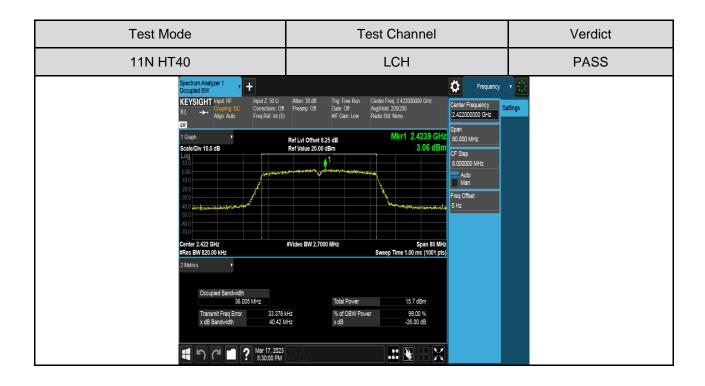


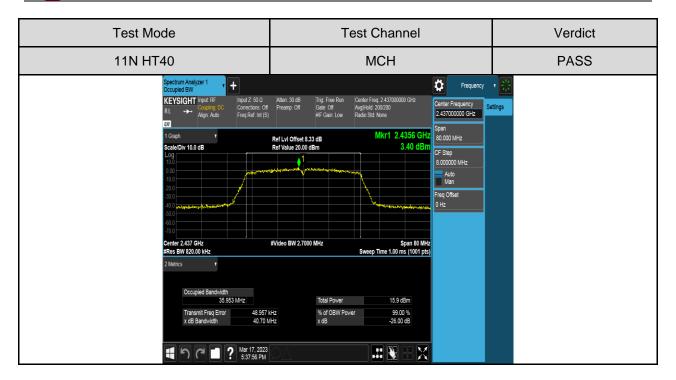


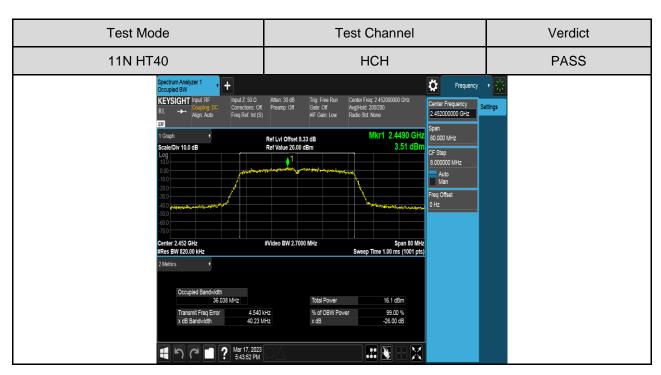
Test Mode Test Channel Verdict 11N HT20 **HCH PASS** Ö KEYSIGHT Input RI 2.462000000 GHz Ref Lvi Offset 8.33 dB Ref Value 20.00 dBm /Div 10.0 dB CF Step 4.000000 MHz Auto Man #Video BW 1.3000 MHz -11.202 kHz 24.28 MHz 99.00 % -26.00 dB 1 9 PM Mar 17, 2023 5:21:06 PM .:: 📎

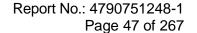




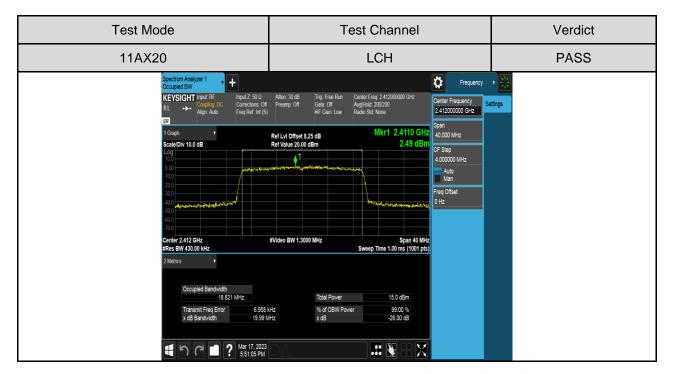


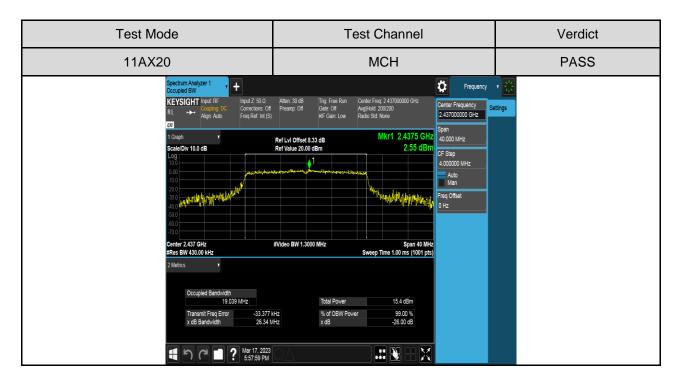






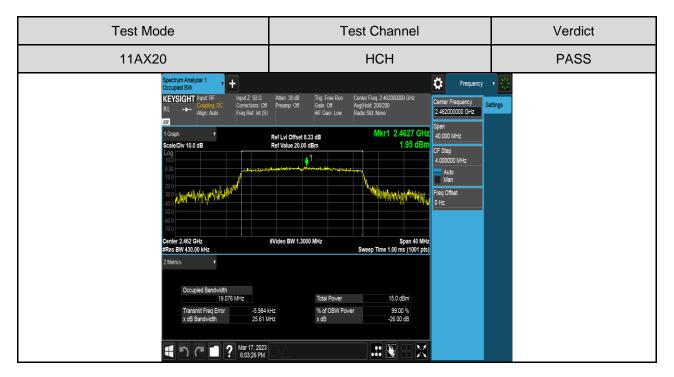


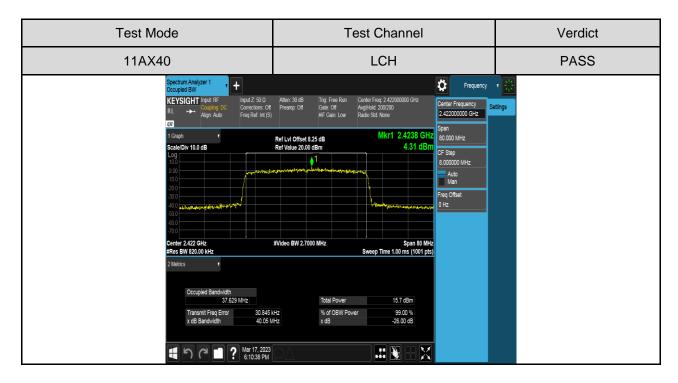


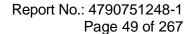




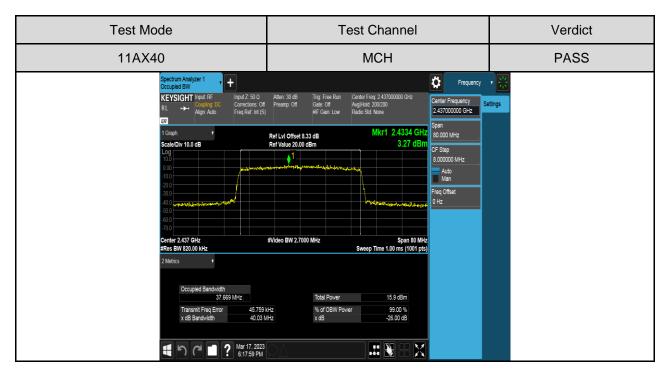


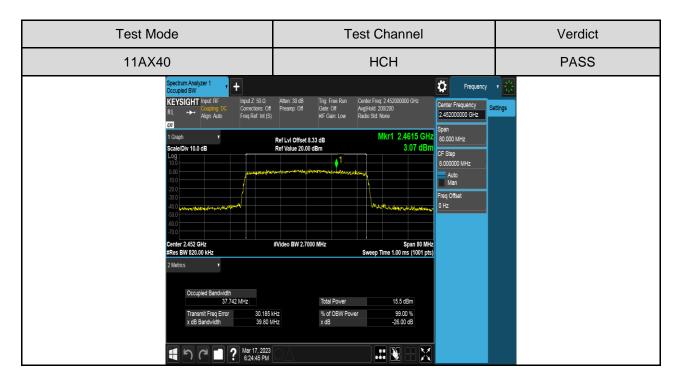










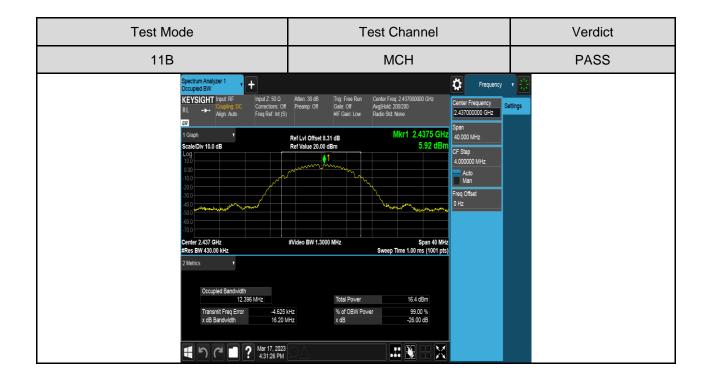


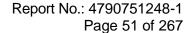


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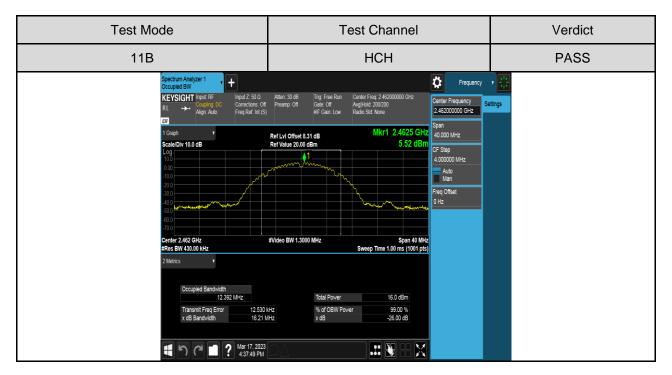
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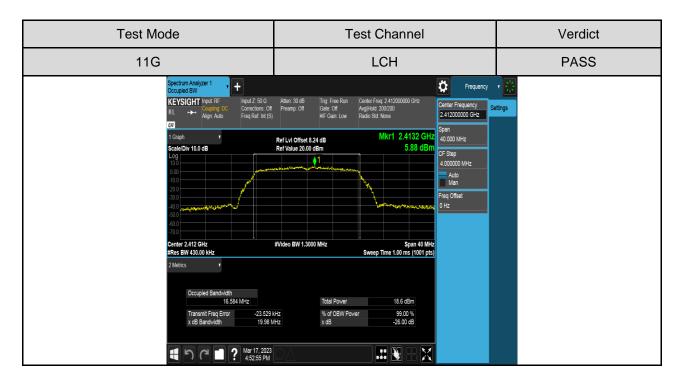


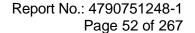




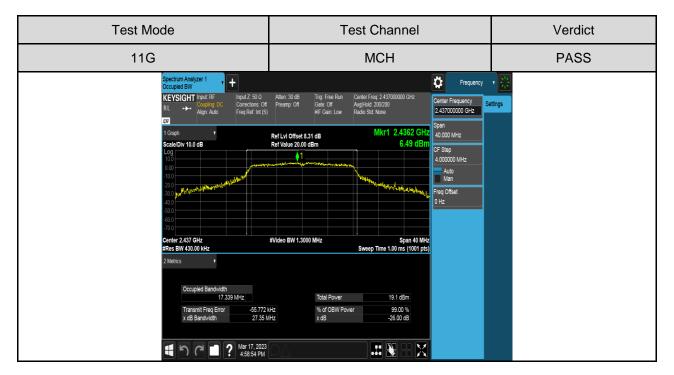


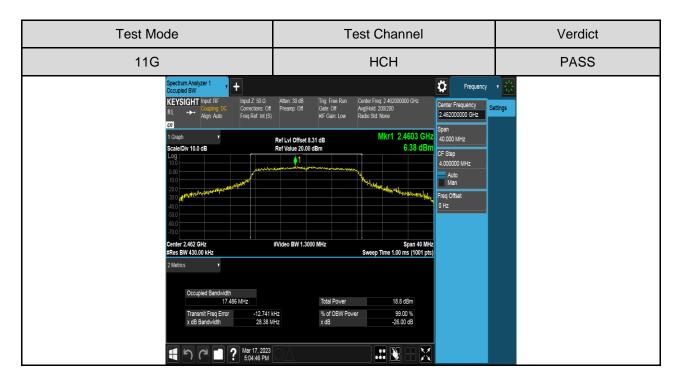


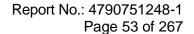




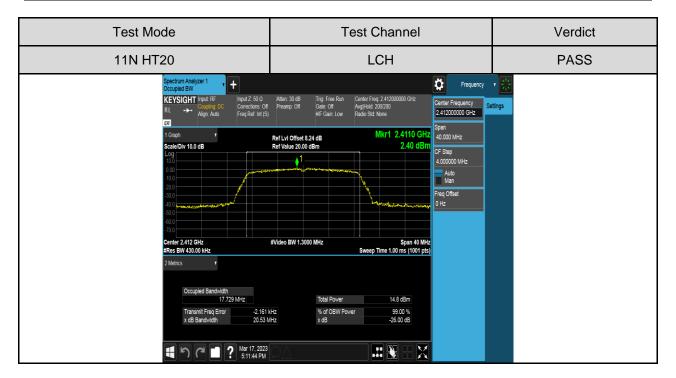


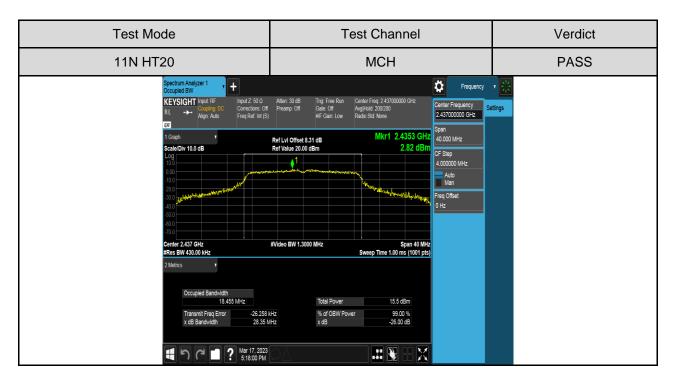






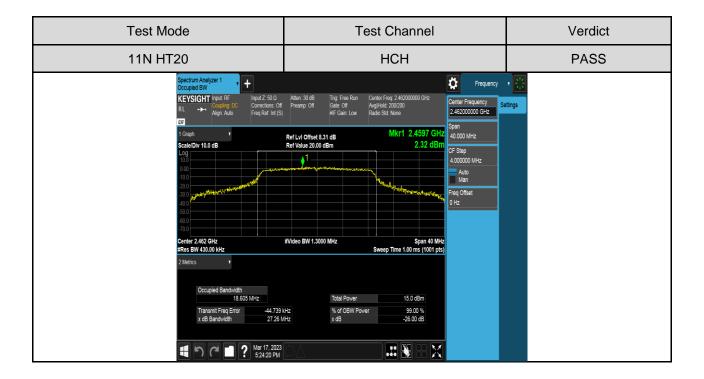


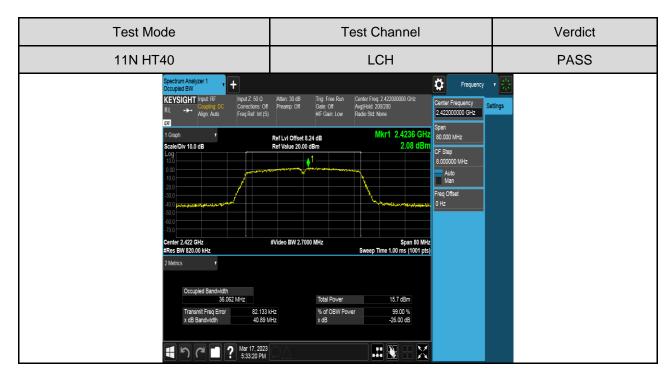


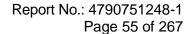




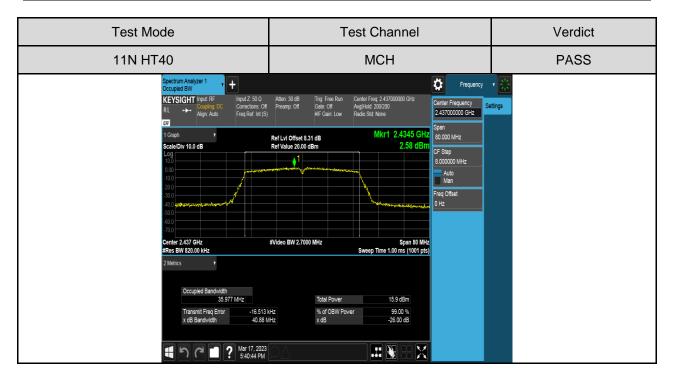


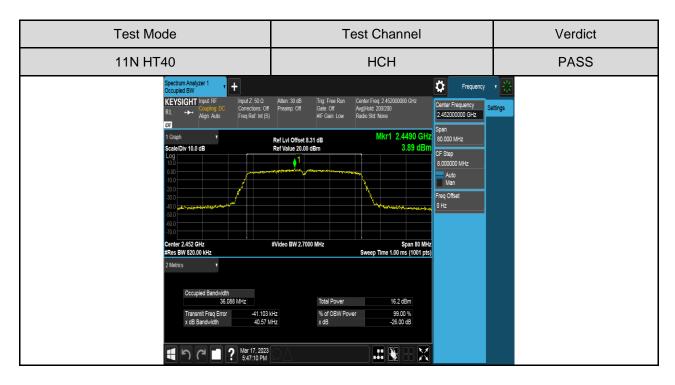






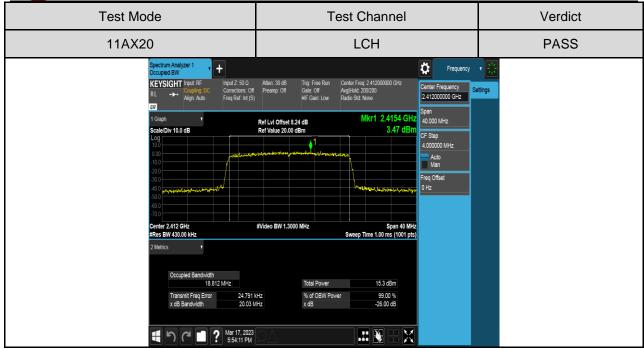


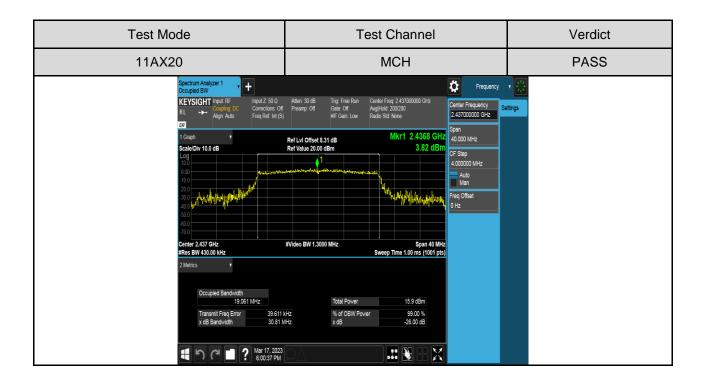


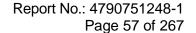




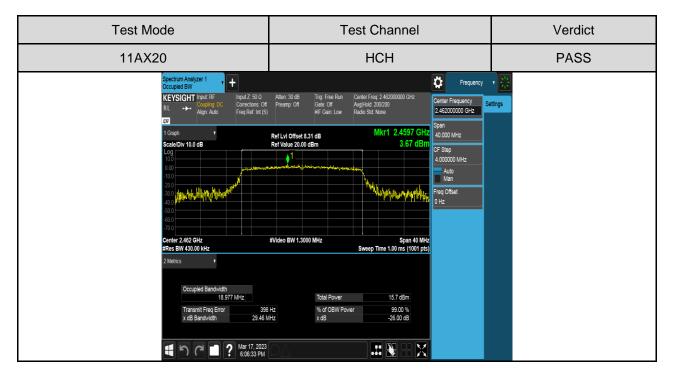
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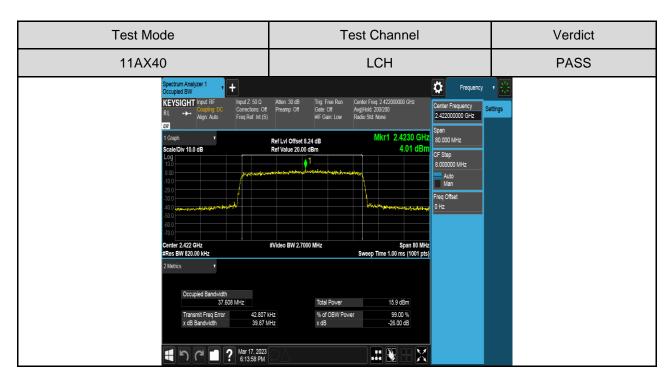








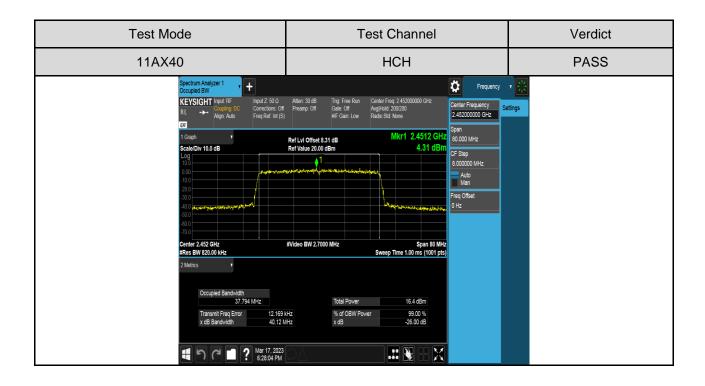








Test Mode Test Channel Verdict 11AX40 **MCH PASS** Ö KEYSIGHT Input RI 2.437000000 GHz Mkr1 2.4424 GI Ref Lvi Offset 8.31 dB Ref Value 20.00 dBm 4.84 dB /Div 10.0 dB CF Step 8.000000 MHz Auto Man #Video BW 2.7000 MHz -7.655 kHz 39.84 MHz 99.00 % -26.00 dB ■ 9 C ■ ? Mar 17, 2023 6:20:50 PM .:: 📎





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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	

^{1.} If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Directional gain = $10\log \left[(10^{G1/20} + 10^{G2/20})^2 / N_{ANT} \right] = 6.05 > 6dBi$, where the NANT is the numbers of antenna. So, the power limit shall be reduced to 30 - (6.05-6) = 29.95 dBm

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.

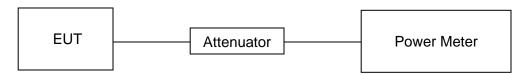
AVG Detector use for AVG result.

^{2.} Limit=30dBm - (Directional gain -6)dBi



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TEST SETUP



TEST ENVIRONMENT

Temperature	24.2℃	Relative Humidity	52.5%
Atmosphere Pressure	102.1kpa	Test Voltage	DC5V

TEST RESULTS TABLE

Test Mode	Antenna	Frequency [MHz]	Average Power[dBm]	Verdict
440	Ant1	2412	12.65	PASS
	Ant2	2412	12.95	PASS
	Ant1	2437	13.11	PASS
11B	Ant2	2437	13.60	PASS
	Ant1	2462	12.65	PASS
	Ant2	2462	13.22	PASS
	Ant1	2412	13.00	PASS
	Ant2	2412	13.13	PASS
440	Ant1	2437	13.35	PASS
11G	Ant2	2437	13.79	PASS
	Ant1	2462	12.72	PASS
	Ant2	2462	13.44	PASS
	Ant1	2412	9.05	PASS
	Ant2	2412	9.11	PASS
	total	2412	12.09	PASS
4.43.100	Ant1	2437	9.40	PASS
11N20	Ant2	2437	9.77	PASS
MIMO	total	2437	12.60	PASS
	Ant1	2462	8.81	PASS
	Ant2	2462	9.31	PASS
	total	2462	12.08	PASS
	Ant1	2422	9.17	PASS
	Ant2	2422	10.45	PASS
	total	2422	12.87	PASS
	Ant1	2437	9.41	PASS
11N40	Ant2	2437	10.68	PASS
MIMO	total	2437	13.10	PASS
	Ant1	2452	9.52	PASS
	Ant2	2452	10.84	PASS
	total	2452	13.24	PASS
	Ant1	2412	9.10	PASS
	Ant2	2412	9.29	PASS
	total	2412	12.21	PASS
	Ant1	2437	9.37	PASS
11AX20	Ant2	2437	9.94	PASS
MIMO	total	2437	12.67	PASS
	Ant1	2462	9.16	PASS
	Ant2	2462	9.65	PASS
	total	2462	12.42	PASS
	Ant1	2422	9.60	PASS
11AX40	Ant2	2422	9.93	PASS
MIMO	total	2422	12.78	PASS
	Ant1	2437	9.73	PASS

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	Ant2	2437	10.15	PASS
	total	2437	12.96	PASS
	Ant1	2452	9.40	PASS
	Ant2	2452	10.35	PASS
	total	2452	12.91	PASS

Remark:

- 1) For all the test results has been adjusted the duty cycle factor.
- 2) For Correction Factor is refer to the result in section 7.1



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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	

^{1.} If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Directional gain = $10\log [(10^{G1/20} + 10^{G2/20})^2/N_{ANT}] = 6.05 > 6dBi$, where the NANT is the numbers of antenna. So, the power limit shall be reduced to 8 - (6.05-6) = 7.95 dBm

TEST PROCEDURE

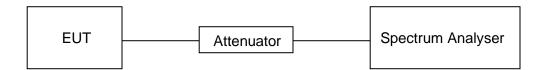
Refer to FCC KDB 558074, connect the UUT to the spectrum analyser and use the following settings:

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

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

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

TEST SETUP



^{2.} Limit=30dBm - (Directional gain -6)dBi



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TEST ENVIRONMENT

Temperature	24.2℃	Relative Humidity	52.5%
Atmosphere Pressure	102.1kpa	Test Voltage	DC5V

TEST RESULTS TABLE

TestMode	Antenna	Test Channel	Maximum Peak power spectral	Verdict
restivioue	Antenna		density (dBm/30kHz)	
	Ant1	LCH	-9.16	PASS
	Ant2	LCH	-8.45	PASS
11B	Ant1	MCH	-8.59	PASS
110	Ant2	MCH	-8.15	PASS
	Ant1	HCH	-8.87	PASS
	Ant2	HCH	-8.4	PASS
	Ant1	LCH	-10.68	PASS
	Ant2	LCH	-10.4	PASS
11G	Ant1	MCH	-9.94	PASS
116	Ant2	MCH	-9.87	PASS
	Ant1	HCH	-10.83	PASS
	Ant2	HCH	-9.49	PASS
	Ant1	LCH	-14.82	PASS
	Ant2	LCH	-14.73	PASS
	total	LCH	-11.76	PASS
	Ant1	MCH	-14.86	PASS
11N20MIMO	Ant2	MCH	-14.06	PASS
	total	MCH	-11.43	PASS
	Ant1	HCH	-15.51	PASS
	Ant2	HCH	-14.81	PASS
	total	HCH	-12.14	PASS
	Ant1	LCH	-17.93	PASS
	Ant2	LCH	-16.79	PASS
	total	LCH	-14.31	PASS
	Ant1	MCH	-17.51	PASS
11N40MIMO	Ant2	MCH	-16.19	PASS
	total	MCH	-13.79	PASS
	Ant1	HCH	-17.45	PASS
	Ant2	HCH	-16.45	PASS
	total	HCH	-13.91	PASS
	Ant1	LCH	-13.72	PASS
ļ	Ant2	LCH	-13.33	PASS
ļ	total	LCH	-10.51	PASS
	Ant1	MCH	-13.75	PASS
11AX20MIMO	Ant2	MCH	-12.1	PASS
	total	MCH	-9.84	PASS
ļ	Ant1	HCH	-14.64	PASS
	Ant2	HCH	-12.74	PASS
	total	HCH	-10.58	PASS
4.4.4.7.4.6.1.1.1.6	Ant1	LCH	-16.8	PASS
11AX40MIMO	Ant2	LCH	-16.96	PASS

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total	LCH	-13.87	PASS
Ant1	MCH	-16.9	PASS
Ant2	MCH	-16.35	PASS
total	MCH	-13.61	PASS
Ant1	HCH	-17.51	PASS
Ant2	HCH	-16.42	PASS
total	HCH	-13.92	PASS

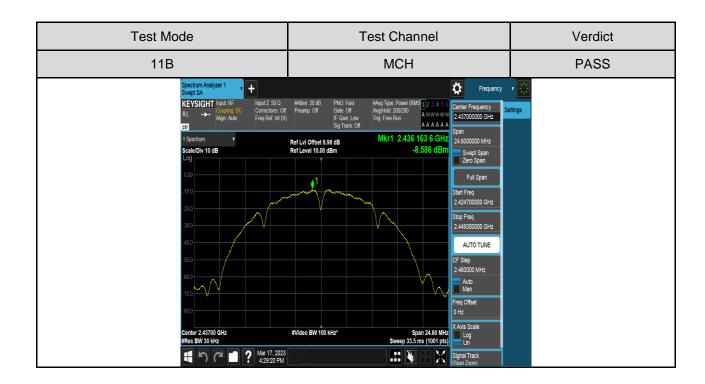


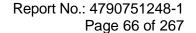
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TEST GRAPHS

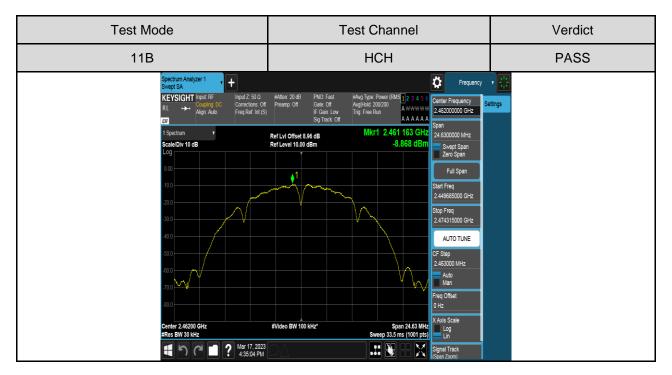
1) For Antenna 1 Part:

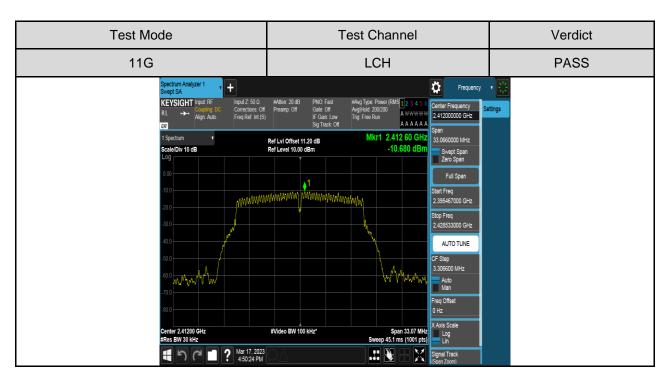


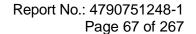






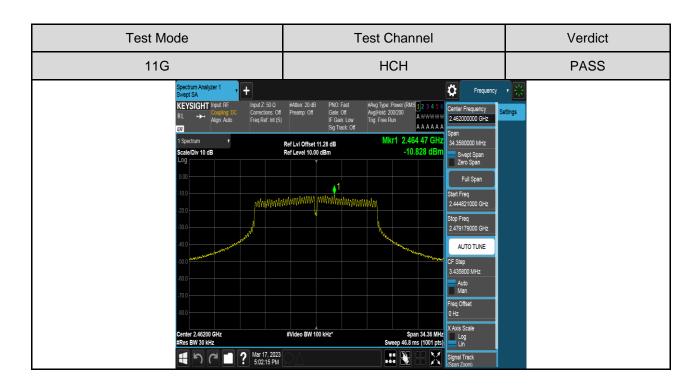






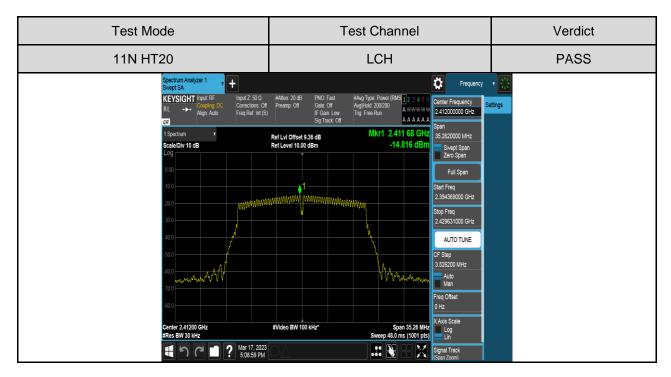


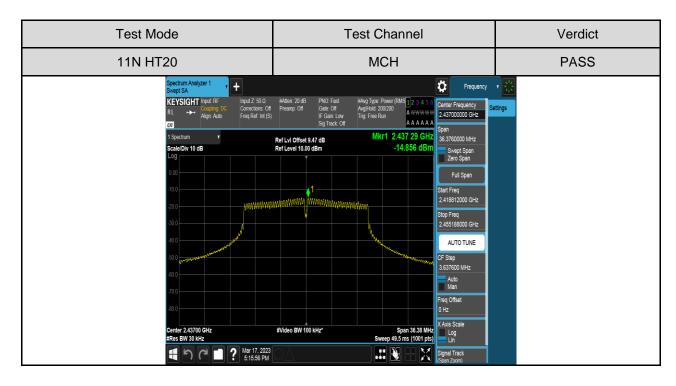
Test Mode Test Channel Verdict 11G **MCH PASS** Ö AAAAAA Mkr1 2.435 70 GI Ref LvI Offset 11.28 dB Ref Level 10.00 dBm -9.940 dB Start Freq 2.419865000 GHz Stop Freq 2.454135000 GHz AUTO TUNE CF Step 3.427000 MHz Auto Man Freq Offset 0 Hz #Video BW 100 kHz* Span 34.27 MHz Sweep 46.7 ms (1001 pts) Mar 17, 2023 4:56:50 PM

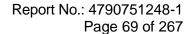




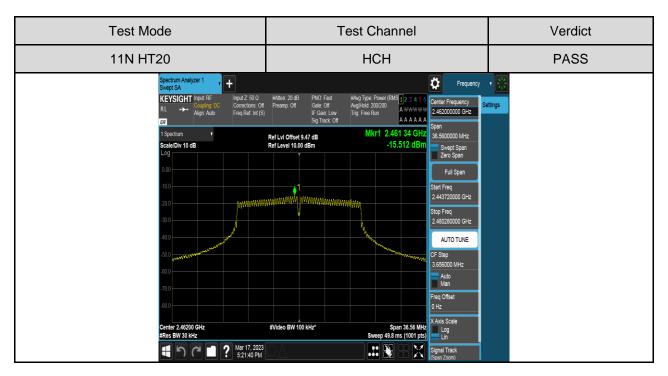


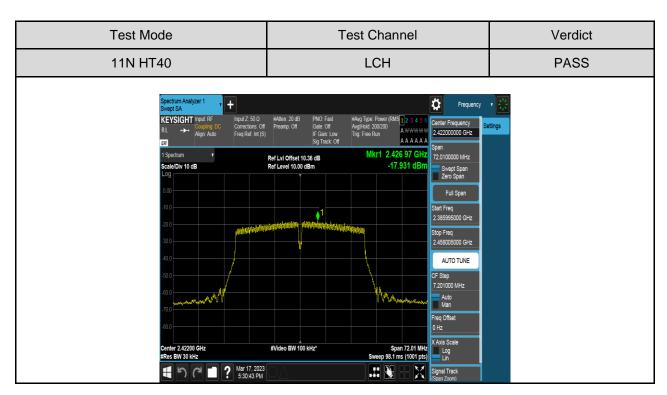


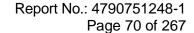




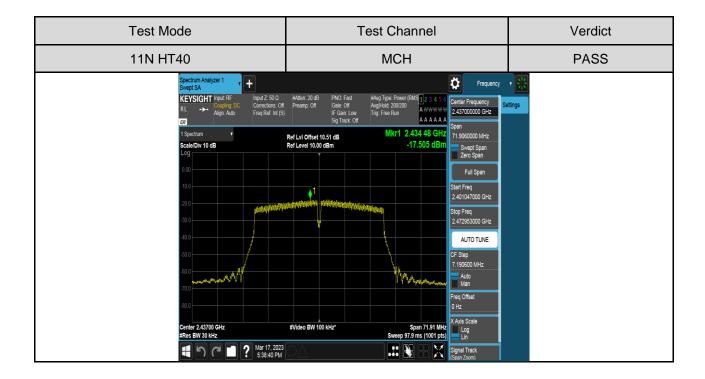


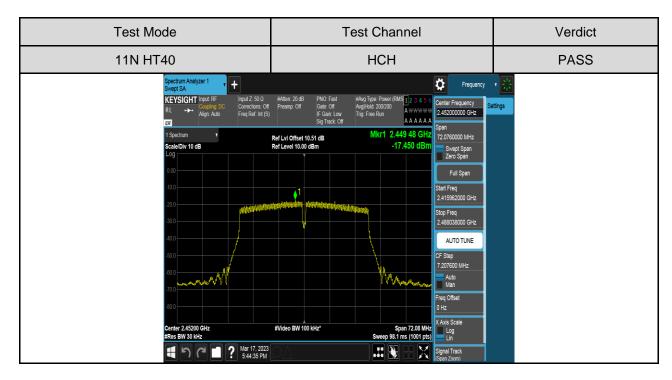






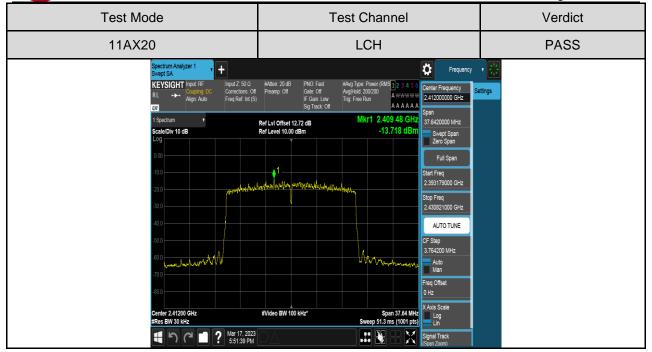


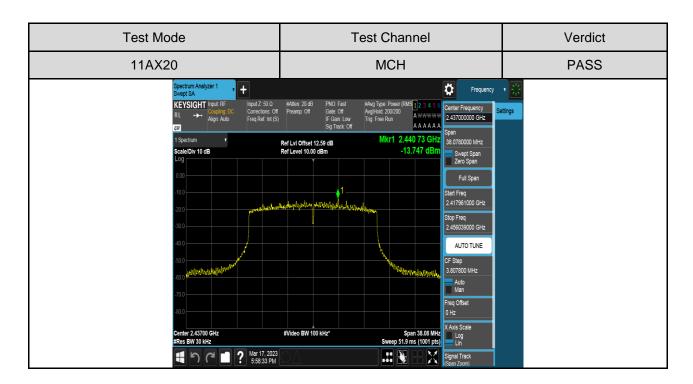


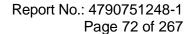




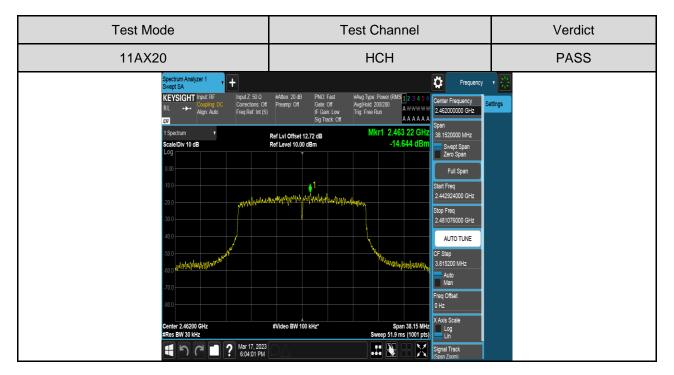
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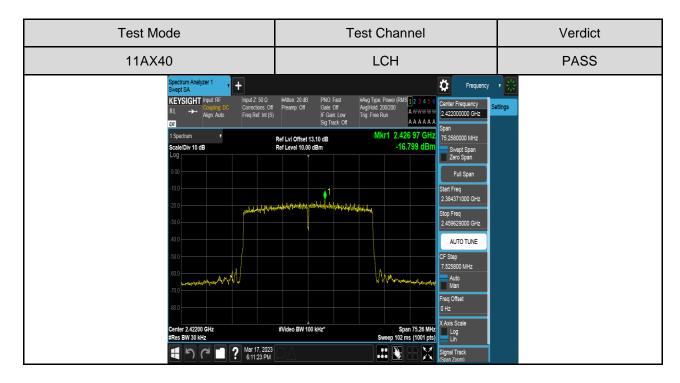








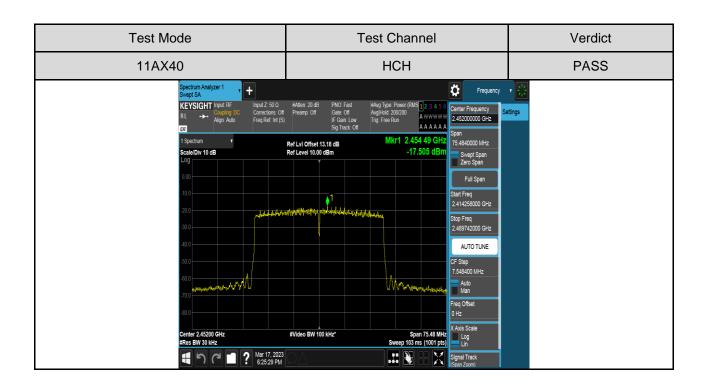


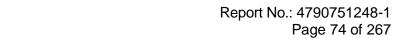






Test Mode Test Channel Verdict 11AX40 **MCH PASS** Ö KEYSIGHT Input: F AAAAAA Mkr1 2.439 49 GI Ref LvI Offset 13.18 dB Ref Level 10.00 dBm -16.901 dB Start Freq 2.399331000 GHz Stop Freq 2.474669000 GHz AUTO TUNE CF Step 7.533800 MHz Auto Man Freq Offset 0 Hz #Video BW 100 kHz* Mar 17, 2023 6:18:44 PM







2) For Antenna 2 Part:

