

5.11. Spurious Emission (radiated)

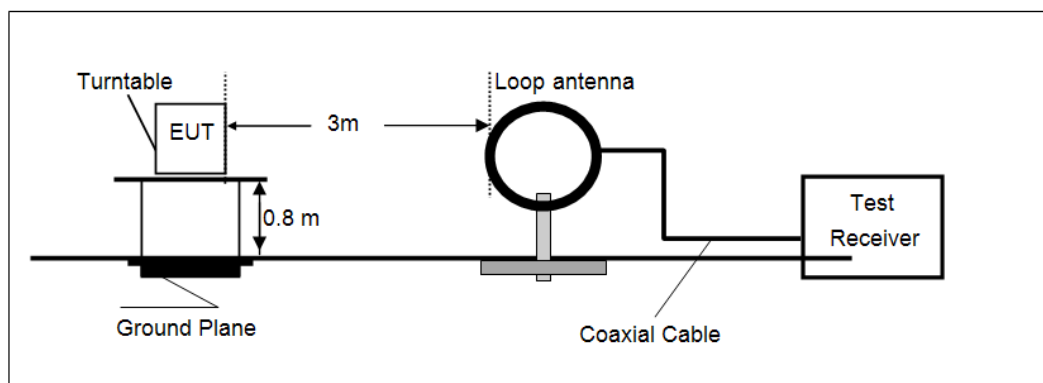
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.209

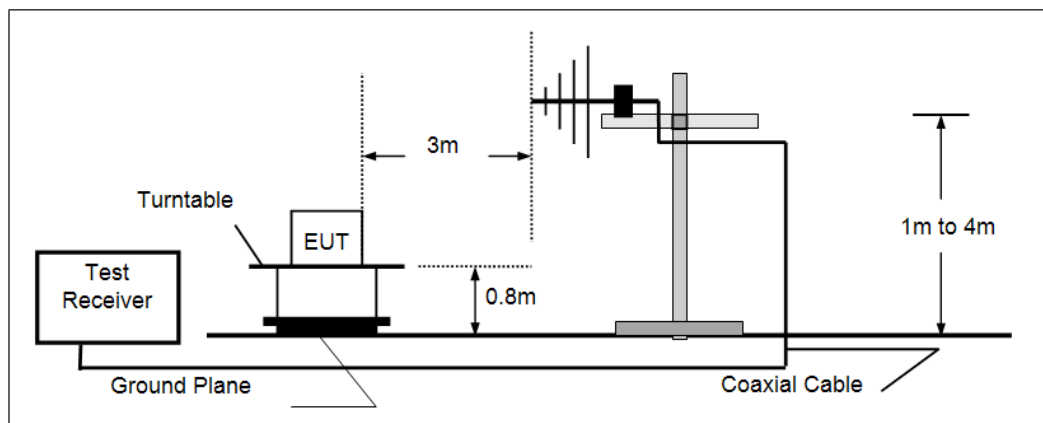
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

TEST CONFIGURATION

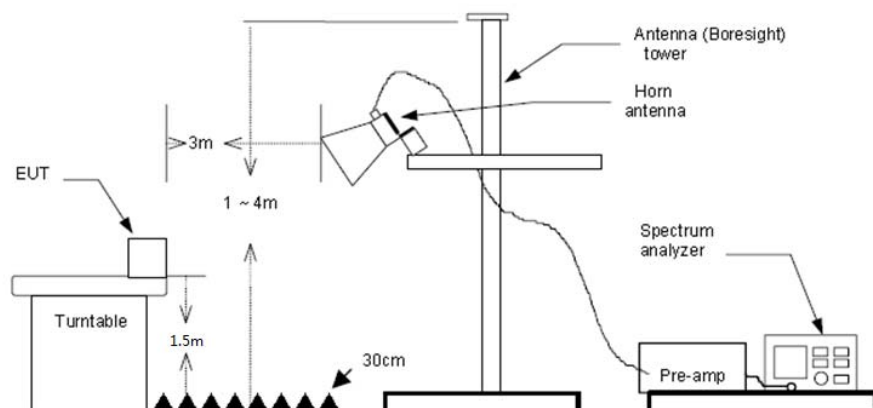
➤ Below 30MHz



➤ 30MHz~1000MHz



➤ Above 1GHz



TEST PROCEDURE

1. The EUT was tested according to ANSI C63.10:2013 for compliance to FCC 47CFR 15.247 requirements.
2. The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna.
5. Use the following spectrum analyzer settings
 - (1) Span shall be wide enough to fully capture the emission being measured;
 - (2) Below 1GHz, RBW=120KHz, VBW=300KHz, Sweep=auto, Detector function=peak, Trace=max hold;
If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
 - (3) Above 1GHz, RBW=1MHz, VBW=3MHz for Peak value
RBW=1MHz, VBW=10Hz PK detector for Average value.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note:

- 1) *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
- 2) *Have pre-scan 9kHz~25GHz frequency emission, the emission levels of other frequencies are very lower than the limit and not show in test report.*
- 3) *Below 1GHz, Have pre-scan all modulation mode, found the 8DPSK modulation Low channel which it was worst case, so only the worst case's data on the test report.*
- 4) *Above 1GHz, Have pre-scan all modulation mode, found the 8DPSK modulation which it was worst case, so only the worst case's data on the test report*
- 5) *The peak level is lower than average limit (54 dBuV/m), this data is too weak instrument of signal is unable to test.*

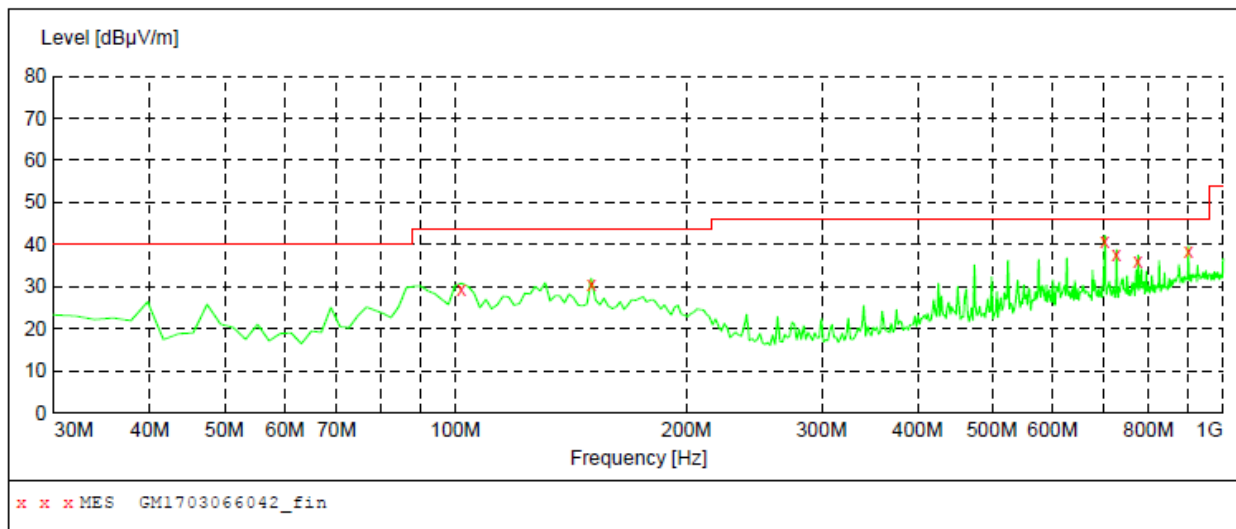
➤ **9kHz ~ 30MHz**

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

➤ 30MHz ~ 1GHz

Polarization:

Vertical

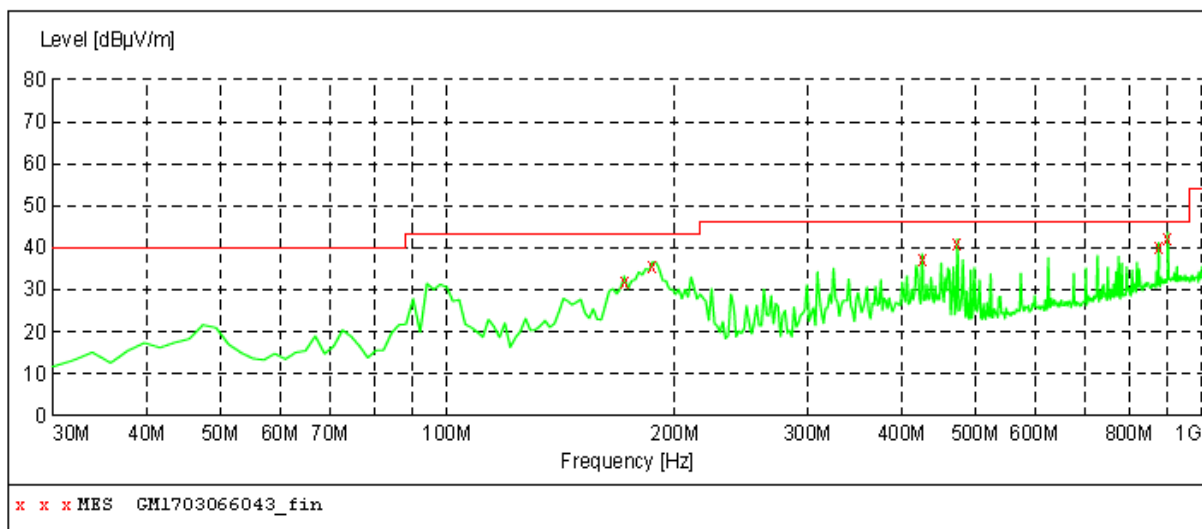
**MEASUREMENT RESULT: "GM1703066042_fin"**

3/6/2017 12:06PM

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
101.780000	29.50	-17.5	43.5	13.0	QP	100.0	65.00	VERTICAL
150.280000	30.60	-19.9	43.5	12.9	QP	100.0	331.00	VERTICAL
701.240000	40.90	-3.2	46.0	5.1	QP	100.0	38.00	VERTICAL
726.460000	37.50	-2.7	46.0	8.5	QP	100.0	160.00	VERTICAL
774.960000	36.20	-1.6	46.0	9.8	QP	100.0	171.00	VERTICAL
901.060000	38.40	1.2	46.0	7.6	QP	100.0	257.00	VERTICAL

Polarization:

Horizontal

**MEASUREMENT RESULT: "GM1703066043_fin"**

3/6/2017 12:29PM

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
171.620000	31.90	-18.9	43.5	11.6	QP	100.0	29.00	HORIZONTAL
187.140000	35.40	-17.5	43.5	8.1	QP	100.0	173.00	HORIZONTAL
425.760000	37.30	-9.9	46.0	9.7	QP	100.0	245.00	HORIZONTAL
474.260000	40.80	-8.5	46.0	5.2	QP	100.0	245.00	HORIZONTAL
875.840000	40.00	0.6	46.0	6.0	QP	100.0	197.00	HORIZONTAL
901.060000	42.40	1.2	46.0	3.6	QP	100.0	208.00	HORIZONTAL

➤ Above 1GHz

CH00 for 8DPSK									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin Limit (dB)	Polarization	Test value
1008.71	54.28	24.21	4.23	36.67	46.05	74.00	-27.95	Vertical	Peak
1331.29	50.68	24.55	4.88	36.50	43.61	74.00	-30.39	Vertical	
1711.91	50.31	25.34	5.79	36.96	44.48	74.00	-29.52	Vertical	
3425.68	42.17	28.67	8.00	38.51	40.33	74.00	-33.67	Vertical	
4804.11	45.79	31.09	9.54	36.95	49.47	74.00	-24.53	Vertical	
1142.20	47.55	24.36	4.53	36.60	39.84	74.00	-34.16	Horizontal	Peak
1327.45	51.76	24.55	4.88	36.50	44.69	74.00	-29.31	Horizontal	
1803.33	52.27	25.60	5.97	37.14	46.70	74.00	-27.30	Horizontal	
3714.44	37.84	29.06	8.40	38.25	37.05	74.00	-36.95	Horizontal	
4804.11	42.30	31.09	9.54	36.95	45.98	74.00	-28.02	Horizontal	

CH39 for 8DPSK									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin Limit (dB)	Polarization	Test value
1267.45	46.03	24.49	4.77	36.53	38.76	74.00	-35.24	Vertical	Peak
1578.82	46.51	24.95	5.51	36.69	40.28	74.00	-33.72	Vertical	
1741.86	46.69	25.43	5.85	37.02	40.95	74.00	-33.05	Vertical	
2656.33	43.20	28.10	7.04	37.99	40.35	74.00	-33.65	Vertical	
3435.59	42.12	28.68	8.02	38.50	40.32	74.00	-33.68	Vertical	
1263.80	48.88	24.49	4.77	36.53	41.61	74.00	-32.39	Horizontal	Peak
1687.35	49.35	25.27	5.74	36.90	43.46	74.00	-30.54	Horizontal	
2018.51	48.53	26.17	6.29	37.30	43.69	74.00	-30.31	Horizontal	
3735.98	38.34	29.09	8.43	38.24	37.62	74.00	-36.38	Horizontal	
4888.15	42.05	31.14	9.60	36.71	46.08	74.00	-27.92	Horizontal	

CH78 for 8DPSK									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin Limit (dB)	Polarization	Test value
1249.27	46.66	24.48	4.74	36.54	39.34	74.00	-34.66	Vertical	Peak
1578.82	46.55	24.95	5.51	36.69	40.32	74.00	-33.68	Vertical	
1888.69	45.65	25.82	6.10	37.21	40.36	74.00	-33.64	Vertical	
3435.59	40.49	28.68	8.02	38.50	38.69	74.00	-35.31	Vertical	
4959.31	44.06	31.18	9.64	36.51	48.37	74.00	-25.63	Vertical	
1152.15	49.46	24.38	4.55	36.59	41.80	74.00	-32.20	Horizontal	Peak
1331.29	54.18	24.55	4.88	36.50	47.11	74.00	-26.89	Horizontal	
1687.35	52.20	25.27	5.74	36.90	46.31	74.00	-27.69	Horizontal	
3725.20	38.64	29.07	8.41	38.24	37.88	74.00	-36.12	Horizontal	