



Appendix B

E-UTRA Band 4



CONTENT

	Page
1 EFFECTIVE (ISOTROPIC) RADIATED POWER OUTPUT DATA.....	3
2 PEAK-TO-AVERAGE RATIO	15
2.1 FOR LTE	16
2.1.1 Test Band = LTE band4.....	16
3 MODULATION CHARACTERISTICS	20
3.1 FOR LTE	20
3.1.1 Test Band = LTE band4.....	20
4 BANDWIDTH	22
4.1 FOR LTE	23
4.1.1 Test Band = LTE band4.....	23
5 BAND EDGES COMPLIANCE	42
5.1 FOR LTE	42
5.1.1 Test Band = LTE band4.....	42
6 SPURIOUS EMISSION AT ANTENNA TERMINAL.....	67
6.1 FOR LTE	67
6.1.1 Test Band = LTE band4.....	67
7 FIELD STRENGTH OF SPURIOUS RADIATION	72
7.1 FOR LTE	72
7.1.1 Test Band = LTE band4.....	72
8 FREQUENCY STABILITY	74
8.1 FREQUENCY ERROR VS. VOLTAGE	74
8.2 FREQUENCY ERROR VS. TEMPERATURE	75



1 Effective (Isotropic) Radiated Power Output Data

Effective Isotropic Radiated Power of Transmitter (EIRP) for LTE BAND 4

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM1	1.4M	LCH	RB1#0	23.05	24.55	33.00	PASS
				RB1#2	23.20	24.70	33.00	PASS
				RB1#5	23.02	24.52	33.00	PASS
				RB3#0	23.39	24.89	33.00	PASS
				RB3#2	23.18	24.68	33.00	PASS
				RB3#3	23.40	24.90	33.00	PASS
				RB6#0	22.23	23.73	33.00	PASS
			MCH	RB1#0	23.15	24.65	33.00	PASS
				RB1#2	23.22	24.72	33.00	PASS
				RB1#5	23.21	24.71	33.00	PASS
				RB3#0	23.33	24.83	33.00	PASS
				RB3#2	23.35	24.85	33.00	PASS
				RB3#3	23.25	24.75	33.00	PASS
				RB6#0	22.18	23.68	33.00	PASS
			HCH	RB1#0	23.37	24.87	33.00	PASS
				RB1#2	23.46	24.96	33.00	PASS
				RB1#5	23.35	24.85	33.00	PASS
				RB3#0	23.48	24.98	33.00	PASS
				RB3#2	23.48	24.98	33.00	PASS
				RB3#3	23.55	25.05	33.00	PASS
				RB6#0	22.44	23.94	33.00	PASS



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch

Report No.: SZEM171201298701

Page: 4 of 75

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM2	1.4M	LCH	RB1#0	22.21	23.71	33.00	PASS
				RB1#2	22.42	23.92	33.00	PASS
				RB1#5	22.43	23.93	33.00	PASS
				RB3#0	22.29	23.79	33.00	PASS
				RB3#2	22.36	23.86	33.00	PASS
				RB3#3	22.37	23.87	33.00	PASS
				RB6#0	21.04	22.54	33.00	PASS
			MCH	RB1#0	21.77	23.27	33.00	PASS
				RB1#2	21.98	23.48	33.00	PASS
				RB1#5	22.13	23.63	33.00	PASS
				RB3#0	22.15	23.65	33.00	PASS
				RB3#2	22.02	23.52	33.00	PASS
				RB3#3	22.24	23.74	33.00	PASS
				RB6#0	20.97	22.47	33.00	PASS
			HCH	RB1#0	21.73	23.23	33.00	PASS
				RB1#2	21.96	23.46	33.00	PASS
				RB1#5	21.77	23.27	33.00	PASS
				RB3#0	22.13	23.63	33.00	PASS
				RB3#2	22.50	24.00	33.00	PASS
				RB3#3	22.40	23.90	33.00	PASS
				RB6#0	21.23	22.73	33.00	PASS



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch

Report No.: SZEM171201298701

Page: 5 of 75

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM1	3M	LCH	RB1#0	23.39	24.89	33.00	PASS
				RB1#7	23.46	24.96	33.00	PASS
				RB1#14	23.38	24.88	33.00	PASS
				RB8#0	22.25	23.75	33.00	PASS
				RB8#4	22.29	23.79	33.00	PASS
				RB8#7	22.37	23.87	33.00	PASS
				RB15#0	22.24	23.74	33.00	PASS
			MCH	RB1#0	23.00	24.50	33.00	PASS
				RB1#7	23.13	24.63	33.00	PASS
				RB1#14	23.03	24.53	33.00	PASS
				RB8#0	22.08	23.58	33.00	PASS
				RB8#4	22.24	23.74	33.00	PASS
				RB8#7	22.22	23.72	33.00	PASS
				RB15#0	22.19	23.69	33.00	PASS
			HCH	RB1#0	23.40	24.90	33.00	PASS
				RB1#7	23.14	24.64	33.00	PASS
				RB1#14	23.35	24.85	33.00	PASS
				RB8#0	22.52	24.02	33.00	PASS
				RB8#4	22.61	24.11	33.00	PASS
				RB8#7	22.55	24.05	33.00	PASS
				RB15#0	22.47	23.97	33.00	PASS



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch

Report No.: SZEM171201298701

Page: 6 of 75

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM2	3M	LCH	RB1#0	21.79	23.29	33.00	PASS
				RB1#7	22.05	23.55	33.00	PASS
				RB1#14	21.73	23.23	33.00	PASS
				RB8#0	21.23	22.73	33.00	PASS
				RB8#4	21.26	22.76	33.00	PASS
				RB8#7	21.31	22.81	33.00	PASS
				RB15#0	21.37	22.87	33.00	PASS
			MCH	RB1#0	21.55	23.05	33.00	PASS
				RB1#7	21.94	23.44	33.00	PASS
				RB1#14	22.32	23.82	33.00	PASS
				RB8#0	20.90	22.40	33.00	PASS
				RB8#4	21.17	22.67	33.00	PASS
				RB8#7	21.16	22.66	33.00	PASS
				RB15#0	21.19	22.69	33.00	PASS
			HCH	RB1#0	22.57	24.07	33.00	PASS
				RB1#7	22.17	23.67	33.00	PASS
				RB1#14	22.63	24.13	33.00	PASS
				RB8#0	21.10	22.60	33.00	PASS
				RB8#4	21.22	22.72	33.00	PASS
				RB8#7	21.15	22.65	33.00	PASS
				RB15#0	21.34	22.84	33.00	PASS



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch

Report No.: SZEM171201298701

Page: 7 of 75

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM1	5M	LCH	RB1#0	23.29	24.79	33.00	PASS
				RB1#13	23.08	24.58	33.00	PASS
				RB1#24	23.07	24.57	33.00	PASS
				RB12#0	22.31	23.81	33.00	PASS
				RB12#6	22.29	23.79	33.00	PASS
				RB12#13	22.27	23.77	33.00	PASS
				RB25#0	22.28	23.78	33.00	PASS
			MCH	RB1#0	23.18	24.68	33.00	PASS
				RB1#13	23.04	24.54	33.00	PASS
				RB1#24	23.33	24.83	33.00	PASS
				RB12#0	22.22	23.72	33.00	PASS
				RB12#6	22.22	23.72	33.00	PASS
				RB12#13	22.28	23.78	33.00	PASS
				RB25#0	22.25	23.75	33.00	PASS
			HCH	RB1#0	23.38	24.88	33.00	PASS
				RB1#13	23.35	24.85	33.00	PASS
				RB1#24	23.40	24.90	33.00	PASS
				RB12#0	22.52	24.02	33.00	PASS
				RB12#6	22.55	24.05	33.00	PASS
				RB12#13	22.61	24.11	33.00	PASS
				RB25#0	22.56	24.06	33.00	PASS



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch

Report No.: SZEM171201298701

Page: 8 of 75

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM2	5M	LCH	RB1#0	22.49	23.99	33.00	PASS
				RB1#13	22.06	23.56	33.00	PASS
				RB1#24	22.34	23.84	33.00	PASS
				RB12#0	21.04	22.54	33.00	PASS
				RB12#6	21.10	22.60	33.00	PASS
				RB12#13	21.10	22.60	33.00	PASS
				RB25#0	21.31	22.81	33.00	PASS
			MCH	RB1#0	21.63	23.13	33.00	PASS
				RB1#13	21.67	23.17	33.00	PASS
				RB1#24	21.97	23.47	33.00	PASS
				RB12#0	21.09	22.59	33.00	PASS
				RB12#6	21.02	22.52	33.00	PASS
				RB12#13	21.07	22.57	33.00	PASS
				RB25#0	21.25	22.75	33.00	PASS
			HCH	RB1#0	22.14	23.64	33.00	PASS
				RB1#13	21.99	23.49	33.00	PASS
				RB1#24	21.97	23.47	33.00	PASS
				RB12#0	21.46	22.96	33.00	PASS
				RB12#6	21.37	22.87	33.00	PASS
				RB12#13	21.37	22.87	33.00	PASS
				RB25#0	21.51	23.01	33.00	PASS



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch

Report No.: SZEM171201298701

Page: 9 of 75

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM1	10M	LCH	RB1#0	23.49	24.99	33.00	PASS
				RB1#25	23.30	24.80	33.00	PASS
				RB1#49	23.46	24.96	33.00	PASS
				RB25#0	22.38	23.88	33.00	PASS
				RB25#13	22.37	23.87	33.00	PASS
				RB25#25	22.39	23.89	33.00	PASS
				RB50#0	22.47	23.97	33.00	PASS
			MCH	RB1#0	22.99	24.49	33.00	PASS
				RB1#25	23.10	24.60	33.00	PASS
				RB1#49	23.12	24.62	33.00	PASS
				RB25#0	22.22	23.72	33.00	PASS
				RB25#13	22.17	23.67	33.00	PASS
				RB25#25	22.26	23.76	33.00	PASS
				RB50#0	22.29	23.79	33.00	PASS
			HCH	RB1#0	23.42	24.92	33.00	PASS
				RB1#25	23.57	25.07	33.00	PASS
				RB1#49	23.4	24.90	33.00	PASS
				RB25#0	22.56	24.06	33.00	PASS
				RB25#13	22.56	24.06	33.00	PASS
				RB25#25	22.54	24.04	33.00	PASS
				RB50#0	22.60	24.10	33.00	PASS



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch

Report No.: SZEM171201298701

Page: 10 of 75

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM2	10M	LCH	RB1#0	21.72	23.22	33.00	PASS
				RB1#25	21.99	23.49	33.00	PASS
				RB1#49	22.08	23.58	33.00	PASS
				RB25#0	21.29	22.79	33.00	PASS
				RB25#13	21.29	22.79	33.00	PASS
				RB25#25	21.41	22.91	33.00	PASS
				RB50#0	21.28	22.78	33.00	PASS
			MCH	RB1#0	21.53	23.03	33.00	PASS
				RB1#25	21.73	23.23	33.00	PASS
				RB1#49	21.48	22.98	33.00	PASS
				RB25#0	21.20	22.70	33.00	PASS
				RB25#13	21.06	22.56	33.00	PASS
				RB25#25	21.21	22.71	33.00	PASS
				RB50#0	21.09	22.59	33.00	PASS
			HCH	RB1#0	22.14	23.64	33.00	PASS
				RB1#25	22.25	23.75	33.00	PASS
				RB1#49	21.90	23.40	33.00	PASS
				RB25#0	21.40	22.90	33.00	PASS
				RB25#13	21.38	22.88	33.00	PASS
				RB25#25	21.37	22.87	33.00	PASS
				RB50#0	21.52	23.02	33.00	PASS



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch

Report No.: SZEM171201298701

Page: 11 of 75

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM1	15M	LCH	RB1#0	23.31	24.81	33.00	PASS
				RB1#38	23.22	24.72	33.00	PASS
				RB1#74	23.07	24.57	33.00	PASS
				RB36#0	22.35	23.85	33.00	PASS
				RB36#18	22.28	23.78	33.00	PASS
				RB36#39	22.28	23.78	33.00	PASS
				RB75#0	22.35	23.85	33.00	PASS
			MCH	RB1#0	23.30	24.80	33.00	PASS
				RB1#38	23.37	24.87	33.00	PASS
				RB1#74	23.37	24.87	33.00	PASS
				RB36#0	22.25	23.75	33.00	PASS
				RB36#18	22.26	23.76	33.00	PASS
				RB36#39	22.37	23.87	33.00	PASS
				RB75#0	22.27	23.77	33.00	PASS
			HCH	RB1#0	23.49	24.99	33.00	PASS
				RB1#38	23.56	25.06	33.00	PASS
				RB1#74	23.44	24.94	33.00	PASS
				RB36#0	22.55	24.05	33.00	PASS
				RB36#18	22.53	24.03	33.00	PASS
				RB36#39	22.62	24.12	33.00	PASS
				RB75#0	22.59	24.09	33.00	PASS



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch

Report No.: SZEM171201298701

Page: 12 of 75

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM2	15M	LCH	RB1#0	22.13	23.63	33.00	PASS
				RB1#38	22.10	23.60	33.00	PASS
				RB1#74	22.23	23.73	33.00	PASS
				RB36#0	21.31	22.81	33.00	PASS
				RB36#18	21.28	22.78	33.00	PASS
				RB36#39	21.17	22.67	33.00	PASS
				RB75#0	21.38	22.88	33.00	PASS
			MCH	RB1#0	21.88	23.38	33.00	PASS
				RB1#38	21.55	23.05	33.00	PASS
				RB1#74	22.43	23.93	33.00	PASS
				RB36#0	21.20	22.70	33.00	PASS
				RB36#18	21.14	22.64	33.00	PASS
				RB36#39	21.26	22.76	33.00	PASS
				RB75#0	21.25	22.75	33.00	PASS
			HCH	RB1#0	22.10	23.60	33.00	PASS
				RB1#38	21.95	23.45	33.00	PASS
				RB1#74	21.81	23.31	33.00	PASS
				RB36#0	21.38	22.88	33.00	PASS
				RB36#18	21.44	22.94	33.00	PASS
				RB36#39	21.46	22.96	33.00	PASS
				RB75#0	21.53	23.03	33.00	PASS



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch

Report No.: SZEM171201298701

Page: 13 of 75

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM1	20M	LCH	RB1#0	23.34	24.84	33.00	PASS
				RB1#50	23.28	24.78	33.00	PASS
				RB1#99	23.00	24.50	33.00	PASS
				RB50#0	22.35	23.85	33.00	PASS
				RB50#25	22.35	23.85	33.00	PASS
				RB50#50	22.18	23.68	33.00	PASS
				RB100#0	22.39	23.89	33.00	PASS
			MCH	RB1#0	23.57	25.07	33.00	PASS
				RB1#50	23.40	24.90	33.00	PASS
				RB1#99	23.12	24.62	33.00	PASS
				RB50#0	22.21	23.71	33.00	PASS
				RB50#25	22.27	23.77	33.00	PASS
				RB50#50	22.29	23.79	33.00	PASS
				RB100#0	22.15	23.65	33.00	PASS
			HCH	RB1#0	23.62	25.12	33.00	PASS
				RB1#50	23.49	24.99	33.00	PASS
				RB1#99	23.28	24.78	33.00	PASS
				RB50#0	22.43	23.93	33.00	PASS
				RB50#25	22.53	24.03	33.00	PASS
				RB50#50	22.44	23.94	33.00	PASS
				RB100#0	22.43	23.93	33.00	PASS



SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZEM171201298701

Page: 14 of 75

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM2	20M	LCH	RB1#0	21.67	23.17	33.00	PASS
				RB1#50	22.07	23.57	33.00	PASS
				RB1#99	21.91	23.41	33.00	PASS
				RB50#0	21.21	22.71	33.00	PASS
				RB50#25	21.19	22.69	33.00	PASS
				RB50#50	21.07	22.57	33.00	PASS
				RB100#0	21.11	22.61	33.00	PASS
			MCH	RB1#0	21.67	23.17	33.00	PASS
				RB1#50	21.83	23.33	33.00	PASS
				RB1#99	21.76	23.26	33.00	PASS
				RB50#0	20.98	22.48	33.00	PASS
				RB50#25	21.20	22.70	33.00	PASS
				RB50#50	21.18	22.68	33.00	PASS
				RB100#0	21.13	22.63	33.00	PASS
			HCH	RB1#0	21.9	23.40	33.00	PASS
				RB1#50	22.03	23.53	33.00	PASS
				RB1#99	21.78	23.28	33.00	PASS
				RB50#0	21.24	22.74	33.00	PASS
				RB50#25	21.44	22.94	33.00	PASS
				RB50#50	21.47	22.97	33.00	PASS
				RB100#0	21.40	22.90	33.00	PASS

Note:

a: For getting the EIRP (Efficient Isotropic Radiated Power) in substitution method, the following formula should be taken to calculate it,

$$\text{EIRP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBi]}$$

b: SGP=Signal Generator Level

c: RBW > emission bandwidth, VBW > 3 x RBW.

Detector: RMS



2 Peak-to-Average Ratio

Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
Band 4	TM1/20M	LCH	4.52	13	PASS
		MCH	4.81	13	PASS
		HCH	4.43	13	PASS
	TM2/20M	LCH	5.51	13	PASS
		MCH	5.80	13	PASS
		HCH	5.57	13	PASS



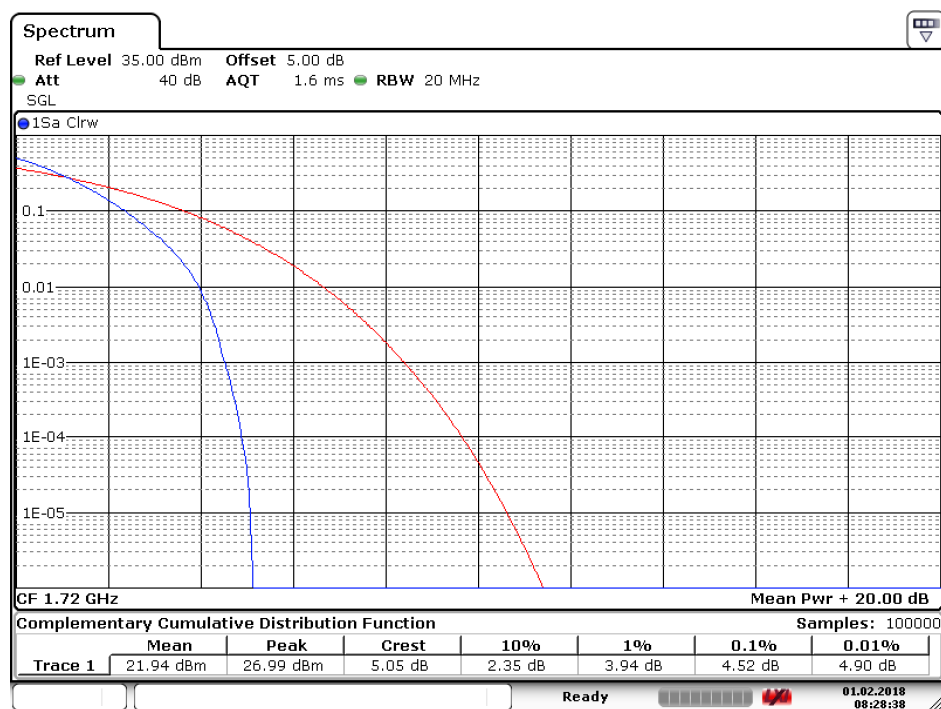
Part II - Test Plots

2.1 For LTE

2.1.1 Test Band = LTE band4

2.1.1.1 Test Mode = LTE/TM1.Bandwidth=20MHz

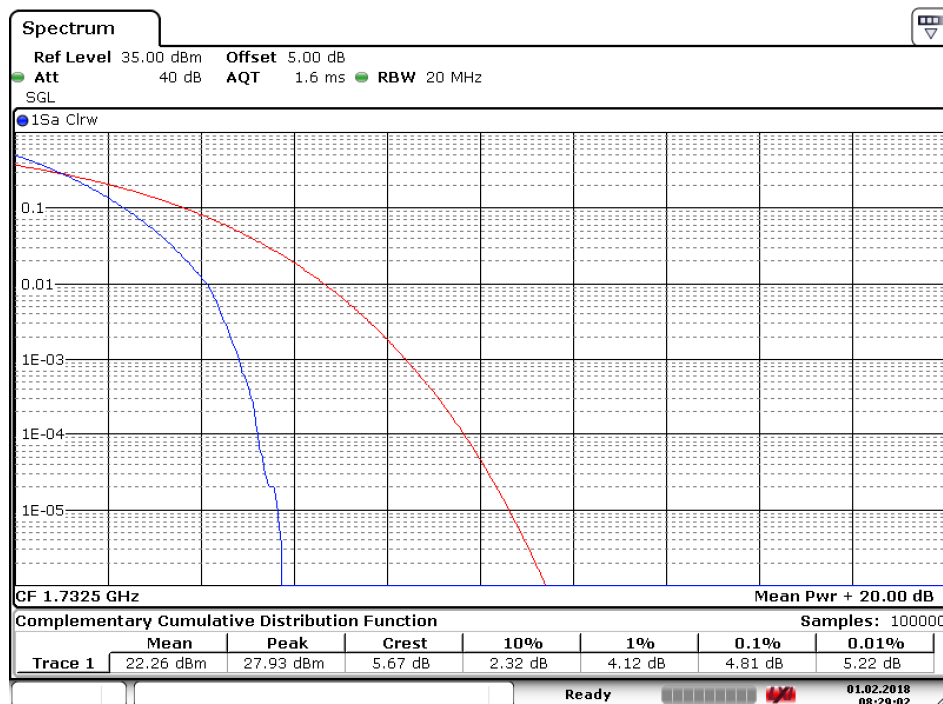
2.1.1.1.1 Test Channel = LCH



Date: 1.FEB.2018 08:28:39

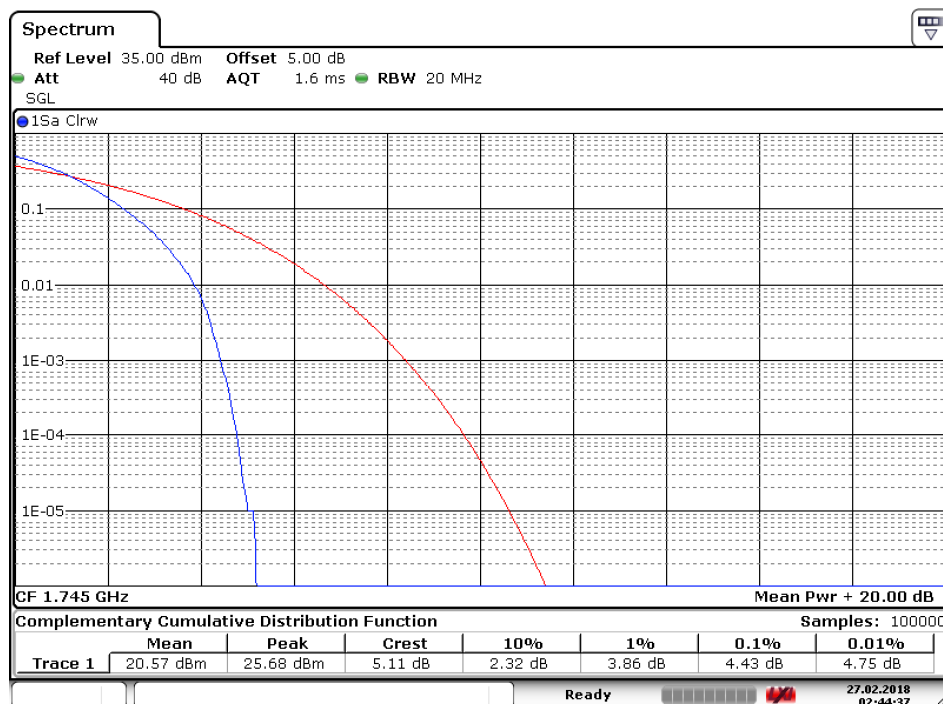


2.1.1.1.2 Test Channel = MCH



Date: 1.FEB.2018 08:29:02

2.1.1.1.3 Test Channel = HCH

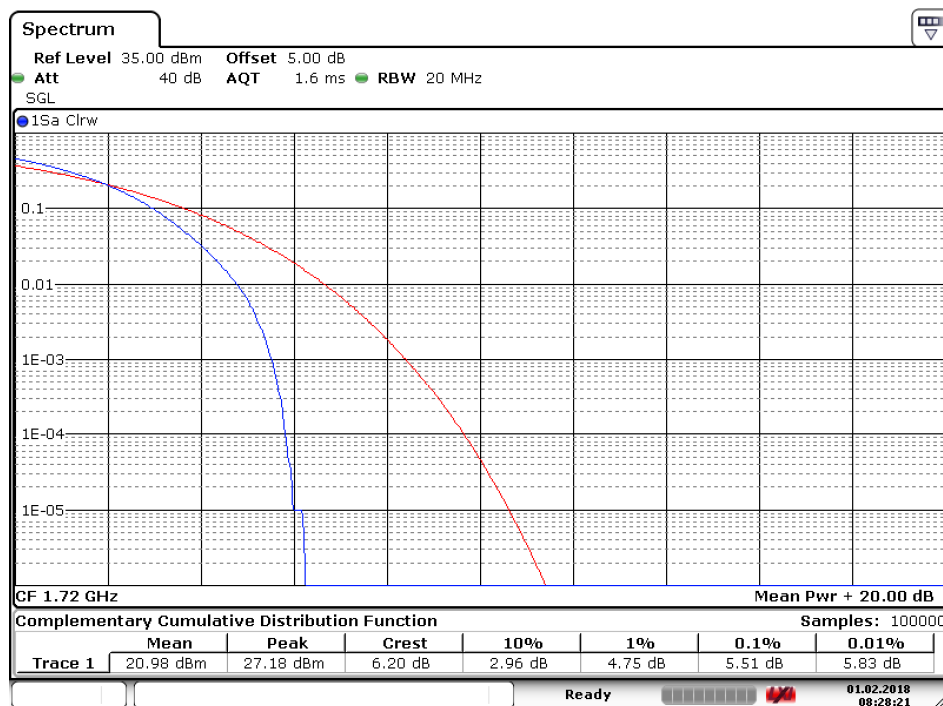


Date: 27.FEB.2018 02:44:38



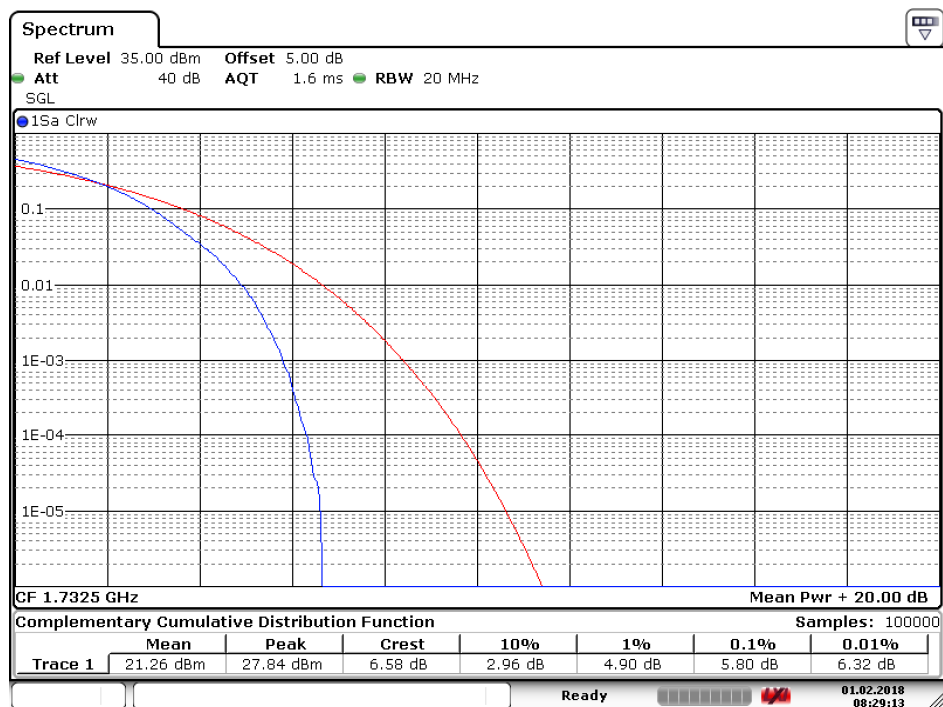
2.1.1.2 Test Mode = LTE/TM2.Bandwidth=20MHz

2.1.1.2.1 Test Channel = LCH



Date: 1.FEB.2018 08:28:22

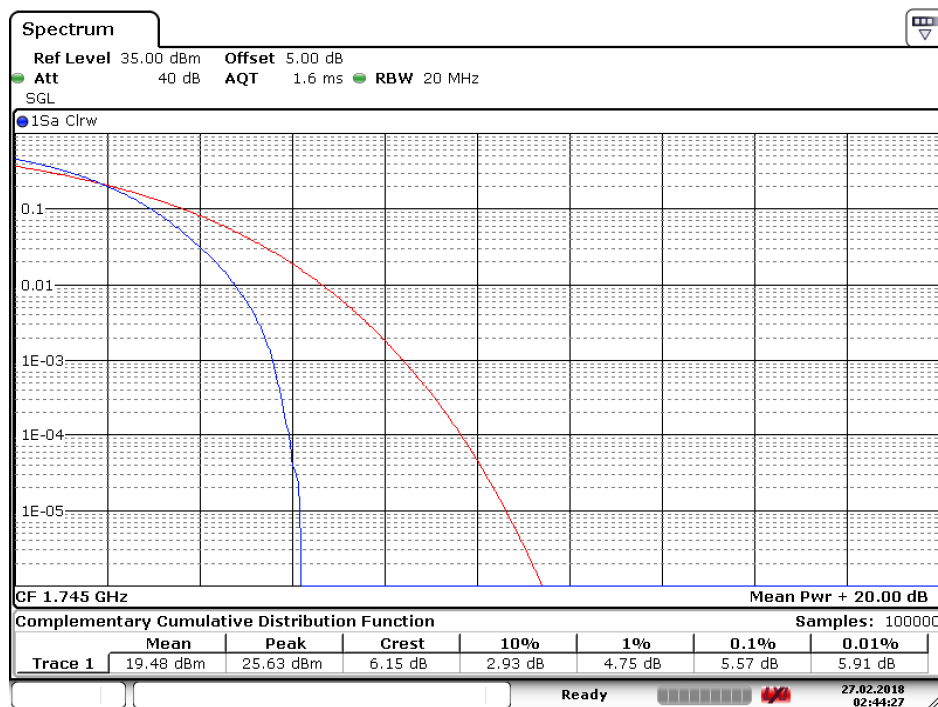
2.1.1.2.2 Test Channel = MCH



Date: 1.FEB.2018 08:29:14



2.1.1.2.3 Test Channel = HCH



Date: 27.FEB.2018 02:44:28

3 Modulation Characteristics

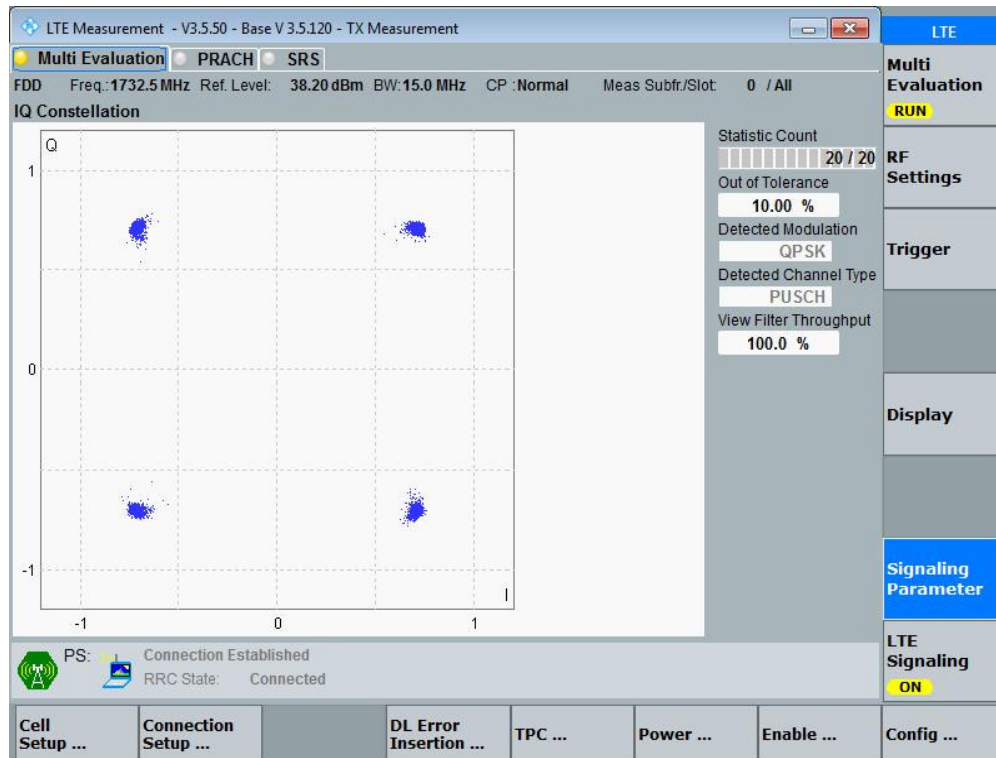
Part I - Test Plots

3.1 For LTE

3.1.1 Test Band = LTE band4

3.1.1.1 Test Mode = LTE /TM1 20MHz

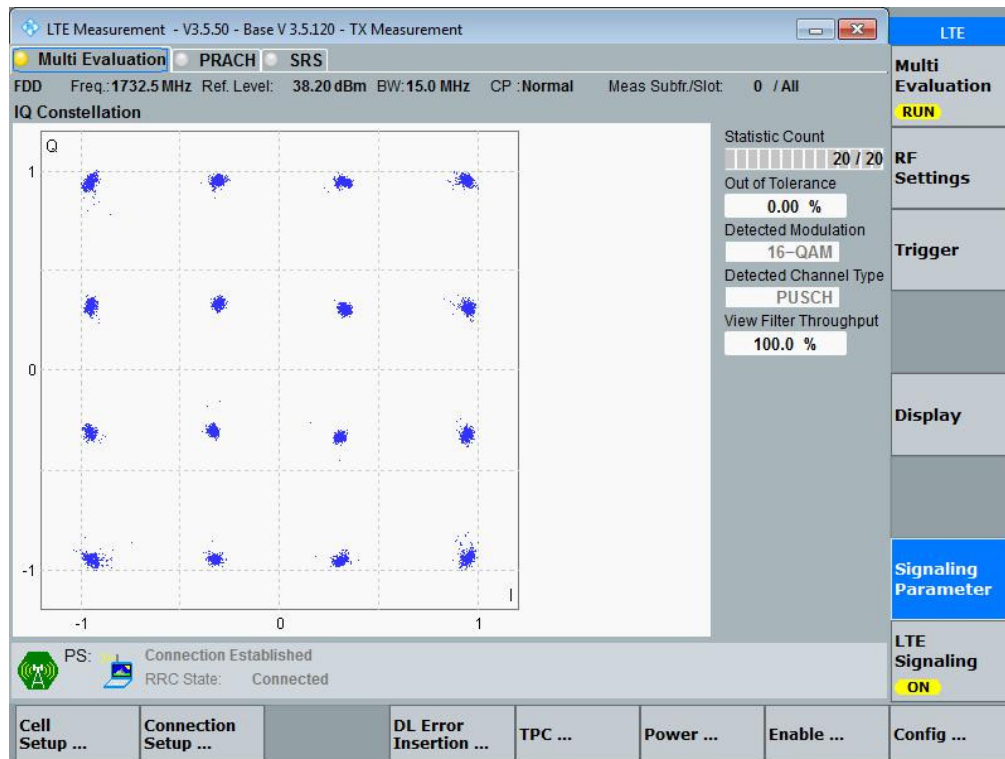
3.1.1.1.1 Test Channel = MCH





3.1.1.2 Test Mode = LTE /TM2 20MHz

3.1.1.2.1 Test Channel = MCH





4 Bandwidth

Part I - Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
Band 4	TM1/1.4MHz	LCH	1.10	1.29	PASS
		MCH	1.09	1.29	PASS
		HCH	1.10	1.36	PASS
	TM2/1.4MHz	LCH	1.10	1.31	PASS
		MCH	1.10	1.29	PASS
		HCH	1.10	1.29	PASS
	TM1/ 3MHz	LCH	2.69	2.93	PASS
		MCH	2.69	2.93	PASS
		HCH	2.69	2.94	PASS
	TM2/3MHz	LCH	2.69	2.94	PASS
		MCH	2.69	2.93	PASS
		HCH	2.69	2.96	PASS
	TM1/ 5MHz	LCH	4.48	4.94	PASS
		MCH	4.47	4.92	PASS
		HCH	4.48	4.93	PASS
	TM2/ 5MHz	LCH	4.48	4.94	PASS
		MCH	4.48	4.91	PASS
		HCH	4.49	4.98	PASS
	TM1/10MHz	LCH	8.93	9.67	PASS
		MCH	8.91	9.67	PASS
		HCH	8.95	9.79	PASS
	TM2/ 10MHz	LCH	8.93	9.63	PASS
		MCH	8.93	9.63	PASS
		HCH	8.93	9.71	PASS
	TM1/ 15MHz	LCH	13.43	14.84	PASS
		MCH	13.40	14.69	PASS
		HCH	13.43	14.72	PASS
	TM2/ 15MHz	LCH	13.43	14.72	PASS
		MCH	13.46	14.66	PASS
		HCH	13.46	14.66	PASS
	TM1/ 20MHz	LCH	17.86	19.34	PASS
		MCH	17.86	19.30	PASS
		HCH	17.82	19.18	PASS
	TM2/ 20MHz	LCH	17.82	19.34	PASS
		MCH	17.90	19.34	PASS
		HCH	17.90	19.42	PASS

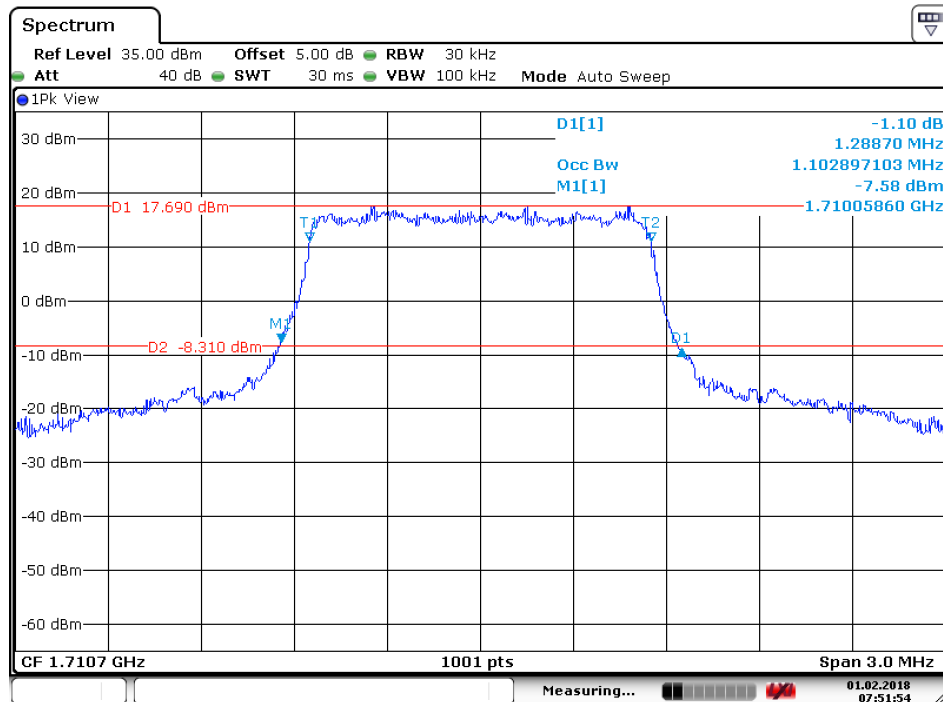


4.1 For LTE

4.1.1 Test Band = LTE band4

4.1.1.1 Test Mode = LTE/TM1 1.4MHz

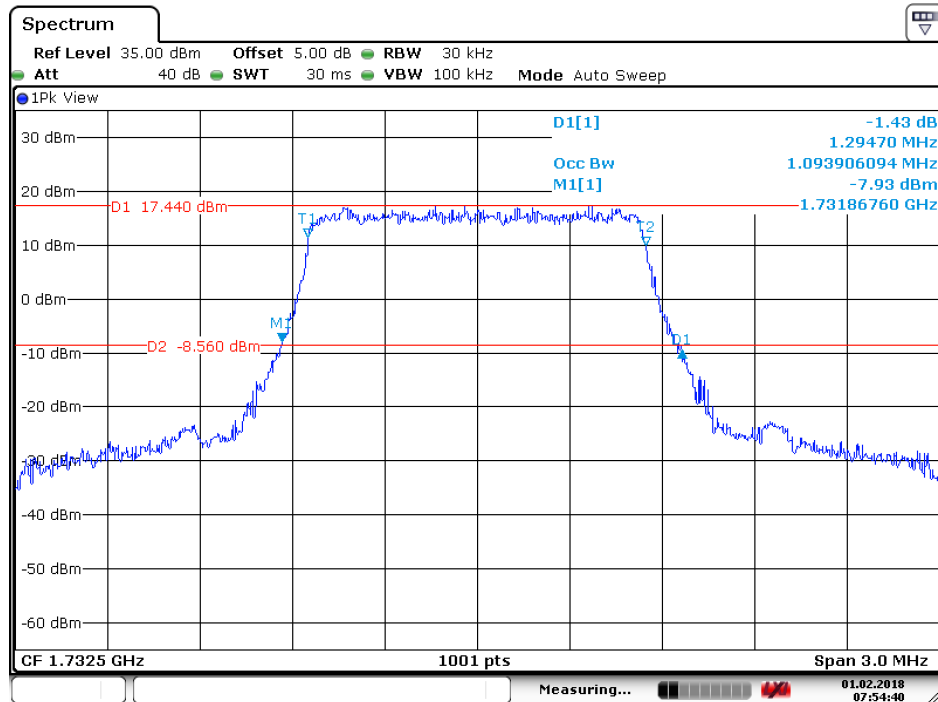
4.1.1.1.1 Test Channel = LCH



Date: 1.FEB.2018 07:51:54

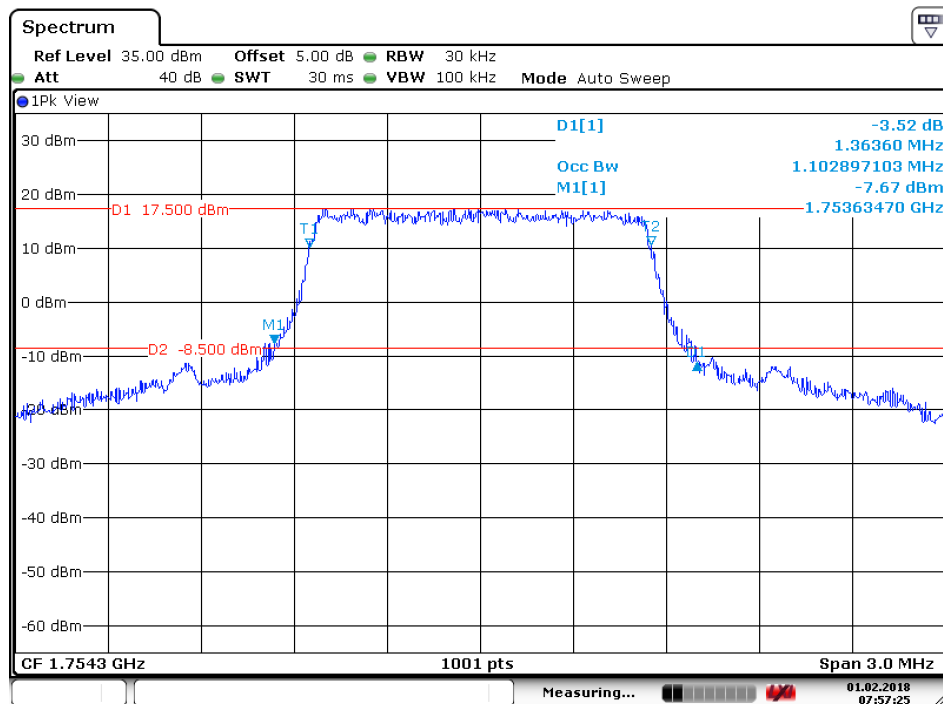


4.1.1.1.2 Test Channel = MCH



Date: 1.FEB.2018 07:54:41

4.1.1.1.3 Test Channel = HCH

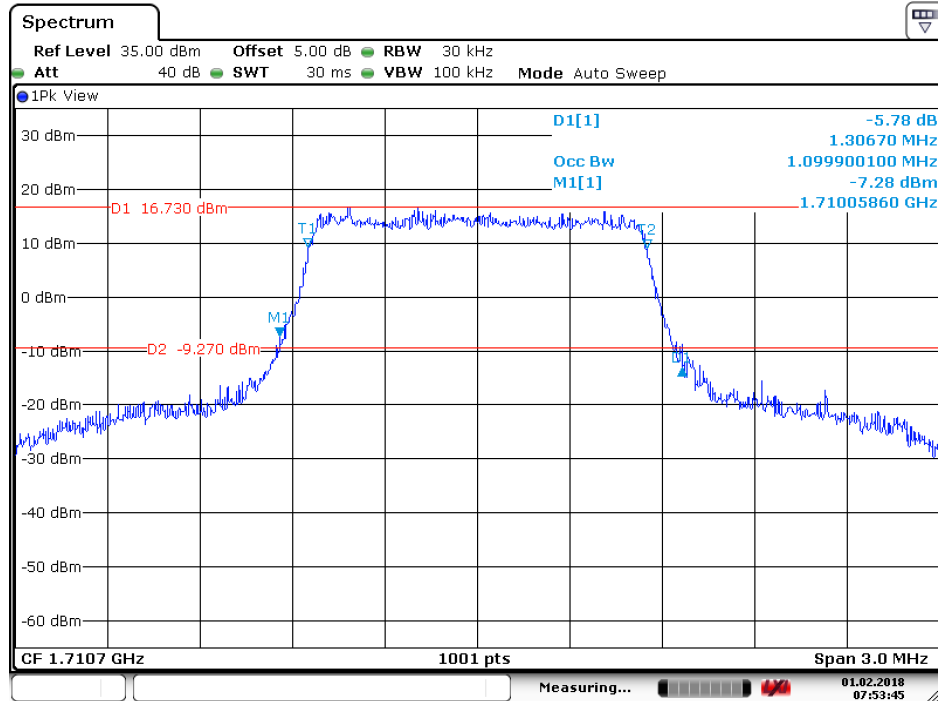


Date: 1.FEB.2018 07:57:25



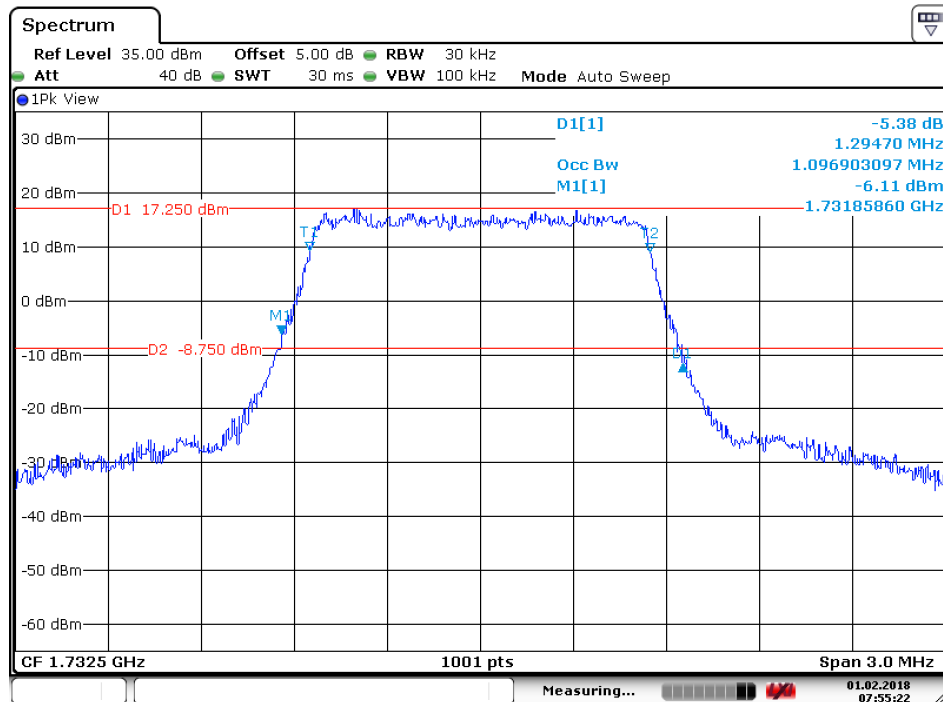
4.1.1.2 est Mode = LTE/TM2 1.4MHz

4.1.1.2.1 Test Channel = LCH



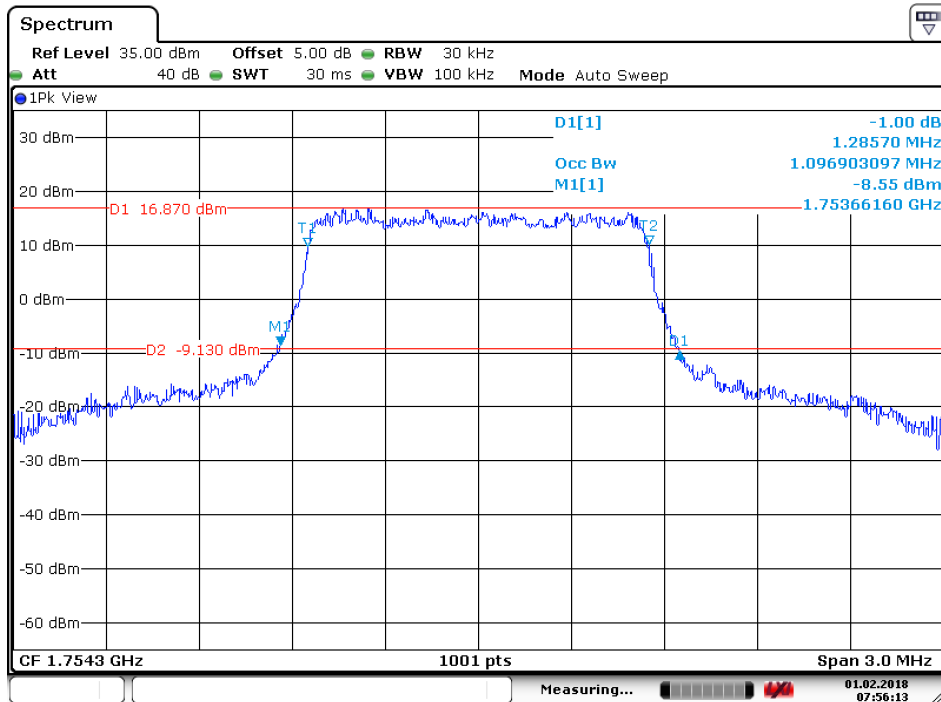
Date: 1.FEB.2018 07:53:46

4.1.1.2.2 Test Channel = MCH



Date: 1.FEB.2018 07:55:22

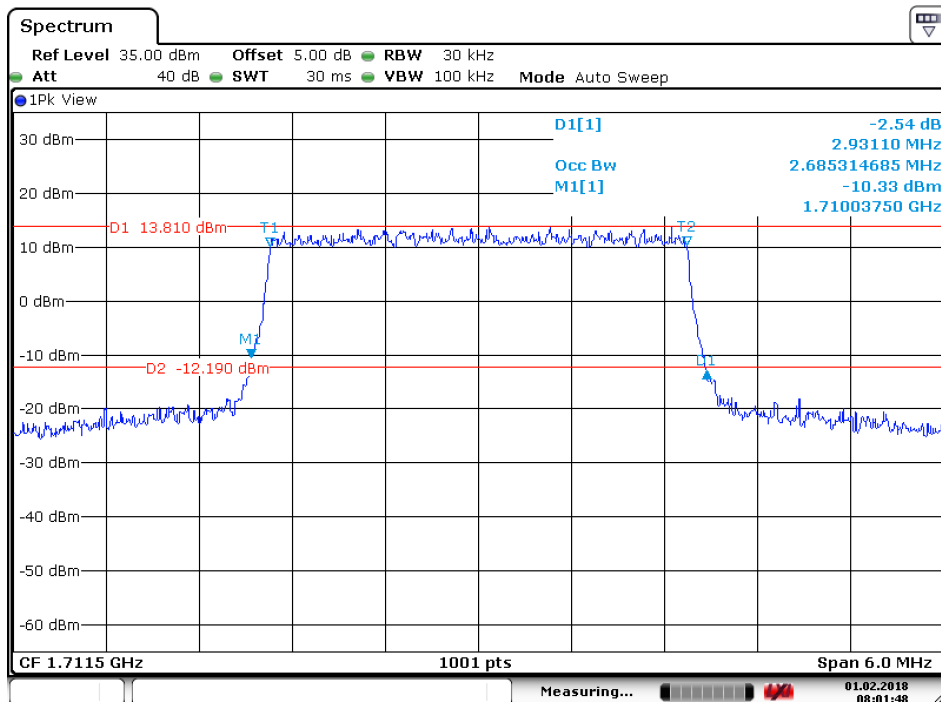
4.1.1.2.3 Test Channel = HCH



Date: 1.FEB.2018 07:56:14

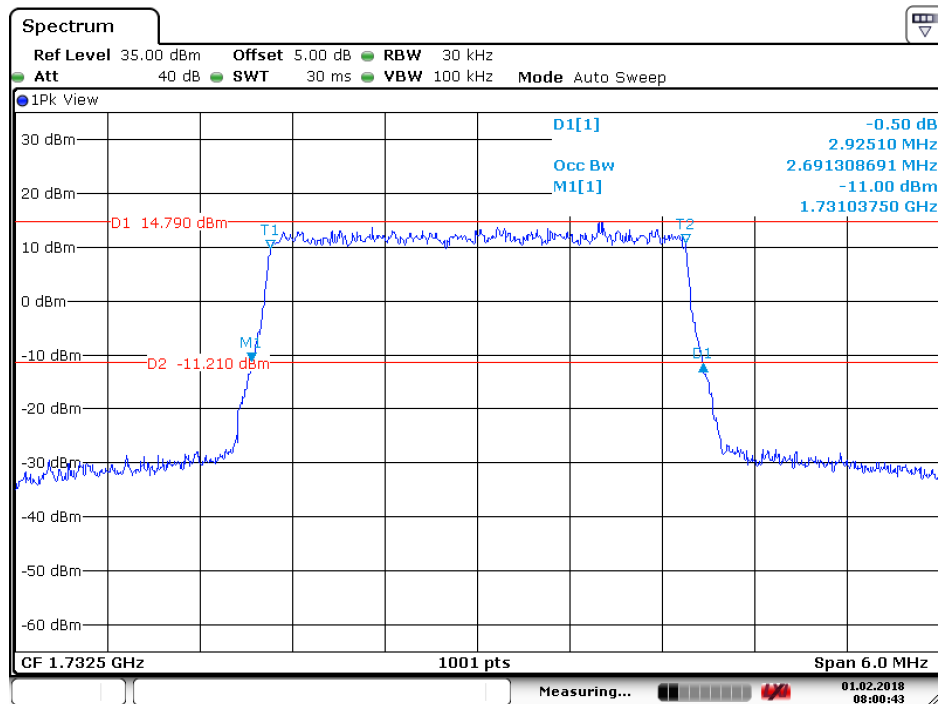
4.1.1.3 Test Mode = LTE/TM1 3MHz

4.1.1.3.1 Test Channel = LCH



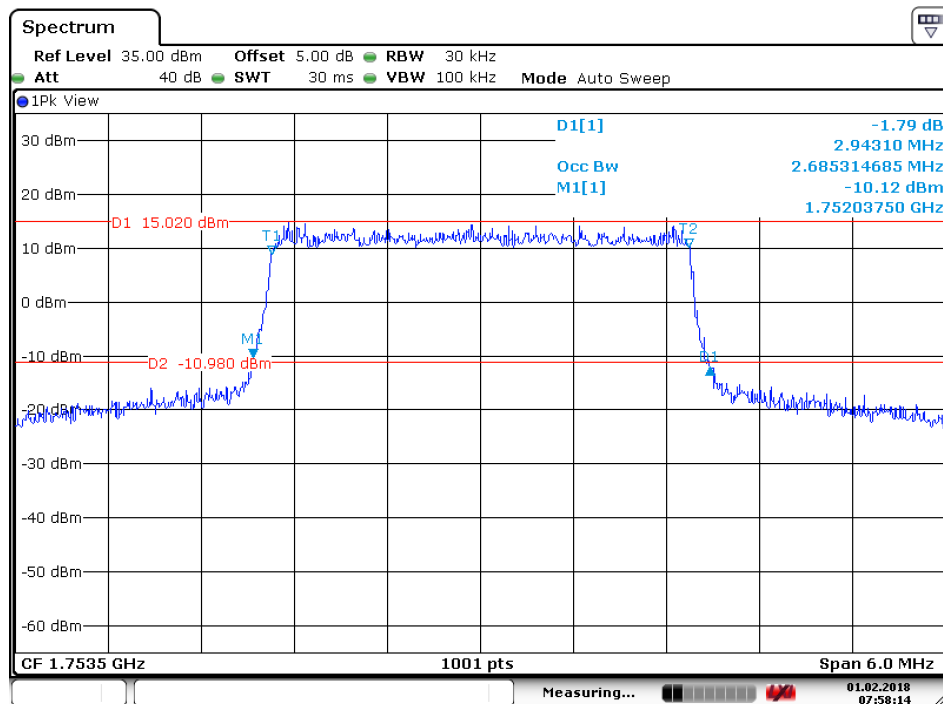
Date: 1.FEB.2018 08:01:49

4.1.1.3.2 Test Channel = MCH



Date: 1.FEB.2018 08:00:44

4.1.1.3.3 Test Channel = HCH

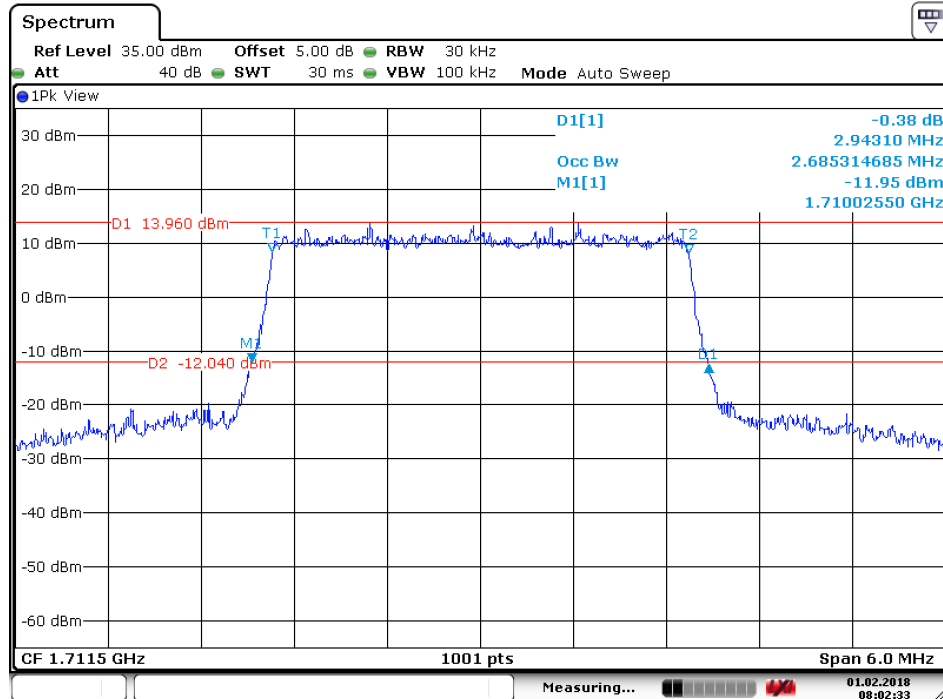


Date: 1.FEB.2018 07:58:15



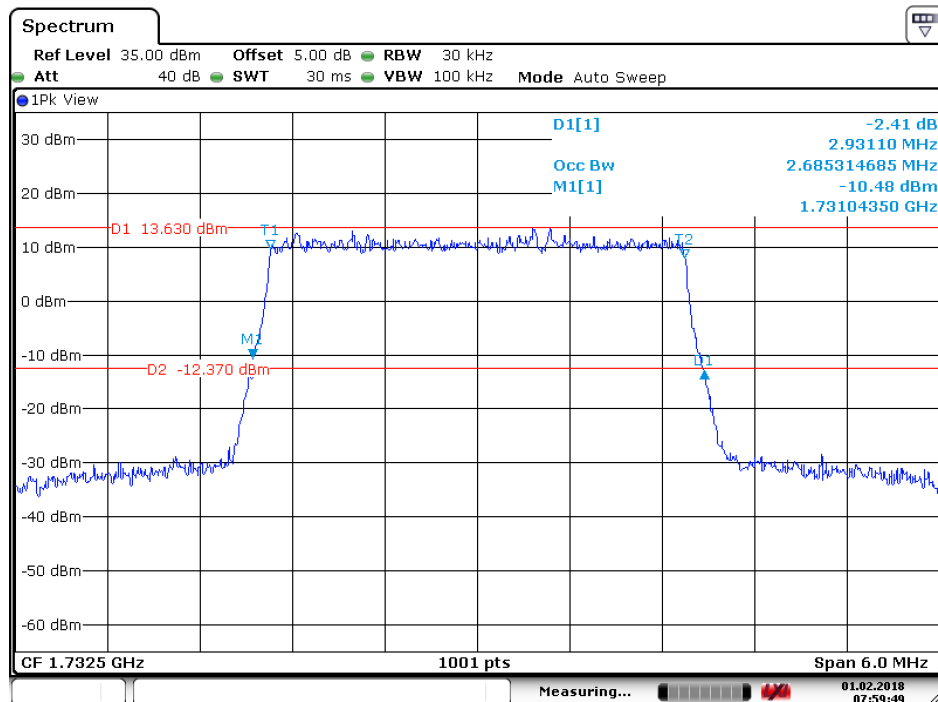
4.1.1.4 Test Mode = LTE/TM2 3MHz

4.1.1.4.1 Test Channel = LCH



Date: 1.FEB.2018 08:02:33

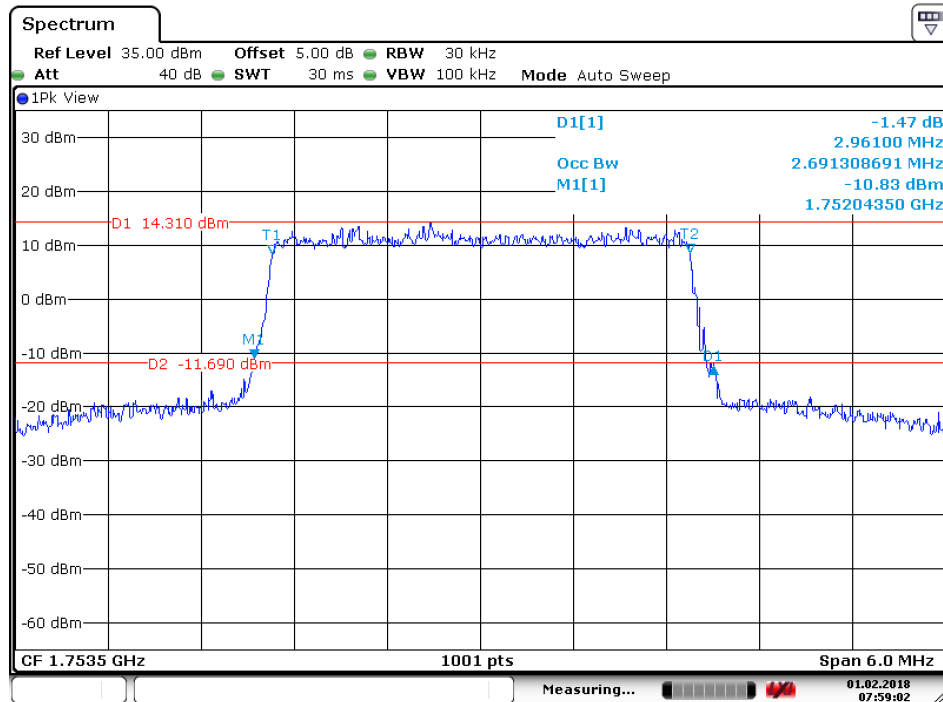
4.1.1.4.2 Test Channel = MCH



Date: 1.FEB.2018 07:59:50



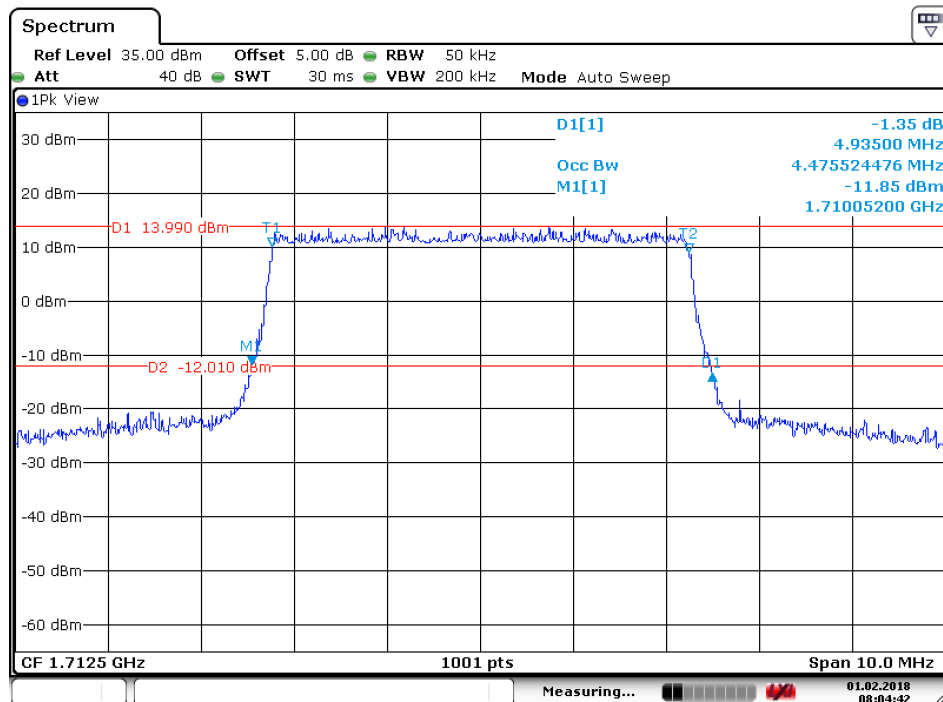
4.1.1.4.3 Test Channel = HCH



Date: 1.FEB.2018 07:59:02

4.1.1.5 Test Mode = LTE/TM1 5MHz

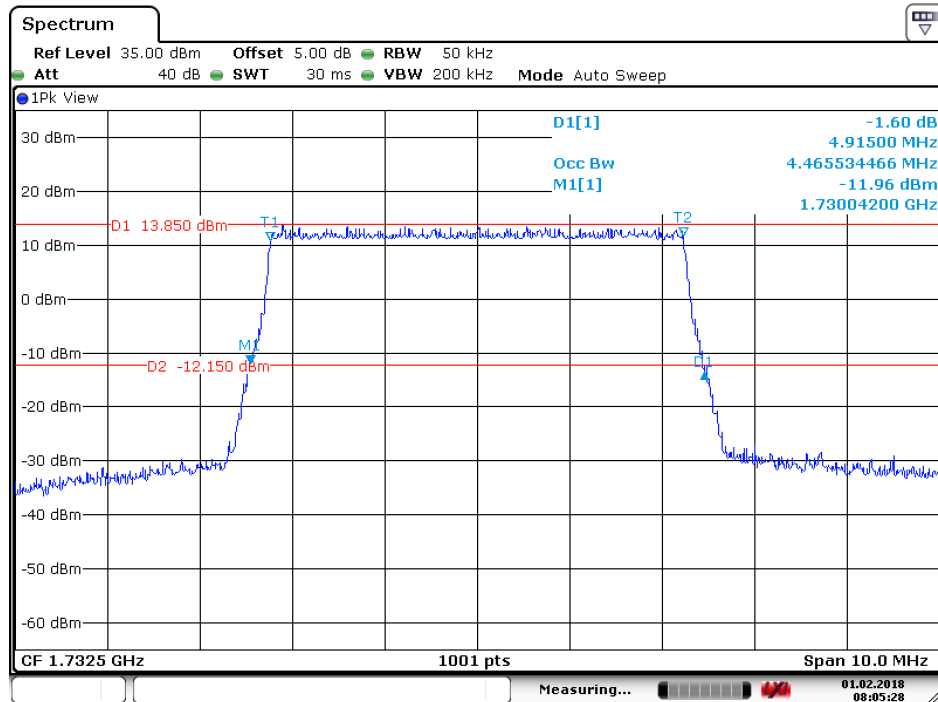
4.1.1.5.1 Test Channel = LCH



Date: 1.FEB.2018 08:04:42

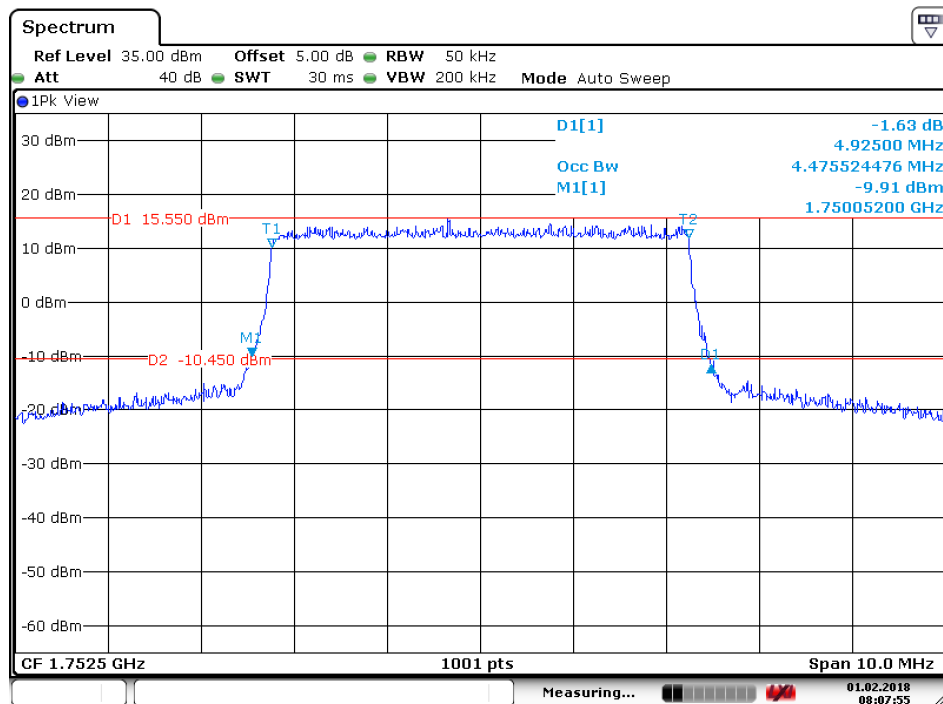


4.1.1.5.2 Test Channel = MCH



Date: 1.FEB.2018 08:05:28

4.1.1.5.3 Test Channel = HCH

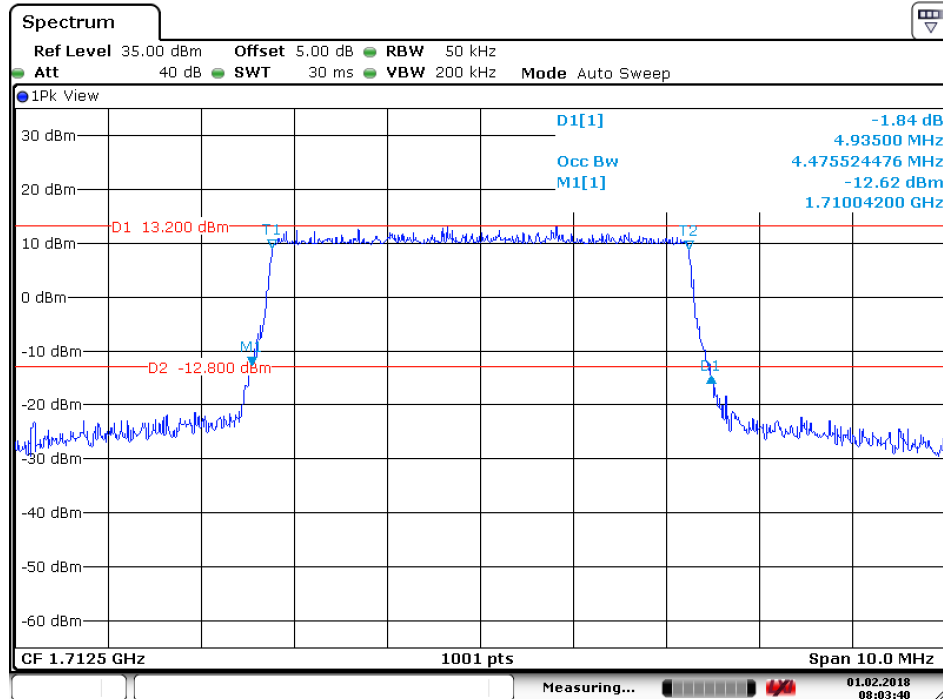


Date: 1.FEB.2018 08:07:56



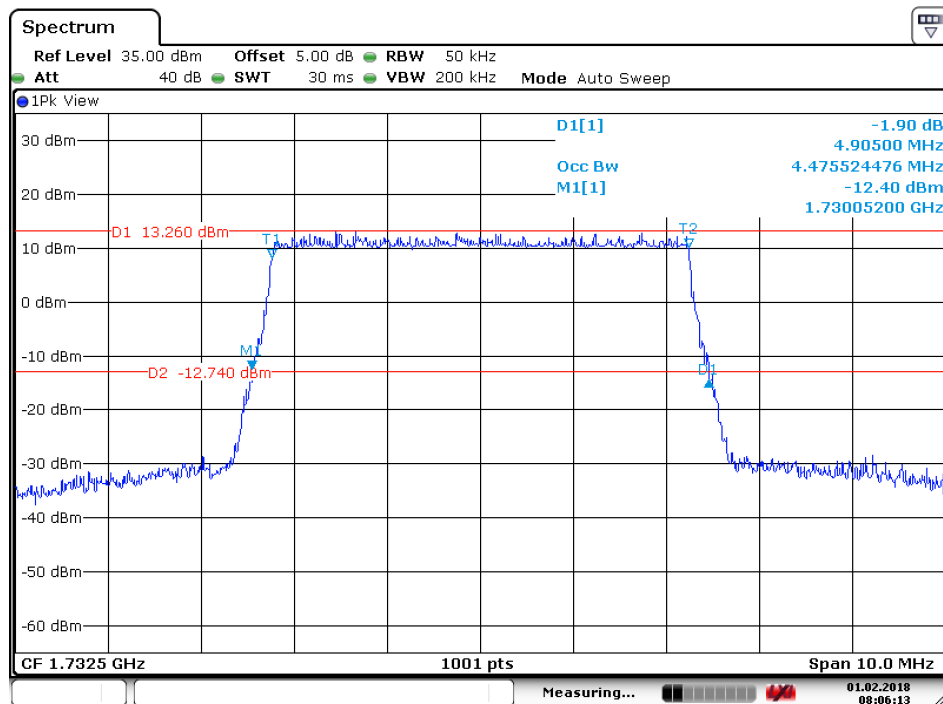
4.1.1.6 Test Mode = LTE/TM2 5MHz

4.1.1.6.1 Test Channel = LCH



Date: 1.FEB.2018 08:03:40

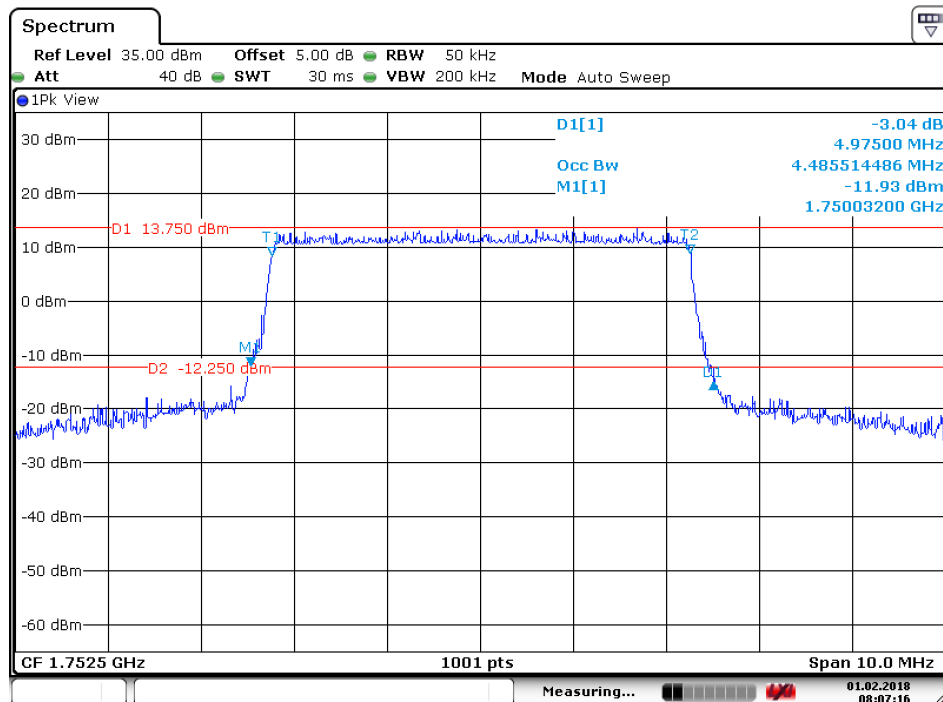
4.1.1.6.2 Test Channel = MCH



Date: 1.FEB.2018 08:06:14



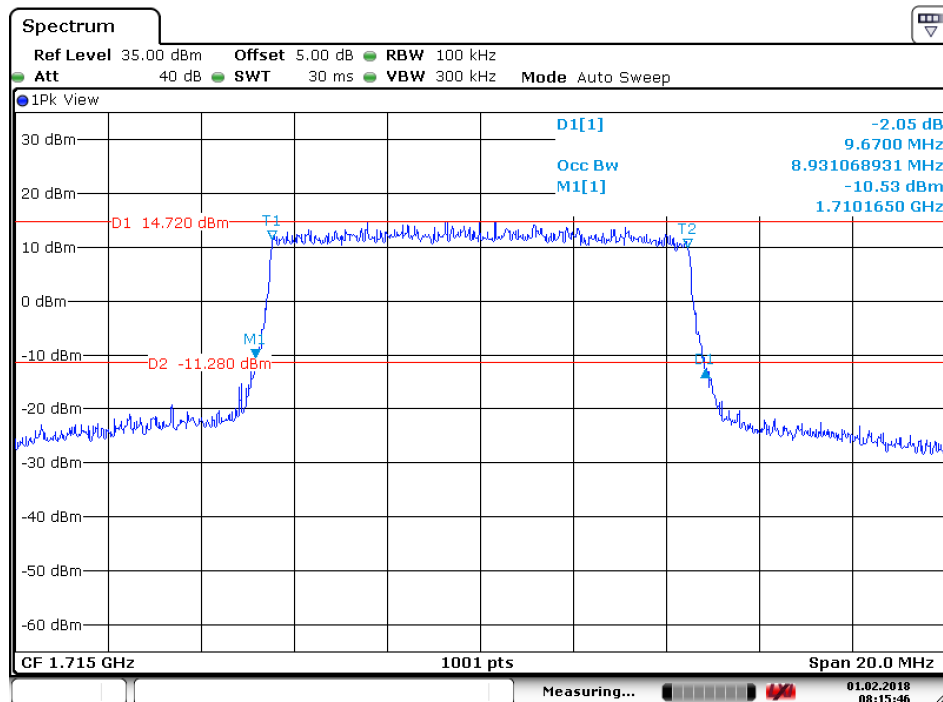
4.1.1.6.3 Test Channel = HCH



Date: 1.FEB.2018 08:07:16

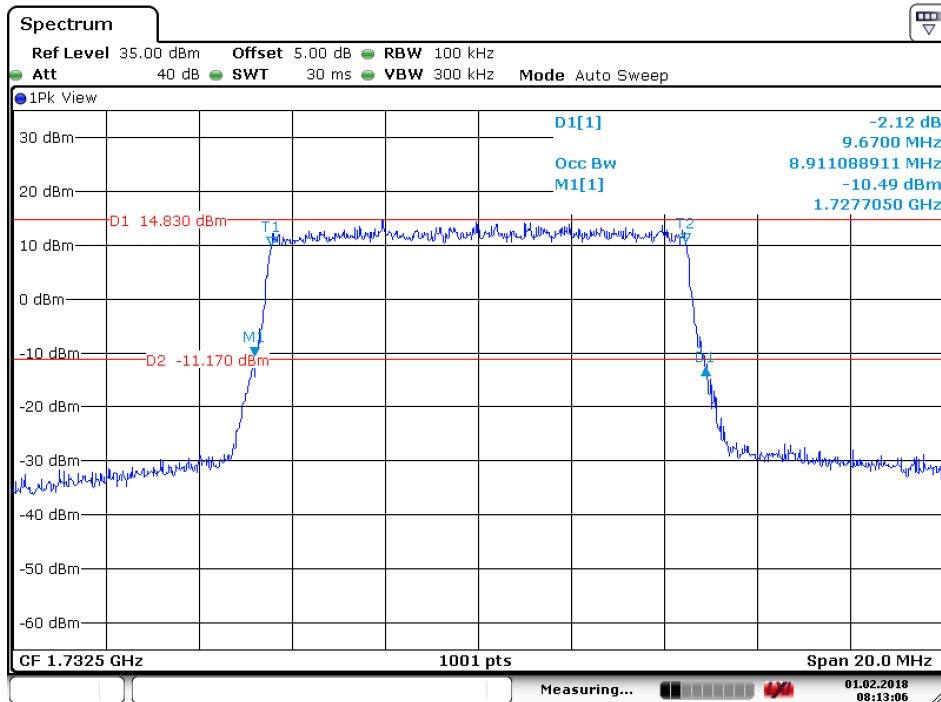
4.1.1.7 Test Mode = LTE/TM1 10MHz

4.1.1.7.1 Test Channel = LCH



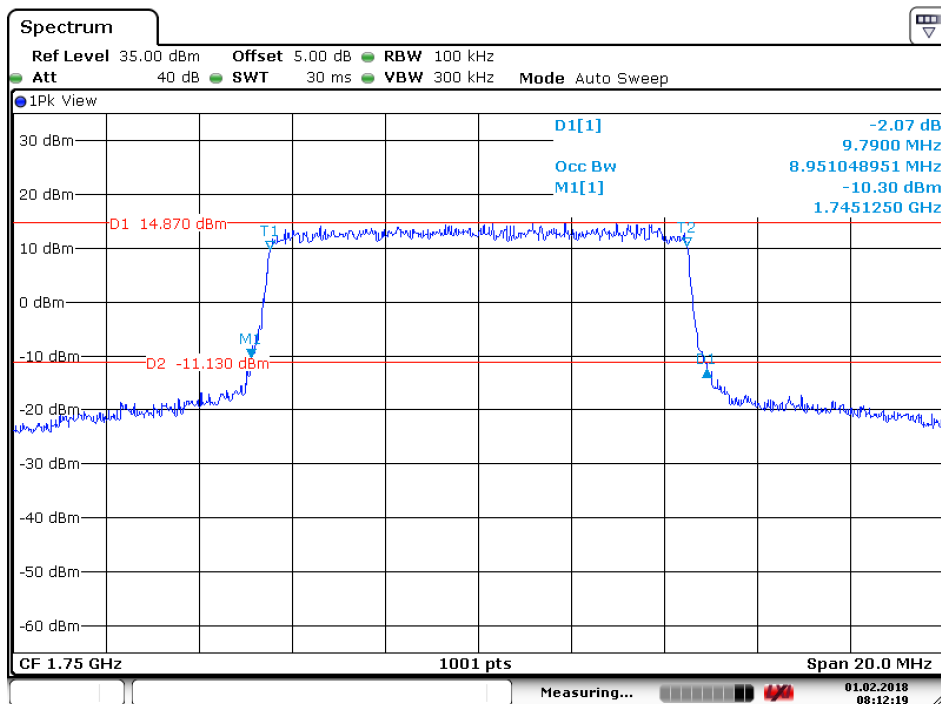
Date: 1.FEB.2018 08:15:46

4.1.1.7.2 Test Channel = MCH



Date: 1.FEB.2018 08:13:07

4.1.1.7.3 Test Channel = HCH

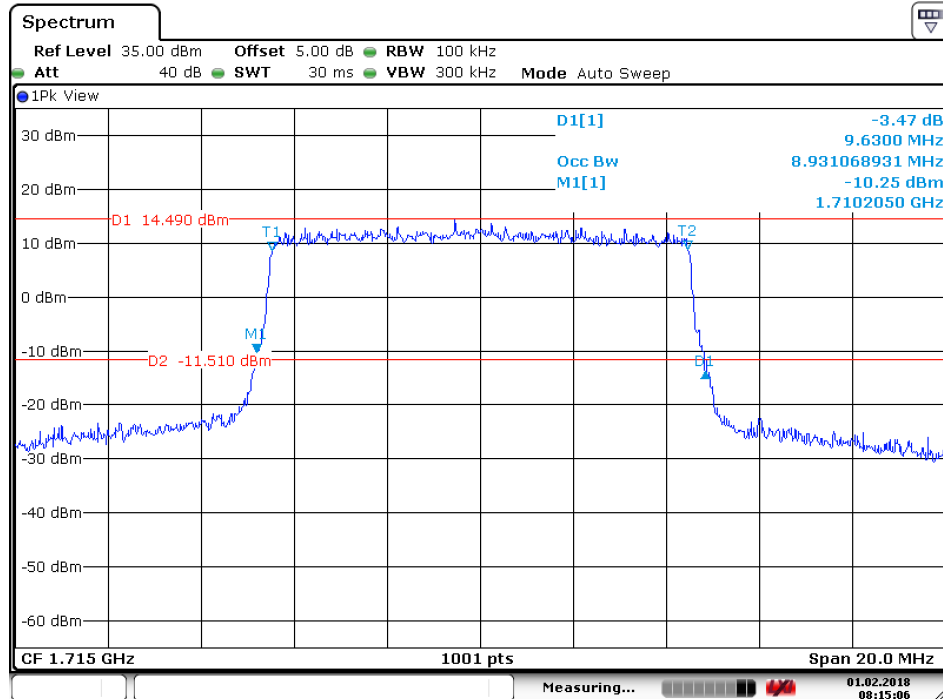


Date: 1.FEB.2018 08:12:19



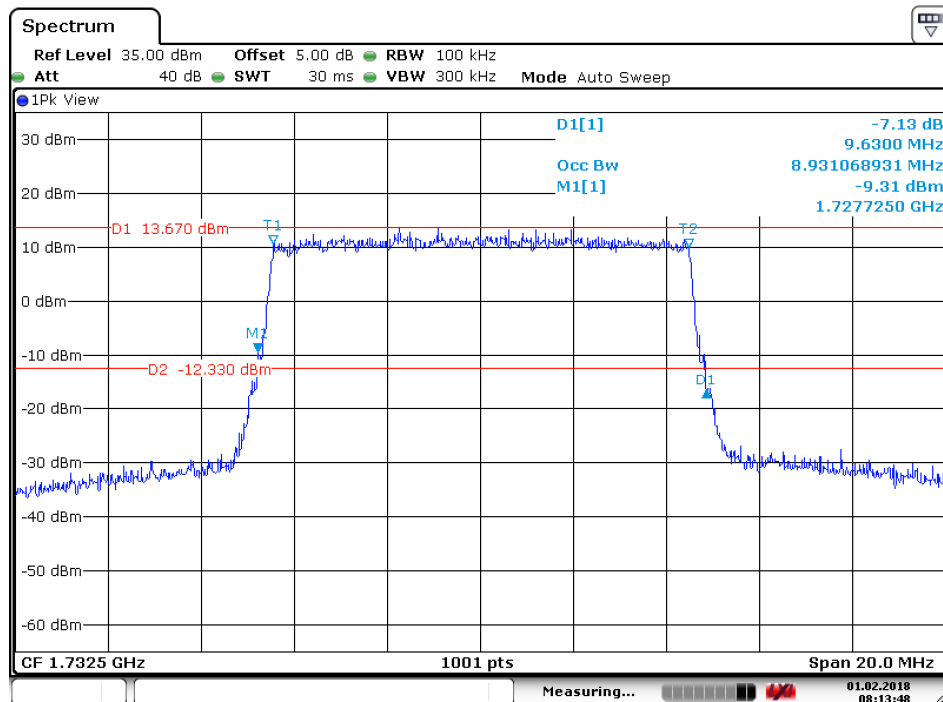
4.1.1.8 Test Mode = LTE/TM2 10MHz

4.1.1.8.1 Test Channel = LCH



Date: 1.FEB.2018 08:15:07

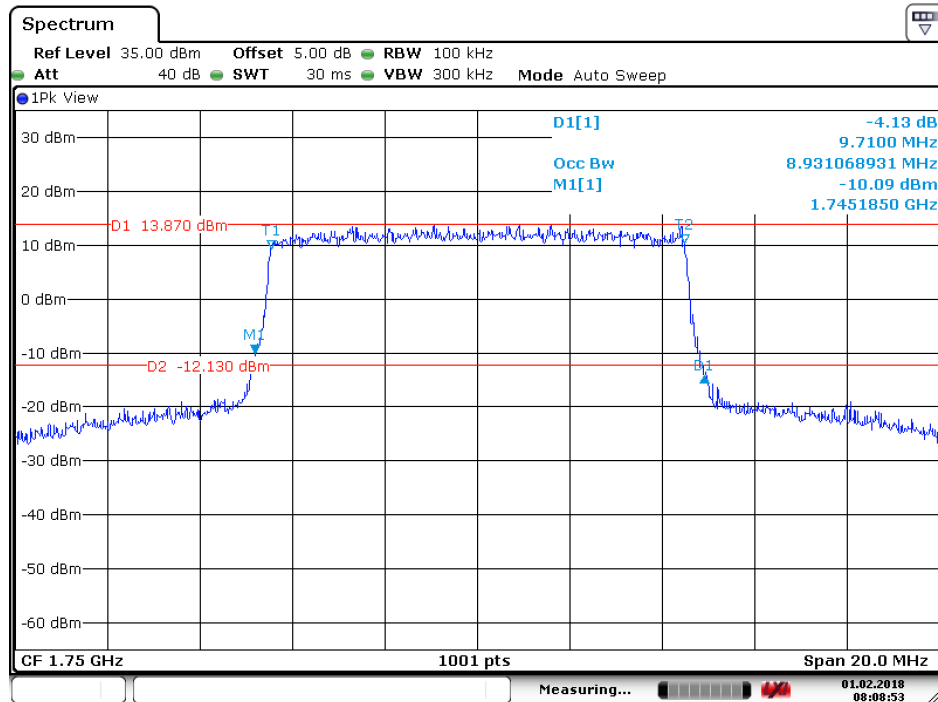
4.1.1.8.2 Test Channel = MCH



Date: 1.FEB.2018 08:13:48



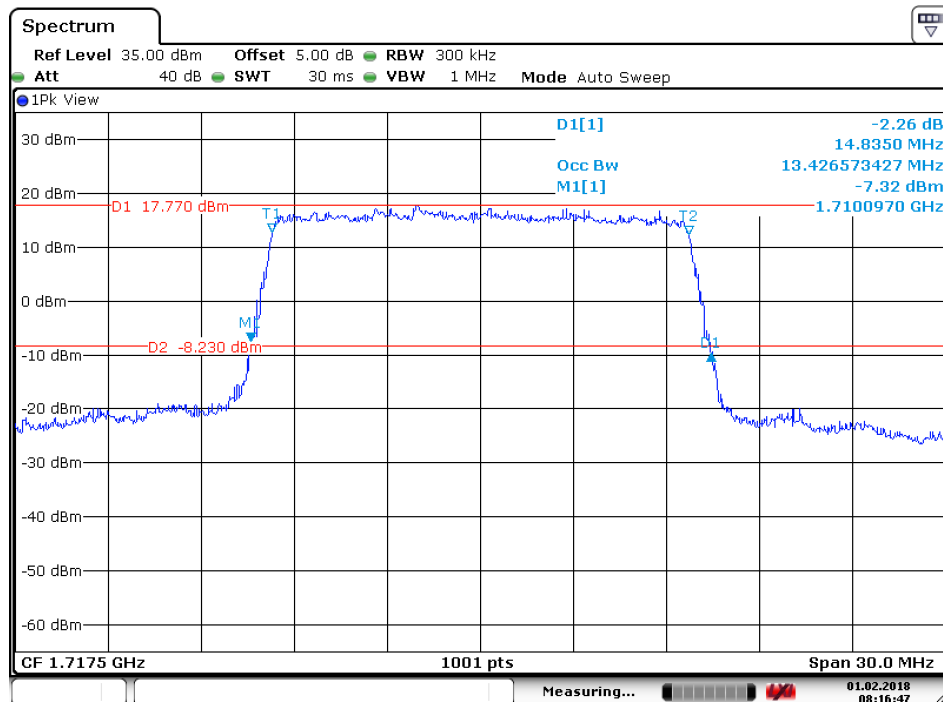
4.1.1.8.3 Test Channel = HCH



Date: 1.FEB.2018 08:08:53

4.1.1.9 Test Mode = LTE/TM1 15MHz

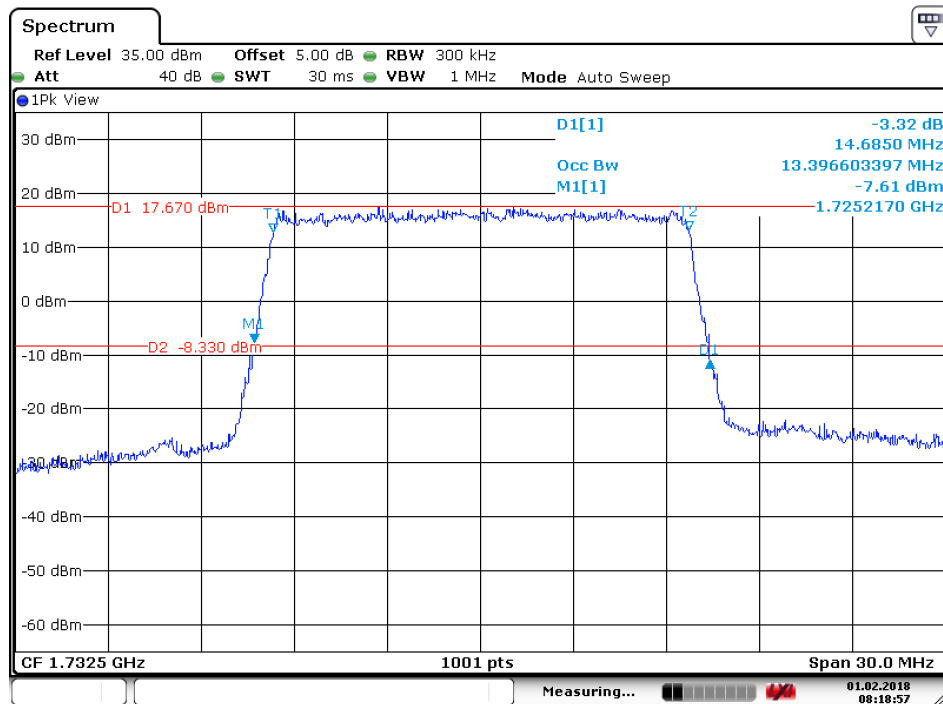
4.1.1.9.1 Test Channel = LCH



Date: 1.FEB.2018 08:16:47

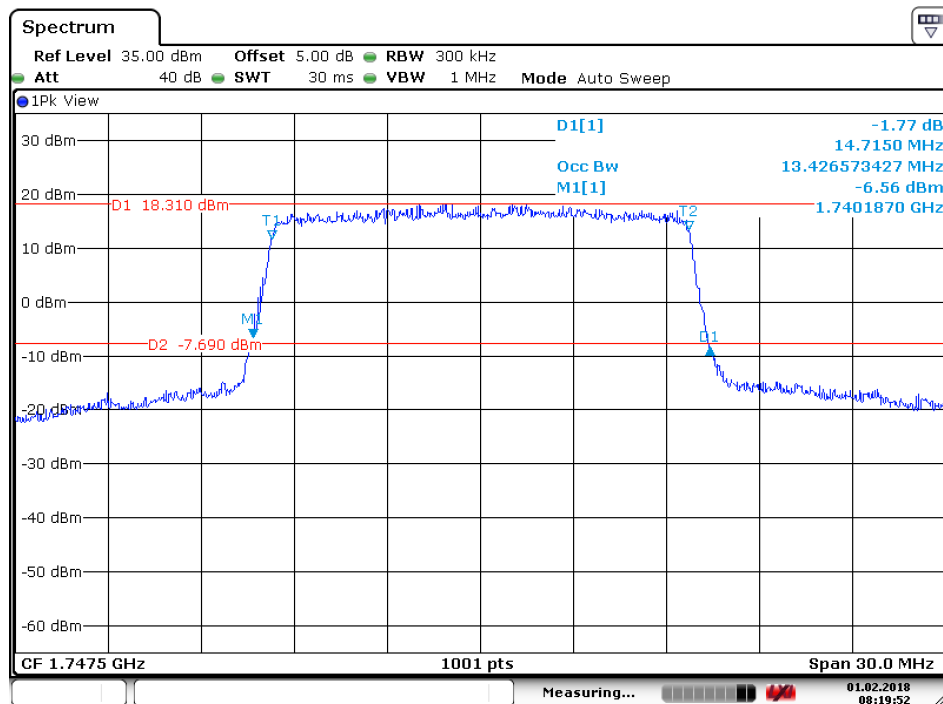


4.1.1.9.2 Test Channel = MCH



Date: 1.FEB.2018 08:18:57

4.1.1.9.3 Test Channel = HCH

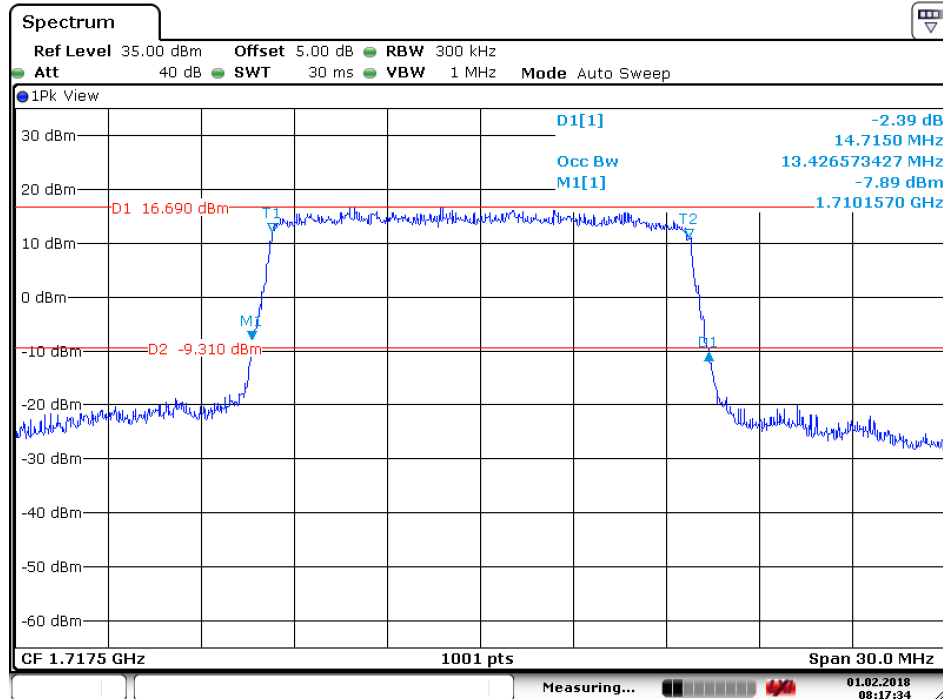


Date: 1.FEB.2018 08:19:52



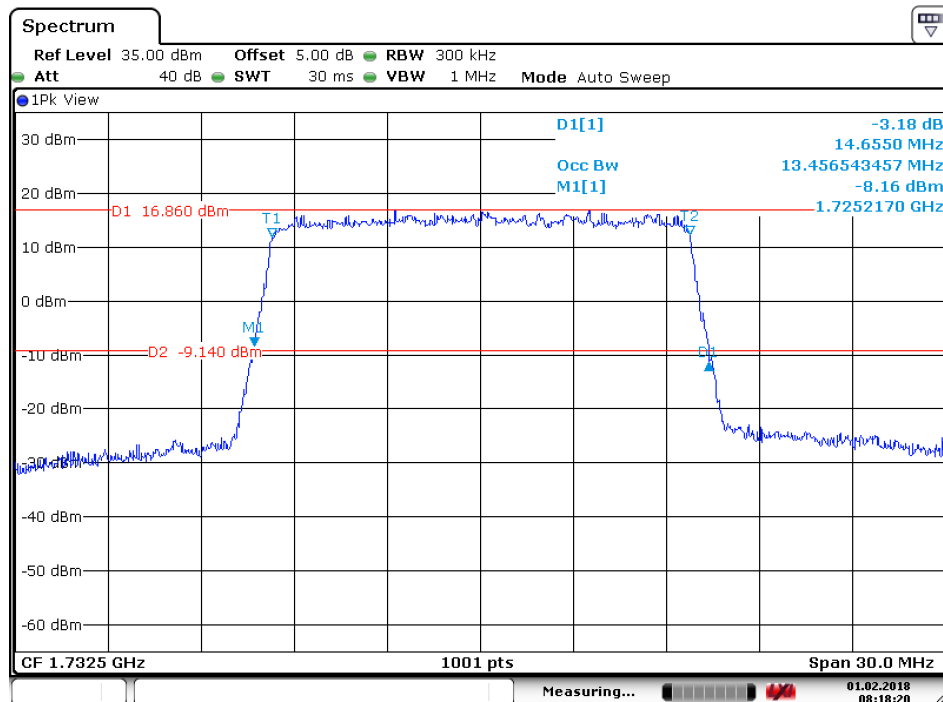
4.1.1.10 Test Mode = LTE/TM2 15MHz

4.1.1.10.1 Test Channel = LCH



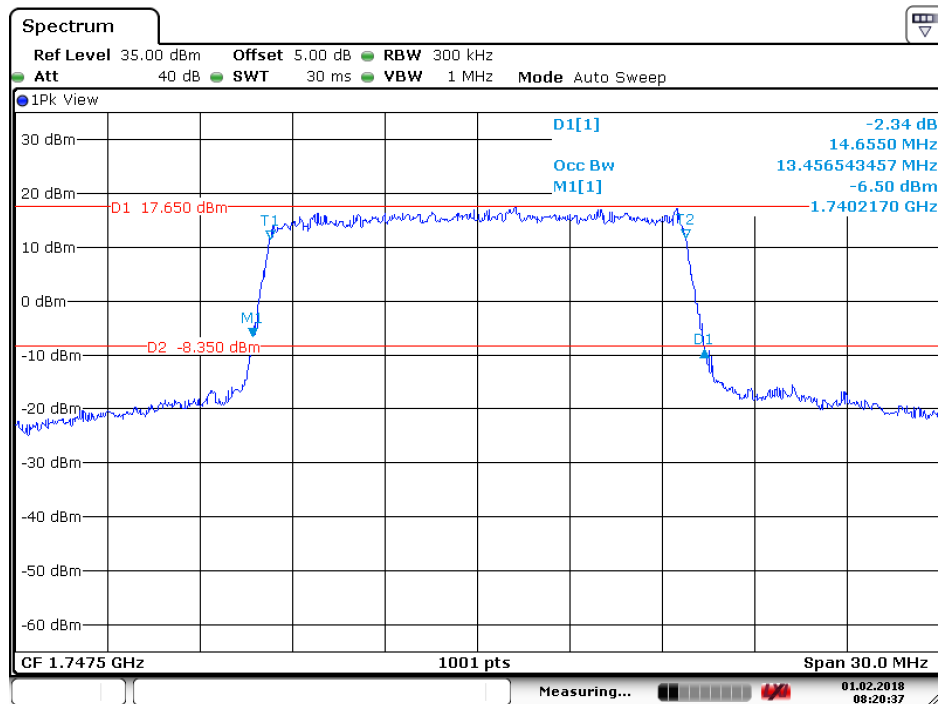
Date: 1.FEB.2018 08:17:35

4.1.1.10.2 Test Channel = MCH



Date: 1.FEB.2018 08:18:20

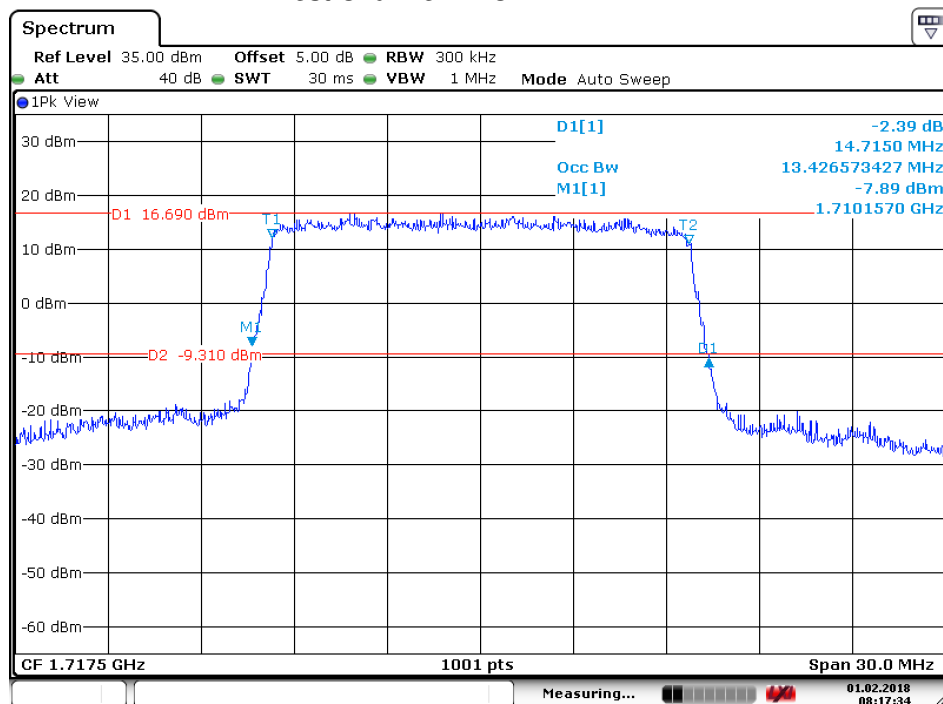
4.1.1.10.3 Test Channel = HCH



Date: 1.FEB.2018 08:20:37

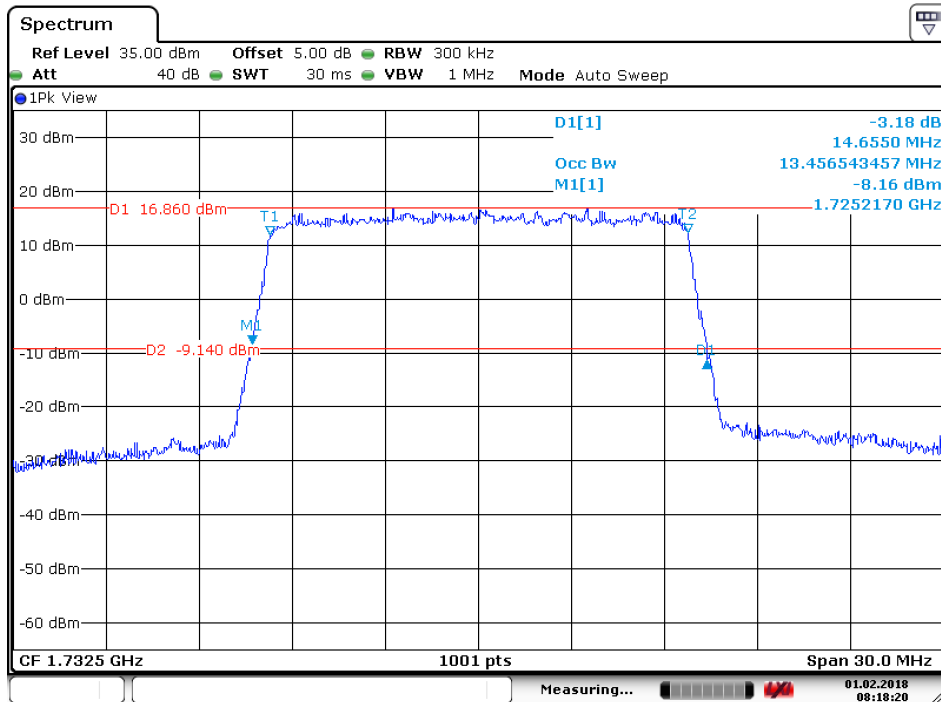
4.1.1.11 Test Mode = LTE/TM1 20MHz

4.1.1.11.1 Test Channel = LCH



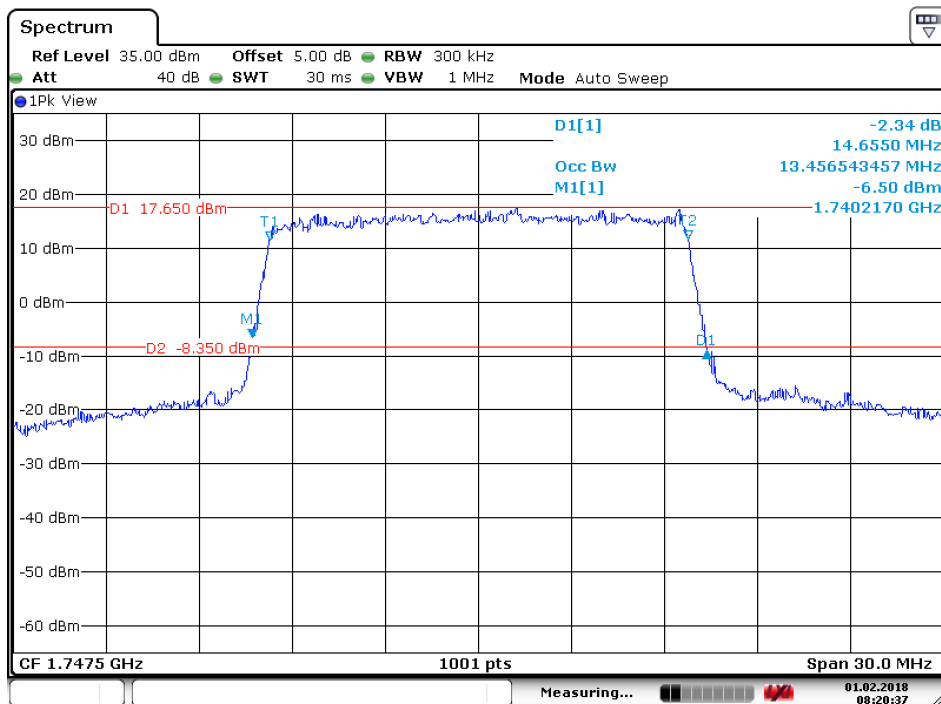
Date: 1.FEB.2018 08:17:35

4.1.1.11.2 Test Channel = MCH



Date: 1.FEB.2018 08:18:20

4.1.1.11.3 Test Channel = HCH

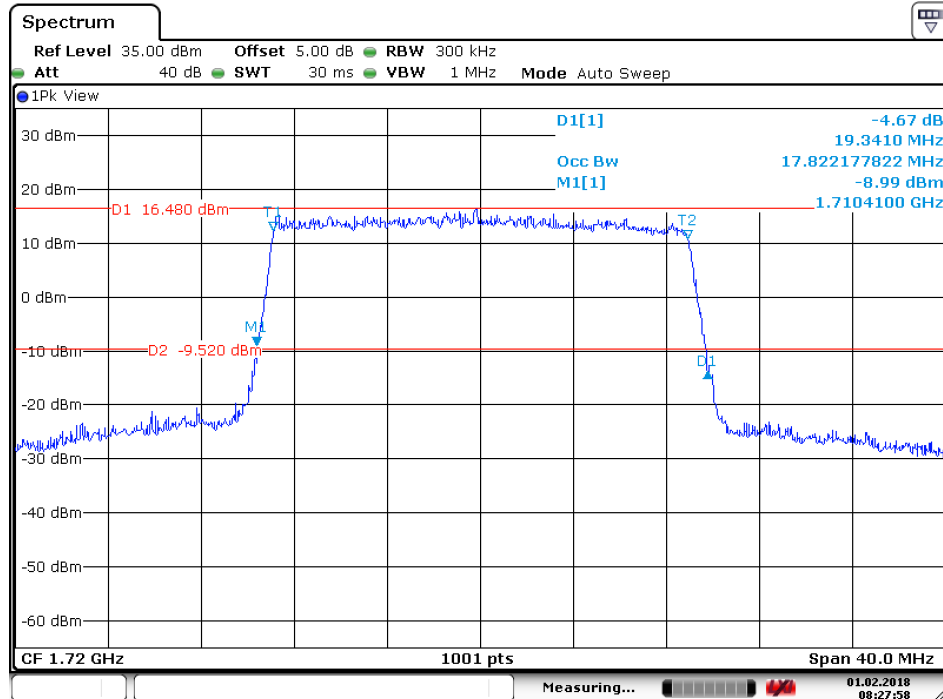


Date: 1.FEB.2018 08:20:37



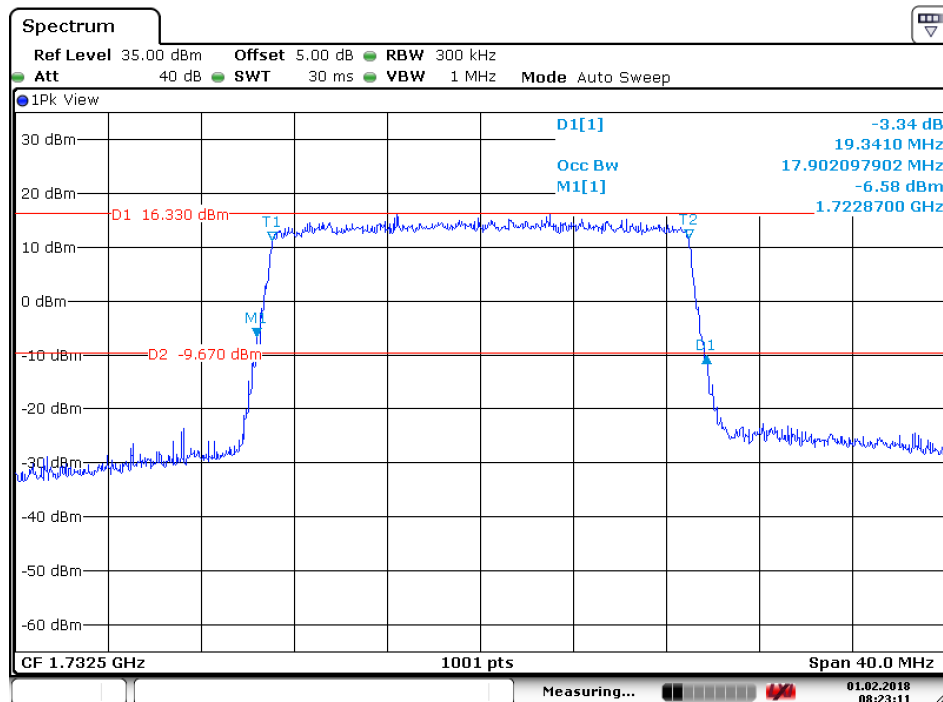
4.1.1.12 Test Mode = LTE/TM2 20MHz

4.1.1.12.1 Test Channel = LCH



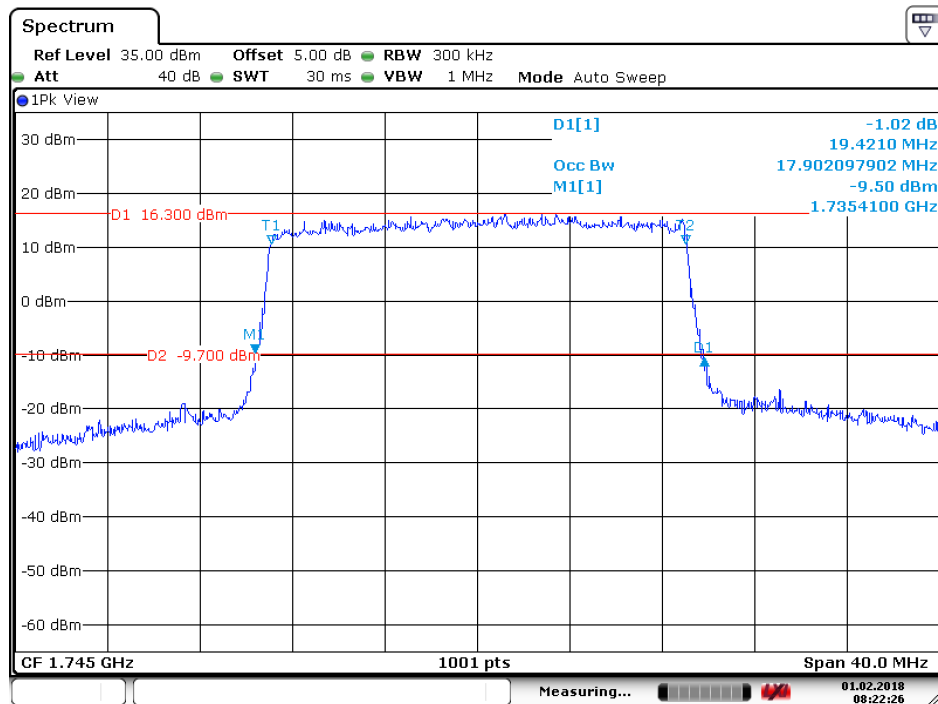
Date: 1.FEB.2018 08:27:58

4.1.1.12.2 Test Channel = MCH



Date: 1.FEB.2018 08:23:12

4.1.1.12.3 Test Channel = HCH



Date: 1.FEB.2018 08:22:26



5 Band Edges Compliance

Part I –

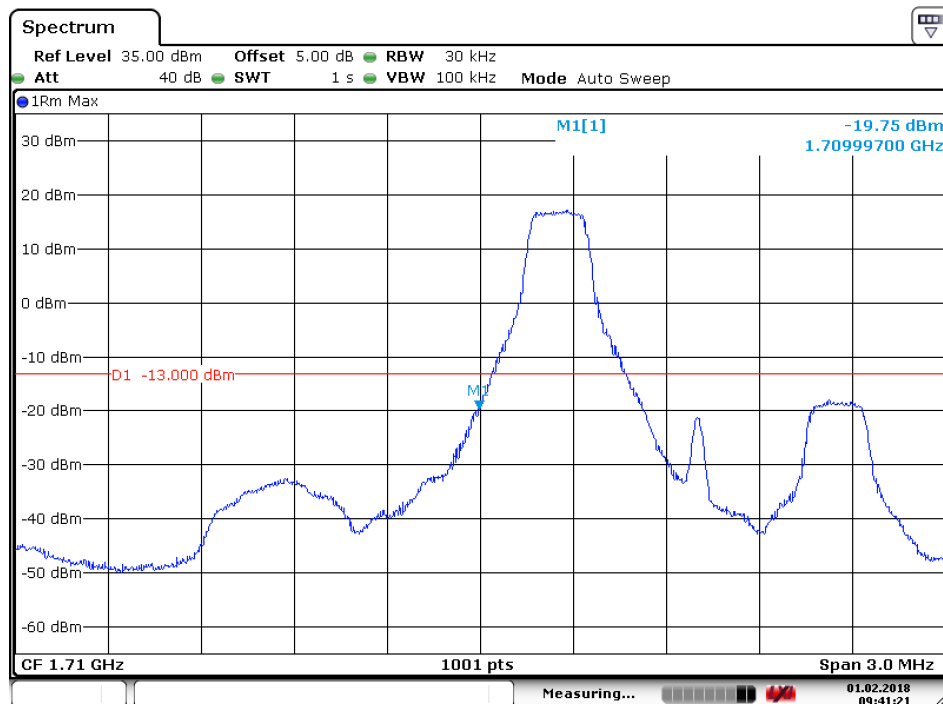
5.1 For LTE

5.1.1 Test Band = LTE band4

5.1.1.1 Test Mode = LTE/TM1 1.4MHz

5.1.1.1.1 Test Channel = LCH

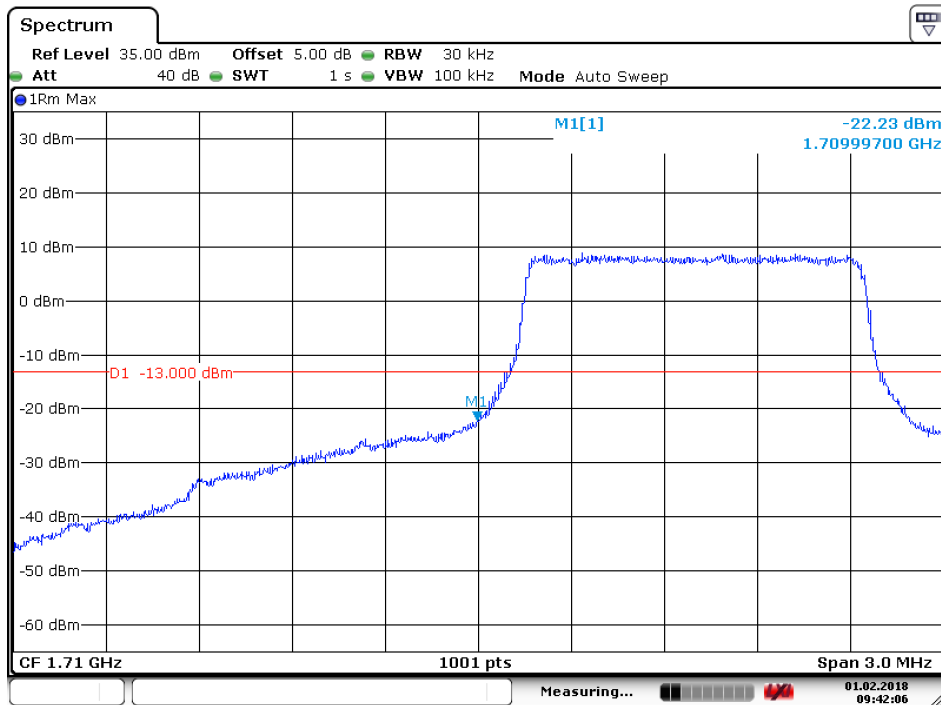
5.1.1.1.1.1 Test RB=1RB



Date: 1.FEB.2018 09:41:21



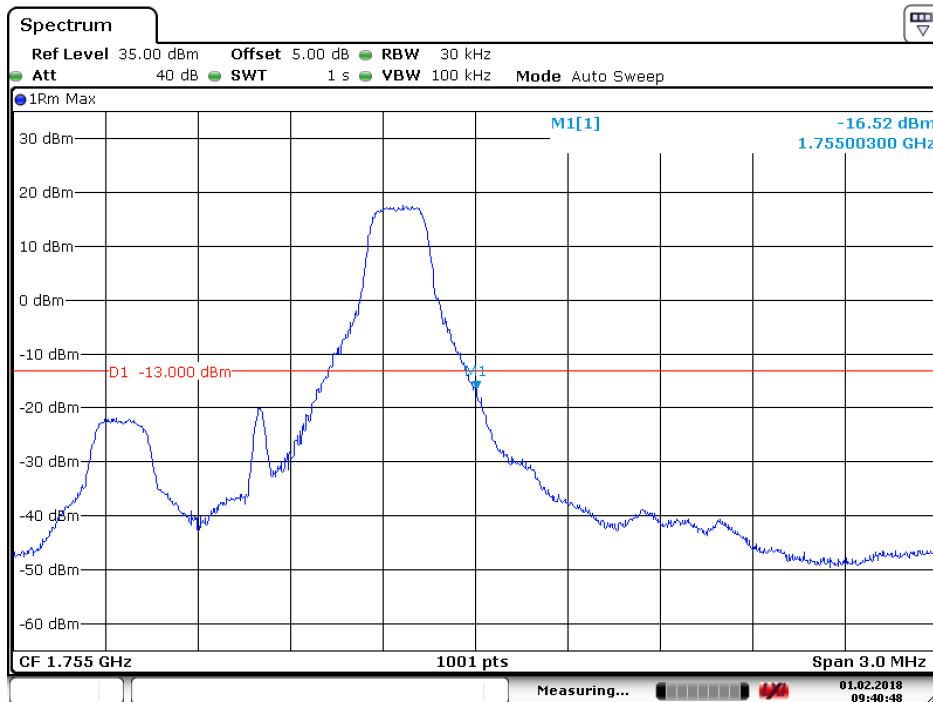
5.1.1.1.2 Test RB=6RB



Date: 1.FEB.2018 09:42:07

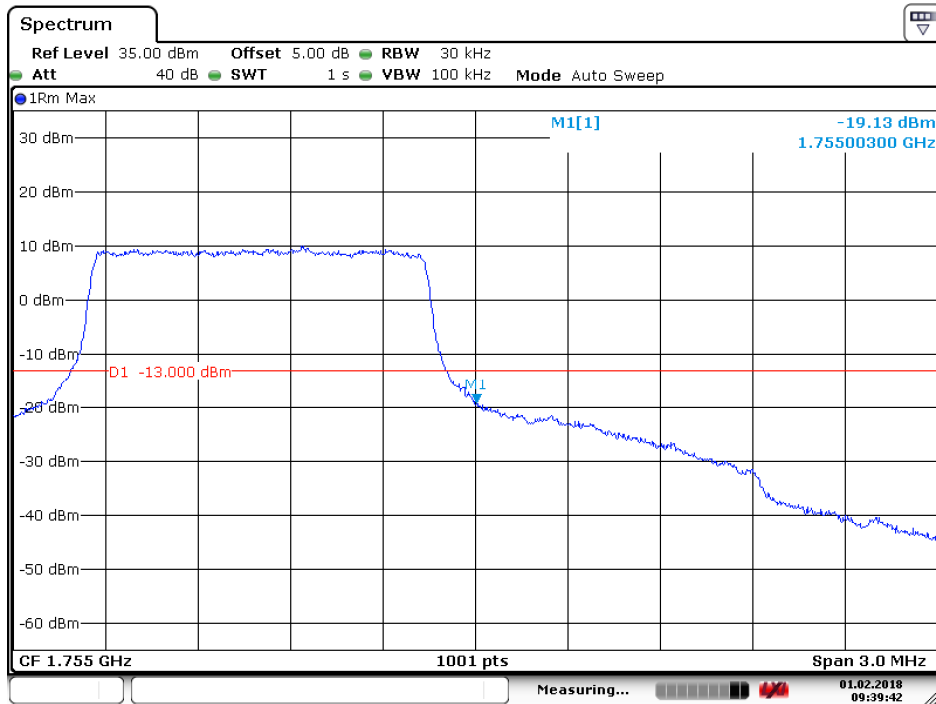
5.1.1.1.2 Test Channel = HCH

5.1.1.1.2.1 Test RB=1RB



Date: 1.FEB.2018 09:40:48

5.1.1.1.2.2 Test RB=6RB

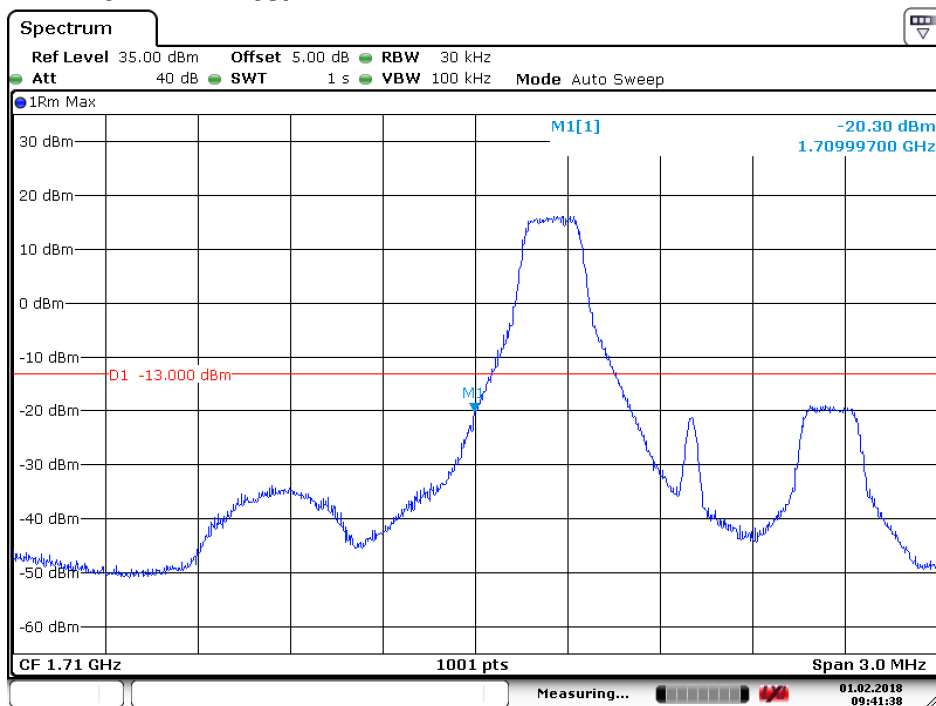


Date: 1.FEB.2018 09:39:43

5.1.1.2 Test Mode = LTE/TM2 1.4MHz

5.1.1.2.1 Test Channel = LCH

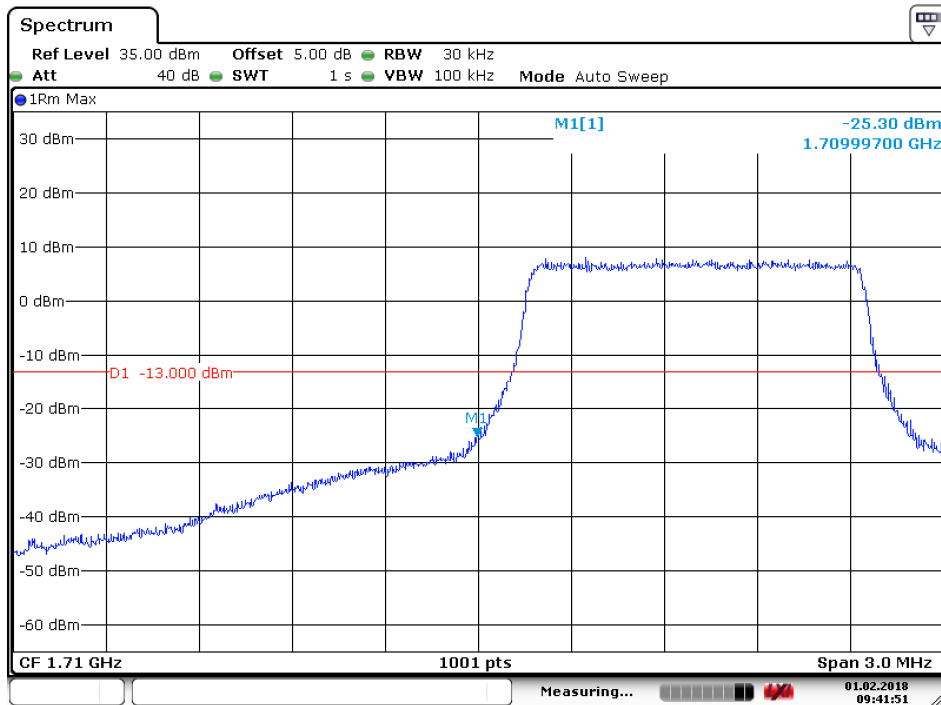
5.1.1.2.1.1 Test RB=1RB



Date: 1.FEB.2018 09:41:39



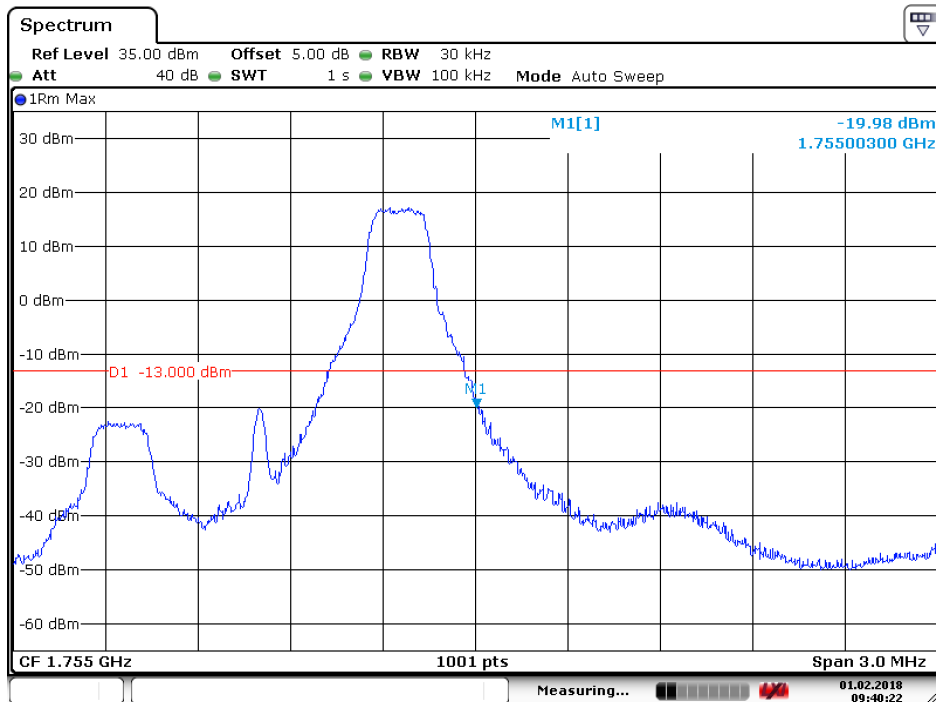
5.1.1.2.1.2 Test RB=6RB



Date: 1.FEB.2018 09:41:52

5.1.1.2.2 Test Channel = HCH

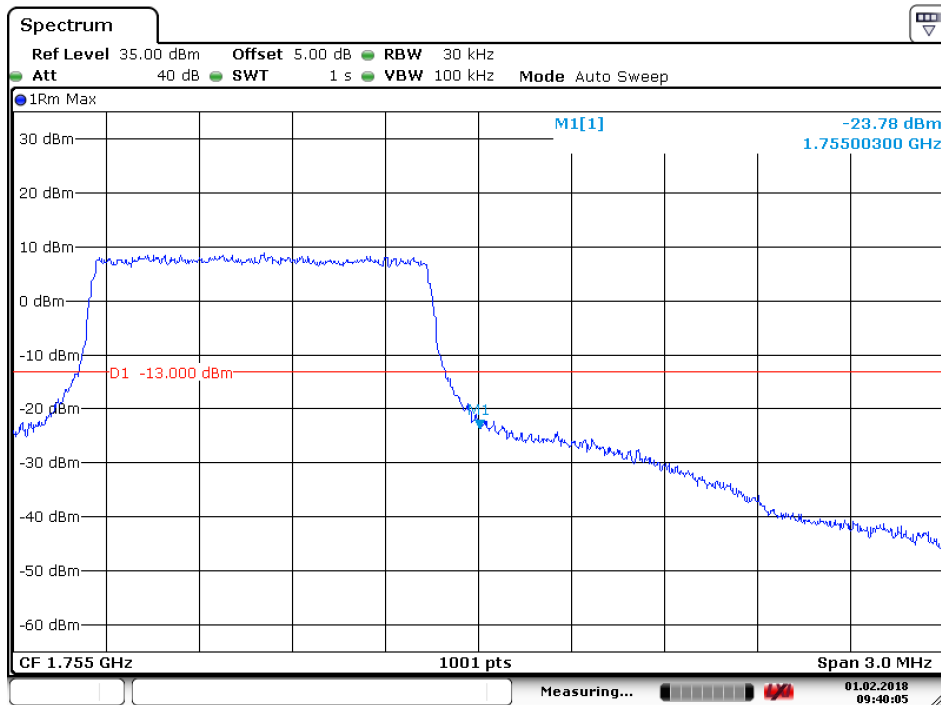
5.1.1.2.2.1 Test RB=1RB



Date: 1.FEB.2018 09:40:22



5.1.1.2.2 Test RB=6RB

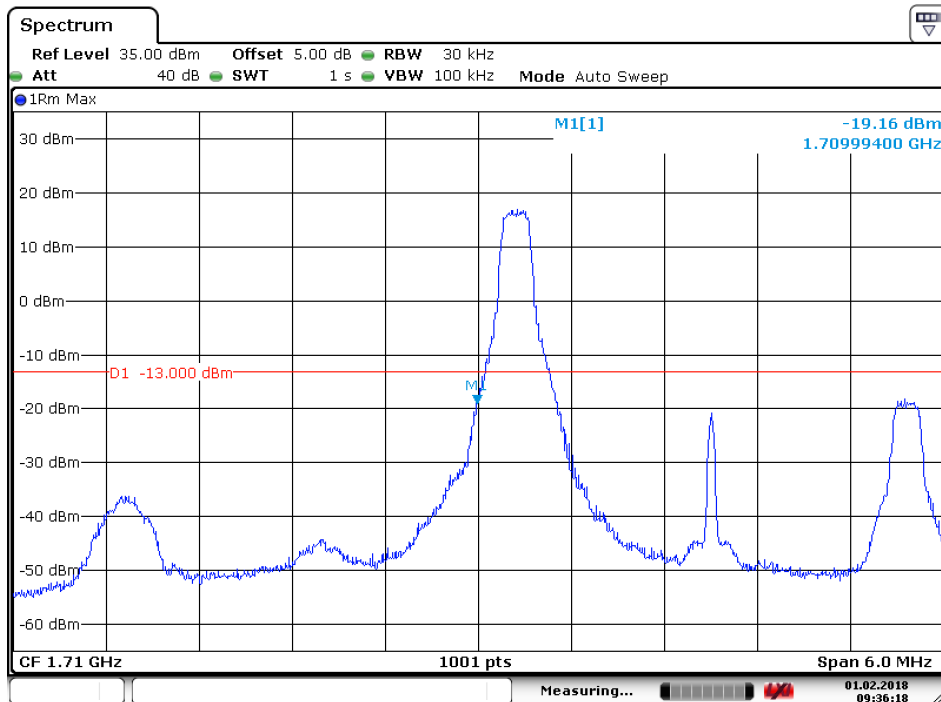


Date: 1.FEB.2018 09:40:06

5.1.1.3 Test Mode = LTE/TM1 3MHz

5.1.1.3.1 Test Channel = LCH

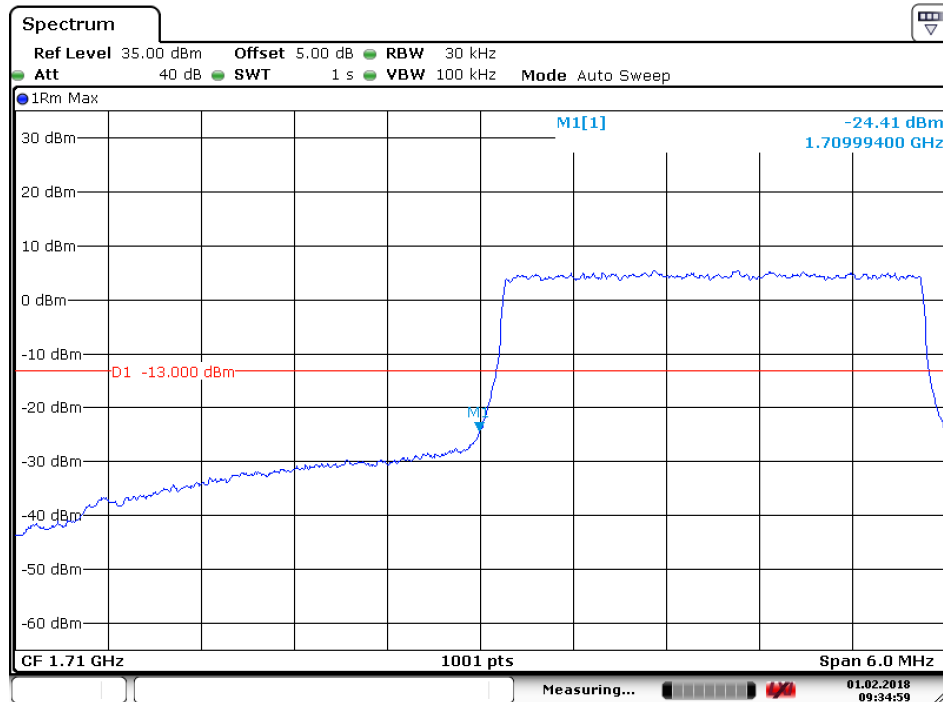
5.1.1.3.1.1 Test RB=1RB



Date: 1.FEB.2018 09:36:18



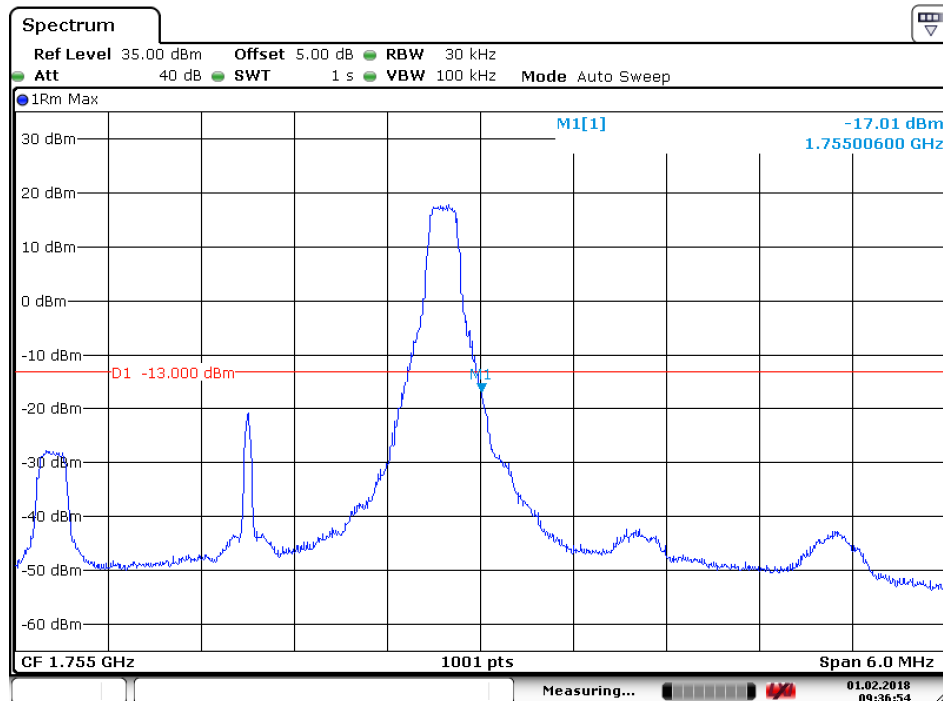
5.1.1.3.1.2 Test RB=15RB



Date: 1.FEB.2018 09:34:59

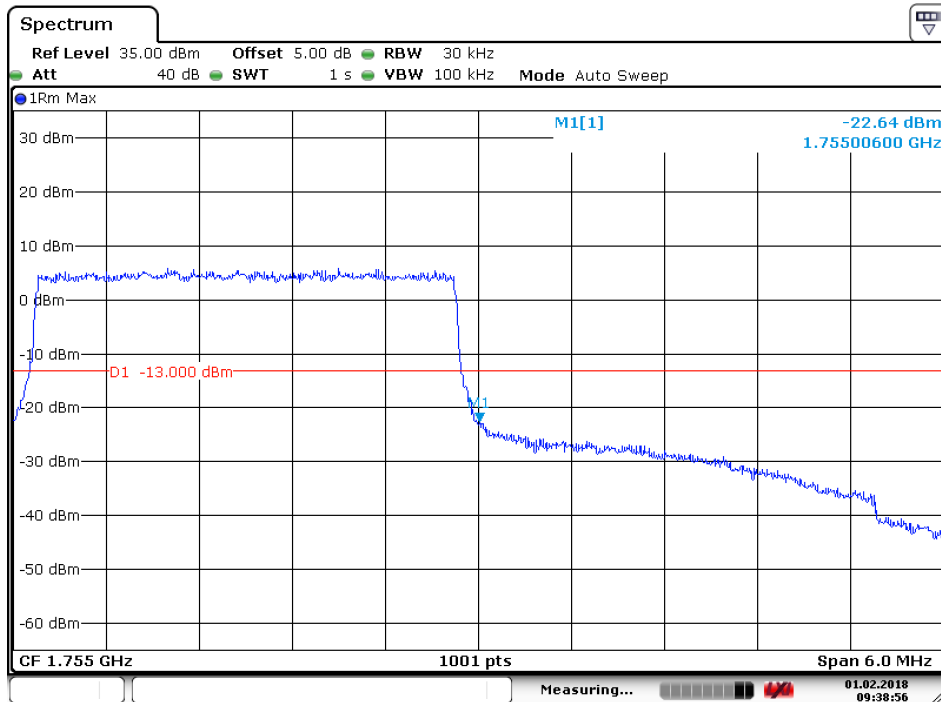
5.1.1.3.2 Test Channel = HCH

5.1.1.3.2.1 Test RB=1RB



Date: 1.FEB.2018 09:36:55

5.1.1.3.2.2 Test RB=15RB

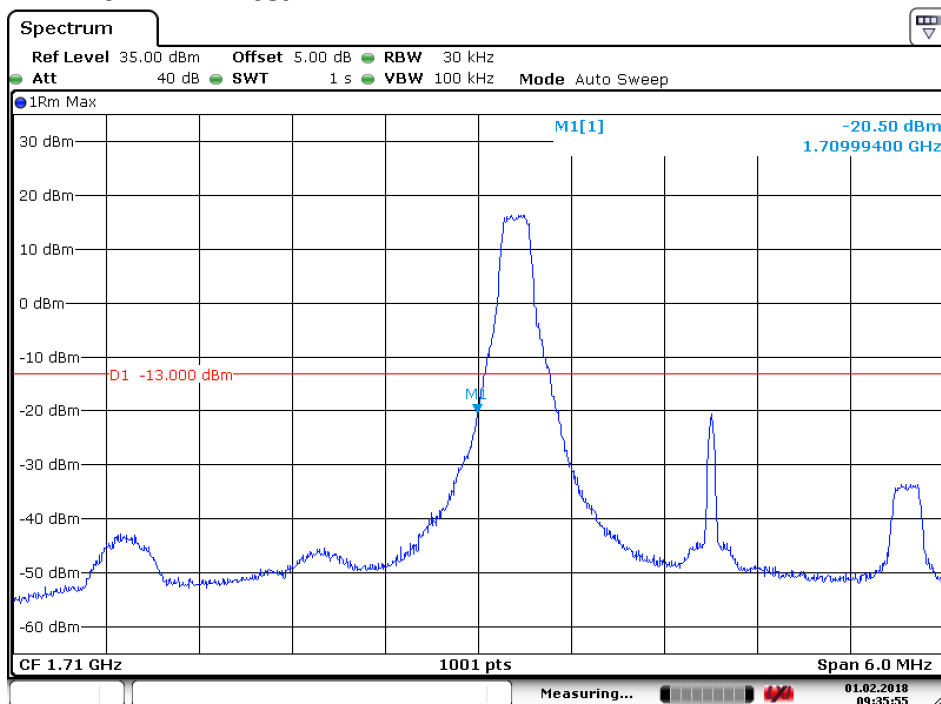


Date: 1.FEB.2018 09:38:56

5.1.1.4 Test Mode = LTE/TM2 3MHz

5.1.1.4.1 Test Channel = LCH

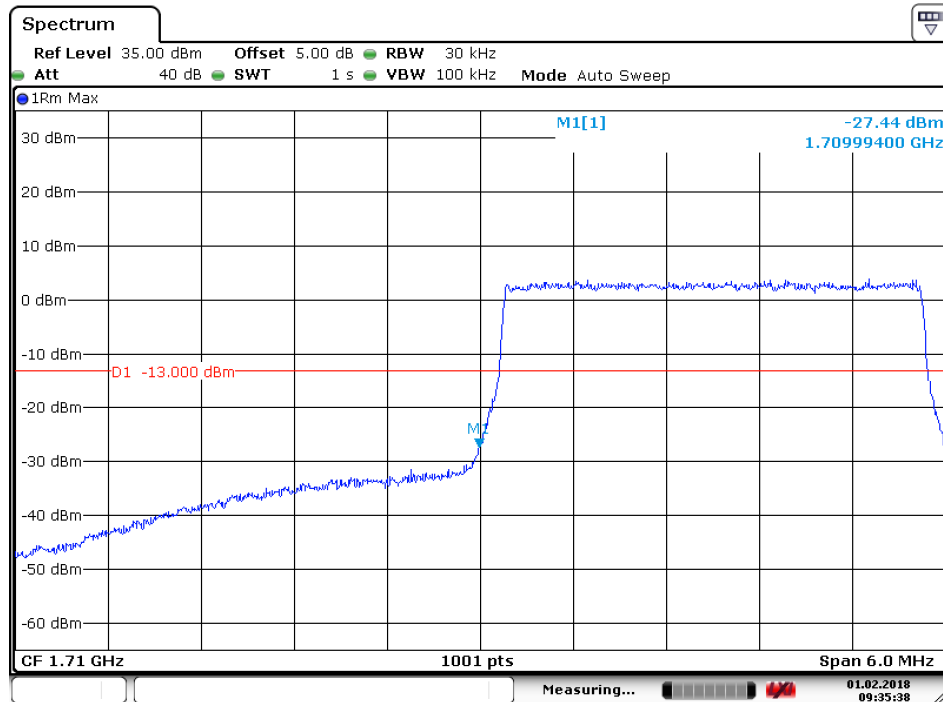
5.1.1.4.1.1 Test RB=1RB



Date: 1.FEB.2018 09:35:56



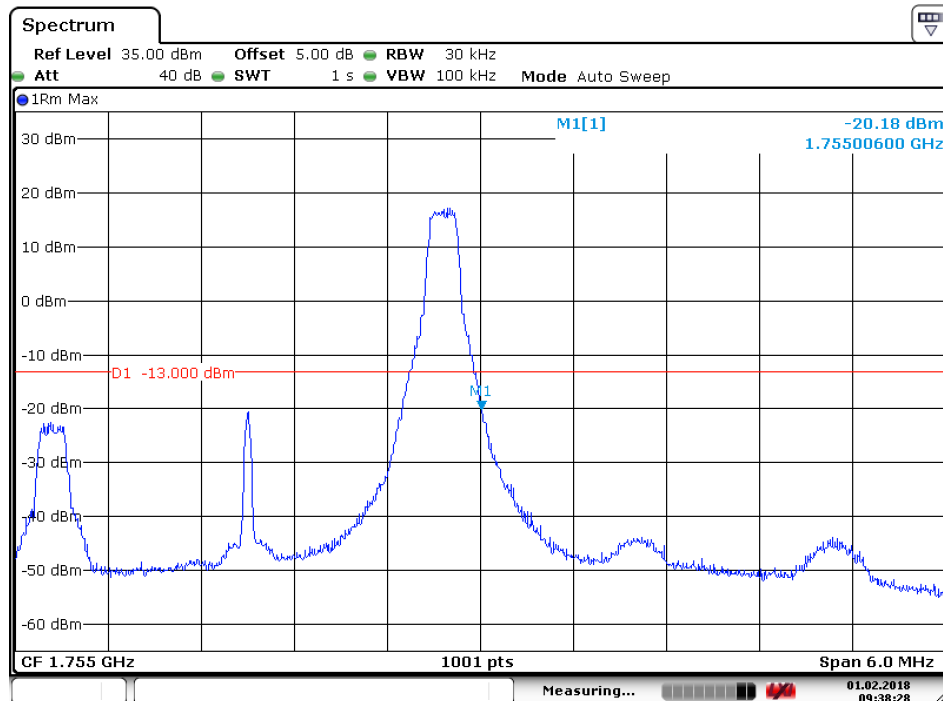
5.1.1.4.1.2 Test RB=15RB



Date: 1.FEB.2018 09:35:39

5.1.1.4.2 Test Channel = HCH

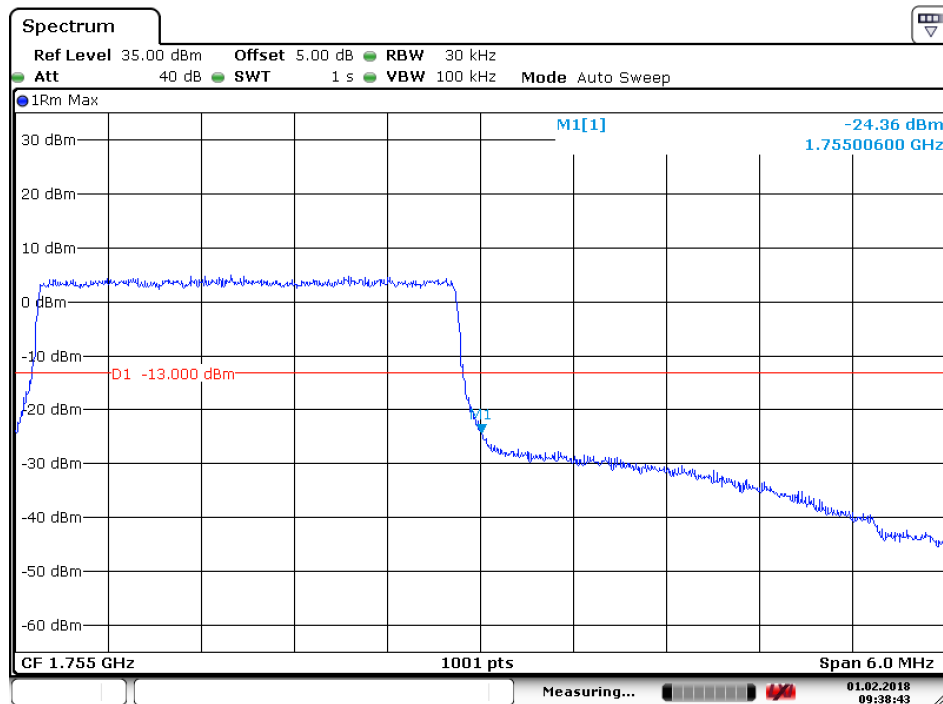
5.1.1.4.2.1 Test RB=1RB



Date: 1.FEB.2018 09:38:28



5.1.1.4.3 Test RB=15RB

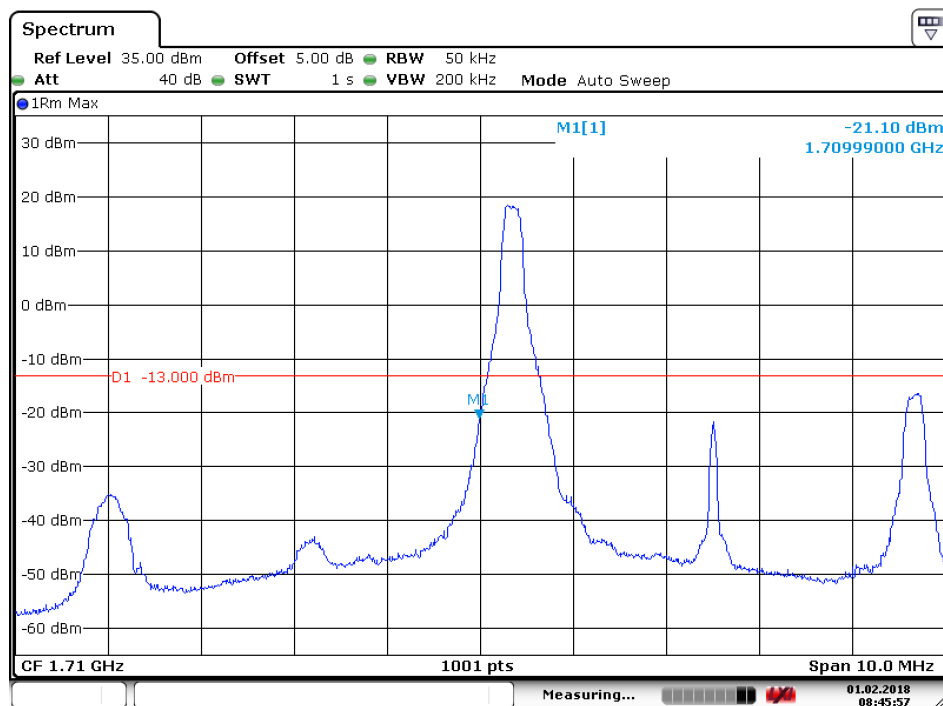


Date: 1.FEB.2018 09:38:43

5.1.1.5 Test Mode = LTE/TM1 5MHz

5.1.1.5.1 Test Channel = LCH

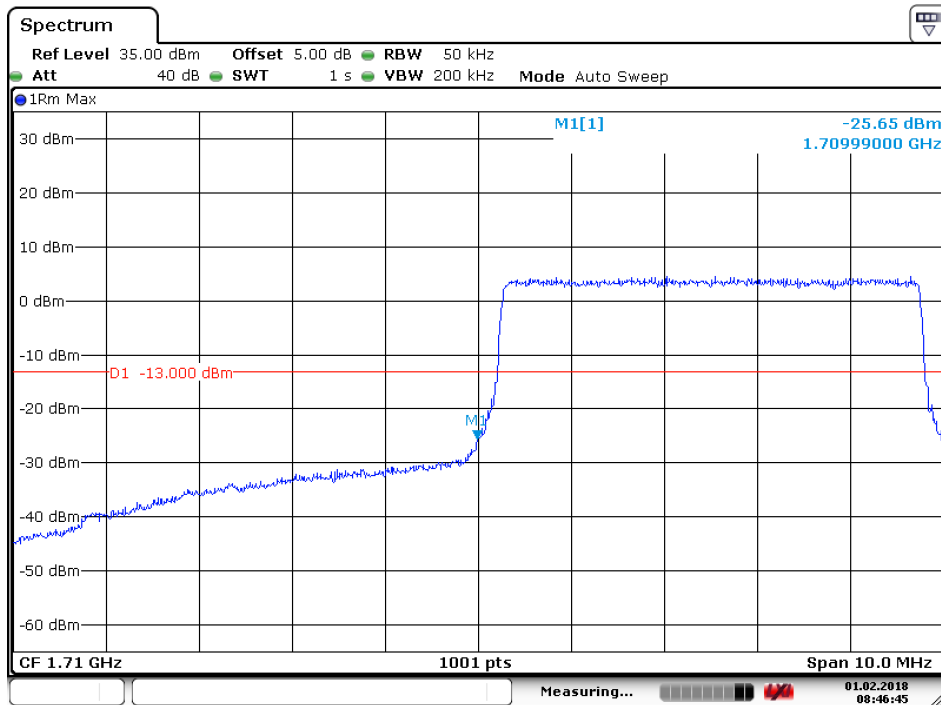
5.1.1.5.1.1 Test RB=1RB



Date: 1.FEB.2018 08:45:58



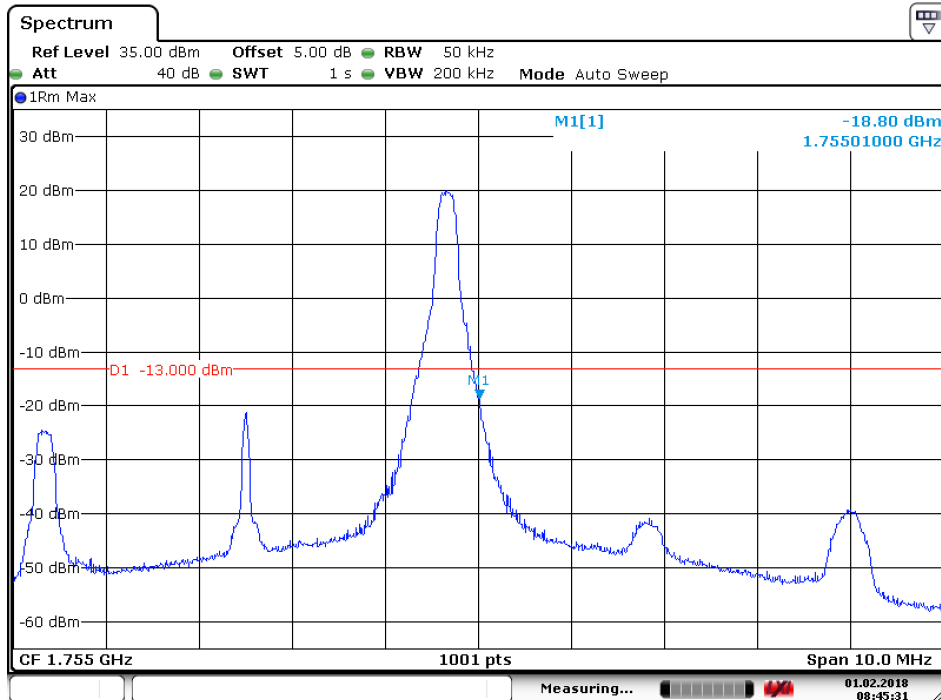
5.1.1.5.1.2 Test RB=25RB



Date: 1.FEB.2018 08:46:45

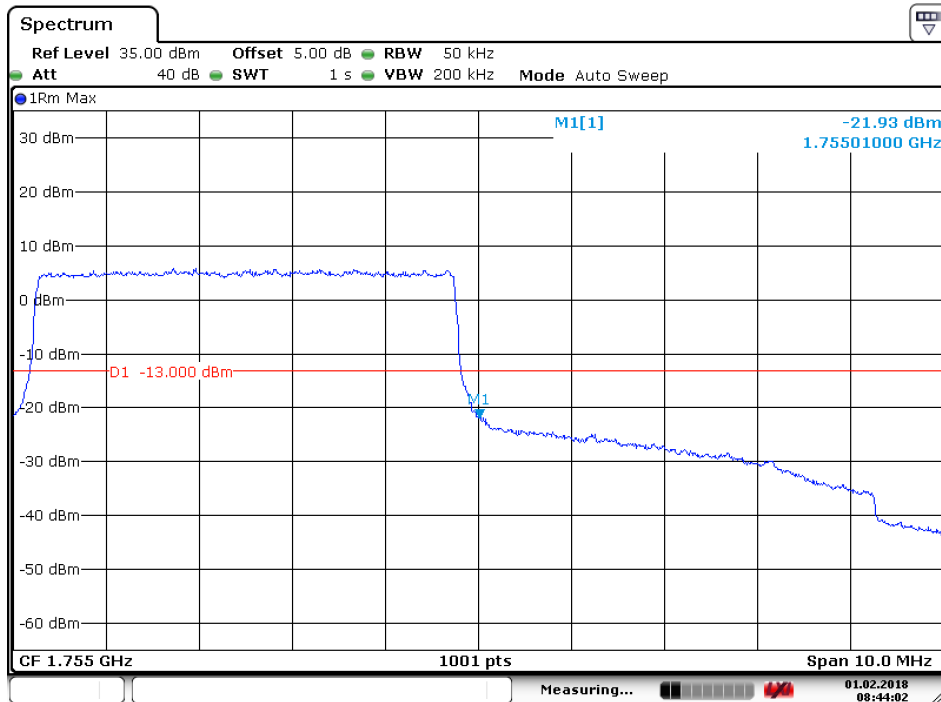
5.1.1.5.2 Test Channel = HCH

5.1.1.5.2.1 Test RB=1RB



Date: 1.FEB.2018 08:45:32

5.1.1.5.2.2 Test RB=25RB

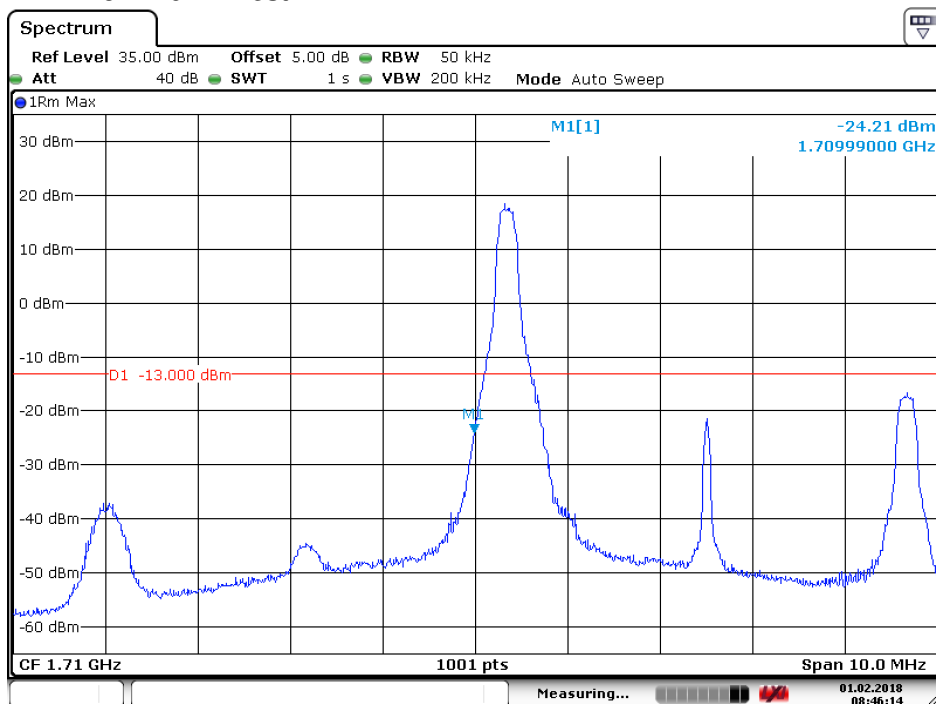


Date: 1.FEB.2018 08:44:02

5.1.1.6 Test Mode = LTE/TM2 5MHz

5.1.1.6.1 Test Channel = LCH

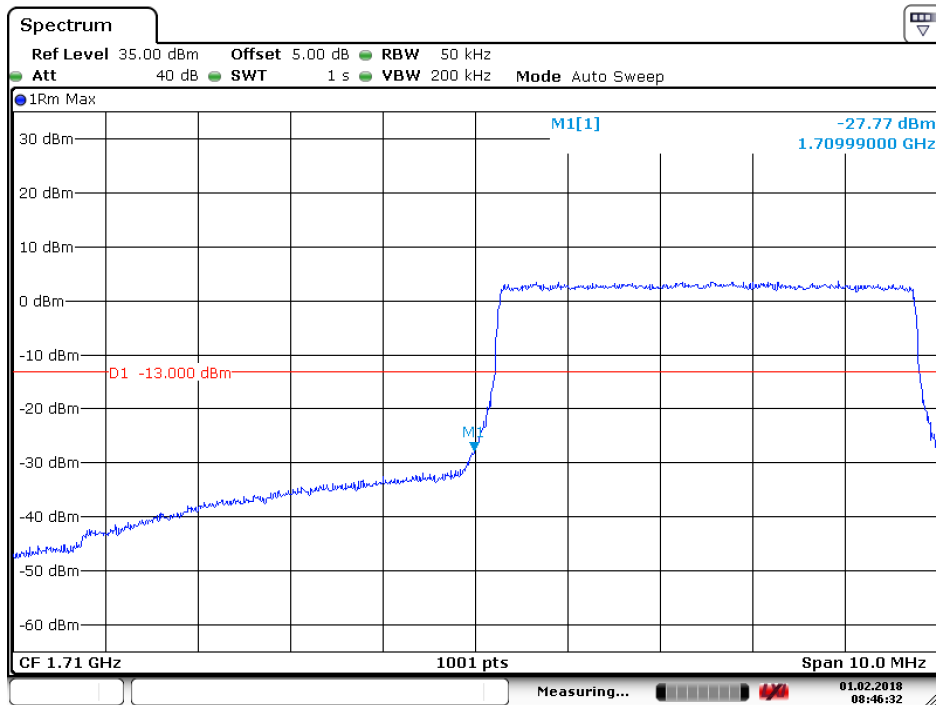
5.1.1.6.1.1 Test RB=1RB



Date: 1.FEB.2018 08:46:15



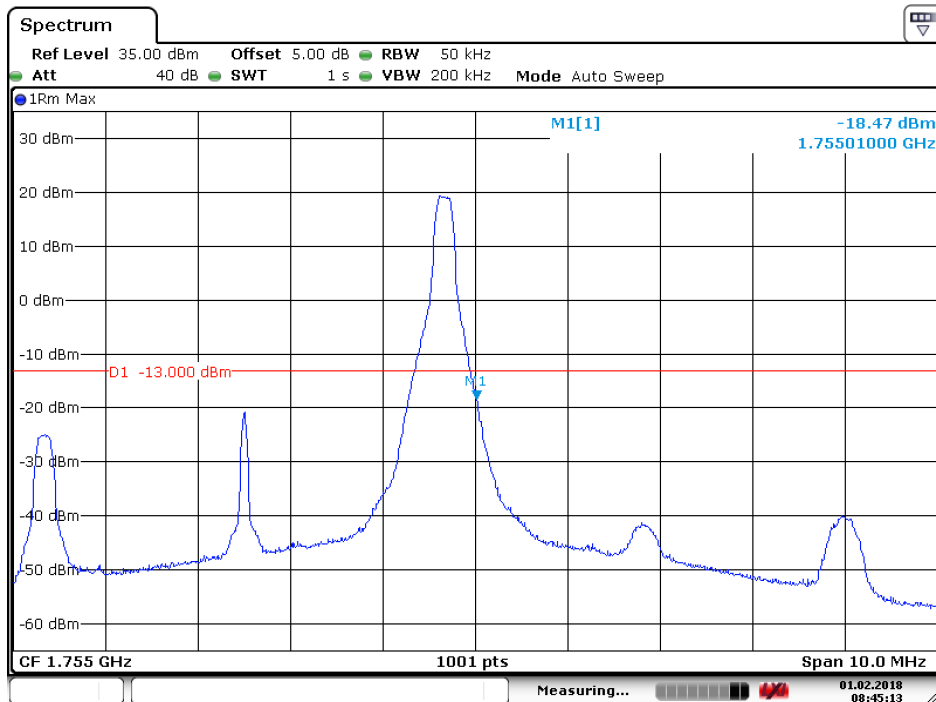
5.1.1.6.1.2 Test RB=25RB



Date: 1.FEB.2018 08:46:32

5.1.1.6.2 Test Channel = HCH

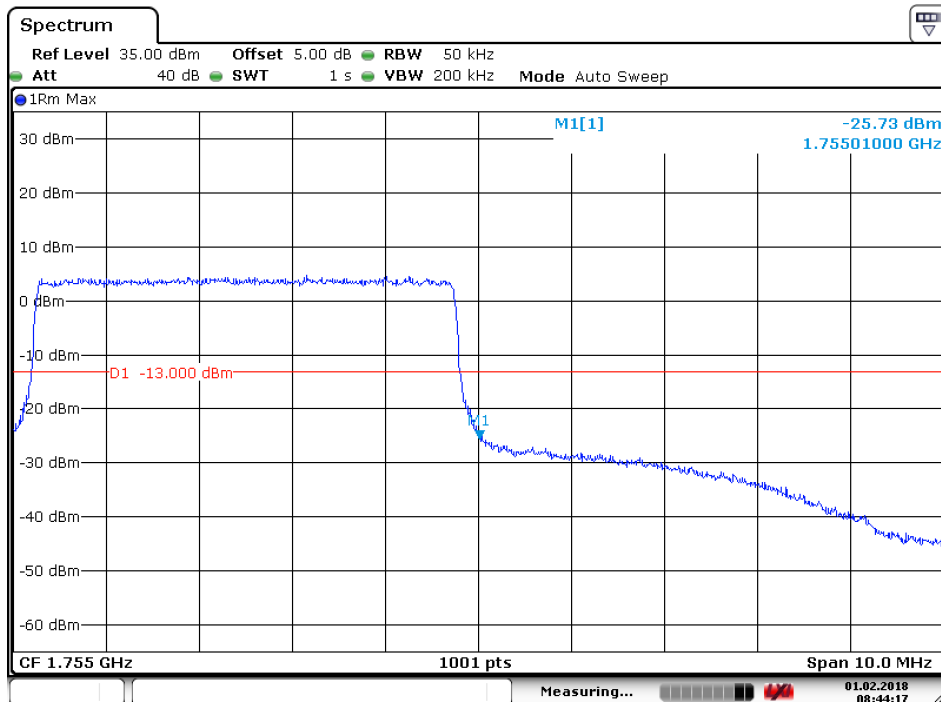
5.1.1.6.2.1 Test RB=1RB



Date: 1.FEB.2018 08:45:14



5.1.1.6.2.2 Test RB=25RB

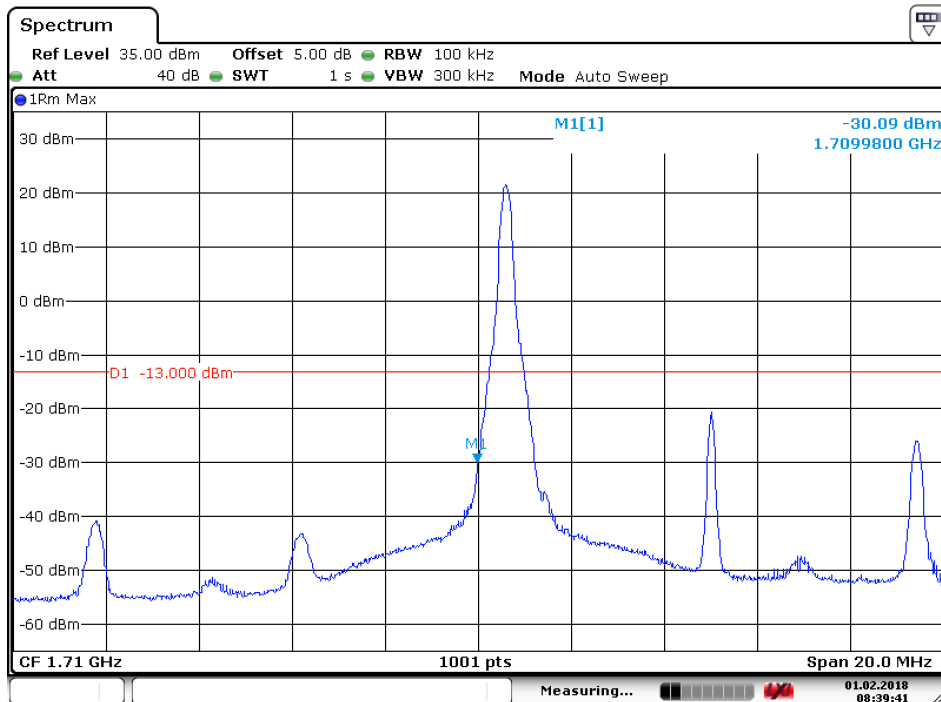


Date: 1.FEB.2018 08:44:18

5.1.1.7 Test Mode = LTE/TM1 10MHz

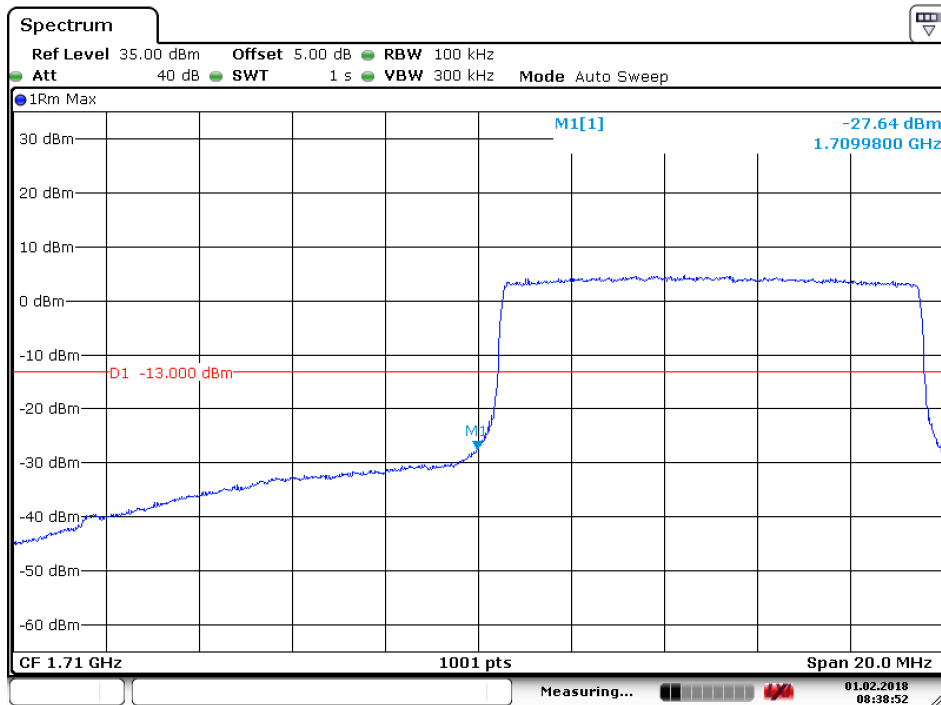
5.1.1.7.1 Test Channel = LCH

5.1.1.7.1.1 Test RB=1RB



Date: 1.FEB.2018 08:39:41

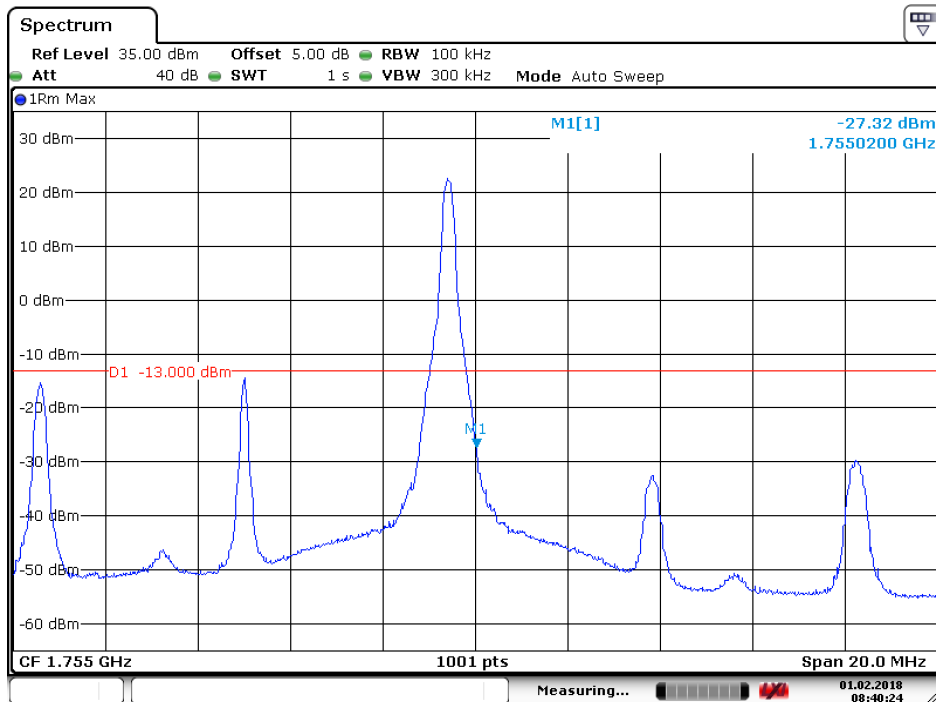
5.1.1.7.1.2 Test RB=50RB



Date: 1.FEB.2018 08:38:53

5.1.1.7.2 Test Channel = HCH

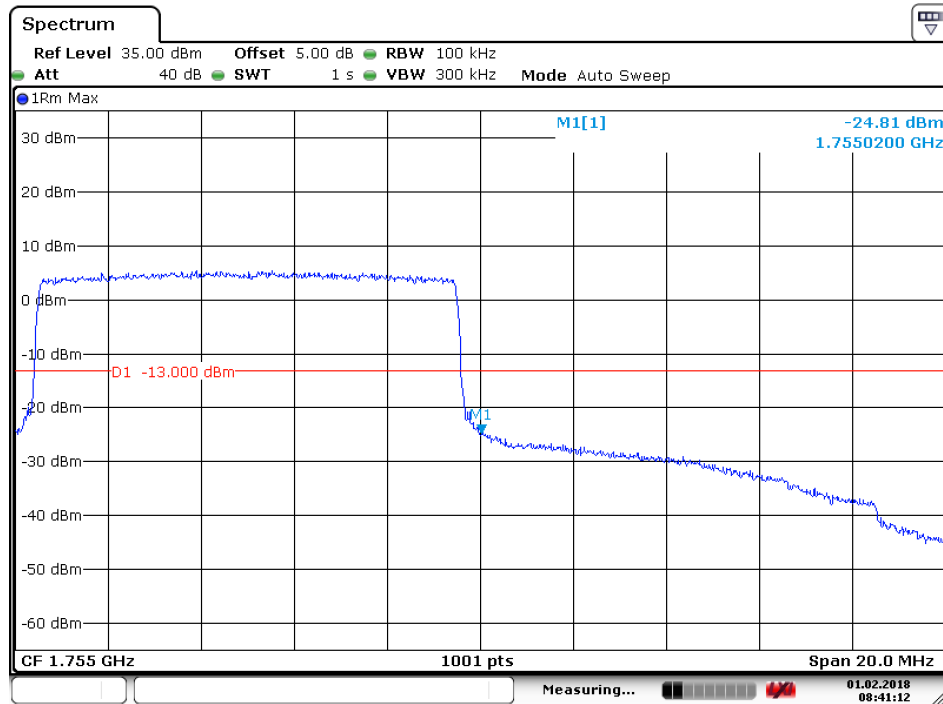
5.1.1.7.2.1 Test RB=1RB



Date: 1.FEB.2018 08:40:24



5.1.1.7.2.2 Test RB=50RB

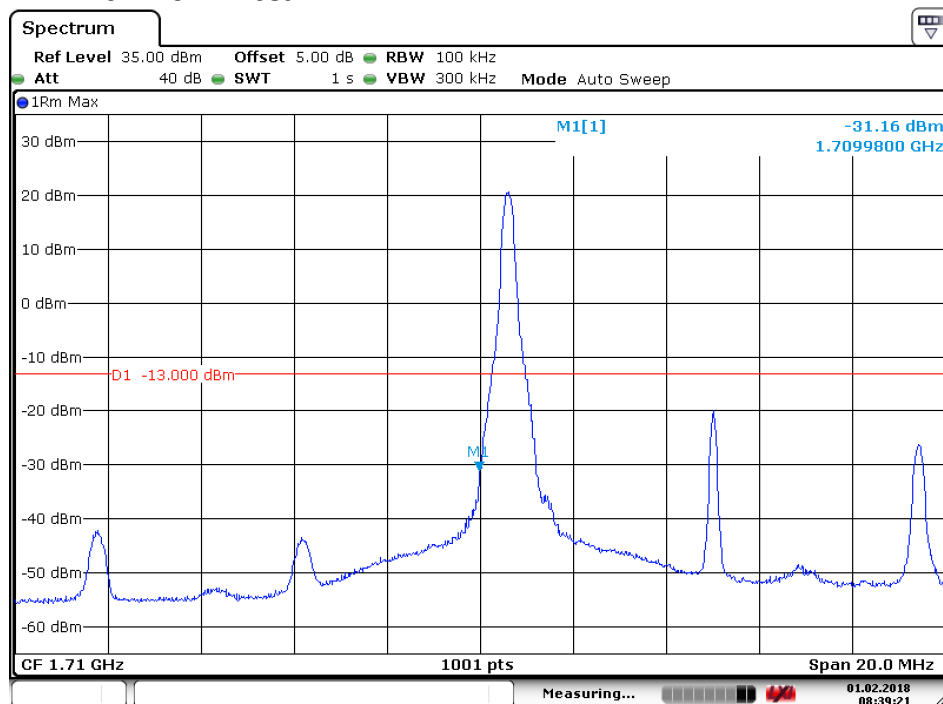


Date: 1.FEB.2018 08:41:12

5.1.1.8 Test Mode = LTE/TM2 10MHz

5.1.1.8.1 Test Channel = LCH

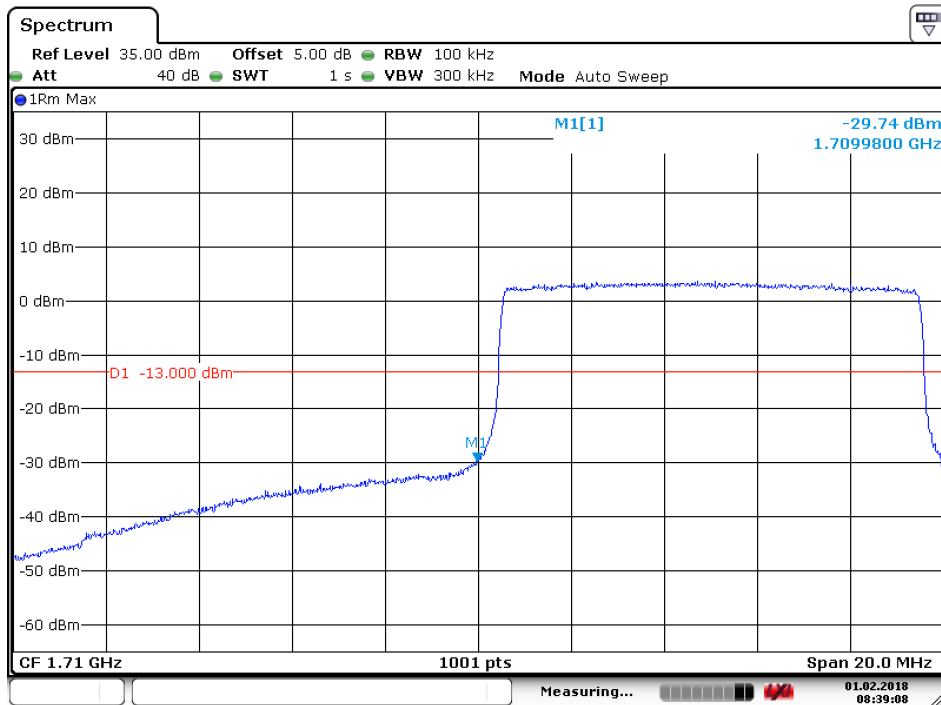
5.1.1.8.1.1 Test RB=1RB



Date: 1.FEB.2018 08:39:22



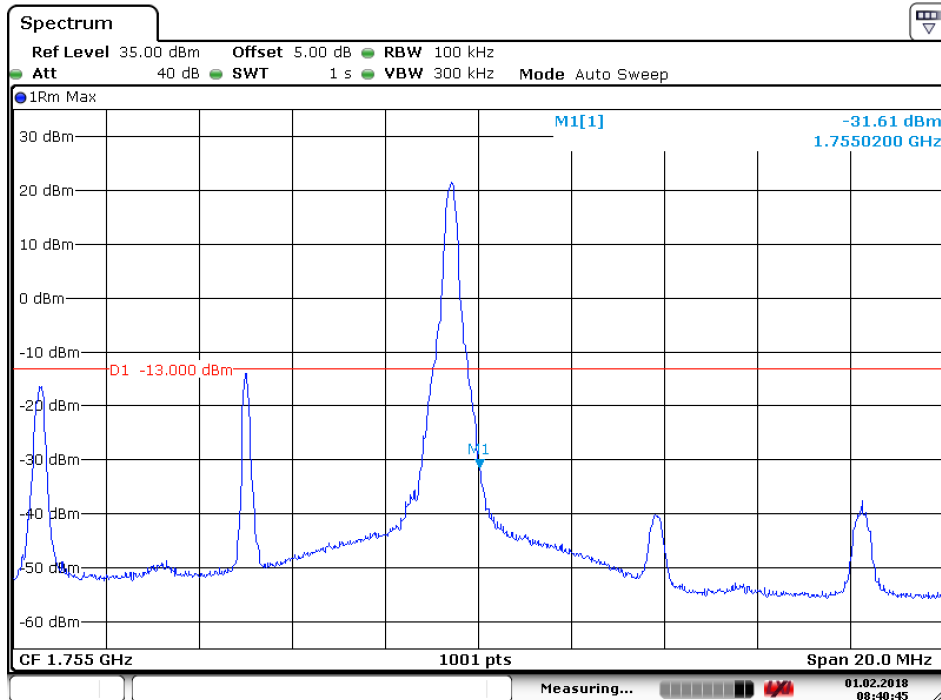
5.1.1.8.1.2 Test RB=50RB



Date: 1.FEB.2018 08:39:08

5.1.1.8.2 Test Channel = HCH

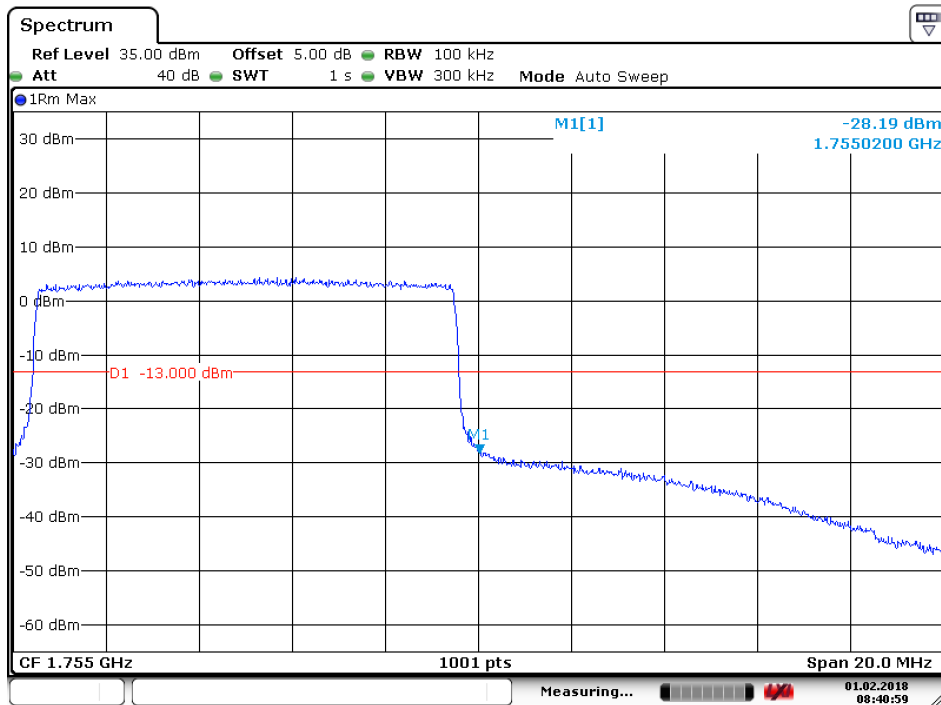
5.1.1.8.2.1 Test RB=1RB



Date: 1.FEB.2018 08:40:45



5.1.1.8.2.2 Test RB=50RB

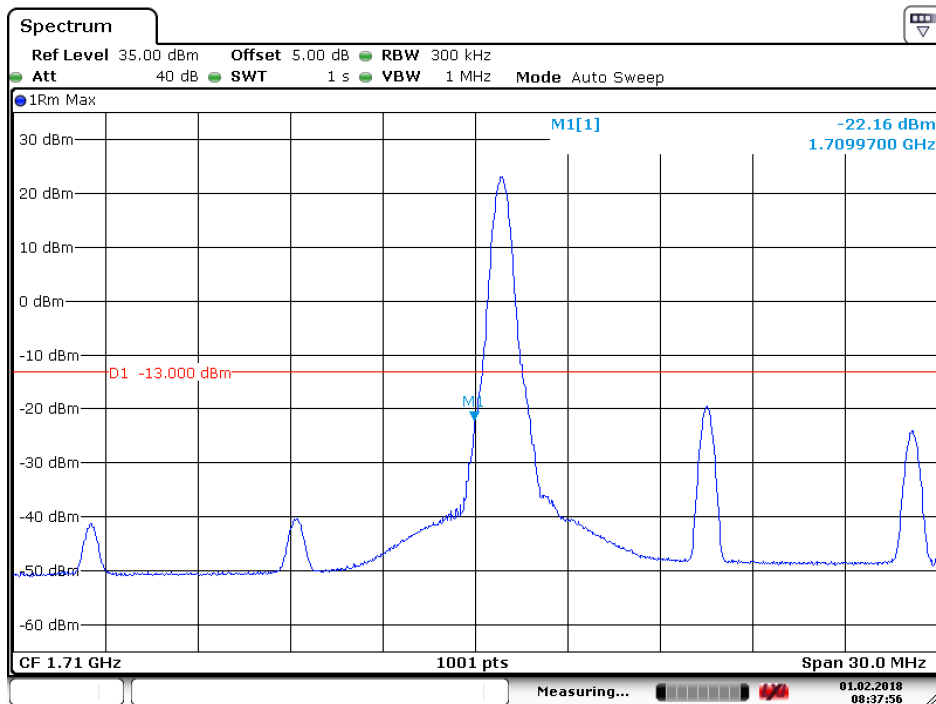


Date: 1.FEB.2018 08:40:59

5.1.1.9 Test Mode = LTE/TM1 15MHz

5.1.1.9.1 Test Channel = LCH

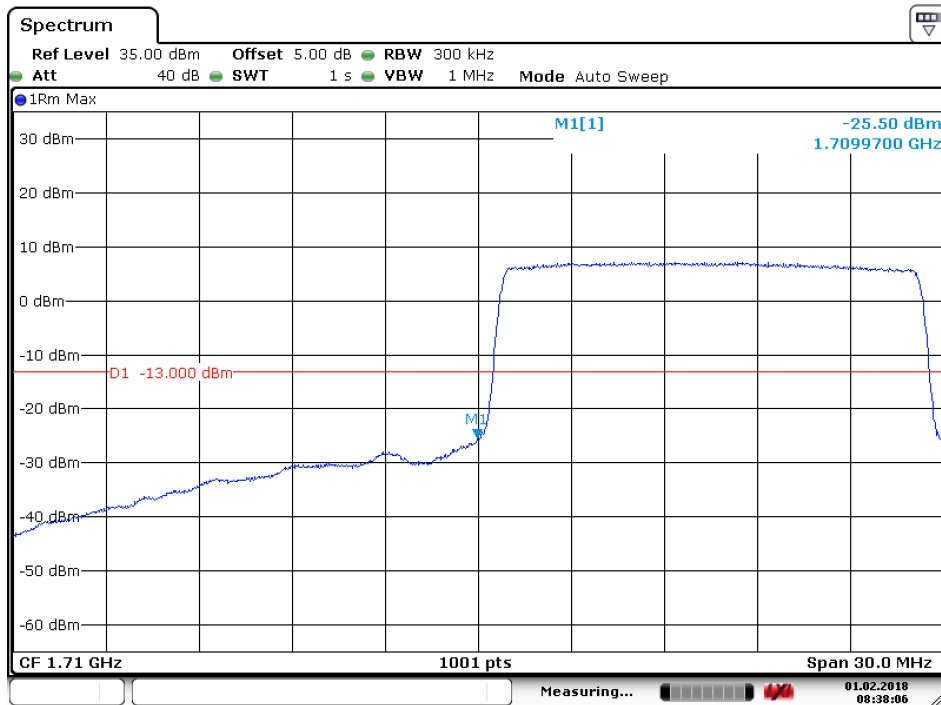
5.1.1.9.1.1 Test RB=1RB



Date: 1.FEB.2018 08:37:56



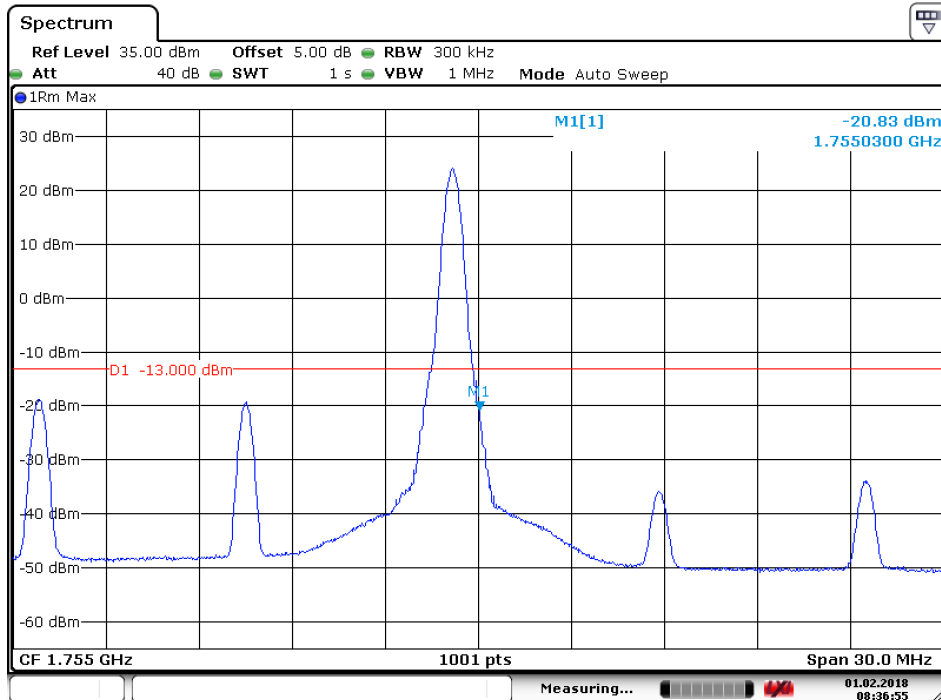
5.1.1.9.1.2 Test RB=75RB



Date: 1.FEB.2018 08:38:07

5.1.1.9.2 Test Channel = HCH

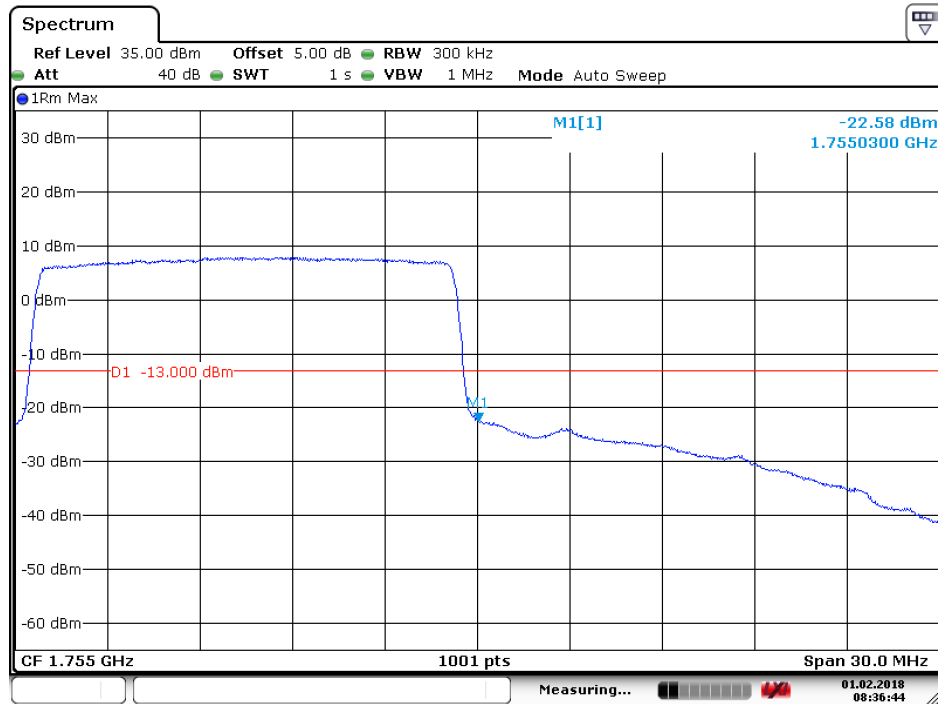
5.1.1.9.2.1 Test RB=1RB



Date: 1.FEB.2018 08:36:56



5.1.1.9.2.2 Test RB=75RB

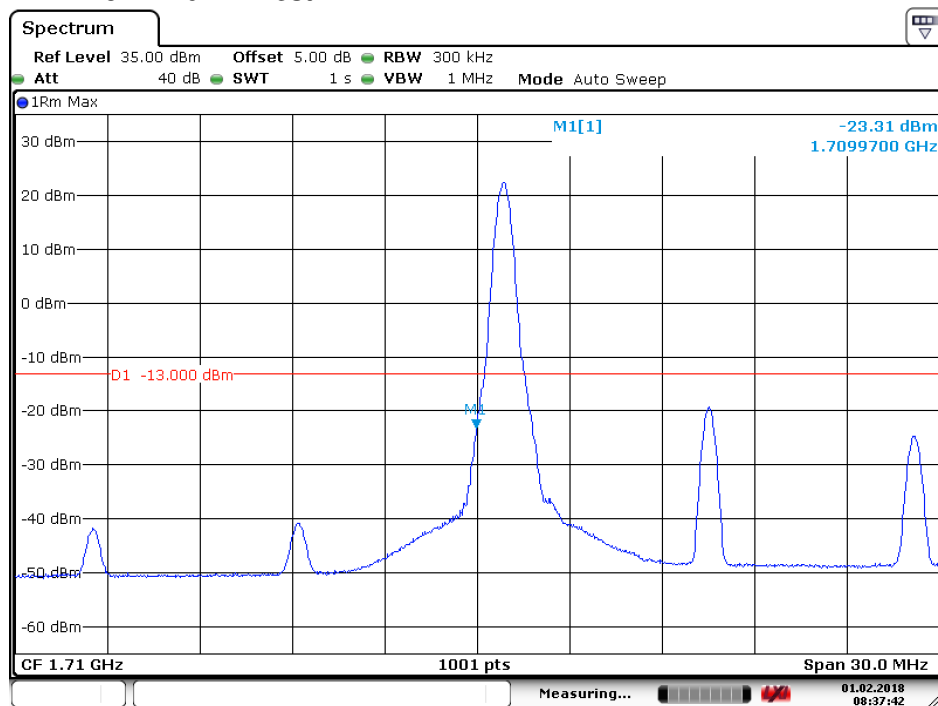


Date: 1.FEB.2018 08:36:44

5.1.1.10 Test Mode = LTE/TM2 15MHz

5.1.1.10.1 Test Channel = LCH

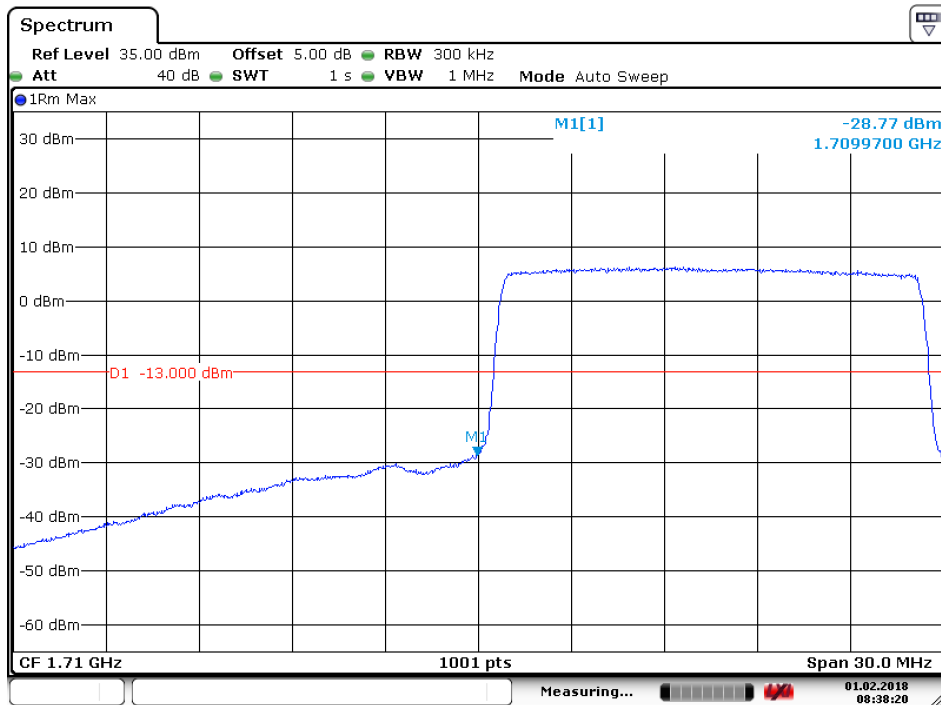
5.1.1.10.1.1 Test RB=1RB



Date: 1.FEB.2018 08:37:43



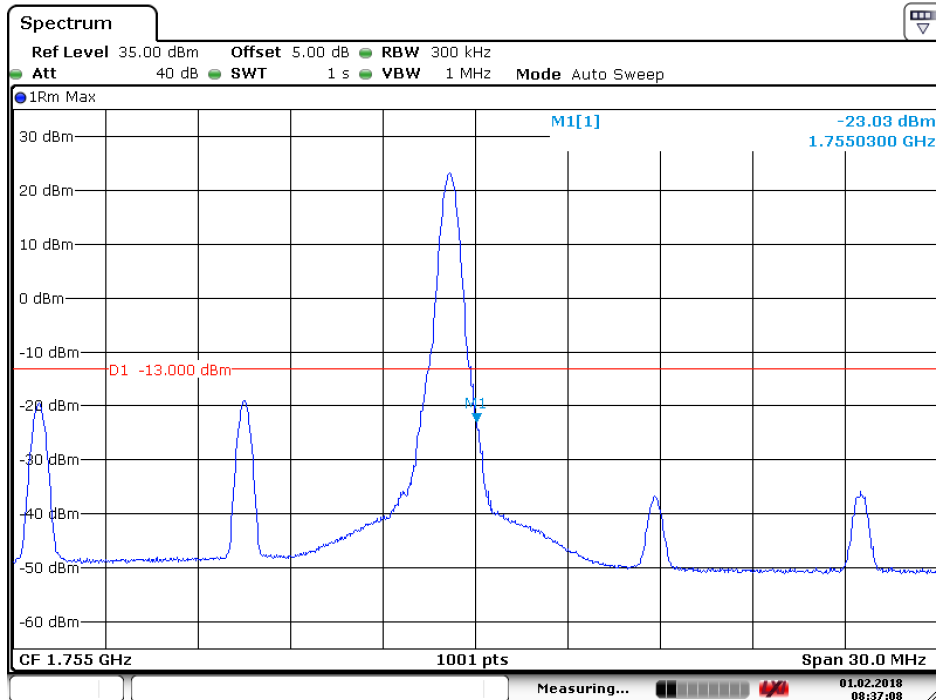
5.1.1.10.1.2 Test RB=75RB



Date: 1.FEB.2018 08:38:20

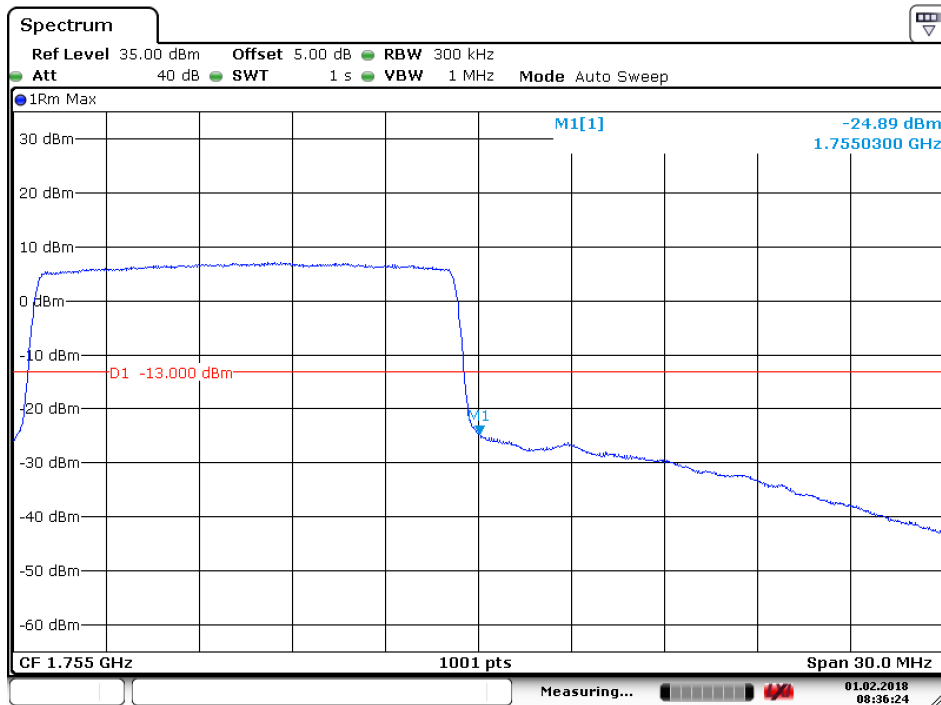
5.1.1.10.2 Test Channel = HCH

5.1.1.10.2.1 Test RB=1RB



Date: 1.FEB.2018 08:37:09

5.1.1.10.2.2 Test RB=75RB

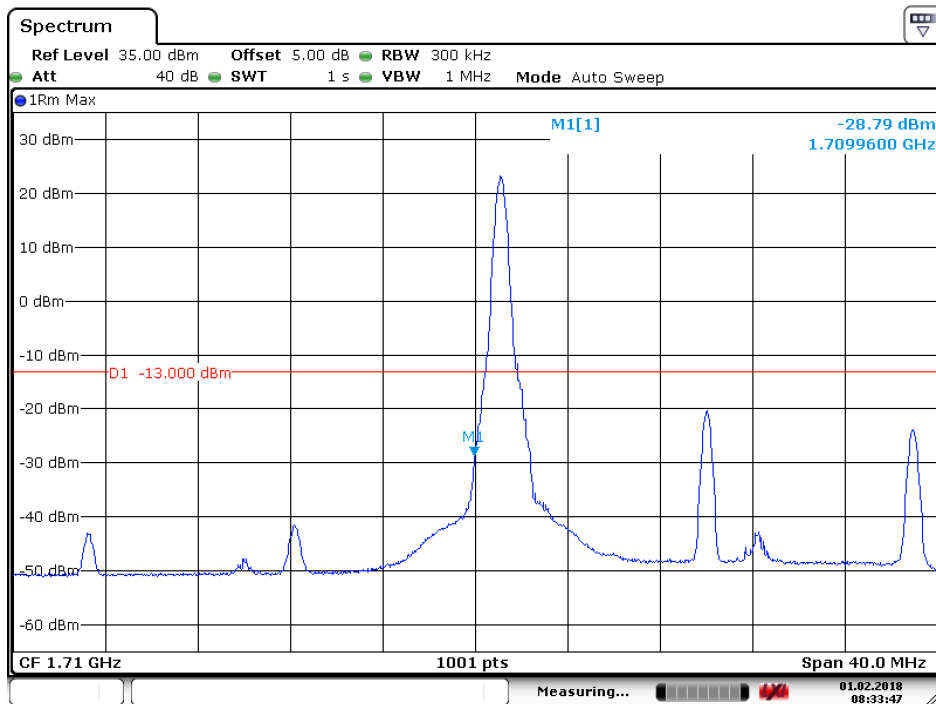


Date: 1.FEB.2018 08:36:24

5.1.1.11 Test Mode = LTE/TM1 20MHz

5.1.1.11.1 Test Channel = LCH

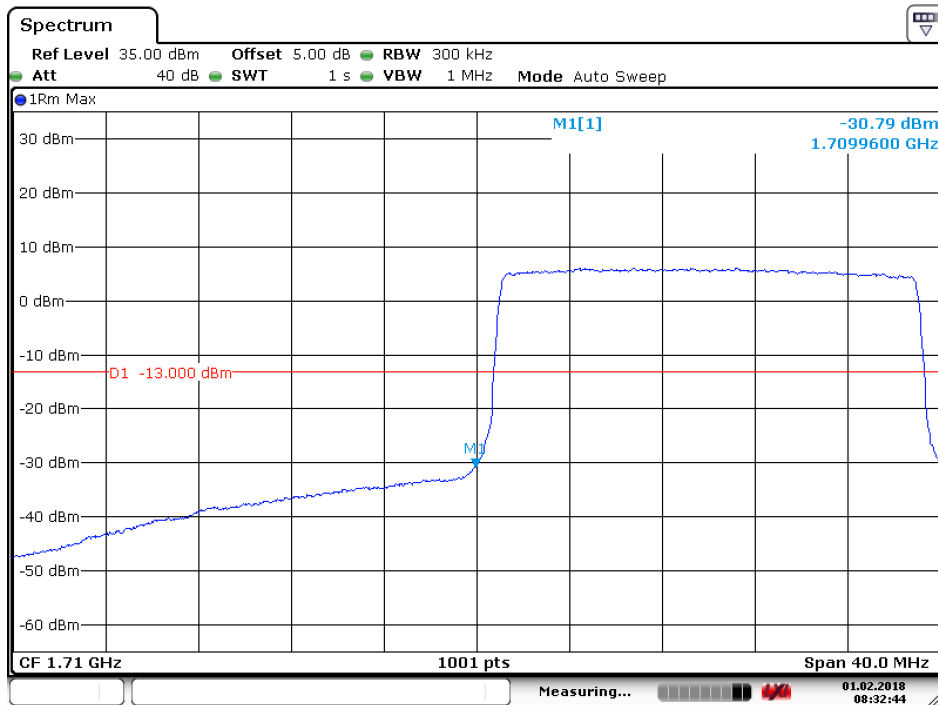
5.1.1.11.1.1 Test RB=1RB



Date: 1.FEB.2018 08:33:47



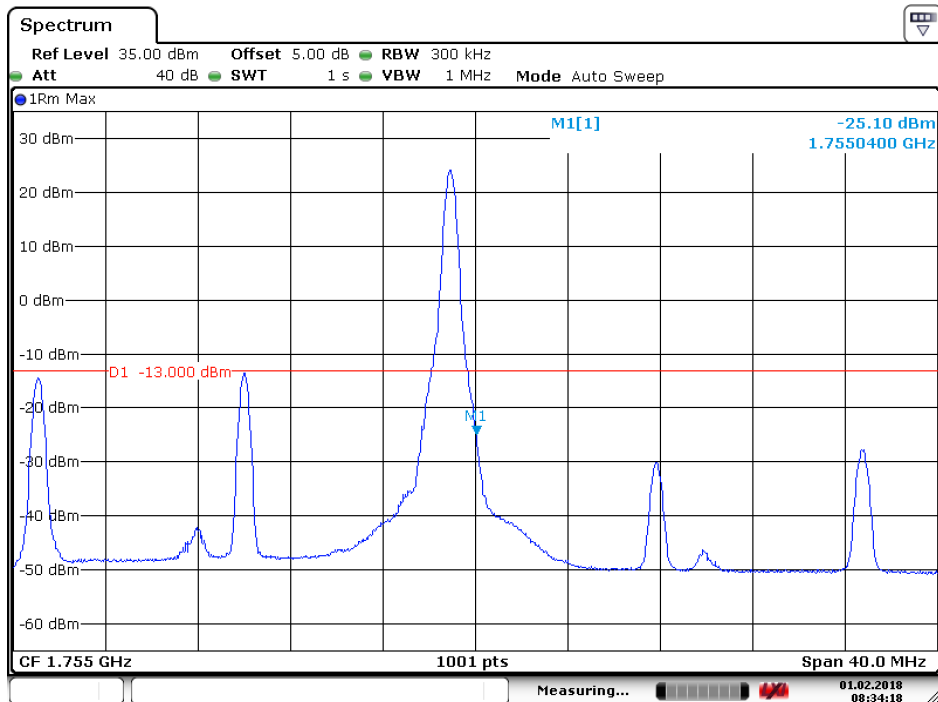
5.1.1.11.2 Test RB=100RB



Date: 1.FEB.2018 08:32:44

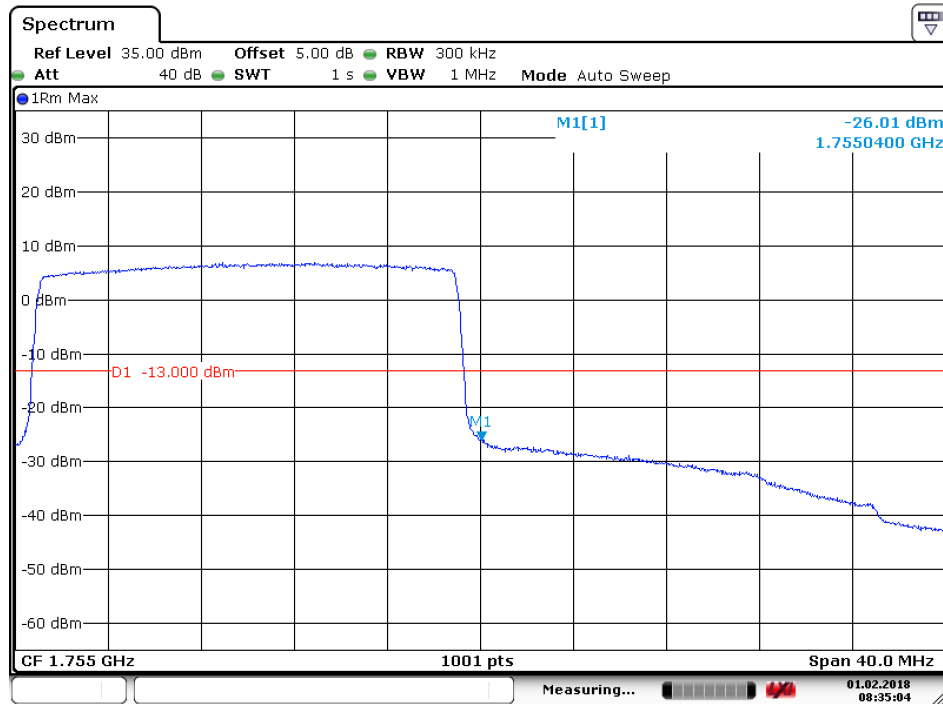
5.1.1.11.2 Test Channel = HCH

5.1.1.11.2.1 Test RB=1RB



Date: 1.FEB.2018 08:34:19

5.1.1.11.2.2 Test RB=100RB

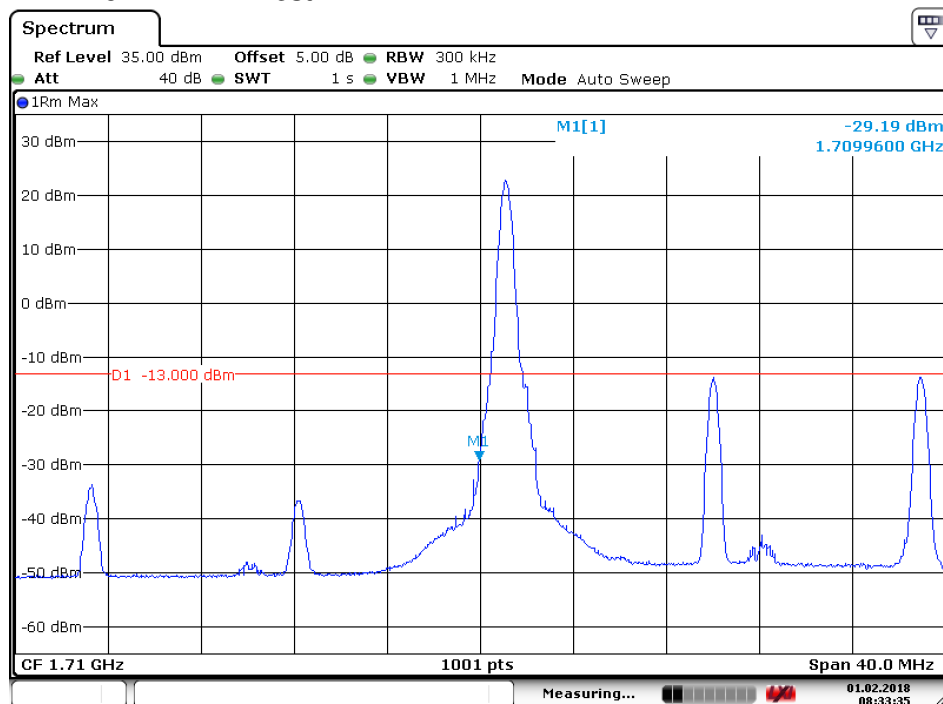


Date: 1.FEB.2018 08:35:04

5.1.1.12 Test Mode = LTE/TM2 20MHz

5.1.1.12.1 Test Channel = LCH

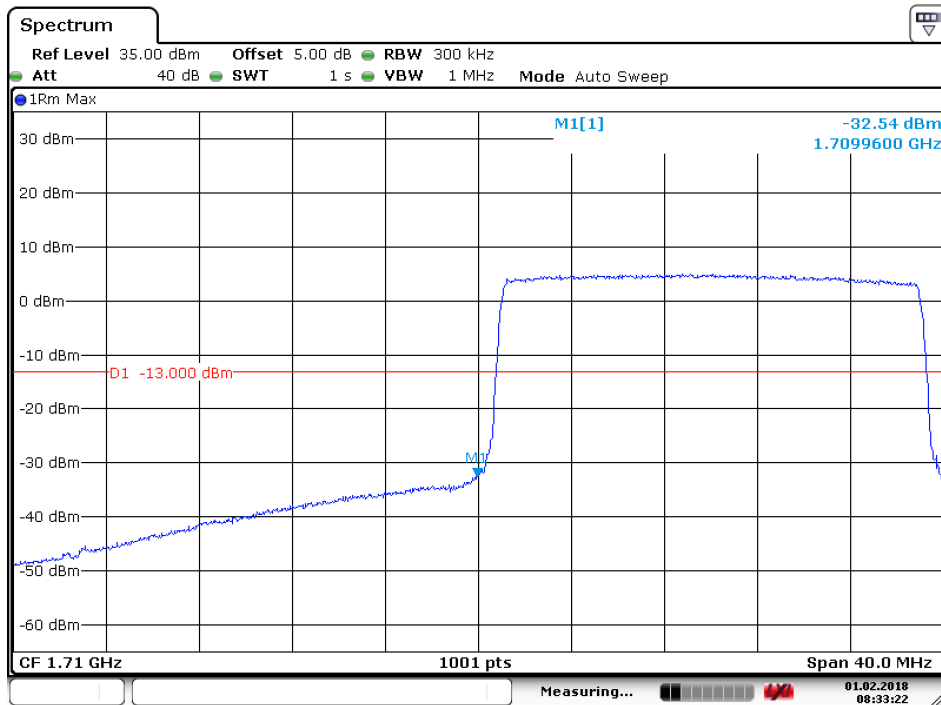
5.1.1.12.1.1 Test RB=1RB



Date: 1.FEB.2018 08:33:36



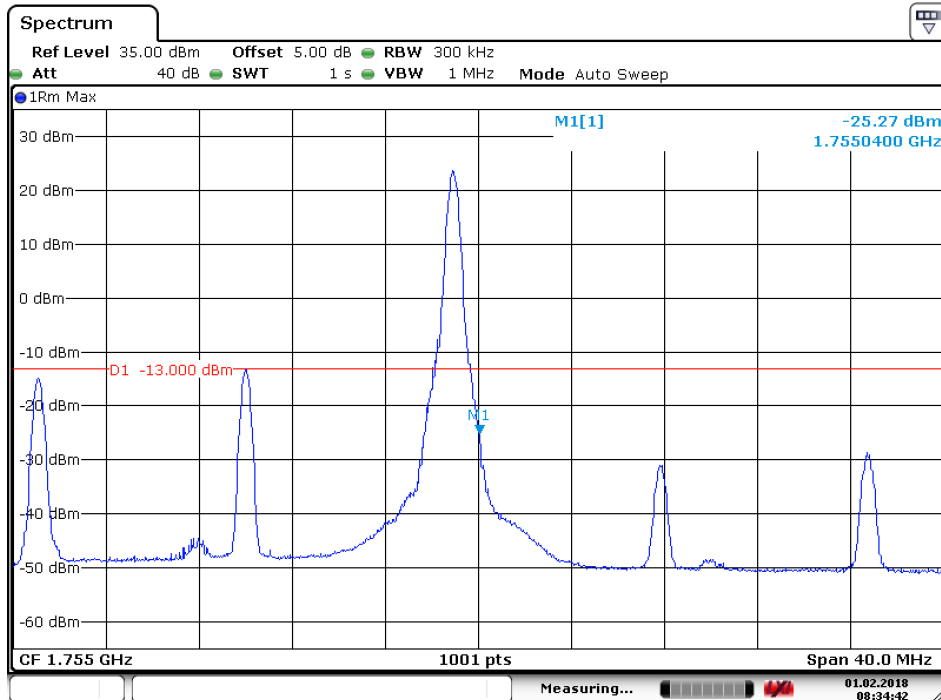
5.1.1.12.1.2 Test RB=100RB



Date: 1.FEB.2018 08:33:23

5.1.1.12.2 Test Channel = HCH

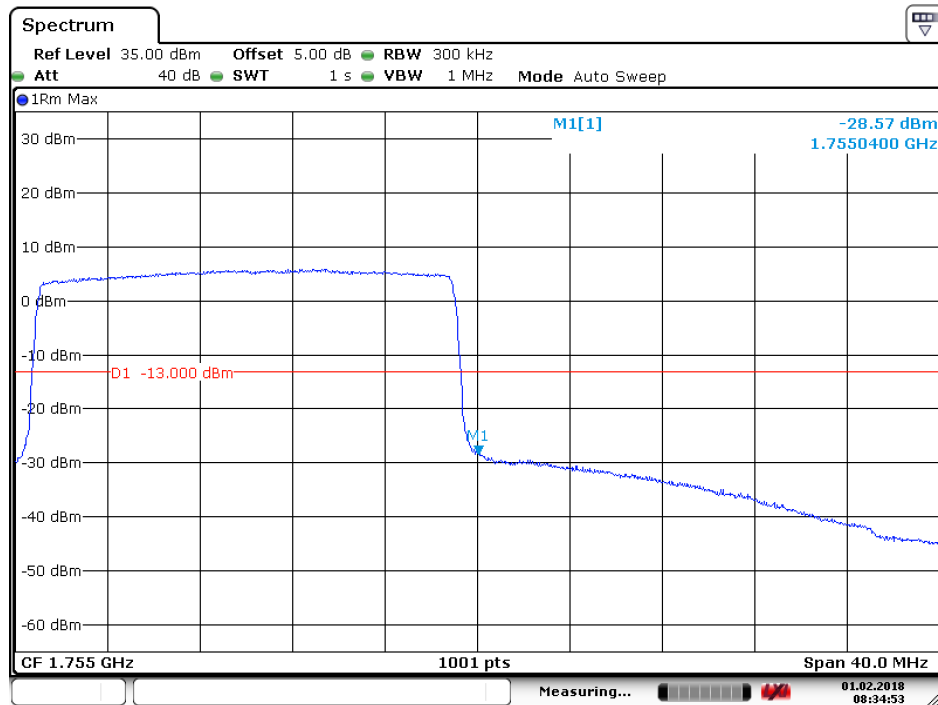
5.1.1.12.2.1 Test RB=1RB



Date: 1.FEB.2018 08:34:42



5.1.1.12.2.2 Test RB=100RB



Date: 1.FEB.2018 08:34:53



6 Spurious Emission at Antenna Terminal

NOTE: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of $< RBW/2$ so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points = $k \cdot (\text{Span} / RBW)$ " with k between 4 and 5, which results in an acceptable level error of less than 0.5 dB.

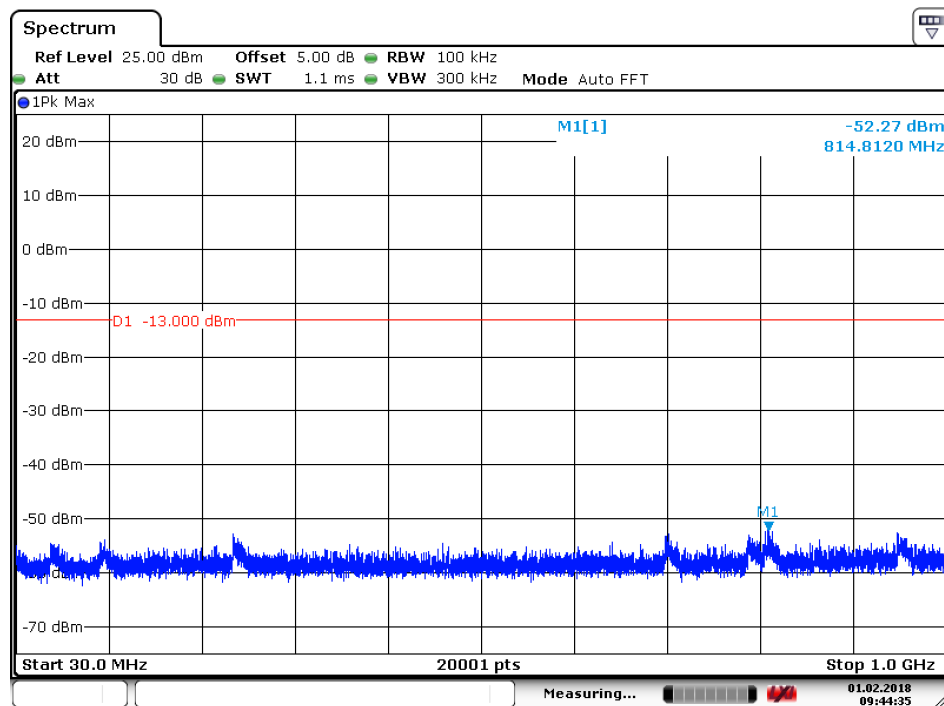
Part I - Test Plots

6.1 For LTE

6.1.1 Test Band = LTE band4

6.1.1.1 Test Mode = LTE / TM1 20MHz RB1#0

6.1.1.1.1 Test Channel = LCH



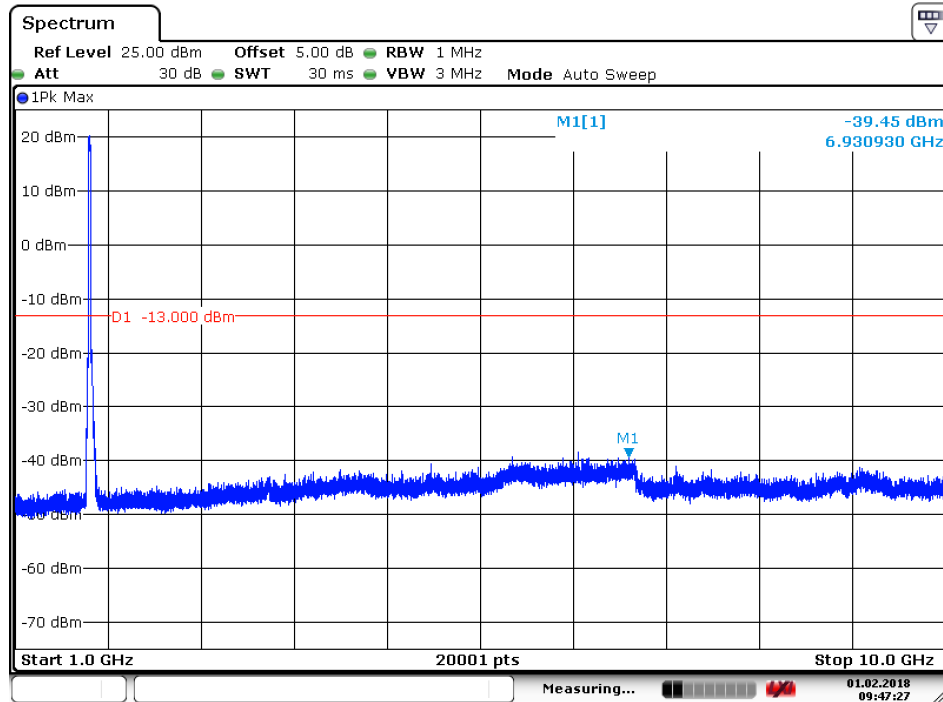
Date: 1.FEB.2018 09:44:35



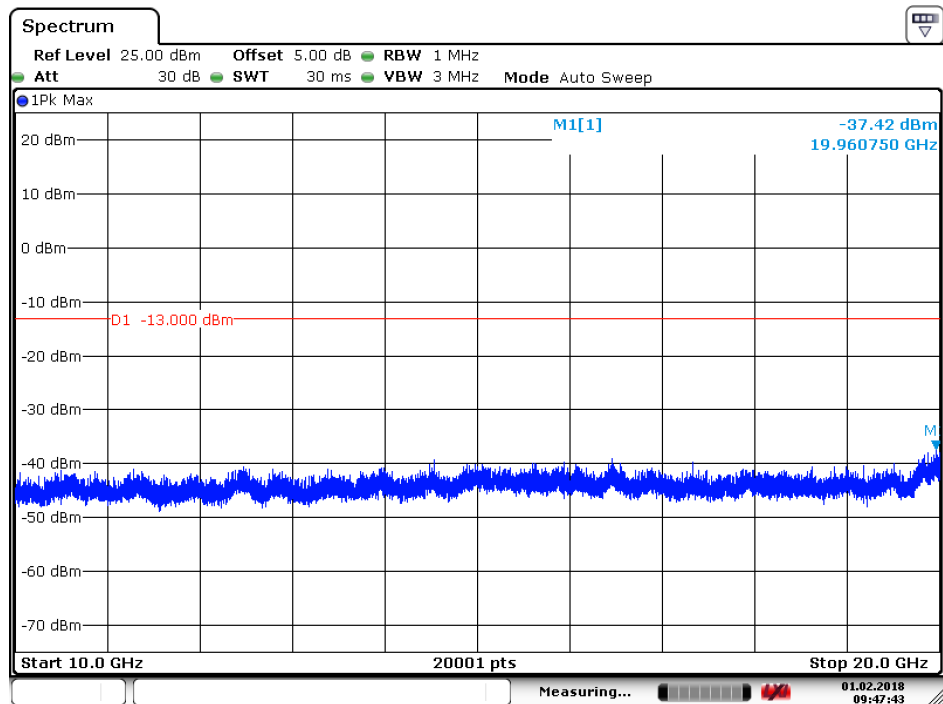
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZEM171201298701

Page: 68 of 75



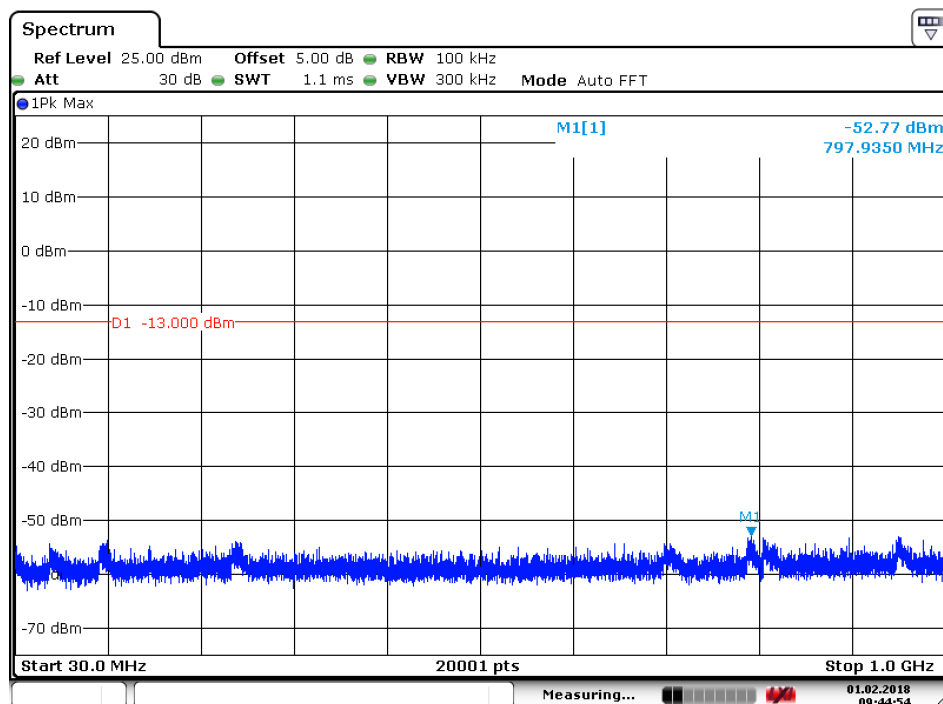
Date: 1.FEB.2018 09:47:27



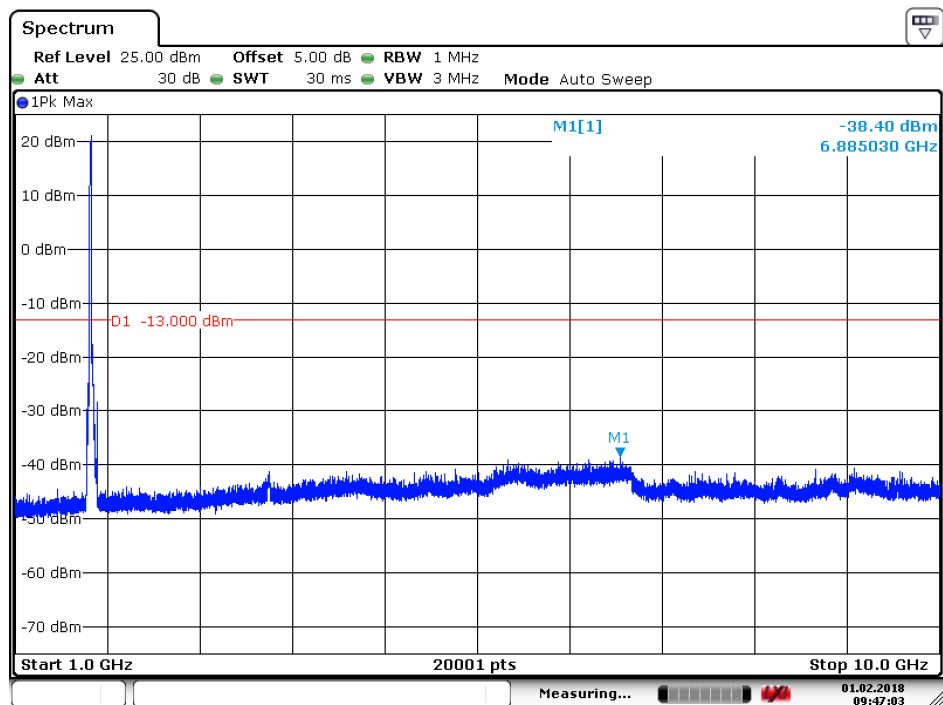
Date: 1.FEB.2018 09:47:44



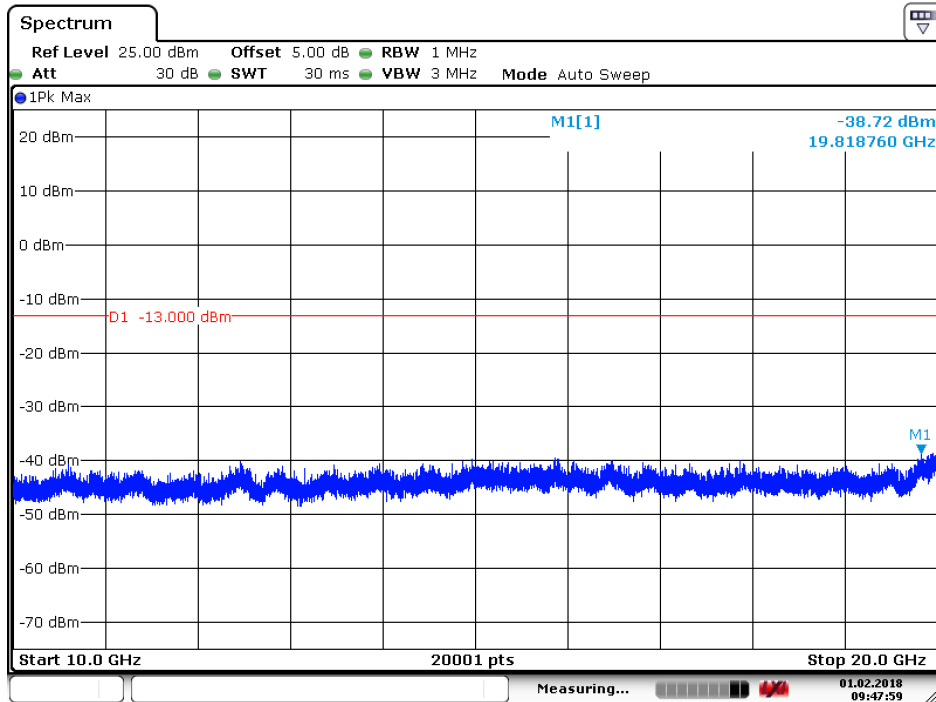
6.1.1.1.2 Test Channel = MCH



Date: 1.FEB.2018 09:44:54

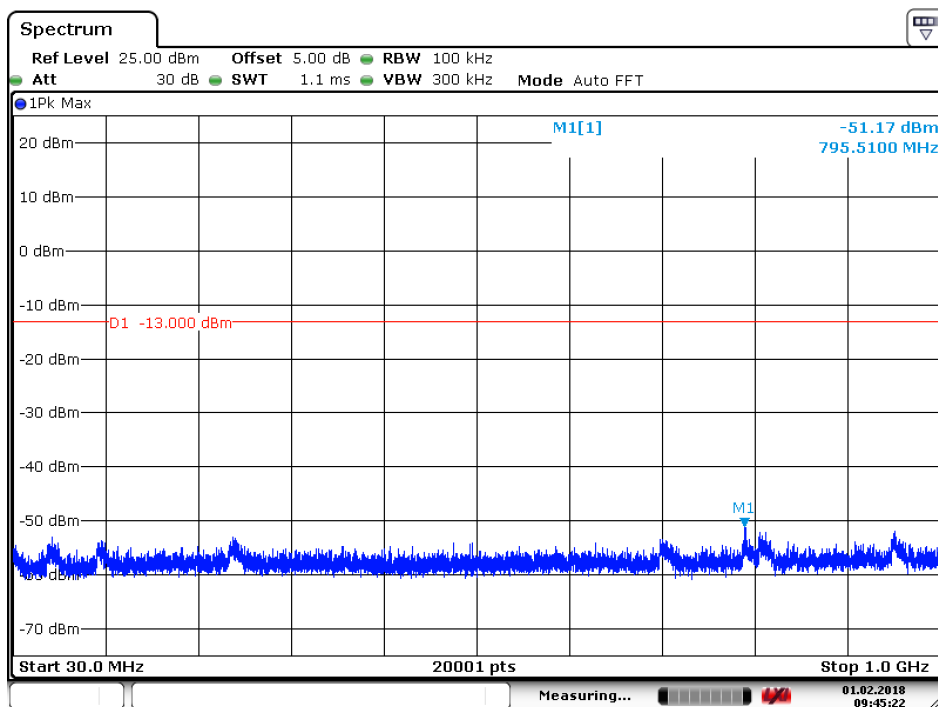


Date: 1.FEB.2018 09:47:03



Date: 1.FEB.2018 09:48:00

6.1.1.1.3 Test Channel = HCH



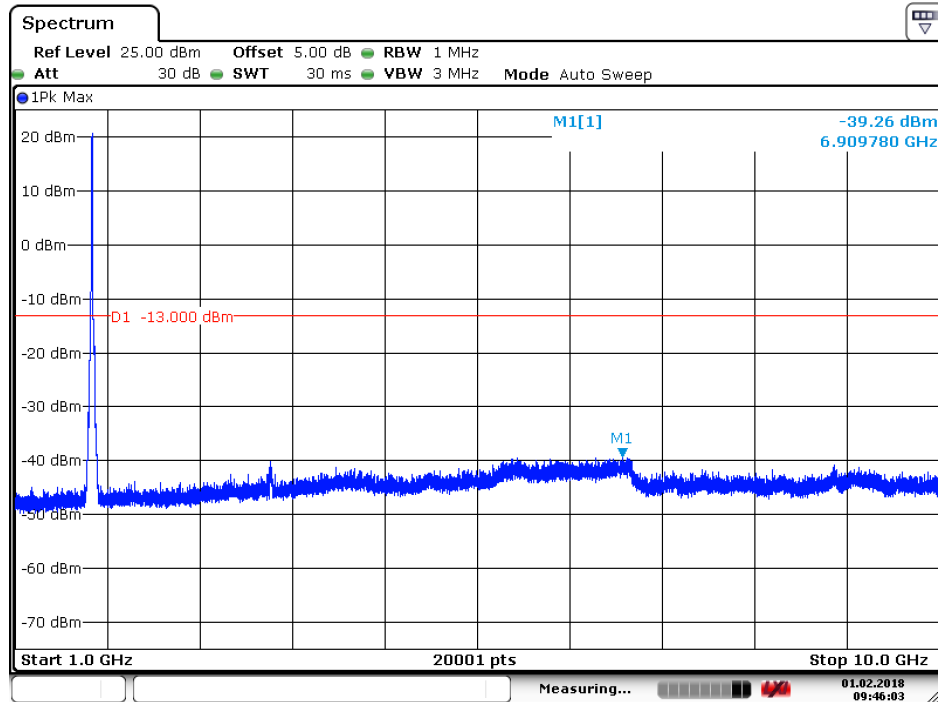
Date: 1.FEB.2018 09:45:22



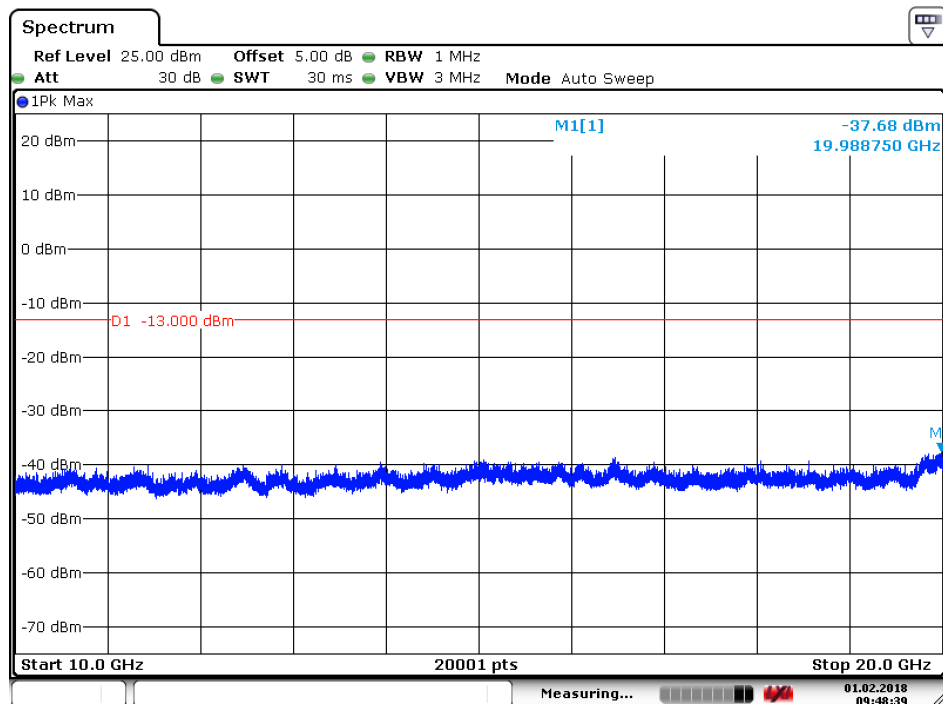
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZEM171201298701

Page: 71 of 75



Date: 1.FEB.2018 09:46:03



Date: 1.FEB.2018 09:48:39



7 Field Strength of Spurious Radiation

7.1 For LTE

7.1.1 Test Band = LTE band4

7.1.1.1 Test Mode =LTE/TM1 20MHz RB1#0

7.1.1.1.1 Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1199.500000	-66.32	-13.00	53.32	Vertical
1568.000000	-66.35	-13.00	53.35	Vertical
2543.000000	-58.87	-13.00	45.87	Vertical
4454.700000	-67.87	-13.00	54.87	Vertical
5487.875000	-66.66	-13.00	53.66	Vertical
6531.125000	-65.62	-13.00	52.62	Vertical
1200.000000	-67.06	-13.00	54.06	Horizontal
1623.000000	-65.59	-13.00	52.59	Horizontal
2679.000000	-57.71	-13.00	44.71	Horizontal
3543.725000	-68.84	-13.00	55.84	Horizontal
4936.675000	-66.67	-13.00	53.67	Horizontal
7240.925000	-64.85	-13.00	51.85	Horizontal

7.1.1.1.2 Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1100.000000	-66.52	-13.00	53.52	Vertical
1573.500000	-66.32	-13.00	53.32	Vertical
2602.500000	-58.11	-13.00	45.11	Vertical
3744.250000	-68.21	-13.00	55.21	Vertical
5222.025000	-66.68	-13.00	53.68	Vertical
7040.725000	-64.76	-13.00	51.76	Vertical
1388.500000	-67.46	-13.00	54.46	Horizontal
1667.000000	-65.19	-13.00	52.19	Horizontal
2580.500000	-58.84	-13.00	45.84	Horizontal
4206.400000	-67.10	-13.00	54.10	Horizontal
5222.350000	-66.71	-13.00	53.71	Horizontal
6572.400000	-65.20	-13.00	52.20	Horizontal



SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZEM171201298701

Page: 73 of 75

7.1.1.1.3 Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1224.500000	-66.21	-13.00	53.21	Vertical
1576.500000	-65.98	-13.00	52.98	Vertical
2469.500000	-58.87	-13.00	45.87	Vertical
3705.575000	-68.53	-13.00	55.53	Vertical
4720.875000	-66.64	-13.00	53.64	Vertical
7492.150000	-65.13	-13.00	52.13	Vertical
1271.000000	-67.45	-13.00	54.45	Horizontal
1622.500000	-65.61	-13.00	52.61	Horizontal
2580.500000	-58.88	-13.00	45.88	Horizontal
3725.725000	-68.59	-13.00	55.59	Horizontal
4754.025000	-66.96	-13.00	53.96	Horizontal
7731.350000	-64.83	-13.00	51.83	Horizontal

NOTE:

- 1) The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.



8 Frequency Stability

8.1 Frequency Error VS. Voltage

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband4	LTE/TM1 20MHz	LCH	TN	VL	-2.03	-0.00118	PASS
				VN	2.46	0.00143	PASS
				VH	-7.73	-0.00449	PASS
		MCH	TN	VL	1.49	0.00086	PASS
				VN	-2.84	-0.00164	PASS
				VH	2.63	0.00152	PASS
		HCH	TN	VL	-6.42	-0.00368	PASS
				VN	-5.17	-0.00296	PASS
				VH	-2.49	-0.00143	PASS
	LTE/TM2 20MHz	LCH	TN	VL	-4.28	-0.00249	PASS
				VN	0.33	0.00019	PASS
				VH	-5.10	-0.00297	PASS
		MCH	TN	VL	1.56	0.00090	PASS
				VN	-2.80	-0.00162	PASS
				VH	2.59	0.00149	PASS
		HCH	TN	VL	-3.08	-0.00177	PASS
				VN	-6.21	-0.00356	PASS
				VH	4.98	0.00285	PASS



8.2 Frequency Error VS. Temperature

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband4	LTE/TM1 20MHz	LCH	VN	-30	-4.40	-0.00256	PASS
				-20	-1.34	-0.00078	PASS
				-10	2.38	0.00138	PASS
				0	1.75	0.00102	PASS
				10	1.65	0.00096	PASS
				20	3.11	0.00181	PASS
				30	5.31	0.00309	PASS
				40	-0.14	-0.00008	PASS
				50	2.59	0.00151	PASS
		MCH	VN	-30	-7.80	-0.00450	PASS
				-20	-2.95	-0.00170	PASS
				-10	-7.49	-0.00432	PASS
				0	-5.62	-0.00324	PASS
				10	-4.04	-0.00233	PASS
				20	-3.94	-0.00227	PASS
				30	-5.66	-0.00327	PASS
				40	-4.00	-0.00231	PASS
				50	-6.92	-0.00399	PASS
		HCH	VN	-30	2.54	0.00146	PASS
				-20	-3.43	-0.00197	PASS
				-10	1.53	0.00088	PASS
				0	-2.83	-0.00162	PASS
				10	4.60	0.00264	PASS
				20	-0.57	-0.00033	PASS
				30	-2.66	-0.00152	PASS
				40	4.43	0.00254	PASS
				50	-7.90	-0.00453	PASS

The End