

Appendix B

E-UTRA Band 30

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1 Effective (Isotropic) Radiated Power Output Data

Effective Isotropic Radiated Power of Transmitter (EIRP) for LTE BAND 30

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND 30	LTE/TM1	5M	LCH	RB1#0	23.30	23.30	24.00	PASS
				RB1#13	23.38	23.38	24.00	PASS
				RB1#24	23.31	23.31	24.00	PASS
				RB12#0	22.51	22.51	24.00	PASS
				RB12#6	22.52	22.52	24.00	PASS
				RB12#13	22.46	22.46	24.00	PASS
				RB25#0	22.40	22.40	24.00	PASS
			MCH	RB1#0	23.43	23.43	24.00	PASS
				RB1#13	23.53	23.53	24.00	PASS
				RB1#24	23.45	23.45	24.00	PASS
				RB12#0	22.39	22.39	24.00	PASS
				RB12#6	22.54	22.54	24.00	PASS
				RB12#13	22.45	22.45	24.00	PASS
				RB25#0	22.44	22.44	24.00	PASS
			HCH	RB1#0	23.38	23.38	24.00	PASS
				RB1#13	23.44	23.44	24.00	PASS
				RB1#24	23.18	23.18	24.00	PASS
				RB12#0	22.50	22.50	24.00	PASS
				RB12#6	22.48	22.48	24.00	PASS
				RB12#13	22.59	22.59	24.00	PASS
				RB25#0	22.39	22.39	24.00	PASS



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Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND 30	LTE/TM2	5M	LCH	RB1#0	22.79	22.79	24.00	PASS
				RB1#13	22.63	22.63	24.00	PASS
				RB1#24	22.38	22.38	24.00	PASS
				RB12#0	21.68	21.68	24.00	PASS
				RB12#6	21.57	21.57	24.00	PASS
				RB12#13	21.49	21.49	24.00	PASS
				RB25#0	21.52	21.52	24.00	PASS
			MCH	RB1#0	23.16	23.16	24.00	PASS
				RB1#13	23.08	23.08	24.00	PASS
				RB1#24	22.66	22.66	24.00	PASS
				RB12#0	21.57	21.57	24.00	PASS
				RB12#6	21.46	21.46	24.00	PASS
				RB12#13	21.29	21.29	24.00	PASS
				RB25#0	21.47	21.47	24.00	PASS
			HCH	RB1#0	22.71	22.71	24.00	PASS
				RB1#13	22.48	22.48	24.00	PASS
				RB1#24	22.43	22.43	24.00	PASS
				RB12#0	21.56	21.56	24.00	PASS
				RB12#6	21.40	21.40	24.00	PASS
				RB12#13	21.50	21.50	24.00	PASS
				RB25#0	21.39	21.39	24.00	PASS



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Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND 30	LTE/TM3	5M	LCH	RB1#0	22.75	22.75	24.00	PASS
				RB1#13	22.64	22.64	24.00	PASS
				RB1#24	22.42	22.42	24.00	PASS
				RB12#0	21.48	21.48	24.00	PASS
				RB12#6	21.47	21.47	24.00	PASS
				RB12#13	21.29	21.29	24.00	PASS
				RB25#0	21.49	21.49	24.00	PASS
			MCH	RB1#0	22.50	22.50	24.00	PASS
				RB1#13	22.36	22.36	24.00	PASS
				RB1#24	22.36	22.36	24.00	PASS
				RB12#0	21.38	21.38	24.00	PASS
				RB12#6	21.37	21.37	24.00	PASS
				RB12#13	21.29	21.29	24.00	PASS
				RB25#0	21.38	21.38	24.00	PASS
			HCH	RB1#0	22.52	22.52	24.00	PASS
				RB1#13	22.30	22.30	24.00	PASS
				RB1#24	22.38	22.38	24.00	PASS
				RB12#0	21.38	21.38	24.00	PASS
				RB12#6	21.37	21.37	24.00	PASS
				RB12#13	21.30	21.30	24.00	PASS
				RB25#0	21.26	21.26	24.00	PASS

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
	LTE/TM1	10M	MCH	RB1#0	23.54	23.54	24.00	PASS
				RB1#25	23.24	23.24	24.00	PASS
				RB1#49	23.21	23.21	24.00	PASS
				RB25#0	22.52	22.52	24.00	PASS
				RB25#13	22.54	22.54	24.00	PASS
				RB25#25	22.38	22.38	24.00	PASS
				RB50#0	22.54	22.54	24.00	PASS
BAND 30	LTE/TM2	10M	MCH	RB1#0	23.05	23.05	24.00	PASS
				RB1#25	22.66	22.66	24.00	PASS
				RB1#49	22.49	22.49	24.00	PASS
				RB25#0	21.61	21.61	24.00	PASS
				RB25#13	21.54	21.54	24.00	PASS
				RB25#25	21.48	21.48	24.00	PASS
				RB50#0	21.67	21.67	24.00	PASS
	LTE/TM3	10M	MCH	RB1#0	22.62	22.62	24.00	PASS
				RB1#25	22.29	22.29	24.00	PASS
				RB1#49	22.33	22.33	24.00	PASS
				RB25#0	21.44	21.44	24.00	PASS
				RB25#13	21.28	21.28	24.00	PASS
				RB25#25	21.31	21.31	24.00	PASS
				RB50#0	21.32	21.32	24.00	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

2 Peak-to-Average Ratio

Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
Band 30	TM1/10M	MCH	4.23	13	PASS
	TM2/10M	MCH	5.25	13	PASS
	TM3/10M	MCH	6.06	13	PASS

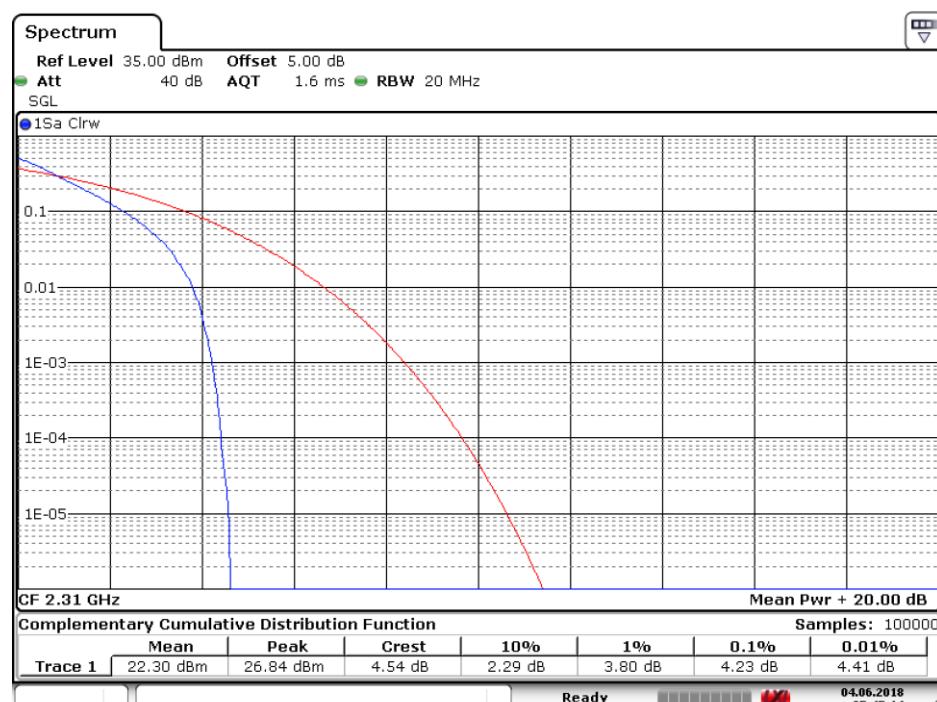
Part II - Test Plots

2.1 For LTE

2.1.1 Test Band = LTE BAND 30

2.1.1.1 Test Mode = LTE/TM1.Bandwidth=10MHz

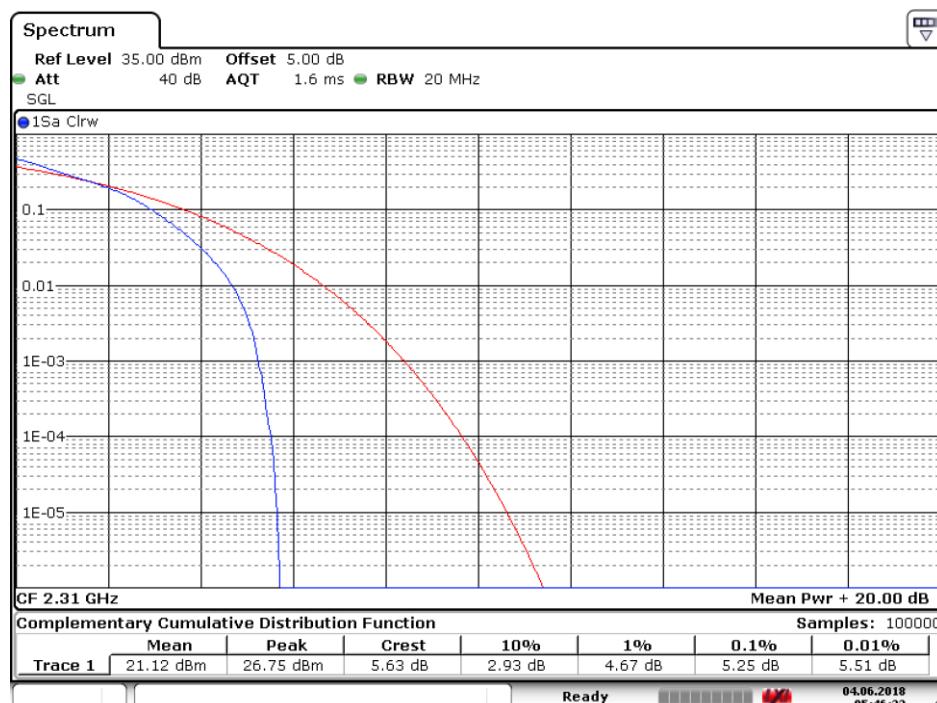
2.1.1.1.1 Test Channel = MCH



Date: 4.JUN.2018 05:45:14

2.1.1.2 Test Mode = LTE/TM2.Bandwidth=10MHz

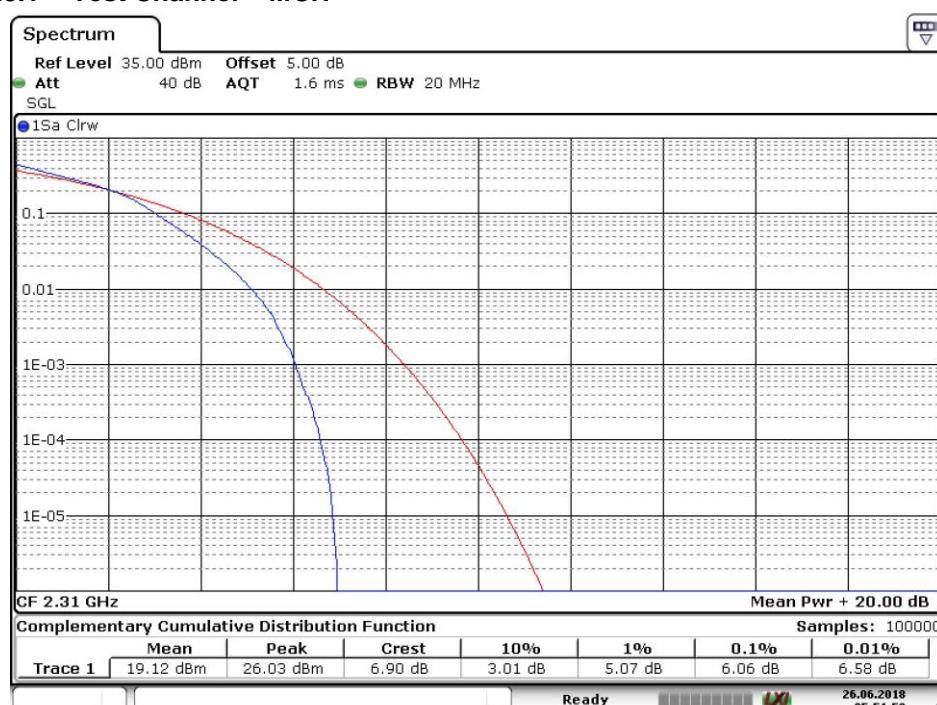
2.1.1.2.1 Test Channel = MCH



Date: 4.JUN.2018 05:46:23

2.1.1.3 Test Mode = LTE/TM3.Bandwidth=10MHz

2.1.1.3.1 Test Channel = MCH



Date: 26.JUN.2018 05:51:59

3 Modulation Characteristics

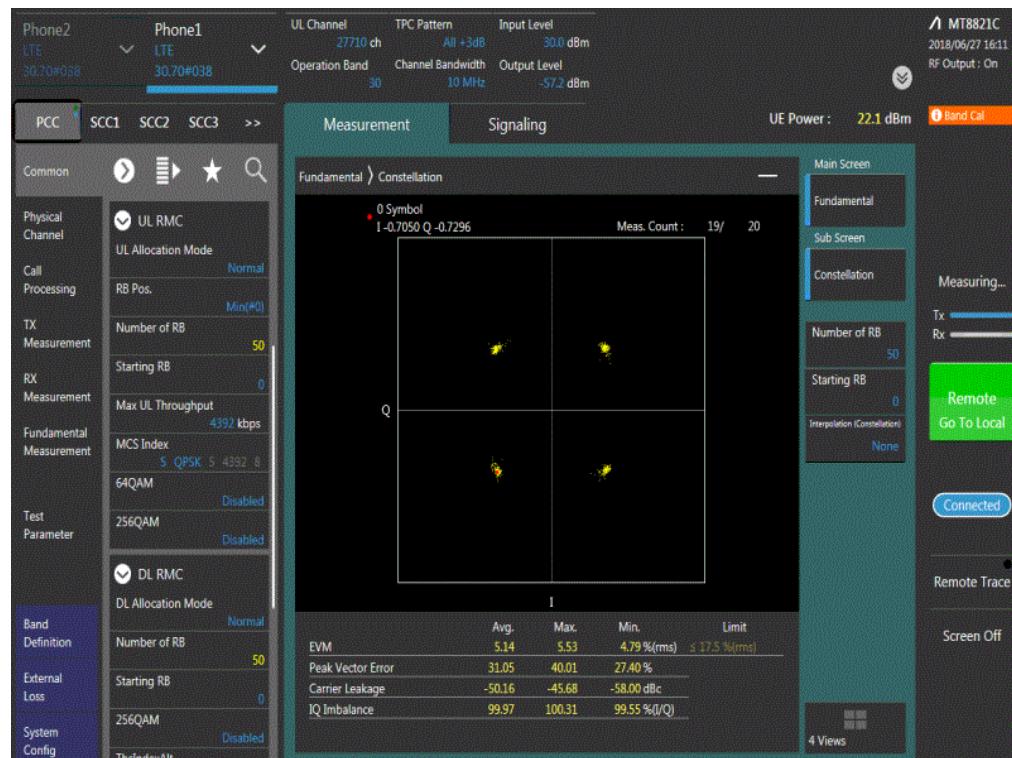
Part I - Test Plots

3.1 For LTE

3.1.1 Test Band = LTE BAND 30

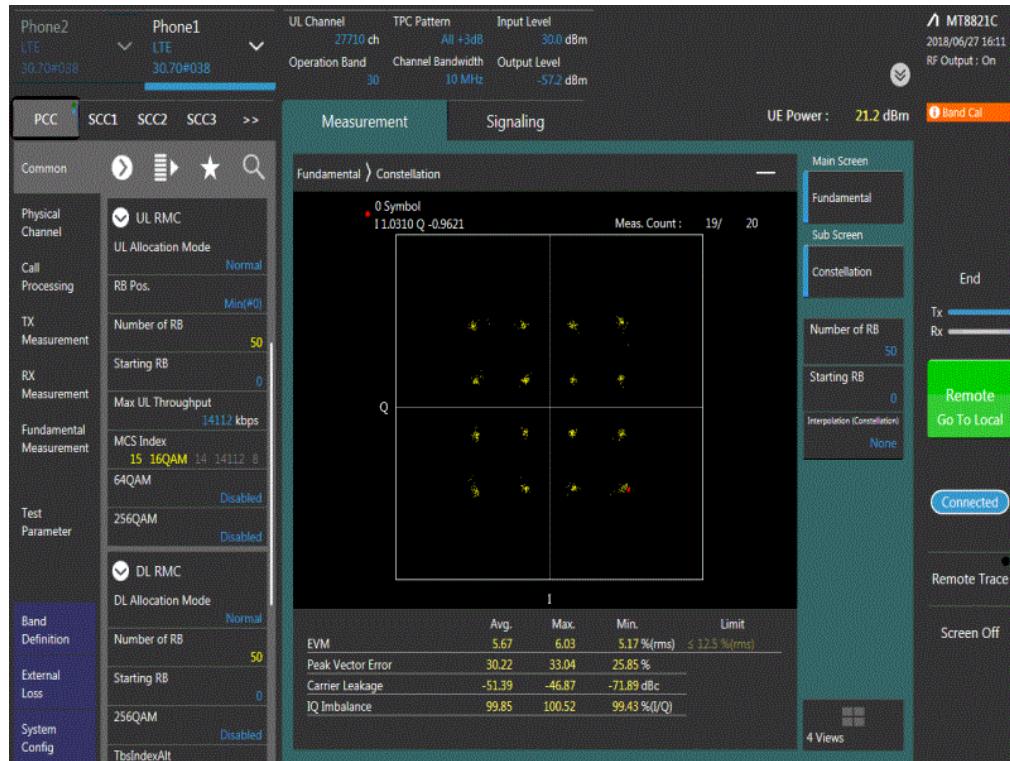
3.1.1.1 Test Mode = LTE /TM1 10MHz

3.1.1.1.1 Test Channel = MCH



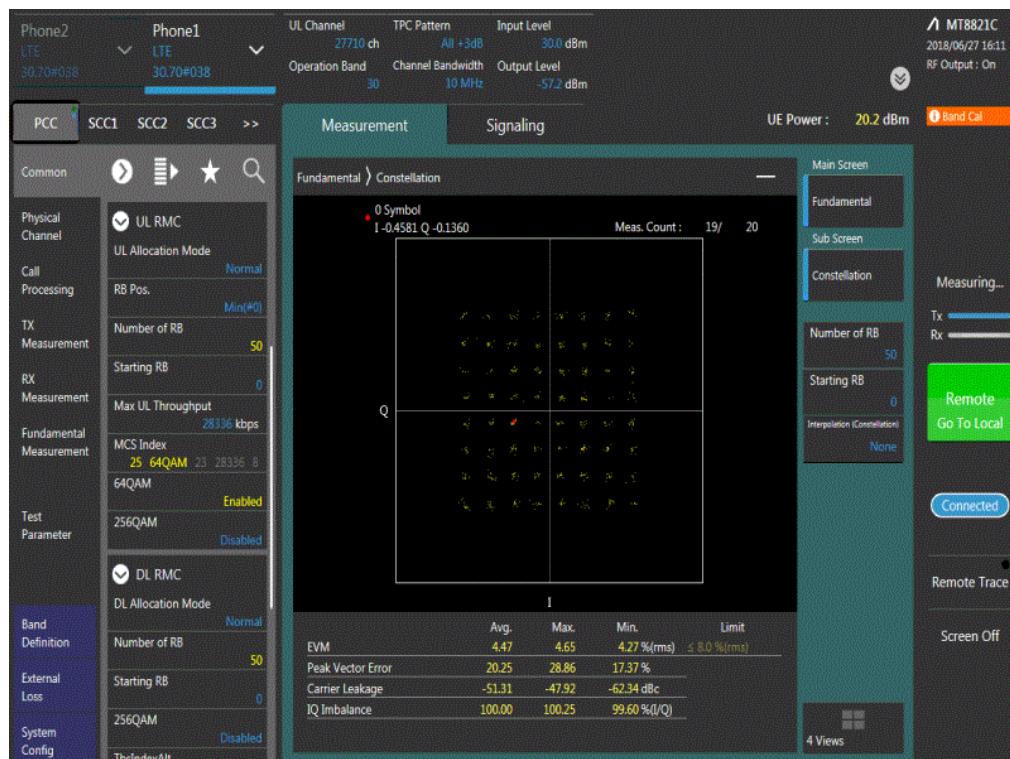
3.1.1.2 Test Mode = LTE /TM2 10MHz

3.1.1.2.1 Test Channel = MCH



3.1.1.3 Test Mode = LTE /TM3 10MHz

3.1.1.3.1 Test Channel = MCH



4 Bandwidth

Part I - Test Results

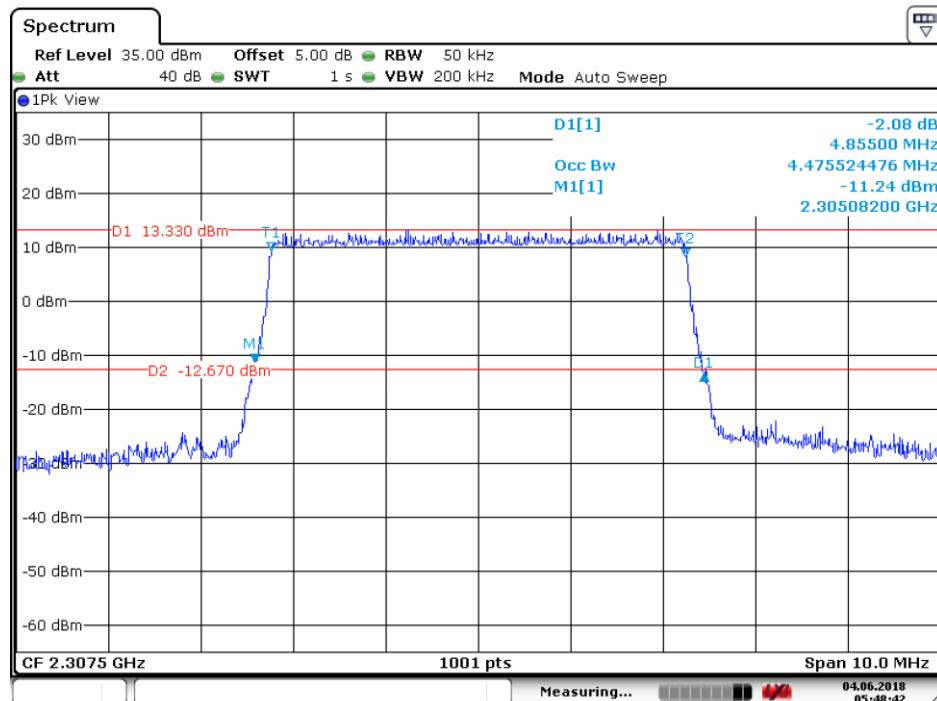
Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
Band 30	TM1/ 5MHz	LCH	4.48	4.86	PASS
		MCH	4.47	4.85	PASS
		HCH	4.48	4.87	PASS
	TM2/ 5MHz	LCH	4.48	4.90	PASS
		MCH	4.47	4.91	PASS
		HCH	4.47	4.79	PASS
	TM3/ 5MHz	LCH	4.47	4.86	PASS
		MCH	4.47	4.88	PASS
		HCH	4.47	4.84	PASS
	TM1/10MHz	MCH	8.93	9.59	PASS
	TM2/ 10MHz	MCH	8.93	9.63	PASS
	TM3/ 10MHz	MCH	8.93	9.69	PASS

4.1 For LTE

4.1.1 Test Band = LTE BAND 30

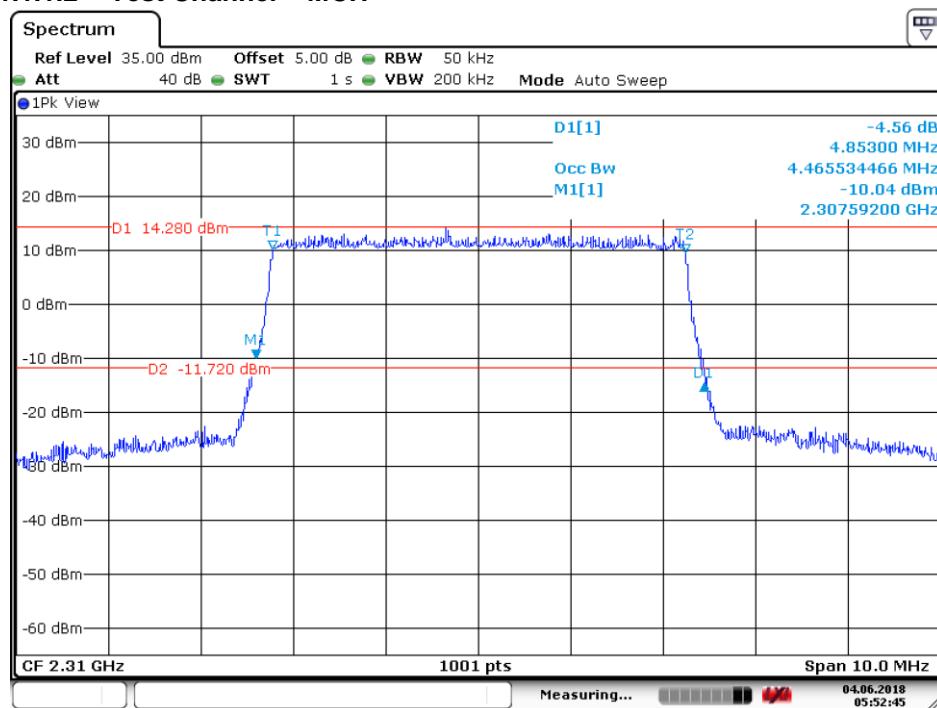
4.1.1.1 Test Mode = LTE/TM1 5MHz

4.1.1.1.1 Test Channel = LCH



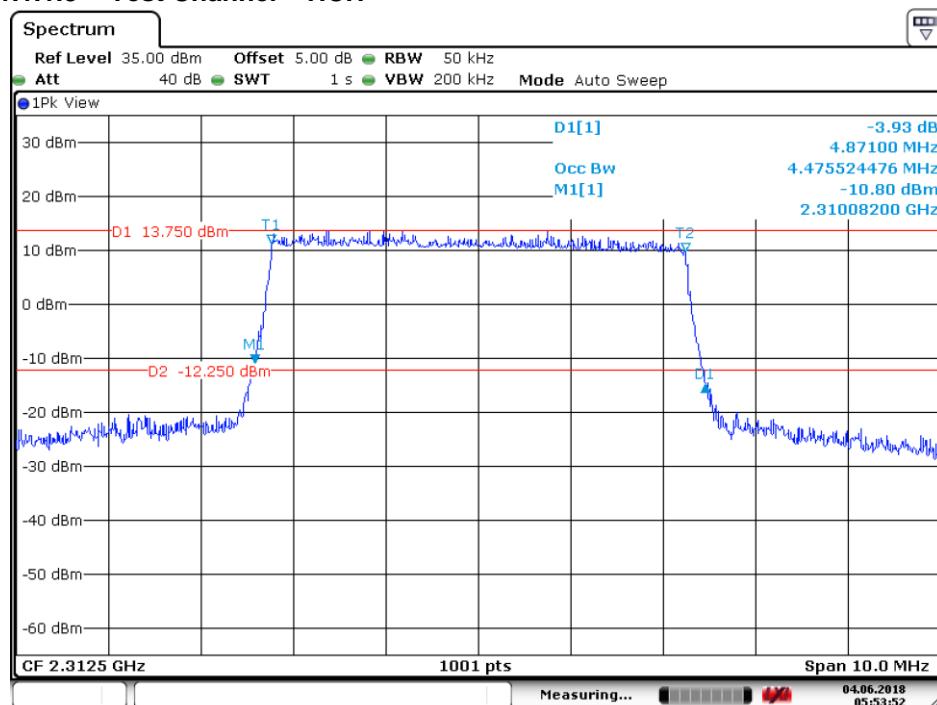
Date: 4.JUN.2018 05:48:42

4.1.1.1.2 Test Channel = MCH



Date: 4.JUN.2018 05:52:46

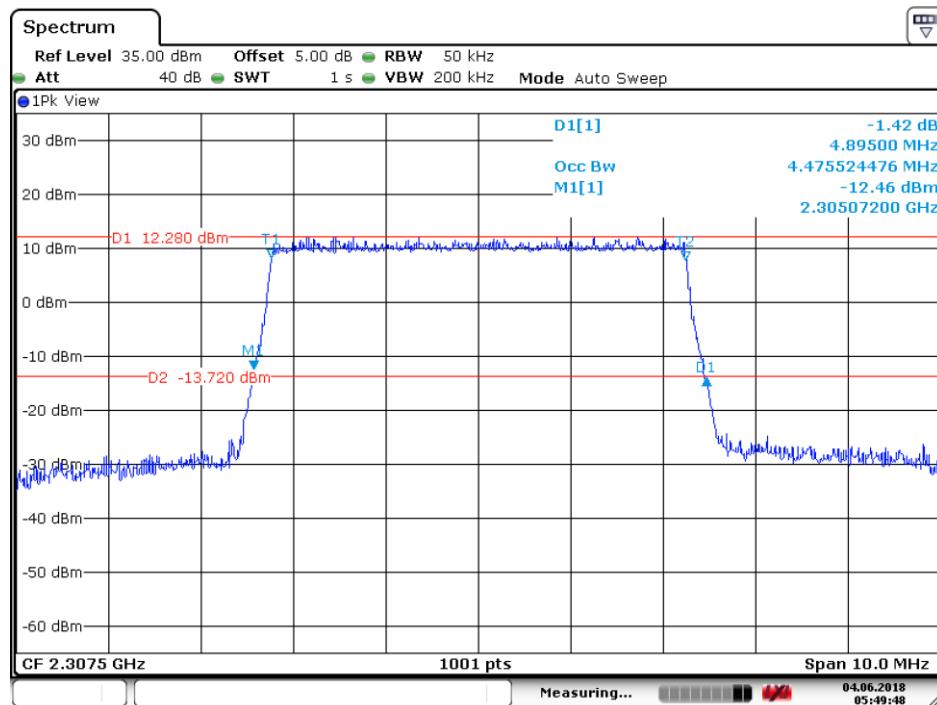
4.1.1.1.3 Test Channel = HCH



Date: 4.JUN.2018 05:53:52

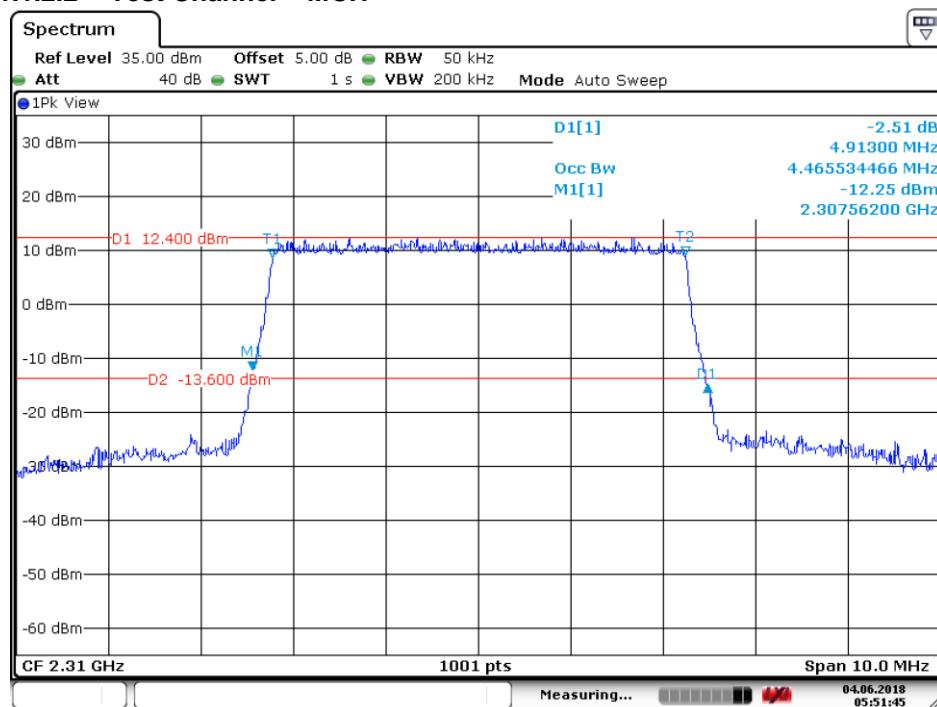
4.1.1.2 Test Mode = LTE/TM2 5MHz

4.1.1.2.1 Test Channel = LCH



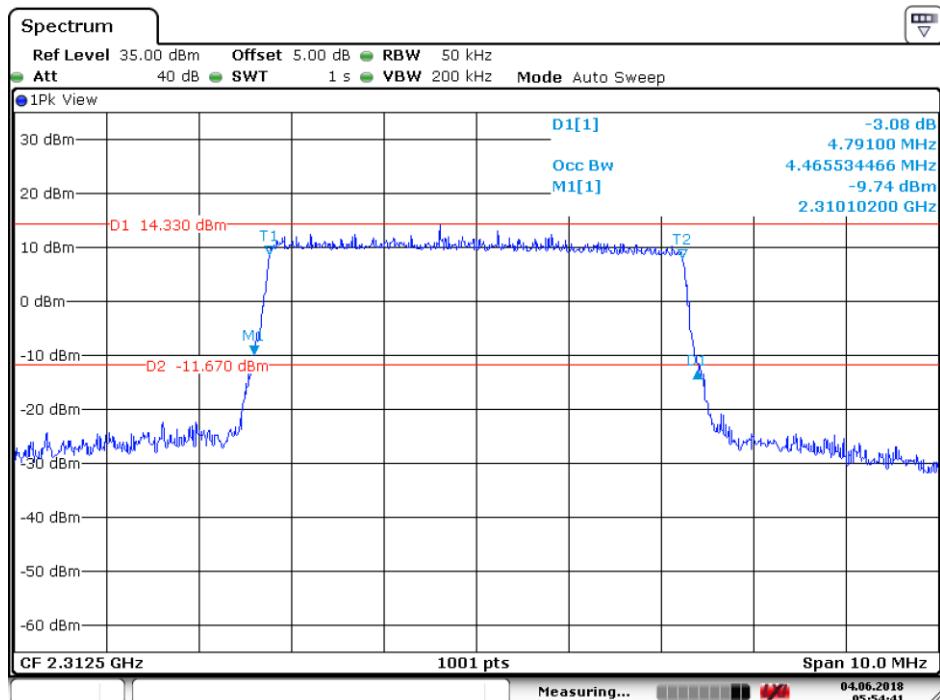
Date: 4.JUN.2018 05:49:48

4.1.1.2.2 Test Channel = MCH



Date: 4.JUN.2018 05:51:46

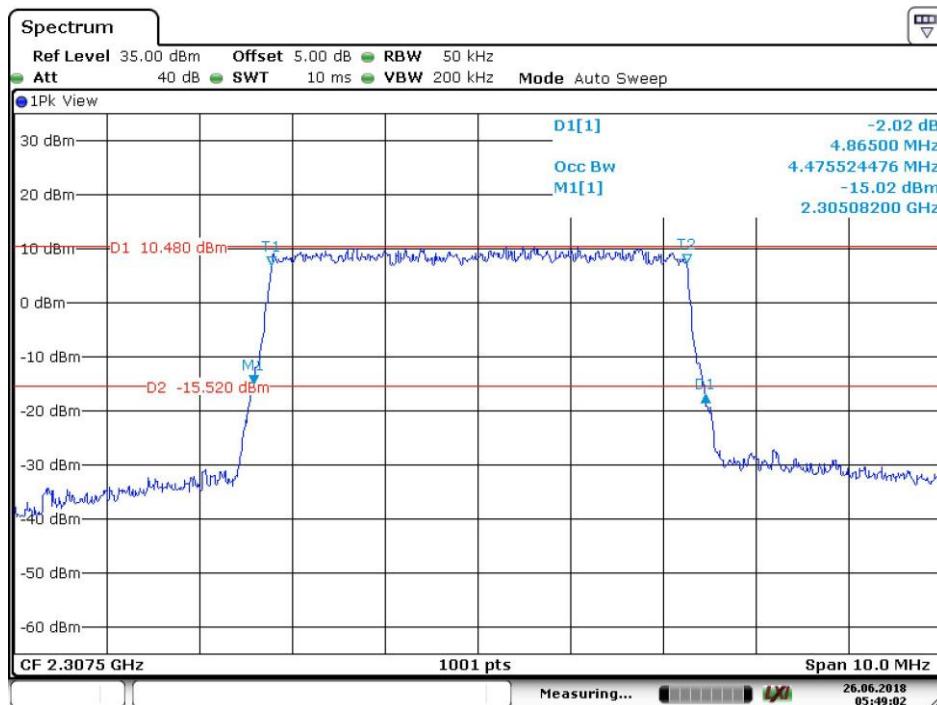
4.1.1.2.3 Test Channel = HCH



Date: 4.JUN.2018 05:54:41

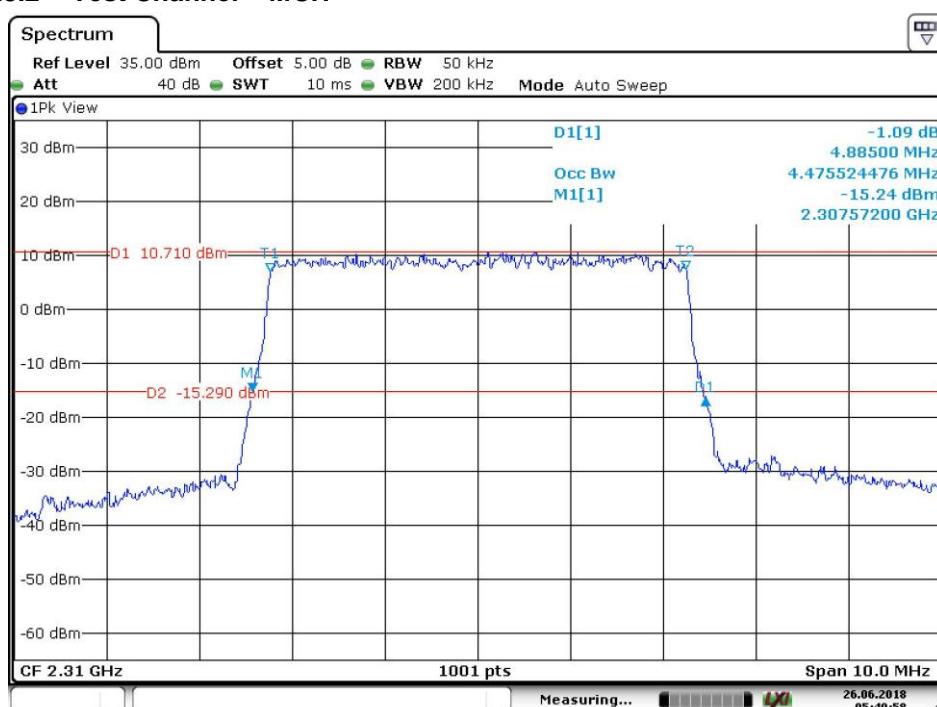
4.1.1.3 Test Mode = LTE/TM3 5MHz

4.1.1.3.1 Test Channel = LCH



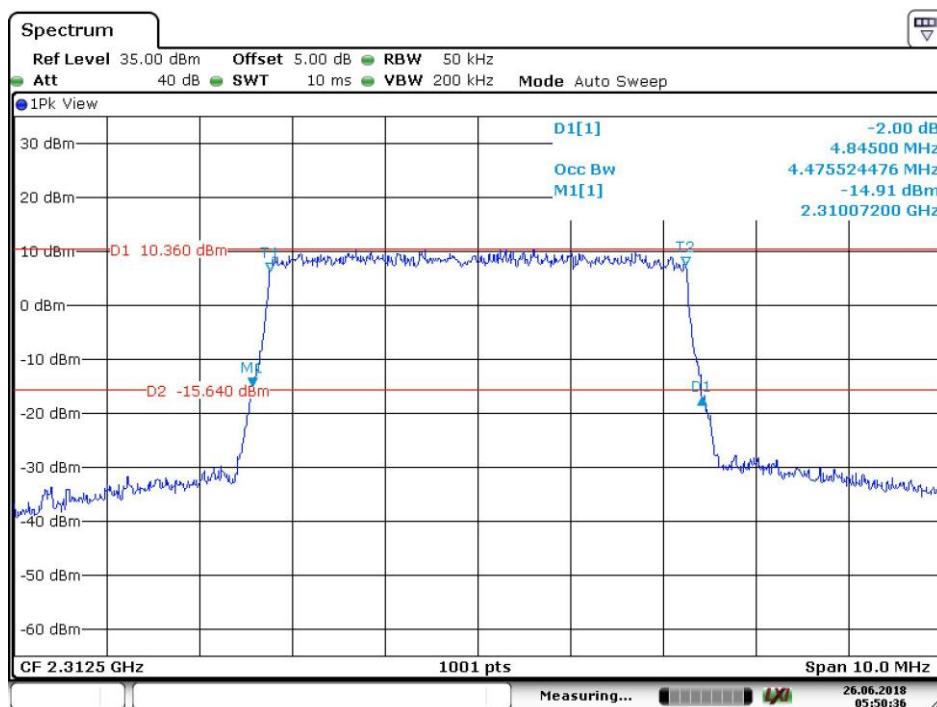
Date: 26.JUN.2018 05:49:03

4.1.1.3.2 Test Channel = MCH



Date: 26.JUN.2018 05:49:59

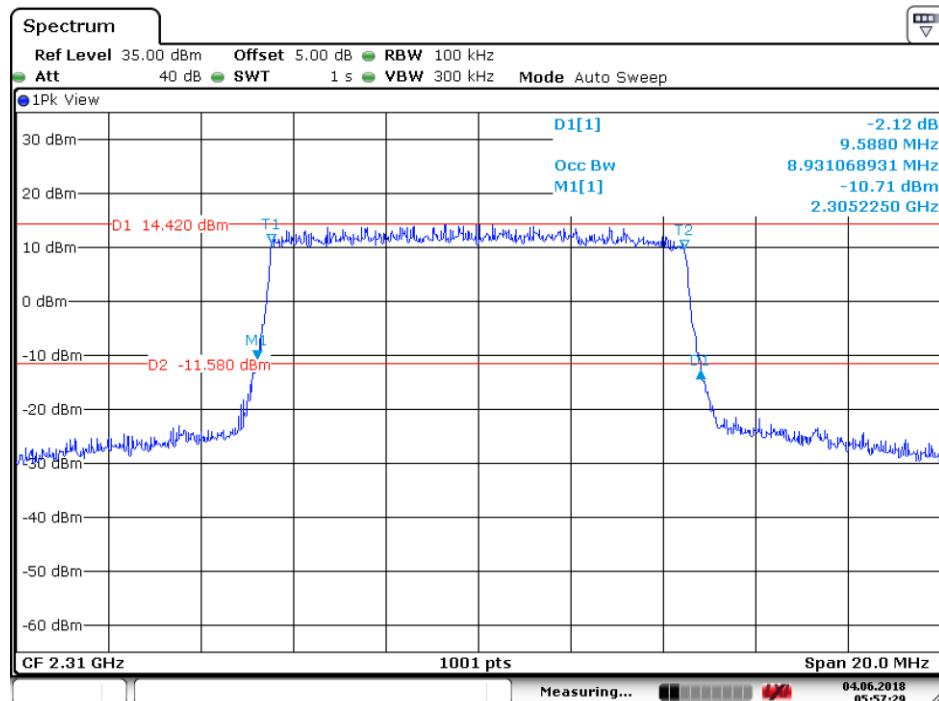
4.1.1.3.3 Test Channel = HCH



Date: 26.JUN.2018 05:50:37

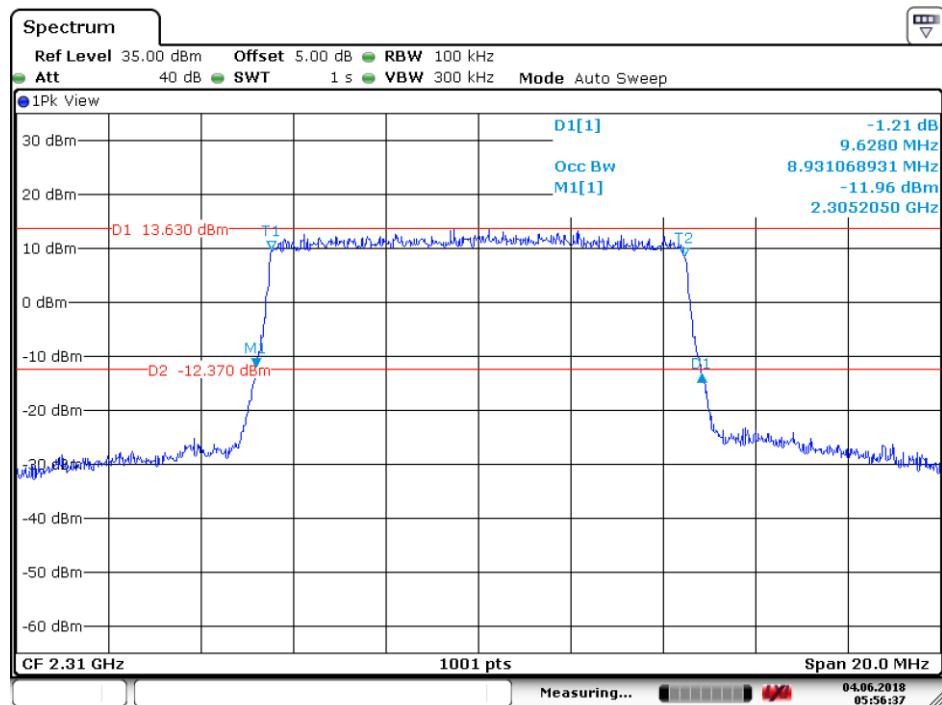
4.1.1.4 Test Mode = LTE/TM1 10MHz

4.1.1.4.1 Test Channel = MCH



4.1.1.5 Test Mode = LTE/TM2 10MHz

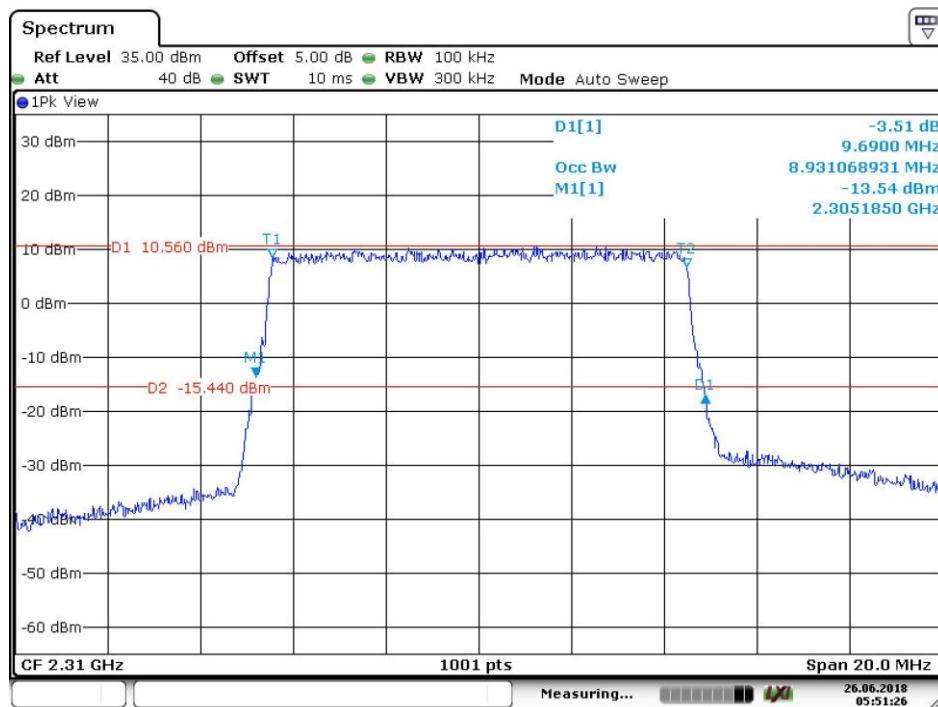
4.1.1.5.1 Test Channel = MCH



Date: 4.JUN 2018 05:56:38

4.1.1.6 Test Mode = LTE/TM3 10MHz

4.1.1.6.1 Test Channel = MCH



Date: 26.JUN.2018 05:51:27

5 Band Edges Compliance

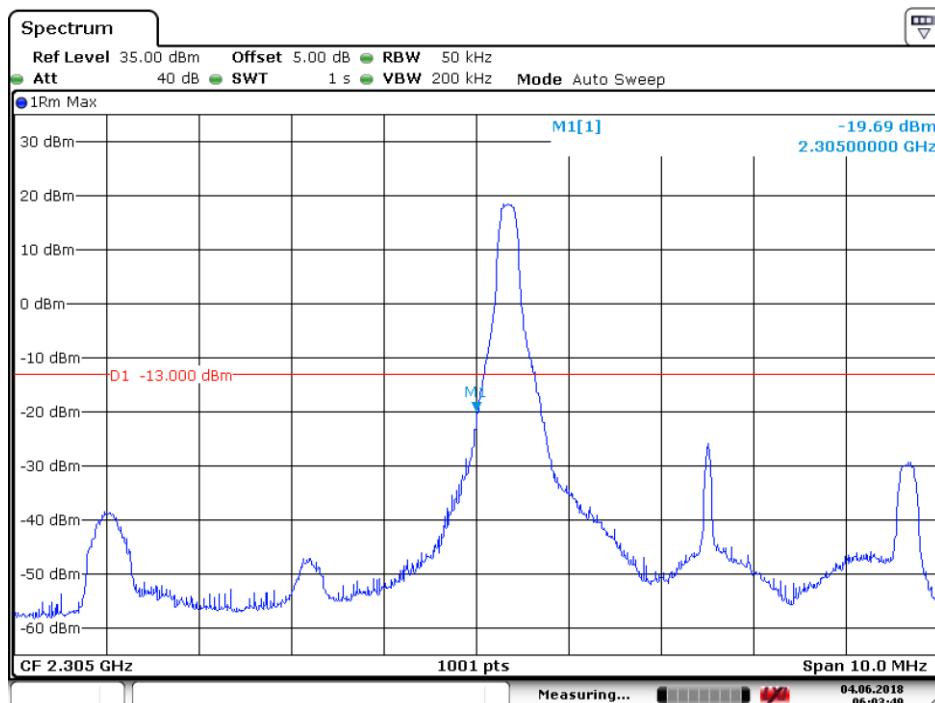
5.1 For LTE

5.1.1 Test Band = LTE BAND 30

5.1.1.1 Test Mode = LTE/TM1 5MHz

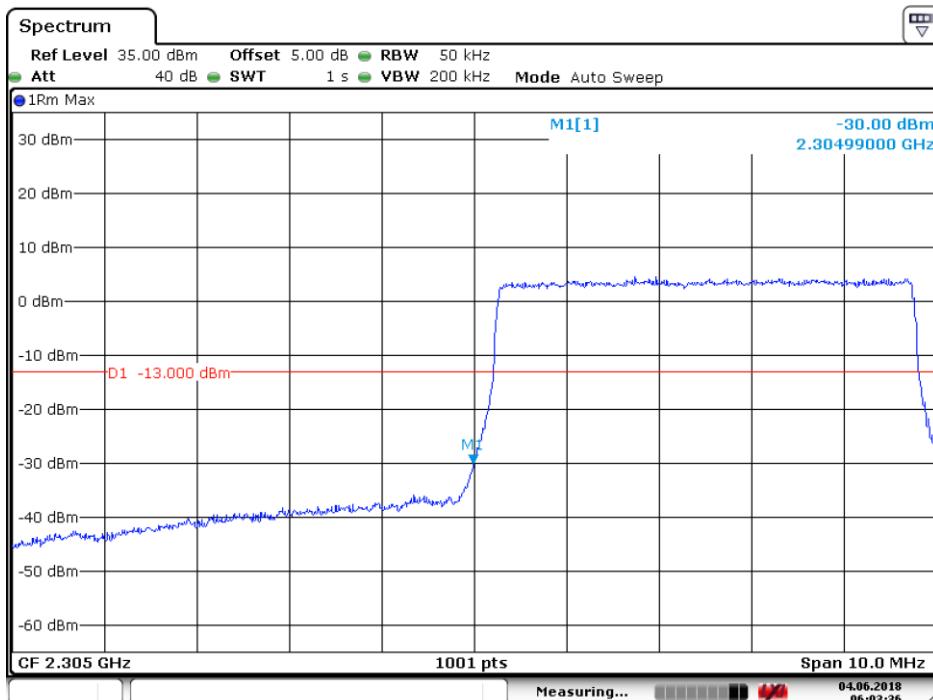
5.1.1.1.1 Test Channel = LCH

5.1.1.1.1.1 Test RB=1RB



Date: 4.JUN 2018 06:03:50

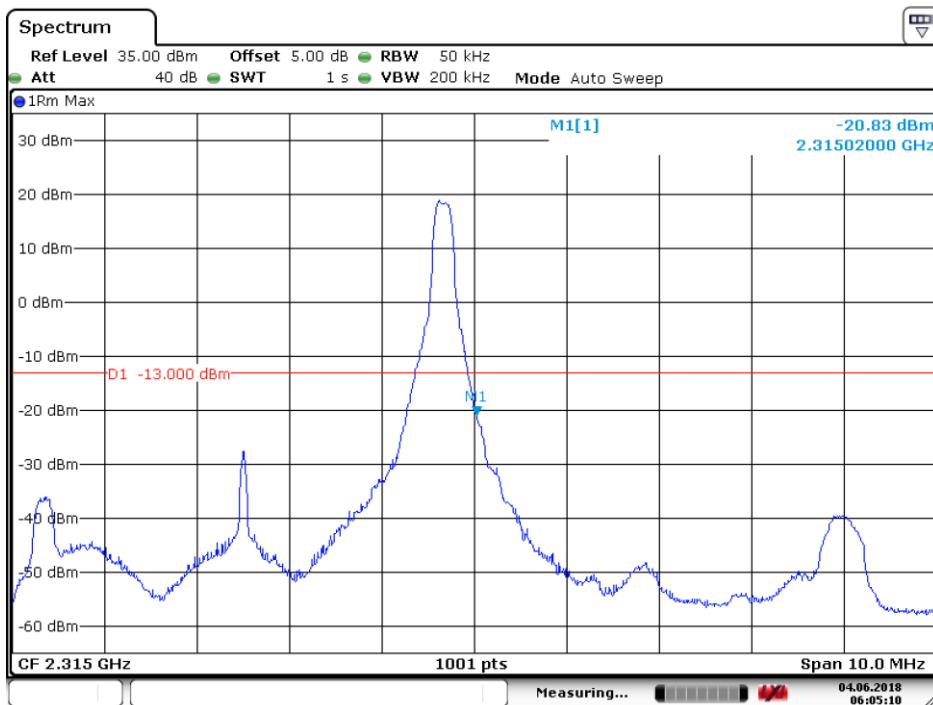
5.1.1.1.2 Test RB=25RB



Date: 4.JUN.2018 06:03:36

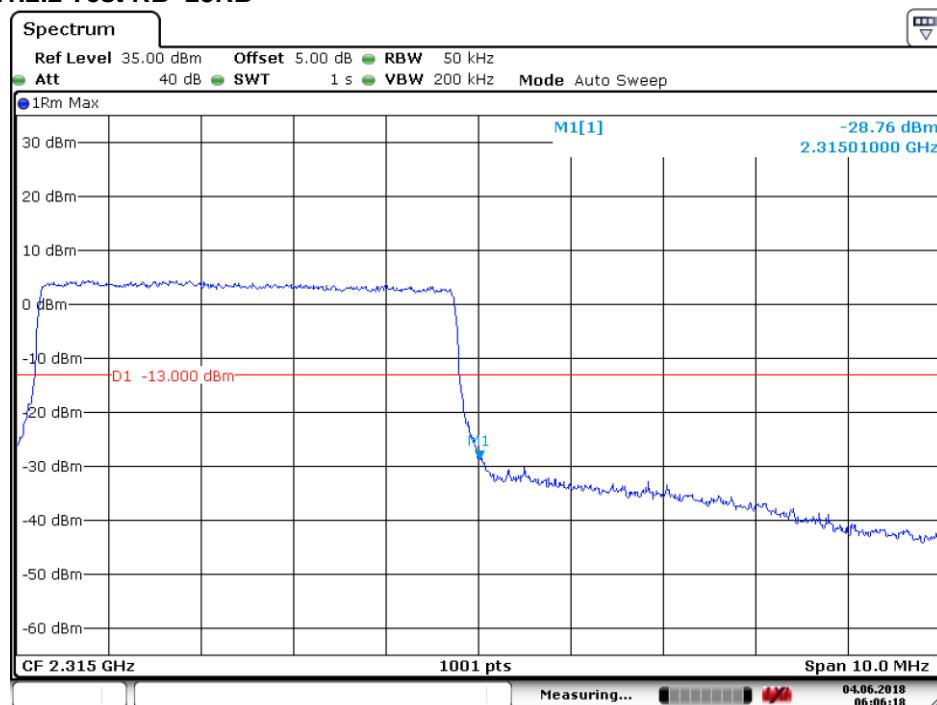
5.1.1.2 Test Channel = HCH

5.1.1.2.1 Test RB=1RB



Date: 4.JUN.2018 06:05:11

5.1.1.1.2.2 Test RB=25RB

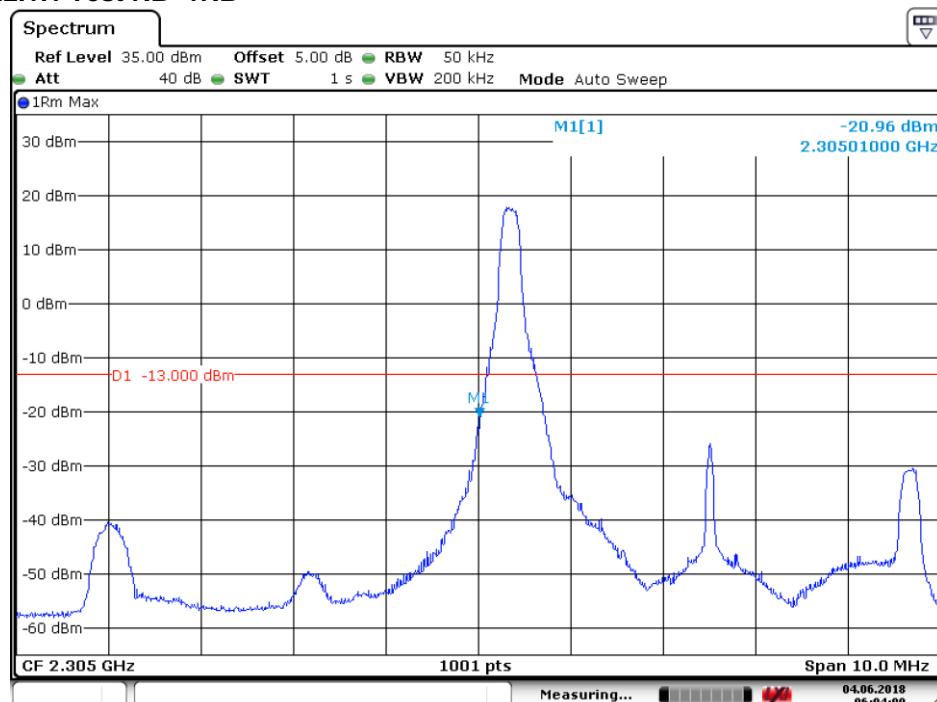


Date: 4.JUN.2018 06:06:19

5.1.1.2 Test Mode = LTE/TM2 5MHz

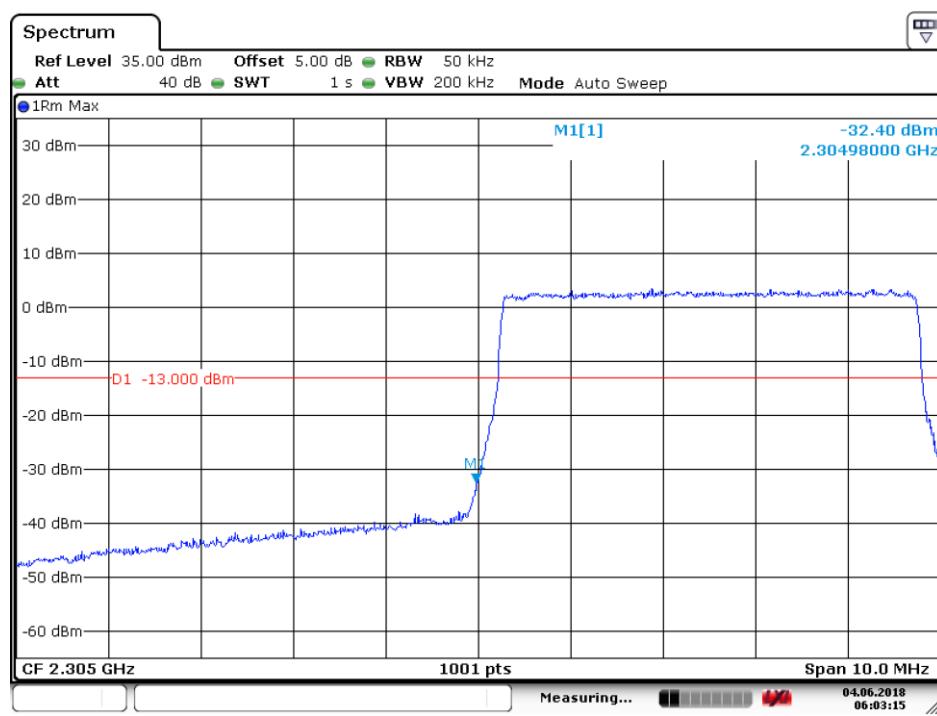
5.1.1.2.1 Test Channel = LCH

5.1.1.2.1.1 Test RB=1RB



Date: 4.JUN.2018 06:04:08

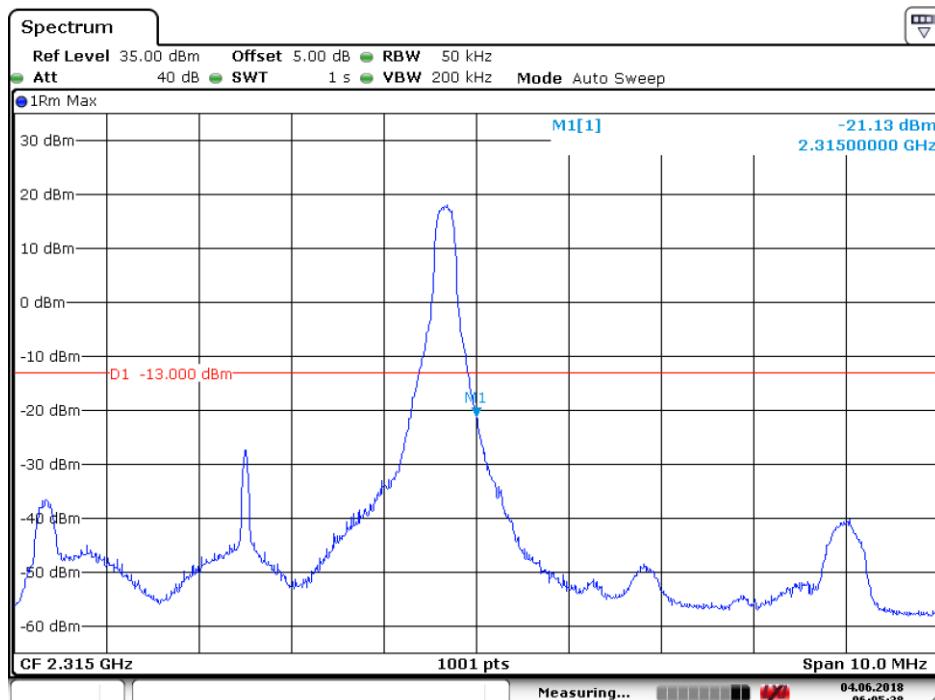
5.1.1.2.1.2 Test RB=25RB



Date: 4.JUN.2018 06:03:15

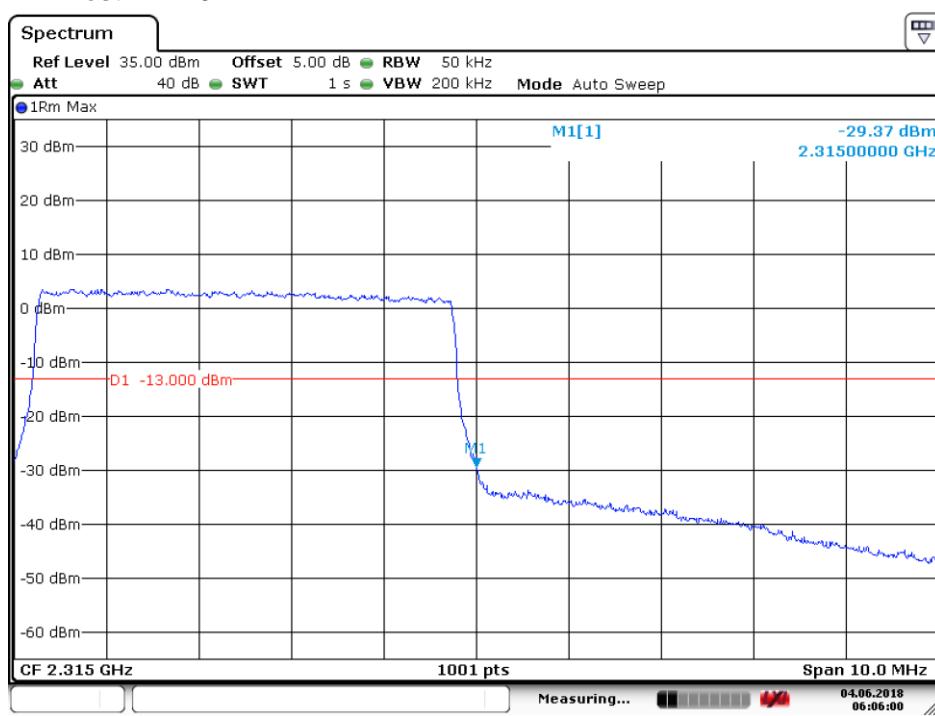
5.1.1.2.2 Test Channel = HCH

5.1.1.2.2.1 Test RB=1RB



Date: 4.JUN.2018 06:05:39

5.1.1.2.2.2 Test RB=25RB

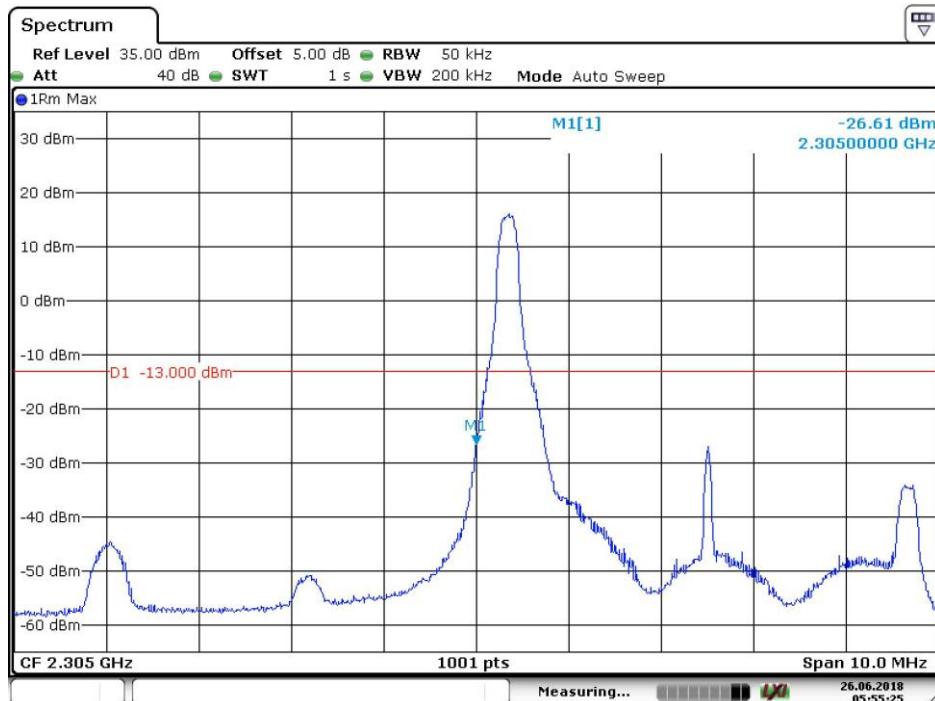


Date: 4.JUN.2018 06:06:01

5.1.1.3 Test Mode = LTE/TM3 5MHz

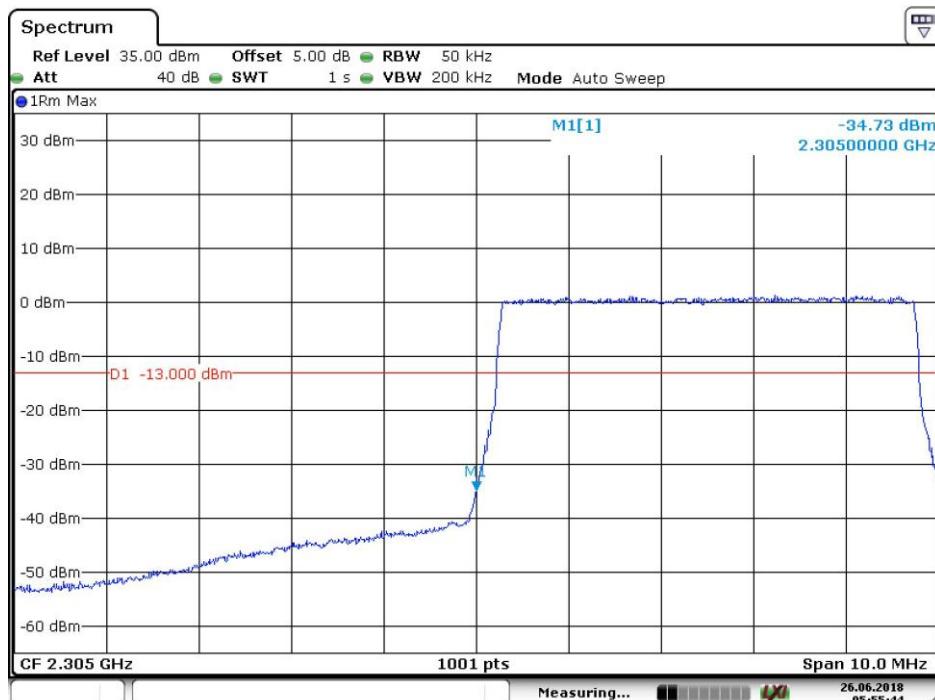
5.1.1.3.1 Test Channel = LCH

5.1.1.3.1.1 Test RB=1RB



Date: 26.JUN.2018 05:55:25

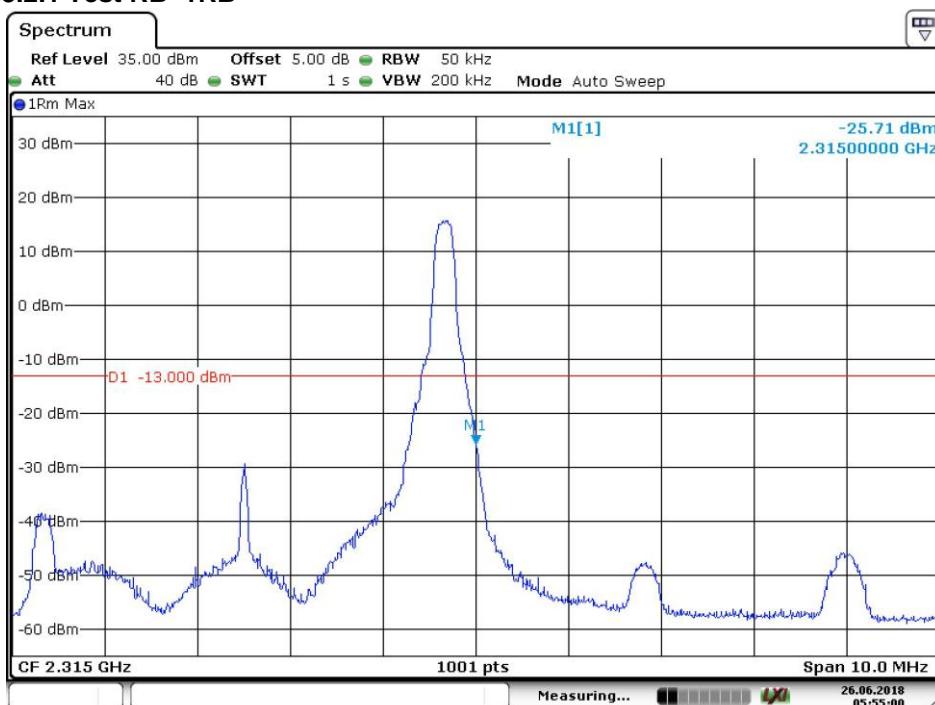
5.1.1.3.1.2 Test RB=25RB



Date: 26.JUN.2018 05:55:44

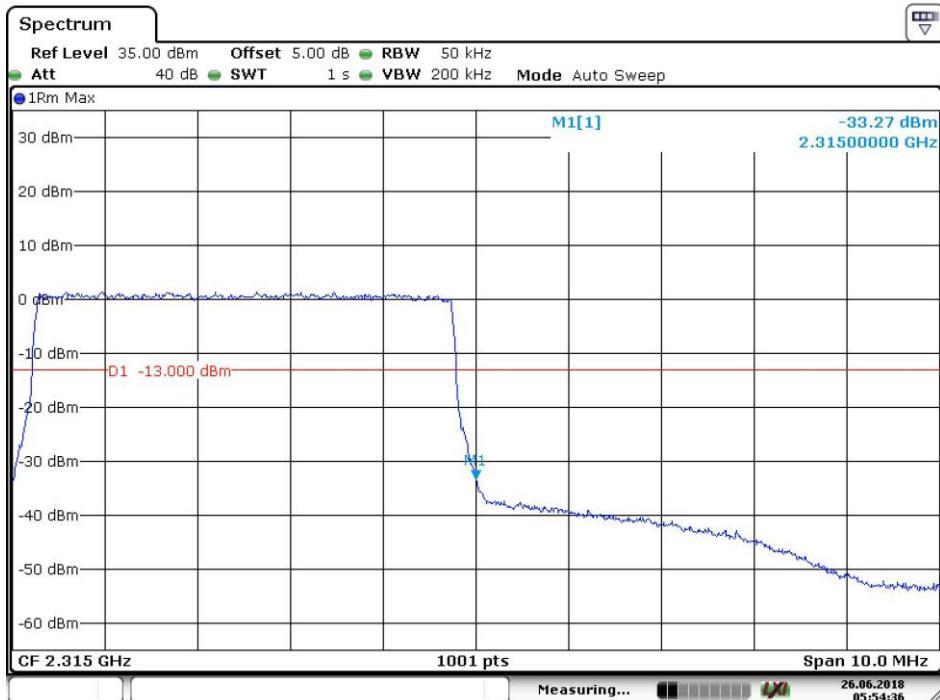
5.1.1.3.2 Test Channel = HCH

5.1.1.3.2.1 Test RB=1RB

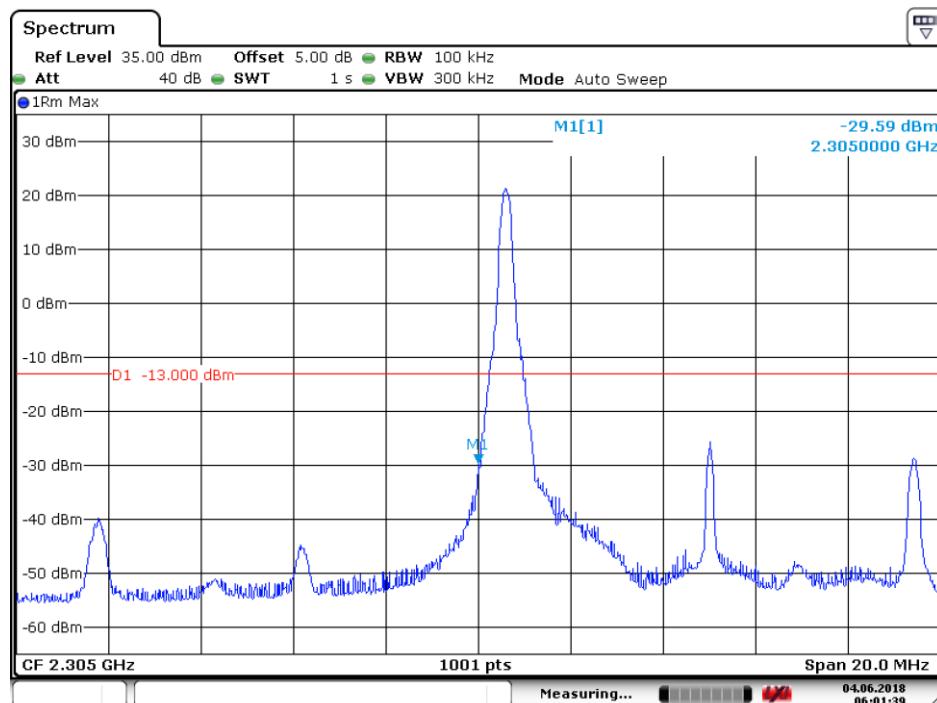


Date: 26.JUN.2018 05:55:00

5.1.1.3.2.2 Test RB=25RB

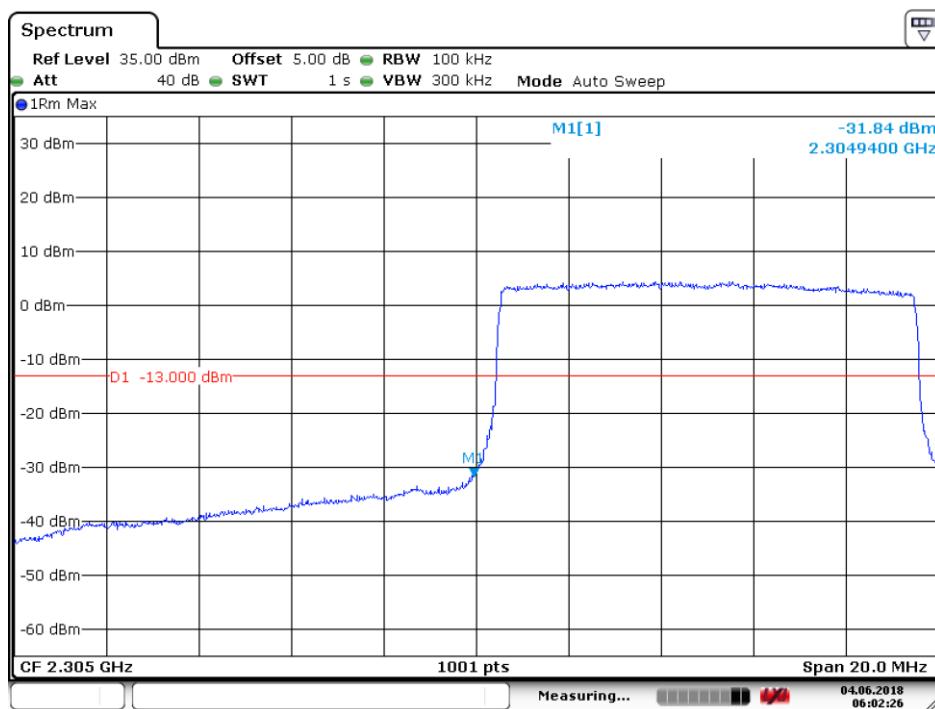


Date: 26.JUN.2018 05:54:37

5.1.1.4 Test Mode = LTE/TM1 10MHz**5.1.1.4.1 Test Channel = LCH****5.1.1.4.1.1 Test RB=1RB**

Date: 4.JUN.2018 06:01:38

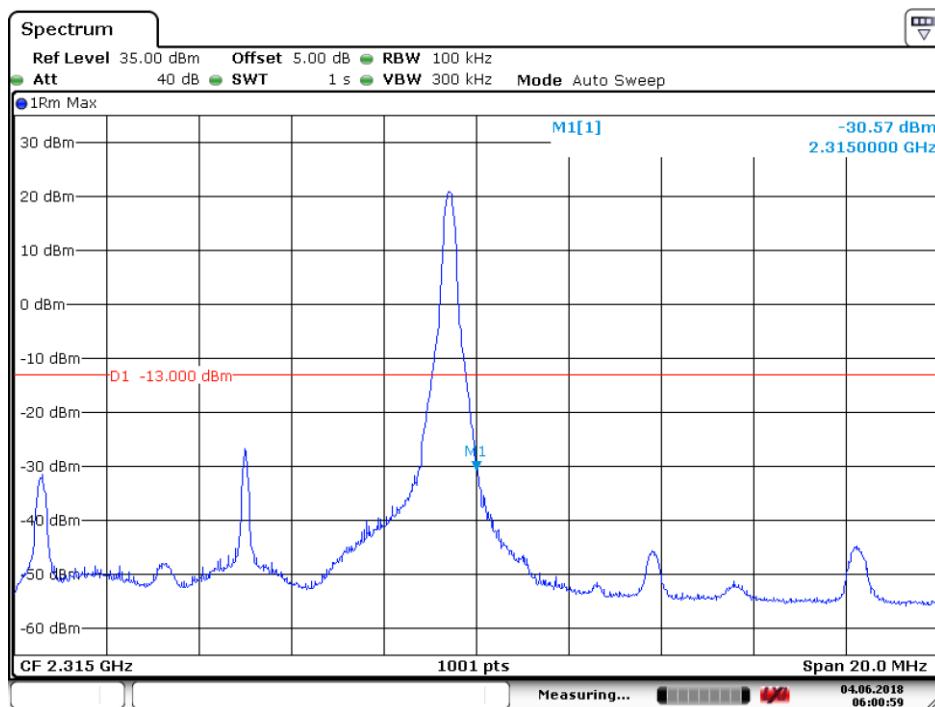
5.1.1.4.1.2 Test RB=50RB



Date: 4.JUN.2018 06:02:27

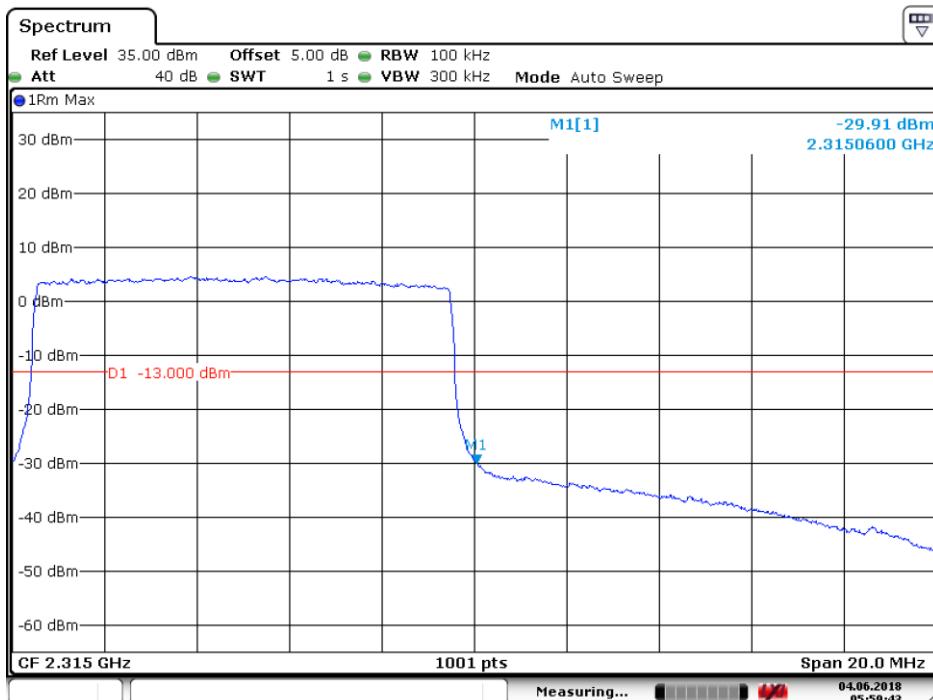
5.1.1.4.2 Test Channel = HCH

5.1.1.4.2.1 Test RB=1RB



Date: 4.JUN.2018 06:00:59

5.1.1.4.2.2 Test RB=50RB

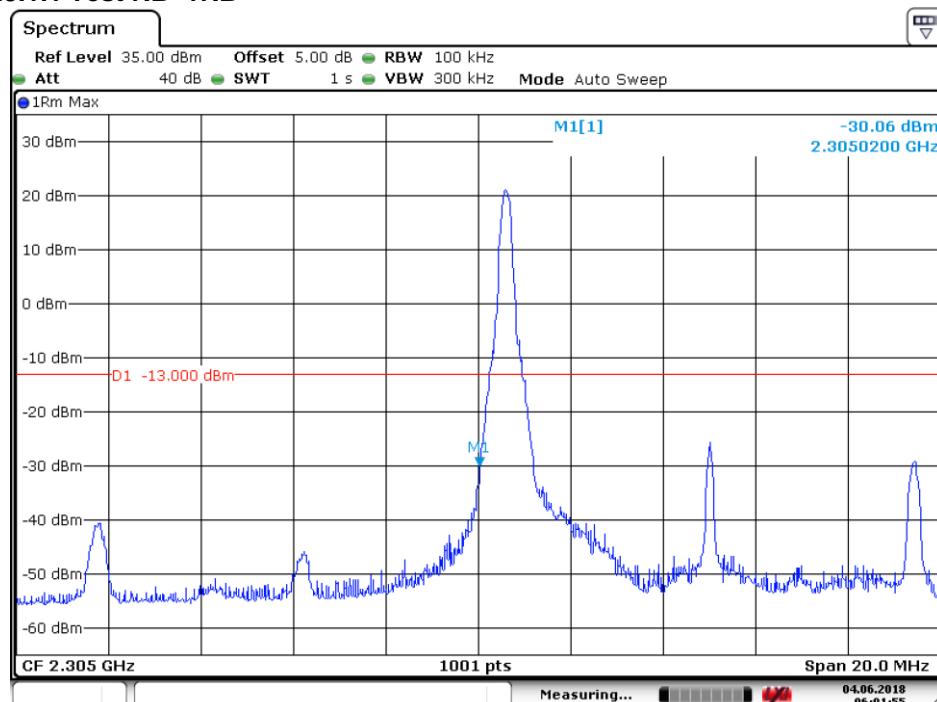


Date: 4.JUN.2018 05:59:43

5.1.1.5 Test Mode = LTE/TM2 10MHz

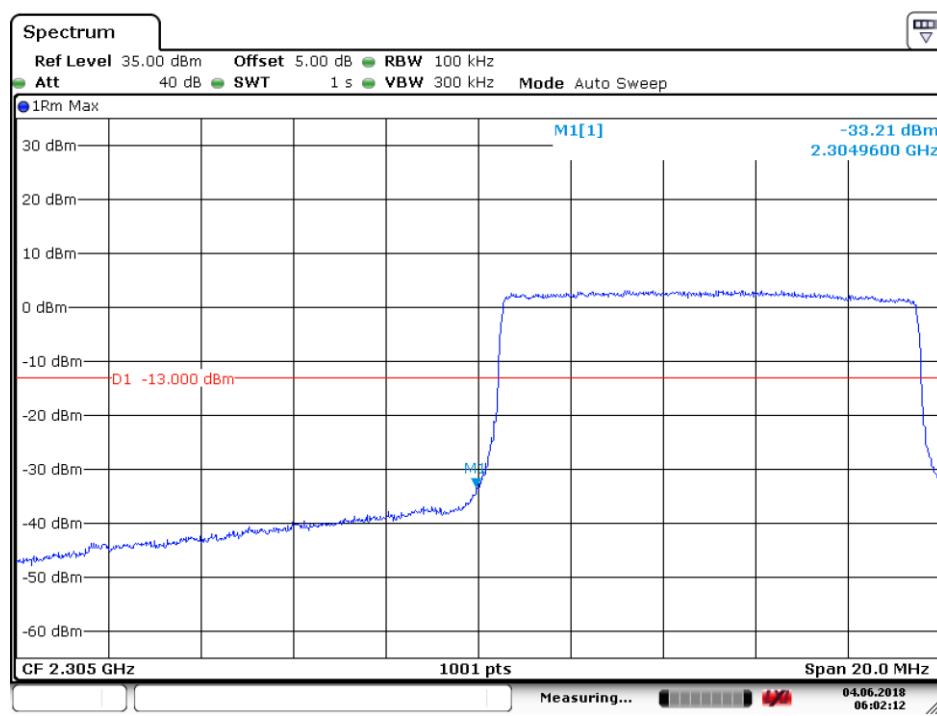
5.1.1.5.1 Test Channel = LCH

5.1.1.5.1.1 Test RB=1RB

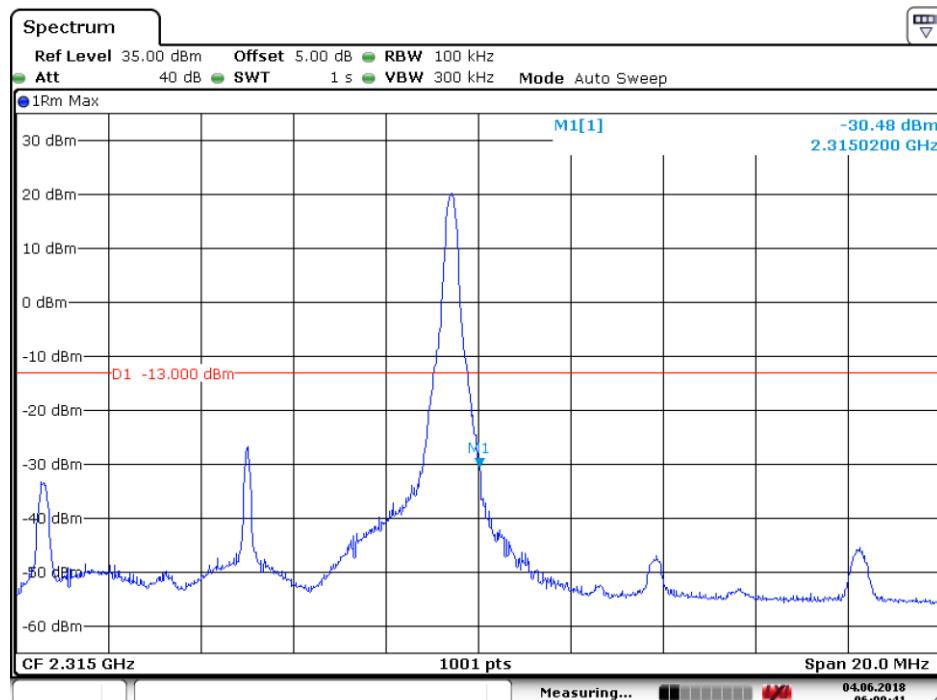


Date: 4.JUN.2018 06:01:55

5.1.1.5.1.2 Test RB=50RB

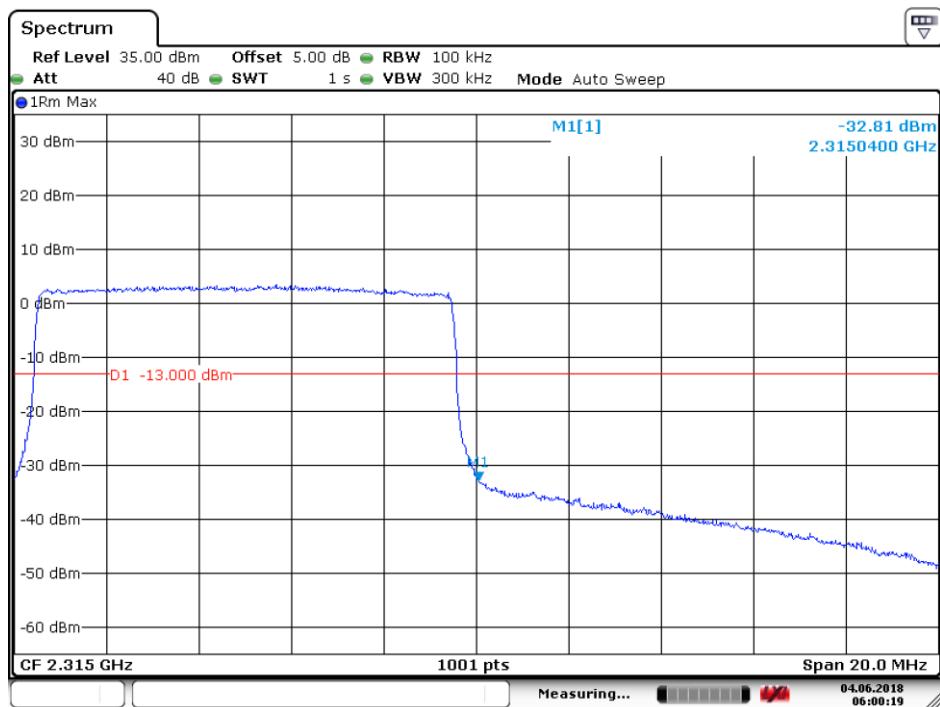


Date: 4.JUN.2018 06:02:13

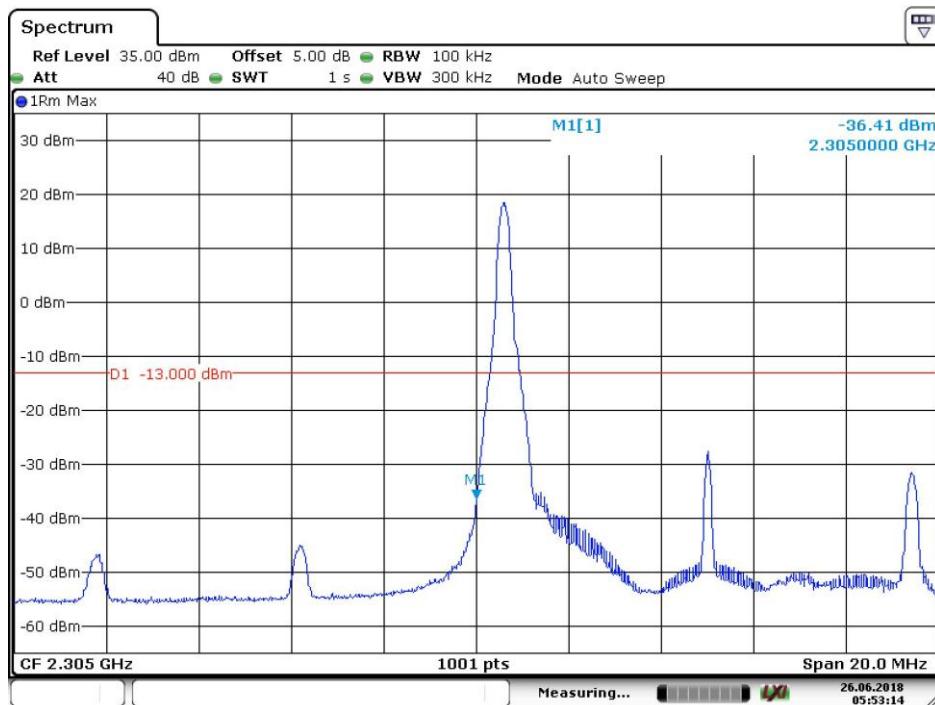
5.1.1.5.2 Test Channel = HCH**5.1.1.5.2.1 Test RB=1RB**

Date: 4.JUN.2018 06:00:41

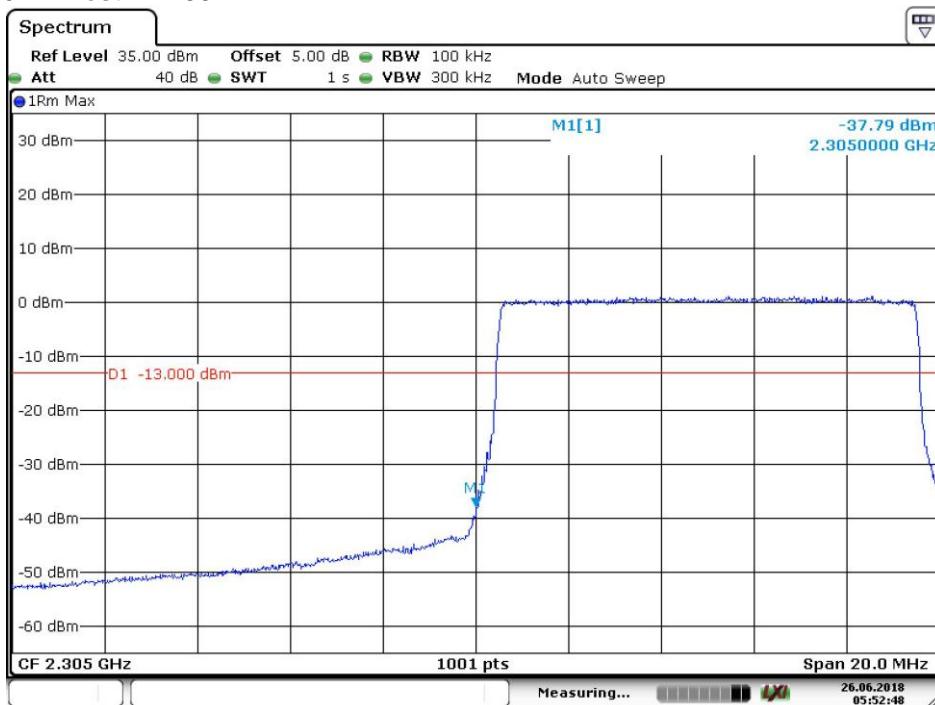
5.1.1.5.2.2 Test RB=50RB



Date: 4.JUN.2018 06:00:20

5.1.1.6 Test Mode = LTE/TM3 10MHz
5.1.1.6.1 Test Channel = LCH
5.1.1.6.1.1 Test RB=1RB


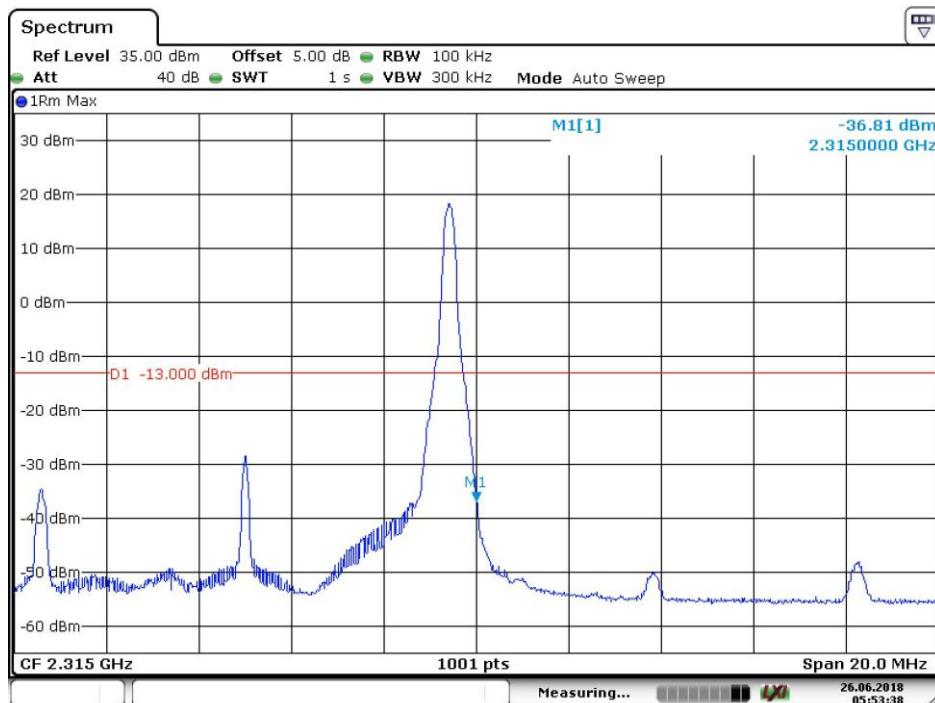
Date: 26.JUN.2018 05:53:14

5.1.1.6.1.2 Test RB=50RB


Date: 26.JUN.2018 05:52:49

5.1.1.6.2 Test Channel = HCH

5.1.1.6.2.1 Test RB=1RB



Date: 26.JUN.2018 05:53:38

5.1.1.6.2.2 Test RB=50RB



Date: 26.JUN.2018 05:53:49

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 $< \text{RBW}/2$ so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points = $k * (\text{Span} / \text{RBW})$ " with k between 4 and 5, which results in an acceptable level error of less than 0.5 dB.

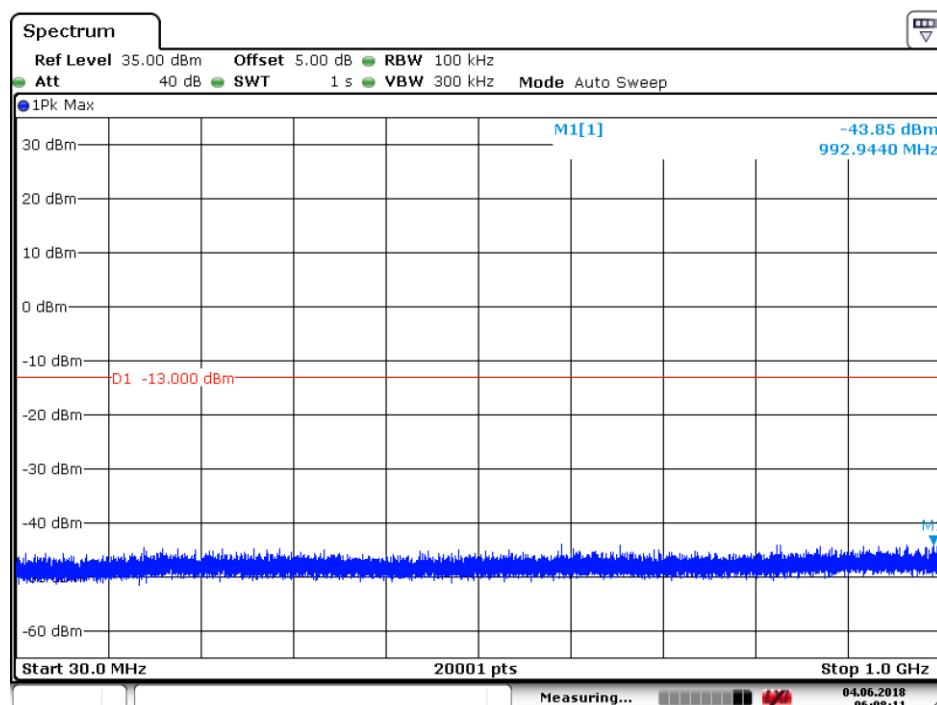
Part I - Test Plots

6.1 For LTE

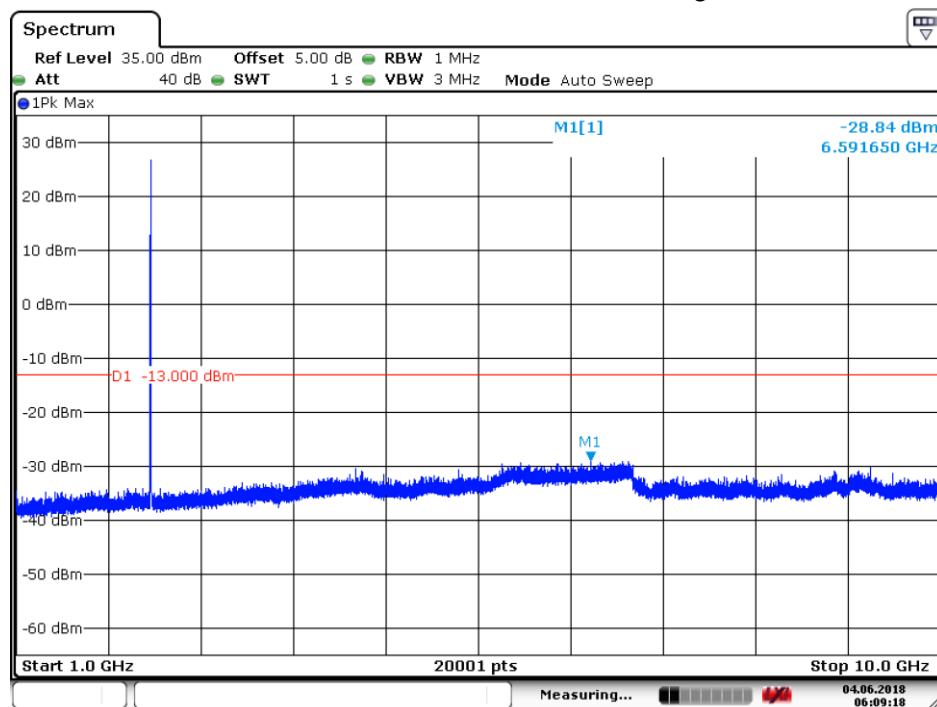
6.1.1 Test Band = LTE BAND 30

6.1.1.1 Test Mode = LTE / TM1 10MHz RB1#0

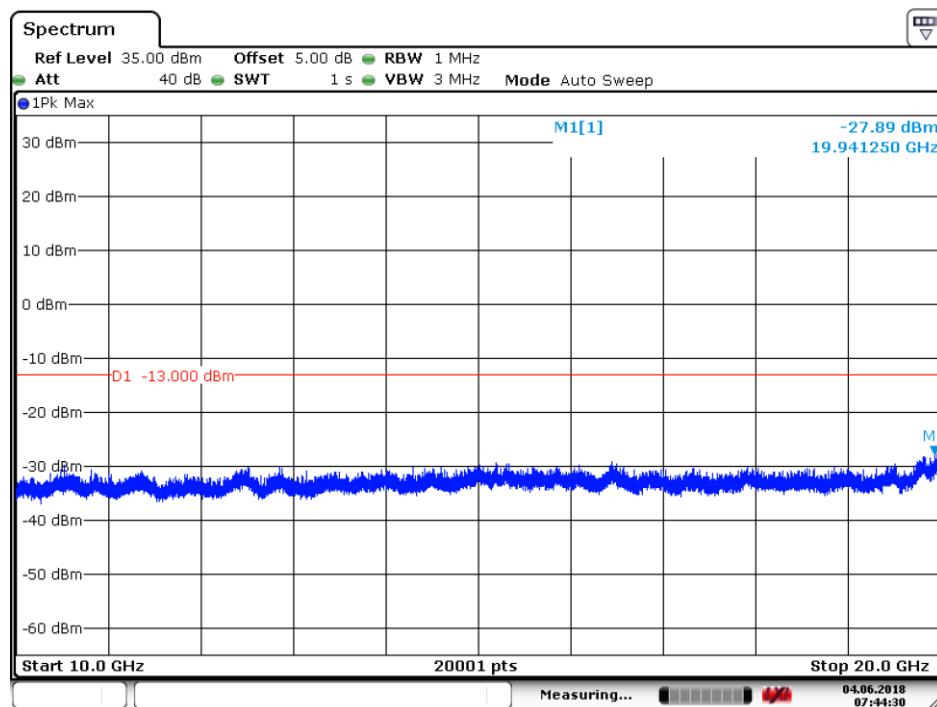
6.1.1.1.1 Test Channel = MCH



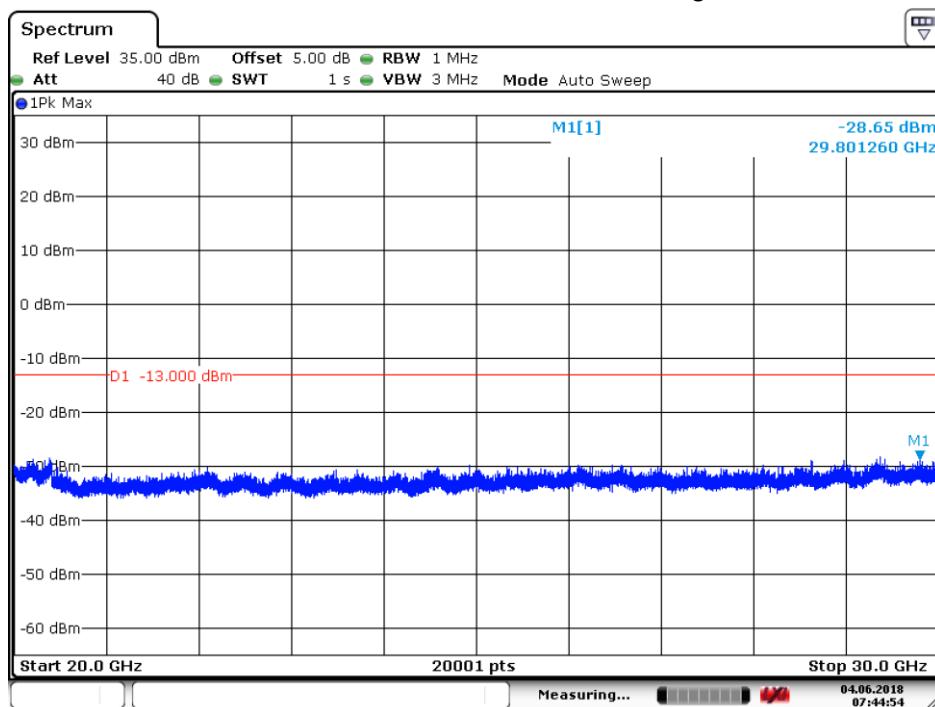
Date: 4.JUN.2018 06:08:11



Date: 4.JUN.2018 06:09:18



Date: 4.JUN.2018 07:44:30



Date: 4.JUN.2018 07:44:55

7 Field Strength of Spurious Radiation

7.1 For LTE

7.1.1 Test Band = LTE BAND 30

7.1.1.1 Test Mode =LTE/TM1 10MHz RB1#0

7.1.1.1.1 Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
64.350000	-81.58	-40.00	41.58	Vertical
182.550000	-81.13	-40.00	41.13	Vertical
515.450000	-82.04	-40.00	42.04	Vertical
4619.800000	-64.79	-40.00	24.79	Vertical
6916.575000	-64.12	-40.00	24.12	Vertical
9222.450000	-58.10	-40.00	18.10	Vertical
55.900000	-77.93	-40.00	37.93	Horizontal
183.500000	-71.90	-40.00	31.90	Horizontal
621.508333	-80.59	-40.00	40.59	Horizontal
4619.800000	-65.72	-40.00	25.72	Horizontal
6477.825000	-64.93	-40.00	24.93	Horizontal
9222.450000	-62.17	-40.00	22.17	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.
- 2) We have tested all modulation and all bandwidth, but only the worst case data presented in this report.

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
LTEBAND 30	LTE/TM1 10MHz	LCH/MCH/HCH	TN	VL	-8.00	-0.00346	PASS
				VN	-8.15	-0.00353	PASS
				VH	-3.35	-0.00145	PASS
	LTE/TM2 10MHz	LCH/MCH/HCH	TN	VL	-1.72	-0.00075	PASS
				VN	-5.79	-0.00251	PASS
				VH	7.19	0.00311	PASS
	LTE/TM3 10MHz	LCH/MCH/HCH	TN	VL	10.32	0.004469	PASS
				VN	-8.00	-0.003463	PASS
				VH	8.51	0.003686	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
	LTE/TM1 10MHz	LCH/MCH/HCH	VN	-30	-8.75	-0.00379	PASS
				-20	-4.13	-0.00179	PASS
				-10	8.33	0.00361	PASS
				0	-2.35	-0.00102	PASS
				10	3.53	0.00153	PASS
				20	-1.25	-0.00054	PASS
				30	-5.34	-0.00231	PASS
				40	1.25	0.00054	PASS
				50	-4.42	-0.00191	PASS
LTEBAND 30	LTE/TM2 10MHz	LCH/MCH/HCH	VN	-30	0.74	0.00032	PASS
				-20	9.59	0.00415	PASS
				-10	-2.49	-0.00108	PASS
				0	1.33	0.00057	PASS
				10	2.23	0.00096	PASS
				20	2.36	0.00102	PASS
				30	7.08	0.00306	PASS
				40	2.91	0.00126	PASS
				50	-3.66	-0.00159	PASS
				-30	6.08	0.002631	PASS
	LTE/TM3 10MHz	LCH/MCH/HCH	VN	-20	7.88	0.003411	PASS
				-10	-4.87	-0.002108	PASS
				0	2.21	0.000956	PASS
				10	-2.94	-0.001272	PASS
				20	9.77	0.004229	PASS
				30	-2.27	-0.000983	PASS
				40	5.49	0.002375	PASS
				50	9.59	0.004151	PASS

The End