



LTE Band 13 16QAM 5MHz CH-Low, 100%RB (763MHz ~775MHz)



LTE Band 13 16QAM 5MHz CH-Low, 100%RB (775MHz ~777MHz)



LTE Band 13 16QAM 5MHz CH-High, 100%RB (787MHz ~793MHz)



LTE Band 13 16QAM 5MHz CH-High, 100%RB (793MHz ~805MHz)





LTE Band 13 16QAM 10MHz CH-Low, 1 RB
(763MHz ~775MHz)



LTE Band 13 16QAM 10MHz CH-Low, 1 RB
(775MHz ~777MHz)



LTE Band 13 16QAM 10MHz CH-High, 1 RB
(787MHz ~793MHz)



LTE Band 13 16QAM 10MHz CH-High, 1 RB
(793MHz ~805MHz)





LTE Band 13 16QAM 10MHz CH-Low, 100%RB (763MHz ~775MHz)



LTE Band 13 16QAM 10MHz CH-Low, 100%RB (775MHz ~777MHz)



LTE Band 13 16QAM 10MHz CH-High, 100%RB (787MHz ~793MHz)

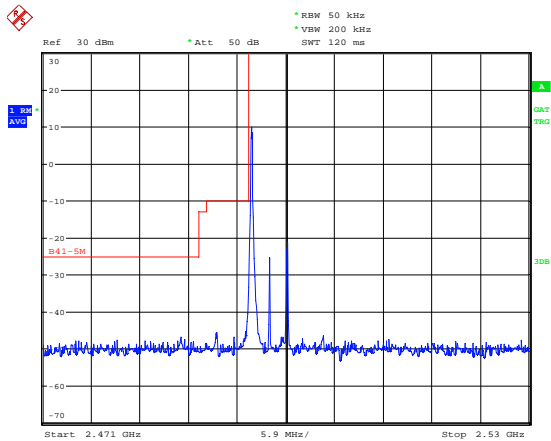


LTE Band 13 16QAM 10MHz CH-High, 100%RB (793MHz ~805MHz)



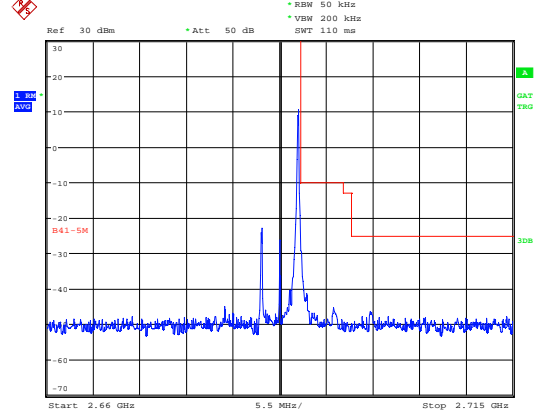


LTE Band 41 QPSK 5MHz CH-Low, 1 RB



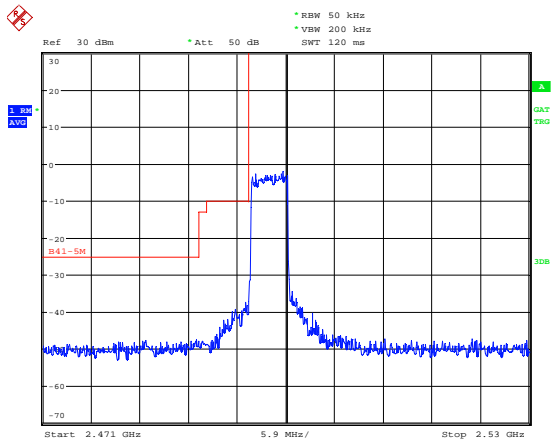
Date: 4.JUN.2019 16:10:32

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



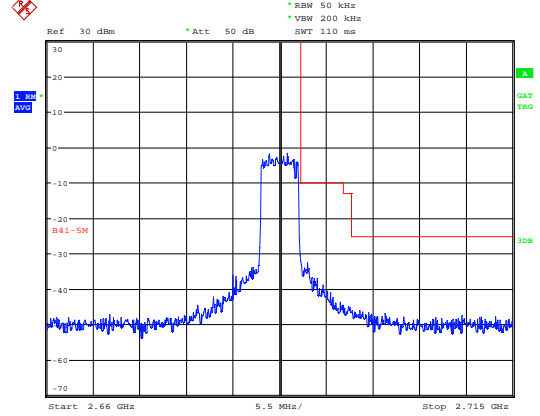
Date: 4.JUN.2019 16:49:37

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



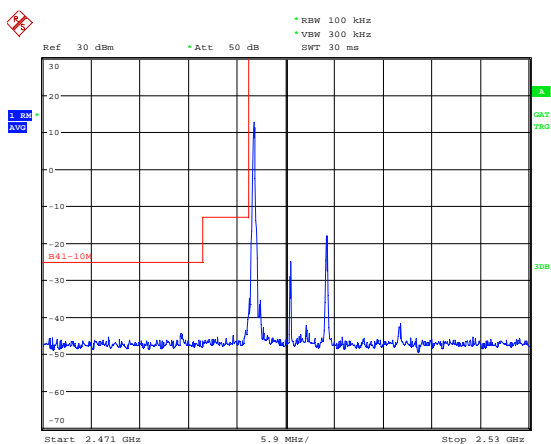
Date: 4.JUN.2019 16:11:11

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



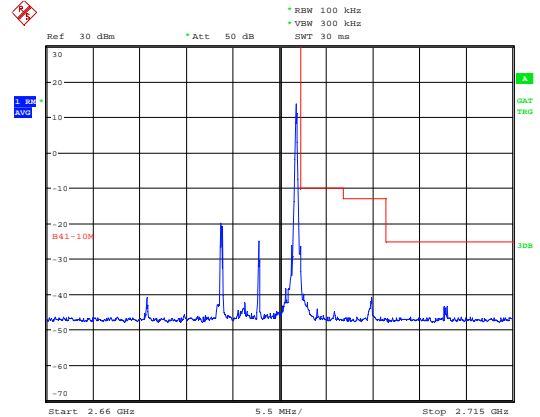
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LTE Band 41 QPSK 10MHz CH-Low, 1 RB



Date: 4.JUN.2019 16:15:06

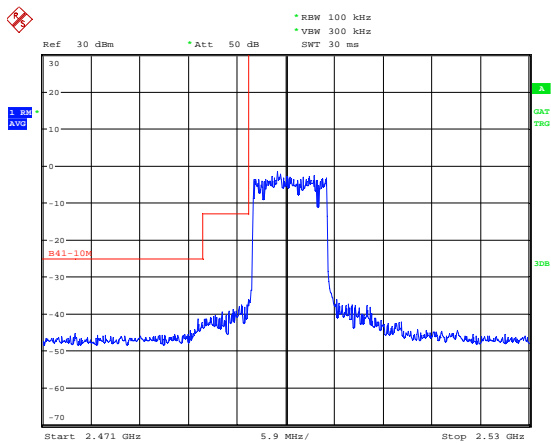
LTE Band 41 QPSK 10MHz CH-High, 1 RB



Date: 4.JUN.2019 16:47:21

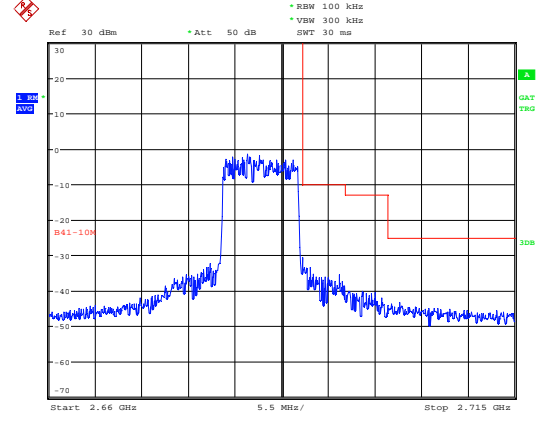


LTE Band 41 QPSK 10MHz CH-Low, 100%RB



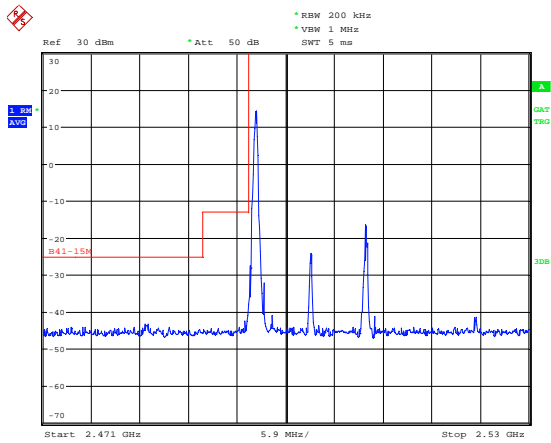
Date: 4.JUN.2019 16:15:54

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



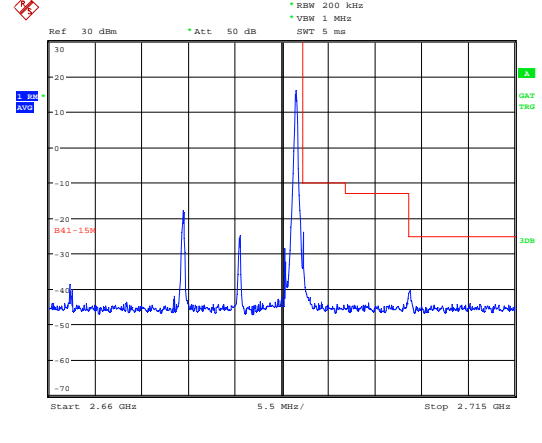
Date: 4.JUN.2019 16:48:10

LTE Band 41 QPSK 15MHz CH-Low, 1 RB



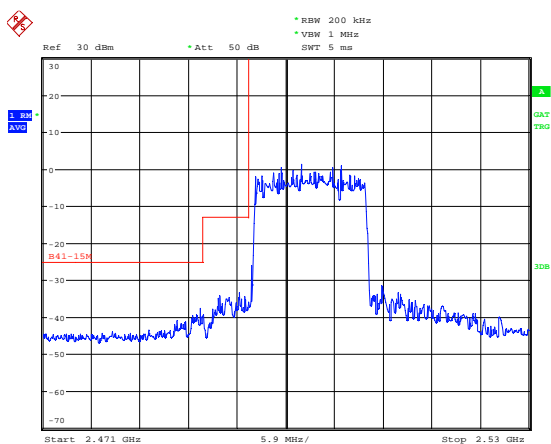
Date: 4.JUN.2019 16:17:50

LTE Band 41 QPSK 15MHz CH-High, 1 RB



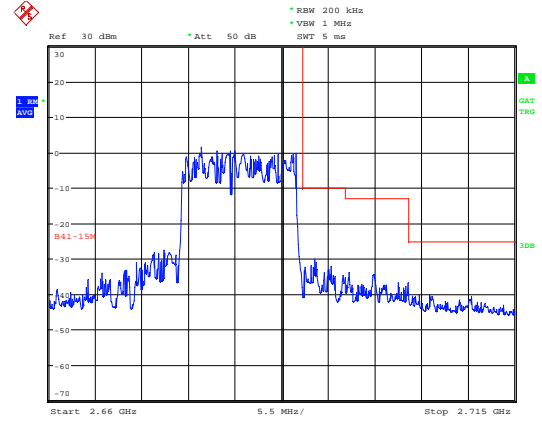
Date: 4.JUN.2019 16:34:53

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



Date: 4.JUN.2019 16:18:27

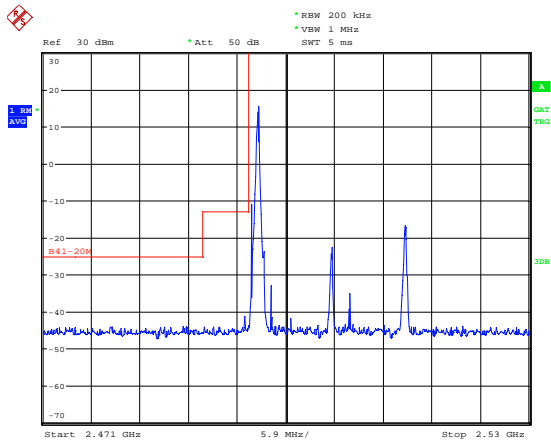
LTE Band 41 QPSK 15MHz CH-High, 100%RB



Date: 4.JUN.2019 16:35:31

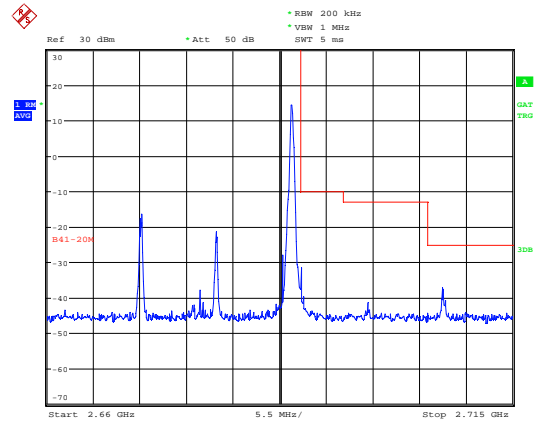


LTE Band 41 QPSK 20MHz CH-Low, 1 RB



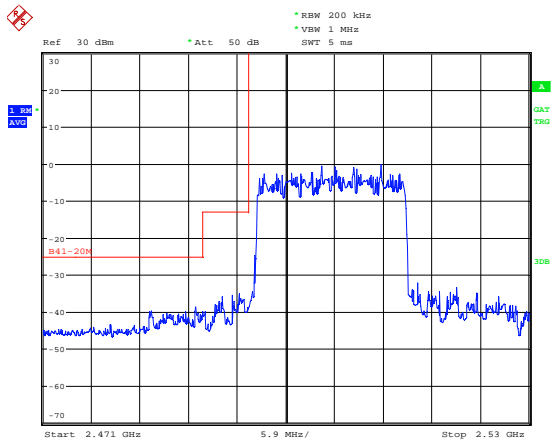
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LTE Band 41 QPSK 20MHz CH-High, 1 RB



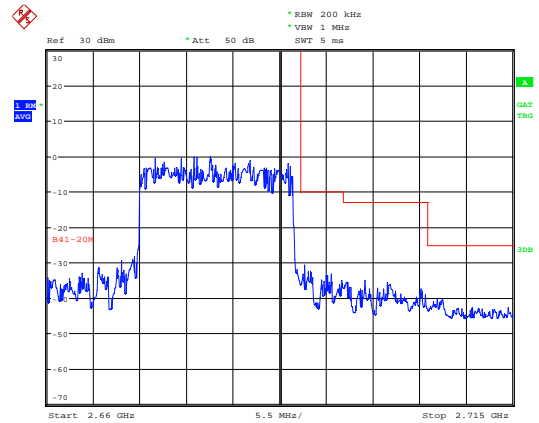
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LTE Band 41 QPSK 20MHz CH-Low, 100%RB



Date: 4.JUN.2019 16:23:46

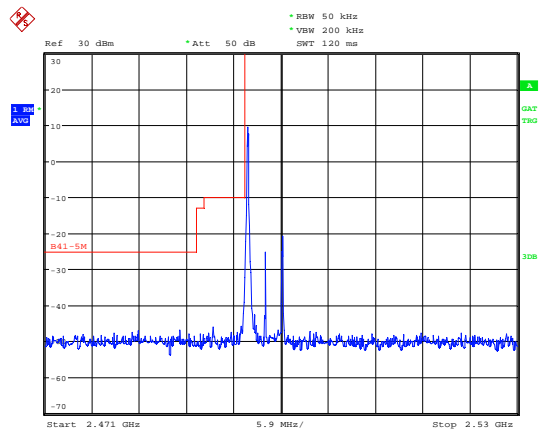
LTE Band 41 QPSK 20MHz CH-High, 100%RB



Date: 4.JUN.2019 16:30:21

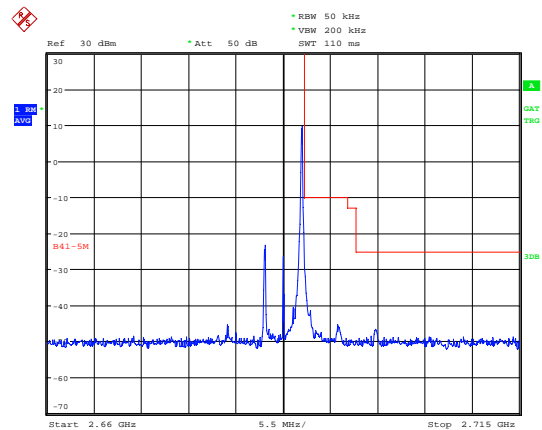


LTE Band 41 16QAM 5MHz CH-Low, 1 RB



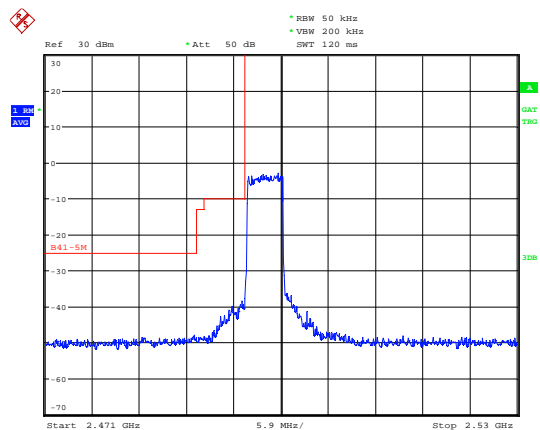
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LTE Band 41 16QAM 5MHz CH-High, 1 RB



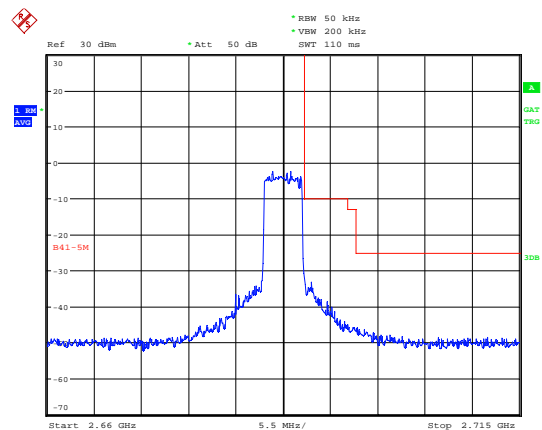
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LTE Band 41 16QAM 5MHz CH-Low, 100%RB



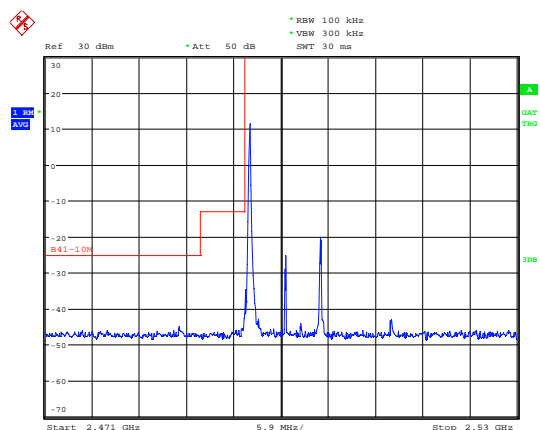
Date: 4.JUN.2019 16:11:27

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



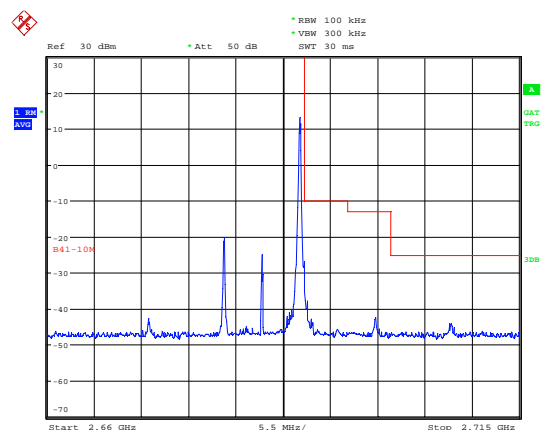
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LTE Band 41 16QAM 10MHz CH-Low, 1 RB



Date: 4.JUN.2019 16:15:28

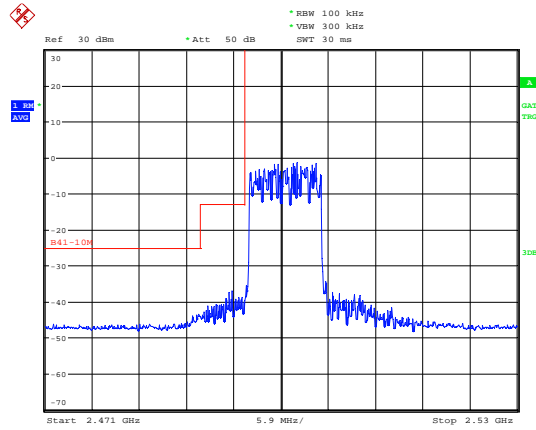
LTE Band 41 16QAM 10MHz CH-High, 1 RB



Date: 4.JUN.2019 16:47:45

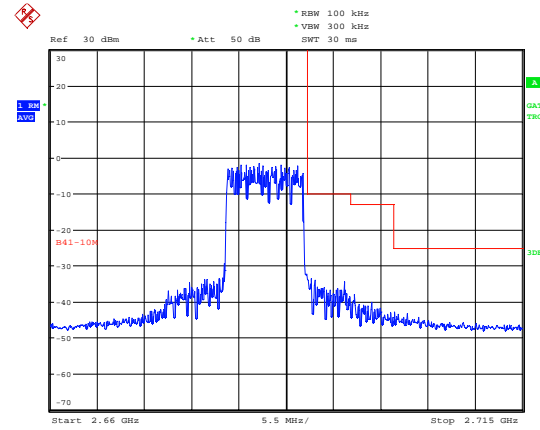


LTE Band 41 16QAM 10MHz CH-Low, 100%RB



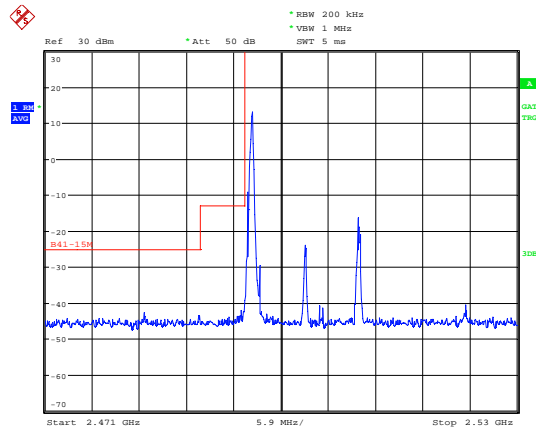
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LTE Band 41 16QAM 10MHz CH-High, 100%RB



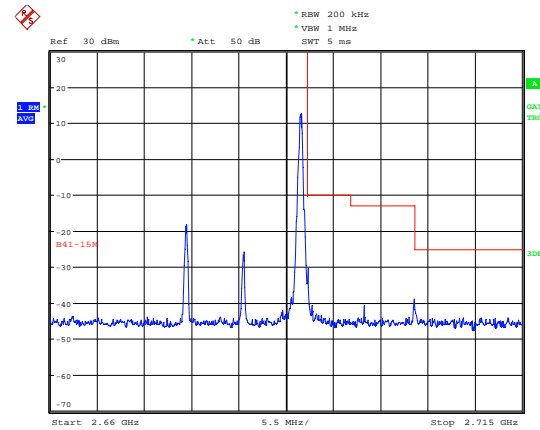
Date: 4.JUN.2019 16:48:25

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



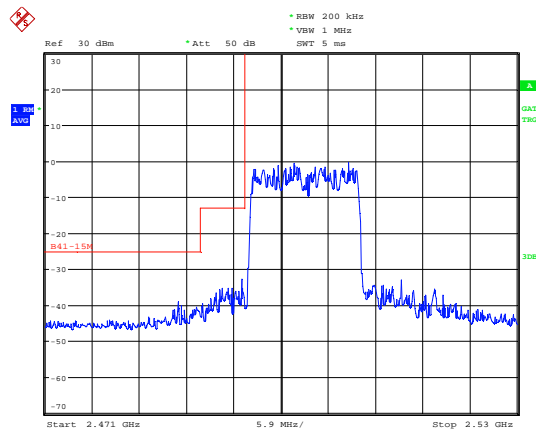
Date: 4.JUN.2019 16:18:11

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



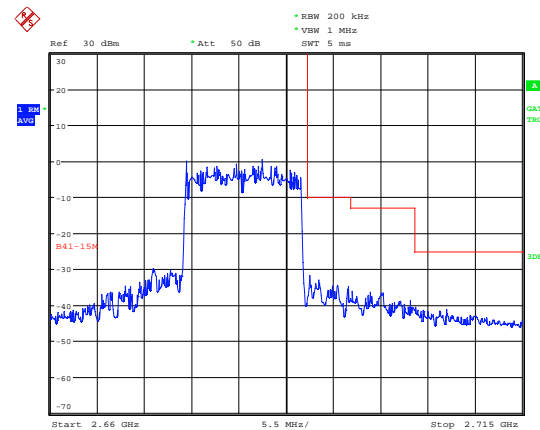
Date: 4.JUN.2019 16:35:07

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



Date: 4.JUN.2019 16:18:40

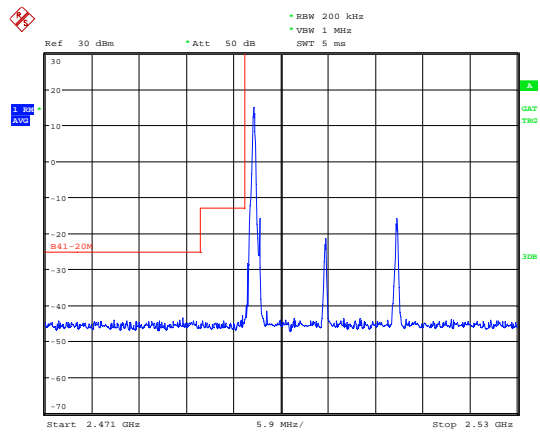
LTE Band 41 16QAM 15MHz CH-High, 100%RB



Date: 4.JUN.2019 16:35:42

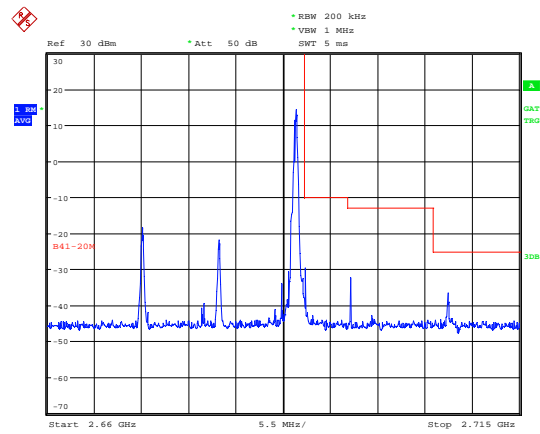


LTE Band 41 16QAM 20MHz CH-Low, RB 1



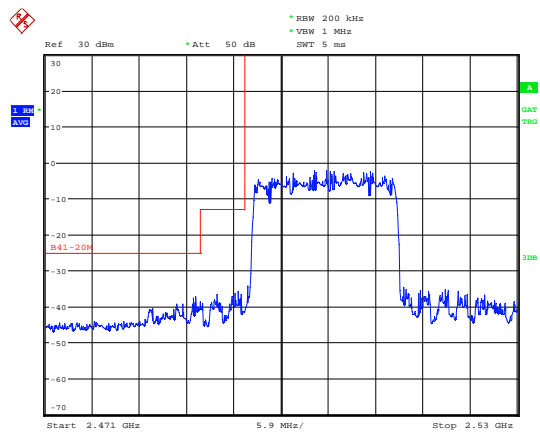
Date: 4 JUN 2019 16:23:23

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



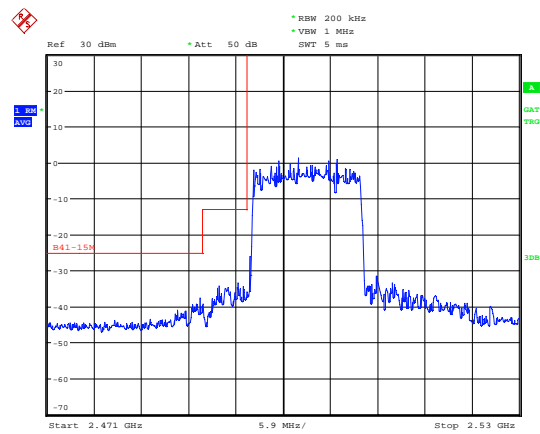
Date: 4 JUN 2019 16:30:02

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



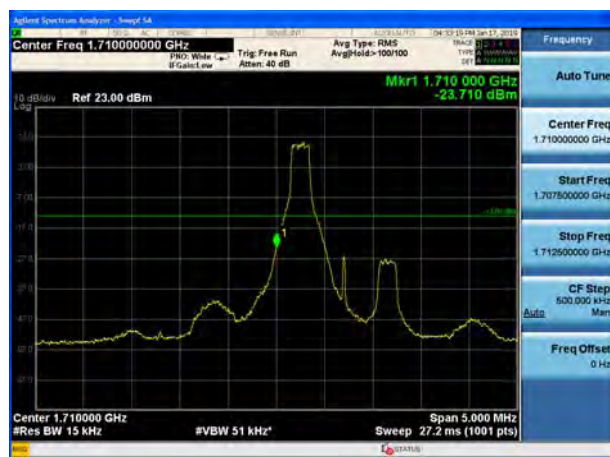
Date: 4 JUN 2019 16:24:01

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



Date: 4 JUN 2019 16:18:27

LTE Band 66 QPSK 1.4MHz CH-Low, 1 RB



LTE Band 66 QPSK 1.4MHz CH-High, 1 RB





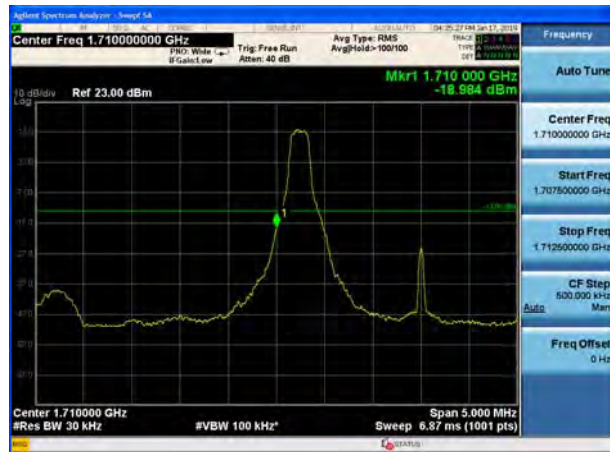
LTE Band 66 QPSK 1.4MHz CH-Low, 100%RB



LTE Band 66 QPSK 1.4MHz CH-High, 100%RB



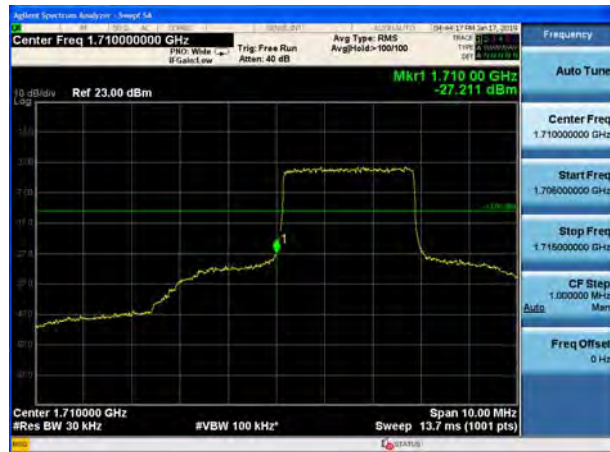
LTE Band 66 QPSK 3MHz CH-Low, 1 RB



LTE Band 66 QPSK 3MHz CH-High, 1 RB



LTE Band 66 QPSK 3MHz CH-Low, 100%RB



LTE Band 66 QPSK 3MHz CH-High, 100%RB





LTE Band 66 QPSK 5MHz CH-Low, 1 RB



LTE Band 66 QPSK 5MHz CH-High, 1 RB



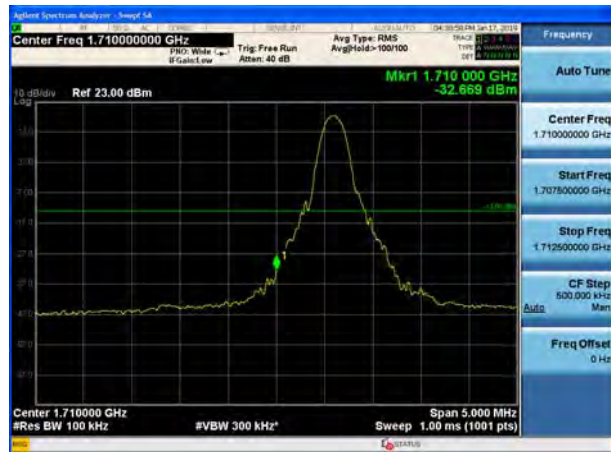
LTE Band 66 QPSK 5MHz CH-Low, 100%RB



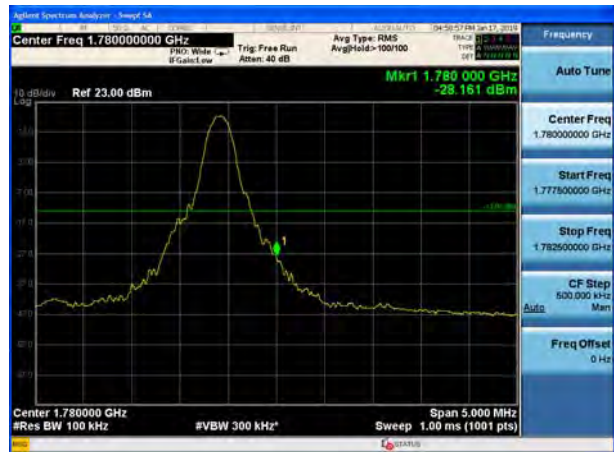
LTE Band 66 QPSK 5MHz CH-High, 100%RB



LTE Band 66 QPSK 10MHz CH-Low, 1 RB

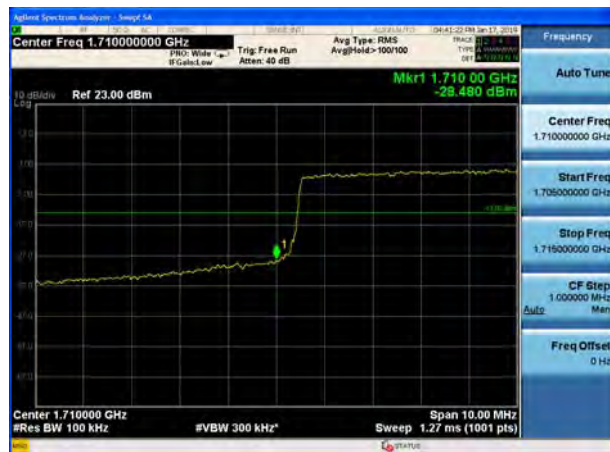


LTE Band 66 QPSK 10MHz CH-High, 1 RB





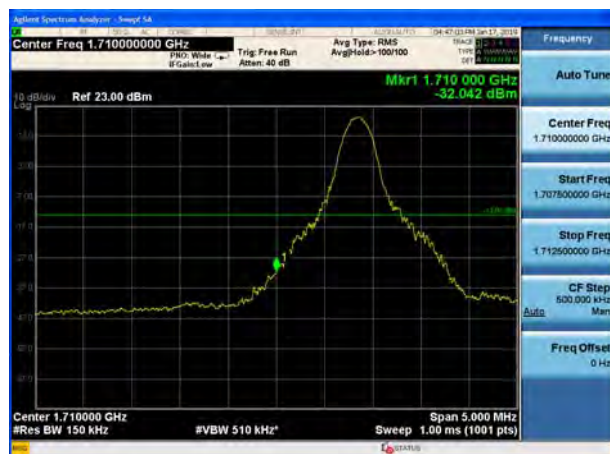
LTE Band 66 QPSK 10MHz CH-Low, 100%RB



LTE Band 66 QPSK 10MHz CH-High, 100%RB



LTE Band 66 QPSK 15MHz CH-Low, 1 RB



LTE Band 66 QPSK 15MHz CH-High, 1 RB



LTE Band 66 QPSK 15MHz CH-Low, 100%RB

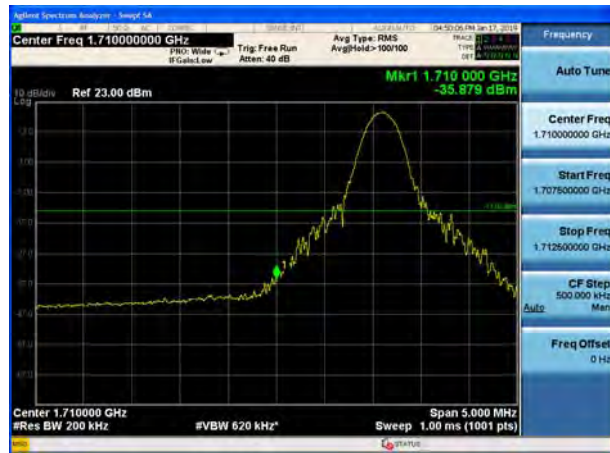


LTE Band 66 QPSK 15MHz CH-High, 100%RB





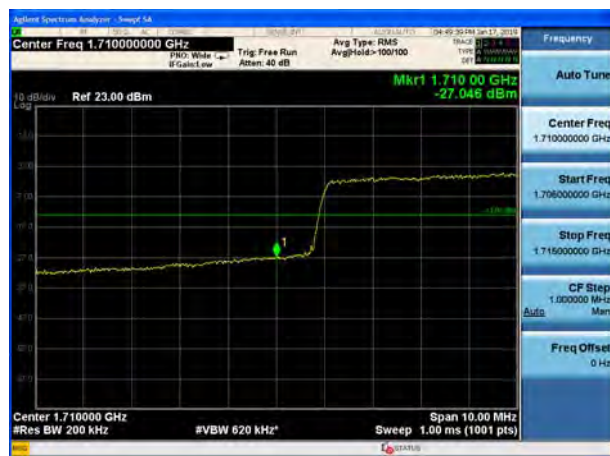
LTE Band 66 QPSK 20MHz CH-Low, 1 RB



LTE Band 66 QPSK 20MHz CH-High, 1 RB



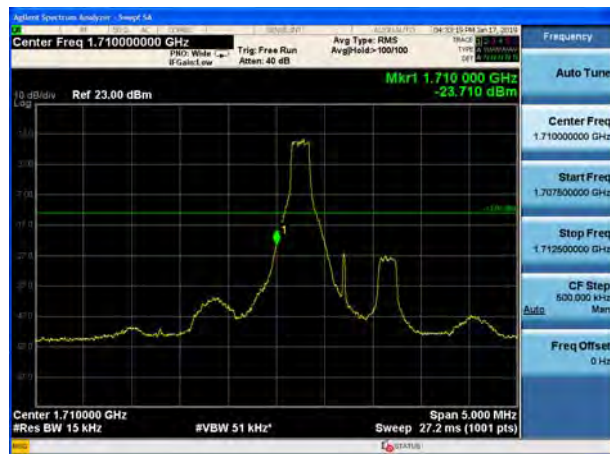
LTE Band 66 QPSK 20MHz CH-Low, 100%RB



LTE Band 66 QPSK 20MHz CH-High, 100%RB



LTE Band 66 16QAM 1.4MHz CH-Low, 1 RB

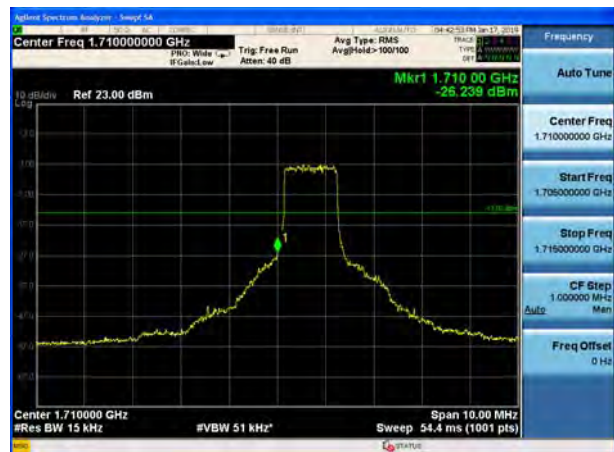


LTE Band 66 16QAM 1.4MHz CH-High, 1 RB





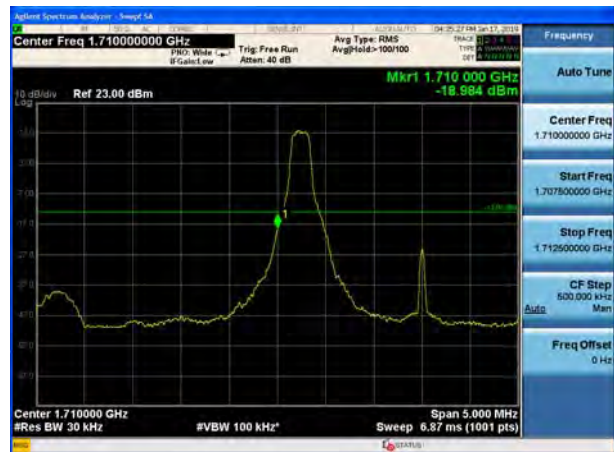
LTE Band 66 16QAM 1.4MHz CH-Low, 100%RB



LTE Band 66 16QAM 1.4MHz CH-High, 100%RB



LTE Band 66 16QAM 3MHz CH-Low, 1 RB



LTE Band 66 16QAM 3MHz CH-High, 1 RB



LTE Band 66 16QAM 3MHz CH-Low, 100%RB

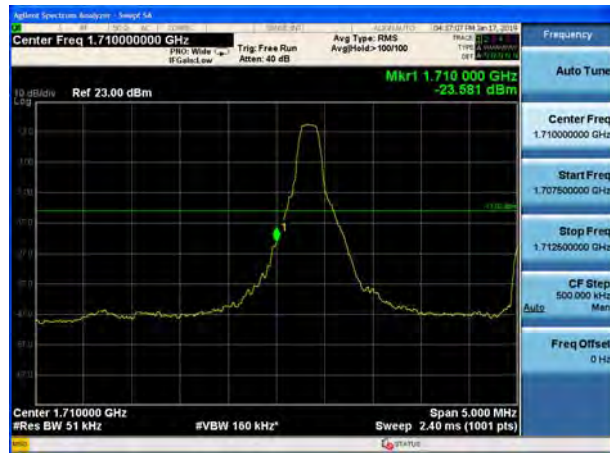


LTE Band 66 16QAM 3MHz CH-High, 100%RB

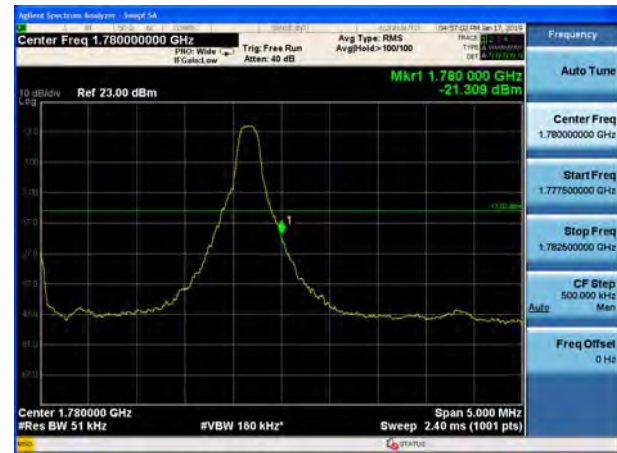




LTE Band 66 16QAM 5MHz CH-Low, 1 RB



LTE Band 66 16QAM 5MHz CH-High, 1 RB



LTE Band 66 16QAM 5MHz CH-Low, 100%RB



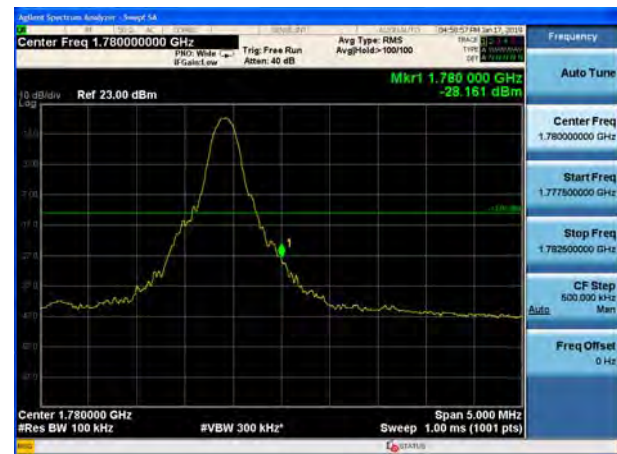
LTE Band 66 16QAM 5MHz CH-High, 100%RB



LTE Band 66 16QAM 10MHz CH-Low, 1 RB

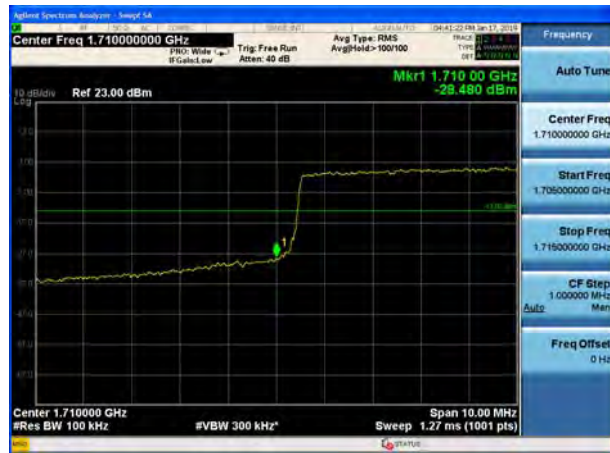


LTE Band 66 16QAM 10MHz CH-High, 1 RB





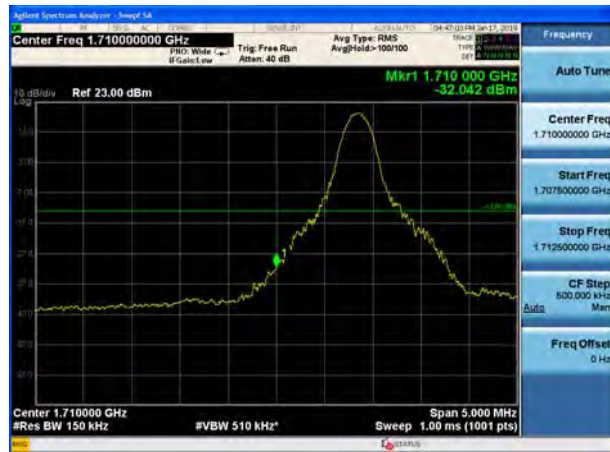
LTE Band 66 16QAM 10MHz CH-Low, 100%RB



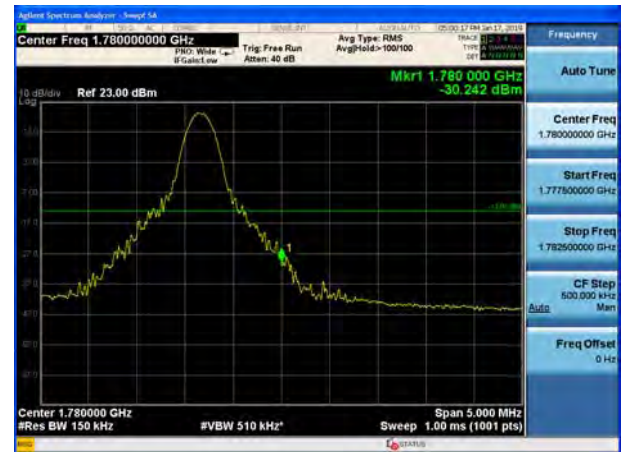
LTE Band 66 16QAM 10MHz CH-High, 100%RB



LTE Band 66 16QAM 15MHz CH-Low, 1 RB



LTE Band 66 16QAM 15MHz CH-High, 1 RB



LTE Band 66 16QAM 15MHz CH-Low, 100%RB

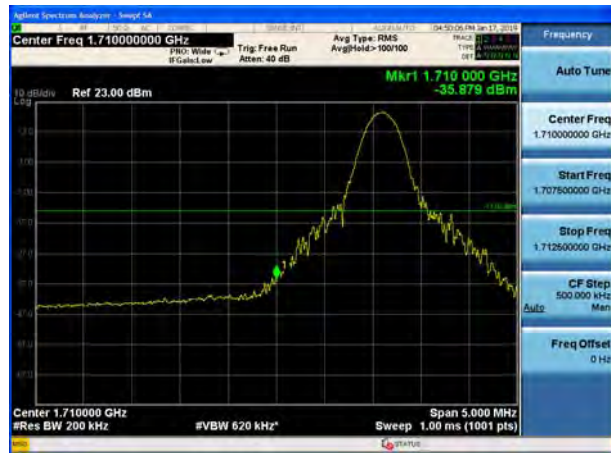


LTE Band 66 16QAM 15MHz CH-High, 100%RB





LTE Band 66 16QAM 20MHz CH-Low, 1 RB



LTE Band 66 16QAM 20MHz CH-High, 1 RB



LTE Band 66 16QAM 20MHz CH-Low, 100%RB



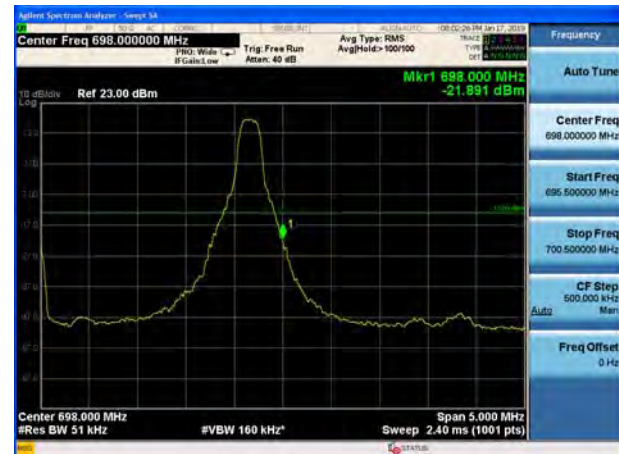
LTE Band 66 16QAM 20MHz CH-High, 100%RB

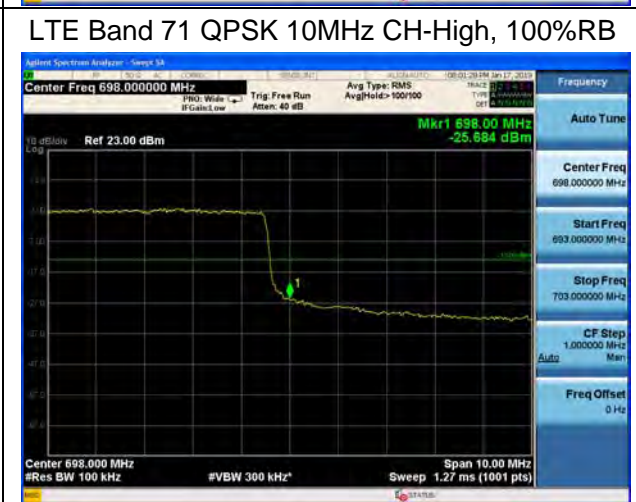
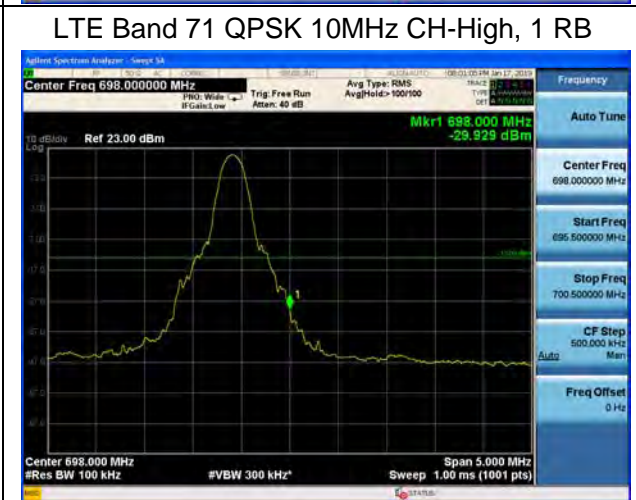
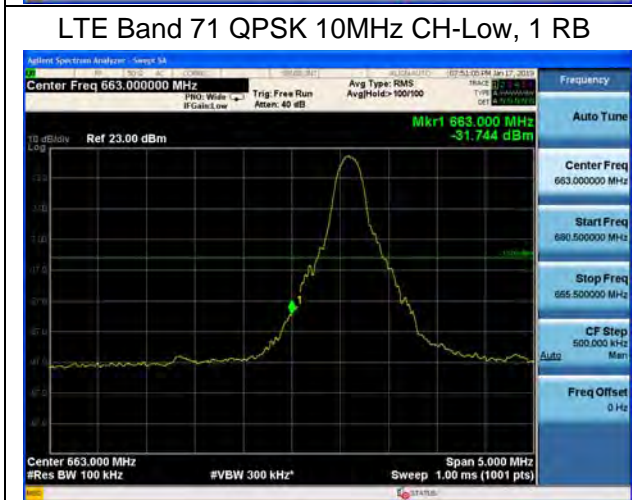
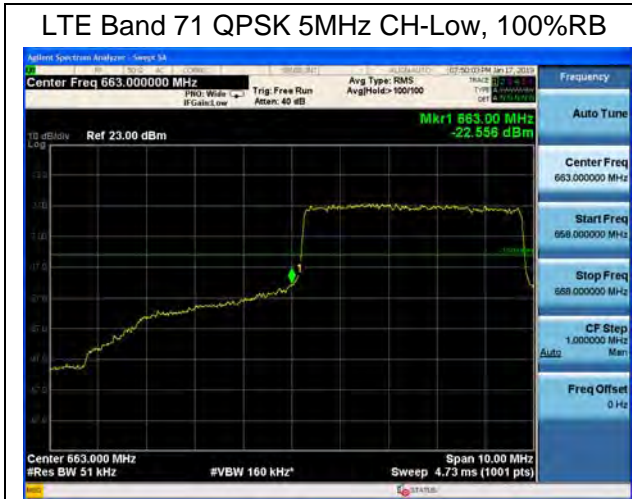


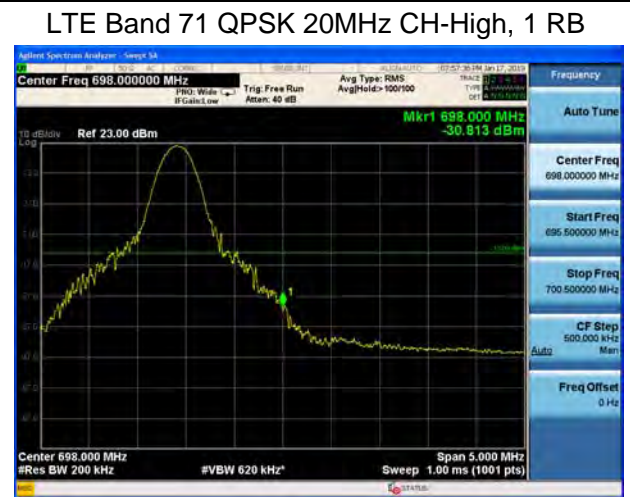
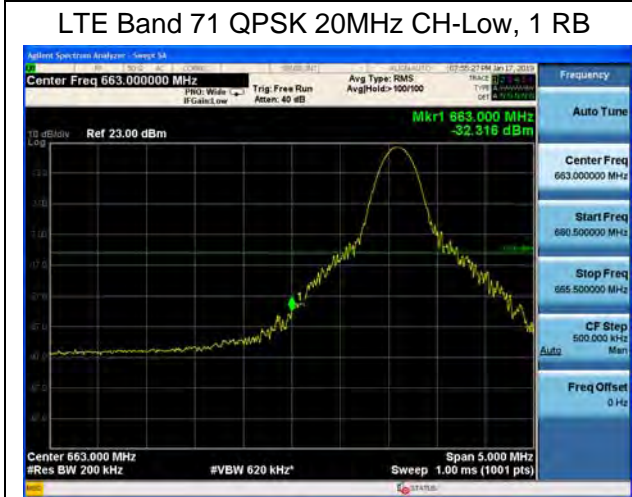
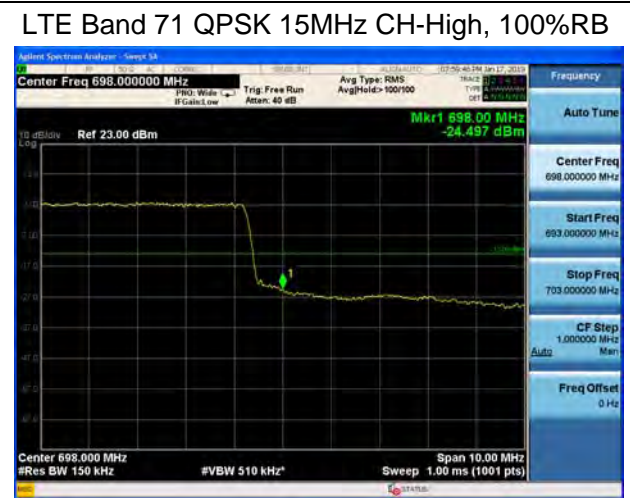
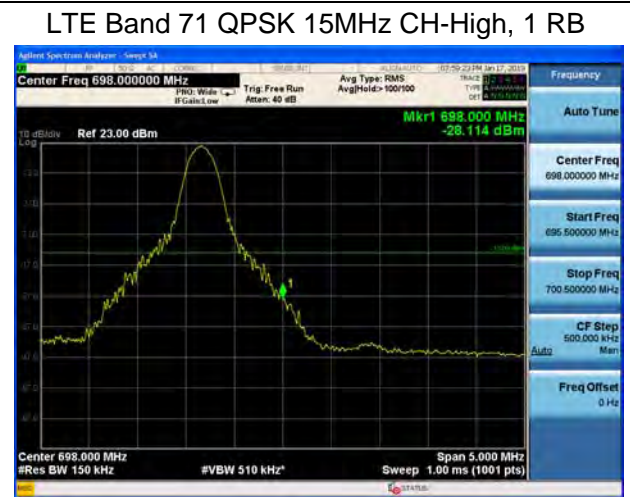
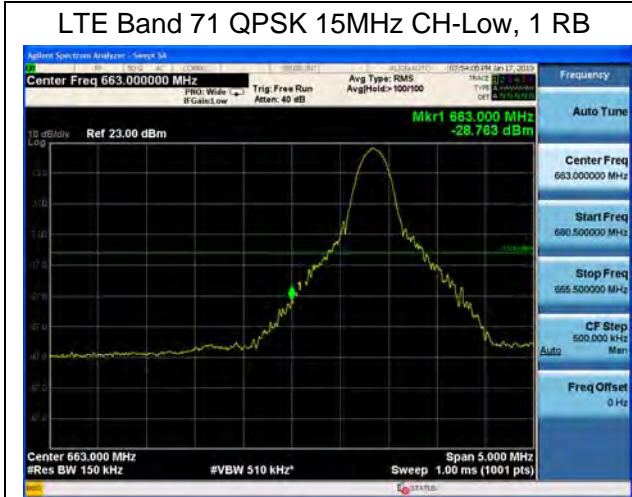
LTE Band 71 QPSK 5MHz CH-Low, 1 RB



LTE Band 71 QPSK 5MHz CH-High, 1 RB









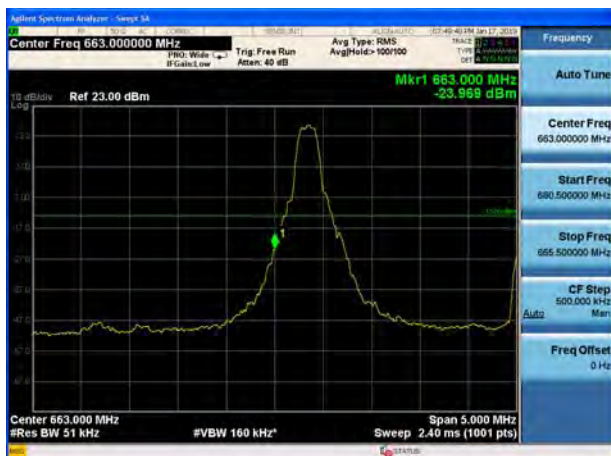
LTE Band 71 QPSK 20MHz CH-Low, 100%RB



LTE Band 71 QPSK 20MHz CH-High, 100%RB



LTE Band 71 16QAM 5MHz CH-Low, 1 RB



LTE Band 71 16QAM 5MHz CH-High, 1 RB



LTE Band 71 16QAM 5MHz CH-Low, 100%RB

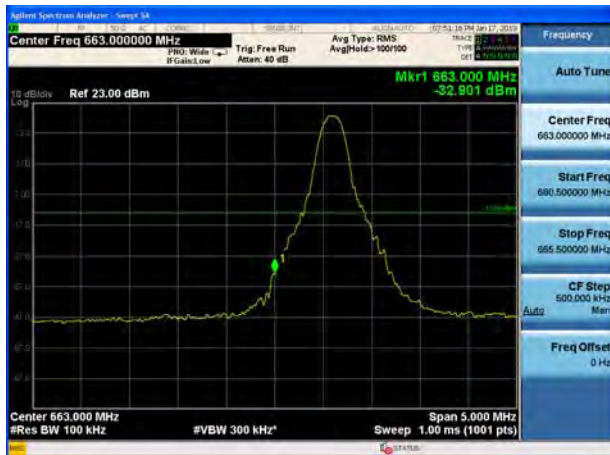


LTE Band 71 16QAM 5MHz CH-High, 100%RB





LTE Band 71 16QAM 10MHz CH-Low, 1 RB



LTE Band 71 16QAM 10MHz CH-High, 1 RB



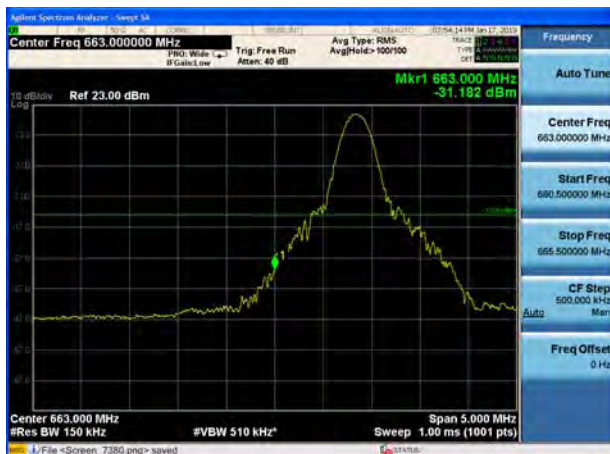
LTE Band 71 16QAM 10MHz CH-Low, 100%RB



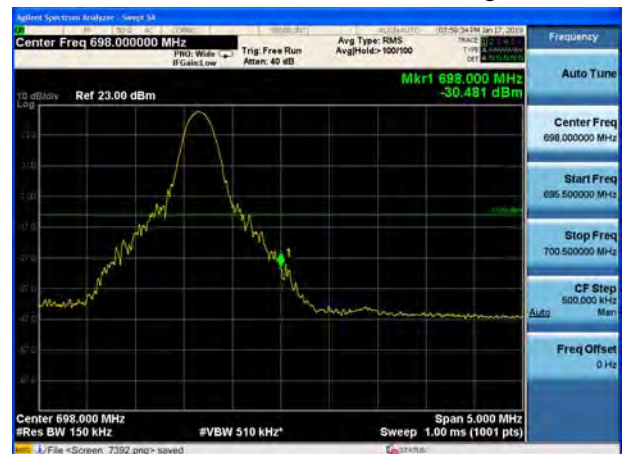
LTE Band 71 16QAM 10MHz CH-High, 100%RB



LTE Band 71 16QAM 15MHz CH-Low, 1 RB



LTE Band 71 16QAM 15MHz CH-High, 1 RB





LTE Band 71 16QAM 15MHz CH-Low, 100%RB



LTE Band 71 16QAM 15MHz CH-High, 100%RB



LTE Band 71 16QAM 20MHz CH-Low, 1 RB



LTE Band 71 16QAM 20MHz CH-High, 1 RB



LTE Band 71 16QAM 20MHz CH-Low, 100%RB



LTE Band 71 16QAM 20MHz CH-High, 100%RB



5.5 Peak-to-Average Power Ratio (PAPR)

Ambient condition

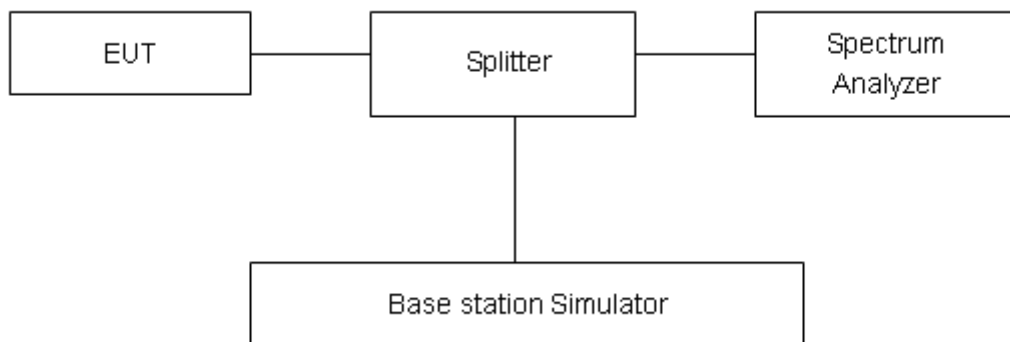
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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 the normal 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	27.00	24.12	2.88	≤13	PASS
	1413	1732.6	27.12	24.31	2.81	≤13	PASS
	1513	1752.6	27.32	24.23	3.09	≤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	23.16	19.17	3.99	≤13	PASS
		20175	1732.5	22.81	18.95	3.86	≤13	PASS
		20393	1754.3	23.05	19.25	3.80	≤13	PASS
	3	19965	1711.5	23.23	19.13	4.10	≤13	PASS
		20175	1732.5	23.16	19.08	4.08	≤13	PASS
		20385	1753.5	23.43	19.37	4.06	≤13	PASS
	5	19975	1712.5	23.31	19.17	4.14	≤13	PASS
		20175	1732.5	23.08	19.03	4.05	≤13	PASS
		20375	1752.5	23.55	19.46	4.09	≤13	PASS
	10	20000	1715	23.37	19.19	4.18	≤13	PASS
		20175	1732.5	23.05	18.92	4.13	≤13	PASS
		20350	1750	23.72	19.50	4.22	≤13	PASS
	15	20025	1717.5	23.07	18.77	4.30	≤13	PASS
		20175	1732.5	22.91	18.59	4.32	≤13	PASS
		20325	1747.5	23.49	19.05	4.44	≤13	PASS
	20	20050	1720	23.18	19.18	4.00	≤13	PASS
		20175	1732.5	23.23	19.03	4.20	≤13	PASS
		20300	1745	23.77	19.45	4.32	≤13	PASS
16QAM	1.4	19957	1710.7	22.77	18.08	4.69	≤13	PASS
		20175	1732.5	22.82	18.24	4.58	≤13	PASS
		20393	1754.3	23.01	18.46	4.55	≤13	PASS
	3	19965	1711.5	23.13	18.24	4.89	≤13	PASS
		20175	1732.5	22.94	18.12	4.82	≤13	PASS
		20385	1753.5	23.20	18.40	4.80	≤13	PASS
	5	19975	1712.5	23.26	18.41	4.85	≤13	PASS
		20175	1732.5	22.98	18.25	4.73	≤13	PASS
		20375	1752.5	23.37	18.59	4.78	≤13	PASS
	10	20000	1715	23.28	18.35	4.93	≤13	PASS
		20175	1732.5	22.93	18.08	4.85	≤13	PASS
		20350	1750	23.60	18.65	4.95	≤13	PASS



	15	20025	1717.5	23.08	17.93	5.15	≤13	PASS
		20175	1732.5	22.82	17.74	5.08	≤13	PASS
		20325	1747.5	20.49	18.24	2.25	≤13	PASS
	20	20050	1720	23.10	18.34	4.76	≤13	PASS
		20175	1732.5	23.12	18.23	4.89	≤13	PASS
		20300	1745	23.57	18.50	5.07	≤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	25.00	19.20	5.80	≤13	PASS
		21100	2535	25.32	19.36	5.96	≤13	PASS
		21425	2567.5	25.24	19.36	5.88	≤13	PASS
	10	20800	2505	25.01	19.21	5.80	≤13	PASS
		21100	2535	25.27	19.37	5.90	≤13	PASS
		21400	2565	25.29	19.43	5.86	≤13	PASS
	15	20825	2507.5	24.34	18.88	5.46	≤13	PASS
		21100	2535	24.60	19.04	5.56	≤13	PASS
		21375	2562.5	24.60	19.07	5.53	≤13	PASS
	20	20850	2510	24.98	19.22	5.76	≤13	PASS
		21100	2535	25.29	19.36	5.93	≤13	PASS
		21350	2560	25.37	19.49	5.88	≤13	PASS
16QAM	5	20775	2502.5	24.92	18.19	6.73	≤13	PASS
		21100	2535	25.28	18.43	6.85	≤13	PASS
		21425	2567.5	25.36	18.61	6.75	≤13	PASS
	10	20800	2505	25.03	18.30	6.73	≤13	PASS
		21100	2535	25.22	18.40	6.82	≤13	PASS
		21400	2565	25.37	18.55	6.82	≤13	PASS
	15	20825	2507.5	24.45	17.97	6.48	≤13	PASS
		21100	2535	24.63	18.10	6.53	≤13	PASS
		21375	2562.5	24.62	18.06	6.56	≤13	PASS
	20	20850	2510	25.14	18.43	6.71	≤13	PASS
		21100	2535	25.48	18.65	6.83	≤13	PASS
		21350	2560	25.43	18.59	6.84	≤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	25.22	20.17	5.05	≤13	PASS
		23095	707.5	25.44	20.25	5.19	≤13	PASS
		23173	715.3	25.12	20.03	5.09	≤13	PASS
	3	23025	700.5	25.16	20.16	5.00	≤13	PASS
		23095	707.5	25.41	20.19	5.22	≤13	PASS
		23165	714.5	25.25	20.17	5.08	≤13	PASS
	5	23035	701.5	25.19	20.20	4.99	≤13	PASS
		23095	707.5	25.45	20.25	5.20	≤13	PASS
		23155	713.5	25.25	20.13	5.12	≤13	PASS
	10	23060	704	25.39	20.22	5.17	≤13	PASS
		23095	707.5	25.41	20.18	5.23	≤13	PASS
		23130	711	25.30	20.26	5.04	≤13	PASS
16QAM	1.4	23017	699.7	25.26	19.45	5.81	≤13	PASS
		23095	707.5	25.35	19.36	5.99	≤13	PASS
		23173	715.3	25.08	19.16	5.92	≤13	PASS
	3	23025	700.5	24.97	19.13	5.84	≤13	PASS
		23095	707.5	25.24	19.18	6.06	≤13	PASS
		23165	714.5	25.16	19.27	5.89	≤13	PASS
	5	23035	701.5	25.08	19.33	5.75	≤13	PASS
		23095	707.5	25.27	19.28	5.99	≤13	PASS
		23155	713.5	25.10	19.21	5.89	≤13	PASS
	10	23060	704	25.26	19.34	5.92	≤13	PASS
		23095	707.5	25.19	19.18	6.01	≤13	PASS
		23130	711	25.26	19.36	5.90	≤13	PASS

LTE Band 13								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	23205	779.5	24.78	20.34	4.44	≤13	PASS
		23230	782	24.51	20.11	4.40	≤13	PASS
		23255	784.5	24.86	20.21	4.65	≤13	PASS
	10	23230	782	24.88	20.20	4.68	≤13	PASS
16QAM	5	23205	779.5	24.59	19.39	5.20	≤13	PASS
		23230	782	24.38	19.26	5.12	≤13	PASS
		23255	784.5	24.70	19.27	5.43	≤13	PASS
	10	23230	782	24.73	19.26	5.47	≤13	PASS



LTE Band 41								
Modulation	Bandwidth ((MHz))	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	39675	2498.5	25.20	16.62	8.58	≤13	PASS
		40620	2593	25.64	16.86	8.78	≤13	PASS
		41565	2687.5	22.64	17.05	5.59	≤13	PASS
	10	39700	2501	25.37	16.79	8.58	≤13	PASS
		40620	2593	25.67	17.03	8.64	≤13	PASS
		41540	2685	25.64	16.79	8.85	≤13	PASS
	15	39725	2503.5	24.73	16.45	8.28	≤13	PASS
		40620	2593	25.18	16.51	8.67	≤13	PASS
		41515	2682.5	25.17	16.58	8.59	≤13	PASS
	20	39750	2506	25.23	16.92	8.31	≤13	PASS
		40620	2593	25.69	16.65	9.04	≤13	PASS
		41490	2680	25.63	16.88	8.75	≤13	PASS
16QAM	5	39675	2498.5	25.01	15.70	9.31	≤13	PASS
		40620	2593	25.47	15.96	9.51	≤13	PASS
		41565	2687.5	25.53	16.21	9.32	≤13	PASS
	10	39700	2501	25.15	15.86	9.29	≤13	PASS
		40620	2593	25.57	16.15	9.42	≤13	PASS
		41540	2685	25.52	16.09	9.43	≤13	PASS
	15	39725	2503.5	24.54	14.93	9.61	≤13	PASS
		40620	2593	25.20	15.67	9.53	≤13	PASS
		41515	2682.5	25.08	15.74	9.34	≤13	PASS
	20	39750	2506	24.95	15.51	9.44	≤13	PASS
		40620	2593	25.68	15.98	9.70	≤13	PASS
		41490	2680	25.38	15.55	9.83	≤13	PASS

LTE Band 66								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	131979	1710.7	30.29	25.83	4.46	≤13	PASS
		132322	1745	30.82	25.89	4.93	≤13	PASS
		132665	1779.3	30.67	26.58	4.09	≤13	PASS
	3	131987	1711.5	30.56	25.92	4.64	≤13	PASS



		132322	1745	31.08	26.08	5.00	≤13	PASS
		132657	1778.5	30.93	26.59	4.34	≤13	PASS
	5	131997	1712.5	30.50	25.77	4.73	≤13	PASS
		132322	1745	31.08	26.08	5.00	≤13	PASS
		132647	1777.5	31.36	26.95	4.41	≤13	PASS
	10	132022	1715	30.80	26.11	4.69	≤13	PASS
		132322	1745	31.22	26.24	4.98	≤13	PASS
		132622	1775	30.06	25.57	4.49	≤13	PASS
	15	132047	1717.5	30.34	25.63	4.71	≤13	PASS
		132322	1745	30.72	25.76	4.96	≤13	PASS
		132597	1772.5	30.39	25.70	4.69	≤13	PASS
	20	132072	1720	30.40	25.85	4.55	≤13	PASS
		132322	1745	30.93	26.04	4.89	≤13	PASS
		132572	1770	30.42	26.04	4.38	≤13	PASS
	16QAM	1.4	131979	1710.7	30.07	24.76	5.31	≤13
132322			1745	30.85	25.58	5.27	≤13	PASS
132665			1779.3	30.69	25.75	4.94	≤13	PASS
3		131987	1711.5	30.49	25.04	5.45	≤13	PASS
		132322	1745	31.01	25.51	5.50	≤13	PASS
		132657	1778.5	30.86	25.74	5.12	≤13	PASS
5		131997	1712.5	30.36	24.88	5.48	≤13	PASS
		132322	1745	31.46	26.14	5.32	≤13	PASS
		132647	1777.5	31.16	25.90	5.26	≤13	PASS
10		132022	1715	30.74	25.80	4.94	≤13	PASS
		132322	1745	31.20	25.78	5.42	≤13	PASS
		132622	1775	30.84	25.59	5.25	≤13	PASS
15		132047	1717.5	30.31	25.22	5.09	≤13	PASS
		132322	1745	30.69	24.91	5.78	≤13	PASS
		132597	1772.5	30.39	25.31	5.08	≤13	PASS
20		132072	1720	30.36	25.10	5.26	≤13	PASS
		132322	1745	30.84	25.18	5.66	≤13	PASS
		132572	1770	30.35	25.45	4.90	≤13	PASS

LTE Band 71								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
	5	133147	665.5	32.45	28.31	4.14	≤13	PASS
		133297	680.5	32.72	28.35	4.37	≤13	PASS
		133447	695.5	33.20	28.65	4.55	≤13	PASS
	10	133172	668	32.70	28.27	4.43	≤13	PASS



		133297	680.5	32.90	28.49	4.41	≤13	PASS
		133422	693	33.21	28.69	4.52	≤13	PASS
	15	133197	670.5	32.81	27.87	4.94	≤13	PASS
		133297	680.5	32.65	28.23	4.42	≤13	PASS
		133397	690.5	32.93	28.10	4.83	≤13	PASS
	20	133222	673	33.02	28.49	4.53	≤13	PASS
		133322	683	32.95	28.54	4.41	≤13	PASS
		133372	688	33.28	28.64	4.64	≤13	PASS
	5	133147	665.5	32.18	27.31	4.87	≤13	PASS
		133297	680.5	32.58	27.49	5.09	≤13	PASS
		133447	695.5	33.15	28.37	4.78	≤13	PASS
	10	133172	668	32.61	27.85	4.76	≤13	PASS
		133297	680.5	32.88	28.22	4.66	≤13	PASS
		133422	693	33.11	27.97	5.14	≤13	PASS
	15	133197	670.5	32.69	27.32	5.37	≤13	PASS
		133297	680.5	32.63	27.85	4.78	≤13	PASS
		133397	690.5	32.91	27.77	5.14	≤13	PASS
	20	133222	673	32.92	28.04	4.88	≤13	PASS
		133322	683	32.86	28.13	4.73	≤13	PASS
		133372	688	33.18	28.25	4.93	≤13	PASS

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)

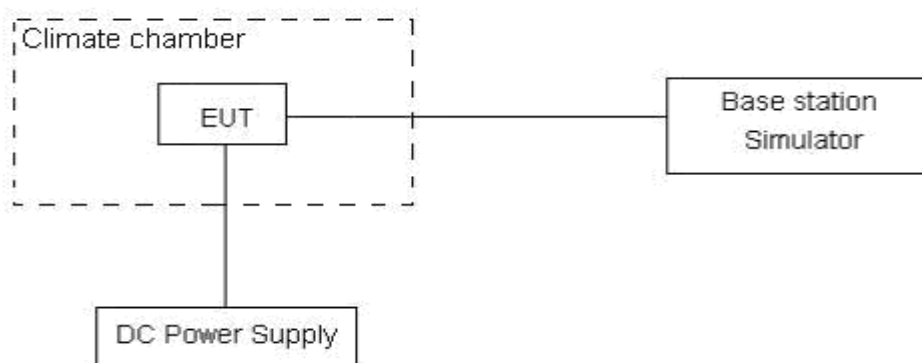
The frequency stability shall be measured with variation of primary supply voltage as follows:

(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 3.5 V and 4.2 V, with a nominal voltage of 3.7V.

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 $k = 3, U = 0.01\text{ppm}$.



Test Result

WCDMA Band IV						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
Temperature	Voltage	QPSK	BPSK	QPSK	BPSK	
Normal (25°C)	Normal	1.04	7.85	0.00055	0.00418	PASS
Extreme (55°C)		2.62	8.20	0.00140	0.00436	PASS
Extreme (50°C)		9.93	3.88	0.00528	0.00206	PASS
Extreme (40°C)		13.03	6.97	0.00693	0.00371	PASS
Extreme (30°C)		10.35	12.60	0.00551	0.00670	PASS
Extreme (20°C)		17.03	4.73	0.00906	0.00252	PASS
Extreme (10°C)		15.62	4.64	0.00831	0.00247	PASS
Extreme (0°C)		4.15	13.28	0.00221	0.00707	PASS
Extreme (-10°C)		3.55	11.64	0.00189	0.00619	PASS
Extreme (-20°C)		10.01	7.74	0.00533	0.00412	PASS
Extreme (-30°C)		12.94	16.87	0.00688	0.00897	PASS
25°C		LV	8.76	11.81	0.00466	0.00628
	HV	16.13	13.53	0.00858	0.00719	PASS

LTE Band 4(20M BANDWIDTH)						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
Temperature	Voltage	QPSK	BPSK	QPSK	BPSK	
Normal (25°C)	Normal	16.86	16.76	0.00897	0.00892	PASS
Extreme (55°C)		13.17	5.66	0.00701	0.00301	PASS
Extreme (50°C)		7.39	8.84	0.00393	0.00470	PASS
Extreme (40°C)		6.80	4.72	0.00362	0.00251	PASS
Extreme (30°C)		5.04	6.91	0.00268	0.00368	PASS
Extreme (20°C)		9.12	4.83	0.00485	0.00257	PASS
Extreme (10°C)		5.70	9.80	0.00303	0.00521	PASS
Extreme (0°C)		1.50	16.69	0.00080	0.00888	PASS
Extreme (-10°C)		16.90	13.22	0.00899	0.00703	PASS
Extreme (-20°C)		11.42	3.93	0.00608	0.00209	PASS
Extreme (-30°C)		14.35	17.61	0.00763	0.00937	PASS
25°C		LV	5.89	5.12	0.00313	0.00272
	HV	13.40	16.46	0.00713	0.00876	PASS

LTE Band 7(20M BANDWIDTH)						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
Temperature	Voltage	QPSK	BPSK	QPSK	BPSK	
Normal (25°C)	Normal	4.45	9.84	0.00237	0.00524	PASS
Extreme (55°C)		10.57	7.95	0.00562	0.00423	PASS
Extreme (50°C)		8.44	3.17	0.00449	0.00169	PASS
Extreme (40°C)		12.26	5.75	0.00652	0.00306	PASS
Extreme (30°C)		15.74	12.80	0.00837	0.00681	PASS
Extreme (20°C)		3.14	15.36	0.00167	0.00817	PASS
Extreme (10°C)		1.74	2.23	0.00093	0.00119	PASS
Extreme (0°C)		7.77	3.27	0.00413	0.00174	PASS
Extreme (-10°C)		16.22	11.59	0.00863	0.00617	PASS
Extreme (-20°C)		9.47	4.41	0.00504	0.00234	PASS
Extreme (-30°C)		1.96	7.50	0.00104	0.00399	PASS
25°C	LV	11.94	1.62	0.00635	0.00086	PASS
	HV	17.89	5.00	0.00952	0.00266	PASS

LTE Band 12 (10M BANDWIDTH)						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
Temperature	Voltage	QPSK	BPSK	QPSK	BPSK	
Normal (25°C)	Normal	4.68	11.43	0.00249	0.00608	PASS
Extreme (55°C)		13.74	3.54	0.00731	0.00188	PASS
Extreme (50°C)		12.42	6.21	0.00660	0.00330	PASS
Extreme (40°C)		7.70	15.71	0.00409	0.00835	PASS
Extreme (30°C)		11.38	9.49	0.00605	0.00505	PASS
Extreme (20°C)		8.99	16.92	0.00478	0.00900	PASS
Extreme (10°C)		7.05	13.35	0.00375	0.00710	PASS
Extreme (0°C)		10.64	5.87	0.00566	0.00312	PASS
Extreme (-10°C)		13.02	9.72	0.00693	0.00517	PASS
Extreme (-20°C)		16.20	1.71	0.00862	0.00091	PASS
Extreme (-30°C)		10.18	10.47	0.00542	0.00557	PASS
25°C	LV	10.08	1.01	0.00536	0.00054	PASS
	HV	10.76	6.87	0.00572	0.00365	PASS

LTE Band 13 (10M BANDWIDTH)						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
Temperature	Voltage	QPSK	BPSK	QPSK	BPSK	
Normal (25°C)	Normal	5.07	3.30	0.00270	0.00175	PASS
Extreme (55°C)		3.22	2.85	0.00171	0.00152	PASS
Extreme (50°C)		3.53	4.20	0.00188	0.00223	PASS
Extreme (40°C)		11.86	15.82	0.00631	0.00842	PASS
Extreme (30°C)		2.23	1.33	0.00118	0.00071	PASS
Extreme (20°C)		2.47	10.75	0.00131	0.00572	PASS
Extreme (10°C)		3.24	1.70	0.00173	0.00091	PASS
Extreme (0°C)		2.79	1.69	0.00148	0.00090	PASS
Extreme (-10°C)		3.98	10.39	0.00211	0.00553	PASS
Extreme (-20°C)		12.54	16.49	0.00667	0.00877	PASS
Extreme (-30°C)		1.54	14.30	0.00082	0.00760	PASS
25°C	LV	1.19	10.42	0.00063	0.00554	PASS
	HV	1.33	16.54	0.00071	0.00880	PASS

LTE Band 41 (20M BANDWIDTH)						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
Temperature	Voltage	QPSK	BPSK	QPSK	BPSK	
Normal (25°C)	Normal	1.06	2.29	0.00056	0.00122	PASS
Extreme (55°C)		17.02	5.06	0.00905	0.00269	PASS
Extreme (50°C)		11.34	14.26	0.00603	0.00759	PASS
Extreme (40°C)		5.86	11.69	0.00311	0.00622	PASS
Extreme (30°C)		9.57	1.00	0.00509	0.00053	PASS
Extreme (20°C)		6.13	12.38	0.00326	0.00658	PASS
Extreme (10°C)		17.55	16.80	0.00934	0.00894	PASS
Extreme (0°C)		7.80	7.78	0.00415	0.00414	PASS
Extreme (-10°C)		15.20	1.14	0.00809	0.00061	PASS
Extreme (-20°C)		5.03	1.60	0.00268	0.00085	PASS
Extreme (-30°C)		14.24	14.89	0.00757	0.00792	PASS
25°C	LV	11.30	9.85	0.00601	0.00524	PASS
	HV	15.39	2.17	0.00818	0.00115	PASS

LTE Band 66 (10M BANDWIDTH)						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
Temperature	Voltage	QPSK	BPSK	QPSK	BPSK	
Normal (25°C)	Normal	13.95	13.20	0.00742	0.00702	PASS
Extreme (55°C)		5.36	11.17	0.00285	0.00594	PASS
Extreme (50°C)		7.45	12.16	0.00396	0.00647	PASS
Extreme (40°C)		17.41	1.70	0.00926	0.00090	PASS
Extreme (30°C)		8.36	9.25	0.00445	0.00492	PASS
Extreme (20°C)		14.54	7.01	0.00773	0.00373	PASS
Extreme (10°C)		9.99	13.01	0.00531	0.00692	PASS
Extreme (0°C)		4.61	8.09	0.00245	0.00430	PASS
Extreme (-10°C)		1.07	13.51	0.00057	0.00719	PASS
Extreme (-20°C)		3.87	11.41	0.00206	0.00607	PASS
Extreme (-30°C)	1.56	3.47	0.00083	0.00185	PASS	
25°C	LV	8.39	17.51	0.00446	0.00931	PASS
	HV	9.45	9.07	0.00503	0.00482	PASS

LTE Band 71 (20M BANDWIDTH)						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
Temperature	Voltage	QPSK	BPSK	QPSK	BPSK	
Normal (25°C)	Normal	4.25	2.31	0.00226	0.00123	PASS
Extreme (55°C)		3.03	14.36	0.00161	0.00764	PASS
Extreme (50°C)		15.50	10.03	0.00825	0.00534	PASS
Extreme (40°C)		8.31	8.86	0.00442	0.00471	PASS
Extreme (30°C)		15.11	13.81	0.00804	0.00735	PASS
Extreme (20°C)		11.59	6.10	0.00616	0.00324	PASS
Extreme (10°C)		5.24	12.70	0.00279	0.00675	PASS
Extreme (0°C)		5.35	4.12	0.00284	0.00219	PASS
Extreme (-10°C)		3.47	4.57	0.00184	0.00243	PASS
Extreme (-20°C)		5.61	13.07	0.00298	0.00695	PASS
Extreme (-30°C)	12.94	7.69	0.00688	0.00409	PASS	
25°C	LV	11.98	15.13	0.00637	0.00805	PASS
	HV	9.97	11.95	0.00531	0.00636	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.

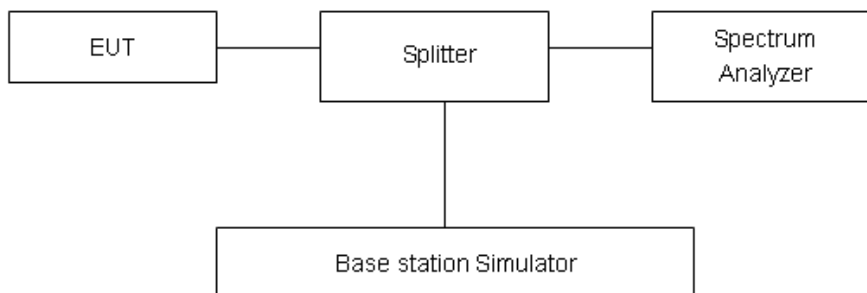
RBW is set to 100kHz, VBW is set to 300kHz for 30MHz~1GHz

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

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 $43 + 10 \log_{10} (P)$ dB..”

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.

Rule Part 27.53(f) For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically



radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

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 (c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the 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, in accordance with the following:

- (1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;
- (2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;
- (3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $76 + 10 \log (P)$ dB in a 6.25 kHz band segment, for base and fixed stations;
- (4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;
- (5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

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

Measurement Uncertainty

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

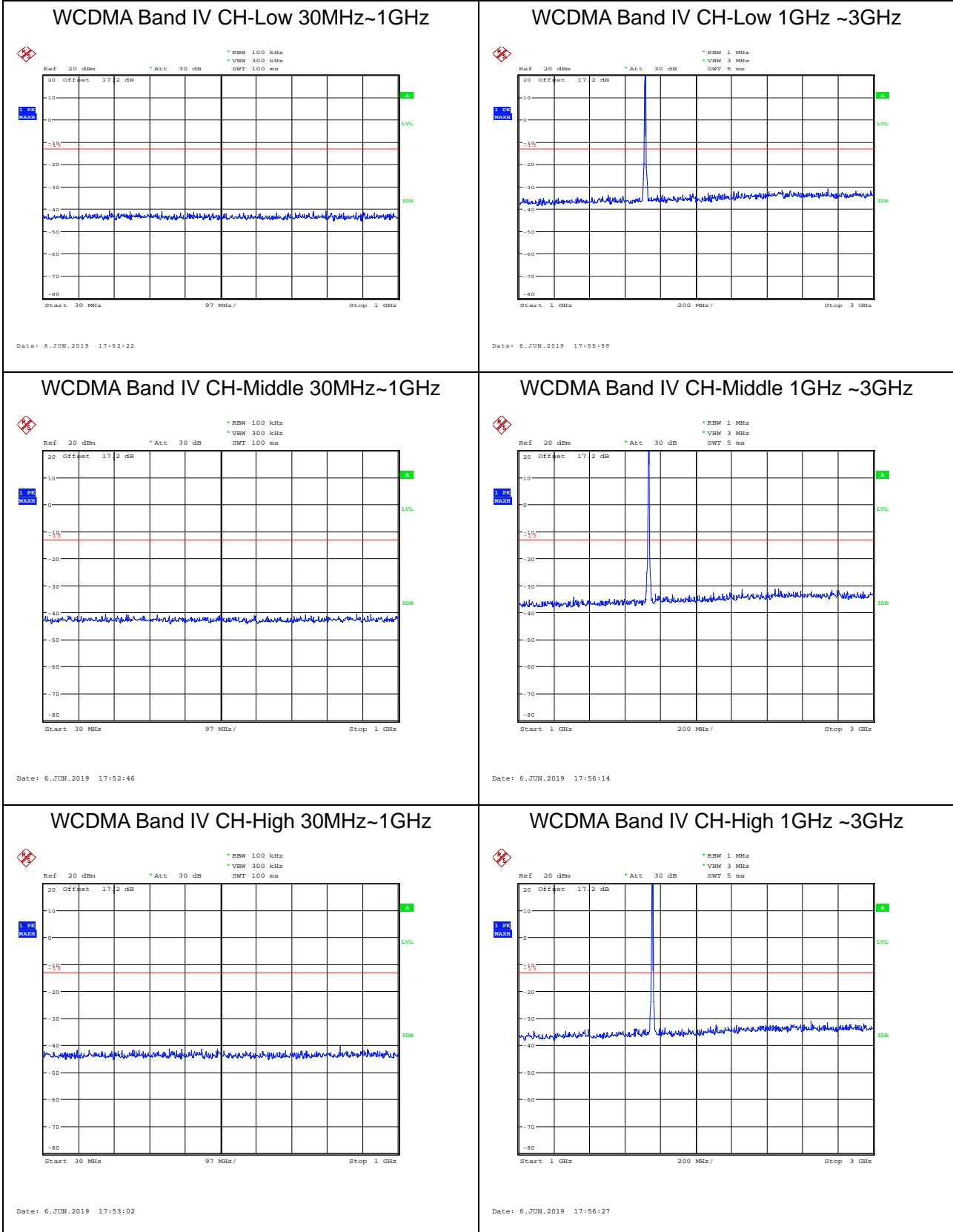
Frequency	Uncertainty
9kHz-1GHz	0.684 dB
1GHz-27GHz	1.407 dB



Test Result

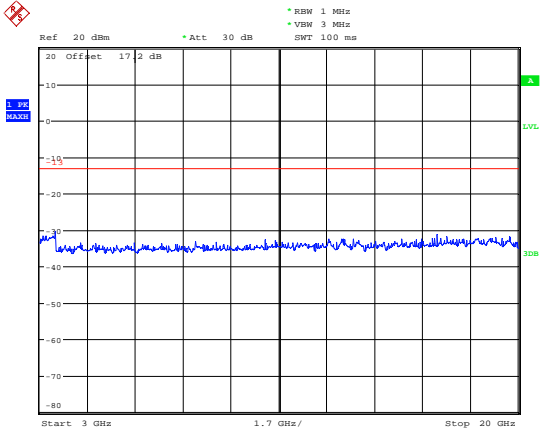
Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions more than 20 dB below the limit are not reported.

The signal beyond the limit is carrier.



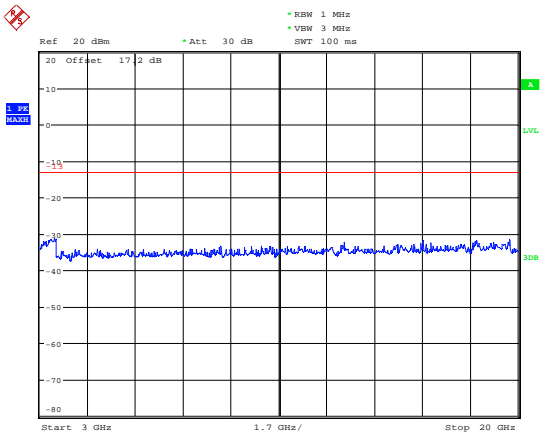


WCDMA Band IV CH-Low 3GHz ~20GHz



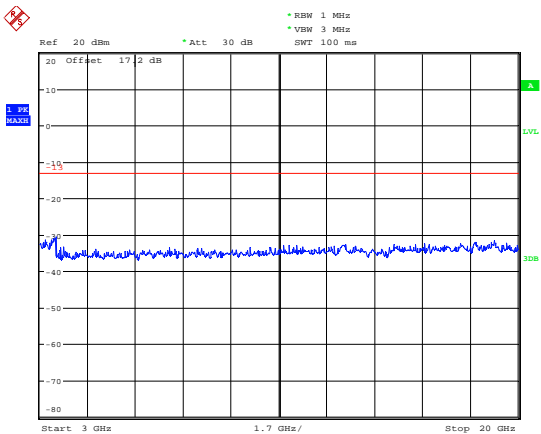
Date: 6.JUN.2019 18:32:46

WCDMA Band IV CH-Middle 3GHz ~20GHz



Date: 6.JUN.2019 18:33:02

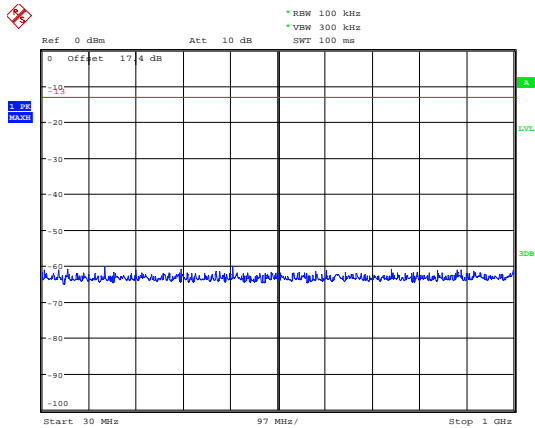
WCDMA Band IV CH-High 3GHz ~20GHz



Date: 6.JUN.2019 18:33:17

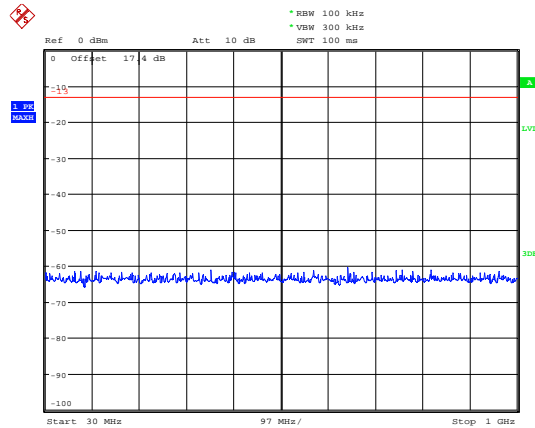


LTE Band 4 1.4MHz CH-Low 30MHz~1GHz



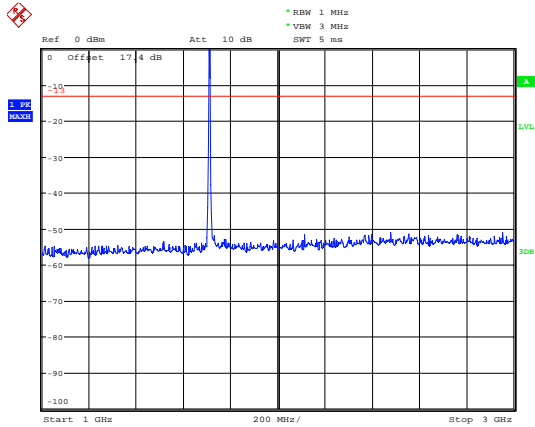
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LTE Band 4 1.4MHz CH-Middle 30MHz~1GHz



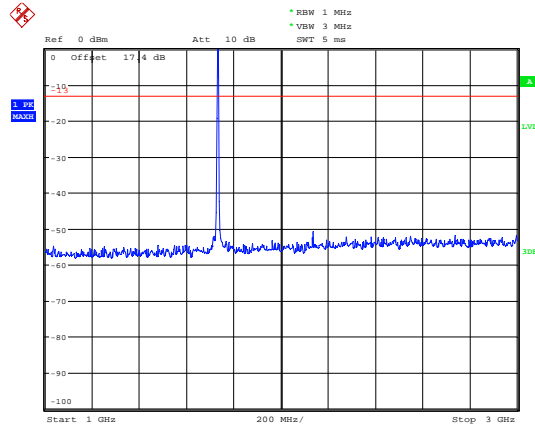
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LTE Band 4 1.4MHz CH-Low 1GHz~3GHz



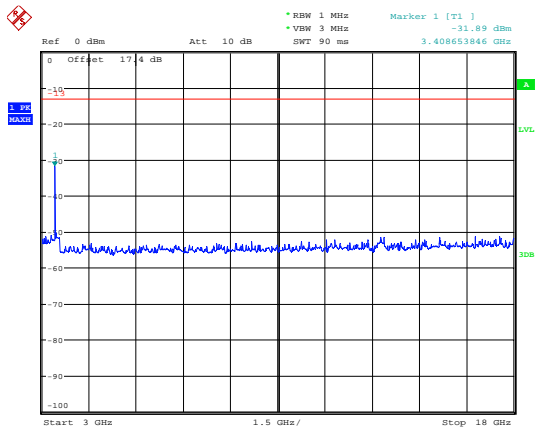
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LTE Band 4 1.4MHz CH-Middle 1GHz~3GHz



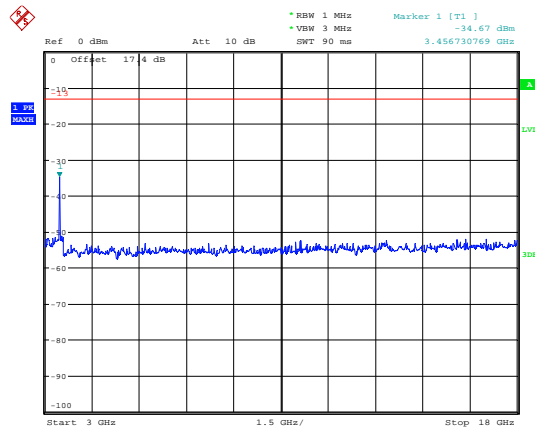
Date: 19.JAN.2019 14:23:31

LTE Band 4 1.4MHz CH-Low 3GHz~18GHz



Date: 19.JAN.2019 14:20:24

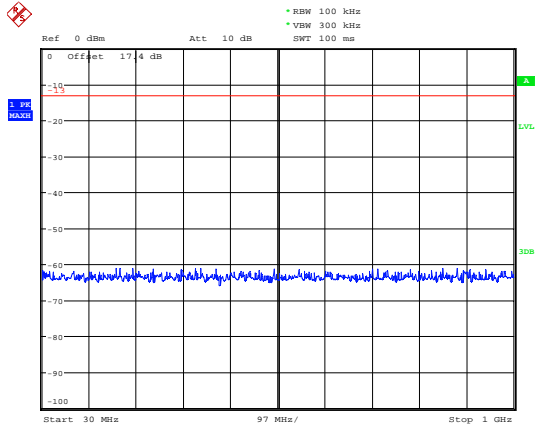
LTE Band 4 1.4MHz CH-Middle 3GHz~18GHz



Date: 19.JAN.2019 14:23:43

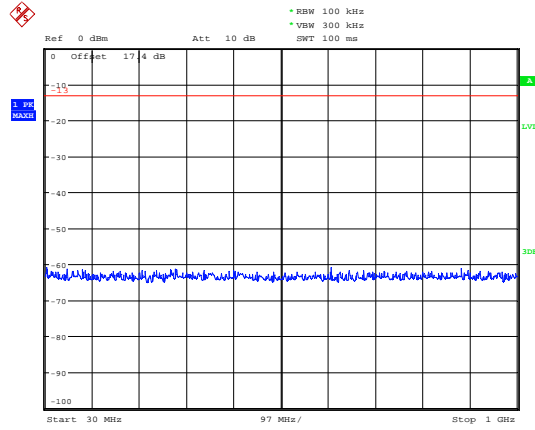


LTE Band 4 1.4MHz CH-High 30MHz~1GHz



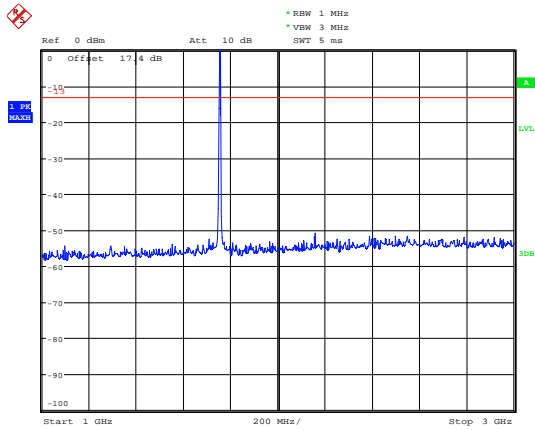
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LTE Band 4 3MHz CH-Low 30MHz~1GHz



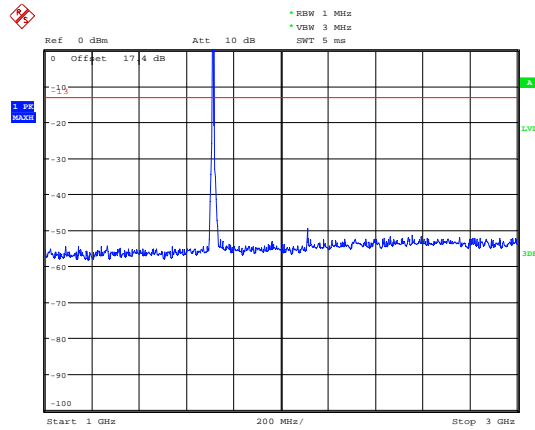
Date: 19.JAN.2019 14:25:45

LTE Band 4 1.4MHz CH-High 1GHz~3GHz



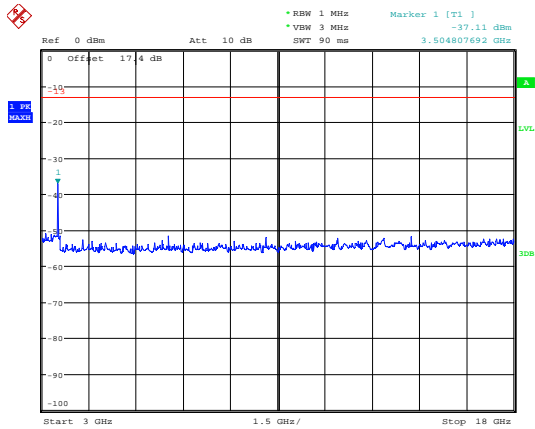
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LTE Band 4 3MHz CH-Low 1GHz~3GHz



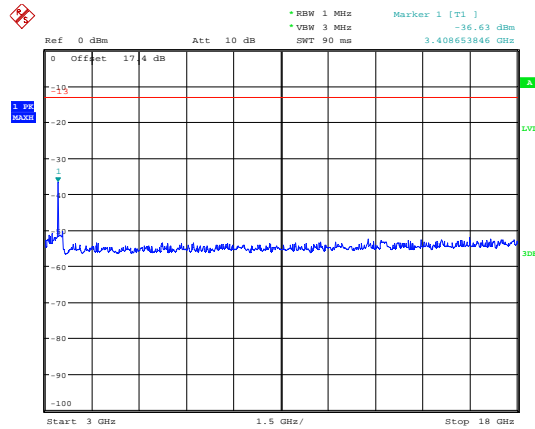
Date: 19.JAN.2019 14:25:59

LTE Band 4 1.4MHz CH-High 3GHz~18GHz



Date: 19.JAN.2019 14:24:11

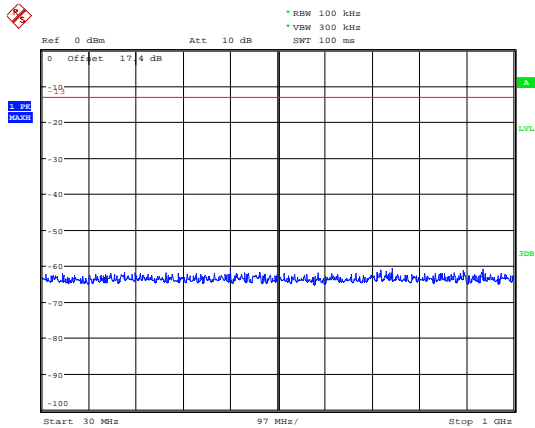
LTE Band 4 3MHz CH-Low 3GHz~18GHz



Date: 19.JAN.2019 14:26:10

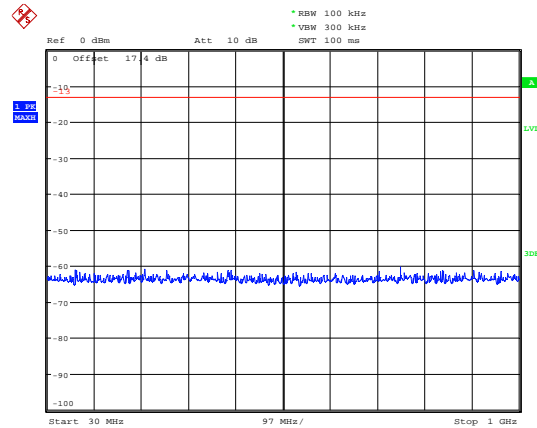


LTE Band 4 3MHz CH-Middle 30MHz~1GHz



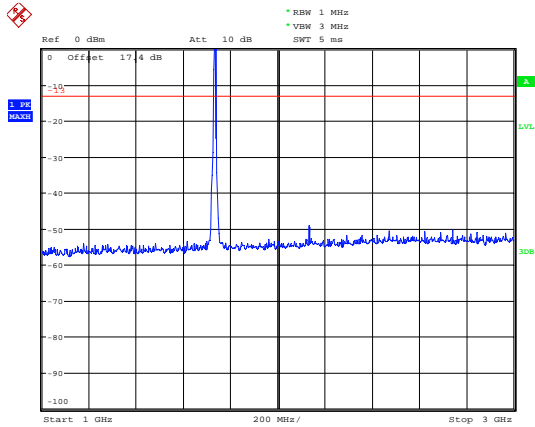
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LTE Band 4 3MHz CH-High 30MHz~1GHz



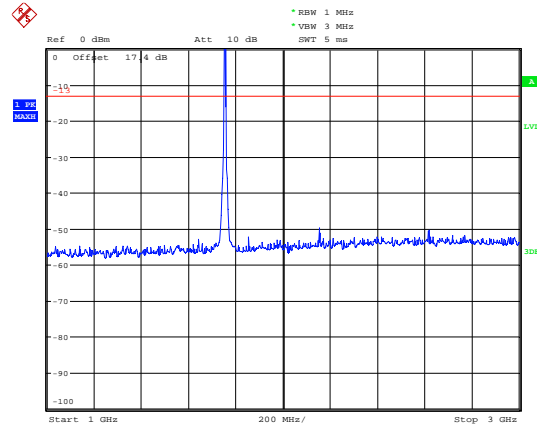
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LTE Band 4 3MHz CH-Middle 1GHz~3GHz



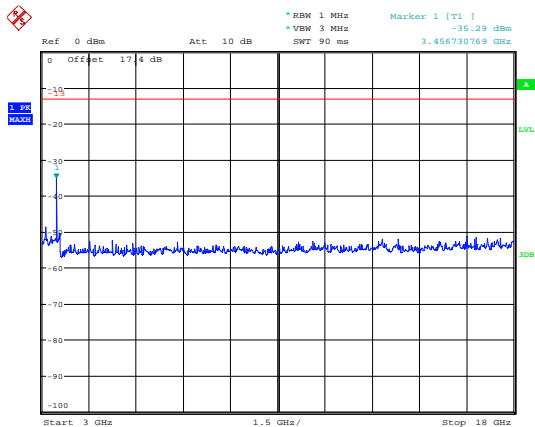
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LTE Band 4 3MHz CH-High 1GHz~3GHz



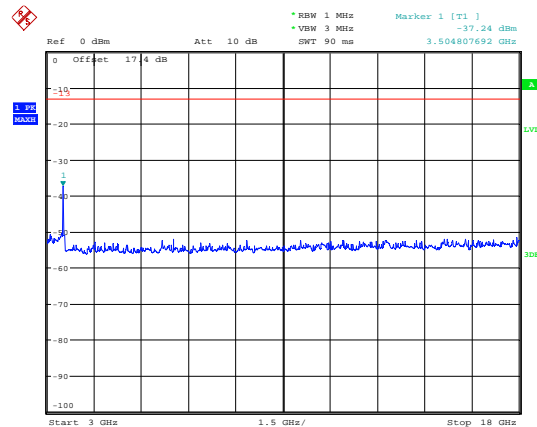
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LTE Band 4 3MHz CH-Middle 3GHz~18GHz



Date: 19.JAN.2019 14:26:44

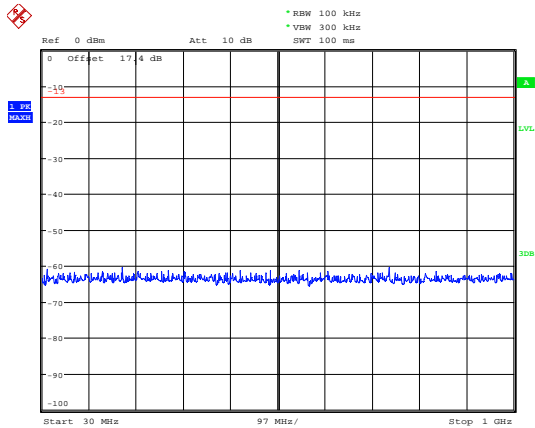
LTE Band 4 3MHz CH-High 3GHz~18GHz



Date: 19.JAN.2019 14:28:03

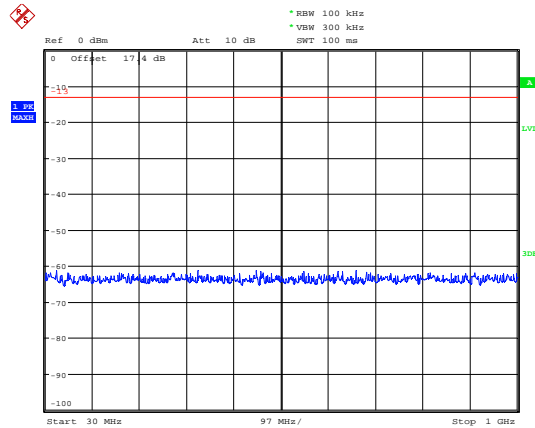


LTE Band 4 5MHz CH-Low 30MHz~1GHz



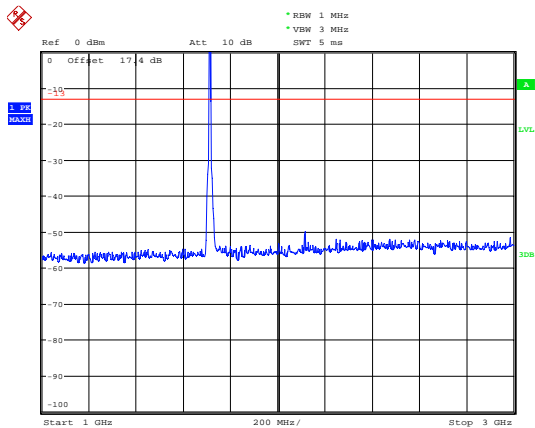
Date: 19.JAN.2019 14:29:25

LTE Band 4 5MHz CH-Middle 30MHz~1GHz



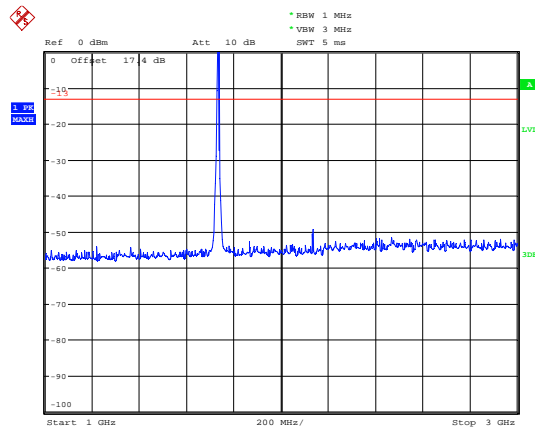
Date: 19.JAN.2019 14:29:46

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



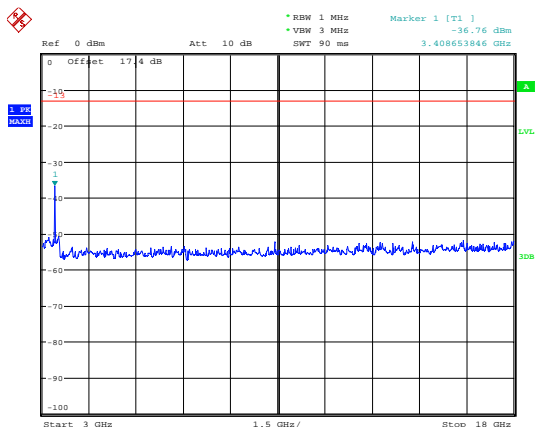
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LTE Band 4 5MHz CH-Middle 1GHz~3GHz



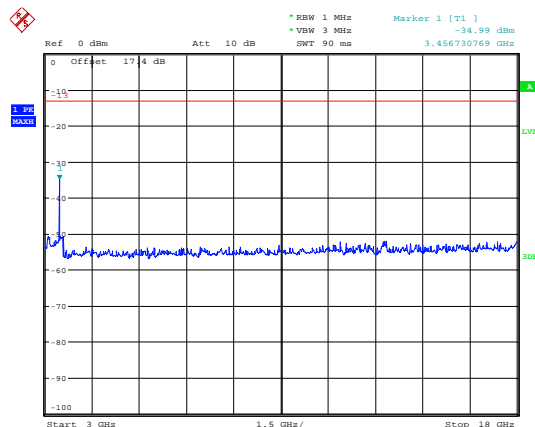
Date: 19.JAN.2019 14:30:01

LTE Band 4 5MHz CH-Low 3GHz~18GHz



Date: 19.JAN.2019 14:28:56

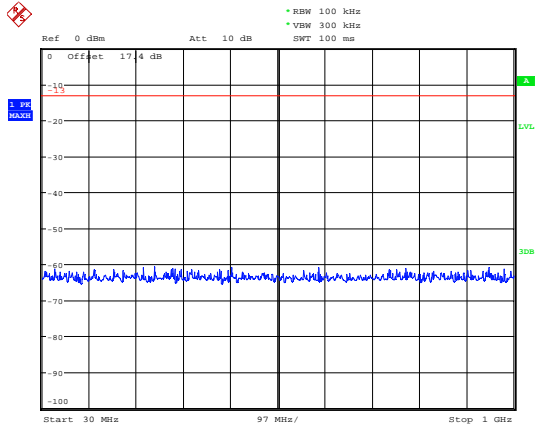
LTE Band 4 5MHz CH-Middle 3GHz~18GHz



Date: 19.JAN.2019 14:30:14

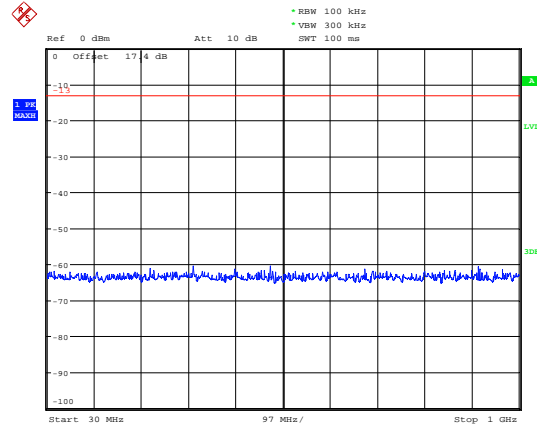


LTE Band 4 5MHz CH-High 30MHz~1GHz



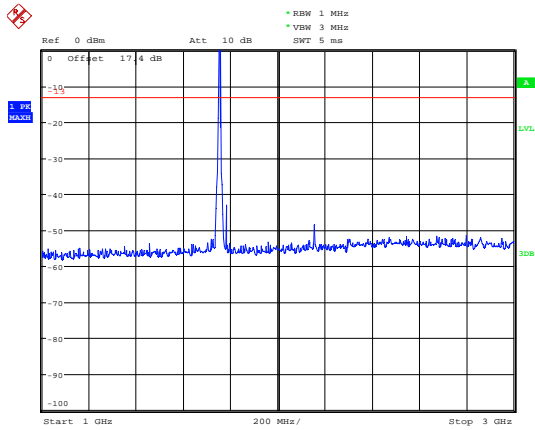
Date: 19.JAN.2019 14:31:06

LTE Band 4 10MHz CH-Low 30MHz~1GHz



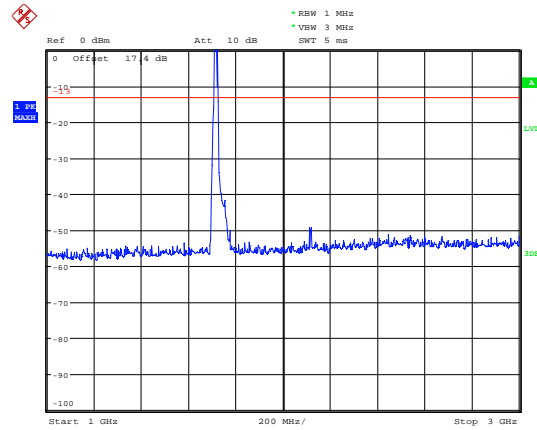
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LTE Band 4 5MHz CH-High 1GHz~3GHz



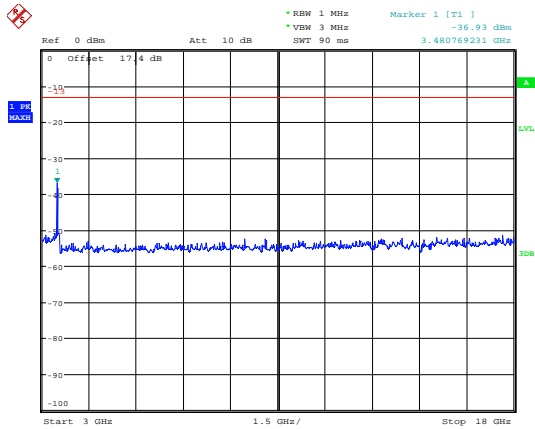
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LTE Band 4 10MHz CH-Low 1GHz~3GHz



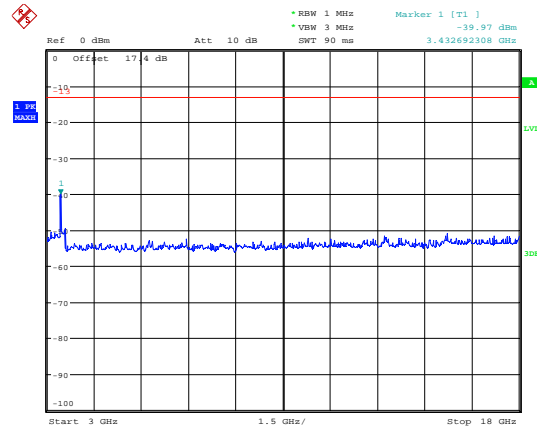
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LTE Band 4 5MHz CH-High 3GHz~18GHz



Date: 19.JAN.2019 14:30:37

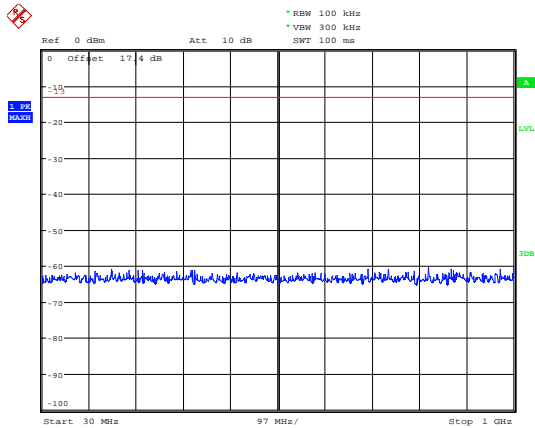
LTE Band 4 10MHz CH-Low 3GHz~18GHz



Date: 19.JAN.2019 14:33:01

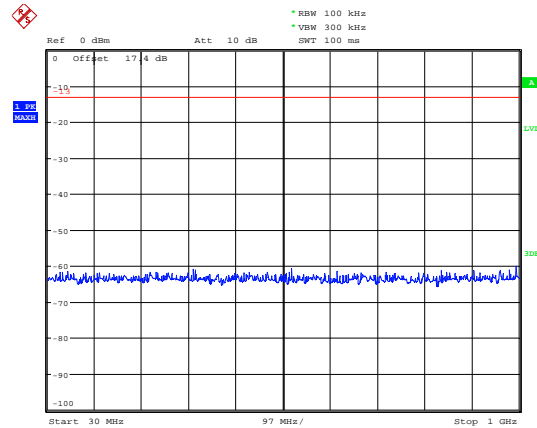


LTE Band 4 10MHz CH-Middle 30MHz~1GHz



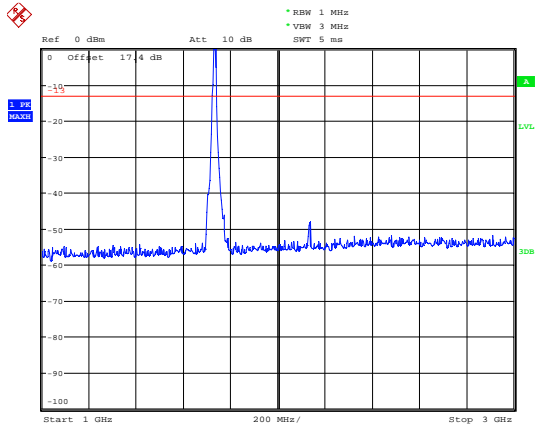
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LTE Band 4 10MHz CH-High 30MHz~1GHz



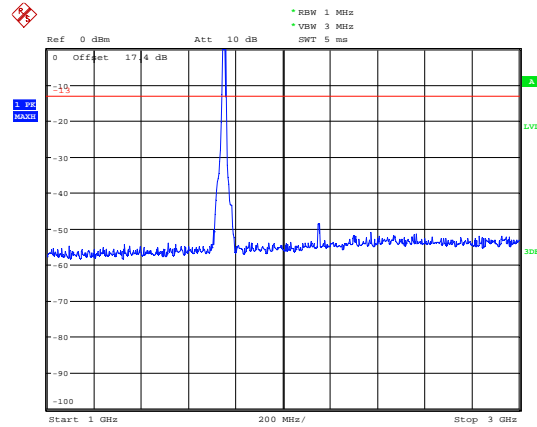
Date: 19.JAN.2019 14:34:25

LTE Band 4 10MHz CH-Middle 1GHz~3GHz



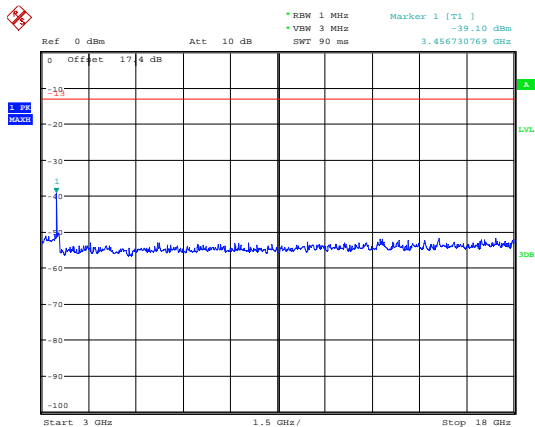
Date: 19.JAN.2019 14:33:43

LTE Band 4 10MHz CH-High 1GHz~3GHz



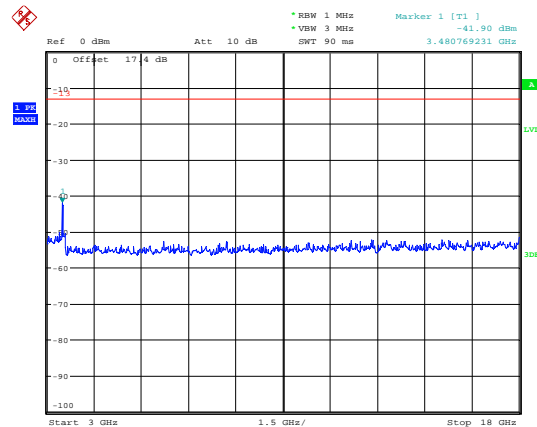
Date: 19.JAN.2019 14:34:38

LTE Band 4 10MHz CH-Middle 3GHz~18GHz



Date: 19.JAN.2019 14:33:29

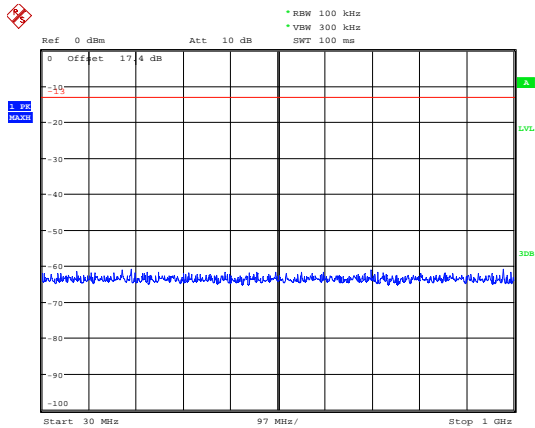
LTE Band 4 10MHz CH-High 3GHz~18GHz



Date: 19.JAN.2019 14:34:49

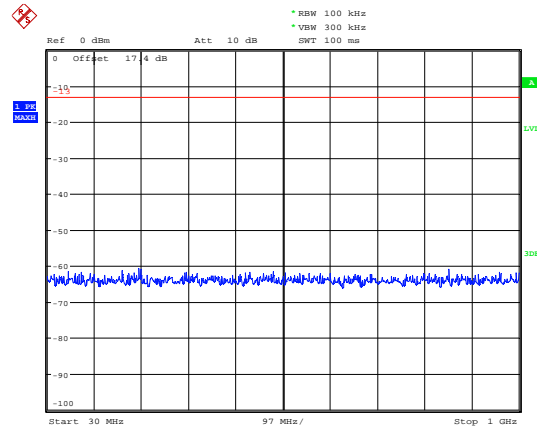


LTE Band 4 15MHz CH-Low 30MHz~1GHz



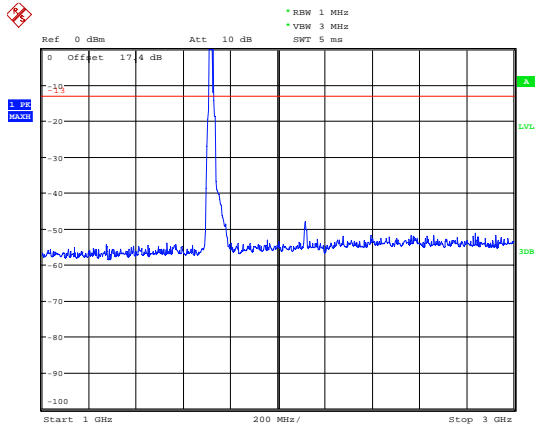
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LTE Band 4 15MHz CH-Middle 30MHz~1GHz



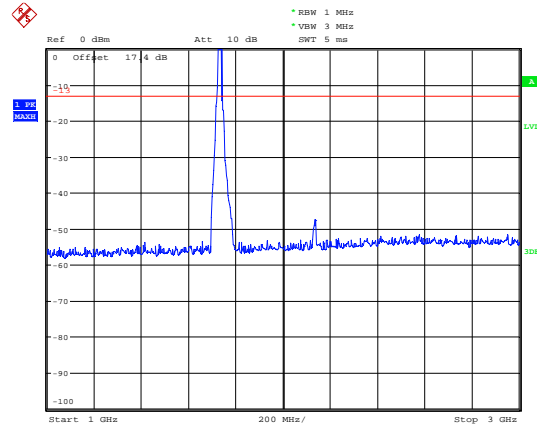
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LTE Band 4 15MHz CH-Low 1GHz~3GHz



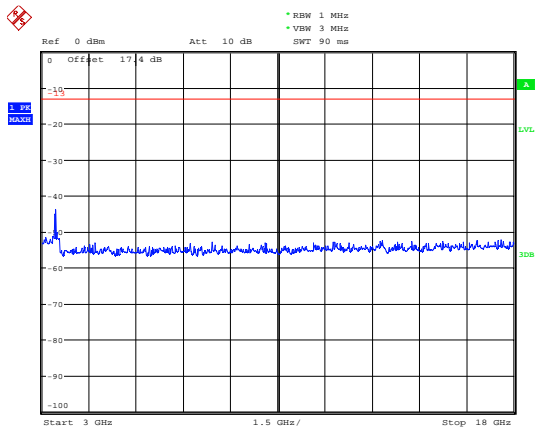
Date: 19.JAN.2019 14:35:57

LTE Band 4 15MHz CH-Middle 1GHz~3GHz



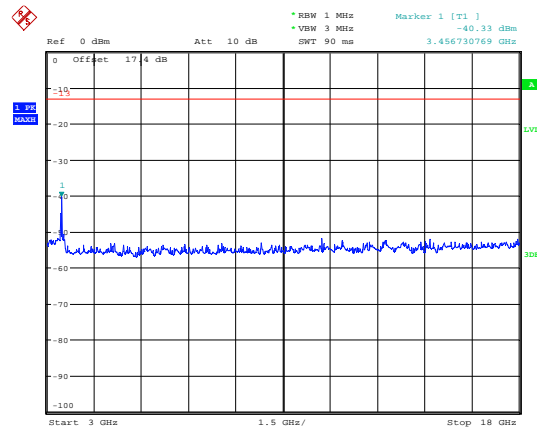
Date: 19.JAN.2019 14:36:43

LTE Band 4 15MHz CH-Low 3GHz~18GHz



Date: 19.JAN.2019 14:35:45

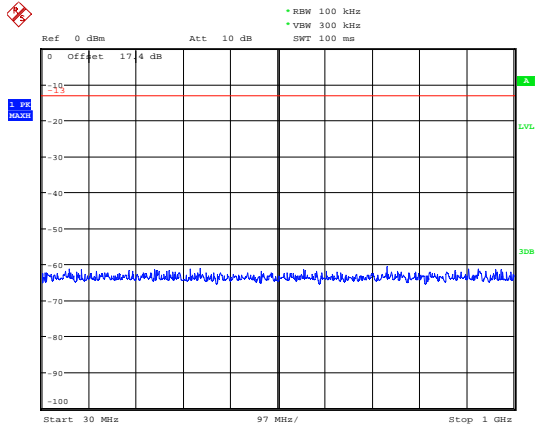
LTE Band 4 15MHz CH-Middle 3GHz~18GHz



Date: 19.JAN.2019 14:36:58

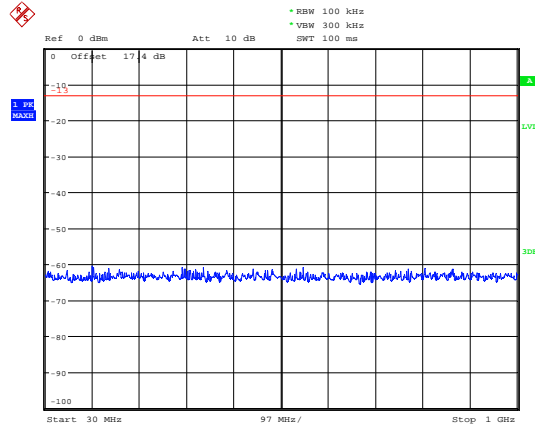


LTE Band 4 15MHz CH-High 30MHz~1GHz



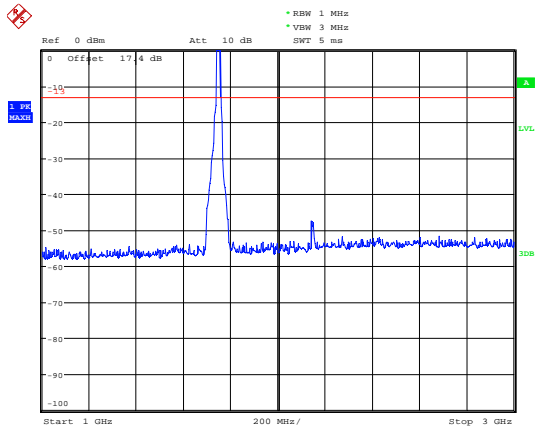
Date: 19.JAN.2019 14:37:47

LTE Band 4 20MHz CH-Low 30MHz~1GHz



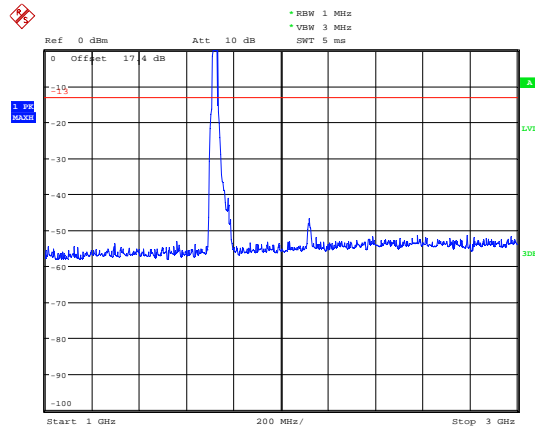
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LTE Band 4 15MHz CH-High 1GHz~3GHz



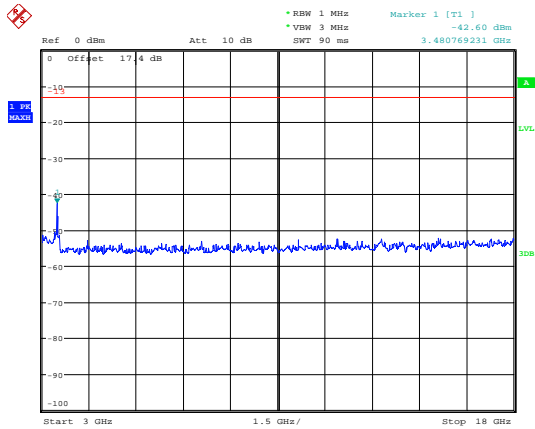
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LTE Band 4 20MHz CH-Low 1GHz~3GHz



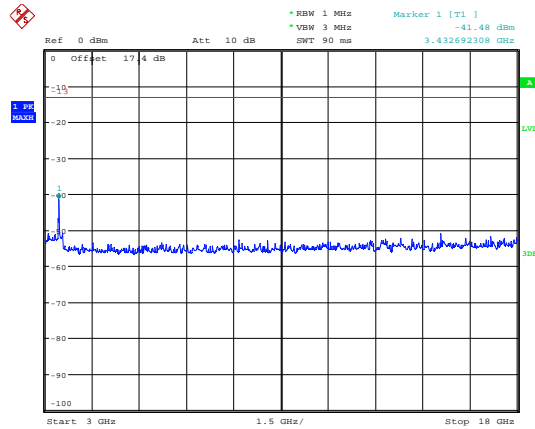
Date: 19.JAN.2019 14:39:05

LTE Band 4 15MHz CH-High 3GHz~18GHz



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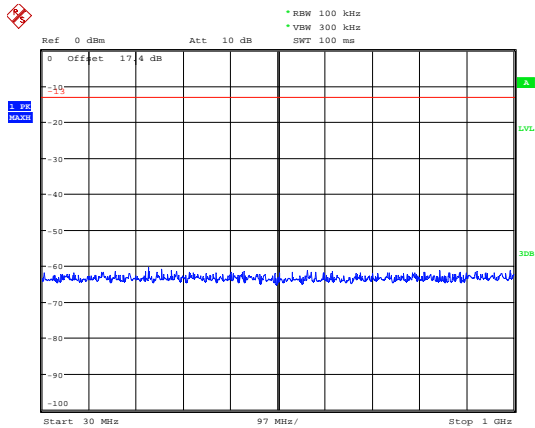
LTE Band 4 20MHz CH-Low 3GHz~18GHz



Date: 19.JAN.2019 14:39:15

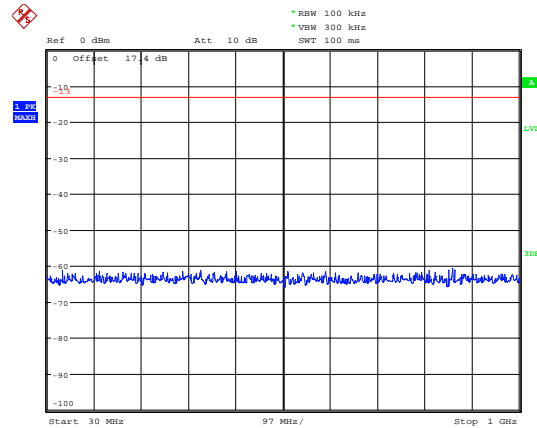


LTE Band 4 20MHz CH-Middle 30MHz~1GHz



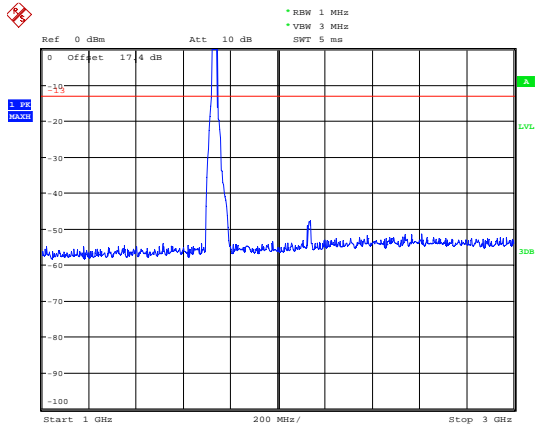
Date: 19.JAN.2019 14:40:07

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



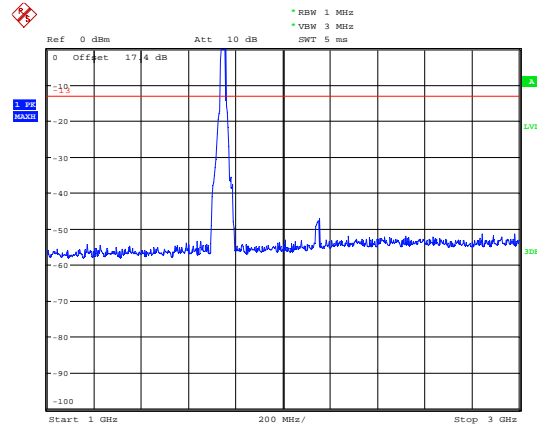
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LTE Band 4 20MHz CH-Middle 1GHz~3GHz



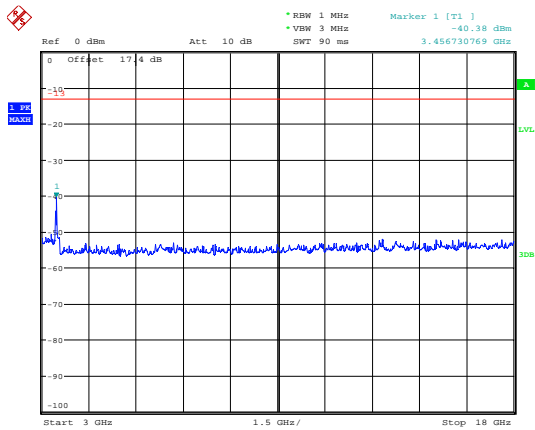
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LTE Band 4 20MHz CH-High 1GHz~3GHz



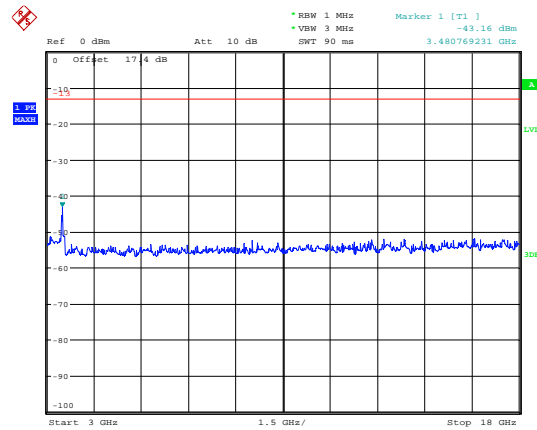
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LTE Band 4 20MHz CH-Middle 3GHz~18GHz



Date: 19.JAN.2019 14:39:38

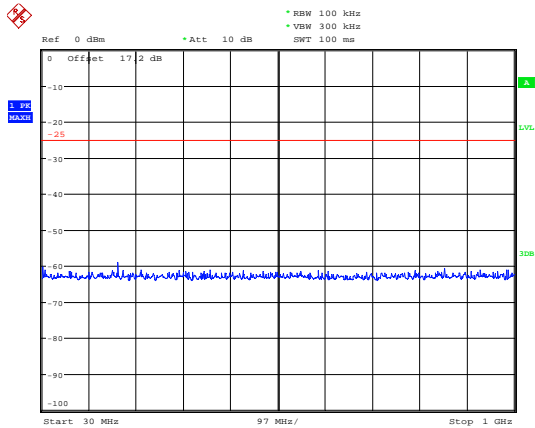
LTE Band 4 20MHz CH-High 3GHz~18GHz



Date: 19.JAN.2019 14:40:49

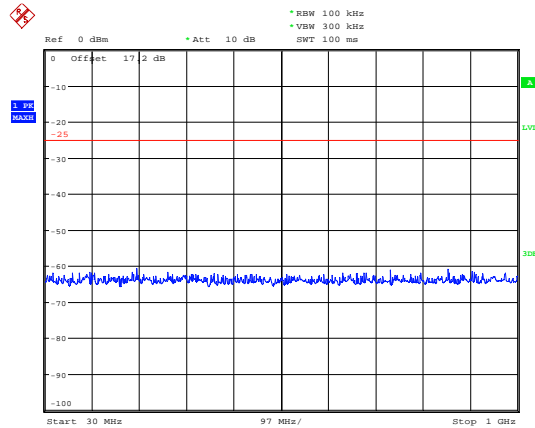


LTE Band 7 5MHz CH-Low 30MHz~1GHz



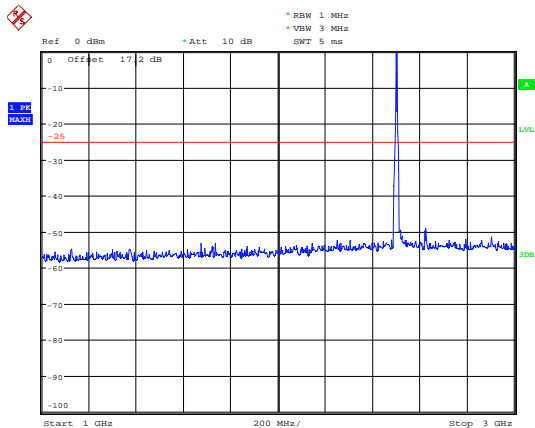
Date: 19.JUN.2019 11:38:18

LTE Band 7 5MHz CH-Middle 30MHz~1GHz



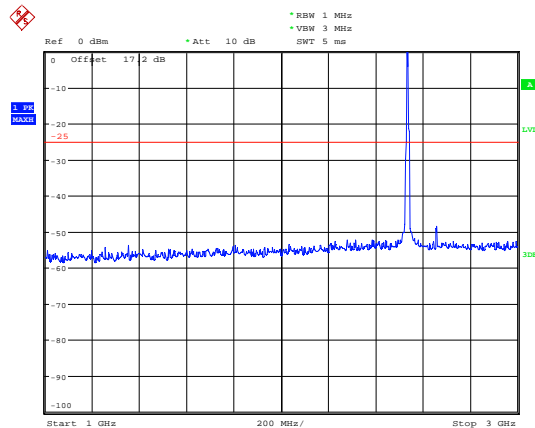
Date: 19.JUN.2019 11:39:33

LTE Band 7 5MHz CH-Low 1GHz~3GHz



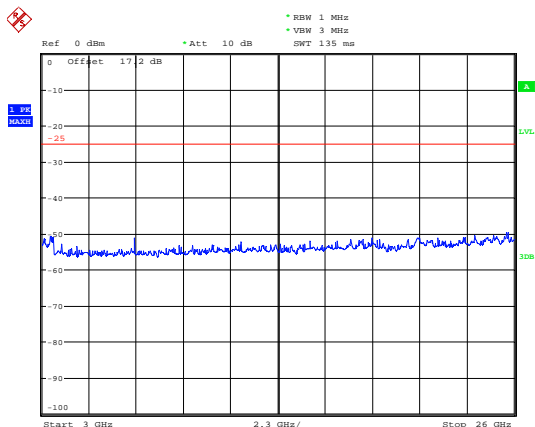
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LTE Band 7 5MHz CH-Middle 1GHz~3GHz



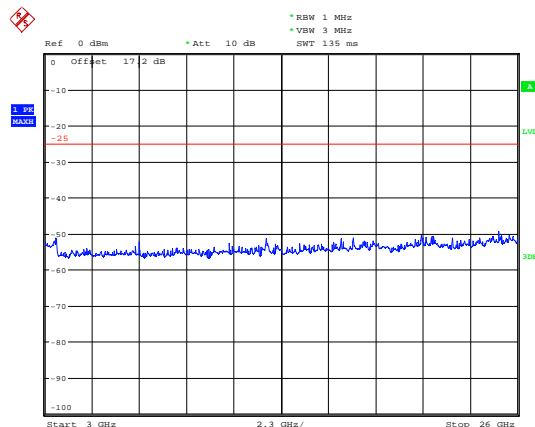
Date: 19.JUN.2019 11:46:33

LTE Band 7 5MHz CH-Low 3GHz~26GHz



Date: 19.JUN.2019 12:52:55

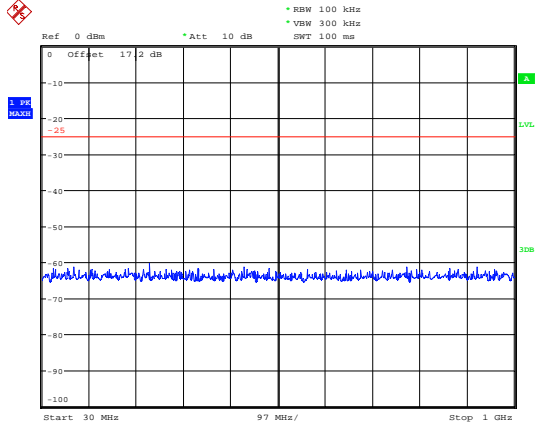
LTE Band 7 5MHz CH-Middle 3GHz~26GHz



Date: 19.JUN.2019 11:51:27

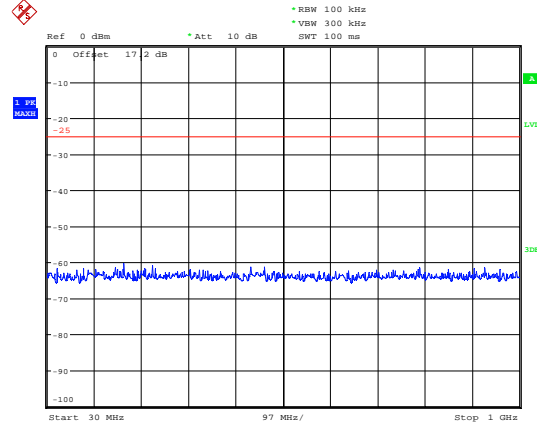


LTE Band 7 5MHz CH-High 30MHz~1GHz



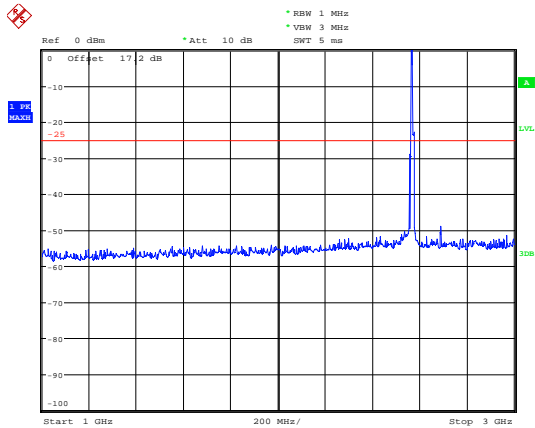
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LTE Band 7 10MHz CH-Low 30MHz~1GHz



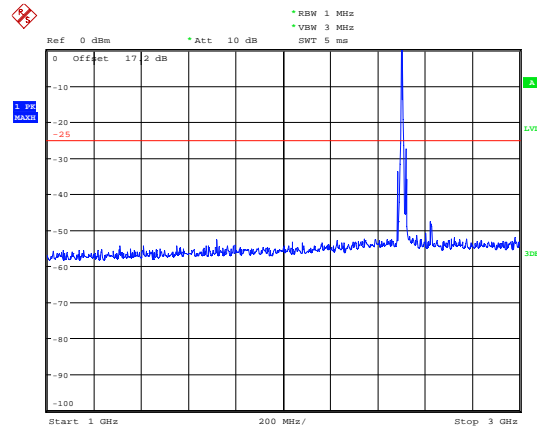
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LTE Band 7 5MHz CH-High 1GHz~3GHz



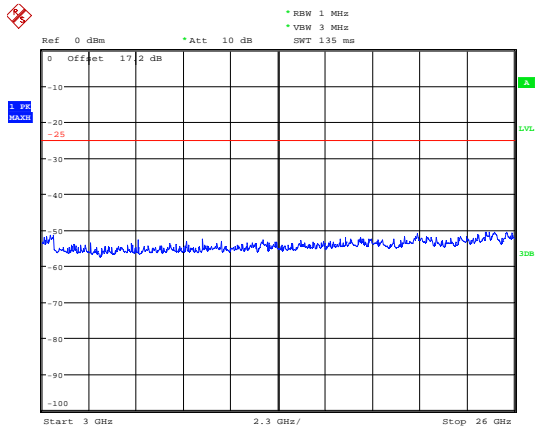
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LTE Band 7 10MHz CH-Low 1GHz~3GHz



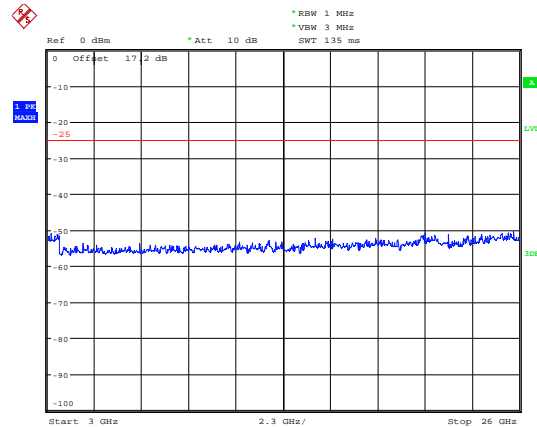
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LTE Band 7 5MHz CH-High 3GHz~26GHz



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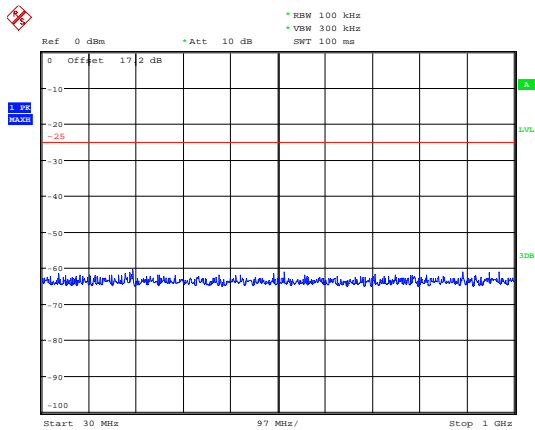
LTE Band 7 10MHz CH-Low 3GHz~26GHz



Date: 19.JUN.2019 11:52:11

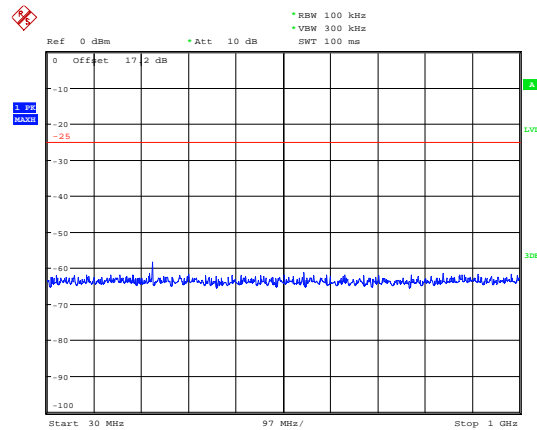


LTE Band 7 10MHz CH-Middle 30MHz~1GHz



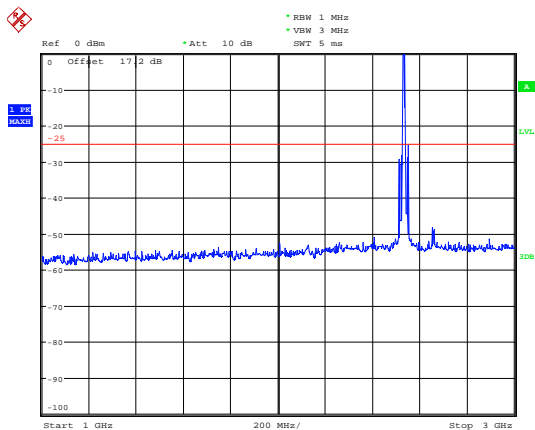
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LTE Band 7 10MHz CH-High 30MHz~1GHz



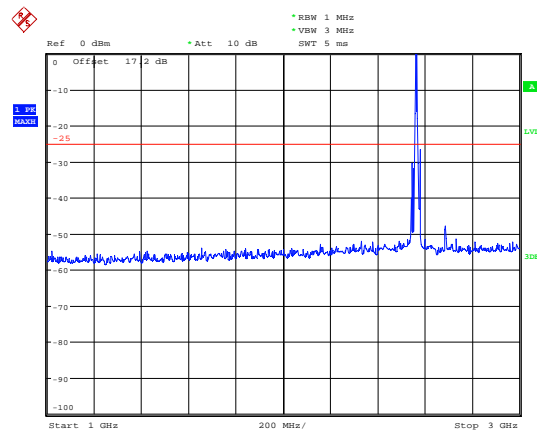
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LTE Band 7 10MHz CH-Middle 1GHz~3GHz



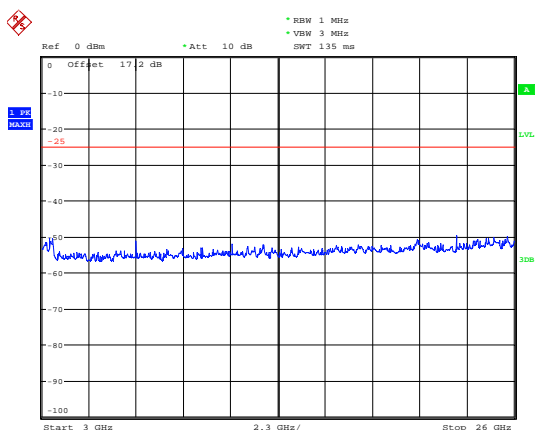
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LTE Band 7 10MHz CH-High 1GHz~3GHz



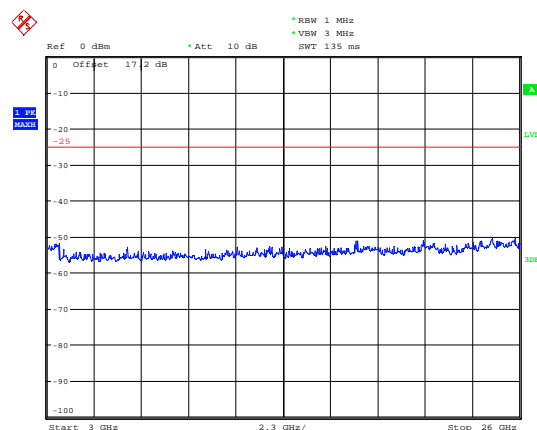
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LTE Band 7 10MHz CH-Middle 3GHz~26GHz



Date: 19.JUN.2019 11:52:23

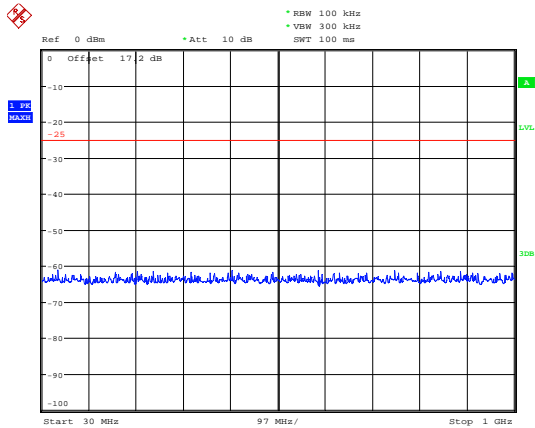
LTE Band 7 10MHz CH-High 3GHz~26GHz



Date: 19.JUN.2019 11:52:37

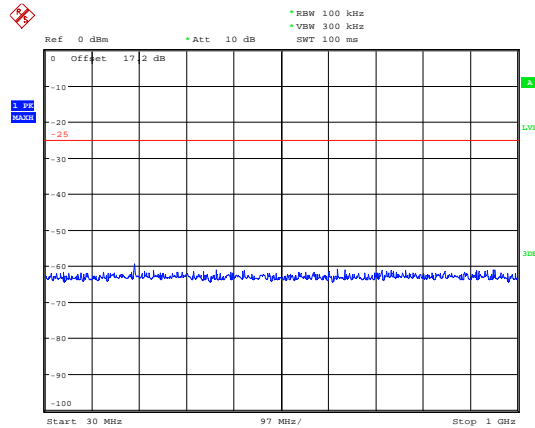


LTE Band 7 15MHz CH-Low 30MHz~1GHz



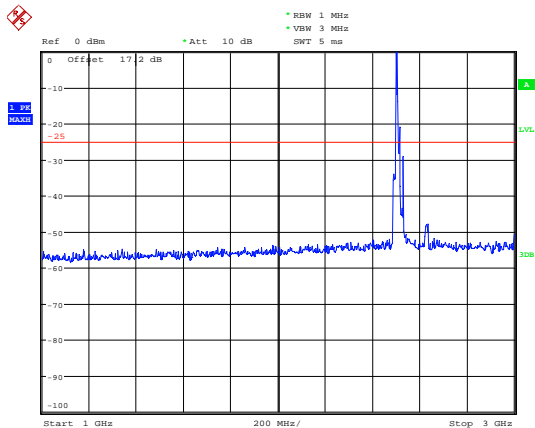
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LTE Band 7 15MHz CH-Middle 30MHz~1GHz



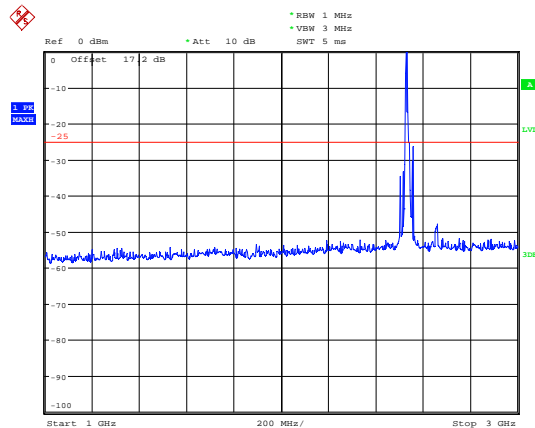
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LTE Band 7 15MHz CH-Low 1GHz~3GHz



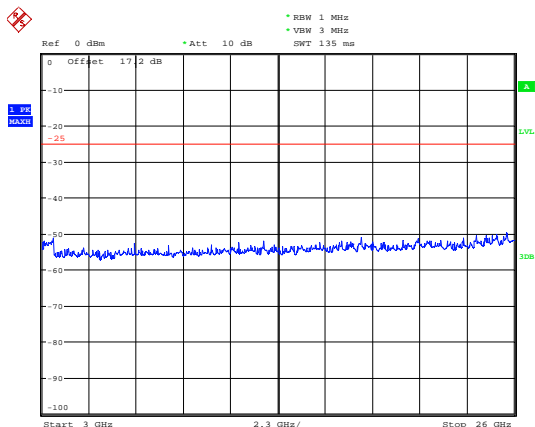
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LTE Band 7 15MHz CH-Middle 1GHz~3GHz



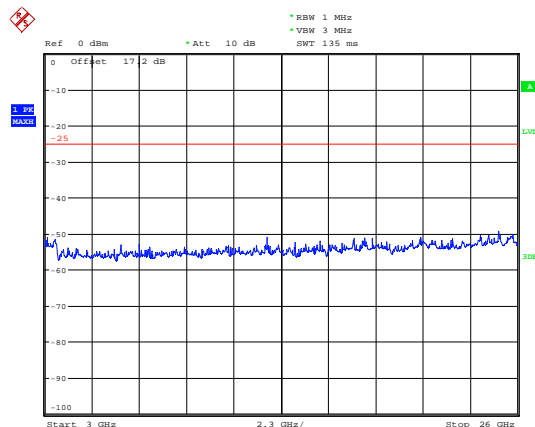
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LTE Band 7 15MHz CH-Low 3GHz~26GHz



Date: 19.JUN.2019 11:49:25

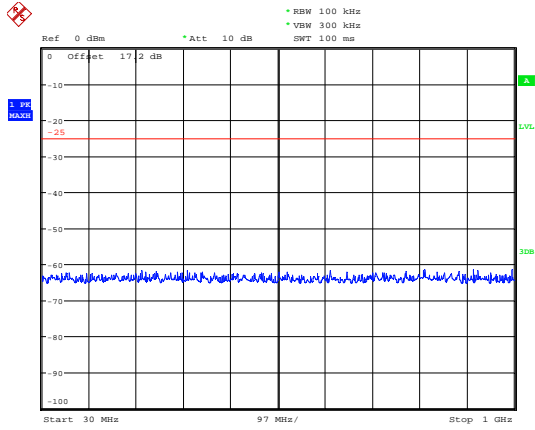
LTE Band 7 15MHz CH-Middle 3GHz~26GHz



Date: 19.JUN.2019 11:49:11

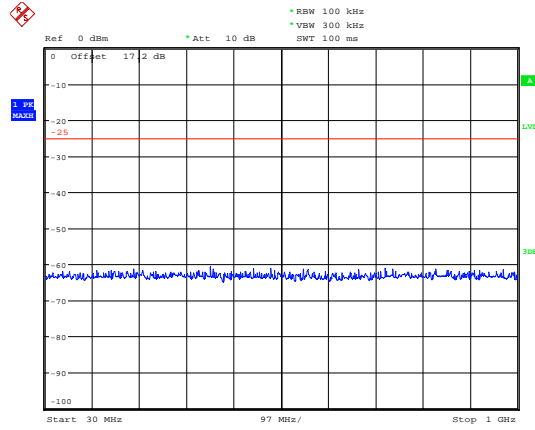


LTE Band 7 15MHz CH-High 30MHz~1GHz



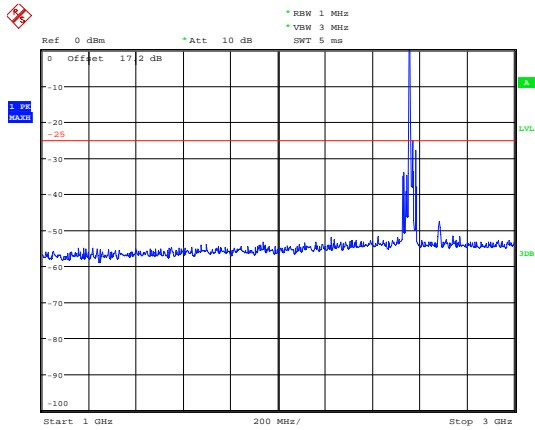
Date: 19.JUN.2019 11:41:56

LTE Band 7 20MHz CH-Low 30MHz~1GHz



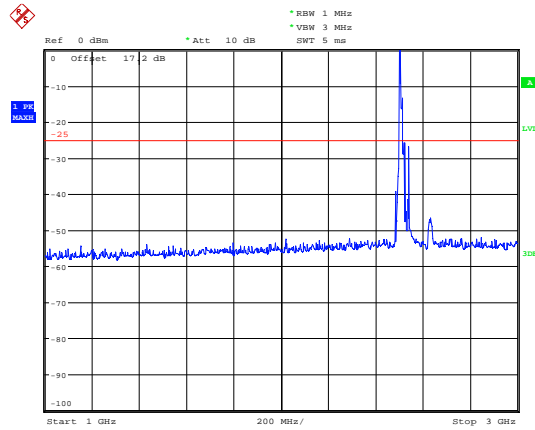
Date: 19.JUN.2019 11:43:34

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



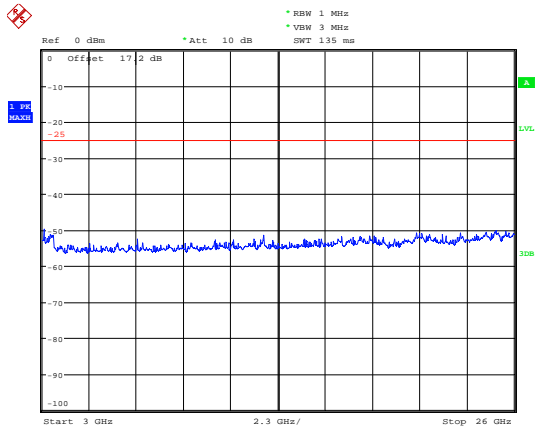
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LTE Band 7 20MHz CH-Low 1GHz~3GHz



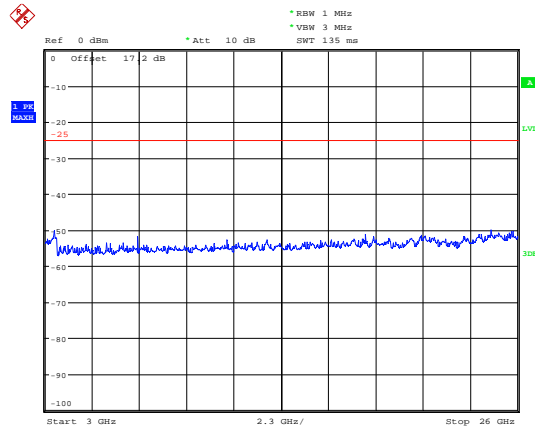
Date: 19.JUN.2019 11:45:53

LTE Band 7 15MHz CH-High 3GHz~26GHz



Date: 19.JUN.2019 11:49:00

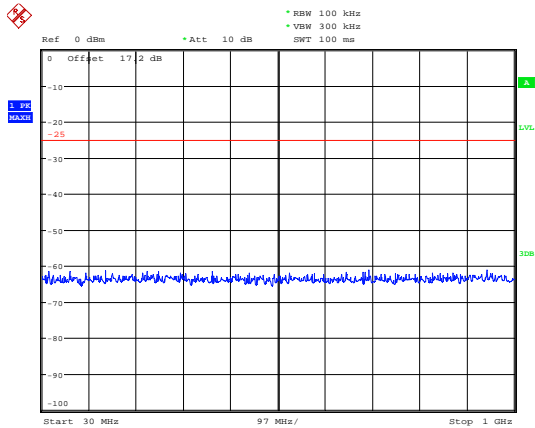
LTE Band 7 20MHz CH-Low 3GHz~26GHz



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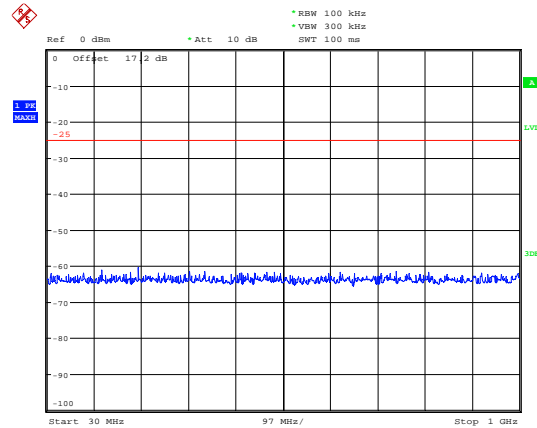


LTE Band 7 20MHz CH-Middle 30MHz~1GHz



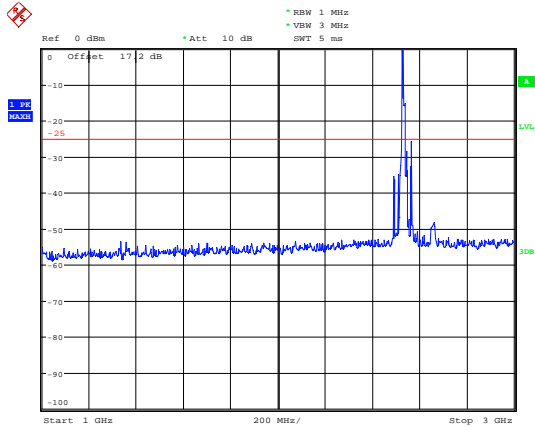
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LTE Band 7 20MHz CH-High 30MHz~1GHz



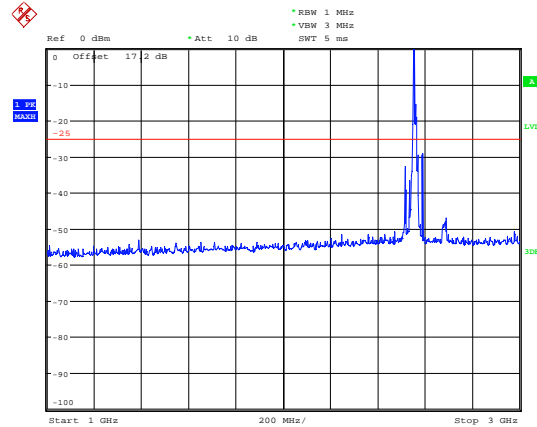
Date: 19.JUN.2019 11:43:59

LTE Band 7 20MHz CH-Middle 1GHz~3GHz



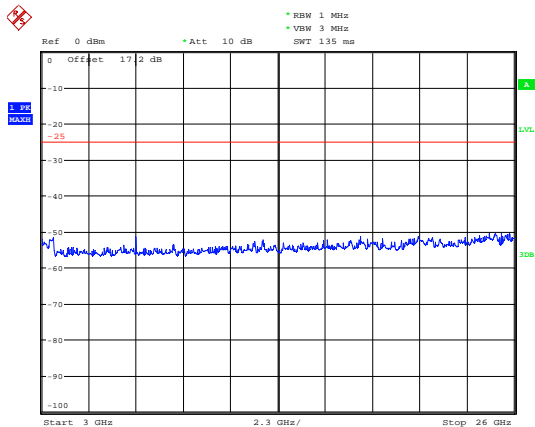
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LTE Band 7 20MHz CH-High 1GHz~3GHz



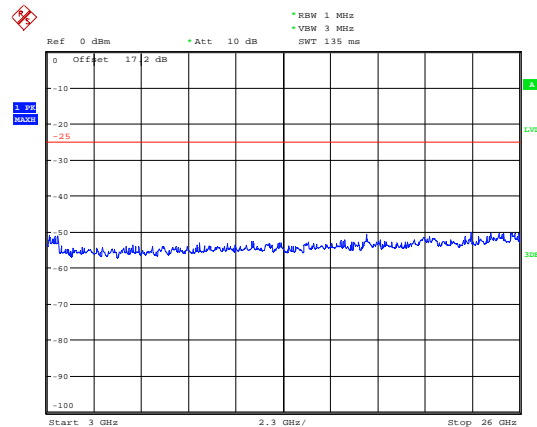
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LTE Band 7 20MHz CH-Middle 3GHz~26GHz



Date: 19.JUN.2019 11:50:42

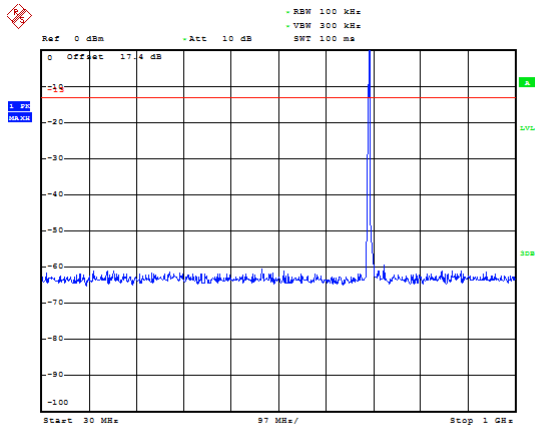
LTE Band 7 20MHz CH-High 3GHz~26GHz



Date: 19.JUN.2019 11:50:56

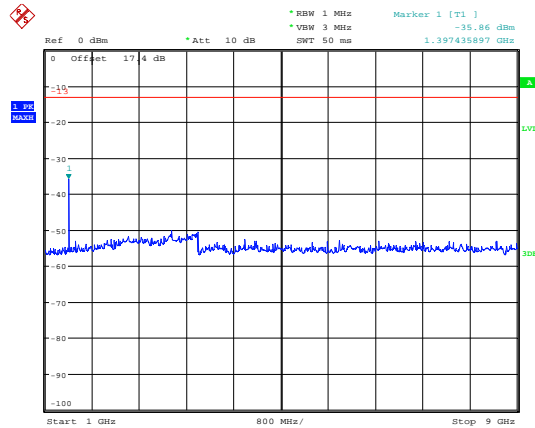


LTE Band 12 1.4MHz CH-Low 30MHz~1GHz



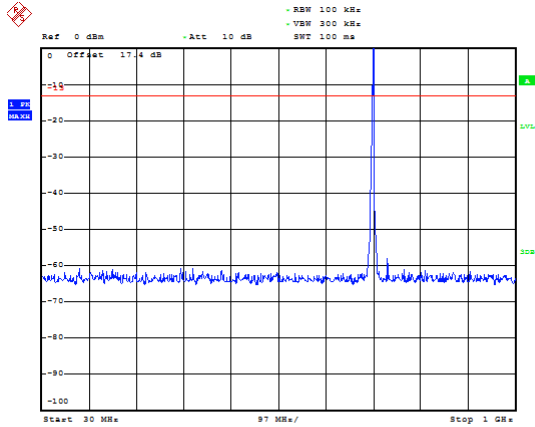
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LTE Band 12 1.4MHz CH-Low 1GHz~9GHz



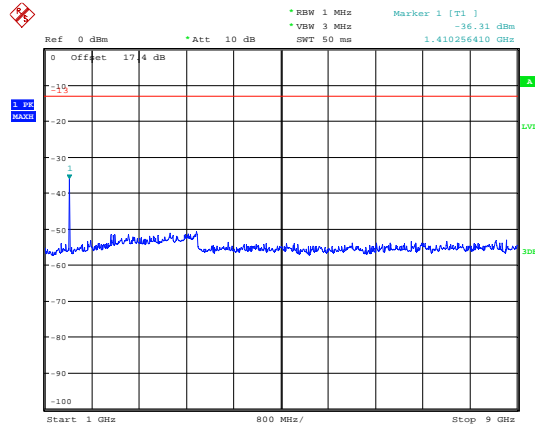
Date: 21.JAN.2019 11:26:33

LTE Band 12 1.4MHz CH- Middle 30MHz~1GHz



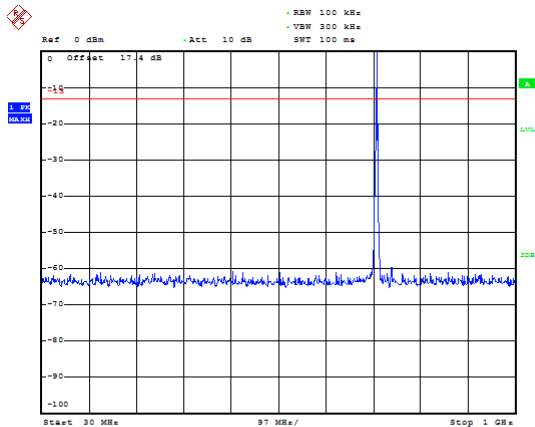
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LTE Band 12 1.4MHz CH- Middle 1GHz~9GHz



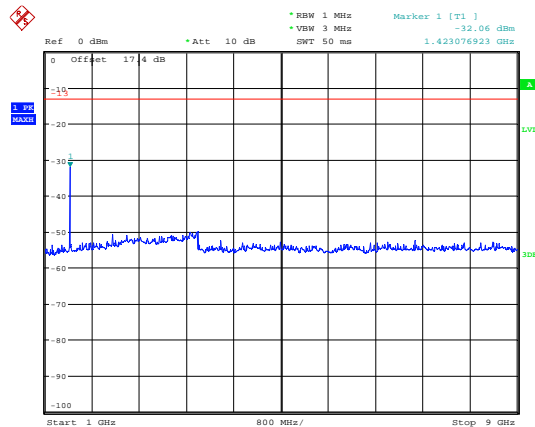
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LTE Band 12 1.4MHz CH-High 30MHz~1GHz



Date: 21.JAN.2019 11:28:50

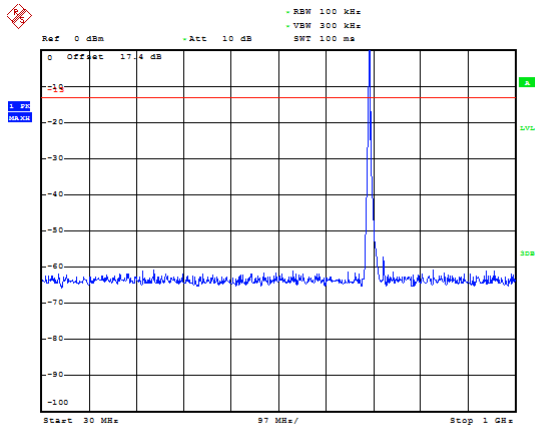
LTE Band 12 1.4MHz CH-High 1GHz~9GHz



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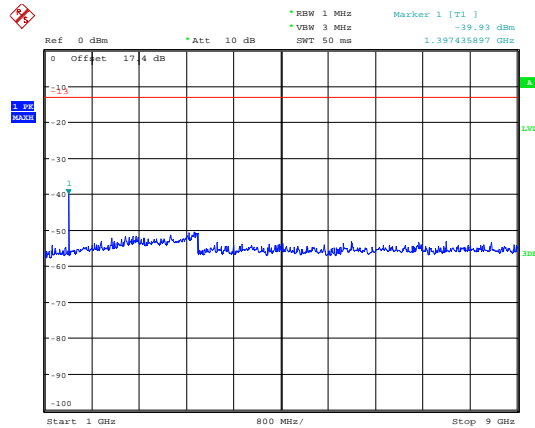


LTE Band 12 3MHz CH-Low 30MHz~1GHz



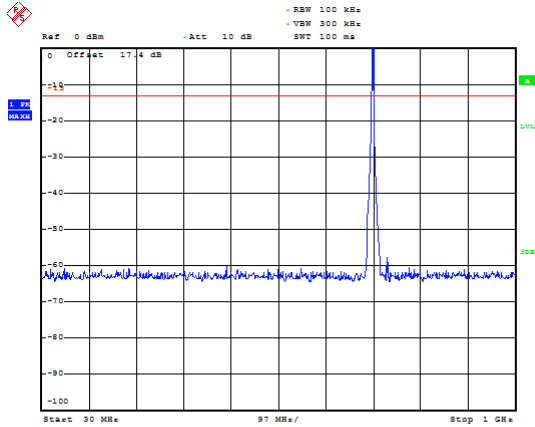
Date: 21.JAN.2019 11:31:35

LTE Band 12 3MHz CH-Low 1GHz~9GHz



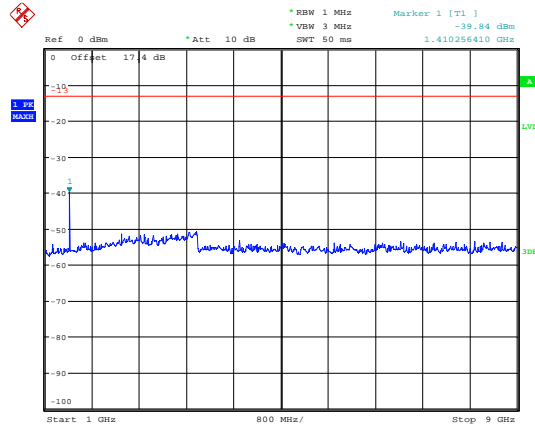
Date: 21.JAN.2019 11:31:52

LTE Band 12 3MHz CH- Middle 30MHz~1GHz



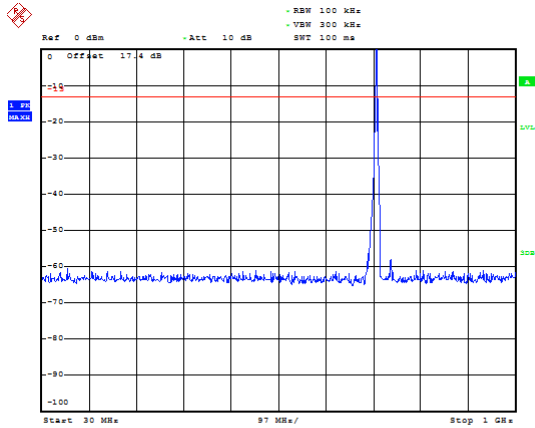
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LTE Band 12 3MHz CH- Middle 1GHz~9GHz



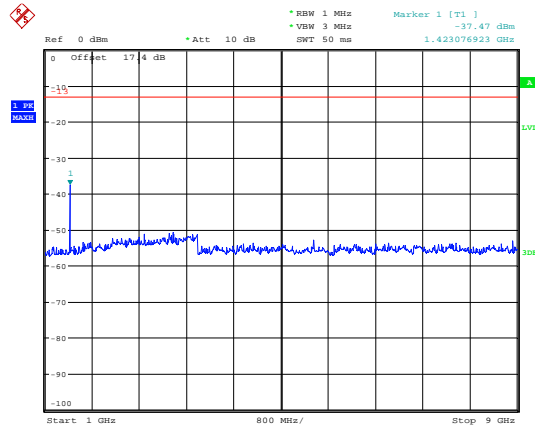
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LTE Band 12 3MHz CH-High 30MHz~1GHz



Date: 21.JAN.2019 11:32:57

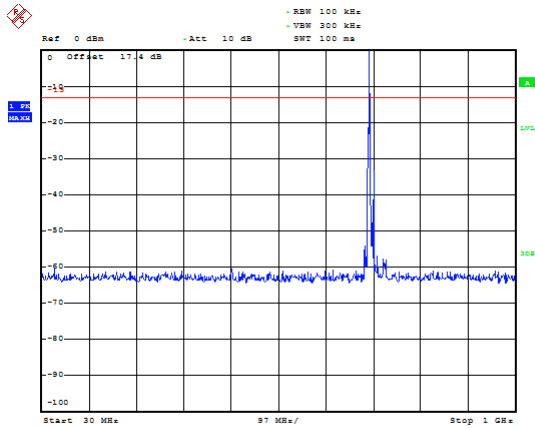
LTE Band 12 3MHz CH-High 1GHz~9GHz



Date: 21.JAN.2019 11:33:11

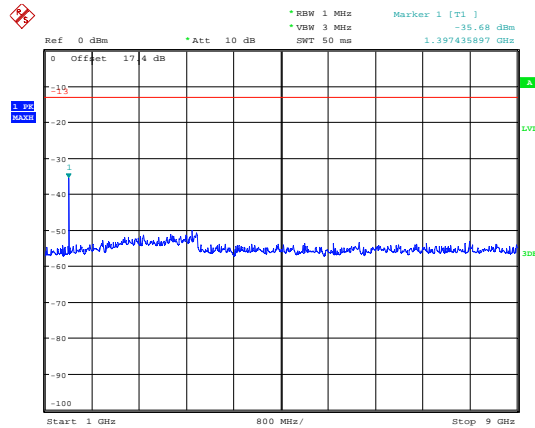


LTE Band 12 5MHz CH-Low 30MHz~1GHz



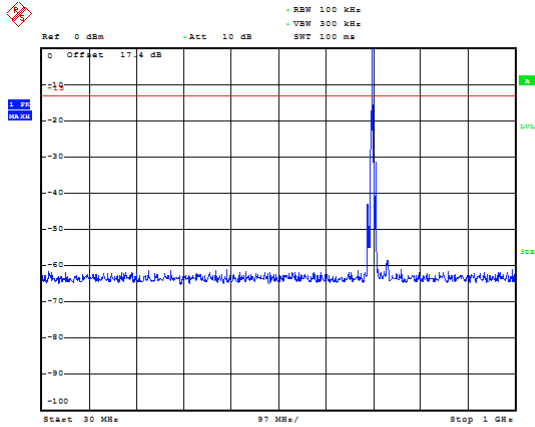
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LTE Band 12 5MHz CH-Low 1GHz~9GHz



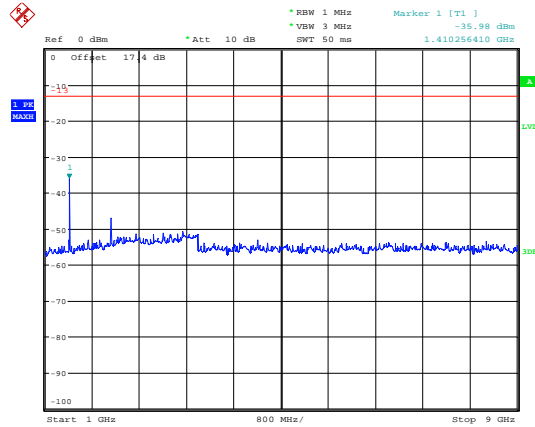
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LTE Band 12 5MHz CH- Middle 30MHz~1GHz



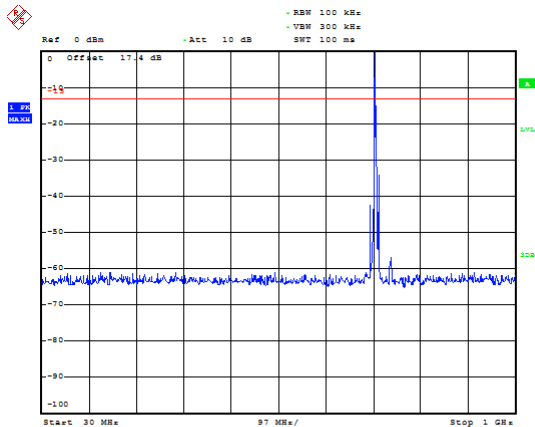
Date: 21.JAN.2019 11:49:03

LTE Band 12 5MHz CH- Middle 1GHz~9GHz



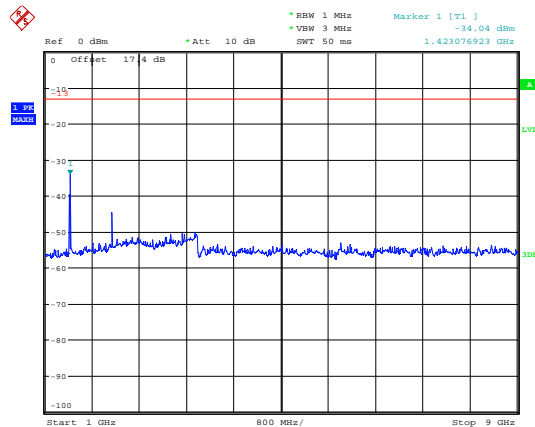
Date: 21.JAN.2019 11:49:20

LTE Band 12 5MHz CH-High 30MHz~1GHz



Date: 21.JAN.2019 11:50:05

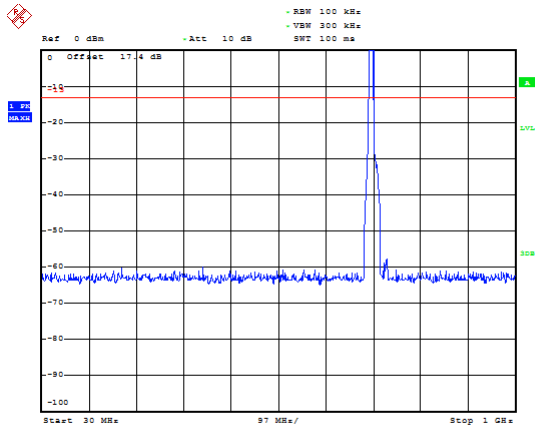
LTE Band 12 5MHz CH-High 1GHz~9GHz



Date: 21.JAN.2019 11:49:47

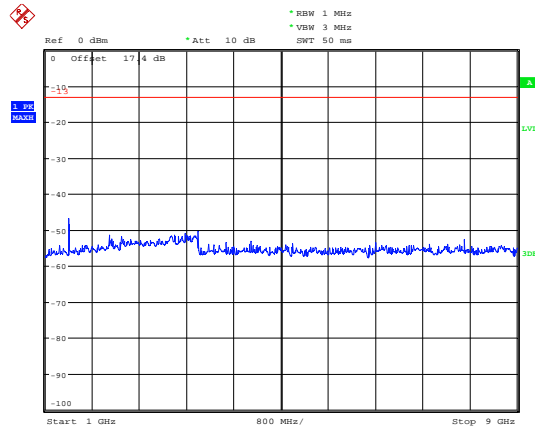


LTE Band 12 10MHz CH-Low 30MHz~1GHz



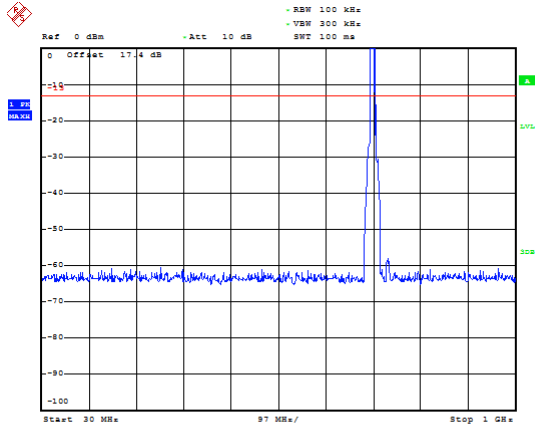
Date: 21.JAN.2019 11:50:33

LTE Band 12 10MHz CH-Low 1GHz~9GHz



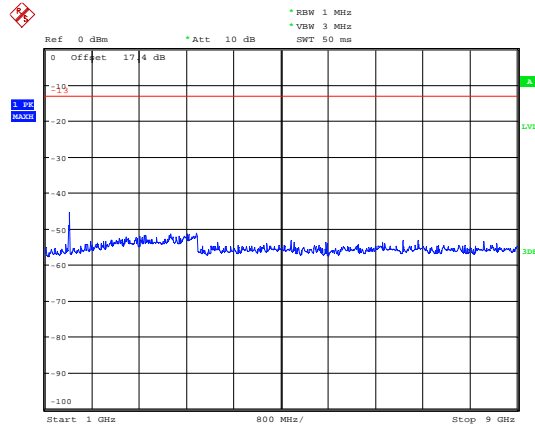
Date: 21.JAN.2019 11:51:01

LTE Band 12 10MHz CH- Middle 30MHz~1GHz



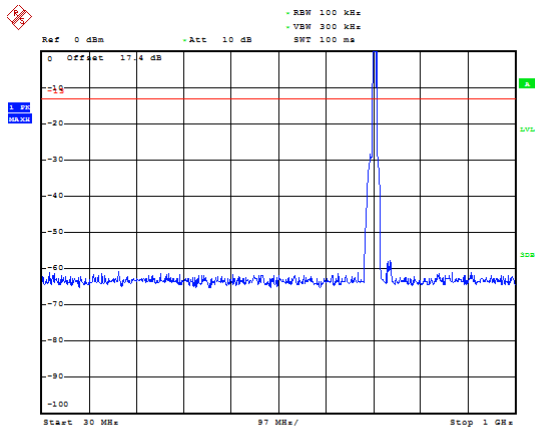
Date: 21.JAN.2019 11:51:34

LTE Band 12 10MHz CH- Middle 1GHz~9GHz



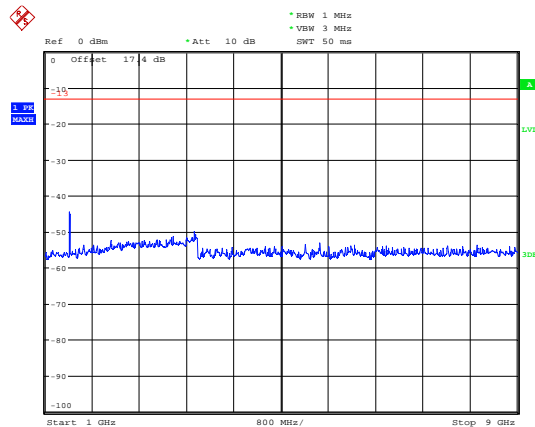
Date: 21.JAN.2019 11:51:19

LTE Band 12 10MHz CH-High 30MHz~1GHz



Date: 21.JAN.2019 11:51:52

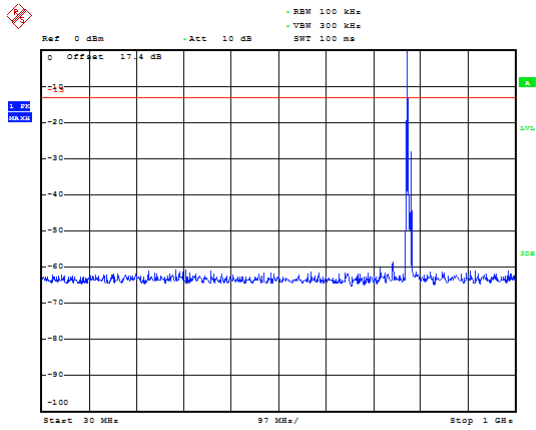
LTE Band 12 10MHz CH-High 1GHz~9GHz



Date: 21.JAN.2019 11:52:09

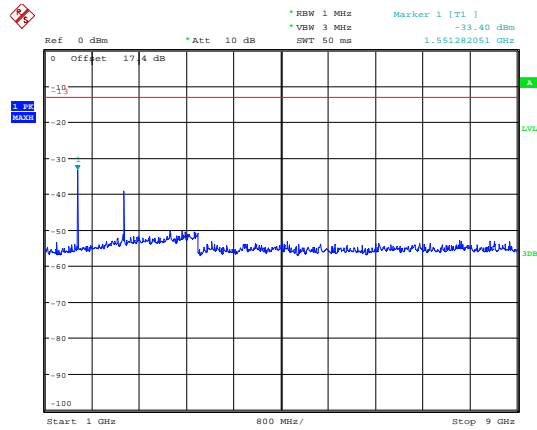


LTE Band 13 5MHz CH-Low 30MHz~1GHz



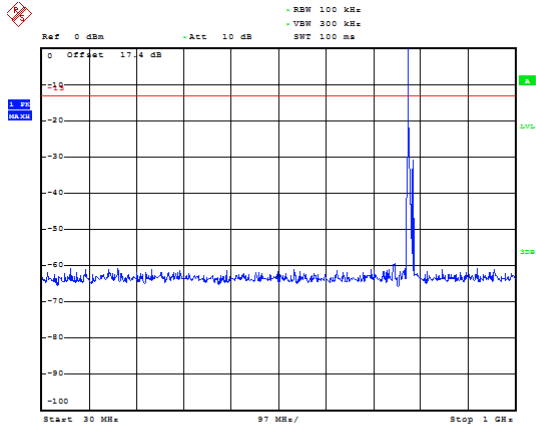
Date: 21.JAN.2019 11:53:25

LTE Band 13 5MHz CH-Low 1GHz~9GHz



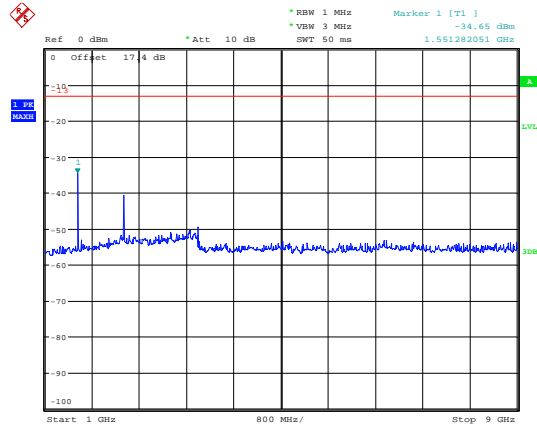
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LTE Band 13 5MHz CH-Middle 30MHz~1GHz



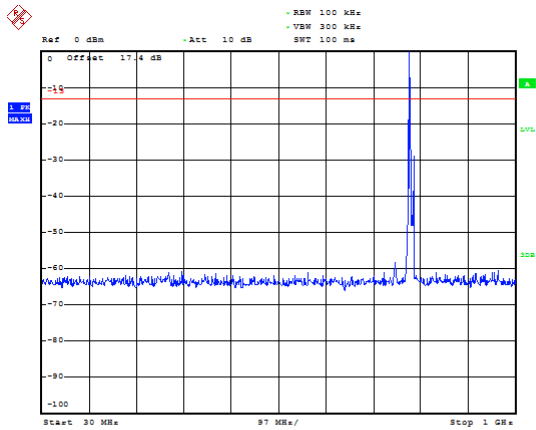
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LTE Band 13 5MHz CH-Middle 1GHz~9GHz



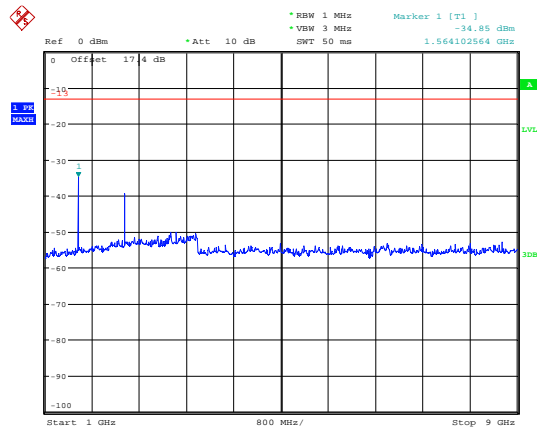
Date: 21.JAN.2019 11:53:55

LTE Band 13 5MHz CH-High 30MHz~1GHz



Date: 21.JAN.2019 11:54:25

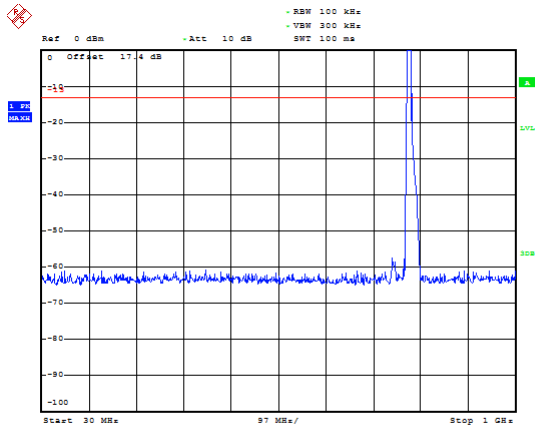
LTE Band 13 5MHz CH-High 1GHz~9GHz



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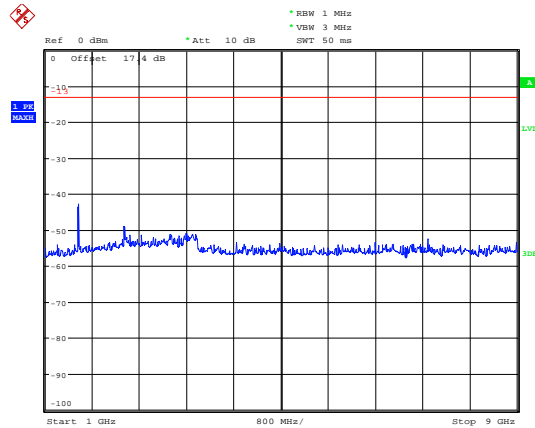


LTE Band 13 10MHz CH-Middle 30MHz~1GHz

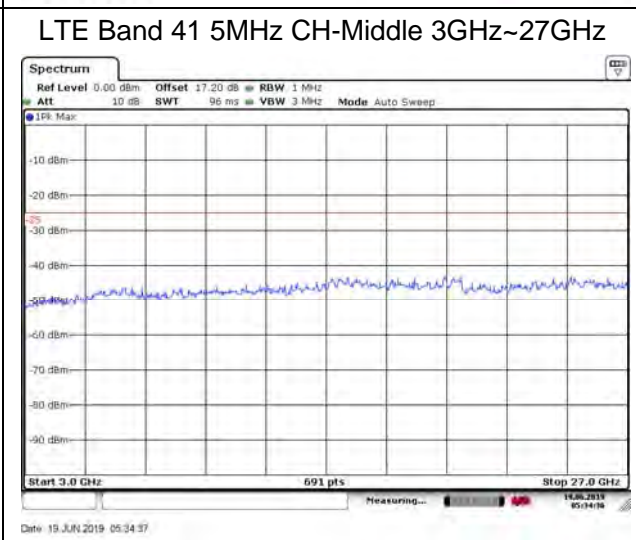
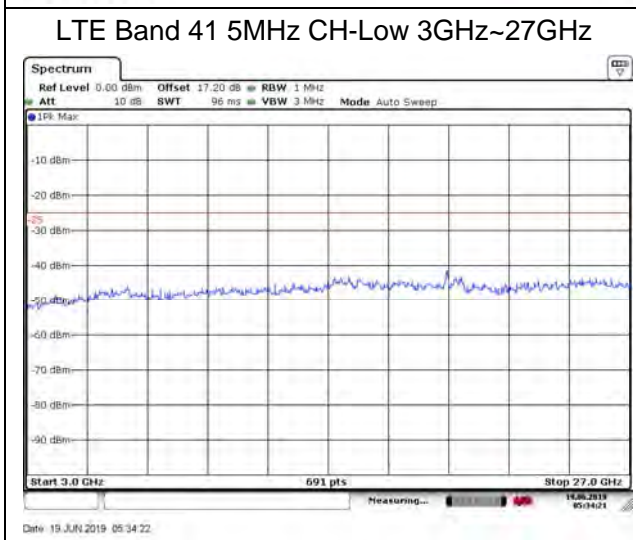
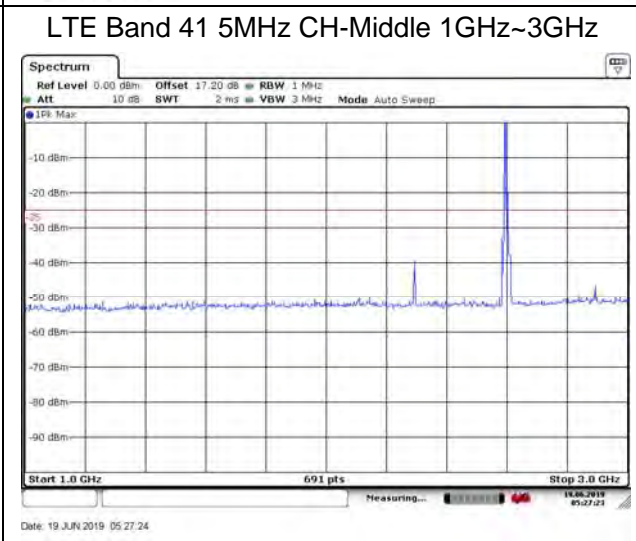
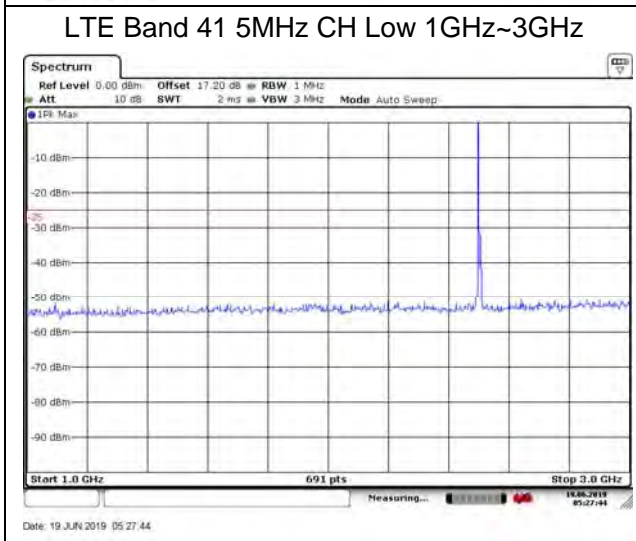
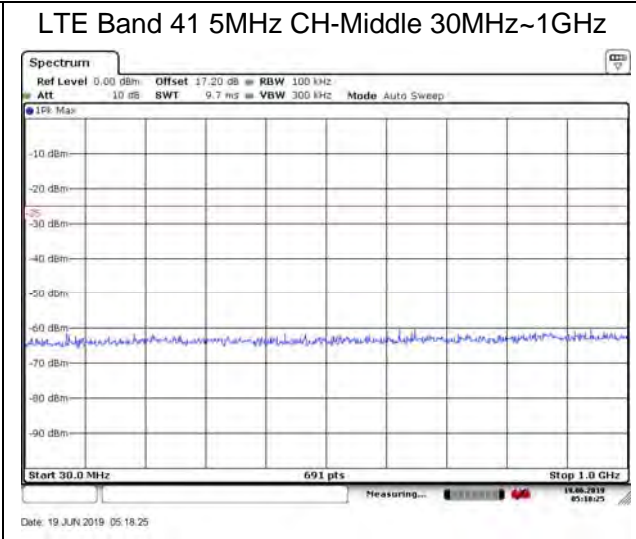
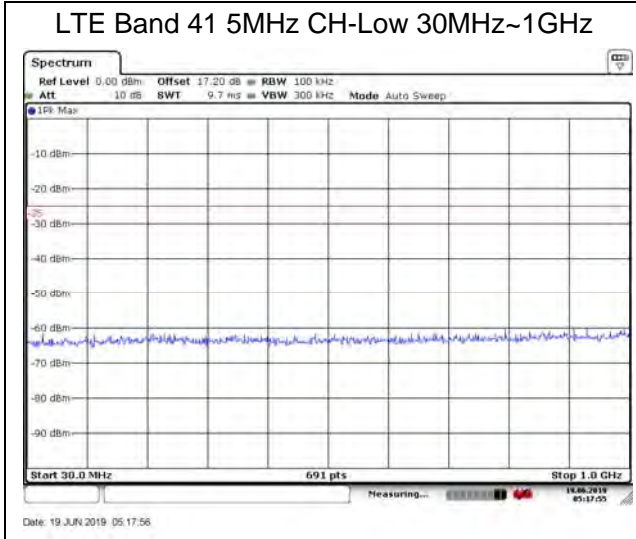


Date: 21.JAN.2019 11:55:01

LTE Band 13 10MHz CH-Middle 1GHz~9GHz

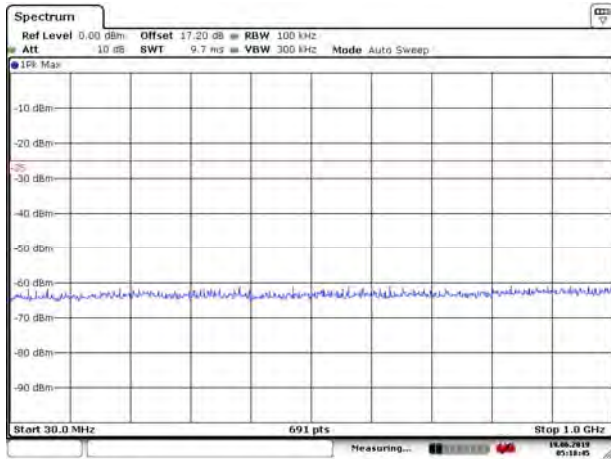


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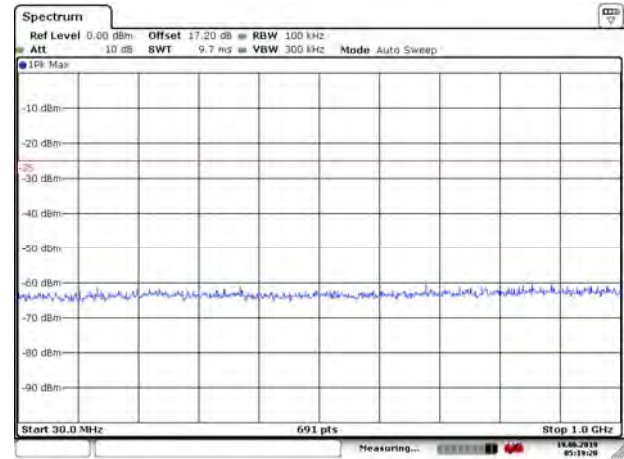




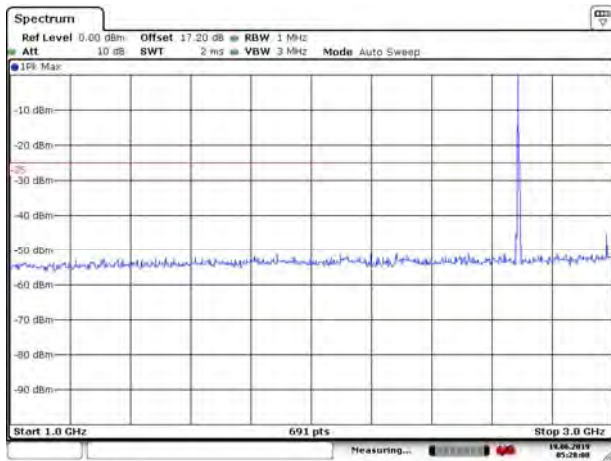
LTE Band 41 5MHz CH-High 30MHz~1GHz



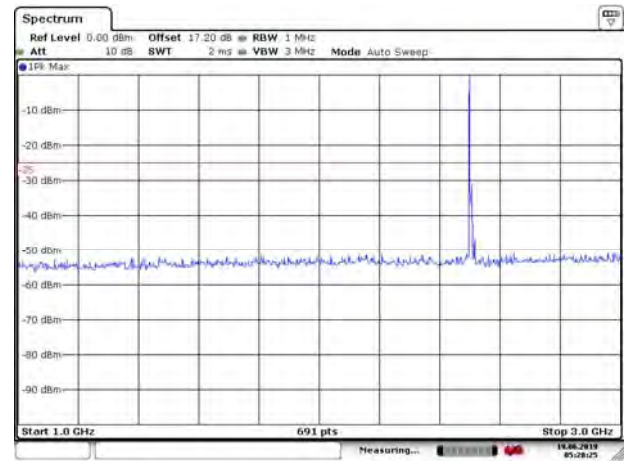
LTE Band 41 10MHz CH-Low 30MHz~1GHz



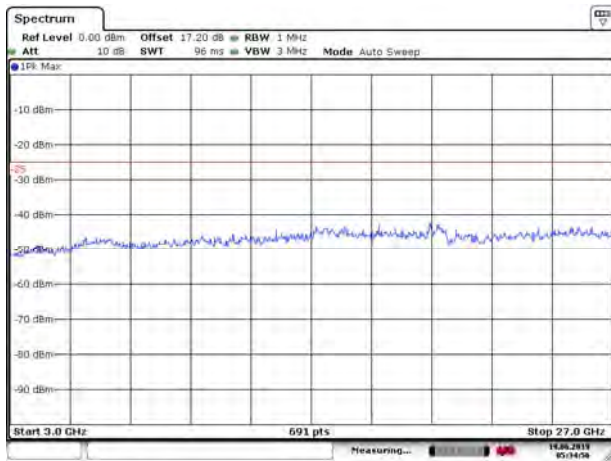
LTE Band 41 5MHz CH-High 1GHz~3GHz



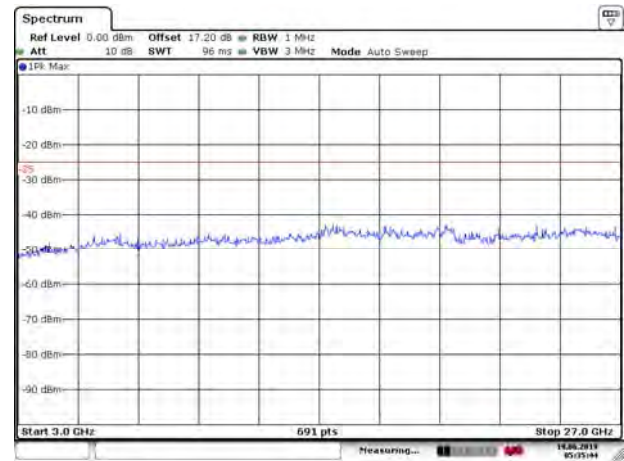
LTE Band 41 10MHz CH-Low 1GHz~3GHz



LTE Band 41 5MHz CH-High 3GHz~27GHz

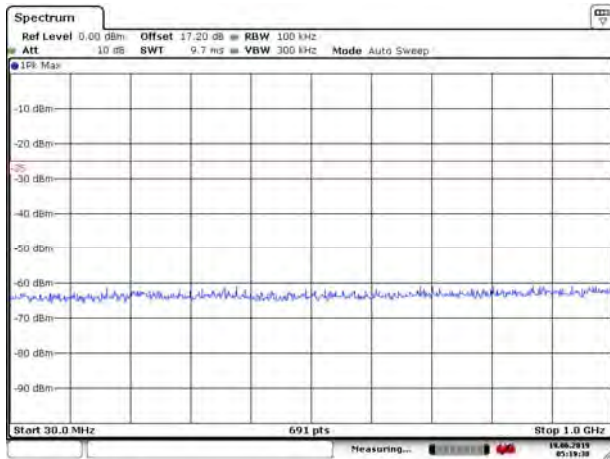


LTE Band 41 10MHz CH-Low 3GHz~27GHz



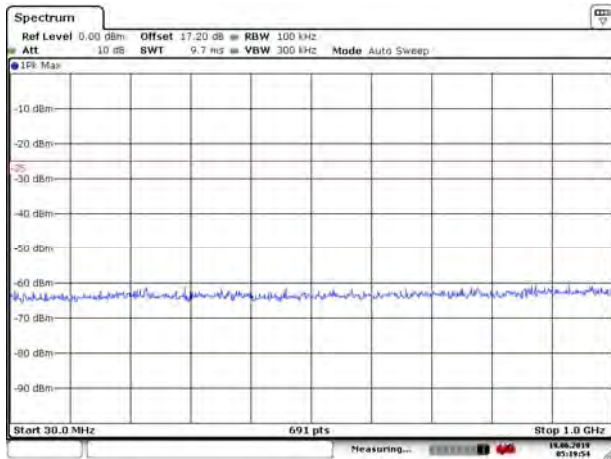


LTE Band 41 10MHz CH-Middle 30MHz~1GHz



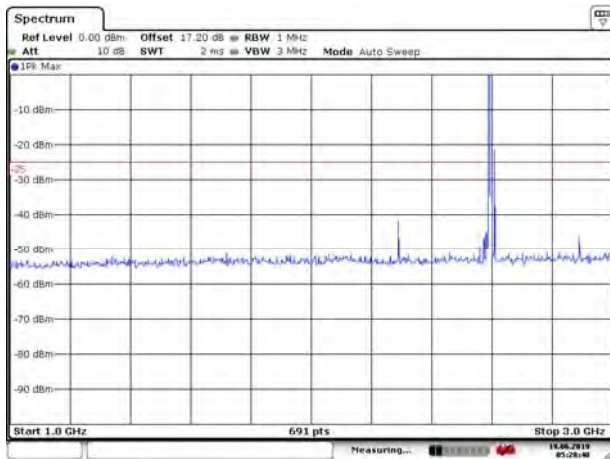
Date: 19 JUN 2019 05:19:38

LTE Band 41 10MHz CH-High 30MHz~1GHz



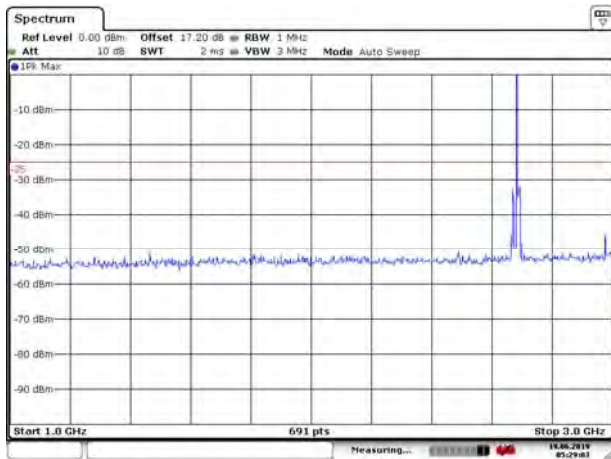
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LTE Band 41 10MHz CH-Middle 1GHz~3GHz



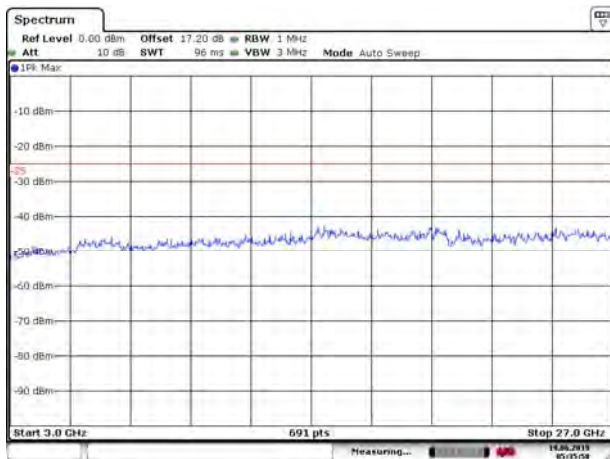
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LTE Band 41 10MHz CH-High 1GHz~3GHz



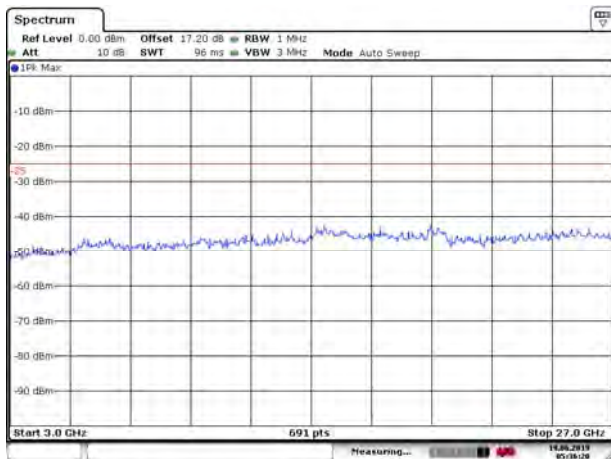
Date: 19 JUN 2019 05:29:03

LTE Band 41 10MHz CH-Middle 3GHz~27GHz



Date: 19 JUN 2019 05:35:59

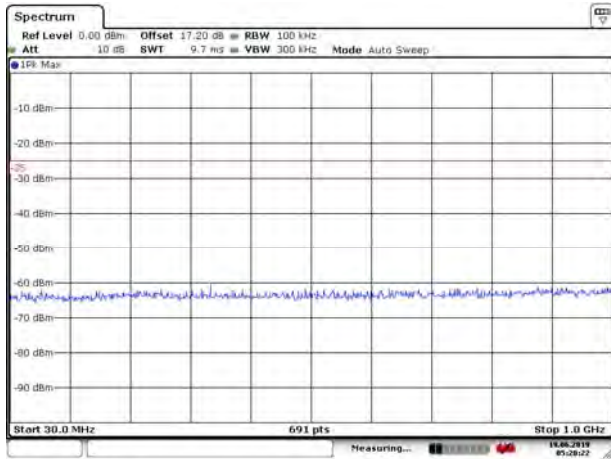
LTE Band 41 10MHz CH-High 3GHz~27GHz



Date: 19 JUN 2019 05:36:20

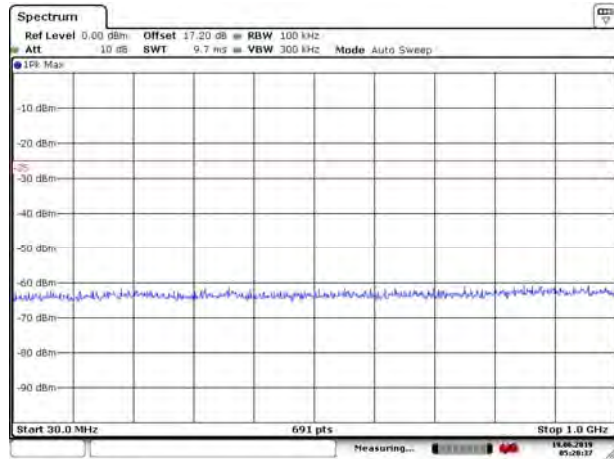


LTE Band 41 15MHz CH-Low 30MHz~1GHz



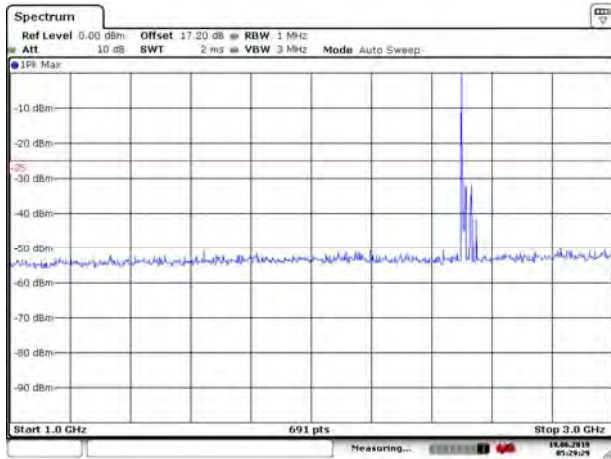
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LTE Band 41 15MHz CH-Middle 30MHz~1GHz



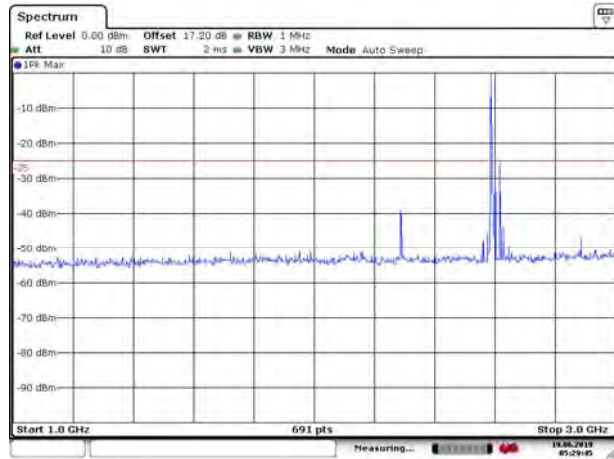
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LTE Band 41 15MHz CH-Low 1GHz~3GHz



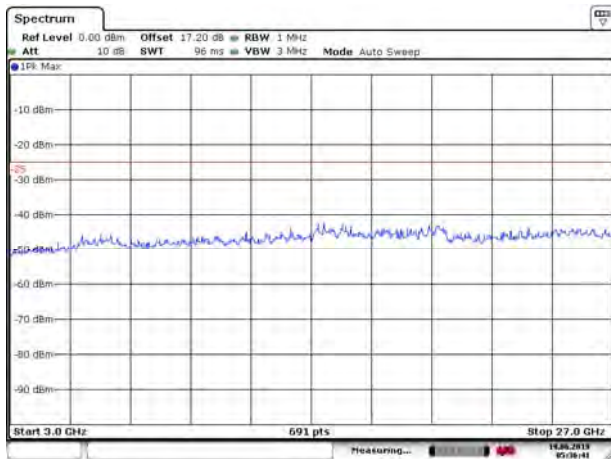
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LTE Band 41 15MHz CH-Middle 1GHz~3GHz



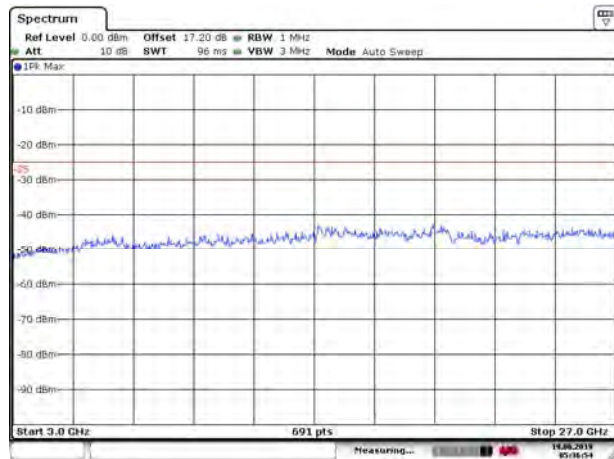
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LTE Band 41 15MHz CH-Low 3GHz~27GHz



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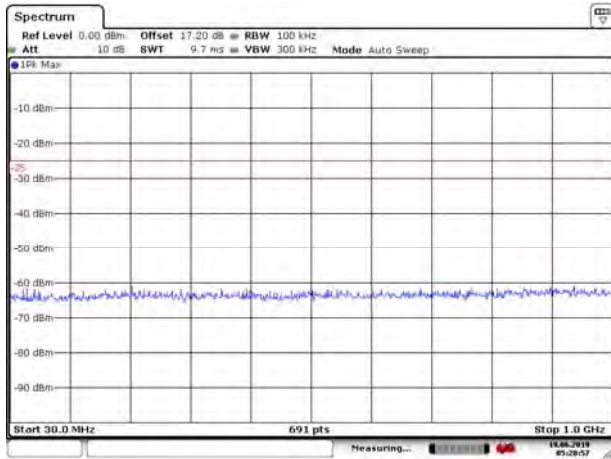
LTE Band 41 15MHz CH-Middle 3GHz~27GHz



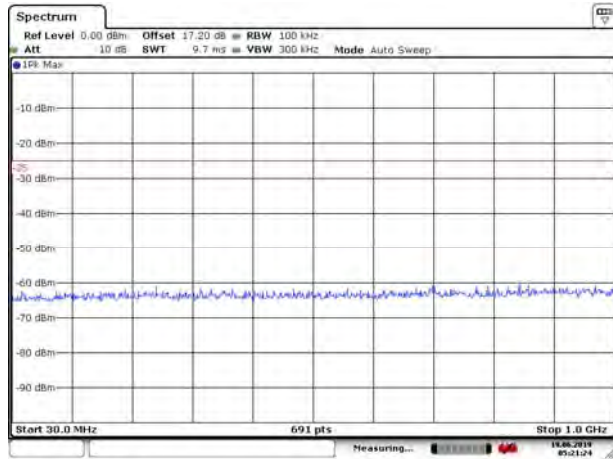
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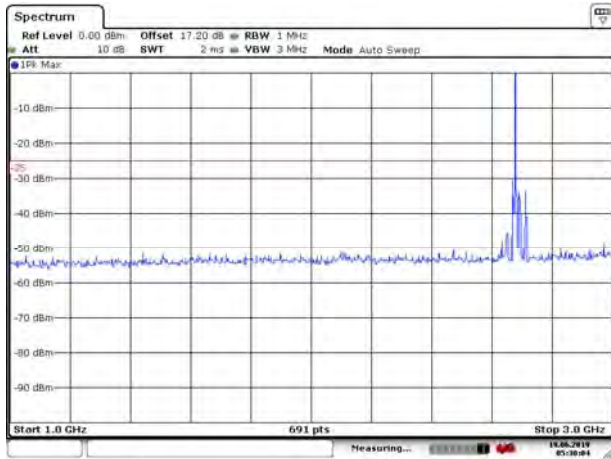
LTE Band 41 15MHz CH-High 30MHz~1GHz



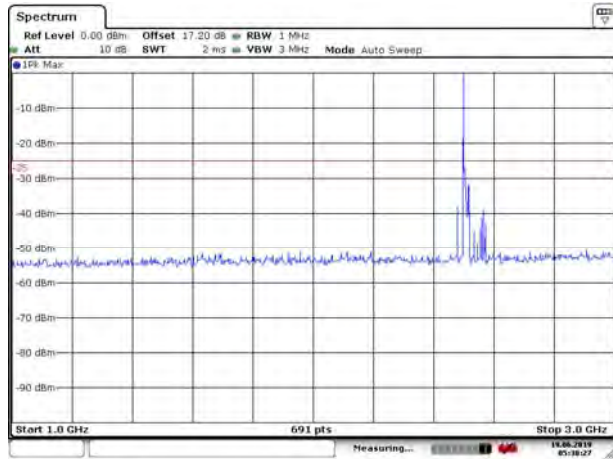
LTE Band 41 20MHz CH-Low 30MHz~1GHz



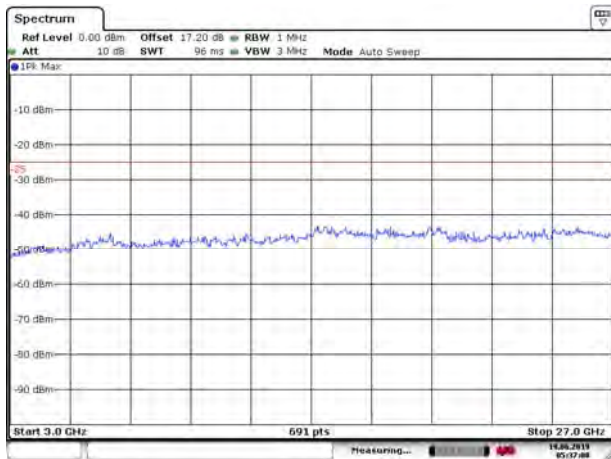
LTE Band 41 15MHz CH-High 1GHz~3GHz



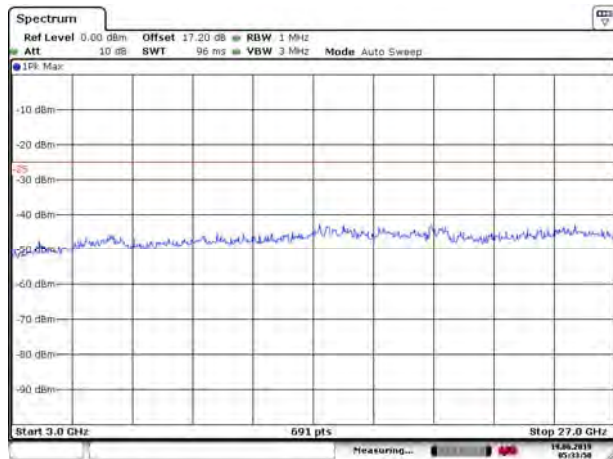
LTE Band 41 20MHz CH-Low 1GHz~3GHz



LTE Band 41 15MHz CH-High 3GHz~27GHz

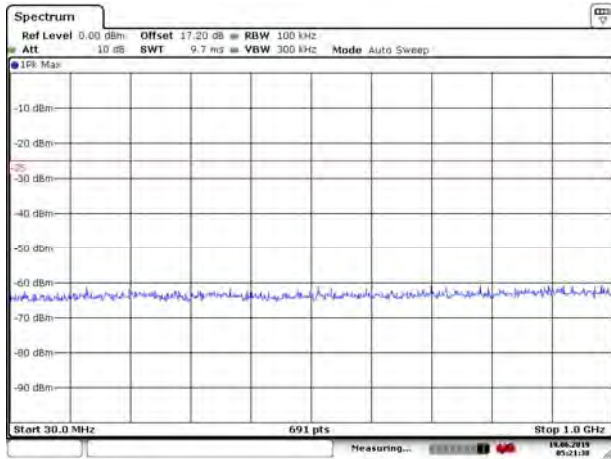


LTE Band 41 20MHz CH-Low 3GHz~27GHz

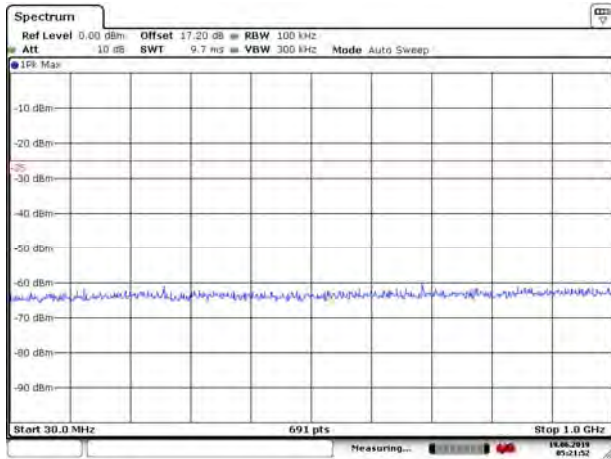




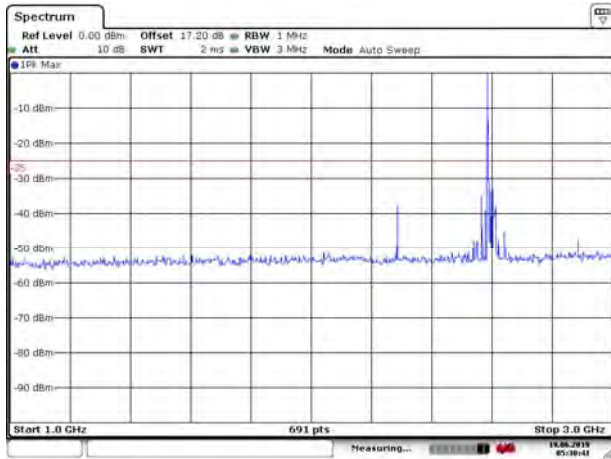
LTE Band 41 20MHz CH-Middle 30MHz~1GHz



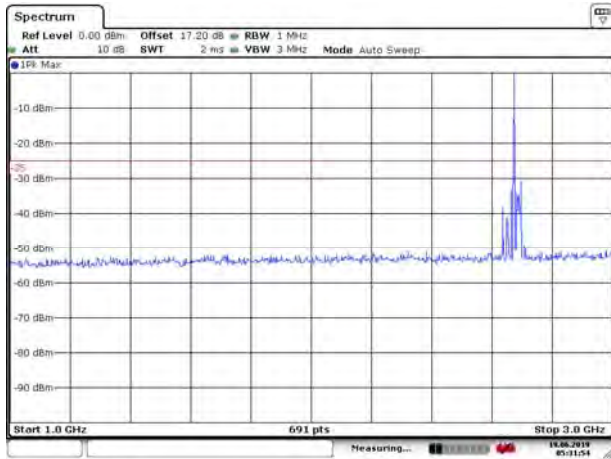
LTE Band 41 20MHz CH-High 30MHz~1GHz



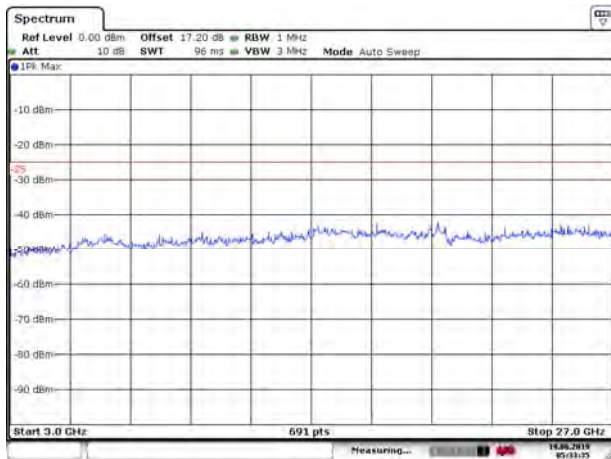
LTE Band 41 20MHz CH-Middle 1GHz~3GHz



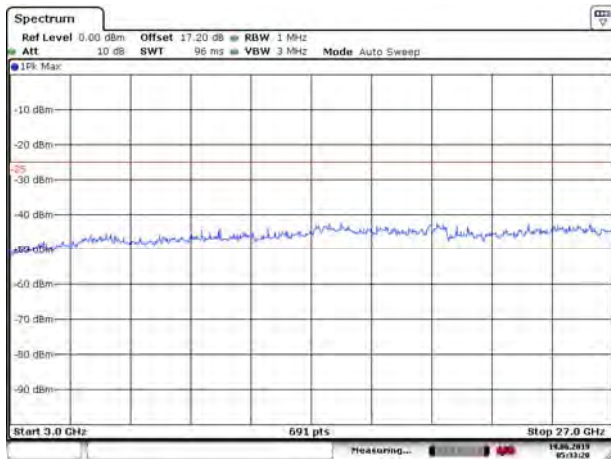
LTE Band 41 20MHz CH-High 1GHz~3GHz



LTE Band 41 20MHz CH-Middle 3GHz~27GHz

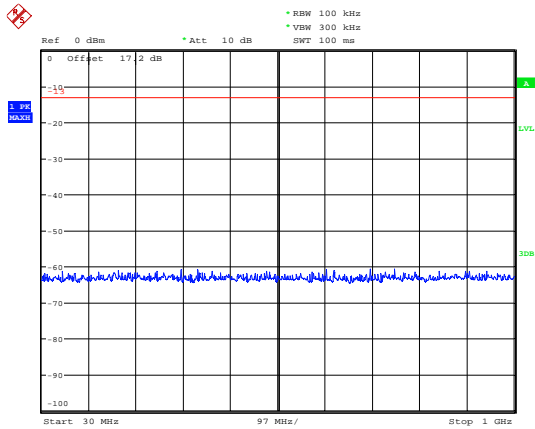


LTE Band 41 20MHz CH-High 3GHz~27GHz



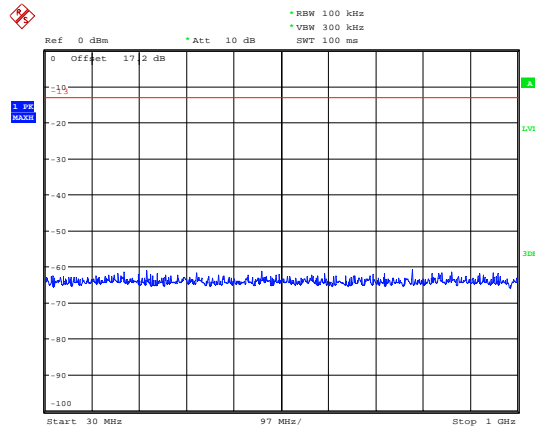


LTE Band 66 1.4MHz CH-Low 30MHz~1GHz



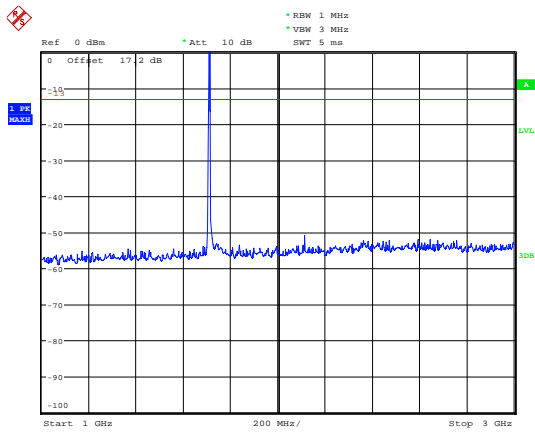
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LTE Band 66 1.4MHz CH-Middle 30MHz~1GHz



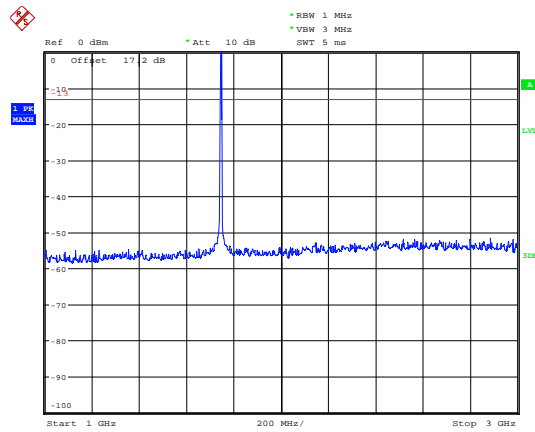
Date: 19.JUN.2019 11:58:01

LTE Band 66 1.4MHz CH-Low 1GHz~3GHz



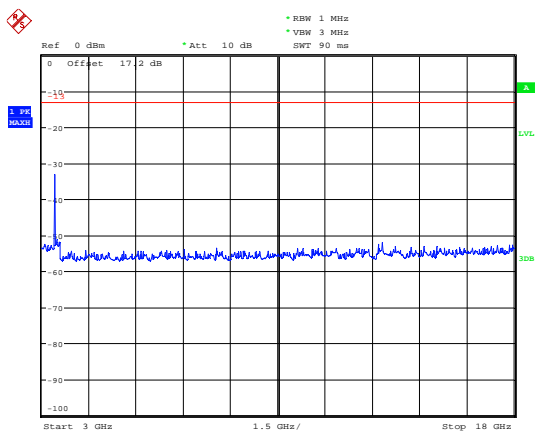
Date: 19.JUN.2019 12:04:07

LTE Band 66 1.4MHz CH-Middle 1GHz~3GHz



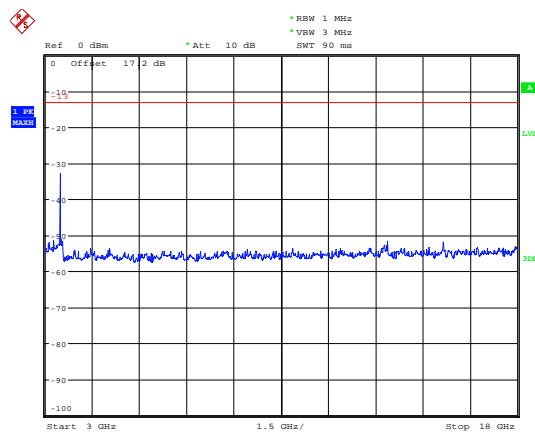
Date: 19.JUN.2019 12:04:18

LTE Band 66 1.4MHz CH-Low 3GHz~18GHz



Date: 19.JUN.2019 12:11:21

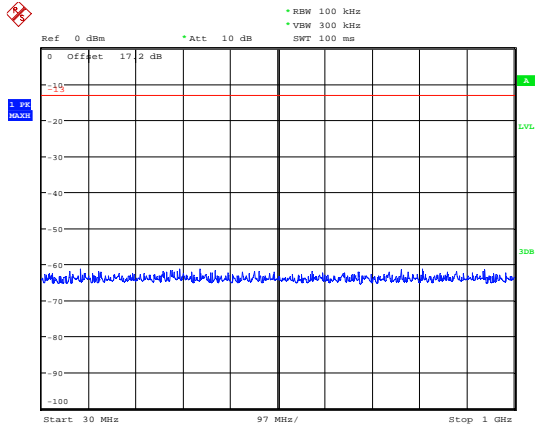
LTE Band 66 1.4MHz CH-Middle 3GHz~18GHz



Date: 19.JUN.2019 12:11:31

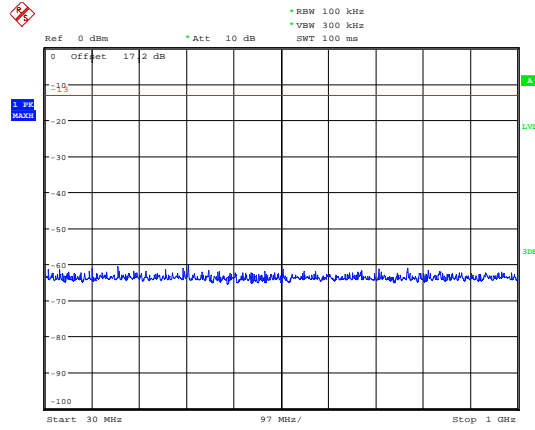


LTE Band 66 1.4MHz CH-High 30MHz~1GHz



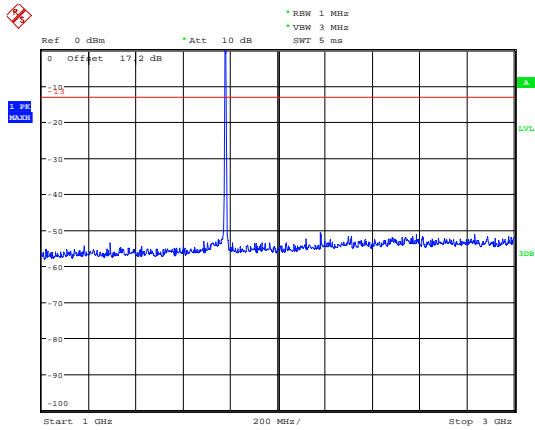
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LTE Band 66 3MHz CH-Low 30MHz~1GHz



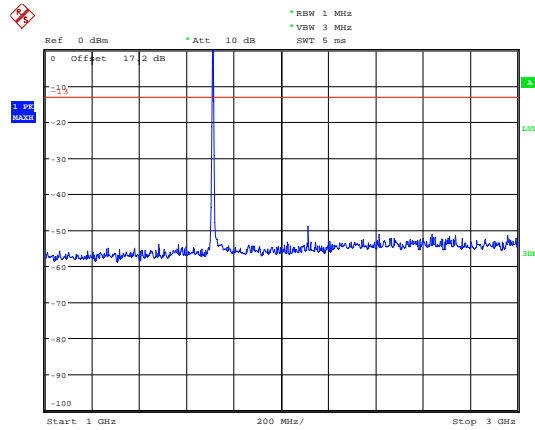
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LTE Band 66 1.4MHz CH-High 1GHz~3GHz



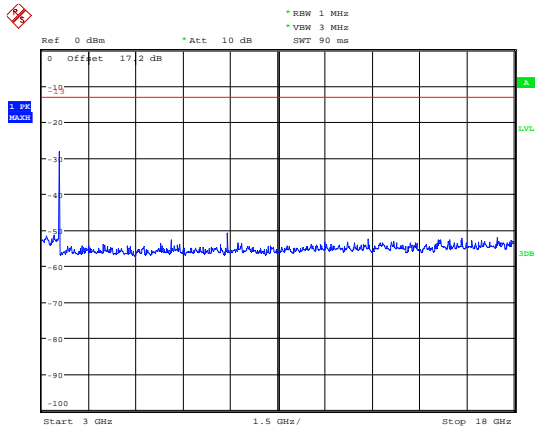
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LTE Band 66 3MHz CH-Low 1GHz~3GHz



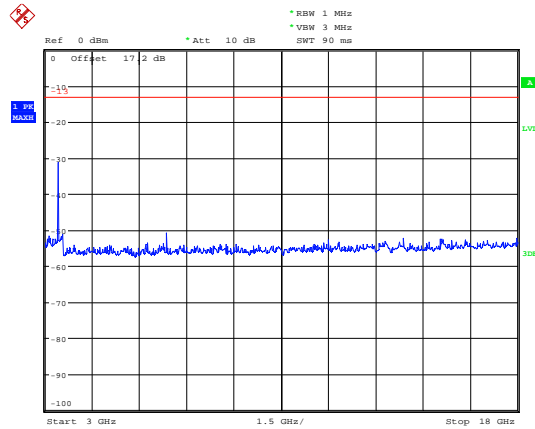
Date: 19.JUN.2019 12:04:58

LTE Band 66 1.4MHz CH-High 3GHz~18GHz



Date: 19.JUN.2019 12:11:48

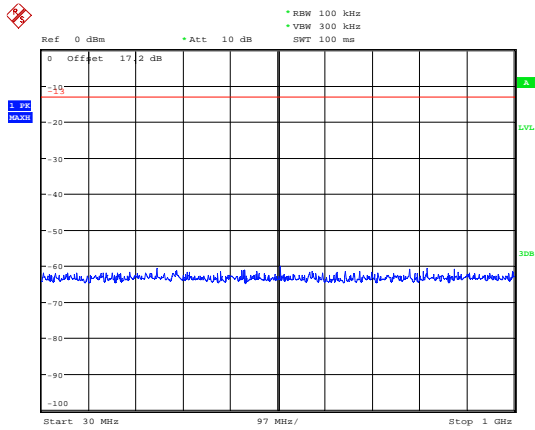
LTE Band 66 3MHz CH-Low 3GHz~18GHz



Date: 19.JUN.2019 12:13:02

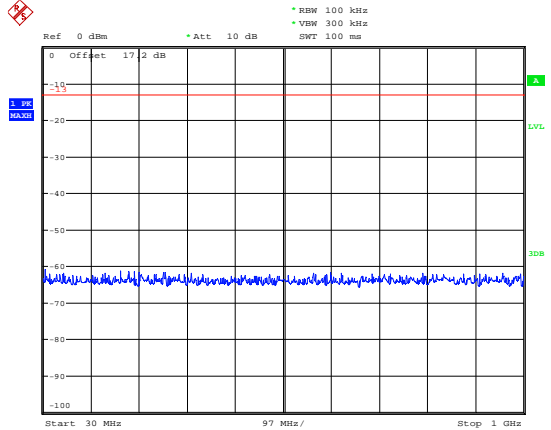


LTE Band 66 3MHz CH-Middle 30MHz~1GHz



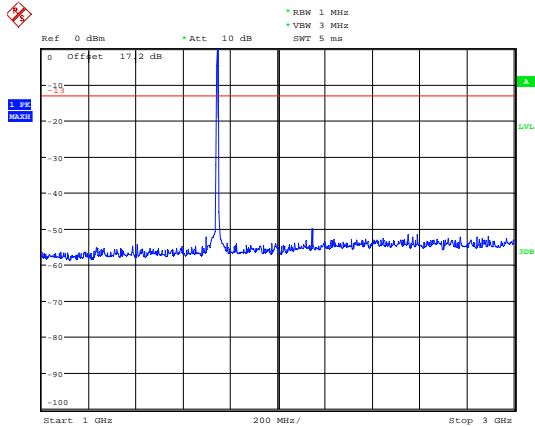
Date: 19 JUN 2019 11:59:05

LTE Band 66 3MHz CH-High 30MHz~1GHz



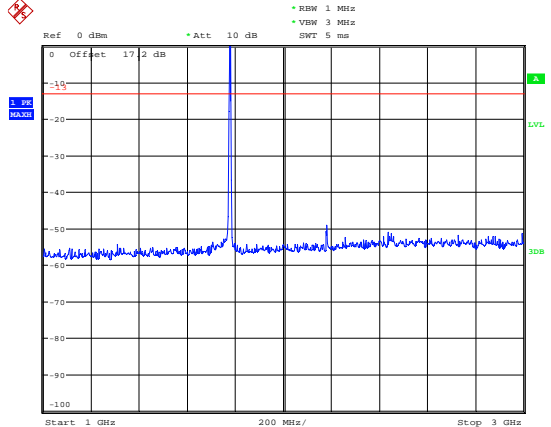
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LTE Band 66 3MHz CH-Middle 1GHz~3GHz



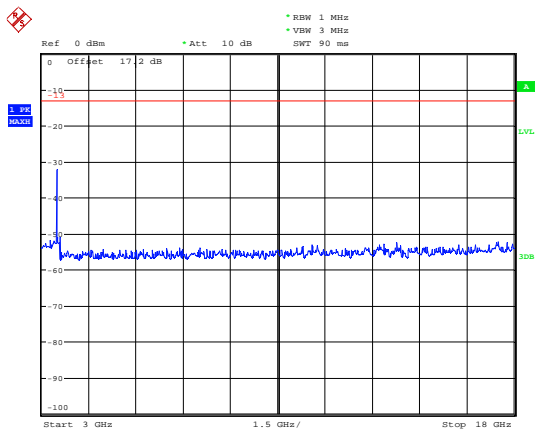
Date: 19 JUN 2019 12:05:08

LTE Band 66 3MHz CH-High 1GHz~3GHz



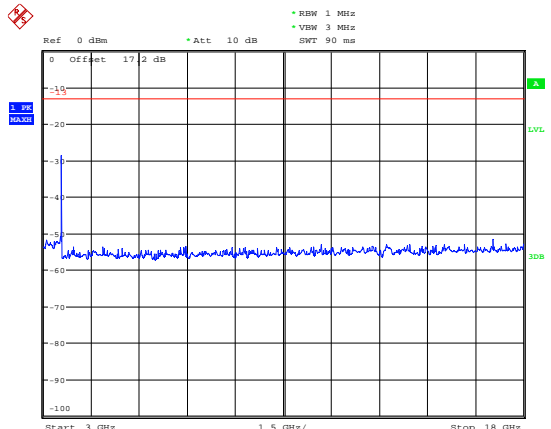
Date: 19 JUN 2019 12:05:24

LTE Band 66 3MHz CH-Middle 3GHz~18GHz



Date: 19 JUN 2019 12:13:12

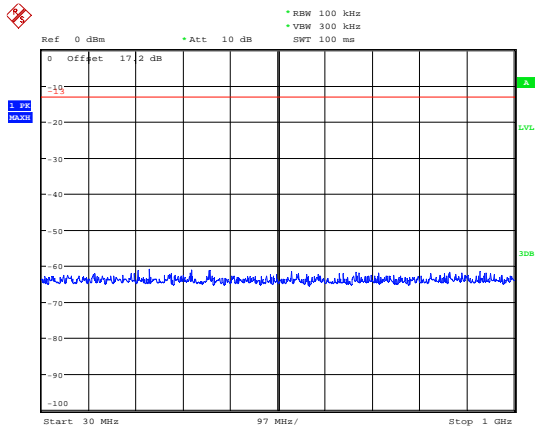
LTE Band 66 3MHz CH-High 3GHz~18GHz



Date: 19 JUN 2019 12:13:27

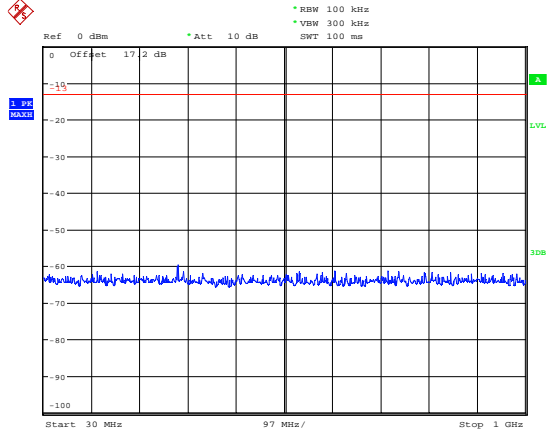


LTE Band 66 5MHz CH-Low 30MHz~1GHz



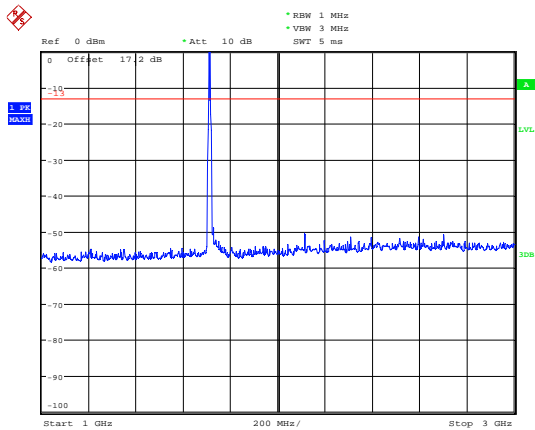
Date: 19.JUN.2019 11:59:47

LTE Band 66 5MHz CH-Middle 30MHz~1GHz



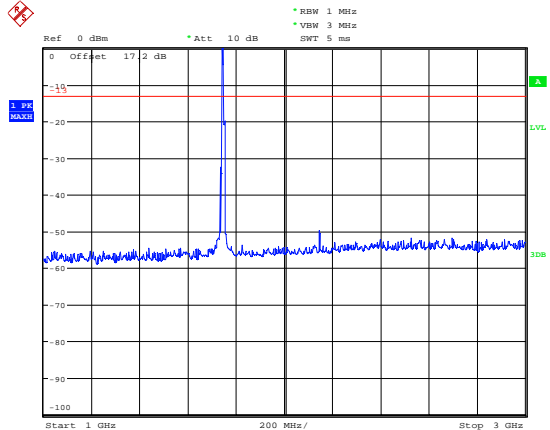
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LTE Band 66 5MHz CH-Low 1GHz~3GHz



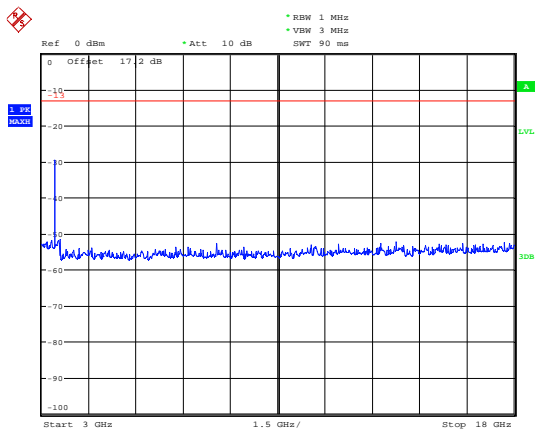
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LTE Band 66 5MHz CH-Middle 1GHz~3GHz



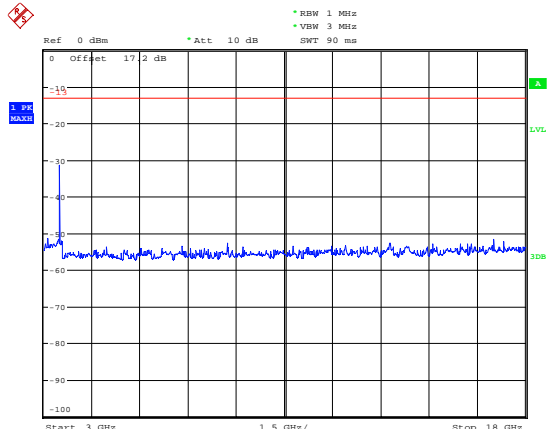
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LTE Band 66 5MHz CH-Low 3GHz~18GHz



Date: 19.JUN.2019 12:13:51

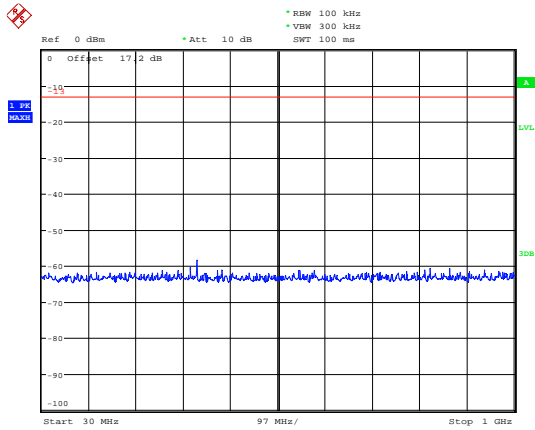
LTE Band 66 5MHz CH-Middle 3GHz~18GHz



Date: 19.JUN.2019 12:14:01

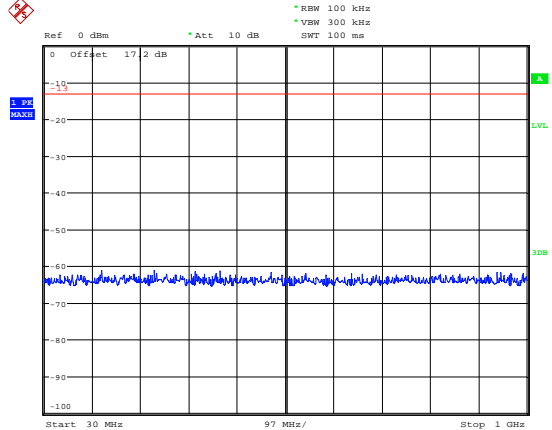


LTE Band 66 5MHz CH-High 30MHz~1GHz



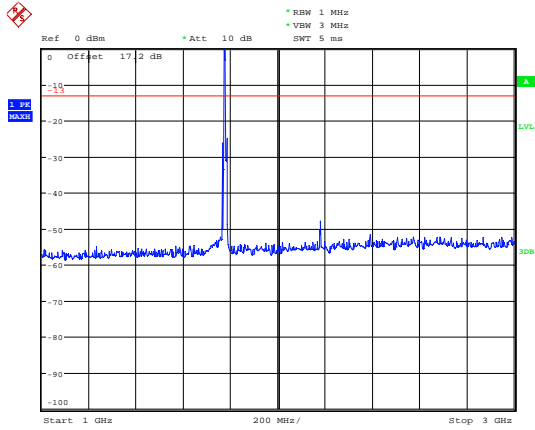
Date: 19.JUN.2019 12:00:19

LTE Band 66 10MHz CH-Low 30MHz~1GHz



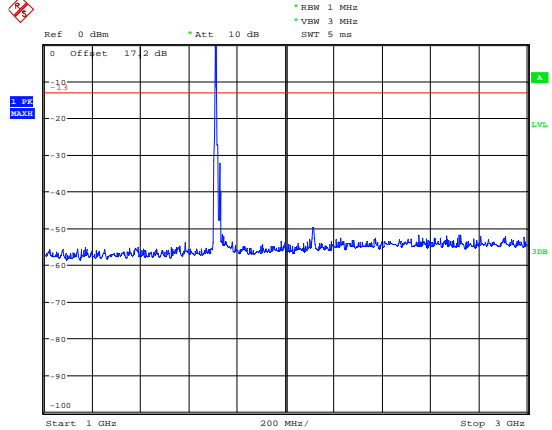
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LTE Band 66 5MHz CH-High 1GHz~3GHz



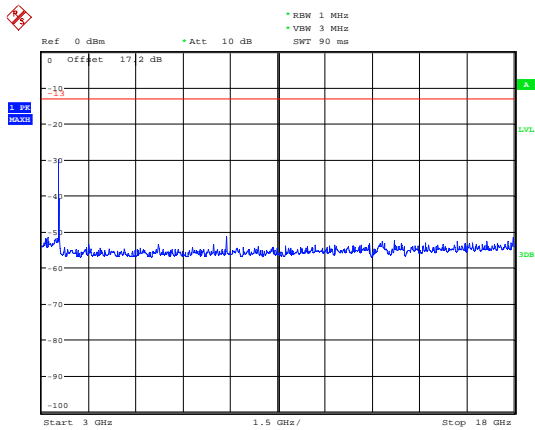
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LTE Band 66 10MHz CH-Low 1GHz~3GHz



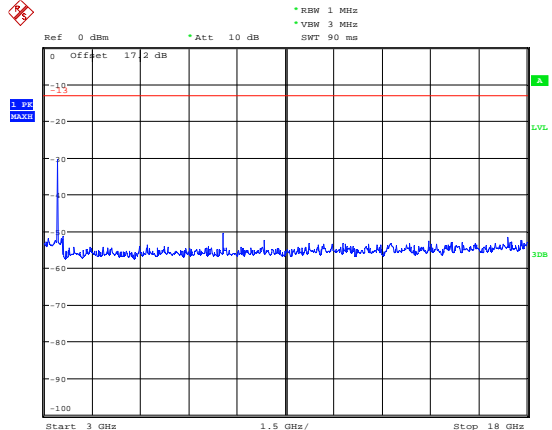
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LTE Band 66 5MHz CH-High 3GHz~18GHz



Date: 19.JUN.2019 12:14:19

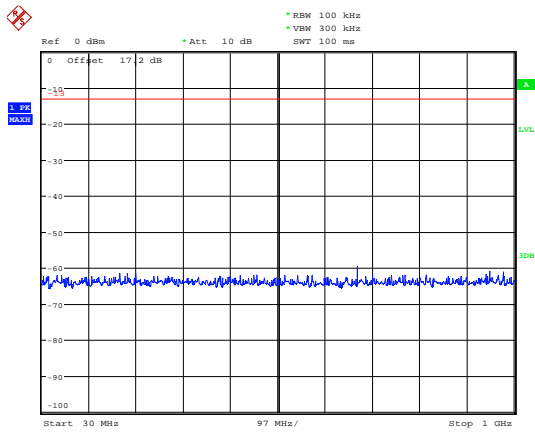
LTE Band 66 10MHz CH-Low 3GHz~18GHz



Date: 19.JUN.2019 12:14:37

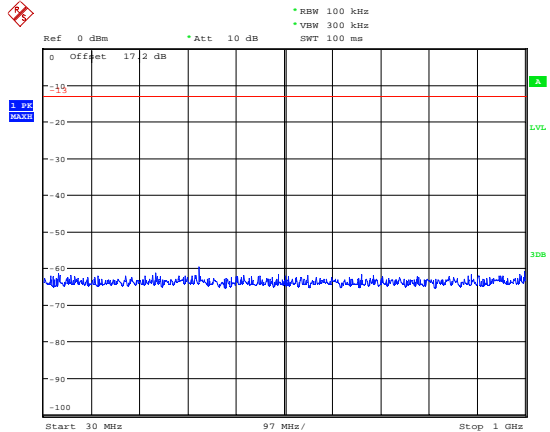


LTE Band 66 10MHz CH-Middle 30MHz~1GHz



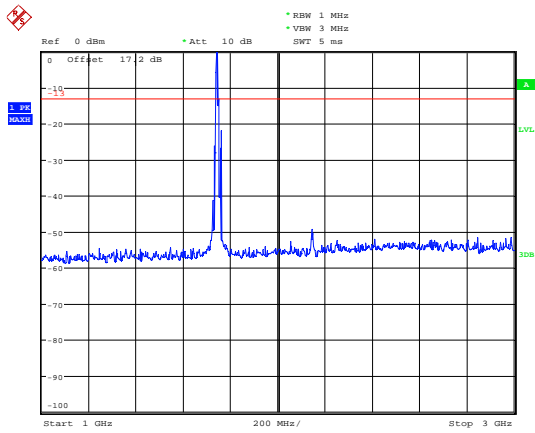
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LTE Band 66 10MHz CH-High 30MHz~1GHz



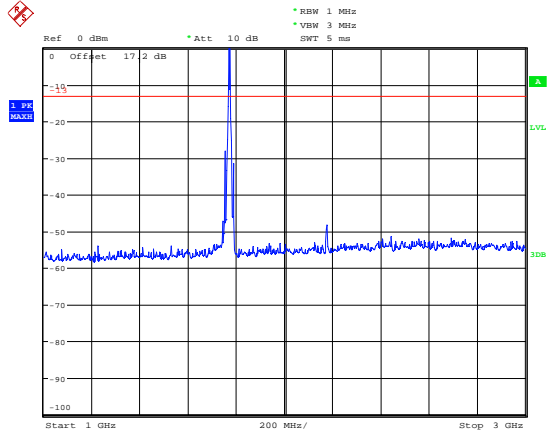
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LTE Band 66 10MHz CH-Middle 1GHz~3GHz



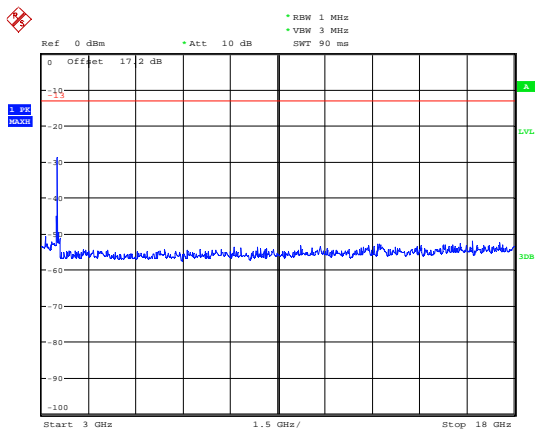
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LTE Band 66 10MHz CH-High 1GHz~3GHz



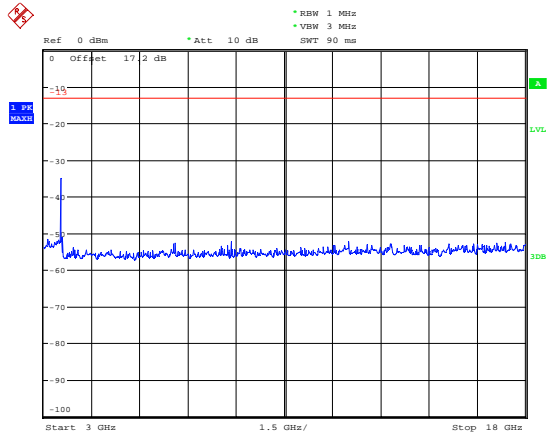
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LTE Band 66 10MHz CH-Middle 3GHz~18GHz



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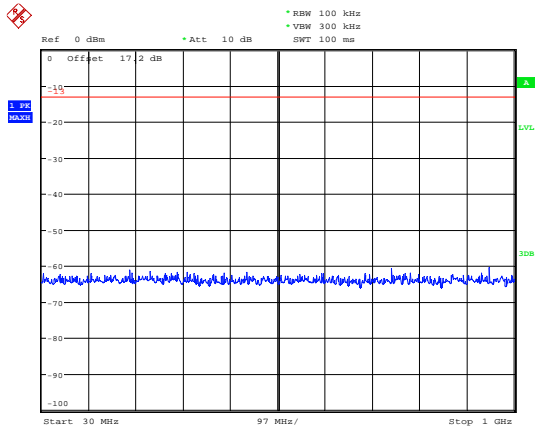
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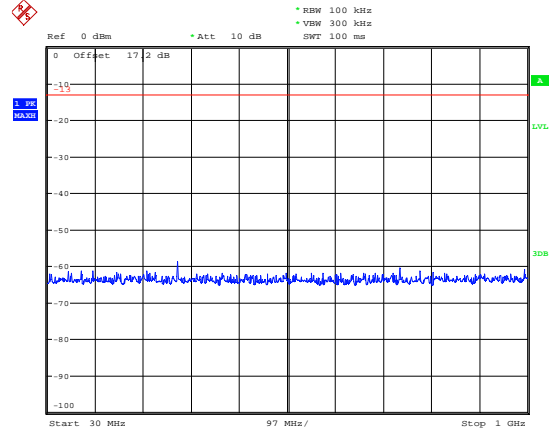


LTE Band 66 15MHz CH-Low 30MHz~1GHz



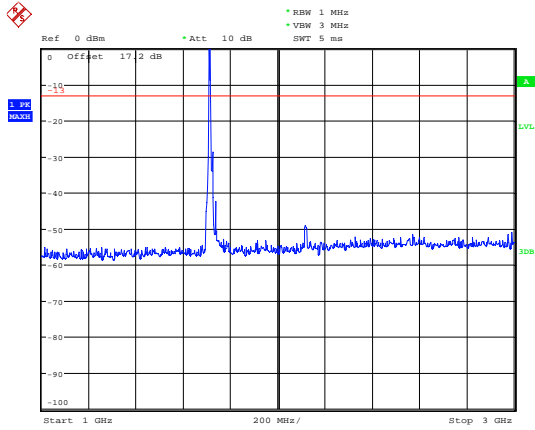
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LTE Band 66 15MHz CH-Middle 30MHz~1GHz



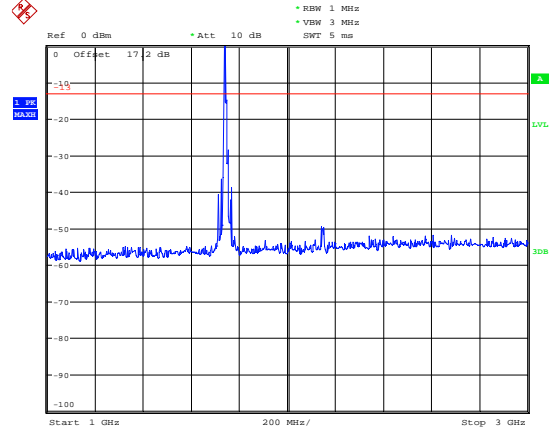
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LTE Band 66 15MHz CH-Low 1GHz~3GHz



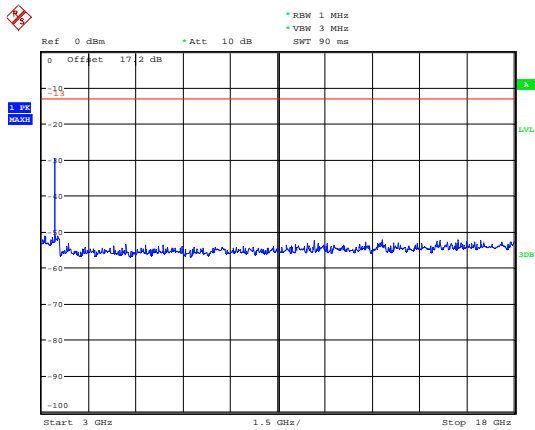
Date: 19.JUN.2019 12:08:26

LTE Band 66 15MHz CH-Middle 1GHz~3GHz



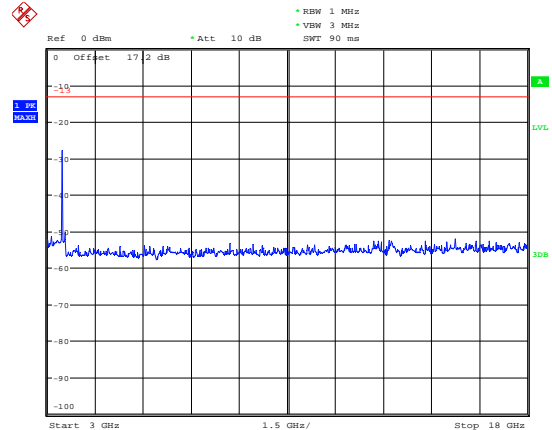
Date: 19.JUN.2019 12:08:36

LTE Band 66 15MHz CH-Low 3GHz~18GHz



Date: 19.JUN.2019 12:09:32

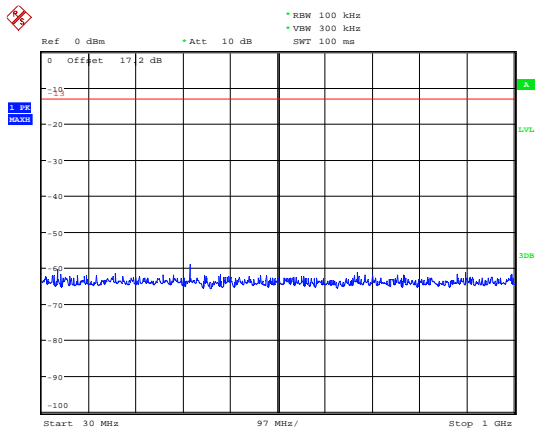
LTE Band 66 15MHz CH-Middle 3GHz~18GHz



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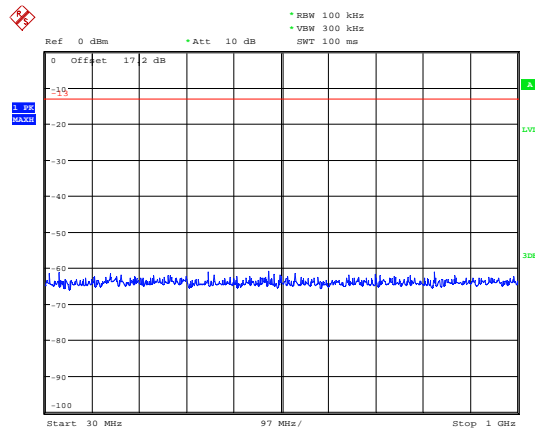


LTE Band 66 15MHz CH-High 30MHz~1GHz



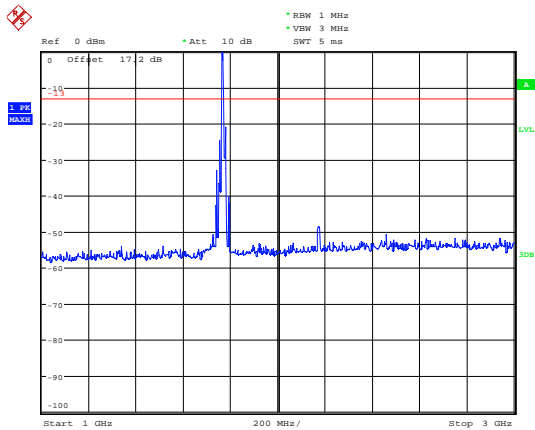
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LTE Band 66 20MHz CH-Low 30MHz~1GHz



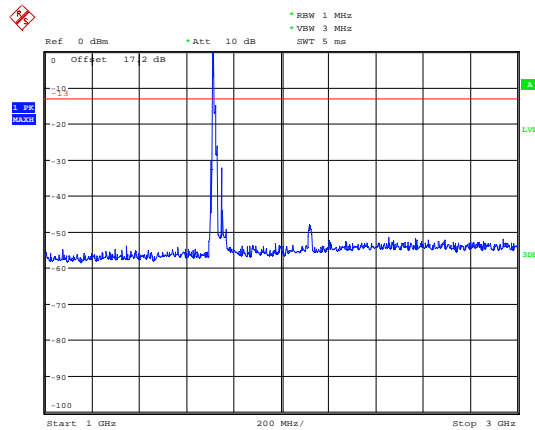
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LTE Band 66 15MHz CH-High 1GHz~3GHz



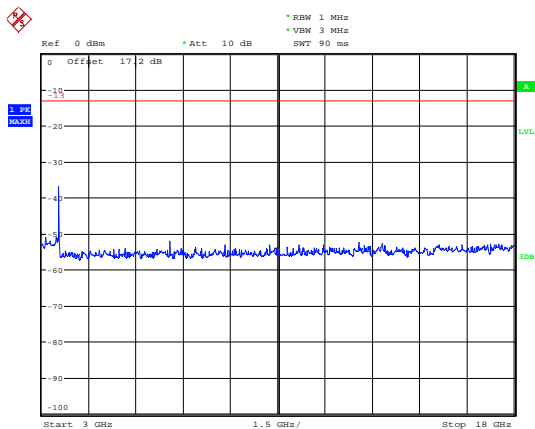
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LTE Band 66 20MHz CH-Low 1GHz~3GHz



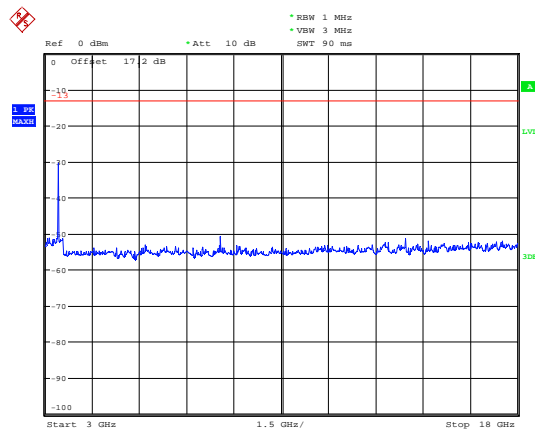
Date: 19.JUN.2019 12:03:46

LTE Band 66 15MHz CH-High 3GHz~18GHz



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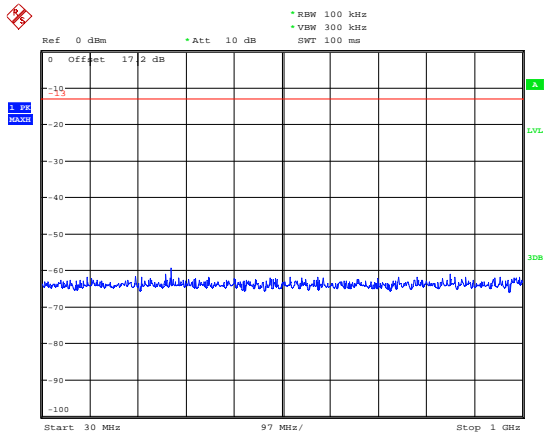
LTE Band 66 20MHz CH-Low 3GHz~18GHz



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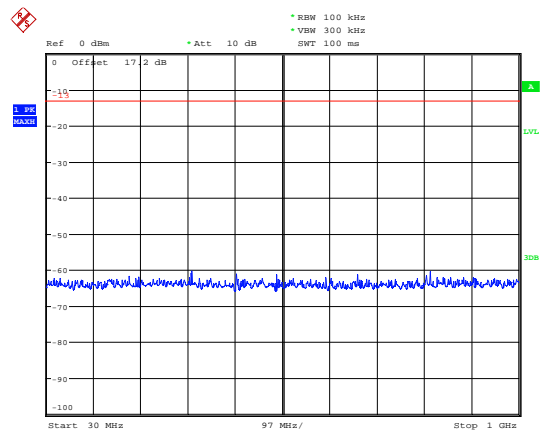


LTE Band 66 20MHz CH- Middle 30MHz~1GHz



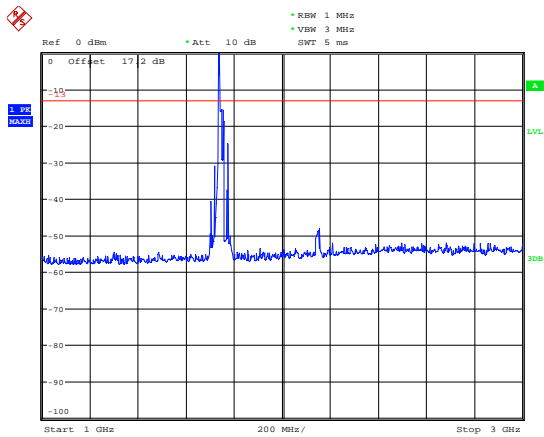
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LTE Band 66 20MHz CH-High 30MHz~1GHz



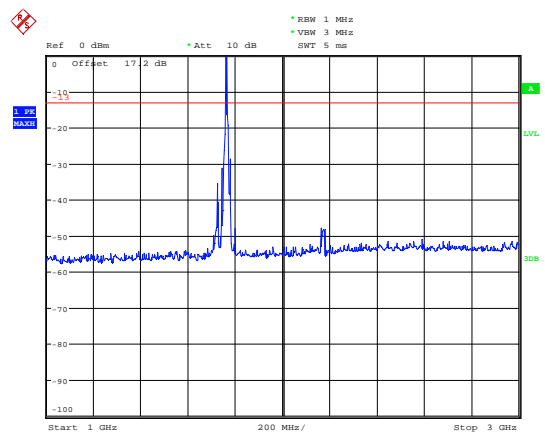
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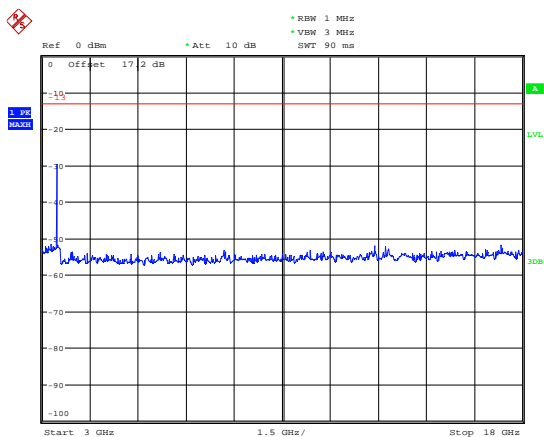
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LTE Band 66 20MHz CH-High 1GHz~3GHz



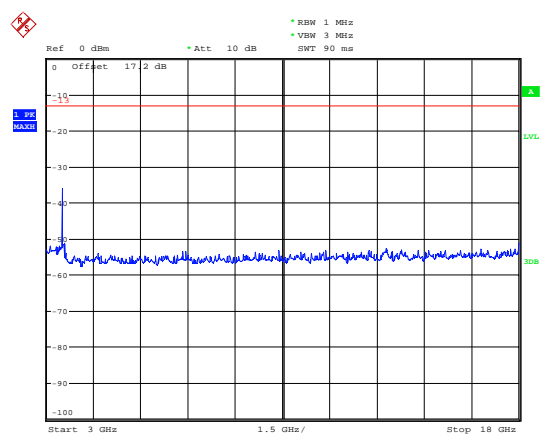
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LTE Band 66 20MHz CH- Middle 3GHz~18GHz



Date: 19.JUN.2019 12:10:48

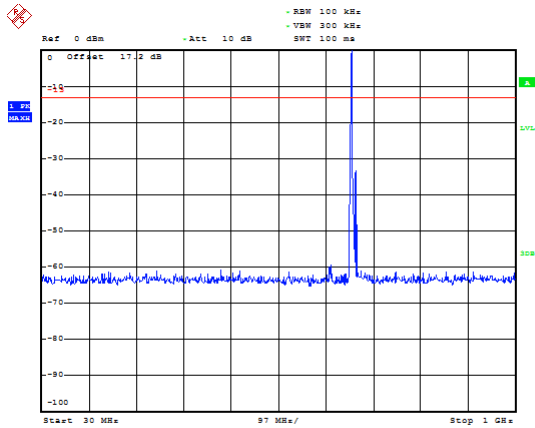
LTE Band 66 20MHz CH-High 3GHz~18GHz



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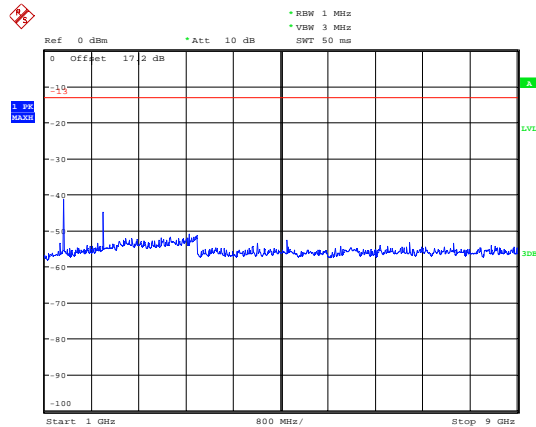


LTE Band 71 5MHz CH-Low 30MHz~1GHz



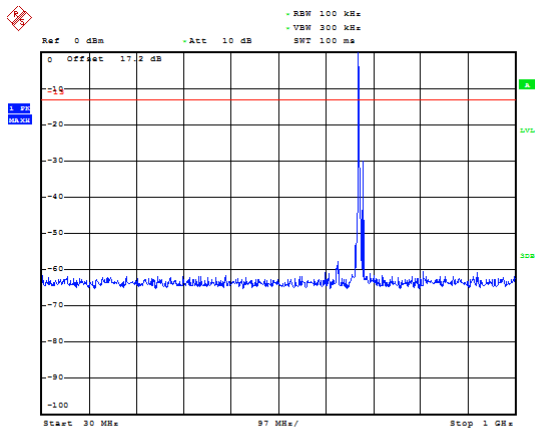
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LTE Band 71 5MHz CH-Low 1GHz~9GHz



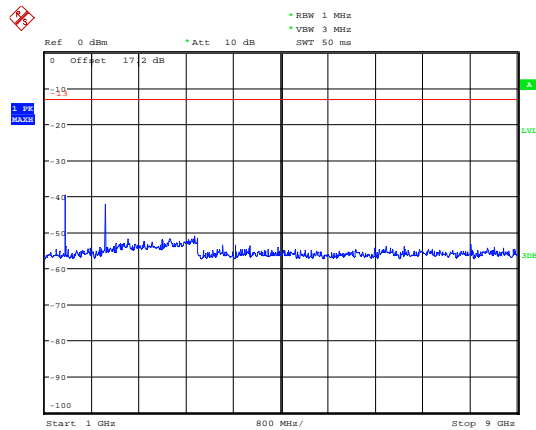
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LTE Band 71 5MHz CH-Middle 30MHz~1GHz



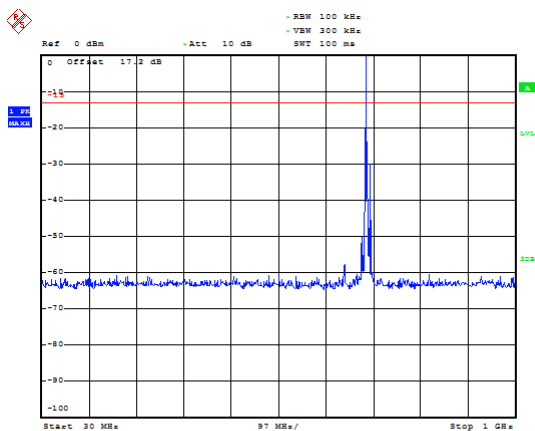
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LTE Band 71 5MHz CH-Middle 1GHz~9GHz



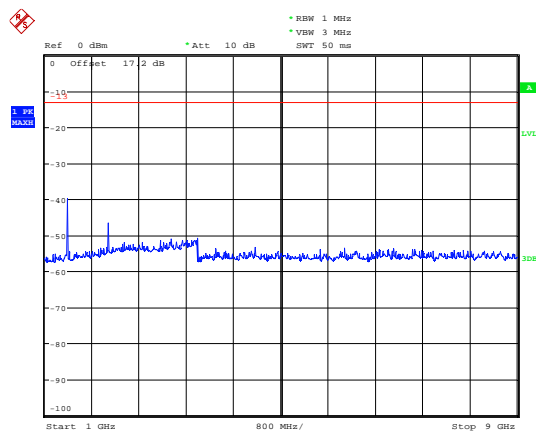
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LTE Band 71 5MHz CH-High 30MHz~1GHz



Date: 19 JUN.2019 12:29:54

LTE Band 71 5MHz CH-High 1GHz~9GHz

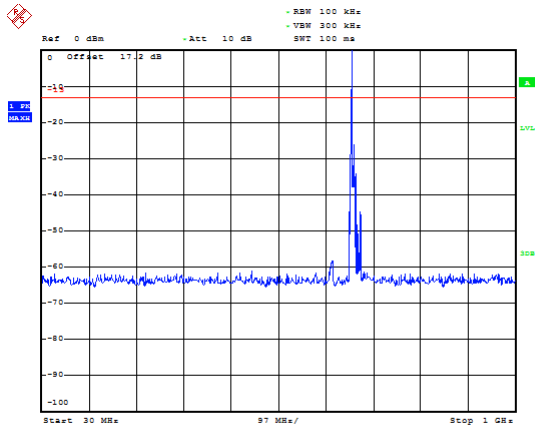


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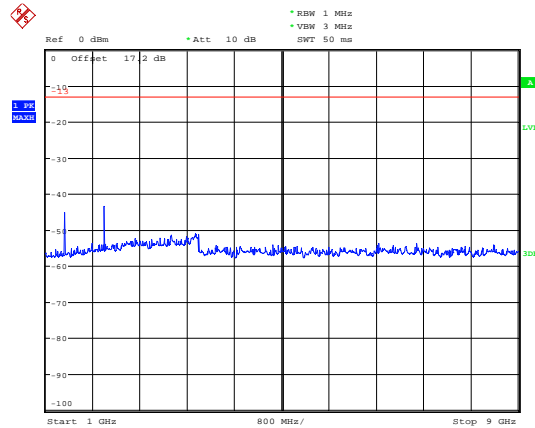


LTE Band 71 10MHz CH-Low 30MHz~1GHz



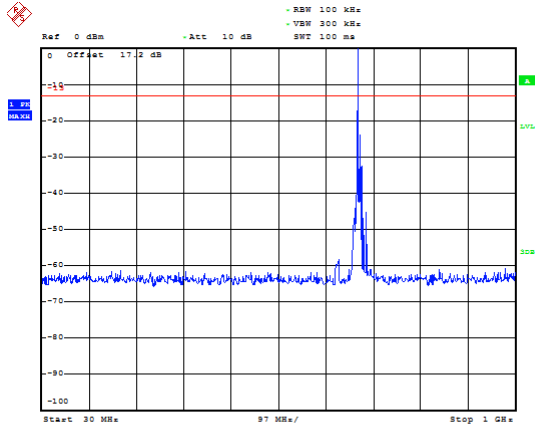
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LTE Band 71 10MHz CH-Low 1GHz~9GHz



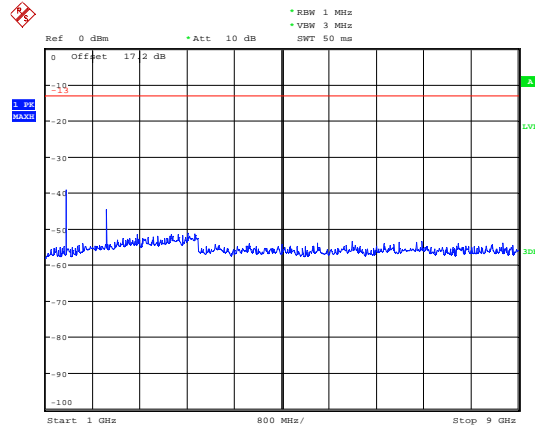
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LTE Band 71 10MHz CH-Middle 30MHz~1GHz



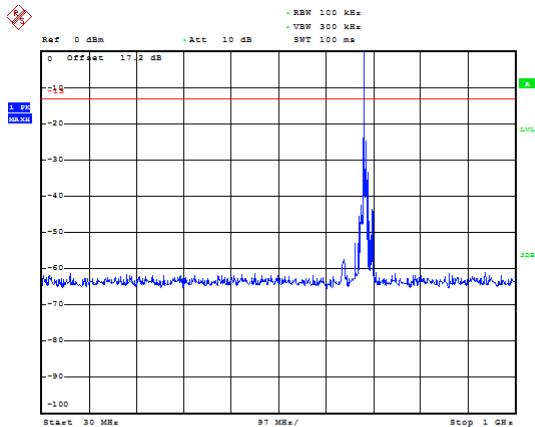
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LTE Band 71 10MHz CH-Middle 1GHz~9GHz



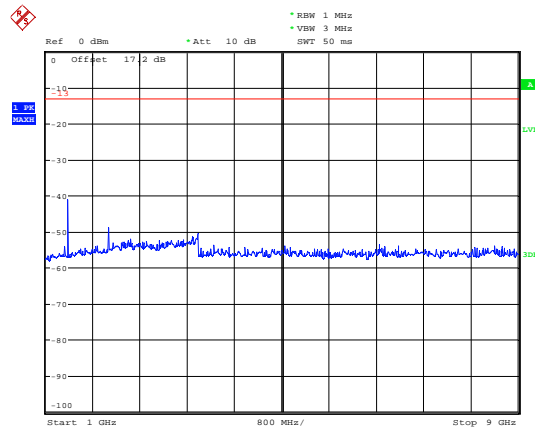
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LTE Band 71 10MHz CH-High 30MHz~1GHz



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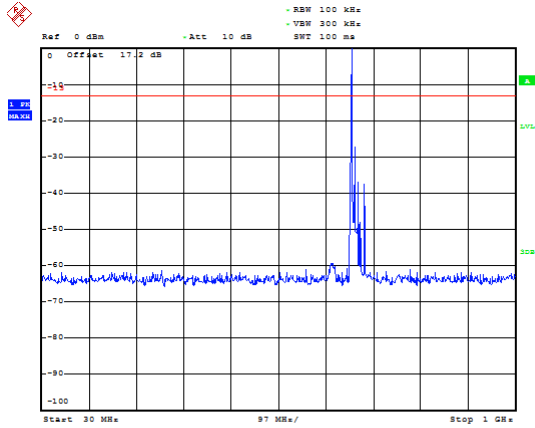
LTE Band 71 10MHz CH-High 1GHz~9GHz



Date: 19 JUN. 2019 12:36:22

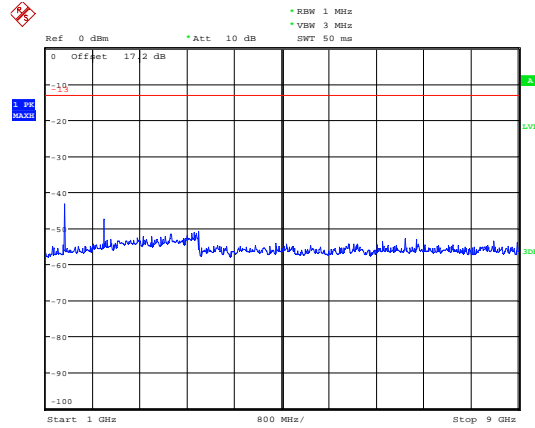


LTE Band 71 15MHz CH-Low 30MHz~1GHz



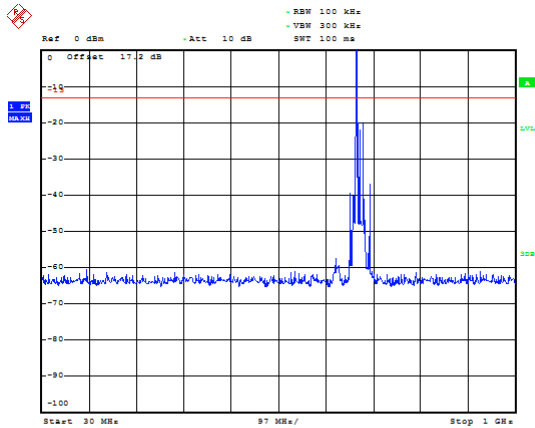
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LTE Band 71 15MHz CH-Low 1GHz~9GHz



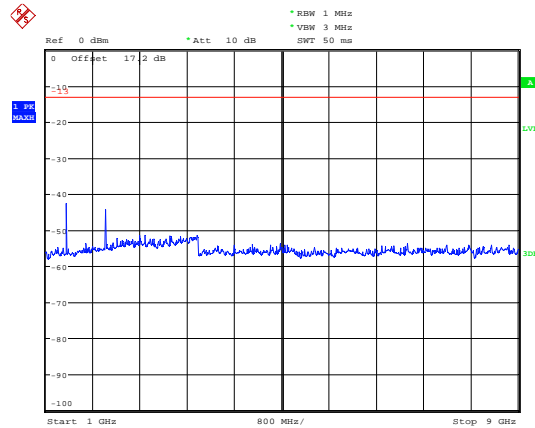
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LTE Band 71 15MHz CH-Middle 30MHz~1GHz



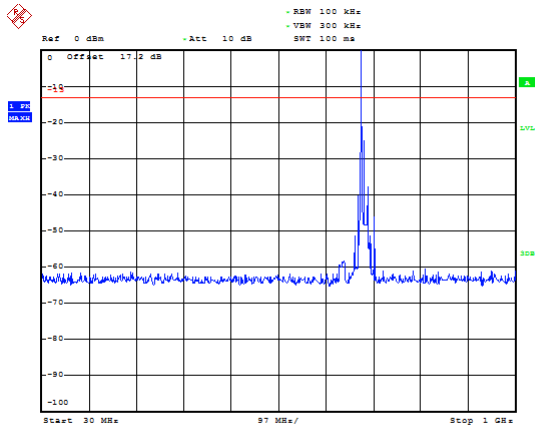
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LTE Band 71 15MHz CH-Middle 1GHz~9GHz



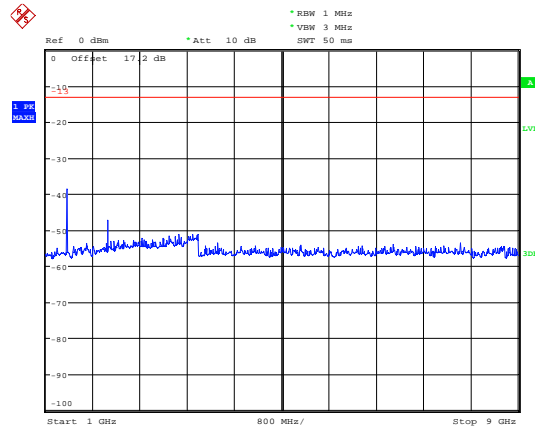
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LTE Band 71 15MHz CH-High 30MHz~1GHz



Date: 19 JUN 2019 12:31:45

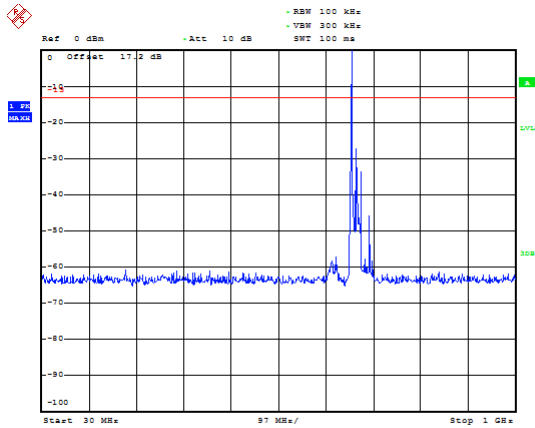
LTE Band 71 15MHz CH-High 1GHz~9GHz



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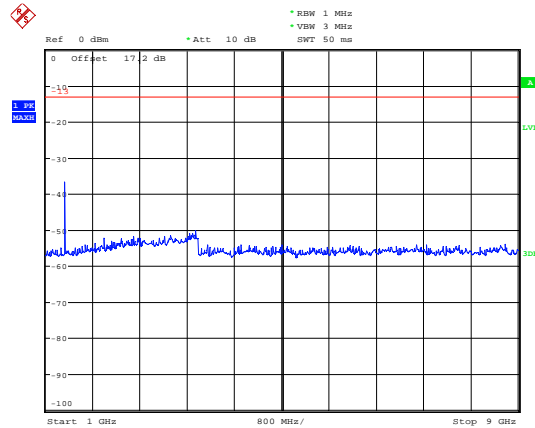


LTE Band 71 20MHz CH-Low 30MHz~1GHz



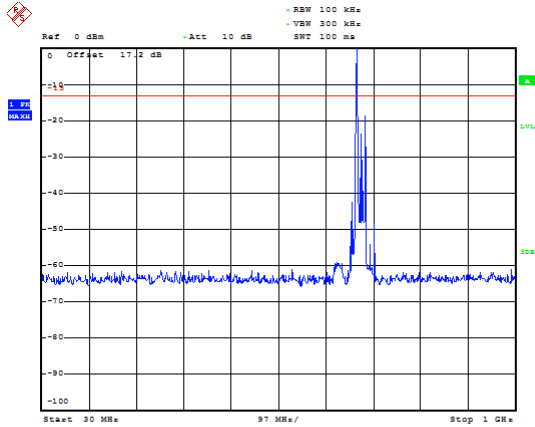
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LTE Band 71 20MHz CH-Low 1GHz~9GHz



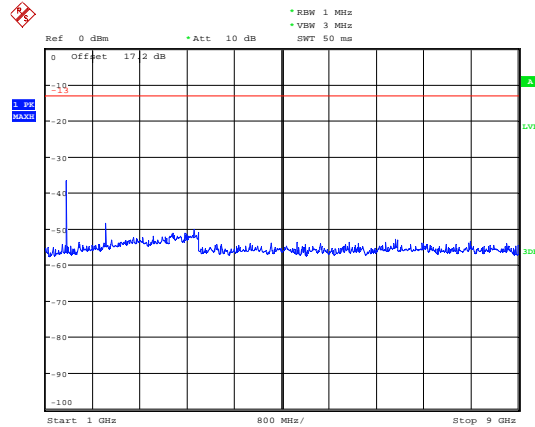
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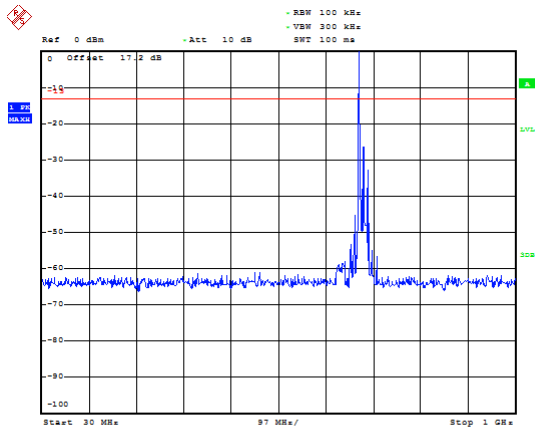
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LTE Band 71 20MHz CH-Middle 1GHz~9GHz



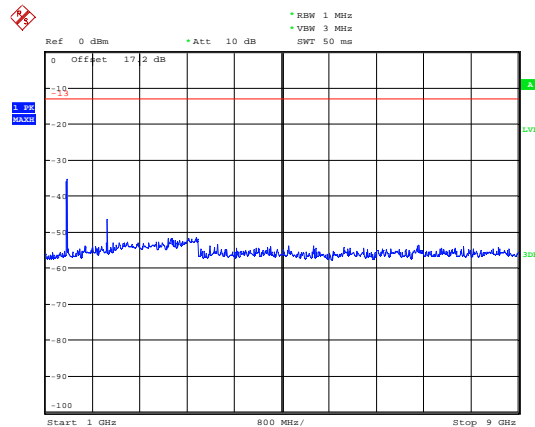
Date: 19 JUN. 2019 12:33:47

LTE Band 71 20MHz CH-High 30MHz~1GHz



Date: 19 JUN. 2019 12:32:24

LTE Band 71 20MHz CH-High 1GHz~9GHz



Date: 19 JUN. 2019 12:33:34

5.8 Radiates Spurious Emission

Ambient condition

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

Method of Measurement

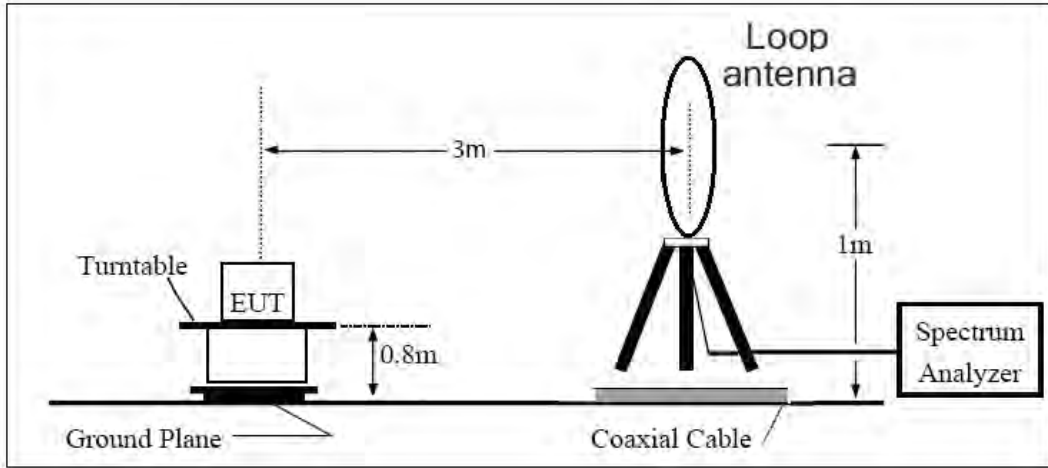
- The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI C63.26 (2015).
- Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H). Above 1GHz: (Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.) The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).
- A loop antenna, A log-periodic antenna or horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
- The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=200Hz,VBW=600Hz for 9kHz150kHz , RBW=10kHz, VBW=30kHz 150kHz-30MHz ,RBW=100kHz,VBW=300kHz for 30MHz to 1GHz and RBW=1MHz, VBW=3MHz for above 1GHz And the maximum value of the receiver should be recorded as (Pr).
- The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
- A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
- The measurement results are obtained as described below:
 $Power(EIRP)=PMea- PAg - Pcl + Ga$
 The measurement results are amend as described below:
 $Power(EIRP)=PMea- Pcl + Ga$
- This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP

= EIRP-2.15dBi.

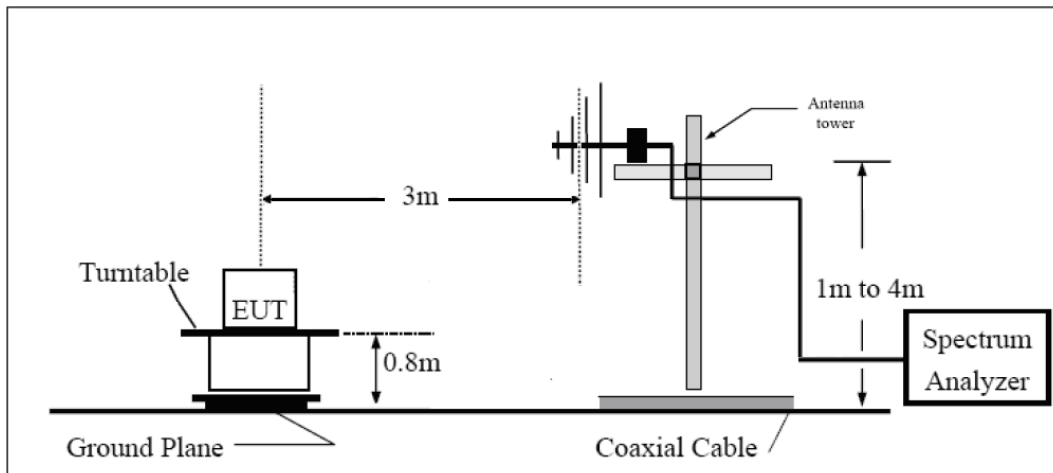
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

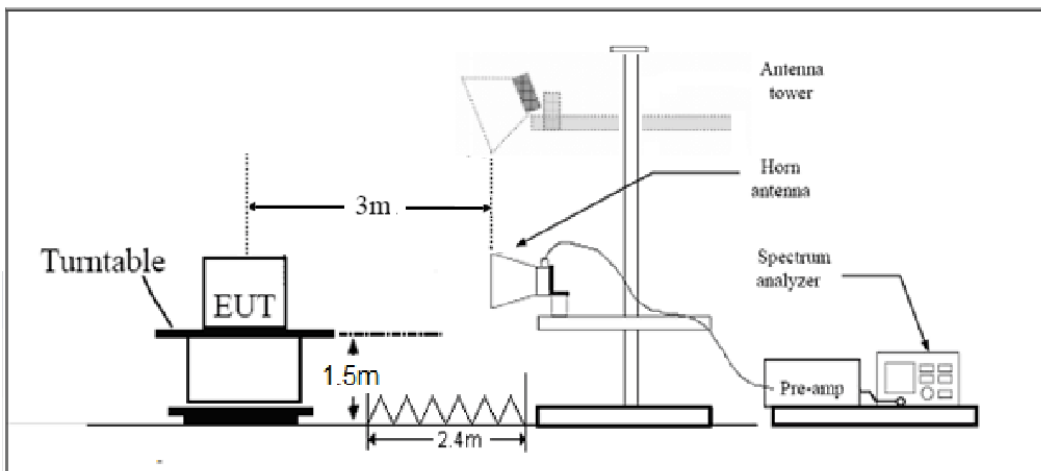
9KHz ~ 30MHz



30MHz ~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

**Limits**

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

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.

Rule Part 27.53(f) For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

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 (c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the 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, in accordance with the following:

- (1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;
- (2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;
- (3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $76 + 10 \log(P)$ dB in a 6.25 kHz band segment, for base and fixed stations;
- (4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;
- (5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

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



	Limit in the band 1559-1610 MHz	-40 dBm
Part 27.53(m) Limit		-25 dBm

Measurement Uncertainty

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

Test Result

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

WCDMA Band IV CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3424.80	-57.68	2.6	10.15	Horizontal	-50.13	-13.00	37.13	135
3	5137.20	-47.11	2.4	11.35	Horizontal	-38.16	-13.00	25.16	45
4	6849.60	-51.77	4.5	10.85	Horizontal	-45.42	-13.00	32.42	90
5	8562.00	-51.67	5.1	11.35	Horizontal	-45.42	-13.00	32.42	135
6	10274.40	-51.33	5.3	11.95	Horizontal	-44.68	-13.00	31.68	135
7	11986.80	-51.39	5.5	13.55	Horizontal	-43.34	-13.00	30.34	45
8	13699.20	-43.27	6.3	13.75	Horizontal	-35.82	-13.00	22.82	90
9	15411.60	-48.63	6.7	13.85	Horizontal	-41.48	-13.00	28.48	180
10	17124.00	-45.46	6.8	14.25	Horizontal	-38.01	-13.00	25.01	225

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

WCDMA Band IV CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.20	-58.27	2.6	10.75	Horizontal	-50.12	-13.00	37.12	45
3	5197.80	-53.63	2.4	11.05	Horizontal	-44.98	-13.00	31.98	90
4	6930.40	-50.02	4.5	11.15	Horizontal	-43.37	-13.00	30.37	135
5	8663.00	-52.31	5.1	11.35	Horizontal	-46.06	-13.00	33.06	135
6	10395.60	-49.71	5.3	11.95	Horizontal	-43.06	-13.00	30.06	45
7	12128.20	-51.27	5.5	13.55	Horizontal	-43.22	-13.00	30.22	45
8	13860.80	-45.41	6.3	13.75	Horizontal	-37.96	-13.00	24.96	90
9	15593.40	-47.62	6.7	13.85	Horizontal	-40.47	-13.00	27.47	135
10	17326.00	-46.00	6.8	14.25	Horizontal	-38.55	-13.00	25.55	135

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



WCDMA Band IV CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3505.20	-56.78	2.6	10.15	Horizontal	-49.23	-13.00	36.23	45
3	5254.13	-54.73	2.4	11.05	Horizontal	-46.08	-13.00	33.08	135
4	7010.40	-40.79	4.5	11.15	Horizontal	-34.14	-13.00	21.14	135
5	8763.00	-51.78	5.1	11.35	Horizontal	-45.53	-13.00	32.53	45
6	10515.60	-50.77	5.3	11.95	Horizontal	-44.12	-13.00	31.12	45
7	12268.20	-50.73	5.5	13.55	Horizontal	-42.68	-13.00	29.68	90
8	14020.80	-47.18	6.3	13.75	Horizontal	-39.73	-13.00	26.73	135
9	15773.40	-47.11	6.7	13.85	Horizontal	-39.96	-13.00	26.96	45
10	17526.00	-46.22	6.8	14.25	Horizontal	-38.77	-13.00	25.77	90

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3440.00	-57.44	2.6	10.15	Horizontal	-49.89	-13.00	36.89	0
3	5133.38	-51.43	2.4	11.35	Horizontal	-42.48	-13.00	29.48	45
4	6880.00	-42.31	4.5	10.85	Horizontal	-35.96	-13.00	22.96	90
5	8600.00	-53.73	5.1	11.35	Horizontal	-47.48	-13.00	34.48	315
6	10320.00	-49.59	5.3	11.95	Horizontal	-42.94	-13.00	29.94	45
7	12040.00	-51.84	5.5	13.55	Horizontal	-43.79	-13.00	30.79	225
8	13760.00	-47.51	6.3	13.75	Horizontal	-40.06	-13.00	27.06	45
9	15480.00	-50.12	6.7	13.85	Horizontal	-42.97	-13.00	29.97	135
10	17200.00	-46.73	6.8	14.25	Horizontal	-39.28	-13.00	26.28	45

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.00	-58.89	2.6	10.75	Horizontal	-50.74	-13.00	37.74	0
3	5170.88	-53.81	2.4	11.05	Horizontal	-45.16	-13.00	32.16	45
4	6930.00	-46.09	4.5	11.15	Horizontal	-39.44	-13.00	26.44	0
5	8662.50	-51.26	5.1	11.35	Horizontal	-45.01	-13.00	32.01	315
6	10395.00	-52.27	5.3	11.95	Horizontal	-45.62	-13.00	32.62	225
7	12127.50	-52.10	5.5	13.55	Horizontal	-44.05	-13.00	31.05	270
8	13860.00	-46.50	6.3	13.75	Horizontal	-39.05	-13.00	26.05	45
9	15592.50	-50.69	6.7	13.85	Horizontal	-43.54	-13.00	30.54	225
10	17325.00	-46.62	6.8	14.25	Horizontal	-39.17	-13.00	26.17	45

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3490.00	-56.54	2.6	10.15	Horizontal	-48.99	-13.00	35.99	90
3	5208.38	-53.21	2.4	11.05	Horizontal	-44.56	-13.00	31.56	135
4	6980.00	-45.55	4.5	11.15	Horizontal	-38.90	-13.00	25.90	45
5	8725.00	-53.04	5.1	11.35	Horizontal	-46.79	-13.00	33.79	45
6	10470.00	-51.46	5.3	11.95	Horizontal	-44.81	-13.00	31.81	0
7	12215.00	-52.12	5.5	13.55	Horizontal	-44.07	-13.00	31.07	315
8	13960.00	-51.95	6.3	13.75	Horizontal	-44.50	-13.00	31.50	225
9	15705.00	-51.04	6.7	13.85	Horizontal	-43.89	-13.00	30.89	270
10	17450.00	-47.99	6.8	14.25	Horizontal	-40.54	-13.00	27.54	315

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5002.13	-52.59	2.00	10.15	Horizontal	-44.44	-25.00	19.44	225
3	7530.00	-44.21	2.50	11.35	Horizontal	-35.36	-25.00	10.36	270
4	10040.00	-42.69	4.20	12.05	Horizontal	-34.84	-25.00	9.84	315
5	12550.00	-45.62	5.20	14.85	Horizontal	-35.97	-25.00	10.97	0
6	15060.00	-51.99	5.50	13.23	Horizontal	-44.26	-25.00	19.26	45
7	17570.00	-47.22	5.70	12.15	Horizontal	-40.77	-25.00	15.77	90
8	20080.00	--	--	--	--	--	--	--	--
9	22590.00	--	--	--	--	--	--	--	--
10	25100.00	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5052.38	-53.63	2.00	10.15	Horizontal	-45.48	-25.00	20.48	270
3	7605.00	-48.87	2.50	11.35	Horizontal	-40.02	-25.00	15.02	90
4	10140.00	-47.60	4.20	12.05	Horizontal	-39.75	-25.00	14.75	135
5	12675.00	-52.46	5.20	14.85	Horizontal	-42.81	-25.00	17.81	45
6	15210.00	-50.54	5.50	13.23	Horizontal	-42.81	-25.00	17.81	315
7	17745.00	-44.86	5.70	12.15	Horizontal	-38.41	-25.00	13.41	225
8	20280.00	--	--	--	--	--	--	--	--
9	22815.00	--	--	--	--	--	--	--	--
10	25350.00	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.



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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5102.25	-52.73	2.00	10.15	Horizontal	-44.58	-25.00	19.58	135
3	7680.00	-52.05	2.50	11.35	Horizontal	-43.20	-25.00	18.20	45
4	10240.00	-48.63	4.20	12.05	Horizontal	-40.78	-25.00	15.78	315
5	12800.00	-44.92	5.20	14.85	Horizontal	-35.27	-25.00	10.27	45
6	15360.00	-46.08	5.50	13.23	Horizontal	-38.35	-25.00	13.35	90
7	17920.00	-44.18	5.70	12.15	Horizontal	-37.73	-25.00	12.73	135
8	20480.00	--	--	--	--	--	--	--	--
9	23040.00	--	--	--	--	--	--	--	--
10	25600.00	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



LTE Band 12 QPSK 10MHz CH-Low, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1408.00	-67.08	2.00	10.15	Horizontal	-61.08	-13.00	48.08	225
3	2112.00	-64.13	2.51	11.35	Horizontal	-57.44	-13.00	44.44	0
4	2816.00	-63.46	4.20	10.85	Horizontal	-58.96	-13.00	45.96	315
5	3520.00	-57.14	5.20	11.35	Horizontal	-53.14	-13.00	40.14	315
6	4224.00	-55.11	5.50	11.95	Horizontal	-50.81	-13.00	37.81	225
7	4928.00	-55.22	5.70	13.55	Horizontal	-49.52	-13.00	36.52	270
8	5632.00	-55.21	6.30	13.75	Horizontal	-49.91	-13.00	36.91	315
9	6336.00	-55.69	6.80	13.85	Horizontal	-50.79	-13.00	37.79	225
10	7040.00	-56.05	6.90	14.25	Horizontal	-50.85	-13.00	37.85	135

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.

LTE Band 12 QPSK 10MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1415.00	-67.68	2.00	10.75	Horizontal	-61.08	-13.00	48.08	315
3	2122.50	-66.51	2.51	11.05	Horizontal	-60.12	-13.00	47.12	270
4	2830.00	-64.03	4.20	11.15	Horizontal	-59.23	-13.00	46.23	315
5	3537.50	-54.39	5.20	11.15	Horizontal	-50.59	-13.00	37.59	45
6	4245.00	-54.70	5.50	11.95	Horizontal	-50.40	-13.00	37.40	0
7	4952.50	-54.86	5.70	13.55	Horizontal	-49.16	-13.00	36.16	315
8	5660.00	-55.50	6.30	13.75	Horizontal	-50.20	-13.00	37.20	270
9	6367.50	-55.88	6.80	13.85	Horizontal	-50.98	-13.00	37.98	45
10	7075.00	-56.21	6.90	14.25	Horizontal	-51.01	-13.00	38.01	90

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.



LTE Band 12 QPSK 10MHz CH-High, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1422.00	-67.49	2.00	10.15	Horizontal	-61.49	-13.00	48.49	270
3	2133.00	-66.54	2.51	11.05	Horizontal	-60.15	-13.00	47.15	45
4	2844.00	-64.22	4.20	11.15	Horizontal	-59.42	-13.00	46.42	90
5	3555.00	-56.67	5.20	11.15	Horizontal	-52.87	-13.00	39.87	135
6	4266.00	-55.12	5.50	11.95	Horizontal	-50.82	-13.00	37.82	45
7	4977.00	-54.18	5.70	13.55	Horizontal	-48.48	-13.00	35.48	0
8	5688.00	-56.09	6.30	13.75	Horizontal	-50.79	-13.00	37.79	315
9	6399.00	-56.45	6.80	13.85	Horizontal	-51.55	-13.00	38.55	225
10	7110.00	-56.33	6.90	14.25	Horizontal	-51.13	-13.00	38.13	315

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 13 QPSK 10MHz CH-Low, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1556.50	-66.21	2.00	10.15	Horizontal	-60.21	-40.00	20.21	135
3	2346.00	-65.26	2.51	11.35	Horizontal	-58.57	-13.00	45.57	45
4	3128.00	-58.75	4.20	10.85	Horizontal	-54.25	-13.00	41.25	45
5	3910.00	-55.97	5.20	11.35	Horizontal	-51.97	-13.00	38.97	90
6	4692.00	-54.21	5.50	11.95	Horizontal	-49.91	-13.00	36.91	135
7	5474.00	-55.31	5.70	13.55	Horizontal	-49.61	-13.00	36.61	45
8	6256.00	-56.21	6.30	13.75	Horizontal	-50.91	-13.00	37.91	45
9	7038.00	-55.92	6.80	13.85	Horizontal	-51.02	-13.00	38.02	0
10	7820.00	-53.70	6.90	14.25	Horizontal	-48.50	-13.00	35.50	315

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



LTE Band 13 QPSK 10MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1555.25	-66.57	2.00	10.75	Horizontal	-59.97	-40.00	19.97	315
3	2346.00	-65.88	2.51	11.05	Horizontal	-59.49	-13.00	46.49	225
4	3128.00	-58.49	4.20	11.15	Horizontal	-53.69	-13.00	40.69	225
5	3910.00	-55.50	5.20	11.15	Horizontal	-51.70	-13.00	38.70	315
6	4692.00	-53.62	5.50	11.95	Horizontal	-49.32	-13.00	36.32	225
7	5474.00	-55.25	5.70	13.55	Horizontal	-49.55	-13.00	36.55	135
8	6256.00	-55.43	6.30	13.75	Horizontal	-50.13	-13.00	37.13	45
9	7038.00	-56.13	6.80	13.85	Horizontal	-51.23	-13.00	38.23	315
10	7820.00	-53.18	6.90	14.25	Horizontal	-47.98	-13.00	34.98	0

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 13 QPSK 10MHz CH-High, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1564.00	-66.72	2.00	10.15	Horizontal	-60.72	-40.00	20.72	135
3	2346.00	-65.99	2.51	11.05	Horizontal	-59.60	-13.00	46.60	0
4	3128.00	-58.02	4.20	11.15	Horizontal	-53.22	-13.00	40.22	45
5	3910.00	-55.17	5.20	11.15	Horizontal	-51.37	-13.00	38.37	90
6	4692.00	-53.67	5.50	11.95	Horizontal	-49.37	-13.00	36.37	225
7	5474.00	-55.58	5.70	13.55	Horizontal	-49.88	-13.00	36.88	45
8	6256.00	-55.75	6.30	13.75	Horizontal	-50.45	-13.00	37.45	135
9	7038.00	-56.26	6.80	13.85	Horizontal	-51.36	-13.00	38.36	45
10	7820.00	-53.84	6.90	14.25	Horizontal	-48.64	-13.00	35.64	90

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5012.00	-55.08	2.00	10.15	Horizontal	-46.93	-25.00	21.93	45
3	7518.00	-46.83	2.50	11.35	Horizontal	-37.98	-25.00	12.98	225
4	10024.00	-45.36	4.20	12.05	Horizontal	-37.51	-25.00	12.51	45
5	12530.00	-49.86	5.20	14.85	Horizontal	-40.21	-25.00	15.21	0
6	15036.00	-50.17	5.50	13.23	Horizontal	-42.44	-25.00	17.44	90
7	17542.00	-44.82	5.70	12.15	Horizontal	-38.37	-25.00	13.37	225
8	20048.00	--	--	--	--	--	--	--	--
9	22554.00	--	--	--	--	--	--	--	--
10	25060.00	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5186.00	-54.23	2.00	10.15	Horizontal	-46.08	-25.00	21.08	315
3	7779.00	-49.48	2.50	11.35	Horizontal	-40.63	-25.00	15.63	45
4	10372.00	-49.76	4.20	12.05	Horizontal	-41.91	-25.00	16.91	135
5	12965.00	-44.24	5.20	14.85	Horizontal	-34.59	-25.00	9.59	45
6	15558.00	-45.76	5.50	13.23	Horizontal	-38.03	-25.00	13.03	0
7	18151.00	--	--	--	--	--	--	--	--
8	20744.00	--	--	--	--	--	--	--	--
9	23337.00	--	--	--	--	--	--	--	--
10	25930.00	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.



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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5341.88	-55.82	2.00	10.15	Horizontal	-47.67	-25.00	22.67	0
3	8013.38	-48.95	2.50	11.35	Horizontal	-40.10	-25.00	15.10	45
4	10684.50	-53.11	4.20	12.05	Horizontal	-45.26	-25.00	20.26	90
5	13400.00	-48.82	5.20	14.85	Horizontal	-39.17	-25.00	14.17	225
6	16080.00	-45.75	5.50	13.23	Horizontal	-38.02	-25.00	13.02	45
7	18760.00	--	--	--	--	--	--	--	--
8	21440.00	--	--	--	--	--	--	--	--
9	24120.00	--	--	--	--	--	--	--	--
10	26800.00	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.

LTE Band 66 QPSK 20MHz CH-Low, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3421.9	-54.16	2.6	10.15	Horizontal	-46.61	-13.00	33.61	270
3	5133.0	-50.11	2.4	11.35	Horizontal	-41.16	-13.00	28.16	315
4	6880.0	-40.46	4.5	10.85	Horizontal	-34.11	-13.00	21.11	225
5	8600.0	-52.21	5.1	11.35	Horizontal	-45.96	-13.00	32.96	135
6	10320.0	-50.99	5.3	11.95	Horizontal	-44.34	-13.00	31.34	45
7	12040.0	-53.18	5.5	13.55	Horizontal	-45.13	-13.00	32.13	0
8	13760.0	-45.54	6.3	13.75	Horizontal	-38.09	-13.00	25.09	315
9	15480.0	-50.91	6.7	13.85	Horizontal	-43.76	-13.00	30.76	270
10	17200.0	-48.40	6.8	14.25	Horizontal	-40.95	-13.00	27.95	45

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.



LTE Band 66 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3447.0	-57.41	2.6	10.75	Horizontal	-49.26	-13.00	36.26	45
3	5170.5	-51.41	2.4	11.05	Horizontal	-42.76	-13.00	29.76	225
4	6930.0	-43.07	4.5	11.15	Horizontal	-36.42	-13.00	23.42	45
5	8662.5	-52.29	5.1	11.35	Horizontal	-46.04	-13.00	33.04	0
6	10395.0	-51.26	5.3	11.95	Horizontal	-44.61	-13.00	31.61	90
7	12127.5	-51.85	5.5	13.55	Horizontal	-43.80	-13.00	30.80	0
8	13860.0	-50.91	6.3	13.75	Horizontal	-43.46	-13.00	30.46	315
9	15592.5	-50.12	6.7	13.85	Horizontal	-42.97	-13.00	29.97	135
10	17325.0	-48.09	6.8	14.25	Horizontal	-40.64	-13.00	27.64	45

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.

LTE Band 66 QPSK 20MHz CH-High, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3472.1	-57.24	2.6	10.15	Horizontal	-49.69	-13.00	36.69	0
3	5208.4	-55.61	2.4	11.05	Horizontal	-46.96	-13.00	33.96	90
4	6980.0	-34.03	4.5	11.15	Horizontal	-27.38	-13.00	14.38	270
5	8725.0	-47.22	5.1	11.35	Horizontal	-40.97	-13.00	27.97	315
6	10470.0	-51.16	5.3	11.95	Horizontal	-44.51	-13.00	31.51	225
7	12215.0	-51.14	5.5	13.55	Horizontal	-43.09	-13.00	30.09	135
8	13960.0	-48.76	6.3	13.75	Horizontal	-41.31	-13.00	28.31	45
9	15705.0	-50.62	6.7	13.85	Horizontal	-43.47	-13.00	30.47	0
10	17450.0	-48.02	6.8	14.25	Horizontal	-40.57	-13.00	27.57	315

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.



LTE Band 71 QPSK 20MHz CH-Low, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1346.00	-69.09	2.00	10.15	Horizontal	-63.09	-13.00	50.09	270
3	2019.00	-68.22	2.51	11.35	Horizontal	-61.53	-13.00	48.53	315
4	2692.00	-64.35	4.20	10.85	Horizontal	-59.85	-13.00	46.85	0
5	3365.3	-58.12	5.20	11.35	Horizontal	-54.12	-13.00	41.12	90
6	4035.0	-55.27	5.50	11.95	Horizontal	-50.97	-13.00	37.97	0
7	4714.5	-54.33	5.70	13.55	Horizontal	-48.63	-13.00	35.63	90
8	5386.1	-56.02	6.30	13.75	Horizontal	-50.72	-13.00	37.72	0
9	6056.9	-55.23	6.80	13.85	Horizontal	-50.33	-13.00	37.33	315
10	6728.5	-54.80	6.90	14.25	Horizontal	-49.60	-13.00	36.60	225

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 71 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1366.00	-70.16	2.00	10.75	Horizontal	-63.56	-13.00	50.56	45
3	2049.00	-65.64	2.51	11.05	Horizontal	-59.25	-13.00	46.25	90
4	2732.00	-64.38	4.20	11.15	Horizontal	-59.58	-13.00	46.58	180
5	3412.5	-57.76	5.20	11.15	Horizontal	-53.96	-13.00	40.96	45
6	4095.0	-54.57	5.50	11.95	Horizontal	-50.27	-13.00	37.27	0
7	4786.9	-55.31	5.70	13.55	Horizontal	-49.61	-13.00	36.61	90
8	5462.3	-54.72	6.30	13.75	Horizontal	-49.42	-13.00	36.42	225
9	6146.8	-55.09	6.80	13.85	Horizontal	-50.19	-13.00	37.19	45
10	6838.6	-56.72	6.90	14.25	Horizontal	-51.52	-13.00	38.52	135

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



LTE Band 71 QPSK 20MHz CH-High, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1376.00	-68.63	2.00	10.15	Horizontal	-62.63	-13.00	49.63	225
3	2064.00	-67.29	2.51	11.05	Horizontal	-60.90	-13.00	47.90	45
4	2752.00	-64.82	4.20	11.15	Horizontal	-60.02	-13.00	47.02	0
5	3442.5	-57.20	5.20	11.15	Horizontal	-53.40	-13.00	40.40	45
6	4125.4	-55.44	5.50	11.95	Horizontal	-51.14	-13.00	38.14	225
7	4816.5	-55.53	5.70	13.55	Horizontal	-49.83	-13.00	36.83	270
8	5506.5	-54.38	6.30	13.75	Horizontal	-49.08	-13.00	36.08	45
9	6191.4	-54.96	6.80	13.85	Horizontal	-50.06	-13.00	37.06	0
10	6880.3	-54.48	6.90	14.25	Horizontal	-49.28	-13.00	36.28	90

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



6 Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Base Station Simulator	R&S	CMW500	113824	2019-05-19	2020-05-18
Power Splitter	Hua Xiang	SHX-GF2-2-13	10120101	/	/
Spectrum Analyzer	Key sight	N9010A	MY50210259	2019-05-19	2020-05-18
Signal Analyzer	R&S	FSV30	100815	2018-12-16	2019-12-15
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2017-09-26	2019-09-25
Trilog Antenna	SCHWARZBECK	VUBL 9163	9163-201	2017-11-18	2019-11-17
Horn Antenna	R&S	HF907	100126	2018-07-07	2020-07-06
Horn Antenna	ETS-Lindgren	3160-09	00102643	2018-06-20	2020-06-19
Horn Antenna	STEATITE	QSH-SL-26-40-K-15	16779	2017-07-20	2019-07-19
Signal generator	R&S	SMB 100A	102594	2019-05-19	2020-05-18
Climatic Chamber	ESPEC	SU-242	93000506	2017-12-17	2020-12-16
Preamplifier	R&S	SCU18	102327	2019-05-19	2020-05-18
MOB COMMS DC SUPPLY	Keysight	66319D	MY43004105	2019-05-19	2020-05-18
RF Cable	Agilent	SMA 15cm	0001	2019-03-15	2019-06-14
Software	R&S	EMC32	9.26.0	/	/

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

ANNEX A: EUT Appearance and Test Setup

A.1 EUT Appearance



a: EUT



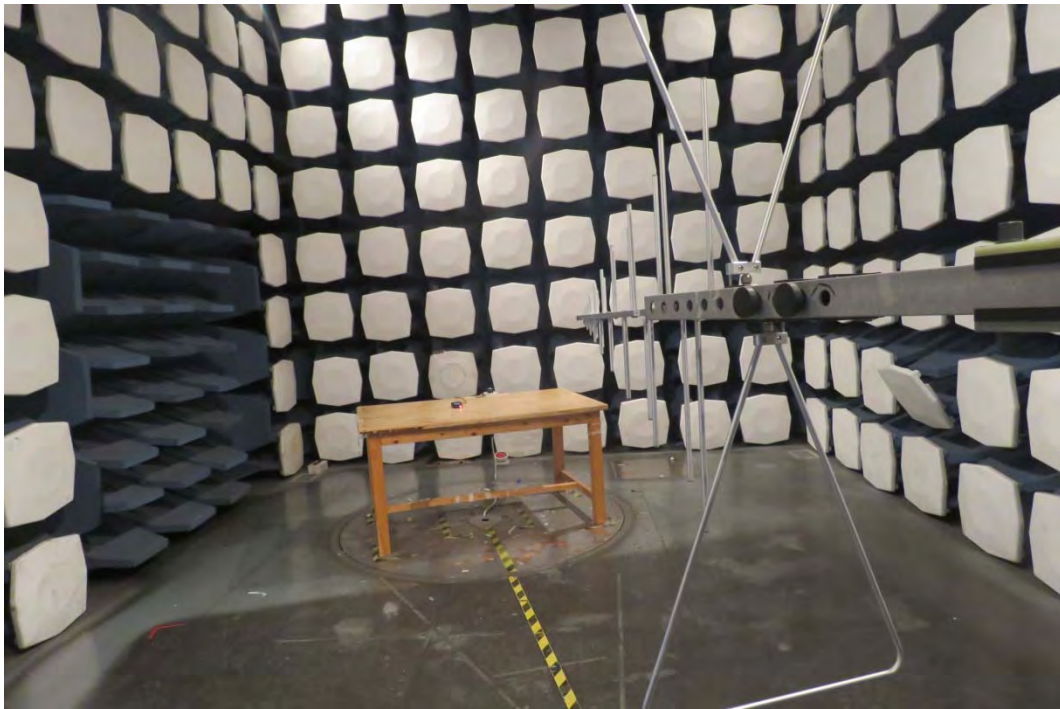
b: Adapter



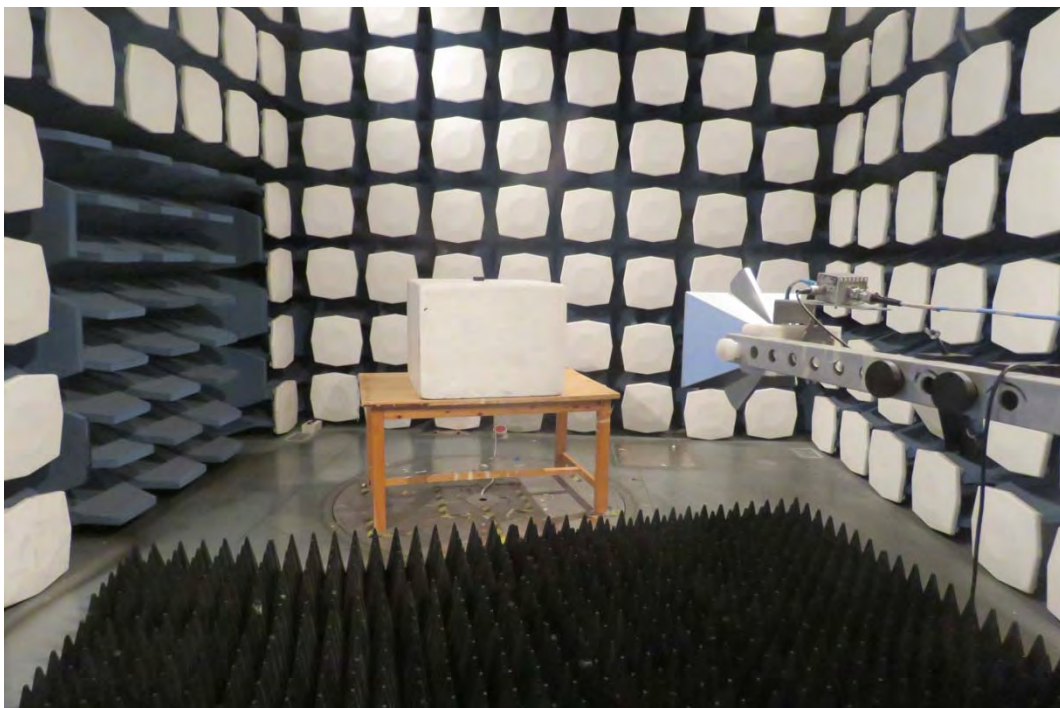
c: USB Cable

Picture 1 EUT and Accessory

A.2 Test Setup



30MHz ~ 1GHz



Above 1GHz

Picture 2 Radiated Spurious Emissions Test setup