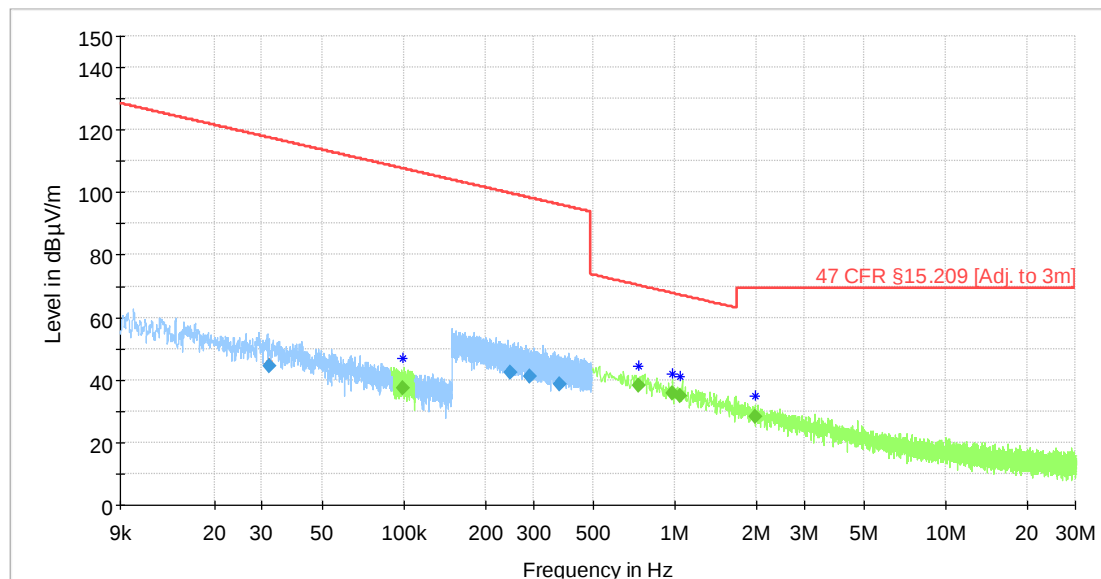


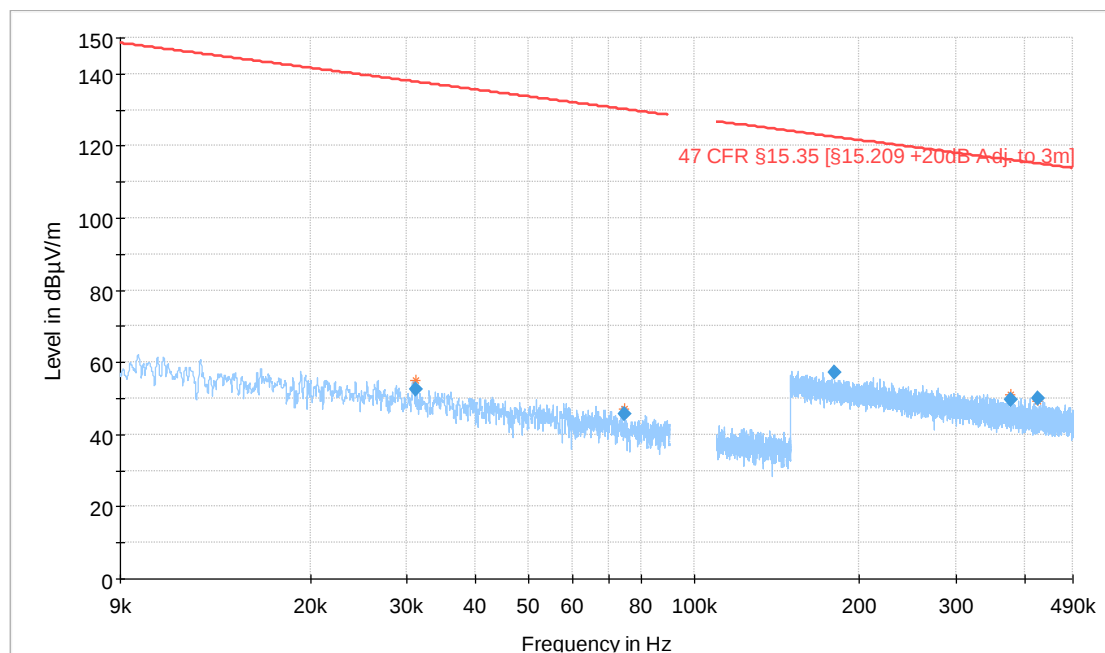
Test mode condition	Proprietary radio 2400 MHz Traffic Mode - Low Channel (Channel 2 – 2402 MHz)	
Antenna orientation	Loop Antenna Perpendicular to Axis	
Detector	Quasi-Peak & Average	
Sweep frequency	9 kHz-30 MHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Joel Efraimsson	Date: 2020.06.08
Environmental conditions	Temperature: 20,6 °C	Humidity: 42,4 %
Chamber details	Chamber: SAC 5	



- Preview Result 2-PK+
- Critical_Freqs PK+
- 47 CFR §15.209 [Adj. to 3m]
- Final_Result QPK
- QuasiPeak-QPK (Single)
- Preview Result 1-AVG
- Critical_Freqs AVG
- Final_Result AVG
- MaxPeak-PK+ (Single)
- Average-AVG (Single)

Frequency (MHz)	Average (dBµV/m)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)
0.248505	42.52	---	99.7	57.17	1000	9	100	70	10.6
0.290374	40.96	---	98.35	57.38	1000	9	100	247	10.5
0.736495	---	38.43	70.26	31.83	1000	9	100	205	10.7
0.978076	---	35.78	67.8	32.01	1000	9	100	230	10.8
1.0402	---	35.04	67.26	32.23	1000	9	100	292	10.8
1.985615	---	28.39	69.54	41.16	1000	9	100	292	10.9

Test mode condition	Proprietary radio 2400 MHz Traffic Mode - Low Channel (Channel 2 – 2402 MHz)	
Antenna orientation	Loop Antenna Parallel to Floor	
Detector	Peak	
Sweep frequency	9 kHz - 490 kHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Joel Efraimsson	Date: 2020.06.11
Environmental conditions	Temperature: 21,7 °C	Humidity: 41,8 %
Chamber details	Chamber: SAC 5	

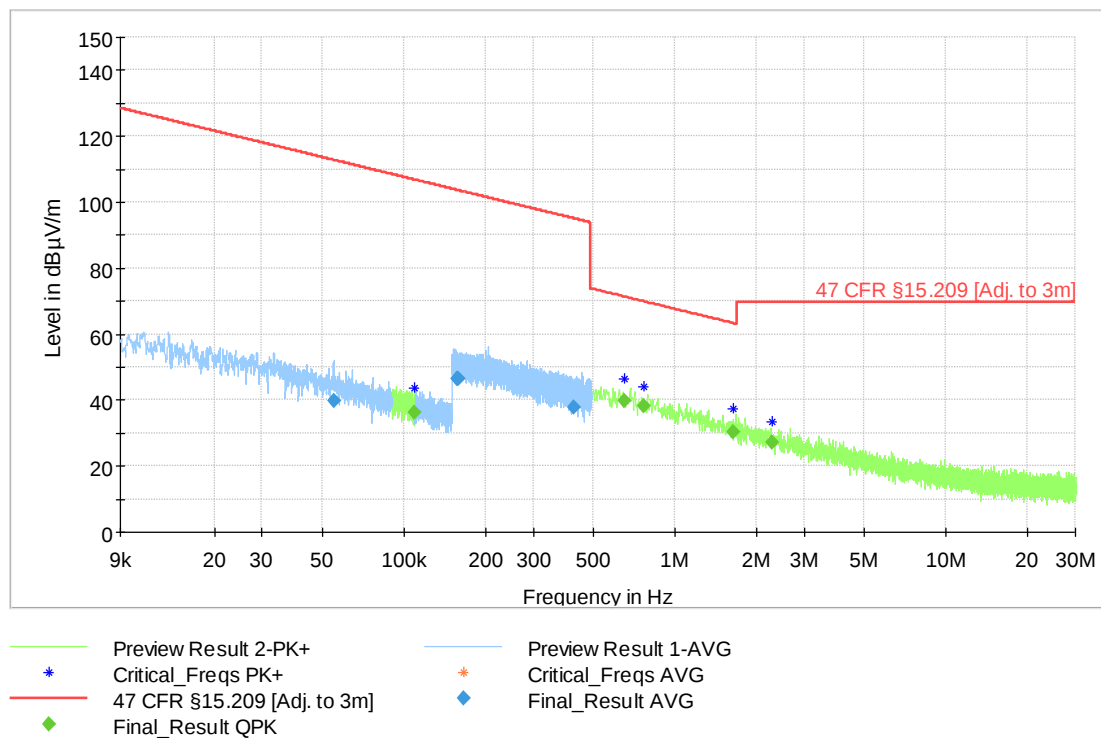


— Preview Result 1-PK+
— 47 CFR §15.35 [§15.209 +20dB Adj. to 3m]

★ Critical_Freqs PK+
◆ Final_Result PK+

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)
0.031048	52.60	137.76	85.16	1000.0	0.200	100.0	128.0	14.7
0.074608	45.69	130.15	84.46	1000.0	0.200	100.0	247.0	11.8
0.179716	57.08	122.51	65.43	1000.0	9.000	100.0	68.0	10.8
0.377037	49.61	116.08	66.47	1000.0	9.000	100.0	150.0	10.4
0.423080	49.88	115.08	65.20	1000.0	9.000	100.0	218.0	10.4

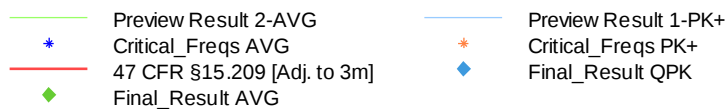
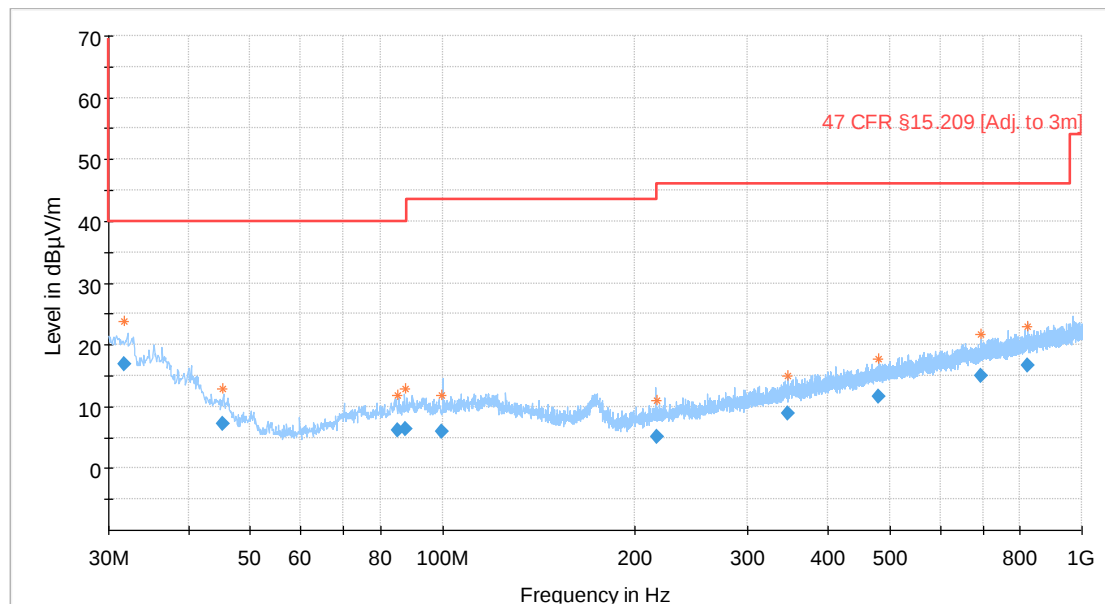
Test mode condition	Proprietary radio 2400 MHz Traffic Mode - Low Channel (Channel 2 – 2402 MHz)	
Antenna orientation	Loop Antenna Parallel to Floor	
Detector	Quasi-Peak & Average	
Sweep frequency	9 kHz-30 MHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Joel Efraimsson	Date: 2020.06.11
Environmental conditions	Temperature: 21,7 °C	Humidity: 41,8 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	Average (dBµV/m)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
0.157531	46.62	---	103.66	57.04	1000	9	100	230	10.9
0.1595	46.52	---	103.55	57.03	1000	9	100	219	10.9
0.652159	---	39.83	71.32	31.48	1000	9	100	310	10.6
0.771606	---	38.22	69.86	31.64	1000	9	100	202	10.7
1.637818	---	30.35	63.32	32.96	1000	9	100	293	10.9
2.27582	---	27.03	69.54	42.51	1000	9	100	95	10.9

30 MHz – 1 GHz

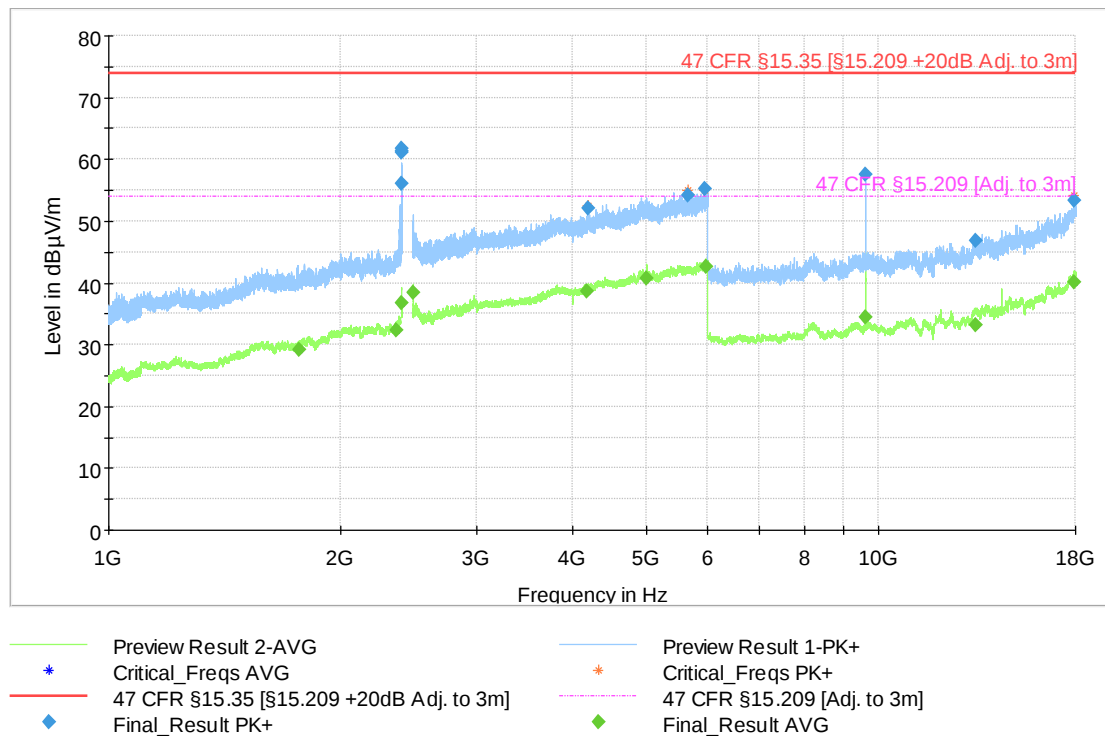
Test mode condition	Proprietary radio 2400 MHz Traffic Mode - Low Channel (Cannel 2 – 2402 MHz)	
Antenna orientation	Horizontal and vertical	
Sweep frequency	30 MHz-1 GHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-001	
Ancillary Equipment	None	
Test Engineer	Fariborz Abasi	Date: 2020.06.02
Environmental conditions	Temperature: 19.8 °C	Humidity: 47.4 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
31.7074	16.88	---	40	23.12	1000	120	281	H	247
45.21444	7.2	---	40	32.8	1000	120	378	V	202
85.1026	6.21	---	40	33.79	1000	120	275	H	278
87.4672	6.38	---	40	33.62	1000	120	380	H	68
696.36528	15.07	---	46.02	30.95	1000	120	280	V	22
821.10984	16.72	---	46.02	29.3	1000	120	375	V	335

1 GHz – 18 GHz

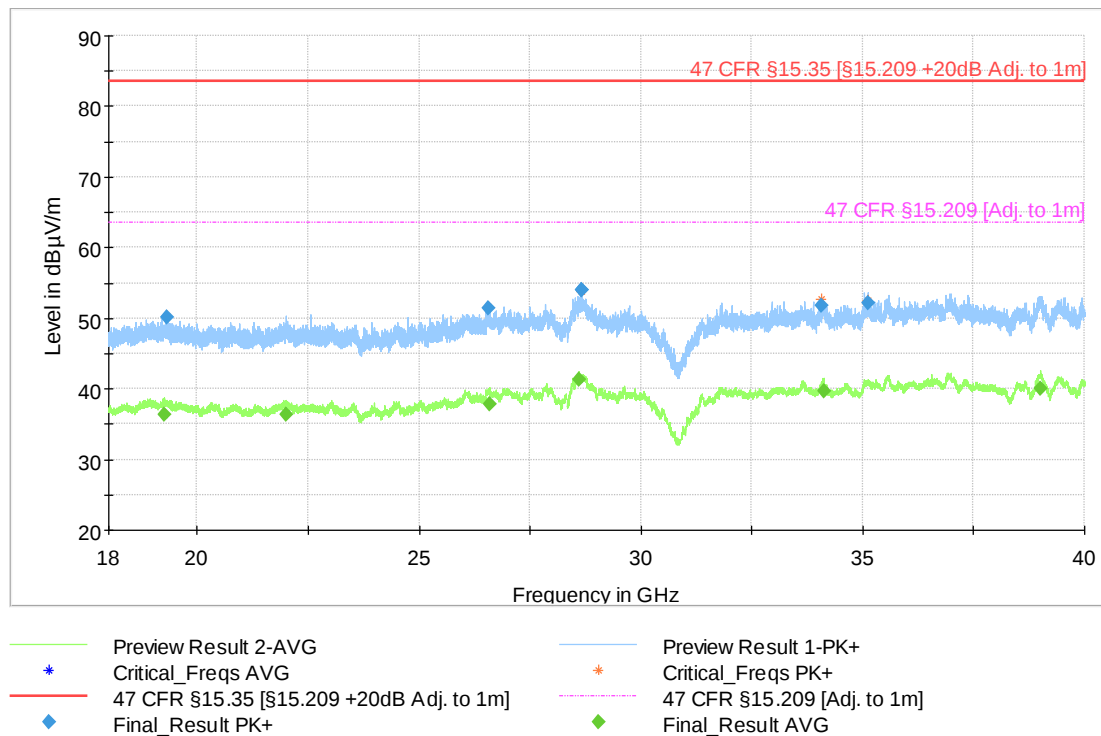
Test mode condition	Proprietary radio 2400 MHz Traffic Mode - Low Channel (Channel 2 – 2402 MHz)	
Antenna orientation	Horizontal and vertical	
Sweep frequency	1 GHz-18 GHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-001	
Ancillary Equipment	None	
Test Engineer	Sam Ebadeh	Date: 2020.06.04
Environmental conditions	Temperature: 20,6 °C	Humidity: 39,3 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2399.8389	61.23	---	73.98	12.74	1000	1000	149	H	264
2399.8943	61.7	---	73.98	12.27	1000	1000	175	H	250
2399.9641	61.12	---	73.98	12.86	1000	1000	175	H	70
4999.129	---	40.7	53.98	13.28	1000	1000	175	H	196
5973.254	---	42.66	53.98	11.32	1000	1000	149	V	153
17931.191	---	40.02	53.98	13.96	1000	1000	210	V	247

18 GHz – 40 GHz

Test mode condition	Proprietary radio 2400 MHz Traffic Mode - Low Channel (Channel 2 – 2402 MHz)	
Antenna orientation	Horizontal and vertical	
Sweep frequency	18 GHz-40 GHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-001	
Ancillary Equipment	None	
Test Engineer	Niall Forrester	Date: 2020.06.25
Environmental conditions	Temperature: 21.9 °C	Humidity: 53.1 %
Chamber details	Chamber: SAC 5	

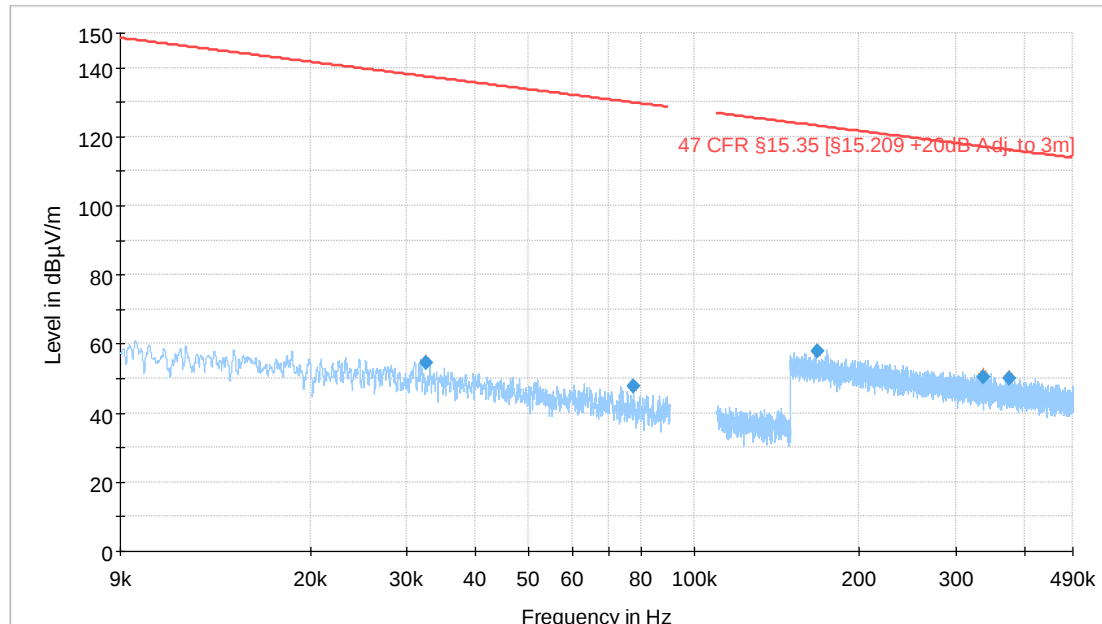


Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
21994.775	---	36.39	63.52	27.13	1000	1000	155	H	67
26577.837	---	37.88	63.52	25.65	1000	1000	155	V	82
28608.788	---	41.3	63.52	22.22	1000	1000	155	V	115
28667.435	54.02	---	83.52	29.5	1000	1000	155	V	7
34119.506	---	39.65	63.52	23.87	1000	1000	155	V	292
38997.347	---	40.08	63.52	23.44	1000	1000	155	V	22

4.2.2.5 Proprietary radio 2400 MHz – Mid channel (Channel 40 – 2440 MHz)

9 kHz – 30 MHz

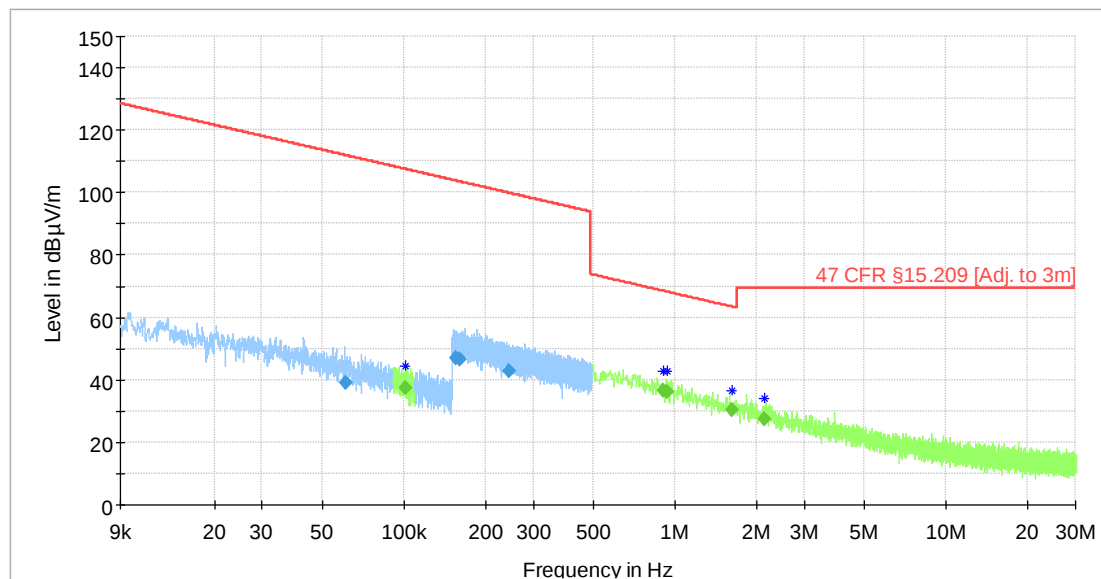
Test mode condition	Proprietary radio 2400 MHz Traffic Mode - Mid Channel (Channel 40 – 2440 MHz)	
Antenna orientation	Loop Antenna Parallel to Axis	
Detector	Peak	
Sweep frequency	9 kHz-490 kHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Joel Efraimsson	Date: 2020.06.08
Environmental conditions	Temperature: 20,6 °C	Humidity: 42,4 %
Chamber details	Chamber: SAC 5	



— Preview Result 1-PK+
— 47 CFR §15.35 [§15.209 +20dB Adj. to 3m]
x MaxPeak-PK+ (Single)
 ♦ Critical_Freqs PK+
♦ Final_Result PK+

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)
0.032400	54.50	137.39	82.89	1000.0	0.200	100.0	153.0	14.5
0.077581	47.86	129.81	81.95	1000.0	0.200	100.0	1.0	11.7
0.167457	57.94	123.13	65.18	1000.0	9.000	100.0	195.0	10.8
0.336791	50.31	117.06	66.75	1000.0	9.000	100.0	229.0	10.4
0.375422	50.08	116.11	66.04	1000.0	9.000	100.0	160.0	10.4

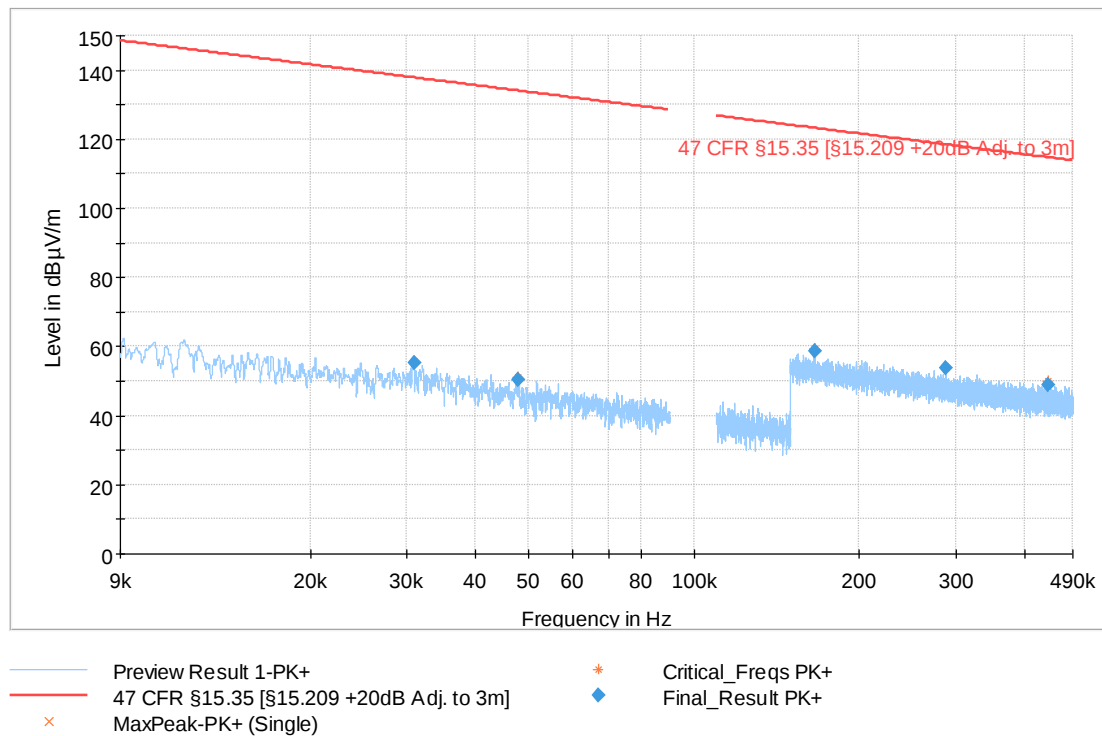
Test mode condition	Proprietary radio 2400 MHz Traffic Mode - Mid Channel (Channel 40 – 2440 MHz)	
Antenna orientation	Loop Antenna Parallel to Axis	
Detector	Quasi-Peak & Average	
Sweep frequency	9 kHz-30 MHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Joel Efraimsson	Date: 2020.06.08
Environmental conditions	Temperature: 20,6 °C	Humidity: 42,4 %
Chamber details	Chamber: SAC 5	



Preview Result 2-PK+	Preview Result 1-AVG
Critical_Freqs PK+	Critical_Freqs AVG
47 CFR §15.209 [Adj. to 3m]	Final_Result AVG
Final_Result QPK	MaxPeak-PK+ (Single)
QuasiPeak-QPK (Single)	Average-AVG (Single)

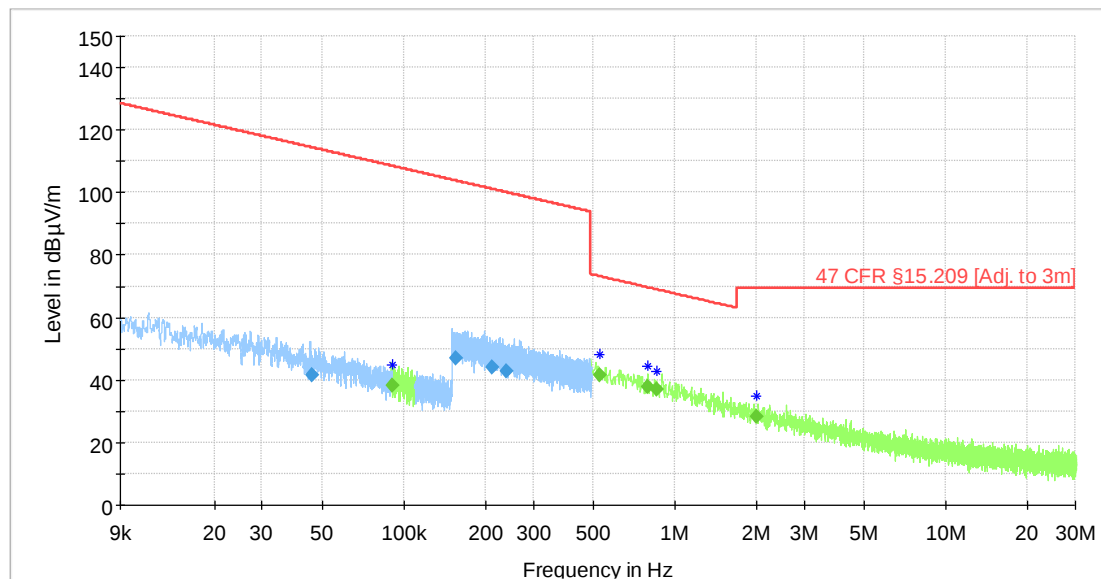
Frequency (MHz)	Average (dBµV/m)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (s)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
0.155672	46.85	---	103.76	56.91	1000	9	100	241	10.9
0.161646	46.44	---	103.43	57	1000	9	100	83	10.9
0.909458	---	36.37	68.43	32.06	1000	9	100	202	10.7
0.931523	---	36.2	68.22	32.02	1000	9	100	16	10.7
1.624286	---	30.38	63.39	33.01	1000	9	100	-6	10.9
2.144842	---	27.62	69.54	41.92	1000	9	100	129	10.9

Test mode condition	Proprietary radio 2400 MHz Traffic Mode - Mid Channel (Channel 40 – 2440 MHz)	
Antenna orientation	Loop Antenna Perpendicular to Axis	
Detector	Peak	
Sweep frequency	9 kHz-490 kHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Joel Efraimsson	Date: 2020.06.08
Environmental conditions	Temperature: 20,6 °C	Humidity: 42,4 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)
0.030953	55.28	137.79	82.51	1000.0	0.200	100.0	-20.0	14.7
0.047848	50.31	134.01	83.70	1000.0	0.200	100.0	22.0	12.7
0.166363	58.78	123.18	64.41	1000.0	9.000	100.0	308.0	10.9
0.288187	53.80	118.41	64.61	1000.0	9.000	100.0	218.0	10.5
0.440932	48.75	114.72	65.97	1000.0	9.000	100.0	205.0	10.5

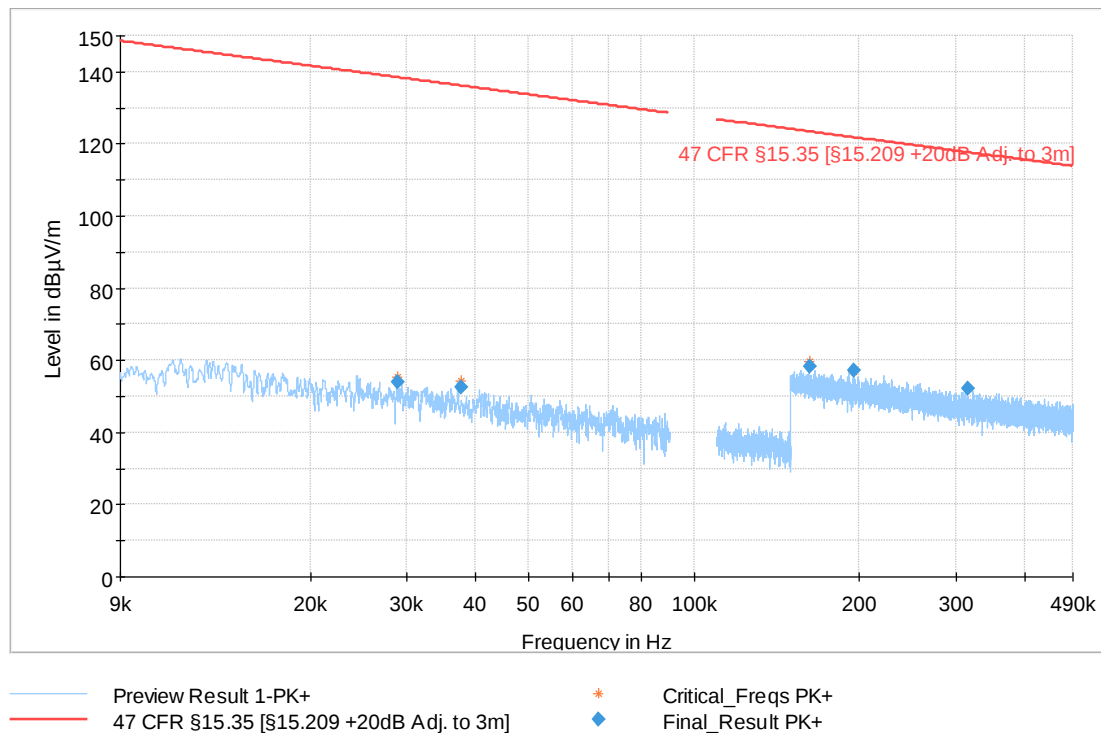
Test mode condition	Proprietary radio 2400 MHz Traffic Mode - Mid Channel (Channel 40 – 2440 MHz)	
Antenna orientation	Loop Antenna Perpendicular to Axis	
Detector	Quasi-Peak & Average	
Sweep frequency	9 kHz-30 MHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Joel Efraimsson	Date: 2020.06.08
Environmental conditions	Temperature: 20,6 °C	Humidity: 42,4 %
Chamber details	Chamber: SAC 5	



Preview Result 2-PK+	Preview Result 1-AVG
Critical_Freqs PK+	Critical_Freqs AVG
47 CFR §15.209 [Adj. to 3m]	Final_Result AVG
Final_Result QPK	MaxPeak-PK+ (Single)
QuasiPeak-QPK (Single)	Average-AVG (Single)

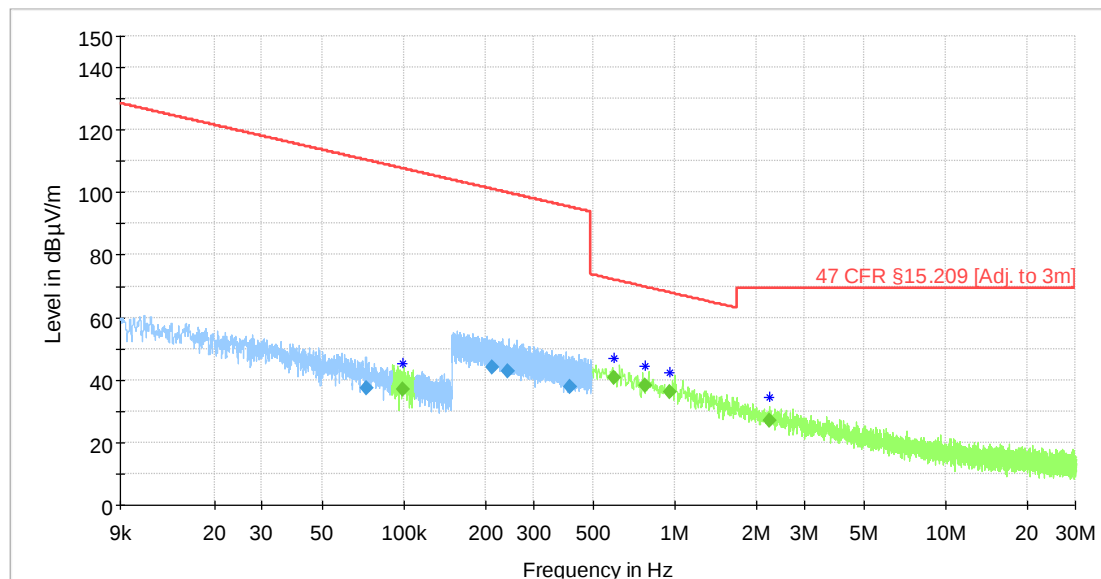
Frequency (MHz)	Average (dBµV/m)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)
0.155736	46.83	---	103.76	56.93	1000	9	100	68	10.9
0.211552	44.14	---	101.1	56.95	1000	9	100	61	10.6
0.529736	---	41.63	73.12	31.49	1000	9	100	202	10.6
0.793305	---	37.81	69.62	31.81	1000	9	100	174	10.7
0.853841	---	37	68.98	31.98	1000	9	100	198	10.7
1.991442	---	28.27	69.54	41.27	1000	9	100	95	10.9

Test mode condition	Proprietary radio 2400 MHz Traffic Mode - Low Channel (Channel 40 – 2440 MHz)	
Antenna orientation	Loop Antenna Parallel to Floor	
Detector	Peak	
Sweep frequency	9 kHz - 490 kHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Sam Ebadeh	Date: 2020.06.11
Environmental conditions	Temperature: 21,7 °C	Humidity: 41,8 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)
0.028813	53.89	138.41	84.52	1000.0	0.200	100.0	-20.0	14.9
0.037715	52.36	136.07	83.71	1000.0	0.200	100.0	60.0	13.8
0.162506	58.25	123.39	65.13	1000.0	9.000	100.0	308.0	10.9
0.195043	57.03	121.80	64.78	1000.0	9.000	100.0	293.0	10.7
0.315258	52.25	117.63	65.38	1000.0	9.000	100.0	308.0	10.4

Test mode condition	Proprietary radio 2400 MHz Traffic Mode - Mid Channel (Channel 40 – 2440 MHz)	
Antenna orientation	Loop Antenna Parallel to Floor	
Detector	Quasi-Peak & Average	
Sweep frequency	9 kHz-30 MHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Sam Ebadeh	Date: 2020.06.11
Environmental conditions	Temperature: 21,7 °C	Humidity: 41,8 %
Chamber details	Chamber: SAC 5	

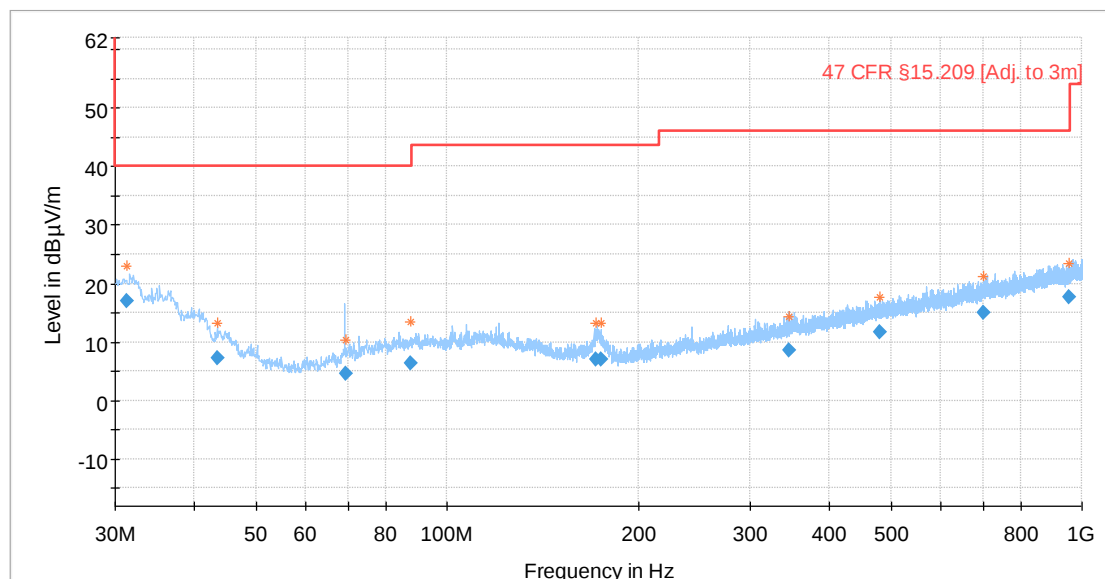


Preview Result 2-PK+	Preview Result 1-AVG
Critical_Freqs PK+	Critical_Freqs AVG
47 CFR §15.209 [Adj. to 3m]	Final_Result AVG
Final_Result QPK	MaxPeak-PK+ (Single)
QuasiPeak-QPK (Single)	Average-AVG (Single)

Frequency (MHz)	Average (dBµV/m)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
0.211224	44.1	---	101.11	57.01	1000	9	100	H	39
0.241394	42.81	---	99.95	57.14	1000	9	100	H	108
0.593616	---	40.59	72.13	31.55	1000	9	100	H	-6
0.773223	---	38.06	69.84	31.77	1000	9	100	H	264
0.959258	---	36.02	67.97	31.95	1000	9	100	H	70
2.234934	---	27.16	69.54	42.38	1000	9	100	H	205

30 MHz – 1 GHz

Test mode condition	Proprietary radio 2400 MHz Traffic Mode - Mid Channel (Cannel 40 – 2440 MHz)	
Antenna orientation	Horizontal and vertical	
Sweep frequency	30 MHz-1 GHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-001	
Ancillary Equipment	None	
Test Engineer	Fariborz Abasi	Date: 2020.06.03
Environmental conditions	Temperature: 21.1 °C	Humidity: 40.5 %
Chamber details	Chamber: SAC 5	

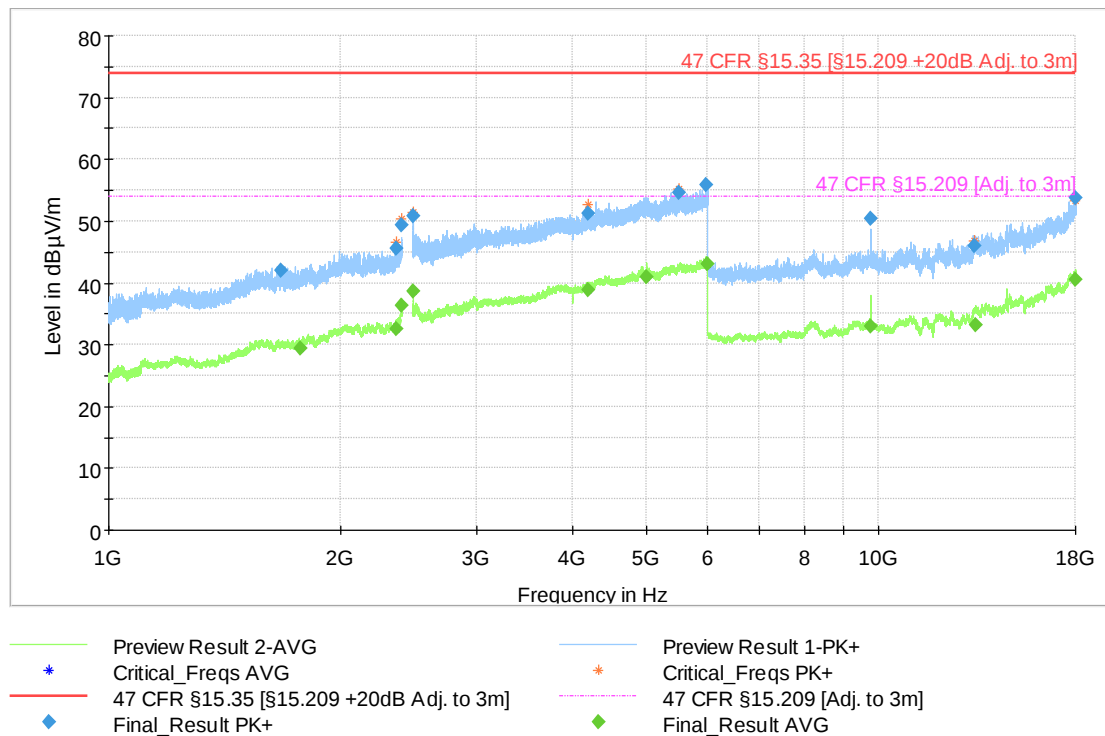


Preview Result 2-AVG	Preview Result 1-PK+
Critical_Freqs AVG	Critical_Freqs PK+
47 CFR §15.209 [Adj. to 3m]	Final_Result QPK
Final_Result AVG	MaxPeak-PK+ (Single)
QuasiPeak-QPK (Single)	Average-AVG (Single)

Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
31.27364	17.07	---	40	22.93	1000	120	330	V	20
43.53256	7.32	---	40	32.68	1000	120	329	V	221
87.78308	6.47	---	40	33.53	1000	120	125	H	175
479.55324	11.67	---	46.02	34.35	1000	120	410	V	289
700.16564	15.09	---	46.02	30.93	1000	120	225	H	19
952.9124	17.71	---	46.02	28.31	1000	120	178	H	51

1 GHz – 18 GHz

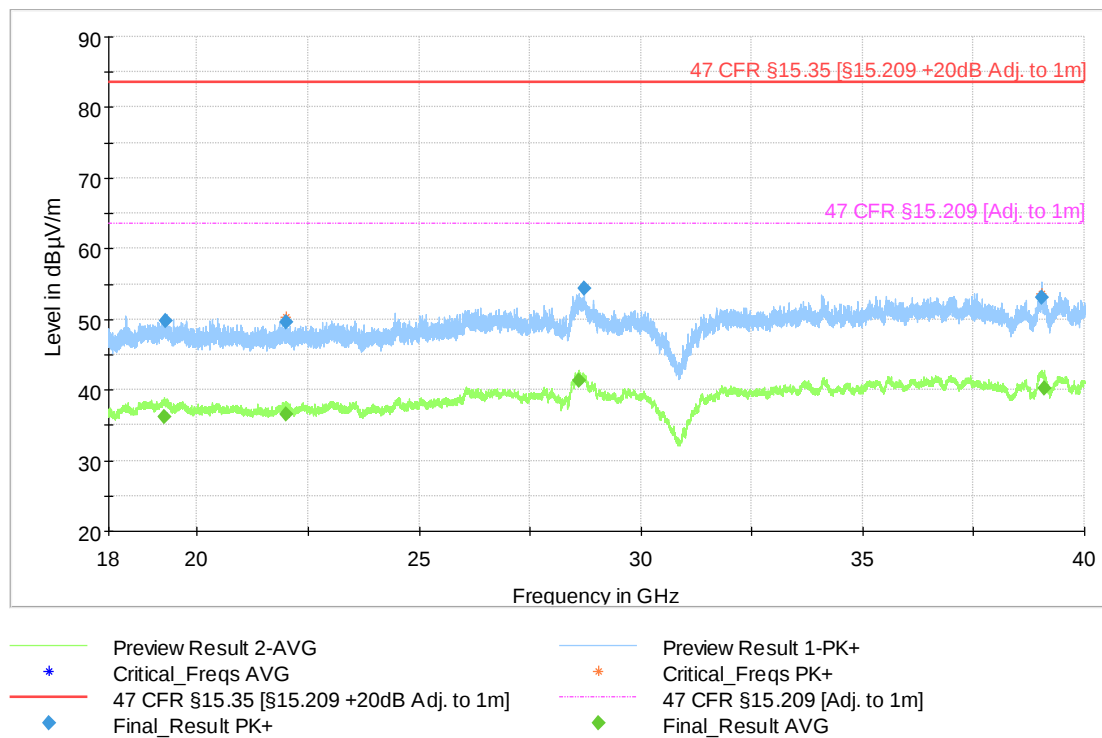
Test mode condition	Proprietary radio 2400 MHz Traffic Mode - Mid Channel (Channel 40 – 2440 MHz)	
Antenna orientation	Horizontal and vertical	
Sweep frequency	1 GHz-18 GHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Fariborz Abasi	Date: 2020.06.05
Environmental conditions	Temperature: 21,4 °C	Humidity: 42,3 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2399.97	---	36.32	53.98	17.66	1000	1000	100	H	67
2483.571	---	38.61	53.98	15.37	1000	1000	210	H	157
4191.749	---	38.84	53.98	15.14	1000	1000	171	H	247
4999.968	---	40.89	53.98	13.09	1000	1000	175	V	309
5977.992	---	42.95	53.98	11.03	1000	1000	100	H	198
17990.507	---	40.42	53.98	13.56	1000	1000	125	H	188

18 GHz – 40 GHz

Test mode condition	Proprietary radio 2400 MHz Traffic Mode - Mid Channel (Channel 40 – 2440 MHz)	
Antenna orientation	Horizontal and vertical	
Sweep frequency	18 GHz-40 GHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-001	
Ancillary Equipment	None	
Test Engineer	Niall Forrester	Date: 2020.06.26
Environmental conditions	Temperature: 22.9 °C	Humidity: 49.3 %
Chamber details	Chamber: SAC 5	

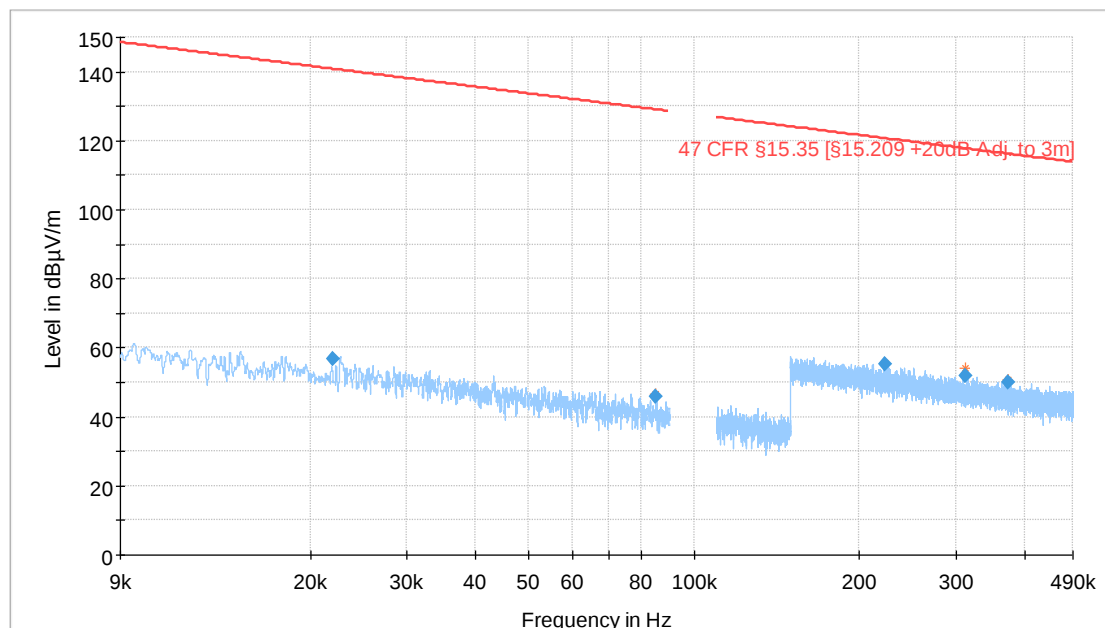


Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
28597.78	---	41.31	63.52	22.21	1000	1000	155	V	139
28733.96	54.29	---	83.52	29.23	1000	1000	155	H	145
39031.889	53.16	---	83.52	30.36	1000	1000	155	V	37
39085.978	---	40.29	63.52	23.24	1000	1000	155	V	52
19300.028	49.83	---	83.52	33.69	1000	1000	155	V	127
21996.147	---	36.5	63.52	27.02	1000	1000	155	H	82

4.2.2.6 Proprietary radio 2400 MHz – High channel (Channel 80 – 2480 MHz)

9 kHz – 30 MHz

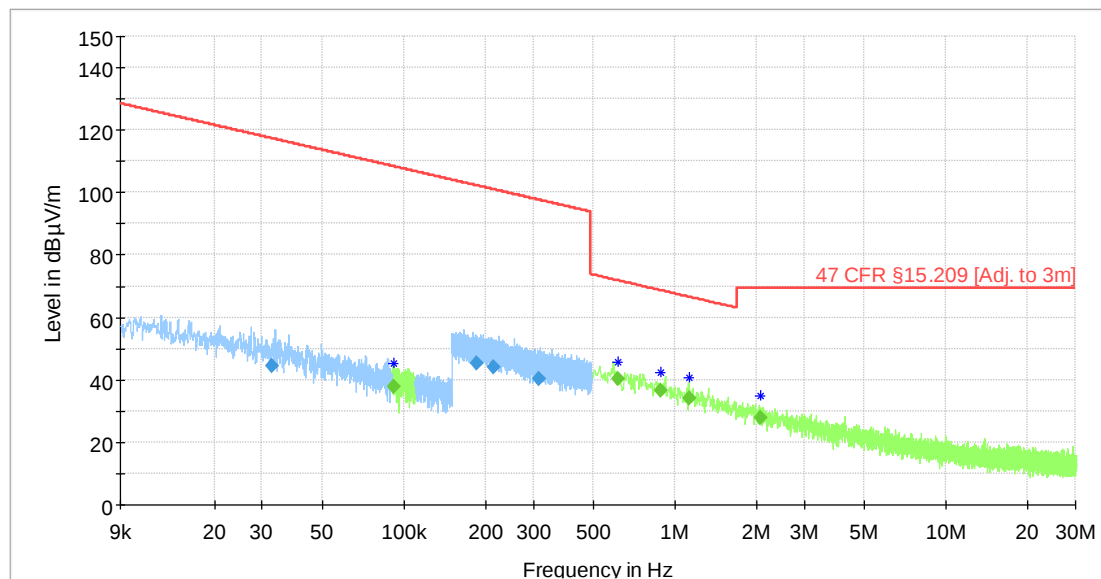
Test mode condition	Proprietary radio 2400 MHz Traffic Mode - High Channel (Channel 80 – 2480 MHz)	
Antenna orientation	Loop Antenna Parallel to Axis	
Detector	Peak	
Sweep frequency	9 kHz-490 kHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Joel Efraimsson	Date: 2020.06.08
Environmental conditions	Temperature: 20,6 °C	Humidity: 42,4 %
Chamber details	Chamber: SAC 5	



— Preview Result 1-PK+
— 47 CFR §15.35 [§15.209 +20dB Adj. to 3m]
x MaxPeak-PK+ (Single)
 ♦ Critical_Freqs PK+
♦ Final_Result PK+

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)
0.022015	56.90	140.75	83.85	1000.0	0.200	100.0	263.0	15.5
0.085094	45.92	129.01	83.09	1000.0	0.200	100.0	60.0	11.6
0.222184	55.08	120.67	65.59	1000.0	9.000	100.0	70.0	10.6
0.312816	51.82	117.70	65.88	1000.0	9.000	100.0	94.0	10.4
0.373113	50.05	116.17	66.12	1000.0	9.000	100.0	250.0	10.4

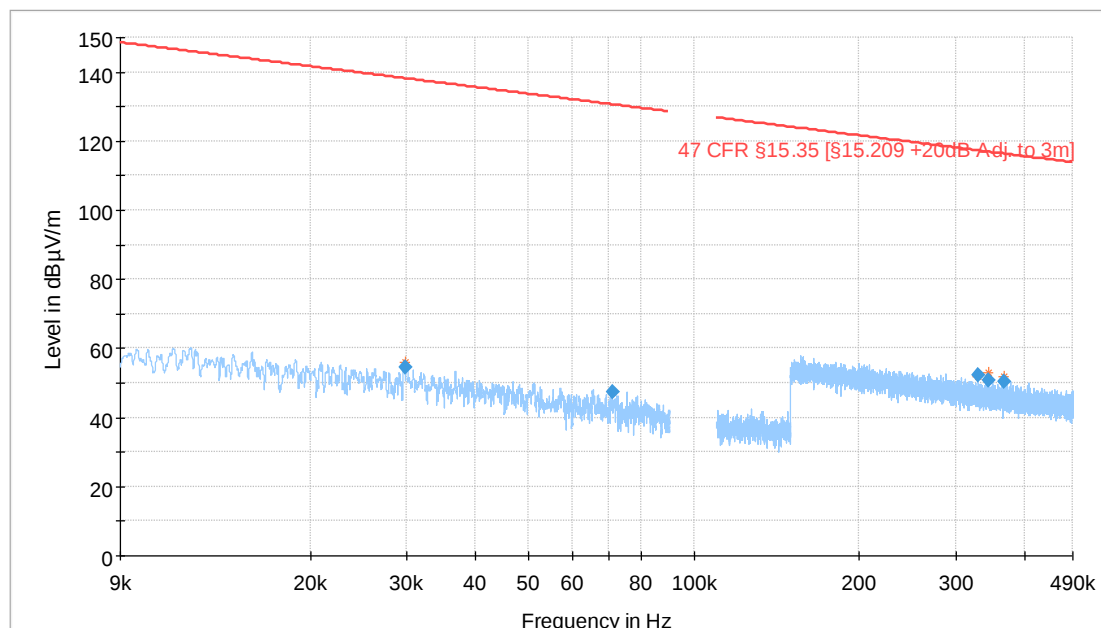
Test mode condition	Proprietary radio 2400 MHz Traffic Mode - High Channel (Channel 80 – 2480 MHz)	
Antenna orientation	Loop Antenna Parallel to Axis	
Detector	Quasi-Peak & Average	
Sweep frequency	9 kHz-30 MHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Joel Efraimsson	Date: 2020.06.08
Environmental conditions	Temperature: 20,6 °C	Humidity: 42,4 %
Chamber details	Chamber: SAC 5	



Preview Result 2-PK+	Preview Result 1-AVG
Critical_Freqs PK+	Critical_Freqs AVG
47 CFR §15.209 [Adj. to 3m]	Final_Result AVG
Final_Result QPK	MaxPeak-PK+ (Single)
QuasiPeak-QPK (Single)	Average-AVG (Single)

Frequency (MHz)	Average (dBµV/m)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
0.186677	45.19	---	102.18	56.99	1000	9	100	115	10.7
0.214232	43.98	---	100.99	57.01	1000	9	100	22	10.6
0.613644	---	40.3	71.85	31.55	1000	9	100	67	10.6
0.89029	---	36.42	68.61	32.19	1000	9	100	22	10.7
1.123818	---	34.26	66.59	32.33	1000	9	100	157	10.8
2.067743	---	27.95	69.54	41.59	1000	9	100	288	10.9

Test mode condition	Proprietary radio 2400 MHz Traffic Mode - High Channel (Channel 80 – 2480 MHz)	
Antenna orientation	Loop Antenna Perpendicular to Axis	
Detector	Peak	
Sweep frequency	9 kHz-490 kHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Joel Efraimsson	Date: 2020.06.08
Environmental conditions	Temperature: 20,6 °C	Humidity: 42,4 %
Chamber details	Chamber: SAC 5	

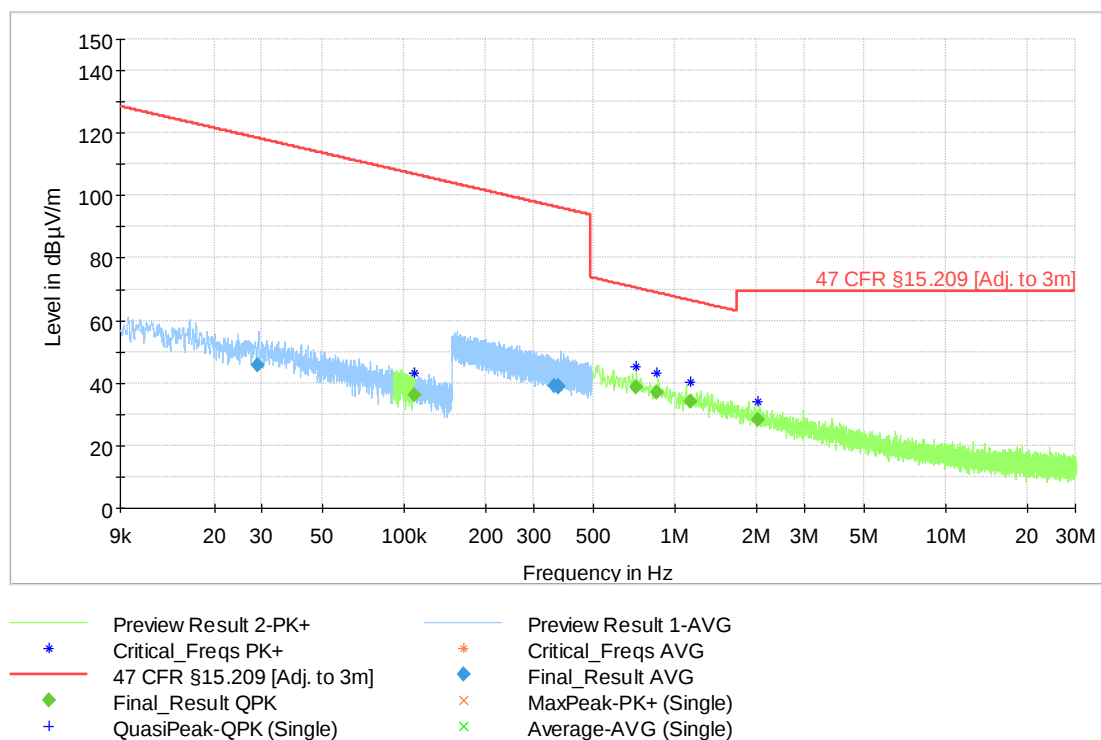


— Preview Result 1-PK+
— 47 CFR §15.35 [§15.209 +20dB Adj. to 3m]
x MaxPeak-PK+ (Single)

♦ Final_Result PK+
* Critical_Freqs PK+

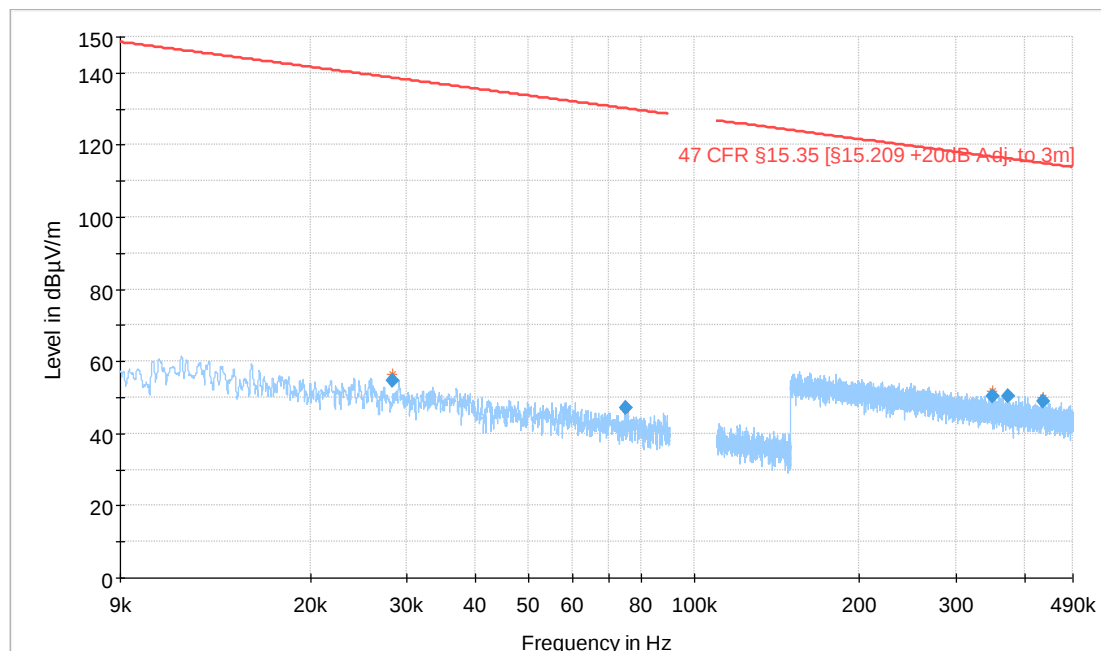
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)
0.029772	54.68	138.13	83.45	1000.0	0.200	100.0	61.0	14.9
0.070954	47.29	130.59	83.30	1000.0	0.200	100.0	-23.0	11.8
0.329533	52.23	117.25	65.02	1000.0	9.000	100.0	338.0	10.4
0.343511	50.79	116.89	66.10	1000.0	9.000	100.0	-23.0	10.4
0.368240	50.33	116.28	65.95	1000.0	9.000	100.0	184.0	10.4

Test mode condition	Proprietary radio 2400 MHz Traffic Mode - High Channel (Channel 80 – 2480 MHz)	
Antenna orientation	Loop Antenna Perpendicular to Axis	
Detector	Quasi-Peak & Average	
Sweep frequency	9 kHz-30 MHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Joel Efraimsson	Date: 2020.06.08
Environmental conditions	Temperature: 20,6 °C	Humidity: 42,4 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	Average (dBµV/m)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)
0.359589	39.14	---	96.49	57.35	1000	9	100	196	10.4
0.36982	38.92	---	96.24	57.33	1000	9	100	157	10.4
0.722824	---	38.66	70.42	31.77	1000	9	100	112	10.7
0.853194	---	37.01	68.98	31.97	1000	9	100	241	10.7
1.1443	---	33.93	66.43	32.5	1000	9	100	25	10.8
2.024627	---	28.2	69.54	41.34	1000	9	100	309	10.9

Test mode condition	Proprietary radio 2400 MHz Traffic Mode - High Channel (Channel 80 – 2480 MHz)	
Antenna orientation	Loop Antenna Parallel to Floor	
Detector	Peak	
Sweep frequency	9 kHz-490 kHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Joel Efraimsson	Date: 2020.06.10
Environmental conditions	Temperature: 19,6 °C	Humidity: 46,0 %
Chamber details	Chamber: SAC 5	

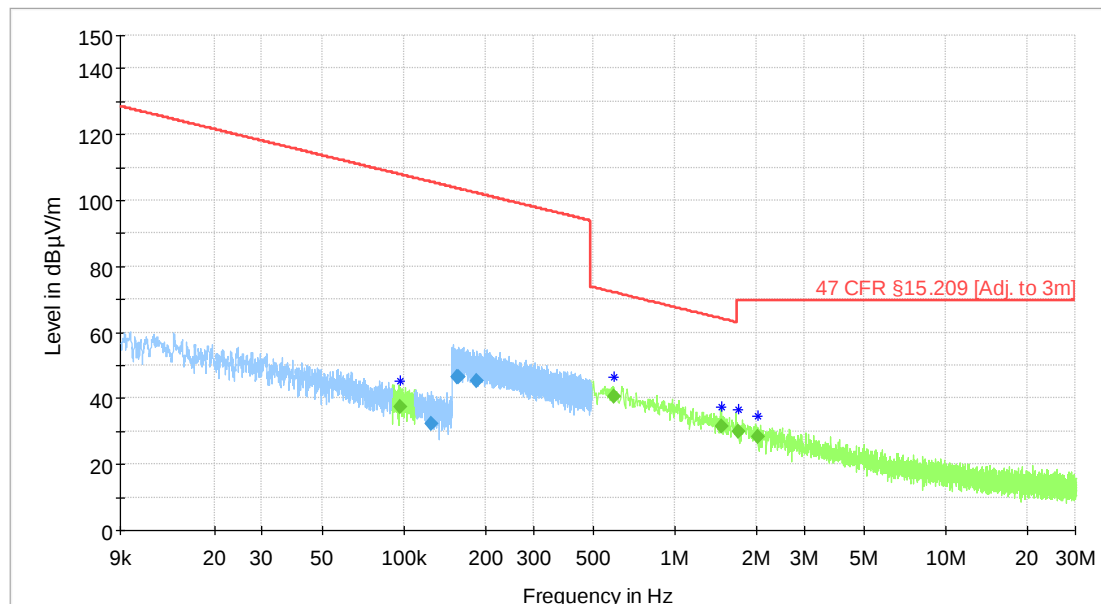


— Preview Result 1-PK+
— 47 CFR §15.35 [§15.209 +20dB Adj. to 3m]

◆ Critical_Freqs PK+
◆ Final_Result PK+

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)
0.028152	54.77	138.61	83.84	1000.0	0.200	100.0	139.0	15.0
0.074876	47.06	130.12	83.05	1000.0	0.200	100.0	240.0	11.7
0.350396	50.35	116.71	66.36	1000.0	9.000	100.0	67.0	10.4
0.373450	50.34	116.16	65.82	1000.0	9.000	100.0	293.0	10.4
0.431445	48.90	114.91	66.01	1000.0	9.000	100.0	85.0	10.4

Test mode condition	Proprietary radio 2400 MHz Traffic Mode - High Channel (Channel 80 – 2480 MHz)	
Antenna orientation	Loop Antenna Parallel to Floor	
Detector	Quasi-Peak & Average	
Sweep frequency	9 kHz-30 MHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Sam Ebadeh	Date: 2020.06.11
Environmental conditions	Temperature: 21,7 °C	Humidity: 41,8 %
Chamber details	Chamber: SAC 5	

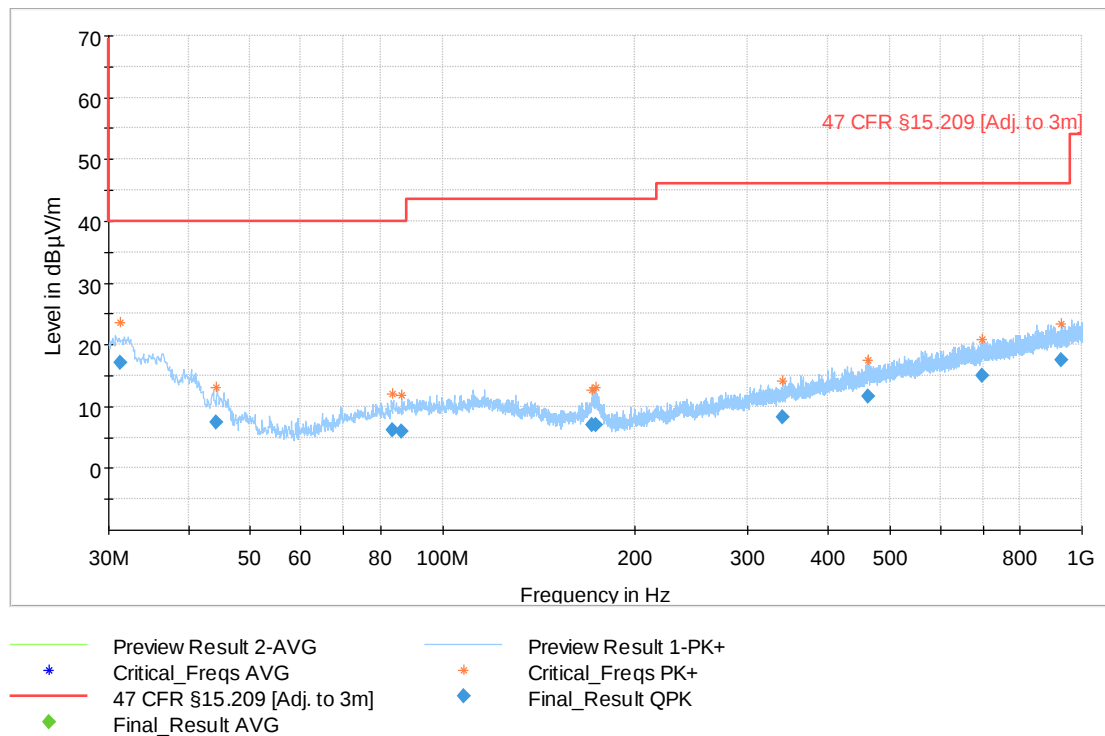


— Preview Result 2-PK+
— Preview Result 1-AVG
* Critical_Freqs PK+
— 47 CFR §15.209 [Adj. to 3m]
♦ Final_Result QPK
♦ Final_Result AVG

Frequency (MHz)	Average (dBµV/m)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
0.158265	46.53	---	103.62	57.09	1000	9	100	H	67
0.184945	45.24	---	102.26	57.03	1000	9	100	H	295
0.596403	---	40.68	72.09	31.42	1000	9	100	H	39
1.485488	---	31.53	64.17	32.64	1000	9	100	H	151
1.711295	---	30.03	69.54	39.52	1000	9	100	H	143
2.033885	---	28.35	69.54	41.19	1000	9	100	H	70

30 MHz – 1 GHz

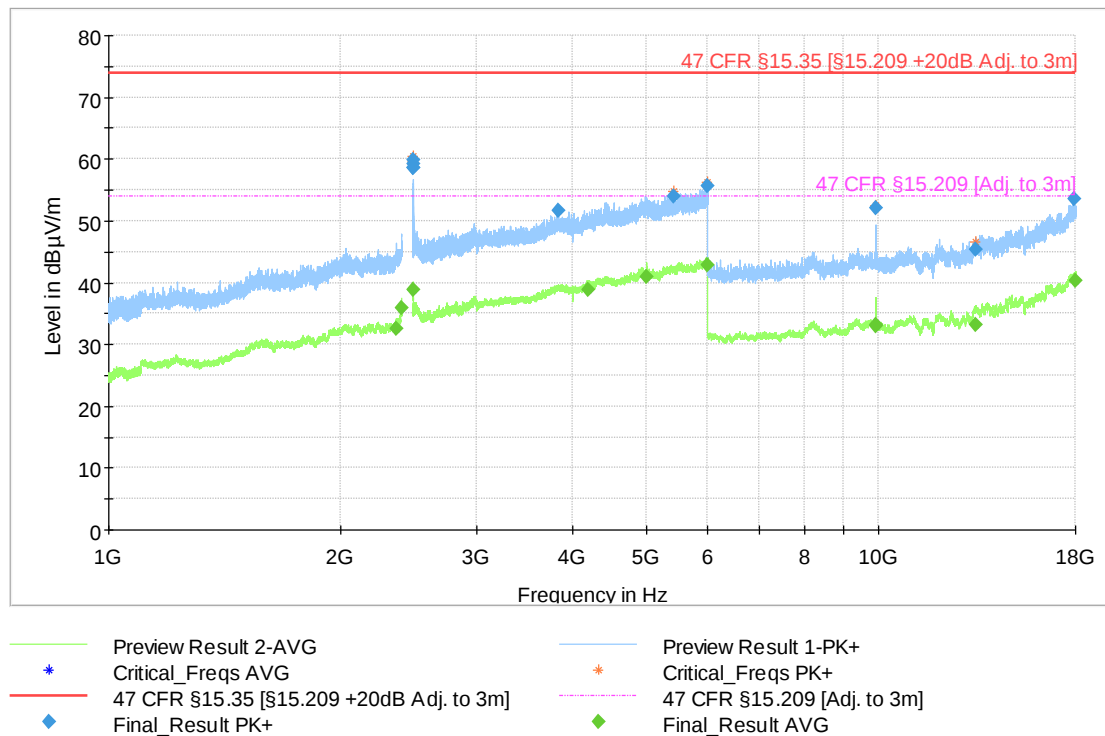
Test mode condition	Proprietary radio 2400 MHz Traffic Mode - High Channel (Cannel 80 – 2480 MHz)	
Antenna orientation	Horizontal and vertical	
Sweep frequency	30 MHz-1 GHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-001	
Ancillary Equipment	None	
Test Engineer	Fariborz Abasi	Date: 2020.06.03
Environmental conditions	Temperature: 21.1 °C	Humidity: 40.5 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
31.22132	17.06	---	40	22.94	1000	120	125	H	202
44.1154	7.37	---	40	32.63	1000	120	375	V	112
83.44072	6.24	---	40	33.76	1000	120	125	H	19
86.32452	5.95	---	40	34.05	1000	120	179	H	108
696.81272	15.02	---	46.02	31	1000	120	106	V	63
929.82248	17.52	---	46.02	28.5	1000	120	125	H	22

1 GHz – 18 GHz

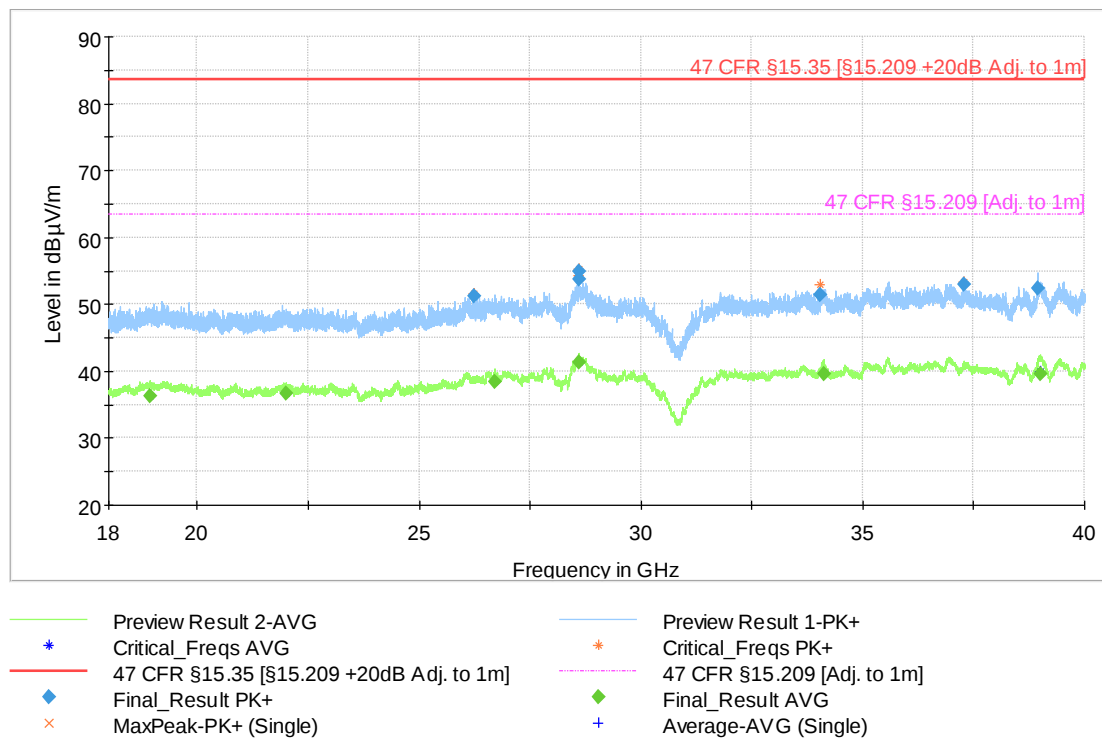
Test mode condition	Proprietary radio 2400 MHz Traffic Mode - High Channel (Channel 80 – 2480 MHz)	
Antenna orientation	Horizontal and vertical	
Sweep frequency	1 GHz-18 GHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Sam Ebadeh	Date: 2020.06.07
Environmental conditions	Temperature: 19,6 °C	Humidity: 42,3 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2483.5591	59.77	---	73.98	14.21	1000	1000	210	H	221
2483.7362	59.14	---	73.98	14.84	1000	1000	210	H	40
4200.832	---	38.8	53.98	15.18	1000	1000	139	H	97
4999.864	---	40.87	53.98	13.11	1000	1000	159	H	39
5979.155	---	42.92	53.98	11.06	1000	1000	210	H	25
17999.357	---	40.22	53.98	13.76	1000	1000	125	V	247

18 GHz – 40 GHz

Test mode condition	Proprietary radio 2400 MHz Traffic Mode - High Channel (Channel 80 – 2480 MHz)	
Antenna orientation	Horizontal and vertical	
Sweep frequency	18 GHz-40 GHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Sam Ebadeh	Date: 2020.06.25
Environmental conditions	Temperature: 21,9 °C	Humidity: 53.1 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
22000.121	---	36.69	63.52	26.83	1000	1000	155	H	199
26698.916	---	38.46	63.52	25.06	1000	1000	155	V	52
28600.184	---	41.27	63.52	22.26	1000	1000	155	H	310
28600.579	54.96	---	83.52	28.56	1000	1000	155	H	205
34118.432	---	39.66	63.52	23.87	1000	1000	155	V	-8
38993.285	---	39.68	63.52	23.84	1000	1000	155	V	247

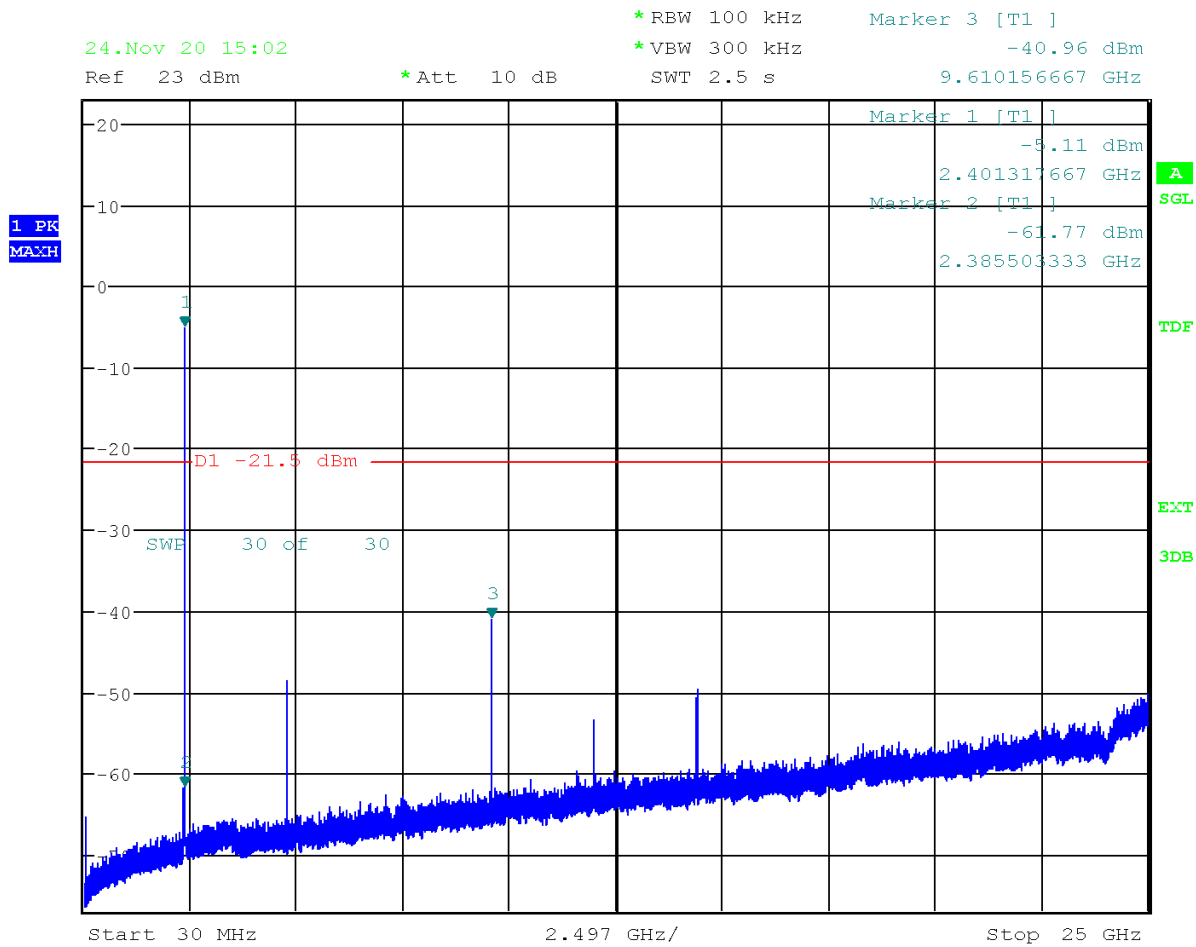
4.3 Test Results – Out of Band Emissions

4.3.1 Out of Band Emissions – Test Summary

Test Specification		47 CFR 15.247 (d)			
Test Engineer & Date		Niall Forrester		2020.11.24	
EUT and Ancillary Equipment IDs		A002835296_004		None	
EUT Operation Mode(s)		Direct Test Mode (DTM)			
EUT Wireless Configuration(s)		See below table			
EUT Hardware Configuration(s)		-			
Overall Result		Pass			

Test Parameter	Wireless Configuration	Tx Pwr (dBm)	Measured Lvl (dBm)	Limit (dBm)	Result
Spurious Emissions (30 MHz – 25 GHz)	BLE Low Channel (2402 MHz) GFSK – 1 MB/s	-1.52	-41.19	-21.52	Pass
Spurious Emissions (30 MHz – 25 GHz)	BLE Low Channel (2402 MHz) GFSK – 2 MB/s	-1.47	-40.96	-21.47	Pass
Spurious Emissions (30 MHz – 25 GHz)	BLE Mid Channel (2440 MHz) GFSK – 1 MB/s	-1.99	-42.66	-21.99	Pass
Spurious Emissions (30 MHz – 25 GHz)	BLE Mid Channel (2440 MHz) GFSK – 2 MB/s	-2.10	-43.46	-22.10	Pass
Spurious Emissions (30 MHz – 25 GHz)	BLE High Channel (2480 MHz) GFSK – 1 MB/s	-1.15	-44.97	-21.15	Pass
Spurious Emissions (30 MHz – 25 GHz)	BLE High Channel (2480 MHz) GFSK – 2 MB/s	-1.22	-45.39	-21.22	Pass

4.3.2 Out of Band Emissions – Test Details (Worst Case Plot - BLE Low Channel 2402 MHz GFSK–2 MB/s)



Date: 24.NOV.2020 15:02:29

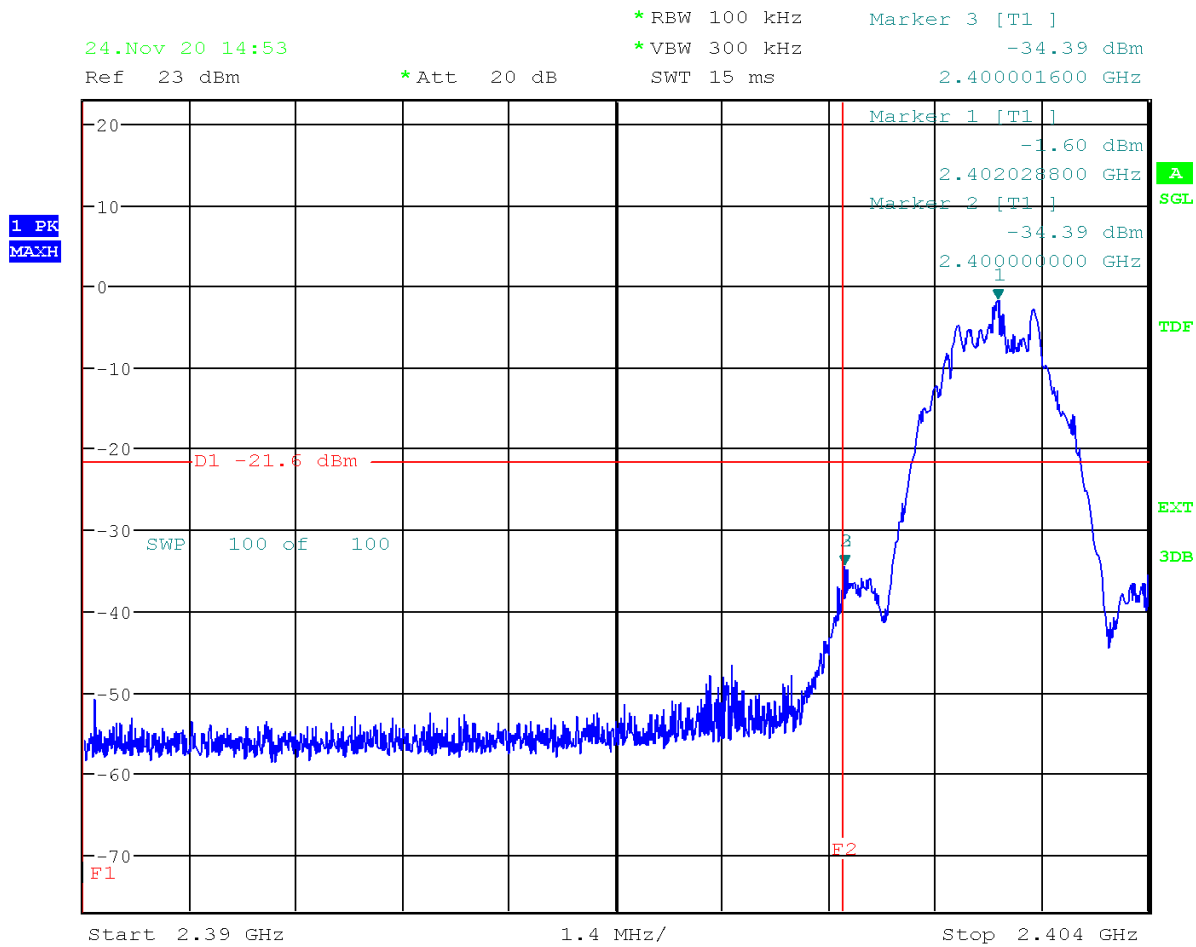
4.4 Test Results – Band Edge Compliance (Authorized Band)

4.4.1 Band Edge Compliance (Authorized Band) – Test Summary

Test Specification	47 CFR 15.247 (d)			
Test Engineer & Date	Niall Forrester		2020.11.24	
EUT and Ancillary Equipment IDs	A002835296_004		None	
EUT Operation Mode(s)	Direct Test Mode (DTM)			
EUT Wireless Configuration(s)	See below table			
EUT Hardware Configuration(s)	-			
Overall Result	Pass			

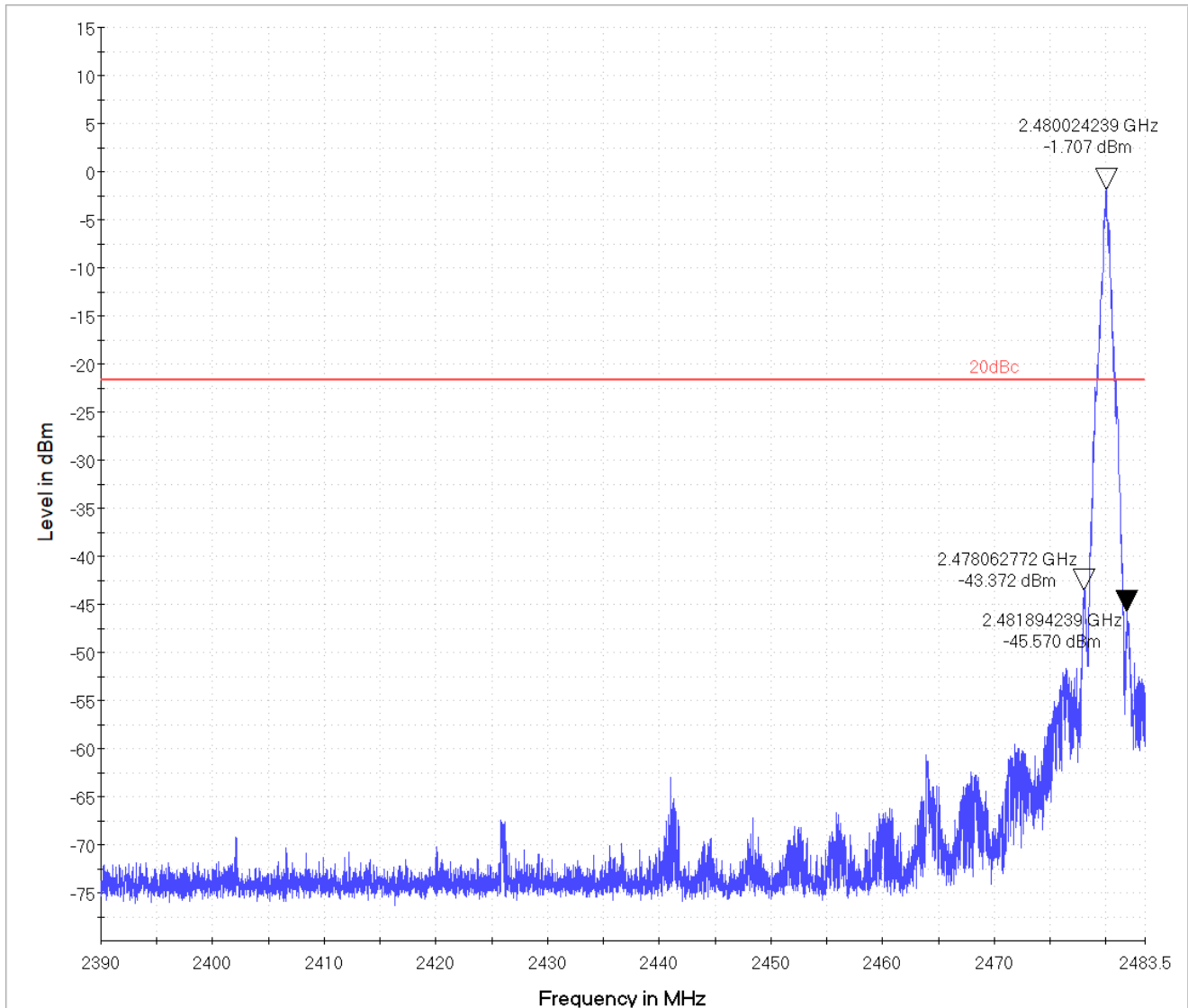
Test Parameter	Wireless Configuration	Measured Level (dBm)	Limit (dBm)	Result
Emissions at Band Edge (Auth. Band – Low Edge)	BLE Low Channel (2402 MHz) GFSK – 1 MB/s	-47.81	-21.60	Pass
Emissions at Band Edge (Auth. Band – Low Edge)	BLE Low Channel (2402 MHz) GFSK – 2 MB/s	-34.39	-21.60	Pass
Emissions at Band Edge (Auth. Band – High Edge)	BLE High Channel (2480 MHz) GFSK – 1 MB/s	-49.73	-21.19	Pass
Emissions at Band Edge (Auth. Band – High Edge)	BLE High Channel (2480 MHz) GFSK – 2 MB/s	-48.79	-21.25	Pass
Emissions at Band Edge (Auth. Band – Low channel)	Proprietary radio 2400 MHz Low Channel (2402 MHz)	-43.941	-21.891	Pass
Emissions at Band Edge (Auth. Band – High channel)	Proprietary radio 2400 MHz High Channel (2480 MHz)	-43.372	-21.707	Pass

4.4.2 Band Edge Compliance (Authorized Band) – Test Details (Worst Case Plot- BLE Low Channel 2402 MHz GFSK–2 MB/s)



Date: 24.NOV.2020 14:53:24

4.4.3 Band Edge Compliance (Authorized Band) – Test Details (Worst Case Plot- Proprietary radio 2400 MHz High Channel 2480 MHz)



4.5 Test Results – Band Edge Compliance (Restricted Band)

4.5.1 Band Edge Compliance (Restricted Band) – Test Summary

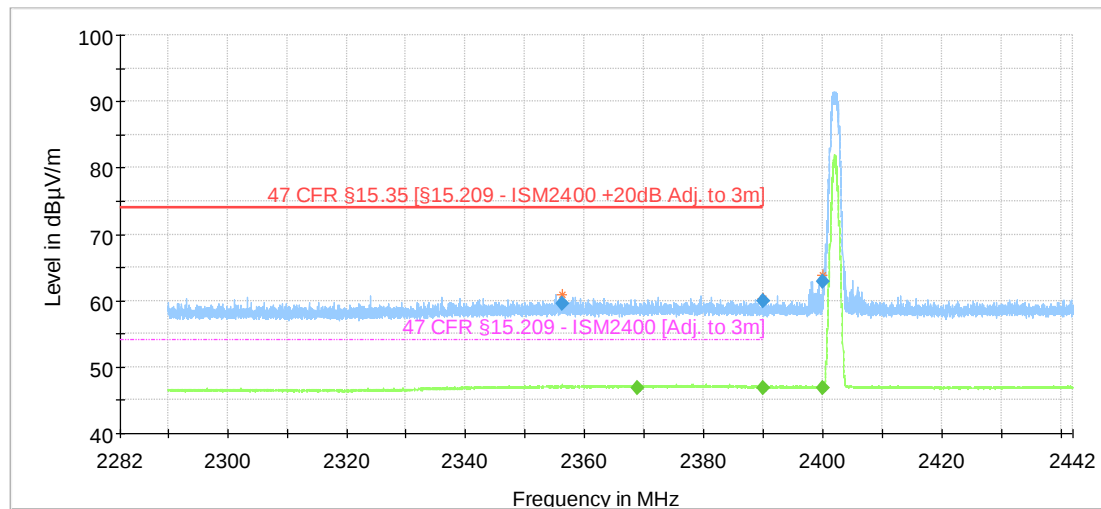
Test Specification	47 CFR 15.209 & 15.247 (d)	
Test Engineer & Date	Sam Ebadeh	2020.06.08
EUT and Ancillary Equipment IDs	A002835296-002	A002835296-007 Laptop A002835296-012 Programming unit
EUT Operation Mode(s)	#1 - #3 - #7 - #9	
EUT Wireless Configuration(s)	See Below	
EUT Hardware Configuration(s)	-	
Overall Result	Pass	
Test Parameter	Wireless Configuration	Result*
Emissions at Band Edge (Rest. Band – Low Edge)	BLE 1 Mbs Traffic Mode - Low Channel (Channel 37 – 2402 MHz)	Pass
Emissions at Band Edge (Rest. Band – High Edge)	BLE 1 Mbs Traffic Mode - High Channel (Channel 40 – 2480 MHz)	Pass
Emissions at Band Edge (Rest. Band – Low Edge)	Proprietary radio 2400 MHz Traffic Mode - Low Channel (Channel 2 – 2402 MHz)	Pass
Emissions at Band Edge (Rest. Band – High Edge)	Proprietary radio 2400 MHz Traffic Mode - High Channel (Channel 80 – 2402 MHz)	Pass

* For detailed measurements, see tables and graphs in sections below

4.5.2 Band Edge Compliance (Restricted Band) Bluetooth Low Energy 1 Mb/s– Test Details

Restricted Band – Low Edge – (Channel 37 – 2402 MHz)

Test mode condition	BLE 1 Mbs Traffic Mode - Low Channel (Channel 37 – 2402 MHz)	
Antenna orientation	Horizontal and vertical	
Sweep frequency	2282 MHz- 2442 MHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Sam Ebadeh	Date: 2020.06.08
Environmental conditions	Temperature: 20,6 °C	Humidity: 42,4 %
Chamber details	Chamber: SAC 5	

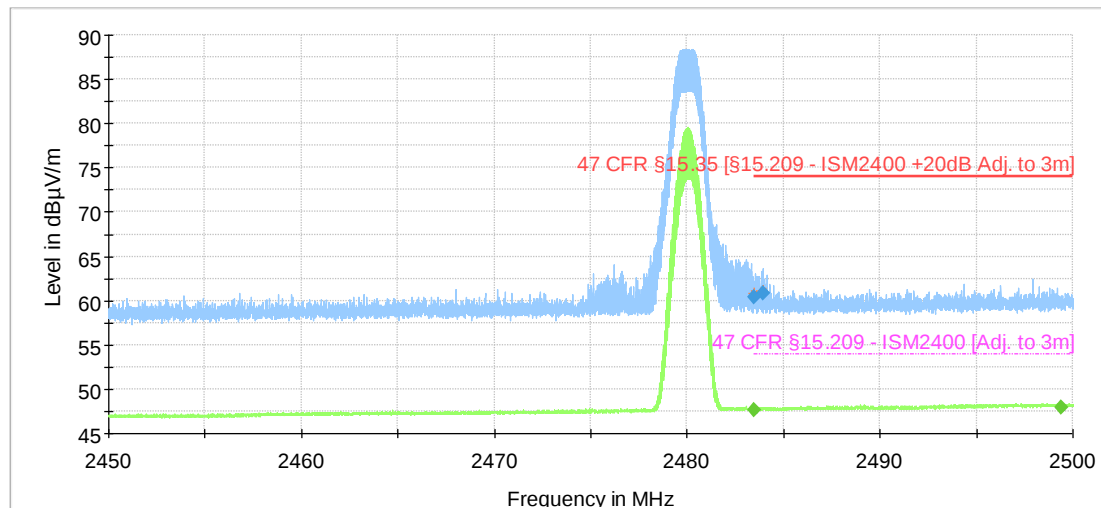


- Preview Result 2-AVG
- Preview Result 1-PK+
- Critical_Freqs AVG
- Critical_Freqs PK+
- 47 CFR §15.35 [§15.209 - ISM2400 +20dB Adj. to 3m]
- 47 CFR §15.209 - ISM2400 [Adj. to 3m]
- Final_Result PK+
- Final_Result AVG

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2356.160000	59.54	---	73.98	14.44	1000.0	1000.000	112.0	V	0.0
2368.960000	---	46.90	53.98	7.08	1000.0	1000.000	210.0	V	143.0
2390.000000	---	46.78	53.98	7.20	1000.0	1000.000	102.0	V	352.0
2390.000000	59.88	---	73.98	14.10	1000.0	1000.000	159.0	H	269.0
2400.000000	---	46.90	---	---	1000.0	1000.000	195.0	H	179.0
2400.000000	62.93	---	---	---	1000.0	1000.000	135.0	H	338.0

Restricted Band – High Edge – (Channel 39 – 2480 MHz)

Test mode condition	BLE 1 Mbs Traffic Mode - High Channel (Channel 39 – 2480 MHz)	
Antenna orientation	Horizontal and vertical	
Sweep frequency	2450 MHz - 2500 MHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Sam Ebadeh	Date: 2020.06.08
Environmental conditions	Temperature: 20,6 °C	Humidity: 42,4 %
Chamber details	Chamber: SAC 5	



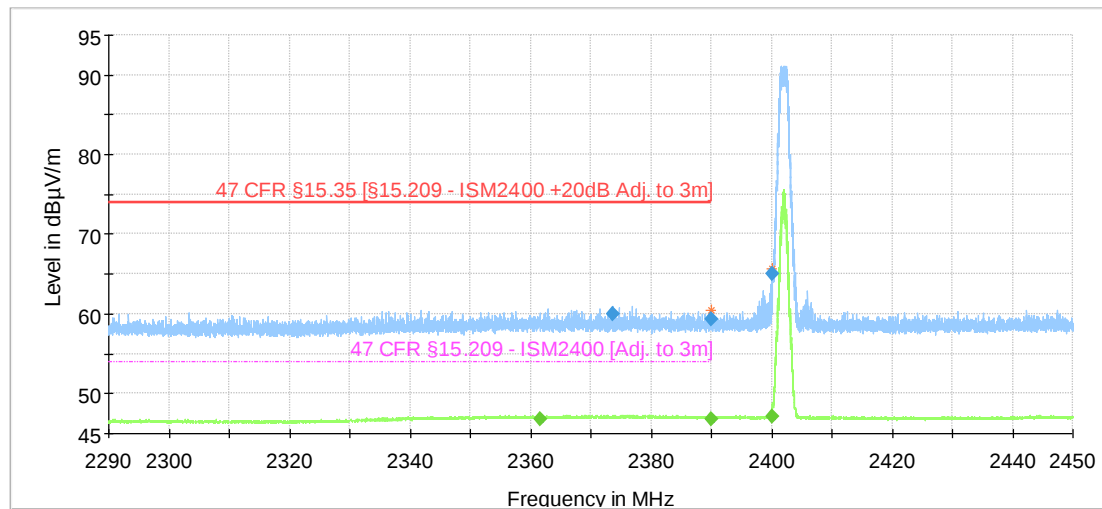
- Preview Result 2-AVG
- Preview Result 1-PK+
- Critical_Freqs AVG
- Critical_Freqs PK+
- 47 CFR §15.35 [§15.209 - ISM2400 +20dB Adj. to 3m]
- 47 CFR §15.209 - ISM2400 [Adj. to 3m]
- Final_Result PK+
- Final_Result AVG

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2483.500000	---	47.59	53.98	6.39	1000.0	1000.000	135.0	H	247.0
2483.500000	60.44	---	73.98	13.54	1000.0	1000.000	122.0	V	0.0
2483.945000	60.89	---	73.98	13.09	1000.0	1000.000	102.0	H	167.0
2499.415000	---	47.98	53.98	6.00	1000.0	1000.000	210.0	H	96.0

4.5.3 Band Edge Compliance (Restricted Band) Proprietary radio 2400 MHz – Test Details

Restricted Band – Low Edge – (Channel 2 – 2402 MHz)

Test mode condition	Proprietary radio 2400 MHz Traffic Mode - Low Channel (Channel 0 – 2402 MHz)	
Antenna orientation	Horizontal and vertical	
Sweep frequency	2290 MHz - 2450 MHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Sam Ebadeh	Date: 2020.06.08
Environmental conditions	Temperature: 20,6 °C	Humidity: 42,4 %
Chamber details	Chamber: SAC 5	

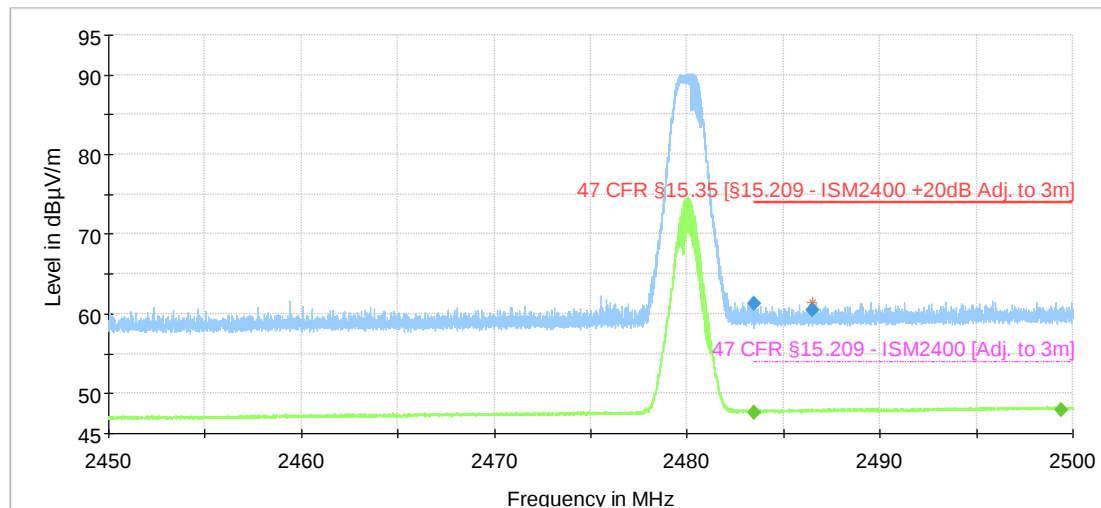


- Preview Result 2-AVG
- Preview Result 1-PK+
- Critical_Freqs AVG
- Critical_Freqs PK+
- 47 CFR §15.35 [§15.209 - ISM2400 +20dB Adj. to 3m]
- 47 CFR §15.209 - ISM2400 [Adj. to 3m]
- Final_Result PK+
- Final_Result AVG

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2361.696000	---	46.86	53.98	7.12	1000.0	1000.000	158.0	V	28.0
2373.680000	60.01	---	73.98	13.97	1000.0	1000.000	146.0	V	0.0
2390.000000	---	46.78	53.98	7.20	1000.0	1000.000	122.0	H	316.0
2390.000000	59.34	---	73.98	14.64	1000.0	1000.000	112.0	V	305.0
2400.000000	---	47.17	---	---	1000.0	1000.000	159.0	H	0.0
2400.000000	65.05	---	---	---	1000.0	1000.000	196.0	H	3.0

Restricted Band – High Edge – (Channel 80 – 2480 MHz)

Test mode condition	Proprietary radio 2400 MHz Traffic Mode - High Channel (Channel 80 – 2480 MHz)	
Antenna orientation	Horizontal and vertical	
Sweep frequency	2450 MHz - 2500 MHz	
Standard	47 CFR Part 15 subpart C	
EUT	A002835296-002	
Ancillary Equipment	None	
Test Engineer	Sam Ebadeh	Date: 2020.06.08
Environmental conditions	Temperature: 20,6 °C	Humidity: 42,4 %
Chamber details	Chamber: SAC 5	



- Preview Result 2-AVG
- Preview Result 1-PK+
- Critical_Freqs AVG
- Critical_Freqs PK+
- 47 CFR §15.35 [§15.209 - ISM2400 +20dB Adj. to 3m]
- 47 CFR §15.209 - ISM2400 [Adj. to 3m]
- Final_Result PK+
- Final_Result AVG

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2483.500000	---	47.60	53.98	6.38	1000.0	1000.000	183.0	H	3.0
2483.500000	61.24	---	73.98	12.74	1000.0	1000.000	183.0	V	0.0
2486.510000	60.40	---	73.98	13.58	1000.0	1000.000	205.0	V	120.0
2499.365000	---	47.98	53.98	5.99	1000.0	1000.000	100.0	H	338.0

4.6 Test Results – 20dB Bandwidth

4.6.1 20dB Bandwidth – Test Summary

Requirement is not applicable as the device is non-hopping

4.7 Test Results – Carrier (Hopping Channel) Separation

4.7.1 Carrier (Hopping Channel) Separation – Test Summary

Requirement is not applicable as the device is non-hopping

4.8 Test Results – Number of Hopping Channels

4.8.1 Number of Hopping Channels – Test Summary

Requirement is not applicable as the device is non-hopping

4.9 Test Results – Time of Occupancy (Dwell Time)

4.9.1 Time of Occupancy (Dwell Time) – Test Summary

Requirement is not applicable as the device is non-hopping

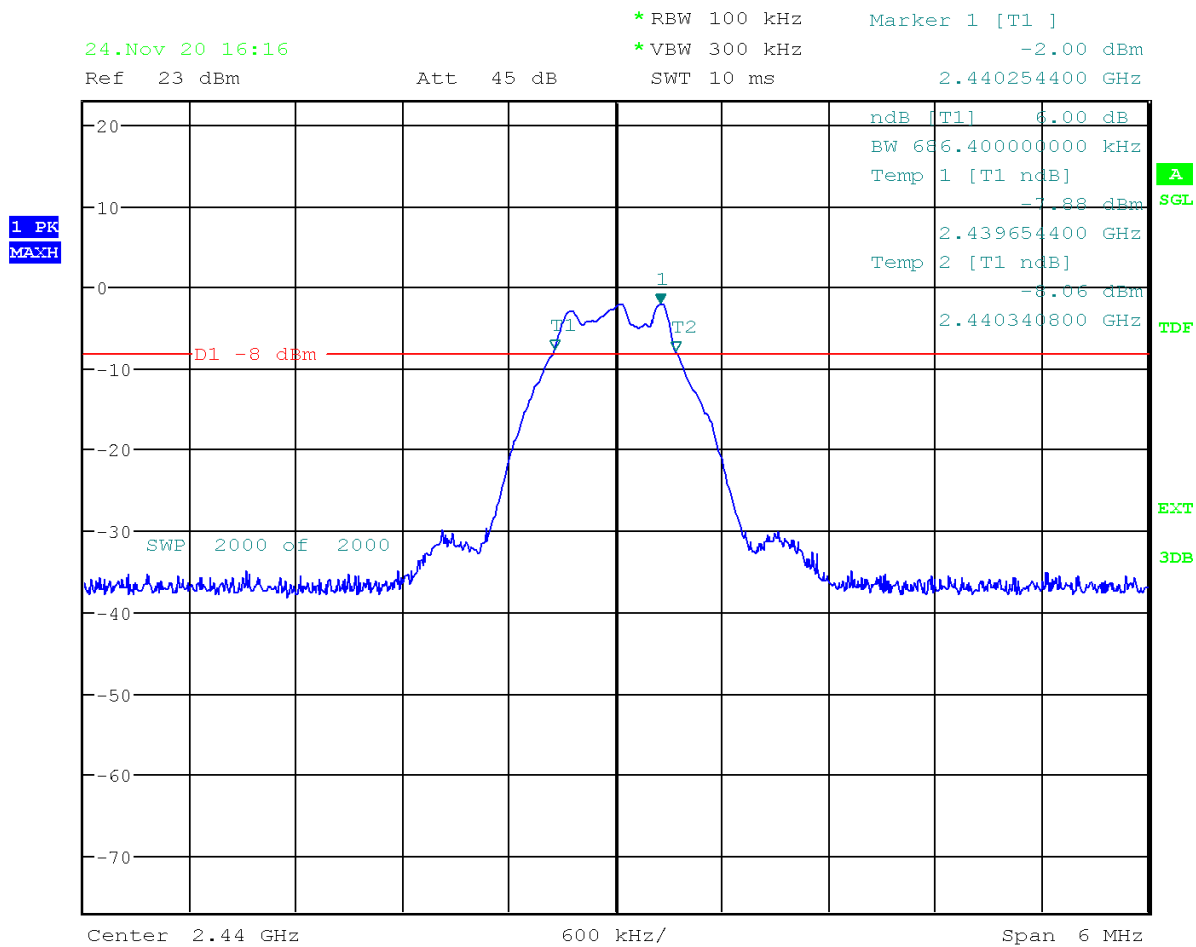
4.10 Test Results – 6dB Bandwidth

4.10.1 6dB Bandwidth – Test Summary

Test Specification		47 CFR 15.247 (a)(2)		
Test Engineer & Date		Niall Forrester	2020.11.24	
EUT and Ancillary Equipment IDs		A002835296-004	None	
EUT Operation Mode(s)		Direct Test Mode (DTM)		
EUT Wireless Configuration(s)		See below table		
EUT Hardware Configuration(s)		-		
Overall Result		Pass		

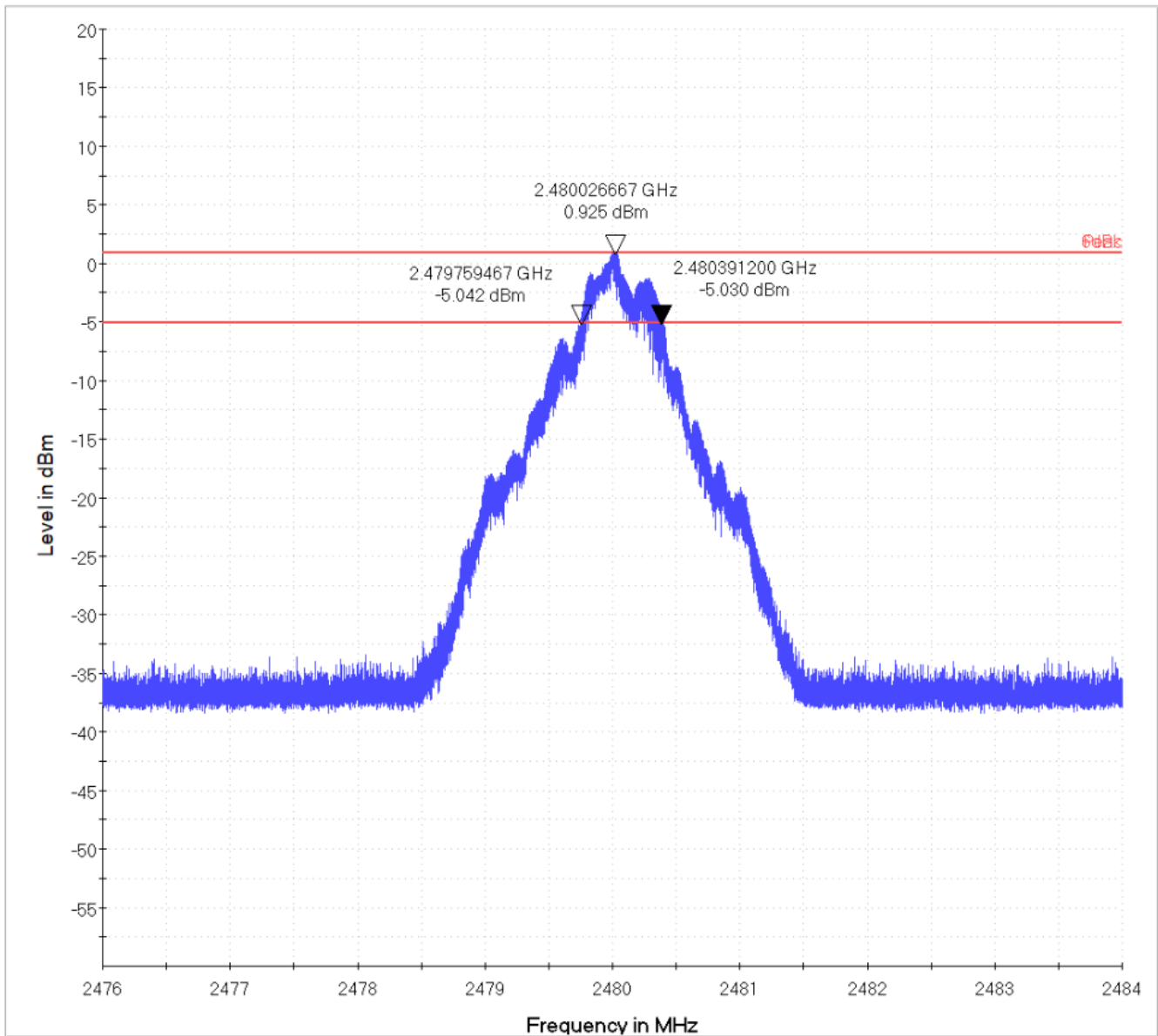
Test Parameter	Wireless Configuration	Measured Level (kHz)	Limit (kHz)	Result
6dB Bandwidth	BLE Low Channel (2402 MHz) GFSK – 1 MB/s	691.20	500	Pass
6dB Bandwidth	BLE Low Channel (2402 MHz) GFSK – 2 MB/s	758.40	500	Pass
6dB Bandwidth	BLE Mid Channel (2440 MHz) GFSK – 1 MB/s	684.40	500	Pass
6dB Bandwidth	BLE Mid Channel (2440 MHz) GFSK – 2 MB/s	758.40	500	Pass
6dB Bandwidth	BLE High Channel (2480 MHz) GFSK – 1 MB/s	696.00	500	Pass
6dB Bandwidth	BLE High Channel (2480 MHz) GFSK – 2 MB/s	758.40	500	Pass
6dB Bandwidth	Proprietary radio 2400 MHz Low Channel (2402 MHz)	644.00	500	Pass
6dB Bandwidth	Proprietary radio 2400 MHz Mid Channel (2440 MHz)	644.53	500	Pass
6dB Bandwidth	Proprietary radio 2400 MHz High Channel (2480 MHz)	631.73	500	Pass

4.10.2 6dB Bandwidth – Test Details (Worse case plot BLE)



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4.10.3 6dB Bandwidth – Test Details (Worse case plot Proprietary Radio)



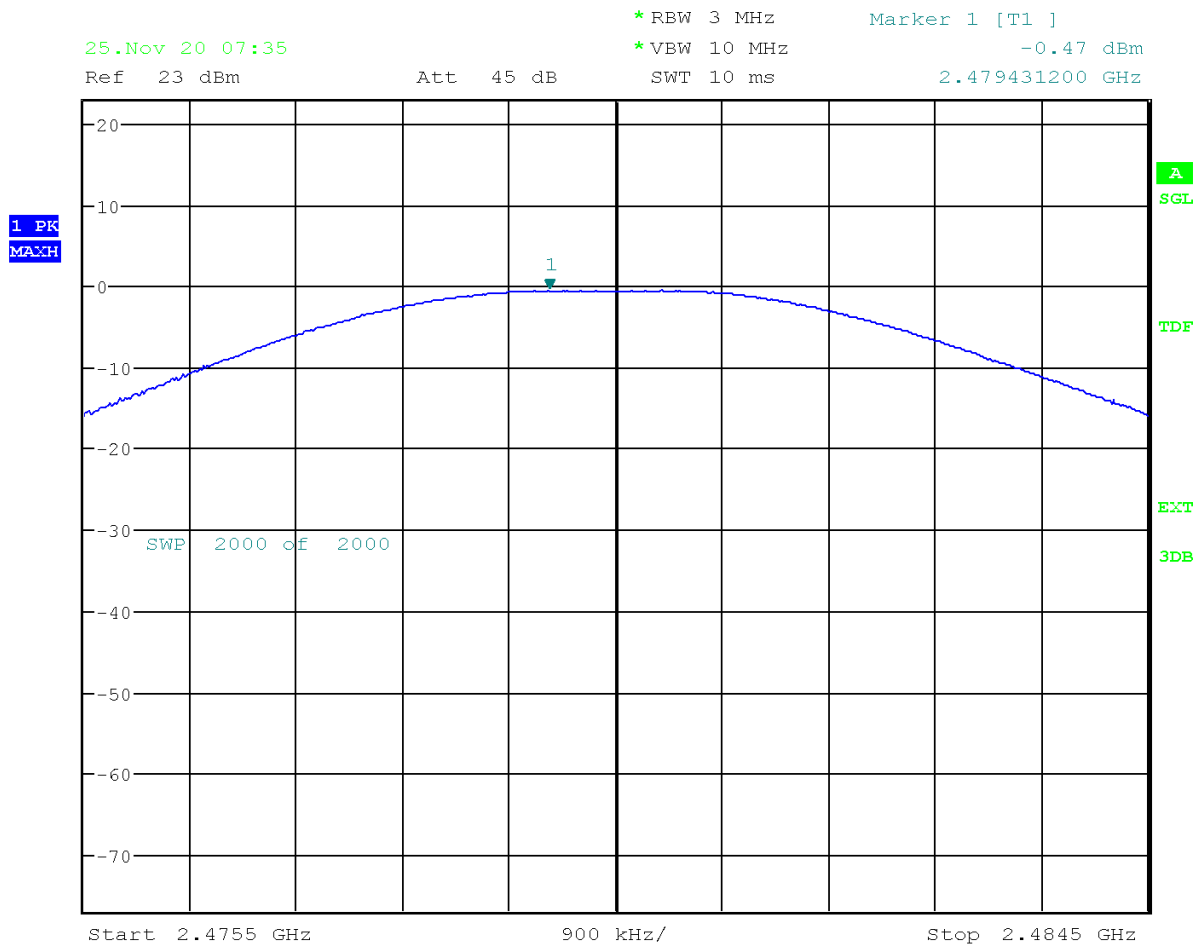
4.11 Test Results – Peak Conducted Output Power

4.11.1 Peak Conducted Output Power – Test Summary

Test Specification		47 CFR 15.247(b)			
Test Engineer & Date		Niall Forrester		2020.11.24 – 2020.11.25	
EUT and Ancillary Equipment IDs		A002835296_004		None	
EUT Operation Mode(s)		Direct Test Mode (DTM)			
EUT Wireless Configuration(s)		See below table			
EUT Hardware Configuration(s)		-			
Overall Result		Pass			

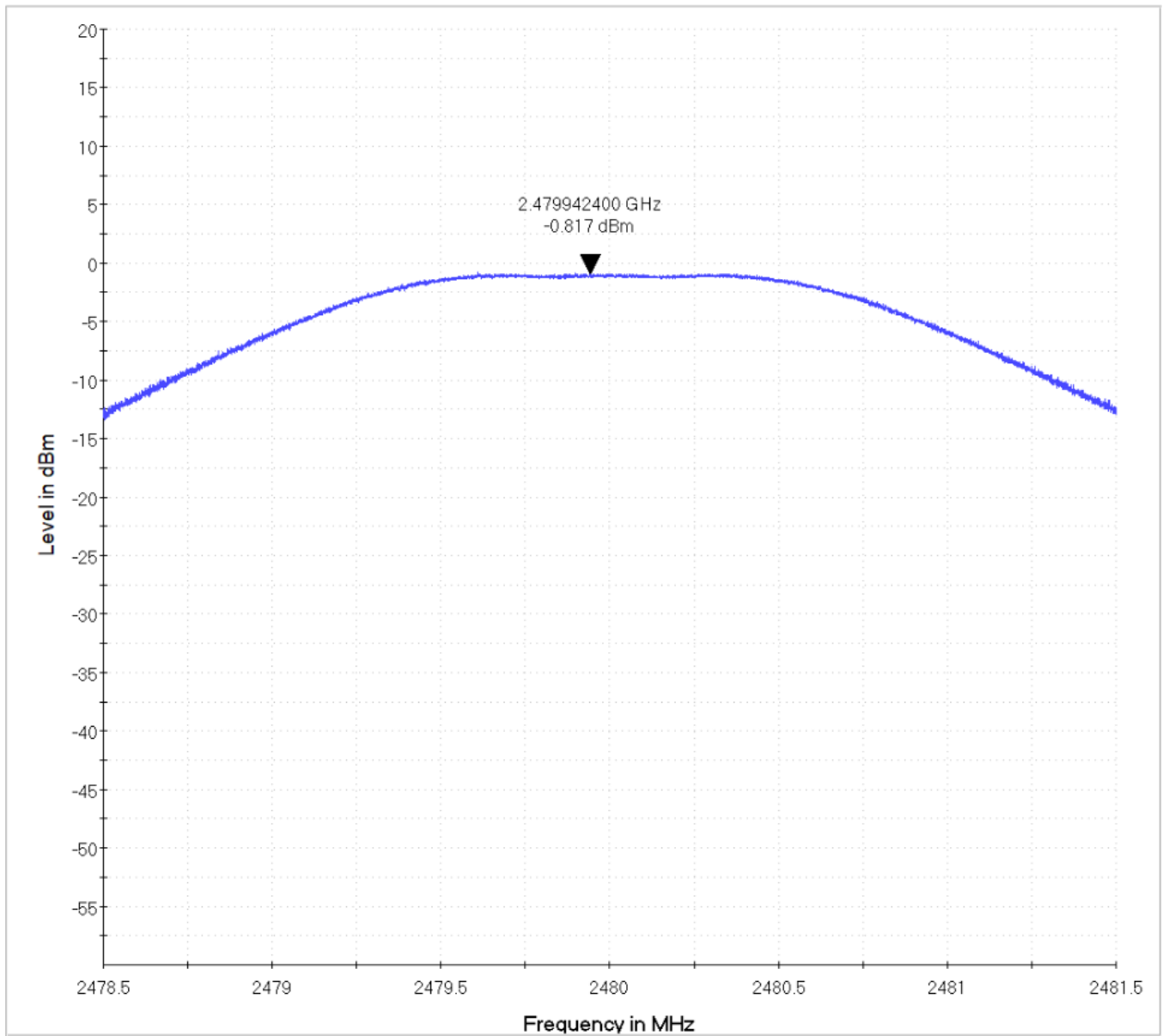
Test Parameter	Wireless Configuration	Measured Level (dBm)			Result
		Low 1.10V	Nominal 1.30V	High 1.45V	
Peak Conducted Output Power	BLE Low Channel (2402 MHz) GFSK – 1 MB/s	-0.86	-1.00	-1.04	Pass
Peak Conducted Output Power	BLE Low Channel (2402 MHz) GFSK – 2 MB/s	-0.80	-0.88	-0.87	Pass
Peak Conducted Output Power	BLE Mid Channel (2440 MHz) GFSK – 1 MB/s	-1.36	-1.47	-1.44	Pass
Peak Conducted Output Power	BLE Mid Channel (2440 MHz) GFSK – 2 MB/s	-1.17	-1.35	-1.27	Pass
Peak Conducted Output Power	BLE High Channel (2480 MHz) GFSK – 1 MB/s	-0.56	-0.65	-0.61	Pass
Peak Conducted Output Power	BLE High Channel (2480 MHz) GFSK – 2 MB/s	-0.47	-0.55	-0.53	Pass
Peak Conducted Output Power	Proprietary radio 2400 MHz Low Channel (2402 MHz)	-1.10	-1.02	-1.09	Pass
Peak Conducted Output Power	Proprietary radio 2400 MHz Mid Channel (2440 MHz)	-0.95	-0.94	-0.99	Pass
Peak Conducted Output Power	Proprietary radio 2400 MHz High Channel (2480 MHz)	-0.82	-0.86	-0.82	Pass

4.11.2 Peak Conducted Output Power – Test Details (BLE High Channel 2480 MHz GFSK–2 MB/s)



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4.11.3 Peak Conducted Output Power – Test Details Proprietary radio 2400 MHz High channel



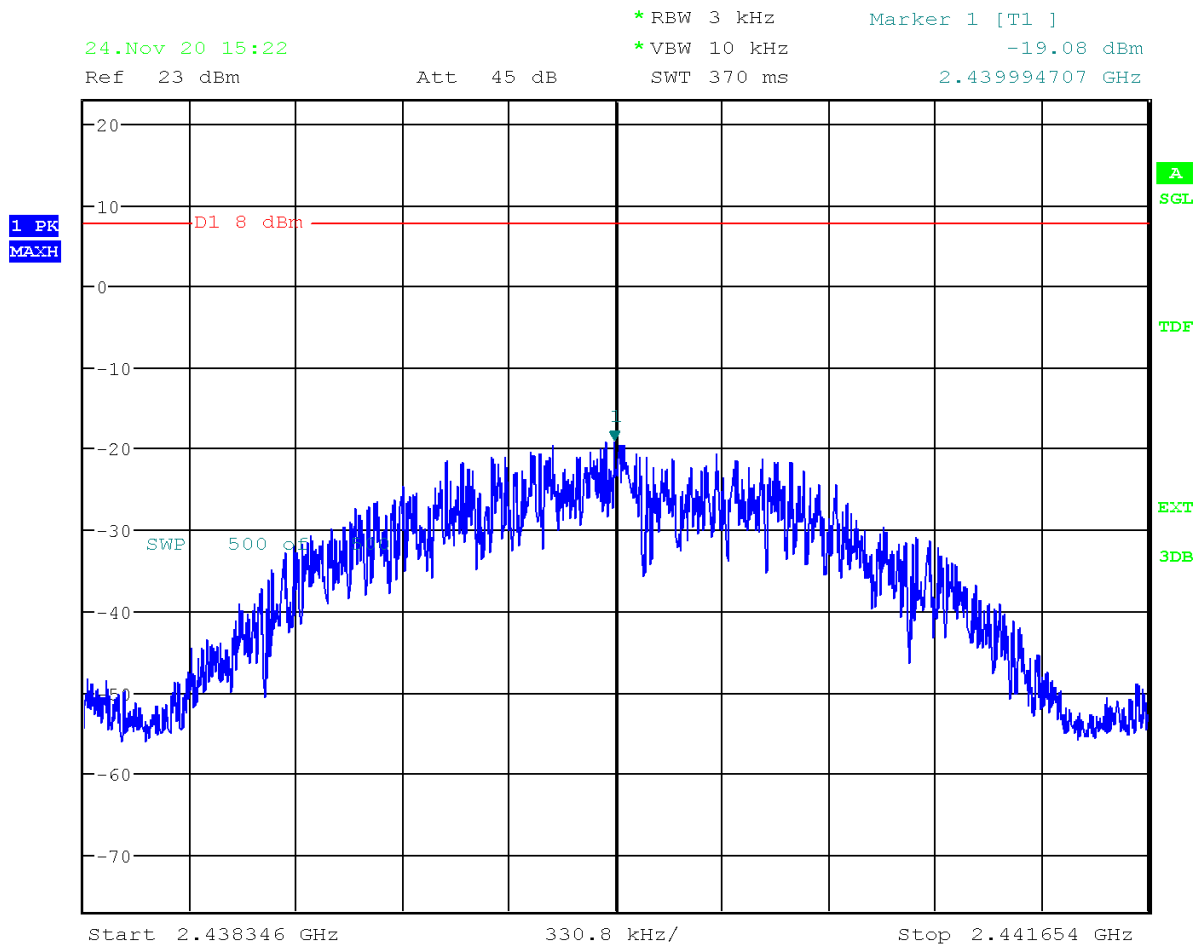
4.12 Test Results – Power Spectral Density

4.12.1 Power Spectral Density – Test Summary

Test Specification		47 CFR 15.247 (e)		
Test Engineer & Date		Niall Forrester	2020.11.24	
EUT and Ancillary Equipment IDs		A002835296_004	None	
EUT Operation Mode(s)		Direct Test Mode (DTM)		
EUT Wireless Configuration(s)		See below table		
EUT Hardware Configuration(s)		-		
Overall Result		Pass		

Test Parameter	Wireless Configuration	Measured (dBm/3kHz)	Limit (dBm/3kHz)	Result
Power Density	BLE Low Channel (2402 MHz) GFSK – 1 MB/s	-17.06	> -30.00 < 8.00	Pass
Power Density	BLE Low Channel (2402 MHz) GFSK – 2 MB/s	-18.42	> -30.00 < 8.00	Pass
Power Density	BLE Mid Channel (2440 MHz) GFSK – 1 MB/s	-17.73	> -30.00 < 8.00	Pass
Power Density	BLE Mid Channel (2440 MHz) GFSK – 2 MB/s	-19.08	> -30.00 < 8.00	Pass
Power Density	BLE High Channel (2480 MHz) GFSK – 1 MB/s	-17.02	> -30.00 < 8.00	Pass
Power Density	BLE High Channel (2480 MHz) GFSK – 2 MB/s	-18.40	> -30.00 < 8.00	Pass
Power Density	Proprietary radio 2400 MHz Low Channel (2402 MHz)	-20.20	> -30.00 < 8.00	Pass
Power Density	Proprietary radio 2400 MHz Mid Channel (2440 MHz)	-19.05	> -30.00 < 8.00	Pass
Power Density	Proprietary radio 2400 MHz High Channel (2480 MHz)	-19.66	> -30.00 < 8.00	Pass

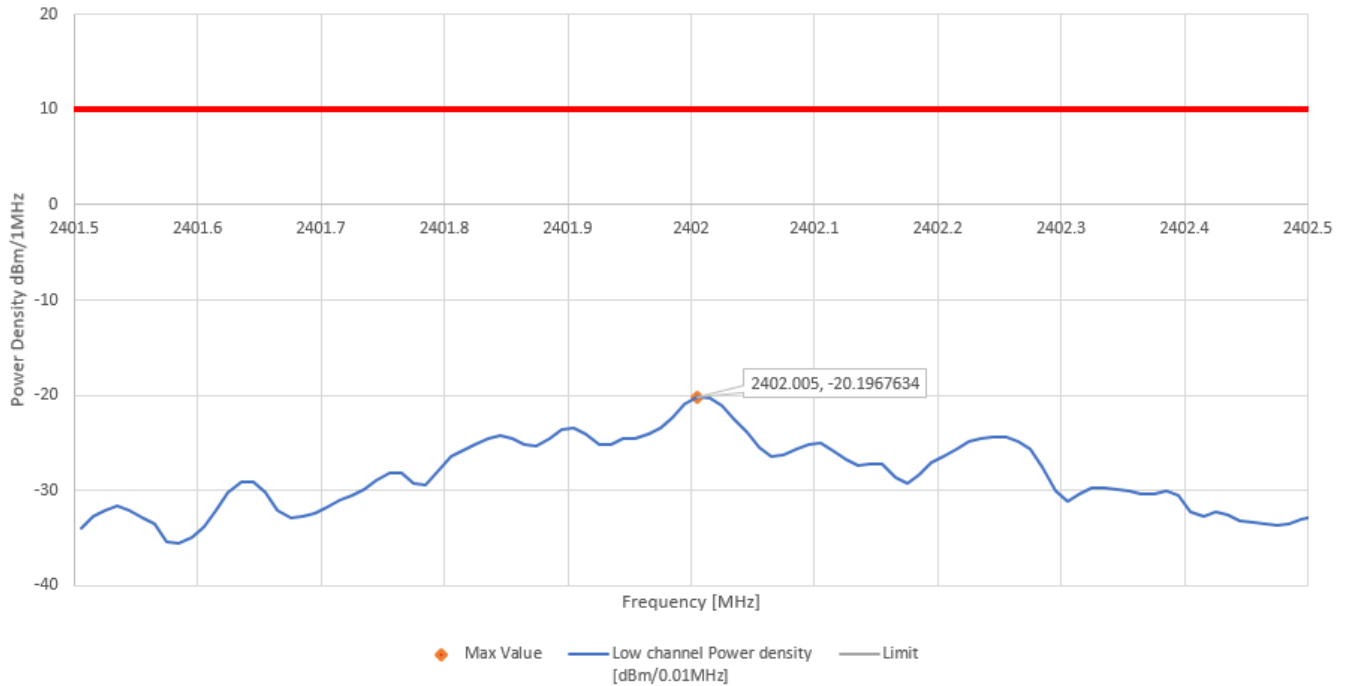
4.12.2 Power Spectral Density – Test Details (BLE High Channel 2480 MHz GFSK–1 MB/s)



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4.12.3 Power Spectral Density – Test Details Proprietary radio 2400 MHz (Worst Case Plot Low channel 2405 MHz)

4.3.2.3 Power Spectral Density



5. TEST EQUIPMENT STATUS

5.1 List of Hardware with Calibration Dates

5.1.1 Hardware List – CTE System

Type	Manufacturer	Model	Serial Number / ID	Calibration Date	Calibration Due
Comprehensive Testing Environment	TÜV Rheinland LGA Products	HWE 6000	00139	N/A	N/A
Bluetooth Signaling Unit	Rohde & Schwarz	CMW500	163750 2711468	16.07.2020	16.07.2021
Spectrum Analyzer	Rohde & Schwarz	FSU26	100308 2704108	14.07.2020	14.07.2021
Vector Signal Generator	Rohde & Schwarz	SMU200A	101584 2704111	04.08.2020	04.08.2021
Power Supply	Keithley	2303	1198722 2717714	24.07.2020	24.07.2021
Multimeter	Keithley	2700	1035251 2704115	09.07.2020	09.07.2021
Average Power Sensor	Rohde & Schwarz	NRP-Z31	102145 2704104	17.07.2020	17.07.2021
Temperature Chamber	Vötsch	VT4002	58566081940010 2717693	N/A	N/A
Temp. & Humidity Logger	Lufft	Opus 20	113.0118.0802.033 2771025	31.07.2020	31.07.2022

5.1.2 Hardware List – Conducted Emissions System

N/A

5.1.3 Hardware List – SAC5 System

Type	Manufacturer	Model	Serial Number / ID	Calibration Date	Calibration Due
EMI Test Receiver	Rohde & Schwarz	ESW44	101760 2881044	28.10.2019	28.10.2020
Ultra Broadband Antenna	Rohde & Schwarz	HL562E	100988 2823181	23.07.2019	23.07.2021
Double Ridged Waveguide Horn Antenna	Rohde & Schwarz	HF907	102678 2823164	15.07.2019	15.07.2021
Control Device	Maturo	NCD	NCD/393/2372.01	N/A	N/A
Open Switch & Control Unit	Rohde & Schwarz	OSP150	100081 2884198	11.11.2019	11.11.2020
Open Switch & Control Unit	Rohde & Schwarz	OSP120	100084 2761253	11.11.2019	11.11.2020
Shielded Filter Unit	Rohde & Schwarz	OSP-F Extension 1	101333 2761265	11.11.2019	11.11.2020
Shielded Filter Unit	Rohde & Schwarz	OSP-F Extension 2	101335 2761266	01.04.2019	01.04.2020
Shielded Filter Unit	Rohde & Schwarz	OSP-F Base Unit	101330 2761262	01.04.2019	01.04.2020
Humidity Temperature Probe	Rotronic	HF532- DG1XX21X	0061829280 2926379	14.08.2018	14.08.2020

5.2 Software / Firmware Versions

Equipment	Software / Firmware Name	Version
Comprehensive Testing Environment (CTE)	CTE – TMF CTE – BT	V47.5 V43.1
Conducted Emissions System	EMC 32	N/A
SAC 5	EMC 32	V10.50.40

6. MEASUREMENT UNCERTAINTY

6.1 Measurement Uncertainty for CTE

Parameter	Uncertainty (Coverage Factor k=2)
Maximum Output Power (15.247b)	±0.51 dB
6dB / 20dB Channel Bandwidth & 99% Occupied bandwidth (15.247a)	<5%
Carrier Frequency Separation (15.247a)	N/A
Number of Hopping Channels (15.247a)	N/A
Time of Occupancy – Dwell Time (15.247a)	N/A
Band Edge Compliance of Conducted Emissions (15.247a)	±1.04 dB
Conducted Spurious Emissions (15.247d)	±2.98 dB
Power Spectral Density (15.247e)	±0.51 dB

6.2 Measurement Uncertainty for Conducted Emissions

Parameter	Uncertainty (Coverage Factor k=2)
Conducted emissions with LISN 150KHz to 30 MHz	2.98 dB

6.3 Measurement Uncertainty for SAC 5 (Radiated Emissions & Band Edge)

Parameter	Uncertainty (Coverage Factor k=2)
Field Strength 10 Hz -9 kHz	3.38 dB
Field Strength 9 kHz -30 MHz	3.38 dB
Field Strength 30 MHz -1000 MHz	3.38 dB
Field Strength 1 GHz -18 GHz	4.88 dB
Field Strength 18 GHz - 40 GHz	5.14 dB

7. PHOTOGRAPHS

7.1 Photographs of the EUT

See 60393820-Appendix

7.2 Photographs of the Test Setup

See 60393820-Appendix