



Appendix B

E-UTRA Band 2

CONTENT

	Page
1 EFFECTIVE (ISOTROPIC) RADIATED POWER OUTPUT DATA.....	3
2 PEAK-TO-AVERAGE RATIO	15
2.1 FOR LTE	16
2.1.1 <i>Test Band = LTE band2</i>	16
3 MODULATION CHARACTERISTICS.....	22
3.1 FOR LTE	22
3.1.1 <i>Test Band = LTE band2</i>	22
4 BANDWIDTH	24
4.1 FOR LTE	25
4.1.1 <i>Test Band = LTE band2</i>	25
5 BAND EDGES COMPLIANCE	61
5.1 FOR LTE	61
5.1.1 <i>Test Band = LTE band2</i>	61
6 SPURIOUS EMISSION AT ANTENNA TERMINAL.....	109
6.1 FOR LTE	109
6.1.1 <i>Test Band = LTE band2</i>	109
7 FIELD STRENGTH OF SPURIOUS RADIATION	118
7.1 FOR LTE	118
7.1.1 <i>Test Band = LTE band2</i>	118
8 FREQUENCY STABILITY	120
8.1 FREQUENCY ERROR VS. VOLTAGE	120
8.2 FREQUENCY ERROR VS. TEMPERATURE	121

1 Effective (Isotropic) Radiated Power Output Data

Effective Isotropic Radiated Power of Transmitter (EIRP) for LTE BAND 2

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND2	LTE/TM1	1.4M	LCH	1RB#0	22.43	20.53	33.00	PASS
				1RB#2	22.46	20.56	33.00	PASS
				1RB#5	22.46	20.56	33.00	PASS
				3RB#0	22.55	20.65	33.00	PASS
				3RB#1	22.54	20.64	33.00	PASS
				3RB#3	22.53	20.63	33.00	PASS
				6RB#0	21.64	19.74	33.00	PASS
			MCH	1RB#0	22.29	20.39	33.00	PASS
				1RB#2	22.37	20.47	33.00	PASS
				1RB#5	22.34	20.44	33.00	PASS
				3RB#0	22.46	20.56	33.00	PASS
				3RB#1	22.48	20.58	33.00	PASS
				3RB#3	22.41	20.51	33.00	PASS
				6RB#0	21.54	19.64	33.00	PASS
			HCH	1RB#0	22.14	20.24	33.00	PASS
				1RB#2	22.19	20.29	33.00	PASS
				1RB#5	22.18	20.28	33.00	PASS
				3RB#0	22.3	20.4	33.00	PASS
				3RB#1	22.31	20.41	33.00	PASS
				3RB#3	22.3	20.4	33.00	PASS
				6RB#0	21.39	19.49	33.00	PASS



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

Report No.: SZEM180100088201
Page: 4 of 122

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND2	LTE/TM2	1.4M	LCH	1RB#0	21.55	19.65	33.00	PASS
				1RB#2	21.63	19.73	33.00	PASS
				1RB#5	21.59	19.69	33.00	PASS
				3RB#0	21.5	19.6	33.00	PASS
				3RB#1	21.5	19.6	33.00	PASS
				3RB#3	21.44	19.54	33.00	PASS
				6RB#0	20.67	18.77	33.00	PASS
			MCH	1RB#0	21.59	19.69	33.00	PASS
				1RB#2	21.69	19.79	33.00	PASS
				1RB#5	21.6	19.7	33.00	PASS
				3RB#0	21.41	19.51	33.00	PASS
				3RB#1	21.42	19.52	33.00	PASS
				3RB#3	21.51	19.61	33.00	PASS
				6RB#0	20.45	18.55	33.00	PASS
			HCH	1RB#0	21.38	19.48	33.00	PASS
				1RB#2	21.48	19.58	33.00	PASS
				1RB#5	21.42	19.52	33.00	PASS
				3RB#0	21.26	19.36	33.00	PASS
				3RB#1	21.27	19.37	33.00	PASS
				3RB#3	21.31	19.41	33.00	PASS
				6RB#0	20.29	18.39	33.00	PASS



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

Report No.: SZEM180100088201
Page: 5 of 122

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND2	LTE/TM1	3M	LCH	1RB#0	22.42	20.52	33.00	PASS
				1RB#8	22.39	20.49	33.00	PASS
				1RB#14	22.44	20.54	33.00	PASS
				8RB#0	21.72	19.82	33.00	PASS
				8RB#4	21.73	19.83	33.00	PASS
				8RB#7	21.73	19.83	33.00	PASS
				15RB#0	21.71	19.81	33.00	PASS
			MCH	1RB#0	22.43	20.53	33.00	PASS
				1RB#8	22.38	20.48	33.00	PASS
				1RB#14	22.42	20.52	33.00	PASS
				8RB#0	21.63	19.73	33.00	PASS
				8RB#4	21.63	19.73	33.00	PASS
				8RB#7	21.62	19.72	33.00	PASS
				15RB#0	21.62	19.72	33.00	PASS
			HCH	1RB#0	22.3	20.4	33.00	PASS
				1RB#8	22.22	20.32	33.00	PASS
				1RB#14	22.29	20.39	33.00	PASS
				8RB#0	21.5	19.6	33.00	PASS
				8RB#4	21.51	19.61	33.00	PASS
				8RB#7	21.51	19.61	33.00	PASS
				15RB#0	21.49	19.59	33.00	PASS



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

Report No.: SZEM180100088201
Page: 6 of 122

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND2	LTE/TM2	3M	LCH	1RB#0	21.67	19.77	33.00	PASS
				1RB#8	21.59	19.69	33.00	PASS
				1RB#14	21.63	19.73	33.00	PASS
				8RB#0	20.74	18.84	33.00	PASS
				8RB#4	20.74	18.84	33.00	PASS
				8RB#7	20.73	18.83	33.00	PASS
				15RB#0	20.72	18.82	33.00	PASS
			MCH	1RB#0	21.64	19.74	33.00	PASS
				1RB#8	21.54	19.64	33.00	PASS
				1RB#14	21.57	19.67	33.00	PASS
				8RB#0	20.61	18.71	33.00	PASS
				8RB#4	20.61	18.71	33.00	PASS
				8RB#7	20.62	18.72	33.00	PASS
				15RB#0	20.54	18.64	33.00	PASS
			HCH	1RB#0	21.22	19.32	33.00	PASS
				1RB#8	21.17	19.27	33.00	PASS
				1RB#14	21.18	19.28	33.00	PASS
				8RB#0	20.5	18.6	33.00	PASS
				8RB#4	20.49	18.59	33.00	PASS
				8RB#7	20.51	18.61	33.00	PASS
				15RB#0	20.4	18.5	33.00	PASS



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

Report No.: SZEM180100088201
Page: 7 of 122

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND2	LTE/TM1	5M	LCH	1RB#0	22.6	20.7	33.00	PASS
				1RB#12	22.58	20.68	33.00	PASS
				1RB#24	22.55	20.65	33.00	PASS
				12RB#0	21.63	19.73	33.00	PASS
				12RB#6	21.63	19.73	33.00	PASS
				12RB#13	21.64	19.74	33.00	PASS
				25RB#0	21.64	19.74	33.00	PASS
			MCH	1RB#0	22.5	20.6	33.00	PASS
				1RB#12	22.46	20.56	33.00	PASS
				1RB#24	22.44	20.54	33.00	PASS
				12RB#0	21.56	19.66	33.00	PASS
				12RB#6	21.55	19.65	33.00	PASS
				12RB#13	21.54	19.64	33.00	PASS
				25RB#0	21.56	19.66	33.00	PASS
			HCH	1RB#0	22.35	20.45	33.00	PASS
				1RB#12	22.31	20.41	33.00	PASS
				1RB#24	22.3	20.4	33.00	PASS
				12RB#0	21.41	19.51	33.00	PASS
				12RB#6	21.39	19.49	33.00	PASS
				12RB#13	21.42	19.52	33.00	PASS
				25RB#0	21.4	19.5	33.00	PASS



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

Report No.: SZEM180100088201
Page: 8 of 122

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND2	LTE/TM2	5M	LCH	1RB#0	21.61	19.71	33.00	PASS
				1RB#12	21.6	19.7	33.00	PASS
				1RB#24	21.58	19.68	33.00	PASS
				12RB#0	20.63	18.73	33.00	PASS
				12RB#6	20.63	18.73	33.00	PASS
				12RB#13	20.64	18.74	33.00	PASS
				25RB#0	20.67	18.77	33.00	PASS
			MCH	1RB#0	21.54	19.64	33.00	PASS
				1RB#12	21.49	19.59	33.00	PASS
				1RB#24	21.5	19.6	33.00	PASS
				12RB#0	20.52	18.62	33.00	PASS
				12RB#6	20.52	18.62	33.00	PASS
				12RB#13	20.52	18.62	33.00	PASS
				25RB#0	20.55	18.65	33.00	PASS
			HCH	1RB#0	21.55	19.65	33.00	PASS
				1RB#12	21.52	19.62	33.00	PASS
				1RB#24	21.49	19.59	33.00	PASS
				12RB#0	20.41	18.51	33.00	PASS
				12RB#6	20.41	18.51	33.00	PASS
				12RB#13	20.45	18.55	33.00	PASS
				25RB#0	20.38	18.48	33.00	PASS



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

Report No.: SZEM180100088201
Page: 9 of 122

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND2	LTE/TM1	10M	LCH	1RB#0	22.67	20.77	33.00	PASS
				1RB#24	22.62	20.72	33.00	PASS
				1RB#49	22.65	20.75	33.00	PASS
				25RB#0	21.62	19.72	33.00	PASS
				25RB#12	21.61	19.71	33.00	PASS
				25RB#25	21.69	19.79	33.00	PASS
				50RB#0	21.64	19.74	33.00	PASS
			MCH	1RB#0	22.55	20.65	33.00	PASS
				1RB#24	22.5	20.6	33.00	PASS
				1RB#49	22.51	20.61	33.00	PASS
				25RB#0	21.58	19.68	33.00	PASS
				25RB#12	21.59	19.69	33.00	PASS
				25RB#25	21.59	19.69	33.00	PASS
				50RB#0	21.59	19.69	33.00	PASS
			HCH	1RB#0	22.46	20.56	33.00	PASS
				1RB#24	22.4	20.5	33.00	PASS
				1RB#49	22.41	20.51	33.00	PASS
				25RB#0	21.52	19.62	33.00	PASS
				25RB#12	21.52	19.62	33.00	PASS
				25RB#25	21.46	19.56	33.00	PASS
				50RB#0	21.49	19.59	33.00	PASS



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

Report No.: SZEM180100088201
Page: 10 of 122

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND2	LTE/TM2	10M	LCH	1RB#0	21.61	19.71	33.00	PASS
				1RB#24	21.58	19.68	33.00	PASS
				1RB#49	21.58	19.68	33.00	PASS
				25RB#0	20.64	18.74	33.00	PASS
				25RB#12	20.65	18.75	33.00	PASS
				25RB#25	20.69	18.79	33.00	PASS
				50RB#0	20.64	18.74	33.00	PASS
			MCH	1RB#0	21.79	19.89	33.00	PASS
				1RB#24	21.76	19.86	33.00	PASS
				1RB#49	21.72	19.82	33.00	PASS
				25RB#0	20.56	18.66	33.00	PASS
				25RB#12	20.56	18.66	33.00	PASS
				25RB#25	20.55	18.65	33.00	PASS
				50RB#0	20.56	18.66	33.00	PASS
			HCH	1RB#0	21.68	19.78	33.00	PASS
				1RB#24	21.63	19.73	33.00	PASS
				1RB#49	21.59	19.69	33.00	PASS
				25RB#0	20.57	18.67	33.00	PASS
				25RB#12	20.57	18.67	33.00	PASS
				25RB#25	20.48	18.58	33.00	PASS
				50RB#0	20.52	18.62	33.00	PASS



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

Report No.: SZEM180100088201
Page: 11 of 122

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND2	LTE/TM1	15M	LCH	1RB#0	22.7	20.8	33.00	PASS
				1RB#38	22.51	20.61	33.00	PASS
				1RB#74	22.57	20.67	33.00	PASS
				36RB#0	21.9	20	33.00	PASS
				36RB#18	21.74	19.84	33.00	PASS
				36RB#39	21.79	19.89	33.00	PASS
				75RB#0	21.68	19.78	33.00	PASS
			MCH	1RB#0	22.71	20.81	33.00	PASS
				1RB#38	22.5	20.6	33.00	PASS
				1RB#74	22.58	20.68	33.00	PASS
				36RB#0	22.01	20.11	33.00	PASS
				36RB#18	21.83	19.93	33.00	PASS
				36RB#39	21.85	19.95	33.00	PASS
				75RB#0	21.66	19.76	33.00	PASS
			HCH	1RB#0	22.62	20.72	33.00	PASS
				1RB#38	22.44	20.54	33.00	PASS
				1RB#74	22.46	20.56	33.00	PASS
				36RB#0	21.55	19.65	33.00	PASS
				36RB#18	21.38	19.48	33.00	PASS
				36RB#39	21.38	19.48	33.00	PASS
				75RB#0	21.62	19.72	33.00	PASS



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

Report No.: SZEM180100088201
Page: 12 of 122

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND2	LTE/TM2	15M	LCH	1RB#0	21.89	19.99	33.00	PASS
				1RB#38	21.73	19.83	33.00	PASS
				1RB#74	21.78	19.88	33.00	PASS
				36RB#0	21.91	20.01	33.00	PASS
				36RB#18	21.75	19.85	33.00	PASS
				36RB#39	21.8	19.9	33.00	PASS
				75RB#0	20.61	18.71	33.00	PASS
			MCH	1RB#0	21.99	20.09	33.00	PASS
				1RB#38	21.83	19.93	33.00	PASS
				1RB#74	21.85	19.95	33.00	PASS
				36RB#0	21.82	19.92	33.00	PASS
				36RB#18	21.83	19.93	33.00	PASS
				36RB#39	21.86	19.96	33.00	PASS
				75RB#0	20.64	18.74	33.00	PASS
			HCH	1RB#0	21.54	19.64	33.00	PASS
				1RB#38	21.39	19.49	33.00	PASS
				1RB#74	21.38	19.48	33.00	PASS
				36RB#0	21.54	19.64	33.00	PASS
				36RB#18	21.39	19.49	33.00	PASS
				36RB#39	21.38	19.48	33.00	PASS
				75RB#0	20.57	18.67	33.00	PASS



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

Report No.: SZEM180100088201
Page: 13 of 122

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND2	LTE/TM1	20M	LCH	1RB#0	22.99	21.09	33.00	PASS
				1RB#49	22.68	20.78	33.00	PASS
				1RB#99	22.83	20.93	33.00	PASS
				50RB#0	21.62	19.72	33.00	PASS
				50RB#25	21.62	19.72	33.00	PASS
				50RB#50	21.61	19.71	33.00	PASS
				100RB#0	21.6	19.7	33.00	PASS
			MCH	1RB#0	22.69	20.79	33.00	PASS
				1RB#49	22.44	20.54	33.00	PASS
				1RB#99	22.59	20.69	33.00	PASS
				50RB#0	21.81	19.91	33.00	PASS
				50RB#25	21.81	19.91	33.00	PASS
				50RB#50	21.67	19.77	33.00	PASS
				100RB#0	21.75	19.85	33.00	PASS
			HCH	1RB#0	22.78	20.88	33.00	PASS
				1RB#49	22.51	20.61	33.00	PASS
				1RB#99	22.63	20.73	33.00	PASS
				50RB#0	21.72	19.82	33.00	PASS
				50RB#25	21.72	19.82	33.00	PASS
				50RB#50	21.48	19.58	33.00	PASS
				100RB#0	21.62	19.72	33.00	PASS



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

Report No.: SZEM180100088201
Page: 14 of 122

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND2	LTE/TM2	20M	LCH	1RB#0	22.03	20.13	33.00	PASS
				1RB#49	21.81	19.91	33.00	PASS
				1RB#99	21.93	20.03	33.00	PASS
				50RB#0	20.62	18.72	33.00	PASS
				50RB#25	20.62	18.72	33.00	PASS
				50RB#50	20.61	18.71	33.00	PASS
				100RB#0	20.6	18.7	33.00	PASS
			MCH	1RB#0	21.82	19.92	33.00	PASS
				1RB#49	21.6	19.7	33.00	PASS
				1RB#99	21.69	19.79	33.00	PASS
				50RB#0	20.83	18.93	33.00	PASS
				50RB#25	20.84	18.94	33.00	PASS
				50RB#50	20.7	18.8	33.00	PASS
				100RB#0	20.72	18.82	33.00	PASS
			HCH	1RB#0	21.78	19.88	33.00	PASS
				1RB#49	21.57	19.67	33.00	PASS
				1RB#99	21.62	19.72	33.00	PASS
				50RB#0	20.72	18.82	33.00	PASS
				50RB#25	20.71	18.81	33.00	PASS
				50RB#50	20.47	18.57	33.00	PASS
				100RB#0	20.61	18.71	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,

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

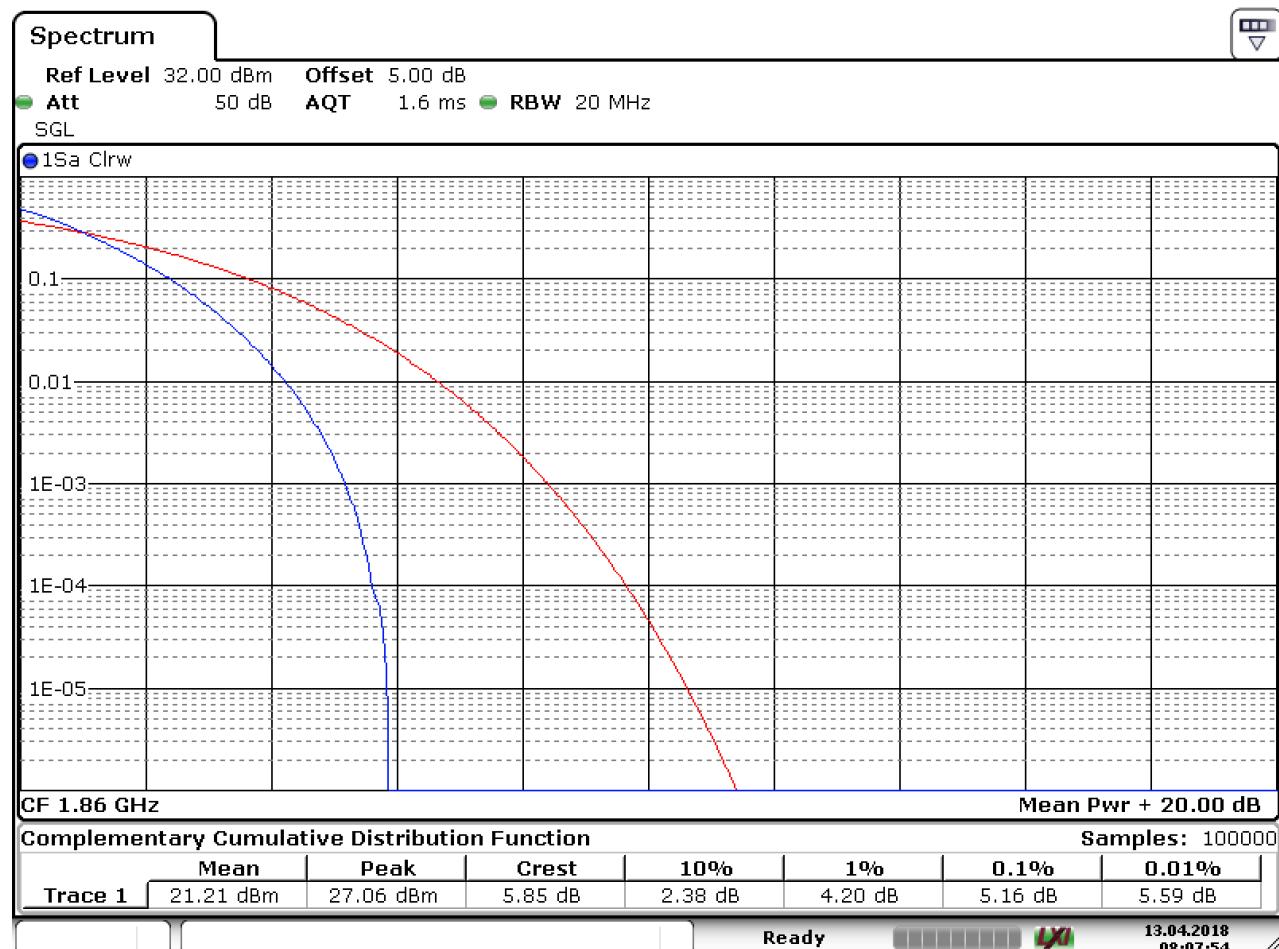
b: SGP=Signal Generator Level



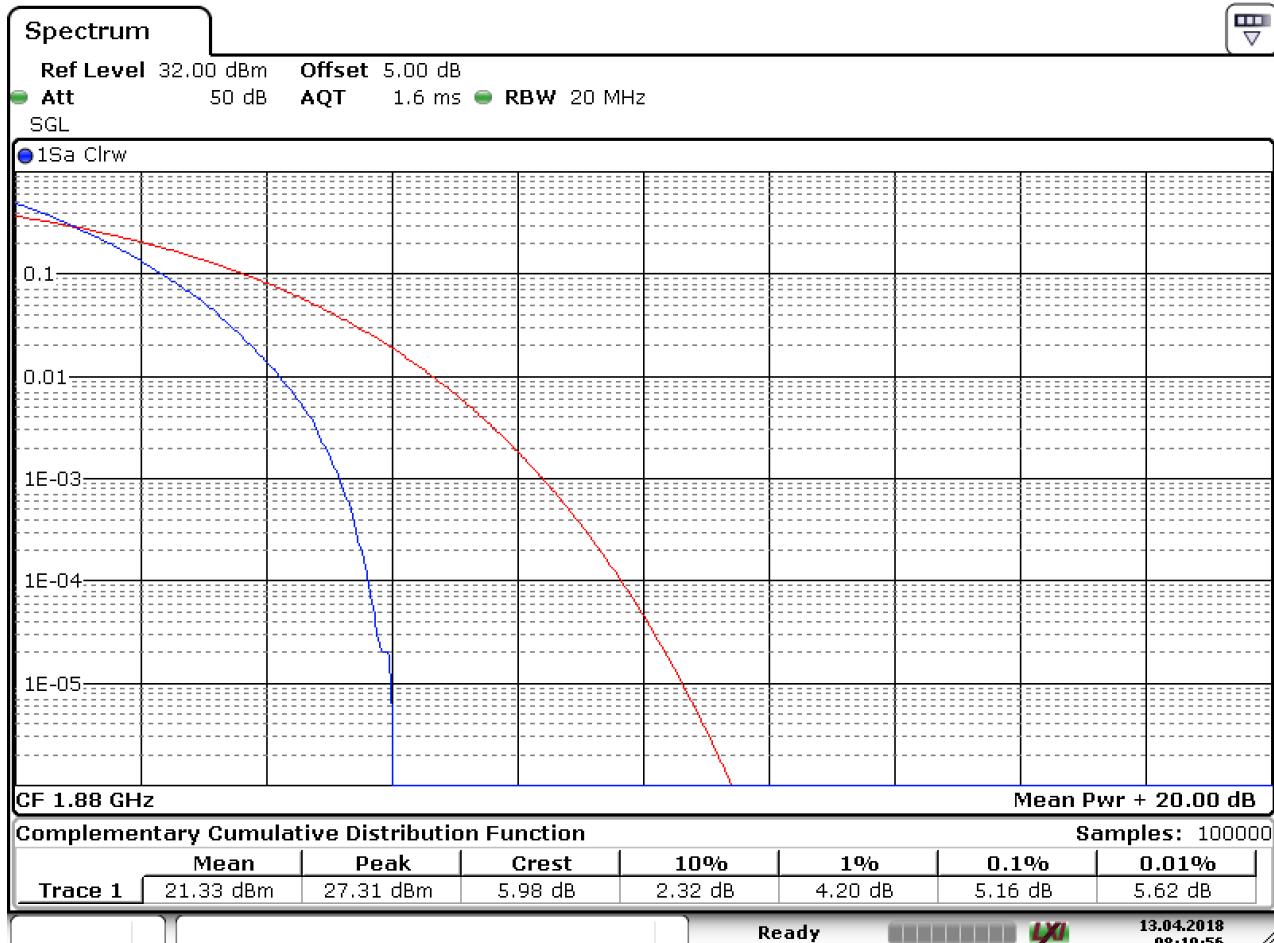
2 Peak-to-Average Ratio

Part I - Test Results

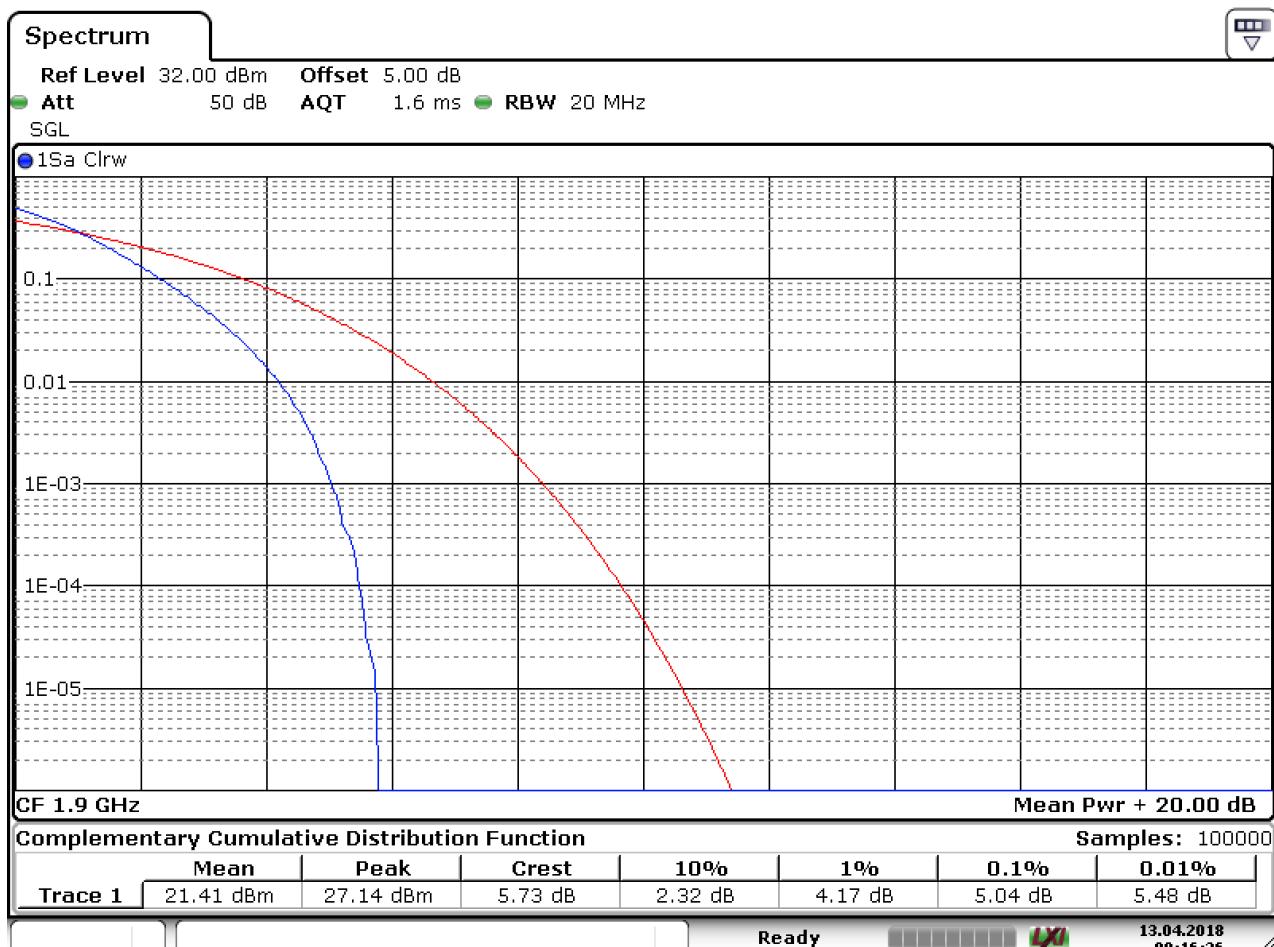
Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
Band 2	TM1/20M	LCH	5.16	13	PASS
		MCH	5.16	13	PASS
		HCH	5.04	13	PASS
	TM2/20M	LCH	6.14	13	PASS
		MCH	6.09	13	PASS
		HCH	5.94	13	PASS

Part II - Test Plots**2.1 For LTE****2.1.1 Test Band = LTE band2****2.1.1.1 Test Mode = LTE/TM1.Bandwidth=20MHz****2.1.1.1.1 Test Channel = LCH**

Date: 13.APR.2018 08:07:54

2.1.1.1.2 Test Channel = MCH

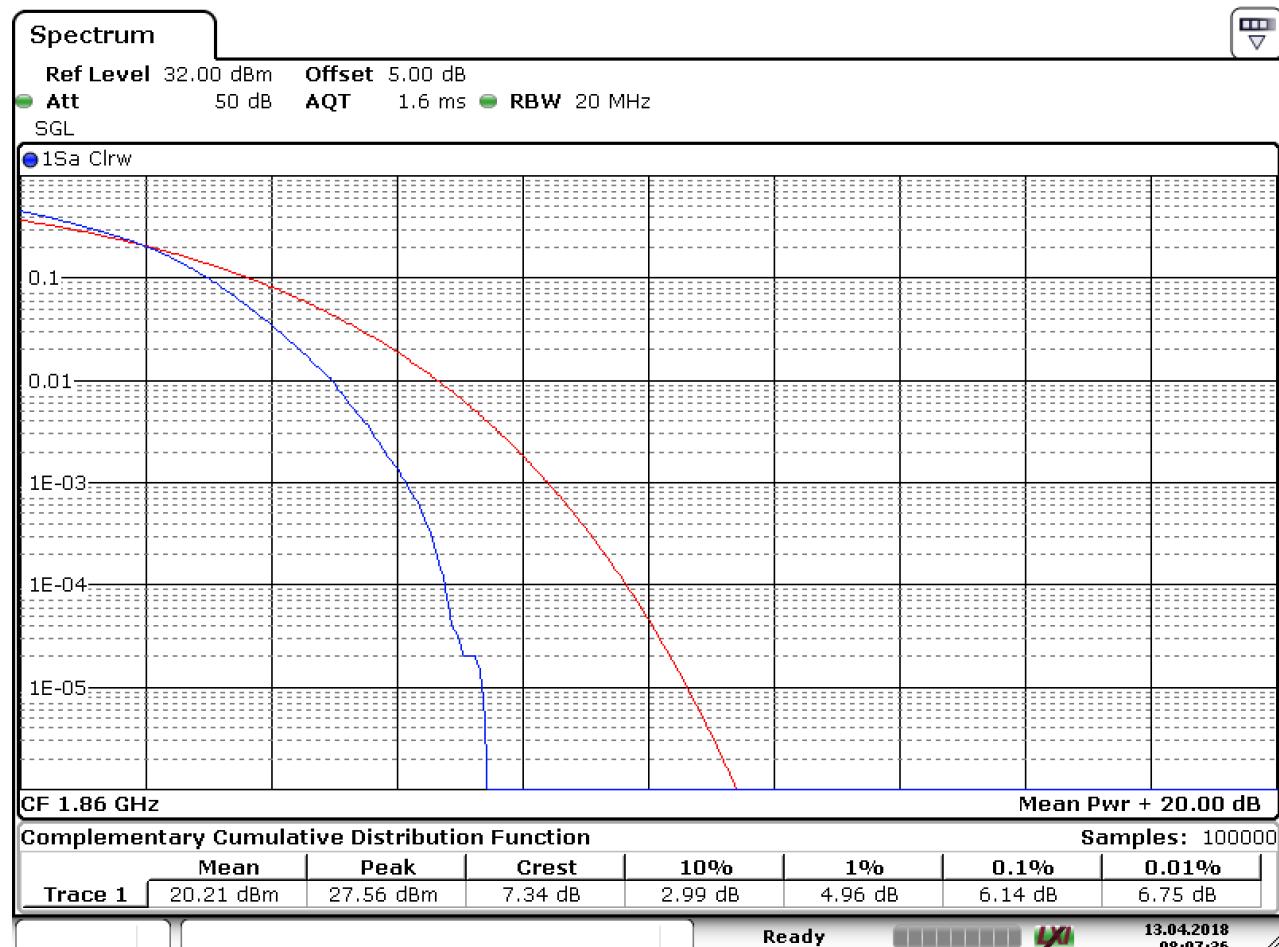
Date: 13.APR.2018 08:10:57

2.1.1.1.3 Test Channel = HCH

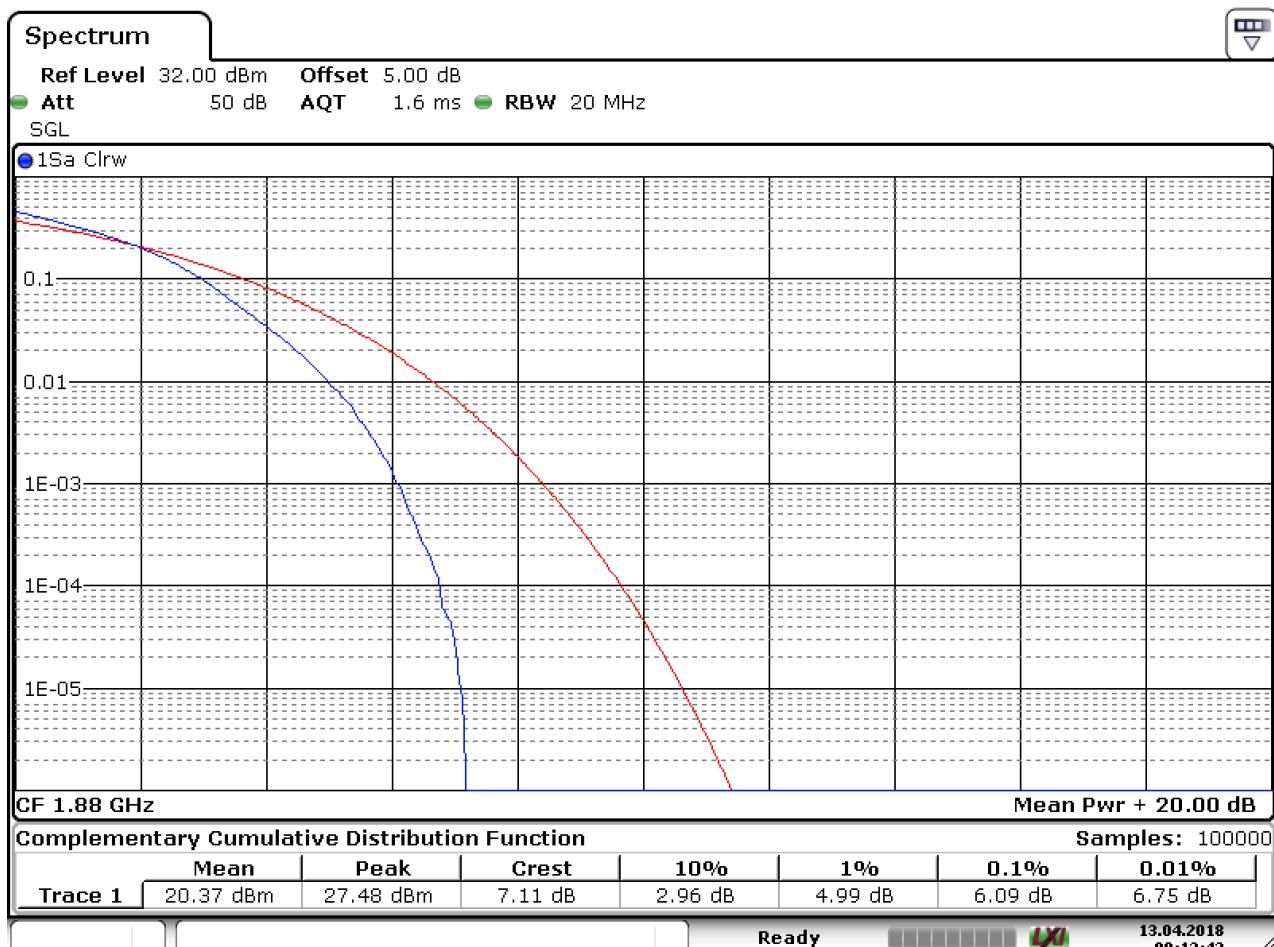
Date: 13.APR.2018 08:16:26

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

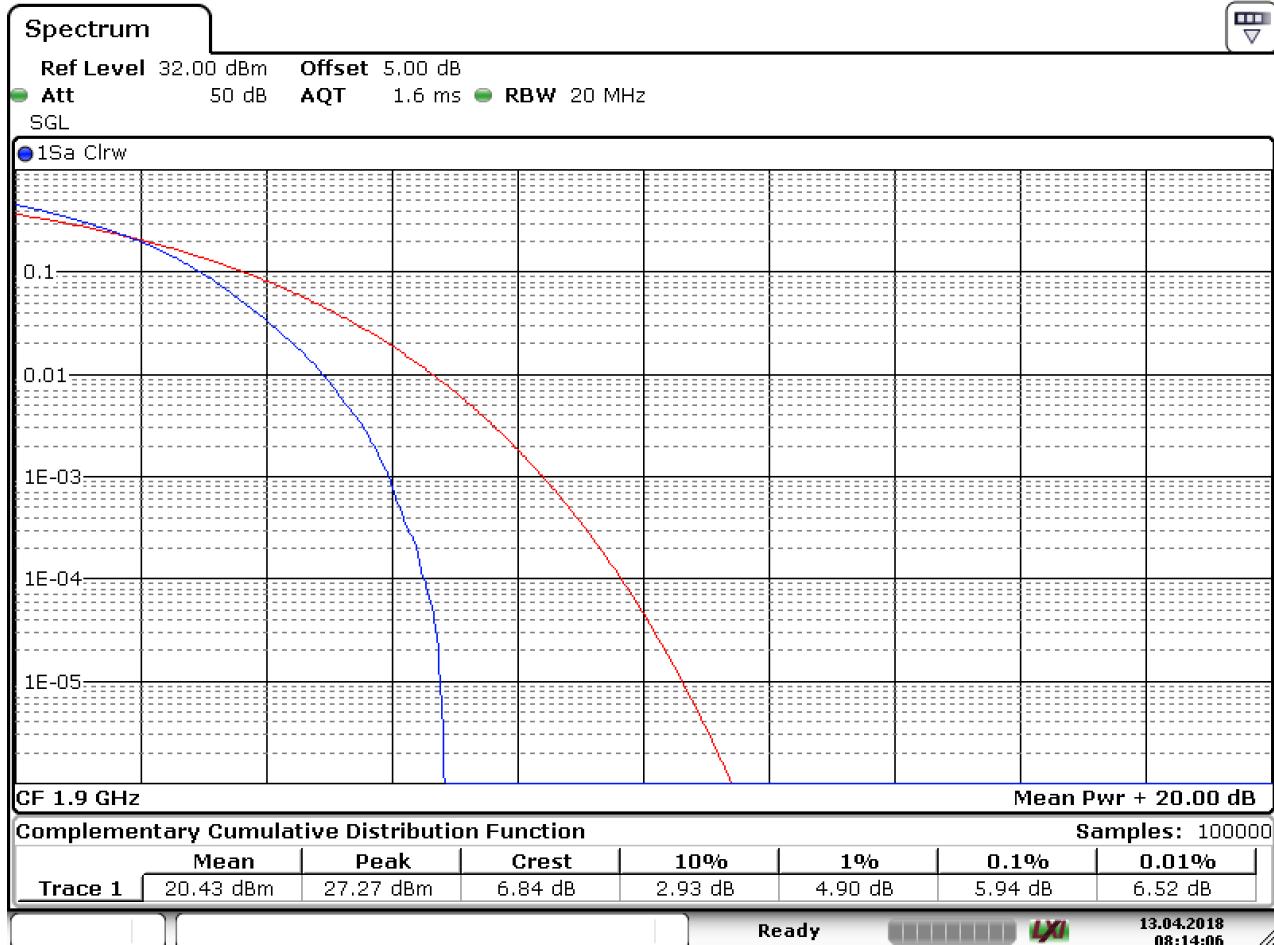
2.1.1.2.1 Test Channel = LCH



Date: 13.APR.2018 08:07:37

2.1.1.2.2 Test Channel = MCH

Date: 13.APR.2018 08:13:42

2.1.1.2.3 Test Channel = HCH

Date: 13.APR.2018 08:14:06

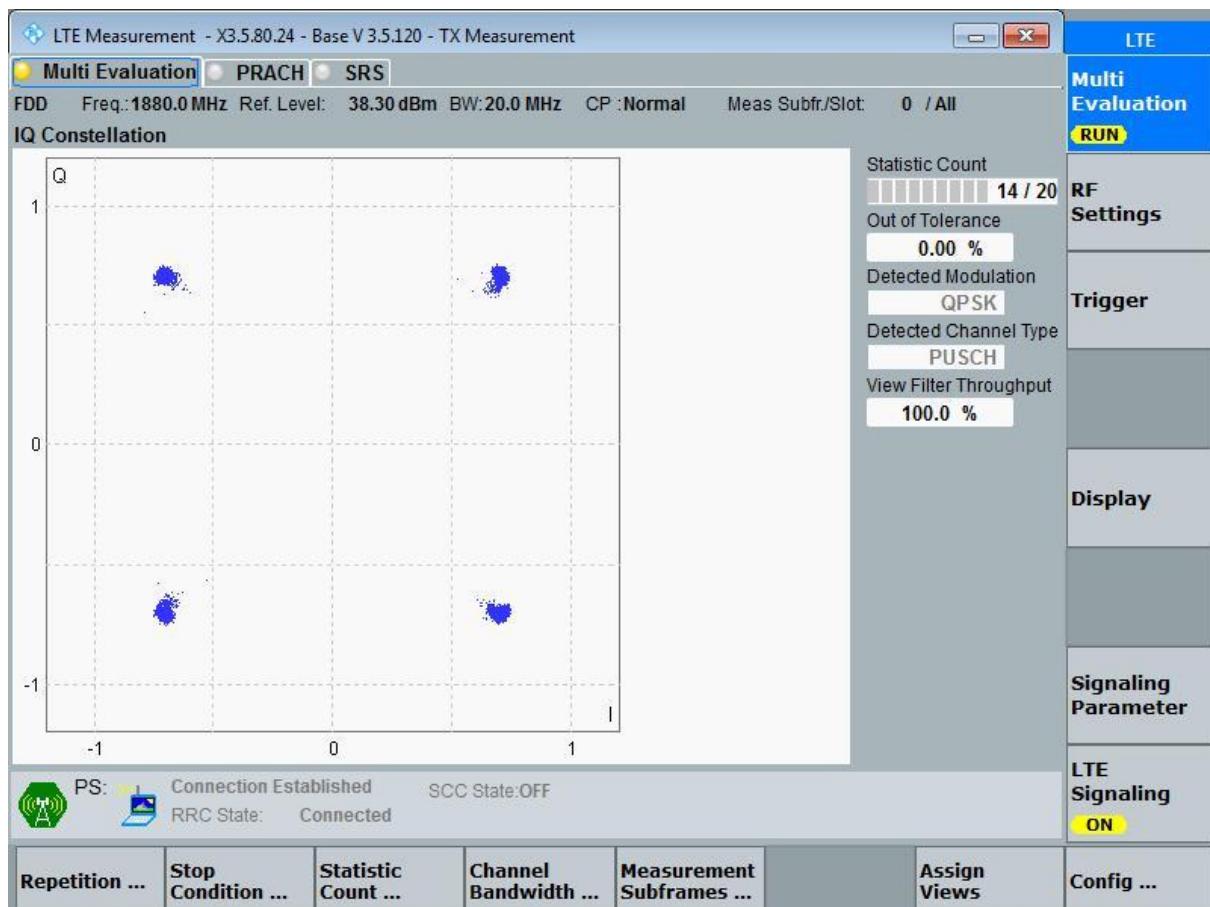
3 Modulation Characteristics

3.1 For LTE

3.1.1 Test Band = LTE band2

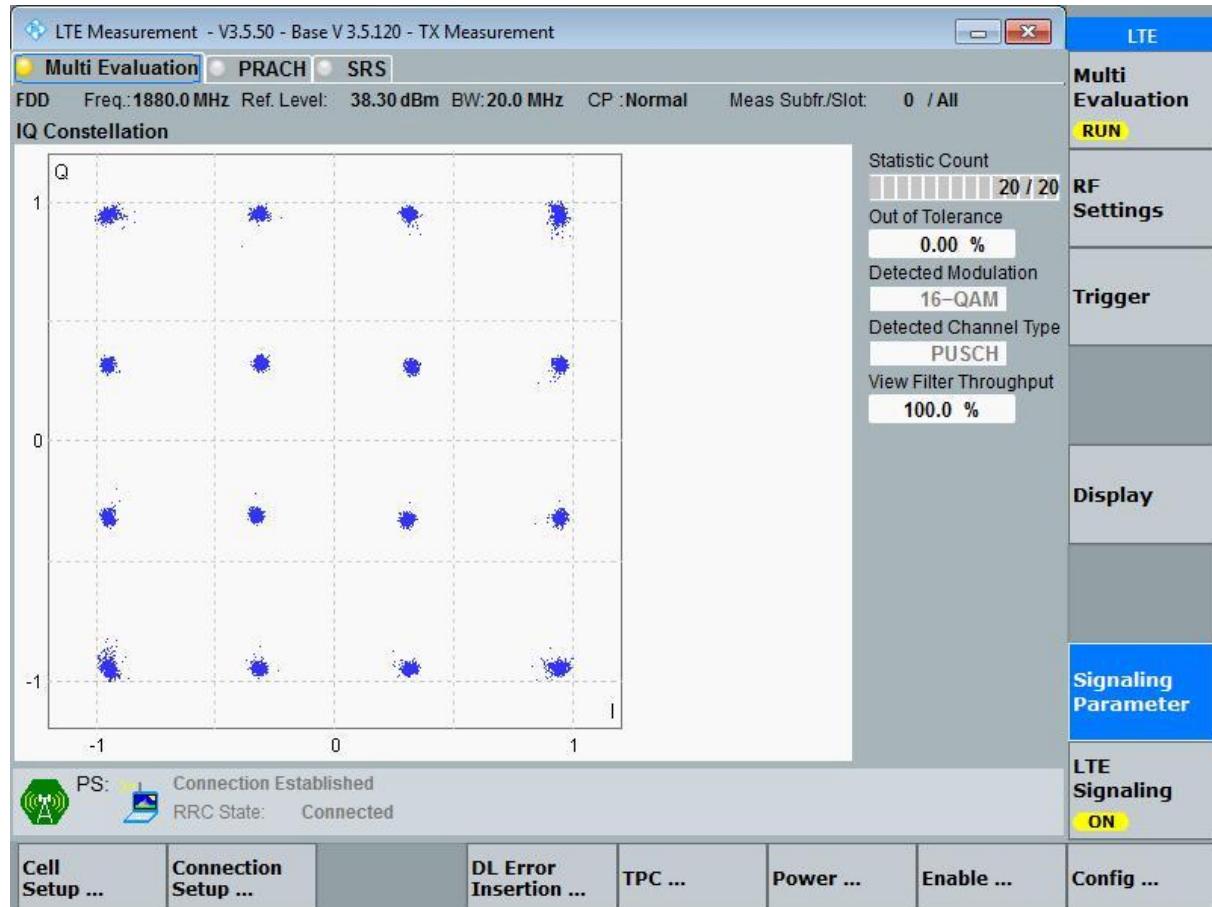
3.1.1.1 Test Mode = LTE /TM1 20MHz

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

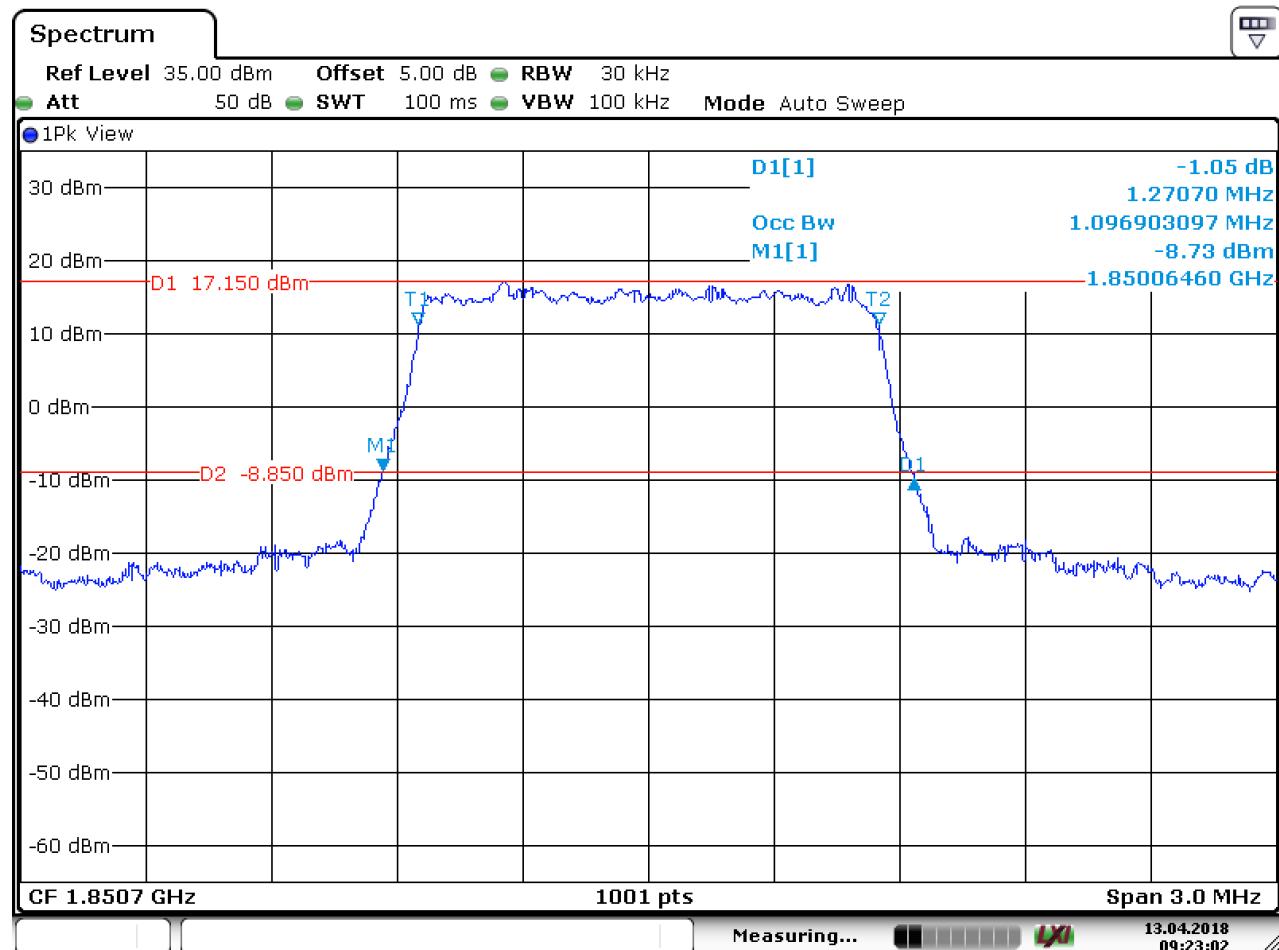
Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
Band 2	TM1/1.4MHz	LCH	1.097	1.271	PASS
		MCH	1.094	1.268	PASS
		HCH	1.097	1.271	PASS
	TM2/1.4MHz	LCH	1.094	1.274	PASS
		MCH	1.097	1.282	PASS
		HCH	1.088	1.247	PASS
	TM1/ 3MHz	LCH	2.685	2.913	PASS
		MCH	2.685	2.925	PASS
		HCH	2.691	2.907	PASS
	TM2/3MHz	LCH	2.679	2.919	PASS
		MCH	2.685	2.919	PASS
		HCH	2.679	2.919	PASS
	TM1/ 5MHz	LCH	4.456	4.825	PASS
		MCH	4.466	4.915	PASS
		HCH	4.486	4.955	PASS
	TM2/ 5MHz	LCH	4.486	4.985	PASS
		MCH	4.466	4.975	PASS
		HCH	4.466	4.935	PASS
	TM1/10MHz	LCH	8.951	9.830	PASS
		MCH	8.951	9.770	PASS
		HCH	8.931	9.670	PASS
	TM2/ 10MHz	LCH	8.911	9.650	PASS
		MCH	8.931	9.730	PASS
		HCH	8.931	9.770	PASS
	TM1/ 15MHz	LCH	13.427	14.865	PASS
		MCH	13.487	14.955	PASS
		HCH	13.457	14.865	PASS
	TM2/ 15MHz	LCH	13.487	14.895	PASS
		MCH	13.487	14.835	PASS
		HCH	13.457	14.835	PASS
	TM1/ 20MHz	LCH	17.942	19.421	PASS
		MCH	17.942	19.381	PASS
		HCH	17.942	19.740	PASS
	TM2/ 20MHz	LCH	17.942	19.540	PASS
		MCH	17.942	19.580	PASS
		HCH	17.902	19.580	PASS

4.1 For LTE

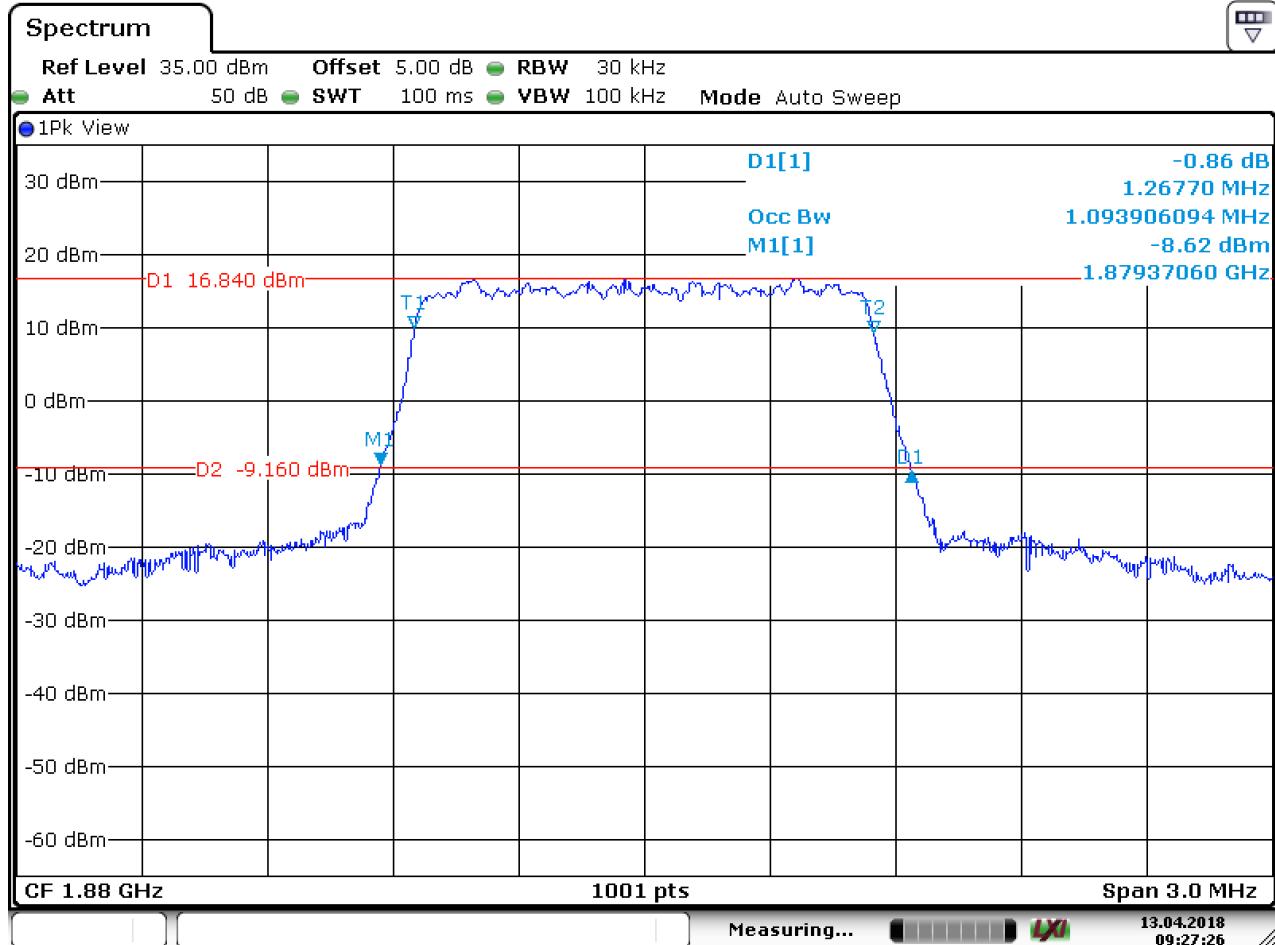
4.1.1 Test Band = LTE band2

4.1.1.1 Test Mode = LTE/TM1 1.4MHz

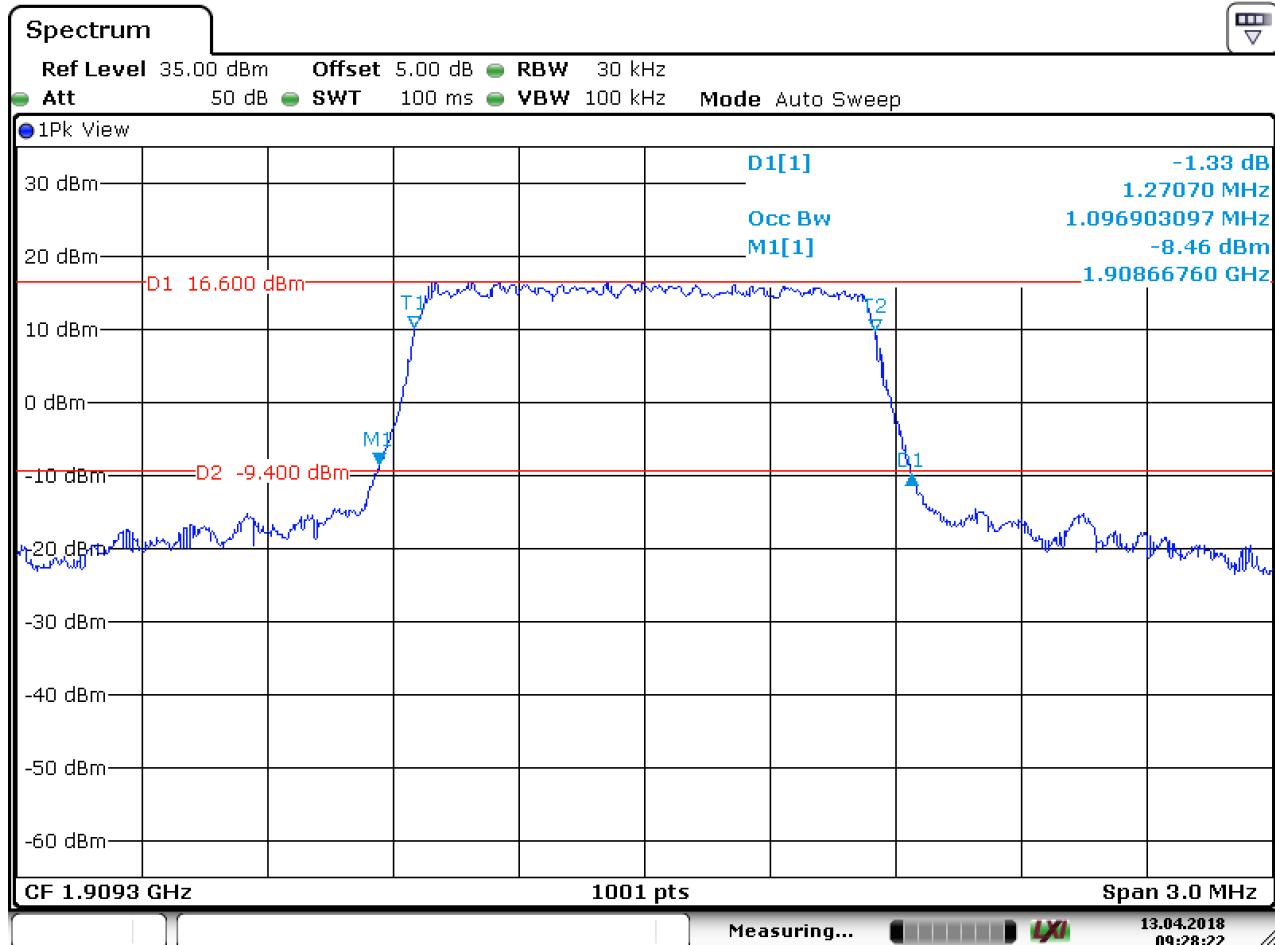
4.1.1.1.1 Test Channel = LCH



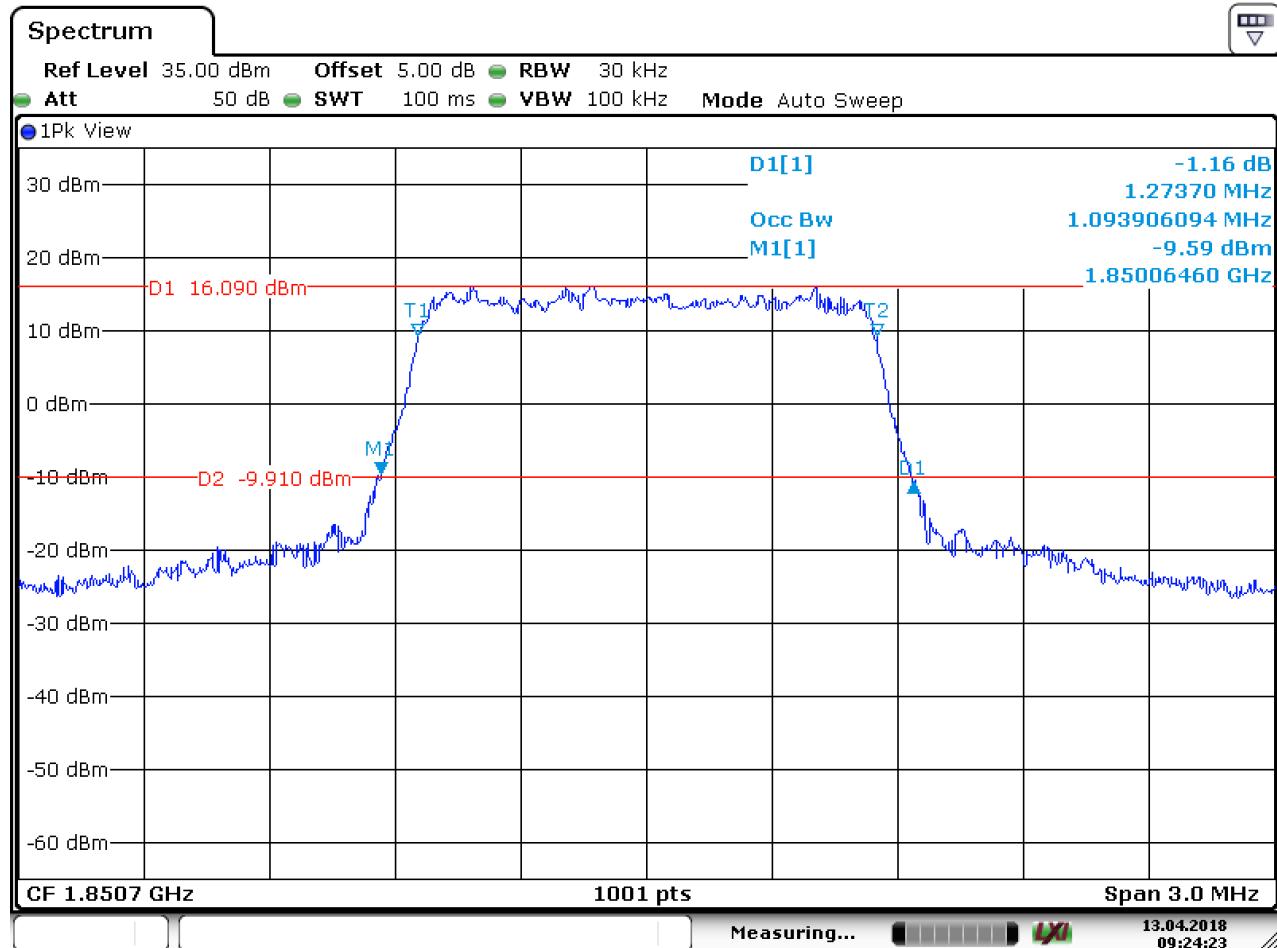
Date: 13.APR.2018 09:23:02

4.1.1.1.2 Test Channel = MCH

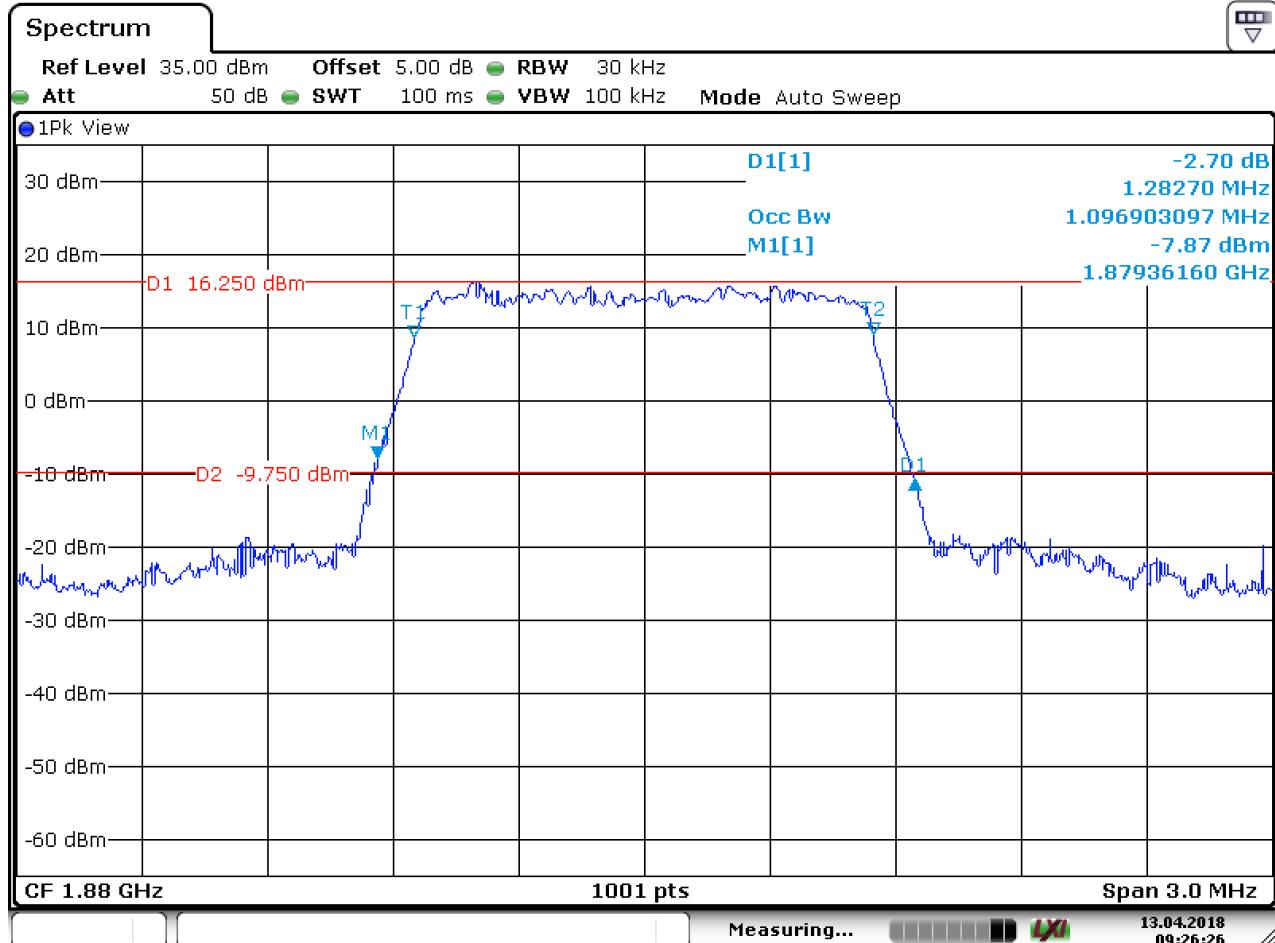
Date: 13.APR.2018 09:27:27

4.1.1.1.3 Test Channel = HCH


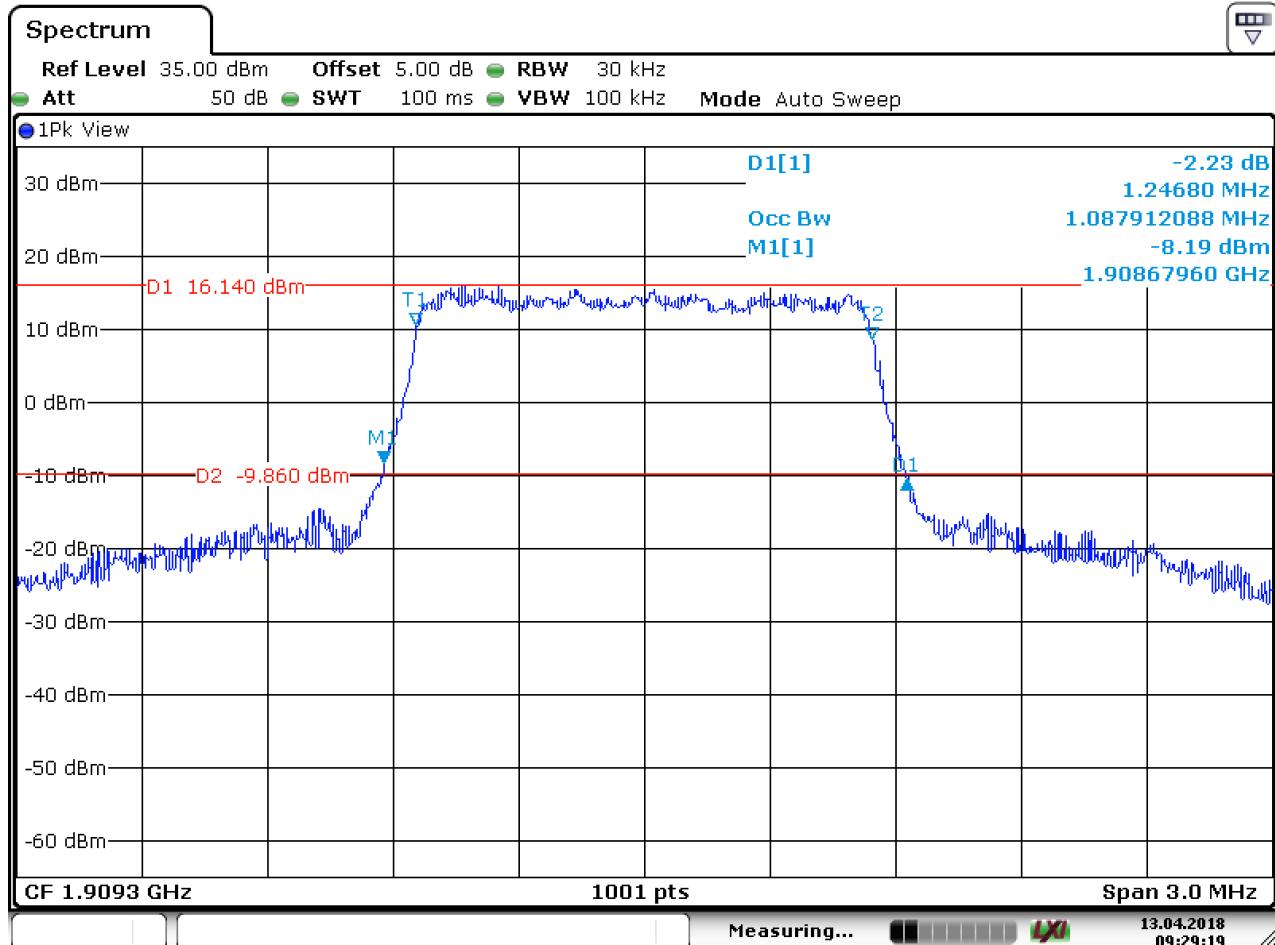
Date: 13.APR.2018 09:28:23

4.1.1.2 Test Mode = LTE/TM2 1.4MHz**4.1.1.2.1 Test Channel = LCH**

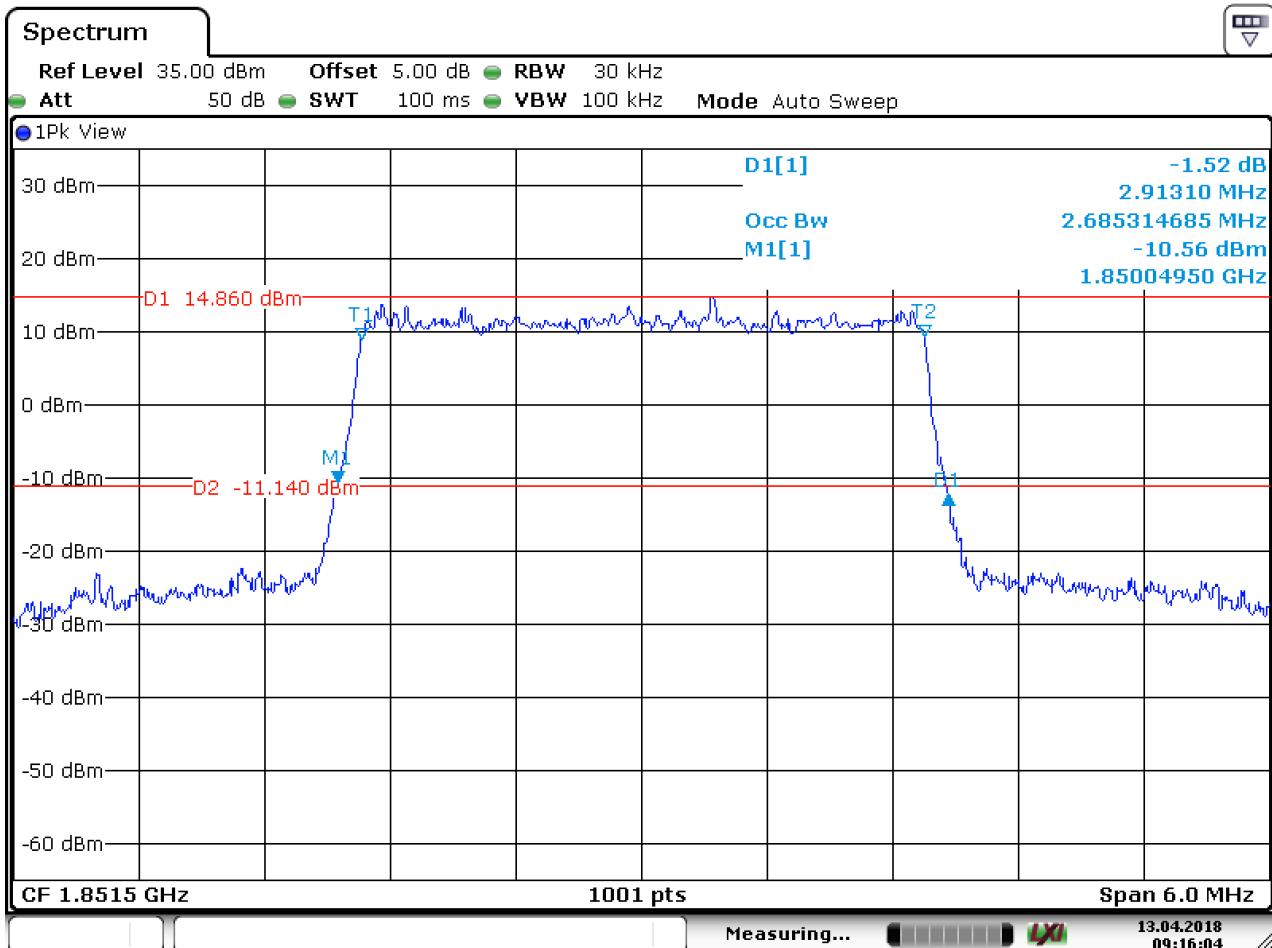
Date: 13.APR.2018 09:24:23

4.1.1.2.2 Test Channel = MCH

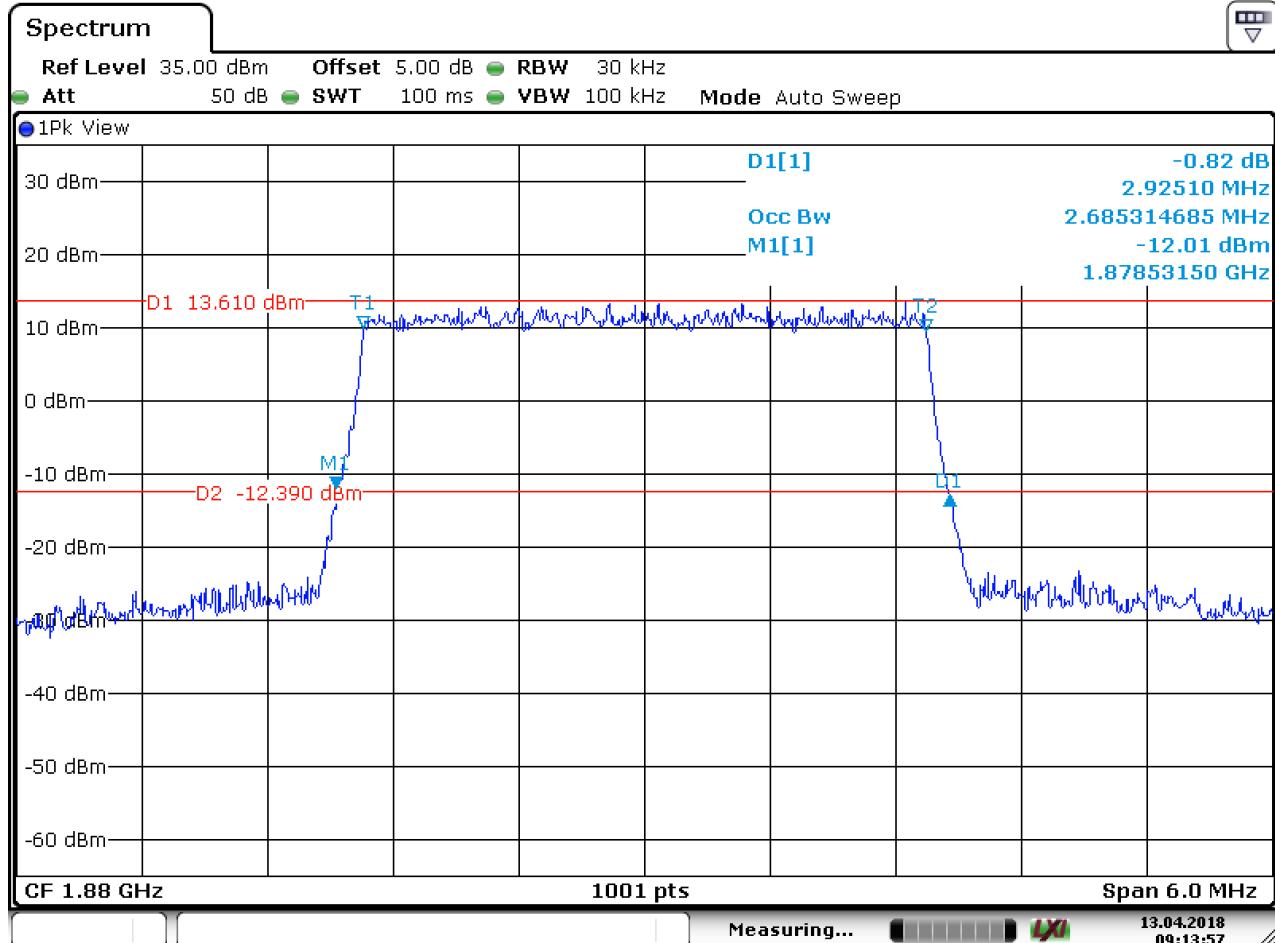
Date: 13.APR.2018 09:26:27

4.1.1.2.3 Test Channel = HCH

Date: 13.APR.2018 09:29:20

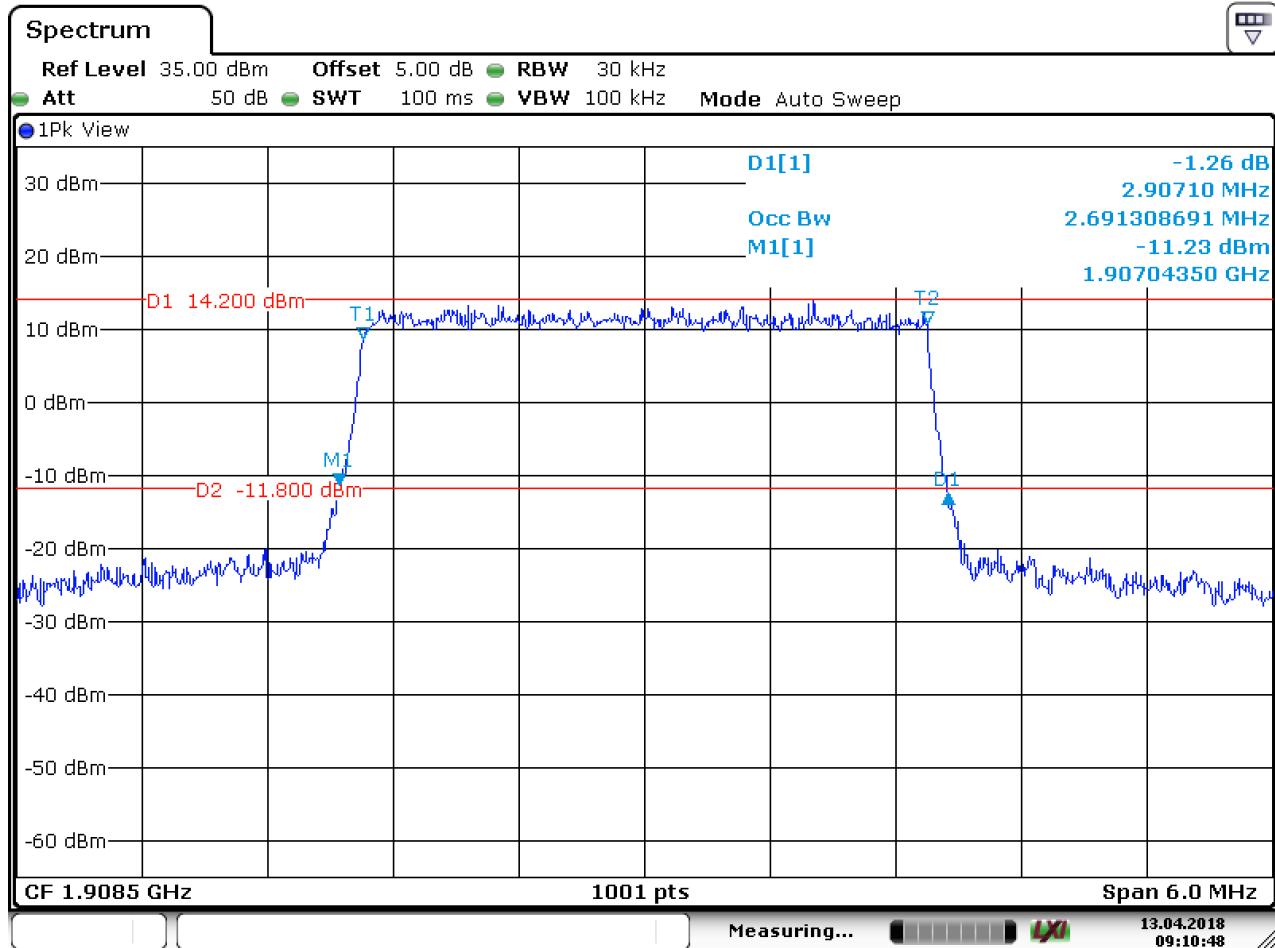
4.1.1.3 Test Mode = LTE/TM1 3MHz**4.1.1.3.1 Test Channel = LCH**

Date: 13.APR.2018 09:16:05

4.1.1.3.2 Test Channel = MCH

Date: 13.APR.2018 09:13:57

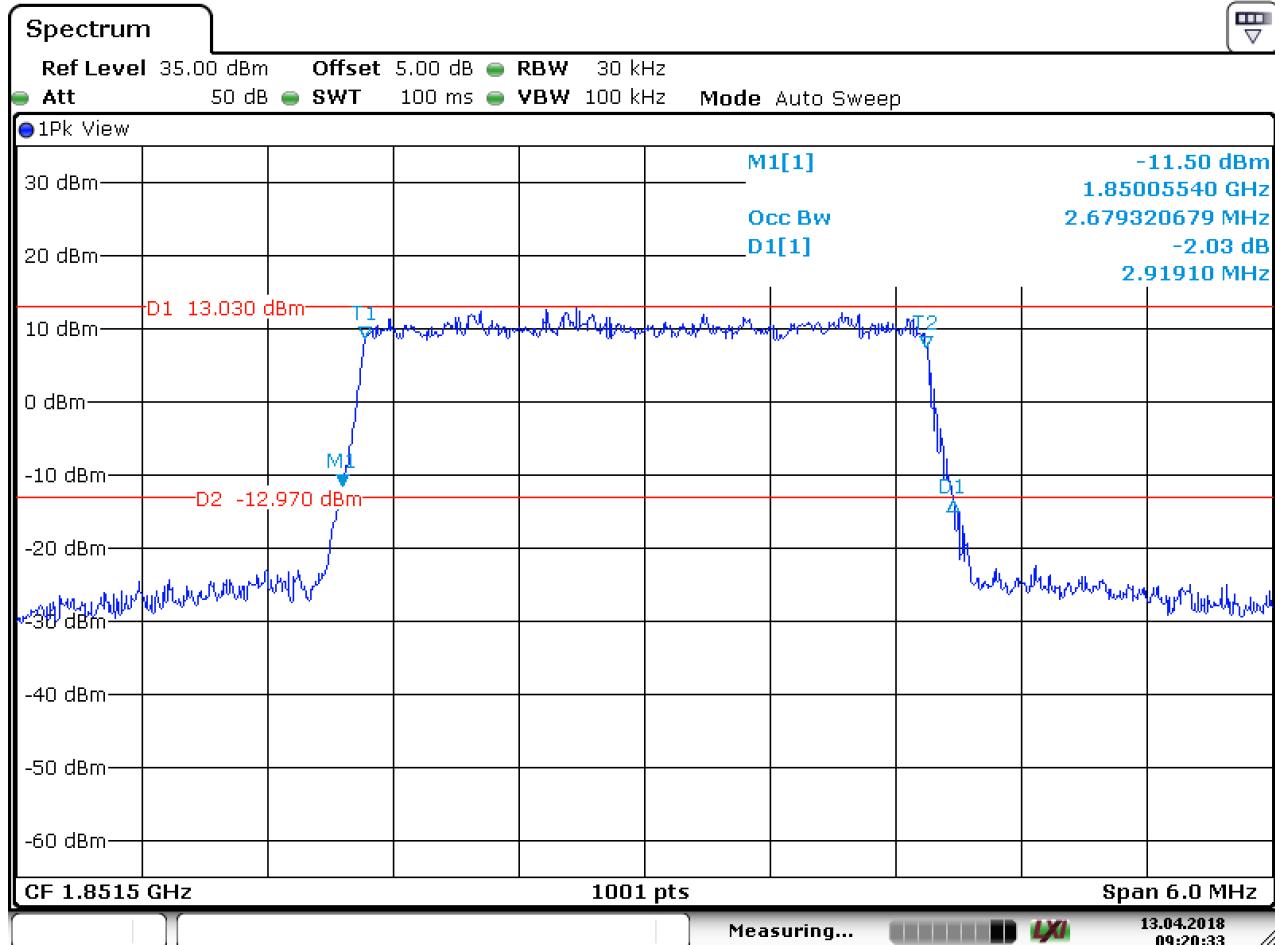
4.1.1.3.3 Test Channel = HCH



Date: 13.APR.2018 09:10:49

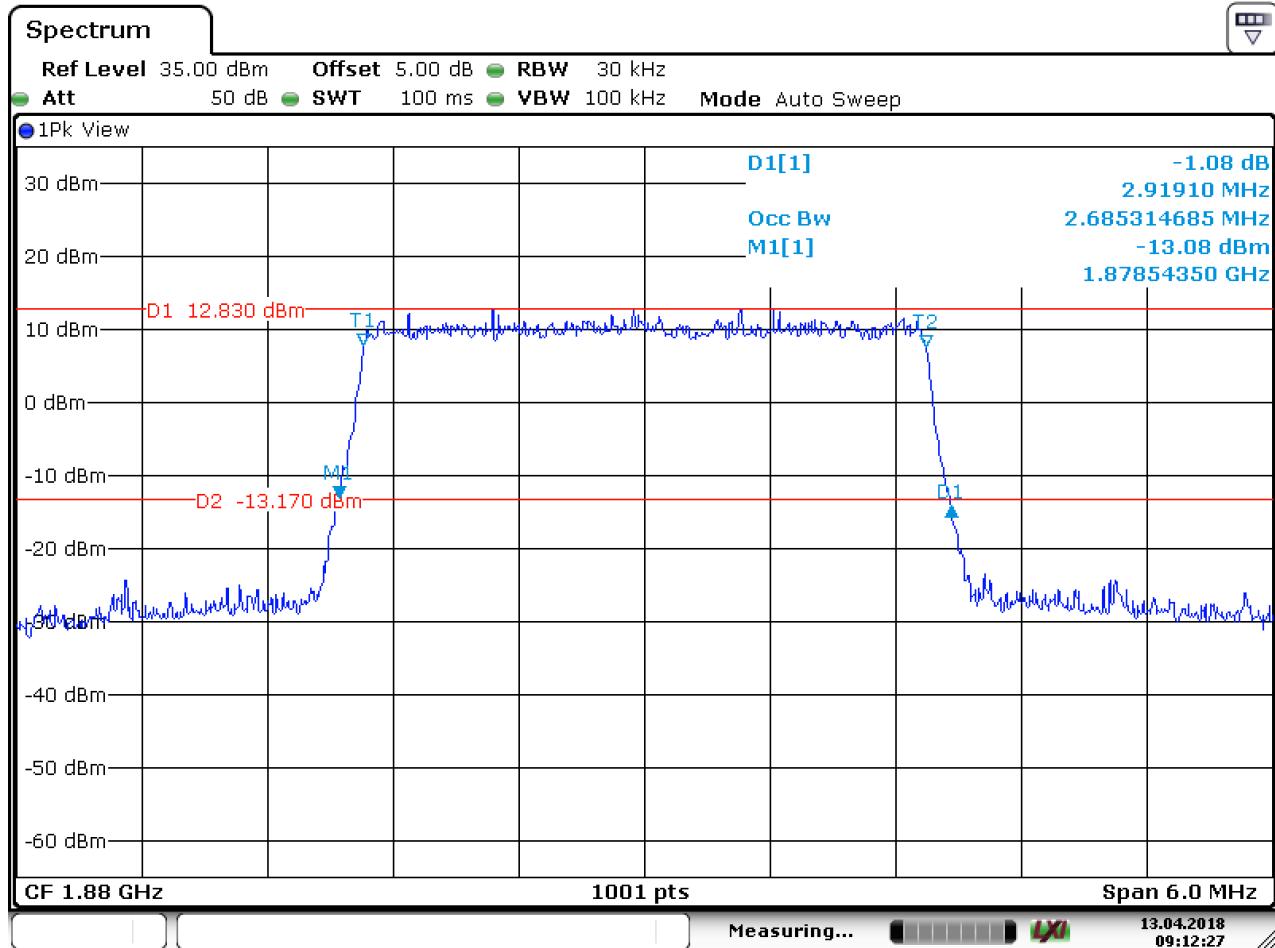
4.1.1.4 Test Mode = LTE/TM2 3MHz

4.1.1.4.1 Test Channel = LCH



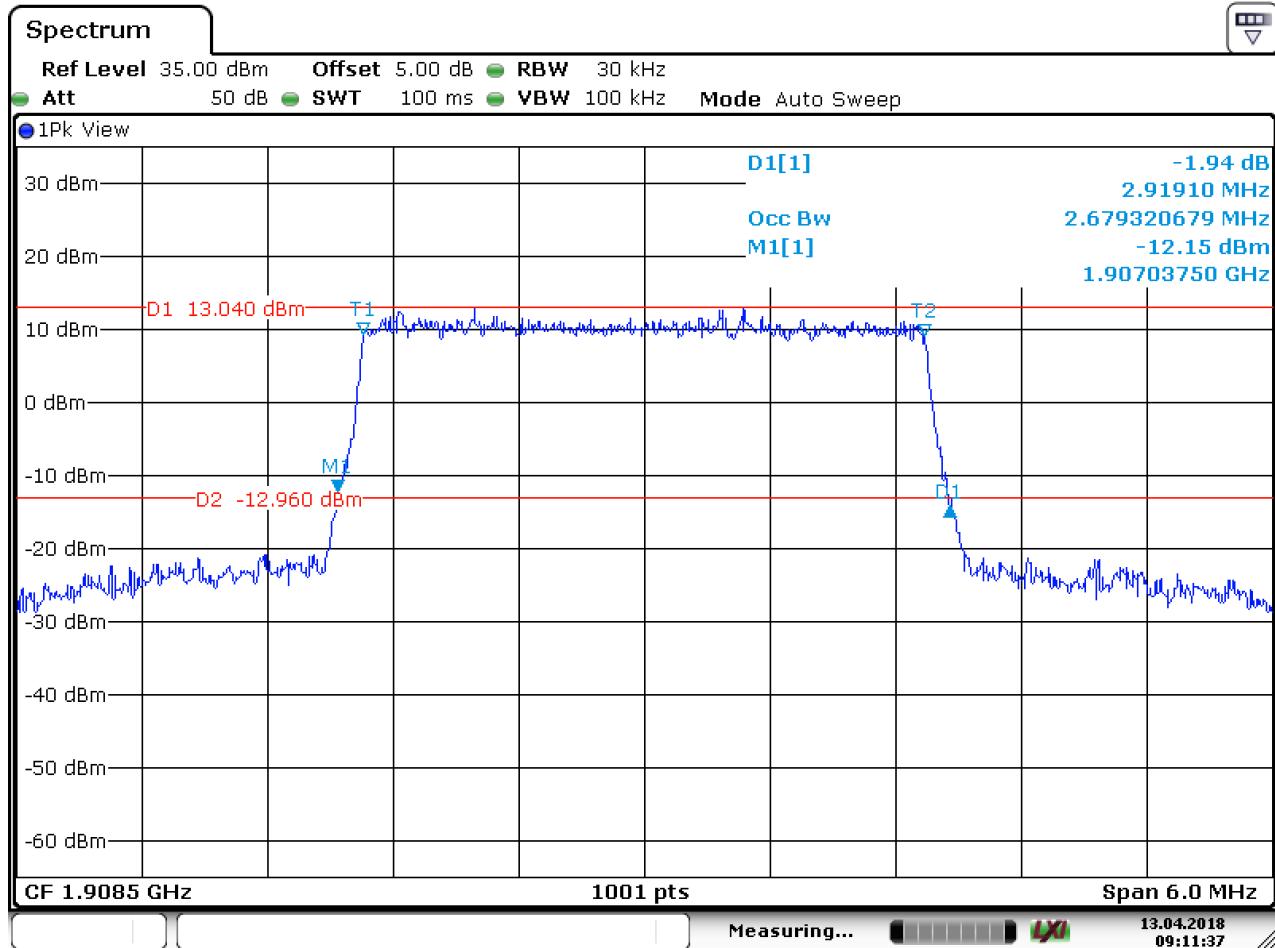
Date: 13.APR.2018 09:20:33

4.1.1.4.2 Test Channel = MCH

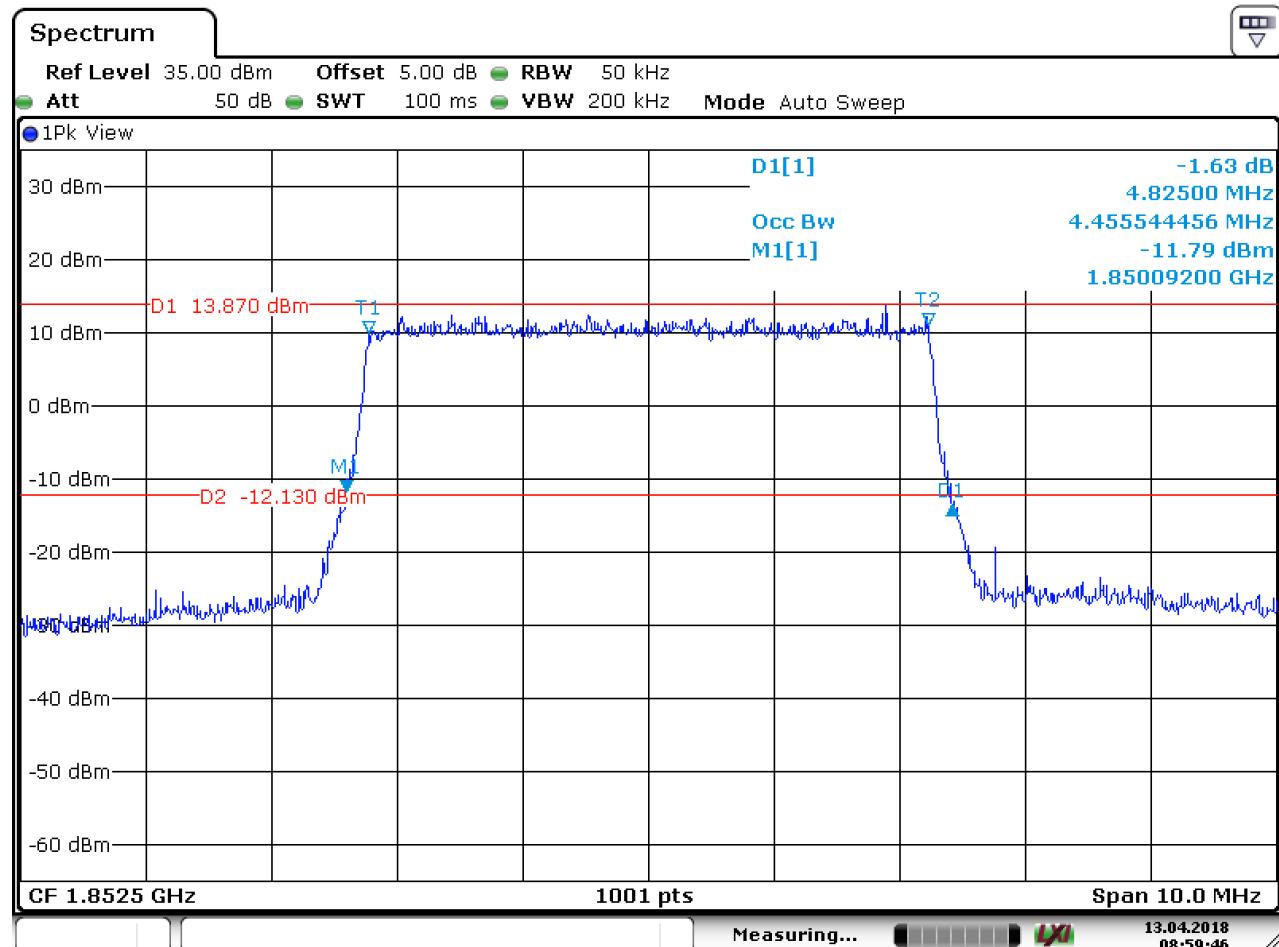


Date: 13.APR.2018 09:12:27

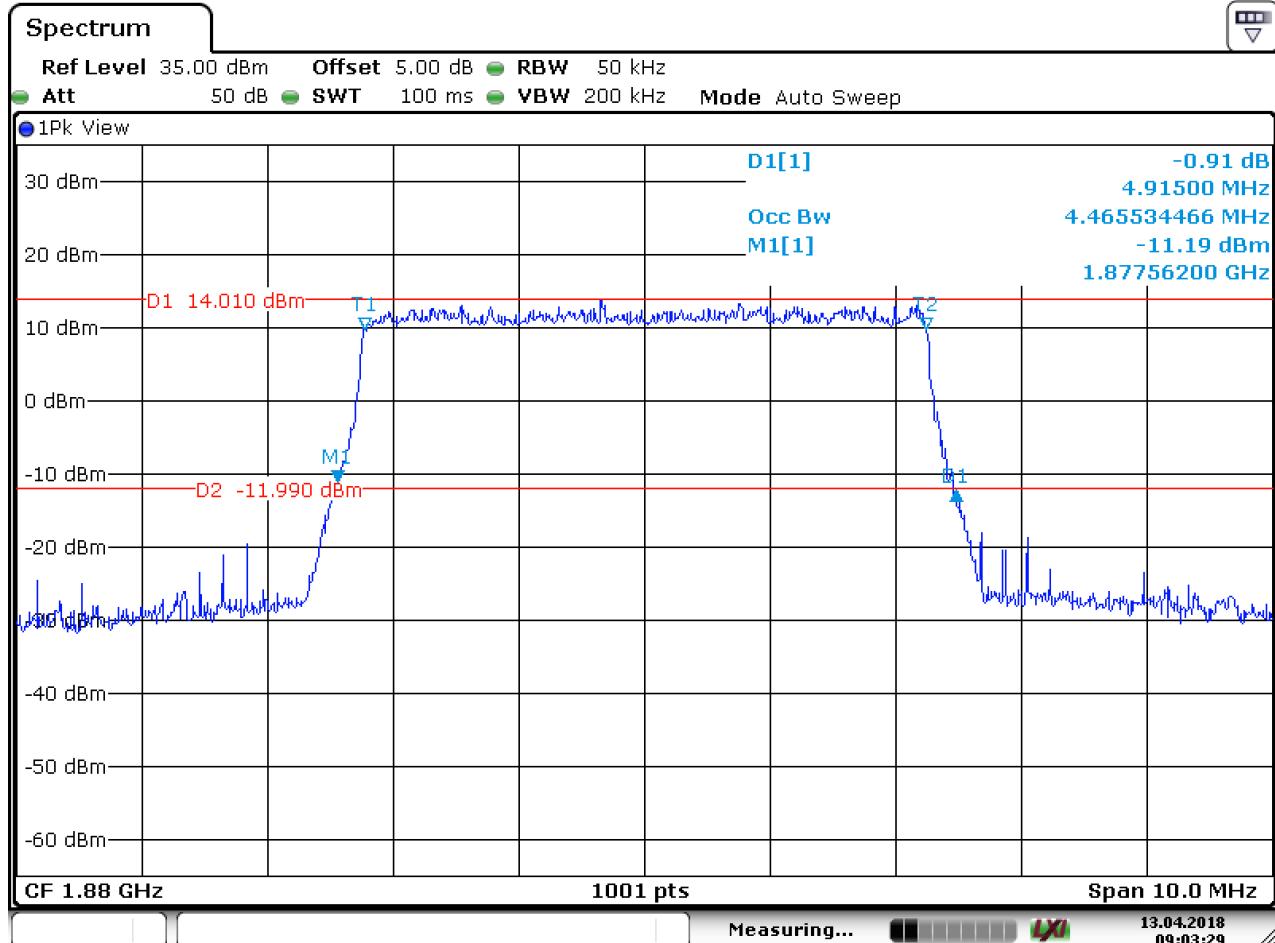
4.1.1.4.3 Test Channel = HCH



Date: 13.APR.2018 09:11:37

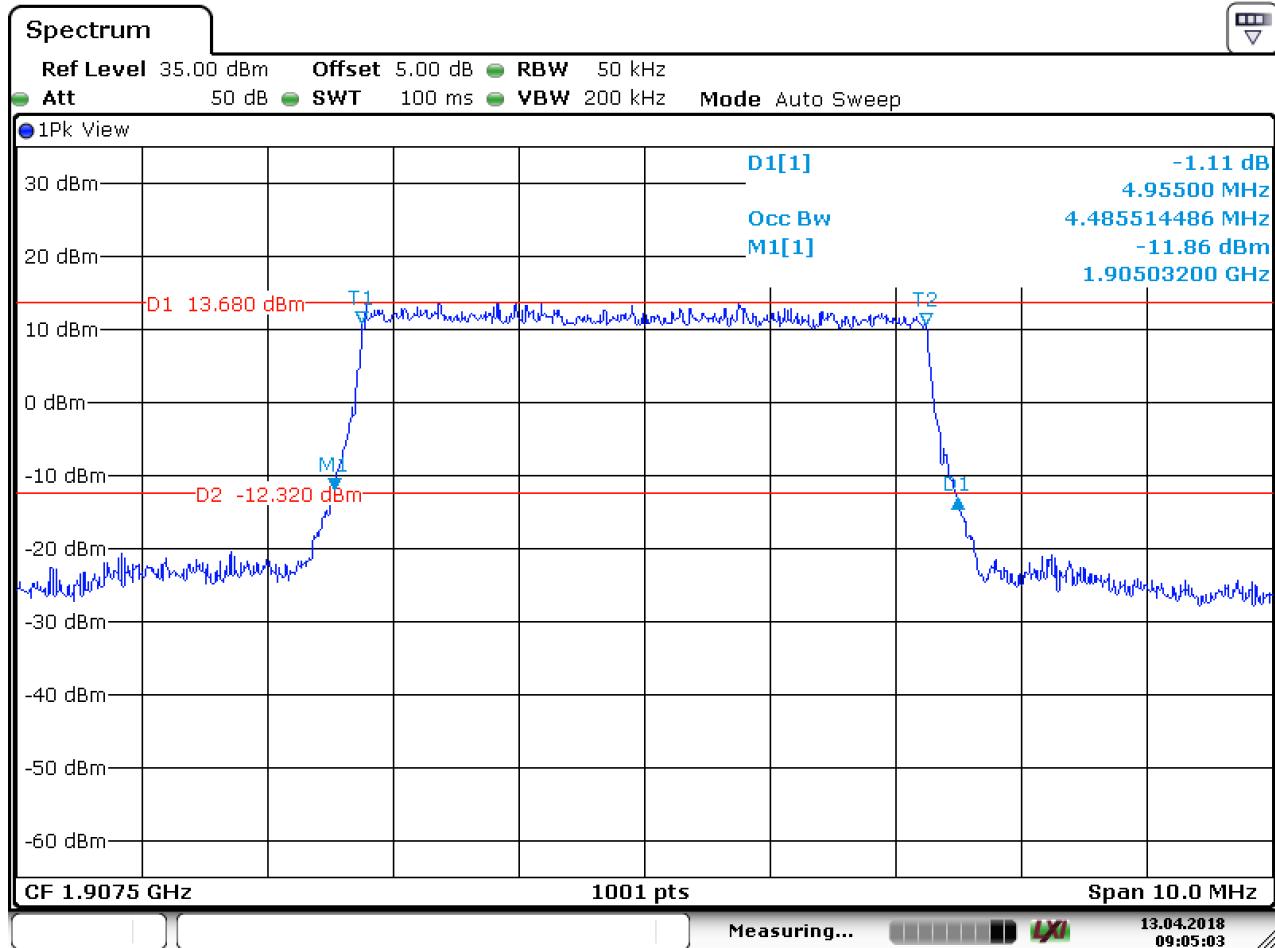
4.1.1.5 Test Mode = LTE/TM1 5MHz**4.1.1.5.1 Test Channel = LCH**

Date: 13.APR.2018 08:59:46

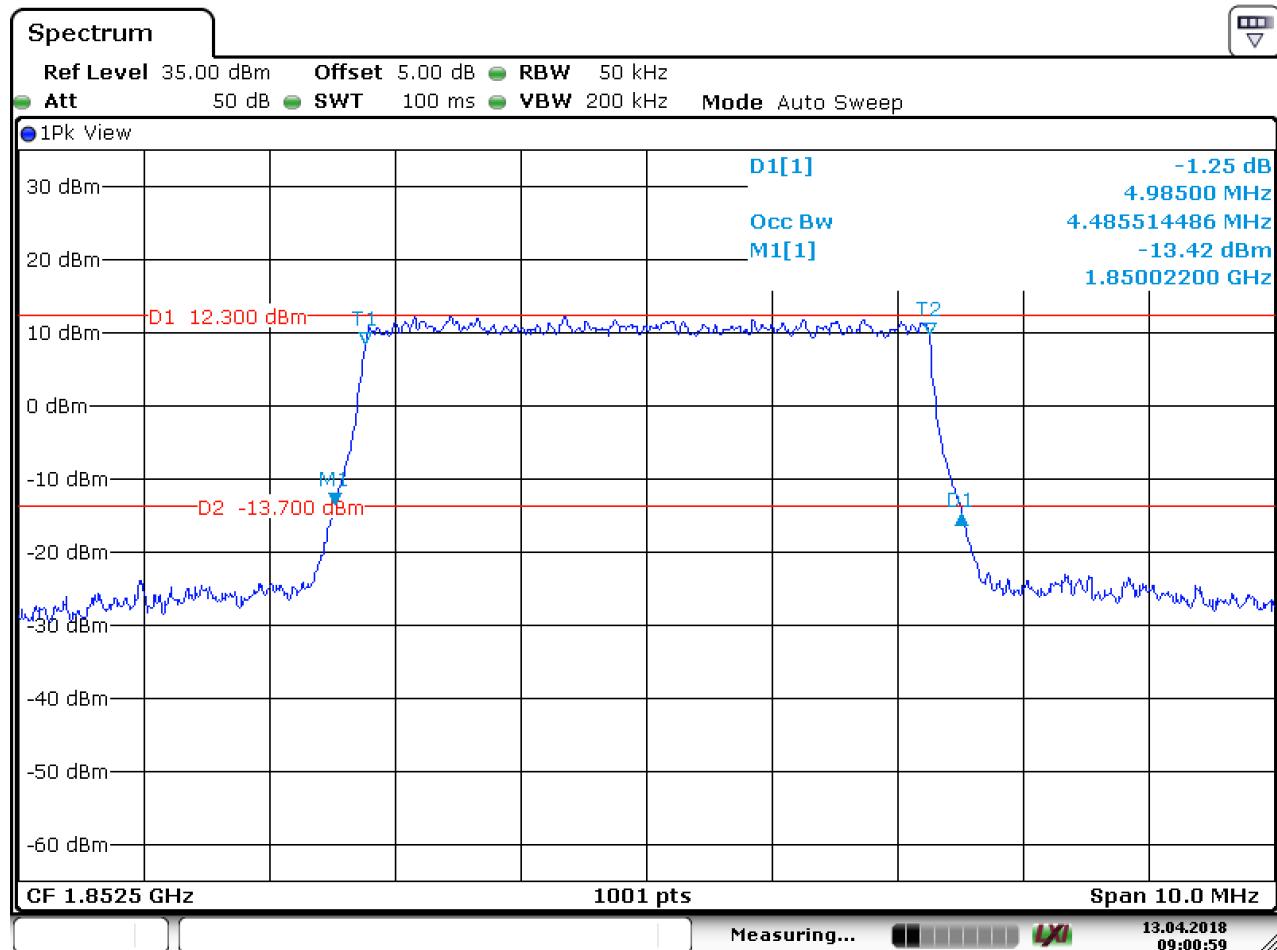
4.1.1.5.2 Test Channel = MCH

Date: 13.APR.2018 09:03:30

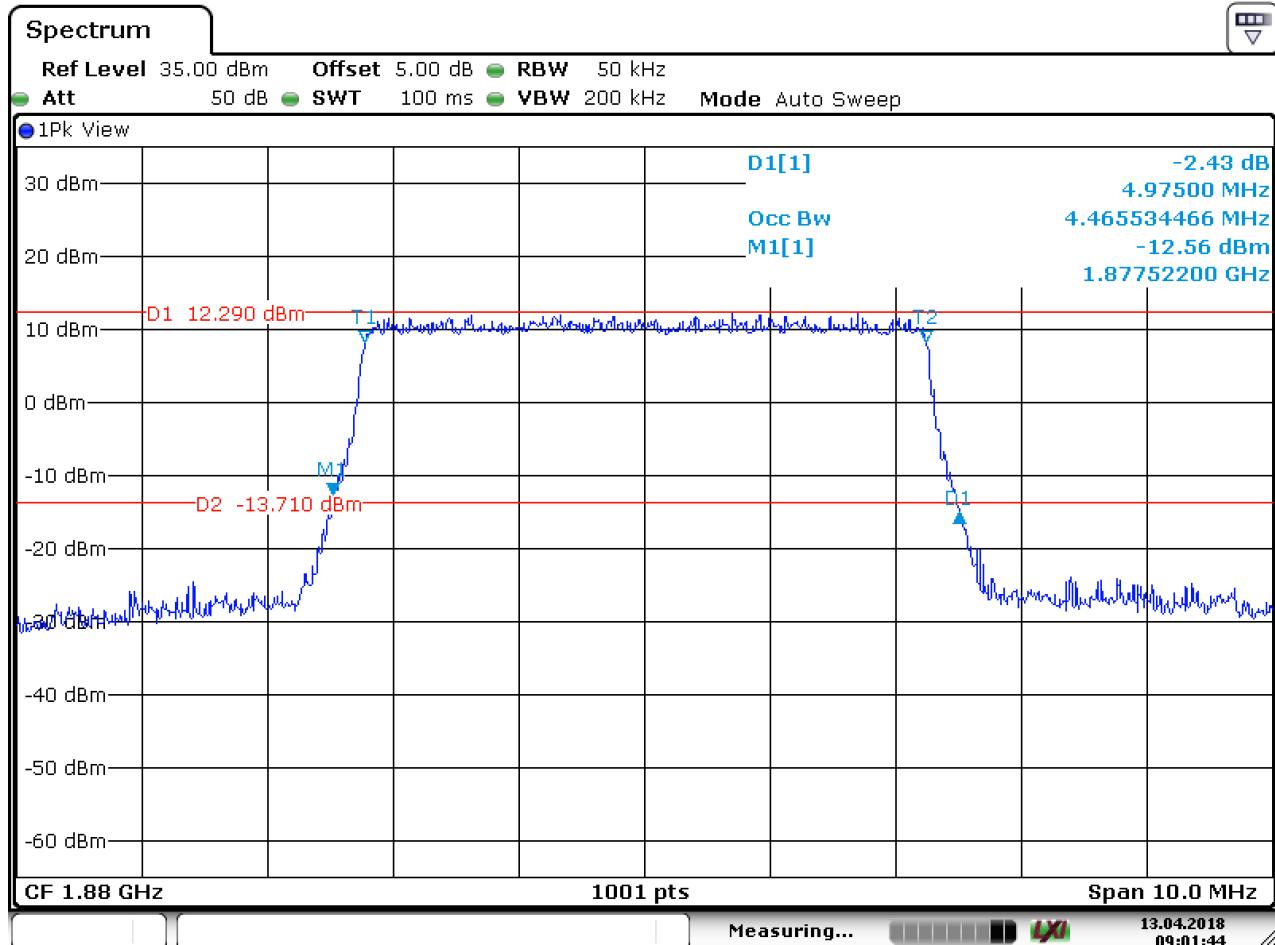
4.1.1.5.3 Test Channel = HCH



Date: 13.APR.2018 09:05:03

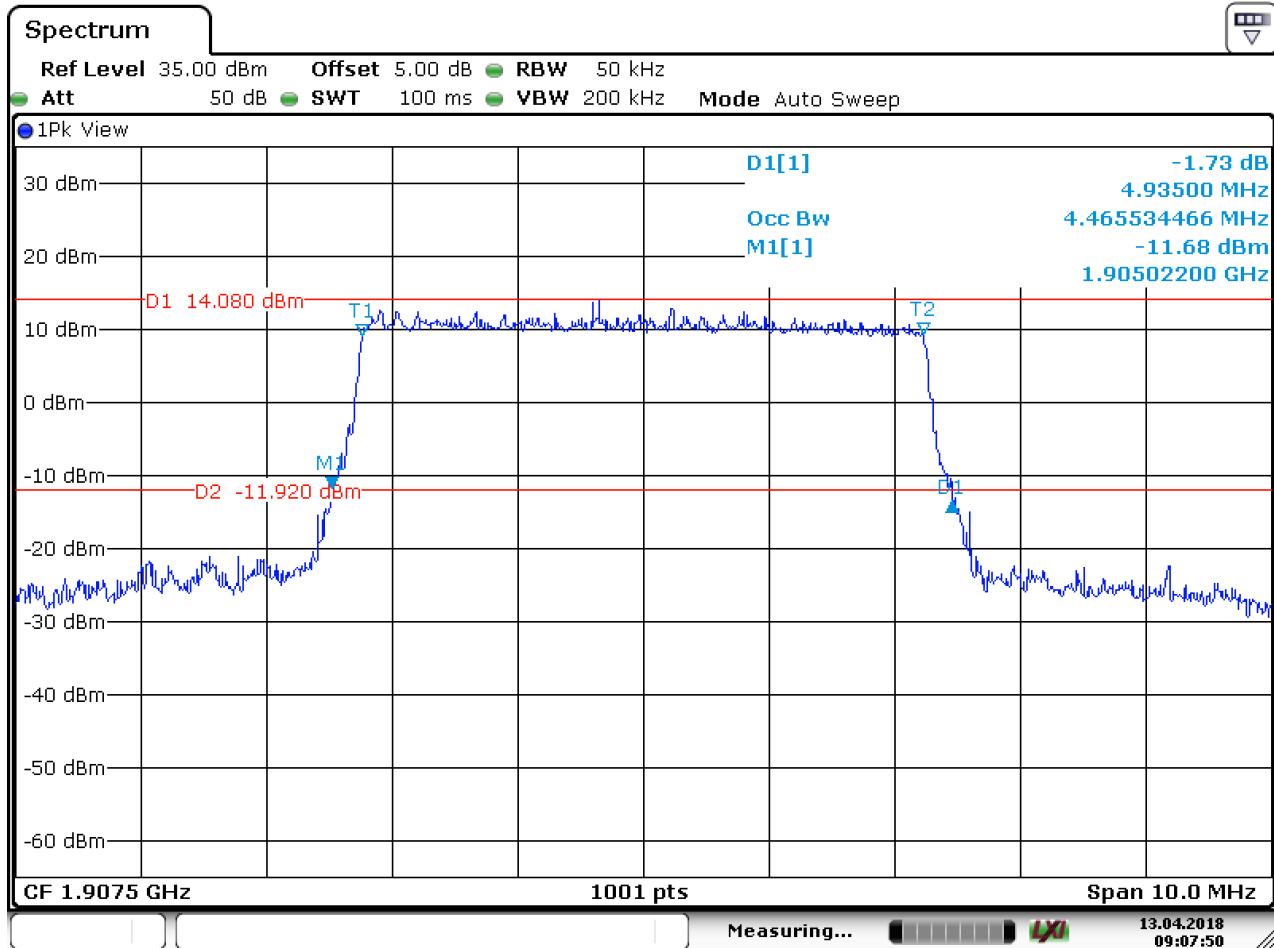
4.1.1.6 Test Mode = LTE/TM2 5MHz**4.1.1.6.1 Test Channel = LCH**

Date: 13.APR.2018 09:01:00

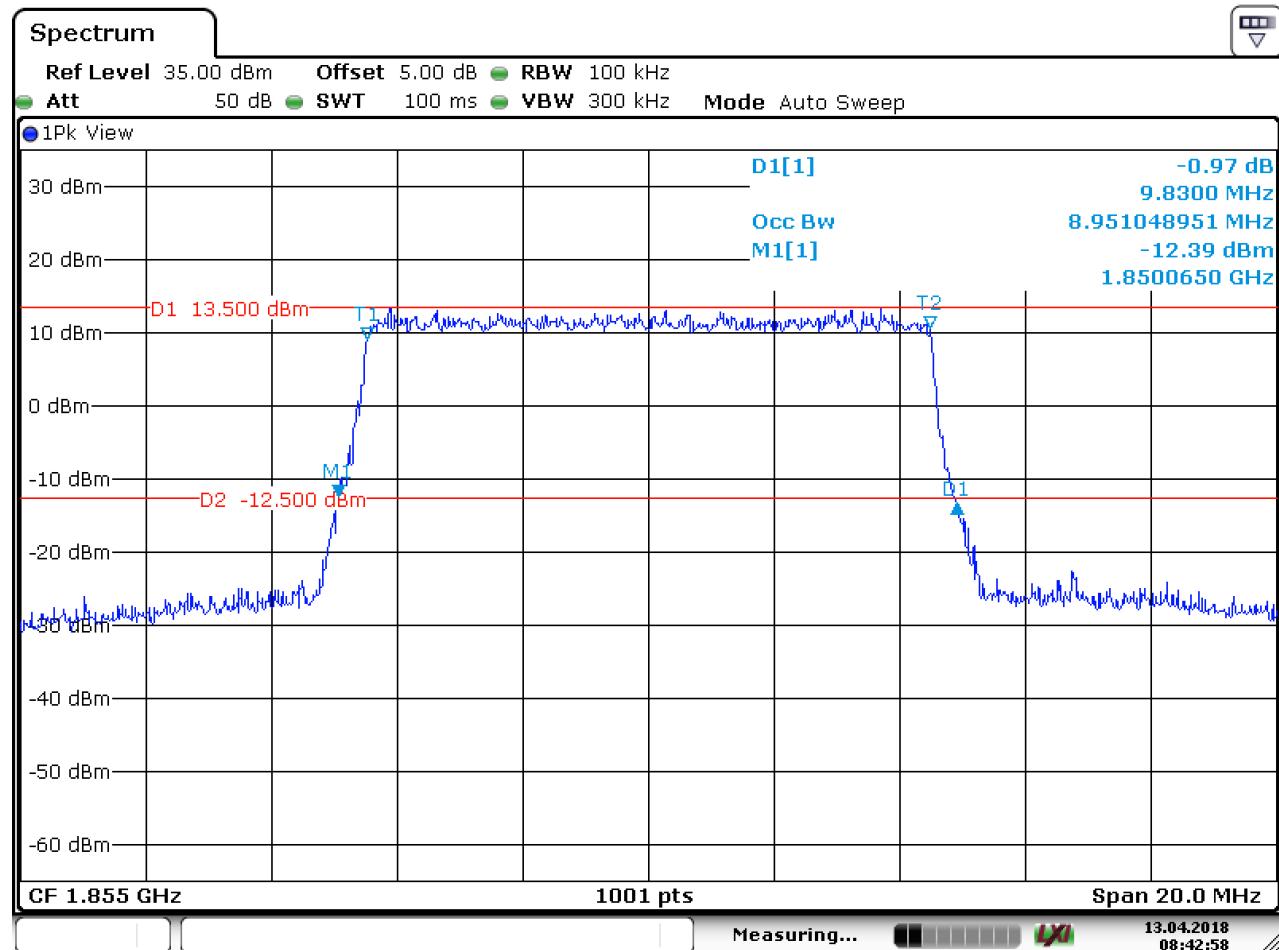
4.1.1.6.2 Test Channel = MCH

Date: 13.APR.2018 09:01:44

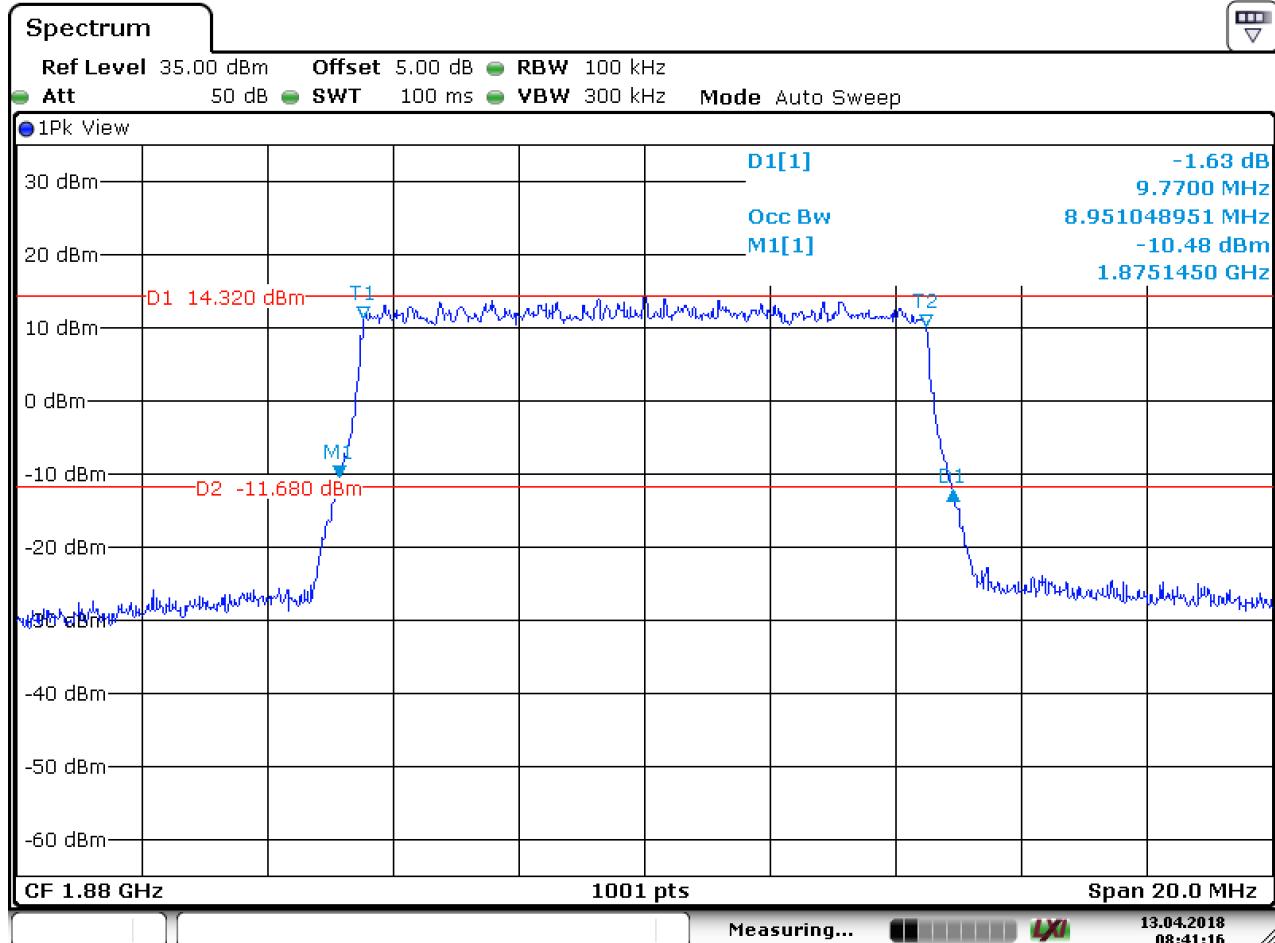
4.1.1.6.3 Test Channel = HCH



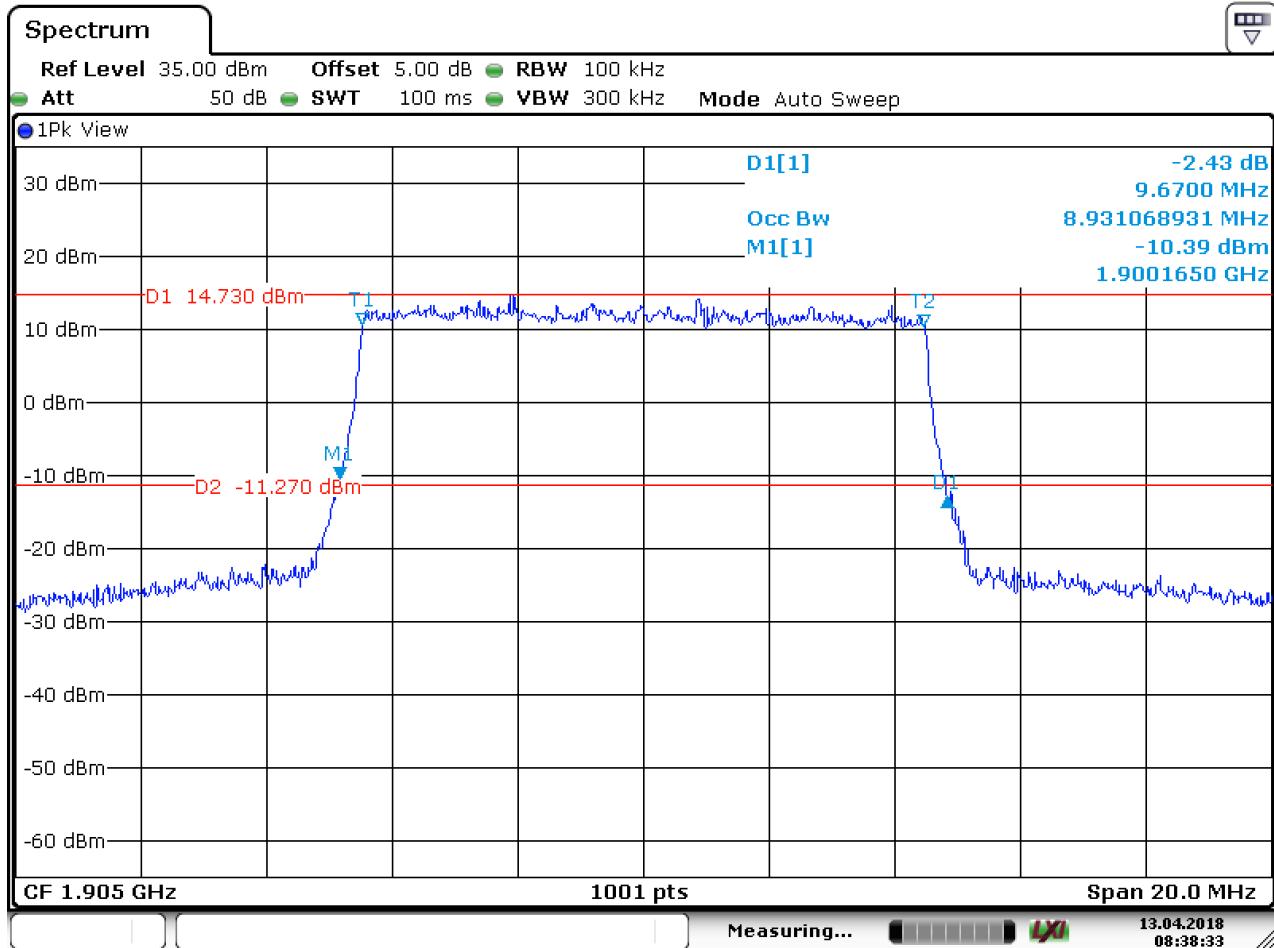
Date: 13.APR.2018 09:07:51

4.1.1.7 Test Mode = LTE/TM1 10MHz**4.1.1.7.1 Test Channel = LCH**

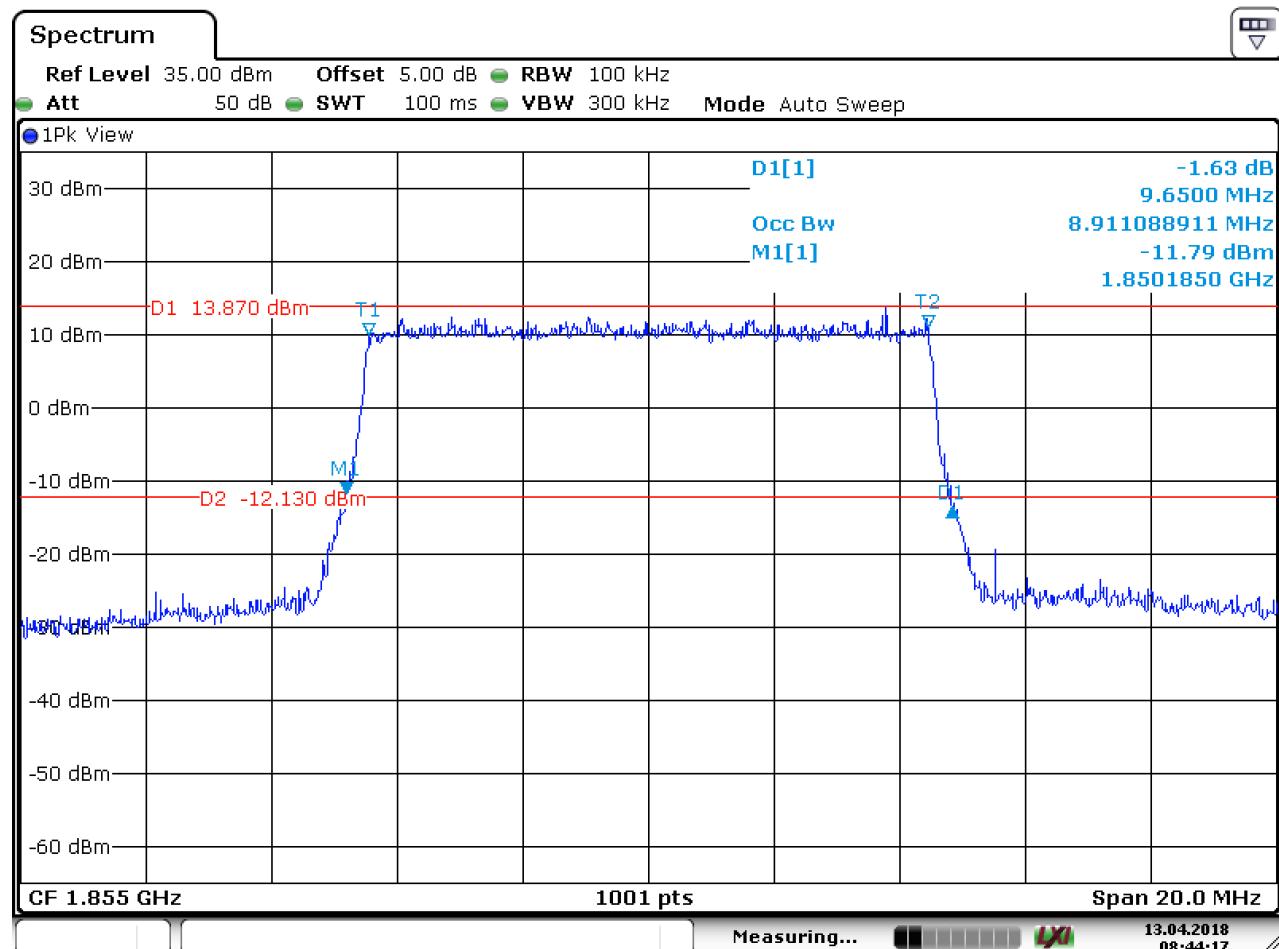
Date: 13.APR.2018 08:42:58

4.1.1.7.2 Test Channel = MCH

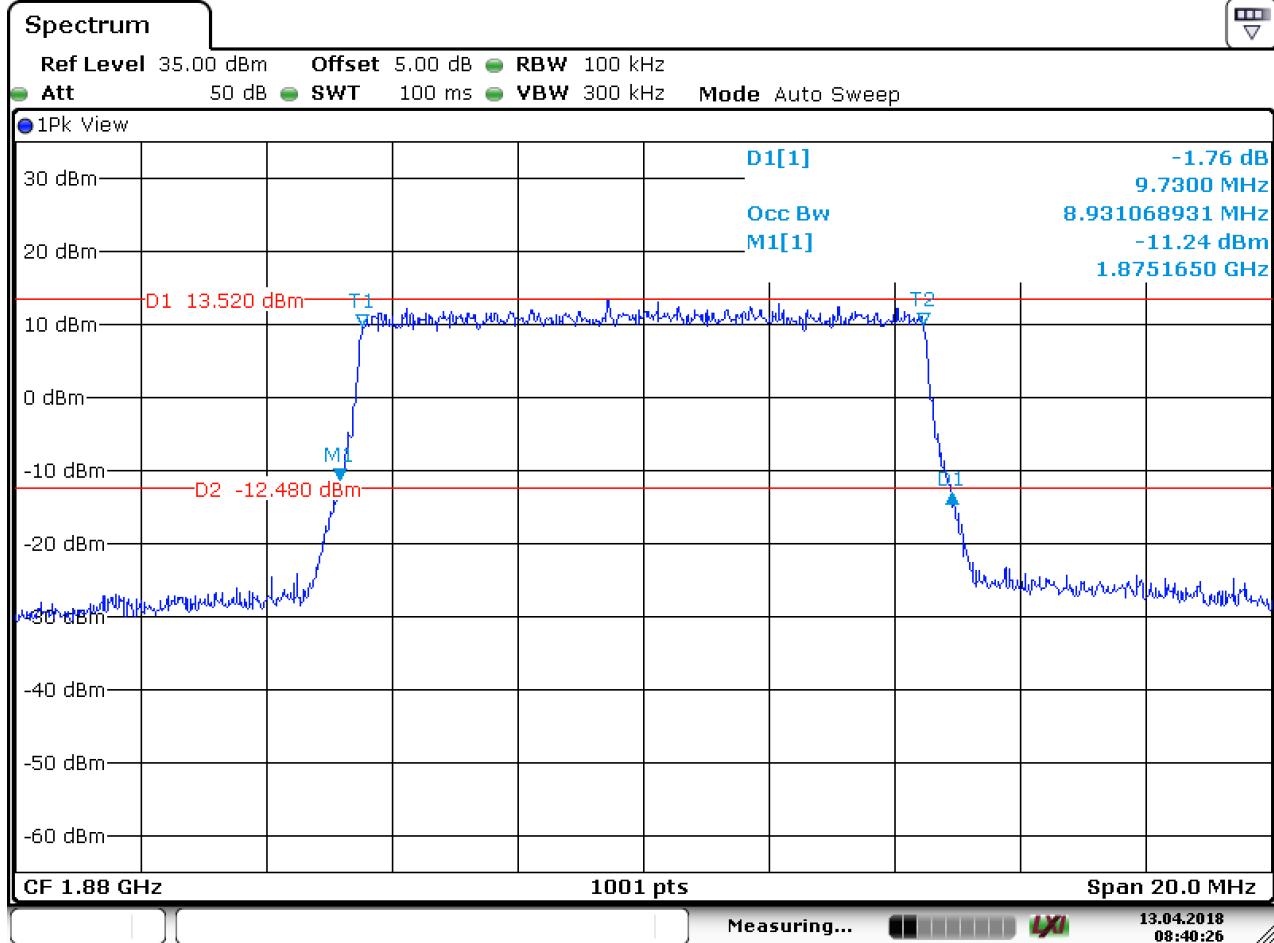
Date: 13.APR.2018 08:41:17

4.1.1.7.3 Test Channel = HCH

Date: 13.APR.2018 08:38:33

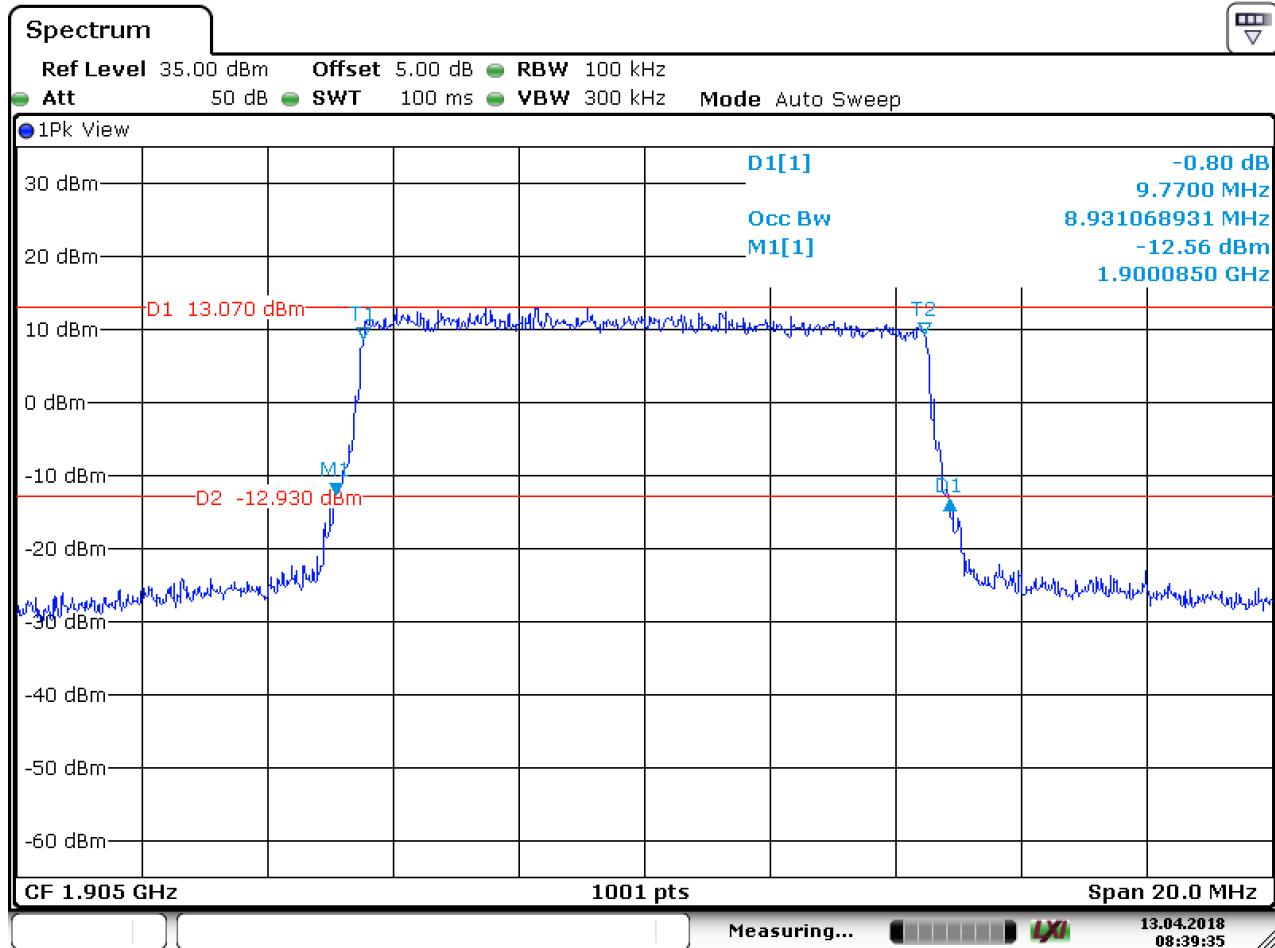
4.1.1.8 Test Mode = LTE/TM2 10MHz**4.1.1.8.1 Test Channel = LCH**

Date: 13.APR.2018 08:44:17

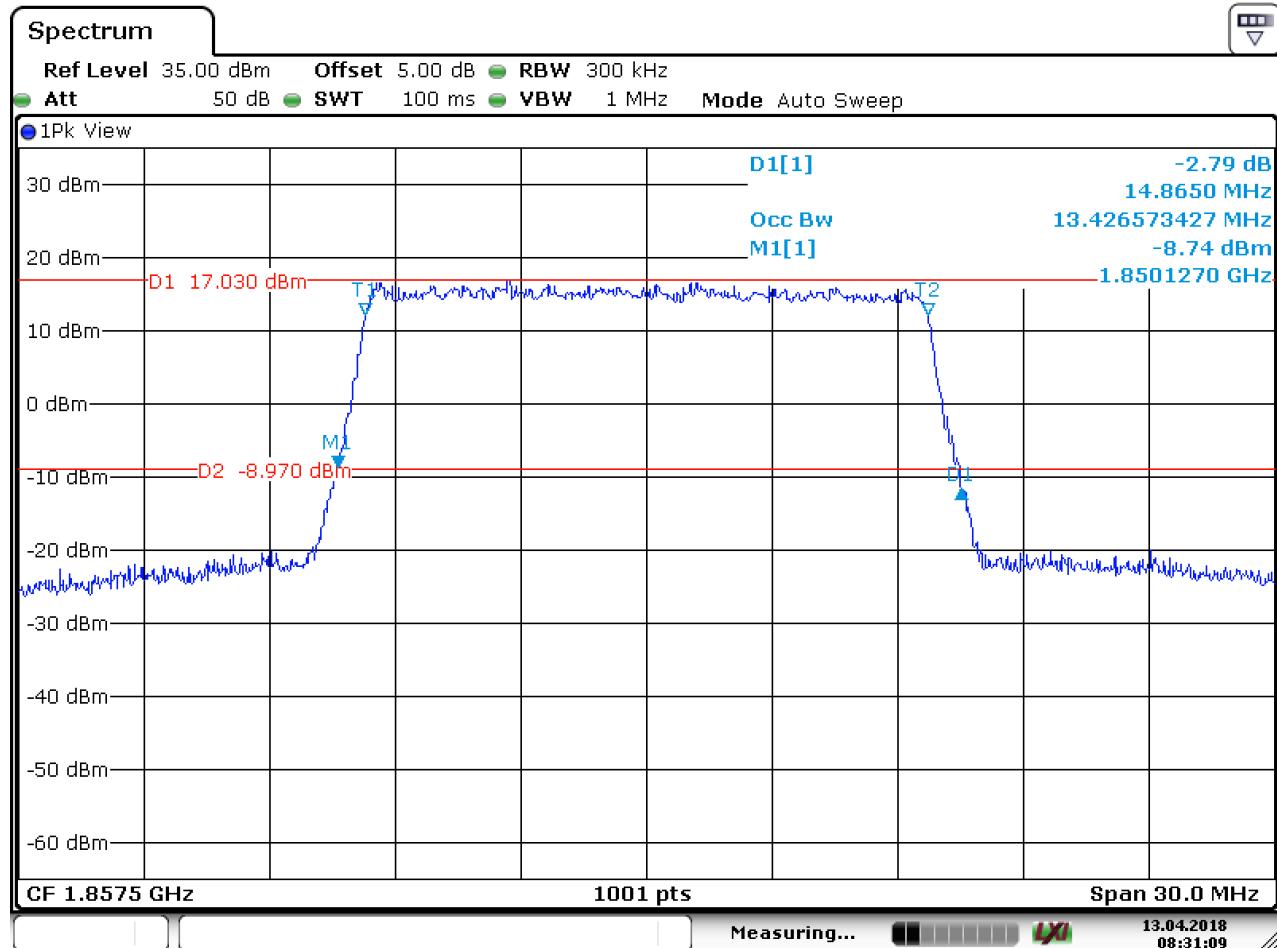
4.1.1.8.2 Test Channel = MCH

Date: 13.APR.2018 08:40:27

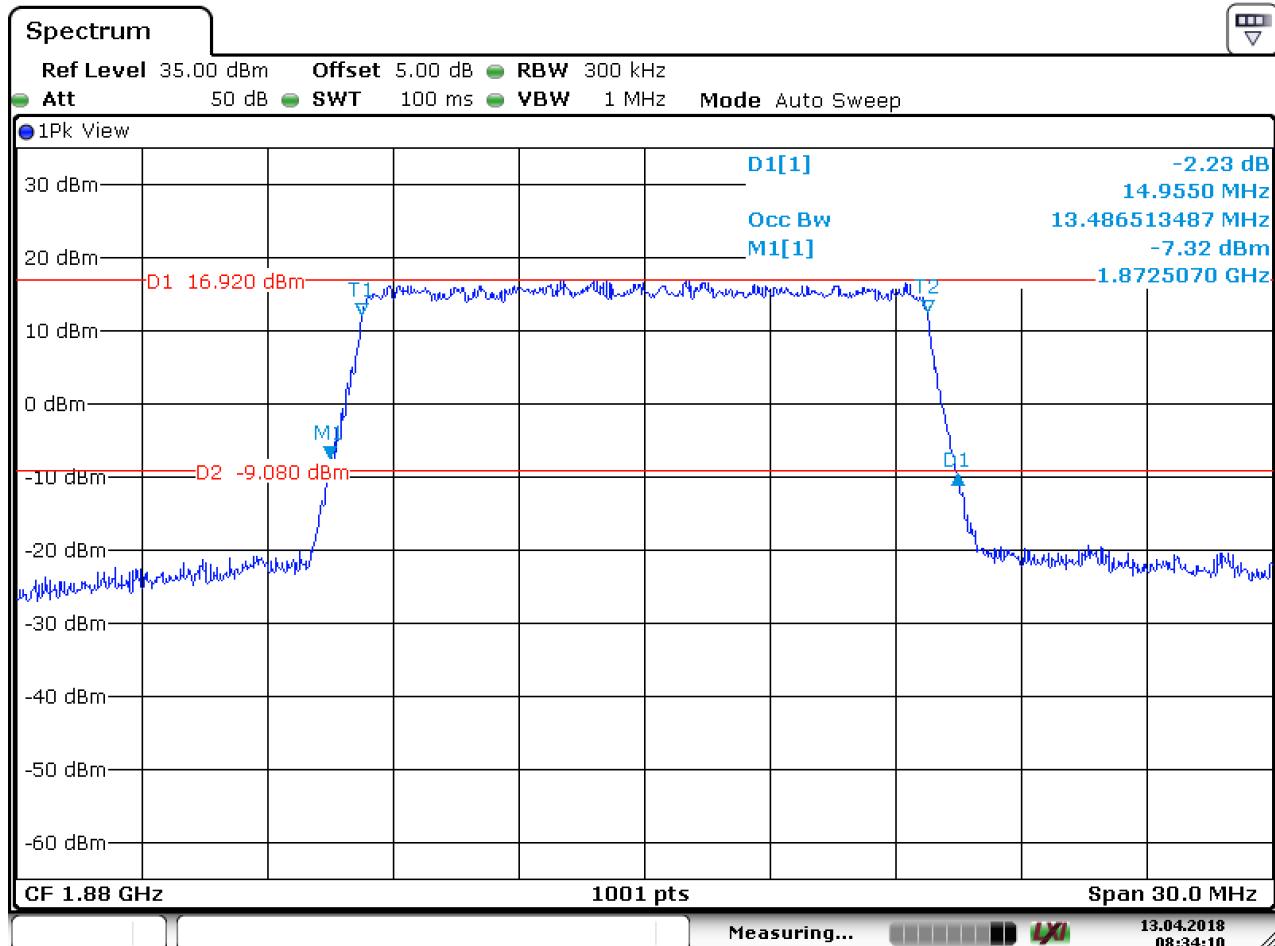
4.1.1.8.3 Test Channel = HCH



Date: 13.APR.2018 08:39:35

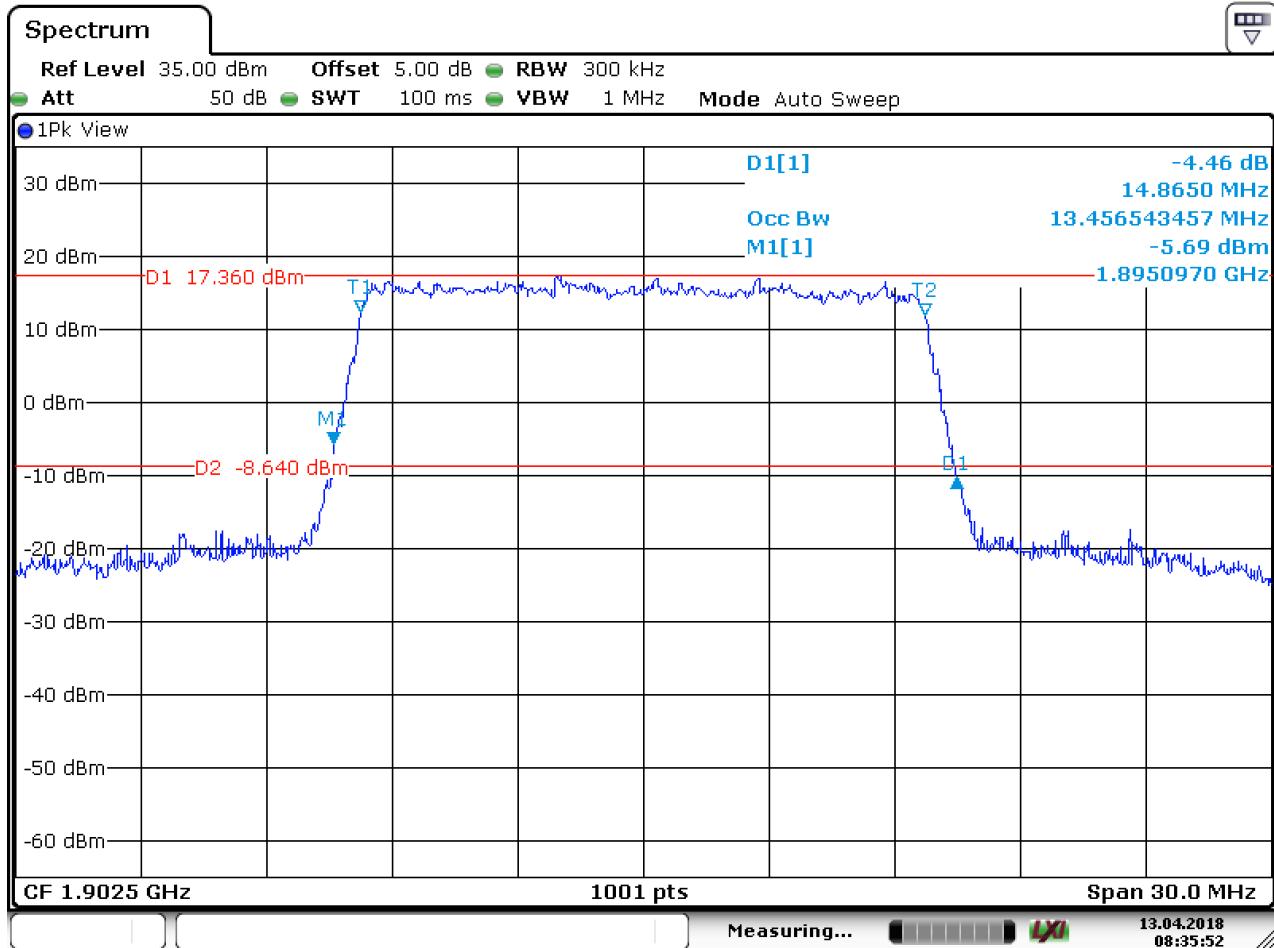
4.1.1.9 Test Mode = LTE/TM1 15MHz**4.1.1.9.1 Test Channel = LCH**

Date: 13.APR.2018 08:31:09

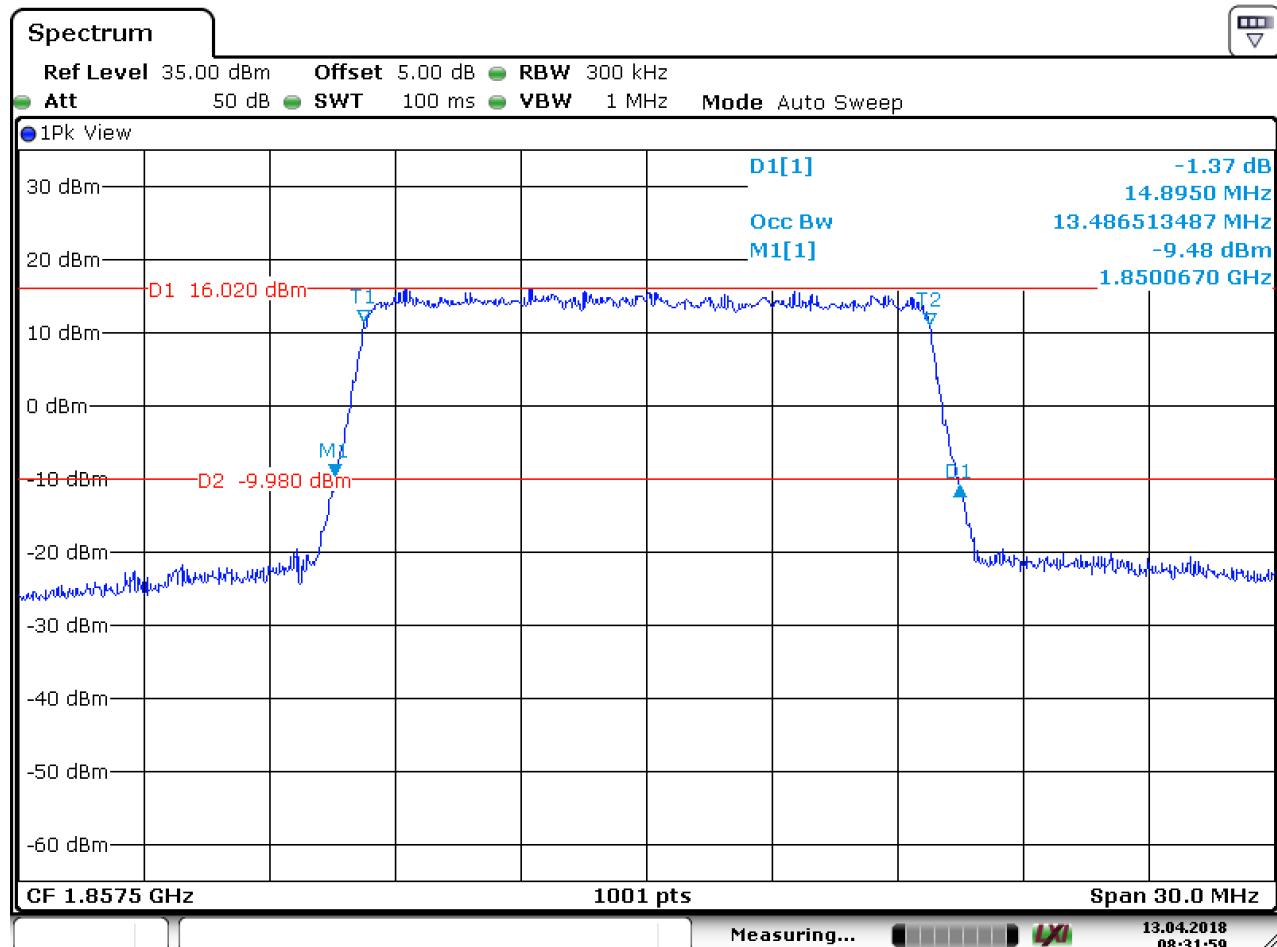
4.1.1.9.2 Test Channel = MCH

Date: 13.APR.2018 08:34:11

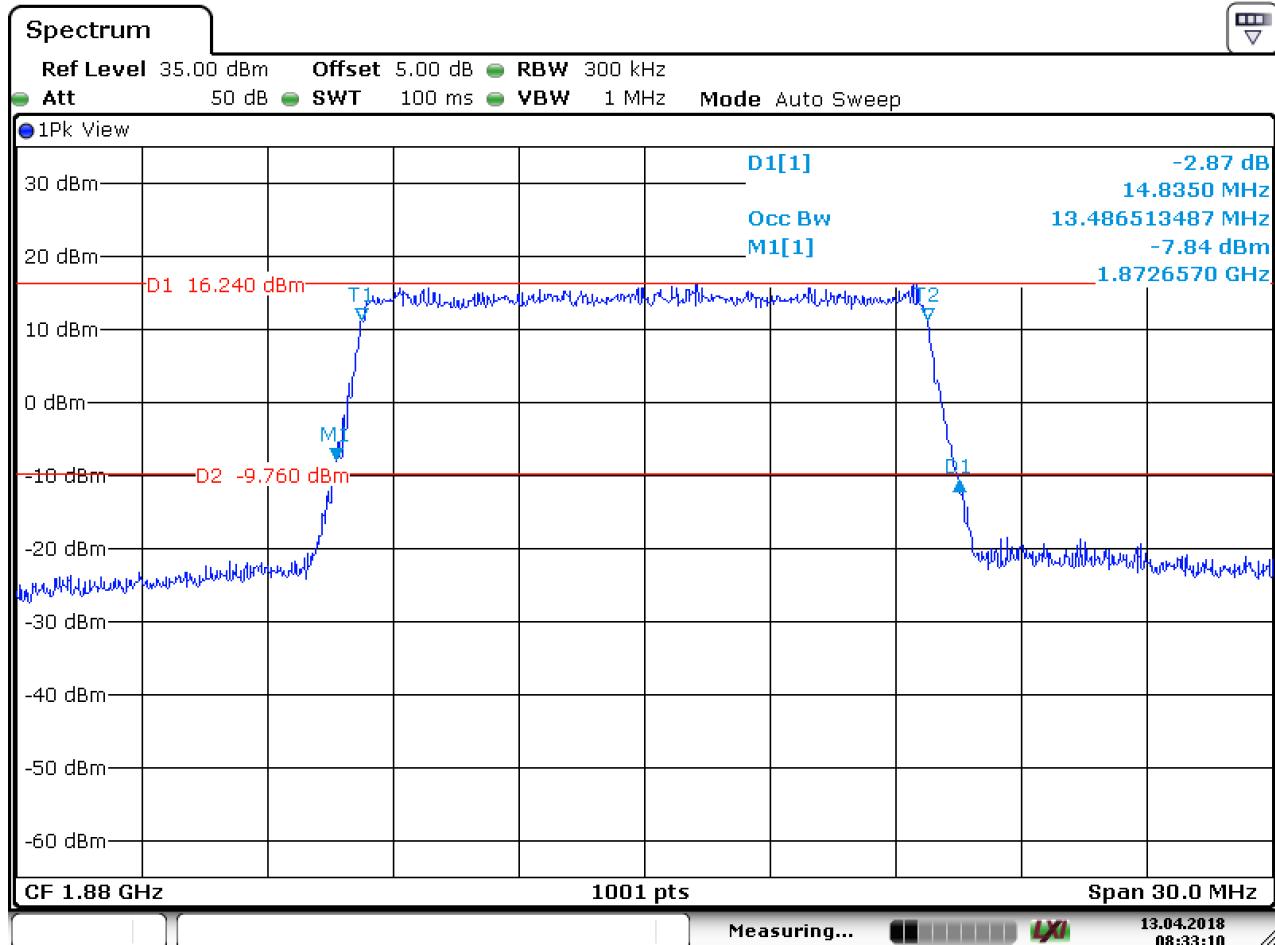
4.1.1.9.3 Test Channel = HCH



Date: 13.APR.2018 08:35:52

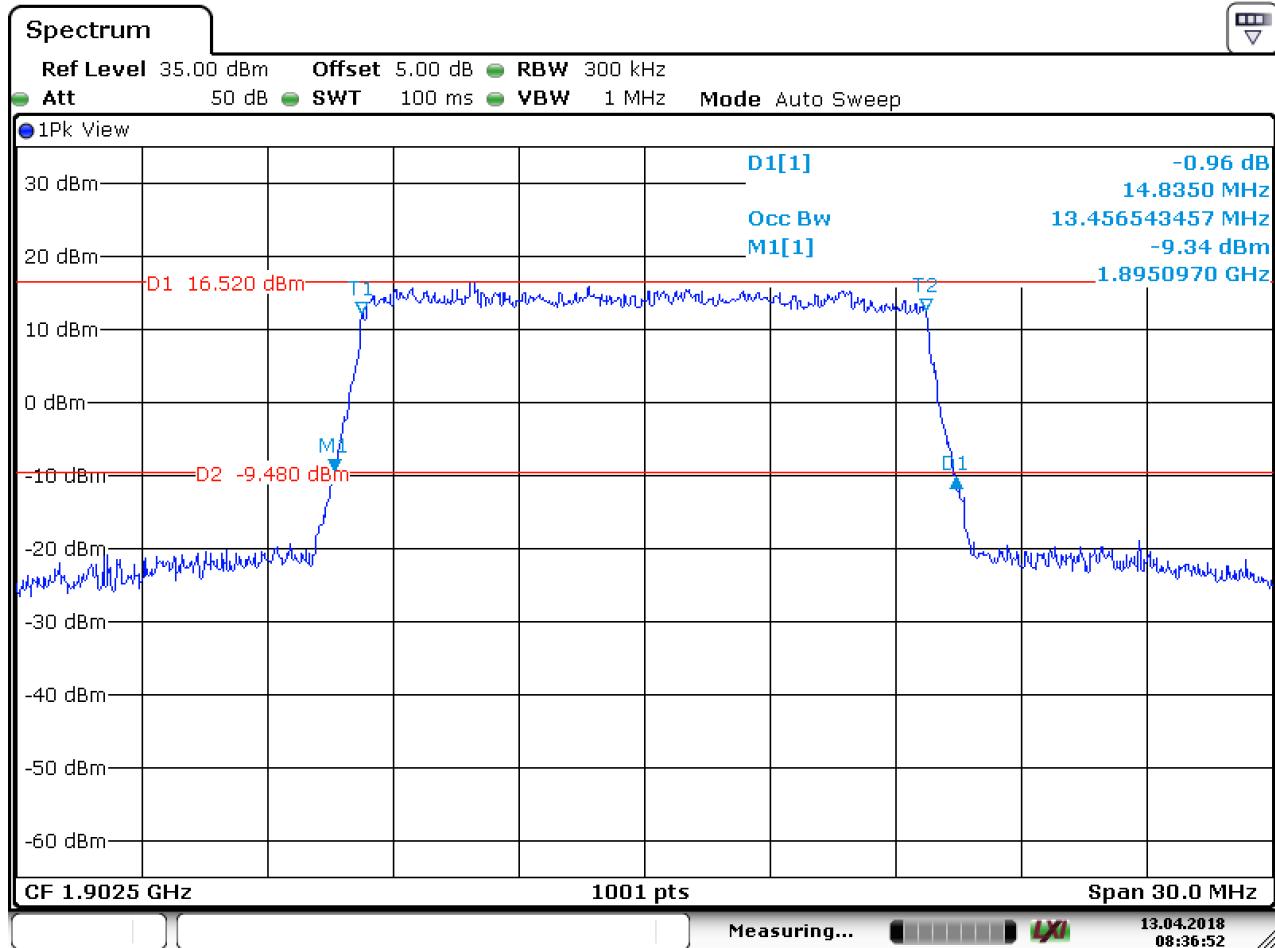
4.1.1.10 Test Mode = LTE/TM2 15MHz**4.1.1.10.1 Test Channel = LCH**

Date: 13.APR.2018 08:32:00

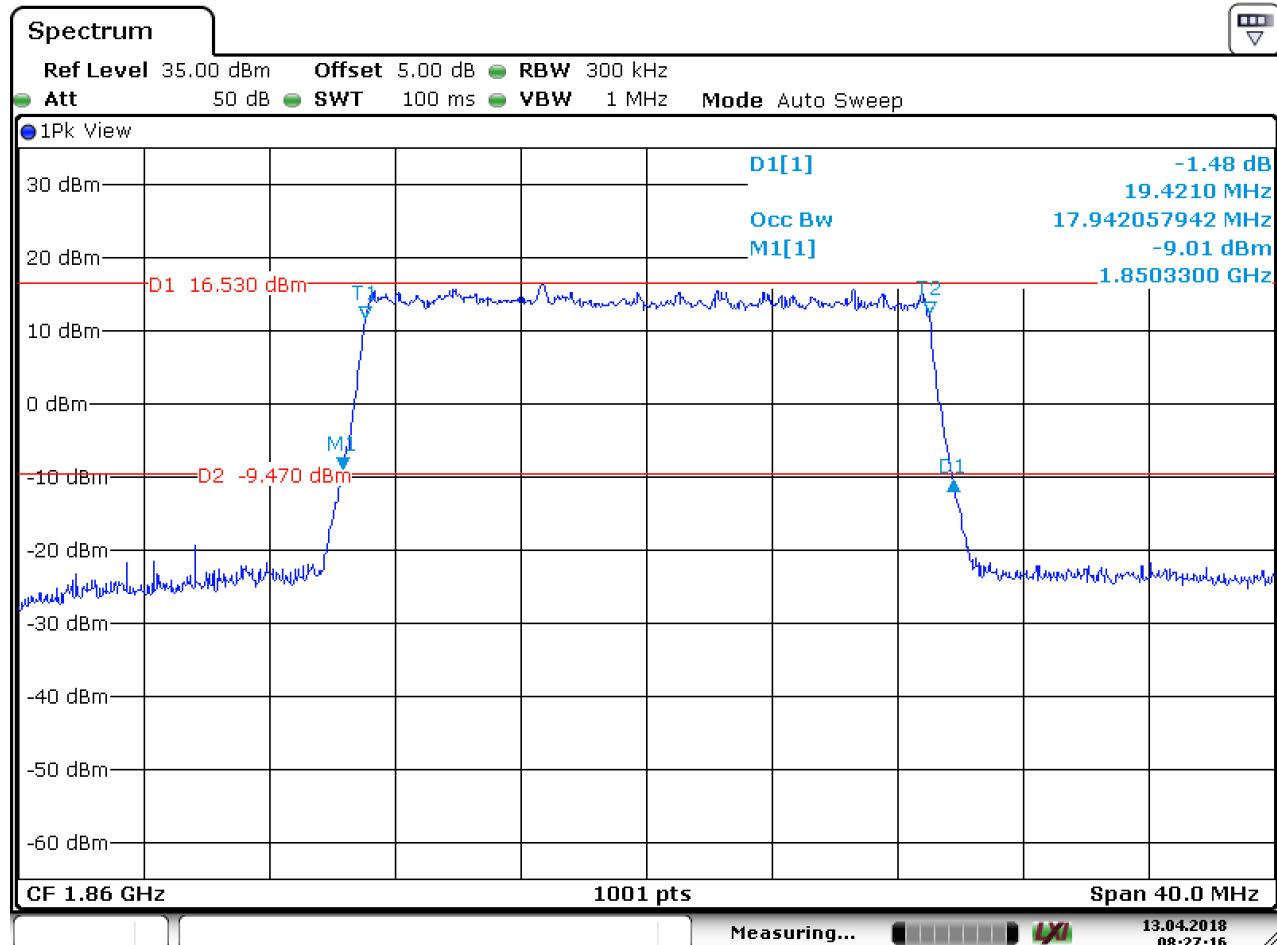
4.1.1.10.2 Test Channel = MCH

Date: 13.APR.2018 08:33:11

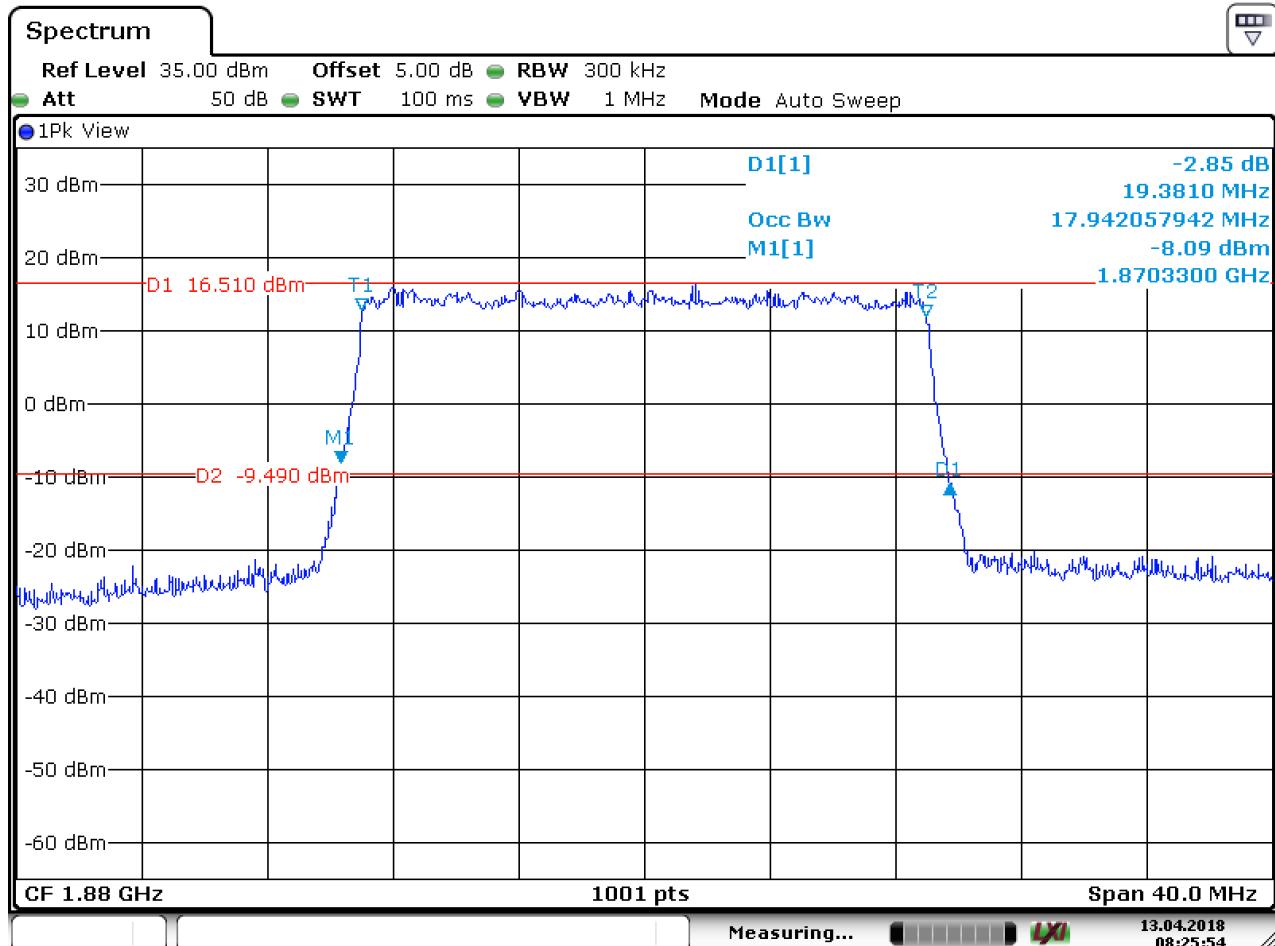
4.1.1.10.3 Test Channel = HCH



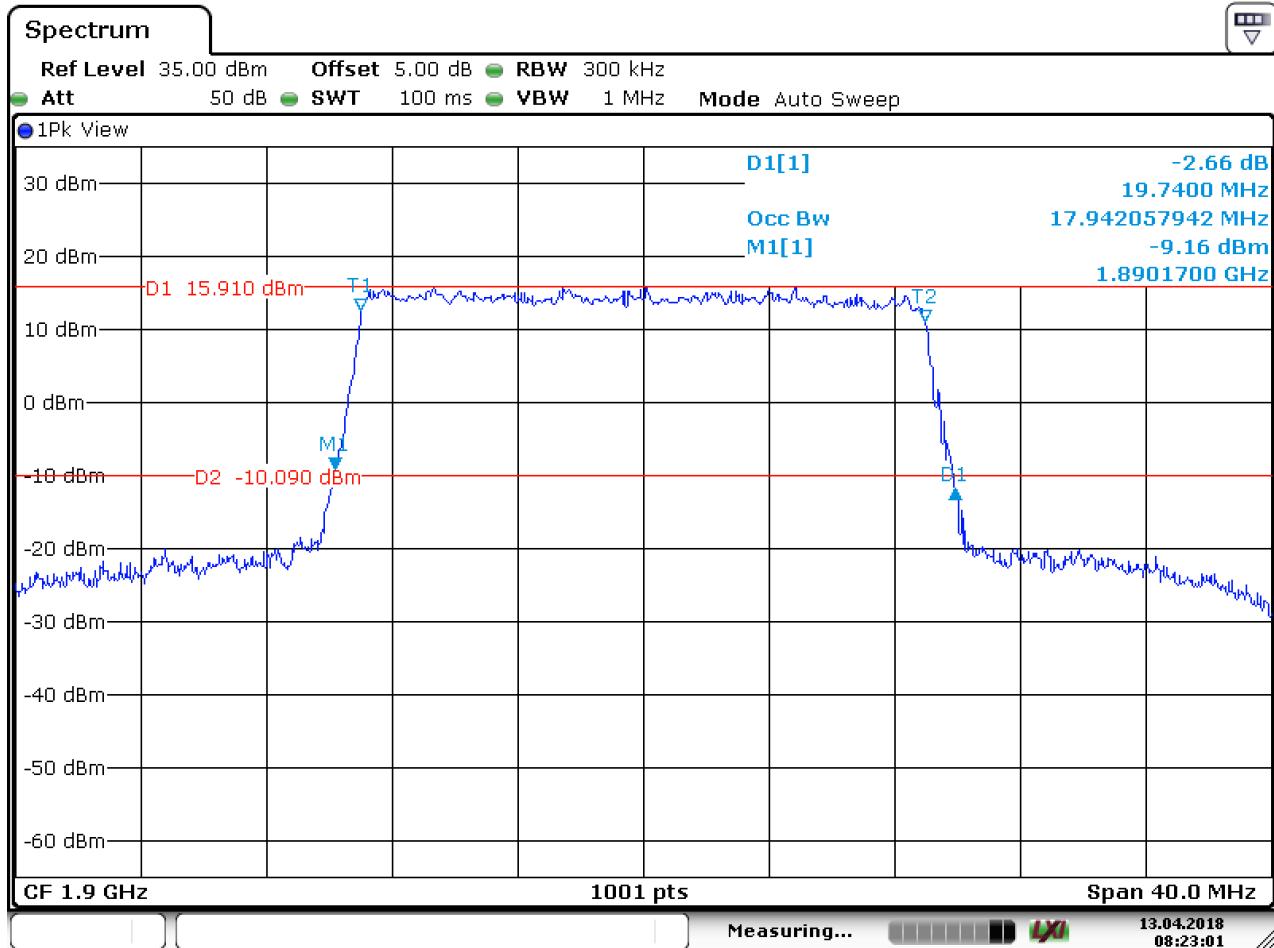
Date: 13.APR.2018 08:36:51

4.1.1.11 Test Mode = LTE/TM1 20MHz**4.1.1.11.1 Test Channel = LCH**

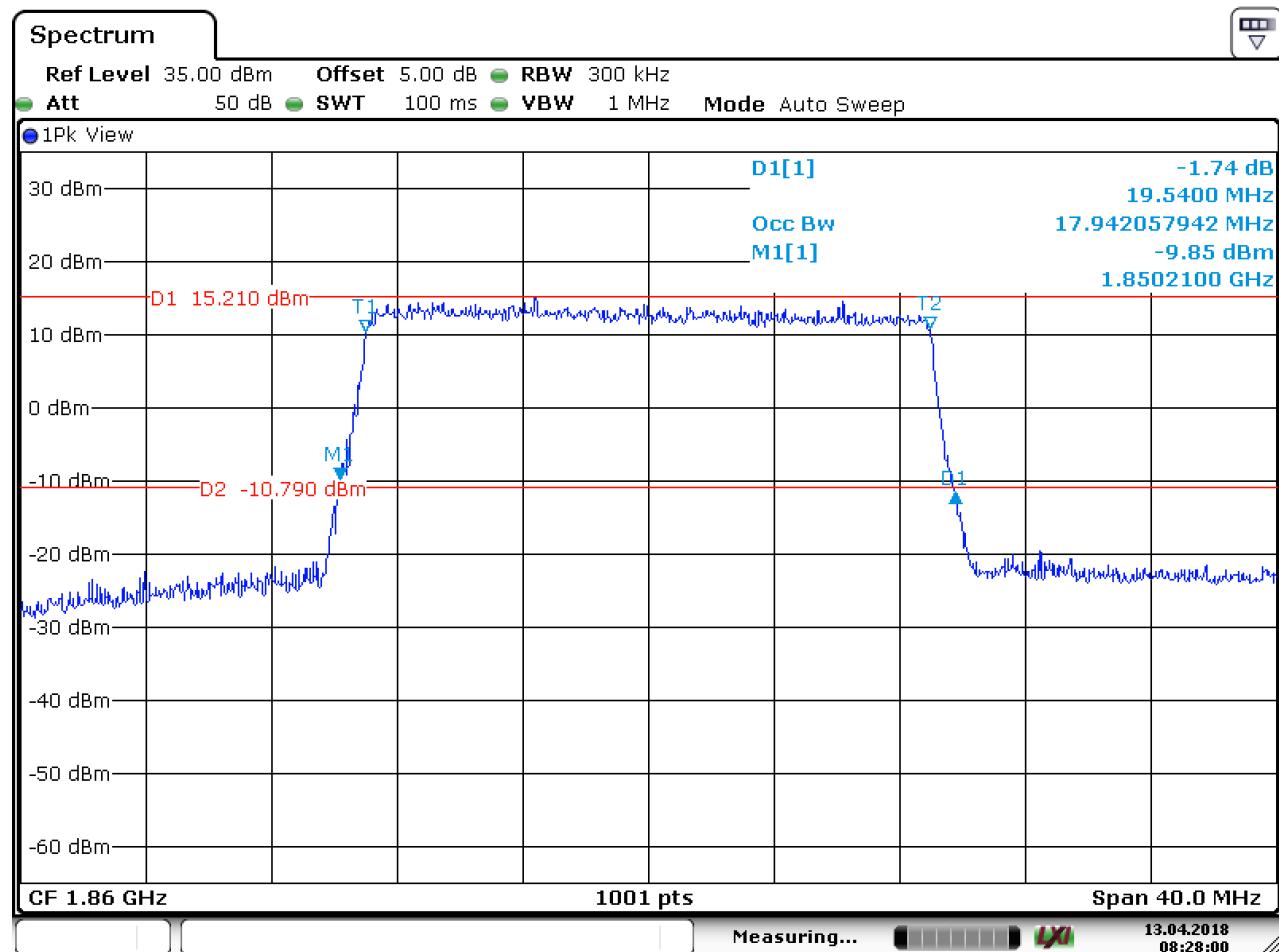
Date: 13.APR.2018 08:27:16

4.1.1.11.2 Test Channel = MCH

Date: 13.APR.2018 08:25:55

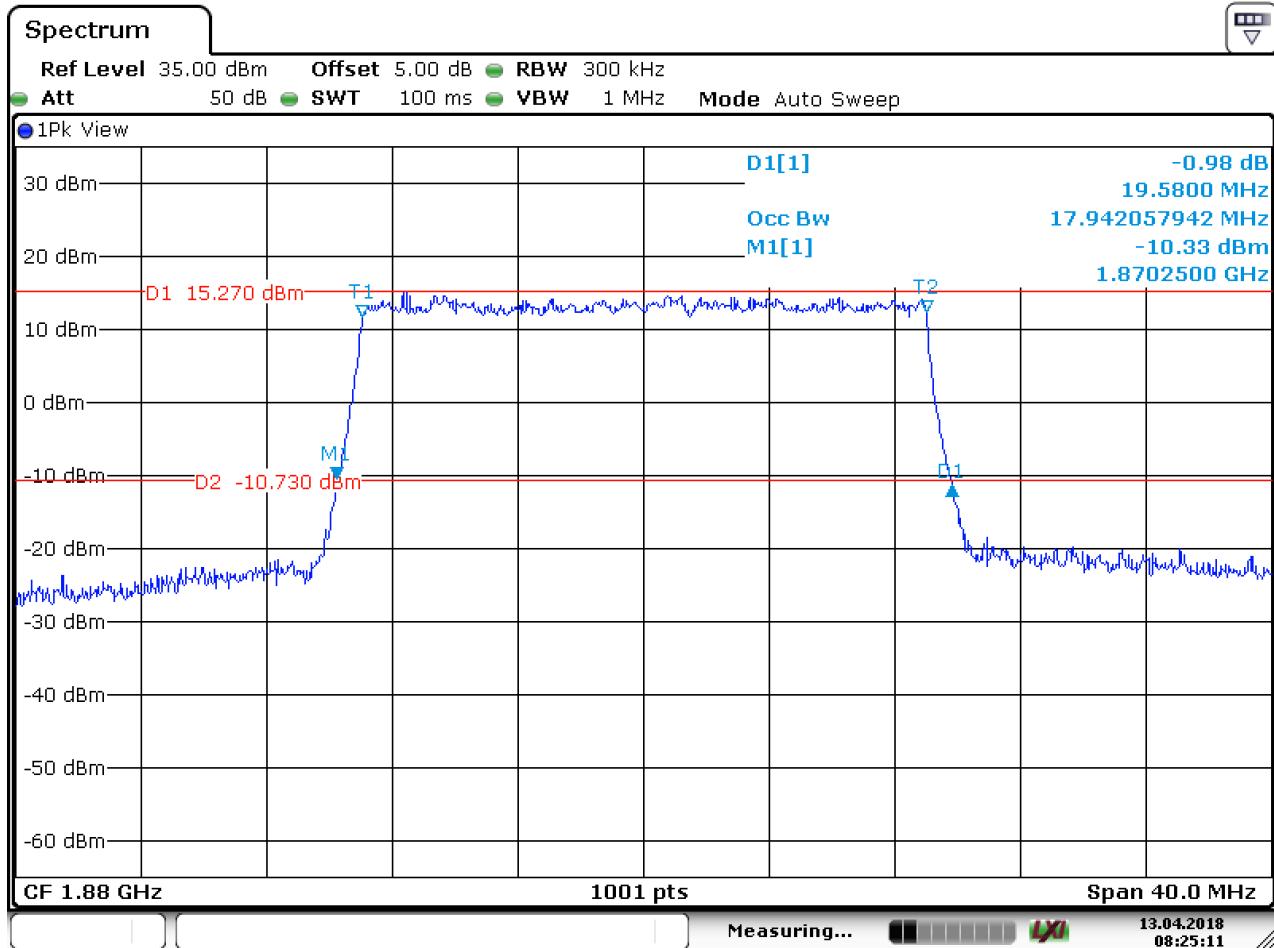
4.1.1.11.3 Test Channel = HCH

Date: 13.APR.2018 08:23:01

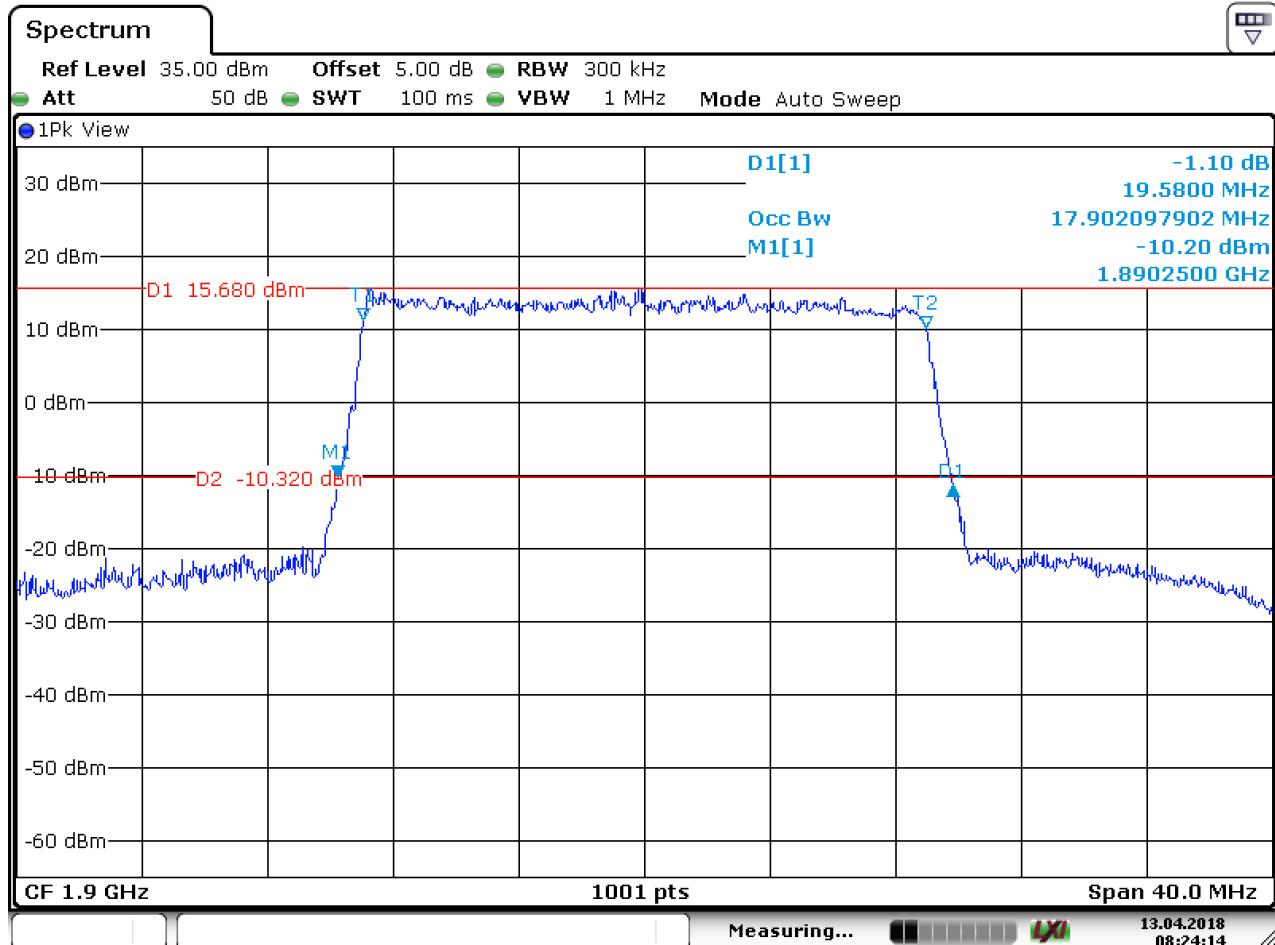
4.1.1.12 Test Mode = LTE/TM2 20MHz**4.1.1.12.1 Test Channel = LCH**

Date: 13.APR.2018 08:28:01

4.1.1.12.2 Test Channel = MCH



Date: 13.APR.2018 08:25:11

4.1.1.12.3 Test Channel = HCH

Date: 13.APR.2018 08:24:15

5 Band Edges Compliance

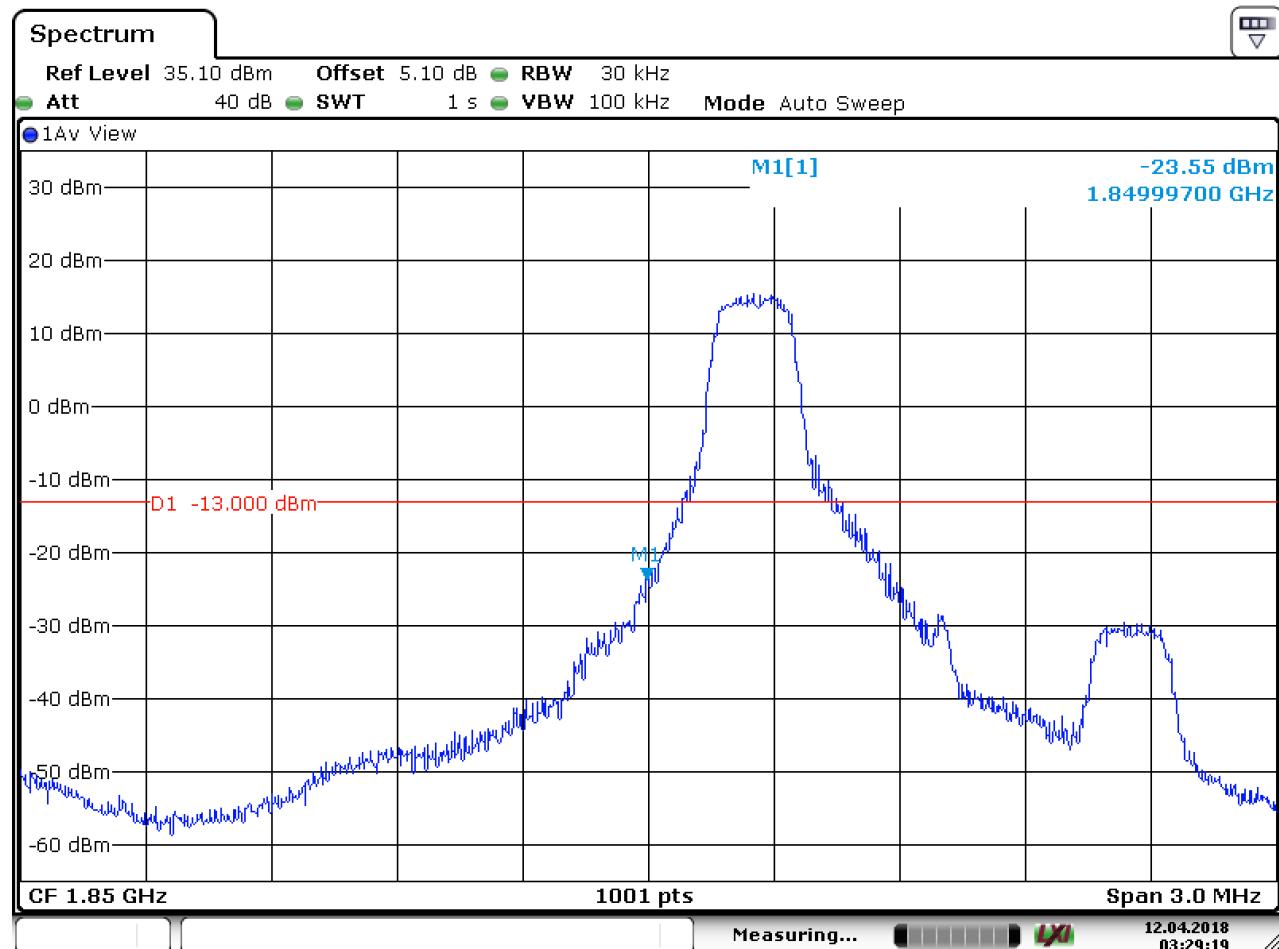
5.1 For LTE

5.1.1 Test Band = LTE band2

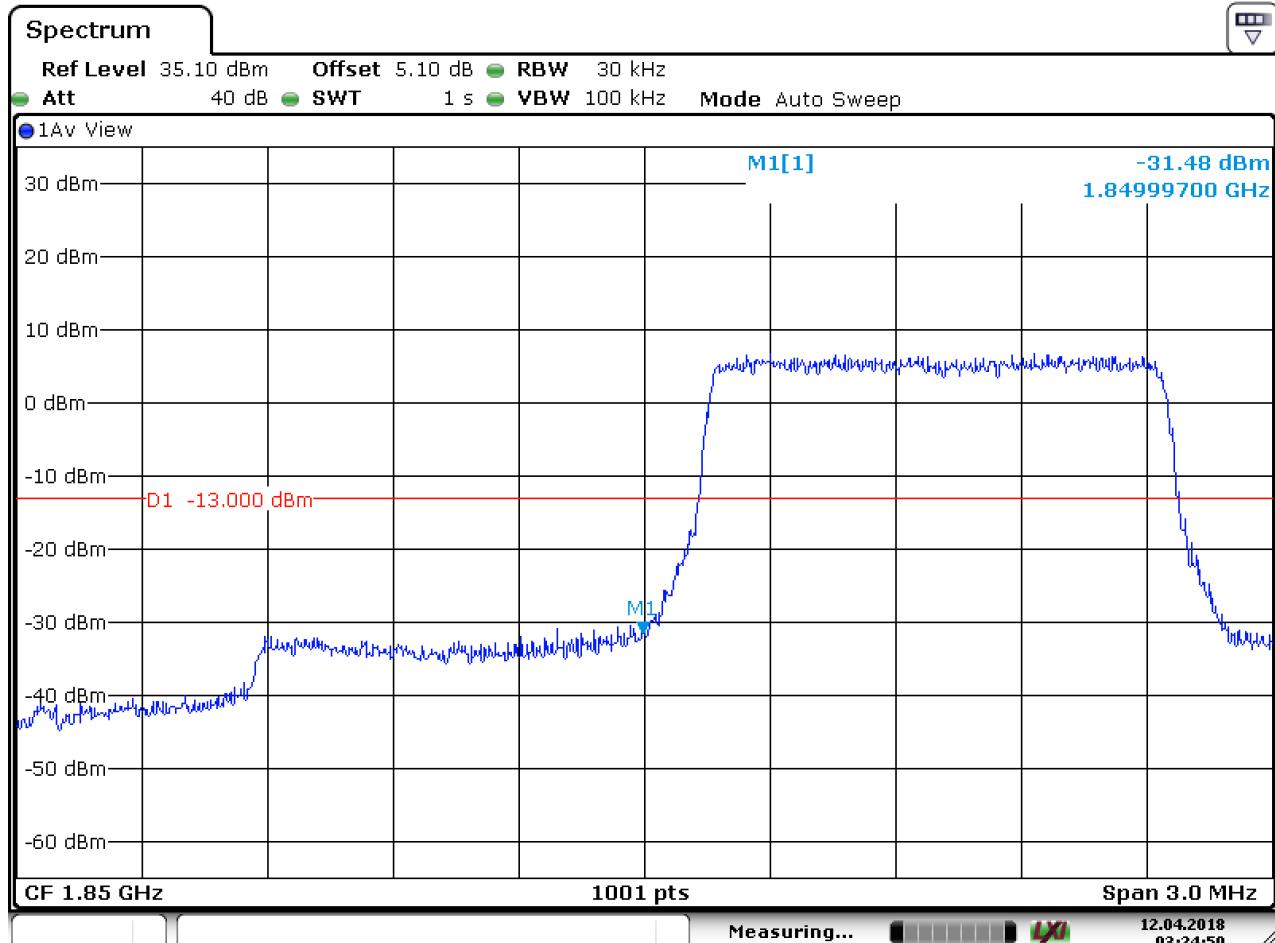
5.1.1.1 Test Mode = LTE/TM1 1.4MHz

5.1.1.1.1 Test Channel = LCH

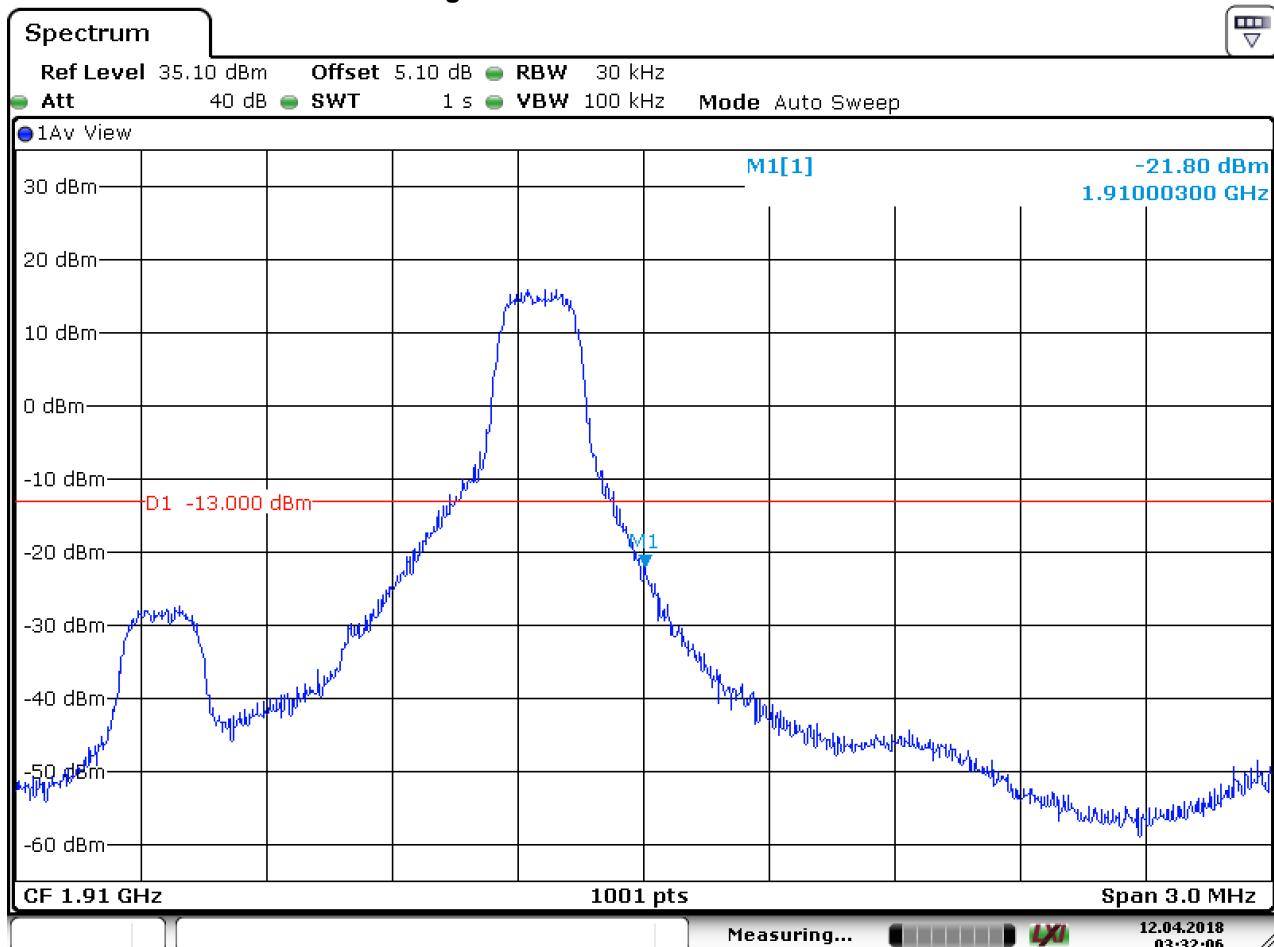
5.1.1.1.1.1 Test RB=1RB#Low



Date: 12.APR.2018 03:29:19

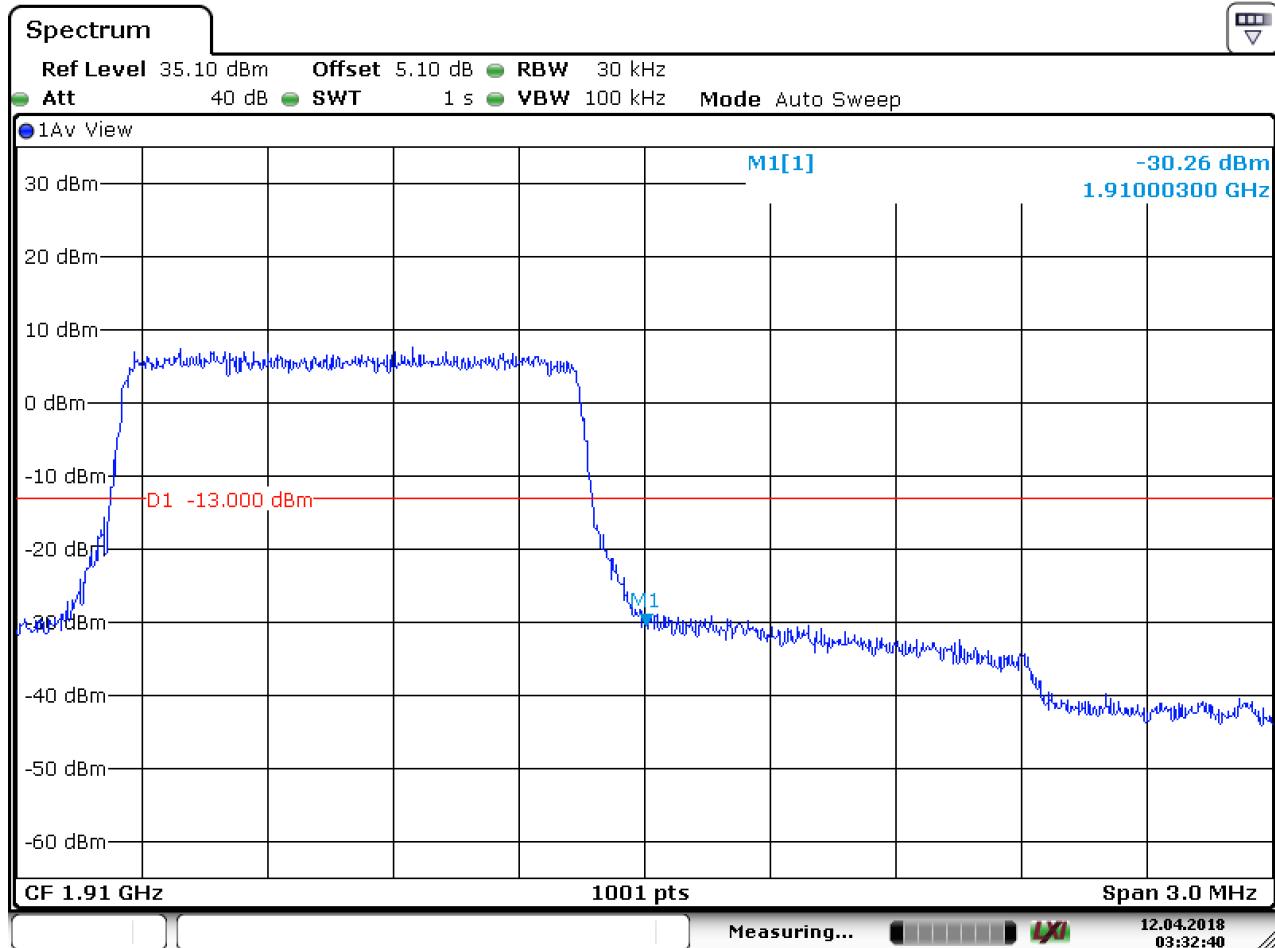
5.1.1.1.1.2 Test RB=FullRBs

Date: 12.APR.2018 03:24:51

5.1.1.1.2 Test Channel = HCH**5.1.1.1.2.1 Test RB=1RB#High**

Date: 12.APR.2018 03:32:06

5.1.1.1.2.2 Test RB=FullRBs

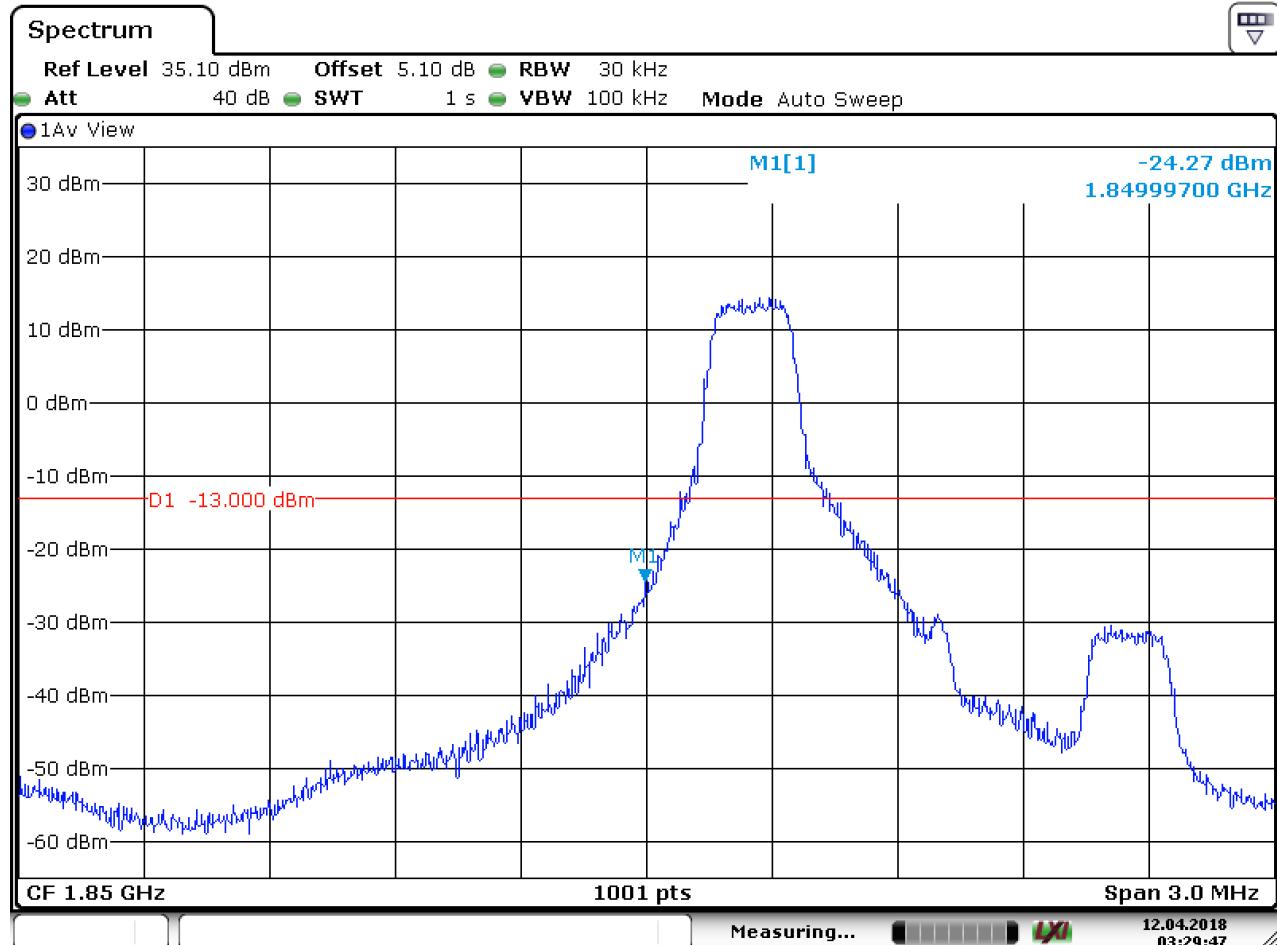


Date: 12.APR.2018 03:32:41

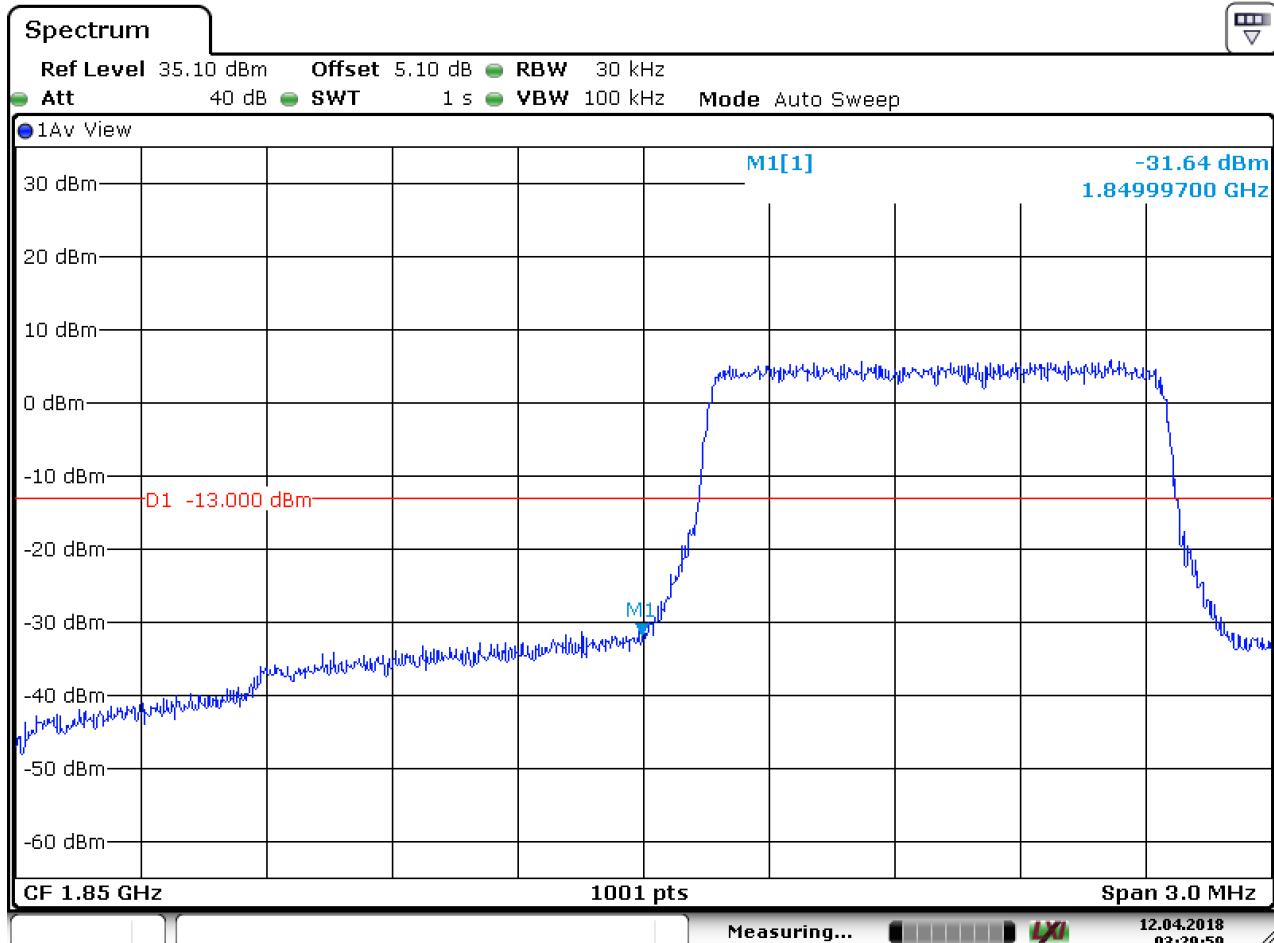
5.1.1.2 Test Mode = LTE/TM2 1.4MHz

5.1.1.2.1 Test Channel = LCH

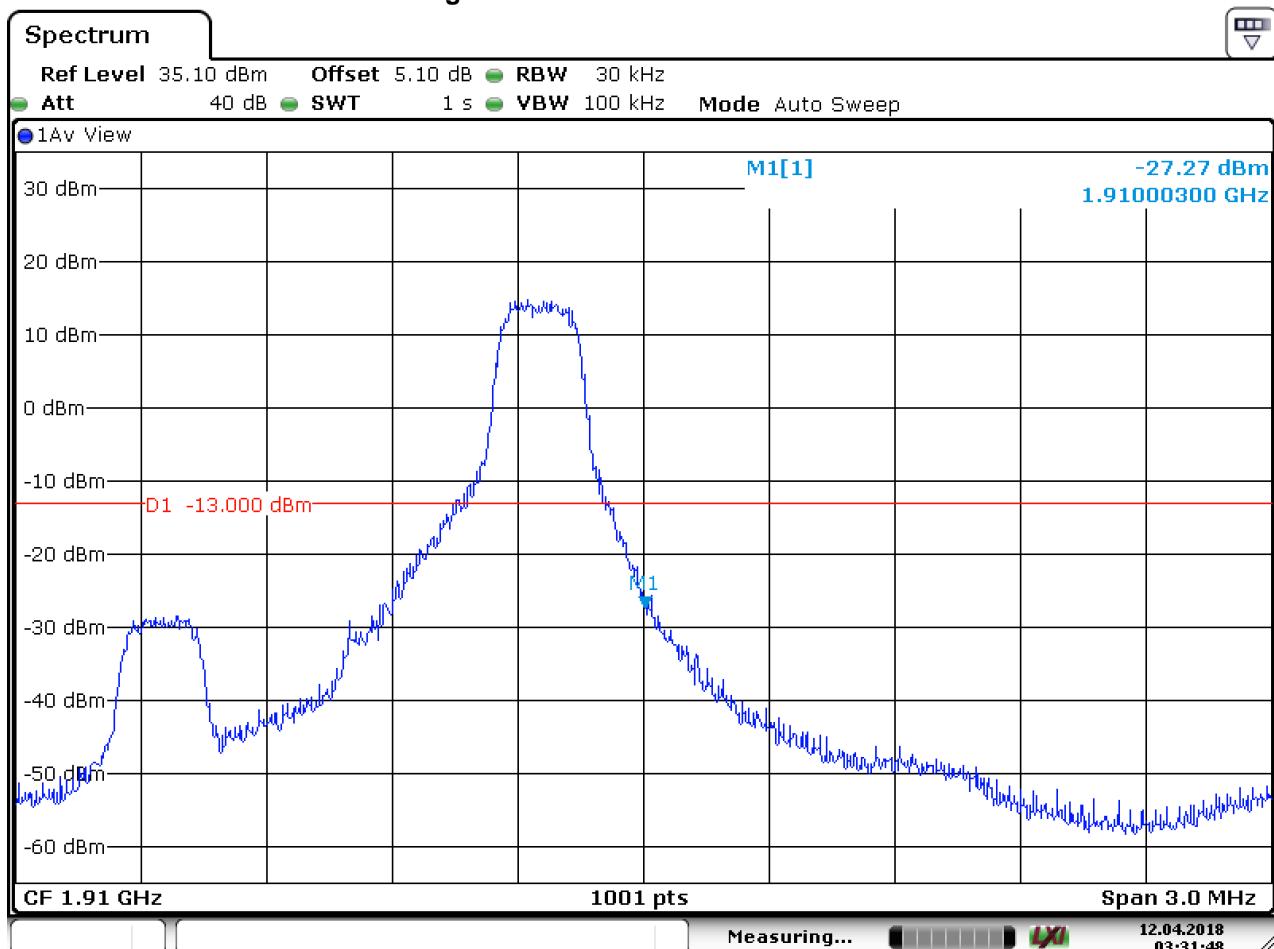
5.1.1.2.1.1 Test RB=1RB#Low



Date: 12.APR.2018 03:29:47

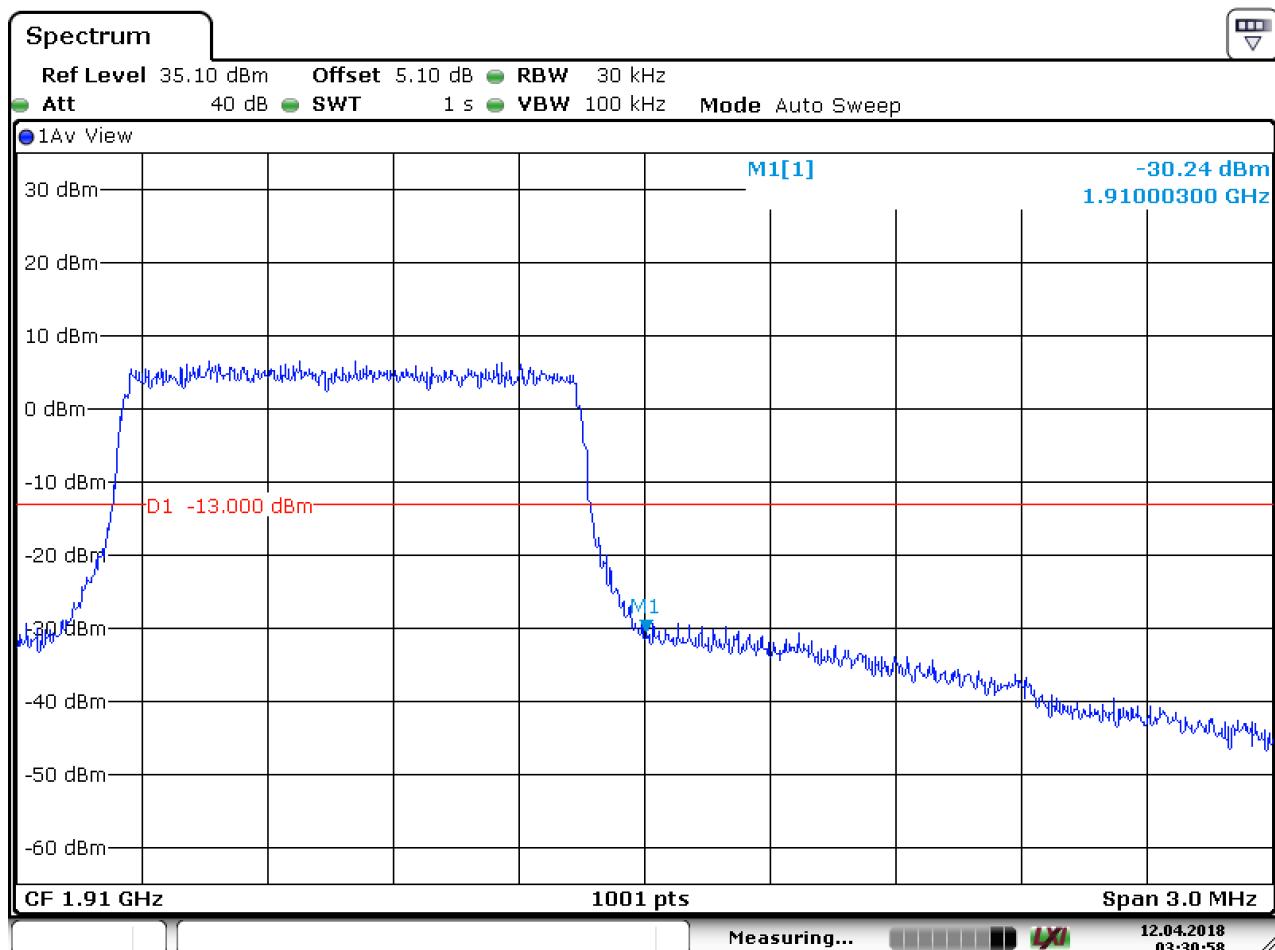
5.1.1.2.1.2 Test RB=FullRBs

Date: 12.APR.2018 03:29:59

5.1.1.2.2 Test Channel = HCH**5.1.1.2.2.1 Test RB=1RB#High**

Date: 12.APR.2018 03:31:48

5.1.1.2.2.2 Test RB=FullRBs

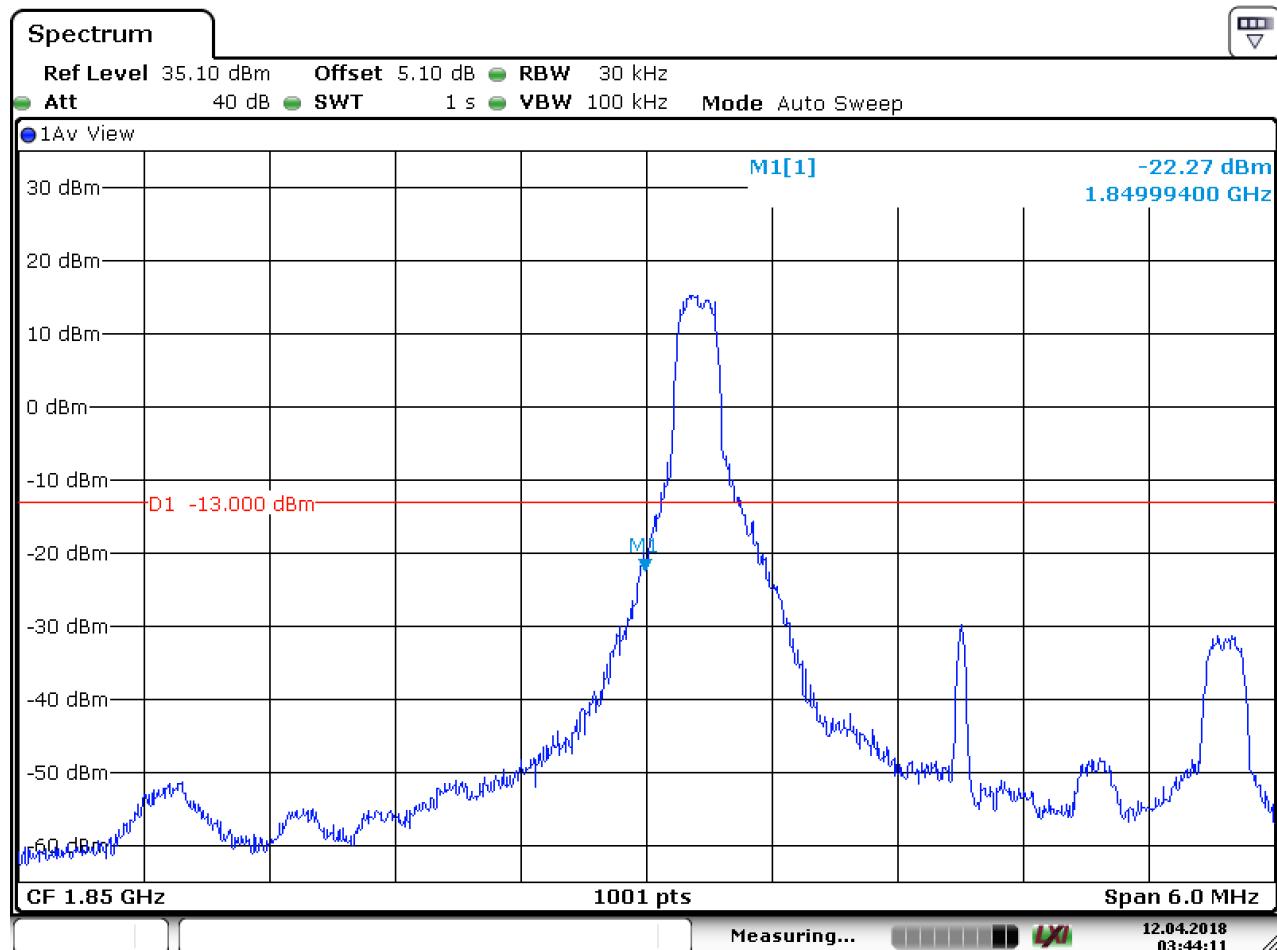


Date: 12.APR.2018 03:30:58

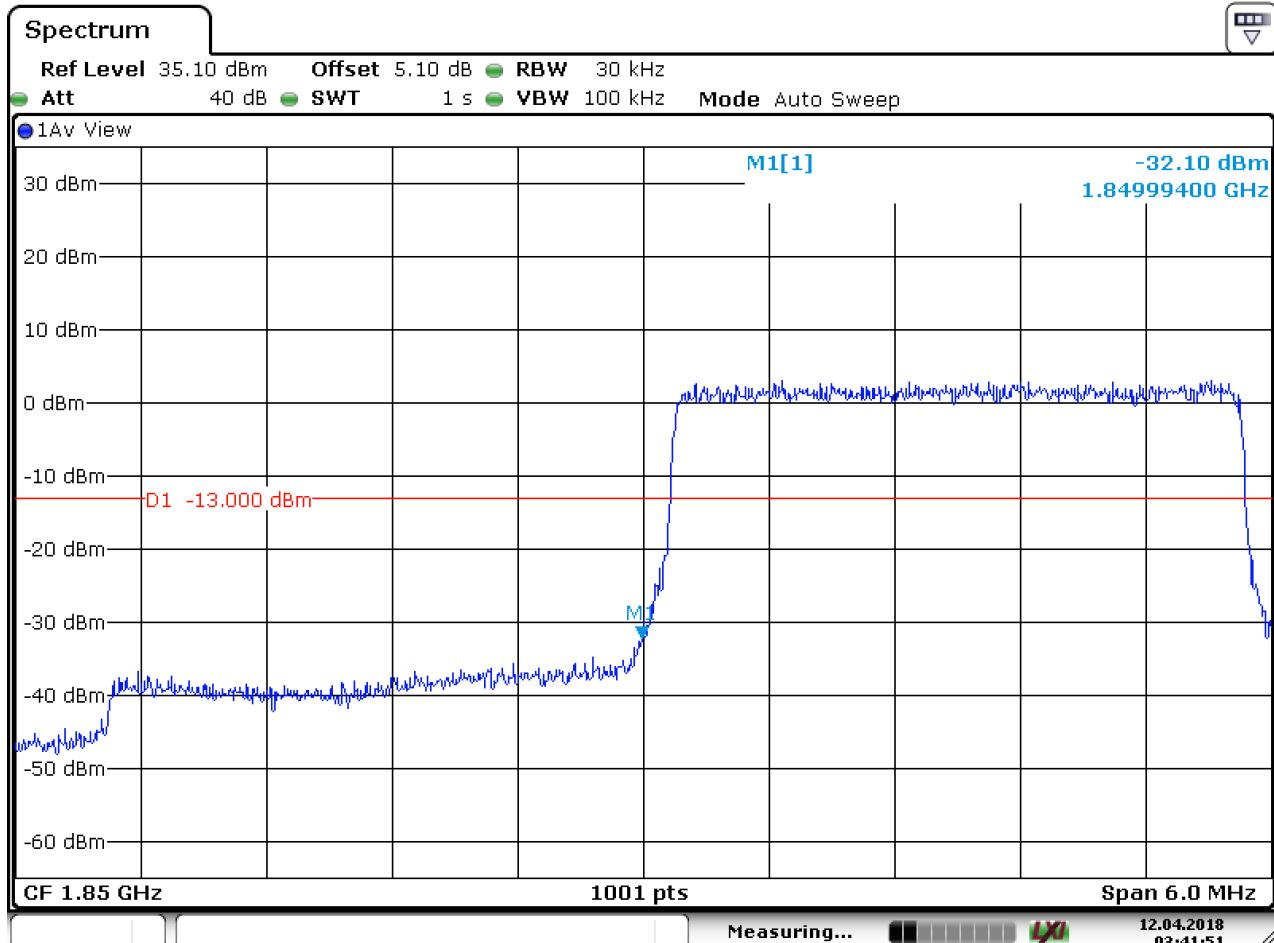
5.1.1.3 Test Mode = LTE/TM1 3MHz

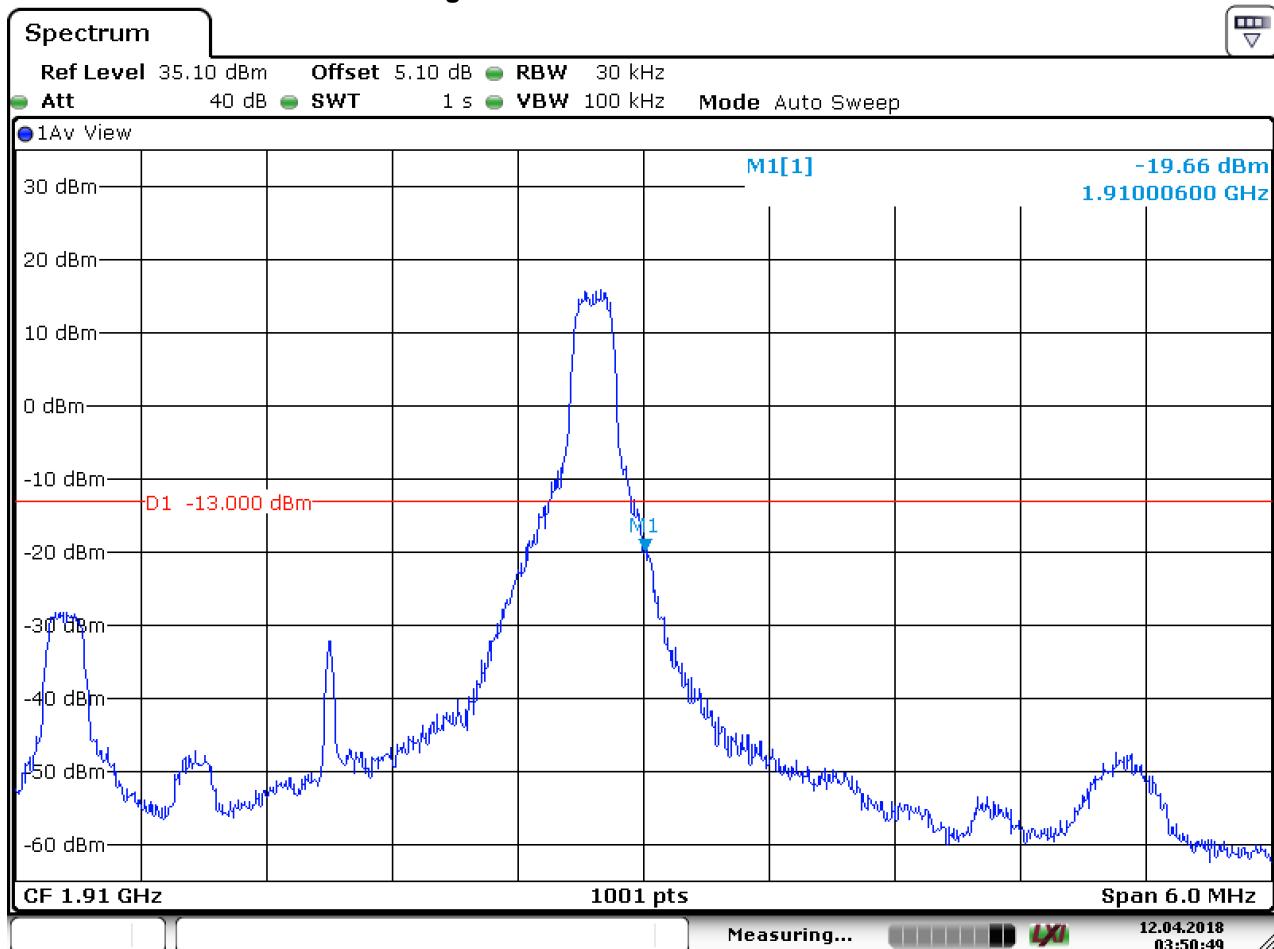
5.1.1.3.1 Test Channel = LCH

5.1.1.3.1.1 Test RB=1RB#Low



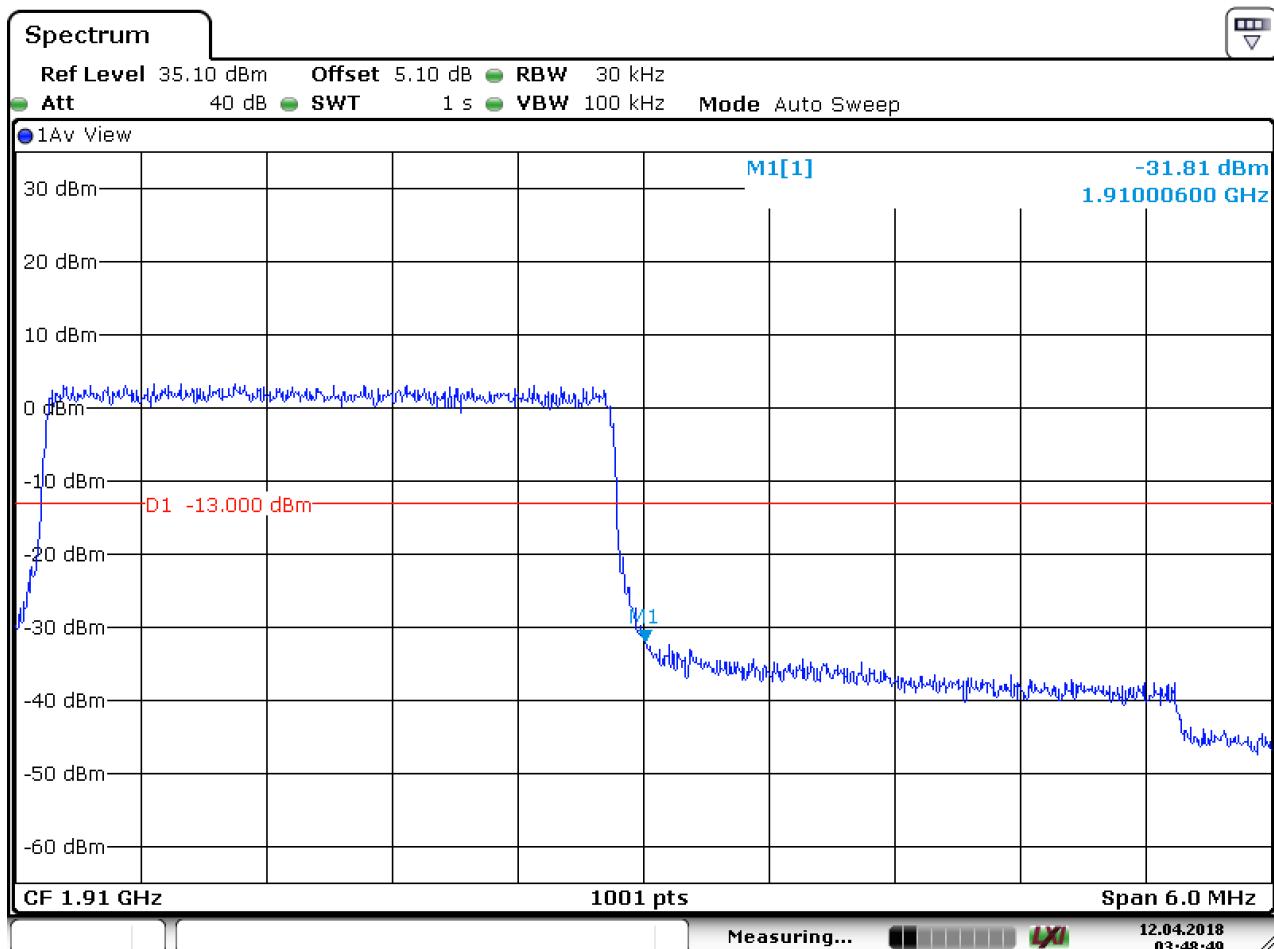
Date: 12.APR.2018 03:44:11

5.1.1.3.1.2 Test RB=FullRBs

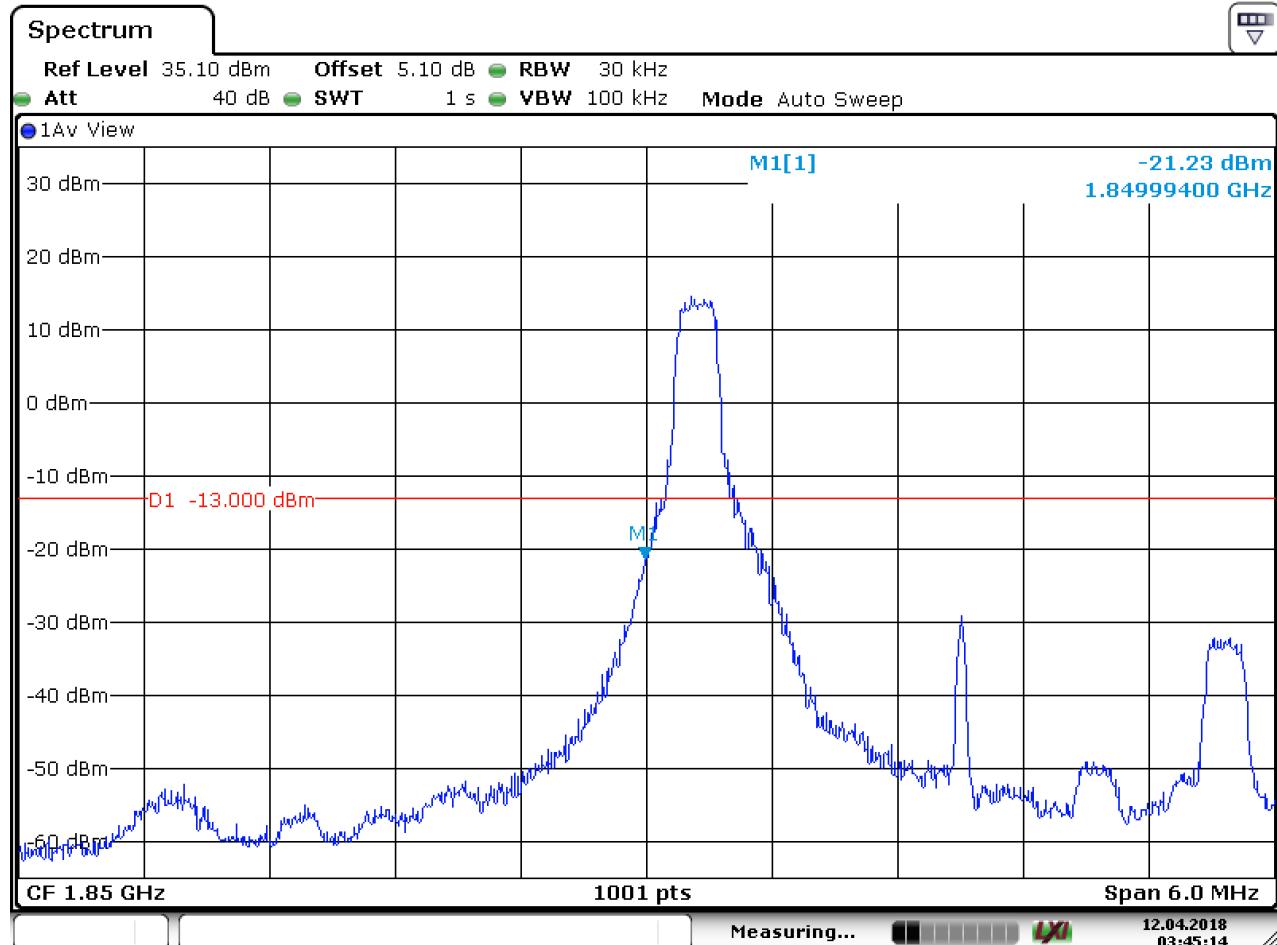
5.1.1.3.2 Test Channel = HCH**5.1.1.3.2.1 Test RB=1RB#High**

Date: 12.APR.2018 03:50:50

5.1.1.3.2.2 Test RB=FullRBs

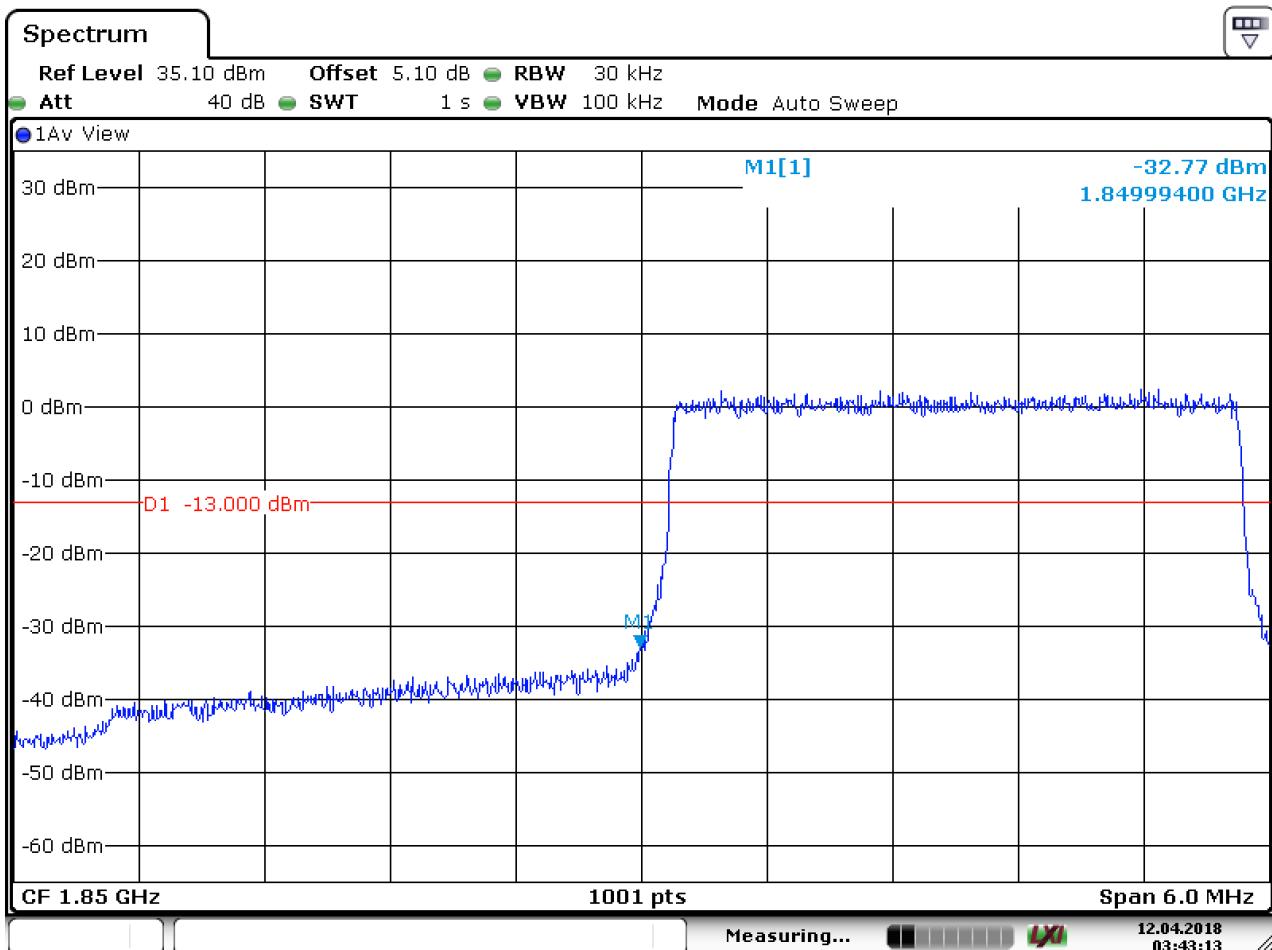


Date: 12.APR.2018 03:48:50

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#Low**

Date: 12.APR.2018 03:45:14

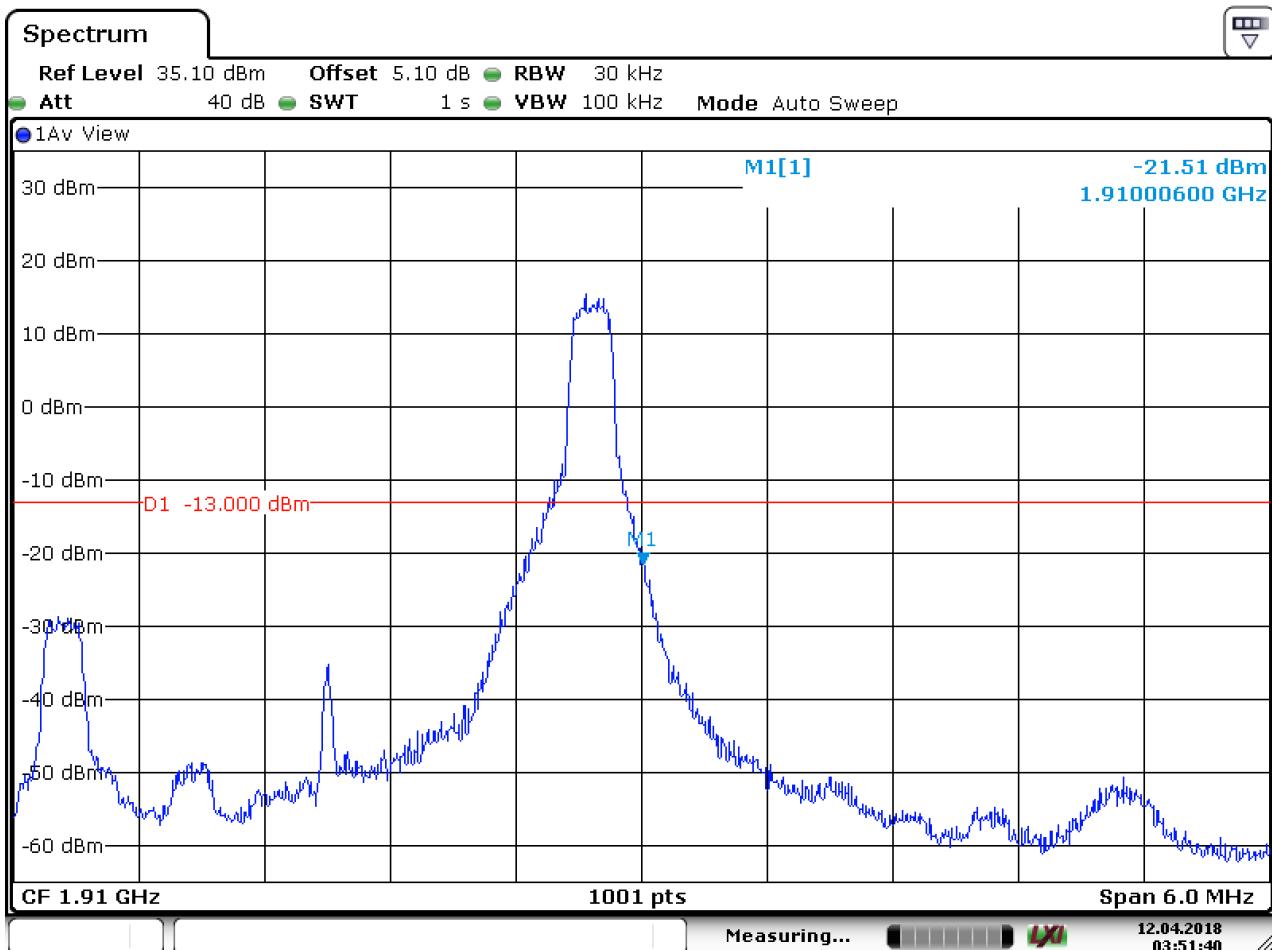
5.1.1.4.1.2 Test RB=FullRBs



Date: 12.APR.2018 03:43:13

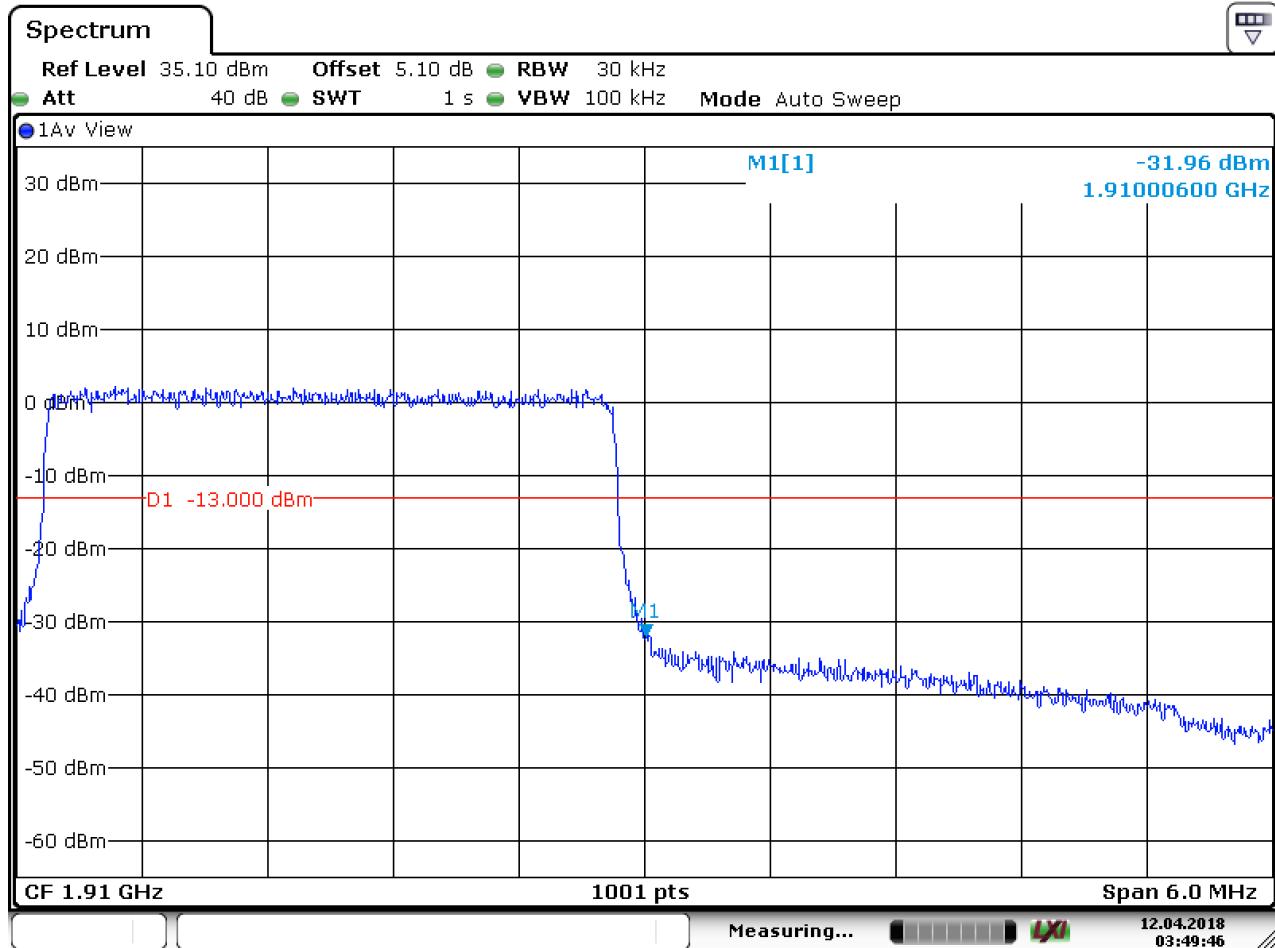
5.1.1.4.1 Test Channel = LCH

5.1.1.4.1.1 Test RB=1RB#High

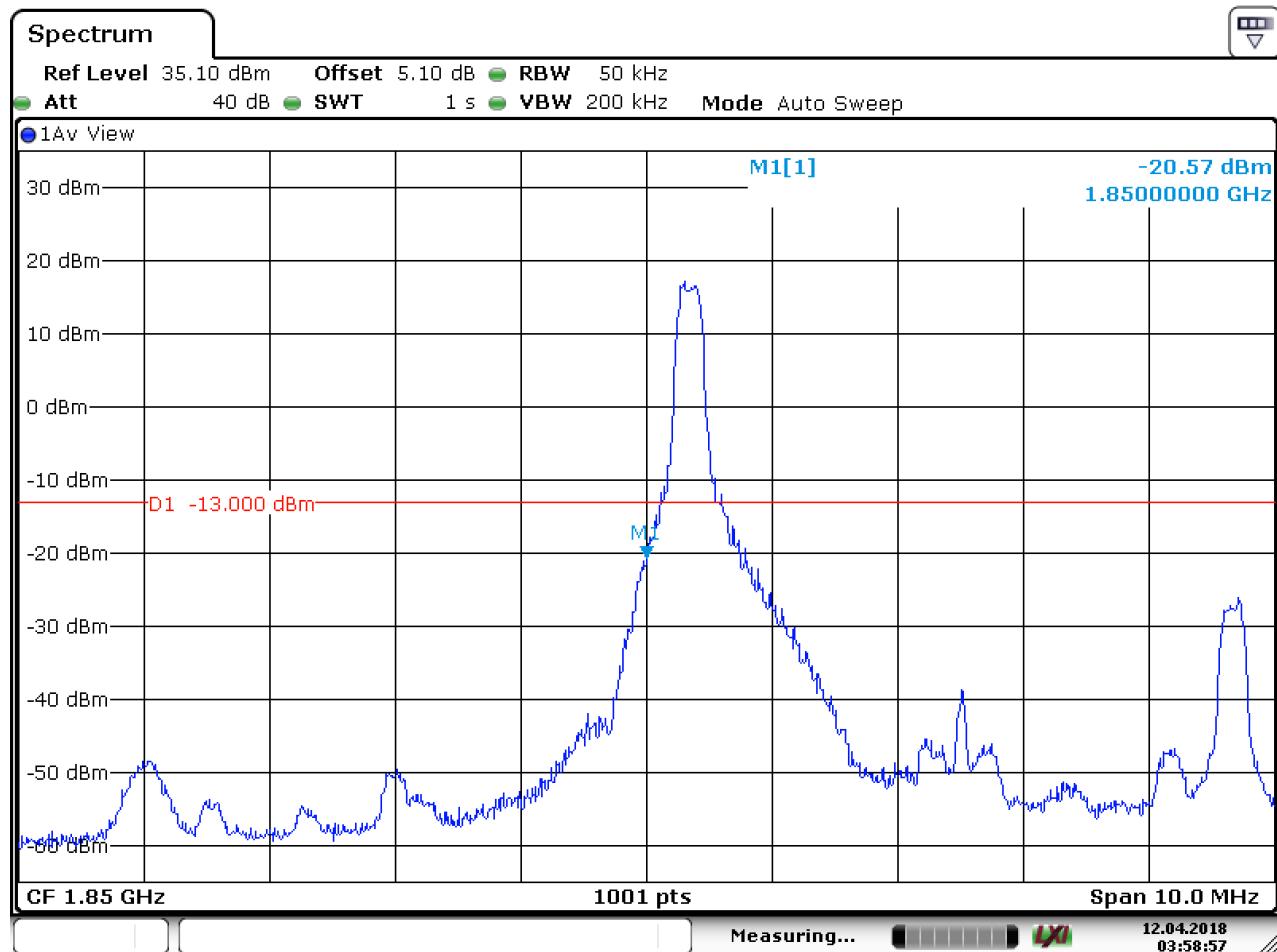


Date: 12.APR.2018 03:51:40

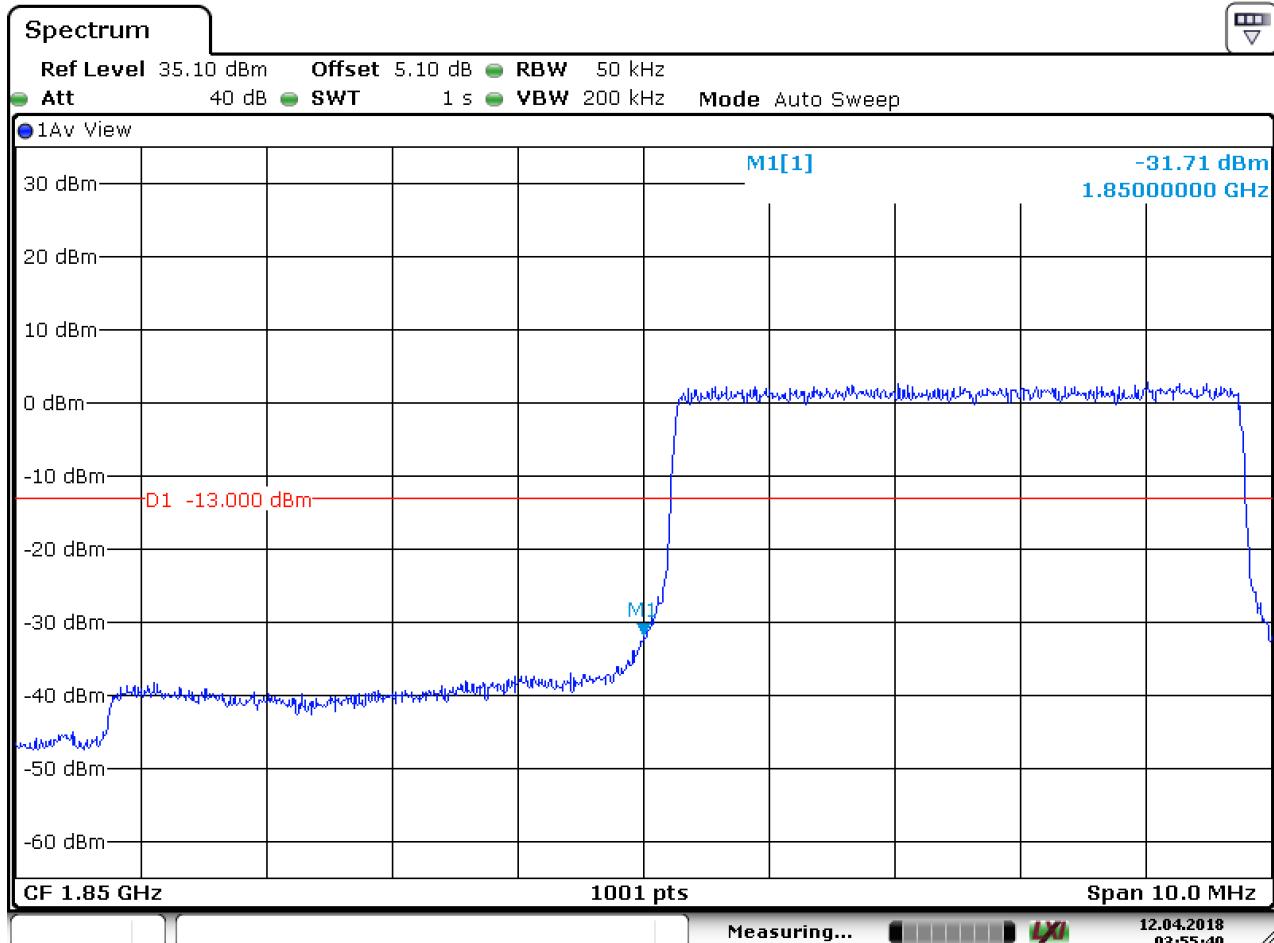
5.1.1.4.1.2 Test RB=FullRBs



Date: 12.APR.2018 03:49:46

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#Low**

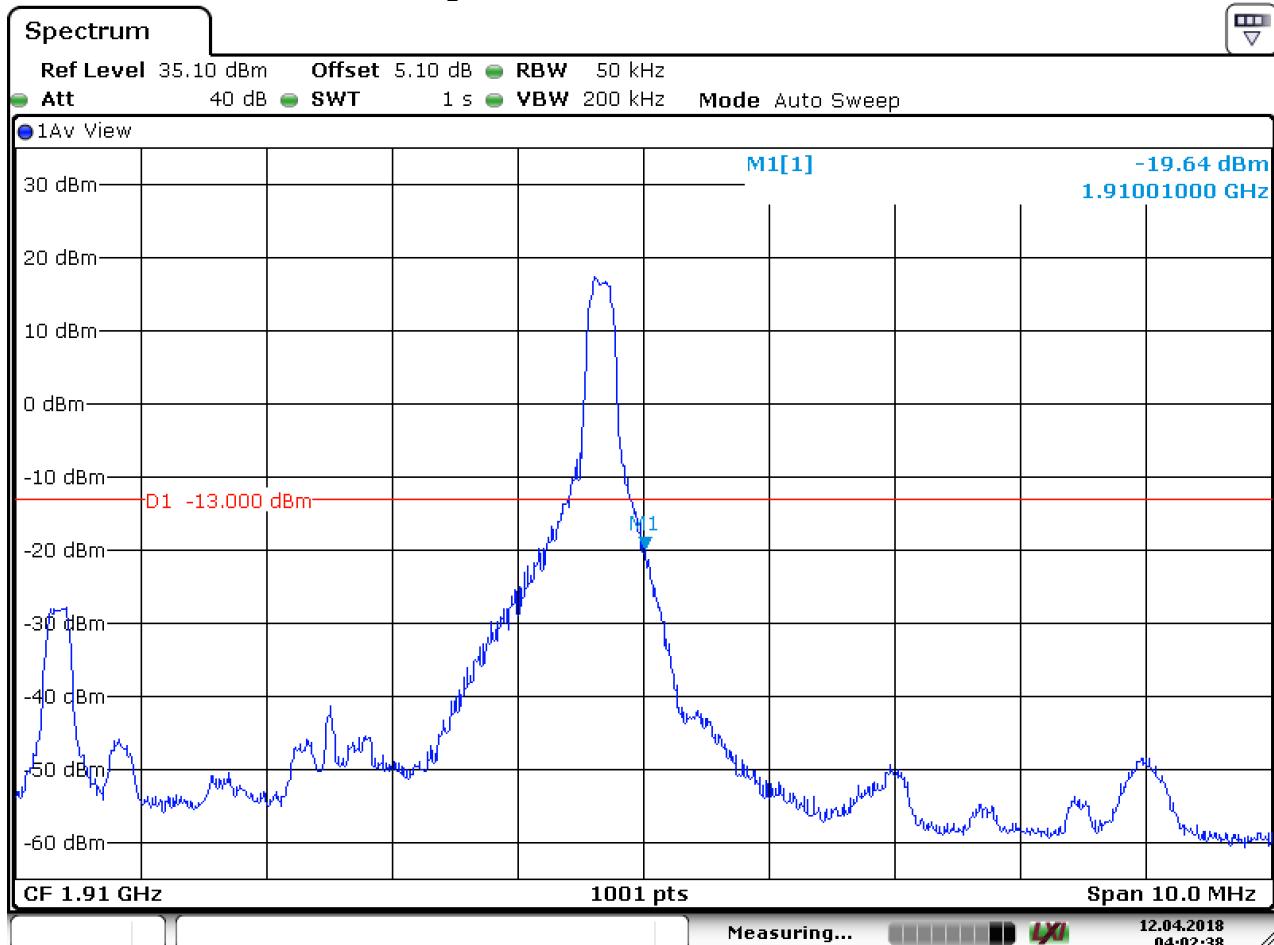
Date: 12.APR.2018 03:58:58

5.1.1.5.1.2 Test RB=FullRBs

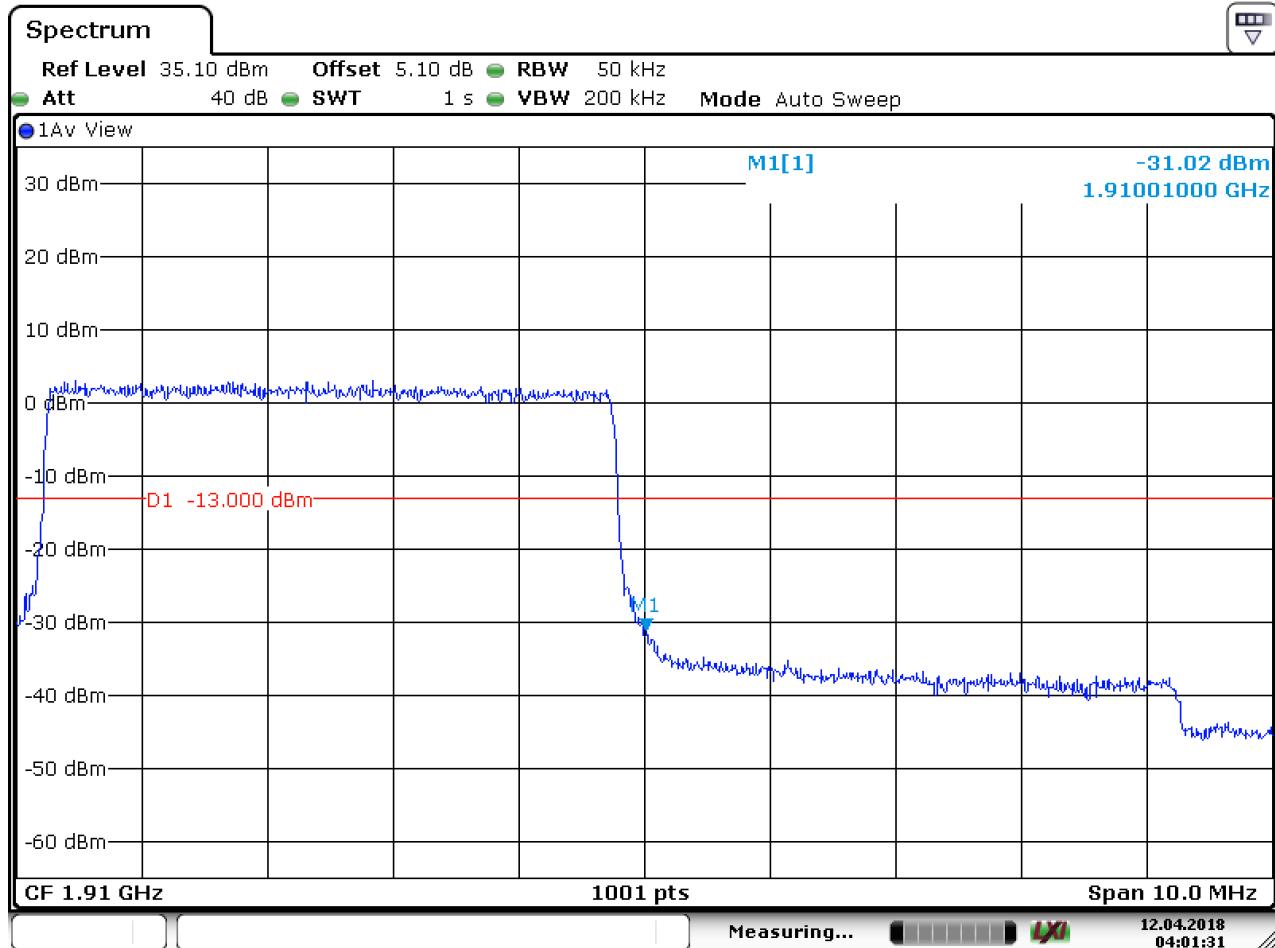
Date: 12.APR.2018 03:55:40

5.1.1.5.2 Test Channel = HCH

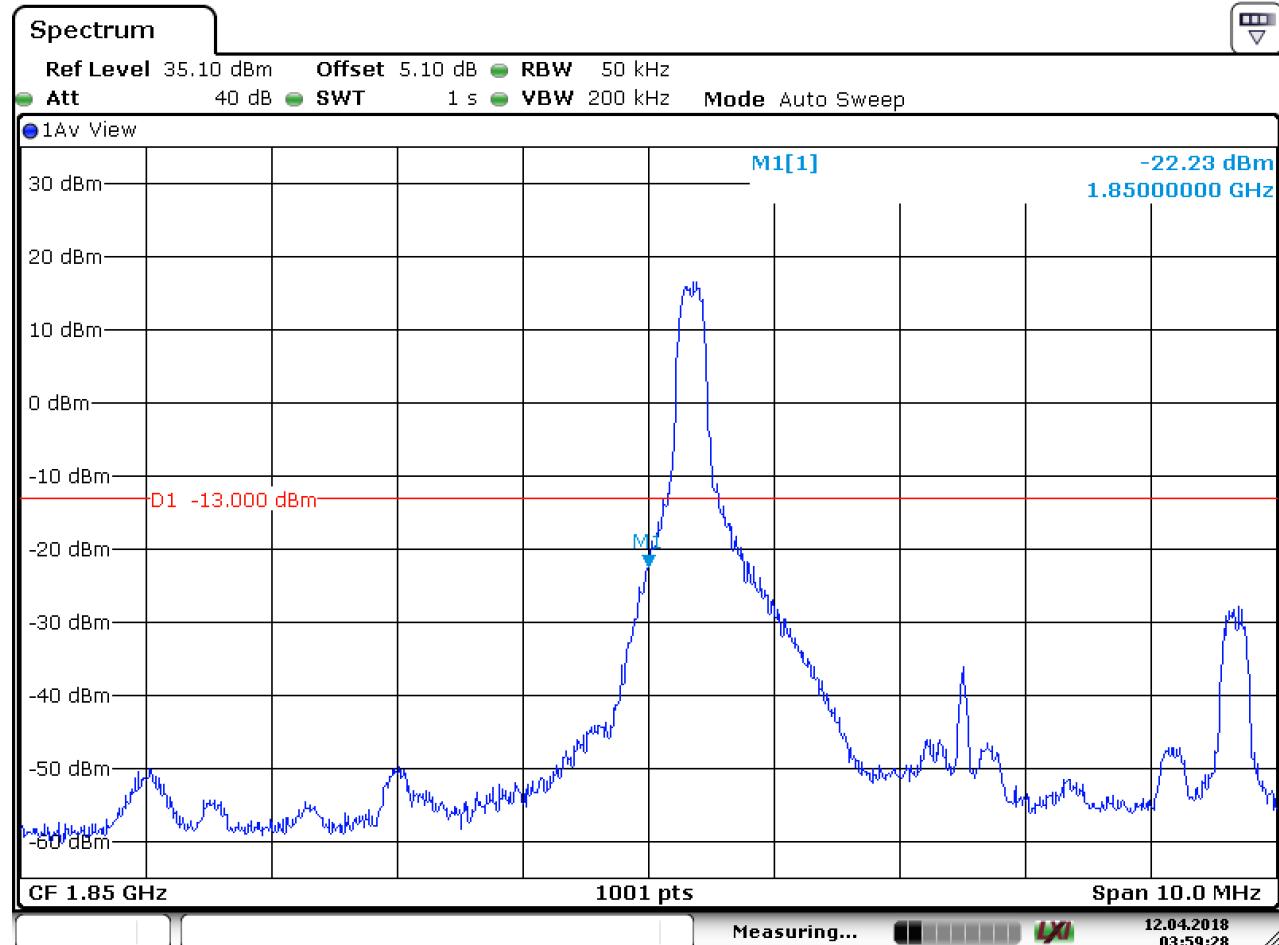
5.1.1.5.2.1 Test RB=1RB#High



5.1.1.5.2.2 Test RB=FullRBs

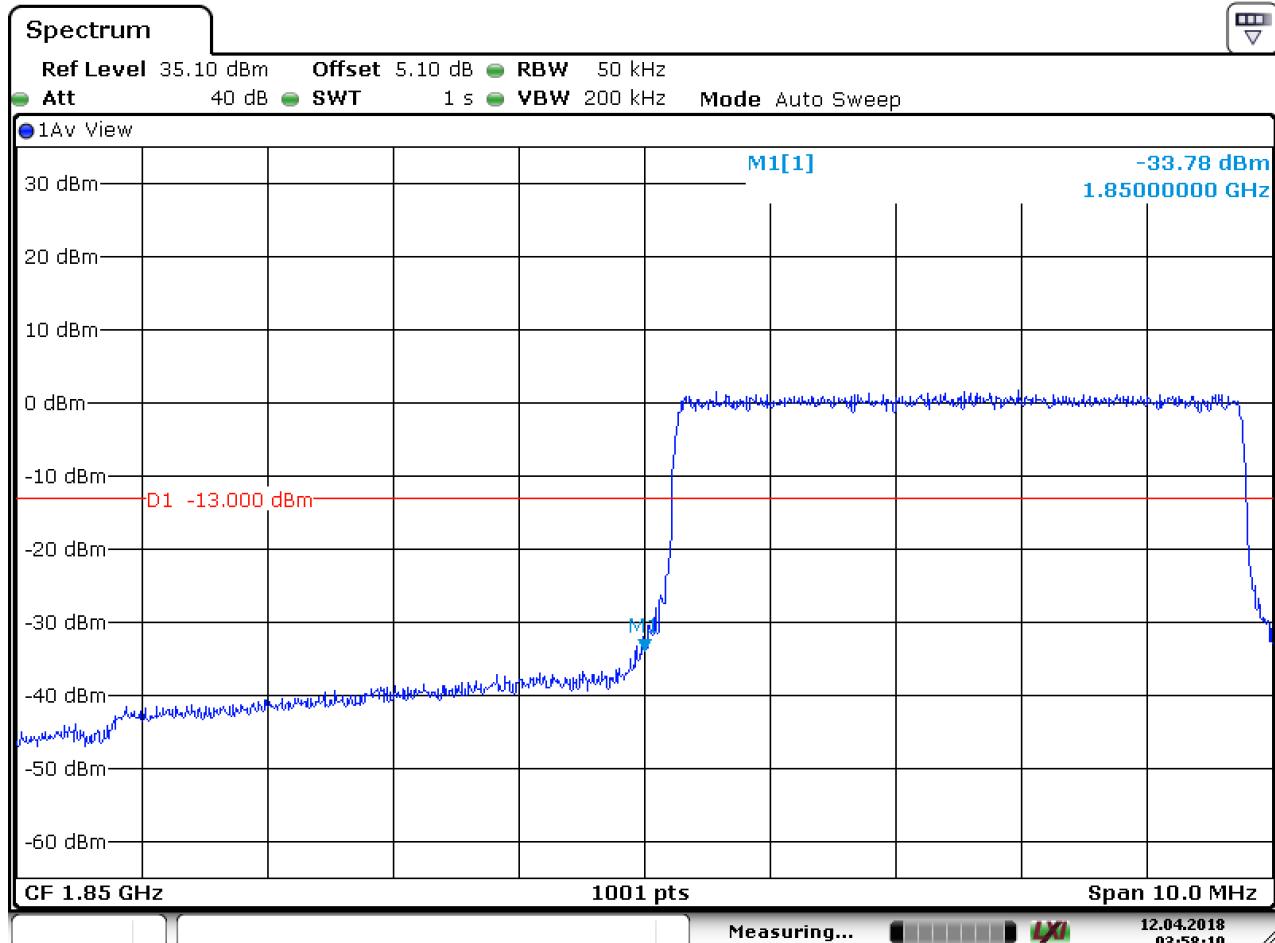


Date: 12.APR.2018 04:01:31

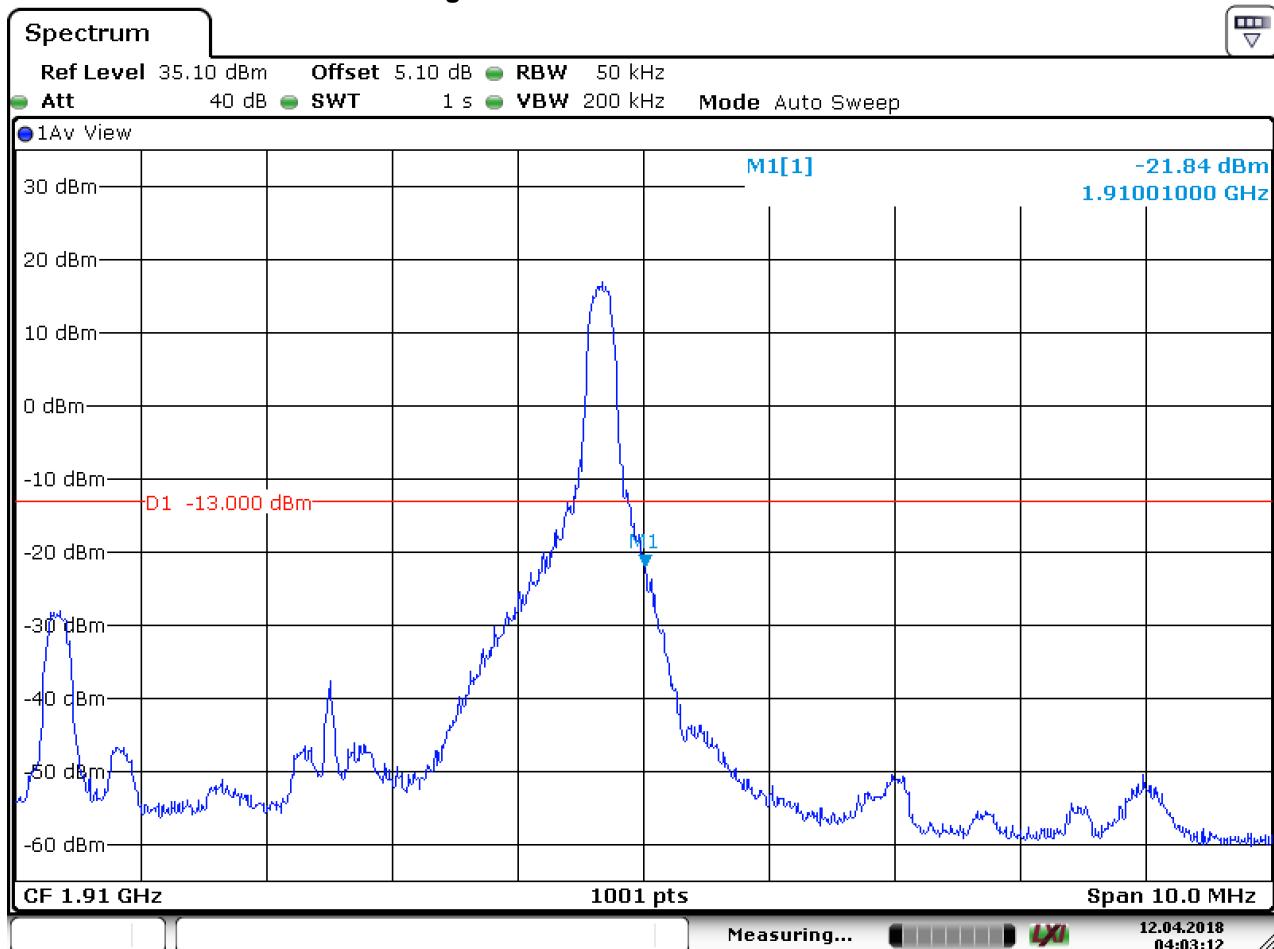
5.1.1.6 Test Mode = LTE/TM2 5MHz**5.1.1.6.1 Test Channel = LCH****5.1.1.6.1.1 Test RB=1RB#Low**

Date: 12.APR.2018 03:59:28

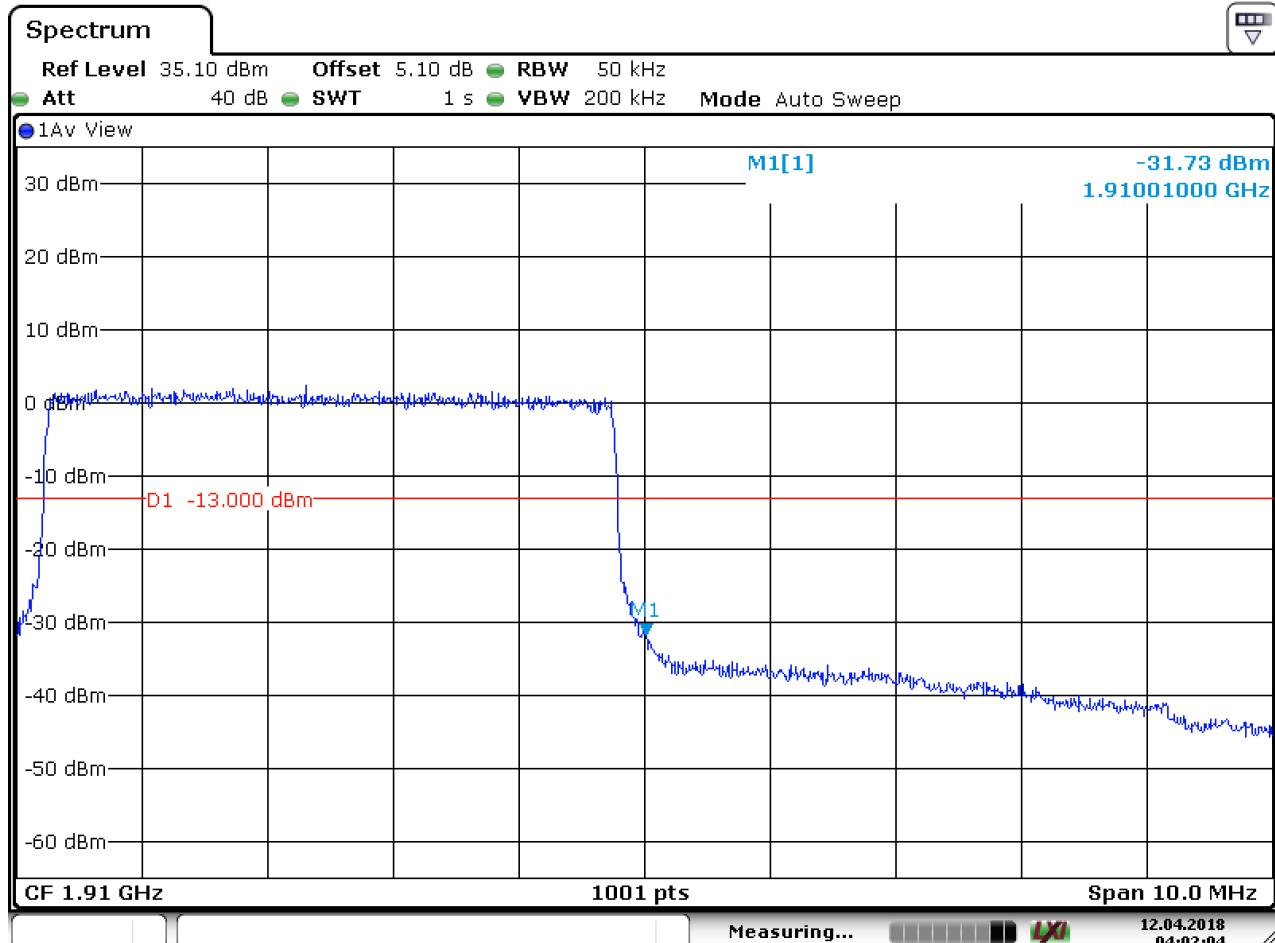
5.1.1.6.1.2 Test RB=FullRBs



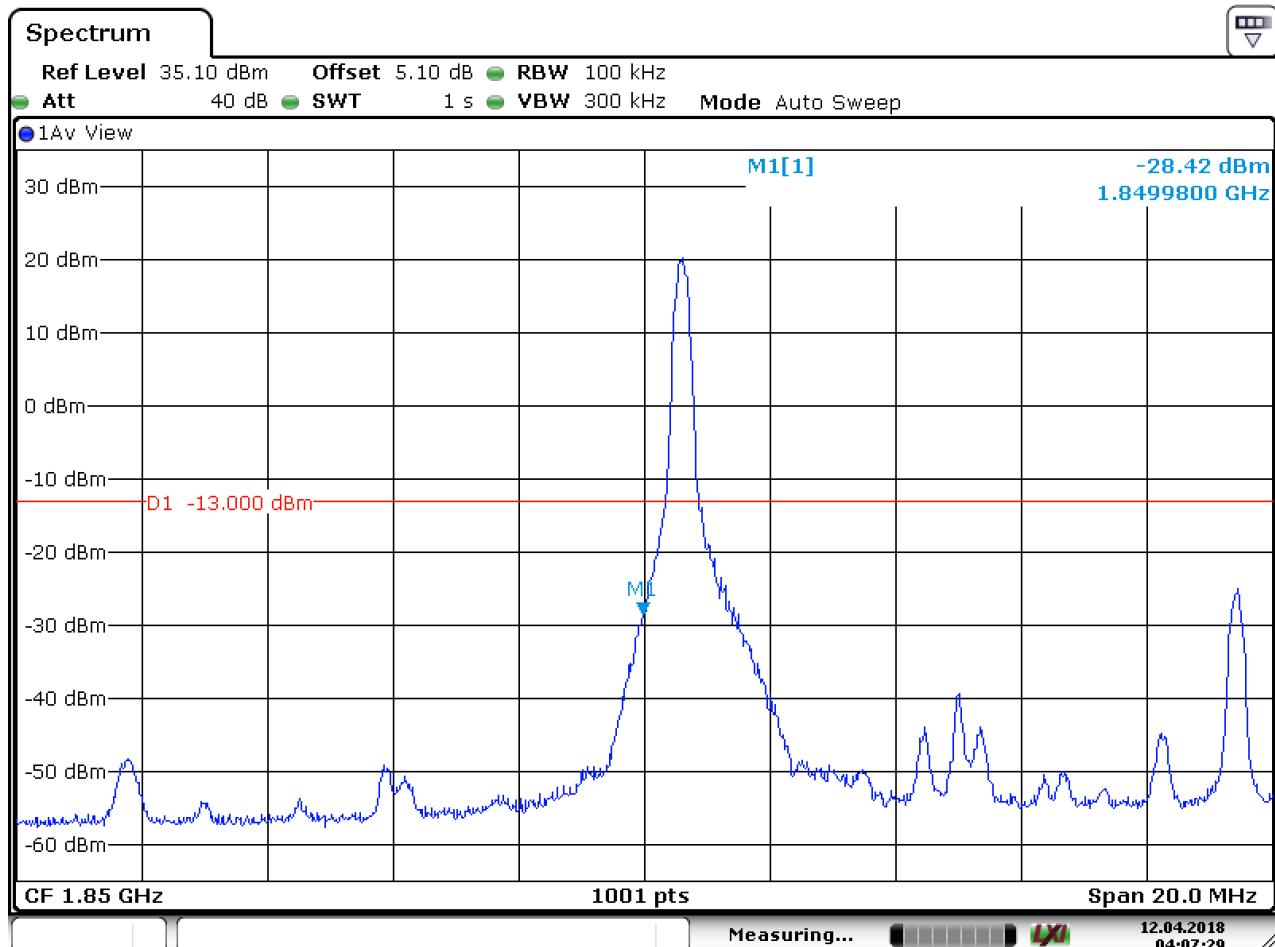
Date: 12.APR.2018 03:58:11

5.1.1.6.2 Test Channel = HCH**5.1.1.6.2.1 Test RB=1RB#High**

Date: 12.APR.2018 04:03:12

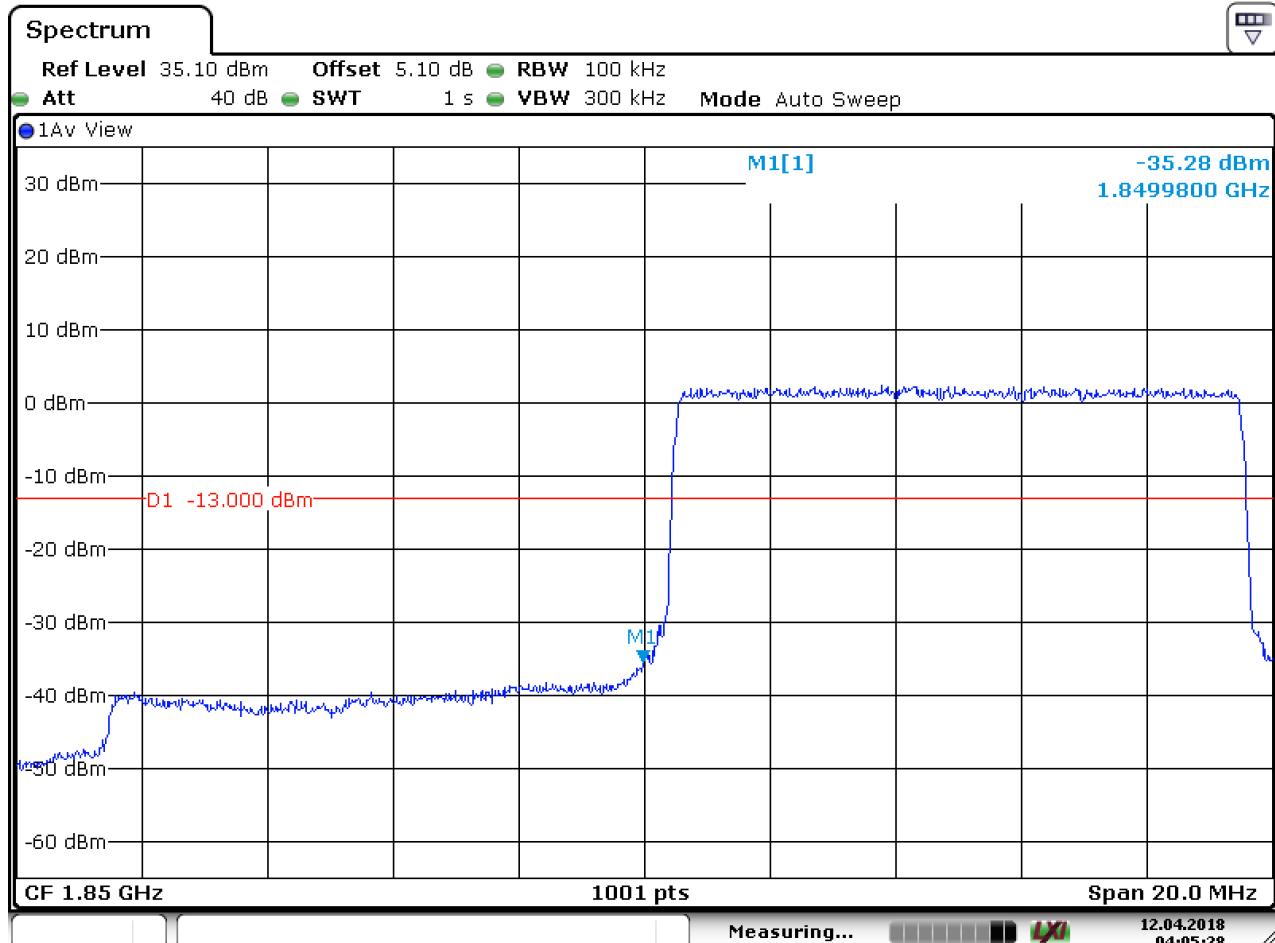
5.1.1.6.2.2 Test RB=FullRBs

Date: 12.APR.2018 04:02:05

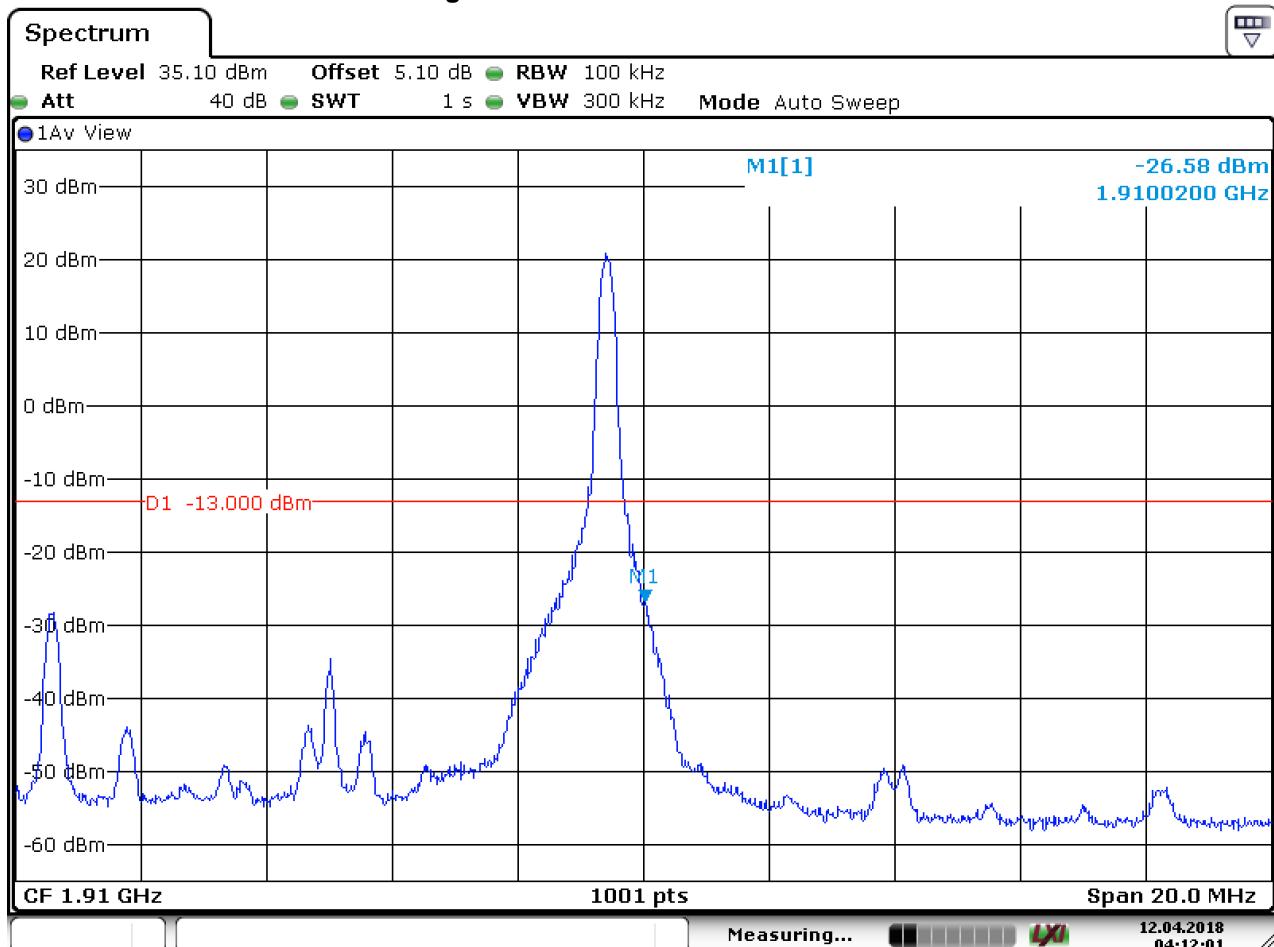
5.1.1.7 Test Mode = LTE/TM1 10MHz**5.1.1.7.1 Test Channel = LCH****5.1.1.7.1.1 Test RB=1RB#Low**

Date: 12.APR.2018 04:07:29

5.1.1.7.1.2 Test RB=FullRBs

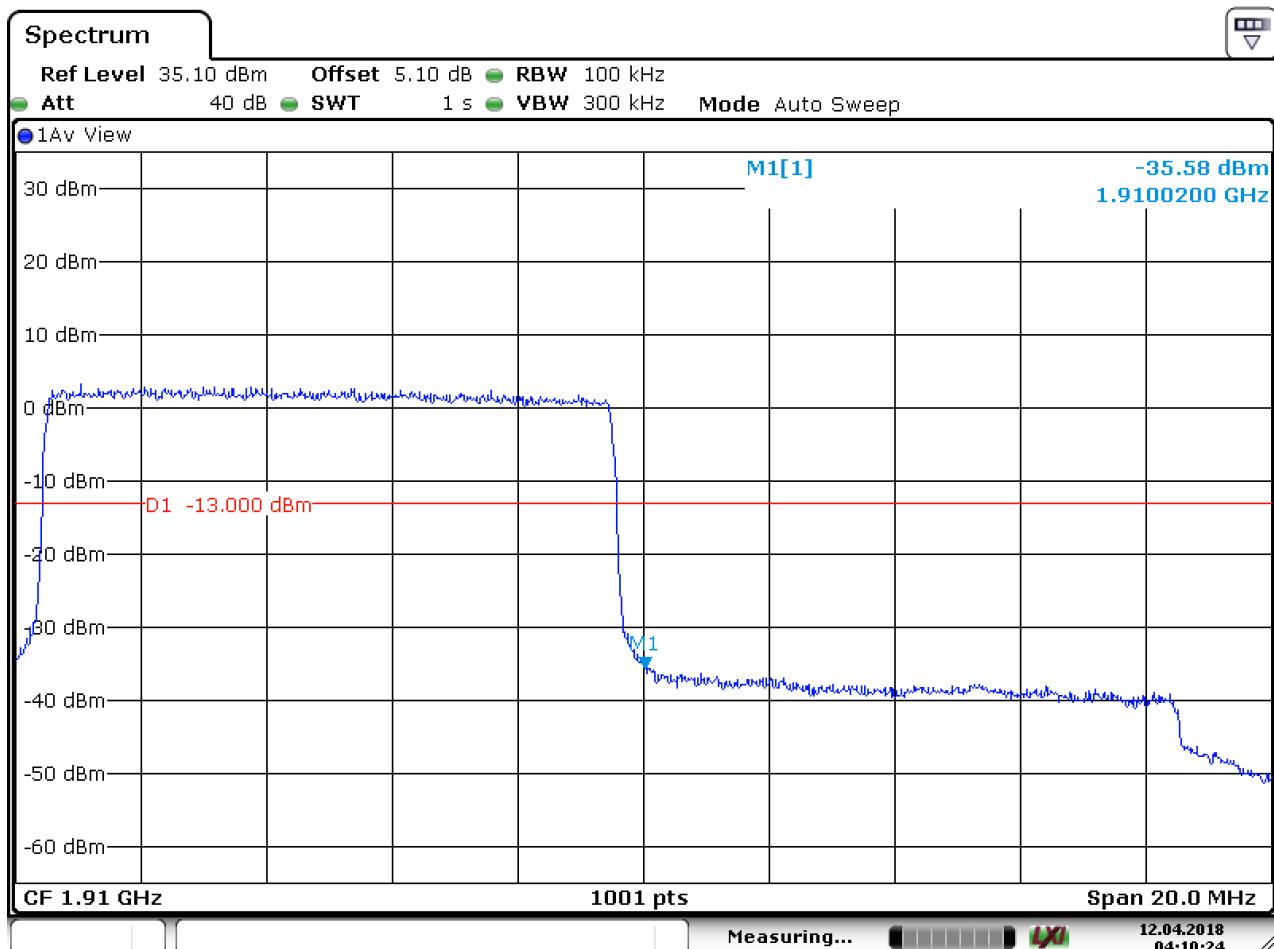


Date: 12.APR.2018 04:05:29

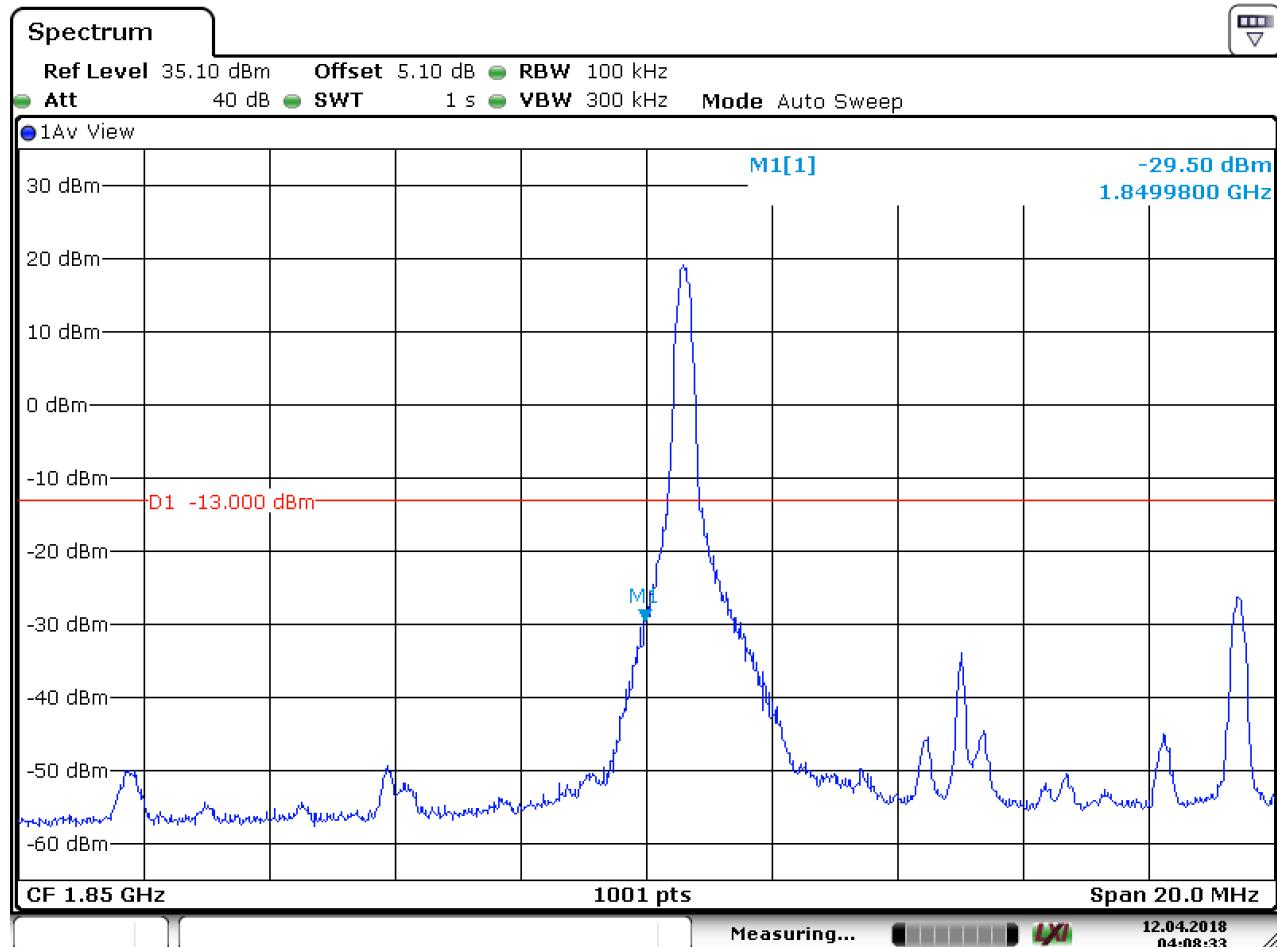
5.1.1.7.2 Test Channel = HCH**5.1.1.7.2.1 Test RB=1RB#High**

Date: 12.APR.2018 04:12:01

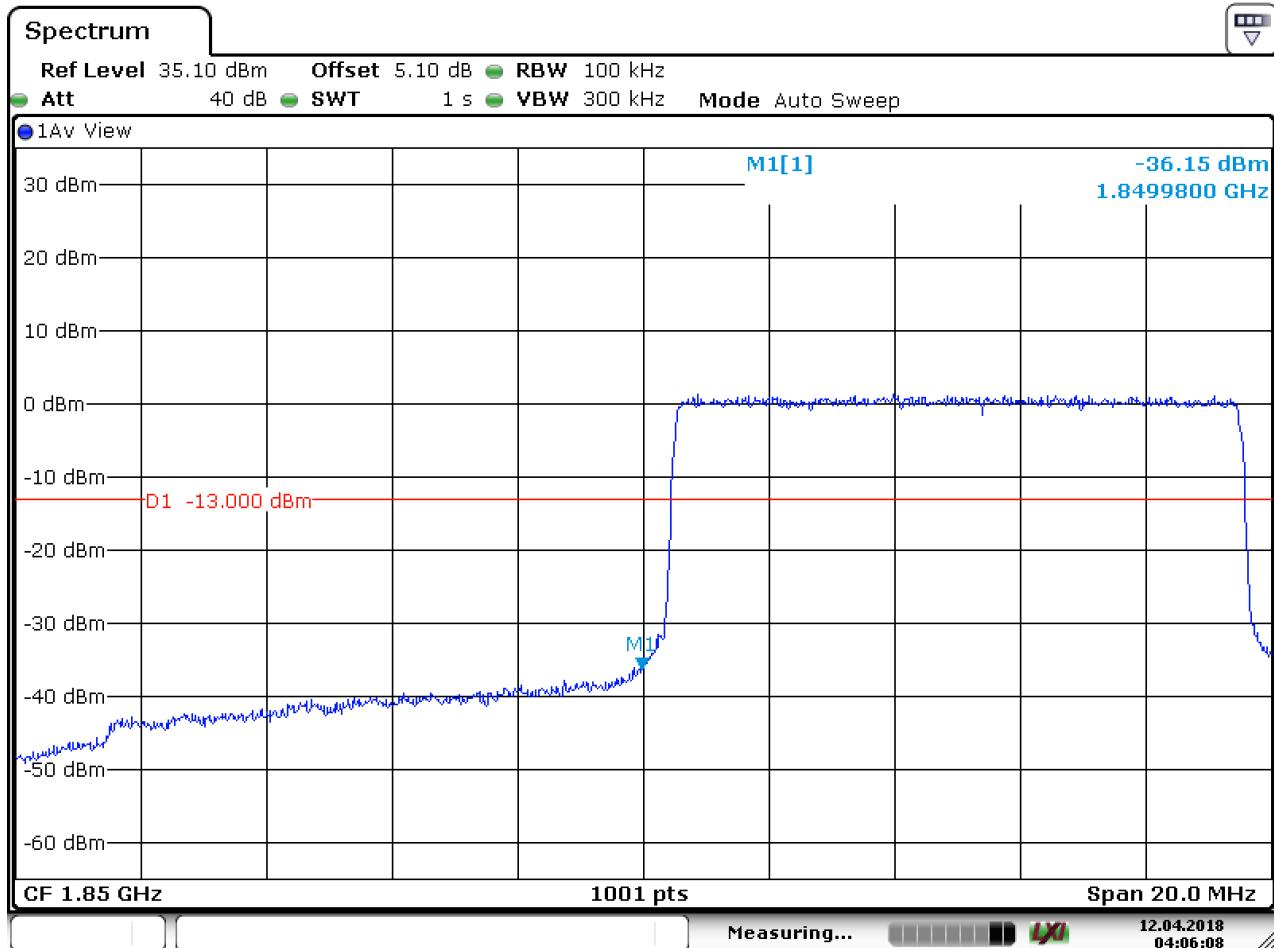
5.1.1.7.2.2 Test RB=FullRBs



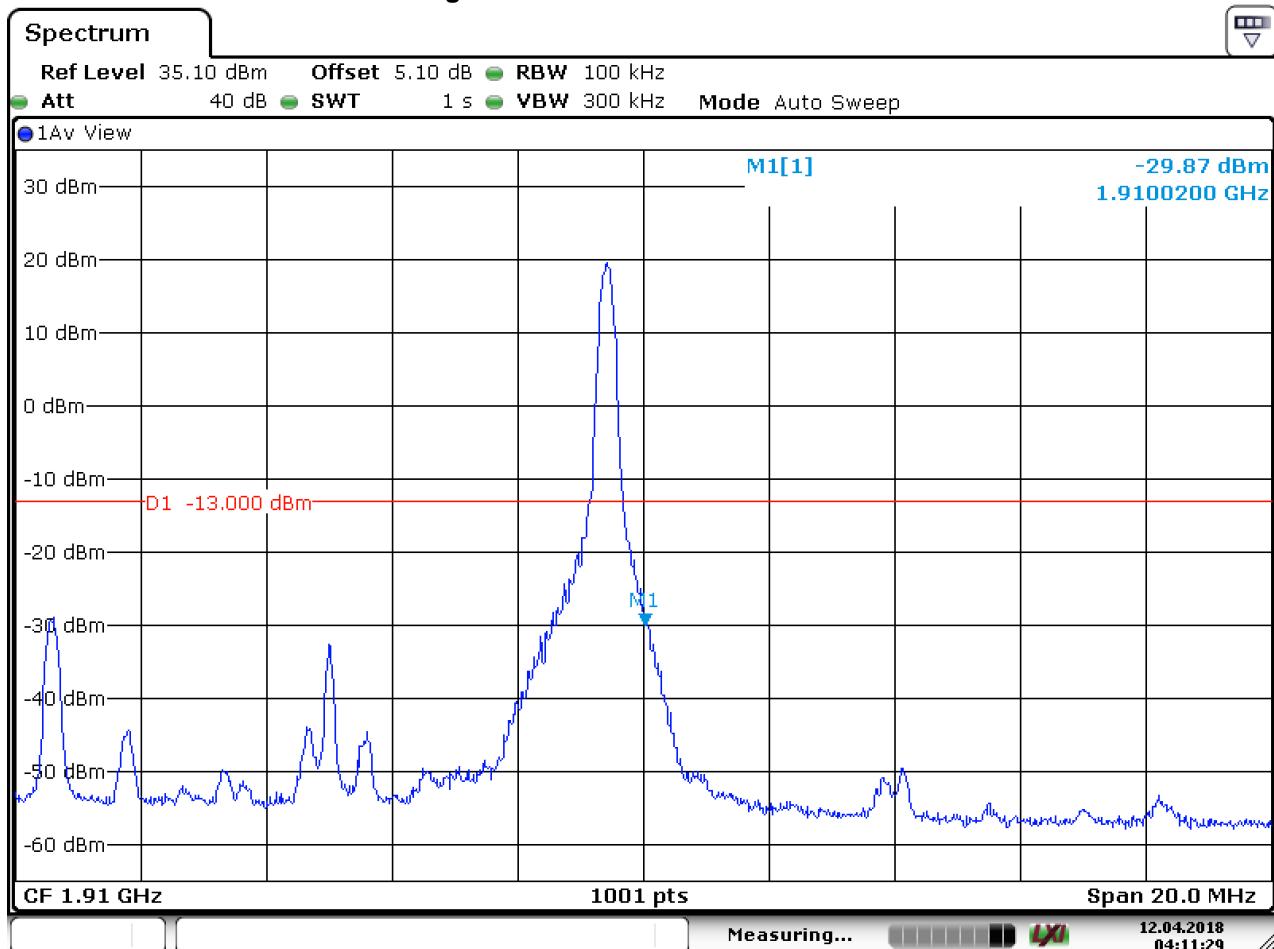
Date: 12.APR.2018 04:10:25

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#Low**

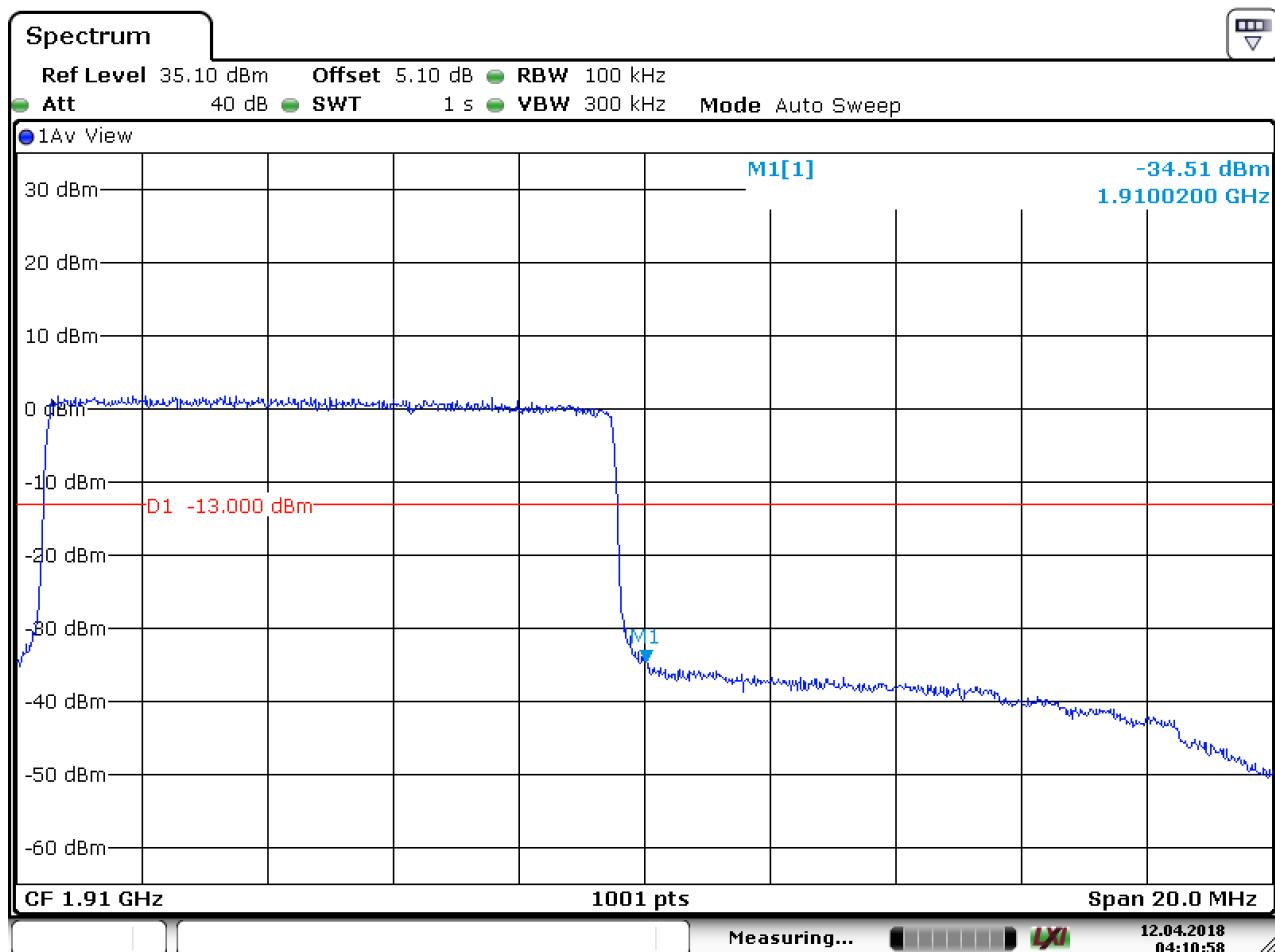
Date: 12.APR.2018 04:08:34

5.1.1.8.1.2 Test RB=FullRBs

Date: 12.APR.2018 04:06:08

5.1.1.8.2 Test Channel = HCH**5.1.1.8.2.1 Test RB=1RB#High**

Date: 12.APR.2018 04:11:29

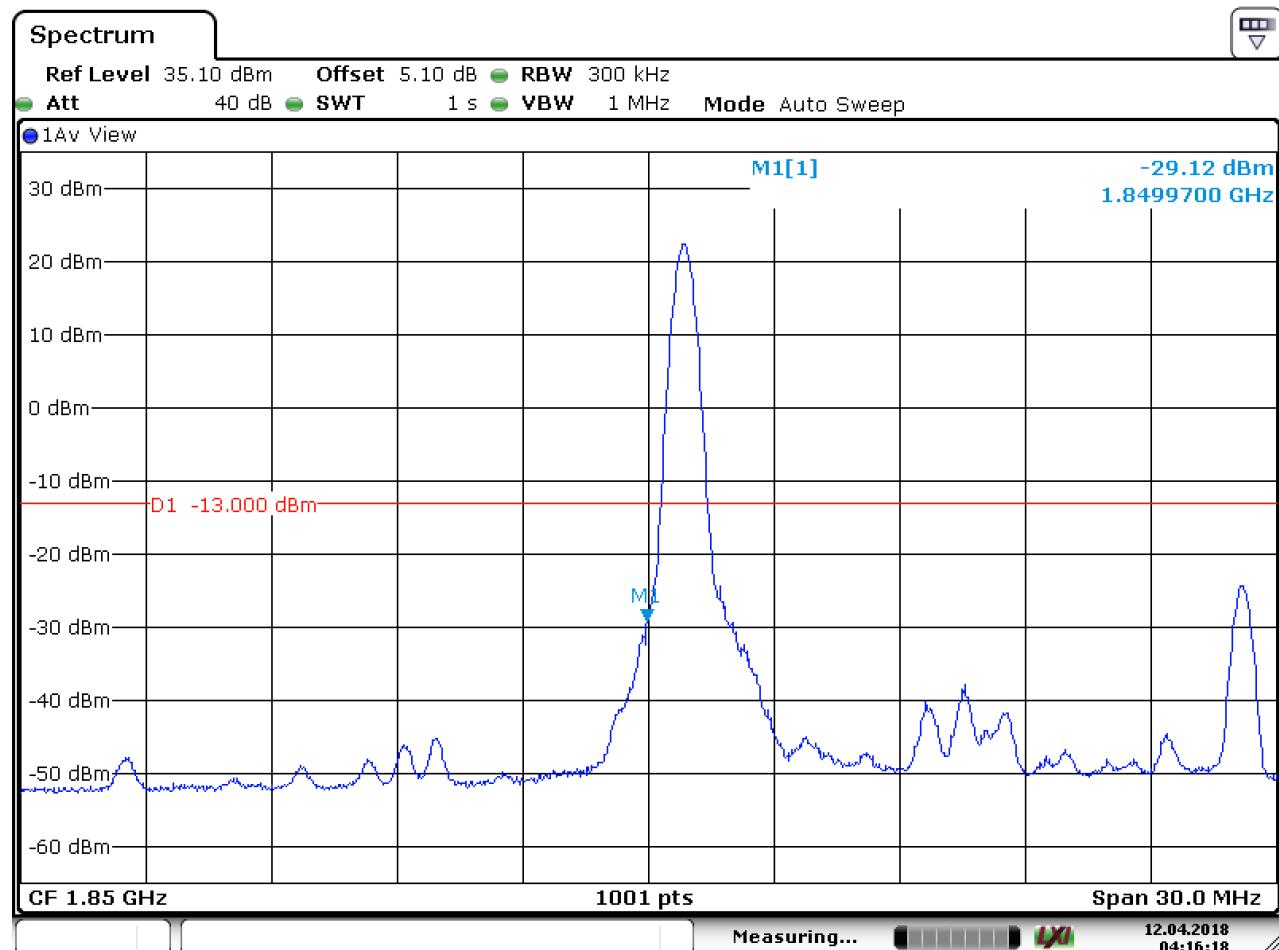
5.1.1.8.2.2 Test RB=FullRBs

Date: 12.APR.2018 04:10:58

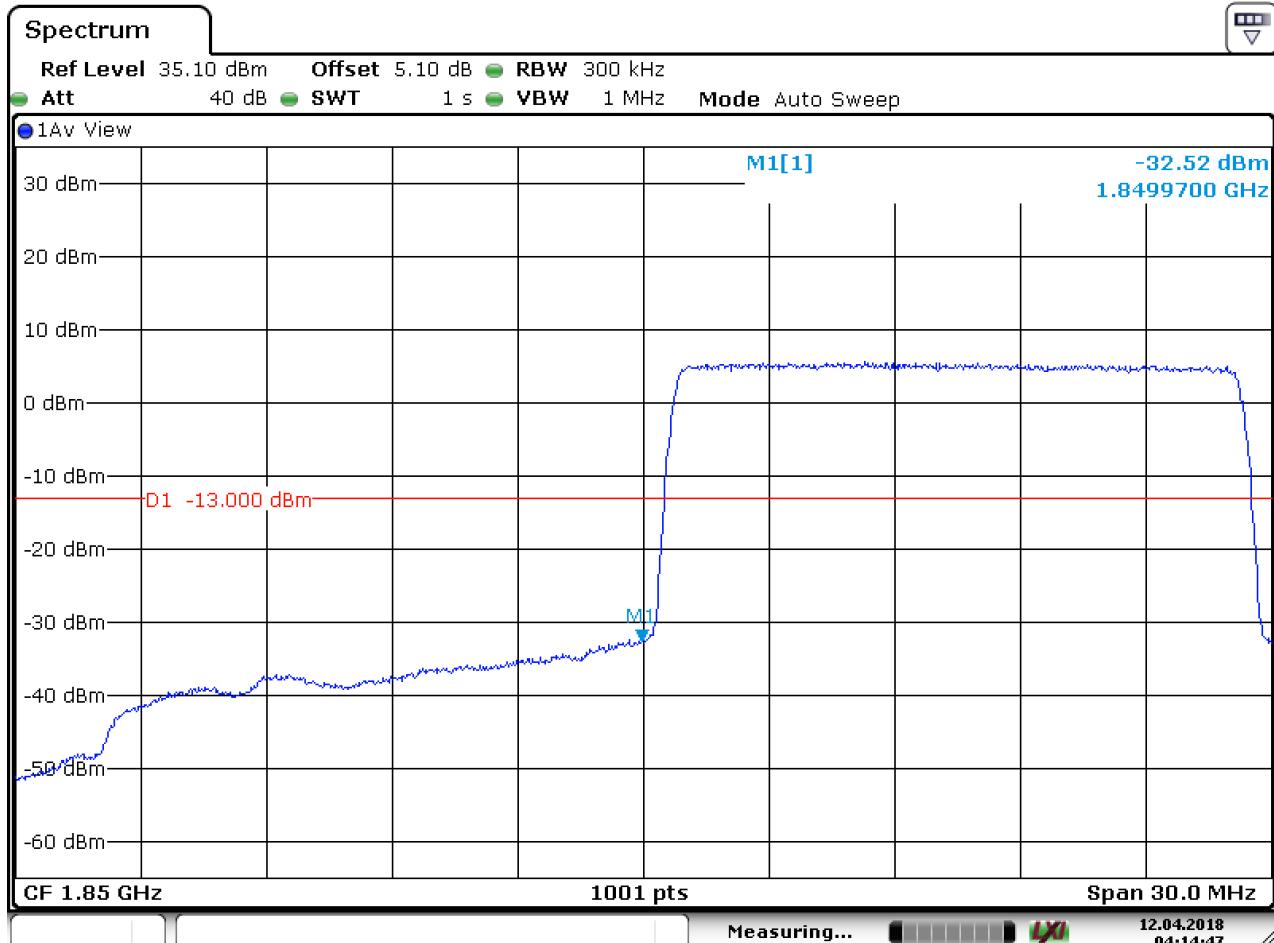
5.1.1.9 Test Mode = LTE/TM1 15MHz

5.1.1.9.1 Test Channel = LCH

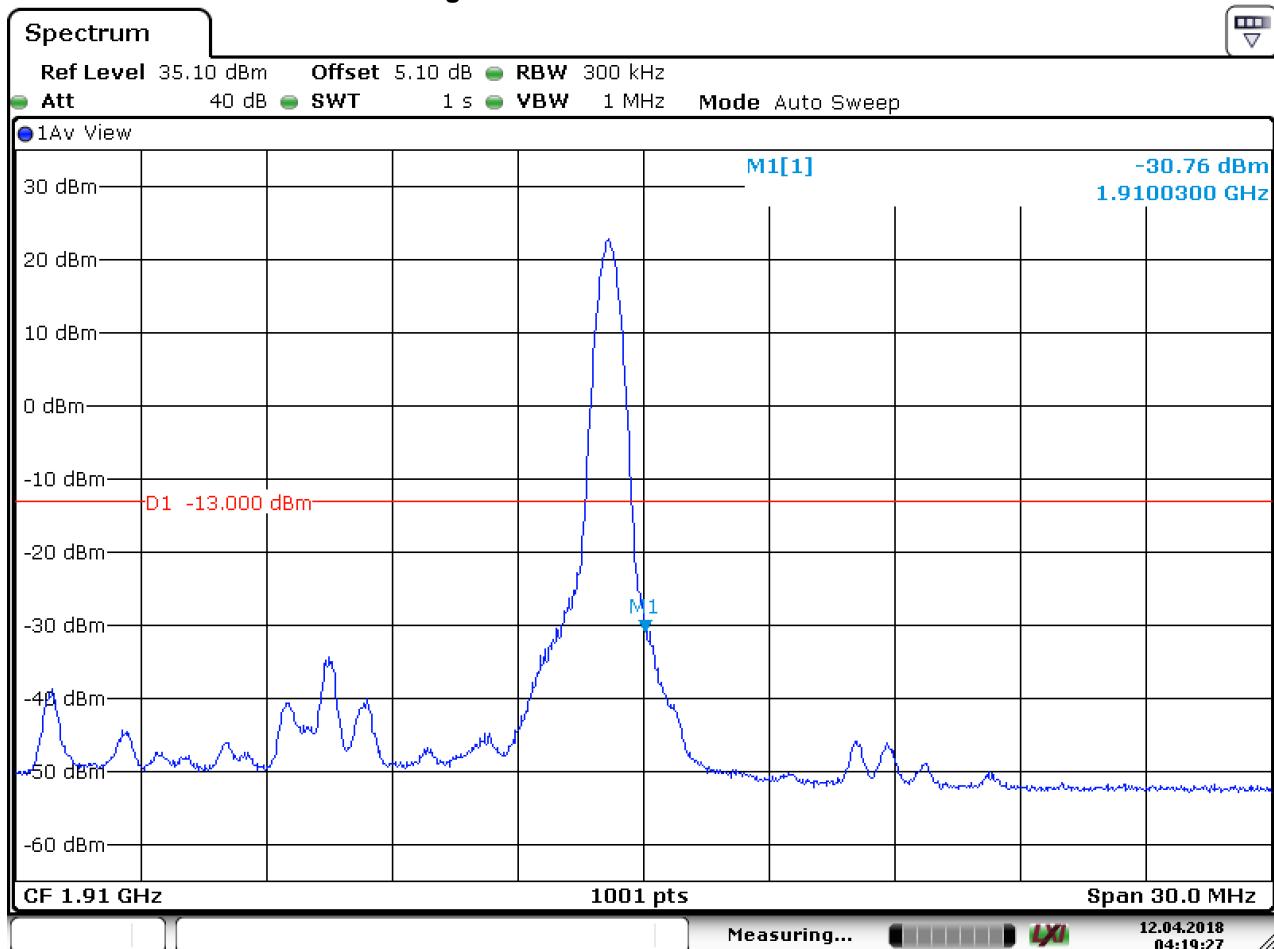
5.1.1.9.1.1 Test RB=1RB#Low



Date: 12.APR.2018 04:16:19

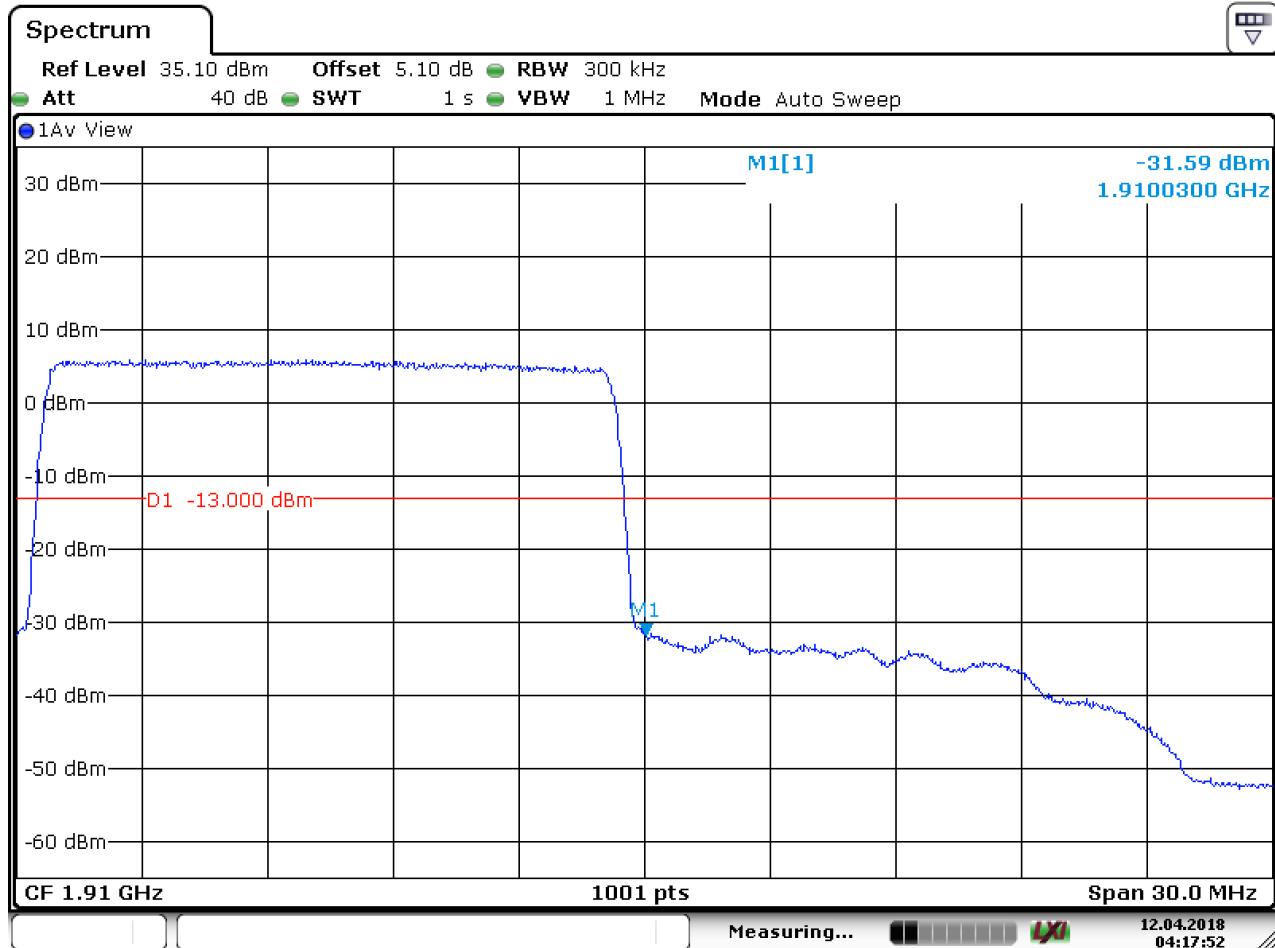
5.1.1.9.1.2 Test RB=FullRBs

Date: 12.APR.2018 04:14:47

5.1.1.9.2 Test Channel = HCH**5.1.1.9.2.1 Test RB=1RB#High**

Date: 12.APR.2018 04:19:27

5.1.1.9.2.2 Test RB=FullRBs

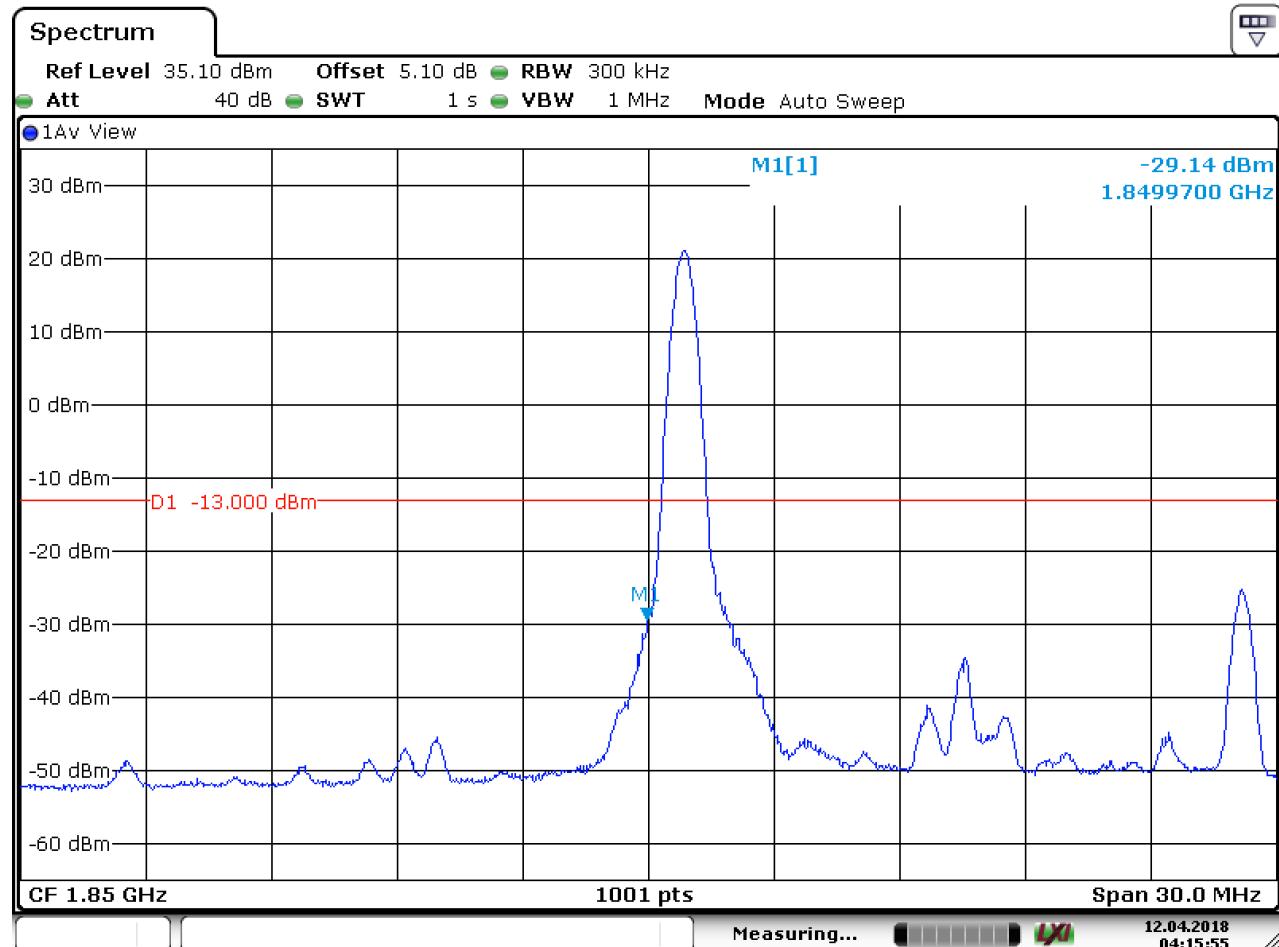


Date: 12.APR.2018 04:17:53

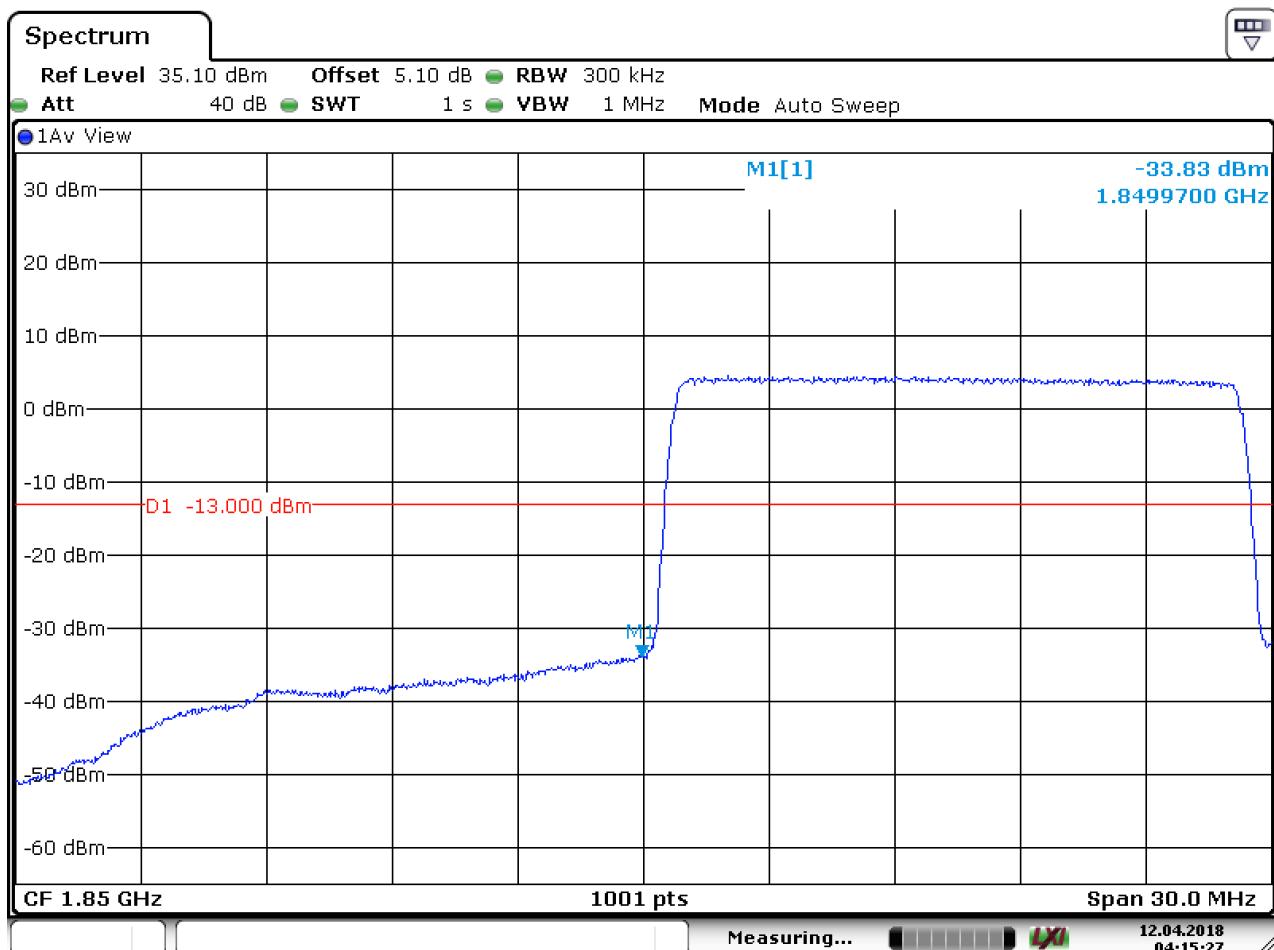
5.1.1.10 Test Mode = LTE/TM2 15MHz

5.1.1.10.1 Test Channel = LCH

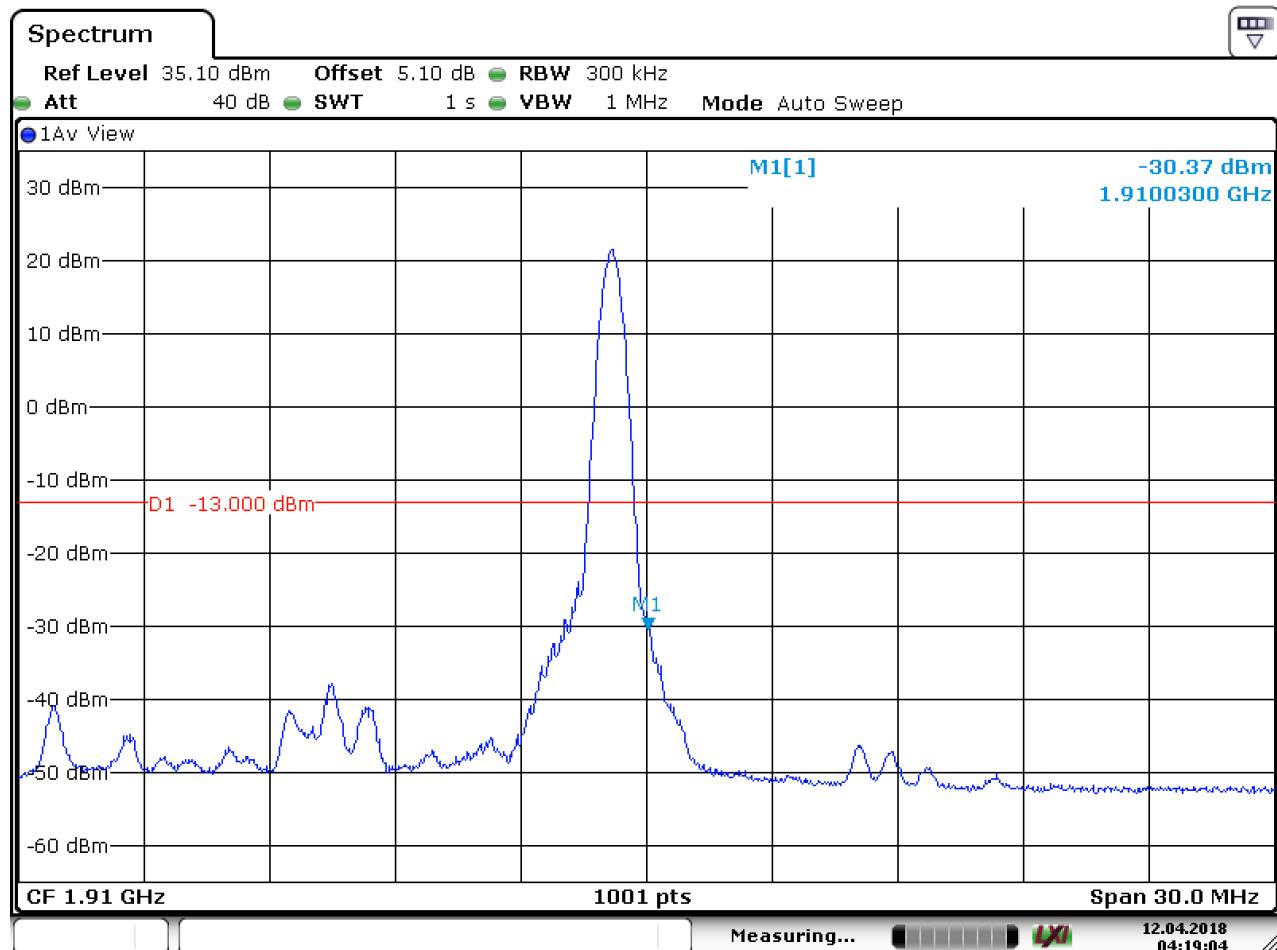
5.1.1.10.1.1 Test RB=1RB#Low



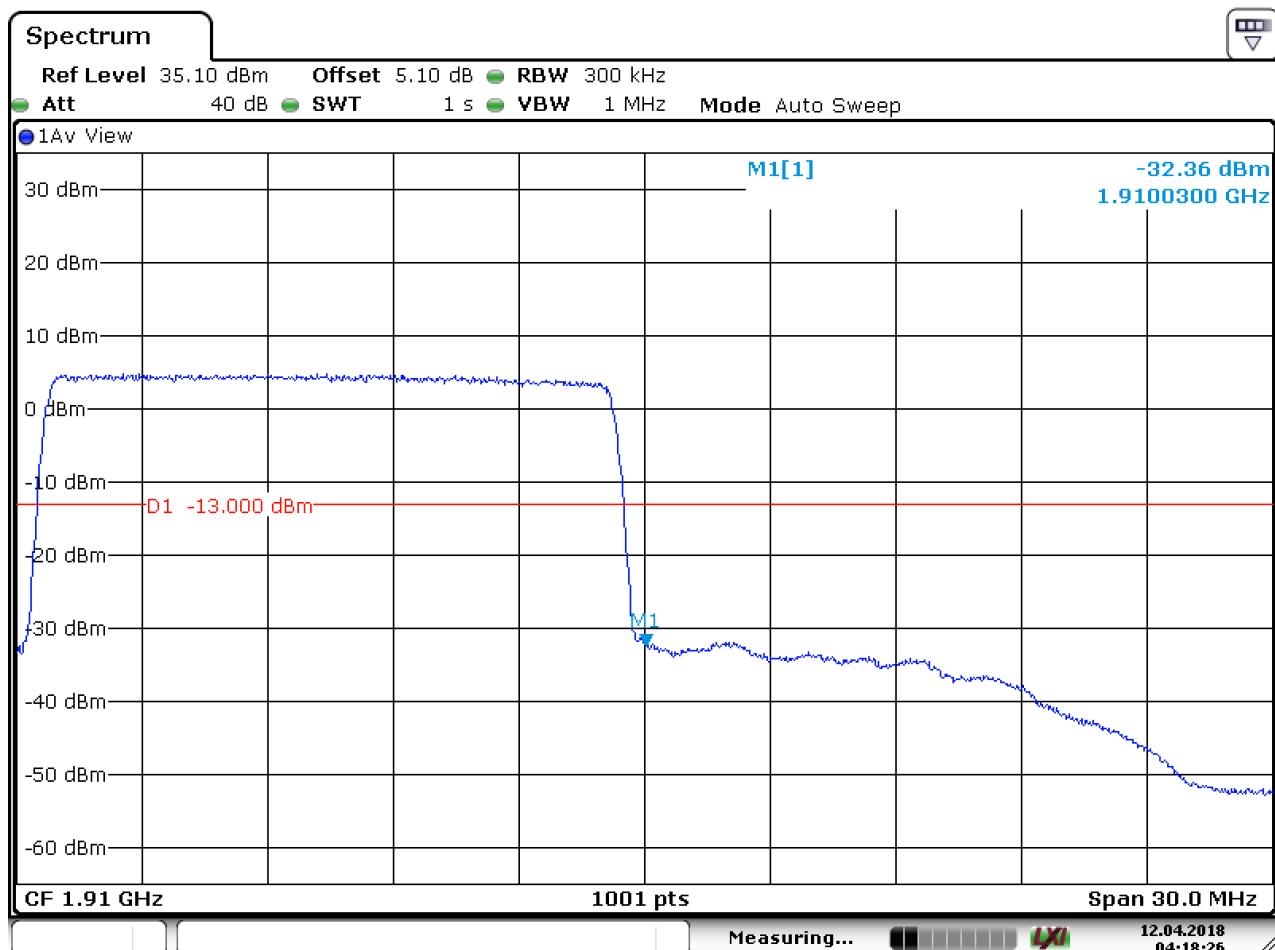
Date: 12.APR.2018 04:15:55

5.1.1.10.1.2 Test RB=FullRBs

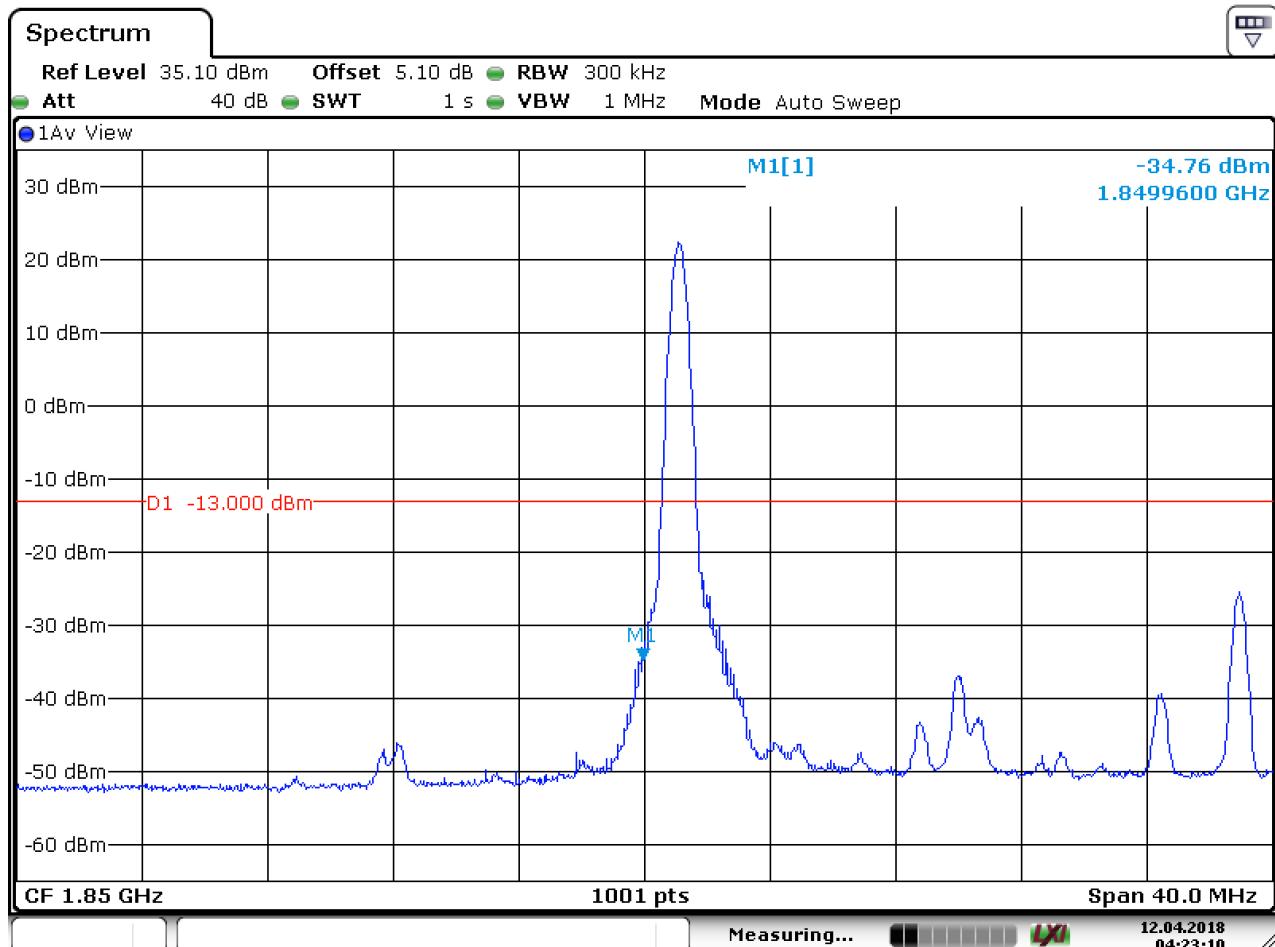
Date: 12.APR.2018 04:15:28

5.1.1.10.2 Test Channel = HCH**5.1.1.10.2.1 Test RB=1RB#High**

Date: 12.APR.2018 04:19:05

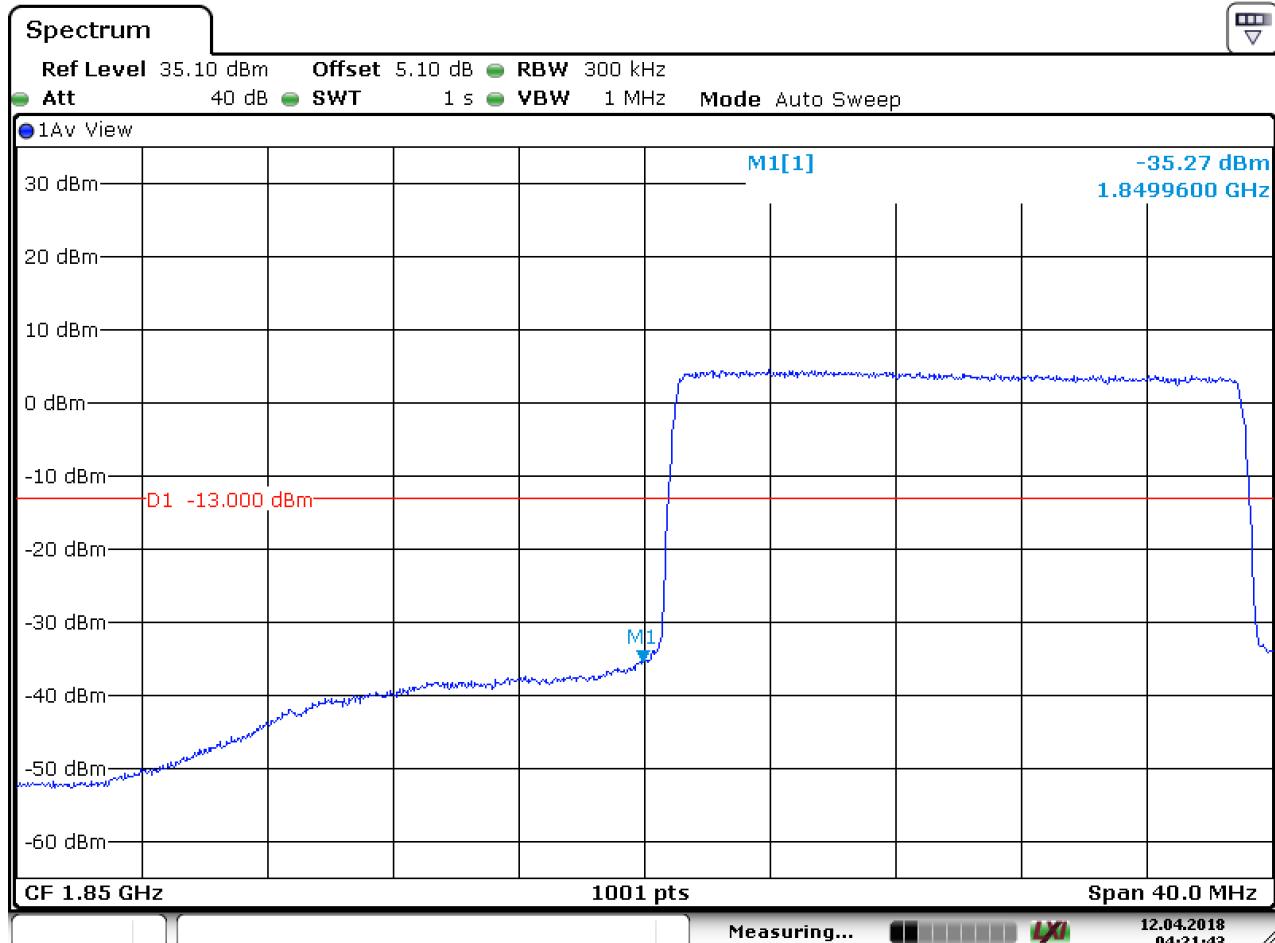
5.1.1.10.2.2 Test RB=FullRBs

Date: 12.APR.2018 04:18:26

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#Low**

Date: 12.APR.2018 04:23:10

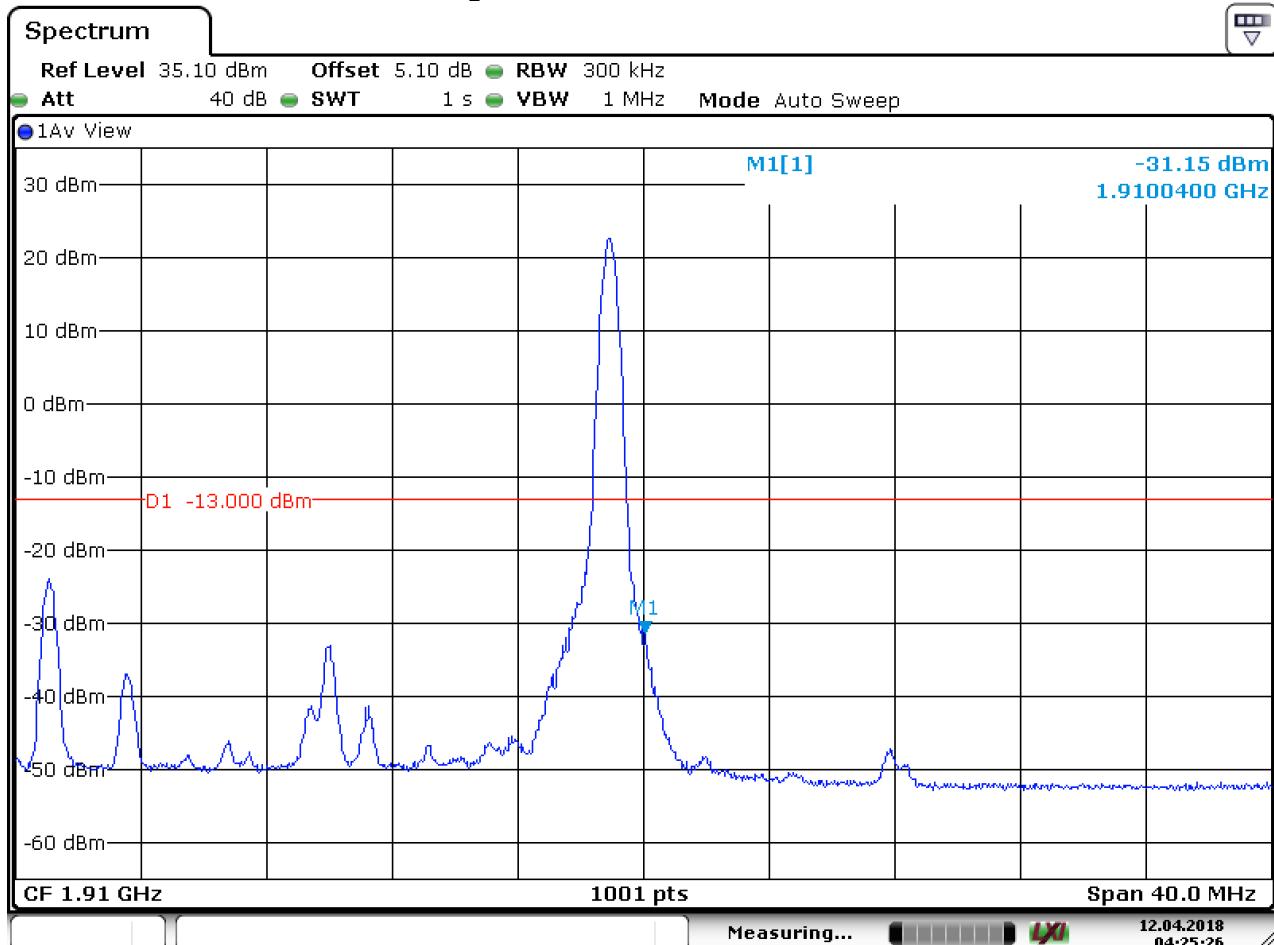
5.1.1.11.1.2 Test RB=FullRBs



Date: 12.APR.2018 04:21:43

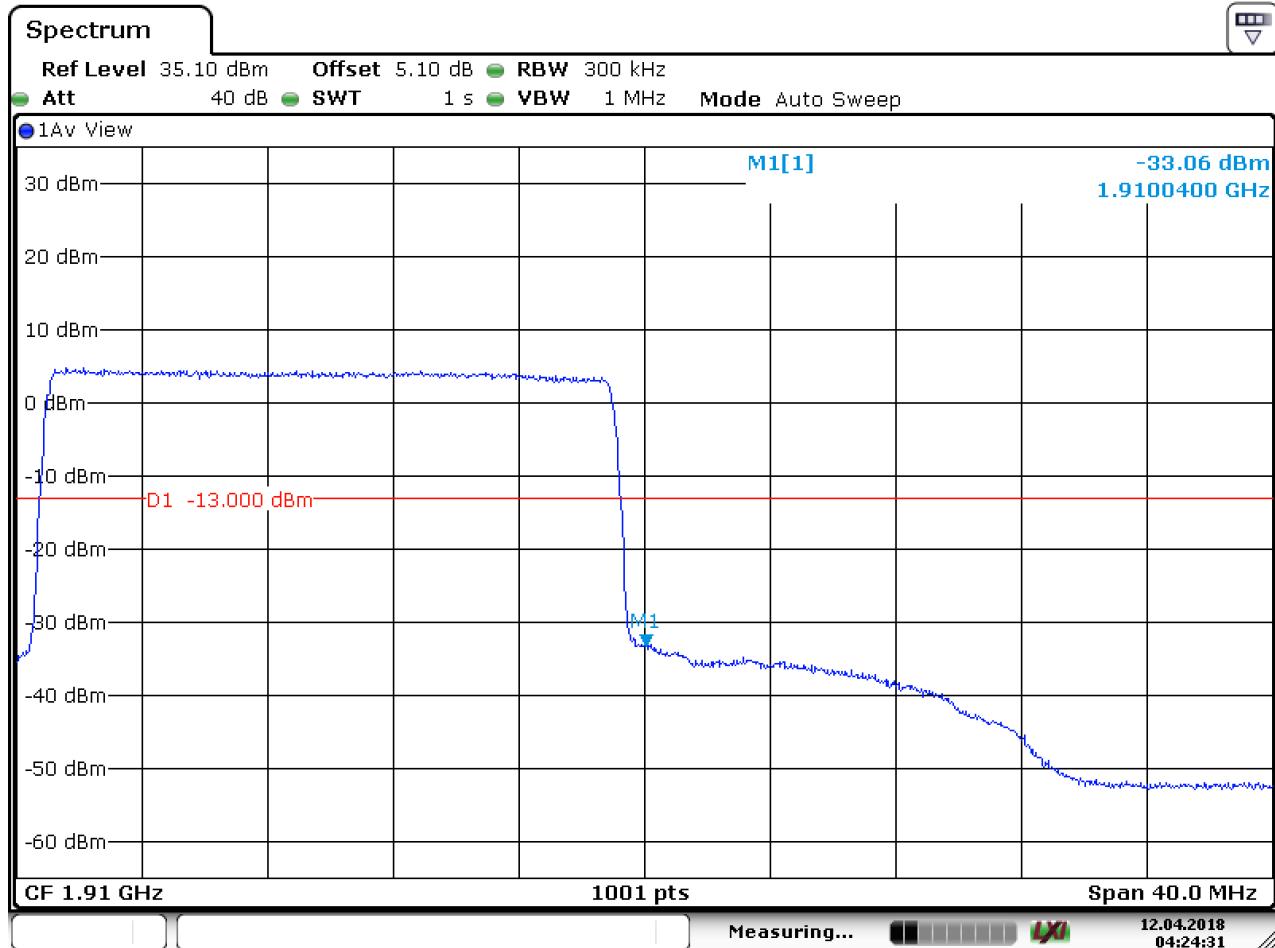
5.1.1.11.2 Test Channel = HCH

5.1.1.11.2.1 Test RB=1RB#High

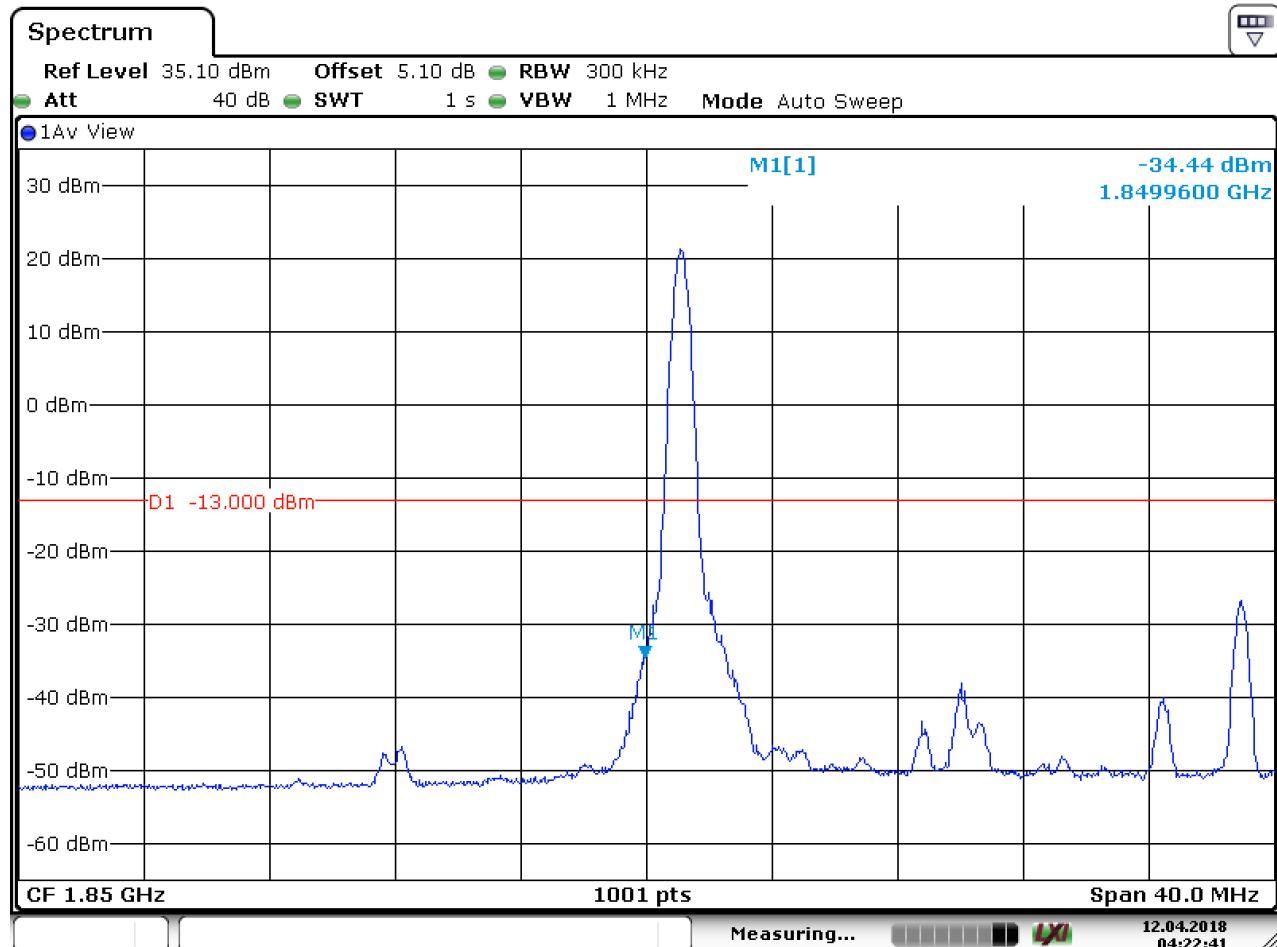


Date: 12.APR.2018 04:25:26

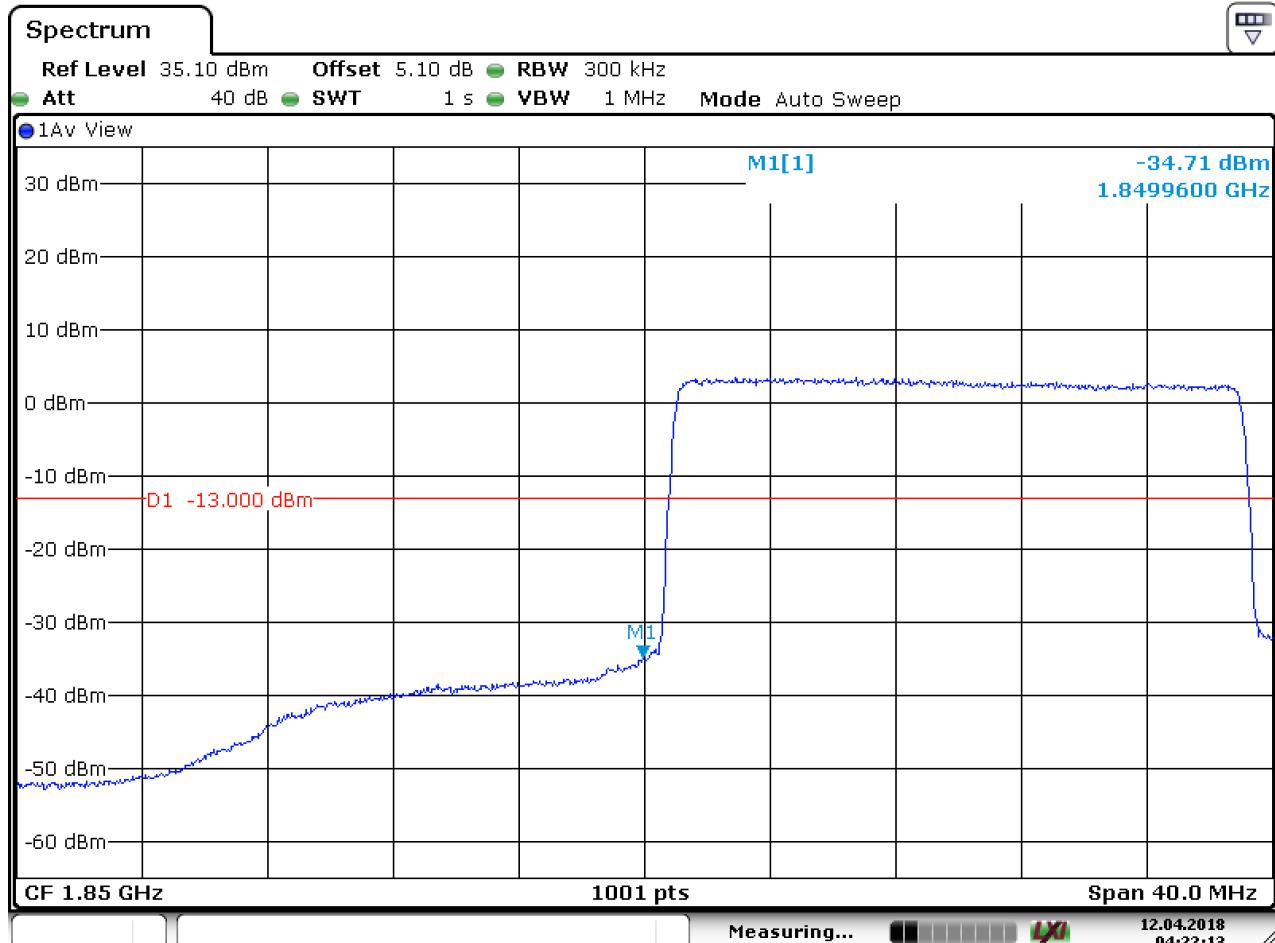
5.1.1.11.2.2 Test RB=FullRBs



Date: 12.APR.2018 04:24:32

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#Low**

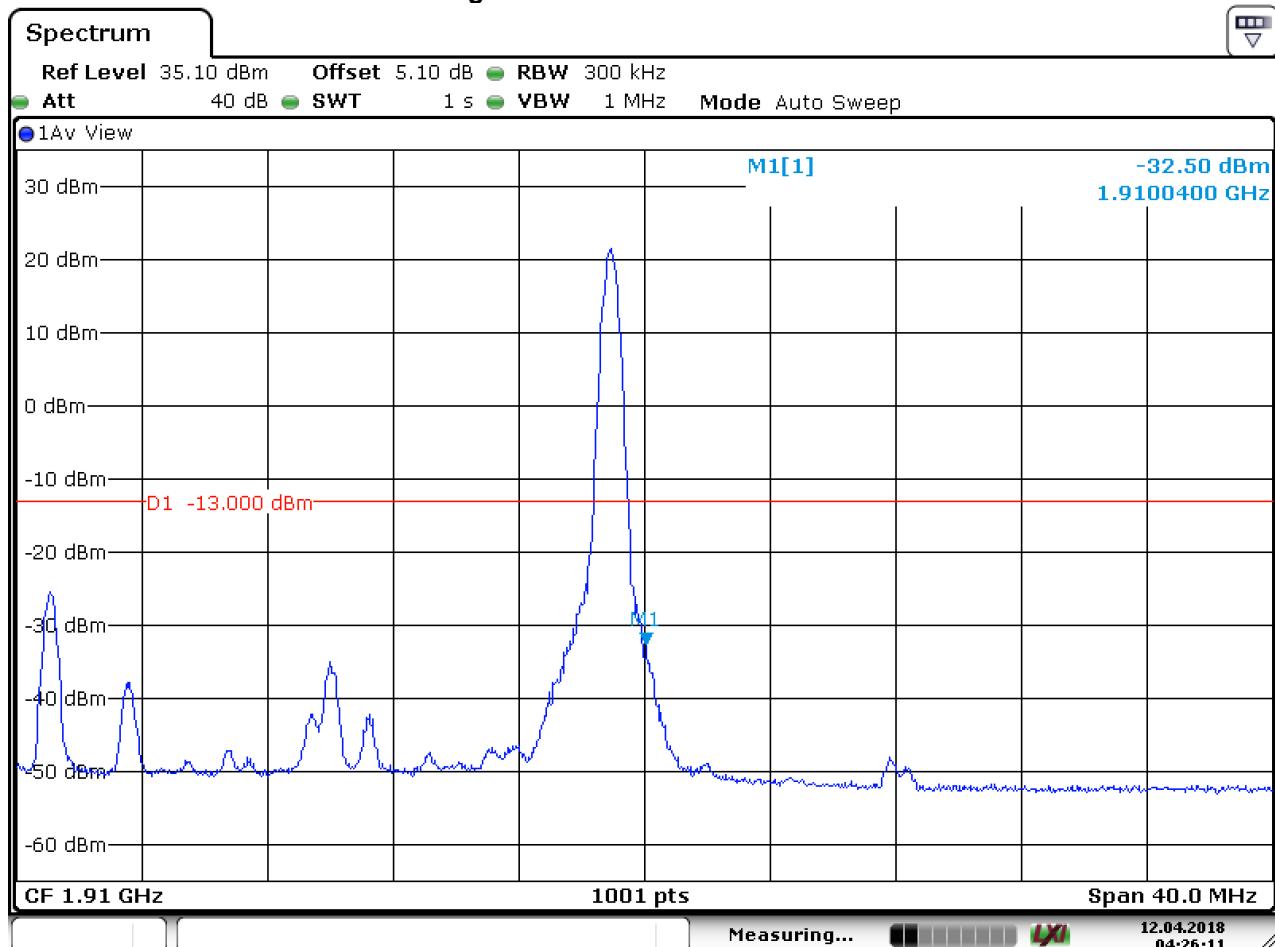
Date: 12.APR.2018 04:22:41

5.1.1.12.1.2 Test RB=FullRBs

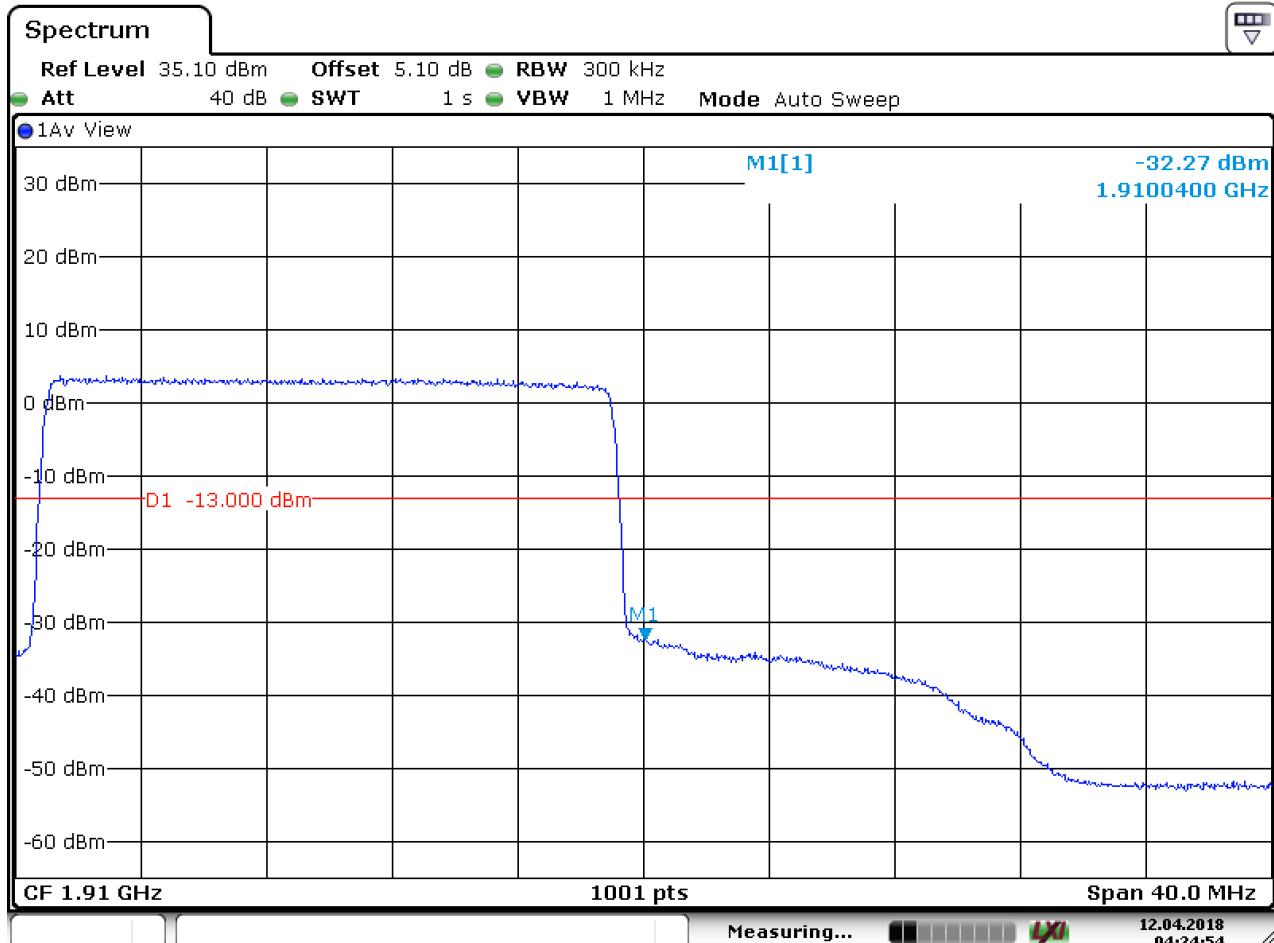
Date: 12.APR.2018 04:22:13

5.1.1.12.2 Test Channel = HCH

5.1.1.12.2.1 Test RB=1RB#High



Date: 12.APR.2018 04:26:12

5.1.1.12.2.2 Test RB=FullRBs

Date: 12.APR.2018 04:24:55

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 * (Span / RBW)" with k between 4 and 5, which results in an acceptable level error of less than 0.5 dB.

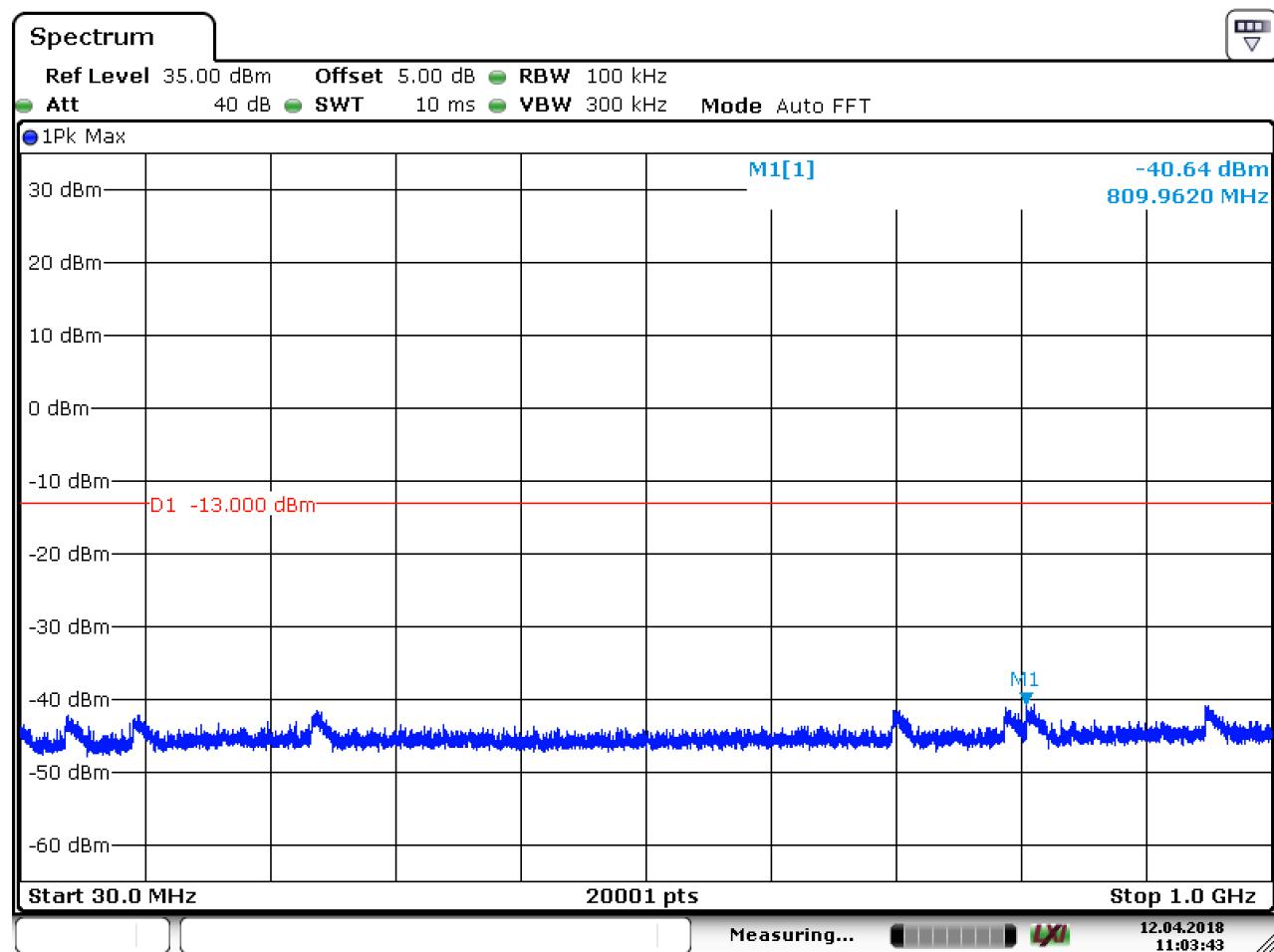
Part I - Test Plots

6.1 For LTE

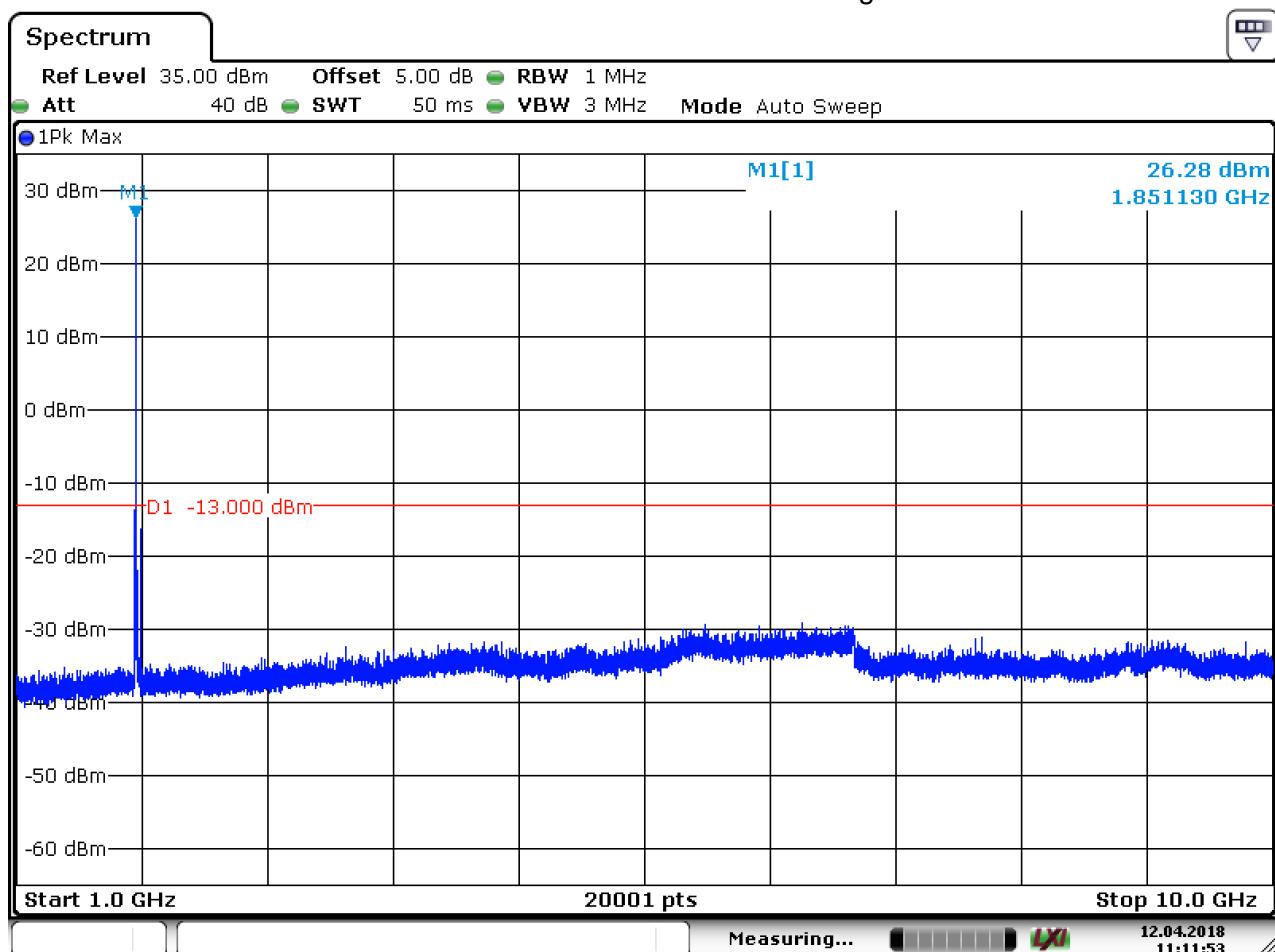
6.1.1 Test Band = LTE band2

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

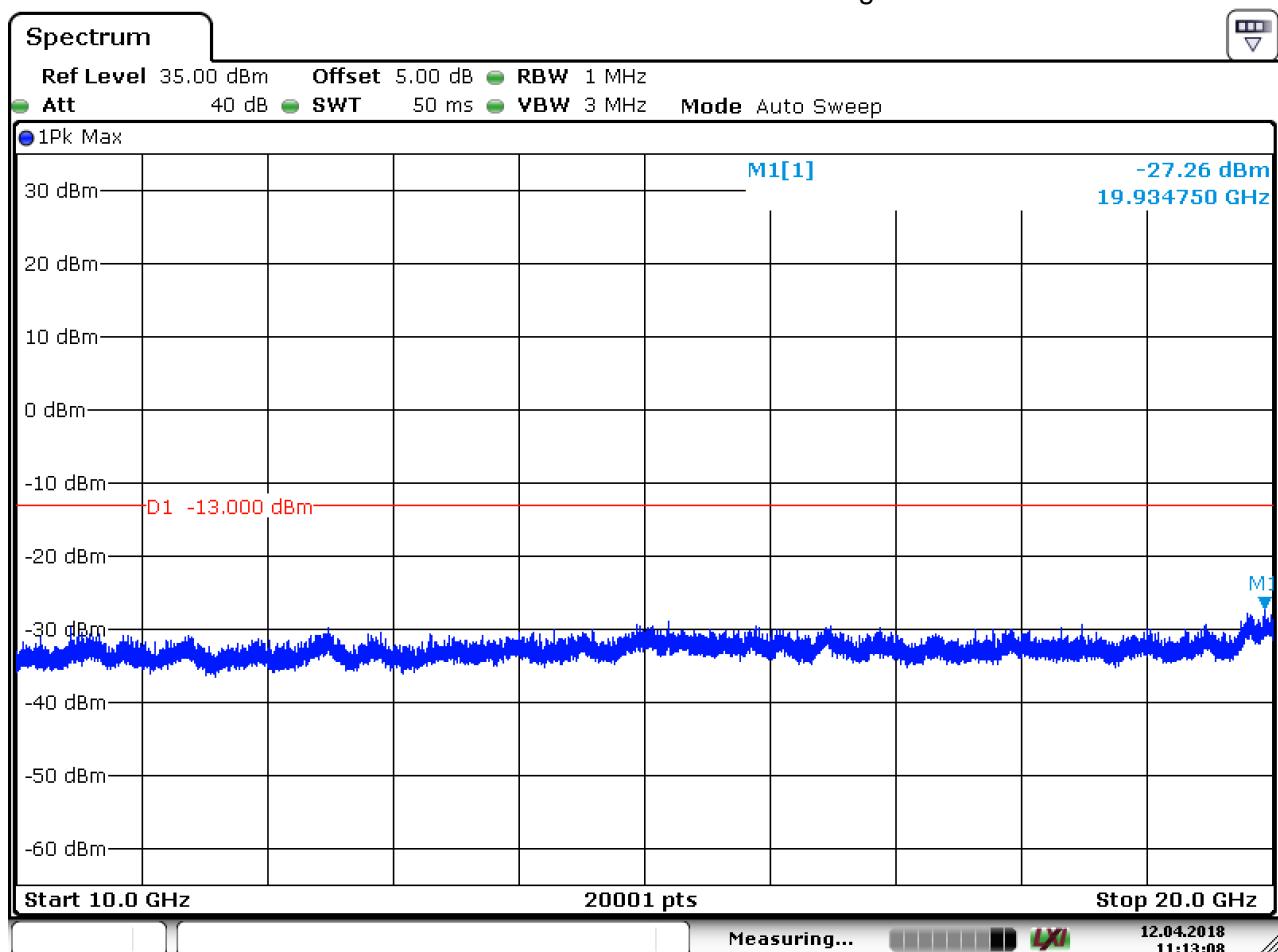
6.1.1.1.1 Test Channel = LCH



Date: 12.APR.2018 11:03:43

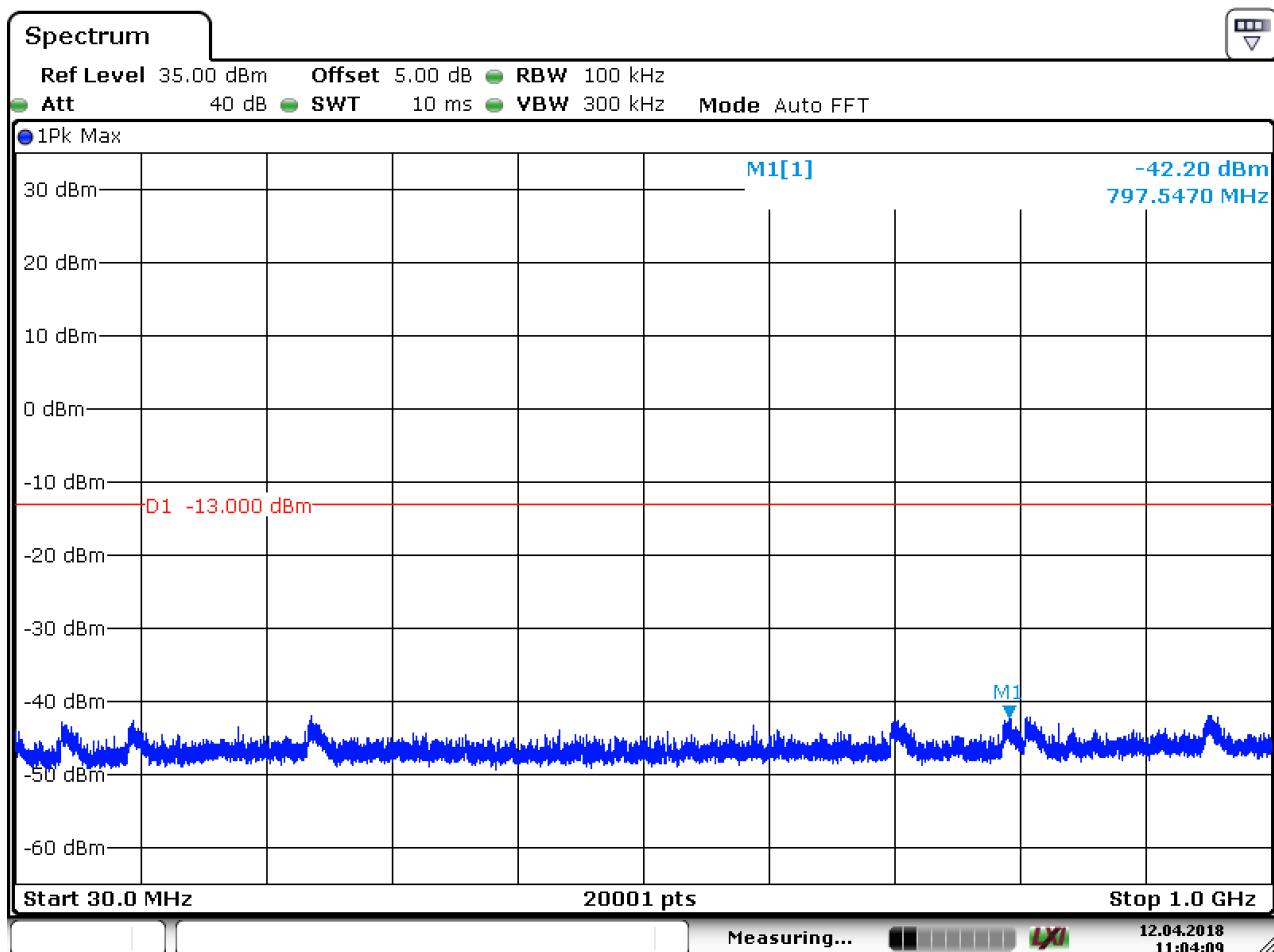
Report No.: SZEM180100088201
Page: 110 of 122

Date: 12.APR.2018 11:11:53

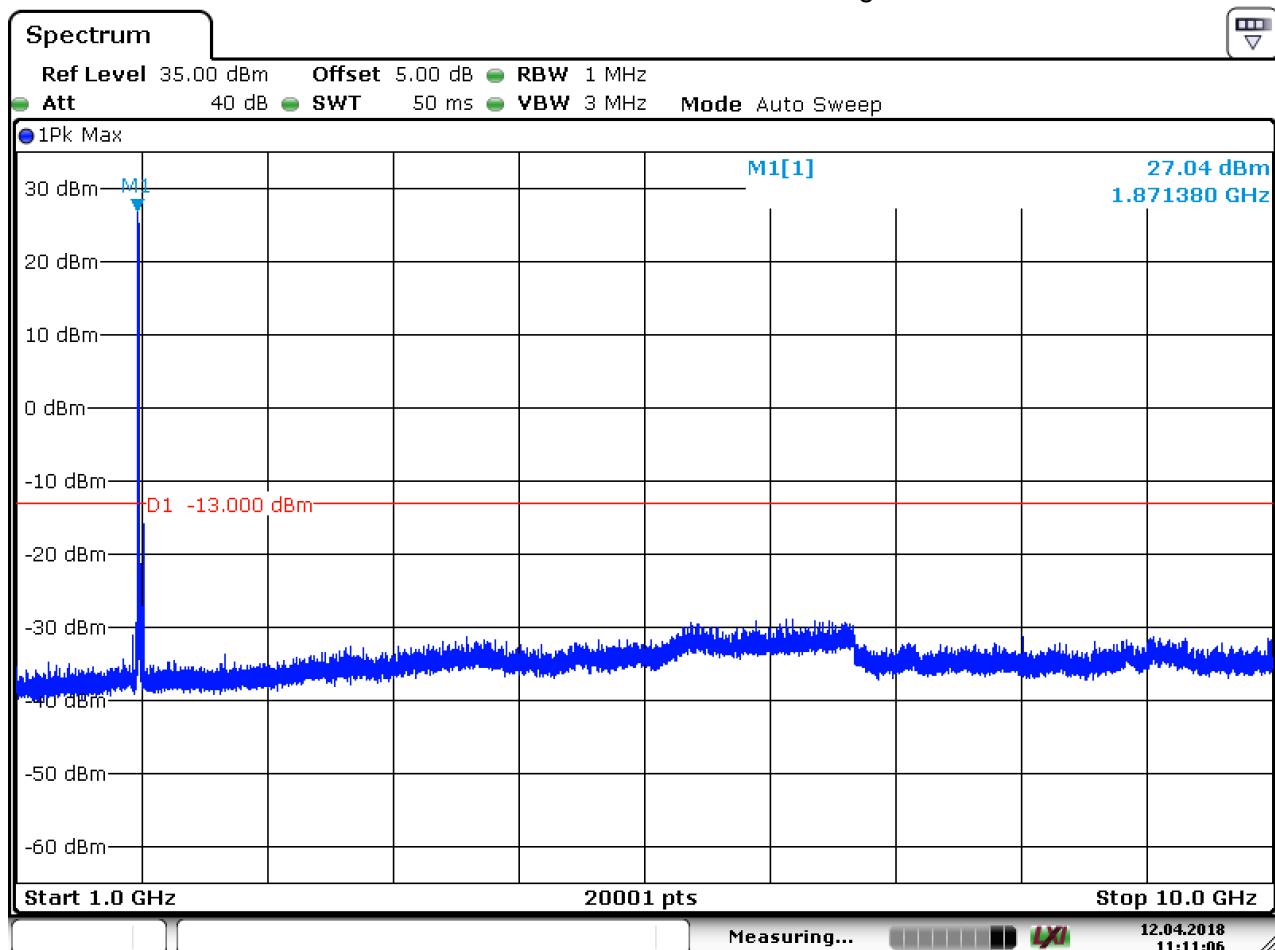
Report No.: SZEM180100088201
Page: 111 of 122

Date: 12.APR.2018 11:13:08

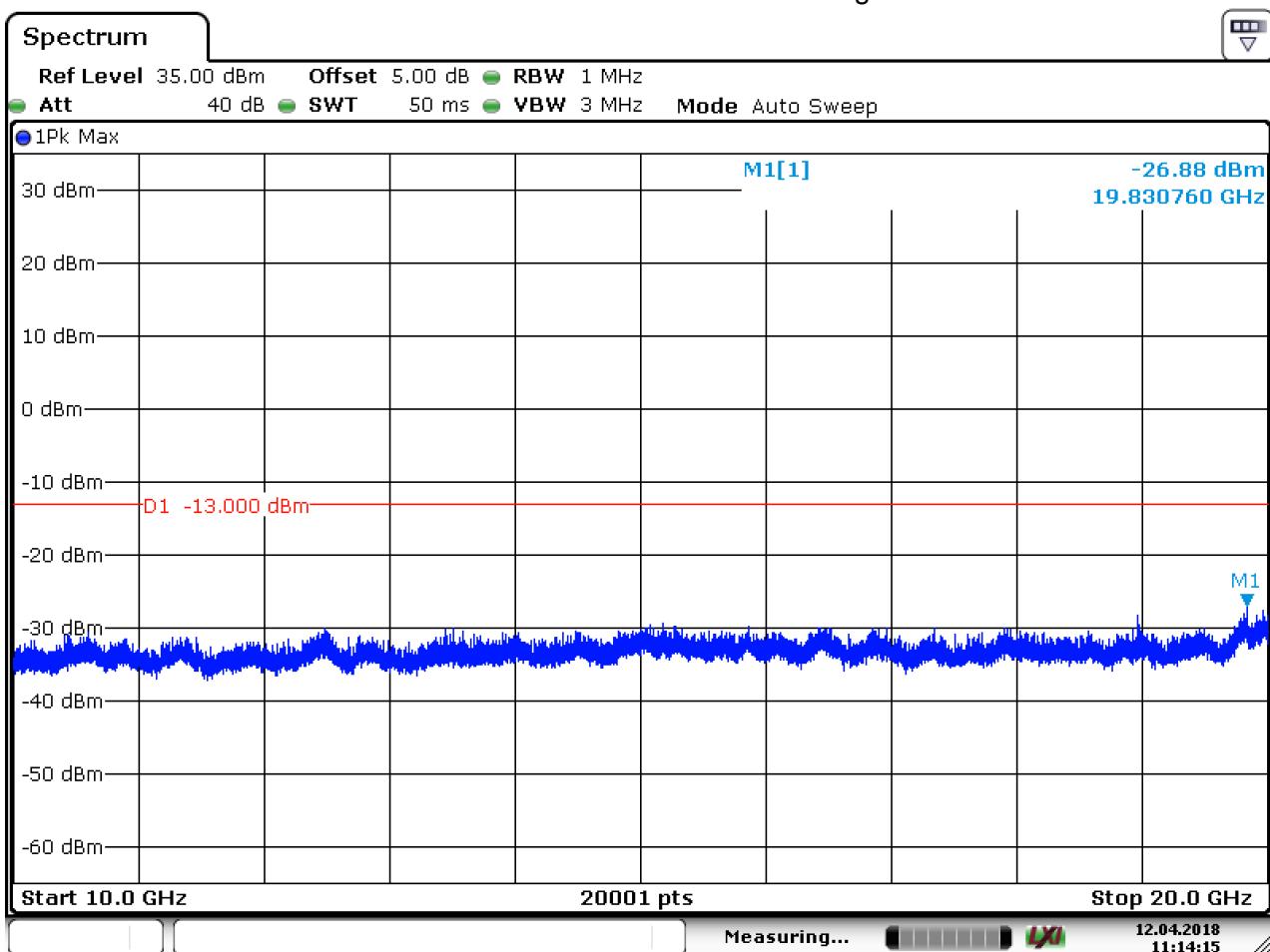
6.1.1.1.2 Test Channel = MCH



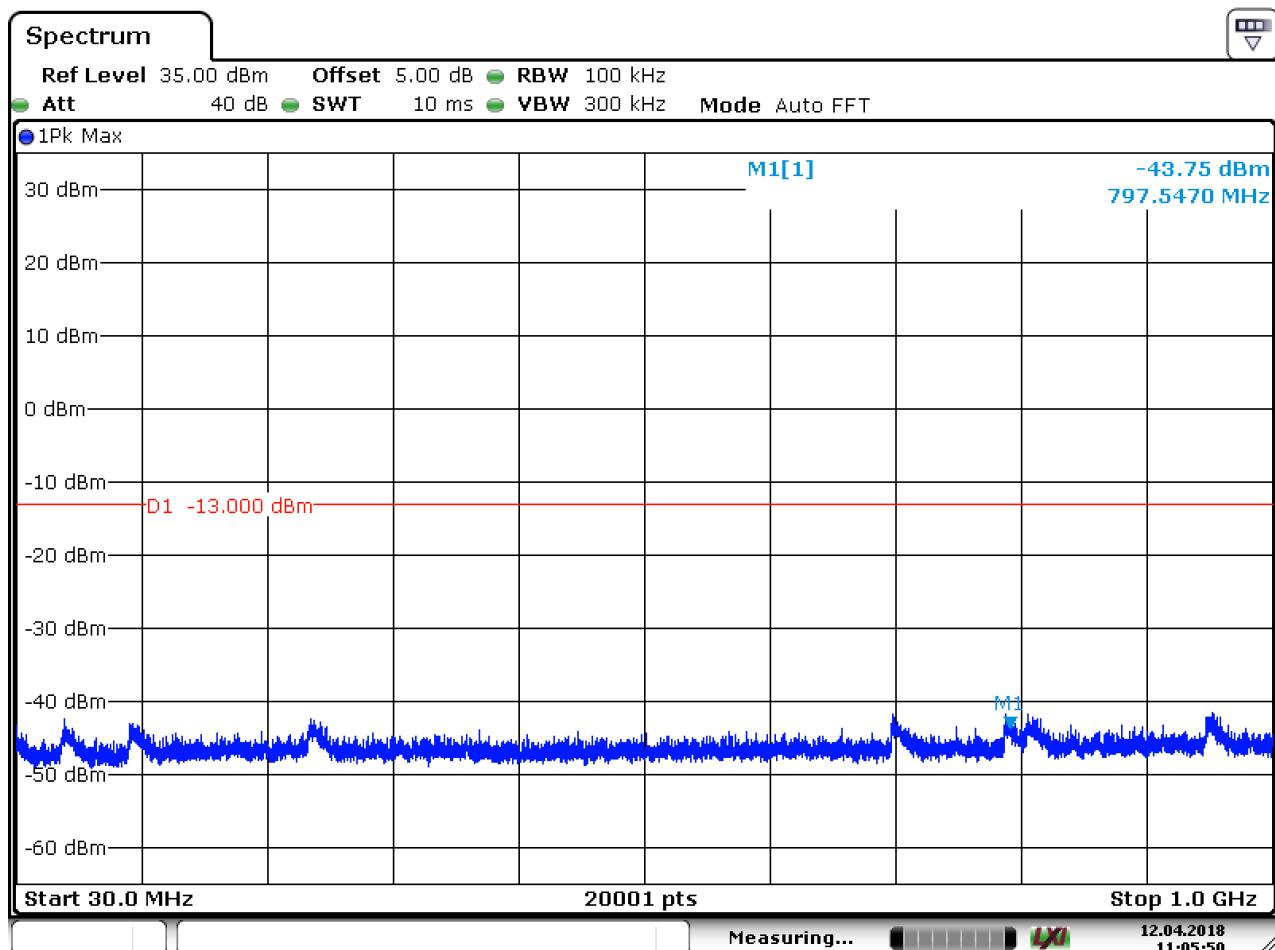
Date: 12.APR.2018 11:04:09

Report No.: SZEM180100088201
Page: 113 of 122

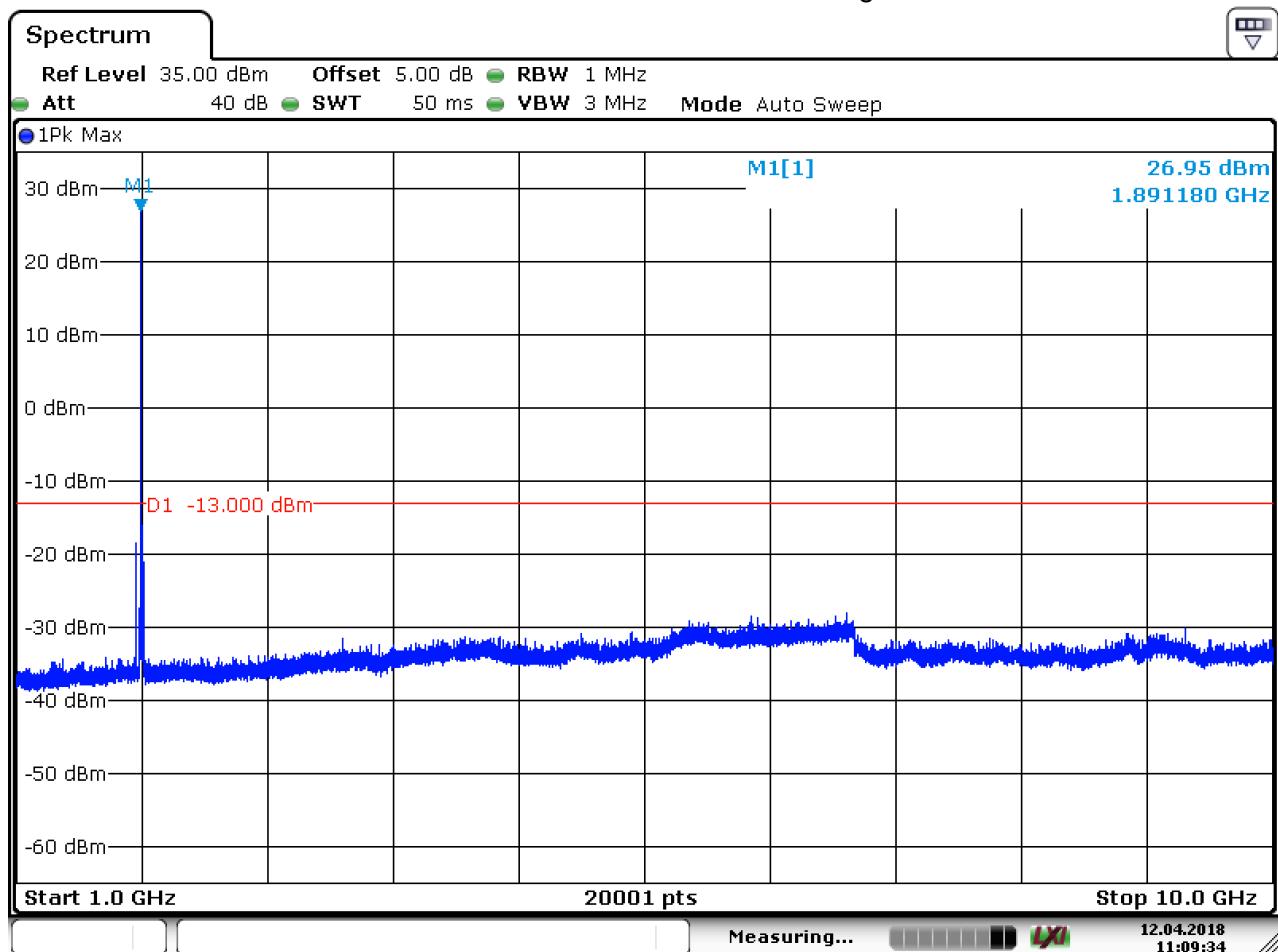
Date: 12.APR.2018 11:11:06

Report No.: SZEM180100088201
Page: 114 of 122

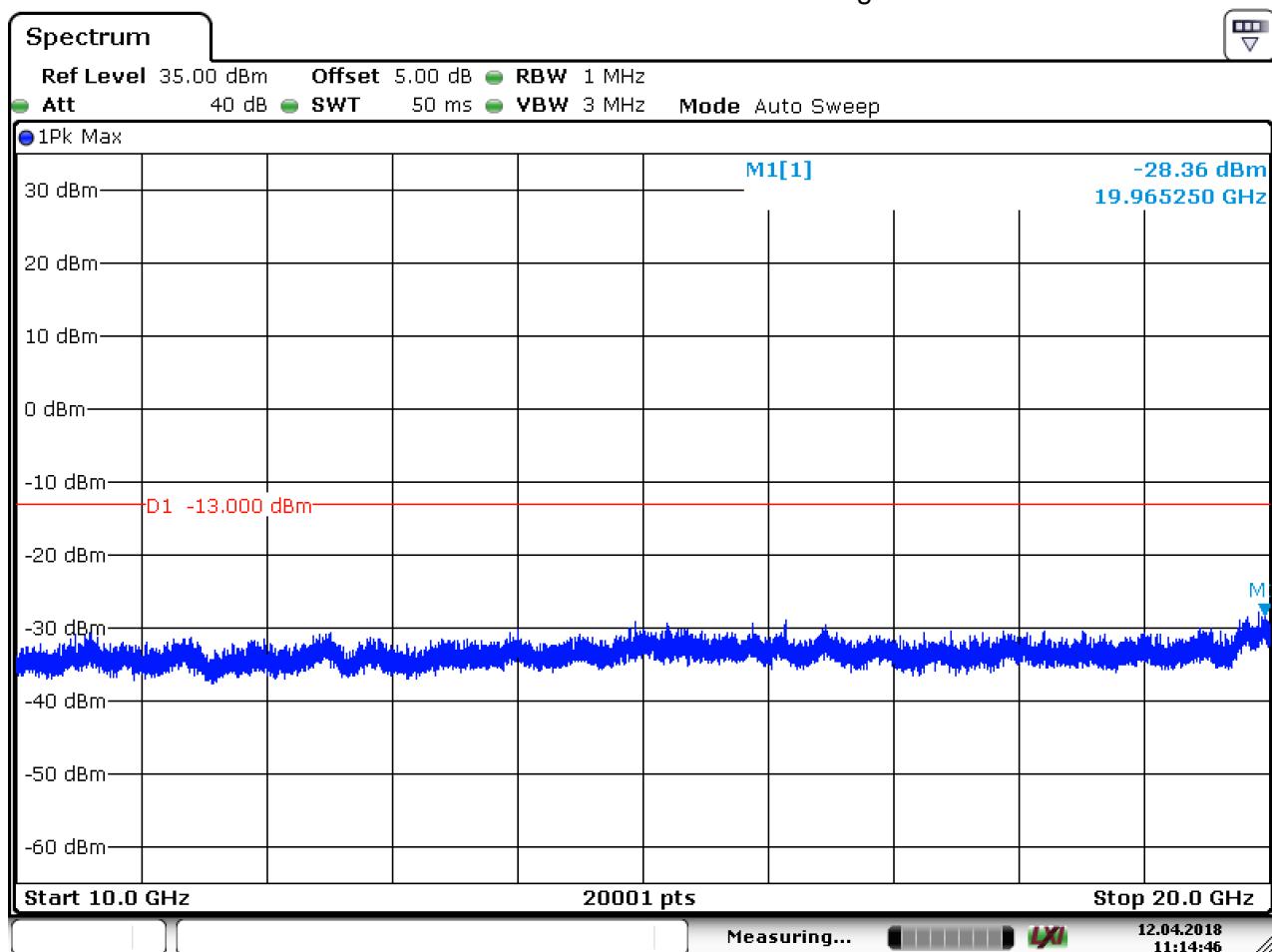
Date: 12.APR.2018 11:14:14

6.1.1.1.3 Test Channel = HCH

Date: 12.APR.2018 11:05:50

Report No.: SZEM180100088201
Page: 116 of 122

Date: 12.APR.2018 11:09:34

Report No.: SZEM180100088201
Page: 117 of 122

Date: 12.APR.2018 11:14:46

7 Field Strength of Spurious Radiation

7.1 For LTE

7.1.1 Test Band = LTE band2

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
64.950000	-78.22	-13.00	65.22	Vertical
146.950000	-84.56	-13.00	71.56	Vertical
2802.500000	-57.75	-13.00	44.75	Vertical
3702.000000	-64.60	-13.00	51.60	Vertical
5589.275000	-65.21	-13.00	52.21	Vertical
9255.275000	-63.29	-13.00	50.29	Vertical
62.650000	-77.50	-13.00	64.50	Horizontal
151.150000	-83.05	-13.00	70.05	Horizontal
1479.500000	-61.14	-13.00	48.14	Horizontal
3702.000000	-63.62	-13.00	50.62	Horizontal
6048.500000	-65.60	-13.00	52.60	Horizontal
9255.275000	-60.16	-13.00	47.16	Horizontal

7.1.1.1.2 Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
65.850000	-77.94	-13.00	64.94	Vertical
125.000000	-84.99	-13.00	71.99	Vertical
1202.000000	-66.32	-13.00	53.32	Vertical
3741.975000	-63.83	-13.00	50.83	Vertical
5648.750000	-64.71	-13.00	51.71	Vertical
8648.175000	-64.10	-13.00	51.10	Vertical
62.300000	-77.47	-13.00	64.47	Horizontal
104.300000	-85.68	-13.00	72.68	Horizontal
1271.000000	-62.51	-13.00	49.51	Horizontal
3741.975000	-63.04	-13.00	50.04	Horizontal
6476.525000	-65.19	-13.00	52.19	Horizontal
9355.375000	-63.50	-13.00	50.50	Horizontal



7.1.1.1.3 Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
59.500000	-80.26	-13.00	67.26	Vertical
125.000000	-85.17	-13.00	72.17	Vertical
1283.000000	-66.64	-13.00	53.64	Vertical
3781.950000	-65.08	-13.00	52.08	Vertical
5708.875000	-64.98	-13.00	51.98	Vertical
9236.750000	-64.10	-13.00	51.10	Vertical
63.400000	-77.92	-13.00	64.92	Horizontal
152.100000	-85.38	-13.00	72.38	Horizontal
1236.000000	-62.58	-13.00	49.58	Horizontal
3781.950000	-62.13	-13.00	49.13	Horizontal
6123.900000	-65.96	-13.00	52.96	Horizontal
8648.175000	-64.35	-13.00	51.35	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
LTEband2	LTE/TM1 20MHz	LCH	TN	VL	6.61	0.003554	PASS
				VN	8.91	0.004790	PASS
				VH	-7.88	-0.004237	PASS
		MCH	TN	VL	-10.66	-0.005670	PASS
				VN	-10.77	-0.005729	PASS
				VH	-14.35	-0.007633	PASS
		HCH	TN	VL	-9.04	-0.004758	PASS
				VN	-7.47	-0.003932	PASS
				VH	-14.20	-0.007474	PASS
	LTE/TM2 20MHz	LCH	TN	VL	-9.33	-0.005016	PASS
				VN	-7.02	-0.003774	PASS
				VH	-6.39	-0.003435	PASS
		MCH	TN	VL	-10.09	-0.005367	PASS
				VN	-9.31	-0.004952	PASS
				VH	-9.36	-0.004979	PASS
		HCH	TN	VL	-5.64	-0.002968	PASS
				VN	7.07	0.003721	PASS
				VH	7.88	0.004147	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
LTEband2	LTE/TM1 20MHz	LCH	VN	-30	-7.14	-0.003839	PASS
				-20	5.74	0.003086	PASS
				-10	-6.01	-0.003231	PASS
				0	5.58	0.003000	PASS
				10	6.78	0.003645	PASS
				20	-9.11	-0.004846	PASS
				30	-9.03	-0.004803	PASS
				40	-7.80	-0.004149	PASS
				50	-8.55	-0.004548	PASS
		MCH	VN	-30	-9.31	-0.004952	PASS
				-20	-7.93	-0.004174	PASS
				-10	-7.61	-0.004005	PASS
				0	-7.58	-0.003989	PASS
				10	-7.68	-0.004042	PASS
				20	-8.55	-0.004500	PASS
				30	7.64	0.004126	PASS
				40	7.31	0.003948	PASS
				50	7.40	0.003997	PASS
		HCH	VN	-30	7.50	0.004051	PASS
				-20	8.88	0.004796	PASS
				-10	6.45	0.003431	PASS
				0	6.94	0.003691	PASS
				10	7.74	0.004117	PASS
				20	6.38	0.003394	PASS
				30	8.21	0.004367	PASS
				40	7.95	0.004166	PASS
				50	8.30	0.004349	PASS



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

Report No.: SZEM180100088201
Page: 122 of 122

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband2	LTE/TM2 20MHz	LCH	VN	-30	5.36	0.002817	PASS
				-20	-5.38	-0.002828	PASS
				-10	7.31	0.003842	PASS
				0	-6.09	-0.003201	PASS
				10	-6.35	-0.003338	PASS
				20	-6.95	-0.003737	PASS
				30	-8.25	-0.004435	PASS
				40	5.95	0.003199	PASS
				50	-6.07	-0.003263	PASS
		MCH	VN	-30	-6.94	-0.003731	PASS
				-20	-9.87	-0.005250	PASS
				-10	-10.83	-0.005761	PASS
				0	-8.97	-0.004771	PASS
				10	-10.47	-0.005569	PASS
				20	-8.43	-0.004484	PASS
				30	5.82	0.003063	PASS
				40	-6.64	-0.003495	PASS
				50	6.82	0.003589	PASS
		HCH	VN	-30	7.05	0.003711	PASS
				-20	6.37	0.003353	PASS
				-10	5.36	0.002817	PASS
				0	-5.38	-0.002828	PASS
				10	7.31	0.003842	PASS
				20	-6.09	-0.003201	PASS
				30	-6.35	-0.003338	PASS
				40	-6.95	-0.003737	PASS
				50	-8.25	-0.004435	PASS

The End