

Band :	UNII 2C
Operation Mode:	802.11ac_VHT40
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11020	50.21	2.97	V	53.18	73.98	20.80	PK
11020	37.65	2.97	V	40.62	53.98	13.36	AV
16530	52.32	4.15	V	56.47	68.20	11.73	PK
11020	49.69	2.97	H	52.66	73.98	21.32	PK
11020	37.59	2.97	H	40.56	53.98	13.42	AV
16530	52.12	4.15	H	56.27	68.20	11.93	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
5. We have done all data rate in 802.11ac_VHT40. Worst case is MCS0 in 802.11ac_VHT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)

Band :	UNII 2C
Operation Mode:	802.11ac_VHT40
Transfer MCS Index:	0
Operating Frequency	5550 MHz
Channel No.	110 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11100	50.12	2.79	V	52.91	73.98	21.07	PK
11100	36.23	2.79	V	39.02	53.98	14.96	AV
16650	53.81	7.19	V	61.00	68.20	7.20	PK
11100	49.51	2.79	H	52.30	73.98	21.68	PK
11100	36.31	2.79	H	39.10	53.98	14.88	AV
16650	53.91	7.19	H	61.10	68.20	7.10	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
5. We have done all data rate in 802.11ac_VHT40. Worst case is MCS0 in 802.11ac_VHT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)

Band :	UNII 2C
Operation Mode:	802.11ac_VHT40
Operating Frequency	5710 MHz
Channel No.	142 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11420	50.09	3.36	V	53.45	73.98	20.53	PK
11420	36.98	3.36	V	40.34	53.98	13.64	AV
17130	48.68	7.02	V	55.70	68.20	12.50	PK
11420	51.10	3.36	H	54.46	73.98	19.52	PK
11420	37.03	3.36	H	40.39	53.98	13.59	AV
17130	48.93	7.02	H	55.95	68.20	12.25	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
5. We have done all data rate in 802.11ac_VHT40. Worst case is MCS0 in 802.11ac_VHT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)

Band :	UNII 2C
Operation Mode:	802.11ac_VHT80
Operating Frequency	5530 MHz
Channel No.	106 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11060	50.14	3.46	V	53.60	73.98	20.38	PK
11060	37.59	3.46	V	41.05	53.98	12.93	AV
16590	52.16	4.11	V	56.27	68.20	11.93	PK
11060	49.85	3.46	H	53.31	73.98	20.67	PK
11060	37.51	3.46	H	40.97	53.98	13.01	AV
16590	52.14	4.11	H	56.25	68.20	11.95	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
5. We have done all data rate in 802.11ac_VHT80. Worst case is MCS0 in 802.11ac_VHT80.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)

Band :	UNII 2C
Operation Mode:	802.11ac_VHT80
Operating Frequency	5690 MHz
Channel No.	138 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11380	50.23	3.41	V	53.64	73.98	20.34	PK
11380	36.56	3.41	V	39.97	53.98	14.01	AV
17070	53.98	5.78	V	59.76	68.20	8.44	PK
11380	49.68	3.41	H	53.09	73.98	20.89	PK
11380	36.31	3.41	H	39.72	53.98	14.26	AV
17070	53.78	5.78	H	59.56	68.20	8.64	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
5. We have done all data rate in 802.11ac_VHT80. Worst case is MCS0 in 802.11ac_VHT80.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)

Band :	UNII 3
Operation Mode:	802.11 a
Operating Frequency	5745MHz
Channel No.	149 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11490	53.14	2.87	V	56.01	73.98	17.97	PK
11490	40.34	2.87	V	43.21	53.98	10.77	AV
17235	54.47	7.44	V	61.91	68.20	6.30	PK
11490	52.86	2.51	H	55.37	73.98	18.61	PK
11490	40.12	2.51	H	42.63	53.98	11.35	AV
17235	54.13	7.44	H	61.57	68.20	6.64	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)

Band :	UNII 3
Operation Mode:	802.11 a
Operating Frequency	5785 MHz
Channel No.	157 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11570	55.38	2.48	V	57.86	73.98	16.12	PK
11570	41.26	2.48	V	43.74	53.98	10.24	AV
17355	54.08	7.86	V	61.94	68.20	6.27	PK
11570	55.05	2.48	H	57.53	73.98	16.45	PK
11570	41.05	2.48	H	43.53	53.98	10.45	AV
17355	53.96	7.86	H	61.82	68.20	6.39	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)

Band :	UNII 3
Operation Mode:	802.11 a
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11650	58.70	3.24	V	61.94	73.98	12.04	PK
11650	44.56	3.24	V	47.80	53.98	6.18	AV
17475	56.91	8.14	V	65.05	68.20	3.16	PK
11650	58.61	3.24	H	61.85	73.98	12.13	PK
11650	44.39	3.24	H	47.63	53.98	6.35	AV
17475	56.57	8.14	H	64.71	68.20	3.50	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna
7. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)

Band :	UNII 3
Operation Mode:	802.11 n_HT20
Operating Frequency	5745 MHz
Channel No.	149 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11490	53.04	2.87	V	55.91	73.98	18.07	PK
11490	40.21	2.87	V	43.08	53.98	10.90	AV
17235	54.26	7.44	V	61.70	68.20	6.51	PK
11490	52.76	2.51	H	55.27	73.98	18.71	PK
11490	40.05	2.51	H	42.56	53.98	11.42	AV
17235	54.11	7.44	H	61.55	68.20	6.66	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
5. We have done all data rate in 802.11n_HT20. Worst case is MCS0 in 802.11n_HT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)

Band :	UNII 3
Operation Mode:	802.11 n_HT20
Operating Frequency	5785 MHz
Channel No.	157 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11570	54.23	2.48	V	56.71	73.98	17.27	PK
11570	41.13	2.48	V	43.61	53.98	10.37	AV
17355	53.89	7.86	V	61.75	68.20	6.46	PK
11570	54.69	2.48	H	57.17	73.98	16.81	PK
11570	41.02	2.48	H	43.50	53.98	10.48	AV
17355	53.81	7.86	H	61.67	68.20	6.54	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
5. We have done all data rate in 802.11n_HT20. Worst case is MCS0 in 802.11n_HT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)

Band :	UNII 3
Operation Mode:	802.11 n_HT20
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11650	58.37	3.24	V	61.61	73.98	12.37	PK
11650	44.26	3.24	V	47.50	53.98	6.48	AV
17475	55.96	8.14	V	64.10	68.20	4.11	PK
11650	58.56	3.24	H	61.80	73.98	12.18	PK
11650	44.23	3.24	H	47.47	53.98	6.51	AV
17475	55.89	8.14	H	64.03	68.20	4.18	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
5. We have done all data rate in 802.11n_HT20. Worst case is MCS0 in 802.11n_HT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)

Band :	UNII 3
Operation Mode:	802.11 ac_VHT20
Operating Frequency	5745 MHz
Channel No.	149 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11490	52.87	2.87	V	55.74	73.98	18.24	PK
11490	40.14	2.87	V	43.01	53.98	10.97	AV
17235	54.12	7.44	V	61.56	68.20	6.65	PK
11490	52.76	2.51	H	55.27	73.98	18.71	PK
11490	40.05	2.51	H	42.56	53.98	11.42	AV
17235	53.98	7.44	H	61.42	68.20	6.79	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
5. We have done all data rate in 802.11ac_VHT20. Worst case is MCS0 in 802.11ac_VHT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)

Band :	UNII 3
Operation Mode:	802.11 ac_VHT20
Operating Frequency	5785 MHz
Channel No.	157 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11570	54.14	2.48	V	56.62	73.98	17.36	PK
11570	41.05	2.48	V	43.53	53.98	10.45	AV
17355	53.77	7.86	V	61.63	68.20	6.58	PK
11570	54.12	2.48	H	56.60	73.98	17.38	PK
11570	40.99	2.48	H	43.47	53.98	10.51	AV
17355	53.71	7.86	H	61.57	68.20	6.64	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
5. We have done all data rate in 802.11ac_VHT20. Worst case is MCS0 in 802.11ac_VHT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)

Band :	UNII 3
Operation Mode:	802.11 ac_VHT20
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11650	57.96	3.24	V	61.20	73.98	12.78	PK
11650	44.12	3.24	V	47.36	53.98	6.62	AV
17475	55.79	8.14	V	63.93	68.20	4.28	PK
11650	58.16	3.24	H	61.40	73.98	12.58	PK
11650	44.11	3.24	H	47.35	53.98	6.63	AV
17475	55.71	8.14	H	63.85	68.20	4.36	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
5. We have done all data rate in 802.11ac_VHT20. Worst case is MCS0 in 802.11ac_VHT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)

Band :	UNII3
Operation Mode:	802.11n_HT40
Operating Frequency	5755 MHz
Channel No.	151 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11510	51.99	2.90	V	54.89	73.98	19.09	PK
11510	40.11	2.90	V	43.01	53.98	10.97	AV
17265	54.11	6.80	V	60.91	68.20	7.29	PK
11510	52.68	2.90	H	55.58	73.98	18.40	PK
11510	39.98	2.90	H	42.88	53.98	11.10	AV
17265	53.99	6.80	H	60.79	68.20	7.41	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
5. We have done all data rate in 802.11n_HT40. Worst case is MCS0 in 802.11n_HT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)

Band :	UNII 3
Operation Mode:	802.11n_HT40
Operating Frequency	5795 MHz
Channel No.	159 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11590	57.81	3.72	V	61.53	73.98	12.45	PK
11590	43.98	3.72	V	47.70	53.98	6.28	AV
17385	55.84	7.21	V	63.05	68.20	5.16	PK
11590	57.68	3.72	H	61.40	73.98	12.58	PK
11590	43.91	3.72	H	47.63	53.98	6.35	AV
17385	55.78	7.21	H	62.99	68.20	5.22	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
5. We have done all data rate in 802.11n_HT40. Worst case is MCS0 in 802.11n_HT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)

Band :	UNII 3
Operation Mode:	802.11ac_VHT40
Operating Frequency	5755 MHz
Channel No.	151 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11510	52.98	2.90	V	55.88	73.98	18.10	PK
11510	40.05	2.90	V	42.95	53.98	11.03	AV
17265	54.13	6.80	V	60.93	68.20	7.27	PK
11510	52.71	2.90	H	55.61	73.98	18.37	PK
11510	39.96	2.90	H	42.86	53.98	11.12	AV
17265	53.96	6.80	H	60.76	68.20	7.44	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
5. We have done all data rate in 802.11ac_VHT40. Worst case is MCS0 in 802.11ac_VHT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)

Band :	UNII 3
Operation Mode:	802.11ac_VHT40
Operating Frequency	5795 MHz
Channel No.	159 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11590	57.86	3.72	V	61.58	73.98	12.40	PK
11590	43.84	3.72	V	47.56	53.98	6.42	AV
17385	55.99	7.21	V	63.20	68.20	5.01	PK
11590	57.98	3.72	H	61.70	73.98	12.28	PK
11590	43.78	3.72	H	47.50	53.98	6.48	AV
17385	55.76	7.21	H	62.97	68.20	5.24	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
5. We have done all data rate in 802.11ac_VHT40. Worst case is MCS0 in 802.11ac_VHT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna
7. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)

Band :	UNII 3
Operation Mode:	802.11ac_VHT80
Operating Frequency	5775 MHz
Channel No.	155 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11550	55.84	3.32	V	59.16	73.98	14.82	PK
11550	41.88	3.32	V	45.20	53.98	8.78	AV
17325	53.98	8.09	V	62.07	68.20	6.14	PK
11550	55.18	3.32	H	58.50	73.98	15.48	PK
11550	41.68	3.32	H	45.00	53.98	8.98	AV
17325	53.89	8.09	H	61.98	68.20	6.23	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

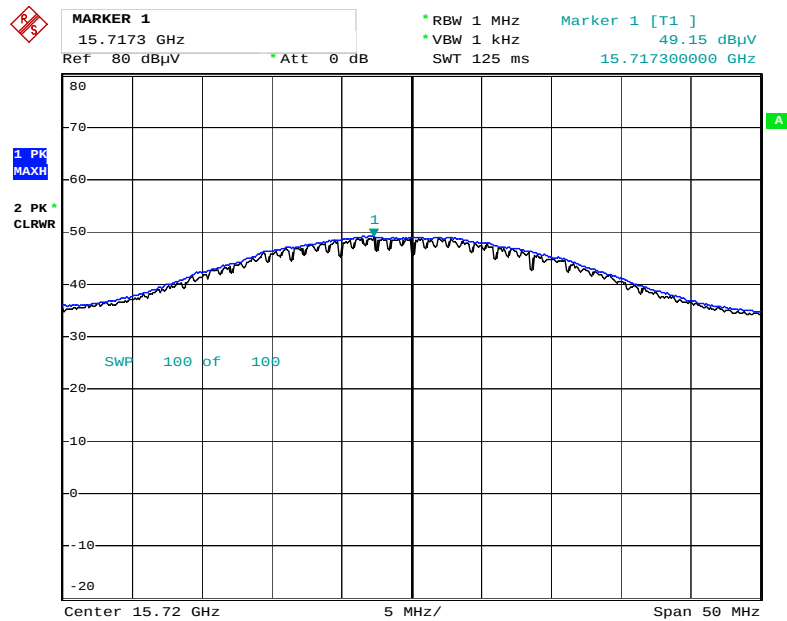
Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
5. We have done all data rate in 802.11ac_VHT80. Worst case is MCS0 in 802.11ac_VHT80.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)

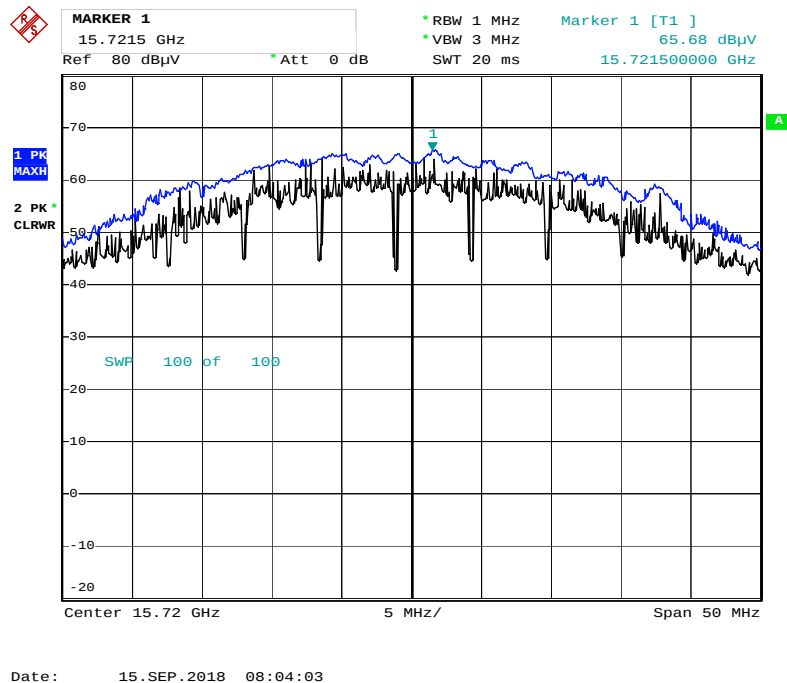
[Internal Ant]

■ RESULT PLOTS (Worst Case: X-V)

Radiated Spurious Emissions plot –Average Reading (802.11a, Ch.48 3rd Harmonic)



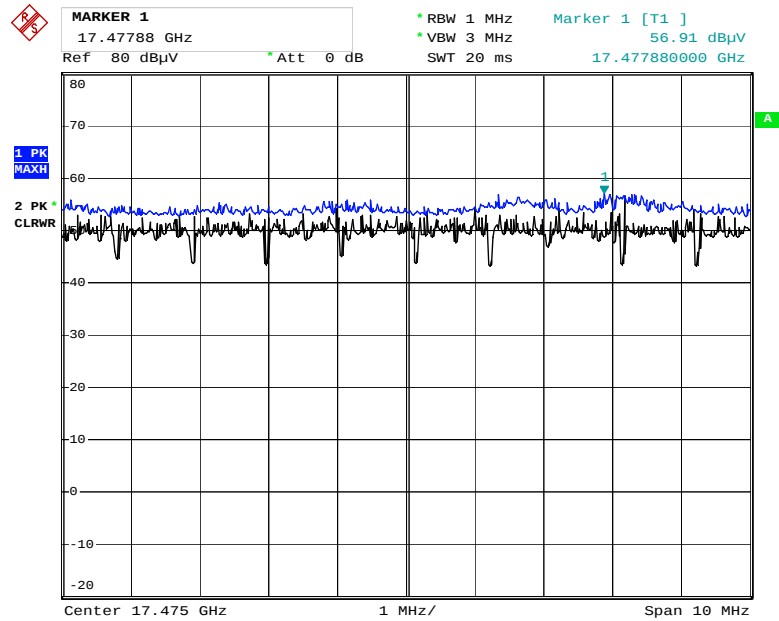
Radiated Spurious Emissions plot –Peak Reading (802.11a, Ch.48 3rd Harmonic)



[External Ant]

■ RESULT PLOTS (Worst Case: X-V)

Radiated Spurious Emissions plot –Peak Reading (802.11a, Ch.165 3rd Harmonic)



Date: 15.SEP.2018 10:36:05

Note : Only the worst case plots for Radiated Spurious Emissions.

10.7.2 RADIATED RESTRICTED BAND EDGE MEASUREMENTS

Test Requirements and limit, §15.247(d) §15.205, §15.209

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in section 15.209(a) (See section 15.205(c)).

[Internal Ant]

Band :	UNII 1
Operation Mode:	802.11 a
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	65.42	3.07	H	68.49	73.98	5.49	PK
5150	46.34	3.07	H	49.41	53.98	4.57	AV
5150	65.96	3.07	V	69.03	73.98	4.95	PK
5150	46.95	3.07	V	50.02	53.98	3.96	AV

Band :	UNII 1
Operation Mode:	802.11 n_HT20
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	64.71	3.07	H	67.78	73.98	6.20	PK
5150	45.99	3.07	H	49.06	53.98	4.92	AV
5150	64.90	3.07	V	67.97	73.98	6.01	PK
5150	46.82	3.07	V	49.89	53.98	4.09	AV

Band :	UNII 1
Operation Mode:	802.11 ac_VHT20
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	66.48	3.07	H	69.55	73.98	4.43	PK
5150	45.17	3.07	H	48.24	53.98	5.74	AV
5150	67.05	3.07	V	70.12	73.98	3.86	PK
5150	45.24	3.07	V	48.31	53.98	5.67	AV

Band :	UNII 1
Operation Mode:	802.11 n_HT40
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	65.29	3.07	H	68.36	73.98	5.62	PK
5150	45.76	3.07	H	48.83	53.98	5.15	AV
5150	65.76	3.07	V	68.83	73.98	5.15	PK
5150	46.24	3.07	V	49.31	53.98	4.67	AV

Band :	UNII 1
Operation Mode:	802.11 ac_VHT40
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	66.75	3.07	H	69.82	73.98	4.16	PK
5150	45.96	3.07	H	49.03	53.98	4.95	AV
5150	67.07	3.07	V	70.14	73.98	3.84	PK
5150	46.33	3.07	V	49.4	53.98	4.58	AV

Band :	UNII 1
Operation Mode:	802.11 ac_VHT80
Operating Frequency	5210 MHz
Channel No.	42 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	64.23	3.07	H	67.30	73.98	6.68	PK
5150	46.84	3.07	H	49.91	53.98	4.07	AV
5150	64.59	3.07	V	67.66	73.98	6.32	PK
5150	47.04	3.07	V	50.11	53.98	3.87	AV

Band :	UNII 2A
Operation Mode:	802.11 a
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	62.98	2.59	H	65.57	73.98	8.41	PK
5350	44.16	2.59	H	46.75	53.98	7.23	AV
5350	63.37	2.59	V	65.96	73.98	8.02	PK
5350	44.61	2.59	V	47.2	53.98	6.78	AV

Band :	UNII 2A
Operation Mode:	802.11 n_HT20
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	63.14	2.59	H	65.73	73.98	8.25	PK
5350	44.91	2.59	H	47.5	53.98	6.48	AV
5350	63.44	2.59	V	66.03	73.98	7.95	PK
5350	45.03	2.59	V	47.62	53.98	6.36	AV

Band :	UNII 2A
Operation Mode:	802.11 ac_VHT20
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	65.44	2.59	H	68.03	73.98	5.95	PK
5350	44.86	2.59	H	47.45	53.98	6.53	AV
5350	66.54	2.59	V	69.13	73.98	4.85	PK
5350	45.22	2.59	V	47.81	53.98	6.17	AV

Band :	UNII 2A
Operation Mode:	802.11 n_HT40
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	64.98	2.59	H	67.57	73.98	6.41	PK
5350	46.55	2.59	H	49.14	53.98	4.84	AV
5350	65.62	2.59	V	68.21	73.98	5.77	PK
5350	47.12	2.59	V	49.71	53.98	4.27	AV

Band :	UNII 2A
Operation Mode:	802.11 ac_VHT40
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	67.12	2.59	H	69.71	73.98	4.27	PK
5350	46.86	2.59	H	49.45	53.98	4.53	AV
5350	67.30	2.59	V	69.89	73.98	4.09	PK
5350	47.19	2.59	V	49.78	53.98	4.20	AV

Band :	UNII 2A
Operation Mode:	802.11 ac_VHT80
Operating Frequency	5290 MHz
Channel No.	58 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	64.43	2.59	H	67.02	73.98	6.96	PK
5350	47.11	2.59	H	49.7	53.98	4.28	AV
5350	64.62	2.59	V	67.21	73.98	6.77	PK
5350	47.38	2.59	V	49.97	53.98	4.01	AV

Band :	UNII 2C
Operation Mode:	802.11 a
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	59.56	3.13	H	62.69	73.98	11.29	PK
5460	41.99	3.13	H	45.12	53.98	8.86	AV
5470	60.86	3.40	H	64.26	68.20	3.94	PK
5460	60.00	3.13	V	63.13	73.98	10.85	PK
5460	42.44	3.13	V	45.57	53.98	8.41	AV
5470	61.07	3.40	V	64.47	68.20	3.73	PK

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Band :	UNII 2C
Operation Mode:	802.11 n_HT20
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	58.96	3.13	H	62.09	73.98	11.89	PK
5460	42.14	3.13	H	45.27	53.98	8.71	AV
5470	63.59	3.40	H	66.99	73.98	6.99	PK
5470	43.84	3.40	H	47.24	53.98	6.74	AV
5460	59.20	3.13	V	62.33	73.98	11.65	PK
5460	42.23	3.13	V	45.36	53.98	8.62	AV
5470	63.74	3.40	V	67.14	73.98	6.84	PK
5470	44.01	3.40	V	47.41	53.98	6.57	AV

Band :	UNII 2C
Operation Mode:	802.11 ac_VHT20
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	58.41	3.13	H	61.54	73.98	12.44	PK
5460	42.36	3.13	H	45.49	53.98	8.49	AV
5470	62.84	3.40	H	66.24	73.98	7.74	PK
5470	43.45	3.40	H	46.85	53.98	7.13	AV
5460	59.00	3.13	V	62.13	73.98	11.85	PK
5460	42.46	3.13	V	45.59	53.98	8.39	AV
5470	63.47	3.40	V	66.87	73.98	7.11	PK
5470	43.94	3.40	V	47.34	53.98	6.64	AV

Report No.: HCT-RF-1810-FC003-R2

Band :	UNII 2C
Operation Mode:	802.11 n_HT40
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	59.71	3.13	H	62.84	73.98	11.14	PK
5460	43.62	3.13	H	46.75	53.98	7.23	AV
5470	65.97	3.40	H	69.37	73.98	4.61	PK
5470	45.98	3.40	H	49.38	53.98	4.60	AV
5460	59.76	3.13	V	62.89	73.98	11.09	PK
5460	43.75	3.13	V	46.88	53.98	7.10	AV
5470	66.56	3.40	V	69.96	73.98	4.02	PK
5470	46.71	3.40	V	50.11	53.98	3.87	AV

Band :	UNII 2C
Operation Mode:	802.11 ac_VHT40
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	59.83	3.13	H	62.96	73.98	11.02	PK
5460	43.42	3.13	H	46.55	53.98	7.43	AV
5470	63.98	3.40	H	67.38	73.98	6.60	PK
5470	44.53	3.40	H	47.93	53.98	6.05	AV
5460	60.17	3.13	V	63.3	73.98	10.68	PK
5460	43.65	3.13	V	46.78	53.98	7.20	AV
5470	64.13	3.40	V	67.53	73.98	6.45	PK
5470	44.75	3.40	V	48.15	53.98	5.83	AV

Band :	UNII 2C
Operation Mode:	802.11 ac_VHT80
Operating Frequency	5530 MHz
Channel No.	106 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	62.43	3.13	H	65.56	73.98	8.42	PK
5460	46.89	3.13	H	50.02	53.98	3.96	AV
5470	61.56	3.40	H	64.96	73.98	9.02	PK
5470	46.42	3.40	H	49.82	53.98	4.16	AV
5460	62.72	3.13	V	65.85	73.98	8.13	PK
5460	47.02	3.13	V	50.15	53.98	3.83	AV
5470	61.72	3.40	V	65.12	73.98	8.86	PK
5470	46.80	3.40	V	50.2	53.98	3.78	AV

Notes:

1. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + ATT + Distance Factor
2. We have done all data rate in 802.11a/n/ac mode test. . Worst case of EUT is lowest data rate in 802.11a/n/ac.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

[External Ant]

Band :	UNII 1
Operation Mode:	802.11 a
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	54.12	3.07	H	57.19	73.98	16.79	PK
5150	40.98	3.07	H	44.05	53.98	9.93	AV
5150	54.33	3.07	V	57.4	73.98	16.58	PK
5150	41.44	3.07	V	44.51	53.98	9.47	AV

Band :	UNII 1
Operation Mode:	802.11 n_HT20
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	56.42	3.07	H	59.49	73.98	14.49	PK
5150	41.23	3.07	H	44.3	53.98	9.68	AV
5150	56.72	3.07	V	59.79	73.98	14.19	PK
5150	41.64	3.07	V	44.71	53.98	9.27	AV

Band :	UNII 1
Operation Mode:	802.11 ac_VHT20
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	56.26	3.07	H	59.33	73.98	14.65	PK
5150	40.98	3.07	H	44.05	53.98	9.93	AV
5150	56.79	3.07	V	59.86	73.98	14.12	PK
5150	41.31	3.07	V	44.38	53.98	9.60	AV

Band :	UNII 1
Operation Mode:	802.11 n_HT40
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	59.68	3.07	H	62.75	73.98	11.23	PK
5150	43.26	3.07	H	46.33	53.98	7.65	AV
5150	60.08	3.07	V	63.15	73.98	10.83	PK
5150	43.78	3.07	V	46.85	53.98	7.13	AV

Band :	UNII 1
Operation Mode:	802.11 ac_VHT40
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	58.46	3.07	H	61.53	73.98	12.45	PK
5150	43.14	3.07	H	46.21	53.98	7.77	AV
5150	59.24	3.07	V	62.31	73.98	11.67	PK
5150	43.92	3.07	V	46.99	53.98	6.99	AV

Band :	UNII 1
Operation Mode:	802.11 ac_VHT80
Operating Frequency	5210 MHz
Channel No.	42 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	61.86	3.07	H	64.93	73.98	9.05	PK
5150	44.96	3.07	H	48.03	53.98	5.95	AV
5150	62.16	3.07	V	65.23	73.98	8.75	PK
5150	45.37	3.07	V	48.44	53.98	5.54	AV

Band :	UNII 2A
Operation Mode:	802.11 a
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	54.86	2.59	H	57.45	73.98	16.53	PK
5350	42.18	2.59	H	44.77	53.98	9.21	AV
5350	55.37	2.59	V	57.96	73.98	16.02	PK
5350	42.76	2.59	V	45.35	53.98	8.63	AV

Band :	UNII 2A
Operation Mode:	802.11 n_HT20
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	55.18	2.59	H	57.77	73.98	16.21	PK
5350	41.68	2.59	H	44.27	53.98	9.71	AV
5350	55.60	2.59	V	58.19	73.98	15.79	PK
5350	42.09	2.59	V	44.68	53.98	9.30	AV

Band :	UNII 2A
Operation Mode:	802.11 ac_VHT20
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	57.21	2.59	H	59.80	73.98	14.18	PK
5350	42.13	2.59	H	44.72	53.98	9.26	AV
5350	57.80	2.59	V	60.39	73.98	13.59	PK
5350	42.55	2.59	V	45.14	53.98	8.84	AV

Band :	UNII 2A
Operation Mode:	802.11 n_HT40
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	63.98	2.59	H	66.57	73.98	7.41	PK
5350	45.96	2.59	H	48.55	53.98	5.43	AV
5350	64.99	2.59	V	67.58	73.98	6.40	PK
5350	46.22	2.59	V	48.81	53.98	5.17	AV

Band :	UNII 2A
Operation Mode:	802.11 ac_VHT40
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	61.14	2.59	H	63.73	73.98	10.25	PK
5350	45.41	2.59	H	48	53.98	5.98	AV
5350	61.93	2.59	V	64.52	73.98	9.46	PK
5350	46.28	2.59	V	48.87	53.98	5.11	AV

Band :	UNII 2A
Operation Mode:	802.11 ac_VHT80
Operating Frequency	5290 MHz
Channel No.	58 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	60.68	2.59	H	63.27	73.98	10.71	PK
5350	47.05	2.59	H	49.64	53.98	4.34	AV
5350	61.01	2.59	V	63.6	73.98	10.38	PK
5350	47.38	2.59	V	49.97	53.98	4.01	AV

Band :	UNII 2C
Operation Mode:	802.11 a
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	54.26	3.13	H	57.39	73.98	16.59	PK
5460	40.98	3.13	H	44.11	53.98	9.87	AV
5470	60.15	3.40	H	63.55	68.20	4.65	PK
5460	54.74	3.13	V	57.87	73.98	16.11	PK
5460	41.11	3.13	V	44.24	53.98	9.74	AV
5470	60.49	3.40	V	63.89	68.20	4.31	PK

Band :	UNII 2C
Operation Mode:	802.11 n_HT20
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	54.05	3.13	H	57.18	73.98	16.80	PK
5460	40.81	3.13	H	43.94	53.98	10.04	AV
5470	60.98	3.40	H	64.38	73.98	9.60	PK
5470	42.18	3.40	H	45.58	53.98	8.40	AV
5460	54.26	3.13	V	57.39	73.98	16.59	PK
5460	40.91	3.13	V	44.04	53.98	9.94	AV
5470	61.72	3.40	V	65.12	73.98	8.86	PK
5470	42.39	3.40	V	45.79	53.98	8.19	AV

Band :	UNII 2C
Operation Mode:	802.11 ac_VHT20
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	55.23	3.13	H	58.36	73.98	15.62	PK
5460	41.11	3.13	H	44.24	53.98	9.74	AV
5470	61.51	3.40	H	64.91	73.98	9.07	PK
5470	42.46	3.40	H	45.86	53.98	8.12	AV
5460	55.46	3.13	V	58.59	73.98	15.39	PK
5460	41.21	3.13	V	44.34	53.98	9.64	AV
5470	61.70	3.40	V	65.1	73.98	8.88	PK
5470	42.95	3.40	V	46.35	53.98	7.63	AV

Band :	UNII 2C
Operation Mode:	802.11 n_HT40
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	56.12	3.13	H	59.25	73.98	14.73	PK
5460	40.98	3.13	H	44.11	53.98	9.87	AV
5470	65.88	3.40	H	69.28	73.98	4.70	PK
5470	45.18	3.40	H	48.58	53.98	5.40	AV
5460	56.33	3.13	V	59.46	73.98	14.52	PK
5460	41.27	3.13	V	44.4	53.98	9.58	AV
5470	66.04	3.40	V	69.44	73.98	4.54	PK
5470	45.42	3.40	V	48.82	53.98	5.16	AV

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Band :	UNII 2C
Operation Mode:	802.11 ac_VHT40
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	55.89	3.13	H	59.02	73.98	14.96	PK
5460	40.96	3.13	H	44.09	53.98	9.89	AV
5470	65.29	3.40	H	68.69	73.98	5.29	PK
5470	44.98	3.40	H	48.38	53.98	5.60	AV
5460	56.90	3.13	V	60.03	73.98	13.95	PK
5460	41.05	3.13	V	44.18	53.98	9.80	AV
5470	66.35	3.40	V	69.75	73.98	4.23	PK
5470	45.34	3.40	V	48.74	53.98	5.24	AV

Band :	UNII 2C
Operation Mode:	802.11 ac_VHT80
Operating Frequency	5530 MHz
Channel No.	106 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	62.76	3.13	H	65.89	73.98	8.09	PK
5460	45.12	3.13	H	48.25	53.98	5.73	AV
5470	65.84	3.40	H	69.24	73.98	4.74	PK
5470	46.91	3.40	H	50.31	53.98	3.67	AV
5460	62.98	3.13	V	66.11	73.98	7.87	PK
5460	45.63	3.13	V	48.76	53.98	5.22	AV
5470	66.47	3.40	V	69.87	73.98	4.11	PK
5470	47.45	3.40	V	50.85	53.98	3.13	AV

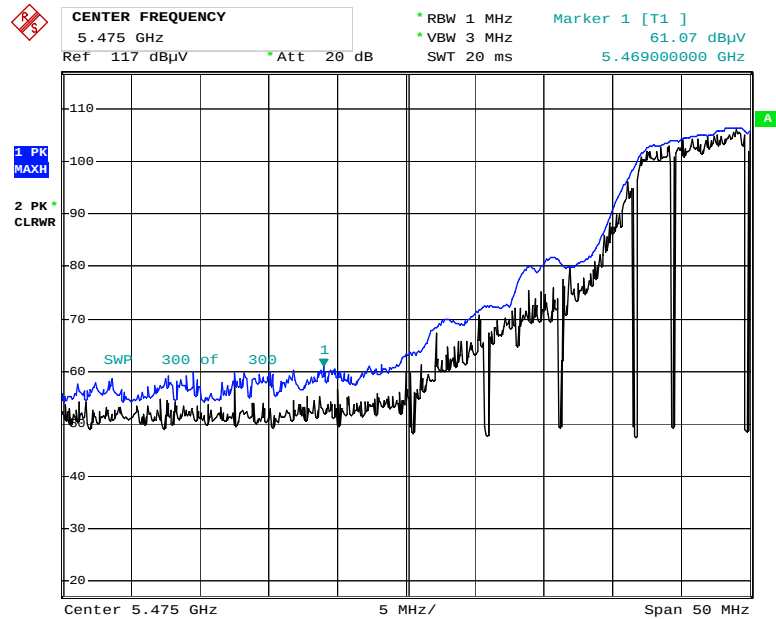
Notes:

1. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + ATT + Distance Factor
2. We have done all data rate in 802.11a/n/ac mode test. . Worst case of EUT is lowest data rate in 802.11a/n/ac.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

[Internal Ant]

■ RESULT PLOTS (Worst Case: X-V)

Radiated Restricted Band Edges plot – Peak Reading (802.11a, Ch.100)

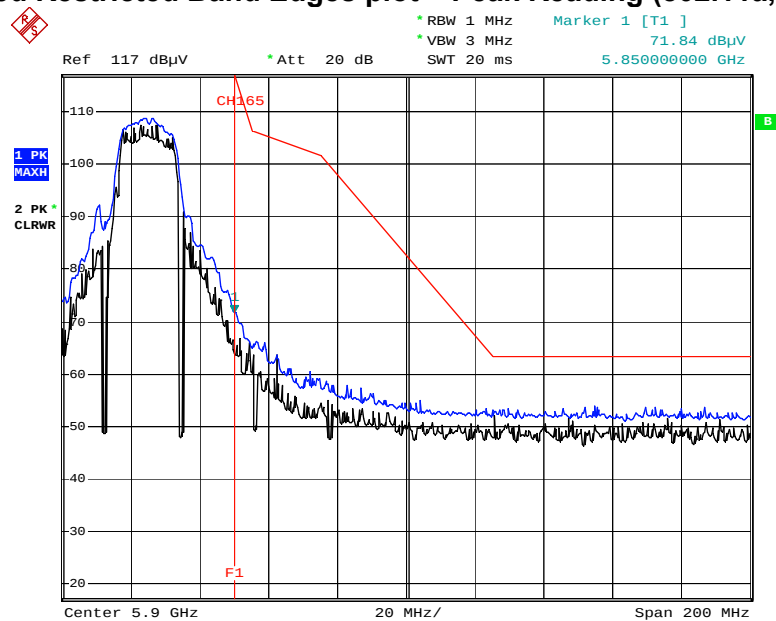


Date: 15.SEP.2018 07:01:09

[Internal Ant]

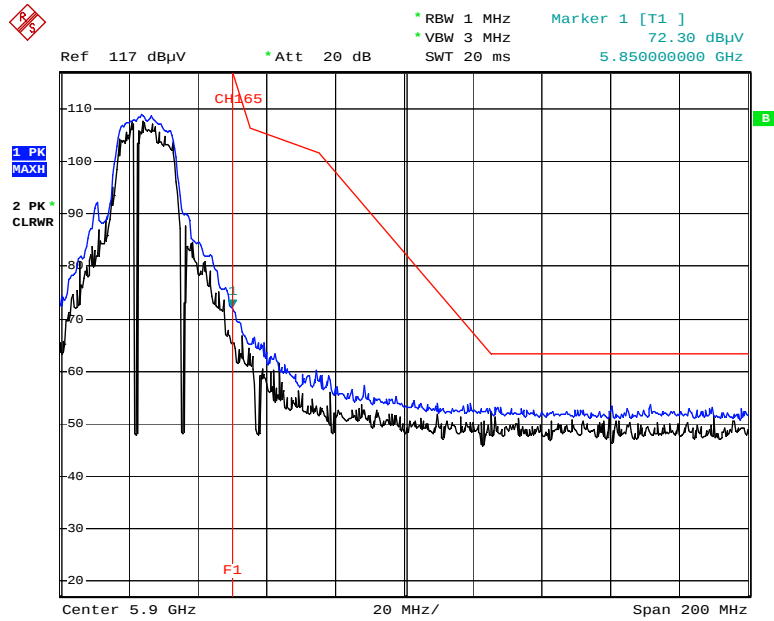
■ RESULT PLOTS (UNII 3)

Radiated Restricted Band Edges plot – Peak Reading (802.11a, Ch.165)



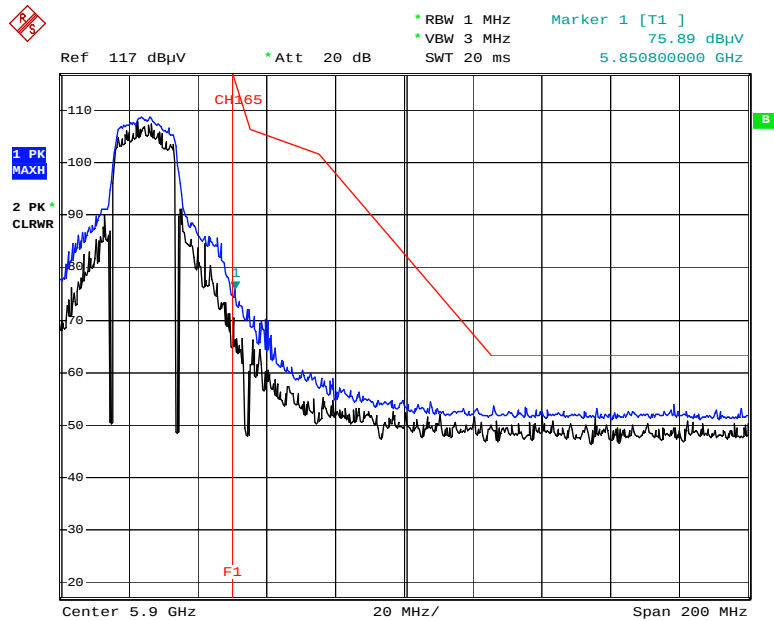
Date: 21.SEP.2018 02:56:20

Radiated Restricted Band Edges plot – Peak Reading (802.11n_HT20, Ch.165)



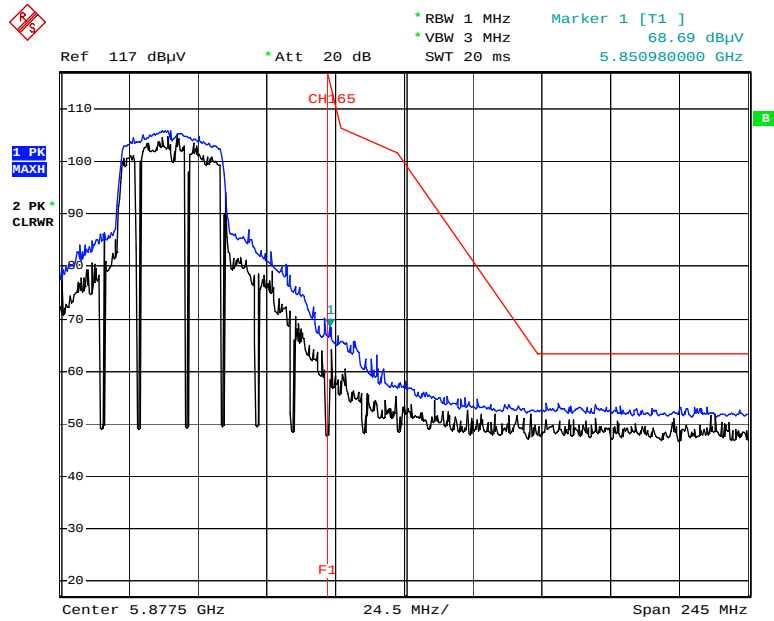
Date: 21.SEP.2018 02:58:20

Radiated Restricted Band Edges plot – Peak Reading (802.11ac_VHT20, Ch.165)



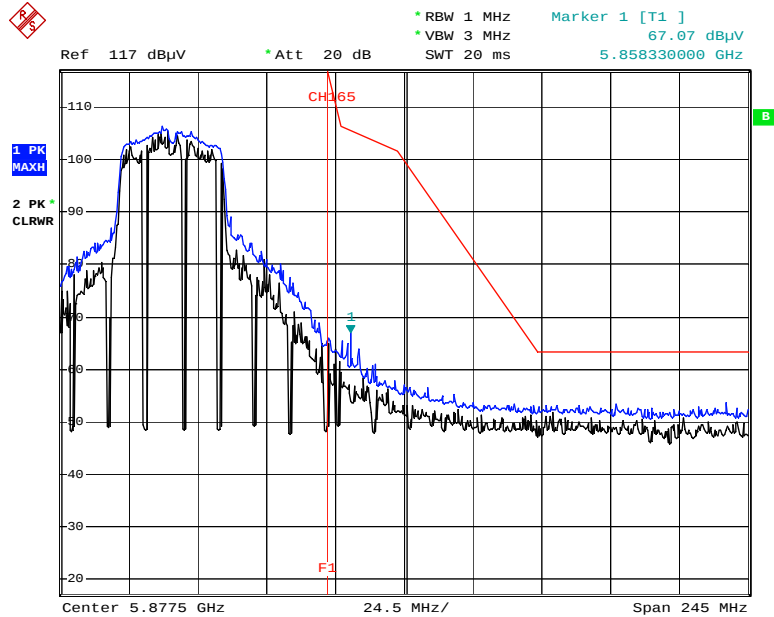
Date: 21.SEP.2018 03:00:59

Radiated Restricted Band Edges plot – Peak Reading (802.11n_HT40, Ch.159)



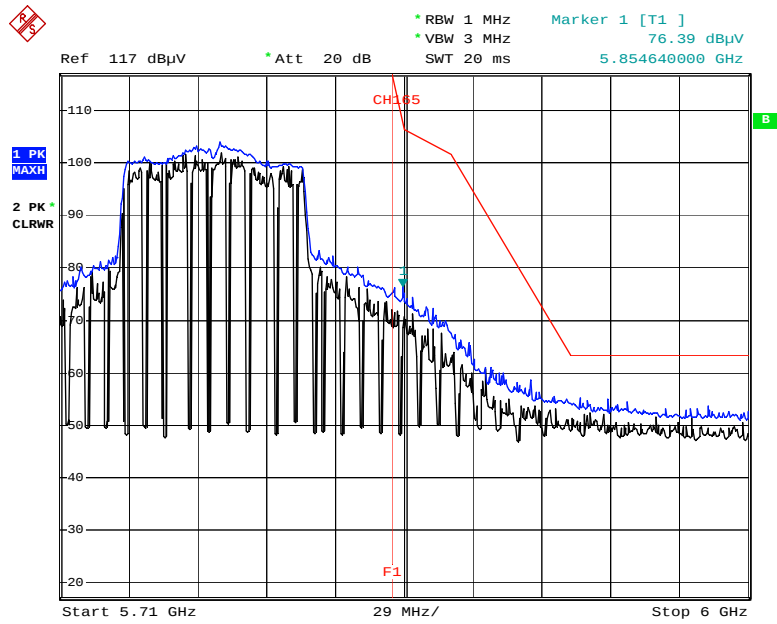
Date: 21.SEP.2018 03:09:30

Radiated Restricted Band Edges plot – Peak Reading (802.11ac_VHT40, Ch.159)



Date: 21.SEP.2018 03:11:03

Radiated Restricted Band Edges plot – Peak Reading (802.11ac_VHT80, Ch.155)

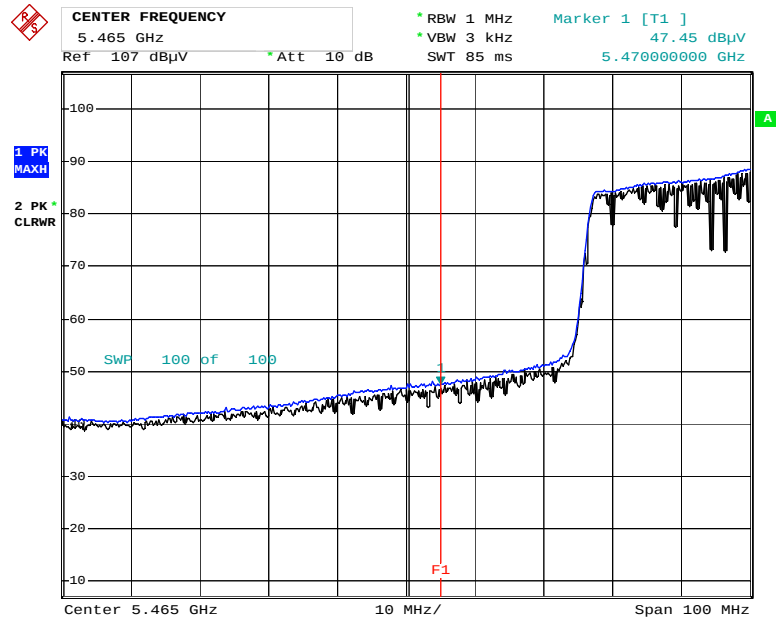


Date: 21.SEP.2018 03:13:14

[External Ant]

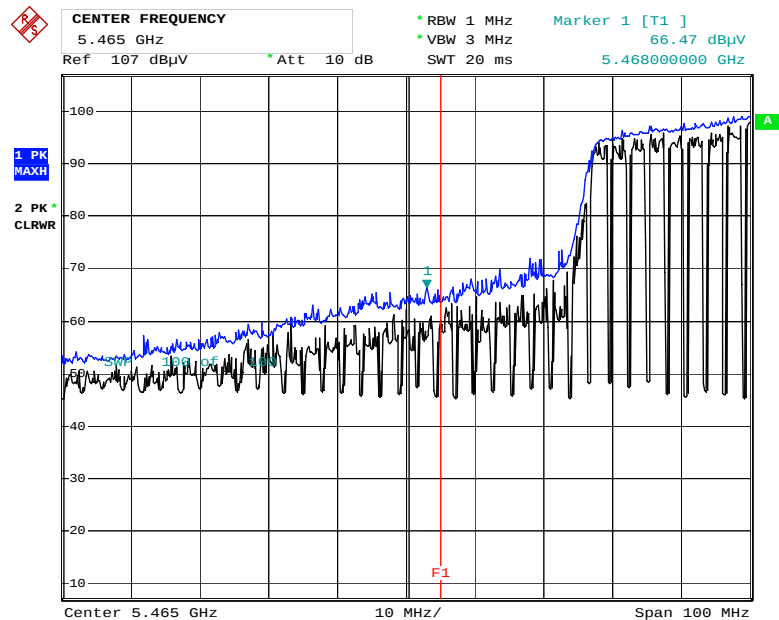
■ RESULT PLOTS (Worst Case: X-V)

Radiated Restricted Band Edges plot – Average Reading (802.11ac_VHT80, Ch.106)



Date: 15.SEP.2018 10:18:22

Radiated Restricted Band Edges plot – Peak Reading (802.11ac_VHT80, Ch.106)

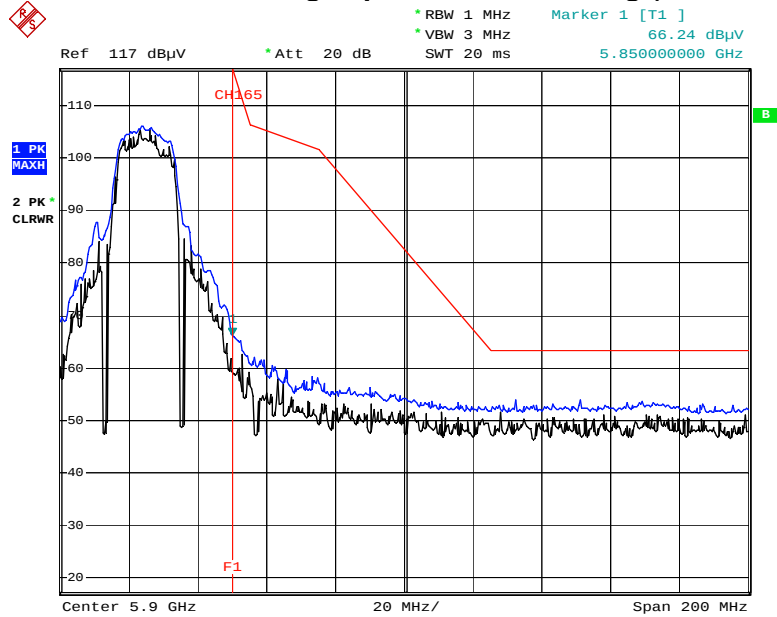


Date: 15.SEP.2018 10:15:37

[External Ant]

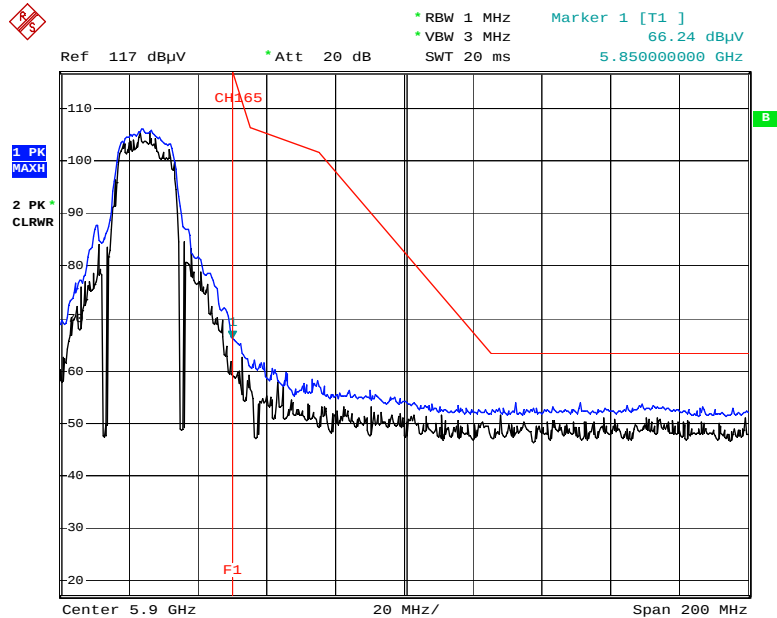
■ RESULT PLOTS (UNII 3)

Radiated Restricted Band Edges plot – Peak Reading (802.11a, Ch.165)



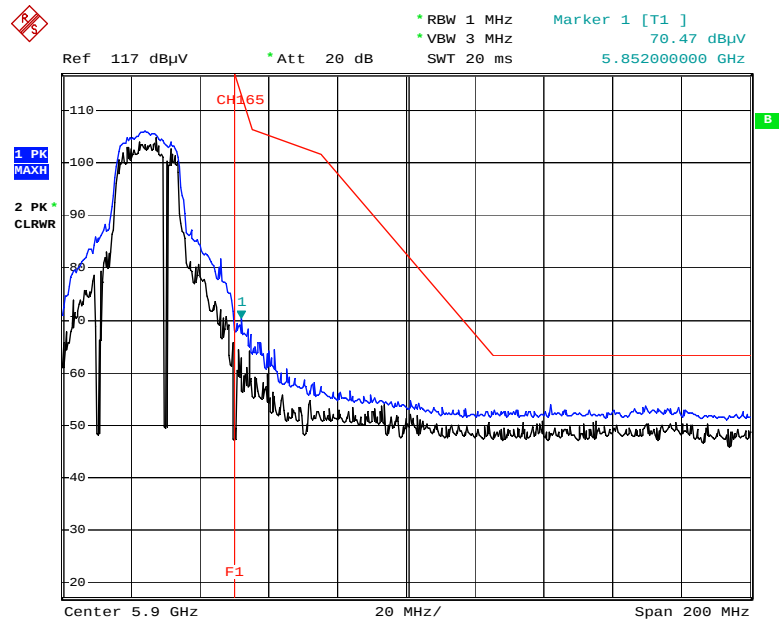
Date: 20.SEP.2018 14:00:38

Radiated Restricted Band Edges plot – Peak Reading (802.11n_HT20, Ch.165)



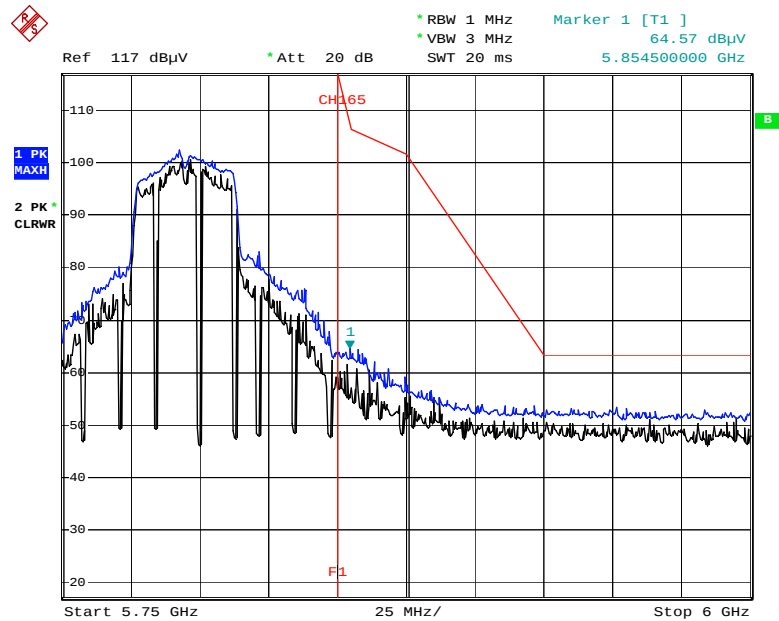
Date: 20.SEP.2018 14:00:38

Radiated Restricted Band Edges plot – Peak Reading (802.11ac_VHT20, Ch.165)



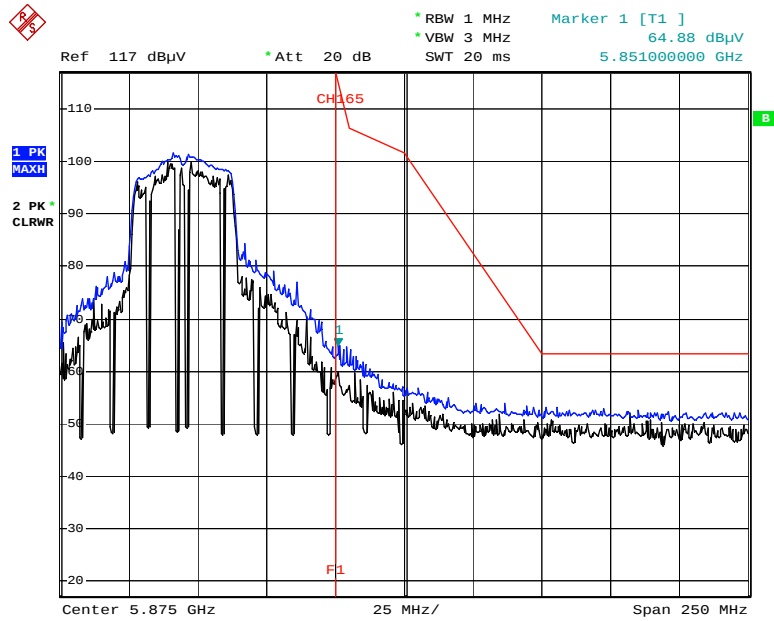
Date: 20.SEP.2018 14:07:41

Radiated Restricted Band Edges plot – Peak Reading (802.11n_HT40, Ch.159)



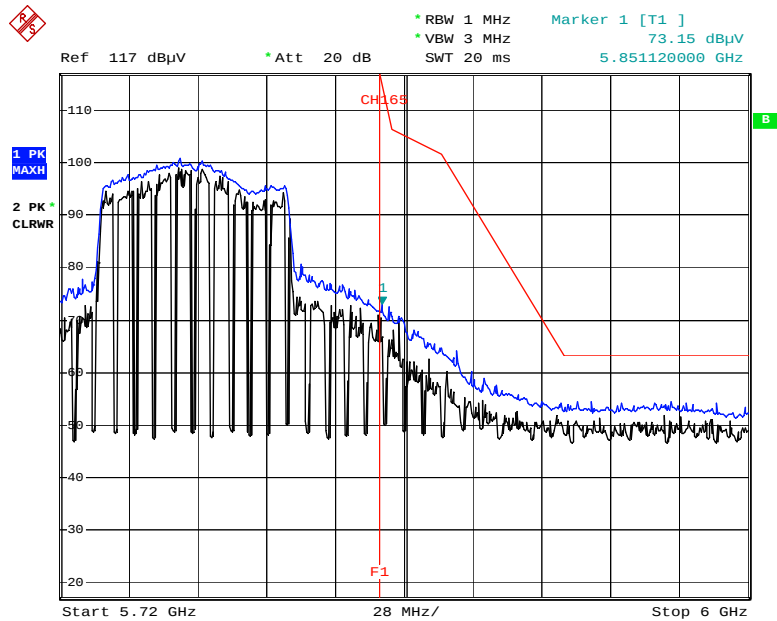
Date: 20.SEP.2018 14:41:45

Radiated Restricted Band Edges plot – Peak Reading (802.11ac_VHT40, Ch.159)



Date: 20.SEP.2018 14:44:02

Radiated Restricted Band Edges plot – Peak Reading (802.11ac_VHT80, Ch.155)



Date: 20.SEP.2018 15:09:09

10.7.3 RECEIVER SPURIOUS EMISSIONS

IC Rule(s) RSS-Gen
Test Requirements: Blow the table
Operating conditions: Under normal test conditions
Method of testing: Radiated

S/A. Settings: F < 1 GHz: RBW: 120 kHz, VBW: 300 kHz (Quasi Peak)
F > 1 GHz: RBW: 1 MHz, VBW: 1 MHz (Peak)
Mode of operation: Receive

Frequency (MHz)	Field Strength (microvolts/m at 3 meters)
30 – 88	100
88 - 216	150
216 – 960	200
Above 960	500

Operation Mode: Receive:

30 MHz ~ 1 GHz

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dB μ V	dB /m	dB	(H/V)	dB μ V/m	dB μ V/m	dB
No Critical peaks found							

Above 1 GHz

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dB μ V	dB /m	dB	(H/V)	dB μ V/m	dB μ V/m	dB
No Critical peaks found							

10.8 POWERLINE CONDUCTED EMISSIONS

Test Requirements and limit, §15.207

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

Test Configuration

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT is placed on a wooden table 80 cm above the reference groundplane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors – Quasi Peak and Average Detector.

Sample Calculation

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

Note : We don't perform powerline conducted emission test. Because this EUT is used with vehicle.

11. LIST OF TEST EQUIPMENT

11.1 LIST OF TEST EQUIPMENT(Conducted Test)

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Rohde & Schwarz	ENV216 / LISN	12/20/2017	Annual	102245
Rohde & Schwarz	ESCI / Test Receiver	06/27/2018	Annual	100033
ESPAC	SU-642 / Temperature Chamber	03/30/2018	Annual	0093008124
Agilent	N9020A / Signal Analyzer	06/08/2018	Annual	MY51110085
Agilent	N9030A / Signal Analyzer	11/22/2017	Annual	MY49431210
Agilent	N1911A / Power Meter	04/16/2018	Annual	MY45100523
Agilent	N1921A / Power Sensor	04/16/2018	Annual	MY52260025
Agilent	87300B / Directional Coupler	11/20/2017	Annual	3116A03621
Hewlett Packard	11667B / Power Splitter	06/07/2018	Annual	05001
Hewlett Packard	E3632A / DC Power Supply	06/26/2018	Annual	KR75303960
Agilent	8493C / Attenuator(10 dB)	07/10/2018	Annual	07560
Rohde & Schwarz	EMC32 / Software	N/A	N/A	N/A
HCT CO., LTD.	FCC WLAN&BT&BLE Conducted Test Software v3.0	N/A	N/A	N/A
Rohde & Schwarz	CBT / Bluetooth Tester	05/17/2018	Annual	100422

11.2 LIST OF TEST EQUIPMENT(Radiated Test)

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Innco system	CO3000 / Controller(Antenna mast)	N/A	N/A	CO3000-4p
Innco system	MA4640/800-XP-EP / Antenna Position Tower	N/A	N/A	N/A
Emco	2090 / Controller	N/A	N/A	060520
Ets	Turn Table	N/A	N/A	N/A
Rohde & Schwarz	Loop Antenna	08/23/2018	Biennial	1513-175
Schwarzbeck	VULB 9160 / Hybrid Antenna	08/09/2018	Biennial	3368
Schwarzbeck	BBHA 9120D / Horn Antenna	11/21/2017	Biennial	9120D-1191
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	12/04/2017	Biennial	BBHA9170541
Rohde & Schwarz	FSP(9 kHz ~ 30 GHz) / Spectrum Analyzer	09/19/2018	Annual	836650/016
Rohde & Schwarz	FSV40-N / Spectrum Analyzer	09/19/2018	Annual	101068-SZ
Wainwright Instruments	WHKX10-2700-3000-18000-40SS / High Pass Filter	07/16/2018	Annual	4
Wainwright Instruments	WHKX8-6090-7000-18000-40SS / High Pass Filter	07/10/2018	Annual	5
Wainwright Instruments	WRCJV2400/2483.5-2370/2520-60/12SS / Band Reject Filter	06/29/2018	Annual	2
Wainwright Instruments	WRCJV5100/5850-40/50-8EEK / Band Reject Filter	01/03/2018	Annual	2
Api tech.	18B-03 / Attenuator (3 dB)	06/07/2018	Annual	2
WEINSCHL	56-10 / Attenuator(10 dB)	10/13/2017	Annual	72316
CERNEX	CBLU1183540 / Broadband Low Noise Amplifier	01/03/2018	Annual	24613
CERNEX	CBL06185030 / Broadband Low Noise Amplifier	01/03/2018	Annual	24615
CERNEX	CBL18265035 / Power Amplifier	01/10/2018	Annual	22966
CERNEX	CBL26405040 / Power Amplifier	06/29/2018	Annual	25956
TESCOM	TC-3000C / Bluetooth Tester	03/27/2018	Annual	3000C000276

12. APPENDIX A_EUT AND TEST SETUP PHOTO

Please refer to test setup photo file no. as follows;

No.	Description
1	HCT-RF-1810-FC001-P
2	HCT-RF-1810-FC002-P
3	HCT-RF-1810-FC003-P
4	HCT-RF-1810-FC004-P