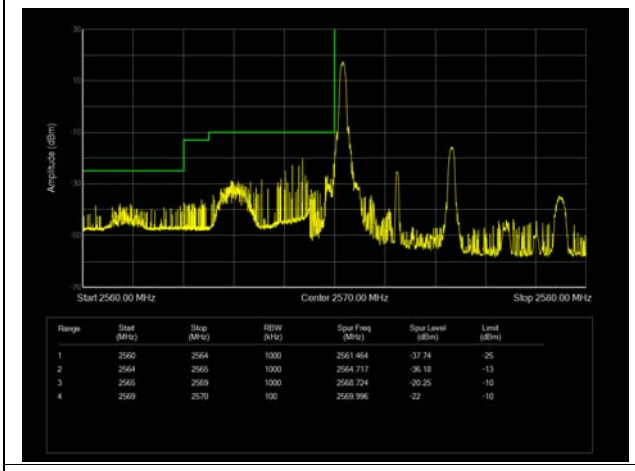
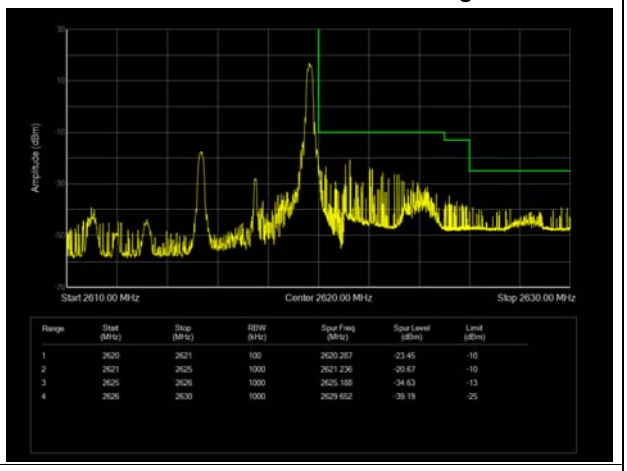
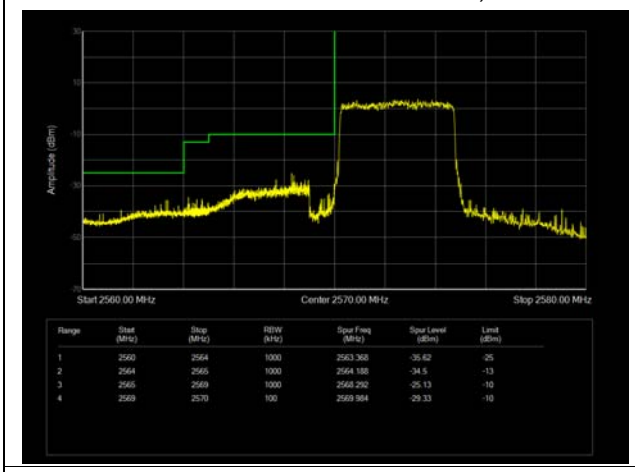
LTE Band 38 QPSK 5MHz CH-Low, 1 RB



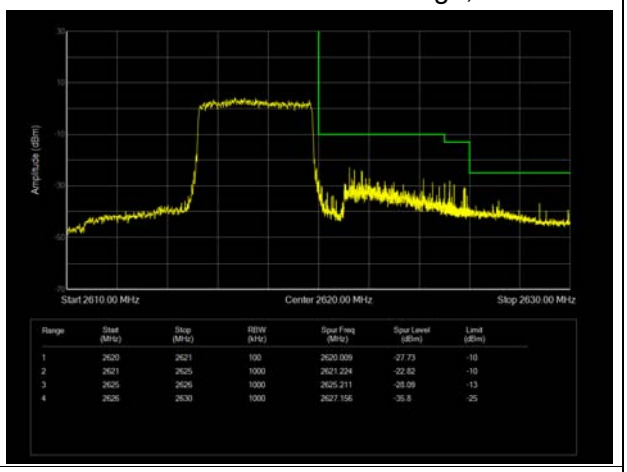
LTE Band 38 QPSK 5MHz CH-High, 1 RB



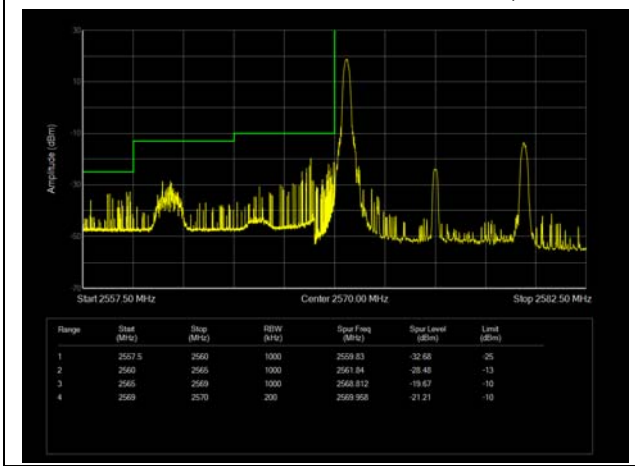
LTE Band 38 QPSK 5MHz CH-Low, 100%RB



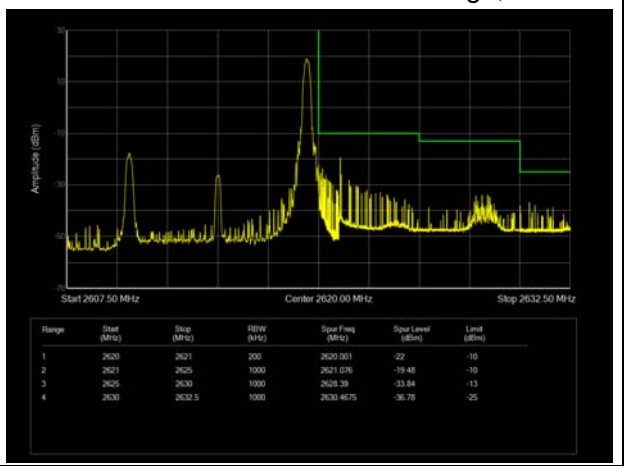
LTE Band 38 QPSK 5MHz CH-High, 100%RB



LTE Band 38 QPSK 10MHz CH-Low, 1 RB



LTE Band 38 QPSK 10MHz CH-High, 1 RB



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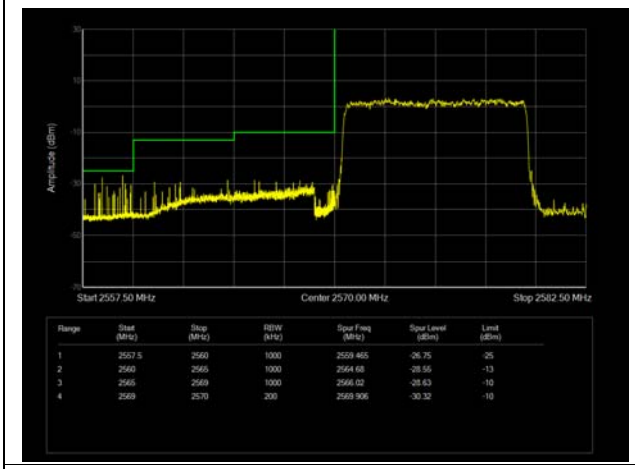
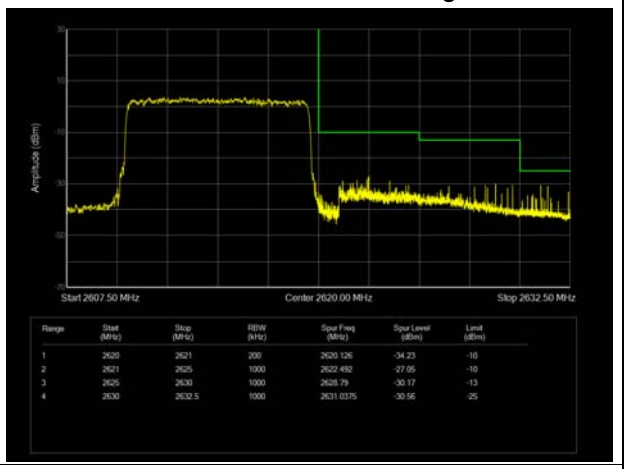
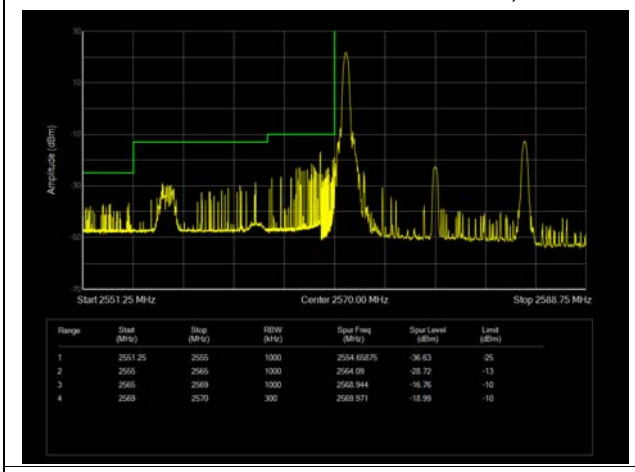
LTE Band 38 QPSK 10MHz CH-Low, 100%RB



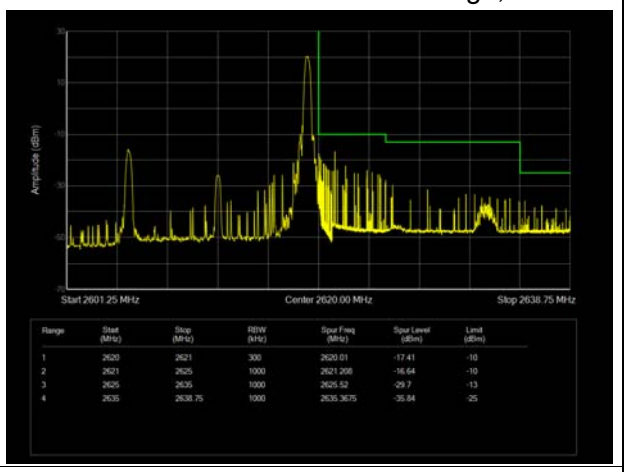
LTE Band 38 QPSK 10MHz CH-High, 100%RB



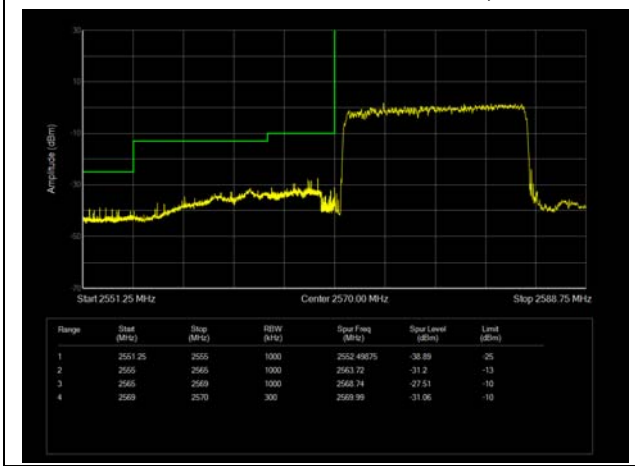
LTE Band 38 QPSK 15MHz CH-Low, 1 RB



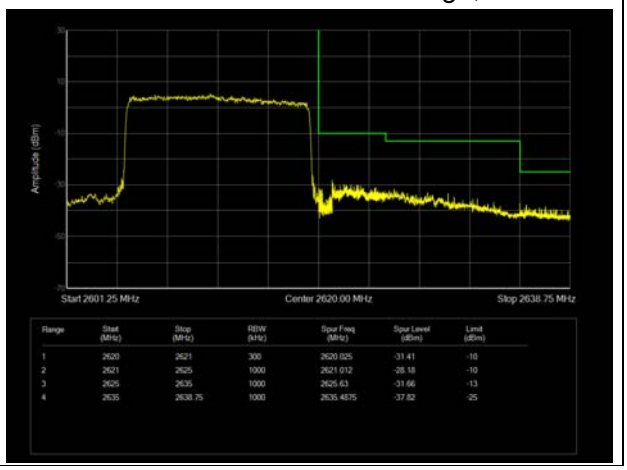
LTE Band 38 QPSK 15MHz CH-High, 1 RB



LTE Band 38 QPSK 15MHz CH-Low, 100%RB



LTE Band 38 QPSK 15MHz CH-High, 100%RB



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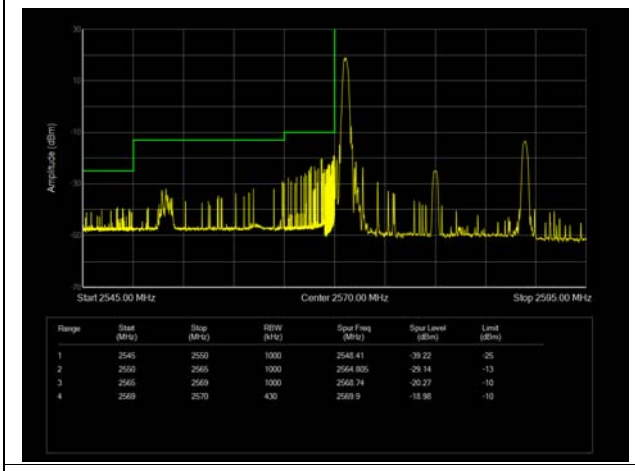
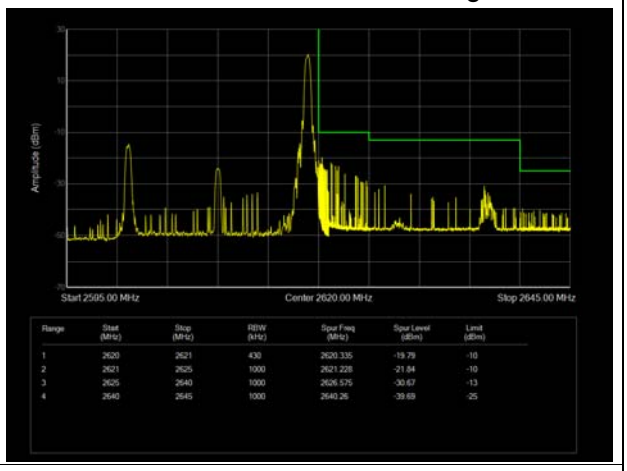
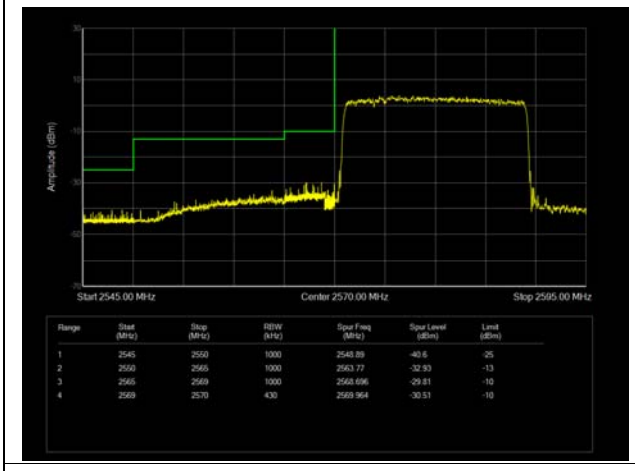
LTE Band 38 QPSK 20MHz CH-Low, 1 RB



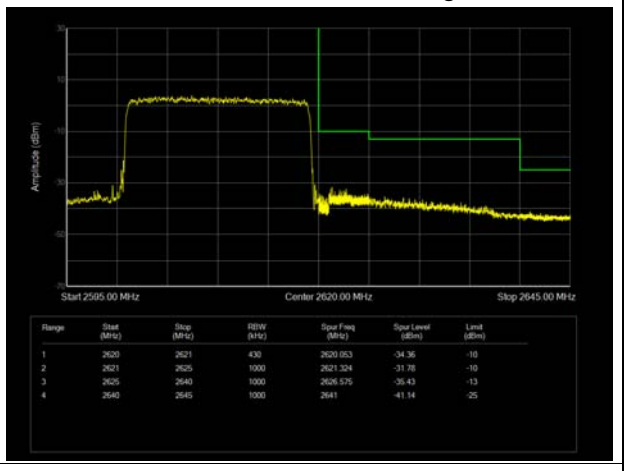
LTE Band 38 QPSK 20MHz CH-High, 1 RB



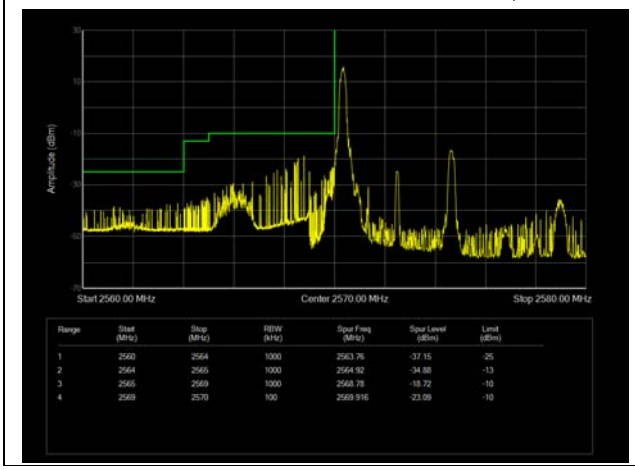
LTE Band 38 QPSK 20MHz CH-Low, 100%RB



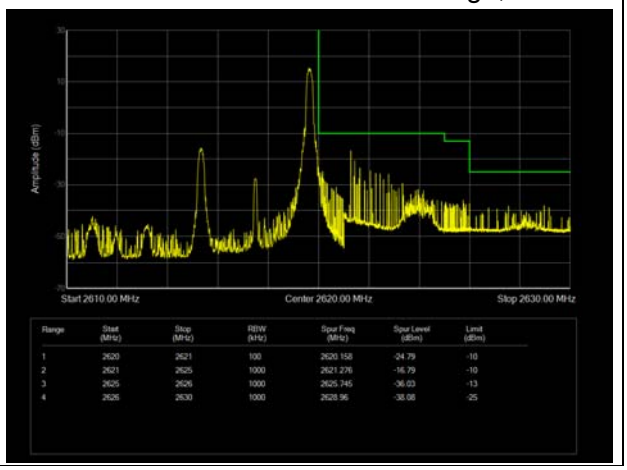
LTE Band 38 QPSK 20MHz CH-High, 100%RB



LTE Band 38 16QAM 5MHz CH-Low, 1 RB



LTE Band 38 16QAM 5MHz CH-High, 1 RB



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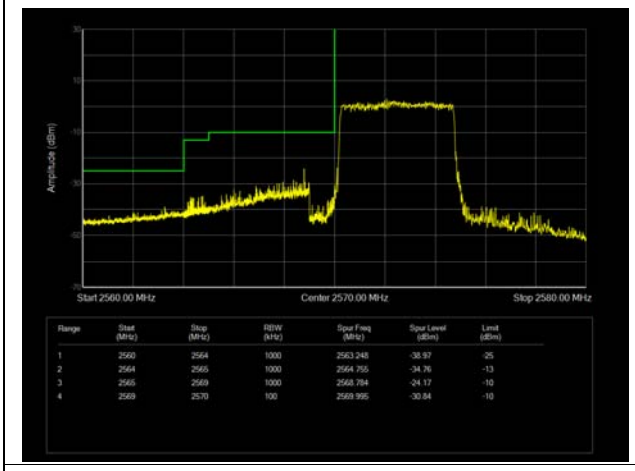
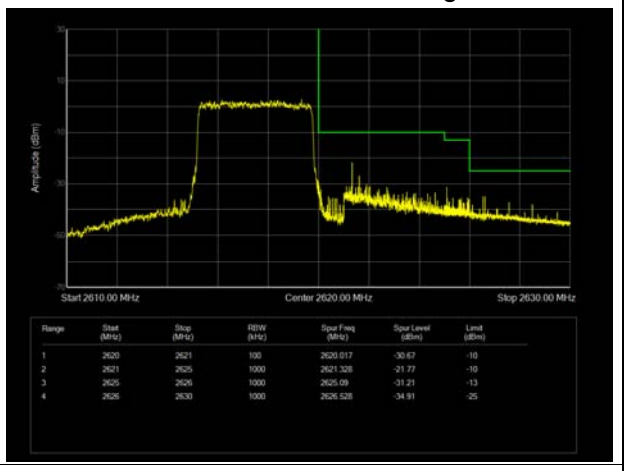
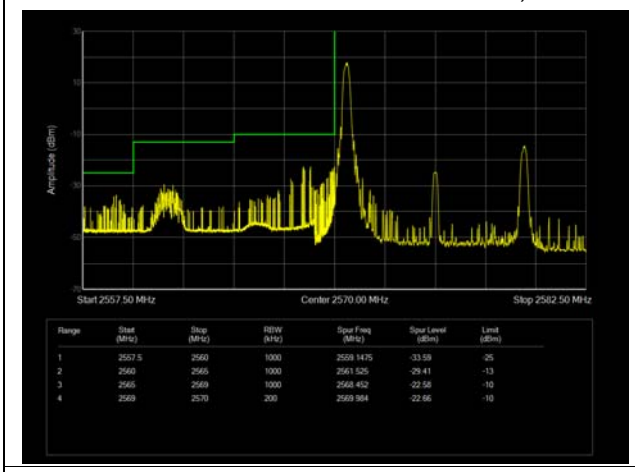
LTE Band 38 16QAM 5MHz CH-Low, 100%RB



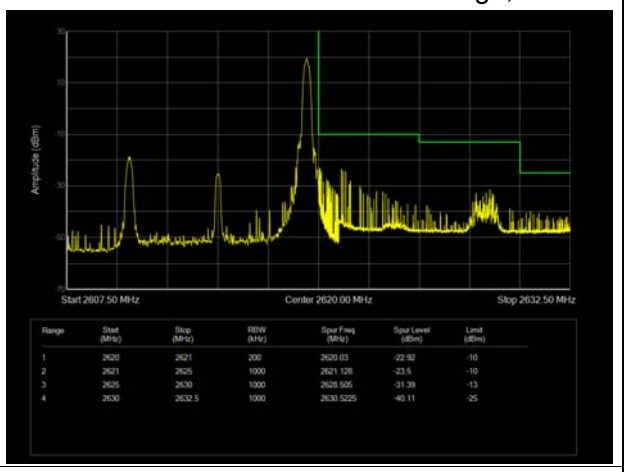
LTE Band 38 16QAM 5MHz CH-High, 100%RB



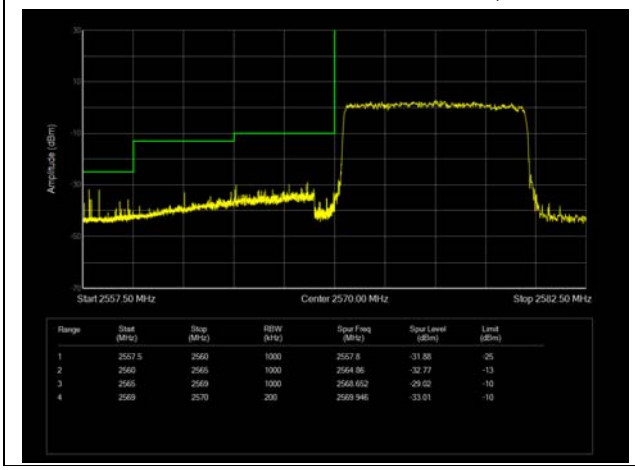
LTE Band 38 16QAM 10MHz CH-Low, 1 RB



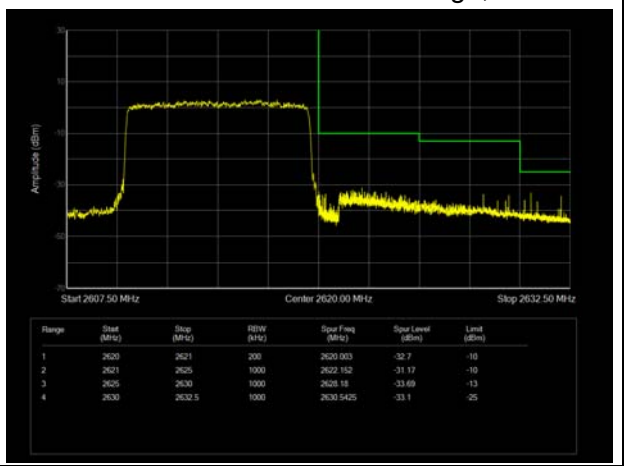
LTE Band 38 16QAM 10MHz CH-High, 1 RB



LTE Band 38 16QAM 10MHz CH-Low, 100%RB



LTE Band 38 16QAM 10MHz CH-High, 100%RB



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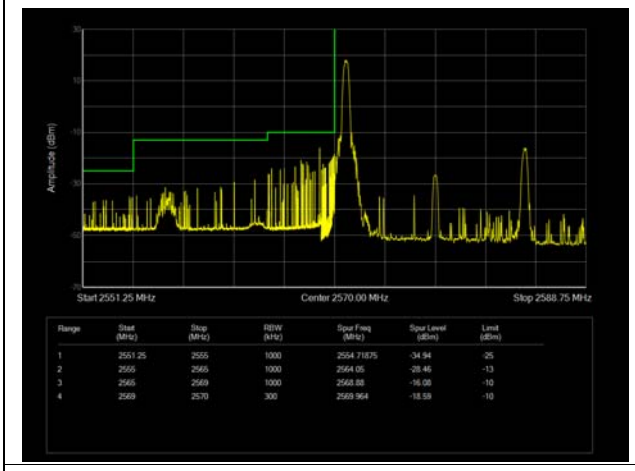
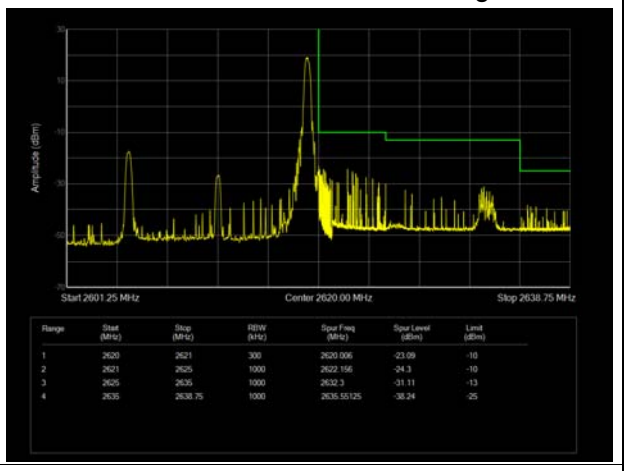
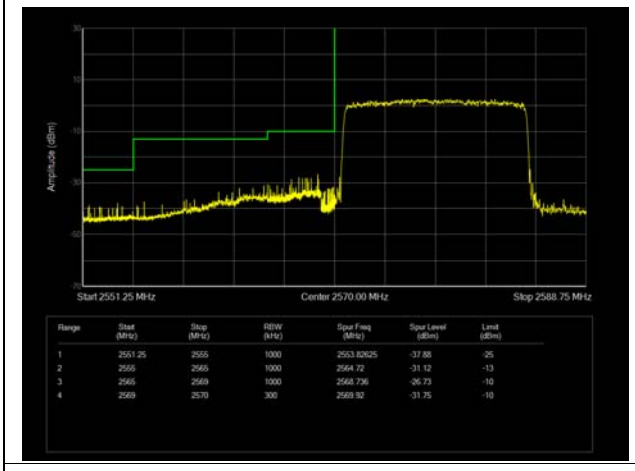
LTE Band 38 16QAM 15MHz CH-Low, 1 RB



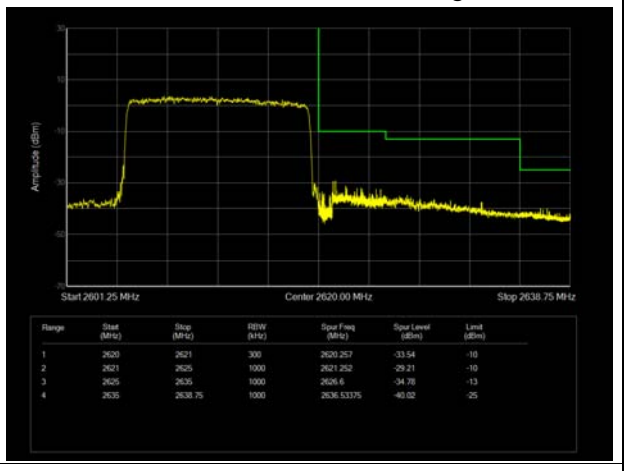
LTE Band 38 16QAM 15MHz CH-High, 1 RB



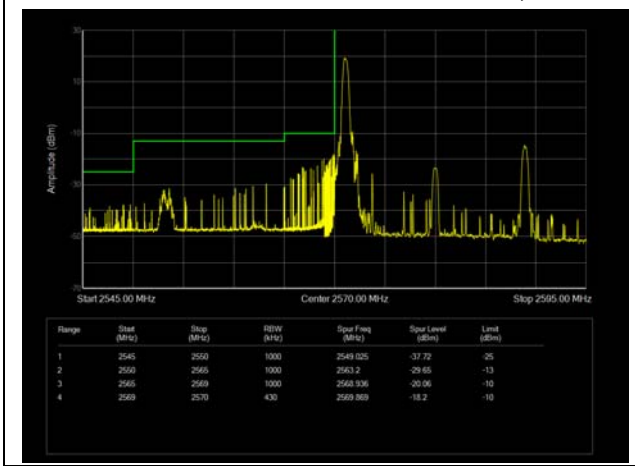
LTE Band 38 16QAM 15MHz CH-Low, 100%RB



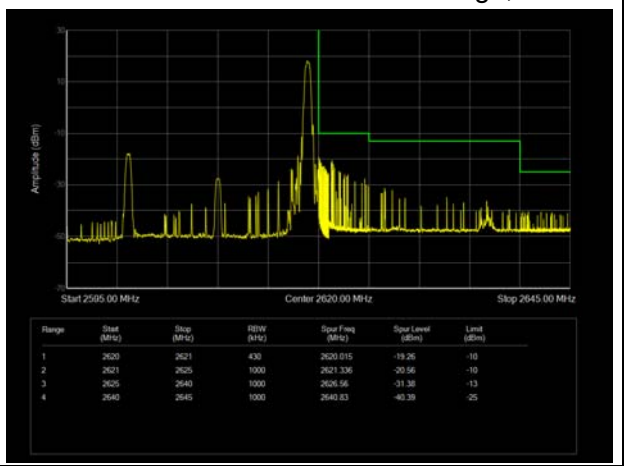
LTE Band 38 16QAM 15MHz CH-High, 100%RB



LTE Band 38 16QAM 20MHz CH-Low, 1 RB



LTE Band 38 16QAM 20MHz CH-High, 1 RB



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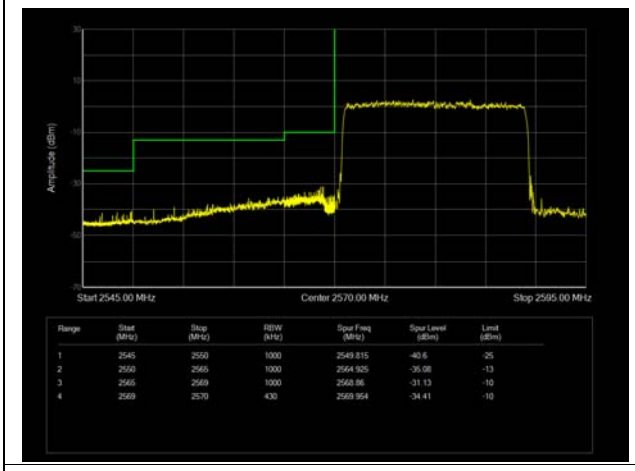
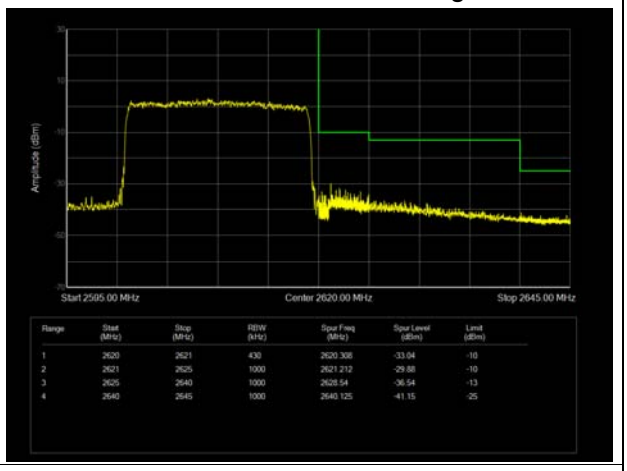
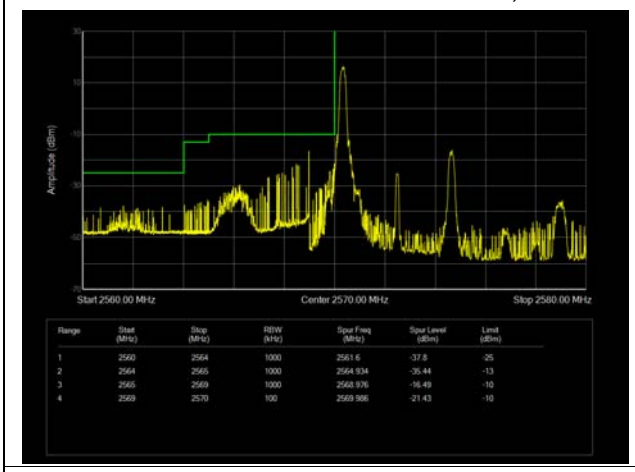
LTE Band 38 16QAM 20MHz CH-Low, 100%RB



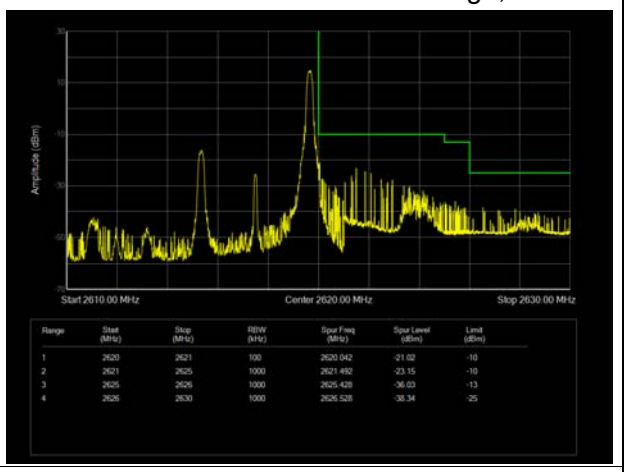
LTE Band 38 16QAM 20MHz CH-High, 100%RB



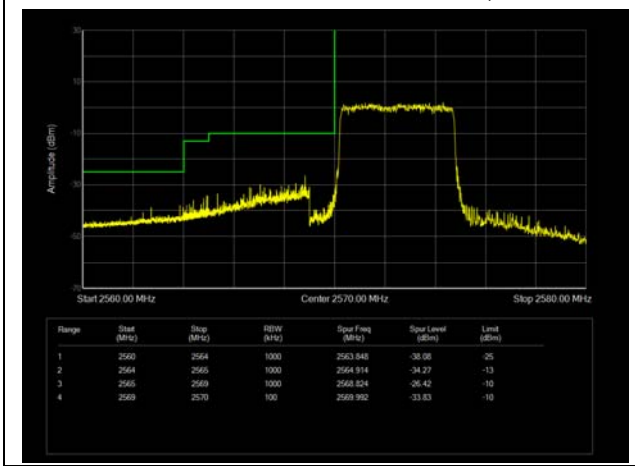
LTE Band 38 64QAM 5MHz CH-Low, 1 RB



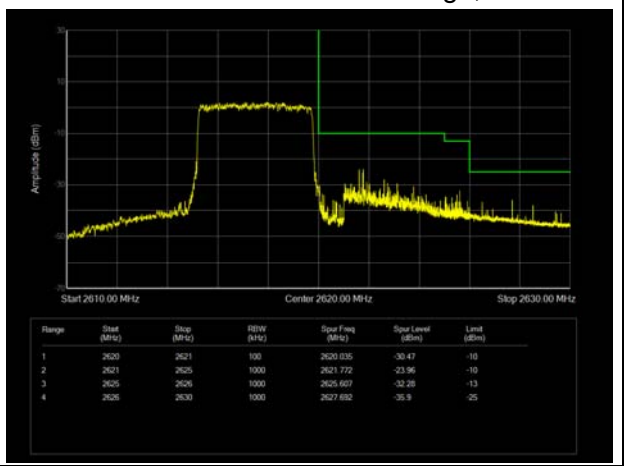
LTE Band 38 64QAM 5MHz CH-High, 1 RB



LTE Band 38 64QAM 5MHz CH-Low, 100%RB



LTE Band 38 64QAM 5MHz CH-High, 100%RB



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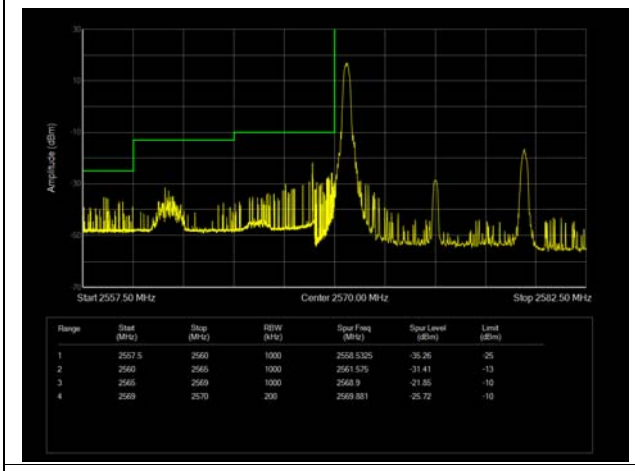
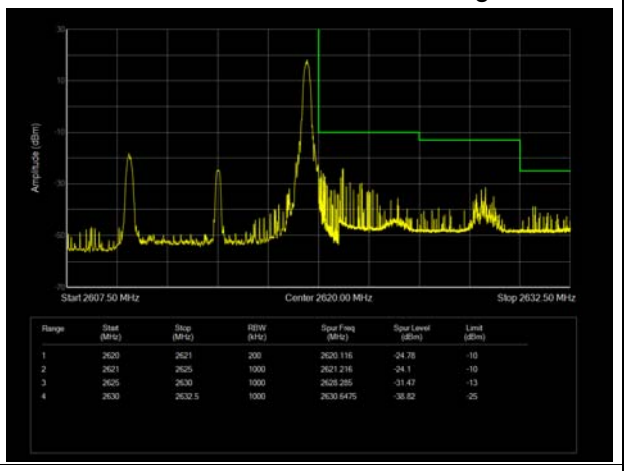
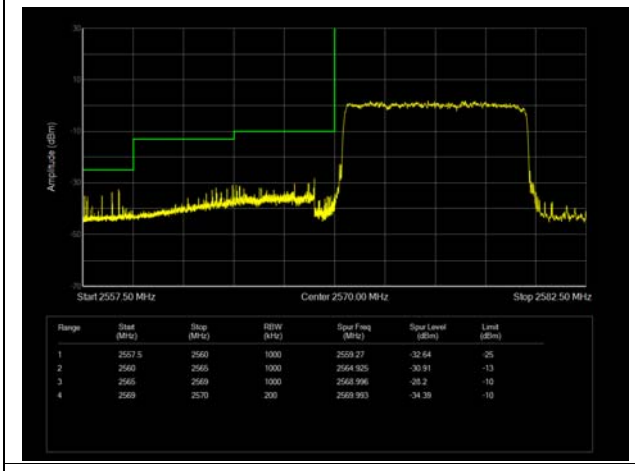
LTE Band 38 64QAM 10MHz CH-Low, 1 RB



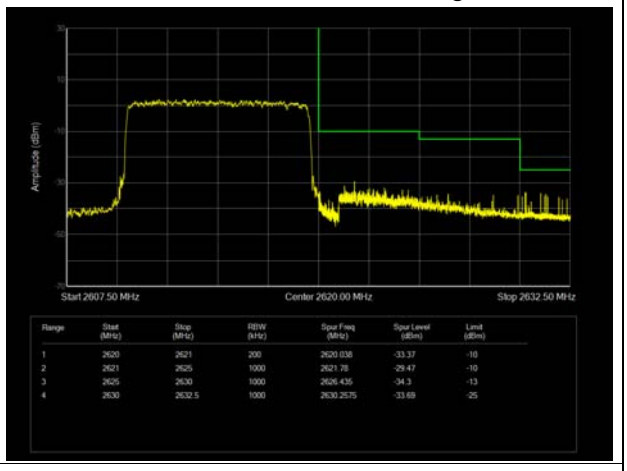
LTE Band 38 64QAM 10MHz CH-High, 1 RB



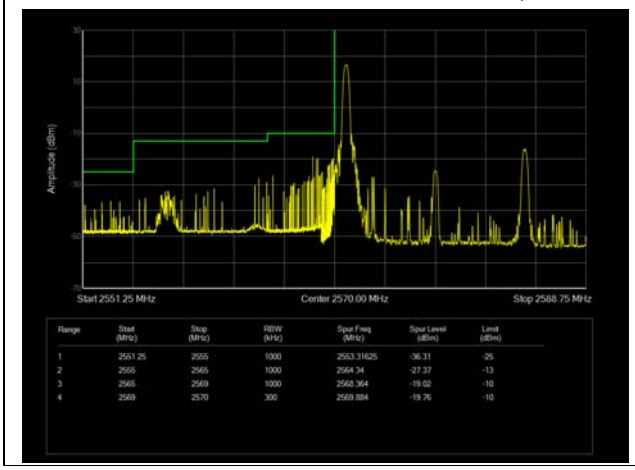
LTE Band 38 64QAM 10MHz CH-Low, 100%RB



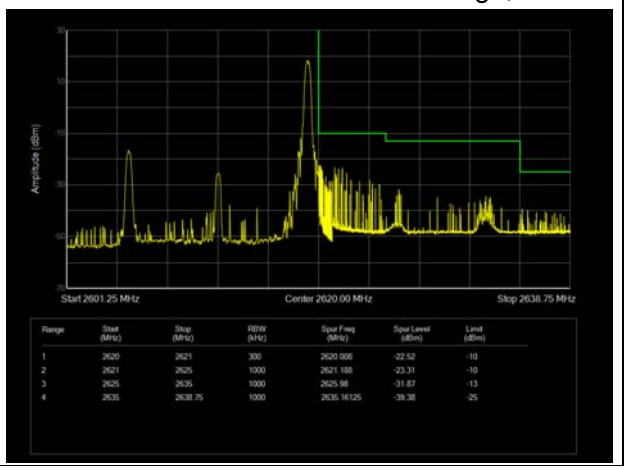
LTE Band 38 64QAM 10MHz CH-High, 100%RB



LTE Band 38 64QAM 15MHz CH-Low, 1 RB



LTE Band 38 64QAM 15MHz CH-High, 1 RB



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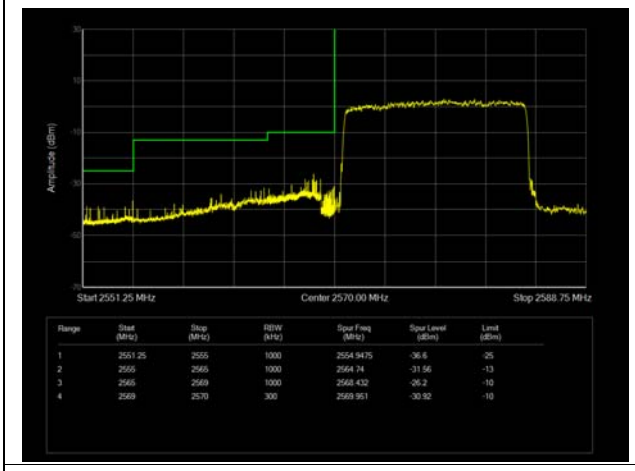
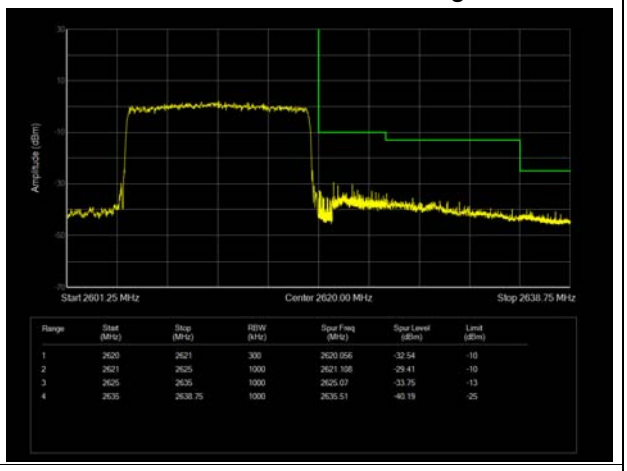
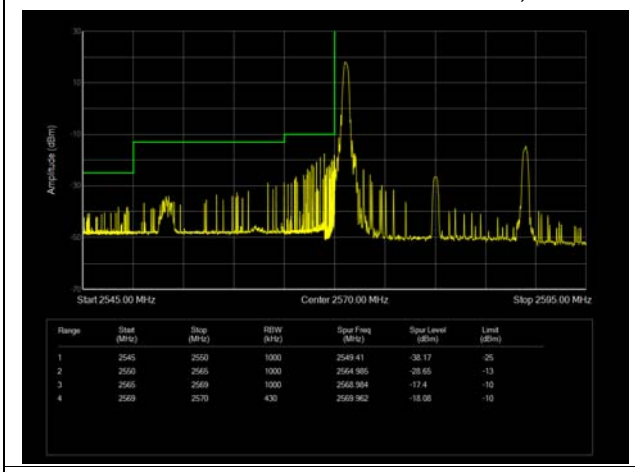
LTE Band 38 64QAM 15MHz CH-Low, 100%RB



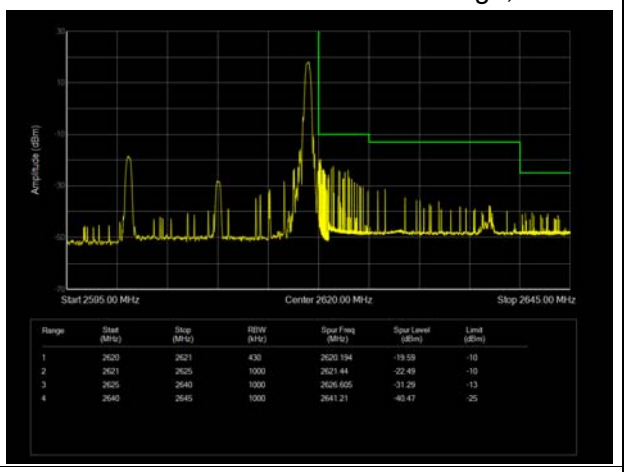
LTE Band 38 64QAM 15MHz CH-High, 100%RB



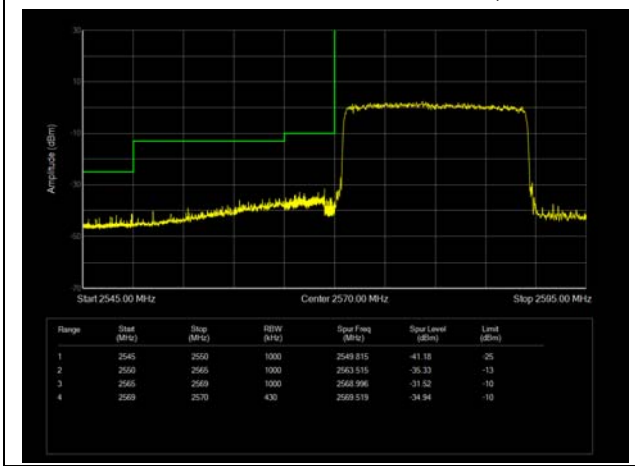
LTE Band 38 64QAM 20MHz CH-Low, 1 RB



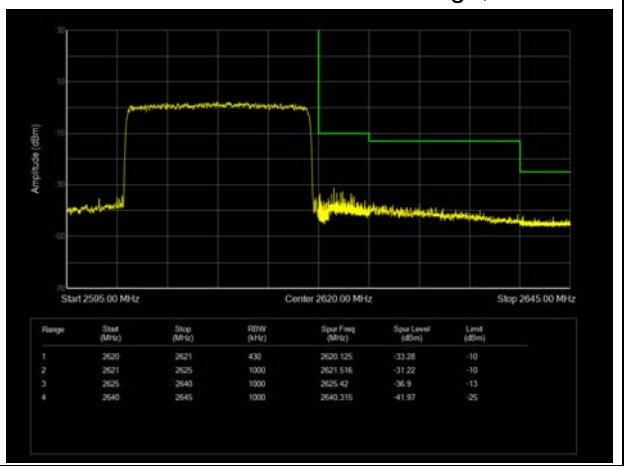
LTE Band 38 64QAM 20MHz CH-High, 1 RB



LTE Band 38 64QAM 20MHz CH-Low, 100%RB



LTE Band 38 64QAM 20MHz CH-High, 100%RB



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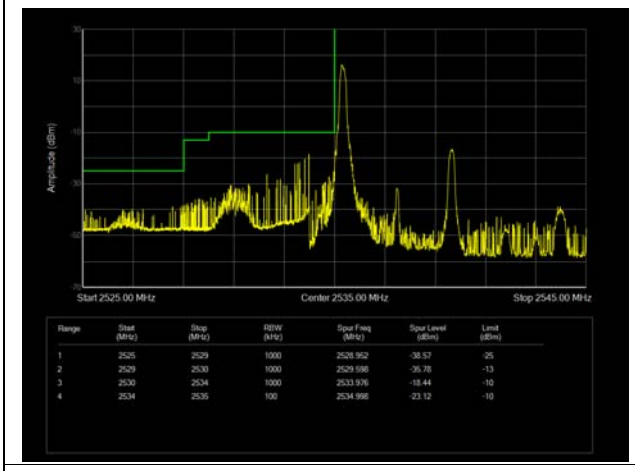
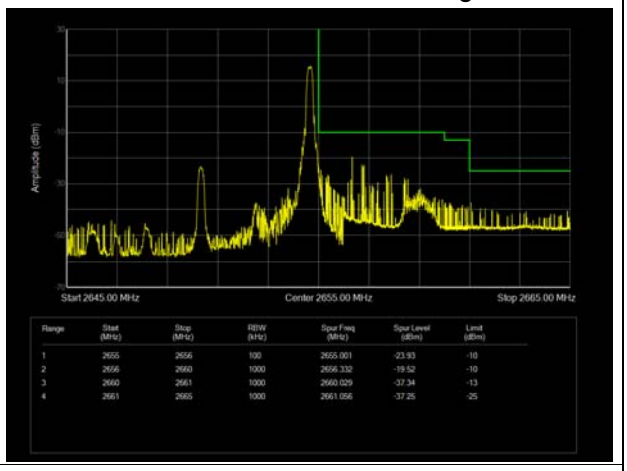
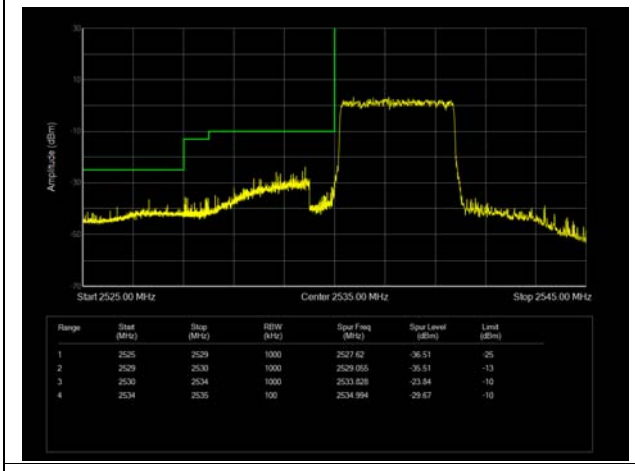
LTE Band 41 QPSK 5MHz CH-Low, 1 RB



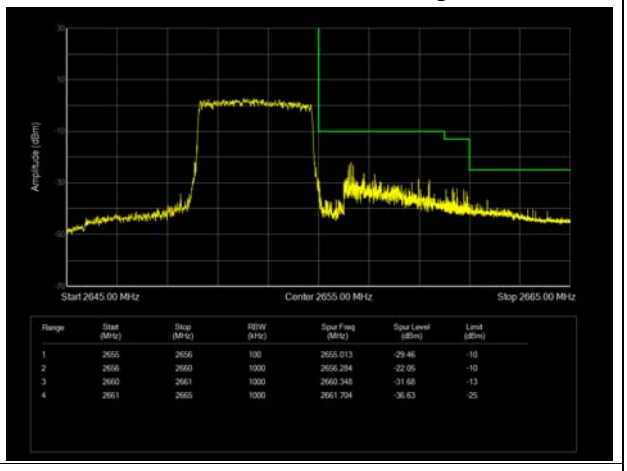
LTE Band 41 QPSK 5MHz CH-High, 1 RB



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



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



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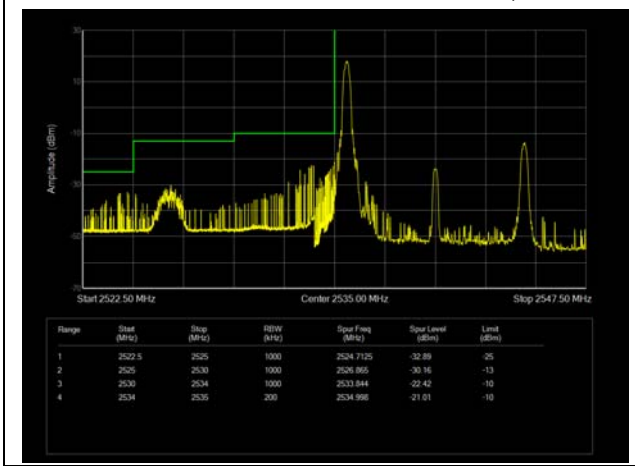

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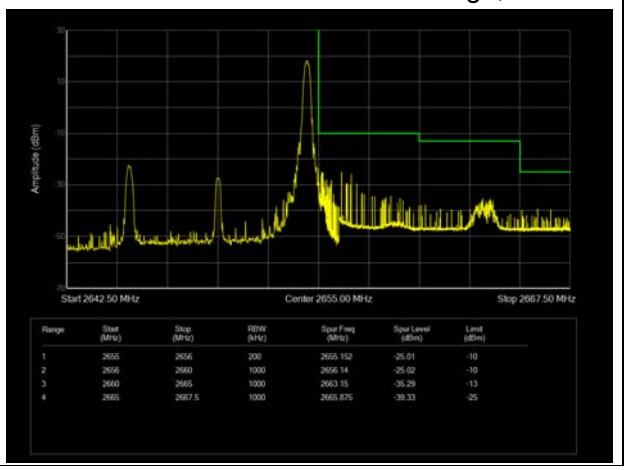

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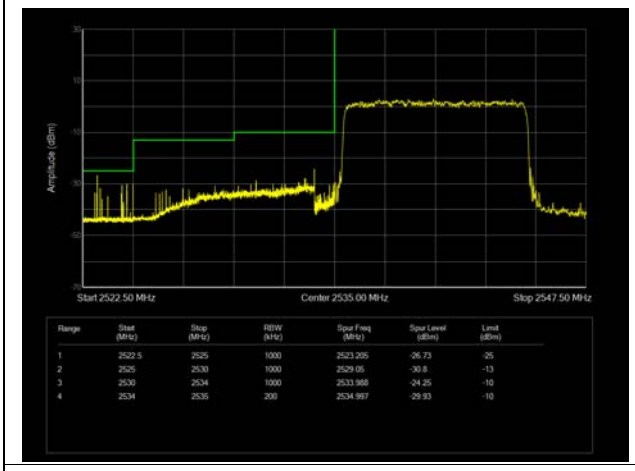
LTE Band 41 QPSK 10MHz CH-Low, 100%RB



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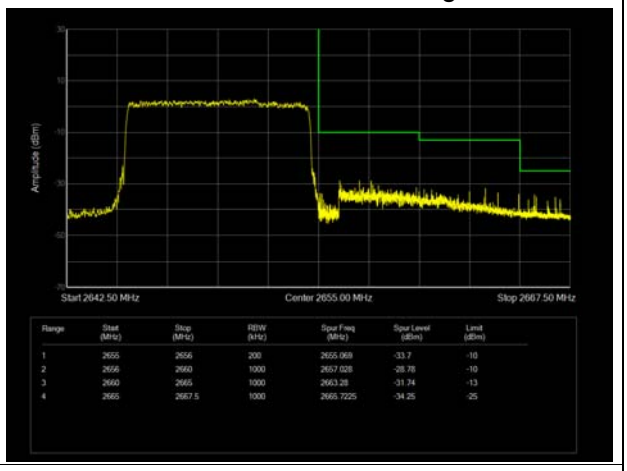

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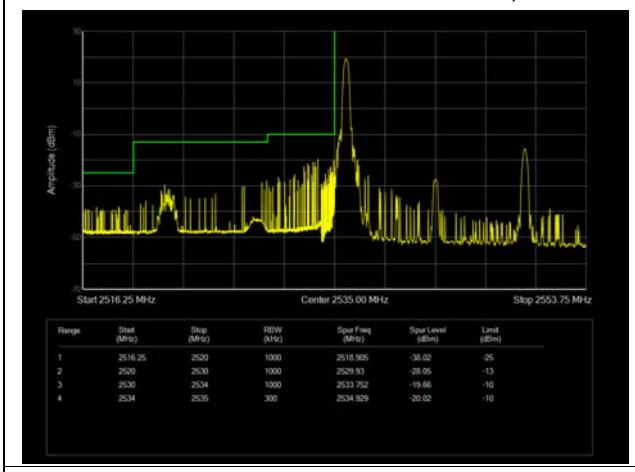

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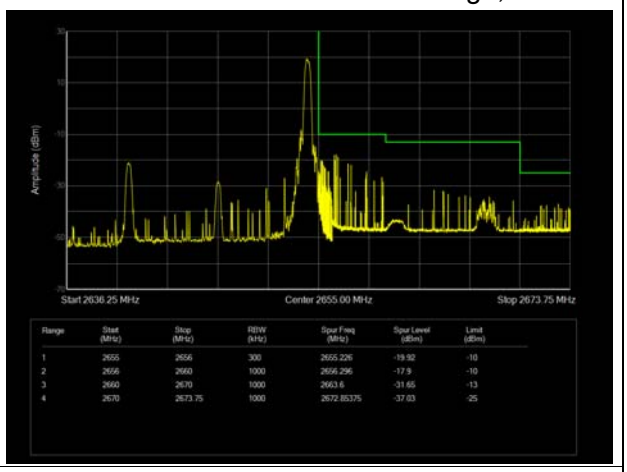
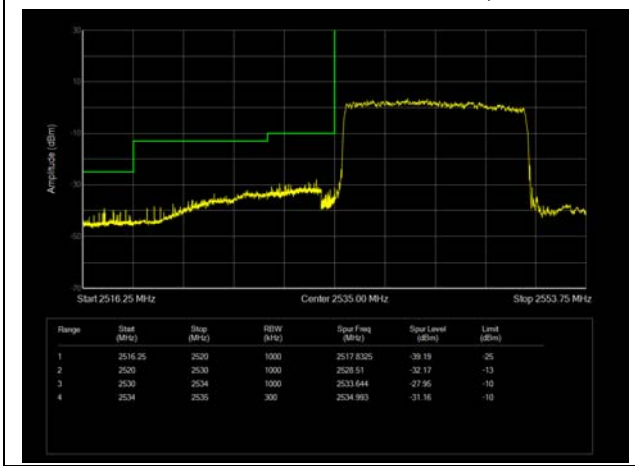
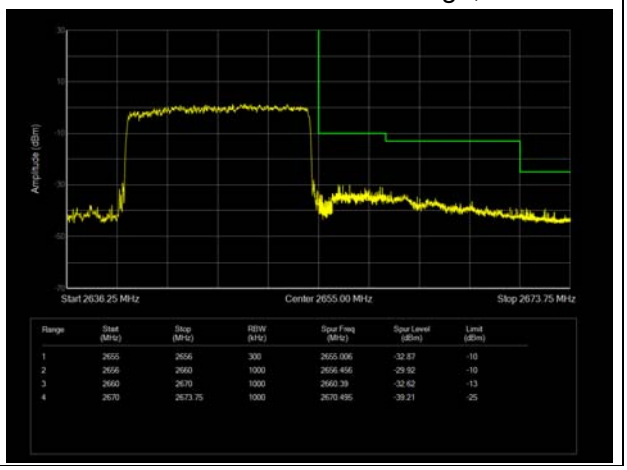


LTE Band 41 QPSK 15MHz CH-Low, 100%RB



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



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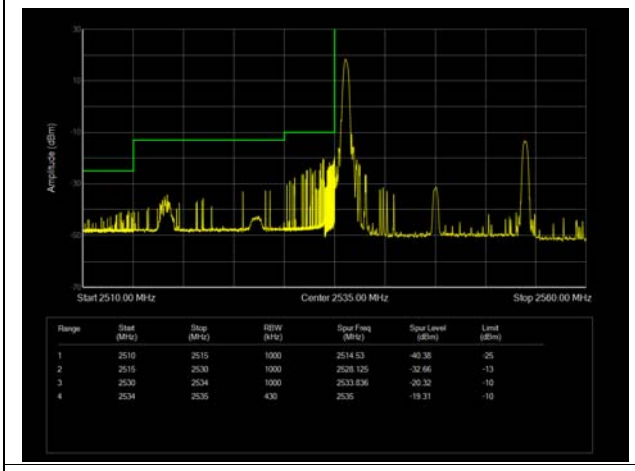
LTE Band 41 QPSK 20MHz CH-Low, 1 RB



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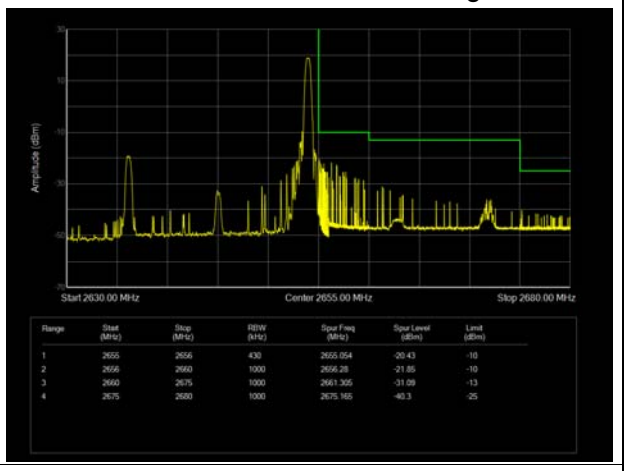

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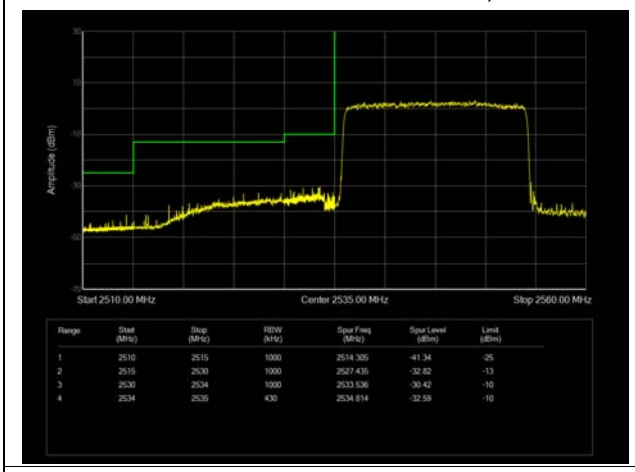
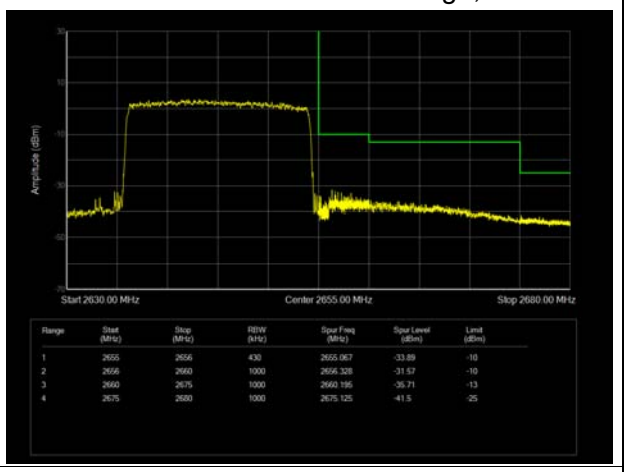
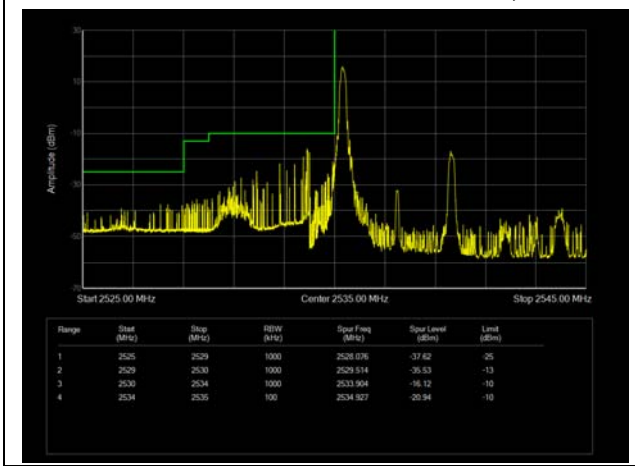


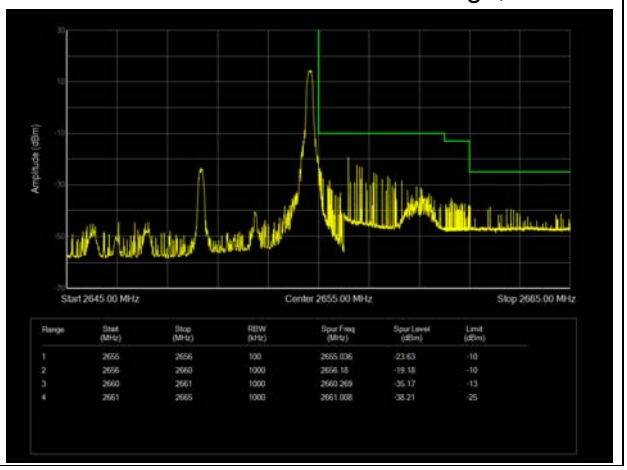
LTE Band 41 QPSK 20MHz CH-High, 100%RB



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



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



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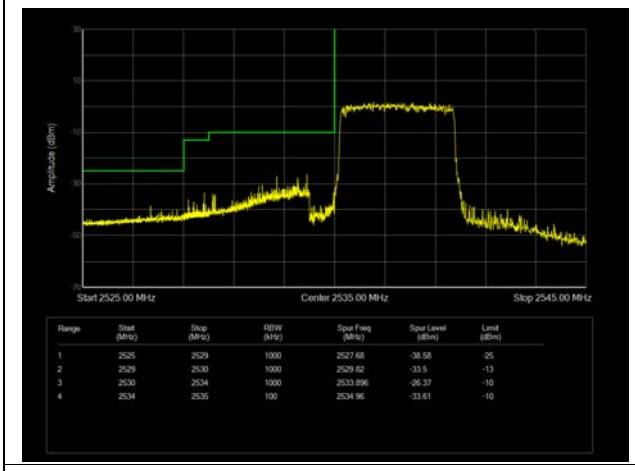
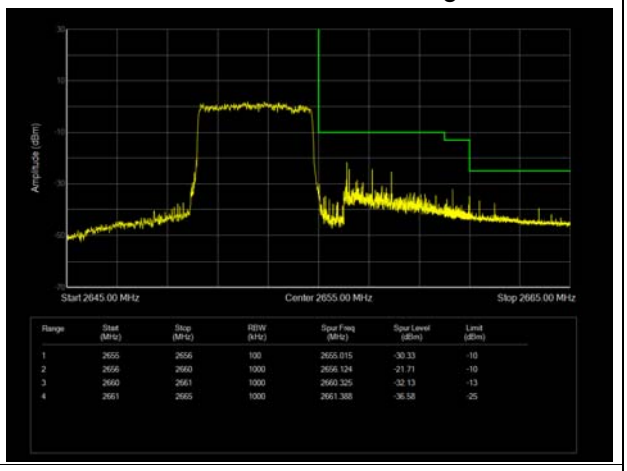
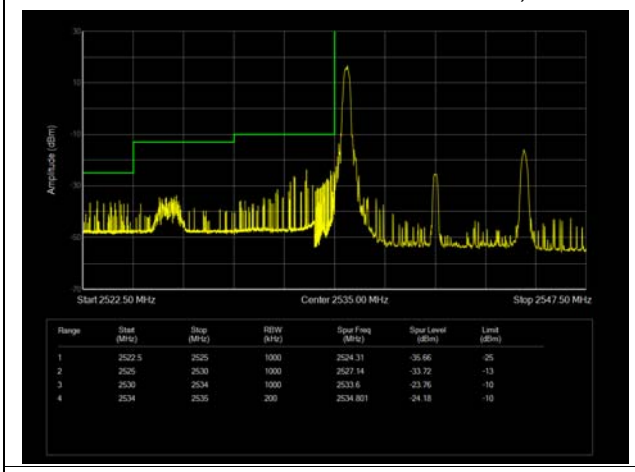
LTE Band 41 16QAM 5MHz CH-Low, 100%RB



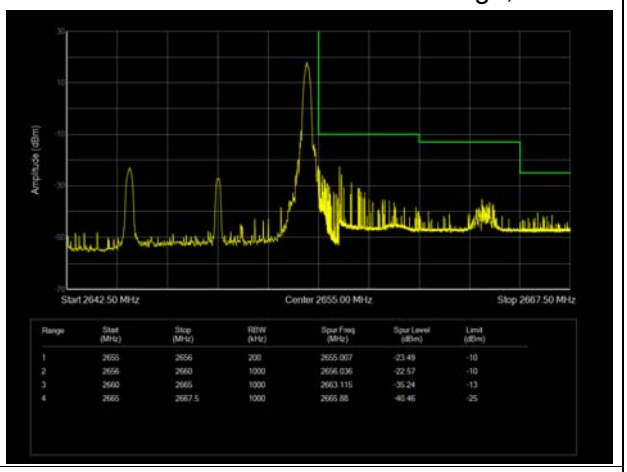
LTE Band 41 16QAM 5MHz CH-High, 100%RB



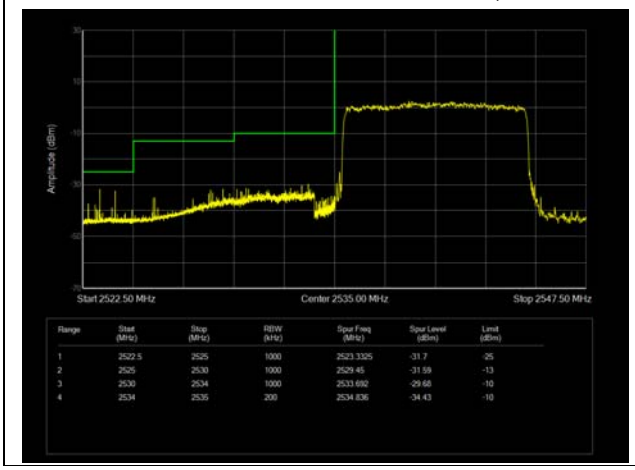
LTE Band 41 16QAM 10MHz CH-Low, 1 RB



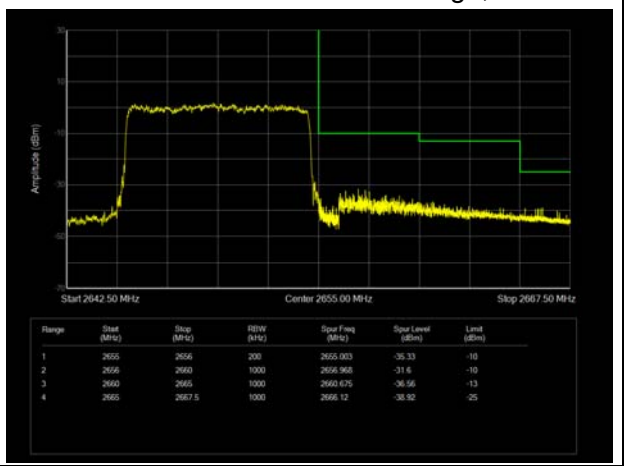
LTE Band 41 16QAM 10MHz CH-High, 1 RB



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



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



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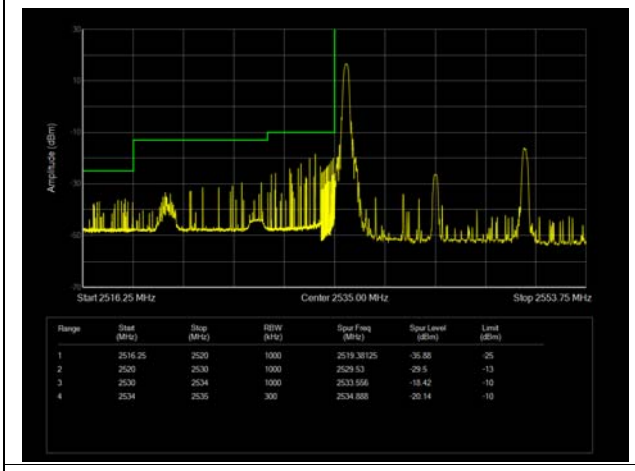
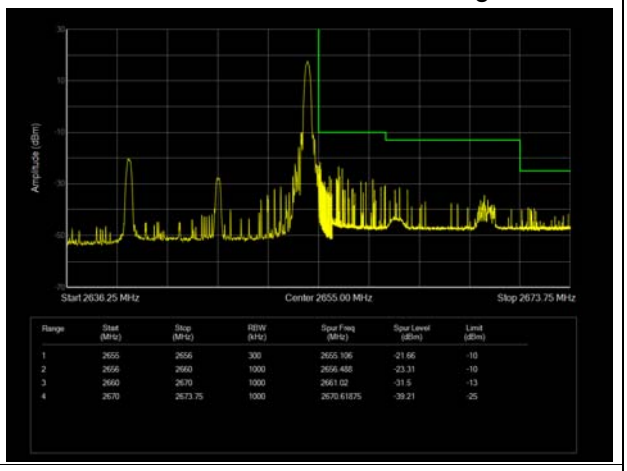
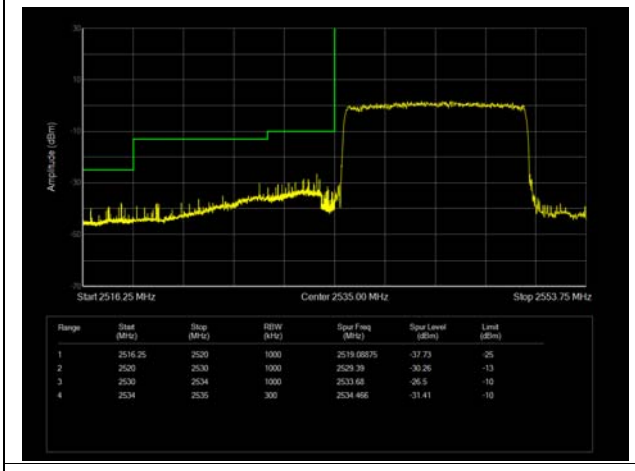
LTE Band 41 16QAM 15MHz CH-Low, 1 RB



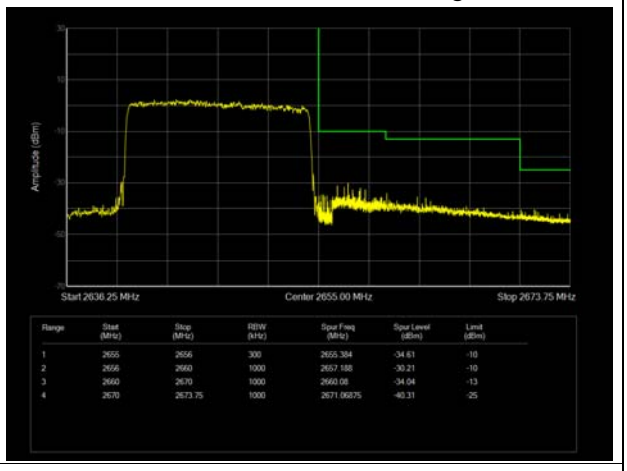
LTE Band 41 16QAM 15MHz CH-High, 1 RB



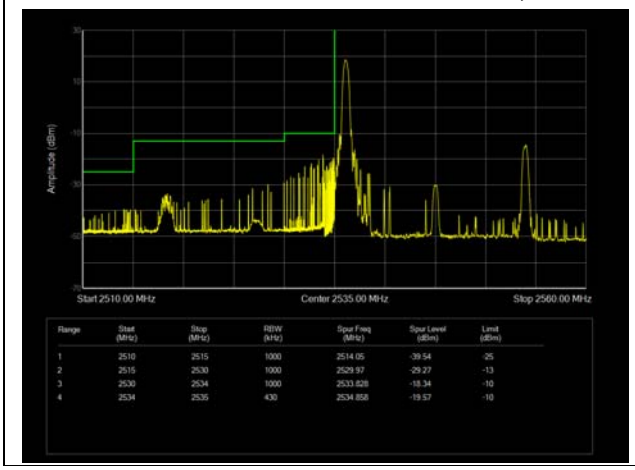
LTE Band 41 16QAM 15MHz CH-Low, 100%RB



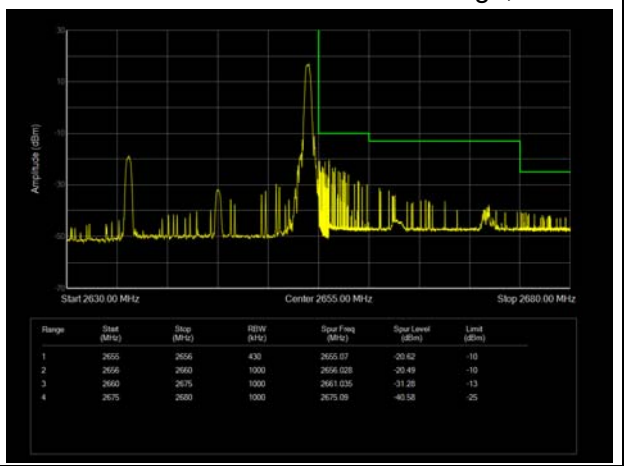
LTE Band 41 16QAM 15MHz CH-High, 100%RB



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



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



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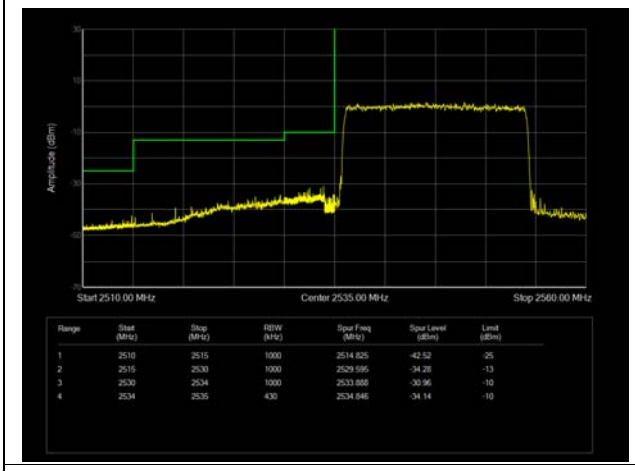
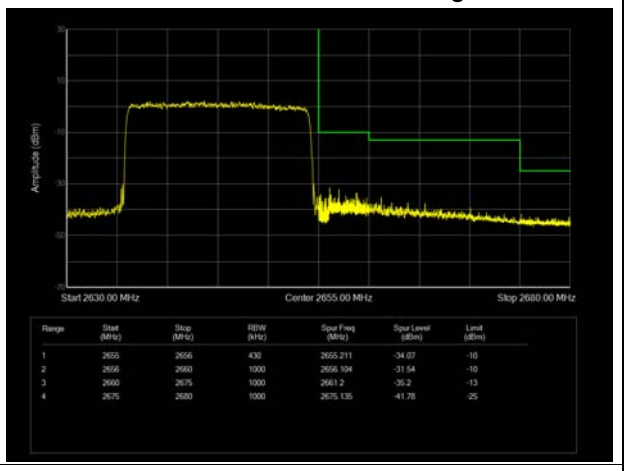
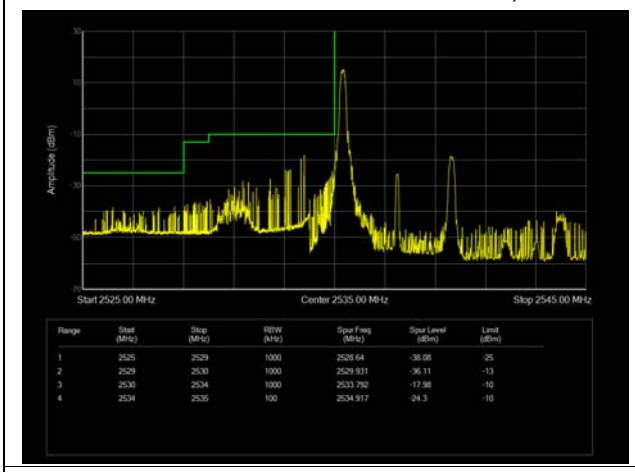
LTE Band 41 16QAM 20MHz CH-Low, 100%RB



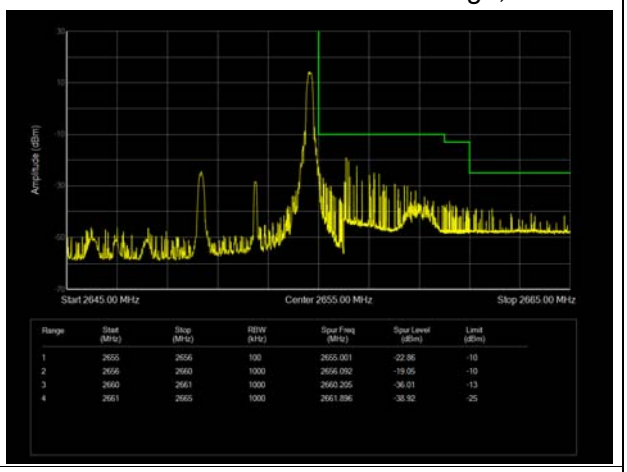
LTE Band 41 16QAM 20MHz CH-High, 100%RB



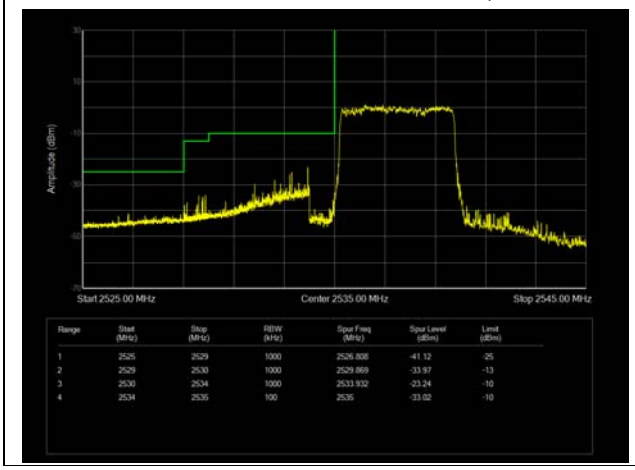
LTE Band 41 64QAM 5MHz CH-Low, 1 RB



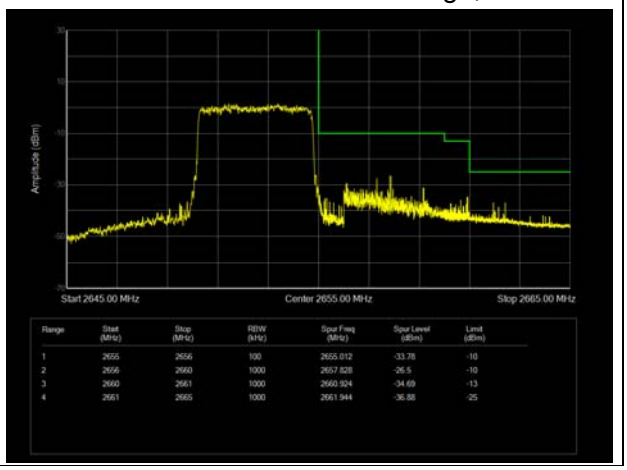
LTE Band 41 64QAM 5MHz CH-High, 1 RB



LTE Band 41 64QAM 5MHz CH-Low, 100%RB



LTE Band 41 64QAM 5MHz CH-High, 100%RB



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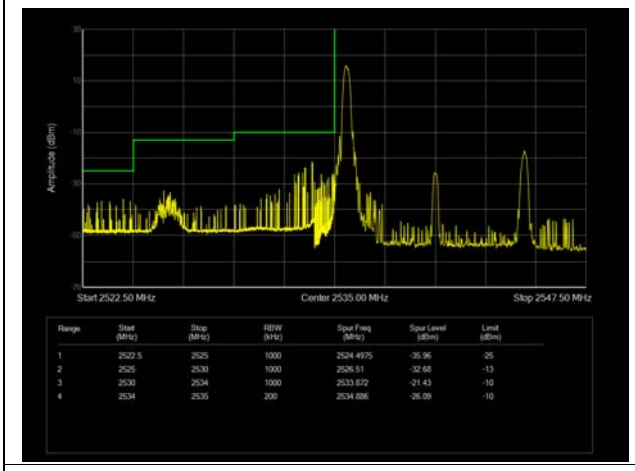
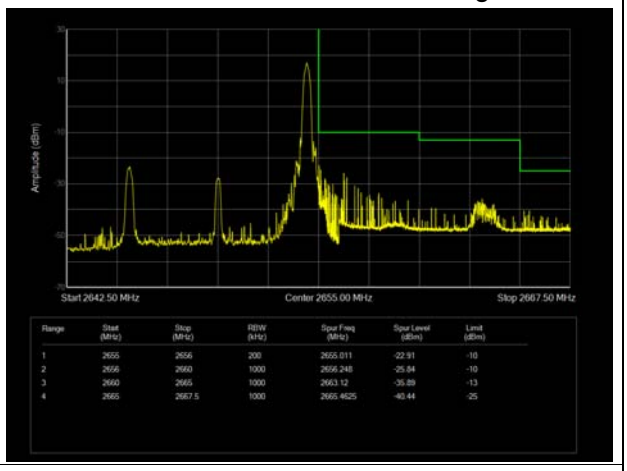
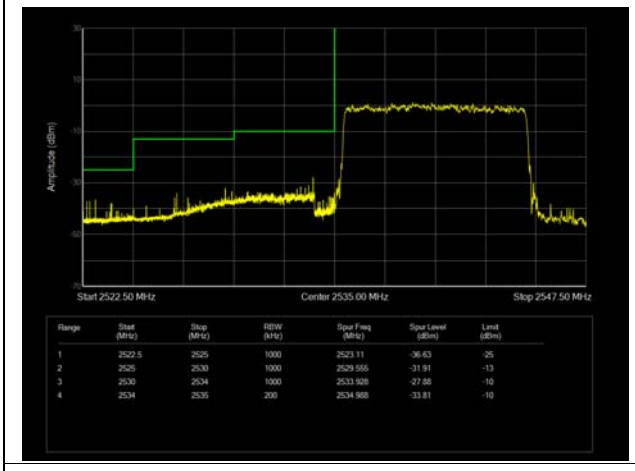
LTE Band 41 64QAM 10MHz CH-Low, 1 RB



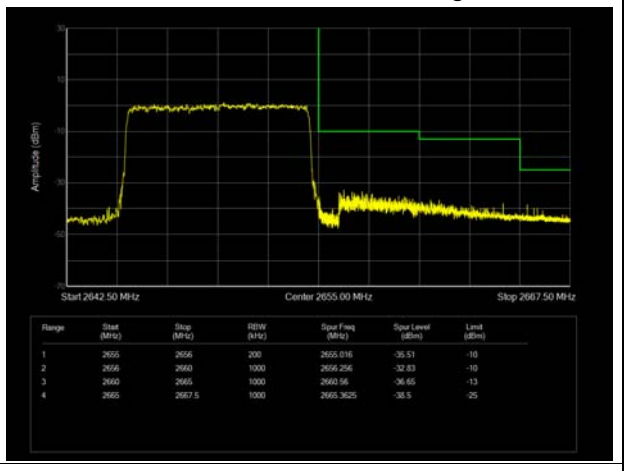
LTE Band 41 64QAM 10MHz CH-High, 1 RB



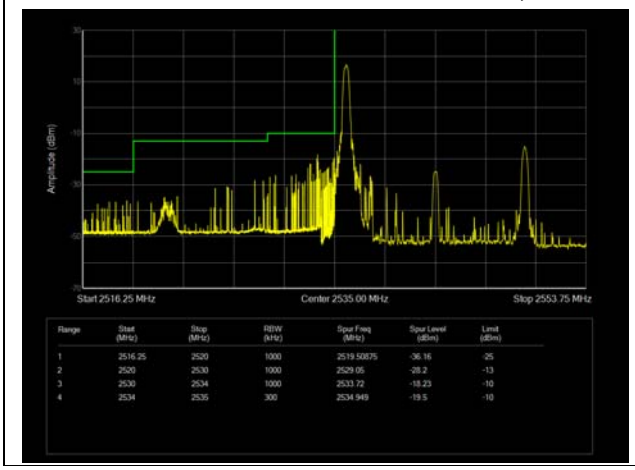
LTE Band 41 64QAM 10MHz CH-Low, 100%RB



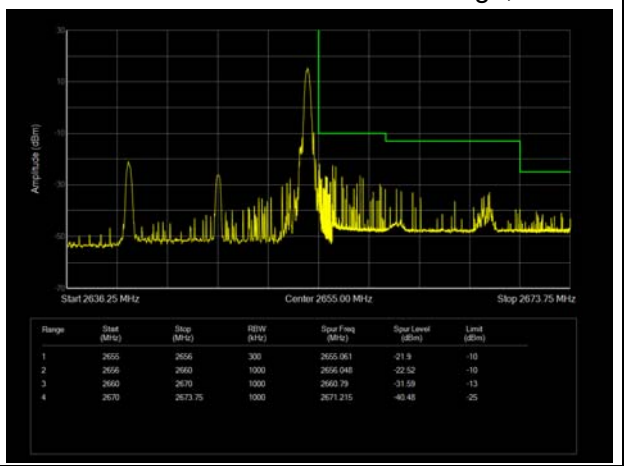
LTE Band 41 64QAM 10MHz CH-High, 100%RB



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



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



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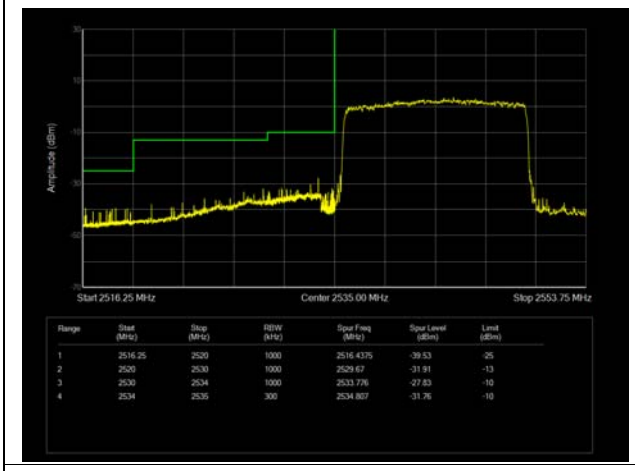
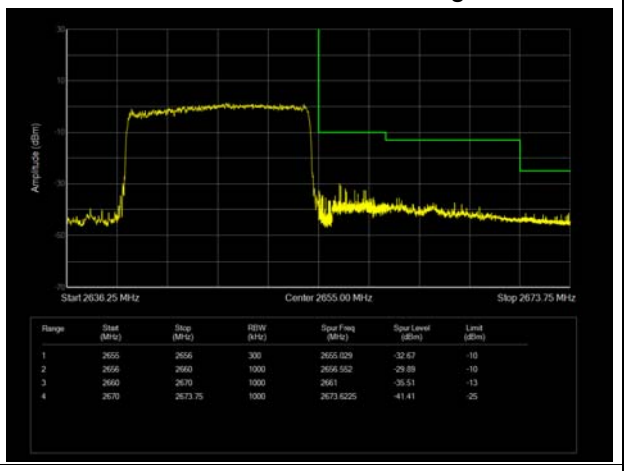
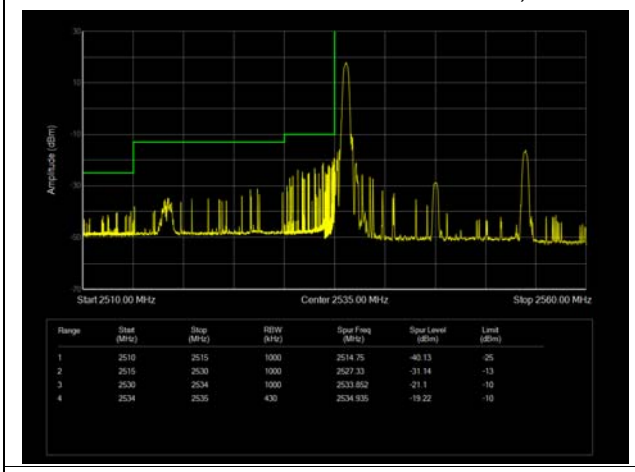
LTE Band 41 64QAM 15MHz CH-Low, 100%RB



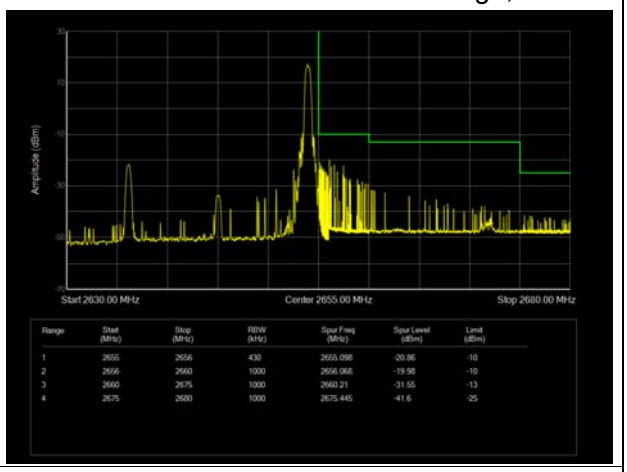
LTE Band 41 64QAM 15MHz CH-High, 100%RB



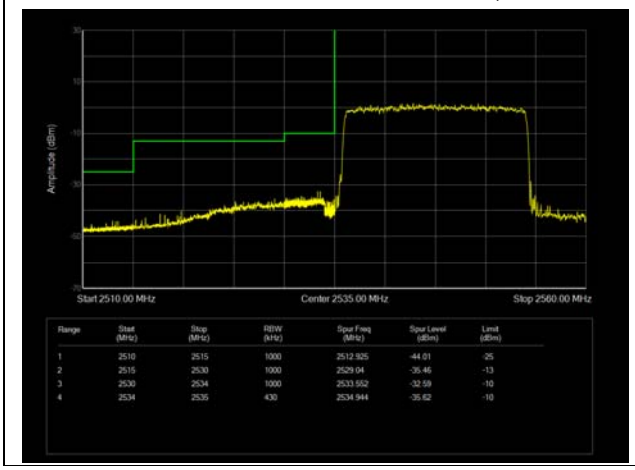
LTE Band 41 64QAM 20MHz CH-Low, 1 RB



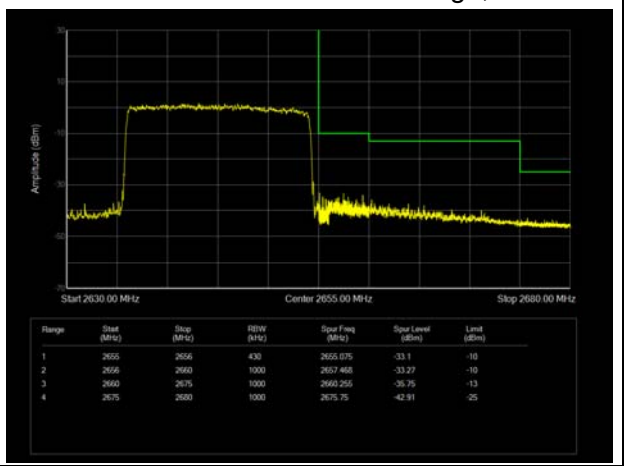
LTE Band 41 64QAM 20MHz CH-High, 1 RB



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



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



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5.4 Peak-to-Average Power Ratio (PAPR)

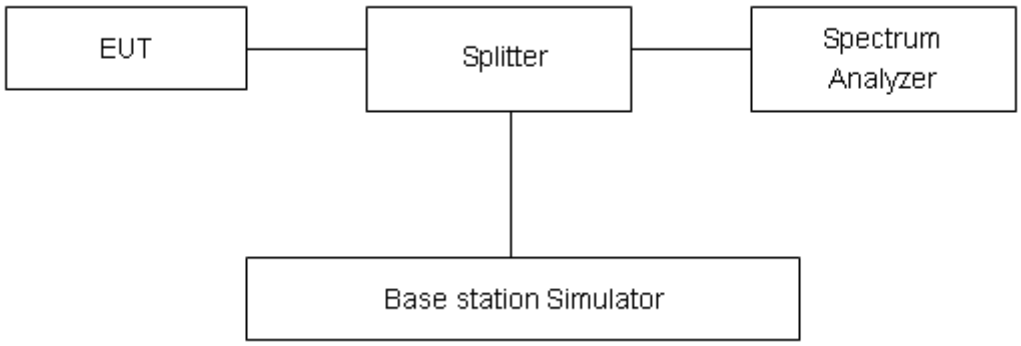
Ambient condition

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.

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Test Results

WCDMA Band IV	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
RMC	1312	1712.4	25.52	22.77	2.75	≤13	PASS
	1413	1732.6	25.74	23.00	2.74	≤13	PASS
	1513	1752.6	25.48	22.77	2.71	≤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	27.54	22.28	5.26	≤13	PASS
		20175	1732.5	27.57	22.43	5.14	≤13	PASS
		20393	1754.3	27.38	22.56	4.82	≤13	PASS
	3	19965	1711.5	27.76	22.59	5.17	≤13	PASS
		20175	1732.5	27.64	22.48	5.16	≤13	PASS
		20385	1753.5	27.48	22.43	5.05	≤13	PASS
	5	19975	1712.5	27.65	22.41	5.24	≤13	PASS
		20175	1732.5	27.63	22.47	5.16	≤13	PASS
		20375	1752.5	27.60	22.60	5.00	≤13	PASS
	10	20000	1715	27.66	22.45	5.21	≤13	PASS
		20175	1732.5	27.56	22.44	5.12	≤13	PASS
		20350	1750	27.62	22.52	5.10	≤13	PASS
	15	20025	1717.5	28.02	22.53	5.49	≤13	PASS
		20175	1732.5	27.94	22.49	5.45	≤13	PASS
		20325	1747.5	27.98	22.50	5.48	≤13	PASS
	20	20050	1720	27.82	22.60	5.22	≤13	PASS
		20175	1732.5	27.75	22.49	5.26	≤13	PASS
		20300	1745	27.88	22.56	5.32	≤13	PASS
16QAM	1.4	19957	1710.7	27.35	21.29	6.06	≤13	PASS
		20175	1732.5	27.40	21.49	5.91	≤13	PASS
		20393	1754.3	27.30	21.49	5.81	≤13	PASS
	3	19965	1711.5	27.71	21.64	6.07	≤13	PASS
		20175	1732.5	27.48	21.47	6.01	≤13	PASS
		20385	1753.5	27.30	21.44	5.86	≤13	PASS
	5	19975	1712.5	27.35	21.30	6.05	≤13	PASS
		20175	1732.5	27.42	21.47	5.95	≤13	PASS
		20375	1752.5	27.46	21.59	5.87	≤13	PASS
	10	20000	1715	27.46	21.46	6.00	≤13	PASS
		20175	1732.5	27.59	21.62	5.97	≤13	PASS
		20350	1750	27.54	21.58	5.96	≤13	PASS

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	15	20025	1717.5	27.47	21.35	6.12	≤13	PASS
		20175	1732.5	27.54	21.46	6.08	≤13	PASS
		20325	1747.5	27.65	21.56	6.09	≤13	PASS
	20	20050	1720	27.59	21.50	6.09	≤13	PASS
		20175	1732.5	27.64	21.60	6.04	≤13	PASS
		20300	1745	27.72	21.65	6.07	≤13	PASS
64QAM	1.4	19957	1710.7	27.10	21.17	5.93	≤13	PASS
		20175	1732.5	26.96	21.02	5.94	≤13	PASS
		20393	1754.3	27.16	21.28	5.88	≤13	PASS
	3	19965	1711.5	27.28	21.27	6.01	≤13	PASS
		20175	1732.5	27.17	21.18	5.99	≤13	PASS
		20385	1753.5	27.01	21.05	5.96	≤13	PASS
	5	19975	1712.5	27.08	21.10	5.98	≤13	PASS
		20175	1732.5	27.20	21.20	6.00	≤13	PASS
		20375	1752.5	27.28	21.39	5.89	≤13	PASS
	10	20000	1715	27.14	21.15	5.99	≤13	PASS
		20175	1732.5	27.16	21.17	5.99	≤13	PASS
		20350	1750	27.08	21.10	5.98	≤13	PASS
	15	20025	1717.5	27.37	21.35	6.02	≤13	PASS
		20175	1732.5	27.20	21.14	6.06	≤13	PASS
		20325	1747.5	27.25	21.12	6.13	≤13	PASS
	20	20050	1720	27.29	21.23	6.06	≤13	PASS
		20175	1732.5	27.22	21.15	6.07	≤13	PASS
		20300	1745	27.32	21.20	6.12	≤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	26.49	21.25	5.24	≤13	PASS
		21100	2535	26.68	21.29	5.39	≤13	PASS
		21425	2567.5	26.37	21.21	5.16	≤13	PASS
	10	20800	2505	26.73	21.43	5.30	≤13	PASS
		21100	2535	26.66	21.29	5.37	≤13	PASS
		21400	2565	26.40	21.31	5.09	≤13	PASS
	15	20825	2507.5	27.07	21.36	5.71	≤13	PASS
		21100	2535	27.00	21.33	5.67	≤13	PASS
		21375	2562.5	26.61	21.10	5.51	≤13	PASS
	20	20850	2510	26.93	21.43	5.50	≤13	PASS

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		21100	2535	26.71	21.32	5.39	≤13	PASS
		21350	2560	26.50	21.23	5.27	≤13	PASS
16QAM	5	20775	2502.5	25.38	20.14	5.24	≤13	PASS
		21100	2535	25.62	20.23	5.39	≤13	PASS
		21425	2567.5	25.29	20.13	5.16	≤13	PASS
	10	20800	2505	25.63	20.33	5.30	≤13	PASS
		21100	2535	25.71	20.34	5.37	≤13	PASS
		21400	2565	25.38	20.29	5.09	≤13	PASS
	15	20825	2507.5	25.98	20.27	5.71	≤13	PASS
		21100	2535	25.93	20.26	5.67	≤13	PASS
		21375	2562.5	25.74	20.23	5.51	≤13	PASS
	20	20850	2510	25.86	20.36	5.50	≤13	PASS
		21100	2535	25.76	20.37	5.39	≤13	PASS
		21350	2560	25.54	20.27	5.27	≤13	PASS
64QAM	5	20775	2502.5	25.72	19.61	6.11	≤13	PASS
		21100	2535	25.80	19.56	6.24	≤13	PASS
		21425	2567.5	25.67	19.65	6.02	≤13	PASS
	10	20800	2505	25.96	19.81	6.15	≤13	PASS
		21100	2535	25.97	19.74	6.23	≤13	PASS
		21400	2565	25.70	19.63	6.07	≤13	PASS
	15	20825	2507.5	26.25	19.96	6.29	≤13	PASS
		21100	2535	26.03	19.72	6.31	≤13	PASS
		21375	2562.5	25.74	19.60	6.14	≤13	PASS
	20	20850	2510	26.10	19.80	6.30	≤13	PASS
		21100	2535	26.01	19.72	6.29	≤13	PASS
		21350	2560	25.78	19.69	6.09	≤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	26.99	19.00	7.99	≤13	PASS
		38000	2595	26.84	17.05	9.79	≤13	PASS
		38225	2617.5	27.23	19.02	8.21	≤13	PASS
	10	37800	2575	26.95	17.71	9.24	≤13	PASS
		38000	2595	26.98	17.95	9.03	≤13	PASS

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		38200	2615	27.24	18.90	8.34	≤13	PASS
	15	37825	2577.5	27.29	17.92	9.37	≤13	PASS
		38000	2595	27.27	18.17	9.10	≤13	PASS
		38175	2612.5	27.39	17.37	10.02	≤13	PASS
	20	37850	2580	26.97	17.73	9.24	≤13	PASS
		38000	2595	27.06	17.98	9.08	≤13	PASS
		38150	2610	27.35	18.19	9.16	≤13	PASS
16QAM	5	37775	2572.5	26.58	16.94	9.64	≤13	PASS
		38000	2595	26.83	17.15	9.68	≤13	PASS
		38225	2617.5	27.05	17.27	9.78	≤13	PASS
	10	37800	2575	26.74	17.46	9.28	≤13	PASS
		38000	2595	26.82	17.39	9.43	≤13	PASS
		38200	2615	26.92	16.99	9.93	≤13	PASS
	15	37825	2577.5	27.09	17.54	9.55	≤13	PASS
		38000	2595	26.95	17.29	9.66	≤13	PASS
		38175	2612.5	26.98	15.99	10.99	≤13	PASS
	20	37850	2580	26.69	16.30	10.39	≤13	PASS
		38000	2595	27.02	19.60	7.42	≤13	PASS
		38150	2610	27.26	17.93	9.33	≤13	PASS
64QAM	5	37775	2572.5	26.09	16.61	9.48	≤13	PASS
		38000	2595	26.23	17.42	8.81	≤13	PASS
		38225	2617.5	26.44	16.88	9.56	≤13	PASS
	10	37800	2575	26.34	17.18	9.16	≤13	PASS
		38000	2595	26.23	17.01	9.22	≤13	PASS
		38200	2615	26.43	16.74	9.69	≤13	PASS
	15	37825	2577.5	26.38	16.44	9.94	≤13	PASS
		38000	2595	26.28	16.33	9.95	≤13	PASS
		38175	2612.5	26.55	16.85	9.70	≤13	PASS
	20	37850	2580	26.16	15.77	10.39	≤13	PASS
		38000	2595	26.21	17.29	8.92	≤13	PASS
		38150	2610	26.55	17.17	9.38	≤13	PASS

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LTE Band 41								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	40065	2537.5	26.28	16.93	9.35	≤13	PASS
		40640	2595	26.44	18.19	8.25	≤13	PASS
		41215	2652.5	26.17	16.67	9.50	≤13	PASS
	10	40090	2540	26.33	16.96	9.37	≤13	PASS
		40640	2595	26.52	18.51	8.01	≤13	PASS
		41190	2650	26.32	18.25	8.07	≤13	PASS
	15	40115	2542.5	26.71	17.62	9.09	≤13	PASS
		40640	2595	26.71	17.06	9.65	≤13	PASS
		41165	2647.5	26.75	18.56	8.19	≤13	PASS
	20	40140	2545	26.40	17.34	9.06	≤13	PASS
		40640	2595	26.39	17.30	9.09	≤13	PASS
		41140	2645	26.70	18.92	7.78	≤13	PASS
16QAM	5	40065	2537.5	25.78	16.14	9.64	≤13	PASS
		40640	2595	26.02	16.58	9.44	≤13	PASS
		41215	2652.5	25.90	16.22	9.68	≤13	PASS
	10	40090	2540	26.11	16.43	9.68	≤13	PASS
		40640	2595	25.94	14.97	10.97	≤13	PASS
		41190	2650	26.11	16.64	9.47	≤13	PASS
	15	40115	2542.5	26.04	15.04	11.00	≤13	PASS
		40640	2595	26.23	16.53	9.70	≤13	PASS
		41165	2647.5	26.29	16.99	9.30	≤13	PASS
	20	40140	2545	26.04	16.07	9.97	≤13	PASS
		40640	2595	26.00	16.80	9.20	≤13	PASS
		41140	2645	26.16	15.32	10.84	≤13	PASS
64QAM	5	40065	2537.5	25.22	16.04	9.18	≤13	PASS
		40640	2595	25.45	16.18	9.27	≤13	PASS
		41215	2652.5	25.20	15.69	9.51	≤13	PASS
	10	40090	2540	25.37	15.85	9.52	≤13	PASS
		40640	2595	25.45	16.10	9.35	≤13	PASS
		41190	2650	25.25	15.72	9.53	≤13	PASS
	15	40115	2542.5	25.53	15.89	9.64	≤13	PASS

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		40640	2595	25.58	16.16	9.42	≤13	PASS
		41165	2647.5	25.55	16.14	9.41	≤13	PASS
	20	40140	2545	25.27	15.03	10.24	≤13	PASS
		40640	2595	25.33	16.47	8.86	≤13	PASS
		41140	2645	25.52	16.52	9.00	≤13	PASS

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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 +50°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 +50°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

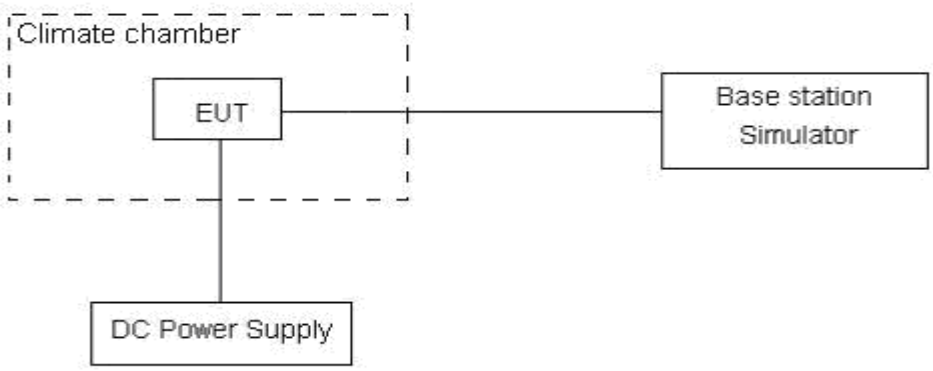
Frequency Stability (Voltage Variation)

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 4.2 V, with a nominal voltage of 3.87V.

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.

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Test Result

WCDMA Band IV						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
Temperature	Voltage	BPSK	QPSK	BPSK	QPSK	
Normal（25℃）	Normal	1.63	10.93	0.00094	0.00631	PASS
Extreme（50℃）		5.44	3.68	0.00314	0.00212	PASS
Extreme（40℃）		10.57	7.87	0.00610	0.00454	PASS
Extreme（30℃）		1.24	5.72	0.00071	0.00330	PASS
Extreme（20℃）		3.57	9.49	0.00206	0.00548	PASS
Extreme（10℃）		7.45	9.02	0.00430	0.00521	PASS
Extreme（0℃）		16.50	14.95	0.00952	0.00863	PASS
Extreme（-10℃）		6.17	2.47	0.00356	0.00143	PASS
Extreme（-20℃）		10.33	12.31	0.00596	0.00711	PASS
Extreme（-30℃）		5.50	6.26	0.00318	0.00361	PASS
25℃	LV	3.70	14.19	0.00213	0.00819	PASS
	HV	13.59	10.99	0.00785	0.00635	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	5.86	5.19	11.36	0.00338	0.00299	0.00656	PASS
Extreme（50℃）		15.72	10.25	2.57	0.00907	0.00591	0.00148	PASS
Extreme（40℃）		15.98	12.42	7.39	0.00922	0.00717	0.00427	PASS
Extreme（30℃）		5.90	5.74	16.79	0.00341	0.00331	0.00969	PASS
Extreme（20℃）		4.57	2.95	5.96	0.00264	0.00170	0.00344	PASS
Extreme（10℃）		5.96	7.09	15.72	0.00344	0.00409	0.00907	PASS
Extreme（0℃）		9.18	12.98	16.34	0.00530	0.00749	0.00943	PASS
Extreme（-10℃）		5.56	9.02	8.66	0.00321	0.00521	0.00500	PASS
Extreme（-20℃）		4.89	3.58	6.76	0.00282	0.00207	0.00390	PASS
Extreme（-30℃）		9.85	9.02	8.99	0.00569	0.00520	0.00519	PASS
25℃	LV	15.03	14.64	3.90	0.00867	0.00845	0.00225	PASS
	HV	9.70	4.15	12.04	0.00560	0.00240	0.00695	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability	Frequency Stability	Frequency Stability	Verdict

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BANDWIDTH	3MHz				（ppm）	（ppm）	（ppm）	
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	11.03	4.85	17.60	0.00636	0.00280	0.01016	PASS
Extreme（50℃）		2.24	16.32	13.59	0.00129	0.00942	0.00784	PASS
Extreme（40℃）		10.14	6.58	8.16	0.00585	0.00380	0.00471	PASS
Extreme（30℃）		3.91	9.71	9.70	0.00226	0.00560	0.00560	PASS
Extreme（20℃）		2.86	6.26	17.25	0.00165	0.00362	0.00995	PASS
Extreme（10℃）		16.12	1.31	17.86	0.00930	0.00075	0.01031	PASS
Extreme（0℃）		7.53	16.11	15.12	0.00434	0.00930	0.00872	PASS
Extreme（-10℃）		7.23	4.27	3.60	0.00418	0.00247	0.00208	PASS
Extreme（-20℃）		13.87	9.36	3.02	0.00800	0.00540	0.00174	PASS
Extreme（-30℃）		16.94	16.19	17.65	0.00978	0.00934	0.01019	PASS
25℃	LV	5.46	9.02	17.58	0.00315	0.00521	0.01015	PASS
	HV	4.34	15.07	6.60	0.00251	0.00870	0.00381	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	8.03	11.62	13.89	0.00463	0.00671	0.00802	PASS
Extreme（50℃）		6.39	9.54	16.34	0.00369	0.00551	0.00943	PASS
Extreme（40℃）		15.00	17.94	15.17	0.00866	0.01036	0.00876	PASS
Extreme（30℃）		1.63	1.91	3.20	0.00094	0.00110	0.00185	PASS
Extreme（20℃）		16.58	8.80	1.97	0.00957	0.00508	0.00114	PASS
Extreme（10℃）		12.96	8.32	9.59	0.00748	0.00480	0.00554	PASS
Extreme（0℃）		1.61	15.10	17.95	0.00093	0.00871	0.01036	PASS
Extreme（-10℃）		8.31	7.20	8.53	0.00480	0.00416	0.00492	PASS
Extreme（-20℃）		11.29	16.10	16.89	0.00651	0.00930	0.00975	PASS
Extreme（-30℃）		5.66	10.66	13.44	0.00327	0.00616	0.00776	PASS
25℃	LV	2.16	9.02	2.36	0.00125	0.00521	0.00136	PASS
	HV	17.83	17.88	3.87	0.01029	0.01032	0.00223	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	6.46	5.60	4.00	0.00373	0.00323	0.00231	PASS

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Extreme（50℃）		3.89	17.63	6.49	0.00225	0.01018	0.00374	PASS
Extreme（40℃）		6.11	4.38	3.57	0.00353	0.00253	0.00206	PASS
Extreme（30℃）		10.01	11.34	2.01	0.00578	0.00654	0.00116	PASS
Extreme（20℃）		15.20	14.19	1.13	0.00877	0.00819	0.00065	PASS
Extreme（10℃）		5.30	2.90	14.40	0.00306	0.00167	0.00831	PASS
Extreme（0℃）		14.17	3.13	14.85	0.00818	0.00181	0.00857	PASS
Extreme（-10℃）		12.89	13.35	3.98	0.00744	0.00771	0.00230	PASS
Extreme（-20℃）		5.32	15.40	10.18	0.00307	0.00889	0.00588	PASS
Extreme（-30℃）		10.79	13.51	12.15	0.00623	0.00780	0.00701	PASS
25℃	LV	1.10	14.24	15.62	0.00064	0.00822	0.00902	PASS
	HV	7.96	12.68	1.56	0.00459	0.00732	0.00090	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	1.09	2.79	3.21	0.00063	0.00161	0.00185	PASS
Extreme（50℃）		11.70	16.11	13.52	0.00676	0.00930	0.00780	PASS
Extreme（40℃）		6.28	11.71	1.91	0.00362	0.00676	0.00110	PASS
Extreme（30℃）		15.83	13.43	13.13	0.00914	0.00775	0.00758	PASS
Extreme（20℃）		14.62	7.47	7.10	0.00844	0.00431	0.00410	PASS
Extreme（10℃）		16.18	11.43	8.64	0.00934	0.00659	0.00499	PASS
Extreme（0℃）		12.11	15.62	1.90	0.00699	0.00901	0.00110	PASS
Extreme（-10℃）		9.00	11.13	16.94	0.00520	0.00642	0.00978	PASS
Extreme（-20℃）		7.18	2.69	14.74	0.00415	0.00155	0.00851	PASS
Extreme（-30℃）		1.87	2.59	7.15	0.00108	0.00149	0.00413	PASS
25℃	LV	5.36	2.16	10.38	0.00309	0.00125	0.00599	PASS
	HV	16.01	16.41	13.84	0.00924	0.00947	0.00799	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	9.02	13.52	11.86	0.00521	0.00780	0.00685	PASS
Extreme（50℃）		6.40	9.71	7.46	0.00369	0.00560	0.00430	PASS
Extreme（40℃）		7.93	9.01	7.25	0.00458	0.00520	0.00418	PASS
Extreme（30℃）		15.70	7.00	10.29	0.00906	0.00404	0.00594	PASS
Extreme（20℃）		13.18	3.55	16.34	0.00761	0.00205	0.00943	PASS

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Extreme（10℃）		11.07	9.02	3.70	0.00639	0.00520	0.00214	PASS
Extreme（0℃）		15.83	3.48	11.28	0.00914	0.00201	0.00651	PASS
Extreme（-10℃）		5.46	3.39	10.97	0.00315	0.00196	0.00633	PASS
Extreme（-20℃）		4.49	10.64	8.56	0.00259	0.00614	0.00494	PASS
Extreme（-30℃）		12.16	1.89	11.33	0.00702	0.00109	0.00654	PASS
25℃	LV	16.11	5.10	11.26	0.00930	0.00295	0.00650	PASS
	HV	2.88	15.10	10.89	0.00166	0.00872	0.00629	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	17.43	9.75	3.05	0.00688	0.00384	0.00120	PASS
Extreme（50℃）		3.18	6.68	8.92	0.00125	0.00263	0.00352	PASS
Extreme（40℃）		13.76	9.39	7.08	0.00543	0.00371	0.00279	PASS
Extreme（30℃）		9.29	12.01	16.88	0.00367	0.00474	0.00666	PASS
Extreme（20℃）		14.88	16.29	5.16	0.00587	0.00642	0.00203	PASS
Extreme（10℃）		10.81	4.91	11.45	0.00426	0.00194	0.00452	PASS
Extreme（0℃）		9.99	12.08	3.72	0.00394	0.00476	0.00147	PASS
Extreme（-10℃）		1.38	7.29	3.62	0.00054	0.00288	0.00143	PASS
Extreme（-20℃）		11.84	3.63	11.29	0.00467	0.00143	0.00445	PASS
Extreme（-30℃）		14.78	13.34	6.44	0.00583	0.00526	0.00254	PASS
25℃	LV	1.34	4.08	4.83	0.00053	0.00161	0.00191	PASS
	HV	13.88	1.16	11.49	0.00548	0.00046	0.00453	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	16.28	1.56	14.75	0.00642	0.00062	0.00582	PASS
Extreme（50℃）		1.55	16.69	7.94	0.00061	0.00658	0.00313	PASS
Extreme（40℃）		17.85	6.98	9.62	0.00704	0.00275	0.00380	PASS
Extreme（30℃）		16.83	16.84	10.16	0.00664	0.00664	0.00401	PASS
Extreme（20℃）		16.20	5.56	17.88	0.00639	0.00219	0.00705	PASS
Extreme（10℃）		1.74	15.77	1.44	0.00069	0.00622	0.00057	PASS
Extreme（0℃）		11.59	2.68	13.33	0.00457	0.00106	0.00526	PASS
Extreme（-10℃）		5.88	2.98	9.30	0.00232	0.00118	0.00367	PASS
Extreme（-20℃）		14.90	14.90	15.90	0.00588	0.00588	0.00627	PASS

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Extreme（-30℃）		15.14	5.18	10.56	0.00597	0.00204	0.00417	PASS
25℃	LV	7.13	1.49	2.44	0.00281	0.00059	0.00096	PASS
	HV	9.86	12.58	16.39	0.00389	0.00496	0.00646	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	8.01	14.20	14.96	0.00316	0.00560	0.00590	PASS
Extreme（50℃）		17.82	5.72	10.16	0.00703	0.00226	0.00401	PASS
Extreme（40℃）		5.55	3.92	10.31	0.00219	0.00155	0.00407	PASS
Extreme（30℃）		9.99	2.47	3.59	0.00394	0.00098	0.00141	PASS
Extreme（20℃）		13.07	1.34	9.05	0.00516	0.00053	0.00357	PASS
Extreme（10℃）		7.48	15.30	7.23	0.00295	0.00603	0.00285	PASS
Extreme（0℃）		14.53	2.28	14.21	0.00573	0.00090	0.00561	PASS
Extreme（-10℃）		3.44	16.51	13.95	0.00136	0.00651	0.00550	PASS
Extreme（-20℃）		9.94	9.97	8.37	0.00392	0.00393	0.00330	PASS
Extreme（-30℃）		7.66	7.75	2.59	0.00302	0.00306	0.00102	PASS
25℃	LV	9.96	17.16	1.98	0.00393	0.00677	0.00078	PASS
	HV	3.85	13.54	12.99	0.00152	0.00534	0.00512	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	8.77	2.88	3.38	0.00346	0.00114	0.00133	PASS
Extreme（50℃）		5.19	13.50	8.97	0.00205	0.00532	0.00354	PASS
Extreme（40℃）		5.72	4.22	2.60	0.00226	0.00166	0.00103	PASS
Extreme（30℃）		3.02	11.61	7.88	0.00119	0.00458	0.00311	PASS
Extreme（20℃）		3.28	5.27	13.08	0.00129	0.00208	0.00516	PASS
Extreme（10℃）		10.61	9.80	16.99	0.00419	0.00387	0.00670	PASS
Extreme（0℃）		4.40	8.15	4.06	0.00174	0.00321	0.00160	PASS
Extreme（-10℃）		8.74	9.04	17.97	0.00345	0.00357	0.00709	PASS
Extreme（-20℃）		2.54	9.86	16.34	0.00100	0.00389	0.00644	PASS
Extreme（-30℃）		9.85	2.82	5.16	0.00388	0.00111	0.00204	PASS
25℃	LV	4.32	2.95	2.28	0.00171	0.00116	0.00090	PASS
	HV	10.88	5.25	16.94	0.00429	0.00207	0.00668	PASS

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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	9.27	7.45	8.49	0.00357	0.00287	0.00327	PASS
Extreme（50℃）		15.98	1.06	17.30	0.00616	0.00041	0.00667	PASS
Extreme（40℃）		14.53	16.42	3.30	0.00560	0.00633	0.00127	PASS
Extreme（30℃）		12.45	10.61	1.80	0.00480	0.00409	0.00069	PASS
Extreme（20℃）		1.76	8.59	14.75	0.00068	0.00331	0.00568	PASS
Extreme（10℃）		15.42	15.13	15.07	0.00594	0.00583	0.00581	PASS
Extreme（0℃）		10.92	16.47	8.60	0.00421	0.00635	0.00332	PASS
Extreme（-10℃）		13.99	17.78	4.43	0.00539	0.00685	0.00171	PASS
Extreme（-20℃）		14.94	8.98	9.50	0.00576	0.00346	0.00366	PASS
Extreme（-30℃）		14.39	3.95	4.90	0.00555	0.00152	0.00189	PASS
25℃	LV	3.39	15.71	13.04	0.00131	0.00606	0.00502	PASS
	HV	5.05	10.34	7.78	0.00194	0.00399	0.00300	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	16.82	10.76	3.43	0.00648	0.00415	0.00132	PASS
Extreme（50℃）		12.57	16.16	9.70	0.00484	0.00623	0.00374	PASS
Extreme（40℃）		6.02	16.12	11.02	0.00232	0.00621	0.00425	PASS
Extreme（30℃）		4.79	1.05	15.79	0.00184	0.00041	0.00609	PASS
Extreme（20℃）		14.17	14.79	10.97	0.00546	0.00570	0.00423	PASS
Extreme（10℃）		8.06	4.90	1.72	0.00311	0.00189	0.00066	PASS
Extreme（0℃）		1.23	1.30	7.95	0.00047	0.00050	0.00307	PASS
Extreme（-10℃）		14.41	2.76	11.79	0.00555	0.00106	0.00454	PASS
Extreme（-20℃）		6.17	10.20	6.95	0.00238	0.00393	0.00268	PASS
Extreme（-30℃）		12.08	13.25	6.73	0.00465	0.00510	0.00259	PASS
25℃	LV	17.85	4.15	3.66	0.00688	0.00160	0.00141	PASS
	HV	6.76	11.17	12.01	0.00261	0.00430	0.00463	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	8.00	10.00	4.00	0.00308	0.00385	0.00154	PASS
Extreme（50℃）		17.00	9.00	10.00	0.00655	0.00347	0.00385	PASS
Extreme（40℃）		5.00	13.00	10.00	0.00193	0.00501	0.00385	PASS

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Extreme（30℃）		7.00	10.00	6.00	0.00270	0.00385	0.00231	PASS
Extreme（20℃）		15.00	13.00	3.00	0.00578	0.00501	0.00116	PASS
Extreme（10℃）		4.00	17.00	14.00	0.00154	0.00655	0.00539	PASS
Extreme（0℃）		12.00	2.00	1.00	0.00462	0.00077	0.00039	PASS
Extreme（-10℃）		1.00	10.00	7.00	0.00039	0.00385	0.00270	PASS
Extreme（-20℃）		12.00	3.00	8.00	0.00462	0.00116	0.00308	PASS
Extreme（-30℃）		13.00	3.00	4.00	0.00501	0.00116	0.00154	PASS
25℃	LV	1.00	16.00	3.00	0.00039	0.00617	0.00116	PASS
	HV	8.00	6.00	11.00	0.00308	0.00231	0.00424	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	16.00	12.00	7.00	0.00617	0.00462	0.00270	PASS
Extreme（50℃）		8.00	1.00	13.00	0.00308	0.00039	0.00501	PASS
Extreme（40℃）		15.00	17.00	4.00	0.00578	0.00655	0.00154	PASS
Extreme（30℃）		13.00	17.00	14.00	0.00501	0.00655	0.00539	PASS
Extreme（20℃）		7.00	14.00	15.00	0.00270	0.00539	0.00578	PASS
Extreme（10℃）		9.00	15.00	15.00	0.00347	0.00578	0.00578	PASS
Extreme（0℃）		14.00	11.00	2.00	0.00539	0.00424	0.00077	PASS
Extreme（-10℃）		14.00	7.00	1.00	0.00539	0.00270	0.00039	PASS
Extreme（-20℃）		6.00	6.00	17.00	0.00231	0.00231	0.00655	PASS
Extreme（-30℃）		12.00	3.00	8.00	0.00462	0.00116	0.00308	PASS
25℃	LV	3.00	1.00	14.00	0.00116	0.00039	0.00539	PASS
	HV	17.00	17.00	1.00	0.00655	0.00655	0.00039	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	2.00	3.00	9.00	0.00077	0.00116	0.00347	PASS
Extreme（50℃）		2.00	3.00	16.00	0.00077	0.00116	0.00617	PASS
Extreme（40℃）		17.00	11.00	3.00	0.00656	0.00424	0.00116	PASS
Extreme（30℃）		4.00	3.00	6.00	0.00154	0.00116	0.00231	PASS
Extreme（20℃）		5.00	16.00	16.00	0.00193	0.00617	0.00617	PASS
Extreme（10℃）		15.00	6.00	5.00	0.00578	0.00231	0.00193	PASS
Extreme（0℃）		17.00	15.00	10.00	0.00656	0.00578	0.00386	PASS
Extreme（-10℃）		2.00	9.00	12.00	0.00077	0.00347	0.00463	PASS
Extreme（-20℃）		10.00	3.00	6.00	0.00386	0.00116	0.00231	PASS
Extreme（-30℃）		5.00	9.00	15.00	0.00193	0.00347	0.00578	PASS

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25℃	LV	10.00	8.00	12.00	0.00386	0.00309	0.00463	PASS
	HV	1.00	14.00	8.00	0.00039	0.00540	0.00309	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	7.00	2.00	3.00	0.00270	0.00077	0.00116	PASS
Extreme（50℃）		2.00	9.00	13.00	0.00077	0.00347	0.00501	PASS
Extreme（40℃）		2.00	17.00	7.00	0.00077	0.00656	0.00270	PASS
Extreme（30℃）		6.00	2.00	11.00	0.00231	0.00077	0.00424	PASS
Extreme（20℃）		3.00	8.00	3.00	0.00116	0.00309	0.00116	PASS
Extreme（10℃）		5.00	13.00	5.00	0.00193	0.00501	0.00193	PASS
Extreme（0℃）		8.00	6.00	1.00	0.00309	0.00231	0.00039	PASS
Extreme（-10℃）		6.00	5.00	14.00	0.00231	0.00193	0.00540	PASS
Extreme（-20℃）		13.00	4.00	8.00	0.00501	0.00154	0.00309	PASS
Extreme（-30℃）		14.00	14.00	5.00	0.00540	0.00540	0.00193	PASS
25℃	LV	17.00	14.00	16.00	0.00656	0.00540	0.00617	PASS
	HV	7.00	9.00	12.00	0.00270	0.00347	0.00463	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	9.00	5.00	17.00	0.00347	0.00193	0.00656	PASS
Extreme（50℃）		9.00	8.00	11.00	0.00347	0.00309	0.00424	PASS
Extreme（40℃）		10.00	14.00	1.00	0.00386	0.00540	0.00039	PASS
Extreme（30℃）		3.00	4.00	13.00	0.00116	0.00154	0.00501	PASS
Extreme（20℃）		17.00	13.00	3.00	0.00656	0.00501	0.00116	PASS
Extreme（10℃）		7.00	4.00	11.00	0.00270	0.00154	0.00424	PASS
Extreme（0℃）		9.00	13.00	9.00	0.00347	0.00501	0.00347	PASS
Extreme（-10℃）		15.00	5.00	4.00	0.00578	0.00193	0.00154	PASS
Extreme（-20℃）		9.00	10.00	7.00	0.00347	0.00386	0.00270	PASS
Extreme（-30℃）		17.00	17.00	12.00	0.00656	0.00656	0.00463	PASS
25℃	LV	1.00	1.00	15.00	0.00039	0.00039	0.00578	PASS
	HV	14.00	3.00	3.00	0.00540	0.00116	0.00116	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	8.00	17.00	17.00	0.00309	0.00656	0.00656	PASS
Extreme（50℃）		3.00	3.00	2.00	0.00116	0.00116	0.00077	PASS
Extreme（40℃）		6.00	10.00	9.00	0.00231	0.00386	0.00347	PASS

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Extreme（30℃）		2.00	12.00	15.00	0.00077	0.00463	0.00578	PASS
Extreme（20℃）		10.00	8.00	2.00	0.00386	0.00309	0.00077	PASS
Extreme（10℃）		2.00	11.00	13.00	0.00077	0.00424	0.00501	PASS
Extreme（0℃）		8.00	17.00	15.00	0.00309	0.00656	0.00578	PASS
Extreme（-10℃）		3.00	1.00	1.00	0.00116	0.00039	0.00039	PASS
Extreme（-20℃）		13.00	1.00	4.00	0.00501	0.00039	0.00154	PASS
Extreme（-30℃）		15.00	17.00	11.00	0.00578	0.00656	0.00424	PASS
25℃	LV	1.00	2.00	17.00	0.00039	0.00077	0.00656	PASS
	HV	10.00	13.00	2.00	0.00386	0.00501	0.00077	PASS

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5.6 Spurious Emissions at Antenna Terminals

Ambient condition

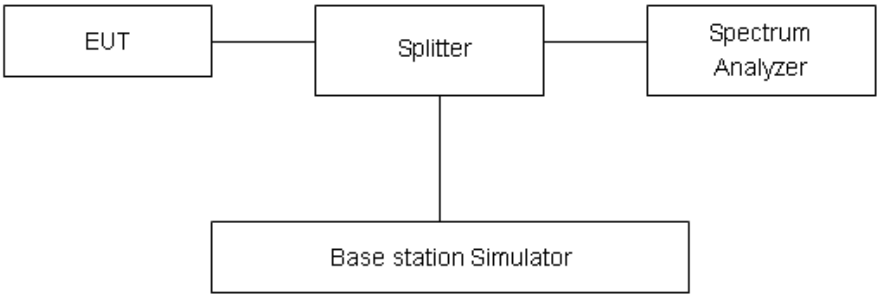
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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



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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.

Part 27.53 (h) Limit	-13 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-30GHz	1.407 dB

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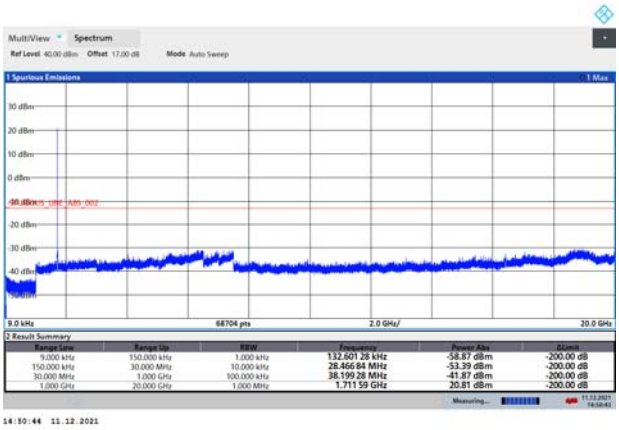
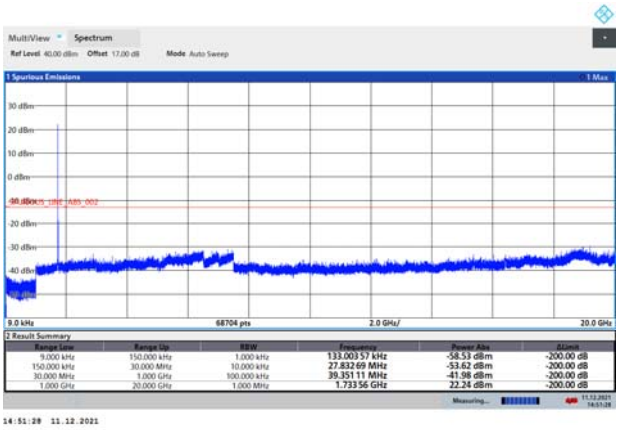
Test Result

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.

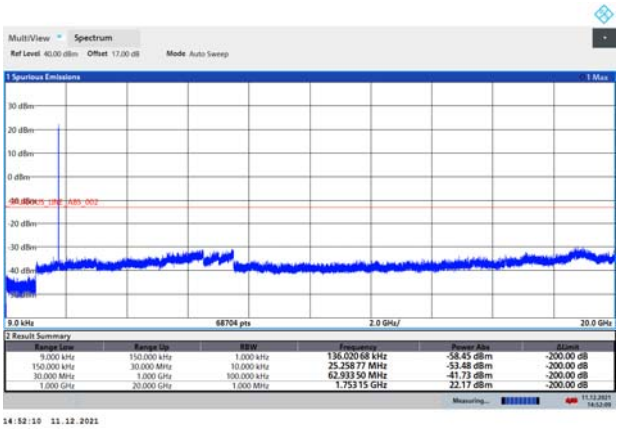
WCDMA Band IV CH-Low 9kHz~20GHz



WCDMA Band IV CH-Middle 9kHz~20GHz



WCDMA Band IV CH-High 9kHz~20GHz



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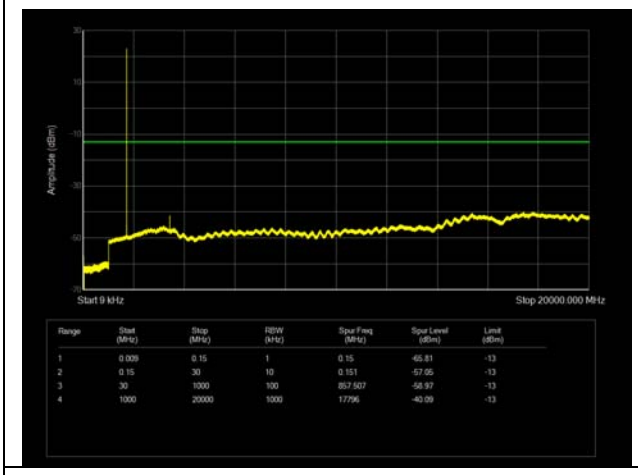
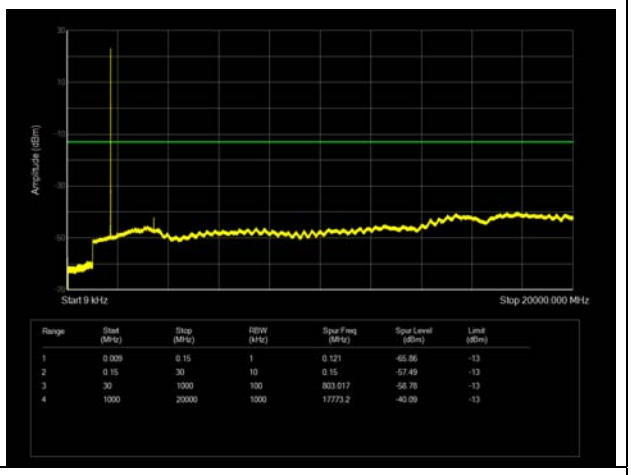
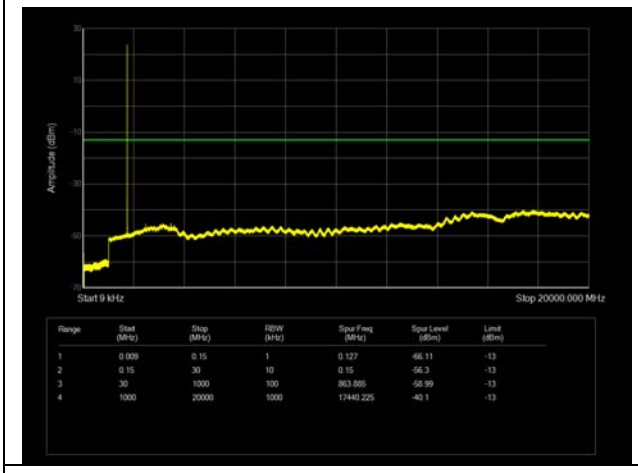
LTE Band 4 1.4MHz CH-Low 9kHz~20GHz



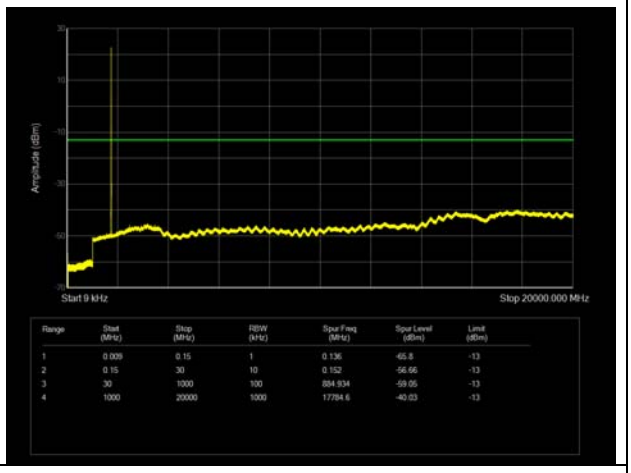
LTE Band 4 3MHz CH- Low 9kHz~20GHz



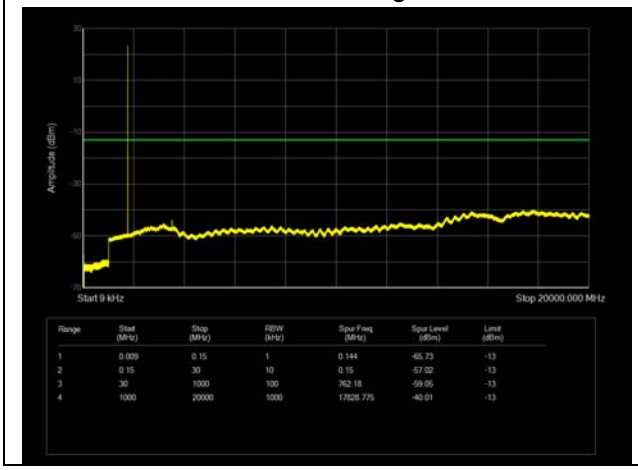
LTE Band 4 1.4MHz CH- Middle 9kHz~20GHz



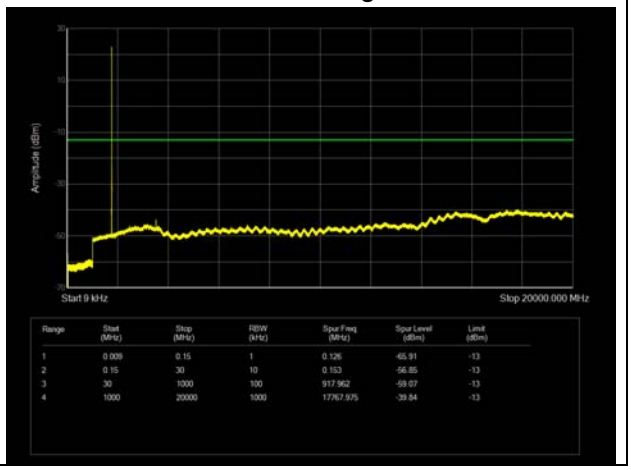
LTE Band 4 3MHz CH- Middle 9kHz~20GHz



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



LTE Band 4 3MHz CH-High 9kHz~20GHz



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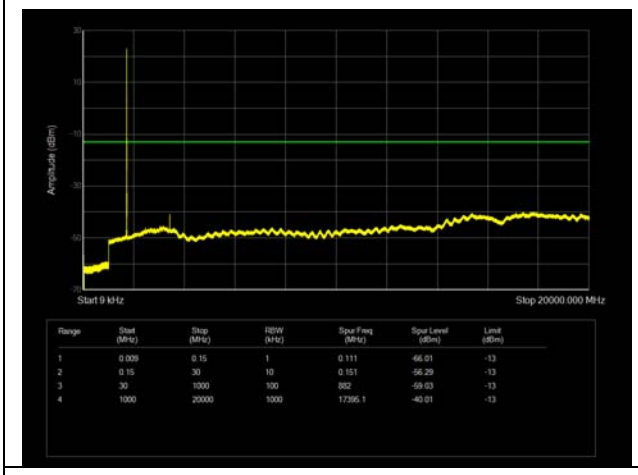
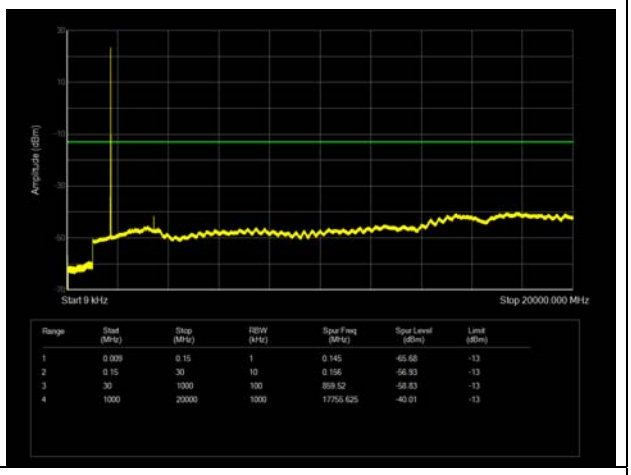
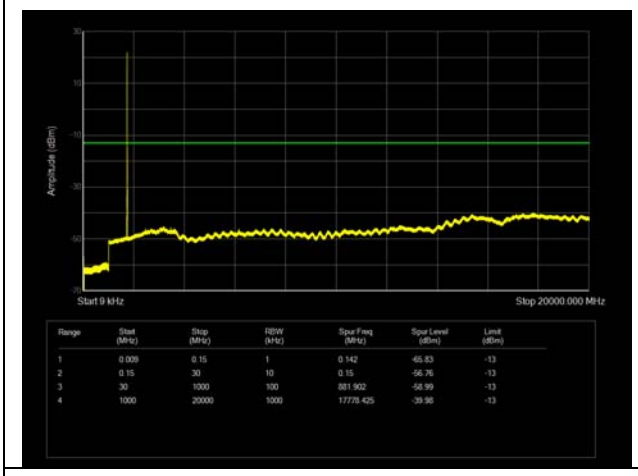
LTE Band 4 5MHz CH- Low 9kHz~20GHz



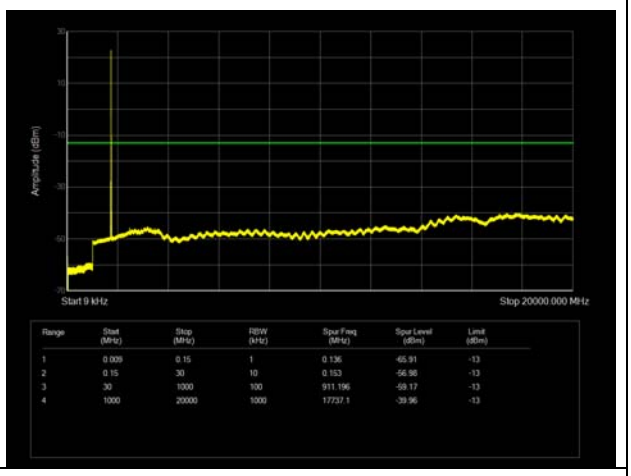
LTE Band 4 10MHz CH-Low 9kHz~20GHz



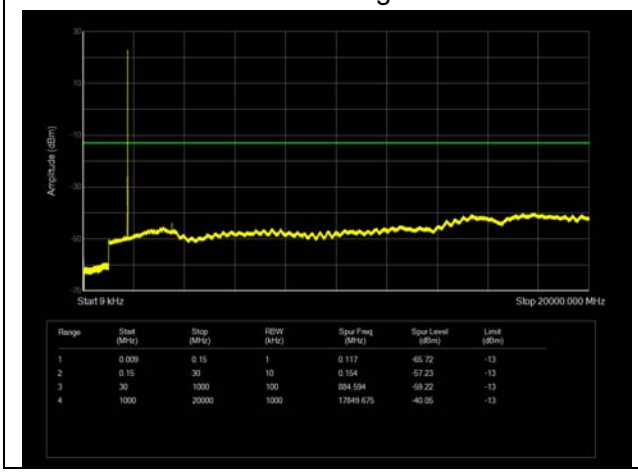
LTE Band 4 5MHz CH- Middle 9kHz~20GHz



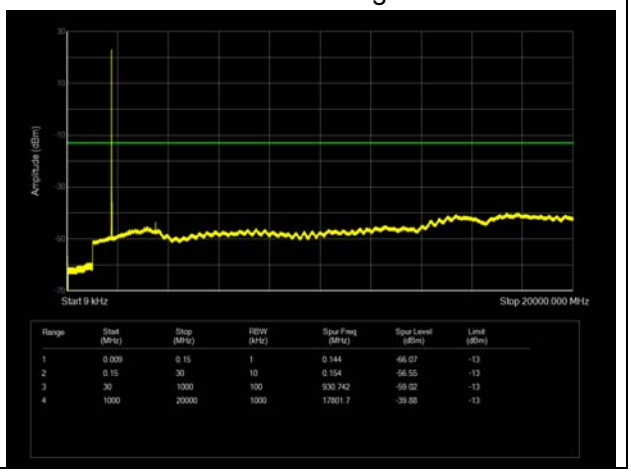
LTE Band 4 10MHz CH- Middle 9kHz~20GHz



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



LTE Band 4 10MHz CH- High 9kHz~20GHz



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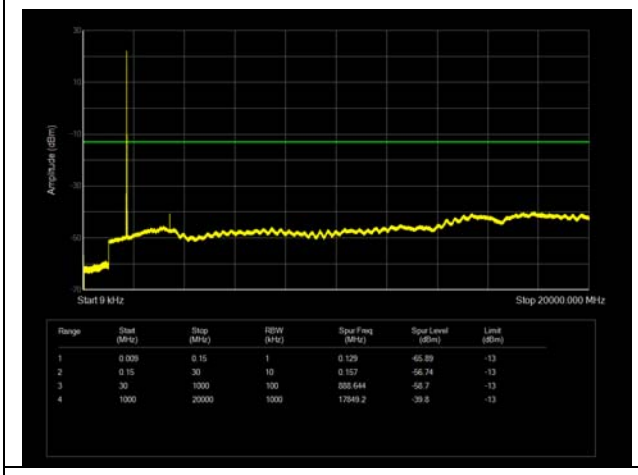
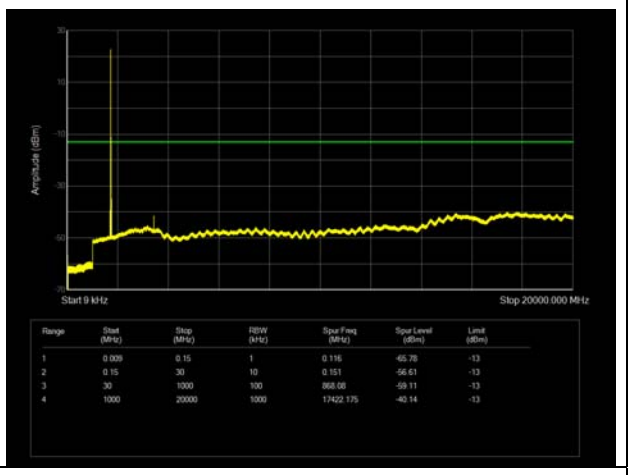
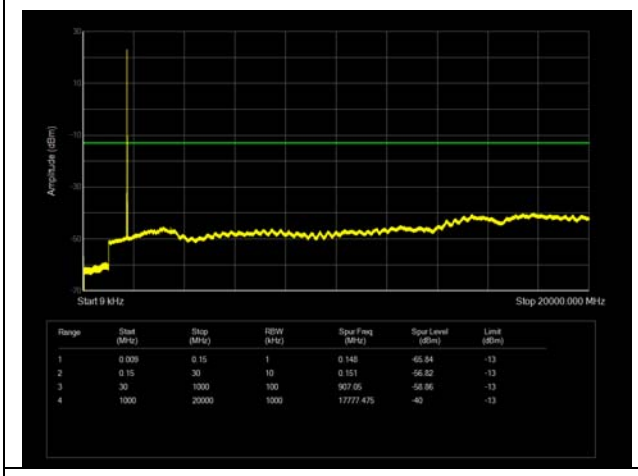
LTE Band 4 15MHz CH- Low 9kHz~20GHz



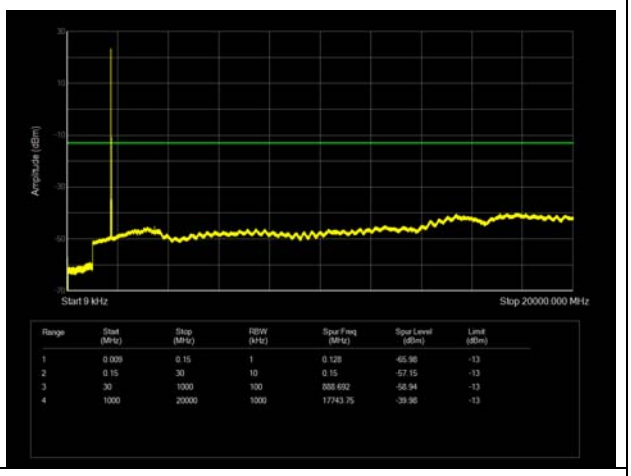
LTE Band 4 20MHz CH-Low 9kHz~20GHz



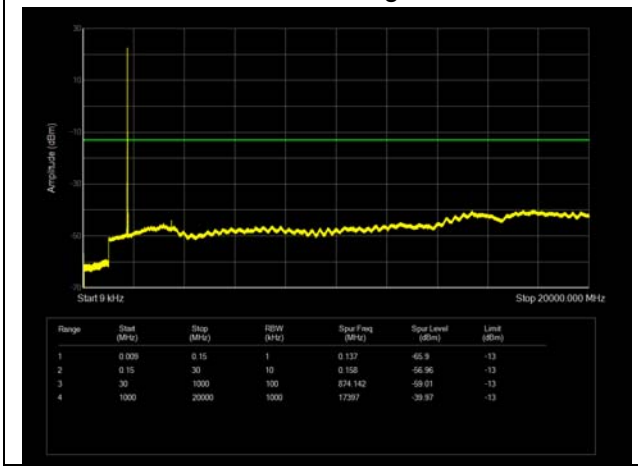
LTE Band 4 15MHz CH- Middle 9kHz~20GHz



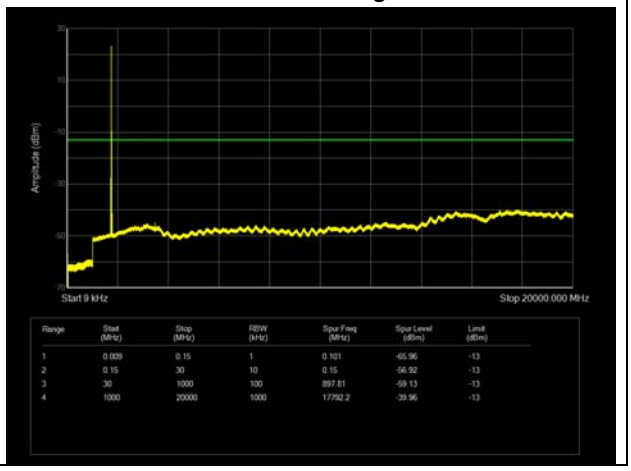
LTE Band 4 20MHz CH- Middle 9kHz~20GHz



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



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



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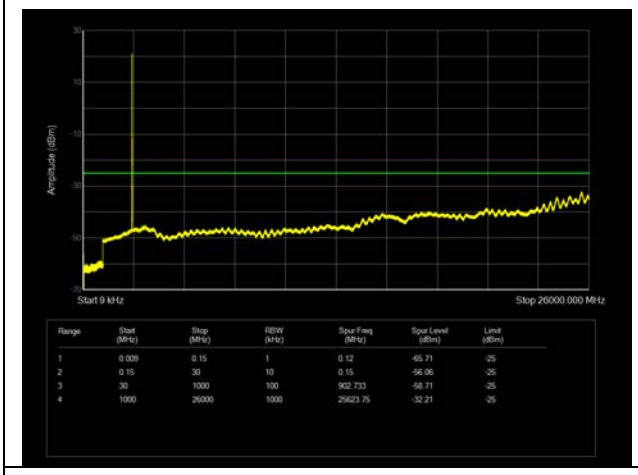
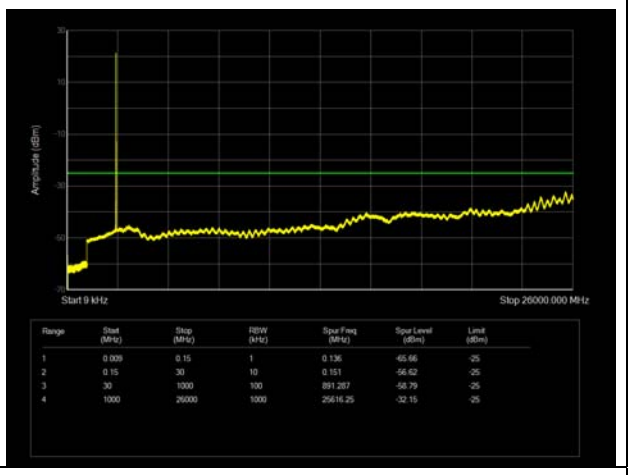
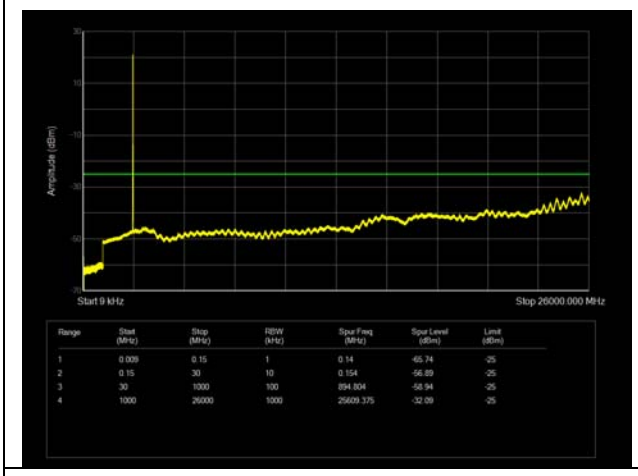
LTE Band 7 5MHz CH- Low 9kHz~26GHz



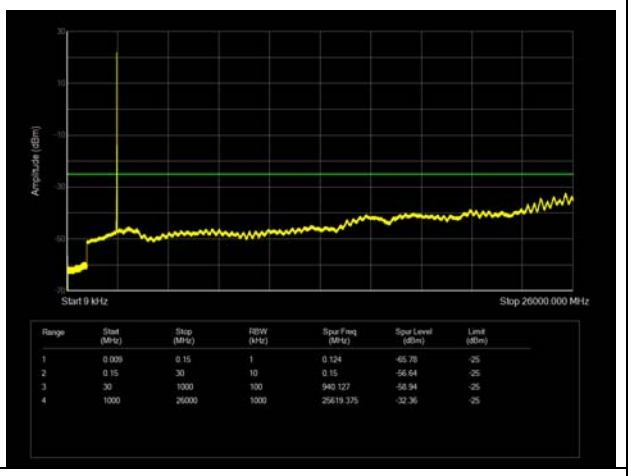
LTE Band 7 10MHz CH-Low 9kHz~26GHz



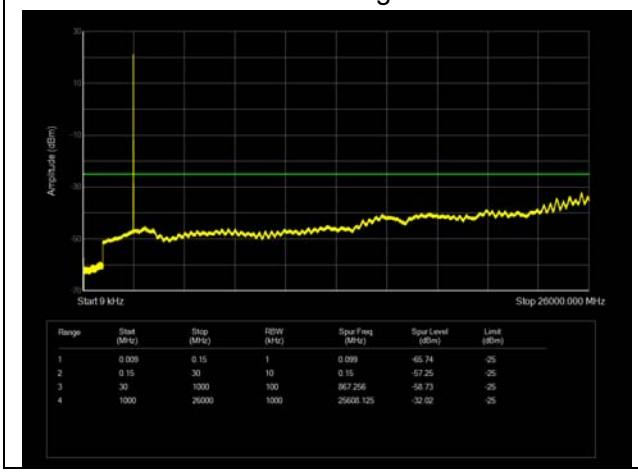
LTE Band 7 5MHz CH- Middle 9kHz~26GHz



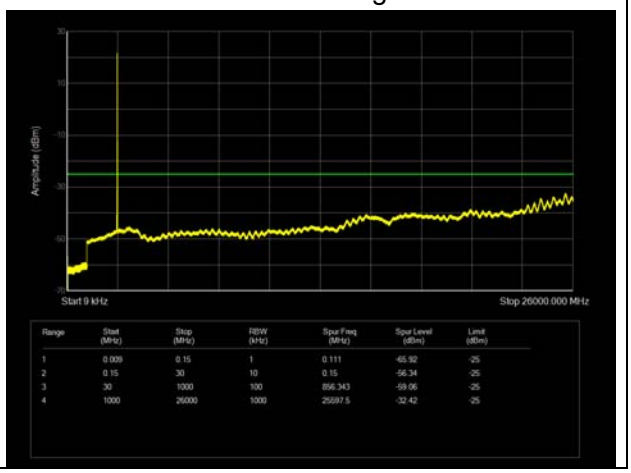
LTE Band 7 10MHz CH- Middle 9kHz~26GHz



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



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



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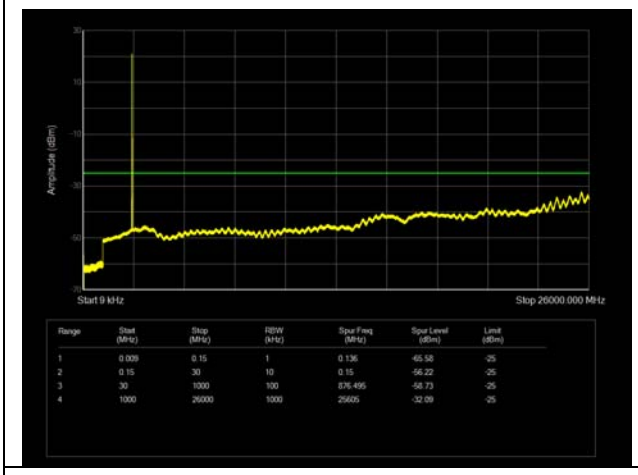
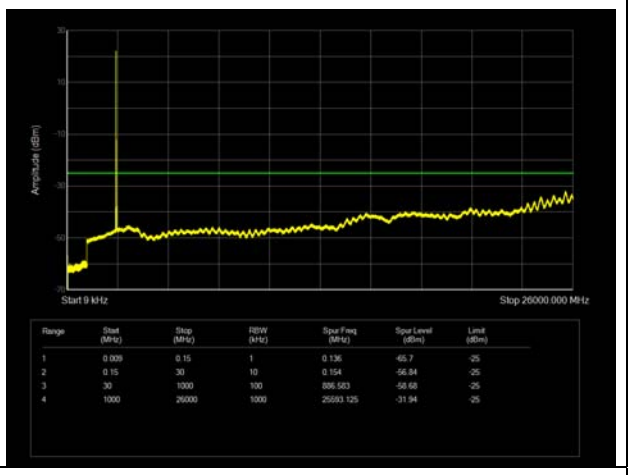
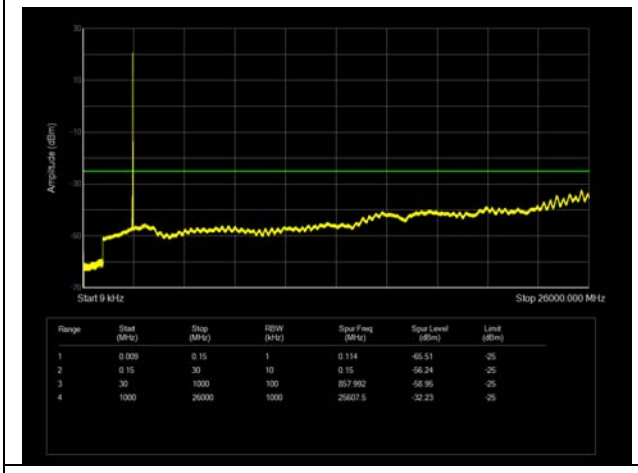
LTE Band 7 15MHz CH- Low 9kHz~26GHz



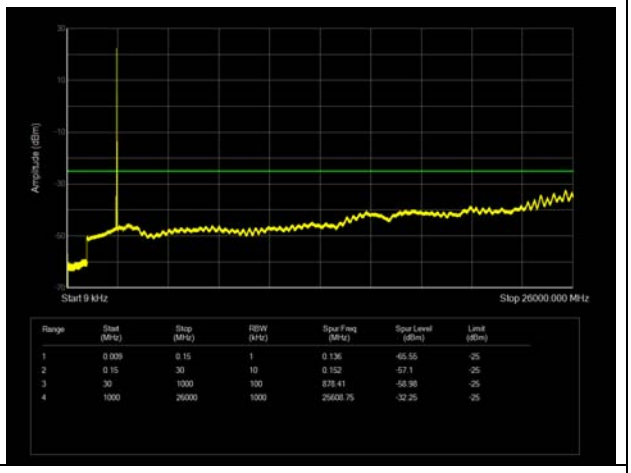
LTE Band 7 20MHz CH-Low 9kHz~26GHz



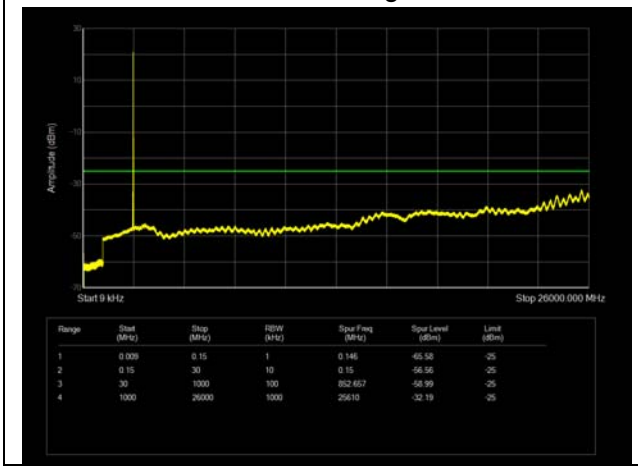
LTE Band 7 15MHz CH- Middle 9kHz~26GHz



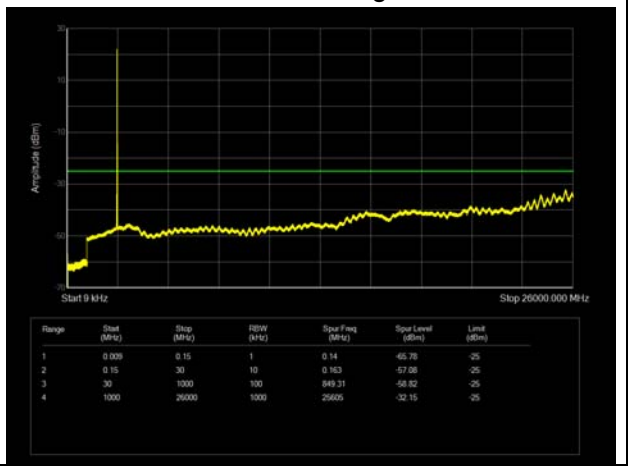
LTE Band 7 20MHz CH- Middle 9kHz~26GHz



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



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



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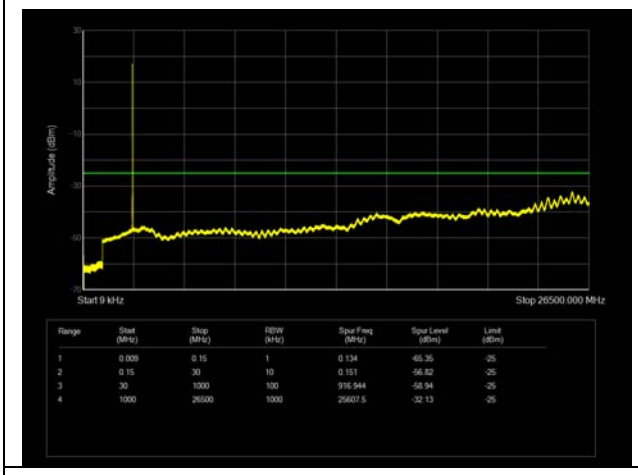
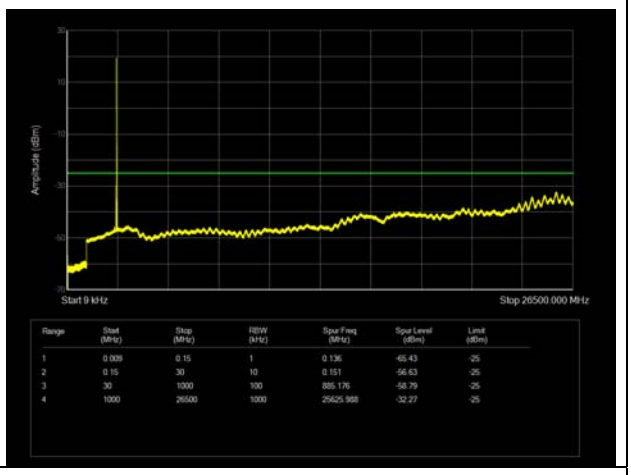
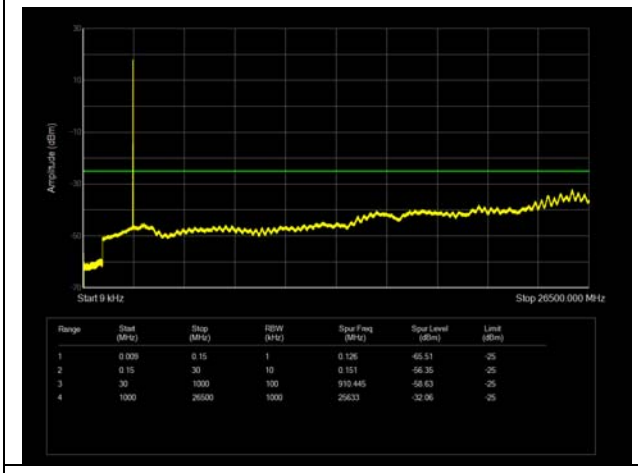
LTE Band 38 5MHz CH-Low 9kHz~26.5GHz



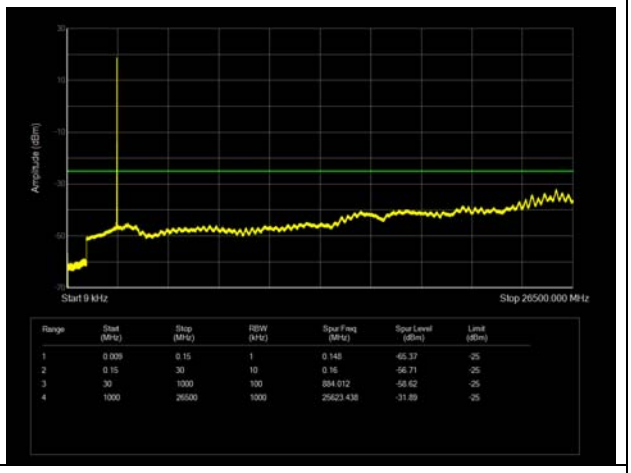
LTE Band 38 10MHz CH- Low 9kHz~26.5GHz



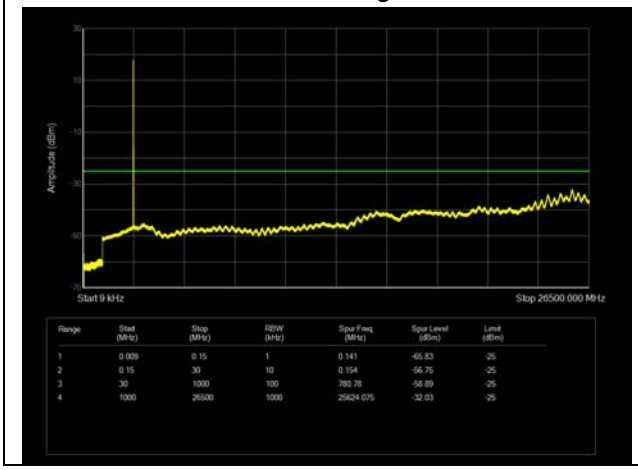
LTE Band 38 5MHz CH- Middle 9kHz~26.5GHz



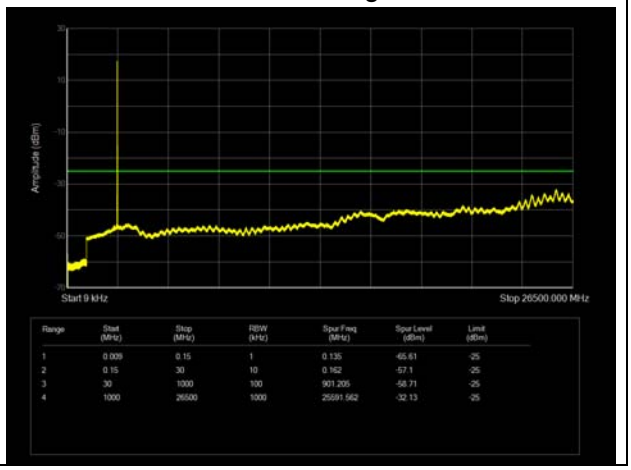
LTE Band 38 10MHz CH- Middle 9kHz~26.5GHz



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



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



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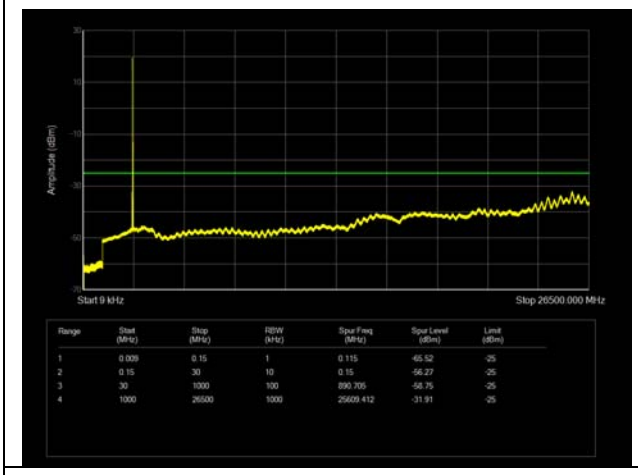
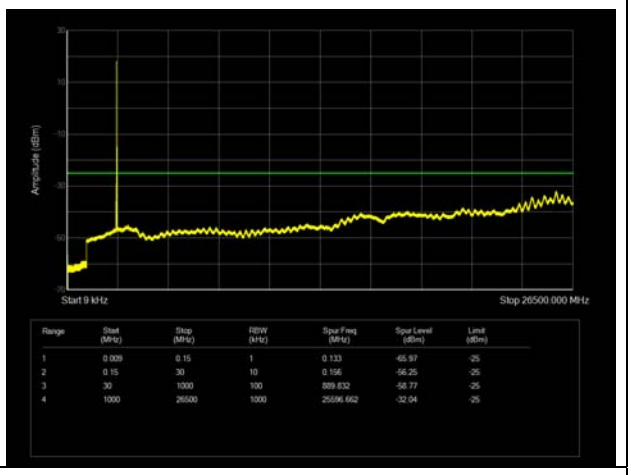
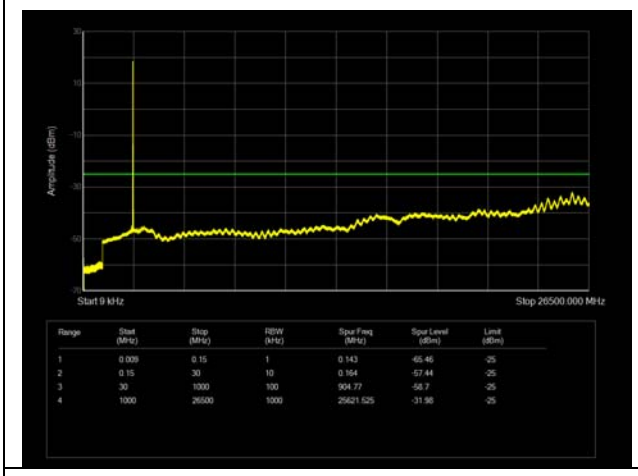
LTE Band 38 15MHz CH- Low 9kHz~26.5GHz



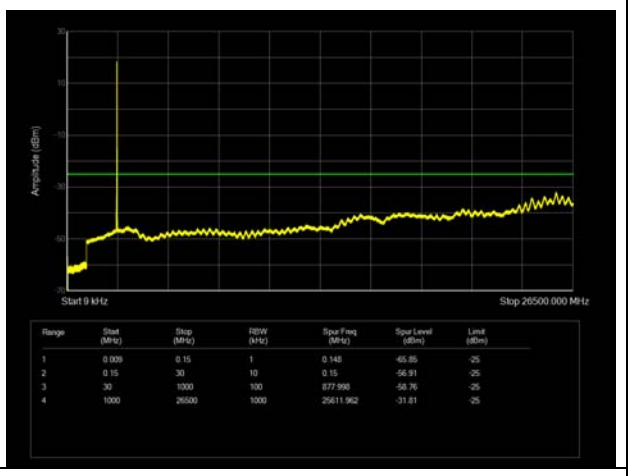
LTE Band 38 20MHz CH-Low 9kHz~26.5GHz



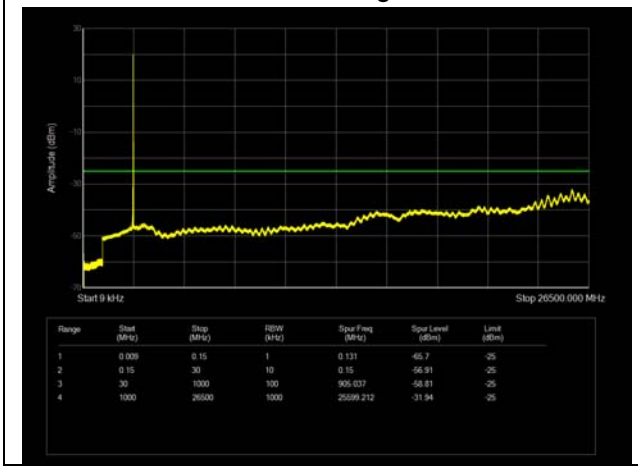
LTE Band 38 15MHz CH- Middle 9kHz~26.5GHz



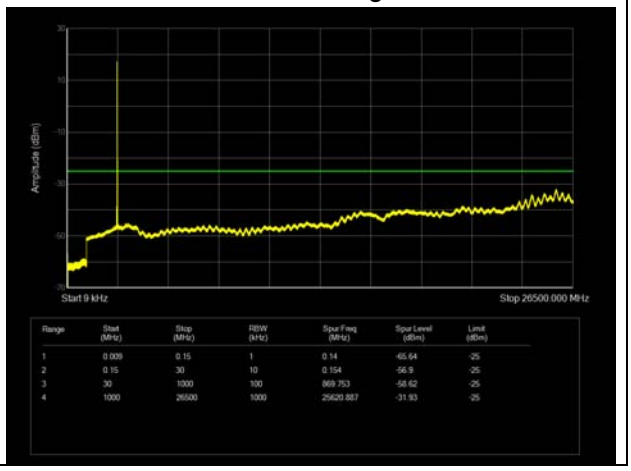
LTE Band 38 20MHz CH- Middle 9kHz~26.5GHz



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



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



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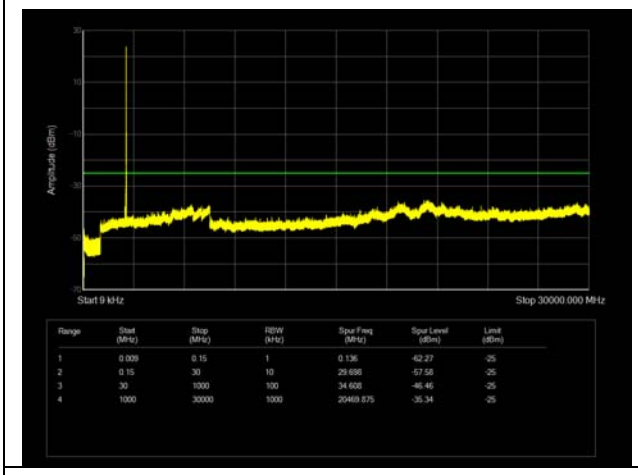
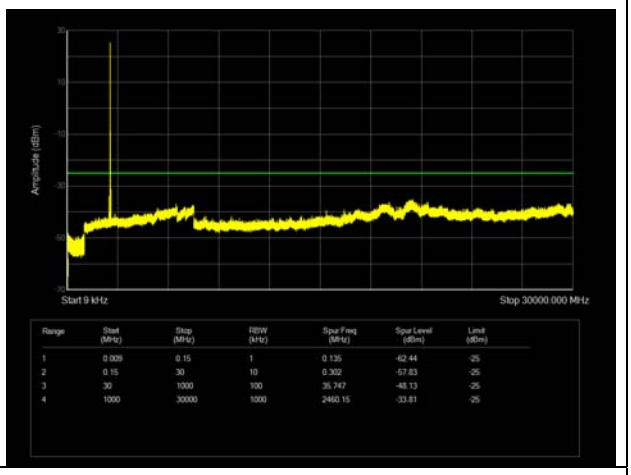
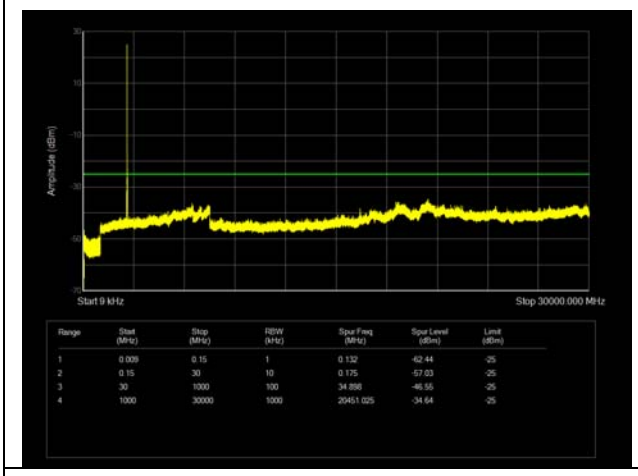
LTE Band 41 5MHz CH-Low 9kHz~30GHz



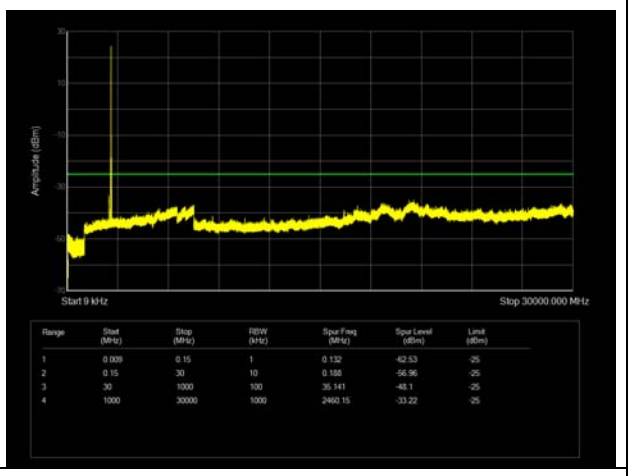
LTE Band 41 10MHz CH- Low 9kHz~30GHz



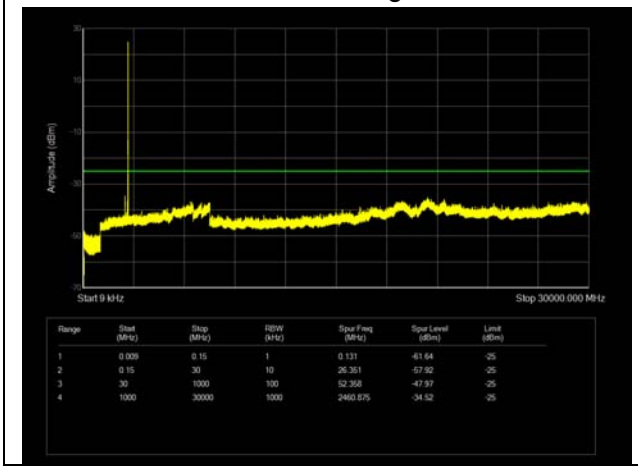
LTE Band 41 5MHz CH- Middle 9kHz~30GHz



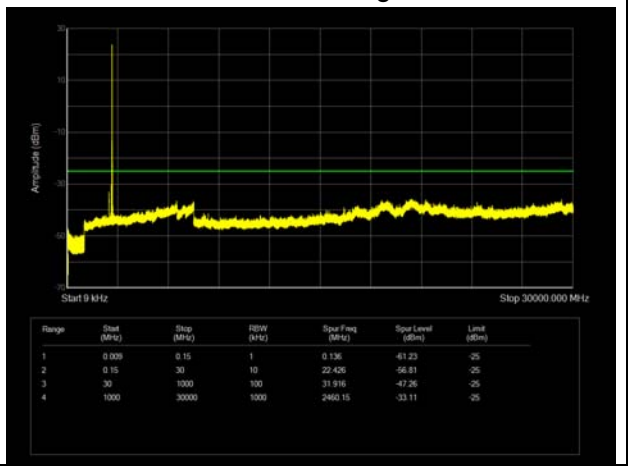
LTE Band 41 10MHz CH- Middle 9kHz~30GHz



LTE Band 41 5MHz CH- High 9kHz~30GHz



LTE Band 41 10MHz CH-High 9kHz~30GHz



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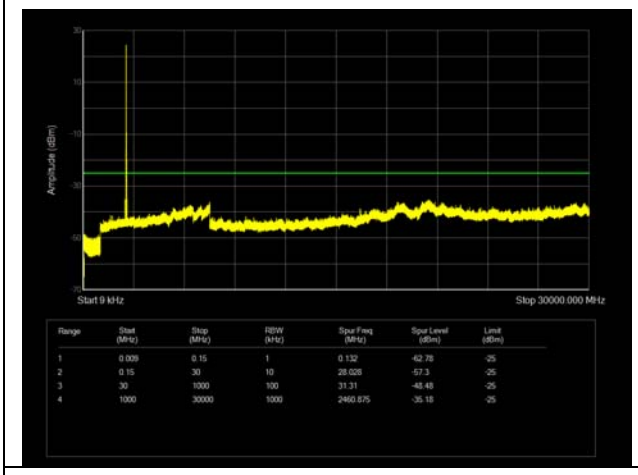
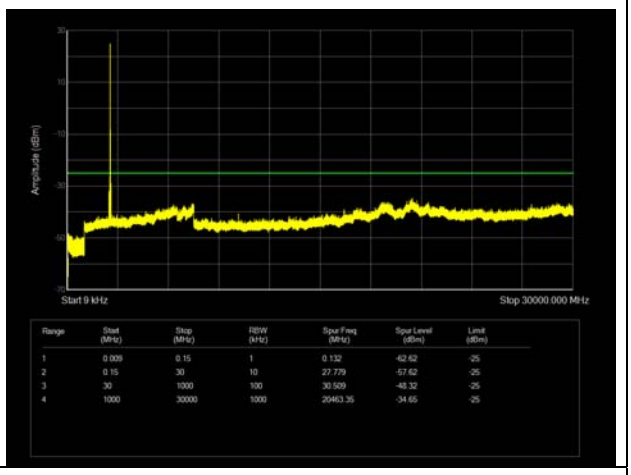
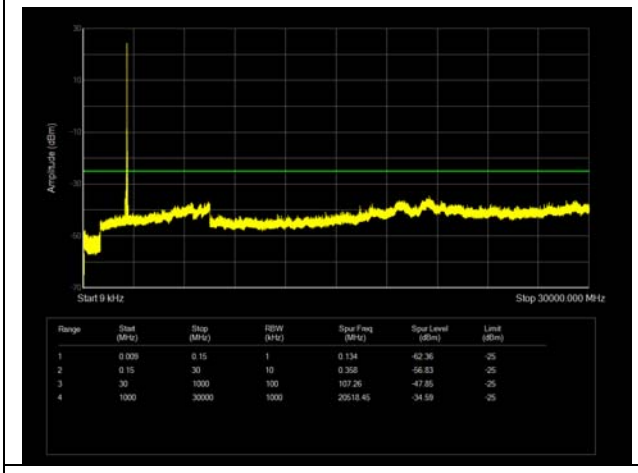
LTE Band 41 15MHz CH- Low 9kHz~30GHz



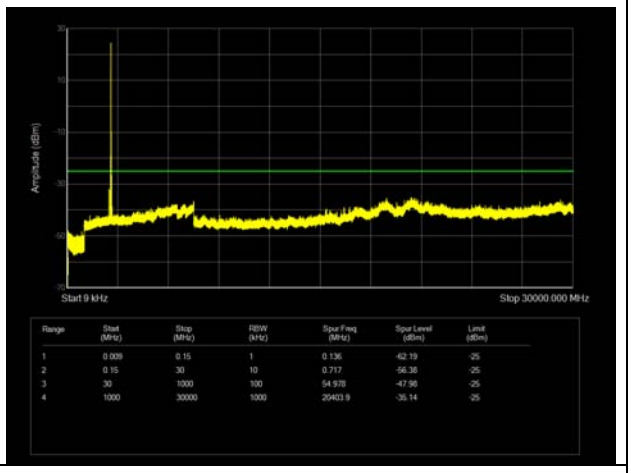
LTE Band 41 20MHz CH-Low 9kHz~30GHz



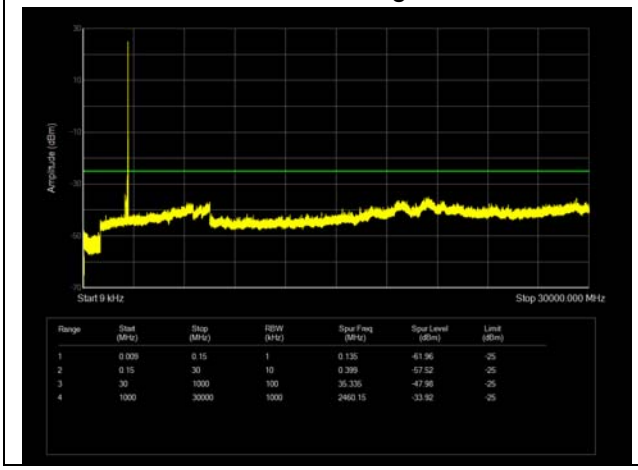
LTE Band 41 15MHz CH- Middle 9kHz~30GHz



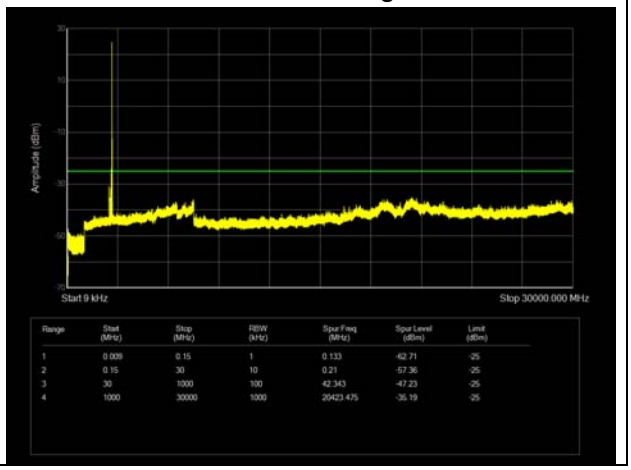
LTE Band 41 20MHz CH- Middle 9kHz~30GHz



LTE Band 41 15MHz CH-High 9kHz~30GHz



LTE Band 41 20MHz CH- High 9kHz~30GHz



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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 dB) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dB.

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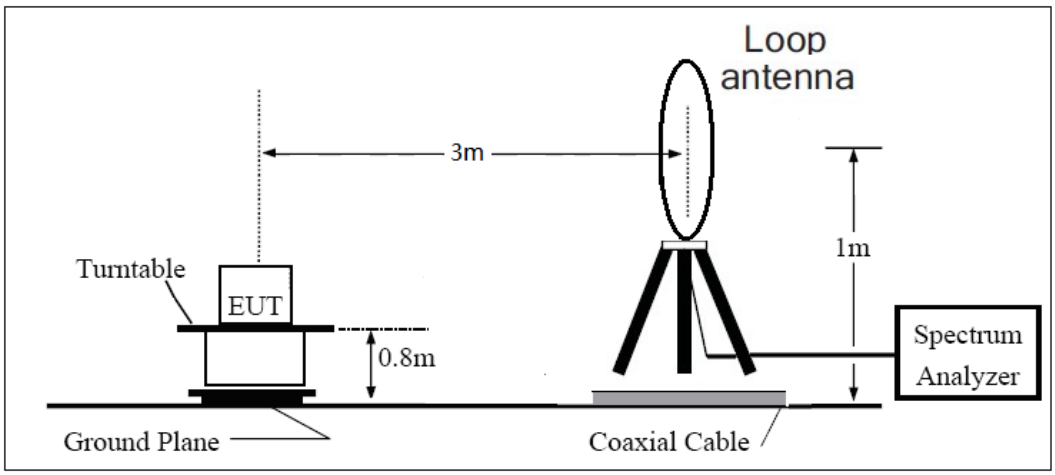
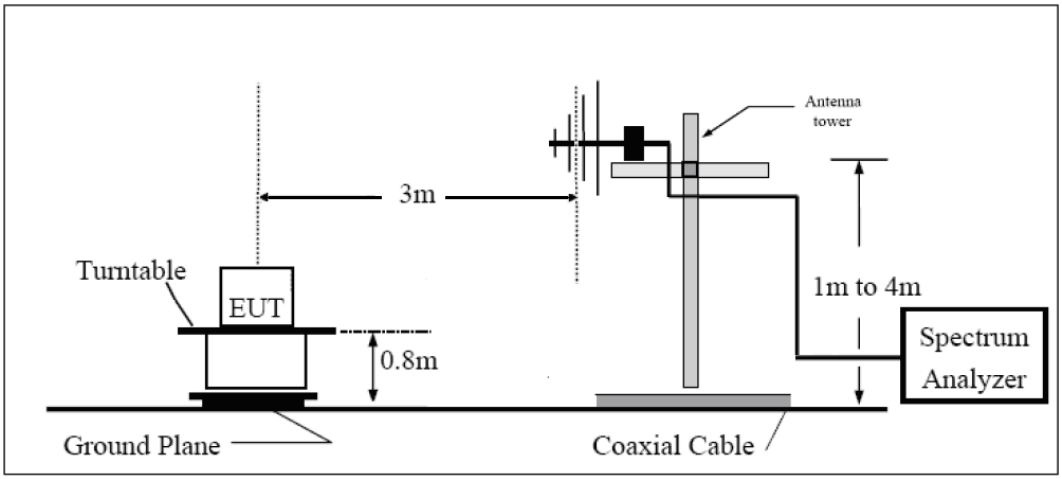
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

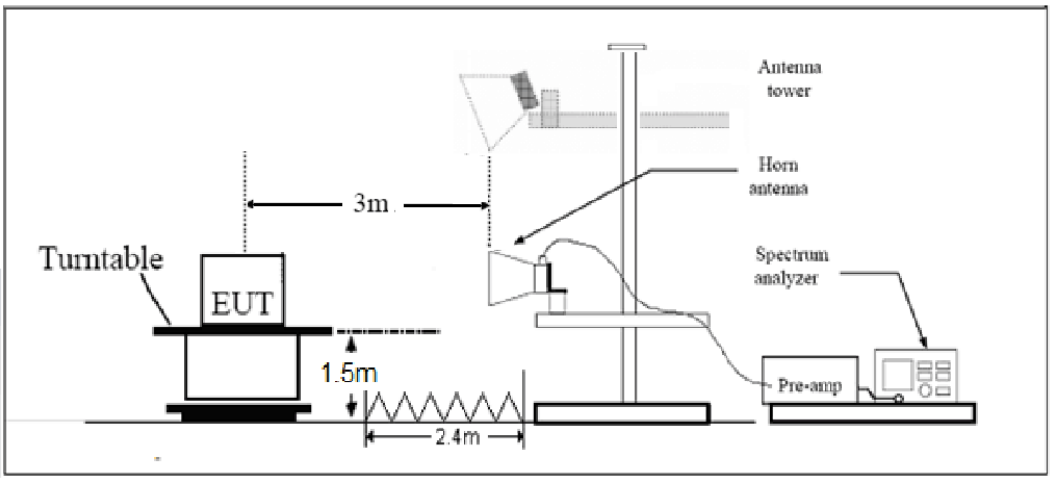
9KHz ~ 30MHz



30MHz ~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Limits

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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.

Part 27.53(h) Limit	-13 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.

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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.

Low 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	-66.05	2.70	12.70	Horizontal	-56.05	-13.00	43.05	135
3	5197.80	-65.90	3.20	12.50	Horizontal	-56.60	-13.00	43.60	45
4	6930.40	-59.43	4.20	11.80	Horizontal	-51.83	-13.00	38.83	315
5	8663.00	-58.56	4.40	12.50	Horizontal	-50.46	-13.00	37.46	270
6	10395.60	-54.31	4.70	11.30	Horizontal	-47.71	-13.00	34.71	180
7	12128.20	-55.62	5.20	13.80	Horizontal	-47.02	-13.00	34.02	45
8	13860.80	-48.17	5.70	11.30	Horizontal	-42.57	-13.00	29.57	0
9	15593.40	-58.16	6.10	16.80	Horizontal	-47.46	-13.00	34.46	90
10	17326.00	-52.02	6.10	14.20	Horizontal	-43.92	-13.00	30.92	135

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	-64.70	2.70	12.70	Horizontal	-54.70	-13.00	41.70	315
3	5197.50	-65.94	3.20	12.50	Horizontal	-56.64	-13.00	43.64	0
4	6930.00	-60.06	4.20	11.80	Horizontal	-52.46	-13.00	39.46	180
5	8662.50	-59.69	4.40	12.50	Horizontal	-51.59	-13.00	38.59	315
6	10395.00	-55.98	4.70	11.30	Horizontal	-49.38	-13.00	36.38	225
7	12127.50	-56.39	5.20	13.80	Horizontal	-47.79	-13.00	34.79	315
8	13860.00	-51.64	5.70	11.30	Horizontal	-46.04	-13.00	33.04	90
9	15592.50	-58.91	6.10	16.80	Horizontal	-48.21	-13.00	35.21	45
10	17325.00	-53.07	6.10	14.20	Horizontal	-44.97	-13.00	31.97	315

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.

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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	-63.84	2.70	12.70	Horizontal	-53.84	-13.00	40.84	180
3	5191.50	-63.03	3.20	12.50	Horizontal	-53.73	-13.00	40.73	0
4	6930.00	-59.94	4.20	11.80	Horizontal	-52.34	-13.00	39.34	45
5	8662.50	-58.43	4.40	12.50	Horizontal	-50.33	-13.00	37.33	315
6	10395.00	-54.25	4.70	11.30	Horizontal	-47.65	-13.00	34.65	270
7	12127.50	-55.78	5.20	13.80	Horizontal	-47.18	-13.00	34.18	180
8	13860.00	-50.49	5.70	11.30	Horizontal	-44.89	-13.00	31.89	0
9	15592.50	-58.18	6.10	16.80	Horizontal	-47.48	-13.00	34.48	45
10	17325.00	-53.70	6.10	14.20	Horizontal	-45.60	-13.00	32.60	315

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	3447.75	-63.81	2.70	12.70	Horizontal	-53.81	-13.00	40.81	180
3	5170.88	-65.68	3.20	12.50	Horizontal	-56.38	-13.00	43.38	0
4	6930.00	-61.21	4.20	11.80	Horizontal	-53.61	-13.00	40.61	45
5	8662.50	-59.60	4.40	12.50	Horizontal	-51.50	-13.00	38.50	315
6	10395.00	-55.75	4.70	11.30	Horizontal	-49.15	-13.00	36.15	270
7	12127.50	-55.53	5.20	13.80	Horizontal	-46.93	-13.00	33.93	180
8	13860.00	-51.38	5.70	11.30	Horizontal	-45.78	-13.00	32.78	0
9	15592.50	-59.43	6.10	16.80	Horizontal	-48.73	-13.00	35.73	45
10	17325.00	-53.55	6.10	14.20	Horizontal	-45.45	-13.00	32.45	315

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.

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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	-65.44	3.40	12.50	Horizontal	-56.34	-25.00	31.34	315
3	7598.60	-59.43	4.40	12.20	Horizontal	-51.63	-25.00	26.63	270
4	10130.63	-54.43	4.70	11.30	Horizontal	-47.83	-25.00	22.83	180
5	12675.00	-54.67	5.40	13.20	Horizontal	-46.87	-25.00	21.87	0
6	15210.00	-54.88	6.10	13.10	Horizontal	-47.88	-25.00	22.88	45
7	17745.00	-53.50	6.10	14.20	Horizontal	-45.40	-25.00	20.40	315
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	5052.20	-64.88	3.40	12.50	Horizontal	-55.78	-25.00	30.78	45
3	7578.30	-54.00	4.40	12.20	Horizontal	-46.20	-25.00	21.20	270
4	10104.40	-54.83	4.70	11.30	Horizontal	-48.23	-25.00	23.23	225
5	12630.50	-57.22	5.40	13.20	Horizontal	-49.42	-25.00	24.42	315
6	15156.60	-55.55	6.10	13.10	Horizontal	-48.55	-25.00	23.55	45
7	17745.00	-55.23	6.10	14.20	Horizontal	-47.13	-25.00	22.13	90
8	20208.80	--	--	--	--	--	--	--	--
9	22734.90	--	--	--	--	--	--	--	--
10	25261.00	--	--	--	--	--	--	--	--

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.

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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	-62.39	3.20	12.50	Horizontal	-53.09	-25.00	28.09	270
3	7777.50	-57.39	4.40	12.30	Horizontal	-49.49	-25.00	24.49	180
4	10370.00	-54.60	4.70	11.80	Horizontal	-47.50	-25.00	22.50	0
5	12962.50	-55.46	5.40	14.00	Horizontal	-46.86	-25.00	21.86	45
6	15555.00	-59.63	6.10	16.80	Horizontal	-48.93	-25.00	23.93	315
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	-63.13	3.20	12.50	Horizontal	-53.83	-25.00	28.83	0
3	7755.00	-57.73	4.40	12.30	Horizontal	-49.83	-25.00	24.83	45
4	10340.00	-55.24	4.70	11.80	Horizontal	-48.14	-25.00	23.14	315
5	12925.00	-54.60	5.40	14.00	Horizontal	-46.00	-25.00	21.00	90
6	15510.00	-58.20	6.10	16.80	Horizontal	-47.50	-25.00	22.50	225
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.

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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	5163.30	-65.60	3.20	12.50	Horizontal	-56.30	-25.00	31.30	90
3	7744.95	-56.36	4.40	12.30	Horizontal	-48.46	-25.00	23.46	180
4	10326.60	-54.80	4.70	11.80	Horizontal	-47.70	-25.00	22.70	0
5	12908.25	-55.10	5.40	14.00	Horizontal	-46.50	-25.00	21.50	45
6	15489.90	-60.34	6.10	16.80	Horizontal	-49.64	-25.00	24.64	315
7	18071.55	--	--	--	--	--	--	--	--
8	20653.20	--	--	--	--	--	--	--	--
9	23234.85	--	--	--	--	--	--	--	--
10	25816.50	--	--	--	--	--	--	--	--
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	5149.60	-65.01	3.20	12.50	Horizontal	-55.71	-25.00	30.71	315
3	7724.40	-58.60	4.40	12.30	Horizontal	-50.70	-25.00	25.70	90
4	10299.20	-55.11	4.70	11.80	Horizontal	-48.01	-25.00	23.01	225
5	12874.00	-55.28	5.40	14.00	Horizontal	-46.68	-25.00	21.68	0
6	15448.80	-59.89	6.10	16.80	Horizontal	-49.19	-25.00	24.19	315
7	18023.60	--	--	--	--	--	--	--	--
8	20598.40	--	--	--	--	--	--	--	--
9	23173.20	--	--	--	--	--	--	--	--
10	25748.00	--	--	--	--	--	--	--	--
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.									

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Upper 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	-65.79	2.70	12.70	Horizontal	-55.79	-13.00	42.79	45
3	5197.80	-66.35	3.20	12.50	Horizontal	-57.05	-13.00	44.05	225
4	6930.40	-59.39	4.20	11.80	Horizontal	-51.79	-13.00	38.79	180
5	8663.00	-58.70	4.40	12.50	Horizontal	-50.60	-13.00	37.60	315
6	10395.60	-52.79	4.70	11.30	Horizontal	-46.19	-13.00	33.19	90
7	12128.20	-55.13	5.20	13.80	Horizontal	-46.53	-13.00	33.53	0
8	13860.80	-49.26	5.70	11.30	Horizontal	-43.66	-13.00	30.66	135
9	15593.40	-58.18	6.10	16.80	Horizontal	-47.48	-13.00	34.48	270
10	17326.00	-51.34	6.10	14.20	Horizontal	-43.24	-13.00	30.24	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 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	-59.52	2.70	12.70	Horizontal	-49.52	-13.00	36.52	315
3	5197.50	-62.56	3.20	12.50	Horizontal	-53.26	-13.00	40.26	45
4	6930.00	-61.57	4.20	11.80	Horizontal	-53.97	-13.00	40.97	270
5	8662.50	-57.22	4.40	12.50	Horizontal	-49.12	-13.00	36.12	0
6	10395.00	-53.68	4.70	11.30	Horizontal	-47.08	-13.00	34.08	180
7	12127.50	-55.55	5.20	13.80	Horizontal	-46.95	-13.00	33.95	225
8	13860.00	-48.98	5.70	11.30	Horizontal	-43.38	-13.00	30.38	315
9	15592.50	-57.75	6.10	16.80	Horizontal	-47.05	-13.00	34.05	45
10	17325.00	-50.59	6.10	14.20	Horizontal	-42.49	-13.00	29.49	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.

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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	-58.94	2.70	12.70	Horizontal	-48.94	-13.00	35.94	225
3	5191.50	-64.19	3.20	12.50	Horizontal	-54.89	-13.00	41.89	45
4	6930.00	-59.65	4.20	11.80	Horizontal	-52.05	-13.00	39.05	180
5	8662.50	-58.18	4.40	12.50	Horizontal	-50.08	-13.00	37.08	0
6	10395.00	-52.95	4.70	11.30	Horizontal	-46.35	-13.00	33.35	315
7	12127.50	-54.27	5.20	13.80	Horizontal	-45.67	-13.00	32.67	135
8	13860.00	-47.62	5.70	11.30	Horizontal	-42.02	-13.00	29.02	45
9	15592.50	-57.46	6.10	16.80	Horizontal	-46.76	-13.00	33.76	270
10	17325.00	-51.30	6.10	14.20	Horizontal	-43.20	-13.00	30.20	315
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	3447.75	-58.98	2.70	12.70	Horizontal	-48.98	-13.00	35.98	45
3	5170.88	-62.75	3.20	12.50	Horizontal	-53.45	-13.00	40.45	180
4	6930.00	-58.97	4.20	11.80	Horizontal	-51.37	-13.00	38.37	270
5	8662.50	-57.40	4.40	12.50	Horizontal	-49.30	-13.00	36.30	225
6	10395.00	-51.66	4.70	11.30	Horizontal	-45.06	-13.00	32.06	45
7	12127.50	-55.49	5.20	13.80	Horizontal	-46.89	-13.00	33.89	90
8	13860.00	-47.40	5.70	11.30	Horizontal	-41.80	-13.00	28.80	315
9	15592.50	-57.74	6.10	16.80	Horizontal	-47.04	-13.00	34.04	180
10	17325.00	-48.76	6.10	14.20	Horizontal	-40.66	-13.00	27.66	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.									

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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	-64.87	3.40	12.50	Horizontal	-55.77	-25.00	30.77	45
3	7598.60	-56.54	4.40	12.20	Horizontal	-48.74	-25.00	23.74	45
4	10130.63	-52.94	4.70	11.30	Horizontal	-46.34	-25.00	21.34	315
5	12675.00	-53.60	5.40	13.20	Horizontal	-45.80	-25.00	20.80	270
6	15210.00	-55.03	6.10	13.10	Horizontal	-48.03	-25.00	23.03	180
7	17745.00	-52.09	6.10	14.20	Horizontal	-43.99	-25.00	18.99	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	5052.20	-64.86	3.40	12.50	Horizontal	-55.76	-25.00	30.76	270
3	7578.30	-57.74	4.40	12.20	Horizontal	-49.94	-25.00	24.94	180
4	10104.40	-53.95	4.70	11.30	Horizontal	-47.35	-25.00	22.35	0
5	12630.50	-55.53	5.40	13.20	Horizontal	-47.73	-25.00	22.73	45
6	15156.60	-56.05	6.10	13.10	Horizontal	-49.05	-25.00	24.05	315
7	17745.00	-53.87	6.10	14.20	Horizontal	-45.77	-25.00	20.77	0
8	20208.80	--	--	--	--	--	--	--	--
9	22734.90	--	--	--	--	--	--	--	--
10	25261.00	--	--	--	--	--	--	--	--

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.

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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	-64.80	3.20	12.50	Horizontal	-55.50	-25.00	30.50	90
3	7777.50	-58.37	4.40	12.30	Horizontal	-50.47	-25.00	25.47	45
4	10370.00	-53.70	4.70	11.80	Horizontal	-46.60	-25.00	21.60	315
5	12962.50	-55.20	5.40	14.00	Horizontal	-46.60	-25.00	21.60	45
6	15555.00	-59.66	6.10	16.80	Horizontal	-48.96	-25.00	23.96	90
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	-65.53	3.20	12.50	Horizontal	-56.23	-25.00	31.23	270
3	7755.00	-55.99	4.40	12.30	Horizontal	-48.09	-25.00	23.09	180
4	10340.00	-55.01	4.70	11.80	Horizontal	-47.91	-25.00	22.91	0
5	12925.00	-56.58	5.40	14.00	Horizontal	-47.98	-25.00	22.98	45
6	15510.00	-59.15	6.10	16.80	Horizontal	-48.45	-25.00	23.45	315
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.

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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	5163.30	-65.52	3.20	12.50	Horizontal	-56.22	-25.00	31.22	180
3	7744.95	-58.31	4.40	12.30	Horizontal	-50.41	-25.00	25.41	0
4	10326.60	-53.67	4.70	11.80	Horizontal	-46.57	-25.00	21.57	45
5	12908.25	-55.37	5.40	14.00	Horizontal	-46.77	-25.00	21.77	315
6	15489.90	-58.02	6.10	16.80	Horizontal	-47.32	-25.00	22.32	0
7	18071.55	--	--	--	--	--	--	--	--
8	20653.20	--	--	--	--	--	--	--	--
9	23234.85	--	--	--	--	--	--	--	--
10	25816.50	--	--	--	--	--	--	--	--
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	5149.60	-63.79	3.20	12.50	Horizontal	-54.49	-25.00	29.49	270
3	7724.40	-58.25	4.40	12.30	Horizontal	-50.35	-25.00	25.35	180
4	10299.20	-54.67	4.70	11.80	Horizontal	-47.57	-25.00	22.57	0
5	12874.00	-54.89	5.40	14.00	Horizontal	-46.29	-25.00	21.29	45
6	15448.80	-58.93	6.10	16.80	Horizontal	-48.23	-25.00	23.23	315
7	18023.60	--	--	--	--	--	--	--	--
8	20598.40	--	--	--	--	--	--	--	--
9	23173.20	--	--	--	--	--	--	--	--
10	25748.00	--	--	--	--	--	--	--	--
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.									

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6 Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Base Station Simulator	R&S	CMW500	113645	2021-05-15	2022-05-14
Climate Chamber	Weiss	VT4002	58226119450 010	2021-05-15	2022-05-14
Spectrum Analyzer	Keysight	N9020A	MY52330084	2021-05-15	2022-05-14
Universal Radio Communication Tester	Key sight	E5515C	GB44400275	2021-05-15	2022-05-14
Signal Analyzer	R&S	FSV3030	101411	2021-12-12	2022-12-12
Signal Analyzer	R&S	FSV30	100815	2021-12-12	2022-12-11
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	01439	2021-06-30	2024-06-29
Horn Antenna	Schwarzbeck	BBHA 9120D	01799	2019-09-21	2022-09-20
Software	R&S	EMC32	9.26.0	/	/

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

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ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.

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ANNEX B: Test Setup Photos

The Test Setup Photos are submitted separately.

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