	2023-12-02
V	Pre-amplification (To 26.5GHz)	R&S	SCU-	-26D	13	5391	2021-12-04	2022-12-03	2023-12-02
V	Band Reject Filter	Wainwright	WRC0 2375-2 2485-2 408	2400- 2510- SS		1	2022-05-20	2023-04-08	2024-04-07
V	High Pass Filter	COM-MW	ZBF13- 0			2	2022-05-20	2023-04-08	2024-04-07
				Soft	ware				
Used	Desci	ription	M	lanufac	turer		Name	Version	
$\overline{\checkmark}$	Test Software for R						TS+	Ver. 2.5	
$\overline{\checkmark}$	Test Software for R	adiated disturbar					E_RSE	Ver. 3.03	
Other instruments									
Used	Equipment	Manufacturer	Model No.		Seri	al No.	Upper Last Cal.	Last Cal.	Next Cal.
V	Spectrum Analyzer	Keysight	N9010B		15	5368	2022-05-20	2023-04-08	2024-04-07
\square	Power Meter	MWT	MW100	-RFCB	22	1694	2022-05-23	2023-04-08	2024-04-07
V	Attenuator	PASTERNACK	PE70	87-6	1	624	2022-05-23	2023-04-08	2024-04-07



Report No.: 4790935097-1 Page 15 of 152

6. MEASUREMENT METHODS

No.	Test Item	KDB Name	Section
1	6dB Bandwidth and 99% Occupied Bandwidth	KDB 558074 D01 15.247 Meas Guidance v05r02	8.2
2	Output Power	KDB 558074 D01 15.247 Meas Guidance v05r02	8.3.2.3 (Method PM)
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



Page 16 of 152

7. ANTENNA PORT TEST RESULTS

7.1. ON TIME AND DUTY CYCLE

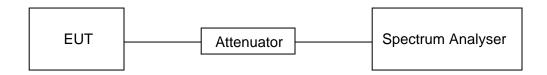
LIMITS

None; for reporting purposes only

PROCEDURE

FCC KDB 558074 Zero-Span Spectrum Analyzer Method

TEST SETUP



TEST ENVIRONMENT

Temperature	22°C	Relative Humidity	56%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V

TEST RESULTS TABLE

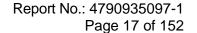
Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (db)	1/T Minimum VBW (kHz)	Final VBW (kHz)
11B	100	100	1	100%	0	0.01	0.01
11G	100	100	1	100%	0	0.01	0.01
802.11N HT20	100	100	1	100%	0	0.01	0.01
802.11N HT40	100	100	1	100%	0	0.01	0.01

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

2) Where: x is Duty Cycle (Linear)

3) Where: T is On Time (transmit duration)

4) If the duty cycle is above 98%, the Final VBW is 10Hz.

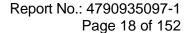




TEST GRAPHS















Page 19 of 152

7.2. 6 dB BANDWIDTH AND 99% OCCUPIED BANDWIDTH

LIMITS

FCC Part15 (15.247), Subpart C						
Section Test Item Limit Frequency Range (MHz)						
CFR 47 FCC 15.247(a)(2) ISED RSS-247 5.2 (a)	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 ANSI C63.10-2013 clause 11.8 for DTS bandwidth and clause 6.9 for Occupied Bandwidth.

Connect the EUT to the spectrum analyser and use the following settings:

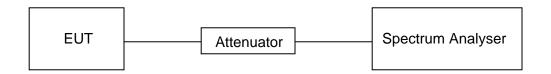
Center Frequency	The centre frequency of the channel under test
Detector	Peak
IRRW	For 6 dB Bandwidth: 100 kHz For 99 % Occupied Bandwidth: 1 % to 5 % of the occupied bandwidth
IV/R/W	For 6 dB Bandwidth: ≥3 × RBW For 99 % Occupied Bandwidth: ≥3 × RBW
Trace	Max hold
Sweep	Auto couple

- a) Use the 99 % power bandwidth function of the instrument, allow the trace to stabilize and report the measured bandwidth.
- b) 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.



Page 20 of 152

TEST SETUP



TEST ENVIRONMENT

Temperature	22°C	Relative Humidity	56%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V

TEST RESULTS TABLE

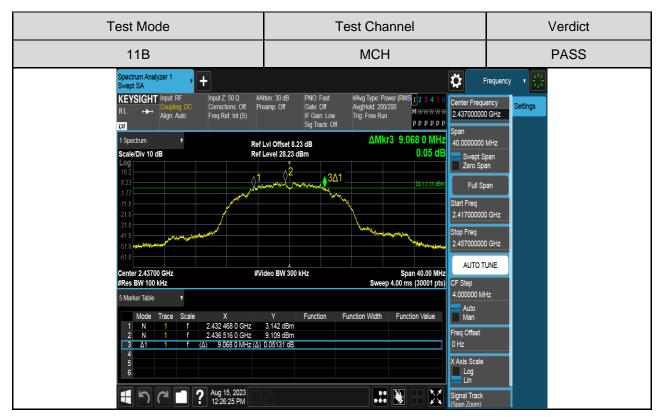
Test Mode	Test Channel	6dB bandwidth (MHz)	99% bandwidth (MHz)	Result
	LCH	9.1120	13.205	Pass
11B	MCH	9.0680	13.148	Pass
	HCH	9.3307	13.158	Pass
	LCH	16.4093	16.532	Pass
11G	MCH	16.4120	16.533	Pass
	HCH	16.4080	16.529	Pass
	LCH	17.0347	17.413	Pass
11N HT20	MCH	17.3133	17.427	Pass
	HCH	17.3093	17.430	Pass
	LCH	33.3093	34.569	Pass
11N HT40	MCH	32.9280	34.576	Pass
	HCH	33.4880	34.609	Pass

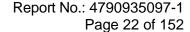


TEST GRAPHS

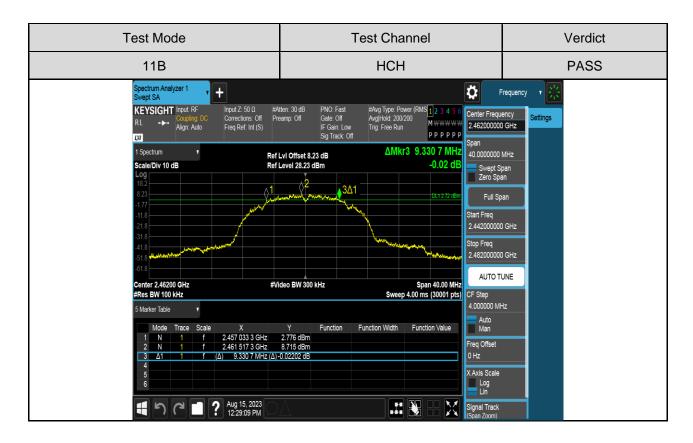
6dB Bandwdith

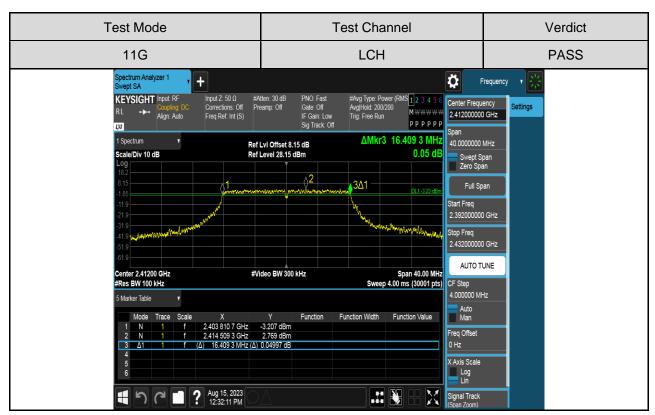


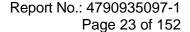






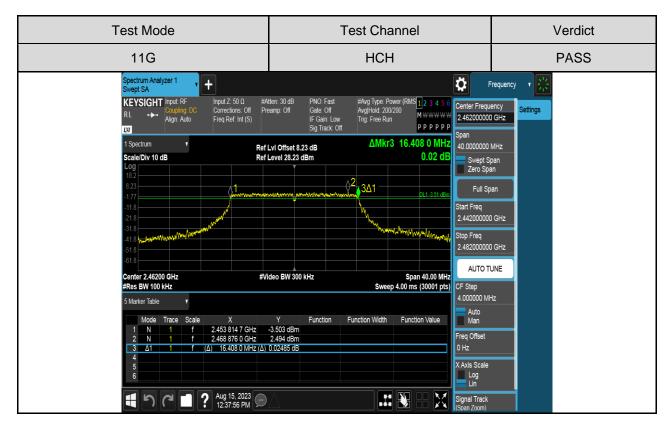


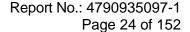




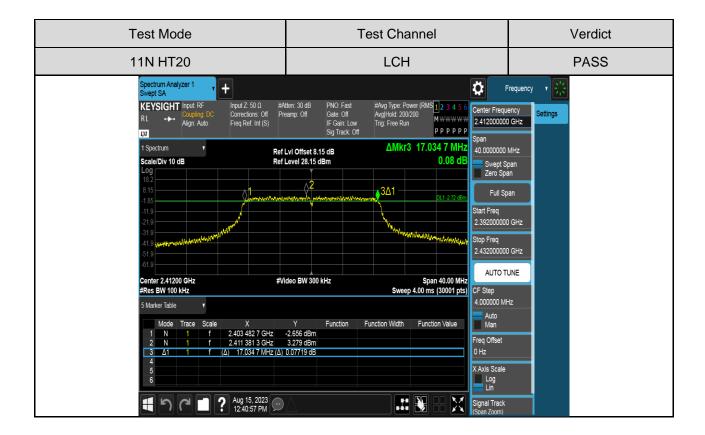


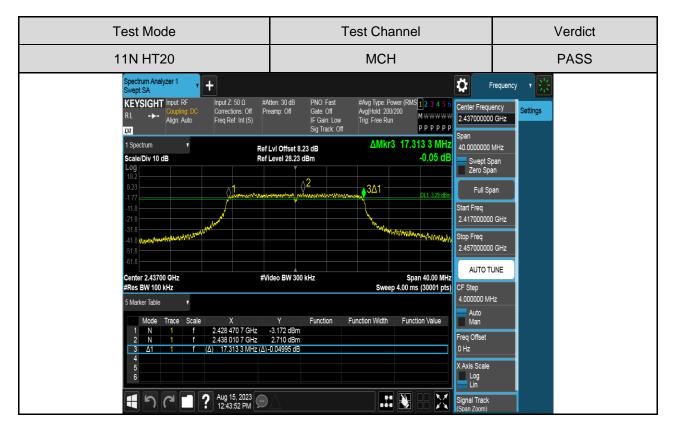


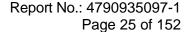




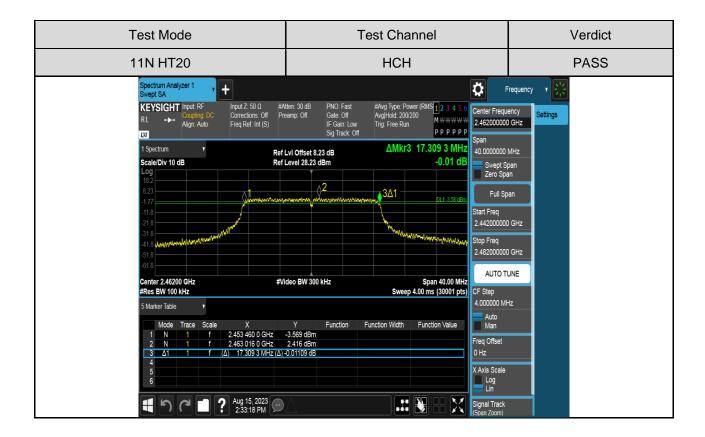


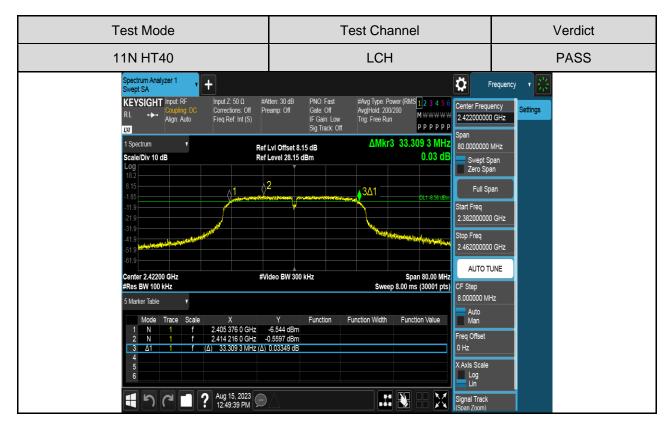


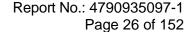






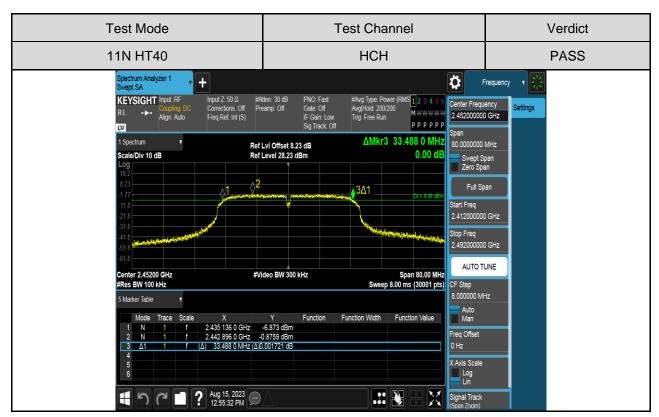


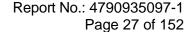










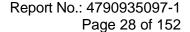




99% Bandwidth

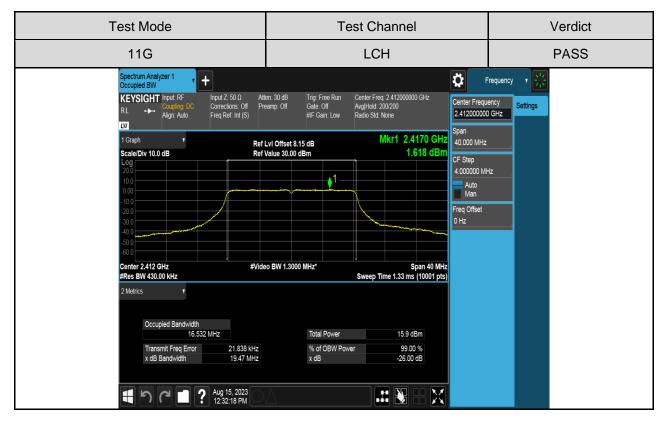


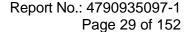




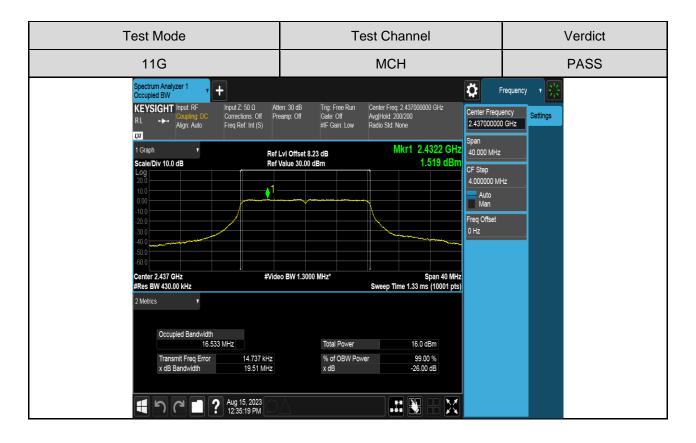


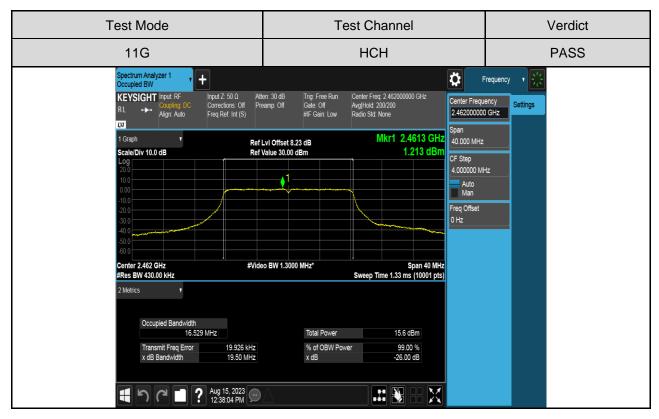


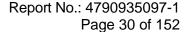




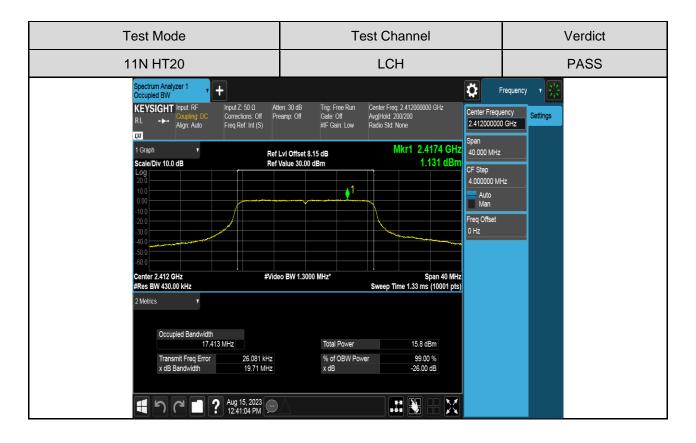


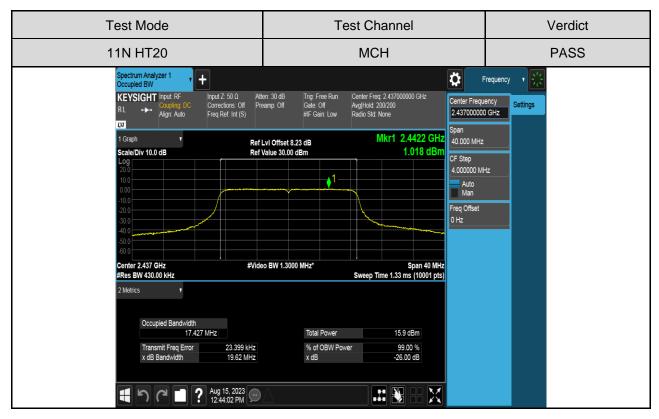


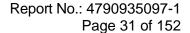




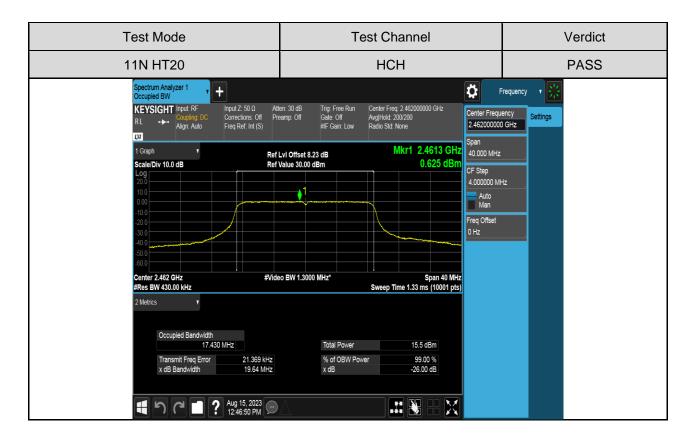


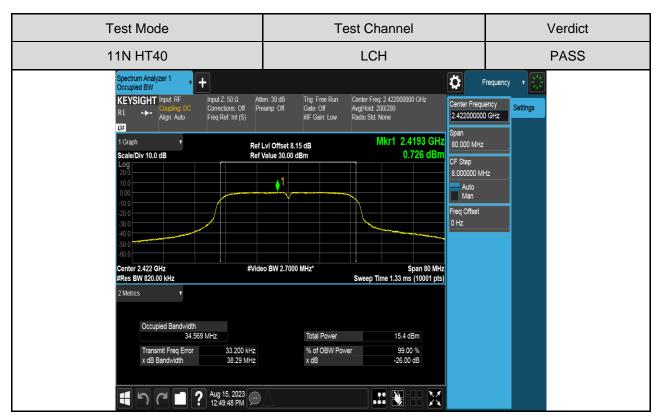


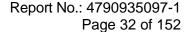






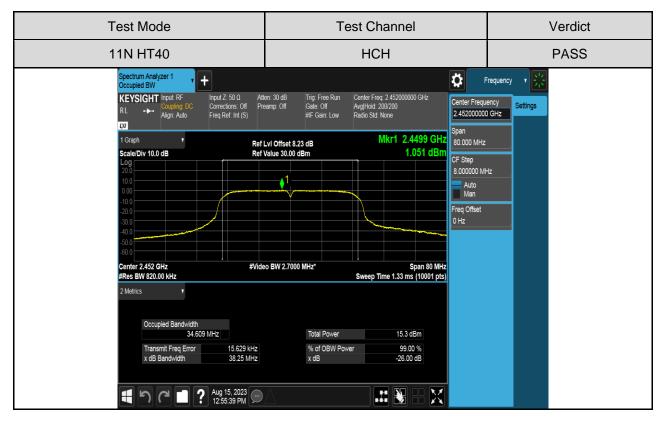














Page 33 of 152

7.3. CONDUCTED OUTPUT POWER

LIMITS

	FCC Part15 (15.247), Subpart C	
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

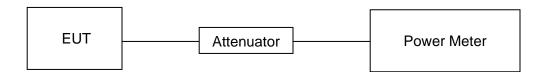
Place the EUT on the table and set it in the transmitting mode.

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Power sensor.

Measure the power of each channel.

AVG Detector used for AVG result.

TEST SETUP





Report No.: 4790935097-1 Page 34 of 152

TEST ENVIRONMENT

Temperature	22°C	Relative Humidity	56%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V

TEST RESULTS TABLE

Test Mode	Test Channel	Measurement Output Power (AV)	10log(1/x) Factor	Maximum Conducted Output Power (AV)	LIMIT
		dBm	dBm	dBm	dBm
	LCH	17.82	0	17.82	30
11B	MCH	17.43	0	17.43	30
	HCH	17.05	0	17.05	30
	LCH	15.93	0	15.93	30
11G	MCH	16.04	0	16.04	30
	HCH	15.65	0	15.65	30
	LCH	15.80	0	15.80	30
11N HT20	MCH	15.87	0	15.87	30
	HCH	15.48	0	15.48	30
	LCH	15.38	0	15.38	30
11N HT40	MCH	15.44	0	15.44	30
	HCH	15.29	0	15.29	30



Page 35 of 152

7.4. POWER SPECTRAL DENSITY

LIMITS

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

TEST PROCEDURE

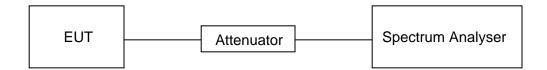
Refer to FCC KDB 558074, connect the UUT to the spectrum analyser and use the following settings:

ootan igoi	
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





Report No.: 4790935097-1 Page 36 of 152

TEST ENVIRONMENT

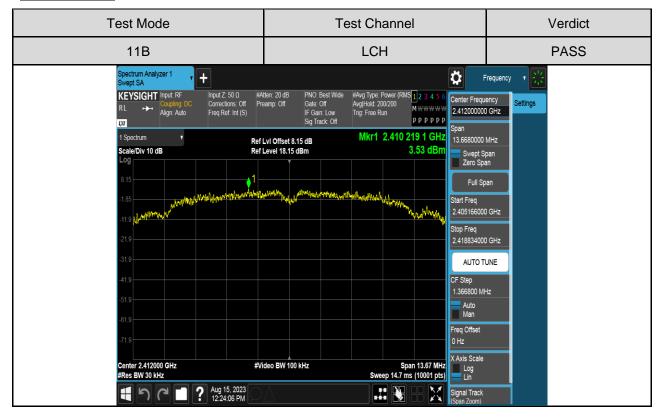
Temperature	22°C	Relative Humidity	56%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V

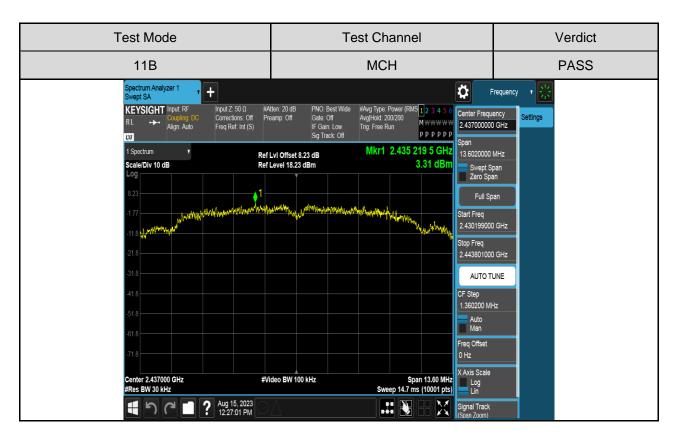
TEST RESULTS TABLE

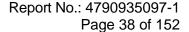
Test Mode	Test Channel	Maximum Peak power spectral density (dBm/30kHz)	Result
	LCH	3.53	Pass
11B	MCH	3.31	Pass
	HCH	2.91	Pass
	LCH	-0.55	Pass
11G	MCH	-0.50	Pass
	HCH	-0.84	Pass
	LCH	-0.89	Pass
11N HT20	MCH	-0.87	Pass
	HCH	-1.16	Pass
	LCH	-3.87	Pass
11N HT40	MCH	-3.87	Pass
	HCH	-4.01	Pass



TEST GRAPHS

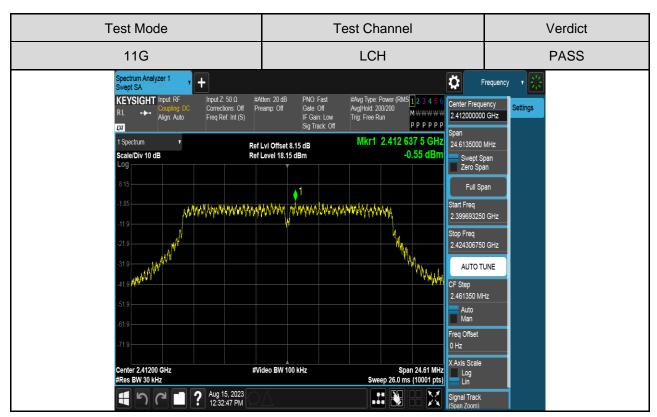


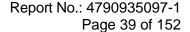




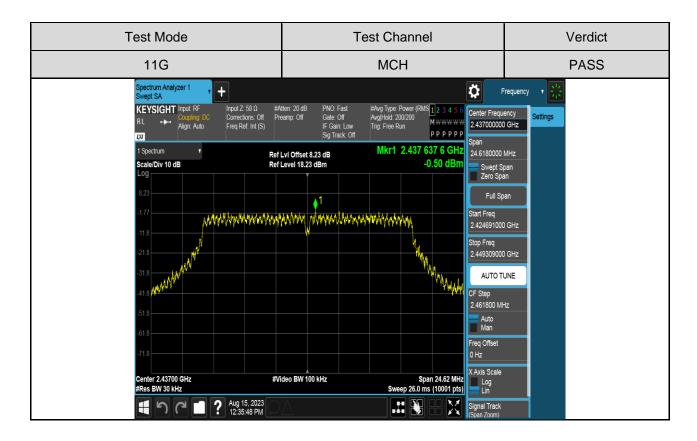


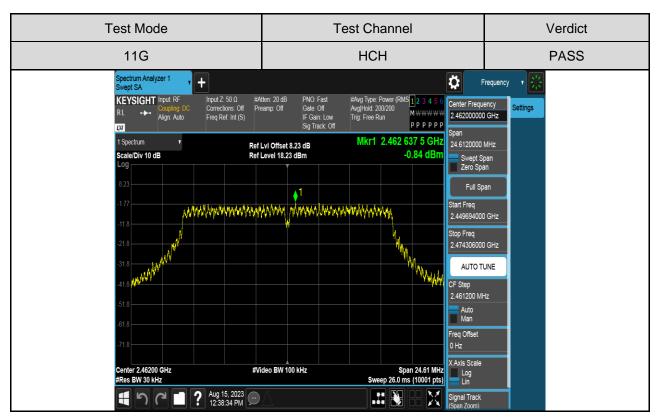


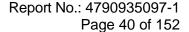




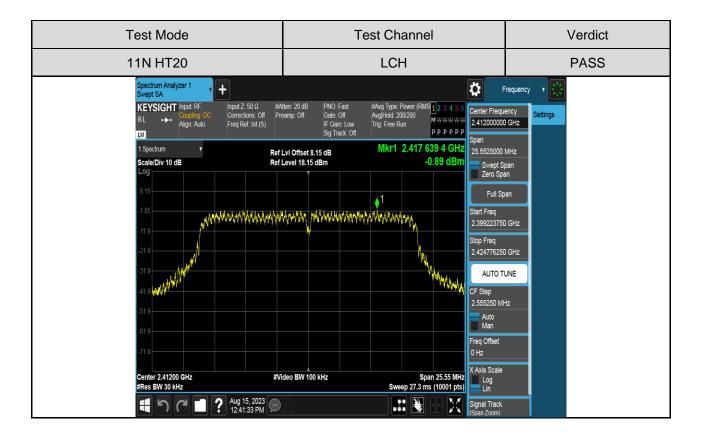


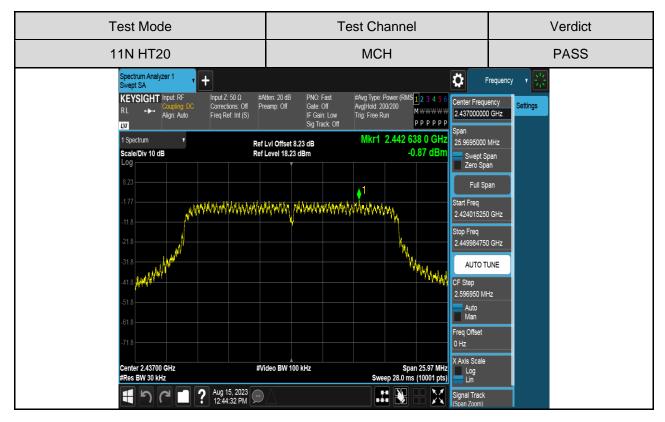


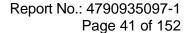




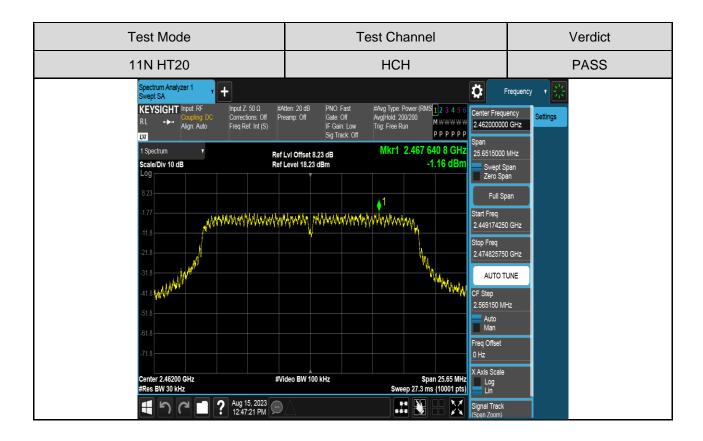


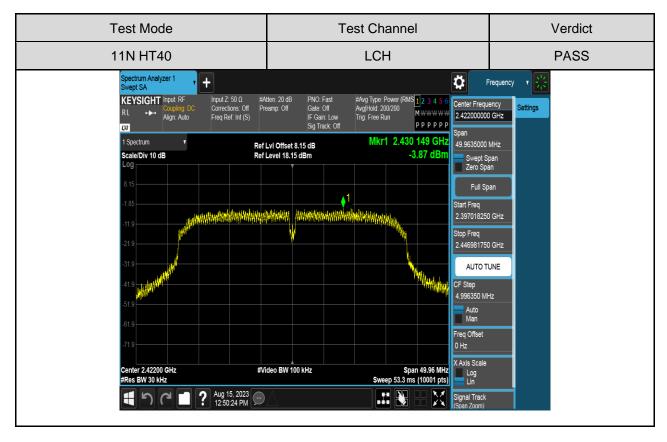


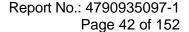




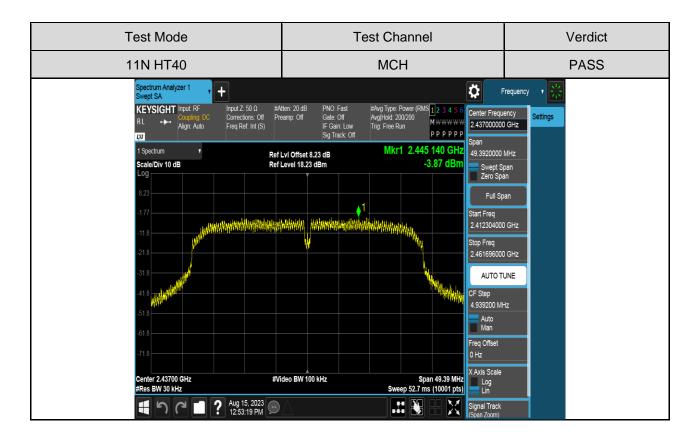


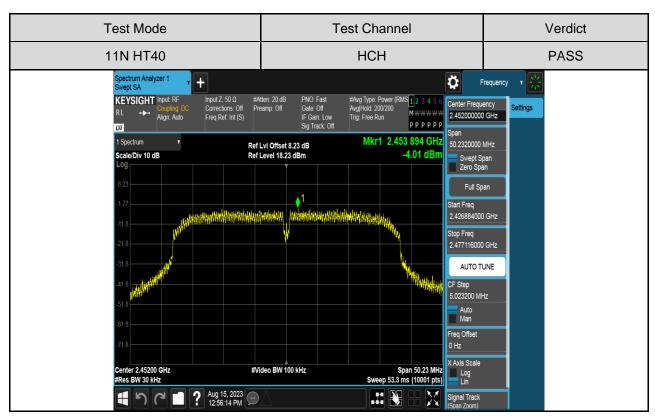














Page 43 of 152

7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

LIMITS

FCC Part15 (15.247), Subpart C			
Section Test Item Limit			
FCC §15.247 (d) RSS-247 Clause 5.5 RSS-GEN Clause 6.13 Conducted Bandedge and Spurious Emissions 30 dB below that in the 100 kHz bandwidd 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 settings:

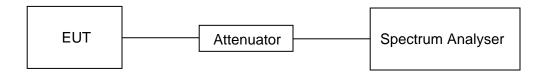
Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	100K
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

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





Page 44 of 152

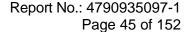
TEST ENVIRONMENT

Temperature	22°C	Relative Humidity	56%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V

PART 1: REFERENCE LEVEL MEASUREMENT

TEST RESULTS TABLE

Test Mode	Test Channel	Result[dBm]
11B	LCH	9.13
	MCH	8.87
	HCH	8.59
11G	LCH	2.81
	MCH	2.98
	HCH	2.65
11N HT20	LCH	2.81
	MCH	2.67
	HCH	2.07
	LCH	-0.77
11N HT40	MCH	-0.37
	HCH	-0.79





TEST GRAPHS



