

FCC 47 CFR PART 15 SUBPART C CERTIFICATION TEST REPORT

For

CONSUMER CAMERA

MODEL NUMBER: IPC-A42P-D

ADDITIONAL MODEL NUMBER: IPC-A42P-D-imou, IPC-A42N-D

PROJECT NUMBER: 4789973747

REPORT NUMBER: 4789973747-83

FCC ID: 2AVYF-IPC- A4X-D

ISSUE DATE: Jun. 16, 2021

Prepared for

Hangzhou Huacheng Network Technology Co., Ltd.

Prepared by

UL-CCIC COMPANY LIMITED

No. 2, Chengwan Road, Suzhou Industrial Park, People's Republic of China

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



Page 2 of 150

Revision History

Rev.	Issue Date	Revisions	Revised By
V0	06/16/2021	Initial Issue	



TABLE OF CONTENTS

1.		ATT	TESTATION OF TEST RESULTS	4
2.		TES	ST METHODOLOGY	6
3.		FAC	CILITIES AND ACCREDITATION	6
4.		CAL	LIBRATION AND UNCERTAINTY	7
	4.	1.	MEASURING INSTRUMENT CALIBRATION	7
	4.	2.	MEASUREMENT UNCERTAINTY	7
5.		EQI	UIPMENT UNDER TEST	8
	5.	1.	DESCRIPTION OF EUT	8
	5.2	2.	MAXIMUM OUTPUT POWER	9
	5.	3.	CHANNEL LIST	9
	5.	4.	TEST CHANNEL CONFIGURATION	10
	5.	5.	THE WORSE CASE POWER SETTING PARAMETER	
	5.	6.	DESCRIPTION OF AVAILABLE ANTENNAS	
	5.	7.	THE WORSE CASE CONFIGURATIONS	11
	5.		TEST ENVIRONMENT	
	5.	9.	DESCRIPTION OF TEST SETUP	13
	5.	10.	MEASURING INSTRUMENT AND SOFTWARE USED	
6.		ME	ASUREMENT METHODS	16
7.		AN٦	TENNA PORT TEST RESULTS	17
	7.	1.	ON TIME AND DUTY CYCLE	17
	7.2	2.	6 dB BANDWIDTH	20
	7.	3.	CONDUCTED OUTPUT POWER	28
	7.	4.	POWER SPECTRAL DENSITY	30
	7.	5.	CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS	38
	7.	6.	RADIATED TEST RESULTS	
		7.6.		
		7.6.2	TEST ENVIRONMENT RESTRICTED BANDEDGE	
			4. SPURIOUS EMISSIONS	
8.		AC	POWER LINE CONDUCTED EMISSIONS	147
a		ΔМ٦	TENNA REQUIREMENTS	150
•		, NI T I	· = · · · · · · · · = ¬ ♥ /	



Page 4 of 150

1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: Hangzhou Huacheng Network Technology Co., Ltd.

Address: No.2930, Nanhuan Road, Binjiang District, Hangzhou, China

Manufacturer Information

Company Name: Hangzhou Huacheng Network Technology Co., Ltd.

Address: No.2930, Nanhuan Road, Binjiang District, Hangzhou, China

EUT Description

Product Name CONSUMER CAMERA

Model Name IPC-A42P-D

Additional No. IPC-A42P-D-imou, IPC-A42N-D-imou, IPC-A42N-D

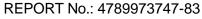
Sample Number 3967060
Data of Receipt Sample Jun. 05, 2021

Test Date Jun. 06, 2021 ~ Jun. 15, 2021

APPLICABLE STANDARDS

STANDARD TEST RESULTS

CFR 47 Part 15 Subpart C PASS





Page 5 of 150

	Summary of Test Results								
Clause	Test Items	FCC Rules	Test Results						
1	6db DTS Bandwidth	FCC 15.247 (a) (2)	PASS						
2	Conducted Power	FCC 15.247 (b) (3)	PASS						
3	Power Spectral Density	FCC 15.247 (e)	PASS						
4	Conducted Band edge And Spurious emission	FCC 15.247 (d)	PASS						
5	Radiated Band edges and Spurious emission	FCC 15.247 (d) FCC 15.209 FCC 15.205	PASS						
6	Conducted Emission Test For AC Power Port	FCC 15.207	PASS						
7	Antenna Requirement	FCC 15.203	PASS						

Remark:

Prepared By: Jason Yang	Reviewed By: Tom Tang		
Jason Yang Engineer	Tom Tang Project Engineer		
Authorized By:			
Chris Zhong			

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> when <Accuracy Method> decision rule is applied.



Page 6 of 150

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.

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) 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.



Page 7 of 150

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)	3.3dB
Radiation Emission test(include Fundamental emission) (30MHz-1GHz)	3.3dB
Radiation Emission test (1GHz to 26GHz)(include Fundamental emission)	3.9dB (1GHz-18Gz)
Note: This was estaints assessed as a surrounded by	4.2dB (18GHz-26.5Gz)

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



Page 8 of 150

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

Product Name:	CONSUMER CAMERA
Model No.:	IPC-A42P-D
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
Sample Type:	Fixed production
Test power grade:	N/A
Test software of EUT:	Secure CRT (manufacturer declare)
Antenna Type:	IFA Antenna
Antenna Gain:	2.84 dBi

Remark:

Model No.:

No.:	Name:	No.:	Name:	No.:	Name:
1	IPC-A42P-D	2	IPC-A42P-D-imou	3	IPC-A42N-D-imou
4	IPC-A42N-D				

Only the main model IPC-A42P-D was tested and only the data of this model is shown in this test report. Since Their material, types of encloser, antenna location, electrical circuit design, layout, components used and internal wiring are identical, only the model name and software are different and the user can't change the RF parameters or others access the software setting.



Page 9 of 150

5.2. MAXIMUM OUTPUT POWER

Number of Transmit Chains (NTX)	IEE Std. 802.11	Channel Number	Max AVG Conducted Power (dBm)
1	IEEE 802.11B	1-11[11]	15.33
1	IEEE 802.11G	1-11[11]	13.13
1	IEEE 802.11nHT20	1-11[11]	13.11
1	IEEE 802.11nHT40	3-9[7]	13.22

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		

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



Page 10 of 150

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		SecureCRT				
Transmit			Test Channel				
Modulation Mode	Antenna		NCB: 20MHz		NCB: 40MHz		
Mode	Number	CH 1	CH 6	CH 11	CH 3	CH 6	CH 9
802.11b	1	N/A	N/A	N/A			
802.11g	1	N/A	N/A	N/A] /		
802.11n HT20	1	N/A	N/A	N/A			
802.11n HT40	1	/ N/A N/A N/A				N/A	



Page 11 of 150

5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	2400-2483.5	IFA Antenna	2.84

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



Page 12 of 150

5.8. **TEST ENVIRONMENT**

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

Note: VL= Lower Extreme Test Voltage

VN= Nominal Voltage

VH= Upper Extreme Test Voltage TN= Normal Temperature



Page 13 of 150

5.9. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

I	tem	Equipment	Brand Name	Model Name	Description
	1	Laptop	ThinkPad	E590	N/A

I/O PORT

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

ACCESSORY

Item	Accessory	Brand Name	Model Name	Description
1	AC Adaptor	MASS	BNS05B050100	INPUT:100-240V~, 50/60Hz, 0.2A
1 AC Adapter	POWER	VUU	OUTPUT:5.0V=1.0A	



Page 14 of 150

TEST SETUP

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

SETUP DIAGRAM FOR TESTS





Page 15 of 150

5.10. MEASURING INSTRUMENT AND SOFTWARE USED

	5.10. MEASURING INSTRUMENT AND SUFTWARE USED								
	Conducted Emissions (Instrument)								
Used	Equipment	Manufacturer	Model	No.	Seria	al No.	Upper Last Cal.	Last Cal.	Next Cal.
$\overline{\checkmark}$	EMI Test Receiver	R&S	ESR	3	126	6700	2019-12-12	2020-12-05	2021-12-04
$\overline{\checkmark}$	Two-Line V-Network	R&S	ENV2	16	126	6701	2019-12-12	2020-12-05	2021-12-04
V	Artificial Mains Networks	R&S	ENY	81	126	6711	2019-12-12	2020-12-05	2021-12-04
				Soft	ware				
Used	Des	cription		Ma	anufac	turer	Name	Version	
V	Test Software for 0	Conducted distur	bance		R&S		EMC32	Ver. 9.25	
		Ra	diated E	Emiss	ions (Instrum	ent)		
Used	Equipment	Manufacturer	Model	No.	Seria	al No.	Upper Last Cal.	Last Cal.	Next Cal.
$\overline{\checkmark}$	Spectrum Analyzer	Keysight	N901	0B	MY57	110128	2020-05-10	2021-05-09	2022-05-08
$\overline{\checkmark}$	EMI test receiver	R&S	ESR2	26	126	7603	2019-12-12	2020-12-05	2021-12-04
V	Receiver Antenna (9kHz-30MHz)	Schwarzbeck	FMZB 1	1513	513	3-265	2018-06-15	2021-06-03	2024-06-02
V	Receiver Antenna (30MHz-1GHz)	SunAR RF Motion	JB1		177	7821	N/A	2019-01-28	2022-01-27
V	Receiver Antenna (1GHz-18GHz)	R&S	HF907		126	6705	2018-01-29	2019-01-28	2022-01-27
V	Receiver Antenna (18GHz-26.5GHz)	Schwarzbeck	BBHA9170		126	6706	2019-02-06	2020-12-05	2021-12-04
V	Pre-amplification (To 18GHz)	Compliance Direction System Inc.	PAP-1G	18-50	14140	-13467	2019-03-18	2020-12-05	2021-12-04
V	Pre-amplification (To 26.5GHz)	R&S	SCU-2	26D	134	1668	2019-02-06	2020-09-27	2021-09-26
V	Band Reject Filter	Wainwright	WRCJ 2350-24 2483.5-29 40S	400- 533.5-		1	2020-05-10	2021-05-09	2022-05-08
V	Highpass Filter	Wainwright	WHKX 2700-30 18000-4	000-		2	2020-05-10	2021-05-09	2022-05-08
				Soft	ware				
Used	Desci	ription	Ma	anufac	turer		Name	Version	
V	Test Software for R	adiated disturbar	ed disturbance Tonso		end		JS32	V1.0	
			Oth	er ins	trume	ents			
Used	Equipment	Manufacturer	Model No.		Seria	al No.	Upper Last Cal.	Last Cal.	Next Cal.
V	Spectrum Analyzer	Keysight	N901	0B	MY57	110128	2020-05-10	2021-05-09	2022-05-08
V	Power Meter	Keysight	U2021	XA	MY57	110002	2020-05-10	2021-05-09	2022-05-08



Page 16 of 150

6. MEASUREMENT METHODS

No.	Test Item	KDB Name	Section
1	6dB Bandwidth	KDB 558074 D01 15.247 Meas Guidance v05r02	8.2
2	Output Power	KDB 558074 D01 15.247 Meas Guidance v05r02	8.3.1.3/8.3.2.3
3	Power Spectral Density	KDB 558074 D01 15.247 Meas Guidance v05r02	8.4
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 17 of 150

7. ANTENNA PORT TEST RESULTS

7.1. ON TIME AND DUTY CYCLE

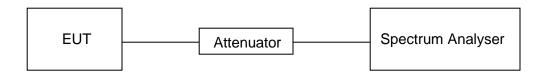
LIMITS

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

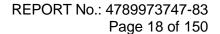
TEST RESULTS TABLE

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	8.378	15.66	0.9911	99.11%	0.04	0.12	1
11G	1.392	2.772	0.9534	95.34%	0.21	0.72	1
802.11n HT20	5.082	9.204	0.9862	98.62%	0.06	0.20	1
802.11n HT40	2.468	3.435	0.9732	97.32%	0.12	0.41	1

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

2) Where: x is Duty Cycle(Linear)

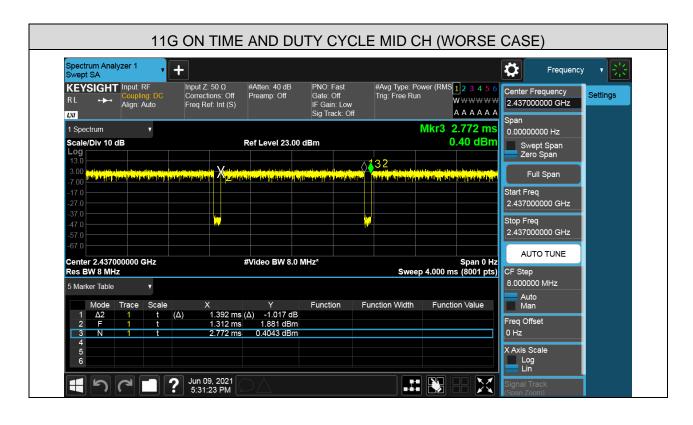
3) Where: T is On Time (transmit duration)





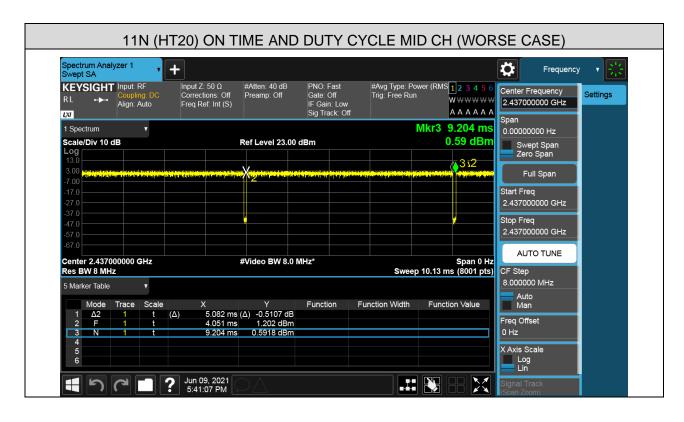
TEST GRAPHS

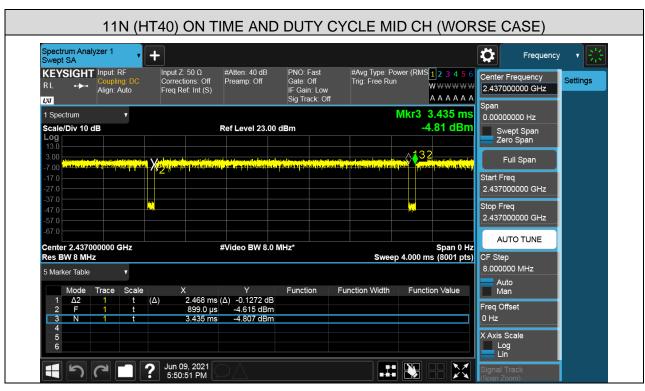






Page 19 of 150







Page 20 of 150

7.2. 6 dB BANDWIDTH

LIMITS

FCC Part15 (15.247), Subpart C						
Section	Frequency Range (MHz)					
FCC 15.247(a)(2)	6dB Bandwidth	>= 500KHz	2400-2483.5			

TEST PROCEDURE

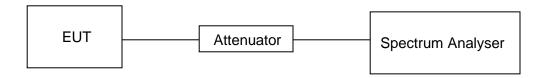
Refer to ANSI C63.10-2013 clause 11.8 for DTS bandwidth.

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

Center Frequency	The centre frequency of the channel under test	
Frequency Span	Between 0.5 times and 1.5 times the OBW	
Detector	Peak	
RBW	For 6 dB Bandwidth :100K	
VBW	For 6dB Bandwidth : ≥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.

TEST SETUP





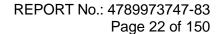
Page 21 of 150

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)	Result
	LCH	10.06	Pass
11B	MCH	10.06	Pass
	HCH	10.06	Pass
	LCH	16.35	Pass
11G	MCH	16.36	Pass
	HCH	16.35	Pass
11N HT20	LCH	17.60	Pass
	MCH	17.60	Pass
	HCH	17.60	Pass
	LCH	36.00	Pass
11N HT40	MCH	36.31	Pass
	HCH	36.33	Pass

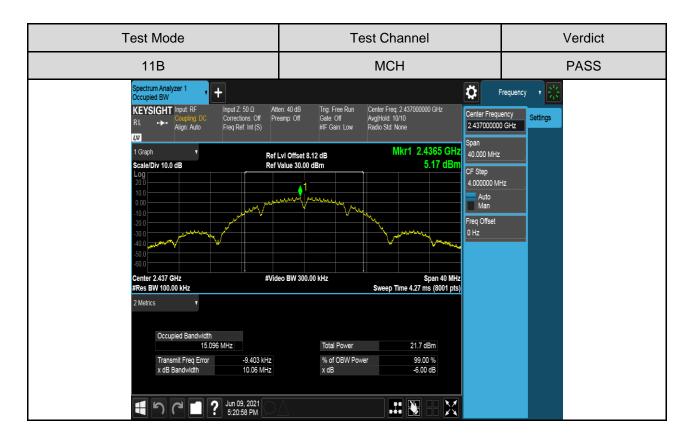




TEST GRAPHS

6dB Bandwdith



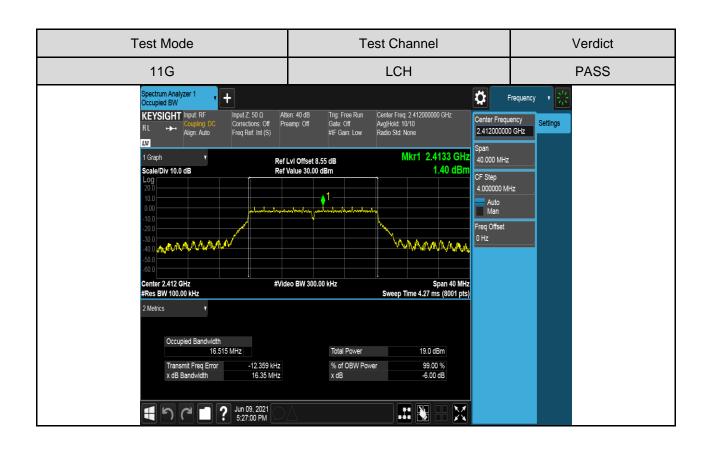




1 2 4 1

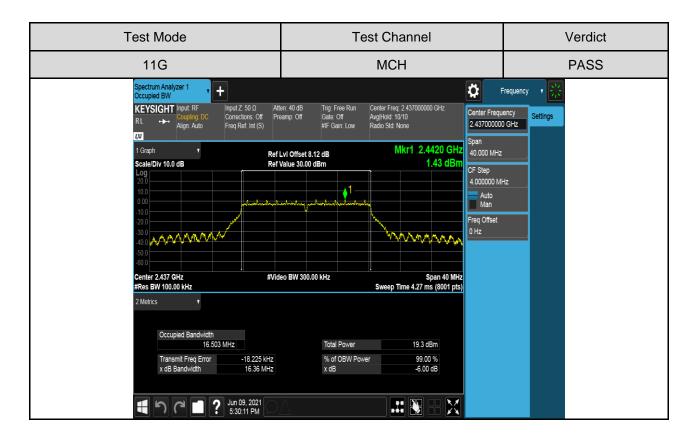
Test Mode **Test Channel** Verdict **HCH PASS** 11B Spectrum Analyzer 1 Occupied BW Ö + Frequency Atten: 40 dB Preamp: Off Input Z: 50 Ω Center Freq: 2.462000000 GHz KEYSIGHT Input RF Corrections: Off Freq Ref: Int (S) Avg|Hold: 10/10 Radio Std: None Settings 2.462000000 GHz Mkr1 2.4615 GHz Ref Lvi Offset 8.51 dB Ref Value 30.00 dBm 40.000 MHz Scale/Div 10.0 dB 5.53 dBn CF Step 4.000000 MHz Auto Man Freq Offset Center 2.462 GHz #Res BW 100.00 kHz #Video BW 300.00 kHz Span 40 MHz Sweep Time 4.27 ms (8001 pts) Occupied Bandwidth 15.128 MHz Total Power 22.1 dBm Transmit Freq Error x dB Bandwidth 36 Hz % of OBW Power 99.00 % -6.00 dB 10.06 MHz

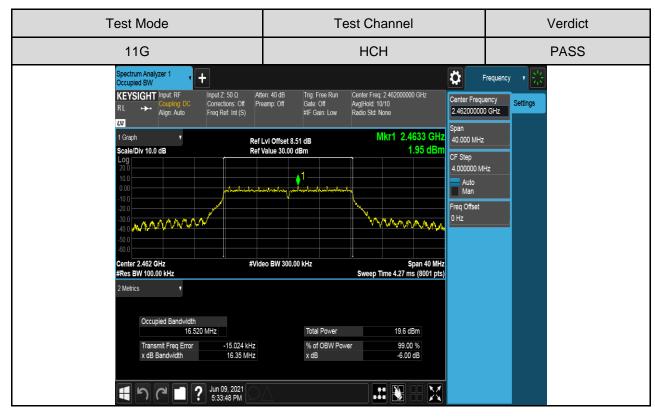
₩





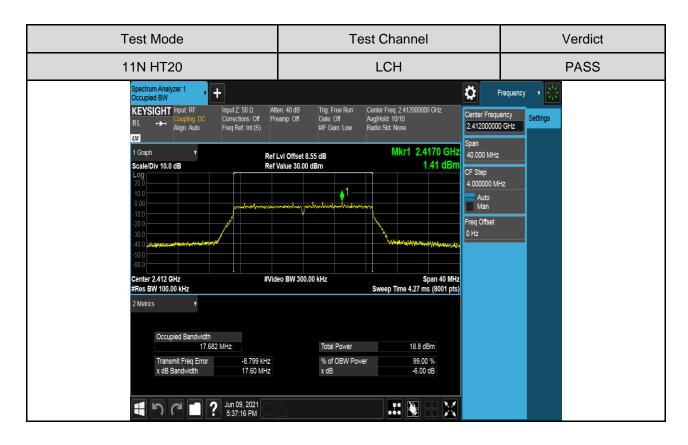
Page 24 of 150

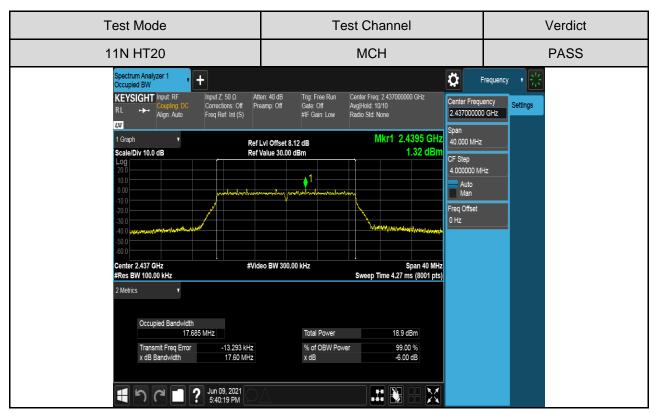






Page 25 of 150

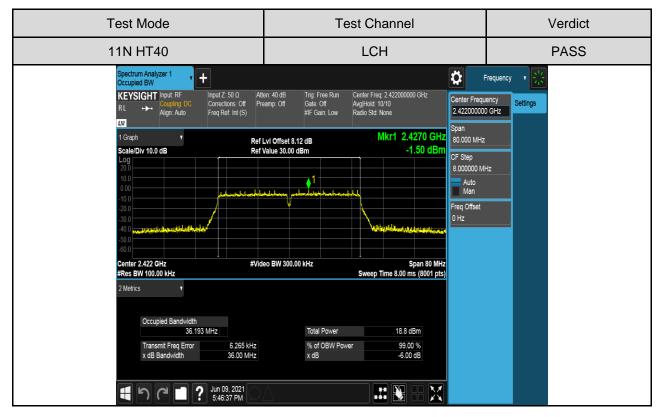






Page 26 of 150

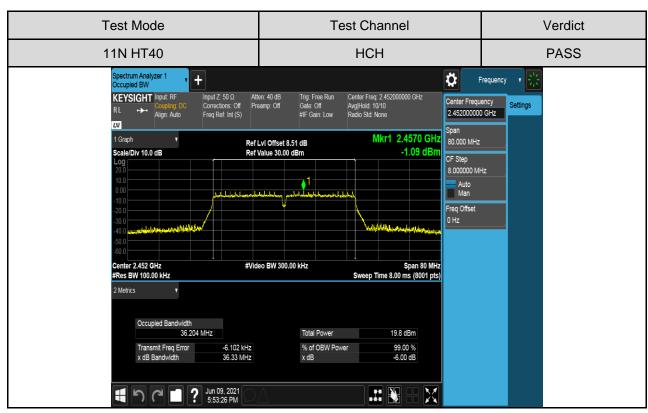






Page 27 of 150





Page 28 of 150

7.3. CONDUCTED OUTPUT POWER

LIMITS

FCC Part15 (15.247), Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.247(b)(3)	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.

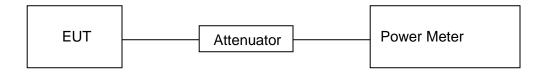
Peak Detector use for Peak result.

AVG Detector use for AVG result.

TEST ENVIRONMENT

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

TEST SETUP







TEST RESULTS TABLE

Test Mode	Test Channel	Maximum Conducted Output Power (AV)	LIMIT
1001000	1 001 0114111101	dBm	dBm
	LCH	14.85	30
11B	MCH	14.96	30
	HCH	15.33	30
	LCH	12.66	30
11G	MCH	12.77	30
	HCH	13.13	30
11n HT20	LCH	12.61	30
	MCH	12.70	30
	HCH	13.11	30
11n HT40	LCH	12.58	30
	MCH	12.76	30
	HCH	13.22	30

Page 30 of 150

7.4. POWER SPECTRAL DENSITY

LIMITS

FCC Part15 (15.247), Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
FCC §15.247 (e)	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:

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.	

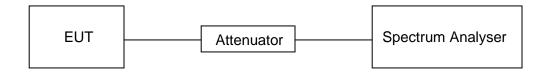
Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.

If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

TEST ENVIRONMENT

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

TEST SETUP





Page 31 of 150

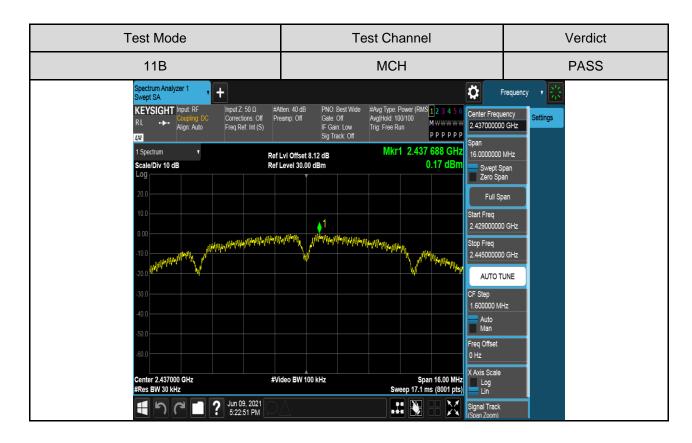
TEST RESULTS TABLE

Test Mode	Test Channel	Maximum Peak power spectral density (dBm/30kHz)	Result
	LCH	-0.03	Pass
11B	MCH	0.17	Pass
	HCH	0.52	Pass
	LCH	-2.86	Pass
11G	MCH	-2.81	Pass
	HCH	-2.25	Pass
	LCH	-3.86	Pass
11n HT20	MCH	-3.48	Pass
	HCH	-3.30	Pass
11n HT40	LCH	-6.53	Pass
	MCH	-6.67	Pass
	HCH	-6.65	Pass



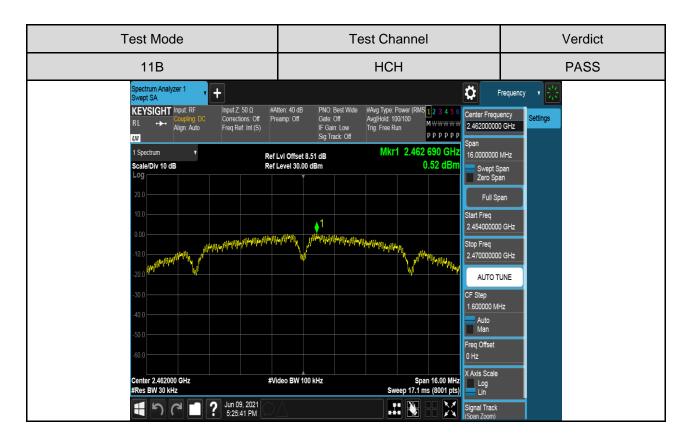
TEST GRAPHS

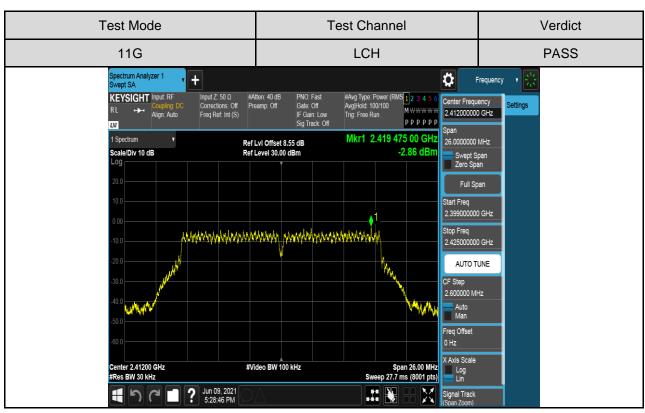






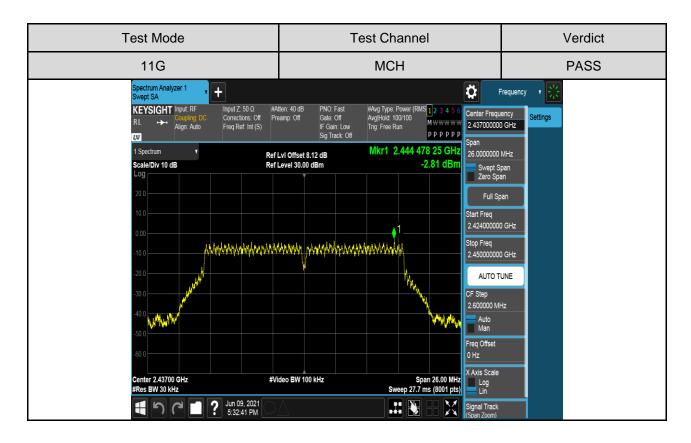
Page 33 of 150

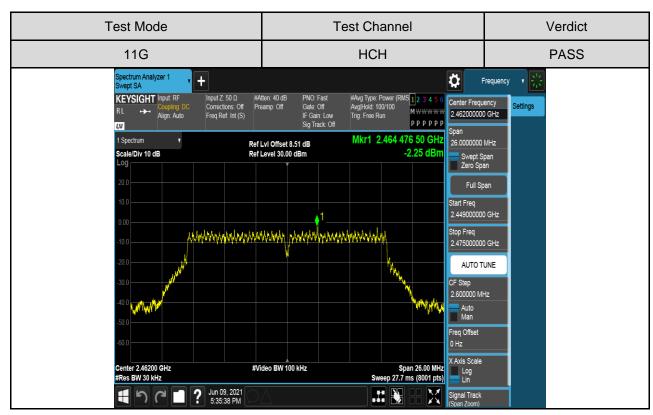






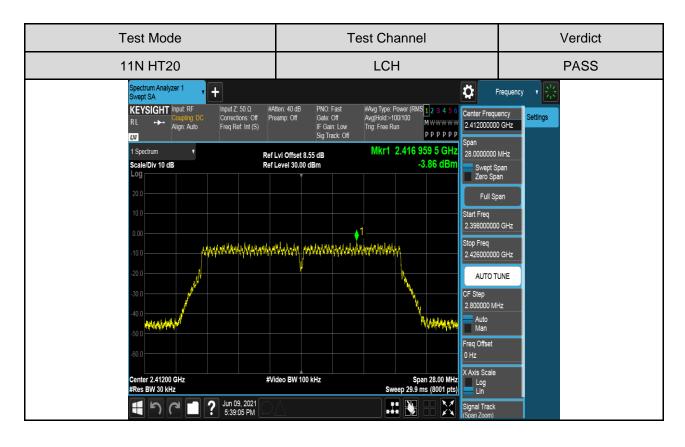
Page 34 of 150

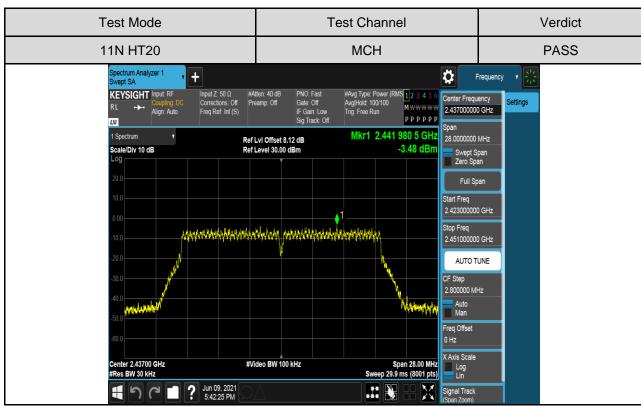






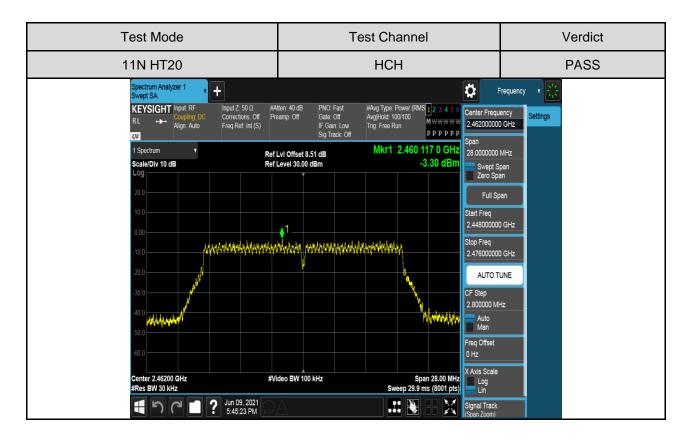
Page 35 of 150

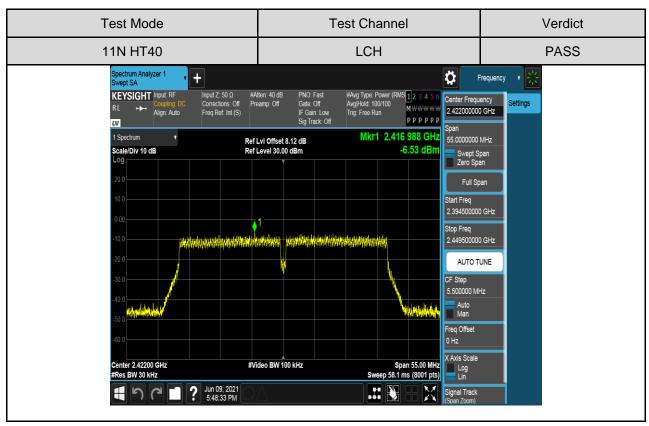






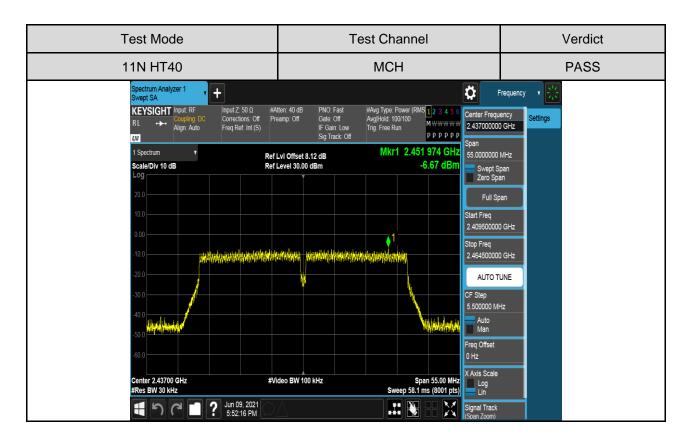
Page 36 of 150

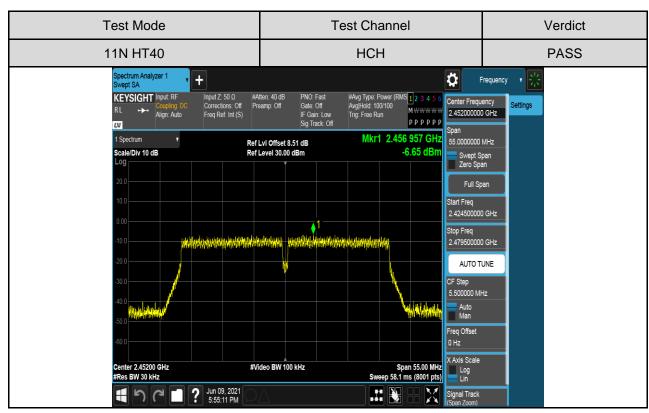






Page 37 of 150







Page 38 of 150

7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

LIMITS

FCC Part15 (15.247), Subpart C			
Section Test Item Limit			
FCC §15.247 (d) Conducted Bandedge and Spurious Emissions Conducted Bandedge and Spurious Emissions 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.	

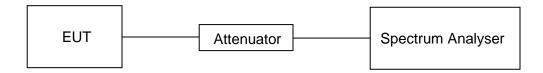
settings:

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

12090	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





REPORT No.: 4789973747-83

Page 39 of 150

TEST ENVIRONMENT

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

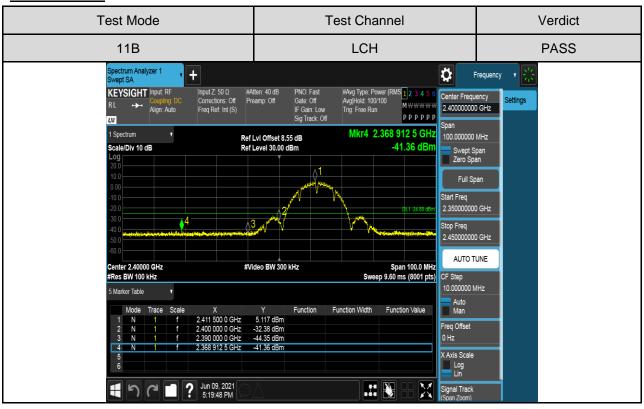
PART I: CONDUCTED BANDEDGE

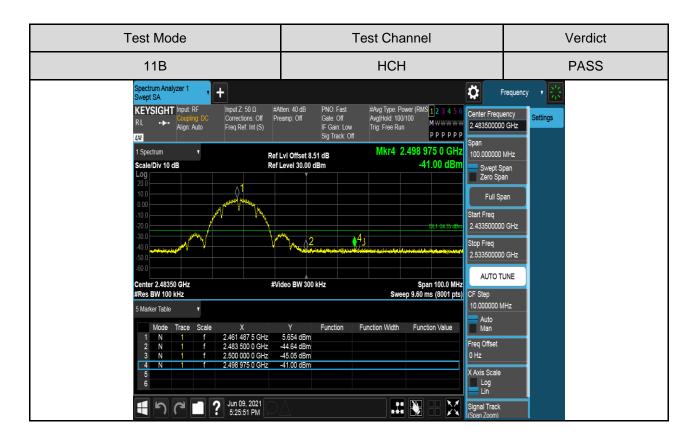
TEST RESULTS TABLE

Test Mode	Test Channel	Carrier Power[dBm]	Max. Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	5.117	-41.36	-24.88	PASS
IID	HCH	5.654	-41.00	-24.35	PASS
11G	LCH	1.482	-40.34	-28.52	PASS
116	HCH	2.044	-39.42	-27.96	PASS
11N HT20	LCH	1.131	-40.18	-28.87	PASS
I IIN HIZU	HCH	1.246	-40.49	-28.75	PASS
11N HT40	LCH	-1.946	-37.74	-31.95	PASS
	HCH	-1.009	-36.25	-31.01	PASS



TEST GRAPHS



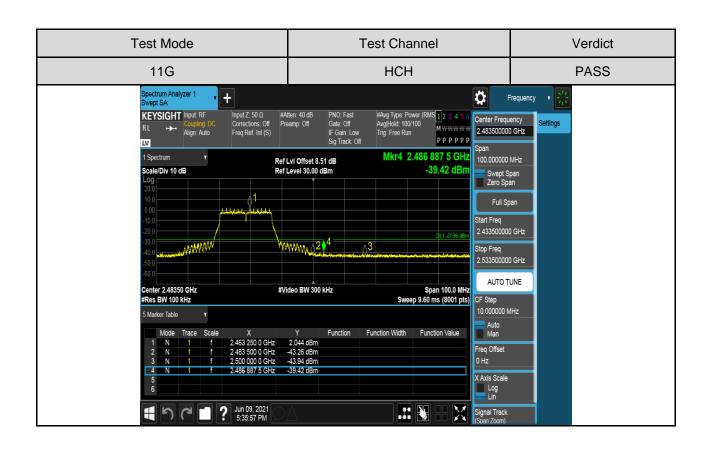




56

Test Mode **Test Channel** Verdict 11G LCH **PASS** pectrum Analyzer 1 wept SA Ö + Frequency Input Z: 50 Ω #Atten: 40 dB KEYSIGHT Input RF Corrections: Off Freq Ref: Int (S) Gate: Off IF Gain: Low Settings 2.400000000 GHz PPPPPP L)XI Mkr4 2.360 800 0 GHz Ref LvI Offset 8.55 dB Ref Level 30.00 dBm 100.000000 MHz -40.34 dBn Scale/Div 10 dB Swept Span Zero Span 2.350000000 GHz 13 and Stop Freq 2.450000000 GHz AUTO TUNE Span 100.0 MHz Sweep 9.60 ms (8001 pts) #Video BW 300 kHz #Res BW 100 kHz 10.000000 MHz Auto Man Function Width Function Value 1.482 dBm -33.17 dBm -43.71 dBm req Offset

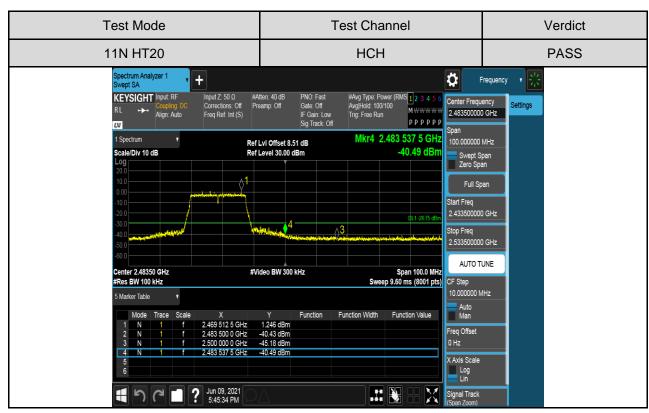
Signal Track (Span Zoom)





Page 42 of 150







Page 43 of 150







Page 44 of 150

PART II: CONDUCTED EMISSION

TEST RESULTS TABLE

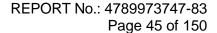
Test Mode	Channel	Pref(dBm)	Puw(dBm)	Verdict
	LCH	5.02	<limit< td=""><td>PASS</td></limit<>	PASS
11B	MCH	5.21	<limit< td=""><td>PASS</td></limit<>	PASS
	HCH	5.57	<limit< td=""><td>PASS</td></limit<>	PASS
	LCH	1.44	<limit< td=""><td>PASS</td></limit<>	PASS
11G	MCH	1.44	<limit< td=""><td>PASS</td></limit<>	PASS
	HCH	1.79	<limit< td=""><td>PASS</td></limit<>	PASS
	LCH	1.14	<limit< td=""><td>PASS</td></limit<>	PASS
11N HT20	MCH	1.32	<limit< td=""><td>PASS</td></limit<>	PASS
	HCH	1.49	<limit< td=""><td>PASS</td></limit<>	PASS
	LCH	-1.39	<limit< td=""><td>PASS</td></limit<>	PASS
11N HT40	MCH	-1.43	<limit< td=""><td>PASS</td></limit<>	PASS
	HCH	-1.03	<limit< td=""><td>PASS</td></limit<>	PASS

TEST GRAPHS

Test Mode	Channel	Verdict
11B	LCH	PASS

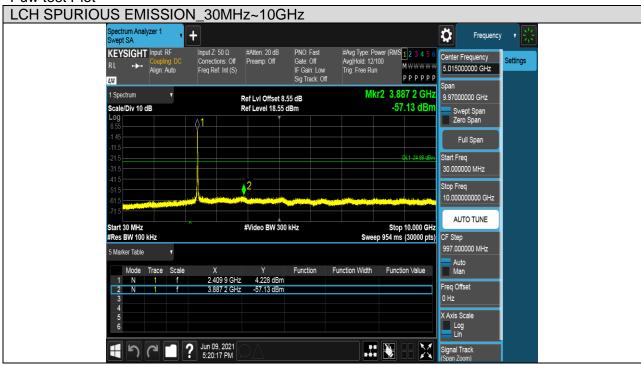
Pref test Plot







Puw test Plot







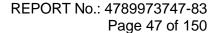
REPORT No.: 4789973747-83

Page 46 of 150

Test Mode	Channel	Verdict
11B	MCH	PASS

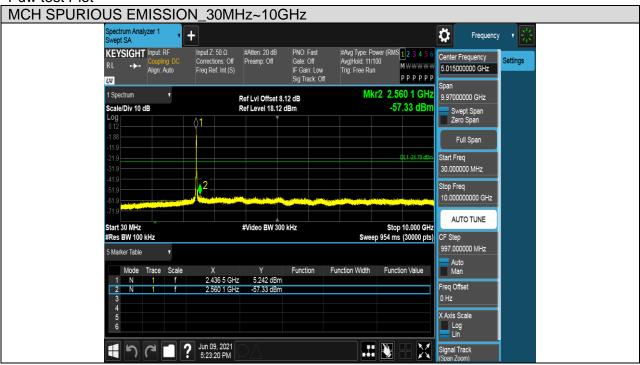
Pref test Plot

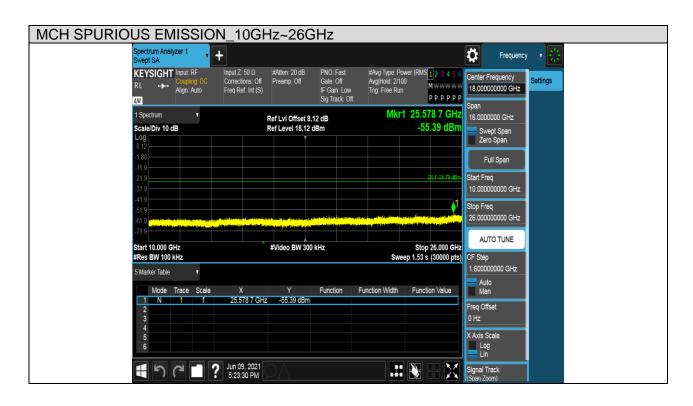






Puw test Plot







REPORT No.: 4789973747-83

Page 48 of 150

Test Mode	Channel	Verdict
11B	HCH	PASS

Pref test Plot

