

Fig.A.6.1.163 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 7.5 GHz-10 GHz)

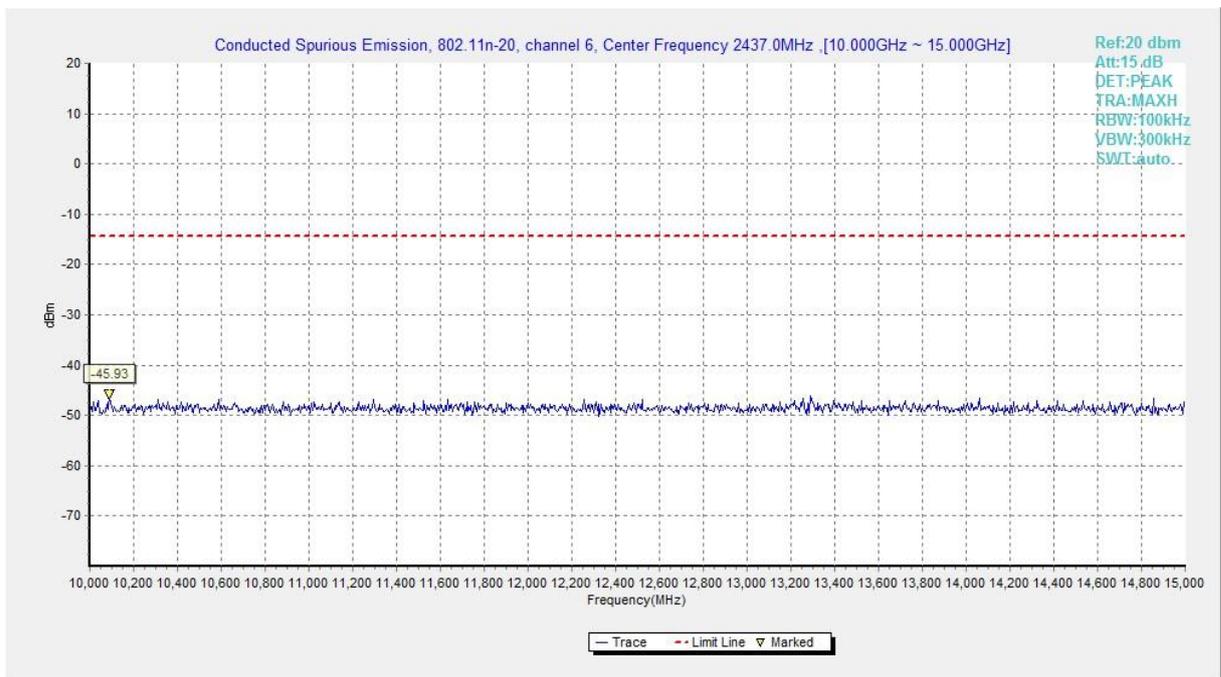


Fig.A.6.1.164 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 10 GHz-15 GHz)

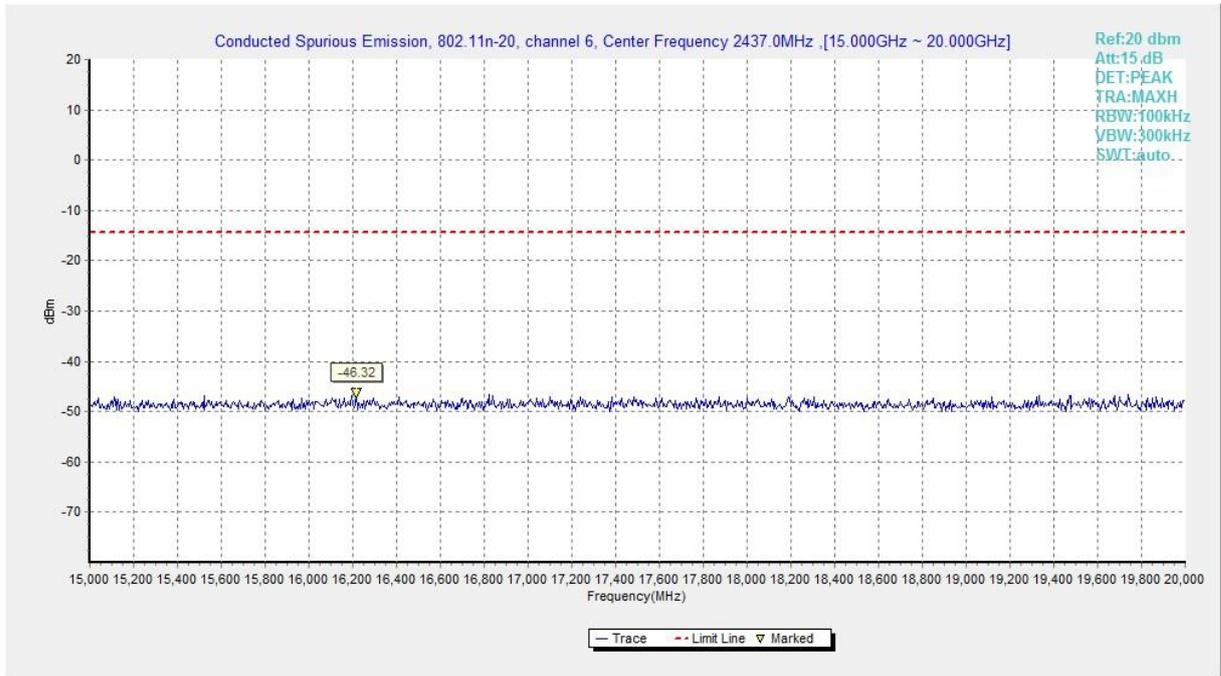


Fig.A.6.1.165 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 15 GHz-20 GHz)

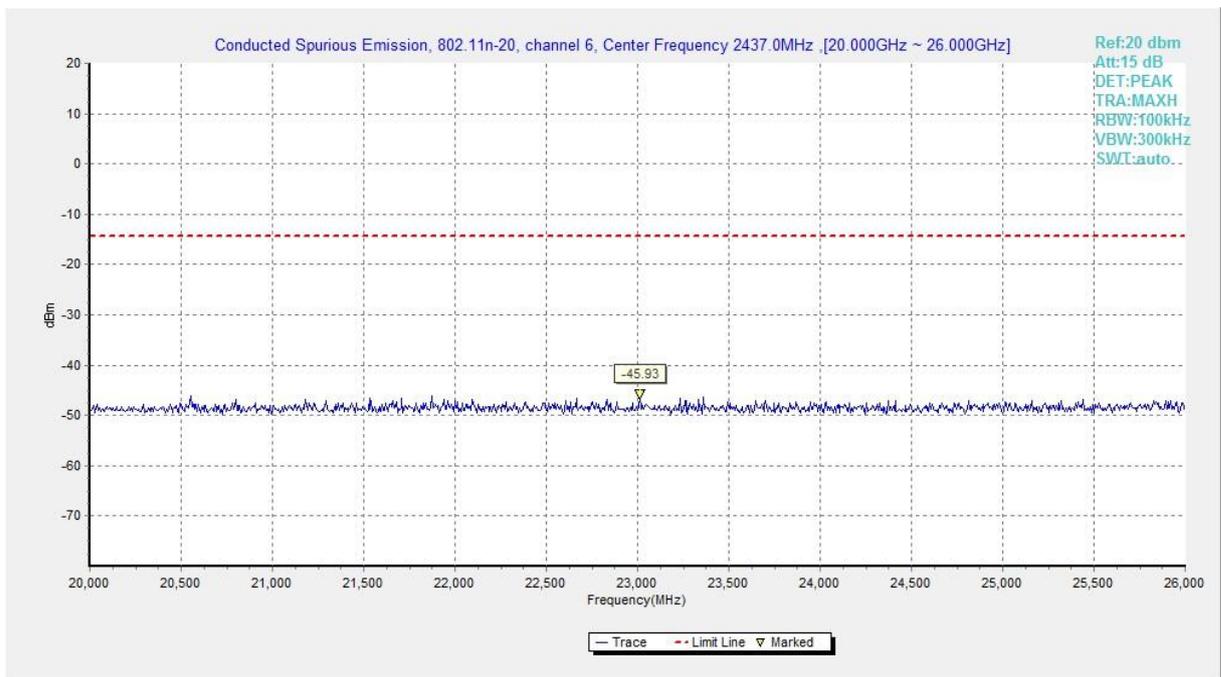


Fig.A.6.1.166 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 20 GHz-26 GHz)

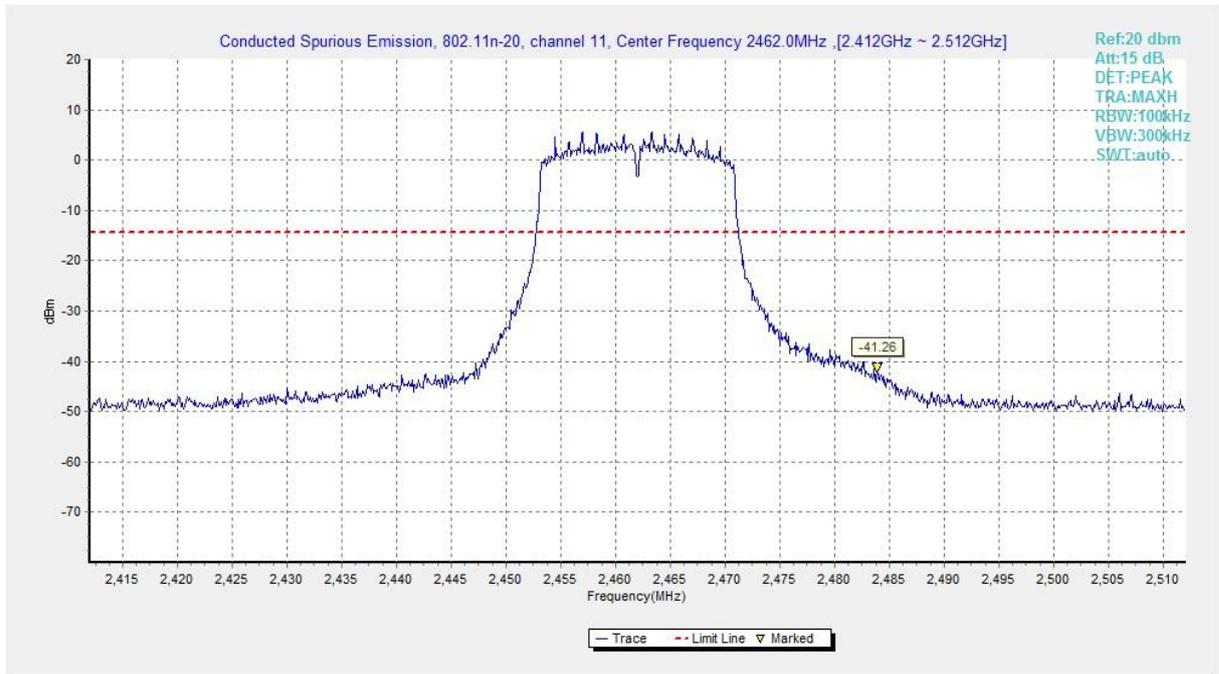


Fig.A.6.1.167 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, Center Frequency)

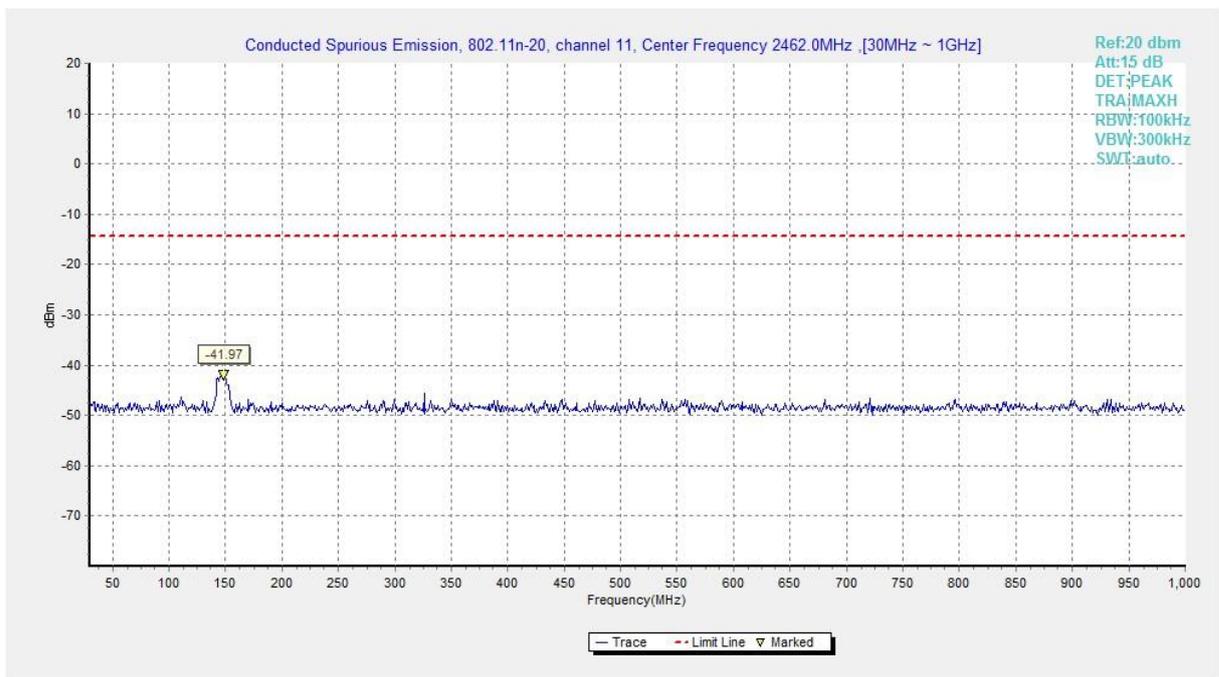


Fig.A.6.1.168 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 30 MHz-1 GHz)

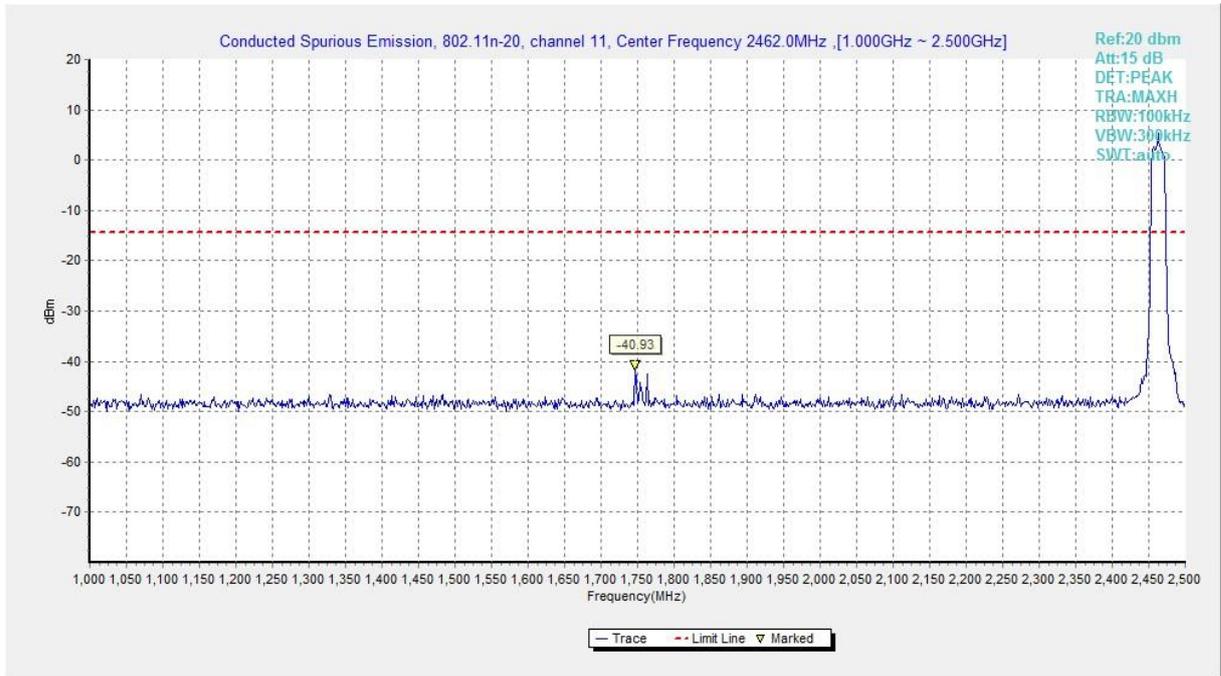


Fig.A.6.1.169 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 1 GHz-2.5 GHz)

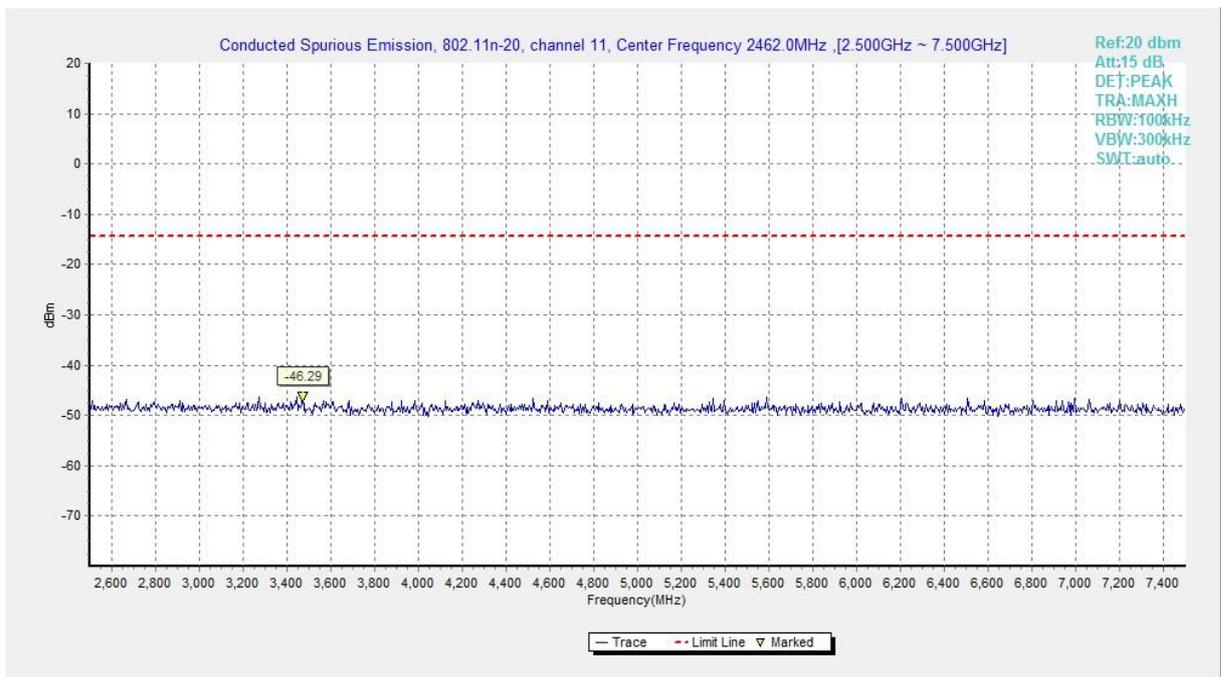


Fig.A.6.1.170 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 2.5 GHz-7.5 GHz)

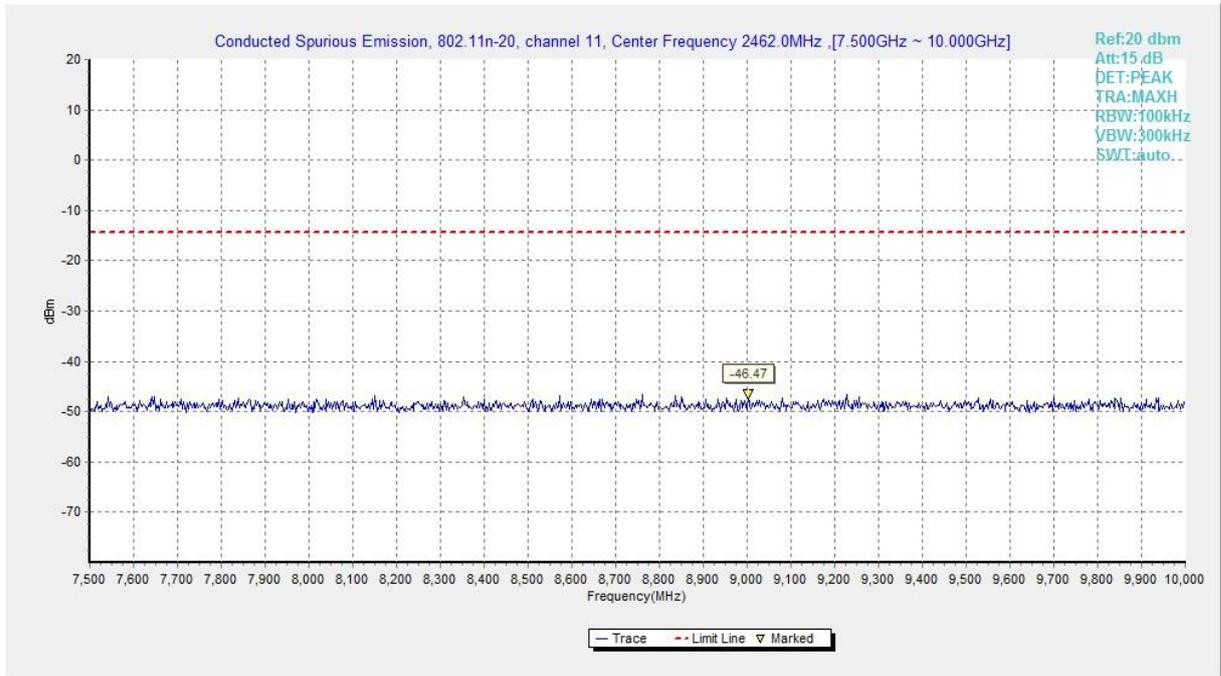


Fig.A.6.1.171 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 7.5 GHz-10 GHz)

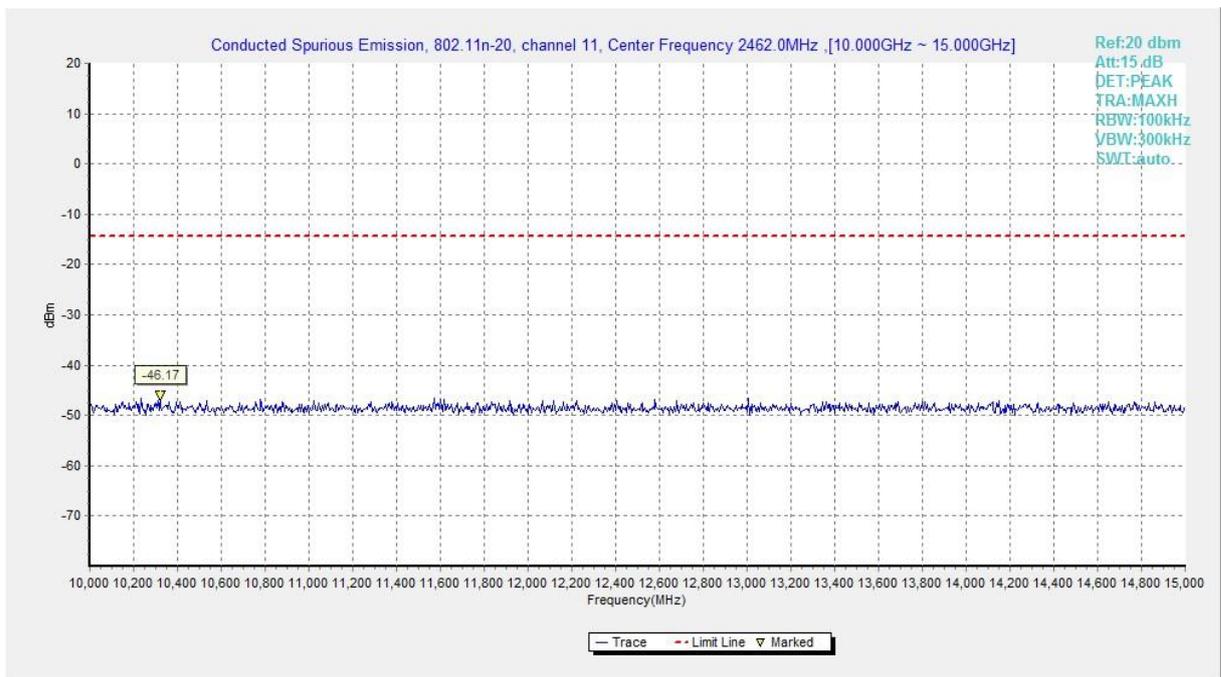


Fig.A.6.1.172 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 10 GHz-15 GHz)

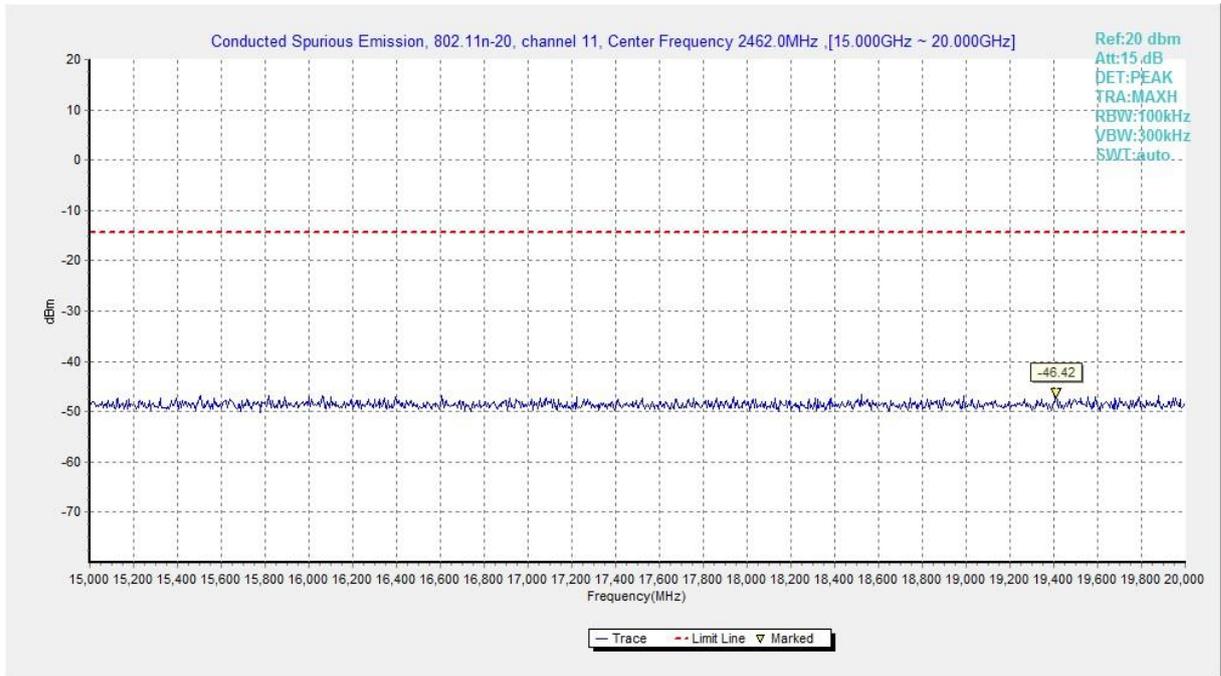


Fig.A.6.1.173 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 15 GHz-20 GHz)

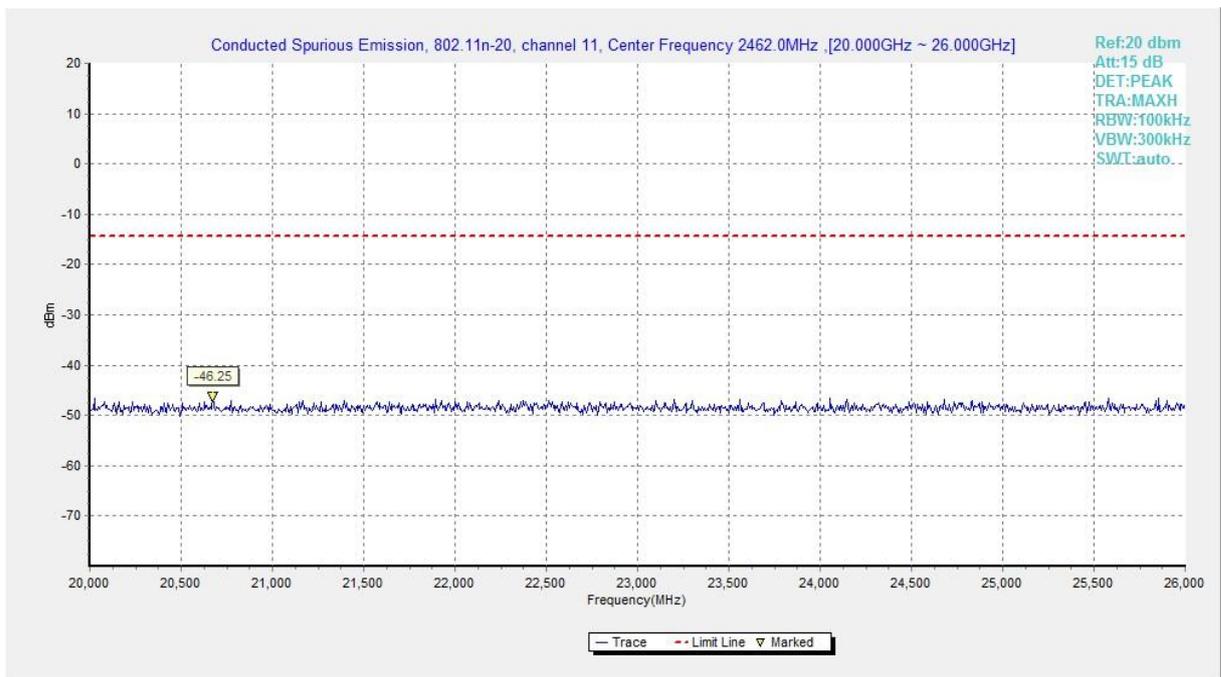


Fig.A.6.1.174 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 20 GHz-26 GHz)

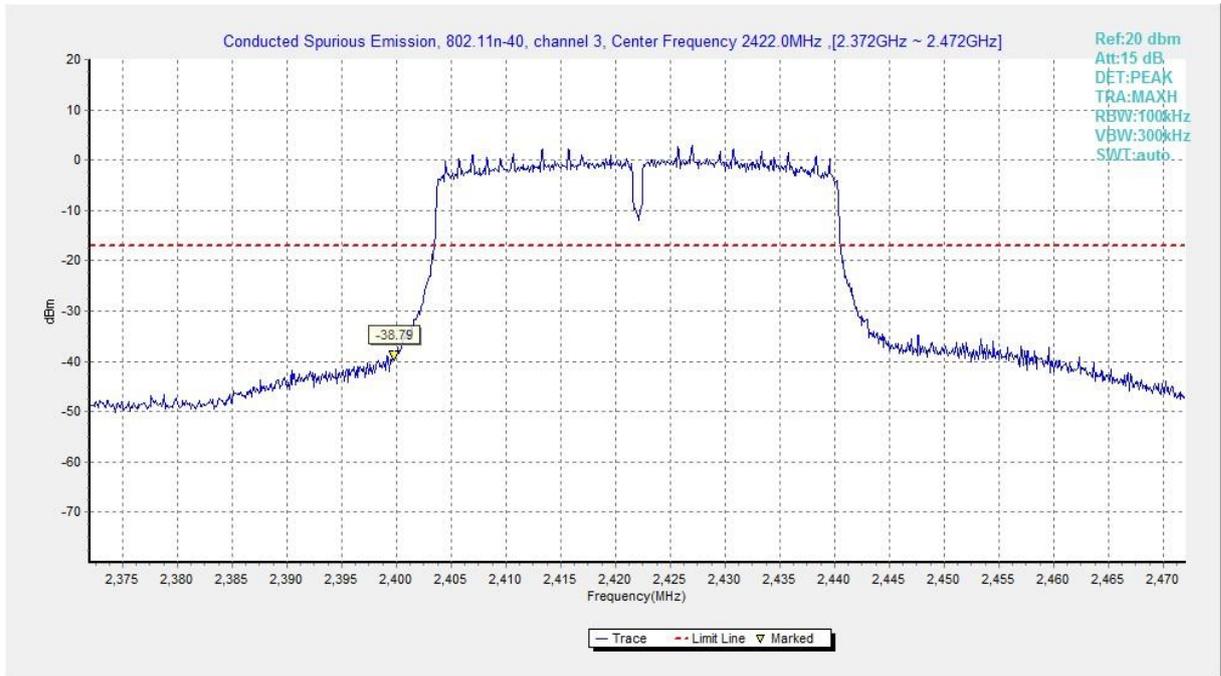


Fig.A.6.1.175 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, Center Frequency)

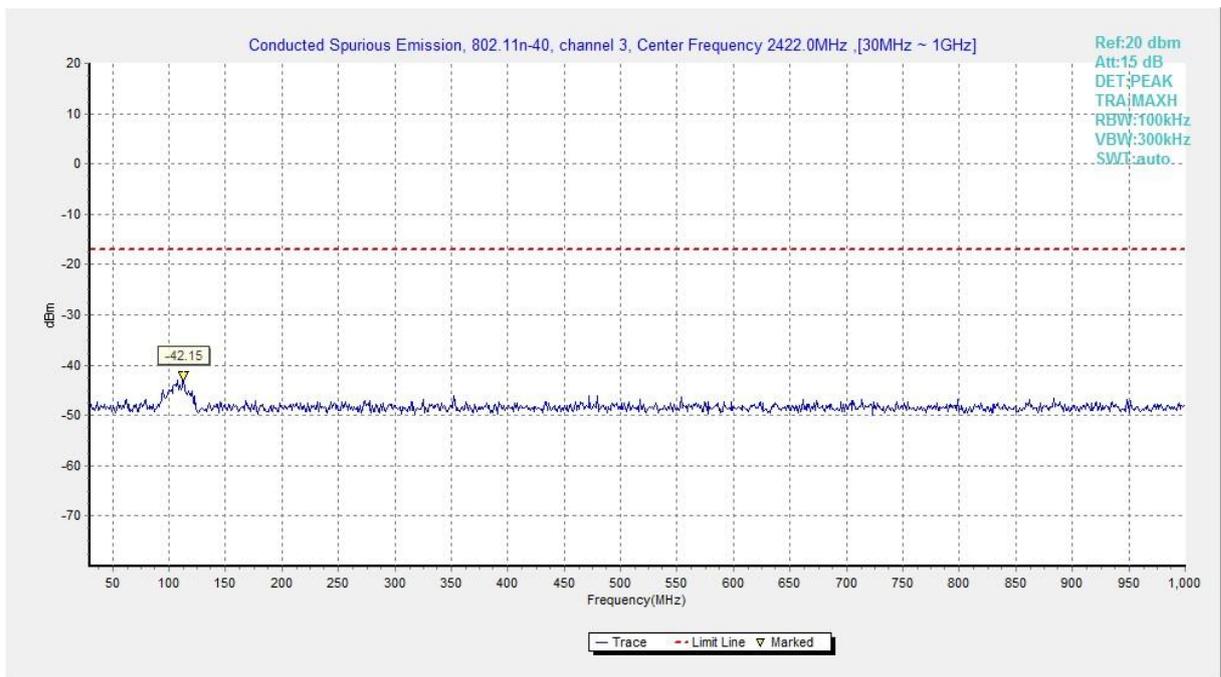


Fig.A.6.1.176 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 30 MHz-1 GHz)

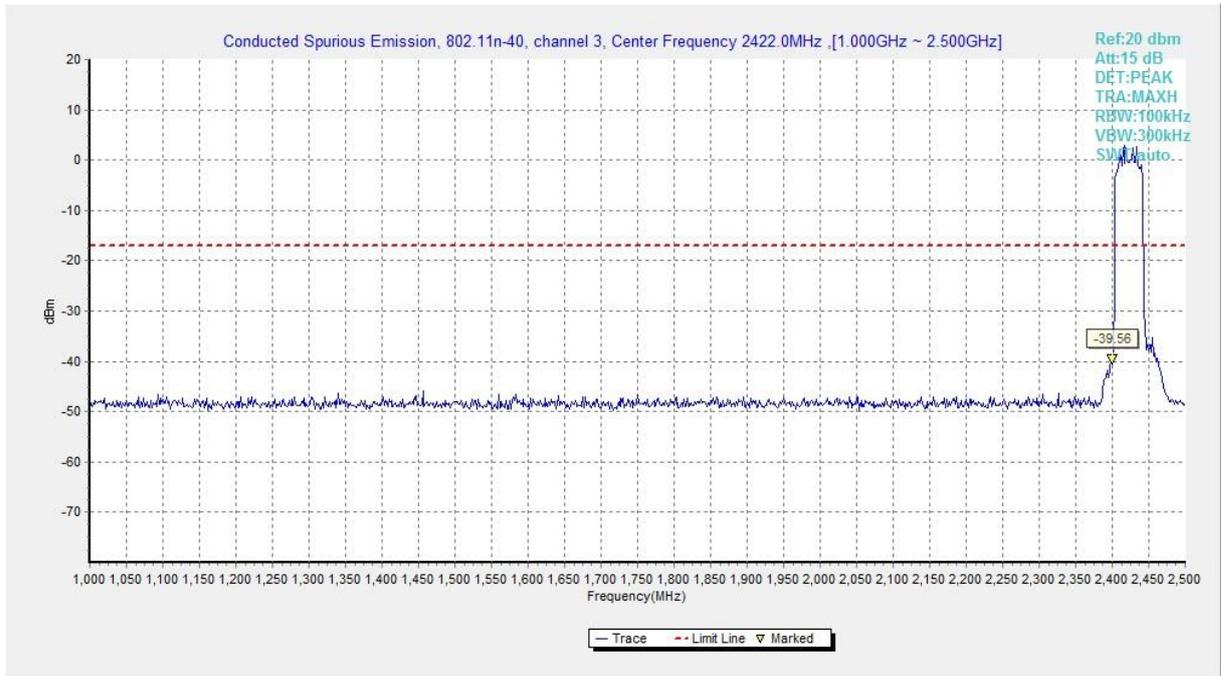


Fig.A.6.1.177 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 1 GHz-2.5 GHz)

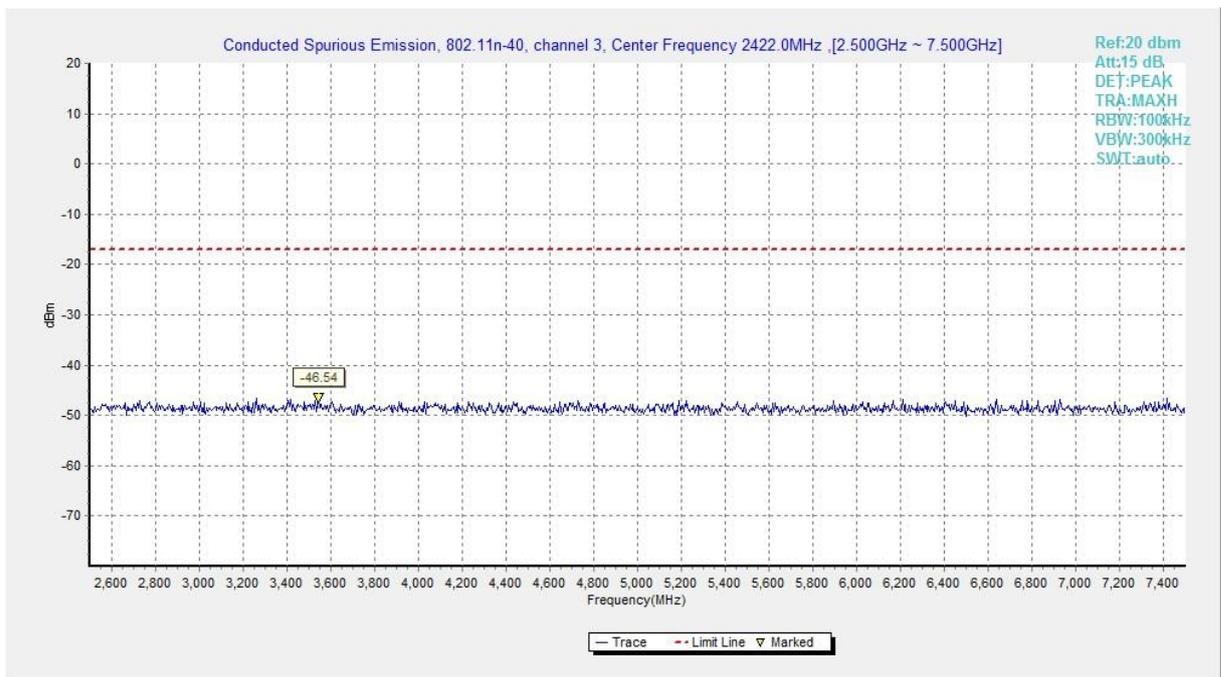


Fig.A.6.1.178 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 2.5 GHz-7.5 GHz)

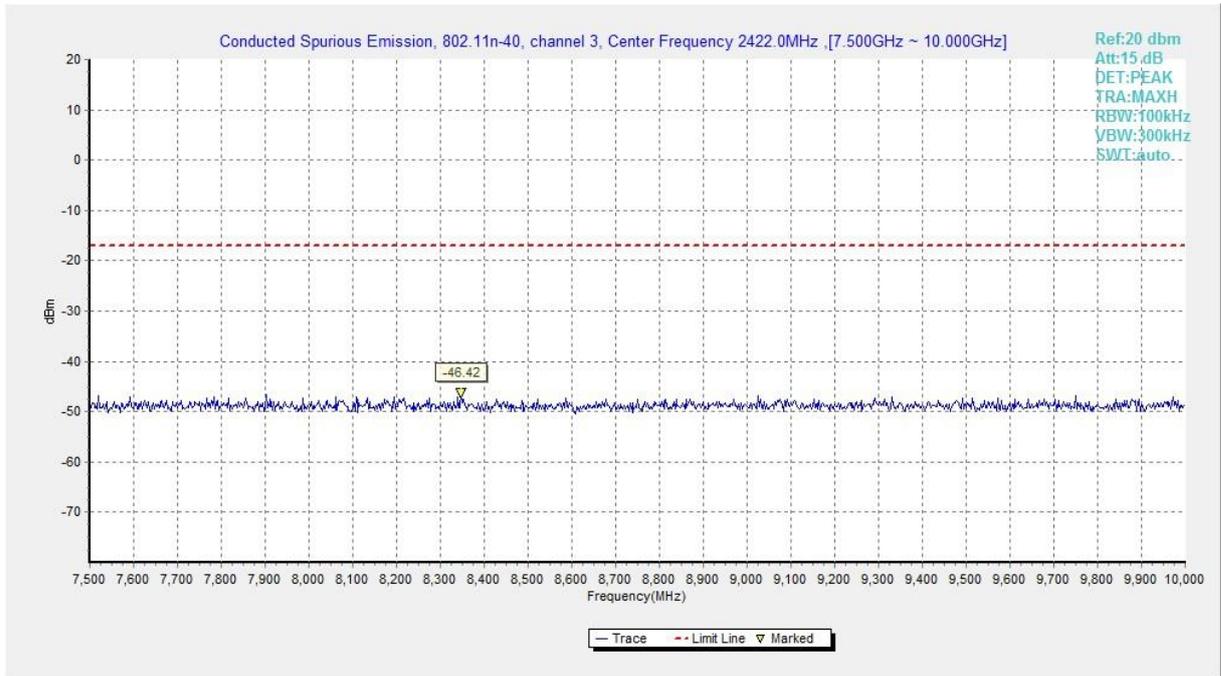


Fig.A.6.1.179 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 7.5 GHz-10 GHz)

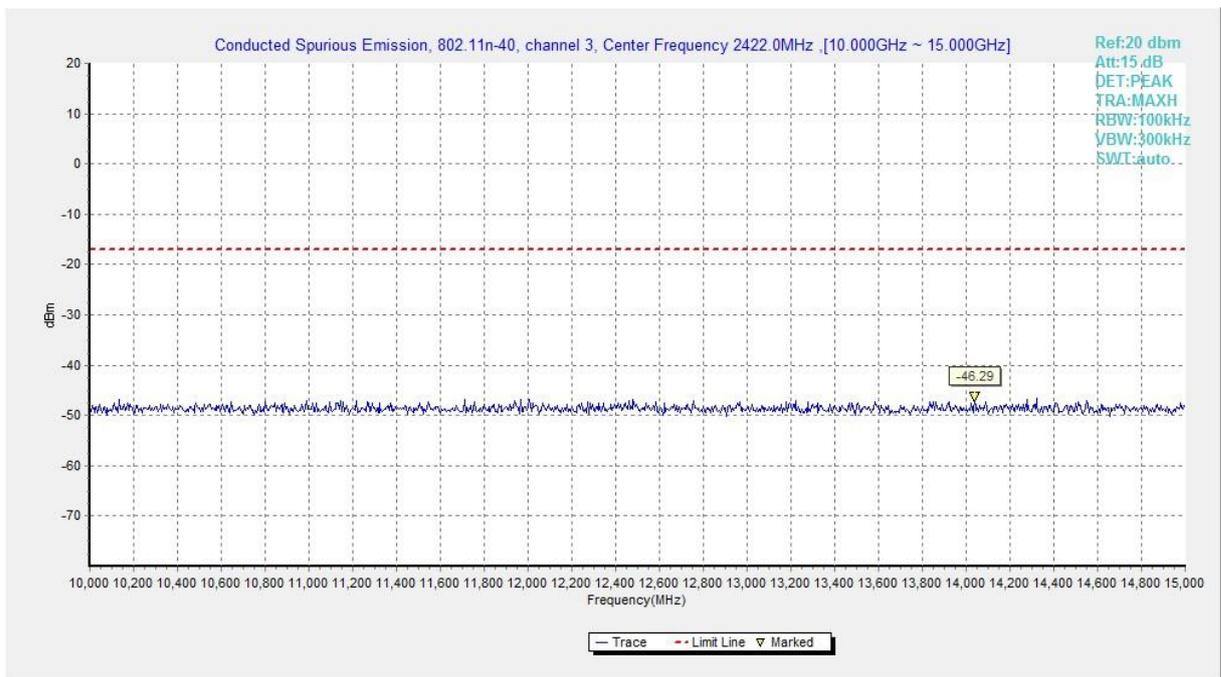


Fig.A.6.1.180 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 10 GHz-15 GHz)

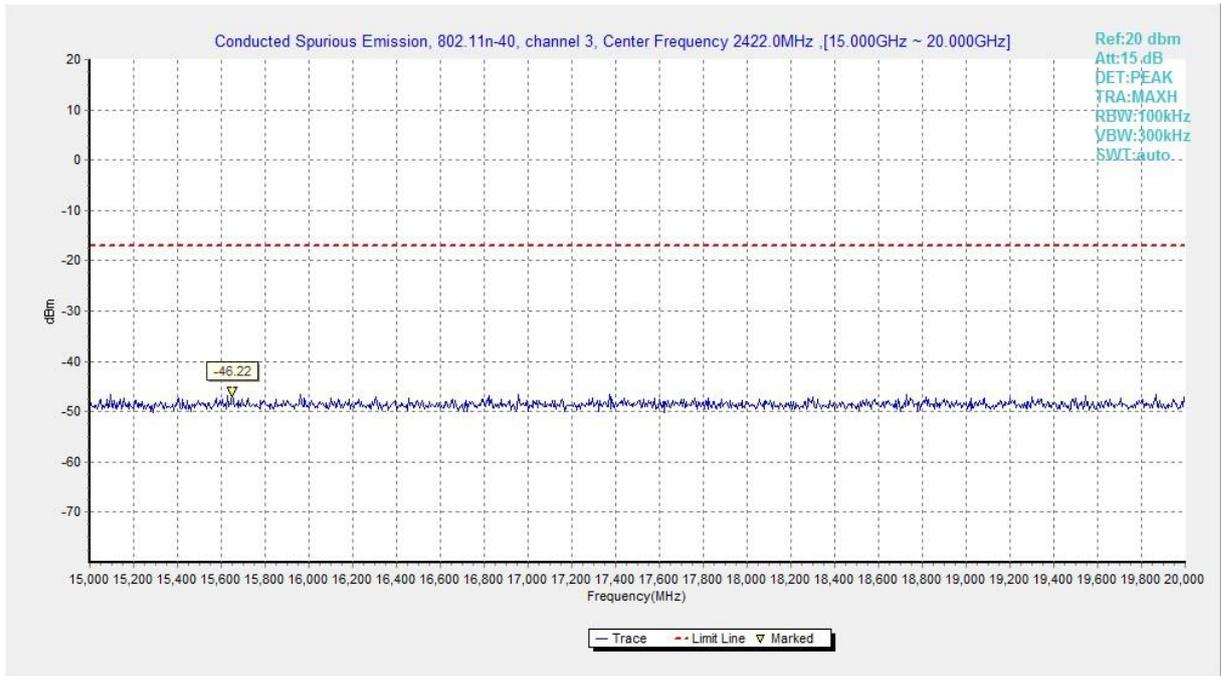


Fig.A.6.1.181 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 15 GHz-20 GHz)

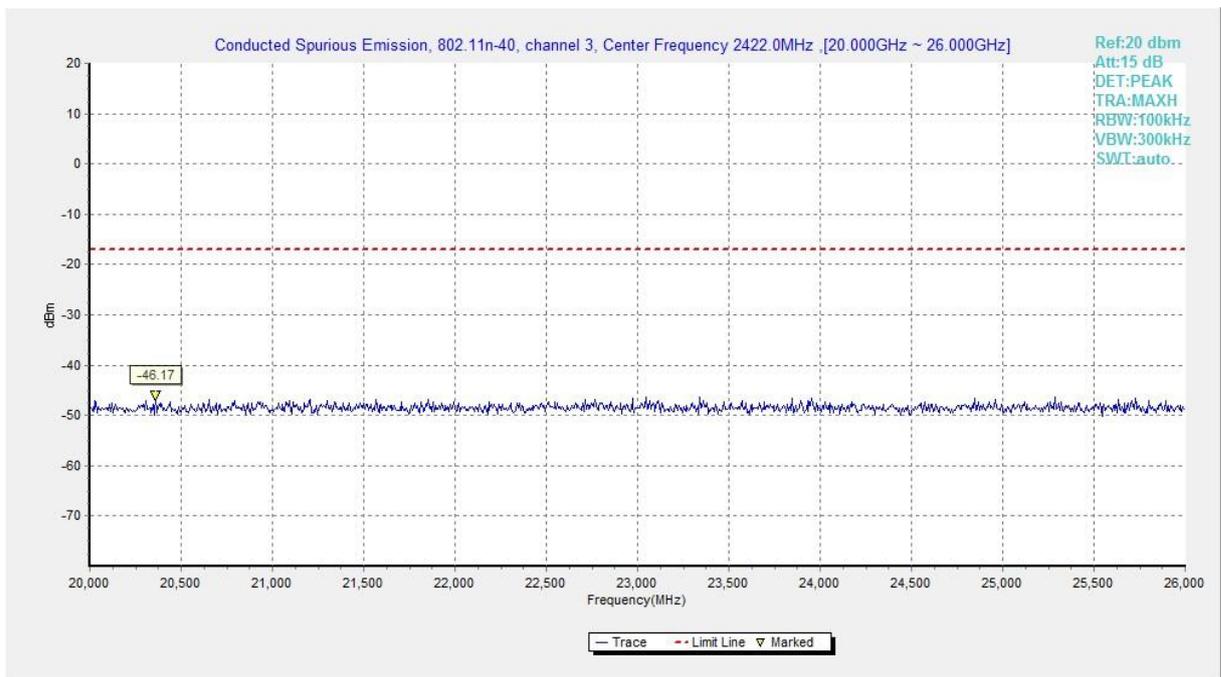


Fig.A.6.1.182 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 20 GHz-26 GHz)

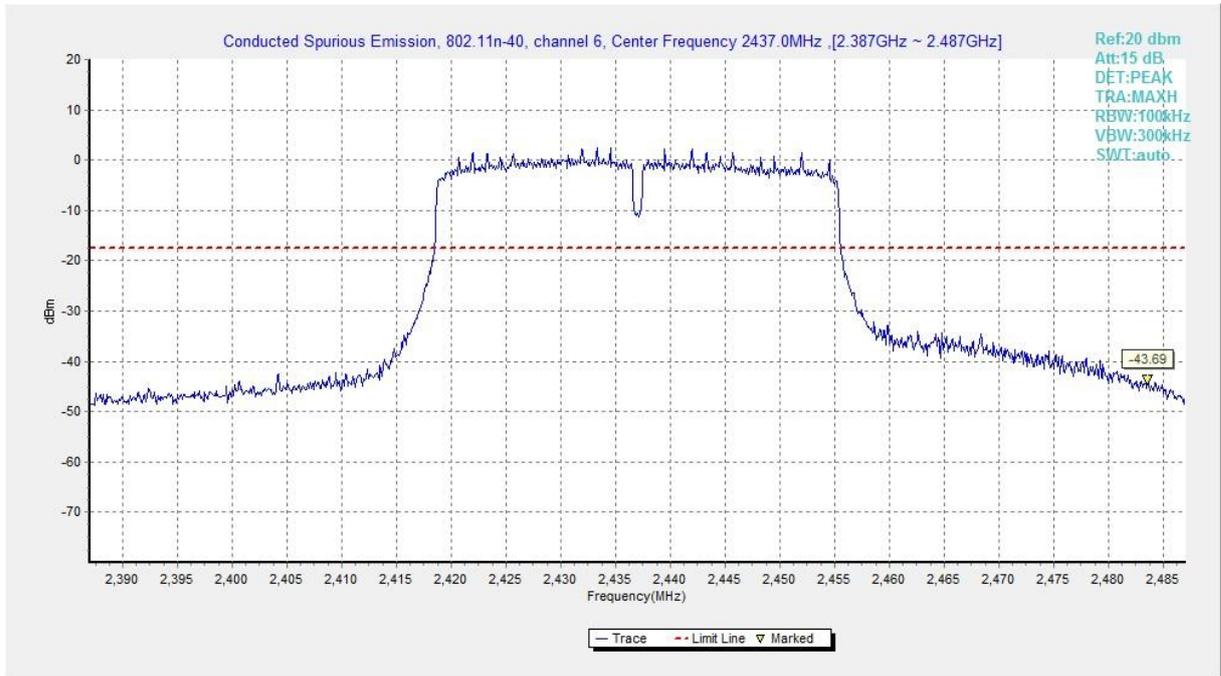


Fig.A.6.1.183 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, Center Frequency)

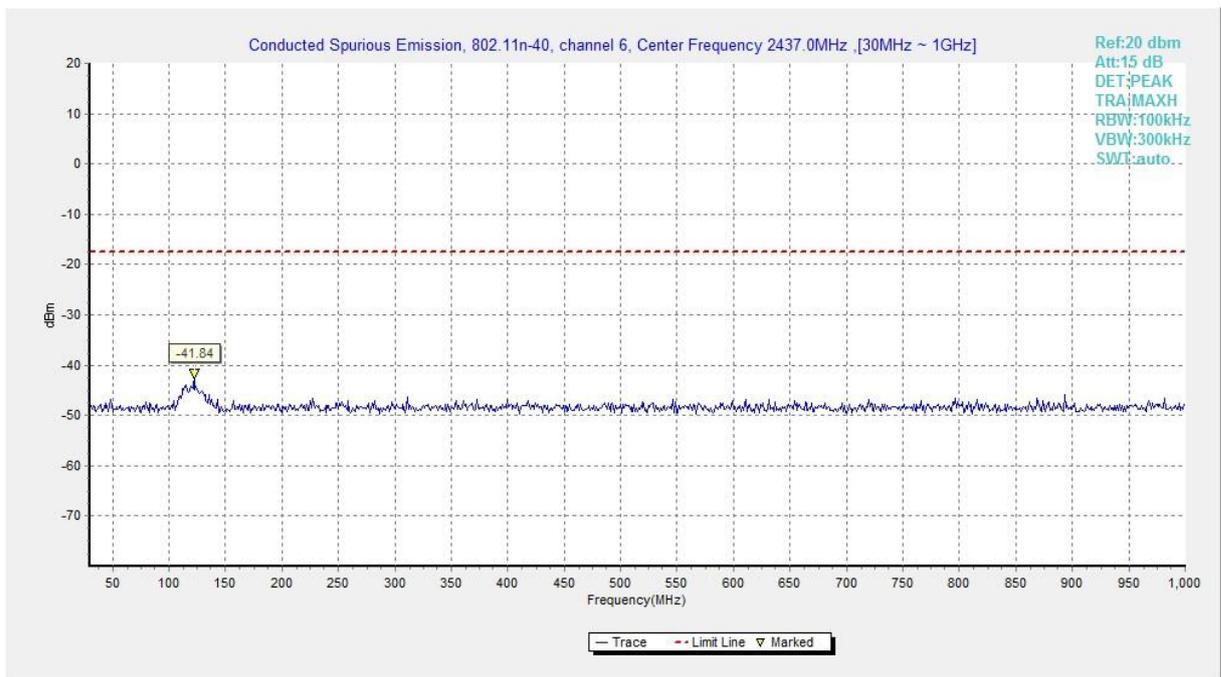


Fig.A.6.1.184 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 30 MHz-1 GHz)

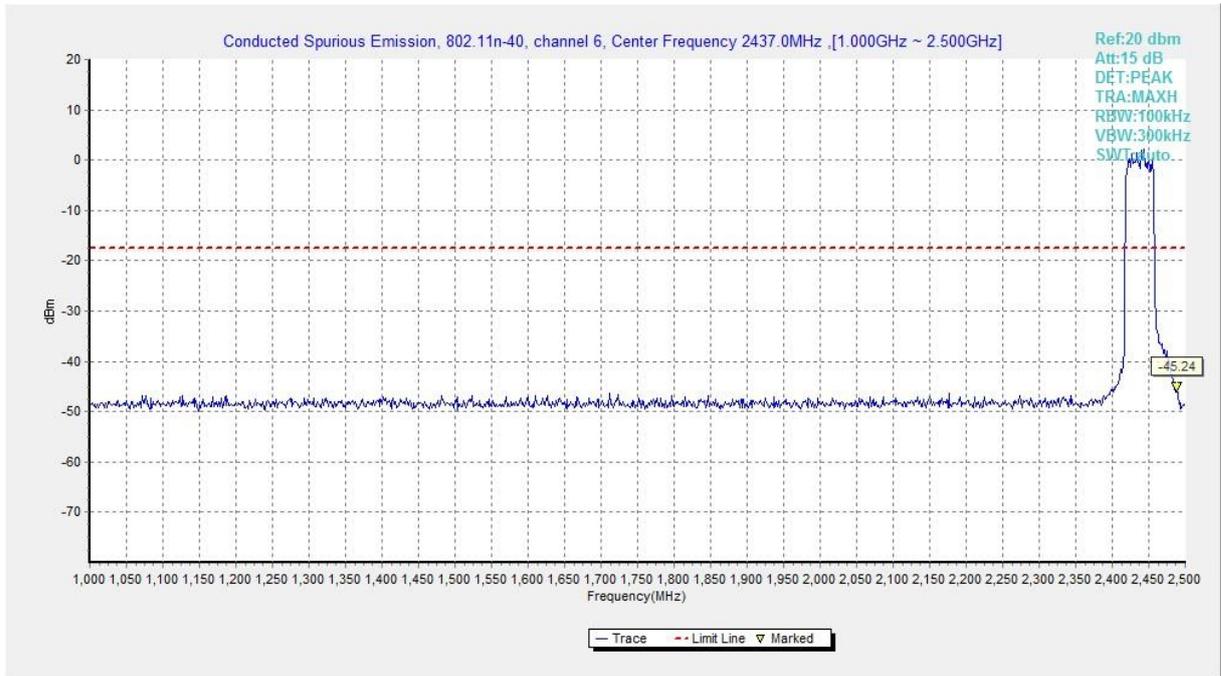


Fig.A.6.1.185 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 1 GHz-2.5 GHz)

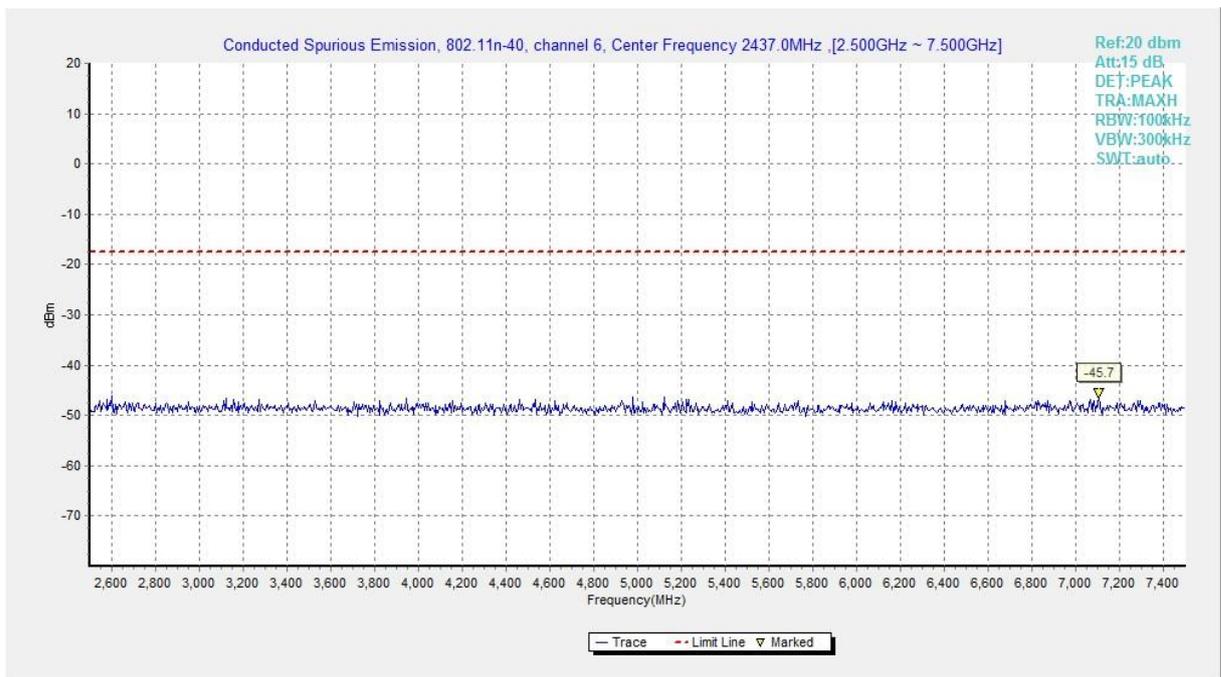


Fig.A.6.1.186 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 2.5 GHz-7.5 GHz)

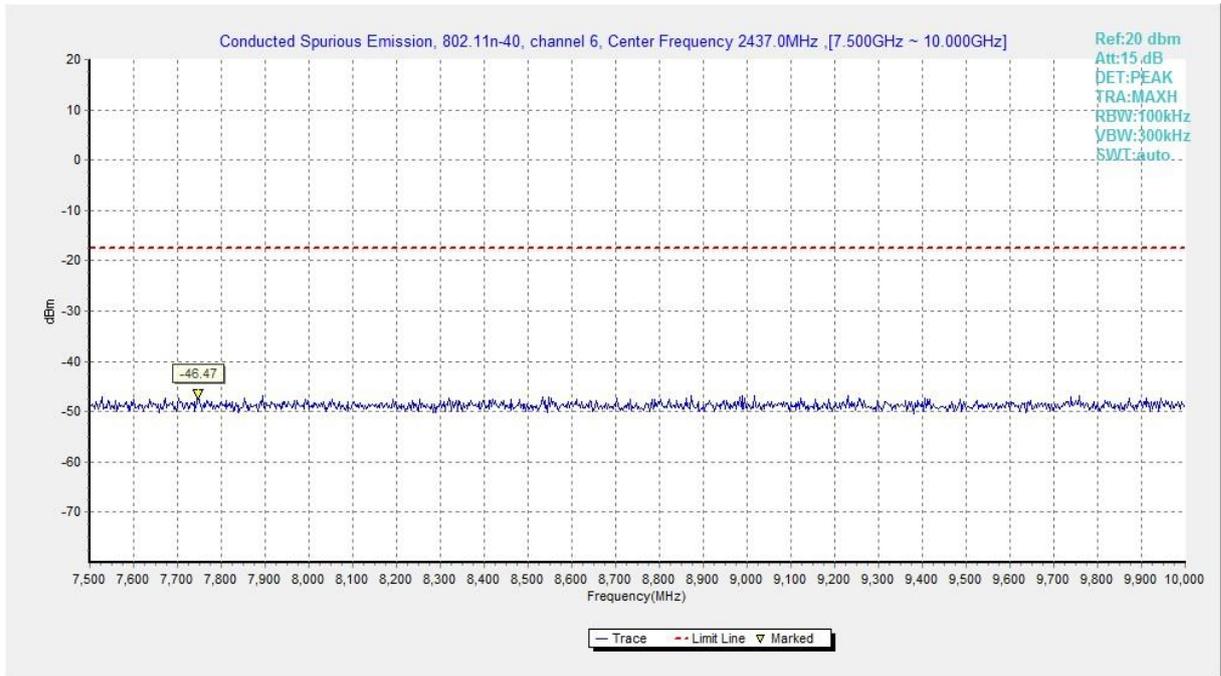


Fig.A.6.1.187 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 7.5 GHz-10 GHz)

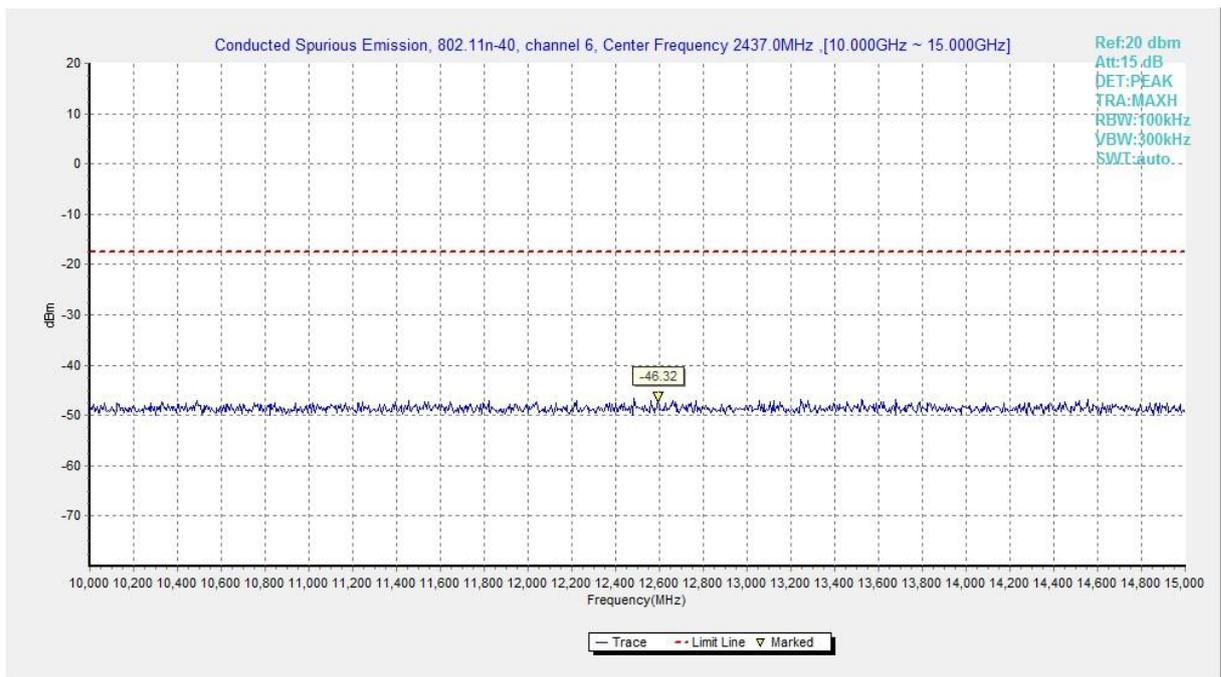


Fig.A.6.1.188 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 10 GHz-15 GHz)

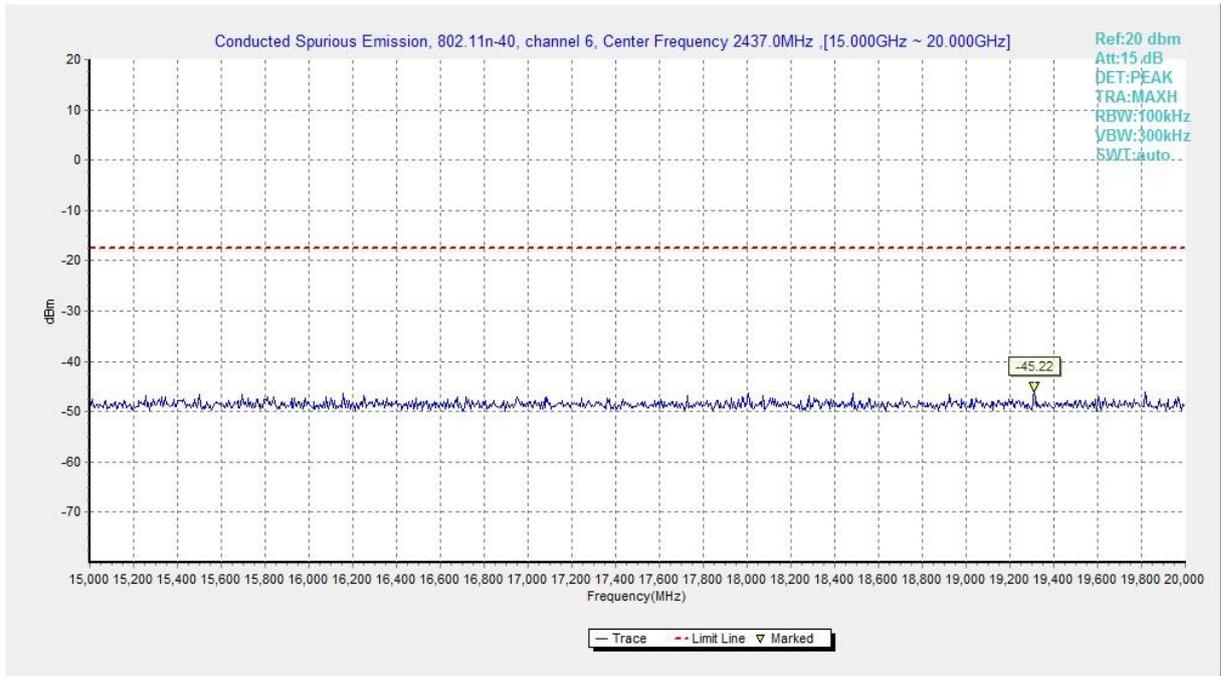


Fig.A.6.1.189 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 15 GHz-20 GHz)

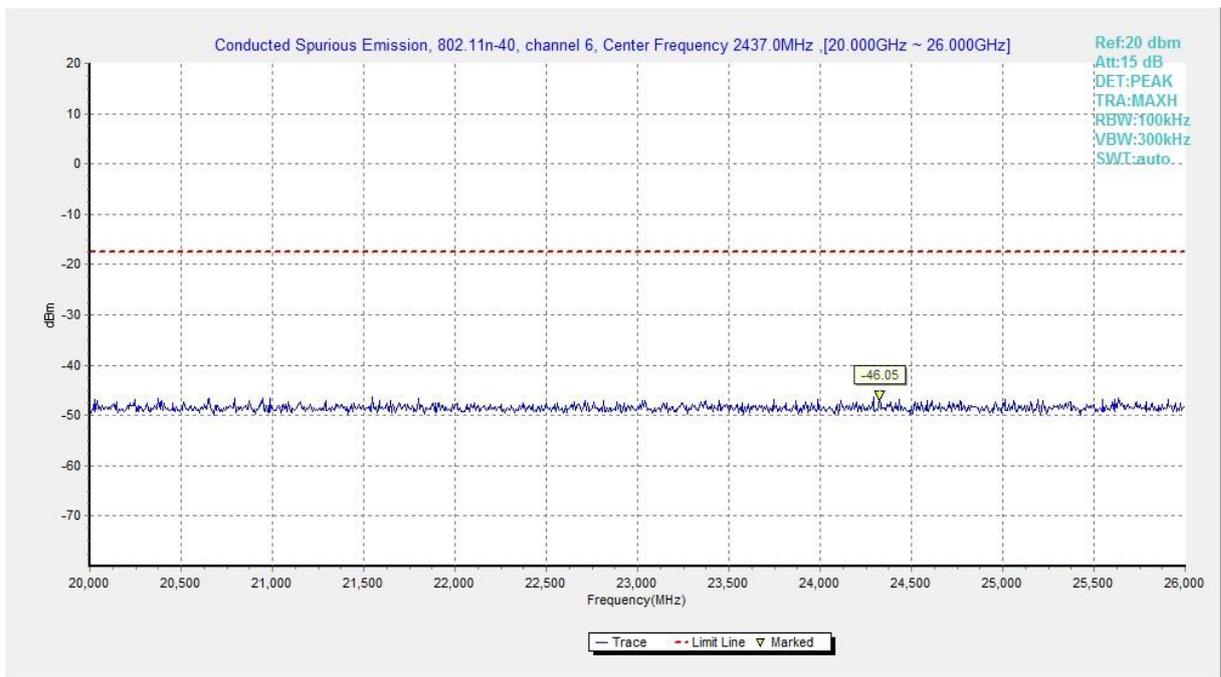


Fig.A.6.1.190 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 20 GHz-26 GHz)

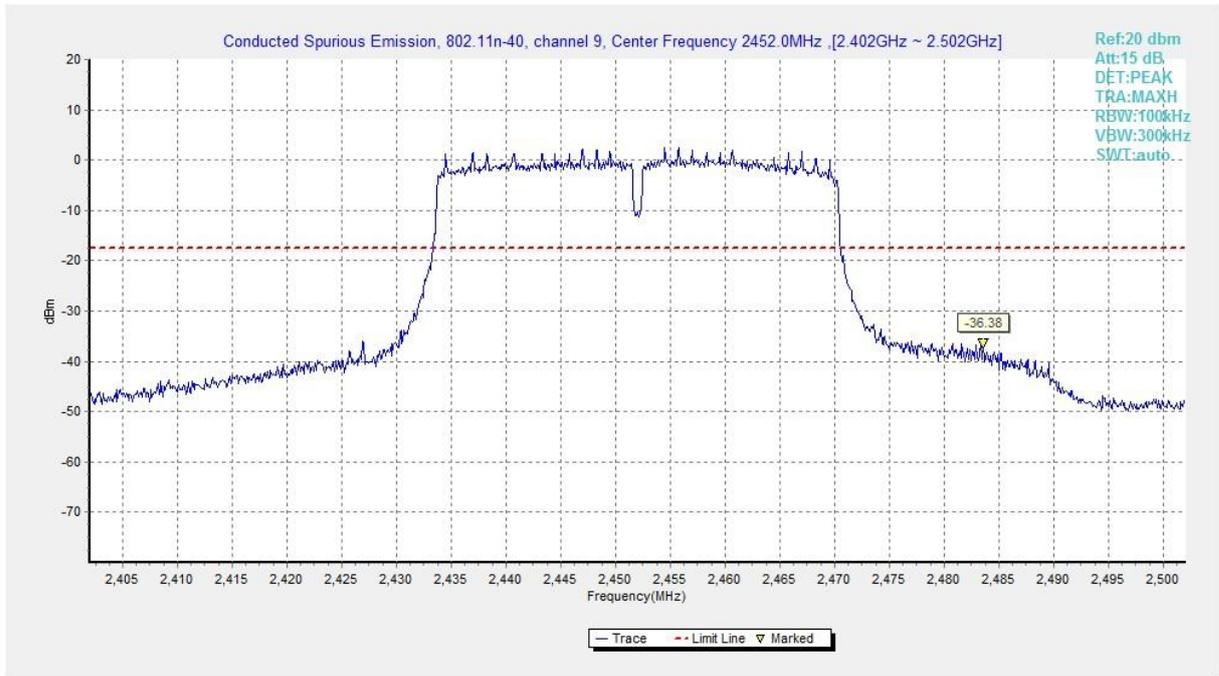


Fig.A.6.1.191 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, Center Frequency)

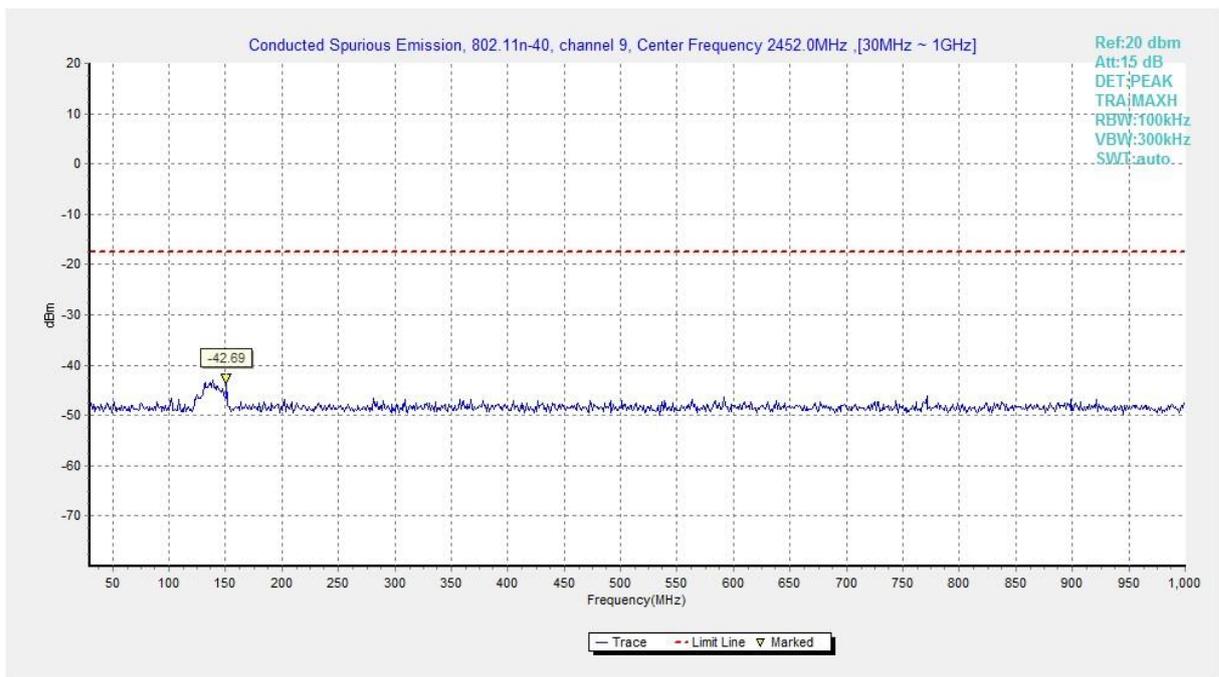


Fig.A.6.1.192 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 30 MHz-1 GHz)

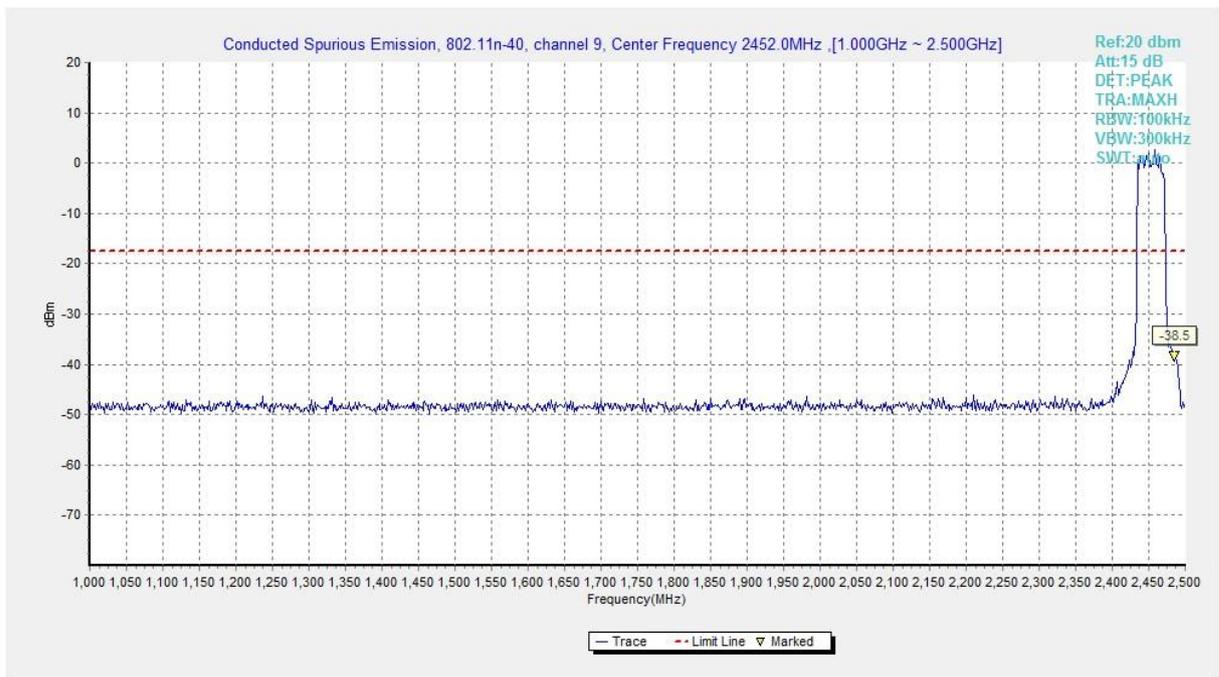


Fig.A.6.1.193 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 1 GHz-2.5 GHz)

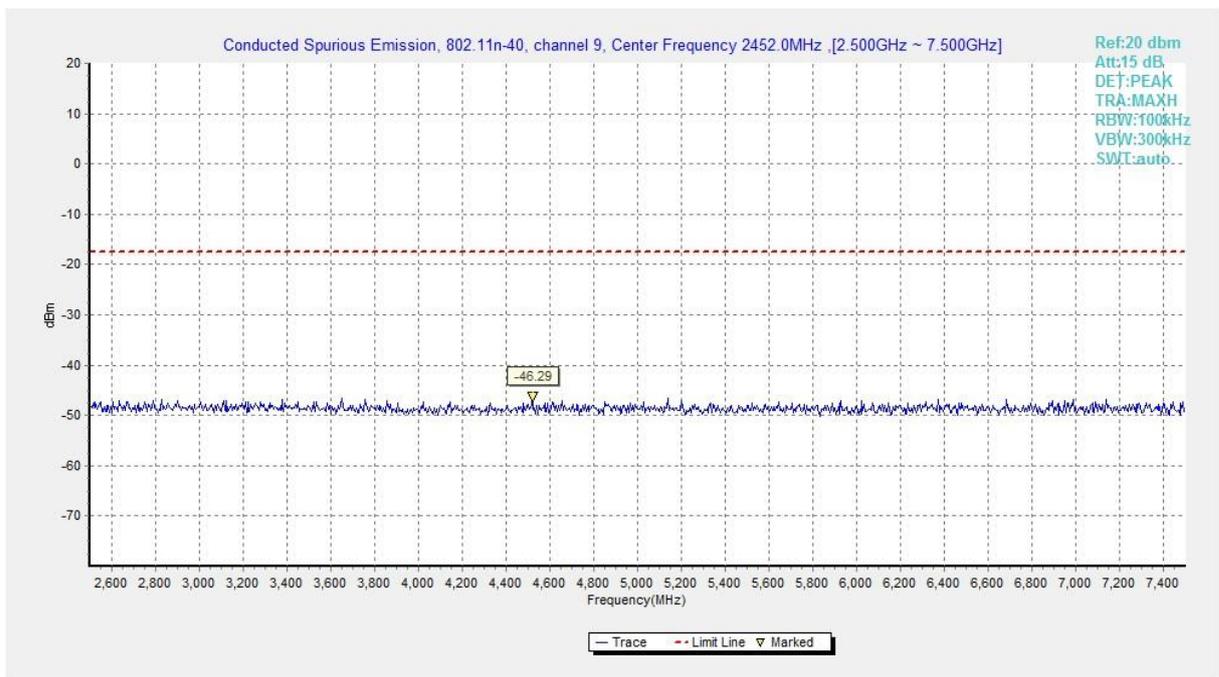


Fig.A.6.1.194 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 2.5 GHz-7.5 GHz)

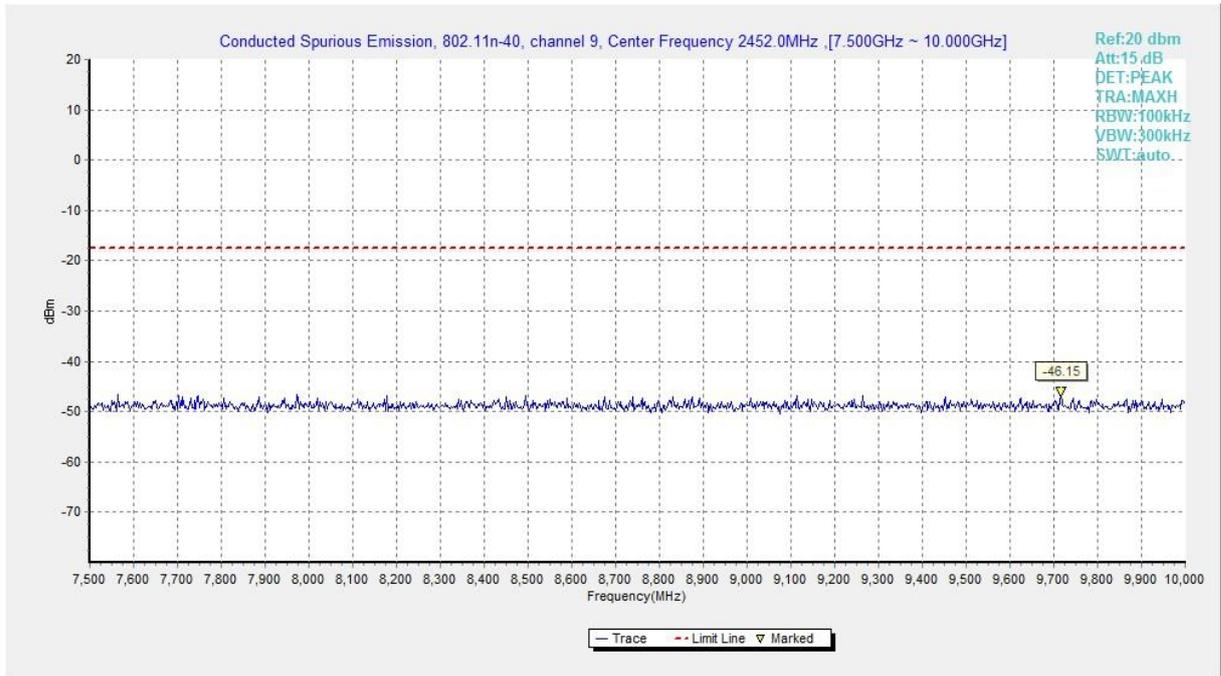


Fig.A.6.1.195 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 7.5 GHz-10 GHz)

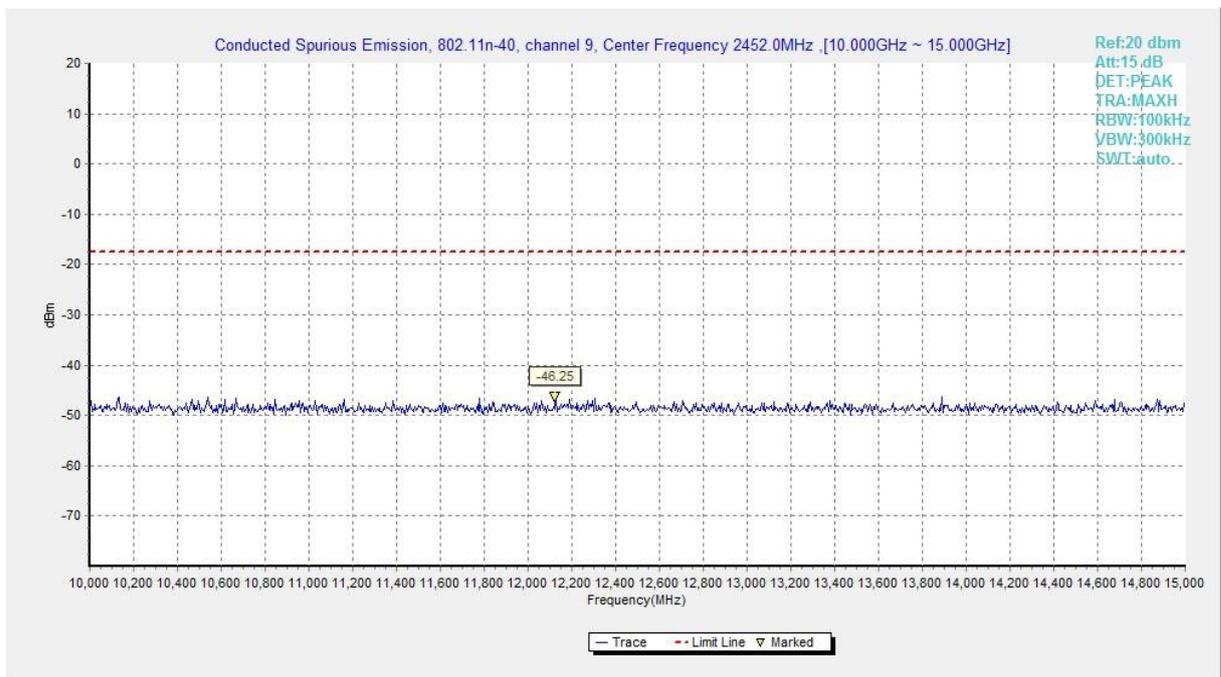


Fig.A.6.1.196 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 10 GHz-15 GHz)

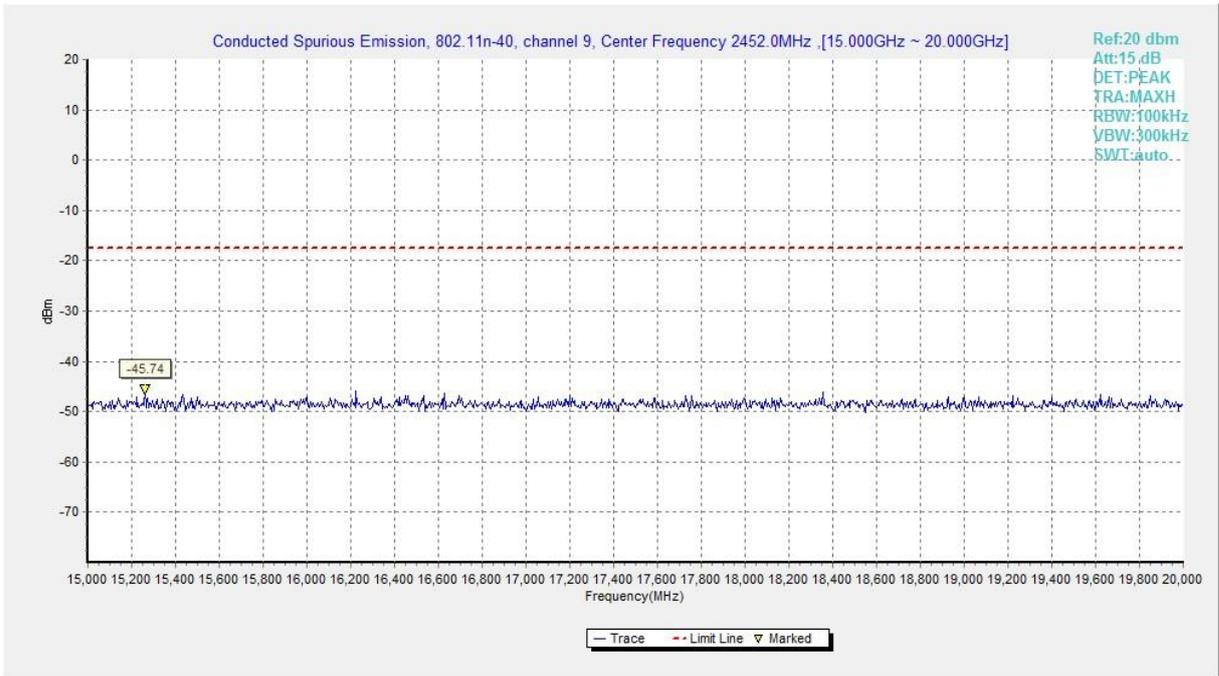


Fig.A.6.1.197 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 15 GHz-20 GHz)

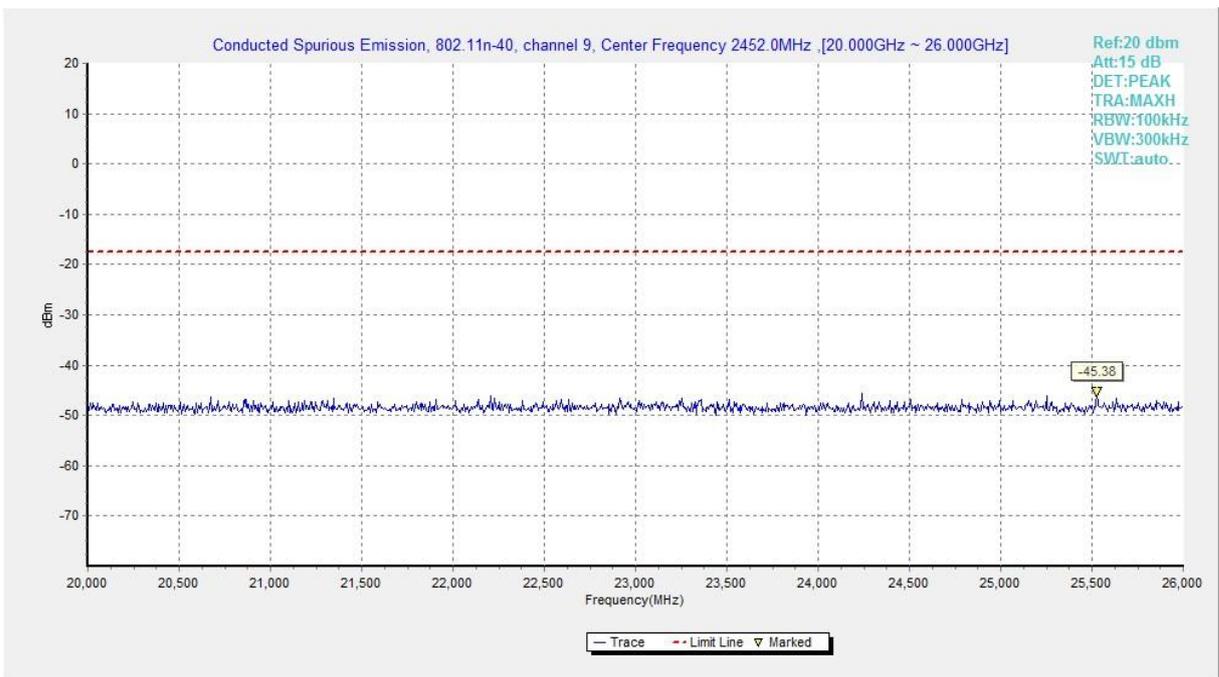
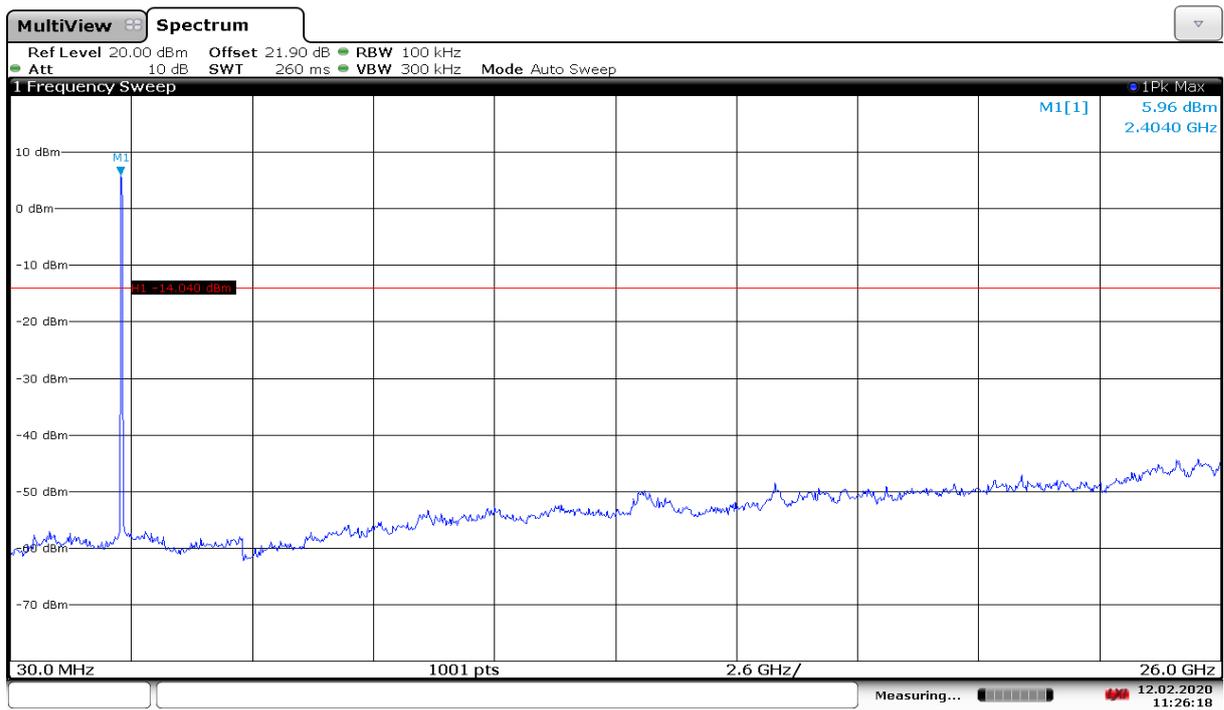
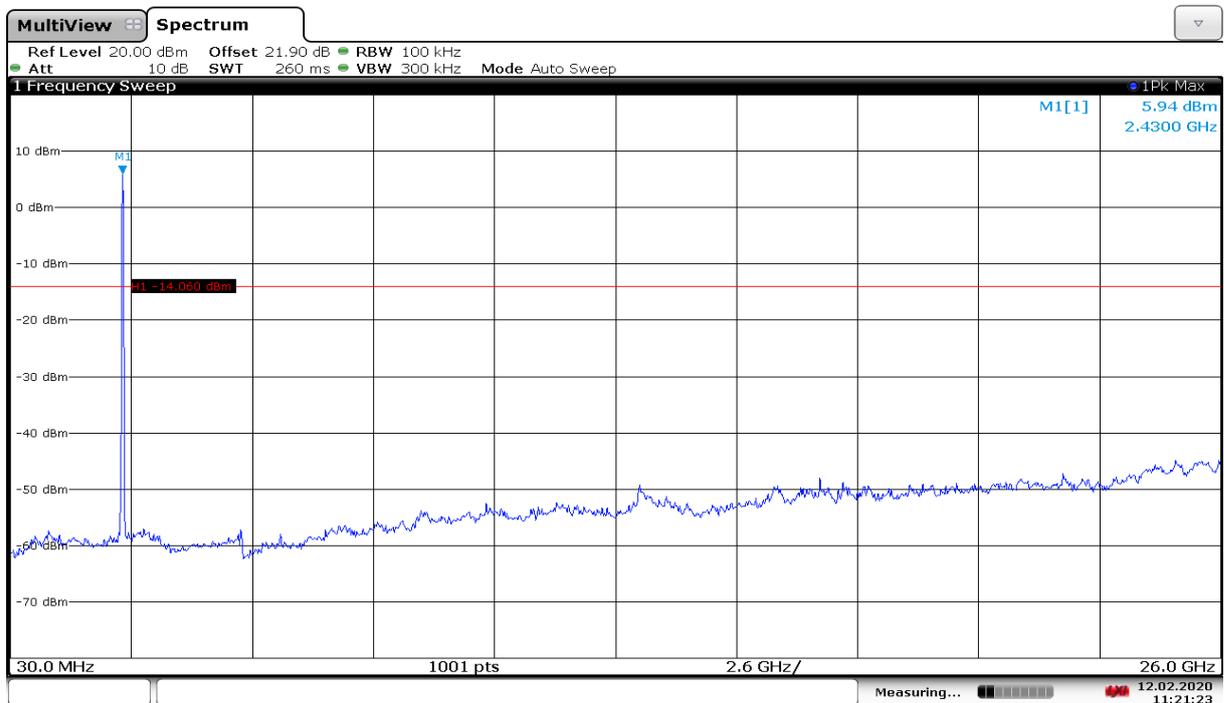


Fig.A.6.1.198 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 20 GHz-26 GHz)



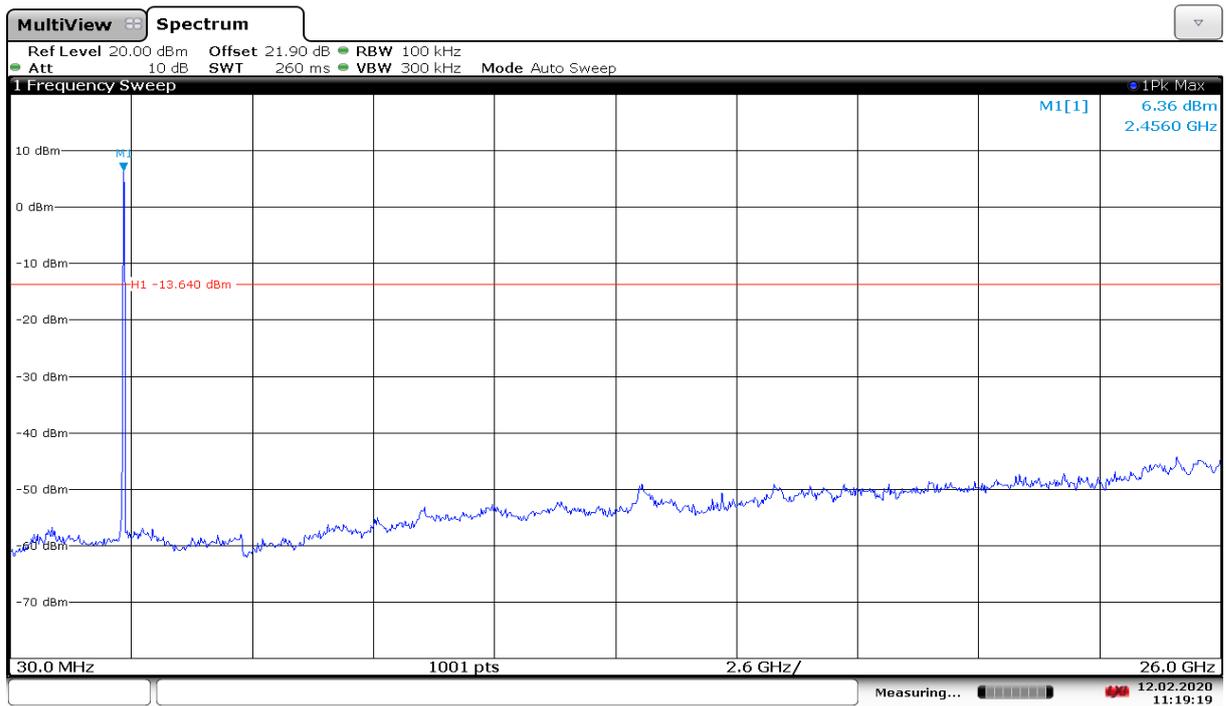
11:26:18 12.02.2020

Fig.A.6.1.199 Transmitter Spurious Emission - Conducted (802.11ax-HE20-RU52-middle, Ch1, 30 MHz-26 GHz)



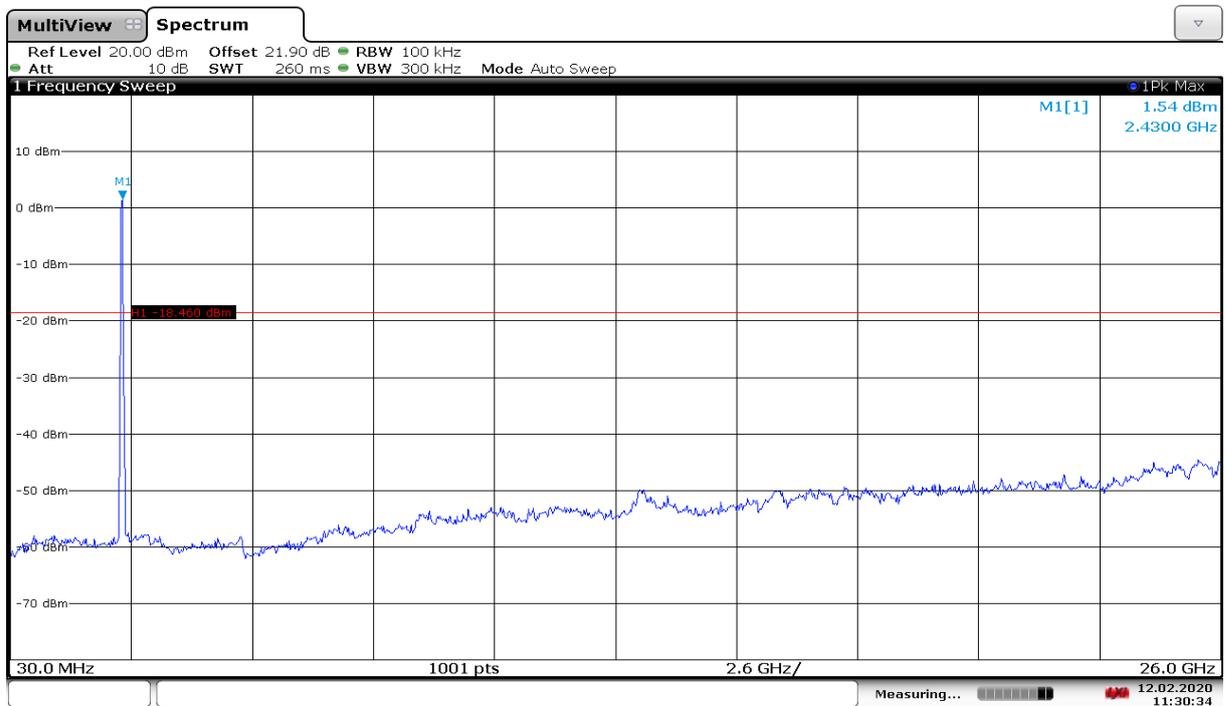
11:21:24 12.02.2020

Fig.A.6.1.200 Transmitter Spurious Emission - Conducted (802.11ax-HE20-RU52-middle, Ch6, 30 MHz-26 GHz)



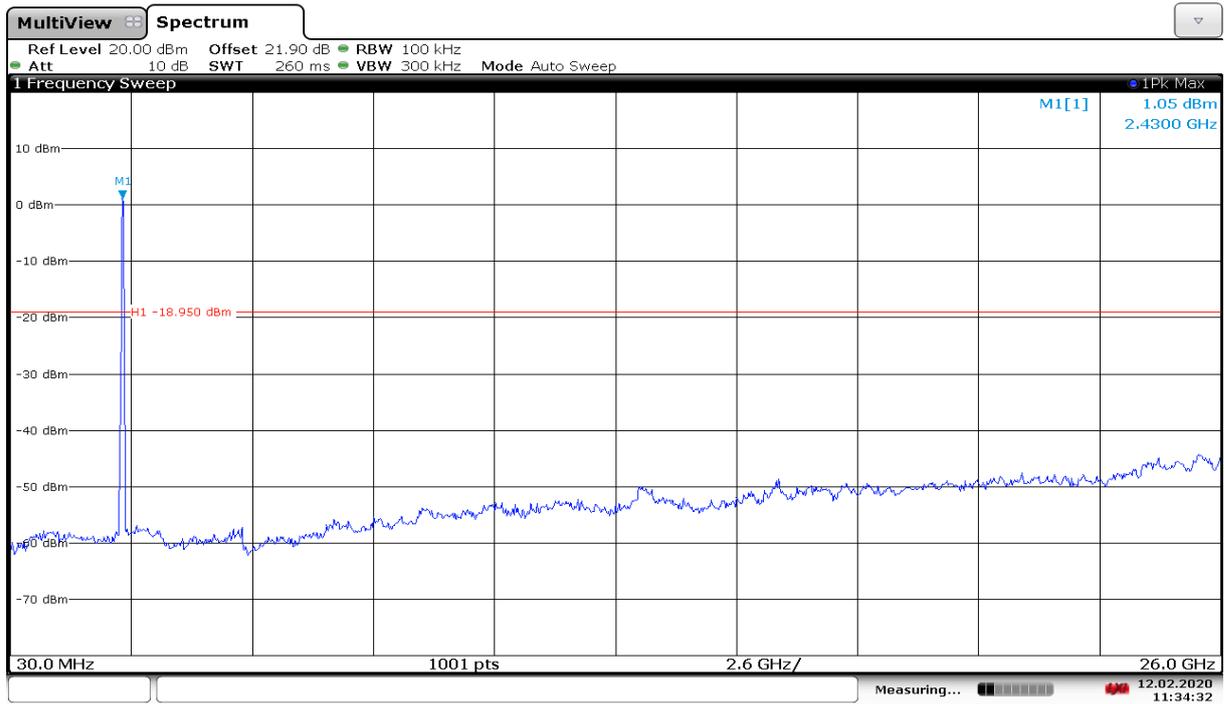
11:19:20 12.02.2020

Fig.A.6.1.201 Transmitter Spurious Emission - Conducted (802.11ax-HE20-RU52-middle, Ch11, 30 MHz-26 GHz)



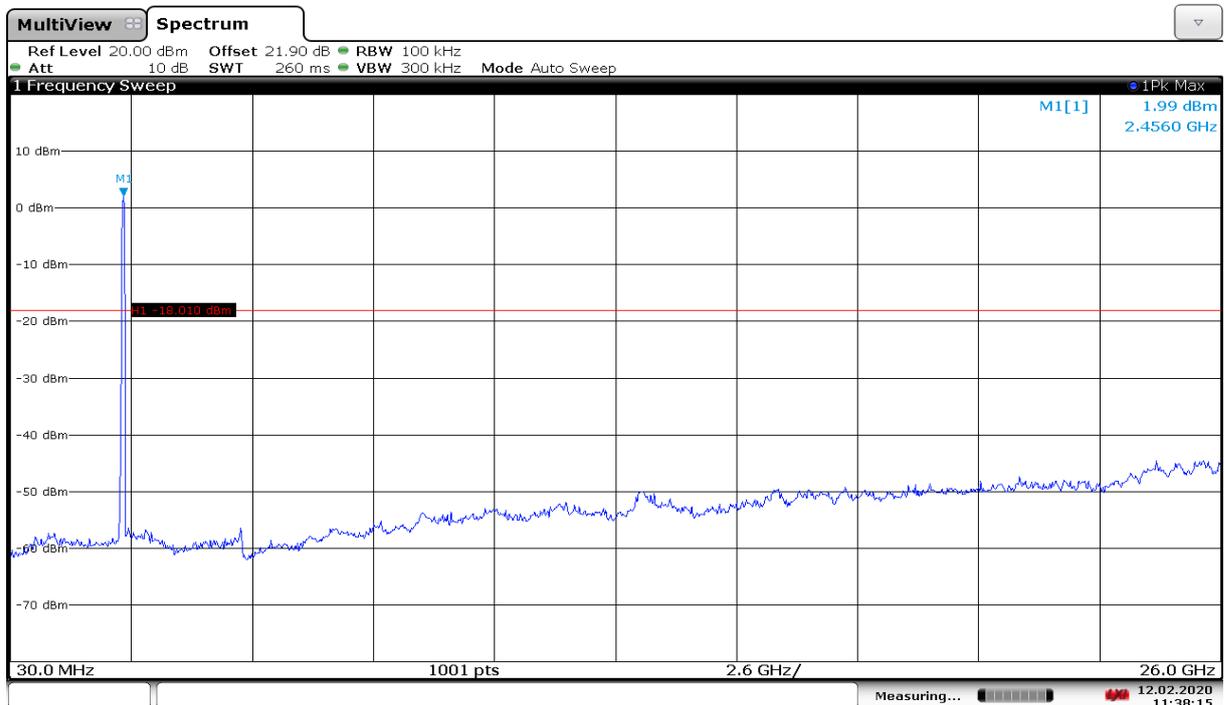
11:30:34 12.02.2020

Fig.A.6.1.202 Transmitter Spurious Emission - Conducted (802.11ax-HE40-RU242-right, Ch3, 30 MHz-26 GHz)



11:34:32 12.02.2020

Fig.A.6.1.203 Transmitter Spurious Emission - Conducted (802.11ax-HE40-RU242-right, Ch6, 30 MHz-26 GHz)



11:38:15 12.02.2020

Fig.A.6.1.204 Transmitter Spurious Emission - Conducted (802.11ax-HE40-RU242-right, Ch9, 30 MHz-26 GHz)

A.6.2 Transmitter Spurious Emission - Radiated

Method of Measurement: See ANSI C63.10-2013-clause 6.4 & 6.5 & 6.6

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247, 15.205, 15.209	20dB below peak output power

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

Limit in restricted band:

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Frequency (MHz)	Field strength(μ V/m)	Measurement distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

Test Condition

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	100KHz/300KHz	5
1000-4000	1MHz/3MHz	15
4000-18000	1MHz/3MHz	40
18000-26500	1MHz/3MHz	20

EUT ID: EUT4

Measurement Results:
802.11b mode EUT4

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	Power	2.38GHz ~2.45GHz	Fig.A.6.2.1	P
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.2	P

802.11g mode EUT4

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11g	Power	2.38GHz ~2.43GHz	Fig.A.6.2.3	P
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.4	P

802.11n-HT20 mode EUT4

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT20)	Power	2.38GHz ~2.45GHz	Fig.A.6.2.5	P
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.6	P

802.11n-HT40 mode EUT4

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT40)	Power	2.38GHz ~2.45GHz	Fig.A.6.2.7	P
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.8	P

802.11ax-HT20 mode EUT43

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11ax (HT20)	Power	2.38GHz ~2.45GHz	Fig.A.6.2.9	P
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.10	P

802.11ax-HT40 mode EUT43

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11ax (HT40)	Power	2.38GHz ~2.45GHz	Fig.A.6.2.11	P
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.12	P

Conclusion: Pass

Note:

A "reference path loss" is established and the A_{Rpl} is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

P_{Mea} is the field strength recorded from the instrument.

The measurement results are obtained as described below:

$$\text{Result} = P_{Mea} + A_{Rpl} = P_{Mea} + \text{Cable Loss} + \text{Antenna Factor}$$

PK RESULTS
802.11b EUT4

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17995.500	46.40	-25.50	43.40	28.50	H	74.00	46.40
17967.000	46.20	-25.50	43.40	28.30	H	74.00	46.20
17968.500	46.20	-25.50	43.40	28.30	H	74.00	46.20
17964.000	46.00	-25.50	43.40	28.10	V	74.00	46.00
17862.000	45.90	-25.50	43.40	28.00	H	74.00	45.90
2361.200	56.30	-14.30	27.20	43.40	H	74.00	56.30

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17997.000	46.50	-25.50	43.40	28.60	V	74.00	46.50
17983.500	46.30	-25.50	43.40	28.40	V	74.00	46.30
17991.000	45.70	-25.50	43.40	27.80	V	74.00	45.70
17910.000	45.60	-25.50	43.40	27.70	H	74.00	45.60
17925.000	45.60	-25.50	43.40	27.70	H	74.00	45.60
17968.500	45.60	-25.50	43.40	27.70	V	74.00	45.60

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17874.000	46.70	-25.50	43.40	28.80	H	74.00	46.70
17824.500	46.50	-25.50	43.40	28.60	H	74.00	46.50
17962.500	46.40	-25.50	43.40	28.50	H	74.00	46.40
17958.000	46.20	-25.50	43.40	28.30	H	74.00	46.20
17992.500	46.10	-25.50	43.40	28.20	V	74.00	46.10
2485.900	52.50	-14.20	27.20	39.50	H	74.00	52.50

802.11g EUT4
Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17863.500	46.70	-25.50	43.40	28.80	H	74.00	46.70
17976.000	46.60	-25.50	43.40	28.70	V	74.00	46.60
17872.500	46.40	-25.50	43.40	28.50	V	74.00	46.40
17985.000	46.30	-25.50	43.40	28.40	V	74.00	46.30
17862.000	45.80	-25.50	43.40	27.90	H	74.00	45.80
2389.700	60.90	-14.20	27.20	47.90	H	74.00	60.90

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17794.500	46.30	-25.50	43.40	28.40	V	74.00	46.30
17967.000	46.20	-25.50	43.40	28.30	H	74.00	46.20
17964.000	46.10	-25.50	43.40	28.20	H	74.00	46.10
17815.500	46.00	-25.50	43.40	28.10	V	74.00	46.00
17788.500	45.90	-25.50	43.40	28.00	H	74.00	45.90
17857.500	45.70	-25.50	43.40	27.80	V	74.00	45.70

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17970.000	46.60	-25.50	43.40	28.70	H	74.00	46.60
17964.000	46.50	-25.50	43.40	28.60	V	74.00	46.50
17940.000	46.20	-25.50	43.40	28.30	H	74.00	46.20
17949.000	46.10	-25.50	43.40	28.20	V	74.00	46.10
17971.500	46.10	-25.50	43.40	28.20	V	74.00	46.10
2485.300	52.40	-14.20	27.20	39.40	V	74.00	52.40

802.11n-HT20 EUT4
Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17968.500	46.20	-25.50	43.40	28.30	H	74.00	46.20
17955.000	46.00	-25.50	43.40	28.10	V	74.00	46.00
17980.500	46.00	-25.50	43.40	28.10	V	74.00	46.00
17953.500	45.90	-25.50	43.40	28.00	H	74.00	45.90
17799.000	45.80	-25.50	43.40	27.90	V	74.00	45.80
2389.500	60.60	-14.20	27.20	47.60	H	74.00	60.60

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17965.500	46.30	-25.50	43.40	28.40	H	74.00	46.30
17968.500	46.30	-25.50	43.40	28.40	V	74.00	46.30
17962.500	46.20	-25.50	43.40	28.30	H	74.00	46.20
17974.500	46.20	-25.50	43.40	28.30	H	74.00	46.20
17886.000	46.10	-25.50	43.40	28.20	H	74.00	46.10
17824.500	46.00	-25.50	43.40	28.10	V	74.00	46.00

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17989.500	46.70	-25.50	43.40	28.80	V	74.00	46.70
17976.000	46.50	-25.50	43.40	28.60	V	74.00	46.50
17991.000	46.20	-25.50	43.40	28.30	H	74.00	46.20
17965.500	46.10	-25.50	43.40	28.20	V	74.00	46.10
17913.000	46.00	-25.50	43.40	28.10	H	74.00	46.00
2485.500	52.70	-14.20	27.20	39.70	H	74.00	52.70

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Ch3

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17979.000	46.90	-25.50	43.40	29.00	H	74.00	46.90
17992.500	46.60	-25.50	43.40	28.70	H	74.00	46.60
17955.000	46.30	-25.50	43.40	28.40	H	74.00	46.30
17980.500	46.20	-25.50	43.40	28.30	H	74.00	46.20
17988.000	46.10	-25.50	43.40	28.20	V	74.00	46.10
2390.000	61.40	-14.20	27.20	48.40	H	74.00	61.40

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17997.000	46.80	-25.50	43.40	28.90	H	74.00	46.80
17913.000	46.50	-25.50	43.40	28.60	V	74.00	46.50
17982.000	46.00	-25.50	43.40	28.10	H	74.00	46.00
17974.500	45.80	-25.50	43.40	27.90	V	74.00	45.80
17829.000	45.70	-25.50	43.40	27.80	V	74.00	45.70
17985.000	45.70	-25.50	43.40	27.80	V	74.00	45.70

Ch9

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17956.500	46.40	-25.50	43.40	28.50	V	74.00	46.40
17928.000	46.10	-25.50	43.40	28.20	V	74.00	46.10
17923.500	45.90	-25.50	43.40	28.00	H	74.00	45.90
17967.000	45.90	-25.50	43.40	28.00	V	74.00	45.90
17836.500	45.70	-25.50	43.40	27.80	H	74.00	45.70
2486.200	54.30	-14.20	27.20	41.30	H	74.00	54.30

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Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17967.000	46.60	-25.50	43.40	28.70	V	74.00	27.40
17845.500	45.90	-25.50	43.40	28.00	V	74.00	28.10
17982.000	45.90	-25.50	43.40	28.00	H	74.00	28.10
17953.500	45.80	-25.50	43.40	27.90	V	74.00	28.20
17976.000	45.80	-25.50	43.40	27.90	H	74.00	28.20
2375.900	55.60	-14.30	27.20	42.70	H	74.00	18.40

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17991.000	46.50	-25.50	43.40	28.60	V	74.00	27.50
17692.500	46.40	-25.70	43.40	28.70	V	74.00	27.60
17778.000	46.40	-25.50	43.40	28.50	V	74.00	27.60
17904.000	46.40	-25.50	43.40	28.50	H	74.00	27.60
17938.500	46.30	-25.50	43.40	28.40	V	74.00	27.70
17962.500	46.30	-25.50	43.40	28.40	V	74.00	27.70

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17839.500	46.60	-25.50	43.40	28.70	H	74.00	27.40
17968.500	46.00	-25.50	43.40	28.10	H	74.00	28.00
17805.000	45.80	-25.50	43.40	27.90	V	74.00	28.20
17850.000	45.80	-25.50	43.40	27.90	H	74.00	28.20
17949.000	45.80	-25.50	43.40	27.90	H	74.00	28.20
2486.000	57.70	-14.20	27.20	44.70	V	74.00	16.30

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Ch3

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17784.000	46.50	-25.50	43.40	28.60	V	74.00	27.50
17974.500	46.40	-25.50	43.40	28.50	V	74.00	27.60
17947.500	46.10	-25.50	43.40	28.20	V	74.00	27.90
17964.000	46.00	-25.50	43.40	28.10	V	74.00	28.00
17973.000	46.00	-25.50	43.40	28.10	H	74.00	28.00
2388.600	66.30	-14.20	27.20	53.30	H	74.00	7.70

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17992.500	47.80	-25.50	43.40	29.90	V	74.00	26.20
17923.500	47.10	-25.50	43.40	29.20	H	74.00	26.90
17974.500	46.90	-25.50	43.40	29.00	H	74.00	27.10
17758.500	46.40	-25.50	43.40	28.50	V	74.00	27.60
17896.500	46.20	-25.50	43.40	28.30	V	74.00	27.80
17833.500	46.00	-25.50	43.40	28.10	V	74.00	28.00

Ch9

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17973.000	47.00	-25.50	43.40	29.10	H	74.00	27.00
17941.500	46.20	-25.50	43.40	28.30	V	74.00	27.80
17877.000	46.10	-25.50	43.40	28.20	H	74.00	27.90
17851.500	45.90	-25.50	43.40	28.00	V	74.00	28.10
17985.000	45.80	-25.50	43.40	27.90	H	74.00	28.20
2487.000	65.40	-14.20	27.20	52.40	H	74.00	8.60

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Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17985.000	34.40	-25.50	43.40	16.50	V	54.00	19.60
17968.500	34.20	-25.50	43.40	16.30	H	54.00	19.80
17980.500	34.20	-25.50	43.40	16.30	V	54.00	19.80
17995.500	34.20	-25.50	43.40	16.30	H	54.00	19.80
17959.500	34.10	-25.50	43.40	16.20	V	54.00	19.90
2388.900	45.20	-14.20	27.20	32.20	H	54.00	8.80

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17974.500	34.30	-25.50	43.40	16.40	V	54.00	19.70
17980.500	34.20	-25.50	43.40	16.30	H	54.00	19.80
17988.000	34.20	-25.50	43.40	16.30	V	54.00	19.80
17991.000	34.20	-25.50	43.40	16.30	V	54.00	19.80
17955.000	34.10	-25.50	43.40	16.20	V	54.00	19.90
17958.000	34.10	-25.50	43.40	16.20	V	54.00	19.90

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17988.000	34.30	-25.50	43.40	16.40	H	54.00	19.70
17967.000	34.10	-25.50	43.40	16.20	V	54.00	19.90
17970.000	34.10	-25.50	43.40	16.20	V	54.00	19.90
17971.500	34.10	-25.50	43.40	16.20	H	54.00	19.90
17974.500	34.10	-25.50	43.40	16.20	V	54.00	19.90
2493.900	39.60	-14.20	27.20	26.60	H	54.00	14.40

802.11g EUT4
Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17974.500	34.30	-25.50	43.40	16.40	H	54.00	19.70
17992.500	34.30	-25.50	43.40	16.40	V	54.00	19.70
17979.000	34.20	-25.50	43.40	16.30	V	54.00	19.80
17980.500	34.20	-25.50	43.40	16.30	V	54.00	19.80
17949.000	34.10	-25.50	43.40	16.20	H	54.00	19.90
2390.000	48.50	-14.20	27.20	35.50	H	54.00	5.50

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17976.000	34.20	-25.50	43.40	16.30	V	54.00	19.80
17991.000	34.20	-25.50	43.40	16.30	H	54.00	19.80
17977.500	34.10	-25.50	43.40	16.20	H	54.00	19.90
17979.000	34.10	-25.50	43.40	16.20	V	54.00	19.90
17985.000	34.10	-25.50	43.40	16.20	V	54.00	19.90
17986.500	34.10	-25.50	43.40	16.20	H	54.00	19.90

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17979.000	34.30	-25.50	43.40	16.40	H	54.00	19.70
17988.000	34.30	-25.50	43.40	16.40	H	54.00	19.70
17971.500	34.20	-25.50	43.40	16.30	V	54.00	19.80
17983.500	34.20	-25.50	43.40	16.30	V	54.00	19.80
17977.500	34.10	-25.50	43.40	16.20	V	54.00	19.90
2485.200	39.30	-14.20	27.20	26.30	V	54.00	14.70

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Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17973.000	34.20	-25.50	43.40	16.30	V	54.00	19.80
17976.000	34.20	-25.50	43.40	16.30	V	54.00	19.80
17979.000	34.20	-25.50	43.40	16.30	V	54.00	19.80
17968.500	34.10	-25.50	43.40	16.20	H	54.00	19.90
17971.500	34.10	-25.50	43.40	16.20	H	54.00	19.90
2389.800	47.20	-14.20	27.20	34.20	H	54.00	6.80

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17953.500	34.30	-25.50	43.40	16.40	V	54.00	19.70
17958.000	34.20	-25.50	43.40	16.30	H	54.00	19.80
17959.500	34.20	-25.50	43.40	16.30	H	54.00	19.80
17962.500	34.20	-25.50	43.40	16.30	H	54.00	19.80
17989.500	34.20	-25.50	43.40	16.30	H	54.00	19.80
17956.500	34.10	-25.50	43.40	16.20	V	54.00	19.90

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17976.000	34.30	-25.50	43.40	16.40	V	54.00	19.70
17994.000	34.30	-25.50	43.40	16.40	V	54.00	19.70
17965.500	34.10	-25.50	43.40	16.20	V	54.00	19.90
17970.000	34.10	-25.50	43.40	16.20	H	54.00	19.90
17973.000	34.10	-25.50	43.40	16.20	H	54.00	19.90
2485.300	41.00	-14.20	27.20	28.00	H	54.00	13.00

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Ch3

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17970.000	34.30	-25.50	43.40	16.40	V	54.00	19.70
17973.000	34.30	-25.50	43.40	16.40	V	54.00	19.70
17953.500	34.20	-25.50	43.40	16.30	H	54.00	19.80
17959.500	34.20	-25.50	43.40	16.30	H	54.00	19.80
17964.000	34.20	-25.50	43.40	16.30	H	54.00	19.80
2390.000	44.70	-14.20	27.20	31.70	H	54.00	9.30

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17989.500	34.40	-25.50	43.40	16.50	V	54.00	19.60
17964.000	34.20	-25.50	43.40	16.30	V	54.00	19.80
17968.500	34.20	-25.50	43.40	16.30	V	54.00	19.80
17973.000	34.20	-25.50	43.40	16.30	H	54.00	19.80
17977.500	34.20	-25.50	43.40	16.30	H	54.00	19.80
17980.500	34.20	-25.50	43.40	16.30	V	54.00	19.80

Ch9

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17991.000	34.20	-25.50	43.40	16.30	V	54.00	19.80
17976.000	34.10	-25.50	43.40	16.20	V	54.00	19.90
17986.500	34.10	-25.50	43.40	16.20	H	54.00	19.90
17988.000	34.10	-25.50	43.40	16.20	V	54.00	19.90
17962.500	34.00	-25.50	43.40	16.10	H	54.00	20.00
2485.000	41.90	-14.20	27.20	28.90	H	54.00	12.10

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Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17961.000	34.20	-25.50	43.40	16.30	V	54.00	19.80
17982.000	34.20	-25.50	43.40	16.30	H	54.00	19.80
17983.500	34.20	-25.50	43.40	16.30	V	54.00	19.80
17986.500	34.20	-25.50	43.40	16.30	V	54.00	19.80
17971.500	34.10	-25.50	43.40	16.20	H	54.00	19.90
2389.900	43.50	-14.20	27.20	30.50	H	54.00	10.50

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17986.500	34.40	-25.50	43.40	16.50	V	54.00	19.60
17994.000	34.30	-25.50	43.40	16.40	H	54.00	19.70
17976.000	34.20	-25.50	43.40	16.30	H	54.00	19.80
17977.500	34.20	-25.50	43.40	16.30	H	54.00	19.80
17980.500	34.20	-25.50	43.40	16.30	V	54.00	19.80
17985.000	34.20	-25.50	43.40	16.30	V	54.00	19.80

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17976.000	34.30	-25.50	43.40	16.40	V	54.00	19.70
17977.500	34.30	-25.50	43.40	16.40	H	54.00	19.70
17992.500	34.30	-25.50	43.40	16.40	V	54.00	19.70
17983.500	34.20	-25.50	43.40	16.30	V	54.00	19.80
17991.000	34.20	-25.50	43.40	16.30	V	54.00	19.80
2488.200	43.20	-14.20	27.20	30.20	V	54.00	10.80

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Ch3

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17958.000	34.20	-25.50	43.40	16.30	V	54.00	19.80
17962.500	34.20	-25.50	43.40	16.30	V	54.00	19.80
17964.000	34.20	-25.50	43.40	16.30	V	54.00	19.80
17970.000	34.20	-25.50	43.40	16.30	V	54.00	19.80
17976.000	34.20	-25.50	43.40	16.30	H	54.00	19.80
2389.700	44.40	-14.20	27.20	31.40	H	54.00	9.60

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17974.500	34.40	-25.50	43.40	16.50	H	54.00	19.60
17970.000	34.30	-25.50	43.40	16.40	H	54.00	19.70
17992.500	34.30	-25.50	43.40	16.40	V	54.00	19.70
17952.000	34.20	-25.50	43.40	16.30	V	54.00	19.80
17973.000	34.20	-25.50	43.40	16.30	H	54.00	19.80
17976.000	34.20	-25.50	43.40	16.30	V	54.00	19.80

Ch9

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dB)
17982.000	34.60	-25.50	43.40	16.70	H	54.00	19.40
17970.000	34.40	-25.50	43.40	16.50	H	54.00	19.60
17988.000	34.30	-25.50	43.40	16.40	V	54.00	19.70
17952.000	34.20	-25.50	43.40	16.30	V	54.00	19.80
17953.500	34.20	-25.50	43.40	16.30	H	54.00	19.80
2485.000	43.80	-14.20	27.20	30.80	V	54.00	10.20

Sample

Result= P_{Mea} + Cable Loss + Antenna Factor

Result(34.60dBuV/m) = P_{Mea}(16.70dBuV/m) + Cable Loss(-25.50dB) + Antenna Factor(43.40dB/m)

Test graphs as below:

Full Spectrum

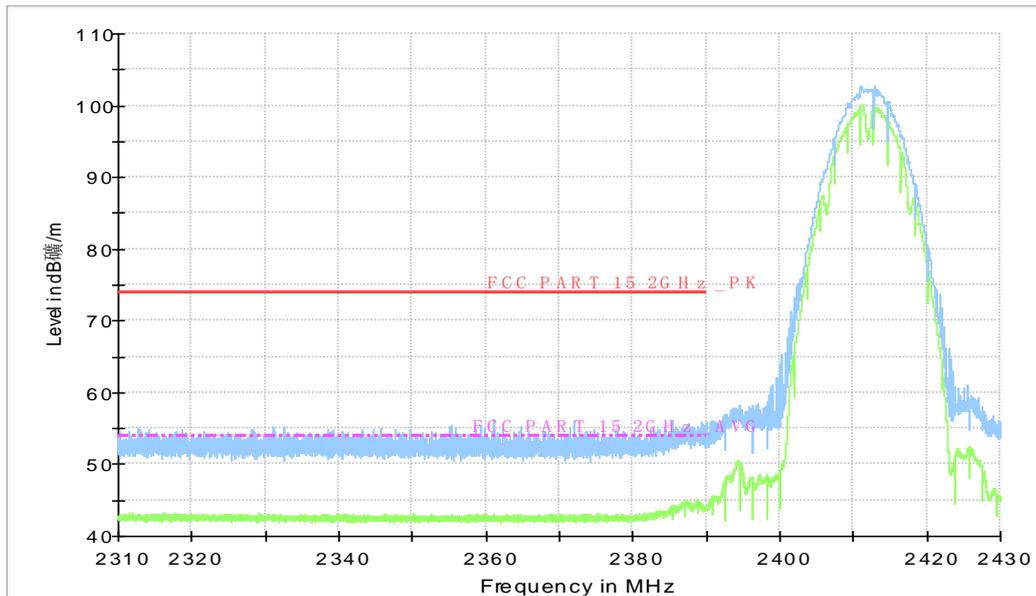


Fig.A.6.2.1 Transmitter Spurious Emission - Radiated (Power): EUT4, 802.11b, ch1, 2.38 GHz – 2.45GHz

Full Spectrum

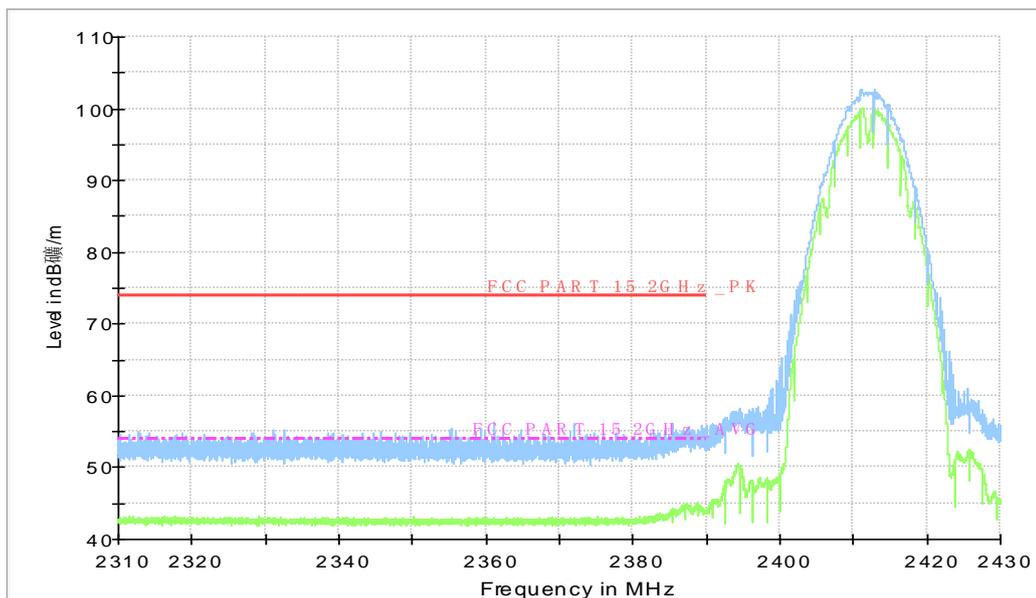


Fig.A.6.2.2 Transmitter Spurious Emission - Radiated (Power): EUT4, 802.11b, ch11, 2.45 GHz - 2.50GHz

Full Spectrum

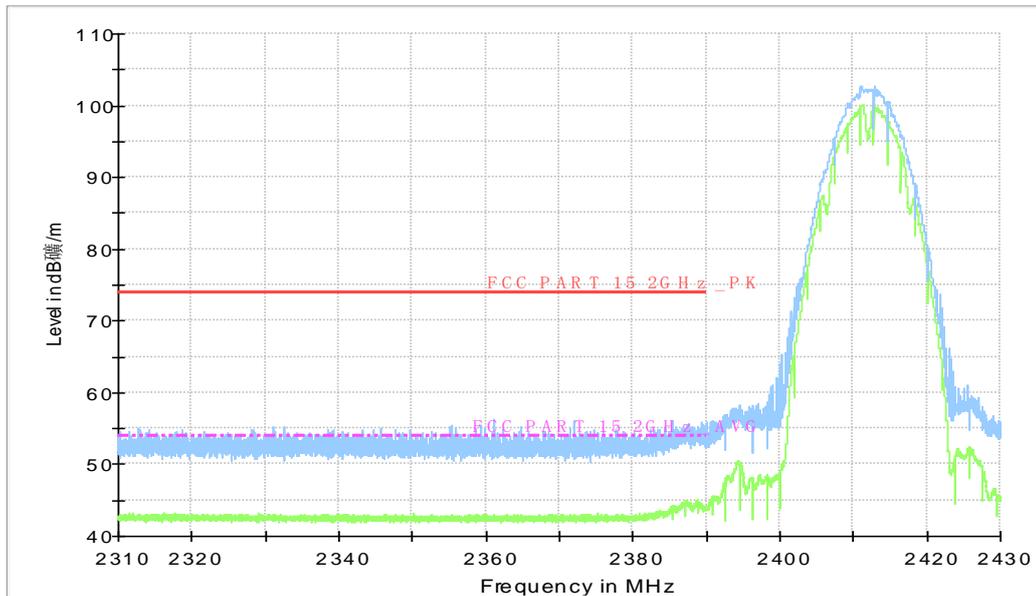


Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (Power): EUT4, 802.11g, ch1, 2.38 GHz - 2.45GHz

Full Spectrum

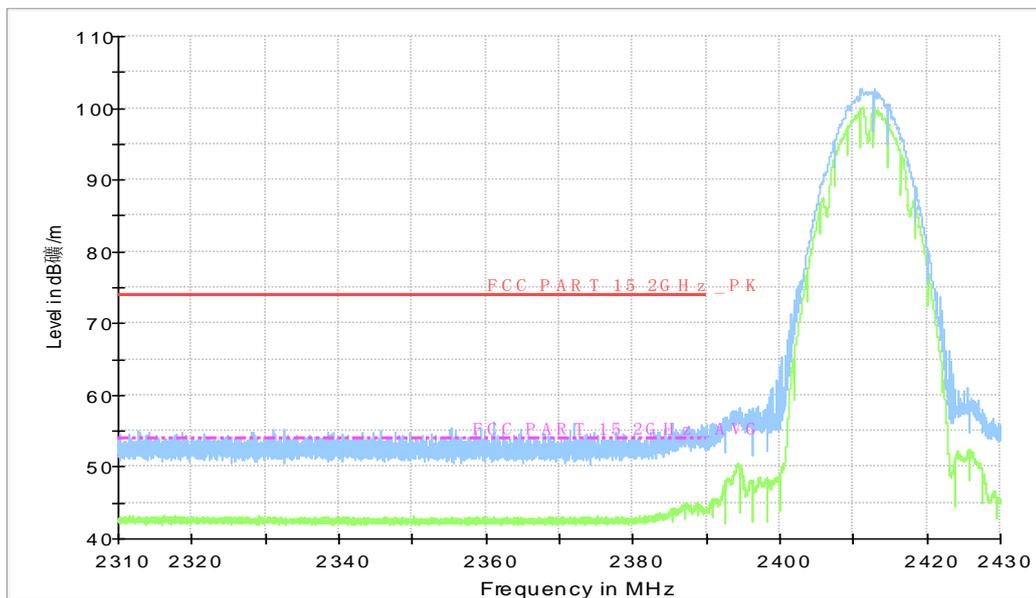


Fig.A.6.2.4 Transmitter Spurious Emission - Radiated (Power): EUT4, 802.11g, ch11, 2.45 GHz - 2.50GHz

Full Spectrum

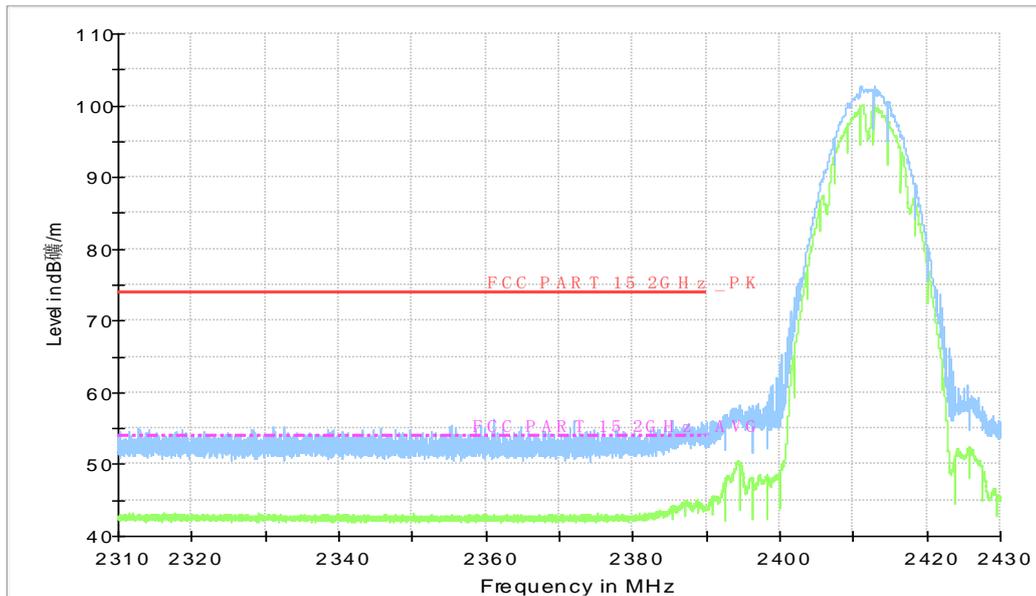


Fig.A.6.2.5 Transmitter Spurious Emission - Radiated (Power): EUT4, 802.11n-HT20, ch1, 2.38 GHz - 2.45GHz

Full Spectrum

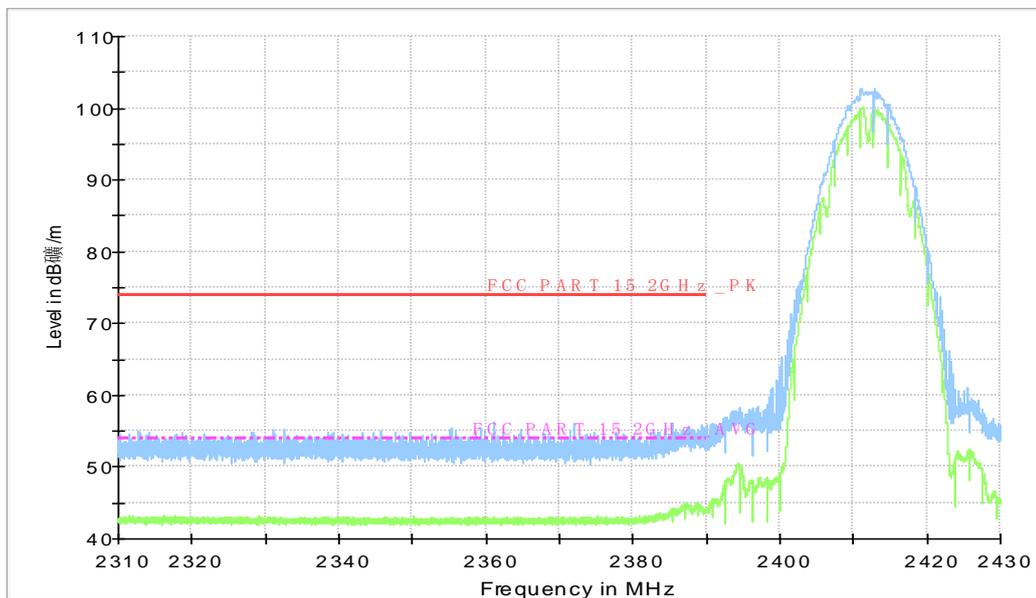


Fig.A.6.2.6 Transmitter Spurious Emission - Radiated (Power): EUT4, 802.11n-HT20, ch11, 2.45 GHz - 2.50GHz

Full Spectrum

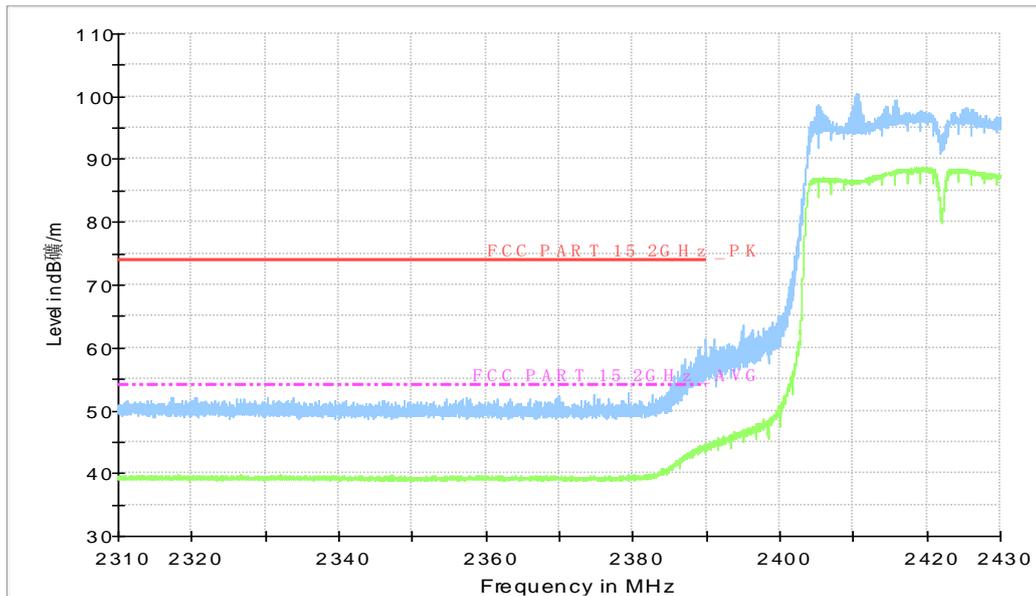


Fig.A.6.2.7 Transmitter Spurious Emission - Radiated (Power): EUT4, 802.11n-HT40, ch3, 2.38 GHz - 2.45GHz

Full Spectrum

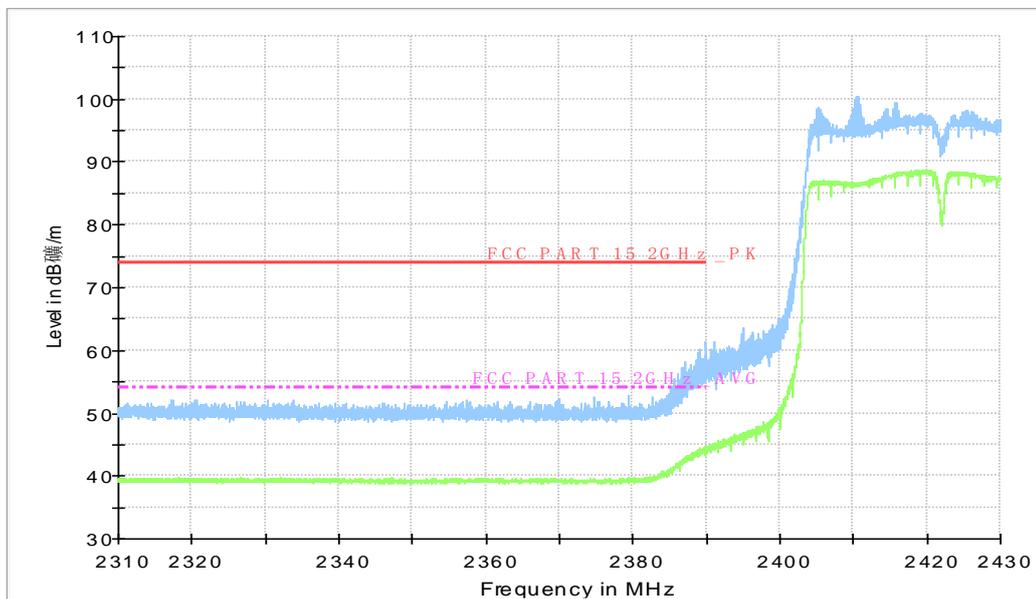


Fig.A.6.2.8 Transmitter Spurious Emission - Radiated (Power): EUT4, 802.11n-HT40, ch9, 2.45 GHz - 2.50GHz

Full Spectrum

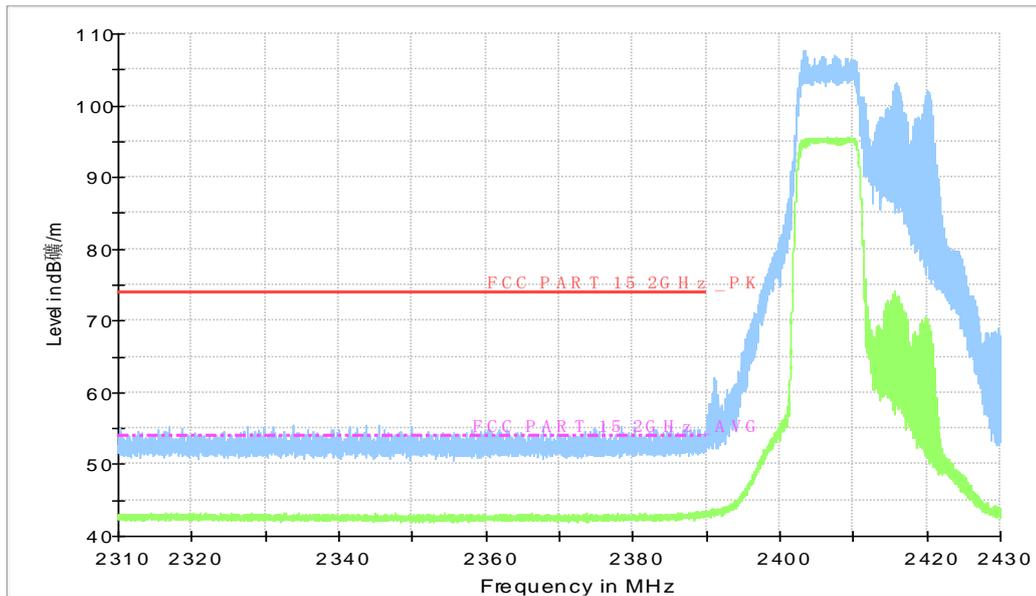


Fig.A.6.2.9 Transmitter Spurious Emission - Radiated (Power): EUT43, 802.11ax-HT20, ch1, 2.38 GHz - 2.45GHz

Full Spectrum

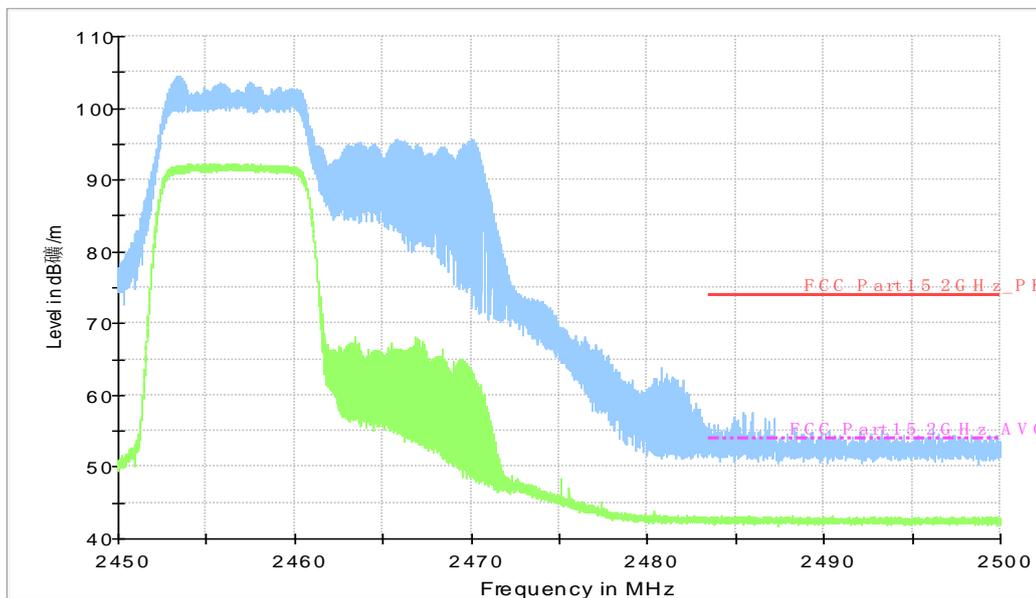


Fig.A.6.2.10 Transmitter Spurious Emission - Radiated (Power): EUT43, 802.11ax-HT20, ch11, 2.45 GHz - 2.50GHz

Full Spectrum

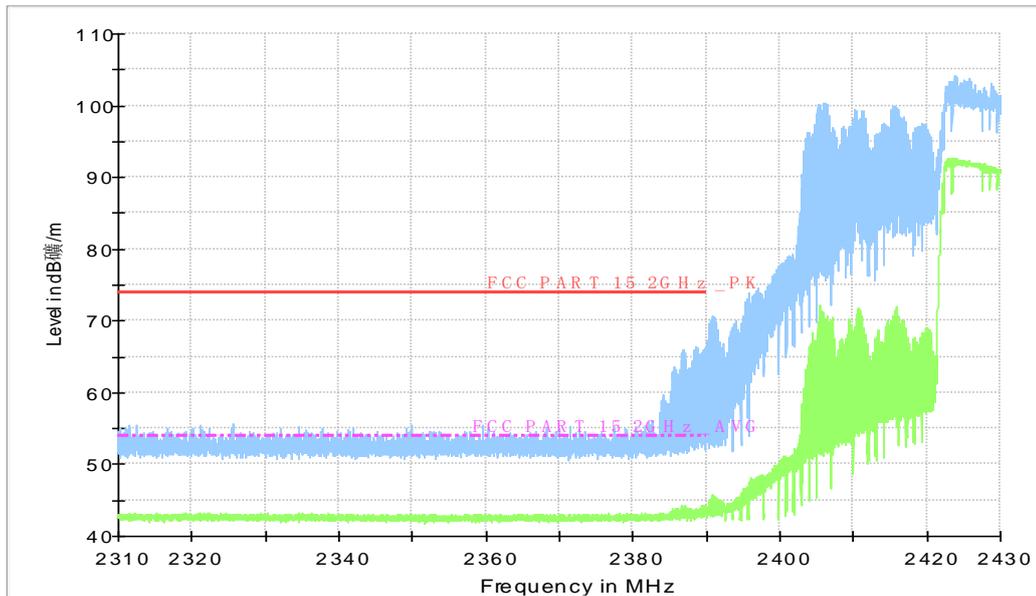


Fig.A.6.2.11 Transmitter Spurious Emission - Radiated (Power): EUT43, 802.11ax-HT40, ch3, 2.38 GHz - 2.45GHz

Full Spectrum

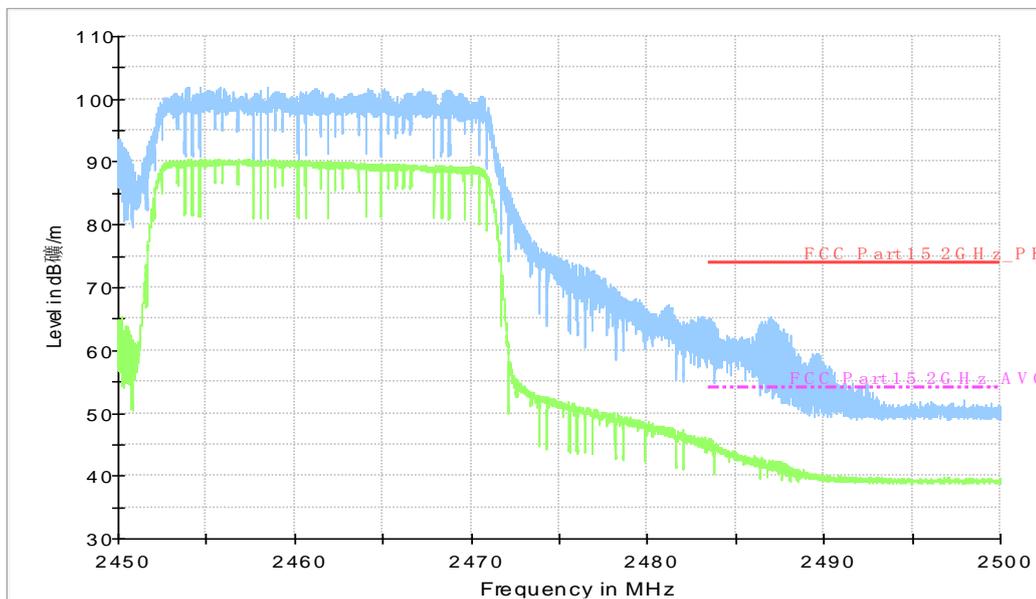


Fig.A.6.2.12 Transmitter Spurious Emission - Radiated (Power): EUT43, 802.11ax-HT40, ch9, 2.45 GHz - 2.50GHz

A.7. AC Power-line Conducted Emission

Method of Measurement: See ANSI C63.10-2013-clause 6.2

- 1 The one EUT cable configuration and arrangement and mode of operation that produced the emission with the highest amplitude relative to the limit is selected for the final measurement, while applying the appropriate modulating signal to the EUT.
- 2 If the EUT is relocated from an exploratory test site to a final test site, the highest emissions shall be remaximized at the final test location before final ac power-line conducted emission measurements are performed.
- 3 The final test on all current-carrying conductors of all of the power cords to the equipment that comprises the EUT (but not the cords associated with other non-EUT equipment in the system) is then performed for the full frequency range for which the EUT is being tested for compliance without further variation of the EUT arrangement, cable positions, or EUT mode of operation.
- 4 If the EUT is comprised of equipment units that have their own separate ac power connections, e.g., floor-standing equipment with independent power cords for each shelf that are able to connect directly to the ac power network, each current-carrying conductor of one unit is measured while the other units are connected to a second (or more) LISN(s). All units shall be separately measured. If a power strip is provided by the manufacturer, to supply all of the units making up the EUT, only the conductors in the power cord of the power strip shall be measured.
- 5 If the EUT uses a detachable antenna, these measurements shall be made with a suitable dummy load connected to the antenna output terminals; otherwise, the tests shall be made with the antenna connected and, if adjustable, fully extended. When measuring the ac conducted emissions from a device that operates between 150 kHz and 30 MHz a non-detachable antenna may be replaced with a dummy load for the measurements within the fundamental emission band of the transmitter, but only for those measurements.³⁶ Record the six highest EUT emissions relative to the limit of each of the current-carrying conductors of the power cords of the equipment that comprises the EUT over the frequency range specified by the procuring or regulatory agency. Diagram or photograph the test setup that was used. See Clause 8 for full reporting requirements.

Test Condition:

Voltage (V)	Frequency (Hz)
120	60

Measurement Result and limit:
EUT4+AE1+AE3+AE6

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dB μ V)	Result (dB μ V)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	66 to 56	Fig.A.7.1	Fig.A.7.2	P
0.5 to 5	56			
5 to 30	60			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dB μ V)	Result (dB μ V)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	56 to 46	Fig.A.7.1	Fig.A.7.2	P
0.5 to 5	46			
5 to 30	50			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

EUT43+AE11+AE13+AE16
WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dB μ V)	Result (dB μ V)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	67 to 56	Fig.A.7.3	Fig.A.7.4	P
0.5 to 5	56			
5 to 30	60			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dB μ V)	Result (dB μ V)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	56 to 46	Fig.A.7.3	Fig.A.7.4	P
0.5 to 5	46			
5 to 30	50			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

Conclusion: Pass

Test graphs as below:

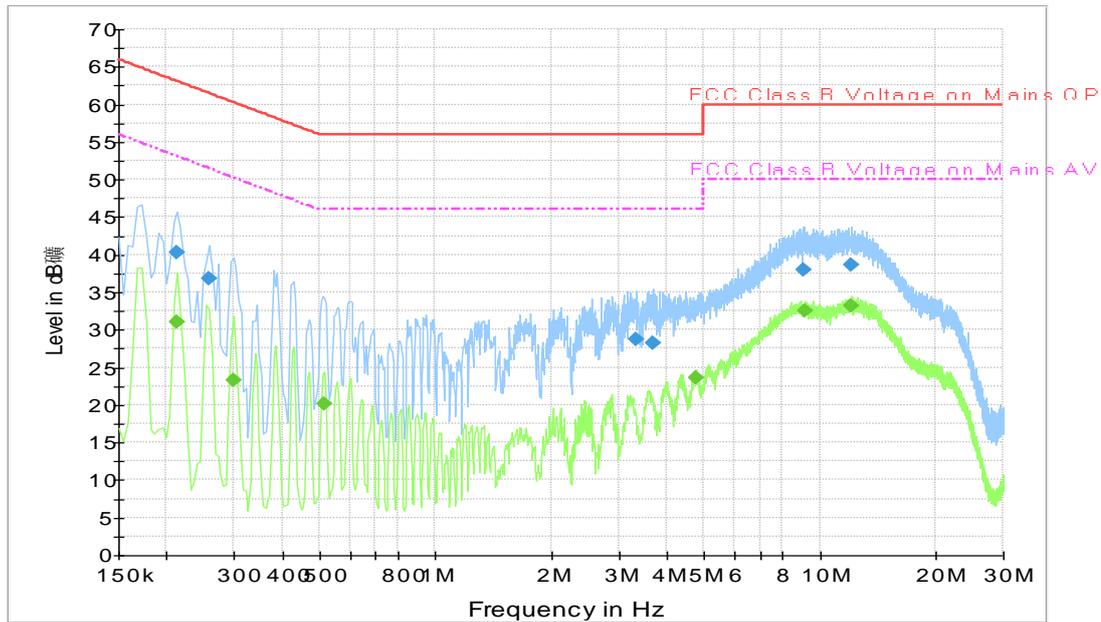


Fig.A.7.1 AC Powerline Conducted Emission-802.11b EUT4(M2001J2G)+AE1+AE3+AE6

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Measurement Result 1:

Frequency (MHz)	QuasiPeak (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.213000	40.3	N	19.9	22.8	63.1
0.258000	36.8	L1	19.8	24.7	61.5
3.322500	28.8	N	19.8	27.2	56.0
3.669000	28.3	N	19.8	27.7	56.0
9.087000	37.9	L1	19.8	22.1	60.0
12.097500	38.6	L1	19.8	21.4	60.0

Measurement Result 2:

Frequency (MHz)	Average (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.213000	31.0	L1	19.8	22.1	53.1
0.298500	23.2	N	19.9	27.0	50.3
0.514500	20.1	N	19.9	25.9	46.0
4.758000	23.5	L1	19.8	22.5	46.0
9.199500	32.5	L1	19.8	17.5	50.0
12.088500	33.2	L1	19.8	16.8	50.0

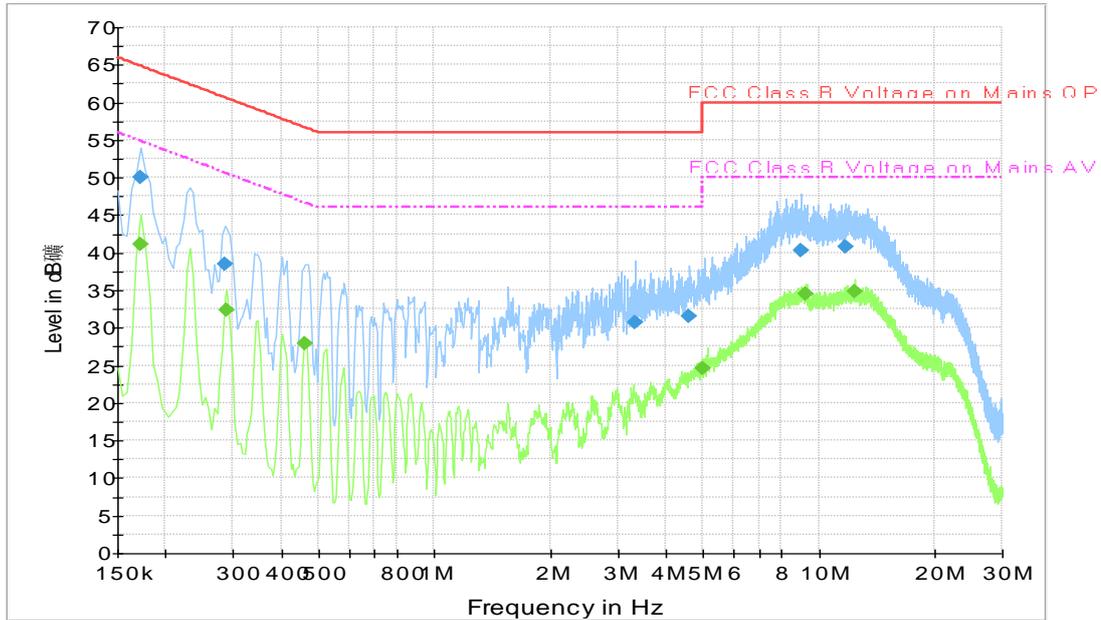


Fig.A.7.2 AC Powerline Conducted Emission-Idle EUT4(M2001J2G)+AE1+AE3+AE6

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Measurement Result 1:

Frequency (MHz)	QuasiPeak (dBμV)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.172500	50.1	L1	19.8	14.8	64.8
0.285000	38.5	L1	19.8	22.2	60.7
3.322500	30.8	N	19.8	25.2	56.0
4.614000	31.6	L1	19.8	24.4	56.0
9.019500	40.4	L1	19.8	19.6	60.0
11.710500	40.7	L1	19.8	19.3	60.0

Measurement Result 2:

Frequency (MHz)	Average (dBμV)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.172500	41.2	L1	19.8	13.7	54.8
0.289500	32.3	L1	19.8	18.3	50.5
0.460500	28.0	N	19.9	18.7	46.7
4.996500	24.7	L1	19.8	21.3	46.0
9.276000	34.5	L1	19.8	15.5	50.0
12.381000	34.8	L1	19.9	15.2	50.0

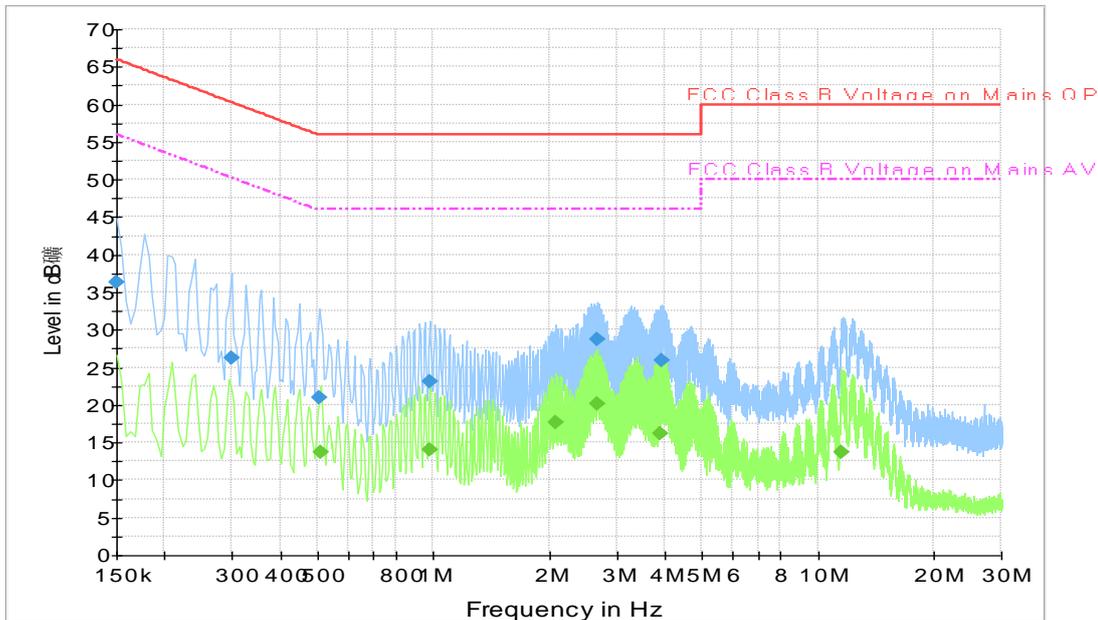


Fig.A.7.3 AC Powerline Conducted Emission-802.11b EUT4(M2001J2G)+AE1+AE3+AE6

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Measurement Result 1:

Frequency (MHz)	QuasiPeak (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	36.3	L1	20.2	29.7	66.0
0.298500	26.3	L1	19.8	34.0	60.3
0.505500	20.9	L1	19.8	35.1	56.0
0.978000	23.2	N	19.9	32.8	56.0
2.670000	28.7	L1	19.8	27.3	56.0
3.943500	25.9	L1	19.8	30.1	56.0

Measurement Result 2:

Frequency (MHz)	Average (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.510000	13.7	L1	19.8	32.3	46.0
0.978000	14.1	N	19.9	31.9	46.0
2.076000	17.6	L1	19.8	28.4	46.0
2.670000	20.2	L1	19.8	25.8	46.0
3.885000	16.2	L1	19.8	29.8	46.0
11.571000	13.6	L1	19.8	36.4	50.0

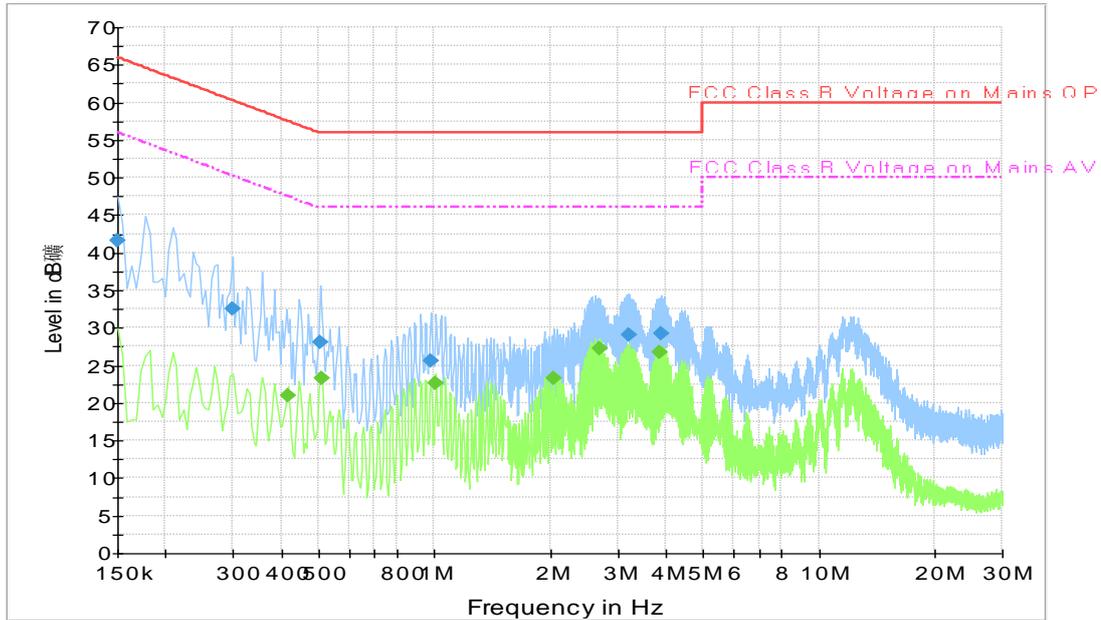


Fig.A.7.4 AC Powerline Conducted Emission-Idle EUT4(M2001J2G)+AE1+AE3+AE6

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Measurement Result 1:

Frequency (MHz)	QuasiPeak (dBμV)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	41.5	N	20.2	24.5	66.0
0.298500	32.6	L1	19.8	27.7	60.3
0.505500	28.0	L1	19.8	28.0	56.0
0.982500	25.6	N	19.9	30.4	56.0
3.205500	29.1	L1	19.8	26.9	56.0
3.889500	29.2	L1	19.8	26.8	56.0

Measurement Result 2:

Frequency (MHz)	Average (dBμV)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.415500	21.0	L1	19.8	26.6	47.5
0.510000	23.2	L1	19.8	22.8	46.0
1.009500	22.7	N	19.9	23.3	46.0
2.049000	23.3	L1	19.8	22.7	46.0
2.701500	27.3	L1	19.8	18.7	46.0
3.858000	26.8	L1	19.8	19.2	46.0

ANNEX B: Accreditation Certificate

<p>United States Department of Commerce National Institute of Standards and Technology</p> 	
<hr/> <p>Certificate of Accreditation to ISO/IEC 17025:2005</p> <hr/>	
<p>NVLAP LAB CODE: 600118-0</p>	
<p>Telecommunication Technology Labs, CAICT Beijing China</p>	
<p><i>is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:</i></p>	
<p>Electromagnetic Compatibility & Telecommunications</p>	
<p><i>This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).</i></p>	
<hr/> <p>2019-09-26 through 2020-09-30 <i>Effective Dates</i></p>	 <hr/> <p><i>[Signature]</i> For the National Voluntary Laboratory Accreditation Program</p>

END OF REPORT