

Appendix for LTE B12 test report

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Appendix A: Effective (Isotropic) Radiated Power Output Data

Test Result:

Band	Bandwidth	Modulation	Channel	RB Configuration	Conducted Power[dBm]	ERP (dBm)	Limit (dBm)	Verdict
Band12	1.4MHz	QPSK	23017	1RB#0	24.10	22.68	34.77	PASS
Band12	1.4MHz	QPSK	23017	1RB#2	24.20	22.78	34.77	PASS
Band12	1.4MHz	QPSK	23017	1RB#5	24.40	22.98	34.77	PASS
Band12	1.4MHz	QPSK	23017	3RB#0	24.22	22.8	34.77	PASS
Band12	1.4MHz	QPSK	23017	3RB#1	24.27	22.85	34.77	PASS
Band12	1.4MHz	QPSK	23017	3RB#3	24.35	22.93	34.77	PASS
Band12	1.4MHz	QPSK	23017	6RB#0	23.28	21.86	34.77	PASS
Band12	1.4MHz	QPSK	23095	1RB#0	24.64	23.22	34.77	PASS
Band12	1.4MHz	QPSK	23095	1RB#2	24.75	23.33	34.77	PASS
Band12	1.4MHz	QPSK	23095	1RB#5	24.70	23.28	34.77	PASS
Band12	1.4MHz	QPSK	23095	3RB#0	24.52	23.1	34.77	PASS
Band12	1.4MHz	QPSK	23095	3RB#1	24.66	23.24	34.77	PASS
Band12	1.4MHz	QPSK	23095	3RB#3	24.52	23.1	34.77	PASS
Band12	1.4MHz	QPSK	23095	6RB#0	23.50	22.08	34.77	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	24.63	23.21	34.77	PASS
Band12	1.4MHz	QPSK	23173	1RB#2	24.66	23.24	34.77	PASS
Band12	1.4MHz	QPSK	23173	1RB#5	24.58	23.16	34.77	PASS
Band12	1.4MHz	QPSK	23173	3RB#0	24.60	23.18	34.77	PASS
Band12	1.4MHz	QPSK	23173	3RB#1	24.56	23.14	34.77	PASS
Band12	1.4MHz	QPSK	23173	3RB#3	24.61	23.19	34.77	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	23.54	22.12	34.77	PASS
Band12	1.4MHz	16QAM	23017	1RB#0	23.13	21.71	34.77	PASS
Band12	1.4MHz	16QAM	23017	1RB#2	23.11	21.69	34.77	PASS
Band12	1.4MHz	16QAM	23017	1RB#5	23.08	21.66	34.77	PASS
Band12	1.4MHz	16QAM	23017	3RB#0	22.98	21.56	34.77	PASS
Band12	1.4MHz	16QAM	23017	3RB#1	23.22	21.8	34.77	PASS
Band12	1.4MHz	16QAM	23017	3RB#3	23.14	21.72	34.77	PASS
Band12	1.4MHz	16QAM	23017	6RB#0	22.29	20.87	34.77	PASS
Band12	1.4MHz	16QAM	23095	1RB#0	23.47	22.05	34.77	PASS
Band12	1.4MHz	16QAM	23095	1RB#2	23.59	22.17	34.77	PASS



Band12	1.4MHz	16QAM	23095	1RB#5	23.20	21.78	34.77	PASS
Band12	1.4MHz	16QAM	23095	3RB#0	23.46	22.04	34.77	PASS
Band12	1.4MHz	16QAM	23095	3RB#1	23.50	22.08	34.77	PASS
Band12	1.4MHz	16QAM	23095	3RB#3	23.61	22.19	34.77	PASS
Band12	1.4MHz	16QAM	23095	6RB#0	22.58	21.16	34.77	PASS
Band12	1.4MHz	16QAM	23173	1RB#0	23.47	22.05	34.77	PASS
Band12	1.4MHz	16QAM	23173	1RB#2	23.48	22.06	34.77	PASS
Band12	1.4MHz	16QAM	23173	1RB#5	23.28	21.86	34.77	PASS
Band12	1.4MHz	16QAM	23173	3RB#0	23.44	22.02	34.77	PASS
Band12	1.4MHz	16QAM	23173	3RB#1	23.58	22.16	34.77	PASS
Band12	1.4MHz	16QAM	23173	3RB#3	23.59	22.17	34.77	PASS
Band12	1.4MHz	16QAM	23173	6RB#0	22.52	21.1	34.77	PASS
Band12	3MHz	QPSK	23025	1RB#0	24.67	23.25	34.77	PASS
Band12	3MHz	QPSK	23025	1RB#8	24.66	23.24	34.77	PASS
Band12	3MHz	QPSK	23025	1RB#14	24.53	23.11	34.77	PASS
Band12	3MHz	QPSK	23025	8RB#0	23.27	21.85	34.77	PASS
Band12	3MHz	QPSK	23025	8RB#4	23.46	22.04	34.77	PASS
Band12	3MHz	QPSK	23025	8RB#7	23.46	22.04	34.77	PASS
Band12	3MHz	QPSK	23025	15RB#0	23.34	21.92	34.77	PASS
Band12	3MHz	QPSK	23095	1RB#0	24.60	23.18	34.77	PASS
Band12	3MHz	QPSK	23095	1RB#8	24.58	23.16	34.77	PASS
Band12	3MHz	QPSK	23095	1RB#14	24.46	23.04	34.77	PASS
Band12	3MHz	QPSK	23095	8RB#0	23.66	22.24	34.77	PASS
Band12	3MHz	QPSK	23095	8RB#4	23.53	22.11	34.77	PASS
Band12	3MHz	QPSK	23095	8RB#7	23.53	22.11	34.77	PASS
Band12	3MHz	QPSK	23095	15RB#0	23.61	22.19	34.77	PASS
Band12	3MHz	QPSK	23165	1RB#0	24.60	23.18	34.77	PASS
Band12	3MHz	QPSK	23165	1RB#8	24.71	23.29	34.77	PASS
Band12	3MHz	QPSK	23165	1RB#14	24.63	23.21	34.77	PASS
Band12	3MHz	QPSK	23165	8RB#0	23.00	21.58	34.77	PASS
Band12	3MHz	QPSK	23165	8RB#4	23.53	22.11	34.77	PASS
Band12	3MHz	QPSK	23165	8RB#7	23.48	22.06	34.77	PASS
Band12	3MHz	QPSK	23165	15RB#0	23.57	22.15	34.77	PASS
Band12	3MHz	16QAM	23025	1RB#0	23.46	22.04	34.77	PASS



Band12	3MHz	16QAM	23025	1RB#8	23.52	22.1	34.77	PASS
Band12	3MHz	16QAM	23025	1RB#14	23.48	22.06	34.77	PASS
Band12	3MHz	16QAM	23025	8RB#0	22.07	20.65	34.77	PASS
Band12	3MHz	16QAM	23025	8RB#4	22.29	20.87	34.77	PASS
Band12	3MHz	16QAM	23025	8RB#7	22.34	20.92	34.77	PASS
Band12	3MHz	16QAM	23025	15RB#0	22.30	20.88	34.77	PASS
Band12	3MHz	16QAM	23095	1RB#0	23.32	21.9	34.77	PASS
Band12	3MHz	16QAM	23095	1RB#8	23.35	21.93	34.77	PASS
Band12	3MHz	16QAM	23095	1RB#14	23.29	21.87	34.77	PASS
Band12	3MHz	16QAM	23095	8RB#0	22.59	21.17	34.77	PASS
Band12	3MHz	16QAM	23095	8RB#4	22.73	21.31	34.77	PASS
Band12	3MHz	16QAM	23095	8RB#7	22.64	21.22	34.77	PASS
Band12	3MHz	16QAM	23095	15RB#0	22.61	21.19	34.77	PASS
Band12	3MHz	16QAM	23165	1RB#0	23.63	22.21	34.77	PASS
Band12	3MHz	16QAM	23165	1RB#8	23.31	21.89	34.77	PASS
Band12	3MHz	16QAM	23165	1RB#14	23.37	21.95	34.77	PASS
Band12	3MHz	16QAM	23165	8RB#0	22.86	21.44	34.77	PASS
Band12	3MHz	16QAM	23165	8RB#4	22.57	21.15	34.77	PASS
Band12	3MHz	16QAM	23165	8RB#7	22.68	21.26	34.77	PASS
Band12	3MHz	16QAM	23165	15RB#0	22.48	21.06	34.77	PASS
Band12	5MHz	QPSK	23035	1RB#0	24.18	22.76	34.77	PASS
Band12	5MHz	QPSK	23035	1RB#12	24.40	22.98	34.77	PASS
Band12	5MHz	QPSK	23035	1RB#24	24.72	23.3	34.77	PASS
Band12	5MHz	QPSK	23035	12RB#0	23.13	21.71	34.77	PASS
Band12	5MHz	QPSK	23035	12RB#6	23.45	22.03	34.77	PASS
Band12	5MHz	QPSK	23035	12RB#13	23.38	21.96	34.77	PASS
Band12	5MHz	QPSK	23035	25RB#0	23.33	21.91	34.77	PASS
Band12	5MHz	QPSK	23095	1RB#0	24.61	23.19	34.77	PASS
Band12	5MHz	QPSK	23095	1RB#12	24.62	23.2	34.77	PASS
Band12	5MHz	QPSK	23095	1RB#24	24.53	23.11	34.77	PASS
Band12	5MHz	QPSK	23095	12RB#0	23.61	22.19	34.77	PASS
Band12	5MHz	QPSK	23095	12RB#6	23.50	22.08	34.77	PASS
Band12	5MHz	QPSK	23095	12RB#13	23.55	22.13	34.77	PASS
Band12	5MHz	QPSK	23095	25RB#0	23.62	22.2	34.77	PASS



Band12	5MHz	QPSK	23155	1RB#0	24.66	23.24	34.77	PASS
Band12	5MHz	QPSK	23155	1RB#12	24.77	23.35	34.77	PASS
Band12	5MHz	QPSK	23155	1RB#24	24.49	23.07	34.77	PASS
Band12	5MHz	QPSK	23155	12RB#0	23.57	22.15	34.77	PASS
Band12	5MHz	QPSK	23155	12RB#6	23.62	22.2	34.77	PASS
Band12	5MHz	QPSK	23155	12RB#13	23.48	22.06	34.77	PASS
Band12	5MHz	QPSK	23155	25RB#0	23.47	22.05	34.77	PASS
Band12	5MHz	16QAM	23035	1RB#0	22.91	21.49	34.77	PASS
Band12	5MHz	16QAM	23035	1RB#12	23.44	22.02	34.77	PASS
Band12	5MHz	16QAM	23035	1RB#24	23.27	21.85	34.77	PASS
Band12	5MHz	16QAM	23035	12RB#0	22.07	20.65	34.77	PASS
Band12	5MHz	16QAM	23035	12RB#6	22.35	20.93	34.77	PASS
Band12	5MHz	16QAM	23035	12RB#13	22.50	21.08	34.77	PASS
Band12	5MHz	16QAM	23035	25RB#0	22.34	20.92	34.77	PASS
Band12	5MHz	16QAM	23095	1RB#0	23.45	22.03	34.77	PASS
Band12	5MHz	16QAM	23095	1RB#12	23.05	21.63	34.77	PASS
Band12	5MHz	16QAM	23095	1RB#24	23.20	21.78	34.77	PASS
Band12	5MHz	16QAM	23095	12RB#0	22.61	21.19	34.77	PASS
Band12	5MHz	16QAM	23095	12RB#6	22.51	21.09	34.77	PASS
Band12	5MHz	16QAM	23095	12RB#13	22.50	21.08	34.77	PASS
Band12	5MHz	16QAM	23095	25RB#0	22.61	21.19	34.77	PASS
Band12	5MHz	16QAM	23155	1RB#0	23.62	22.2	34.77	PASS
Band12	5MHz	16QAM	23155	1RB#12	23.57	22.15	34.77	PASS
Band12	5MHz	16QAM	23155	1RB#24	23.55	22.13	34.77	PASS
Band12	5MHz	16QAM	23155	12RB#0	22.58	21.16	34.77	PASS
Band12	5MHz	16QAM	23155	12RB#6	22.44	21.02	34.77	PASS
Band12	5MHz	16QAM	23155	12RB#13	22.61	21.19	34.77	PASS
Band12	5MHz	16QAM	23155	25RB#0	22.50	21.08	34.77	PASS
Band12	10MHz	QPSK	23060	1RB#0	24.52	23.1	34.77	PASS
Band12	10MHz	QPSK	23060	1RB#24	24.64	23.22	34.77	PASS
Band12	10MHz	QPSK	23060	1RB#49	24.72	23.3	34.77	PASS
Band12	10MHz	QPSK	23060	25RB#0	23.38	21.96	34.77	PASS
Band12	10MHz	QPSK	23060	25RB#12	23.57	22.15	34.77	PASS
Band12	10MHz	QPSK	23060	25RB#25	23.50	22.08	34.77	PASS



Band12	10MHz	QPSK	23060	50RB#0	23.55	22.13	34.77	PASS
Band12	10MHz	QPSK	23095	1RB#0	24.55	23.13	34.77	PASS
Band12	10MHz	QPSK	23095	1RB#24	24.79	23.37	34.77	PASS
Band12	10MHz	QPSK	23095	1RB#49	24.78	23.36	34.77	PASS
Band12	10MHz	QPSK	23095	25RB#0	23.49	22.07	34.77	PASS
Band12	10MHz	QPSK	23095	25RB#12	23.54	22.12	34.77	PASS
Band12	10MHz	QPSK	23095	25RB#25	23.48	22.06	34.77	PASS
Band12	10MHz	QPSK	23095	50RB#0	23.56	22.14	34.77	PASS
Band12	10MHz	QPSK	23130	1RB#0	24.71	23.29	34.77	PASS
Band12	10MHz	QPSK	23130	1RB#24	24.80	23.38	34.77	PASS
Band12	10MHz	QPSK	23130	1RB#49	24.85	23.43	34.77	PASS
Band12	10MHz	QPSK	23130	25RB#0	23.68	22.26	34.77	PASS
Band12	10MHz	QPSK	23130	25RB#12	23.61	22.19	34.77	PASS
Band12	10MHz	QPSK	23130	25RB#25	23.64	22.22	34.77	PASS
Band12	10MHz	QPSK	23130	50RB#0	23.52	22.1	34.77	PASS
Band12	10MHz	16QAM	23060	1RB#0	23.37	21.95	34.77	PASS
Band12	10MHz	16QAM	23060	1RB#24	23.75	22.33	34.77	PASS
Band12	10MHz	16QAM	23060	1RB#49	23.18	21.76	34.77	PASS
Band12	10MHz	16QAM	23060	25RB#0	22.51	21.09	34.77	PASS
Band12	10MHz	16QAM	23060	25RB#12	22.53	21.11	34.77	PASS
Band12	10MHz	16QAM	23060	25RB#25	22.46	21.04	34.77	PASS
Band12	10MHz	16QAM	23060	50RB#0	22.38	20.96	34.77	PASS
Band12	10MHz	16QAM	23095	1RB#0	23.13	21.71	34.77	PASS
Band12	10MHz	16QAM	23095	1RB#24	23.63	22.21	34.77	PASS
Band12	10MHz	16QAM	23095	1RB#49	23.33	21.91	34.77	PASS
Band12	10MHz	16QAM	23095	25RB#0	22.44	21.02	34.77	PASS
Band12	10MHz	16QAM	23095	25RB#12	22.63	21.21	34.77	PASS
Band12	10MHz	16QAM	23095	25RB#25	22.45	21.03	34.77	PASS
Band12	10MHz	16QAM	23095	50RB#0	22.49	21.07	34.77	PASS
Band12	10MHz	16QAM	23130	1RB#0	23.17	21.75	34.77	PASS
Band12	10MHz	16QAM	23130	1RB#24	23.49	22.07	34.77	PASS
Band12	10MHz	16QAM	23130	1RB#49	23.45	22.03	34.77	PASS
Band12	10MHz	16QAM	23130	25RB#0	22.63	21.21	34.77	PASS
Band12	10MHz	16QAM	23130	25RB#12	22.71	21.29	34.77	PASS

Band12	10MHz	16QAM	23130	25RB#25	22.60	21.18	34.77	PASS
Band12	10MHz	16QAM	23130	50RB#0	22.51	21.09	34.77	PASS

Note1:

a, For getting the ERP (Efficient Radiated Power) or EIRP (Efficient Isotropic Radiated Power) in substitution method, the following formula should be taken to calculate it,

$$\text{ERP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBd]}$$

$$\text{EIRP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBi]}$$

b, SGP=Signal Generator Level

c, Antenna gain of LTE Band 12 is 0.73dBi.

Note2: SET Span=1.5*OBW

SET RBW=1%of the OBW,not to exceed 1MHz

SET VBW>= 3*RBW

SET Sweep time=auto-couple.

Detector:RMS

Appendix B: Peak-to-Average Ratio

Test Result:

Worst Case data as follows:

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band12	1.4MHz	QPSK	23017	6RB#0	4.38	13	PASS
Band12	1.4MHz	QPSK	23095	6RB#0	4.42	13	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	4.44	13	PASS
Band12	1.4MHz	16QAM	23017	6RB#0	5.17	13	PASS
Band12	1.4MHz	16QAM	23095	6RB#0	5.18	13	PASS
Band12	1.4MHz	16QAM	23173	6RB#0	5.20	13	PASS
Band12	3MHz	QPSK	23025	15RB#0	4.38	13	PASS
Band12	3MHz	QPSK	23095	15RB#0	4.44	13	PASS
Band12	3MHz	QPSK	23165	15RB#0	4.49	13	PASS
Band12	3MHz	16QAM	23025	15RB#0	5.15	13	PASS
Band12	3MHz	16QAM	23095	15RB#0	5.21	13	PASS
Band12	3MHz	16QAM	23165	15RB#0	5.27	13	PASS
Band12	5MHz	QPSK	23035	25RB#0	4.32	13	PASS
Band12	5MHz	QPSK	23095	25RB#0	4.34	13	PASS
Band12	5MHz	QPSK	23155	25RB#0	4.45	13	PASS
Band12	5MHz	16QAM	23035	25RB#0	5.05	13	PASS
Band12	5MHz	16QAM	23095	25RB#0	5.04	13	PASS
Band12	5MHz	16QAM	23155	25RB#0	5.27	13	PASS
Band12	10MHz	QPSK	23060	50RB#0	4.35	13	PASS
Band12	10MHz	QPSK	23095	50RB#0	4.39	13	PASS
Band12	10MHz	QPSK	23130	50RB#0	4.35	13	PASS
Band12	10MHz	16QAM	23060	50RB#0	5.02	13	PASS
Band12	10MHz	16QAM	23095	50RB#0	5.28	13	PASS
Band12	10MHz	16QAM	23130	50RB#0	5.1	13	PASS

Appendix C: Modulation Characteristics

Test Result:

Band	Bandwidth	Modulation	Channel	RB Configuration	Result	Verdict
Band12	1.4MHz	QPSK	23017	6RB#0	PASS	PASS
Band12	1.4MHz	QPSK	23095	6RB#0	PASS	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	PASS	PASS
Band12	1.4MHz	16QAM	23017	6RB#0	PASS	PASS
Band12	1.4MHz	16QAM	23095	6RB#0	PASS	PASS
Band12	1.4MHz	16QAM	23173	6RB#0	PASS	PASS
Band12	3MHz	QPSK	23025	15RB#0	PASS	PASS
Band12	3MHz	QPSK	23095	15RB#0	PASS	PASS
Band12	3MHz	QPSK	23165	15RB#0	PASS	PASS
Band12	3MHz	16QAM	23025	15RB#0	PASS	PASS
Band12	3MHz	16QAM	23095	15RB#0	PASS	PASS
Band12	3MHz	16QAM	23165	15RB#0	PASS	PASS
Band12	5MHz	QPSK	23035	25RB#0	PASS	PASS
Band12	5MHz	QPSK	23095	25RB#0	PASS	PASS
Band12	5MHz	QPSK	23155	25RB#0	PASS	PASS
Band12	5MHz	16QAM	23035	25RB#0	PASS	PASS
Band12	5MHz	16QAM	23095	25RB#0	PASS	PASS
Band12	5MHz	16QAM	23155	25RB#0	PASS	PASS
Band12	10MHz	QPSK	23060	50RB#0	PASS	PASS
Band12	10MHz	QPSK	23095	50RB#0	PASS	PASS
Band12	10MHz	QPSK	23130	50RB#0	PASS	PASS
Band12	10MHz	16QAM	23060	50RB#0	PASS	PASS
Band12	10MHz	16QAM	23095	50RB#0	PASS	PASS
Band12	10MHz	16QAM	23130	50RB#0	PASS	PASS

Appendix D: Bandwidth

Test Result:

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band12	1.4MHz	QPSK	23017	6RB#0	1.0892	1.297	PASS
Band12	1.4MHz	QPSK	23095	6RB#0	1.1027	1.310	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	1.0869	1.282	PASS
Band12	1.4MHz	16QAM	23017	6RB#0	1.0956	1.309	PASS
Band12	1.4MHz	16QAM	23095	6RB#0	1.0895	1.286	PASS
Band12	1.4MHz	16QAM	23173	6RB#0	1.0894	1.285	PASS
Band12	3MHz	QPSK	23025	15RB#0	2.6995	3.009	PASS
Band12	3MHz	QPSK	23095	15RB#0	2.7043	2.983	PASS
Band12	3MHz	QPSK	23165	15RB#0	2.6989	3.005	PASS
Band12	3MHz	16QAM	23025	15RB#0	2.6971	2.998	PASS
Band12	3MHz	16QAM	23095	15RB#0	2.7027	2.994	PASS
Band12	3MHz	16QAM	23165	15RB#0	2.6933	2.970	PASS
Band12	5MHz	QPSK	23035	25RB#0	4.5070	5.001	PASS
Band12	5MHz	QPSK	23095	25RB#0	4.5027	4.931	PASS
Band12	5MHz	QPSK	23155	25RB#0	4.5015	4.956	PASS
Band12	5MHz	16QAM	23035	25RB#0	4.4952	5.009	PASS
Band12	5MHz	16QAM	23095	25RB#0	4.5019	4.968	PASS
Band12	5MHz	16QAM	23155	25RB#0	4.4882	4.931	PASS
Band12	10MHz	QPSK	23060	50RB#0	8.9508	9.891	PASS
Band12	10MHz	QPSK	23095	50RB#0	8.9626	9.864	PASS
Band12	10MHz	QPSK	23130	50RB#0	8.9609	9.892	PASS
Band12	10MHz	16QAM	23060	50RB#0	8.9577	9.844	PASS
Band12	10MHz	16QAM	23095	50RB#0	8.9624	9.863	PASS
Band12	10MHz	16QAM	23130	50RB#0	8.9844	9.872	PASS

Test Graphs

Band12-1.4MHz-QPSK-23017-6RB#0



Band12-1.4MHz-QPSK-23095-6RB#0



Band12-1.4MHz-QPSK-23173-6RB#0



Band12-1.4MHz-16QAM-23017-6RB#0



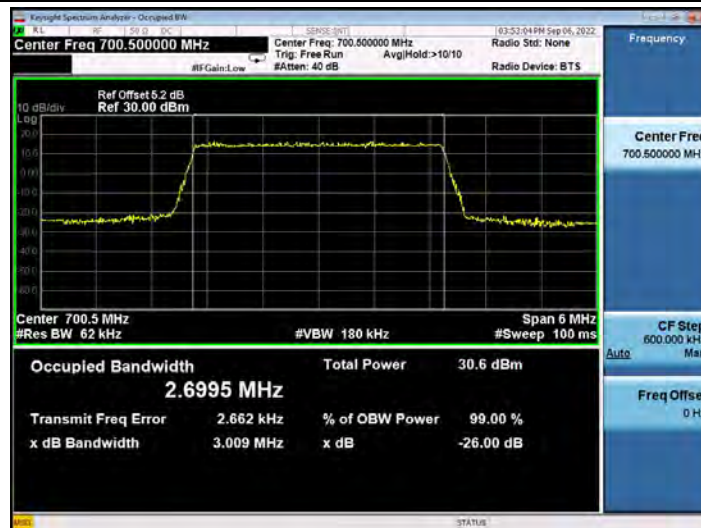
Band12-1.4MHz-16QAM-23095-6RB#0



Band12-1.4MHz-16QAM-23173-6RB#0



Band12-3MHz-QPSK-23025-15RB#0



Band12-3MHz-QPSK-23095-15RB#0



Band12-3MHz-QPSK-23165-15RB#0



Band12-3MHz-16QAM-23025-15RB#0



Band12-3MHz-16QAM-23095-15RB#0



Band12-3MHz-16QAM-23165-15RB#0



Band12-5MHz-QPSK-23035-25RB#0



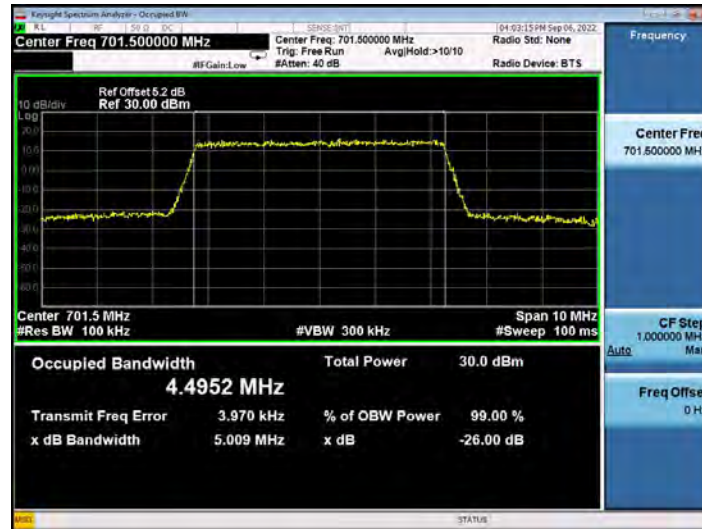
Band12-5MHz-QPSK-23095-25RB#0



Band12-5MHz-QPSK-23155-25RB#0



Band12-5MHz-16QAM-23035-25RB#0



Band12-5MHz-16QAM-23095-25RB#0



Band12-5MHz-16QAM-23155-25RB#0



Band12-10MHz-QPSK-23060-50RB#0



Band12-10MHz-QPSK-23095-50RB#0



Band12-10MHz-QPSK-23130-50RB#0



Band12-10MHz-16QAM-23060-50RB#0



Band12-10MHz-16QAM-23095-50RB#0



Band12-10MHz-16QAM-23130-50RB#0



Appendix E: Band Edge Compliance

Test Result:

Worst Case data as follows:

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band12	1.4MHz	QPSK	23017	1RB#0	Reference test Graphs	PASS
Band12	1.4MHz	QPSK	23017	6RB#0	Reference test Graphs	PASS
Band12	1.4MHz	QPSK	23173	1RB#5	Reference test Graphs	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	Reference test Graphs	PASS
Band12	3MHz	QPSK	23025	1RB#0	Reference test Graphs	PASS
Band12	3MHz	QPSK	23025	15RB#0	Reference test Graphs	PASS
Band12	3MHz	QPSK	23165	1RB#14	Reference test Graphs	PASS
Band12	3MHz	QPSK	23165	15RB#0	Reference test Graphs	PASS
Band12	5MHz	QPSK	23035	1RB#0	Reference test Graphs	PASS
Band12	5MHz	QPSK	23035	25RB#0	Reference test Graphs	PASS
Band12	5MHz	QPSK	23155	1RB#24	Reference test Graphs	PASS
Band12	5MHz	QPSK	23155	25RB#0	Reference test Graphs	PASS
Band12	10MHz	QPSK	23060	1RB#0	Reference test Graphs	PASS
Band12	10MHz	QPSK	23060	50RB#0	Reference test Graphs	PASS
Band12	10MHz	QPSK	23130	1RB#49	Reference test Graphs	PASS
Band12	10MHz	QPSK	23130	50RB#0	Reference test Graphs	PASS

Test Graphs

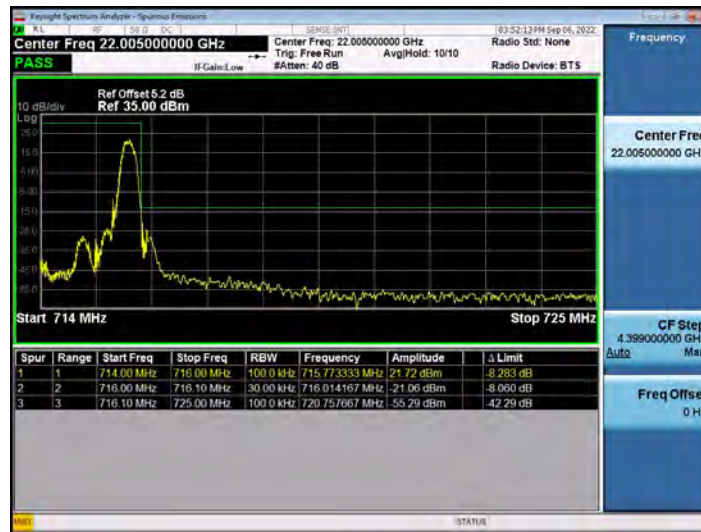
Band12-1.4MHz-QPSK-23017-1RB#0



Band12-1.4MHz-QPSK-23017-6RB#0



Band12-1.4MHz-QPSK-23173-1RB#5



Band12-1.4MHz-QPSK-23173-6RB#0



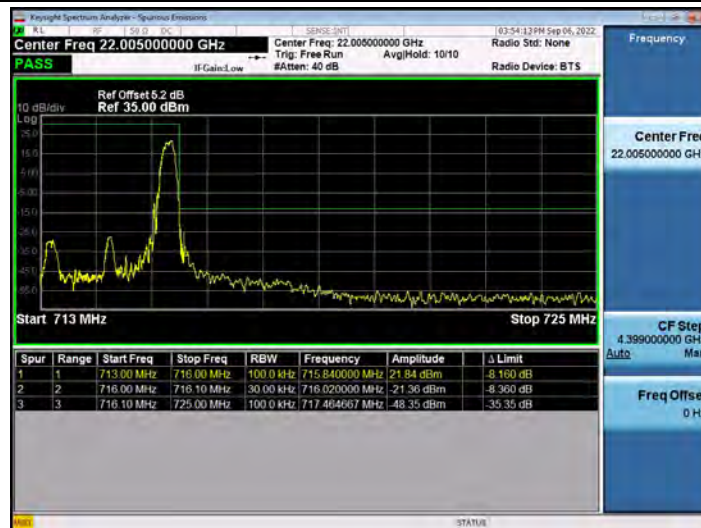
Band12-3MHz-QPSK-23025-1RB#0



Band12-3MHz-QPSK-23025-15RB#0



Band12-3MHz-QPSK-23165-1RB#14



Band12-3MHz-QPSK-23165-15RB#0



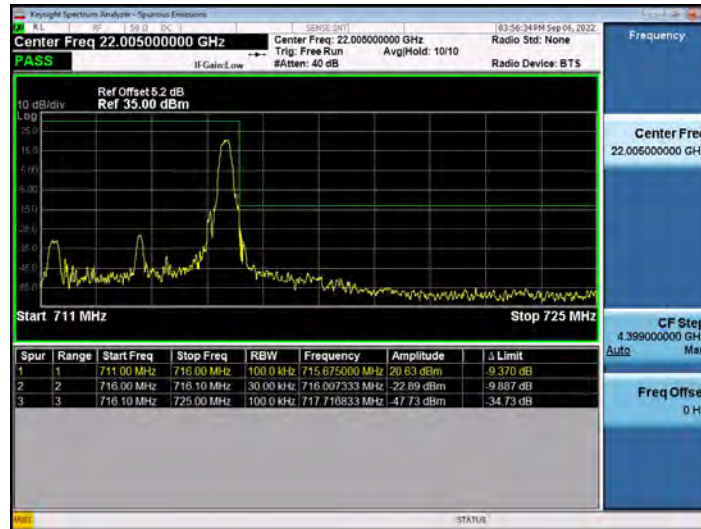
Band12-5MHz-QPSK-23035-1RB#0



Band12-5MHz-QPSK-23035-25RB#0



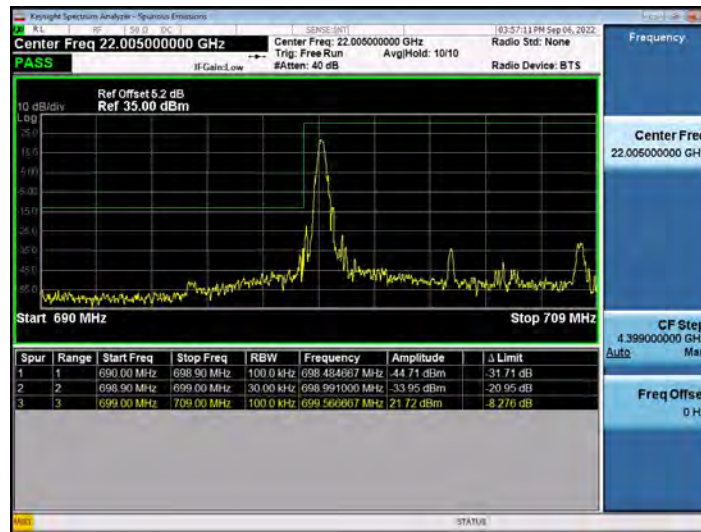
Band12-5MHz-QPSK-23155-1RB#24



Band12-5MHz-QPSK-23155-25RB#0



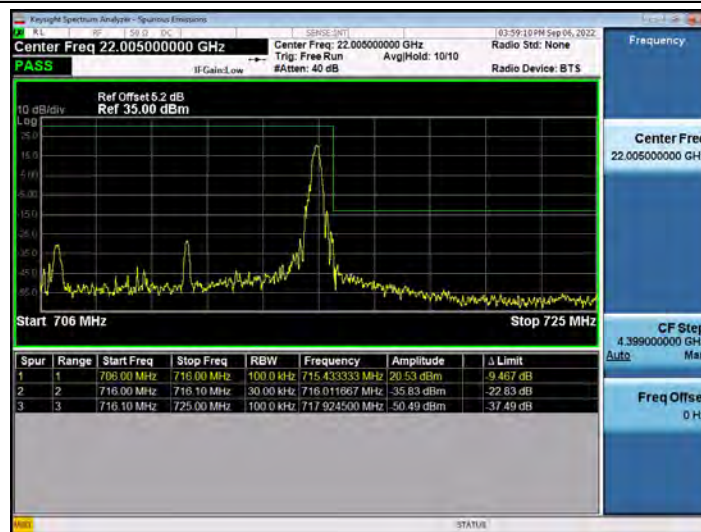
Band12-10MHz-QPSK-23060-1RB#0



Band12-10MHz-QPSK-23060-50RB#0



Band12-10MHz-QPSK-23130-1RB#49



Appendix F: Spurious Emission at Antenna Terminals

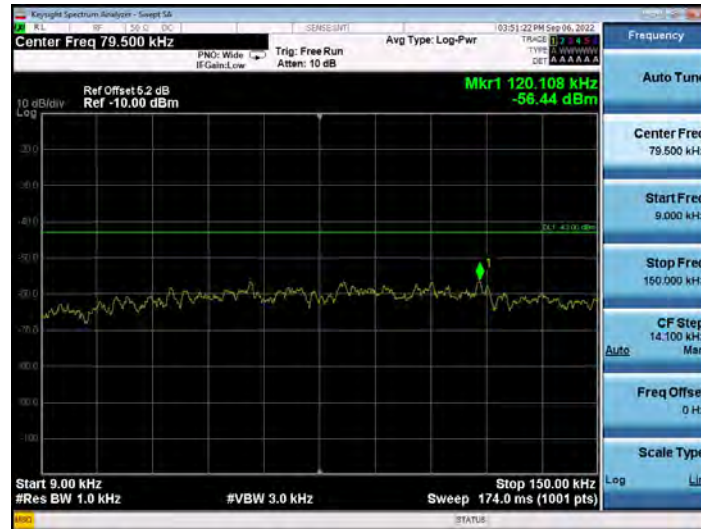
Test Result:

Worst Case data as follows:

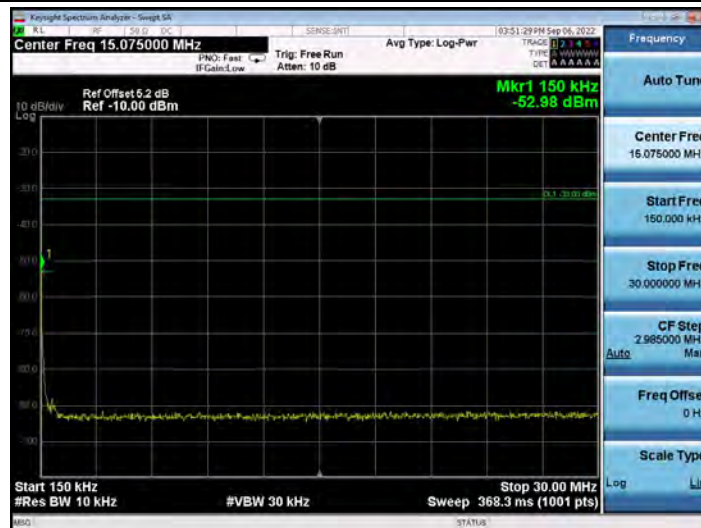
Band	Bandwidth	Modulation	Channel	RB Configuration	Frequency Range	Result (dBm)	Verdict
Band12	1.4MHz	QPSK	23095	1RB#0	Range1:9KHz~150KHz	-56.44	PASS
Band12	1.4MHz	QPSK	23095	1RB#0	Range2:150KHz~30MHz	-52.98	PASS
Band12	1.4MHz	QPSK	23095	1RB#0	Range3:30MHz~7.075GHz	-36.39	PASS
Band12	3MHz	QPSK	23095	1RB#0	Range1:9KHz~150KHz	-56.12	PASS
Band12	3MHz	QPSK	23095	1RB#0	Range2:150KHz~30MHz	-52.96	PASS
Band12	3MHz	QPSK	23095	1RB#0	Range3:30MHz~7.075GHz	-39.11	PASS
Band12	5MHz	QPSK	23095	1RB#0	Range1:9KHz~150KHz	-56.63	PASS
Band12	5MHz	QPSK	23095	1RB#0	Range2:150KHz~30MHz	-53.75	PASS
Band12	5MHz	QPSK	23095	1RB#0	Range3:30MHz~7.075GHz	-37.06	PASS
Band12	10MHz	QPSK	23095	1RB#0	Range1:9KHz~150KHz	-55.11	PASS
Band12	10MHz	QPSK	23095	1RB#0	Range2:150KHz~30MHz	-52.94	PASS
Band12	10MHz	QPSK	23095	1RB#0	Range3:30MHz~7.075GHz	-37.59	PASS

Test Graphs

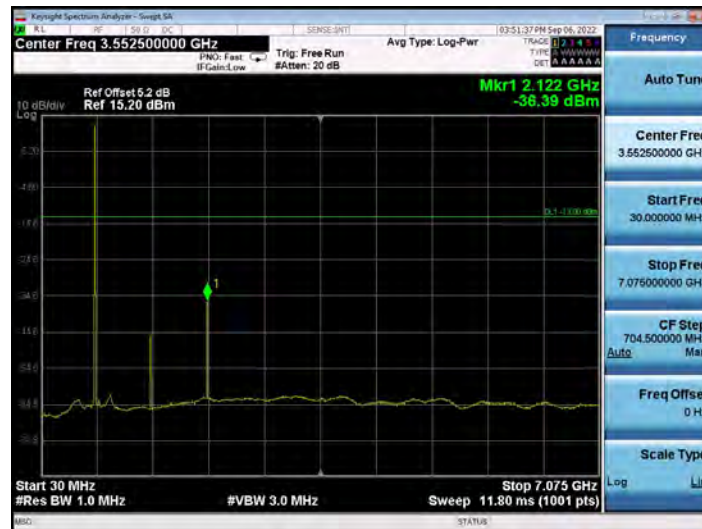
Band12-1.4MHz-QPSK-23095-1RB#0-Range1: 9KHz~150KHz



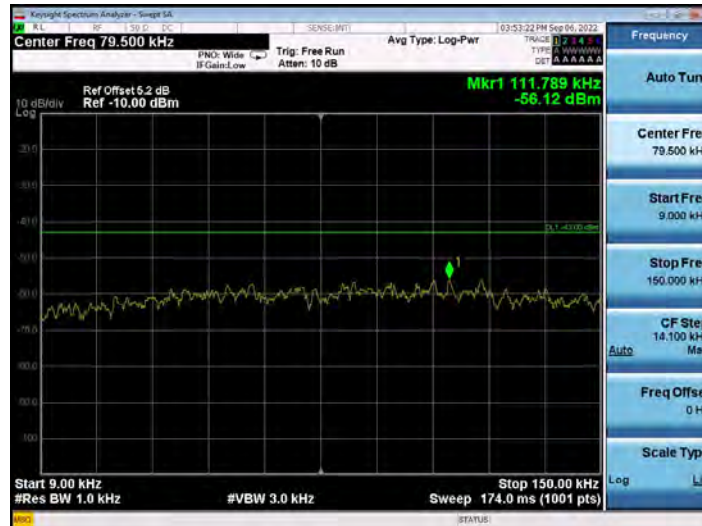
Band12-1.4MHz-QPSK-23095-1RB#0-Range2: 150KHz~30MHz



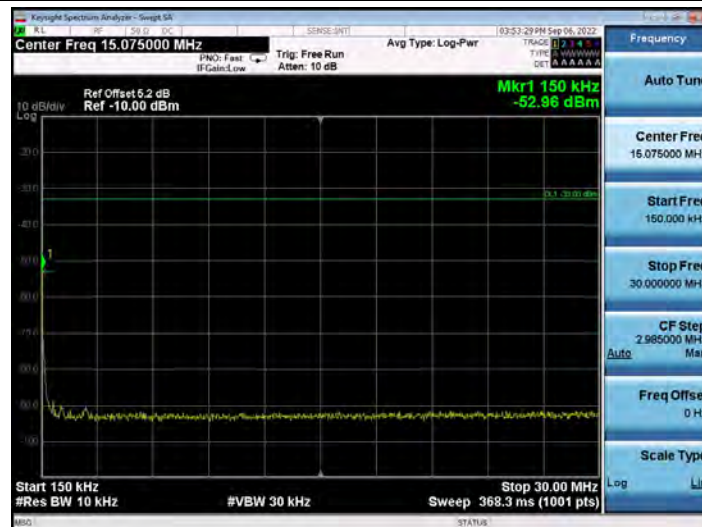
Band12-1.4MHz-QPSK-23095-1RB#0-Range3: 30MHz~7.07GHz



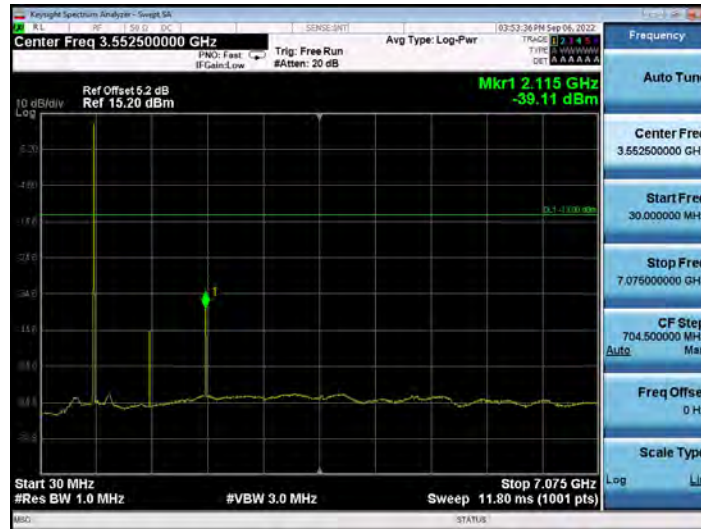
Band12-3MHz-QPSK-23095-1RB#0-Range1: 9KHz~150KHz



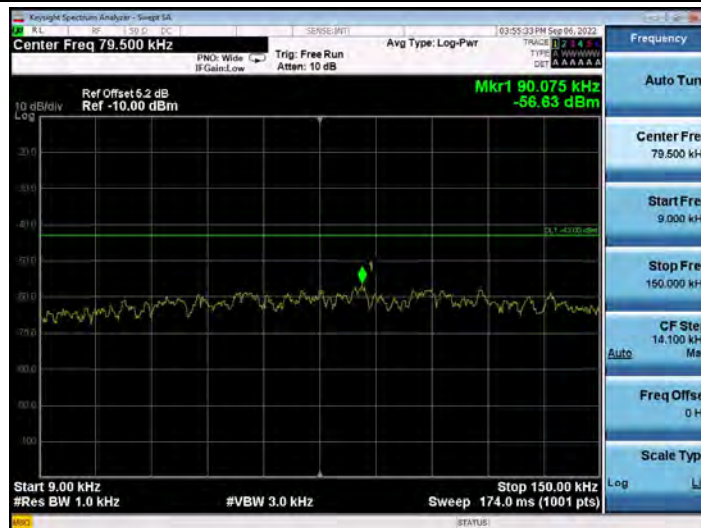
Band12-3MHz-QPSK-23095-1RB#0-Range2: 150KHz~30MHz



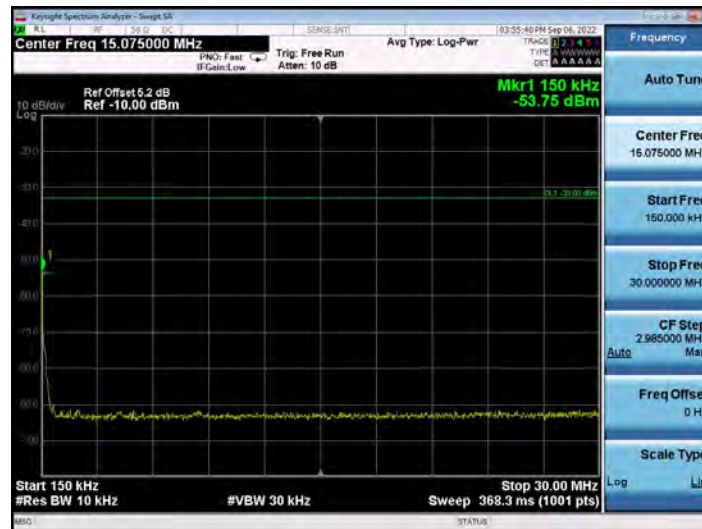
Band12-3MHz-QPSK-23095-1RB#0-Range3: 30MHz~7.07GHz



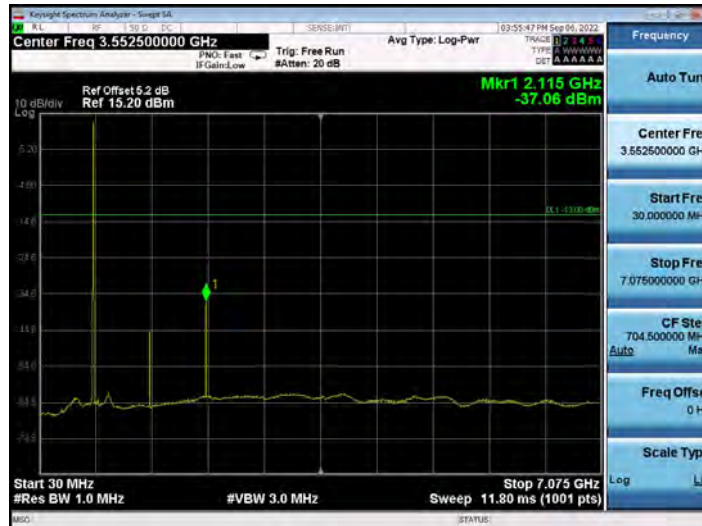
Band12-5MHz-QPSK-23095-1RB#0-Range1: 9KHz~150KHz



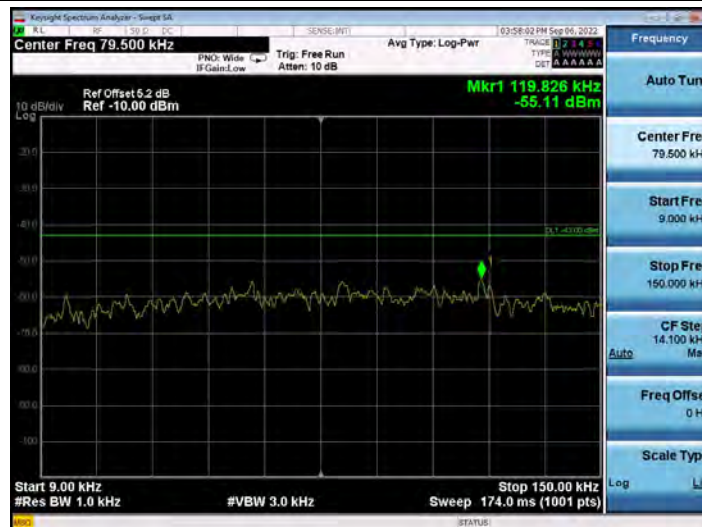
Band12-5MHz-QPSK-23095-1RB#0-Range2: 150KHz~30MHz



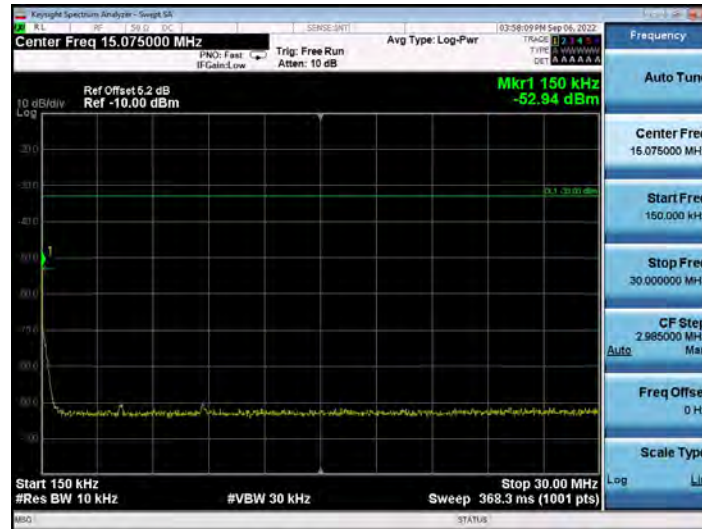
Band12-5MHz-QPSK-23095-1RB#0-Range3: 30MHz~7.07GHz



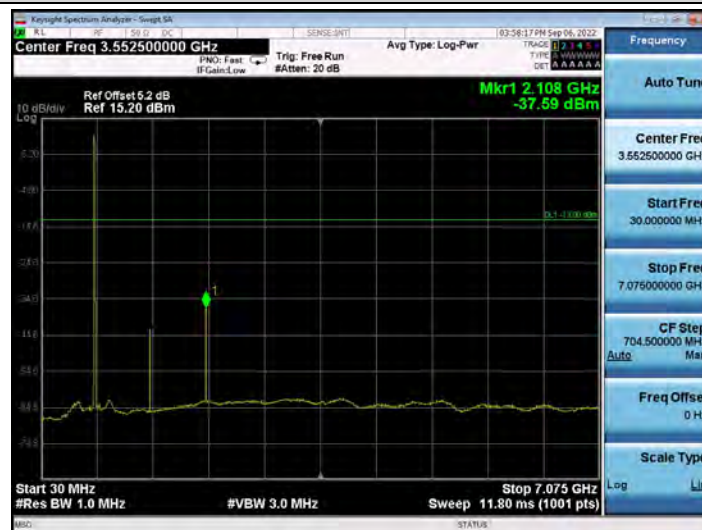
Band12-10MHz-QPSK-23095-1RB#0-Range1: 9KHz~150KHz



Band12-10MHz-QPSK-23095-1RB#0-Range1: 150KHz~30MHz



Band12-10MHz-QPSK-23095-1RB#0-Range4: 30MHz~7.07GHz



Appendix G: Field Strength of Spurious Radiation

The transmitting equipment under test (EUT) is placed on a styrene turntable which is four feet in diameter and approximately 0.8 meter up to 1GHz and 1.5 meter above 1GHz in height above the ground plane. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The EUT is adjusted through all three orthogonal axes to obtain maximum emission levels. The antenna height and polarization are varied during the testing to search for maximum signal levels.

The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower. The emissions were very low against the limit in the frequency range 9kHz to 30MHz and 18 GHz ~ 20 GHz.

Note: We tested all modes, but the data presented below is the worst case.

9kHz~150kHz, VBW = 200Hz, VBW = 600Hz, Detector: PK

150kHz~30MHz, VBW = 9kHz, VBW = 30kHz, Detector: PK

30MHz~1GHz, RBW = 100kHz, VBW = 300kHz. Detector: RMS

Above 1GHz, RBW = 1MHz, VBW = 3MHz. Detector: RMS

Test Plots

Test Band = BAND12

Worst Test Bandwidth = 5MHz-Middle channel(30MHz~1GHz)

Worst Test Bandwidth = 1.4MHz, 5MHz, 10MHz, -Middle channel(1GHz~8GHz)

Note:

1. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
2. The EUT is tested radiation emission at each test mode in three axes. The worst emissions are reported in all test mode and channels.
3. Measurement = Reading + Correct Factor
Over = Measurement – Limit.

Middle channel Horizontal

Below 1G

BW_5MHz

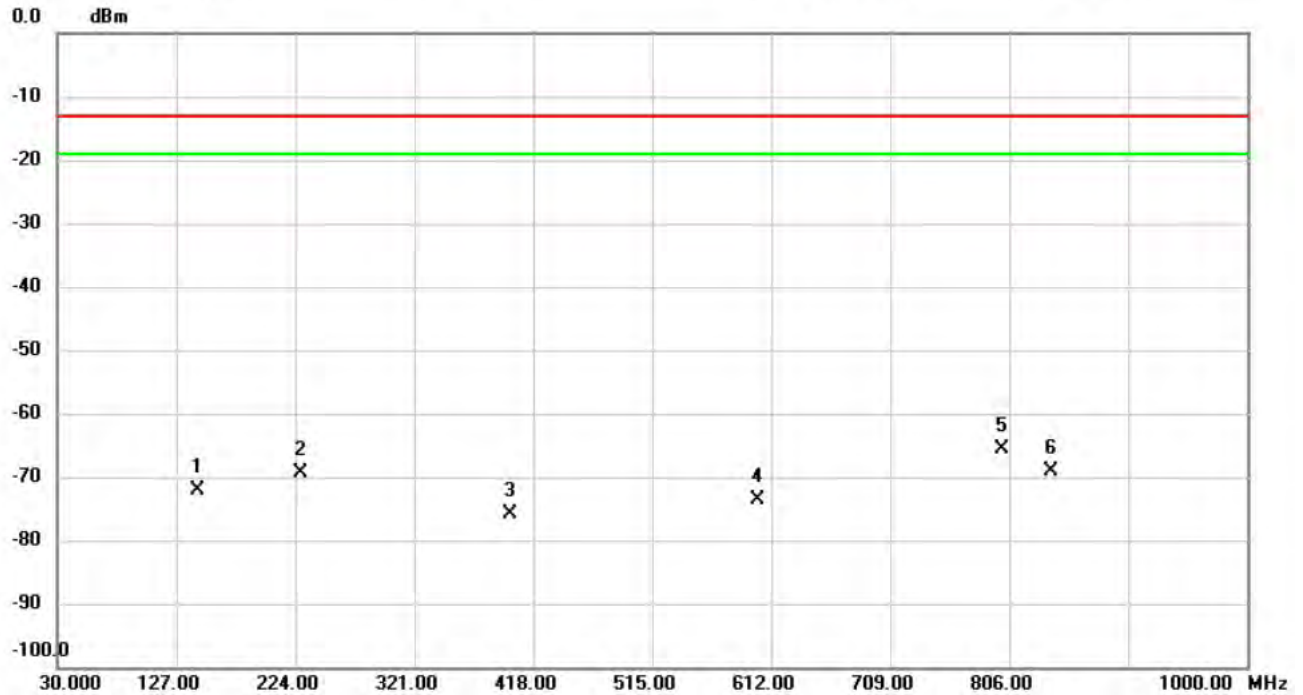
Radiated Emission Measurement

File :FCCP_BELOW1G

Data :#10

Date: 2022/9/13

Time: 11:26:52



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBm	dB	dBm	dBm	dB	Detector
1		144.4600	-66.64	-5.41	-72.05	-13.00	-59.05	RMS
2		228.8500	-64.83	-4.66	-69.49	-13.00	-56.49	RMS
3		399.5700	-74.07	-1.76	-75.83	-13.00	-62.83	RMS
4		600.3600	-75.61	1.95	-73.66	-13.00	-60.66	RMS
5	*	800.1800	-69.84	4.28	-65.56	-13.00	-52.56	RMS
6		839.9500	-73.29	4.22	-69.07	-13.00	-56.07	RMS

Above IG
BW_1.4MHz

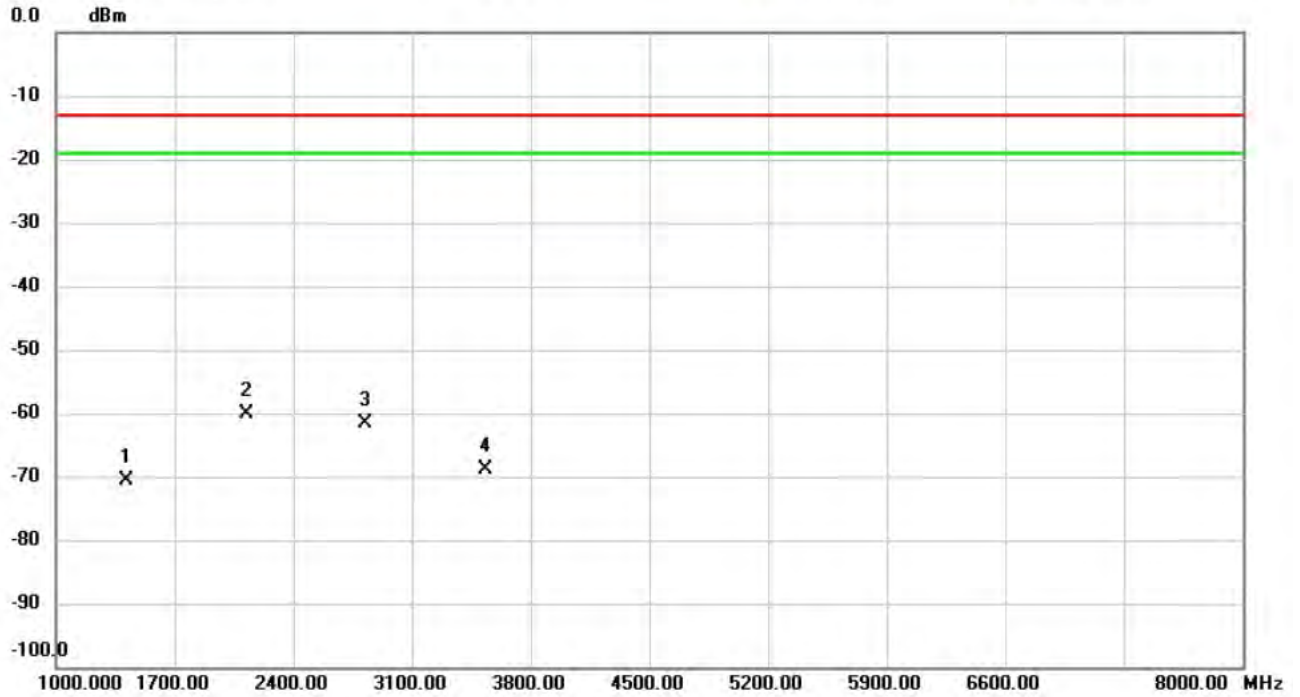
Radiated Emission Measurement

File : FCCP_ABOVE1G

Data : #16

Date: 2022/9/7

Time: 13:24:37



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector
		MHz	dBm	dB	dBm	dBm	dB	
1		1413.000	-58.18	-12.36	-70.54	-13.00	-57.54	RMS
2	*	2120.000	-50.36	-9.80	-60.16	-13.00	-47.16	RMS
3		2827.000	-52.83	-8.85	-61.68	-13.00	-48.68	RMS
4		3534.000	-61.10	-7.67	-68.77	-13.00	-55.77	RMS

BW_5MHz

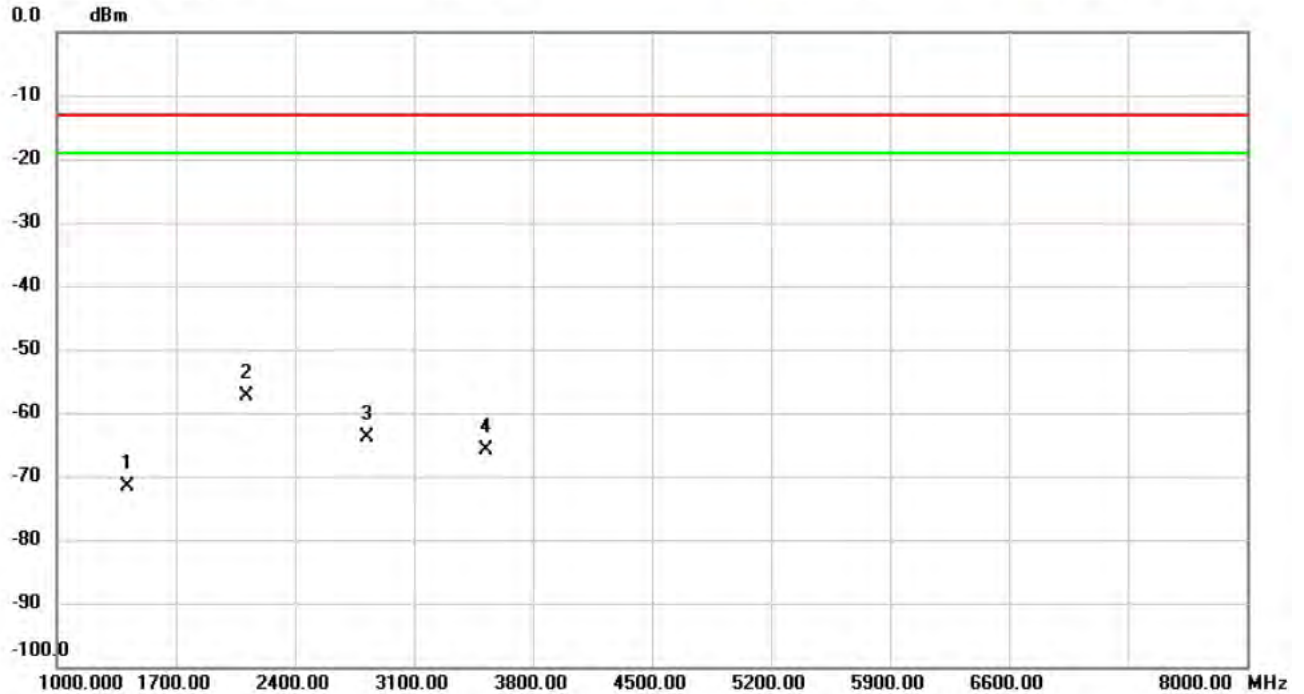
Radiated Emission Measurement

File :FCCP_ABOVE1G

Data :#14

Date: 2022/9/7

Time: 13:20:15



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBm	dB	dBm	dBm	dB	Detector
1		1413.000	-59.23	-12.36	-71.59	-13.00	-58.59	RMS
2	*	2113.000	-47.58	-9.88	-57.46	-13.00	-44.46	RMS
3		2820.000	-54.91	-8.84	-63.75	-13.00	-50.75	RMS
4		3527.000	-58.18	-7.71	-65.89	-13.00	-52.89	RMS

BW_10MHz

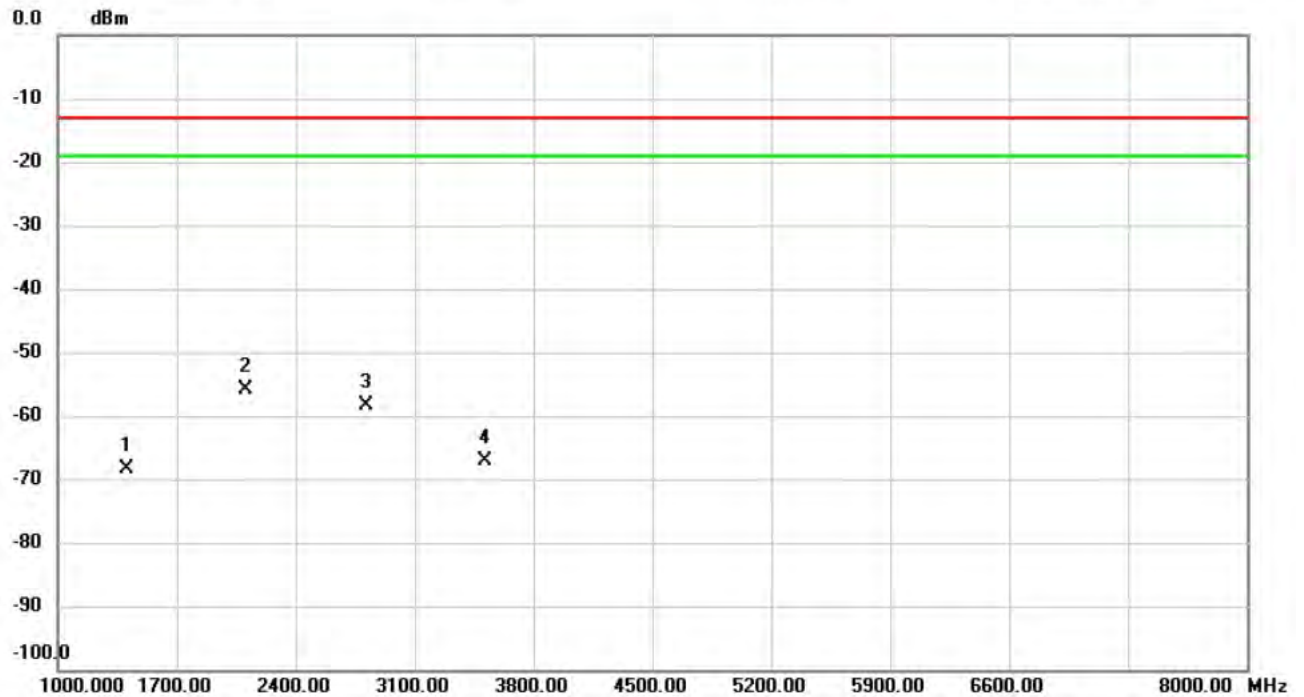
Radiated Emission Measurement

File :FCCP_ABOVE1G

Data :#18

Date: 2022/9/7

Time: 13:27:44



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector
		MHz	dBm	dB	dBm	dBm	dB	
1		1406.000	-56.04	-12.34	-68.38	-13.00	-55.38	RMS
2	*	2106.000	-45.94	-9.96	-55.90	-13.00	-42.90	RMS
3		2813.000	-49.52	-8.84	-58.36	-13.00	-45.36	RMS
4		3513.000	-59.24	-7.81	-67.05	-13.00	-54.05	RMS

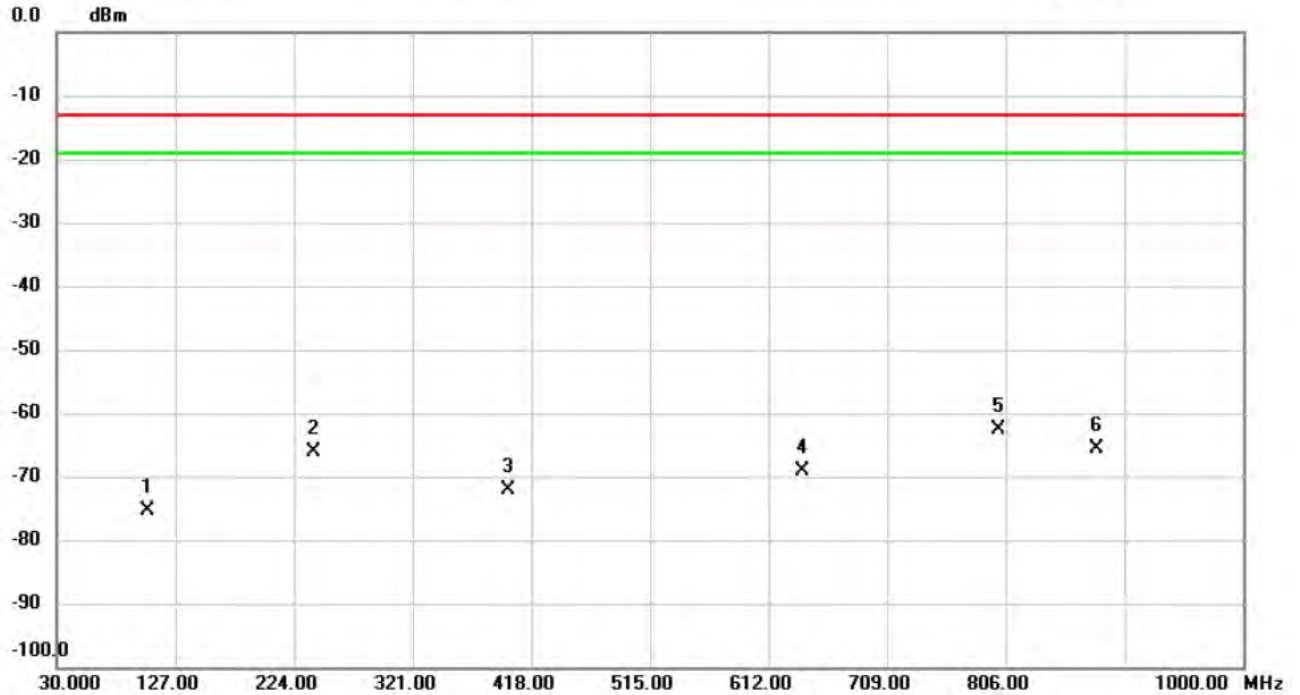
Middle channel Vertical
Below 1G
BW_5MHz
Radiated Emission Measurement

File :FCCP_BELOW1G

Data :#9

Date: 2022/9/13

Time: 11:25:20



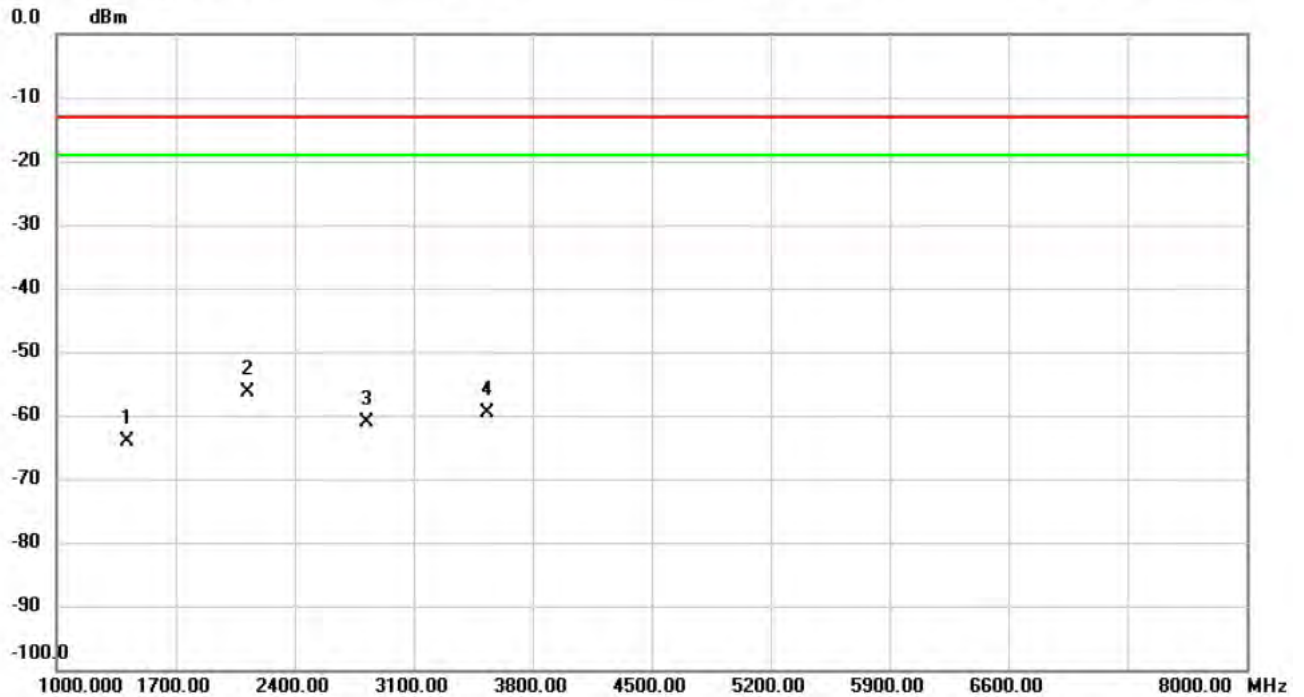
Above IG
BW_1.4MHz
Radiated Emission Measurement

File :FCCP_ABOVE1G

Data :#15

Date: 2022/9/7

Time: 13:23:12



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBm	dB	dBm	dBm	dB	Detector
1		1413.000	-52.16	-12.07	-64.23	-13.00	-51.23	RMS
2	*	2120.000	-46.42	-9.96	-56.38	-13.00	-43.38	RMS
3		2827.000	-52.18	-9.01	-61.19	-13.00	-48.19	RMS
4		3534.000	-51.98	-7.75	-59.73	-13.00	-46.73	RMS

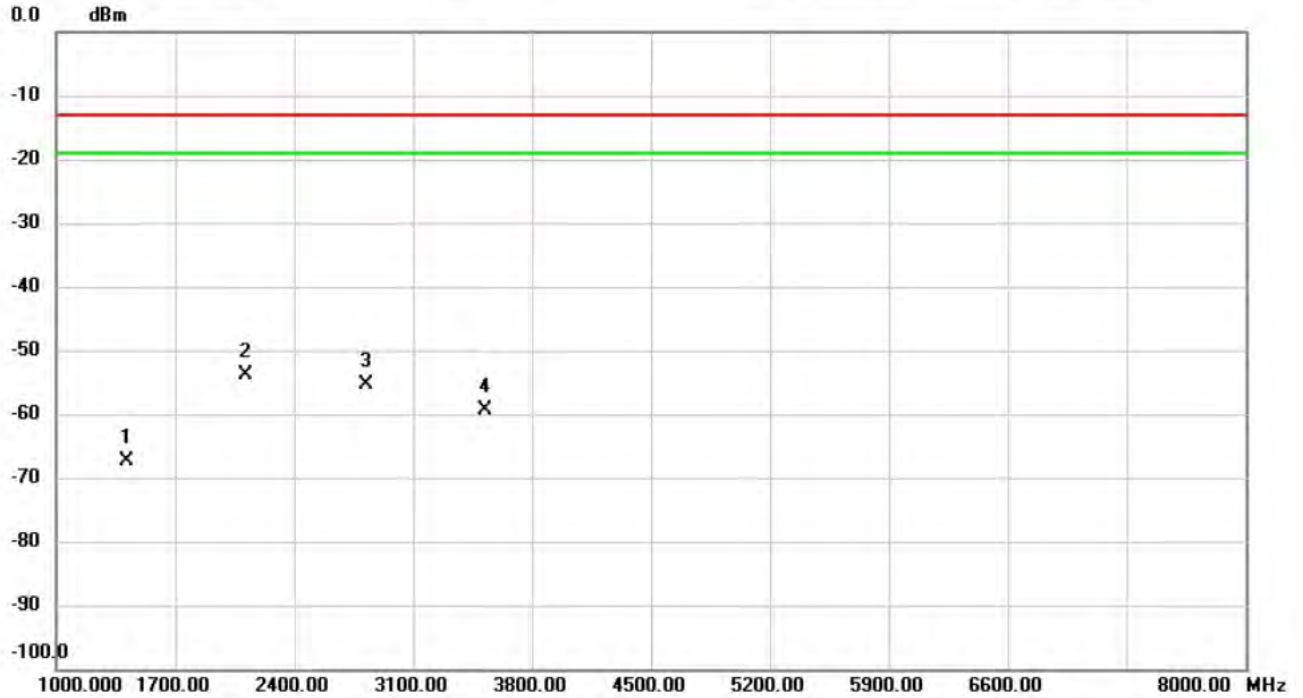
BW_5MHz
Radiated Emission Measurement

File :FCCP_ABOVE1G

Data :#13

Date: 2022/9/7

Time: 13:18:53



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBm	dB	dBm	dBm	dB	Detector
1		1413.000	-55.28	-12.07	-67.35	-13.00	-54.35	RMS
2	*	2113.000	-43.88	-10.02	-53.90	-13.00	-40.90	RMS
3		2820.000	-46.42	-9.01	-55.43	-13.00	-42.43	RMS
4		3527.000	-51.60	-7.79	-59.39	-13.00	-46.39	RMS

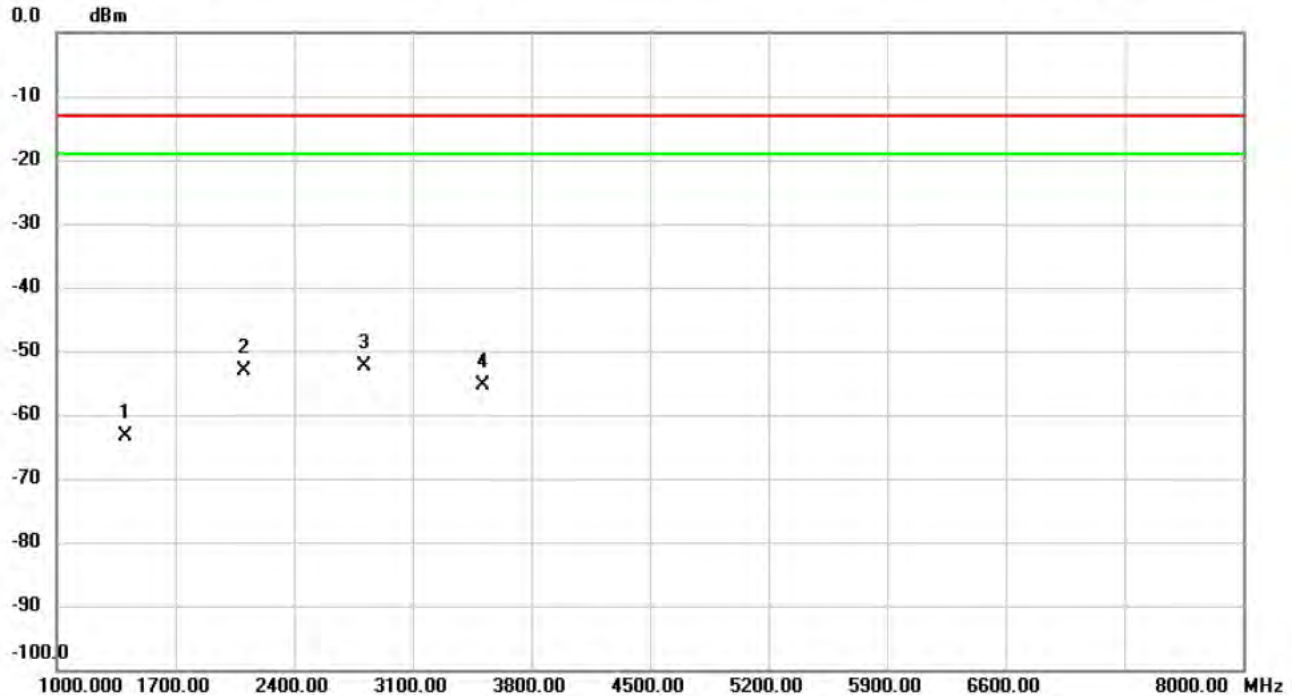
BW_10MHz
Radiated Emission Measurement

File :FCCP_ABOVE1G

Data :#17

Date: 2022/9/7

Time: 13:26:21



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBm	dB	dBm	dBm	dB	Detector
1		1406.000	-51.22	-12.07	-63.29	-13.00	-50.29	RMS
2		2106.000	-42.97	-10.09	-53.06	-13.00	-40.06	RMS
3	*	2813.000	-43.25	-9.01	-52.26	-13.00	-39.26	RMS
4		3513.000	-47.47	-7.88	-55.35	-13.00	-42.35	RMS

Appendix H: Frequency Stability

Test Result:

Frequency Error vs. Voltage:

Worst Case data as follows:

Voltage										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band12	1.4MHz	QPSK	23173	1RB#0	VH	NT	8.46	0.00450000	±2.5	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	VN	NT	7.46	0.00396809	±2.5	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	VL	NT	6.31	0.00335638	±2.5	PASS
Band12	3MHz	QPSK	23165	1RB#0	VH	NT	6.85	0.00364362	±2.5	PASS
Band12	3MHz	QPSK	23165	1RB#0	VN	NT	4.22	0.00224468	±2.5	PASS
Band12	3MHz	QPSK	23165	1RB#0	VL	NT	7.61	0.00404787	±2.5	PASS
Band12	5MHz	QPSK	23155	1RB#0	VH	NT	4.98	0.00264894	±2.5	PASS
Band12	5MHz	QPSK	23155	1RB#0	VN	NT	4.15	0.00220745	±2.5	PASS
Band12	5MHz	QPSK	23155	1RB#0	VL	NT	6.06	0.00322340	±2.5	PASS
Band12	10MHz	QPSK	23130	1RB#0	VH	NT	7.81	0.00415426	±2.5	PASS
Band12	10MHz	QPSK	23130	1RB#0	VN	NT	5.65	0.00300532	±2.5	PASS
Band12	10MHz	QPSK	23130	1RB#0	VL	NT	4.46	0.00237234	±2.5	PASS

Frequency Error vs. Temperature:

Worst Case data as follows:

Temperature										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band12	1.4MHz	QPSK	23173	1RB#0	NV	-40	8.91	0.00473936	±2.5	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	NV	-30	7.45	0.00396277	±2.5	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	NV	-20	-8.84	-0.00470213	±2.5	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	NV	-10	8.71	0.00463298	±2.5	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	NV	0	4.91	0.00261170	±2.5	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	NV	10	5.53	0.00294149	±2.5	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	NV	20	5.98	0.00318085	±2.5	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	NV	30	-8.65	-0.00460106	±2.5	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	NV	40	-7.92	-0.00421277	±2.5	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	NV	50	6.48	0.00344681	±2.5	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	NV	60	7.22	0.00384043	±2.5	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	NV	70	7.10	0.00377660	±2.5	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	NV	80	8.16	0.00434043	±2.5	PASS
Band12	3MHz	QPSK	23165	1RB#0	NV	-40	7.79	0.00414362	±2.5	PASS
Band12	3MHz	QPSK	23165	1RB#0	NV	-30	5.91	0.00314362	±2.5	PASS
Band12	3MHz	QPSK	23165	1RB#0	NV	-20	6.37	0.00338830	±2.5	PASS
Band12	3MHz	QPSK	23165	1RB#0	NV	-10	-5.92	-0.00314894	±2.5	PASS
Band12	3MHz	QPSK	23165	1RB#0	NV	0	4.49	0.00238830	±2.5	PASS
Band12	3MHz	QPSK	23165	1RB#0	NV	10	-7.60	-0.00404255	±2.5	PASS
Band12	3MHz	QPSK	23165	1RB#0	NV	20	8.99	0.00478191	±2.5	PASS
Band12	3MHz	QPSK	23165	1RB#0	NV	30	8.16	0.00434043	±2.5	PASS
Band12	3MHz	QPSK	23165	1RB#0	NV	40	5.29	0.00281383	±2.5	PASS
Band12	3MHz	QPSK	23165	1RB#0	NV	50	6.52	0.00346809	±2.5	PASS
Band12	3MHz	QPSK	23165	1RB#0	NV	60	-4.63	-0.00246277	±2.5	PASS
Band12	3MHz	QPSK	23165	1RB#0	NV	70	5.18	0.00275532	±2.5	PASS
Band12	3MHz	QPSK	23165	1RB#0	NV	80	-5.63	-0.00299468	±2.5	PASS
Band12	5MHz	QPSK	23155	1RB#0	NV	-40	7.58	0.00403191	±2.5	PASS
Band12	5MHz	QPSK	23155	1RB#0	NV	-30	5.94	0.00315957	±2.5	PASS
Band12	5MHz	QPSK	23155	1RB#0	NV	-20	4.10	0.00218085	±2.5	PASS
Band12	5MHz	QPSK	23155	1RB#0	NV	-10	5.77	0.00306915	±2.5	PASS
Band12	5MHz	QPSK	23155	1RB#0	NV	0	6.49	0.00345213	±2.5	PASS
Band12	5MHz	QPSK	23155	1RB#0	NV	10	7.44	0.00395745	±2.5	PASS
Band12	5MHz	QPSK	23155	1RB#0	NV	20	7.45	0.00396277	±2.5	PASS
Band12	5MHz	QPSK	23155	1RB#0	NV	30	7.53	0.00400532	±2.5	PASS



Band12	5MHz	QPSK	23155	1RB#0	NV	40	5.94	0.00315957	±2.5	PASS
Band12	5MHz	QPSK	23155	1RB#0	NV	50	4.99	0.00265426	±2.5	PASS
Band12	5MHz	QPSK	23155	1RB#0	NV	60	5.68	0.00302128	±2.5	PASS
Band12	5MHz	QPSK	23155	1RB#0	NV	70	8.55	0.00454787	±2.5	PASS
Band12	5MHz	QPSK	23155	1RB#0	NV	80	-6.38	-0.00339362	±2.5	PASS
Band12	10MHz	QPSK	23130	1RB#0	NV	-40	6.17	0.00328191	±2.5	PASS
Band12	10MHz	QPSK	23130	1RB#0	NV	-30	4.03	0.00214362	±2.5	PASS
Band12	10MHz	QPSK	23130	1RB#0	NV	-20	-8.70	-0.00462766	±2.5	PASS
Band12	10MHz	QPSK	23130	1RB#0	NV	-10	8.66	0.00460638	±2.5	PASS
Band12	10MHz	QPSK	23130	1RB#0	NV	0	-5.54	-0.00294681	±2.5	PASS
Band12	10MHz	QPSK	23130	1RB#0	NV	10	7.53	0.00400532	±2.5	PASS
Band12	10MHz	QPSK	23130	1RB#0	NV	20	8.58	0.00456383	±2.5	PASS
Band12	10MHz	QPSK	23130	1RB#0	NV	30	-8.47	-0.00450532	±2.5	PASS
Band12	10MHz	QPSK	23130	1RB#0	NV	40	6.27	0.00333511	±2.5	PASS
Band12	10MHz	QPSK	23130	1RB#0	NV	50	7.78	0.00413830	±2.5	PASS
Band12	10MHz	QPSK	23130	1RB#0	NV	60	8.33	0.00443085	±2.5	PASS
Band12	10MHz	QPSK	23130	1RB#0	NV	70	7.27	0.00386702	±2.5	PASS
Band12	10MHz	QPSK	23130	1RB#0	NV	80	6.04	0.00321277	±2.5	PASS

END