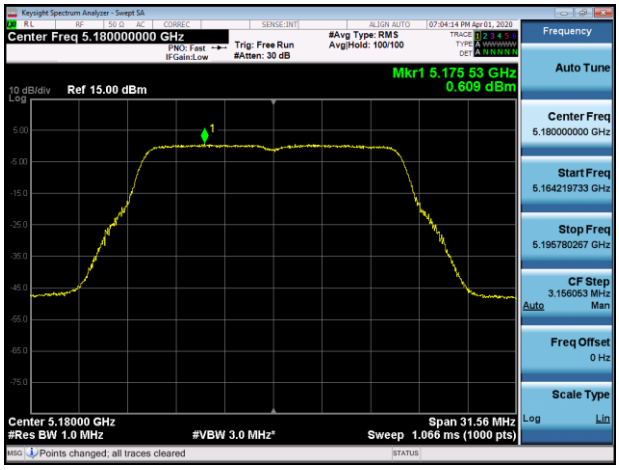
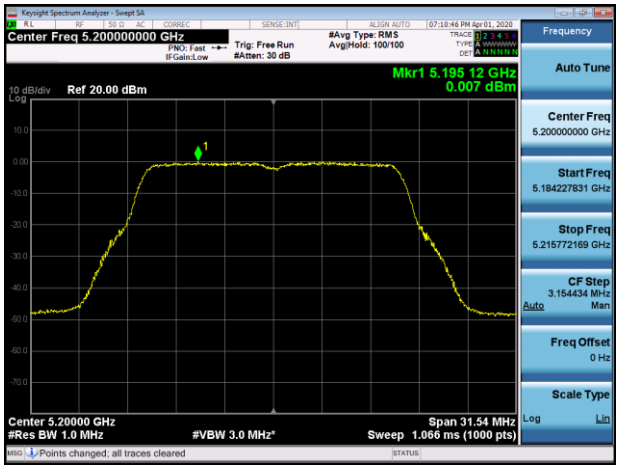
▣ Test Plots (ISED)

ANT 2 PORT

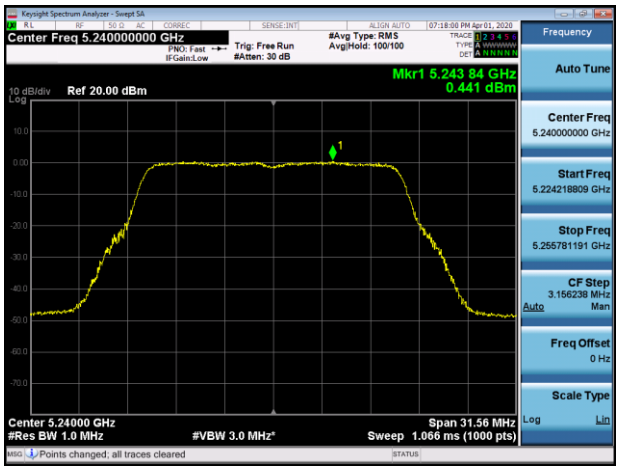
802.11a UNII 1 BAND PSD (CH 36)



802.11a UNII 1 BAND PSD (CH 40)



802.11a UNII 1 BAND PSD (CH 48)



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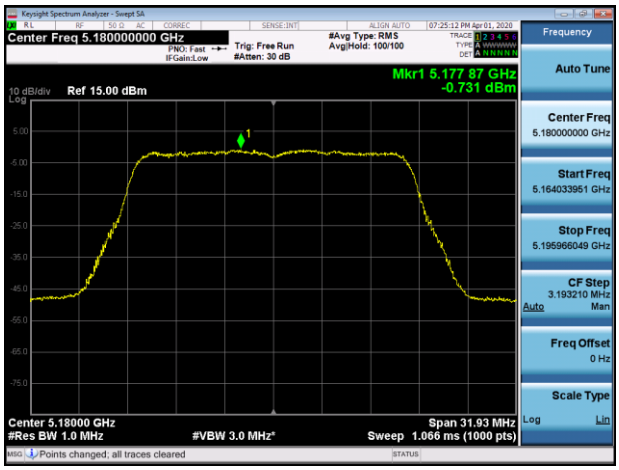

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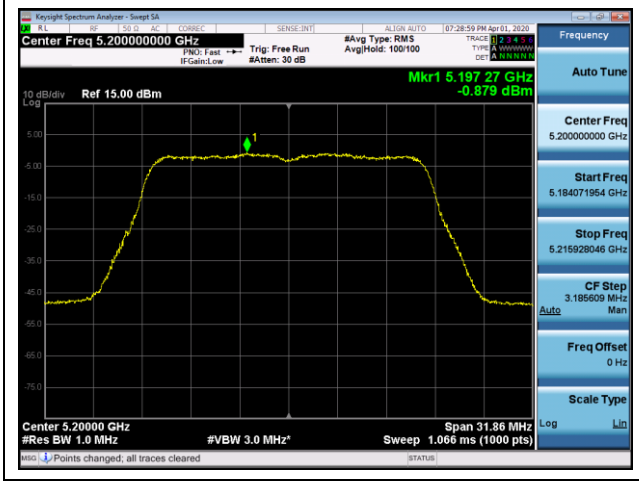

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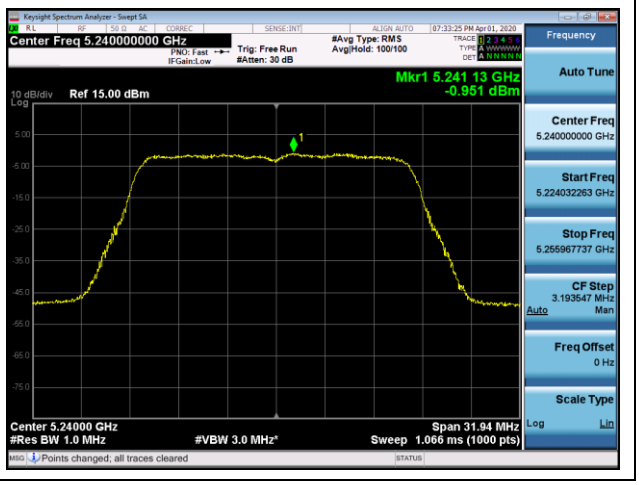

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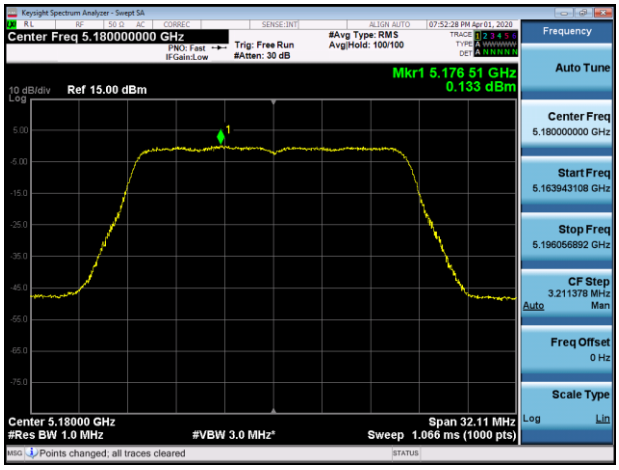
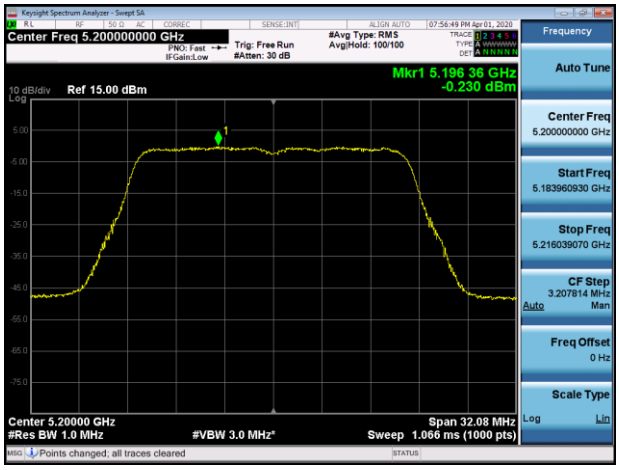
▣ Test Plots (ISED)

ANT 2 PORT

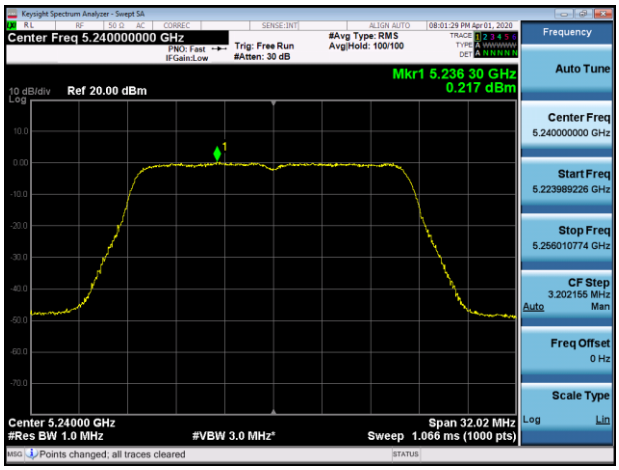
802.11ac VHT20 UNII 1 BAND PSD (CH 36)



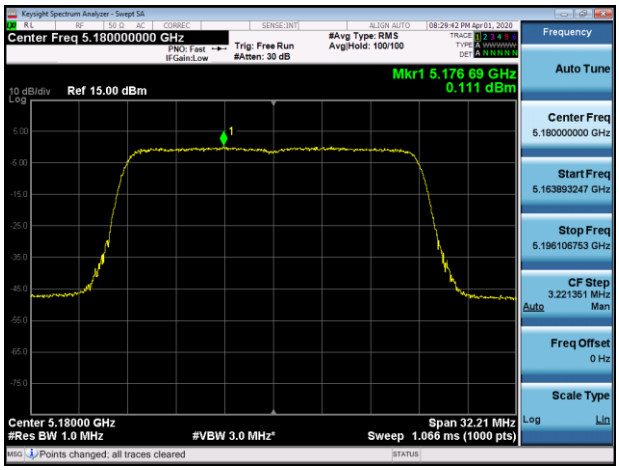
802.11ac VHT20 UNII 1 BAND PSD (CH 40)



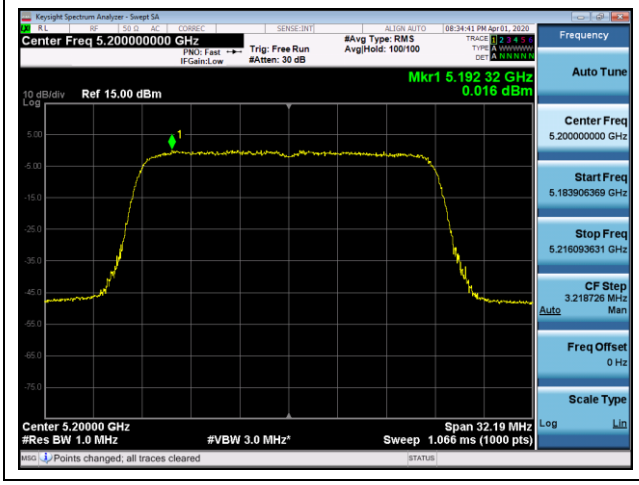
802.11ac VHT20 UNII 1 BAND PSD (CH 48)



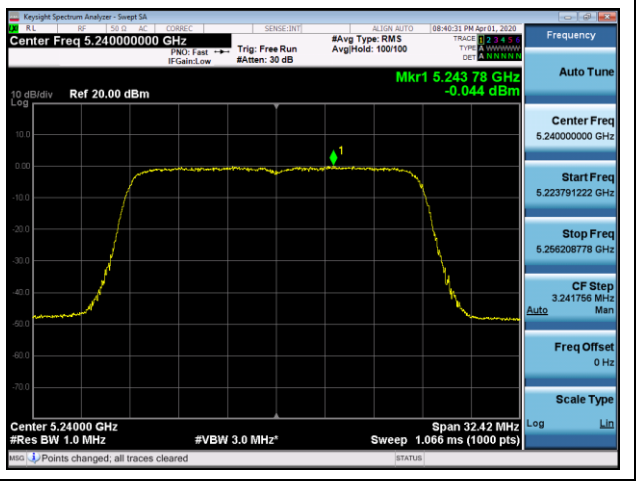
802.11ax HE20 UNII 1 BAND PSD (CH 36)



802.11ax HE20 UNII 1 BAND PSD (CH 40)



802.11ax HE20 UNII 1 BAND PSD (CH 48)



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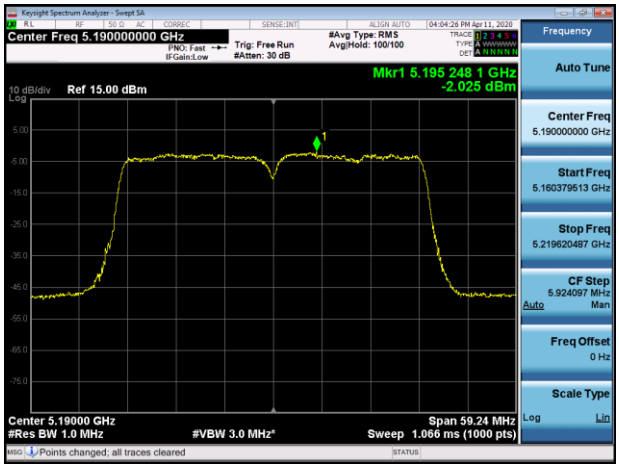
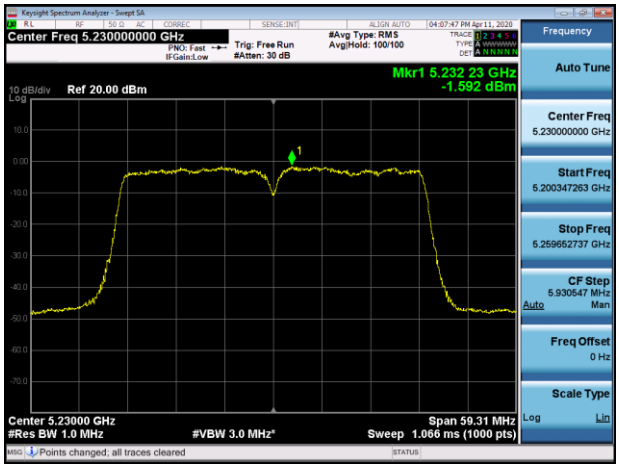
▣ Test Plots (ISED)

ANT 2 PORT

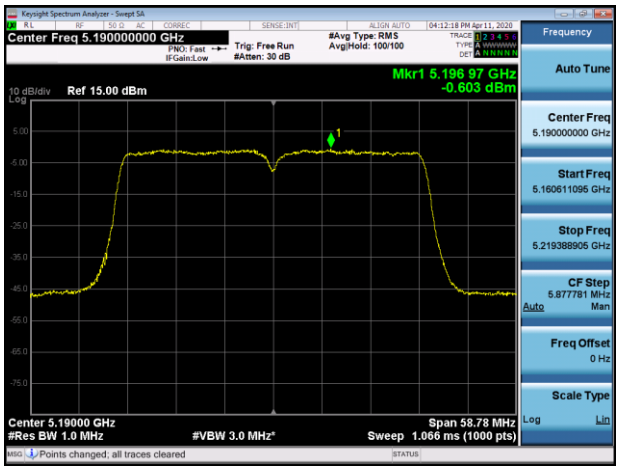
802.11n HT40 UNII 1 BAND PSD (CH 38)



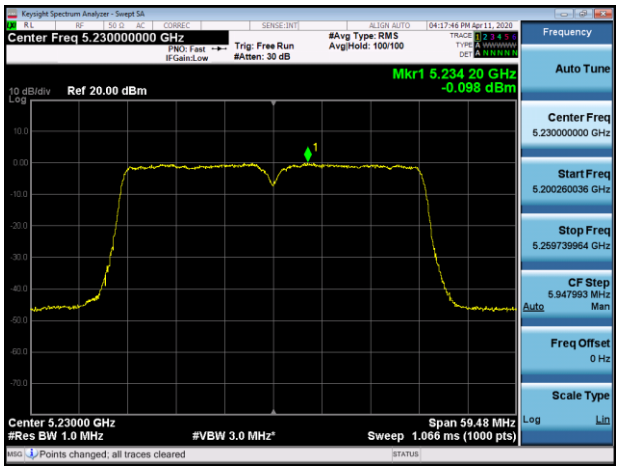
802.11n HT40 UNII 1 BAND PSD (CH 46)



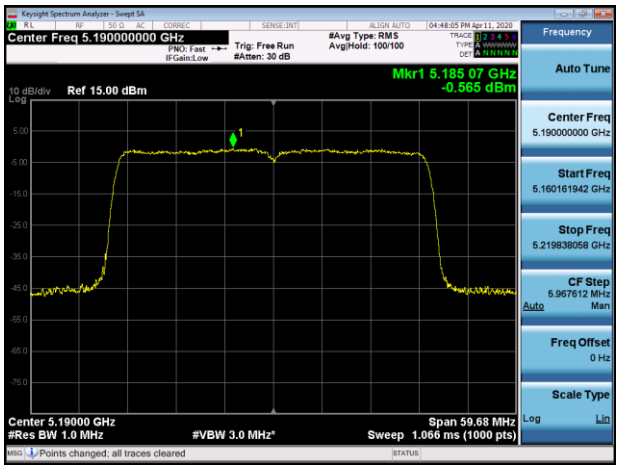
802.11ac VHT40 UNII 1 BAND PSD (CH 38)



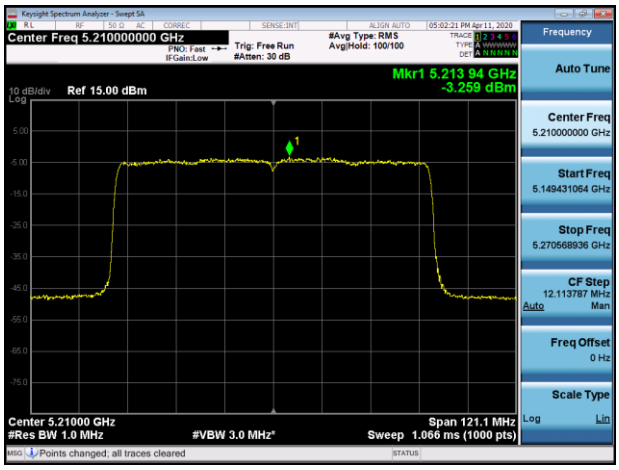
802.11ac VHT40 UNII 1 BAND PSD (CH 46)



802.11ax HE20 UNII 1 BAND PSD (CH 38)



802.11ax HE20 UNII 1 BAND PSD (CH 46)



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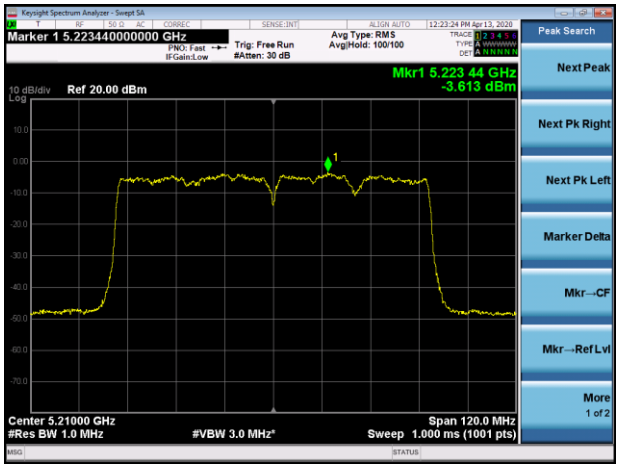
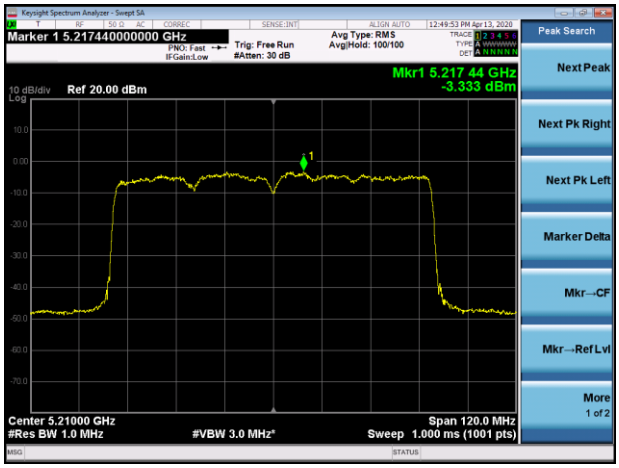
▣ Test Plots (ISED)

ANT 2 PORT

802.11ac VHT80 UNII 1 BAND PSD (CH 42)	802.11ax HE80 UNII 1 BAND PSD (CH 42)
	

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9.5 FREQUENCY STABILITY

Operating Band : U-NII Band 1
Operating Frequency : 5,180,000,000 Hz (CH 36)
Reference Voltage : 57 VDC

Voltage (%)	Power (VDC)	Temp (°C)	Frequency error (ppm)			
			0 minutes	2 minutes	5 minutes	10 minutes
100%	57	+20 (Ref)	-7.18	-7.29	-7.42	-7.64
100%		-30	-5.73	-5.95	-5.83	-5.90
100%		-20	-3.42	-3.55	-3.21	-3.30
100%		-10	-6.11	-6.28	-6.19	-6.40
100%		0	4.32	4.16	4.17	4.18
100%		+10	7.28	7.34	7.52	7.92
100%		+30	10.29	10.34	10.11	10.62
100%		+40	11.82	11.75	11.67	11.98
100%		+50	11.35	11.42	11.63	11.48
115%	65.55	+20	-6.33	-6.24	-6.35	-6.24
85%	48.45	+20	-6.38	-6.29	-6.17	-6.19

Operating Band : U-NII Band 3
Operating Frequency : 5,745,000,000 Hz (CH149)
Reference Voltage : 57 VDC

Voltage (%)	Power (VDC)	Temp (°C)	Frequency error (ppm)			
			0 minutes	2 minutes	5 minutes	10 minutes
100%	57	+20 (Ref)	-2.58	-2.73	-3.42	-3.31
100%		-30	-5.12	-5.93	-5.62	-5.89
100%		-20	-7.32	-7.55	-7.29	-7.66
100%		-10	-3.58	-3.27	-3.18	-3.16
100%		0	4.01	4.29	4.11	4.30
100%		+10	7.13	7.29	7.33	7.90
100%		+30	10.51	10.28	10.35	10.68
100%		+40	11.71	11.29	11.85	11.98
100%		+50	11.13	11.27	11.36	11.45
115%	65.55	+20	-2.11	-2.39	-2.17	-2.59
85%	48.45	+20	-2.69	-2.53	-2.55	-2.72

Note:
According to the results of the frequency stability test above, the frequency deviation measured are very small. The channels at the band edge should remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore, the Radio frequency should remain in-band during operation over the temperature and voltage range as tested.

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9.6 RADIATED SPURIOUS EMISSIONS

Frequency Range : 9 kHz – 30MHz

CH 36

Frequency (MHz)	Polarization	Reading (dBuV)	Corr.[1)] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
0.036	H	9.3	20.9	30.2	116.5	86.3	QP
0.036	V	8.6	20.9	29.5	116.5	87.0	QP
0.157	H	-8.1	19.8	11.7	103.7	92.0	QP
0.155	V	2.5	19.8	22.3	103.8	81.5	QP

CH 149

Frequency (MHz)	Polarization	Reading (dBuV)	Corr.[1)] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
0.036	H	10.3	20.9	31.2	116.5	85.3	QP
0.036	V	9.7	20.9	30.6	116.5	85.9	QP
0.151	V	-8.4	19.8	11.4	104.0	92.6	QP
0.155	H	2.7	19.8	22.5	103.8	81.3	QP

Notes:
1. The measurement distance is 3 meters.
2. Distance extrapolation factor = 40 log (specific distance / test distance) (dB)
3. Limit line = Specific Limits (dBuV) + Distance extrapolation factor
4. Correction Factor: Antenna Factor + Cable loss
5. The other Frequencies are attenuated more than 20 dB below the permissible limits.
   In order to simplify the report, attached worst-case mode result.

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Frequency Range : Below 1 GHz

CH 36

Frequency (MHz)	Polarization	Reading (dBuV)	Corr.[1)] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
33.821	V	29.6	-2.4	27.2	40	12.8	QP
499.965	V	32.4	-2.1	30.3	46	15.7	QP
499.965	H	37.6	-2.1	35.5	46	10.5	QP
624.998	V	37.2	-0.2	37.0	46	9.0	QP
624.998	H	31.3	-0.2	31.1	46	14.9	QP
875.064	H	26.8	3.6	30.4	46	15.6	QP

CH 44

Frequency (MHz)	Polarization	Reading (dBuV)	Corr.[1)] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
34.462	V	27.8	-2.8	25.0	40	15.0	QP
500.002	V	34.2	-2.1	32.1	46	13.9	QP
500.019	H	39.2	-2.1	37.1	46	8.9	QP
624.998	V	38.6	-0.2	38.4	46	7.6	QP
625.014	H	31.3	-0.2	31.1	46	14.9	QP
875.009	H	31.1	3.6	34.7	46	11.3	QP

CH 48

Frequency (MHz)	Polarization	Reading (dBuV)	Corr.[1)] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
34.414	V	30.1	-2.8	27.3	40	12.7	QP
499.993	H	39.3	-2.1	37.2	46	8.8	QP
500.004	V	34.1	-2.1	32.0	46	14.0	QP
624.983	H	31.0	-0.2	30.8	46	15.2	QP
624.99	V	36.6	-0.2	36.4	46	9.6	QP
875.0	H	31.5	3.6	35.1	46	10.9	QP

Notes:

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain

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Frequency Range : Below 1 GHz

CH 149

Frequency (MHz)	Polarization	Reading (dBuV)	Corr.[1)] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
34.074	V	29.7	-2.5	27.2	40	12.8	QP
500.011	V	33.1	-2.1	31.0	46	15.0	QP
500.007	H	38.7	-2.1	36.6	46	9.4	QP
624.998	V	36.5	-0.2	36.3	46	9.7	QP
624.979	H	30.7	-0.2	30.5	46	15.5	QP
874.989	H	30.8	3.6	34.4	46	11.6	QP

CH 157

Frequency (MHz)	Polarization	Reading (dBuV)	Corr.[1)] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
34.12	V	30.7	-2.6	28.1	40	11.9	QP
499.989	V	33.0	-2.1	30.9	46	15.1	QP
500.004	H	38.7	-2.1	36.6	46	9.4	QP
624.994	V	38.0	-0.2	37.8	46	8.2	QP
625.034	H	29.4	-0.2	29.2	46	16.8	QP
875.005	H	30.7	3.6	34.3	46	11.7	QP

CH 165

Frequency (MHz)	Polarization	Reading (dBuV)	Corr.[1)] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
34.115	V	30.6	-2.6	28	40	12.0	QP
500.001	V	33.3	-2.1	31.2	46	14.8	QP
500.005	H	38.7	-2.1	36.6	46	9.4	QP
624.976	H	30.5	-0.2	30.3	46	15.7	QP
625.005	V	37.3	-0.2	37.1	46	8.9	QP
874.985	H	30.3	3.6	33.9	46	12.1	QP

Notes:

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain

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Frequency Range : Above 1 GHz

CH 36

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
10359.17	H	31.0	44.4	7.0	38.0	51.4	54	68.2	8.7	16.8
10359.53	V	31.0	44.9	7.0	38.0	51.9	54	68.2	9.8	16.3
15539.61	V	28.1	41.5	14.6	42.7	56.1	54	68.2	7.0	12.1
15542.98	H	28.1	41.7	14.6	42.7	56.3	54	68.2	7.3	11.9

CH 44

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
10399.72	H	30.4	44.3	7.0	37.4	51.3	54	68.2	16.6	16.9
10400.71	V	30.5	43.6	7.1	37.6	50.7	54	68.2	16.4	17.5
15605.55	H	28.1	41.7	14.5	42.6	56.2	54	68.2	11.4	12
15608.23	V	28.2	41.4	14.5	42.7	55.9	54	68.2	11.3	12.3

CH 48

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
10481.69	H	29.7	43.2	7.3	37.0	50.5	54	68.2	17.0	17.7
10474.76	V	30.1	43.5	7.3	37.4	50.8	54	68.2	16.6	17.4
15720.18	H	29.2	42.1	14.6	43.8	56.7	54	68.2	10.2	11.5
15721.23	V	29.1	42.5	14.6	43.7	57.1	54	68.2	10.3	11.1

Notes:

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB). However, duty factor was not applied in this case because there was no harmonic observed

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Frequency Range : Above 1 GHz

CH 149

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
11490.91	H	30.2	43.3	7.8	38.0	51.1	54	68.2	16.0	17.1
11491.97	V	30.1	43.9	7.8	37.9	51.7	54	68.2	16.1	16.5

CH 157

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
10458.71	H	30.7	44.4	7.2	37.9	51.6	54	68.2	16.1	16.6
10458.21	V	30.7	43.7	7.2	37.9	50.9	54	68.2	16.1	17.3

CH 165

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
10419.59	H	30.3	44.0	7.1	37.4	51.1	54	68.2	16.6	17.1
10418.11	V	30.5	44.3	7.1	37.6	51.4	54	68.2	16.4	16.8

Notes:

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB). However, duty factor was not applied in this case because there was no harmonic observed

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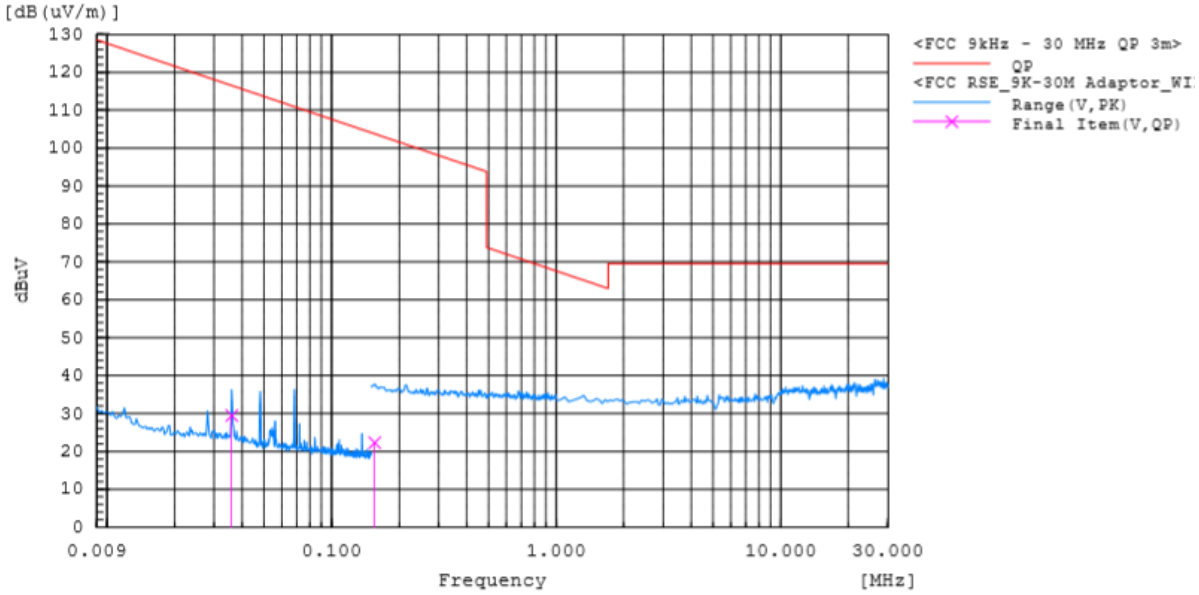
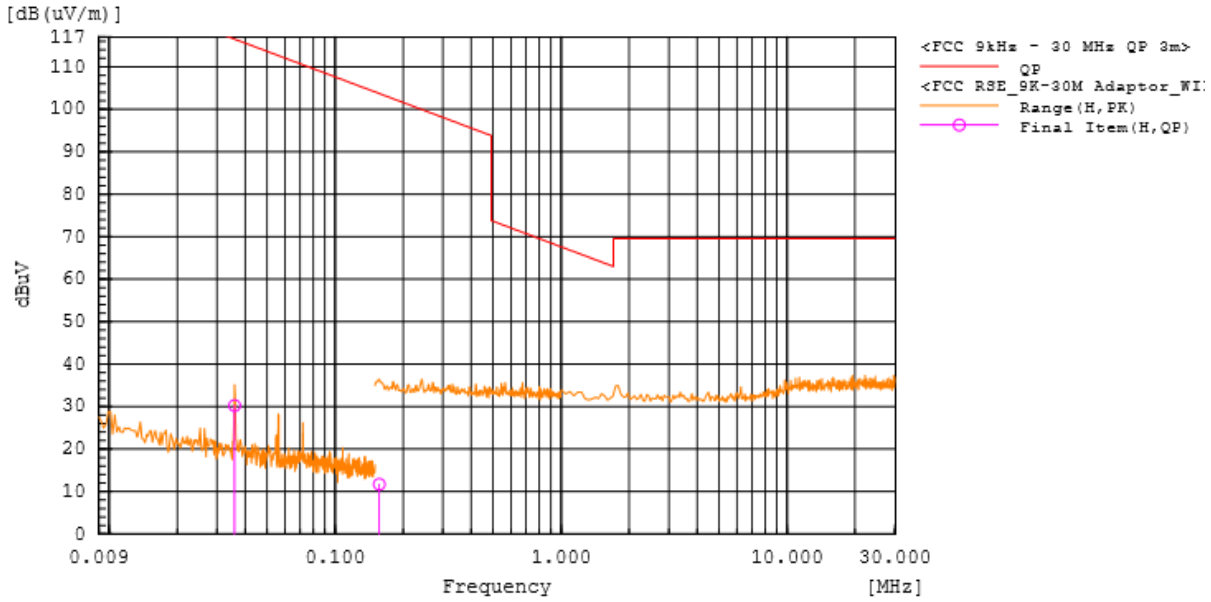
▣ Test Plots

Radiated Spurious Emission 9 kHz – 30 MHz (Antenna Position 90°)



Radiated Spurious Emission 9 kHz – 30 MHz (Antenna Position 180°)



Note:
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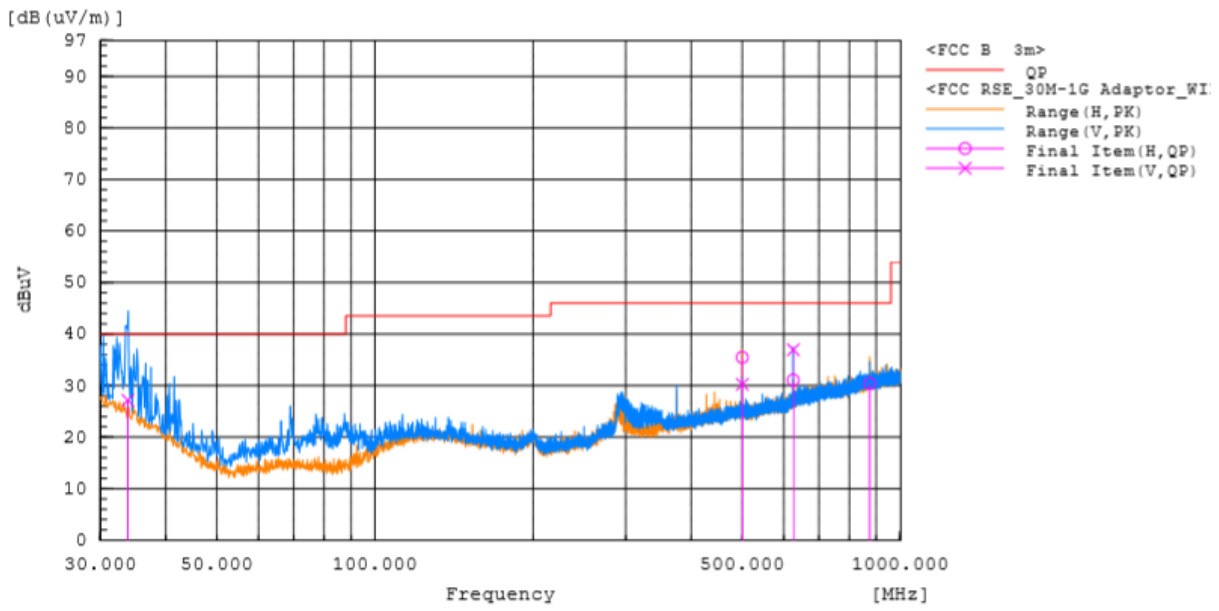
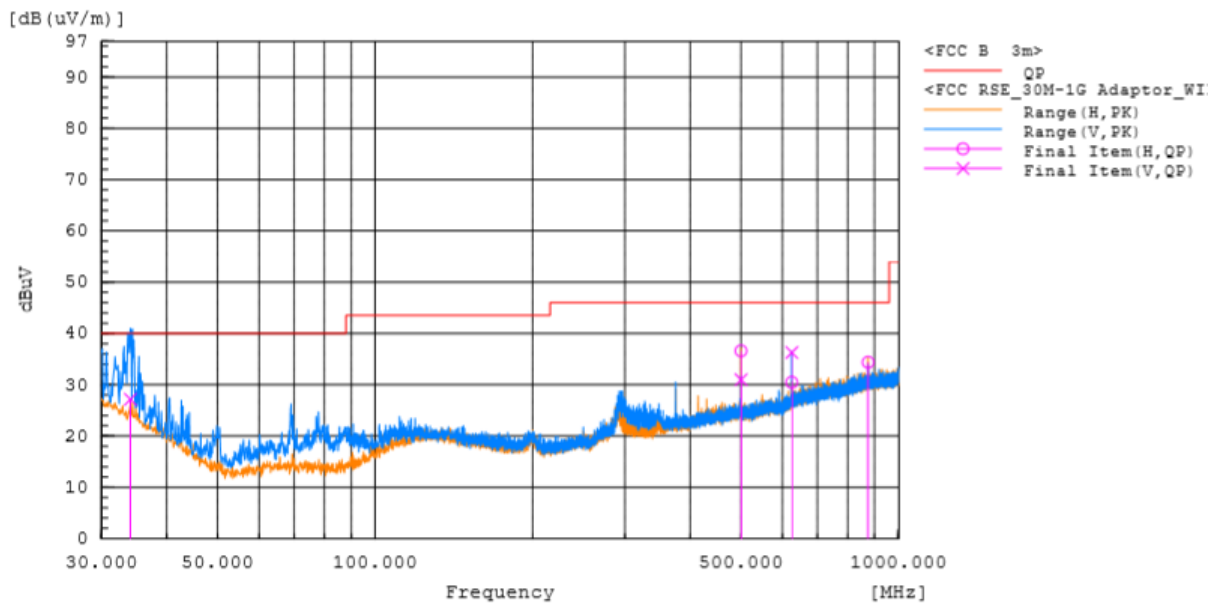
▣ Test Plots

Radiated Spurious Emission 30 MHz – 1 GHz (CH 36)



Radiated Spurious Emission 30 MHz – 1 GHz (CH 149)



Note:
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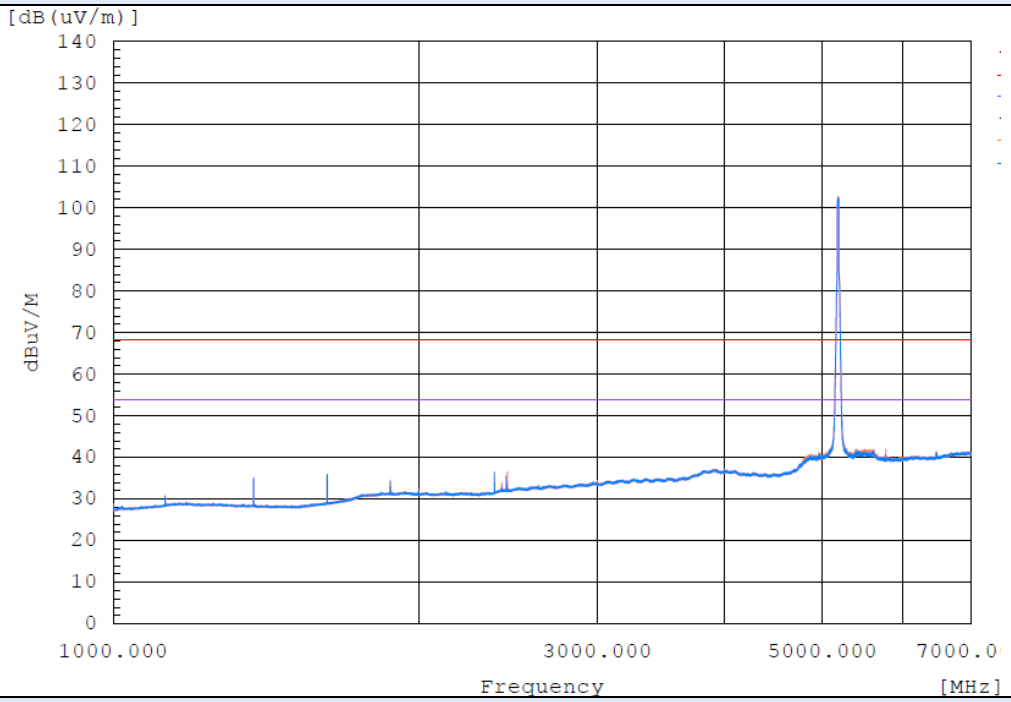
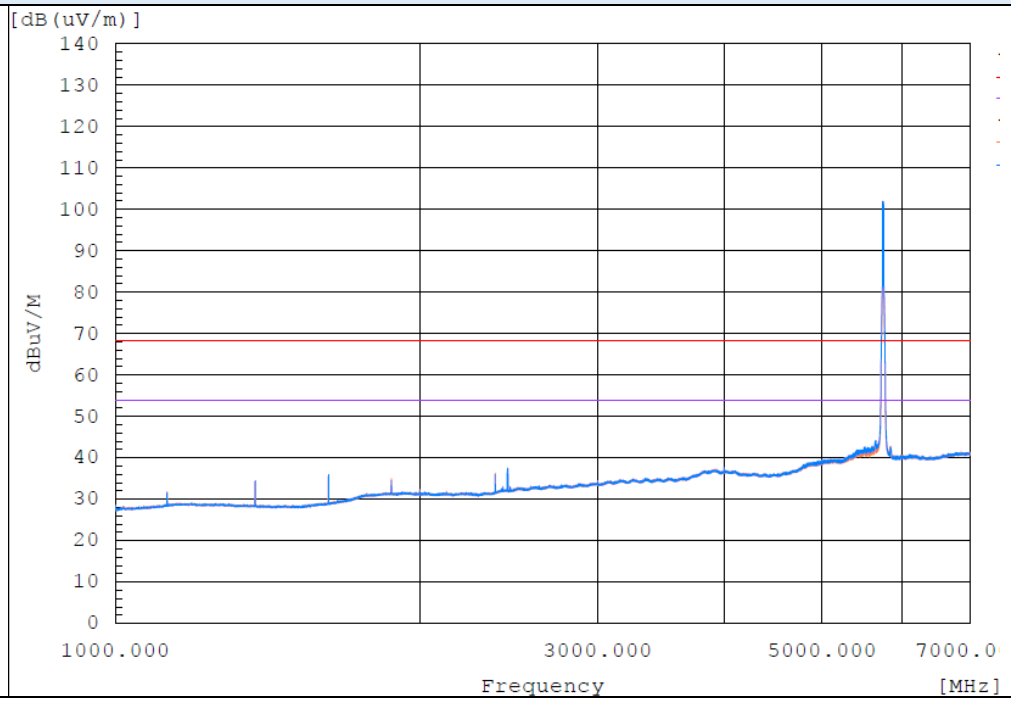
▣ Test Plots

Radiated Spurious Emission 1 GHz - 7 GHz (CH 36)



Radiated Spurious Emission 1 GHz - 7 GHz (CH 149)



Note:
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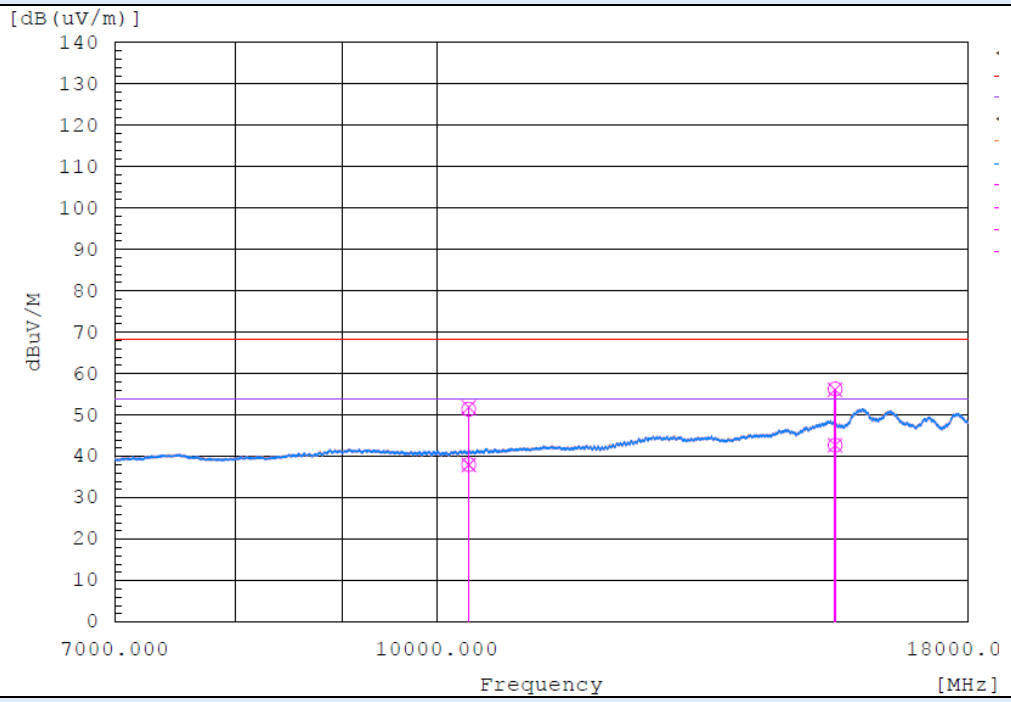
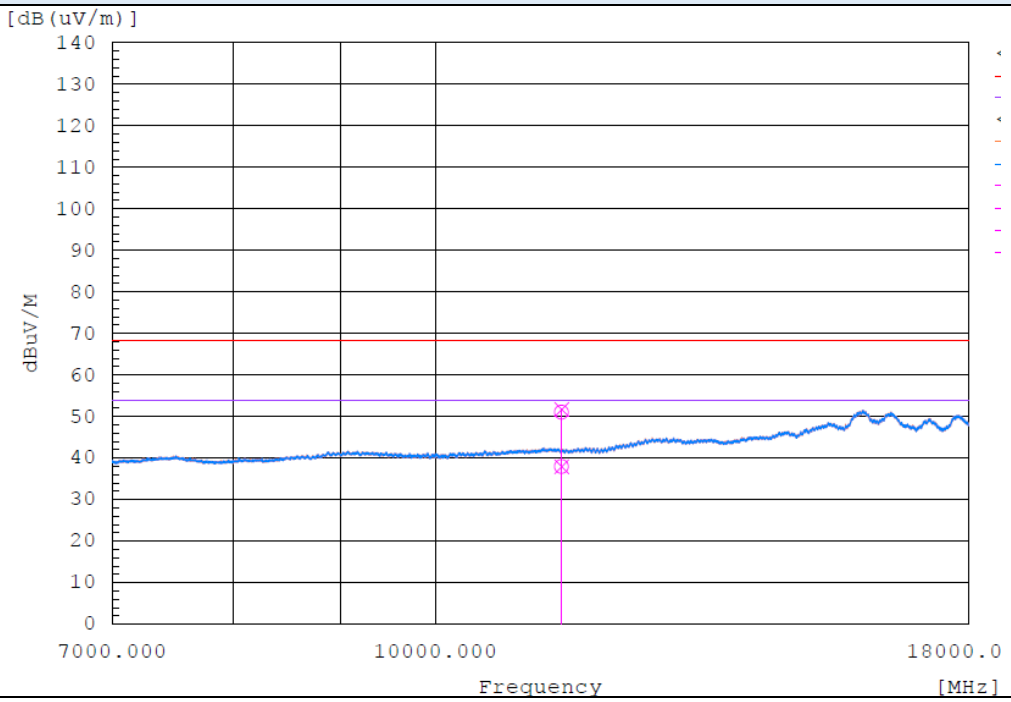
▣ Test Plots

Radiated Spurious Emission 7 GHz - 18 GHz (CH 36)



Radiated Spurious Emission 7 GHz - 18 GHz (CH 149)



Note:
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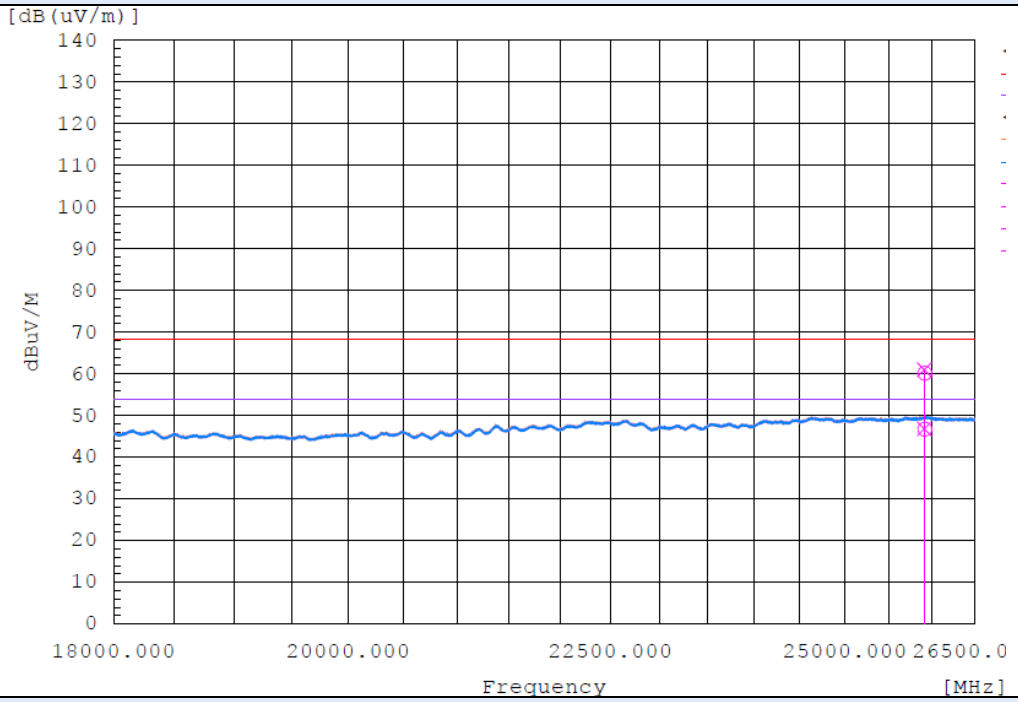
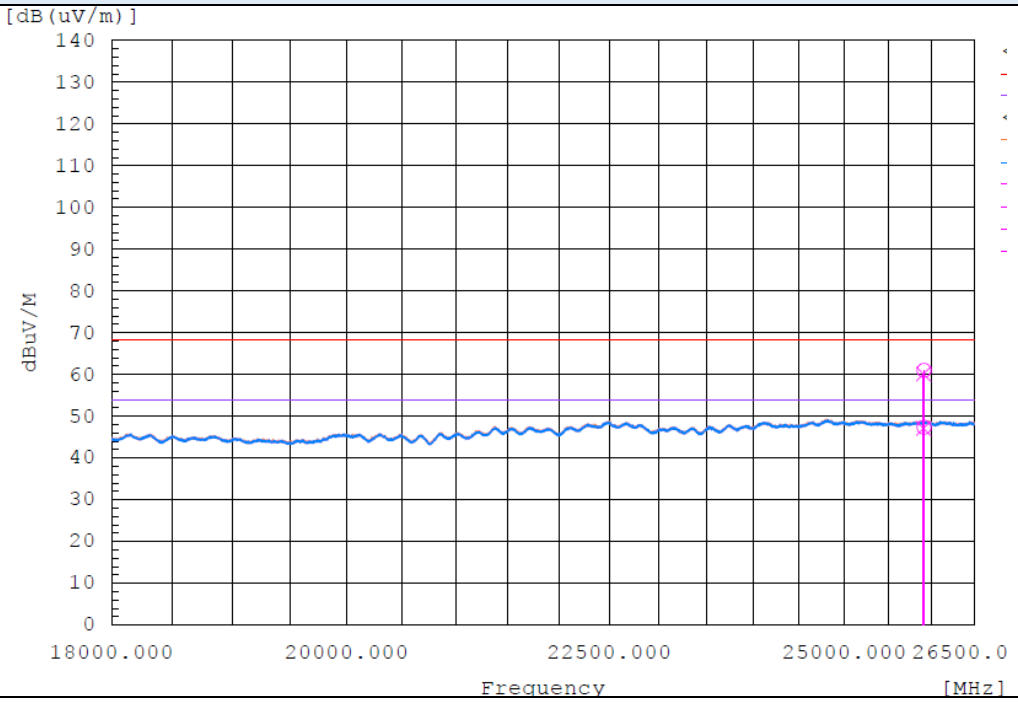
▣ Test Plots

Radiated Spurious Emission 18 GHz – 26.5 GHz (CH 36)



Radiated Spurious Emission 18 GHz – 26.5 GHz (CH 149)



Note:
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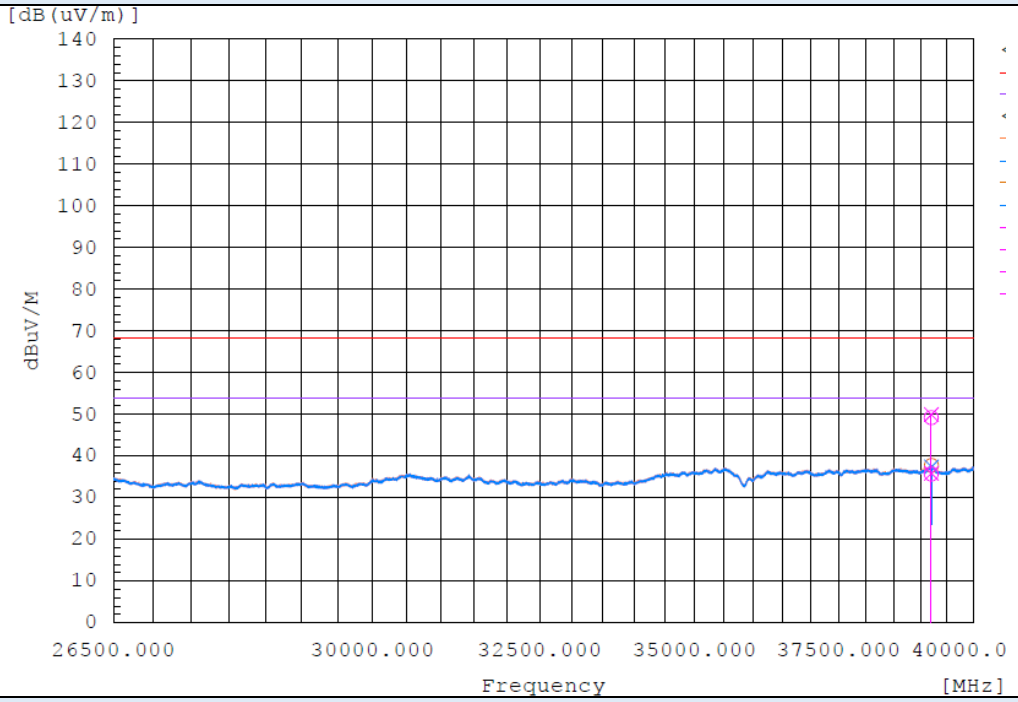
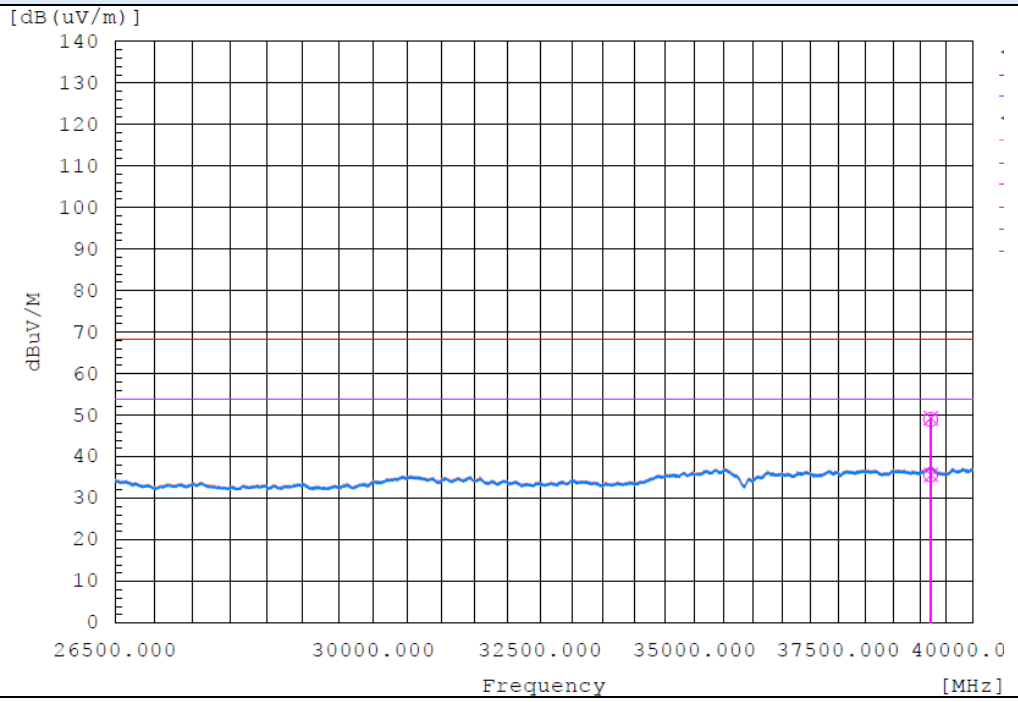
▣ Test Plots

Radiated Spurious Emission 26.5 GHz – 40 GHz (CH 36)



Radiated Spurious Emission 26.5 GHz – 40 GHz (CH 149)



Note:
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9.7 RADIATED RESTRICTED BAND EDGES

Operating Frequency 5180 MHz
Channel No. CH 36
Mode 802.11a (CDD)

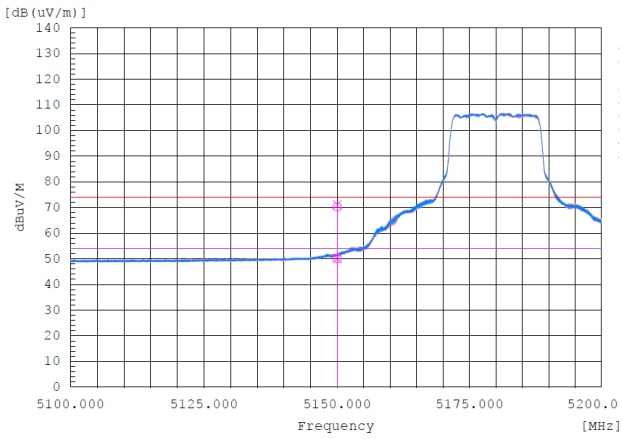
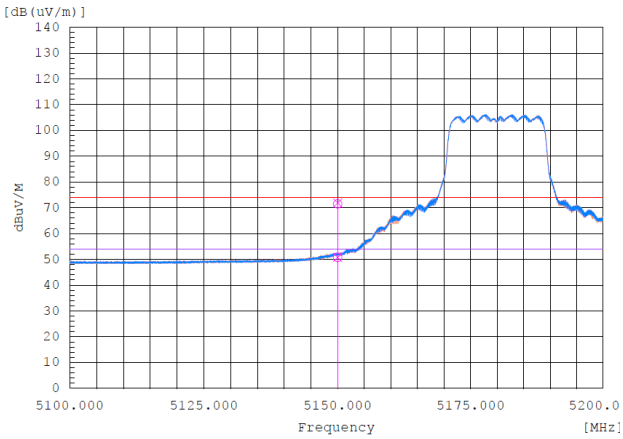
Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	Duty	AV	PK	AV	PK	AV	PK
5150	H	39.6	59.7	10.6	0.22	50.4	70.3	54.0	74.0	3.6	3.7
5150	V	39.5	60.5	10.6	0.22	50.3	71.1	54.0	74.0	3.7	2.9

Operating Frequency 5180 MHz
Channel No. CH 36
Mode 802.11n HT20 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	Duty	AV	PK	AV	PK	AV	PK
5150	H	40.2	60.9	10.6	0.21	51.0	71.5	54.0	74.0	3.0	2.5
5150	V	40.2	61.3	10.6	0.21	51.0	71.9	54.0	74.0	3.0	2.1

Notes:
1. Correction Factor: Antenna Factor + Cable loss
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB)

▣ Test Plots

Radiated Band Edges 802.11a (CH 36)	Radiated Band Edges 802.11n HT20 (CH 36)
	

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Operating Frequency 5190 MHz
Channel No. CH 38
Mode 802.11n HT40 (CDD)

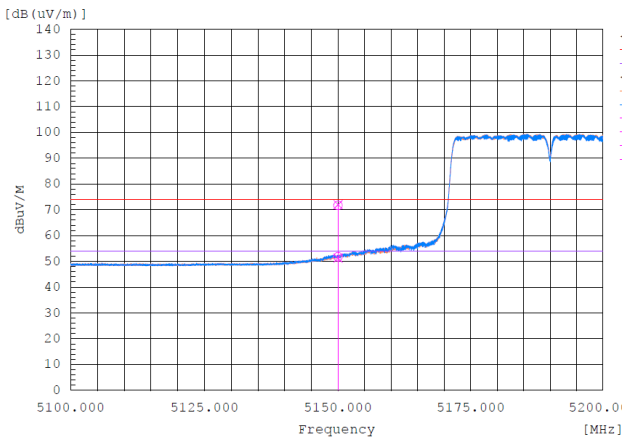
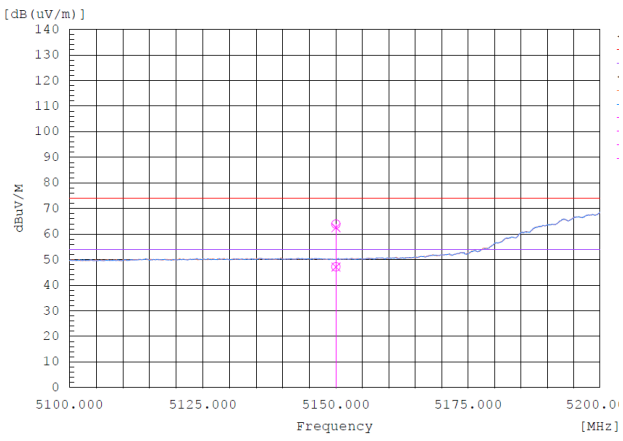
Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	Duty	AV	PK	AV	PK	AV	PK
5150	H	41.2	61.1	10.6	0.44	52.2	71.7	54.0	74.0	1.8	2.3
5150	V	40.7	61.4	10.6	0.44	51.7	72.0	54.0	74.0	2.3	2.0

Operating Frequency 5230 MHz
Channel No. CH 46
Mode 802.11n HT40 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	Duty	AV	PK	AV	PK	AV	PK
5150	H	36.6	53.3	10.6	0.44	47.6	63.9	54.0	74.0	6.4	10.1
5150	V	36.5	51.9	10.6	0.44	47.5	62.5	54.0	74.0	6.5	11.5

Notes:
1. Correction Factor: Antenna Factor + Cable loss
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB)

▣ Test Plots

Radiated Band Edges 802.11n HT40 (CH 38)	Radiated Band Edges 802.11n HT40 (CH 46)
	

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Operating Frequency 5180 MHz
Channel No. CH 36
Mode 802.11ac VHT20 (CDD)

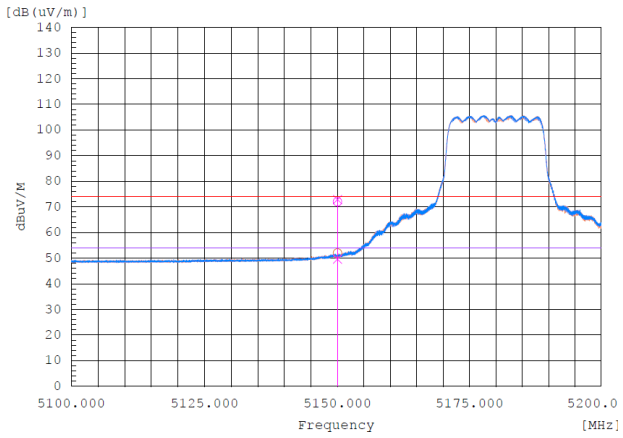
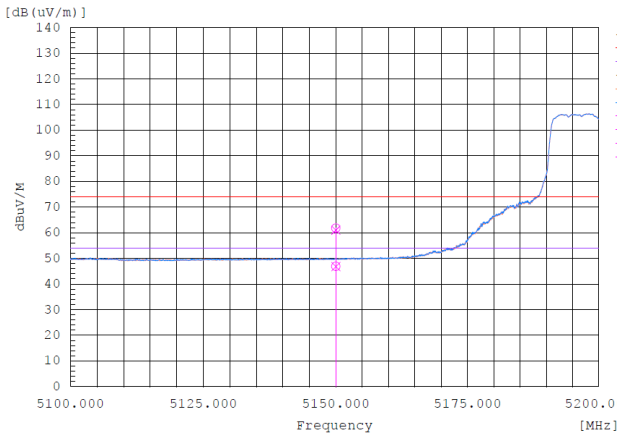
Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	Duty	AV	PK	AV	PK	AV	PK
5150	H	38.3	61.2	10.6	0.07	49.0	71.8	54.0	74.0	5.0	2.2
5150	V	37.9	60.3	10.6	0.07	48.6	70.9	54.0	74.0	5.4	3.1

Operating Frequency 5200 MHz
Channel No. CH 40
Mode 802.11ac VHT20 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	Duty	AV	PK	AV	PK	AV	PK
5150	H	36.3	51.2	10.6	0.07	47.0	61.8	54.0	74.0	7.0	12.2
5150	V	36.2	50.4	10.6	0.07	46.9	61.0	54.0	74.0	7.1	13.0

Notes:
1. Correction Factor: Antenna Factor + Cable loss
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB)

▣ Test Plots

Radiated Band Edges 802.11ac VHT20 (CH 36)	Radiated Band Edges 802.11ac VHT20 (CH 40)
	

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Operating Frequency 5190 MHz
Channel No. CH 38
Mode 802.11ac VHT40 (CDD)

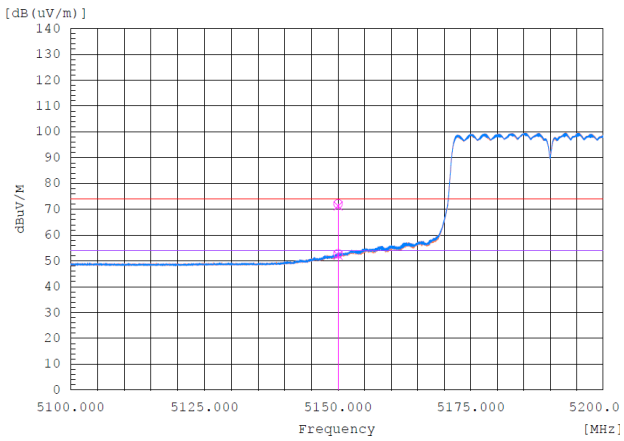
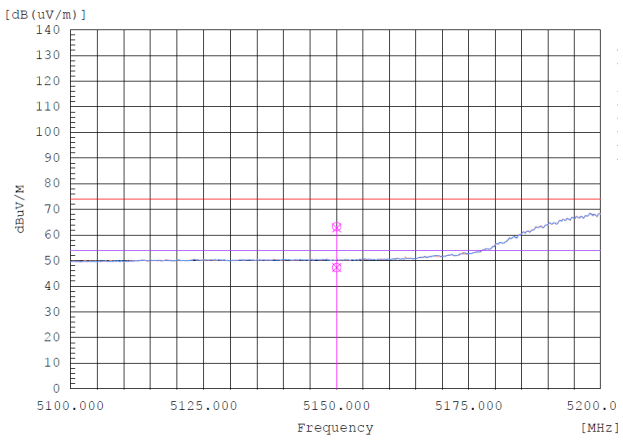
Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	Duty	AV	PK	AV	PK	AV	PK
5150	H	41.2	58.5	10.6	0.13	51.9	69.1	54.0	74.0	2.1	4.9
5150	V	40.8	57.8	10.6	0.13	51.5	68.4	54.0	74.0	2.5	5.6

Operating Frequency 5230 MHz
Channel No. CH 46
Mode 802.11ac VHT40 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	Duty	AV	PK	AV	PK	AV	PK
5150	H	36.7	52.7	10.6	0.13	47.4	63.3	54.0	74.0	6.6	10.7
5150	V	36.7	52.2	10.6	0.13	47.4	62.8	54.0	74.0	6.6	11.2

Notes:
1. Correction Factor: Antenna Factor + Cable loss
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB)

▣ Test Plots

Radiated Band Edges 802.11ac VHT40 (CH 38)	Radiated Band Edges 802.11ac VHT40 (CH 46)
	

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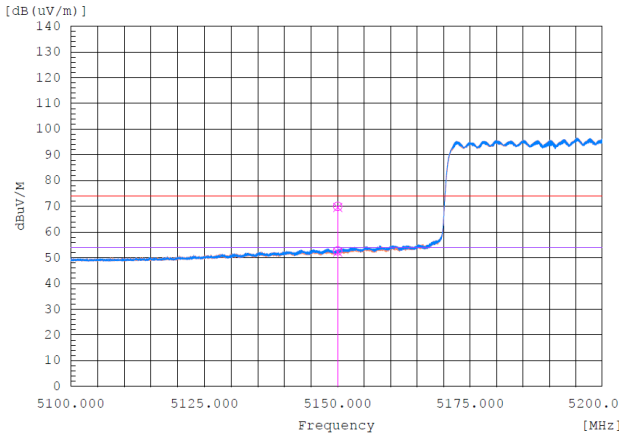
Operating Frequency	5210 MHz
Channel No.	CH 42
Mode	802.11ac VHT80 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	Duty	AV	PK	AV	PK	AV	PK
5150	H	42.1	59.4	10.6	0.26	53.0	70.0	54.0	74.0	1.0	4.0
5150	V	41.6	59.0	10.6	0.26	52.5	69.6	54.0	74.0	1.5	4.4

Notes:
1. Correction Factor: Antenna Factor + Cable loss
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB)

▣ Test Plots

Radiated Band Edges 802.11ac VHT80 (CH 42)	
	

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Operating Frequency 5180 MHz
Channel No. CH 36
Mode 802.11ax HE20 (CDD)

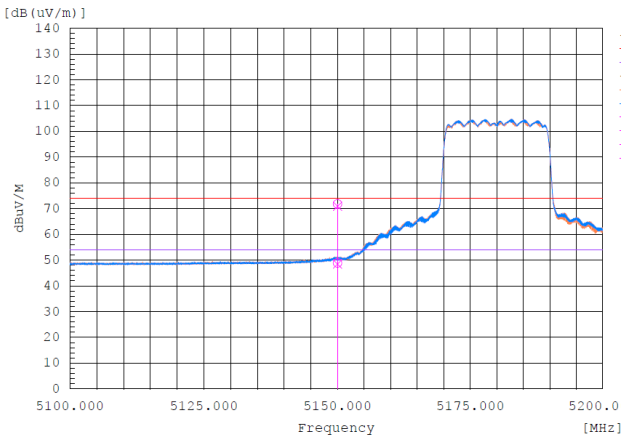
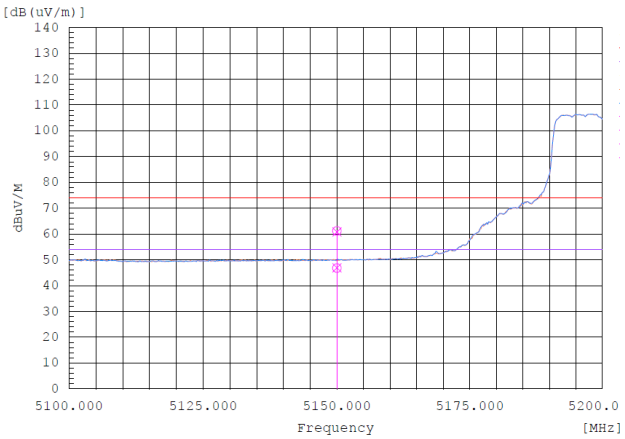
Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	Duty	AV	PK	AV	PK	AV	PK
5150	H	38.3	61.2	10.6	0	48.9	71.8	54.0	74.0	5.1	2.2
5150	V	37.9	60.3	10.6	0	48.5	70.9	54.0	74.0	5.5	3.1

Operating Frequency 5200 MHz
Channel No. CH 40
Mode 802.11ax HE20 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	Duty	AV	PK	AV	PK	AV	PK
5150	H	36.2	50.6	10.6	0	46.8	61.2	54.0	74.0	7.2	12.8
5150	V	36.3	50.2	10.6	0	46.9	60.8	54.0	74.0	7.1	13.2

Notes:
1. Correction Factor: Antenna Factor + Cable loss
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB)

▣ Test Plots

Radiated Band Edges 802.11ax HE20 (CH 36)	Radiated Band Edges 802.11ax HE20 (CH 40)
	

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Operating Frequency 5190 MHz
Channel No. CH 38
Mode 802.11ax HE40 (CDD)

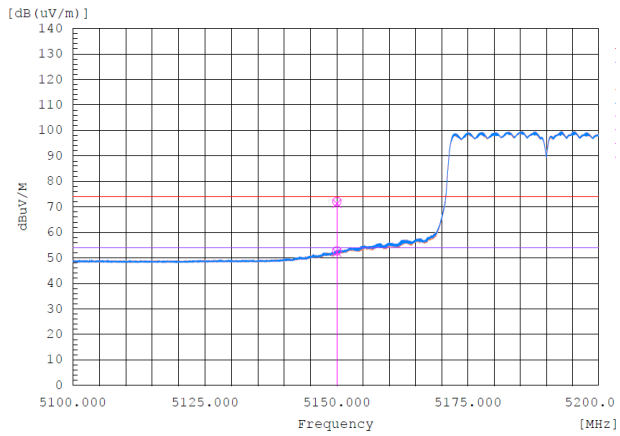
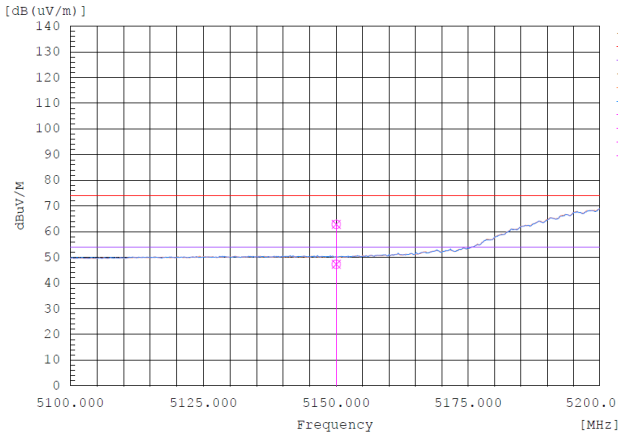
Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	Duty	AV	PK	AV	PK	AV	PK
5150	H	42.2	61.5	10.6	0.18	53.0	72.1	54.0	74.0	1.0	1.9
5150	V	41.6	60.7	10.6	0.18	52.4	71.3	54.0	74.0	1.6	2.7

Operating Frequency 5230 MHz
Channel No. CH 46
Mode 802.11ax HE40 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	Duty	AV	PK	AV	PK	AV	PK
5150	H	36.2	50.6	10.6	0.18	47.0	61.2	54.0	74.0	7.0	12.8
5150	V	36.3	50.2	10.6	0.18	47.1	60.8	54.0	74.0	6.9	13.2

Notes:
1. Correction Factor: Antenna Factor + Cable loss
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB)

▣ Test Plots

Radiated Band Edges 802.11ax HE40 (CH 38)	Radiated Band Edges 802.11ax HE40 (CH 46)
	

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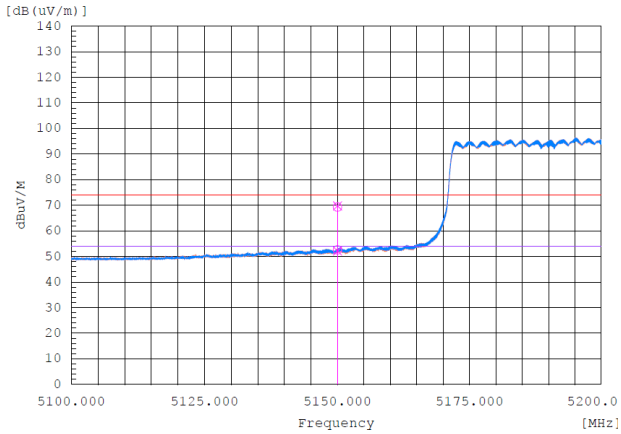
Operating Frequency	5210 MHz
Channel No.	CH 42
Mode	802.11ax HE40 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	Duty	AV	PK	AV	PK	AV	PK
5150	H	42.0	58.7	10.6	0.26	52.9	69.3	54.0	74.0	1.1	4.7
5150	V	41.5	59.2	10.6	0.26	52.4	69.8	54.0	74.0	1.6	4.2

Notes:
1. Correction Factor: Antenna Factor + Cable loss
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB)

▣ Test Plots

Radiated Band Edges 802.11ax HE80 (CH 42)	
	

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Operating Frequency 5745 MHz
Channel No. CH 149
Mode 802.11a (CDD)

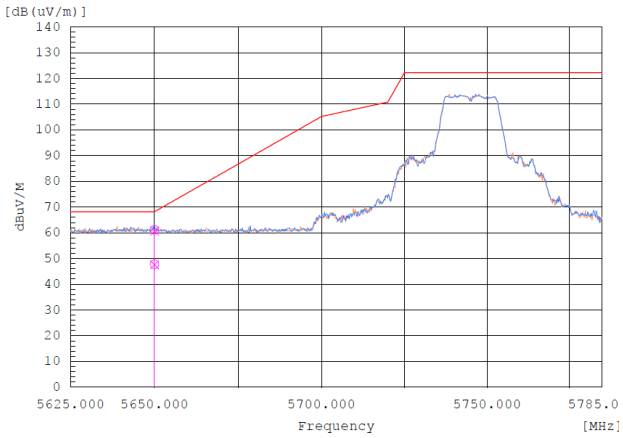
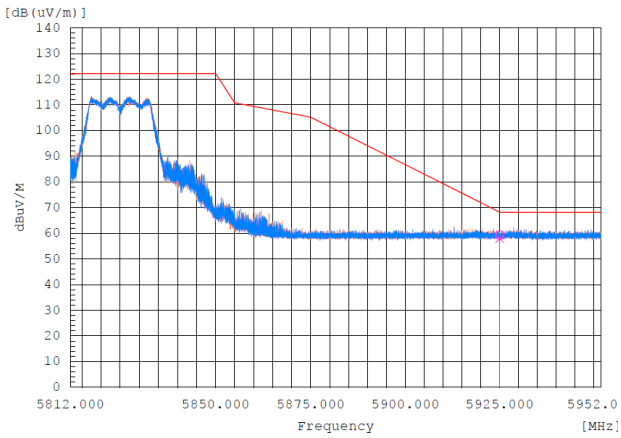
Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5650	H	49.8	11.3	61.1	68.2	7.1
5650	V	48.8	11.3	60.1	68.2	8.1

Operating Frequency 5825 MHz
Channel No. CH 165
Mode 802.11a (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5925	H	47.4	11.9	59.3	68.2	8.9
5925	V	46.1	11.9	58.0	68.2	10.2

Notes:
1. Correction Factor: Antenna Factor + Cable loss
2. PK Level = Measured Power(dBm) + Correction Factor(dB)

▣ Test Plots

Radiated Band Edges 802.11a (CH 149)	Radiated Band Edges 802.11a (CH 165)
	

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Operating Frequency 5745 MHz
Channel No. CH 149
Mode 802.11n HT20 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5650	H	50.5	11.3	61.8	68.2	6.4
5650	V	48.1	11.3	59.4	68.2	8.8

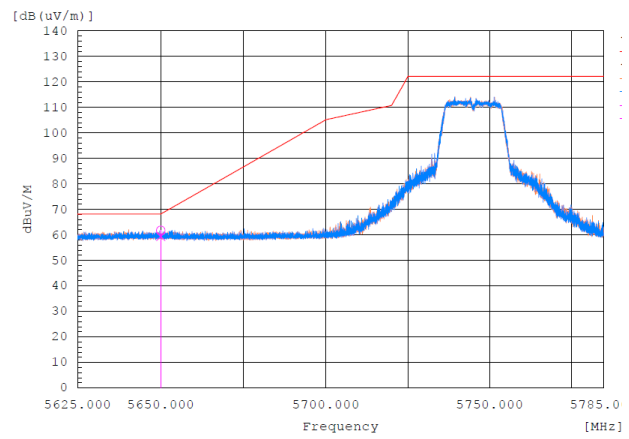
Operating Frequency 5825 MHz
Channel No. CH 165
Mode 802.11n HT20 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5925	H	48.1	11.9	60.0	68.2	8.2
5925	V	47.6	11.9	59.5	68.2	8.7

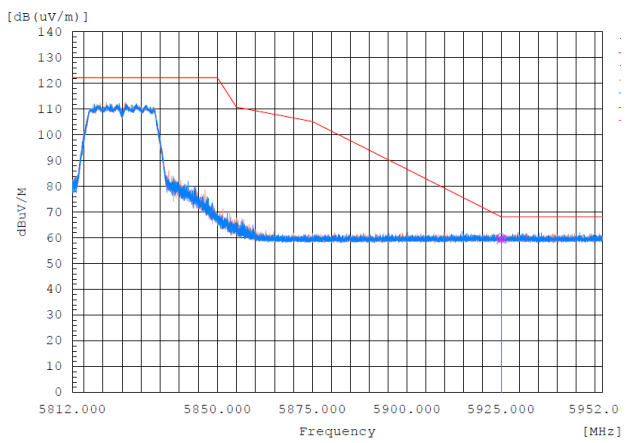
Notes:
1. Correction Factor: Antenna Factor + Cable loss
2. PK Level = Measured Power(dBm) + Correction Factor(dB)

▣ Test Plots

Radiated Band Edges 802.11n HT20 (CH 149)



Radiated Band Edges 802.11n HT20 (CH 165)



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Operating Frequency 5745 MHz
Channel No. CH 149
Mode 802.11ac VHT20 (CDD)

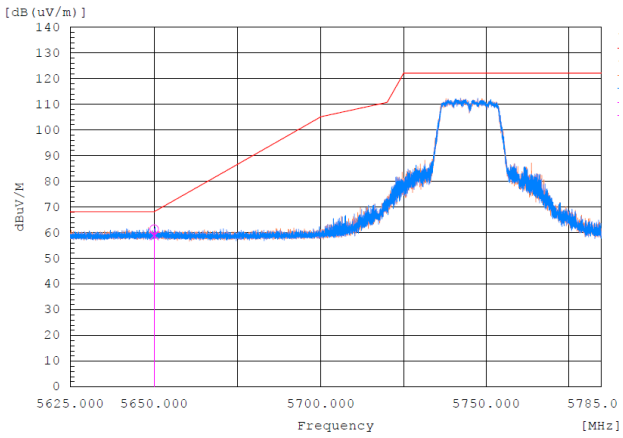
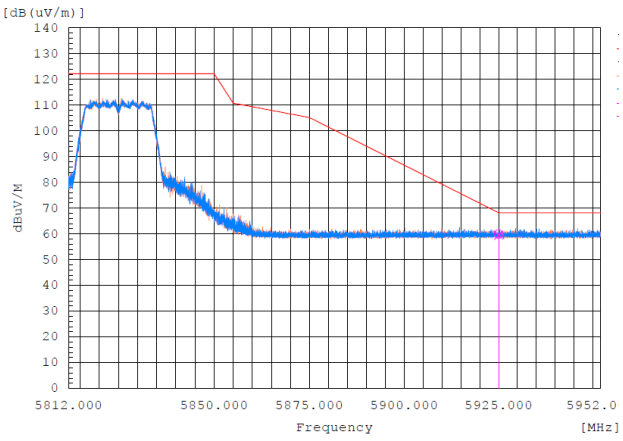
Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5650	H	50.1	11.3	61.4	68.2	6.8
5650	V	47.6	11.3	58.9	68.2	9.3

Operating Frequency 5825 MHz
Channel No. CH 165
Mode 802.11ac VHT20 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5925	H	47.8	11.9	59.7	68.2	8.5
5925	V	46.5	11.9	58.4	68.2	9.8

Notes:
1. Correction Factor: Antenna Factor + Cable loss
2. PK Level = Measured Power(dBm) + Correction Factor(dB)

▣ Test Plots

Radiated Band Edges 802.11ac VHT20 (CH 149)	Radiated Band Edges 802.11ac VHT20 (CH 165)
	

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Operating Frequency 5745 MHz
Channel No. CH 149
Mode 802.11ax HE20 (CDD)

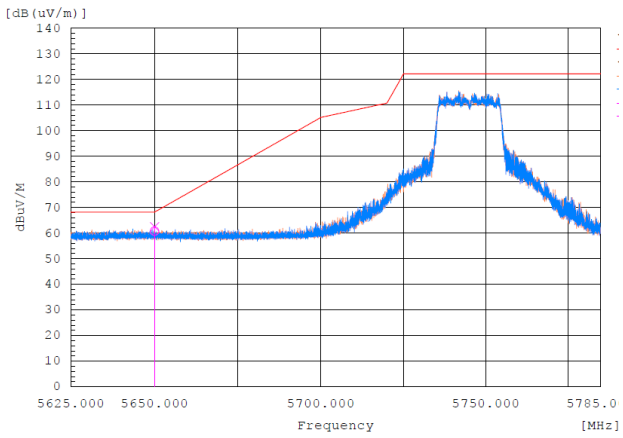
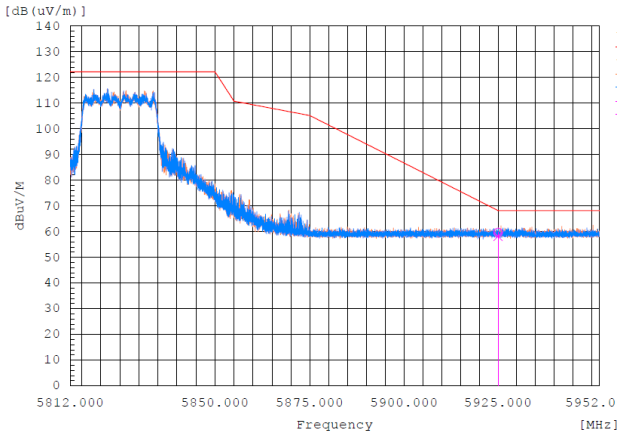
Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5650	H	49.5	11.3	60.8	68.2	7.4
5650	V	51.2	11.3	62.5	68.2	5.7

Operating Frequency 5825 MHz
Channel No. CH 165
Mode 802.11ax HE20 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5925	H	47.8	11.9	59.7	68.2	8.5
5925	V	46.3	11.9	58.2	68.2	10.0

Notes:
1. Correction Factor: Antenna Factor + Cable loss
2. PK Level = Measured Power(dBm) + Correction Factor(dB)

▣ Test Plots

Radiated Band Edges 802.11ax HE20 (CH 149)	Radiated Band Edges 802.11ax HE20 (CH 165)
	

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Operating Frequency 5745 MHz
Channel No. CH 149
Mode 802.11ac VHT20 (CDD)

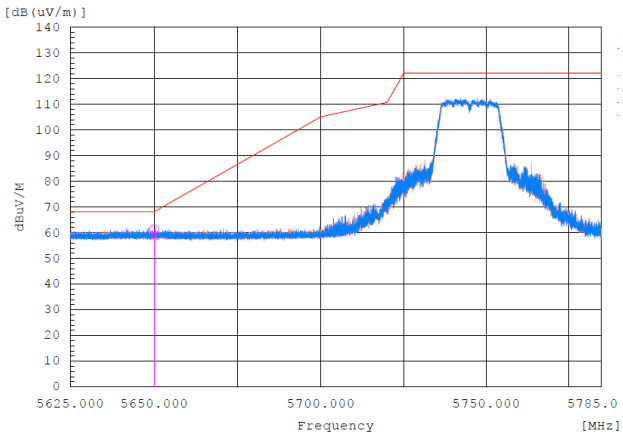
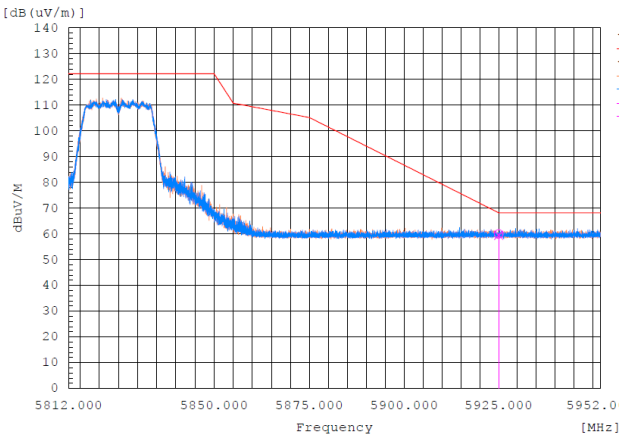
Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5650	H	50.1	11.3	61.4	68.2	6.8
5650	V	47.6	11.3	58.9	68.2	9.3

Operating Frequency 5825 MHz
Channel No. CH 165
Mode 802.11ac VHT20 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5925	H	47.8	11.9	59.7	68.2	8.5
5925	V	46.5	11.9	58.4	68.2	9.8

Notes:
1. Correction Factor: Antenna Factor + Cable loss
2. PK Level = Measured Power(dBm) + Correction Factor(dB)

▣ Test Plots

Radiated Band Edges 802.11ac VHT20 (CH 149)	Radiated Band Edges 802.11ac VHT20 (CH 165)
	

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Operating Frequency 5755 MHz
Channel No. CH 151
Mode 802.11n HT40 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5650	H	50.8	11.3	62.1	68.2	6.1
5650	V	48.1	11.3	59.4	68.2	8.8

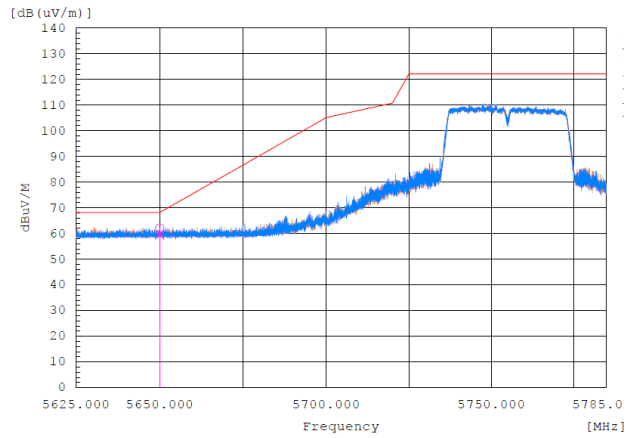
Operating Frequency 5795 MHz
Channel No. CH 159
Mode 802.11n HT40 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5925	H	48.3	11.9	60.2	68.2	8.0
5925	V	47.2	11.9	59.1	68.2	9.1

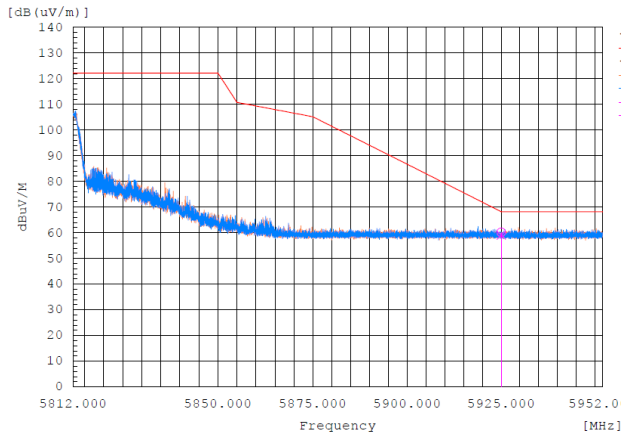
Notes:
1. Correction Factor: Antenna Factor + Cable loss
2. PK Level = Measured Power(dBm) + Correction Factor(dB)

▣ Test Plots

Radiated Band Edges 802.11n HT40 (CH 151)



Radiated Band Edges 802.11n HT40 (CH 159)



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Operating Frequency 5755 MHz
Channel No. CH 151
Mode 802.11ac VHT40 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5650	H	51.1	11.3	62.4	68.2	5.8
5650	V	47.8	11.3	59.1	68.2	9.1

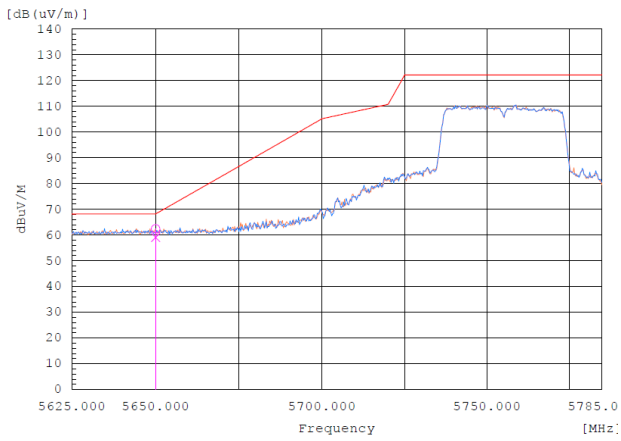
Operating Frequency 5795 MHz
Channel No. CH 159
Mode 802.11ac VHT40 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5925	H	48.0	11.9	59.9	68.2	8.3
5925	V	46.6	11.9	58.5	68.2	9.7

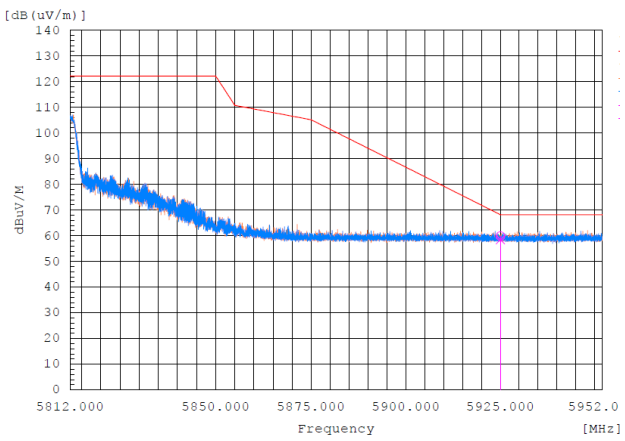
Notes:
1. Correction Factor: Antenna Factor + Cable loss
2. PK Level = Measured Power(dBm) + Correction Factor(dB)

▣ Test Plots

Radiated Band Edges 802.11ac VHT40 (CH 151)



Radiated Band Edges 802.11ac VHT40 (CH 159)



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Operating Frequency 5755 MHz
Channel No. CH 151
Mode 802.11ax HE40 (CDD)

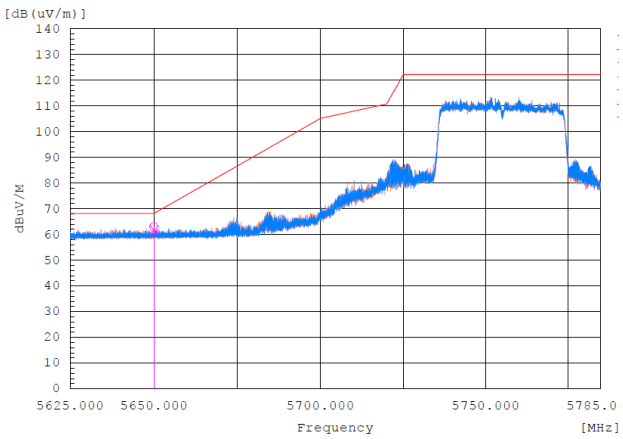
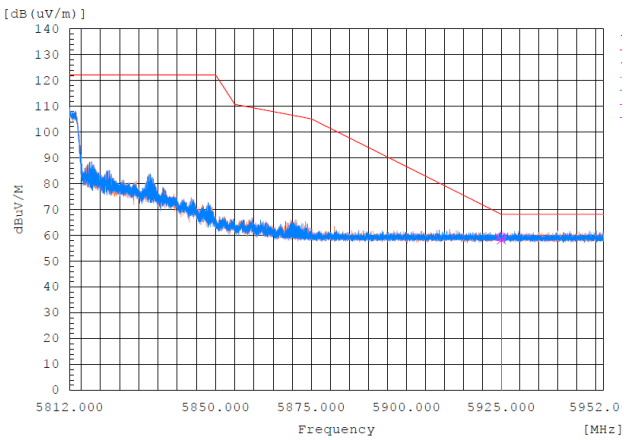
Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5650	H	51.7	11.3	63.0	68.2	5.2
5650	V	50.6	11.3	61.9	68.2	6.3

Operating Frequency 5795 MHz
Channel No. CH 159
Mode 802.11ax HE40 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5925	H	47.5	11.9	59.4	68.2	8.8
5925	V	46.4	11.9	58.3	68.2	9.9

Notes:
1. Correction Factor: Antenna Factor + Cable loss
2. PK Level = Measured Power(dBm) + Correction Factor(dB)

▣ Test Plots

Radiated Band Edges 802.11ax HE40 (CH 151)	Radiated Band Edges 802.11ax HE40 (CH 159)
	

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Operating Frequency 5775 MHz
Channel No. CH 155
Mode 802.11ac VHT80 (CDD)

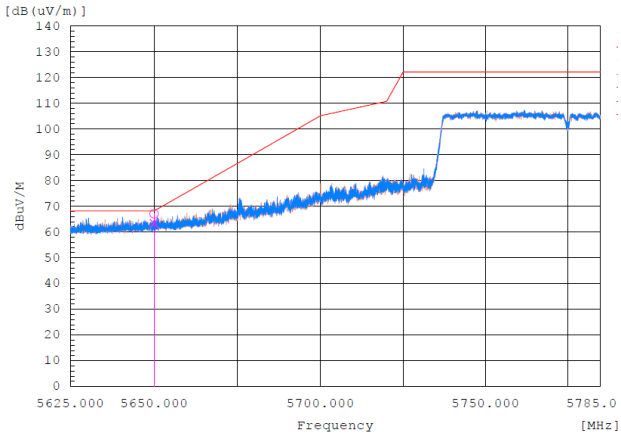
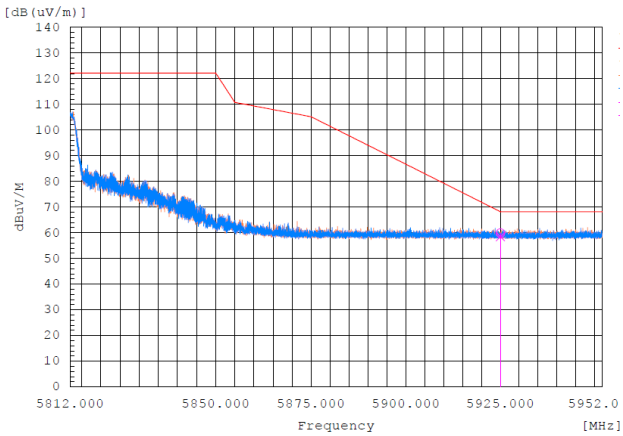
Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5650	H	55.8	11.3	67.1	68.2	1.1
5650	V	52.1	11.3	63.4	68.2	4.8

Operating Frequency 5775 MHz
Channel No. CH 155
Mode 802.11ac VHT80 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5925	H	50.0	11.9	61.9	68.2	6.3
5925	V	47.1	11.9	59.0	68.2	9.2

Notes:
1. Correction Factor: Antenna Factor + Cable loss
2. PK Level = Measured Power(dBm) + Correction Factor(dB)

▣ Test Plots

Radiated Band Edges 802.11ac VHT80 (CH 155)	Radiated Band Edges 802.11ac VHT80 (CH 155)
	

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Operating Frequency 5775 MHz
Channel No. CH 155
Mode 802.11ax HE80 (CDD)

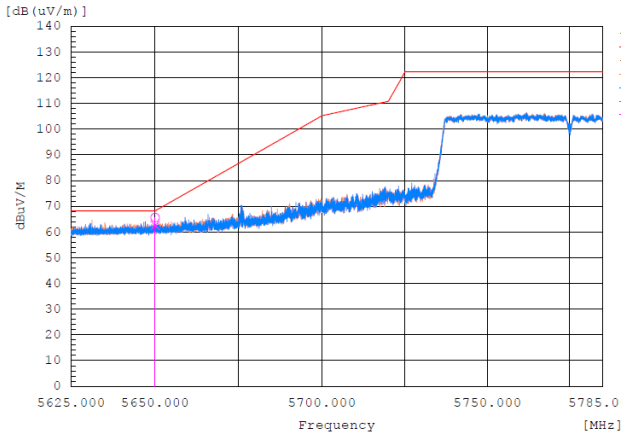
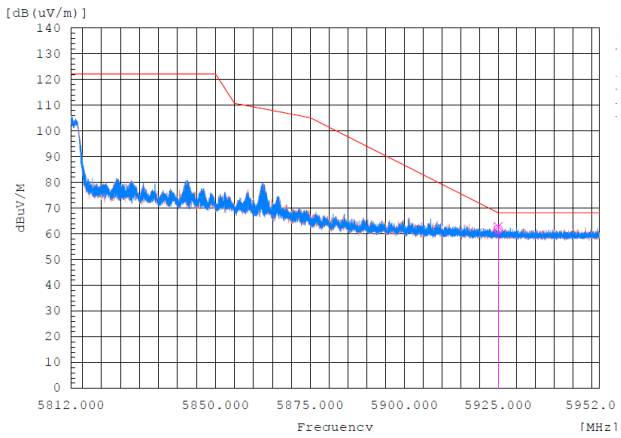
Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5650	H	54.3	11.3	65.6	68.2	2.6
5650	V	51.3	11.3	62.6	68.2	5.6

Operating Frequency 5775 MHz
Channel No. CH 155
Mode 802.11ax HE80 (CDD)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5925	H	49.8	11.9	61.7	68.2	6.5
5925	V	51.0	11.9	62.9	68.2	5.3

Notes:
1. Correction Factor: Antenna Factor + Cable loss
2. PK Level = Measured Power(dBm) + Correction Factor(dB)

▣ Test Plots

Radiated Band Edges 802.11ax HE80 (CH 155)	Radiated Band Edges 802.11ax HE80 (CH 155)
	

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9.8 RECEIVER SPURIOUS EMISSIONS

Frequency Range : Below 1 GHz

CH 36

Frequency (MHz)	Polarization	Reading (dBuV)	Corr.[1)] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
33.225	V	33.5	-1.9	31.6	40	8.4	QP
500.002	H	38.5	-2.1	36.4	46	9.6	QP
500.019	V	28.8	-2.1	26.7	46	19.3	QP
624.998	V	37.2	-0.2	37.0	46	9.0	QP
625.001	H	27.9	-0.2	27.7	46	18.3	QP
874.995	V	27.3	3.6	30.9	46	15.1	QP

CH 149

Frequency (MHz)	Polarization	Reading (dBuV)	Corr.[1)] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
33.52	V	33.1	-2.2	30.9	40	9.1	QP
500.008	H	38.6	-2.1	36.5	46	9.5	QP
500.022	V	28.6	-2.1	26.5	46	19.5	QP
625.007	V	37.9	-0.2	37.7	46	8.3	QP
625.015	H	28.2	-0.2	28.0	46	18.0	QP
874.996	V	27	3.6	30.6	46	15.4	QP

Frequency Range : Above 1 GHz

CH 36

Frequency (MHz)	Polarization	Reading (dBuV)		Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		AV	Corr.[1)]	AV	AV	AV
15960.86	H	29.5	16.7	46.2	54	7.8
15960.14	V	29.5	16.7	46.2	54	7.8
24819.23	H	36.8	12.1	48.9	54	5.1
24819.34	V	36.7	12.1	48.8	54	5.2

CH 149

Frequency (MHz)	Polarization	Reading (dBuV)		Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		AV	Corr.[1)]	AV	AV	AV
16038.7	H	29.7	16.6	46.3	54	7.7
16037.06	V	29.6	16.7	46.3	54	7.7
24819.4	H	36.2	12.1	48.3	54	5.7
24819.12	V	36.1	12.1	48.2	54	5.8

Note:

1. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Quasi peak detector mode.
2. Correction Factor: Antenna Factor + Cable loss + Preamplifier

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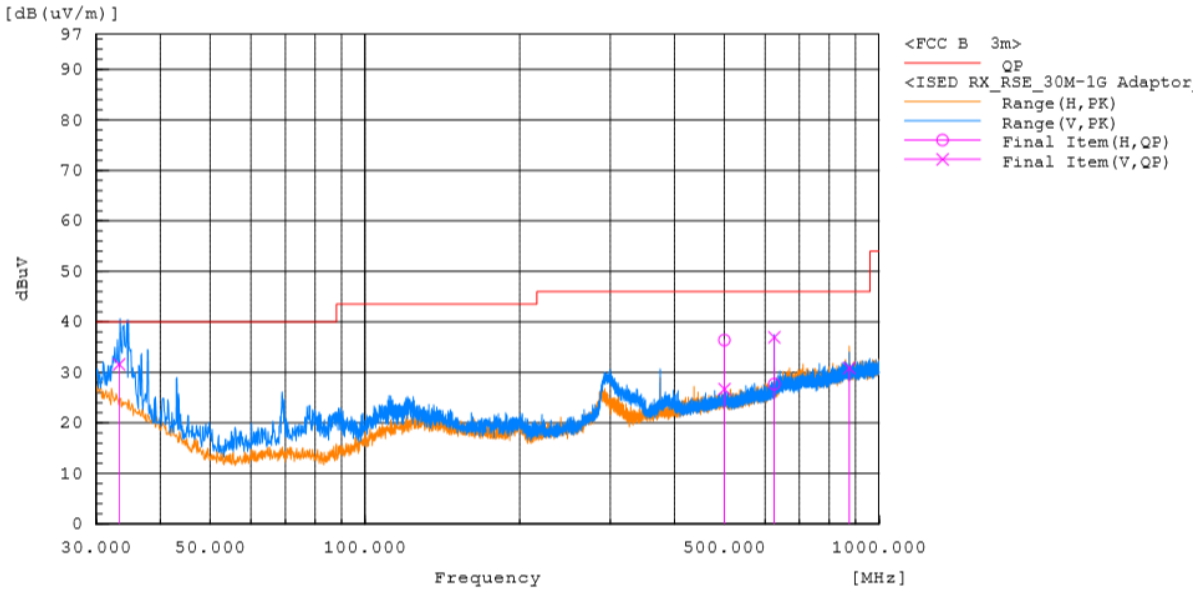
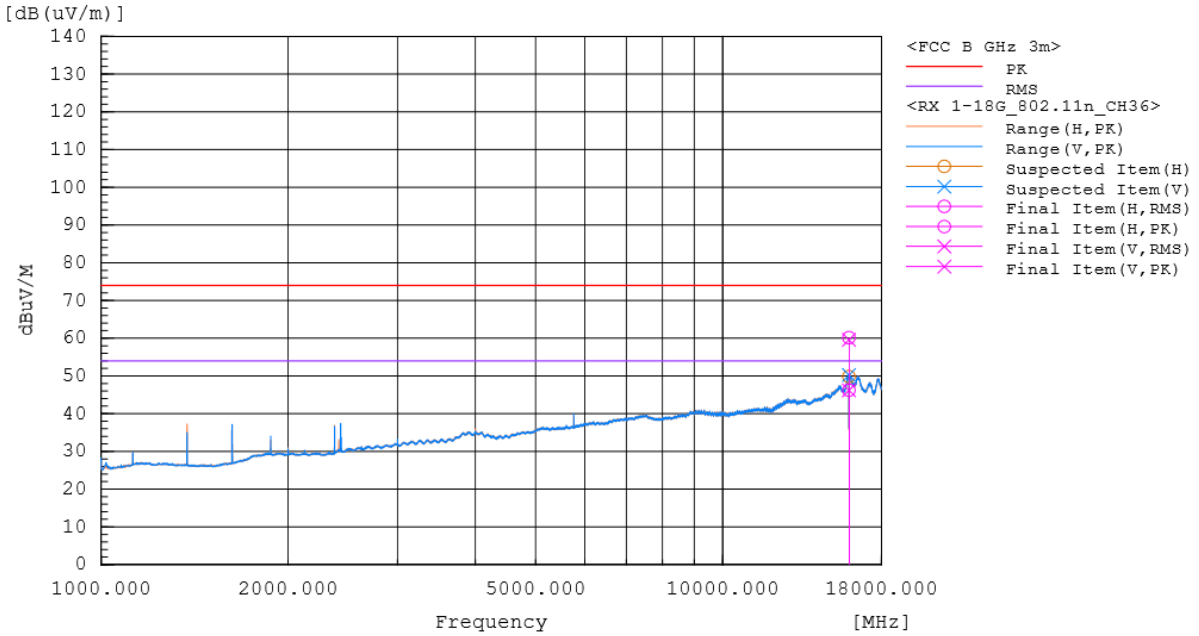
▣ Test Plots

Receiver Spurious Emission below 1 GHz



Receiver Spurious Emission 1 GHz – 18 GHz



Note:
The worst-case plots are included in this report.

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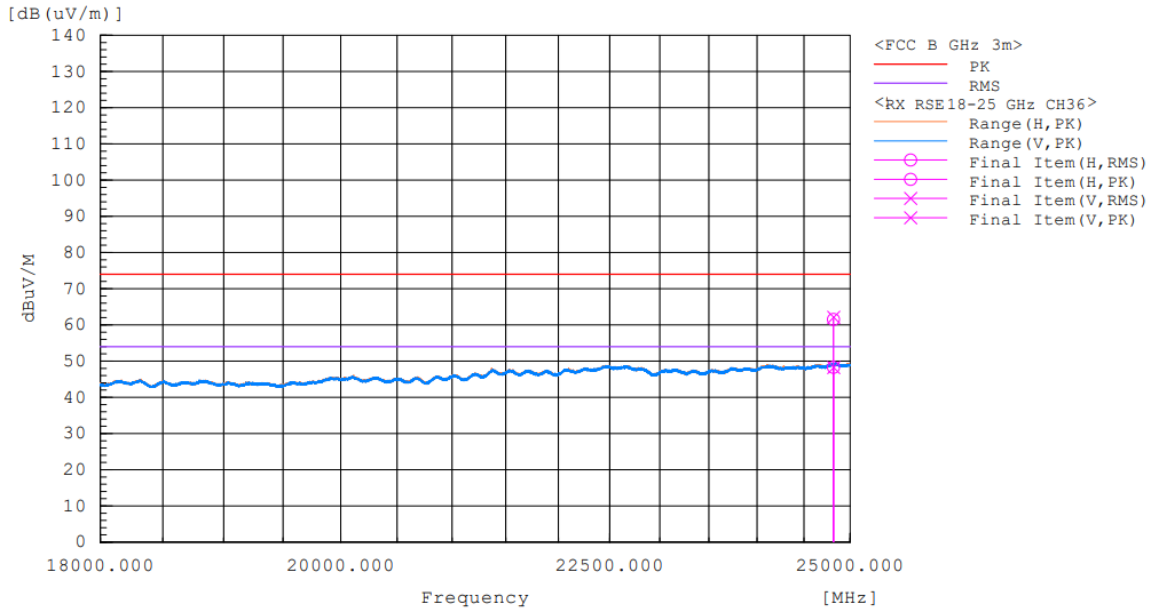
▣ Test Plots

Receiver Spurious Emission 18 GHz – 26.5 GHz



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9.9 POWERLINE CONDUCTED EMISSIONS

AC Adapter

Frequency (MHz)	Line	Reading (dBµV)		Corr. (dB)	Level (dBµV)		Limit (dBµV)		Margin (dB)	
		QP	CAV		QP	CAV	QP	CAV	QP	CAV
0.153	L1	37.3	26.0	9.8	47.1	35.8	65.9	55.9	18.8	20.1
0.181	L1	33.0	20.8	9.8	42.8	30.6	64.5	54.5	21.7	23.9
0.365	L1	25.2	21.0	9.7	34.9	30.7	58.6	48.6	23.7	17.9
1.207	L1	24.0	21.4	9.8	33.8	31.2	56	46	22.2	14.8
2.113	L1	20.3	18.6	9.7	30.0	28.3	56	46	26.0	17.7
3.32	L1	21.4	16.8	9.8	31.2	26.6	56	46	24.8	19.4
14.788	L1	20.7	19.9	10.2	30.9	30.1	60	50	29.1	19.9
17.504	L1	18.5	16.3	10.3	28.8	26.6	60	50	31.2	23.4

Frequency (MHz)	Line	Reading (dBµV)		Corr. (dB)	Level (dBµV)		Limit (dBµV)		Margin (dB)	
		QP	CAV		QP	CAV	QP	CAV	QP	CAV
0.154	N	37.9	25.4	9.8	47.7	35.2	65.8	55.8	18.1	20.6
0.232	N	25.7	9.4	9.7	35.4	19.1	62.4	52.4	27.0	33.3
0.365	N	24.8	20.6	9.7	34.5	30.3	58.6	48.6	24.1	18.3
1.207	N	23.4	21.2	9.8	33.2	31.0	56	46	22.8	15.0
3.016	N	21.1	16.6	9.8	30.9	26.4	56	46	25.1	19.6
3.324	N	21.3	16.4	9.8	31.1	26.2	56	46	24.9	19.8
14.788	N	21.3	20.7	10.1	31.4	30.8	60	50	28.6	19.2
17.505	N	19.6	18.1	10.2	29.8	28.3	60	50	30.2	21.7

Note : Quasi-peak(Final Result) = Reading Value + Correction Factor

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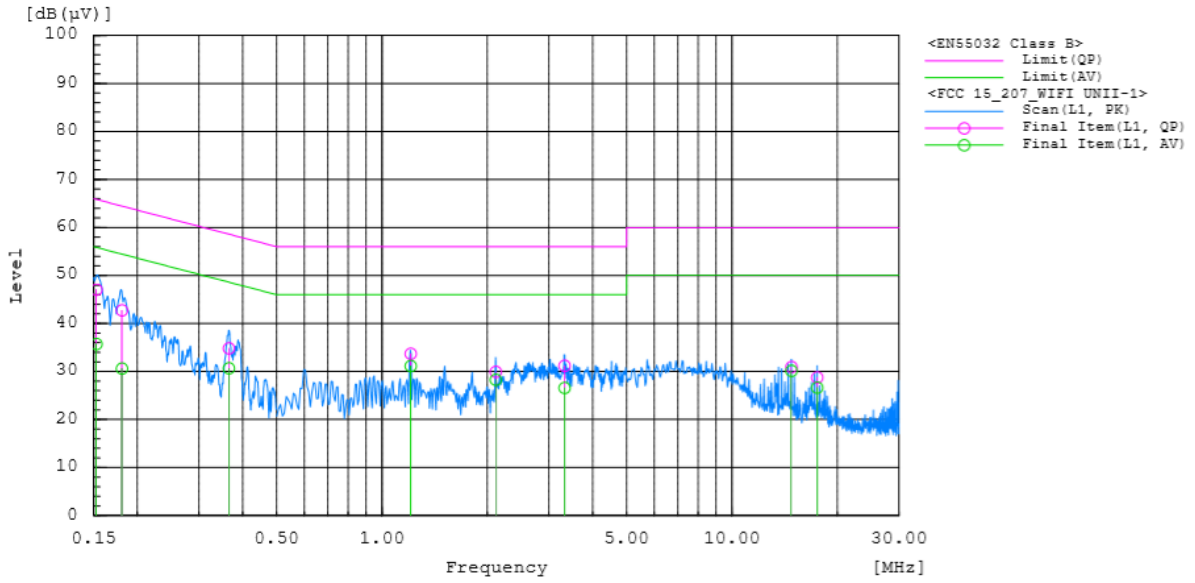
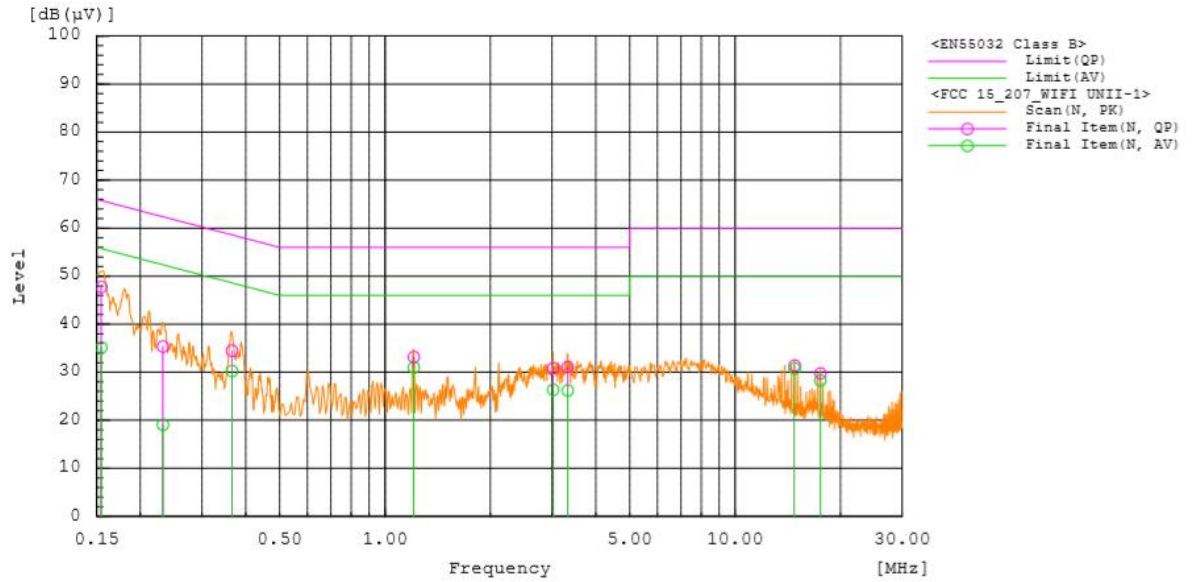
▣ Test Plots

AC Adapter : AC Line Conducted Emission (L1)



AC Adapter : AC Line Conducted Emission (N)



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PoE Adapter

Frequency (MHz)	Line	Reading (dBµV)		Corr. (dB)	Level (dBµV)		Limit (dBµV)		Margin (dB)	
		QP	CAV		QP	CAV	QP	CAV	QP	CAV
0.154	L1	40.6	22.0	9.8	50.4	31.8	65.8	55.8	15.4	24.0
0.180	L1	36.4	19.3	9.8	46.2	29.1	64.5	54.5	18.3	25.4
0.233	L1	29.1	10.8	9.7	38.8	20.5	62.3	52.3	23.5	31.8
4.952	L1	11.9	8.3	9.9	21.8	18.2	56	46	34.2	27.8
16.095	L1	34.5	29.5	10.2	44.7	39.7	60	50	15.3	10.3
16.398	L1	34.8	33.6	10.2	45.0	43.8	60	50	15.0	6.2
17.005	L1	32.9	24.5	10.2	43.1	34.7	60	50	16.9	15.3

Frequency (MHz)	Line	Reading (dBµV)		Corr. (dB)	Level (dBµV)		Limit (dBµV)		Margin (dB)	
		QP	CAV		QP	CAV	QP	CAV	QP	CAV
0.151	N	39.0	20.2	9.8	48.8	30.0	65.9	55.9	17.1	25.9
0.177	N	37.1	19.7	9.7	46.8	29.4	64.6	54.6	17.8	25.2
0.182	N	36.4	19.7	9.7	46.1	29.4	64.4	54.4	18.3	25.0
3.094	N	8.8	2.5	9.8	18.6	12.3	56	46	37.4	33.7
4.890	N	12.5	8.9	9.9	22.4	18.8	56	46	33.6	27.2
16.399	N	35.1	33.9	10.2	45.3	44.1	60	50	14.7	5.9
16.702	N	33.1	30.8	10.2	43.3	41.0	60	50	16.7	9.0
17.005	N	33.2	23.3	10.2	43.4	33.5	60	50	16.6	16.5

Note : Quasi-peak(Final Result) = Reading Value + Correction Factor

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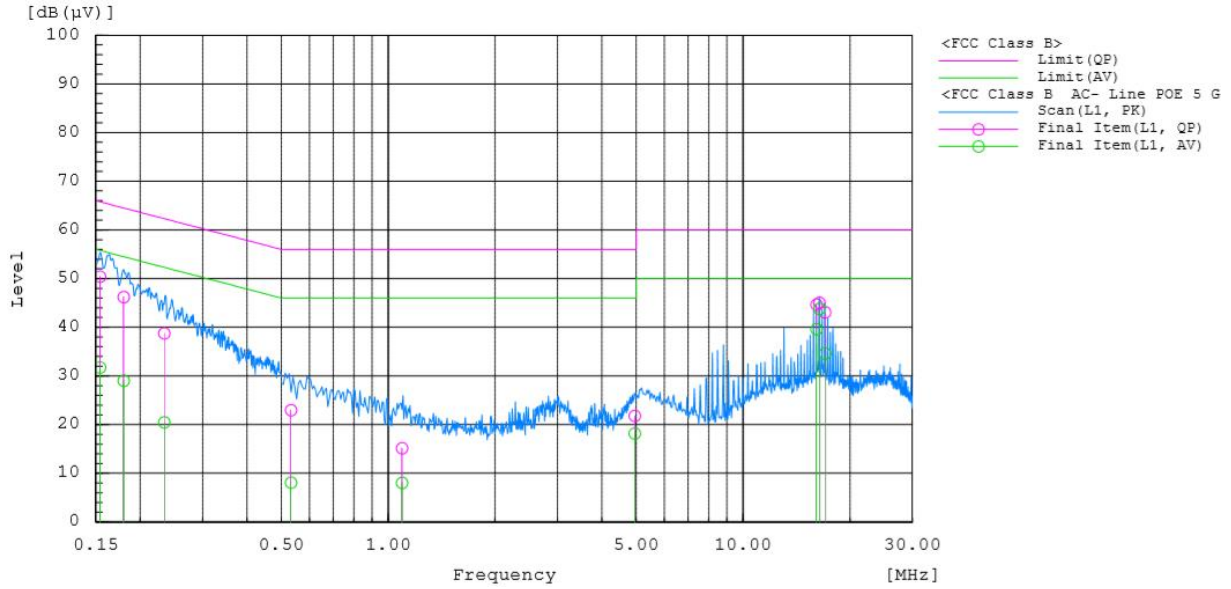
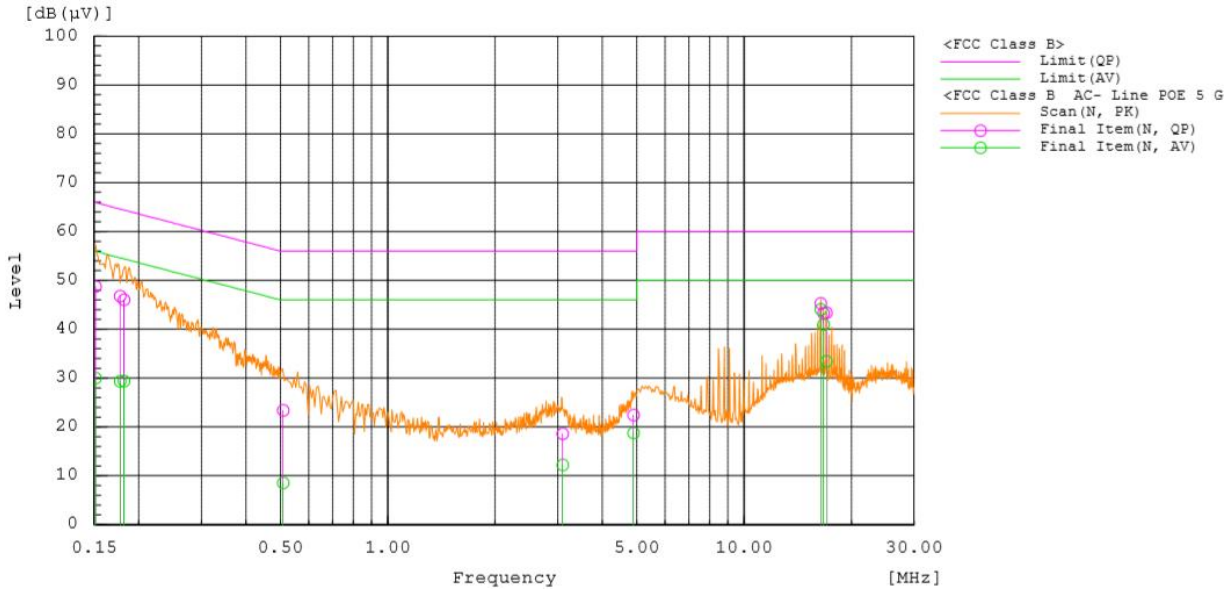
▣ Test Plots

PoE Adapter : AC Line Conducted Emission (L1)



PoE Adapter : AC Line Conducted Emission (N)



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10. LIST OF TEST EQUIPMENT

No.	Instrument	Model No.	Calibration Due (mm/dd/yy)	Manufacture	Serial No.
☒	Signal Analyzer (20 Hz ~ 40.0 GHz)	ESU40	12/20/2020	ROHDE & SCHWARZ	100529
☒	Signal Analyzer (10 Hz ~ 26.5 GHz)	N9020A	11/08/2020	Keysight	MY52091291
☒	BI-LOG Antenna (30 MHz ~ 1 GHz)	JB6	11/29/2020	Sunol	A071116
☒	Attenuator (20 dB, DC ~ 26.5 GHz)	8493C	12/13/2020	HP	09072
☒	POWER AMP (1 GHz ~ 18 GHz)	PAM-118A	08/22/2020	Com-Power Corporation	18040074
☒	POWER AMP (0.3GHz ~ 1GHz)	8447D	10/08/2020	HP	2944
☒	Horn Antenna (1 GHz ~ 18 GHz)	DRH-118	08/28/2020	Sunol	A070516
☒	Loop Antenna (0.009 ~ 30 MHz)	HLA 6121	08/27/2020	TESEQ	43964
☒	Horn Antenna (18 GHz ~ 40 GHz)	DRH-1840	02/20/2021	Sunol	17120
☒	POWER AMP (18 GHz ~ 40 GHz)	CBL184050-45-01	02/04/2021	CERNEX, Inc.	43964
☒	ISM Band Reject filter (2370 ~ 2400 - 2483.5 ~2520 MHz)	WRCJV12	01/18/2021	Wainwright	4
☒	EMI Test Receiver	ESR3	12/20/2020	Rohde & Schwarz	102363
☒	LISN	3816/2SH	01/19/2021	EMCO	00205729
☒	LISN	ENV216	01/19/2021	Rohde & Schwarz	101349

Note:

1. Equipment listed above that calibrated during the testing period was set for test after the calibration.
2. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date

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11. ANNEX A TEST SETUP PHOTO

The setup photos are provided as a separate document

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