10.5 Test data for 802.11n_HT20 RLAN Mode

10.5.1 Test data for Antenna 0

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Test Result : Pass

-. Duty Cycle : 93 %

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	MEASURED VALUE (dBm)	RBW Converted Value(dB)	Duty Correction Factor(dB)	Final Result (dBm)	LIMIT (dBm)	MARGIN (dB)
5 150 ~ 5 250	Low	5 180.00	9.37	-	0.32	9.69	10.10	0.41
	Middle	5 220.00	9.22	-	0.32	9.54	10.10	0.56
	High	5 240.00	8.78	-	0.32	9.1	10.10	1.00
5 725 ~ 5 850	Low	5 745.00	9.98	-3	0.32	7.3	29.10	21.80
	Middle	5 785.00	9.65	-3	0.32	6.97	29.10	22.13
	High	5 825.00	9.01	-3	0.32	6.33	29.10	22.77

Remark 1: Calculated RBW Converted Value(dB)= 10Log(Measured RBW/Standard Set RBW)

Remark 2: Result(dBm) = MEASURED VALUE(dBm) + RBW Converted Value(dB)+ Duty Cycle Factor(dB)

Remark 3: See next page for measurement data.

Tested by: Tae-Ho, Kim / Senior Manager

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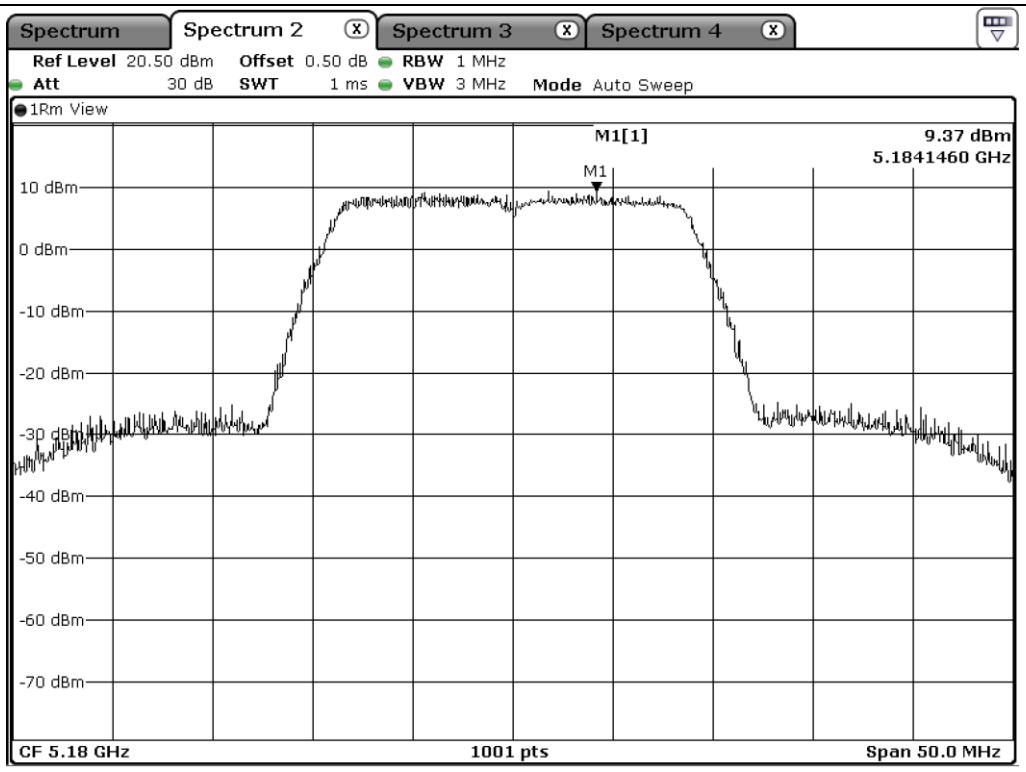
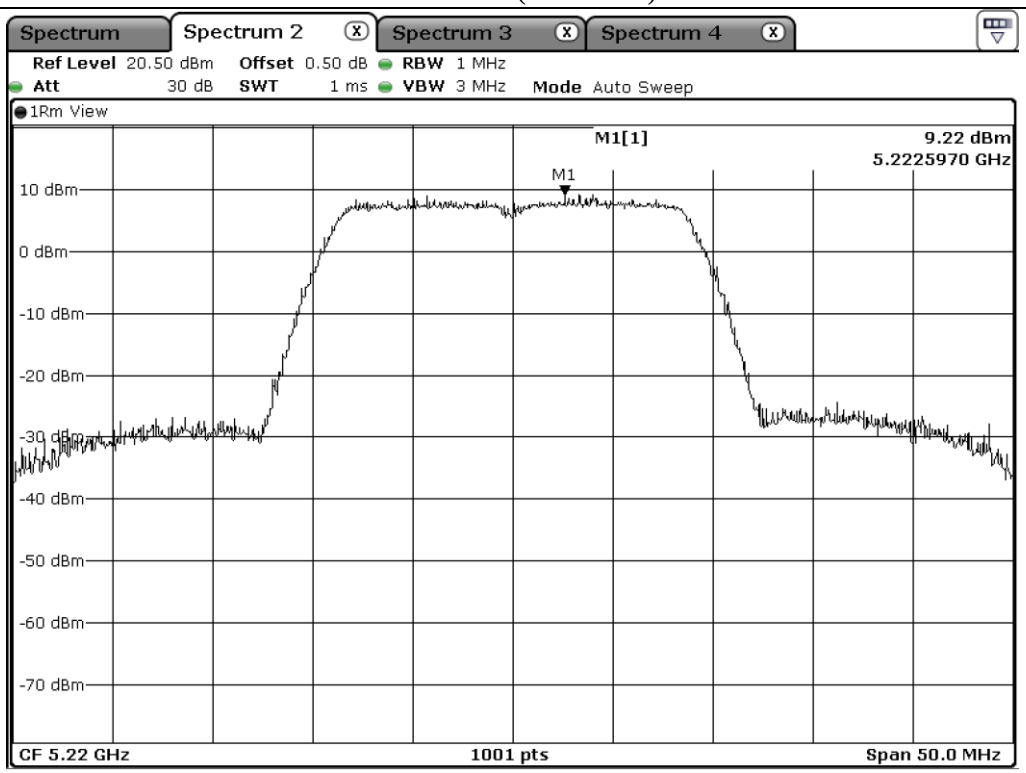


Low Channel (5 180 MHz)



Middle Channel (5 220 MHz)

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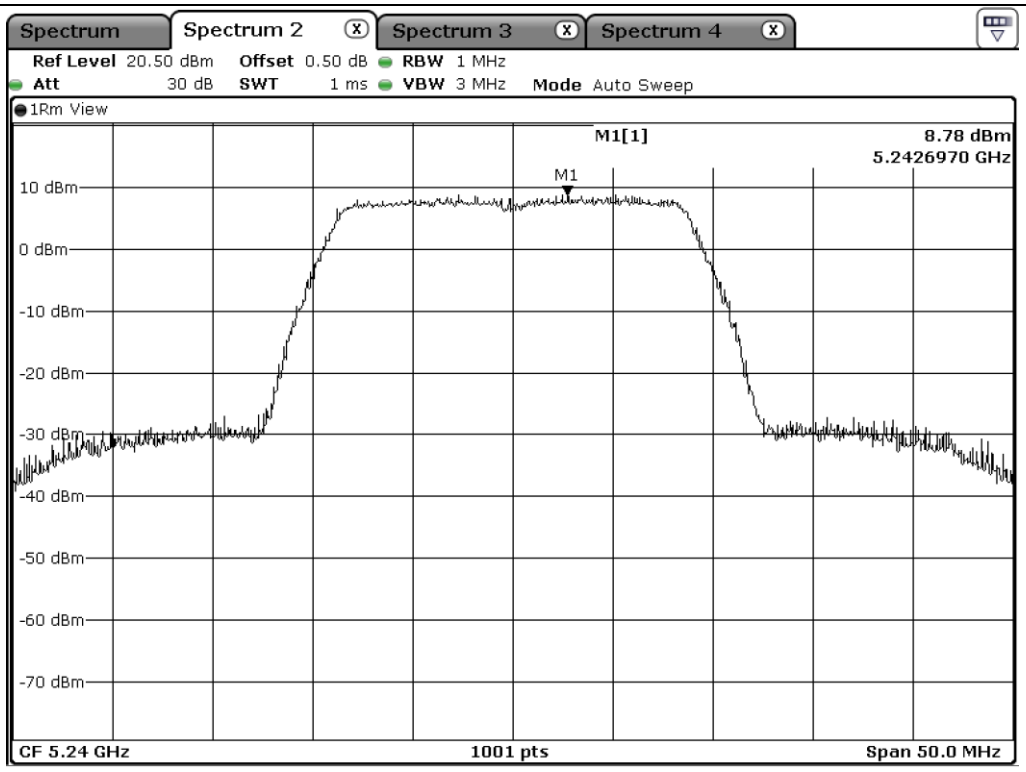

High Channel (5 240 MHz)

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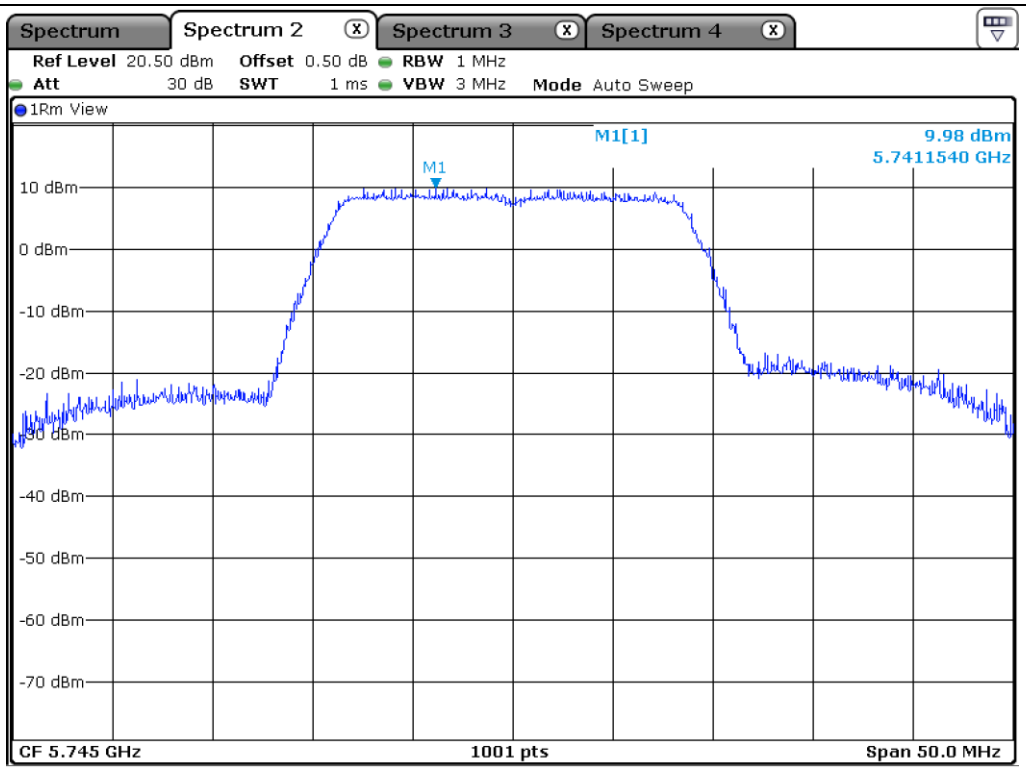
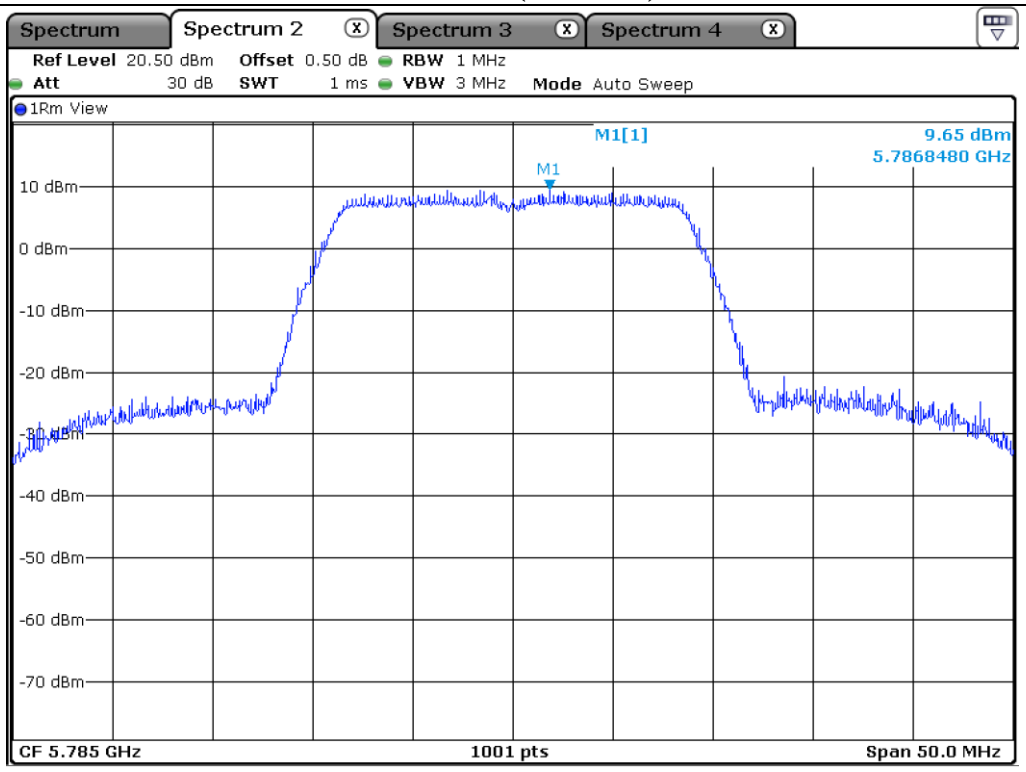
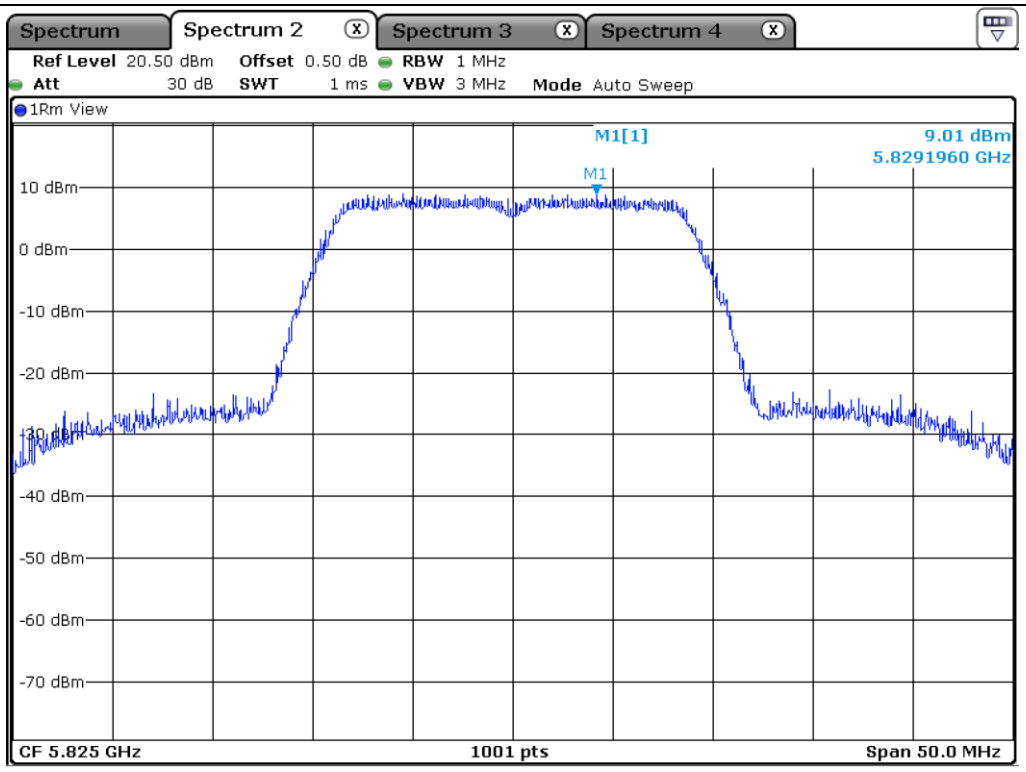


Low Channel (5 745 MHz)



Middle Channel (5 785 MHz)



High Channel (5 825 MHz)

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

10.5.2 Test data for Antenna 1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Test Result : Pass

-. Duty Cycle : 93 %

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	MEASURED VALUE (dBm)	RBW Converted Value(dB)	Duty Correction Factor(dB)	Final Result (dBm)	LIMIT (dBm)	MARGIN (dB)
5 150 ~ 5 250	Low	5 180.00	9.54	-	0.32	9.86	11.00	1.14
	Middle	5 220.00	8.75	-	0.32	9.07	11.00	1.93
	High	5 240.00	9.20	-	0.32	9.52	11.00	1.48
5 725 ~ 5 850	Low	5 745.00	10.35	-3	0.32	7.67	30.00	22.33
	Middle	5 785.00	10.13	-3	0.32	7.45	30.00	22.55
	High	5 825.00	10.14	-3	0.32	7.46	30.00	22.54

Remark 1: Calculated RBW Converted Value(dB)= 10Log(Measured RBW/Standard Set RBW)

Remark 2: Result(dBm) = MEASURED VALUE(dBm) + RBW Converted Value(dB)+ Duty Cycle Factor(dB)

Remark 3: See next page for measurement data.

Tested by: Tae-Ho, Kim / Senior Manager

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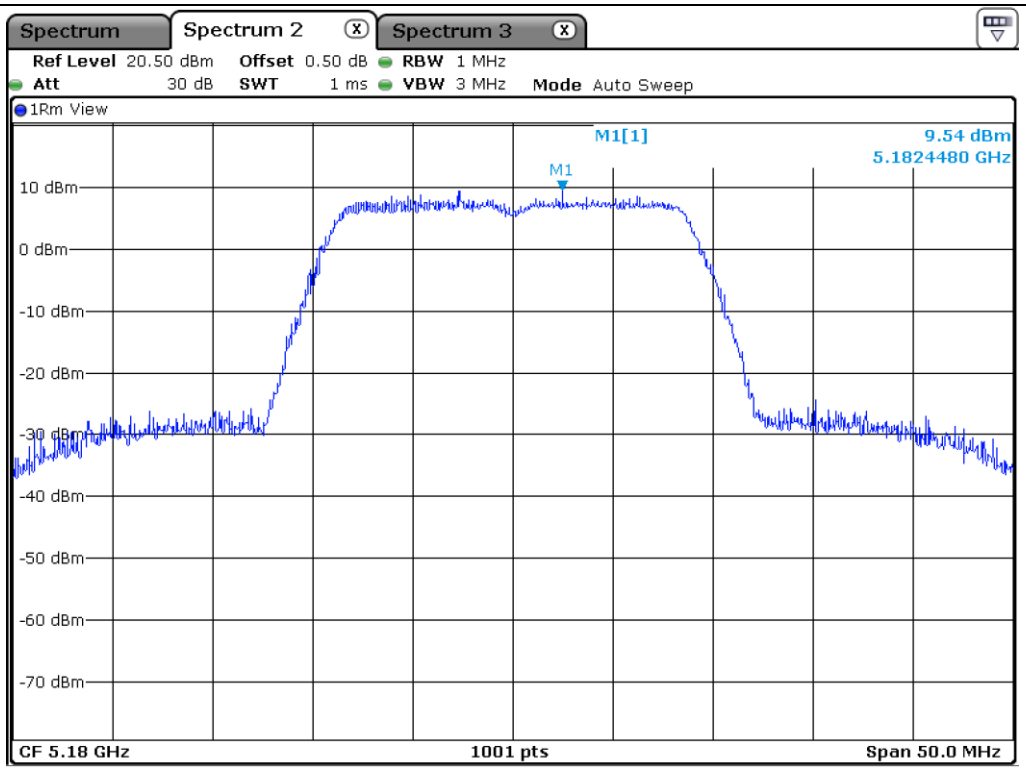
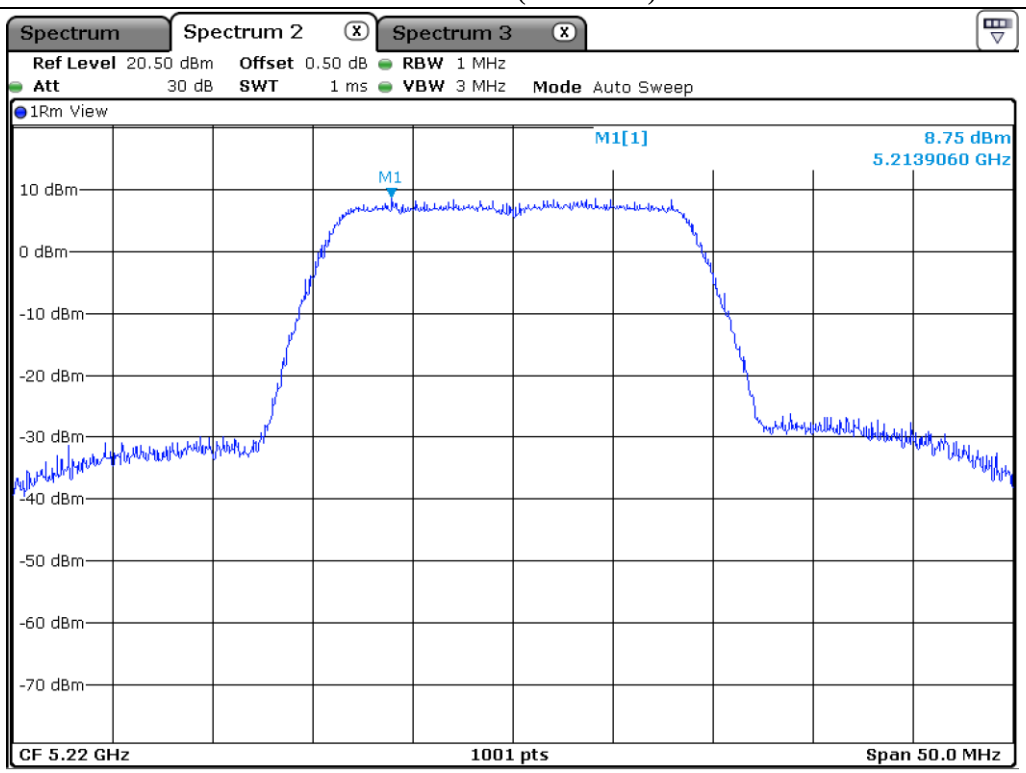


Low Channel (5 180 MHz)



Middle Channel (5 220 MHz)

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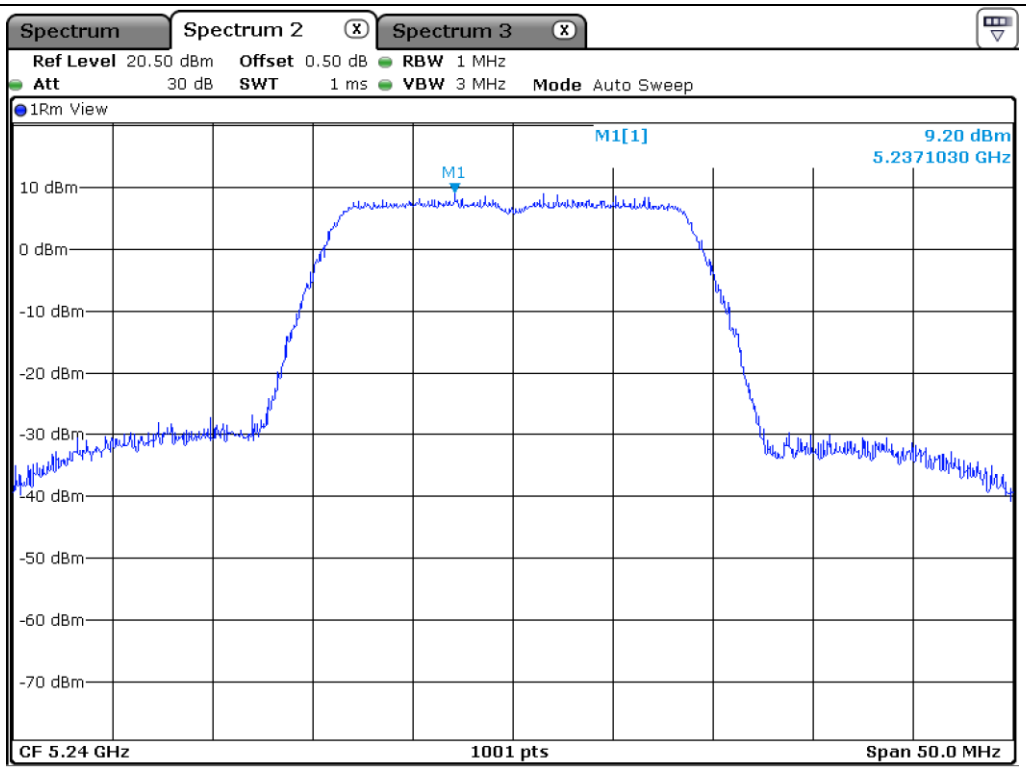
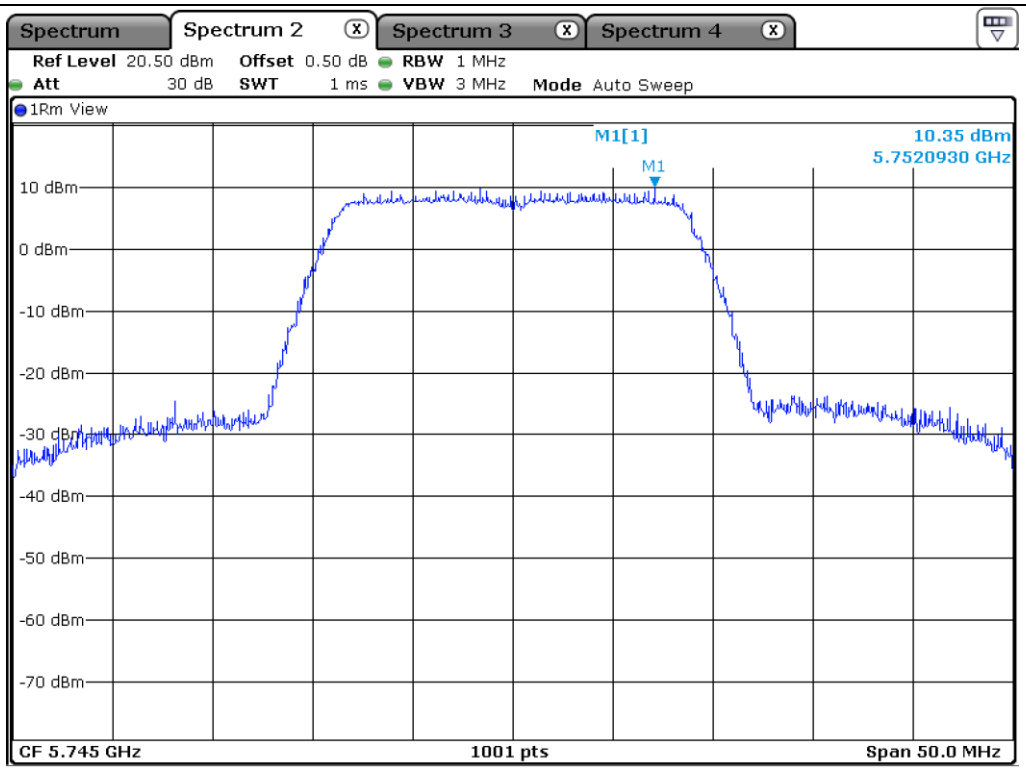
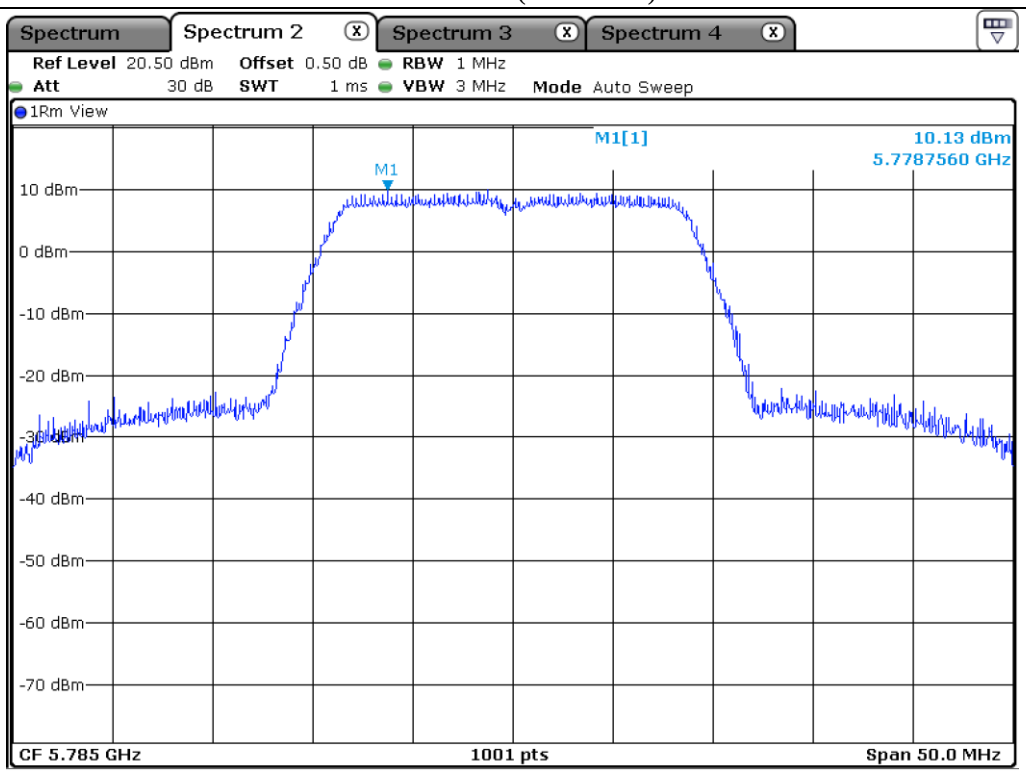


High Channel (5 240 MHz)

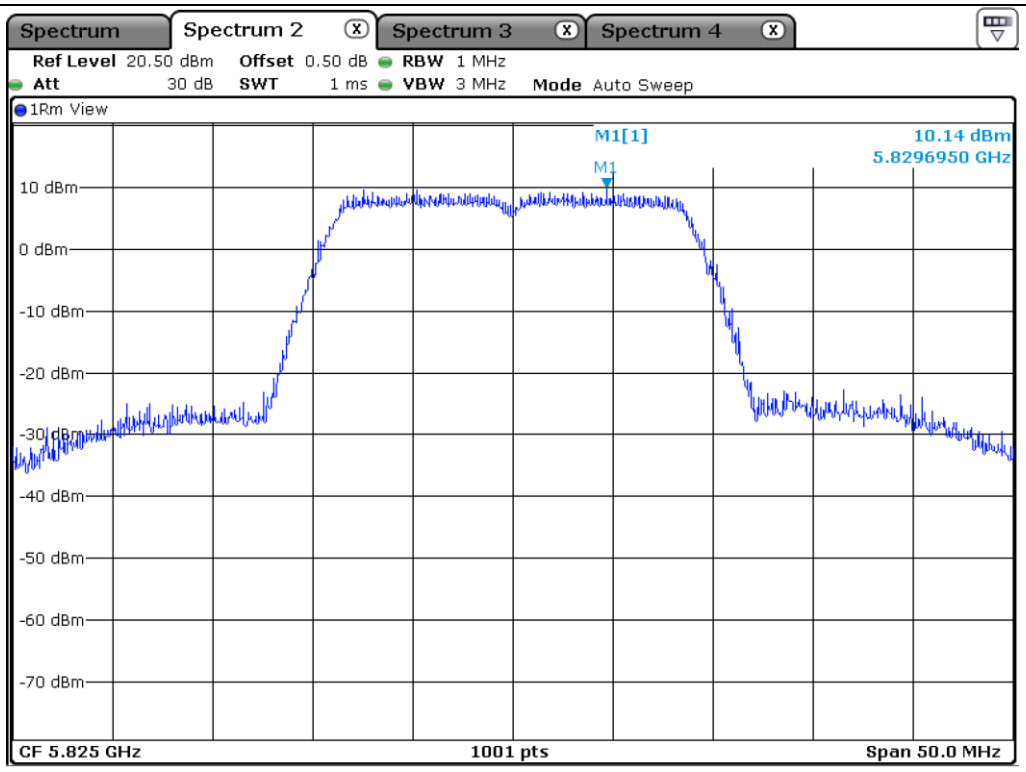
ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)



Low Channel (5 745 MHz)



Middle Channel (5 785 MHz)



High Channel (5 825 MHz)

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10.5.3 Test data for Multiple Transmit

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Test Result : Pass

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	Antenna 0 MEASURED VLAUE (dBm)	Antenna 1 MEASURED VLAUE (dBm)	COMBINED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
5 150 ~ 5 250	Low	5 180.00	3.08	1.47	5.36	7.56	2.20
	Middle	5 220.00	3.59	2.23	5.97	7.56	1.59
	High	5 240.00	3.50	2.68	6.12	7.56	1.44
5 725 ~ 5 850	Low	5 745.00	7.39	7.37	10.39	26.56	16.17
	Middle	5 785.00	7.66	7.26	10.47	26.56	16.09
	High	5 825.00	8.00	6.15	10.18	26.56	16.38

Remark 1: Margin = Limit – Combined Value

Remark 2: Calculated Output Power= $10\log(10^{(\text{Antenna0 Output Power}/10)} + 10^{(\text{Antenna1 Output Power}/10)})$

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

Remark 4 : Limit = 11 dBm – Exceeds Antenna gain (UNII I)

Limit = 30 dBm – Exceeds Antenna gain (UNII III)

Remark 5 : Exceeds Antenna gain = Above the limits is calculated according to antenna gain.

Because antenna gain is higher than 6 dBi.

Tested by: Tae-Ho, Kim / Senior Manager

10.6 Test data for 802.11n_HT40 RLAN Mode

10.6.1 Test data for Antenna 0

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Test Result : Pass

-. Duty Cycle : 87 %

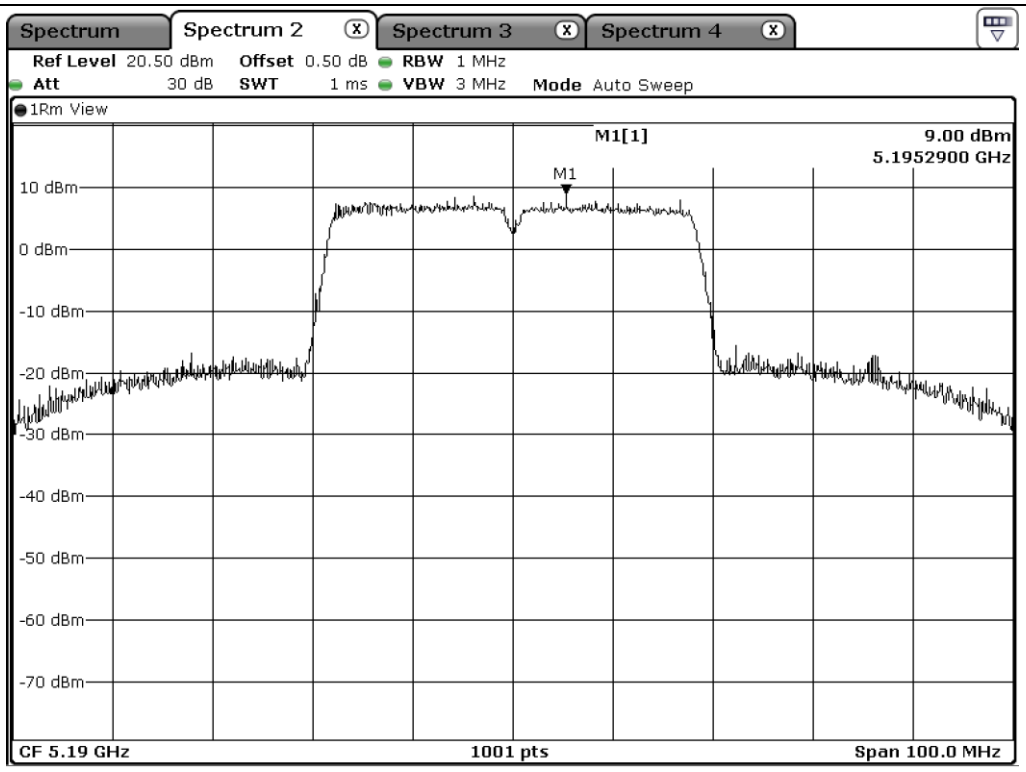
FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	MEASURED VALUE (dBm)	RBW Converted Value(dB)	Duty Correction Factor(dB)	Final Result (dBm)	LIMIT (dBm)	MARGIN (dB)
5 150 ~ 5 250	Low	5 190.00	9.00	-	0.6	9.60	10.10	0.50
	High	5 230.00	8.18	-	0.60	8.78	10.10	1.32
5 725 ~ 5 850	Low	5 755.00	7.41	-3	0.6	5.01	29.10	24.09
	High	5 795.00	7.41	-3	0.6	5.01	29.10	24.09

Remark 1: Calculated RBW Converted Value(dB)= 10Log(Measured RBW/Standard Set RBW)

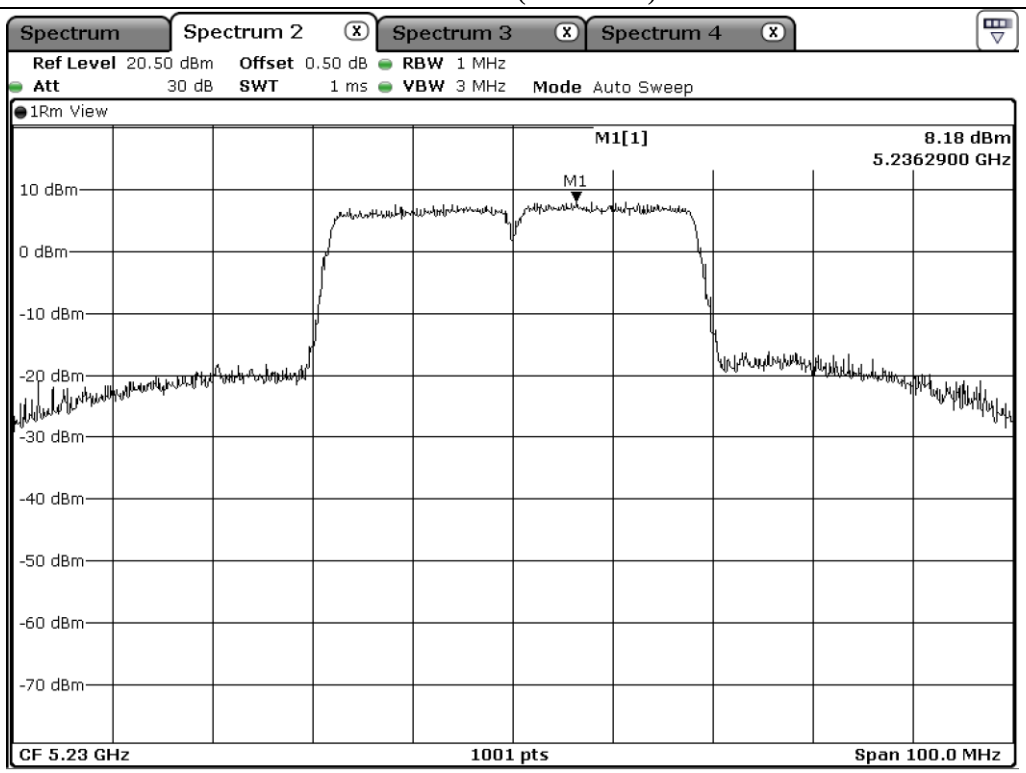
Remark 2: Result(dBm) = MEASURED VALUE(dBm) + RBW Converted Value(dB)+ Duty Cycle Factor(dB)

Remark 3: See next page for measurement data.

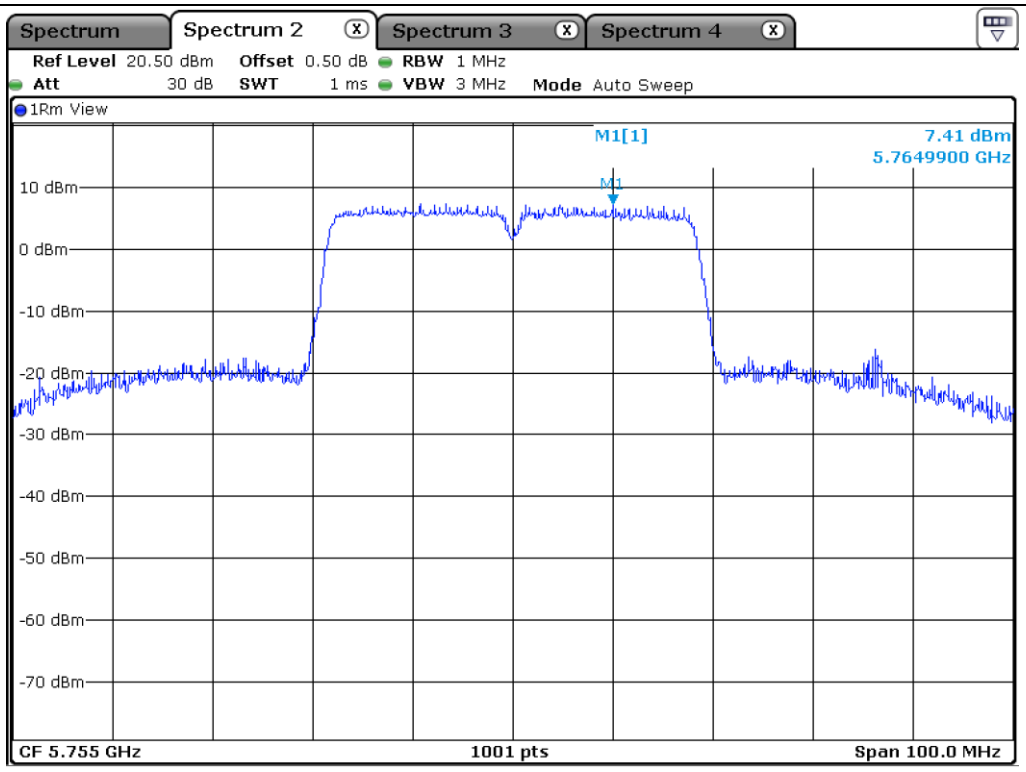
Tested by: Tae-Ho, Kim / Senior Manager



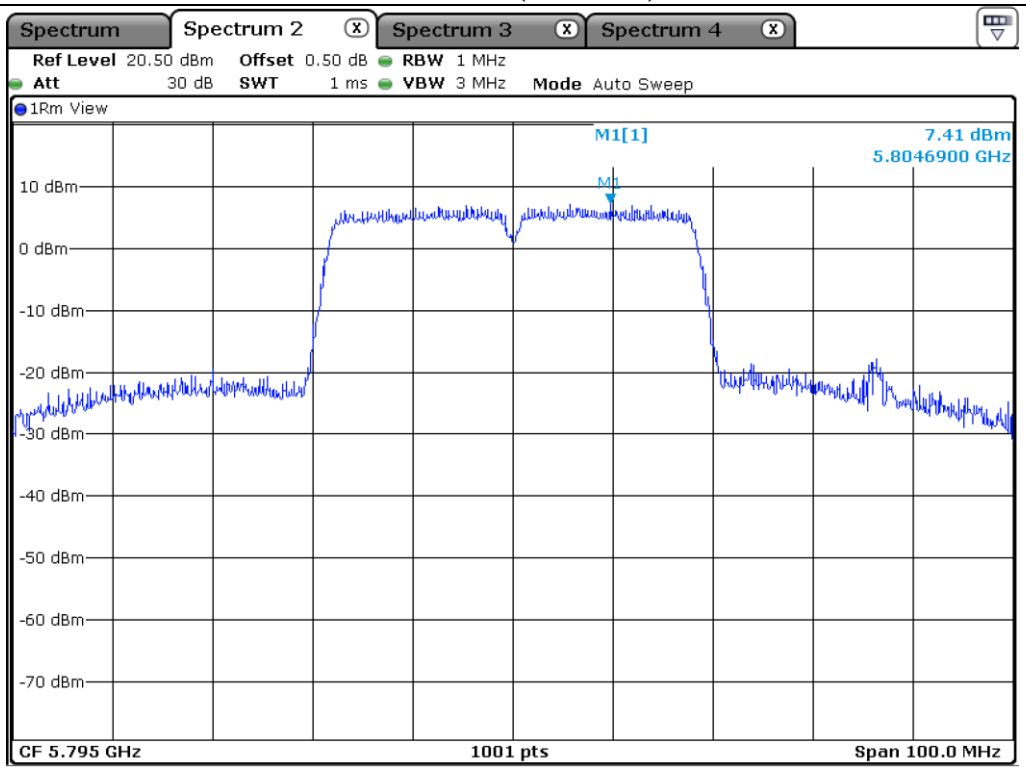
Low Channel (5 190 MHz)



High Channel (5 230 MHz)



Low Channel (5 755 MHz)



High Channel (5 795 MHz)

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10.6.2 Test data for Antenna 1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Test Result : Pass

-. Duty Cycle : 87 %

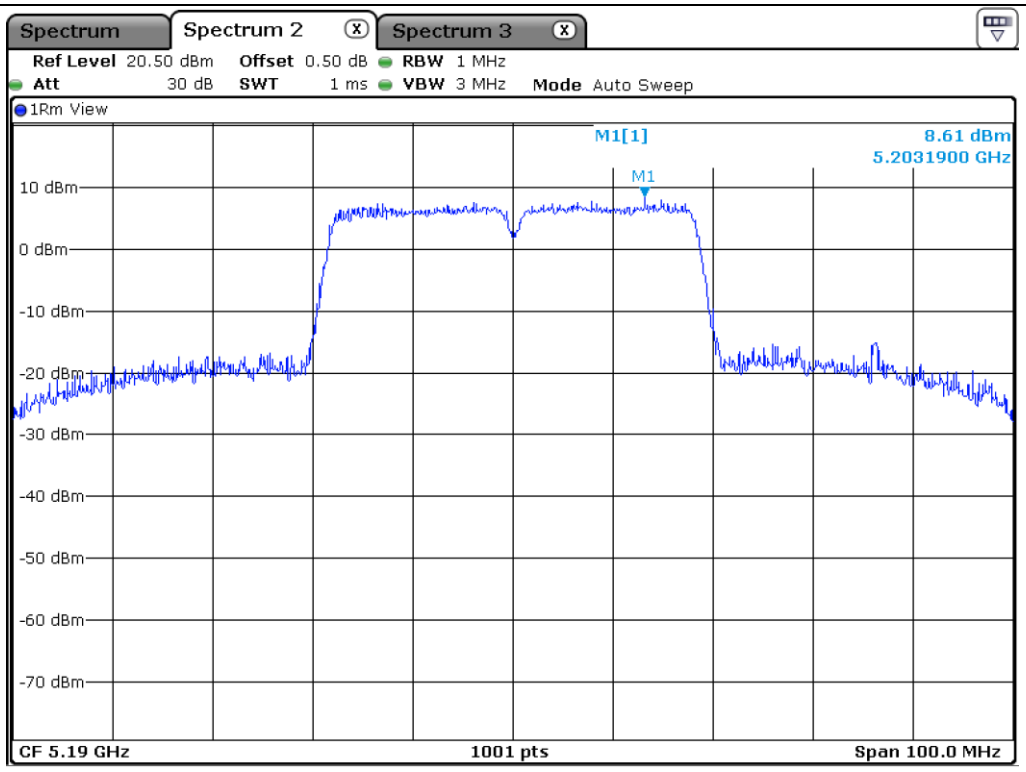
FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	MEASURED VALUE (dBm)	RBW Converted Value(dB)	Duty Correction Factor(dB)	Final Result (dBm)	LIMIT (dBm)	MARGIN (dB)
5 150 ~ 5 250	Low	5 190.00	8.61	-	0.6	9.21	11.00	1.8
	High	5 230.00	8.96	-	0.6	9.56	11.00	1.44
5 725 ~ 5 850	Low	5 755.00	7.96	-3	0.6	5.56	30.00	24.4
	High	5 795.00	7.76	-3	0.6	5.36	30.00	24.64

Remark 1: Calculated RBW Converted Value(dB)= 10Log(Measured RBW/Standard Set RBW)

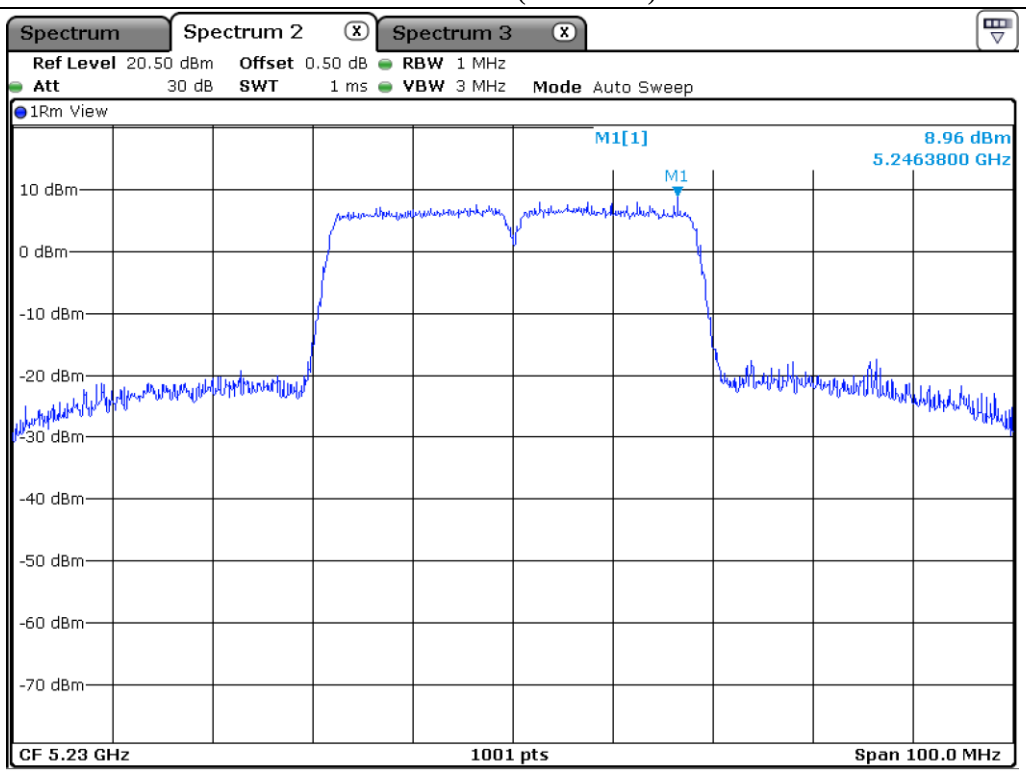
Remark 2: Result(dBm) = MEASURED VALUE(dBm) + RBW Converted Value(dB)+ Duty Cycle Factor(dB)

Remark 3: See next page for measurement data.

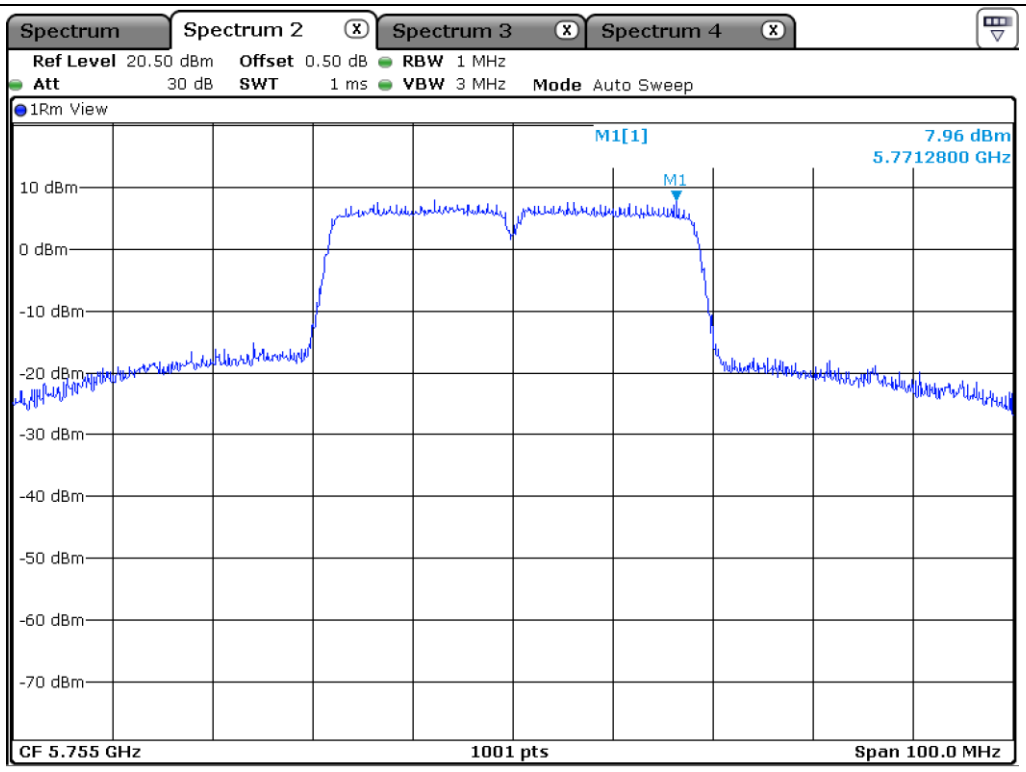
Tested by: Tae-Ho, Kim / Senior Manager



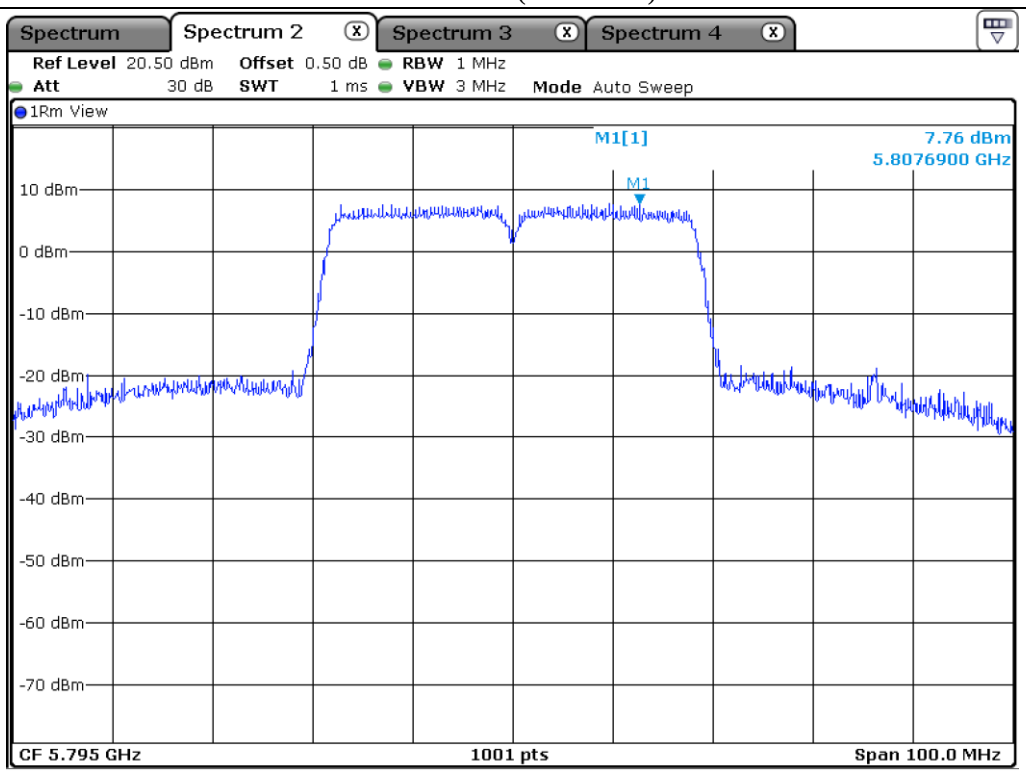
Low Channel (5 190 MHz)



High Channel (5 230 MHz)



Low Channel (5 755 MHz)



High Channel (5 795 MHz)

10.6.3 Test data for Multiple Transmit

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Test Result : Pass

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	Antenna 0 MEASURED VLAUE (dBm)	Antenna 1 MEASURED VLAUE (dBm)	COMBINED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
5 150 ~ 5 250	Low	5 190.00	3.94	3.06	6.53	7.56	1.00
	High	5 230.00	2.92	2.73	5.84	7.56	1.72
5 725 ~ 5 850	Low	5 755.00	5.73	5.69	8.72	26.56	17.8
	High	5 795.00	5.94	6.70	9.35	26.56	17.21

Remark 1: Margin = Limit – Combined Value

Remark 2: Calculated Output Power= $10\log(10^{(\text{Antenna0 Output Power}/10)} + 10^{(\text{Antenna1 Output Power}/10)})$

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

Remark 4 : Limit = 11 dBm – Exceeds Antenna gain (UNII I)

Limit = 30 dBm – Exceeds Antenna gain (UNII III)

Remark 5 : Exceeds Antenna gain = Above the limits is calculated according to antenna gain.

Because antenna gain is higher than 6 dBi.

Tested by: Tae-Ho, Kim / Senior Manager

10.7 Test data for 802.11ac_HT80 RLAN Mode

10.7.1 Test data for Antenna 0

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Test Result : Pass

-. Duty Cycle : 79 %

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	MEASURED VALUE (dBm)	RBW Converted Value(dB)	Duty Correction Factor(dB)	Final Result (dBm)	LIMIT (dBm)	MARGIN (dB)
5 150 ~ 5 250	Middle	5 210.00	4.21	-	1.02	5.23	10.10	4.87
5 725 ~ 5 850	Middle	5 775.00	4.30	-3.00	1.02	2.32	29.10	26.78

Remark 1: Calculated RBW Converted Value(dB)= 10Log(Measured RBW/Standard Set RBW)

Remark 2: Result(dBm) = MEASURED VALUE(dBm) + RBW Converted Value(dB)+ Duty Cycle Factor(dB)

Remark 3: See next page for measurement data.

Tested by: Tae-Ho, Kim / Senior Manager

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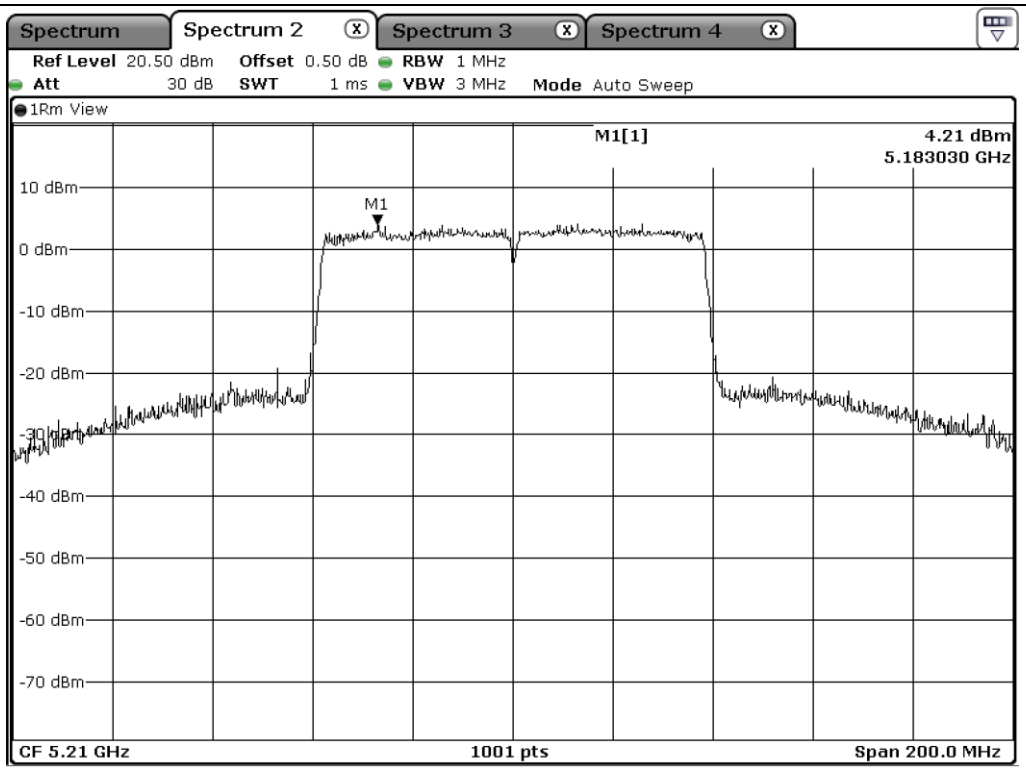
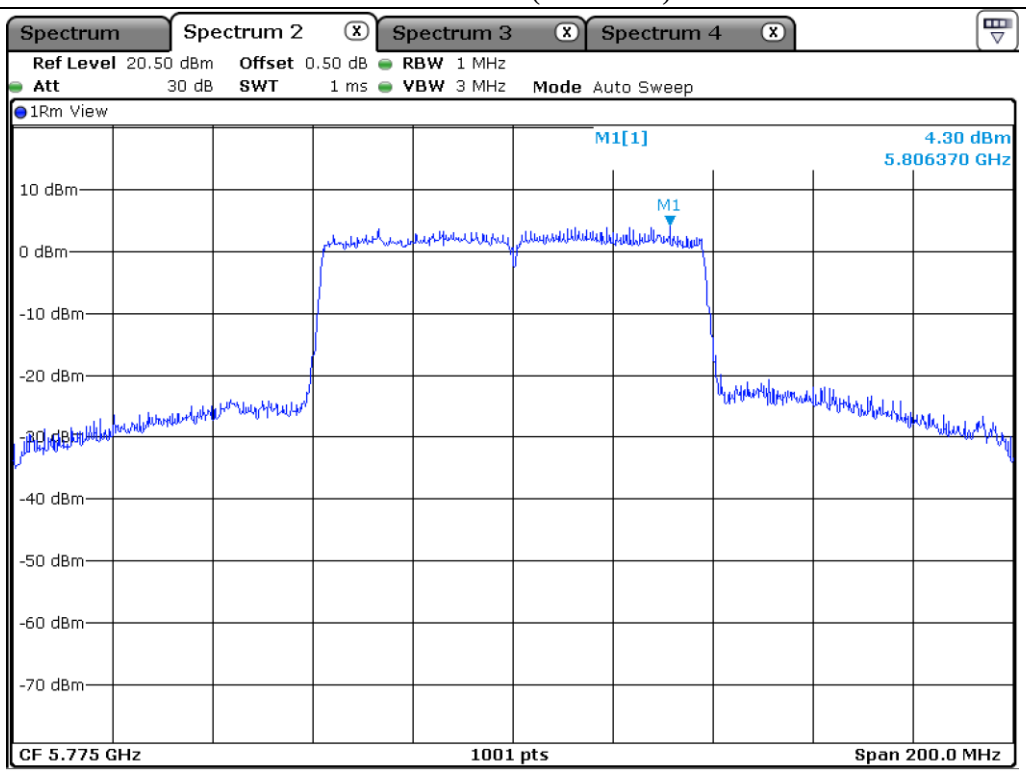


Middle Channel (5 210 MHz)



Middle Channel (5 775 MHz)

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10.7.2 Test data for Antenna 1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Test Result : Pass

-. Duty Cycle : 79 %

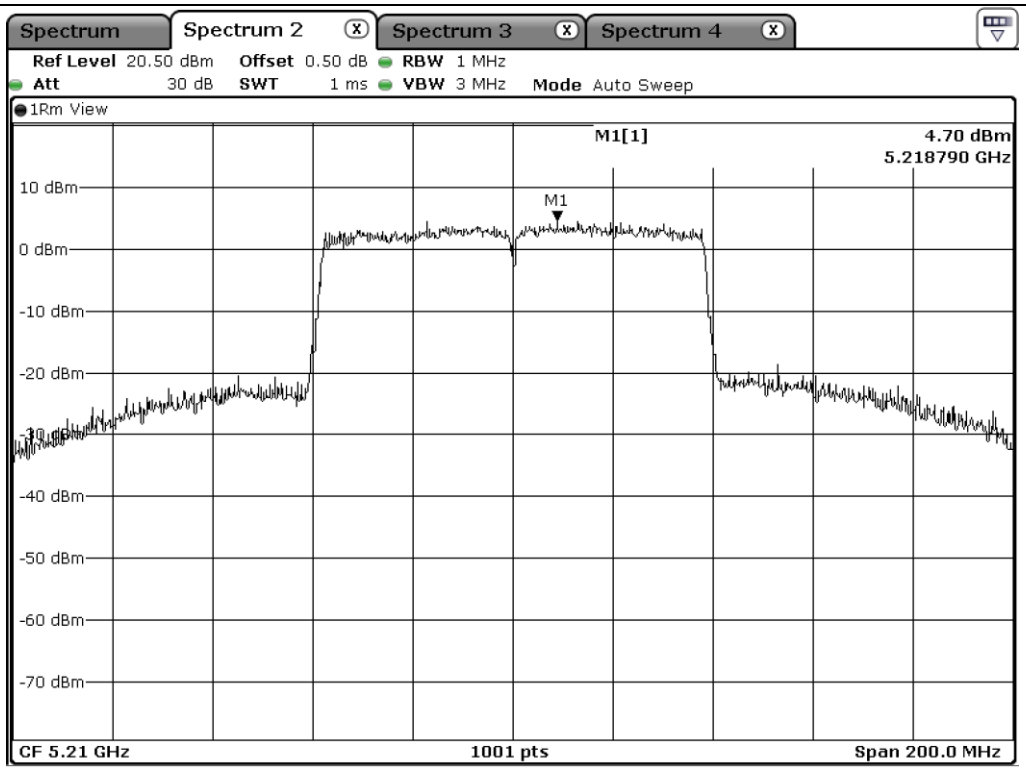
FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	MEASURED VALUE (dBm)	RBW Converted Value(dB)	Duty Correction Factor(dB)	Final Result (dBm)	LIMIT (dBm)	MARGIN (dB)
5 150 ~ 5 250	Middle	5 210.00	4.70	-	1.02	5.72	11.00	6.30
5 725 ~ 5 850	Middle	5 775.00	3.81	-3.00	1.02	1.83	30.00	28.17

Remark 1: Calculated RBW Converted Value(dB)= 10Log(Measured RBW/Standard Set RBW)

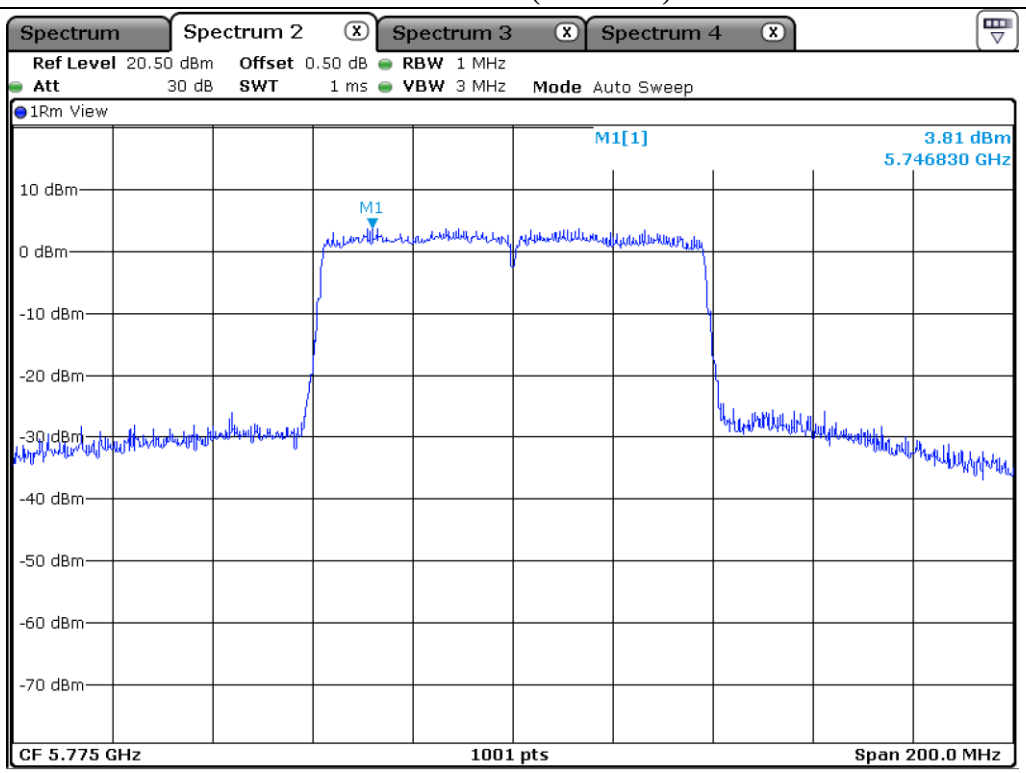
Remark 2: Result(dBm) = MEASURED VALUE(dBm) + RBW Converted Value(dB)+ Duty Cycle Factor(dB)

Remark 3: See next page for measurement data.

Tested by: Tae-Ho, Kim / Senior Manager



Middle Channel (5 210 MHz)



Middle Channel (5 775 MHz)

10.7.3 Test data for Multiple Transmit

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Test Result : Pass

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	Antenna 0 MEASURED VLAUE (dBm)	Antenna 1 MEASURED VLAUE (dBm)	COMBINED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
5 150 ~ 5 250	Middle	5 210.00	2.00	0.89	4.49	7.56	3.07
5 725 ~ 5 850	Middle	5 775.00	1.85	4.13	6.15	26.56	20.41

Remark 1: Margin = Limit – Combined Value

Remark 2: Calculated Output Power= $10\log(10^{(\text{Antenna0 Output Power}/10)} + 10^{(\text{Antenna1 Output Power}/10)})$

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

Remark 4 : Limit = 11 dBm – Exceeds Antenna gain (UNII I)

Limit = 30 dBm – Exceeds Antenna gain (UNII III)

Remark 5 : Exceeds Antenna gain = Above the limits is calculated according to antenna gain.

Because antenna gain is higher than 6 dBi.

Tested by: Tae-Ho, Kim / Senior Manager

11. FREQUENCY STABILITY WITH TEMPERATURE VARIATION

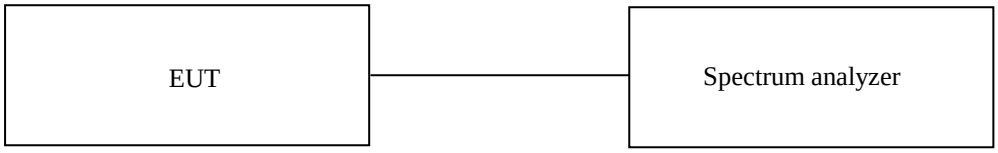
11.1 Operating environment

Temperature : 24.3 ℃

Relative humidity : 43.9 % R.H.

11.2 Test set-up

Turn EUT off and set chamber temperature to -20 ℃ and then allow sufficient time (approximately 20 min to 30 min after chamber reach the assigned temperature) for EUT to stabilize. Turn on the EUT and measure the EUT operating frequency and then turn off the EUT after the measurement. The temperature in the chamber was raised 10 ℃ step from -20 ℃ to +80 ℃. Repeat above method for frequency measurements every 10 ℃ step and then record all measured frequencies on each temperature step.



11.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.(Interval)
■ -	FSV40	Rohde & Schwarz	Signal Analyzer	101009	Mar. 14, 2018 (1Y)
■ -	SSE-43CI-A	Samkun Tech	Humidity Chamber	60712	Feb. 23, 2018 (1Y)
■ -	E3632A	Agilent	DC Power supply	MY50370016	Mar. 14, 2018 (1Y)

All test equipment used is calibrated on a regular basis.

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11.4 Test Data for U-NII-1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Result : Pass

Temperature (˚C)	Carrier Freq. (Hz)	Measured Freq. (Hz)	Frequency Error (kHz)
-20	5 180 000 000	5 179 982 587	-17.413
-10		5 179 981 592	-18.408
0		5 179 981 019	-18.981
10		5 179 980 884	-19.116
20		5 179 980 023	-19.977
30		5 179 979 815	-20.185
40		5 179 977 868	-22.132
50		5 179 974 674	-25.326
60		5 219 982 873	-17.127
70		5 219 981 836	-18.164
80		5 219 981 308	-18.692
-20	5 220 000 000	5 219 980 829	-19.171
-10		5 219 980 381	-19.619
0		5 219 978 451	-21.549
10		5 219 976 914	-23.086
20		5 219 974 291	-25.709
30		5 179 982 587	-17.413
40		5 179 981 592	-18.408
50		5 179 981 019	-18.981
60		5 179 980 884	-19.116
70		5 179 980 023	-19.977
80		5 179 979 815	-20.185

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-20	5 240 000 000	5 239 982 116	-17.884
-10		5 239 981 773	-18.227
0		5 239 981 171	-18.829
10		5 239 980 543	-19.457
20		5 239 980 366	-19.634
30		5 239 978 837	-21.163
40		5 239 977 086	-22.914
50		5 239 975 913	-24.087
60		5 239 982 116	-17.884
70		5 239 981 773	-18.227
80		5 239 981 171	-18.829

Note : While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.(ANSI C63.10-2013)

Tested by: Tae-Ho, Kim / Senior Manager

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11.5 Test Data for U-NII-3

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Result : Pass

Temperature (˚C)	Carrier Freq. (Hz)	Measured Freq. (Hz)	Frequency Error (kHz)
-20	5 745 000 000	5 744 982 893	-17.107
-10		5 744 981 526	-18.474
0		5 744 981 250	-18.750
10		5 744 980 657	-19.343
20		5 744 980 123	-19.877
30		5 744 979 675	-20.325
40		5 744 976 691	-23.309
50		5 744 974 598	-25.402
60		5 784 982 658	-17.342
70		5 784 981 866	-18.134
80		5 784 981 286	-18.714
-20	5 785 000 000	5 784 980 823	-19.177
-10		5 784 980 459	-19.541
0		5 784 979 100	-20.900
10		5 784 976 251	-23.749
20		5 784 975 243	-24.757
30		5 744 982 893	-17.107
40		5 744 981 526	-18.474
50		5 744 981 250	-18.750
60		5 744 980 657	-19.343
70		5 744 980 123	-19.877
80		5 744 979 675	-20.325

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-20	5 825 000 000	5 824 982 480	-17.520
-10		5 824 981 913	-18.087
0		5 824 981 435	-18.565
10		5 824 980 680	-19.320
20		5 824 980 077	-19.923
30		5 824 979 144	-20.856
40		5 824 977 855	-22.145
50		5 824 974 665	-25.335
60		5 824 982 480	-17.520
70		5 824 981 913	-18.087
80		5 824 981 435	-18.565

Note : While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.(ANSI C63.10-2013)

Tested by: Tae-Ho, Kim / Senior Manager

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

12. FREQUENCY STABILITY WITH VOLTAGE VARIATION

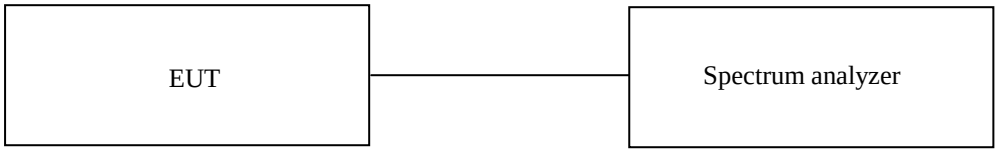
12.1 Operating environment

Temperature : 24.3 ℃

Relative humidity : 43.9 % R.H.

12.2 Test set-up

An external DC power supply was connected to the input of the EUT. The voltage of EUT set to 108.3 % of the nominal value and then was reduced to 91.6 % of nominal voltage. The output frequency was recorded at each step.



12.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.(Interval)
■ -	FSV40	Rohde & Schwarz	Signal Analyzer	101009	Mar. 14, 2018 (1Y)
■ -	E3632A	Agilent	DC Power supply	MY50370016	Mar. 14, 2018 (1Y)

All test equipment used is calibrated on a regular basis.

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12.4 Test Data for U-NII-1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Result : Pass

Voltage (VDC)	Carrier Freq. (Hz)	Measured Freq. (Hz)	Frequency Error (kHz)
13.2	5 180 000 000	5 179 979 489	-20.511
12.0		5 179 976 781	-23.219
10.8		5 179 975 955	-24.045
13.2	5 220 000 000	5 219 979 497	-20.503
12.0		5 219 977 747	-22.253
10.8		5 219 976 320	-23.680
13.2	5 240 000 000	5 239 979 811	-20.189
12.0		5 239 977 857	-22.143
10.8		5 239 975 087	-24.913

12.5 Test Data for U-NII-3

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Result : Pass

Voltage (VDC)	Carrier Freq. (Hz)	Measured Freq. (Hz)	Frequency Error (kHz)
13.2	5 745 000 000	5 744 978 701	-21.299
12.0		5 744 977 379	-22.621
10.8		5 744 975 851	-24.149
13.2	5 785 000 000	5 784 978 056	-21.944
12.0		5 784 976 556	-23.444
10.8		5 784 975 972	-24.028
13.2	5 825 000 000	5 824 978 018	-21.982
12.0		5 824 977 767	-22.233
10.8		5 824 975 777	-24.223

Tested by: Tae-Ho, Kim / Senior Manager

13. RADIATED SPURIOUS EMISSIONS

13.1 Operating environment

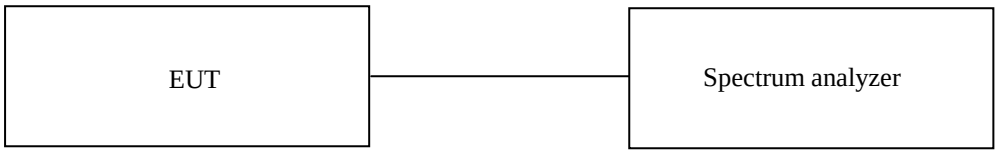
Temperature : 24.3 ℃

Relative humidity : 43.9 % R.H.

13.2 Test set-up for conducted measurement

The radiated emissions measurements were on the 3 m semi anechoic chamber. The EUT and other support equipment were placed on a non-conductive 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 40 GHz was scanned and maximum emission levels at each frequency recorded. The system was rotated 360°, and the antenna was varied in the height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for horizontal and vertical polarization of the receiving antenna.



13.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.(Interval)
■ -	FSV40	Rohde & Schwarz	Signal Analyzer	101009	Mar. 14, 2018 (1Y)
■ -	ESU	Rohde & Schwarz	EMI Test Receiver	100261	Mar. 29, 2018 (1Y)
■ -	310N	Sonoma Instrument	Pre-Amplifier	312544	Mar. 28, 2018 (1Y)
■ -	BBV9718	Schwarzbeck	Amplifier	310	Mar. 30, 2018 (1Y)
■ -	DT3000-3t	Innco System	Turn Table	DT3000/093	N/A
■ -	MA-4000XPET	Innco System	Antenna Master	MA4000/509	N/A
■ -	VULB9163	Schwarzbeck	TRILOG Broadband Antenna	777	Apr. 13, 2018 (2Y)
■ -	BBHA9120D	Schwarzbeck	Horn Antenna	BBHA9120D295	Aug. 16, 2017 (2Y)
■ -	BBHA9170	Schwarzbeck	Horn Antenna	BBHA9170179	Jul. 28, 2017 (2Y)
■ -	FMZB 1513	Rohde & Schwarz	Loop Antenna	1513-235	May. 13, 2018 (2Y)
■ -	SCU40A	Rohde & Schwarz	Signal Conditioning unit	100436	Mar. 15, 2018 (1Y)

All test equipment used is calibrated on a regular basis.

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13.4 Test data for Below 30 MHz

-. Test Date : August 16, 2018 ~ August 28, 2018

-. 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)
It was not observed any emissions from the EUT.									

Tested by: Tae-Ho, Kim / Senior Manager

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

13.5 Test data for 30 MHz ~ 1 000 MHz

13.5.1 Test data for Frequency U-NII-1

Humidity Level : 43.9 % R.H. Temperature: 24.3 ℃

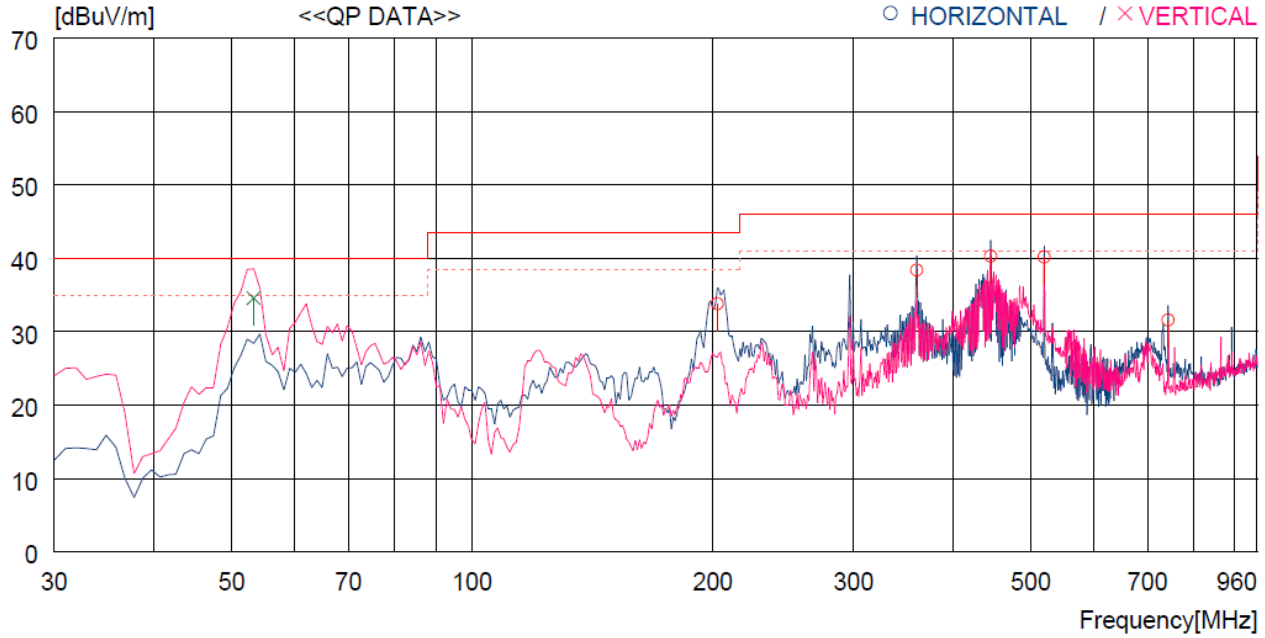
Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.247

Result : PASSED

EUT : Beam Projector Date: August 16, 2018 ~ August 28, 2018

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 [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	202.660	53.1	10.6	3.3	33.2	33.8	43.5	9.7	100	265
2	359.800	52.7	14.4	4.4	33.1	38.4	46.0	7.6	100	0
3	445.161	52.2	16.5	4.8	33.2	40.3	46.0	5.7	200	263
4	519.850	50.8	17.5	5.2	33.3	40.2	46.0	5.8	200	359
5	742.944	38.3	20.4	6.3	33.4	31.6	46.0	14.4	100	211
----- Vertical ------										
6	53.280	52.1	13.8	1.8	33.1	34.6	40.0	5.4	100	36

Tested by: Tae-Ho, Kim / Senior Manager

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13.5.2 Test data for Frequency U-NII-3

Humidity Level : 43.9 % R.H. Temperature: 24.3 ℃

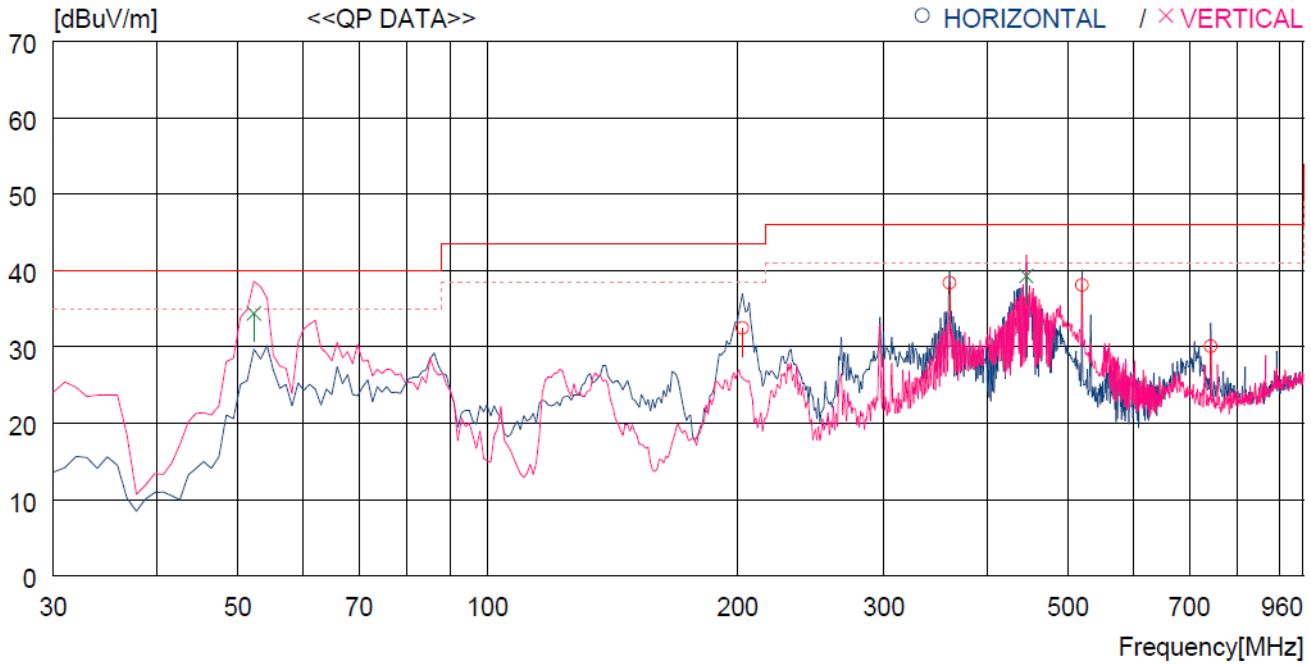
Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.247

Result : PASSED

EUT : Beam Projector Date: August 16, 2018 ~ August 28, 2018

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 [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	202.660	51.8	10.6	3.3	33.2	32.5	43.5	11.0	100	255
2	359.800	52.7	14.4	4.4	33.1	38.4	46.0	7.6	100	0
3	519.850	48.7	17.5	5.2	33.3	38.1	46.0	7.9	200	100
4	742.944	36.8	20.4	6.3	33.4	30.1	46.0	15.9	100	209
----- Vertical ------										
5	52.310	52.1	13.7	1.7	33.1	34.4	40.0	5.6	100	359
6	445.161	51.2	16.5	4.8	33.2	39.3	46.0	6.7	100	359

Tested by: Tae-Ho, Kim / Senior Manager

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13.6 Test data for Above 1 GHz

13.6.1 Test data for Frequency U-NII-1

13.6.1.1 Test data for 802.11a RLAN Mode

13.6.1.1.1 Test data for Antenna 0

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 94 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Low Channel										
10 360.00	27.56	Peak	H	39.66	16.38	34.74	-	48.86	68.20	19.34
	18.54	Peak	V				-	39.84	68.20	28.36
Middle Channel										
10 440.00	25.41	Peak	H	39.84	16.74	34.76	-	47.23	68.20	20.97
	17.28	Peak	V				-	39.10	68.20	29.10
High Channel										
10 480.00	26.94	Peak	H	40.02	17.09	34.77	-	49.28	68.20	18.92
	16.87	Peak	V				-	39.21	68.20	28.99

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

13.6.1.1.2 Test data for Antenna 1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 94 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Low Channel										
10 360.00	26.84	Peak	H	39.66	16.38	34.74	-	48.14	68.20	20.06
	19.23	Peak	V				-	40.53	68.20	27.67
Middle Channel										
10 440.00	25.14	Peak	H	39.84	16.74	34.76	-	46.96	68.20	21.24
	18.64	Peak	V				-	40.46	68.20	27.74
High Channel										
10 480.00	25.17	Peak	H	40.02	17.09	34.77	-	47.51	68.20	20.69
	19.12	Peak	V				-	41.46	68.20	26.74

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

13.6.1.2 Test data for 802.11n_HT20 RLAN Mode

13.6.1.2.1 Test data for Antenna 0

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 93 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Low Channel										
10 360.00	25.30	Peak	H	39.66	16.38	34.74	-	46.60	68.20	21.60
	20.30	Peak	V				-	41.60	68.20	26.60
Middle Channel										
10 400.00	28.10	Peak	H	39.84	16.74	34.76	-	49.92	68.20	18.28
	19.20	Peak	V				-	41.02	68.20	27.18
High Channel										
10 480.00	25.70	Peak	H	40.02	17.09	34.77	-	48.04	68.20	20.16
	17.20	Peak	V				-	39.54	68.20	28.66

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

13.6.1.2.2 Test data for Antenna 1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 93 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Low Channel										
10 360.00	29.60	Peak	H	39.66	16.38	34.74	-	50.90	68.20	17.30
	19.80	Peak	V				-	41.10	68.20	27.10
Middle Channel										
10 400.00	26.30	Peak	H	39.84	16.74	34.76	-	48.12	68.20	20.08
	19.90	Peak	V				-	41.72	68.20	26.48
High Channel										
10 480.00	22.40	Peak	H	40.02	17.09	34.77	-	44.74	68.20	23.46
	20.30	Peak	V				-	42.64	68.20	25.56

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

13.6.1.2.3 Test data for Multiple Transmit

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 93 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Low Channel										
10 360.00	27.30	Peak	H	39.66	16.38	34.74	-	48.60	68.20	19.60
	19.40	Peak	V				-	40.70	68.20	27.50
Middle Channel										
10 400.00	25.70	Peak	H	39.84	16.74	34.76	-	47.52	68.20	20.68
	18.30	Peak	V				-	40.12	68.20	28.08
High Channel										
10 480.00	22.20	Peak	H	40.02	17.09	34.77	-	44.54	68.20	23.66
	19.60	Peak	V				-	41.94	68.20	26.26

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

13.6.1.3 Test data for 802.11n_HT40 RLAN Mode

13.6.1.3.1 Test data for Antenna 0

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 87 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Low Channel										
10 380.00	25.80	Peak	H	39.93	16.88	34.74	-	47.87	68.20	20.33
	19.10	Peak	V				-	41.17	68.20	27.03
High Channel										
10 460.00	23.00	Peak	H	40.02	17.05	34.76	-	45.31	68.20	22.89
	20.60	Peak	V				-	42.90	68.20	25.30

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

13.6.1.3.2 Test data for Antenna 1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 87 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Low Channel										
10 380.00	28.60	Peak	H	39.93	16.88	34.74	-	50.67	68.20	17.53
	20.30	Peak	V				-	42.37	68.20	25.83
High Channel										
10 460.00	22.60	Peak	H	40.02	17.05	34.76	-	44.91	68.20	23.29
	19.20	Peak	V				-	41.50	68.20	26.70

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

13.6.1.3.3 Test data for Multiple Transmit

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 87 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Low Channel										
10 380.00	26.30	Peak	H	39.93	16.88	34.74	-	48.37	68.20	19.83
	21.80	Peak	V				-	43.87	68.20	24.33
High Channel										
10 460.00	22.60	Peak	H	40.02	17.05	34.76	-	44.91	68.20	23.29
	17.30	Peak	V				-	39.60	68.20	28.60

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

13.6.1.4 Test data for 802.11ac_HT80 RLAN Mode

13.6.1.4.1 Test data for Antenna 0

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 79 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Middle Channel										
10 420.00	24.80	Peak	H	39.98	16.97	34.76	-	46.99	68.20	21.21
	21.70	Peak	V				-	43.89	68.20	24.31

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

13.6.1.4.2 Test data for Antenna 1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 79 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Middle Channel										
10 420.00	26.30	Peak	H	39.98	16.97	34.76	-	48.49	68.20	19.71
	18.00	Peak	V				-	40.19	68.20	28.01

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

13.6.1.4.3 Test data for Multiple Transmit

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 79 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Middle Channel										
10 420.00	29.00	Peak	H	39.98	16.97	34.76	-	51.19	68.20	17.01
	19.80	Peak	V				-	41.99	68.20	26.21

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

13.6.2 Test data for Frequency U-NII-3

13.6.2.1 Test data for 802.11a RLAN Mode

13.6.2.1.1 Test data for Antenna 0

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 94 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Low Channel										
11 490.00	25.14	Peak	H	40.07	18.32	33.75	-	49.78	74.00	24.22
	18.45	Average	H				0.27	43.36	54.00	10.64
	24.95	Peak	V				-	49.59	74.00	24.41
	18.23	Average	V				0.27	43.14	54.00	10.86
Middle Channel										
11 570.00	25.28	Peak	H	39.78	18.94	33.64	-	50.36	74.00	23.64
	18.24	Average	H				0.27	43.59	54.00	10.41
	25.13	Peak	V				-	50.21	74.00	23.79
	18.28	Average	V				0.27	43.63	54.00	10.37
High Channel										
11 650.00	26.12	Peak	H	39.49	19.56	33.61	-	51.56	74.00	22.44
	18.14	Average	H				0.27	43.85	54.00	10.15
	24.87	Peak	V				-	50.31	74.00	23.69
	18.25	Average	V				0.27	43.96	54.00	10.04

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

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13.6.2.1.2 Test data for Antenna 1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 94 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Low Channel										
11 490.00	24.57	Peak	H	40.07	18.32	33.75	-	49.21	74.00	24.79
	18.25	Average	H				0.27	43.16	54.00	10.84
	23.58	Peak	V				-	48.22	74.00	25.78
	17.58	Average	V				0.27	42.49	54.00	11.51
Middle Channel										
11 570.00	25.34	Peak	H	39.78	18.94	33.64	-	50.42	74.00	23.58
	17.69	Average	H				0.27	43.04	54.00	10.96
	25.98	Peak	V				-	51.06	74.00	22.94
	18.24	Average	V				0.27	43.59	54.00	10.41
High Channel										
11 650.00	24.95	Peak	H	39.49	19.56	33.61	-	50.39	74.00	23.61
	18.24	Average	H				0.27	43.95	54.00	10.05
	25.18	Peak	V				-	50.62	74.00	23.38
	18.26	Average	V				0.27	43.97	54.00	10.03

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

13.6.2.2 Test data for 802.11n_HT20 RLAN Mode

13.6.2.2.1 Test data for Antenna 0

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 93 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Low Channel										
11 490.00	22.80	Peak	H	40.07	18.32	33.75	-	47.44	74.00	26.56
	18.90	Average	H				0.32	43.86	54.00	10.14
	21.00	Peak	V				-	45.64	74.00	28.36
	14.70	Average	V				0.32	39.66	54.00	14.34
Middle Channel										
11 570.00	27.00	Peak	H	39.78	18.94	33.64	-	52.08	74.00	21.92
	15.90	Average	H				0.32	41.30	54.00	12.70
	27.00	Peak	V				-	52.08	74.00	21.92
	15.60	Average	V				0.32	41.00	54.00	13.00
High Channel										
11 650.00	27.20	Peak	H	39.49	19.56	33.61	-	52.64	74.00	21.36
	17.50	Average	H				0.32	43.26	54.00	10.74
	28.00	Peak	V				-	53.44	74.00	20.56
	20.70	Average	V				0.32	46.46	54.00	7.54

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

13.6.2.2.2 Test data for Antenna 1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 93 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Low Channel										
11 490.00	25.70	Peak	H	40.07	18.32	33.75	-	50.34	74.00	23.66
	18.70	Average	H				0.32	43.66	54.00	10.34
	23.60	Peak	V				-	48.24	74.00	25.76
	19.90	Average	V				0.32	44.86	54.00	9.14
Middle Channel										
11 570.00	27.10	Peak	H	39.78	18.94	33.64	-	52.18	74.00	21.82
	18.40	Average	H				0.32	43.80	54.00	10.20
	24.00	Peak	V				-	49.08	74.00	24.92
	15.80	Average	V				0.32	41.20	54.00	12.80
High Channel										
11 650.00	26.20	Peak	H	39.49	19.56	33.61	-	51.64	74.00	22.36
	20.40	Average	H				0.32	46.16	54.00	7.84
	24.30	Peak	V				-	49.74	74.00	24.26
	19.00	Average	V				0.32	44.76	54.00	9.24

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

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13.6.2.2.3 Test data for Multiple Transmit

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 93 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Low Channel										
11 490.00	24.50	Peak	H	40.07	18.32	33.75	-	49.14	74.00	24.86
	18.20	Average	H				0.32	43.16	54.00	10.84
	25.80	Peak	V				-	50.44	74.00	23.56
	19.90	Average	V				0.32	44.86	54.00	9.14
Middle Channel										
11 570.00	22.60	Peak	H	39.78	18.94	33.64	-	47.68	74.00	26.32
	15.40	Average	H				0.32	40.80	54.00	13.20
	24.30	Peak	V				-	49.38	74.00	24.62
	21.00	Average	V				0.32	46.40	54.00	7.60
High Channel										
11 650.00	22.90	Peak	H	39.49	19.56	33.61	-	48.34	74.00	25.66
	18.60	Average	H				0.32	44.36	54.00	9.64
	23.70	Peak	V				-	49.14	74.00	24.86
	19.00	Average	V				0.32	44.76	54.00	9.24

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

13.6.2.3 Test data for 802.11n_HT40 RLAN Mode

13.6.2.3.1 Test data for Antenna 0

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 87 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Low Channel										
11 510.00	27.20	Peak	H	39.78	18.94	33.63	-	52.29	74.00	21.71
	20.00	Average	H				0.60	45.69	54.00	8.31
	24.10	Peak	V				-	49.19	74.00	24.81
	18.90	Average	V				0.60	44.59	54.00	9.41
High Channel										
11 590.00	26.70	Peak	H	39.66	19.19	33.62	-	51.93	74.00	22.07
	15.70	Average	H				0.60	41.53	54.00	12.47
	28.30	Peak	V				-	53.53	74.00	20.47
	20.20	Average	V				0.60	46.03	54.00	7.97

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

13.6.2.3.2 Test data for Antenna 1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 87 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Low Channel										
11 510.00	27.10	Peak	H	39.78	18.94	33.63	-	52.19	74.00	21.81
	18.10	Average	H				0.60	43.79	54.00	10.21
	21.10	Peak	V				-	46.19	74.00	27.81
	14.60	Average	V				0.60	40.29	54.00	13.71
High Channel										
11 590.00	28.30	Peak	H	39.66	19.19	33.62	-	53.53	74.00	20.47
	20.10	Average	H				0.60	45.93	54.00	8.07
	26.40	Peak	V				-	51.63	74.00	22.37
	17.30	Average	V				0.60	43.13	54.00	10.87

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

13.6.2.3.3 Test data for Multiple Transmit

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 87 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Low Channel										
11 510.00	25.90	Peak	H	39.78	18.94	33.63	-	50.99	74.00	23.01
	15.70	Average	H				0.60	41.39	54.00	12.61
	21.50	Peak	V				-	46.59	74.00	27.41
	18.50	Average	V				0.60	44.19	54.00	9.81
High Channel										
11 590.00	22.90	Peak	H	39.66	19.19	33.62	-	48.13	74.00	25.87
	15.20	Average	H				0.60	41.03	54.00	12.97
	23.80	Peak	V				-	49.03	74.00	24.97
	21.00	Average	V				0.60	46.83	54.00	7.17

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

13.6.2.4 Test data for 802.11ac_HT80 RLAN Mode

13.6.2.4.1 Test data for Antenna 0

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 79 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Middle Channel										
11 550.00	25.40	Peak	H	39.78	18.94	33.63	-	50.49	74.00	23.51
	20.50	Average	H				1.02	46.61	54.00	7.39
	25.20	Peak	V				-	50.29	74.00	23.71
	18.70	Average	V				1.02	44.81	54.00	9.19

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

13.6.2.4.2 Test data for Antenna 1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 79 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Middle Channel										
11 550.00	25.30	Peak	H	39.78	18.94	33.63	-	50.39	74.00	23.61
	19.50	Average	H				1.02	45.61	54.00	8.39
	23.10	Peak	V				-	48.19	74.00	25.81
	20.00	Average	V				1.02	46.11	54.00	7.89

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

13.6.2.4.3 Test data for Multiple Transmit

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 79 %

-.Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Middle Channel										
11 550.00	24.10	Peak	H	39.78	18.94	33.63	-	49.19	74.00	24.81
	18.70	Average	H				1.02	44.81	54.00	9.19
	23.00	Peak	V				-	48.09	74.00	25.91
	16.00	Average	V				1.02	42.11	54.00	11.89

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14. RADIATED RESTRICTED BAND EDGE MEASUREMENTS

14.1 Operating environment

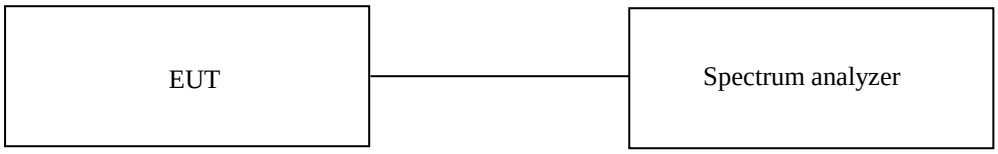
Temperature : 24.3 ℃

Relative humidity : 43.9 % R.H.

14.2 Test set-up for conducted measurement

The radiated emissions measurements were performed on the 3 m, open-field test site. The EUT was placed on a non-conductive turntable above the ground plane.

The system was rotated 360°, and the antenna was varied in the height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for horizontal and vertical polarization of the receiving antenna.



14.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.(Interval)
■ -	FSV40	Rohde & Schwarz	Signal Analyzer	101009	Mar. 14, 2018 (1Y)
■ -	ESU	Rohde & Schwarz	EMI Test Receiver	100261	Mar. 29, 2018 (1Y)
■ -	310N	Sonoma Instrument	Pre-Amplifier	312544	Mar. 28, 2018 (1Y)
■ -	BBV9718	Schwarzbeck	Amplifier	310	Mar. 30, 2018 (1Y)
■ -	DT3000-3t	Innco System	Turn Table	DT3000/093	N/A
■ -	MA-4000XPET	Innco System	Antenna Master	MA4000/509	N/A
■ -	VULB9163	Schwarzbeck	TRILOG Broadband Antenna	777	Apr. 13, 2018 (2Y)
■ -	BBHA9120D	Schwarzbeck	Horn Antenna	BBHA9120D295	Aug. 16, 2017 (2Y)
■ -	BBHA9170	Schwarzbeck	Horn Antenna	BBHA9170179	Jul. 28, 2017 (2Y)

All test equipment used is calibrated on a regular basis.

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14.4 Test data for Frequency U-NII-1

14.4.1 Test data for 802.11a RLAN Mode

14.4.1.1 Test data for Antenna 0

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 94 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
5 141.880	46.72	Peak	H	31.28	12.65	36.01	-	54.64	74.00	19.36
5 148.380	38.73	Average	H				0.27	46.92	54.00	7.08
5 141.480	43.88	Peak	V				-	51.80	74.00	22.20
5 148.400	35.10	Average	V				0.27	43.29	54.00	10.71

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.4.1.2 Test data for Antenna 1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 94 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
5 146.430	45.75	Peak	H	31.28	12.65	36.01	-	53.67	74.00	20.33
5 141.880	37.94	Average	H				0.27	46.13	54.00	7.87
5 146.430	43.86	Peak	V				-	51.78	74.00	22.22
5 141.890	35.30	Average	V				0.27	43.49	54.00	10.51

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.4.2 Test data for 802.11n_HT20 RLAN Mode

14.4.2.1 Test data for Antenna 0

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 93 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
5 149.830	49.91	Peak	H	31.28	12.65	36.01	-	57.83	74.00	16.17
5 143.830	40.88	Average	H				0.32	49.12	54.00	4.88
5 149.790	46.59	Peak	V				-	54.51	74.00	19.49
5 143.880	37.38	Average	V				0.32	45.62	54.00	8.38

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.4.2.2 Test data for Antenna 1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 93 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
5 149.830	48.71	Peak	H	31.28	12.65	36.01	-	56.63	74.00	17.37
5 143.830	39.18	Average	H				0.32	47.42	54.00	6.58
5 149.770	45.17	Peak	V				-	53.09	74.00	20.91
5 143.890	37.83	Average	V				0.32	46.07	54.00	7.93

Tabulated test data for Restricted Band

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

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

Tested by: Tae-Ho, Kim / Senior Manager

14.4.2.3 Test data for Multiple Transmit

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 93 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
5 149.430	51.47	Peak	H	31.28	12.65	36.01	-	59.39	74.00	14.61
5 149.080	42.25	Average	H				0.32	50.49	54.00	3.51
5 149.430	47.63	Peak	V				-	55.55	74.00	18.45
5 149.030	40.29	Average	V				0.32	48.53	54.00	5.47

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.4.3 Test data for 802.11n_HT40 RLAN Mode

14.4.3.1 Test data for Antenna 0

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 87 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
5 147.083	48.86	Peak	H	31.28	12.65	36.01	-	56.78	74.00	17.22
5 147.090	40.50	Average	H				0.60	49.02	54.00	4.98
5 147.100	45.71	Peak	V				-	53.63	74.00	20.37
5 147.100	38.79	Average	V				0.60	47.31	54.00	6.69

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.4.3.2 Test data for Antenna 1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 87 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
5 147.730	49.36	Peak	H	31.28	12.65	36.01	-	57.28	74.00	16.72
5 147.730	41.78	Average	H				0.60	50.30	54.00	3.70
5 147.800	46.38	Peak	V				-	54.30	74.00	19.70
5 147.800	38.96	Average	V				0.60	47.48	54.00	6.52

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.4.3.3 Test data for Multiple Transmit

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 87 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
5 149.680	52.52	Peak	H	31.28	12.65	36.01	-	60.44	74.00	13.56
5 149.680	43.48	Average	H				0.60	52.00	54.00	2.00
5 148.580	49.70	Peak	V				-	57.62	74.00	16.38
5 145.130	40.07	Average	V				0.60	48.59	54.00	5.41

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.4.4 Test data for 802.11ac_HT80 RLAN Mode

14.4.4.1 Test data for Antenna 0

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 79 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
5 146.430	47.52	Peak	H	31.28	12.65	36.01	-	55.44	74.00	18.56
5 147.750	38.94	Average	H				1.02	47.88	54.00	6.12
5 146.460	46.07	Peak	V				-	53.99	74.00	20.01
5 147.770	36.03	Average	V				1.02	44.97	54.00	9.03

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.4.4.2 Test data for Antenna 1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 79 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
5 146.430	47.47	Peak	H	31.28	12.65	36.01	-	55.39	74.00	18.61
5 147.730	39.28	Average	H				1.02	48.22	54.00	5.78
5 146.450	45.49	Peak	V				-	53.41	74.00	20.59
5 147.770	36.16	Average	V				1.02	45.10	54.00	8.90

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.4.4.3 Test data for Multiple Transmit

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 79 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
5 144.480	50.22	Peak	H	31.28	12.65	36.01	-	58.14	74.00	15.86
5 149.030	42.02	Average	H				1.02	50.96	54.00	3.04
5 144.480	48.25	Peak	V				-	56.17	74.00	17.83
5 149.084	39.00	Average	V				1.02	47.94	54.00	6.06

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.5 Test data for Frequency U-NII-3

14.5.1 Test data for 802.11a RLAN Mode

14.5.1.1 Test data for Antenna 0

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 94 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Low Channel										
5 714.890	52.10	Peak	H	32.17	12.09	35.59	-	60.77	121.17	60.40
5 714.350	48.21	Peak	V				-	56.88	121.02	64.14
5 724.790	60.53	Peak	H				-	69.20	133.52	64.32
5 724.180	53.02	Peak	V				-	61.69	132.13	70.44
High Channel										
5 851.370	52.84	Peak	H	32.17	12.09	35.43	-	61.67	130.88	69.21
5 850.540	48.93	Peak	V				-	57.76	132.77	75.01
5 860.270	46.32	Peak	H				-	55.15	121.12	65.97
5 861.100	45.85	Peak	V				-	54.68	120.89	66.21

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.5.1.2 Test data for Antenna 1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 94 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Low Channel										
5 714.180	53.16	Peak	H	32.17	12.09	35.59	-	61.83	120.97	59.14
5 715.820	48.69	Peak	V				-	57.36	121.43	64.07
5 724.730	59.77	Peak	H				-	68.44	133.38	64.94
5 724.460	52.58	Peak	V				-	61.25	132.77	71.52
High Channel										
5 850.270	52.53	Peak	H	32.17	12.09	35.43	-	61.36	133.38	72.02
5 851.090	47.36	Peak	V				-	56.19	131.51	75.32
5 860.550	46.41	Peak	H				-	55.24	121.05	65.81
5 861.100	45.81	Peak	V				-	54.64	120.89	66.25

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.5.2 Test data for 802.11n_HT20 RLAN Mode

14.5.2.1 Test data for Antenna 0

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 93 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Low Channel										
5 714.950	55.96	Peak	H	32.17	12.09	35.59	-	64.63	121.19	56.56
5 714.850	51.63	Peak	V				-	60.30	121.16	60.86
5 724.150	64.60	Peak	H				-	73.27	132.06	58.79
5 724.150	58.98	Peak	V				-	67.65	132.06	64.41
High Channel										
5 850.220	58.77	Peak	H	32.17	12.09	35.43	-	67.60	133.50	65.90
5 850.370	56.80	Peak	V				-	65.63	133.16	67.53
5 859.150	53.47	Peak	H				-	62.30	121.44	59.14
5 859.760	52.26	Peak	V				-	61.09	121.27	60.18

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.5.2.2 Test data for Antenna 1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 93 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Low Channel										
5 714.950	55.80	Peak	H	32.17	12.09	35.59	-	64.47	121.19	56.72
5 714.860	51.63	Peak	V				-	60.30	121.16	60.86
5 724.150	64.63	Peak	H				-	73.30	132.06	58.76
5 724.170	58.90	Peak	V				-	67.57	132.11	64.54
High Channel										
5 850.000	59.83	Peak	H	32.17	12.09	35.43	-	68.66	134.00	65.34
5 850.000	56.76	Peak	V				-	65.59	134.00	68.41
5 859.150	53.30	Peak	H				-	62.13	121.44	59.31
5 859.660	52.73	Peak	V				-	61.56	121.30	59.74

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.5.2.3 Test data for Multiple Transmit

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 93 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Low Channel										
5 714.870	54.78	Peak	H	32.17	12.09	35.59	-	63.45	121.16	57.71
5 714.770	50.66	Peak	V				-	59.33	121.14	61.81
5 724.150	63.70	Peak	H				-	72.37	132.06	59.69
5 724.170	57.86	Peak	V				-	66.53	132.11	65.58
High Channel										
5 850.000	58.99	Peak	H	32.17	12.09	35.43	-	67.82	134.00	66.18
5 850.000	54.64	Peak	V				-	63.47	134.00	70.53
5 859.090	52.65	Peak	H				-	61.48	121.45	59.97
5 859.220	52.26	Peak	V				-	61.09	121.42	60.33

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.5.3 Test data for 802.11n_HT40 RLAN Mode

14.5.3.1 Test data for Antenna 0

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 87 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Low Channel										
5 714.880	63.24	Peak	H	32.17	12.09	35.59	-	71.91	121.17	49.26
5 714.770	59.87	Peak	V				-	68.54	121.14	52.60
5 724.790	67.05	Peak	H				-	75.72	133.52	57.80
5 724.830	61.93	Peak	V				-	70.60	133.61	63.01
High Channel										
5 850.000	66.07	Peak	H	32.17	12.09	35.43	-	74.90	134.00	59.10
5 850.000	63.25	Peak	V				-	72.08	134.00	61.92
5 859.170	62.54	Peak	H				-	71.37	121.43	50.06
5 859.300	61.08	Peak	V				-	69.91	121.40	51.49

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.5.3.2 Test data for Antenna 1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 87 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Low Channel										
5 714.890	63.70	Peak	H	32.17	12.09	35.59	-	72.37	121.17	48.80
5 714.880	60.18	Peak	V				-	68.85	121.17	52.32
5 724.770	66.86	Peak	H				-	75.53	133.48	57.95
5 724.790	61.83	Peak	V				-	70.50	133.52	63.02
High Channel										
5 850.000	67.45	Peak	H	32.17	12.09	35.43	-	76.28	134.00	57.72
5 850.000	62.11	Peak	V				-	70.94	134.00	63.06
5 859.340	63.80	Peak	H				-	72.63	121.38	48.75
5 859.300	62.18	Peak	V				-	71.01	121.40	50.39

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.5.3.3 Test data for Multiple Transmit

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 87 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Low Channel										
5 714.870	63.24	Peak	H	32.17	12.09	35.59	-	71.91	121.16	49.25
5 714.870	58.69	Peak	V				-	67.36	121.16	53.80
5 724.780	67.05	Peak	H				-	75.72	133.50	57.78
5 724.810	61.20	Peak	V				-	69.87	133.57	63.70
High Channel										
5 850.000	65.48	Peak	H	32.17	12.09	35.43	-	74.31	134.00	59.69
5 850.000	61.29	Peak	V				-	70.12	134.00	63.88
5 859.090	60.26	Peak	H				-	69.09	121.45	52.36
5 859.240	59.89	Peak	V				-	68.72	121.41	52.69

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.5.4 Test data for 802.11ac_HT80 RLAN Mode

14.5.4.1 Test data for Antenna 0

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 79 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Middle Channel										
5 714.880	65.18	Peak	H	32.17	12.09	35.59	-	73.85	121.17	47.32
5 714.890	60.17	Peak	V				-	68.84	121.17	52.33
5 724.770	68.03	Peak	H				-	76.70	133.48	56.78
5 724.760	64.39	Peak	V				-	73.06	133.45	60.39
5 850.000	68.71	Peak	H	32.17	12.09	35.43	-	77.54	134.00	56.46
5 850.000	63.58	Peak	V				-	72.41	134.00	61.59
5 859.170	62.38	Peak	H				-	71.21	121.43	50.22
5 859.200	61.47	Peak	V				-	70.30	121.42	51.12

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.5.4.2 Test data for Antenna 1

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 79 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Middle Channel										
5 714.890	64.79	Peak	H	32.17	12.09	35.59	-	73.46	121.17	47.71
5 714.910	61.26	Peak	V				-	69.93	121.17	51.24
5 724.780	68.35	Peak	H				-	77.02	133.50	56.48
5 724.780	63.58	Peak	V				-	72.25	133.50	61.25
5 850.000	67.63	Peak	H	32.17	12.09	35.43	-	76.46	134.00	57.54
5 850.000	64.08	Peak	V				-	72.91	134.00	61.09
5 859.110	62.48	Peak	H				-	71.31	121.45	50.14
5 859.370	61.08	Peak	V				-	69.91	121.38	51.47

Tabulated test data for Restricted Band

Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.5.4.3 Test data for Multiple Transmit

-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 79 %

-. Result : Pass

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Middle Channel										
5 714.890	65.79	Peak	H	32.17	12.09	35.59	-	74.46	121.17	46.71
5 714.880	61.37	Peak	V				-	70.04	121.17	51.13
5 724.790	68.69	Peak	H				-	77.36	133.52	56.16
5 724.790	63.56	Peak	V				-	72.23	133.52	61.29
5 850.000	68.45	Peak	H	32.17	12.09	35.43	-	77.28	134.00	56.72
5 850.000	64.22	Peak	V				-	73.05	134.00	60.95
5 859.240	63.55	Peak	H				-	72.38	121.41	49.03
5 859.300	62.79	Peak	V				-	71.62	121.40	49.78

Tabulated test data for Restricted Band

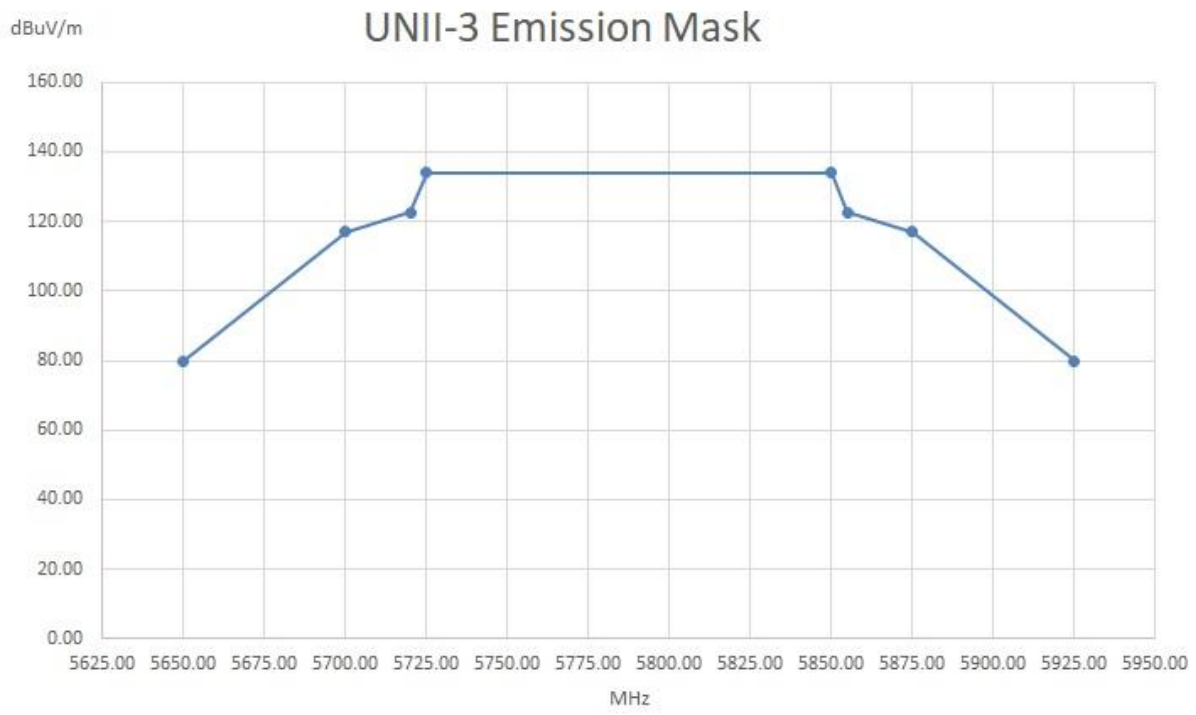
Remark - “H”: Horizontal, “V”: Vertical

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

Tested by: Tae-Ho, Kim / Senior Manager

14.5.5 U-NII-3 Emission Limits

14.5.5.1 Emission Mask Plots



Remark.

-. Title 47 → Part 15 → Subpart E—UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE DEVICES

§ 15.407 General technical requirements.

(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Tested by: Tae-Ho, Kim / Senior Manager

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15. CONDUCTED EMISSION TEST

15.1 Operating environment

Temperature : 24.3 ℃

Relative humidity : 43.9 % R.H.

15.2 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 μH + 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.

15.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal. (Interval)
■ -	ESPI	Rohde & Schwarz	Test Receiver	101012	Oct. 27, 2017 (1Y)
□ -	ESHS10	Rohde & Schwarz	Test Receiver	834467/007	Mar. 29, 2018 (1Y)
□ -	NSLK8128	Schwarzbeck	AMN	8128-216	Mar. 29, 2018 (1Y)
■ -	NSLK8126	Schwarzbeck	AMN	8126-404	Apr. 04, 2018 (1Y)
□ -	3825/2	EMCO	AMN	9109-1869	Apr. 11, 2018 (1Y)
■ -	3825/2	EMCO	AMN	9109-1867	Mar. 28, 2018 (1Y)

All test equipment used is calibrated on a regular basis.

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15.4 Test data for Frequency U-NII-1

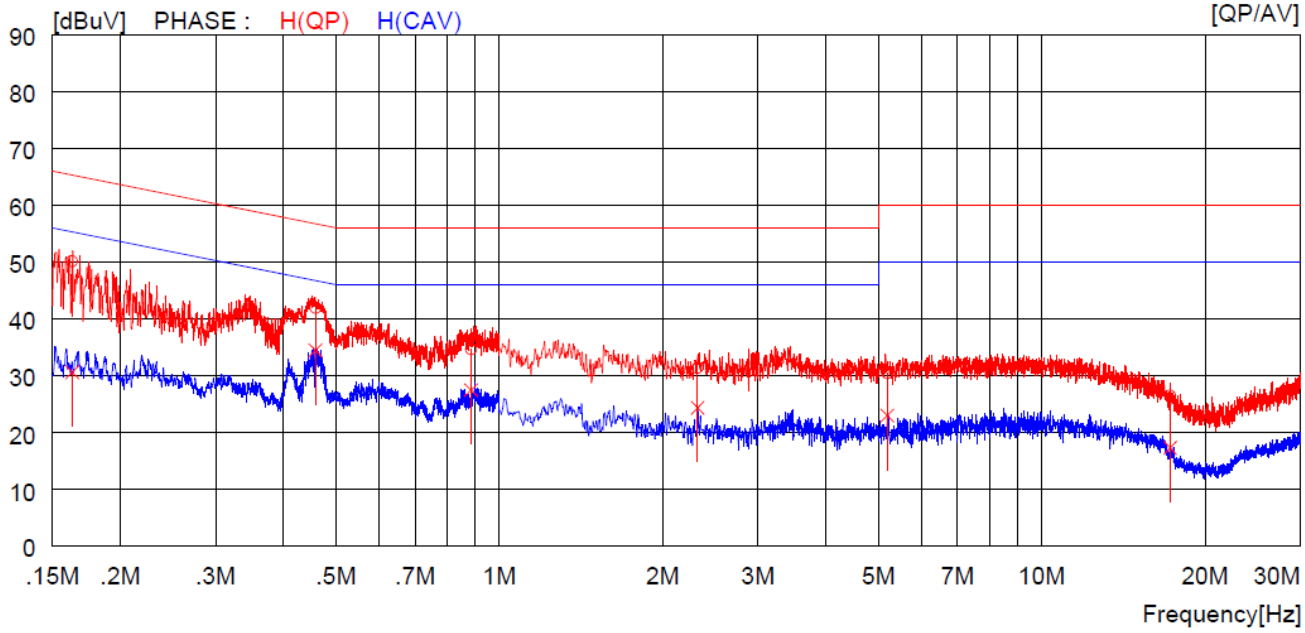
-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 9 kHz

-. Frequency range : 0.15 MHz ~ 30 MHz

-. Tested Line : HOT LINE

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



NO	FREQ [MHz]	READING QP [dBuV]	READING AV [dBuV]	C.FACTOR [dB]	RESULT QP [dBuV]	RESULT AV [dBuV]	LIMIT QP [dBuV]	LIMIT AV [dBuV]	MARGIN QP [dBuV]	MARGIN AV [dBuV]	PHASE
1	0.16300	40.2	----	9.9	50.1	----	65.3	----	15.2	----	H(QP)
2	0.45800	32.0	----	9.9	41.9	----	56.7	----	14.8	----	H(QP)
3	0.88700	24.8	----	9.9	34.7	----	56.0	----	21.3	----	H(QP)
4	2.32000	21.5	----	9.9	31.4	----	56.0	----	24.6	----	H(QP)
5	5.19000	20.3	----	10.1	30.4	----	60.0	----	29.6	----	H(QP)
6	17.25000	16.0	----	10.5	26.5	----	60.0	----	33.5	----	H(QP)
7	0.16300	----	20.7	9.9	----	30.6	----	55.3	----	24.7	H(CAV)
8	0.45800	----	24.6	9.9	----	34.5	----	46.7	----	12.2	H(CAV)
9	0.88700	----	17.6	9.9	----	27.5	----	46.0	----	18.5	H(CAV)
10	2.32000	----	14.5	9.9	----	24.4	----	46.0	----	21.6	H(CAV)
11	5.19000	----	12.9	10.1	----	23.0	----	50.0	----	27.0	H(CAV)
12	17.25000	----	6.8	10.5	----	17.3	----	50.0	----	32.7	H(CAV)

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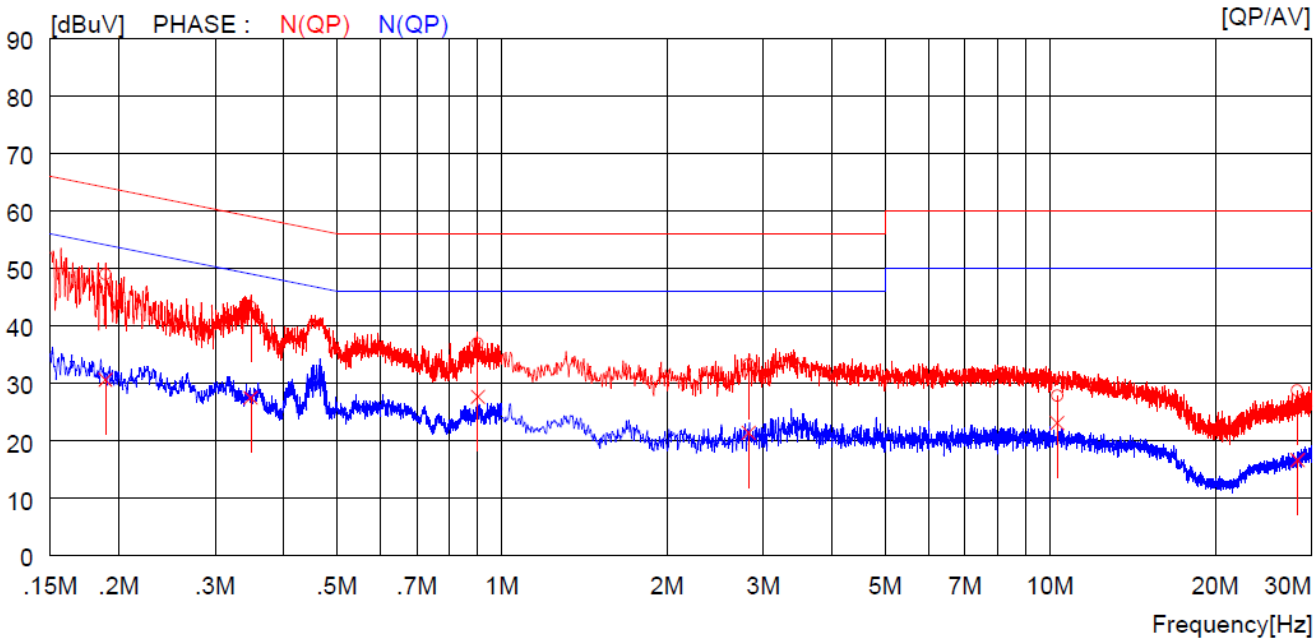
-. Tested Line : NEUTRAL LINE



NO	FREQ [MHz]	READING QP [dBuV]	READING AV [dBuV]	C.FACTOR [dB]	RESULT QP [dBuV]	RESULT AV [dBuV]	LIMIT QP [dBuV]	LIMIT AV [dBuV]	MARGIN QP [dBuV]	MARGIN AV [dBuV]	PHASE
1	0.18900	39.1	----	9.9	49.0	----	64.1	----	15.1	----	N(QP)
2	0.34800	33.4	----	9.9	43.3	----	59.0	----	15.7	----	N(QP)
3	0.90300	27.0	----	9.9	36.9	----	56.0	----	19.1	----	N(QP)
4	2.82000	23.3	----	10.0	33.3	----	56.0	----	22.7	----	N(QP)
5	10.31000	17.7	----	10.2	27.9	----	60.0	----	32.1	----	N(QP)
6	28.24000	18.0	----	10.8	28.8	----	60.0	----	31.2	----	N(QP)
7	0.18900	----	20.7	9.9	----	30.6	----	54.1	----	23.5	N(CAV)
8	0.34800	----	17.6	9.9	----	27.5	----	49.0	----	21.5	N(CAV)
9	0.90300	----	17.8	9.9	----	27.7	----	46.0	----	18.3	N(CAV)
10	2.82000	----	11.4	10.0	----	21.4	----	46.0	----	24.6	N(CAV)
11	10.31000	----	12.9	10.2	----	23.1	----	50.0	----	26.9	N(CAV)
12	28.24000	----	5.8	10.8	----	16.6	----	50.0	----	33.4	N(CAV)

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.

Tested by: Tae-Ho, Kim / Senior Manager

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15.5 Test data for Frequency U-NII-3

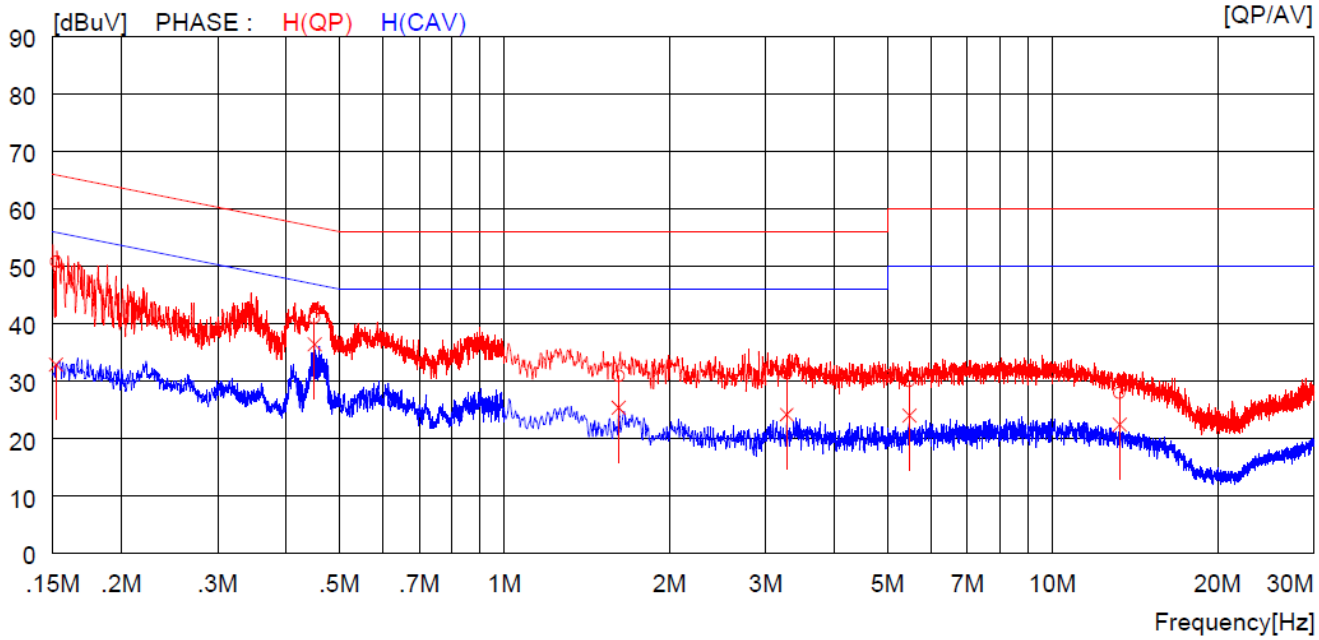
-. Test Date : August 16, 2018 ~ August 28, 2018

-. Resolution bandwidth : 9 kHz

-. Frequency range : 0.15 MHz ~ 30 MHz

-. Tested Line : HOT LINE

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



NO	FREQ [MHz]	READING QP [dBuV]	READING AV [dBuV]	C.FACTOR [dB]	RESULT QP [dBuV]	RESULT AV [dBuV]	LIMIT QP [dBuV]	LIMIT AV [dBuV]	MARGIN QP [dBuV]	MARGIN AV [dBuV]	PHASE
1	0.15200	41.0	----	9.8	50.8	----	65.9	----	15.1	----	H(QP)
2	0.45000	31.2	----	9.8	41.0	----	56.9	----	15.9	----	H(QP)
3	1.61600	21.0	----	9.9	30.9	----	56.0	----	25.1	----	H(QP)
4	3.27200	21.3	----	10.1	31.4	----	56.0	----	24.6	----	H(QP)
5	5.47500	19.9	----	10.1	30.0	----	60.0	----	30.0	----	H(QP)
6	13.25000	17.7	----	10.3	28.0	----	60.0	----	32.0	----	H(QP)
7	0.15200	----	23.1	9.8	----	32.9	----	55.9	----	23.0	H(CAV)
8	0.45000	----	26.6	9.8	----	36.4	----	46.9	----	10.5	H(CAV)
9	1.61600	----	15.5	9.9	----	25.4	----	46.0	----	20.6	H(CAV)
10	3.27200	----	14.1	10.1	----	24.2	----	46.0	----	21.8	H(CAV)
11	5.47500	----	13.9	10.1	----	24.0	----	50.0	----	26.0	H(CAV)
12	13.25000	----	12.1	10.3	----	22.4	----	50.0	----	27.6	H(CAV)

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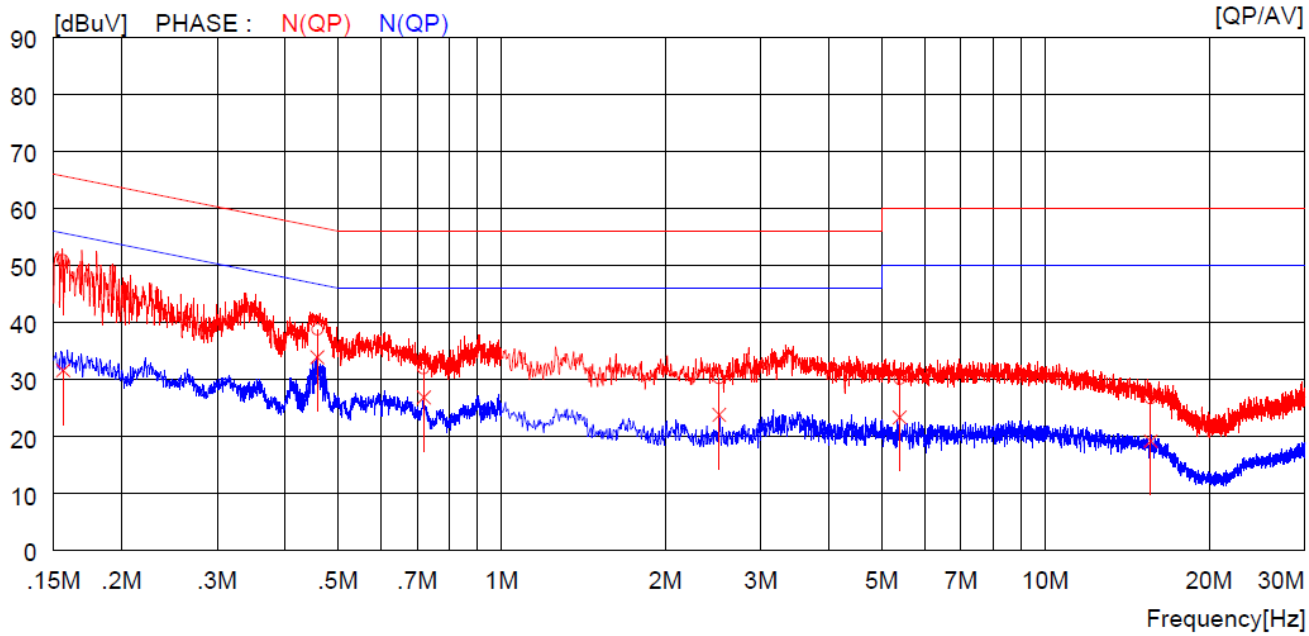
-. Tested Line : NEUTRAL LINE



NO	FREQ [MHz]	READING QP [dBuV]	READING AV [dBuV]	C.FACTOR [dB]	RESULT QP [dBuV]	RESULT AV [dBuV]	LIMIT QP [dBuV]	LIMIT AV [dBuV]	MARGIN QP [dBuV]	MARGIN AV [dBuV]	PHASE
1	0.15600	41.1	----	9.8	50.9	----	65.7	----	14.8	----	N(QP)
2	0.45800	28.9	----	9.9	38.8	----	56.7	----	17.9	----	N(QP)
3	0.71900	22.0	----	9.9	31.9	----	56.0	----	24.1	----	N(QP)
4	2.51200	20.3	----	9.9	30.2	----	56.0	----	25.8	----	N(QP)
5	5.39500	20.0	----	10.1	30.1	----	60.0	----	29.9	----	N(QP)
6	15.62000	16.3	----	10.4	26.7	----	60.0	----	33.3	----	N(QP)
7	0.15600	----	21.8	9.8	----	31.6	----	55.7	----	24.1	N(CAV)
8	0.45800	----	24.0	9.9	----	33.9	----	46.7	----	12.8	N(CAV)
9	0.71900	----	17.0	9.9	----	26.9	----	46.0	----	19.1	N(CAV)
10	2.51200	----	13.9	9.9	----	23.8	----	46.0	----	22.2	N(CAV)
11	5.39500	----	13.3	10.1	----	23.4	----	50.0	----	26.6	N(CAV)
12	15.62000	----	8.8	10.4	----	19.2	----	50.0	----	30.8	N(CAV)

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.

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