

FCC 47 CFR PART 15 SUBPART C CERTIFICATION TEST REPORT

For

Thermal Camera

MODEL NUMBER: DH-TPC-BF1241

ADDITIONAL MODEL NUMBER:

TPC-BF1241, DH-TPC-BFxyzmn-abcdef

x=1~9: v=1~9: z=0~9: m=0~9: n=P. N or blank: a=T or blank: b=

(x=1~9; y=1~9; z=0~9; m=0~9; n=P, N or blank; a=T or blank; b=A~Z or blank; c=1~36 or blank; d=F or blank; e=1~36 or blank; f=-WIFI or blank)

PROJECT NUMBER: 4789630224

REPORT NUMBER: 4789630224-4

FCC ID: SVN-TPC-BF1241

ISSUE DATE: Nov. 10, 2020

Prepared for

Zhejiang Dahua Vision Technology Co., Ltd.

Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	11/10/2020	Initial Issue	



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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: Zhejiang Dahua Vision Technology Co., Ltd. Address: No.1199, Bin'an road, Binjiang District, Hangzhou,

P.R.China.

Manufacturer Information

Company Name: Zhejiang Dahua Vision Technology Co., Ltd. Address: No.1199, Bin'an road, Binjiang District, Hangzhou,

P.R.China.

EUT Description

Product Name Thermal Camera Model Name DH-TPC-BF1241

Additional No. TPC-BF1241, DH-TPC-BFxyzmn-abcdef

(x=1 \sim 9; y=1 \sim 9; z=0 \sim 9; n=P, N or blank; a=T or blank; b=A \sim Z or blank; c=1 \sim 36 or blank; d=F or blank; e=1 \sim 36 or blank;

f=-WIFI or blank)

Sample Number 3312978
Data of Receipt Sample Sep. 10, 2020

Date Tested Sep. 10, 2020 ~ Oct. 26, 2020

APPLICABLE STANDARDS

STANDARD TEST RESULTS

CFR 47 Part 15 Subpart C PASS



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

Remark:

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

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.



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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.
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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.



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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)
(10112 to 200112)(morado i directical cimbolori)	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.



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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

Product Name:	Thermal Camera
Model No.:	DH-TPC-BF1241
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:	Rod Antenna
Antenna Gain:	2.34 dBi
Power Supply:	12V -, 12.A

Remark:

Model No.:

No.	Name:	No.:	Name:	No.:	Name:
1	DH-TPC-BF1241	2	TPC-BF1241	3	DH-TPC-BFxyzmn-abcdef (x=1~9; y=1~9; z=0~9; m=0~9; n=P, N or blank; a=T or blank; b=A~Z or blank; c=1~36 or blank; d=F or blank; e=1~36 or blank; f=-WIFI or blank)

Only the main model DH-TPC-BF1241 was tested and only the data of this model is shown in this test report. Since Their technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction are identical, only the Lens/trademark/ or the name of the models are different.



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5.2. MAXIMUM OUTPUT POWER

Number of Transmit Chains (NTX)	IEE Std. 802.11	Channel Number	Max Peak Conducted Power (dBm)	Max AVG Conducted Power (dBm)
1	IEEE 802.11B	1-11[11]	19.78	17.23
1	IEEE 802.11G	1-11[11]	22.09	14.11
1	IEEE 802.11nHT20	1-11[11]	22.01	13.46
1	IEEE 802.11nHT40	3-9[7]	N/A	13.05

5.3. CHANNEL LIST

	Channel List for 802.11b/g/n (20 MHz)						
Channel	Frequency (MHz)	Channel	Frequenc y(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	Frequenc y(MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	5	2432	7	2442	9	2452
4	2427	6	2437	8	2447		



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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 V	The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band							
Test Softw	vare		Secu			reCRT		
	Transmit			Test C	Channel			
Modulation Mode	Antenna	١	NCB: 20MH	lz	١	ICB: 40MHz	7	
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	



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5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	2400-2483.5	Rod Antenna	2.34

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 802.11b mode: 6 Mbps 802.11n HT20 mode: MCS0 802.11n HT40 mode: MCS0



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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	DC 12V			
	VH	N/A			

Note: VL= Lower Extreme Test Voltage

VN= Nominal Voltage

VH= Upper Extreme Test Voltage

TN= Normal Temperature



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5.9. 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 UL Lab
3	USB Flash Disk	SanDisk	N/A	N/A
4	Alarm	N/A	N/A	Supply by UL Lab
5	Headset	Logitech	H111	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
3	TRS	TRS	TRS	100cm Length	Audio In
4	TRS	TRS	TRS	100cm Length	Audio Out

ACCESSORY

No.	Accessory	Brand Name	Model Name	Description
1	DC Adapter	НОПОТО	ADS-65HI-12N-1 12048E	INPUT:100-240V~50/60Hz 1.5A Max OUTPUT:12.0V=4.0A

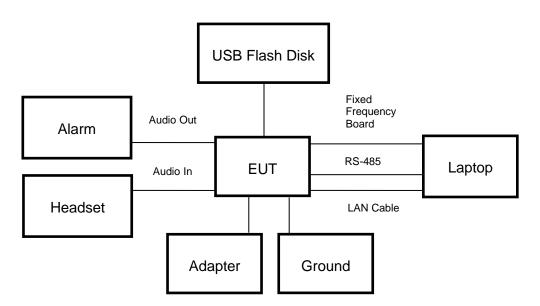


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TEST SETUP

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

SETUP DIAGRAM FOR TESTS





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5.10. MEASURING INSTRUMENT AND SOFTWARE USED

	5.10. MEASURING INSTRUMENT AND SUFTWARE USED							
		Cor	nducted	Emis	sions (Instru			
Used	Equipment	Manufacturer	Model	No.	Serial No.	Upper Last Cal.	Last Cal.	Next Cal.
$\overline{\checkmark}$	EMI Test Receiver	R&S	ESR3		126700	2018-12-13	2019-12-12	2020-12-11
$\overline{\checkmark}$	Two-Line V-Network	R&S	ENV2	216	126701	2018-12-13	2019-12-12	2020-12-11
V	Artificial Mains Networks	R&S	ENY	81	126711	2018-12-13	2019-12-12	2020-12-11
				Soft	ware			
Used	Des	scription		Ма	nufacturer	Name	Version	
$\overline{\checkmark}$	Test Software for 0	Conducted distur	bance		R&S	EMC32	Ver. 9.25	
		Ra	diated E	Emiss	ions (Instrur	nent)		
Used	Equipment	Manufacturer	Model	No.	Serial No.	Upper Last Cal.	Last Cal.	Next Cal.
$\overline{\checkmark}$	Spectrum Analyzer	Keysight	N901	0B	MY57110128	2019-05-29	2020-05-28	2021-05-27
$\overline{\checkmark}$	EMI test receiver	R&S	ESR	26	1267603	2018-12-13	2019-12-22	2020-12-21
V	Receiver Antenna (9kHz-30MHz)	Schwarzbeck	FMZB ⁻	1513	513-265	2019-06-16	2020-06-15	2021-06-14
V	Receiver Antenna (30MHz-1GHz)	SunAR RF Motion	JB ²	1	126704	N/A	2019-01-28	2022-01-27
V	Receiver Antenna (1GHz-18GHz)	R&S	HF907		126705	2019-01-26	2020-01-26	2021-01-25
V	Receiver Antenna (18GHz-26.5GHz)	Schwarzbeck	BBHA9170		126706	2019-02-06	2020-02-05	2021-02-04
V	Receiver Antenna (26.5GHz-40GHz)	TOYO	HAP 26-40W		00000012	2019-07-23	2020-07-22	2021-07-21
V	Pre-amplification (To 1GHz)	R&S	SCU-03D		134666	2019-02-06	2020-02-05	2021-02-04
V	Pre-amplification (To 18GHz)	Compliance Direction System Inc.	PAP-1G	18-50	14140-13467	2019-03-18	2020-03-17	2021-03-16
V	Pre-amplification (To 26.5GHz)	R&S	SCU-2	26D	134668	2019-02-06	2020-02-05	2021-02-04
V	Band Reject Filter	Wainwright	WRCJ 2350-2 2483.5-2 40S	400- 533.5- S	1	2019-05-29	2020-05-28	2021-05-27
	Highpass Filter	Wainwright	WHKX10- 2700-3000- 18000-40SS		2	2019-05-29	2020-05-28	2021-05-27
	Software							
Used	Descr	ription	Ma	anufac	turer	Name	Version	
$\overline{\mathbf{V}}$	Test Software for R	adiated disturbar	nce	Tonsce	end	JS32	V1.0	
			Oth	er ins	truments			
Used	Equipment	Manufacturer	Model	No.	Serial No.	Upper Last Cal.	Last Cal.	Next Cal.
V	Spectrum Analyzer	Keysight	N901	0B	MY57110128	2019-05-29	2020-05-28	2021-05-27
V	Power Meter	Keysight	U2021	IXA	MY57110002	2019-06-12	2020-06-11	2021-06-10



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6. MEASUREMENT METHODS

No.	Test Item	Test Item KDB Name	
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



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7. ANTENNA PORT TEST RESULTS

7.1. ON TIME AND DUTY CYCLE

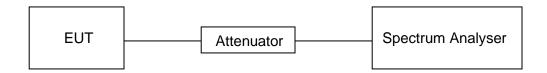
LIMITS

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	DC 12V

RESULTS

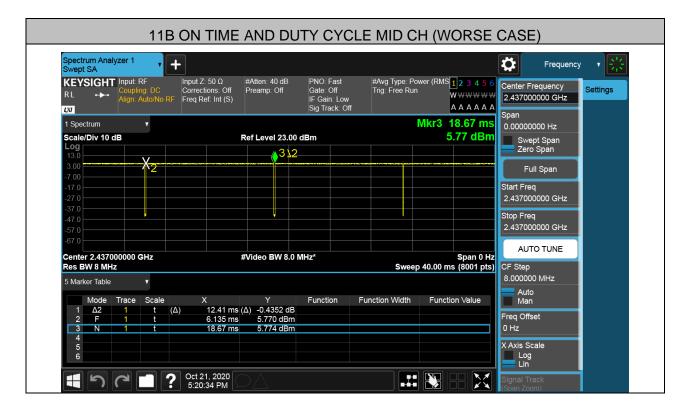
Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (db)	1/T Minimum VBW (kHz)	Final VBW (kHz)
11B	12.41	12.535	0.9900	99.00%	0.04	0.08	0.1
11G	2.063	2.128	0.9695	96.95%	0.13	0.48	0.5
802.11n HT20	1.919	2.073	0.9257	92.57%	0.34	0.52	1
802.11n HT40	0.9435	1.0435	0.9042	90.42%	0.44	1.06	2

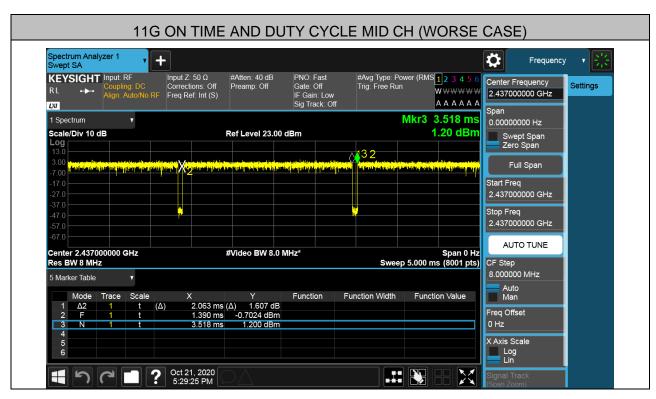
Note: 1) Duty Cycle Correction Factor=10log(1/x).

2) Where: x is Duty Cycle(Linear)

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

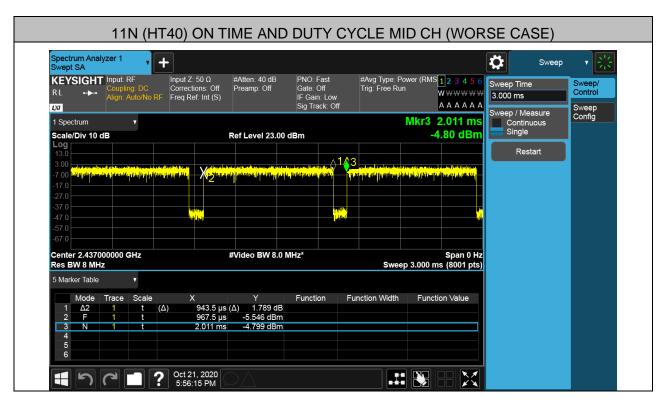












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7.2. 6 dB BANDWIDTH

LIMITS

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

TEST PROCEDURE

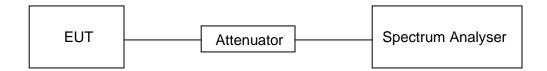
Refer to FCC KDB 558074, connect the UUT to the spectrum analyser and use the following settings:

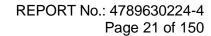
Center Frequency	The centre frequency of the channel under test	
Detector	Peak	
RBW	For 6 dB Bandwidth :100K	
VBW	For 6dB Bandwidth : ≥3 x RBW	
Trace	Max hold	
Sweep	Auto couple	

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





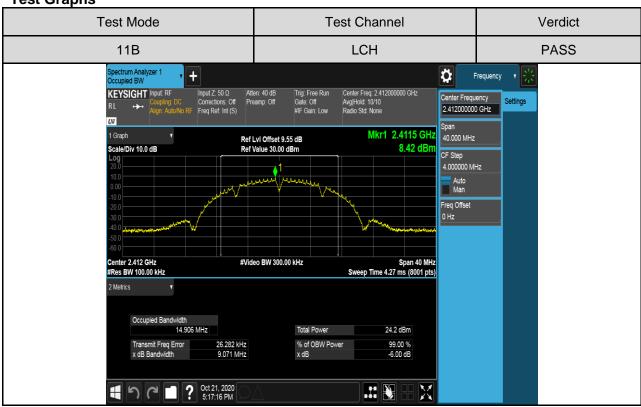


RESULTS

Test Mode	Test Channel	6dB bandwidth (MHz)	Result
	LCH	9.071	Pass
11B	MCH	10.06	Pass
	HCH	10.06	Pass
	LCH	16.35	Pass
11G	MCH	16.33	Pass
	HCH	16.34	Pass
	LCH	17.34	Pass
11N HT20	MCH	17.33	Pass
	HCH	17.36	Pass
11N HT40	LCH	33.14	Pass
	MCH	35.10	Pass
	HCH	35.08	Pass

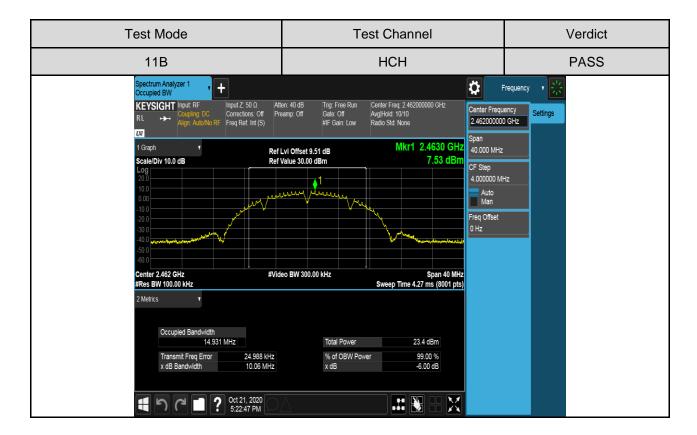


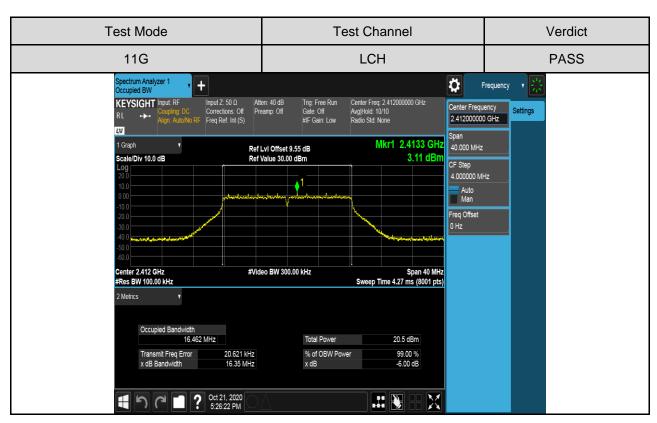
Test Graphs



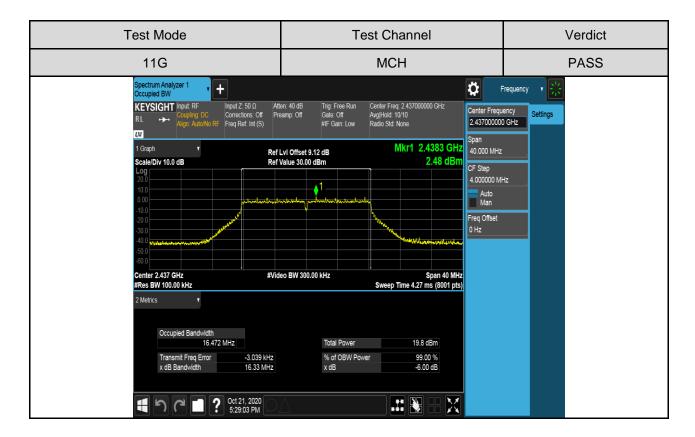


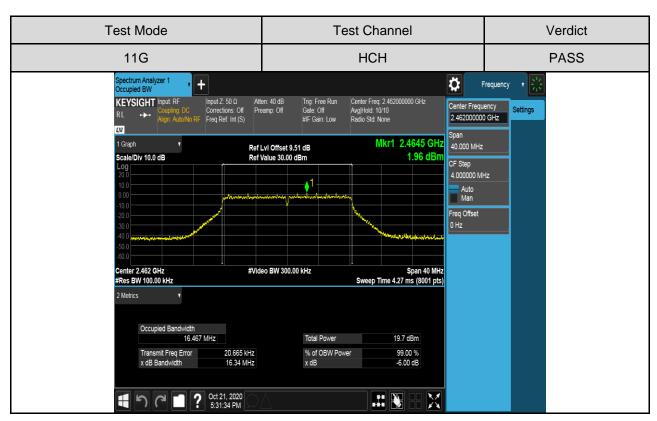














Test Mode **Test Channel** Verdict 11N HT20 **LCH PASS** Spectrum Analyzer 1 Occupied BW Ö + Frequency Atten: 40 dB Preamp: Off Input Z: 50 Ω Center Freq: 2.412000000 GHz KEYSIGHT Input RF Corrections: Off Freq Ref: Int (S) Avg|Hold: 10/10 Radio Std: None Settings 2.412000000 GHz ĻXI Mkr1 2.4133 GHz Ref LvI Offset 9.55 dB Ref Value 30.00 dBm 40.000 MHz 3.12 dBn Scale/Div 10.0 dB CF Step 4.000000 MHz Auto Man Freq Offset Center 2.412 GHz #Video BW 300.00 kHz Span 40 MHz #Res BW 100.00 kHz Sweep Time 4.27 ms (8001 pts) 2 Metrics Occupied Bandwidth 17.620 MHz Total Power 20.6 dBm Transmit Freq Error x dB Bandwidth 15.598 kHz 17.34 MHz % of OBW Power 99.00 % -6.00 dB X 1961

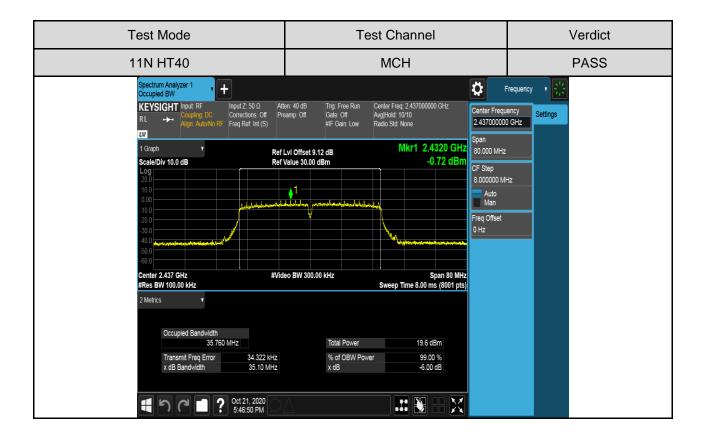


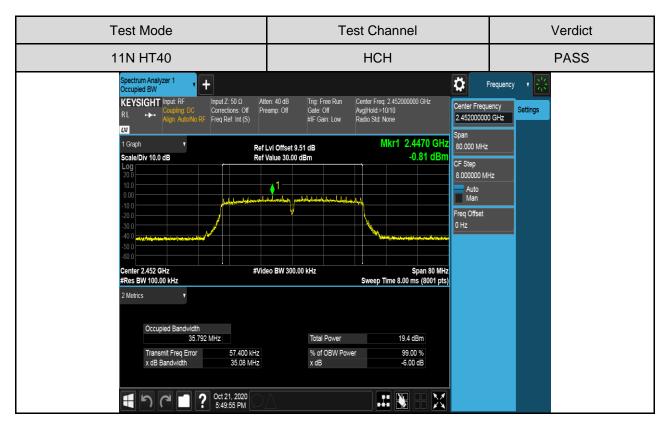












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7.3. CONDUCTED OUTPUT POWER

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.

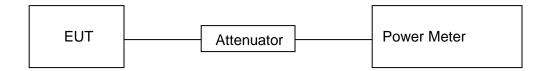
Peak Detector use for Peak result.

AVG Detector use for AVG result.

TEST ENVIRONMENT

Temperature	22°C	Relative Humidity	56%
Atmosphere Pressure	101kPa	Test Voltage	DC 12V

TEST SETUP





RESULTS

Test Mode	Test Channel	Maximum Conducted Output Power (PK)	Maximum Conducted Output Power (AV)	LIMIT
		dBm	dBm	dBm
	LCH	19.78	17.23	30
11B	MCH	18.72	16.12	30
	HCH	19.08	16.37	30
	LCH	22.09	14.11	30
11G	MCH	21.31	13.34	30
	HCH	21.37	13.28	30
	LCH	22.01	14.24	30
11n HT20	MCH	21.21	13.46	30
	HCH	21.23	13.41	30
11n HT40	LCH	N/A	13.05	30
	MCH	N/A	12.45	30
	HCH	N/A	12.22	30

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7.4. POWER SPECTRAL DENSITY

LIMITS

FCC Part15 (15.247) , Subpart C				
Section	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.

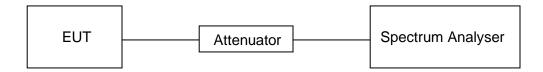
Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.

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	DC 12V

TEST SETUP



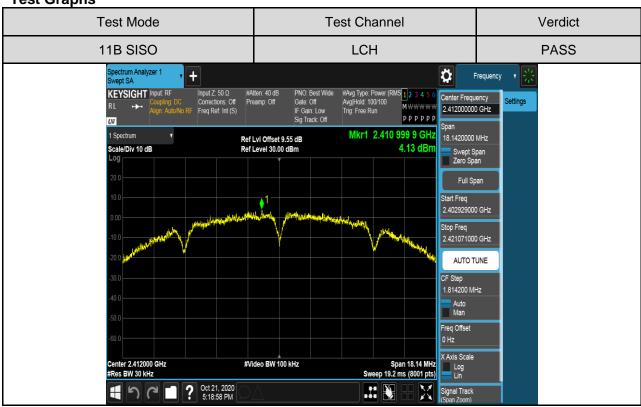


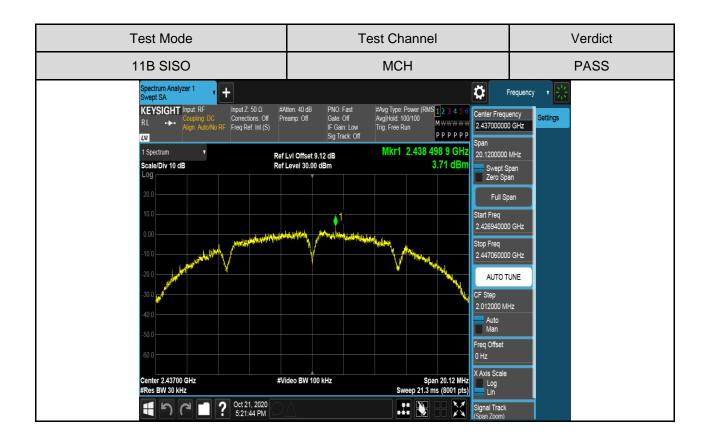
RESULTS

Test Mode	Test Channel	Maximum Peak power spectral density (dBm/30kHz)	Result
	LCH	4.13	Pass
11B	MCH	3.71	Pass
	HCH	3.36	Pass
	LCH	-1.75	Pass
11G	MCH	-2.18	Pass
	HCH	-2.17	Pass
	LCH	-1.72	Pass
11n HT20	MCH	-2.50	Pass
	HCH	-2.56	Pass
	LCH	-4.28	Pass
11n HT40	MCH	-5.09	Pass
	HCH	-5.56	Pass



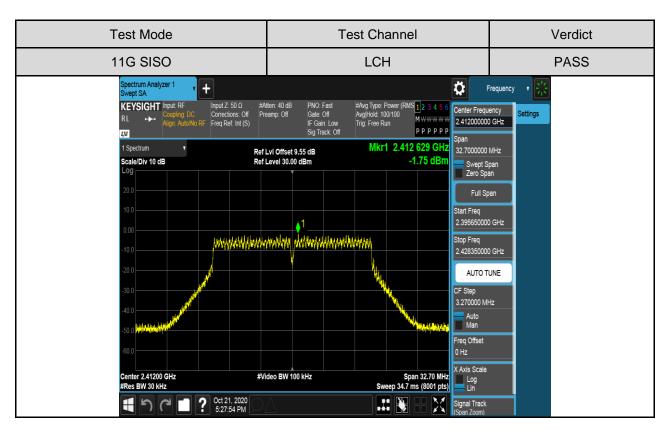
Test Graphs



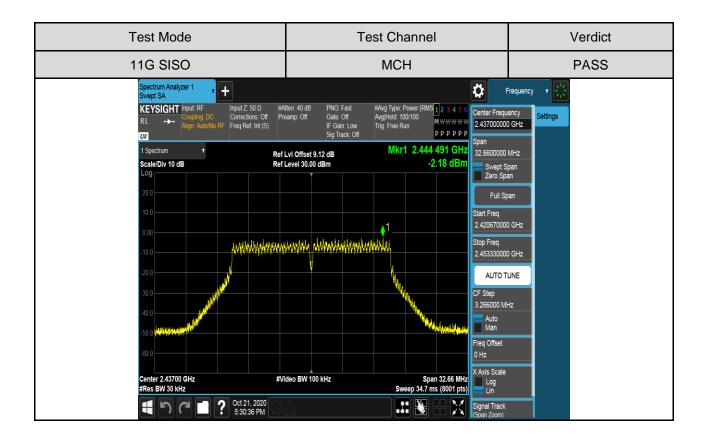


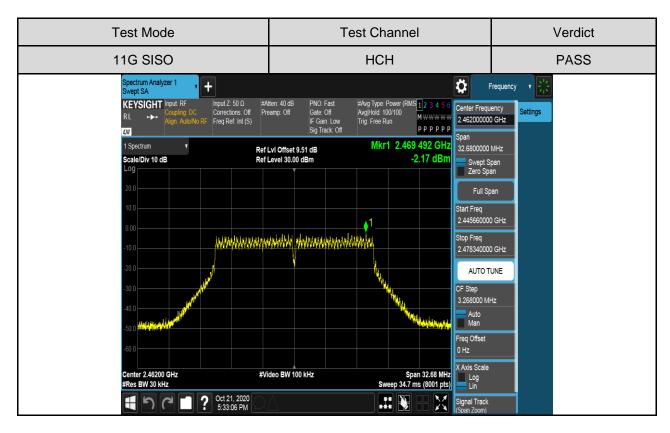






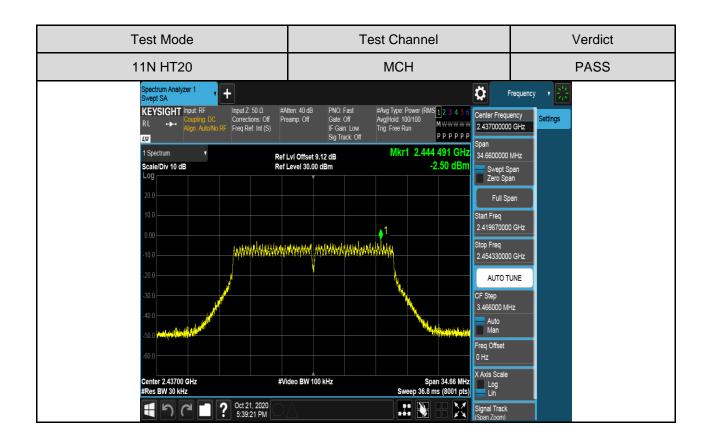






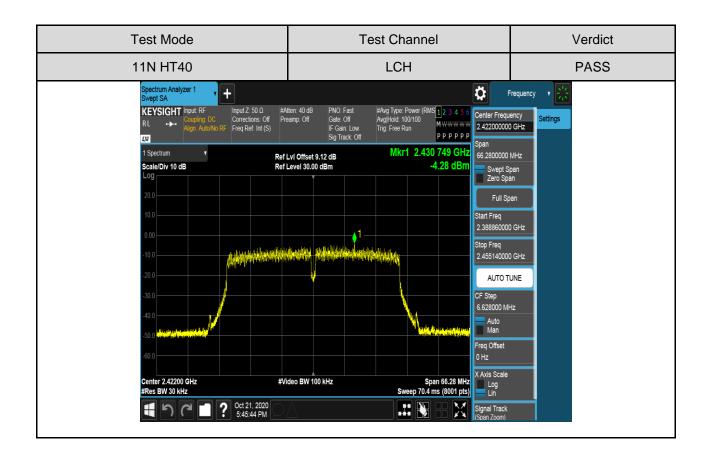


Test Mode **Test Channel** Verdict 11N HT20 **LCH PASS** pectrum Analyzer 1 wept SA Ö + Frequency Input Z: 50 Ω #Atten: 40 dB #Avg Type: Power (RMS 1 2 3 4 5 KEYSIGHT Input RF Corrections: Off Freq Ref: Int (S) Gate: Off IF Gain: Low Settings 2.412000000 GHz PPPPPP ĻXI Mkr1 2.411 380 GHz Ref LvI Offset 9.55 dB Ref Level 30.00 dBm 34.6800000 MHz -1.72 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.394660000 GHz Managarita Stop Freq 2.429340000 GHz AUTO TUNE 3.468000 MHz Auto Man Freq Offset Center 2.41200 GHz #Video BW 100 kHz Span 34.68 MHz Sweep 36.8 ms (8001 pts) ? Oct 21, 2020 5:36:15 PM X 196 # 3

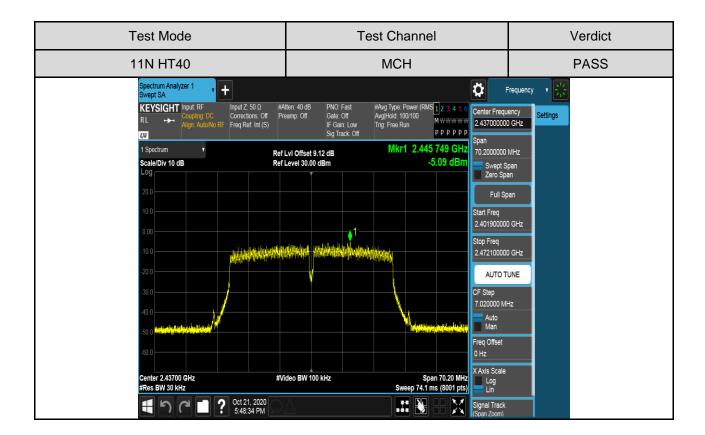


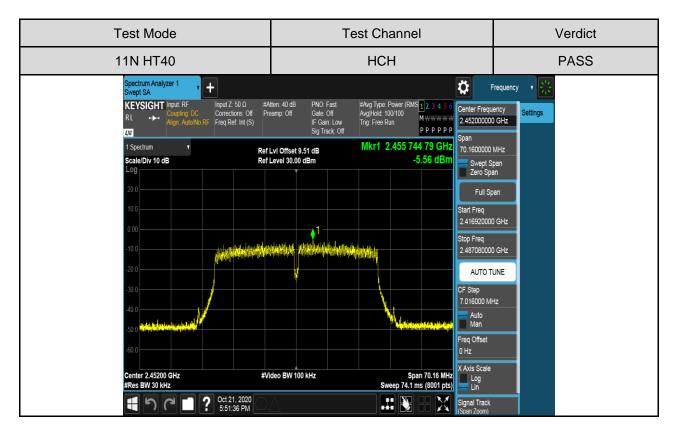


Test Mode **Test Channel** Verdict 11N HT20 **HCH PASS** pectrum Analyzer 1 wept SA Ö + Frequency Input Z: 50 Ω #Atten: 40 dB #Avg Type: Power (RMS 1 2 3 4 5 KEYSIGHT Input RF Corrections: Off Freq Ref: Int (S) Gate: Off IF Gain: Low Settings 2.462000000 GHz PPPPPP ĻXI Mkr1 2.463 254 26 GHz Ref LvI Offset 9.51 dB Ref Level 30.00 dBm 34.7200000 MHz -2.56 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.444640000 GHz Stop Freq 2.479360000 GHz AUTO TUNE 3.472000 MHz Auto Man Freq Offset #Video BW 100 kHz Span 34.72 MHz Res BW 30 kHz Sweep 36.8 ms (8001 pts) ? Oct 21, 2020 5:42:03 PM 196 # 3











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	For b/g/n HT20 modes: at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power; For HT40 mode: 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.

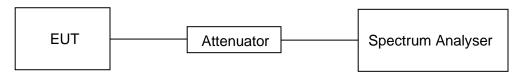
settings:

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





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TEST ENVIRONMENT

Temperature	22°C	Relative Humidity	56%
Atmosphere Pressure	101kPa	Test Voltage	DC 12V

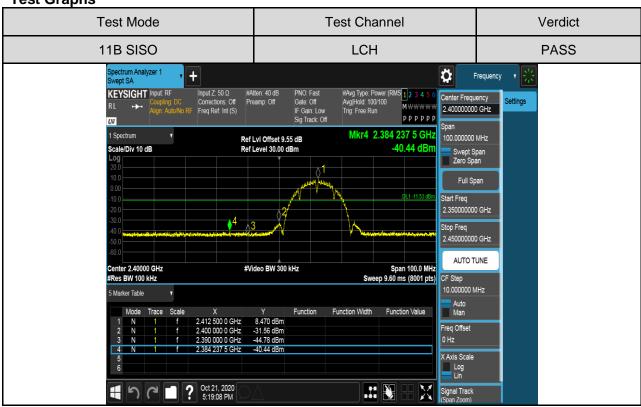
Part I : Conducted Bandedge

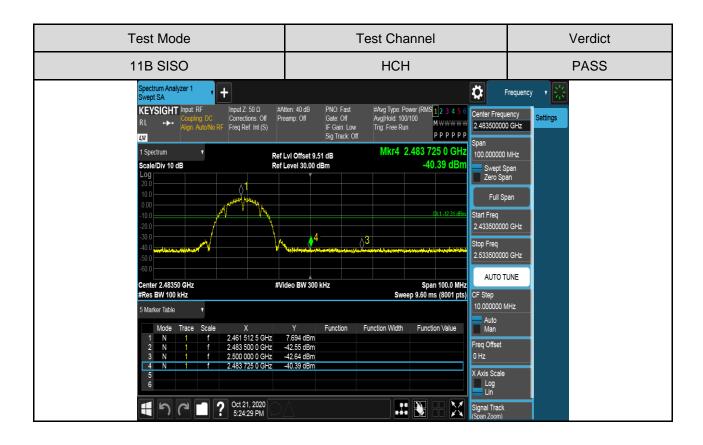
RESULTS TABLE

Test Mode	Test Channel	Carrier Power[dBm]	Max. Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	8.470	-40.44	-11.53	PASS
IID	HCH	7.694	-40.39	-12.31	PASS
11G	LCH	2.823	-39.77	-17.18	PASS
110	HCH	2.134	-40.33	-17.87	PASS
11N HT20	LCH	2.623	-39.71	-17.38	PASS
TIIN HIZU	HCH	1.911	-39.60	-18.09	PASS
11N HT40	LCH	0.3853	-40.44	-29.62	PASS
111N 1114U	HCH	-0.6896	-39.90	-30.69	PASS

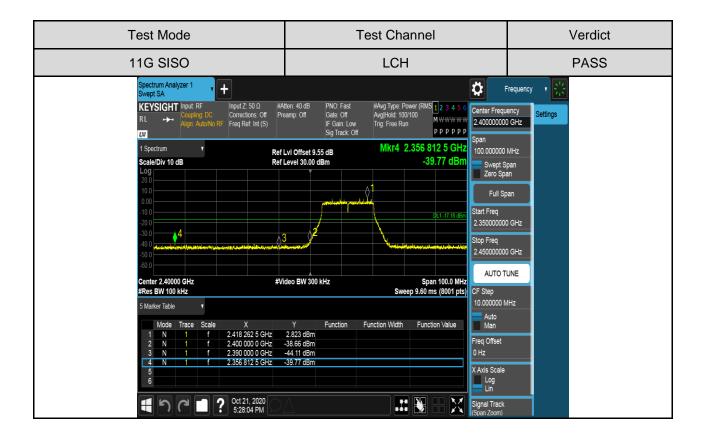


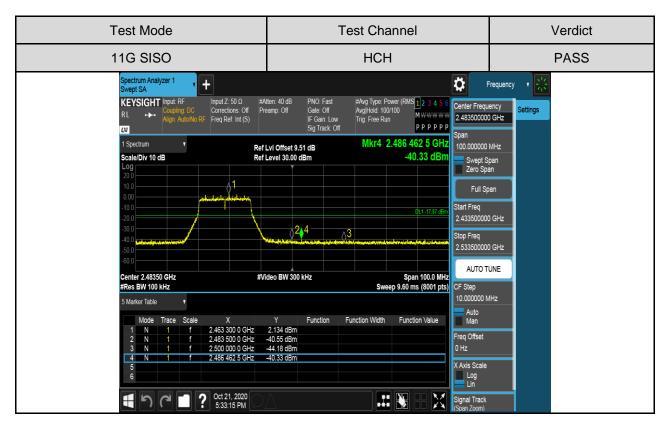
Test Graphs



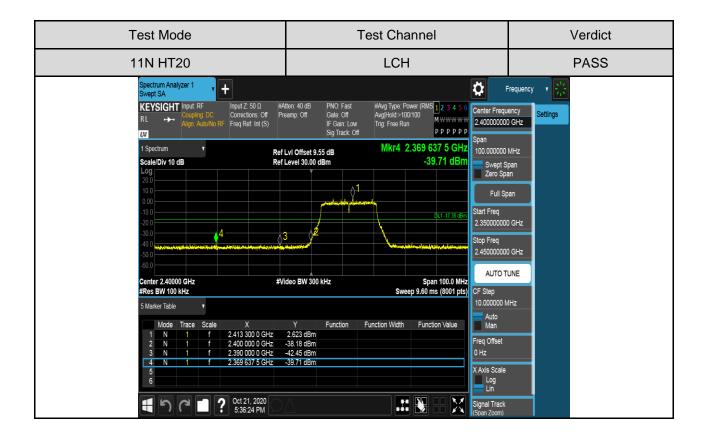


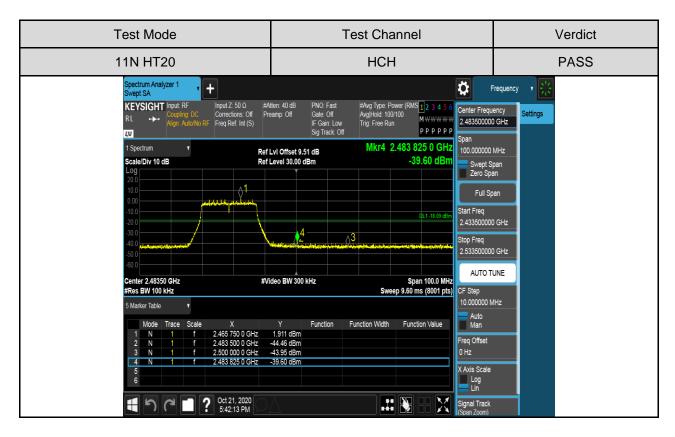




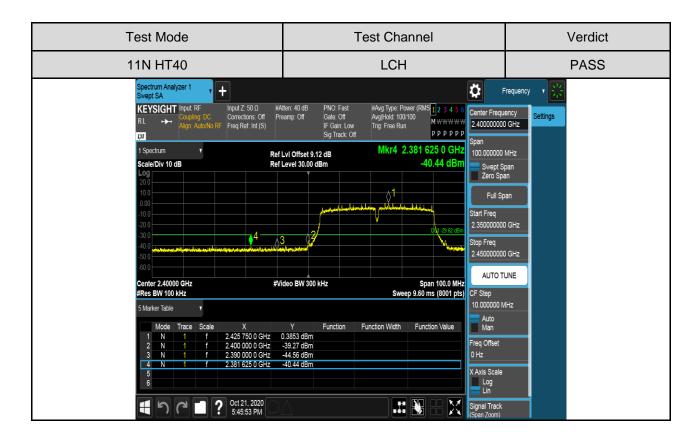


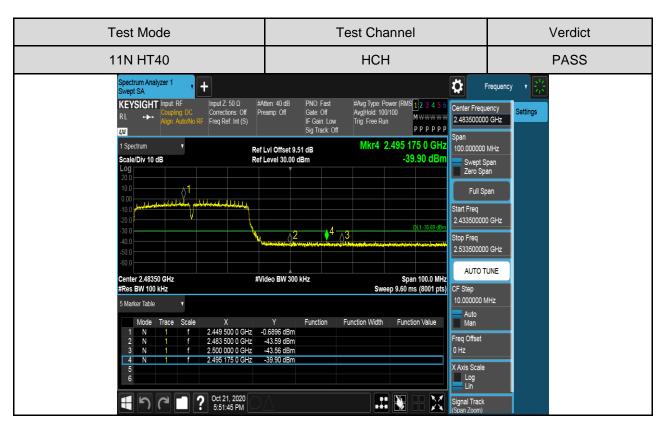














Part II : Conducted Emission

Test Result Table

Test Mode	Channel	Pref(dBm)	Puw(dBm)	Verdict
	LCH	8.55	<limit< td=""><td>PASS</td></limit<>	PASS
11B	MCH	6.93	<limit< td=""><td>PASS</td></limit<>	PASS
	HCH	7.64	<limit< td=""><td>PASS</td></limit<>	PASS
	LCH	2.82	<limit< td=""><td>PASS</td></limit<>	PASS
11G	MCH	2.43	<limit< td=""><td>PASS</td></limit<>	PASS
	HCH	2.28	<limit< td=""><td>PASS</td></limit<>	PASS
	LCH	2.79	<limit< td=""><td>PASS</td></limit<>	PASS
11N HT20	MCH	2.02	<limit< td=""><td>PASS</td></limit<>	PASS
	HCH	2.08	<limit< td=""><td>PASS</td></limit<>	PASS
	LCH	0.21	<limit< td=""><td>PASS</td></limit<>	PASS
11N HT40	MCH	-0.46	<limit< td=""><td>PASS</td></limit<>	PASS
	HCH	-0.53	<limit< td=""><td>PASS</td></limit<>	PASS

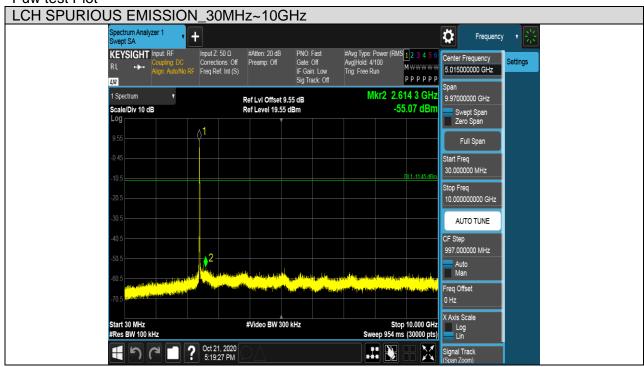
Test Plots

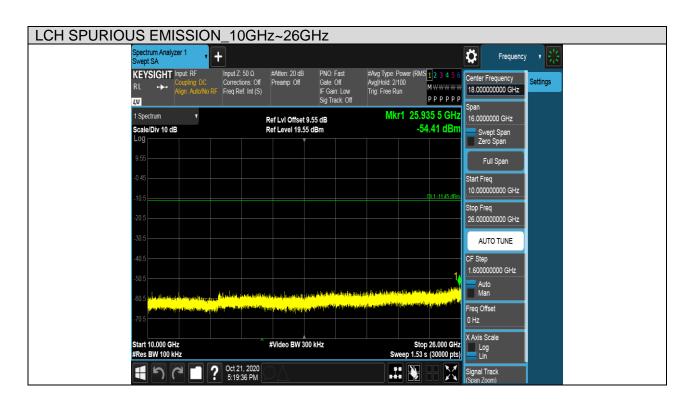
Test Mode	Channel	Verdict
11B	LCH	PASS





Puw test Plot







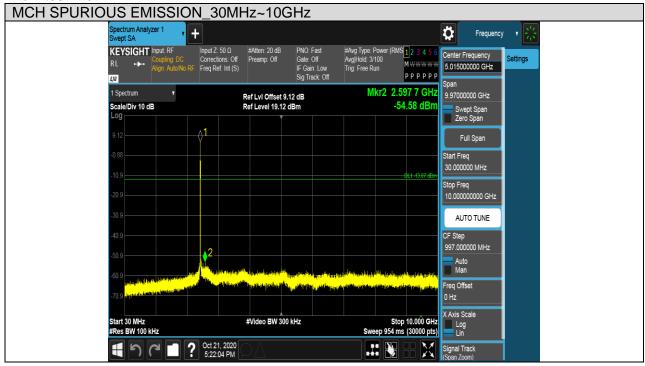
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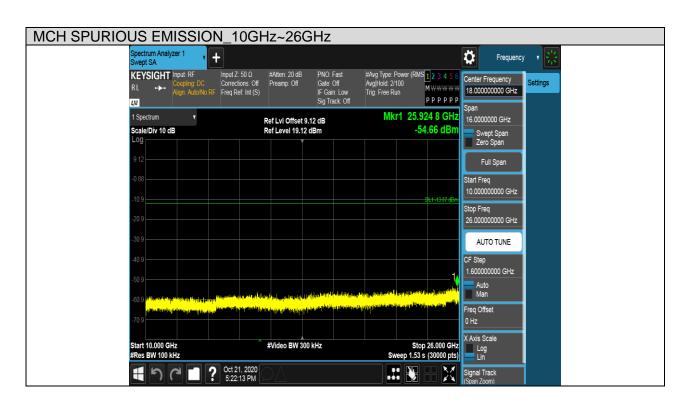
Test Mode	Channel	Verdict
11B	MCH	PASS





Puw test Plot







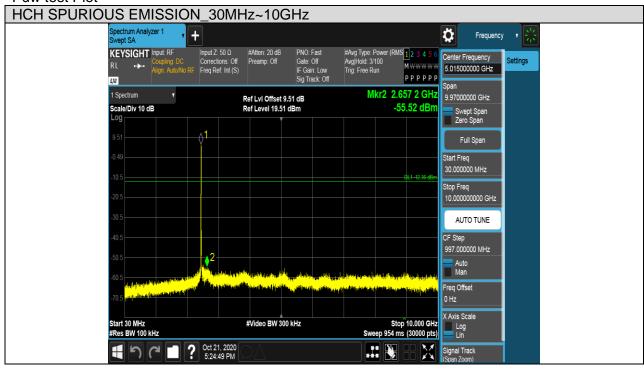
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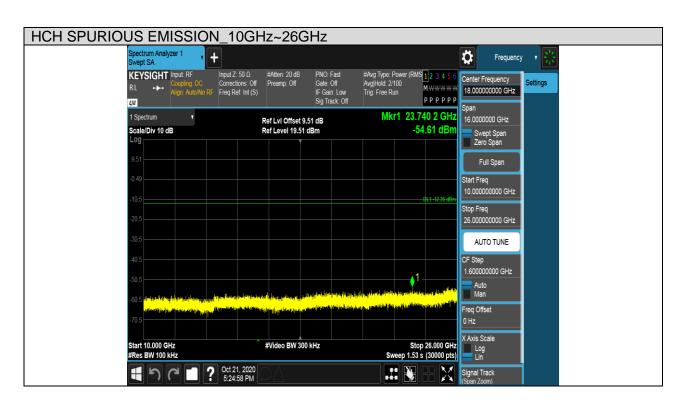
Test Mode	Channel	Verdict
11B	HCH	PASS





Puw test Plot







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Test Mode	Channel	Verdict
11G	LCH	PASS

