



Report No.: ZEWM2303000343RG02

Rev.: 01

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# Appendix B.10

## LTE Band18(815-824)



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## Power Output Data

### Test Result

#### Ant13:

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Limit(dBm)	Verdict
18(815-824)	5MHz	QPSK	23875	1RB#0	23.22	50	PASS
18(815-824)	5MHz	QPSK	23875	1RB#12	23.15	50	PASS
18(815-824)	5MHz	QPSK	23875	1RB#24	23.06	50	PASS
18(815-824)	5MHz	QPSK	23875	25RB#0	22.19	50	PASS
18(815-824)	5MHz	QPSK	23895	1RB#0	23.21	50	PASS
18(815-824)	5MHz	QPSK	23895	1RB#12	22.92	50	PASS
18(815-824)	5MHz	QPSK	23895	1RB#24	23.08	50	PASS
18(815-824)	5MHz	QPSK	23895	25RB#0	22.14	50	PASS
18(815-824)	5MHz	QPSK	23915	1RB#0	23.14	50	PASS
18(815-824)	5MHz	QPSK	23915	1RB#12	23.05	50	PASS
18(815-824)	5MHz	QPSK	23915	1RB#24	23.03	50	PASS
18(815-824)	5MHz	QPSK	23915	25RB#0	22.18	50	PASS
18(815-824)	5MHz	16QAM	23875	1RB#0	22.65	50	PASS
18(815-824)	5MHz	16QAM	23875	1RB#12	22.55	50	PASS
18(815-824)	5MHz	16QAM	23875	1RB#24	22.32	50	PASS
18(815-824)	5MHz	16QAM	23875	25RB#0	21.18	50	PASS
18(815-824)	5MHz	16QAM	23895	1RB#0	22.41	50	PASS
18(815-824)	5MHz	16QAM	23895	1RB#12	22.4	50	PASS
18(815-824)	5MHz	16QAM	23895	1RB#24	22.35	50	PASS
18(815-824)	5MHz	16QAM	23895	25RB#0	21.16	50	PASS
18(815-824)	5MHz	16QAM	23915	1RB#0	22.56	50	PASS
18(815-824)	5MHz	16QAM	23915	1RB#12	22.45	50	PASS
18(815-824)	5MHz	16QAM	23915	1RB#24	22.56	50	PASS
18(815-824)	5MHz	16QAM	23915	25RB#0	21.09	50	PASS
18(815-824)	5MHz	64QAM	23875	1RB#0	22.17	50	PASS
18(815-824)	5MHz	64QAM	23875	1RB#12	22.05	50	PASS
18(815-824)	5MHz	64QAM	23875	1RB#24	21.92	50	PASS
18(815-824)	5MHz	64QAM	23875	25RB#0	20.63	50	PASS
18(815-824)	5MHz	64QAM	23895	1RB#0	21.75	50	PASS
18(815-824)	5MHz	64QAM	23895	1RB#12	21.69	50	PASS



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18(815-824)	5MHz	64QAM	23895	1RB#24	21.84	50	PASS
18(815-824)	5MHz	64QAM	23895	25RB#0	20.78	50	PASS
18(815-824)	5MHz	64QAM	23915	1RB#0	22.07	50	PASS
18(815-824)	5MHz	64QAM	23915	1RB#12	21.85	50	PASS
18(815-824)	5MHz	64QAM	23915	1RB#24	21.93	50	PASS
18(815-824)	5MHz	64QAM	23915	25RB#0	20.54	50	PASS



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## Peak-to-Average Ratio(CCDF)

### Test Result

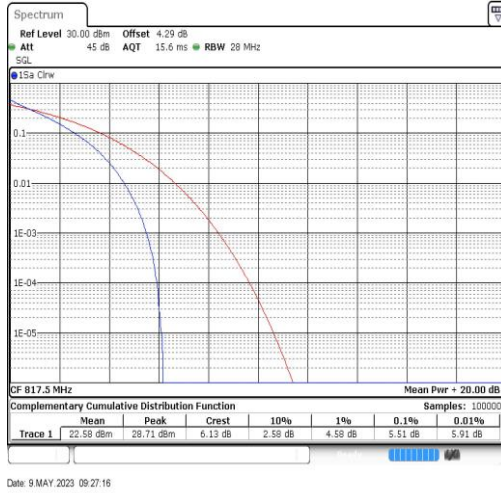
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Band18	5MHz	QPSK	23895	25RB#0	5.62	13	PASS
Band18	5MHz	QPSK	23915	25RB#0	5.74	13	PASS
Band18	5MHz	16QAM	23875	25RB#0	6.20	13	PASS
Band18	5MHz	16QAM	23895	25RB#0	6.32	13	PASS
Band18	5MHz	16QAM	23915	25RB#0	6.46	13	PASS
Band18	5MHz	64QAM	23875	25RB#0	6.64	13	PASS
Band18	5MHz	64QAM	23895	25RB#0	6.75	13	PASS
Band18	5MHz	64QAM	23915	25RB#0	6.84	13	PASS



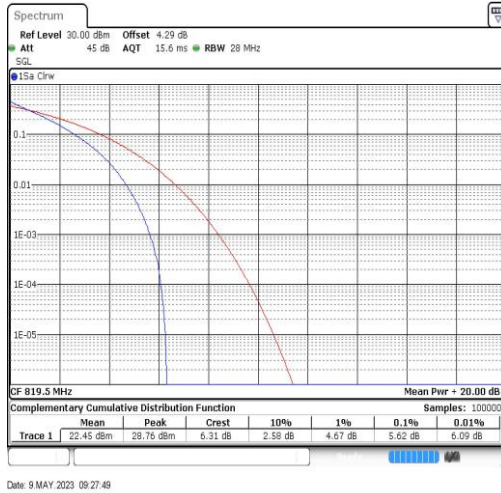
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**Test Graphs**

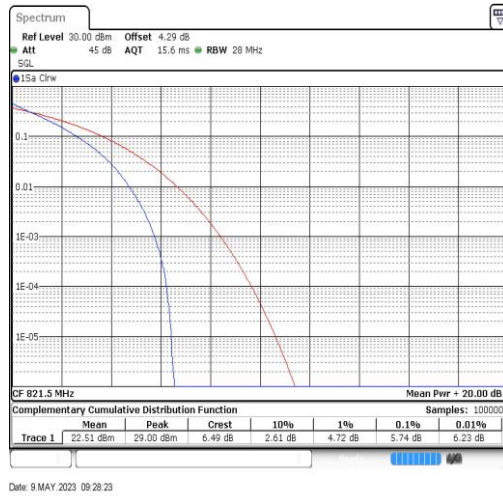


**Band18-5MHz-QPSK-23875-25RB#0**

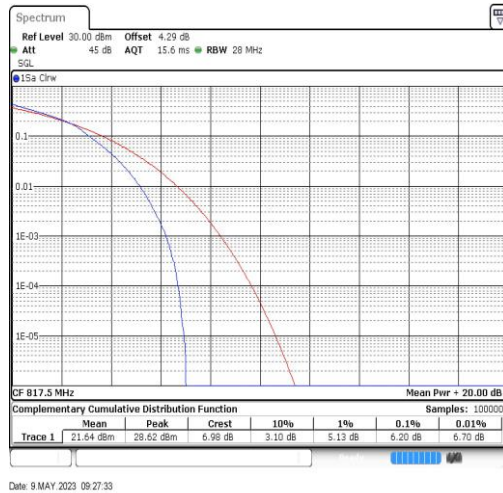


**Band18-5MHz-QPSK-23895-25RB#0**





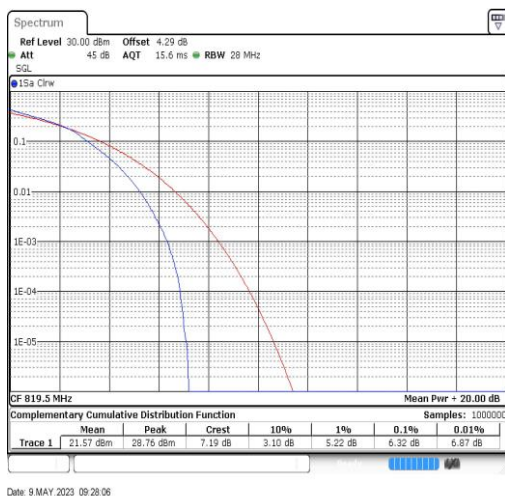
Band18-5MHz-QPSK-23915-25RB#0



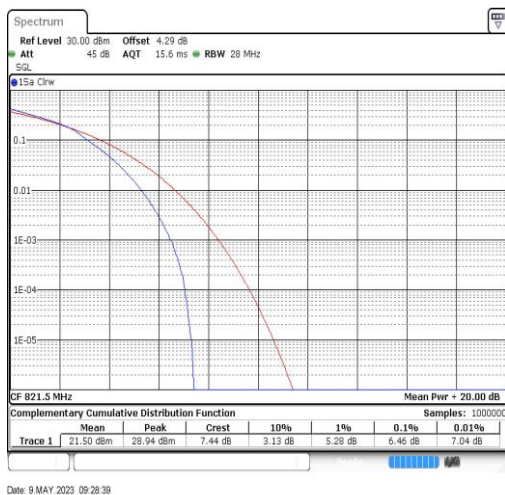
Band18-5MHz-16QAM-23875-25RB#0



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Band18-5MHz-16QAM-23895-25RB#0



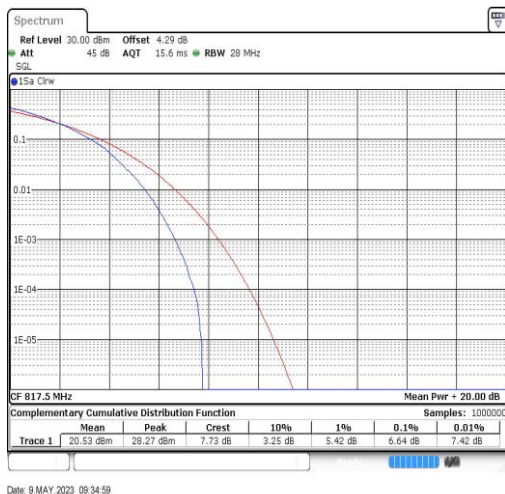
Band18-5MHz-16QAM-23915-25RB#0



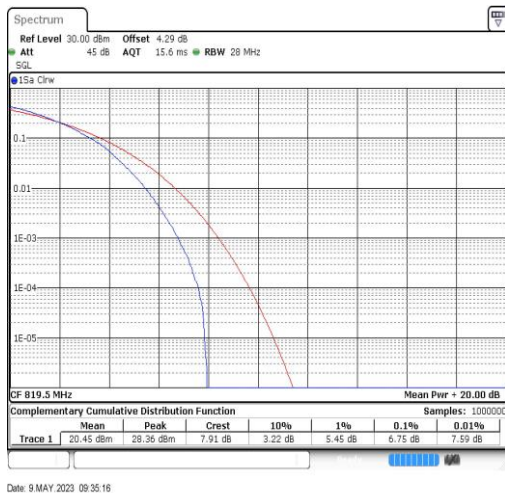
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Band18-5MHz-64QAM-23875-25RB#0



Band18-5MHz-64QAM-23895-25RB#0

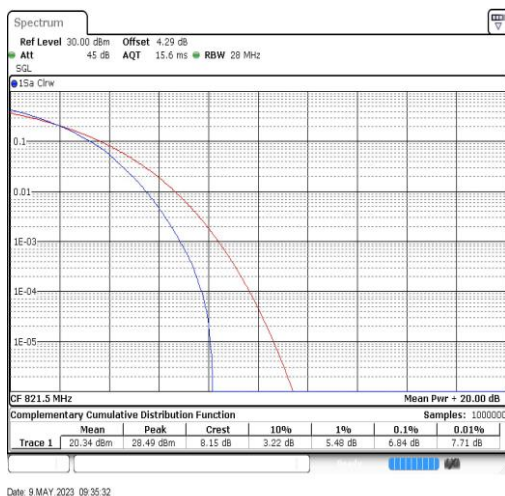


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Band18-5MHz-64QAM-23915-25RB#0



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## Modulation Characteristics

### Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result	Verdict
Band18	5MHz	QPSK	23895	25RB#0	PASS	PASS
Band18	5MHz	16QAM	23895	25RB#0	PASS	PASS
Band18	5MHz	64QAM	23895	25RB#0	PASS	PASS



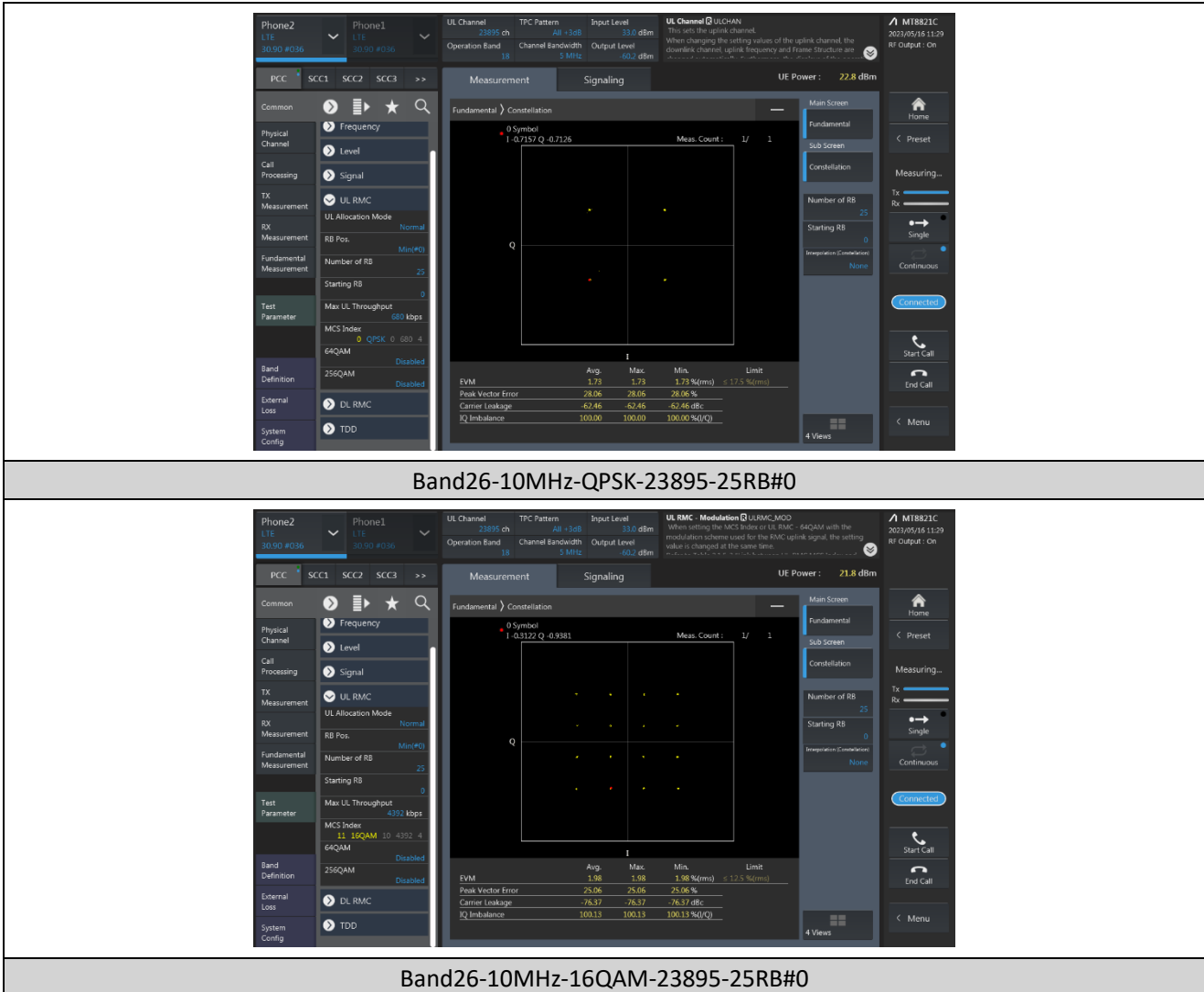
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## Test Graphs

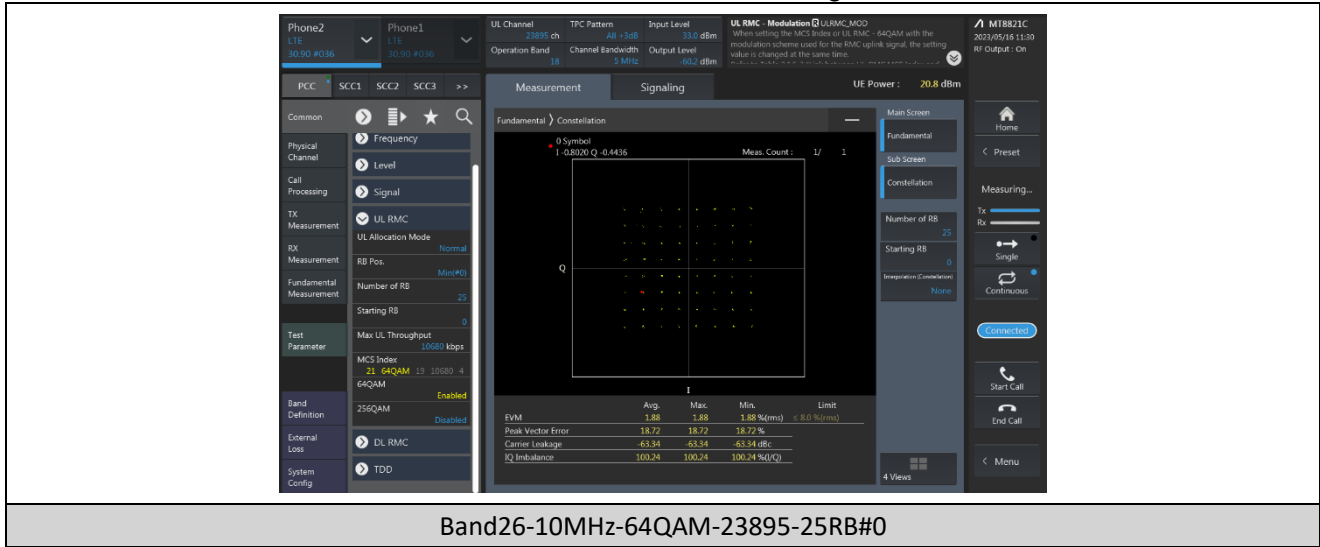


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Band26-10MHz-64QAM-23895-25RB#0



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## 26dB Bandwidth and Occupied Bandwidth

### Test Result

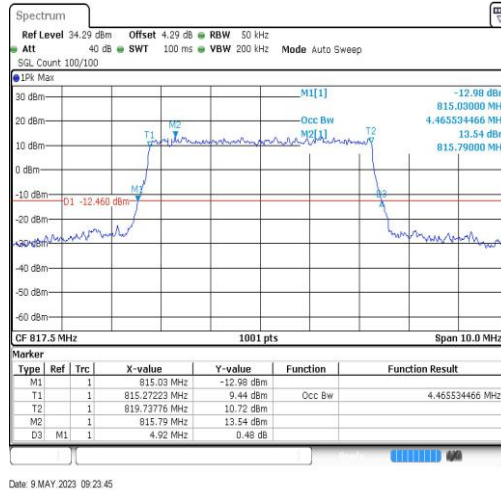
Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band18	5MHz	QPSK	23875	25RB#0	4.466	4.92	PASS
Band18	5MHz	QPSK	23895	25RB#0	4.476	4.90	PASS
Band18	5MHz	QPSK	23915	25RB#0	4.476	4.90	PASS
Band18	5MHz	16QAM	23875	25RB#0	4.476	4.91	PASS
Band18	5MHz	16QAM	23895	25RB#0	4.466	4.93	PASS
Band18	5MHz	16QAM	23915	25RB#0	4.466	4.94	PASS
Band18	5MHz	64QAM	23875	25RB#0	4.476	4.91	PASS
Band18	5MHz	64QAM	23895	25RB#0	4.476	4.93	PASS
Band18	5MHz	64QAM	23915	25RB#0	4.476	4.95	PASS



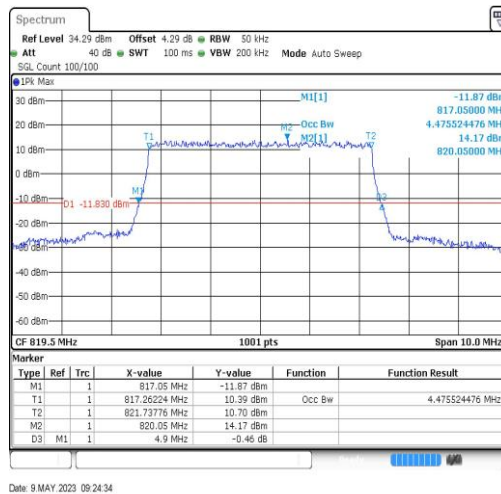
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## Test Graphs

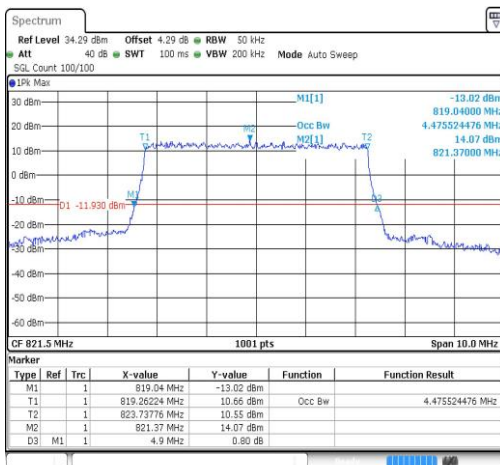


Band18-5MHz-QPSK-23875-25RB#0-4.466



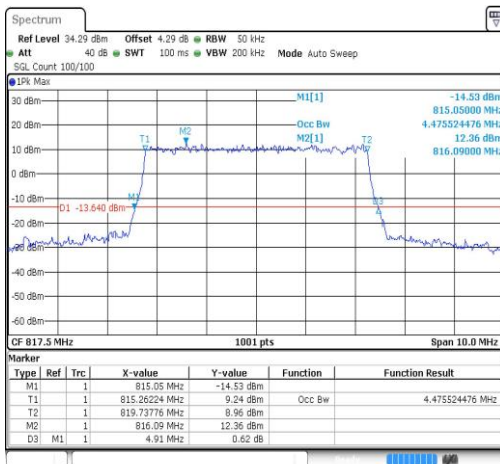
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Date: 9 MAY 2023 09:25:22

Band18-5MHz-QPSK-23915-25RB#0-4.476



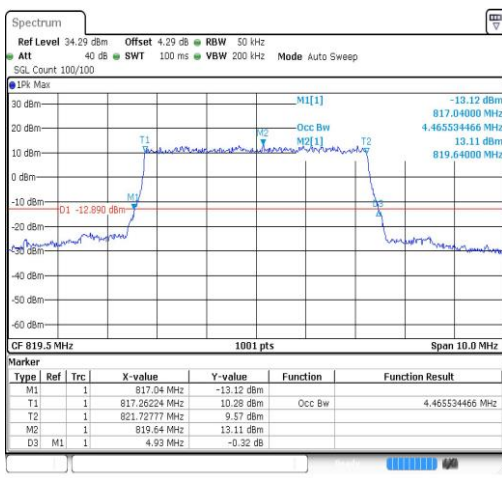
Date: 9 MAY 2023 09:24:10

Band18-5MHz-16QAM-23875-25RB#0-4.476



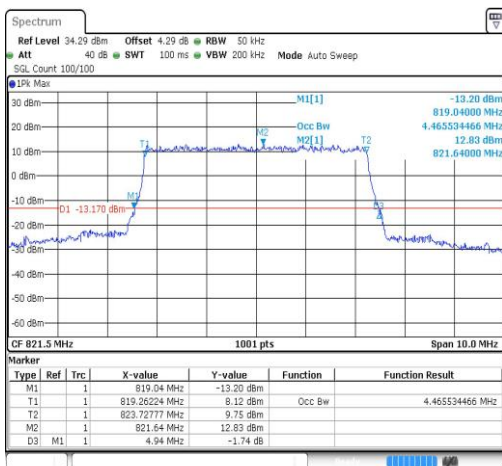
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Date: 9 MAY 2023 09:24:58

Band18-5MHz-16QAM-23895-25RB#0-4.466



Date: 9 MAY 2023 09:25:46

Band18-5MHz-16QAM-23915-25RB#0-4.466

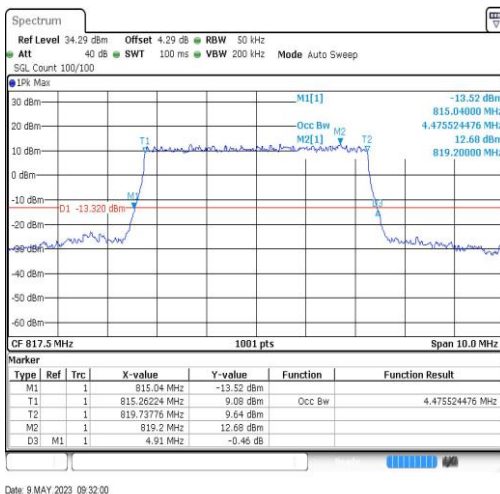


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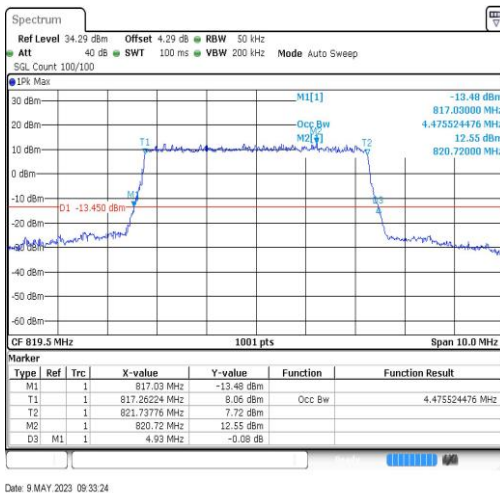
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Date: 9 MAY 2023 09:32:00

Band18-5MHz-64QAM-23875-25RB#0-4.476



Date: 9 MAY 2023 09:33:24

Band18-5MHz-64QAM-23895-25RB#0-4.476



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Band18-5MHz-64QAM-23915-25RB#0-4.476

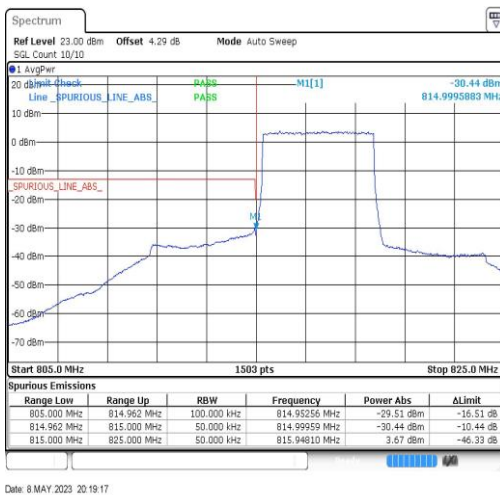


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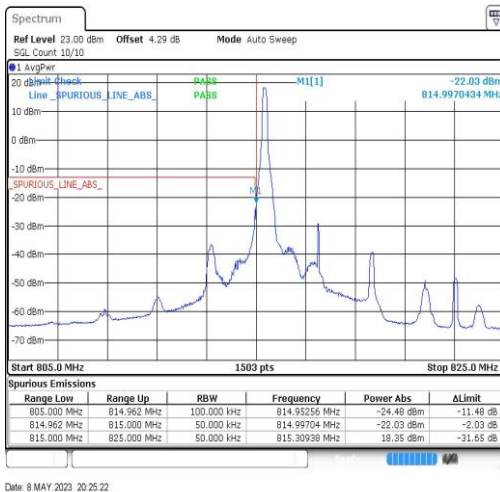
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## Band Edge

### Test Graphs

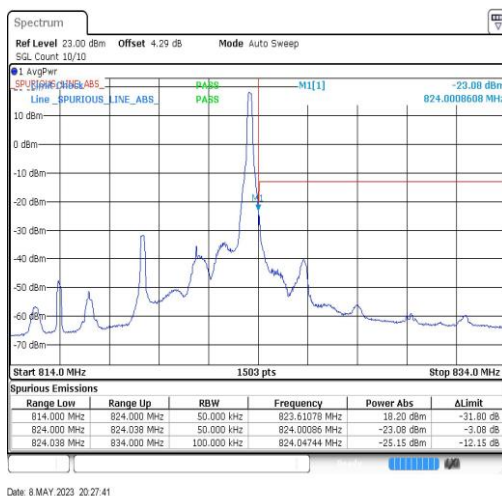


18(815-824)\_Band18\_5MHz\_QPSK\_23875\_25RB#0

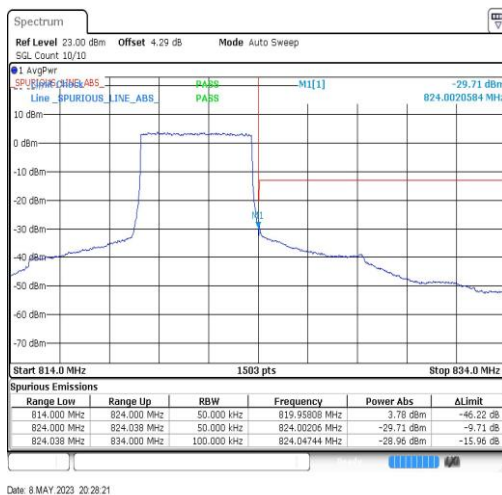


18(815-824)\_Band18\_5MHz\_QPSK\_23875\_1RB#0





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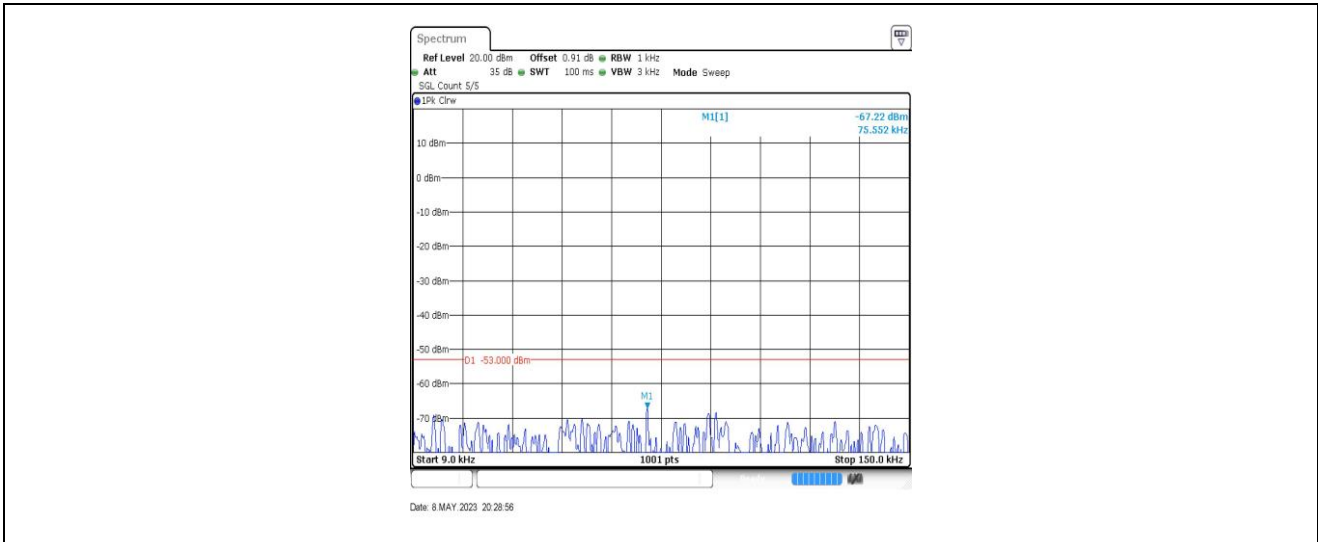


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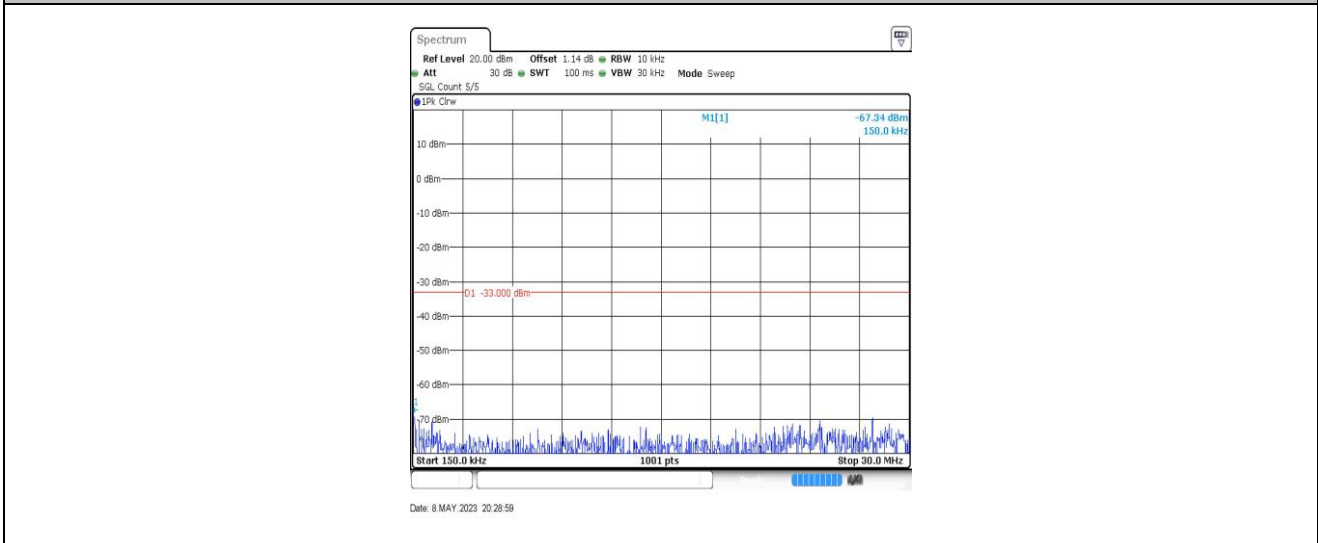


## Conducted Spurious Emission

### Test Graphs



18(815-824)\_Band18\_5MHz\_QPSK\_23875\_1RB#0\_0.009~0.15\_0.009~0.15

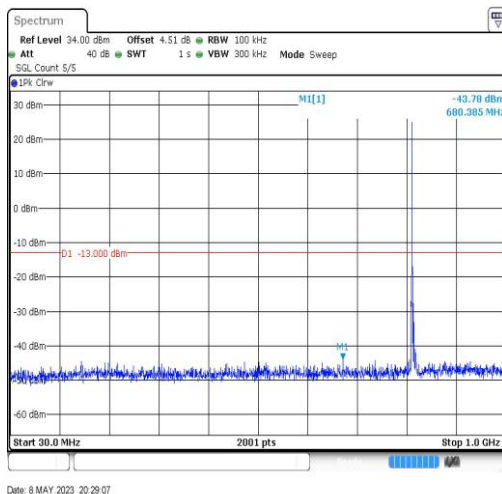


18(815-824)\_Band18\_5MHz\_QPSK\_23875\_1RB#0\_0.15~30\_0.15~30

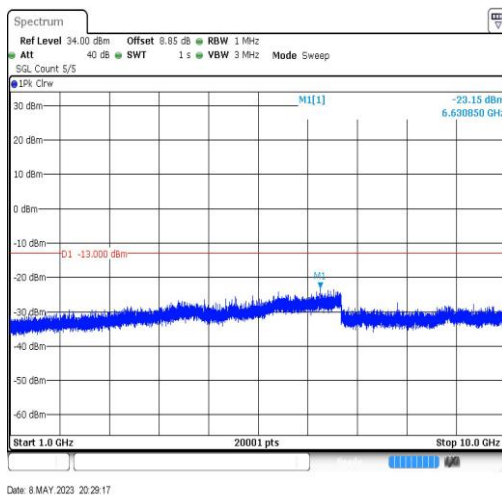


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18(815-824)\_Band18\_5MHz\_QPSK\_23875\_1RB#0\_30~1000\_30~1000



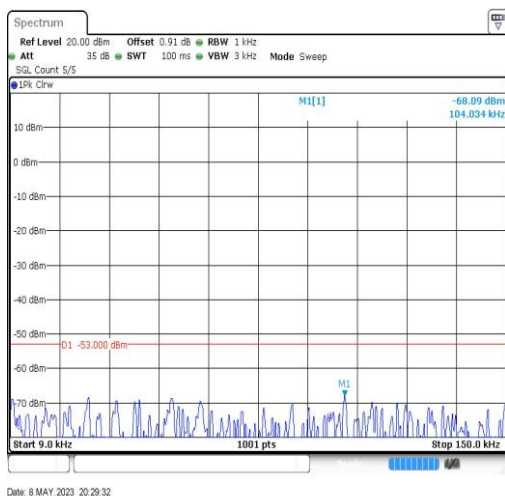
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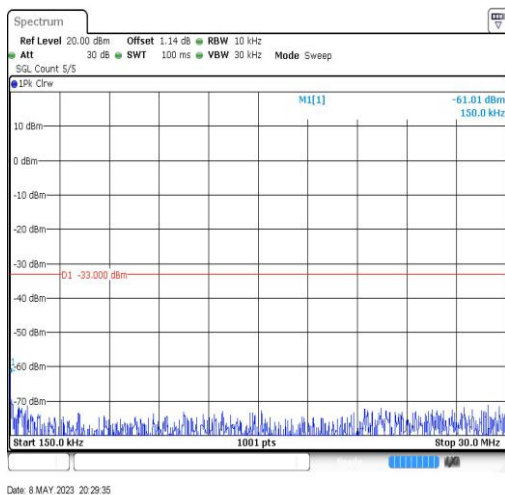
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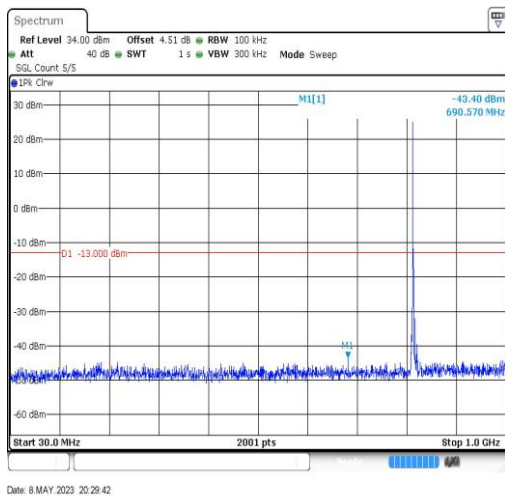
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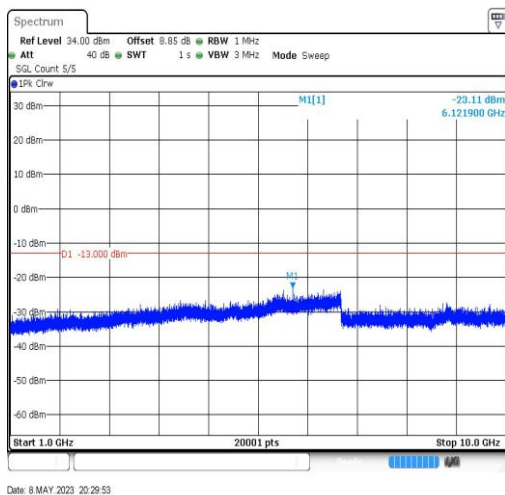
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18(815-824)\_Band18\_5MHz\_QPSK\_23895\_1RB#0\_30~1000\_30~1000



18(815-824)\_Band18\_5MHz\_QPSK\_23895\_1RB#0\_1000~10000\_1000~10000

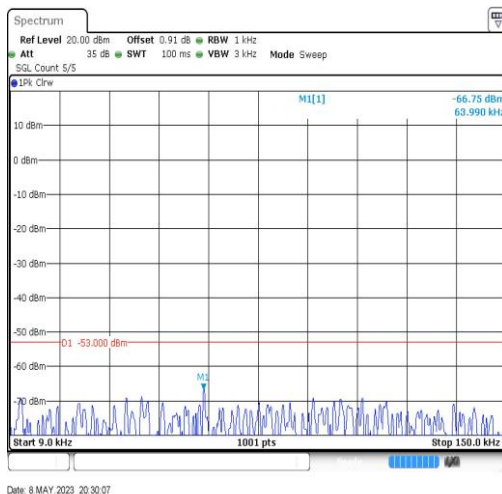


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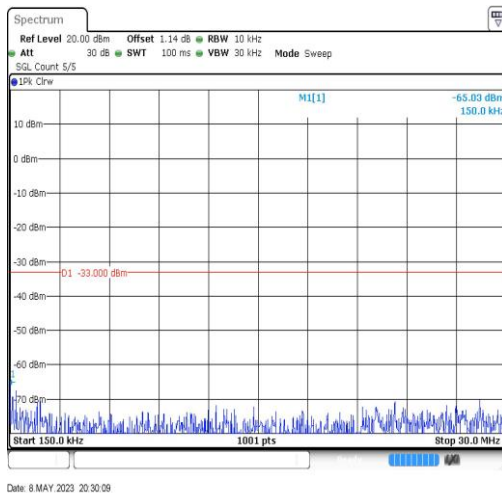
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18(815-824)\_Band18\_5MHz\_QPSK\_23915\_1RB#0\_0.009-0.15\_0.009-0.15



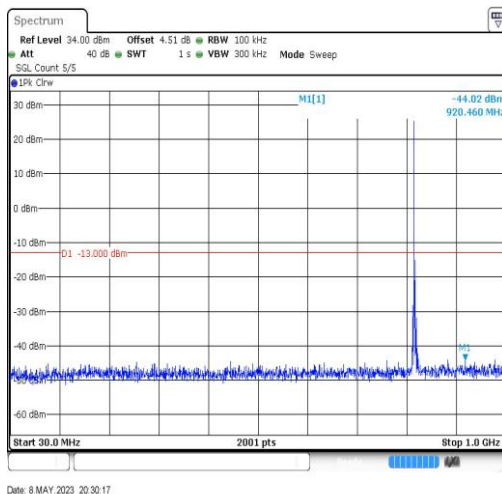
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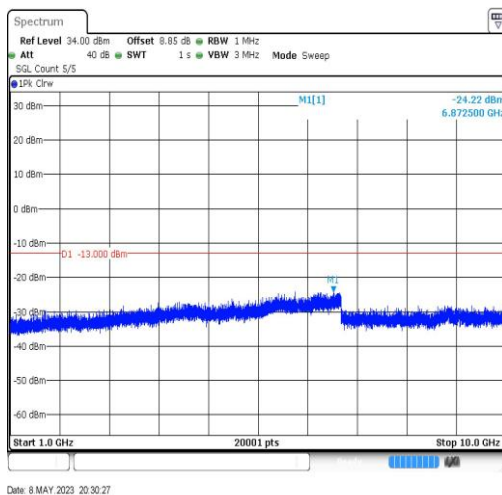
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18(815-824)\_Band18\_5MHz\_QPSK\_23915\_1RB#0\_30~1000\_30~1000



18(815-824)\_Band18\_5MHz\_QPSK\_23915\_1RB#0\_1000~10000\_1000~10000



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**Field Strength of Spurious Radiation**

**Test Band = LTE\_18(815-824)\_5M\_ANT13\_TM1**

**Test Channel = LCH**

Final Data List										
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle[°]	Polarity
1	1630.8289	29.77	-19.14	25.86	-58.77	-13.00	45.77	392	232	Horizontal
2	2792.7241	24.93	-16.94	28.61	-58.66	-13.00	45.66	217	106	Horizontal
3	3624.7812	53.31	-49.39	30.30	-61.04	-13.00	48.04	295	266	Horizontal
4	5481.9741	51.15	-45.49	33.21	-56.39	-13.00	43.39	352	246	Horizontal
5	7494.5747	49.72	-43.21	36.61	-52.14	-13.00	39.14	210	227	Horizontal
6	9250.2625	47.55	-41.17	39.10	-49.78	-13.00	36.78	188	187	Horizontal

Final Data List										
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle[°]	Polarity
1	1630.5788	29.57	-19.14	25.86	-58.97	-13.00	45.97	113	95	Vertical
2	2640.7051	25.41	-17.59	28.32	-59.12	-13.00	46.12	367	185	Vertical
3	4422.1211	51.64	-48.33	32.07	-59.88	-13.00	46.88	376	354	Vertical
4	6275.4638	50.85	-45.32	34.55	-55.18	-13.00	42.18	190	76	Vertical
5	7881.3441	49.29	-43.43	37.29	-52.11	-13.00	39.11	170	55	Vertical
6	9010.1505	48.34	-41.69	38.78	-49.83	-13.00	36.83	198	252	Vertical



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**Test Band = LTE\_18(815-824)\_5M\_ANT13\_TM1**

**Test Channel = MCH**

Final Data List										
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle[°]	Polarity
1	1634.5793	32.05	-19.11	25.87	-56.45	-13.00	43.45	268	66	Horizontal
2	2451.9315	24.68	-17.72	27.90	-60.40	-13.00	47.40	198	74	Horizontal
3	3920.196	52.95	-49.06	30.72	-60.65	-13.00	47.65	394	133	Horizontal
4	5819.741	51.33	-45.63	34.10	-55.46	-13.00	42.46	260	232	Horizontal
5	7480.574	49.37	-43.31	36.64	-52.56	-13.00	39.56	313	65	Horizontal
6	9252.3626	47.70	-41.21	39.09	-49.68	-13.00	36.68	241	153	Horizontal

Final Data List										
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle[°]	Polarity
1	1634.5793	31.24	-19.11	25.87	-57.26	-13.00	44.26	168	92	Vertical
2	2385.6732	24.85	-17.83	27.83	-60.41	-13.00	47.41	172	132	Vertical
3	3614.6307	53.14	-49.49	30.26	-61.35	-13.00	48.35	111	241	Vertical
4	5125.3063	51.02	-47.12	33.55	-57.81	-13.00	44.81	249	325	Vertical
5	7137.9069	49.24	-44.01	37.05	-52.98	-13.00	39.98	234	202	Vertical
6	9483.3742	47.72	-41.45	39.13	-49.86	-13.00	36.86	180	207	Vertical



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**Test Band = LTE\_18(815-824)\_5M\_ANT13\_TM1**  
**Test Channel = HCH**

Final Data List										
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle[°]	Polarity
1	1638.5798	31.15	-19.09	25.88	-57.32	-13.00	44.32	212	203	Horizontal
2	2457.9322	26.44	-17.77	27.92	-58.67	-13.00	45.67	133	73	Horizontal
3	3633.5317	52.62	-49.30	30.33	-61.61	-13.00	48.61	369	330	Horizontal
4	4904.0952	51.71	-47.53	33.11	-57.97	-13.00	44.97	124	285	Horizontal
5	6935.5968	50.08	-44.58	36.34	-53.42	-13.00	40.42	252	20	Horizontal
6	8558.2779	48.97	-42.33	38.95	-49.67	-13.00	36.67	336	158	Horizontal

Final Data List										
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle[°]	Polarity
1	1638.8299	30.59	-19.09	25.88	-57.88	-13.00	44.88	359	92	Vertical
2	2405.6757	24.86	-17.51	27.81	-60.10	-13.00	47.10	110	2	Vertical
3	4009.8005	52.26	-49.12	31.06	-61.06	-13.00	48.06	372	0	Vertical
4	5269.8635	50.88	-46.56	33.32	-57.62	-13.00	44.62	389	354	Vertical
5	7151.2076	50.00	-44.09	37.10	-52.25	-13.00	39.25	388	74	Vertical
6	9022.4011	49.05	-41.75	38.76	-49.20	-13.00	36.20	211	54	Vertical



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**Test Band = LTE\_18(815-824)\_5M\_ANT31\_TM1**

**Test Channel = LCH**

Final Data List										
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle[°]	Polarity
1	1483.0604	23.21	-18.93	25.63	-65.35	-13.00	52.35	247	239	Horizontal
2	2202.9004	24.10	-17.85	27.69	-61.32	-13.00	48.32	384	358	Horizontal
3	3639.132	52.62	-49.25	30.36	-61.53	-13.00	48.53	123	287	Horizontal
4	4914.5957	50.85	-47.44	33.13	-58.72	-13.00	45.72	210	99	Horizontal
5	6969.5485	49.09	-44.38	36.44	-54.11	-13.00	41.11	390	252	Horizontal
6	9015.4008	47.35	-41.72	38.77	-50.86	-13.00	37.86	351	222	Horizontal

Final Data List										
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle[°]	Polarity
1	1533.3167	23.13	-19.09	25.80	-65.42	-13.00	52.42	124	239	Vertical
2	2119.64	24.25	-18.51	27.46	-62.06	-13.00	49.06	305	330	Vertical
3	3545.6773	52.60	-49.64	30.07	-62.23	-13.00	49.23	321	272	Vertical
4	4910.0455	50.85	-47.48	33.12	-58.77	-13.00	45.77	357	6	Vertical
5	6780.189	49.47	-44.60	36.26	-54.13	-13.00	41.13	131	218	Vertical
6	7456.0728	48.80	-43.50	36.69	-53.27	-13.00	40.27	240	130	Vertical



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**Test Band = LTE\_18(815-824)\_5M\_ANT31\_TM1**  
**Test Channel = MCH**

Final Data List										
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle[°]	Polarity
1	1473.5592	23.09	-18.98	25.65	-65.50	-13.00	52.50	357	269	Horizontal
2	2264.158	24.41	-18.14	27.53	-61.46	-13.00	48.46	213	34	Horizontal
3	3631.7816	52.78	-49.32	30.33	-61.47	-13.00	48.47	255	30	Horizontal
4	4397.6199	51.40	-48.47	32.19	-60.14	-13.00	47.14	387	177	Horizontal
5	6512.7756	48.99	-44.33	35.13	-55.47	-13.00	42.47	320	177	Horizontal
6	8987.3994	46.84	-41.76	38.72	-51.46	-13.00	38.46	189	127	Horizontal

Final Data List										
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle[°]	Polarity
1	1437.0546	23.06	-19.18	25.73	-65.65	-13.00	52.65	156	107	Vertical
2	2196.3996	23.66	-17.90	27.68	-61.82	-13.00	48.82	232	356	Vertical
3	3754.6377	52.15	-49.38	30.50	-61.99	-13.00	48.99	297	275	Vertical
4	5489.3245	50.16	-45.48	33.16	-57.42	-13.00	44.42	339	256	Vertical
5	7375.5688	49.15	-44.04	36.85	-53.30	-13.00	40.30	361	360	Vertical
6	9020.301	47.40	-41.74	38.76	-50.84	-13.00	37.84	246	236	Vertical



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**Test Channel = HCH**

Final Data List										
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle[°]	Polarity
1	1779.0974	25.12	-19.16	25.62	-63.68	-13.00	50.68	135	23	Horizontal
2	2763.9705	24.78	-17.14	28.67	-58.95	-13.00	45.95	199	239	Horizontal
3	4410.2205	51.42	-48.40	32.14	-60.10	-13.00	47.10	216	262	Horizontal
4	5802.2401	49.51	-45.52	34.10	-57.17	-13.00	44.17	229	110	Horizontal
5	7471.4736	48.48	-43.38	36.66	-53.50	-13.00	40.50	239	164	Horizontal
6	9033.6017	47.22	-41.80	38.73	-51.11	-13.00	38.11	258	51	Horizontal

Final Data List										
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle[°]	Polarity
1	1483.0604	23.19	-18.93	25.63	-65.37	-13.00	52.37	261	200	Vertical
2	2124.8906	24.29	-18.55	27.45	-62.07	-13.00	49.07	123	89	Vertical
3	3622.3311	52.82	-49.42	30.29	-61.57	-13.00	48.57	322	183	Vertical
4	5700.735	49.27	-44.74	33.51	-57.22	-13.00	44.22	142	74	Vertical
5	7471.1236	48.98	-43.38	36.66	-53.00	-13.00	40.00	166	290	Vertical
6	9041.3021	47.33	-41.83	38.72	-51.04	-13.00	38.04	298	217	Vertical

**Remark:**

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & AMP. The basic equation with a sample calculation is as follows:

AF = Antenna Factor(dB/m)

Factor = Cable Factor(dB) - Pre-amplifier (dB)

Level = Reading Level + AF + Factor -95.26

Margin = Limit – Level





## Frequency Stability

### Test Result

Voltage									
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band18	5MHz	QPSK	23895	25RB#0	VN	NT	0.50	0.000610	PASS
Band18	5MHz	QPSK	23895	25RB#0	VL	NT	3.80	0.004637	PASS
Band18	5MHz	QPSK	23895	25RB#0	VH	NT	1.30	0.001586	PASS

Temperature									
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band18	5MHz	QPSK	23895	25RB#0	NV	-30	2.70	0.003295	PASS
Band18	5MHz	QPSK	23895	25RB#0	NV	-20	0.40	0.000488	PASS
Band18	5MHz	QPSK	23895	25RB#0	NV	-10	-0.90	-0.001098	PASS
Band18	5MHz	QPSK	23895	25RB#0	NV	0	-0.70	-0.000854	PASS
Band18	5MHz	QPSK	23895	25RB#0	NV	10	-0.30	-0.000366	PASS
Band18	5MHz	QPSK	23895	25RB#0	NV	20	-0.40	-0.000488	PASS
Band18	5MHz	QPSK	23895	25RB#0	NV	30	1.90	0.002318	PASS
Band18	5MHz	QPSK	23895	25RB#0	NV	40	3.00	0.003661	PASS
Band18	5MHz	QPSK	23895	25RB#0	NV	50	1.20	0.001464	PASS

---End of Attachment---



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