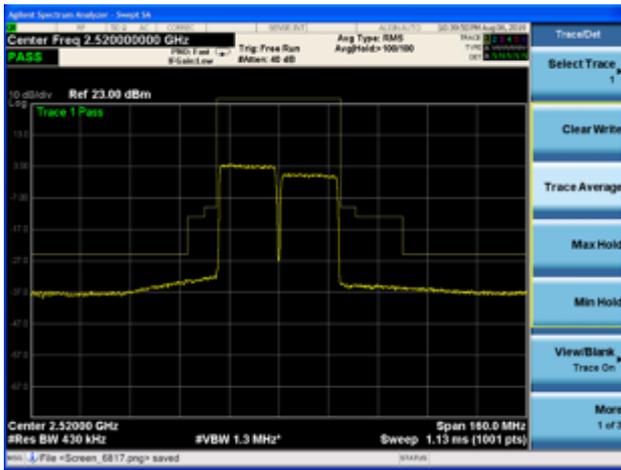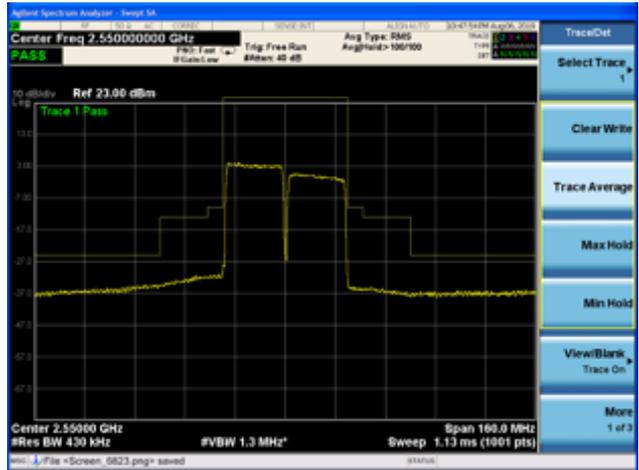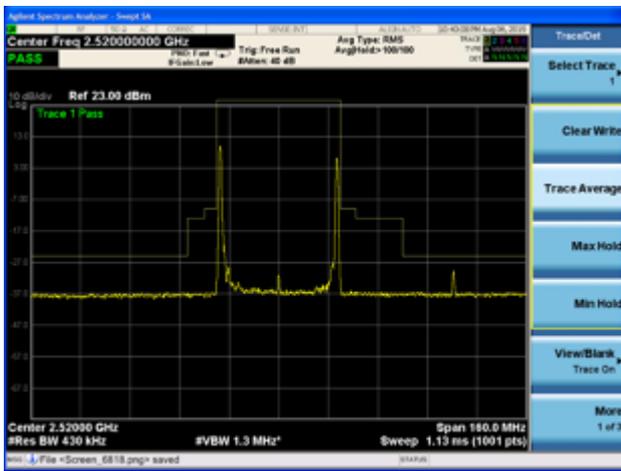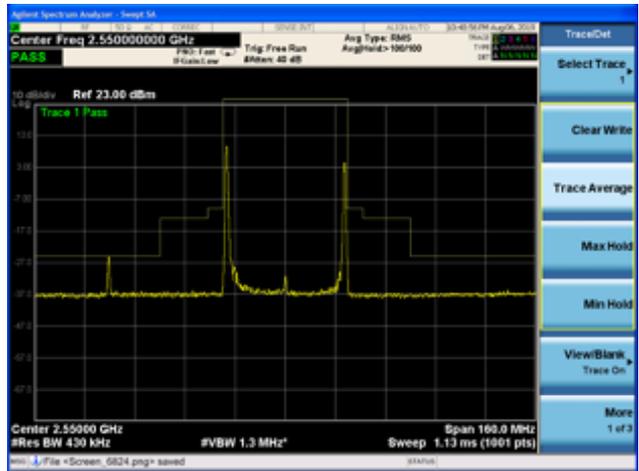| CA-7C 16QAM 20MHz+20MHz CH-Low, 100%RB	CA-7C 16QAM 20MHz+20MHz CH-High, 100%RB
CA-7C 64QAM 20MHz+20MHz CH-Low, 1 RB	CA-7C 64QAM 20MHz+20MHz CH-High, 1 RB
CA-7C 64QAM 20MHz+20MHz CH-Low, 100%RB	CA-7C 64QAM 20MHz+20MHz CH-High, 100%RB

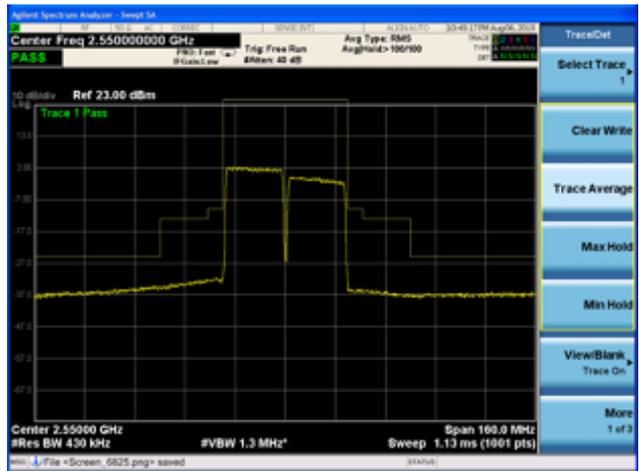| CA-12B QPSK 5MHz+5MHz CH-Low, 1 RB	CA-12B QPSK 5MHz+5MHz CH-High, 1 RB
CA-12B QPSK 5MHz+5MHz CH-Low, 100%RB	CA-12B QPSK 5MHz+5MHz CH-High, 100%RB
CA-12B 16QAM 5MHz+5MHz CH-Low, 1 RB	CA-12B 16QAM 5MHz+5MHz CH-High, 1 RB

CA-12B 16QAM 5MHz+5MHz CH-Low, 100%RB	CA-12B 16QAM 5MHz+5MHz CH-High, 100%RB

CA-12B 64QAM 5MHz+5MHz CH-Low, 1 RB	CA-12B 64QAM 5MHz+5MHz CH-High, 1 RB

CA-12B 64QAM 5MHz+5MHz CH-Low, 100%RB	CA-12B 64QAM 5MHz+5MHz CH-High, 100%RB

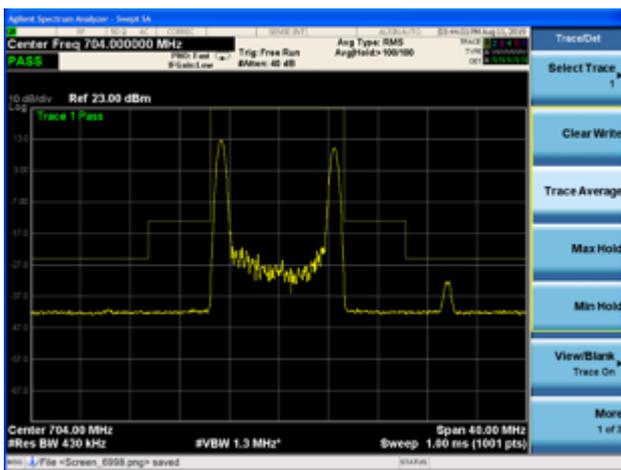| CA-12B QPSK 5MHz+10MHz CH-Low, 1 RB	CA-12B QPSK 5MHz+10MHz CH-High, 1 RB
CA-12B QPSK 5MHz+10MHz CH-Low, 100%RB	CA-12B QPSK 5MHz+10MHz CH-High, 100%RB
CA-12B 16QAM 5MHz+10MHz CH-Low, 1 RB	CA-12B 16QAM 5MHz+10MHz CH-High, 1 RB

CA-12B 16QAM 5MHz+10MHz CH-Low, 100%RB	CA-12B 16QAM 5MHz+10MHz CH-High, 100%RB
CA-12B 64QAM 5MHz+10MHz CH-Low, 1 RB	CA-12B 64QAM 5MHz+10MHz CH-High, 1 RB
CA-12B 64QAM 5MHz+10MHz CH-Low, 100%RB	CA-12B 64QAM 5MHz+10MHz CH-High, 100%RB

CA-38C QPSK 15MHz+15MHz CH-Low, 1 RB	CA-38C QPSK 15MHz+15MHz CH-High, 1 RB
CA-38C QPSK 15MHz+15MHz CH-Low, 100%RB	CA-38C QPSK 15MHz+15MHz CH-High, 100%RB
CA-38C 16QAM 15MHz+15MHz CH-Low, 1 RB	CA-38C 16QAM 15MHz+15MHz CH-High, 1 RB
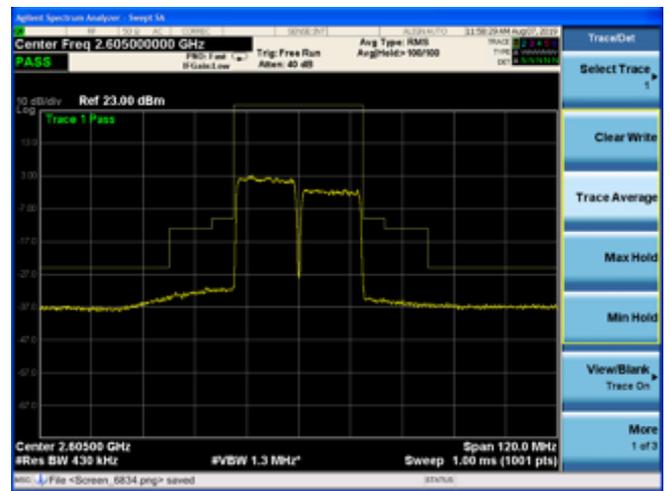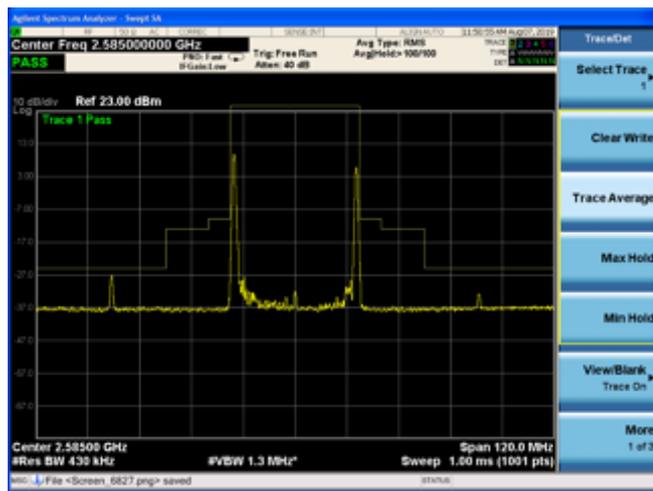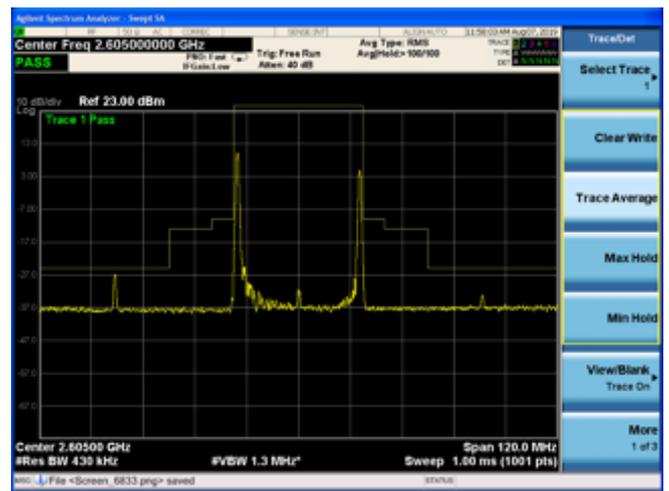
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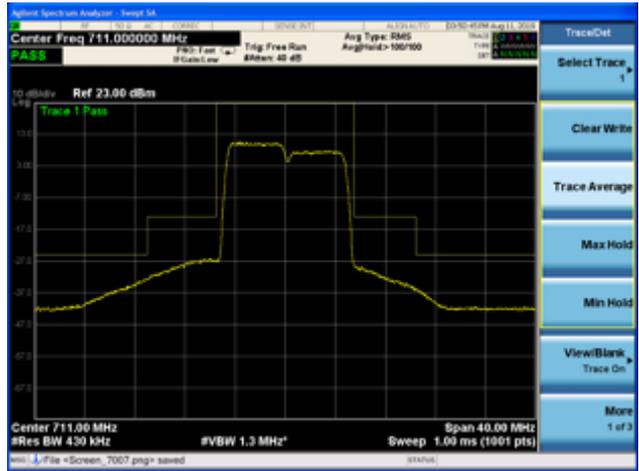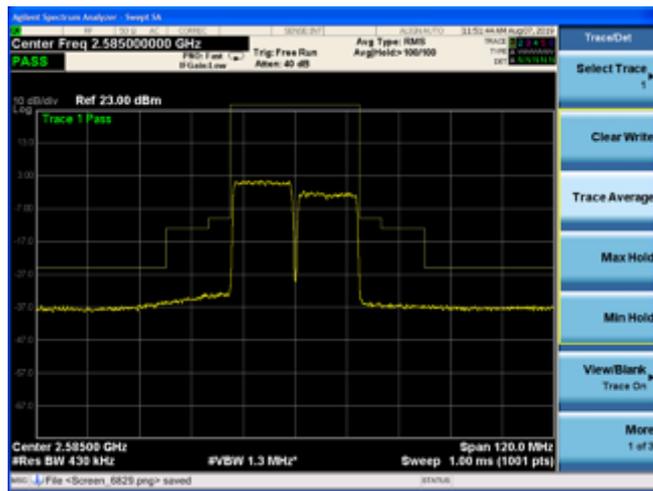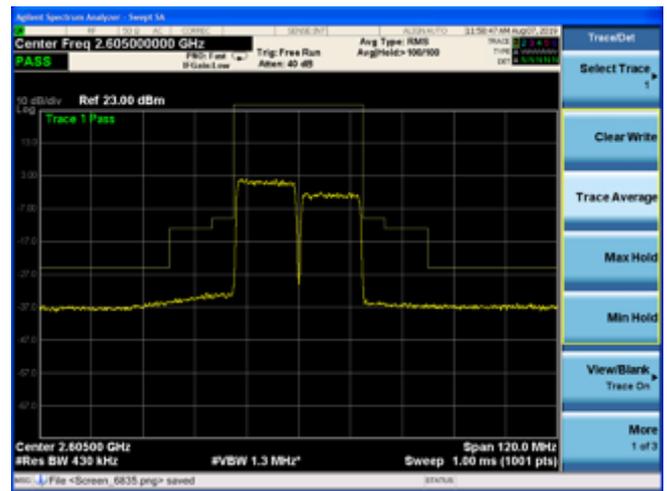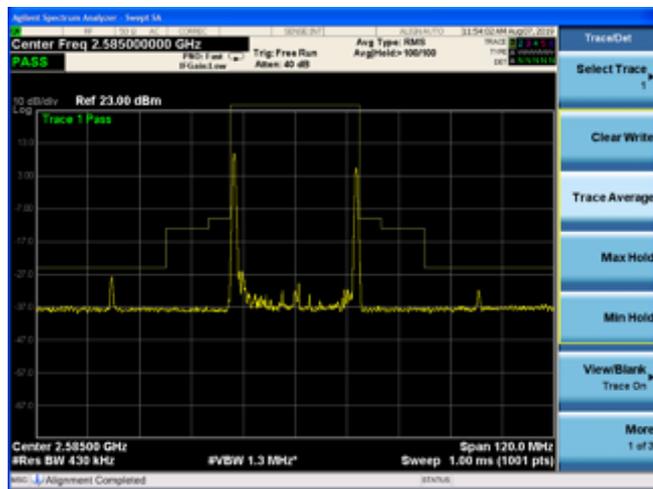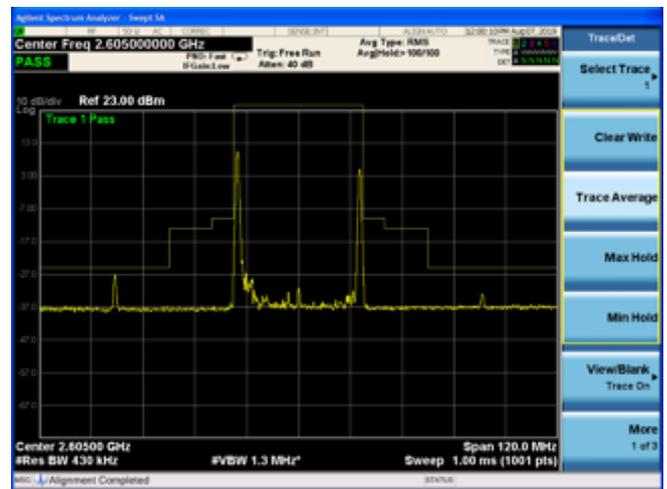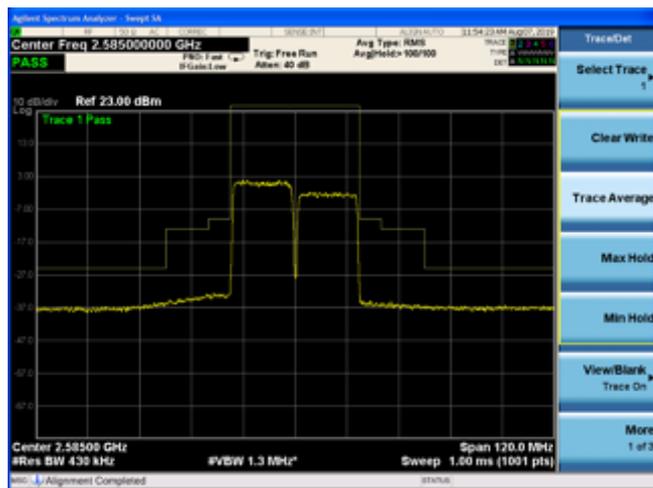
CA-38C 16QAM 15MHz+15MHz CH-Low, 100%RB	CA-38C 16QAM15MHz+15MHz CH-High, 100%RB
CA-38C 64QAM 15MHz+15MHz CH-Low, 1 RB	CA-38C 64QAM 15MHz+15MHz CH-High, 1 RB
CA-38C 64QAM 15MHz+15MHz CH-Low, 100%RB	CA-38C 64QAM 15MHz+15MHz CH-High, 100%RB
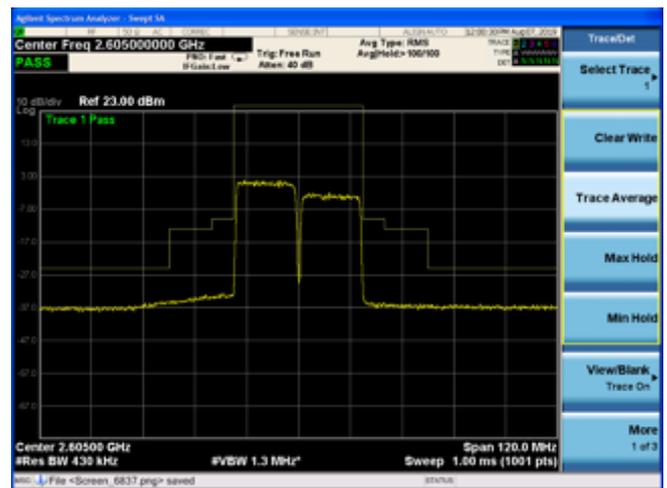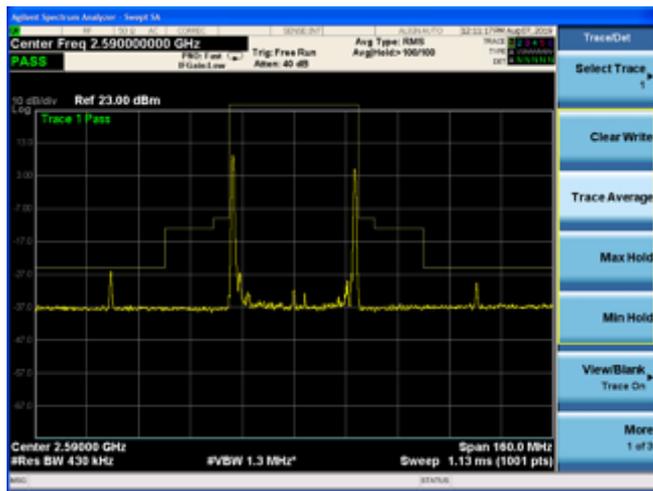
CA-38C QPSK 20MHz+20MHz CH-Low, 1 RB	CA-38C QPSK 20MHz+20MHz CH-High, 1 RB
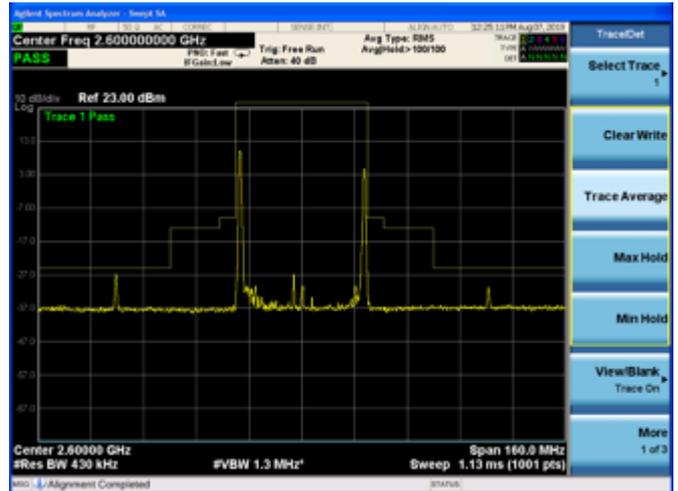
CA-38C QPSK 20MHz+20MHz CH-Low, 100%RB	CA-38C QPSK 20MHz+20MHz CH-High, 100%RB
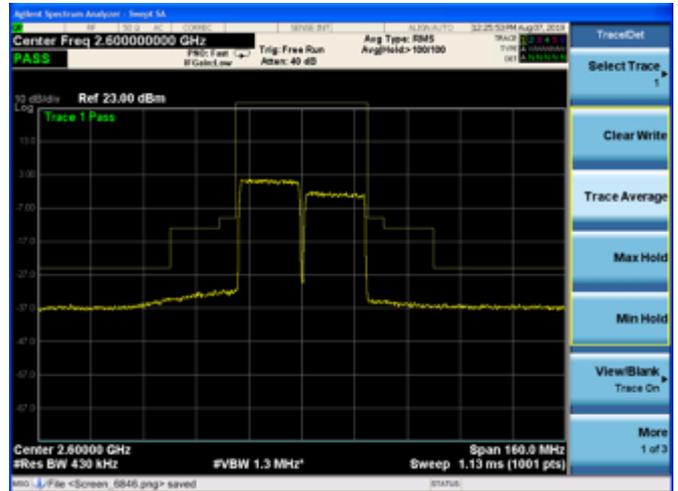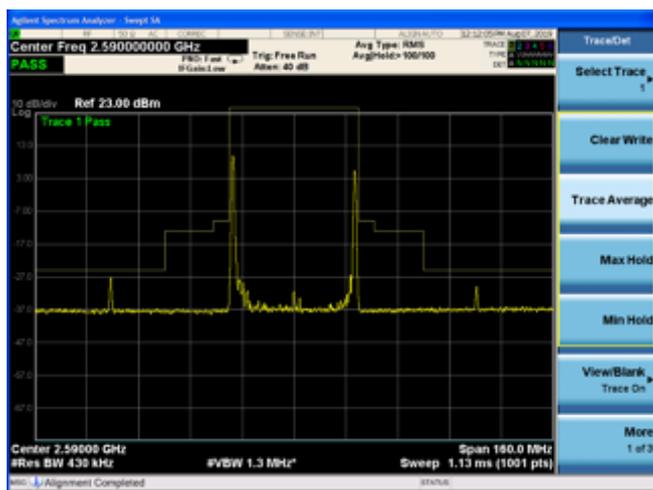
CA-38C 16QAM 20MHz+20MHz CH-Low, 1 RB	CA-38C 16QAM 20MHz+20MHz CH-High, 1 RB

CA-38C 16QAM 20MHz+20MHz CH-Low, 100%RB	CA-38C 16QAM 20MHz+20MHz CH-High, 100%RB
CA-38C 64QAM 20MHz+20MHz CH-Low, 1 RB	CA-38C 64QAM 20MHz+20MHz CH-High, 1 RB
CA-38C 64QAM 20MHz+20MHz CH-Low, 100%RB	CA-38C 64QAM 20MHz+20MHz CH-High, 100%RB

CA-41C QPSK 20MHz+5MHz CH-Low, 1 RB	CA-41C QPSK 20MHz+5MHz CH-High, 1 RB
CA-41C QPSK 20MHz+5MHz CH-Low, 100%RB	CA-41C QPSK 20MHz+5MHz CH-High, 100%RB
CA-41C 16QAM 20MHz+5MHz CH-Low, 1 RB	CA-41C 16QAM 20MHz+5MHz CH-High, 1 RB

CA-41C 16QAM 20MHz+5MHz CH-Low, 100%RB	CA-41C 16QAM 20MHz+5MHz CH-High, 100%RB

CA-41C 64QAM 20MHz+5MHz CH-Low, 1 RB	CA-41C 64QAM 20MHz+5MHz CH-High, 1 RB

CA-41C 64QAM 20MHz+5MHz CH-Low, 100%RB	CA-41C 64QAM 20MHz+5MHz CH-High, 100%RB

CA-41C QPSK 20MHz+20MHz CH-Low, 1 RB	CA-41C QPSK 20MHz+20MHz CH-High, 1 RB
CA-41C QPSK 20MHz+20MHz CH-Low, 100%RB	CA-41C QPSK 20MHz+20MHz CH-High, 100%RB
CA-41C 16QAM 20MHz+20MHz CH-Low, 1 RB	CA-41C 16QAM 20MHz+20MHz CH-High, 1 RB

CA-41C 16QAM 20MHz+20MHz CH-Low, 100%RB	CA-41C 16QAM 20MHz+20MHz CH-High, 100%RB
CA-41C 64QAM 20MHz+20MHz CH-Low, 1 RB	CA-41C 64QAM 20MHz+20MHz CH-High, 1 RB
CA-41C 64QAM 20MHz+20MHz CH-Low, 100%RB	CA-41C 64QAM 20MHz+20MHz CH-High, 100%RB

5.5 Peak-to-Average Power Ratio (PAPR)

Ambient condition

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

Methods of Measurement

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

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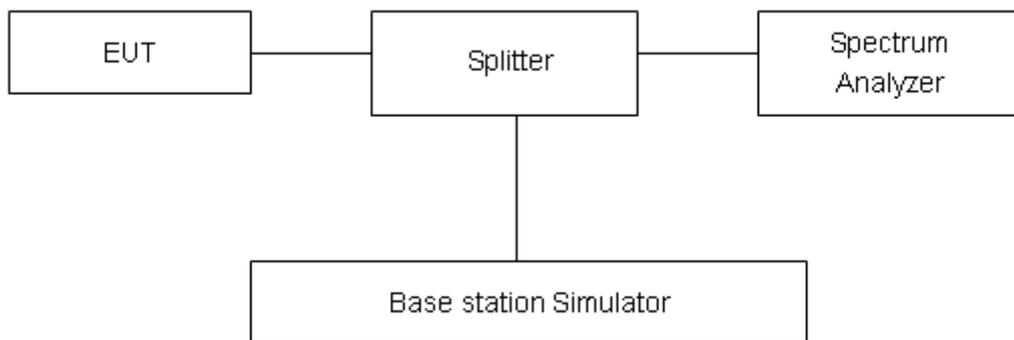
Limits
Rule Part 27.50(d)(5) Equipment employed must be authorized in accordance with the provisions of 24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph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

Measurement Uncertainty

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

Test Results

WCDMA Band IV	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
RMC	1312	1712.4	26.59	23.44	3.15	≤13	PASS
	1413	1732.6	26.69	23.50	3.19	≤13	PASS
	1513	1752.6	26.80	23.55	3.25	≤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	29.02	23.63	5.39	≤13	PASS
		20175	1732.5	28.75	23.26	5.49	≤13	PASS
		20393	1754.3	28.46	22.89	5.57	≤13	PASS
	3	19965	1711.5	29.07	23.63	5.44	≤13	PASS
		20175	1732.5	28.92	23.38	5.54	≤13	PASS
		20385	1753.5	28.54	23.00	5.54	≤13	PASS
	5	19975	1712.5	29.04	23.60	5.44	≤13	PASS
		20175	1732.5	28.91	23.39	5.52	≤13	PASS
		20375	1752.5	28.52	22.99	5.53	≤13	PASS
	10	20000	1715	29.01	23.61	5.40	≤13	PASS
		20175	1732.5	28.87	23.38	5.49	≤13	PASS
		20350	1750	28.52	23.00	5.52	≤13	PASS
	15	20025	1717.5	28.50	23.17	5.33	≤13	PASS
		20175	1732.5	28.22	22.91	5.31	≤13	PASS
		20325	1747.5	28.07	22.70	5.37	≤13	PASS
	20	20050	1720	29.08	23.57	5.51	≤13	PASS
		20175	1732.5	28.80	23.29	5.51	≤13	PASS
		20300	1745	28.72	23.21	5.51	≤13	PASS
16QAM	1.4	19957	1710.7	28.77	22.63	6.14	≤13	PASS
		20175	1732.5	28.76	22.56	6.20	≤13	PASS
		20393	1754.3	28.19	21.86	6.33	≤13	PASS
	3	19965	1711.5	28.72	22.56	6.16	≤13	PASS
		20175	1732.5	28.43	22.19	6.24	≤13	PASS
		20385	1753.5	28.18	21.86	6.32	≤13	PASS
	5	19975	1712.5	28.72	22.52	6.20	≤13	PASS
		20175	1732.5	28.45	22.16	6.29	≤13	PASS
		20375	1752.5	28.23	21.94	6.29	≤13	PASS
	10	20000	1715	28.64	22.52	6.12	≤13	PASS
		20175	1732.5	28.45	22.21	6.24	≤13	PASS
		20350	1750	28.19	21.95	6.24	≤13	PASS

		20025	1717.5	28.20	22.12	6.08	≤13	PASS
	15	20175	1732.5	27.90	21.79	6.11	≤13	PASS
		20325	1747.5	27.71	21.55	6.16	≤13	PASS
		20050	1720	28.77	22.53	6.24	≤13	PASS
	20	20175	1732.5	28.45	22.19	6.26	≤13	PASS
		20300	1745	28.36	22.12	6.24	≤13	PASS
64QAM		19957	1710.7	28.56	22.44	6.12	≤13	PASS
	1.4	20175	1732.5	28.67	22.51	6.16	≤13	PASS
		20393	1754.3	29.45	23.15	6.30	≤13	PASS
		19965	1711.5	28.57	22.44	6.13	≤13	PASS
	3	20175	1732.5	28.79	22.53	6.26	≤13	PASS
		20385	1753.5	29.28	23.04	6.24	≤13	PASS
		19975	1712.5	28.63	22.47	6.16	≤13	PASS
	5	20175	1732.5	28.97	22.73	6.24	≤13	PASS
		20375	1752.5	29.28	22.99	6.29	≤13	PASS
		20000	1715	28.79	22.65	6.14	≤13	PASS
	10	20175	1732.5	28.86	22.62	6.24	≤13	PASS
		20350	1750	29.21	22.96	6.25	≤13	PASS
		20025	1717.5	28.26	22.16	6.10	≤13	PASS
	15	20175	1732.5	28.33	22.21	6.12	≤13	PASS
		20325	1747.5	28.67	22.53	6.14	≤13	PASS
		20050	1720	28.84	22.63	6.21	≤13	PASS
	20	20175	1732.5	28.93	22.66	6.27	≤13	PASS
		20300	1745	29.28	23.04	6.24	≤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	31.21	25.84	5.37	≤13	PASS
		21100	2535	31.14	25.77	5.37	≤13	PASS
		21425	2567.5	31.70	26.58	5.12	≤13	PASS
	10	20800	2505	31.10	25.76	5.34	≤13	PASS
		21100	2535	31.11	25.74	5.37	≤13	PASS
		21400	2565	31.79	26.64	5.15	≤13	PASS
	15	20825	2507.5	30.72	25.53	5.19	≤13	PASS
		21100	2535	30.62	25.36	5.26	≤13	PASS
		21375	2562.5	31.33	26.21	5.12	≤13	PASS

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	20	20850	2510	31.34	26.01	5.33	≤13	PASS
		21100	2535	31.20	25.80	5.40	≤13	PASS
		21350	2560	31.68	26.61	5.07	≤13	PASS
16QAM	5	20775	2502.5	31.02	24.92	6.10	≤13	PASS
		21100	2535	30.91	24.82	6.09	≤13	PASS
		21425	2567.5	31.43	25.65	5.78	≤13	PASS
	10	20800	2505	30.98	24.92	6.06	≤13	PASS
		21100	2535	30.91	24.80	6.11	≤13	PASS
		21400	2565	31.48	25.56	5.92	≤13	PASS
	15	20825	2507.5	30.52	24.50	6.02	≤13	PASS
		21100	2535	30.44	24.39	6.05	≤13	PASS
		21375	2562.5	31.05	25.17	5.88	≤13	PASS
	20	20850	2510	31.05	24.97	6.08	≤13	PASS
		21100	2535	31.00	24.87	6.13	≤13	PASS
		21350	2560	31.48	25.59	5.89	≤13	PASS
64QAM	5	20775	2502.5	29.25	23.15	6.10	≤13	PASS
		21100	2535	29.12	22.98	6.14	≤13	PASS
		21425	2567.5	29.48	23.56	5.92	≤13	PASS
	10	20800	2505	29.19	23.09	6.10	≤13	PASS
		21100	2535	29.14	22.95	6.19	≤13	PASS
		21400	2565	29.69	23.80	5.89	≤13	PASS
	15	20825	2507.5	28.78	22.73	6.05	≤13	PASS
		21100	2535	28.70	22.66	6.04	≤13	PASS
		21375	2562.5	29.08	23.13	5.95	≤13	PASS
	20	20850	2510	29.20	23.02	6.18	≤13	PASS
		21100	2535	29.25	23.11	6.14	≤13	PASS
		21350	2560	29.45	23.38	6.07	≤13	PASS

LTE Band 12								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	23017	699.7	32.46	26.77	5.69	≤13	PASS
		23095	707.5	32.56	26.85	5.71	≤13	PASS
		23173	715.3	32.65	26.98	5.67	≤13	PASS
	3	23025	700.5	32.50	26.81	5.69	≤13	PASS

Modulation	Bandwidth (MHz)	Channel	Frequency	Peak	Avg	PAPR	Limit	Conclusion
		23095	707.5	32.56	26.83	5.73	≤13	PASS
		23165	714.5	32.60	27.00	5.60	≤13	PASS
	5	23035	701.5	32.51	26.81	5.70	≤13	PASS
		23095	707.5	32.62	26.87	5.75	≤13	PASS
		23155	713.5	32.58	26.96	5.62	≤13	PASS
	10	23060	704	32.33	26.78	5.55	≤13	PASS
		23095	707.5	32.57	26.83	5.74	≤13	PASS
		23130	711	32.75	26.99	5.76	≤13	PASS
16QAM	1.4	23017	699.7	32.19	25.79	6.40	≤13	PASS
		23095	707.5	32.20	25.76	6.44	≤13	PASS
		23173	715.3	32.26	25.93	6.33	≤13	PASS
	3	23025	700.5	32.15	25.77	6.38	≤13	PASS
		23095	707.5	32.20	25.80	6.40	≤13	PASS
		23165	714.5	32.23	25.92	6.31	≤13	PASS
	5	23035	701.5	32.21	25.79	6.42	≤13	PASS
		23095	707.5	32.28	25.78	6.50	≤13	PASS
		23155	713.5	32.31	25.92	6.39	≤13	PASS
	10	23060	704	32.06	25.75	6.31	≤13	PASS
		23095	707.5	32.17	25.70	6.47	≤13	PASS
		23130	711	32.27	25.86	6.41	≤13	PASS
64QAM	1.4	23017	699.7	31.45	25.06	6.39	≤13	PASS
		23095	707.5	31.40	25.02	6.38	≤13	PASS
		23173	715.3	31.48	25.11	6.37	≤13	PASS
	3	23025	700.5	31.45	25.09	6.36	≤13	PASS
		23095	707.5	31.39	25.04	6.35	≤13	PASS
		23165	714.5	31.43	25.11	6.32	≤13	PASS
	5	23035	701.5	31.46	25.06	6.40	≤13	PASS
		23095	707.5	31.52	25.06	6.46	≤13	PASS
		23155	713.5	31.49	25.13	6.36	≤13	PASS
	10	23060	704	31.33	25.03	6.30	≤13	PASS
		23095	707.5	31.44	24.98	6.46	≤13	PASS
		23130	711	31.52	25.12	6.40	≤13	PASS

LTE Band 17								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	23755	706.5	32.95	27.36	5.59	≤13	PASS
		23790	710	33.01	27.35	5.66	≤13	PASS
		23825	713.5	32.91	27.31	5.60	≤13	PASS
	10	23780	709	33.16	27.46	5.70	≤13	PASS

		23790	710	33.16	27.45	5.71	≤13	PASS
		23800	711	33.08	27.45	5.63	≤13	PASS
16QAM	5	23755	706.5	32.63	26.27	6.36	≤13	PASS
		23790	710	32.64	26.26	6.38	≤13	PASS
		23825	713.5	32.60	26.27	6.33	≤13	PASS
	10	23780	709	32.72	26.36	6.36	≤13	PASS
		23790	710	32.75	26.36	6.39	≤13	PASS
		23800	711	32.67	26.36	6.31	≤13	PASS
64QAM	5	23755	706.5	31.82	25.45	6.37	≤13	PASS
		23790	710	31.83	25.46	6.37	≤13	PASS
		23825	713.5	31.78	25.44	6.34	≤13	PASS
	10	23780	709	31.94	25.57	6.37	≤13	PASS
		23790	710	31.93	25.54	6.39	≤13	PASS
		23800	711	31.93	25.58	6.35	≤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	31.38	22.39	8.99	≤13	PASS
		38000	2595	31.32	22.50	8.82	≤13	PASS
		38225	2617.5	31.24	21.83	9.41	≤13	PASS
	10	37800	2575	31.39	22.37	9.02	≤13	PASS
		38000	2595	31.30	22.21	9.09	≤13	PASS
		38200	2615	31.31	21.93	9.38	≤13	PASS
	15	37825	2577.5	30.99	21.77	9.22	≤13	PASS
		38000	2595	30.89	21.66	9.23	≤13	PASS
		38175	2612.5	30.86	21.69	9.17	≤13	PASS
	20	37850	2580	31.56	22.81	8.75	≤13	PASS
		38000	2595	31.34	22.14	9.20	≤13	PASS
		38150	2610	31.43	21.95	9.48	≤13	PASS
16QAM	5	37775	2572.5	31.28	21.51	9.77	≤13	PASS
		38000	2595	31.30	21.55	9.75	≤13	PASS
		38225	2617.5	31.28	20.92	10.36	≤13	PASS
	10	37800	2575	31.21	21.43	9.78	≤13	PASS
		38000	2595	31.21	21.32	9.89	≤13	PASS
		38200	2615	31.23	21.05	10.18	≤13	PASS

		37825	2577.5	30.82	21.09	9.73	≤13	PASS
	15	38000	2595	30.83	20.88	9.95	≤13	PASS
		38175	2612.5	30.85	20.42	10.43	≤13	PASS
		37850	2580	31.34	21.53	9.81	≤13	PASS
	20	38000	2595	31.25	21.42	9.83	≤13	PASS
		38150	2610	31.25	21.02	10.23	≤13	PASS
64QAM		37775	2572.5	29.62	19.62	10.00	≤13	PASS
	5	38000	2595	29.56	19.68	9.88	≤13	PASS
		38225	2617.5	29.77	19.85	9.92	≤13	PASS
		37800	2575	29.56	19.70	9.86	≤13	PASS
	10	38000	2595	29.69	19.84	9.85	≤13	PASS
		38200	2615	29.56	19.23	10.33	≤13	PASS
		37825	2577.5	29.20	19.71	9.49	≤13	PASS
	15	38000	2595	29.22	19.31	9.91	≤13	PASS
		38175	2612.5	29.30	19.19	10.11	≤13	PASS
		37850	2580	29.65	19.84	9.81	≤13	PASS
	20	38000	2595	29.55	19.32	10.23	≤13	PASS
		38150	2610	29.69	19.54	10.15	≤13	PASS

LTE Band 41								
Modulation	Bandwidth ((MHz))	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK		39675	2498.5	31.10	22.43	8.67	≤13	PASS
	5	40620	2593	31.36	22.50	8.86	≤13	PASS
		41565	2687.5	31.26	22.04	9.22	≤13	PASS
		39700	2501	31.11	22.42	8.69	≤13	PASS
	10	40620	2593	31.31	22.36	8.95	≤13	PASS
		41540	2685	31.20	22.50	8.70	≤13	PASS
		39725	2503.5	30.74	22.56	8.18	≤13	PASS
	15	40620	2593	30.92	21.95	8.97	≤13	PASS
		41515	2682.5	30.86	22.37	8.49	≤13	PASS
		39750	2506	31.14	22.14	9.00	≤13	PASS
	20	40620	2593	31.33	22.24	9.09	≤13	PASS
		41490	2680	31.14	21.99	9.15	≤13	PASS

16QAM	5	39675	2498.5	30.82	21.28	9.54	≤13	PASS
		40620	2593	31.05	21.62	9.43	≤13	PASS
		41565	2687.5	31.08	20.89	10.19	≤13	PASS
	10	39700	2501	30.82	21.25	9.57	≤13	PASS
		40620	2593	31.00	21.42	9.58	≤13	PASS
		41540	2685	31.09	21.21	9.88	≤13	PASS
	15	39725	2503.5	30.46	20.71	9.75	≤13	PASS
		40620	2593	30.66	21.12	9.54	≤13	PASS
		41515	2682.5	30.55	20.74	9.81	≤13	PASS
	20	39750	2506	30.85	21.21	9.64	≤13	PASS
		40620	2593	31.03	21.28	9.75	≤13	PASS
		41490	2680	30.97	20.91	10.06	≤13	PASS
64QAM	5	39675	2498.5	29.17	19.32	9.85	≤13	PASS
		40620	2593	29.46	19.78	9.68	≤13	PASS
		41565	2687.5	29.73	19.85	9.88	≤13	PASS
	10	39700	2501	29.11	19.36	9.75	≤13	PASS
		40620	2593	29.37	19.74	9.63	≤13	PASS
		41540	2685	29.30	19.39	9.91	≤13	PASS
	15	39725	2503.5	28.70	19.18	9.52	≤13	PASS
		40620	2593	29.06	19.37	9.69	≤13	PASS
		41515	2682.5	28.92	19.19	9.73	≤13	PASS
	20	39750	2506	29.18	19.68	9.50	≤13	PASS
		40620	2593	29.40	19.63	9.77	≤13	PASS
		41490	2680	29.50	19.76	9.74	≤13	PASS

Mode	Bandwidth	PCC		SCC1		Modulation	Peak-to-Average Power Ratio (PAPR)		
		Channel	Frequency (MHz)	Channel	Frequency (MHz)		Peak (dBm)	Avg (dBm)	PAPR (dB)
CA_7C	CA_7C_10MHz+20MHz_QPSK	21006	2525.6	21150	2540	QPSK	26.09	19.84	6.25
	CA_7C_10MHz+20MHz_16QAM	21006	2525.6	21150	2540	16QAM	25.64	18.77	6.87
	CA_7C_10MHz+20MHz_64QAM	21006	2525.6	21150	2540	64QAM	25.29	18.43	6.86
	CA_7C_20MHz+10MHz_QPSK	21051	2530.1	21195	2544.5	QPSK	26.14	19.89	6.25
	CA_7C_20MHz+10MHz_16QAM	21051	2530.1	21195	2544.5	16QAM	25.61	18.76	6.85
	CA_7C_20MHz+10MHz_64QAM	21051	2530.1	21195	2544.5	64QAM	25.14	18.31	6.83
	CA_7C_15MHz+10MHz_QPSK	21051	2530.1	21171	2542.1	QPSK	26.09	19.79	6.30
	CA_7C_15MHz+10MHz_16QAM	21051	2530.1	21171	2542.1	16QAM	25.63	18.74	6.89

CA_7C_15MHz+10MHz_64QAM	21051	2530.1	21171	2542.1	64QAM	25.11	18.24	6.87
CA_7C_15MHz+15MHz_QPSK	21025	2527.5	21175	2542.5	QPSK	26.33	19.82	6.51
CA_7C_15MHz+15MHz_16QAM	21025	2527.5	21175	2542.5	16QAM	25.73	18.71	7.02
CA_7C_15MHz+15MHz_64QAM	21025	2527.5	21175	2542.5	64QAM	25.53	18.77	6.76
CA_7C_15MHz+20MHz_QPSK	21003	2525.3	21174	2542.4	QPSK	26.08	19.44	6.64
CA_7C_15MHz+20MHz_16QAM	21003	2525.3	21174	2542.4	16QAM	25.46	18.29	7.17
CA_7C_15MHz+20MHz_64QAM	21003	2525.3	21174	2542.4	64QAM	25.14	17.97	7.17
CA_7C_20MHz+15MHz_QPSK	21026	2527.6	21197	2544.7	QPSK	26.00	19.35	6.65
CA_7C_20MHz+15MHz_16QAM	21026	2527.6	21197	2544.7	16QAM	25.46	18.30	7.16
CA_7C_20MHz+15MHz_64QAM	21026	2527.6	21197	2544.7	64QAM	25.11	17.97	7.14
CA_7C_20MHz+20MHz_QPSK	21001	2525.1	21199	2544.9	QPSK	25.72	18.93	6.79
CA_7C_20MHz+20MHz_16QAM	21001	2525.1	21199	2544.9	16QAM	25.12	17.79	7.33
CA_7C_20MHz+20MHz_64QAM	21001	2525.1	21199	2544.9	64QAM	24.46	17.15	7.31

Mode	Bandwidth	PCC		SCC1		Modulation	Peak-to-Average Power Ratio (PAPR)		
		Channel	Frequency (MHz)	Channel	Frequency (MHz)		Peak (dBm)	Avg (dBm)	PAPR (dB)
CA_12B	CA_12B_5MHz+5MHz_QPSK	23071	705.1	23119	709.9	QPSK	28.83	22.53	6.30
	CA_12B_5MHz+5MHz_16QAM	23071	705.1	23119	709.9	16QAM	28.20	21.45	6.75
	CA_12B_5MHz+5MHz_64QAM	23071	705.1	23119	709.9	64QAM	28.13	21.40	6.73
	CA_12B_5MHz+10MHz_QPSK	23048	702.8	23120	710	QPSK	28.81	22.64	6.17
	CA_12B_5MHz+10MHz_16QAM	23048	702.8	23120	710	16QAM	28.22	21.56	6.66
	CA_12B_5MHz+10MHz_64QAM	23048	702.8	23120	710	64QAM	28.01	21.31	6.70

Mode	Bandwidth	PCC		SCC1		Modulation	Peak-to-Average Power Ratio (PAPR)		
		Channel	Frequency (MHz)	Channel	Frequency (MHz)		Peak (dBm)	Avg (dBm)	PAPR (dB)
CA_38C	CA_38C_15MHz+15MHz_QPSK	37925	2587.5	38075	2602.5	QPSK	26.48	18.03	8.45
	CA_38C_15MHz+15MHz_16QAM	37925	2587.5	38075	2602.5	16QAM	25.97	16.96	9.01
	CA_38C_15MHz+15MHz_64QAM	37925	2587.5	38075	2602.5	64QAM	25.24	16.44	8.80
	CA_38C_20MHz+20MHz_QPSK	37901	2585.1	38099	2604.9	QPSK	25.82	17.18	8.64
	CA_38C_20MHz+20MHz_16QAM	37901	2585.1	38099	2604.9	16QAM	25.26	16.13	9.13
	CA_38C_20MHz+20MHz_64QAM	37901	2585.1	38099	2604.9	64QAM	24.51	15.33	9.18

Mode	Bandwidth	PCC		SCC1		Modulation	Peak-to-Average Power Ratio (PAPR)		
		Channel	Frequency (MHz)	Channel	Frequency (MHz)		Peak (dBm)	Avg (dBm)	PAPR (dB)
CA_41C	CA_41C_5MHz+20MHz_QPSK	40528	2583.8	40645	2595.5	QPSK	27.78	17.91	9.87
	CA_41C_5MHz+20MHz_16QAM	40528	2583.8	40645	2595.5	16QAM	27.44	17.33	10.11
	CA_41C_5MHz+20MHz_64QAM	40528	2583.8	40645	2595.5	64QAM	26.77	16.27	10.50

CA_41C_20MHz+5MHz_QPSK	40595	2590.5	40712	2602.2	QPSK	27.56	18.69	8.87
CA_41C_20MHz+5MHz_16QAM	40595	2590.5	40712	2602.2	16QAM	27.13	17.02	10.11
CA_41C_20MHz+5MHz_64QAM	40595	2590.5	40712	2602.2	64QAM	26.54	17.01	9.53
CA_41C_10MHz+20MHz_QPSK	40526	2583.6	40670	2598	QPSK	27.97	18.50	9.47
CA_41C_10MHz+20MHz_16QAM	40526	2583.6	40670	2598	16QAM	27.54	17.58	9.96
CA_41C_10MHz+20MHz_64QAM	40526	2583.6	40670	2598	64QAM	26.85	15.87	10.98
CA_41C_20MHz+10MHz_QPSK	40571	2588.1	40715	2602.5	QPSK	28.02	18.22	9.80
CA_41C_20MHz+10MHz_16QAM	40571	2588.1	40715	2602.5	16QAM	27.57	17.44	10.13
CA_41C_20MHz+10MHz_64QAM	40571	2588.1	40715	2602.5	64QAM	26.94	16.38	10.56
CA_41C_15MHz+15MHz_QPSK	40545	2585.5	40695	2600.5	QPSK	28.24	18.29	9.95
CA_41C_15MHz+15MHz_16QAM	40545	2585.5	40695	2600.5	16QAM	27.58	17.38	10.20
CA_41C_15MHz+15MHz_64QAM	40545	2585.5	40695	2600.5	64QAM	27.07	16.54	10.53
CA_41C_15MHz+20MHz_QPSK	40523	2583.3	40694	2600.4	QPSK	27.94	17.57	10.37
CA_41C_15MHz+20MHz_16QAM	40523	2583.3	40694	2600.4	16QAM	27.37	16.39	10.98
CA_41C_15MHz+20MHz_64QAM	40523	2583.3	40694	2600.4	64QAM	26.83	15.99	10.84
CA_41C_20MHz+15MHz_QPSK	40546	2585.6	40717	2602.7	QPSK	28.09	17.78	10.31
CA_41C_20MHz+15MHz_16QAM	40546	2585.6	40717	2602.7	16QAM	27.45	16.69	10.76
CA_41C_20MHz+15MHz_64QAM	40546	2585.6	40717	2602.7	64QAM	26.87	15.75	11.12
CA_41C_20MHz+20MHz_QPSK	40521	2583.1	40719	2602.9	QPSK	27.62	17.38	10.24
CA_41C_20MHz+20MHz_16QAM	40521	2583.1	40719	2602.9	16QAM	26.84	15.89	10.95
CA_41C_20MHz+20MHz_64QAM	40521	2583.1	40719	2602.9	64QAM	26.48	16.10	10.38

5.6 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 +55°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 +55°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:

(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

(2) For hand carried, battery powered equipment, reduce primary supply voltage 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 4.35 V, with a nominal voltage of 3.8V.

Test setup
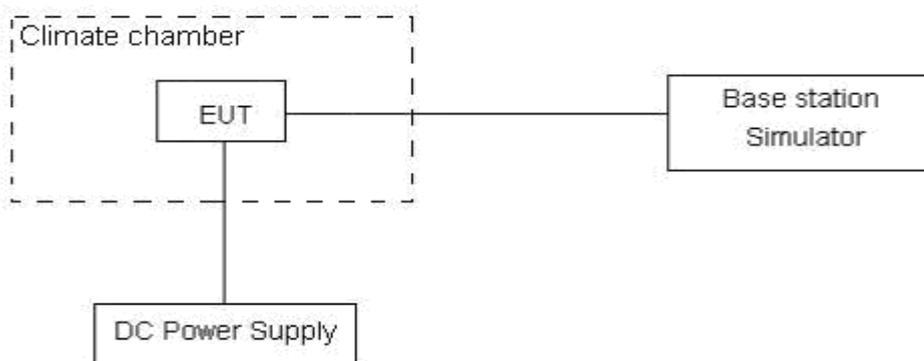
Limits

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

Measurement Uncertainty

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

Test Result

WCDMA Band IV						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
Temperature	Voltage	BPSK	QPSK	BPSK	QPSK	
Normal（25℃）	Normal	13.51	7.01	0.00719	0.00373	PASS
Extreme（55℃）		9.03	10.47	0.00480	0.00557	PASS
Extreme（50℃）		7.39	10.46	0.00393	0.00556	PASS
Extreme（40℃）		14.16	14.92	0.00753	0.00793	PASS
Extreme（30℃）		17.70	16.55	0.00942	0.00880	PASS
Extreme（20℃）		8.12	8.01	0.00432	0.00426	PASS
Extreme（10℃）		9.83	13.79	0.00523	0.00734	PASS
Extreme（0℃）		10.89	13.52	0.00579	0.00719	PASS
Extreme（-10℃）		9.19	8.72	0.00489	0.00464	PASS
Extreme（-20℃）		9.72	7.96	0.00517	0.00423	PASS
Extreme（-30℃）		5.32	14.86	0.00283	0.00790	PASS
25℃	LV	7.38	9.56	0.00393	0.00509	PASS
	HV	9.79	10.16	0.00521	0.00540	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	17.50	13.24	13.88	0.00931	0.00704	0.00738	PASS
Extreme（55℃）		10.66	8.44	17.98	0.00567	0.00449	0.00957	PASS
Extreme（50℃）		4.68	10.35	15.12	0.00249	0.00551	0.00804	PASS
Extreme（40℃）		13.19	7.09	5.11	0.00701	0.00377	0.00272	PASS
Extreme（30℃）		3.41	4.47	14.37	0.00181	0.00238	0.00764	PASS
Extreme（20℃）		1.03	5.56	5.59	0.00055	0.00296	0.00297	PASS
Extreme（10℃）		16.89	9.69	2.46	0.00899	0.00516	0.00131	PASS
Extreme（0℃）		6.89	7.31	5.18	0.00366	0.00389	0.00276	PASS
Extreme（-10℃）		2.92	17.63	14.22	0.00156	0.00938	0.00756	PASS
Extreme（-20℃）		12.82	7.99	12.65	0.00682	0.00425	0.00673	PASS
Extreme（-30℃）		1.41	5.13	8.98	0.00075	0.00273	0.00478	PASS
25℃	LV	5.92	7.76	6.06	0.00315	0.00413	0.00322	PASS
	HV	3.27	8.35	6.23	0.00174	0.00444	0.00332	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability	Frequency Stability	Frequency Stability	Verdict

BANDWIDTH	3MHz				（ppm）	（ppm）	（ppm）	
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	1.20	6.55	4.38	0.00064	0.00348	0.00233	PASS
Extreme（55℃）		10.23	13.43	10.89	0.00544	0.00715	0.00579	PASS
Extreme（50℃）		16.07	1.07	13.96	0.00855	0.00057	0.00743	PASS
Extreme（40℃）		11.26	4.89	12.15	0.00599	0.00260	0.00647	PASS
Extreme（30℃）		16.98	3.56	4.80	0.00903	0.00189	0.00255	PASS
Extreme（20℃）		13.49	7.83	2.94	0.00718	0.00416	0.00156	PASS
Extreme（10℃）		11.69	2.77	1.13	0.00622	0.00147	0.00060	PASS
Extreme（0℃）		1.50	4.27	14.49	0.00080	0.00227	0.00771	PASS
Extreme（-10℃）		13.15	8.37	1.70	0.00700	0.00445	0.00091	PASS
Extreme（-20℃）		8.33	14.82	10.69	0.00443	0.00788	0.00569	PASS
Extreme（-30℃）		5.72	12.06	1.86	0.00304	0.00641	0.00099	PASS
25℃	LV	8.28	6.18	13.12	0.00441	0.00329	0.00698	PASS
	HV	3.53	13.90	4.07	0.00188	0.00739	0.00216	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	8.33	4.38	15.68	0.00443	0.00233	0.00834	PASS
Extreme（55℃）		3.50	1.74	1.86	0.00186	0.00093	0.00099	PASS
Extreme（50℃）		15.44	5.94	10.72	0.00821	0.00316	0.00570	PASS
Extreme（40℃）		4.48	5.32	1.25	0.00238	0.00283	0.00066	PASS
Extreme（30℃）		17.82	7.54	17.63	0.00948	0.00401	0.00938	PASS
Extreme（20℃）		10.87	15.38	17.84	0.00578	0.00818	0.00949	PASS
Extreme（10℃）		8.87	16.86	10.98	0.00472	0.00897	0.00584	PASS
Extreme（0℃）		7.49	9.03	17.30	0.00399	0.00480	0.00920	PASS
Extreme（-10℃）		11.31	1.21	5.38	0.00602	0.00064	0.00286	PASS
Extreme（-20℃）		6.17	8.95	9.97	0.00328	0.00476	0.00530	PASS
Extreme（-30℃）		17.05	1.73	5.07	0.00907	0.00092	0.00270	PASS
25℃	LV	7.78	15.80	17.51	0.00414	0.00840	0.00932	PASS
	HV	6.60	6.71	4.02	0.00351	0.00357	0.00214	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	9.32	15.03	12.97	0.00496	0.00800	0.00690	PASS
Extreme（55℃）		2.59	8.53	3.10	0.00138	0.00454	0.00165	PASS
Extreme（50℃）		11.18	9.67	16.79	0.00595	0.00514	0.00893	PASS
Extreme（40℃）		6.39	10.83	12.17	0.00340	0.00576	0.00648	PASS
Extreme（30℃）		7.65	1.99	2.04	0.00407	0.00106	0.00109	PASS
Extreme（20℃）		9.46	17.47	4.09	0.00503	0.00929	0.00218	PASS

Extreme（10℃）		5.35	12.12	13.08	0.00285	0.00645	0.00696	PASS
Extreme（0℃）		12.21	9.75	12.59	0.00649	0.00519	0.00670	PASS
Extreme（-10℃）		3.31	12.97	7.44	0.00176	0.00690	0.00396	PASS
Extreme（-20℃）		3.94	15.58	16.02	0.00210	0.00829	0.00852	PASS
Extreme（-30℃）		1.76	5.38	14.65	0.00094	0.00286	0.00779	PASS
25℃	LV	16.95	4.73	11.43	0.00902	0.00251	0.00608	PASS
	HV	10.04	5.29	2.99	0.00534	0.00282	0.00159	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℃）		3.08	2.50	6.02	0.00164	0.00133	0.00320	PASS
Extreme（55℃）		5.55	4.04	7.57	0.00295	0.00215	0.00403	PASS
Extreme（50℃）		15.05	1.31	15.78	0.00801	0.00070	0.00839	PASS
Extreme（40℃）		6.10	7.75	1.65	0.00325	0.00412	0.00088	PASS
Extreme（30℃）		9.53	12.91	8.84	0.00507	0.00687	0.00470	PASS
Extreme（20℃）	Normal	3.78	11.75	6.69	0.00201	0.00625	0.00356	PASS
Extreme（10℃）		13.38	12.62	4.53	0.00712	0.00671	0.00241	PASS
Extreme（0℃）		17.76	1.11	6.06	0.00945	0.00059	0.00322	PASS
Extreme（-10℃）		1.74	8.90	17.20	0.00092	0.00474	0.00915	PASS
Extreme（-20℃）		9.11	11.87	10.86	0.00485	0.00631	0.00578	PASS
Extreme（-30℃）		17.87	15.65	10.37	0.00950	0.00832	0.00552	PASS
25℃	LV	2.17	12.48	10.16	0.00115	0.00664	0.00540	PASS
	HV	16.22	4.56	16.93	0.00863	0.00243	0.00901	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℃）		3.08	6.19	13.59	0.00164	0.00329	0.00723	PASS
Extreme（55℃）		7.31	1.80	16.89	0.00389	0.00096	0.00899	PASS
Extreme（50℃）		7.63	6.61	4.92	0.00406	0.00352	0.00262	PASS
Extreme（40℃）		2.01	6.73	9.85	0.00107	0.00358	0.00524	PASS
Extreme（30℃）		10.86	15.72	16.07	0.00578	0.00836	0.00855	PASS
Extreme（20℃）	Normal	16.62	14.64	4.99	0.00884	0.00779	0.00266	PASS
Extreme（10℃）		17.09	11.68	7.26	0.00909	0.00621	0.00386	PASS
Extreme（0℃）		11.15	1.91	6.71	0.00593	0.00102	0.00357	PASS
Extreme（-10℃）		5.13	1.13	15.07	0.00273	0.00060	0.00801	PASS
Extreme（-20℃）		13.30	6.57	4.75	0.00708	0.00349	0.00253	PASS
Extreme（-30℃）		16.22	10.77	6.68	0.00863	0.00573	0.00355	PASS
25℃	LV	4.41	2.19	16.36	0.00234	0.00116	0.00870	PASS
	HV	5.54	17.59	10.07	0.00295	0.00936	0.00536	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	16.08	6.60	5.07	0.00855	0.00351	0.00270	PASS
Extreme（55℃）		10.44	11.36	15.04	0.00555	0.00604	0.00800	PASS
Extreme（50℃）		16.11	4.07	5.90	0.00857	0.00216	0.00314	PASS
Extreme（40℃）		13.03	10.07	12.78	0.00693	0.00536	0.00680	PASS
Extreme（30℃）		11.75	10.62	14.28	0.00625	0.00565	0.00760	PASS
Extreme（20℃）		14.84	8.26	5.73	0.00789	0.00440	0.00305	PASS
Extreme（10℃）		12.32	4.14	15.25	0.00655	0.00220	0.00811	PASS
Extreme（0℃）		6.15	14.59	2.62	0.00327	0.00776	0.00140	PASS
Extreme（-10℃）		5.37	8.45	17.85	0.00286	0.00450	0.00949	PASS
Extreme（-20℃）		4.61	8.94	1.27	0.00245	0.00475	0.00067	PASS
Extreme（-30℃）		9.20	4.41	12.77	0.00489	0.00235	0.00679	PASS
25℃	LV	15.21	4.78	4.51	0.00809	0.00254	0.00240	PASS
	HV	2.59	4.28	1.35	0.00138	0.00228	0.00072	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	12.35	1.43	7.42	0.00657	0.00076	0.00395	PASS
Extreme（55℃）		4.63	17.46	6.88	0.00246	0.00929	0.00366	PASS
Extreme（50℃）		2.94	10.89	4.49	0.00156	0.00579	0.00239	PASS
Extreme（40℃）		4.63	6.43	8.57	0.00246	0.00342	0.00456	PASS
Extreme（30℃）		2.07	11.36	10.68	0.00110	0.00604	0.00568	PASS
Extreme（20℃）		11.88	3.64	12.91	0.00632	0.00194	0.00687	PASS
Extreme（10℃）		8.40	12.32	13.36	0.00447	0.00655	0.00711	PASS
Extreme（0℃）		10.25	1.36	3.38	0.00545	0.00072	0.00180	PASS
Extreme（-10℃）		11.78	2.39	4.26	0.00627	0.00127	0.00226	PASS
Extreme（-20℃）		15.97	15.91	13.76	0.00849	0.00847	0.00732	PASS
Extreme（-30℃）		9.35	15.99	14.51	0.00498	0.00850	0.00772	PASS
25℃	LV	16.87	17.28	12.66	0.00897	0.00919	0.00673	PASS
	HV	1.46	14.85	13.36	0.00078	0.00790	0.00711	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	1.20	2.46	13.37	0.00064	0.00131	0.00711	PASS
Extreme（55℃）		17.11	1.83	10.37	0.00910	0.00098	0.00551	PASS

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Extreme（50℃）		14.68	12.94	1.20	0.00781	0.00688	0.00064	PASS
Extreme（40℃）		17.51	9.61	10.46	0.00932	0.00511	0.00557	PASS
Extreme（30℃）		6.33	11.36	12.86	0.00337	0.00604	0.00684	PASS
Extreme（20℃）		11.08	8.89	5.56	0.00589	0.00473	0.00296	PASS
Extreme（10℃）		9.16	4.52	15.79	0.00487	0.00241	0.00840	PASS
Extreme（0℃）		8.71	16.46	1.97	0.00463	0.00876	0.00105	PASS
Extreme（-10℃）		4.07	16.06	4.94	0.00216	0.00854	0.00263	PASS
Extreme（-20℃）		11.93	1.86	1.22	0.00635	0.00099	0.00065	PASS
Extreme（-30℃）		5.62	10.47	1.99	0.00299	0.00557	0.00106	PASS
25℃	LV	4.44	13.96	16.75	0.00236	0.00742	0.00891	PASS
	HV	12.01	1.75	10.68	0.00639	0.00093	0.00568	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℃）		12.17	16.84	13.84	0.00647	0.00896	0.00736	PASS
Extreme（55℃）		7.90	17.44	16.58	0.00420	0.00928	0.00882	PASS
Extreme（50℃）		14.26	6.80	7.02	0.00758	0.00362	0.00373	PASS
Extreme（40℃）		10.54	16.03	12.38	0.00561	0.00853	0.00659	PASS
Extreme（30℃）		16.19	4.03	15.89	0.00861	0.00214	0.00845	PASS
Extreme（20℃）	Normal	4.04	3.00	8.96	0.00215	0.00160	0.00477	PASS
Extreme（10℃）		17.38	15.68	11.88	0.00925	0.00834	0.00632	PASS
Extreme（0℃）		11.29	2.11	16.56	0.00601	0.00112	0.00881	PASS
Extreme（-10℃）		13.22	8.59	11.29	0.00703	0.00457	0.00601	PASS
Extreme（-20℃）		4.52	2.04	2.54	0.00240	0.00109	0.00135	PASS
Extreme（-30℃）		7.37	2.04	17.86	0.00392	0.00109	0.00950	PASS
25℃	LV	15.87	5.32	8.29	0.00844	0.00283	0.00441	PASS
	HV	1.36	14.63	8.16	0.00072	0.00778	0.00434	PASS

LTE Band 12								
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℃）		6.52	5.64	2.60	0.00347	0.00300	0.00138	PASS
Extreme（55℃）		15.16	4.36	17.54	0.00806	0.00232	0.00933	PASS
Extreme（50℃）		11.09	10.27	1.08	0.00590	0.00546	0.00057	PASS
Extreme（40℃）	Normal	6.30	17.96	5.00	0.00335	0.00955	0.00266	PASS
Extreme（30℃）		2.17	12.64	6.38	0.00116	0.00672	0.00340	PASS
Extreme（20℃）		17.77	8.44	7.34	0.00945	0.00449	0.00390	PASS
Extreme（10℃）		5.67	8.71	9.61	0.00302	0.00463	0.00511	PASS

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Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
Extreme（0℃）		17.37	15.57	4.29	0.00924	0.00828	0.00228	PASS
Extreme（-10℃）		8.98	5.81	10.96	0.00478	0.00309	0.00583	PASS
Extreme（-20℃）		12.15	10.07	16.71	0.00646	0.00535	0.00889	PASS
Extreme（-30℃）		1.91	8.77	12.97	0.00102	0.00466	0.00690	PASS
25℃	LV	3.45	14.94	16.20	0.00184	0.00795	0.00862	PASS
	HV	2.33	14.79	14.82	0.00124	0.00787	0.00789	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	3MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）		4.09	15.06	14.61	0.00218	0.00801	0.00777	PASS
Extreme（55℃）		17.01	10.21	14.26	0.00905	0.00543	0.00759	PASS
Extreme（50℃）		17.15	3.40	2.95	0.00912	0.00181	0.00157	PASS
Extreme（40℃）		6.01	15.55	5.29	0.00319	0.00827	0.00281	PASS
Extreme（30℃）		17.26	16.36	4.03	0.00918	0.00870	0.00215	PASS
Extreme（20℃）	Normal	8.32	7.88	1.95	0.00443	0.00419	0.00104	PASS
Extreme（10℃）		15.68	14.56	3.79	0.00834	0.00774	0.00201	PASS
Extreme（0℃）		10.00	12.26	11.14	0.00532	0.00652	0.00593	PASS
Extreme（-10℃）		1.97	8.87	9.86	0.00105	0.00472	0.00525	PASS
Extreme（-20℃）		4.55	7.24	12.32	0.00242	0.00385	0.00655	PASS
Extreme（-30℃）		16.32	8.31	8.00	0.00868	0.00442	0.00426	PASS
25℃	LV	4.40	17.14	10.80	0.00234	0.00912	0.00575	PASS
	HV	1.29	2.31	15.97	0.00069	0.00123	0.00850	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℃）		8.29	11.19	11.37	0.00441	0.00595	0.00605	PASS
Extreme（55℃）		15.45	14.05	15.79	0.00822	0.00747	0.00840	PASS
Extreme（50℃）		17.18	13.55	2.92	0.00914	0.00721	0.00156	PASS
Extreme（40℃）		4.78	6.26	15.51	0.00254	0.00333	0.00825	PASS
Extreme（30℃）		4.79	8.50	1.99	0.00255	0.00452	0.00106	PASS
Extreme（20℃）	Normal	2.41	15.92	12.79	0.00128	0.00847	0.00680	PASS
Extreme（10℃）		15.12	6.57	4.81	0.00804	0.00350	0.00256	PASS
Extreme（0℃）		17.90	10.06	2.85	0.00952	0.00535	0.00152	PASS
Extreme（-10℃）		17.82	17.78	1.74	0.00948	0.00946	0.00093	PASS
Extreme（-20℃）		17.71	14.15	3.51	0.00942	0.00753	0.00187	PASS
Extreme（-30℃）		10.23	2.03	10.34	0.00544	0.00108	0.00550	PASS
25℃	LV	11.57	4.45	13.34	0.00615	0.00237	0.00710	PASS
	HV	4.02	3.98	13.37	0.00214	0.00212	0.00711	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability	Frequency Stability	Frequency Stability	Verdict

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BANDWIDTH	10MHz				（ppm）	（ppm）	（ppm）	
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	6.53	5.67	14.30	0.00347	0.00302	0.00761	PASS
Extreme（55℃）		6.01	13.90	12.93	0.00319	0.00739	0.00688	PASS
Extreme（50℃）		3.59	8.40	11.87	0.00191	0.00447	0.00631	PASS
Extreme（40℃）		4.81	6.45	2.79	0.00256	0.00343	0.00148	PASS
Extreme（30℃）		11.50	11.77	9.07	0.00612	0.00626	0.00482	PASS
Extreme（20℃）		6.83	15.62	3.47	0.00363	0.00831	0.00184	PASS
Extreme（10℃）		17.38	7.76	16.66	0.00925	0.00413	0.00886	PASS
Extreme（0℃）		9.41	2.76	5.69	0.00501	0.00147	0.00303	PASS
Extreme（-10℃）		4.85	15.50	5.14	0.00258	0.00825	0.00273	PASS
Extreme（-20℃）		5.68	10.01	13.25	0.00302	0.00533	0.00705	PASS
Extreme（-30℃）		14.06	17.81	16.79	0.00748	0.00948	0.00893	PASS
25℃	LV	15.24	15.99	8.91	0.00810	0.00850	0.00474	PASS
	HV	10.29	10.78	5.13	0.00548	0.00573	0.00273	PASS

LTE Band 17								
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	1.58	17.01	8.75	0.00084	0.00905	0.00465	PASS
Extreme（55℃）		9.84	4.65	6.35	0.00523	0.00247	0.00338	PASS
Extreme（50℃）		15.48	3.21	8.72	0.00823	0.00171	0.00464	PASS
Extreme（40℃）		11.19	15.46	12.15	0.00595	0.00822	0.00646	PASS
Extreme（30℃）		17.45	11.11	3.19	0.00928	0.00591	0.00170	PASS
Extreme（20℃）		8.51	13.40	13.62	0.00453	0.00713	0.00724	PASS
Extreme（10℃）		6.91	2.32	12.25	0.00368	0.00124	0.00652	PASS
Extreme（0℃）		17.06	13.21	4.23	0.00907	0.00703	0.00225	PASS
Extreme（-10℃）		14.22	4.36	1.02	0.00756	0.00232	0.00054	PASS
Extreme（-20℃）		11.32	14.71	11.16	0.00602	0.00783	0.00594	PASS
Extreme（-30℃）		2.87	17.05	2.50	0.00152	0.00907	0.00133	PASS
25℃	LV	4.72	8.03	6.74	0.00251	0.00427	0.00358	PASS
	HV	17.60	4.21	3.48	0.00936	0.00224	0.00185	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	17.23	13.76	4.94	0.00916	0.00732	0.00263	PASS
Extreme（55℃）		5.46	10.54	2.02	0.00290	0.00560	0.00108	PASS
Extreme（50℃）		3.31	13.21	8.72	0.00176	0.00703	0.00464	PASS

Condition		Freq.Error (Hz) 64QAM	Freq.Error (Hz) 16QAM	Freq.Error (Hz) QPSK	Frequency Stability (ppm) 64QAM	Frequency Stability (ppm) 16QAM	Frequency Stability (ppm) QPSK	Verdict
Extreme（40℃）		4.20	17.59	17.69	0.00223	0.00935	0.00941	PASS
Extreme（30℃）		14.51	10.50	3.73	0.00772	0.00559	0.00199	PASS
Extreme（20℃）		9.82	17.77	13.89	0.00522	0.00945	0.00739	PASS
Extreme（10℃）		4.63	16.98	15.33	0.00246	0.00903	0.00816	PASS
Extreme（0℃）		11.72	14.16	12.68	0.00623	0.00753	0.00674	PASS
Extreme（-10℃）		6.41	2.42	1.82	0.00341	0.00129	0.00097	PASS
Extreme（-20℃）		15.89	4.18	14.02	0.00845	0.00222	0.00746	PASS
Extreme（-30℃）		2.51	16.61	5.70	0.00133	0.00884	0.00303	PASS
25℃	LV	4.73	14.62	5.47	0.00252	0.00778	0.00291	PASS
	HV	5.17	8.54	3.15	0.00275	0.00454	0.00168	PASS

LTE Band 38								
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	5MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）		1.85	9.57	16.74	0.00099	0.00509	0.00890	PASS
Extreme（55℃）		10.15	17.66	7.44	0.00540	0.00939	0.00396	PASS
Extreme（50℃）		6.56	9.36	8.01	0.00349	0.00498	0.00426	PASS
Extreme（40℃）		16.07	9.49	1.29	0.00855	0.00505	0.00068	PASS
Extreme（30℃）		3.61	2.91	6.41	0.00192	0.00155	0.00341	PASS
Extreme（20℃）	Normal	4.30	9.47	12.83	0.00229	0.00504	0.00682	PASS
Extreme（10℃）		14.23	10.17	3.35	0.00757	0.00541	0.00178	PASS
Extreme（0℃）		10.94	11.53	14.94	0.00582	0.00613	0.00795	PASS
Extreme（-10℃）		8.01	9.64	11.88	0.00426	0.00513	0.00632	PASS
Extreme（-20℃）		11.40	4.93	9.72	0.00606	0.00262	0.00517	PASS
Extreme（-30℃）		10.57	11.25	10.69	0.00562	0.00599	0.00569	PASS
25℃	LV	10.33	15.85	9.55	0.00550	0.00843	0.00508	PASS
	HV	17.60	17.83	17.33	0.00936	0.00948	0.00922	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℃）		8.15	9.23	12.80	0.00433	0.00491	0.00681	PASS
Extreme（55℃）		15.12	2.42	14.87	0.00804	0.00129	0.00791	PASS
Extreme（50℃）		6.19	10.52	11.21	0.00329	0.00560	0.00596	PASS
Extreme（40℃）	Normal	1.77	10.66	1.37	0.00094	0.00567	0.00073	PASS
Extreme（30℃）		8.25	17.22	8.15	0.00439	0.00916	0.00433	PASS
Extreme（20℃）		16.88	6.64	13.67	0.00898	0.00353	0.00727	PASS
Extreme（10℃）		9.15	10.64	11.77	0.00487	0.00566	0.00626	PASS
Extreme（0℃）		12.20	5.86	2.54	0.00649	0.00312	0.00135	PASS

Extreme（-10℃）		14.65	7.13	15.35	0.00779	0.00379	0.00816	PASS
Extreme（-20℃）		8.88	10.84	7.99	0.00472	0.00577	0.00425	PASS
Extreme（-30℃）		11.08	15.70	10.05	0.00589	0.00835	0.00535	PASS
25℃	LV	1.48	15.95	6.82	0.00079	0.00848	0.00363	PASS
	HV	1.34	7.17	16.62	0.00071	0.00382	0.00884	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℃）		13.81	10.14	17.94	0.00734	0.00539	0.00954	PASS
Extreme（55℃）		10.99	13.95	11.09	0.00585	0.00742	0.00590	PASS
Extreme（50℃）		1.24	3.88	3.90	0.00066	0.00207	0.00207	PASS
Extreme（40℃）		3.69	6.51	10.28	0.00196	0.00346	0.00547	PASS
Extreme（30℃）		8.88	16.53	10.97	0.00472	0.00879	0.00584	PASS
Extreme（20℃）	Normal	11.61	14.50	13.78	0.00617	0.00771	0.00733	PASS
Extreme（10℃）		17.01	3.60	2.92	0.00905	0.00192	0.00155	PASS
Extreme（0℃）		5.02	10.11	5.31	0.00267	0.00538	0.00283	PASS
Extreme（-10℃）		8.85	8.91	11.20	0.00471	0.00474	0.00596	PASS
Extreme（-20℃）		15.44	16.79	11.70	0.00821	0.00893	0.00623	PASS
Extreme（-30℃）		17.48	11.80	6.62	0.00930	0.00628	0.00352	PASS
25℃	LV	3.00	14.12	4.68	0.00160	0.00751	0.00249	PASS
	HV	1.82	2.01	9.98	0.00097	0.00107	0.00531	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℃）		4.54	16.59	9.21	0.00241	0.00883	0.00490	PASS
Extreme（55℃）		2.86	15.40	17.39	0.00152	0.00819	0.00925	PASS
Extreme（50℃）		15.61	12.06	10.25	0.00830	0.00641	0.00545	PASS
Extreme（40℃）		2.82	1.27	10.80	0.00150	0.00068	0.00575	PASS
Extreme（30℃）		10.63	17.35	4.46	0.00566	0.00923	0.00237	PASS
Extreme（20℃）	Normal	9.71	1.07	3.44	0.00517	0.00057	0.00183	PASS
Extreme（10℃）		14.52	3.87	2.81	0.00773	0.00206	0.00149	PASS
Extreme（0℃）		12.00	16.64	13.22	0.00638	0.00885	0.00703	PASS
Extreme（-10℃）		8.42	5.27	4.29	0.00448	0.00281	0.00228	PASS
Extreme（-20℃）		10.94	8.68	2.51	0.00582	0.00462	0.00134	PASS
Extreme（-30℃）		11.23	2.75	16.93	0.00597	0.00147	0.00900	PASS
25℃	LV	4.27	7.62	11.80	0.00227	0.00405	0.00628	PASS
	HV	8.14	14.18	5.64	0.00433	0.00754	0.00300	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	6.21	4.81	4.87	0.00330	0.00256	0.00259	PASS
Extreme（55℃）		4.65	12.17	14.32	0.00247	0.00647	0.00762	PASS
Extreme（50℃）		13.83	7.08	5.53	0.00736	0.00377	0.00294	PASS
Extreme（40℃）		5.45	11.15	7.91	0.00290	0.00593	0.00420	PASS
Extreme（30℃）		7.85	11.06	17.05	0.00417	0.00588	0.00907	PASS
Extreme（20℃）		8.71	6.18	8.65	0.00463	0.00329	0.00460	PASS
Extreme（10℃）		14.95	2.45	3.42	0.00795	0.00130	0.00182	PASS
Extreme（0℃）		3.78	13.74	2.87	0.00201	0.00731	0.00153	PASS
Extreme（-10℃）		13.07	13.68	4.13	0.00695	0.00728	0.00220	PASS
Extreme（-20℃）		3.10	7.69	10.84	0.00165	0.00409	0.00577	PASS
Extreme（-30℃）		3.80	12.72	15.66	0.00202	0.00677	0.00833	PASS
25℃	LV	3.11	7.71	16.47	0.00165	0.00410	0.00876	PASS
	HV	12.34	4.10	14.13	0.00657	0.00218	0.00751	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	10MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	15.19	2.61	7.18	0.00808	0.00139	0.00382	PASS
Extreme（55℃）		14.77	3.94	7.18	0.00785	0.00209	0.00382	PASS
Extreme（50℃）		17.60	4.08	10.21	0.00936	0.00217	0.00543	PASS
Extreme（40℃）		17.61	16.50	1.00	0.00937	0.00878	0.00053	PASS
Extreme（30℃）		14.74	2.38	3.61	0.00784	0.00127	0.00192	PASS
Extreme（20℃）		13.93	17.05	10.41	0.00741	0.00907	0.00554	PASS
Extreme（10℃）		4.29	9.57	8.43	0.00228	0.00509	0.00448	PASS
Extreme（0℃）		12.20	17.18	17.11	0.00649	0.00914	0.00910	PASS
Extreme（-10℃）		12.18	13.94	12.30	0.00648	0.00742	0.00654	PASS
Extreme（-20℃）		6.82	12.84	10.73	0.00363	0.00683	0.00571	PASS
Extreme（-30℃）		9.45	10.58	9.21	0.00502	0.00563	0.00490	PASS
25℃	LV	3.29	17.73	10.86	0.00175	0.00943	0.00577	PASS
	HV	7.90	3.86	3.00	0.00420	0.00205	0.00159	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	8.97	17.11	2.34	0.00477	0.00910	0.00124	PASS
Extreme（55℃）		6.97	3.37	1.64	0.00371	0.00179	0.00087	PASS

Extreme（50℃）		8.29	7.54	9.88	0.00441	0.00401	0.00526	PASS
Extreme（40℃）		5.49	9.81	7.78	0.00292	0.00522	0.00414	PASS
Extreme（30℃）		3.86	13.67	3.43	0.00206	0.00727	0.00183	PASS
Extreme（20℃）		13.69	11.75	13.10	0.00728	0.00625	0.00697	PASS
Extreme（10℃）		9.54	7.62	15.29	0.00508	0.00405	0.00813	PASS
Extreme（0℃）		7.73	8.36	8.67	0.00411	0.00445	0.00461	PASS
Extreme（-10℃）		3.10	14.12	5.24	0.00165	0.00751	0.00279	PASS
Extreme（-20℃）		17.22	9.22	2.75	0.00916	0.00490	0.00146	PASS
Extreme（-30℃）		1.51	17.25	12.12	0.00080	0.00917	0.00645	PASS
25℃	LV	16.51	8.08	3.69	0.00878	0.00430	0.00196	PASS
	HV	13.20	16.79	3.99	0.00702	0.00893	0.00212	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℃）		12.86	17.13	10.50	0.00684	0.00911	0.00558	PASS
Extreme（55℃）		1.98	10.10	10.57	0.00105	0.00537	0.00562	PASS
Extreme（50℃）		13.85	6.41	4.92	0.00737	0.00341	0.00262	PASS
Extreme（40℃）		14.53	1.88	7.75	0.00773	0.00100	0.00412	PASS
Extreme（30℃）		5.47	7.30	12.91	0.00291	0.00388	0.00687	PASS
Extreme（20℃）	Normal	3.39	14.91	7.16	0.00180	0.00793	0.00381	PASS
Extreme（10℃）		8.03	5.43	14.22	0.00427	0.00289	0.00756	PASS
Extreme（0℃）		12.18	1.14	15.13	0.00648	0.00061	0.00805	PASS
Extreme（-10℃）		2.60	9.12	5.05	0.00138	0.00485	0.00268	PASS
Extreme（-20℃）		3.42	15.92	17.87	0.00182	0.00847	0.00950	PASS
Extreme（-30℃）		8.80	15.41	9.72	0.00468	0.00820	0.00517	PASS
25℃	LV	6.34	1.80	17.64	0.00337	0.00095	0.00939	PASS
	HV	16.53	9.33	5.31	0.00879	0.00496	0.00282	PASS

CA_7C_QPSK		20MHz+10MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal（25℃）		12.84	0.00683	6.93	0.00368	PASS
Extreme（55℃）		10.00	0.00532	8.06	0.00429	PASS
Extreme（50℃）		2.46	0.00131	16.15	0.00859	PASS
Extreme（40℃）		11.19	0.00595	8.00	0.00426	PASS
Extreme（30℃）	Normal	8.93	0.00475	17.21	0.00916	PASS
Extreme（20℃）		11.07	0.00589	14.93	0.00794	PASS
Extreme（10℃）		10.49	0.00558	15.67	0.00833	PASS
Extreme（0℃）		13.87	0.00738	4.62	0.00246	PASS

Extreme（-10℃）		4.56	0.00243	13.41	0.00713	PASS
Extreme（-20℃）		11.27	0.00599	13.98	0.00744	PASS
Extreme（-30℃）		6.65	0.00354	4.75	0.00253	PASS
25℃	LV	8.23	0.00438	15.77	0.00839	PASS
	HV	17.87	0.00951	15.94	0.00848	PASS

CA_7C_16QAM		20MHz+10MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal（25℃）	Normal	1.22	0.00065	6.37	0.00339	PASS
Extreme（55℃）		13.97	0.00743	14.24	0.00757	PASS
Extreme（50℃）		16.94	0.00901	14.08	0.00749	PASS
Extreme（40℃）		17.53	0.00932	14.32	0.00762	PASS
Extreme（30℃）		6.49	0.00345	11.01	0.00586	PASS
Extreme（20℃）		16.47	0.00876	2.60	0.00138	PASS
Extreme（10℃）		14.54	0.00774	8.81	0.00469	PASS
Extreme（0℃）		7.17	0.00381	8.98	0.00477	PASS
Extreme（-10℃）		1.78	0.00095	2.48	0.00132	PASS
Extreme（-20℃）		4.20	0.00223	15.96	0.00849	PASS
Extreme（-30℃）		14.62	0.00778	11.00	0.00585	PASS
25℃	LV	12.36	0.00658	8.75	0.00465	PASS
	HV	2.36	0.00126	7.78	0.00414	PASS

CA_7C_64QAM		20MHz+10MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal（25℃）	Normal	14.01	0.00745	16.43	0.00874	PASS
Extreme（55℃）		11.31	0.00601	1.16	0.00062	PASS
Extreme（50℃）		10.29	0.00547	9.27	0.00493	PASS
Extreme（40℃）		13.52	0.00719	5.71	0.00304	PASS
Extreme（30℃）		12.37	0.00658	13.18	0.00701	PASS
Extreme（20℃）		13.74	0.00731	6.13	0.00326	PASS
Extreme（10℃）		6.25	0.00332	7.71	0.00410	PASS
Extreme（0℃）		6.46	0.00344	2.36	0.00126	PASS
Extreme（-10℃）		12.51	0.00666	3.15	0.00168	PASS
Extreme（-20℃）		7.84	0.00417	16.99	0.00904	PASS
Extreme（-30℃）		8.88	0.00472	9.90	0.00527	PASS
25℃	LV	14.49	0.00771	10.00	0.00532	PASS
	HV	4.66	0.00248	7.66	0.00407	PASS

CA_12B_QPSK		5MHz+5MHz (Bandwidth)		5MHz+10MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	Verdict
Temperature	Voltage					
Normal（25℃）	Normal	12.84	0.00683	6.93	0.00368	PASS
Extreme（55℃）		10.00	0.00532	8.06	0.00429	PASS
Extreme（50℃）		2.46	0.00131	16.15	0.00859	PASS
Extreme（40℃）		11.19	0.00595	8.00	0.00426	PASS
Extreme（30℃）		8.93	0.00475	17.21	0.00916	PASS
Extreme（20℃）		11.07	0.00589	14.93	0.00794	PASS
Extreme（10℃）		10.49	0.00558	15.67	0.00833	PASS
Extreme（0℃）		13.87	0.00738	4.62	0.00246	PASS
Extreme（-10℃）		4.56	0.00243	13.41	0.00713	PASS
Extreme（-20℃）		11.27	0.00599	13.98	0.00744	PASS
Extreme（-30℃）		6.65	0.00354	4.75	0.00253	PASS
25℃	LV	8.23	0.00438	15.77	0.00839	PASS
	HV	17.87	0.00951	15.94	0.00848	PASS

CA_12B_16QAM		5MHz+5MHz (Bandwidth)		5MHz+10MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	Verdict
Temperature	Voltage					
Normal（25℃）	Normal	1.22	0.00065	6.37	0.00339	PASS
Extreme（55℃）		13.97	0.00743	14.24	0.00757	PASS
Extreme（50℃）		16.94	0.00901	14.08	0.00749	PASS
Extreme（40℃）		17.53	0.00932	14.32	0.00762	PASS
Extreme（30℃）		6.49	0.00345	11.01	0.00586	PASS
Extreme（20℃）		16.47	0.00876	2.60	0.00138	PASS
Extreme（10℃）		14.54	0.00774	8.81	0.00469	PASS
Extreme（0℃）		7.17	0.00381	8.98	0.00477	PASS
Extreme（-10℃）		1.78	0.00095	2.48	0.00132	PASS
Extreme（-20℃）		4.20	0.00223	15.96	0.00849	PASS
Extreme（-30℃）		14.62	0.00778	11.00	0.00585	PASS
25℃	LV	12.36	0.00658	8.75	0.00465	PASS
	HV	2.36	0.00126	7.78	0.00414	PASS

CA_12B_64QAM		5MHz+5MHz (Bandwidth)		5MHz+10MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	Verdict
Temperature	Voltage					
Normal（25℃）	Normal	14.01	0.00745	16.43	0.00874	PASS
Extreme（55℃）		11.31	0.00601	1.16	0.00062	PASS

Extreme（50℃）		10.29	0.00547	9.27	0.00493	PASS
Extreme（40℃）		13.52	0.00719	5.71	0.00304	PASS
Extreme（30℃）		12.37	0.00658	13.18	0.00701	PASS
Extreme（20℃）		13.74	0.00731	6.13	0.00326	PASS
Extreme（10℃）		6.25	0.00332	7.71	0.00410	PASS
Extreme（0℃）		6.46	0.00344	2.36	0.00126	PASS
Extreme（-10℃）		12.51	0.00666	3.15	0.00168	PASS
Extreme（-20℃）		7.84	0.00417	16.99	0.00904	PASS
Extreme（-30℃）		8.88	0.00472	9.90	0.00527	PASS
25℃	LV	14.49	0.00771	10.00	0.00532	PASS
	HV	4.66	0.00248	7.66	0.00407	PASS

CA_38C_QPSK		15MHz+15MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal（25℃）	Normal	11.21	0.00596	14.20	0.00755	PASS
Extreme（55℃）		7.23	0.00384	8.36	0.00445	PASS
Extreme（50℃）		6.29	0.00335	17.44	0.00928	PASS
Extreme（40℃）		6.27	0.00333	4.83	0.00257	PASS
Extreme（30℃）		17.61	0.00937	15.08	0.00802	PASS
Extreme（20℃）		12.97	0.00690	9.00	0.00479	PASS
Extreme（10℃）		7.07	0.00376	12.14	0.00646	PASS
Extreme（0℃）		2.76	0.00147	9.53	0.00507	PASS
Extreme（-10℃）		4.69	0.00249	16.49	0.00877	PASS
Extreme（-20℃）		15.81	0.00841	2.33	0.00124	PASS
Extreme（-30℃）		1.92	0.00102	1.32	0.00070	PASS
25℃	LV	4.47	0.00238	16.19	0.00861	PASS
	HV	16.50	0.00878	5.10	0.00271	PASS
CA_38C_16QAM		15MHz+15MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal（25℃）	Normal	16.72	0.00890	11.30	0.00601	PASS
Extreme（55℃）		9.93	0.00528	5.00	0.00266	PASS
Extreme（50℃）		6.23	0.00332	6.33	0.00337	PASS
Extreme（40℃）		9.78	0.00520	17.45	0.00928	PASS
Extreme（30℃）		11.91	0.00634	16.41	0.00873	PASS
Extreme（20℃）		15.73	0.00837	3.95	0.00210	PASS
Extreme（10℃）		10.35	0.00551	10.12	0.00538	PASS

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Extreme（0℃）		8.21	0.00437	16.42	0.00874	PASS
Extreme（-10℃）		13.69	0.00728	2.77	0.00148	PASS
Extreme（-20℃）		17.51	0.00932	9.35	0.00497	PASS
Extreme（-30℃）		3.67	0.00195	11.31	0.00602	PASS
25℃	LV	10.50	0.00558	16.36	0.00870	PASS
	HV	16.91	0.00899	9.60	0.00511	PASS

CA_38C_64QAM		15MHz+15MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal（25℃）	Normal	6.10	0.00325	9.72	0.00517	PASS
Extreme（55℃）		9.14	0.00486	14.35	0.00763	PASS
Extreme（50℃）		7.34	0.00390	8.42	0.00448	PASS
Extreme（40℃）		4.21	0.00224	4.65	0.00247	PASS
Extreme（30℃）		4.78	0.00254	4.85	0.00258	PASS
Extreme（20℃）		3.78	0.00201	12.19	0.00648	PASS
Extreme（10℃）		6.68	0.00355	4.84	0.00257	PASS
Extreme（0℃）		17.74	0.00944	3.53	0.00188	PASS
Extreme（-10℃）		9.86	0.00524	3.57	0.00190	PASS
Extreme（-20℃）		13.44	0.00715	15.87	0.00844	PASS
Extreme（-30℃）		10.53	0.00560	10.24	0.00545	PASS
25℃	LV	5.98	0.00318	3.81	0.00203	PASS
	HV	15.71	0.00836	8.51	0.00453	PASS

CA_41C_QPSK		5MHz+20MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal（25℃）	Normal	11.21	0.00596	14.20	0.00755	PASS
Extreme（55℃）		7.23	0.00384	8.36	0.00445	PASS
Extreme（50℃）		6.29	0.00335	17.44	0.00928	PASS
Extreme（40℃）		6.27	0.00333	4.83	0.00257	PASS
Extreme（30℃）		17.61	0.00937	15.08	0.00802	PASS
Extreme（20℃）		12.97	0.00690	9.00	0.00479	PASS
Extreme（10℃）		7.07	0.00376	12.14	0.00646	PASS
Extreme（0℃）		2.76	0.00147	9.53	0.00507	PASS
Extreme（-10℃）		4.69	0.00249	16.49	0.00877	PASS
Extreme（-20℃）		15.81	0.00841	2.33	0.00124	PASS
Extreme（-30℃）		1.92	0.00102	1.32	0.00070	PASS
25℃	LV	4.47	0.00238	16.19	0.00861	PASS

	HV	16.50	0.00878	5.10	0.00271	PASS
CA_41C_16QAM		5MHz+20MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal（25℃）	Normal	16.72	0.00890	11.30	0.00601	PASS
Extreme（55℃）		9.93	0.00528	5.00	0.00266	PASS
Extreme（50℃）		6.23	0.00332	6.33	0.00337	PASS
Extreme（40℃）		9.78	0.00520	17.45	0.00928	PASS
Extreme（30℃）		11.91	0.00634	16.41	0.00873	PASS
Extreme（20℃）		15.73	0.00837	3.95	0.00210	PASS
Extreme（10℃）		10.35	0.00551	10.12	0.00538	PASS
Extreme（0℃）		8.21	0.00437	16.42	0.00874	PASS
Extreme（-10℃）		13.69	0.00728	2.77	0.00148	PASS
Extreme（-20℃）		17.51	0.00932	9.35	0.00497	PASS
Extreme（-30℃）		3.67	0.00195	11.31	0.00602	PASS
25℃	LV	10.50	0.00558	16.36	0.00870	PASS
	HV	16.91	0.00899	9.60	0.00511	PASS
CA_41C_64QAM		5MHz+20MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal（25℃）	Normal	6.10	0.00325	9.72	0.00517	PASS
Extreme（55℃）		9.14	0.00486	14.35	0.00763	PASS
Extreme（50℃）		7.34	0.00390	8.42	0.00448	PASS
Extreme（40℃）		4.21	0.00224	4.65	0.00247	PASS
Extreme（30℃）		4.78	0.00254	4.85	0.00258	PASS
Extreme（20℃）		3.78	0.00201	12.19	0.00648	PASS
Extreme（10℃）		6.68	0.00355	4.84	0.00257	PASS
Extreme（0℃）		17.74	0.00944	3.53	0.00188	PASS
Extreme（-10℃）		9.86	0.00524	3.57	0.00190	PASS
Extreme（-20℃）		13.44	0.00715	15.87	0.00844	PASS
Extreme（-30℃）		10.53	0.00560	10.24	0.00545	PASS
25℃	LV	5.98	0.00318	3.81	0.00203	PASS
	HV	15.71	0.00836	8.51	0.00453	PASS

5.7 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.

Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.

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

Test setup
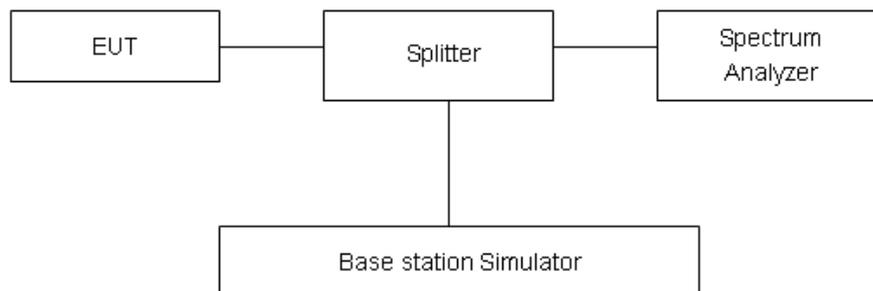
Limits

LTE -4 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.."

LTE -12 Rule Part 27.53 (g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

LTE -7/38/41 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)/(g) 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-27GHz	1.407 dB

Test Result

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

The signal beyond the limit is carrier.

WCDMA Band IV CH-Low 30MHz~1GHz	WCDMA Band IV CH-Middle 30MHz~1GHz
WCDMA Band IV CH-Low 1GHz ~3GHz	WCDMA Band IV CH-Middle 1GHz ~3GHz
WCDMA Band IV CH-Low 3GHz ~20GHz	WCDMA Band IV CH-Middle 3GHz ~20GHz
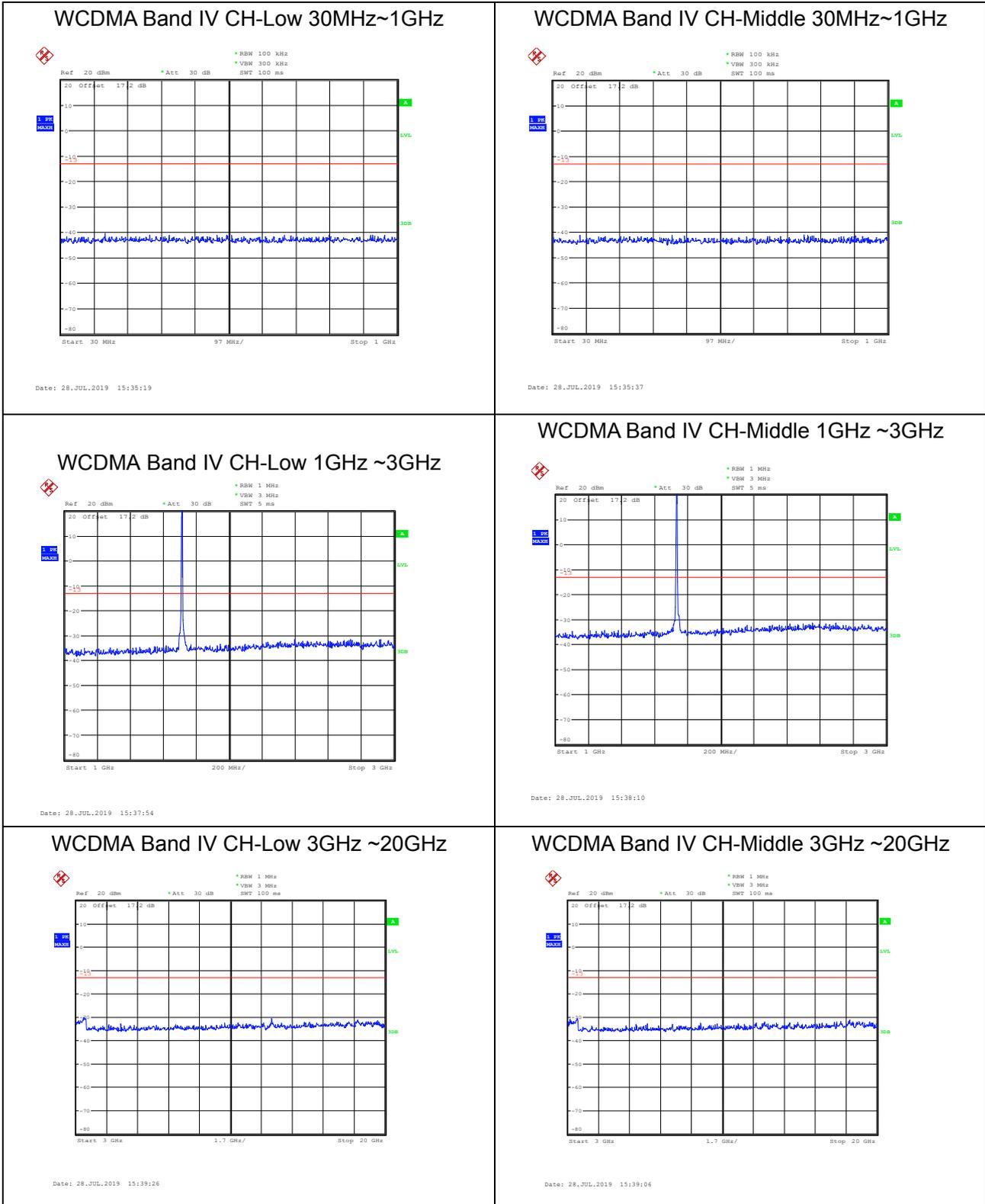
WCDMA Band IV CH-High 30MHz~1GHz
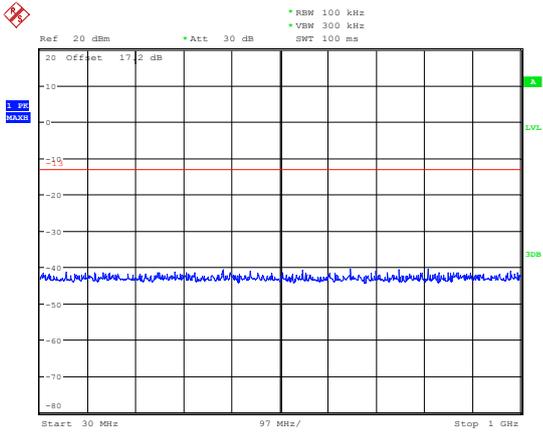
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WCDMA Band IV CH-High 1GHz ~3GHz
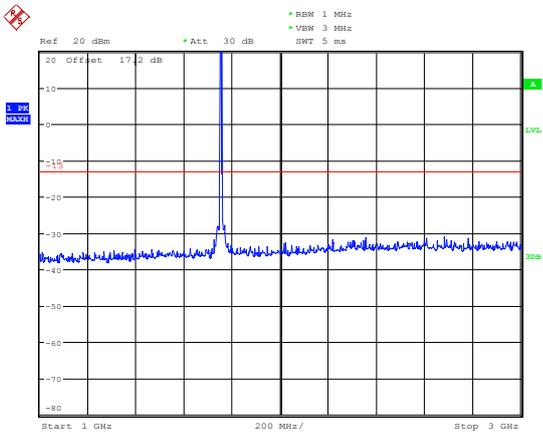
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WCDMA Band IV CH-High 3GHz ~20GHz
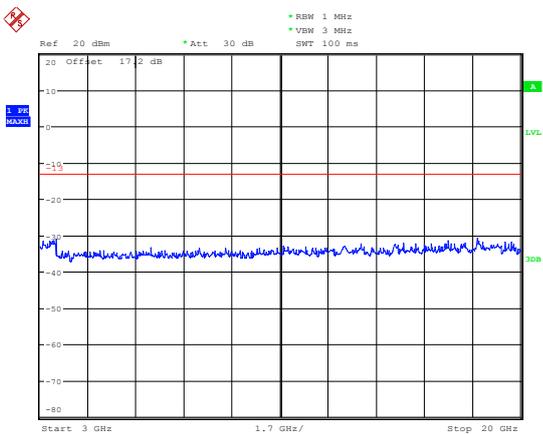
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LTE Band 4 1.4MHz CH-Low 30MHz~1GHz
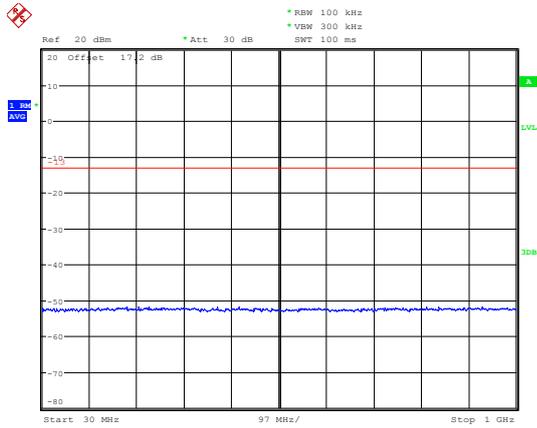
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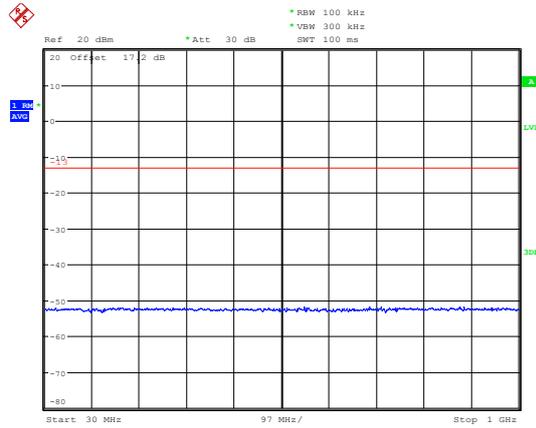
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LTE Band 4 1.4MHz CH-Low 1GHz~3GHz
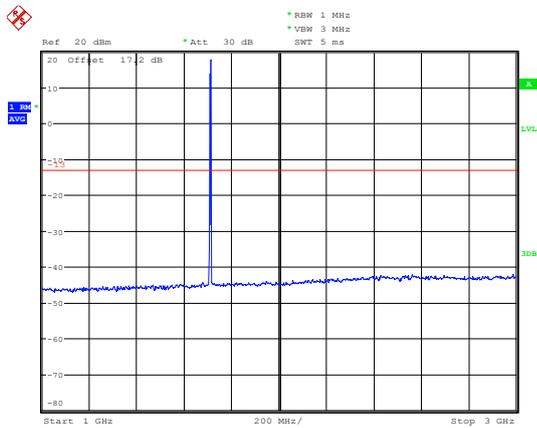
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LTE Band 4 1.4MHz CH-Middle 1GHz~3GHz
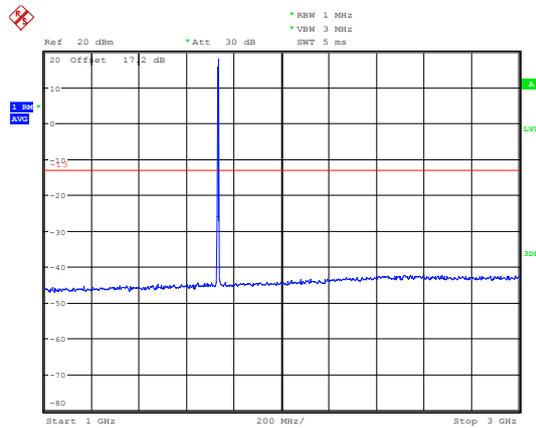
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LTE Band 4 1.4MHz CH-Low 3GHz~20GHz
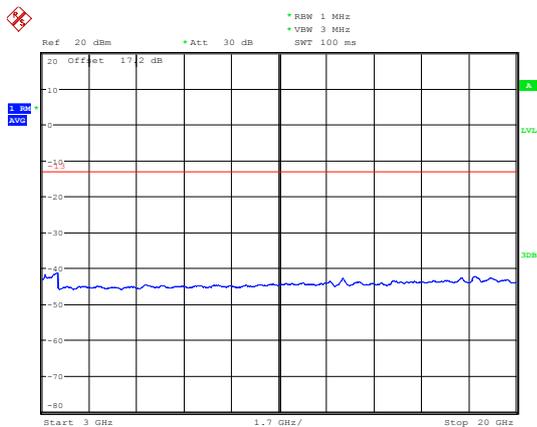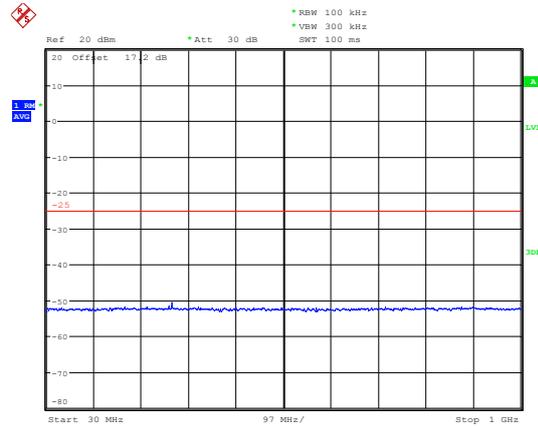

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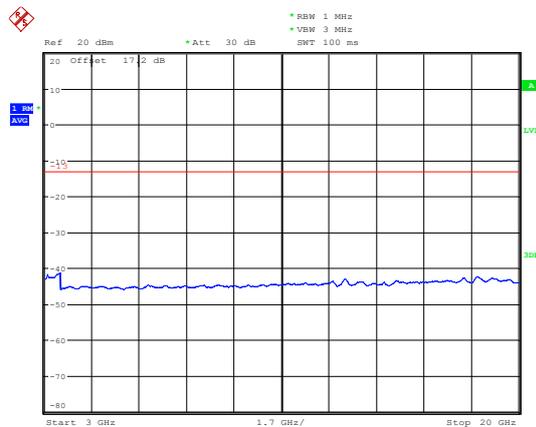
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LTE Band 4 1.4MHz CH-High 30MHz~1GHz
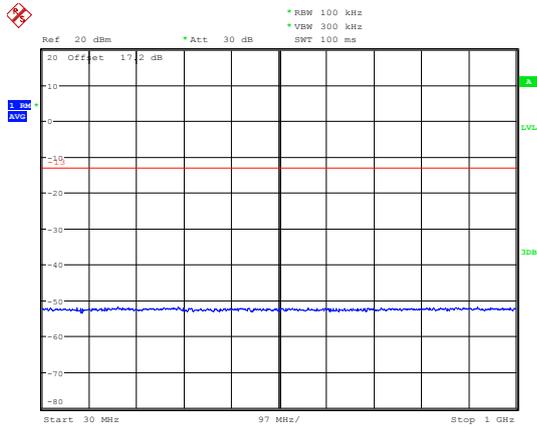
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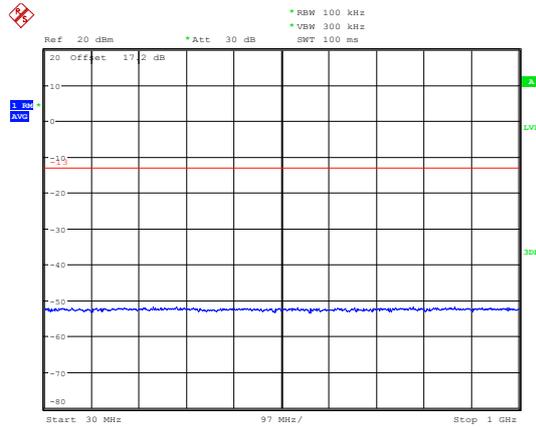
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LTE Band 4 1.4MHz CH-High 1GHz~3GHz
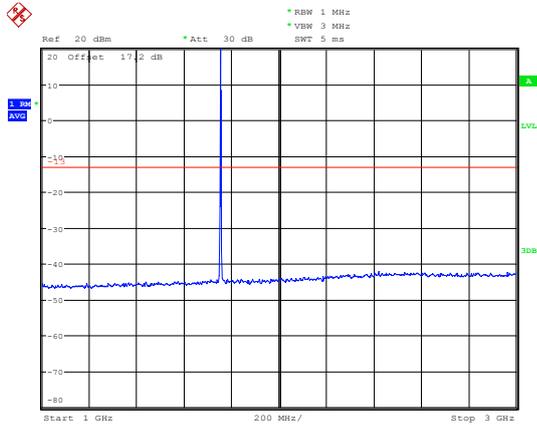
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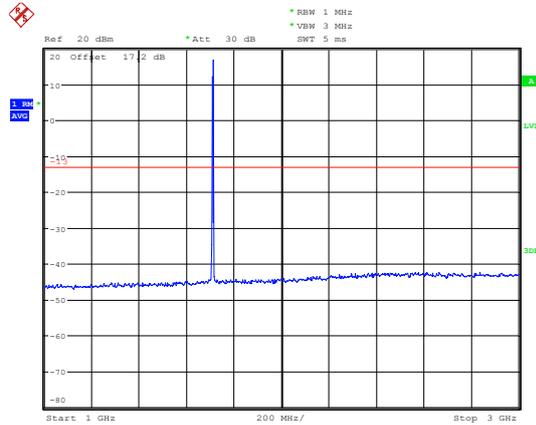
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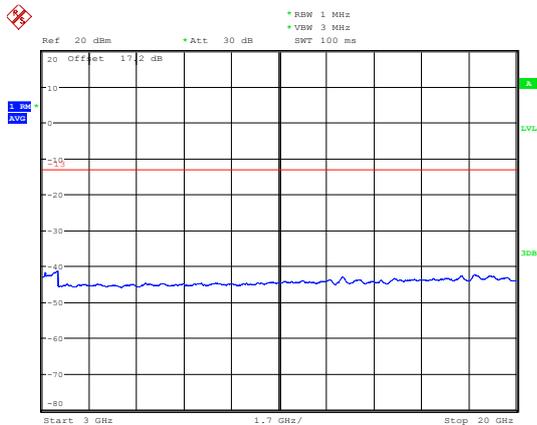
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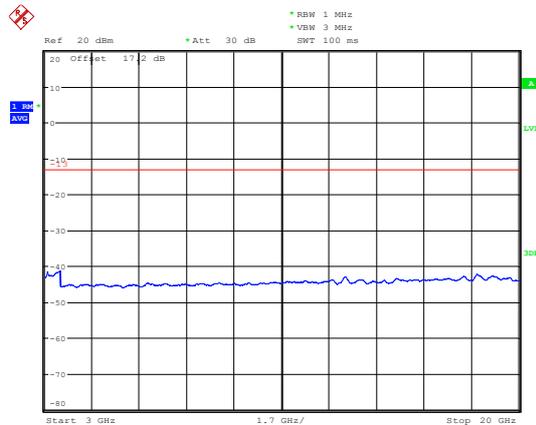
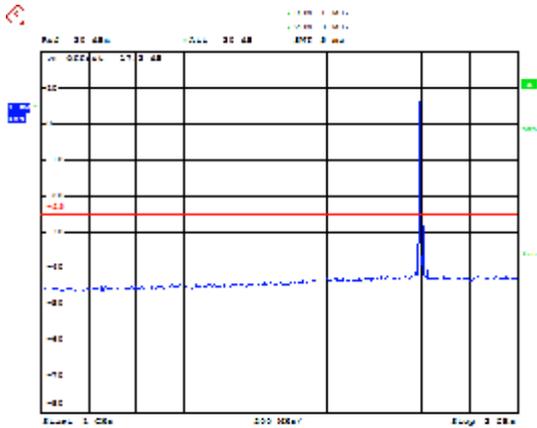Date: 2.AUG.2019 13:03:56

LTE Band 4 3MHz CH-Middle 30MHz~1GHz
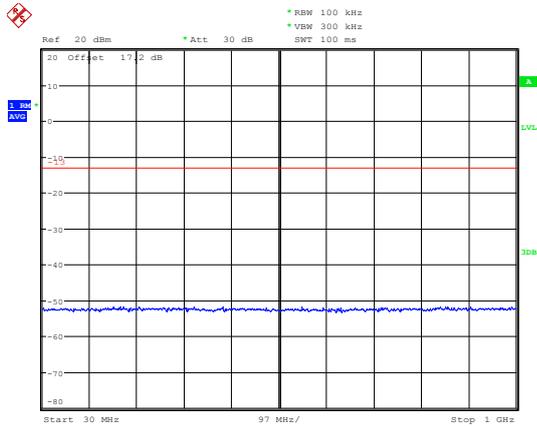
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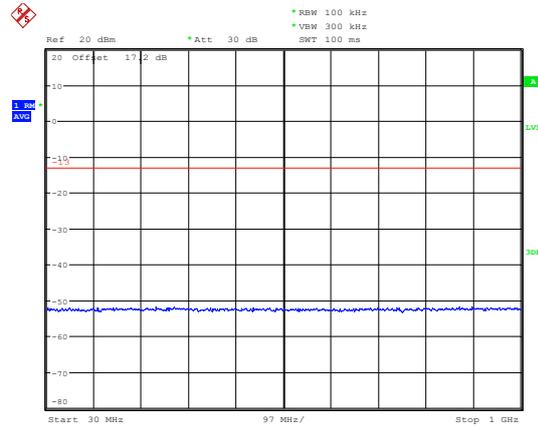
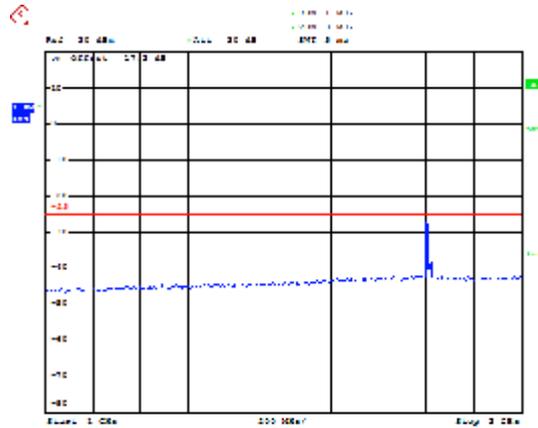

Date: 2.AUG.2019 12:52:04

LTE Band 4 3MHz CH-Middle 1GHz~3GHz
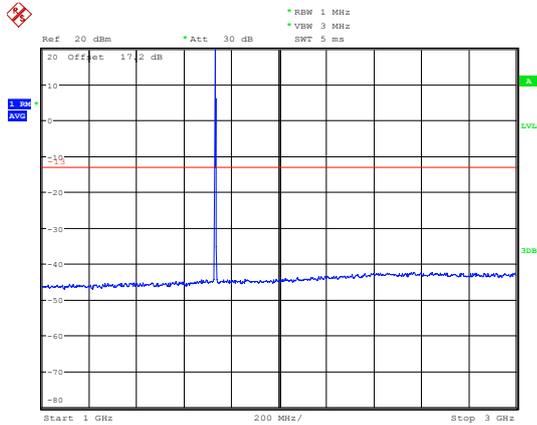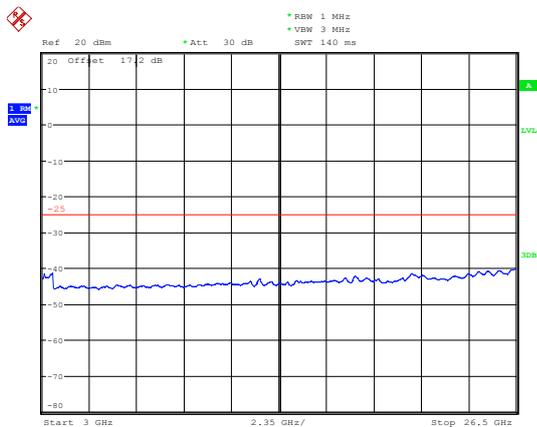

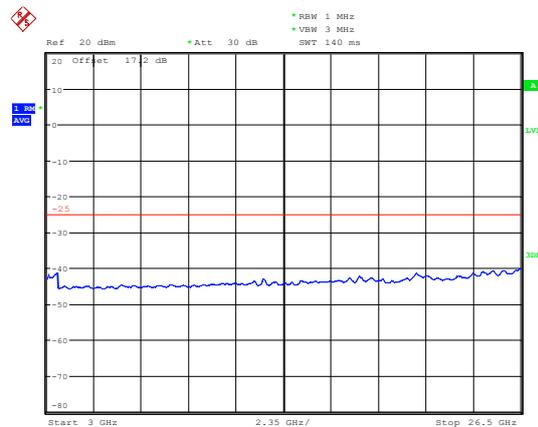Date: 2.AUG.2019 12:57:39

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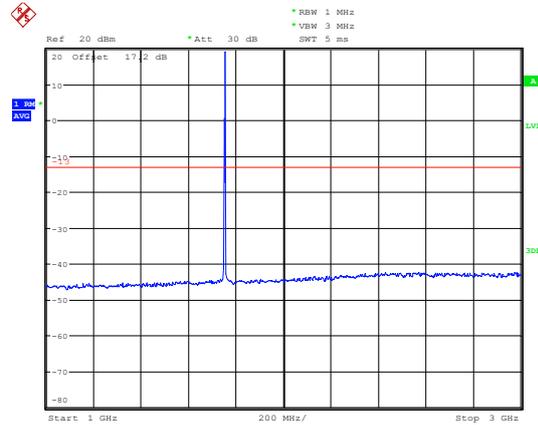
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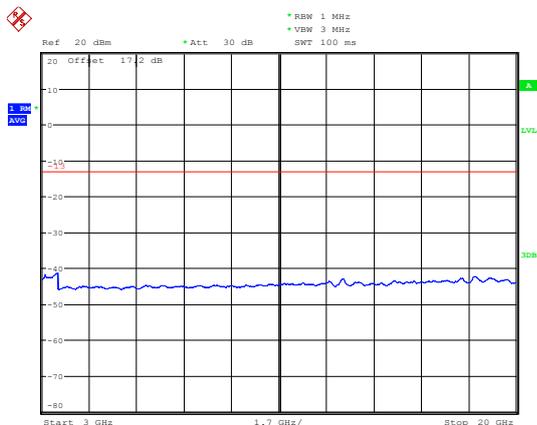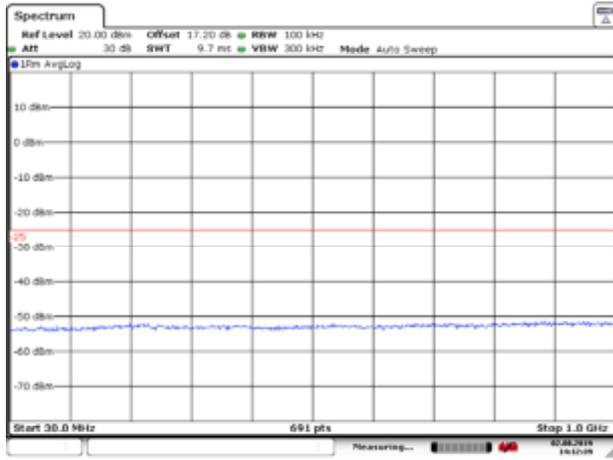

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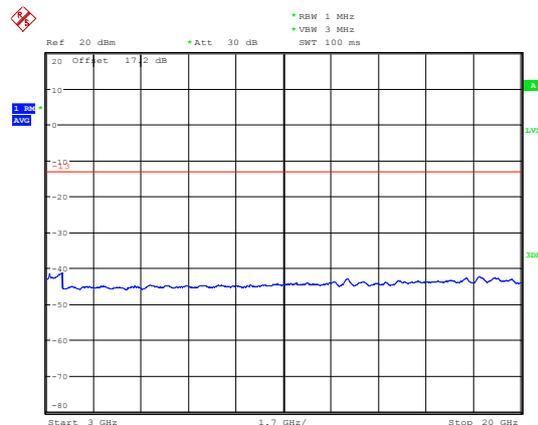
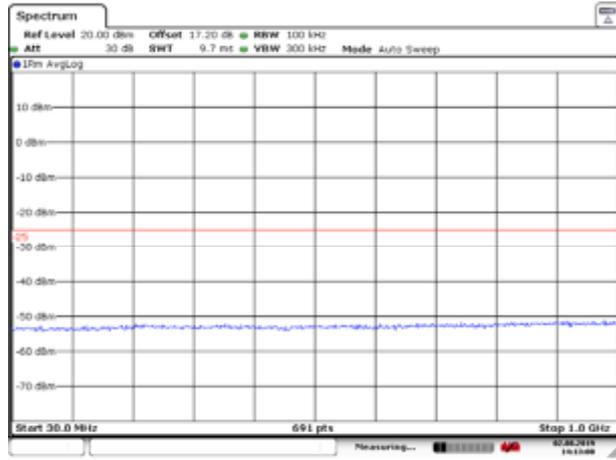Date: 2.AUG.2019 13:04:24
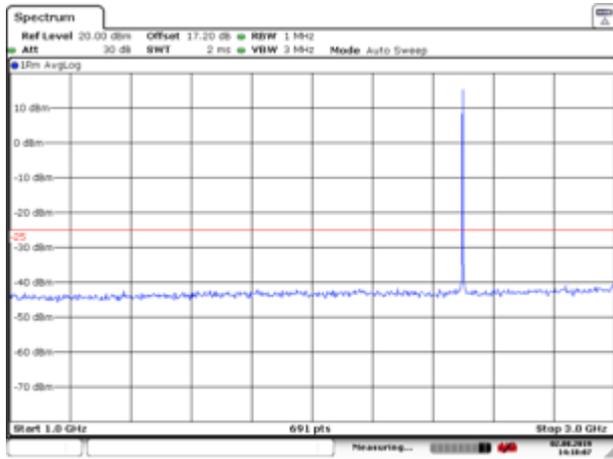
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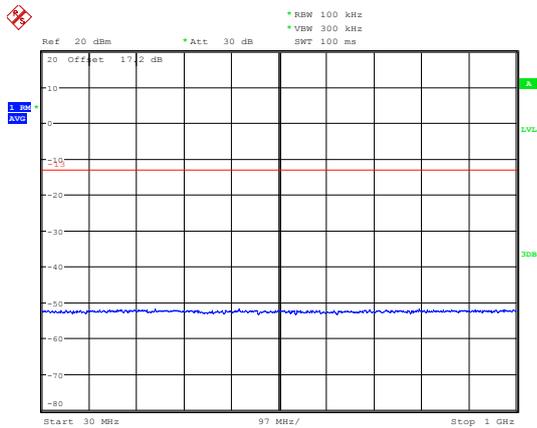
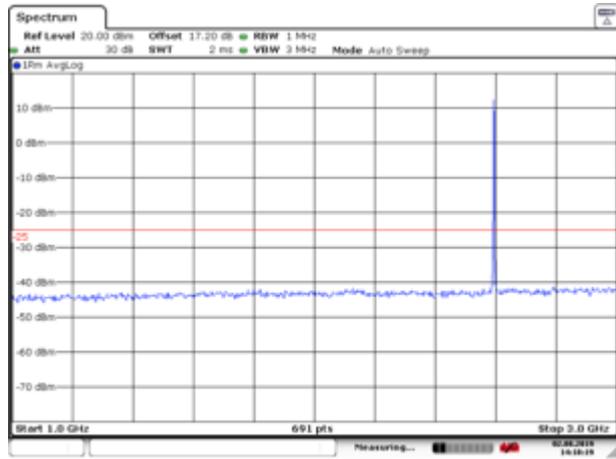Date: 2.AUG.2019 12:52:23

LTE Band 4 5MHz CH-Middle 30MHz~1GHz
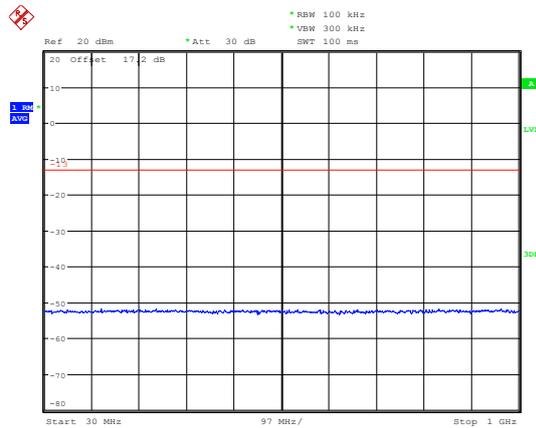
Date: 2.AUG.2019 12:52:39

LTE Band 4 5MHz CH-Low 1GHz~3GHz
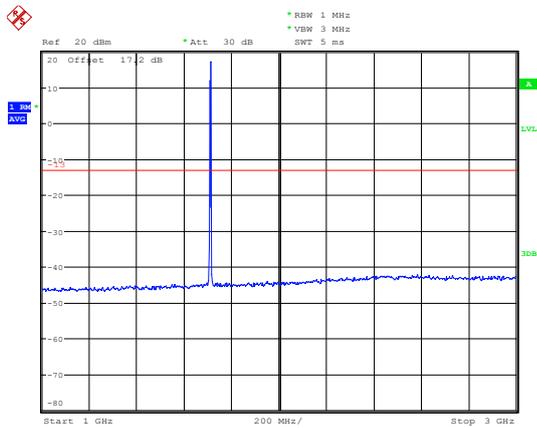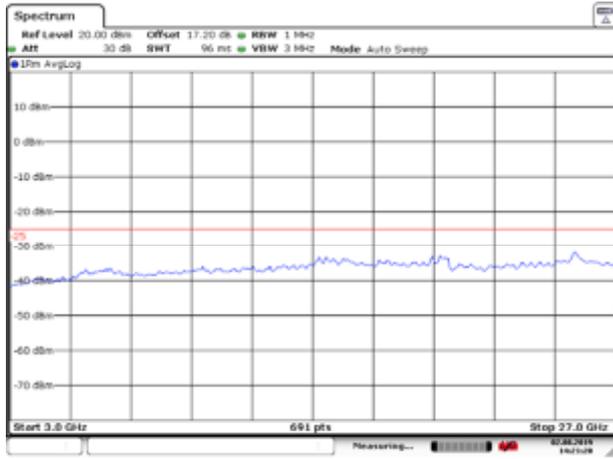

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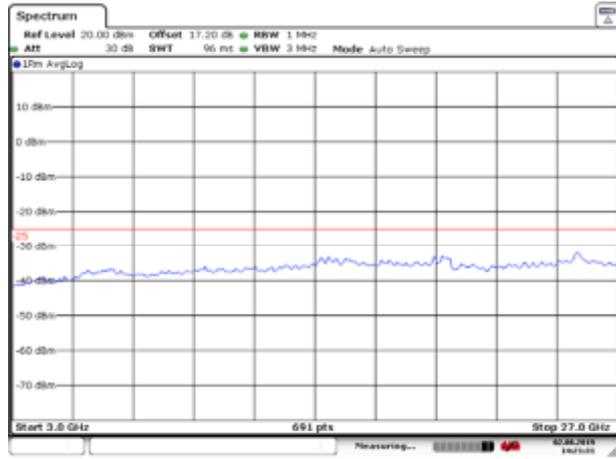
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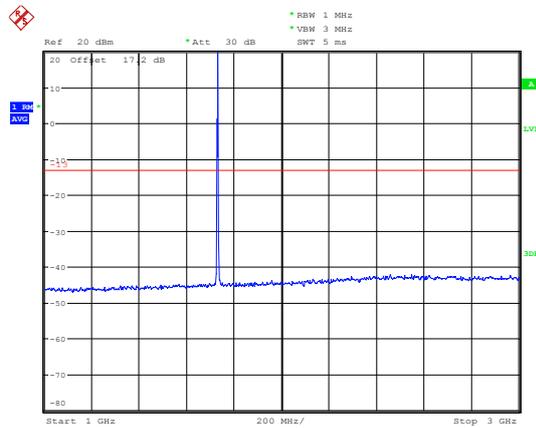
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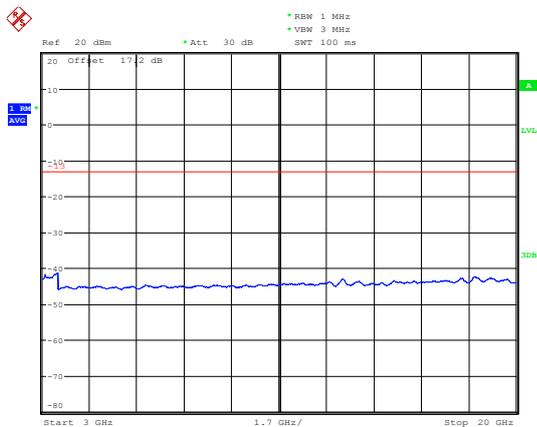
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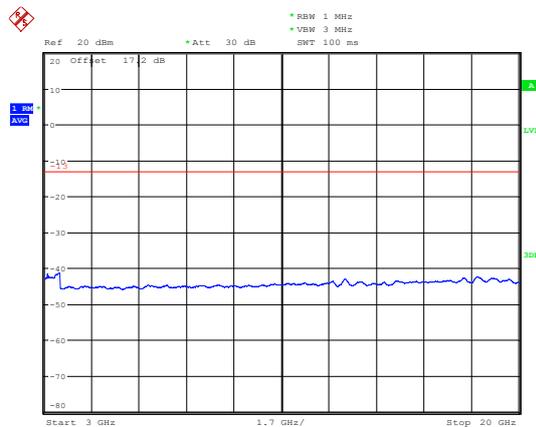
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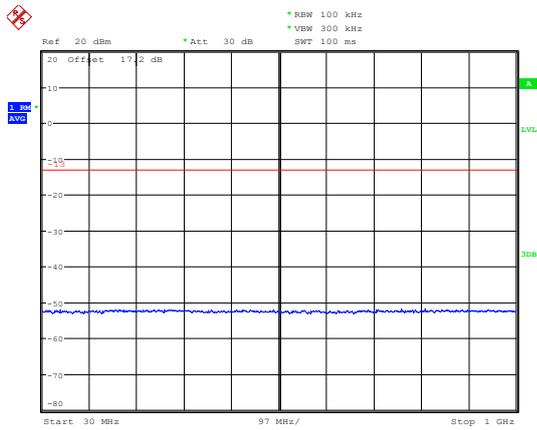
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LTE Band 4 10MHz CH-Low 30MHz~1GHz
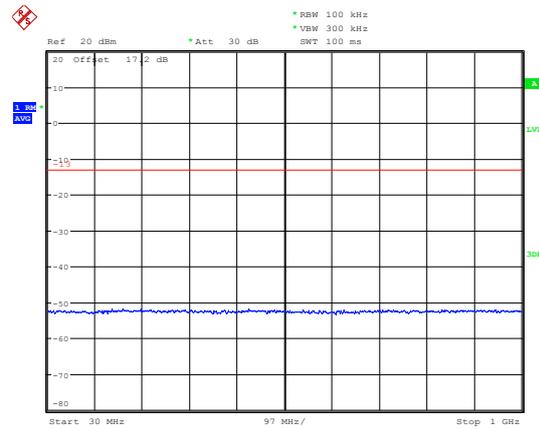
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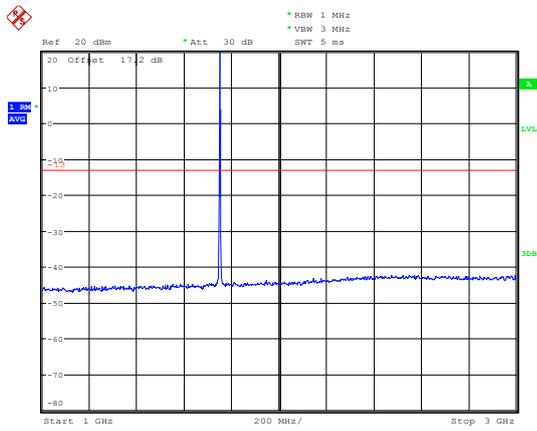
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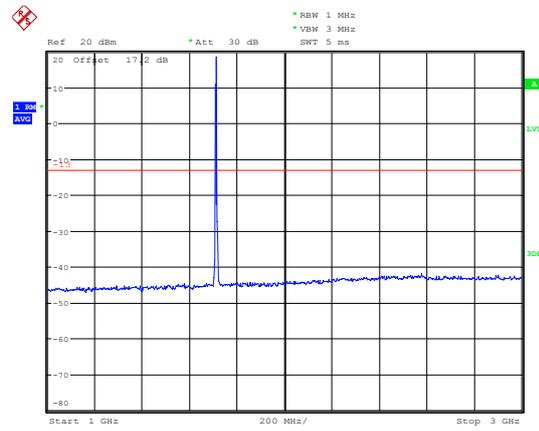
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LTE Band 4 5MHz CH-High 3GHz~20GHz
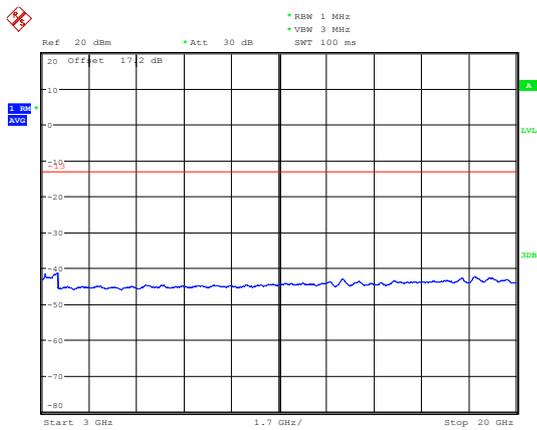
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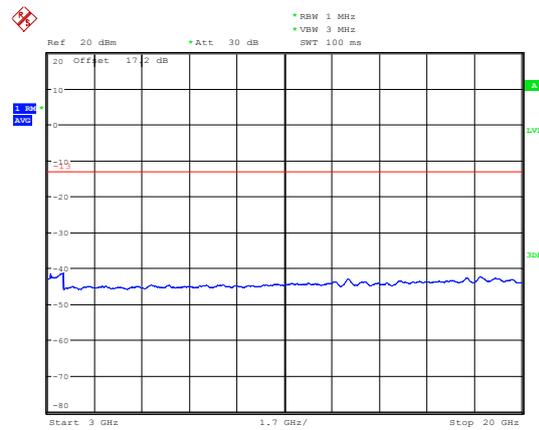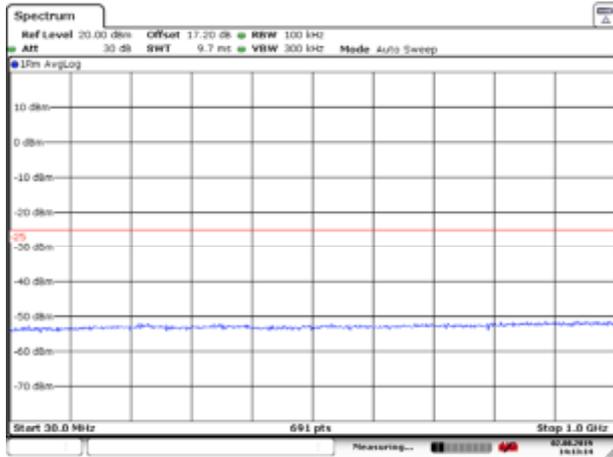

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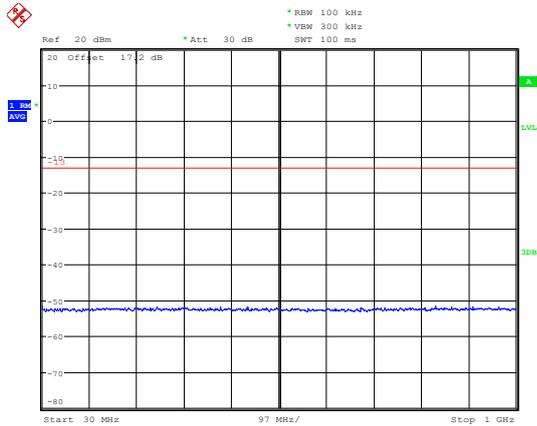
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LTE Band 4 10MHz CH-High 30MHz~1GHz
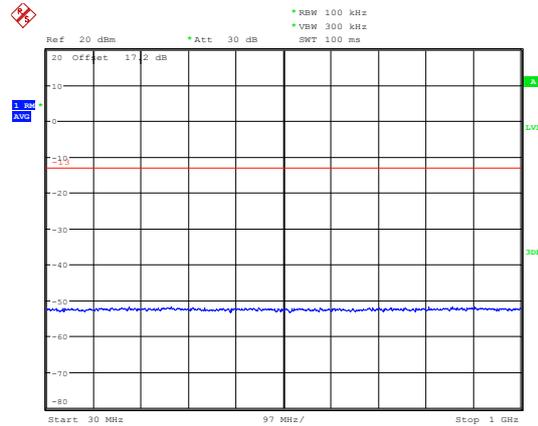
Date: 2.AUG.2019 12:53:35

LTE Band 4 10MHz CH-Middle 1GHz~3GHz
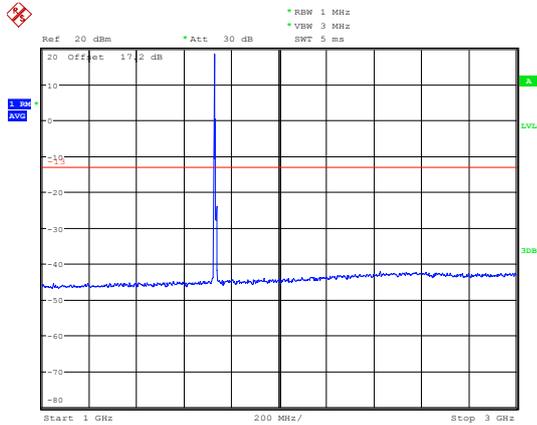
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LTE Band 4 10MHz CH-High 1GHz~3GHz
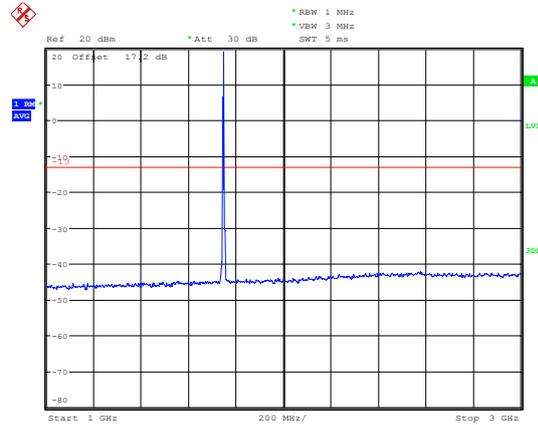
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LTE Band 4 10MHz CH-Middle 3GHz~20GHz
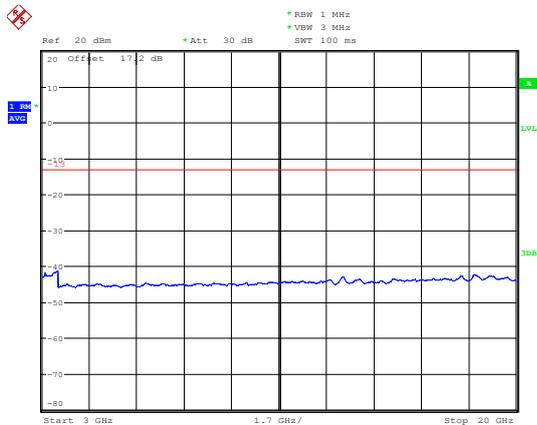
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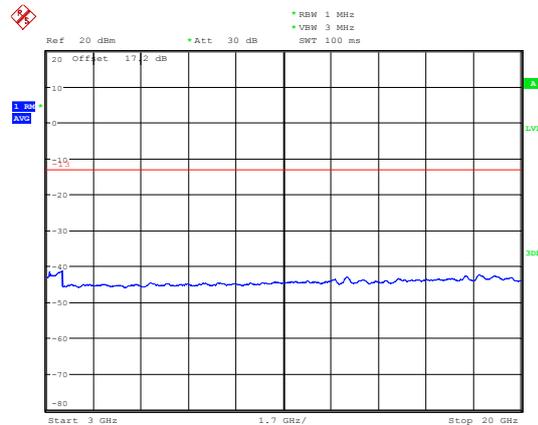
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LTE Band 4 15MHz CH-Low 30MHz~1GHz
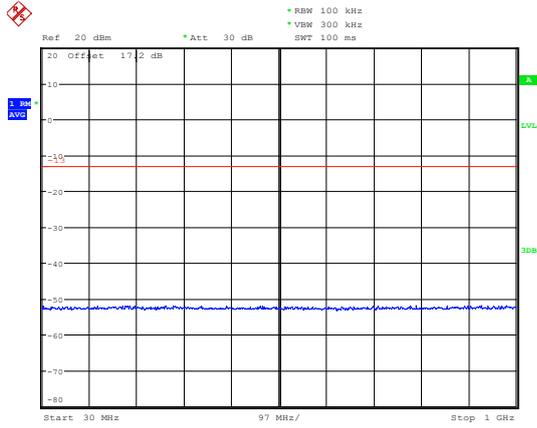
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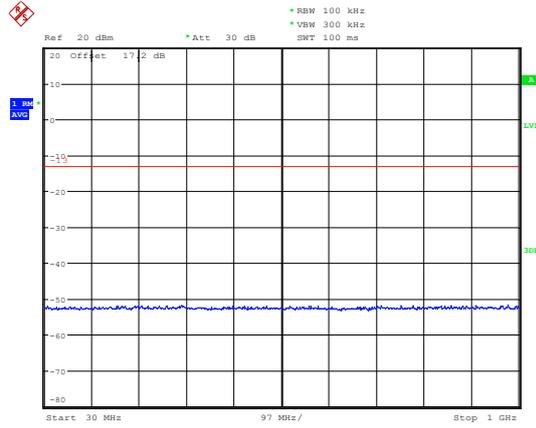
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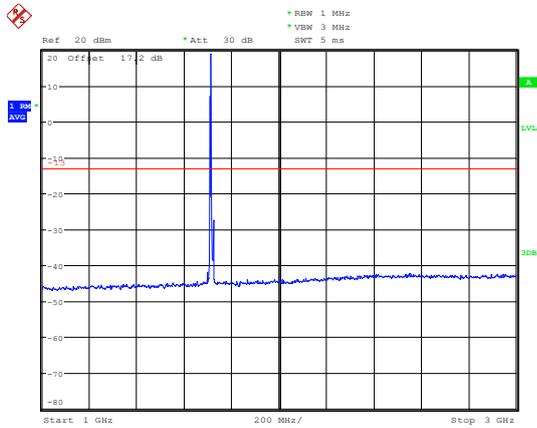
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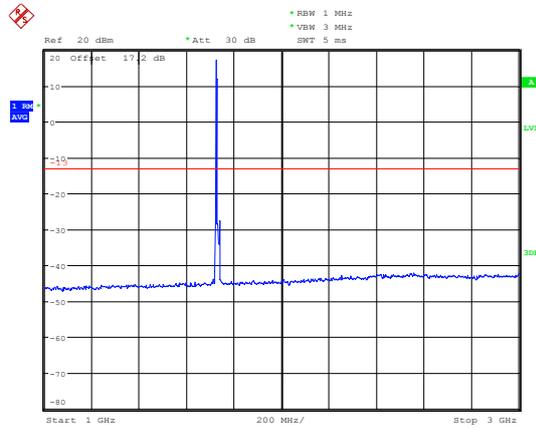
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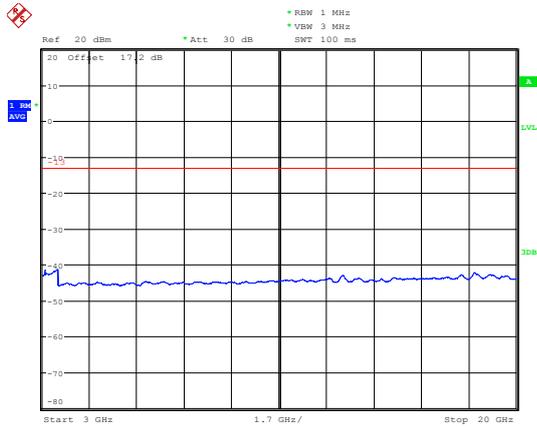
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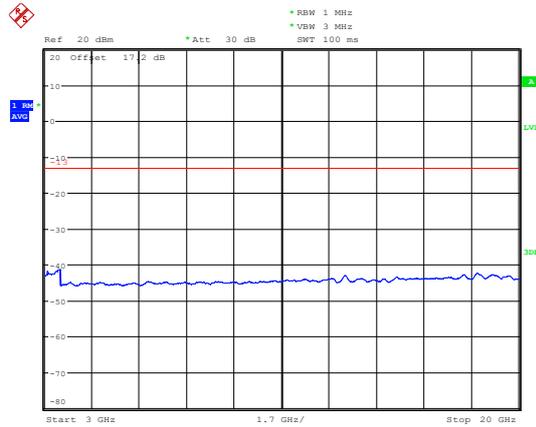
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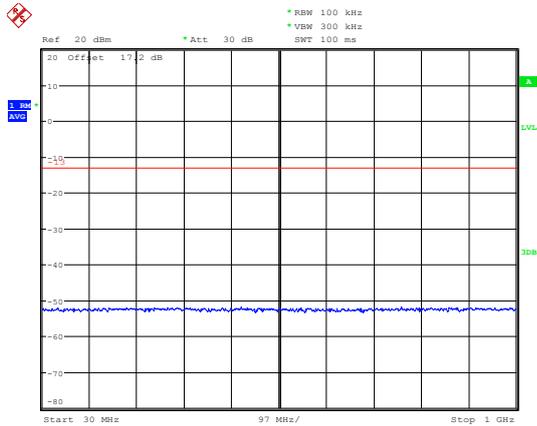
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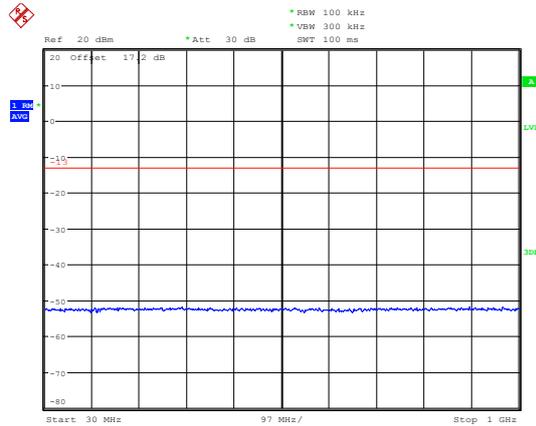
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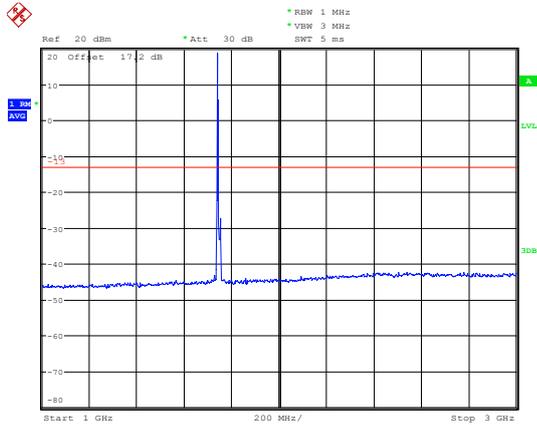
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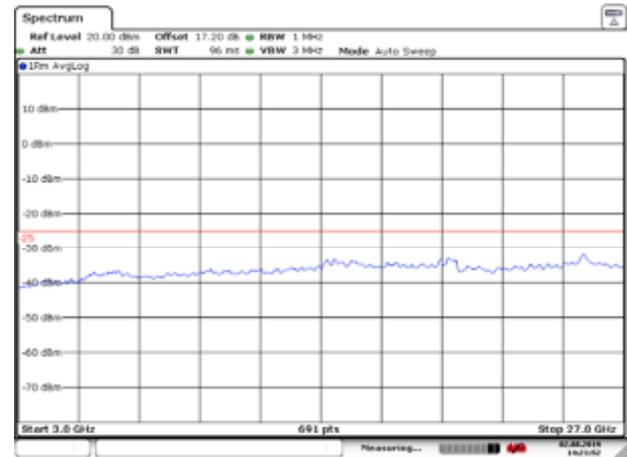
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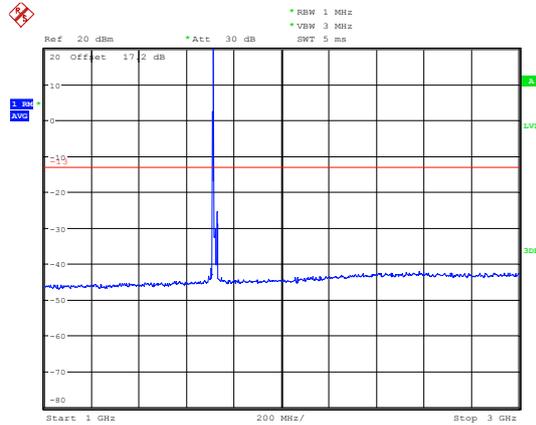
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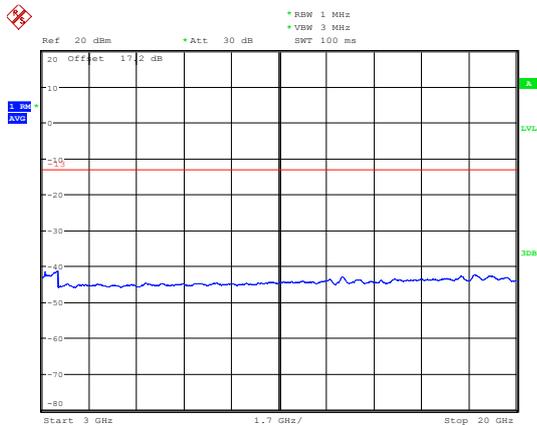
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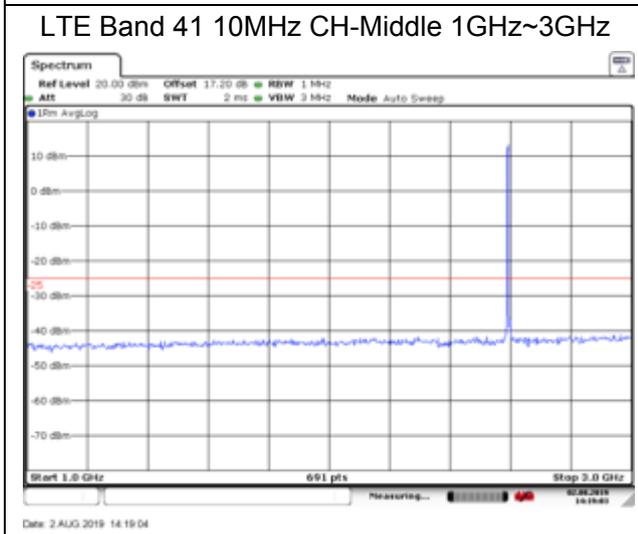
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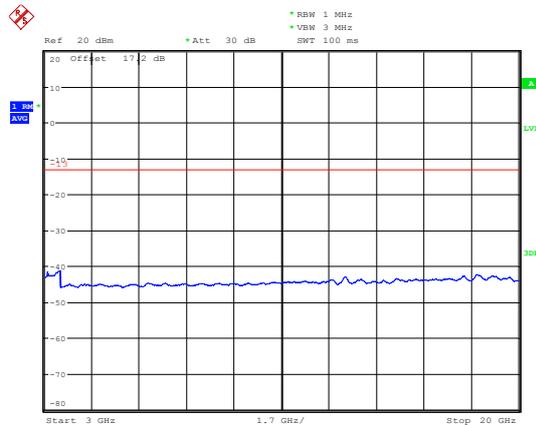
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LTE Band 4 20MHz CH- Middle 30MHz~1GHz

Date: 2.AUG.2019 12:54:41

LTE Band 4 20MHz CH- High 30MHz~1GHz
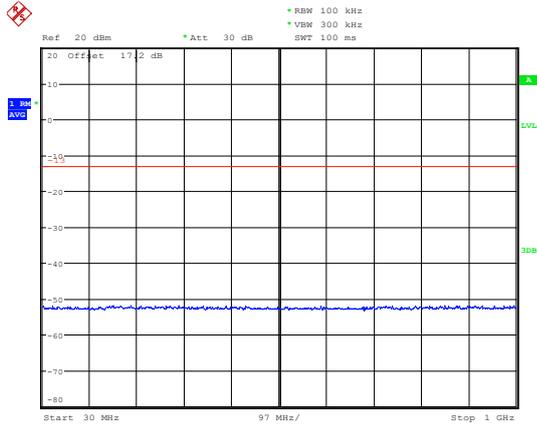
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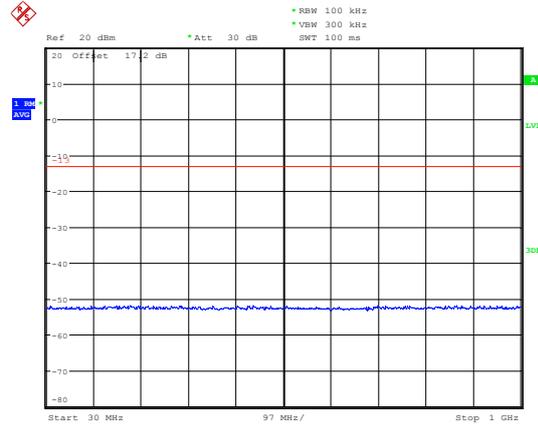
LTE Band 4 20MHz CH- Middle 1GHz~3GHz

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LTE Band 4 20MHz CH- High 1GHz~3GHz
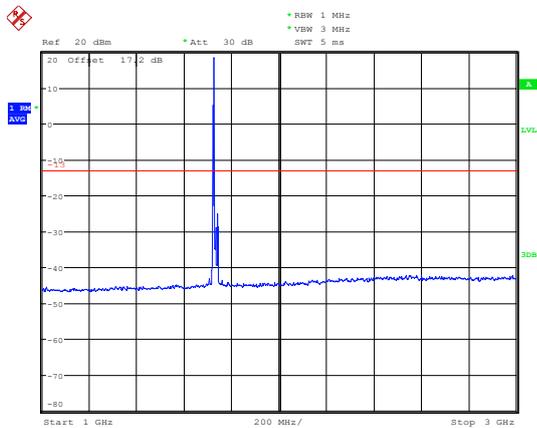
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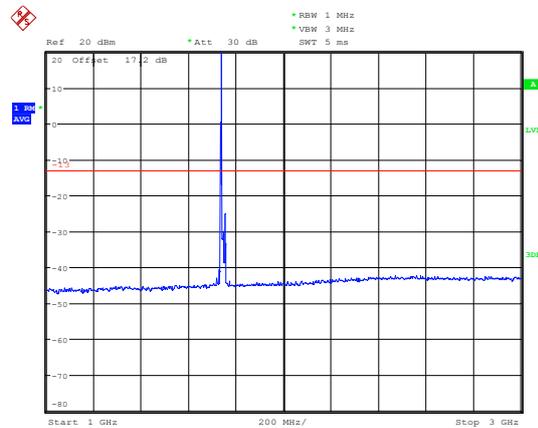
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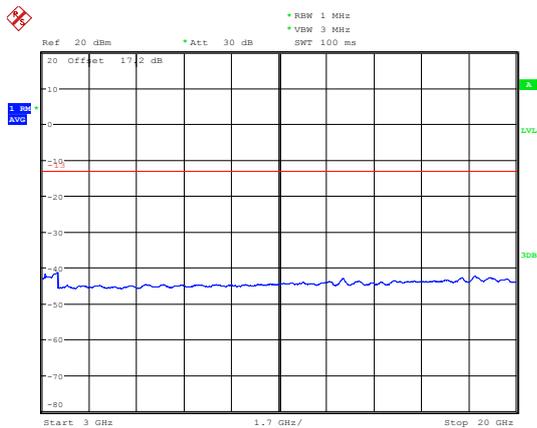
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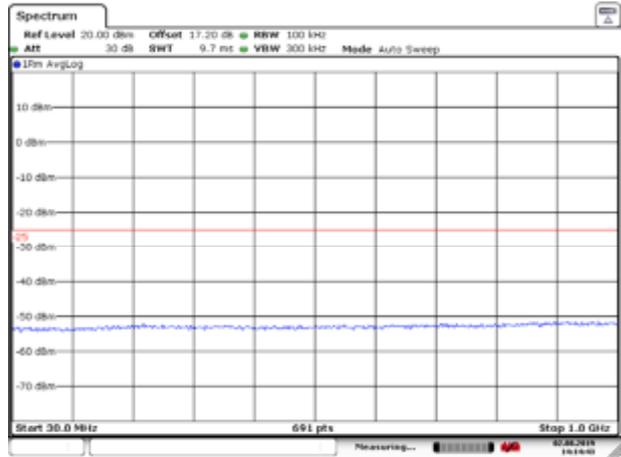

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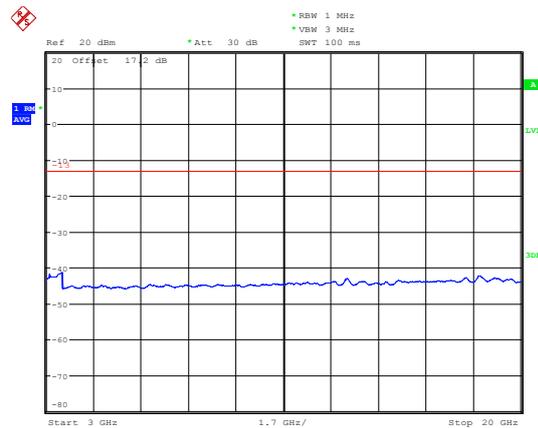
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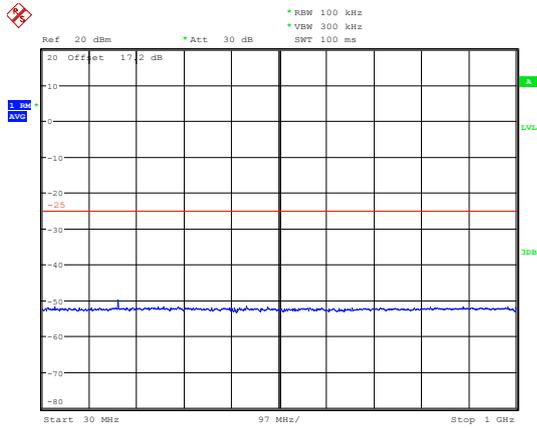
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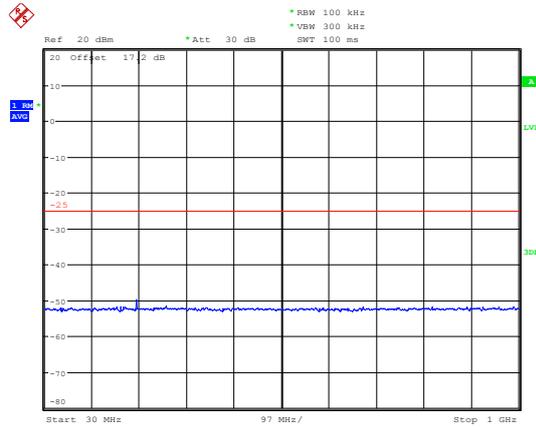
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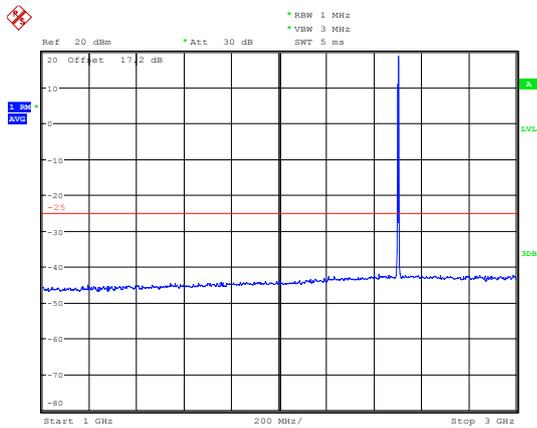
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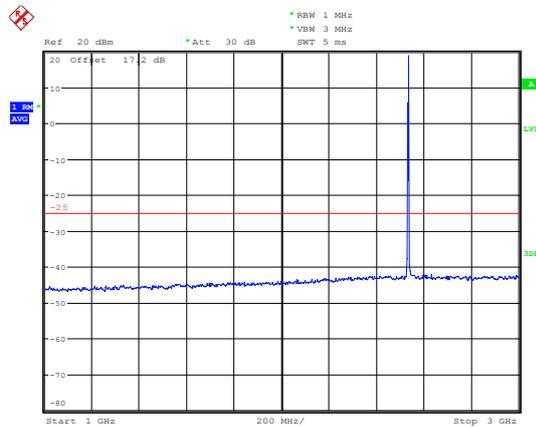
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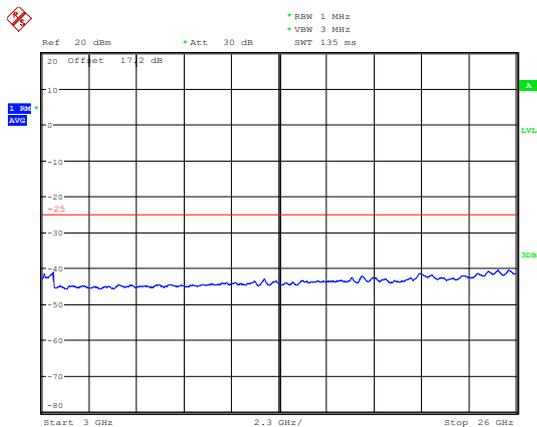
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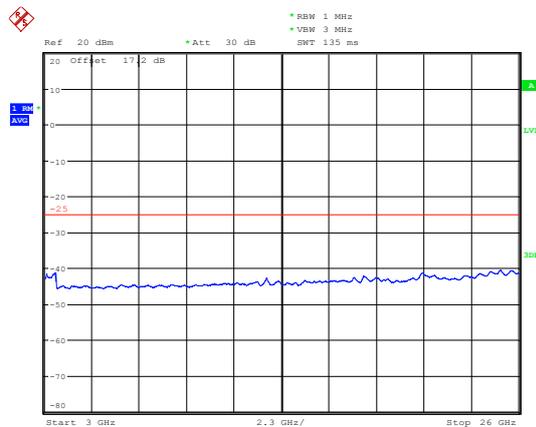
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LTE Band 7 5MHz CH-High 30MHz~1GHz
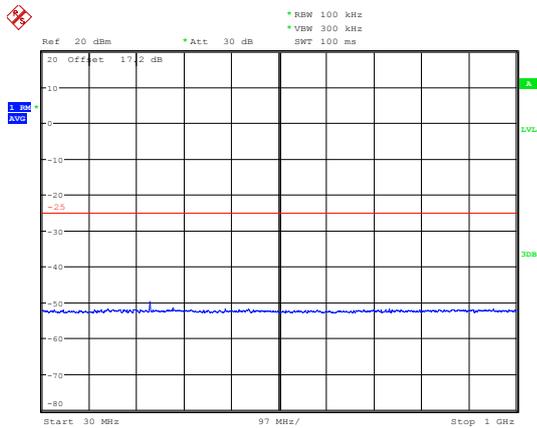
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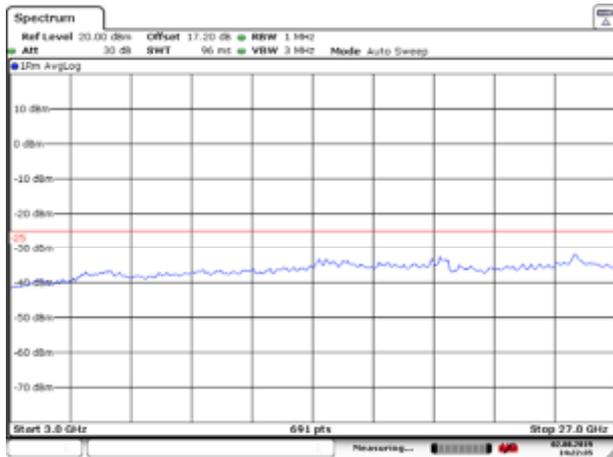## LTE Band 7 10MHz CH-Low 30MHz~1GHz
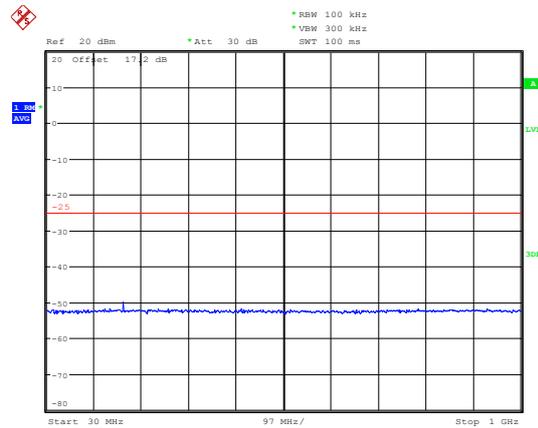
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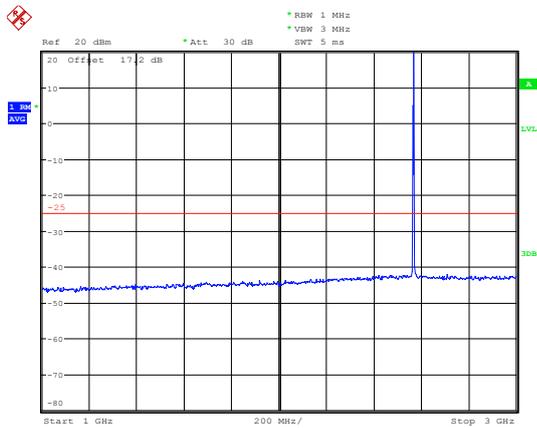
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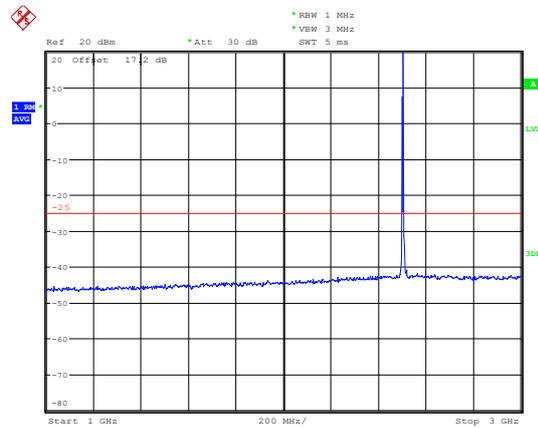
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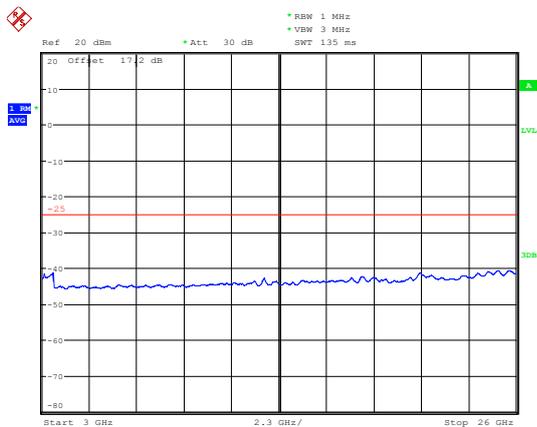
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LTE Band 7 10MHz CH-Low 3GHz~20GHz

Date: 2.AUG.2019 15:09:30

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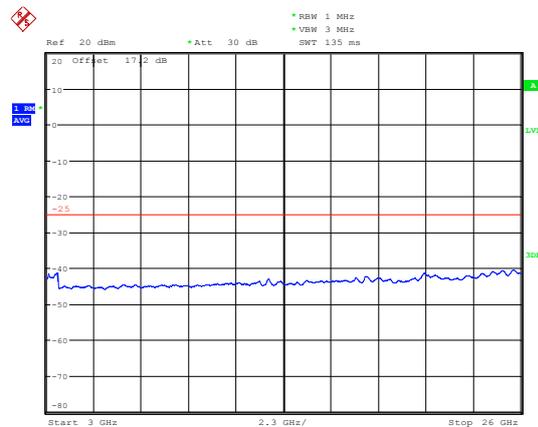
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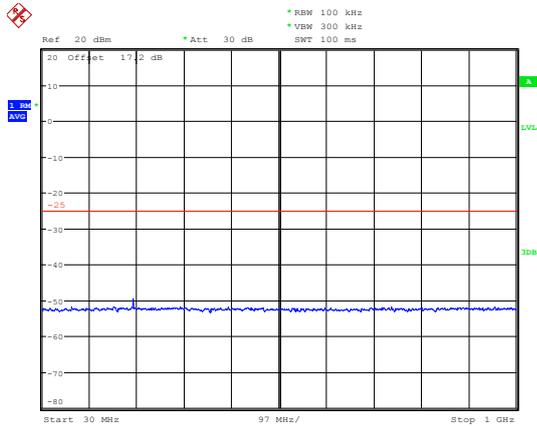
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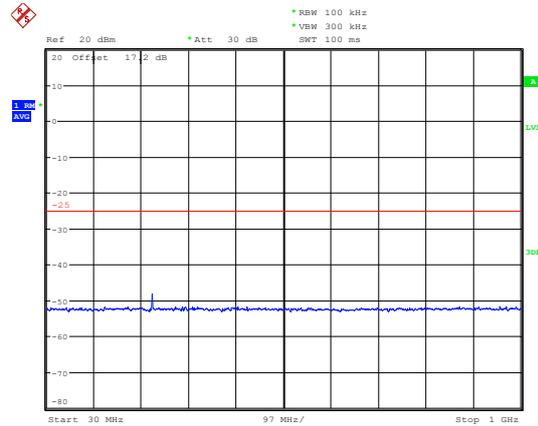
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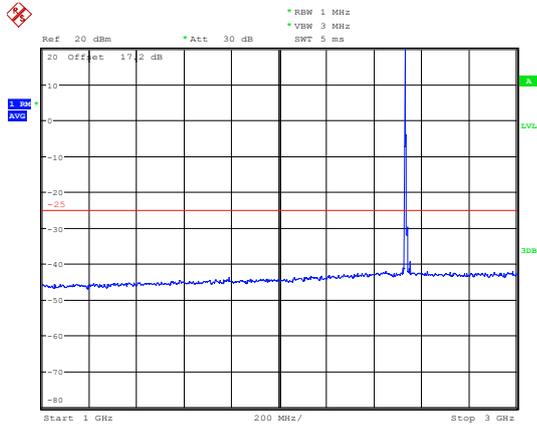
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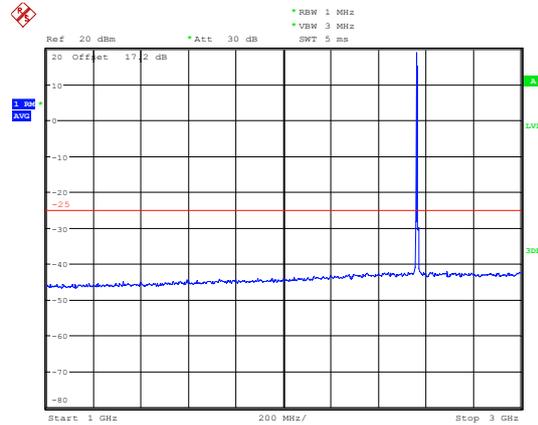
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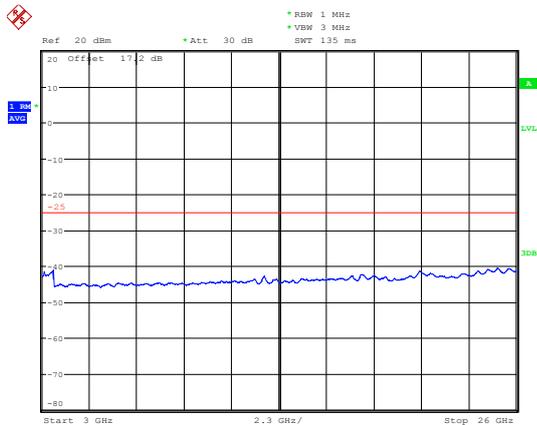
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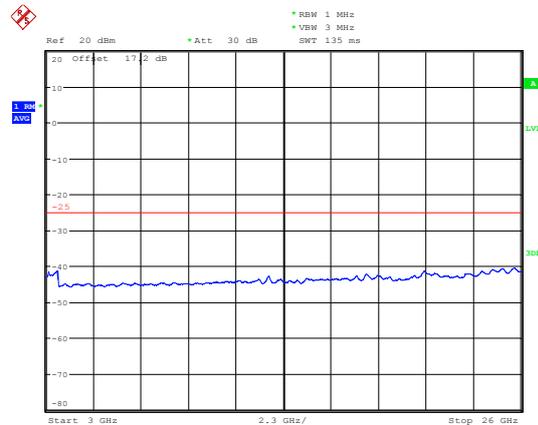
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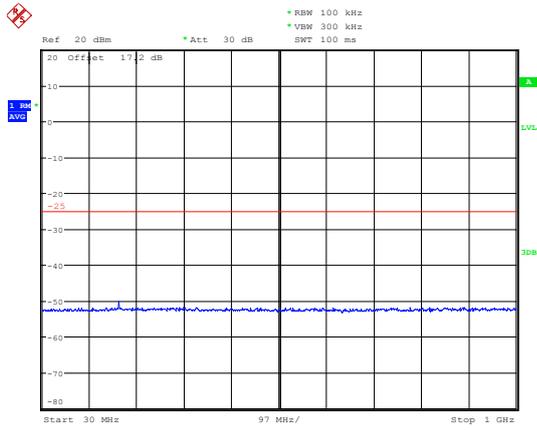
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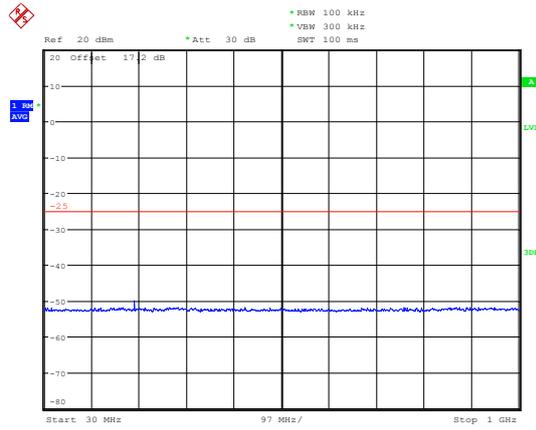
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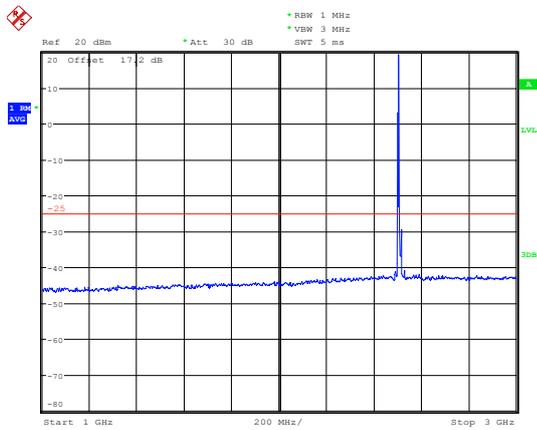
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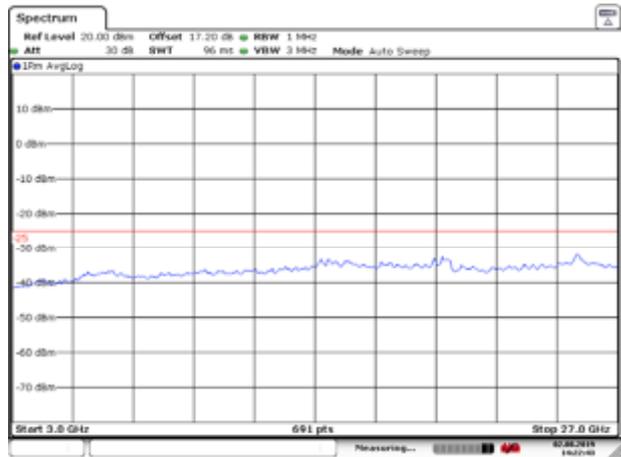
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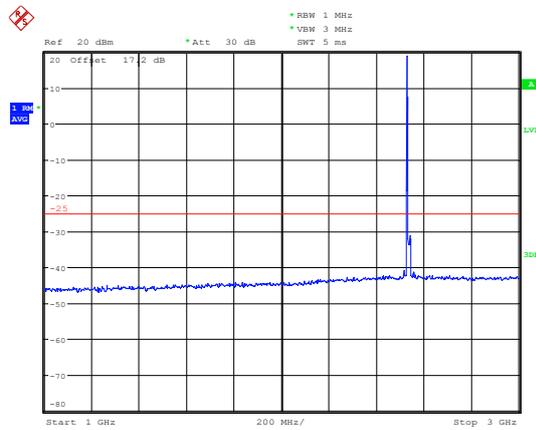
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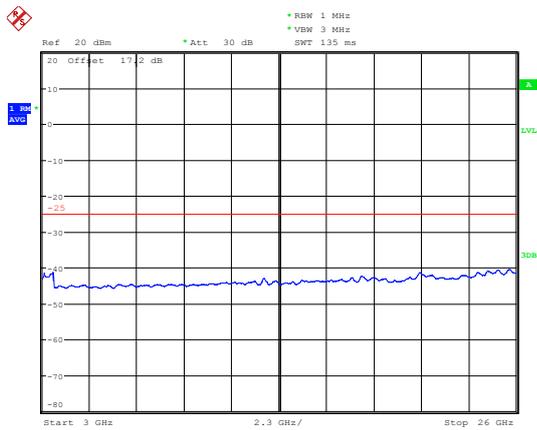
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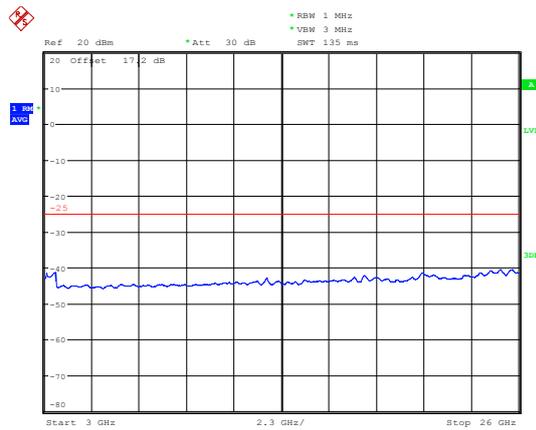
Date: 2.AUG.2019 15:10:27

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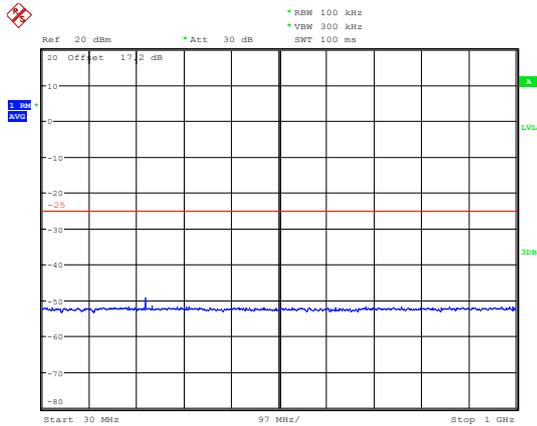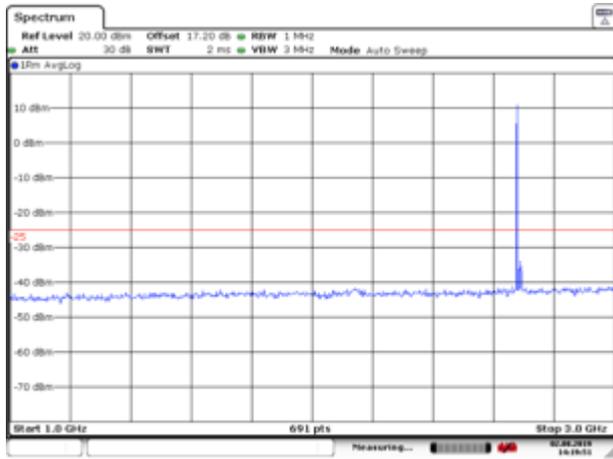

Date: 2.AUG.2019 14:54:46

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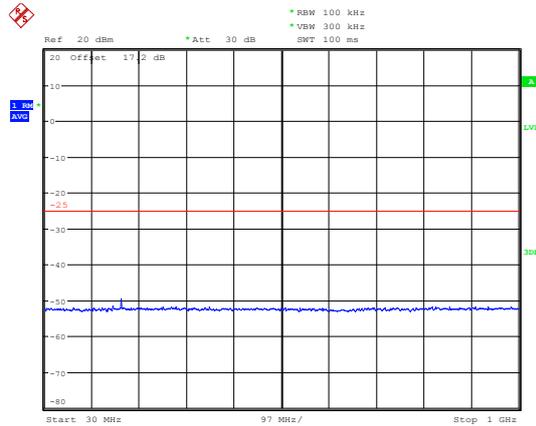
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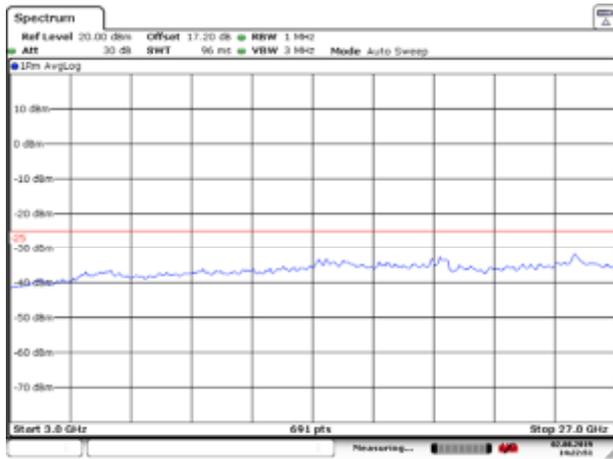### LTE Band 7 15MHz CH-High 1GHz~3GHz
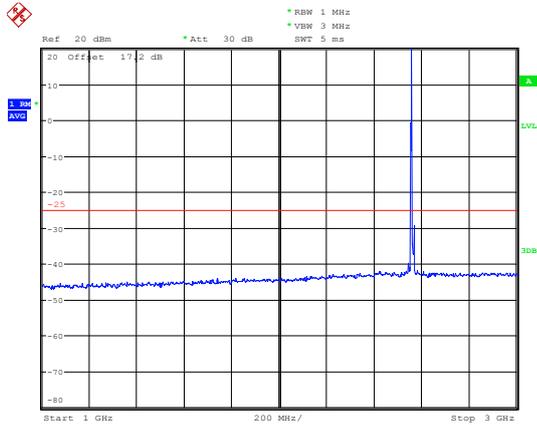
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LTE Band 7 20MHz CH-Low 1GHz~3GHz
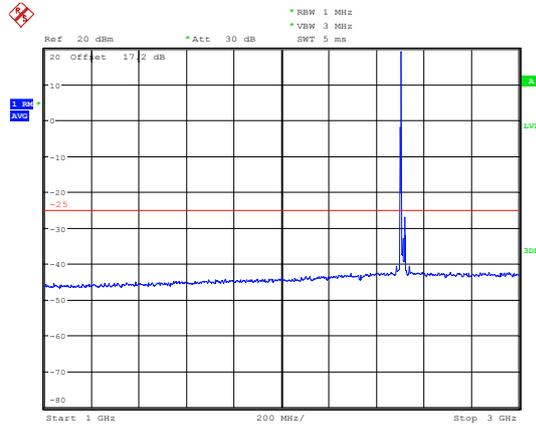
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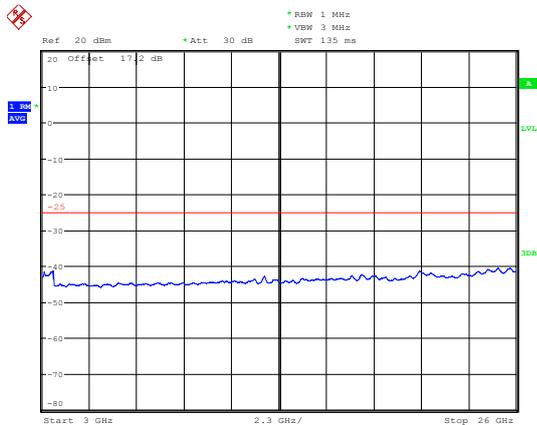
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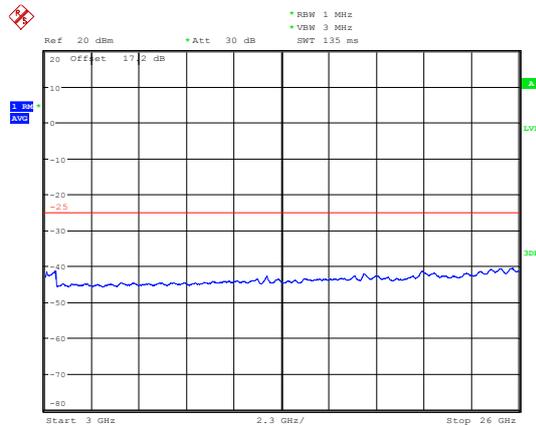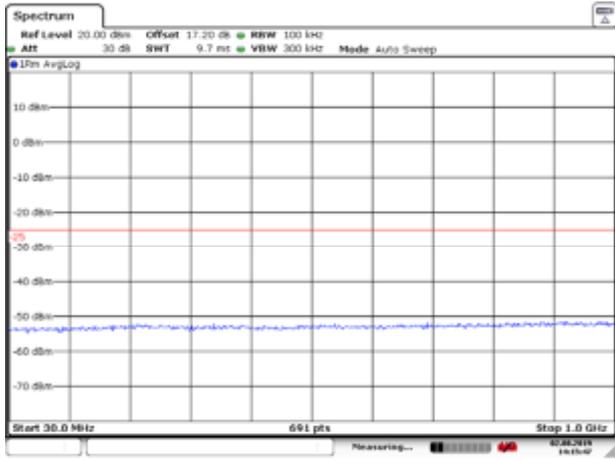

Date: 2.AUG.2019 15:10:59

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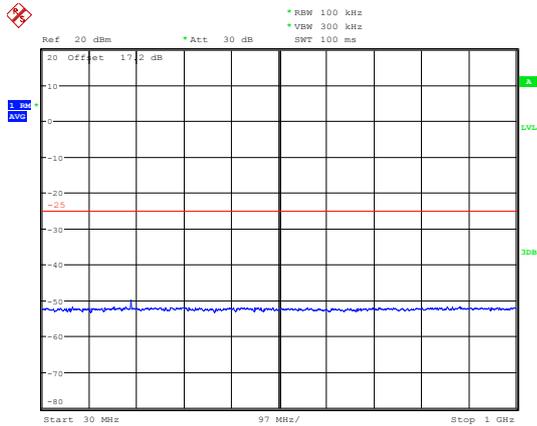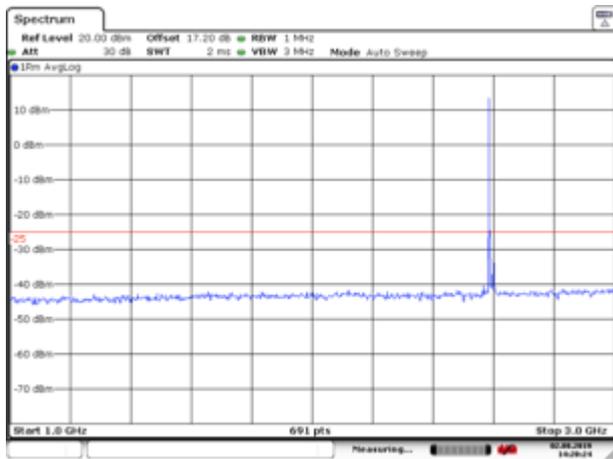

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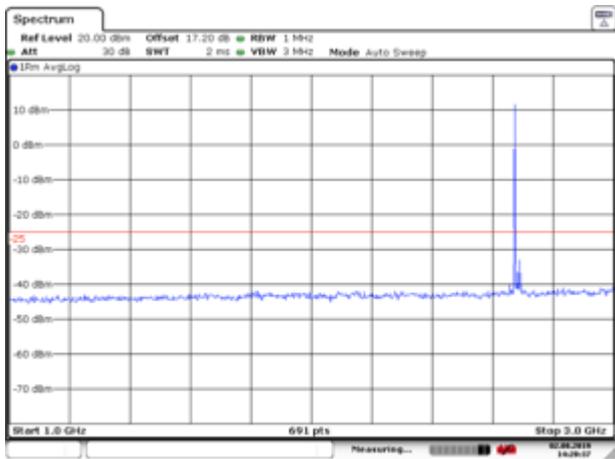### LTE Band 7 20MHz CH-High 30MHz~1GHz
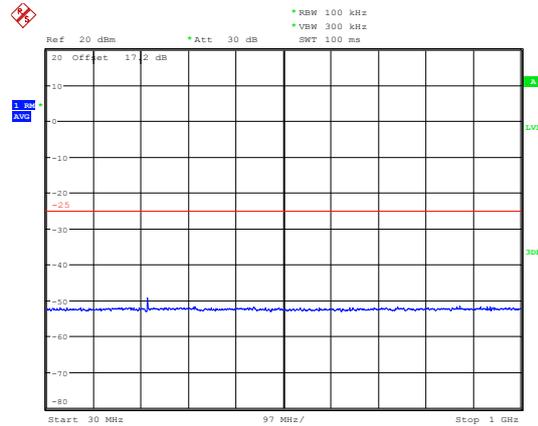
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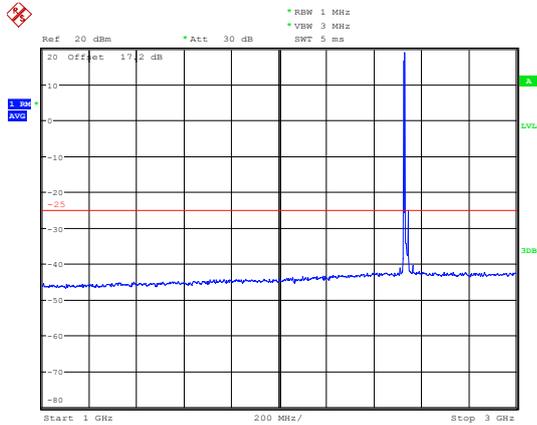
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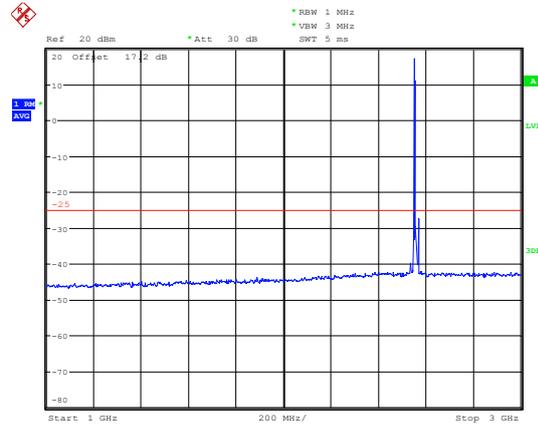
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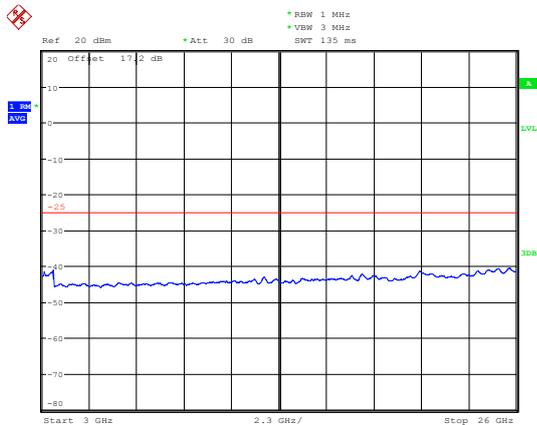
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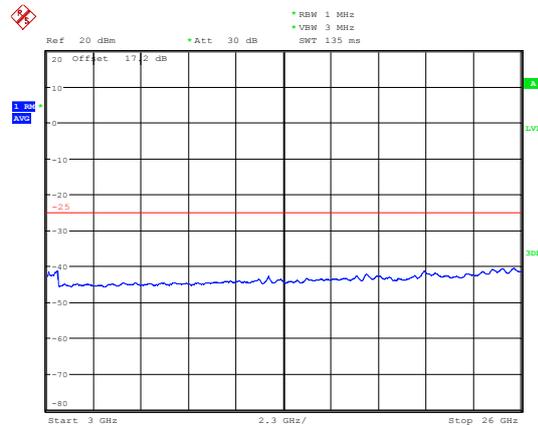
Date: 2.AUG.2019 15:11:23

LTE Band 12 1.4MHz CH-Low 30MHz~1GHz	LTE Band 12 1.4MHz CH-Low 1GHz~9GHz
Date: 2.AUG.2019 21:44:08
LTE Band 12 1.4MHz CH- Middle 30MHz~1GHz	LTE Band 12 1.4MHz CH- Middle 1GHz~9GHz
Date: 2.AUG.2019 21:44:21
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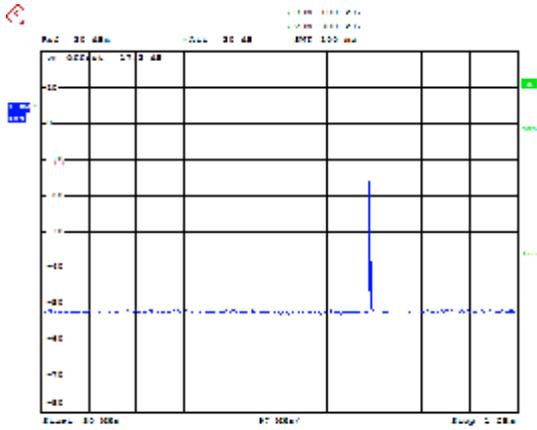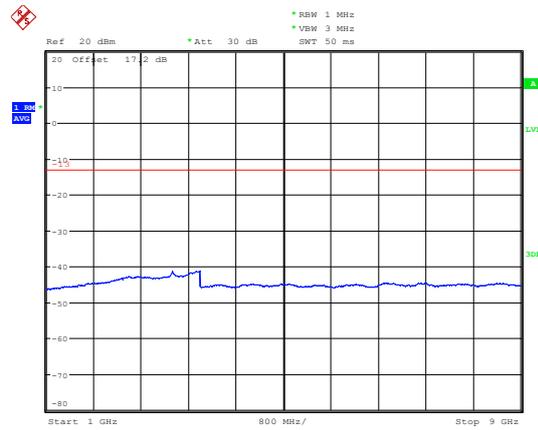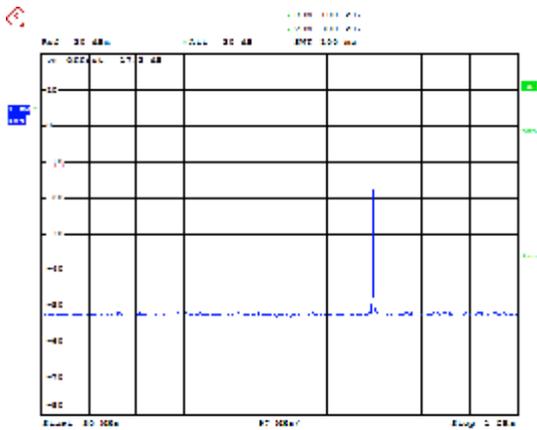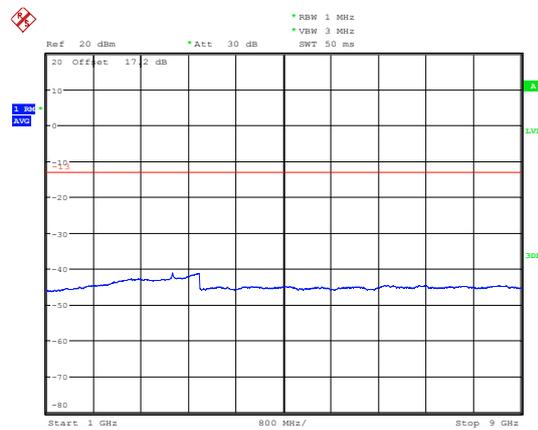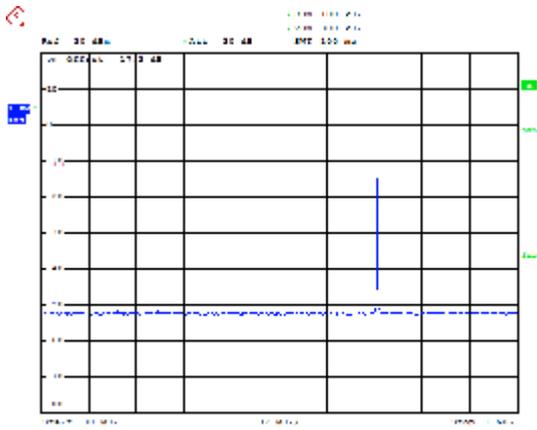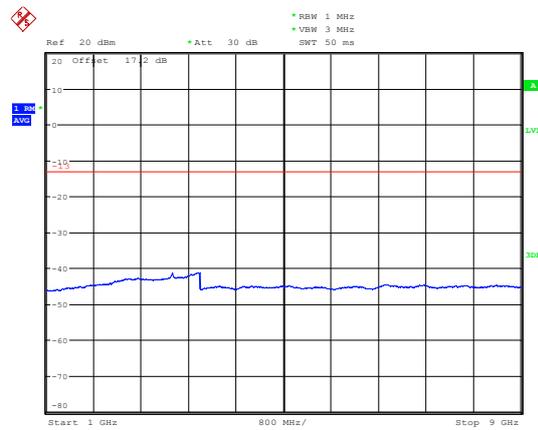
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	Date: 2.AUG.2019 21:45:07
LTE Band 12 3MHz CH- Middle 30MHz~1GHz	LTE Band 12 3MHz CH- Middle 1GHz~9GHz
	Date: 2.AUG.2019 21:45:20
LTE Band 12 3MHz CH-High 30MHz~1GHz	LTE Band 12 3MHz CH-High 1GHz~9GHz
	Date: 2.AUG.2019 21:45:36
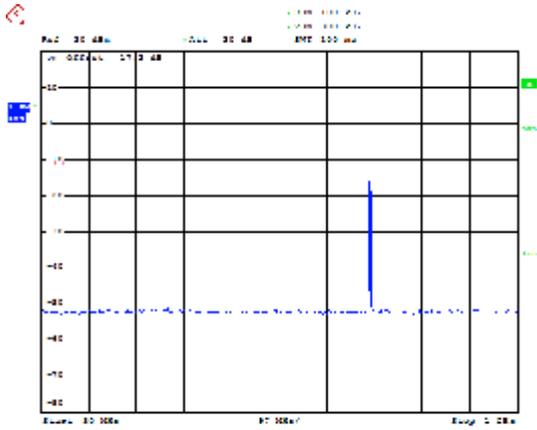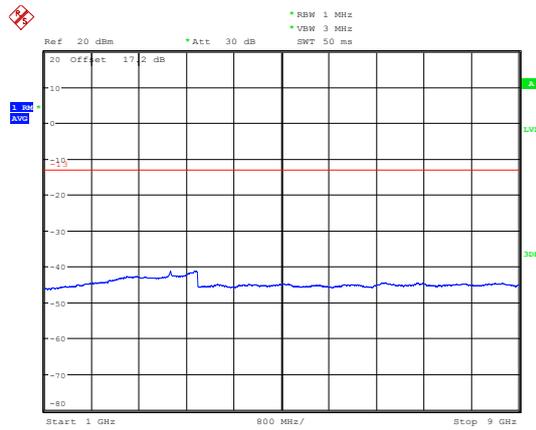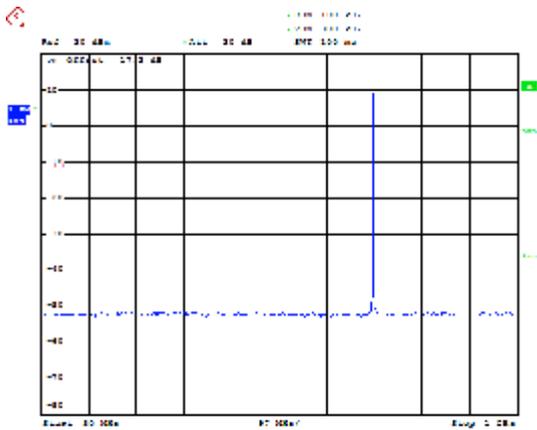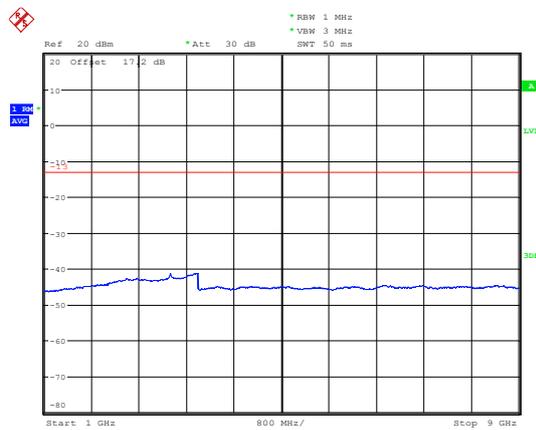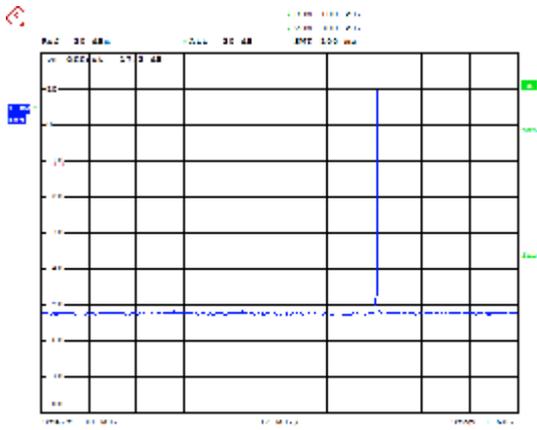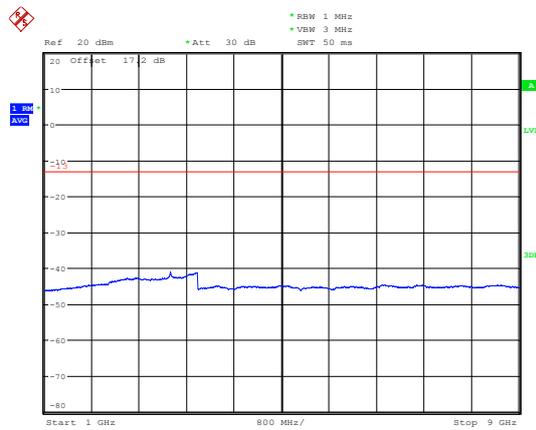
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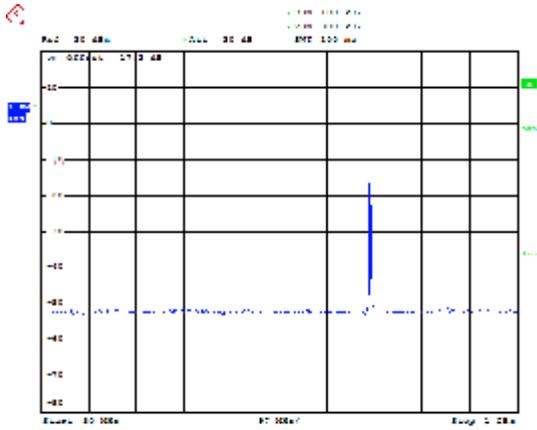
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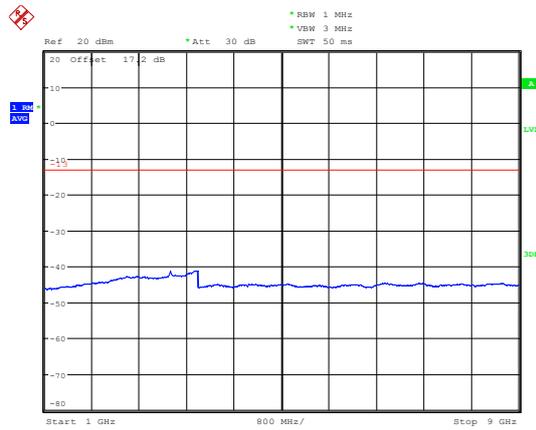
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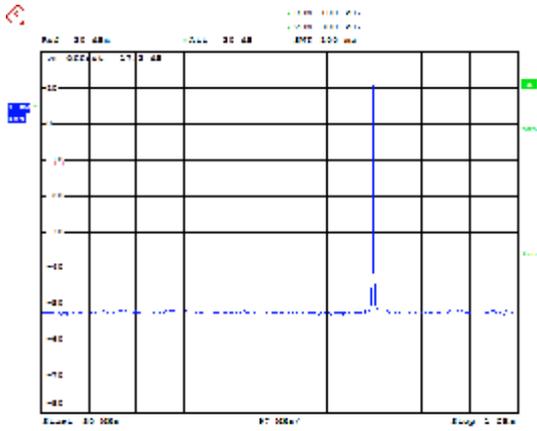
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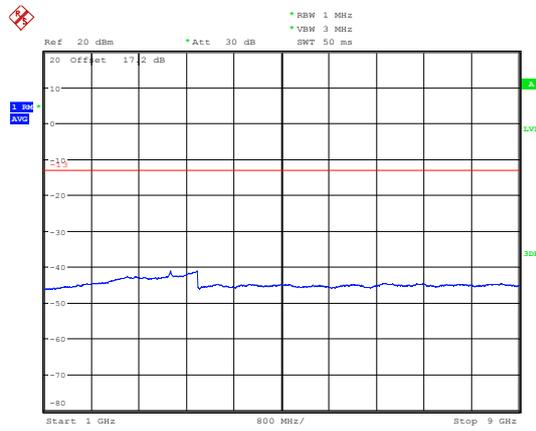
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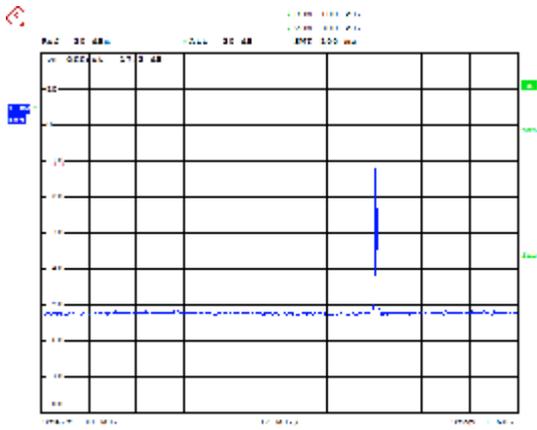
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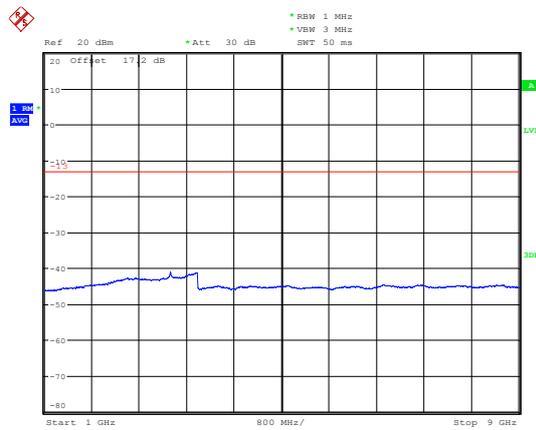
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LTE Band 12 10MHz CH-Low 30MHz~1GHz	LTE Band 12 10MHz CH-Low 1GHz~9GHz
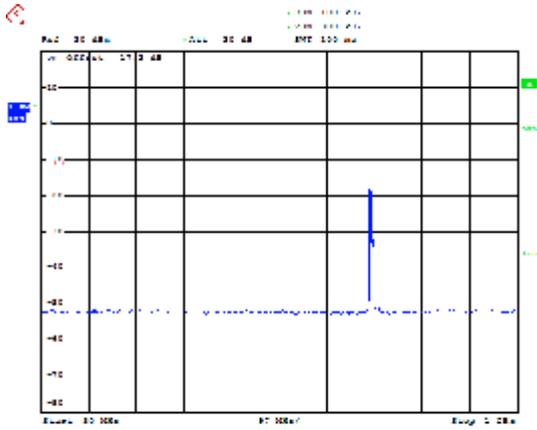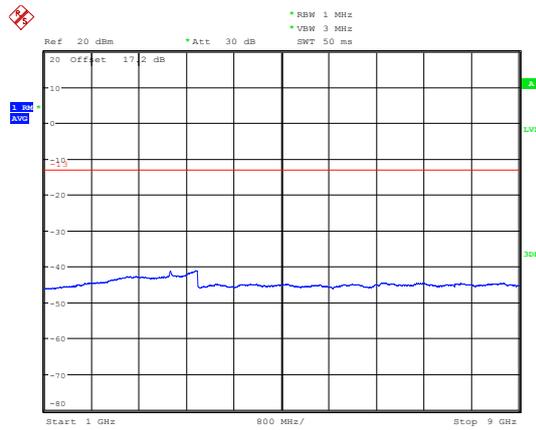
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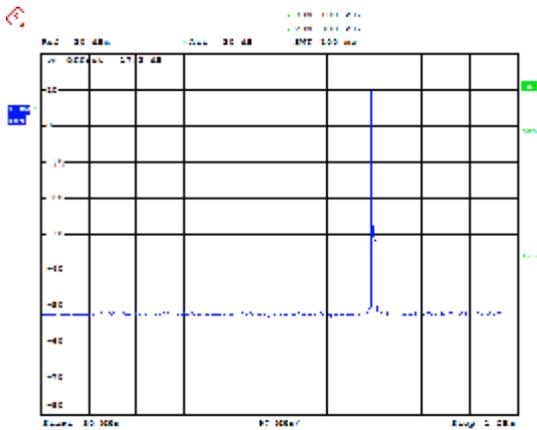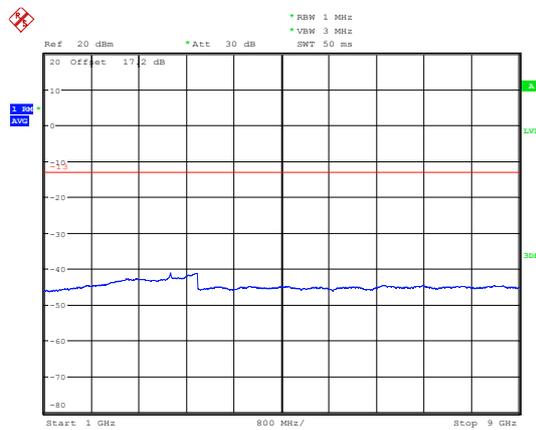
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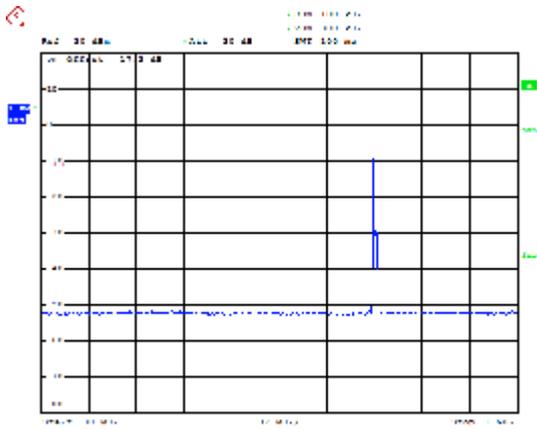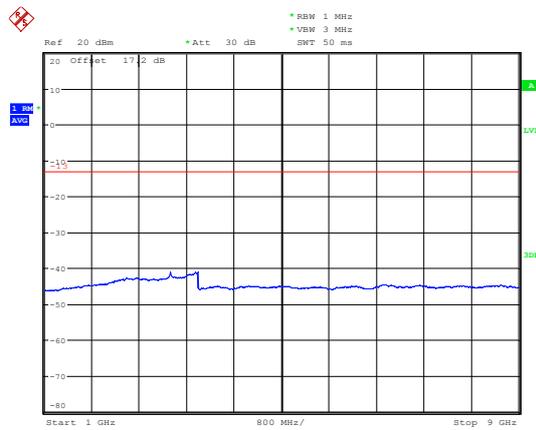
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Date: 2.AUG.2019 21:47:41
LTE Band 17 5MHz CH-Middle 30MHz~1GHz	LTE Band 17 5MHz CH-Middle 1GHz~9GHz
Date: 2.AUG.2019 21:47:57
LTE Band 17 5MHz CH-High 30MHz~1GHz	LTE Band 17 5MHz CH-High 1GHz~9GHz
Date: 2.AUG.2019 21:48:08 |
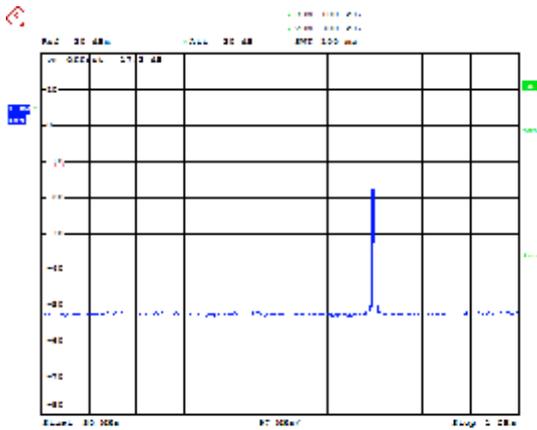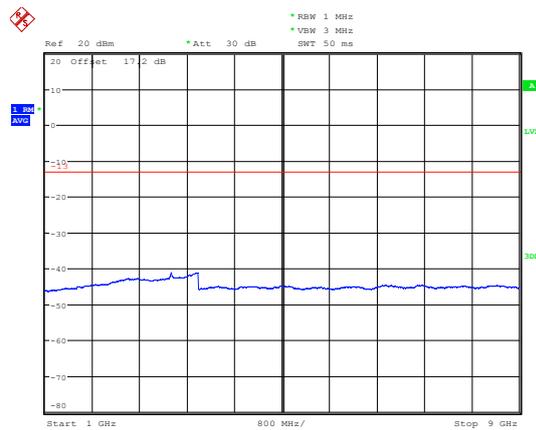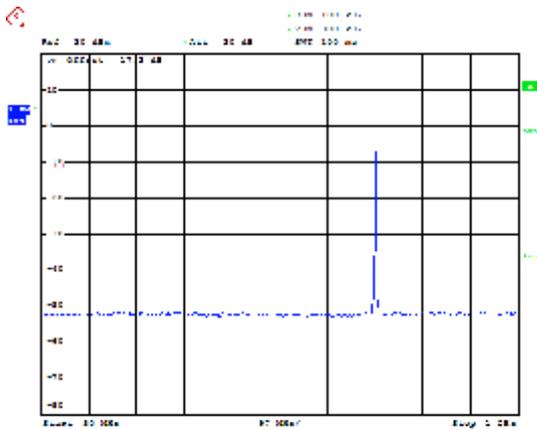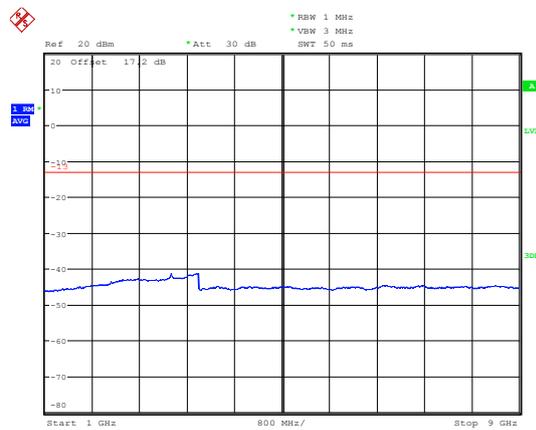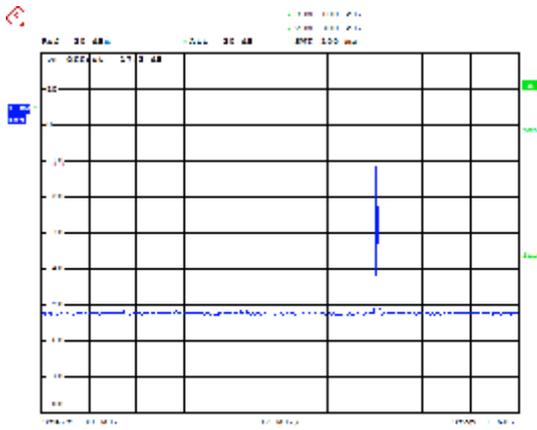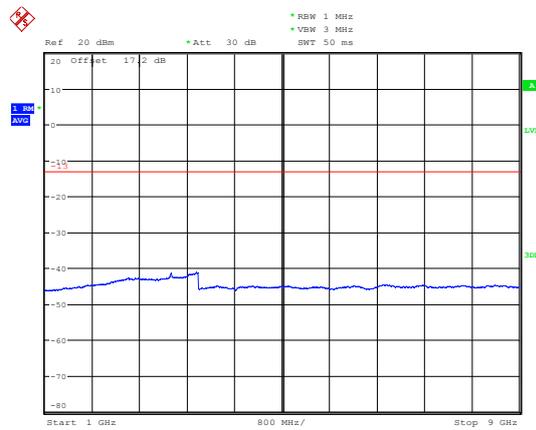
LTE Band 17 10MHz CH-Low 30MHz~1GHz	LTE Band 17 10MHz CH-Low 1GHz~9GHz
	 Date: 2.AUG.2019 21:48:25
LTE Band 17 10MHz CH-Middle 30MHz~1GHz	LTE Band 17 10MHz CH-Middle 1GHz~9GHz
	 Date: 2.AUG.2019 21:48:36
LTE Band 17 10MHz CH-High 30MHz~1GHz	LTE Band 17 10MHz CH-High 1GHz~9GHz
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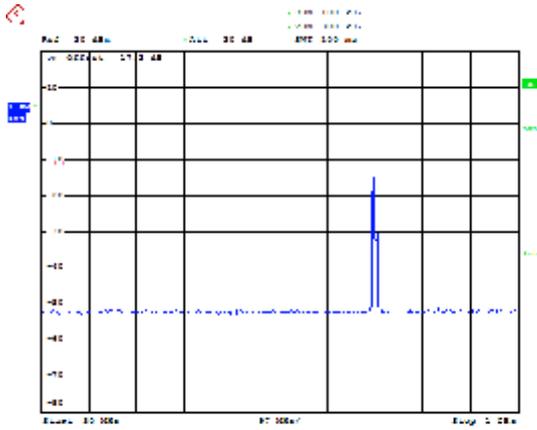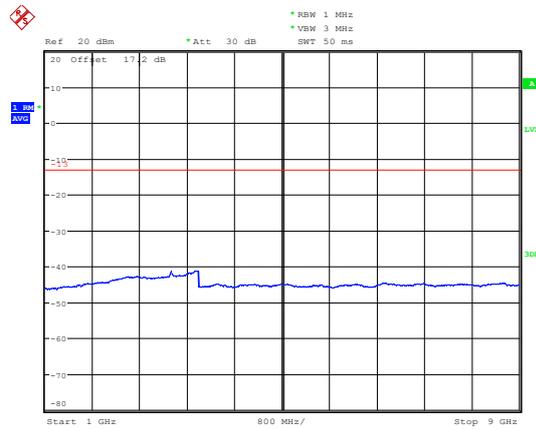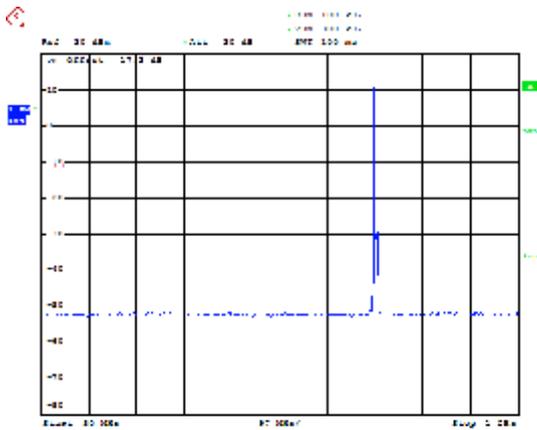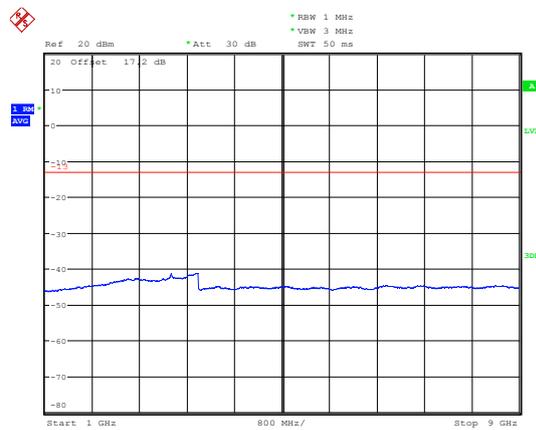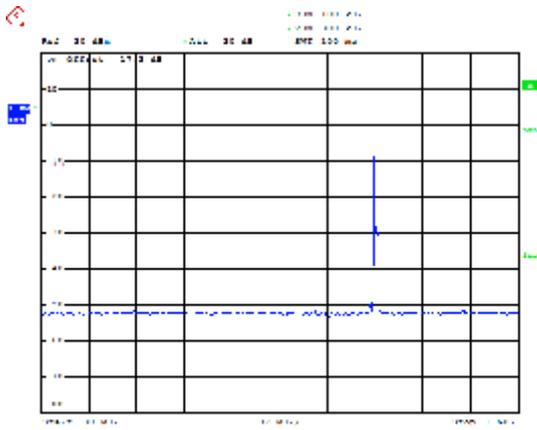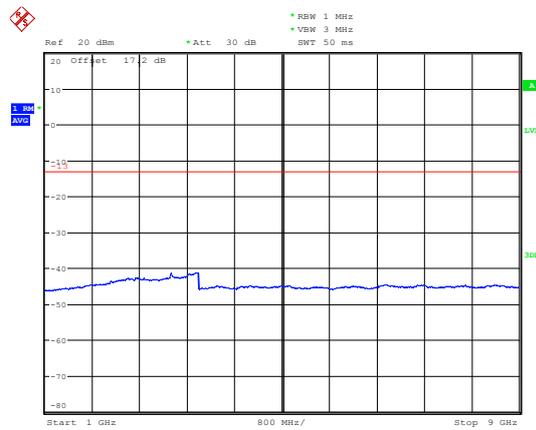
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Date: 2.AUG.2019 15:51:01	Date: 2.AUG.2019 15:51:15
LTE Band 38 5MHz CH-Low 1GHz~3GHz	LTE Band 38 5MHz CH-Middle 1GHz~3GHz
LTE Band 38 5MHz CH-Low 3GHz~26.5GHz	LTE Band 38 5MHz CH-Middle 3GHz~26.5GHz
Date: 2.AUG.2019 16:25:15	Date: 2.AUG.2019 16:25:24
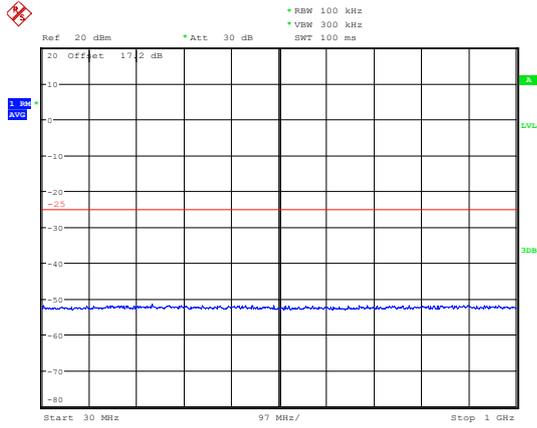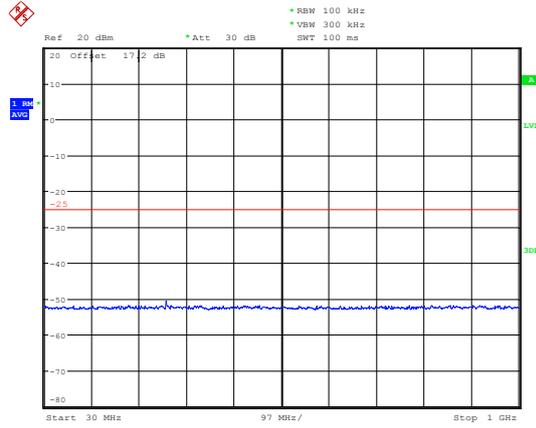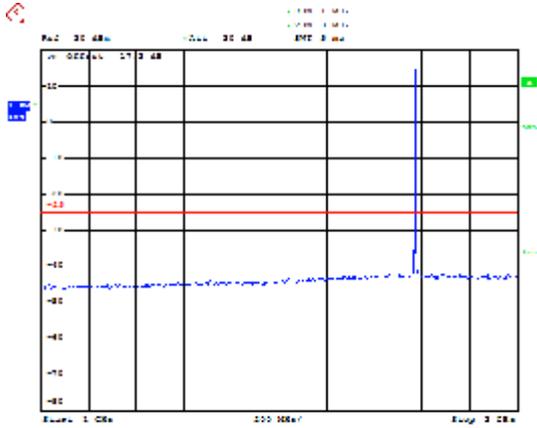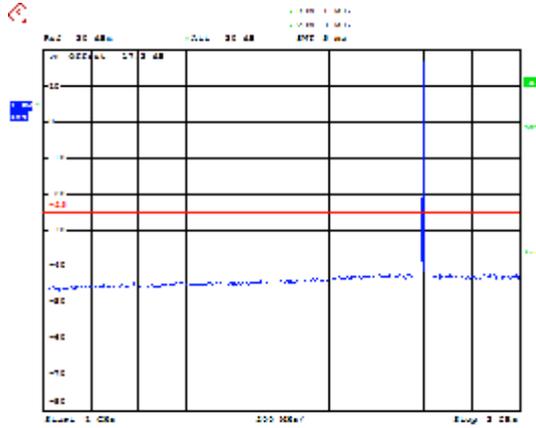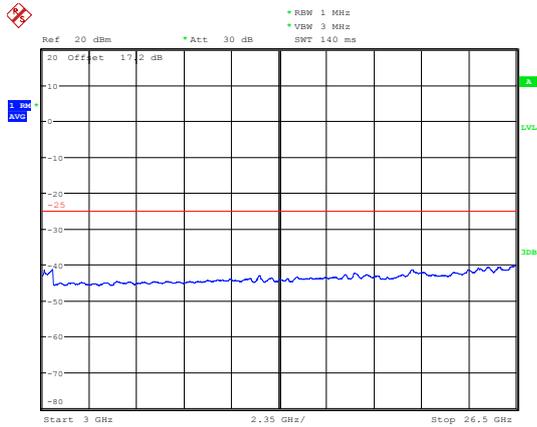
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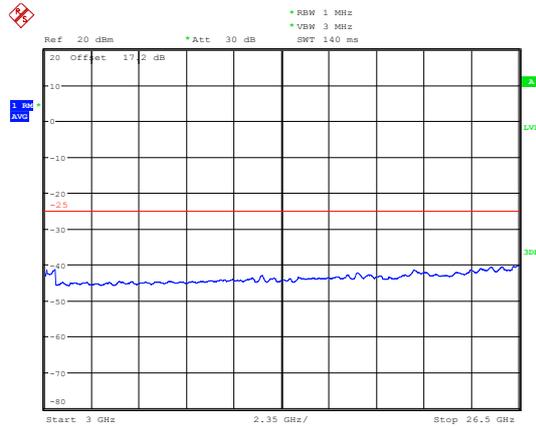
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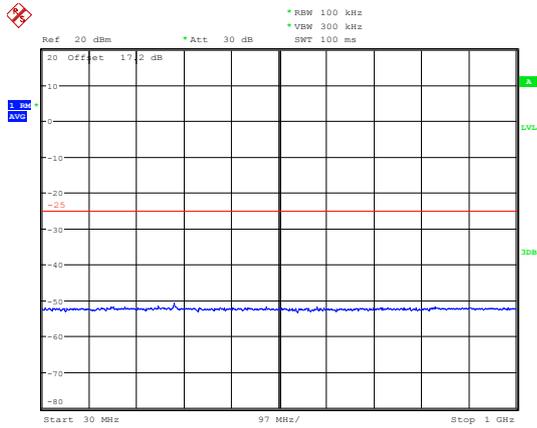
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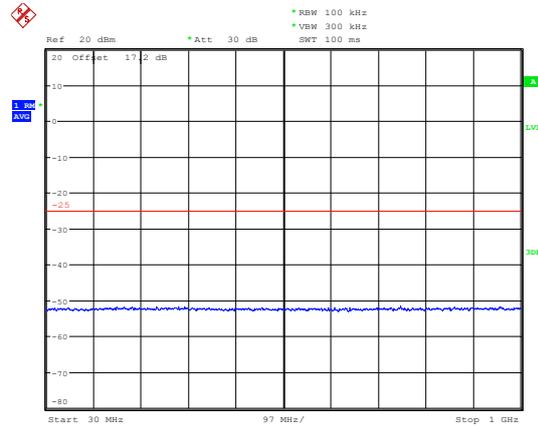
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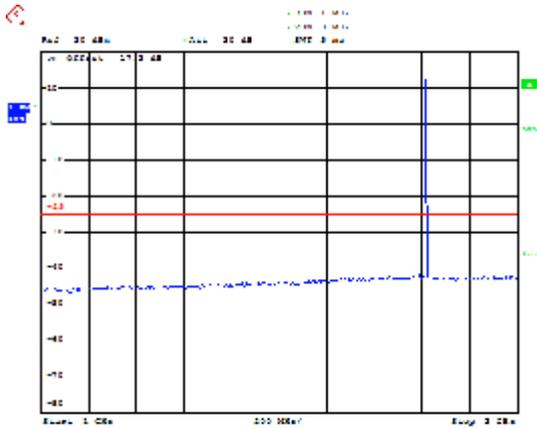
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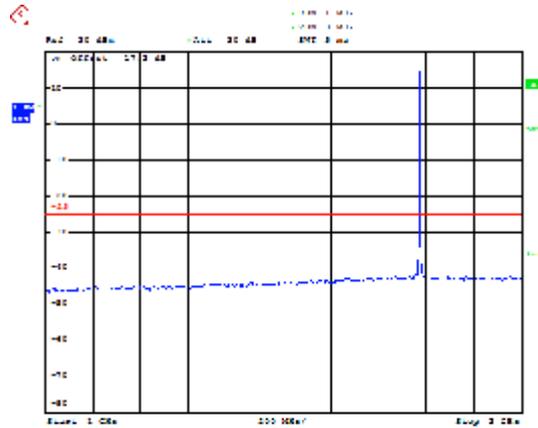
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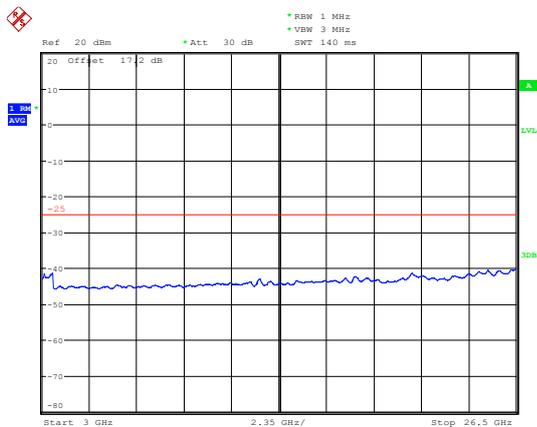
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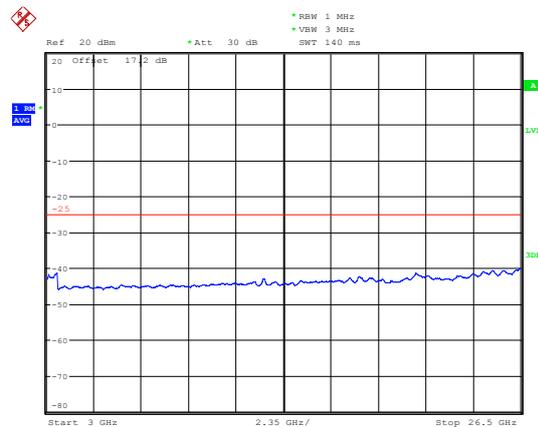
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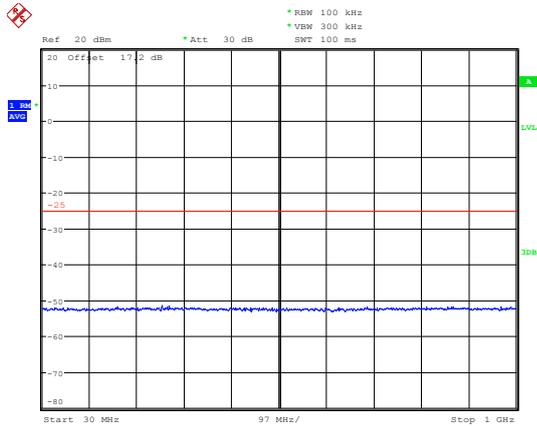
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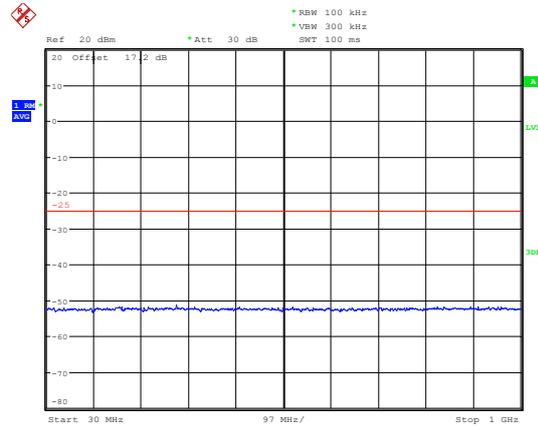
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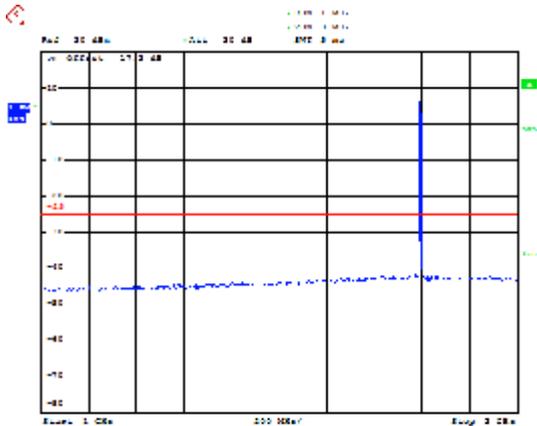
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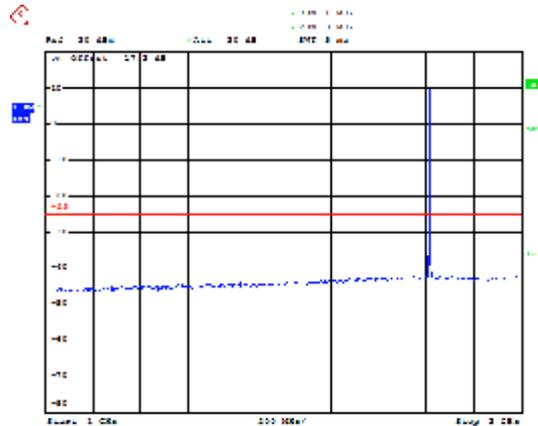
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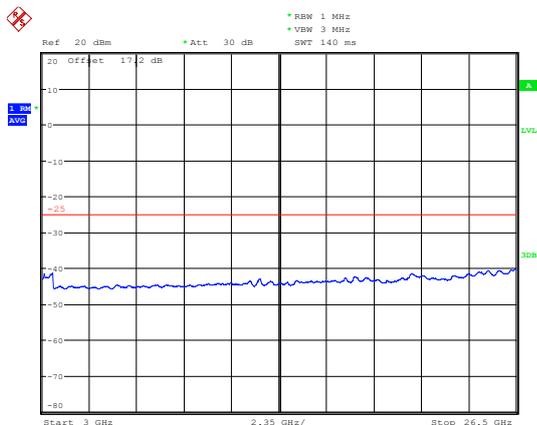
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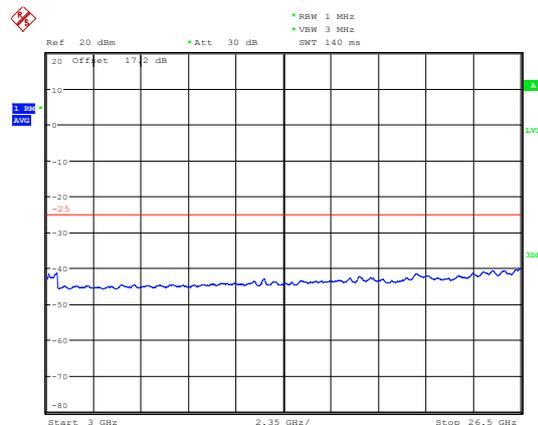
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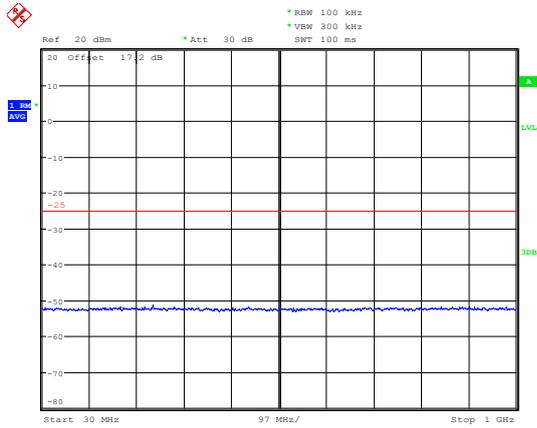
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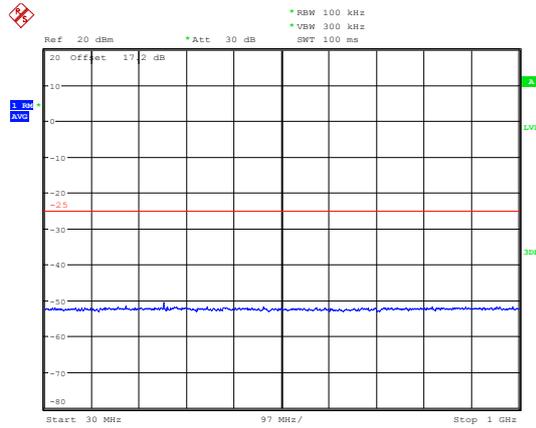
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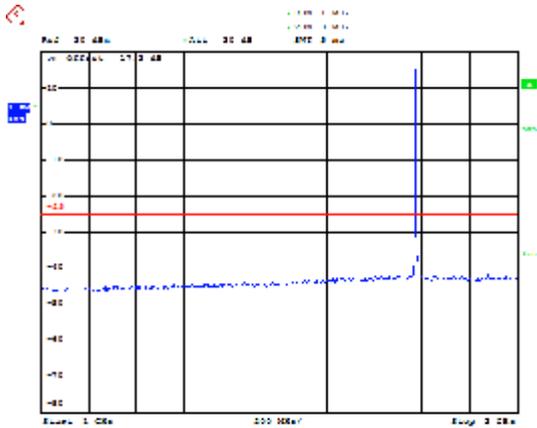
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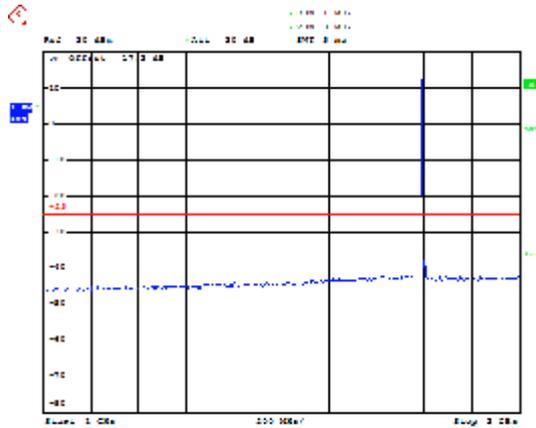
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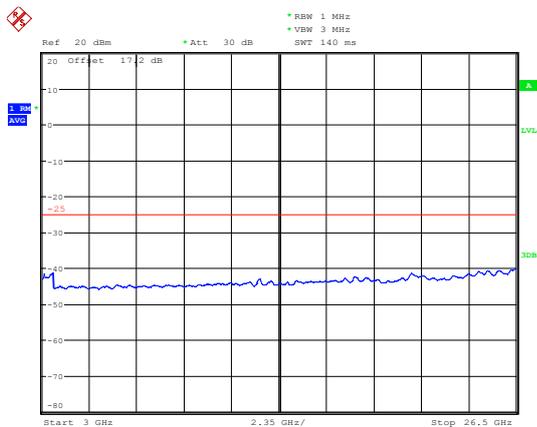
Date: 2.AUG.2019 16:28:14

LTE Band 38 15MHz CH-Middle 3GHz~26.5GHz

Date: 2.AUG.2019 16:28:21

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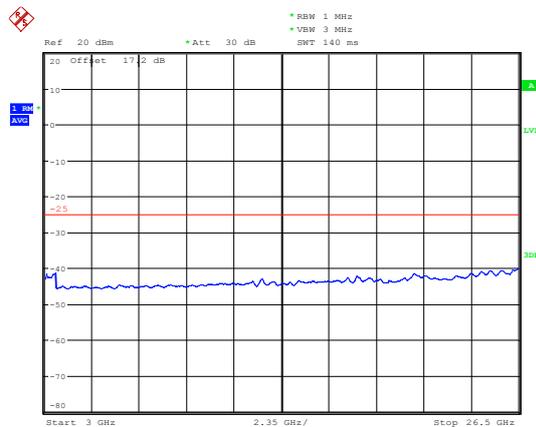
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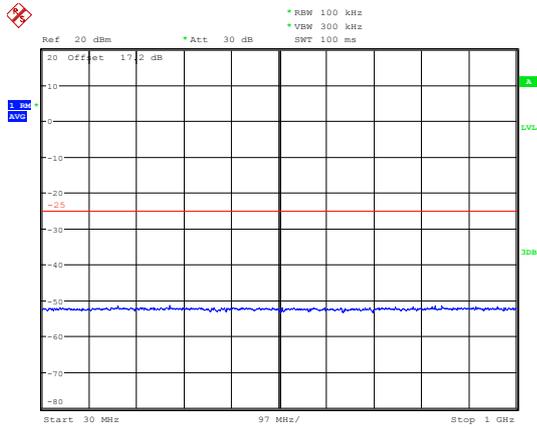
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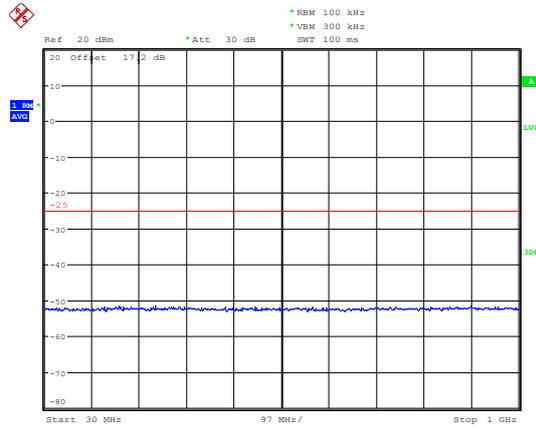
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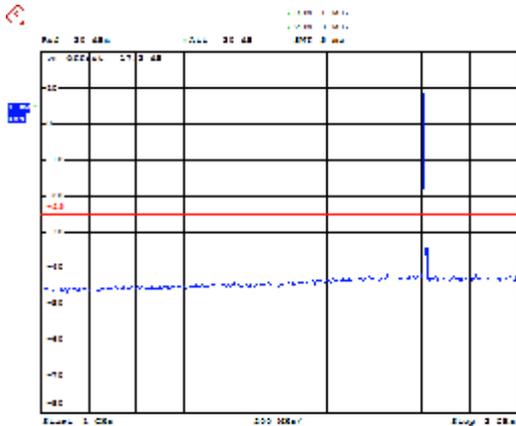
LTE Band 38 20MHz CH-Low 1GHz~3GHz

LTE Band 38 15MHz CH-High 3GHz~26.5GHz
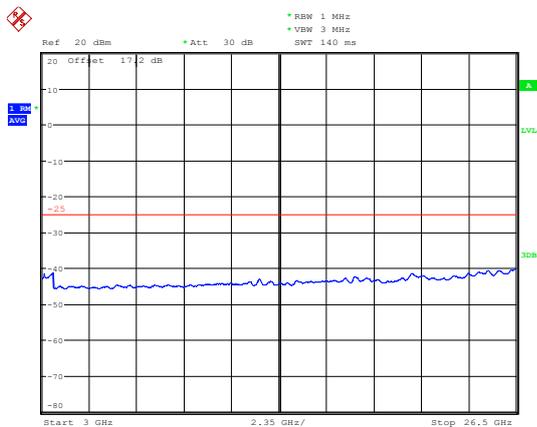
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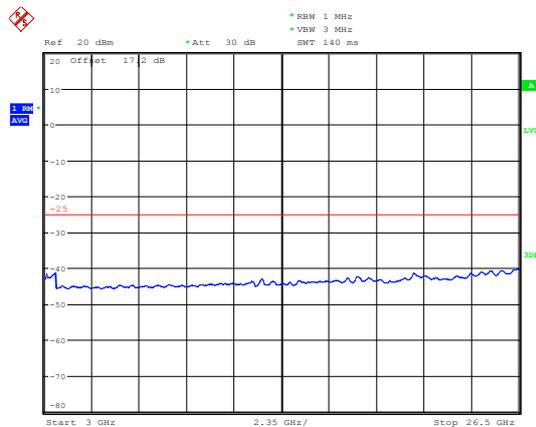
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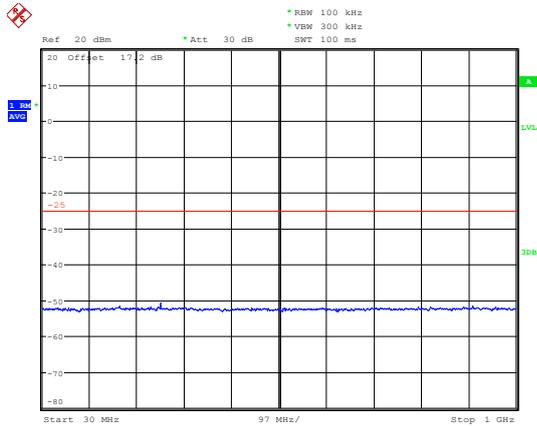
Date: 2.AUG.2019 15:53:27

LTE Band 38 20MHz CH-High 30MHz~1GHz

Date: 2.AUG.2019 15:53:35

LTE Band 38 20MHz CH-Middle 1GHz~3GHz

LTE Band 38 20MHz CH-High 1GHz~3GHz

LTE Band 38 20MHz CH-Middle 3GHz~26.5GHz

Date: 2.AUG.2019 16:29:35

LTE Band 38 20MHz CH-High 3GHz~26.5GHz

Date: 2.AUG.2019 16:29:45

LTE Band 41 5MHz CH-Low 30MHz~1GHz	LTE Band 41 5MHz CH-Middle 30MHz~1GHz
Date: 2.AUG.2019 14:12:39	Date: 2.AUG.2019 14:13:00
LTE Band 41 5MHz CH Low 1GHz~3GHz	LTE Band 41 5MHz CH-Middle 1GHz~3GHz
Date: 2.AUG.2019 14:18:07	Date: 2.AUG.2019 14:18:19
LTE Band 41 5MHz CH-Low 3GHz~27GHz	LTE Band 41 5MHz CH-Middle 3GHz~27GHz
Date: 2.AUG.2019 14:21:21	Date: 2.AUG.2019 14:21:32

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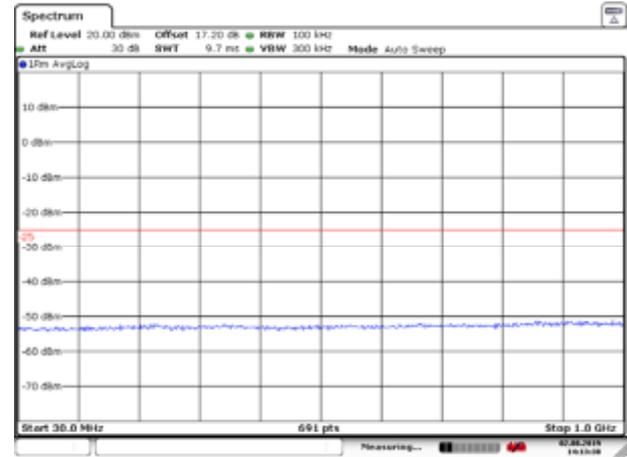
LTE Band 41 5MHz CH-High 30MHz~1GHz	LTE Band 41 10MHz CH-Low 30MHz~1GHz
Date: 2.AUG 2019 14:13:14	Date: 2.AUG 2019 14:13:38
LTE Band 41 5MHz CH-High 1GHz~3GHz	LTE Band 41 10MHz CH-Low 1GHz~3GHz
Date: 2.AUG 2019 14:18:32	Date: 2.AUG 2019 14:18:50
LTE Band 41 5MHz CH-High 3GHz~27GHz	LTE Band 41 10MHz CH-Low 3GHz~27GHz
Date: 2.AUG 2019 14:21:40	Date: 2.AUG 2019 14:21:52
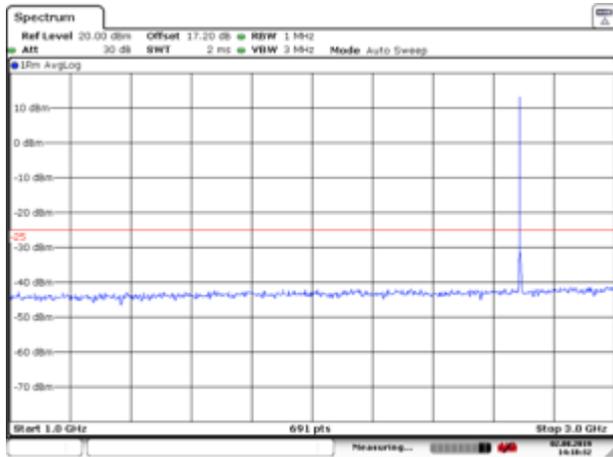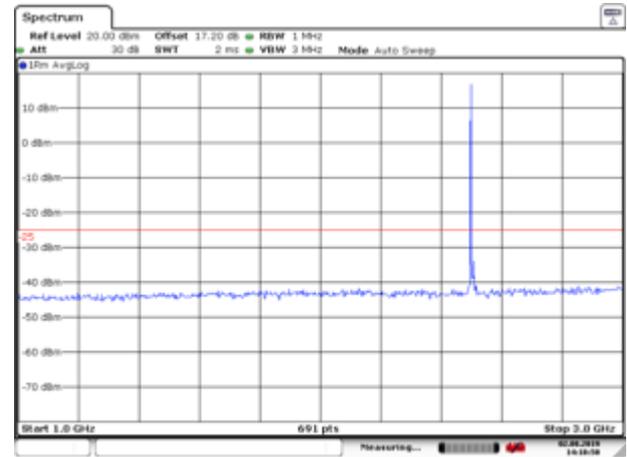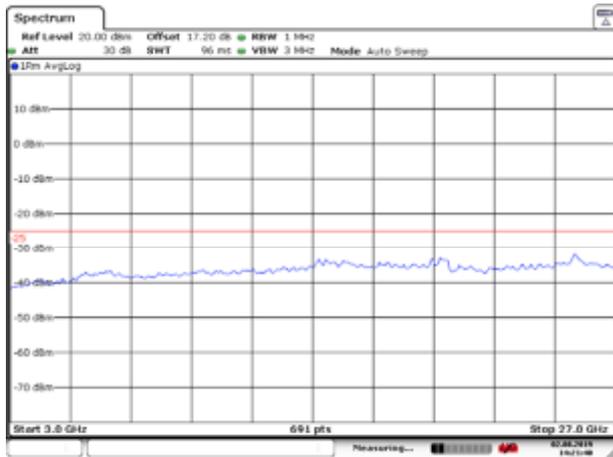
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LTE Band 41 10MHz CH-Middle 1GHz~3GHz	LTE Band 41 10MHz CH-High 1GHz~3GHz
Date: 2.AUG 2019 14:19:04	Date: 2.AUG 2019 14:19:13
LTE Band 41 10MHz CH-Middle 3GHz~27GHz	LTE Band 4110MHz CH-High 3GHz~27GHz
Date: 2.AUG 2019 14:22:02	Date: 2.AUG 2019 14:22:12
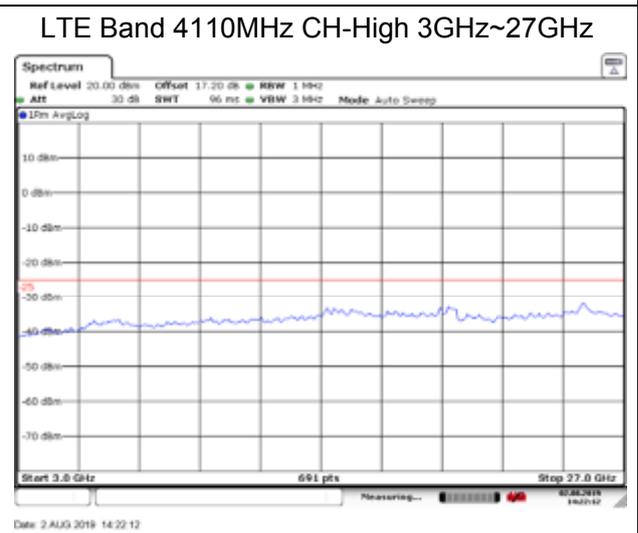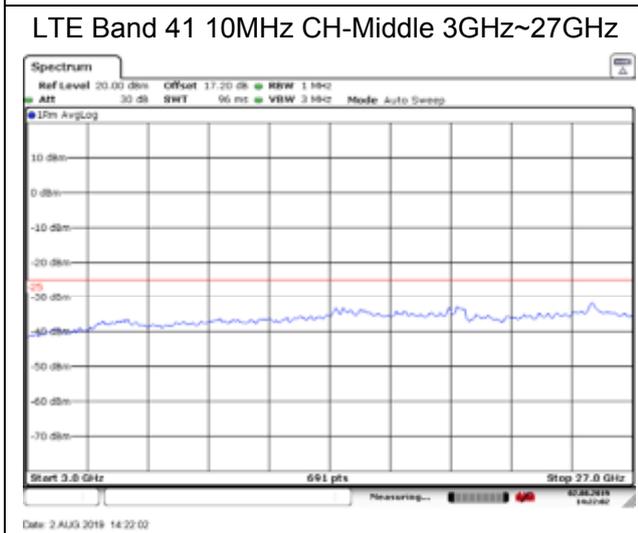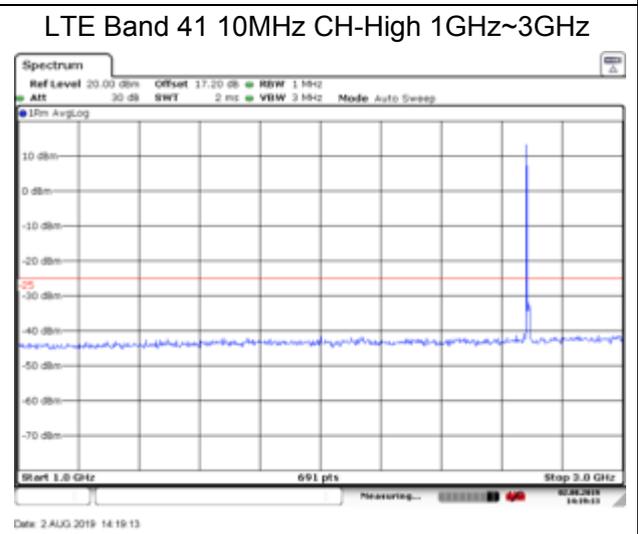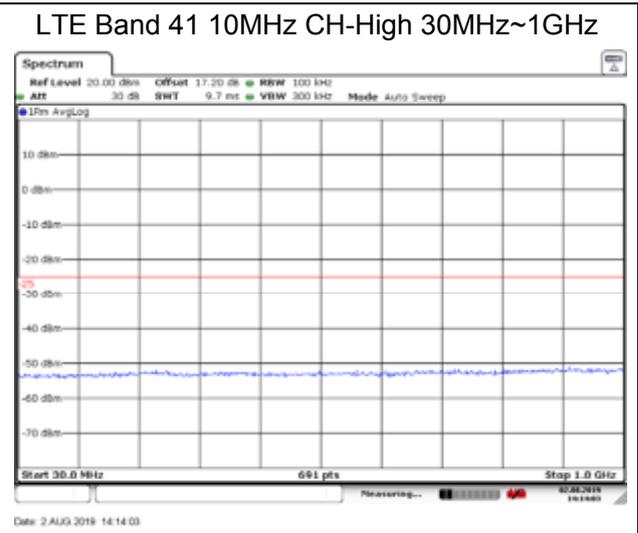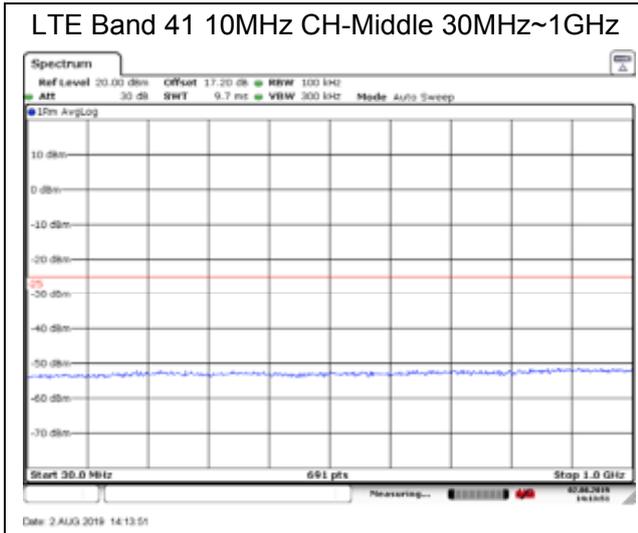
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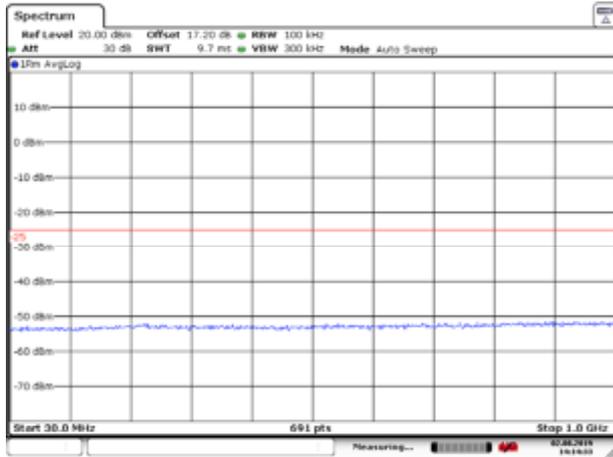
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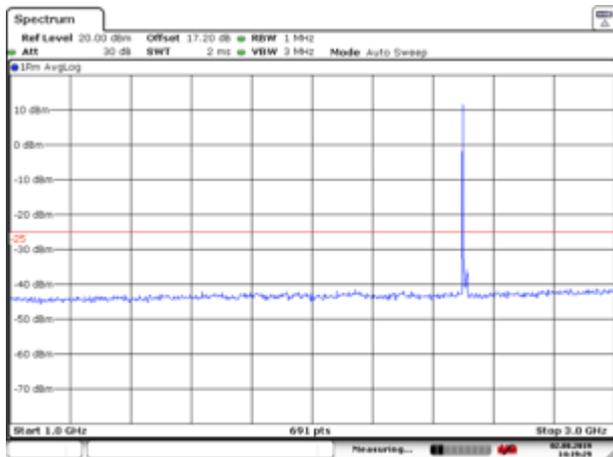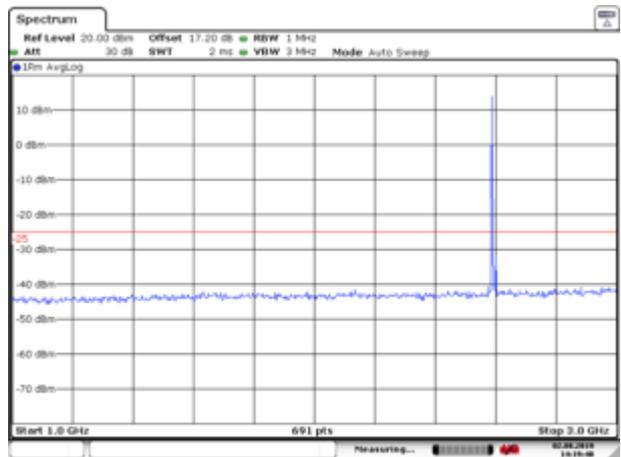
LTE Band 41 15MHz CH-Low 3GHz~27GHz	LTE Band 41 15MHz CH-Middle 3GHz~27GHz
Date: 2 AUG 2019 14:22:36	Date: 2 AUG 2019 14:22:44

LTE Band 41 15MHz CH-High 30MHz~1GHz	LTE Band 41 20MHz CH-Low 30MHz~1GHz
LTE Band 41 15MHz CH-High 1GHz~3GHz	LTE Band 41 20MHz CH-Low 1GHz~3GHz
LTE Band 41 15MHz CH-High 3GHz~27GHz	LTE Band 41 20MHz CH-Low 3GHz~27GHz
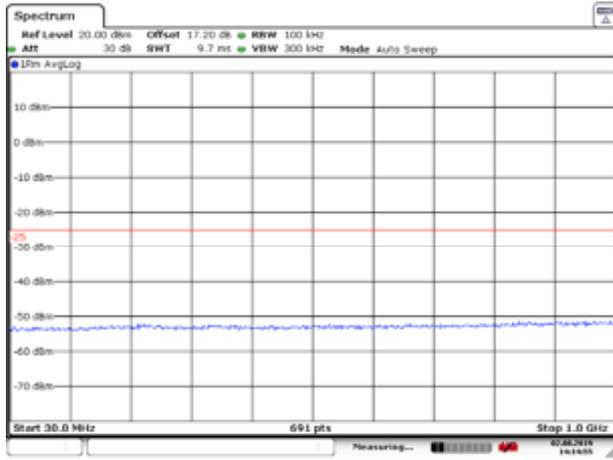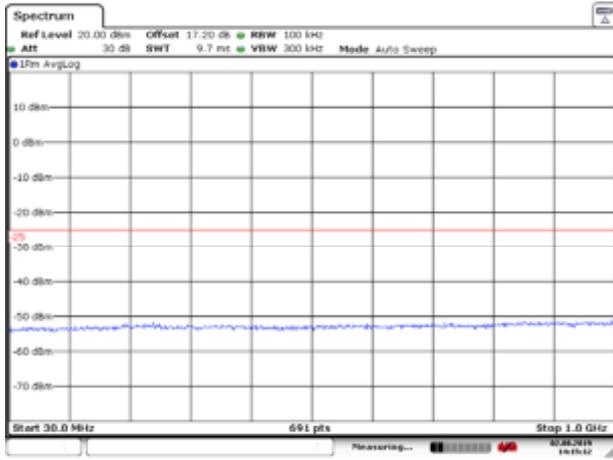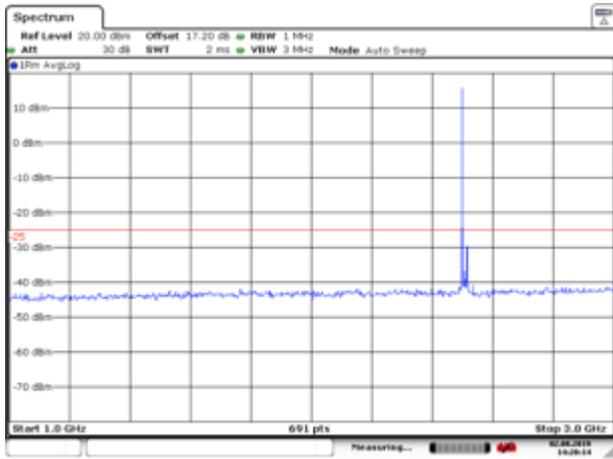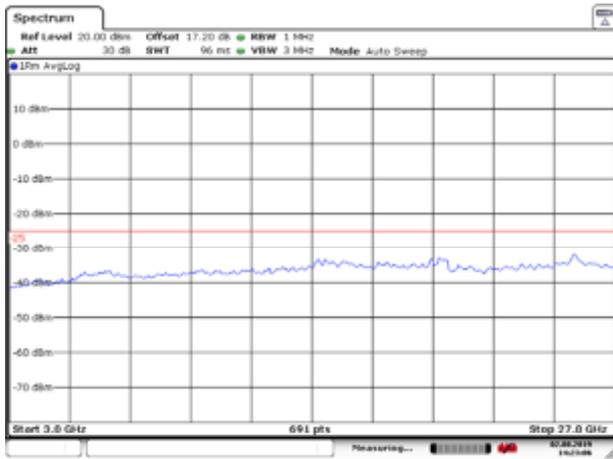
LTE Band 41 20MHz CH-Middle 30MHz~1GHz	LTE Band 41 20MHz CH-High 30MHz~1GHz
LTE Band 41 20MHz CH-Middle 1GHz~3GHz	LTE Band 41 20MHz CH-High 1GHz~3GHz
LTE Band 41 20MHz CH-Middle 3GHz~27GHz	LTE Band 41 20MHz CH-High 3GHz~27GHz
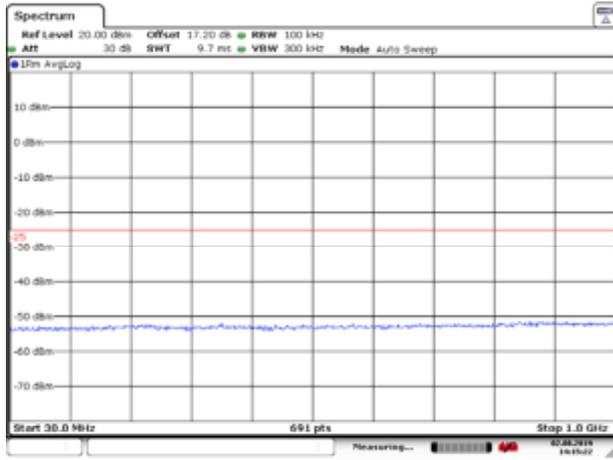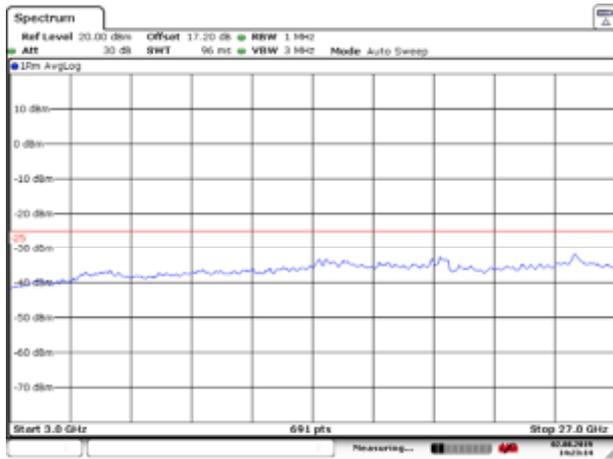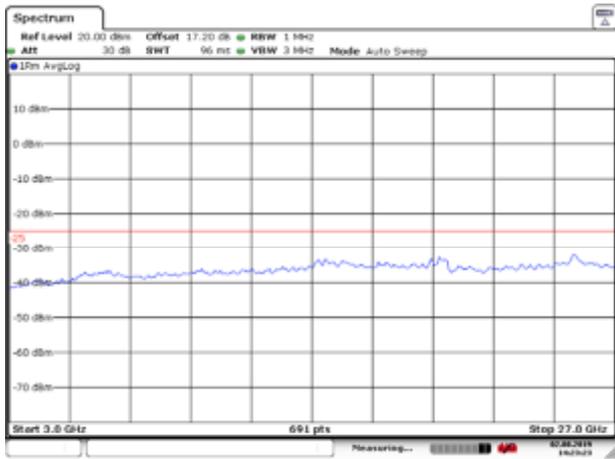
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CA-7C 20MHz+10MHz CH-Low QPSK 1GHz~3GHz	CA-7C 20MHz+10MHz CH-Middle QPSK 1GHz~3GHz
Date: 5.AUG.2019 18:57:25	Date: 5.AUG.2019 18:57:25
CA-7C 20MHz+10MHz CH-Low QPSK 3GHz~26GHz	CA-7C 20MHz+10MHz CH-Middle QPSK 3GHz~26GHz
Date: 5.AUG.2019 18:58:22	Date: 5.AUG.2019 19:19:37
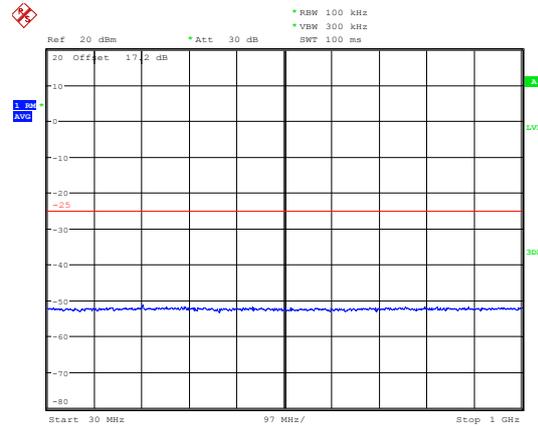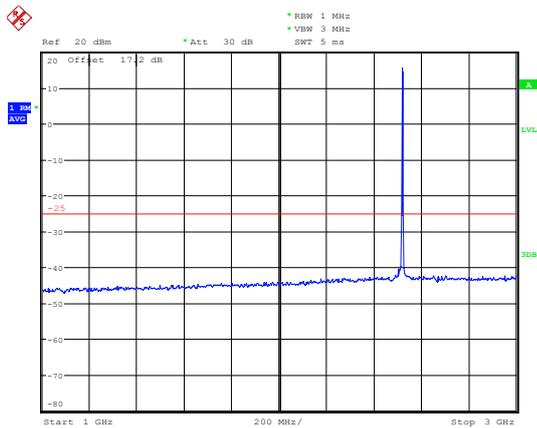
TA Technology (Shanghai) Co., Ltd.   **TA-MB-05-003R**   **Page 238 of 310**

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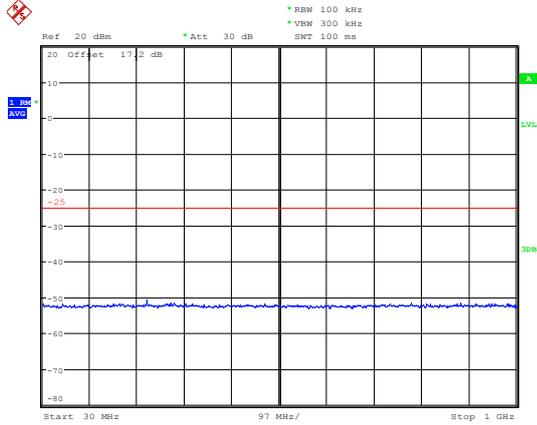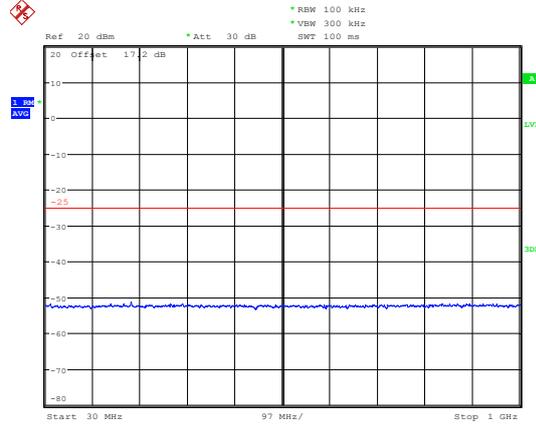
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Date: 5.AUG.2019 19:25:43	Date: 5.AUG.2019 18:56:04
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Date: 5.AUG.2019 19:26:58	Date: 5.AUG.2019 18:57:42
CA-7C 20MHz+10MHz CH-High QPSK 3GHz~26GHz	CA-7C 20MHz+10MHz CH-Low 16QAM 3GHz~26GHz
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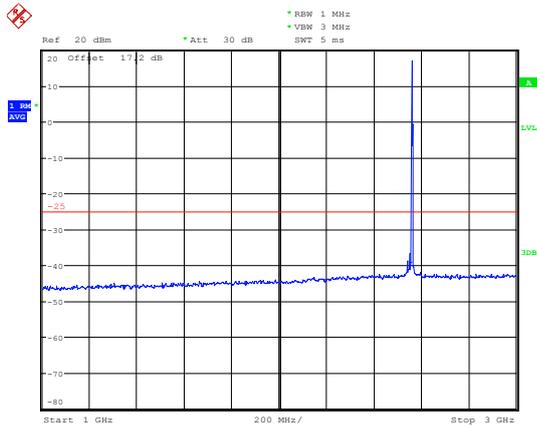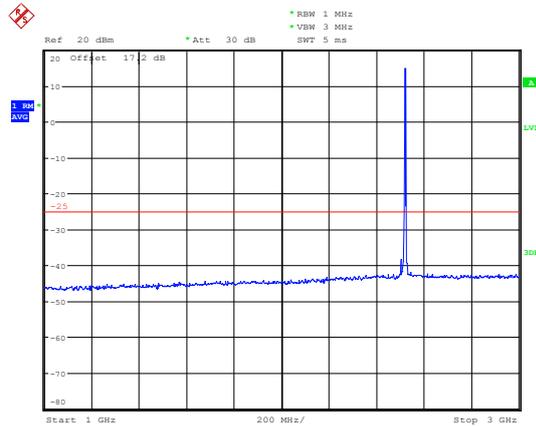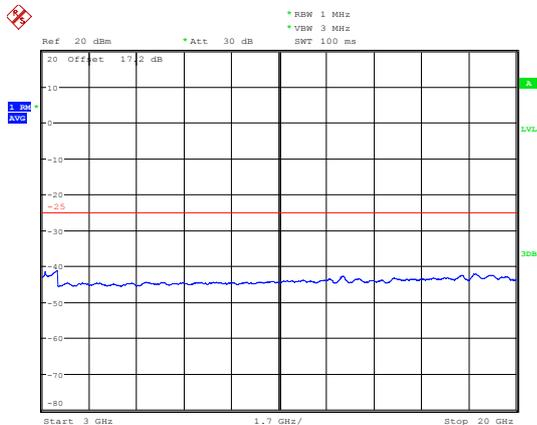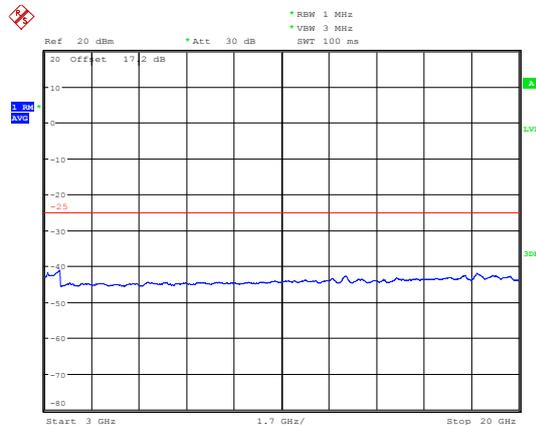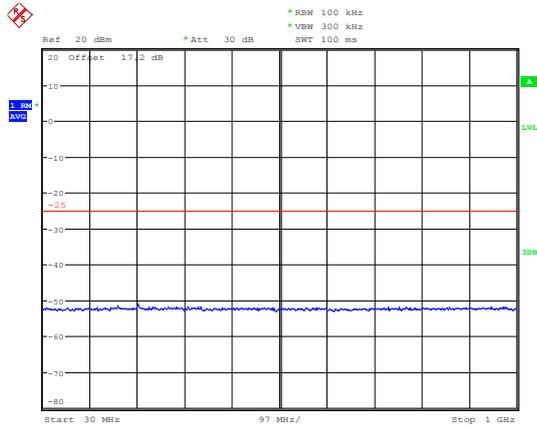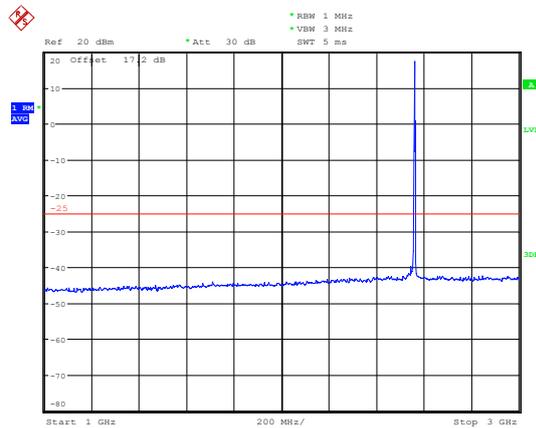
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Date: 5.AUG.2019 19:22:32	Date: 5.AUG.2019 19:26:10
CA-7C 20MHz+10MHz CH-Middle 16QAM 1GHz~3GHz	CA-7C 20MHz+10MHz CH- High 16QAM 1GHz~3GHz
Date: 5.AUG.2019 18:57:42	Date: 5.AUG.2019 19:27:10
CA-7C 20MHz+10MHz CH-Middle 16QAM 3GHz~26GHz	CA-7C 20MHz+10MHz CH- High 16QAM 3GHz~26GHz
Date: 5.AUG.2019 19:19:46	Date: 5.AUG.2019 19:28:17
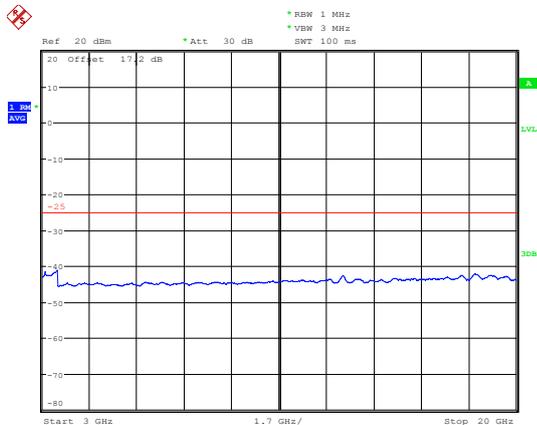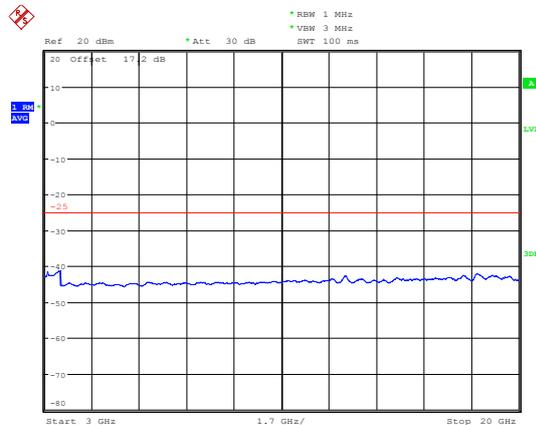
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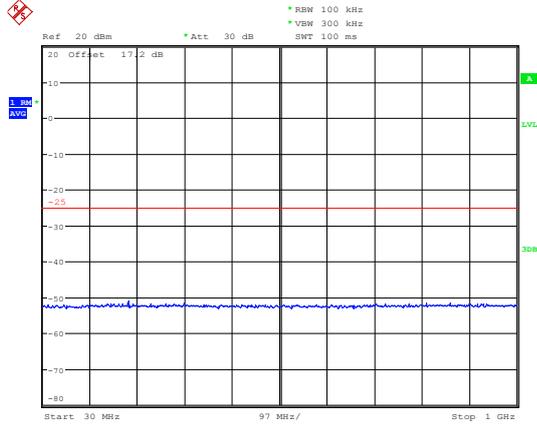
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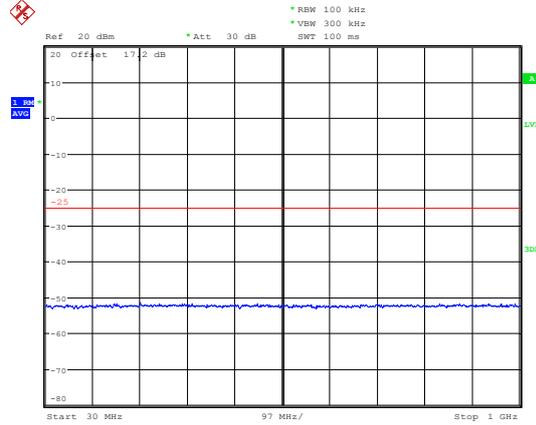
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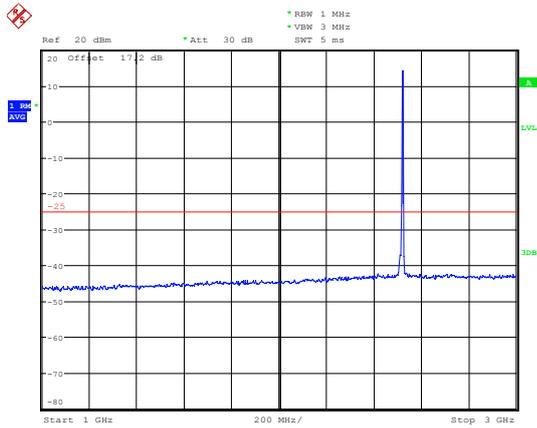
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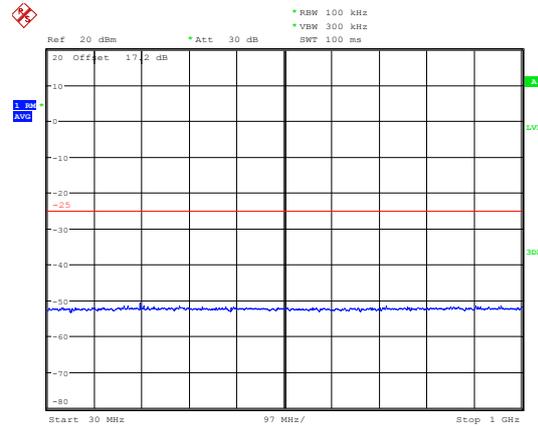### CA-7C 20MHz+10MHz CH-Middle 64QAM 1GHz~3GHz
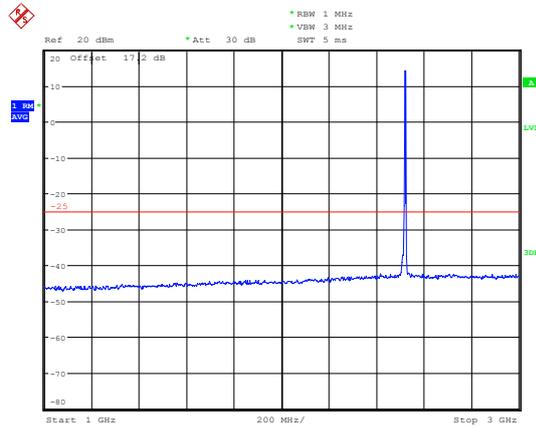
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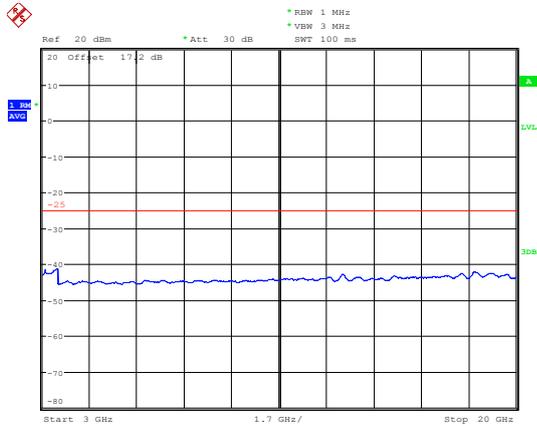
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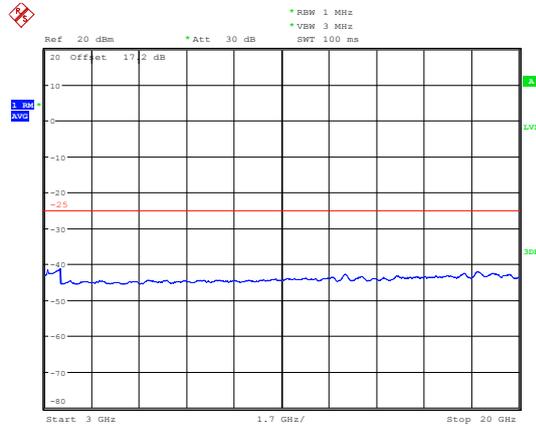
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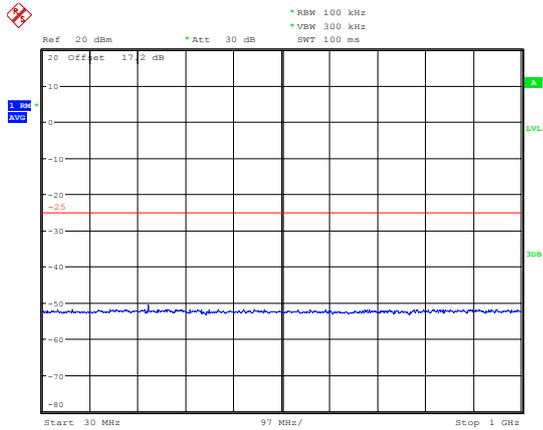
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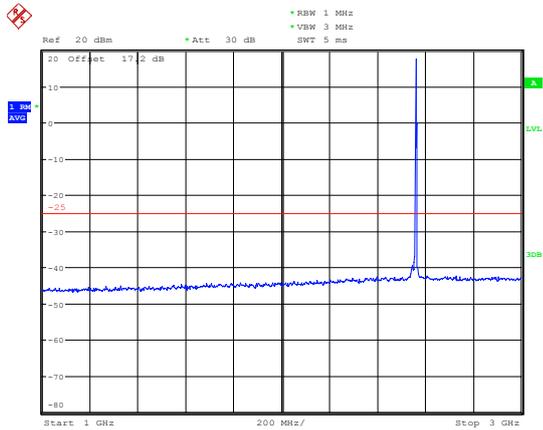
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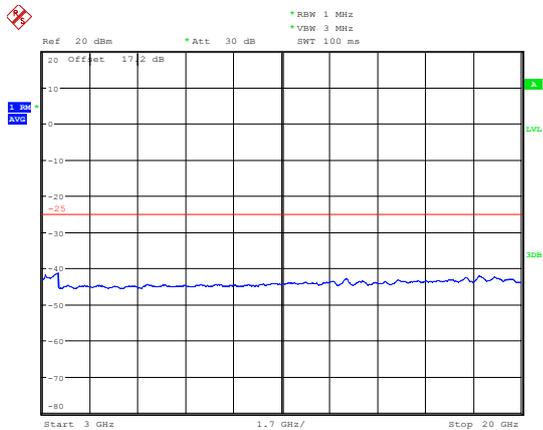
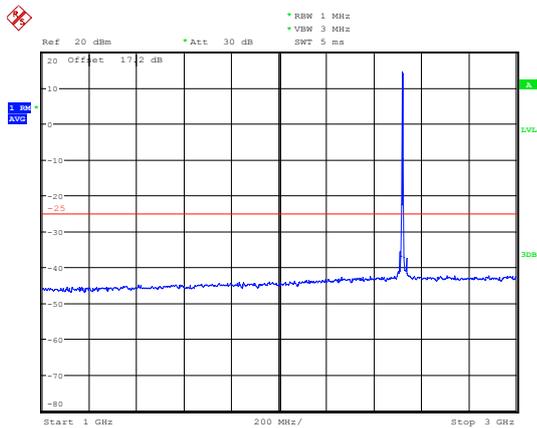Date: 5.AUG.2019 19:28:40

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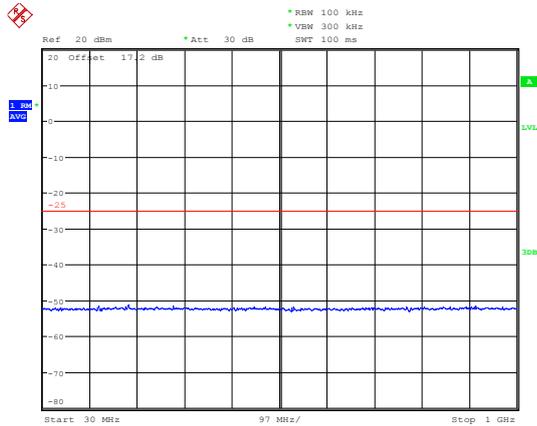
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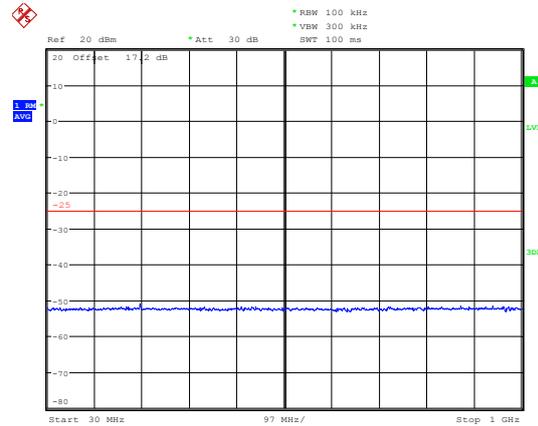
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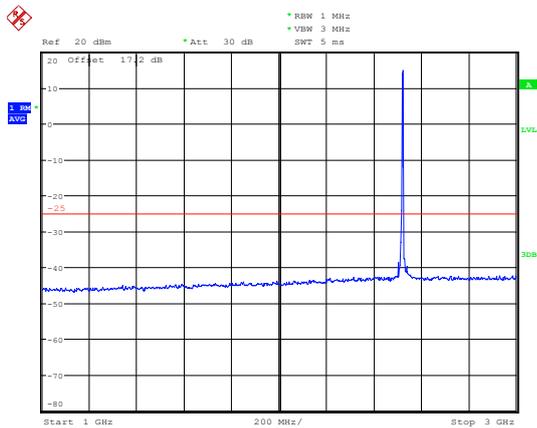
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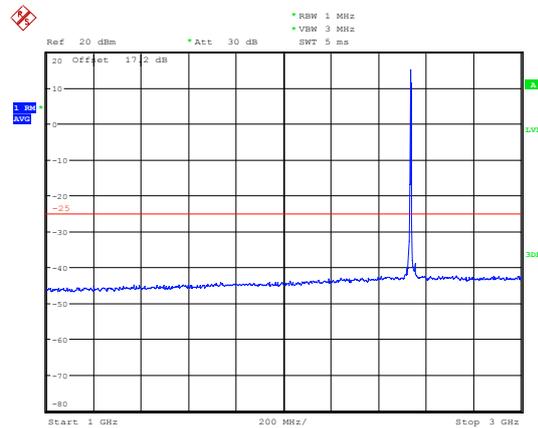
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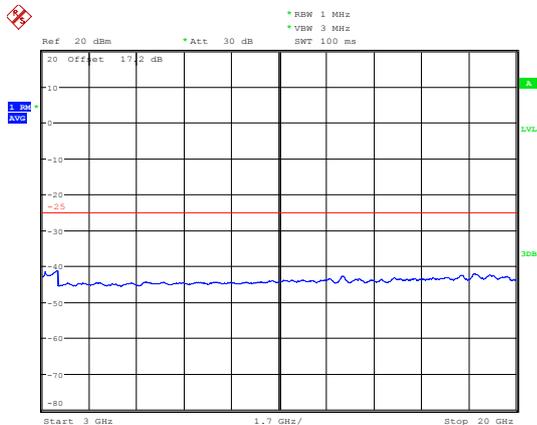
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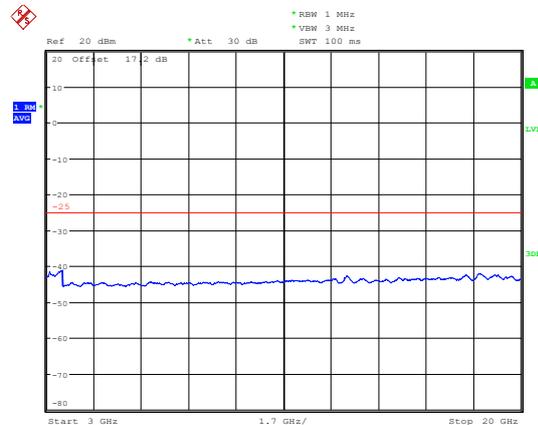
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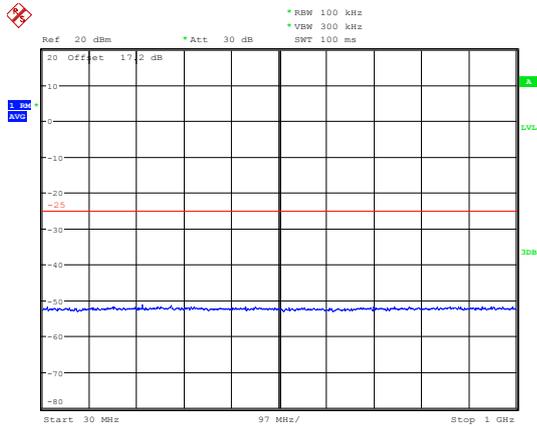
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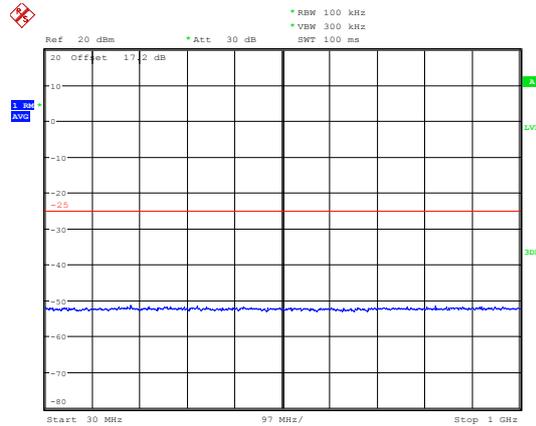
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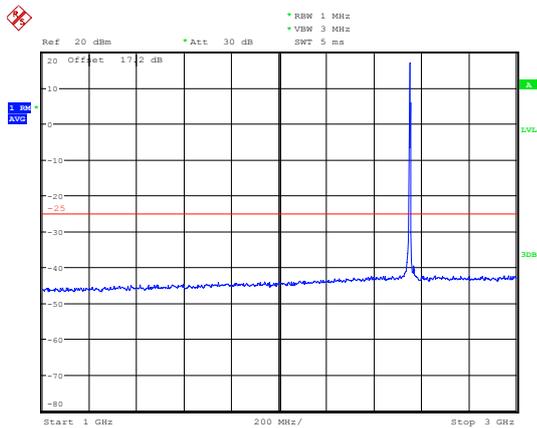
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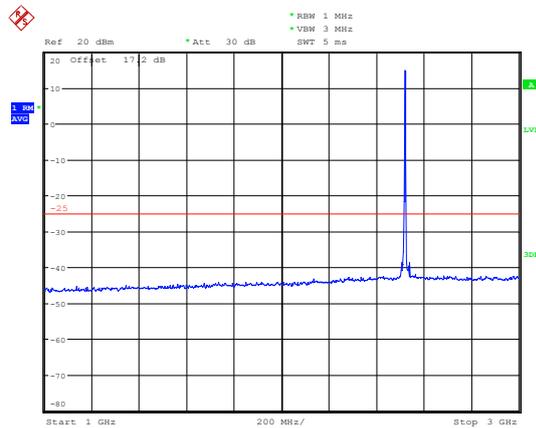
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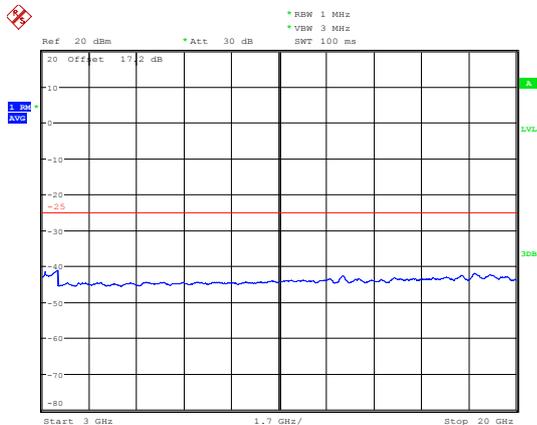
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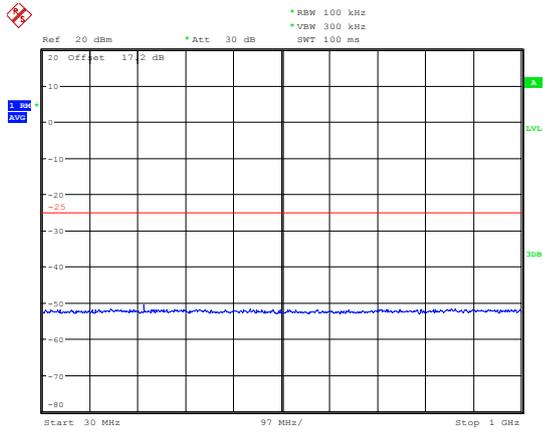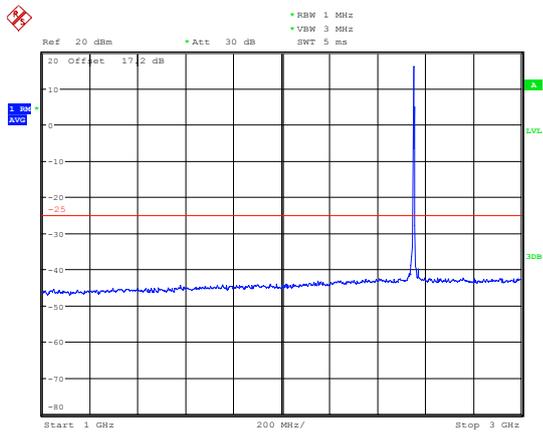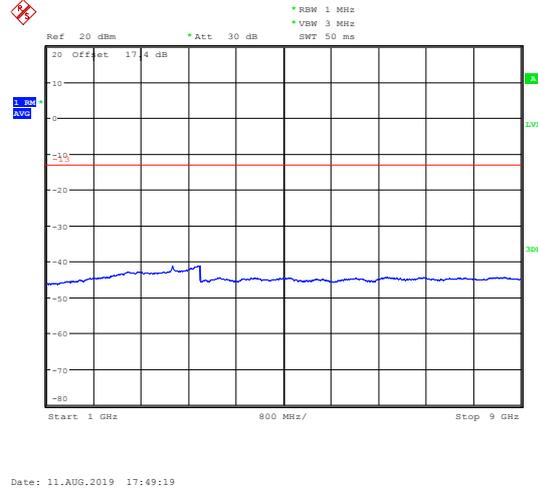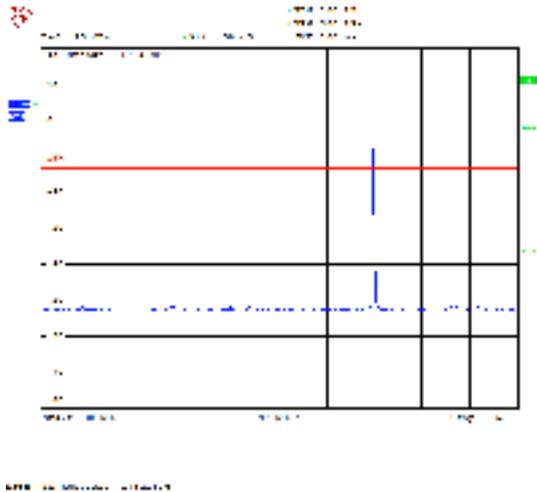## CA-7C 20MHz+20MHz CH-Low 16QAM 3GHz~26GHz
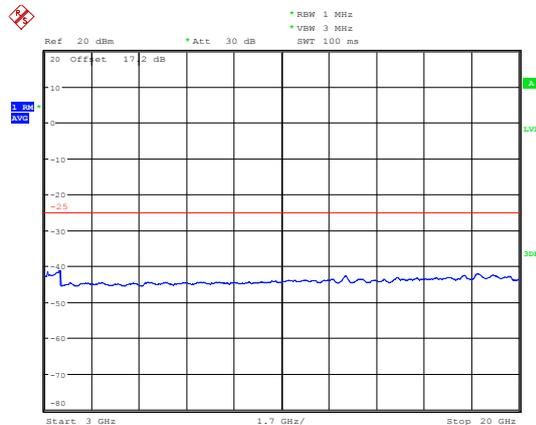
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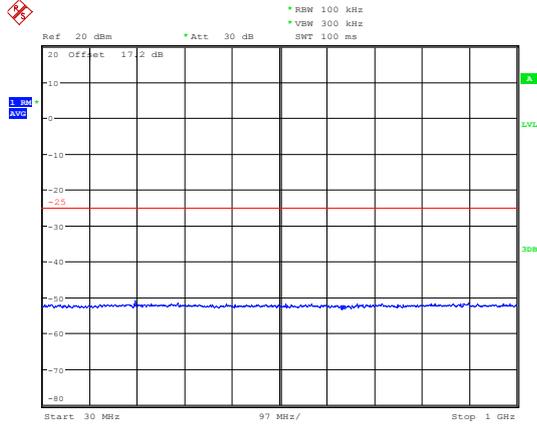
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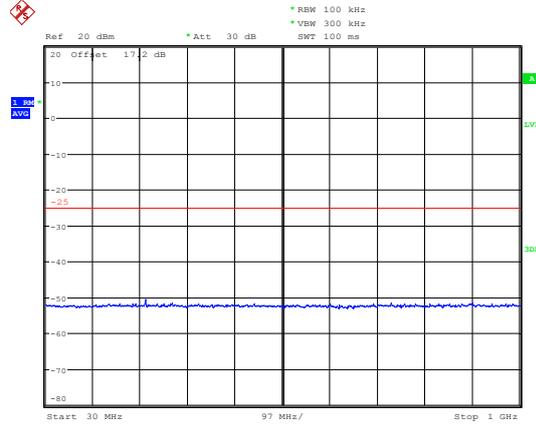
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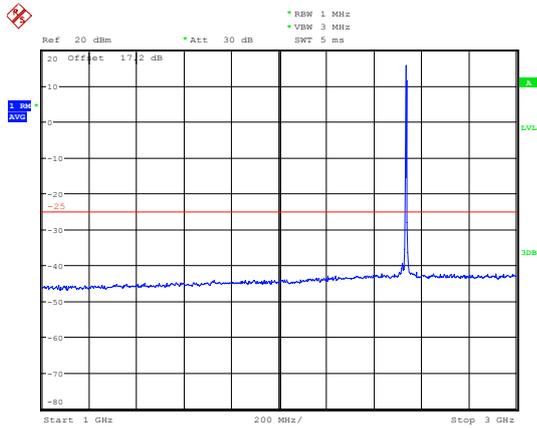
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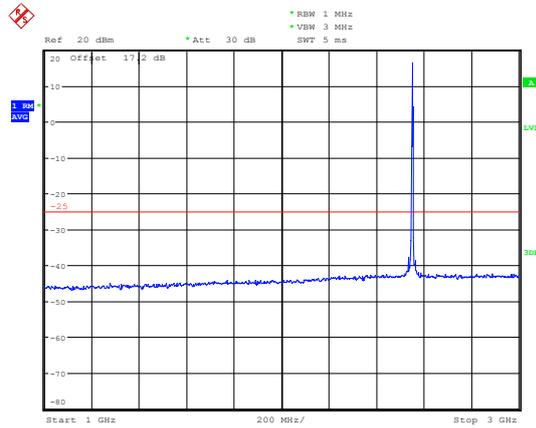
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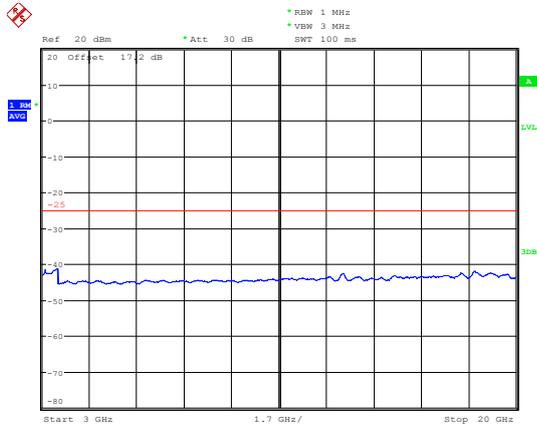
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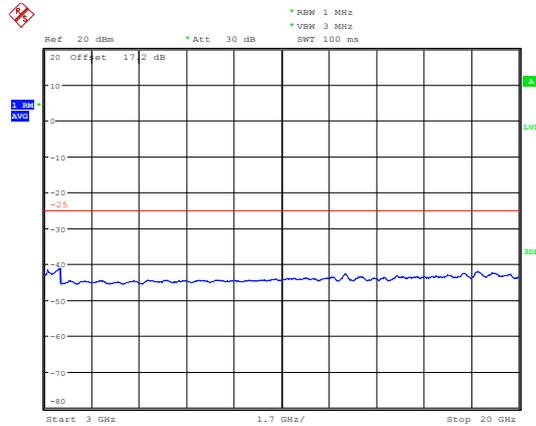
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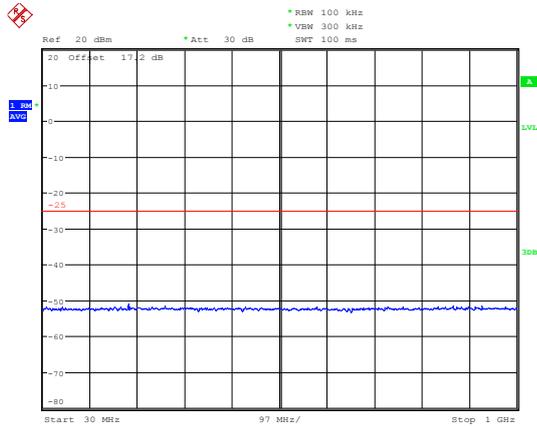
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Date: 5.AUG.2019 21:16:06

CA-7C 20MHz+20MHz CH-Low 64QAM 1GHz~3GHz

Date: 5.AUG.2019 21:10:34

CA-7C 20MHz+20MHz CH-Middle 64QAM 1GHz~3GHz
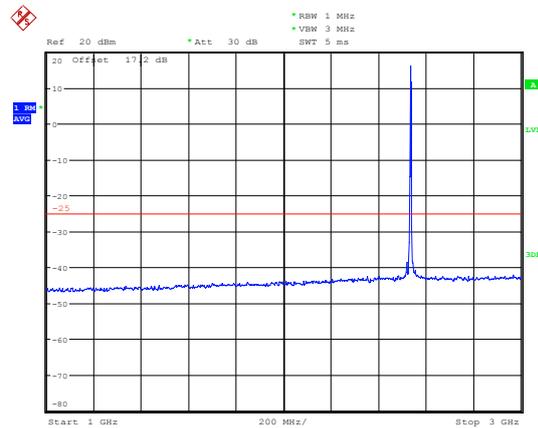
Date: 5.AUG.2019 21:16:51

CA-7C 20MHz+20MHz CH-Low 64QAM 3GHz~26GHz
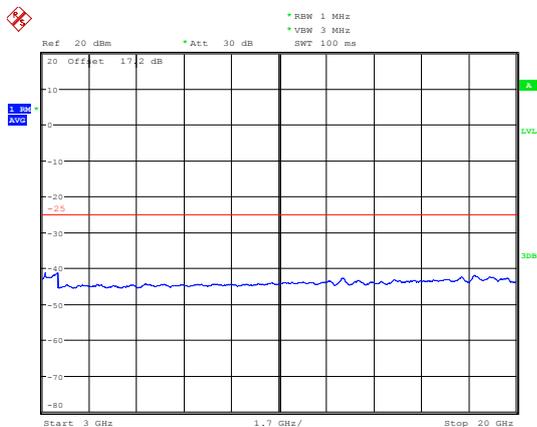
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CA-7C 20MHz+20MHz CH-Middle 64QAM 3GHz~26GHz
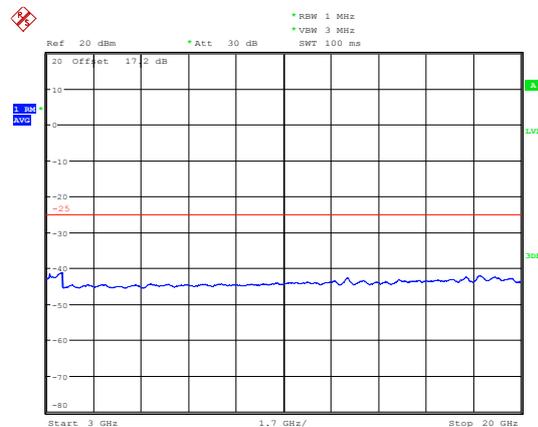
Date: 5.AUG.2019 21:17:47

CA-7C 20MHz+20MHz CH-High 64QAM
30MHz~1GHz

Date: 5.AUG.2019 21:25:18

CA-7C 20MHz+20MHz CH-High 64QAM
1GHz~3GHz

Date: 5.AUG.2019 21:23:52

CA-7C 20MHz+20MHz CH-High 64QAM
3GHz~26GHz
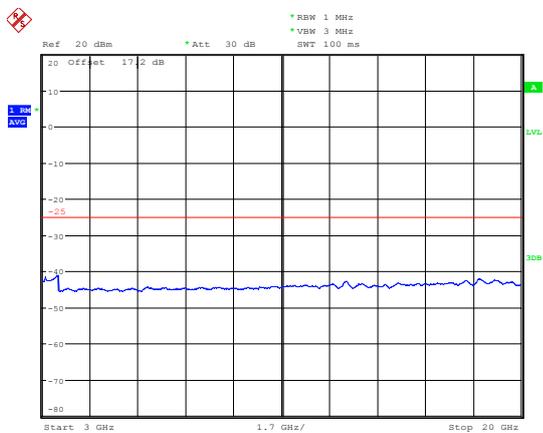
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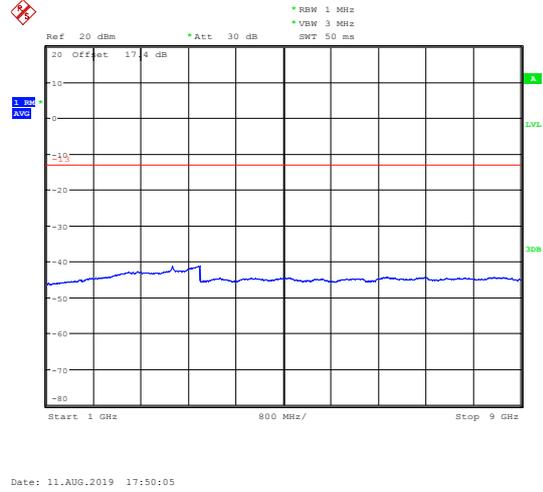| CA-12B 5MHz+5MHz CH-Low QPSK 30MHz~1GHz	CA-12B 5MHz+5MHz CH-Low QPSK 1GHz~9GHz
	Date: 11.AUG.2019 17:49:19
CA-12B 5MHz+5MHz CH-Middle QPSK 30MHz~1GHz	CA-12B 5MHz+5MHz CH-Middle QPSK 1GHz~9GHz
	Date: 11.AUG.2019 17:51:55
CA-12B 5MHz+5MHz CH-High QPSK 30MHz~1GHz	CA-12B 5MHz+5MHzCH-High QPSK 1GHz~9GHz
	Date: 11.AUG.2019 17:54:29
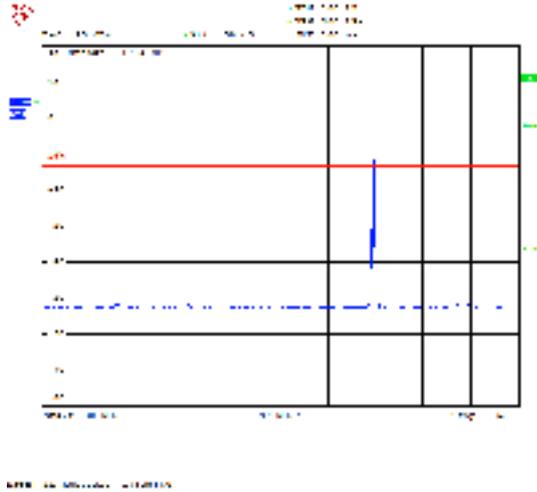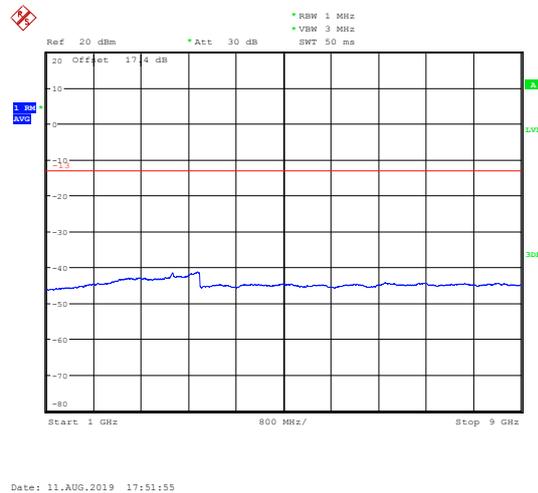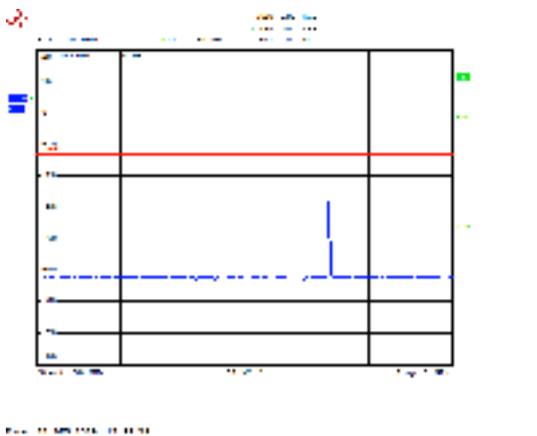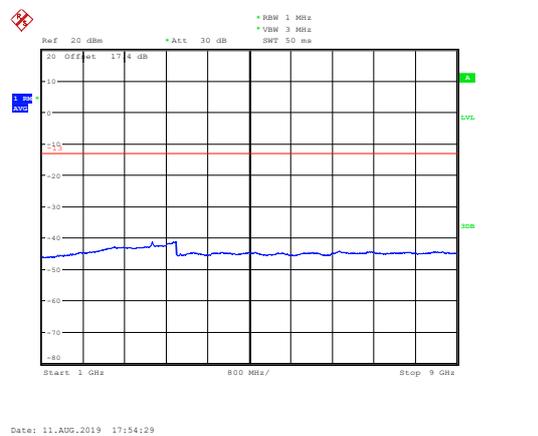
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CA-12B 5MHz+5MHz CH-High 16QAM 30MHz~1GHz	CA-12B 5MHz+5MHzCH-High 16QAM 1GHz~9GHz
	Date: 11.AUG.2019 17:54:56
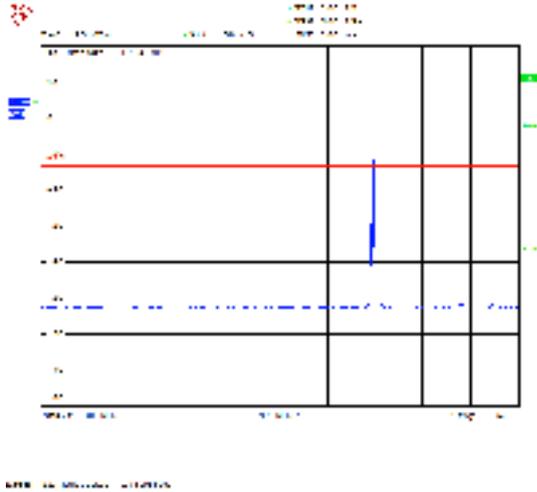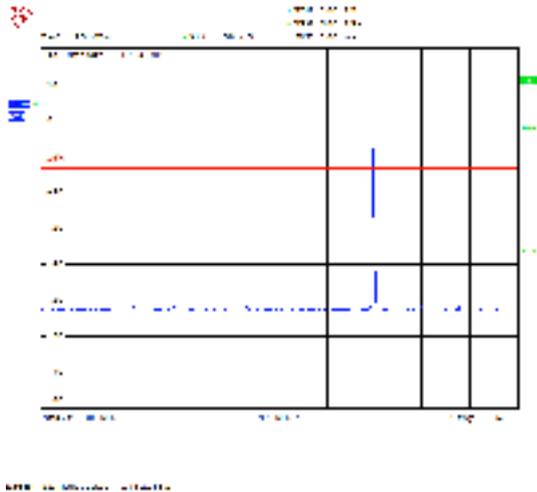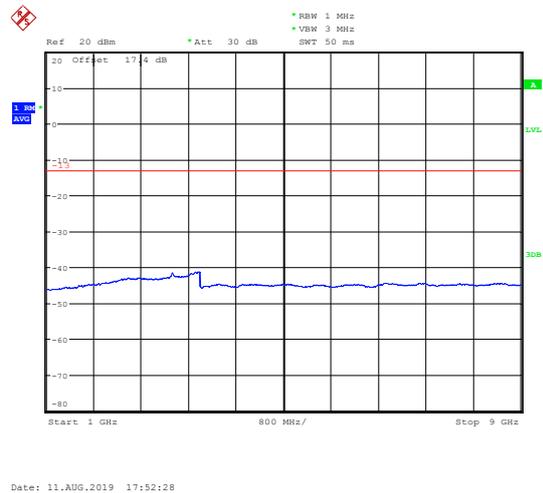
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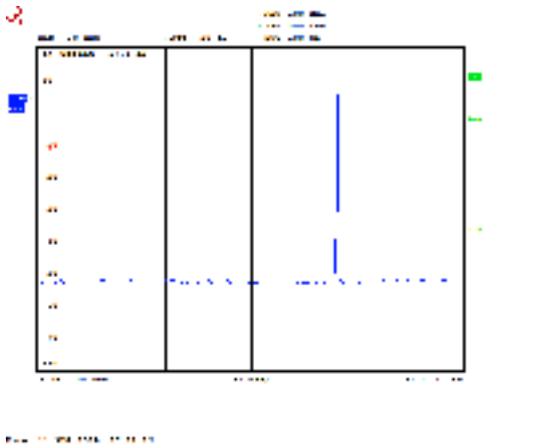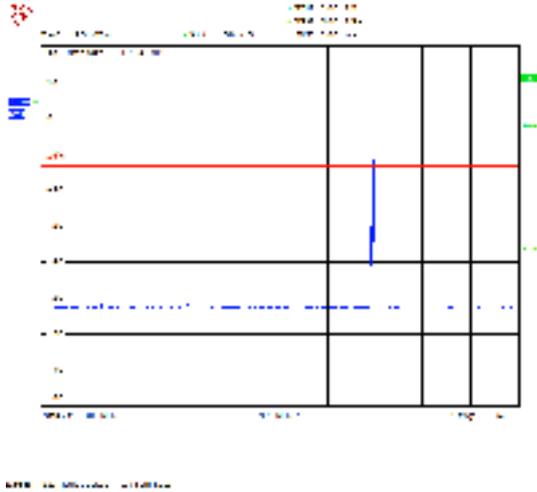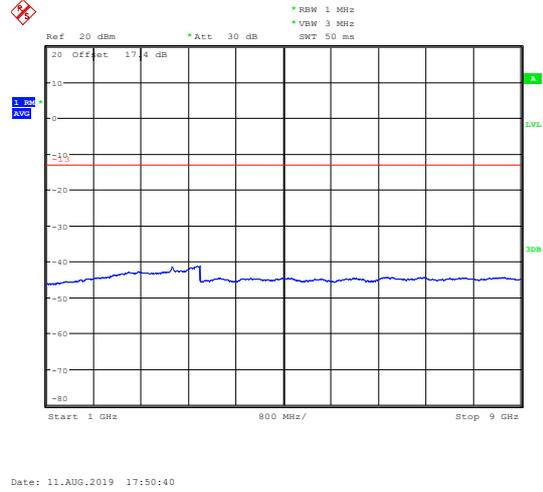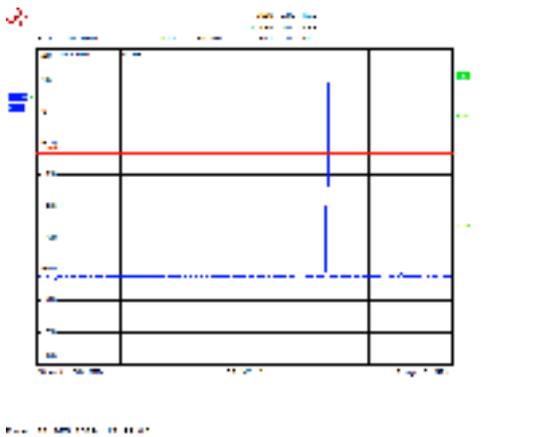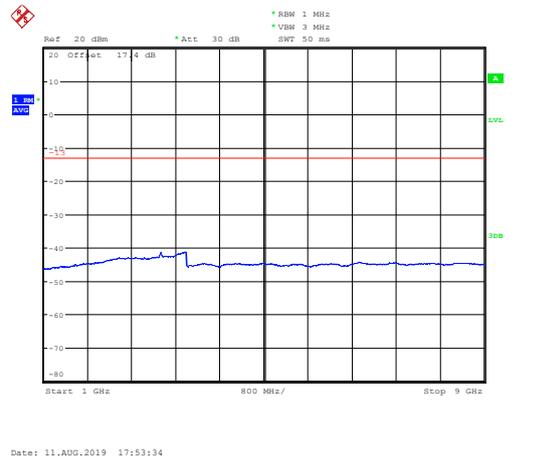
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CA-12B 5MHz+5MHz CH-Middle 64QAM 30MHz~1GHz	CA-12B 5MHz+5MHz CH-Middle 64QAM 1GHz~9GHz
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CA-12B 5MHz+5MHz CH-High 64QAM 30MHz~1GHz	CA-12B 5MHz+5MHzCH-High 64QAM 1GHz~9GHz
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