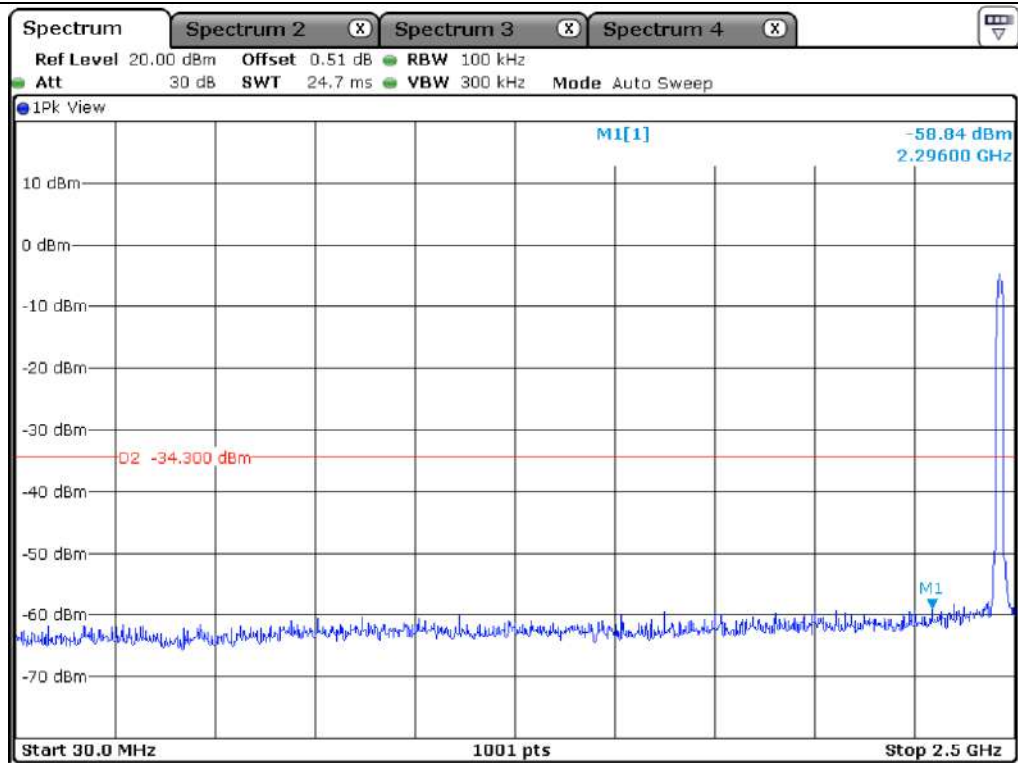
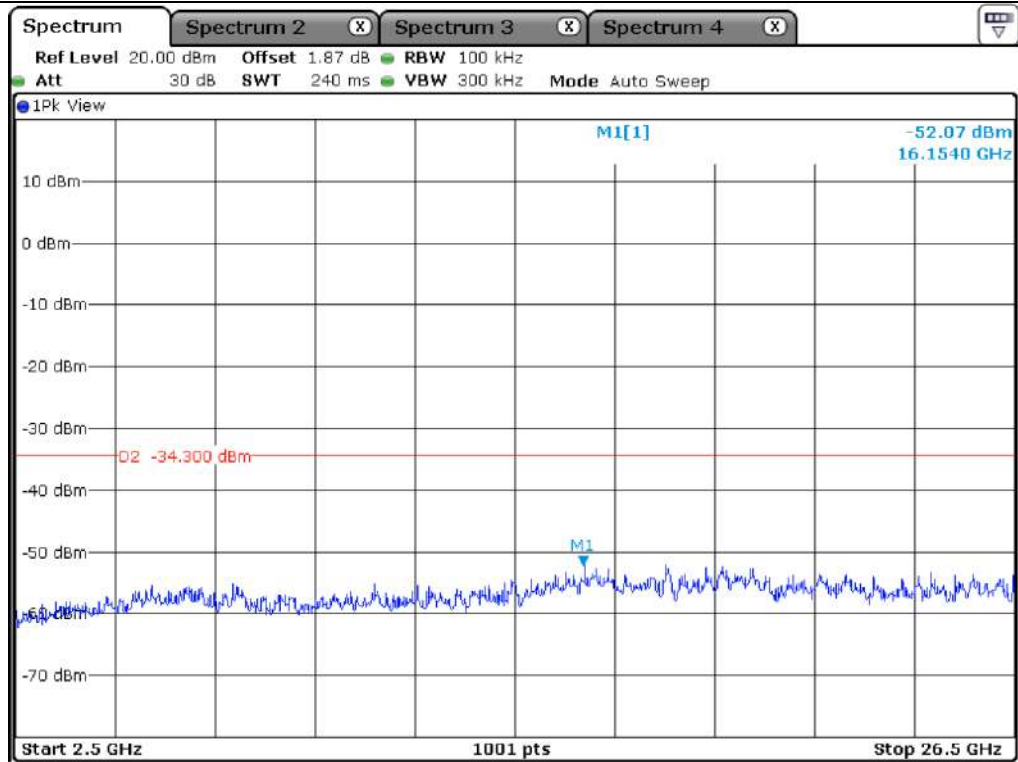
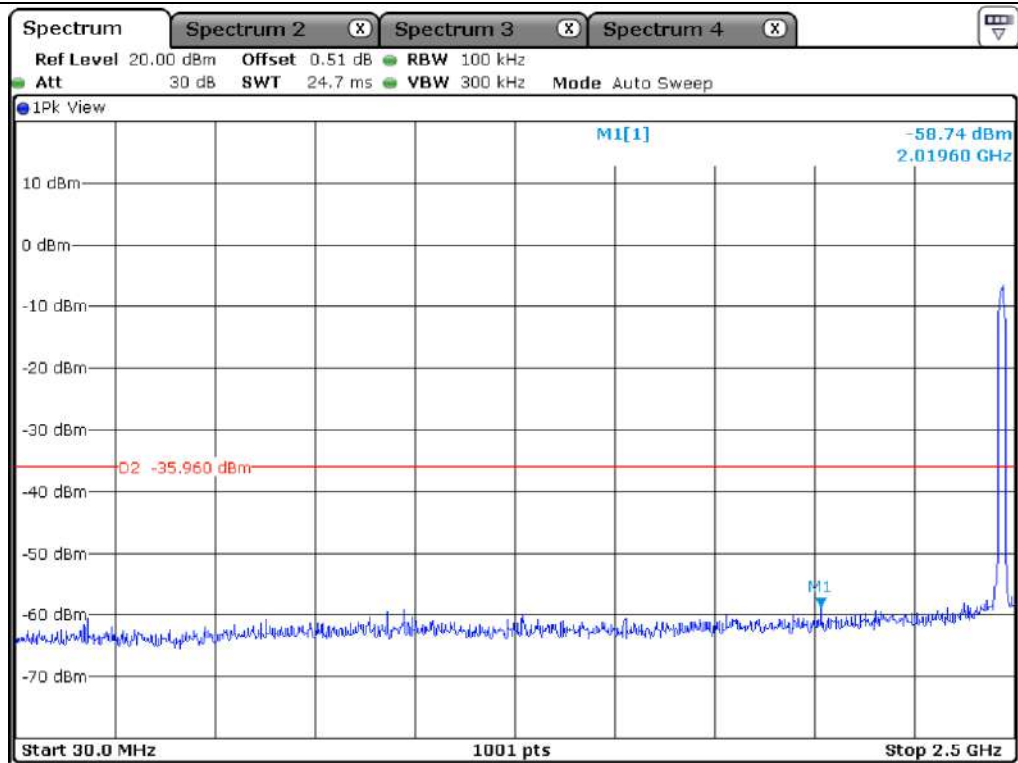




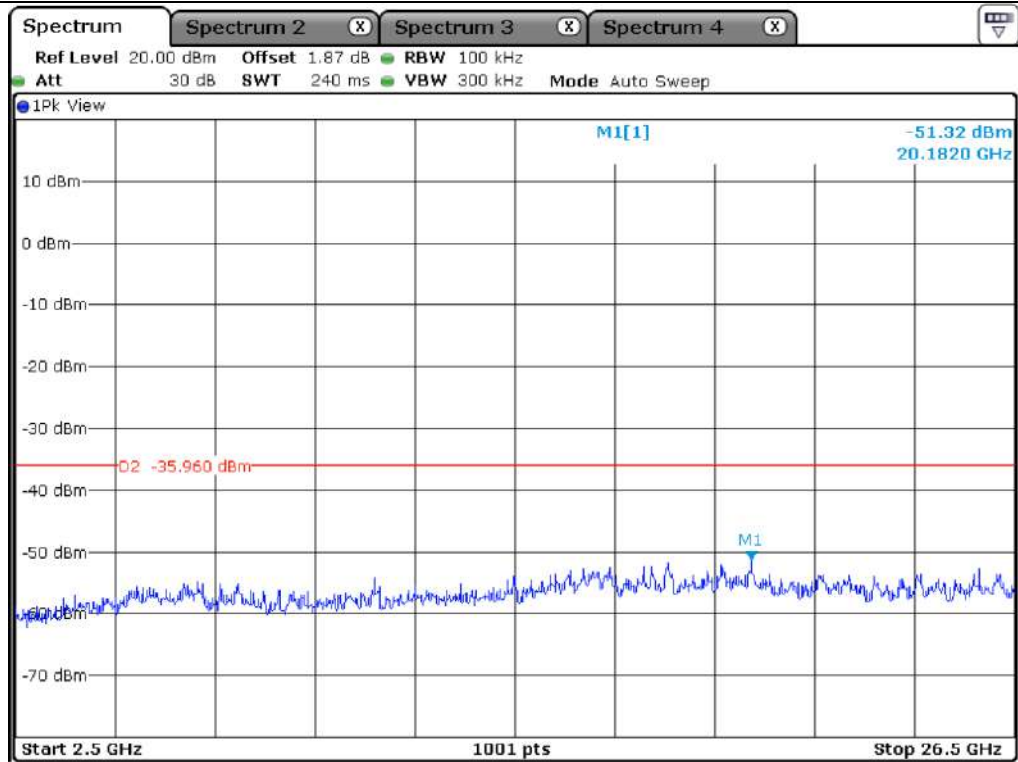
High Channel 11



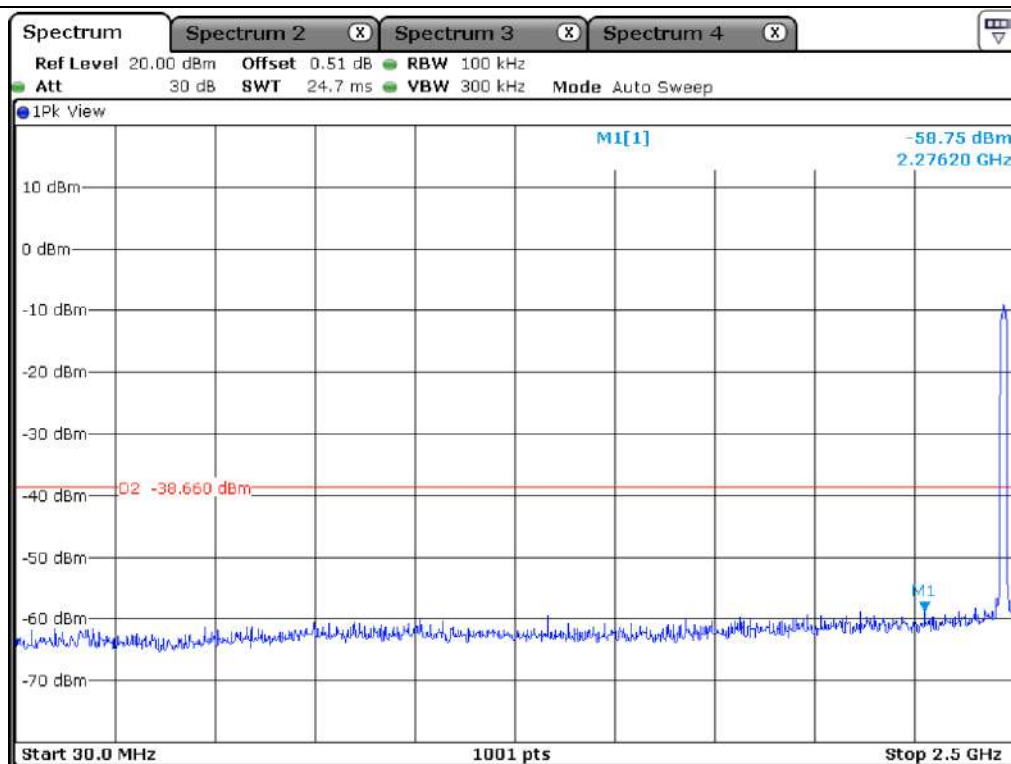
High Channel 11



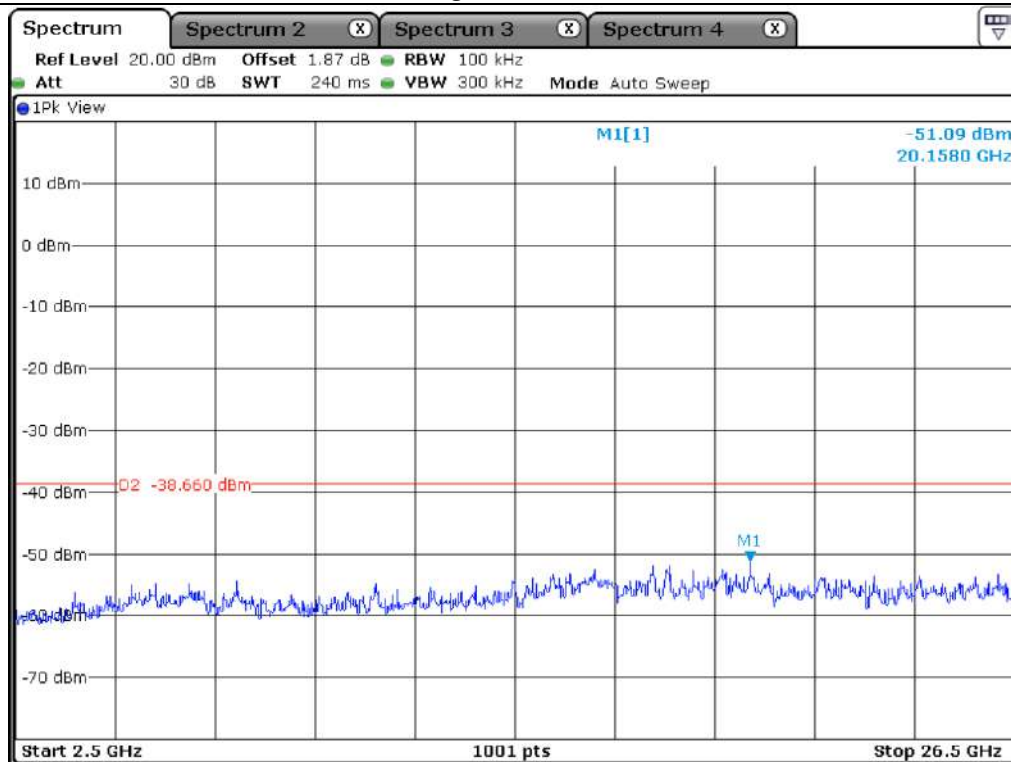
High Channel 12



High Channel 12

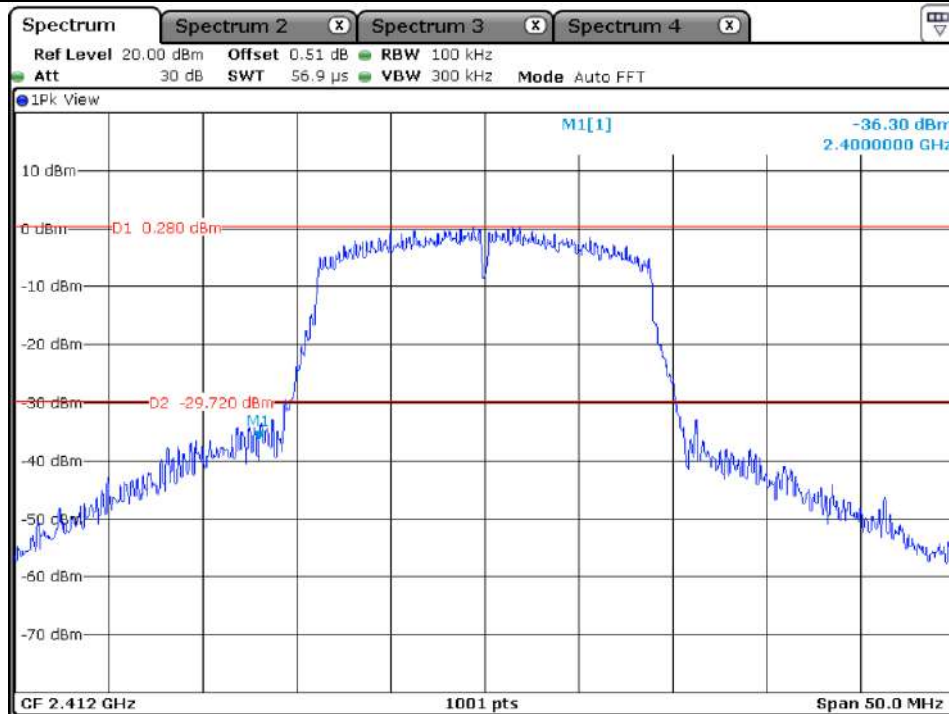


High Channel 13

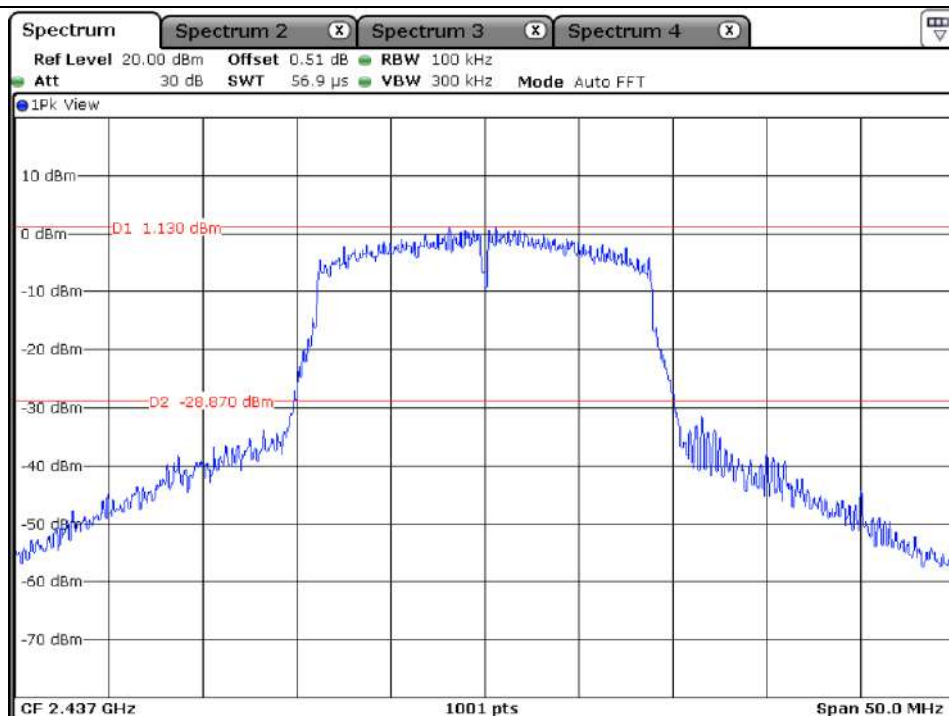


High Channel 13

9.5.3.2 Test data for Antenna 1



Low Channel



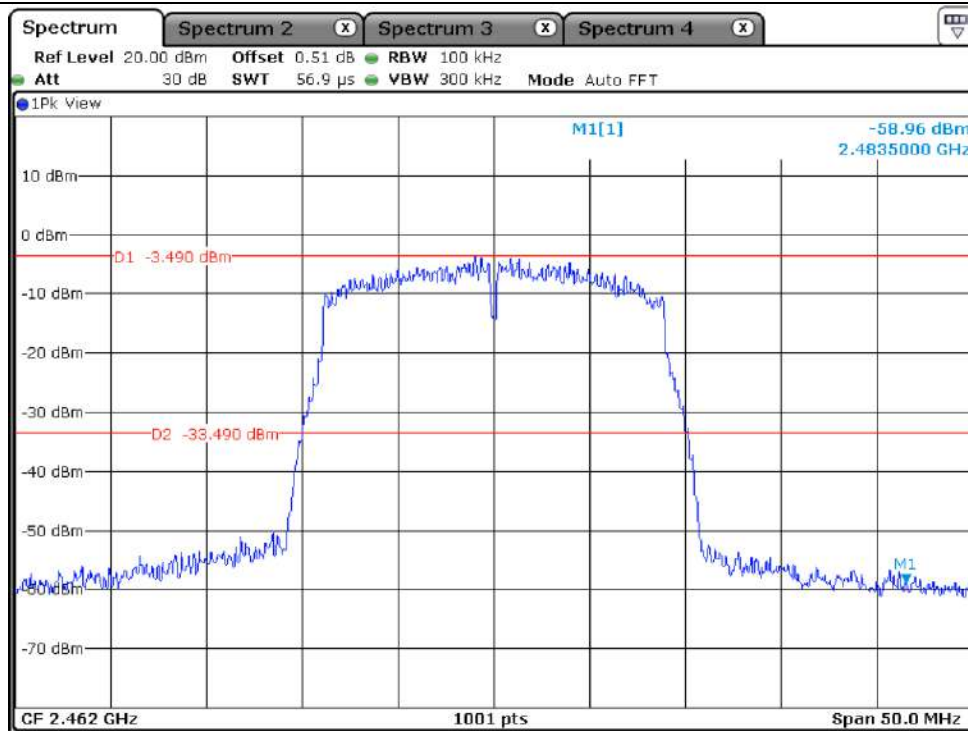
Middle Channel

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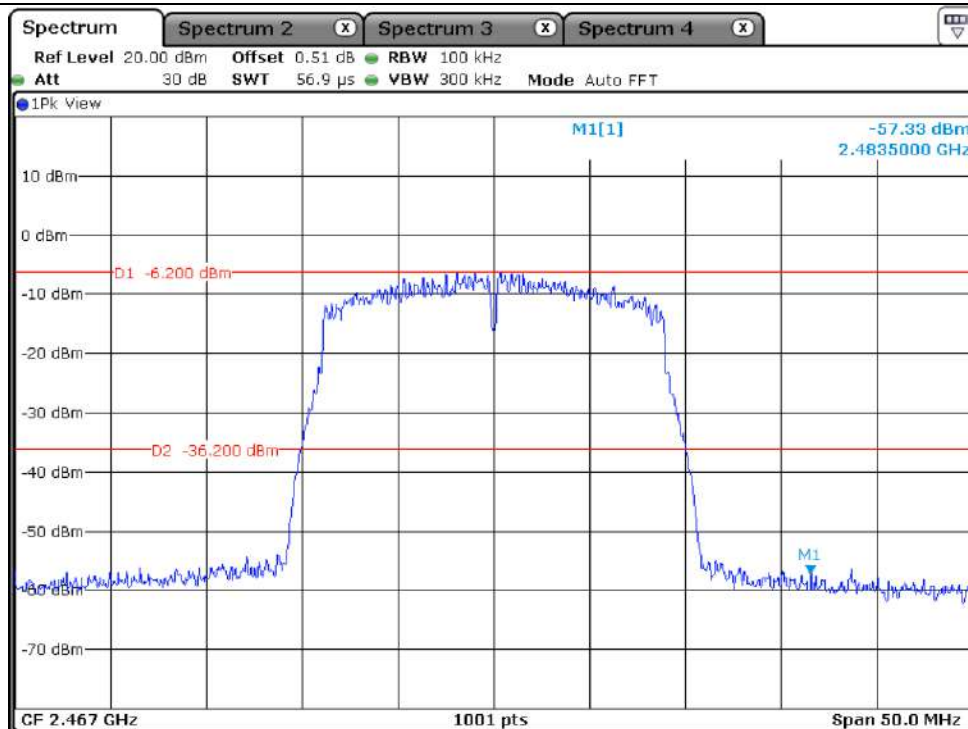
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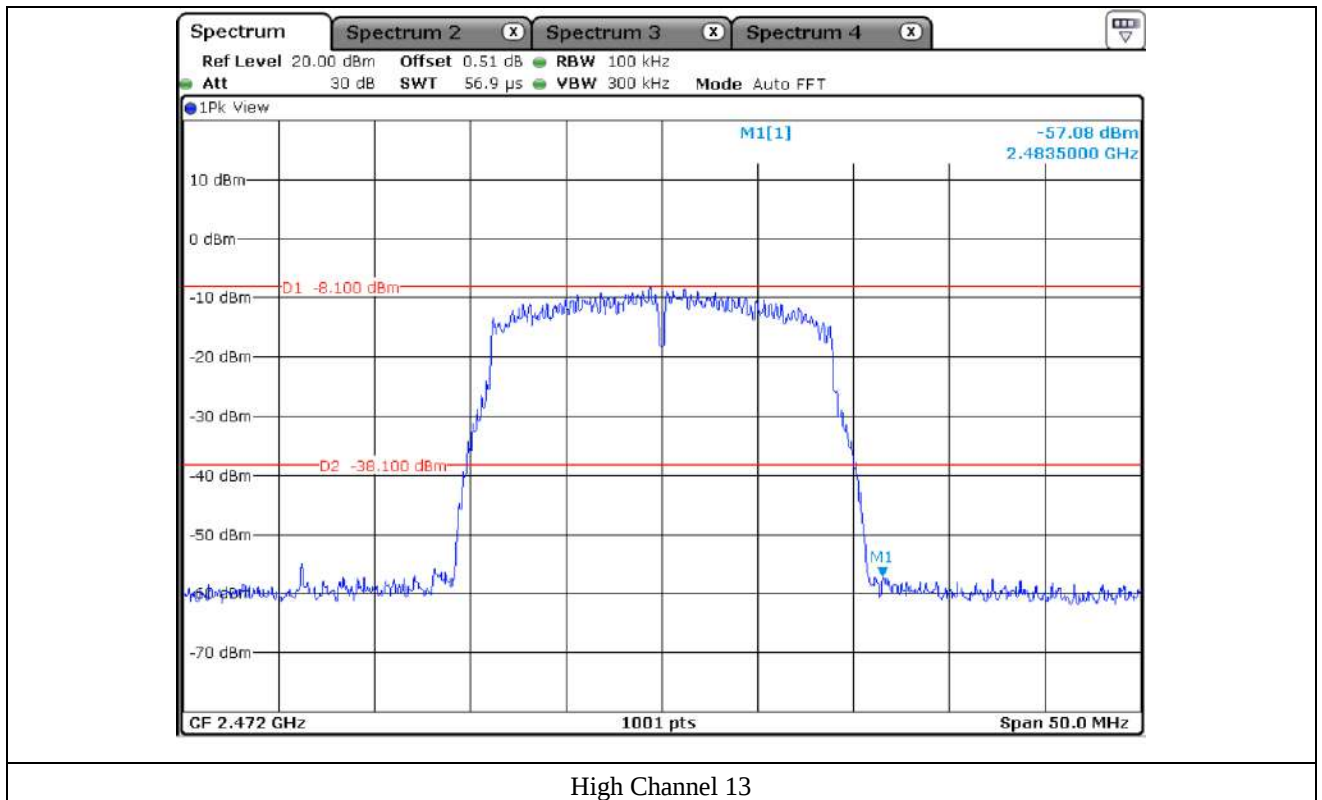
ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

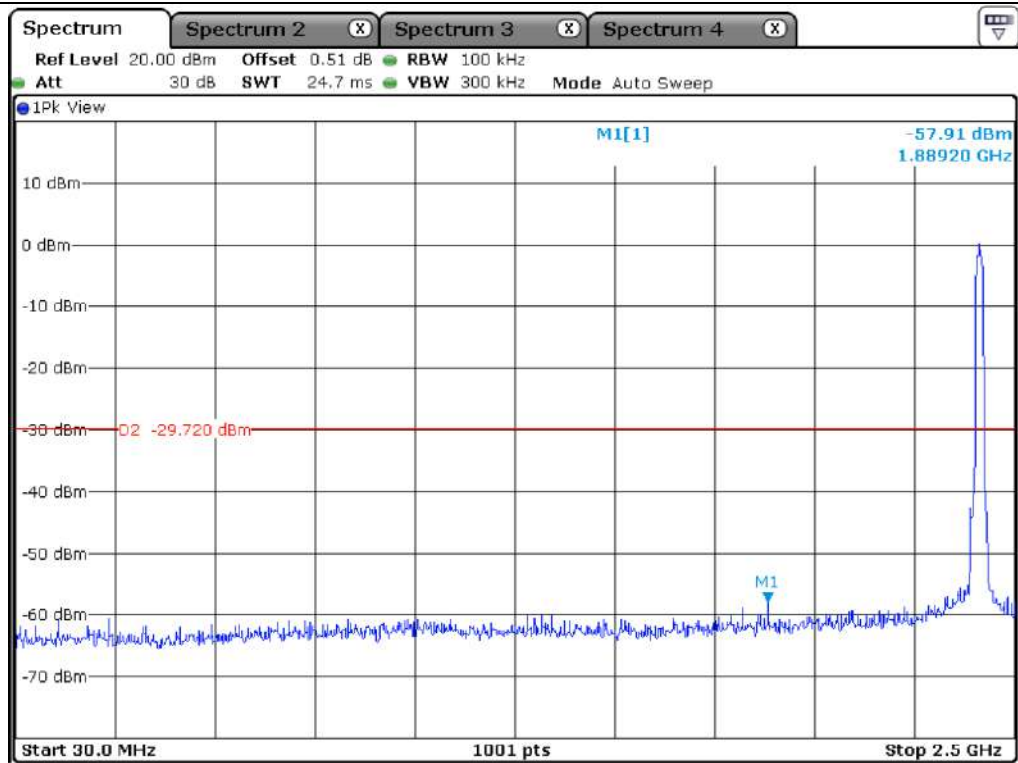


High Channel 11

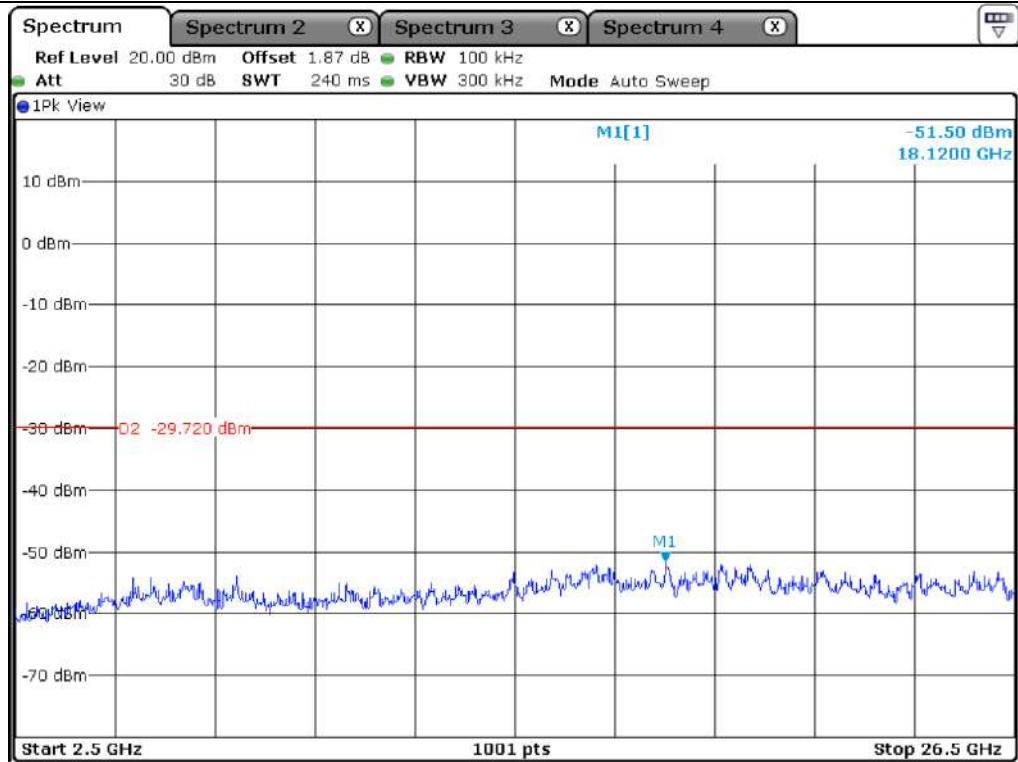


High Channel 12





Low Channel



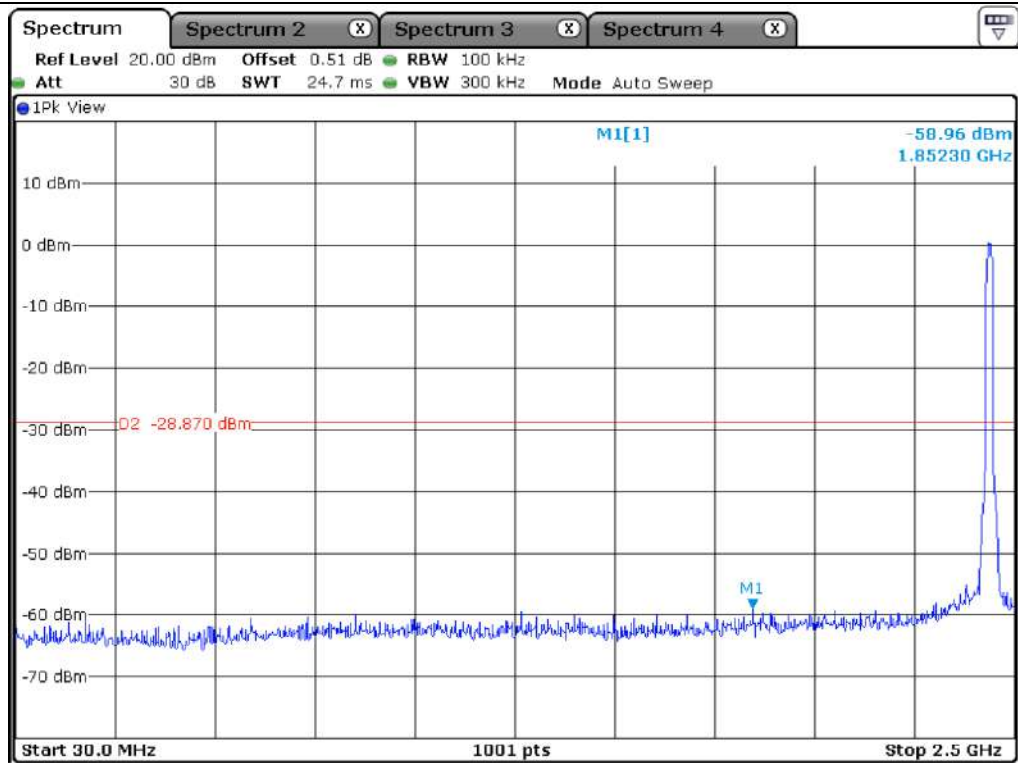
Low Channel

This Report is not correlated with the authentication of KOLAS

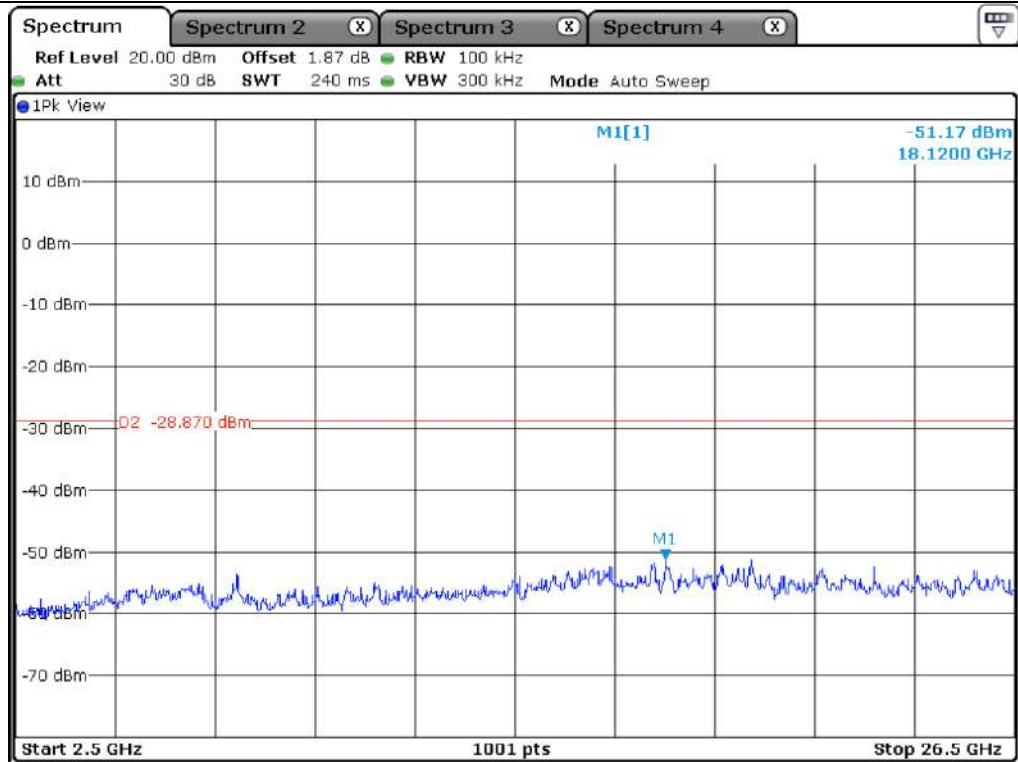
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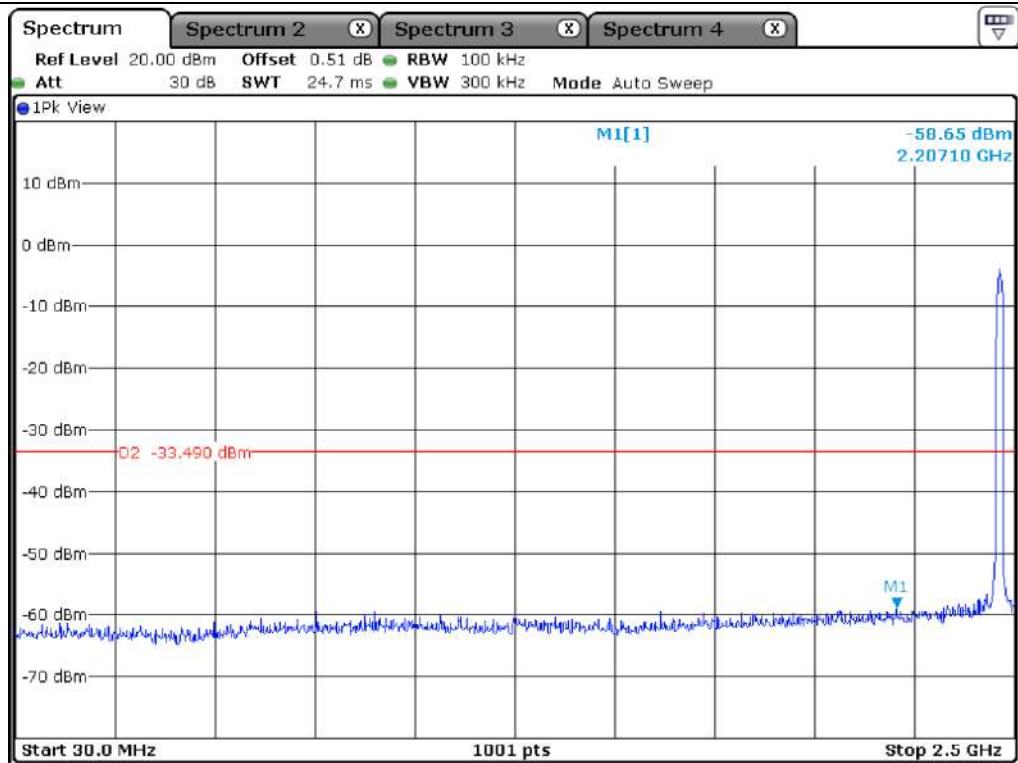
ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)



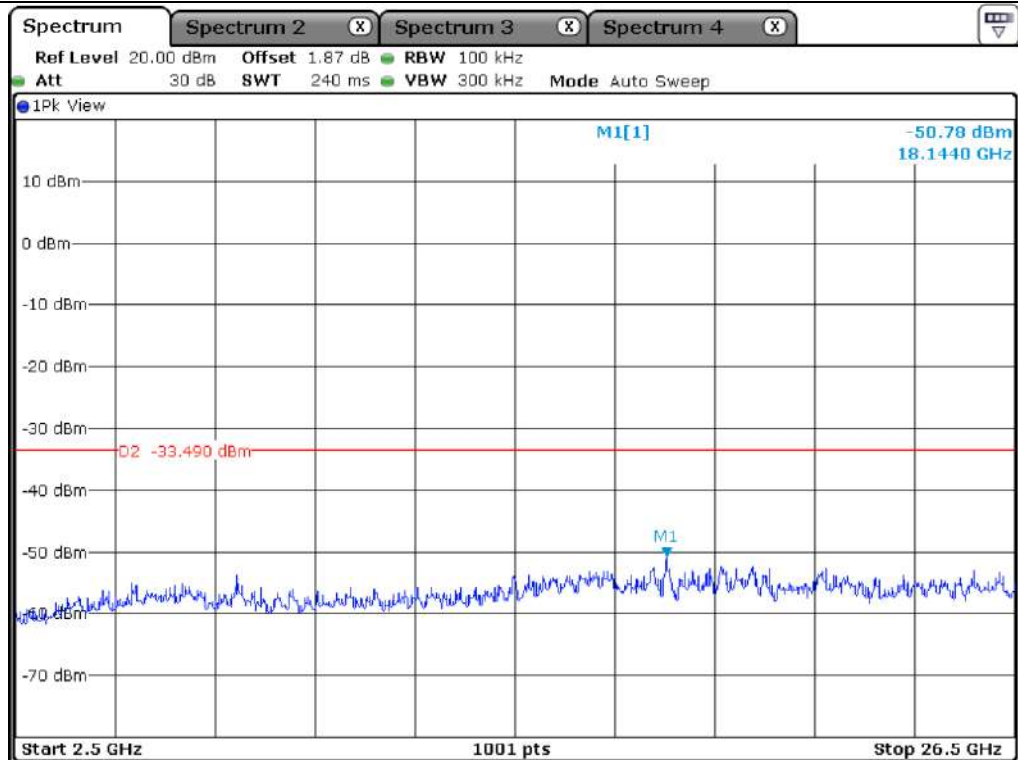
Middle Channel



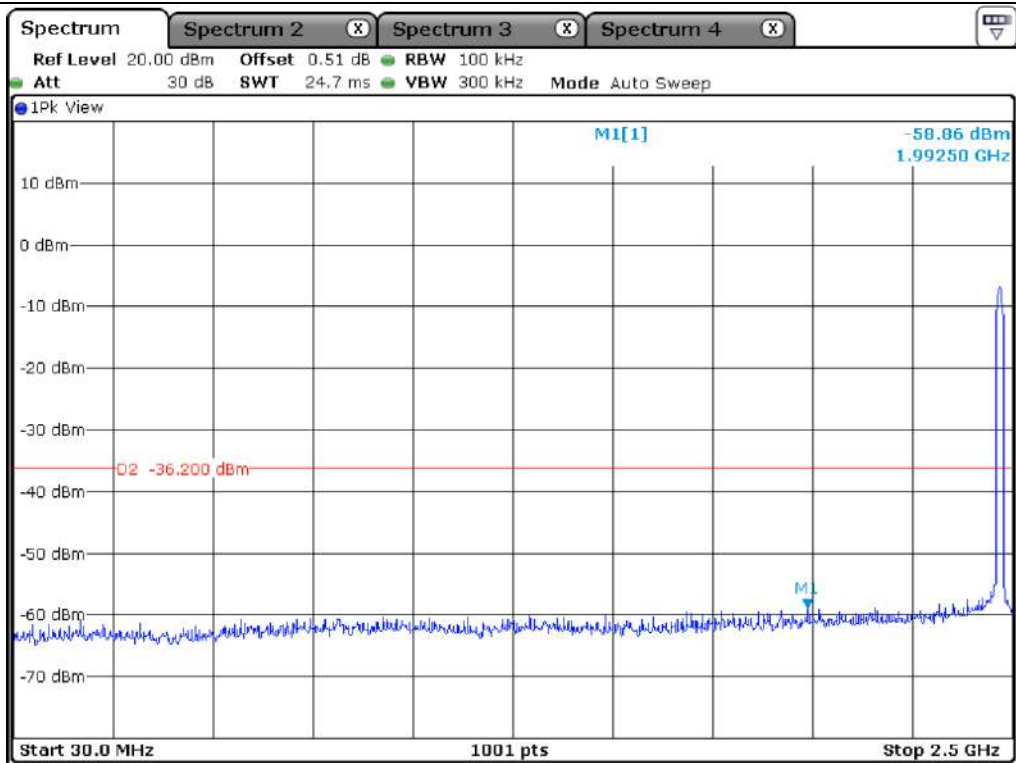
Middle Channel



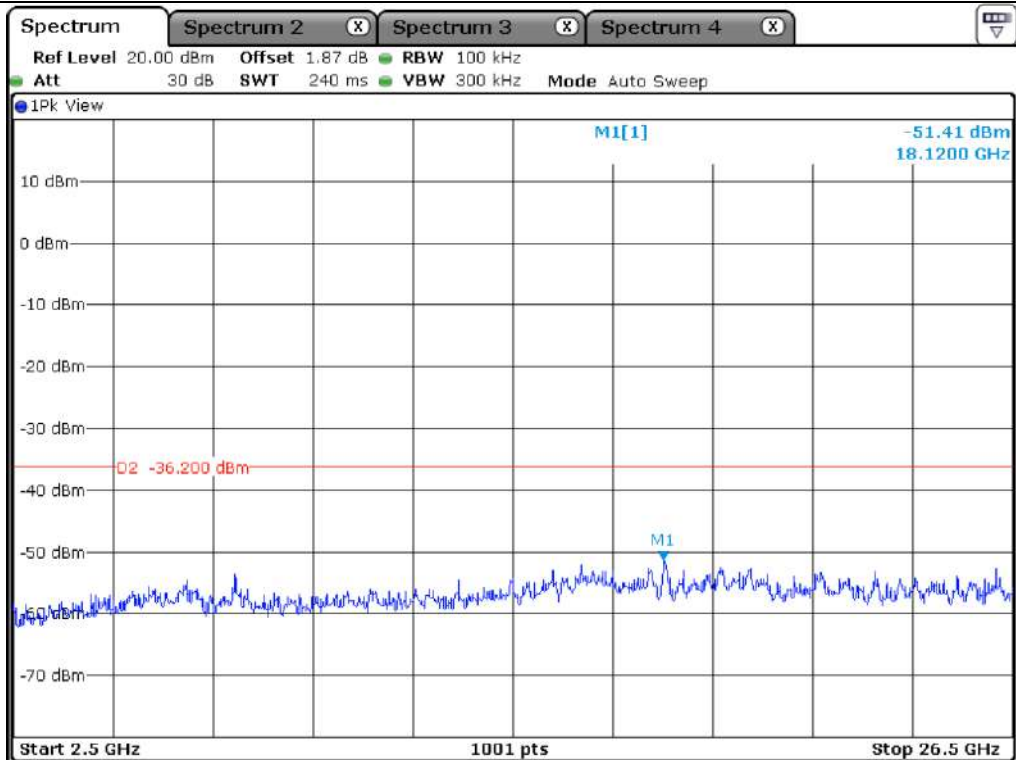
High Channel 11



High Channel 11



High Channel 12



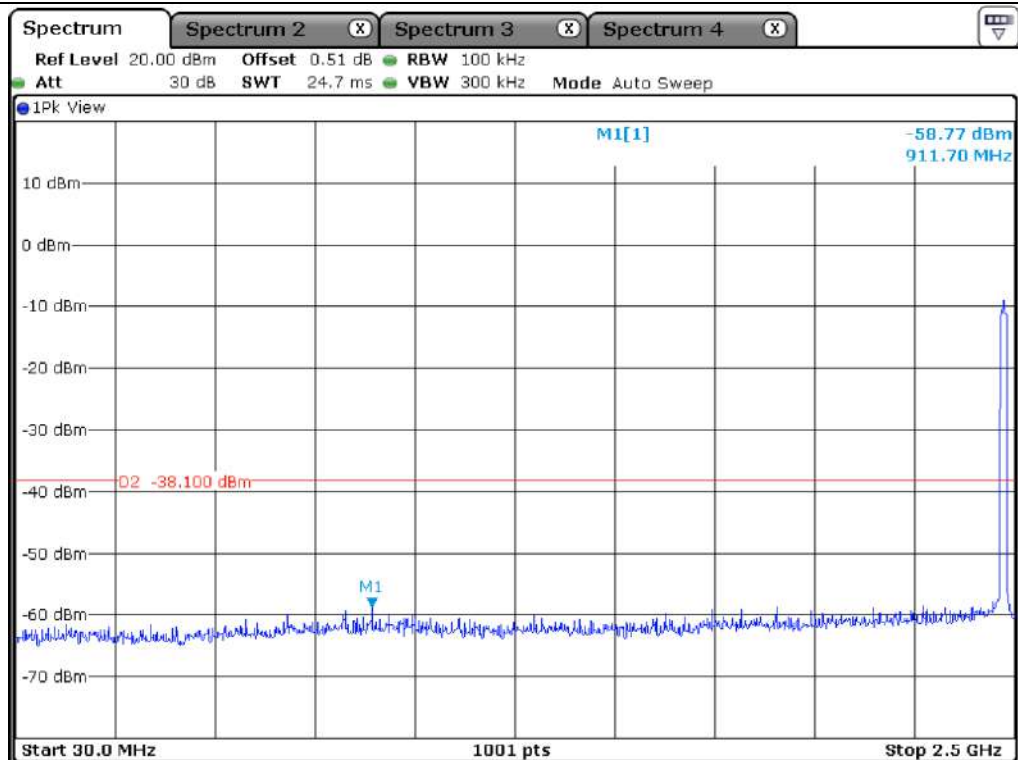
High Channel 12

This Report is not correlated with the authentication of KOLAS

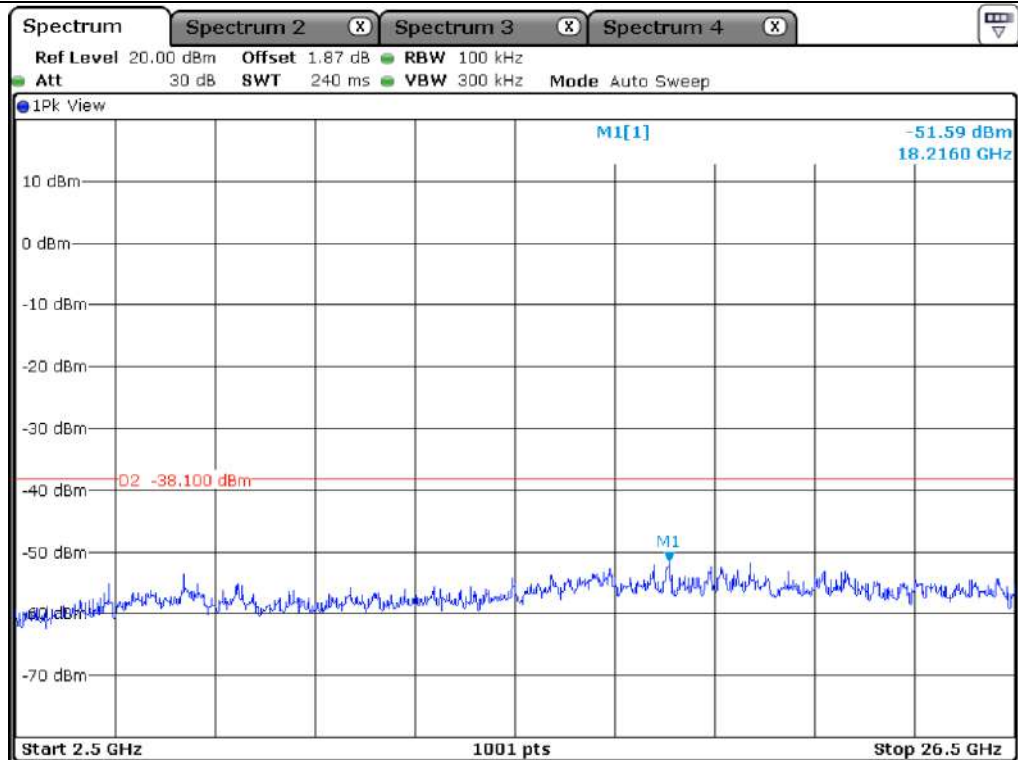
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High Channel 13



High Channel 13

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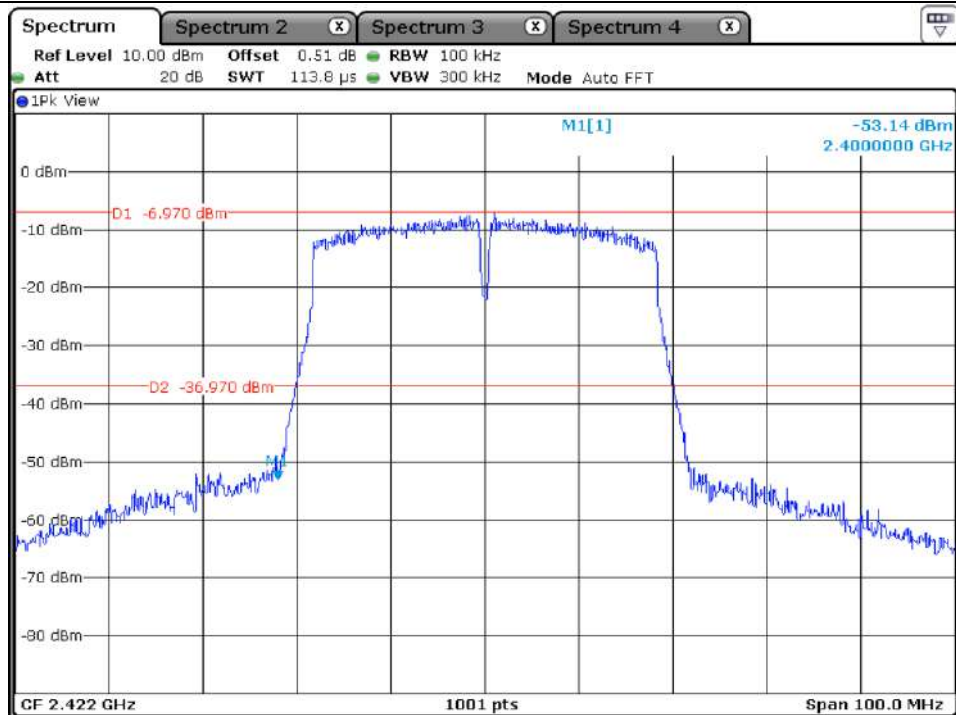
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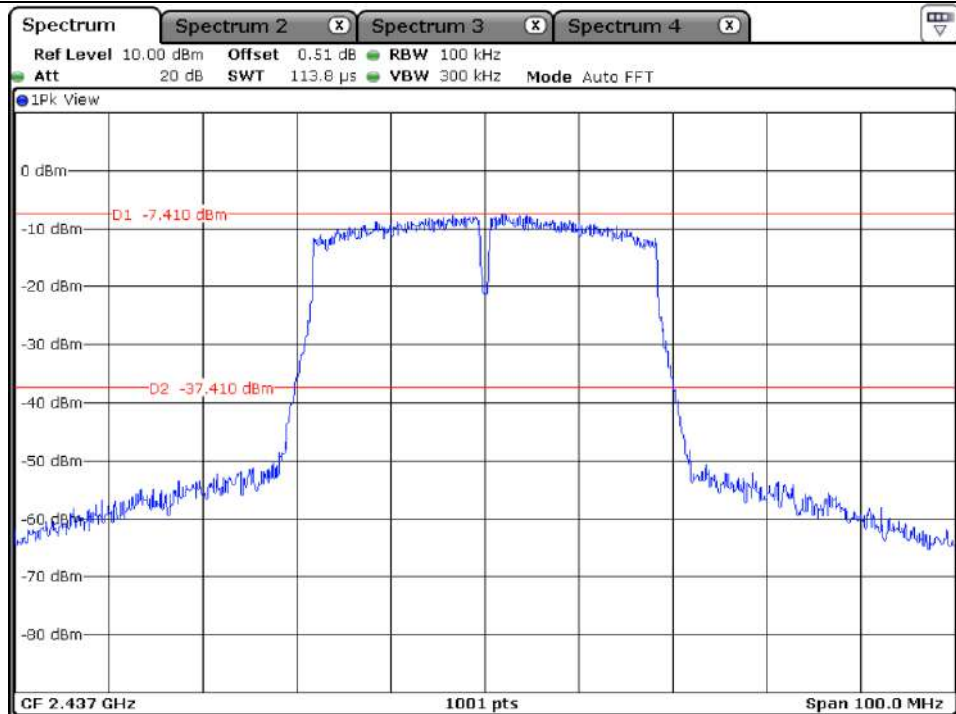
ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

9.5.4 Test data for 802.11n_HT40 WLAN Mode

9.5.4.1 Test data for Antenna 0



Low Channel



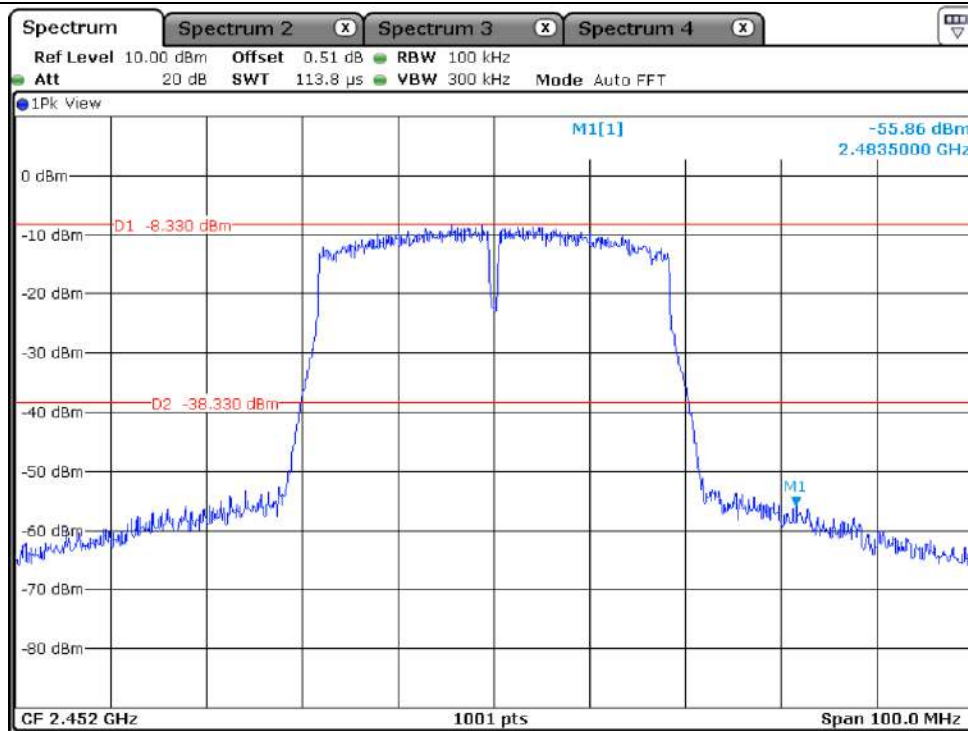
Middle Channel

This Report is not correlated with the authentication of KOLAS

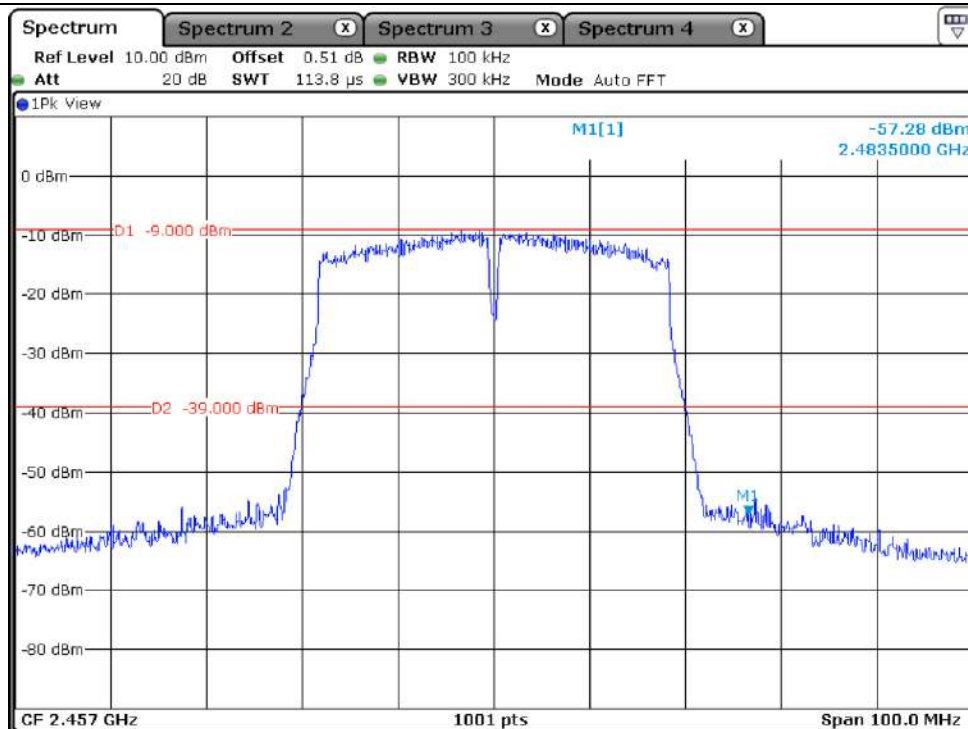
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High Channel 9



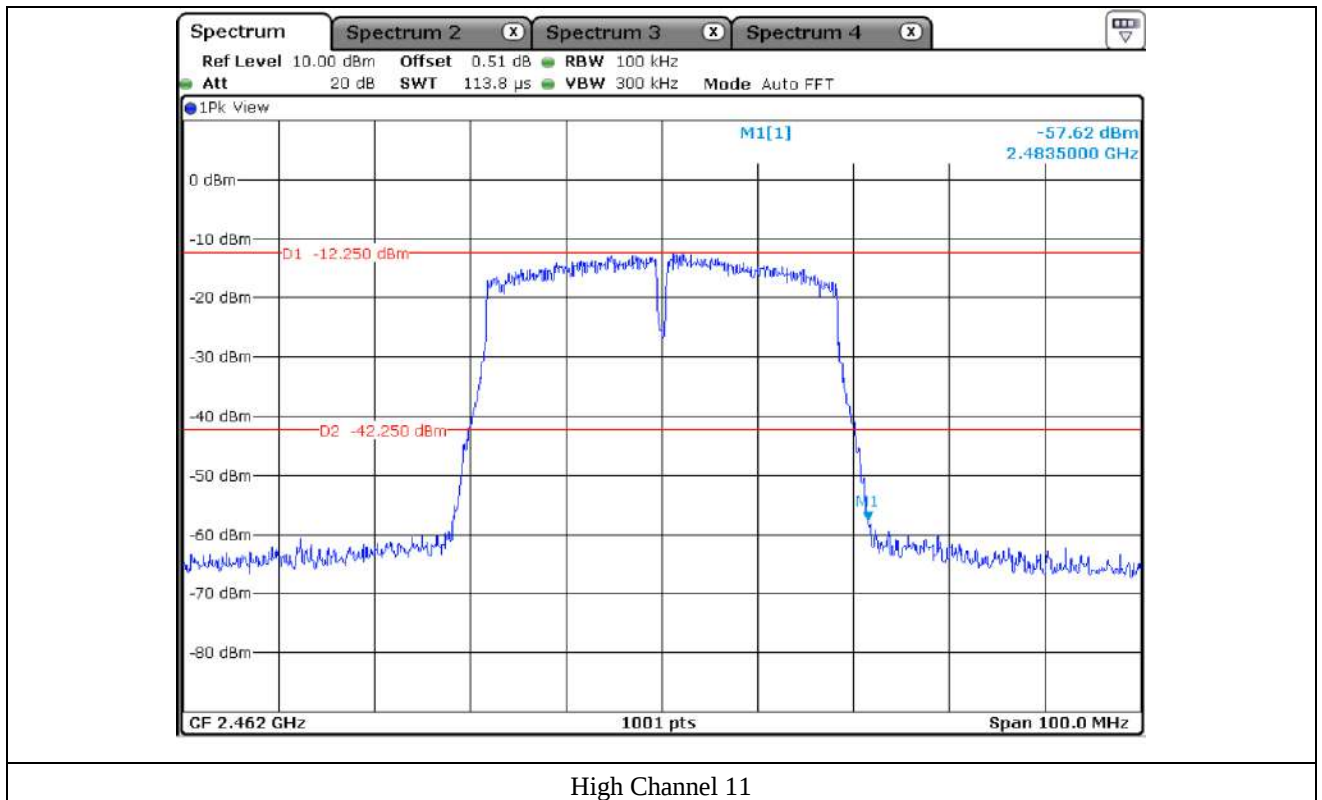
High Channel 10

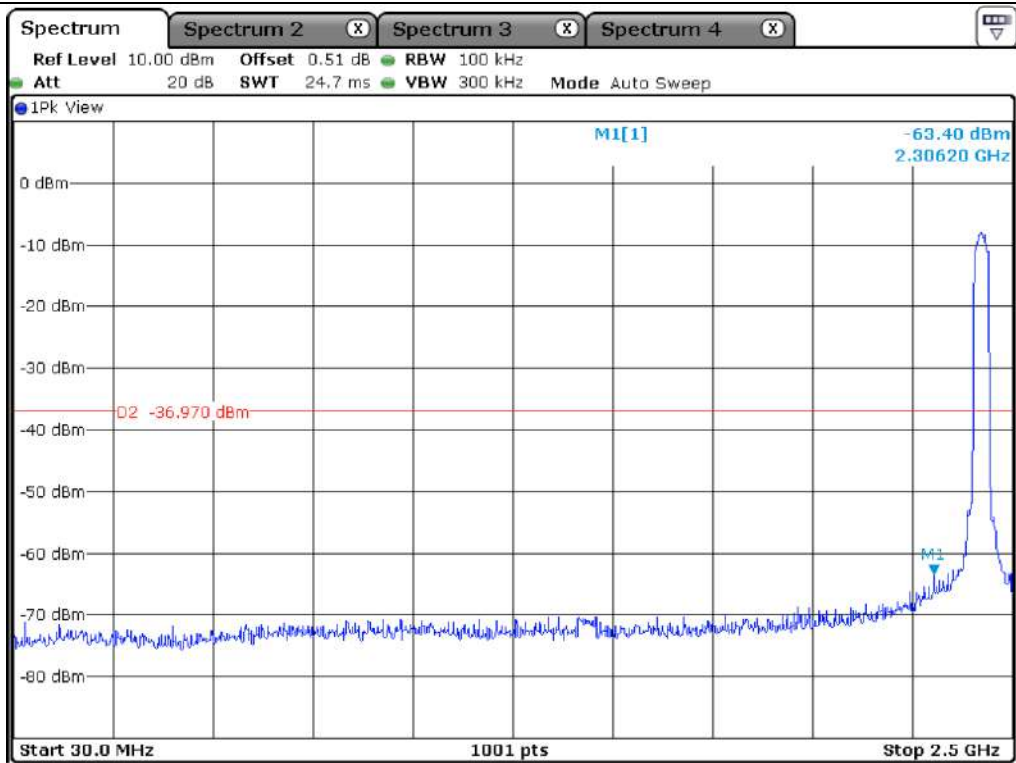
This Report is not correlated with the authentication of KOLAS

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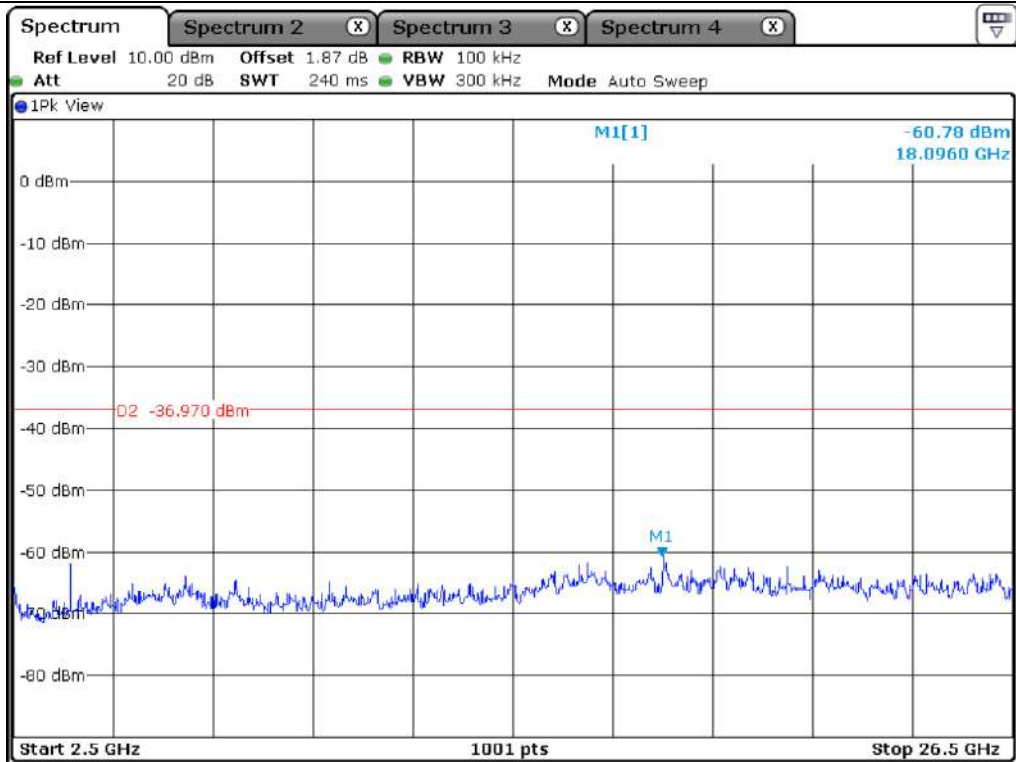
OTC-TRF-RF-001(0)

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)





Low Channel



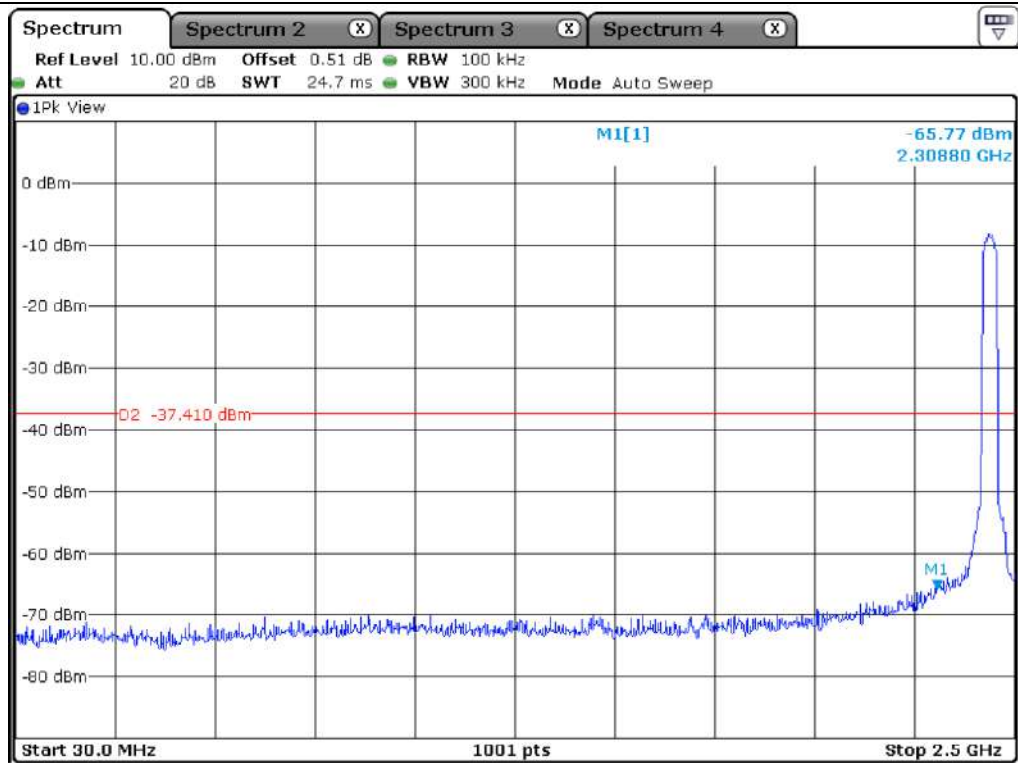
Low Channel

This Report is not correlated with the authentication of KOLAS

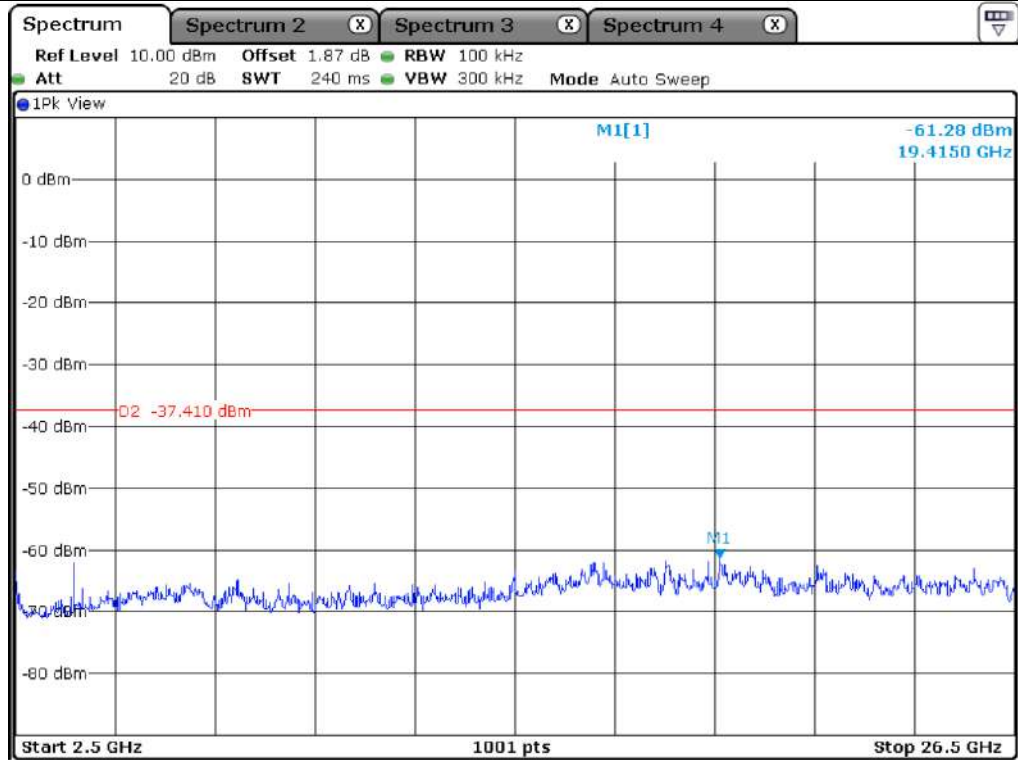
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Middle Channel



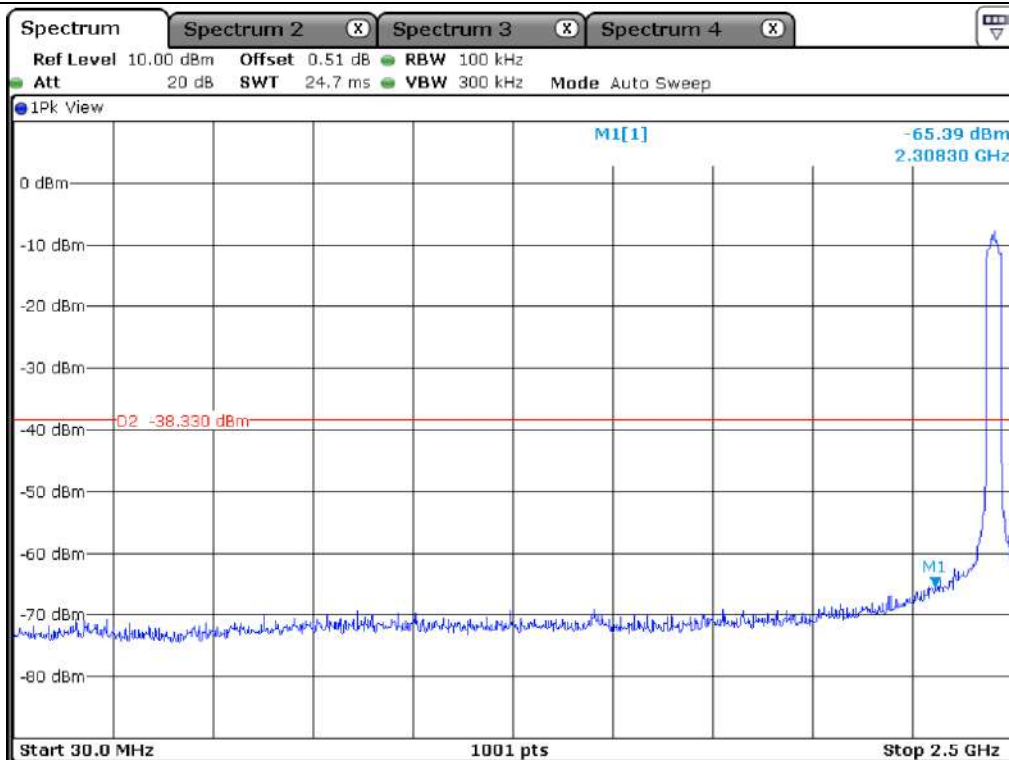
Middle Channel

This Report is not correlated with the authentication of KOLAS

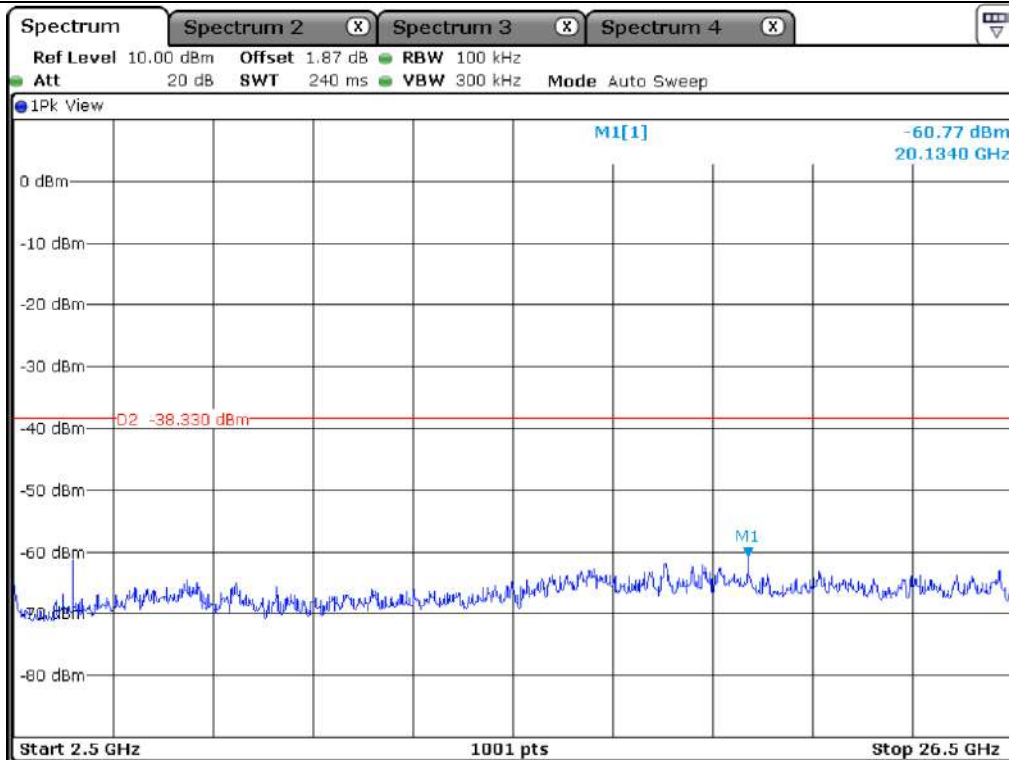
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High Channel 9



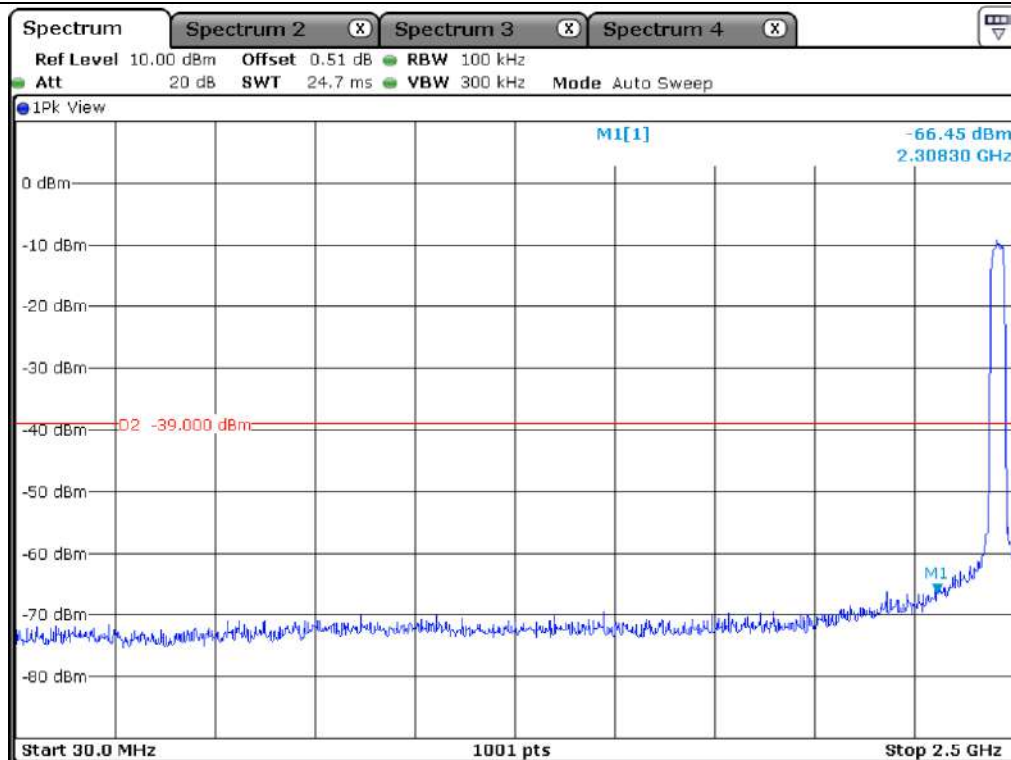
High Channel 9

This Report is not correlated with the authentication of KOLAS

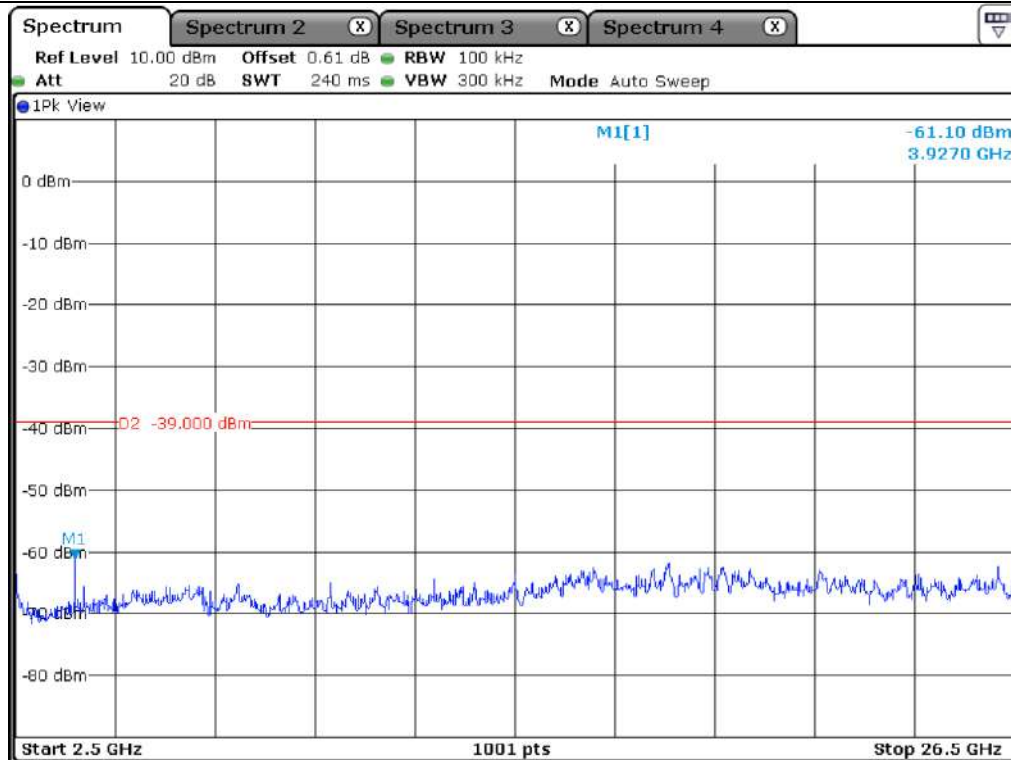
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High Channel 10



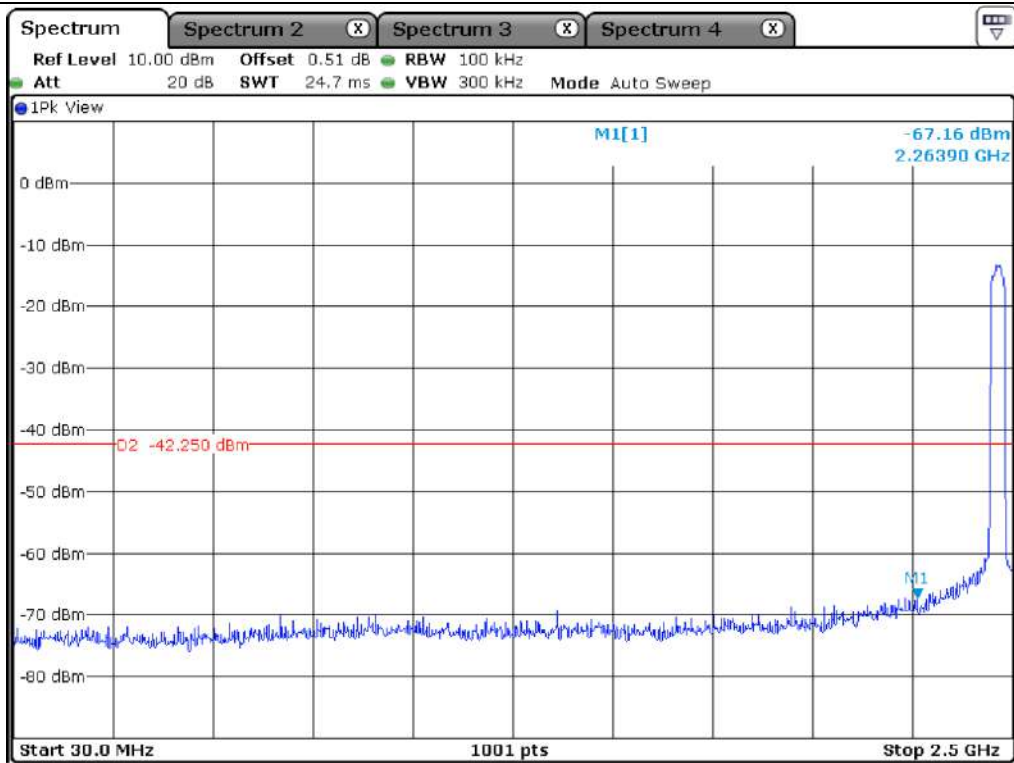
High Channel 10

This Report is not correlated with the authentication of KOLAS

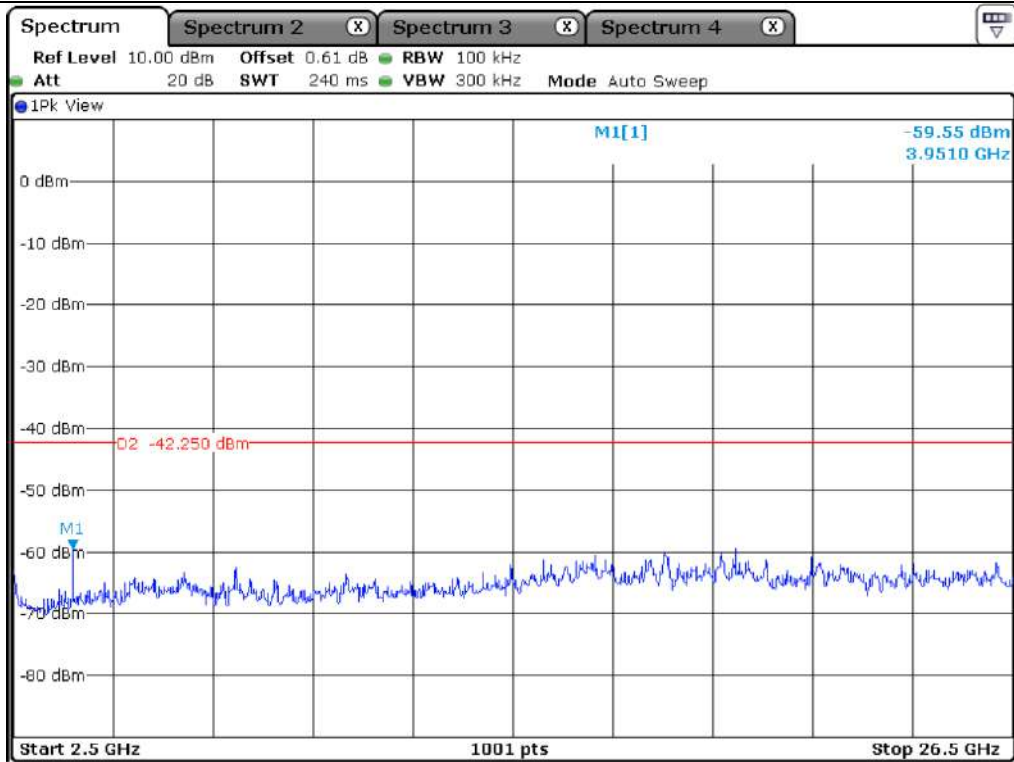
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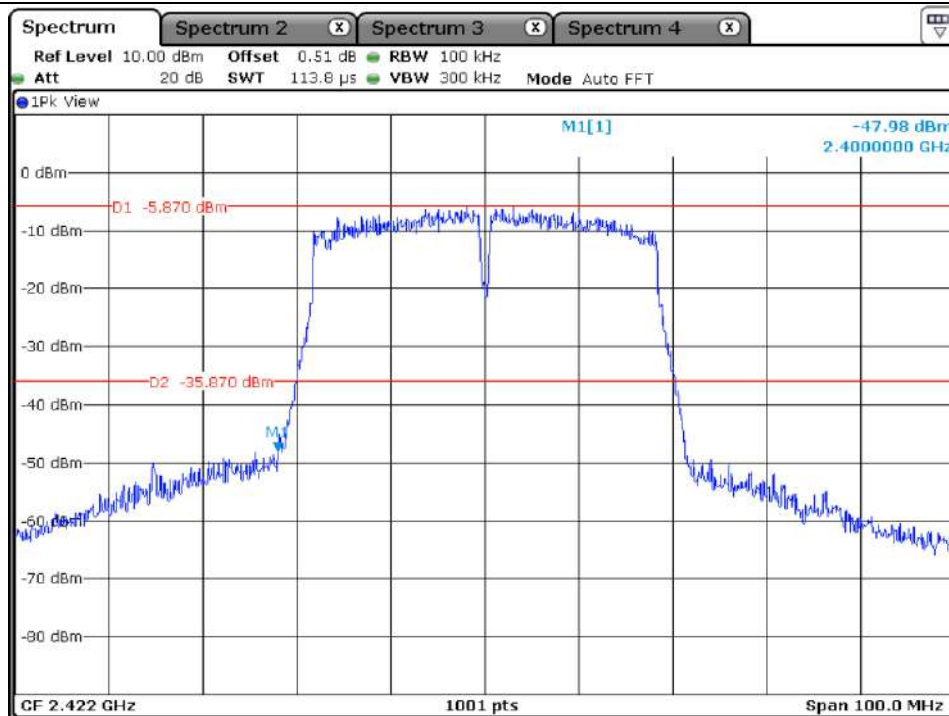


High Channel 11

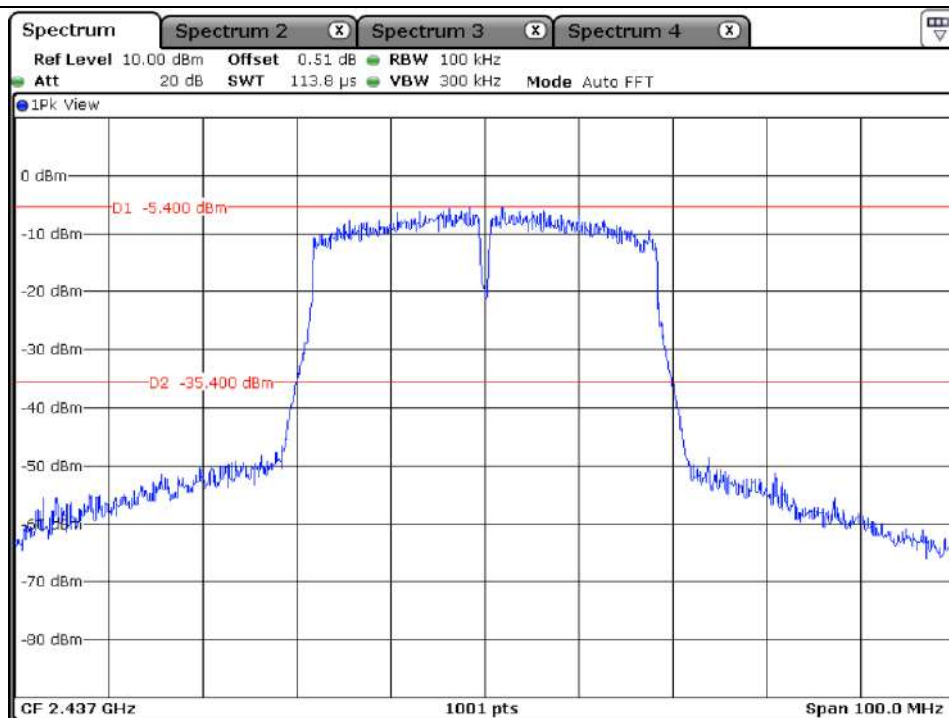


High Channel 11

9.5.4.2 Test data for Antenna 1



Low Channel



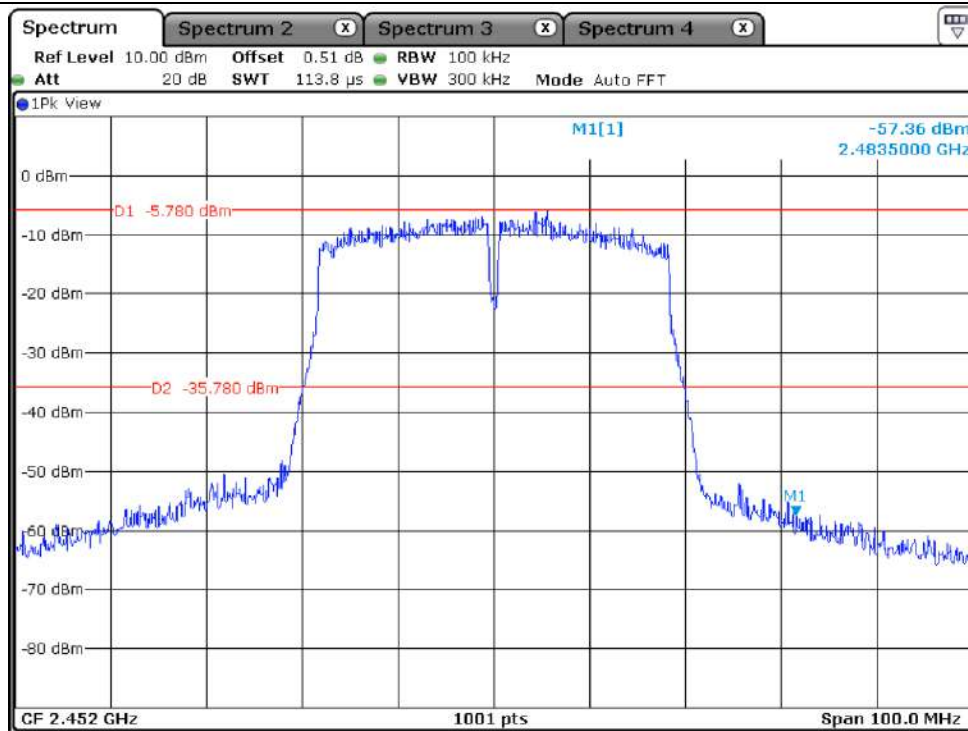
Middle Channel

This Report is not correlated with the authentication of KOLAS

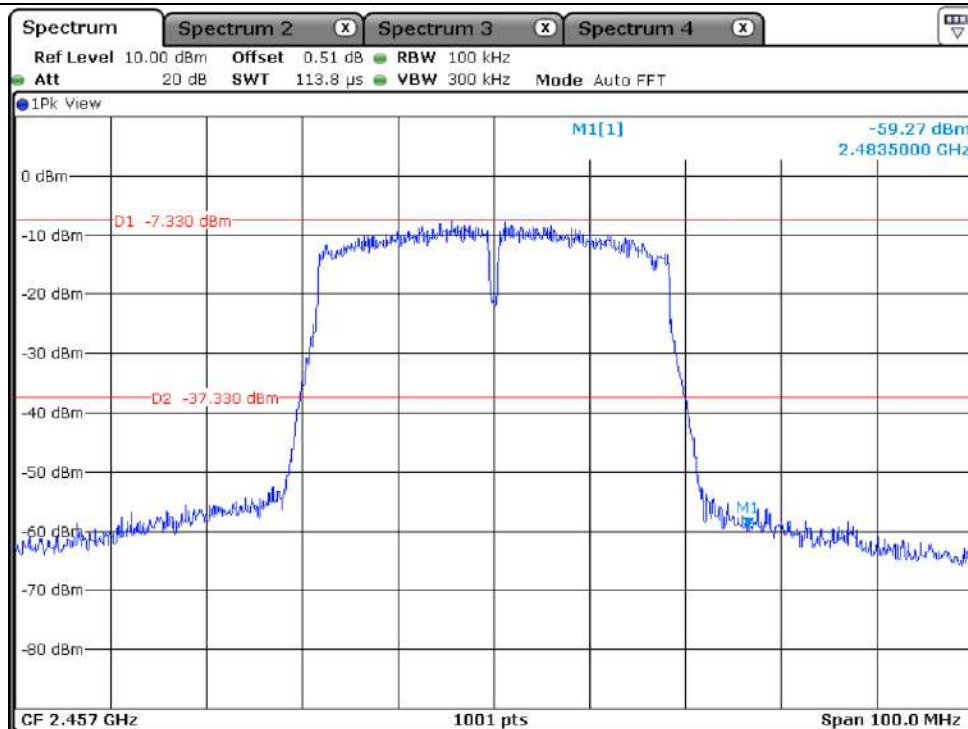
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OTC-TRF-RF-001(0)

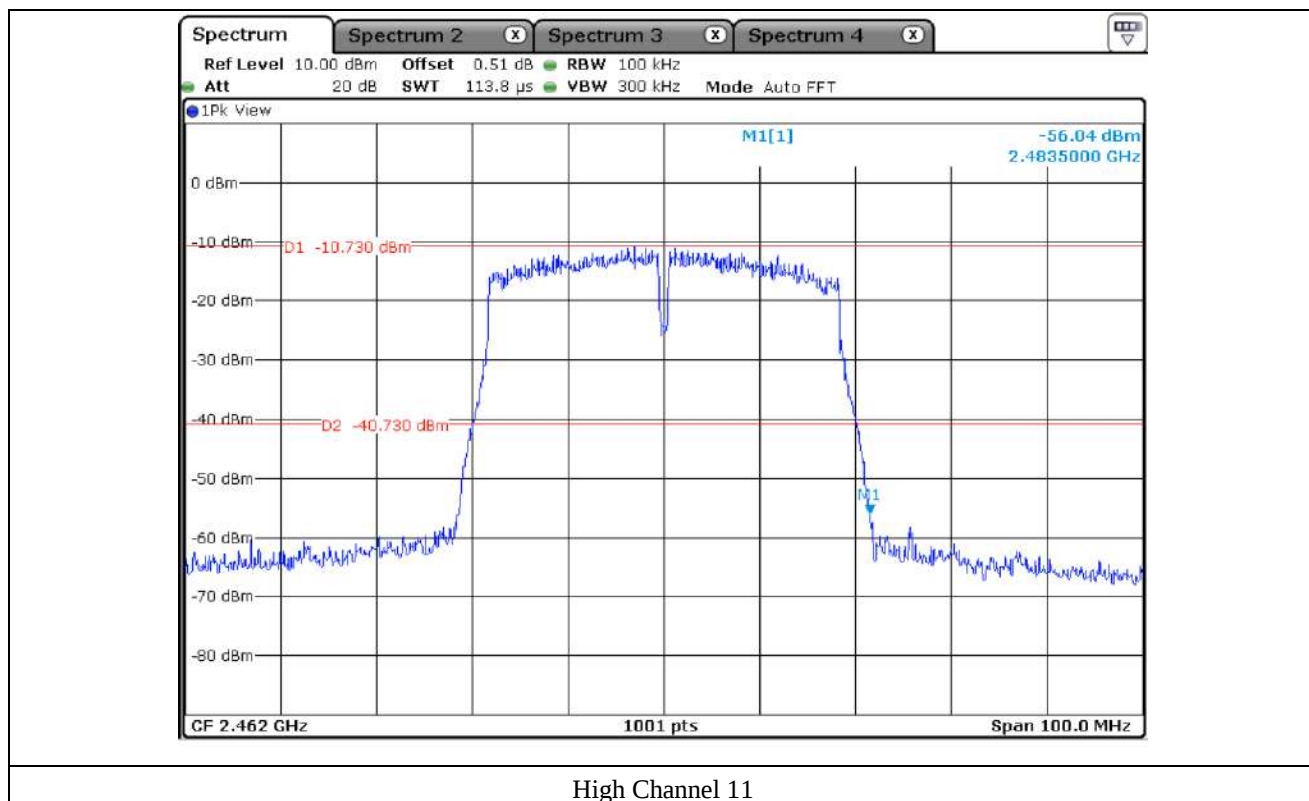
ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

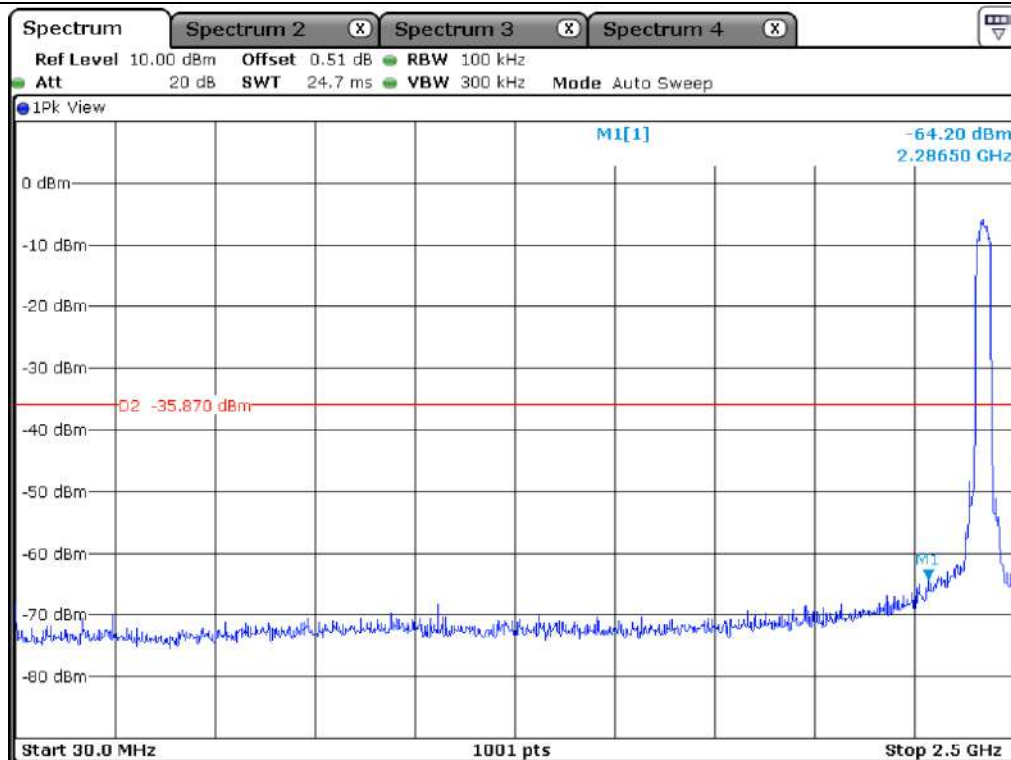


High Channel 9

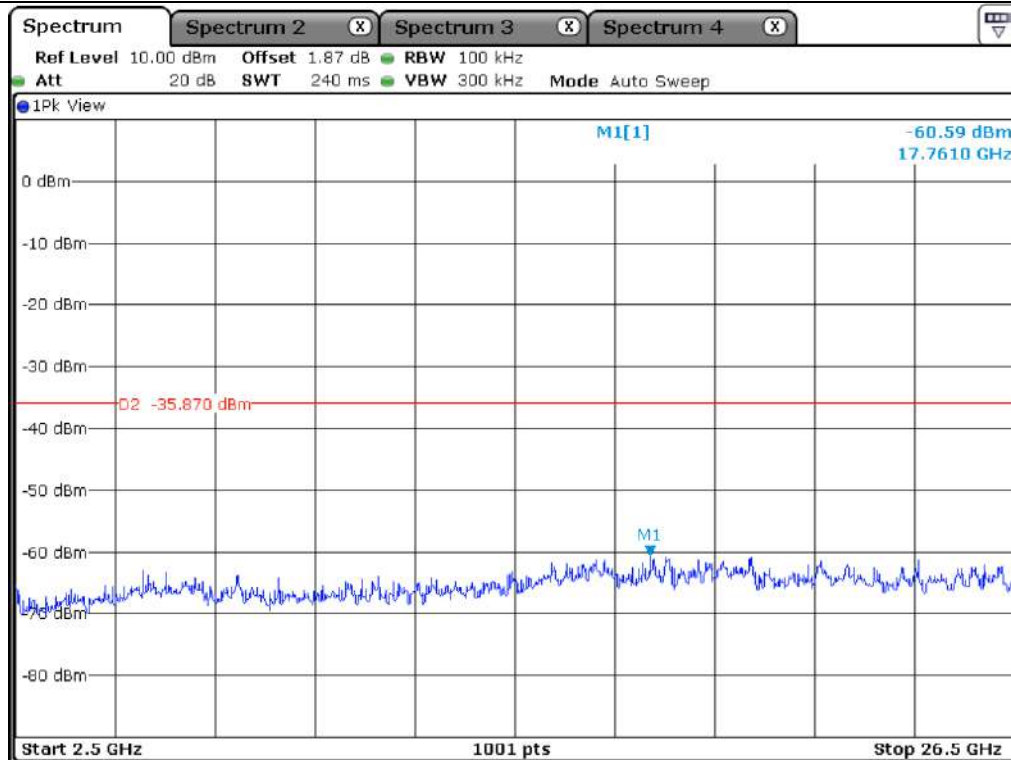


High Channel 10





Low Channel



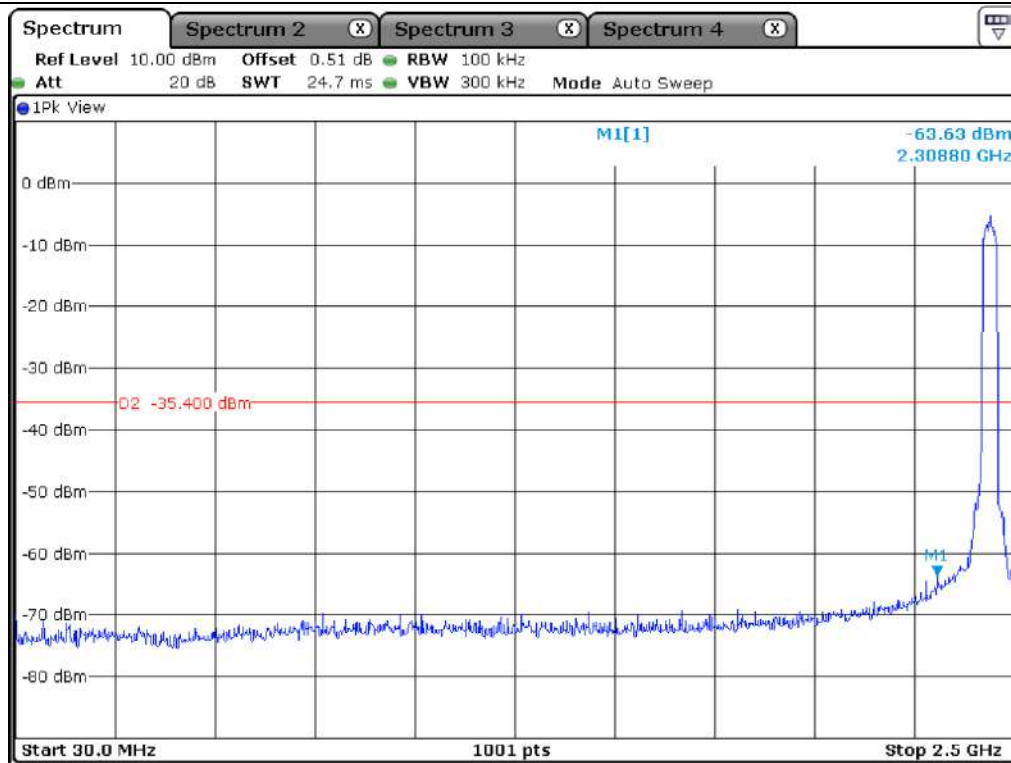
Low Channel

This Report is not correlated with the authentication of KOLAS

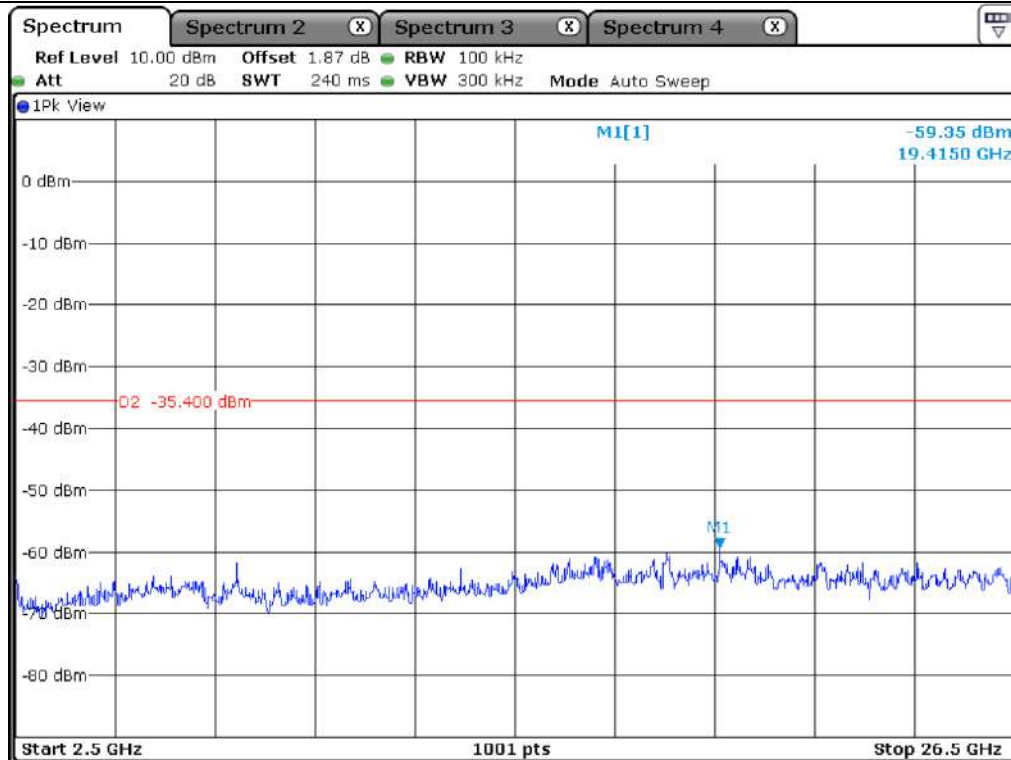
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Middle Channel



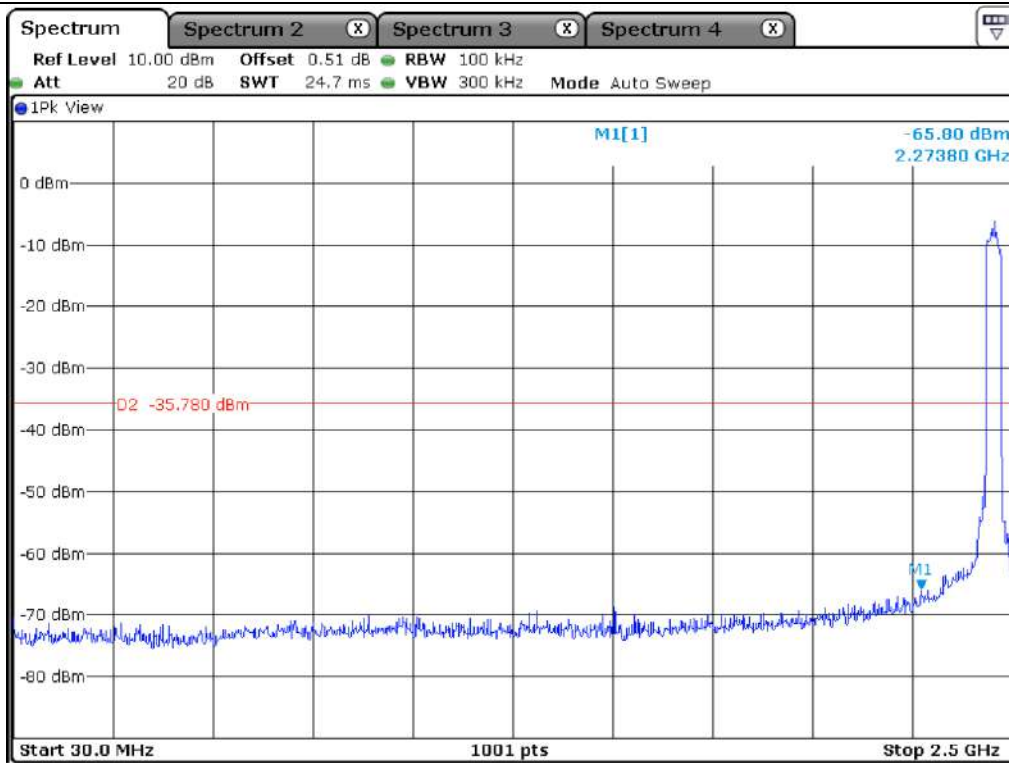
Middle Channel

This Report is not correlated with the authentication of KOLAS

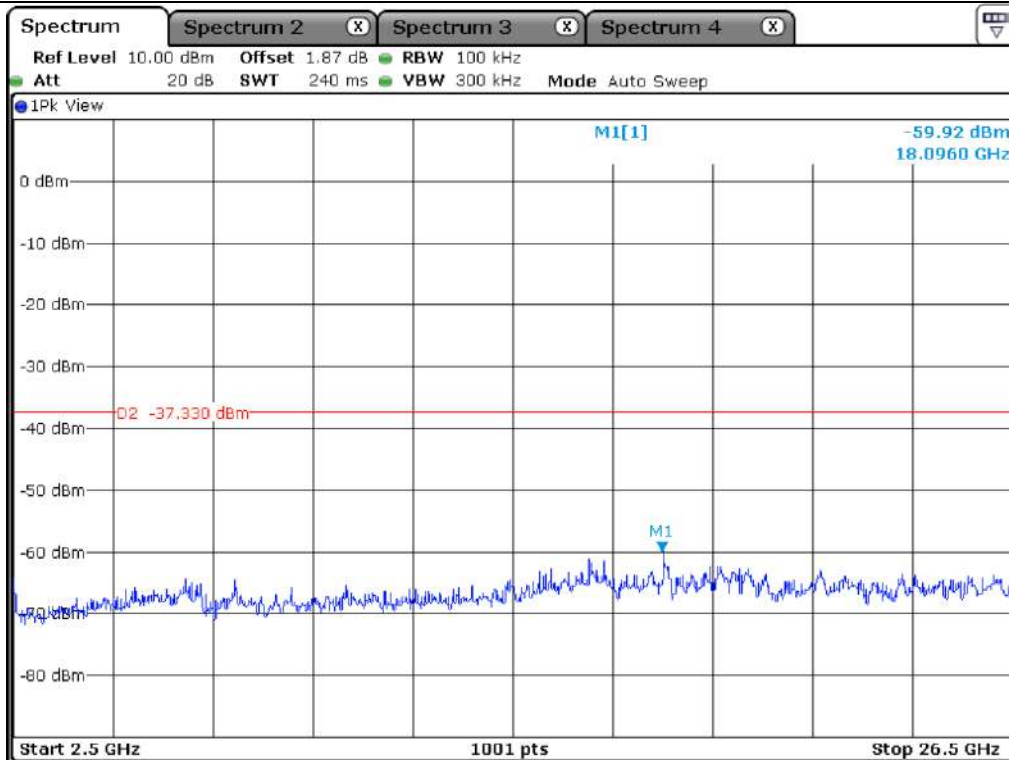
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High Channel 9



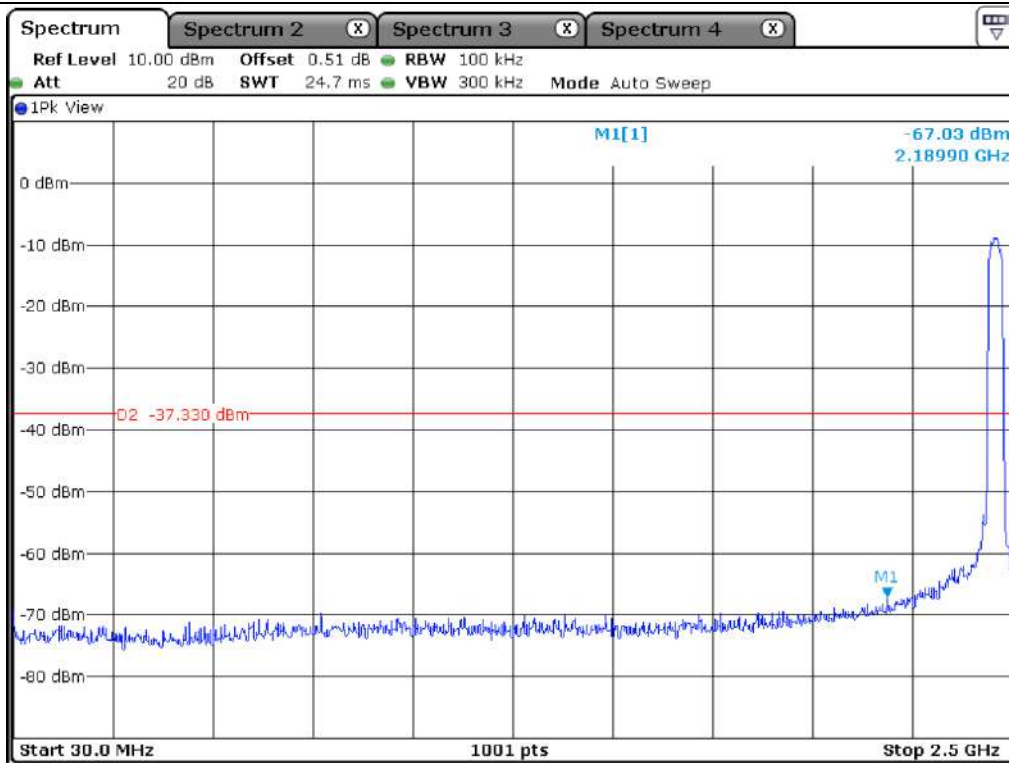
High Channel 9

This Report is not correlated with the authentication of KOLAS

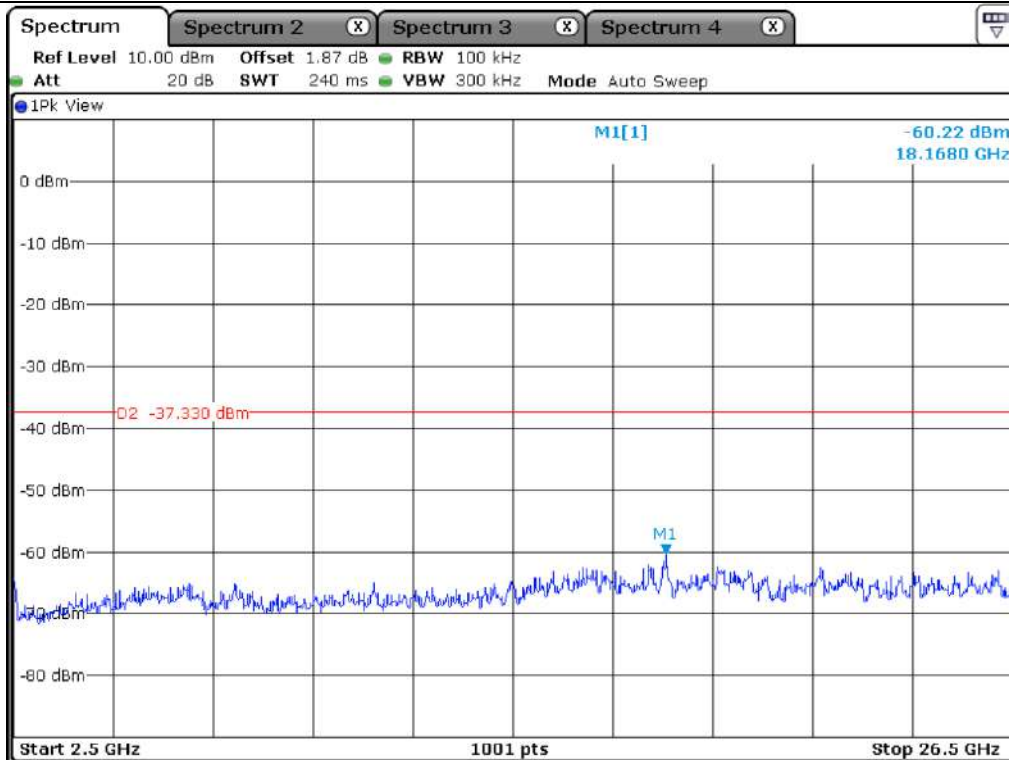
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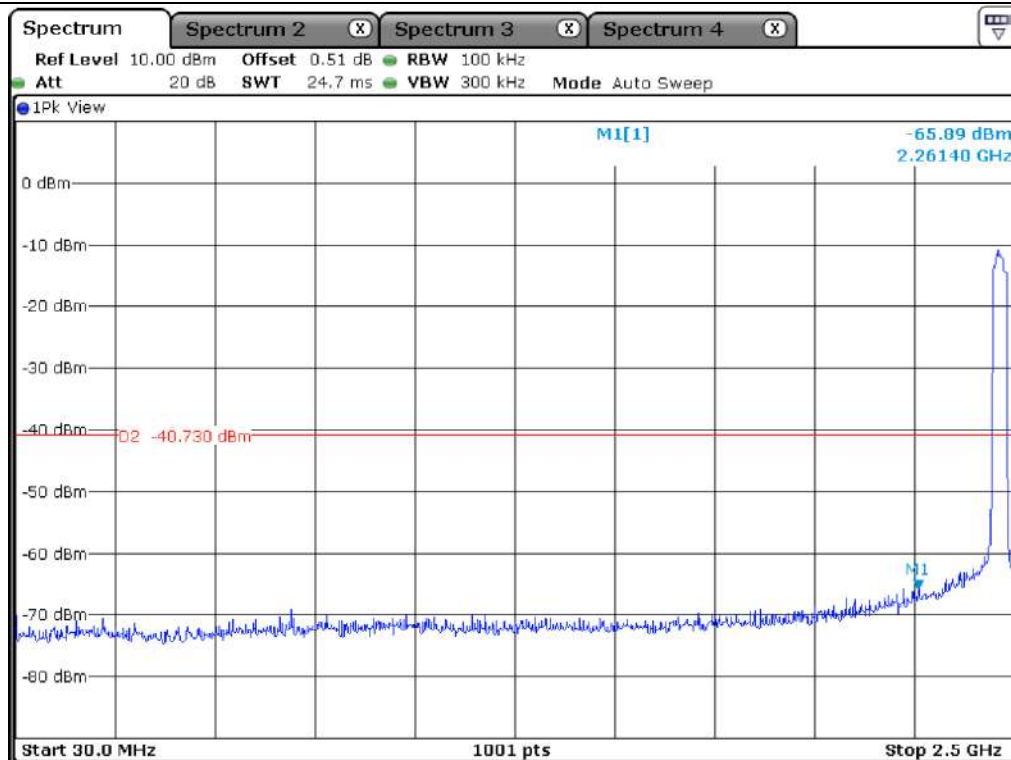
ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)



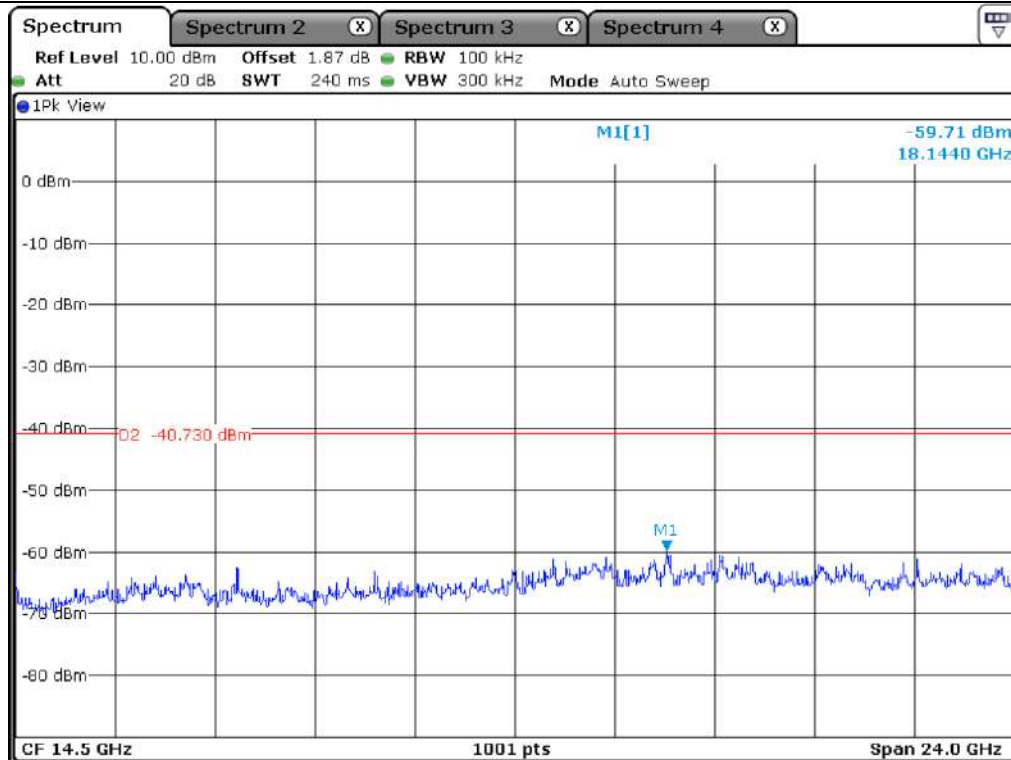
High Channel 10



High Channel 10



High Channel 11



High Channel 11

9.6 Test data for radiated emission

9.6.1 Radiated Emission which fall in the Restricted Band

9.6.1.1 Test data for 802.11b WLAN Mode

9.6.1.1.1 Test data for Antenna 0

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode
- Video bandwidth : 3 MHz for Peak and Average Mode
- Measurement distance : 3 m
- Duty Cycle : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	ATT Factor	AMP Factor	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
2 388.857	49.39	Peak	H	27.60	7.23	9.96	41.90	52.28	74.00	21.72
2 385.410	41.92	Average	H	27.60	7.23	9.96	41.90	44.81	54.00	9.19
2 387.960		Peak	V	27.60	7.23	9.96	41.90	2.89	74.00	71.11
2 386.130	41.52	Average	V	27.60	7.23	9.96	41.90	44.41	54.00	9.59
Test Data for High 11 Channel										
2 487.136	50.65	Peak	H	27.60	7.35	9.96	41.70	53.86	74.00	20.14
2 483.500	41.80	Average	H	27.60	7.35	9.96	41.70	45.01	54.00	8.99
2 495.276	50.28	Peak	V	27.60	7.35	9.96	41.70	53.49	74.00	20.51
2 483.500	41.17	Average	V	27.60	7.35	9.96	41.70	44.38	54.00	9.62
Test Data for High 12 Channel										
2 483.500	53.05	Peak	H	27.60	7.35	9.96	41.70	56.26	74.00	17.74
2 483.500	45.38	Average	H	27.60	7.35	9.96	41.70	48.59	54.00	5.41
2 483.724	52.76	Peak	V	27.60	7.35	9.96	41.70	55.97	74.00	18.03
2 483.500	46.05	Average	V	27.60	7.35	9.96	41.70	49.26	54.00	4.74
Test Data for High 13 Channel										
2 483.500	54.74	Peak	H	27.60	7.35	9.96	41.70	57.95	74.00	16.05
2 483.808	48.78	Average	H	27.60	7.35	9.96	41.70	51.99	54.00	2.01
2 484.059	53.86	Peak	V	27.60	7.35	9.96	41.70	57.07	74.00	16.93
2 483.836	48.45	Average	V	27.60	7.35	9.96	41.70	51.66	54.00	2.34

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

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Total Level = Reading + Antenna Factor + Cable Loss+ATT Factor– AMP Factor

9.6.1.1.2 Test data for Antenna 1

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode
- Video bandwidth : 3 MHz for Peak and Average Mode
- Measurement distance : 3 m
- Duty Cycle : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	ATT Factor	AMP Factor	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
2 385.310	50.28	Peak	H	27.60	7.23	9.96	41.90	53.17	74.00	20.83
2 387.040	41.79	Average	H	27.60	7.23	9.96	41.90	44.68	54.00	9.32
2 382.560	50.11	Peak	V	27.60	7.23	9.96	41.90	53.00	74.00	21.00
2 385.410	41.76	Average	V	27.60	7.23	9.96	41.90	44.65	54.00	9.35
Test Data for High 11 Channel										
2 483.668	49.38	Peak	H	27.60	7.35	9.96	41.70	52.59	74.00	21.41
2 483.500	42.01	Average	H	27.60	7.35	9.96	41.70	45.22	54.00	8.78
2 498.297	51.31	Peak	V	27.60	7.35	9.96	41.70	54.52	74.00	19.48
2 483.500	41.58	Average	V	27.60	7.35	9.96	41.70	44.79	54.00	9.21
Test Data for High 12 Channel										
2 486.465	52.89	Peak	H	27.60	7.35	9.96	41.70	56.10	74.00	17.90
2 483.500	47.05	Average	H	27.60	7.35	9.96	41.70	50.26	54.00	3.74
2 483.500	52.90	Peak	V	27.60	7.35	9.96	41.70	56.11	74.00	17.89
2 483.500	47.21	Average	V	27.60	7.35	9.96	41.70	50.42	54.00	3.58
Test Data for High 13 Channel										
2486.549	53.77	Peak	H	27.60	7.35	9.96	41.70	56.98	74.00	17.02
2485.906	47.90	Average	H	27.60	7.35	9.96	41.70	51.11	54.00	2.89
2486.633	53.79	Peak	V	27.60	7.35	9.96	41.70	57.00	74.00	17.00
2485.822	48.14	Average	V	27.60	7.35	9.96	41.70	51.35	54.00	2.65

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss+ATT Factor– AMP Factor

9.6.1.2 Test data for 802.11g WLAN Mode

9.6.1.2.1 Test data for Multiple Transmit

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode
- Video bandwidth : 3 MHz for Peak and Average Mode
- Measurement distance : 3 m
- Duty Cycle : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	ATT Factor	AMP Factor	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
2 389.690	58.41	Peak	H	27.60	7.23	9.96	41.90	61.30	74.00	12.70
2 390.000	47.32	Average	H	27.60	7.23	9.96	41.90	50.21	54.00	3.79
2 388.680	59.07	Peak	V	27.60	7.23	9.96	41.90	61.96	74.00	12.04
2 390.000	47.18	Average	V	27.60	7.23	9.96	41.90	50.07	54.00	3.93
Test Data for High 11 Channel										
2 483.500	58.38	Peak	H	27.60	7.35	9.96	41.70	61.59	74.00	12.41
2 483.500	46.65	Average	H	27.60	7.35	9.96	41.70	49.86	54.00	4.14
2 483.696	59.95	Peak	V	27.60	7.35	9.96	41.70	63.16	74.00	10.84
2 483.500	46.25	Average	V	27.60	7.35	9.96	41.70	49.46	54.00	4.54
Test Data for High 12 Channel										
2 483.808	61.61	Peak	H	27.60	7.35	9.96	41.70	64.82	74.00	9.18
2 483.500	48.61	Average	H	27.60	7.35	9.96	41.70	51.82	54.00	2.18
2 483.500	61.42	Peak	V	27.60	7.35	9.96	41.70	64.63	74.00	9.37
2 483.500	47.84	Average	V	27.60	7.35	9.96	41.70	51.05	54.00	2.95
Test Data for High 13 Channel										
2 483.808	59.93	Peak	H	27.60	7.35	9.96	41.70	63.14	74.00	10.86
2 483.500	48.26	Average	H	27.60	7.35	9.96	41.70	51.47	54.00	2.53
2 484.059	60.60	Peak	V	27.60	7.35	9.96	41.70	63.81	74.00	10.19
2 483.500	47.47	Average	V	27.60	7.35	9.96	41.70	50.68	54.00	3.32

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss+ATT Factor– AMP Factor

9.6.1.3 Test data for 802.11n_HT20 WLAN Mode

9.6.1.3.1 Test data for Multiple Transmit

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode
- Video bandwidth : 3 MHz for Peak and Average Mode
- Measurement distance : 3 m
- Duty Cycle : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	ATT Factor	AMP Factor	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
2 389.390	59.68	Peak	H	27.60	7.23	9.96	41.90	62.57	74.00	11.43
2 390.000	43.90	Average	H	27.60	7.23	9.96	41.90	46.79	54.00	7.21
2 389.490	54.83	Peak	V	27.60	7.23	9.96	41.90	57.72	74.00	16.28
2 390.000	42.74	Average	V	27.60	7.23	9.96	41.90	45.63	54.00	8.37
Test Data for High 11 Channel										
2 483.780	60.73	Peak	H	27.60	7.35	9.96	41.70	63.94	74.00	10.06
2 483.500	48.25	Average	H	27.60	7.35	9.96	41.70	51.46	54.00	2.54
2 483.500	58.61	Peak	V	27.60	7.35	9.96	41.70	61.82	74.00	12.18
2 483.500	47.82	Average	V	27.60	7.35	9.96	41.70	51.03	54.00	2.97
Test Data for High 12 Channel										
2 483.500	58.36	Peak	H	27.60	7.35	9.96	41.70	61.57	74.00	12.43
2 483.500	47.62	Average	H	27.60	7.35	9.96	41.70	50.83	54.00	3.17
2 483.780	59.58	Peak	V	27.60	7.35	9.96	41.70	62.79	74.00	11.21
2 484.815	46.75	Average	V	27.60	7.35	9.96	41.70	49.96	54.00	4.04
Test Data for High 13 Channel										
2 483.864	61.72	Peak	H	27.60	7.35	9.96	41.70	64.93	74.00	9.07
2 483.500	47.37	Average	H	27.60	7.35	9.96	41.70	50.58	54.00	3.42
2 483.500	60.18	Peak	V	27.60	7.35	9.96	41.70	63.39	74.00	10.61
2 483.500	46.94	Average	V	27.60	7.35	9.96	41.70	50.15	54.00	3.85

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss+ATT Factor– AMP Factor

9.6.1.4 Test data for 802.11n_HT40 WLAN Mode

9.6.1.4.1 Test data for Multiple Transmit

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode
- Video bandwidth : 3 MHz for Peak and Average Mode
- Measurement distance : 3 m
- Duty Cycle : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	ATT Factor	AMP Factor	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
2 385.310	57.08	Peak	H	27.60	7.23	9.96	41.90	59.97	74.00	14.03
2 390.000	47.78	Average	H	27.60	7.23	9.96	41.90	50.67	54.00	3.33
2 384.910	55.65	Peak	V	27.60	7.23	9.96	41.90	58.54	74.00	15.46
2 390.000	46.35	Average	V	27.60	7.23	9.96	41.90	49.24	54.00	4.76
Test Data for High 11 Channel										
2 485.122	59.13	Peak	H	27.60	7.35	9.96	41.70	62.34	74.00	11.66
2 483.500	47.37	Average	H	27.60	7.35	9.96	41.70	50.58	54.00	3.42
2 484.983	58.06	Peak	V	27.60	7.35	9.96	41.70	61.27	74.00	12.73
2 483.500	47.05	Average	V	27.60	7.35	9.96	41.70	50.26	54.00	3.74
Test Data for High 12 Channel										
2 483.640	59.56	Peak	H	27.60	7.35	9.96	41.70	62.77	74.00	11.23
2 484.199	47.44	Average	H	27.60	7.35	9.96	41.70	50.65	54.00	3.35
2 485.290	58.63	Peak	V	27.60	7.35	9.96	41.70	61.84	74.00	12.16
2 483.500	46.64	Average	V	27.60	7.35	9.96	41.70	49.85	54.00	4.15
Test Data for High 13 Channel										
2 483.500	60.02	Peak	H	27.60	7.35	9.96	41.70	63.23	74.00	10.77
2 483.500	48.23	Average	H	27.60	7.35	9.96	41.70	51.44	54.00	2.56
2 483.500	58.42	Peak	V	27.60	7.35	9.96	41.70	61.63	74.00	12.37
2 483.500	47.48	Average	V	27.60	7.35	9.96	41.70	50.69	54.00	3.31

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss+ATT Factor– AMP Factor

9.6.2 Spurious & Harmonic Radiated Emission

9.6.2.1 Test data for 802.11b WLAN Mode

9.6.2.1.1 Test data for Antenna 0

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band
- Video bandwidth : 3 MHz for Peak and Average Mode
- Frequency range : 1 GHz ~ 26.5 GHz
- Measurement distance : 3 m
- Duty Cycle : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel									
4 824.00	44.50	Peak	H	31.20	9.45	41.30	43.85	74.00	30.15
4 824.00	36.94	Average	H	31.20	9.45	41.30	36.29	54.00	17.71
4 824.00	44.61	Peak	V	31.20	9.45	41.30	43.96	74.00	30.04
4 824.00	36.85	Average	V	31.20	9.45	41.30	36.20	54.00	17.80
Test Data for Middle Channel									
4 874.00	44.57	Peak	H	31.20	9.56	41.30	44.03	74.00	29.97
4 874.00	36.81	Average	H	31.20	9.56	41.30	36.27	54.00	17.73
4 874.00	44.41	Peak	V	31.20	9.56	41.30	43.87	74.00	30.13
4 874.00	36.78	Average	V	31.20	9.56	41.30	36.24	54.00	17.76

Test Data for High 11 Channel									
4 924.00	44.59	Peak	H	31.20	9.61	41.50	43.90	74.00	30.10
4 924.00	36.93	Average	H	31.20	9.61	41.50	36.24	54.00	17.76
4 924.00	44.43	Peak	V	31.20	9.61	41.50	43.74	74.00	30.26
4 924.00	36.85	Average	V	31.20	9.61	41.50	36.16	54.00	17.84
Test Data for High 12 Channel									
4 934.00	45.11	Peak	H	31.30	9.59	41.50	44.50	74.00	29.50
4 934.00	36.87	Average	H	31.30	9.59	41.50	36.26	54.00	17.74
4 934.00	44.68	Peak	V	31.30	9.59	41.50	44.07	74.00	29.93
4 934.00	36.67	Average	V	31.30	9.59	41.50	36.06	54.00	17.94
Test Data for High 13 Channel									
4 944.00	45.21	Peak	H	31.30	9.63	41.50	44.64	74.00	29.36
4 944.00	36.85	Average	H	31.30	9.63	41.50	36.28	54.00	17.72
4 944.00	44.78	Peak	V	31.30	9.63	41.50	44.21	74.00	29.79
4 944.00	36.61	Average	V	31.30	9.63	41.50	36.04	54.00	17.96

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor – AMP Factor + Cable Loss

9.6.2.1.2 Test data for Antenna 1

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band
- Video bandwidth : 3 MHz for Peak and Average Mode
- Frequency range : 1 GHz ~ 26.5 GHz
- Measurement distance : 3 m
- Duty Cycle : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel									
4 824.00	45.14	Peak	H	31.20	9.45	41.30	44.49	74.00	29.51
4 824.00	38.84	Average	H	31.20	9.45	41.30	38.19	54.00	15.81
4 824.00	44.98	Peak	V	31.20	9.45	41.30	44.33	74.00	29.67
4 824.00	38.91	Average	V	31.20	9.45	41.30	38.26	54.00	15.74
Test Data for Middle Channel									
4 874.00	45.16	Peak	H	31.20	9.56	41.30	44.62	74.00	29.38
4 874.00	38.68	Average	H	31.20	9.56	41.30	38.14	54.00	15.86
4 874.00	45.04	Peak	V	31.20	9.56	41.30	44.50	74.00	29.50
4 874.00	38.66	Average	V	31.20	9.56	41.30	38.12	54.00	15.88

Test Data for High 11 Channel									
4 924.00	45.05	Peak	H	31.20	9.61	41.50	44.36	74.00	29.64
4 924.00	38.51	Average	H	31.20	9.61	41.50	37.82	54.00	16.18
4 924.00	44.99	Peak	V	31.20	9.61	41.50	44.30	74.00	29.70
4 924.00	38.35	Average	V	31.20	9.61	41.50	37.66	54.00	16.34
Test Data for High 12 Channel									
4 934.00	45.13	Peak	H	31.30	9.59	41.50	44.52	74.00	29.48
4 934.00	38.66	Average	H	31.30	9.59	41.50	38.05	54.00	15.95
4 934.00	45.07	Peak	V	31.30	9.59	41.50	44.46	74.00	29.54
4 934.00	38.63	Average	V	31.30	9.59	41.50	38.02	54.00	15.98
Test Data for High 13 Channel									
4 944.00	45.06	Peak	H	31.30	9.63	41.50	44.49	74.00	29.51
4 944.00	38.31	Average	H	31.30	9.63	41.50	37.74	54.00	16.26
4 944.00	45.08	Peak	V	31.30	9.63	41.50	44.51	74.00	29.49
4 944.00	38.21	Average	V	31.30	9.63	41.50	37.64	54.00	16.36

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor – AMP Factor + Cable Loss

9.6.2.2 Test data for 802.11g WLAN Mode

9.6.2.2.1 Test data for Multiple Transmit

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band
- Video bandwidth : 3 MHz for Peak and Average Mode
- Frequency range : 1 GHz ~ 26.5 GHz
- Measurement distance : 3 m
- Duty Cycle : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel									
4 824.00	45.09	Peak	H	31.20	9.45	41.30	44.44	74.00	29.56
4 824.00	35.88	Average	H	31.20	9.45	41.30	35.23	54.00	18.77
4 824.00	45.06	Peak	V	31.20	9.45	41.30	44.41	74.00	29.59
4 824.00	35.71	Average	V	31.20	9.45	41.30	35.06	54.00	18.94
Test Data for Middle Channel									
4 874.00	45.15	Peak	H	31.20	9.56	41.30	44.61	74.00	29.39
4 874.00	38.65	Average	H	31.20	9.56	41.30	38.11	54.00	15.89
4 874.00	45.07	Peak	V	31.20	9.56	41.30	44.53	74.00	29.47
4 874.00	38.71	Average	V	31.20	9.56	41.30	38.17	54.00	15.83

Test Data for High 11 Channel									
4 924.00	45.11	Peak	H	31.20	9.61	41.50	44.42	74.00	29.58
4 924.00	38.62	Average	H	31.20	9.61	41.50	37.93	54.00	16.07
4 924.00	45.21	Peak	V	31.20	9.61	41.50	44.52	74.00	29.48
4 924.00	38.51	Average	V	31.20	9.61	41.50	37.82	54.00	16.18
Test Data for High 12 Channel									
4 934.00	45.08	Peak	H	31.30	9.59	41.50	44.47	74.00	29.53
4 934.00	38.64	Average	H	31.30	9.59	41.50	38.03	54.00	15.97
4 934.00	45.03	Peak	V	31.30	9.59	41.50	44.42	74.00	29.58
4 934.00	38.51	Average	V	31.30	9.59	41.50	37.90	54.00	16.10
Test Data for High 13 Channel									
4 944.00	45.07	Peak	H	31.30	9.63	41.50	44.50	74.00	29.50
4 944.00	38.68	Average	H	31.30	9.63	41.50	38.11	54.00	15.89
4 944.00	45.19	Peak	V	31.30	9.63	41.50	44.62	74.00	29.38
4 944.00	38.71	Average	V	31.30	9.63	41.50	38.14	54.00	15.86

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor – AMP Factor + Cable Loss

9.6.2.3 Test data for 802.11n_HT20 WLAN Mode

9.6.2.3.1 Test data for Multiple Transmit

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band
- Video bandwidth : 3 MHz for Peak and Average Mode
- Frequency range : 1 GHz ~ 26.5 GHz
- Measurement distance : 3 m
- Duty Cycle : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel									
4 824.00	45.11	Peak	H	31.20	9.45	41.30	44.46	74.00	29.54
4 824.00	37.51	Average	H	31.20	9.45	41.30	36.86	54.00	17.14
4 824.00	45.21	Peak	V	31.20	9.45	41.30	44.56	74.00	29.44
4 824.00	37.67	Average	V	31.20	9.45	41.30	37.02	54.00	16.98
Test Data for Middle Channel									
4 874.00	45.08	Peak	H	31.20	9.56	41.30	44.54	74.00	29.46
4 874.00	37.81	Average	H	31.20	9.56	41.30	37.27	54.00	16.73
4 874.00	45.13	Peak	V	31.20	9.56	41.30	44.59	74.00	29.41
4 874.00	37.75	Average	V	31.20	9.56	41.30	37.21	54.00	16.79

Test Data for High 11 Channel									
4 924.00	45.31	Peak	H	31.20	9.61	41.50	44.62	74.00	29.38
4 924.00	37.68	Average	H	31.20	9.61	41.50	36.99	54.00	17.01
4 924.00	45.22	Peak	V	31.20	9.61	41.50	44.53	74.00	29.47
4 924.00	37.66	Average	V	31.20	9.61	41.50	36.97	54.00	17.03
Test Data for High 12 Channel									
4 934.00	45.18	Peak	H	31.30	9.59	41.50	44.57	74.00	29.43
4 934.00	37.72	Average	H	31.30	9.59	41.50	37.11	54.00	16.89
4 934.00	45.19	Peak	V	31.30	9.59	41.50	44.58	74.00	29.42
4 934.00	37.68	Average	V	31.30	9.59	41.50	37.07	54.00	16.93
Test Data for High 13 Channel									
4 944.00	45.11	Peak	H	31.30	9.63	41.50	44.54	74.00	29.46
4 944.00	37.56	Average	H	31.30	9.63	41.50	36.99	54.00	17.01
4 944.00	45.18	Peak	V	31.30	9.63	41.50	44.61	74.00	29.39
4 944.00	37.61	Average	V	31.30	9.63	41.50	37.04	54.00	16.96

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor -AMP Factor + Cable Loss

9.6.2.4 Test data for 802.11n_HT40 WLAN Mode

9.6.2.4.1 Test data for Multiple Transmit

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band
- Video bandwidth : 3 MHz for Peak and Average Mode
- Frequency range : 1 GHz ~ 26.5 GHz
- Measurement distance : 3 m
- Duty Cycle : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel									
4 844.00	45.11	Peak	H	31.20	9.45	41.30	44.46	74.00	29.54
4 844.00	37.35	Average	H	31.20	9.45	41.30	36.70	54.00	17.30
4 844.00	45.08	Peak	V	31.20	9.45	41.30	44.43	74.00	29.57
4 844.00	37.51	Average	V	31.20	9.45	41.30	36.86	54.00	17.14
Test Data for Middle Channel									
4 874.00	45.16	Peak	H	31.20	9.56	41.30	44.62	74.00	29.38
4 874.00	37.95	Average	H	31.20	9.56	41.30	37.41	54.00	16.59
4 874.00	45.08	Peak	V	31.20	9.56	41.30	44.54	74.00	29.46
4 874.00	37.66	Average	V	31.20	9.56	41.30	37.12	54.00	16.88

Test Data for High 9 Channel									
4 904.00	45.11	Peak	H	31.20	9.61	41.50	44.42	74.00	29.58
4 904.00	37.85	Average	H	31.20	9.61	41.50	37.16	54.00	16.84
4 904.00	45.03	Peak	V	31.20	9.61	41.50	44.34	74.00	29.66
4 904.00	37.72	Average	V	31.20	9.61	41.50	37.03	54.00	16.97
Test Data for High 10 Channel									
4 914.00	45.16	Peak	H	31.30	9.59	41.50	44.55	74.00	29.45
4 914.00	37.66	Average	H	31.30	9.59	41.50	37.05	54.00	16.95
4 914.00	45.13	Peak	V	31.30	9.59	41.50	44.52	74.00	29.48
4 914.00	37.51	Average	V	31.30	9.59	41.50	36.90	54.00	17.10
Test Data for High 11 Channel									
4 924.00	45.14	Peak	H	31.30	9.63	41.50	44.57	74.00	29.43
4 924.00	37.55	Average	H	31.30	9.63	41.50	36.98	54.00	17.02
4 924.00	45.09	Peak	V	31.30	9.63	41.50	44.52	74.00	29.48
4 924.00	37.48	Average	V	31.30	9.63	41.50	36.91	54.00	17.09

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor -AMP Factor + Cable Loss

10. PEAK POWER SPECTRUL DENSITY

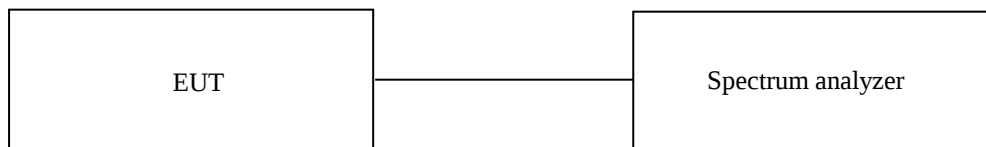
10.1 Operating environment

Temperature : 22 °C
Relative humidity : 44 % R.H.

10.2 Test set-up

The antenna output of the EUT was connected to the spectrum analyzer.

The resolution bandwidth is set to $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$, the video bandwidth is set to 3 times the resolution bandwidth.



10.3 Test Date

May 10, 2021 ~ May 26, 2021

10.4 Test data for 802.11b WLAN Mode

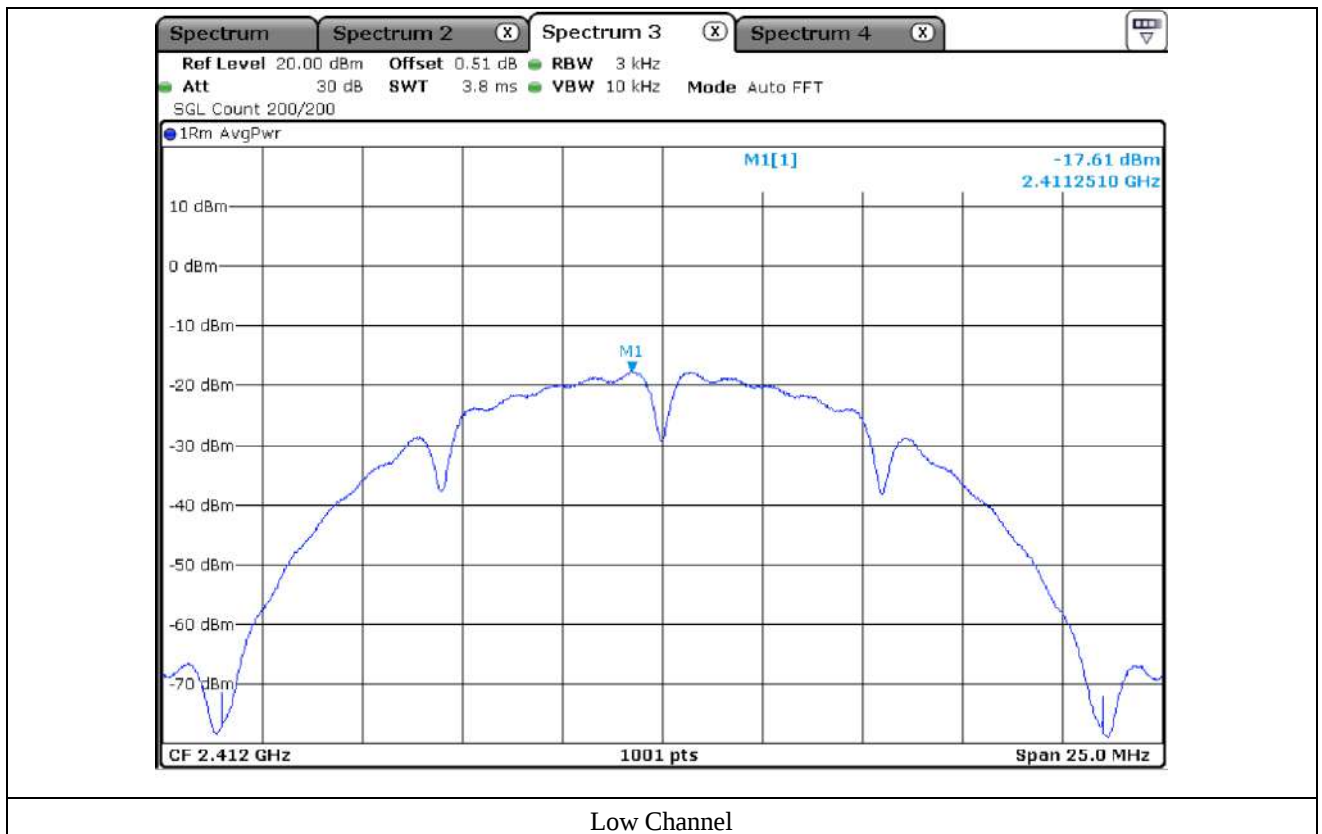
10.4.1 Test data for Antenna 0

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

CHANNEL	FREQUENCY(MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
Low	2 412.00	-17.61	8.00	25.61
Middle	2 437.00	-17.70	8.00	25.70
High 11	2 462.00	-18.53	8.00	26.53
High 12	2 467.00	-20.84	8.00	28.84
High 13	2 472.00	-21.36	8.00	29.36

Remark. Margin = Limit – Measured value





Middle Channel



High Channel 11



High Channel 12



High Channel 13

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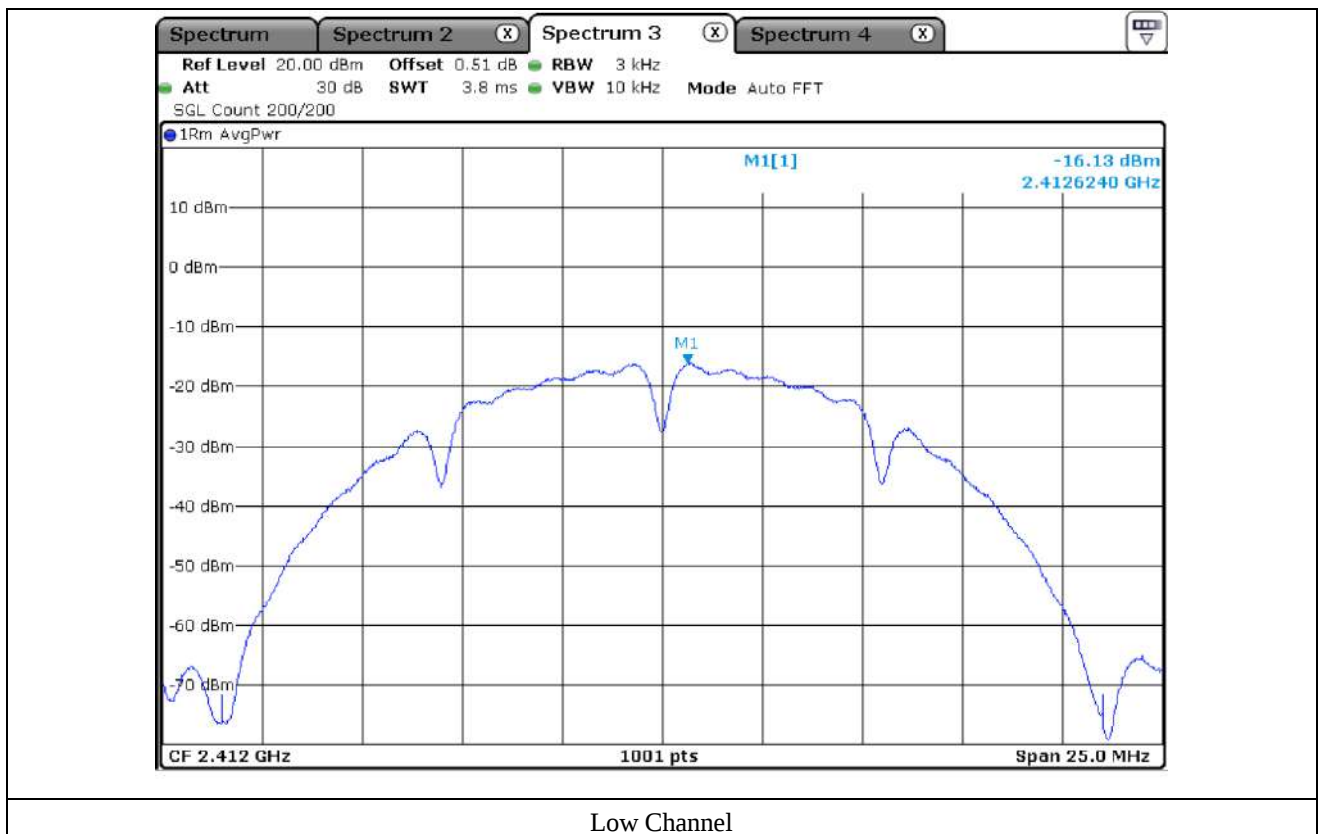
10.4.2 Test data for Antenna 1

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

CHANNEL	FREQUENCY(MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
Low	2 412.00	-16.13	8.00	24.13
Middle	2 437.00	-15.32	8.00	23.32
High 11	2 462.00	-18.39	8.00	26.39
High 12	2 467.00	-19.54	8.00	27.54
High 13	2 472.00	-22.01	8.00	30.01

Remark. Margin = Limit – Measured value





Middle Channel



High Channel 11

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High Channel 12



High Channel 13

10.5 Test data for 802.11g WLAN Mode

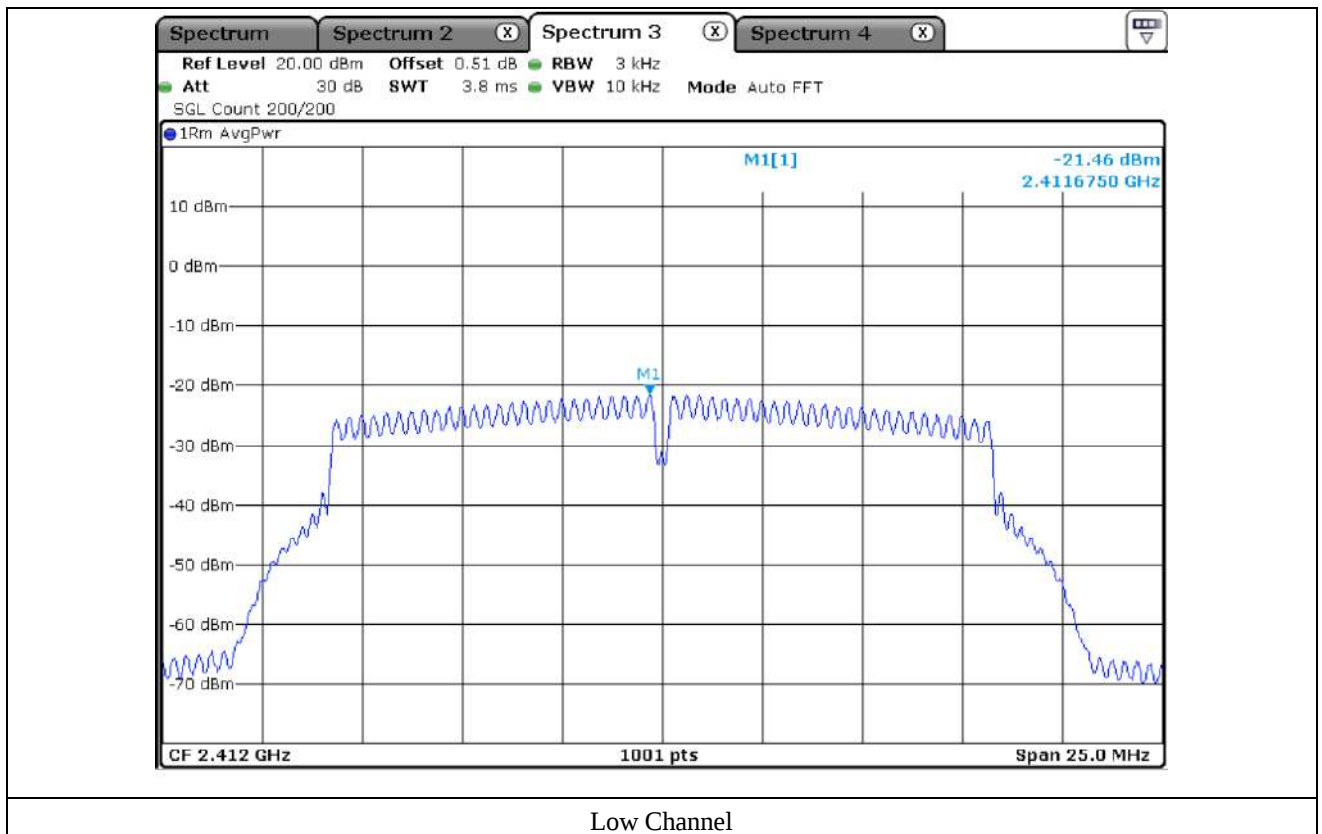
10.5.1 Test data for Antenna 0

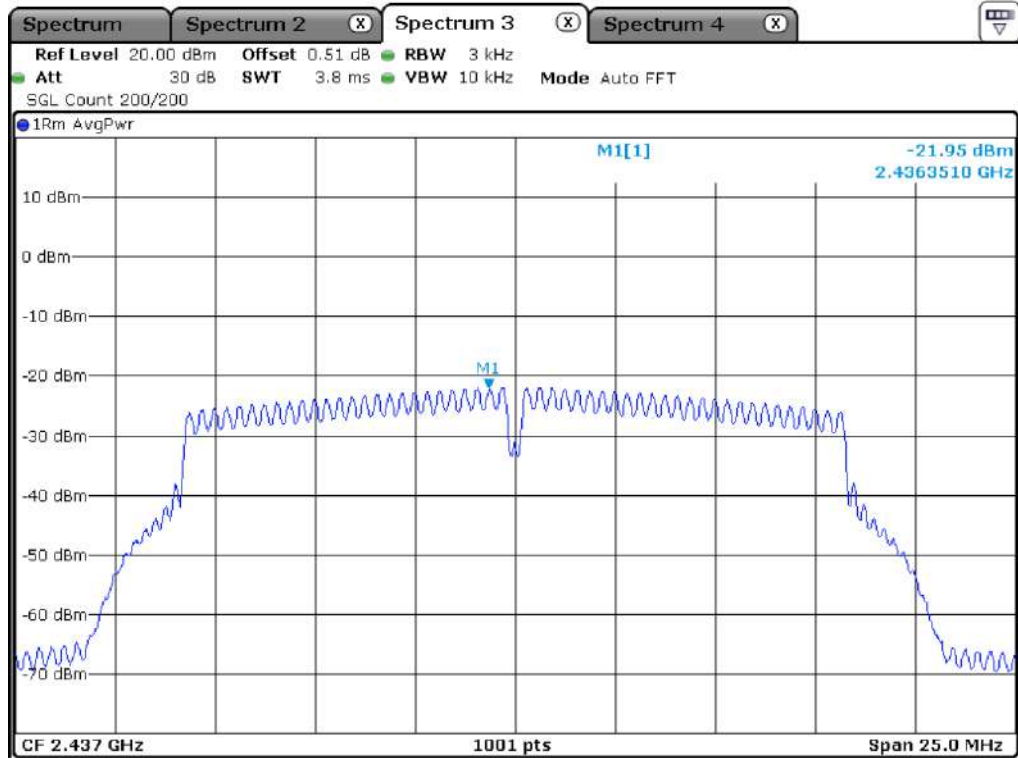
-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

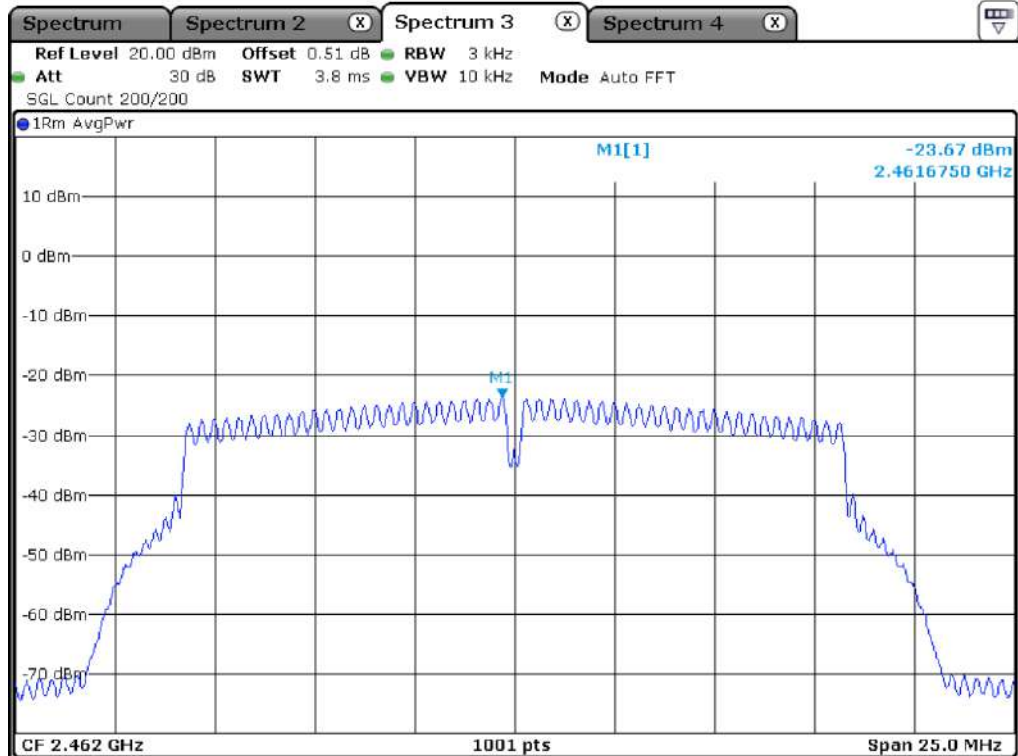
CHANNEL	FREQUENCY(MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
Low	2 412.00	-21.46	8.00	29.46
Middle	2 437.00	-21.95	8.00	29.95
High 11	2 462.00	-23.67	8.00	31.67
High 12	2 467.00	-26.67	8.00	34.67
High 13	2 472.00	-28.21	8.00	36.21

Remark. Margin = Limit – Measured value





Middle Channel



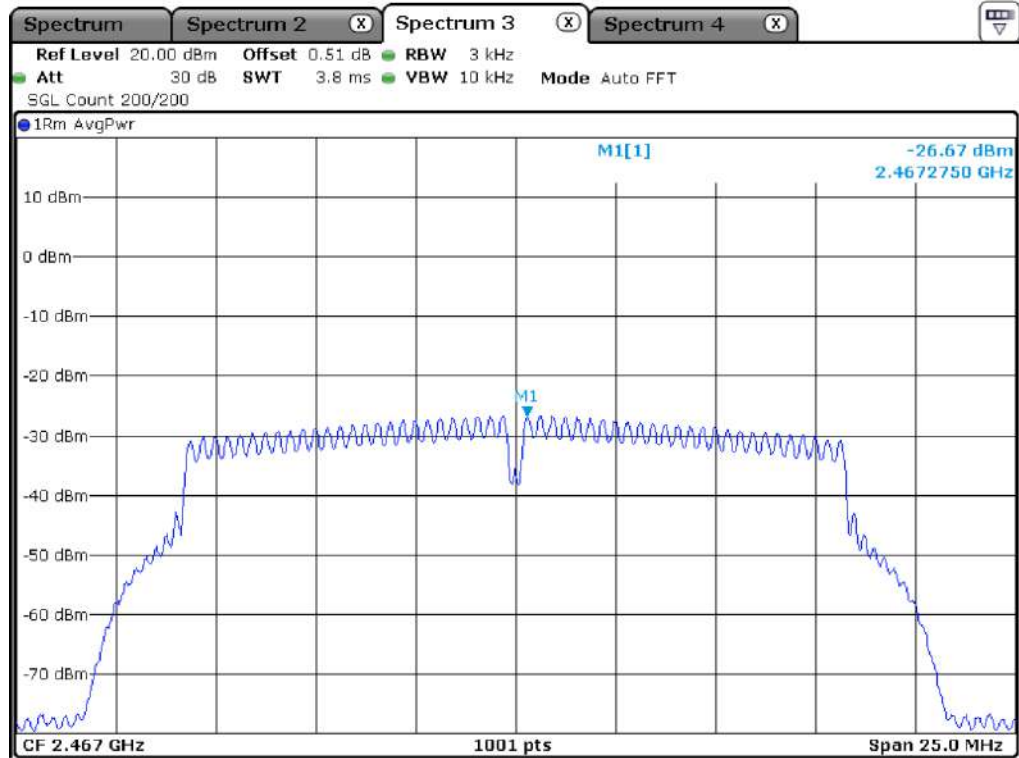
High Channel 11

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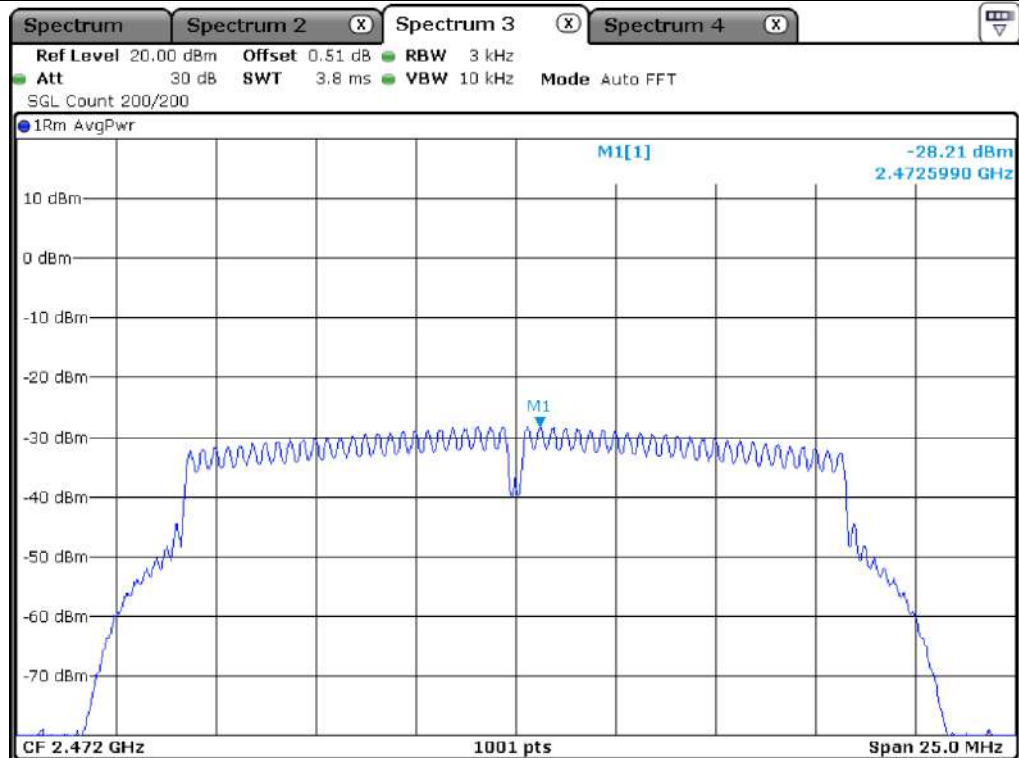
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High Channel 12



High Channel 13

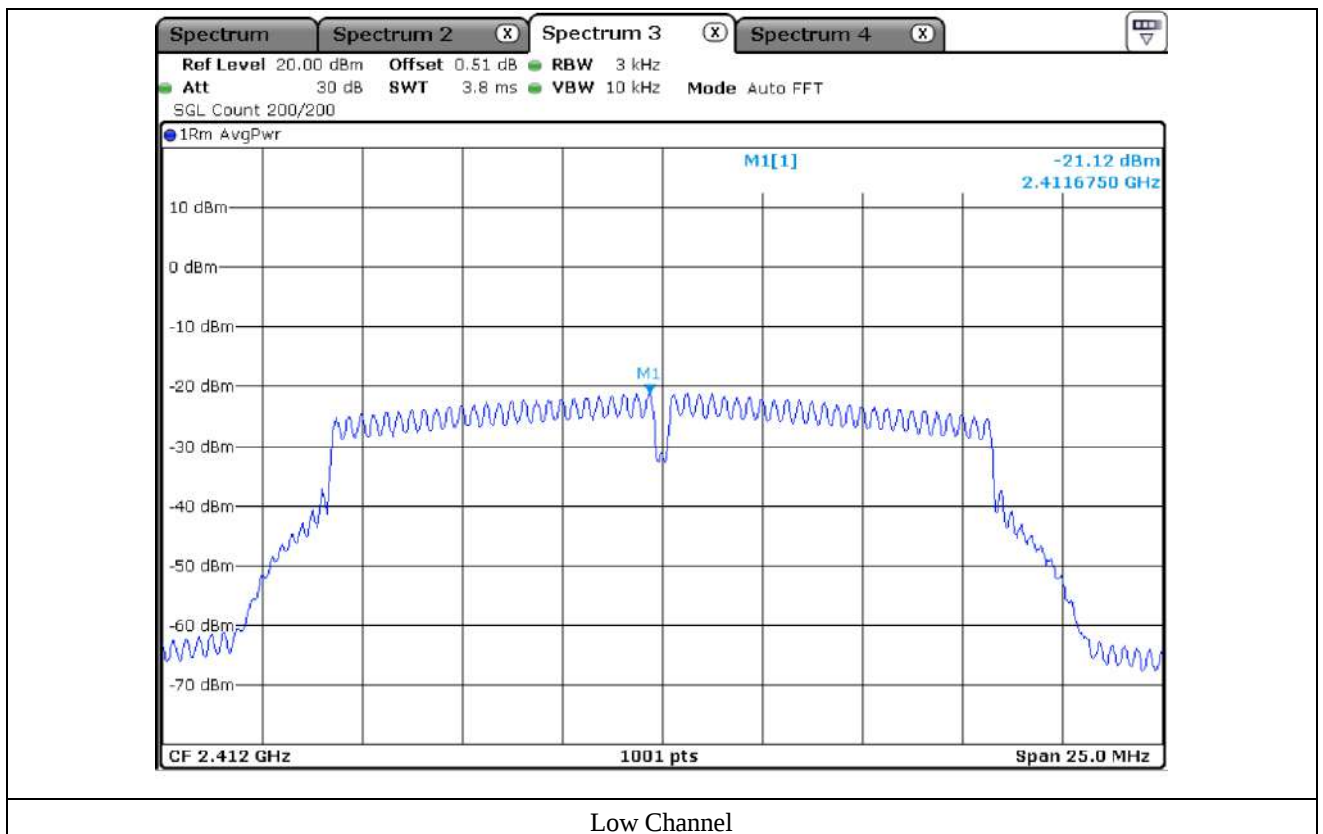
10.5.2 Test data for Antenna 1

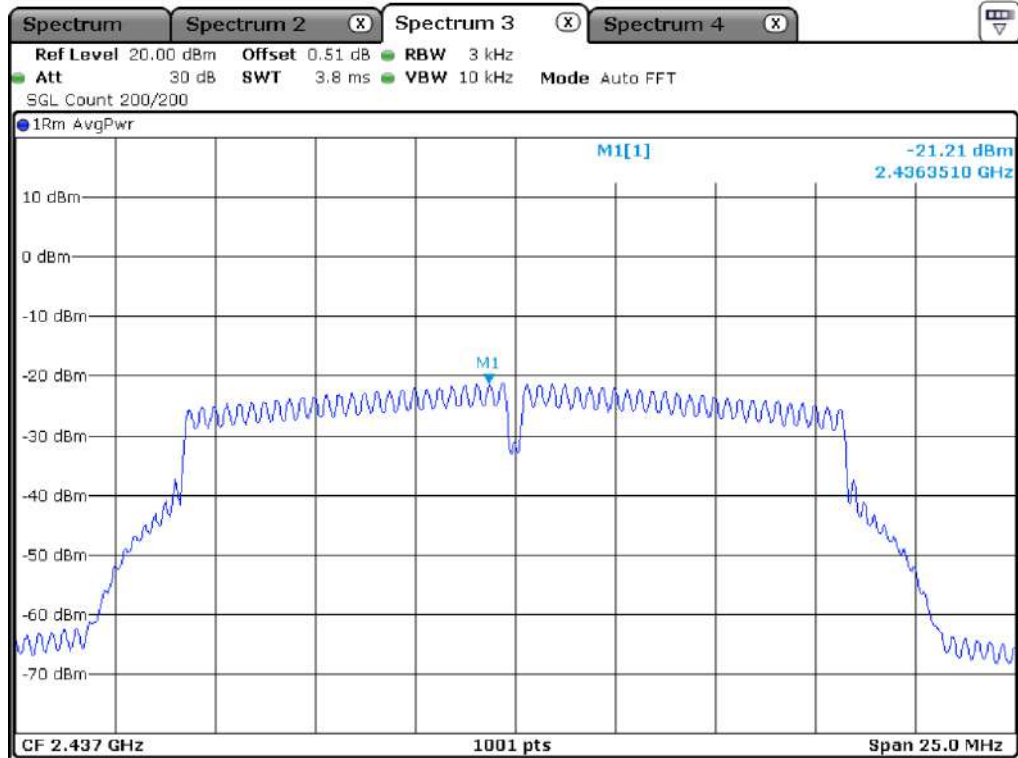
-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

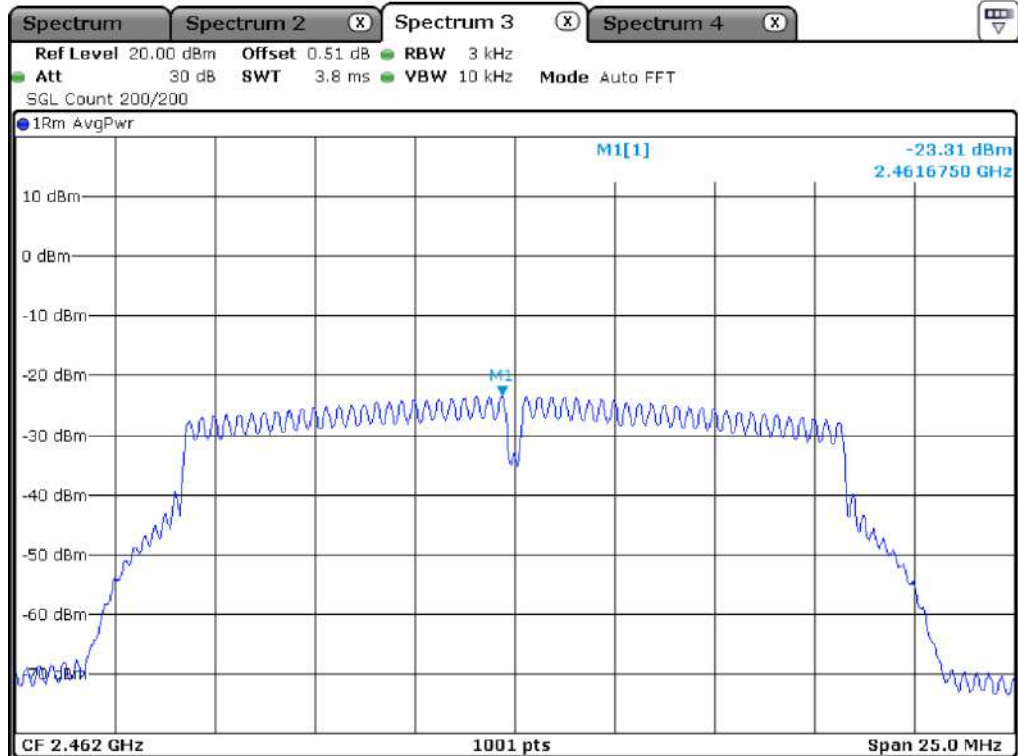
CHANNEL	FREQUENCY(MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
Low	2 412.00	-21.12	8.00	29.12
Middle	2 437.00	-21.21	8.00	29.21
High 11	2 462.00	-23.31	8.00	31.31
High 12	2 467.00	-26.40	8.00	34.40
High 13	2 472.00	-28.01	8.00	36.01

Remark. Margin = Limit – Measured value





Middle Channel



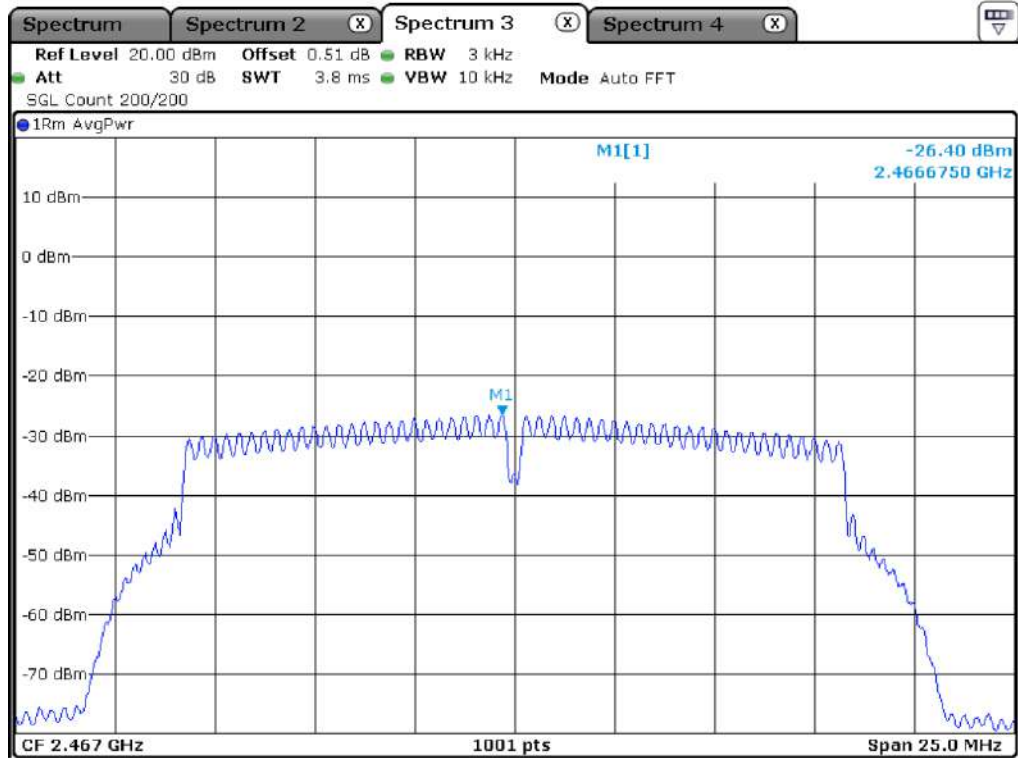
High Channel 11

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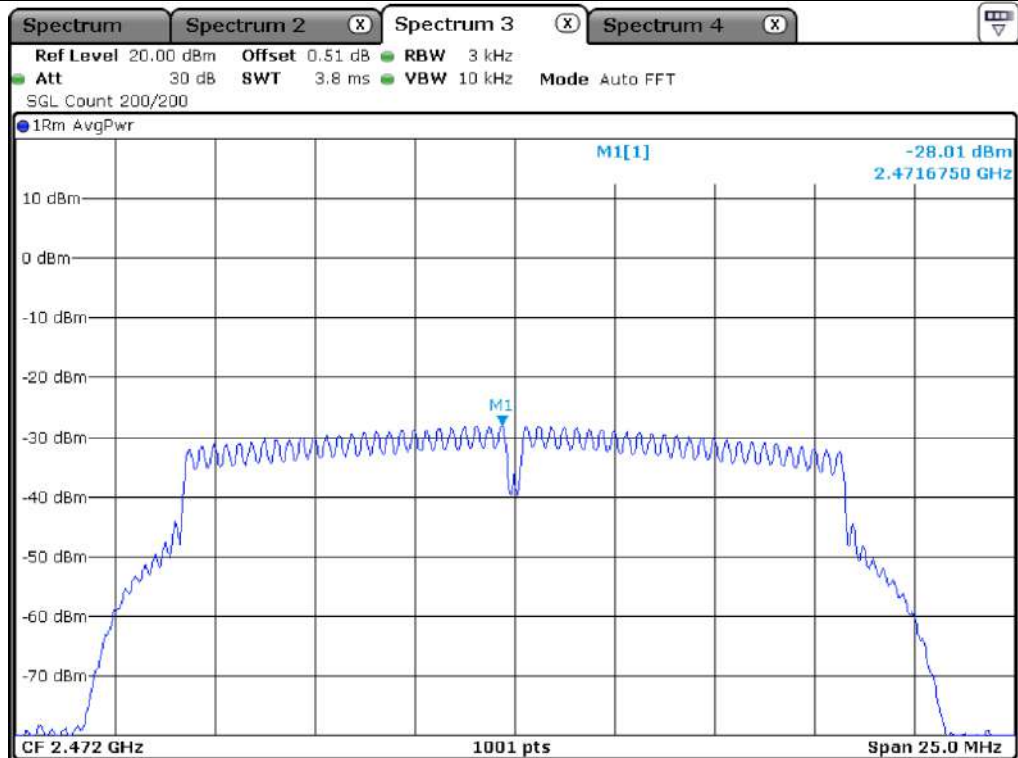
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High Channel 12



High Channel 13

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10.5.3 Test data for Multiple Transmit

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

CHANNEL	FREQUENCY(MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
Low	2 412.00	-18.28	8.00	26.28
Middle	2 437.00	-18.55	8.00	26.55
High 11	2 462.00	-20.48	8.00	28.48
High 12	2 467.00	-23.52	8.00	31.52
High 13	2 472.00	-25.10	8.00	33.10

Remark 1 : Margin = Limit – Measured value

Remark 2 : Calculated Power Density = $10\log(10^{(\text{Antenna 0 Power Density}/10)} + 10^{(\text{Antenna 1 Power Density}/10)})$

Remark 3 : Directional gain = $10*\log[(10^{G0/20} + 10^{G1/20})^2/N]$ dBi

10.6 Test data for 802.11n_HT20 WLAN Mode

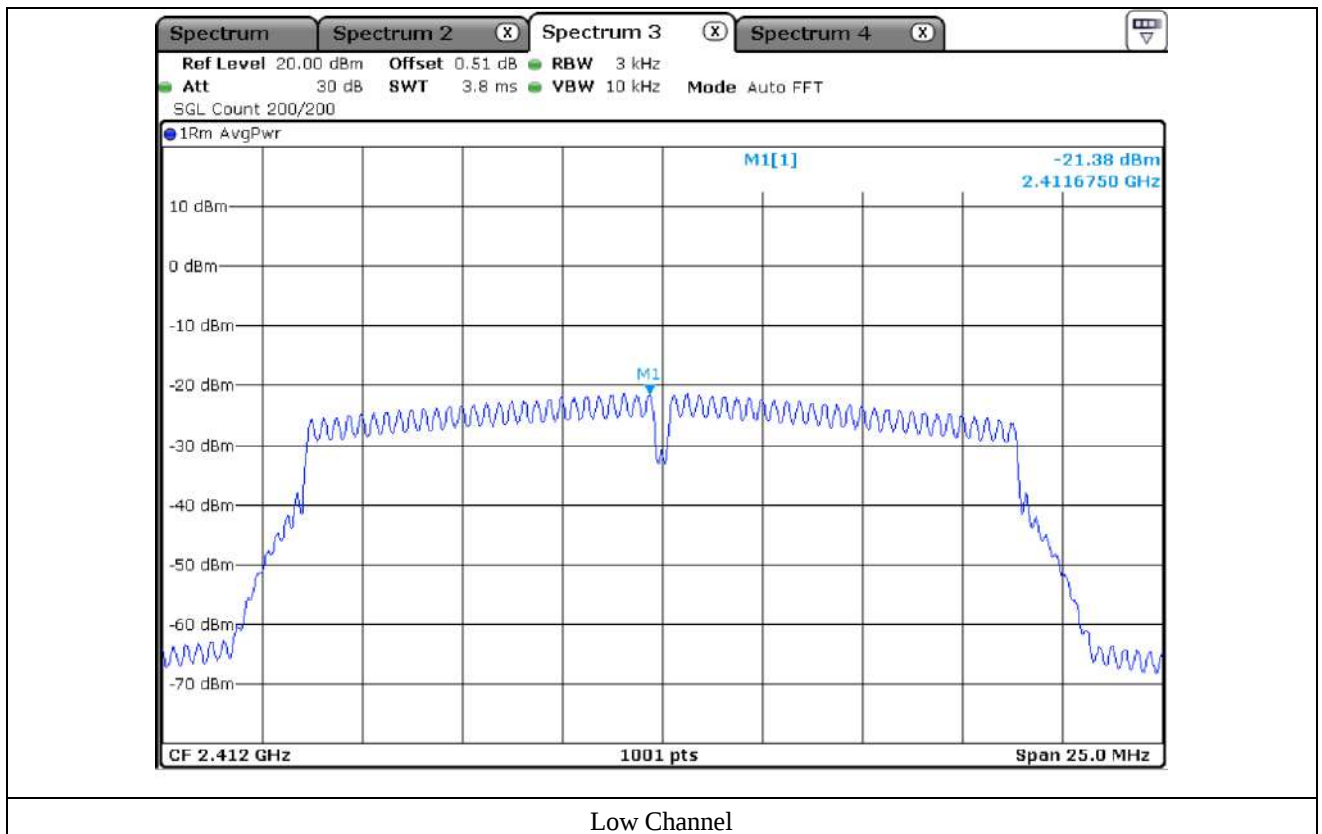
10.6.1 Test data for Antenna 0

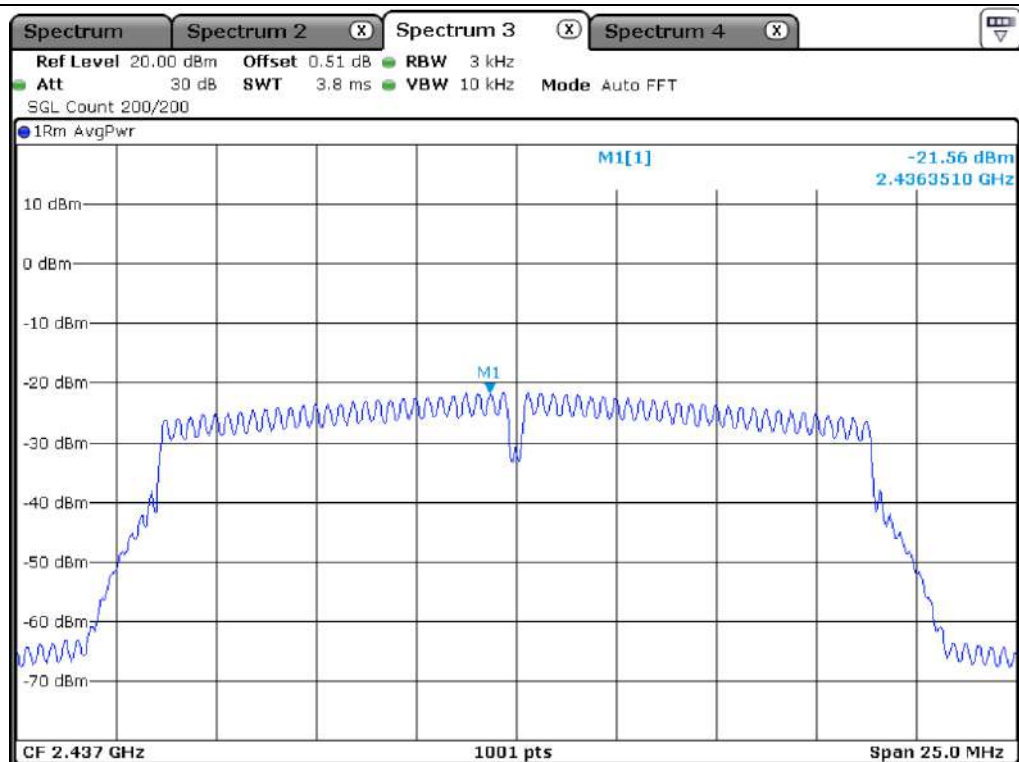
-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

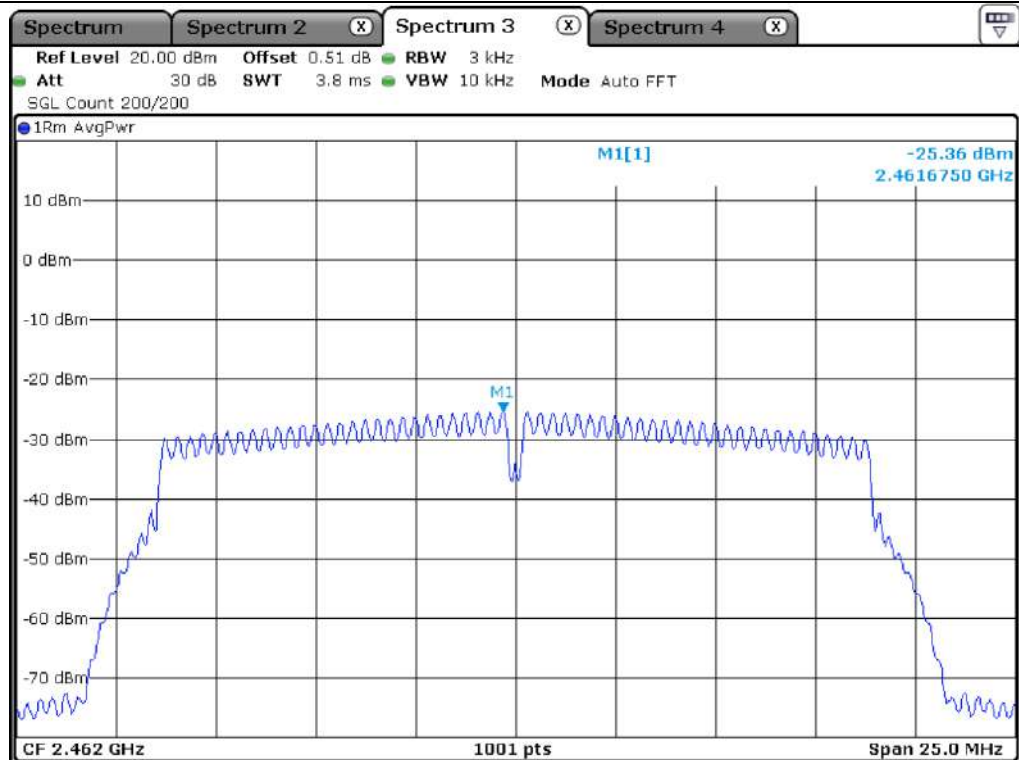
CHANNEL	FREQUENCY(MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
Low	2 412.00	-21.38	8.00	29.38
Middle	2 437.00	-21.56	8.00	29.56
High 11	2 462.00	-25.36	8.00	33.36
High 12	2 467.00	-27.34	8.00	35.34
High 13	2 472.00	-26.70	8.00	34.70

Remark. Margin = Limit – Measured value

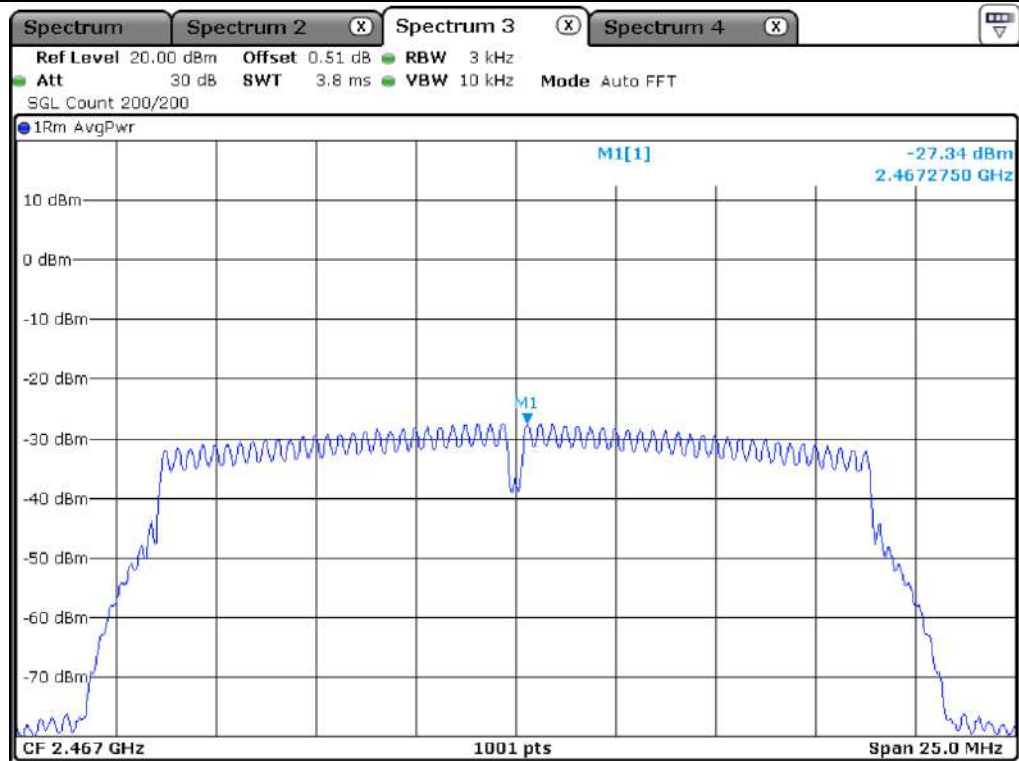




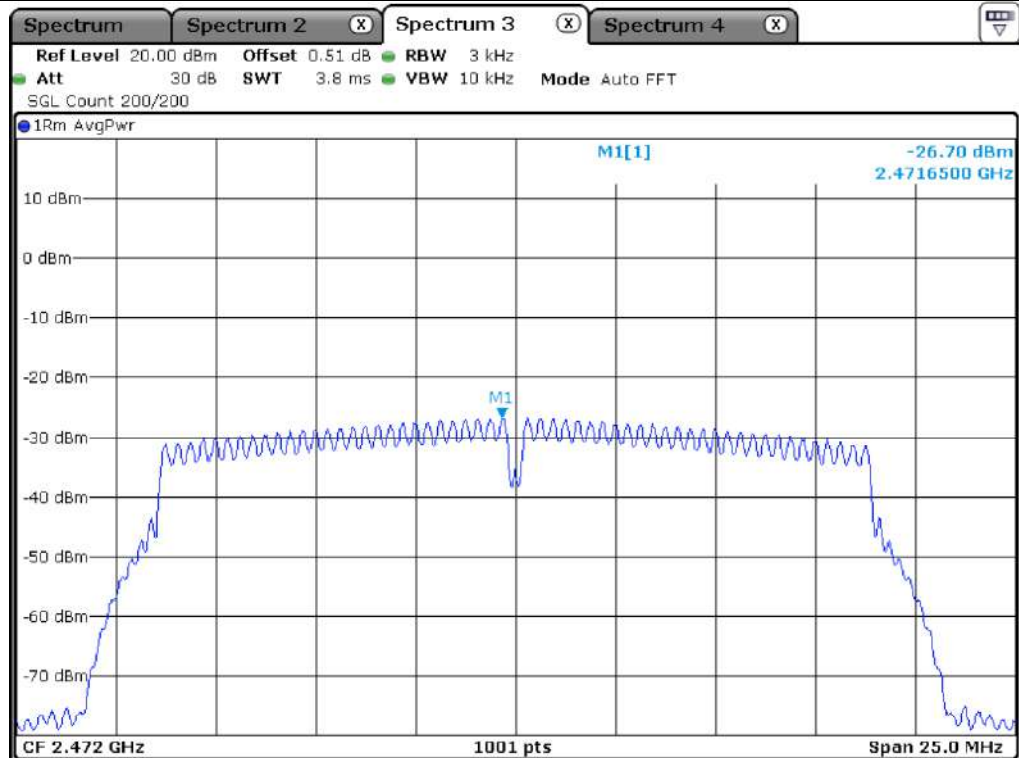
Middle Channel



High Channel 11



High Channel 12



High Channel 13

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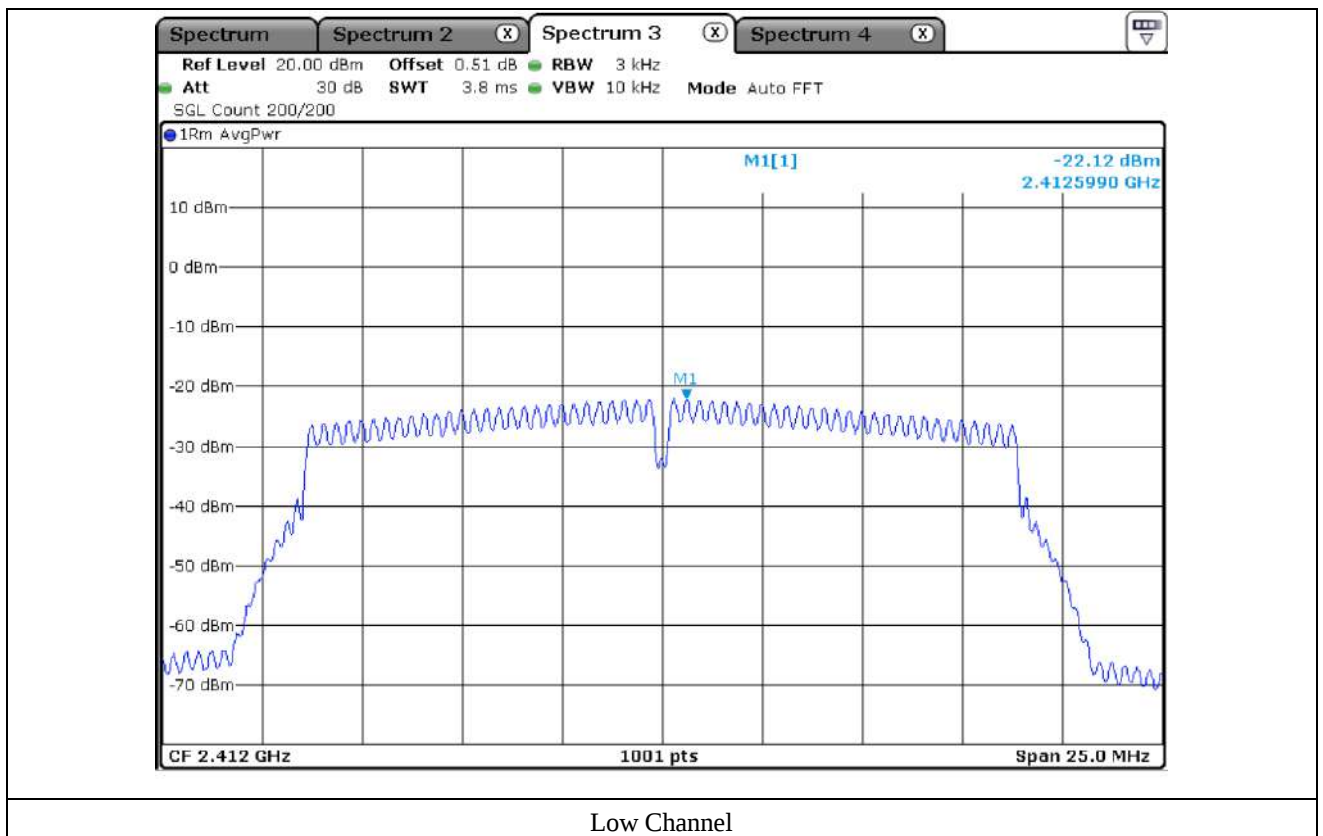
10.6.2 Test data for Antenna 1

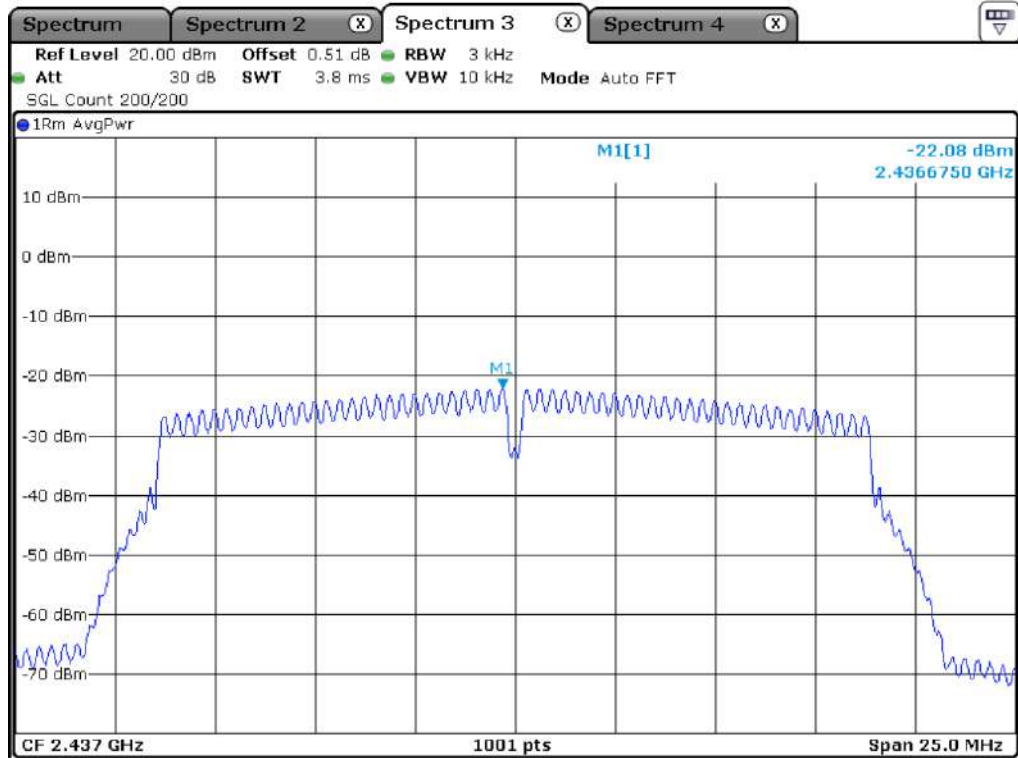
-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

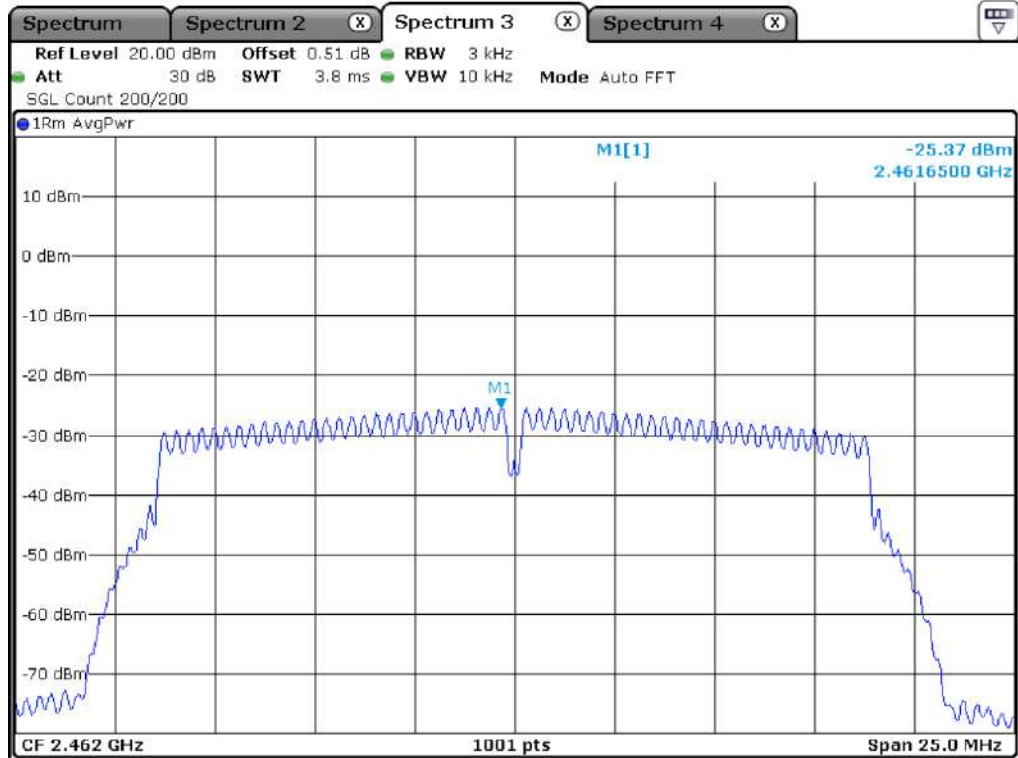
CHANNEL	FREQUENCY(MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
Low	2 412.00	-22.12	8.00	30.12
Middle	2 437.00	-22.08	8.00	30.08
High 11	2 462.00	-25.37	8.00	33.37
High 12	2 467.00	-28.54	8.00	36.54
High 13	2 472.00	-30.43	8.00	38.43

Remark. Margin = Limit – Measured value





Middle Channel

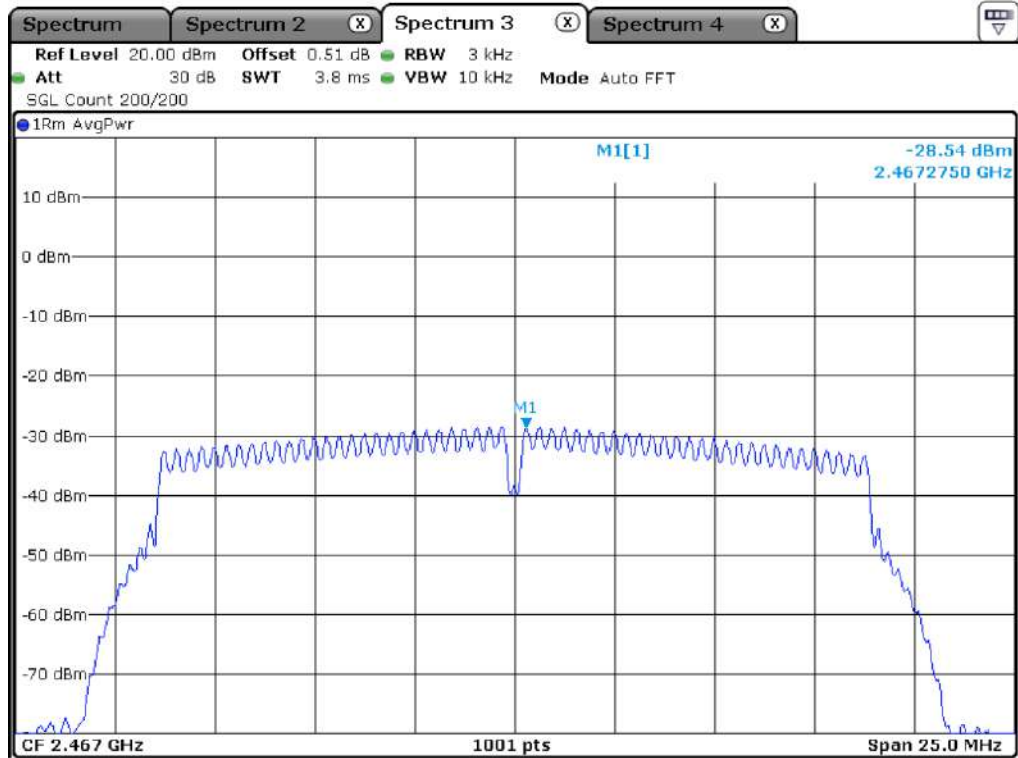


High Channel 11

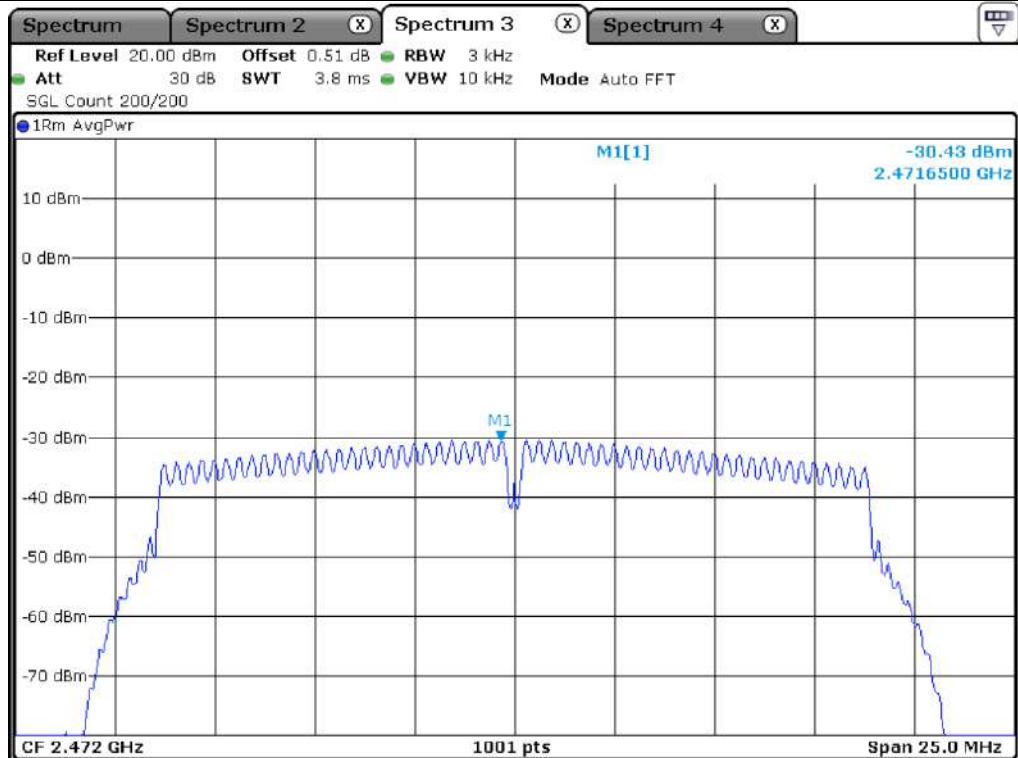
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High Channel 12



High Channel 13

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10.6.3 Test data for Multiple Transmit

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

CHANNEL	FREQUENCY(MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
Low	2 412.00	-18.72	8.00	26.72
Middle	2 437.00	-18.80	8.00	26.80
High 11	2 462.00	-22.35	8.00	30.35
High 12	2 467.00	-24.89	8.00	32.89
High 13	2 472.00	-25.17	8.00	33.17

Remark 1 : Margin = Limit – Measured value

Remark 2 : Calculated Power Density = $10\log(10^{(\text{Antenna 0 Power Density}/10)} + 10^{(\text{Antenna 1 Power Density}/10)})$

Remark 3 : Directional gain = $10*\log[(10^{G0/20} + 10^{G1/20})^2/N]$ dBi

10.7 Test data for 802.11n_HT40 WLAN Mode

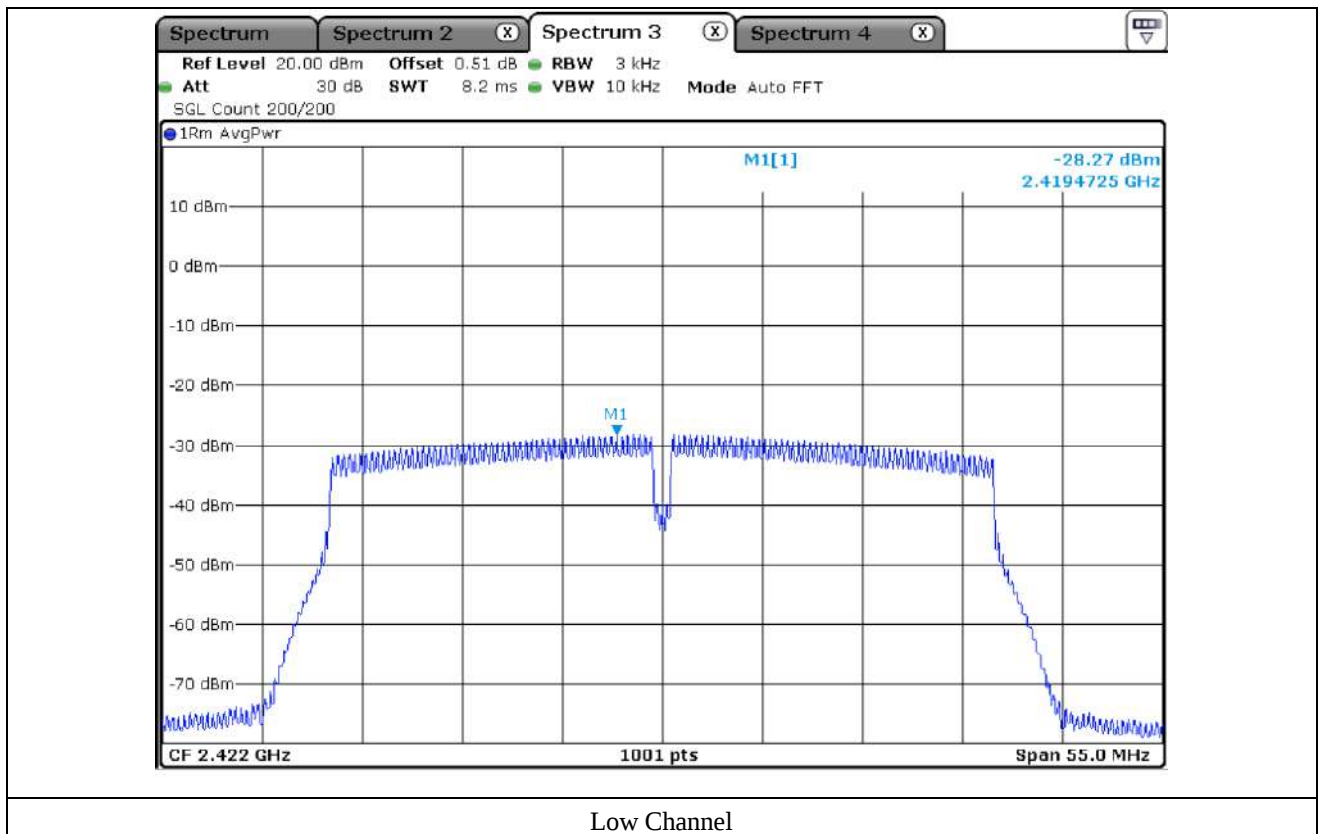
10.7.1 Test data for Antenna 0

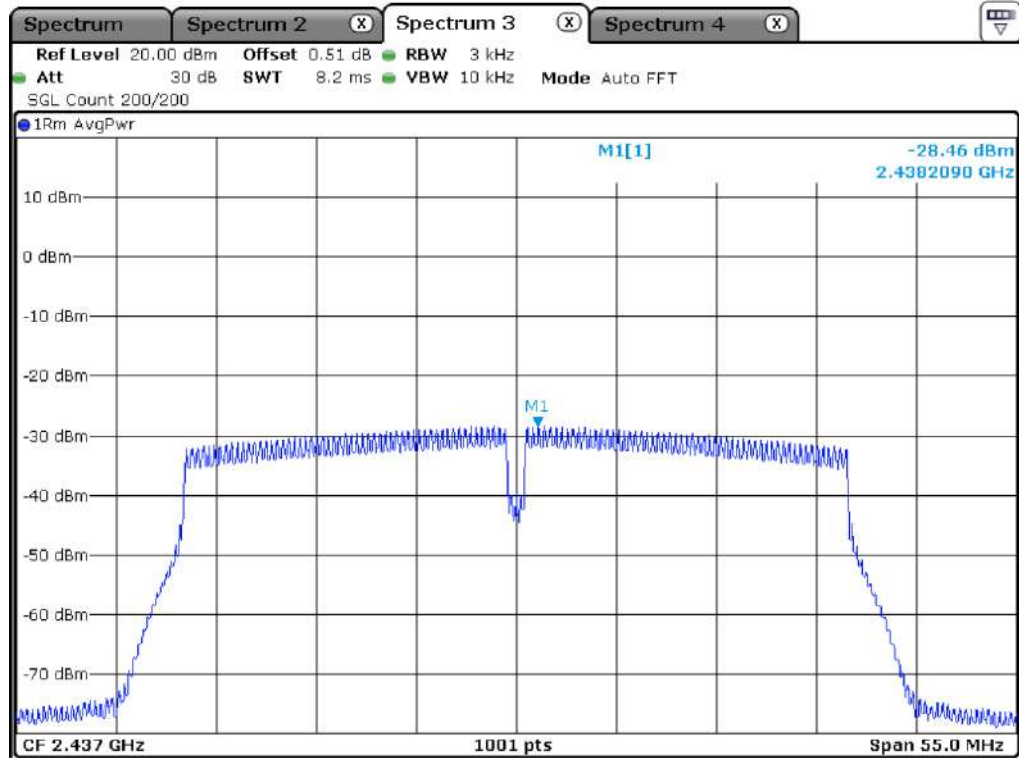
-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

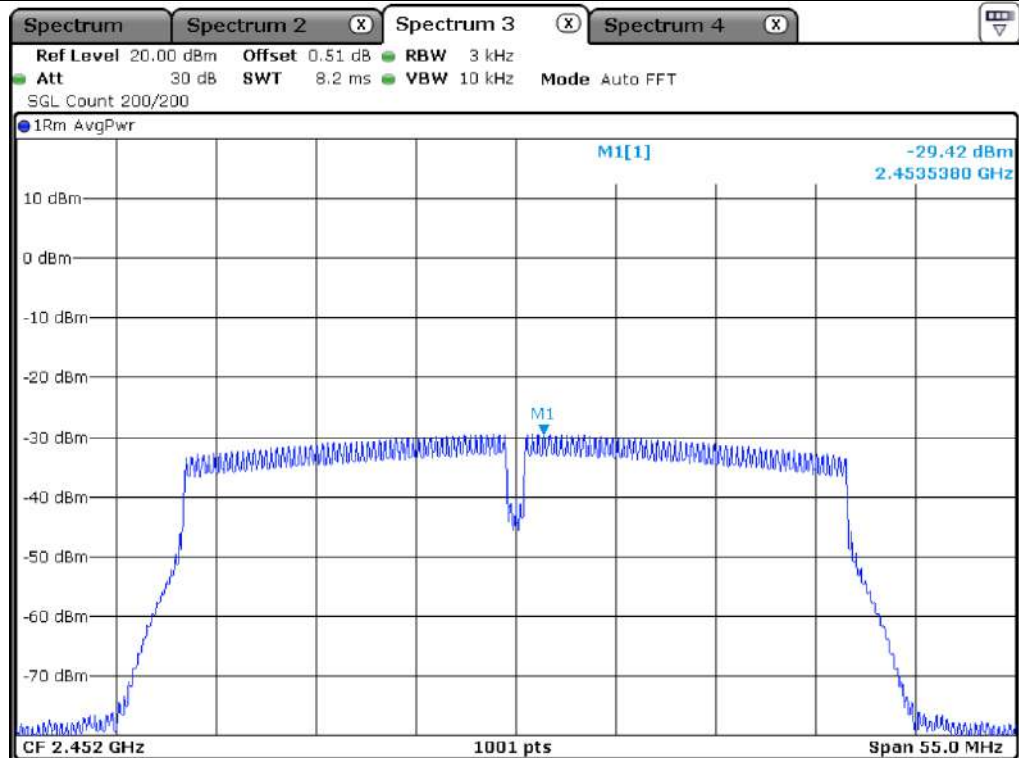
CHANNEL	FREQUENCY(MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
Low	2 412.00	-28.27	8.00	36.27
Middle	2 437.00	-28.46	8.00	36.46
High 9	2 452.00	-29.42	8.00	37.42
High 10	2 457.00	-30.45	8.00	38.45
High 11	2 462.00	-33.51	8.00	41.51

Remark. Margin = Limit – Measured value





Middle Channel



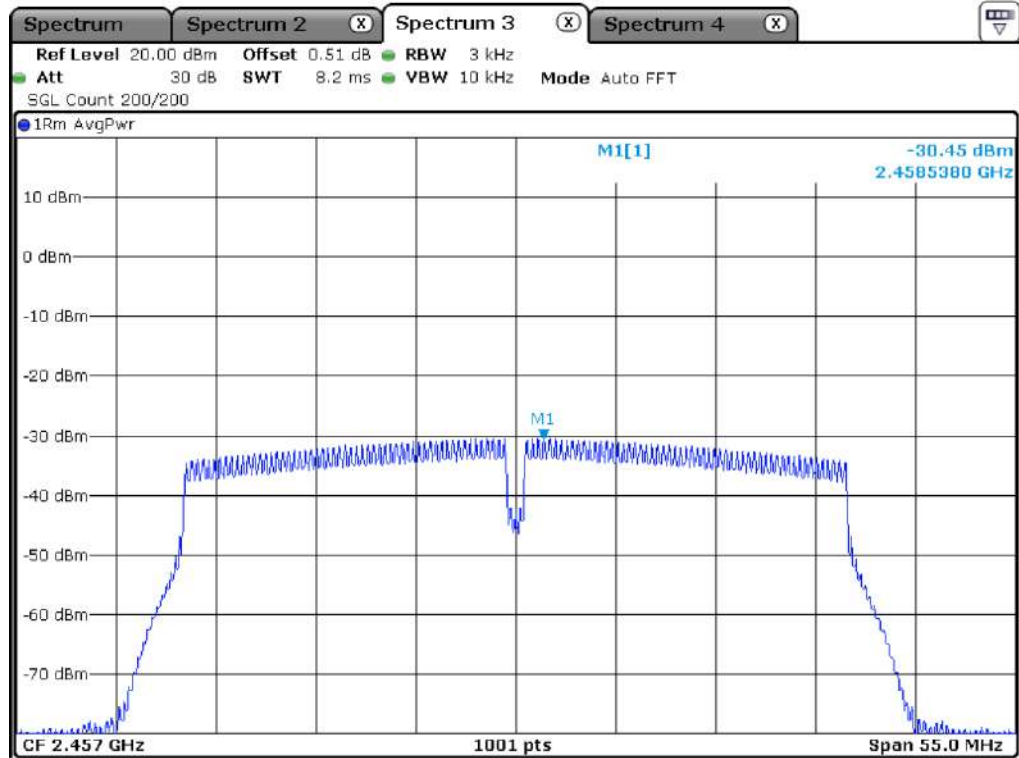
High Channel 9

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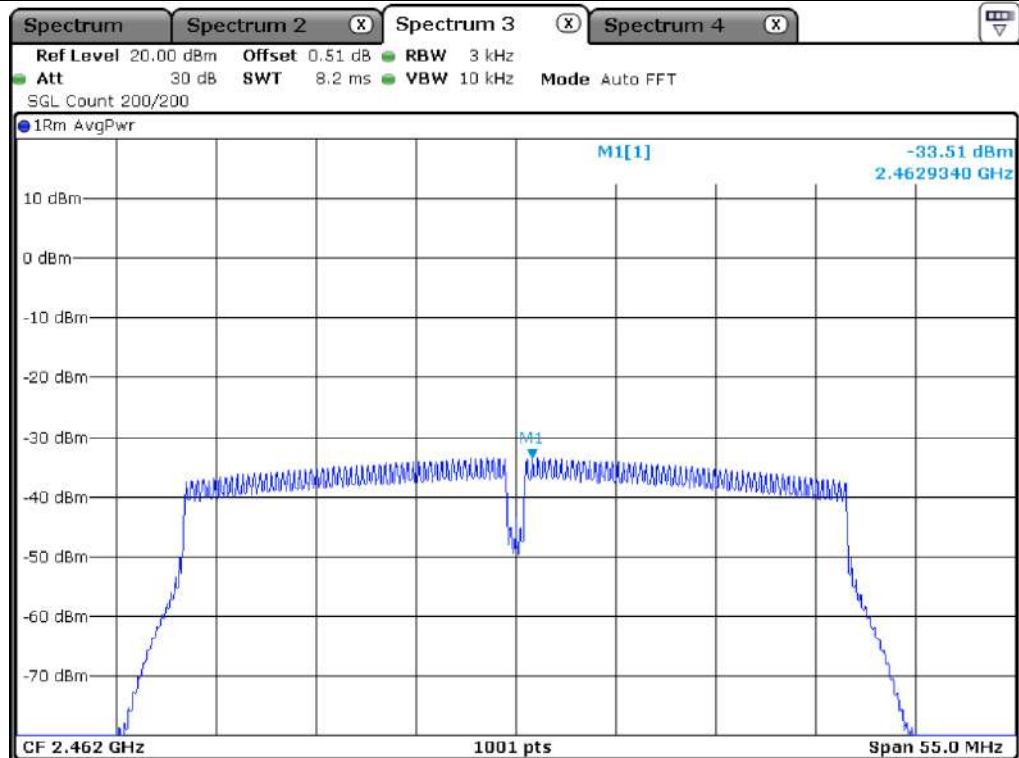
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High Channel 10



High Channel 11

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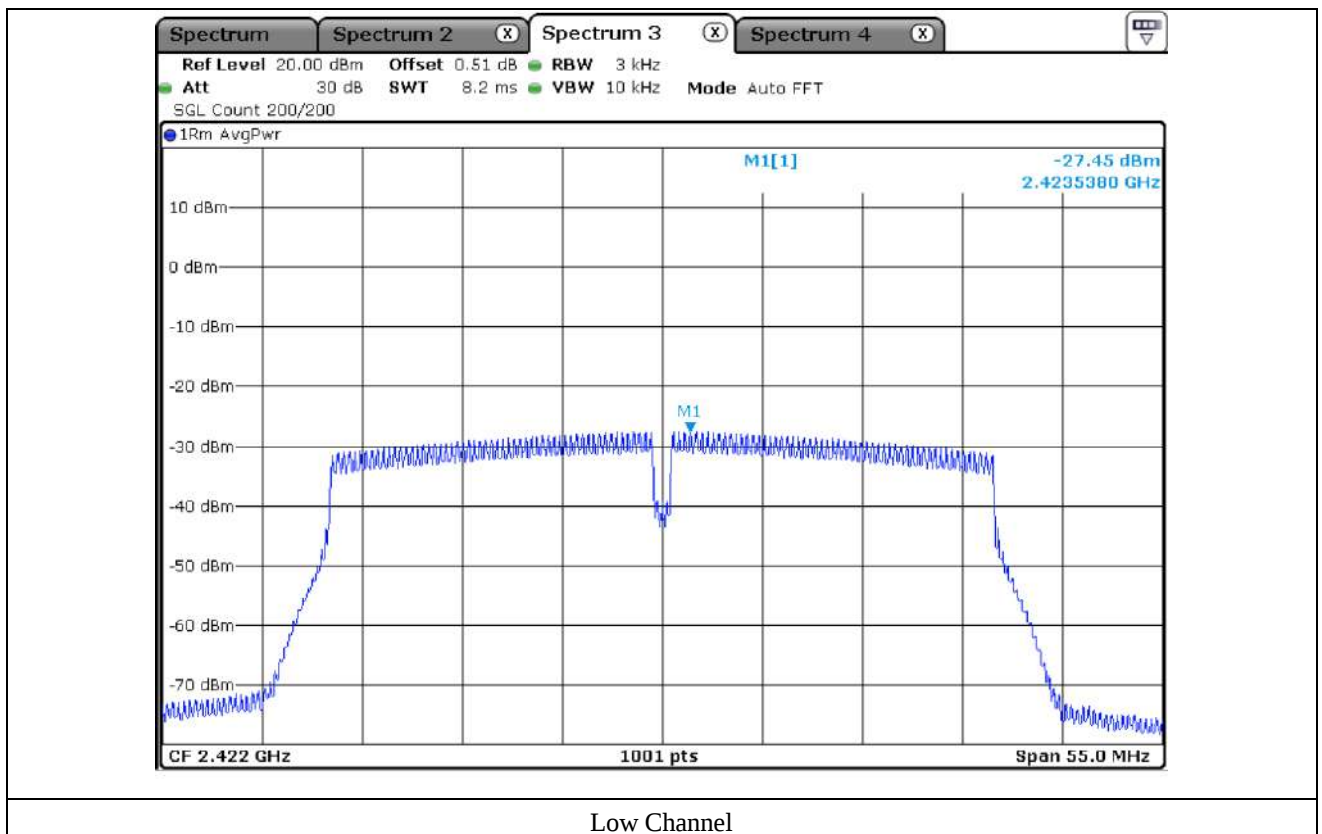
10.7.2 Test data for Antenna 1

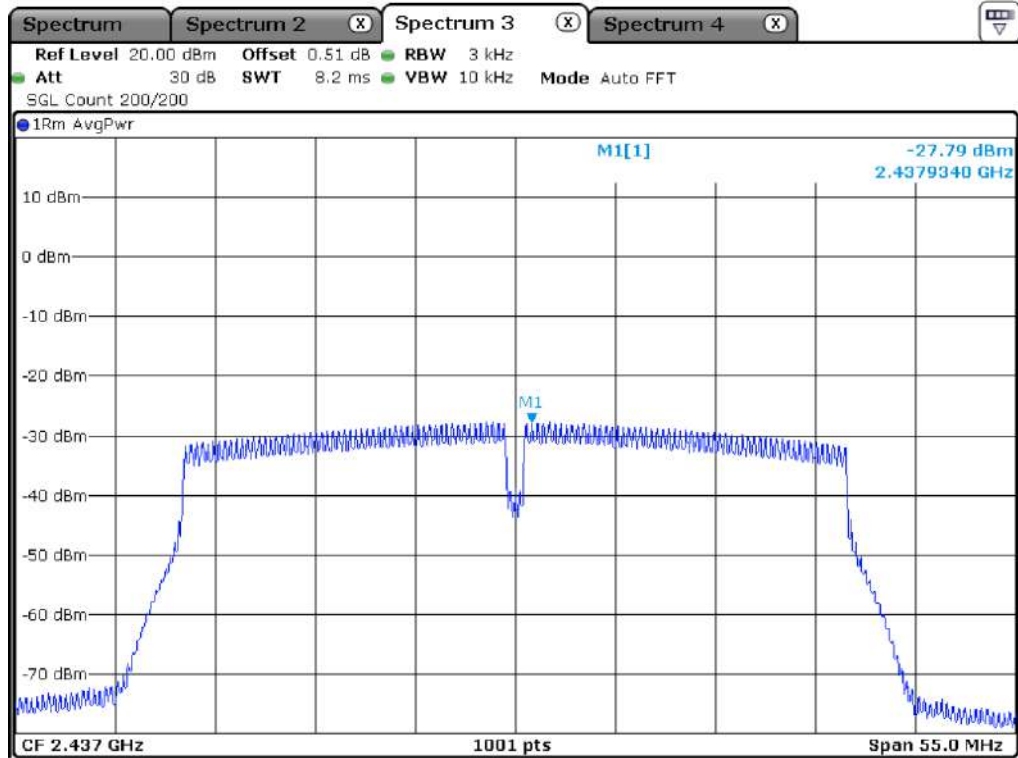
-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

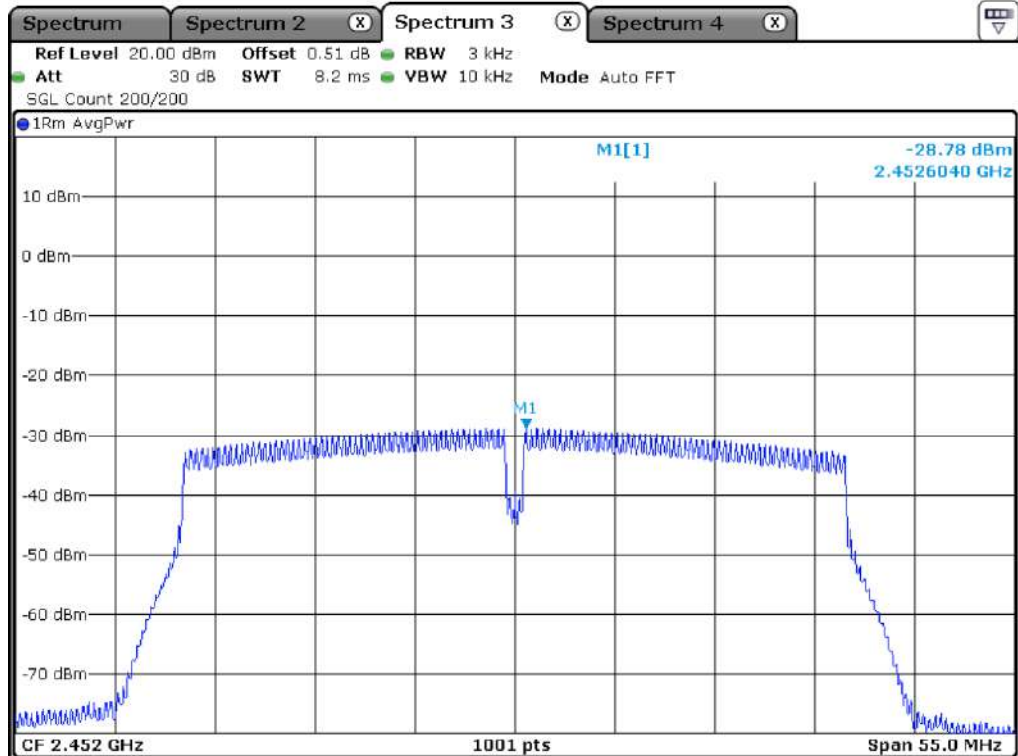
CHANNEL	FREQUENCY(MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
Low	2 412.00	-27.45	8.00	35.45
Middle	2 437.00	-27.79	8.00	35.79
High 9	2 452.00	-28.78	8.00	36.78
High 10	2 457.00	-29.78	8.00	37.78
High 11	2 462.00	-32.64	8.00	40.64

Remark. Margin = Limit – Measured value

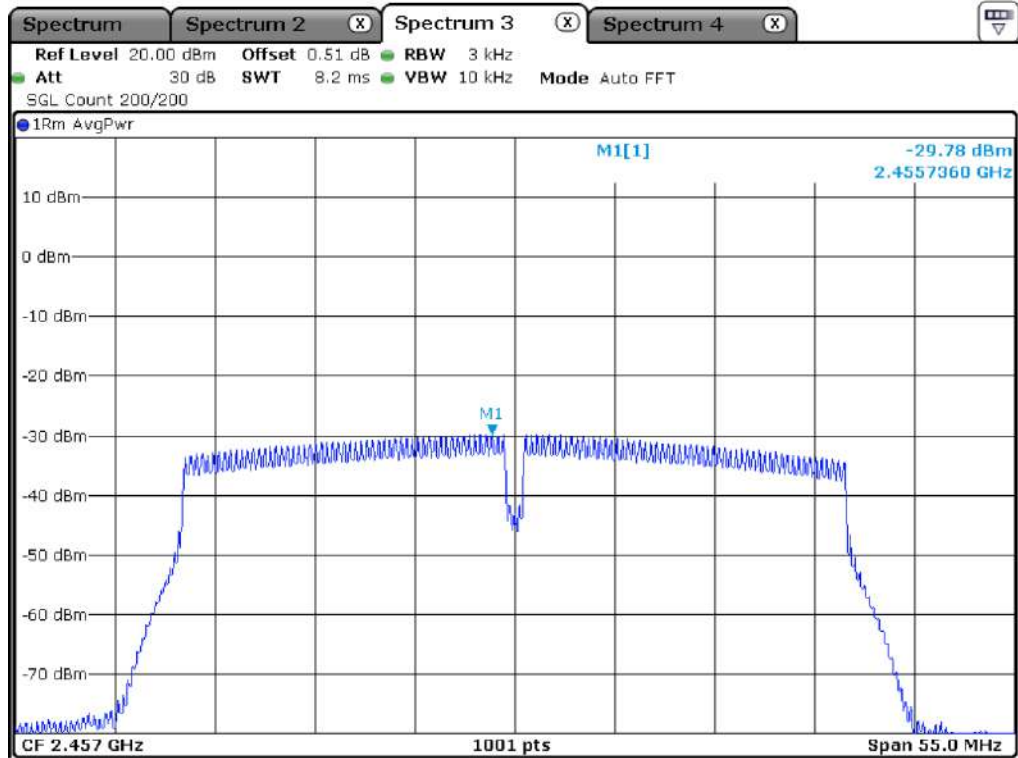




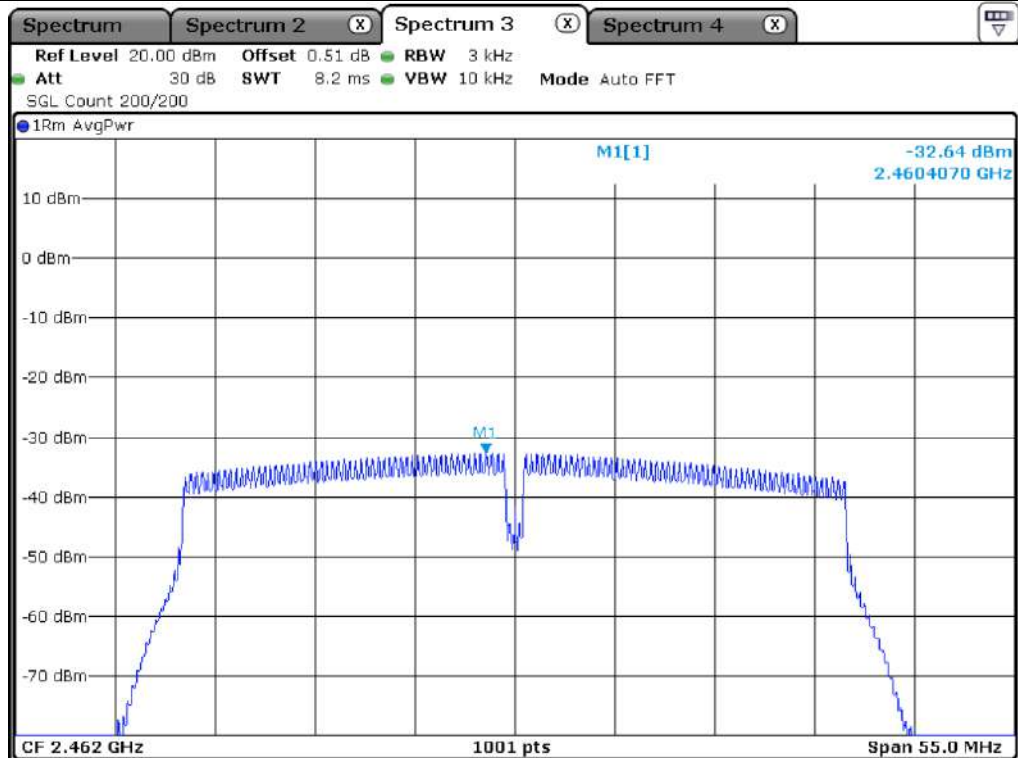
Middle Channel



High Channel 9



High Channel 10



High Channel 11

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10.7.3 Test data for Multiple Transmit

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

CHANNEL	FREQUENCY(MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
Low	2 412.00	-24.83	8.00	32.83
Middle	2 437.00	-25.10	8.00	33.10
High 9	2 452.00	-26.08	8.00	34.08
High 10	2 457.00	-27.09	8.00	35.09
High 11	2 462.00	-30.04	8.00	38.04

Remark 1 : Margin = Limit – Measured value

Remark 2 : Calculated Power Density = $10\log(10^{(\text{Antenna 0 Power Density}/10)} + 10^{(\text{Antenna 1 Power Density}/10)})$

Remark 3 : Directional gain = $10*\log[(10^{G0/20} + 10^{G1/20})^2/N]$ dBi

11. RADIATED EMISSION TEST

11.1 Operating environment

Temperature : 22 °C
Relative humidity : 44 % R.H.

11.2 Test set-up

The radiated emissions measurements were on the 3 m semi anechoic chamber. The EUT and other support equipment were placed on turntable above the ground plane. The interconnecting cables from outside test site were inserted into ferrite clamps at the point where the cables reach the turntable.

The frequency spectrum from 30 MHz to 26.5 GHz was scanned and emission levels maximized at each frequency recorded. The system was rotated 360°, and the antenna was varied in height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for both horizontal and vertical polarization of the receiving antenna.

11.3 Test Date

May 10, 2021 ~ May 26, 2021

11.4 Test data for 30 MHz ~ 1 000 MHz

11.4.1 Test data for WLAN 2.4 GHz

Humidity Level : 44 % R.H.

Temperature: 22 °C

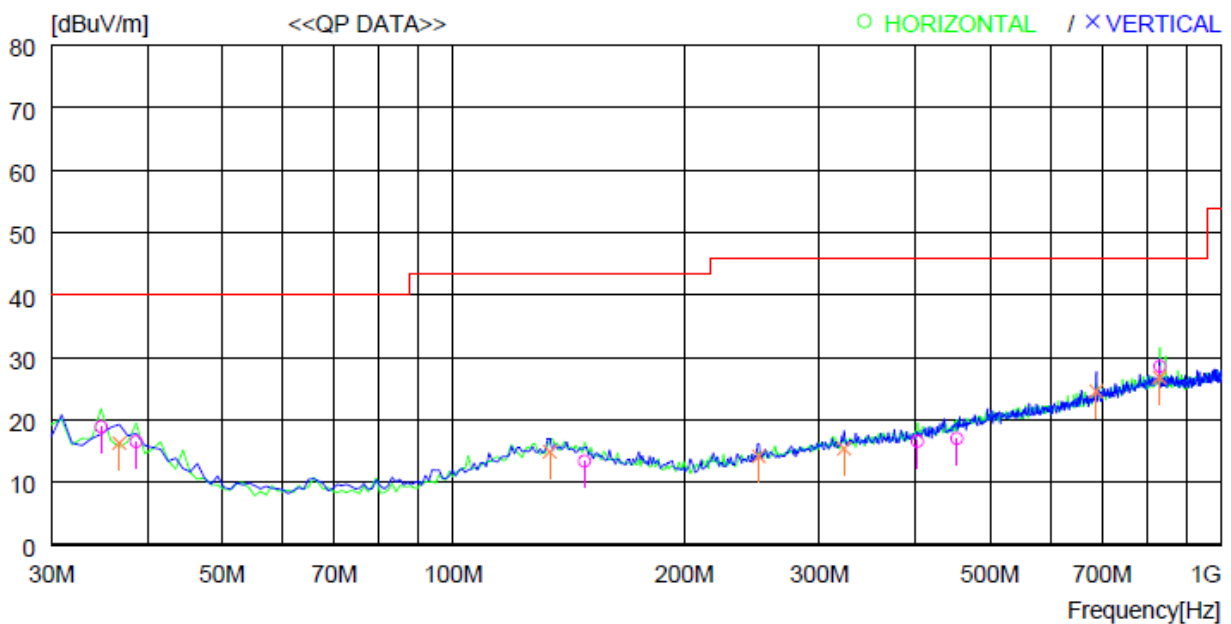
Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.247

Result : PASSED

EUT : Wi-Fi/BT Transceiver

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)

-. Antenna 0, Antenna 1 and Multiple transmit tested, but the worst data were recorded.



No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	[dBuV]	FACTOR	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- Horizontal -----										
1	34.850	31.1	19.2	0.6	32.0	18.9	40.0	21.1	100	359
2	38.730	30.1	17.7	0.7	32.0	16.5	40.0	23.5	100	272
3	148.340	25.3	18.7	1.4	32.0	13.4	43.5	30.1	200	64
4	402.480	25.7	20.6	2.4	32.1	16.6	46.0	29.4	100	281
5	452.921	24.7	21.9	2.6	32.2	17.0	46.0	29.0	400	188
6	832.181	29.2	27.2	4.1	31.9	28.6	46.0	17.4	300	147
----- Vertical -----										
7	36.790	29.3	18.4	0.6	32.0	16.3	40.0	23.7	400	359
8	133.790	26.4	19.2	1.3	32.0	14.9	43.5	28.6	400	359
9	250.190	26.7	17.6	1.9	32.0	14.2	46.0	31.8	100	0
10	322.940	25.8	19.4	2.2	32.0	15.4	46.0	30.6	200	359
11	687.655	28.1	25.4	3.4	32.3	24.6	46.0	21.4	100	60
12	831.211	27.4	27.2	4.1	31.9	26.8	46.0	19.2	200	359

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OTC-TRF-RF-001(0)

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

11.4.2 Test data for Intermodulation Mode(Bluetooth LE + WLAN 2.4 GHz + WLAN 5 GHz)

Humidity Level : 44 % R.H.

Temperature: 22 °C

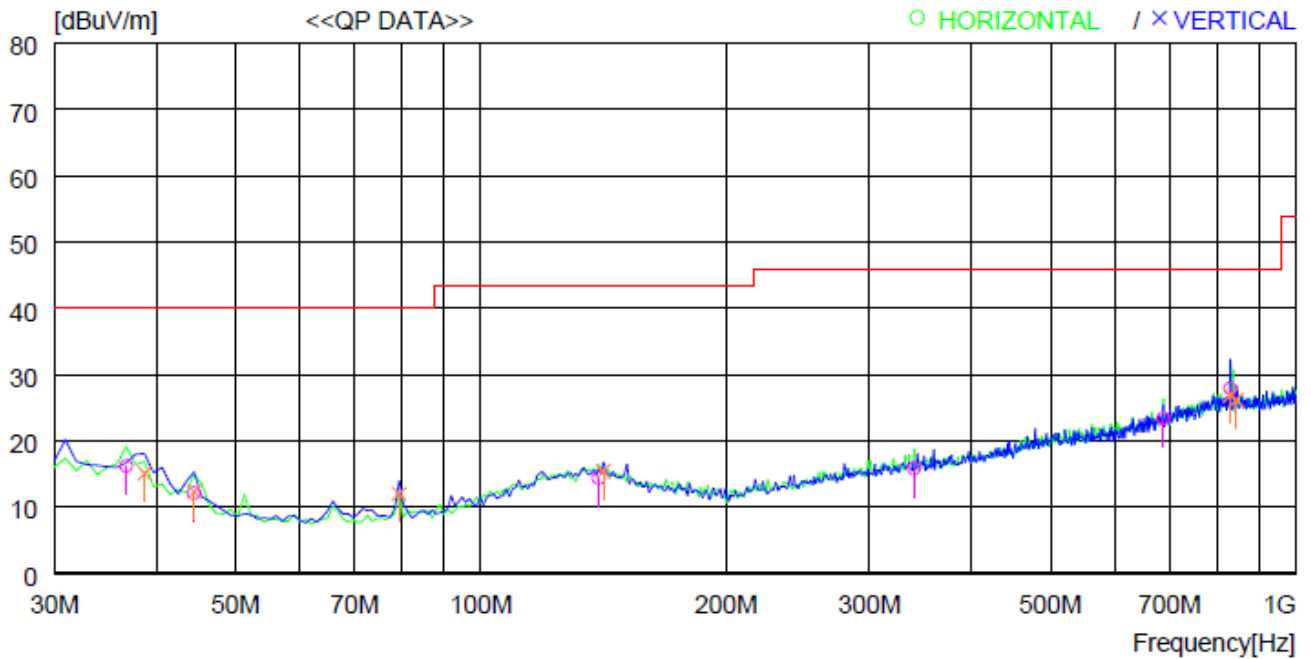
Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.247

Result : PASSED

EUT : Wi-Fi/BT Transceiver

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)

-. Antenna 0, Antenna 1 and Multiple transmit tested, but the worst data were recorded.



No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	QP	FACTOR	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- Horizontal -----										
1	36.790	29.2	18.4	0.6	32.0	16.2	40.0	23.8	400	127
2	44.550	28.1	15.3	0.7	32.0	12.1	40.0	27.9	300	167
3	139.610	25.7	19.4	1.3	32.0	14.4	43.5	29.1	100	358
4	340.400	25.9	19.7	2.2	32.0	15.8	46.0	30.2	300	200
5	687.655	26.9	25.4	3.4	32.3	23.4	46.0	22.6	300	256
6	831.211	28.5	27.2	4.1	31.9	27.9	46.0	18.1	200	2
----- Vertical -----										
7	38.730	28.7	17.7	0.7	32.0	15.1	40.0	24.9	200	40
8	44.550	28.3	15.3	0.7	32.0	12.3	40.0	27.7	200	359
9	79.470	30.1	12.9	1.0	32.0	12.0	40.0	28.0	200	359
10	141.550	26.7	19.3	1.4	32.0	15.4	43.5	28.1	200	350
11	831.211	27.5	27.2	4.1	31.9	26.9	46.0	19.1	300	0
12	844.791	26.9	27.2	4.0	31.9	26.2	46.0	19.8	200	304

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OTC-TRF-RF-001(0)

11.4.3 Test data for Intermodulation Mode(Bluetooth + WLAN 2.4 GHz + WLAN 5 GHz)

Humidity Level : 44 % R.H.

Temperature: 22 °C

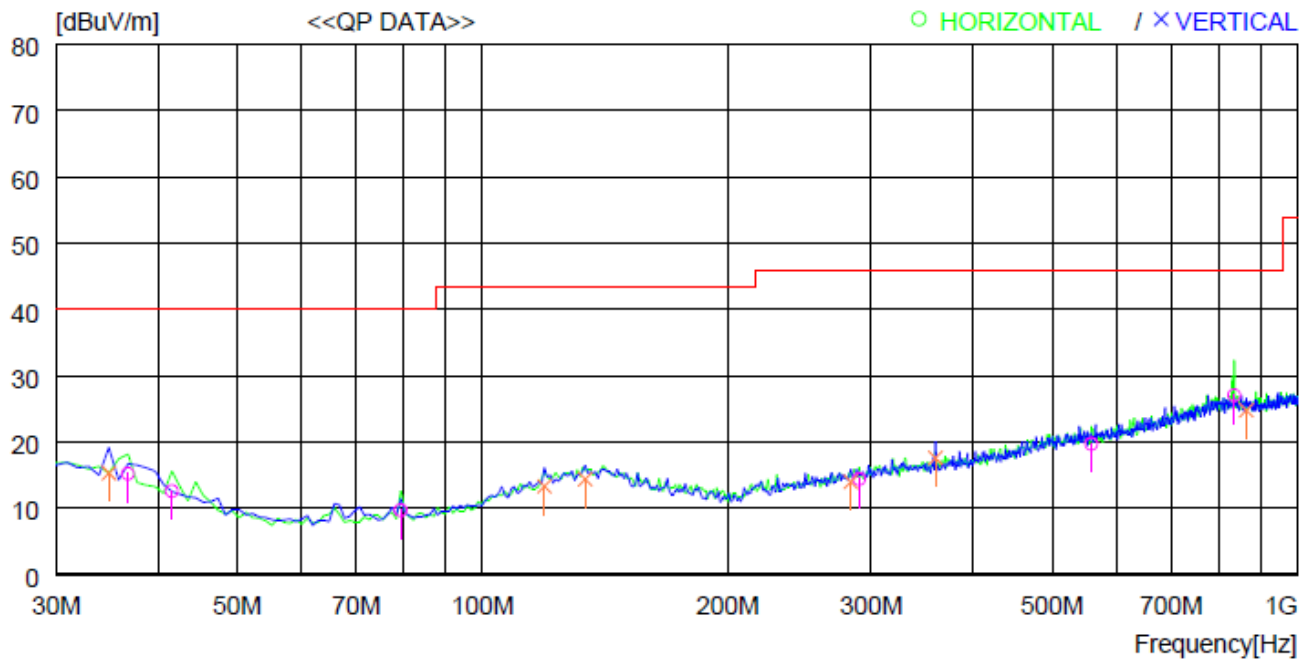
Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.247

Result : PASSED

EUT : Wi-Fi/BT Transceiver

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)

-. Antenna 0, Antenna 1 and Multiple transmit tested, but the worst data were recorded.



No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	QP	FACTOR	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- Horizontal -----										
1	36.790	28.2	18.4	0.6	32.0	15.2	40.0	24.8	200	293
2	41.640	27.4	16.5	0.7	32.0	12.6	40.0	27.4	400	9
3	79.470	27.8	12.9	1.0	32.0	9.7	40.0	30.3	400	125
4	289.960	25.6	18.8	2.0	32.0	14.4	46.0	31.6	300	3
5	558.649	25.5	23.7	2.9	32.4	19.7	46.0	26.3	200	0
6	836.061	27.8	27.2	4.0	31.9	27.1	46.0	18.9	300	114
----- Vertical -----										
7	34.850	27.5	19.2	0.6	32.0	15.3	40.0	24.7	400	0
8	119.240	25.6	18.5	1.2	32.0	13.3	43.5	30.2	300	359
9	133.790	25.9	19.2	1.3	32.0	14.4	43.5	29.1	400	0
10	283.170	25.4	18.6	2.0	32.0	14.0	46.0	32.0	100	0
11	359.800	27.6	19.9	2.2	32.1	17.6	46.0	28.4	400	0
12	865.160	25.3	27.3	4.0	31.8	24.8	46.0	21.2	200	278

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OTC-TRF-RF-001(0)

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

11.5 Test data for Below 30 MHz

- . Resolution bandwidth : 200 Hz (from 9 kHz to 0.15 MHz), 9 kHz (from 0.15 MHz to 30 MHz)
- . Frequency range : 9 kHz ~ 30 MHz
- . Measurement distance : 3 m
- . Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Ant. Pol. (H/V)	Ant. Height (m)	Angle (°)	Ant. Factor (dB/m)	Cable Loss	Emission Level(dBμV/m)	Limits (dBμV/m)	Margin (dB)
Emission from the EUT more than 20 dB below the limit in each frequency range.									

11.6 Test data for above 1 GHz

- . Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode
- . Video bandwidth : 3 MHz for Peak and Average Mode
- . Frequency range : 1 GHz ~ 26.5 GHz
- . Measurement distance : 3 m
- . Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Ant. Pol. (H/V)	Ant. Height (m)	Angle (°)	Ant. Factor (dB/m)	Cable Loss	Emission Level(dBμV/m)	Limits (dBμV/m)	Margin (dB)
Emission from the EUT more than 20 dB below the limit in each frequency range.									

12. CONDUCTED EMISSION TEST

12.1 Operating environment

Temperature : 22 °C
Relative humidity : 44 % R.H.

12.2 Test set-up

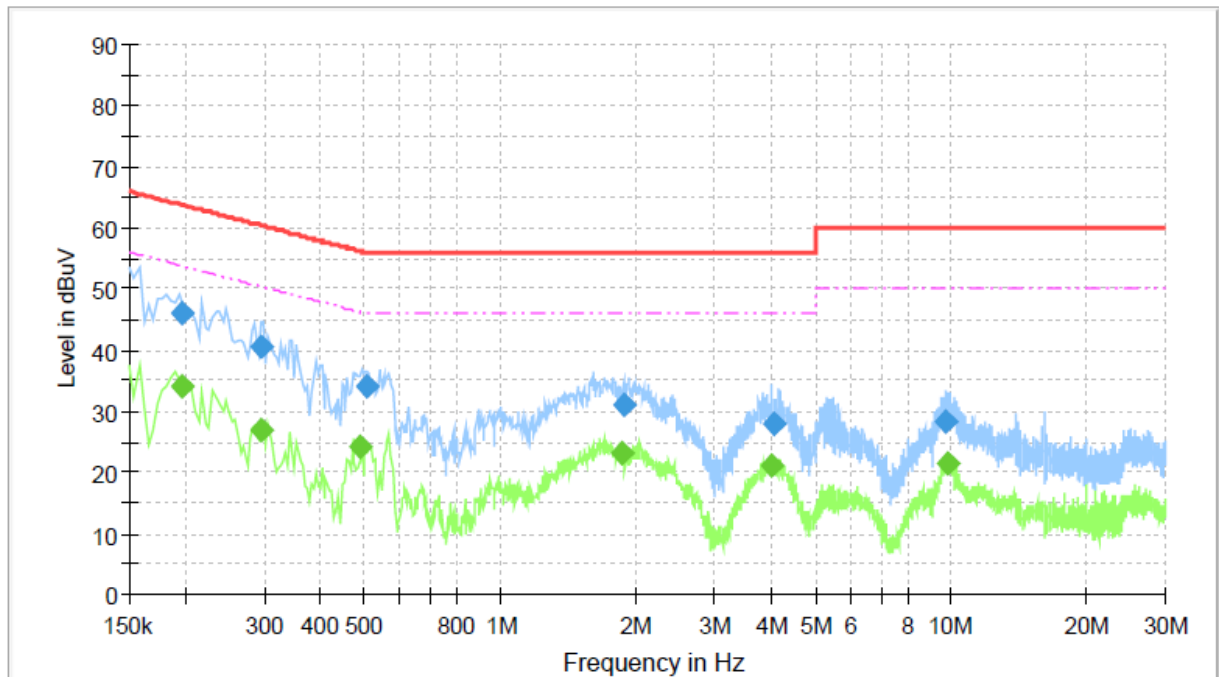
The EUT was placed on a wooden table, 0.8 m height above the floor. Power was fed to the EUT through a 50 Ω / 50 μ H + 5 Ω Artificial Mains Network (AMN). The ground plane was electrically bonded to the reference ground system and all power lines were filtered from ambient.

12.3 Test Date

May 10, 2021 ~ May 26, 2021

12.4 Test data for WLAN 2.4 GHz

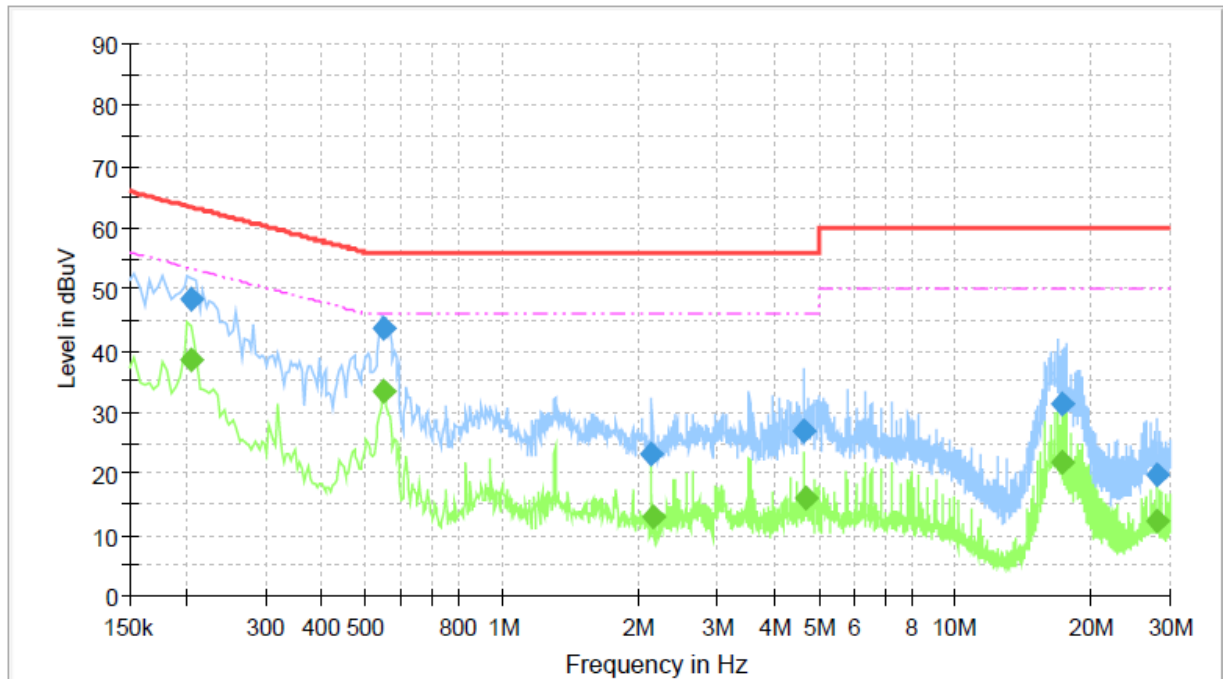
- Resolution bandwidth : 9 kHz
- Frequency range : 0.15 MHz ~ 30 MHz
- Tested Line : LIVE LINE
- Antenna 0, Antenna 1 and Multiple transmit tested, but the worst data were recorded.



Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
4.038	27.90	---	56.00	28.10	3000.0	9.0	L1	10.05
9.760	28.29	---	60.00	31.71	3000.0	9.0	L1	10.32
1.883	31.11	---	56.00	24.89	3000.0	9.0	L1	10.01
0.503	34.08	---	56.00	21.92	3000.0	9.0	L1	9.93
0.294	40.40	---	60.43	20.02	3000.0	9.0	L1	9.93
0.198	45.95	---	63.72	17.77	3000.0	9.0	L1	9.92
0.198	---	34.21	53.72	19.51	3000.0	9.0	L1	9.92
0.294	---	26.94	50.43	23.48	3000.0	9.0	L1	9.93
0.489	---	24.12	46.18	22.07	3000.0	9.0	L1	9.93
1.863	---	23.16	46.00	22.84	3000.0	9.0	L1	10.01
4.002	---	21.17	46.00	24.83	3000.0	9.0	L1	10.05
9.840	---	21.34	50.00	28.66	3000.0	9.0	L1	10.32

-. Tested Line : NEUTRAL LINE



Final Result

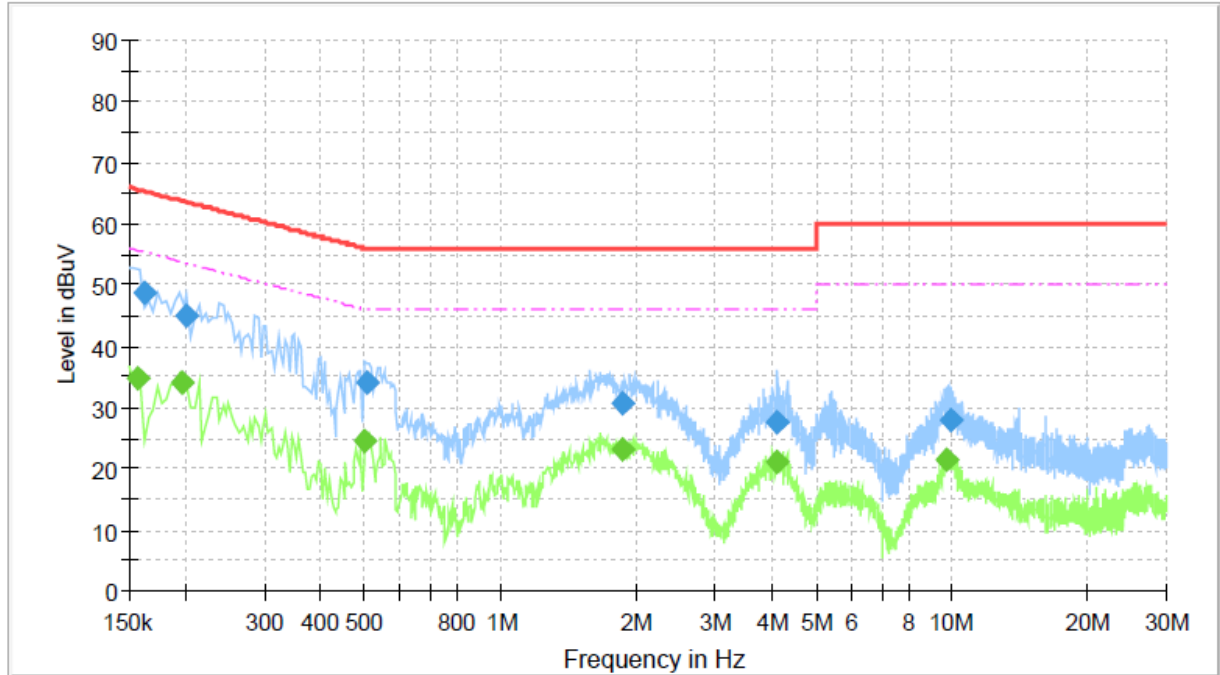
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
27.958	19.62	---	60.00	40.38	3000.0	9.0	N	10.83
2.129	23.01	---	56.00	32.99	3000.0	9.0	N	10.03
4.660	27.01	---	56.00	28.99	3000.0	9.0	N	10.08
17.313	31.52	---	60.00	28.48	3000.0	9.0	N	10.70
0.545	43.78	---	56.00	12.22	3000.0	9.0	N	9.95
0.206	48.33	---	63.39	15.06	3000.0	9.0	N	9.94
0.206	---	38.39	53.39	15.00	3000.0	9.0	N	9.94
0.549	---	33.52	46.00	12.48	3000.0	9.0	N	9.95
2.159	---	12.82	46.00	33.18	3000.0	9.0	N	10.03
4.688	---	15.86	46.00	30.14	3000.0	9.0	N	10.08
17.285	---	21.71	50.00	28.29	3000.0	9.0	N	10.70
27.958	---	12.43	50.00	37.57	3000.0	9.0	N	10.83

Remark: Margin (dB) = Limit – Level (Result)

The emission level in above table is included the transducer factor that means insertion loss (LISN), cable loss and attenuator.

12.5 Test data for Intermodulation Mode(Bluetooth LE + WLAN 2.4 GHz + WLAN 5 GHz)

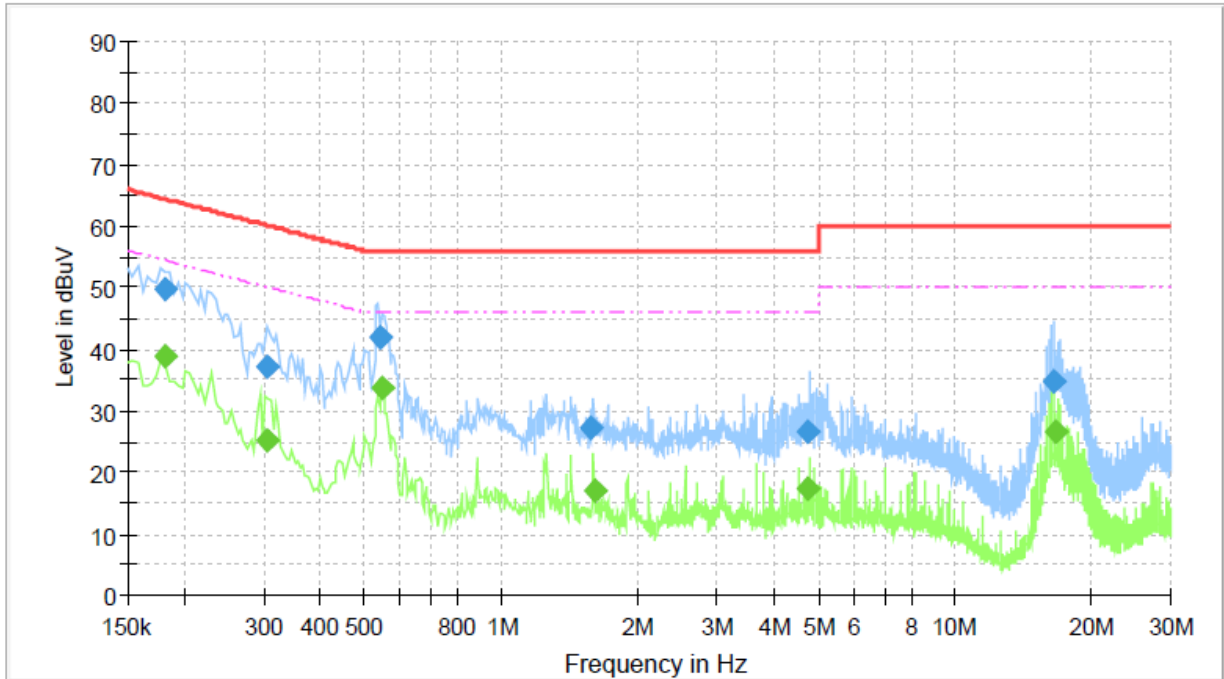
- . Resolution bandwidth : 9 kHz
- . Frequency range : 0.15 MHz ~ 30 MHz
- . Tested Line : LIVE LINE



Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
4.105	27.71	---	56.00	28.29	3000.0	9.0	L1	10.05
9.911	27.84	---	60.00	32.16	3000.0	9.0	L1	10.33
1.873	30.79	---	56.00	25.21	3000.0	9.0	L1	10.01
0.505	34.18	---	56.00	21.82	3000.0	9.0	L1	9.93
0.202	44.90	---	63.55	18.65	3000.0	9.0	L1	9.92
0.162	48.66	---	65.39	16.73	3000.0	9.0	L1	9.92
0.158	---	34.75	55.60	20.84	3000.0	9.0	L1	9.93
0.198	---	34.17	53.72	19.54	3000.0	9.0	L1	9.92
0.501	---	24.52	46.00	21.48	3000.0	9.0	L1	9.93
1.867	---	23.13	46.00	22.87	3000.0	9.0	L1	10.01
4.077	---	21.17	46.00	24.83	3000.0	9.0	L1	10.05
9.783	---	21.40	50.00	28.60	3000.0	9.0	L1	10.32

-. Tested Line : NEUTRAL LINE



Final Result

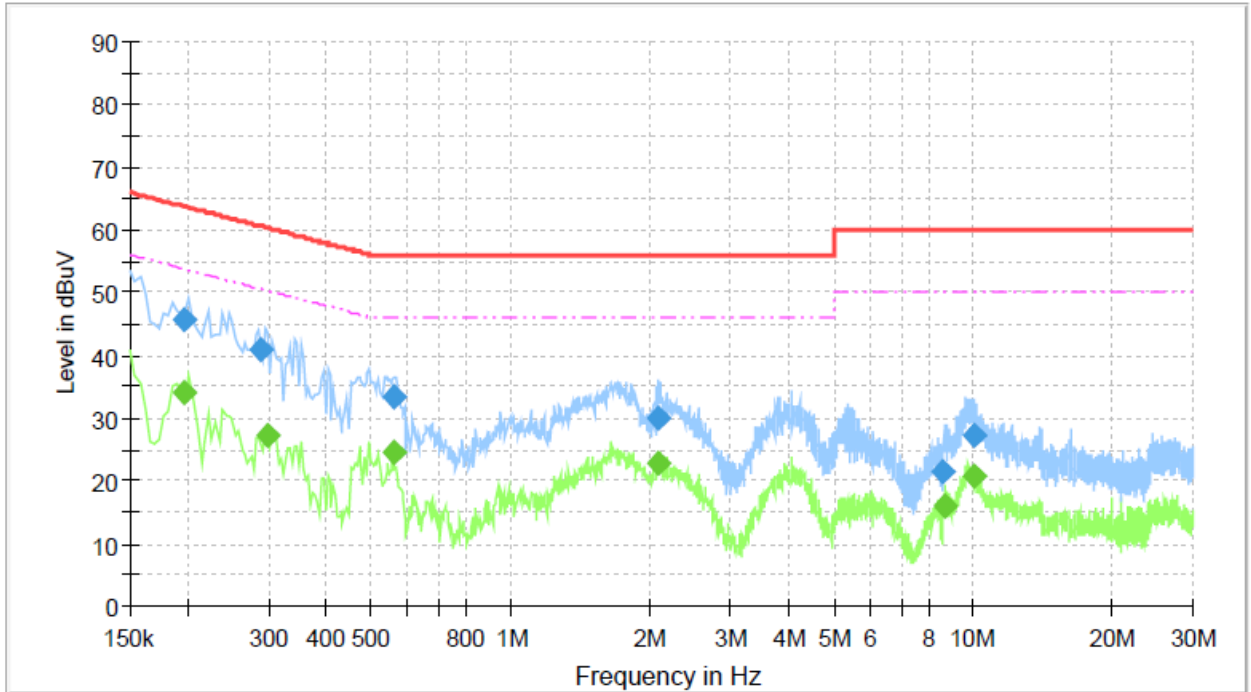
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
4.754	26.50	---	56.00	29.50	3000.0	9.0	N	10.08
1.582	27.39	---	56.00	28.61	3000.0	9.0	N	10.01
16.573	34.72	---	60.00	25.28	3000.0	9.0	N	10.68
0.306	37.18	---	60.09	22.91	3000.0	9.0	N	9.94
0.539	41.97	---	56.00	14.03	3000.0	9.0	N	9.95
0.181	49.72	---	64.42	14.69	3000.0	9.0	N	9.94
0.182	---	38.83	54.42	15.59	3000.0	9.0	N	9.94
0.306	---	25.17	50.09	24.92	3000.0	9.0	N	9.94
0.549	---	33.63	46.00	12.37	3000.0	9.0	N	9.95
1.614	---	16.88	46.00	29.12	3000.0	9.0	N	10.01
4.742	---	17.50	46.00	28.50	3000.0	9.0	N	10.08
16.637	---	26.60	50.00	23.40	3000.0	9.0	N	10.68

Remark: Margin (dB) = Limit – Level (Result)

The emission level in above table is included the transducer factor that means insertion loss (LISN), cable loss and attenuator.

12.6 Test data for Intermodulation Mode(Bluetooth + WLAN 2.4 GHz + WLAN 5 GHz)

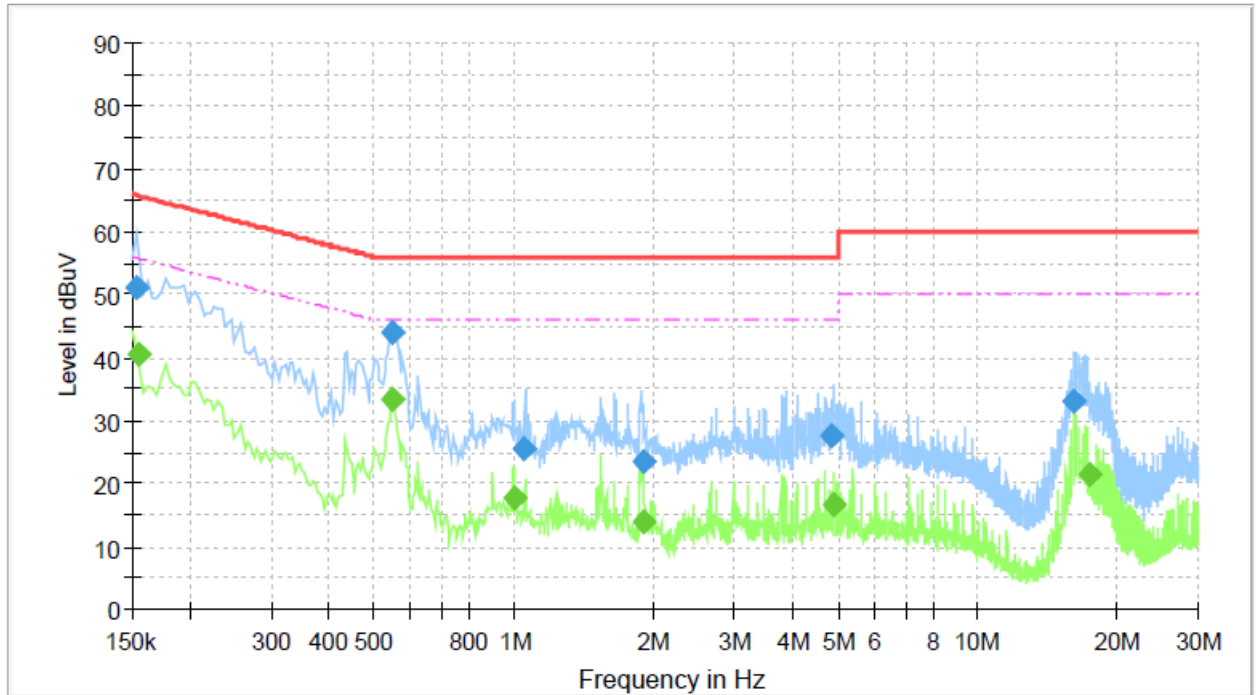
- . Resolution bandwidth : 9 kHz
- . Frequency range : 0.15 MHz ~ 30 MHz
- . Tested Line : LIVE LINE



Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
8.627	21.59	---	60.00	38.41	3000.0	9.0	L1	10.26
10.077	27.13	---	60.00	32.87	3000.0	9.0	L1	10.33
2.081	30.14	---	56.00	25.86	3000.0	9.0	L1	10.02
0.560	33.32	---	56.00	22.68	3000.0	9.0	L1	9.94
0.290	40.88	---	60.54	19.66	3000.0	9.0	L1	9.93
0.198	45.57	---	63.72	18.14	3000.0	9.0	L1	9.92
0.198	---	34.02	53.72	19.70	3000.0	9.0	L1	9.92
0.298	---	27.19	50.31	23.12	3000.0	9.0	L1	9.93
0.560	---	24.49	46.00	21.51	3000.0	9.0	L1	9.94
2.089	---	22.93	46.00	23.07	3000.0	9.0	L1	10.02
8.731	---	16.18	50.00	33.82	3000.0	9.0	L1	10.26
10.045	---	20.87	50.00	29.13	3000.0	9.0	L1	10.33

-. Tested Line : NEUTRAL LINE



Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
1.899	23.39	---	56.00	32.61	3000.0	9.0	N	10.02
1.051	25.56	---	56.00	30.44	3000.0	9.0	N	9.99
4.865	27.45	---	56.00	28.55	3000.0	9.0	N	10.09
16.212	33.21	---	60.00	26.79	3000.0	9.0	N	10.66
0.545	43.82	---	56.00	12.18	3000.0	9.0	N	9.95
0.154	51.29	---	65.78	14.49	3000.0	9.0	N	9.94
0.155	---	40.41	55.75	15.34	3000.0	9.0	N	9.94
0.545	---	33.43	46.00	12.57	3000.0	9.0	N	9.95
1.000	---	17.58	46.00	28.42	3000.0	9.0	N	9.99
1.903	---	13.85	46.00	32.15	3000.0	9.0	N	10.02
4.877	---	16.59	46.00	29.41	3000.0	9.0	N	10.09
17.444	---	21.50	50.00	28.50	3000.0	9.0	N	10.70

Remark: Margin (dB) = Limit – Level (Result)

The emission level in above table is included the transducer factor that means insertion loss (LISN), cable loss and attenuator.

13. LIST OF TEST EQUIPMENT

Model Number	Manufacturer	Description	Serial Number	Last Cal.(Interval)
FSV40-N	Rohde & Schwarz	Signal Analyzer	102177	Apr. 16, 2021 (1Y)
FSW43	Rohde & Schwarz	Signal Analyzer	104544	Jul. 15, 2020 (1Y)
ESW 44	Rohde & Schwarz	EMI Test Receiver	101851	Mar. 23, 2021 (1Y)
310N	Sonoma Instrument	Pre-Amplifier	392756	Oct. 16, 2020 (1Y)
PAM-118A	Com-Power	Pre-Amplifier	18040081	Oct. 12, 2020 (1Y)
PAM-840A	Com-Power	Pre-Amplifier	461339	Oct. 16, 2020 (1Y)
DT3000-3t	Innco System	Turn Table	DT3000/093	N/A
MA-4000XPET	Innco System	Antenna Master	MA4000/509	N/A
FMZB 1513	Schwarzbeck	Loop Antenna	1513-235	Mar. 24, 2020 (2Y)
HLP-2008	TDK	Hybrid Antenna	131316	Feb. 27, 2020 (2Y)
AH-118	Com-Power	Horn Antenna	10050061	Oct. 15, 2020 (1Y)
BBHA9170	Schwarzbeck	Horn Antenna	BBHA9170178	Jan. 07, 2021(1Y)
HPF 3GHz	Rohde & Schwarz	High Pass Filter	N/A	Feb. 08, 2021 (1Y)
10 dB Attenuator	Rohde & Schwarz	10 dB Attenuator	14100882-3	Jul. 15, 2020 (1Y)
ESR3	Rohde & Schwarz	EMI TEST RECEIVER	102602	Mar. 15, 2021 (1Y)
NSLK8126	Schwarzbeck	AMN	8126-404	Mar. 15, 2021 (1Y)
ESH3Z2	Rohde & Schwarz	PULSE LIMITER	357.8810.52	Mar. 15, 2021 (1Y)