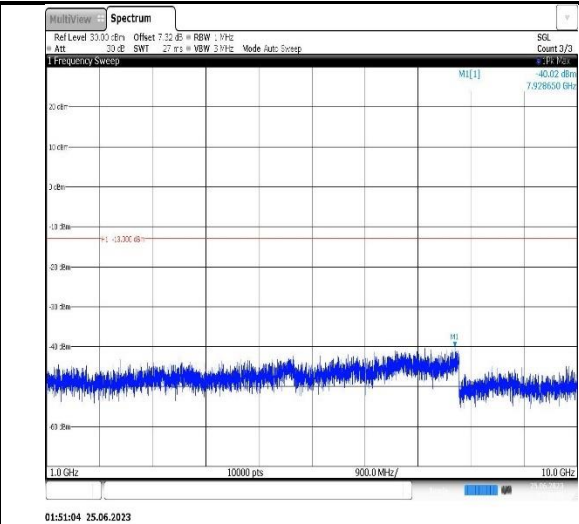
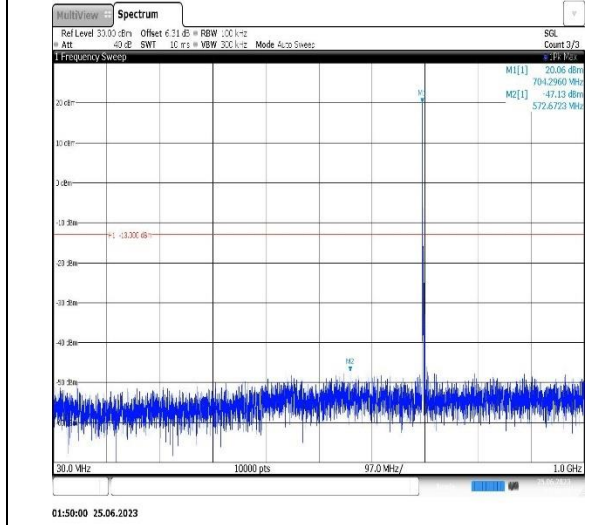


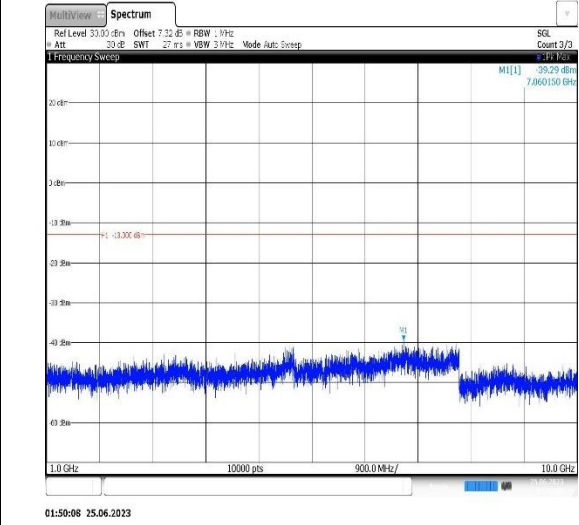
**Band17-5MHz-16QAM-23755-1RB#0-  
Range1:30~1000MHz**



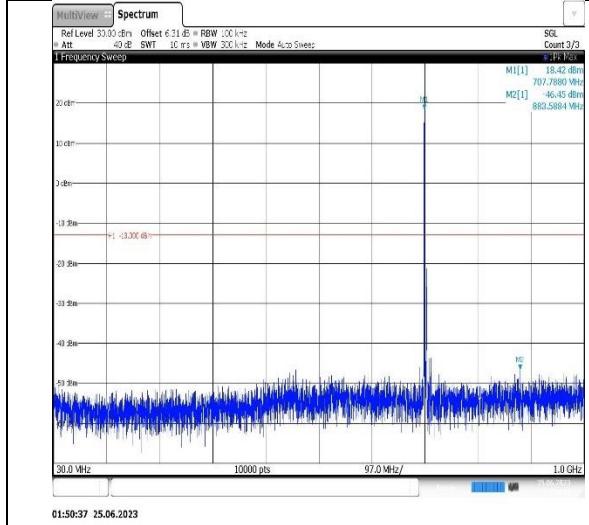
**Band17-5MHz-16QAM-23755-1RB#0-  
Range2:1000~10000MHz**



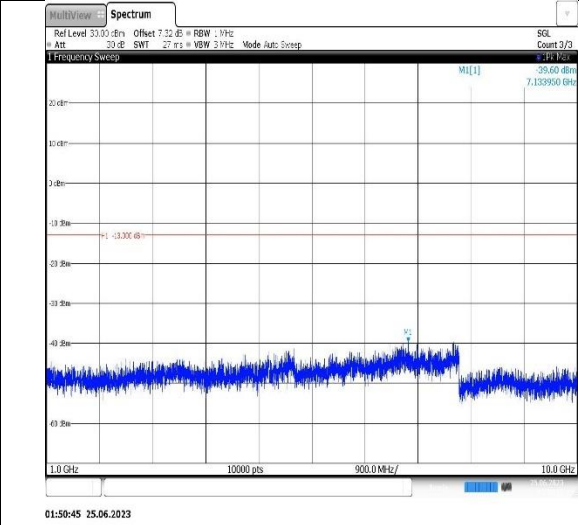
**Band17-5MHz-16QAM-23790-1RB#0-  
Range1:30~1000MHz**



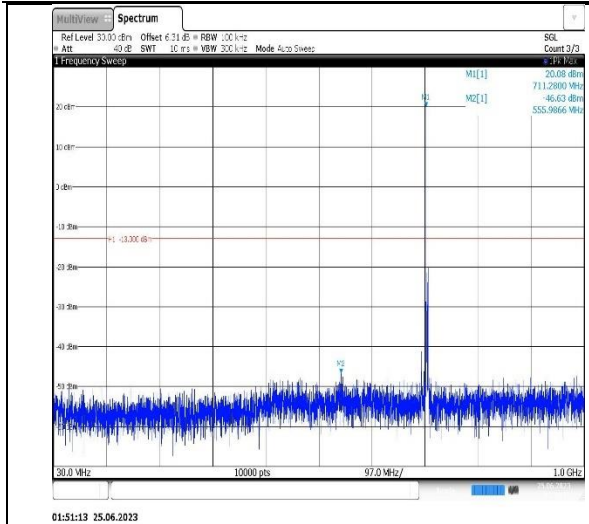
**Band17-5MHz-16QAM-23790-1RB#0-  
Range2:1000~10000MHz**



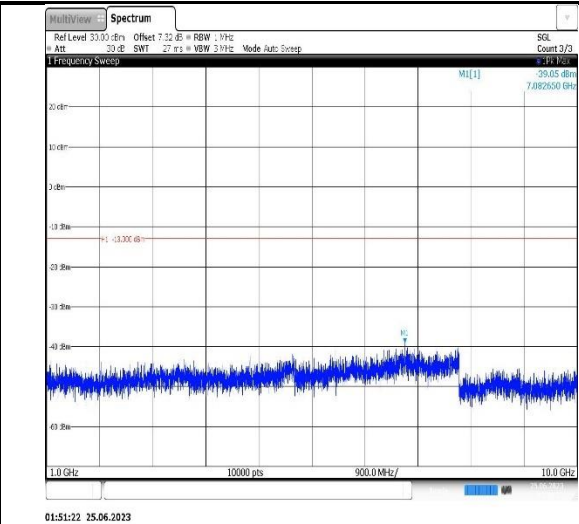
**Band17-5MHz-16QAM-23825-1RB#0-  
Range1:30~1000MHz**



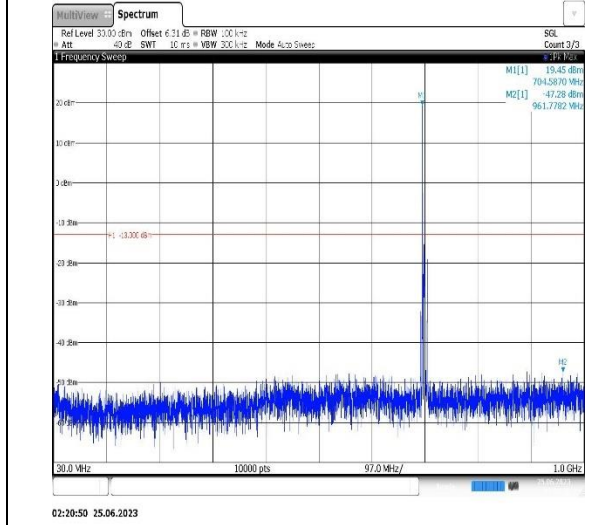
**Band17-5MHz-16QAM-23825-1RB#0-  
Range2:1000~10000MHz**



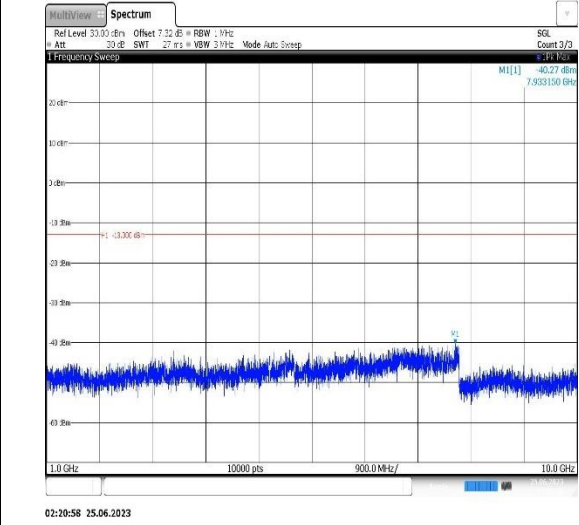
**Band17-10MHz-QPSK-23780-1RB#0-Range1:30~1000MHz**



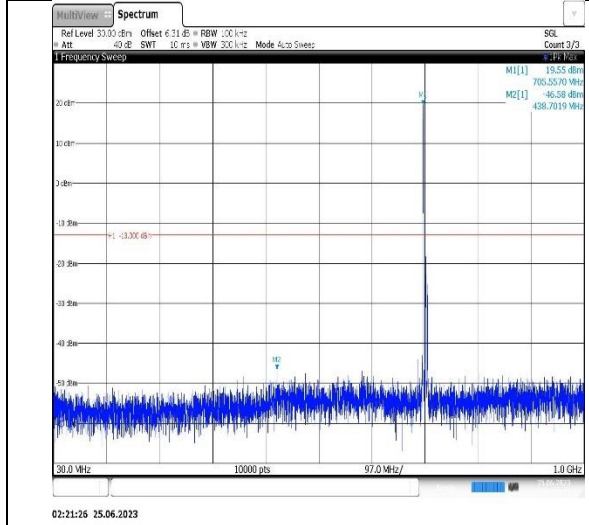
**Band17-10MHz-QPSK-23780-1RB#0-Range2:1000~10000MHz**



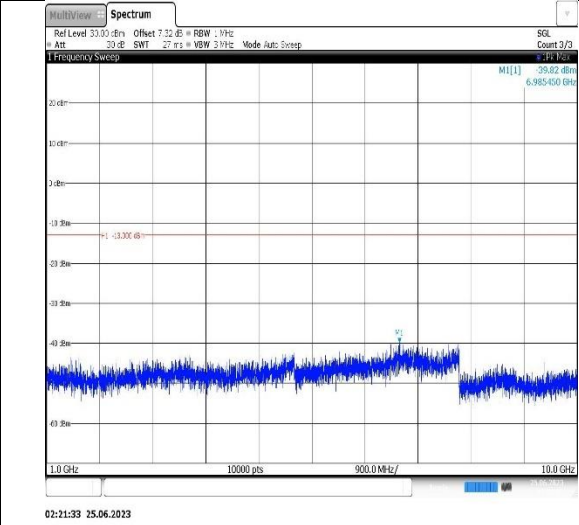
**Band17-10MHz-QPSK-23790-1RB#0-Range1:30~1000MHz**



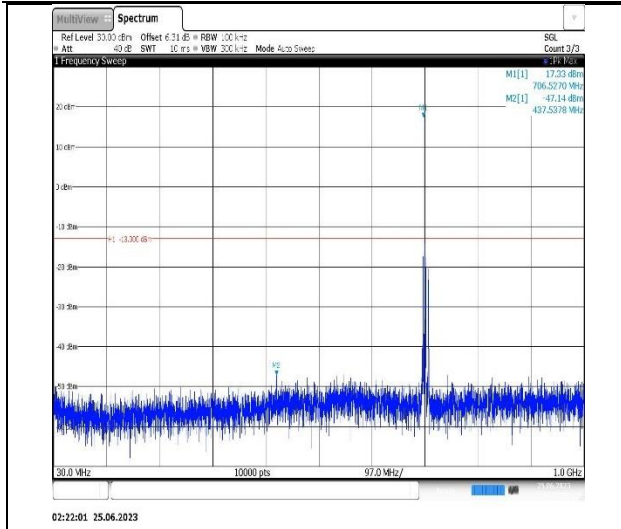
**Band17-10MHz-QPSK-23790-1RB#0-Range2:1000~10000MHz**



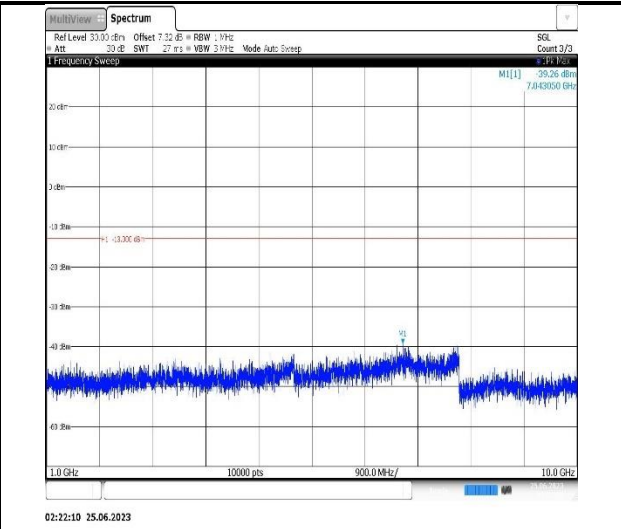
**Band17-10MHz-QPSK-23800-1RB#0-Range1:30~1000MHz**



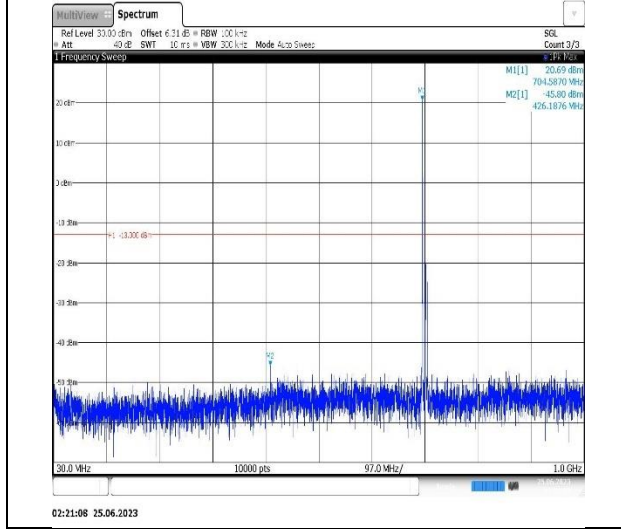
**Band17-10MHz-QPSK-23800-1RB#0-Range2:1000~10000MHz**



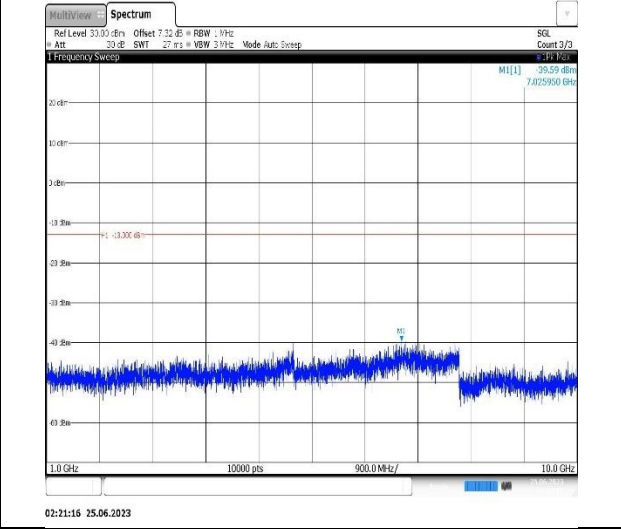
Band17-10MHz-16QAM-23780-1RB#0-Range1:30~1000MHz



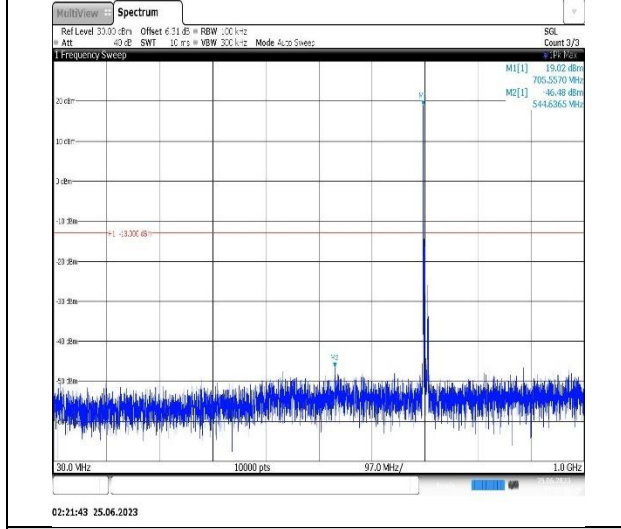
Band17-10MHz-16QAM-23780-1RB#0-Range2:1000~10000MHz



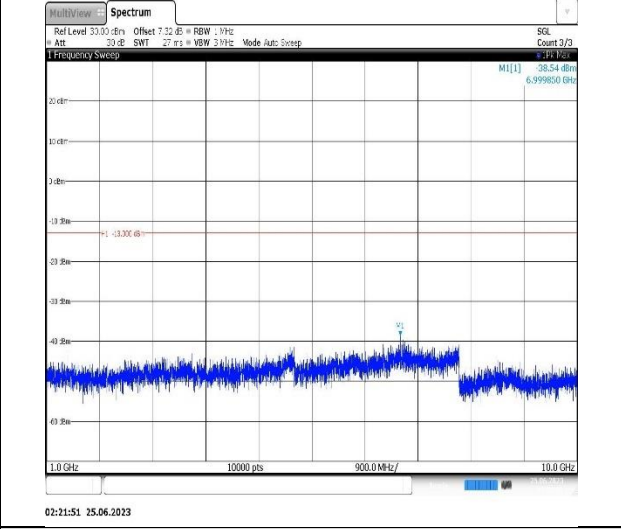
Band17-10MHz-16QAM-23790-1RB#0-Range1:30~1000MHz



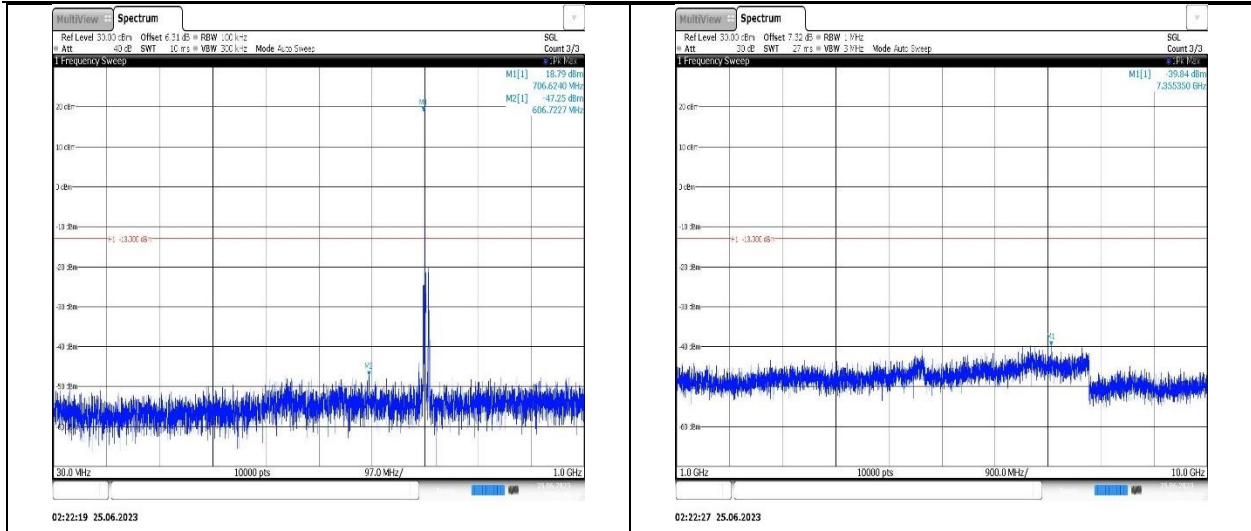
Band17-10MHz-16QAM-23790-1RB#0-Range2:1000~10000MHz



Band17-10MHz-16QAM-23800-1RB#0-Range1:30~1000MHz



Band17-10MHz-16QAM-23800-1RB#0-Range2:1000~10000MHz



## 8.6. Appendix F: Frequency Stability

### 8.6.1. Test Result

Voltage										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band2	1.4MHz	QPSK	18900	6RB#0	VL	NT	-27.67	- 0.014718	±2.5	PASS
Band2	1.4MHz	QPSK	18900	6RB#0	VN	NT	32.44	0.017255	±2.5	PASS
Band2	1.4MHz	QPSK	18900	6RB#0	VH	NT	-18.41	- 0.009793	±2.5	PASS
Band2	3MHz	QPSK	18900	15RB#0	VL	NT	-42.14	- 0.022415	±2.5	PASS
Band2	3MHz	QPSK	18900	15RB#0	VN	NT	11.80	0.006277	±2.5	PASS
Band2	3MHz	QPSK	18900	15RB#0	VH	NT	-16.47	- 0.008761	±2.5	PASS
Band2	5MHz	QPSK	18900	25RB#0	VL	NT	-30.58	- 0.016266	±2.5	PASS
Band2	5MHz	QPSK	18900	25RB#0	VN	NT	-51.46	- 0.027372	±2.5	PASS
Band2	5MHz	QPSK	18900	25RB#0	VH	NT	-6.32	- 0.003362	±2.5	PASS
Band2	10MHz	QPSK	18900	50RB#0	VL	NT	7.93	0.004218	±2.5	PASS
Band2	10MHz	QPSK	18900	50RB#0	VN	NT	-10.56	- 0.005617	±2.5	PASS
Band2	10MHz	QPSK	18900	50RB#0	VH	NT	-8.03	- 0.004271	±2.5	PASS
Band2	15MHz	QPSK	18900	75RB#0	VL	NT	-25.61	- 0.013622	±2.5	PASS
Band2	15MHz	QPSK	18900	75RB#0	VN	NT	-43.64	- 0.023213	±2.5	PASS
Band2	15MHz	QPSK	18900	75RB#0	VH	NT	-34.96	- 0.018596	±2.5	PASS
Band2	20MHz	QPSK	18900	100RB#0	VL	NT	-8.33	- 0.004431	±2.5	PASS
Band2	20MHz	QPSK	18900	100RB#0	VN	NT	-36.72	- 0.019532	±2.5	PASS
Band2	20MHz	QPSK	18900	100RB#0	VH	NT	9.93	0.005282	±2.5	PASS
Band4	1.4MHz	QPSK	20175	6RB#0	VL	NT	14.39	0.008306	±2.5	PASS
Band4	1.4MHz	QPSK	20175	6RB#0	VN	NT	38.39	0.022159	±2.5	PASS
Band4	1.4MHz	QPSK	20175	6RB#0	VH	NT	15.25	0.008802	±2.5	PASS
Band4	3MHz	QPSK	20175	15RB#0	VL	NT	6.37	0.003677	±2.5	PASS

Band4	3MHz	QPSK	2017 5	15RB#0	VN	NT	27.49	0.015867	±2.5	PAS S
Band4	3MHz	QPSK	2017 5	15RB#0	VH	NT	-9.73	- 0.005616	±2.5	PAS S
Band4	5MHz	QPSK	2017 5	25RB#0	VL	NT	19.88	0.011475	±2.5	PAS S
Band4	5MHz	QPSK	2017 5	25RB#0	VN	NT	18.08	0.010436	±2.5	PAS S
Band4	5MHz	QPSK	2017 5	25RB#0	VH	NT	42.77	0.024687	±2.5	PAS S
Band4	10MHz	QPSK	2017 5	50RB#0	VL	NT	20.69	0.011942	±2.5	PAS S
Band4	10MHz	QPSK	2017 5	50RB#0	VN	NT	34.83	0.020104	±2.5	PAS S
Band4	10MHz	QPSK	2017 5	50RB#0	VH	NT	20.38	0.011763	±2.5	PAS S
Band4	15MHz	QPSK	2017 5	75RB#0	VL	NT	22.80	0.013160	±2.5	PAS S
Band4	15MHz	QPSK	2017 5	75RB#0	VN	NT	23.56	0.013599	±2.5	PAS S
Band4	15MHz	QPSK	2017 5	75RB#0	VH	NT	44.67	0.025784	±2.5	PAS S
Band4	20MHz	QPSK	2017 5	100RB# 0	VL	NT	41.73	0.024087	±2.5	PAS S
Band4	20MHz	QPSK	2017 5	100RB# 0	VN	NT	43.30	0.024993	±2.5	PAS S
Band4	20MHz	QPSK	2017 5	100RB# 0	VH	NT	35.42	0.020444	±2.5	PAS S
Band5	1.4MH z	QPSK	2052 5	6RB#0	VL	NT	2.95	0.003527	±2.5	PAS S
Band5	1.4MH z	QPSK	2052 5	6RB#0	VN	NT	13.45	0.016079	±2.5	PAS S
Band5	1.4MH z	QPSK	2052 5	6RB#0	VH	NT	-8.40	- 0.010042	±2.5	PAS S
Band5	3MHz	QPSK	2052 5	15RB#0	VL	NT	-7.77	- 0.009289	±2.5	PAS S
Band5	3MHz	QPSK	2052 5	15RB#0	VN	NT	5.35	0.006396	±2.5	PAS S
Band5	3MHz	QPSK	2052 5	15RB#0	VH	NT	-14.05	- 0.016796	±2.5	PAS S
Band5	5MHz	QPSK	2052 5	25RB#0	VL	NT	-7.07	- 0.008452	±2.5	PAS S
Band5	5MHz	QPSK	2052 5	25RB#0	VN	NT	11.32	0.013533	±2.5	PAS S
Band5	5MHz	QPSK	2052 5	25RB#0	VH	NT	-14.36	- 0.017167	±2.5	PAS S
Band5	10MHz	QPSK	2052 5	50RB#0	VL	NT	22.77	0.027221	±2.5	PAS S
Band5	10MHz	QPSK	2052 5	50RB#0	VN	NT	22.09	0.026408	±2.5	PAS S

Band5	10MHz	QPSK	2052 5	50RB#0	VH	NT	25.31	0.030257	±2.5	PAS S
Band1 2	1.4MH z	QPSK	2309 5	6RB#0	VL	NT	1.95	0.002756	±2.5	PAS S
Band1 2	1.4MH z	QPSK	2309 5	6RB#0	VN	NT	36.28	0.051279	±2.5	PAS S
Band1 2	1.4MH z	QPSK	2309 5	6RB#0	VH	NT	12.99	0.018360	±2.5	PAS S
Band1 2	3MHz	QPSK	2309 5	15RB#0	VL	NT	44.12	0.062360	±2.5	PAS S
Band1 2	3MHz	QPSK	2309 5	15RB#0	VN	NT	25.59	0.036170	±2.5	PAS S
Band1 2	3MHz	QPSK	2309 5	15RB#0	VH	NT	4.43	0.006261	±2.5	PAS S
Band1 2	5MHz	QPSK	2309 5	25RB#0	VL	NT	37.28	0.052693	±2.5	PAS S
Band1 2	5MHz	QPSK	2309 5	25RB#0	VN	NT	26.41	0.037329	±2.5	PAS S
Band1 2	5MHz	QPSK	2309 5	25RB#0	VH	NT	47.46	0.067081	±2.5	PAS S
Band1 2	10MHz	QPSK	2309 5	50RB#0	VL	NT	27.14	0.038360	±2.5	PAS S
Band1 2	10MHz	QPSK	2309 5	50RB#0	VN	NT	24.23	0.034247	±2.5	PAS S
Band1 2	10MHz	QPSK	2309 5	50RB#0	VH	NT	30.30	0.042827	±2.5	PAS S
Band1 3	5MHz	QPSK	2323 0	25RB#0	VL	NT	-6.25	- 0.007992	±2.5	PAS S
Band1 3	5MHz	QPSK	2323 0	25RB#0	VN	NT	20.99	0.026841	±2.5	PAS S
Band1 3	5MHz	QPSK	2323 0	25RB#0	VH	NT	-19.83	- 0.025358	±2.5	PAS S
Band1 3	10MHz	QPSK	2323 0	50RB#0	VL	NT	0.00	0.000000	±2.5	PAS S
Band1 3	10MHz	QPSK	2323 0	50RB#0	VN	NT	0.00	0.000000	±2.5	PAS S
Band1 3	10MHz	QPSK	2323 0	50RB#0	VH	NT	0.00	0.000000	±2.5	PAS S
Band1 7	5MHz	QPSK	2379 0	25RB#0	VL	NT	22.92	0.032282	±2.5	PAS S
Band1 7	5MHz	QPSK	2379 0	25RB#0	VN	NT	18.25	0.025704	±2.5	PAS S
Band1 7	5MHz	QPSK	2379 0	25RB#0	VH	NT	27.89	0.039282	±2.5	PAS S
Band1 7	10MHz	QPSK	2379 0	50RB#0	VL	NT	12.37	0.017423	±2.5	PAS S
Band1 7	10MHz	QPSK	2379 0	50RB#0	VN	NT	16.41	0.023113	±2.5	PAS S
Band1 7	10MHz	QPSK	2379 0	50RB#0	VH	NT	9.48	0.013352	±2.5	PAS S

Temperature										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band2	1.4MHz	QPSK	18900	6RB#0	NV	-30	-28.82	- 0.015330	±2.5	PASS
Band2	1.4MHz	QPSK	18900	6RB#0	NV	-20	-32.36	- 0.017213	±2.5	PASS
Band2	1.4MHz	QPSK	18900	6RB#0	NV	-10	-37.16	- 0.019766	±2.5	PASS
Band2	1.4MHz	QPSK	18900	6RB#0	NV	0	-46.25	- 0.024601	±2.5	PASS
Band2	1.4MHz	QPSK	18900	6RB#0	NV	10	-52.03	- 0.027676	±2.5	PASS
Band2	1.4MHz	QPSK	18900	6RB#0	NV	20	12.46	0.006628	±2.5	PASS
Band2	1.4MHz	QPSK	18900	6RB#0	NV	30	-6.29	- 0.003346	±2.5	PASS
Band2	1.4MHz	QPSK	18900	6RB#0	NV	40	-10.09	- 0.005367	±2.5	PASS
Band2	1.4MHz	QPSK	18900	6RB#0	NV	50	-17.90	- 0.009521	±2.5	PASS
Band2	3MHz	QPSK	18900	15RB#0	NV	-30	-24.15	- 0.012846	±2.5	PASS
Band2	3MHz	QPSK	18900	15RB#0	NV	-20	-29.20	- 0.015532	±2.5	PASS
Band2	3MHz	QPSK	18900	15RB#0	NV	-10	-38.34	- 0.020394	±2.5	PASS
Band2	3MHz	QPSK	18900	15RB#0	NV	0	-44.53	- 0.023686	±2.5	PASS
Band2	3MHz	QPSK	18900	15RB#0	NV	10	-53.33	- 0.028367	±2.5	PASS
Band2	3MHz	QPSK	18900	15RB#0	NV	20	-51.51	- 0.027399	±2.5	PASS
Band2	3MHz	QPSK	18900	15RB#0	NV	30	-4.45	- 0.002367	±2.5	PASS
Band2	3MHz	QPSK	18900	15RB#0	NV	40	-9.11	- 0.004846	±2.5	PASS
Band2	3MHz	QPSK	18900	15RB#0	NV	50	-14.39	- 0.007654	±2.5	PASS
Band2	5MHz	QPSK	18900	25RB#0	NV	-30	-21.63	- 0.011505	±2.5	PASS
Band2	5MHz	QPSK	18900	25RB#0	NV	-20	-23.05	- 0.012261	±2.5	PASS
Band2	5MHz	QPSK	18900	25RB#0	NV	-10	-34.45	- 0.018324	±2.5	PASS
Band2	5MHz	QPSK	18900	25RB#0	NV	0	-44.88	- 0.023872	±2.5	PASS
Band2	5MHz	QPSK	18900	25RB#0	NV	10	-26.32	- 0.014000	±2.5	PASS



Band2	5MHz	QPSK	1890 0	25RB#0	NV	20	-35.00	- 0.018617	±2.5	PAS S
Band2	5MHz	QPSK	1890 0	25RB#0	NV	30	-43.87	- 0.023335	±2.5	PAS S
Band2	5MHz	QPSK	1890 0	25RB#0	NV	40	5.02	0.002670	±2.5	PAS S
Band2	5MHz	QPSK	1890 0	25RB#0	NV	50	-6.35	- 0.003378	±2.5	PAS S
Band2	10MHz	QPSK	1890 0	50RB#0	NV	-30	-21.39	- 0.011378	±2.5	PAS S
Band2	10MHz	QPSK	1890 0	50RB#0	NV	-20	-31.79	- 0.016910	±2.5	PAS S
Band2	10MHz	QPSK	1890 0	50RB#0	NV	-10	-41.97	- 0.022324	±2.5	PAS S
Band2	10MHz	QPSK	1890 0	50RB#0	NV	0	-53.23	- 0.028314	±2.5	PAS S
Band2	10MHz	QPSK	1890 0	50RB#0	NV	10	6.39	0.003399	±2.5	PAS S
Band2	10MHz	QPSK	1890 0	50RB#0	NV	20	-3.55	- 0.001888	±2.5	PAS S
Band2	10MHz	QPSK	1890 0	50RB#0	NV	30	-12.96	- 0.006894	±2.5	PAS S
Band2	10MHz	QPSK	1890 0	50RB#0	NV	40	-20.61	- 0.010963	±2.5	PAS S
Band2	10MHz	QPSK	1890 0	50RB#0	NV	50	-25.19	- 0.013399	±2.5	PAS S
Band2	15MHz	QPSK	1890 0	75RB#0	NV	-30	-59.57	- 0.031686	±2.5	PAS S
Band2	15MHz	QPSK	1890 0	75RB#0	NV	-20	-27.65	- 0.014707	±2.5	PAS S
Band2	15MHz	QPSK	1890 0	75RB#0	NV	-10	-47.09	- 0.025048	±2.5	PAS S
Band2	15MHz	QPSK	1890 0	75RB#0	NV	0	-10.54	- 0.005606	±2.5	PAS S
Band2	15MHz	QPSK	1890 0	75RB#0	NV	10	-17.91	- 0.009527	±2.5	PAS S
Band2	15MHz	QPSK	1890 0	75RB#0	NV	20	-27.81	- 0.014793	±2.5	PAS S
Band2	15MHz	QPSK	1890 0	75RB#0	NV	30	-35.53	- 0.018899	±2.5	PAS S
Band2	15MHz	QPSK	1890 0	75RB#0	NV	40	-45.93	- 0.024431	±2.5	PAS S
Band2	15MHz	QPSK	1890 0	75RB#0	NV	50	-52.53	- 0.027941	±2.5	PAS S
Band2	20MHz	QPSK	1890 0	100RB# 0	NV	-30	-10.27	- 0.005463	±2.5	PAS S
Band2	20MHz	QPSK	1890 0	100RB# 0	NV	-20	-22.92	- 0.012191	±2.5	PAS S
Band2	20MHz	QPSK	1890 0	100RB# 0	NV	-10	-38.24	- 0.020340	±2.5	PAS S

Band2	20MHz	QPSK	1890 0	100RB# 0	NV	0	-9.71	- 0.005165	±2.5	PAS S
Band2	20MHz	QPSK	1890 0	100RB# 0	NV	10	-19.37	- 0.010303	±2.5	PAS S
Band2	20MHz	QPSK	1890 0	100RB# 0	NV	20	-24.36	- 0.012957	±2.5	PAS S
Band2	20MHz	QPSK	1890 0	100RB# 0	NV	30	-34.78	- 0.018500	±2.5	PAS S
Band2	20MHz	QPSK	1890 0	100RB# 0	NV	40	-43.60	- 0.023191	±2.5	PAS S
Band2	20MHz	QPSK	1890 0	100RB# 0	NV	50	-47.48	- 0.025255	±2.5	PAS S
Band4	1.4MHz z	QPSK	2017 5	6RB#0	NV	-30	25.36	0.014638	±2.5	PAS S
Band4	1.4MHz z	QPSK	2017 5	6RB#0	NV	-20	35.95	0.020750	±2.5	PAS S
Band4	1.4MHz z	QPSK	2017 5	6RB#0	NV	-10	7.32	0.004225	±2.5	PAS S
Band4	1.4MHz z	QPSK	2017 5	6RB#0	NV	0	13.23	0.007636	±2.5	PAS S
Band4	1.4MHz z	QPSK	2017 5	6RB#0	NV	10	22.67	0.013085	±2.5	PAS S
Band4	1.4MHz z	QPSK	2017 5	6RB#0	NV	20	29.60	0.017085	±2.5	PAS S
Band4	1.4MHz z	QPSK	2017 5	6RB#0	NV	30	32.16	0.018563	±2.5	PAS S
Band4	1.4MHz z	QPSK	2017 5	6RB#0	NV	40	45.36	0.026182	±2.5	PAS S
Band4	1.4MHz z	QPSK	2017 5	6RB#0	NV	50	15.05	0.008687	±2.5	PAS S
Band4	3MHz	QPSK	2017 5	15RB#0	NV	-30	5.91	0.003411	±2.5	PAS S
Band4	3MHz	QPSK	2017 5	15RB#0	NV	-20	14.89	0.008595	±2.5	PAS S
Band4	3MHz	QPSK	2017 5	15RB#0	NV	-10	20.26	0.011694	±2.5	PAS S
Band4	3MHz	QPSK	2017 5	15RB#0	NV	0	27.77	0.016029	±2.5	PAS S
Band4	3MHz	QPSK	2017 5	15RB#0	NV	10	36.59	0.021120	±2.5	PAS S
Band4	3MHz	QPSK	2017 5	15RB#0	NV	20	-2.95	- 0.001703	±2.5	PAS S
Band4	3MHz	QPSK	2017 5	15RB#0	NV	30	7.21	0.004162	±2.5	PAS S
Band4	3MHz	QPSK	2017 5	15RB#0	NV	40	13.46	0.007769	±2.5	PAS S
Band4	3MHz	QPSK	2017 5	15RB#0	NV	50	15.18	0.008762	±2.5	PAS S
Band4	5MHz	QPSK	2017 5	25RB#0	NV	-30	11.12	0.006418	±2.5	PAS S

Band4	5MHz	QPSK	2017 5	25RB#0	NV	-20	16.47	0.009506	±2.5	PAS S
Band4	5MHz	QPSK	2017 5	25RB#0	NV	-10	23.73	0.013697	±2.5	PAS S
Band4	5MHz	QPSK	2017 5	25RB#0	NV	0	31.44	0.018147	±2.5	PAS S
Band4	5MHz	QPSK	2017 5	25RB#0	NV	10	38.08	0.021980	±2.5	PAS S
Band4	5MHz	QPSK	2017 5	25RB#0	NV	20	39.42	0.022753	±2.5	PAS S
Band4	5MHz	QPSK	2017 5	25RB#0	NV	30	42.63	0.024606	±2.5	PAS S
Band4	5MHz	QPSK	2017 5	25RB#0	NV	40	49.85	0.028773	±2.5	PAS S
Band4	5MHz	QPSK	2017 5	25RB#0	NV	50	25.91	0.014955	±2.5	PAS S
Band4	10MHz	QPSK	2017 5	50RB#0	NV	-30	31.89	0.018407	±2.5	PAS S
Band4	10MHz	QPSK	2017 5	50RB#0	NV	-20	40.03	0.023105	±2.5	PAS S
Band4	10MHz	QPSK	2017 5	50RB#0	NV	-10	-10.77	- 0.006216	±2.5	PAS S
Band4	10MHz	QPSK	2017 5	50RB#0	NV	0	6.54	0.003775	±2.5	PAS S
Band4	10MHz	QPSK	2017 5	50RB#0	NV	10	16.42	0.009478	±2.5	PAS S
Band4	10MHz	QPSK	2017 5	50RB#0	NV	20	23.80	0.013737	±2.5	PAS S
Band4	10MHz	QPSK	2017 5	50RB#0	NV	30	29.10	0.016797	±2.5	PAS S
Band4	10MHz	QPSK	2017 5	50RB#0	NV	40	35.43	0.020450	±2.5	PAS S
Band4	10MHz	QPSK	2017 5	50RB#0	NV	50	43.49	0.025102	±2.5	PAS S
Band4	15MHz	QPSK	2017 5	75RB#0	NV	-30	49.18	0.028387	±2.5	PAS S
Band4	15MHz	QPSK	2017 5	75RB#0	NV	-20	-6.05	- 0.003492	±2.5	PAS S
Band4	15MHz	QPSK	2017 5	75RB#0	NV	-10	13.83	0.007983	±2.5	PAS S
Band4	15MHz	QPSK	2017 5	75RB#0	NV	0	15.62	0.009016	±2.5	PAS S
Band4	15MHz	QPSK	2017 5	75RB#0	NV	10	26.52	0.015307	±2.5	PAS S
Band4	15MHz	QPSK	2017 5	75RB#0	NV	20	29.10	0.016797	±2.5	PAS S
Band4	15MHz	QPSK	2017 5	75RB#0	NV	30	35.43	0.020450	±2.5	PAS S
Band4	15MHz	QPSK	2017 5	75RB#0	NV	40	32.53	0.018776	±2.5	PAS S

Band4	15MHz	QPSK	2017 5	75RB#0	NV	50	16.25	0.009380	±2.5	PAS S
Band4	20MHz	QPSK	2017 5	100RB# 0	NV	-30	37.61	0.021709	±2.5	PAS S
Band4	20MHz	QPSK	2017 5	100RB# 0	NV	-20	44.09	0.025449	±2.5	PAS S
Band4	20MHz	QPSK	2017 5	100RB# 0	NV	-10	42.36	0.024450	±2.5	PAS S
Band4	20MHz	QPSK	2017 5	100RB# 0	NV	0	47.08	0.027175	±2.5	PAS S
Band4	20MHz	QPSK	2017 5	100RB# 0	NV	10	48.39	0.027931	±2.5	PAS S
Band4	20MHz	QPSK	2017 5	100RB# 0	NV	20	-5.56	- 0.003209	±2.5	PAS S
Band4	20MHz	QPSK	2017 5	100RB# 0	NV	30	-4.15	- 0.002395	±2.5	PAS S
Band4	20MHz	QPSK	2017 5	100RB# 0	NV	40	9.31	0.005374	±2.5	PAS S
Band4	20MHz	QPSK	2017 5	100RB# 0	NV	50	14.69	0.008479	±2.5	PAS S
Band5	1.4MH z	QPSK	2052 5	6RB#0	NV	-30	-5.99	- 0.007161	±2.5	PAS S
Band5	1.4MH z	QPSK	2052 5	6RB#0	NV	-20	-7.11	- 0.008500	±2.5	PAS S
Band5	1.4MH z	QPSK	2052 5	6RB#0	NV	-10	-5.25	- 0.006276	±2.5	PAS S
Band5	1.4MH z	QPSK	2052 5	6RB#0	NV	0	-5.42	- 0.006479	±2.5	PAS S
Band5	1.4MH z	QPSK	2052 5	6RB#0	NV	10	-5.78	- 0.006910	±2.5	PAS S
Band5	1.4MH z	QPSK	2052 5	6RB#0	NV	20	-8.54	- 0.010209	±2.5	PAS S
Band5	1.4MH z	QPSK	2052 5	6RB#0	NV	30	-10.50	- 0.012552	±2.5	PAS S
Band5	1.4MH z	QPSK	2052 5	6RB#0	NV	40	-8.51	- 0.010173	±2.5	PAS S
Band5	1.4MH z	QPSK	2052 5	6RB#0	NV	50	-8.03	- 0.009600	±2.5	PAS S
Band5	3MHz	QPSK	2052 5	15RB#0	NV	-30	-15.09	- 0.018039	±2.5	PAS S
Band5	3MHz	QPSK	2052 5	15RB#0	NV	-20	-19.03	- 0.022750	±2.5	PAS S
Band5	3MHz	QPSK	2052 5	15RB#0	NV	-10	-21.59	- 0.025810	±2.5	PAS S
Band5	3MHz	QPSK	2052 5	15RB#0	NV	0	-24.25	- 0.028990	±2.5	PAS S
Band5	3MHz	QPSK	2052 5	15RB#0	NV	10	-24.03	- 0.028727	±2.5	PAS S
Band5	3MHz	QPSK	2052 5	15RB#0	NV	20	-27.01	- 0.032289	±2.5	PAS S

Band5	3MHz	QPSK	2052 5	15RB#0	NV	30	-28.77	- 0.034393	±2.5	PAS S
Band5	3MHz	QPSK	2052 5	15RB#0	NV	40	-33.06	- 0.039522	±2.5	PAS S
Band5	3MHz	QPSK	2052 5	15RB#0	NV	50	-33.20	- 0.039689	±2.5	PAS S
Band5	5MHz	QPSK	2052 5	25RB#0	NV	-30	-16.81	- 0.020096	±2.5	PAS S
Band5	5MHz	QPSK	2052 5	25RB#0	NV	-20	-19.44	- 0.023240	±2.5	PAS S
Band5	5MHz	QPSK	2052 5	25RB#0	NV	-10	-22.40	- 0.026778	±2.5	PAS S
Band5	5MHz	QPSK	2052 5	25RB#0	NV	0	-24.25	- 0.028990	±2.5	PAS S
Band5	5MHz	QPSK	2052 5	25RB#0	NV	10	-25.46	- 0.030436	±2.5	PAS S
Band5	5MHz	QPSK	2052 5	25RB#0	NV	20	-28.75	- 0.034369	±2.5	PAS S
Band5	5MHz	QPSK	2052 5	25RB#0	NV	30	-30.96	- 0.037011	±2.5	PAS S
Band5	5MHz	QPSK	2052 5	25RB#0	NV	40	-32.94	- 0.039378	±2.5	PAS S
Band5	5MHz	QPSK	2052 5	25RB#0	NV	50	-33.82	- 0.040430	±2.5	PAS S
Band5	10MHz	QPSK	2052 5	50RB#0	NV	-30	26.09	0.031189	±2.5	PAS S
Band5	10MHz	QPSK	2052 5	50RB#0	NV	-20	26.02	0.031106	±2.5	PAS S
Band5	10MHz	QPSK	2052 5	50RB#0	NV	-10	25.03	0.029922	±2.5	PAS S
Band5	10MHz	QPSK	2052 5	50RB#0	NV	0	26.99	0.032265	±2.5	PAS S
Band5	10MHz	QPSK	2052 5	50RB#0	NV	10	26.26	0.031393	±2.5	PAS S
Band5	10MHz	QPSK	2052 5	50RB#0	NV	20	28.07	0.033556	±2.5	PAS S
Band5	10MHz	QPSK	2052 5	50RB#0	NV	30	27.61	0.033007	±2.5	PAS S
Band5	10MHz	QPSK	2052 5	50RB#0	NV	40	27.25	0.032576	±2.5	PAS S
Band5	10MHz	QPSK	2052 5	50RB#0	NV	50	28.52	0.034094	±2.5	PAS S
Band1 2	1.4MH z	QPSK	2309 5	6RB#0	NV	-30	18.34	0.025922	±2.5	PAS S
Band1 2	1.4MH z	QPSK	2309 5	6RB#0	NV	-20	22.12	0.031265	±2.5	PAS S
Band1 2	1.4MH z	QPSK	2309 5	6RB#0	NV	-10	26.35	0.037244	±2.5	PAS S
Band1 2	1.4MH z	QPSK	2309 5	6RB#0	NV	0	30.90	0.043675	±2.5	PAS S

Band1 2	1.4MH z	QPSK	2309 5	6RB#0	NV	10	33.63	0.047534	±2.5	PAS S
Band1 2	1.4MH z	QPSK	2309 5	6RB#0	NV	20	36.42	0.051477	±2.5	PAS S
Band1 2	1.4MH z	QPSK	2309 5	6RB#0	NV	30	37.81	0.053442	±2.5	PAS S
Band1 2	1.4MH z	QPSK	2309 5	6RB#0	NV	40	40.78	0.057640	±2.5	PAS S
Band1 2	1.4MH z	QPSK	2309 5	6RB#0	NV	50	42.66	0.060297	±2.5	PAS S
Band1 2	3MHz	QPSK	2309 5	15RB#0	NV	-30	9.96	0.014078	±2.5	PAS S
Band1 2	3MHz	QPSK	2309 5	15RB#0	NV	-20	14.03	0.019830	±2.5	PAS S
Band1 2	3MHz	QPSK	2309 5	15RB#0	NV	-10	18.42	0.026035	±2.5	PAS S
Band1 2	3MHz	QPSK	2309 5	15RB#0	NV	0	19.96	0.028212	±2.5	PAS S
Band1 2	3MHz	QPSK	2309 5	15RB#0	NV	10	23.32	0.032961	±2.5	PAS S
Band1 2	3MHz	QPSK	2309 5	15RB#0	NV	20	25.32	0.035788	±2.5	PAS S
Band1 2	3MHz	QPSK	2309 5	15RB#0	NV	30	27.25	0.038516	±2.5	PAS S
Band1 2	3MHz	QPSK	2309 5	15RB#0	NV	40	29.93	0.042304	±2.5	PAS S
Band1 2	3MHz	QPSK	2309 5	15RB#0	NV	50	31.21	0.044113	±2.5	PAS S
Band1 2	5MHz	QPSK	2309 5	25RB#0	NV	-30	-6.55	- 0.009258	±2.5	PAS S
Band1 2	5MHz	QPSK	2309 5	25RB#0	NV	-20	-2.57	- 0.003633	±2.5	PAS S
Band1 2	5MHz	QPSK	2309 5	25RB#0	NV	-10	4.32	0.006106	±2.5	PAS S
Band1 2	5MHz	QPSK	2309 5	25RB#0	NV	0	6.88	0.009724	±2.5	PAS S
Band1 2	5MHz	QPSK	2309 5	25RB#0	NV	10	10.49	0.014827	±2.5	PAS S
Band1 2	5MHz	QPSK	2309 5	25RB#0	NV	20	11.64	0.016452	±2.5	PAS S
Band1 2	5MHz	QPSK	2309 5	25RB#0	NV	30	15.52	0.021936	±2.5	PAS S
Band1 2	5MHz	QPSK	2309 5	25RB#0	NV	40	16.79	0.023731	±2.5	PAS S
Band1 2	5MHz	QPSK	2309 5	25RB#0	NV	50	21.24	0.030021	±2.5	PAS S
Band1 2	10MHz	QPSK	2309 5	50RB#0	NV	-30	32.06	0.045314	±2.5	PAS S
Band1 2	10MHz	QPSK	2309 5	50RB#0	NV	-20	35.48	0.050148	±2.5	PAS S

Band1 2	10MHz	QPSK	2309 5	50RB#0	NV	-10	36.56	0.051675	±2.5	PAS S
Band1 2	10MHz	QPSK	2309 5	50RB#0	NV	0	38.08	0.053823	±2.5	PAS S
Band1 2	10MHz	QPSK	2309 5	50RB#0	NV	10	39.51	0.055845	±2.5	PAS S
Band1 2	10MHz	QPSK	2309 5	50RB#0	NV	20	42.40	0.059929	±2.5	PAS S
Band1 2	10MHz	QPSK	2309 5	50RB#0	NV	30	46.09	0.065145	±2.5	PAS S
Band1 2	10MHz	QPSK	2309 5	50RB#0	NV	40	45.00	0.063604	±2.5	PAS S
Band1 2	10MHz	QPSK	2309 5	50RB#0	NV	50	49.01	0.069272	±2.5	PAS S
Band1 3	5MHz	QPSK	2323 0	25RB#0	NV	-30	-22.36	- 0.028593	±2.5	PAS S
Band1 3	5MHz	QPSK	2323 0	25RB#0	NV	-20	-27.14	- 0.034706	±2.5	PAS S
Band1 3	5MHz	QPSK	2323 0	25RB#0	NV	-10	-28.92	- 0.036982	±2.5	PAS S
Band1 3	5MHz	QPSK	2323 0	25RB#0	NV	0	-33.22	- 0.042481	±2.5	PAS S
Band1 3	5MHz	QPSK	2323 0	25RB#0	NV	10	-32.93	- 0.042110	±2.5	PAS S
Band1 3	5MHz	QPSK	2323 0	25RB#0	NV	20	-36.79	- 0.047046	±2.5	PAS S
Band1 3	5MHz	QPSK	2323 0	25RB#0	NV	30	-41.41	- 0.052954	±2.5	PAS S
Band1 3	5MHz	QPSK	2323 0	25RB#0	NV	40	-44.47	- 0.056867	±2.5	PAS S
Band1 3	5MHz	QPSK	2323 0	25RB#0	NV	50	-45.76	- 0.058517	±2.5	PAS S
Band1 3	10MHz	QPSK	2323 0	50RB#0	NV	-30	0.00	0.000000	±2.5	PAS S
Band1 3	10MHz	QPSK	2323 0	50RB#0	NV	-20	0.00	0.000000	±2.5	PAS S
Band1 3	10MHz	QPSK	2323 0	50RB#0	NV	-10	0.00	0.000000	±2.5	PAS S
Band1 3	10MHz	QPSK	2323 0	50RB#0	NV	0	0.00	0.000000	±2.5	PAS S
Band1 3	10MHz	QPSK	2323 0	50RB#0	NV	10	0.00	0.000000	±2.5	PAS S
Band1 3	10MHz	QPSK	2323 0	50RB#0	NV	20	0.00	0.000000	±2.5	PAS S
Band1 3	10MHz	QPSK	2323 0	50RB#0	NV	30	0.00	0.000000	±2.5	PAS S
Band1 3	10MHz	QPSK	2323 0	50RB#0	NV	40	0.00	0.000000	±2.5	PAS S
Band1 3	10MHz	QPSK	2323 0	50RB#0	NV	50	0.00	0.000000	±2.5	PAS S

Band1 7	5MHz	QPSK	2379 0	25RB#0	NV	-30	30.68	0.043211	±2.5	PAS S
Band1 7	5MHz	QPSK	2379 0	25RB#0	NV	-20	32.00	0.045070	±2.5	PAS S
Band1 7	5MHz	QPSK	2379 0	25RB#0	NV	-10	35.32	0.049746	±2.5	PAS S
Band1 7	5MHz	QPSK	2379 0	25RB#0	NV	0	36.44	0.051324	±2.5	PAS S
Band1 7	5MHz	QPSK	2379 0	25RB#0	NV	10	39.87	0.056155	±2.5	PAS S
Band1 7	5MHz	QPSK	2379 0	25RB#0	NV	20	40.54	0.057099	±2.5	PAS S
Band1 7	5MHz	QPSK	2379 0	25RB#0	NV	30	43.13	0.060746	±2.5	PAS S
Band1 7	5MHz	QPSK	2379 0	25RB#0	NV	40	43.29	0.060972	±2.5	PAS S
Band1 7	5MHz	QPSK	2379 0	25RB#0	NV	50	45.55	0.064155	±2.5	PAS S
Band1 7	10MHz	QPSK	2379 0	50RB#0	NV	-30	9.41	0.013254	±2.5	PAS S
Band1 7	10MHz	QPSK	2379 0	50RB#0	NV	-20	9.80	0.013803	±2.5	PAS S
Band1 7	10MHz	QPSK	2379 0	50RB#0	NV	-10	8.15	0.011479	±2.5	PAS S
Band1 7	10MHz	QPSK	2379 0	50RB#0	NV	0	6.45	0.009085	±2.5	PAS S
Band1 7	10MHz	QPSK	2379 0	50RB#0	NV	10	7.75	0.010915	±2.5	PAS S
Band1 7	10MHz	QPSK	2379 0	50RB#0	NV	20	5.75	0.008099	±2.5	PAS S
Band1 7	10MHz	QPSK	2379 0	50RB#0	NV	30	8.01	0.011282	±2.5	PAS S
Band1 7	10MHz	QPSK	2379 0	50RB#0	NV	40	6.21	0.008746	±2.5	PAS S
Band1 7	10MHz	QPSK	2379 0	50RB#0	NV	50	7.17	0.010099	±2.5	PAS S

Note 1: The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.



## 9. RADIATED SPURIOUS EMISSIONS

### RULE PART(S)

FCC: §2.1053, §22.917, §24.238, §27.53  
RSS-130, RSS-132, RSS-133, RSS-139

### LIMIT

Part §22.917(a), §24.238(a), §27.53(h)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

#### RSS-132 section 5.5

Mobile and base station equipment shall comply with the limits in (i) and (ii) below.

(i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least  $43 + 10 \log_{10} p$  (watts).

(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least  $43 + 10 \log_{10} p$  (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

#### RSS-133 section 6.5.1

Equipment shall comply with the limits in (i) and (ii) below.

(i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least  $43 + 10 \log_{10} p$  (watts).

(ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least  $43 + 10 \log_{10} p$  (watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required.

#### RSS-139 section 6.6

(i) In the first 1.0 MHz bands immediately outside and adjacent to the equipment's smallest operating frequency block,<sup>2</sup> which can contain the equipment's occupied bandwidth, the emission power per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least  $43 + 10 \log_{10} p$  (watts) dB.

(ii) After the first 1.0 MHz outside the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least  $43 + 10 \log_{10} p$  (watts) dB.

For Band 13, 1559-1610 MHz shall be limited to -70 dBW/MHz EIRP for wideband signals and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

## TEST PROCEDURE

### KDB 971168 D01 Section 7

Below 1GHz test procedure as below:

1. The EUT was placed on a rotatable wooden table with 0.8 meter above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. Calculate power in dBm by the following formula:  
$$\text{ERP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBd)}$$

Where:

$P_d$  is the dipole equivalent power,  $P_g$  is the generator output into the substitution antenna, and the antenna gain is the gain of the substitute antenna used relative to either a half-wave dipole (dBd) or an isotropic source (dBi). The substitute level is equal to  $P_g$  [dBm] – cable loss [dB]. The calculated  $P_d$  levels are then compared to the absolute spurious emission limit of -13 dBm which is equivalent to the required minimum attenuation of  $43 + 10\log_{10}(\text{Power [Watts]})$ .

Above 1GHz test procedure as below:

1. The EUT was placed on a rotatable wooden table with 0.8 meter above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. Calculate power in dBm by the following formula:  
$$\text{EIRP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBi)}$$
  
$$\text{EIRP} = \text{ERP} + 2.15\text{dB}$$

Where:  $P_g$  is the generator output power into the substitution antenna.

11. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from  $43 + 10\log(P)$ dB below the transmitter power  $P$ (Watts)

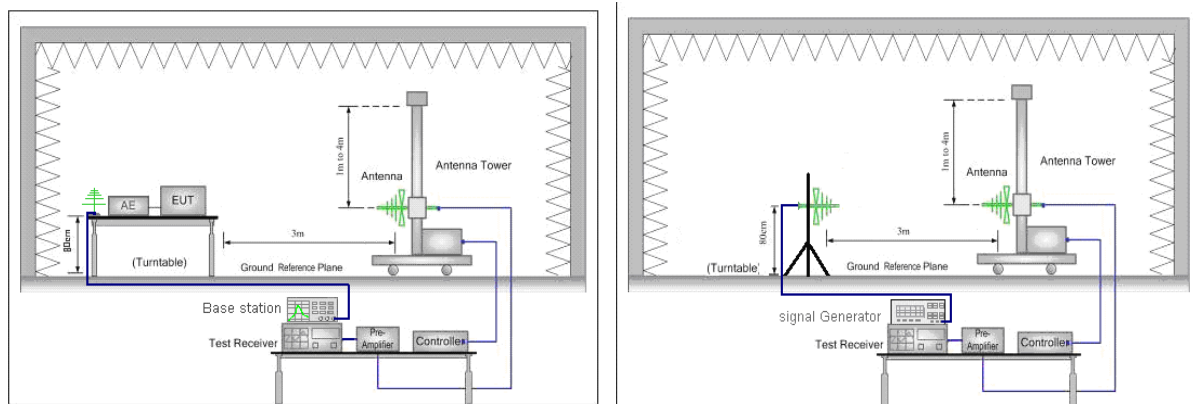
$$\begin{aligned} &= P(W) - [43 + 10\log(P)] \text{ (dB)} \\ &= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)} \\ &= -13\text{dBm}. \end{aligned}$$

NOTE 1: Radiated spurious emissions were investigated below 30 MHz, 30 MHz – 1 GHz and above 1 GHz. There were no emissions found on below 30 MHz and 30 MHz – 1 GHz. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 414788.

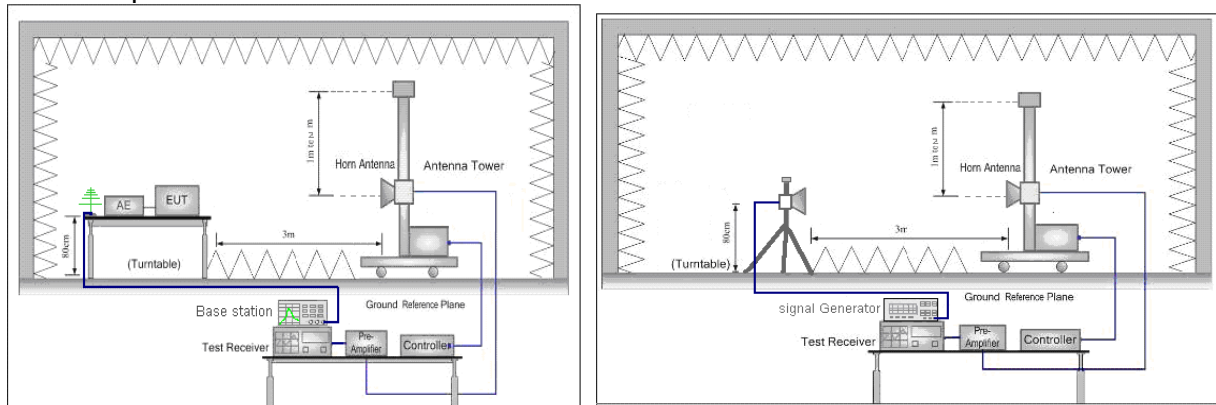
NOTE 2: Please refer to section 5 for bandwidth and RB setting about LTE bands.

## TEST SETUP

### Test Setup for Below 1 GHz



### Test Setup for Above 1 GHz



## TEST ENVIRONMENT

Temperature	22.9°C	Relative Humidity	68.3%
Atmosphere Pressure	101kPa	Test Voltage	AC 120 V, 60 HZ

## RESULTS

### LTE Band 2

#### QPSK-20 MHz-Low Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4995.000	45.57	0.43	46.00	82.25	-36.25	peak
5490.000	45.19	0.84	46.03	82.25	-36.22	peak
6990.000	39.88	6.63	46.51	82.25	-35.74	peak
10005.000	39.31	12.02	51.33	82.25	-30.92	peak
13635.000	33.04	21.19	54.23	82.25	-28.02	peak
17625.000	31.13	23.47	54.60	82.25	-27.65	peak

#### QPSK-20 MHz-Low Channel-Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4995.000	46.63	0.43	47.06	82.25	-35.19	peak
6000.000	45.01	2.25	47.26	82.25	-34.99	peak
10005.000	38.51	12.02	50.53	82.25	-31.72	peak
11520.000	35.75	16.65	52.40	82.25	-29.85	peak
13665.000	33.13	21.25	54.38	82.25	-27.87	peak
18000.000	28.37	25.69	54.06	82.25	-28.19	peak

#### QPSK-20 MHz-Mid Channel- Horizontal

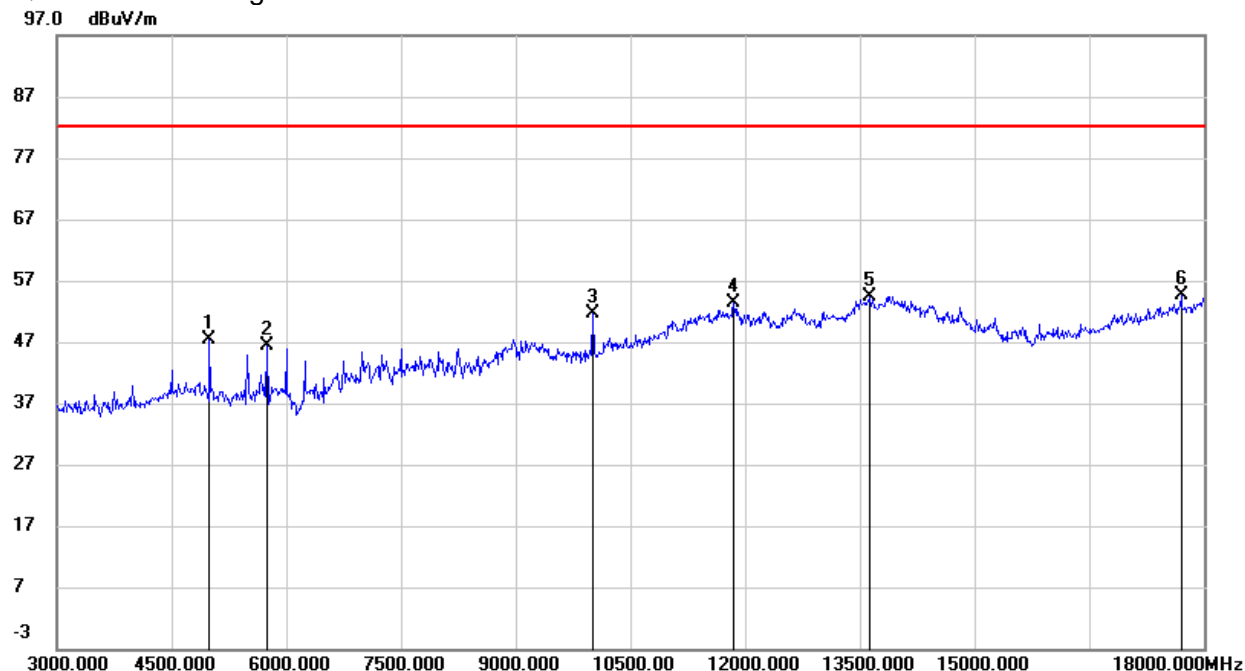
Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4995.000	47.44	0.43	47.87	82.25	-34.38	peak
6990.000	40.64	6.63	47.27	82.25	-34.98	peak
10005.000	37.83	12.02	49.85	82.25	-32.40	peak
11400.000	36.57	16.23	52.80	82.25	-29.45	peak
13605.000	33.55	21.12	54.67	82.25	-27.58	peak
17985.000	28.64	25.60	54.24	82.25	-28.01	peak

#### QPSK-20 MHz- Mid Channel-Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4995.000	46.27	0.43	46.70	82.25	-35.55	peak
5745.000	44.30	1.54	45.84	82.25	-36.41	peak
10005.000	38.34	12.02	50.36	82.25	-31.89	peak
11835.000	35.05	17.51	52.56	82.25	-29.69	peak
13605.000	33.30	21.12	54.42	82.25	-27.83	peak
17940.000	28.48	25.34	53.82	82.25	-28.43	peak

#### QPSK-20 MHz-High Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4995.000	45.91	0.43	46.34	82.25	-35.91	peak
5490.000	46.32	0.84	47.16	82.25	-35.09	peak
7995.000	40.16	6.31	46.47	82.25	-35.78	peak
10005.000	38.36	12.02	50.38	82.25	-31.87	peak
13635.000	32.83	21.19	54.02	82.25	-28.23	peak
17775.000	30.05	24.36	54.41	82.25	-27.84	peak

**QPSK-20 MHz- High Channel-Vertical**


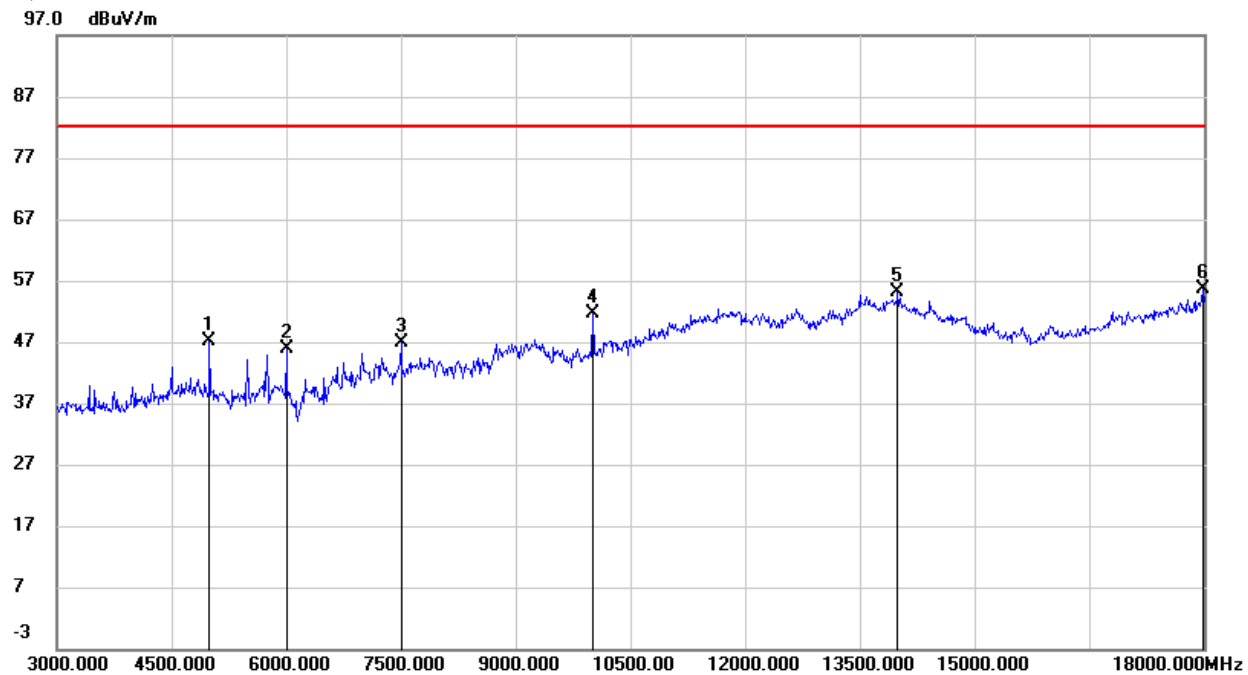
Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4995.000	46.83	0.43	47.26	82.25	-34.99	peak
5745.000	44.86	1.54	46.40	82.25	-35.85	peak
10005.000	39.66	12.02	51.68	82.25	-30.57	peak
11850.000	35.77	17.56	53.33	82.25	-28.92	peak
13635.000	33.20	21.19	54.39	82.25	-27.86	peak
17700.000	30.76	23.91	54.67	82.25	-27.58	peak

Note: Limit= -13dBm+95.25=82.25 dBuV/m

**LTE Band 4**
**QPSK-20 MHz-Low Channel- Horizontal**

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4995.000	45.00	0.43	45.43	82.25	-36.82	peak
5490.000	44.81	0.84	45.65	82.25	-36.60	peak
6990.000	39.80	6.63	46.43	82.25	-35.82	peak
10005.000	37.65	12.02	49.67	82.25	-32.58	peak
13650.000	33.67	21.21	54.88	82.25	-27.37	peak
17970.000	30.10	25.51	55.61	82.25	-26.64	peak

## QPSK-20 MHz-Low Channel- Vertical



Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4995.000	46.64	0.43	47.07	82.25	-35.18	peak
6000.000	43.55	2.25	45.80	82.25	-36.45	peak
7500.000	40.51	6.33	46.84	82.25	-35.41	peak
10005.000	39.71	12.02	51.73	82.25	-30.52	peak
13995.000	33.29	21.95	55.24	82.25	-27.01	peak
17985.000	30.12	25.60	55.72	82.25	-26.53	peak

**QPSK-20 MHz-Mid Channel- Horizontal**

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4995.000	46.27	0.43	46.70	82.25	-35.55	peak
5490.000	45.81	0.84	46.65	82.25	-35.60	peak
6990.000	41.76	6.63	48.39	82.25	-33.86	peak
11430.000	36.09	16.34	52.43	82.25	-29.82	peak
13875.000	33.47	21.70	55.17	82.25	-27.08	peak
17985.000	29.42	25.60	55.02	82.25	-27.23	peak

**QPSK-20 MHz-Mid Channel- Vertical**

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5160.000	47.44	0.58	48.02	82.25	-34.23	peak
6990.000	40.30	6.63	46.93	82.25	-35.32	peak
10005.000	38.86	12.02	50.88	82.25	-31.37	peak
11790.000	35.17	17.38	52.55	82.25	-29.70	peak
13875.000	32.69	21.70	54.39	82.25	-27.86	peak
17985.000	28.79	25.60	54.39	82.25	-27.86	peak

**QPSK-20 MHz-High Channel- Horizontal**

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4995.000	45.39	0.43	45.82	82.25	-36.43	peak
5490.000	44.99	0.84	45.83	82.25	-36.42	peak
10005.000	37.61	12.02	49.63	82.25	-32.62	peak
11790.000	35.18	17.38	52.56	82.25	-29.69	peak
13875.000	33.14	21.70	54.84	82.25	-27.41	peak
18000.000	28.77	25.69	54.46	82.25	-27.79	peak

**QPSK-20 MHz-High Channel- Vertical**

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4995.000	46.26	0.43	46.69	82.25	-35.56	peak
6000.000	45.38	2.25	47.63	82.25	-34.62	peak
9150.000	37.15	10.54	47.69	82.25	-34.56	peak
10005.000	38.17	12.02	50.19	82.25	-32.06	peak
13665.000	29.89	21.25	51.14	82.25	-31.11	peak
17955.000	25.49	25.42	50.91	82.25	-31.34	peak

Note: Limit= -13dBm+95.2=82.2dBuV/m

**LTE Band 5**
**QPSK-10 MHz-Low Channel- Horizontal**

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1657.000	65.44	-12.19	53.25	82.25	-29.00	peak
3331.000	62.41	-6.23	56.18	82.25	-26.07	peak
4159.000	49.02	-3.74	45.28	82.25	-36.97	peak
4996.000	47.17	-0.17	47.00	82.25	-35.25	peak
6004.000	45.07	1.87	46.94	82.25	-35.31	peak
8002.000	41.67	5.65	47.32	82.25	-34.93	peak

**QPSK-20 MHz-Low Channel- Vertical**

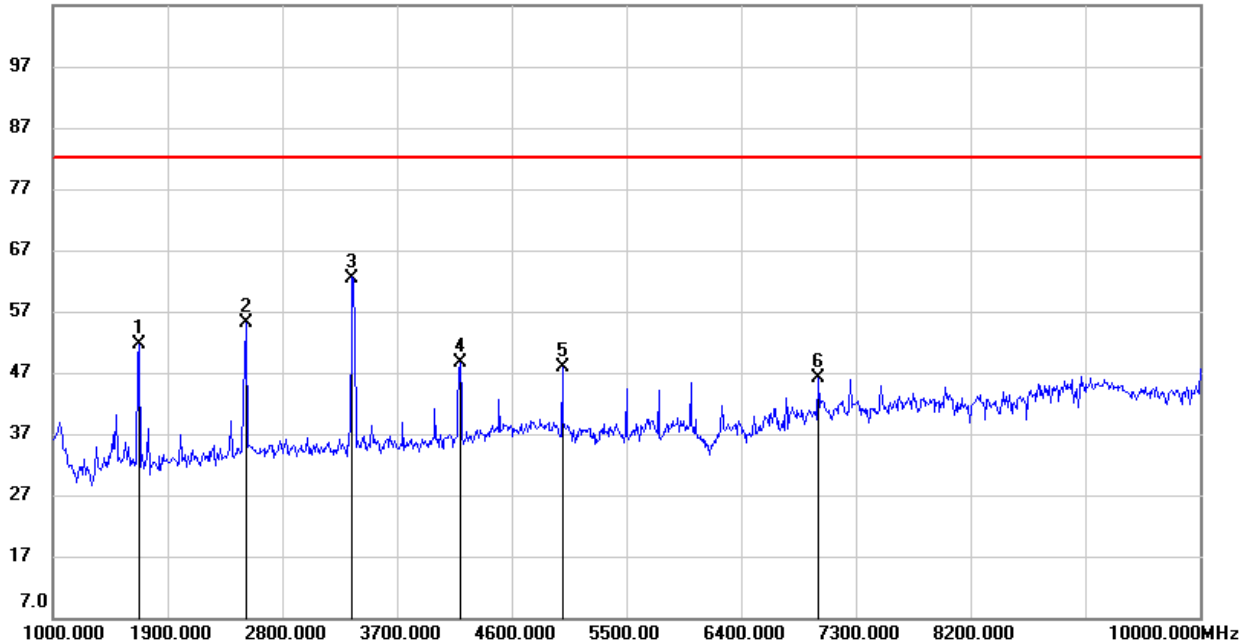
Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1657.000	63.36	-12.19	51.17	82.25	-31.08	peak
2494.000	57.61	-8.52	49.09	82.25	-33.16	peak
3331.000	64.41	-6.23	58.18	82.25	-24.07	peak
4159.000	49.64	-3.74	45.90	82.25	-36.35	peak
4996.000	47.08	-0.17	46.91	82.25	-35.34	peak
7255.000	40.46	5.94	46.40	82.25	-35.85	peak

**QPSK-10 MHz-Mid Channel- Horizontal**

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1675.000	66.96	-12.13	54.83	82.25	-27.42	peak
2521.000	60.63	-8.43	52.20	82.25	-30.05	peak
3349.000	67.74	-6.19	61.55	82.25	-20.70	peak
4195.000	51.67	-3.56	48.11	82.25	-34.14	peak
4996.000	46.28	-0.17	46.11	82.25	-36.14	peak
6004.000	44.46	1.87	46.33	82.25	-35.92	peak

**QPSK-10 MHz-Mid Channel- Vertical**

107.0 dBuV/m



Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1675.000	63.66	-12.13	51.53	82.25	-30.72	peak
2521.000	63.48	-8.43	55.05	82.25	-27.20	peak
3349.000	68.69	-6.19	62.50	82.25	-19.75	peak
4195.000	52.30	-3.56	48.74	82.25	-33.51	peak
4996.000	47.99	-0.17	47.82	82.25	-34.43	peak
7003.000	39.97	6.19	46.16	82.25	-36.09	peak

**QPSK-10 MHz-High Channel- Horizontal**

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1693.000	68.48	-12.08	56.40	82.25	-25.85	peak
2530.000	57.85	-8.40	49.45	82.25	-32.80	peak
3385.000	63.32	-6.11	57.21	82.25	-25.04	peak



4996.000	44.57	-0.17	44.40	82.25	-37.85	peak
6004.000	43.13	1.87	45.00	82.25	-37.25	peak
8002.000	40.42	5.65	46.07	82.25	-36.18	peak

**QPSK-10 MHz-High Channel- Vertical**

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1693.000	67.04	-12.08	54.96	82.25	-27.29	peak
2539.000	62.74	-8.37	54.37	82.25	-27.88	peak
3385.000	66.99	-6.11	60.88	82.25	-21.37	peak
4996.000	48.35	-0.17	48.18	82.25	-34.07	peak
6004.000	45.57	1.87	47.44	82.25	-34.81	peak
7255.000	41.67	5.94	47.61	82.25	-34.64	peak

Note: Limit= -13dBm+95.2=82.2dBuV/m

**LTE Band 12**
**QPSK-10 MHz-Low Channel- Horizontal**

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2116.000	52.60	-10.47	42.13	82.25	-40.12	peak
3997.000	48.98	-4.49	44.49	82.25	-37.76	peak
4996.000	46.44	-0.17	46.27	82.25	-35.98	peak
6004.000	42.05	1.87	43.92	82.25	-38.33	peak
6751.000	39.59	4.96	44.55	82.25	-37.70	peak
8002.000	41.23	5.65	46.88	82.25	-35.37	peak

**QPSK-10 MHz-Low Channel- Vertical**

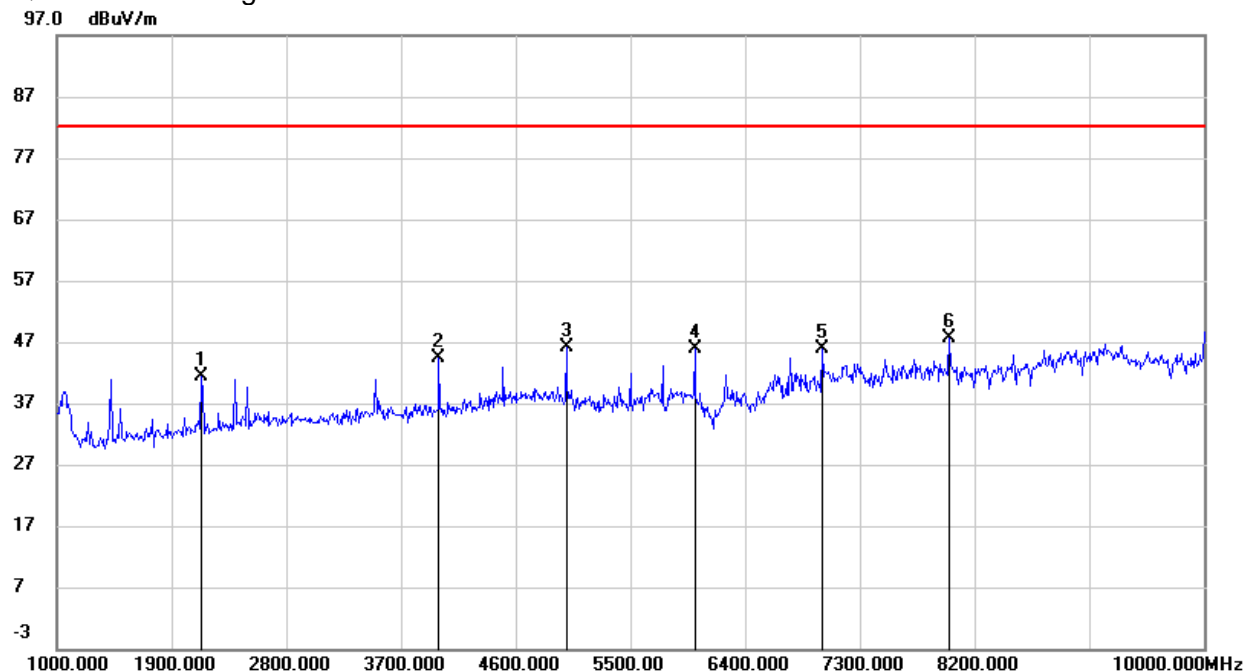
Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2116.000	52.82	-10.47	42.35	82.25	-39.90	peak
2494.000	50.83	-8.52	42.31	82.25	-39.94	peak
4996.000	47.17	-0.17	47.00	82.25	-35.25	peak
6004.000	43.64	1.87	45.51	82.25	-36.74	peak
7003.000	38.85	6.19	45.04	82.25	-37.21	peak
8002.000	40.84	5.65	46.49	82.25	-35.76	peak

**QPSK-10 MHz-Mid Channel- Horizontal**

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1423.000	53.35	-13.07	40.28	82.25	-41.97	peak
2134.000	51.95	-10.37	41.58	82.25	-40.67	peak
3997.000	48.86	-4.49	44.37	82.25	-37.88	peak
4996.000	46.49	-0.17	46.32	82.25	-35.93	peak
7003.000	40.26	6.19	46.45	82.25	-35.80	peak
8002.000	41.83	5.65	47.48	82.25	-34.77	peak

**QPSK-10 MHz-Mid Channel- Vertical**

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2494.000	50.14	-8.52	41.62	82.25	-40.63	peak
4501.000	44.84	-2.14	42.70	82.25	-39.55	peak
4996.000	45.48	-0.17	45.31	82.25	-36.94	peak
6004.000	44.09	1.87	45.96	82.25	-36.29	peak
7255.000	39.16	5.94	45.10	82.25	-37.15	peak
9136.000	36.69	9.80	46.49	82.25	-35.76	peak

**QPSK-10 MHz-High Channel- Horizontal**


Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2134.000	51.69	-10.37	41.32	82.25	-40.93	peak
3997.000	48.78	-4.49	44.29	82.25	-37.96	peak
4996.000	46.28	-0.17	46.11	82.25	-36.14	peak
6004.000	44.02	1.87	45.89	82.25	-36.36	peak
7003.000	39.67	6.19	45.86	82.25	-36.39	peak
8002.000	42.01	5.65	47.66	82.25	-34.59	peak

**QPSK-10 MHz-High Channel- Vertical**

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2494.000	50.79	-8.52	42.27	82.25	-39.98	peak
4501.000	45.92	-2.14	43.78	82.25	-38.47	peak
4996.000	46.16	-0.17	45.99	82.25	-36.26	peak
6004.000	44.67	1.87	46.54	82.25	-35.71	peak
7255.000	39.50	5.94	45.44	82.25	-36.81	peak
8956.000	36.47	9.43	45.90	82.25	-36.35	peak

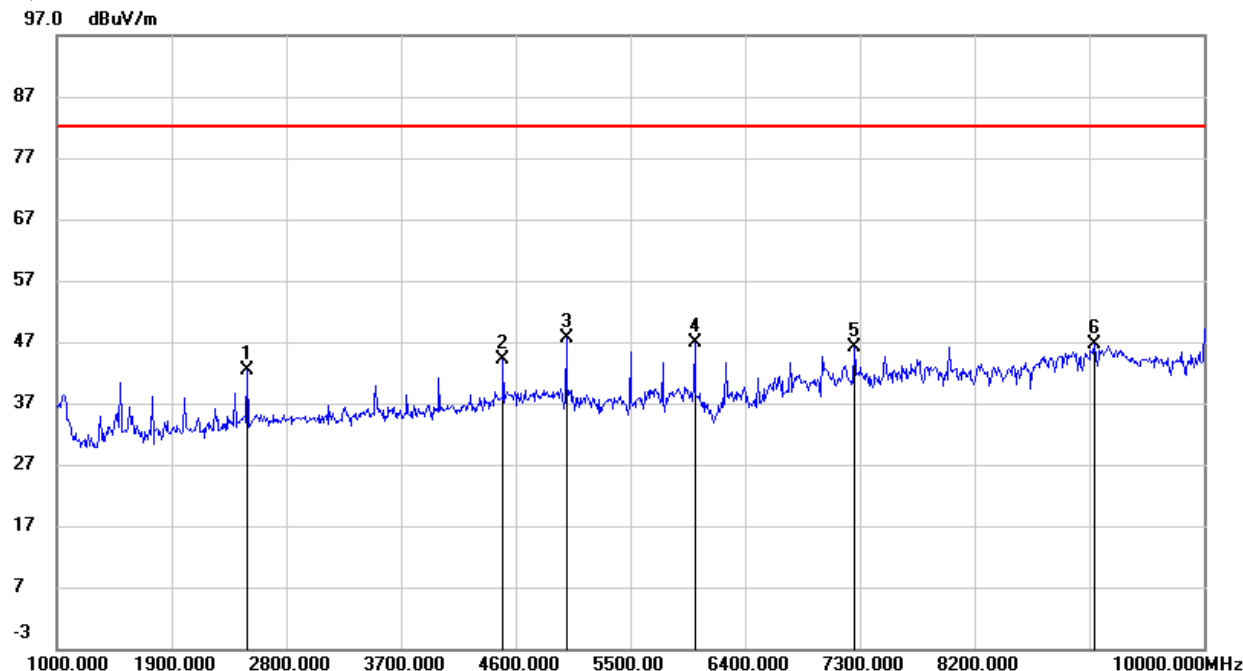
Note: Limit= -13dBm+95.2=82.2dBuV/m

**LTE Band 13**

In the 1559-1610 MHz frequency, the limit is -80 dBW EIRP for narrowband and all modulation are tested and met requirements.

**QPSK-10 MHz- Horizontal**

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
3997.000	48.03	-4.49	43.54	82.25	-38.71	peak
4996.000	45.81	-0.17	45.64	82.25	-36.61	peak
6004.000	43.14	1.87	45.01	82.25	-37.24	peak
7003.000	39.21	6.19	45.40	82.25	-36.85	peak
8002.000	40.70	5.65	46.35	82.25	-35.90	peak
9199.000	36.82	9.82	46.64	82.25	-35.61	peak

**QPSK-10 MHz- Vertical**


Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2494.000	51.01	-8.52	42.49	82.25	-39.76	peak
4501.000	46.31	-2.14	44.17	82.25	-38.08	peak
4996.000	47.80	-0.17	47.63	82.25	-34.62	peak
6004.000	44.89	1.87	46.76	82.25	-35.49	peak
7255.000	40.13	5.94	46.07	82.25	-36.18	peak
9136.000	36.87	9.80	46.67	82.25	-35.58	peak

Note: Limit= -13dBm+95.2=82.2dBuV/m

**LTE Band 17**
**QPSK-10 MHz-Low Channel- Horizontal**

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1423.000	53.90	-13.07	40.83	82.25	-41.42	peak
2134.000	53.22	-10.37	42.85	82.25	-39.40	peak
4996.000	45.61	-0.17	45.44	82.25	-36.81	peak
5500.000	47.65	0.42	48.07	82.25	-34.18	peak
7003.000	40.66	6.19	46.85	82.25	-35.40	peak
8938.000	36.80	9.31	46.11	82.25	-36.14	peak

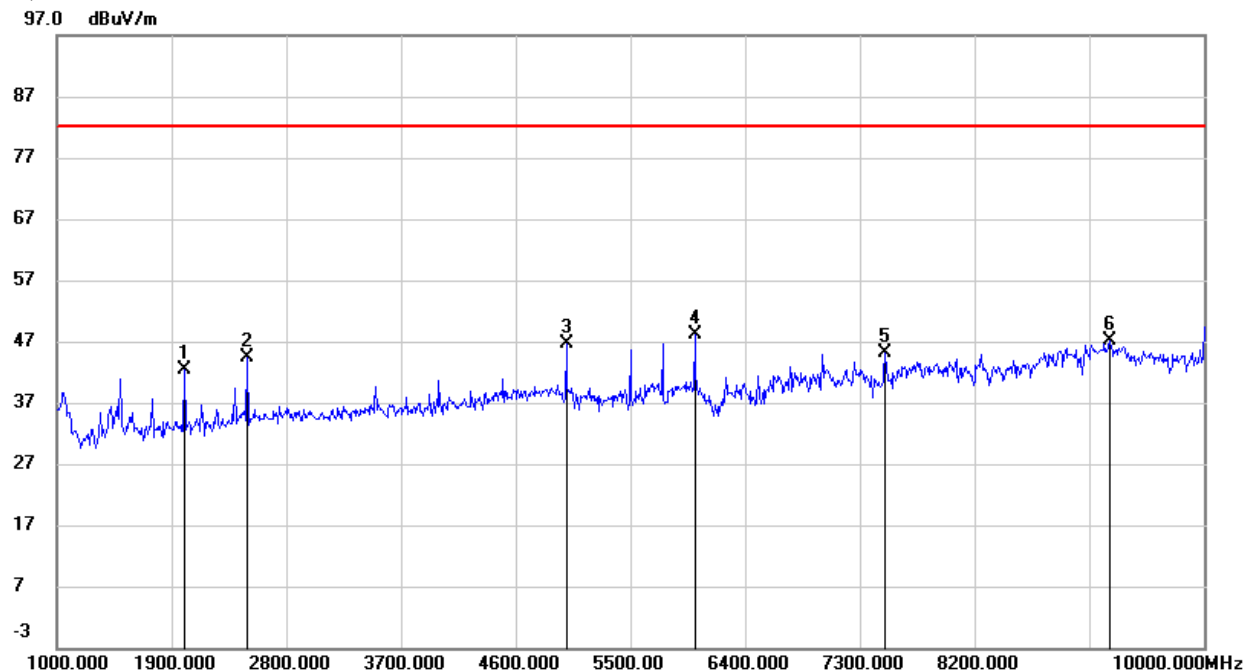
**QPSK-10 MHz-Low Channel- Vertical**

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1999.000	51.66	-11.06	40.60	82.25	-41.65	peak
2494.000	51.26	-8.52	42.74	82.25	-39.51	peak
4996.000	47.04	-0.17	46.87	82.25	-35.38	peak
6004.000	45.48	1.87	47.35	82.25	-34.90	peak
7498.000	39.91	5.69	45.60	82.25	-36.65	peak
9253.000	37.40	9.83	47.23	82.25	-35.02	peak

## QPSK-10 MHz-Mid Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1423.000	54.64	-13.07	41.57	82.25	-40.68	peak
2494.000	49.43	-8.52	40.91	82.25	-41.34	peak
4996.000	47.46	-0.17	47.29	82.25	-34.96	peak
5500.000	46.25	0.42	46.67	82.25	-35.58	peak
7003.000	39.21	6.19	45.40	82.25	-36.85	peak
7498.000	40.44	5.69	46.13	82.25	-36.12	peak

## QPSK-10 MHz-Mid Channel- Vertical



Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1999.000	53.38	-11.06	42.32	82.25	-39.93	peak
2494.000	52.78	-8.52	44.26	82.25	-37.99	peak
4996.000	46.69	-0.17	46.52	82.25	-35.73	peak
6004.000	46.28	1.87	48.15	82.25	-34.10	peak
7498.000	39.33	5.69	45.02	82.25	-37.23	peak
9262.000	37.23	9.84	47.07	82.25	-35.18	peak

## QPSK-10 MHz-High Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1423.000	54.92	-13.07	41.85	82.25	-40.40	peak
2143.000	50.86	-10.33	40.53	82.25	-41.72	peak
4996.000	45.98	-0.17	45.81	82.25	-36.44	peak
5500.000	46.96	0.42	47.38	82.25	-34.87	peak
7003.000	41.56	6.19	47.75	82.25	-34.50	peak
7498.000	39.76	5.69	45.45	82.25	-36.80	peak

## QPSK-10 MHz-High Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1495.000	53.95	-12.74	41.21	82.25	-41.04	peak
2494.000	50.46	-8.52	41.94	82.25	-40.31	peak
4996.000	46.05	-0.17	45.88	82.25	-36.37	peak
5500.000	43.84	0.42	44.26	82.25	-37.99	peak
6004.000	44.27	1.87	46.14	82.25	-36.11	peak
7498.000	40.01	5.69	45.70	82.25	-36.55	peak

Note: Limit= -13dBm+95.2=82.2dBuV/m

**END OF REPORT**

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