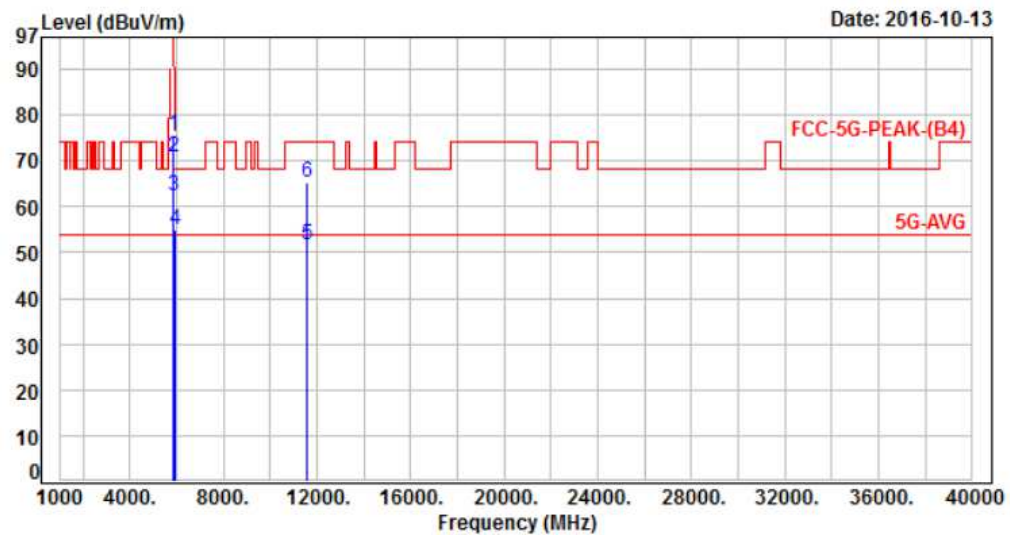




Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 5, CH159	Temperature	: 25°C
Test Date	: Oct. 13, 2016	Humidity	: 63%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5850.00	10.90	64.66	75.56	122.20	-46.64	Peak	103	117	P
2	5855.00	10.90	59.75	70.65	110.80	-40.15	Peak	103	117	P
3	5875.00	10.91	51.40	62.31	105.20	-42.89	Peak	103	117	P
4	5925.00	10.93	44.20	55.13	68.20	-13.07	Peak	103	117	P
5	11590.00	19.88	31.63	51.51	54.00	-2.49	Average	103	117	P
6	11590.00	19.88	45.27	65.15	74.00	-8.85	Peak	103	117	P

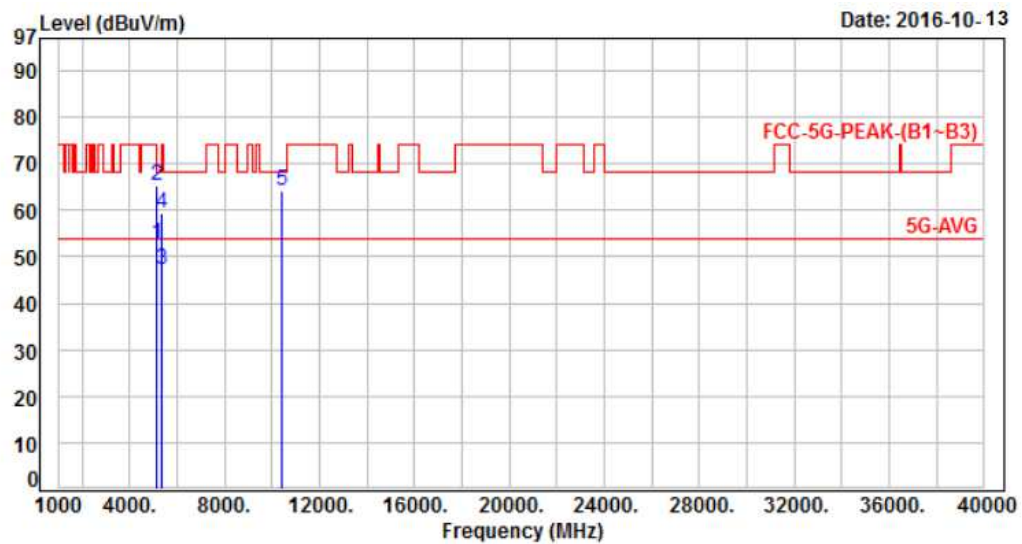
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 6, CH42	Temperature	: 25°C
Test Date	: Oct. 13, 2016	Humidity	: 63%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	9.82	42.94	52.76	54.00	-1.24	Average	216	211	P
2	5150.00	9.82	55.64	65.46	74.00	-8.54	Peak	216	211	P
3	5350.00	10.36	36.87	47.23	54.00	-6.77	Average	216	211	P
4	5350.00	10.36	48.96	59.32	74.00	-14.68	Peak	216	211	P
5	10420.00	18.13	46.18	64.31	68.20	-3.89	Peak	100	200	P

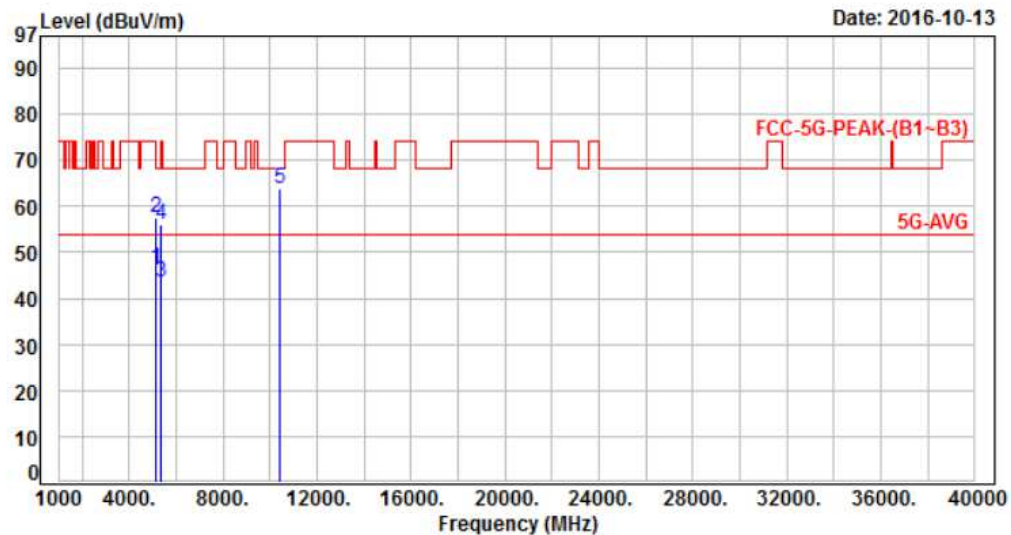
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 6, CH42	Temperature	: 25°C
Test Date	: Oct. 13, 2016	Humidity	: 63%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	9.82	36.51	46.33	54.00	-7.67	Average	165	108	P
2	5150.00	9.82	47.81	57.63	74.00	-16.37	Peak	165	108	P
3	5350.00	10.36	33.23	43.59	54.00	-10.41	Average	165	108	P
4	5350.00	10.36	45.63	55.99	74.00	-18.01	Peak	165	108	P
5	10420.00	18.13	45.60	63.73	68.20	-4.47	Peak	100	320	P

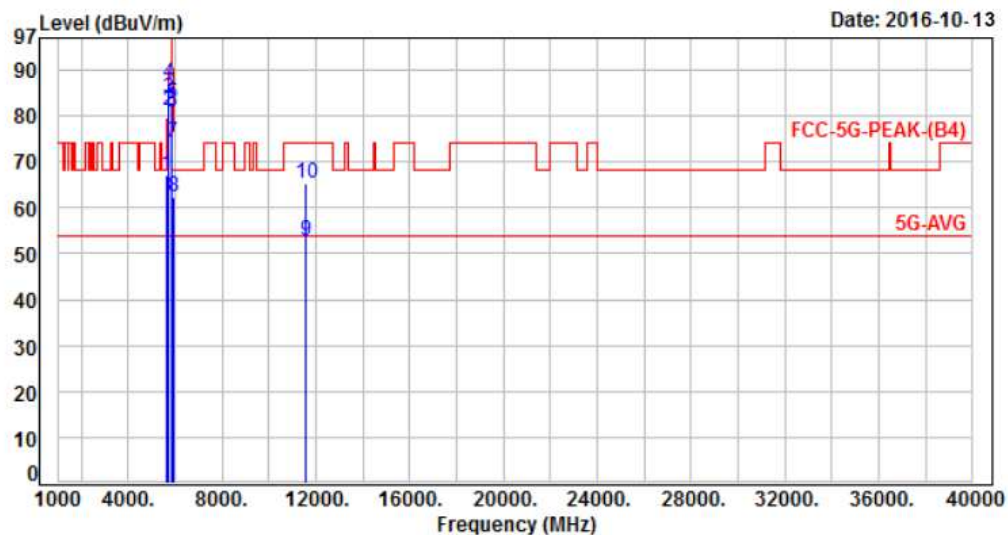
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 6, CH155	Temperature	: 25°C
Test Date	: Oct. 13, 2016	Humidity	: 63%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	10.81	56.30	67.11	68.20	-1.09	Peak	297	205	P
2	5700.00	10.83	70.42	81.25	105.20	-23.95	Peak	297	205	P
3	5720.00	10.84	72.93	83.77	110.80	-27.03	Peak	297	205	P
4	5725.00	10.84	76.32	87.16	122.20	-35.04	Peak	297	205	P
5	5850.00	10.90	71.82	82.72	122.20	-39.48	Peak	297	205	P
6	5855.00	10.90	69.69	80.59	110.80	-30.21	Peak	297	205	P
7	5875.00	10.91	63.07	73.98	105.20	-31.22	Peak	297	205	P
8	5925.00	10.93	51.23	62.16	68.20	-6.04	Peak	297	205	P
9	11550.00	19.88	32.69	52.57	54.00	-1.43	Average	100	266	P
10	11550.00	19.88	45.29	65.17	74.00	-8.83	Peak	100	266	P

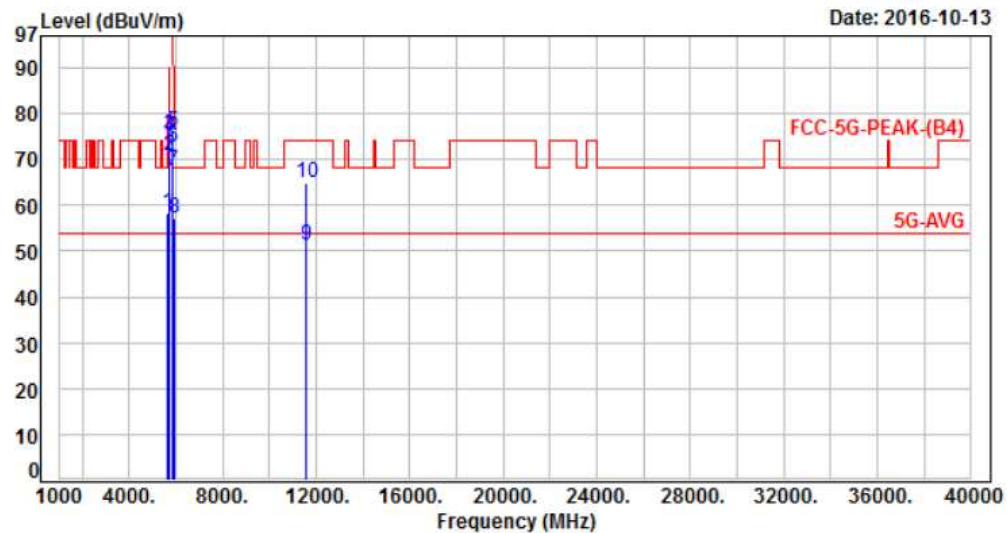
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 6, CH155	Temperature	: 25°C
Test Date	: Oct. 13, 2016	Humidity	: 63%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	10.81	47.60	58.41	68.20	-9.79	Peak	138	94	P
2	5700.00	10.83	59.88	70.71	105.20	-34.49	Peak	138	94	P
3	5720.00	10.84	64.44	75.28	110.80	-35.52	Peak	138	94	P
4	5725.00	10.84	64.20	75.04	122.20	-47.16	Peak	138	94	P
5	5850.00	10.90	65.20	76.10	122.20	-46.10	Peak	138	94	P
6	5855.00	10.90	61.72	72.62	110.80	-38.18	Peak	138	94	P
7	5875.00	10.91	56.70	67.61	105.20	-37.59	Peak	138	94	P
8	5925.00	10.93	46.40	57.33	68.20	-10.87	Peak	138	94	P
9	11550.00	19.88	31.44	51.32	54.00	-2.68	Average	106	337	P
10	11550.00	19.88	45.19	65.07	74.00	-8.93	Peak	106	337	P

Note: Level=Reading+Factor

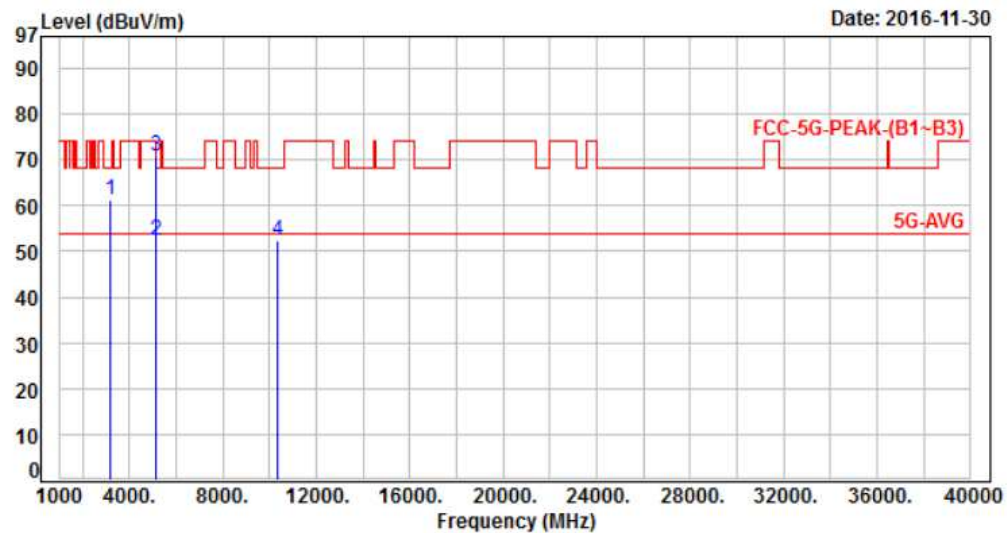
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



6.6.2. Test Result and Data of Beamforming

Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 4, CH36	Temperature	: 25°C
Test Date	: Nov. 30, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	3200.00	-12.19	73.41	61.22	68.20	-6.98	Peak	165	172	P
2	5150.00	-6.54	58.82	52.28	54.00	-1.72	Average	245	217	P
3	5150.00	-6.54	77.35	70.81	74.00	-3.19	Peak	245	217	P
4	10360.00	0.66	51.53	52.19	68.20	-16.01	Peak	273	49	P

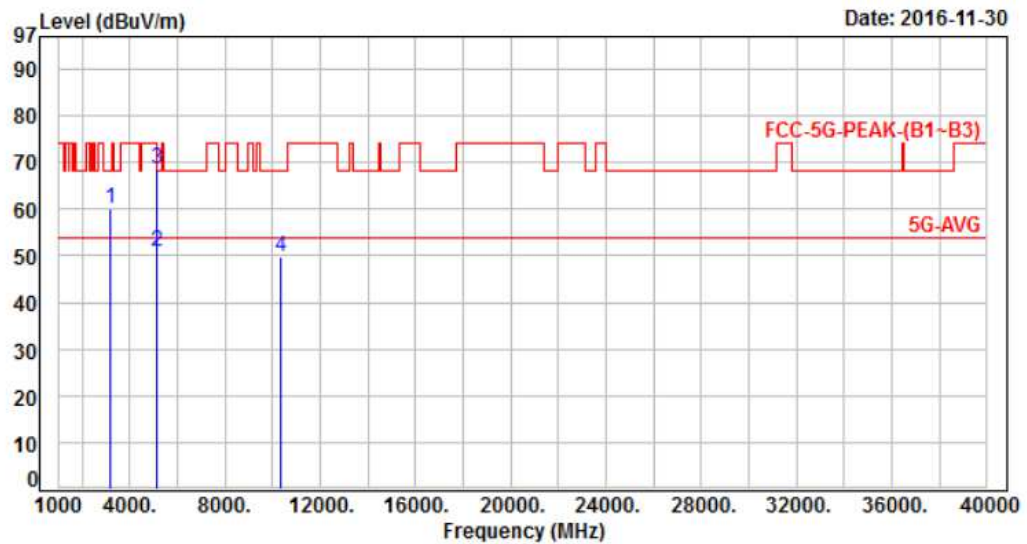
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 4, CH36	Temperature	: 25°C
Test Date	: Nov. 30, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	3200.00	-12.19	72.13	59.94	68.20	-8.26	Peak	202	308	P
2	5150.00	-6.54	57.47	50.93	54.00	-3.07	Average	174	107	P
3	5150.00	-6.54	75.13	68.59	74.00	-5.41	Peak	174	107	P
4	10360.00	0.66	49.11	49.77	68.20	-18.43	Peak	146	164	P

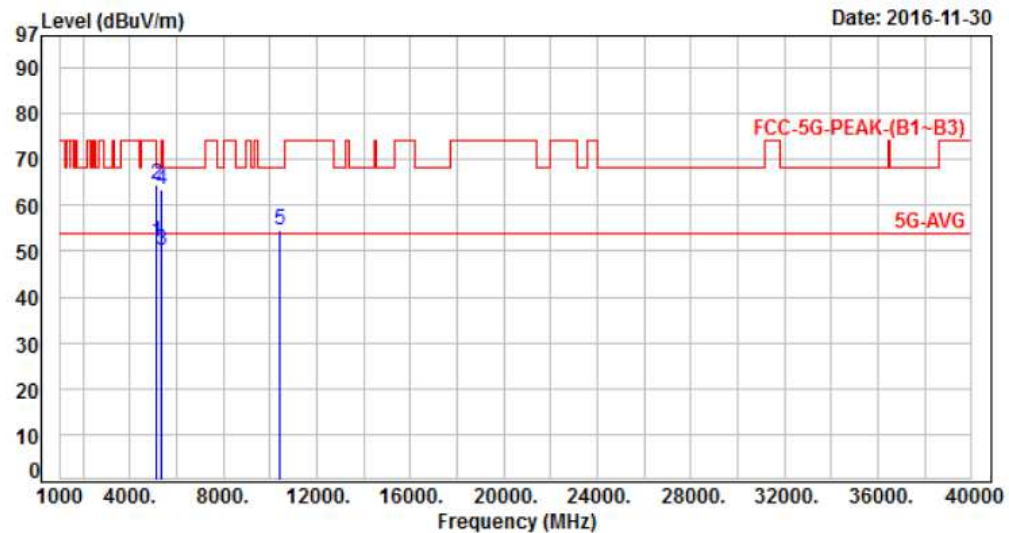
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 4, CH44	Temperature	: 25°C
Test Date	: Nov. 30, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-6.54	58.66	52.12	54.00	-1.88	Average	233	166	P
2	5150.00	-6.54	71.15	64.61	74.00	-9.39	Peak	233	166	P
3	5350.00	-6.06	56.13	50.07	54.00	-3.93	Average	233	166	P
4	5350.00	-6.06	69.59	63.53	74.00	-10.47	Peak	233	166	P
5	10440.00	0.70	53.79	54.49	68.20	-13.71	Peak	235	44	P

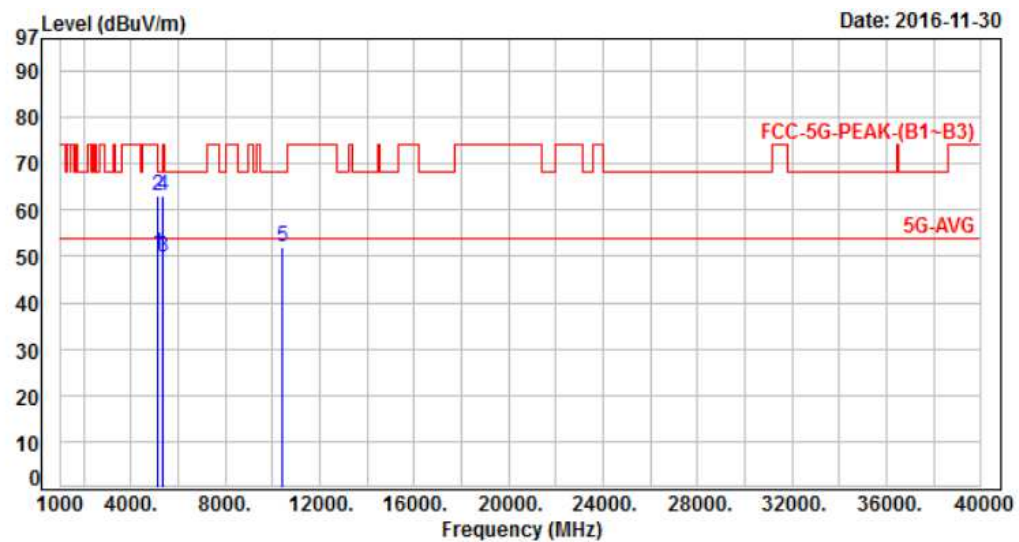
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 4, CH44	Temperature	: 25°C
Test Date	: Nov. 30, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-6.54	56.92	50.38	54.00	-3.62	Average	168	151	P
2	5150.00	-6.54	69.55	63.01	74.00	-10.99	Peak	168	151	P
3	5350.00	-6.06	56.01	49.95	54.00	-4.05	Average	168	151	P
4	5350.00	-6.06	69.21	63.15	74.00	-10.85	Peak	168	151	P
5	10440.00	0.70	51.26	51.96	68.20	-16.24	Peak	208	196	P

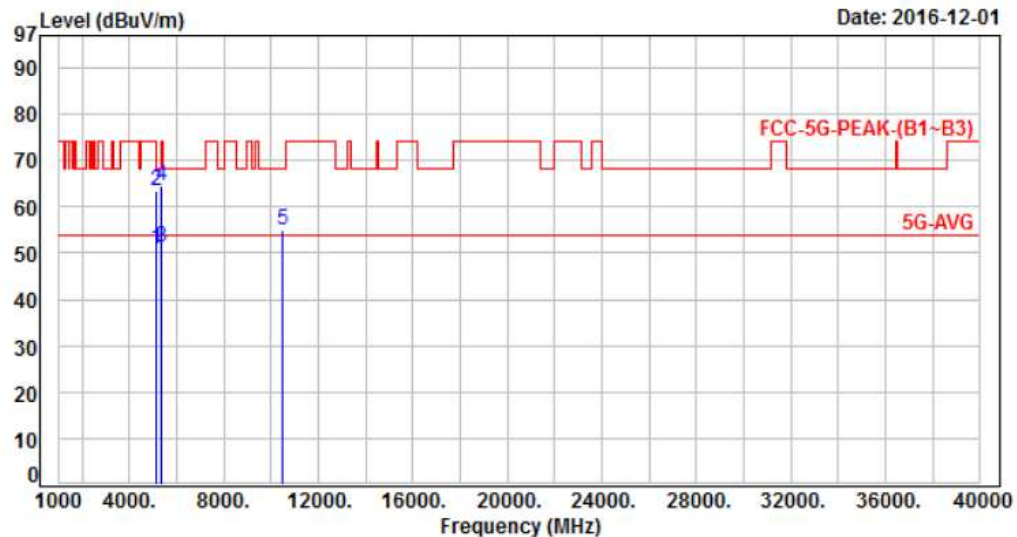
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 4, CH48	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-6.54	57.32	50.78	54.00	-3.22	Average	214	153	P
2	5150.00	-6.54	69.87	63.33	74.00	-10.67	Peak	214	153	P
3	5350.00	-6.06	57.20	51.14	54.00	-2.86	Average	214	153	P
4	5350.00	-6.06	70.61	64.55	74.00	-9.45	Peak	214	153	P
5	10480.00	0.73	54.36	55.09	68.20	-13.11	Peak	226	53	P

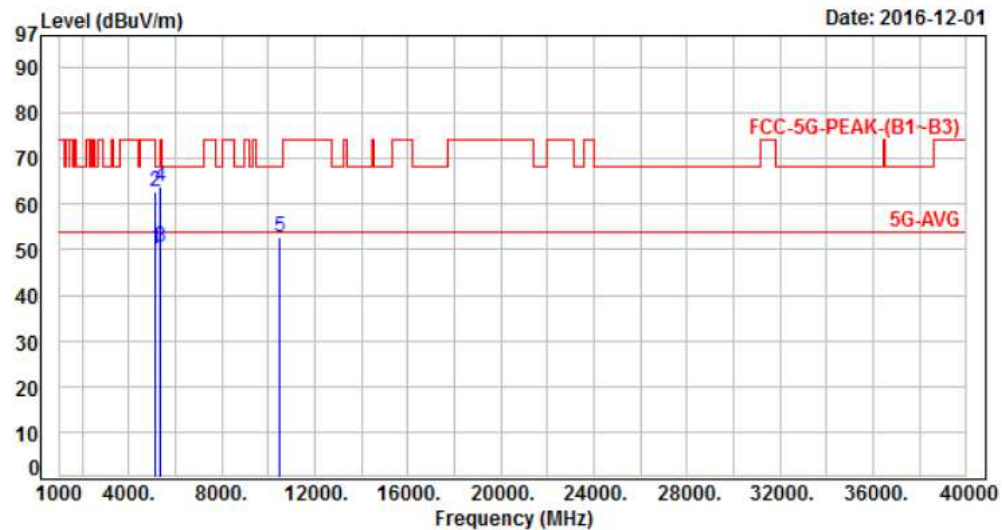
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 4, CH48	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-6.54	56.68	50.14	54.00	-3.86	Average	153	162	P
2	5150.00	-6.54	69.16	62.62	74.00	-11.38	Peak	153	162	P
3	5350.00	-6.06	56.68	50.62	54.00	-3.38	Average	153	162	P
4	5350.00	-6.06	69.71	63.65	74.00	-10.35	Peak	153	162	P
5	10480.00	0.73	52.03	52.76	68.20	-15.44	Peak	202	137	P

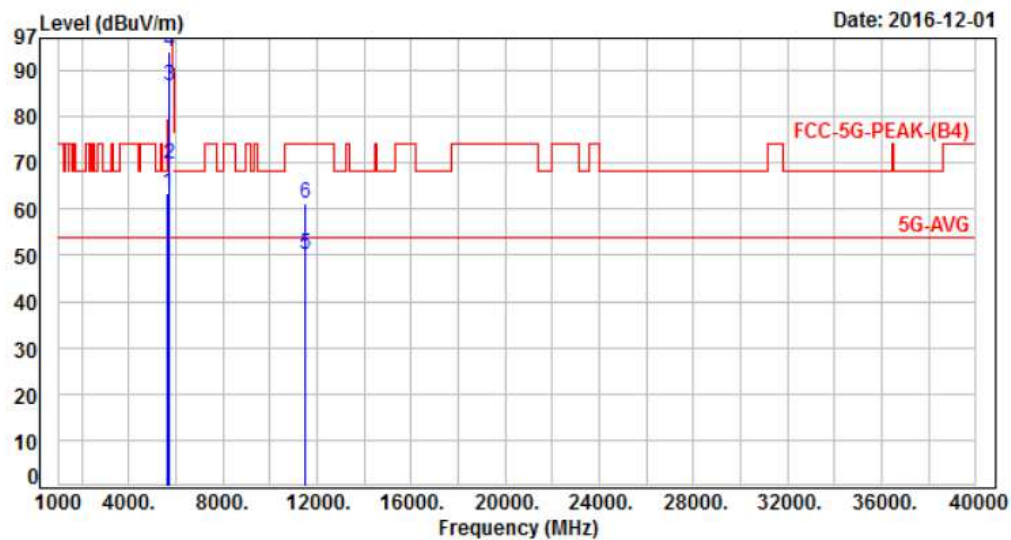
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 4, CH149	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-5.77	69.07	63.30	68.20	-4.90	Peak	134	98	P
2	5700.00	-5.79	75.56	69.77	105.20	-35.43	Peak	134	98	P
3	5720.00	-5.80	92.51	86.71	110.80	-24.09	Peak	134	98	P
4	5725.00	-5.80	99.69	93.89	122.20	-28.31	Peak	134	98	P
5	11490.00	2.06	48.01	50.07	54.00	-3.93	Average	247	98	P
6	11490.00	2.06	59.26	61.32	74.00	-12.68	Peak	247	98	P

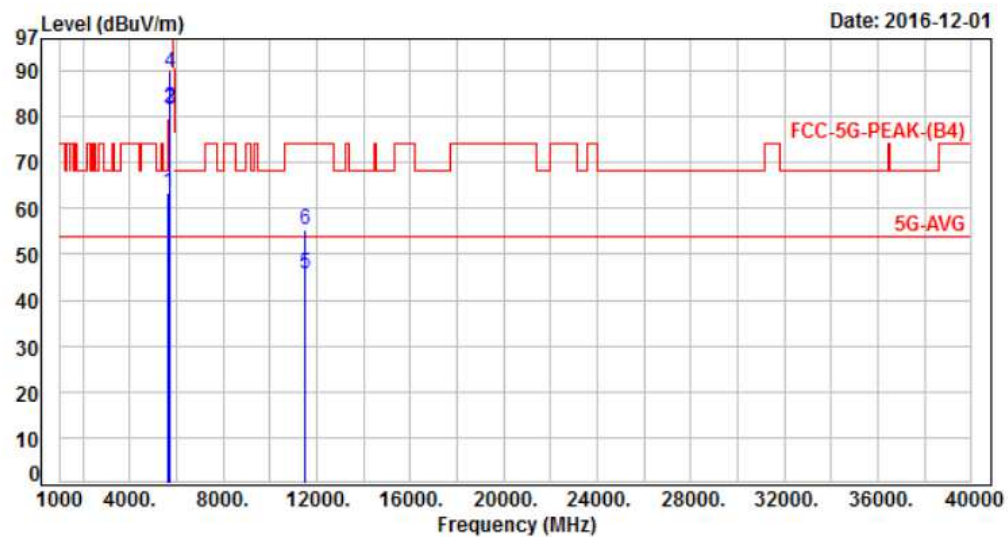
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 4, CH149	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-5.77	69.29	63.52	68.20	-4.68	Peak	136	0	P
2	5700.00	-5.79	87.55	81.76	105.20	-23.44	Peak	136	0	P
3	5720.00	-5.80	87.13	81.33	110.80	-29.47	Peak	136	0	P
4	5725.00	-5.80	95.58	89.78	122.20	-32.42	Peak	136	0	P
5	11490.00	2.06	43.86	45.92	54.00	-8.08	Average	250	0	P
6	11490.00	2.06	53.30	55.36	74.00	-18.64	Peak	250	0	P

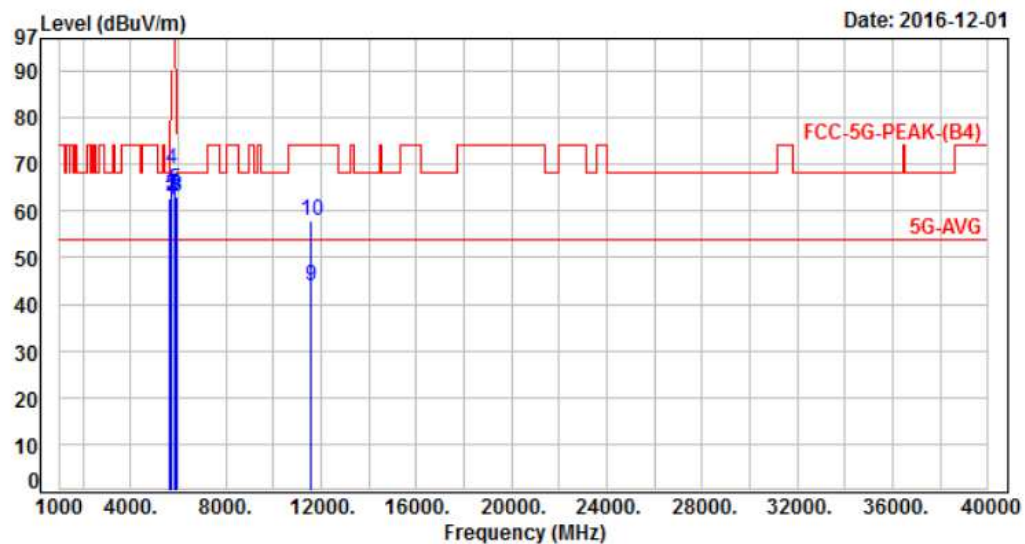
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 4, CH157	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-5.77	68.33	62.56	68.20	-5.64	Peak	133	0	P
2	5700.00	-5.79	68.81	63.02	105.20	-42.18	Peak	133	0	P
3	5720.00	-5.80	69.25	63.45	110.80	-47.35	Peak	133	0	P
4	5725.00	-5.80	74.81	69.01	122.20	-53.19	Peak	133	0	P
5	5850.00	-5.84	70.44	64.60	122.20	-57.60	Peak	133	0	P
6	5855.00	-5.84	69.18	63.34	110.80	-47.46	Peak	133	0	P
7	5875.00	-5.85	68.17	62.32	105.20	-42.88	Peak	133	0	P
8	5925.00	-5.87	69.01	63.14	68.20	-5.06	Peak	133	0	P
9	11570.00	2.09	41.77	43.86	54.00	-10.14	Average	100	350	P
10	11570.00	2.09	55.66	57.75	74.00	-16.25	Peak	100	350	P

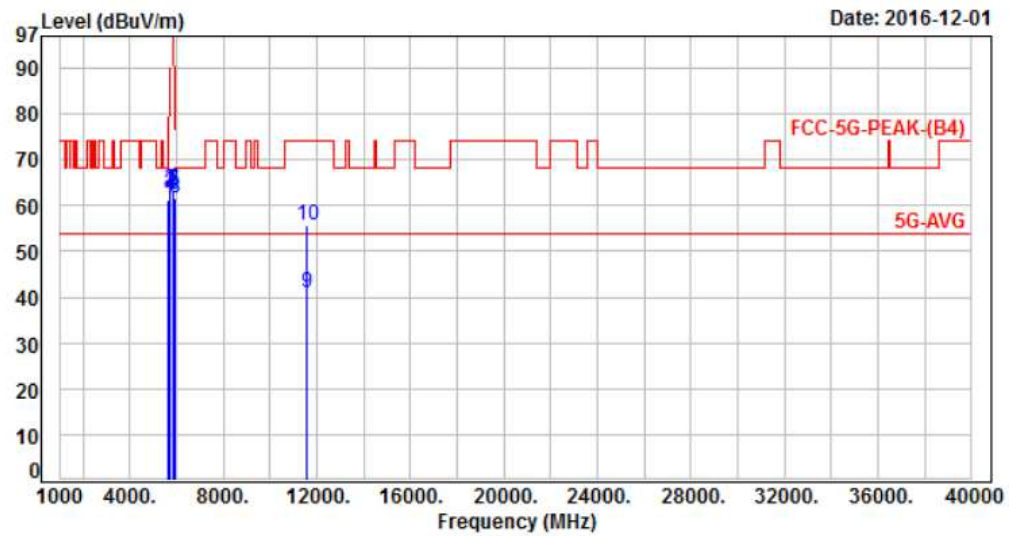
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 4, CH157	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-5.77	66.91	61.14	68.20	-7.06	Peak	158	79	P
2	5700.00	-5.79	68.59	62.80	105.20	-42.40	Peak	158	79	P
3	5720.00	-5.80	69.07	63.27	110.80	-47.53	Peak	158	79	P
4	5725.00	-5.80	68.21	62.41	122.20	-59.79	Peak	158	79	P
5	5850.00	-5.84	69.36	63.52	122.20	-58.68	Peak	158	79	P
6	5855.00	-5.84	68.33	62.49	110.80	-48.31	Peak	158	79	P
7	5875.00	-5.85	68.95	63.10	105.20	-42.10	Peak	158	79	P
8	5925.00	-5.87	67.51	61.64	68.20	-6.56	Peak	158	79	P
9	11570.00	2.09	38.77	40.86	54.00	-13.14	Average	215	78	P
10	11570.00	2.09	53.65	55.74	74.00	-18.26	Peak	215	78	P

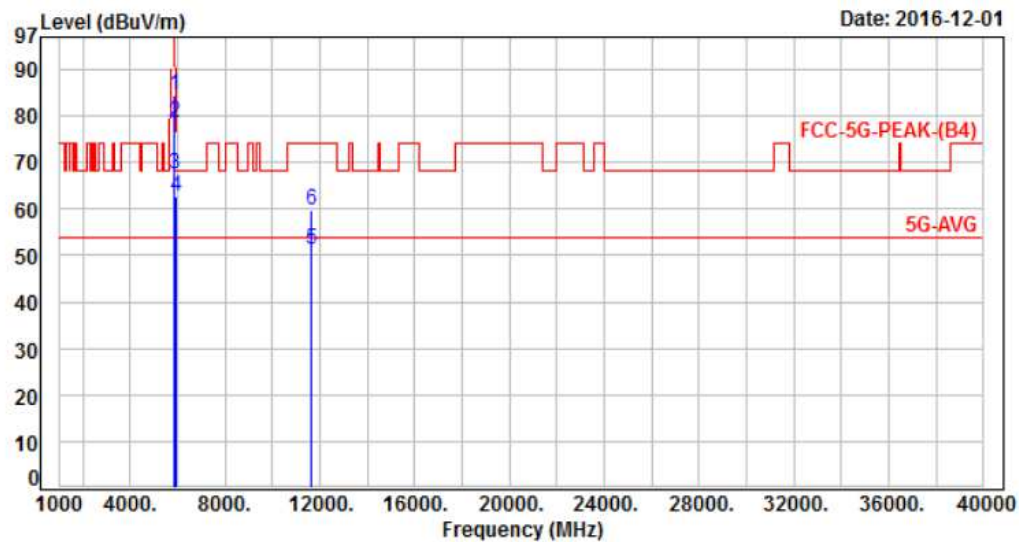
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 4, CH165	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5850.00	-5.84	90.15	84.31	122.20	-37.89	Peak	100	85	P
2	5855.00	-5.84	84.30	78.46	110.80	-32.34	Peak	100	85	P
3	5875.00	-5.85	73.37	67.52	105.20	-37.68	Peak	100	85	P
4	5925.00	-5.87	68.70	62.83	68.20	-5.37	Peak	100	85	P
5	11650.00	2.12	49.13	51.25	54.00	-2.75	Average	225	83	P
6	11650.00	2.12	57.68	59.80	74.00	-14.20	Peak	225	83	P

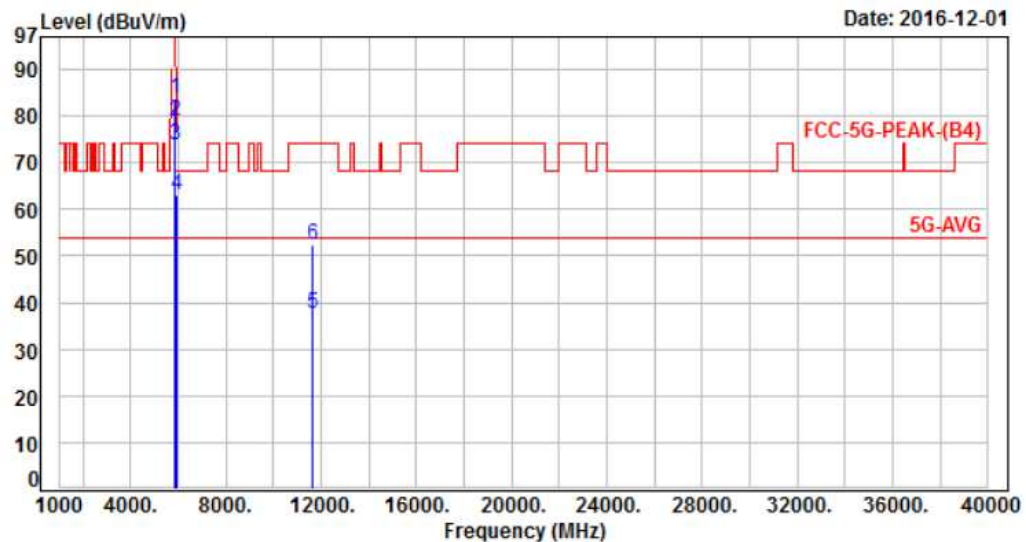
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 4, CH165	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5850.00	-5.84	89.56	83.72	122.20	-38.48	Peak	88	216	P
2	5855.00	-5.84	84.59	78.75	110.80	-32.05	Peak	88	216	P
3	5875.00	-5.85	79.61	73.76	105.20	-31.44	Peak	88	216	P
4	5925.00	-5.87	68.99	63.12	68.20	-5.08	Peak	88	216	P
5	11650.00	2.12	35.41	37.53	54.00	-16.47	Average	215	206	P
6	11650.00	2.12	50.08	52.20	74.00	-21.80	Peak	215	206	P

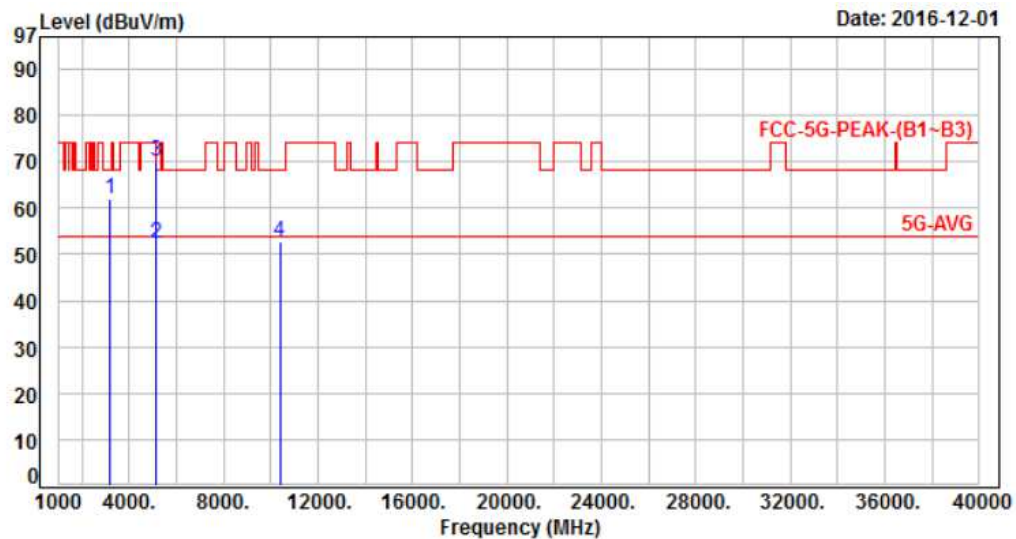
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 5, CH38	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	3200.00	-12.19	74.12	61.93	68.20	-6.27	Peak	158	144	P
2	5150.00	-6.54	58.98	52.44	54.00	-1.56	Average	294	216	P
3	5150.00	-6.54	76.54	70.00	74.00	-4.00	Peak	294	216	P
4	10380.00	0.68	51.98	52.66	68.20	-15.54	Peak	169	147	P

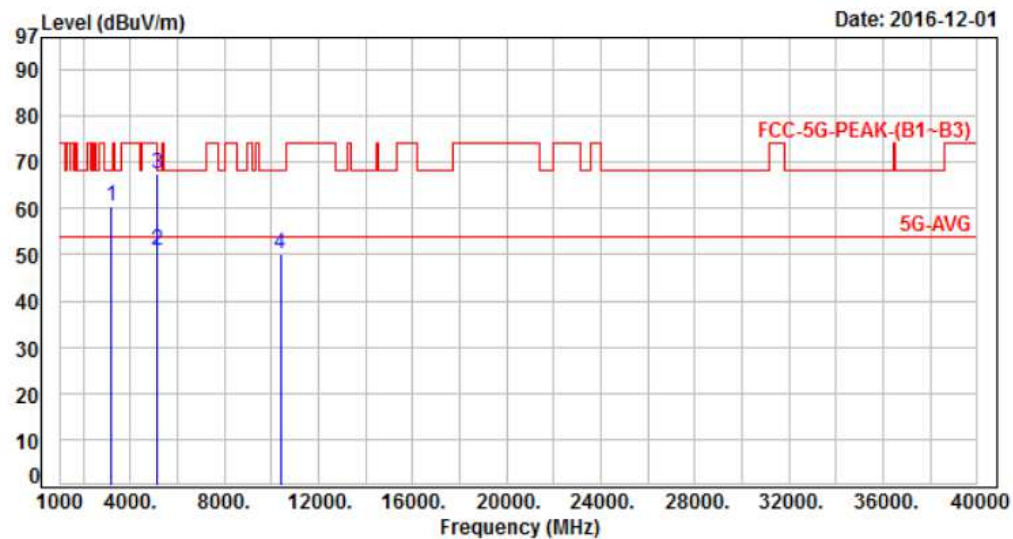
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 5, CH38	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	3200.00	-12.19	72.73	60.54	68.20	-7.66	Peak	212	331	P
2	5150.00	-6.54	57.32	50.78	54.00	-3.22	Average	152	173	P
3	5150.00	-6.54	74.12	67.58	74.00	-6.42	Peak	152	173	P
4	10380.00	0.68	49.36	50.04	68.20	-18.16	Peak	212	189	P

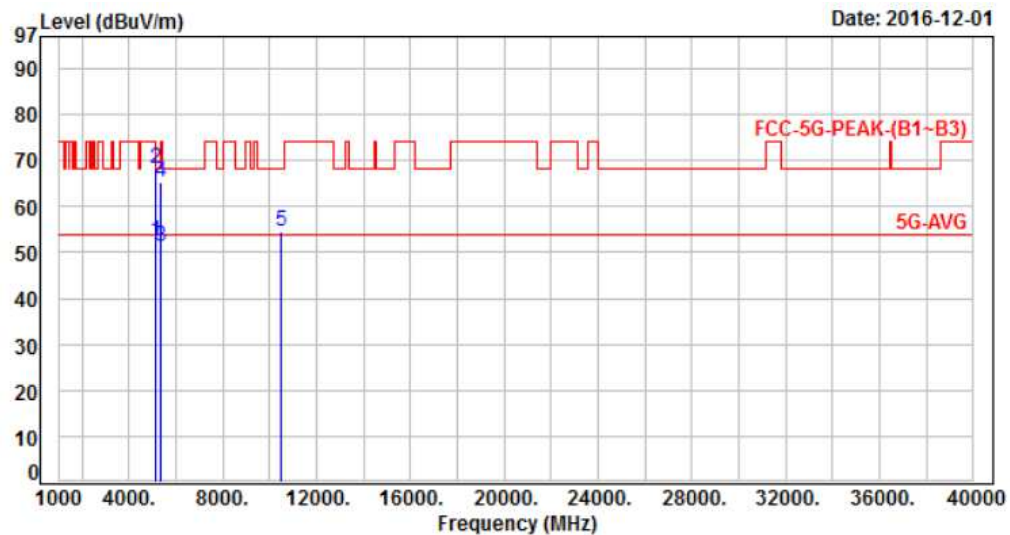
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 5, CH46	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-6.54	58.87	52.33	54.00	-1.67	Average	156	163	P
2	5150.00	-6.54	74.95	68.41	74.00	-5.59	Peak	156	163	P
3	5350.00	-6.06	57.31	51.25	54.00	-2.75	Average	156	163	P
4	5350.00	-6.06	71.37	65.31	74.00	-8.69	Peak	156	163	P
5	10460.00	0.72	53.89	54.61	68.20	-13.59	Peak	161	128	P

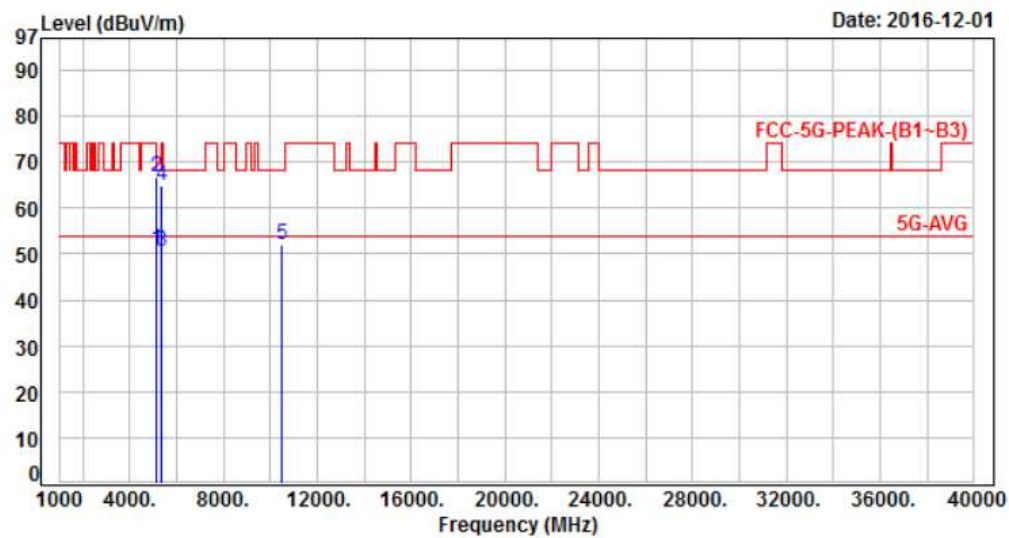
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 5, CH46	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-6.54	57.25	50.71	54.00	-3.29	Average	129	212	P
2	5150.00	-6.54	73.45	66.91	74.00	-7.09	Peak	129	212	P
3	5350.00	-6.06	56.63	50.57	54.00	-3.43	Average	129	212	P
4	5350.00	-6.06	71.00	64.94	74.00	-9.06	Peak	129	212	P
5	10460.00	0.72	51.26	51.98	68.20	-16.22	Peak	212	149	P

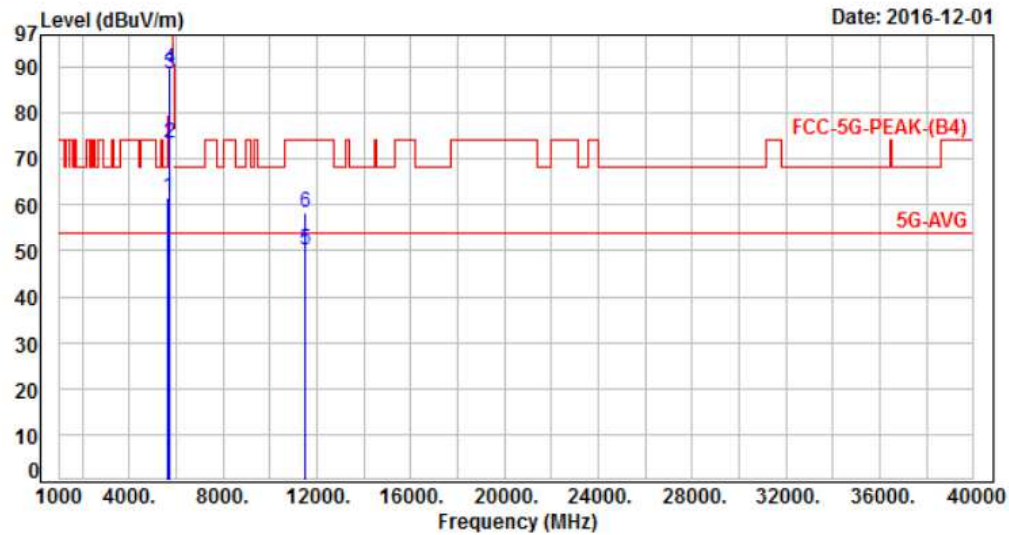
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 5, CH151	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-5.77	67.23	61.46	68.20	-6.74	Peak	138	219	P
2	5700.00	-5.79	79.16	73.37	105.20	-31.83	Peak	138	219	P
3	5720.00	-5.80	94.27	88.47	110.80	-22.33	Peak	138	219	P
4	5725.00	-5.80	95.50	89.70	122.20	-32.50	Peak	138	219	P
5	11510.00	2.07	48.01	50.08	54.00	-3.92	Average	238	90	P
6	11510.00	2.07	56.37	58.44	74.00	-15.56	Peak	238	90	P

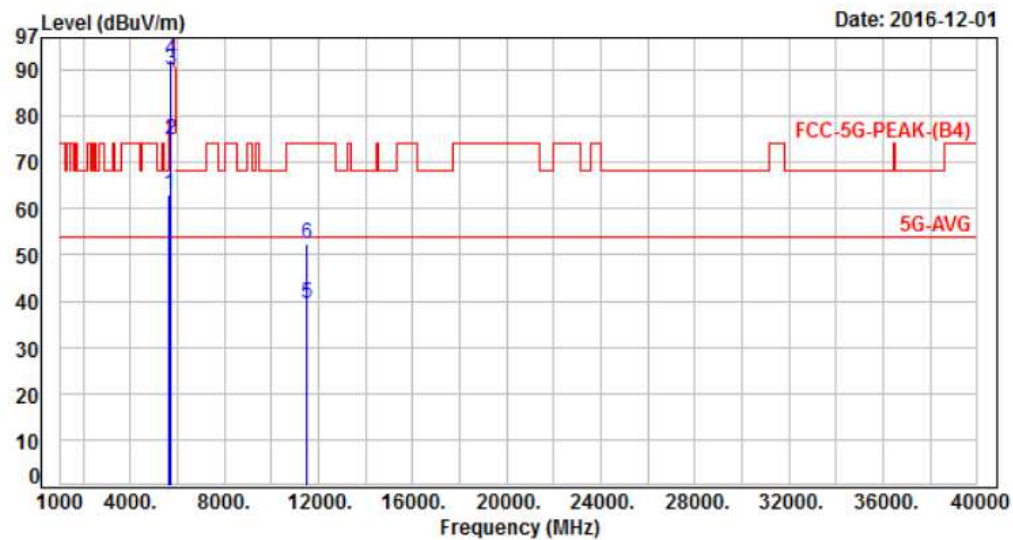
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 5, CH151	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-5.77	68.89	63.12	68.20	-5.08	Peak	232	121	P
2	5700.00	-5.79	80.48	74.69	105.20	-30.51	Peak	232	121	P
3	5720.00	-5.80	95.63	89.83	110.80	-20.97	Peak	232	121	P
4	5725.00	-5.80	98.06	92.26	122.20	-29.94	Peak	232	121	P
5	11510.00	2.07	37.43	39.50	54.00	-14.50	Average	136	211	P
6	11510.00	2.07	50.29	52.36	74.00	-21.64	Peak	136	211	P

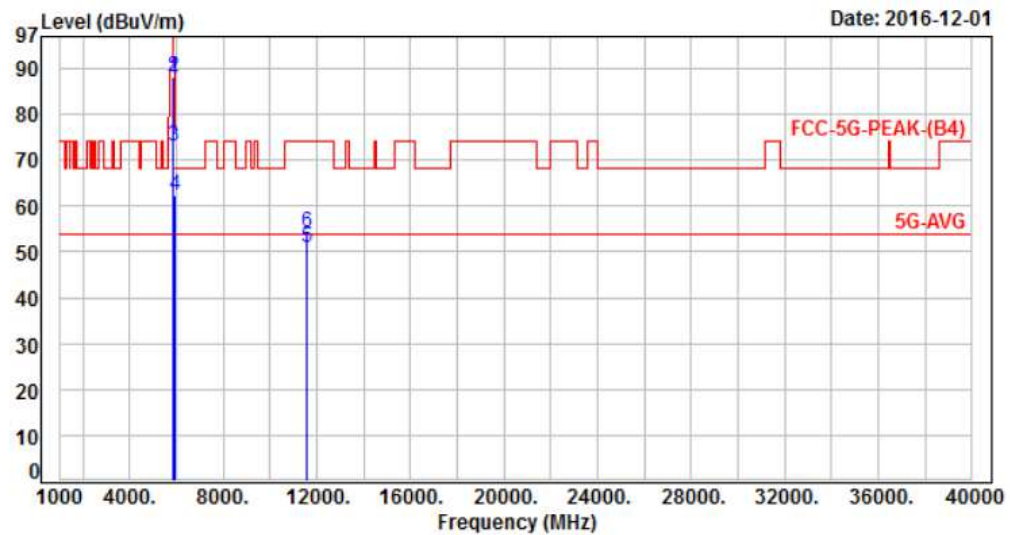
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 5, CH159	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5850.00	-5.84	93.50	87.66	122.20	-34.54	Peak	341	46	P
2	5855.00	-5.84	94.01	88.17	110.80	-22.63	Peak	341	46	P
3	5875.00	-5.85	78.95	73.10	105.20	-32.10	Peak	341	46	P
4	5925.00	-5.87	68.15	62.28	68.20	-5.92	Peak	341	46	P
5	11590.00	2.10	48.78	50.88	54.00	-3.12	Average	240	83	P
6	11590.00	2.10	52.11	54.21	74.00	-19.79	Peak	240	83	P

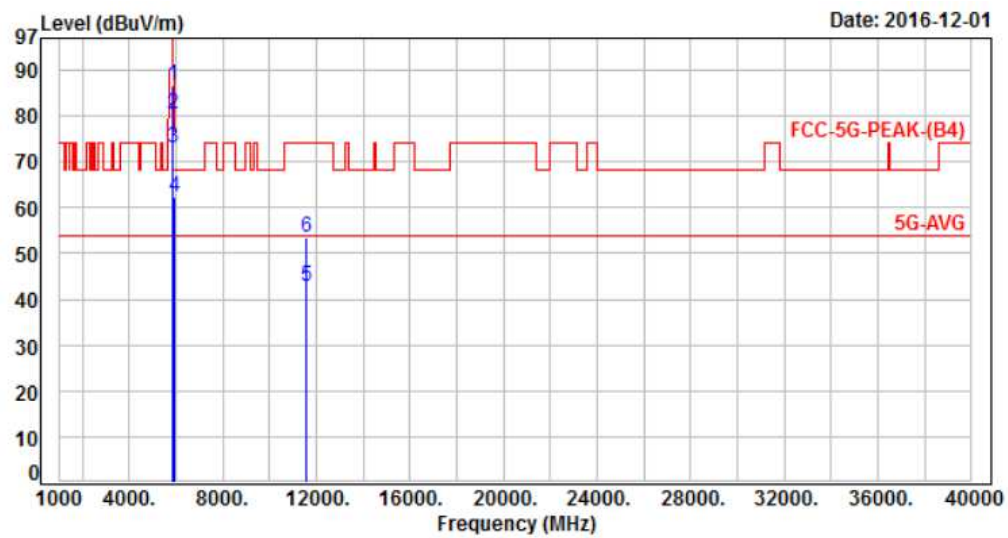
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 5, CH159	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5850.00	-5.84	92.65	86.81	122.20	-35.39	Peak	242	219	P
2	5855.00	-5.84	86.11	80.27	110.80	-30.53	Peak	242	219	P
3	5875.00	-5.85	78.83	72.98	105.20	-32.22	Peak	242	219	P
4	5925.00	-5.87	68.15	62.28	68.20	-5.92	Peak	242	219	P
5	11590.00	2.10	40.55	42.65	54.00	-11.35	Average	243	89	P
6	11590.00	2.10	51.55	53.65	74.00	-20.35	Peak	243	89	P

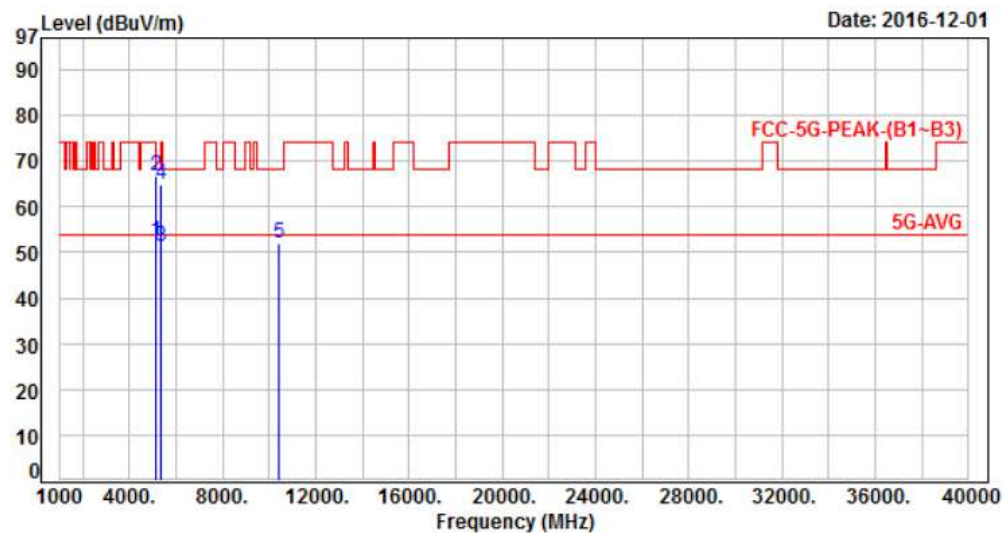
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 6, CH42	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-6.54	58.87	52.33	54.00	-1.67	Average	176	157	P
2	5150.00	-6.54	73.16	66.62	74.00	-7.38	Peak	176	157	P
3	5350.00	-6.06	57.27	51.21	54.00	-2.79	Average	176	157	P
4	5350.00	-6.06	70.98	64.92	74.00	-9.08	Peak	176	157	P
5	10420.00	0.69	51.36	52.05	68.20	-16.15	Peak	246	61	P

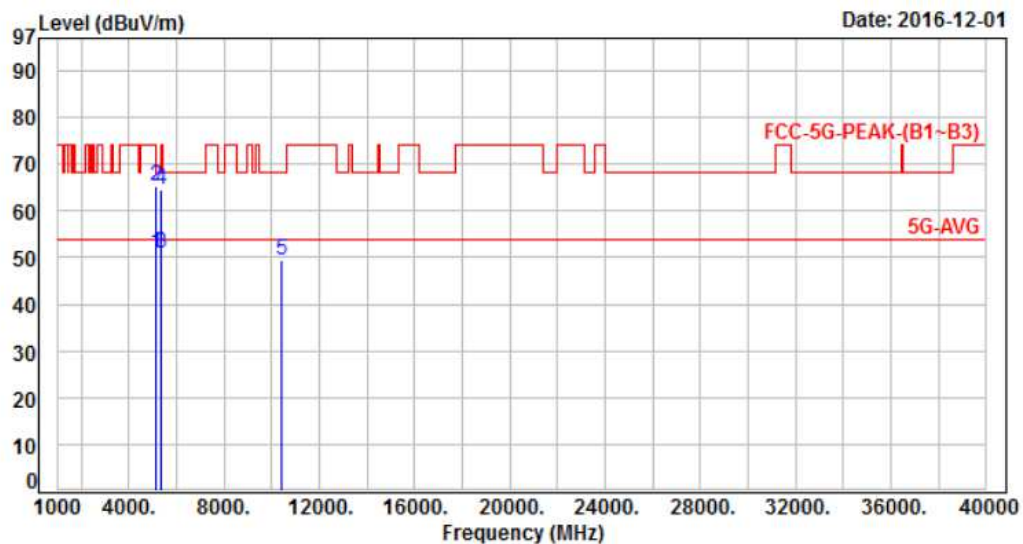
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 6, CH42	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-6.54	57.44	50.90	54.00	-3.10	Average	153	186	P
2	5150.00	-6.54	71.69	65.15	74.00	-8.85	Peak	153	186	P
3	5350.00	-6.06	56.92	50.86	54.00	-3.14	Average	153	186	P
4	5350.00	-6.06	70.65	64.59	74.00	-9.41	Peak	153	186	P
5	10420.00	0.69	48.77	49.46	68.20	-18.74	Peak	128	137	P

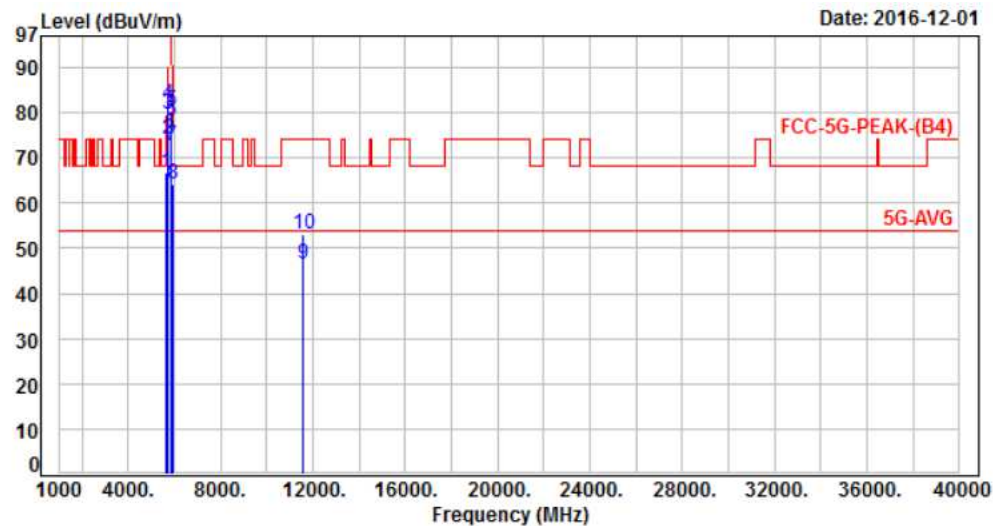
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 6, CH155	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-5.77	72.47	66.70	68.20	-1.50	Peak	328	207	P
2	5700.00	-5.79	79.91	74.12	105.20	-31.08	Peak	328	207	P
3	5720.00	-5.80	85.56	79.76	110.80	-31.04	Peak	328	207	P
4	5725.00	-5.80	87.69	81.89	122.20	-40.31	Peak	328	207	P
5	5850.00	-5.84	86.26	80.42	122.20	-41.78	Peak	315	207	P
6	5855.00	-5.84	84.20	78.36	110.80	-32.44	Peak	315	207	P
7	5875.00	-5.85	78.51	72.66	105.20	-32.54	Peak	315	207	P
8	5925.00	-5.87	70.19	64.32	68.20	-3.88	Peak	315	207	P
9	11550.00	2.09	44.29	46.38	54.00	-7.62	Average	201	89	P
10	11550.00	2.09	51.08	53.17	74.00	-20.83	Peak	201	89	P

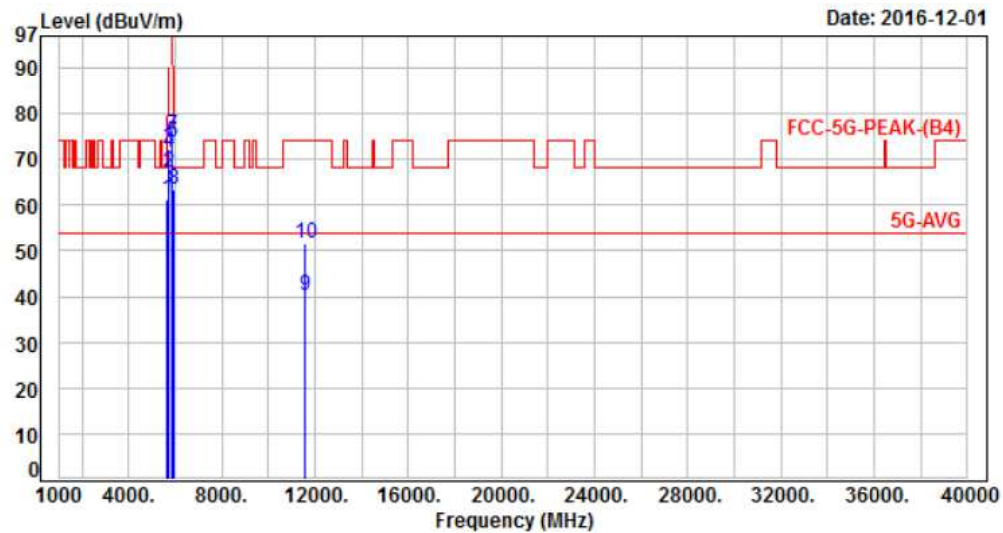
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 6, CH155	Temperature	: 25°C
Test Date	: Dec. 01, 2016	Humidity	: 60%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-5.77	67.15	61.38	68.20	-6.82	Peak	160	111	P
2	5700.00	-5.79	72.75	66.96	105.20	-38.24	Peak	160	111	P
3	5720.00	-5.80	78.27	72.47	110.80	-38.33	Peak	160	111	P
4	5725.00	-5.80	77.22	71.42	122.20	-50.78	Peak	160	111	P
5	5850.00	-5.84	79.72	73.88	122.20	-48.32	Peak	160	111	P
6	5855.00	-5.84	79.48	73.64	110.80	-37.16	Peak	160	111	P
7	5875.00	-5.85	81.01	75.16	105.20	-30.04	Peak	160	111	P
8	5925.00	-5.87	69.26	63.39	68.20	-4.81	Peak	160	111	P
9	11550.00	2.09	38.17	40.26	54.00	-13.74	Average	188	84	P
10	11550.00	2.09	49.56	51.65	74.00	-22.35	Peak	188	84	P

Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



6.7. Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.150
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

** : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz



7. On Time, Duty Cycle and Measurement methods

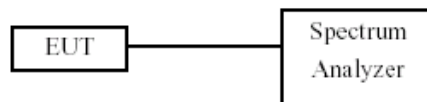
7.1. Test Limit

None; for reporting purposes only.

7.2. Test Procedure

KDB 789033 Zero-Span Spectrum Analyzer Method.

7.3. Test Setup Layout



7.4. Test Result and Data

Temperature: 21°C

Humidity: 58%

Test Date: Mar. 08, 2017

Non Beamforming

Modulation Type	On Time (msec)	Period Time (msec)	Duty Cycle (%)	1/T Minimum VBW(Hz)	Duty Cycle correction Factor (dB)
802.11a	2.09	2.10	99.76%	478.47	0.01
802.11ac VHT20	1.95	1.96	99.49%	512.82	0.02
802.11ac VHT40	0.97	0.98	98.98%	1030.93	0.04
802.11ac VHT80	0.47	0.50	95.56%	2109.70	0.20

Beamforming

Modulation Type	On Time (msec)	Period Time (msec)	Duty Cycle (%)	1/T Minimum VBW(Hz)	Duty Cycle correction Factor (dB)
802.11ac VHT20	4.24	4.66	90.99%	235.85	0.41
802.11ac VHT40	5.06	5.50	92.00%	197.63	0.36
802.11ac VHT80	5.20	5.69	91.32%	192.31	0.39

7.5. Measurement Methods

26 dB and 6dB Emission BW	KDB 789033 D02 v01, Section C
99% Occupied BW	KDB 789033 D02 v01, Section D
Conducted Output Power	KDB 789033 D02 v01, Section E.2.d and E.3.b (Method PM-G)
Power Spectral Density	KDB 789033 D02 v01, Section F
Unwanted emissions in restricted bands	KDB 789033 D02 v01, Sections G and H
Unwanted emissions in non-restricted bands	KDB 789033 D02 v01, Sections G and H



8. 6dB Bandwidth

8.1. Test Limit

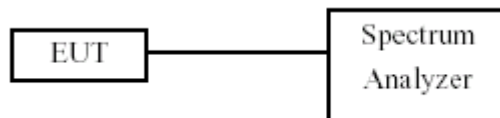
FCC §15.407

The minimum 6 dB bandwidth shall be at least 500 kHz.

8.2. Test Procedure

Reference to 789033 D02 General UNII Test Procedures New Rules v01: The transmitter output is connected to a spectrum analyzer with the RBW set to 100kHz, the VBW $\geq 3 \times$ RBW, peak detector and max hold.

8.3. Test Setup Layout



8.4. Test Result and Data

Temperature: 21°C

Humidity: 58%

Test Date: Mar. 08, 2017

Non Beamforming

In the 5.8G Band

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)
			ANT 3	ANT 4	
802.11a	149	5745	16.30	16.30	0.50
	157	5785	16.40	16.40	0.50
	165	5825	16.30	16.30	0.50
802.11ac VHT20	149	5745	17.60	17.60	0.50
	157	5785	17.60	17.60	0.50
	165	5825	17.70	17.70	0.50
802.11ac VHT40	155	5755	36.40	36.60	0.50
	159	5795	36.40	36.40	0.50
802.11ac VHT80	155	5775	76.16	76.48	0.50

**Beamforming****In the 5.8G Band**

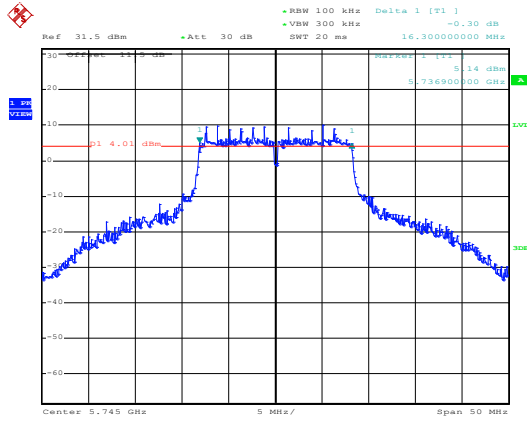
Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)
			ANT 3	ANT 4	
802.11ac VHT20	149	5745	17.60	17.60	0.50
	157	5785	17.60	17.50	0.50
	165	5825	17.60	17.60	0.50
802.11ac VHT40	155	5755	36.60	36.60	0.50
	159	5795	36.40	36.00	0.50
802.11ac VHT80	155	5775	76.48	76.48	0.50

**Non Beamforming**

ANT 3

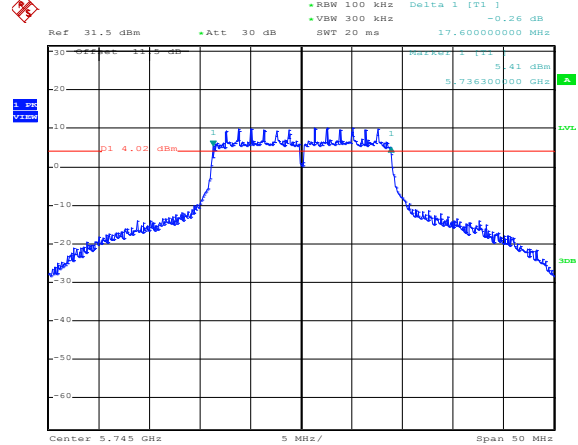
Modulation Standard: 802.11a (6Mbps)

CH149

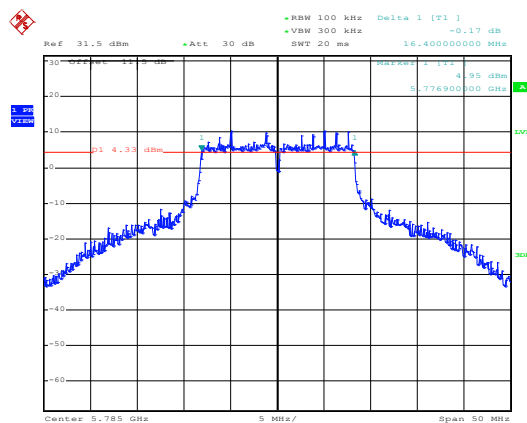


Modulation Standard: 802.11ac, VHT20 (6.5Mbps)

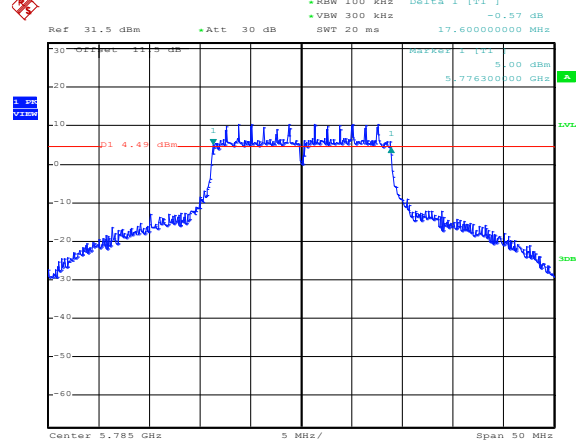
CH149



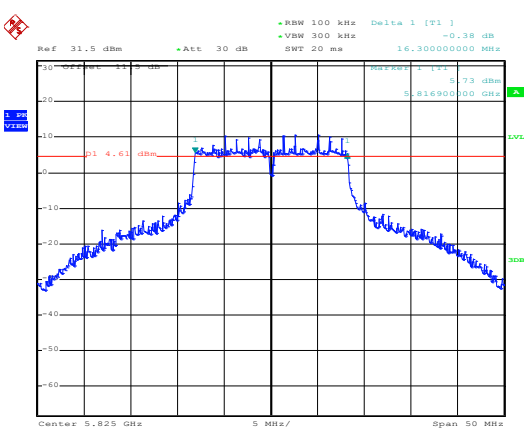
CH157



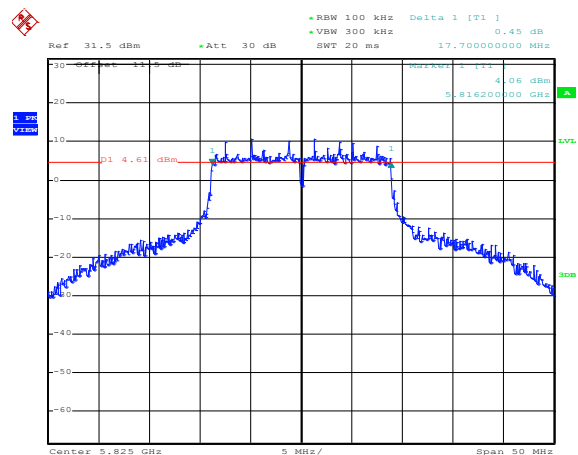
CH157



CH165



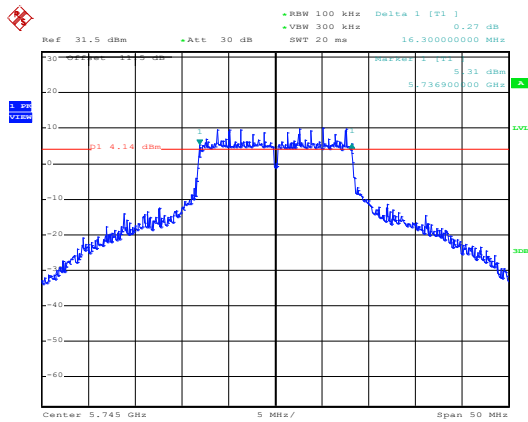
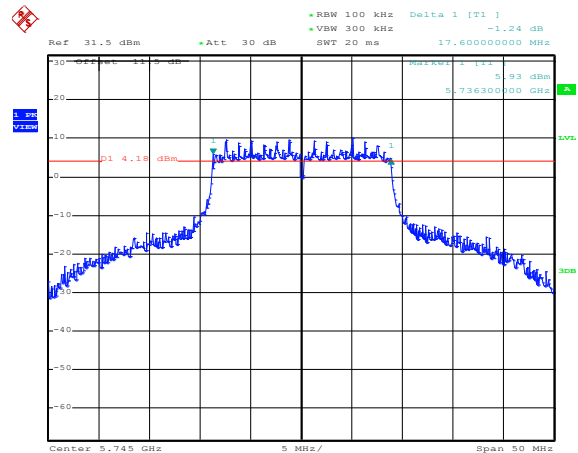
CH165



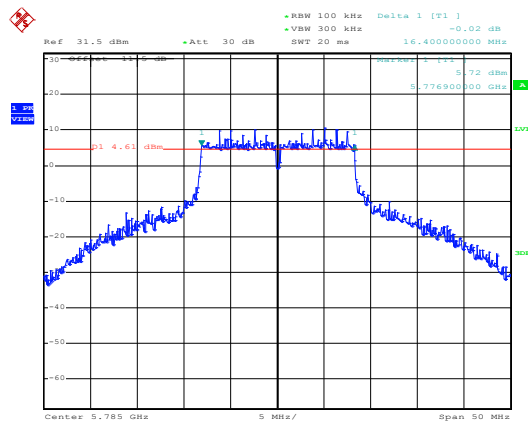




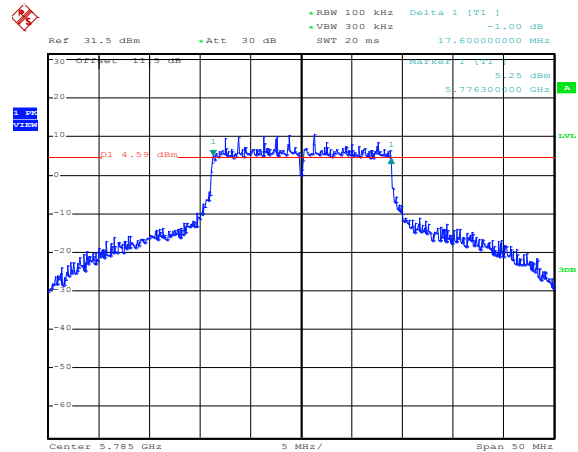
ANT 4

Modulation Standard: 802.11a (6Mbps)
CH149Modulation Standard: 802.11ac, VHT20 (6.5Mbps)
CH149

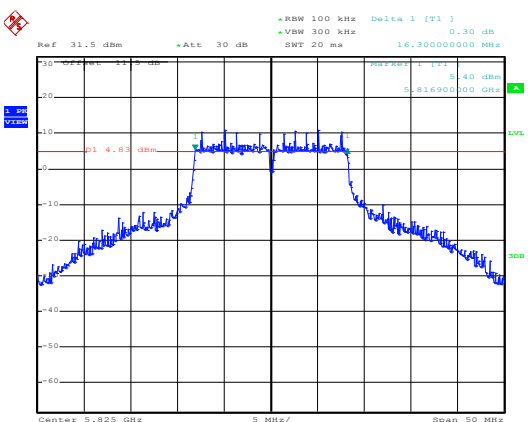
CH157



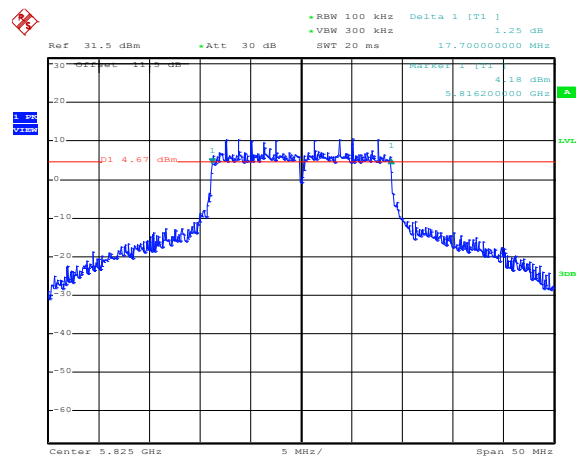
CH157



CH165



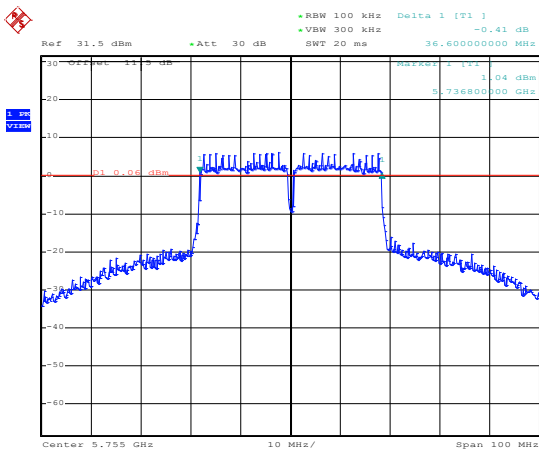
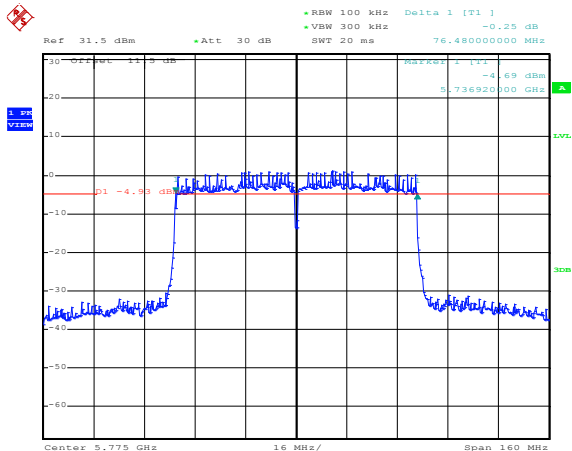
CH165



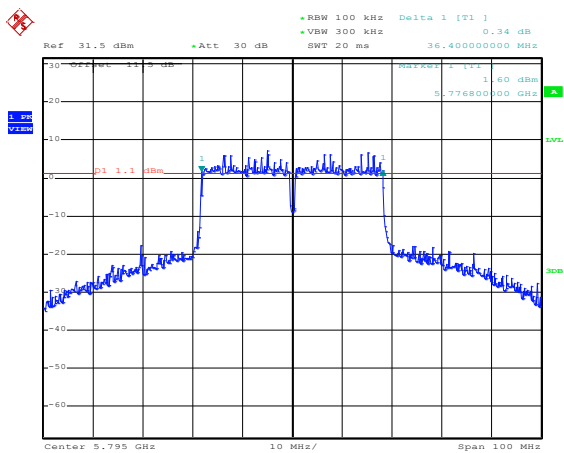


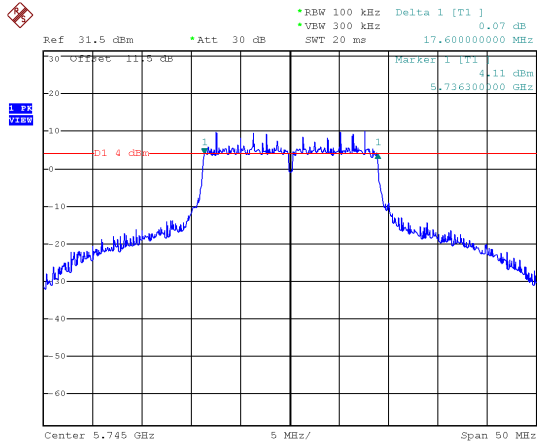
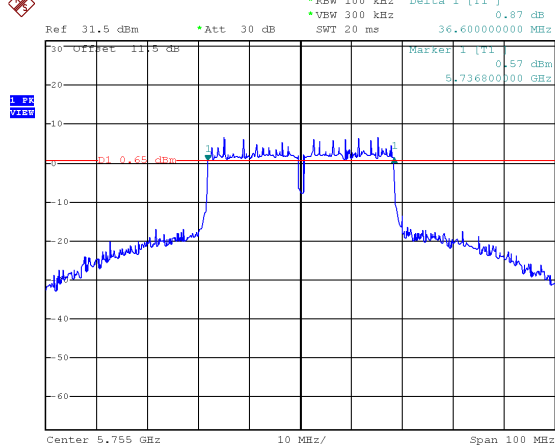
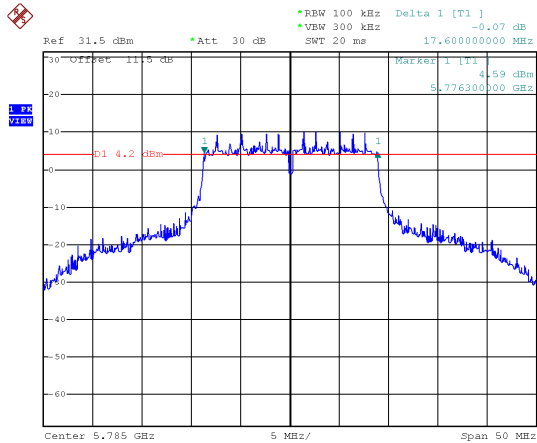
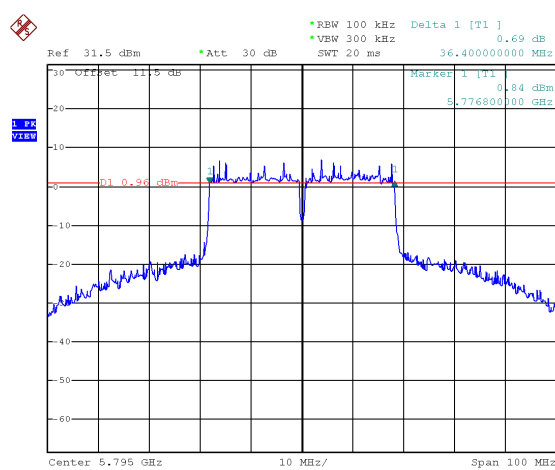
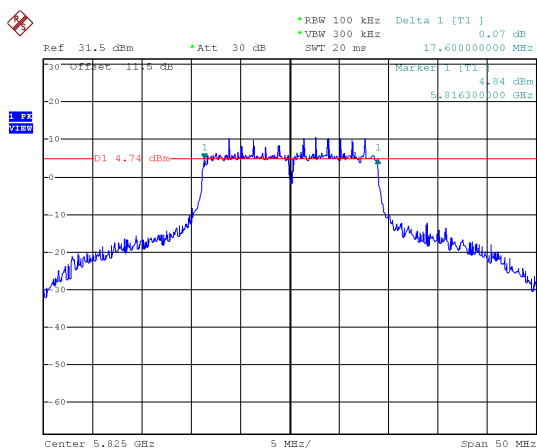
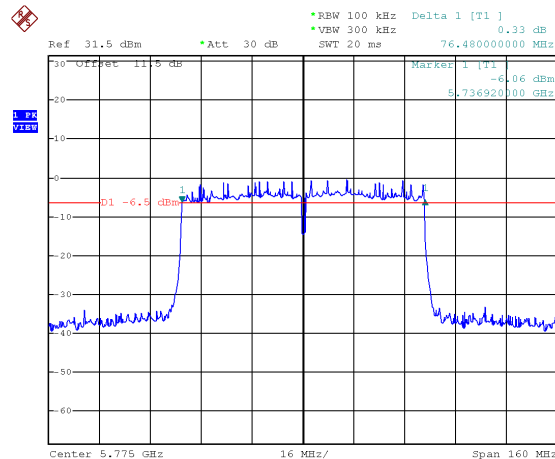
ANT 4

Modulation Standard: 802.11ac, VHT40 (13.5Mbps)
CH151

Modulation Standard: 802.11ac, VHT80 (29.3Mbps)
CH155

CH159

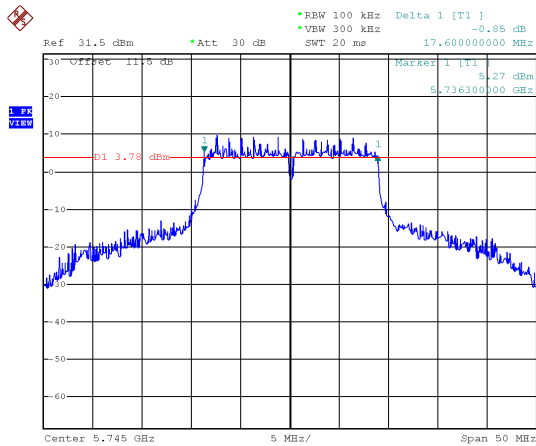


**Beamforming****ANT 3****Modulation Standard: 802.11ac, VHT20 (6.5Mbps)
CH149****Modulation Standard: 802.11ac, VHT40 (13.5Mbps)
CH151****CH157****CH159****CH165****Modulation Standard: 802.11ac, VHT80 (29.3Mbps)
CH155**

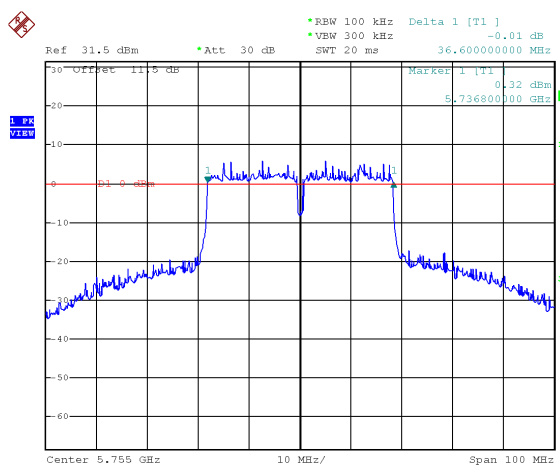


ANT 4

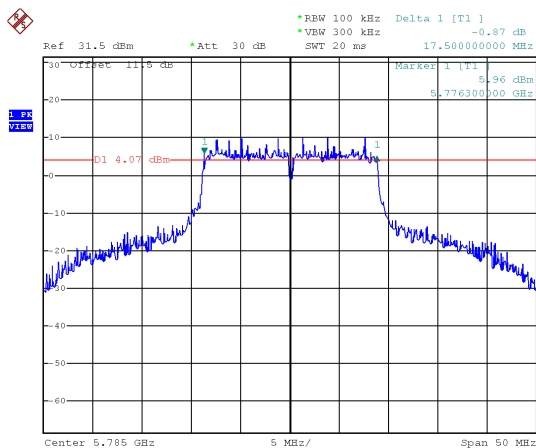
Modulation Standard: 802.11ac, VHT20 (6.5Mbps)
CH149



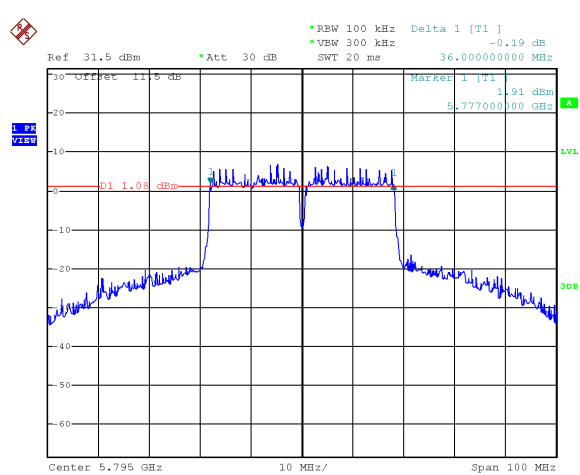
Modulation Standard: 802.11ac, VHT40 (13.5Mbps)
CH151



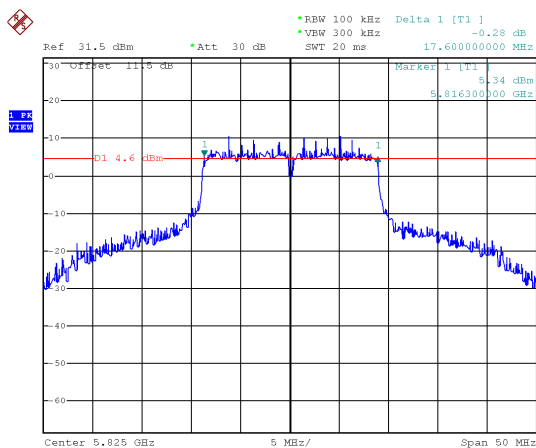
CH157



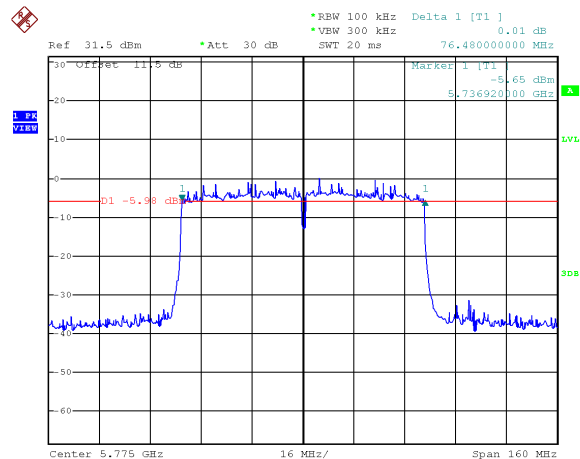
CH159



CH165



Modulation Standard: 802.11ac, VHT80 (29.3Mbps)
CH155





9. 26dB Bandwidth

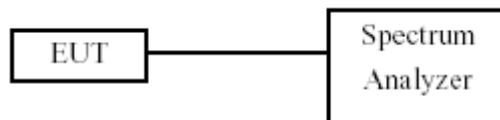
9.1. Test Limit

None; for reporting purposes only.

9.2. Test Procedure

Reference to 789033 D02 General UNII Test Procedures New Rules v01: The transmitter output is connected to a spectrum analyzer with the RBW = approximately 1% of the emission bandwidth, the VBW $\geq 3 \times$ RBW, peak detector and max hold.

9.3. Test Setup Layout



9.4. Test Result and Data

Temperature: 21°C

Humidity: 58%

Test Date: Mar. 08, 2017

Non Beamforming

In the 5.2G Band

Modulation Type	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
			ANT 3	ANT 4
802.11a	36	5180	22.00	21.70
	44	5220	41.10	40.90
	48	5240	37.40	35.10
802.11ac VHT20	36	5180	22.40	22.30
	44	5220	43.10	41.90
	48	5240	44.30	42.50
802.11ac VHT40	38	5190	41.80	41.40
	46	5230	73.40	71.00
802.11ac VHT80	42	5210	82.88	81.92

Beamforming

In the 5.2G Band

Modulation Type	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
			ANT 3	ANT 4
802.11ac VHT20	36	5180	22.10	21.80
	44	5220	44.80	44.60
	48	5240	45.40	42.40
802.11ac VHT40	38	5190	41.40	41.00
	46	5230	42.20	41.20
802.11ac VHT80	42	5210	81.28	81.92

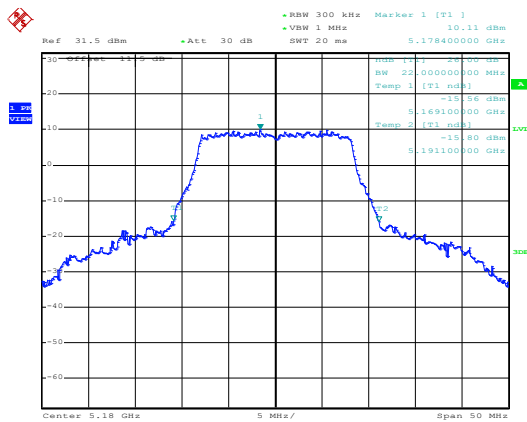
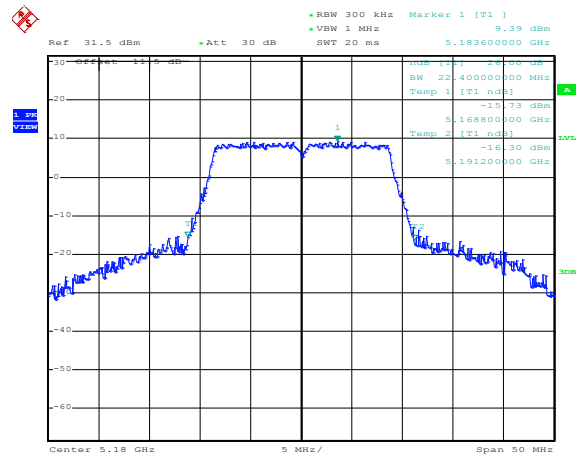


Non Beamforming

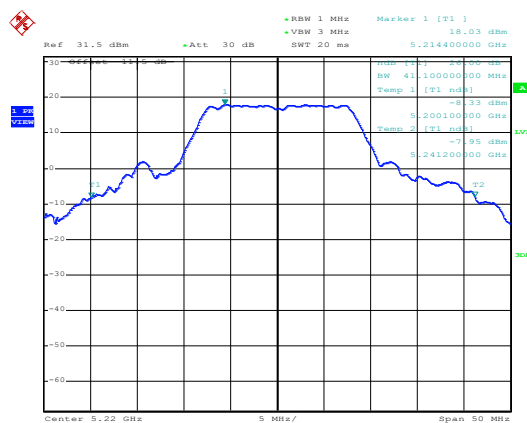
ANT 3

Modulation Standard: 802.11a (6Mbps)

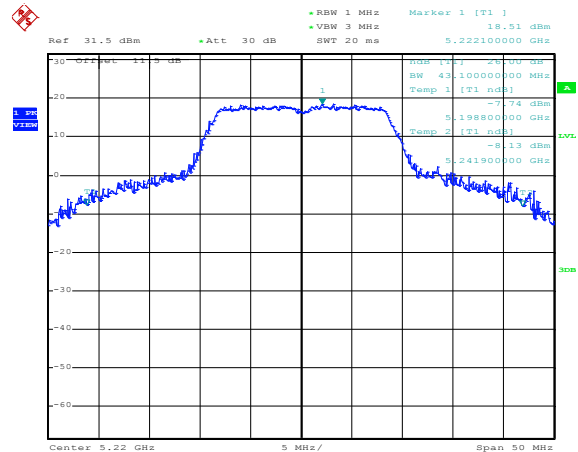
CH36

802.11ac VHT20 (6.5Mbps)
CH36

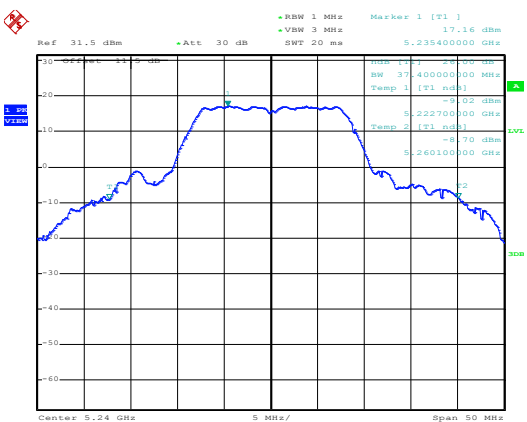
CH44



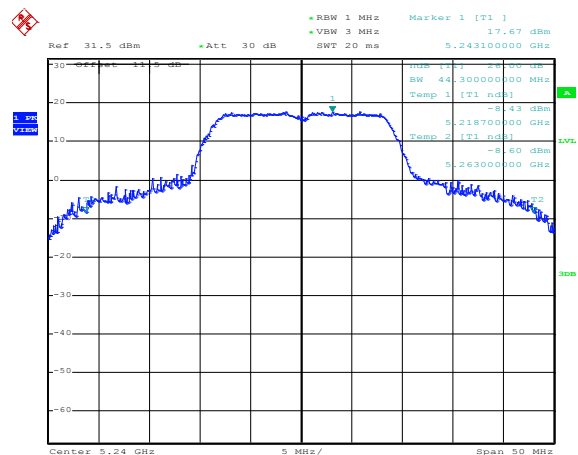
CH44



CH48



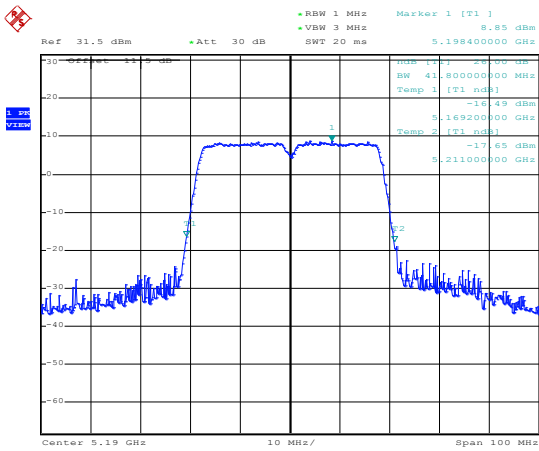
CH48



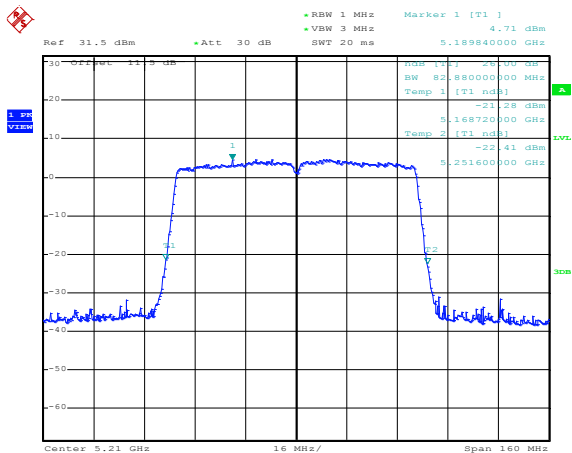


ANT 3

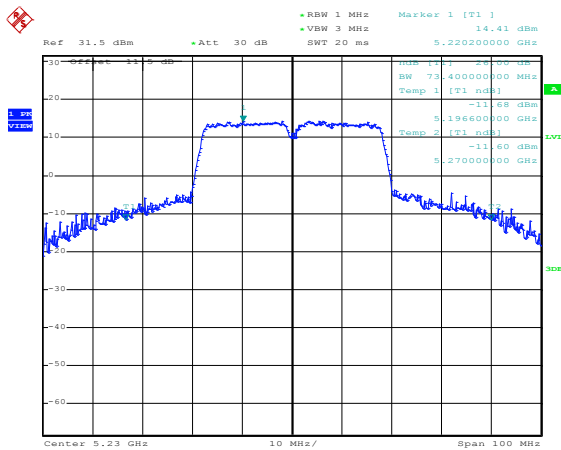
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH38



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH42

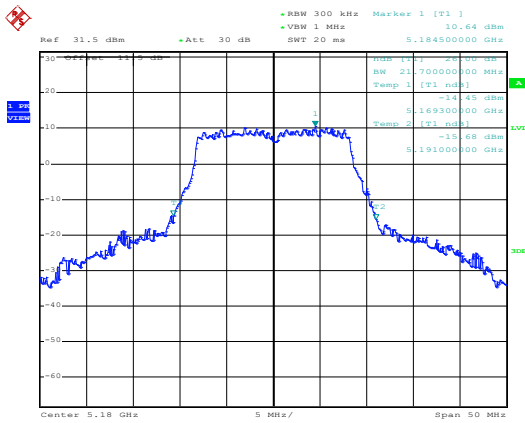
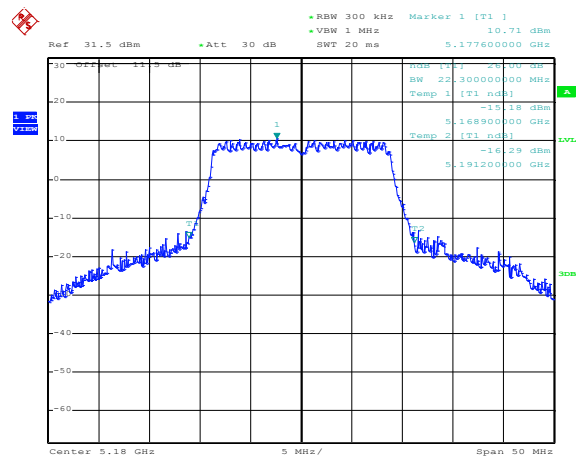


CH46

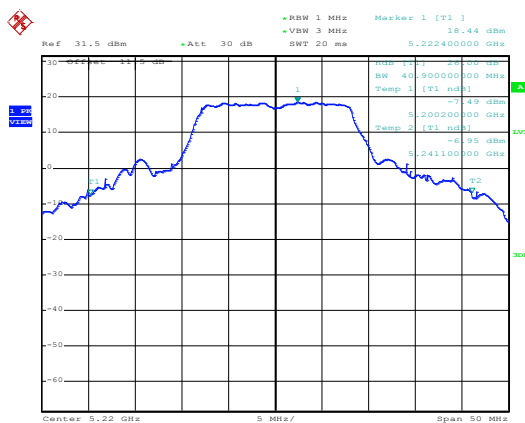




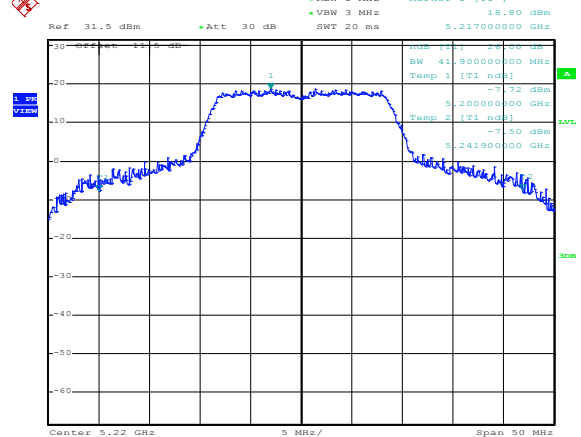
ANT 4

Modulation Standard: 802.11a (6Mbps)
CH36802.11ac VHT20 (6.5Mbps)
CH36

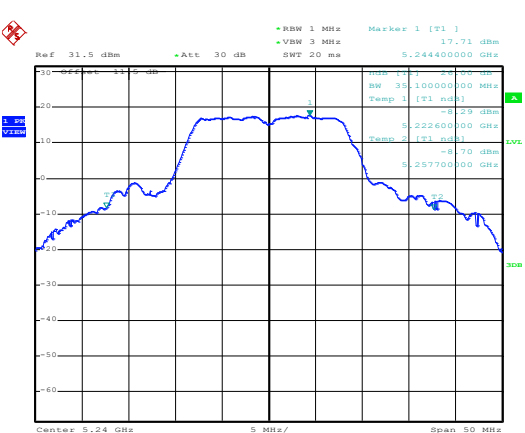
CH44



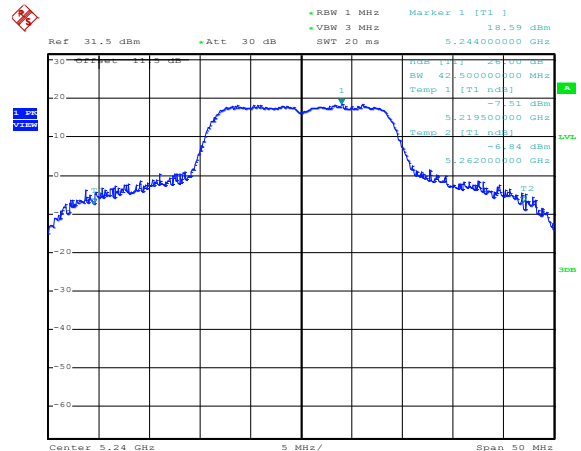
CH44



CH48



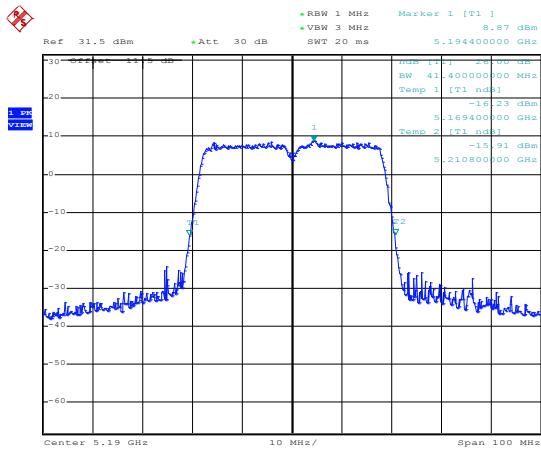
CH48



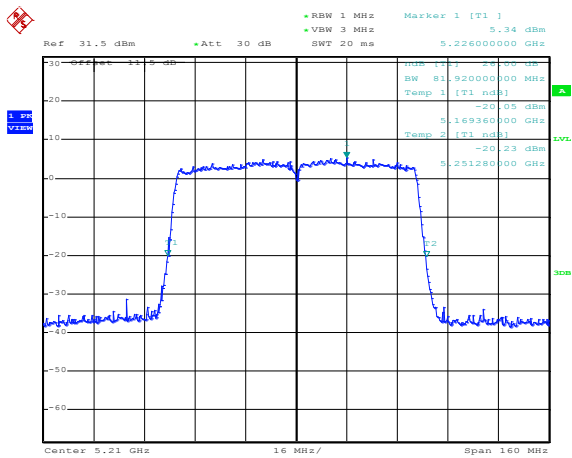


ANT 4

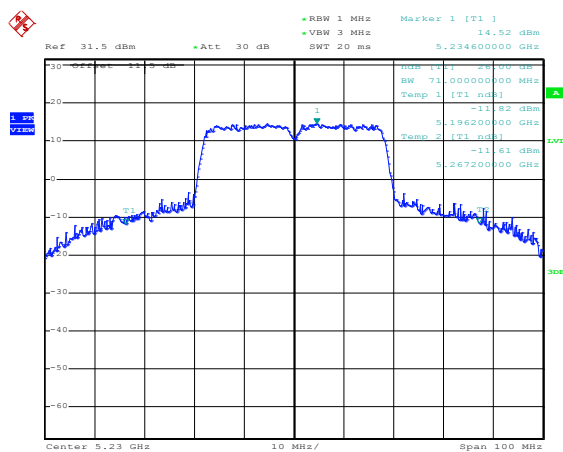
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH38

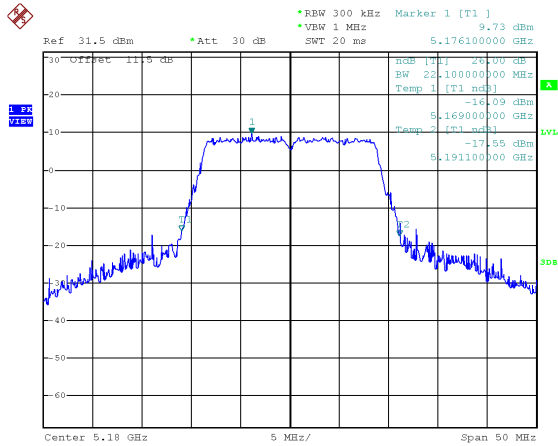
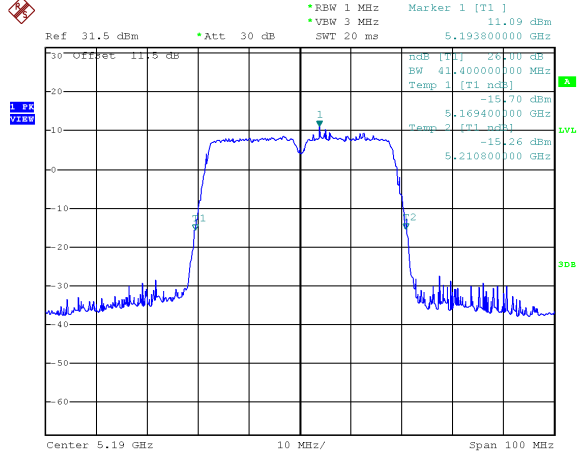
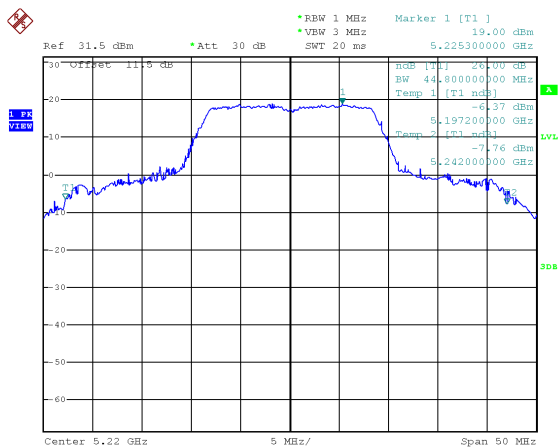
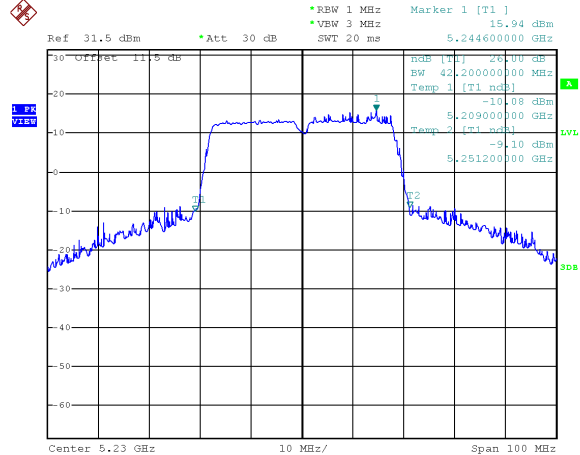
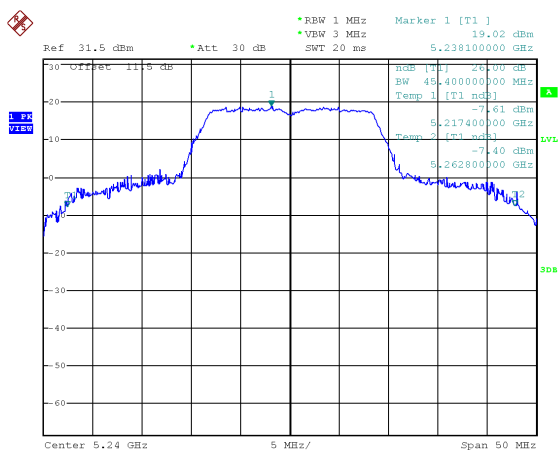
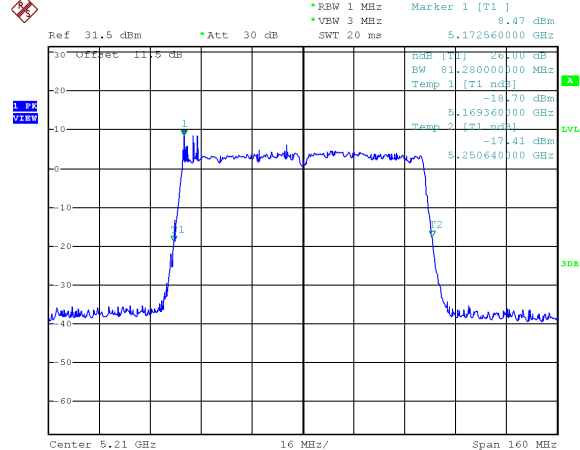


Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH42



CH46

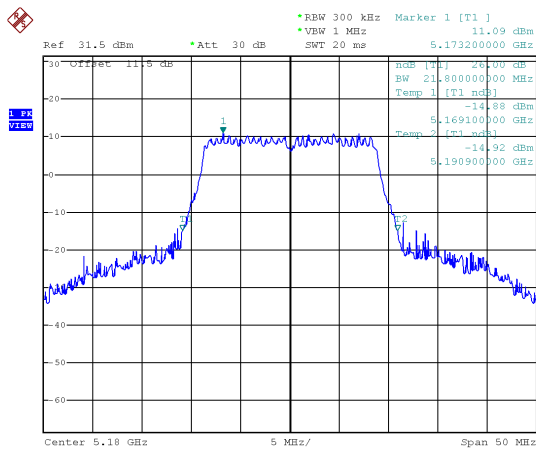


**Beamforming****ANT 3****Modulation Standard: 802.11ac, VHT20 (6.5Mbps)
CH36****Modulation Standard: 802.11ac, VHT40 (13.5Mbps)
CH38****CH44****CH46****CH48****Modulation Standard: 802.11ac, VHT80 (29.3Mbps)
CH42**

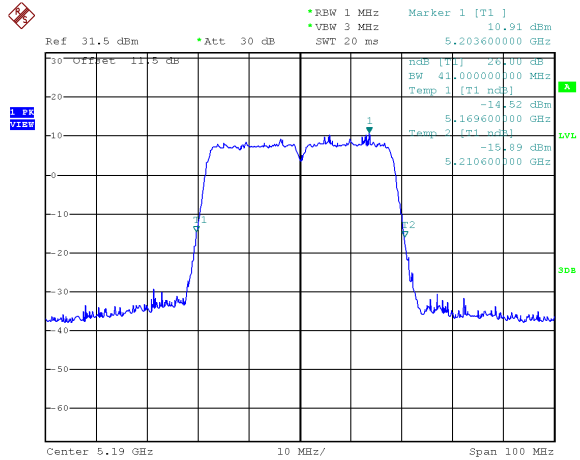


ANT 4

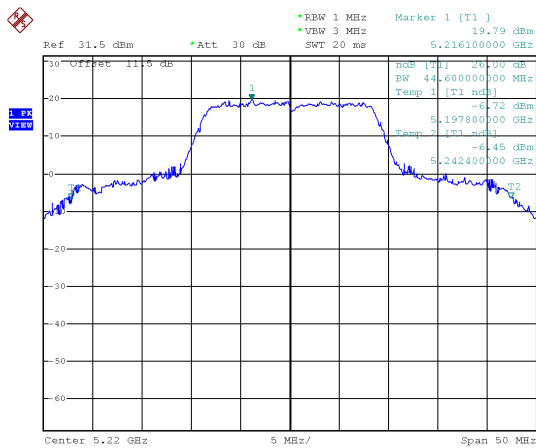
Modulation Standard: 802.11ac, VHT20 (6.5Mbps)
CH36



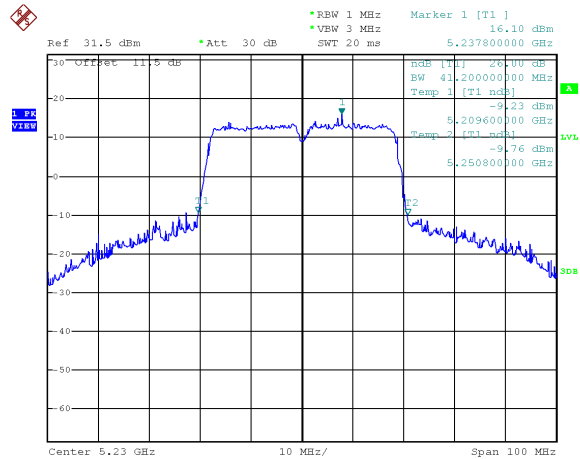
Modulation Standard: 802.11ac, VHT40 (13.5Mbps)
CH38



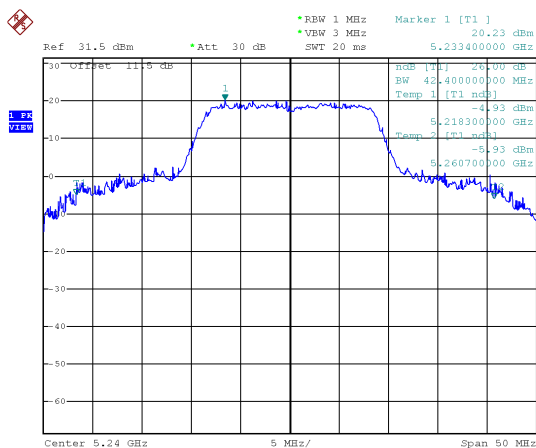
CH44



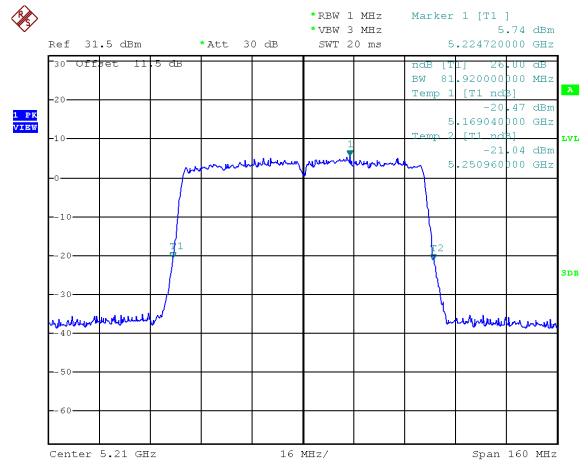
CH46



CH48



Modulation Standard: 802.11ac, VHT80 (29.3Mbps)
CH42





10. Average Power

10.1. Test Limit

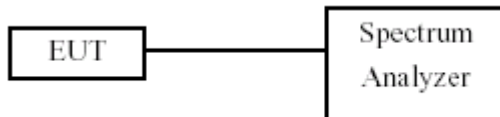
None; for reporting purposes only.

10.2. Test Procedure

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

10.3. Test Setup Layout





10.4. Test Result and Data

Temperature: 21°C

Humidity: 58%

Test Date: Mar. 08, 2017

Non Beamforming

In the 5.2G Band

Modulation Type	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)	Power Limit (dBm)
			ANT 3	ANT 4		
802.11a	36	5180	19.47	19.38	22.44	30.00
	44	5220	22.21	21.83	25.03	30.00
	48	5240	21.34	21.11	24.24	30.00
802.11an HT20	36	5180	19.12	18.88	22.01	30.00
	44	5220	22.17	22.05	25.12	30.00
	48	5240	21.65	21.19	24.44	30.00
802.11an HT40	38	5190	16.32	16.09	19.22	30.00
	46	5230	21.82	22.67	25.28	30.00
802.11ac VHT20	36	5180	19.17	18.94	22.07	30.00
	44	5220	22.36	22.11	25.25	30.00
	48	5240	21.82	21.34	24.60	30.00
802.11ac VHT40	38	5190	16.35	16.16	19.27	30.00
	46	5230	21.93	22.78	25.39	30.00
802.11ac VHT80	42	5210	15.56	15.93	18.76	30.00

In the 5.8G Band

Modulation Type	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)	Power Limit (dBm)
			ANT 3	ANT 4		
802.11a	149	5745	21.82	22.32	25.09	30.00
	157	5785	21.89	22.63	25.29	30.00
	165	5825	22.38	22.53	25.47	30.00
802.11an HT20	149	5745	21.77	22.49	25.16	30.00
	157	5785	22.28	22.54	25.42	30.00
	165	5825	21.85	22.38	25.13	30.00
802.11an HT40	151	5755	21.79	22.21	25.02	30.00
	159	5795	21.31	22.34	24.87	30.00
802.11ac VHT20	149	5745	21.96	22.55	25.28	30.00
	157	5785	22.36	22.68	25.53	30.00
	165	5825	21.94	22.42	25.20	30.00
802.11ac VHT40	151	5755	21.83	22.25	25.06	30.00
	159	5795	21.9	22.36	25.15	30.00
802.11ac VHT80	155	5775	19.8	20.32	23.08	30.00

**Beamforming****In the 5.2G Band**

Modulation Type	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)	Power Limit (dBm)
			ANT 3	ANT 4		
802.11ac VHT20	36	5180	18.7	18.28	21.51	29.64
	44	5220	22.3	21.78	25.06	29.64
	48	5240	22.13	21.64	24.90	29.64
802.11ac VHT40	38	5190	15.71	16.56	19.17	29.64
	46	5230	20.43	20.56	23.51	29.64
802.11ac VHT80	42	5210	15.3	15.32	18.32	29.64

In the 5.8G Band

Modulation Type	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)	Power Limit (dBm)
			ANT 3	ANT 4		
802.11ac VHT20	149	5745	21.83	22.35	25.11	29.33
	157	5785	21.71	22.34	25.05	29.33
	165	5825	21.82	22.36	25.11	29.33
802.11ac VHT40	151	5755	22.26	22.65	25.47	29.33
	159	5795	22.36	22.69	25.54	29.33
802.11ac VHT80	155	5775	19.21	19.48	22.36	29.33



11. Output Power and PPSD

11.1. Test Limit

Output Power:

Frequency Band		Limit
☒	5.15~5.25GHz	
Operating Mode		
☐	Outdoor access point	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30degrees as measured from the horizon must not exceed 125 mW (21 dBm).
☒	Indoor access point	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
☐	Fixed point-to-point access points	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.
☐	Mobile and portable client devices	The maximum conducted output power over the frequency band of operation shall not exceed 250 mW (24dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.



Frequency Band		Limit
☐	5.25-5.35 GHz	The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
☐	5.470-5.725 GHz	
☒	5.725~5.85 GHz	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power.

PSD:

Frequency Band		Limit
☒	5.15~5.25GHz	
	Operating Mode	
☐	Outdoor access point	17 dBm/MHz
☒	Indoor access point	17 dBm/MHz
☐	Fixed point-to-point access points	17 dBm/MHz
☐	Mobile and portable client devices	11 dBm/MHz
☐	5.725~5.85 GHz	11 dBm/MHz
☐	5.470-5.725 GHz	11 dBm/MHz
☒	5.725~5.85 GHz	30 dBm/500kHz



11.2. Test Procedure

As an alternative to FCC KDB-789033, the EUT maximum conducted output power was Measured with an average power meter employing a video bandwidth greater than 6dB BW of the emission under test. Maximum conducted output power was read directly from the meter across all data rates, and across three channels within each sub-band. Special care was used to make sure that the EUT was transmitting in continuous mode. This method exceeds the limitations of FCC KDB-789033, and provides more accurate measurements.

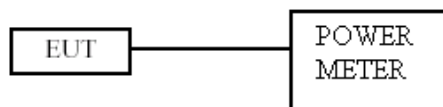
802.11an ($BW \leq 40\text{MHz}$) Maximum conducted output power using KDB 789033 section E)3)b) Method PM-G (Measurement using a gated RF average power meter)

Note: the power meter have a video bandwidth that is greater than or equal to the measurement bandwidth, (Anritsu/ MA2411B video bandwidth: 65MHz)

802.11ac ($BW=80\text{MHz}$) Maximum conducted output power using KDB 789033 section E)2)b) Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep).

When transmitted signals consist of two or more non-contiguous spectrum segments (e.g., 80+80 MHz mode) or when a single spectrum segment of a transmission crosses the boundary between two adjacent U-NII bands, KDB 644545 D01 section F) procedure is used for measurements.

11.3. Test Setup Layout



**11.4. Test Result and Data**

Temperature: 21°C

Humidity: 58%

Test Date: Mar. 08, 2017

Non Beamforming**In the 5.2G Band**

Modulation Type	CH	Freq. (MHz)	Meas PPSS (dBm/MHz)		Sum chain (dBm)	Duty Cycle CF(dB)	Total Corr'd PPSS (dBm/MHz)	PPSS Limit (dBm/MHz)
			ANT 3	ANT 4				
802.11a	36	5180	5.85	6.37	9.13	0.00	9.13	16.64
	44	5220	9.28	9.11	12.21	0.00	12.21	16.64
	48	5240	8.13	8.18	11.17	0.00	11.17	16.64
802.11ac VHT20	36	5180	6.00	5.74	8.88	0.00	8.88	16.64
	44	5220	8.83	8.69	11.77	0.00	11.77	16.64
	48	5240	8.24	8.20	11.23	0.00	11.23	16.64
802.11ac VHT40	38	5190	0.06	-0.45	2.82	0.00	2.82	16.64
	46	5230	6.21	5.83	9.03	0.00	9.03	16.64
802.11ac VHT80	42	5210	-3.68	-4.06	-0.86	0.20	-0.66	16.64

In the 5.8G Band

Modulation Type	CH	Freq. (MHz)	Meas PPSS (dBm/MHz)		Sum chain (dBm)	Duty Cycle CF(dB)	10log(500KHz /RBW) CF (dB)	Total Corr'd PPSS (dBm/MHz)	PPSS Limit (dBm/MHz)
			ANT 3	ANT 4					
802.11a	149	5745	8.75	9.01	11.89	0.00	-3.01	8.88	29.33
	157	5785	9.14	9.24	12.20	0.00	-3.01	9.19	29.33
	165	5825	9.19	9.35	12.28	0.00	-3.01	9.27	29.33
802.11ac VHT20	149	5745	8.43	8.51	11.48	0.00	-3.01	8.47	29.33
	157	5785	8.64	8.68	11.67	0.00	-3.01	8.66	29.33
	165	5825	8.97	8.92	11.96	0.00	-3.01	8.95	29.33
802.11ac VHT40	155	5755	5.34	4.72	8.05	0.00	-3.01	5.04	29.33
	159	5795	5.65	5.23	8.46	0.00	-3.01	5.45	29.33
802.11ac VHT80	155	5775	-0.14	-0.29	2.80	0.20	-3.01	-0.02	29.33

**Beamforming****In the 5.2G Band**

Modulation Type	CH	Freq. (MHz)	Meas PPSS (dBm/MHz)		Sum chain (dBm)	Duty Cycle CF(dB)	Total Corr'd PPSS (dBm/MHz)	PPSS Limit (dBm/MHz)
			ANT 3	ANT 4				
802.11ac VHT20	36	5180	4.31	4.65	7.49	0.41	7.90	16.64
	44	5220	8.06	7.73	10.91	0.41	11.32	16.64
	48	5240	7.84	7.64	10.75	0.41	11.16	16.64
802.11ac VHT40	38	5190	-0.82	-0.83	2.19	0.36	2.55	16.64
	46	5230	3.26	3.01	6.15	0.36	6.51	16.64
802.11ac VHT80	42	5210	-4.82	-4.42	-1.61	0.39	-1.22	16.64

In the 5.8G Band

Modulation Type	CH	Freq. (MHz)	Meas PPSS (dBm/MHz)		Sum chain (dBm)	Duty Cycle CF(dB)	10log(500KHz /RBW) CF (dB)	Total Corr'd PPSS (dBm/MHz)	PPSS Limit (dBm/MHz)
			ANT 3	ANT 4					
802.11ac VHT20	149	5745	7.38	8.07	10.75	0.41	-3.01	8.15	29.33
	157	5785	6.99	7.35	10.18	0.41	-3.01	7.58	29.33
	165	5825	7.64	8.40	11.05	0.41	-3.01	8.45	29.33
802.11ac VHT40	155	5755	4.38	4.79	7.60	0.36	-3.01	4.95	29.33
	159	5795	4.55	4.89	7.73	0.36	-3.01	5.08	29.33
802.11ac VHT80	155	5775	-0.63	-0.33	2.53	0.39	-3.01	-0.09	29.33

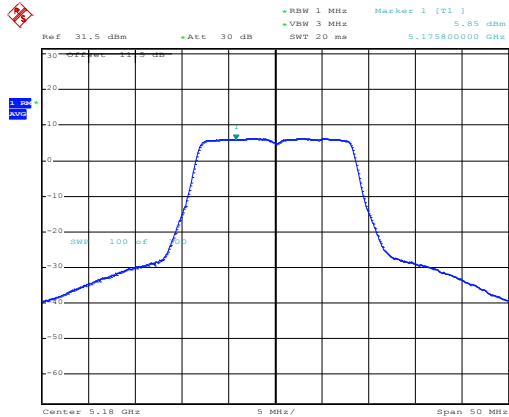
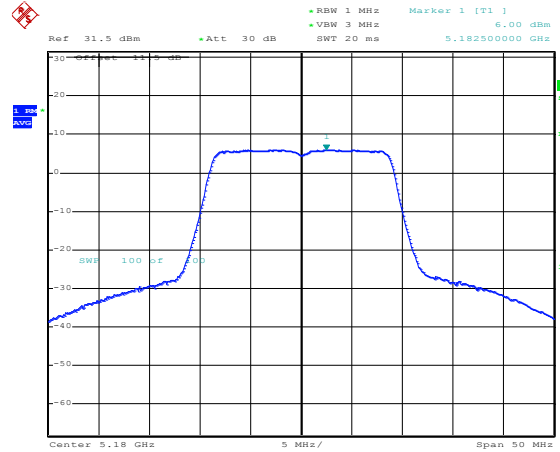
**Non Beamforming**

5.2G Band

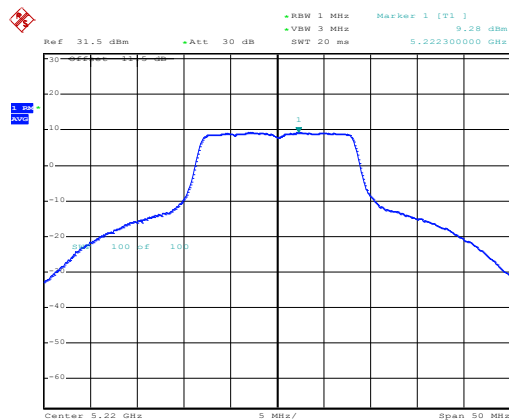
ANT 3

Modulation Standard: 802.11a (6Mbps)

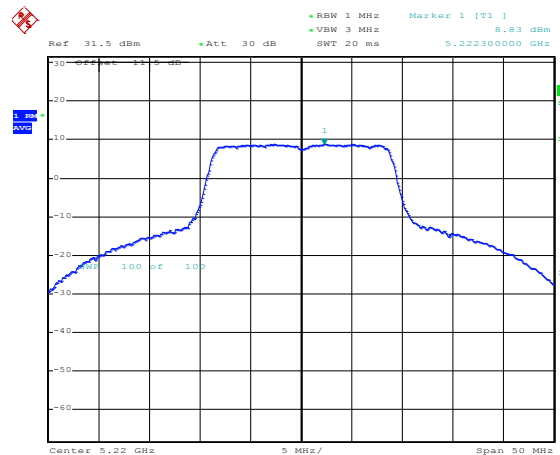
CH36

Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH36

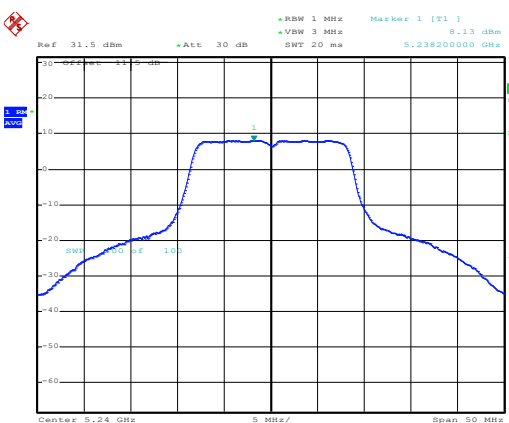
CH44



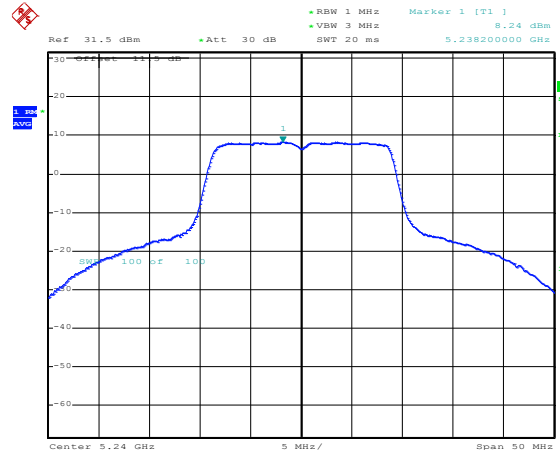
CH44



CH48



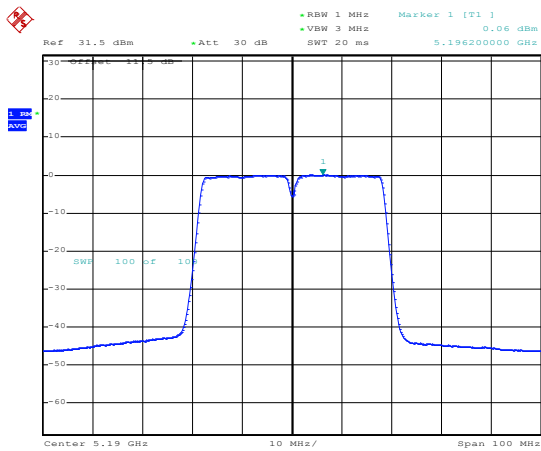
CH48



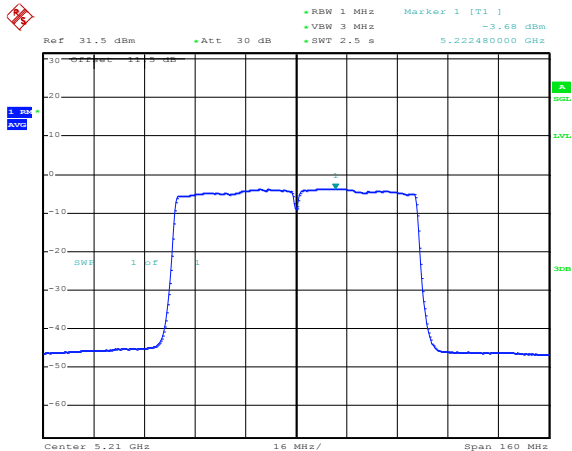


ANT 3

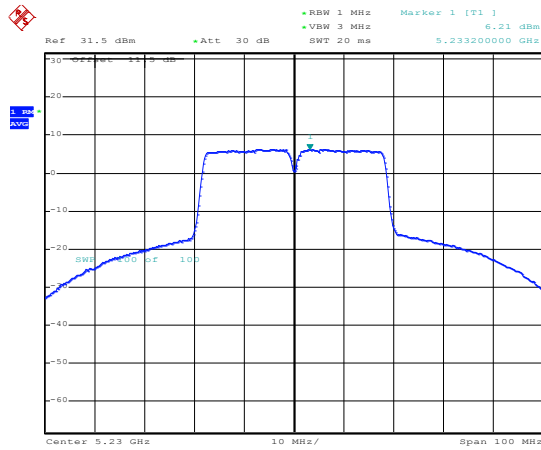
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH38



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH42

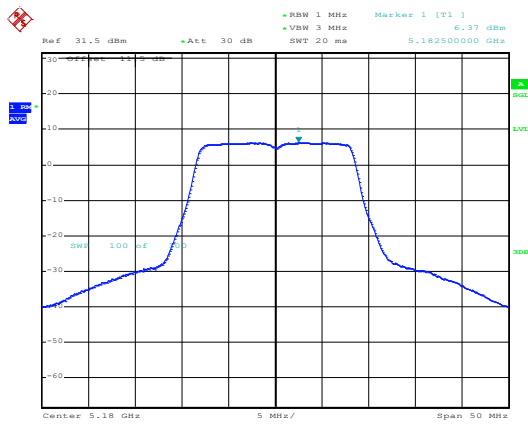


CH46

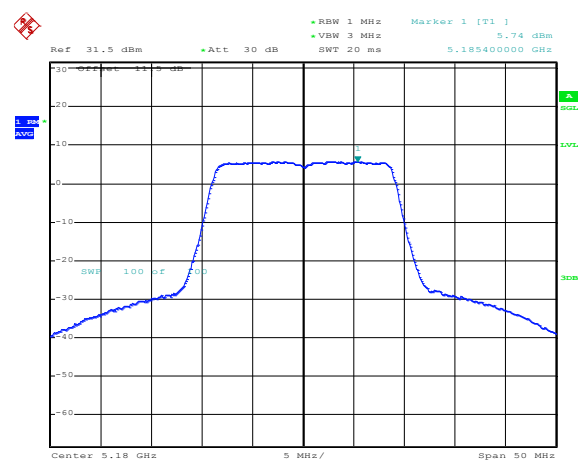




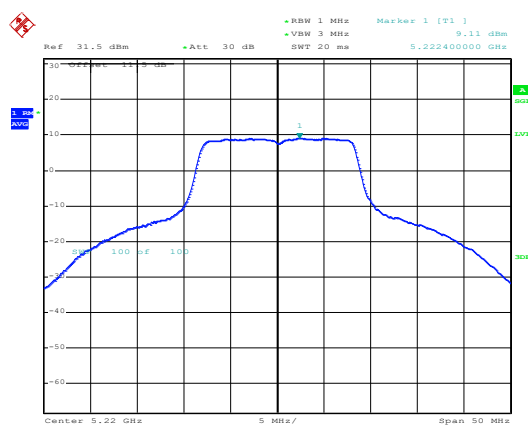
ANT 4
Modulation Standard: 802.11a (6Mbps)
CH36



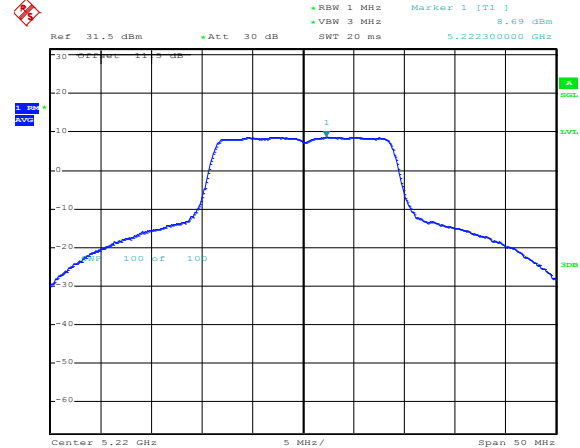
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH36



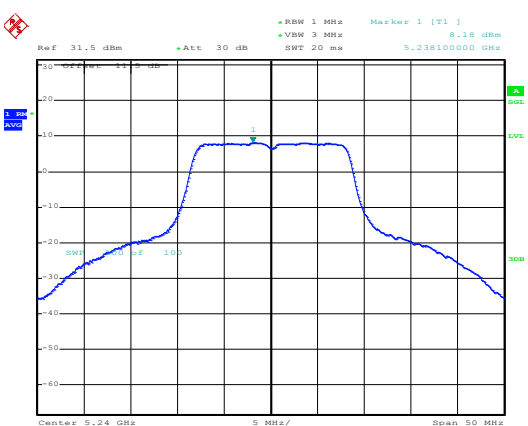
CH44



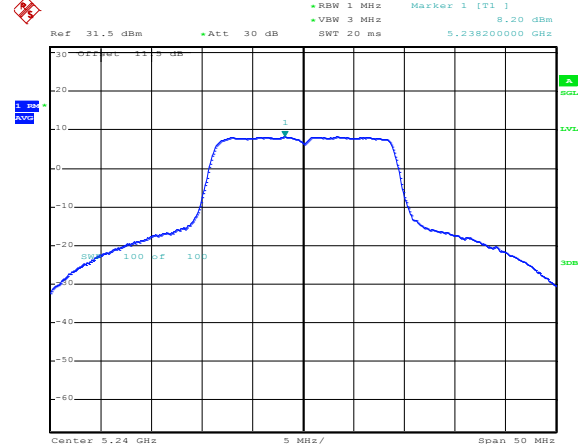
CH44



CH48



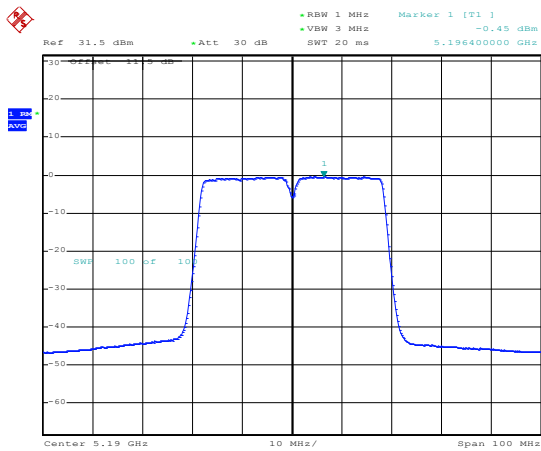
CH48



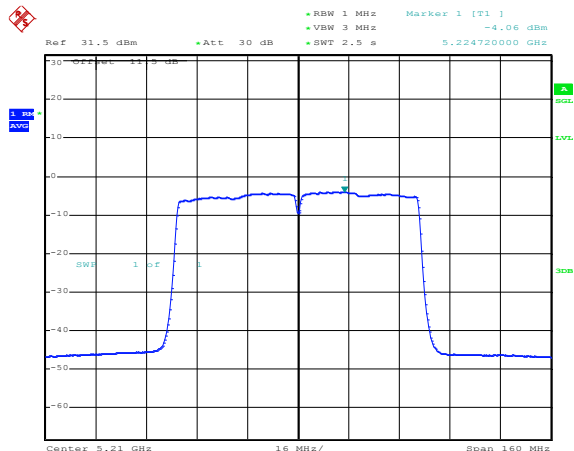


ANT 4

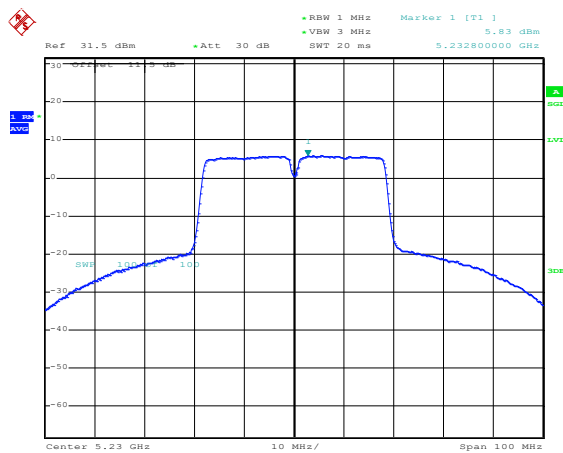
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH38



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH42

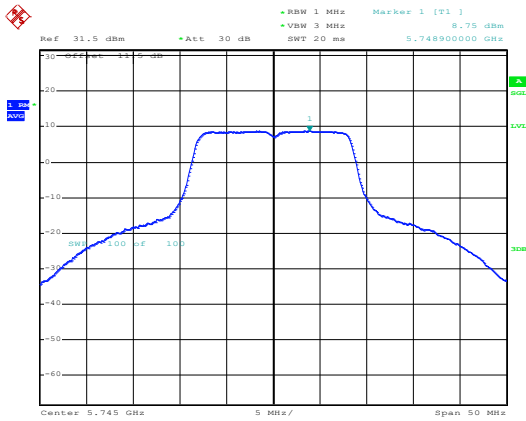


CH46

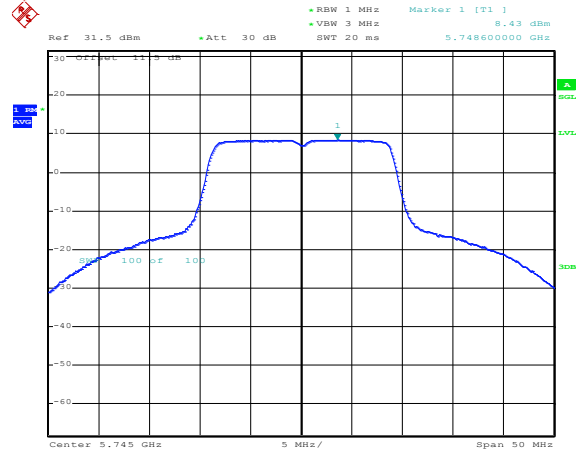




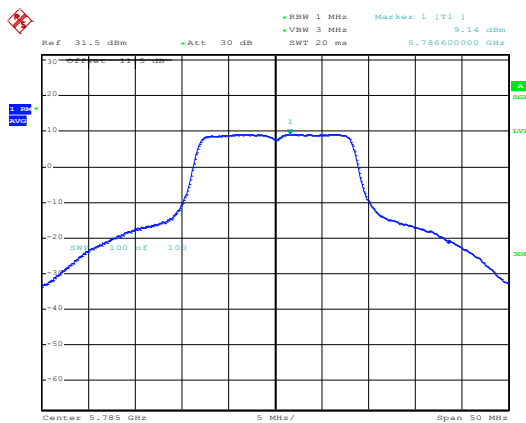
5.8G Band
ANT 3
Modulation Standard: 802.11a (6Mbps)
CH149



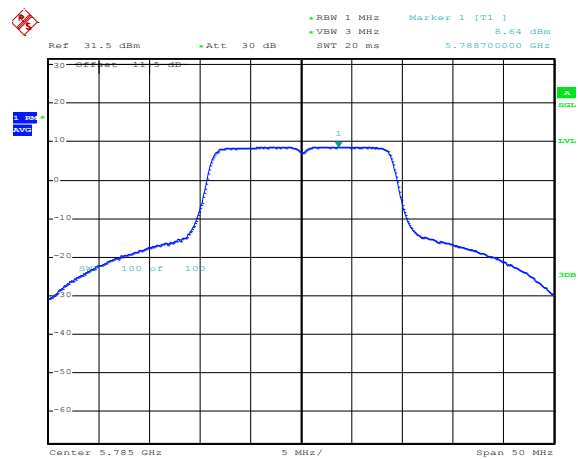
Modulation Standard: 802.11ac, VHT20 (6.5Mbps)
CH149



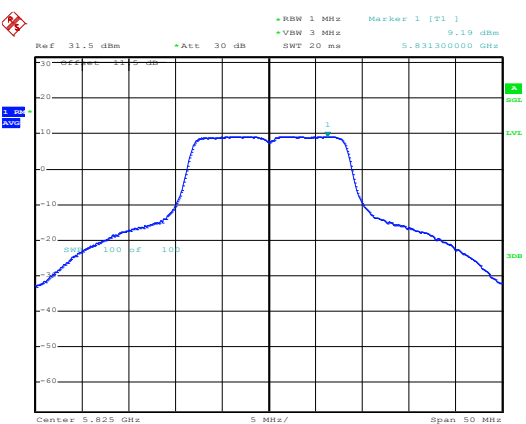
CH157



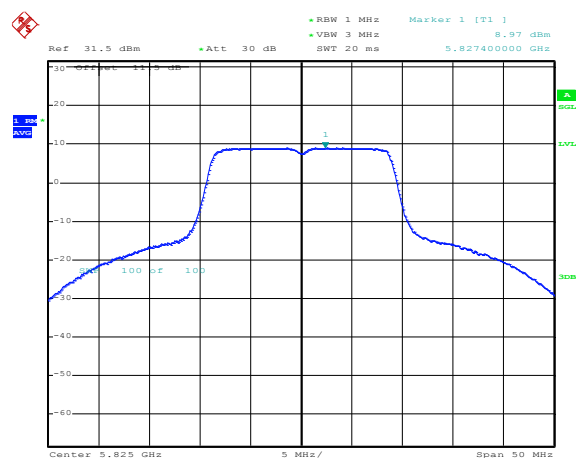
CH157



CH165



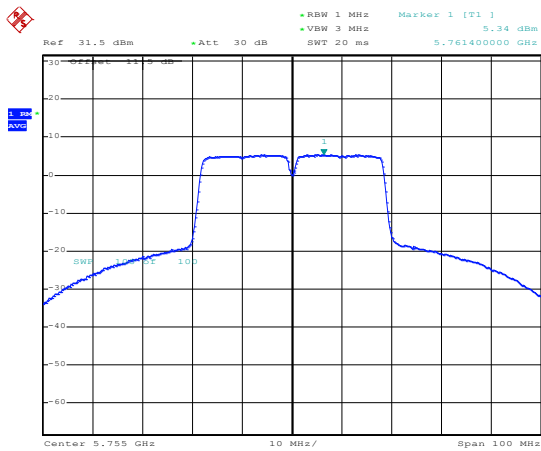
CH165



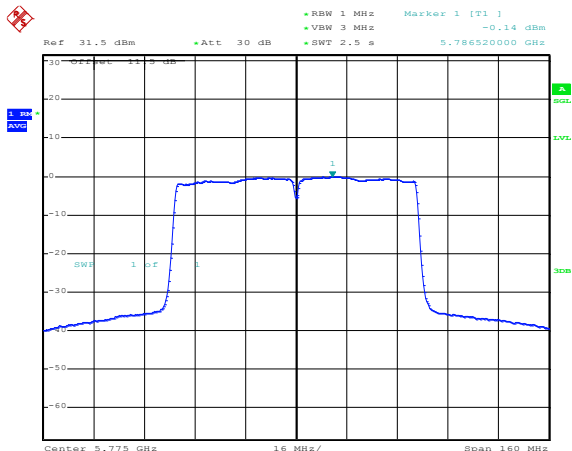


ANT 3

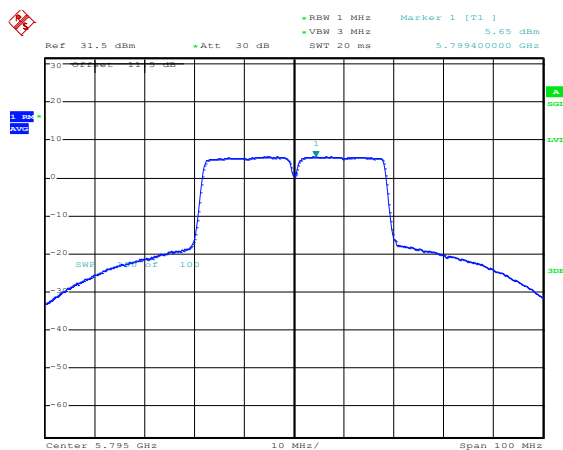
Modulation Standard: 802.11ac, VHT40 (13.5Mbps)
CH151



Modulation Standard: 802.11ac, VHT80 (29.3Mbps)
CH155

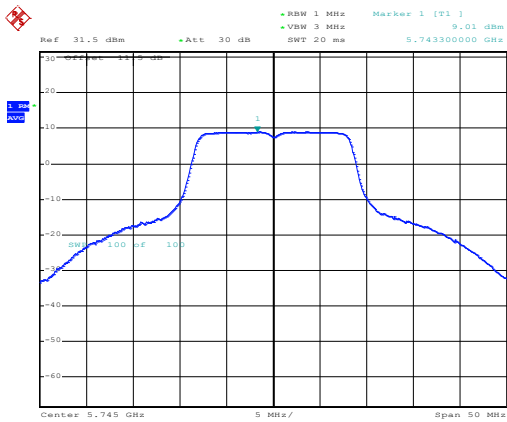


CH159

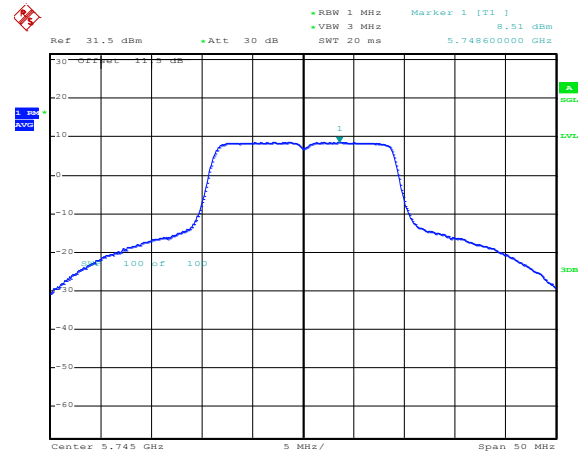




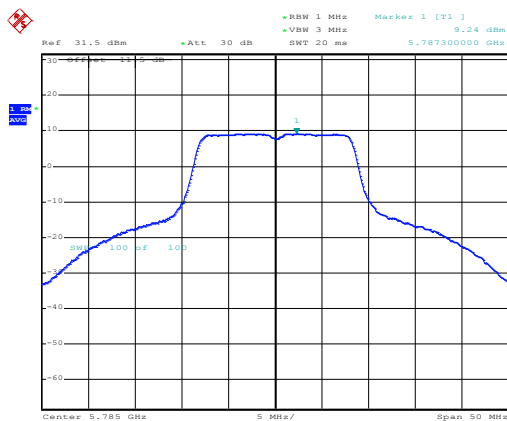
ANT 4
Modulation Standard: 802.11a (6Mbps)
CH149



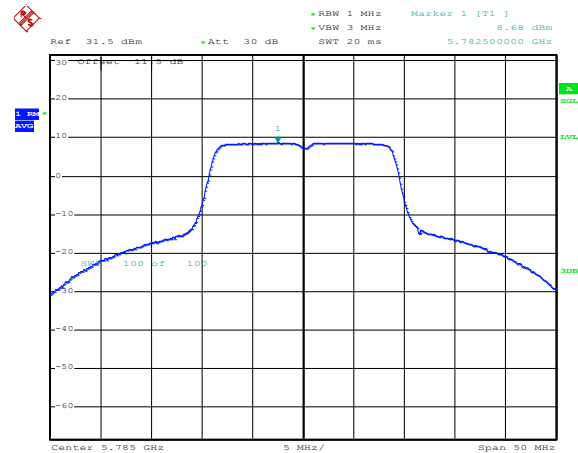
Modulation Standard: 802.11ac, VHT20 (6.5Mbps)
CH149



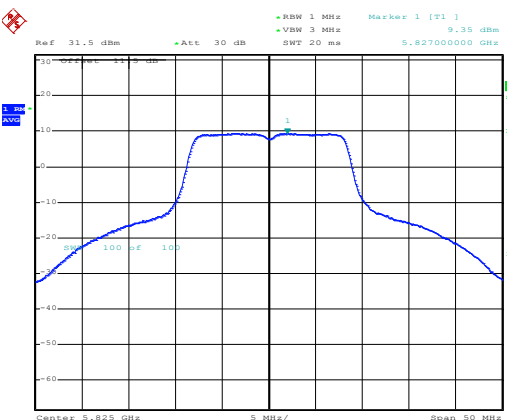
CH157



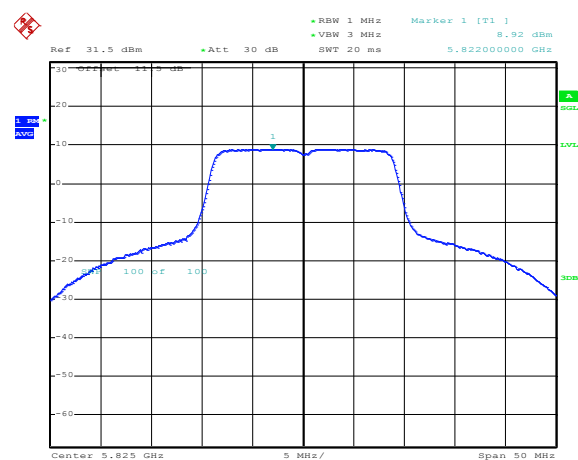
CH157



CH165



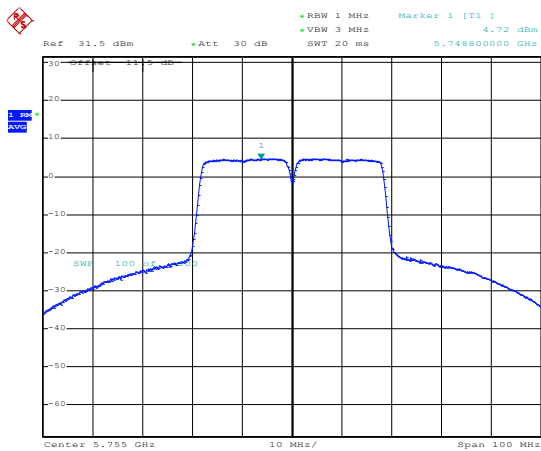
CH165



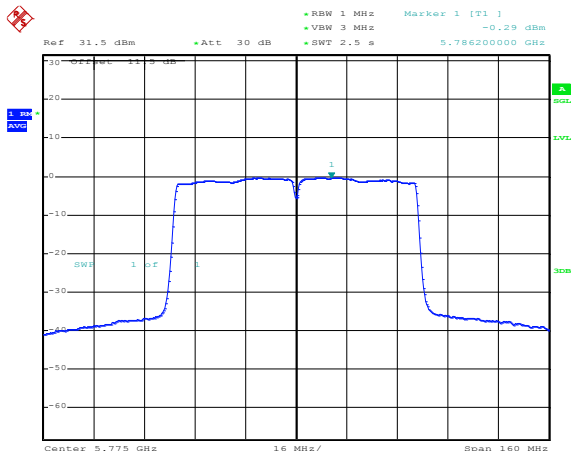


ANT 4

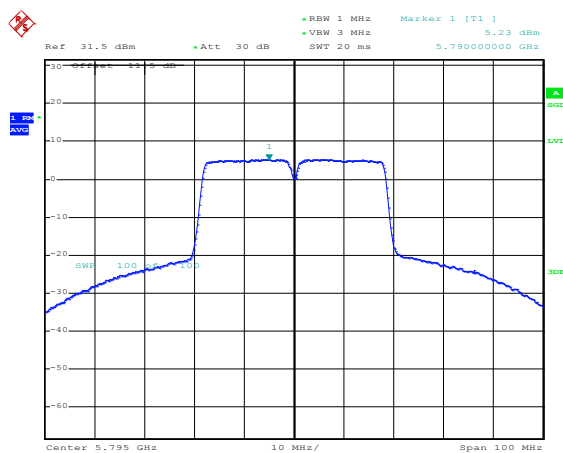
Modulation Standard: 802.11ac, VHT40 (13.5Mbps)
CH151



Modulation Standard: 802.11ac, VHT80 (29.3Mbps)
CH155



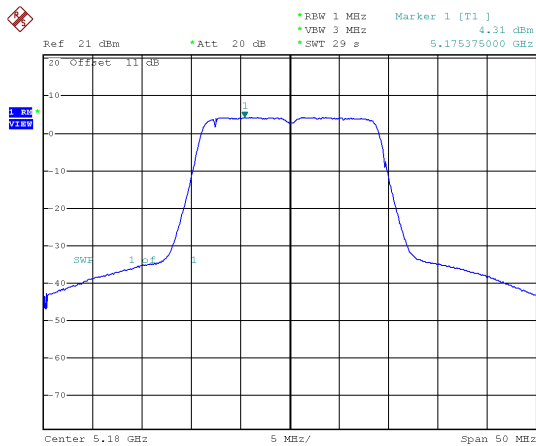
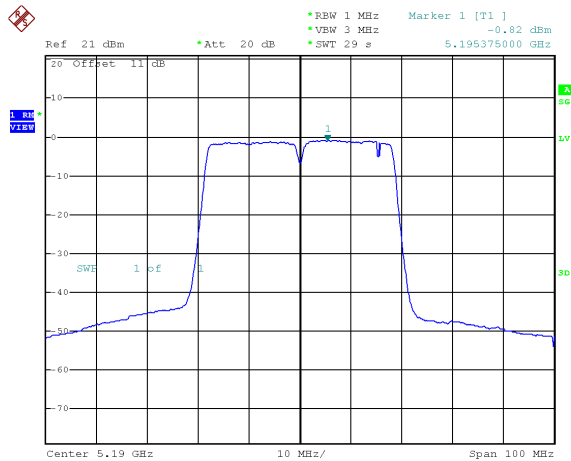
CH159



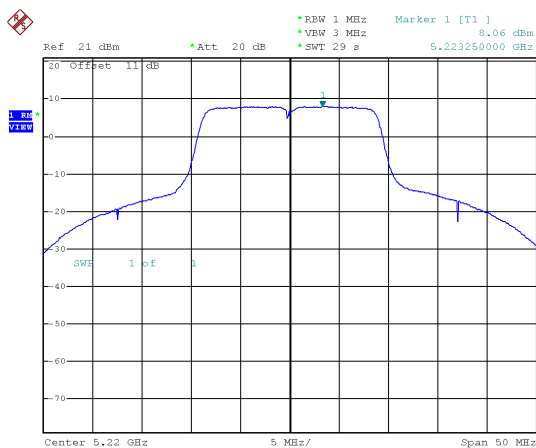
**Beamforming**

5.2G Band

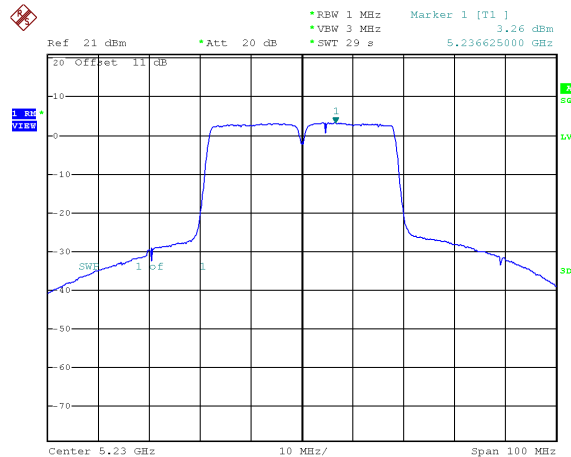
ANT 3

Modulation Standard: 802.11ac, VHT20 (6.5Mbps)
CH36Modulation Standard: 802.11ac, VHT40 (13.5Mbps)
CH38

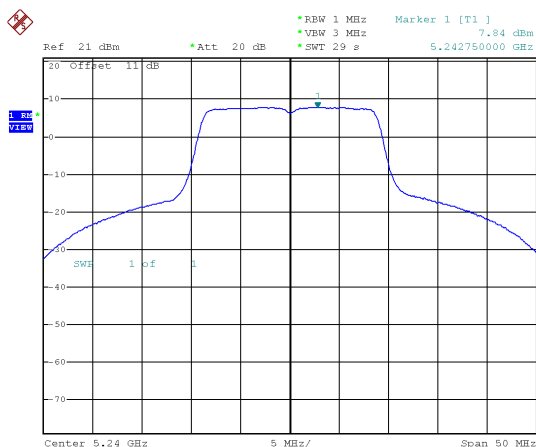
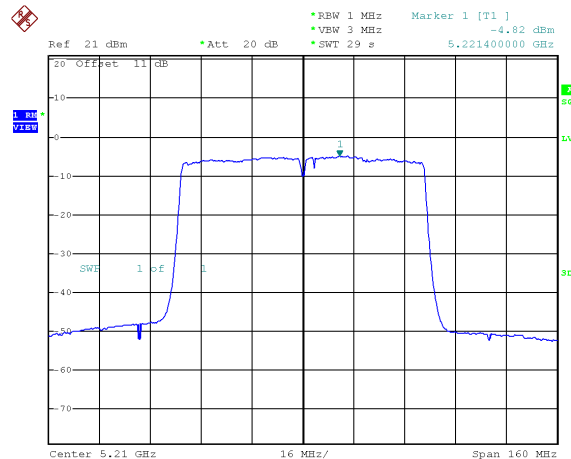
CH44



CH46

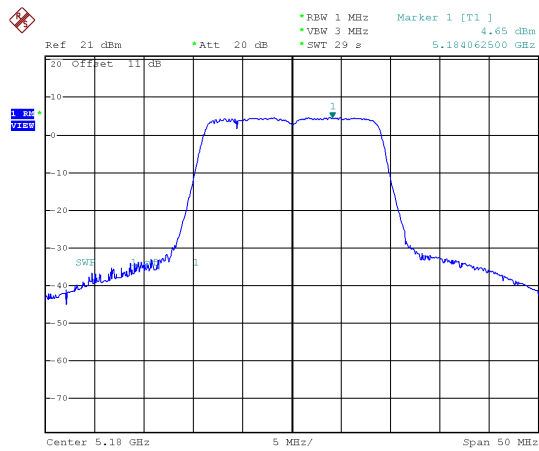
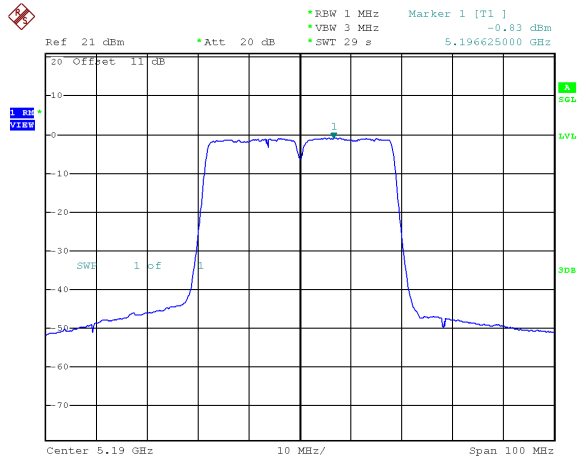


CH48

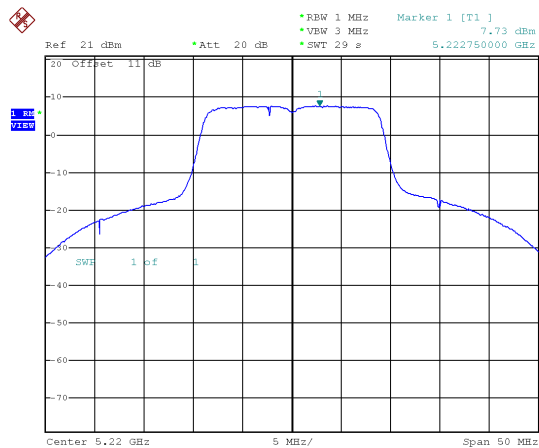
Modulation Standard: 802.11ac, VHT80 (29.3Mbps)
CH42



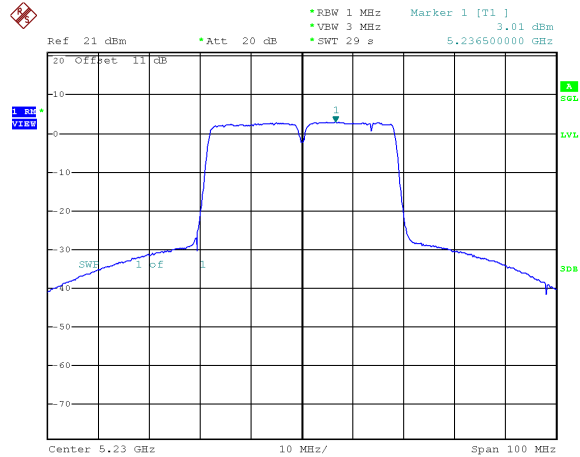
ANT 4

Modulation Standard: 802.11ac, VHT20 (6.5Mbps)
CH36Modulation Standard: 802.11ac, VHT40 (13.5Mbps)
CH38

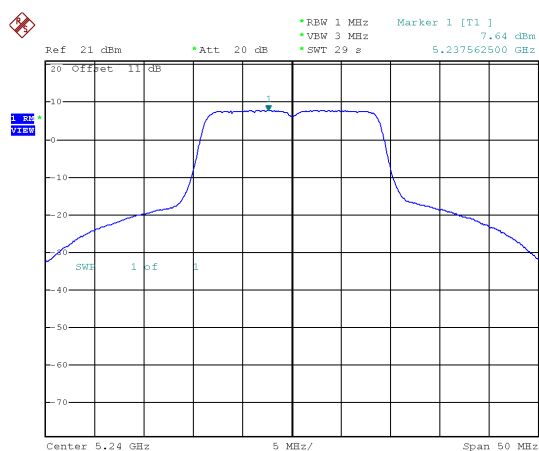
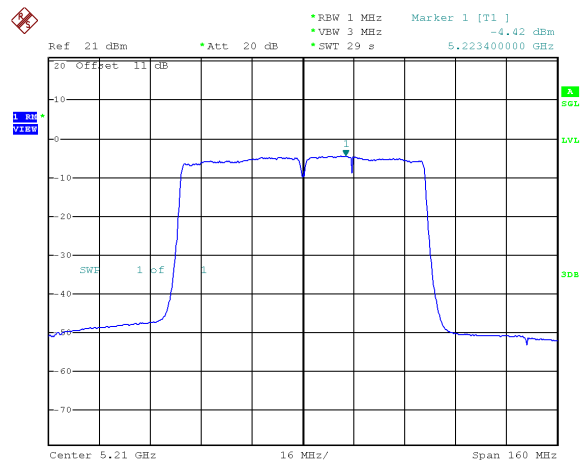
CH44



CH46



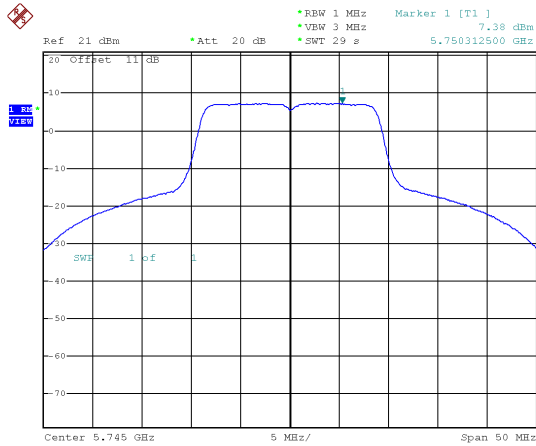
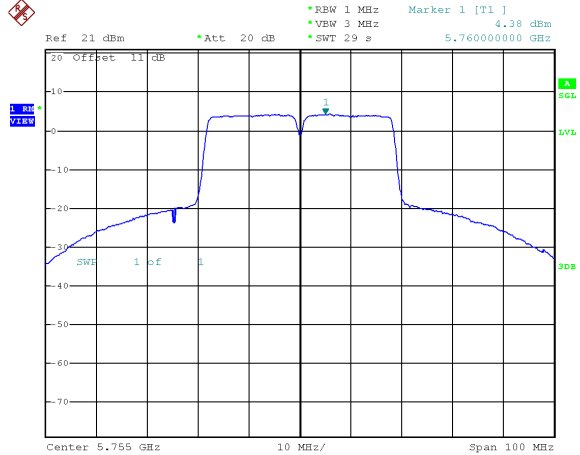
CH48

Modulation Standard: 802.11ac, VHT80 (29.3Mbps)
CH42

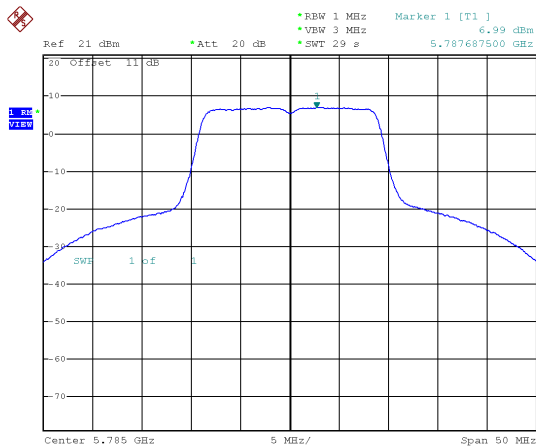


5.8G Band

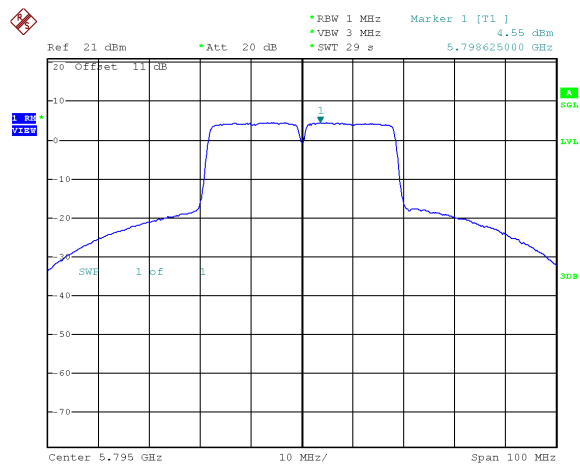
ANT 3

Modulation Standard: 802.11ac, VHT20 (6.5Mbps)
CH149Modulation Standard: 802.11ac, VHT40 (13.5Mbps)
CH151

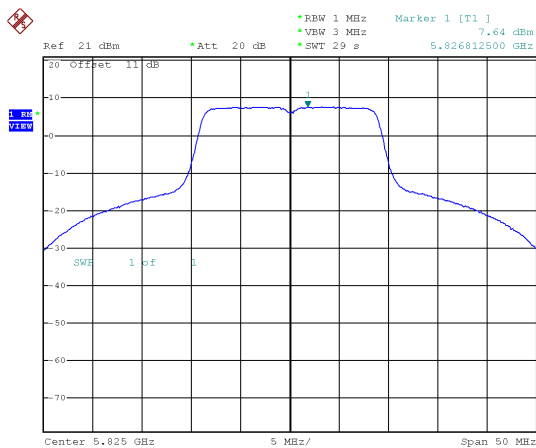
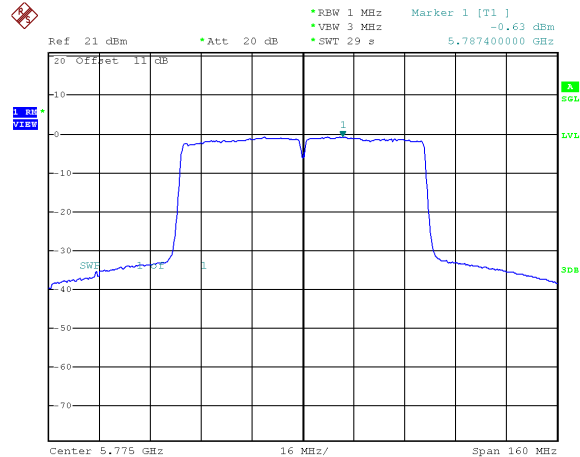
CH157



CH159



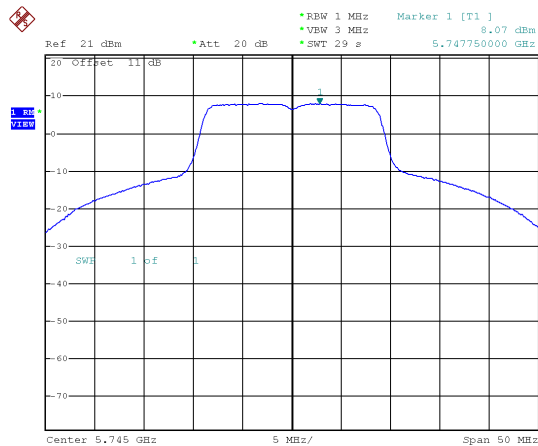
CH165

Modulation Standard: 802.11ac, VHT80 (29.3Mbps)
CH155

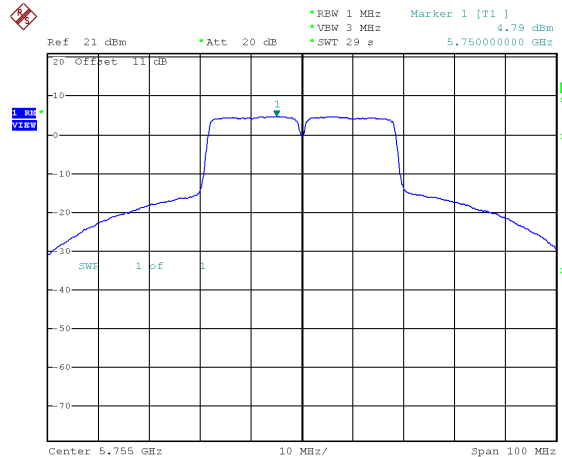


ANT 4

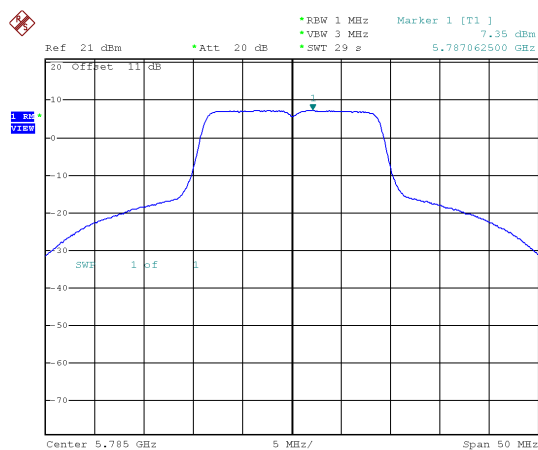
Modulation Standard: 802.11ac, VHT20 (6.5Mbps)
CH149



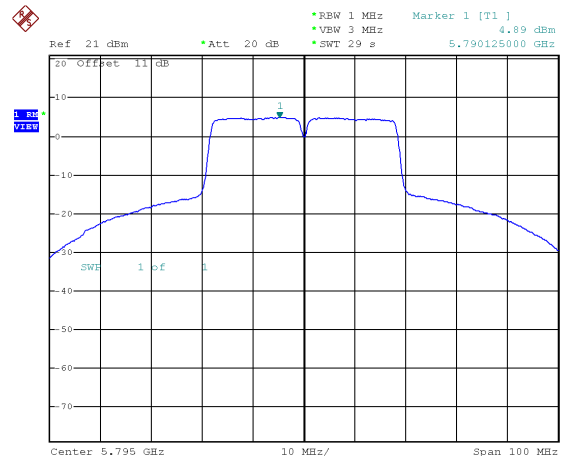
Modulation Standard: 802.11ac, VHT40 (13.5Mbps)
CH151



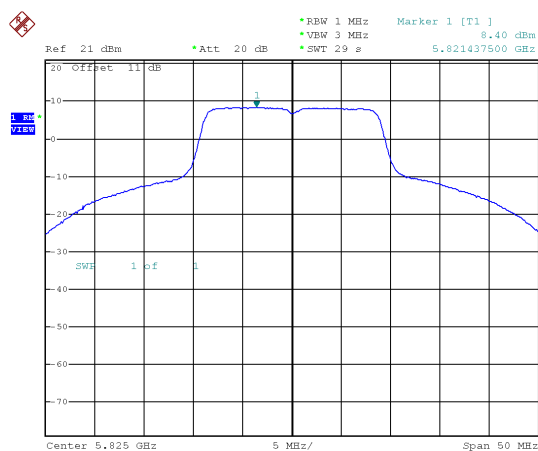
CH157



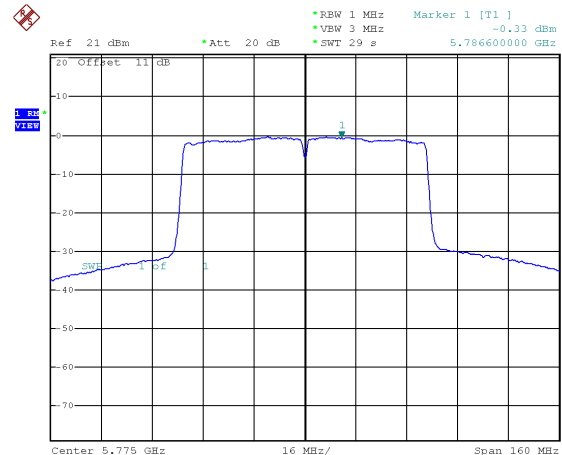
CH159



CH165



Modulation Standard: 802.11ac, VHT80 (29.3Mbps)
CH155



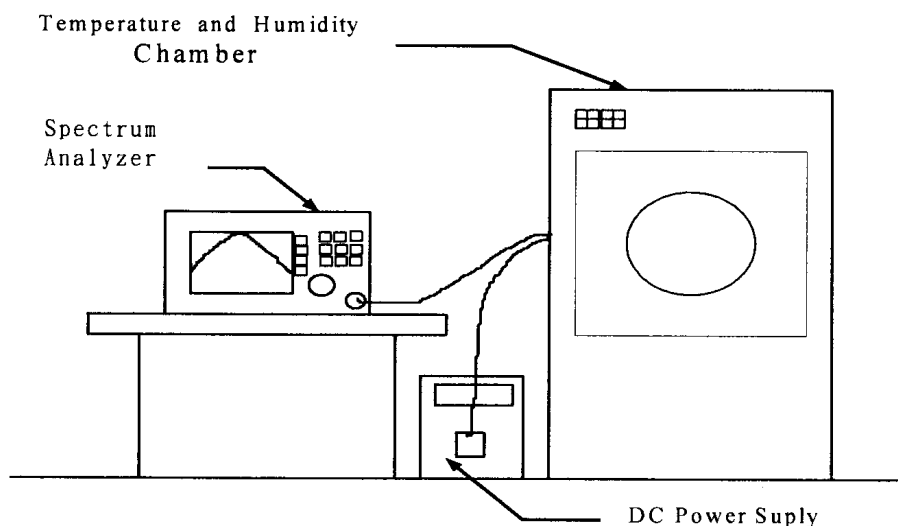


12. Frequency Stability

12.1. Test Procedure

1. The EUT was placed inside the Temperature and Humidity chamber.
2. The transmitter output was connected to spectrum analyzer.
3. Turn the EUT on and couple its output to a spectrum analyzer.
4. Turn the EUT off and set the chamber to the highest temperature specified.
5. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
6. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
7. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

12.2. Test Setup Layout



**12.3. Test Result and Data**

Temperature: 21°C

Humidity: 58%

Test Date: Mar. 08, 2017

Non Beamforming

Operating frequency: 5180 MHz							
Temp	Power supply	2 minute		5 minute		10 minute	
(°C)	(V)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
55	102	5239.2198	-0.014889	5239.6834	-0.006041	5239.4347	-0.107874
	120	5239.5427	-0.008728	5239.2036	-0.015198	5239.9531	-0.008944
	138	5239.8513	-0.002838	5239.4370	-0.010745	5239.1600	-0.160304
40	102	5239.3755	-0.011918	5239.8583	-0.002703	5239.4167	-0.111320
	120	5239.3735	-0.011955	5239.2669	-0.013991	5239.2863	-0.136202
	138	5239.4386	-0.010714	5239.1404	-0.016405	5239.8544	-0.027787
30	102	5239.3627	-0.012162	5239.4929	-0.009678	5239.5663	-0.082769
	120	5239.9713	-0.000547	5239.7121	-0.005494	5239.3435	-0.125293
	138	5239.1798	-0.015653	5239.7204	-0.005337	5239.2377	-0.145477
20	102	5239.8320	-0.003207	5239.8999	-0.001910	5239.9744	-0.004883
	120	5239.0707	-0.017735	5239.4131	-0.011200	5239.8099	-0.036283
	138	5239.0075	-0.018941	5239.6609	-0.006471	5239.9789	-0.004027
10	102	5239.1814	-0.015622	5239.0377	-0.018365	5239.6467	-0.067418
	120	5239.7081	-0.005570	5239.3825	-0.011784	5239.1638	-0.159586
	138	5239.4827	-0.009871	5239.2336	-0.014626	5239.1358	-0.164924
0	102	5239.0936	-0.017298	5239.2311	-0.014674	5239.2652	-0.140234
	120	5239.7695	-0.004399	5239.6037	-0.007563	5239.4309	-0.108615
	138	5239.2149	-0.014983	5239.1273	-0.016655	5239.4573	-0.103573
-10	102	5239.4400	-0.010687	5239.8924	-0.002054	5239.1274	-0.166531
	120	5239.5851	-0.007918	5239.5451	-0.008681	5239.4531	-0.104364
	138	5239.4454	-0.010584	5239.8200	-0.003436	5239.4462	-0.105690
-20	102	5239.0118	-0.018860	5239.0138	-0.018820	5239.1510	-0.162014
	120	5239.2906	-0.013539	5239.0624	-0.017893	5239.6049	-0.075405
	138	5239.8143	-0.003544	5239.6826	-0.006057	5239.2603	-0.141167
-30	102	5239.0640	-0.017862	5239.9558	-0.000843	5239.4029	-0.113952
	120	5239.4310	-0.010860	5239.4791	-0.009940	5239.3200	-0.129766
	138	5239.2895	-0.013559	5239.8533	-0.002799	5239.2092	-0.150914

Limit:

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

**Beamforming**

Operating frequency: 5180 MHz							
Temp	Power supply	2 minute		5 minute		10 minute	
(°C)	(V)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
55	102	5744.3750	-0.010880	5744.7892	-0.003669	5744.6845	-0.054920
	120	5744.8296	-0.002966	5744.5246	-0.008275	5744.9034	-0.016817
	138	5744.8146	-0.003227	5744.7888	-0.003676	5744.8863	-0.019798
40	102	5744.9219	-0.001360	5744.5046	-0.008623	5744.3759	-0.108639
	120	5744.9931	-0.000121	5744.7446	-0.004446	5744.5345	-0.081019
	138	5744.6011	-0.006943	5744.4171	-0.010145	5744.1142	-0.154190
30	102	5744.2842	-0.012459	5744.9812	-0.000328	5744.9098	-0.015694
	120	5744.5086	-0.008554	5744.4333	-0.009864	5744.7178	-0.049126
	138	5744.8663	-0.002327	5744.7833	-0.003772	5744.7975	-0.035249
20	102	5744.6858	-0.005469	5744.9206	-0.001381	5744.9059	-0.016373
	120	5744.7383	-0.004555	5744.0420	-0.016675	5744.5898	-0.071400
	138	5744.9961	-0.000068	5744.0586	-0.016387	5744.5848	-0.072275
10	102	5744.2176	-0.013618	5744.9482	-0.000902	5744.4043	-0.103693
	120	5744.1385	-0.014996	5744.8652	-0.002347	5744.1178	-0.153552
	138	5744.2861	-0.012427	5744.0222	-0.017020	5744.9409	-0.010295
0	102	5744.5850	-0.007223	5744.9031	-0.001686	5744.8657	-0.023383
	120	5744.0142	-0.017159	5744.1971	-0.013976	5744.8393	-0.027964
	138	5744.6739	-0.005677	5744.0352	-0.016794	5744.9407	-0.010323
-10	102	5744.8732	-0.002207	5744.3099	-0.012012	5744.9063	-0.016313
	120	5744.9866	-0.000233	5744.1766	-0.014333	5744.2598	-0.128844
	138	5744.2094	-0.013761	5744.6954	-0.005303	5744.5293	-0.081924
-20	102	5744.5127	-0.008481	5744.8946	-0.001835	5744.3371	-0.115390
	120	5744.4320	-0.009887	5744.7735	-0.003943	5744.7357	-0.046001
	138	5744.9335	-0.001158	5744.7386	-0.004550	5744.6043	-0.068878
-30	102	5744.1125	-0.015448	5744.8481	-0.002645	5744.8779	-0.021257
	120	5744.0904	-0.015832	5744.5958	-0.007036	5744.9227	-0.013462
	138	5744.2449	-0.013144	5744.6329	-0.006390	5744.3954	-0.105240

Limit:

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.



13. Automatically Discontinue Transmission

13.1.Limit of Automatically Discontinue Transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

13.2.Test Result of Automatically Discontinue Transmission

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.