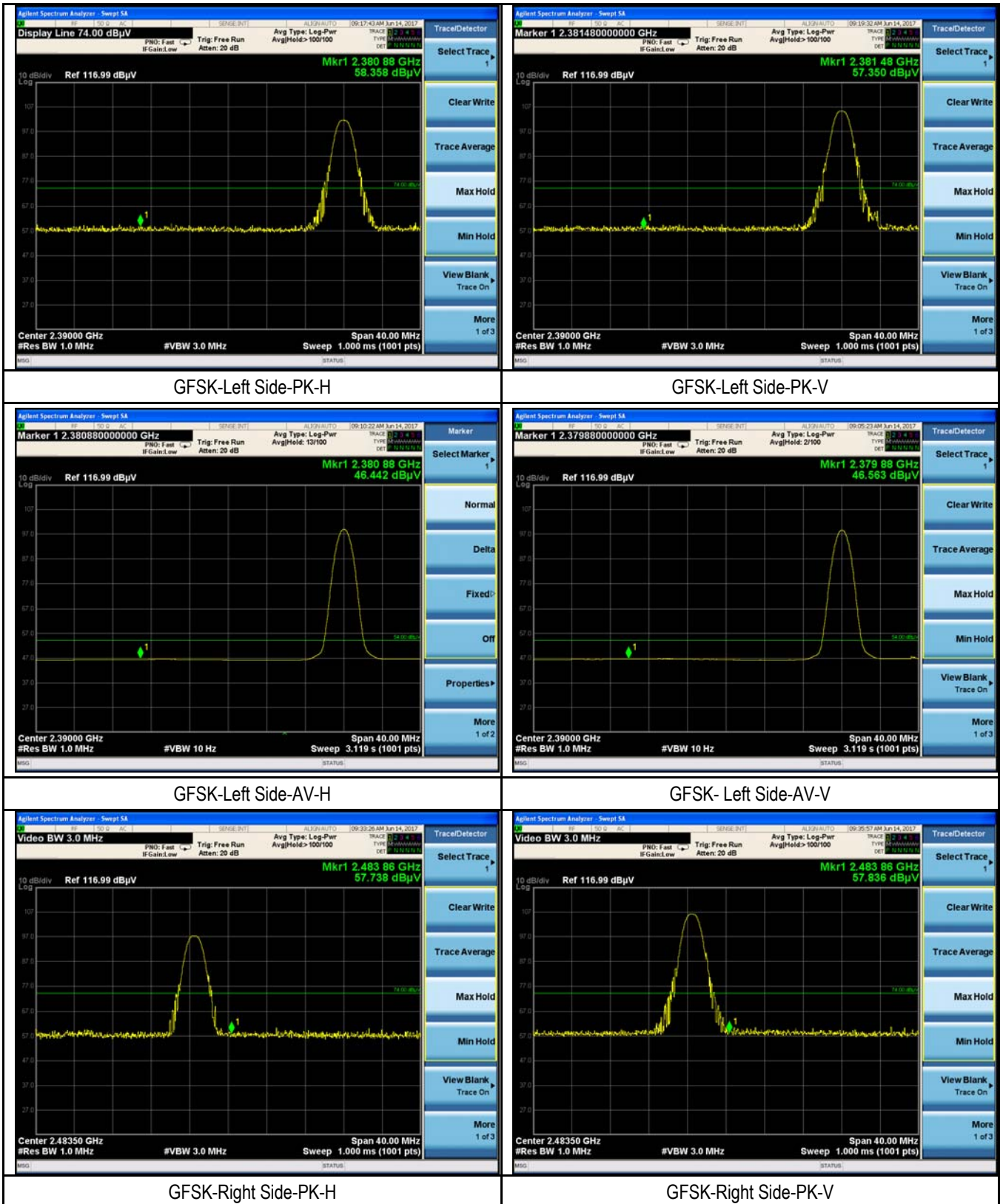
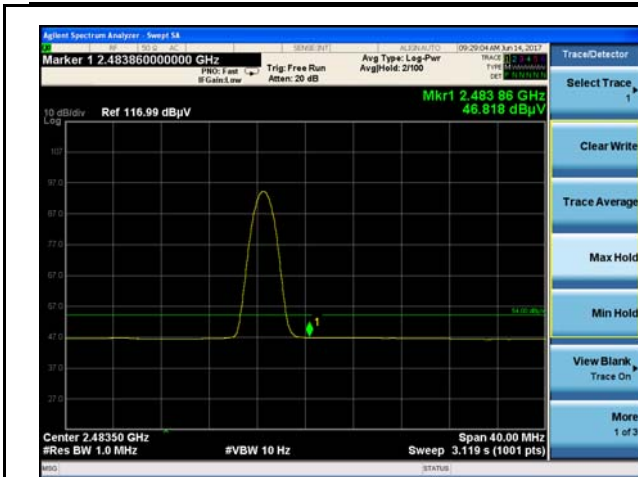


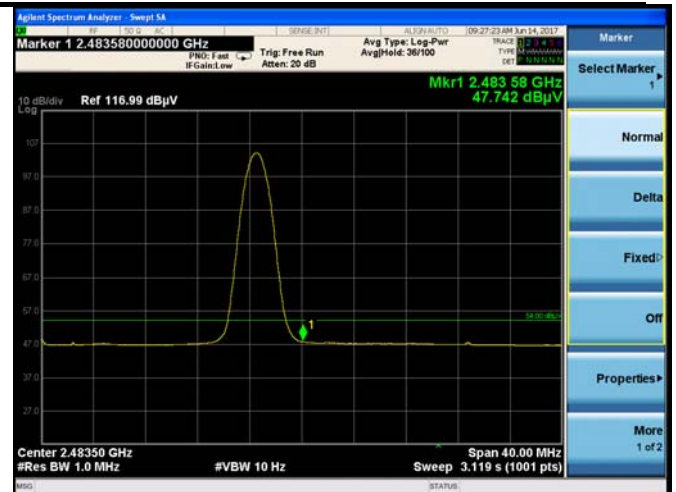
Test Plots GFSK Mode:



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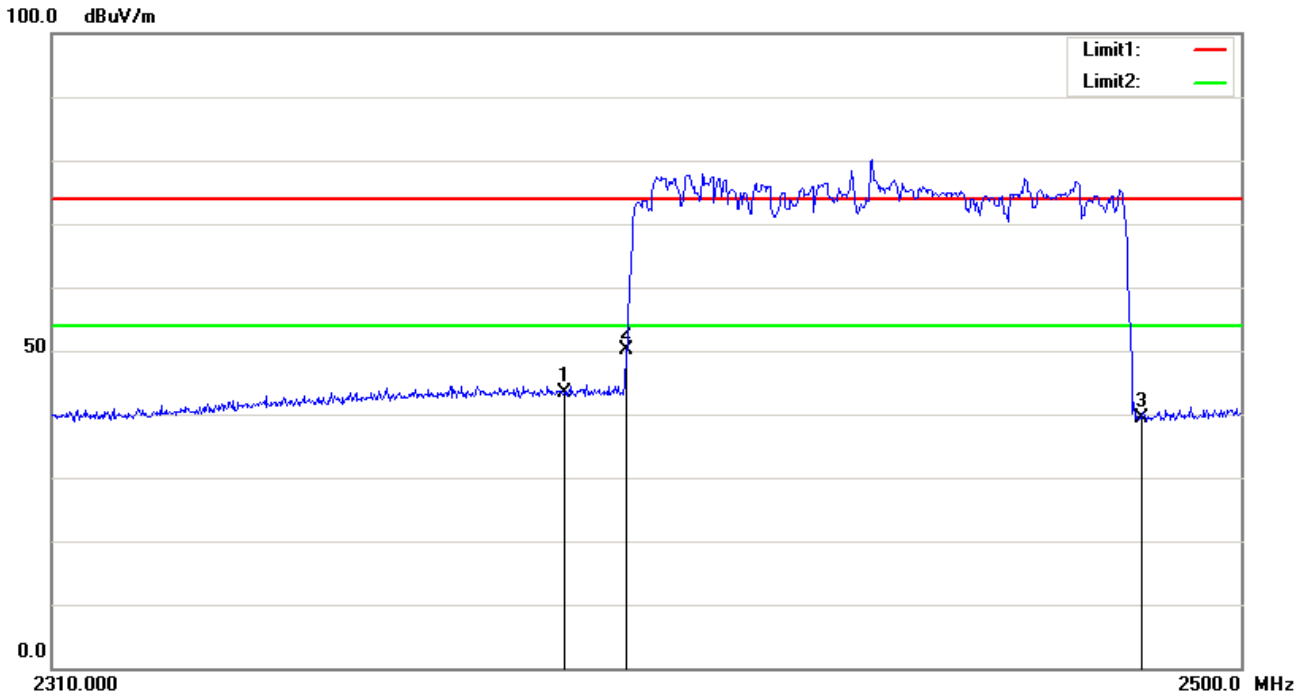


GFSK-Right Side-AV-H



GFSK-Right Side-AV-V

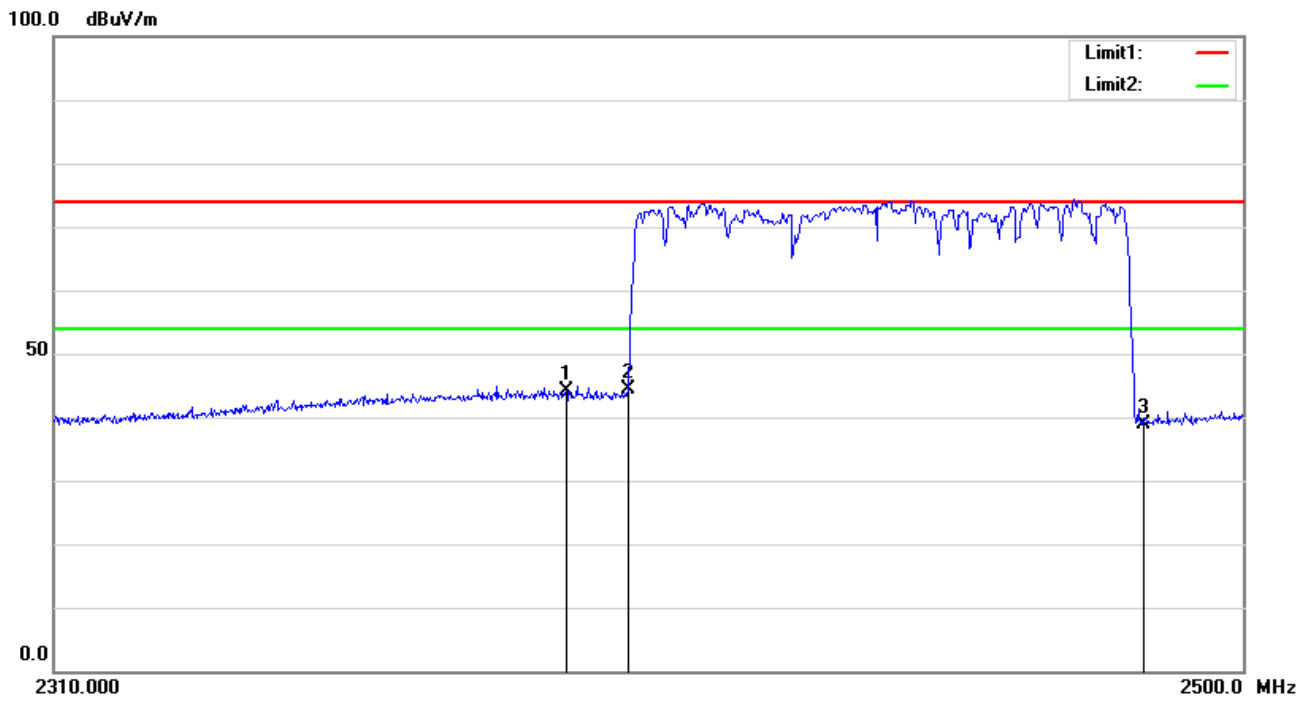
Test Mode: Hopping Mode



GFSK-Hopping-Horizontal

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)
1	2390.000	60.37	peak	31.53	52.55	4.02	43.37	74.00	-30.63	100	39
2	2400.000	67.26	peak	31.54	52.56	4.01	50.25	74.00	-23.75	100	146
3	2483.500	56.47	peak	31.59	52.63	4.06	39.49	74.00	-34.51	200	273

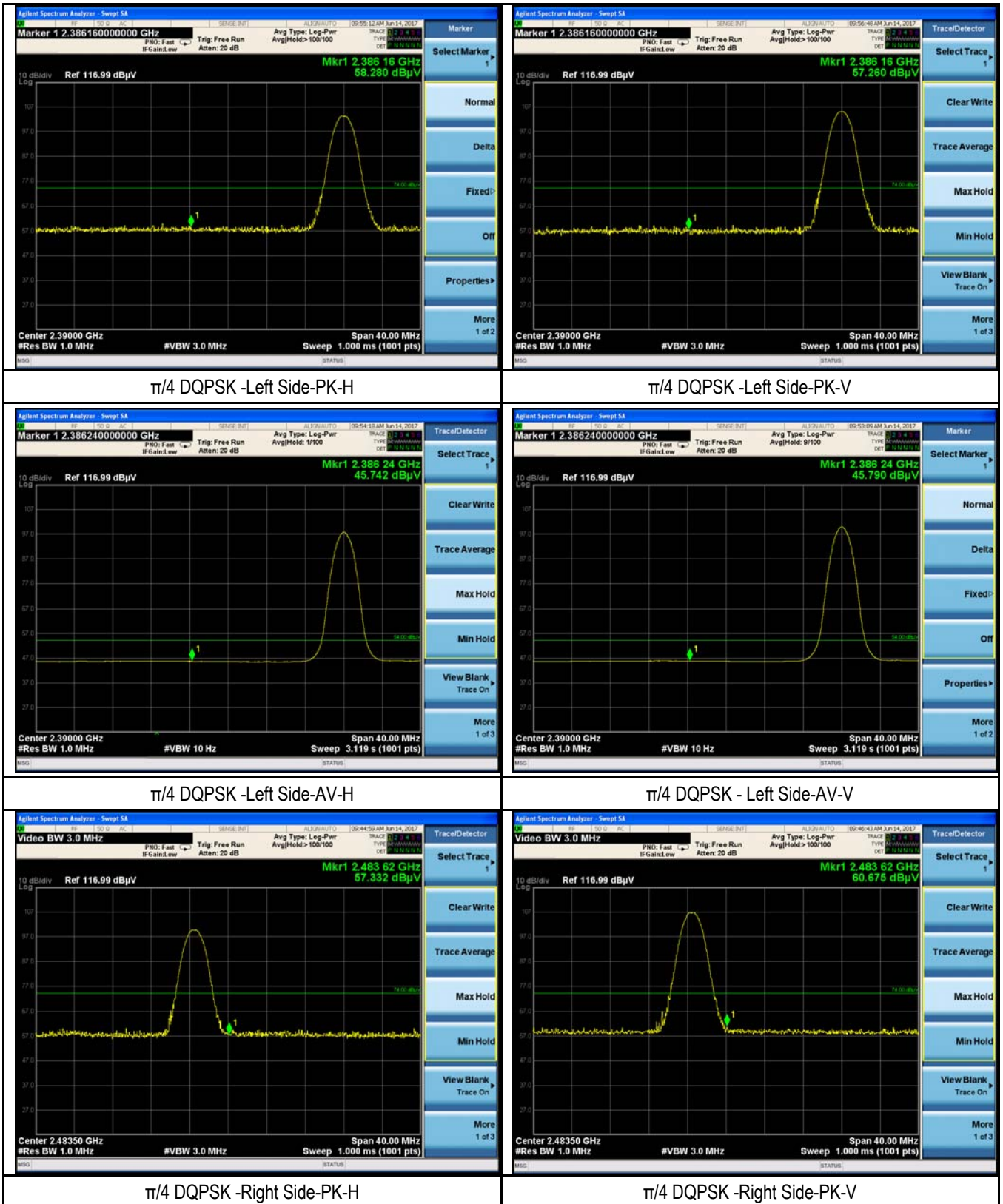
Test Mode:	Hopping Mode
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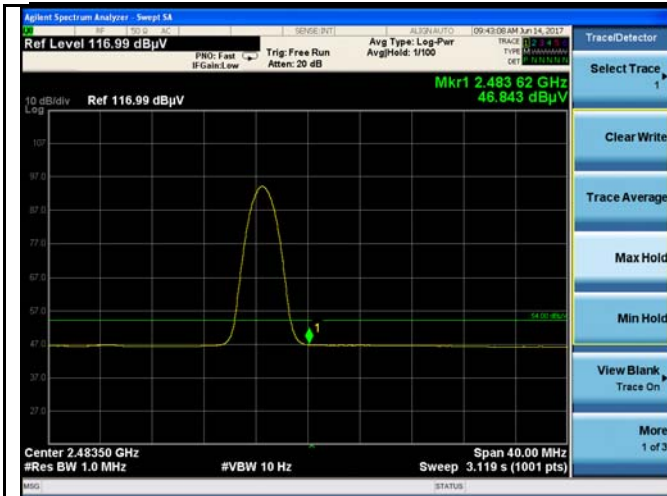
GFSK-Hopping-Vertical

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)
1	2390.000	61.19	peak	31.53	52.55	4.02	44.19	74.00	-29.81	200	241
2	2400.000	61.46	peak	31.54	52.56	4.01	44.45	74.00	-29.55	200	158
3	2483.500	55.96	peak	31.59	52.63	4.06	38.98	74.00	-35.02	300	305

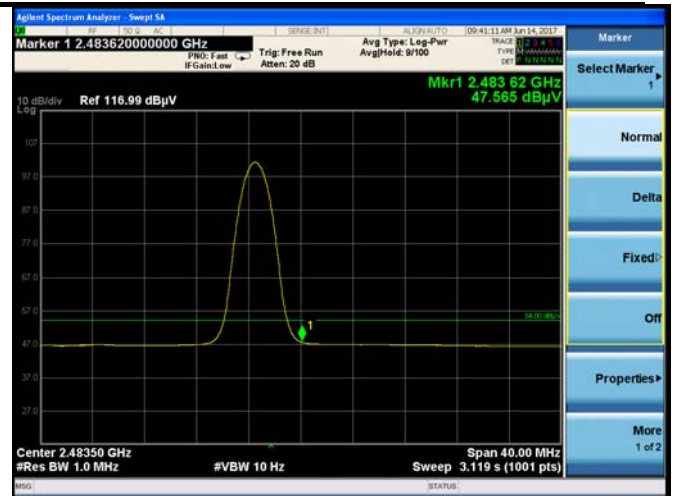
$\pi/4$ DQPSK Mode:



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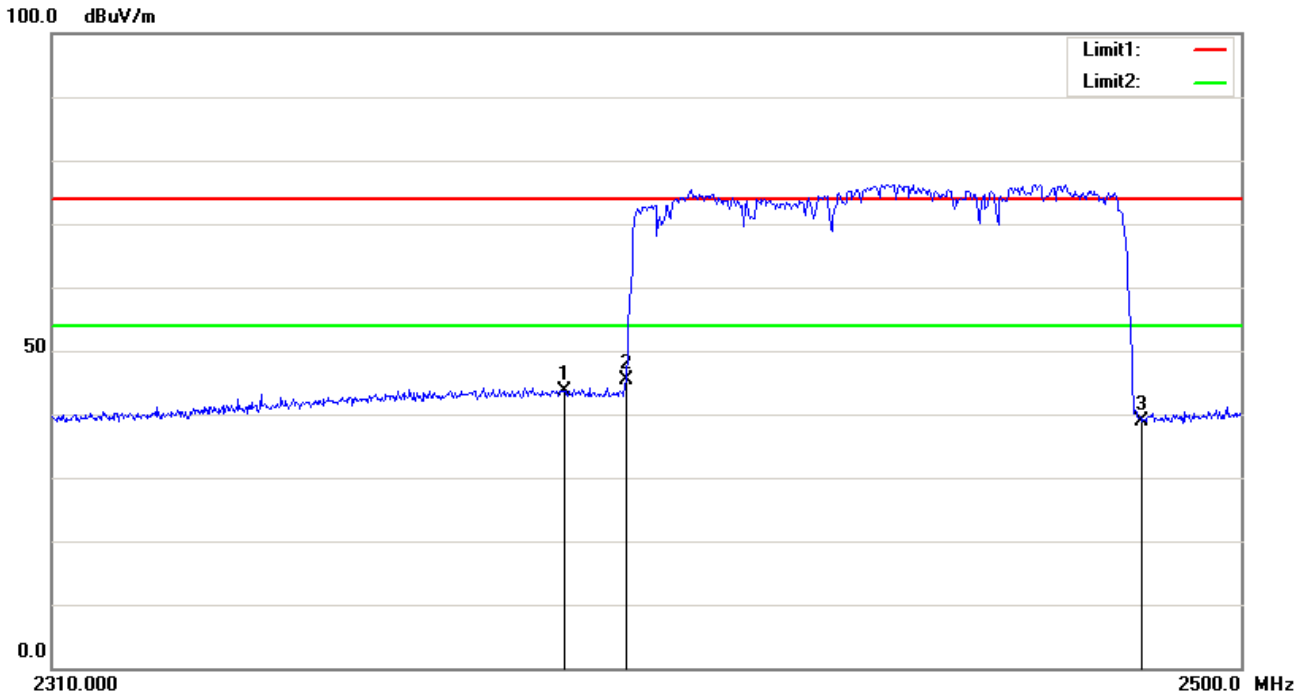


$\pi/4$ DQPSK -Right Side-AV-H



$\pi/4$ DQPSK -Right Side-AV-V

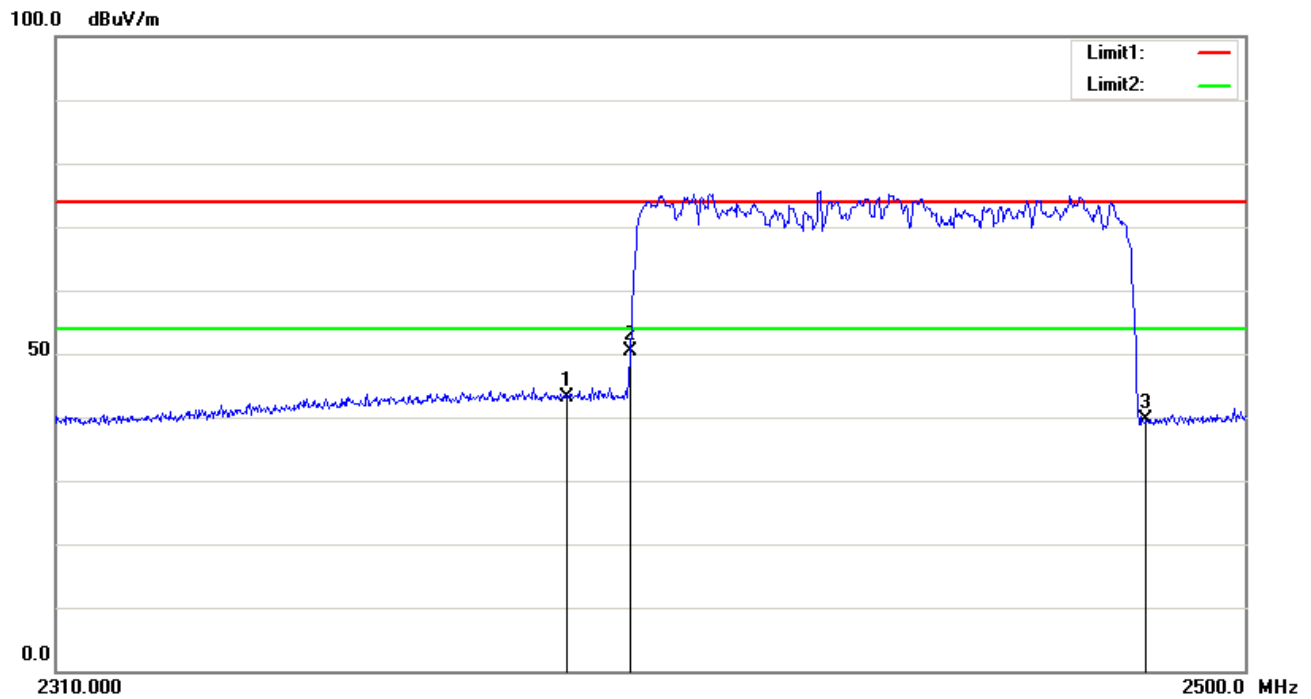
Test Mode: Hopping Mode



$\pi/4$ DQPSK -Hopping-Horizontal

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)
1	2390.000	60.69	peak	31.53	52.55	4.02	43.69	74.00	-30.31	100	150
2	2400.000	62.45	peak	31.54	52.56	4.01	45.44	74.00	-28.56	100	263
3	2483.500	55.85	peak	31.59	52.63	4.06	38.87	74.00	-35.13	200	147

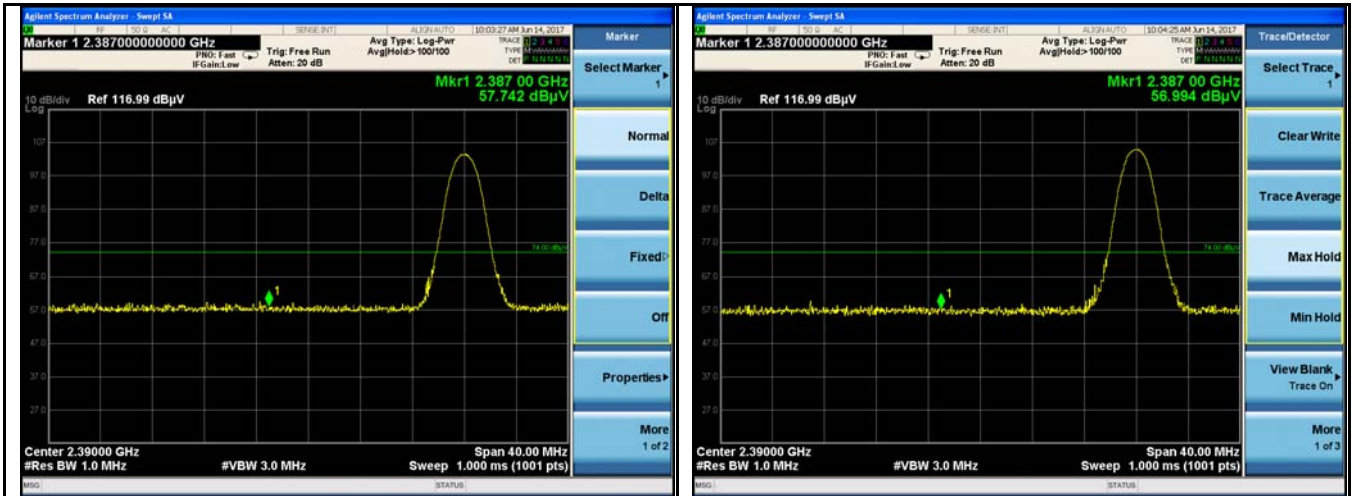
Test Mode: Hopping Mode



$\pi/4$ DQPSK -Hopping-Vertical

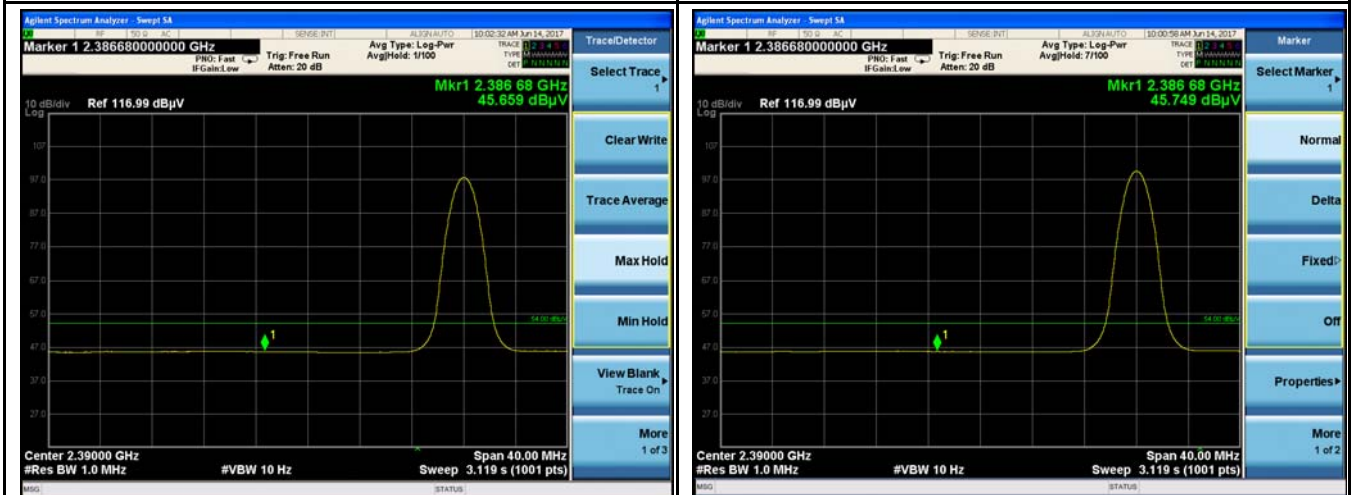
No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)
1	2390.000	60.17	peak	31.53	52.55	4.02	43.17	74.00	-30.83	200	203
2	2400.000	67.49	peak	31.54	52.56	4.01	50.48	74.00	-23.52	200	208
3	2483.500	56.55	peak	31.59	52.63	4.06	39.57	74.00	-34.43	100	250

8-DPSK Mode:



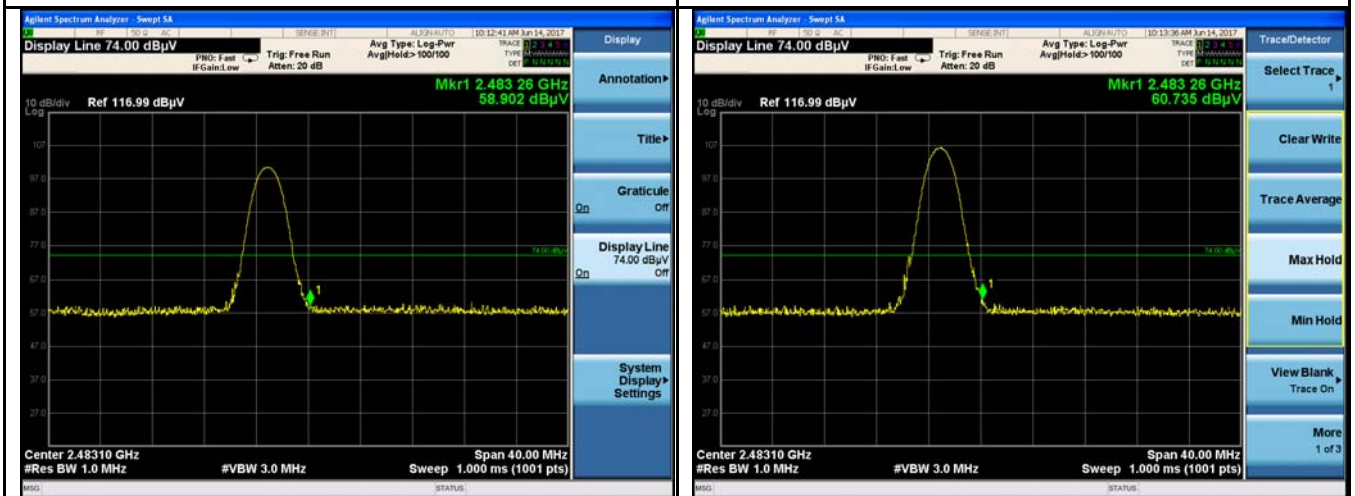
8-DPSK -Left Side-PK-H

8-DPSK -Left Side-PK-V



8-DPSK -Left Side-AV-H

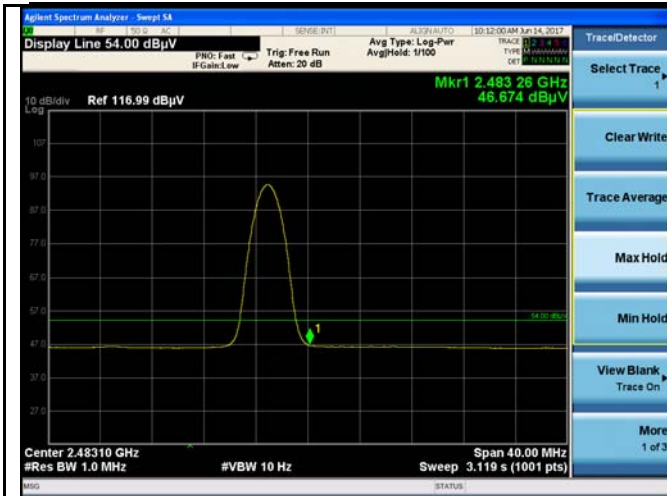
8-DPSK - Left Side-AV-V



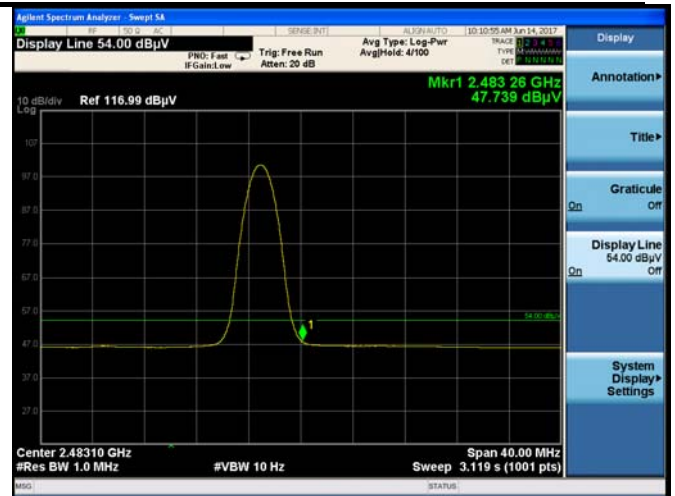
8-DPSK -Right Side-PK-H

8-DPSK -Right Side-PK-V

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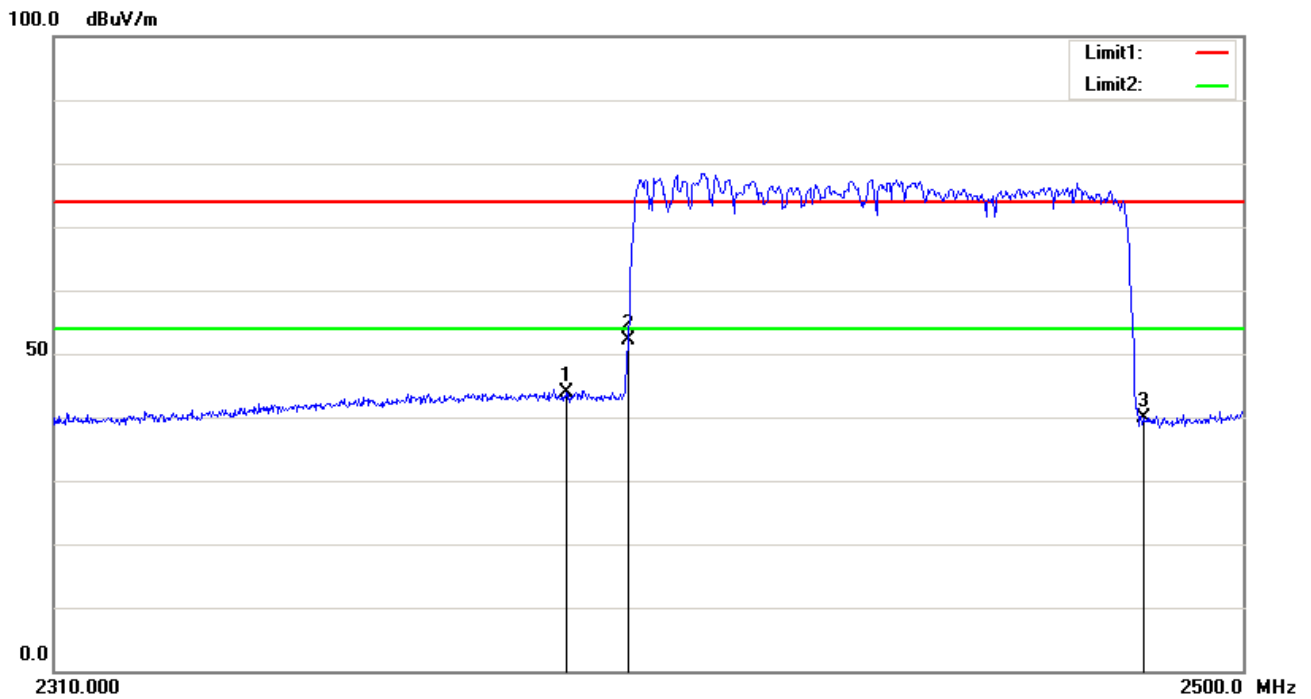


8-DPSK -Right Side-AV-H



8-DPSK -Right Side-AV-V

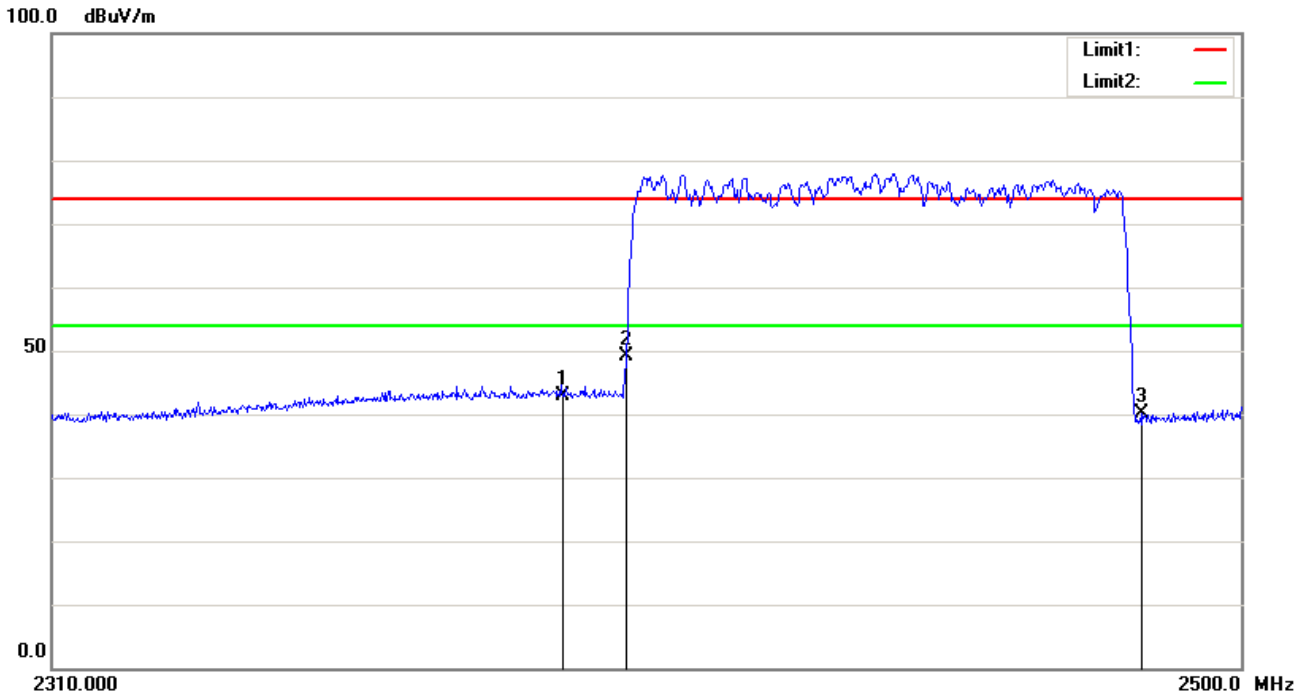
Test Mode:	Hopping Mode
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8-DPSK -Hopping-Horizontal

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)
1	2390.000	60.82	peak	31.53	52.55	4.02	43.82	74.00	-30.18	100	25
2	2400.000	69.13	peak	31.54	52.56	4.01	52.12	74.00	-21.88	200	168
3	2483.500	56.75	peak	31.59	52.63	4.06	39.77	74.00	-34.23	100	320

Test Mode: Hopping Mode



8-DPSK -Hopping-Vertical

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)
1	2390.000	59.76	peak	31.53	52.55	4.02	42.76	74.00	-31.24	200	32
2	2400.000	66.18	peak	31.54	52.56	4.01	49.17	74.00	-24.83	100	291
3	2483.500	57.19	peak	31.59	52.63	4.06	40.21	74.00	-33.79	164	0

6.8 AC Power Line Conducted Emissions

Temperature	22°C
Relative Humidity	59%
Atmospheric Pressure	1017mbar
Test date :	June 09,2017
Tested By :	Trety Lu

Requirement(s):

Spec	Item	Requirement	Applicable		
47CFR§15.207, RSS210 (A8.1)	a)	For Low-power radio-frequency devices that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 [μ]H/50 ohms line impedance stabilization network (LISN). The lower limit applies at the boundary between the frequencies ranges.	☒		
		Class A Limit			
		Frequency ranges (MHz)		Limit (dBμV)	
				QP	Average
		0.15 ~ 0.5		79	66
0.5 ~ 30	73	60			
		Class B Limit			
		Frequency ranges (MHz)	Limit (dBμV)		
			QP	Average	
		0.15 ~ 0.5	66 – 56	56 – 46	
		0.5 ~ 5	56	46	
		5 ~ 30	60	50	
Test Setup		<div><div><div>Vertical Ground Reference Plane</div><div><div>40cm</div><div>EUT</div><div>LISN</div></div></div><div><div>80cm</div><div>Test Receiver</div></div><div>Horizontal Ground Reference Plane</div></div> <p>Note: 1.Support units were connected to second LISN. 2.Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.</p>			
Procedure		<div><div>1. The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m x 1m x 0.8m high, non-metallic table.</div><div>2. The power supply for the EUT was fed through a 50 [μ]H/50 EUT LISN, connected to filtered mains.</div><div>3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable.</div><div>4. All other supporting equipment were powered separately from another main supply.</div><div>5. The EUT was switched on and allowed to warm up to its normal operating condition.</div><div>6. A scan was made on the NEUTRAL line (for AC mains) or Earth line (for DC power) over the required frequency range using an EMI test receiver.</div><div>7. High peaks, relative to the limit line, The EMI test receiver was then tuned to the selected frequencies and the necessary measurements made with a receiver bandwidth setting of 10 kHz.</div><div>8. Step 7 was then repeated for the LIVE line (for AC mains) or DC line (for DC power).</div></div>			
Remark		We test 3 modulations, only show GFSK test data in the report.			

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Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail
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Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Data sample

No.	Frequency (MHz)	Reading (dBμV)	Detector	Lisn/Isn (dB)	Ps_Lmt (dB)	Cab_L (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)
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Frequency (MHz) = Emission frequency in MHz

Reading (dBμV) = Receiver Reading Value

Detector=Quasi Peak Detector or Average Detector

Lisn/Isn= Insertion loss of LISN

Ps_Lmt= Insertion loss of transient limiter (The transient limiter included 10dB attenuation)

Cab_L= cable loss

Result (dBμV) = Reading Value + Corrected Value

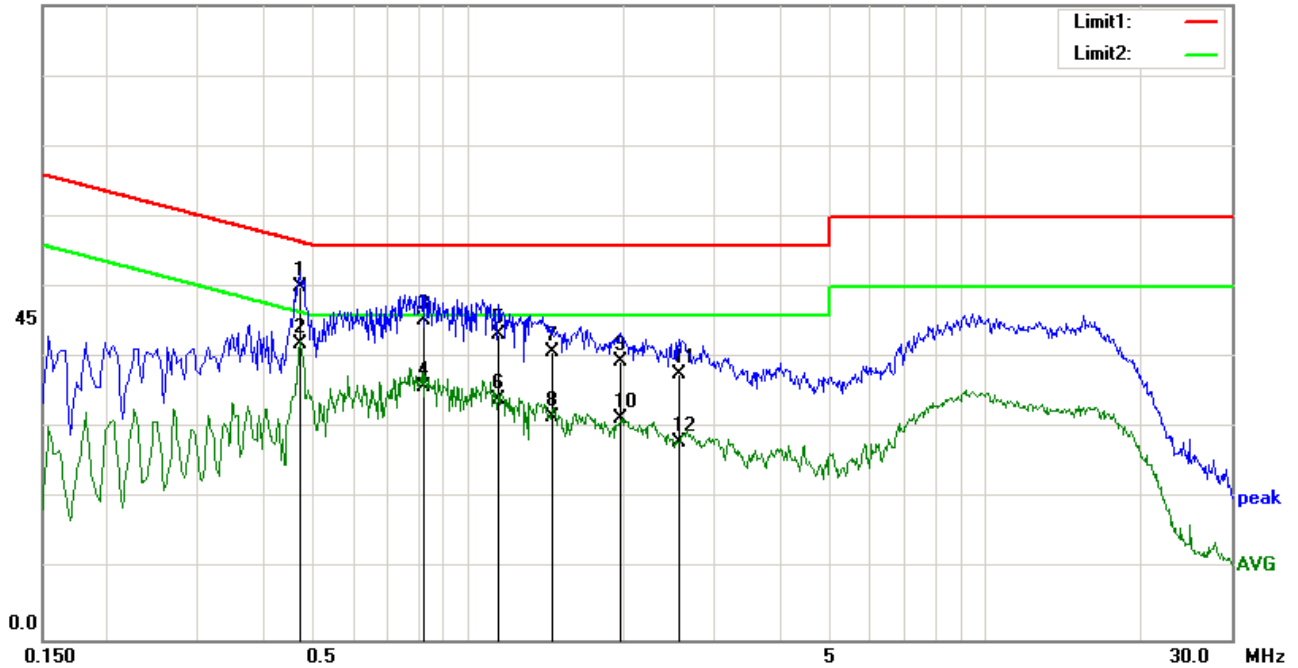
Limit (dBμV) = Limit stated in standard

Calculation Formula:

Margin (dB) = Result (dBμV) – limit (dBμV)

Test Mode: Transmitting BT Mode (Low Channel)

90.0 dBuV

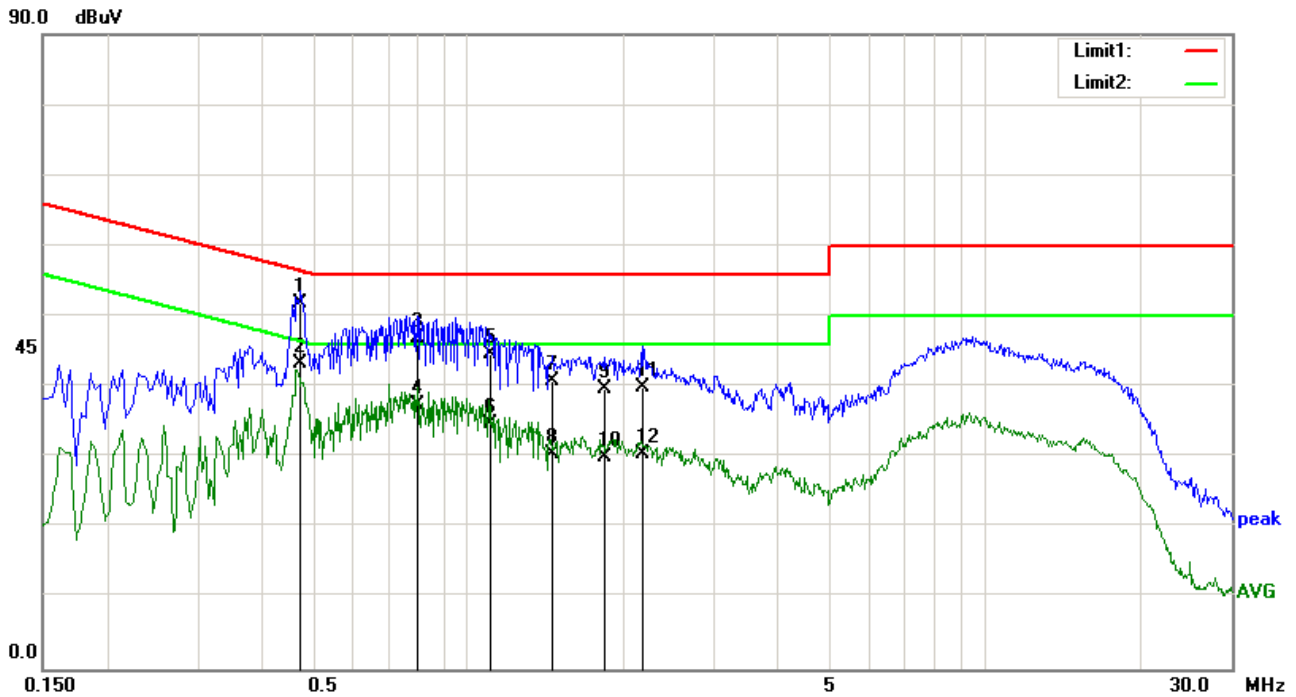


Test Data

Phase Line Plot at 120Vac, 60Hz

No.	Frequency (MHz)	Reading (dBuV)	Detector	Lisn/Isn (dB)	Ps_Lmt (dB)	Cab_L (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.4740	39.78	QP	0.12	-10.00	0.21	50.11	56.44	-6.33
2	0.4740	31.74	AVG	0.12	-10.00	0.21	42.07	46.44	-4.37
3	0.8220	34.95	QP	0.13	-10.00	0.20	45.28	56.00	-10.72
4	0.8220	25.66	AVG	0.13	-10.00	0.20	35.99	46.00	-10.01
5	1.1420	33.01	QP	0.14	-10.00	0.20	43.35	56.00	-12.65
6	1.1420	23.77	AVG	0.14	-10.00	0.20	34.11	46.00	-11.89
7	1.4500	30.59	QP	0.15	-10.00	0.20	40.94	56.00	-15.06
8	1.4500	21.34	AVG	0.15	-10.00	0.20	31.69	46.00	-14.31
9	1.9780	29.21	QP	0.16	-10.00	0.18	39.55	56.00	-16.45
10	1.9780	21.03	AVG	0.16	-10.00	0.18	31.37	46.00	-14.63
11	2.5540	27.30	QP	0.18	-10.00	0.23	37.71	56.00	-18.29
12	2.5540	17.52	AVG	0.18	-10.00	0.23	27.93	46.00	-18.07

Test Mode: Transmitting BT Mode (Low Channel)



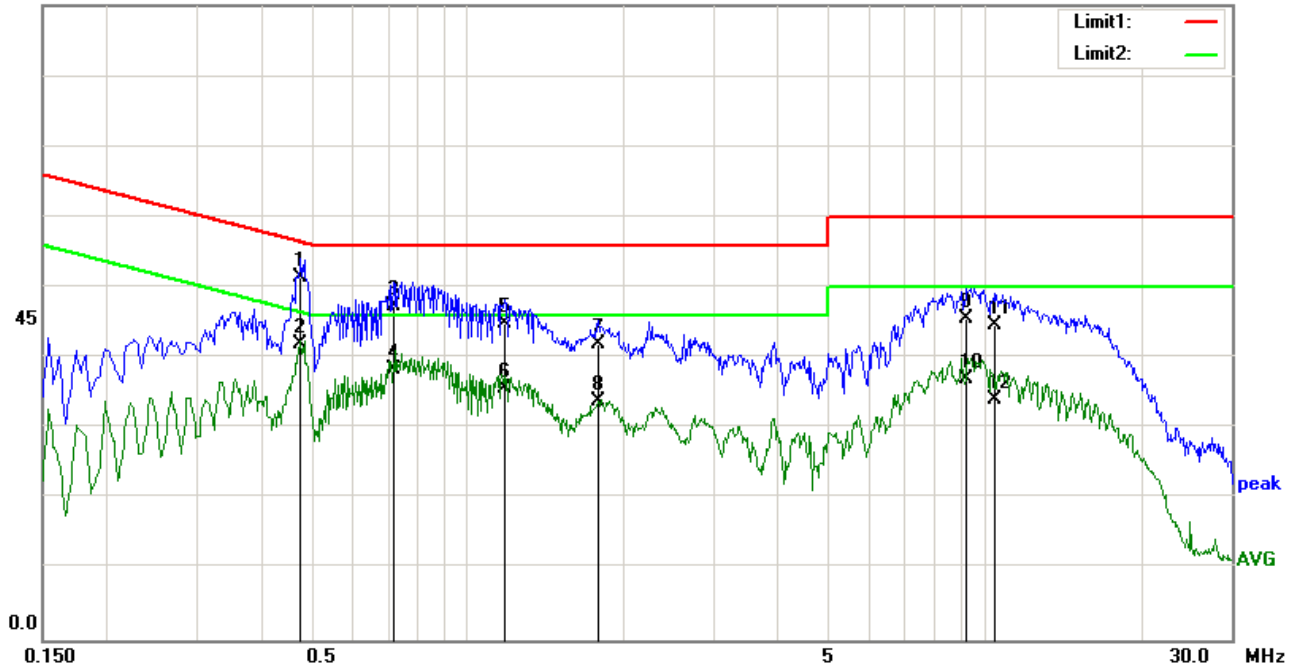
Test Data

Phase Neutral Plot at 120Vac, 60Hz

No.	Frequency (MHz)	Reading (dBuV)	Detector	Lisn/Isn (dB)	Ps Lmt (dB)	Cab L (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.4740	41.54	QP	0.11	-10.00	0.21	51.86	56.44	-4.58
2	0.4740	32.93	AVG	0.11	-10.00	0.21	43.25	46.44	-3.19
3	0.7980	36.52	QP	0.12	-10.00	0.20	46.84	56.00	-9.16
4	0.7980	27.15	AVG	0.12	-10.00	0.20	37.47	46.00	-8.53
5	1.1100	34.38	QP	0.13	-10.00	0.20	44.71	56.00	-11.29
6	1.1100	24.39	AVG	0.13	-10.00	0.20	34.72	46.00	-11.28
7	1.4620	30.42	QP	0.15	-10.00	0.20	40.77	56.00	-15.23
8	1.4620	20.10	AVG	0.15	-10.00	0.20	30.45	46.00	-15.55
9	1.8340	29.39	QP	0.16	-10.00	0.20	39.75	56.00	-16.25
10	1.8340	19.71	AVG	0.16	-10.00	0.20	30.07	46.00	-15.93
11	2.1740	29.55	QP	0.18	-10.00	0.21	39.94	56.00	-16.06
12	2.1740	20.13	AVG	0.18	-10.00	0.21	30.52	46.00	-15.48

Test Mode: Transmitting BT Mode (Low Channel)

90.0 dBuV

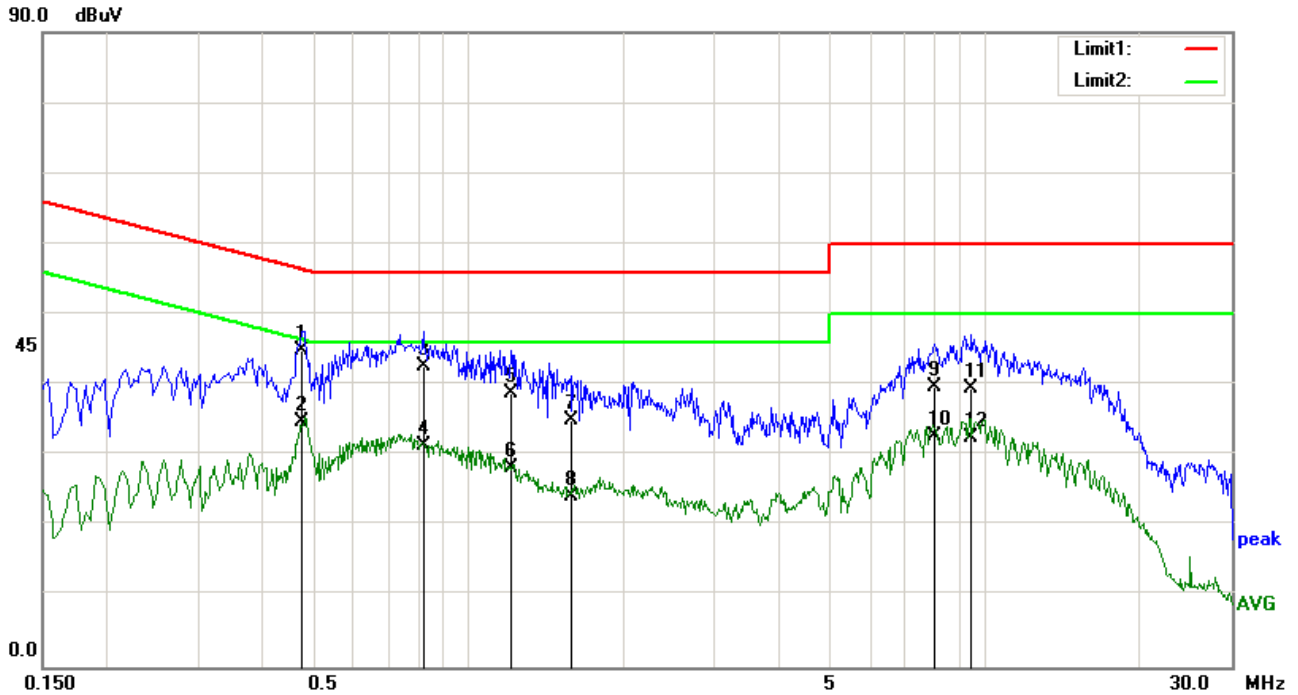


Test Data

Phase Line Plot at 230Vac, 50Hz

No.	Frequency (MHz)	Reading (dBuV)	Detector	Lisn/Isn (dB)	Ps_Lmt (dB)	Cab_L (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.4740	40.98	QP	0.12	-10.00	0.21	51.31	56.44	-5.13
2	0.4740	31.67	AVG	0.12	-10.00	0.21	42.00	46.44	-4.44
3	0.7180	36.94	QP	0.13	-10.00	0.20	47.27	56.00	-8.73
4	0.7180	27.93	AVG	0.13	-10.00	0.20	38.26	46.00	-7.74
5	1.1820	34.66	QP	0.14	-10.00	0.20	45.00	56.00	-11.00
6	1.1820	25.26	AVG	0.14	-10.00	0.20	35.60	46.00	-10.40
7	1.7900	31.63	QP	0.16	-10.00	0.21	42.00	56.00	-14.00
8	1.7900	23.40	AVG	0.16	-10.00	0.21	33.77	46.00	-12.23
9	9.2060	34.62	QP	0.46	-10.00	0.38	45.46	60.00	-14.54
10	9.2060	26.12	AVG	0.46	-10.00	0.38	36.96	50.00	-13.04
11	10.4700	33.73	QP	0.52	-10.00	0.50	44.75	60.00	-15.25
12	10.4700	23.11	AVG	0.52	-10.00	0.50	34.13	50.00	-15.87

Test Mode: Transmitting BT Mode (Low Channel)

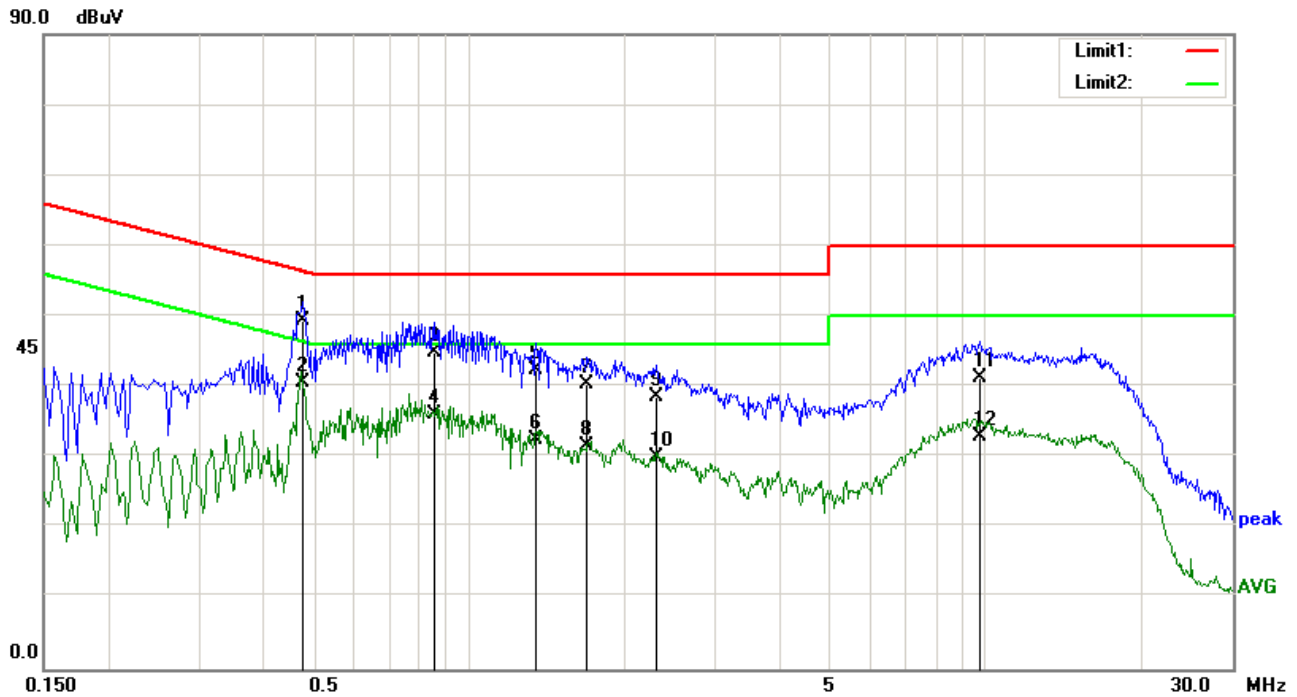


Test Data

Phase Neutral Plot at 230Vac, 50Hz

No.	Frequency (MHz)	Reading (dBuV)	Detector	Lisn/Isn (dB)	Ps Lmt (dB)	Cab L (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.4780	34.56	QP	0.11	-10.00	0.21	44.88	56.37	-11.49
2	0.4780	24.38	AVG	0.11	-10.00	0.21	34.70	46.37	-11.67
3	0.8180	32.29	QP	0.12	-10.00	0.20	42.61	56.00	-13.39
4	0.8180	20.99	AVG	0.12	-10.00	0.20	31.31	46.00	-14.69
5	1.2140	28.45	QP	0.14	-10.00	0.21	38.80	56.00	-17.20
6	1.2140	17.93	AVG	0.14	-10.00	0.21	28.28	46.00	-17.72
7	1.5780	24.69	QP	0.15	-10.00	0.20	35.04	56.00	-20.96
8	1.5780	13.82	AVG	0.15	-10.00	0.20	24.17	46.00	-21.83
9	7.9980	28.98	QP	0.45	-10.00	0.36	39.79	60.00	-20.21
10	7.9980	21.98	AVG	0.45	-10.00	0.36	32.79	50.00	-17.21
11	9.4500	28.60	QP	0.51	-10.00	0.39	39.50	60.00	-20.50
12	9.4500	21.67	AVG	0.51	-10.00	0.39	32.57	50.00	-17.43

Test Mode: Transmitting BT Mode (Middle Channel)

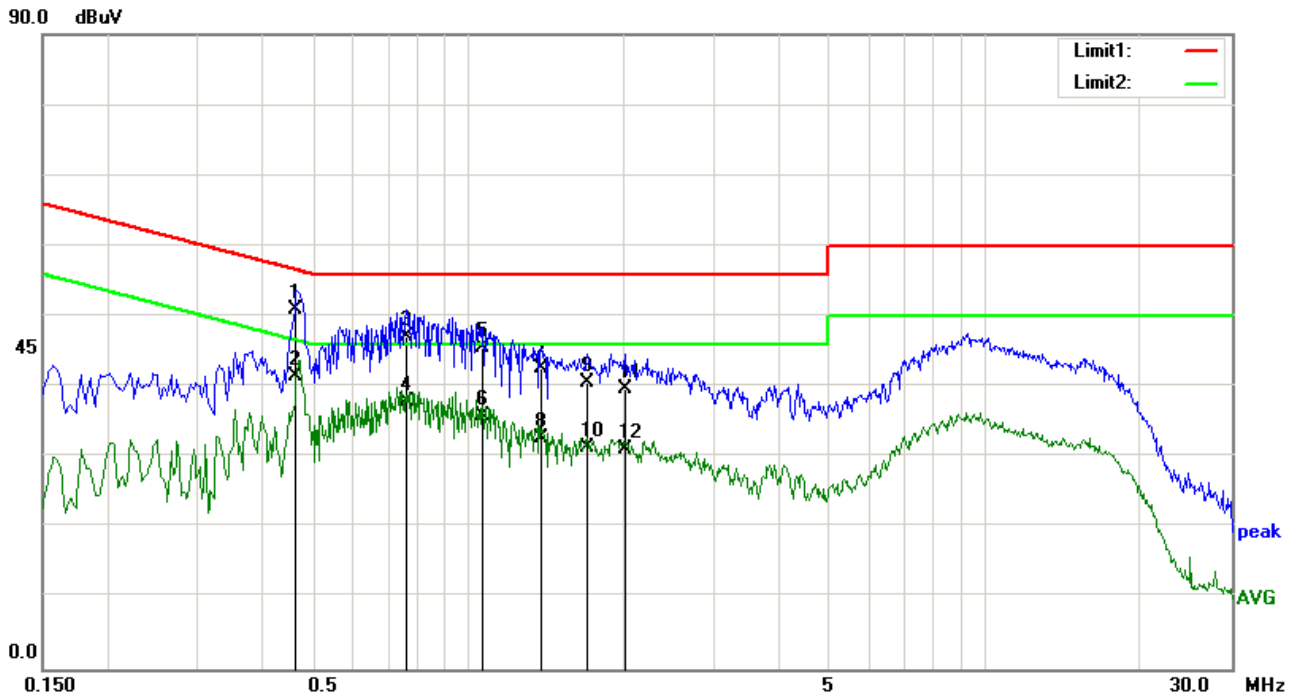


Test Data

Phase Line Plot at 120Vac, 60Hz

No.	Frequency (MHz)	Reading (dBuV)	Detector	Lisn/Isn (dB)	Ps_Lmt (dB)	Cab_L (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.4780	39.10	QP	0.12	-10.00	0.21	49.43	56.37	-6.94
2	0.4780	30.27	AVG	0.12	-10.00	0.21	40.60	46.37	-5.77
3	0.8540	34.58	QP	0.14	-10.00	0.20	44.92	56.00	-11.08
4	0.8540	25.79	AVG	0.14	-10.00	0.20	36.13	46.00	-9.87
5	1.3500	32.13	QP	0.15	-10.00	0.21	42.49	56.00	-13.51
6	1.3500	22.21	AVG	0.15	-10.00	0.21	32.57	46.00	-13.43
7	1.6900	30.05	QP	0.15	-10.00	0.21	40.41	56.00	-15.59
8	1.6900	21.28	AVG	0.15	-10.00	0.21	31.64	46.00	-14.36
9	2.2980	28.10	QP	0.17	-10.00	0.22	38.49	56.00	-17.51
10	2.2980	19.70	AVG	0.17	-10.00	0.22	30.09	46.00	-15.91
11	9.7420	30.31	QP	0.48	-10.00	0.39	41.18	60.00	-18.82
12	9.7420	22.14	AVG	0.48	-10.00	0.39	33.01	50.00	-16.99

Test Mode: Transmitting BT Mode (Middle Channel)



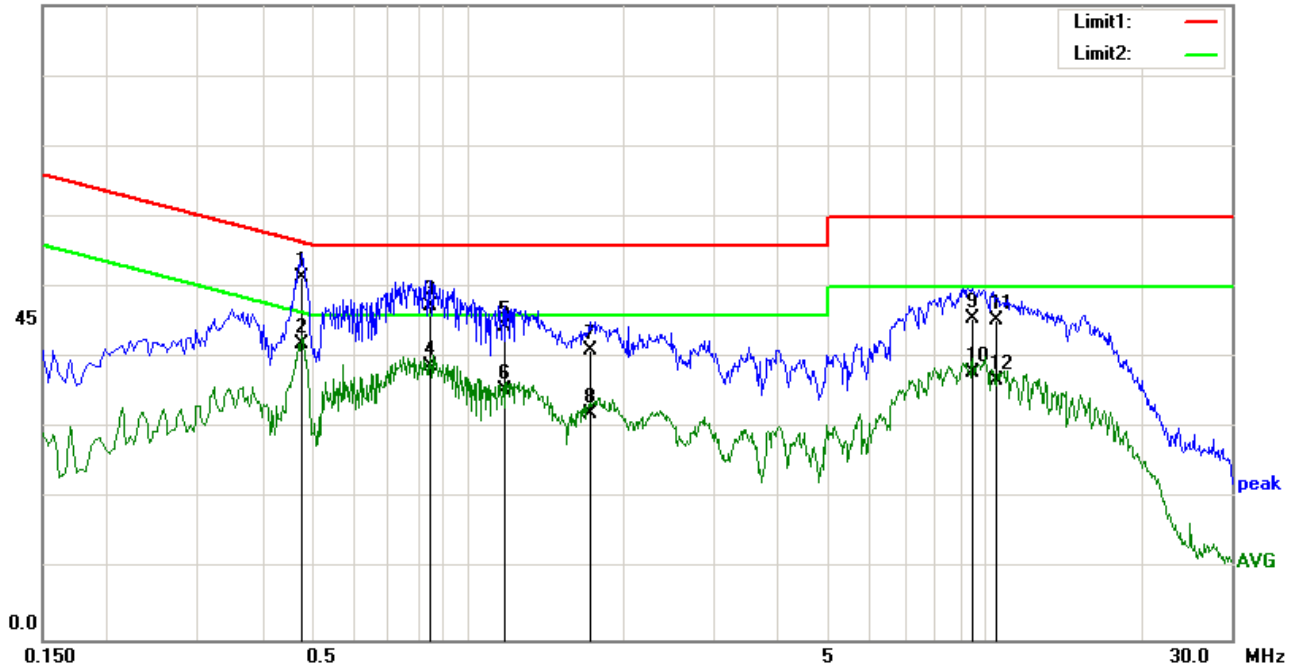
Test Data

Phase Neutral Plot at 120Vac, 60Hz

No.	Frequency (MHz)	Reading (dBuV)	Detector	Lisn/Isn (dB)	Ps Lmt (dB)	Cab L (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.4660	40.75	QP	0.11	-10.00	0.21	51.07	56.58	-5.51
2	0.4660	31.23	AVG	0.11	-10.00	0.21	41.55	46.58	-5.03
3	0.7620	36.85	QP	0.12	-10.00	0.20	47.17	56.00	-8.83
4	0.7620	27.61	AVG	0.12	-10.00	0.20	37.93	46.00	-8.07
5	1.0700	35.19	QP	0.13	-10.00	0.20	45.52	56.00	-10.48
6	1.0700	25.52	AVG	0.13	-10.00	0.20	35.85	46.00	-10.15
7	1.3820	32.40	QP	0.15	-10.00	0.20	42.75	56.00	-13.25
8	1.3820	22.39	AVG	0.15	-10.00	0.20	32.74	46.00	-13.26
9	1.7060	30.28	QP	0.16	-10.00	0.21	40.65	56.00	-15.35
10	1.7060	21.13	AVG	0.16	-10.00	0.21	31.50	46.00	-14.50
11	2.0220	29.45	QP	0.17	-10.00	0.18	39.80	56.00	-16.20
12	2.0220	20.79	AVG	0.17	-10.00	0.18	31.14	46.00	-14.86

Test Mode: Transmitting BT Mode (Middle Channel)

90.0 dBuV

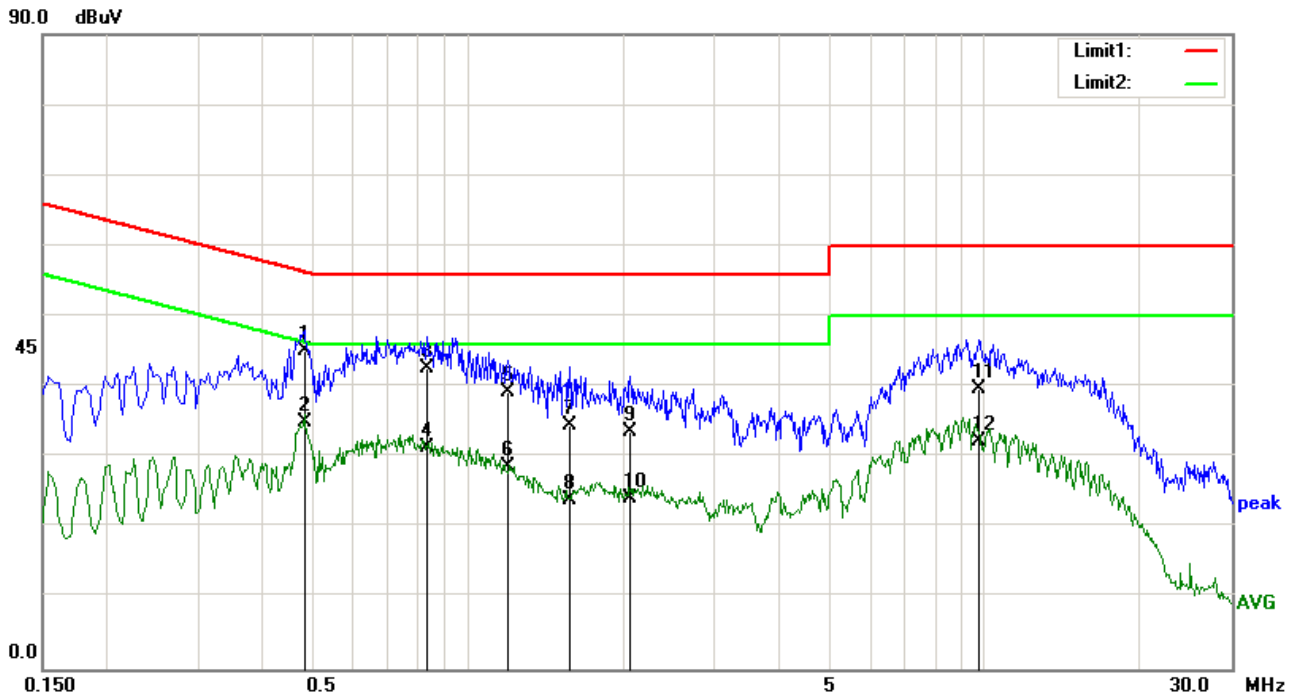


Test Data

Phase Line Plot at 230Vac, 50Hz

No.	Frequency (MHz)	Reading (dBuV)	Detector	Lisn/Isn (dB)	Ps_Lmt (dB)	Cab_L (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.4780	41.01	QP	0.12	-10.00	0.21	51.34	56.37	-5.03
2	0.4780	31.56	AVG	0.12	-10.00	0.21	41.89	46.37	-4.48
3	0.8460	36.94	QP	0.13	-10.00	0.20	47.27	56.00	-8.73
4	0.8460	28.44	AVG	0.13	-10.00	0.20	38.77	46.00	-7.23
5	1.1780	34.08	QP	0.14	-10.00	0.20	44.42	56.00	-11.58
6	1.1780	25.11	AVG	0.14	-10.00	0.20	35.45	46.00	-10.55
7	1.7180	30.68	QP	0.15	-10.00	0.21	41.04	56.00	-14.96
8	1.7180	21.63	AVG	0.15	-10.00	0.21	31.99	46.00	-14.01
9	9.4780	34.81	QP	0.47	-10.00	0.39	45.67	60.00	-14.33
10	9.4780	27.05	AVG	0.47	-10.00	0.39	37.91	50.00	-12.09
11	10.5260	34.20	QP	0.53	-10.00	0.50	45.23	60.00	-14.77
12	10.5260	25.85	AVG	0.53	-10.00	0.50	36.88	50.00	-13.12

Test Mode: Transmitting BT Mode (Middle Channel)

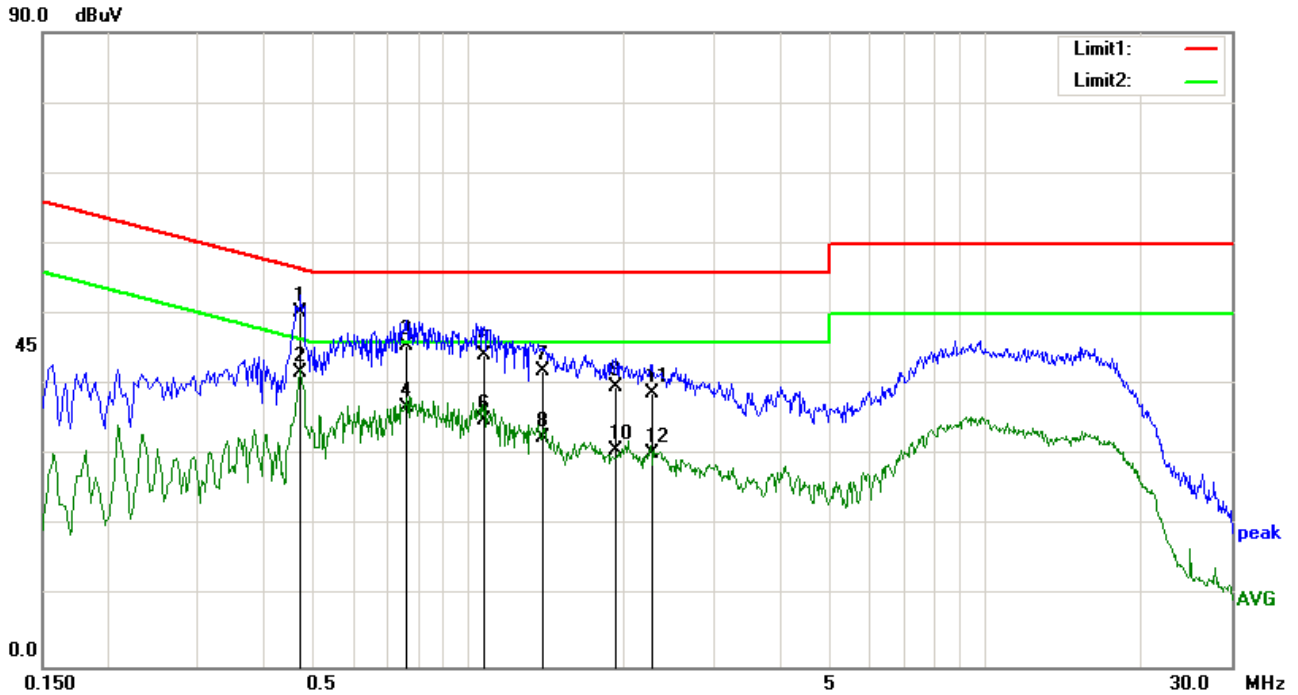


Test Data

Phase Neutral Plot at 230Vac, 50Hz

No.	Frequency (MHz)	Reading (dBuV)	Detector	Lisn/Isn (dB)	Ps Lmt (dB)	Cab L (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.4820	34.76	QP	0.11	-10.00	0.21	45.08	56.30	-11.22
2	0.4820	24.73	AVG	0.11	-10.00	0.21	35.05	46.30	-11.25
3	0.8340	32.39	QP	0.12	-10.00	0.20	42.71	56.00	-13.29
4	0.8340	21.13	AVG	0.12	-10.00	0.20	31.45	46.00	-14.55
5	1.1940	28.97	QP	0.14	-10.00	0.21	39.32	56.00	-16.68
6	1.1940	18.43	AVG	0.14	-10.00	0.21	28.78	46.00	-17.22
7	1.5740	24.19	QP	0.15	-10.00	0.20	34.54	56.00	-21.46
8	1.5740	13.67	AVG	0.15	-10.00	0.20	24.02	46.00	-21.98
9	2.0620	23.21	QP	0.17	-10.00	0.19	33.57	56.00	-22.43
10	2.0620	13.88	AVG	0.17	-10.00	0.19	24.24	46.00	-21.76
11	9.7100	28.79	QP	0.52	-10.00	0.39	39.70	60.00	-20.30
12	9.7100	21.29	AVG	0.52	-10.00	0.39	32.20	50.00	-17.80

Test Mode: Transmitting BT Mode (High Channel)

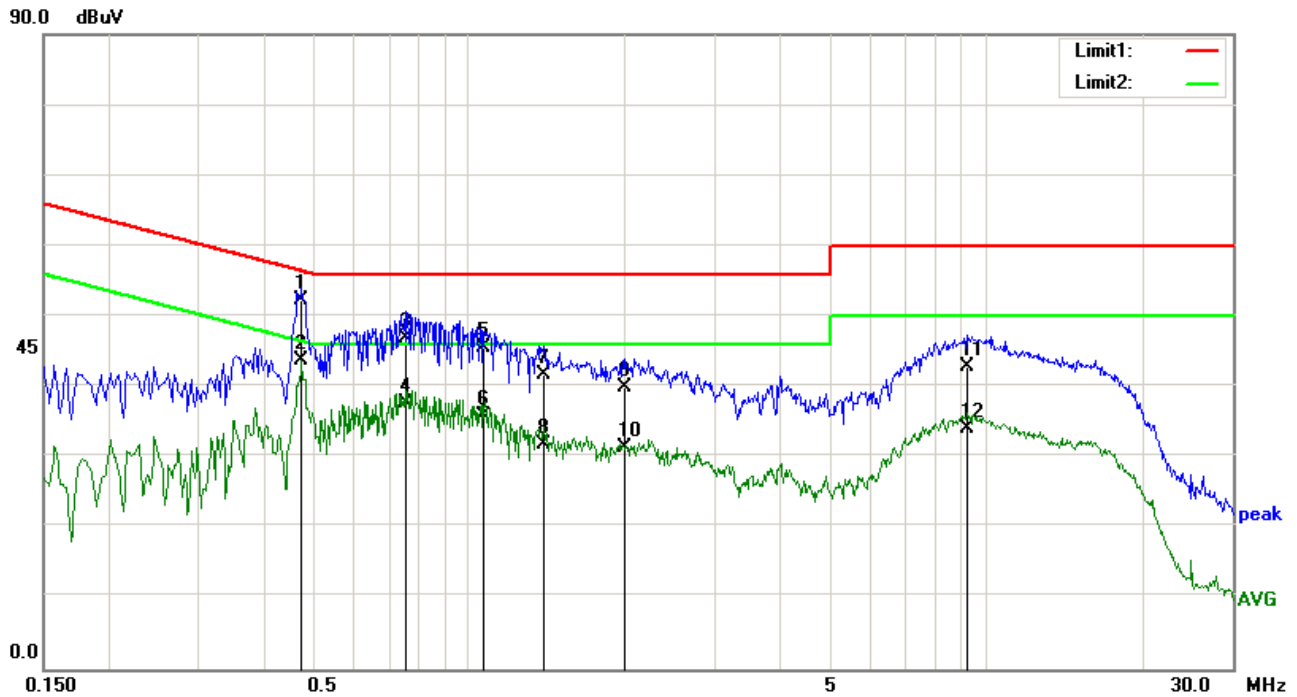


Test Data

Phase Line Plot at 120Vac, 60Hz

No.	Frequency (MHz)	Reading (dBuV)	Detector	Lisn/Isn (dB)	Ps Lmt (dB)	Cab L (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.4740	40.00	QP	0.12	-10.00	0.21	50.33	56.44	-6.11
2	0.4740	31.50	AVG	0.12	-10.00	0.21	41.83	46.44	-4.61
3	0.7620	35.19	QP	0.13	-10.00	0.20	45.52	56.00	-10.48
4	0.7620	26.39	AVG	0.13	-10.00	0.20	36.72	46.00	-9.28
5	1.0740	33.93	QP	0.14	-10.00	0.20	44.27	56.00	-11.73
6	1.0740	24.73	AVG	0.14	-10.00	0.20	35.07	46.00	-10.93
7	1.3980	31.62	QP	0.15	-10.00	0.20	41.97	56.00	-14.03
8	1.3980	22.16	AVG	0.15	-10.00	0.20	32.51	46.00	-13.49
9	1.9340	29.37	QP	0.16	-10.00	0.19	39.72	56.00	-16.28
10	1.9340	20.46	AVG	0.16	-10.00	0.19	30.81	46.00	-15.19
11	2.2660	28.43	QP	0.17	-10.00	0.22	38.82	56.00	-17.18
12	2.2660	19.93	AVG	0.17	-10.00	0.22	30.32	46.00	-15.68

Test Mode: Transmitting BT Mode (High Channel)



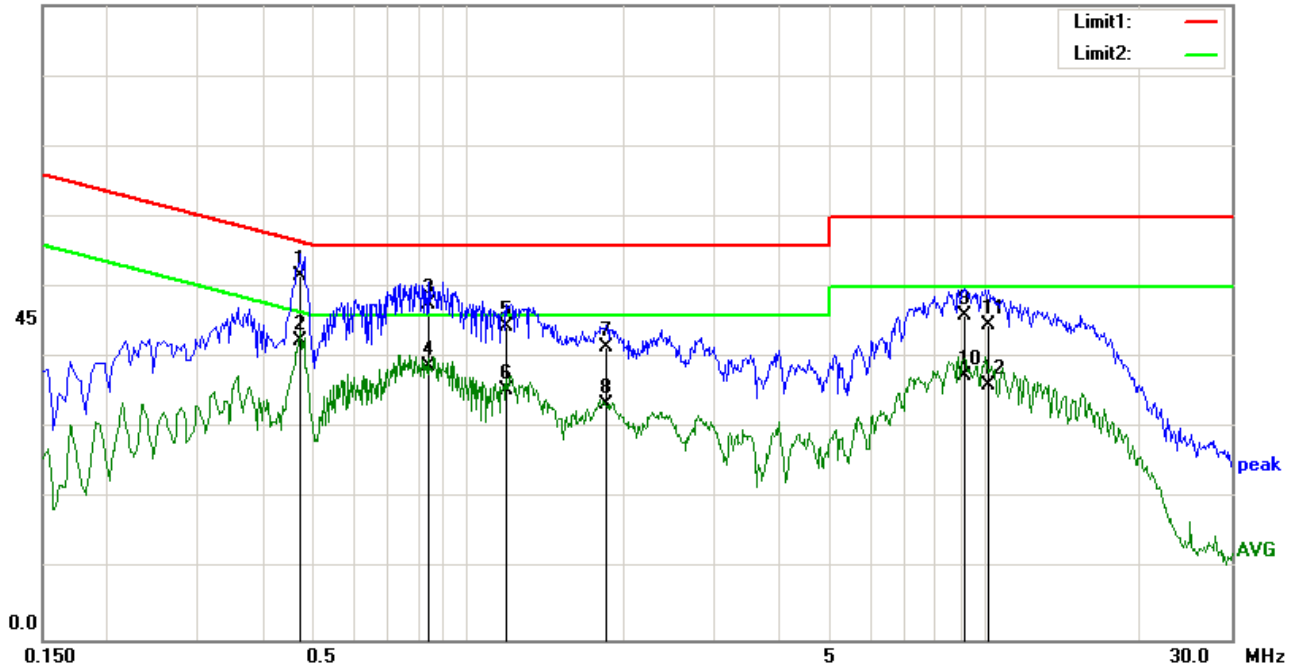
Test Data

Phase Neutral Plot at 120Vac, 60Hz

No.	Frequency (MHz)	Reading (dBuV)	Detector	Lisn/Isn (dB)	Ps Lmt (dB)	Cab L (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.4740	41.89	QP	0.11	-10.00	0.21	52.21	56.44	-4.23
2	0.4740	33.37	AVG	0.11	-10.00	0.21	43.69	46.44	-2.75
3	0.7540	36.67	QP	0.12	-10.00	0.20	46.99	56.00	-9.01
4	0.7540	27.40	AVG	0.12	-10.00	0.20	37.72	46.00	-8.28
5	1.0660	35.34	QP	0.13	-10.00	0.20	45.67	56.00	-10.33
6	1.0660	25.50	AVG	0.13	-10.00	0.20	35.83	46.00	-10.17
7	1.3980	31.44	QP	0.15	-10.00	0.20	41.79	56.00	-14.21
8	1.3980	21.51	AVG	0.15	-10.00	0.20	31.86	46.00	-14.14
9	2.0020	29.65	QP	0.17	-10.00	0.18	40.00	56.00	-16.00
10	2.0020	21.02	AVG	0.17	-10.00	0.18	31.37	46.00	-14.63
11	9.2180	31.97	QP	0.50	-10.00	0.38	42.85	60.00	-17.15
12	9.2180	23.20	AVG	0.50	-10.00	0.38	34.08	50.00	-15.92

Test Mode: Transmitting BT Mode (High Channel)

90.0 dBuV

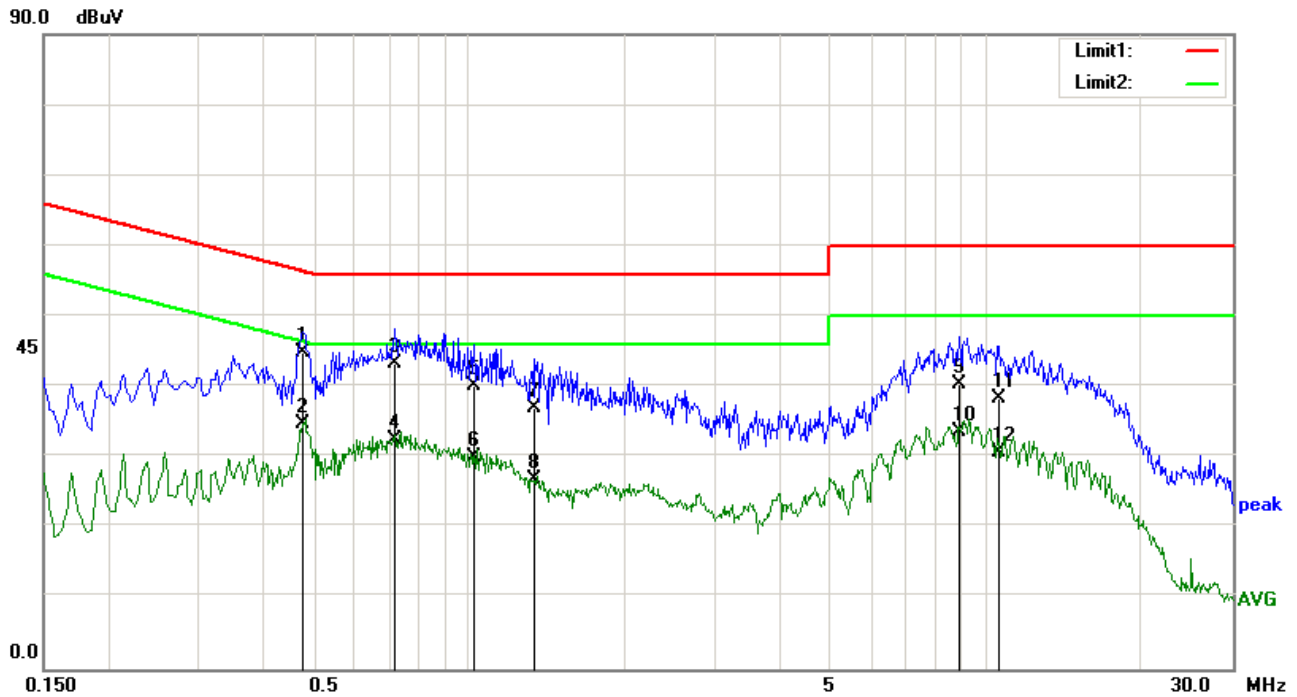


Test Data

Phase Line Plot at 230Vac, 50Hz

No.	Frequency (MHz)	Reading (dBuV)	Detector	Lisn/Isn (dB)	Ps_Lmt (dB)	Cab_L (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.4740	41.38	QP	0.12	-10.00	0.21	51.71	56.44	-4.73
2	0.4740	32.01	AVG	0.12	-10.00	0.21	42.34	46.44	-4.10
3	0.8380	37.22	QP	0.13	-10.00	0.20	47.55	56.00	-8.45
4	0.8380	28.38	AVG	0.13	-10.00	0.20	38.71	46.00	-7.29
5	1.1860	34.13	QP	0.14	-10.00	0.20	44.47	56.00	-11.53
6	1.1860	25.02	AVG	0.14	-10.00	0.20	35.36	46.00	-10.64
7	1.8540	31.15	QP	0.16	-10.00	0.20	41.51	56.00	-14.49
8	1.8540	23.12	AVG	0.16	-10.00	0.20	33.48	46.00	-12.52
9	9.1100	35.24	QP	0.46	-10.00	0.37	46.07	60.00	-13.93
10	9.1100	26.66	AVG	0.46	-10.00	0.37	37.49	50.00	-12.51
11	10.1740	33.78	QP	0.50	-10.00	0.44	44.72	60.00	-15.28
12	10.1740	25.26	AVG	0.50	-10.00	0.44	36.20	50.00	-13.80

Test Mode: Transmitting BT Mode (High Channel)



Test Data

Phase Neutral Plot at 230Vac, 50Hz

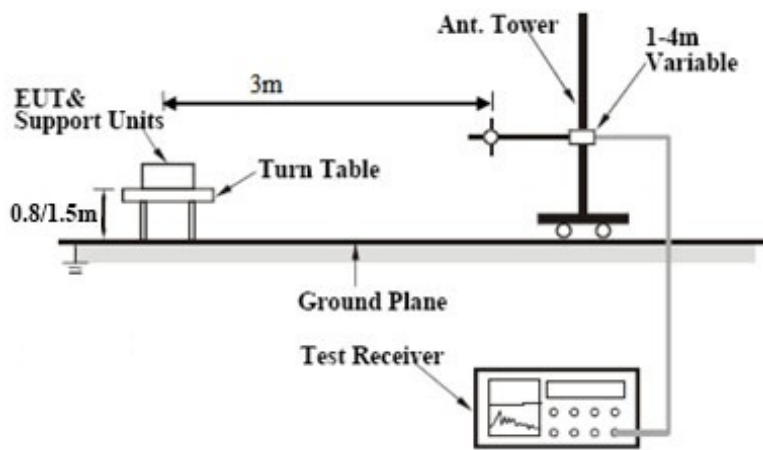
No.	Frequency (MHz)	Reading (dBuV)	Detector	Lisn/Isn (dB)	Ps Lmt (dB)	Cab L (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.4780	34.60	QP	0.11	-10.00	0.21	44.92	56.37	-11.45
2	0.4780	24.42	AVG	0.11	-10.00	0.21	34.74	46.37	-11.63
3	0.7180	32.90	QP	0.12	-10.00	0.20	43.22	56.00	-12.78
4	0.7180	22.18	AVG	0.12	-10.00	0.20	32.50	46.00	-13.50
5	1.0260	29.74	QP	0.13	-10.00	0.19	40.06	56.00	-15.94
6	1.0260	19.72	AVG	0.13	-10.00	0.19	30.04	46.00	-15.96
7	1.3380	26.71	QP	0.14	-10.00	0.21	37.06	56.00	-18.94
8	1.3380	16.50	AVG	0.14	-10.00	0.21	26.85	46.00	-19.15
9	8.8740	29.62	QP	0.48	-10.00	0.37	40.47	60.00	-19.53
10	8.8740	22.86	AVG	0.48	-10.00	0.37	33.71	50.00	-16.29
11	10.5820	27.22	QP	0.58	-10.00	0.50	38.30	60.00	-21.70
12	10.5820	19.71	AVG	0.58	-10.00	0.50	30.79	50.00	-19.21

6.9 Radiated Emissions

Temperature	25°C
Relative Humidity	58%
Atmospheric Pressure	1016mbar
Test date :	June 20, 2017
Tested By :	Trety Lu

Requirement(s):

Spec	Item	Requirement	Applicable										
47CFR§15.205, §15.209, §15.247(d)	a)	Except higher limit as specified elsewhere in other section, the emissions from the low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges	<div><input checked="" type="checkbox"/></div>										
		Class A Limit											
		<table><tr><th>Frequency range (MHz)</th><th>Field Strength (µV/m)</th></tr><tr><td>30 – 88</td><td>90</td></tr><tr><td>88 – 216</td><td>150</td></tr><tr><td>216 – 960</td><td>210</td></tr><tr><td>Above 960</td><td>300</td></tr></table>		Frequency range (MHz)	Field Strength (µV/m)	30 – 88	90	88 – 216	150	216 – 960	210	Above 960	300
		Frequency range (MHz)		Field Strength (µV/m)									
		30 – 88		90									
		88 – 216		150									
		216 – 960		210									
		Above 960		300									
		Class B Limit											
		<table><tr><th>Frequency range (MHz)</th><th>Field Strength (µV/m)</th></tr><tr><td>30 – 88</td><td>100</td></tr><tr><td>88 – 216</td><td>150</td></tr><tr><td>216 – 960</td><td>200</td></tr><tr><td>Above 960</td><td>500</td></tr></table>		Frequency range (MHz)	Field Strength (µV/m)	30 – 88	100	88 – 216	150	216 – 960	200	Above 960	500
Frequency range (MHz)	Field Strength (µV/m)												
30 – 88	100												
88 – 216	150												
216 – 960	200												
Above 960	500												

Test Setup	
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Procedure	<ol style="list-style-type: none"> The EUT was switched on and allowed to warm up to its normal operating condition. The test was carried out at the selected frequency points obtained from the EUT characterization. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner: <ol style="list-style-type: none"> Vertical or horizontal polarization (whichever gave the higher emission level over a full rotation of the EUT) was chosen. The EUT was then rotated to the direction that gave the maximum emission. Finally, the antenna height was adjusted to the height that gave the maximum emission. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi Peak detection at frequency below 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz with Peak detection for Peak measurement at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz
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	5. with Peak detection for Average Measurement as below at frequency above 1GHz. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.
Remark	We test 3 modulations, only show GFSK test data in the report.
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Data sample

No.	Frequency (MHz)	Reading (dB μ V/m)	Detector	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Degree (°)
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Frequency (MHz) = Emission frequency in MHz

Reading (dB μ V/m) = Receiver Reading Value

Detector= Peak Detector or Quasi Peak Detector

Ant_F=Antenna Factor

PA_G=Pre-Amplifier Gain

Cab_L=Cable Loss

Result (dB μ V/m) = Reading Value + Corrected Value

Limit (dB μ V/m) = Limit stated in standard

Height (cm) = Height of Receiver antenna

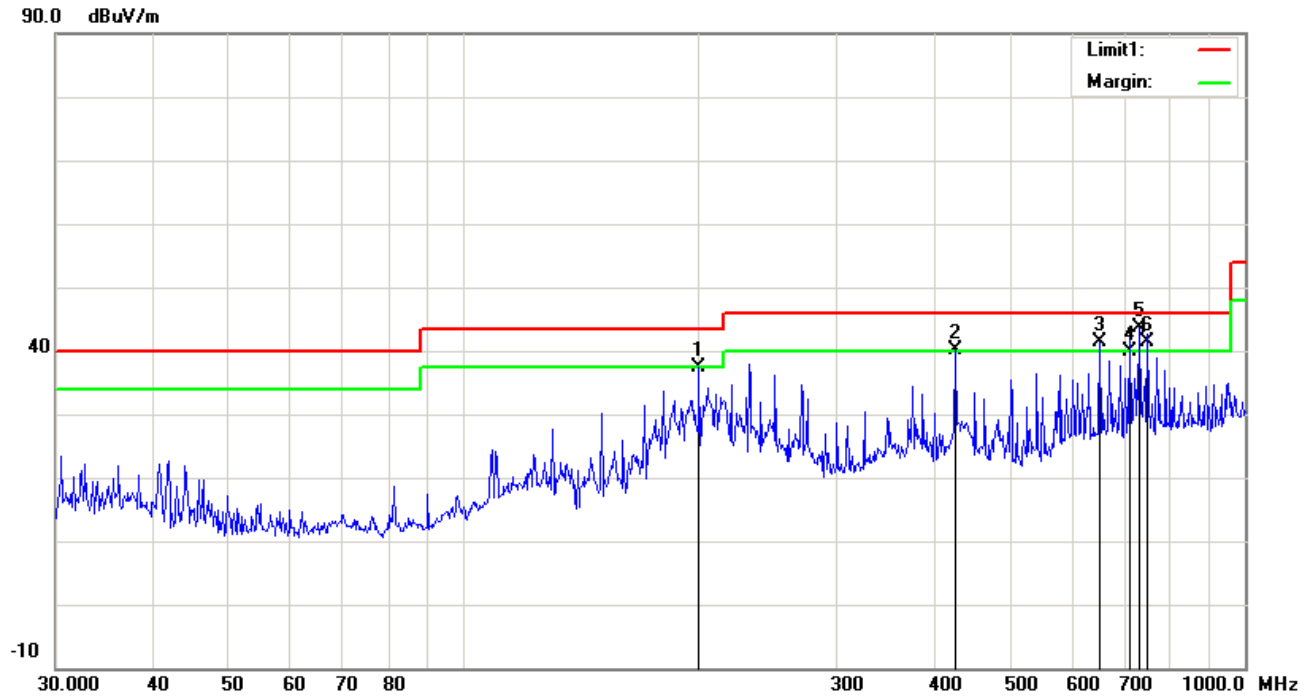
Degree = Turn table degree

Calculation Formula:

Margin (dB) = Result (dB μ V/m) – limit (dB μ V/m)

Test Mode: Transmitting BT Mode (GFSK-Low Channel)

Below 1GHz



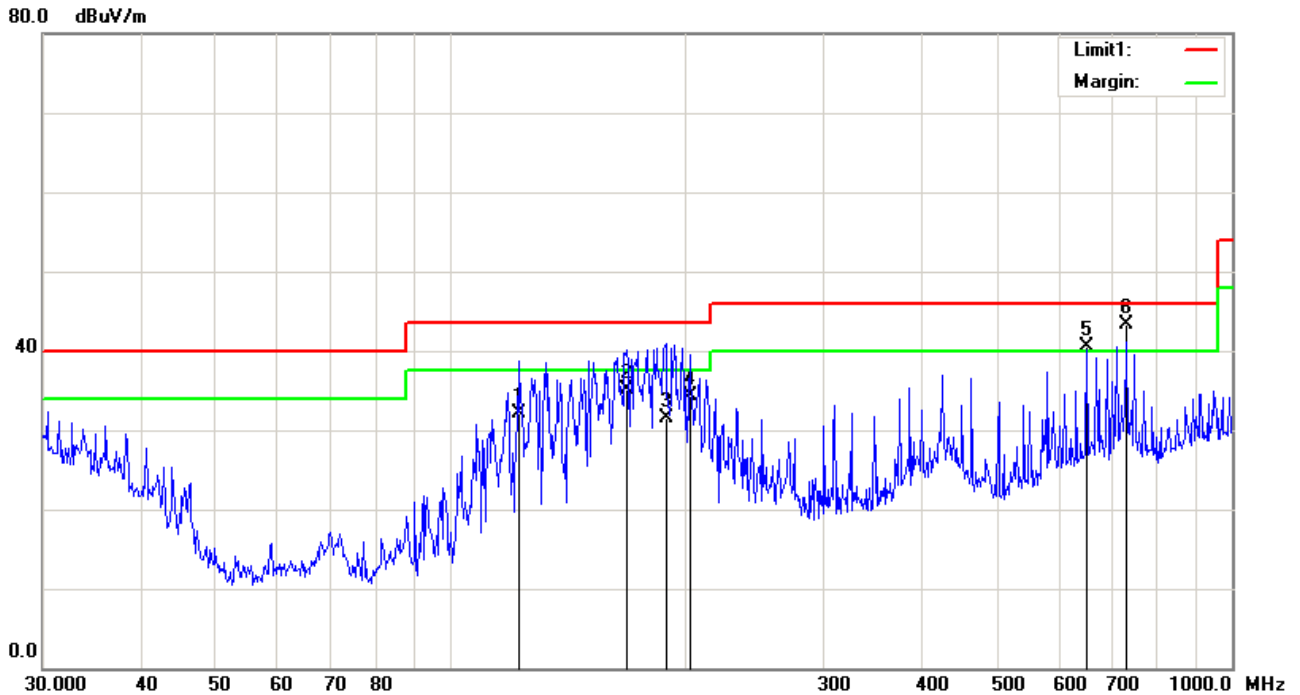
Test Data

Horizontal Polarity Plot @3m

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)
1	199.9856	69.13	peak	13.39	47.34	2.26	37.44	43.50	-6.06	200	246
2	425.0280	69.83	QP	16.00	49.09	3.31	40.05	46.00	-5.95	200	235
3	651.9417	63.46	QP	21.85	48.15	4.10	41.26	46.00	-4.74	300	241
4	711.6734	58.84	QP	22.47	45.60	4.29	40.00	46.00	-6.00	200	183
5	731.9203	62.05	QP	22.59	45.38	4.34	43.60	46.00	-2.40	200	202
6	750.1083	59.20	QP	22.70	45.02	4.40	41.28	46.00	-4.72	200	205

Test Mode:	Transmitting BT Mode (GFSK-Low Channel)
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Below 1GHz



Vertical Polarity Plot @3m

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)
1	121.9755	61.17	QP	15.94	46.71	1.80	32.20	43.50	-11.30	100	161
2	167.8243	65.60	QP	14.17	46.66	2.09	35.20	43.50	-8.30	100	245
3	188.4125	63.60	QP	12.43	46.64	2.21	31.60	43.50	-11.90	100	206
4	202.1005	64.57	QP	14.85	47.39	2.27	34.30	43.50	-9.20	100	36
5	651.9417	63.08	QP	21.47	48.15	4.10	40.50	46.00	-5.50	100	181
6	731.9203	62.18	QP	22.26	45.38	4.34	43.40	46.00	-2.60	100	322