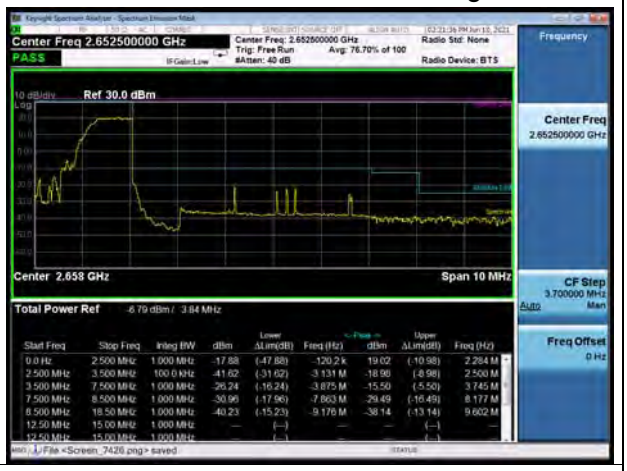
LTE Band 41 QPSK 20MHz CH-Low, 100%RB

LTE Band 41 QPSK 20MHz CH-High, 100%RB

LTE Band 41 16QAM 5MHz CH-Low, 1 RB

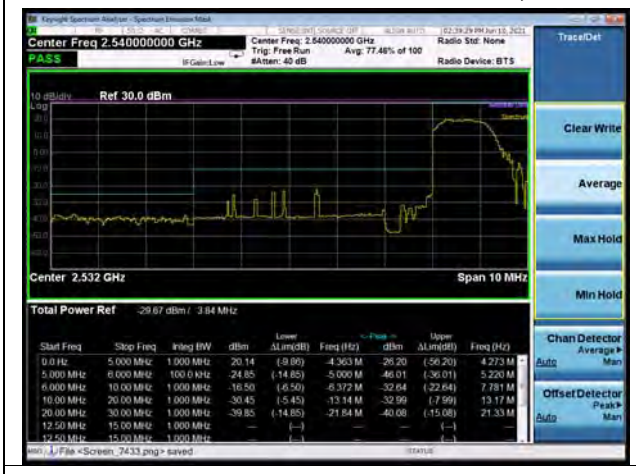
LTE Band 41 16QAM 5MHz CH-High, 1 RB



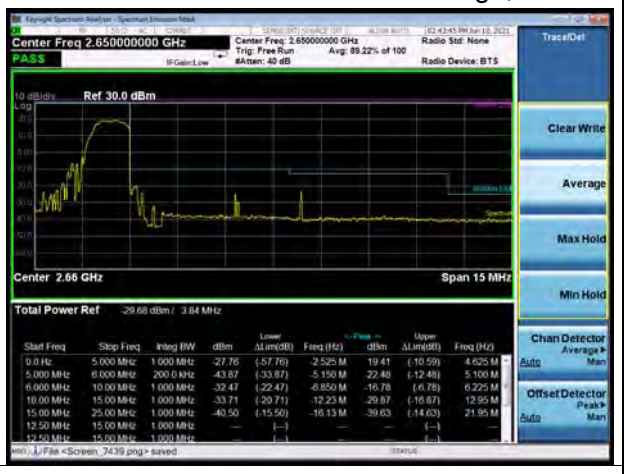
LTE Band 41 16QAM 5MHz CH-Low, 100%RB

LTE Band 41 16QAM 5MHz CH-High, 100%RB

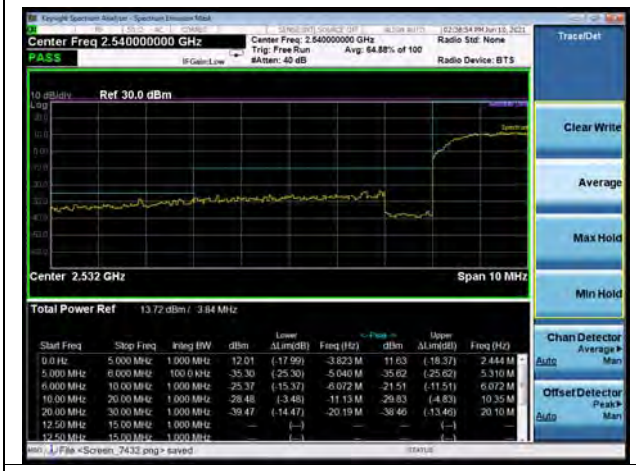
LTE Band 41 16QAM 10MHz CH-Low, 1 RB



LTE Band 41 16QAM 10MHz CH-High, 1 RB

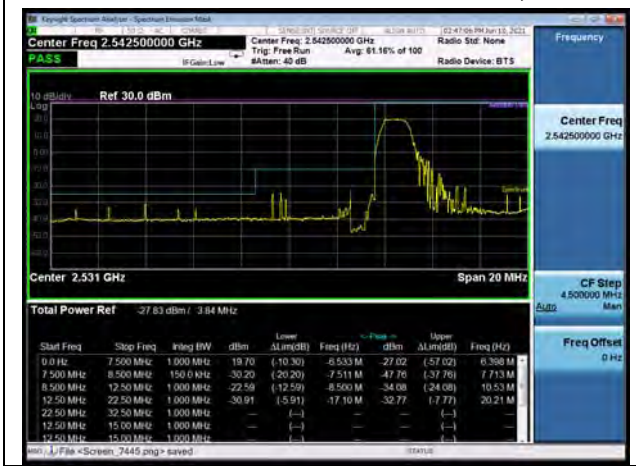


LTE Band 41 16QAM 10MHz CH-Low, 100%RB



LTE Band 41 16QAM 10MHz CH-High, 100%RB

LTE Band 41 16QAM 15MHz CH-Low, 1 RB



LTE Band 41 16QAM 15MHz CH-High, 1 RB

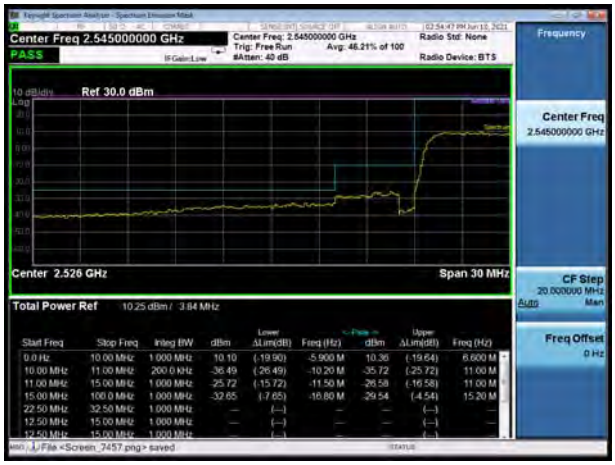
LTE Band 41 16QAM 15MHz CH-Low, 100%RB

LTE Band 41 16QAM 15MHz CH-High, 100%RB

LTE Band 41 16QAM 20MHz CH-Low, RB 1

LTE Band 41 16QAM 20MHz CH-High, RB 1

LTE Band 41 16QAM 20MHz CH-Low, 100%RB

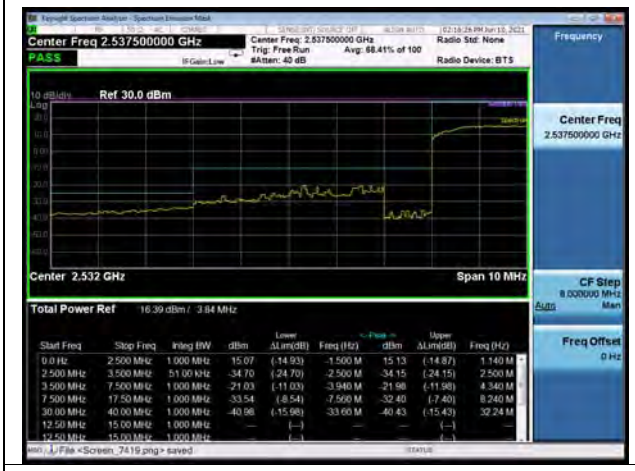


LTE Band 41 16QAM 20MHz CH-High, 100%RB

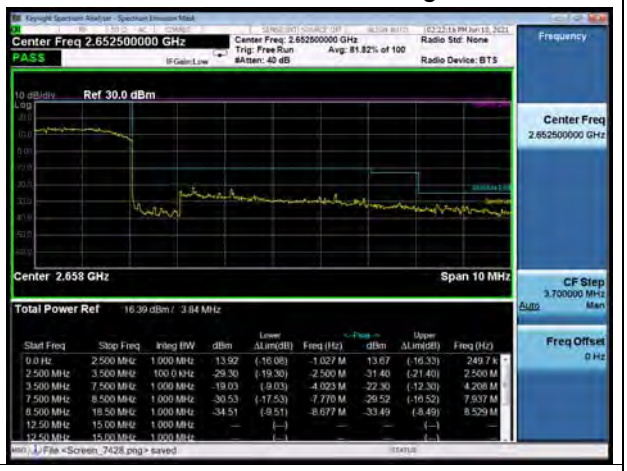
LTE Band 41 46 5MHz CH-Low, 1 RB

LTE Band 41 46M 5MHz CH-High, 1 RB

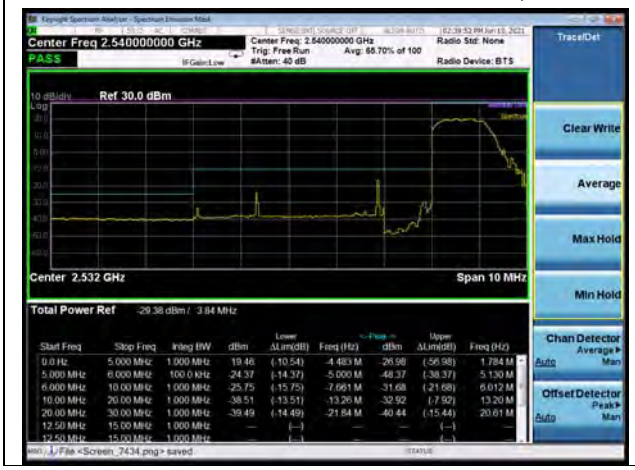
LTE Band 41 46M 5MHz CH-Low, 100%RB



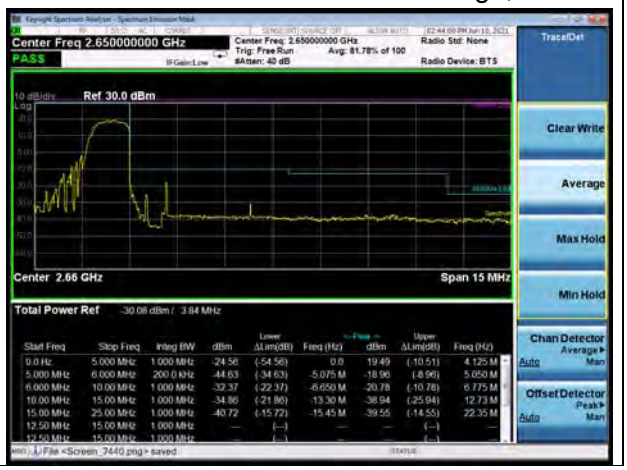
LTE Band 41 46M 5MHz CH-High, 100%RB



LTE Band 41 64QAM 10MHz CH-Low, 1 RB



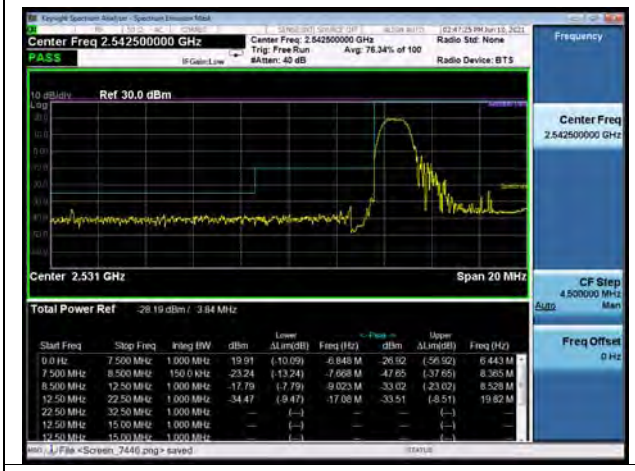
LTE Band 41 64QAM 10MHz CH-High, 1 RB



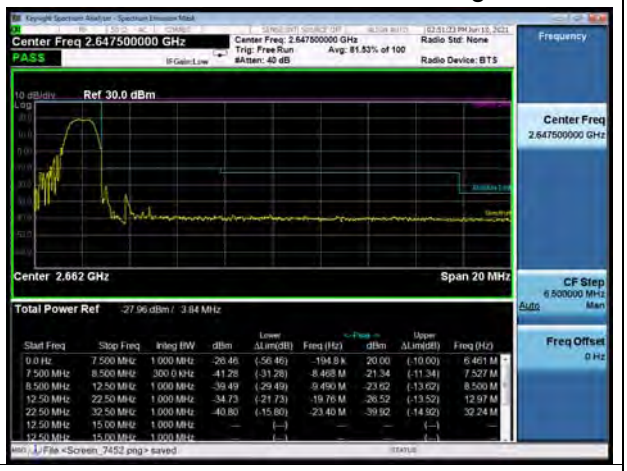
LTE Band 41 64QAM 10MHz CH-Low, 100%RB

LTE Band 41 64QAM 10MHz CH-High, 100%RB

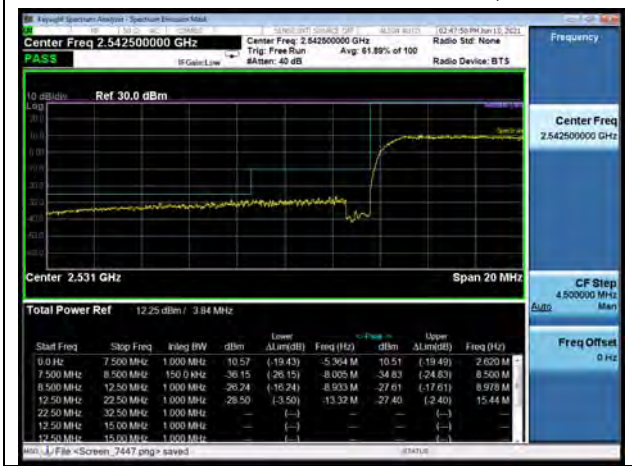
LTE Band 41 64QAM 15MHz CH-Low, 1 RB



LTE Band 41 64QAM15MHz CH-High, 1 RB



LTE Band 41 64QAM 15MHz CH-Low, 100%RB

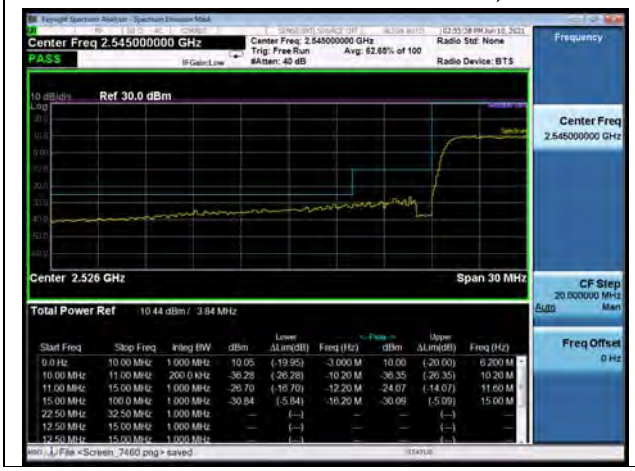


LTE Band 41 64QAM 15MHz CH-High, 100%RB

LTE Band 41 64QAM 20MHz CH-Low, RB 1

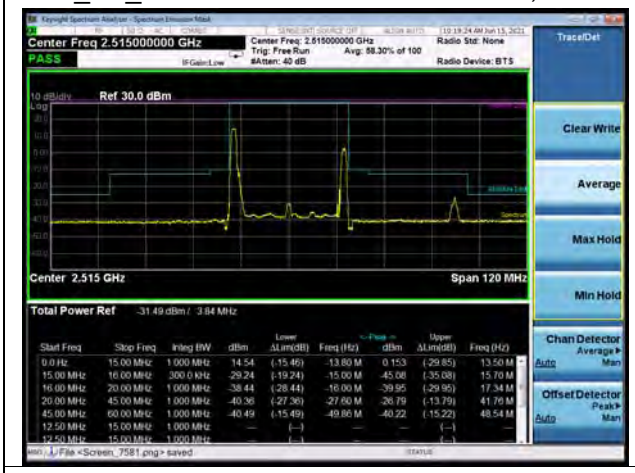
LTE Band 41 64QAM 20MHz CH-High, RB 1

LTE Band 41 64QAM 20MHz CH-Low, 100%RB



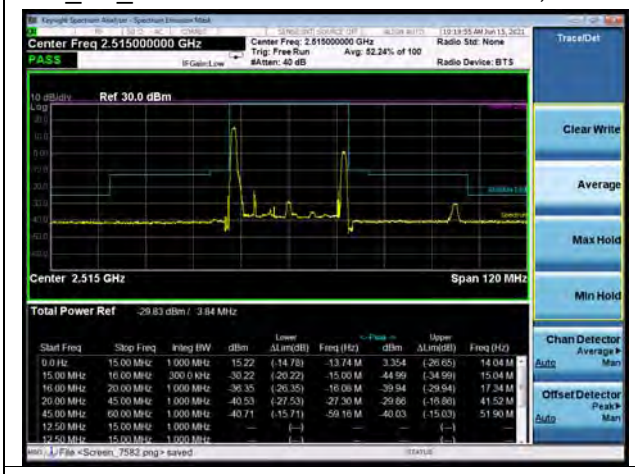
LTE Band 41 64QAM 20MHz CH-High, 100%RB

CA_7C_20MHz+10MHz QPSK CH-Low, RB 1

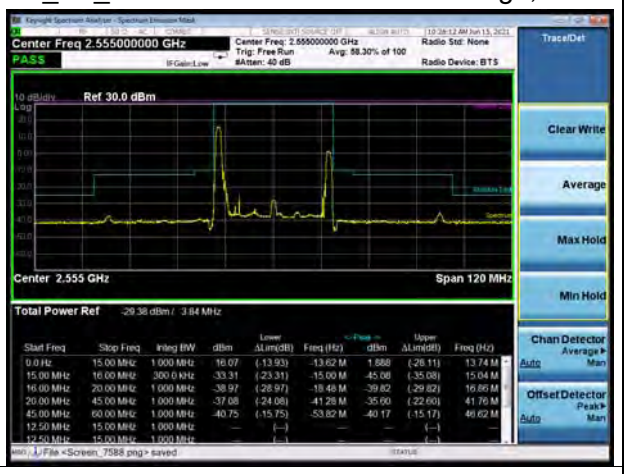


CA_7C_20MHz+10MHz QPSK CH-High, RB 1

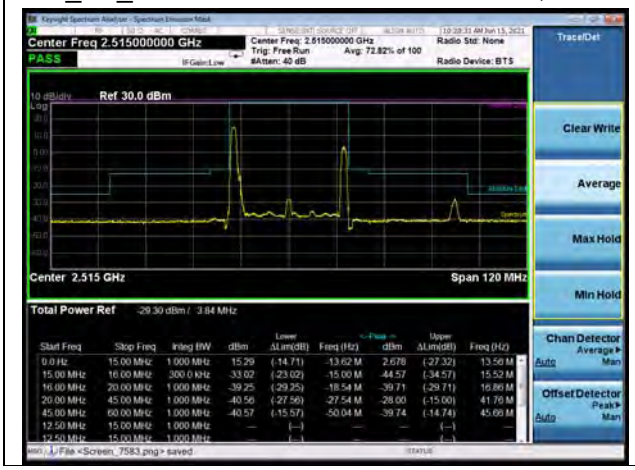
CA_7C_20MHz+10MHz 16QAM CH-Low, RB 1



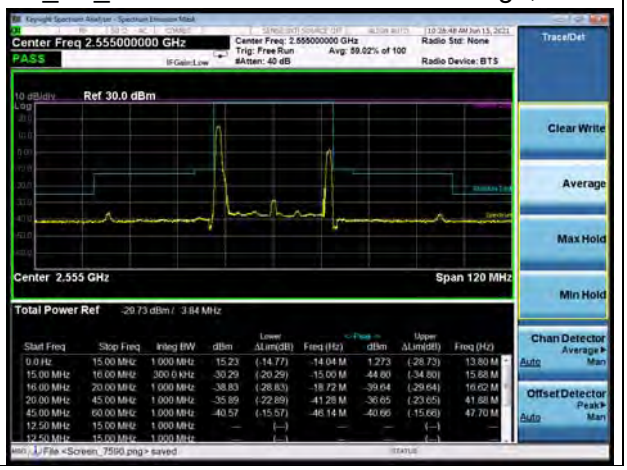
CA_7C_20MHz+10MHz 16QAM CH- High, RB 1



CA_7C_20MHz+10MHz 64QAM CH-Low, RB 1



CA_7C_20MHz+10MHz 64QAM CH- High, RB 1



CA_7C_20MHz+10MHz QPSK CH-Low, 100%RB

CA_7C_20MHz+10MHz QPSK CH-High , 100%RB

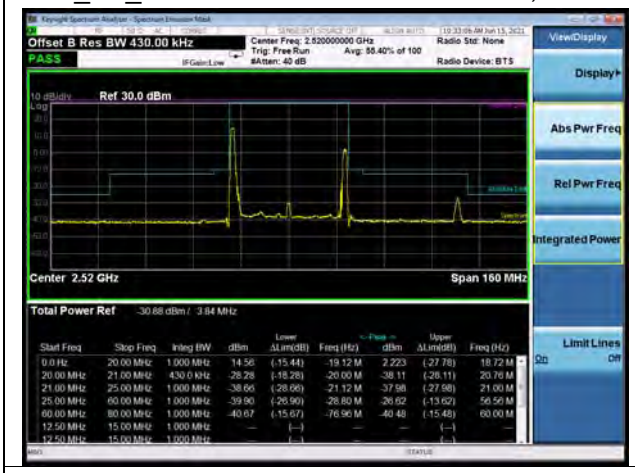
CA_7C_20MHz+10MHz 16QAM CH-Low, 100%RB

CA_7C_20MHz+10MHz 16QAM CH- High, 100%RB

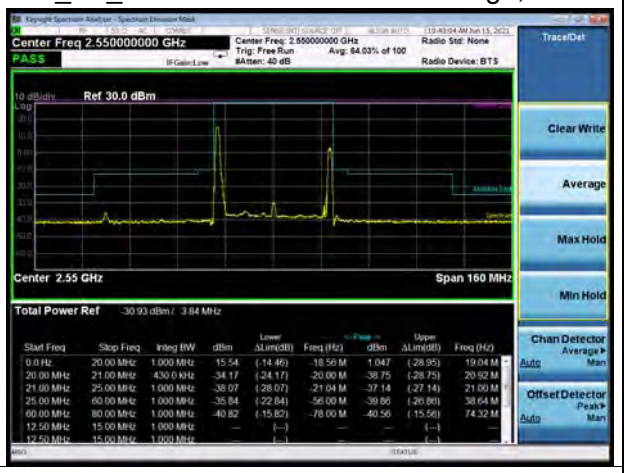
CA_7C_20MHz+10MHz 64QAM CH-Low, 100%RB

CA_7C_20MHz+10MHz 64QAM CH- High, 100%RB

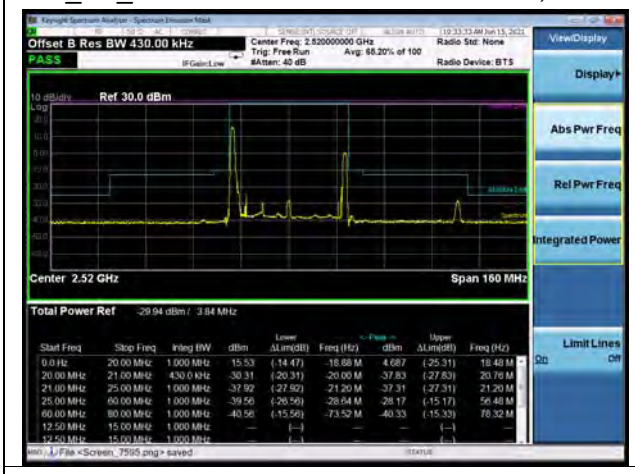
CA_7C_20MHz+20MHz QPSK CH-Low, RB 1



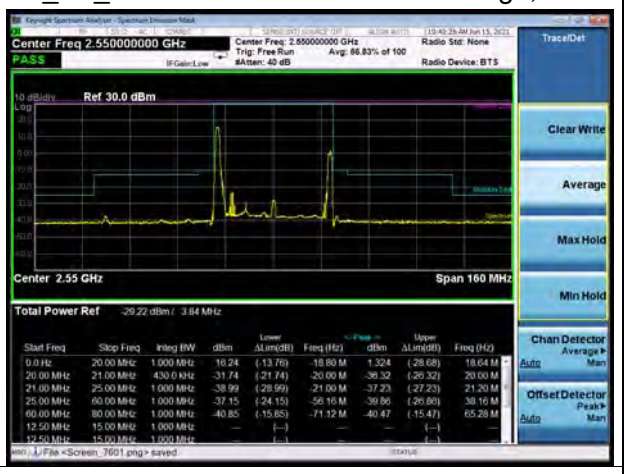
CA_7C_20MHz+20MHz QPSK CH-High, RB 1



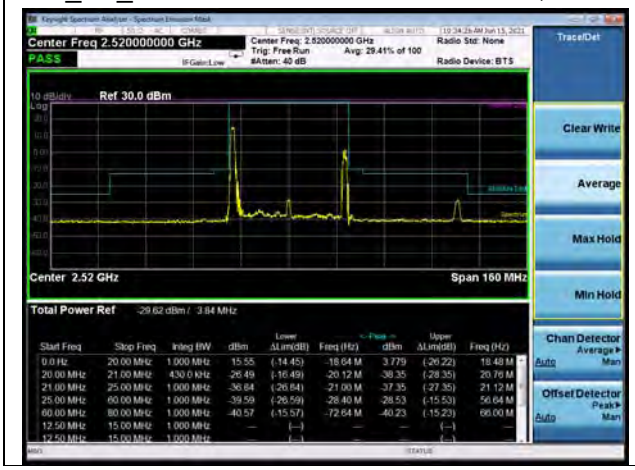
CA_7C_20MHz+20MHz 16QAM CH-Low, RB 1



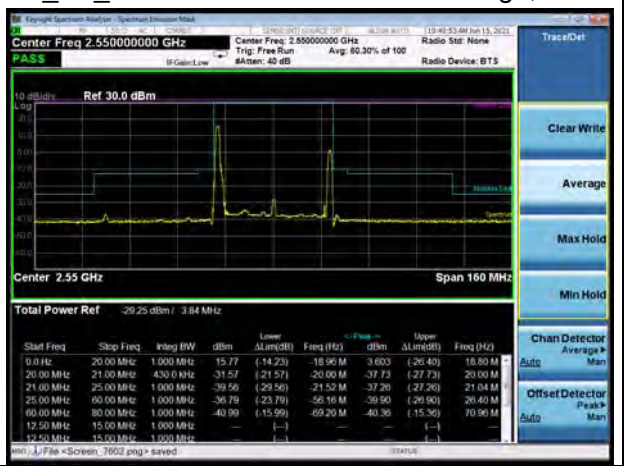
CA_7C_20MHz+20MHz 16QAM CH- High, RB 1



CA_7C_20MHz+20MHz 64QAM CH-Low, RB 1



CA_7C_20MHz+20MHz 64QAM CH- High, RB 1



CA_7C_20MHz+20MHz QPSK CH-Low, 100%RB

CA_7C_20MHz+20MHz QPSK CH-High , 100%RB

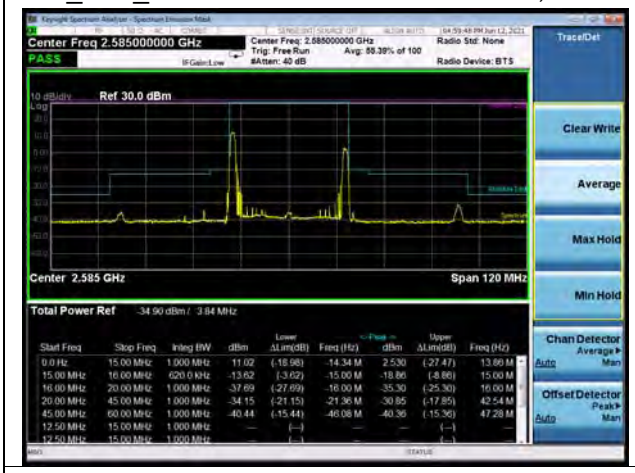
CA_7C_20MHz+20MHz 16QAM CH-Low, 100%RB

CA_7C_20MHz+20MHz 16QAM CH- High, 100%RB

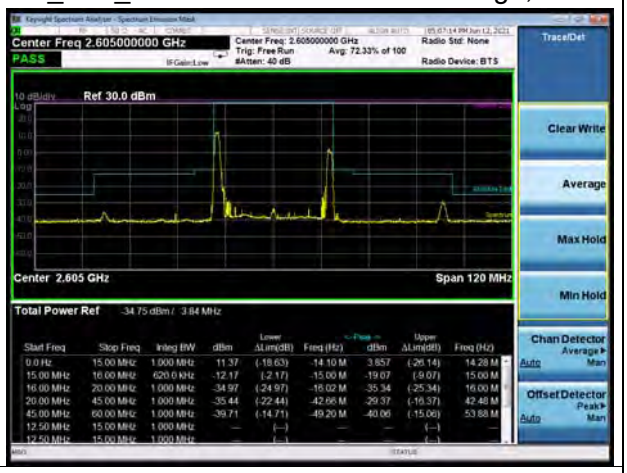
CA_7C_20MHz+20MHz 64QAM CH-Low, 100%RB

CA_7C_20MHz+20MHz 64QAM CH- High, 100%RB

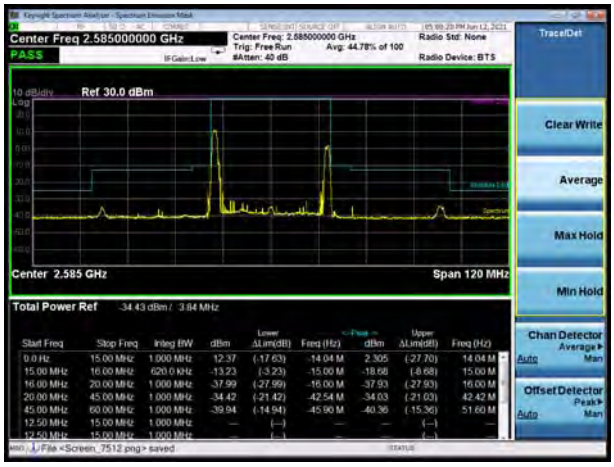
CA_38C_15MHz+15MHz QPSK CH-Low, RB 1



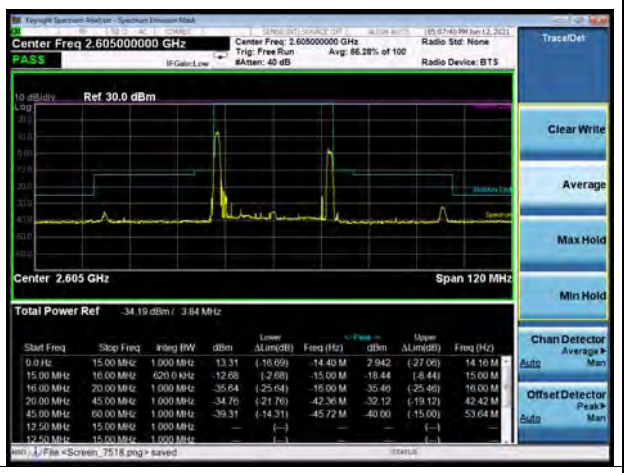
CA_38C_15MHz+15MHz QPSK CH-High, RB 1



CA_38C_15MHz+15MHz 16QAM CH-Low, RB 1

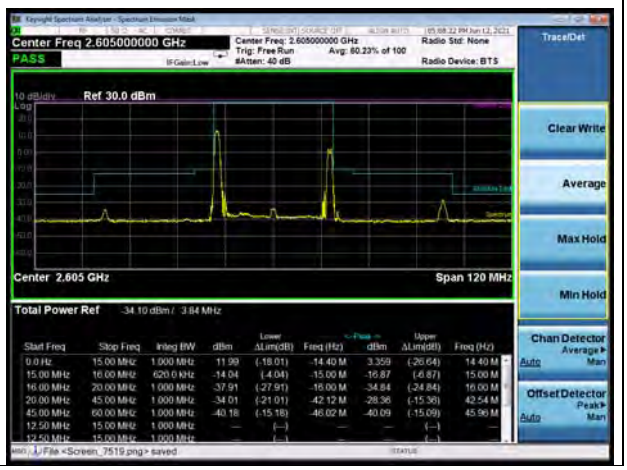


CA_38C_15MHz+15MHz 16QAM CH- High, RB 1



CA_38C_15MHz+15MHz 64QAM CH-Low, RB 1

CA_38C_15MHz+15MHz 64QAM CH- High, RB 1



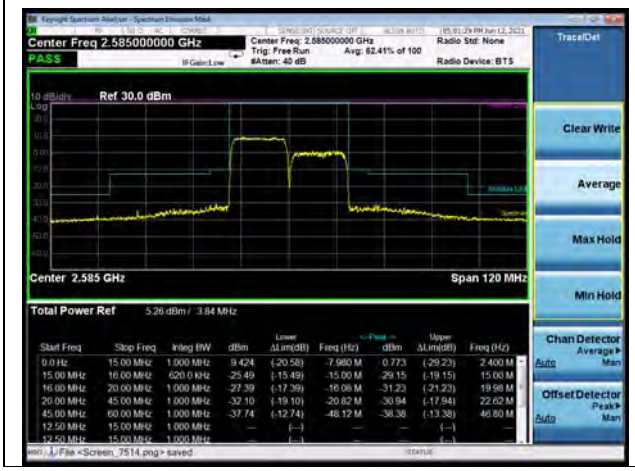
CA_38C_15MHz+15MHz QPSK CH-Low, 100%RB

CA_38C_15MHz+15MHz QPSK CH-High , 100%RB

CA_38C_15MHz+15MHz 16QAM CH-Low, 100%RB

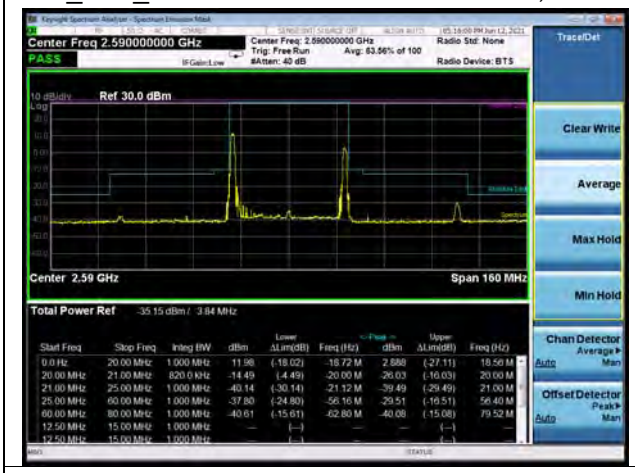
CA_38C_15MHz+15MHz 16QAM CH- High, 100%RB

CA_38C_15MHz+15MHz 64QAM CH-Low, 100%RB



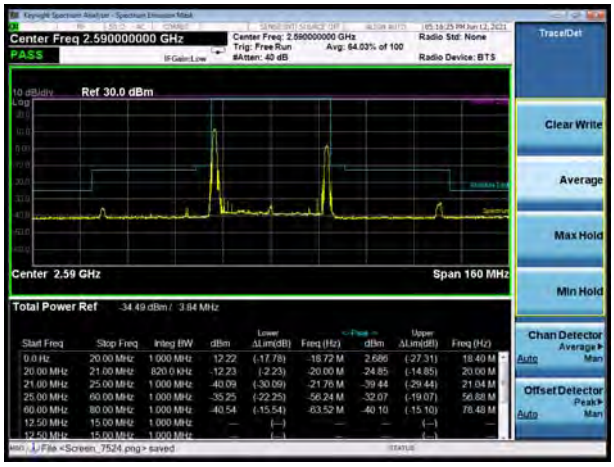
CA_38C_15MHz+15MHz 64QAM CH- High, 100%RB

CA_38C_20MHz+20MHz QPSK CH-Low, RB 1



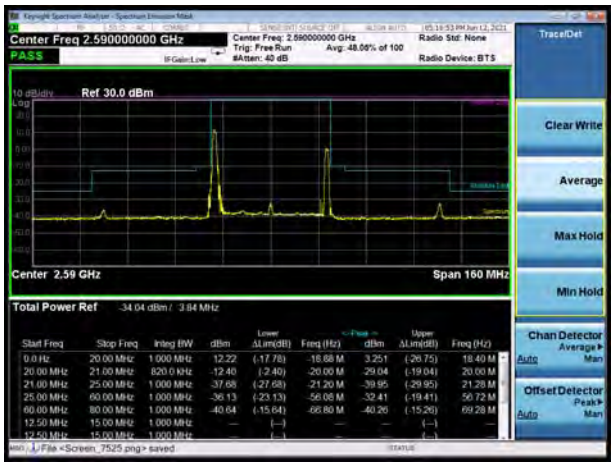
CA_38C_20MHz+20MHz QPSK CH-High, RB 1

CA_38C_20MHz+20MHz 16QAM CH-Low, RB 1



CA_38C_20MHz+20MHz 16QAM CH- High, RB 1

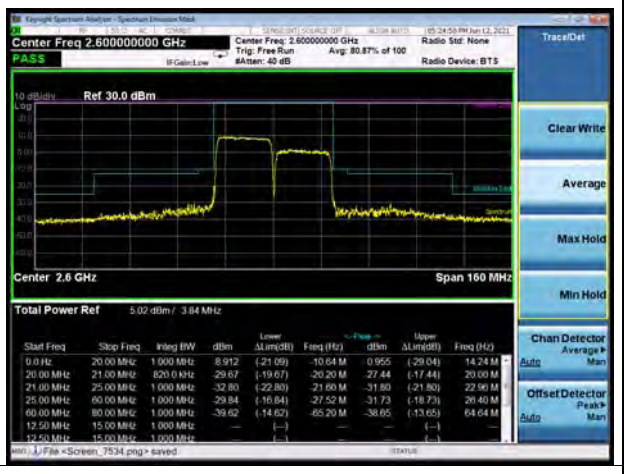
CA_38C_20MHz+20MHz 64QAM CH-Low, RB 1



CA_38C_20MHz+20MHz 64QAM CH- High, RB 1

CA_38C_20MHz+20MHz QPSK CH-Low, 100%RB

CA_38C_20MHz+20MHz QPSK CH-High , 100%RB



CA_38C_20MHz+20MHz 16QAM CH-Low, 100%RB

CA_38C_20MHz+20MHz 16QAM CH- High, 100%RB

CA_38C_20MHz+20MHz 64QAM CH-Low, 100%RB

CA_38C_20MHz+20MHz 64QAM CH- High, 100%RB

5.4 Peak-to-Average Power Ratio (PAPR)

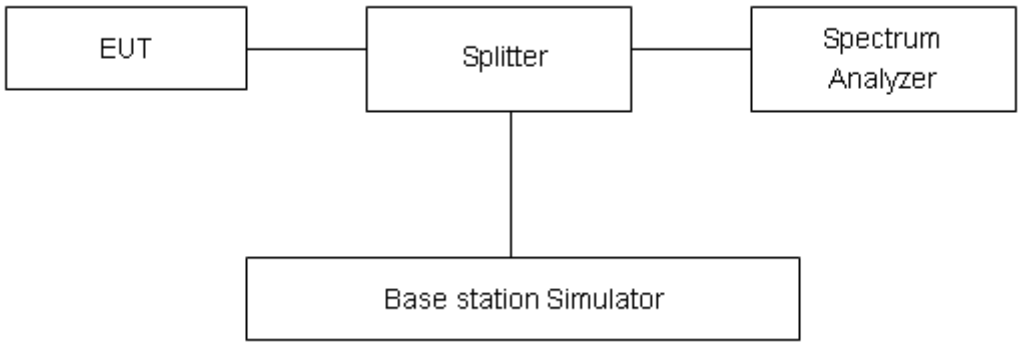
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

Measure the total peak power and record as PPk. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (*e.g.*, dBm). Determine the PAPR from:
PAPR (dB) = PPk (dBm) - PAvg (dBm).

Test Setup



Limits

Rule Part 27.50(d)(5) Equipment employed must be authorized in accordance with the provisions of 24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for thenormal distribution is with the coverage factor k = 2, U= 0.4 dB.

Test Results

WCDMA Band IV	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
RMC	1312	1712.4	21.30	18.11	3.19	≤13	PASS
	1413	1732.6	21.25	18.10	3.15	≤13	PASS
	1513	1752.6	21.25	18.10	3.15	≤13	PASS

LTE Band 4								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	19957	1710.7	27.79	23.08	4.71	≤13	PASS
		20175	1732.5	27.85	23.01	4.84	≤13	PASS
		20393	1754.3	27.80	23.03	4.77	≤13	PASS
	3	19965	1711.5	28.03	23.20	4.83	≤13	PASS
		20175	1732.5	27.84	22.95	4.89	≤13	PASS
		20385	1753.5	27.81	22.95	4.86	≤13	PASS
	5	19975	1712.5	28.06	23.03	5.03	≤13	PASS
		20175	1732.5	27.96	22.95	5.01	≤13	PASS
		20375	1752.5	27.90	22.97	4.93	≤13	PASS
	10	20000	1715	28.15	23.07	5.08	≤13	PASS
		20175	1732.5	27.95	22.96	4.99	≤13	PASS
		20350	1750	27.94	22.98	4.96	≤13	PASS
	15	20025	1717.5	28.59	23.13	5.46	≤13	PASS
		20175	1732.5	28.41	23.05	5.36	≤13	PASS
		20325	1747.5	28.37	23.07	5.30	≤13	PASS
	20	20050	1720	28.35	23.03	5.32	≤13	PASS
		20175	1732.5	28.23	22.92	5.31	≤13	PASS
		20300	1745	28.16	22.93	5.23	≤13	PASS
16QAM	1.4	19957	1710.7	27.64	22.09	5.55	≤13	PASS
		20175	1732.5	27.71	21.97	5.74	≤13	PASS
		20393	1754.3	27.61	21.98	5.63	≤13	PASS
	3	19965	1711.5	27.76	22.02	5.74	≤13	PASS
		20175	1732.5	27.75	21.95	5.80	≤13	PASS
		20385	1753.5	27.73	21.99	5.74	≤13	PASS
	5	19975	1712.5	27.83	22.03	5.80	≤13	PASS
		20175	1732.5	27.77	21.99	5.78	≤13	PASS
		20375	1752.5	27.67	21.97	5.70	≤13	PASS
	10	20000	1715	27.96	22.07	5.89	≤13	PASS
		20175	1732.5	27.79	21.98	5.81	≤13	PASS
		20350	1750	27.74	21.95	5.79	≤13	PASS

	15	20025	1717.5	28.10	22.07	6.03	≤13	PASS
		20175	1732.5	27.99	22.01	5.98	≤13	PASS
		20325	1747.5	27.95	22.02	5.93	≤13	PASS
	20	20050	1720	28.10	22.03	6.07	≤13	PASS
		20175	1732.5	27.96	21.96	6.00	≤13	PASS
		20300	1745	27.96	21.95	6.01	≤13	PASS
64QAM	1.4	19957	1710.7	27.20	21.65	5.55	≤13	PASS
		20175	1732.5	27.33	21.60	5.73	≤13	PASS
		20393	1754.3	27.18	21.54	5.64	≤13	PASS
	3	19965	1711.5	27.25	21.60	5.65	≤13	PASS
		20175	1732.5	27.34	21.52	5.82	≤13	PASS
		20385	1753.5	27.30	21.53	5.77	≤13	PASS
	5	19975	1712.5	27.38	21.61	5.77	≤13	PASS
		20175	1732.5	27.28	21.52	5.76	≤13	PASS
		20375	1752.5	27.30	21.54	5.76	≤13	PASS
	10	20000	1715	27.53	21.63	5.90	≤13	PASS
		20175	1732.5	27.34	21.51	5.83	≤13	PASS
		20350	1750	27.34	21.54	5.80	≤13	PASS
	15	20025	1717.5	27.74	21.66	6.08	≤13	PASS
		20175	1732.5	27.60	21.60	6.00	≤13	PASS
		20325	1747.5	28.07	21.55	6.52	≤13	PASS
	20	20050	1720	27.68	21.60	6.08	≤13	PASS
		20175	1732.5	28.32	21.51	6.81	≤13	PASS
		20300	1745	27.50	21.51	5.99	≤13	PASS

LTE Band 7								
Modulation	**Bandwidth (MHz)**	**Channel**	**Frequency (MHz)**	**Peak (dBm)**	**Avg (dBm)**	**PAPR (dB)**	**Limit (dB)**	**Conclusion**
QPSK	5	20775	2502.5	27.26	22.76	4.50	≤13	PASS
		21100	2535	27.19	22.60	4.59	≤13	PASS
		21425	2567.5	26.56	22.56	4.00	≤13	PASS
	10	20800	2505	27.42	22.85	4.57	≤13	PASS
		21100	2535	27.30	22.70	4.60	≤13	PASS
		21400	2565	26.82	22.64	4.18	≤13	PASS
	15	20825	2507.5	27.89	22.94	4.95	≤13	PASS
		21100	2535	27.71	22.75	4.96	≤13	PASS
		21375	2562.5	27.39	22.77	4.62	≤13	PASS
	20	20850	2510	27.81	22.80	5.01	≤13	PASS

		21100	2535	27.68	22.66	5.02	≤13	PASS
		21350	2560	27.47	22.61	4.86	≤13	PASS
16QAM	5	20775	2502.5	27.11	21.74	5.37	≤13	PASS
		21100	2535	27.06	21.59	5.47	≤13	PASS
		21425	2567.5	26.45	21.50	4.95	≤13	PASS
	10	20800	2505	27.21	21.81	5.40	≤13	PASS
		21100	2535	27.16	21.68	5.48	≤13	PASS
		21400	2565	26.74	21.61	5.13	≤13	PASS
	15	20825	2507.5	27.50	21.86	5.64	≤13	PASS
		21100	2535	27.40	21.69	5.71	≤13	PASS
		21375	2562.5	27.10	21.66	5.44	≤13	PASS
	20	20850	2510	27.55	21.77	5.78	≤13	PASS
		21100	2535	27.37	21.60	5.77	≤13	PASS
		21350	2560	27.22	21.56	5.66	≤13	PASS
64QAM	5	20775	2502.5	26.72	21.21	5.51	≤13	PASS
		21100	2535	26.57	20.99	5.58	≤13	PASS
		21425	2567.5	26.11	20.96	5.15	≤13	PASS
	10	20800	2505	26.77	21.25	5.52	≤13	PASS
		21100	2535	26.70	21.10	5.60	≤13	PASS
		21400	2565	26.29	21.03	5.26	≤13	PASS
	15	20825	2507.5	27.06	21.29	5.77	≤13	PASS
		21100	2535	26.91	21.10	5.81	≤13	PASS
		21375	2562.5	26.65	21.06	5.59	≤13	PASS
	20	20850	2510	27.05	21.20	5.85	≤13	PASS
		21100	2535	26.90	21.04	5.86	≤13	PASS
		21350	2560	26.77	21.03	5.74	≤13	PASS

LTE Band 38								
Modulation	**Bandwidth (MHz)**	**Channel**	**Frequency (MHz)**	**Peak (dBm)**	**Avg (dBm)**	**PAPR (dB)**	**Limit (dB)**	**Conclusion**
QPSK	5	37775	2572.5	28.11	18.54	9.57	≤13	PASS
		38000	2595	28.24	19.94	8.30	≤13	PASS
		38225	2617.5	28.43	20.17	8.26	≤13	PASS
	10	37800	2575	28.19	18.95	9.24	≤13	PASS
		38000	2595	28.26	19.89	8.37	≤13	PASS

		38200	2615	28.37	19.39	8.98	≤13	PASS
	15	37825	2577.5	28.57	19.41	9.16	≤13	PASS
		38000	2595	28.53	18.98	9.55	≤13	PASS
		38175	2612.5	28.81	20.72	8.09	≤13	PASS
	20	37850	2580	28.26	19.30	8.96	≤13	PASS
		38000	2595	28.27	19.16	9.11	≤13	PASS
		38150	2610	28.56	20.72	7.84	≤13	PASS
16QAM	5	37775	2572.5	27.92	18.19	9.73	≤13	PASS
		38000	2595	27.88	18.12	9.76	≤13	PASS
		38225	2617.5	28.15	18.27	9.88	≤13	PASS
	10	37800	2575	28.00	18.32	9.68	≤13	PASS
		38000	2595	28.07	19.62	8.45	≤13	PASS
		38200	2615	28.16	18.52	9.64	≤13	PASS
	15	37825	2577.5	28.17	18.39	9.78	≤13	PASS
		38000	2595	27.98	16.32	11.66	≤13	PASS
		38175	2612.5	28.30	18.43	9.87	≤13	PASS
	20	37850	2580	27.94	17.46	10.48	≤13	PASS
		38000	2595	28.08	18.84	9.24	≤13	PASS
		38150	2610	28.22	18.58	9.64	≤13	PASS
64QAM	5	37775	2572.5	27.38	18.35	9.03	≤13	PASS
		38000	2595	27.23	17.61	9.62	≤13	PASS
		38225	2617.5	27.60	18.91	8.69	≤13	PASS
	10	37800	2575	27.40	17.66	9.74	≤13	PASS
		38000	2595	27.35	17.75	9.60	≤13	PASS
		38200	2615	27.60	18.07	9.53	≤13	PASS
	15M	37825	2577.5	27.57	17.96	9.61	≤13	PASS
		38000	2595	27.54	17.46	10.08	≤13	PASS
		38175	2612.5	27.78	18.10	9.68	≤13	PASS
	20	37850	2580	27.46	18.25	9.21	≤13	PASS
		38000	2595	27.30	16.73	10.57	≤13	PASS
		38150	2610	27.57	18.08	9.49	≤13	PASS

LTE Band 41								
Modulation	Bandwidth ((MHz))	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	39675	2498.5	26.84	18.30	8.54	≤13	PASS
		40620	2593	27.15	18.45	8.70	≤13	PASS
		41565	2687.5	27.02	17.73	9.29	≤13	PASS
	10	39700	2501	26.89	18.92	7.97	≤13	PASS
		40620	2593	27.00	17.82	9.18	≤13	PASS
		41540	2685	27.00	17.89	9.11	≤13	PASS
	15	39725	2503.5	27.20	17.81	9.39	≤13	PASS
		40620	2593	27.39	18.09	9.30	≤13	PASS
		41515	2682.5	27.36	18.13	9.23	≤13	PASS
	20	39750	2506	27.08	18.18	8.90	≤13	PASS
		40620	2593	27.10	17.94	9.16	≤13	PASS
		41490	2680	27.09	18.09	9.00	≤13	PASS
16QAM	5	39675	2498.5	26.55	17.08	9.47	≤13	PASS
		40620	2593	26.87	17.24	9.63	≤13	PASS
		41565	2687.5	26.79	16.83	9.96	≤13	PASS
	10	39700	2501	26.59	17.31	9.28	≤13	PASS
		40620	2593	26.74	17.02	9.72	≤13	PASS
		41540	2685	26.73	16.95	9.78	≤13	PASS
	15	39725	2503.5	26.87	17.46	9.41	≤13	PASS
		40620	2593	27.01	17.21	9.80	≤13	PASS
		41515	2682.5	26.95	17.03	9.92	≤13	PASS
	20	39750	2506	26.80	17.24	9.56	≤13	PASS
		40620	2593	26.81	16.60	10.21	≤13	PASS
		41490	2680	26.73	16.38	10.35	≤13	PASS
64QAM	5	40065	2537.5	26.53	16.66	9.87	≤13	PASS
		40640	2595	26.89	17.22	9.67	≤13	PASS
		41215	2652.5	26.85	17.02	9.83	≤13	PASS
	10	40090	2540	26.58	17.14	9.44	≤13	PASS
		40640	2595	26.77	16.88	9.89	≤13	PASS
		41190	2650	26.73	16.92	9.81	≤13	PASS
	15	40115	2542.5	26.88	17.48	9.40	≤13	PASS

		40640	2595	26.97	17.08	9.89	≤13	PASS
		41165	2647.5	26.92	16.36	10.56	≤13	PASS
	20	40140	2545	26.80	17.62	9.18	≤13	PASS
		40640	2595	26.78	16.66	10.12	≤13	PASS
		41140	2645	26.82	17.04	9.78	≤13	PASS

Mode	Bandwidth	PCC		SCC1		Modulation	Peak-to-Average Power Ratio (PAPR)		
		Channel	Frequency (MHz)	Channel	Frequency (MHz)		Peak (dBm)	Avg (dBm)	PAPR (dB)
CA_7C	CA_7C_10MHz+20MHz_QPSK	21006	2525.6	21150	2540	QPSK	25.55	20.25	5.30
	CA_7C_10MHz+20MHz_16QAM	21006	2525.6	21150	2540	16QAM	25.21	19.15	6.06
	CA_7C_10MHz+20MHz_64QAM	21006	2525.6	21150	2540	64QAM	25.42	19.17	6.25
	CA_7C_20MHz+10MHz_QPSK	21051	2530.1	21195	2544.5	QPSK	25.89	20.65	5.24
	CA_7C_20MHz+10MHz_16QAM	21051	2530.1	21195	2544.5	16QAM	25.74	19.65	6.09
	CA_7C_20MHz+10MHz_64QAM	21051	2530.1	21195	2544.5	64QAM	25.81	19.54	6.27
	CA_7C_15MHz+10MHz_QPSK	21051	2530.1	21171	2542.1	QPSK	27.52	22.94	4.58
	CA_7C_15MHz+10MHz_16QAM	21051	2530.1	21171	2542.1	16QAM	27.66	22.82	4.84
	CA_7C_15MHz+10MHz_64QAM	21051	2530.1	21171	2542.1	64QAM	27.64	22.85	4.79
	CA_7C_15MHz+15MHz_QPSK	21025	2527.5	21175	2542.5	QPSK	25.84	20.36	5.48
	CA_7C_15MHz+15MHz_16QAM	21025	2527.5	21175	2542.5	16QAM	25.78	19.43	6.35
	CA_7C_15MHz+15MHz_64QAM	21025	2527.5	21175	2542.5	64QAM	25.84	19.37	6.47
	CA_7C_15MHz+20MHz_QPSK	21003	2525.3	21174	2542.4	QPSK	25.23	19.50	5.73
	CA_7C_15MHz+20MHz_16QAM	21003	2525.3	21174	2542.4	16QAM	24.94	18.49	6.45
	CA_7C_15MHz+20MHz_64QAM	21003	2525.3	21174	2542.4	64QAM	25.16	18.52	6.64
	CA_7C_20MHz+15MHz_QPSK	21026	2527.6	21197	2544.7	QPSK	25.30	19.96	5.34
	CA_7C_20MHz+15MHz_16QAM	21026	2527.6	21197	2544.7	16QAM	24.87	18.70	6.17
	CA_7C_20MHz+15MHz_64QAM	21026	2527.6	21197	2544.7	64QAM	25.22	18.79	6.43
	CA_7C_20MHz+20MHz_QPSK	21001	2525.1	21199	2544.9	QPSK	24.40	18.95	5.45
	CA_7C_20MHz+20MHz_16QAM	21001	2525.1	21199	2544.9	16QAM	24.39	17.87	6.52
	CA_7C_20MHz+20MHz_64QAM	21001	2525.1	21199	2544.9	64QAM	24.59	17.90	6.69

Mode	Bandwidth	PCC		SCC1		Modulation	Peak-to-Average Power Ratio (PAPR)		
		Channel	Frequency (MHz)	Channel	Frequency (MHz)		Peak (dBm)	Avg (dBm)	PAPR (dB)
CA_38C	CA_38C_15MHz+15MHz_QPSK	37925	2587.5	38075	2602.5	QPSK	25.72	16.46	9.26
	CA_38C_15MHz+15MHz_16QAM	37925	2587.5	38075	2602.5	16QAM	25.62	15.25	10.37
	CA_38C_15MHz+15MHz_64QAM	37925	2587.5	38075	2602.5	64QAM	25.79	14.59	11.20
	CA_38C_20MHz+20MHz_QPSK	37901	2585.1	38099	2604.9	QPSK	24.58	15.66	8.92
	CA_38C_20MHz+20MHz_16QAM	37901	2585.1	38099	2604.9	16QAM	24.51	14.42	10.09
	CA_38C_20MHz+20MHz_64QAM	37901	2585.1	38099	2604.9	64QAM	24.65	13.71	10.94

5.5 Frequency Stability

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -30°C to +60°C in 10°C step size.

(1)With all power removed, the temperature was decreased to -10°C and permitted to stabilize for three hours.

(2)Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.

(3) Repeat the above measurements at 10°C increments from -30°C to +60°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

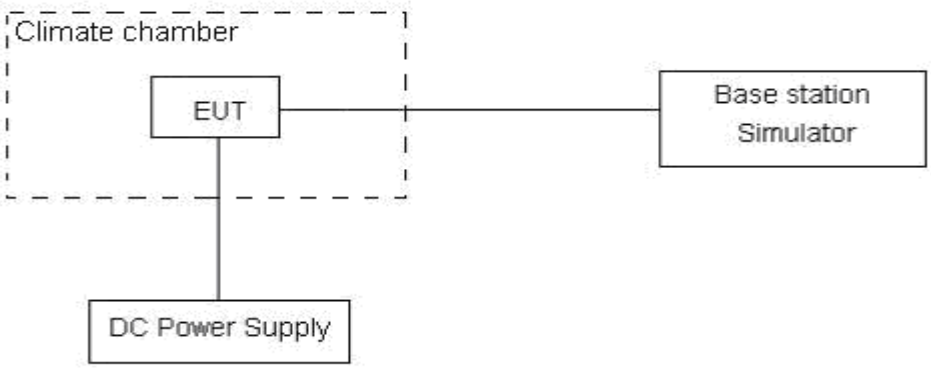
Frequency Stability (Voltage Variation)

The frequency stability shall be measured with variation of primary supply voltage as follows:

Primary Supply Voltage: The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

This transceiver is specified to operate with an input voltage of between 3.6 V and 4.45 V, with a nominal voltage of 3.8V.

Test setup



Limits

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor k = 3,U=0.01ppm.

Test Result

WCDMA Band IV						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
Temperature	Voltage	QPSK	BPSK	QPSK	BPSK	
Normal（25℃）	Normal	12.84	1.68	0.00683	0.00089	PASS
Extreme（60℃）		5.16	15.76	0.00275	0.00838	PASS
Extreme（50℃）		3.71	6.85	0.00197	0.00364	PASS
Extreme（40℃）		12.42	14.26	0.00661	0.00759	PASS
Extreme（30℃）		12.33	4.49	0.00656	0.00239	PASS
Extreme（20℃）		13.70	4.35	0.00729	0.00231	PASS
Extreme（10℃）		14.60	13.48	0.00776	0.00717	PASS
Extreme（0℃）		7.60	16.14	0.00404	0.00859	PASS
Extreme（-10℃）		5.84	17.77	0.00311	0.00945	PASS
Extreme（-20℃）		12.69	11.00	0.00675	0.00585	PASS
Extreme（-30℃）		12.05	6.66	0.00641	0.00354	PASS
25℃	LV	13.17	17.94	0.00700	0.00954	PASS
	HV	13.15	8.48	0.00700	0.00451	PASS

LTE Band 4								
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	1.4MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	1.96	2.22	1.80	0.00104	0.00118	0.00096	PASS
Extreme（60℃）		16.57	6.69	13.53	0.00882	0.00356	0.00720	PASS
Extreme（50℃）		15.29	11.53	16.37	0.00813	0.00613	0.00871	PASS
Extreme（40℃）		6.27	11.85	2.25	0.00333	0.00631	0.00120	PASS
Extreme（30℃）		6.47	7.80	14.99	0.00344	0.00415	0.00797	PASS
Extreme（20℃）		11.73	13.66	14.46	0.00624	0.00726	0.00769	PASS
Extreme（10℃）		17.66	8.00	17.38	0.00940	0.00426	0.00925	PASS
Extreme（0℃）		17.71	12.19	17.27	0.00942	0.00649	0.00919	PASS
Extreme（-10℃）		16.31	3.47	6.86	0.00867	0.00185	0.00365	PASS
Extreme（-20℃）		9.88	2.01	15.99	0.00525	0.00107	0.00851	PASS
Extreme（-30℃）		10.30	2.61	6.88	0.00548	0.00139	0.00366	PASS
25℃	LV	13.93	4.12	14.78	0.00741	0.00219	0.00786	PASS
	HV	9.18	16.40	3.59	0.00488	0.00872	0.00191	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability	Frequency Stability	Frequency Stability	Verdict

BANDWIDTH	3MHz				（ppm）	（ppm）	（ppm）	
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	11.65	2.95	10.13	0.00620	0.00157	0.00539	PASS
Extreme（60℃）		2.61	11.19	8.19	0.00139	0.00595	0.00436	PASS
Extreme（50℃）		1.65	13.93	8.57	0.00088	0.00741	0.00456	PASS
Extreme（40℃）		15.91	2.85	2.32	0.00846	0.00152	0.00124	PASS
Extreme（30℃）		17.35	3.57	7.39	0.00923	0.00190	0.00393	PASS
Extreme（20℃）		8.09	16.07	12.09	0.00430	0.00855	0.00643	PASS
Extreme（10℃）		8.43	7.12	9.49	0.00448	0.00379	0.00505	PASS
Extreme（0℃）		8.81	16.25	3.64	0.00469	0.00865	0.00194	PASS
Extreme（-10℃）		1.00	15.61	17.43	0.00053	0.00830	0.00927	PASS
Extreme（-20℃）		9.81	4.65	13.18	0.00522	0.00247	0.00701	PASS
Extreme（-30℃）		16.89	3.26	13.13	0.00898	0.00174	0.00698	PASS
25℃	LV	1.83	4.09	1.39	0.00097	0.00218	0.00074	PASS
	HV	15.55	5.54	12.56	0.00827	0.00295	0.00668	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	5MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	9.27	9.30	15.06	0.00493	0.00495	0.00801	PASS
Extreme（60℃）		15.12	16.44	6.92	0.00804	0.00874	0.00368	PASS
Extreme（50℃）		1.02	7.28	3.44	0.00054	0.00387	0.00183	PASS
Extreme（40℃）		2.32	6.49	13.85	0.00123	0.00345	0.00737	PASS
Extreme（30℃）		14.14	3.71	10.41	0.00752	0.00197	0.00554	PASS
Extreme（20℃）		5.90	5.81	7.23	0.00314	0.00309	0.00385	PASS
Extreme（10℃）		11.79	4.85	7.97	0.00627	0.00258	0.00424	PASS
Extreme（0℃）		17.91	7.99	9.59	0.00953	0.00425	0.00510	PASS
Extreme（-10℃）		10.98	6.02	17.47	0.00584	0.00320	0.00929	PASS
Extreme（-20℃）		17.07	2.73	12.30	0.00908	0.00145	0.00654	PASS
Extreme（-30℃）		15.72	8.20	15.64	0.00836	0.00436	0.00832	PASS
25℃	LV	10.69	3.71	3.99	0.00569	0.00197	0.00212	PASS
	HV	2.65	9.19	4.68	0.00141	0.00489	0.00249	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	10MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	15.15	14.34	10.92	0.00806	0.00763	0.00581	PASS
Extreme（60℃）		4.86	10.00	10.15	0.00258	0.00532	0.00540	PASS
Extreme（50℃）		9.01	12.51	9.32	0.00479	0.00665	0.00496	PASS
Extreme（40℃）		6.63	16.74	12.32	0.00352	0.00891	0.00655	PASS

Extreme（30℃）		3.16	2.00	2.10	0.00168	0.00106	0.00112	PASS
Extreme（20℃）		13.28	1.95	6.77	0.00706	0.00104	0.00360	PASS
Extreme（10℃）		8.13	10.28	10.27	0.00432	0.00547	0.00546	PASS
Extreme（0℃）		9.31	17.73	4.25	0.00495	0.00943	0.00226	PASS
Extreme（-10℃）		8.62	8.81	13.23	0.00458	0.00468	0.00704	PASS
Extreme（-20℃）		9.01	14.69	5.31	0.00479	0.00781	0.00283	PASS
Extreme（-30℃）		8.58	9.25	7.19	0.00456	0.00492	0.00383	PASS
25℃	LV	5.19	14.00	3.74	0.00276	0.00745	0.00199	PASS
	HV	6.34	8.48	7.77	0.00337	0.00451	0.00413	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	15MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）		16.10	17.35	3.92	0.00856	0.00923	0.00208	PASS
Extreme（60℃）		7.69	16.21	7.20	0.00409	0.00862	0.00383	PASS
Extreme（50℃）		2.14	3.83	9.98	0.00114	0.00204	0.00531	PASS
Extreme（40℃）		13.01	16.41	13.66	0.00692	0.00873	0.00727	PASS
Extreme（30℃）		7.41	10.55	8.26	0.00394	0.00561	0.00439	PASS
Extreme（20℃）	Normal	16.81	1.96	14.61	0.00894	0.00104	0.00777	PASS
Extreme（10℃）		9.72	13.23	11.91	0.00517	0.00704	0.00633	PASS
Extreme（0℃）		6.84	16.55	6.03	0.00364	0.00880	0.00321	PASS
Extreme（-10℃）		15.89	11.70	12.47	0.00845	0.00622	0.00663	PASS
Extreme（-20℃）		12.05	9.32	1.15	0.00641	0.00496	0.00061	PASS
Extreme（-30℃）		16.37	5.54	10.12	0.00871	0.00294	0.00538	PASS
25℃	LV	7.44	11.23	9.75	0.00396	0.00597	0.00519	PASS
	HV	17.29	3.84	11.51	0.00920	0.00204	0.00612	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	20MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）		7.49	13.96	4.57	0.00399	0.00743	0.00243	PASS
Extreme（60℃）		8.31	4.44	15.71	0.00442	0.00236	0.00835	PASS
Extreme（50℃）		11.99	12.56	7.04	0.00638	0.00668	0.00375	PASS
Extreme（40℃）		16.61	9.36	16.53	0.00884	0.00498	0.00879	PASS
Extreme（30℃）		13.00	7.47	7.26	0.00692	0.00397	0.00386	PASS
Extreme（20℃）	Normal	16.53	9.36	14.66	0.00879	0.00498	0.00780	PASS
Extreme（10℃）		5.07	5.75	3.90	0.00270	0.00306	0.00207	PASS
Extreme（0℃）		12.96	12.09	13.20	0.00689	0.00643	0.00702	PASS
Extreme（-10℃）		6.82	10.22	10.35	0.00363	0.00544	0.00550	PASS
Extreme（-20℃）		6.14	6.63	1.91	0.00326	0.00353	0.00102	PASS

Extreme（-30℃）		4.53	8.38	10.57	0.00241	0.00446	0.00562	PASS
25℃	LV	3.61	13.56	6.57	0.00192	0.00721	0.00349	PASS
	HV	16.67	16.66	13.82	0.00887	0.00886	0.00735	PASS

LTE Band 7								
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	5MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	3.93	1.80	8.02	0.00209	0.00096	0.00427	PASS
Extreme（60℃）		6.13	13.22	5.53	0.00326	0.00703	0.00294	PASS
Extreme（50℃）		1.13	11.80	15.67	0.00060	0.00628	0.00833	PASS
Extreme（40℃）		9.27	11.40	10.81	0.00493	0.00606	0.00575	PASS
Extreme（30℃）		3.01	16.96	1.30	0.00160	0.00902	0.00069	PASS
Extreme（20℃）		4.09	1.02	12.49	0.00217	0.00054	0.00664	PASS
Extreme（10℃）		8.56	11.95	15.14	0.00455	0.00636	0.00805	PASS
Extreme（0℃）		12.36	15.69	17.98	0.00658	0.00834	0.00956	PASS
Extreme（-10℃）		14.38	9.13	13.82	0.00765	0.00485	0.00735	PASS
Extreme（-20℃）		9.73	6.86	11.71	0.00518	0.00365	0.00623	PASS
Extreme（-30℃）		9.28	17.47	8.69	0.00493	0.00929	0.00462	PASS
25℃	LV	1.45	15.80	8.55	0.00077	0.00841	0.00455	PASS
	HV	11.68	1.83	4.13	0.00621	0.00097	0.00220	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	10MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	5.06	3.55	7.85	0.00269	0.00189	0.00417	PASS
Extreme（60℃）		4.32	8.59	1.26	0.00230	0.00457	0.00067	PASS
Extreme（50℃）		1.86	14.64	5.13	0.00099	0.00779	0.00273	PASS
Extreme（40℃）		11.22	3.44	16.40	0.00597	0.00183	0.00872	PASS
Extreme（30℃）		17.96	13.25	3.25	0.00955	0.00705	0.00173	PASS
Extreme（20℃）		15.22	14.62	14.72	0.00810	0.00778	0.00783	PASS
Extreme（10℃）		16.18	10.36	15.74	0.00861	0.00551	0.00837	PASS
Extreme（0℃）		5.63	16.06	11.25	0.00300	0.00854	0.00599	PASS
Extreme（-10℃）		17.93	3.68	17.94	0.00953	0.00196	0.00955	PASS
Extreme（-20℃）		9.13	15.63	2.69	0.00485	0.00832	0.00143	PASS
Extreme（-30℃）		8.86	17.36	7.88	0.00471	0.00924	0.00419	PASS
25℃	LV	3.61	14.00	3.42	0.00192	0.00745	0.00182	PASS
	HV	17.43	11.43	7.15	0.00927	0.00608	0.00381	PASS
Condition		Freq.Error	Freq.Error	Freq.Error	Frequency	Frequency	Frequency	Verdict

		(Hz)	(Hz)	(Hz)	Stability （ppm）	Stability （ppm）	Stability （ppm）	
BANDWIDTH	15MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	5.71	15.32	7.35	0.00304	0.00815	0.00391	PASS
Extreme（60℃）		7.75	13.11	4.41	0.00412	0.00698	0.00235	PASS
Extreme（50℃）		10.43	4.82	9.72	0.00555	0.00256	0.00517	PASS
Extreme（40℃）		13.53	16.75	5.90	0.00720	0.00891	0.00314	PASS
Extreme（30℃）		2.19	5.96	8.87	0.00116	0.00317	0.00472	PASS
Extreme（20℃）		8.95	6.14	3.79	0.00476	0.00327	0.00202	PASS
Extreme（10℃）		17.52	16.12	4.57	0.00932	0.00858	0.00243	PASS
Extreme（0℃）		6.26	5.54	5.60	0.00333	0.00295	0.00298	PASS
Extreme（-10℃）		7.82	14.30	5.18	0.00416	0.00761	0.00276	PASS
Extreme（-20℃）		3.04	10.77	17.09	0.00162	0.00573	0.00909	PASS
Extreme（-30℃）		6.79	4.53	10.59	0.00361	0.00241	0.00563	PASS
25℃	LV	11.64	17.58	5.29	0.00619	0.00935	0.00281	PASS
	HV	16.71	8.84	3.79	0.00889	0.00470	0.00201	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	20MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	1.85	16.74	14.72	0.00098	0.00890	0.00783	PASS
Extreme（60℃）		4.89	15.62	12.50	0.00260	0.00831	0.00665	PASS
Extreme（50℃）		8.78	14.33	13.32	0.00467	0.00762	0.00709	PASS
Extreme（40℃）		12.31	8.95	17.33	0.00655	0.00476	0.00922	PASS
Extreme（30℃）		2.27	12.46	7.77	0.00121	0.00663	0.00413	PASS
Extreme（20℃）		15.26	13.47	1.95	0.00812	0.00717	0.00104	PASS
Extreme（10℃）		6.81	8.06	2.02	0.00362	0.00429	0.00108	PASS
Extreme（0℃）		11.77	16.29	2.37	0.00626	0.00867	0.00126	PASS
Extreme（-10℃）		12.63	2.28	9.62	0.00672	0.00121	0.00512	PASS
Extreme（-20℃）		8.84	9.39	2.12	0.00470	0.00500	0.00113	PASS
Extreme（-30℃）		14.91	5.66	11.35	0.00793	0.00301	0.00604	PASS
25℃	LV	16.62	14.86	10.87	0.00884	0.00791	0.00578	PASS
	HV	13.05	10.19	4.02	0.00694	0.00542	0.00214	PASS

LTE Band 38								
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	5MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	14.93	12.00	2.78	0.00794	0.00639	0.00148	PASS
Extreme（60℃）		9.26	15.20	16.26	0.00493	0.00809	0.00865	PASS
Extreme（50℃）		15.13	8.92	9.11	0.00805	0.00474	0.00484	PASS
Extreme（40℃）		11.39	4.43	15.69	0.00606	0.00236	0.00834	PASS
Extreme（30℃）		11.57	4.17	6.53	0.00615	0.00222	0.00347	PASS
Extreme（20℃）		15.73	9.49	11.29	0.00837	0.00505	0.00601	PASS
Extreme（10℃）		5.99	17.30	6.24	0.00319	0.00920	0.00332	PASS
Extreme（0℃）		10.62	2.45	17.90	0.00565	0.00130	0.00952	PASS
Extreme（-10℃）		14.27	4.07	10.81	0.00759	0.00217	0.00575	PASS
Extreme（-20℃）		5.89	4.14	15.39	0.00313	0.00220	0.00819	PASS
Extreme（-30℃）		5.56	12.32	10.89	0.00296	0.00655	0.00579	PASS
25℃	LV	3.90	4.52	13.37	0.00207	0.00240	0.00711	PASS
	HV	16.39	5.85	16.33	0.00872	0.00311	0.00868	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	10MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	7.20	4.51	6.77	0.00383	0.00240	0.00360	PASS
Extreme（60℃）		8.74	4.34	6.36	0.00465	0.00231	0.00338	PASS
Extreme（50℃）		8.44	12.27	7.80	0.00449	0.00652	0.00415	PASS
Extreme（40℃）		6.87	12.26	2.21	0.00365	0.00652	0.00117	PASS
Extreme（30℃）		3.82	4.90	12.07	0.00203	0.00261	0.00642	PASS
Extreme（20℃）		5.72	7.54	15.54	0.00304	0.00401	0.00827	PASS
Extreme（10℃）		5.31	5.35	11.44	0.00282	0.00285	0.00608	PASS
Extreme（0℃）		9.31	2.42	7.66	0.00495	0.00129	0.00408	PASS
Extreme（-10℃）		14.17	1.50	5.14	0.00754	0.00080	0.00273	PASS
Extreme（-20℃）		4.23	12.60	6.39	0.00225	0.00670	0.00340	PASS
Extreme（-30℃）		14.07	13.19	3.45	0.00749	0.00702	0.00183	PASS
25℃	LV	1.14	1.53	7.80	0.00061	0.00082	0.00415	PASS
	HV	14.87	6.31	9.92	0.00791	0.00336	0.00527	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	15MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	

Normal（25℃）	Normal	7.42	13.50	8.34	0.00395	0.00718	0.00444	PASS
Extreme（60℃）		13.63	6.06	8.37	0.00725	0.00323	0.00445	PASS
Extreme（50℃）		10.40	13.45	10.68	0.00553	0.00715	0.00568	PASS
Extreme（40℃）		7.55	17.75	17.86	0.00402	0.00944	0.00950	PASS
Extreme（30℃）		6.39	17.88	11.85	0.00340	0.00951	0.00630	PASS
Extreme（20℃）		17.86	17.25	10.00	0.00950	0.00917	0.00532	PASS
Extreme（10℃）		7.65	11.18	2.89	0.00407	0.00595	0.00154	PASS
Extreme（0℃）		13.85	11.25	5.98	0.00737	0.00599	0.00318	PASS
Extreme（-10℃）		8.49	1.82	15.88	0.00452	0.00097	0.00845	PASS
Extreme（-20℃）		16.99	14.03	10.10	0.00904	0.00746	0.00537	PASS
Extreme（-30℃）		10.28	16.19	6.20	0.00547	0.00861	0.00330	PASS
25℃	LV	6.21	15.39	10.98	0.00330	0.00819	0.00584	PASS
	HV	8.91	5.56	10.21	0.00474	0.00296	0.00543	PASS

Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	20MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	15.54	6.85	14.96	0.00827	0.00364	0.00796	PASS
Extreme（60℃）		3.38	15.52	13.48	0.00180	0.00825	0.00717	PASS
Extreme（50℃）		2.37	15.74	17.75	0.00126	0.00837	0.00944	PASS
Extreme（40℃）		1.48	4.77	14.49	0.00079	0.00254	0.00771	PASS
Extreme（30℃）		17.34	8.03	14.81	0.00922	0.00427	0.00788	PASS
Extreme（20℃）		11.70	3.63	15.71	0.00622	0.00193	0.00836	PASS
Extreme（10℃）		6.85	16.43	2.81	0.00364	0.00874	0.00150	PASS
Extreme（0℃）		13.97	15.02	6.54	0.00743	0.00799	0.00348	PASS
Extreme（-10℃）		14.47	8.55	17.95	0.00770	0.00455	0.00955	PASS
Extreme（-20℃）		4.70	15.93	4.73	0.00250	0.00847	0.00252	PASS
Extreme（-30℃）		11.27	10.72	16.58	0.00600	0.00570	0.00882	PASS
25℃	LV	9.48	3.96	8.94	0.00504	0.00211	0.00476	PASS
	HV	17.51	16.33	8.11	0.00931	0.00868	0.00431	PASS

LTE Band 41								
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	5MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	10.47	8.90	1.25	0.00557	0.00474	0.00066	PASS
Extreme（60℃）		1.07	11.09	17.21	0.00057	0.00590	0.00916	PASS
Extreme（50℃）		1.68	2.90	14.53	0.00090	0.00154	0.00773	PASS
Extreme（40℃）		17.57	17.36	4.42	0.00935	0.00923	0.00235	PASS
Extreme（30℃）		12.23	11.33	12.93	0.00651	0.00603	0.00688	PASS
Extreme（20℃）		9.42	9.13	6.06	0.00501	0.00486	0.00323	PASS
Extreme（10℃）		5.14	3.32	11.90	0.00273	0.00176	0.00633	PASS
Extreme（0℃）		12.19	1.08	16.42	0.00648	0.00057	0.00873	PASS
Extreme（-10℃）		7.17	14.90	6.90	0.00381	0.00793	0.00367	PASS
Extreme（-20℃）		11.91	13.83	15.68	0.00634	0.00736	0.00834	PASS
Extreme（-30℃）		15.70	13.12	11.65	0.00835	0.00698	0.00619	PASS
25℃	LV	5.55	7.70	14.93	0.00295	0.00410	0.00794	PASS
	HV	11.29	15.15	12.76	0.00601	0.00806	0.00679	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	10MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	11.63	3.34	4.04	0.00618	0.00178	0.00215	PASS
Extreme（60℃）		15.86	15.21	6.61	0.00843	0.00809	0.00352	PASS
Extreme（50℃）		2.58	7.51	1.36	0.00137	0.00399	0.00073	PASS
Extreme（40℃）		11.12	2.37	15.23	0.00592	0.00126	0.00810	PASS
Extreme（30℃）		2.11	8.71	16.62	0.00112	0.00463	0.00884	PASS
Extreme（20℃）		16.27	16.19	4.30	0.00866	0.00861	0.00229	PASS
Extreme（10℃）		7.88	8.85	8.88	0.00419	0.00471	0.00473	PASS
Extreme（0℃）		9.96	14.90	4.65	0.00530	0.00792	0.00247	PASS
Extreme（-10℃）		6.59	15.26	4.34	0.00350	0.00812	0.00231	PASS
Extreme（-20℃）		11.41	6.17	7.17	0.00607	0.00328	0.00382	PASS
Extreme（-30℃）		7.79	1.84	17.22	0.00414	0.00098	0.00916	PASS
25℃	LV	4.60	7.18	9.01	0.00245	0.00382	0.00479	PASS
	HV	10.36	10.59	11.64	0.00551	0.00563	0.00619	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	15MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	

Normal（25℃）	Normal	11.55	11.52	12.81	0.00614	0.00613	0.00682	PASS
Extreme（60℃）		5.01	4.11	1.24	0.00267	0.00219	0.00066	PASS
Extreme（50℃）		8.74	10.23	16.48	0.00465	0.00544	0.00877	PASS
Extreme（40℃）		2.05	9.21	17.43	0.00109	0.00490	0.00927	PASS
Extreme（30℃）		8.69	8.72	4.85	0.00462	0.00464	0.00258	PASS
Extreme（20℃）		10.95	9.15	11.86	0.00583	0.00487	0.00631	PASS
Extreme（10℃）		16.95	8.95	9.00	0.00902	0.00476	0.00479	PASS
Extreme（0℃）		2.50	17.56	9.79	0.00133	0.00934	0.00521	PASS
Extreme（-10℃）		13.63	6.42	8.00	0.00725	0.00341	0.00425	PASS
Extreme（-20℃）		10.03	17.09	8.48	0.00533	0.00909	0.00451	PASS
Extreme（-30℃）		2.46	11.11	11.00	0.00131	0.00591	0.00585	PASS
25℃	LV	5.49	15.10	16.58	0.00292	0.00803	0.00882	PASS
	HV	9.32	7.55	14.51	0.00496	0.00402	0.00772	PASS

Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	20MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	17.14	3.02	11.17	0.00912	0.00161	0.00594	PASS
Extreme（60℃）		14.83	1.93	4.20	0.00789	0.00103	0.00223	PASS
Extreme（50℃）		12.38	4.32	14.24	0.00659	0.00230	0.00757	PASS
Extreme（40℃）		13.34	10.08	15.04	0.00710	0.00536	0.00800	PASS
Extreme（30℃）		10.43	1.64	13.81	0.00555	0.00087	0.00734	PASS
Extreme（20℃）		5.61	14.69	15.54	0.00299	0.00782	0.00826	PASS
Extreme（10℃）		1.78	5.59	11.26	0.00094	0.00297	0.00599	PASS
Extreme（0℃）		1.77	2.48	6.29	0.00094	0.00132	0.00335	PASS
Extreme（-10℃）		12.41	8.33	14.95	0.00660	0.00443	0.00795	PASS
Extreme（-20℃）		16.32	3.09	15.00	0.00868	0.00165	0.00798	PASS
Extreme（-30℃）		8.43	10.94	2.03	0.00448	0.00582	0.00108	PASS
25℃	LV	17.03	14.87	4.00	0.00906	0.00791	0.00213	PASS
	HV	8.73	13.75	15.24	0.00464	0.00731	0.00811	PASS

CA_38C_QPSK		15MHz+15MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal（25℃）	Normal	8.84	0.00470	15.17	0.00807	PASS
Extreme（60℃）		15.56	0.00828	8.67	0.00461	PASS
Extreme（50℃）		5.41	0.00288	12.07	0.00642	PASS
Extreme（40℃）		3.43	0.00182	8.21	0.00437	PASS
Extreme（30℃）		11.29	0.00600	3.52	0.00187	PASS
Extreme（20℃）		8.24	0.00438	13.61	0.00724	PASS
Extreme（10℃）		7.09	0.00377	12.25	0.00651	PASS
Extreme（0℃）		16.94	0.00901	8.01	0.00426	PASS
Extreme（-10℃）		5.38	0.00286	6.11	0.00325	PASS
Extreme（-20℃）		2.93	0.00156	6.39	0.00340	PASS
Extreme（-30℃）		14.44	0.00768	17.75	0.00944	PASS
25℃	LV	13.87	0.00738	12.37	0.00658	PASS
	HV	6.40	0.00341	17.61	0.00937	PASS
CA_38C_16QAM		15MHz+15MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal（25℃）	Normal	3.45	0.00184	4.86	0.00259	PASS
Extreme（60℃）		16.03	0.00853	1.59	0.00084	PASS
Extreme（50℃）		2.56	0.00136	12.47	0.00664	PASS
Extreme（40℃）		6.48	0.00345	12.74	0.00678	PASS
Extreme（30℃）		15.69	0.00834	7.00	0.00372	PASS
Extreme（20℃）		2.65	0.00141	12.32	0.00655	PASS
Extreme（10℃）		16.55	0.00880	2.03	0.00108	PASS
Extreme（0℃）		2.17	0.00115	11.37	0.00605	PASS
Extreme（-10℃）		3.94	0.00209	12.12	0.00645	PASS
Extreme（-20℃）		6.92	0.00368	17.91	0.00953	PASS
Extreme（-30℃）		2.69	0.00143	8.98	0.00478	PASS
25℃	LV	8.05	0.00428	8.43	0.00448	PASS
	HV	8.55	0.00455	17.15	0.00912	PASS
CA_38C_64QAM		15MHz+15MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal（25℃）	Normal	12.48	0.00664	15.87	0.00844	PASS

Extreme（60℃）		8.74	0.00465	8.02	0.00427	PASS
Extreme（50℃）		10.15	0.00540	2.28	0.00121	PASS
Extreme（40℃）		6.51	0.00346	2.93	0.00156	PASS
Extreme（30℃）		16.31	0.00868	12.14	0.00645	PASS
Extreme（20℃）		2.39	0.00127	15.81	0.00841	PASS
Extreme（10℃）		14.29	0.00760	2.03	0.00108	PASS
Extreme（0℃）		7.93	0.00422	12.62	0.00671	PASS
Extreme（-10℃）		7.00	0.00373	2.99	0.00159	PASS
Extreme（-20℃）		4.95	0.00263	14.37	0.00765	PASS
Extreme（-30℃）		5.26	0.00280	15.47	0.00823	PASS
25℃	LV	14.23	0.00757	10.82	0.00576	PASS
	HV	4.75	0.00252	12.55	0.00667	PASS

CA_7C_QPSK		20MHz+10MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal（25℃）	Normal	13.64	0.00726	15.12	0.00804	PASS
Extreme（60℃）		11.05	0.00588	6.10	0.00324	PASS
Extreme（50℃）		3.59	0.00191	2.33	0.00124	PASS
Extreme（40℃）		4.60	0.00245	17.35	0.00923	PASS
Extreme（30℃）		13.27	0.00706	8.87	0.00472	PASS
Extreme（20℃）		16.89	0.00899	16.42	0.00873	PASS
Extreme（10℃）		3.66	0.00195	6.44	0.00343	PASS
Extreme（0℃）		8.80	0.00468	11.66	0.00620	PASS
Extreme（-10℃）		9.25	0.00492	12.03	0.00640	PASS
Extreme（-20℃）		7.57	0.00403	15.82	0.00841	PASS
Extreme（-30℃）		2.27	0.00121	5.27	0.00280	PASS
25℃	LV	6.75	0.00359	5.56	0.00296	PASS
	HV	5.31	0.00282	13.53	0.00720	PASS
CA_7C_16QAM		20MHz+10MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal（25℃）	Normal	7.38	0.00392	15.60	0.00830	PASS
Extreme（60℃）		9.07	0.00483	13.59	0.00723	PASS
Extreme（50℃）		13.80	0.00734	11.12	0.00592	PASS
Extreme（40℃）		15.80	0.00841	13.69	0.00728	PASS
Extreme（30℃）		7.59	0.00404	7.80	0.00415	PASS

Extreme（20℃）		10.38	0.00552	5.84	0.00311	PASS
Extreme（10℃）		14.69	0.00781	7.89	0.00420	PASS
Extreme（0℃）		16.03	0.00853	15.15	0.00806	PASS
Extreme（-10℃）		6.48	0.00345	1.79	0.00095	PASS
Extreme（-20℃）		16.01	0.00852	6.60	0.00351	PASS
Extreme（-30℃）		14.09	0.00749	5.86	0.00312	PASS
25℃	LV	13.94	0.00741	14.81	0.00788	PASS
	HV	10.25	0.00545	13.90	0.00739	PASS
CA_7C_64QAM		20MHz+10MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal（25℃）	Normal	7.34	0.00390	15.01	0.00799	PASS
Extreme（60℃）		7.75	0.00412	12.99	0.00691	PASS
Extreme（50℃）		12.48	0.00664	15.17	0.00807	PASS
Extreme（40℃）		2.00	0.00106	7.66	0.00408	PASS
Extreme（30℃）		10.86	0.00578	11.07	0.00589	PASS
Extreme（20℃）		5.84	0.00311	11.05	0.00588	PASS
Extreme（10℃）		11.38	0.00605	15.03	0.00799	PASS
Extreme（0℃）		11.17	0.00594	7.91	0.00421	PASS
Extreme（-10℃）		13.60	0.00723	17.23	0.00916	PASS
Extreme（-20℃）		7.59	0.00404	3.97	0.00211	PASS
Extreme（-30℃）		13.80	0.00734	1.65	0.00088	PASS
25℃	LV	5.68	0.00302	17.22	0.00916	PASS
	HV	5.08	0.00270	7.65	0.00407	PASS

5.6 Spurious Emissions at Antenna Terminals

Ambient condition

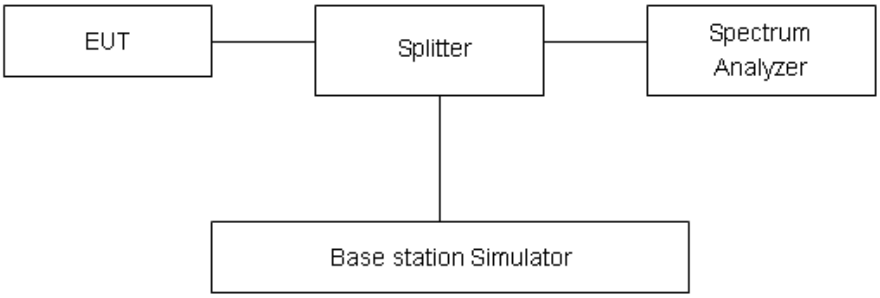
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 9kHz to the 10th harmonic of the carrier. The peak detector is used.
RBW is set to 100kHz, VBW is set to 300kHz for 30MHz~1GHz
RBW is set to 1MHz, VBW is set to 3MHz for above 1GHz, Sweep is set to ATUO.
RBW is set to 1 kHz (0.009MHz~ 0.15 MHz),
RBW is set to 10 kHz (0.15 MHz~ 30 MHz)
RBW is set to 100 kHz (30MHz~1000 MHz)
RBW is set to 1000 kHz (above 1000MHz)

Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup



Limits

Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB..”
Rule Part 27.53(m) 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section.
(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;
(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated

outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;
(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations;
(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;
(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

Part 27.53(a)/(h)/(g) Limit		-13 dBm
Part 27.53(f) Limit	Limit out of the band 1559-1610 MHz	-13 dBm
	Limit in the band 1559-1610 MHz	-40 dBm
Part 27.53(m) Limit		-25 dBm

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor *k* = 1.96.

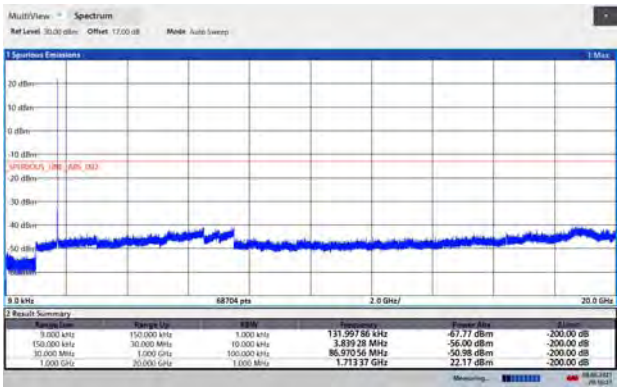
Frequency	Uncertainty
9kHz-1GHz	0.684 dB
1GHz-27GHz	1.407 dB

Test Result

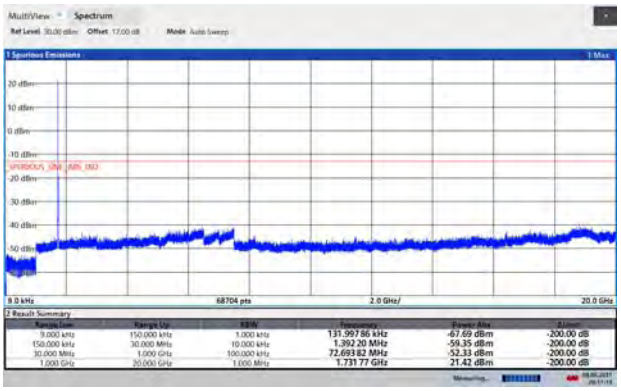
Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions more than 20 dB below the limit are not reported.

The signal beyond the limit is carrier.

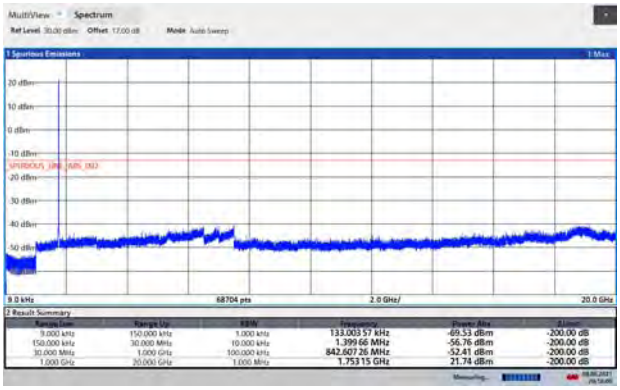
WCDMA Band IV CH-Low 9kHz~20GHz



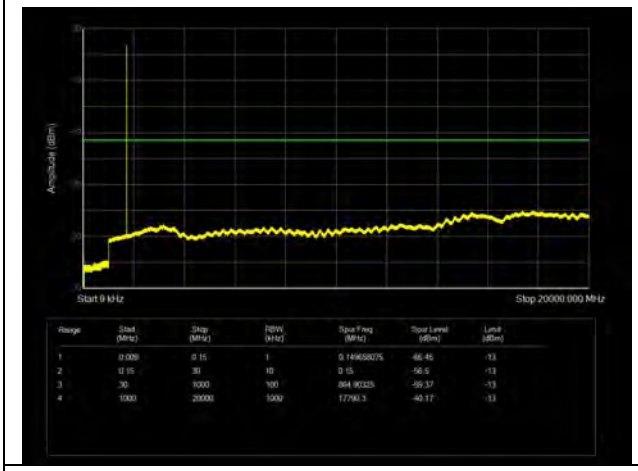
WCDMA Band IV CH-Middle 9kHz~20GHz



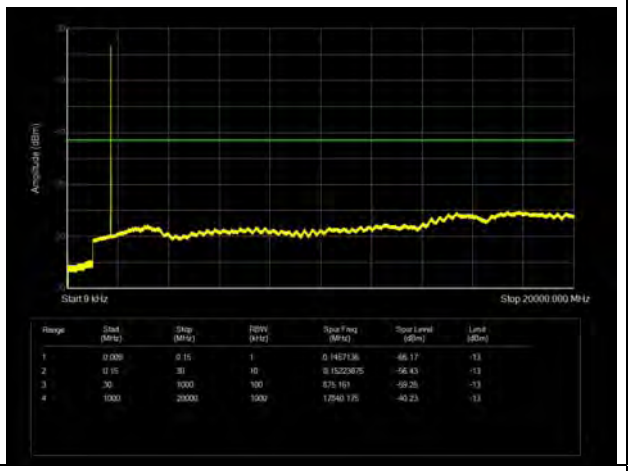
WCDMA Band IV CH-High 9kHz~20GHz



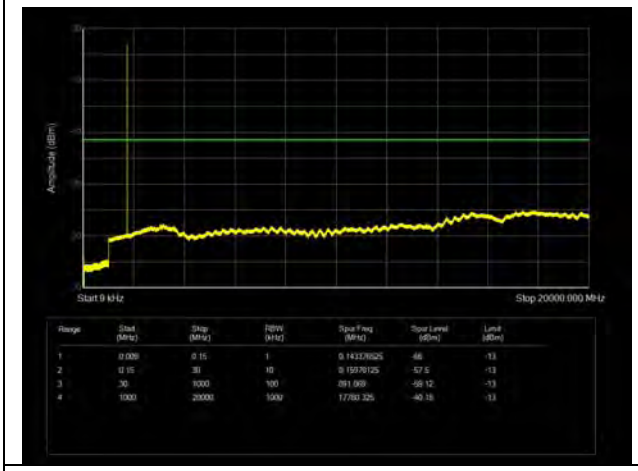
LTE Band 4 1.4MHz CH-Low 9kHz~20GHz



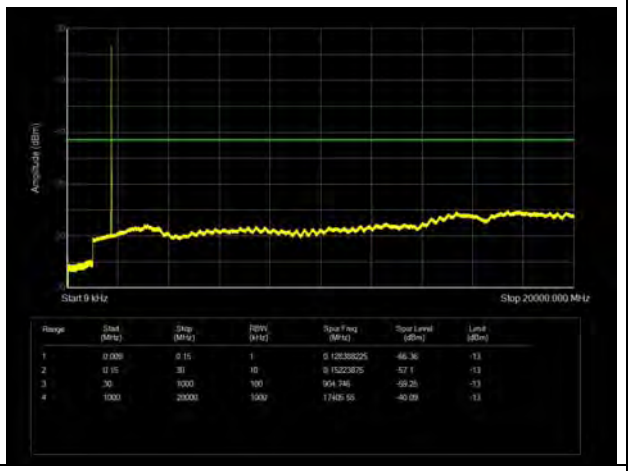
LTE Band 4 5MHz CH- Low 9kHz~20GHz



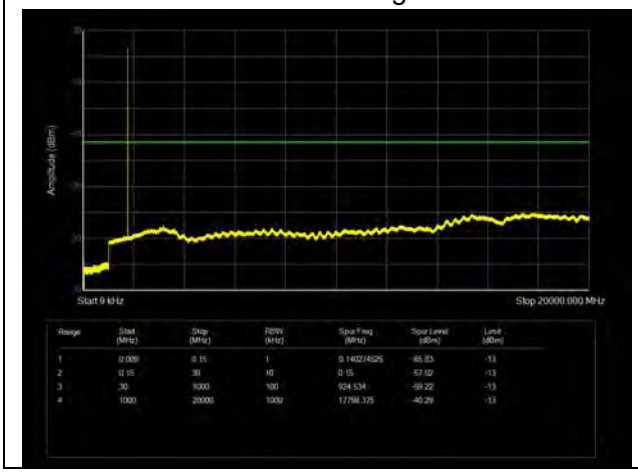
LTE Band 4 1.4MHz CH- Middle 9kHz~20GHz



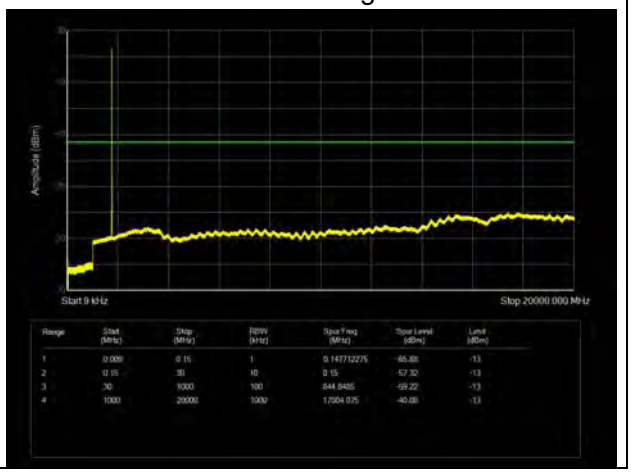
LTE Band 4 5MHz CH- Middle 9kHz~20GHz



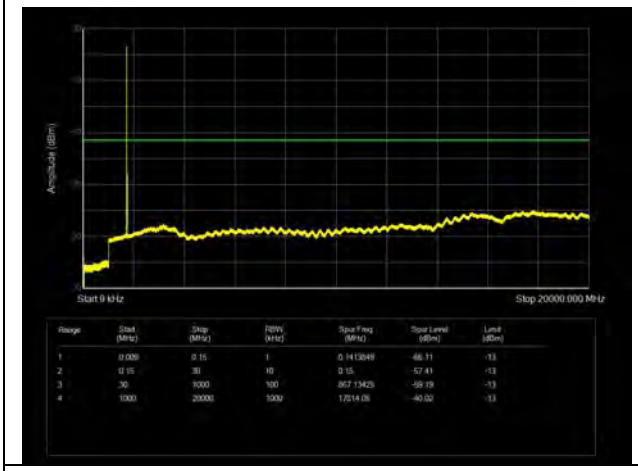
LTE Band 4 1.4MHz CH- High 9kHz~20GHz



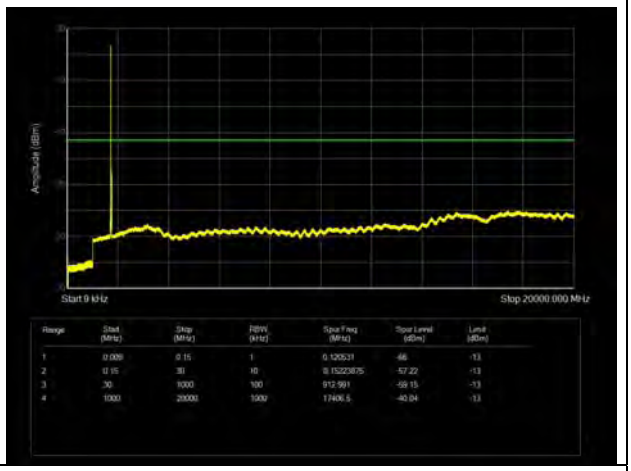
LTE Band 4 5MHz CH-High 9kHz~20GHz



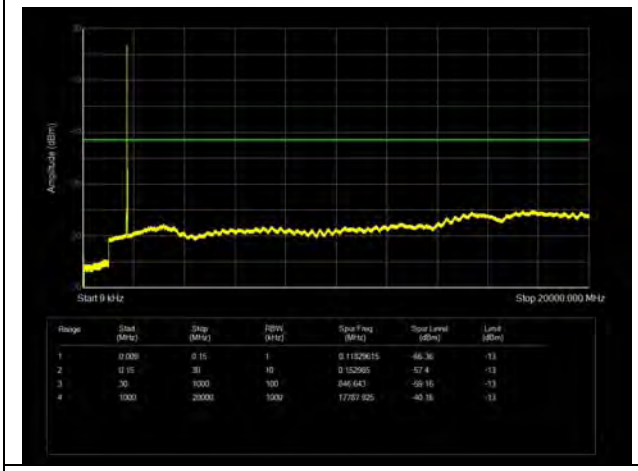
LTE Band 4 15MHz CH- Low 9kHz~20GHz



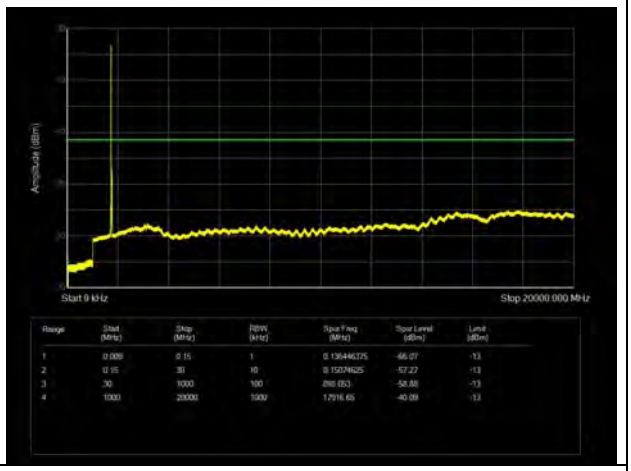
LTE Band 4 20MHz CH-Low 9kHz~20GHz



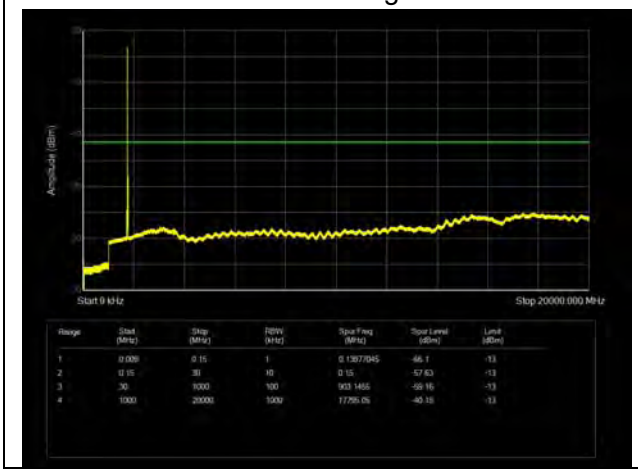
LTE Band 4 15MHz CH- Middle 9kHz~20GHz



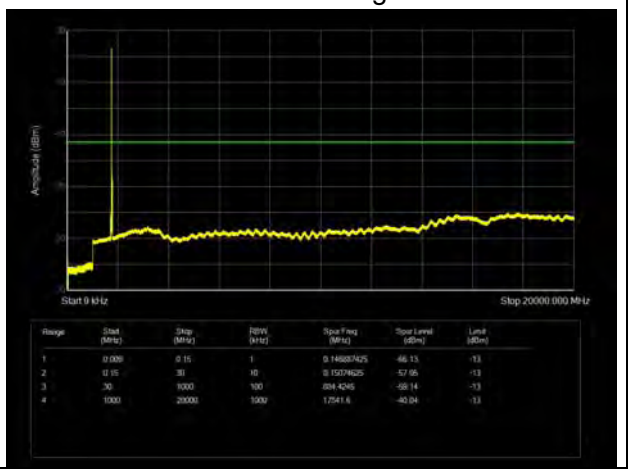
LTE Band 4 20MHz CH- Middle 9kHz~20GHz



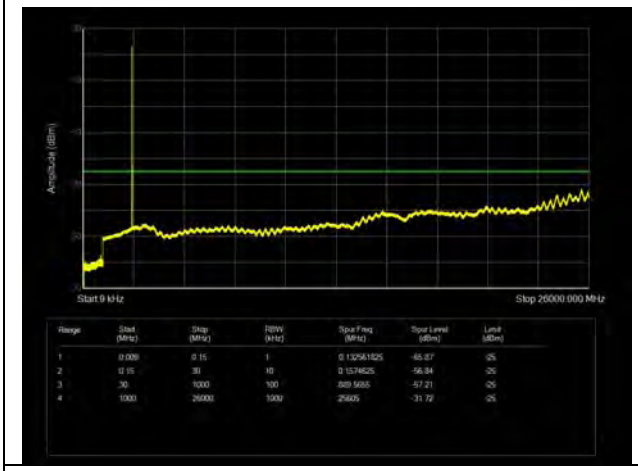
LTE Band 4 15MHz CH-High 9kHz~20GHz



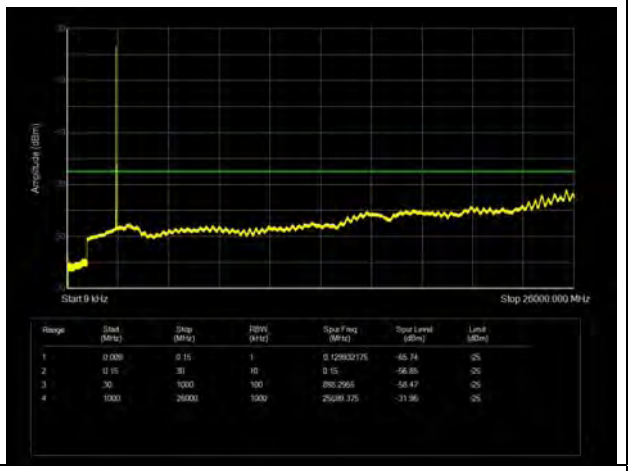
LTE Band 4 20MHz CH- High 9kHz~20GHz



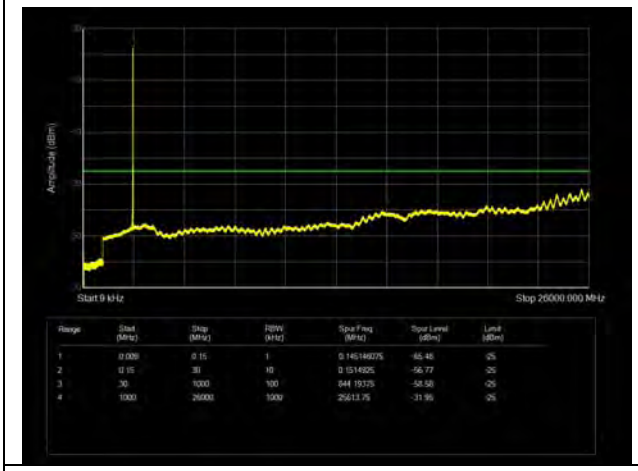
LTE Band 7 5MHz CH- Low 9kHz~26GHz



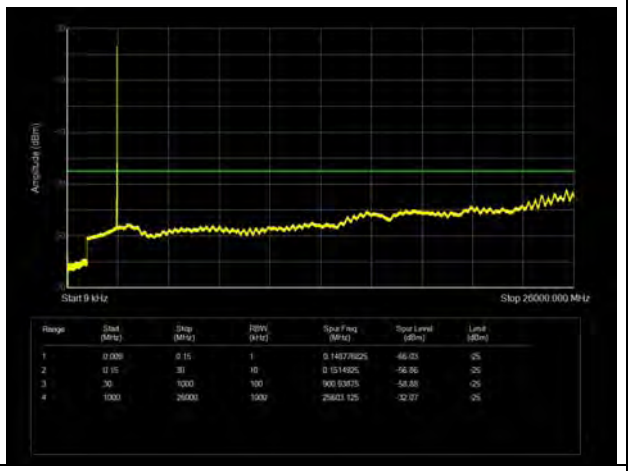
LTE Band 7 10MHz CH-Low 9kHz~26GHz



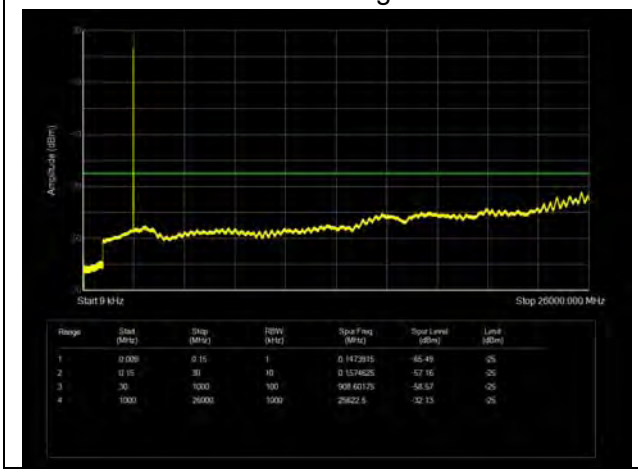
LTE Band 7 5MHz CH- Middle 9kHz~26GHz



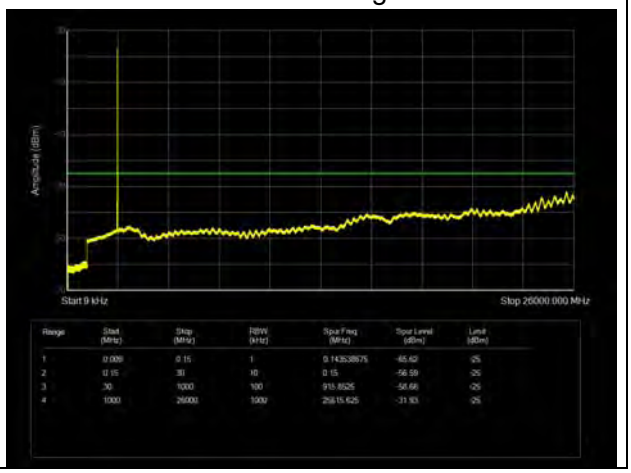
LTE Band 7 10MHz CH- Middle 9kHz~26GHz



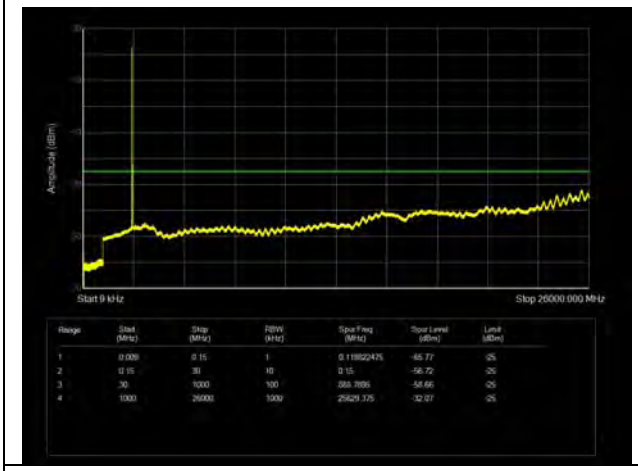
LTE Band 7 5MHz CH-High 9kHz~26GHz



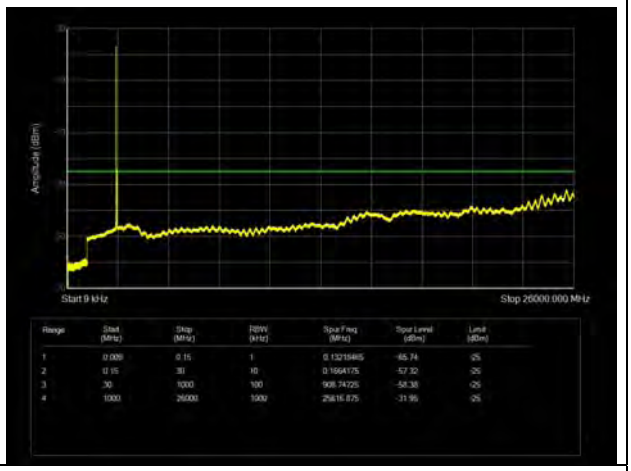
LTE Band 7 10MHz CH- High 9kHz~26GHz



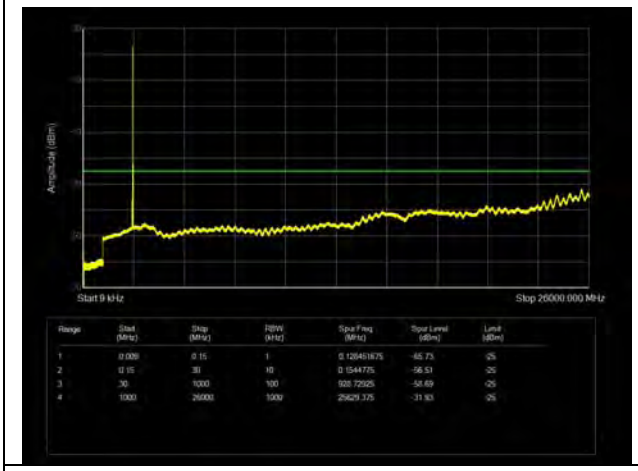
LTE Band 7 15MHz CH- Low 9kHz~26GHz



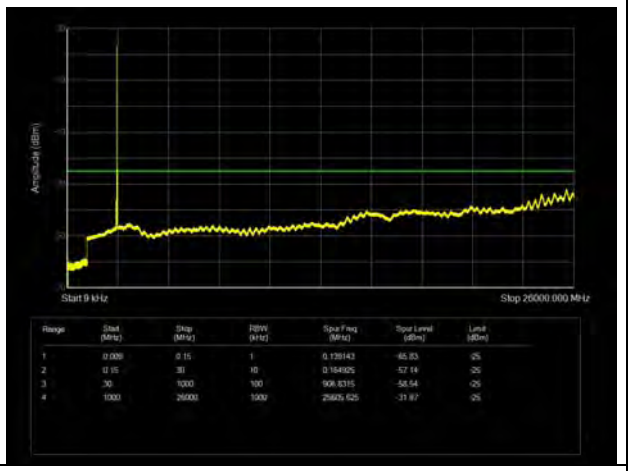
LTE Band 7 20MHz CH-Low 9kHz~26GHz



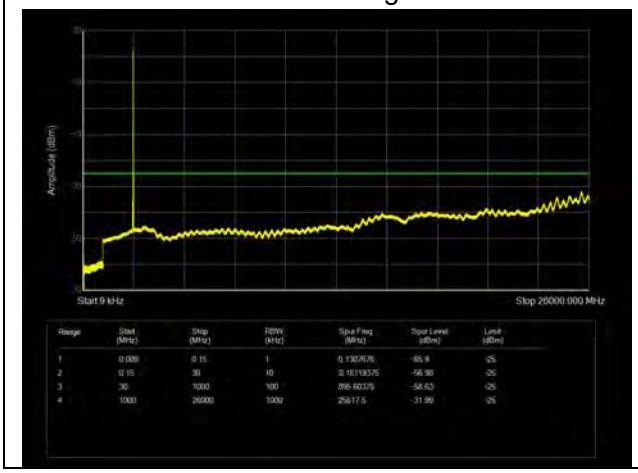
LTE Band 7 15MHz CH- Middle 9kHz~26GHz



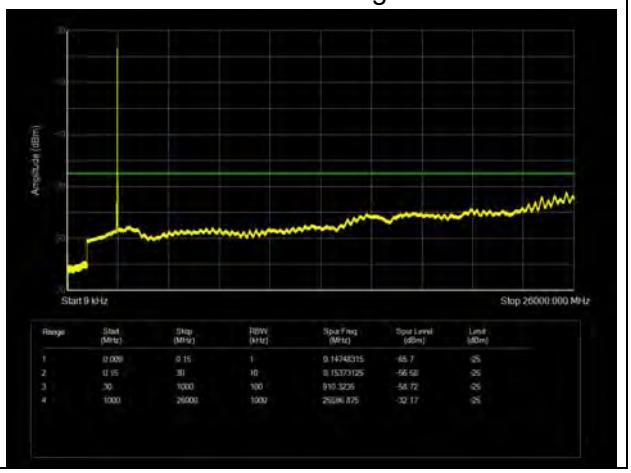
LTE Band 7 20MHz CH- Middle 9kHz~26GHz



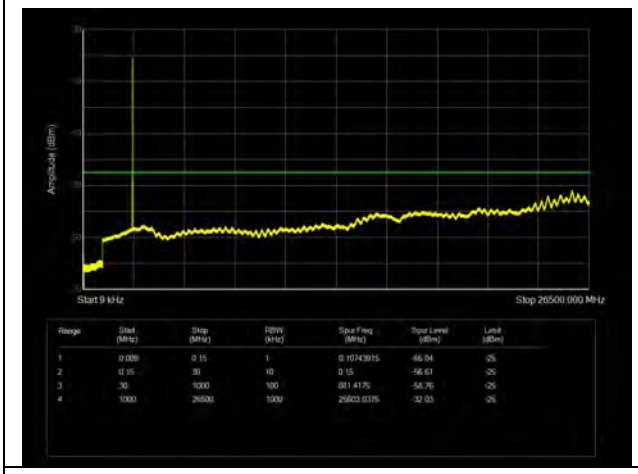
LTE Band 7 15MHz CH-High 9kHz~26GHz



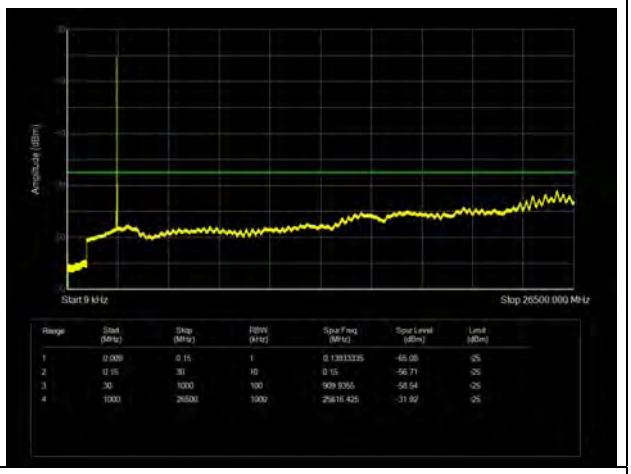
LTE Band 7 20MHz CH- High 9kHz~26GHz



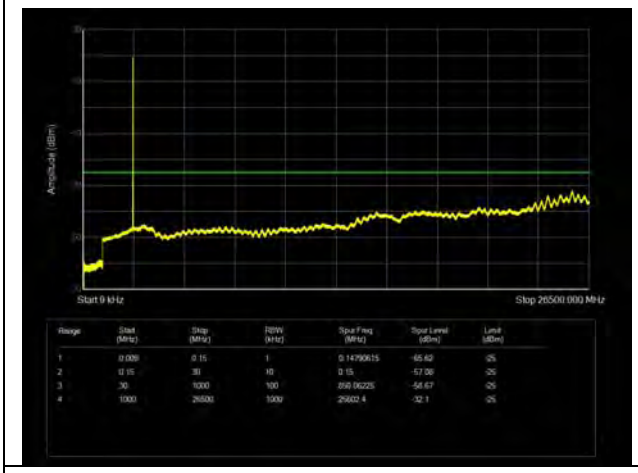
LTE Band 38 5MHz CH- Low 9kHz~26.5GHz



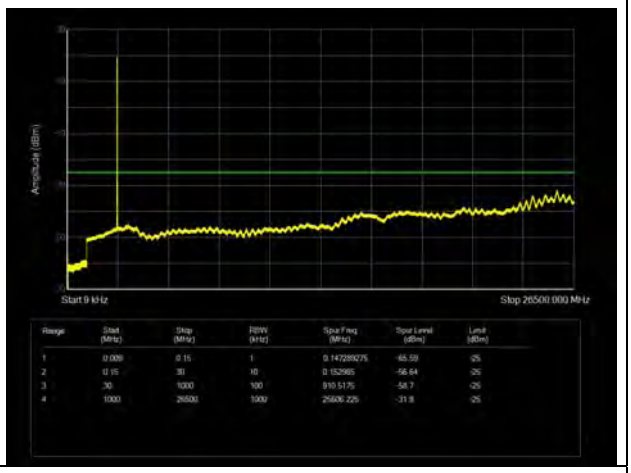
LTE Band 38 10MHz CH-Low 9kHz~26.5GHz



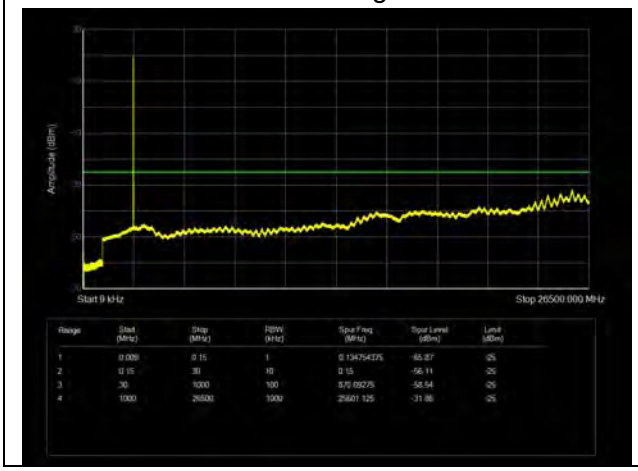
LTE Band 38 5MHz CH- Middle 9kHz~26.5GHz



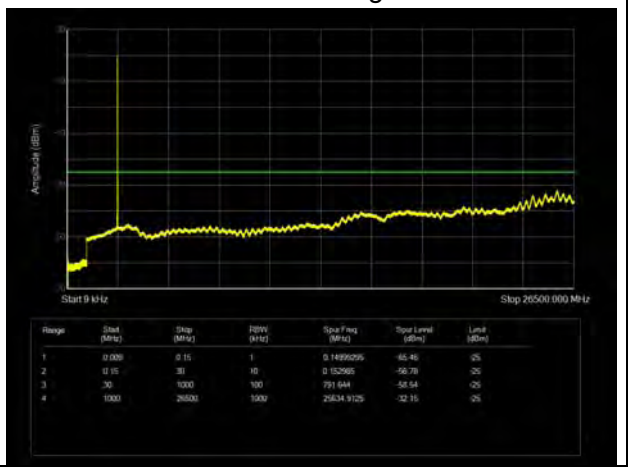
LTE Band 38 10MHz CH- Middle 9kHz~26.5GHz



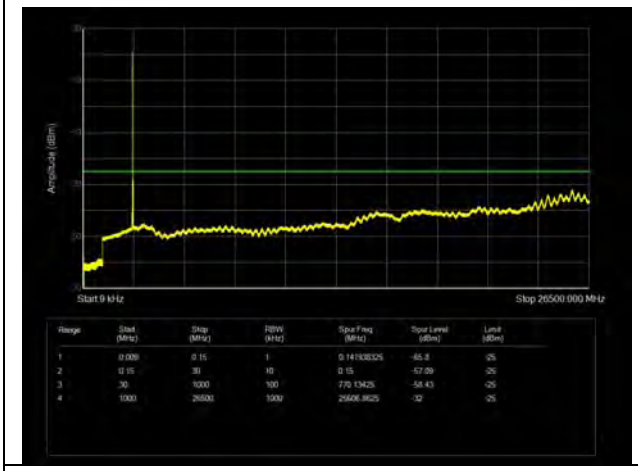
LTE Band 38 5MHz CH-High 9kHz~26.5GHz



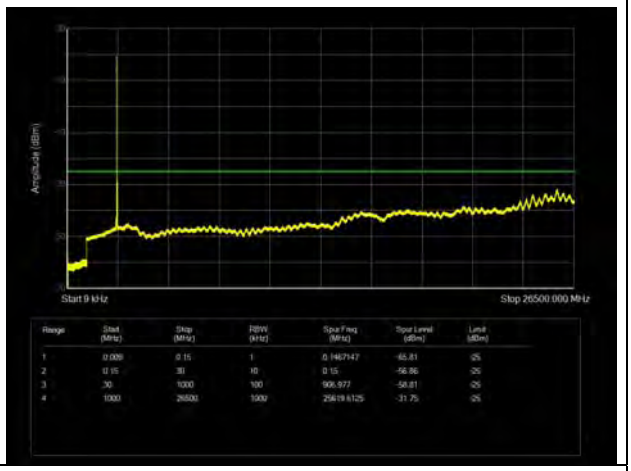
LTE Band 38 10MHz CH- High 9kHz~26.5GHz



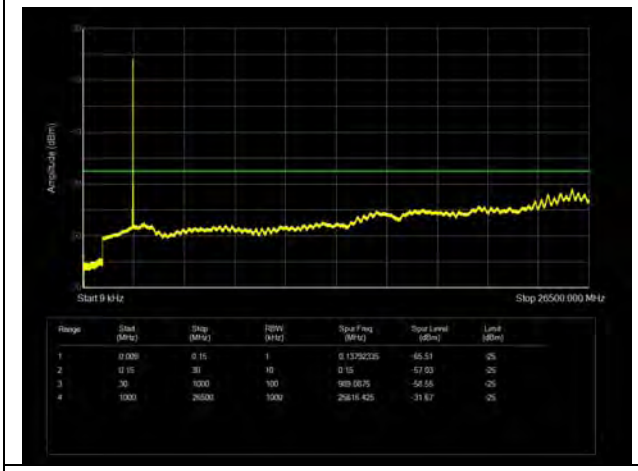
LTE Band 38 15MHz CH- Low 9kHz~26.5GHz



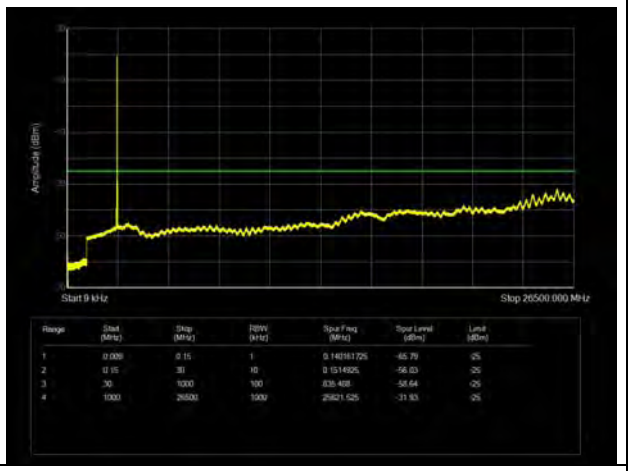
LTE Band 38 20MHz CH-Low 9kHz~26.5GHz



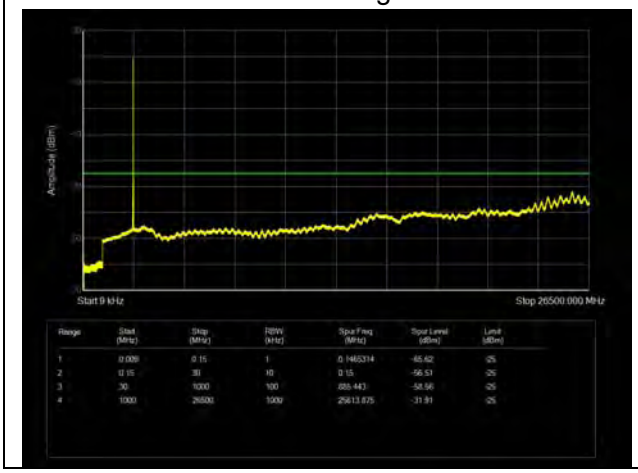
LTE Band 38 15MHz CH- Middle 9kHz~26.5GHz



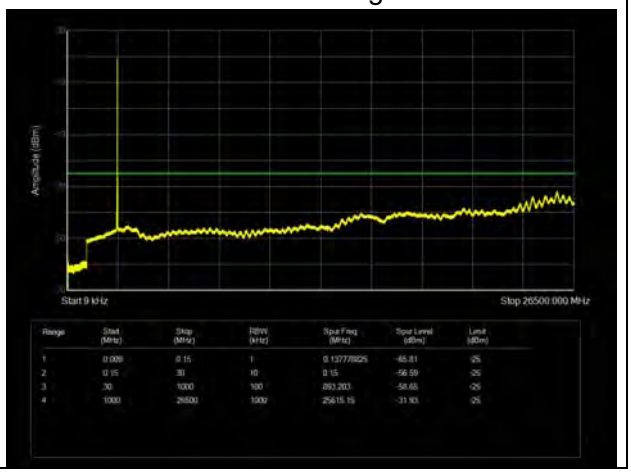
LTE Band 38 20MHz CH- Middle 9kHz~26.5GHz



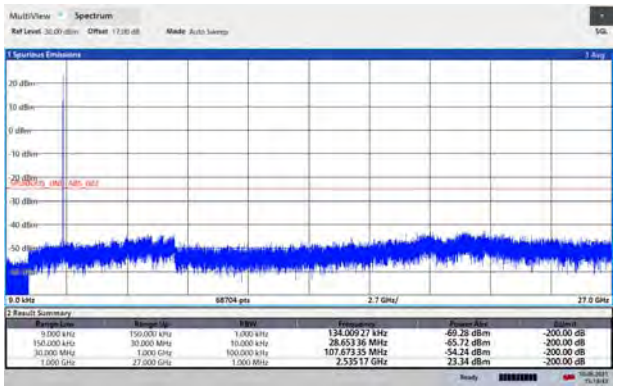
LTE Band 3815MHz CH-High 9kHz~26.5GHz



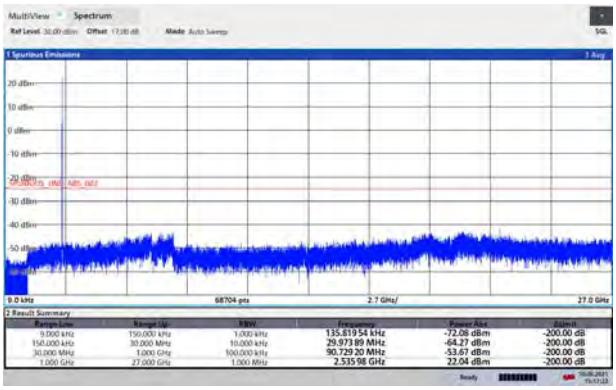
LTE Band 38 20MHz CH- High 9kHz~26.5GHz



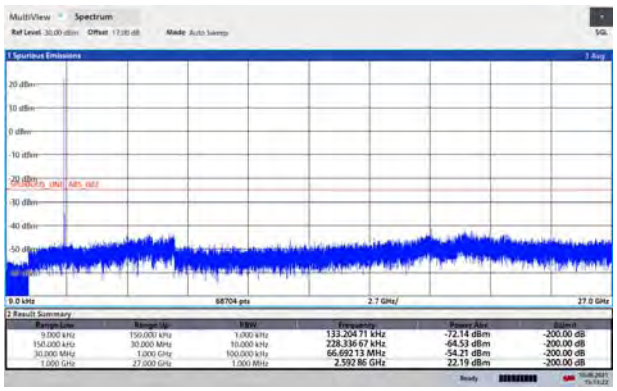
LTE Band 41 5MHz CH- Low 9kHz~27GHz



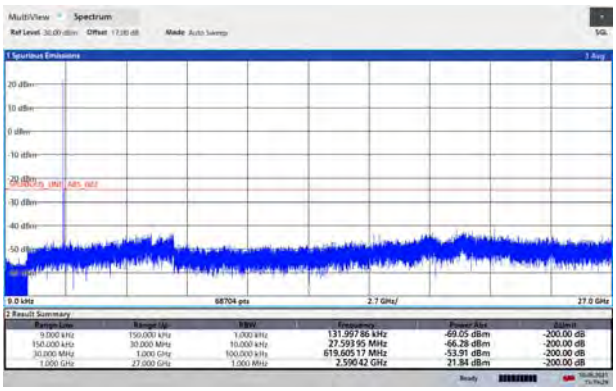
LTE Band 41 10MHz CH-Low 9kHz~27GHz



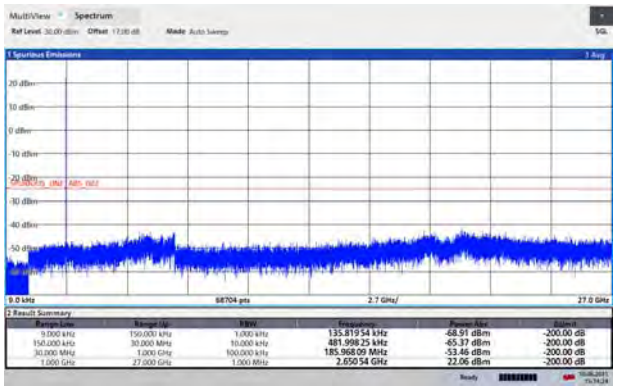
LTE Band 41 5MHz CH- Middle 9kHz~27GHz



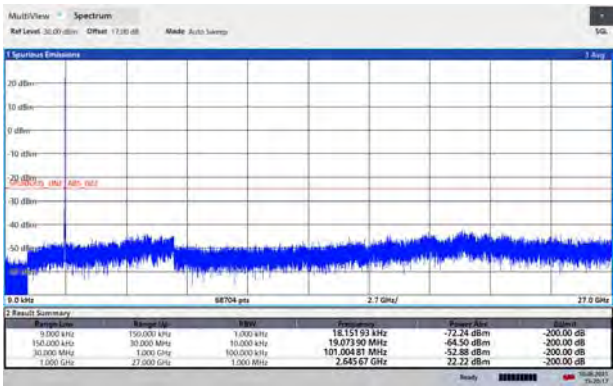
LTE Band 41 10MHz CH- Middle 9kHz~27GHz



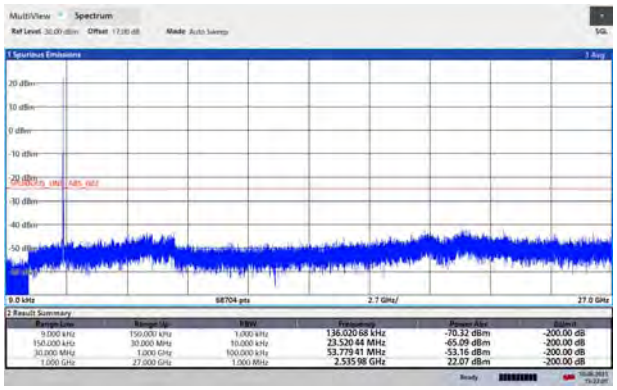
LTE Band 41 5MHz CH-High 9kHz~27GHz



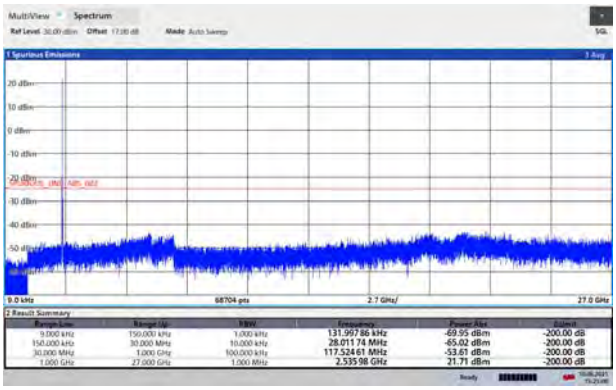
LTE Band 41 10MHz CH- High 9kHz~27GHz



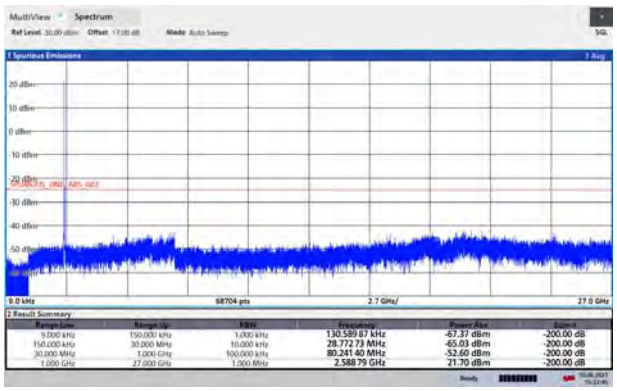
LTE Band 41 15MHz CH- Low 9kHz~27GHz



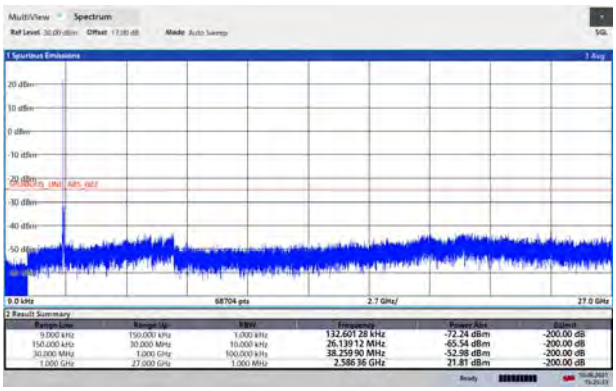
LTE Band 41 20MHz CH-Low 9kHz~27GHz



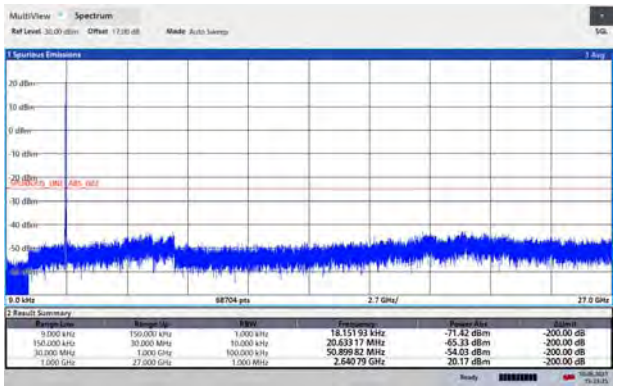
LTE Band 41 15MHz CH- Middle 9kHz~27GHz



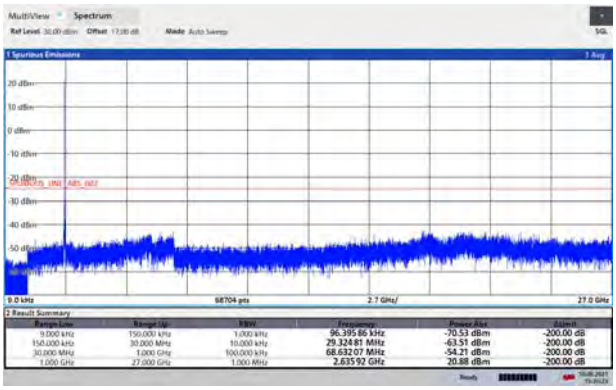
LTE Band 41 20MHz CH- Middle 9kHz~27GHz



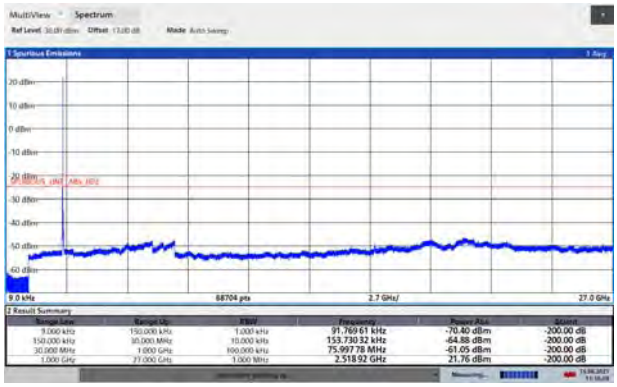
LTE Band 41 15MHz CH-High 9kHz~27GHz



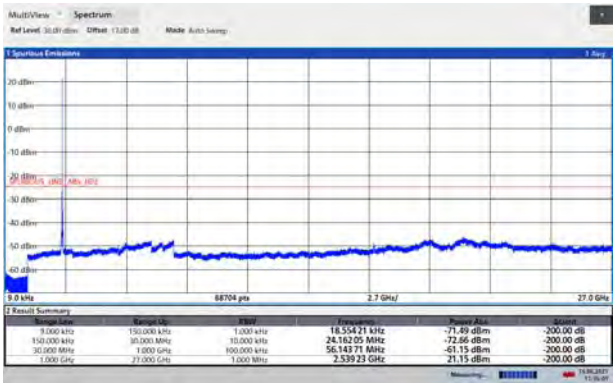
LTE Band 41 20MHz CH- High 9kHz~27GHz



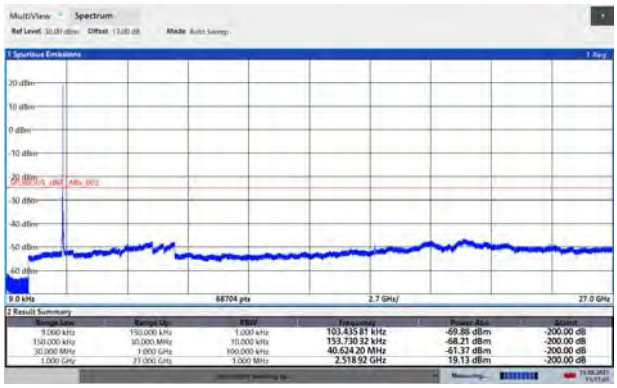
CA_7C_20MHz+10MHz_QPSK CH-Low
9kHz~27GHz



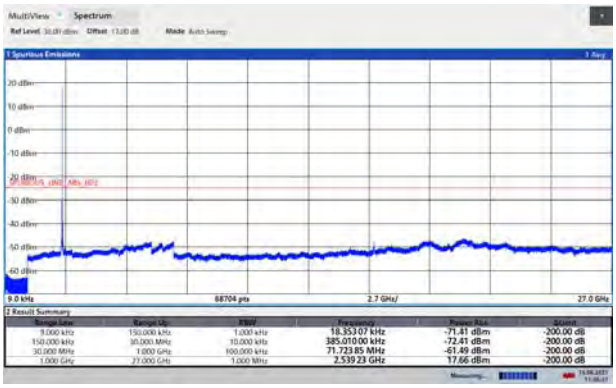
CA_7C_20MHz+10MHz_QPSK CH-Middle
9kHz~27GHz



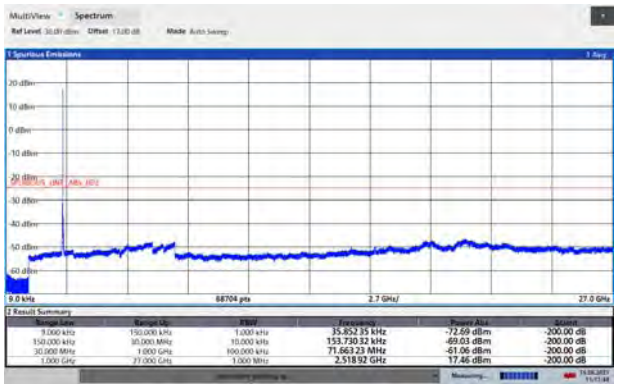
CA_7C_20MHz+10MHz_16QAM CH-Low
9kHz~27GHz



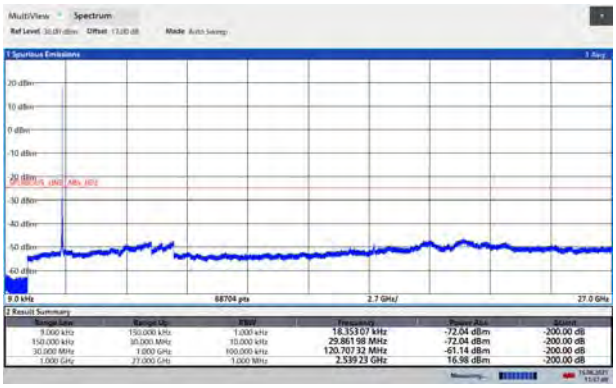
CA_7C_20MHz+10MHz_16QAM CH-Middle
9kHz~27GHz

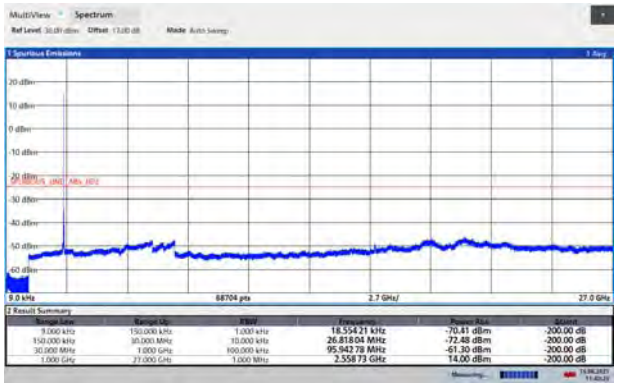
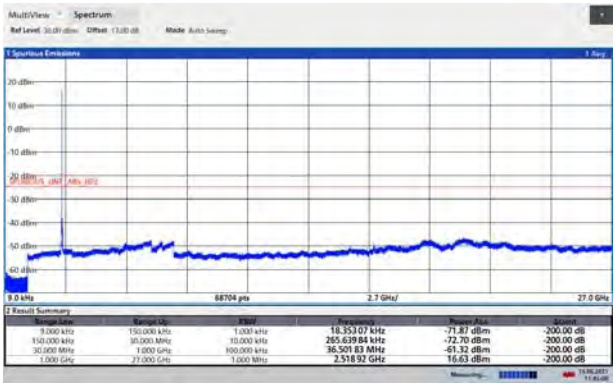
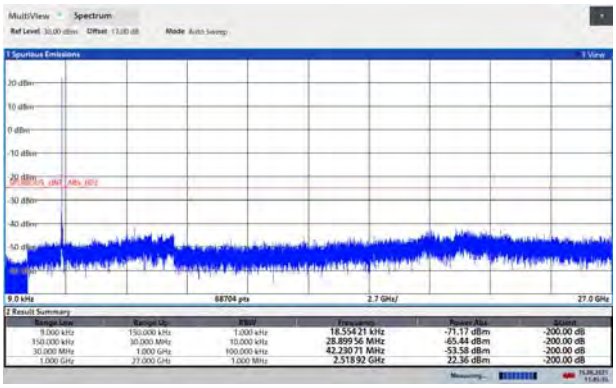
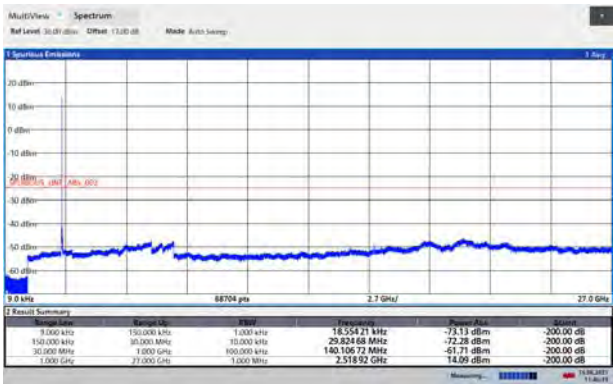


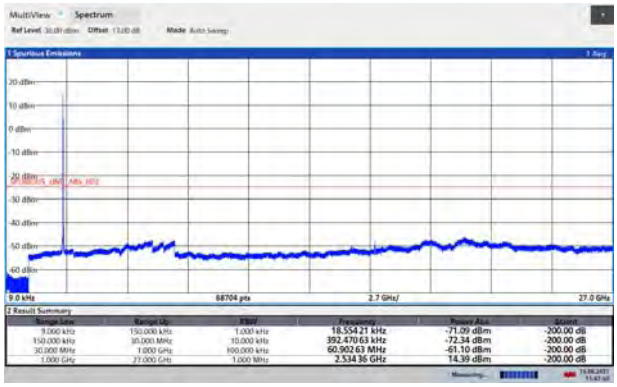
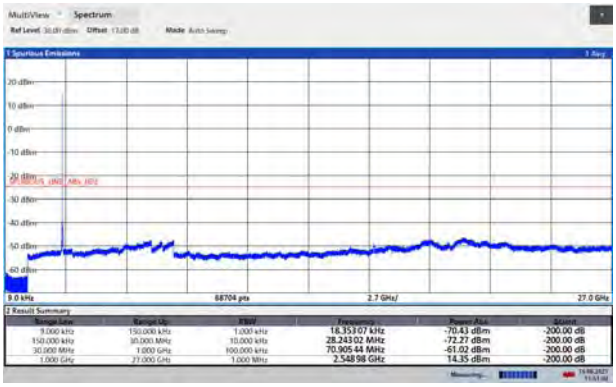
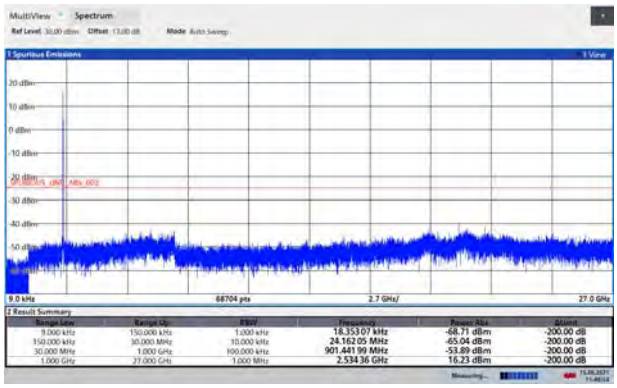
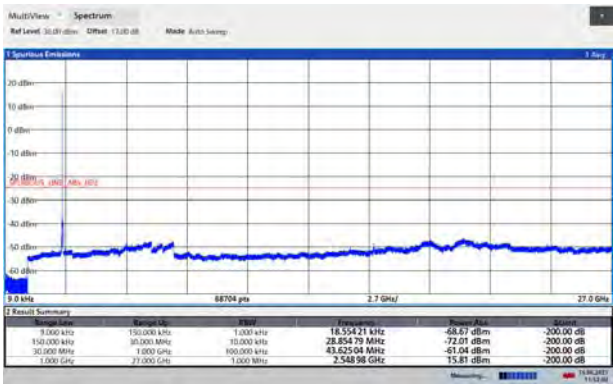
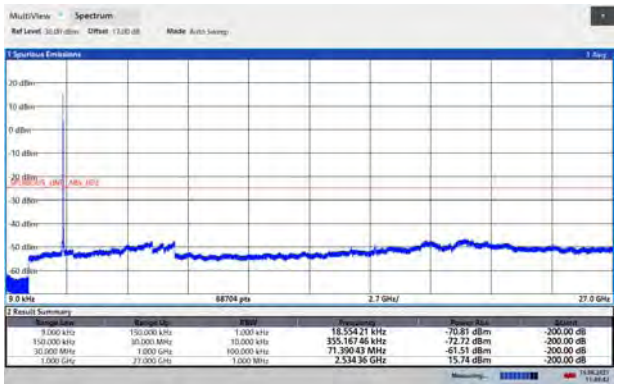
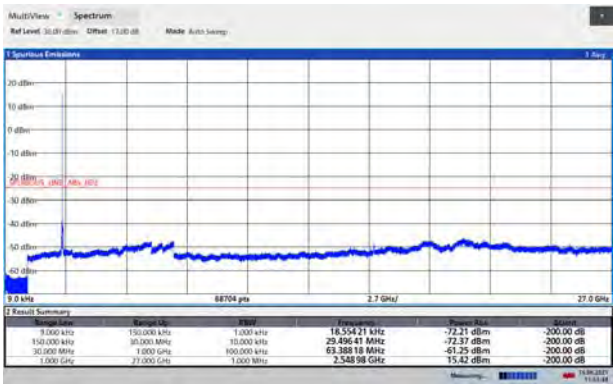
CA_7C_20MHz+10MHz_64QAM CH-Low
9kHz~27GHz



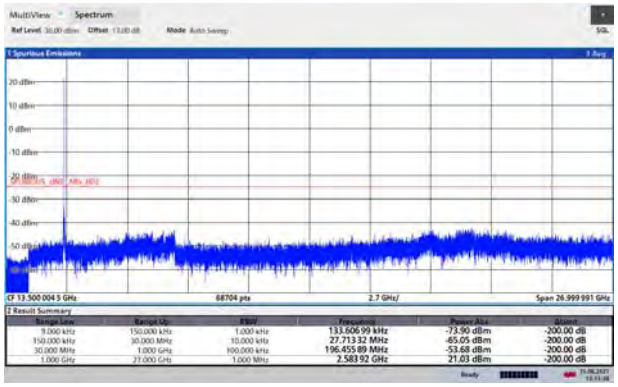
CA_7C_20MHz+10MHz_64QAM CH-Middle
9kHz~27GHz



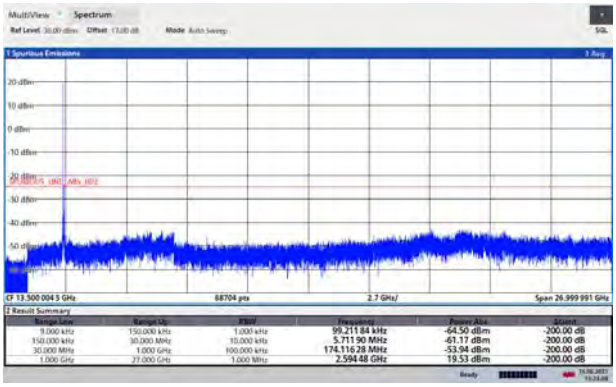
CA_7C_20MHz+10MHz_QPSK CH-High 9kHz~27GHz	CA_7C_20MHz+20MHz_QPSK CH-Low 9kHz~27GHz
	
CA_7C_20MHz+10MHz_16QAM CH-High 9kHz~27GHz	CA_7C_20MHz+20MHz_16QAM CH-Low 9kHz~27GHz
	
CA_7C_20MHz+10MHz_64QAM CH-High 9kHz~27GHz	CA_7C_20MHz+20MHz_64QAM CH-Low 9kHz~27GHz
	

CA_7C_20MHz+20MHz_QPSK CH-Middle 9kHz~27GHz	CA_7C_20MHz+20MHz_QPSK CH-High 9kHz~27GHz
	
CA_7C_20MHz+20MHz_16QAM CH-Middle 9kHz~27GHz	CA_7C_20MHz+20MHz_16QAM CH-High 9kHz~27GHz
	
CA_7C_20MHz+20MHz_64QAM CH-Middle 9kHz~27GHz	CA_7C_20MHz+20MHz_64QAM CH-High 9kHz~27GHz
	

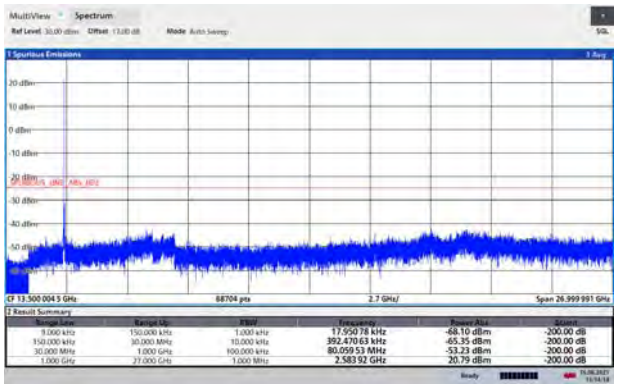
CA_38C_15MHz+15MHz_QPSK CH-Low
9kHz~27GHz



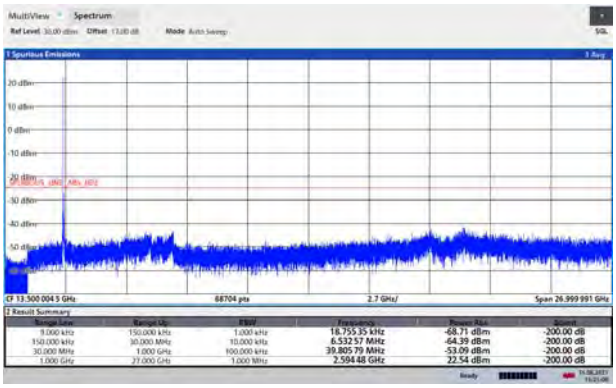
CA_38C _15MHz+15MHz_QPSK CH-Middle
9kHz~27GHz



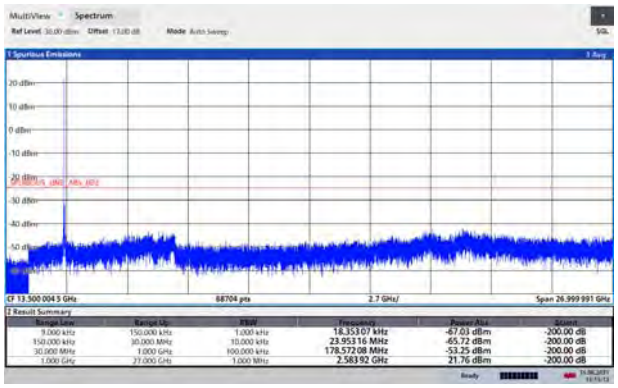
CA_38C _15MHz+15MHz_16QAM CH-Low
9kHz~27GHz



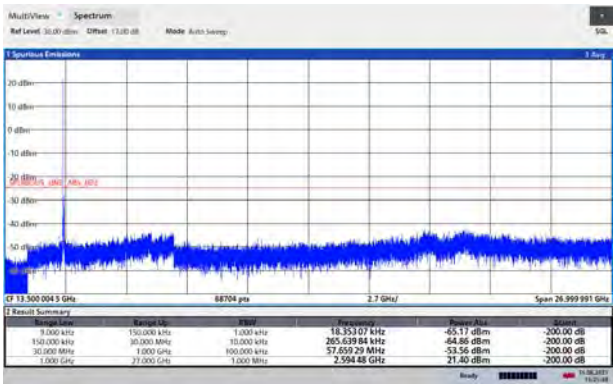
CA_38C _15MHz+15MHz_16QAM CH-Middle
9kHz~27GHz

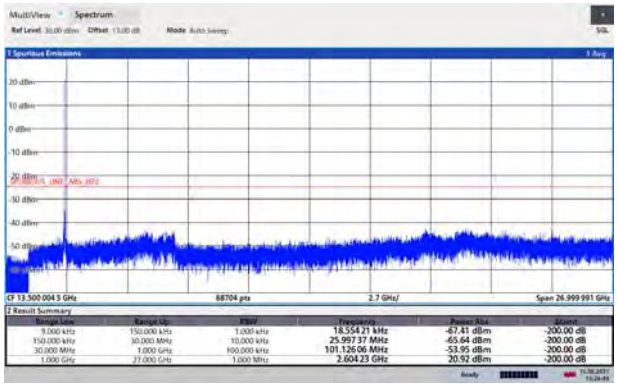
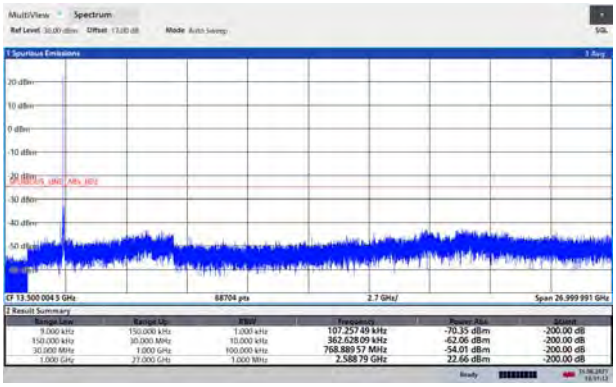
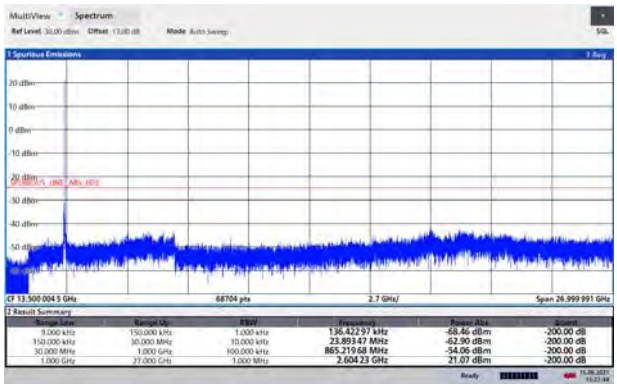
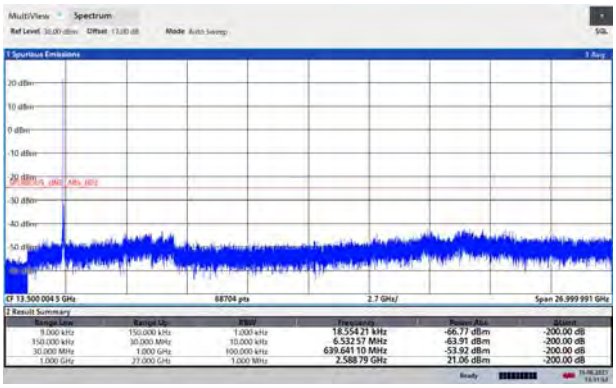
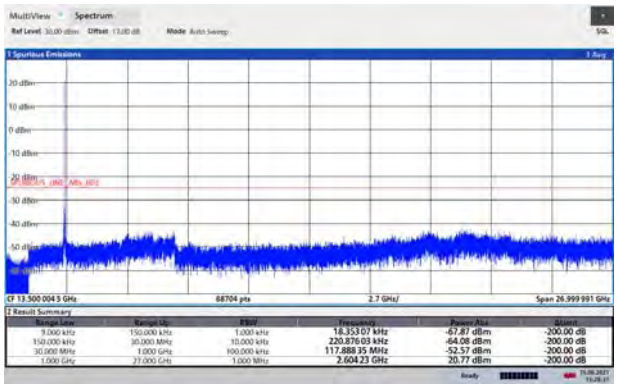
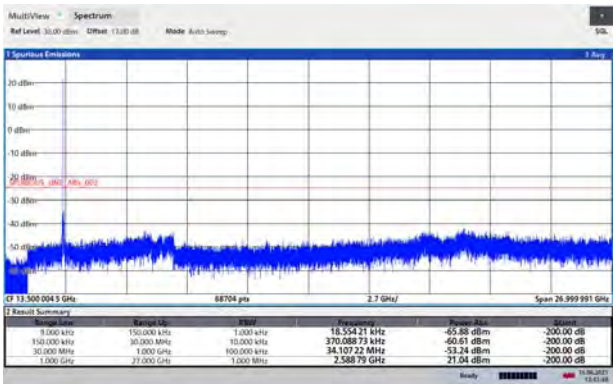


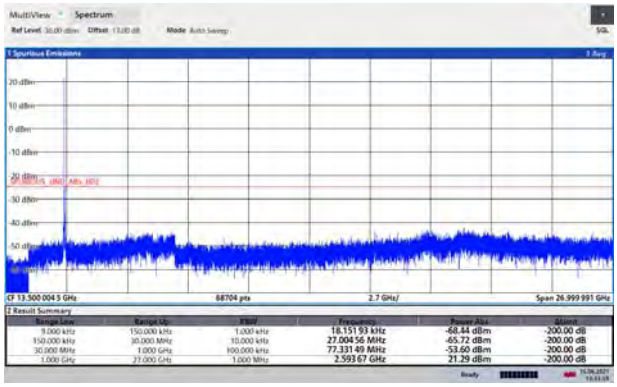
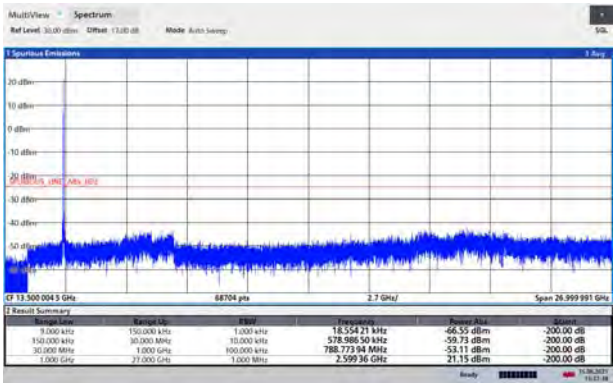
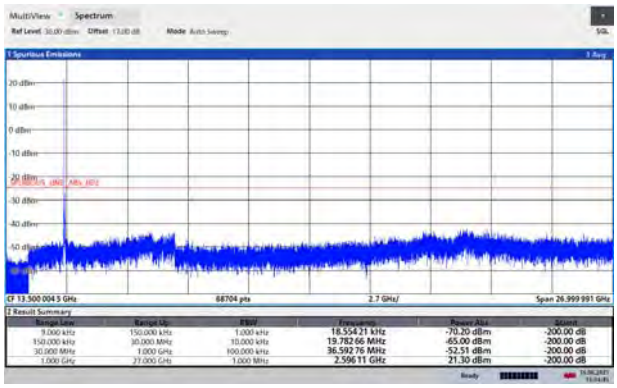
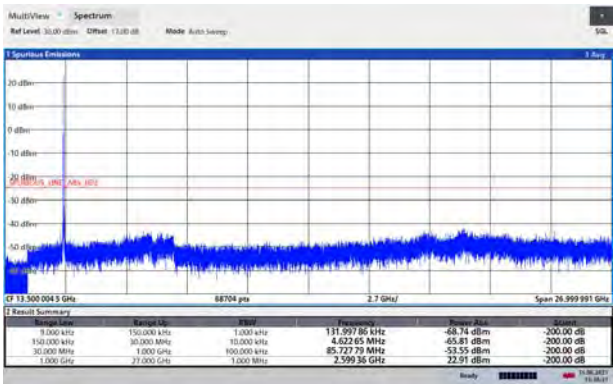
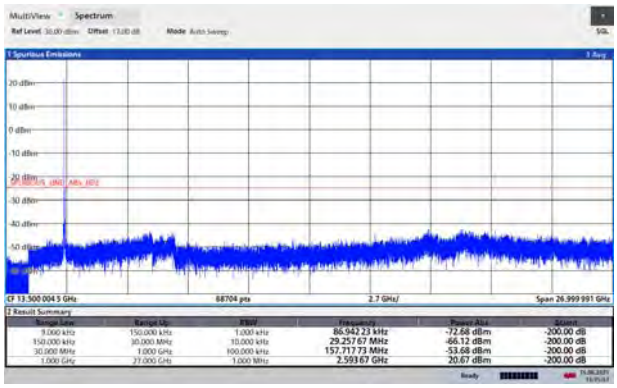
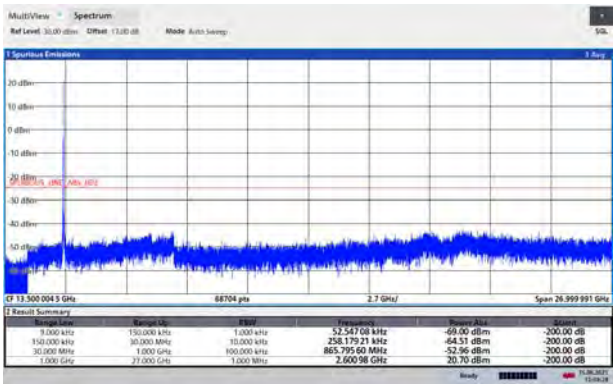
CA_38C _15MHz+15MHz_64QAM CH-Low
9kHz~27GHz



CA_38C _15MHz+15MHz_64QAM CH-Middle
9kHz~27GHz



CA_38C _15MHz+15MHz_QPSK CH-High 9kHz~27GHz	CA_38C _20MHz+20MHz_QPSK CH-Low 9kHz~27GHz
	
CA_38C _15MHz+15MHz_16QAM CH-High 9kHz~27GHz	CA_38C _20MHz+20MHz_16QAM CH-Low 9kHz~27GHz
	
CA_38C _15MHz+15MHz_64QAM CH-High 9kHz~27GHz	CA_38C _20MHz+20MHz_64QAM CH-Low 9kHz~27GHz
	

CA_38C _20MHz+20MHz_QPSK CH-Middle 9kHz~27GHz	CA_38C _20MHz+20MHz_QPSK CH-High 9kHz~27GHz
	
CA_38C _20MHz+20MHz_16QAM CH-Middle 9kHz~27GHz	CA_38C _20MHz+20MHz_16QAM CH-High 9kHz~27GHz
	
CA_38C _20MHz+20MHz_64QAM CH-Middle 9kHz~27GHz	CA_38C _20MHz+20MHz_64QAM CH-High 9kHz~27GHz
	

5.7 Radiates Spurious Emission

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

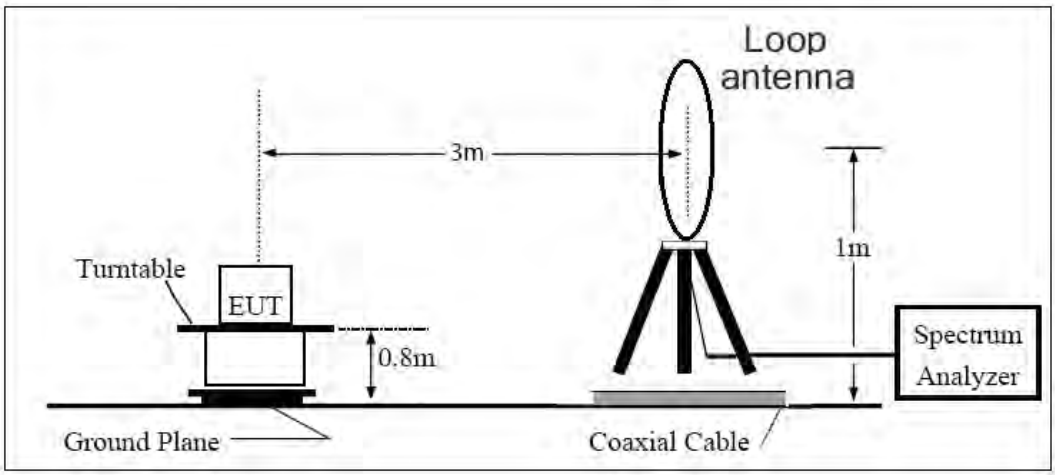
Method of Measurement

1. The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI C63.26 (2015).
2. Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H). Above 1GHz: (Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.) The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).
3. A loop antenna, A log-periodic antenna or horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
4. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=100kHz, VBW=300kHz for 30MHz to 1GHz and RBW=1MHz, VBW=3MHz for above 1GHz, and the maximum value of the receiver should be recorded as (Pr).
5. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
6. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
7. The measurement results are obtained as described below:
Power(EIRP)=PMea- PAg - Pcl + Ga
The measurement results are amend as described below:
Power(EIRP)=PMea- Pcl + Ga
8. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

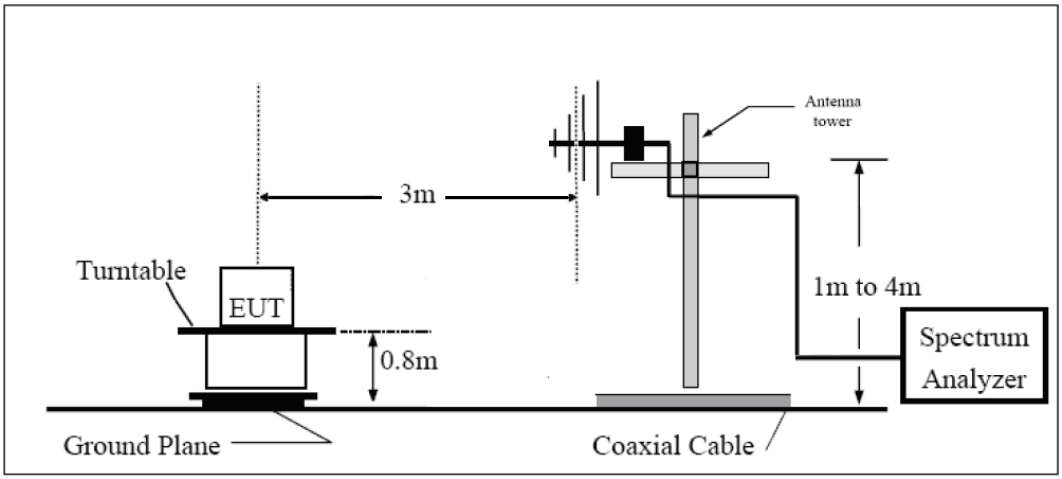
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

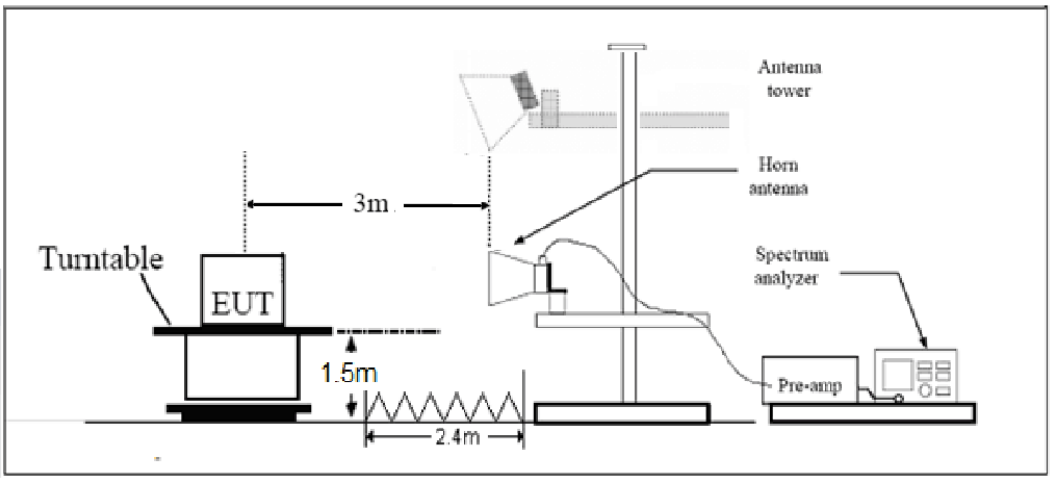
9KHz ~ 30MHz



30MHz ~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Limits

Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.”

Rule Part 27.53(m) 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section.

(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

Part 27.53(a)/(h)/(g) Limit		-13 dBm
Part 27.53(f) Limit	Limit out of the band 1559-1610 MHz	-13 dBm
	Limit in the band 1559-1610 MHz	-40 dBm
Part 27.53(m) Limit		-25 dBm

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95％ confidence level for the normal distribution is with the coverage factor k = ±1.96, U= ±3.55 dB.

Test Result

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions below the noise floor will not be recorded in the report.

Main Antenna

WCDMA Band IV CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.20	-66.72	2.70	12.70	Horizontal	-56.72	-13.00	43.72	45
3	5197.80	-61.23	3.20	12.50	Horizontal	-51.93	-13.00	38.93	0
4	6930.40	-60.97	4.20	11.80	Horizontal	-53.37	-13.00	40.37	0
5	8663.00	-55.90	4.40	12.50	Horizontal	-47.80	-13.00	34.80	135
6	10395.60	-51.02	4.70	11.30	Horizontal	-44.42	-13.00	31.42	90
7	12128.20	-52.65	5.20	13.80	Horizontal	-44.05	-13.00	31.05	135
8	13860.80	-49.20	5.70	11.30	Horizontal	-43.60	-13.00	30.60	45
9	15593.40	-52.73	6.10	16.80	Horizontal	-42.03	-13.00	29.03	225
10	17326.00	-51.74	6.10	14.20	Horizontal	-43.64	-13.00	30.64	45
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 4 QPSK 1.4MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3464.25	-61.02	2.70	12.70	Horizontal	-51.02	-13.00	38.02	90
3	5197.50	-61.12	3.20	12.50	Horizontal	-51.82	-13.00	38.82	45
4	6930.00	-61.44	4.20	11.80	Horizontal	-53.84	-13.00	40.84	180
5	8662.50	-55.49	4.40	12.50	Horizontal	-47.39	-13.00	34.39	0
6	10395.00	-49.72	4.70	11.30	Horizontal	-43.12	-13.00	30.12	315
7	12127.50	-50.66	5.20	13.80	Horizontal	-42.06	-13.00	29.06	90
8	13860.00	-48.33	5.70	11.30	Horizontal	-42.73	-13.00	29.73	45
9	15592.50	-51.97	6.10	16.80	Horizontal	-41.27	-13.00	28.27	225
10	17325.00	-48.60	6.10	14.20	Horizontal	-40.50	-13.00	27.50	90
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 4 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3460.50	-62.24	2.70	12.70	Horizontal	-52.24	-13.00	39.24	0
3	5191.50	-60.65	3.20	12.50	Horizontal	-51.35	-13.00	38.35	45
4	6930.00	-61.27	4.20	11.80	Horizontal	-53.67	-13.00	40.67	225
5	8662.50	-55.09	4.40	12.50	Horizontal	-46.99	-13.00	33.99	180
6	10395.00	-48.28	4.70	11.30	Horizontal	-41.68	-13.00	28.68	315
7	12127.50	-50.94	5.20	13.80	Horizontal	-42.34	-13.00	29.34	90
8	13860.00	-48.50	5.70	11.30	Horizontal	-42.90	-13.00	29.90	45
9	15592.50	-51.92	6.10	16.80	Horizontal	-41.22	-13.00	28.22	225
10	17325.00	-48.53	6.10	14.20	Horizontal	-40.43	-13.00	27.43	90
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 4 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.00	-66.41	2.70	12.70	Horizontal	-56.41	-13.00	43.41	45
3	5197.50	-61.96	3.20	12.50	Horizontal	-52.66	-13.00	39.66	45
4	6930.00	-62.51	4.20	11.80	Horizontal	-54.91	-13.00	41.91	135
5	8662.50	-56.76	4.40	12.50	Horizontal	-48.66	-13.00	35.66	0
6	10395.00	-49.77	4.70	11.30	Horizontal	-43.17	-13.00	30.17	0
7	12127.50	-51.34	5.20	13.80	Horizontal	-42.74	-13.00	29.74	315
8	13860.00	-50.00	5.70	11.30	Horizontal	-44.40	-13.00	31.40	90
9	15592.50	-52.30	6.10	16.80	Horizontal	-41.60	-13.00	28.60	45
10	17325.00	-49.81	6.10	14.20	Horizontal	-41.71	-13.00	28.71	45
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 7 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5065.80	-61.80	3.40	12.50	Horizontal	-52.70	-25.00	27.70	135
3	7598.60	-58.23	4.40	12.20	Horizontal	-50.43	-25.00	25.43	45
4	10130.63	-51.41	4.70	11.30	Horizontal	-44.81	-25.00	19.81	0
5	12675.00	-50.98	5.40	13.20	Horizontal	-43.18	-25.00	18.18	90
6	15210.00	-47.75	6.10	13.10	Horizontal	-40.75	-25.00	15.75	45
7	17745.00	-50.83	6.10	14.20	Horizontal	-42.73	-25.00	17.73	0
8	20280.00	-	-	-	-	-	-	-	-
9	22815.00	-	-	-	-	-	-	-	-
10	25350.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 7 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5050.00	-62.50	3.40	12.50	Horizontal	-53.40	-25.00	28.40	0
3	7575.00	-58.24	4.40	12.20	Horizontal	-50.44	-25.00	25.44	45
4	10100.00	-50.96	4.70	11.30	Horizontal	-44.36	-25.00	19.36	135
5	12625.00	-52.34	5.40	13.20	Horizontal	-44.54	-25.00	19.54	90
6	15150.00	-48.05	6.10	13.10	Horizontal	-41.05	-25.00	16.05	45
7	17675.00	-50.73	6.10	14.20	Horizontal	-42.63	-25.00	17.63	0
8	20200.00	-	-	-	-	-	-	-	-
9	22725.00	-	-	-	-	-	-	-	-
10	25250.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 38 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5185.00	-63.06	3.20	12.50	Horizontal	-53.76	-25.00	28.76	135
3	7777.50	-57.75	4.40	12.30	Horizontal	-49.85	-25.00	24.85	0
4	10370.00	-50.86	4.70	11.80	Horizontal	-43.76	-25.00	18.76	45
5	12962.50	-51.80	5.40	14.00	Horizontal	-43.20	-25.00	18.20	225
6	15555.00	-52.28	6.10	16.80	Horizontal	-41.58	-25.00	16.58	225
7	18147.50	-	-	-	-	-	-	-	-
8	20740.00	-	-	-	-	-	-	-	-
9	23332.50	-	-	-	-	-	-	-	-
10	25925.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 38 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5170.00	-62.10	3.20	12.50	Horizontal	-52.80	-25.00	27.80	0
3	7755.00	-58.37	4.40	12.30	Horizontal	-50.47	-25.00	25.47	45
4	10340.00	-50.95	4.70	11.80	Horizontal	-43.85	-25.00	18.85	135
5	12925.00	-52.34	5.40	14.00	Horizontal	-43.74	-25.00	18.74	90
6	15510.00	-53.00	6.10	16.80	Horizontal	-42.30	-25.00	17.30	45
7	18095.00	-	-	-	-	-	-	-	-
8	20680.00	-	-	-	-	-	-	-	-
9	23265.00	-	-	-	-	-	-	-	-
10	25850.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 41 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5181.00	-62.08	3.20	12.50	Horizontal	-52.78	-25.00	27.78	135
3	7771.50	-58.51	4.40	12.30	Horizontal	-50.61	-25.00	25.61	0
4	10362.00	-49.90	4.70	11.80	Horizontal	-42.80	-25.00	17.80	45
5	12952.50	-52.22	5.40	14.00	Horizontal	-43.62	-25.00	18.62	45
6	15543.00	-53.42	6.10	16.80	Horizontal	-42.72	-25.00	17.72	0
7	18133.50	-	-	-	-	-	-	-	-
8	20724.00	-	-	-	-	-	-	-	-
9	23314.00	-	-	-	-	-	-	-	-
10	25905.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 41 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5166.00	-61.61	3.20	12.50	Horizontal	-52.31	-25.00	27.31	45
3	7749.00	-58.20	4.40	12.30	Horizontal	-50.30	-25.00	25.30	0
4	10332.00	-50.89	4.70	11.80	Horizontal	-43.79	-25.00	18.79	0
5	12915.00	-52.32	5.40	14.00	Horizontal	-43.72	-25.00	18.72	135
6	15498.00	-53.48	6.10	16.80	Horizontal	-42.78	-25.00	17.78	90
7	18081.00	-	-	-	-	-	-	-	-
8	20664.00	-	-	-	-	-	-	-	-
9	23247.00	-	-	-	-	-	-	-	-
10	25830.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

CA_7C QPSK 15M+15M CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5056.60	-59.72	3.40	12.50	Horizontal	-50.62	-25.00	25.62	135
3	7584.90	-55.70	4.40	12.20	Horizontal	-47.90	-25.00	22.90	90
4	10113.20	-50.14	4.70	11.30	Horizontal	-43.54	-25.00	18.54	45
5	12641.50	-49.12	5.40	13.20	Horizontal	-41.32	-25.00	16.32	315
6	15169.80	-47.34	6.10	13.10	Horizontal	-40.34	-25.00	15.34	270
7	17698.10	-49.09	6.10	14.20	Horizontal	-40.99	-25.00	15.99	90
8	20226.40	-	-	-	-	-	-	-	-
9	22754.70	-	-	-	-	-	-	-	-
10	25283.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

CA_7C QPSK 10M+20M CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5052.24	-59.49	3.40	12.50	Horizontal	-50.39	-25.00	25.39	45
3	7578.36	-57.05	4.40	12.20	Horizontal	-49.25	-25.00	24.25	225
4	10104.48	-49.62	4.70	11.30	Horizontal	-43.02	-25.00	18.02	90
5	12630.60	-49.19	5.40	13.20	Horizontal	-41.39	-25.00	16.39	45
6	15156.72	-46.47	6.10	13.10	Horizontal	-39.47	-25.00	14.47	135
7	17682.84	-47.08	6.10	14.20	Horizontal	-38.98	-25.00	13.98	270
8	20208.96	-	-	-	-	-	-	-	-
9	22735.08	-	-	-	-	-	-	-	-
10	25261.20	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

CA_7C QPSK 20M+10M CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5061.24	-59.87	3.40	12.50	Horizontal	-50.77	-25.00	25.77	45
3	7591.86	-56.47	4.40	12.20	Horizontal	-48.67	-25.00	23.67	90
4	10122.48	-50.90	4.70	11.30	Horizontal	-44.30	-25.00	19.30	45
5	12653.10	-49.51	5.40	13.20	Horizontal	-41.71	-25.00	16.71	135
6	15183.72	-48.26	6.10	13.10	Horizontal	-41.26	-25.00	16.26	270
7	17714.34	-47.98	6.10	14.20	Horizontal	-39.88	-25.00	14.88	90
8	20244.96	-	-	-	-	-	-	-	-
9	22775.58	-	-	-	-	-	-	-	-
10	25306.20	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

CA_7C QPSK 20M+20M CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5052.14	-60.60	3.40	12.50	Horizontal	-51.50	-25.00	26.50	315
3	7578.21	-55.74	4.40	12.20	Horizontal	-47.94	-25.00	22.94	0
4	10104.28	-50.04	4.70	11.30	Horizontal	-43.44	-25.00	18.44	45
5	12630.35	-50.32	5.40	13.20	Horizontal	-42.52	-25.00	17.52	315
6	15156.42	-47.95	6.10	13.10	Horizontal	-40.95	-25.00	15.95	90
7	17682.49	-48.38	6.10	14.20	Horizontal	-40.28	-25.00	15.28	225
8	20208.56	-	-	-	-	-	-	-	-
9	22734.63	-	-	-	-	-	-	-	-
10	25260.70	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

CA_38C QPSK 15M+15M CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5161.96	-60.53	3.20	12.50	Horizontal	-51.23	-25.00	26.23	45
3	7742.94	-57.59	4.40	12.30	Horizontal	-49.69	-25.00	24.69	270
4	10323.92	-50.58	4.70	11.80	Horizontal	-43.48	-25.00	18.48	90
5	12904.90	-51.43	5.40	14.00	Horizontal	-42.83	-25.00	17.83	45
6	15485.88	-52.61	6.10	16.80	Horizontal	-41.91	-25.00	16.91	135
7	18066.86	-	-	-	-	-	-	-	-
8	20647.84	-	-	-	-	-	-	-	-
9	23228.82	-	-	-	-	-	-	-	-
10	25809.80	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

CA_38C QPSK 20M+20M CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5152.40	-59.70	3.20	12.50	Horizontal	-50.40	-25.00	25.40	225
3	7728.60	-58.30	4.40	12.30	Horizontal	-50.40	-25.00	25.40	90
4	10304.80	-49.55	4.70	11.80	Horizontal	-42.45	-25.00	17.45	45
5	12881.00	-51.42	5.40	14.00	Horizontal	-42.82	-25.00	17.82	315
6	15457.20	-51.77	6.10	16.80	Horizontal	-41.07	-25.00	16.07	270
7	18033.40	-	-	-	-	-	-	-	-
8	20609.60	-	-	-	-	-	-	-	-
9	23185.80	-	-	-	-	-	-	-	-
10	25762.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

Second Antenna

WCDMA Band IV CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.20	-66.72	2.70	12.70	Horizontal	-56.72	-13.00	43.72	0
3	5197.80	-61.10	3.20	12.50	Horizontal	-51.80	-13.00	38.80	0
4	6930.40	-61.66	4.20	11.80	Horizontal	-54.06	-13.00	41.06	45
5	8663.00	-55.47	4.40	12.50	Horizontal	-47.37	-13.00	34.37	135
6	10395.60	-49.87	4.70	11.30	Horizontal	-43.27	-13.00	30.27	270
7	12128.20	-50.88	5.20	13.80	Horizontal	-42.28	-13.00	29.28	90
8	13860.80	-50.10	5.70	11.30	Horizontal	-44.50	-13.00	31.50	45
9	15593.40	-52.18	6.10	16.80	Horizontal	-41.48	-13.00	28.48	315
10	17326.00	-48.07	6.10	14.20	Horizontal	-39.97	-13.00	26.97	90
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 4 QPSK 1.4MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3464.25	-60.93	2.70	12.70	Horizontal	-50.93	-13.00	37.93	45
3	5197.50	-60.17	3.20	12.50	Horizontal	-50.87	-13.00	37.87	225
4	6930.00	-61.99	4.20	11.80	Horizontal	-54.39	-13.00	41.39	90
5	8662.50	-56.17	4.40	12.50	Horizontal	-48.07	-13.00	35.07	45
6	10395.00	-48.67	4.70	11.30	Horizontal	-42.07	-13.00	29.07	180
7	12127.50	-49.87	5.20	13.80	Horizontal	-41.27	-13.00	28.27	45
8	13860.00	-51.09	5.70	11.30	Horizontal	-45.49	-13.00	32.49	315
9	15592.50	-52.60	6.10	16.80	Horizontal	-41.90	-13.00	28.90	270
10	17325.00	-48.34	6.10	14.20	Horizontal	-40.24	-13.00	27.24	90
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 4 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3460.50	-59.92	2.70	12.70	Horizontal	-49.92	-13.00	36.92	45
3	5191.50	-59.97	3.20	12.50	Horizontal	-50.67	-13.00	37.67	90
4	6930.00	-61.71	4.20	11.80	Horizontal	-54.11	-13.00	41.11	45
5	8662.50	-56.00	4.40	12.50	Horizontal	-47.90	-13.00	34.90	135
6	10395.00	-48.74	4.70	11.30	Horizontal	-42.14	-13.00	29.14	270
7	12127.50	-51.47	5.20	13.80	Horizontal	-42.87	-13.00	29.87	90
8	13860.00	-49.06	5.70	11.30	Horizontal	-43.46	-13.00	30.46	45
9	15592.50	-52.20	6.10	16.80	Horizontal	-41.50	-13.00	28.50	315
10	17325.00	-49.41	6.10	14.20	Horizontal	-41.31	-13.00	28.31	180
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 4 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.00	-60.69	2.70	12.70	Horizontal	-50.69	-13.00	37.69	45
3	5197.50	-60.77	3.20	12.50	Horizontal	-51.47	-13.00	38.47	270
4	6930.00	-61.69	4.20	11.80	Horizontal	-54.09	-13.00	41.09	90
5	8662.50	-55.74	4.40	12.50	Horizontal	-47.64	-13.00	34.64	45
6	10395.00	-50.38	4.70	11.30	Horizontal	-43.78	-13.00	30.78	315
7	12127.50	-51.34	5.20	13.80	Horizontal	-42.74	-13.00	29.74	180
8	13860.00	-49.80	5.70	11.30	Horizontal	-44.20	-13.00	31.20	0
9	15592.50	-50.89	6.10	16.80	Horizontal	-40.19	-13.00	27.19	45
10	17325.00	-49.11	6.10	14.20	Horizontal	-41.01	-13.00	28.01	225
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 7 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5065.80	-60.25	3.40	12.50	Horizontal	-51.15	-25.00	26.15	45
3	7598.60	-58.67	4.40	12.20	Horizontal	-50.87	-25.00	25.87	225
4	10130.63	-49.46	4.70	11.30	Horizontal	-42.86	-25.00	17.86	90
5	12675.00	-50.94	5.40	13.20	Horizontal	-43.14	-25.00	18.14	315
6	15210.00	-48.30	6.10	13.10	Horizontal	-41.30	-25.00	16.30	180
7	17745.00	-48.43	6.10	14.20	Horizontal	-40.33	-25.00	15.33	0
8	20280.00	-	-	-	-	-	-	-	-
9	22815.00	-	-	-	-	-	-	-	-
10	25350.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 7 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5050.00	-60.88	3.40	12.50	Horizontal	-51.78	-25.00	26.78	90
3	7575.00	-57.28	4.40	12.20	Horizontal	-49.48	-25.00	24.48	0
4	10100.00	-50.74	4.70	11.30	Horizontal	-44.14	-25.00	19.14	45
5	12625.00	-51.06	5.40	13.20	Horizontal	-43.26	-25.00	18.26	315
6	15150.00	-48.48	6.10	13.10	Horizontal	-41.48	-25.00	16.48	45
7	17675.00	-48.77	6.10	14.20	Horizontal	-40.67	-25.00	15.67	180
8	20200.00	-	-	-	-	-	-	-	-
9	22725.00	-	-	-	-	-	-	-	-
10	25250.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 38 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5190.00	-61.18	3.20	12.50	Horizontal	-51.88	-25.00	26.88	315
3	7785.00	-58.24	4.40	12.30	Horizontal	-50.34	-25.00	25.34	90
4	10380.00	-48.95	4.70	11.80	Horizontal	-41.85	-25.00	16.85	45
5	12975.00	-51.40	5.40	14.00	Horizontal	-42.80	-25.00	17.80	225
6	15570.00	-52.23	6.10	16.80	Horizontal	-41.53	-25.00	16.53	180
7	18165.00	-	-	-	-	-	-	-	-
8	20760.00	-	-	-	-	-	-	-	-
9	23355.00	-	-	-	-	-	-	-	-
10	25950.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 38 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5190.00	-60.83	3.20	12.50	Horizontal	-51.53	-25.00	26.53	90
3	7785.00	-58.68	4.40	12.30	Horizontal	-50.78	-25.00	25.78	45
4	10380.00	-49.39	4.70	11.80	Horizontal	-42.29	-25.00	17.29	315
5	12975.00	-50.20	5.40	14.00	Horizontal	-41.60	-25.00	16.60	45
6	15570.00	-51.64	6.10	16.80	Horizontal	-40.94	-25.00	15.94	225
7	18165.00	-	-	-	-	-	-	-	-
8	20760.00	-	-	-	-	-	-	-	-
9	23355.00	-	-	-	-	-	-	-	-
10	25950.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 41 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5186.00	-60.83	3.20	12.50	Horizontal	-51.53	-25.00	26.53	135
3	7779.00	-57.75	4.40	12.30	Horizontal	-49.85	-25.00	24.85	180
4	10372.00	-49.02	4.70	11.80	Horizontal	-41.92	-25.00	16.92	45
5	12965.00	-50.86	5.40	14.00	Horizontal	-42.26	-25.00	17.26	225
6	15558.00	-53.79	6.10	16.80	Horizontal	-43.09	-25.00	18.09	90
7	18151.00	-	-	-	-	-	-	-	-
8	20744.00	-	-	-	-	-	-	-	-
9	23337.00	-	-	-	-	-	-	-	-
10	25930.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 41 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5186.00	-61.09	3.20	12.50	Horizontal	-51.79	-25.00	26.79	270
3	7779.00	-58.08	4.40	12.30	Horizontal	-50.18	-25.00	25.18	315
4	10372.00	-49.99	4.70	11.80	Horizontal	-42.89	-25.00	17.89	90
5	12965.00	-51.41	5.40	14.00	Horizontal	-42.81	-25.00	17.81	45
6	15558.00	-52.35	6.10	16.80	Horizontal	-41.65	-25.00	16.65	225
7	18151.00	-	-	-	-	-	-	-	-
8	20744.00	-	-	-	-	-	-	-	-
9	23337.00	-	-	-	-	-	-	-	-
10	25930.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

CA_7C QPSK 15M+15M CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5056.60	-59.98	3.40	12.50	Horizontal	-50.88	-25.00	25.88	45
3	7584.90	-57.12	4.40	12.20	Horizontal	-49.32	-25.00	24.32	90
4	10113.20	-50.34	4.70	11.30	Horizontal	-43.74	-25.00	18.74	225
5	12641.50	-49.18	5.40	13.20	Horizontal	-41.38	-25.00	16.38	45
6	15169.80	-48.26	6.10	13.10	Horizontal	-41.26	-25.00	16.26	315
7	17698.10	-48.88	6.10	14.20	Horizontal	-40.78	-25.00	15.78	90
8	20226.40	-	-	-	-	-	-	-	-
9	22754.70	-	-	-	-	-	-	-	-
10	25283.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

CA_7C QPSK 10M+20M CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5052.24	-59.54	3.40	12.50	Horizontal	-50.44	-25.00	25.44	45
3	7578.36	-56.80	4.40	12.20	Horizontal	-49.00	-25.00	24.00	270
4	10104.48	-50.88	4.70	11.30	Horizontal	-44.28	-25.00	19.28	90
5	12630.60	-52.15	5.40	13.20	Horizontal	-44.35	-25.00	19.35	45
6	15156.72	-49.11	6.10	13.10	Horizontal	-42.11	-25.00	17.11	315
7	17682.84	-48.16	6.10	14.20	Horizontal	-40.06	-25.00	15.06	90
8	20208.96	-	-	-	-	-	-	-	-
9	22735.08	-	-	-	-	-	-	-	-
10	25261.20	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

CA_7C QPSK 20M+10M CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5061.24	-59.51	3.40	12.50	Horizontal	-50.41	-25.00	25.41	0
3	7591.86	-56.24	4.40	12.20	Horizontal	-48.44	-25.00	23.44	0
4	10122.48	-49.21	4.70	11.30	Horizontal	-42.61	-25.00	17.61	90
5	12653.10	-49.68	5.40	13.20	Horizontal	-41.88	-25.00	16.88	45
6	15183.72	-50.09	6.10	13.10	Horizontal	-43.09	-25.00	18.09	135
7	17714.34	-49.00	6.10	14.20	Horizontal	-40.90	-25.00	15.90	270
8	20244.96	-	-	-	-	-	-	-	-
9	22775.58	-	-	-	-	-	-	-	-
10	25306.20	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

CA_7C QPSK 20M+20M CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5052.14	-60.57	3.40	12.50	Horizontal	-51.47	-25.00	26.47	0
3	7578.21	-56.68	4.40	12.20	Horizontal	-48.88	-25.00	23.88	45
4	10104.28	-49.96	4.70	11.30	Horizontal	-43.36	-25.00	18.36	315
5	12630.35	-49.05	5.40	13.20	Horizontal	-41.25	-25.00	16.25	90
6	15156.42	-47.09	6.10	13.10	Horizontal	-40.09	-25.00	15.09	45
7	17682.49	-47.99	6.10	14.20	Horizontal	-39.89	-25.00	14.89	180
8	20208.56	-	-	-	-	-	-	-	-
9	22734.63	-	-	-	-	-	-	-	-
10	25260.70	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

CA_38C QPSK 15M+15M CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5161.96	-60.83	3.20	12.50	Horizontal	-51.53	-25.00	26.53	270
3	7742.94	-57.37	4.40	12.30	Horizontal	-49.47	-25.00	24.47	90
4	10323.92	-49.83	4.70	11.80	Horizontal	-42.73	-25.00	17.73	45
5	12904.90	-50.70	5.40	14.00	Horizontal	-42.10	-25.00	17.10	315
6	15485.88	-53.75	6.10	16.80	Horizontal	-43.05	-25.00	18.05	90
7	18066.86	-	-	-	-	-	-	-	-
8	20647.84	-	-	-	-	-	-	-	-
9	23228.82	-	-	-	-	-	-	-	-
10	25809.80	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

CA_38C QPSK 20M+20M CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5152.40	-61.14	3.20	12.50	Horizontal	-51.84	-25.00	26.84	0
3	7728.60	-57.59	4.40	12.30	Horizontal	-49.69	-25.00	24.69	45
4	10304.80	-50.47	4.70	11.80	Horizontal	-43.37	-25.00	18.37	315
5	12881.00	-50.96	5.40	14.00	Horizontal	-42.36	-25.00	17.36	270
6	15457.20	-51.81	6.10	16.80	Horizontal	-41.11	-25.00	16.11	90
7	18033.40	-	-	-	-	-	-	-	-
8	20609.60	-	-	-	-	-	-	-	-
9	23185.80	-	-	-	-	-	-	-	-
10	25762.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

6 Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Base Station Simulator	R&S	CMW500	113824	2021-05-15	2022-05-14
Power Splitter	Hua Xiang	SHX-GF2-2-13	10120101	/	/
Spectrum Analyzer	Key sight	N9010A	MY50210259	2021-05-15	2022-05-14
Signal Analyzer	R&S	FSV30	100815	2020-12-13	2021-12-12
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2020-04-02	2023-04-01
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	391	2021-05-15	2022-05-14
Horn Antenna	R&S	HF907	102723	2018-08-11	2021-08-10
Horn Antenna	ETS-Lindgren	3160-09	00102643	2018-06-20	2021-06-19
Horn Antenna	STEATITE	QSH-SL-26-40-K-15	16779	2019-12-24	2022-12-23
Signal generator	R&S	SMB 100A	102594	2021-05-15	2022-05-14
Climatic Chamber	ESPEC	SU-242	93000506	2020-12-13	2021-12-12
Preampflier	R&S	SCU18	102327	2021-05-15	2022-05-14
MOB COMMS DC SUPPLY	Keysight	66319D	MY43004105	2021-06-09	2021-12-08
RF Cable	Agilent	SMA 15cm	0001	2021-06-09	2021-12-08
Software	R&S	EMC32	9.26.0	/	/

********END OF REPORT ********

ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.

ANNEX B: Test Setup Photos

The Test Setup Photos are submitted separately.