



# **Appendix B**

## **E-UTRA Band 4**

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## 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	23.15	19.95	30.00	PASS
				RB1#2	23.39	20.19	30.00	PASS
				RB1#5	23.22	20.02	30.00	PASS
				RB3#0	23.33	20.13	30.00	PASS
				RB3#2	23.3	20.1	30.00	PASS
				RB3#3	23.19	19.99	30.00	PASS
				RB6#0	22.25	19.05	30.00	PASS
			MCH	RB1#0	23.28	20.08	30.00	PASS
				RB1#2	23.24	20.04	30.00	PASS
				RB1#5	23.31	20.11	30.00	PASS
				RB3#0	23.3	20.1	30.00	PASS
				RB3#2	23.31	20.11	30.00	PASS
				RB3#3	23.27	20.07	30.00	PASS
				RB6#0	22.34	19.14	30.00	PASS
			HCH	RB1#0	23.3	20.1	30.00	PASS
				RB1#2	23.32	20.12	30.00	PASS
				RB1#5	23.17	19.97	30.00	PASS
				RB3#0	23.27	20.07	30.00	PASS
				RB3#2	23.5	20.3	30.00	PASS
				RB3#3	23.43	20.23	30.00	PASS
				RB6#0	22.46	19.26	30.00	PASS



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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	22.47	19.27	30.00	PASS
				RB1#2	22.45	19.25	30.00	PASS
				RB1#5	22.03	18.83	30.00	PASS
				RB3#0	22.24	19.04	30.00	PASS
				RB3#2	22.28	19.08	30.00	PASS
				RB3#3	22.16	18.96	30.00	PASS
				RB6#0	21.48	18.28	30.00	PASS
			MCH	RB1#0	22.07	18.87	30.00	PASS
				RB1#2	22.35	19.15	30.00	PASS
				RB1#5	22.56	19.36	30.00	PASS
				RB3#0	22.29	19.09	30.00	PASS
				RB3#2	22.26	19.06	30.00	PASS
				RB3#3	22.32	19.12	30.00	PASS
				RB6#0	21.34	18.14	30.00	PASS
			HCH	RB1#0	22.54	19.34	30.00	PASS
				RB1#2	22.51	19.31	30.00	PASS
				RB1#5	22.42	19.22	30.00	PASS
				RB3#0	22.26	19.06	30.00	PASS
				RB3#2	22.37	19.17	30.00	PASS
				RB3#3	22.17	18.97	30.00	PASS
				RB6#0	21.53	18.33	30.00	PASS



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BAND4	LTE/TM1	3M	LCH	RB1#0	23.31	20.11	30.00	PASS
				RB1#7	23.36	20.16	30.00	PASS
				RB1#14	23.28	20.08	30.00	PASS
				RB8#0	22.32	19.12	30.00	PASS
				RB8#4	22.35	19.15	30.00	PASS
				RB8#7	22.35	19.15	30.00	PASS
				RB15#0	22.46	19.26	30.00	PASS
			MCH	RB1#0	23.33	20.13	30.00	PASS
				RB1#7	23.49	20.29	30.00	PASS
				RB1#14	23.28	20.08	30.00	PASS
				RB8#0	22.41	19.21	30.00	PASS
				RB8#4	22.41	19.21	30.00	PASS
				RB8#7	22.36	19.16	30.00	PASS
				RB15#0	22.36	19.16	30.00	PASS
			HCH	RB1#0	23.34	20.14	30.00	PASS
				RB1#7	23.47	20.27	30.00	PASS
				RB1#14	23.36	20.16	30.00	PASS
				RB8#0	22.46	19.26	30.00	PASS
				RB8#4	22.43	19.23	30.00	PASS
				RB8#7	22.34	19.14	30.00	PASS
				RB15#0	22.46	19.26	30.00	PASS



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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	22.13	18.93	30.00	PASS
				RB1#7	22.59	19.39	30.00	PASS
				RB1#14	22.44	19.24	30.00	PASS
				RB8#0	21.36	18.16	30.00	PASS
				RB8#4	21.35	18.15	30.00	PASS
				RB8#7	21.3	18.1	30.00	PASS
				RB15#0	21.39	18.19	30.00	PASS
			MCH	RB1#0	22.45	19.25	30.00	PASS
				RB1#7	23.03	19.83	30.00	PASS
				RB1#14	22.27	19.07	30.00	PASS
				RB8#0	21.43	18.23	30.00	PASS
				RB8#4	21.37	18.17	30.00	PASS
				RB8#7	21.4	18.2	30.00	PASS
				RB15#0	21.33	18.13	30.00	PASS
			HCH	RB1#0	22.34	19.14	30.00	PASS
				RB1#7	22.47	19.27	30.00	PASS
				RB1#14	22.5	19.3	30.00	PASS
				RB8#0	21.4	18.2	30.00	PASS
				RB8#4	21.47	18.27	30.00	PASS
				RB8#7	21.54	18.34	30.00	PASS
				RB15#0	21.37	18.17	30.00	PASS



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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	23.2	20	30.00	PASS
				RB1#13	23.3	20.1	30.00	PASS
				RB1#24	23.18	19.98	30.00	PASS
				RB12#0	22.25	19.05	30.00	PASS
				RB12#6	22.35	19.15	30.00	PASS
				RB12#13	22.28	19.08	30.00	PASS
				RB25#0	22.27	19.07	30.00	PASS
			MCH	RB1#0	23.17	19.97	30.00	PASS
				RB1#13	23.36	20.16	30.00	PASS
				RB1#24	23.24	20.04	30.00	PASS
				RB12#0	22.3	19.1	30.00	PASS
				RB12#6	22.39	19.19	30.00	PASS
				RB12#13	22.35	19.15	30.00	PASS
				RB25#0	22.35	19.15	30.00	PASS
			HCH	RB1#0	23.1	19.9	30.00	PASS
				RB1#13	23.36	20.16	30.00	PASS
				RB1#24	23.26	20.06	30.00	PASS
				RB12#0	22.32	19.12	30.00	PASS
				RB12#6	22.35	19.15	30.00	PASS
				RB12#13	22.34	19.14	30.00	PASS
				RB25#0	22.45	19.25	30.00	PASS



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BAND4	LTE/TM2	5M	LCH	RB1#0	22.47	19.27	30.00	PASS
				RB1#13	22.44	19.24	30.00	PASS
				RB1#24	22.19	18.99	30.00	PASS
				RB12#0	21.35	18.15	30.00	PASS
				RB12#6	21.42	18.22	30.00	PASS
				RB12#13	21.41	18.21	30.00	PASS
				RB25#0	21.26	18.06	30.00	PASS
			MCH	RB1#0	22.59	19.39	30.00	PASS
				RB1#13	22.54	19.34	30.00	PASS
				RB1#24	22.23	19.03	30.00	PASS
				RB12#0	21.33	18.13	30.00	PASS
				RB12#6	21.45	18.25	30.00	PASS
				RB12#13	21.48	18.28	30.00	PASS
				RB25#0	21.29	18.09	30.00	PASS
			HCH	RB1#0	22.55	19.35	30.00	PASS
				RB1#13	22.35	19.15	30.00	PASS
				RB1#24	22.59	19.39	30.00	PASS
				RB12#0	21.38	18.18	30.00	PASS
				RB12#6	21.52	18.32	30.00	PASS
				RB12#13	21.45	18.25	30.00	PASS
				RB25#0	21.44	18.24	30.00	PASS



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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	23.32	20.12	30.00	PASS
				RB1#25	23.31	20.11	30.00	PASS
				RB1#49	23.24	20.04	30.00	PASS
				RB25#0	22.34	19.14	30.00	PASS
				RB25#13	22.43	19.23	30.00	PASS
				RB25#25	22.38	19.18	30.00	PASS
				RB50#0	22.32	19.12	30.00	PASS
			MCH	RB1#0	23.26	20.06	30.00	PASS
				RB1#25	23.48	20.28	30.00	PASS
				RB1#49	23.22	20.02	30.00	PASS
				RB25#0	22.55	19.35	30.00	PASS
				RB25#13	22.47	19.27	30.00	PASS
				RB25#25	22.32	19.12	30.00	PASS
				RB50#0	22.41	19.21	30.00	PASS
			HCH	RB1#0	23.48	20.28	30.00	PASS
				RB1#25	23.34	20.14	30.00	PASS
				RB1#49	23.34	20.14	30.00	PASS
				RB25#0	22.47	19.27	30.00	PASS
				RB25#13	22.39	19.19	30.00	PASS
				RB25#25	22.44	19.24	30.00	PASS
				RB50#0	22.51	19.31	30.00	PASS



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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	22.68	19.48	30.00	PASS
				RB1#25	22.62	19.42	30.00	PASS
				RB1#49	22.22	19.02	30.00	PASS
				RB25#0	21.25	18.05	30.00	PASS
				RB25#13	21.43	18.23	30.00	PASS
				RB25#25	21.36	18.16	30.00	PASS
				RB50#0	21.37	18.17	30.00	PASS
			MCH	RB1#0	22.67	19.47	30.00	PASS
				RB1#25	22.52	19.32	30.00	PASS
				RB1#49	22.18	18.98	30.00	PASS
				RB25#0	21.34	18.14	30.00	PASS
				RB25#13	21.4	18.2	30.00	PASS
				RB25#25	21.28	18.08	30.00	PASS
				RB50#0	21.33	18.13	30.00	PASS
			HCH	RB1#0	22.65	19.45	30.00	PASS
				RB1#25	22.55	19.35	30.00	PASS
				RB1#49	22.66	19.46	30.00	PASS
				RB25#0	21.4	18.2	30.00	PASS
				RB25#13	21.4	18.2	30.00	PASS
				RB25#25	21.35	18.15	30.00	PASS
				RB50#0	21.4	18.2	30.00	PASS



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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	23.25	20.05	30.00	PASS
				RB1#38	23.26	20.06	30.00	PASS
				RB1#74	23.18	19.98	30.00	PASS
				RB36#0	22.46	19.26	30.00	PASS
				RB36#18	22.51	19.31	30.00	PASS
				RB36#39	22.35	19.15	30.00	PASS
				RB75#0	22.36	19.16	30.00	PASS
			MCH	RB1#0	23.2	20	30.00	PASS
				RB1#38	23.42	20.22	30.00	PASS
				RB1#74	23.35	20.15	30.00	PASS
				RB36#0	22.41	19.21	30.00	PASS
				RB36#18	22.35	19.15	30.00	PASS
				RB36#39	22.6	19.4	30.00	PASS
				RB75#0	22.45	19.25	30.00	PASS
			HCH	RB1#0	23.42	20.22	30.00	PASS
				RB1#38	23.49	20.29	30.00	PASS
				RB1#74	23.36	20.16	30.00	PASS
				RB36#0	22.44	19.24	30.00	PASS
				RB36#18	22.44	19.24	30.00	PASS
				RB36#39	22.46	19.26	30.00	PASS
				RB75#0	22.54	19.34	30.00	PASS



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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	22.66	19.46	30.00	PASS
				RB1#38	22.74	19.54	30.00	PASS
				RB1#74	22.54	19.34	30.00	PASS
				RB36#0	21.41	18.21	30.00	PASS
				RB36#18	21.47	18.27	30.00	PASS
				RB36#39	21.31	18.11	30.00	PASS
				RB75#0	21.38	18.18	30.00	PASS
			MCH	RB1#0	22.65	19.45	30.00	PASS
				RB1#38	22.75	19.55	30.00	PASS
				RB1#74	22.52	19.32	30.00	PASS
				RB36#0	21.4	18.2	30.00	PASS
				RB36#18	21.43	18.23	30.00	PASS
				RB36#39	21.45	18.25	30.00	PASS
				RB75#0	21.48	18.28	30.00	PASS
			HCH	RB1#0	22.42	19.22	30.00	PASS
				RB1#38	22.36	19.16	30.00	PASS
				RB1#74	22.31	19.11	30.00	PASS
				RB36#0	21.54	18.34	30.00	PASS
				RB36#18	21.45	18.25	30.00	PASS
				RB36#39	21.39	18.19	30.00	PASS
				RB75#0	21.39	18.19	30.00	PASS



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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	23.24	20.04	30.00	PASS
				RB1#50	23.37	20.17	30.00	PASS
				RB1#99	23.13	19.93	30.00	PASS
				RB50#0	22.62	19.42	30.00	PASS
				RB50#25	22.47	19.27	30.00	PASS
				RB50#50	22.42	19.22	30.00	PASS
				RB100#0	22.5	19.3	30.00	PASS
			MCH	RB1#0	23.18	19.98	30.00	PASS
				RB1#50	23.52	20.32	30.00	PASS
				RB1#99	23.12	19.92	30.00	PASS
				RB50#0	22.69	19.49	30.00	PASS
				RB50#25	22.49	19.29	30.00	PASS
				RB50#50	22.58	19.38	30.00	PASS
				RB100#0	22.56	19.36	30.00	PASS
			HCH	RB1#0	23.13	19.93	30.00	PASS
				RB1#50	23.53	20.33	30.00	PASS
				RB1#99	23.13	19.93	30.00	PASS
				RB50#0	22.55	19.35	30.00	PASS
				RB50#25	22.46	19.26	30.00	PASS
				RB50#50	22.55	19.35	30.00	PASS
				RB100#0	22.57	19.37	30.00	PASS



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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	22.55	19.35	30.00	PASS
				RB1#50	22.44	19.24	30.00	PASS
				RB1#99	21.98	18.78	30.00	PASS
				RB50#0	21.53	18.33	30.00	PASS
				RB50#25	21.4	18.2	30.00	PASS
				RB50#50	21.39	18.19	30.00	PASS
				RB100#0	21.43	18.23	30.00	PASS
			MCH	RB1#0	22.52	19.32	30.00	PASS
				RB1#50	22.89	19.69	30.00	PASS
				RB1#99	22.15	18.95	30.00	PASS
				RB50#0	21.62	18.42	30.00	PASS
				RB50#25	21.55	18.35	30.00	PASS
				RB50#50	21.43	18.23	30.00	PASS
				RB100#0	21.52	18.32	30.00	PASS
			HCH	RB1#0	22.59	19.39	30.00	PASS
				RB1#50	22.69	19.49	30.00	PASS
				RB1#99	22.31	19.11	30.00	PASS
				RB50#0	21.51	18.31	30.00	PASS
				RB50#25	21.53	18.33	30.00	PASS
				RB50#50	21.39	18.19	30.00	PASS
				RB100#0	21.43	18.23	30.00	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 4	TM1/20M	LCH	4.55	13	PASS
		MCH	4.93	13	PASS
		HCH	4.78	13	PASS
	TM2/20M	LCH	5.45	13	PASS
		MCH	5.77	13	PASS
		HCH	5.62	13	PASS

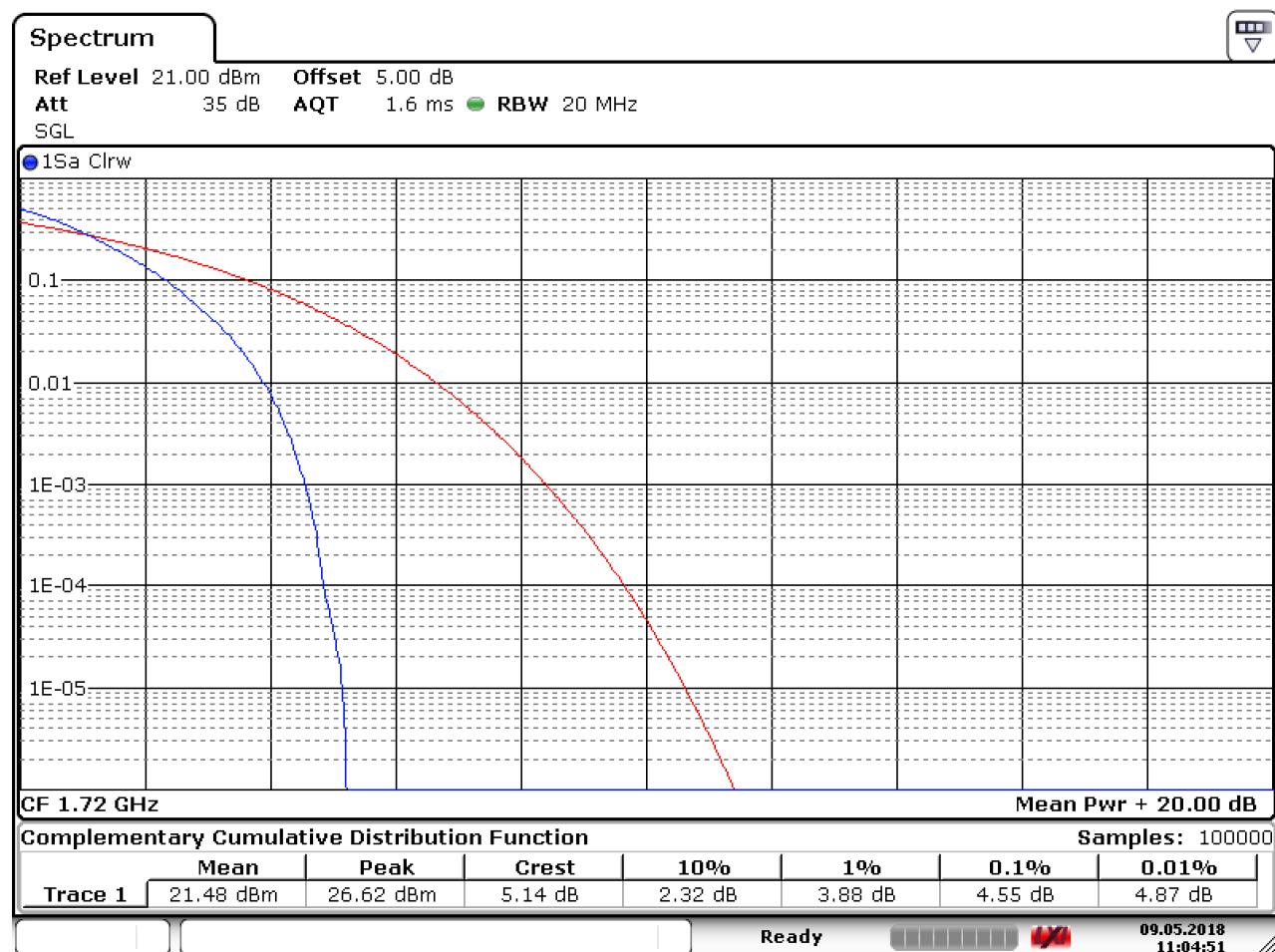
### Part II - Test Plots

#### 2.1 For LTE

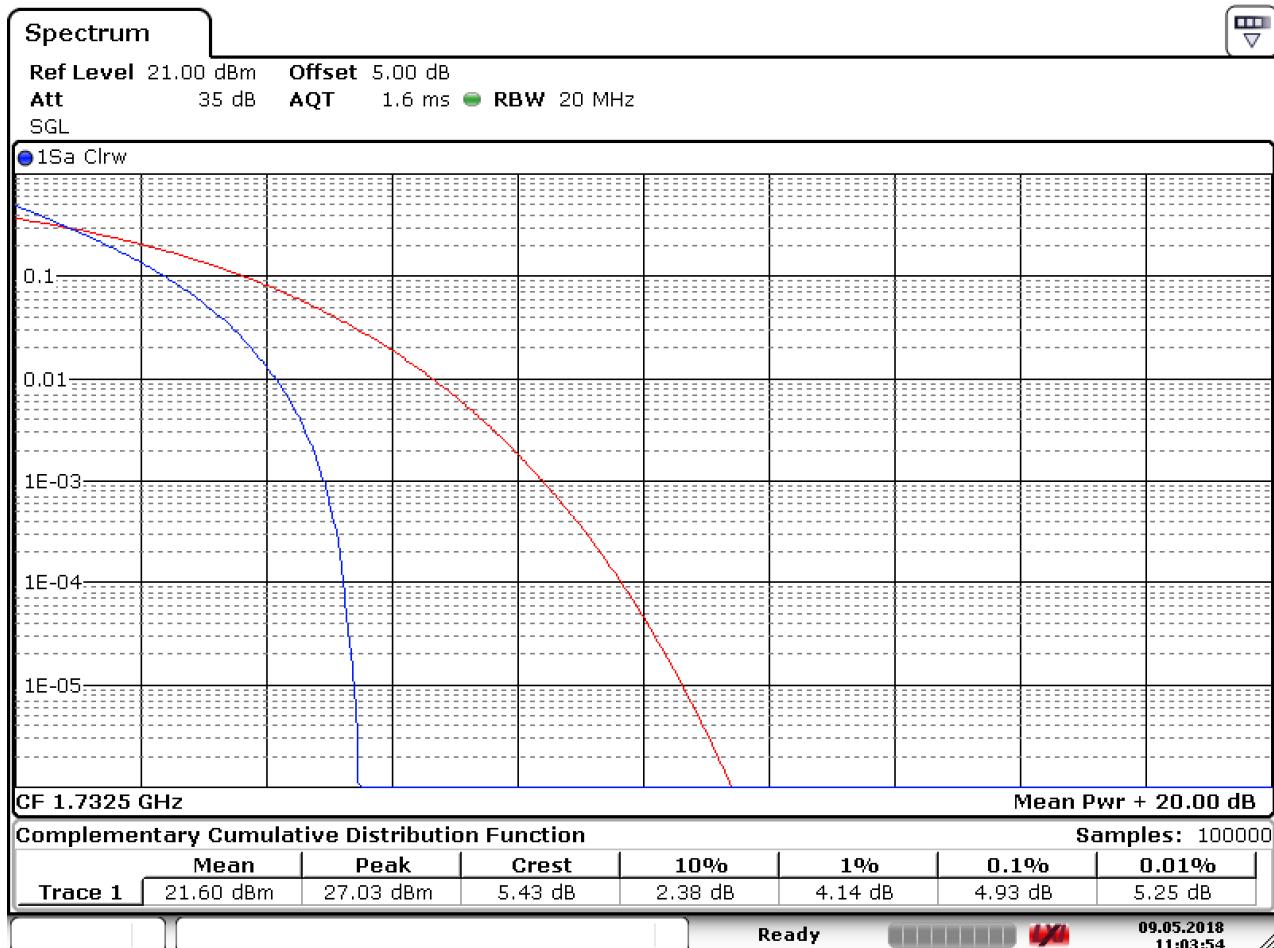
##### 2.1.1 Test Band = LTE band4

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

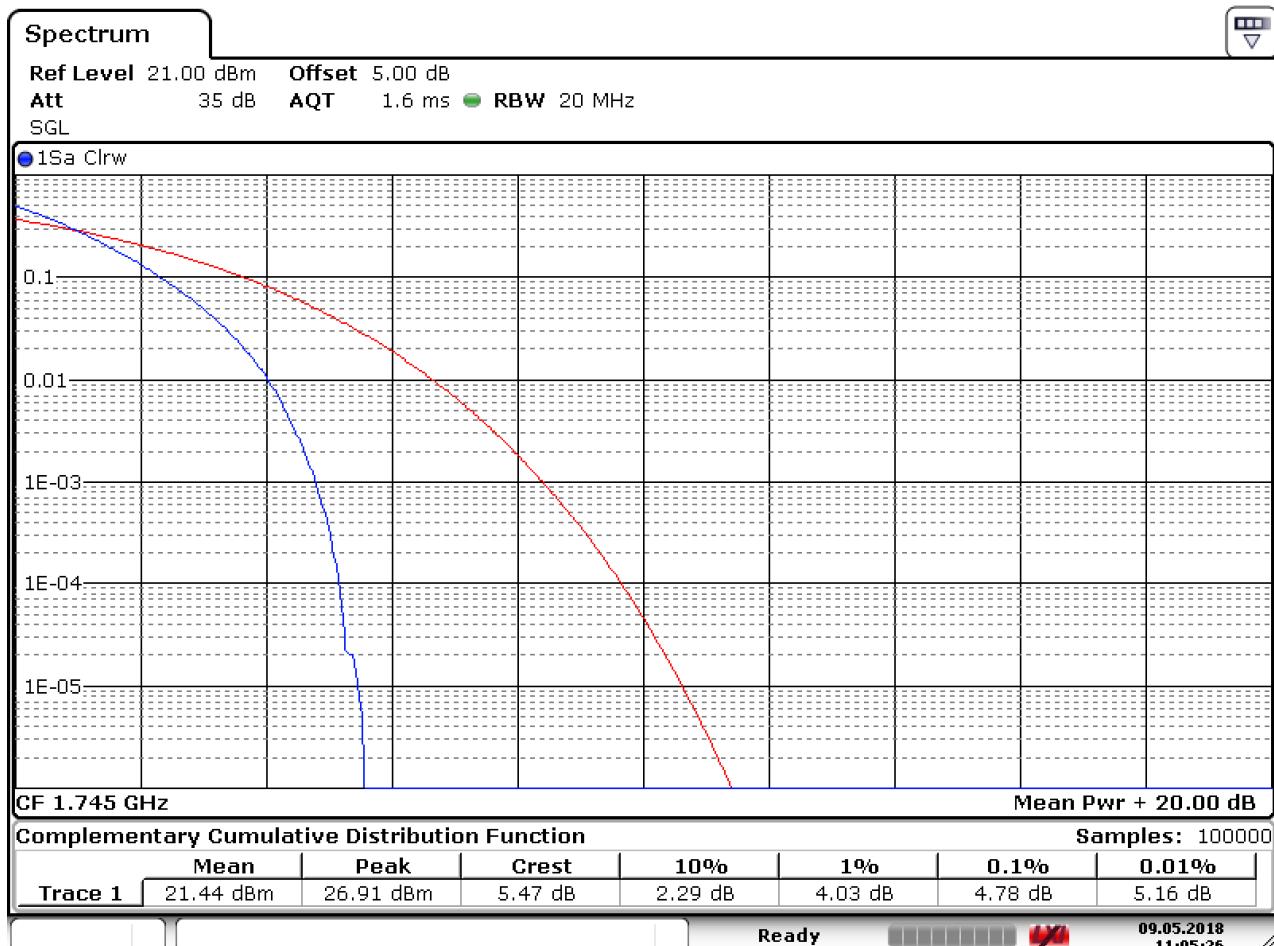
###### 2.1.1.1.1 Test Channel = LCH



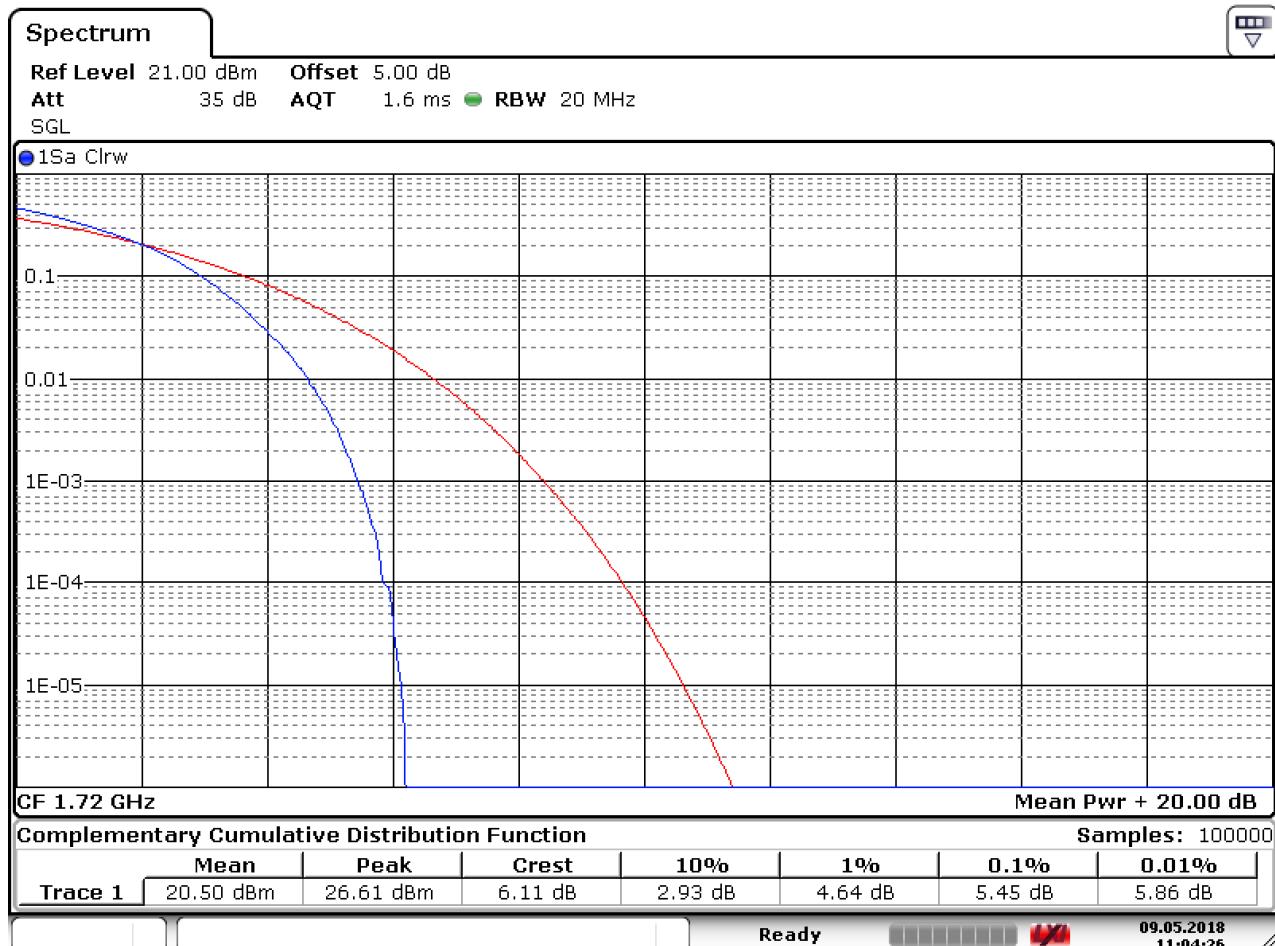
Date: 9.MAY.2018 11:04:51

**2.1.1.1.2 Test Channel = MCH**

Date: 9.MAY.2018 11:03:54

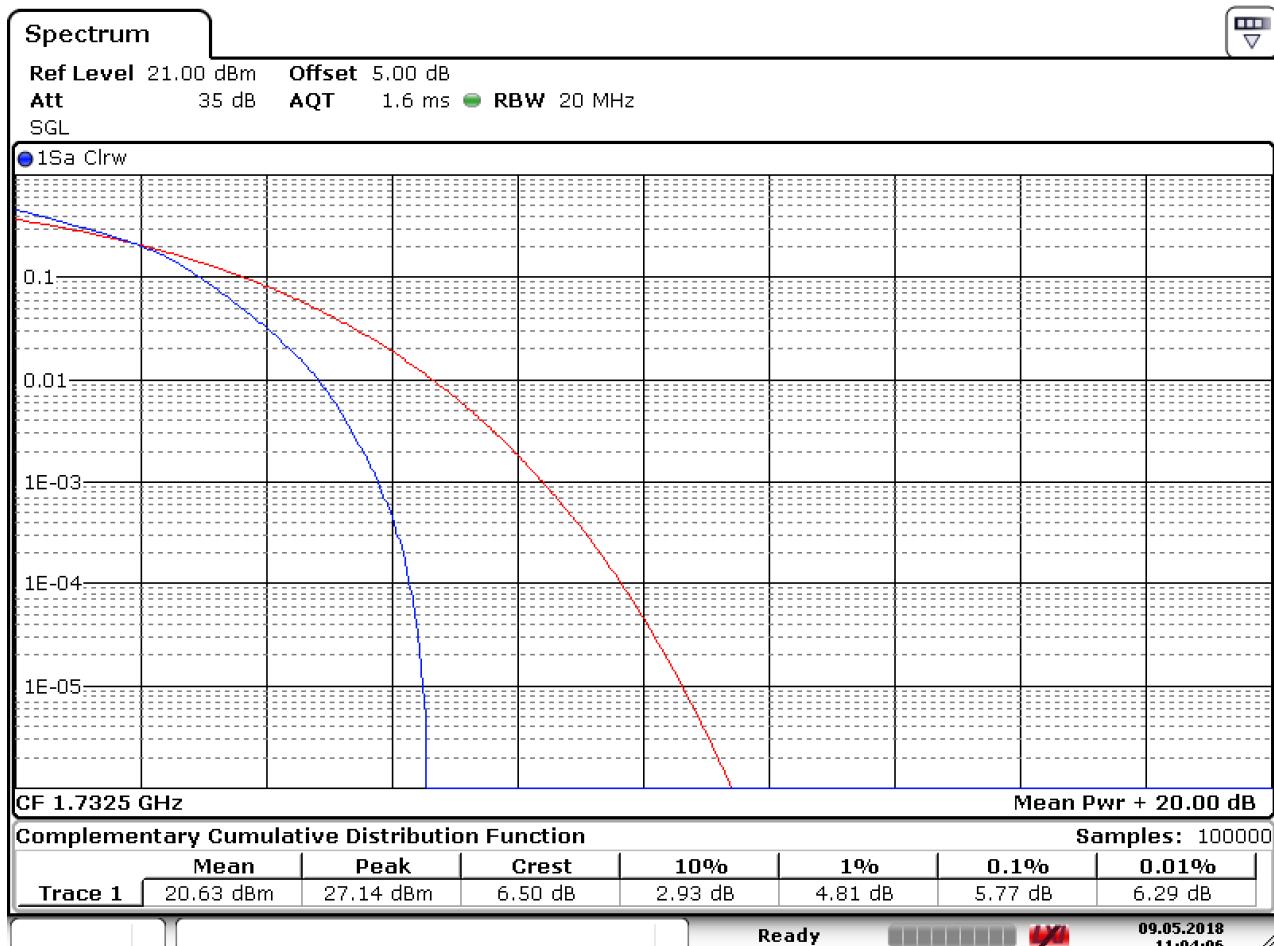
**2.1.1.1.3 Test Channel = HCH**

Date: 9.MAY.2018 11:05:26

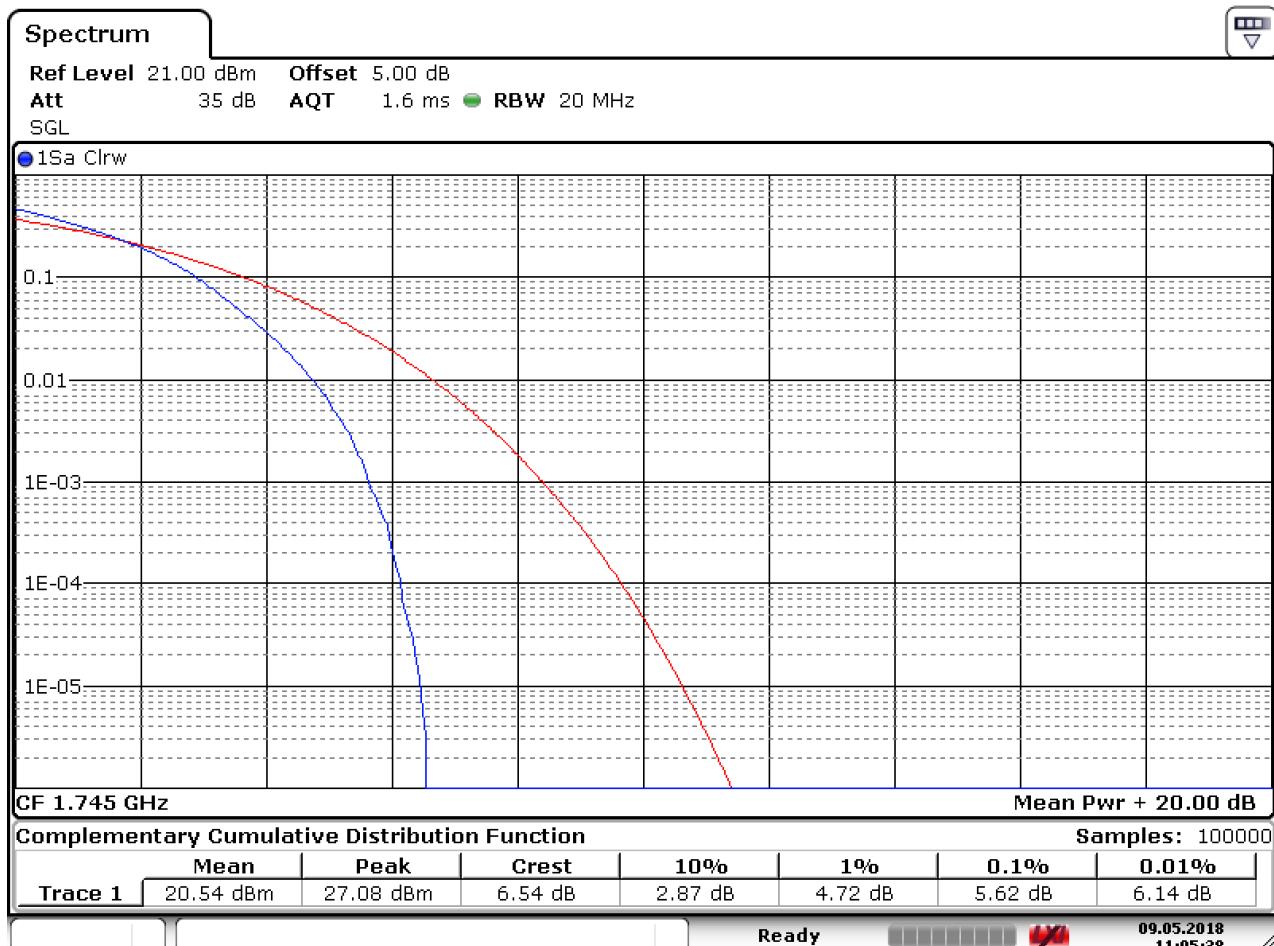
**2.1.1.2 Test Mode = LTE/TM2.Bandwidth=20MHz****2.1.1.2.1 Test Channel = LCH**

Date: 9.MAY.2018 11:04:27

2.1.1.2.2 Test Channel = MCH



### 2.1.1.2.3 Test Channel = HCH



Date: 9.MAY.2018 11:05:39

### 3 Modulation Characteristics

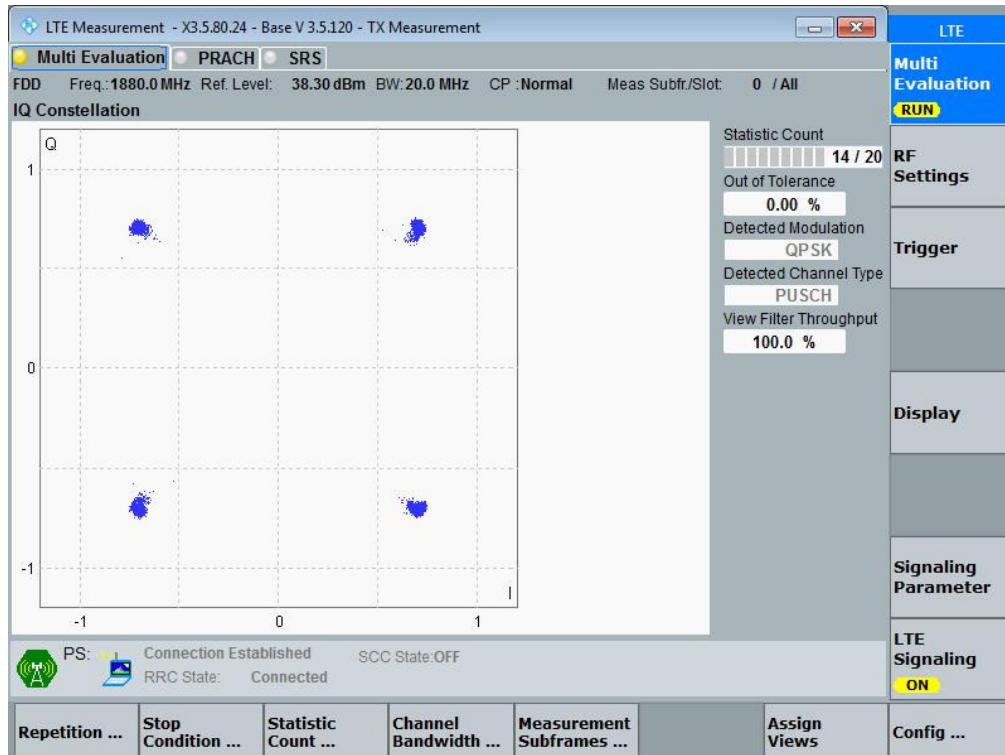
#### Part I - Test Plots

##### 3.1 For LTE

###### 3.1.1 Test Band = LTE band4

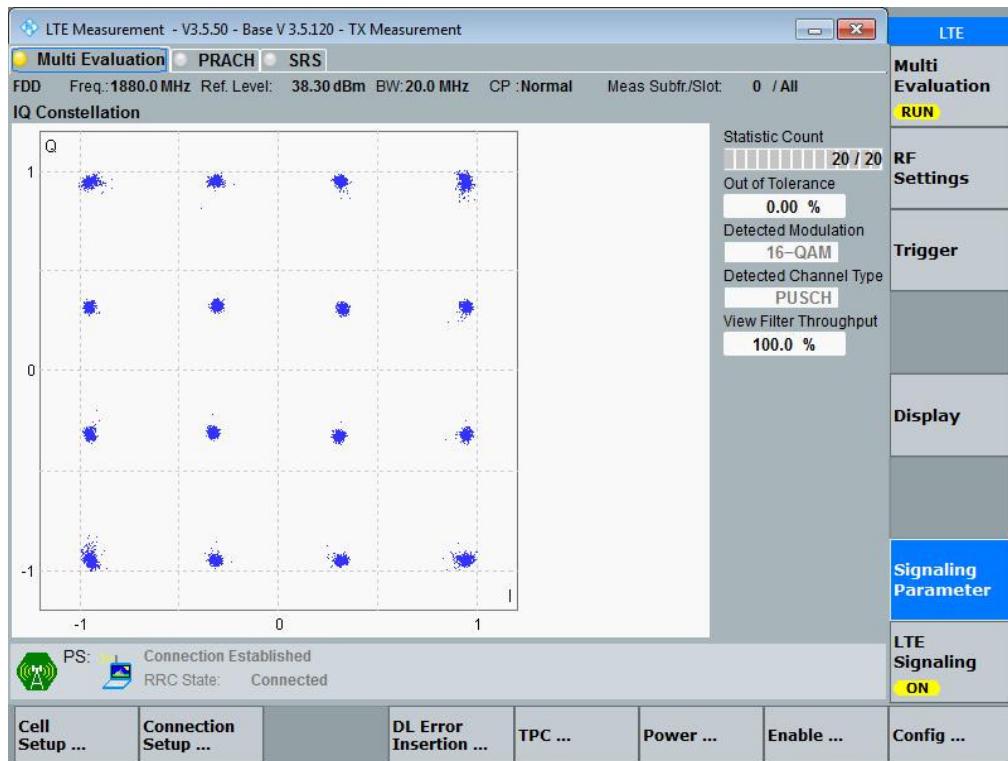
###### 3.1.1.1 Test Mode = LTE /TM1 20MHz

###### 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

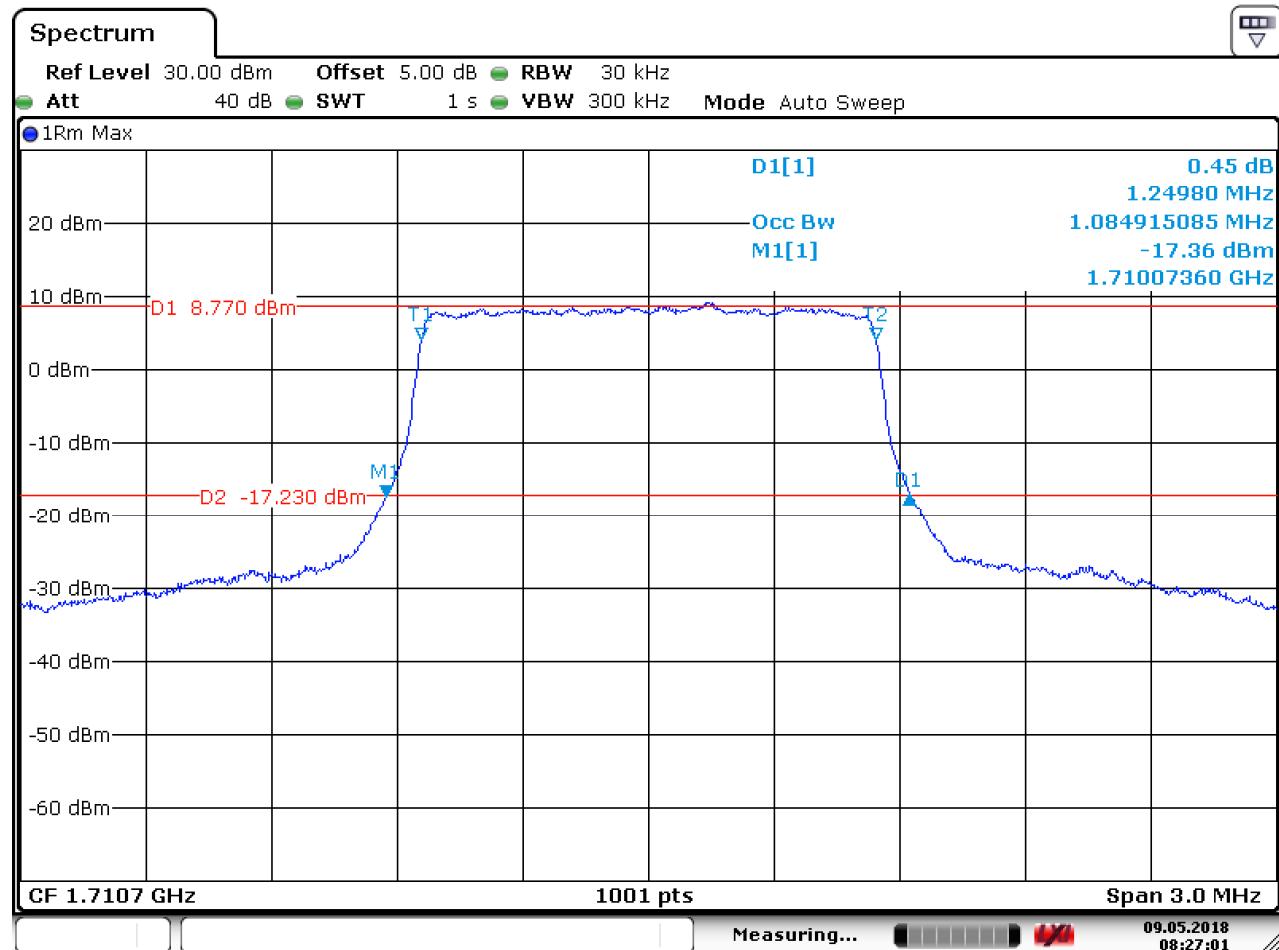
Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
Band 4	TM1/1.4MHz	LCH	1.08	1.25	PASS
		MCH	1.08	1.28	PASS
		HCH	1.08	1.25	PASS
	TM2/1.4MHz	LCH	1.08	1.25	PASS
		MCH	1.09	1.26	PASS
		HCH	1.08	1.25	PASS
	TM1/ 3MHz	LCH	2.67	2.83	PASS
		MCH	2.68	2.85	PASS
		HCH	2.68	2.84	PASS
	TM2/3MHz	LCH	2.67	2.83	PASS
		MCH	2.67	2.85	PASS
		HCH	2.68	2.85	PASS
	TM1/ 5MHz	LCH	4.47	4.84	PASS
		MCH	4.46	4.86	PASS
		HCH	4.47	4.90	PASS
	TM2/ 5MHz	LCH	4.50	4.91	PASS
		MCH	4.48	4.88	PASS
		HCH	4.47	4.89	PASS
	TM1/10MHz	LCH	8.93	9.67	PASS
		MCH	8.91	9.67	PASS
		HCH	8.95	9.77	PASS
	TM2/ 10MHz	LCH	8.93	9.67	PASS
		MCH	8.91	9.67	PASS
		HCH	8.93	9.61	PASS
	TM1/ 15MHz	LCH	13.52	14.87	PASS
		MCH	13.46	14.75	PASS
		HCH	13.49	14.81	PASS
	TM2/ 15MHz	LCH	13.49	14.75	PASS
		MCH	13.46	14.75	PASS
		HCH	13.49	14.69	PASS
	TM1/ 20MHz	LCH	17.94	19.58	PASS
		MCH	17.90	19.34	PASS
		HCH	17.90	19.26	PASS
	TM2/ 20MHz	LCH	17.94	19.34	PASS
		MCH	17.94	19.42	PASS
		HCH	17.94	19.34	PASS

## 4.1 For LTE

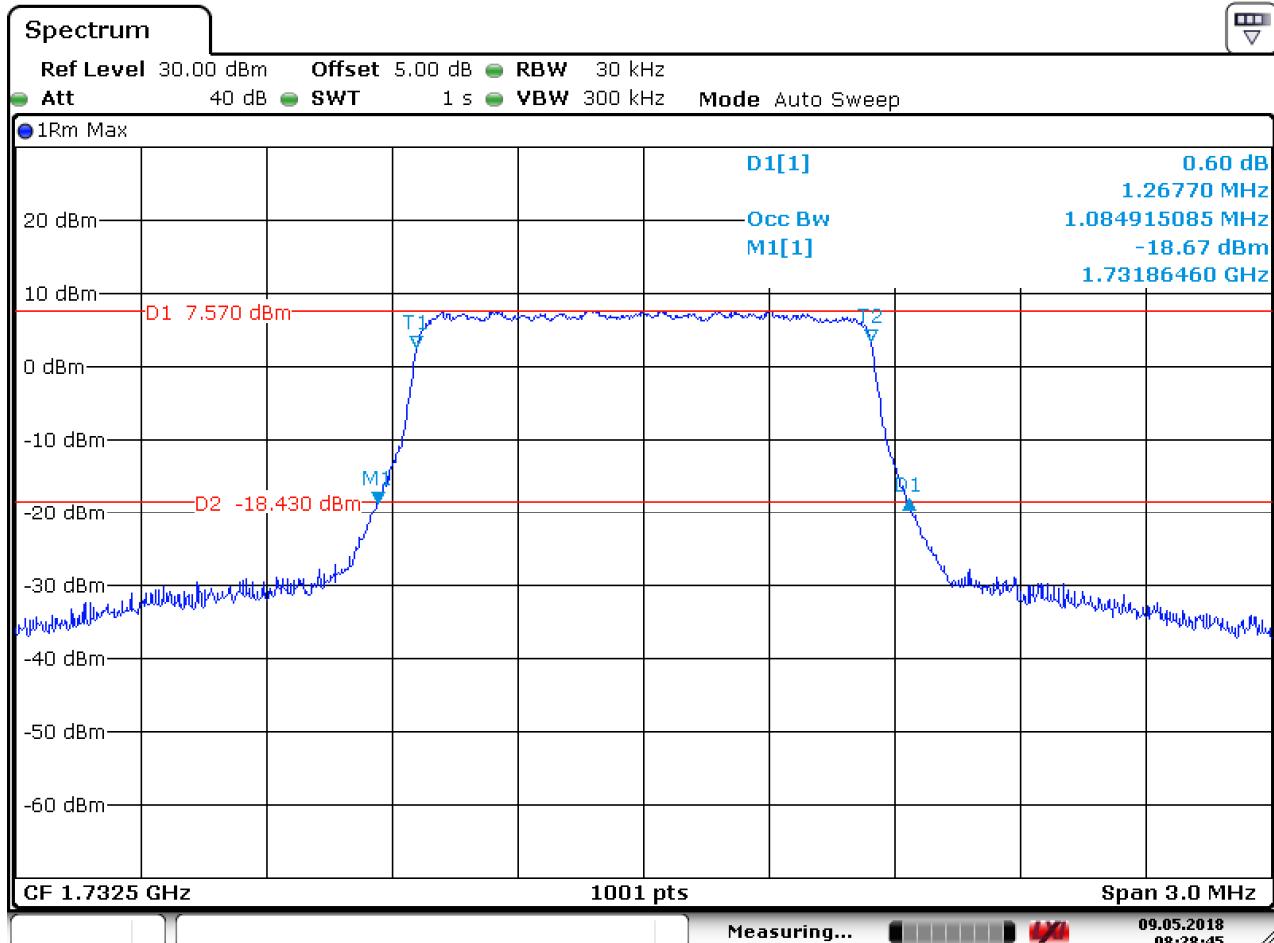
### 4.1.1 Test Band = LTE band4

#### 4.1.1.1 Test Mode = LTE/TM1 1.4MHz

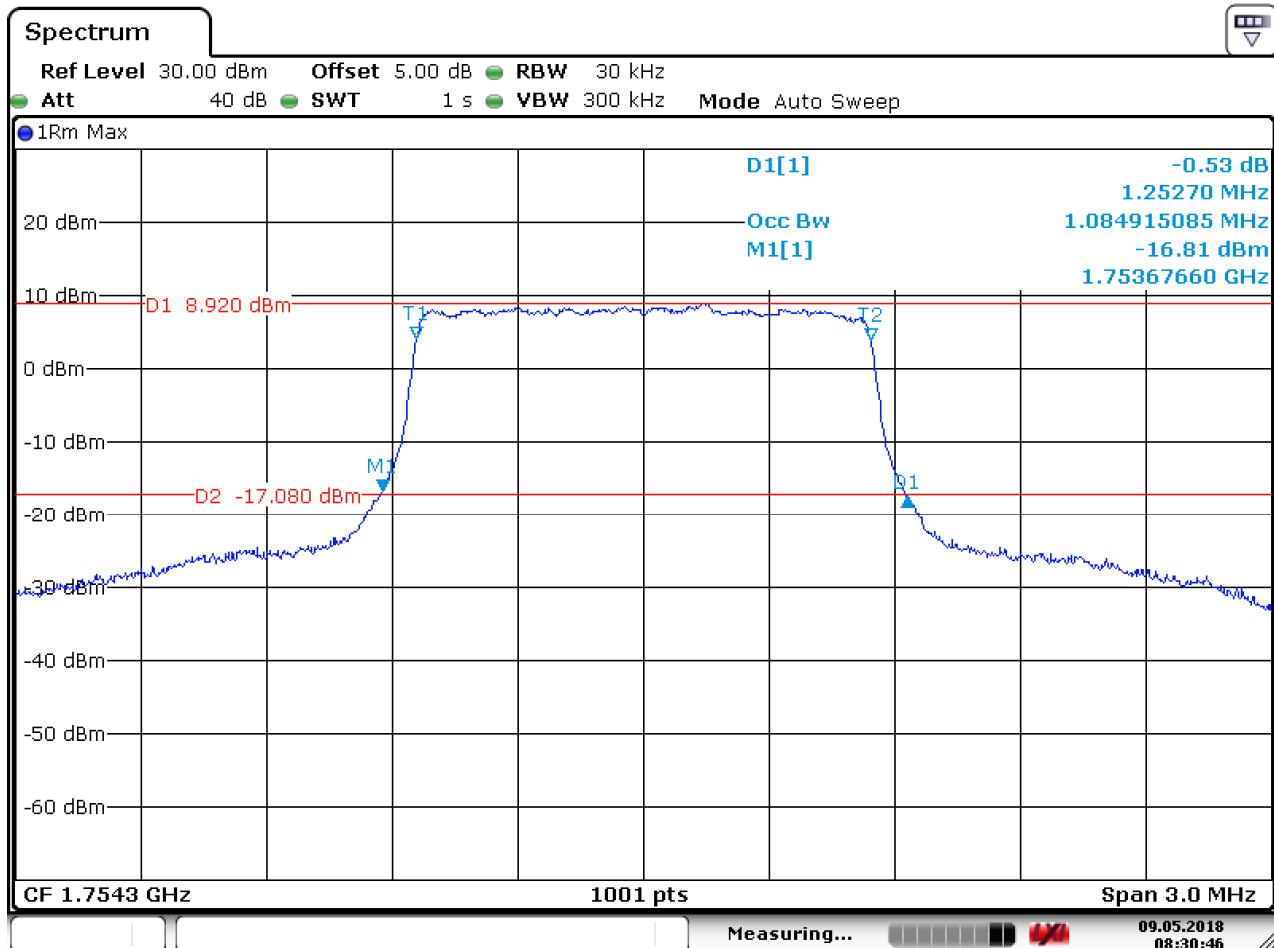
##### 4.1.1.1.1 Test Channel = LCH



Date: 9.MAY.2018 08:27:02

**4.1.1.1.2 Test Channel = MCH**


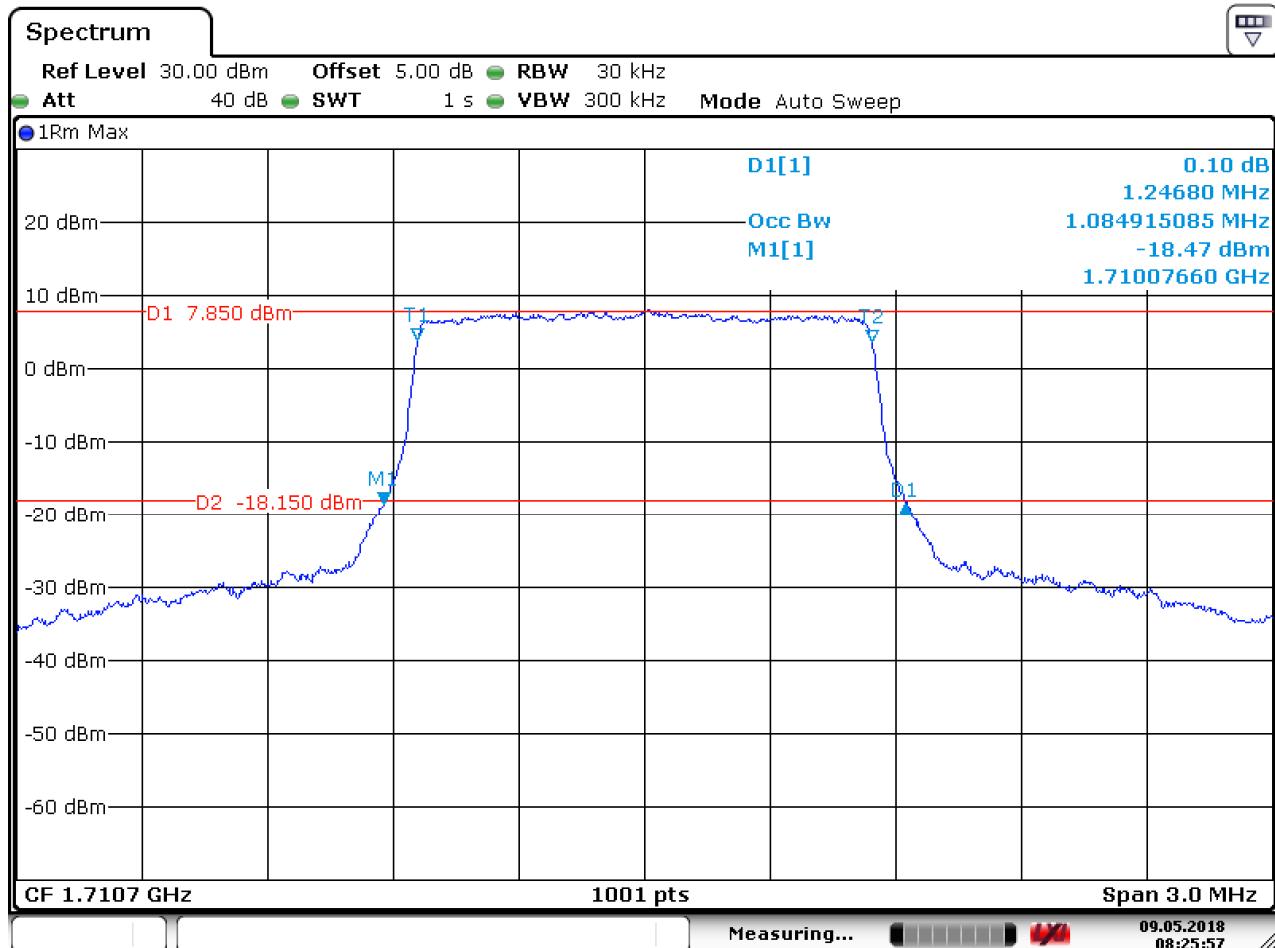
Date: 9.MAY.2018 08:28:45

**4.1.1.1.3 Test Channel = HCH**

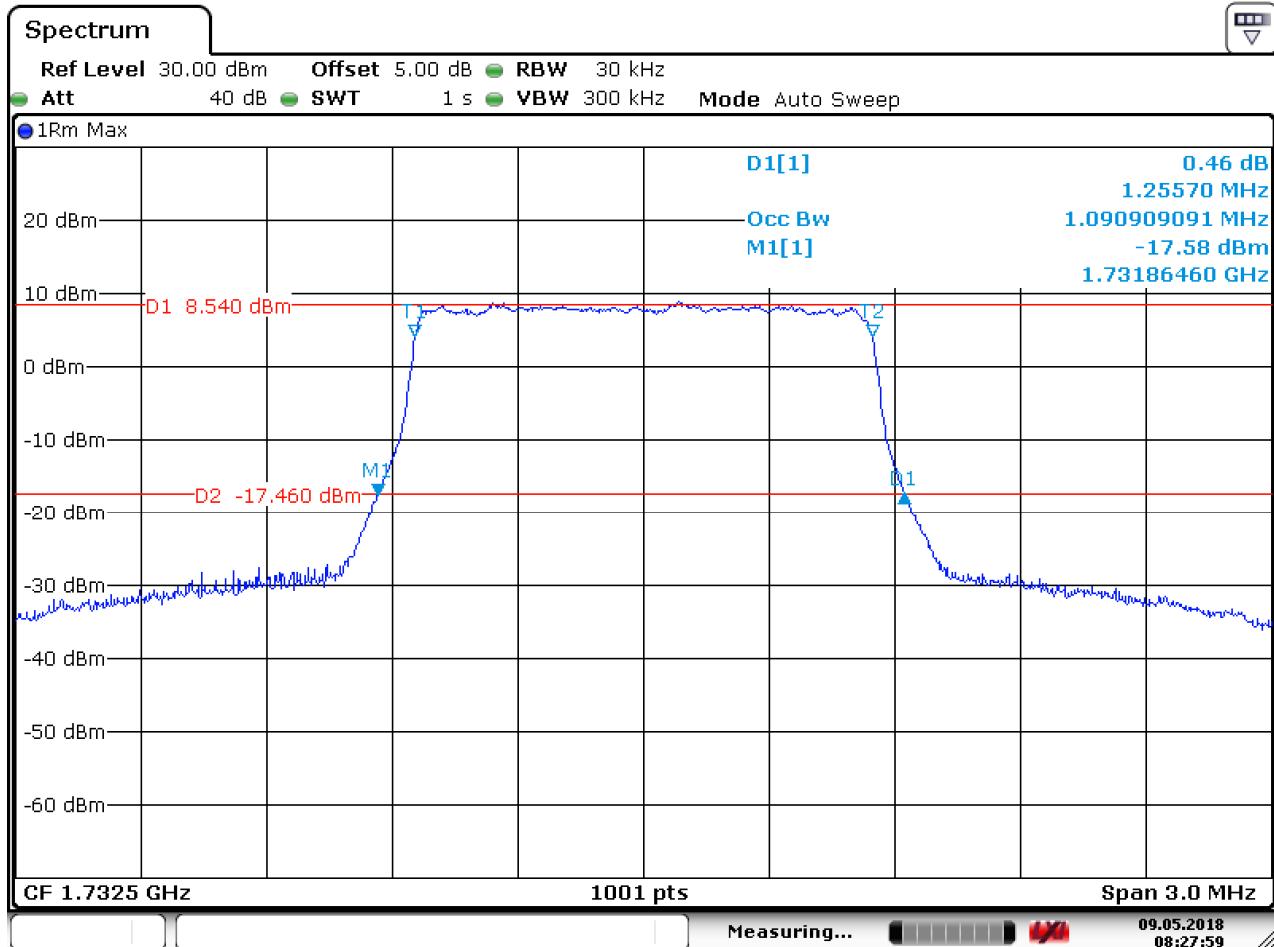
Date: 9.MAY.2018 08:30:46

## 4.1.1.2 Test Mode = LTE/TM2 1.4MHz

## 4.1.1.2.1 Test Channel = LCH

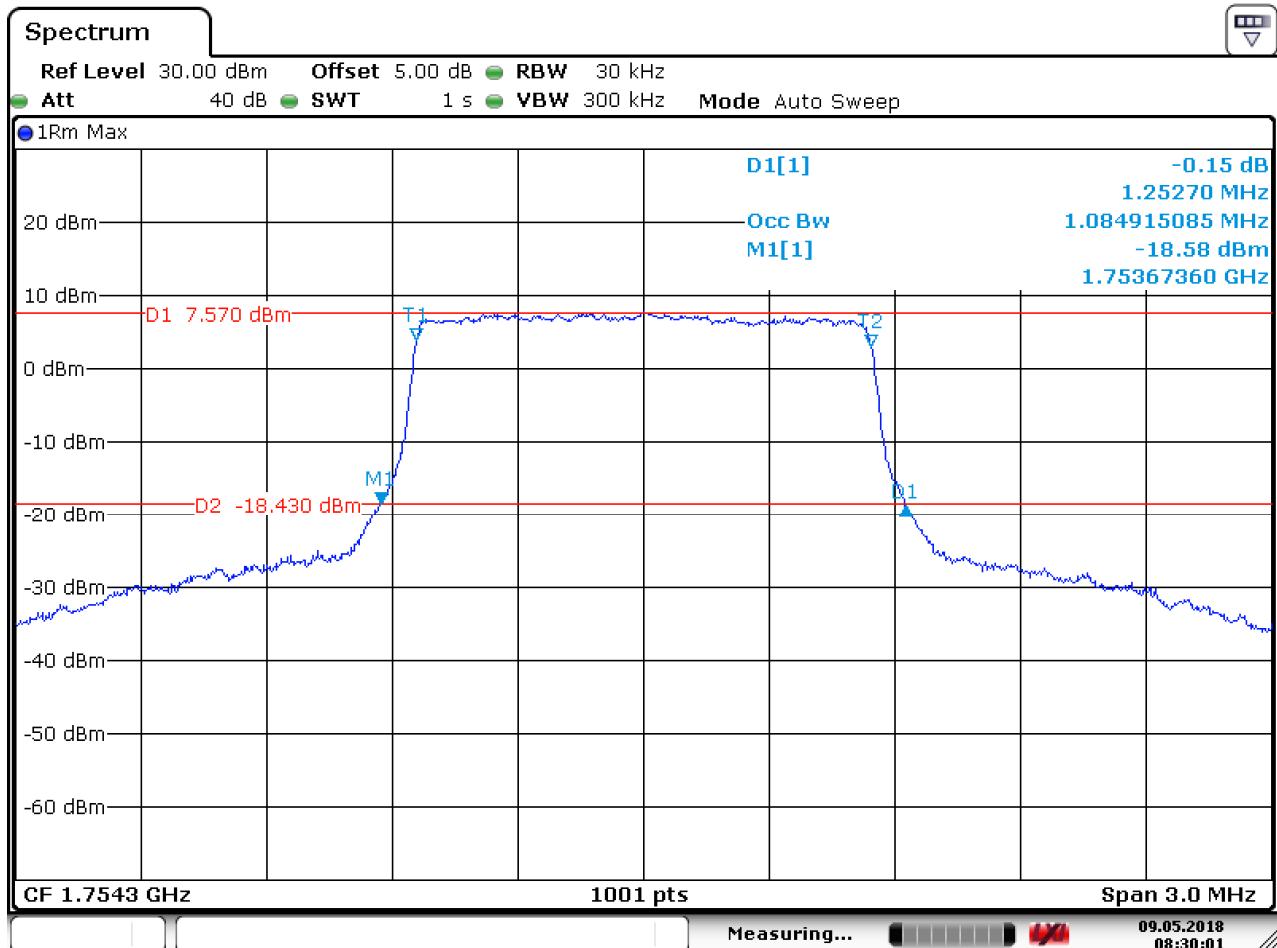


Date: 9.MAY.2018 08:25:58

**4.1.1.2.2 Test Channel = MCH**

Date: 9.MAY.2018 08:27:59

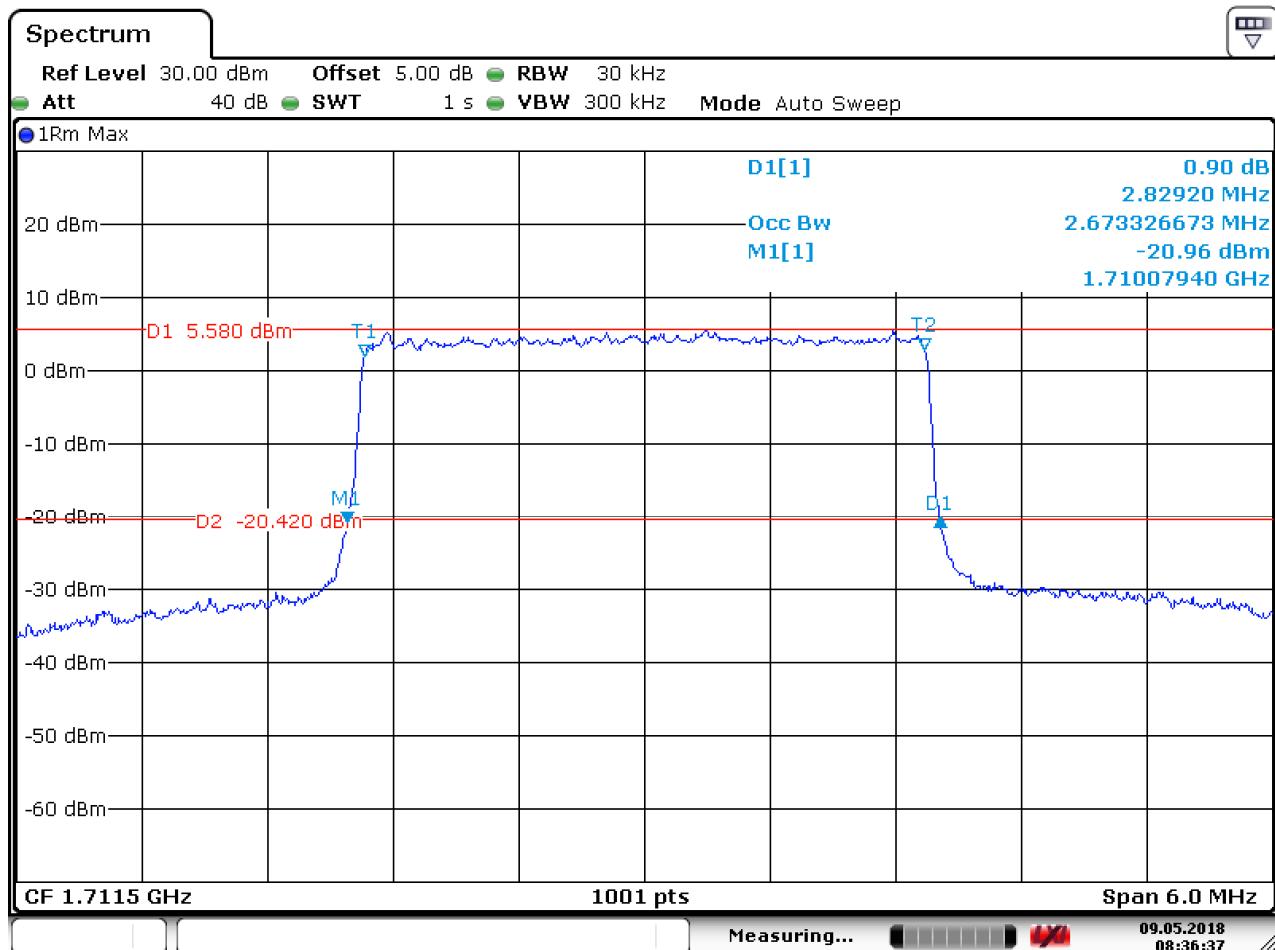
## 4.1.1.2.3 Test Channel = HCH



Date: 9.MAY.2018 08:30:01

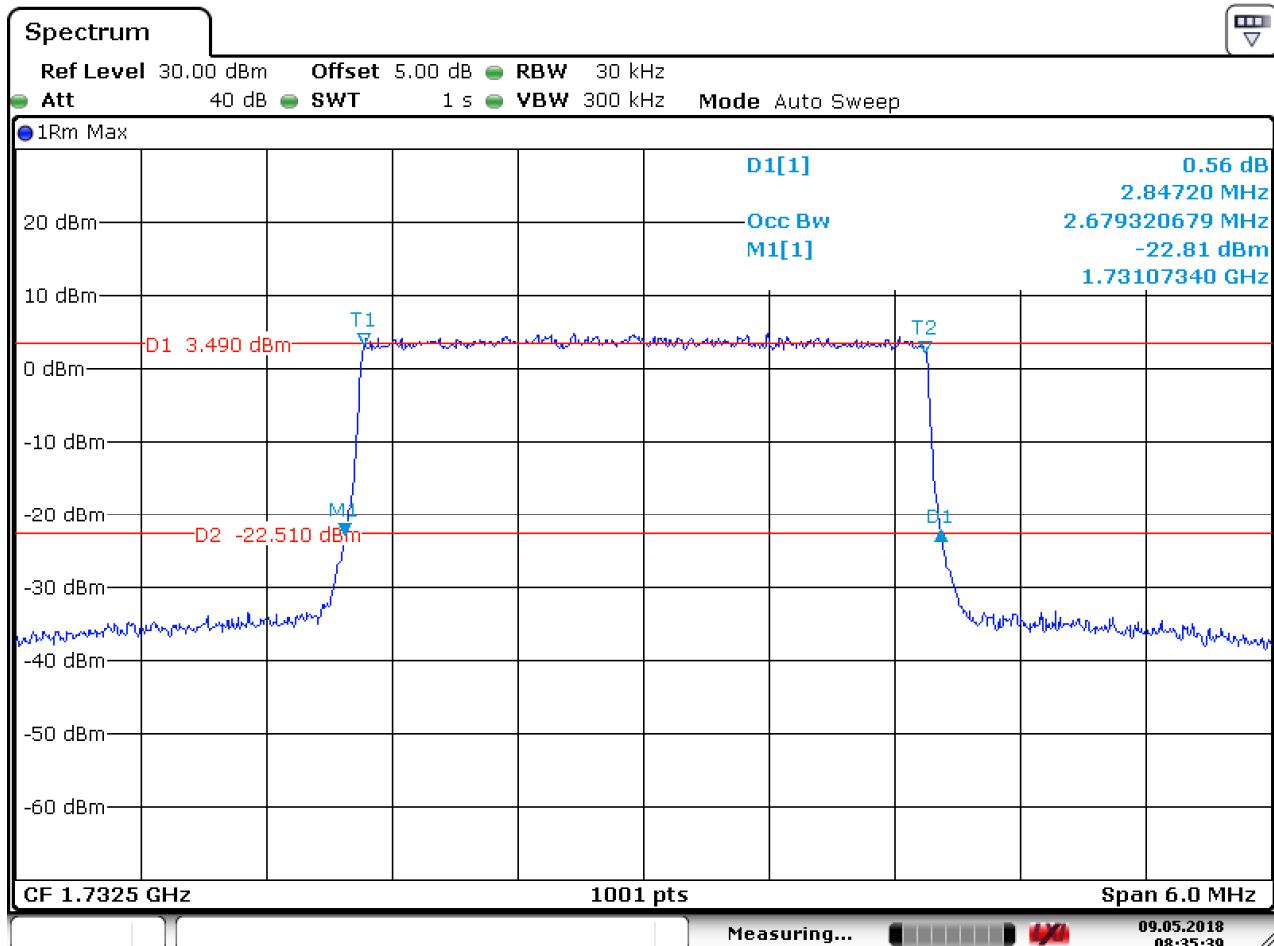
## 4.1.1.3 Test Mode = LTE/TM1 3MHz

## 4.1.1.3.1 Test Channel = LCH



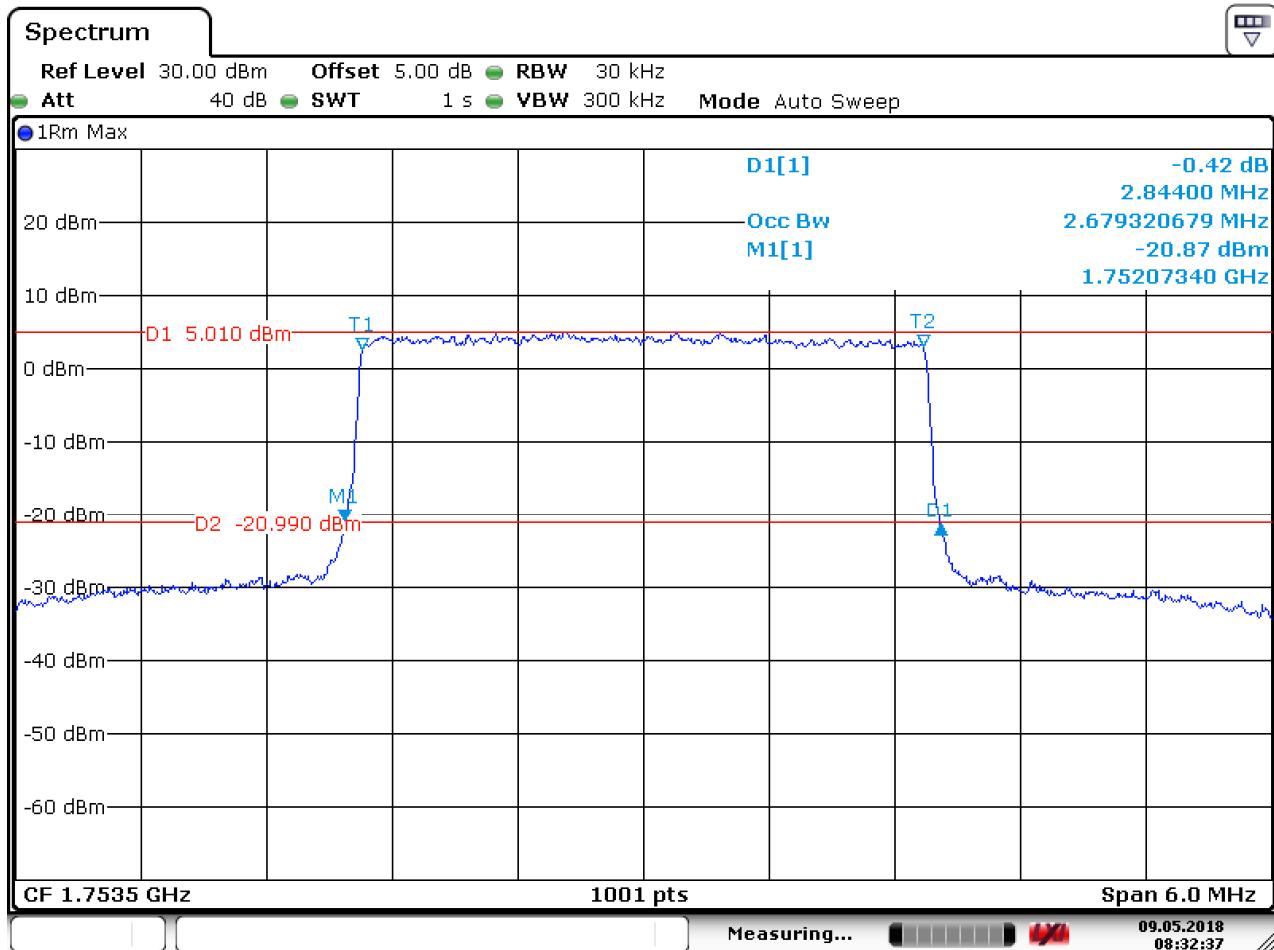
Date: 9.MAY.2018 08:36:37

## 4.1.1.3.2 Test Channel = MCH



Date: 9.MAY.2018 08:35:40

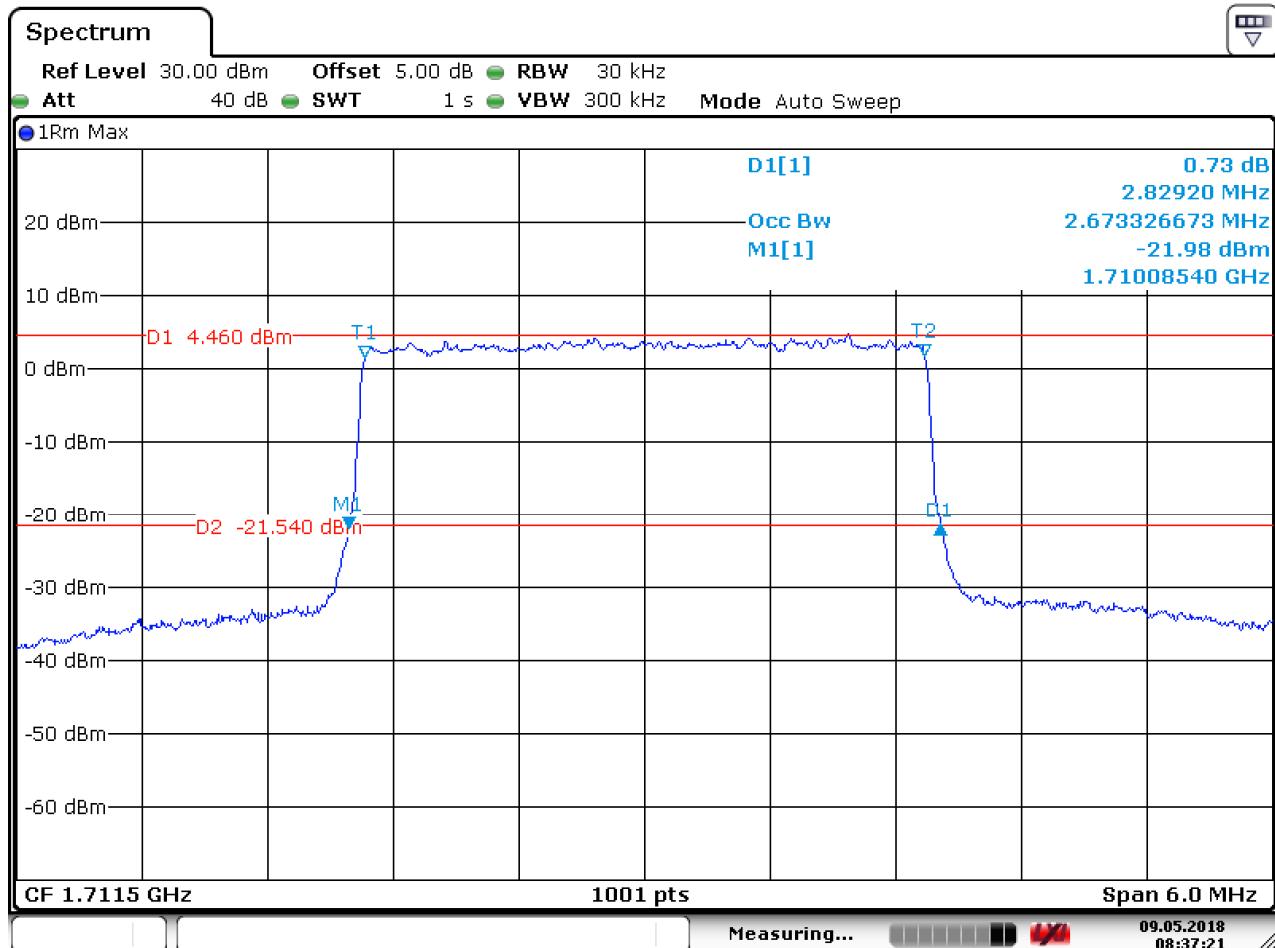
## 4.1.1.3.3 Test Channel = HCH



Date: 9.MAY.2018 08:32:37

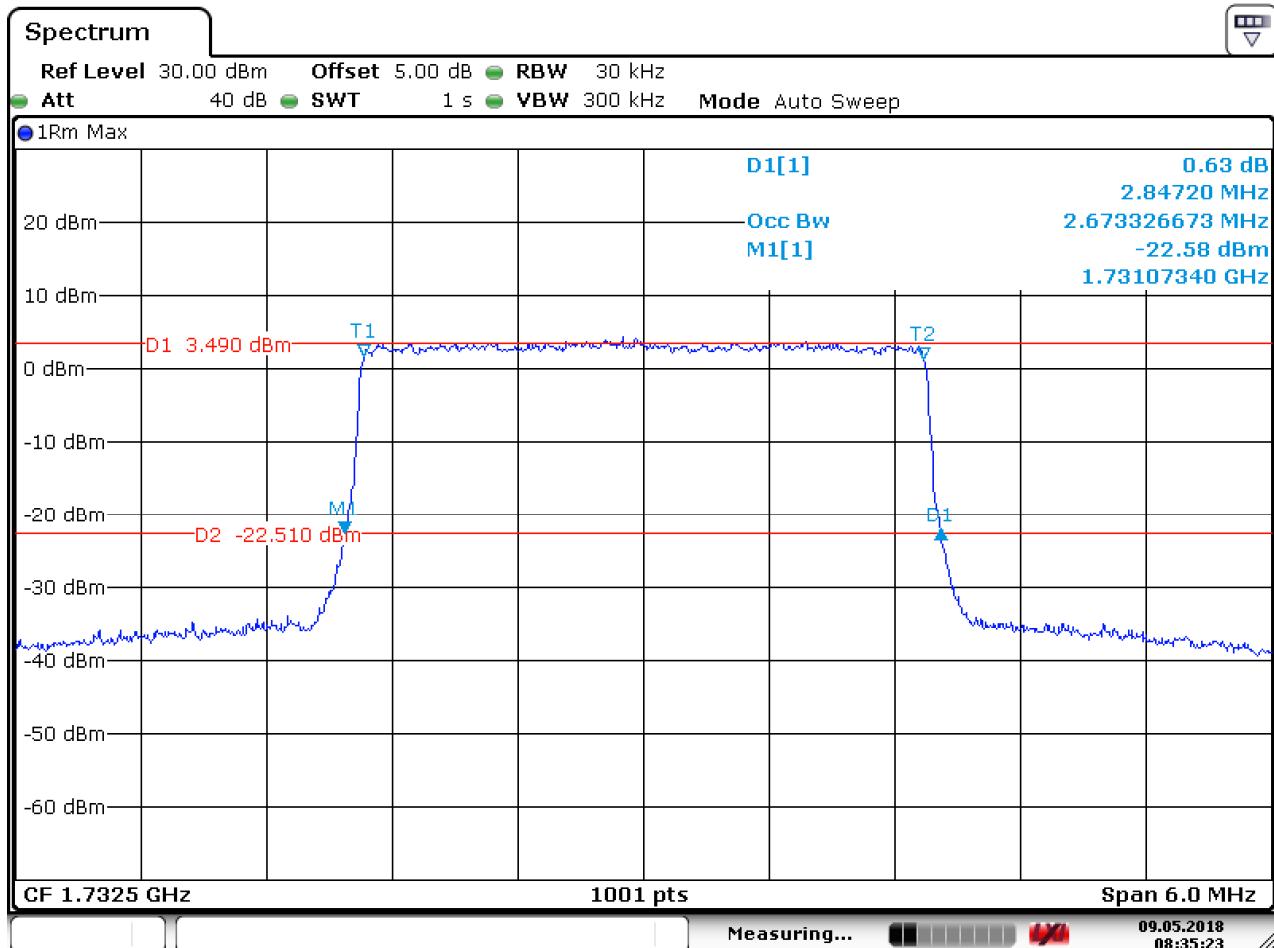
## 4.1.1.4 Test Mode = LTE/TM2 3MHz

## 4.1.1.4.1 Test Channel = LCH

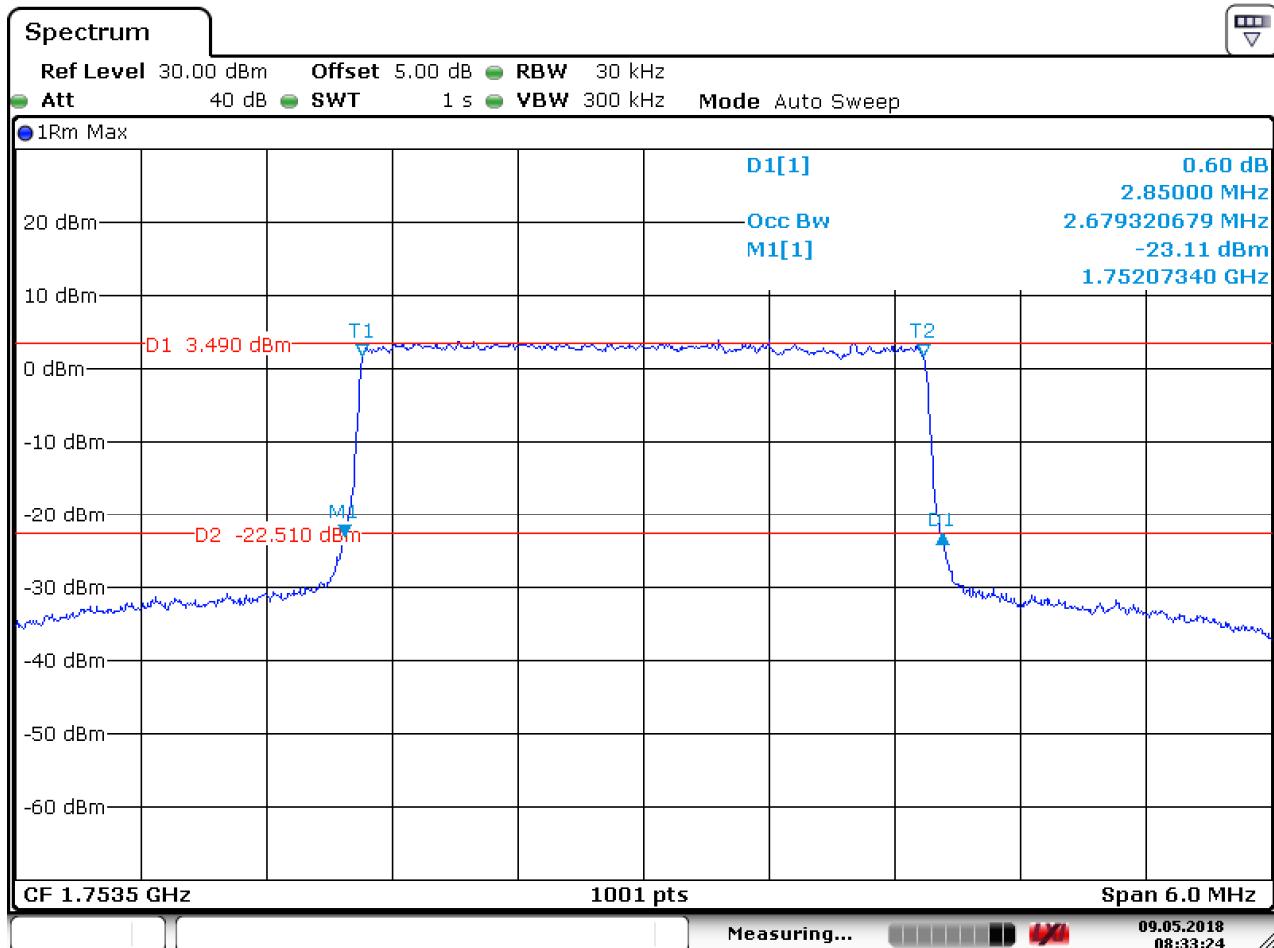


Date: 9.MAY.2018 08:37:21

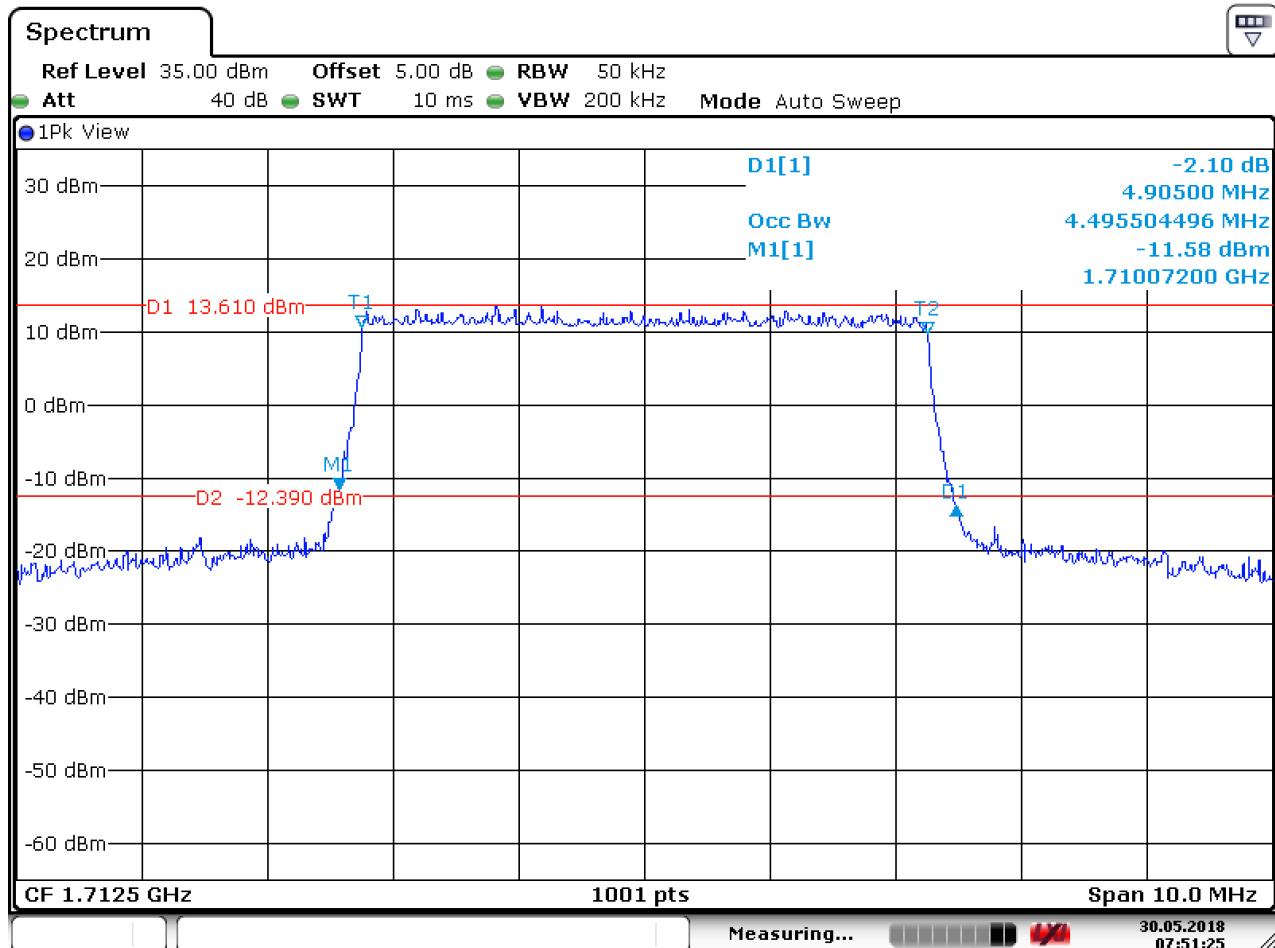
## 4.1.1.4.2 Test Channel = MCH



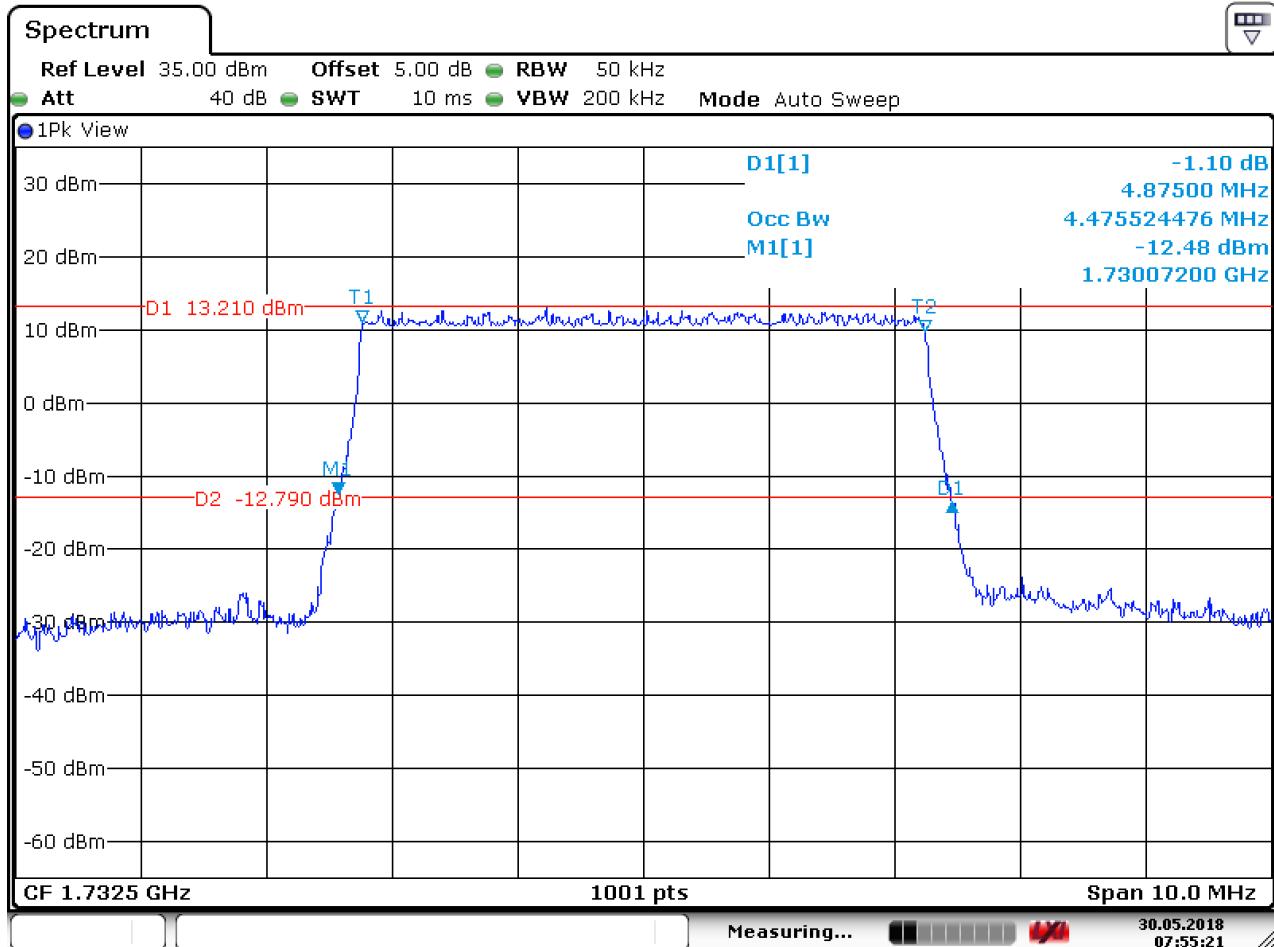
Date: 9.MAY.2018 08:35:23

**4.1.1.4.3 Test Channel = HCH**

Date: 9.MAY.2018 08:33:24

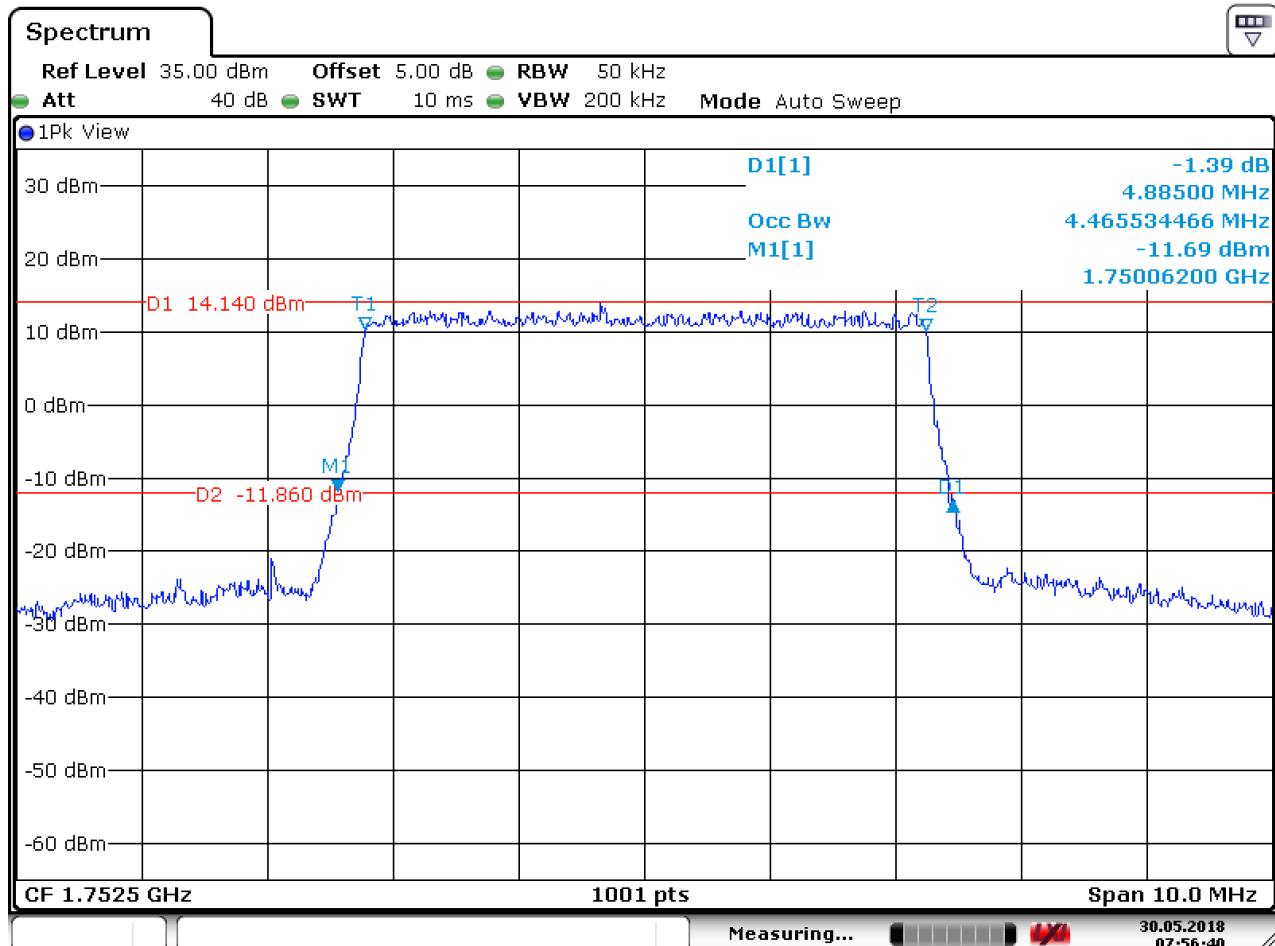
**4.1.1.5 Test Mode = LTE/TM1 5MHz****4.1.1.5.1 Test Channel = LCH**

Date: 30.MAY.2018 07:51:26

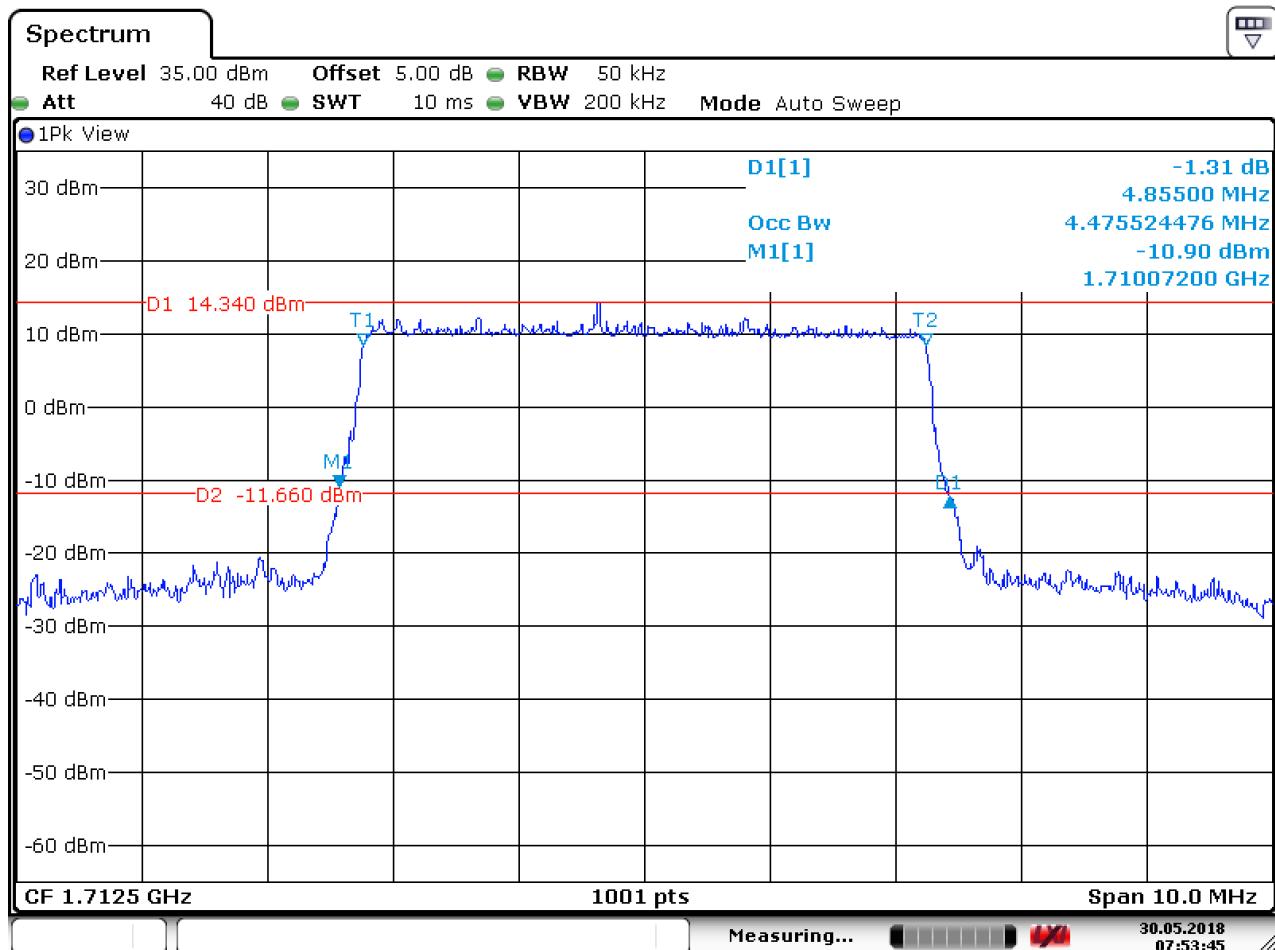
**4.1.1.5.2 Test Channel = MCH**


Date: 30.MAY.2018 07:55:21

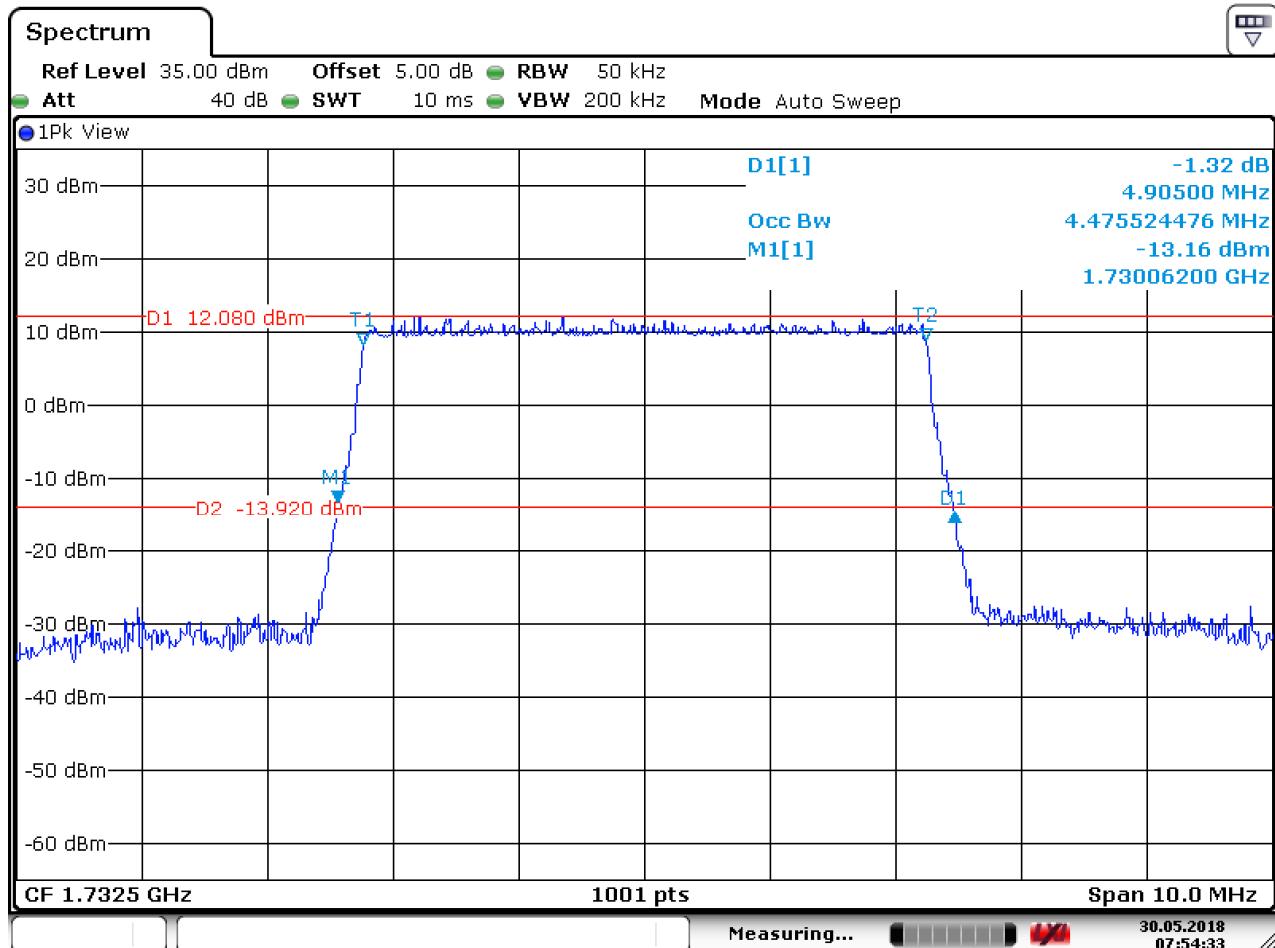
#### 4.1.1.5.3 Test Channel = HCH



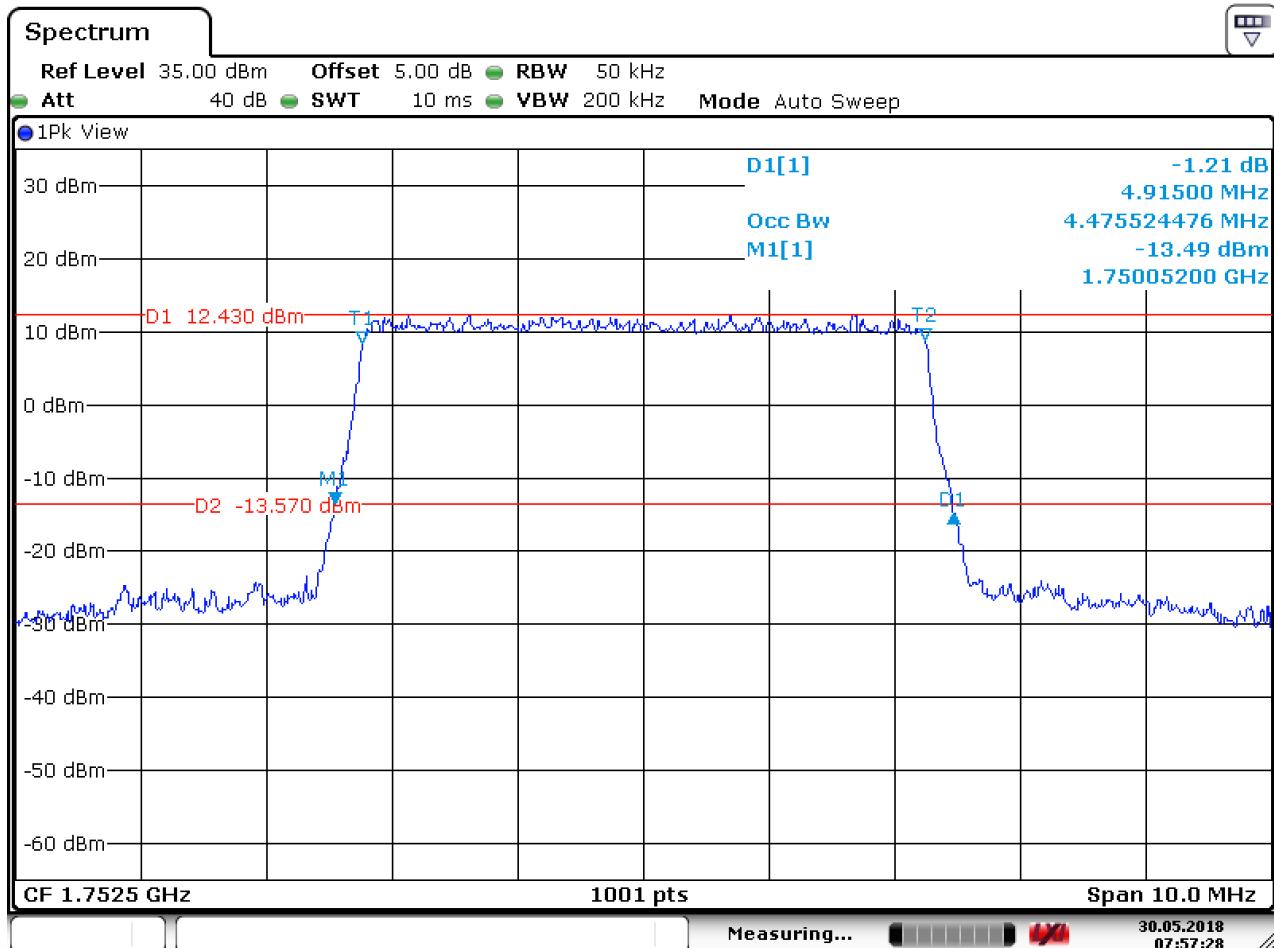
Date: 30.MAY.2018 07:56:40

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

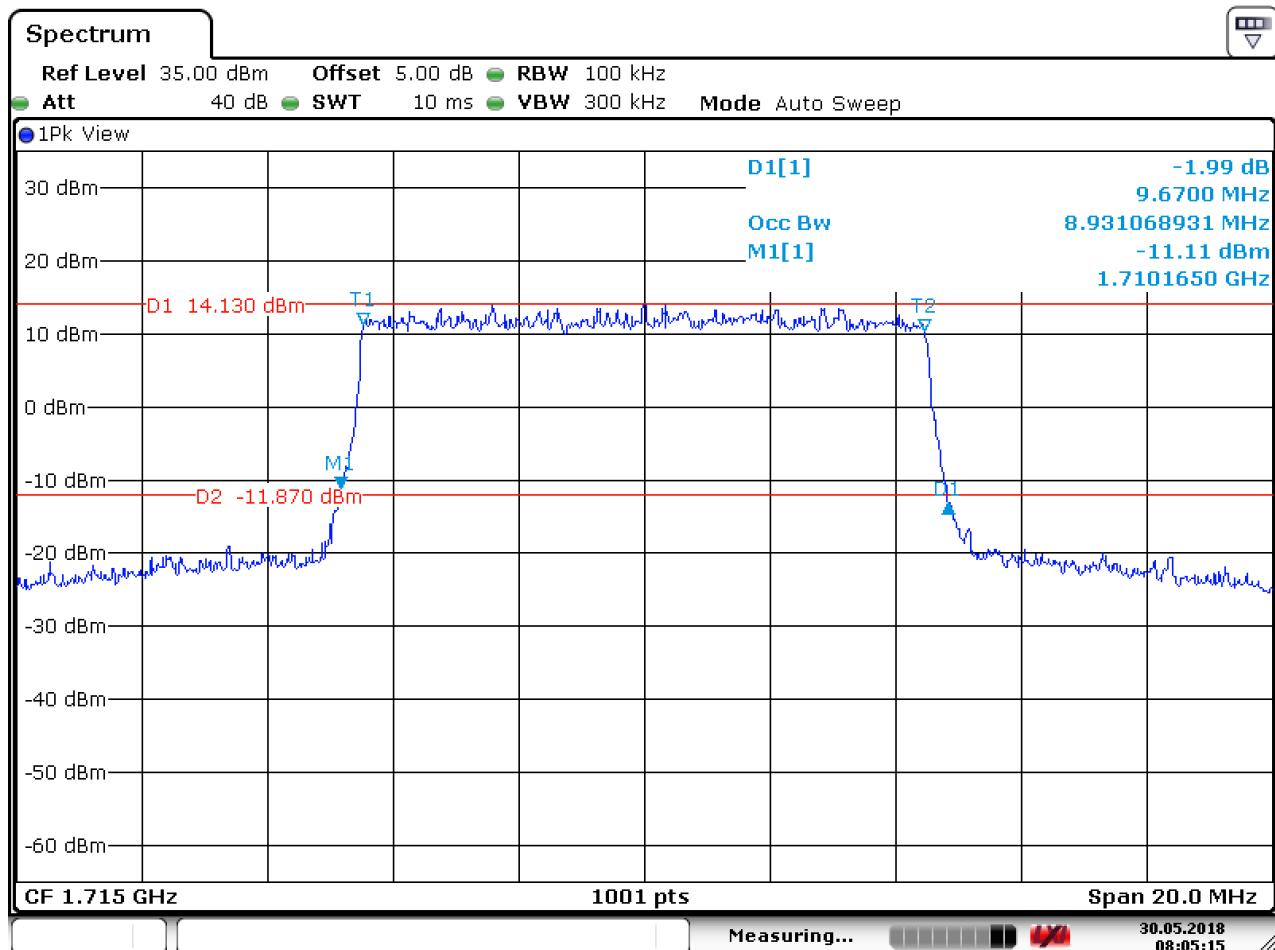
Date: 30.MAY.2018 07:53:45

**4.1.1.6.2 Test Channel = MCH**

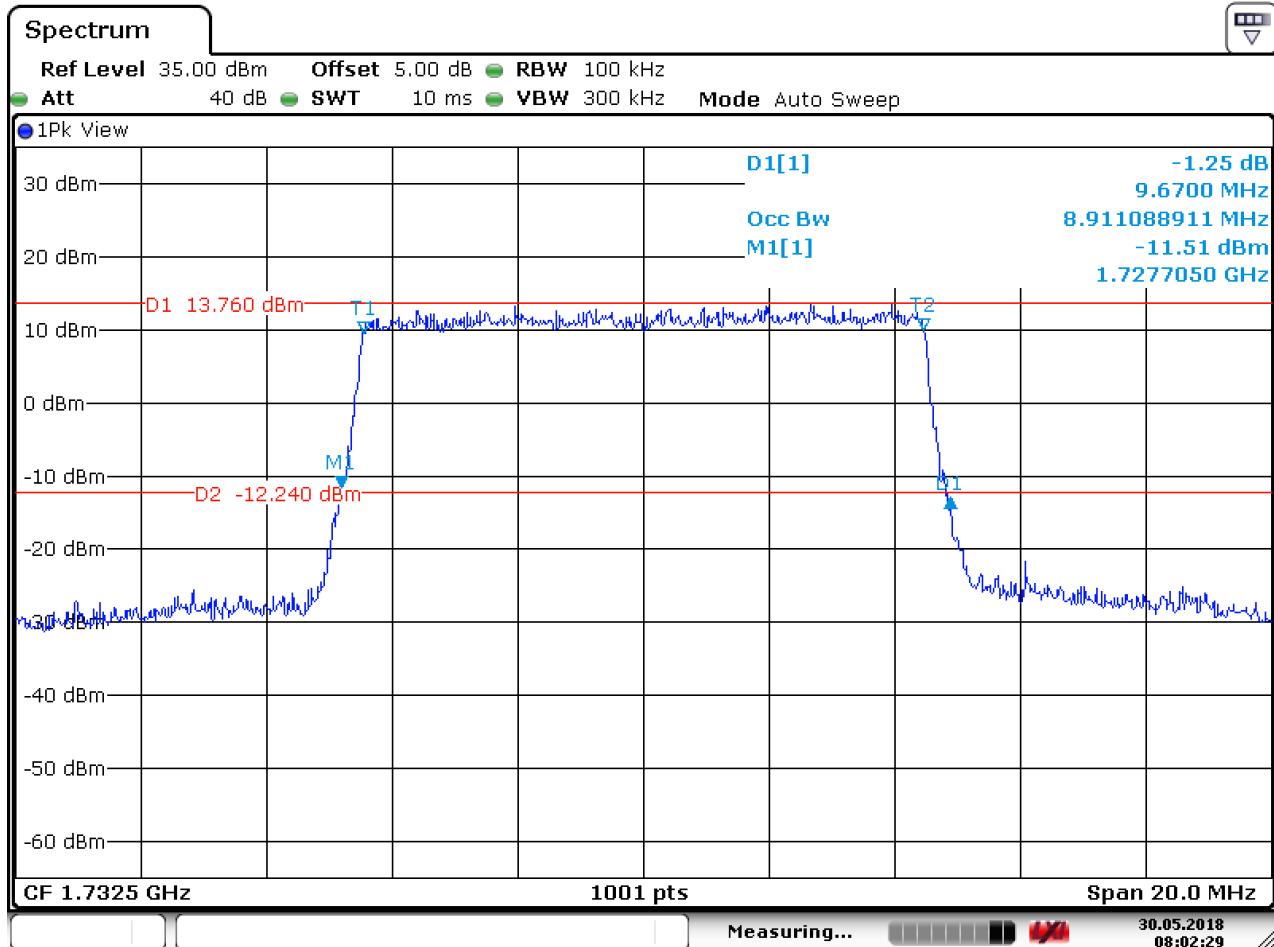
Date: 30.MAY.2018 07:54:34

**4.1.1.6.3 Test Channel = HCH**

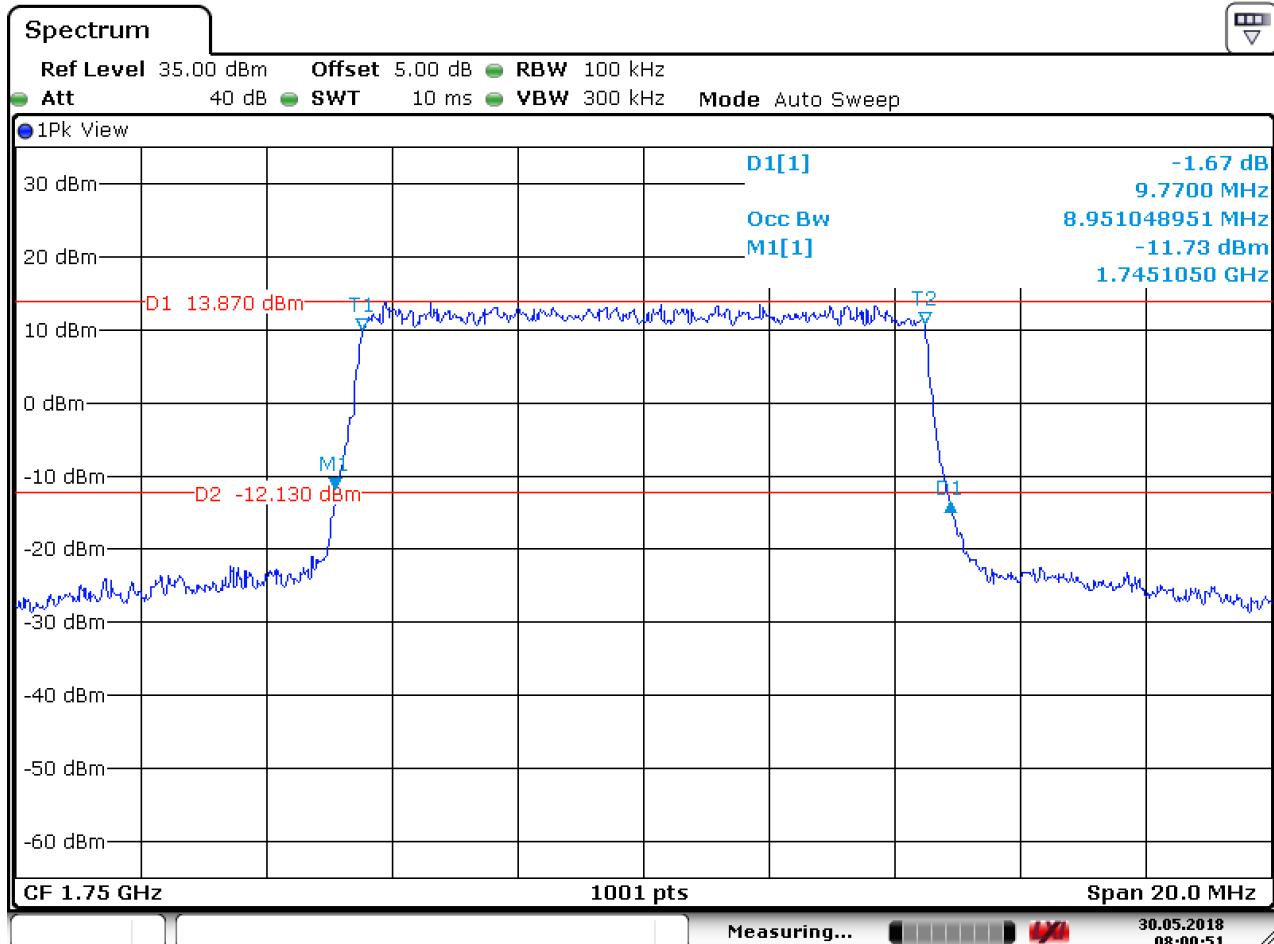
Date: 30.MAY.2018 07:57:28

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

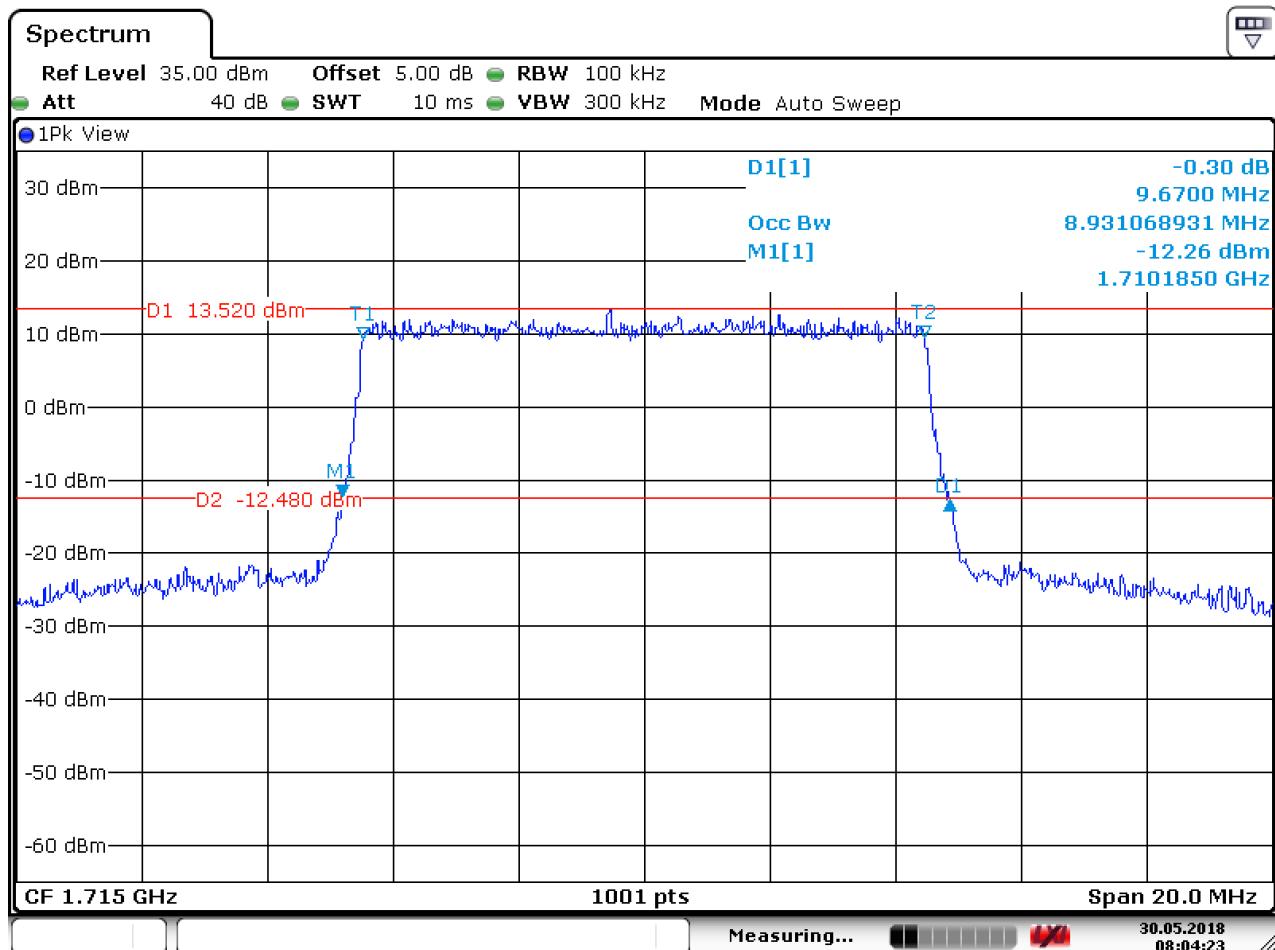
Date: 30.MAY.2018 08:05:15

**4.1.1.7.2 Test Channel = MCH**

Date: 30.MAY.2018 08:02:30

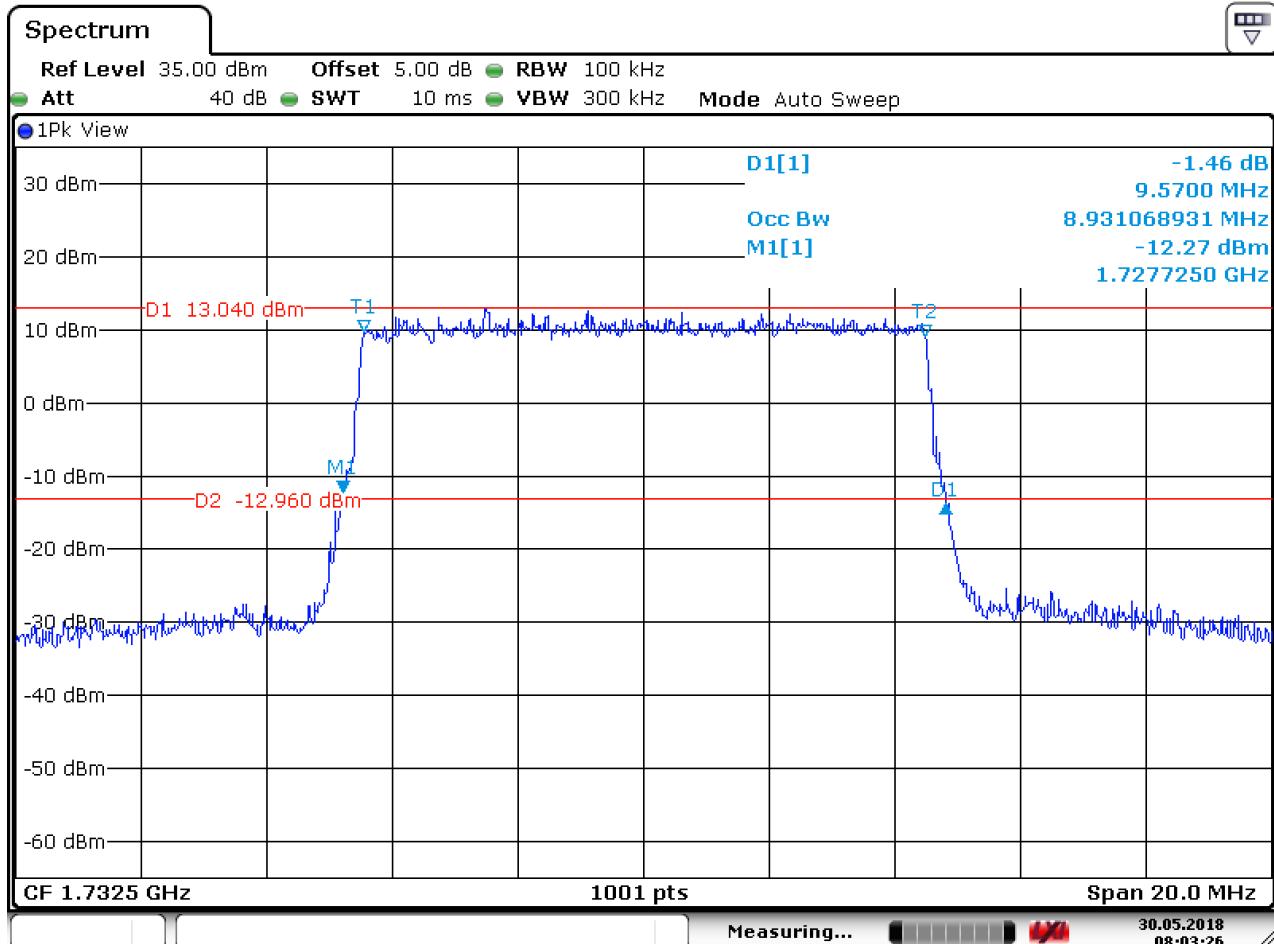
**4.1.1.7.3 Test Channel = HCH**

Date: 30.MAY.2018 08:00:52

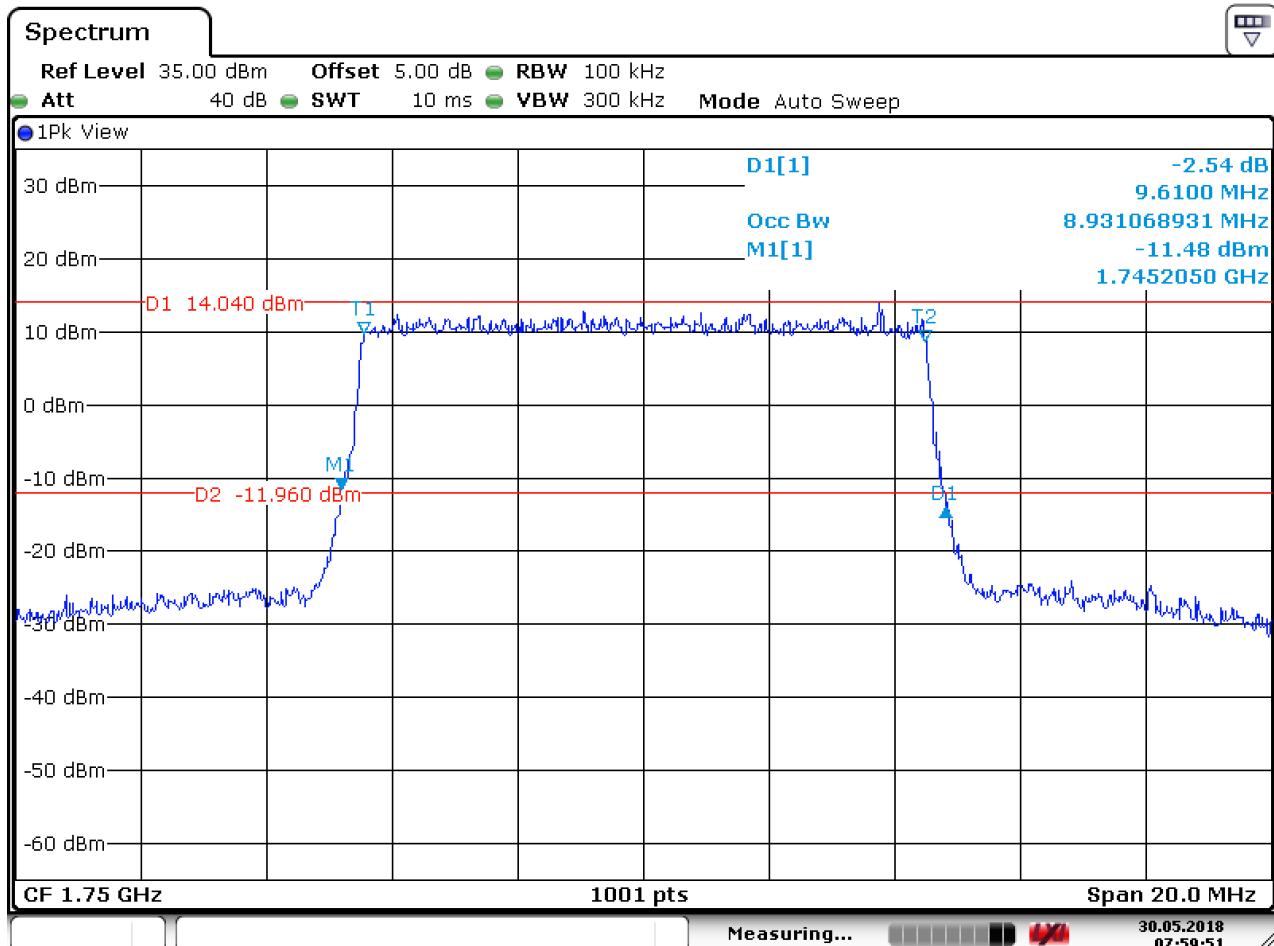
**4.1.1.8 Test Mode = LTE/TM2 10MHz****4.1.1.8.1 Test Channel = LCH**

Date: 30.MAY.2018 08:04:24

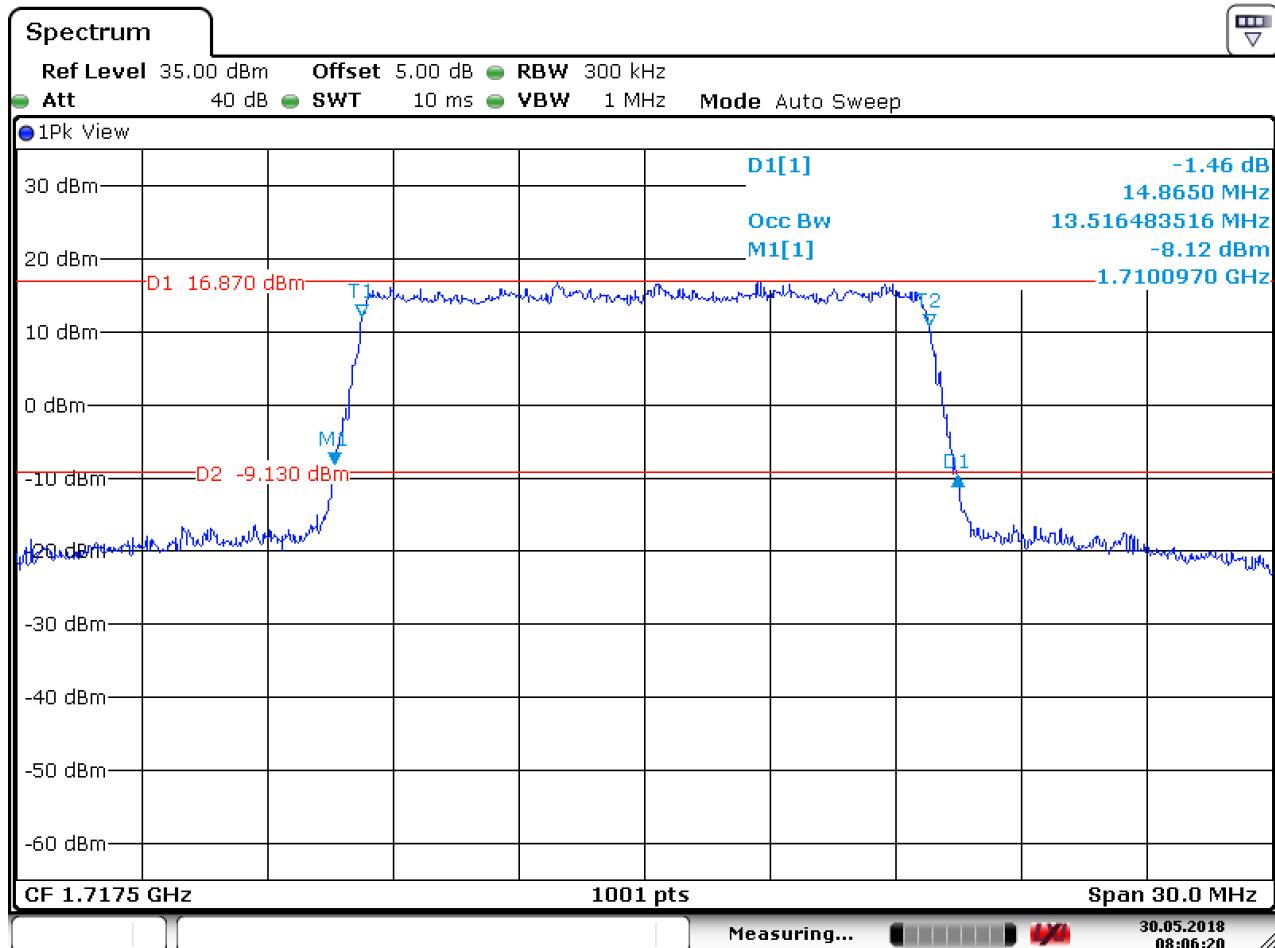
## 4.1.1.8.2 Test Channel = MCH



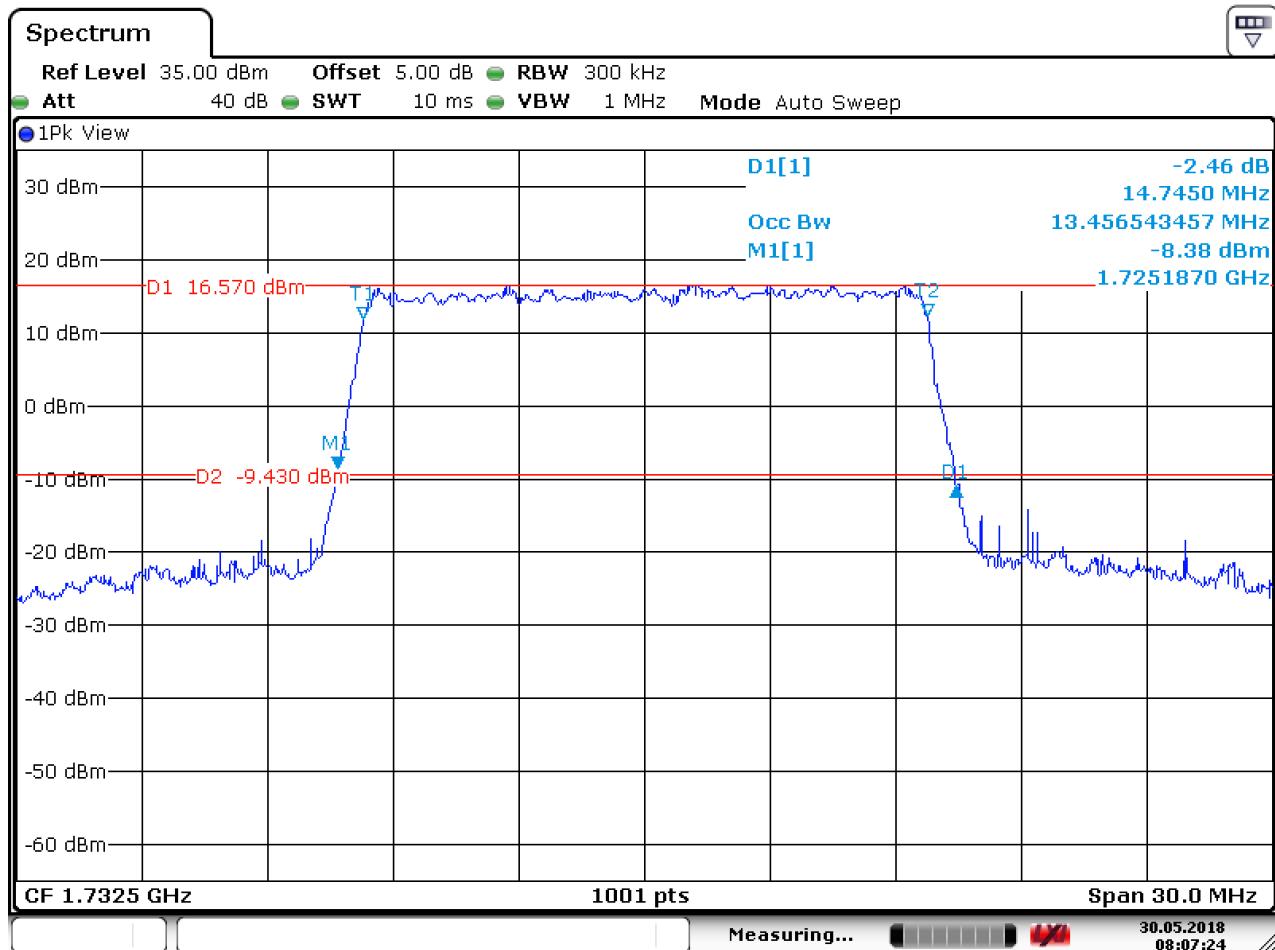
Date: 30.MAY.2018 08:03:27

**4.1.1.8.3 Test Channel = HCH**

Date: 30.MAY.2018 07:59:51

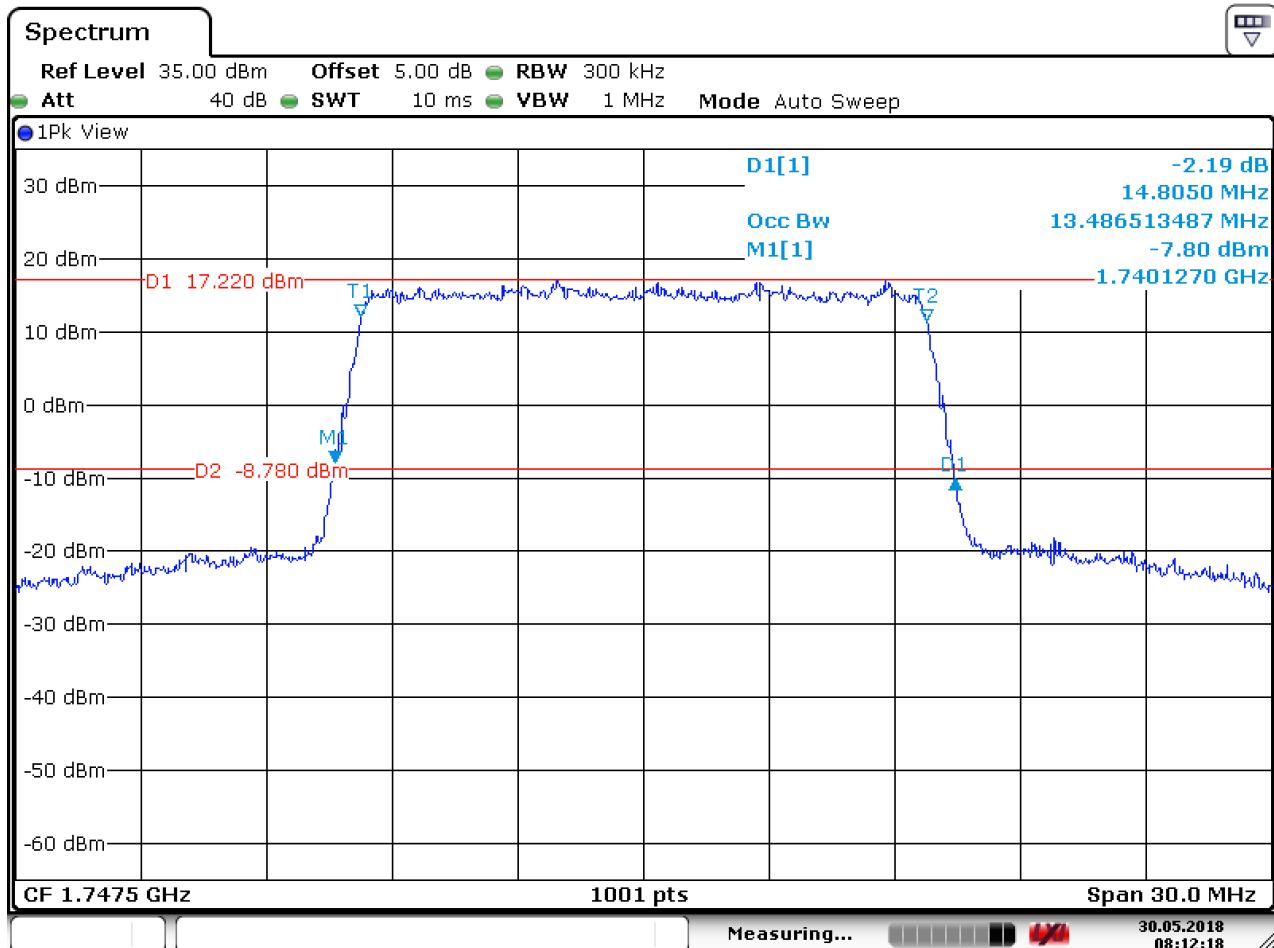
**4.1.1.9 Test Mode = LTE/TM1 15MHz****4.1.1.9.1 Test Channel = LCH**

Date: 30.MAY.2018 08:06:20

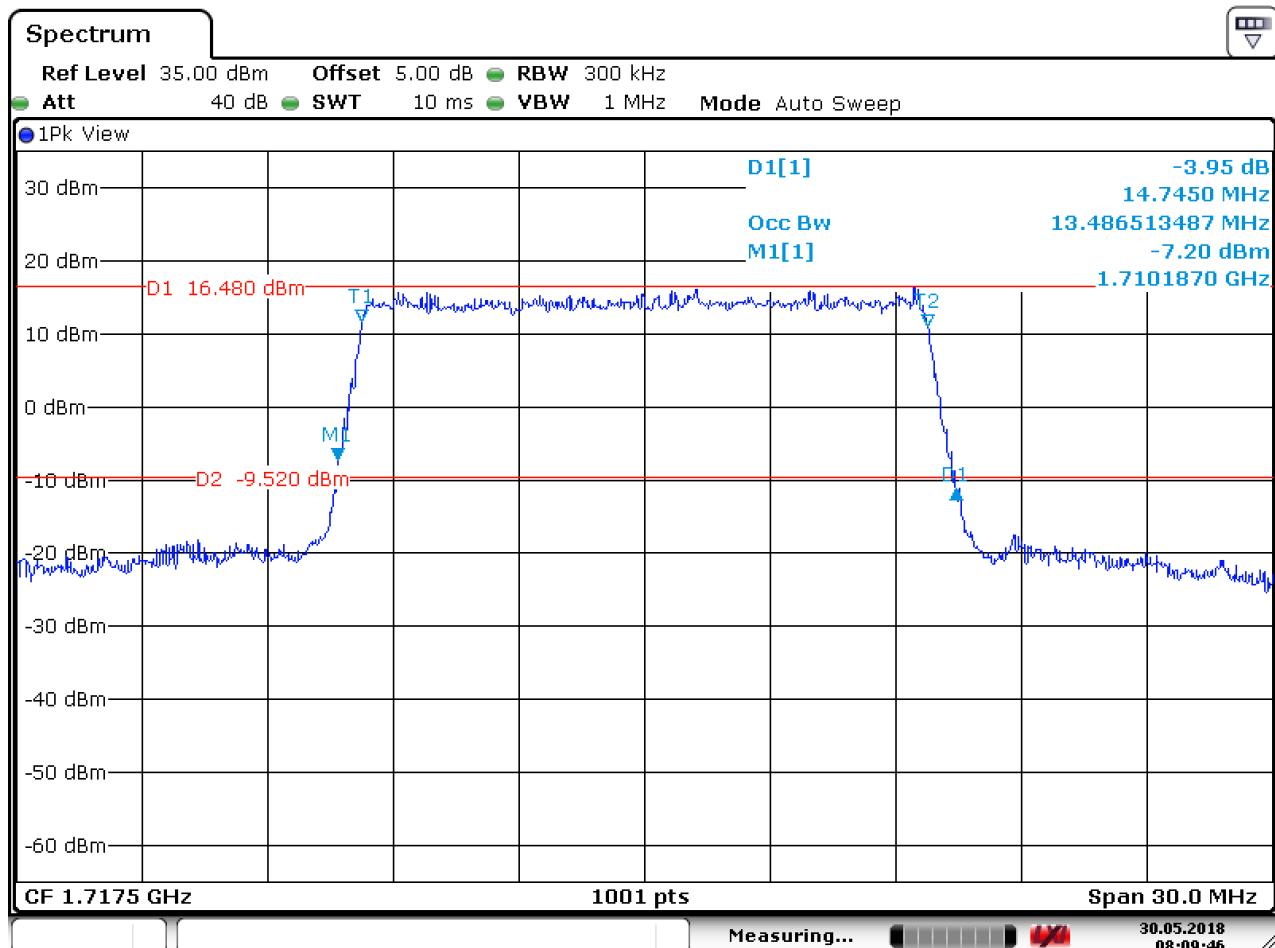
**4.1.1.9.2 Test Channel = MCH**

Date: 30.MAY.2018 08:07:24

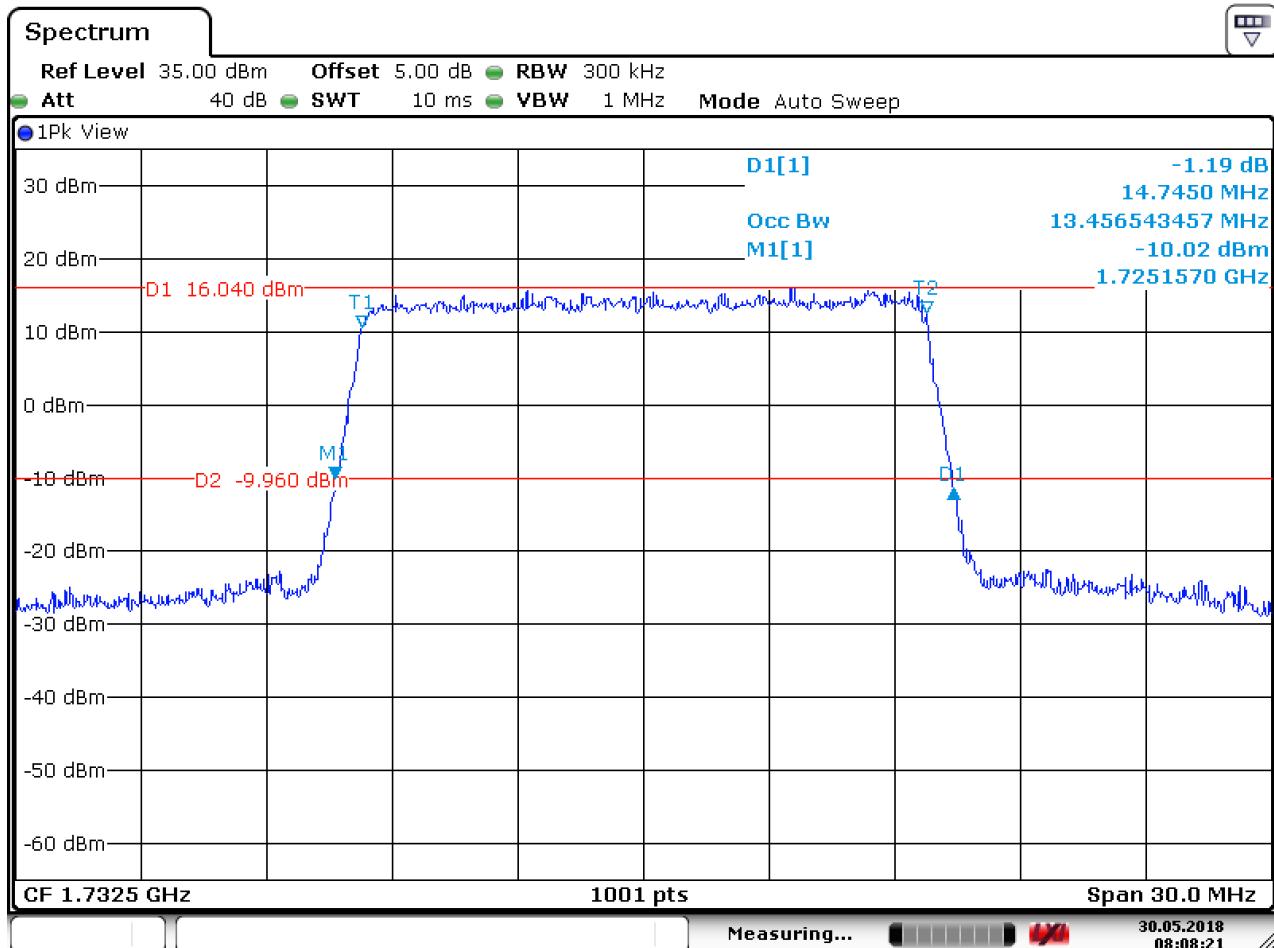
#### 4.1.1.9.3 Test Channel = HCH



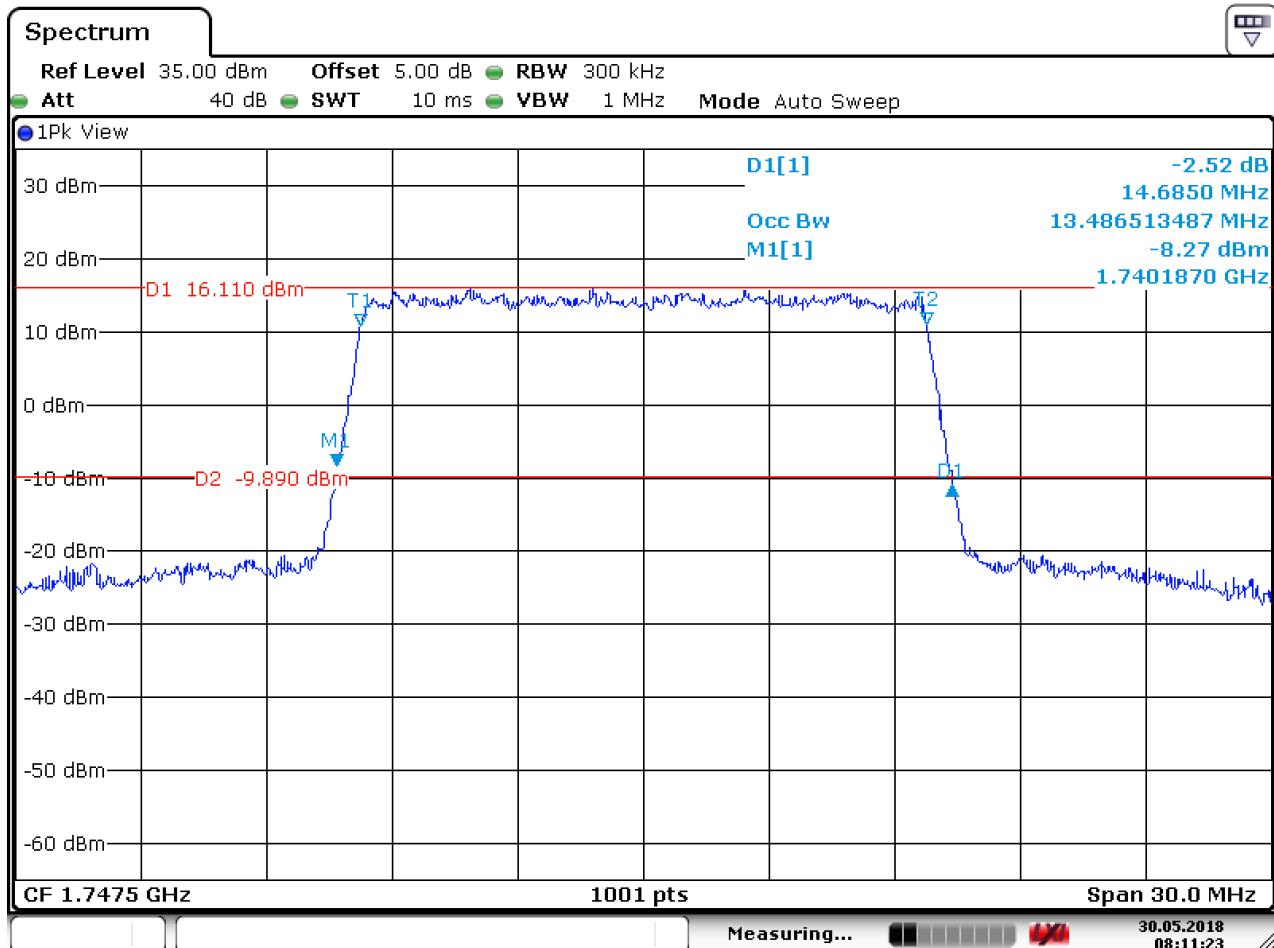
Date: 30.MAY.2018 08:12:18

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

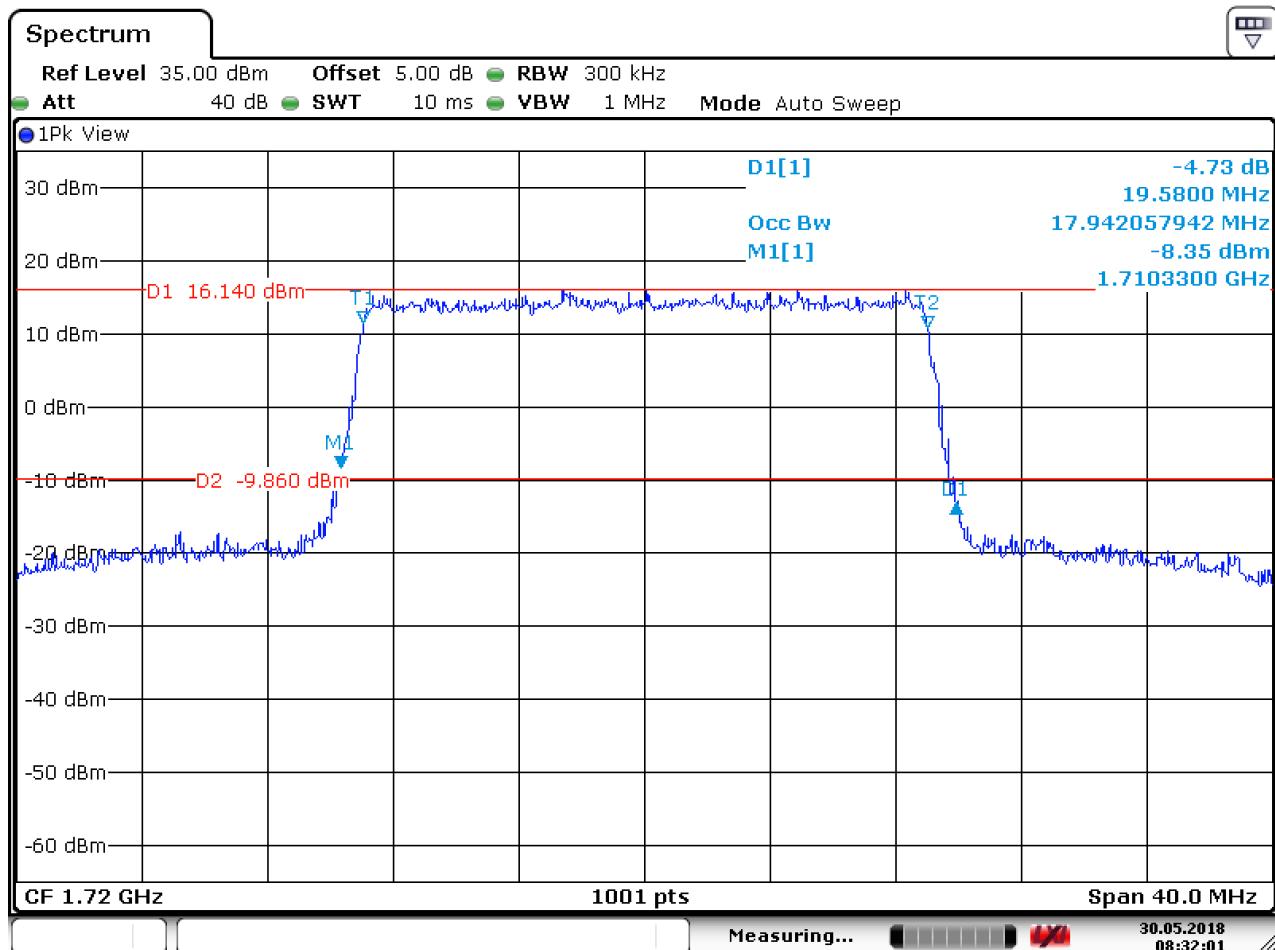
Date: 30.MAY.2018 08:09:47

**4.1.1.10.2 Test Channel = MCH**

Date: 30.MAY.2018 08:08:21

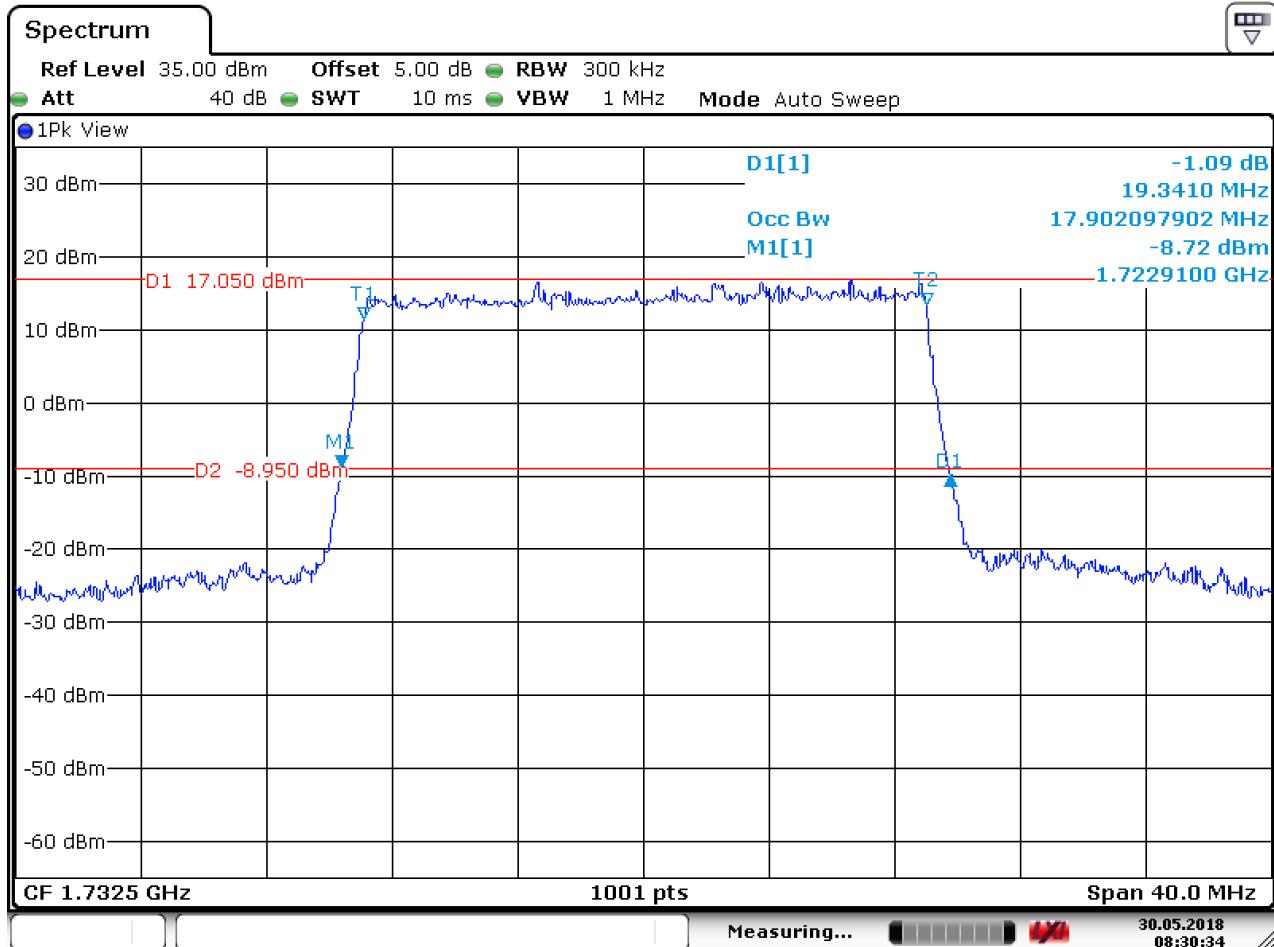
**4.1.1.10.3 Test Channel = HCH**

Date: 30.MAY.2018 08:11:24

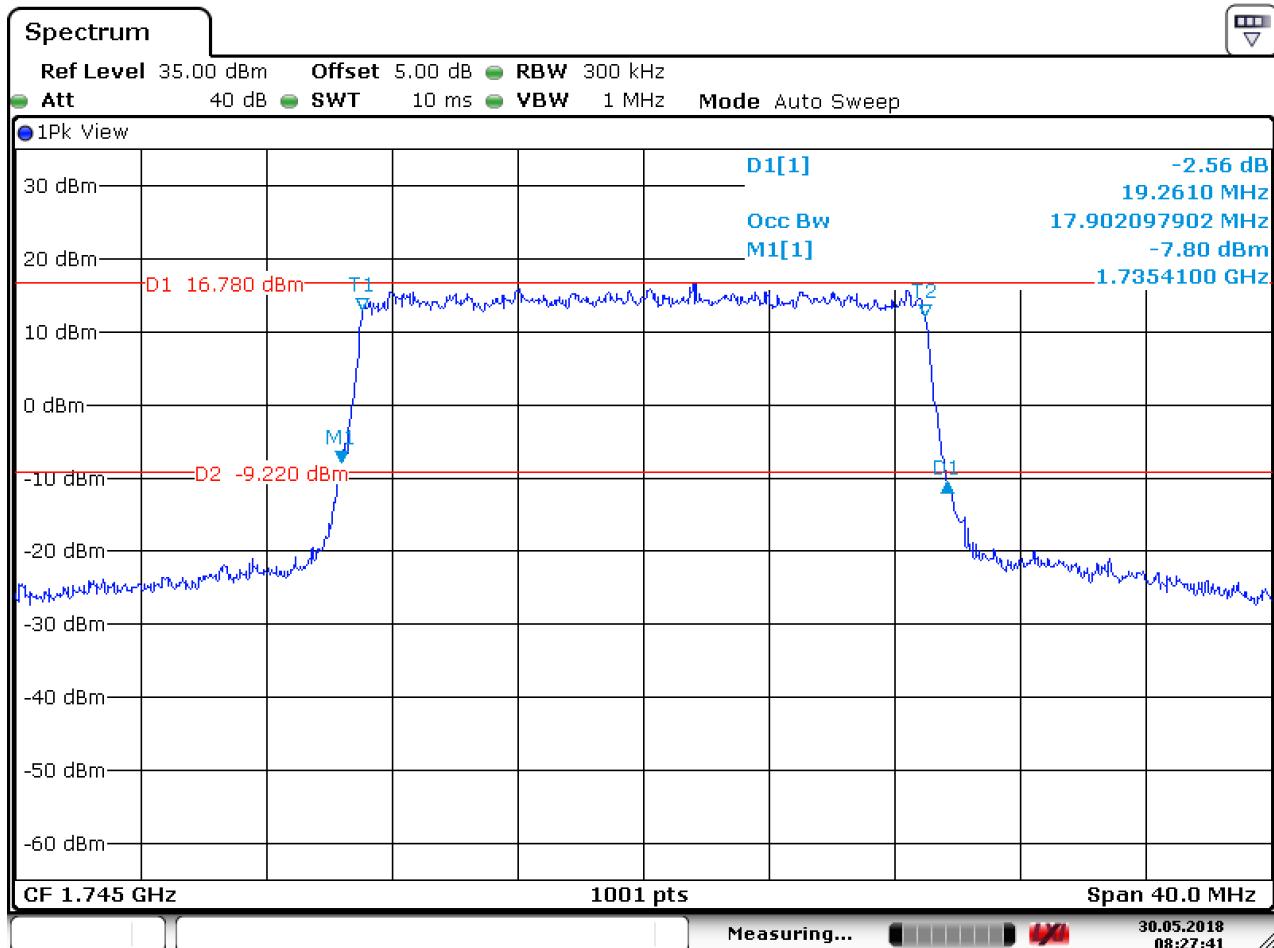
**4.1.1.11 Test Mode = LTE/TM1 20MHz****4.1.1.11.1 Test Channel = LCH**

Date: 30.MAY.2018 08:32:01

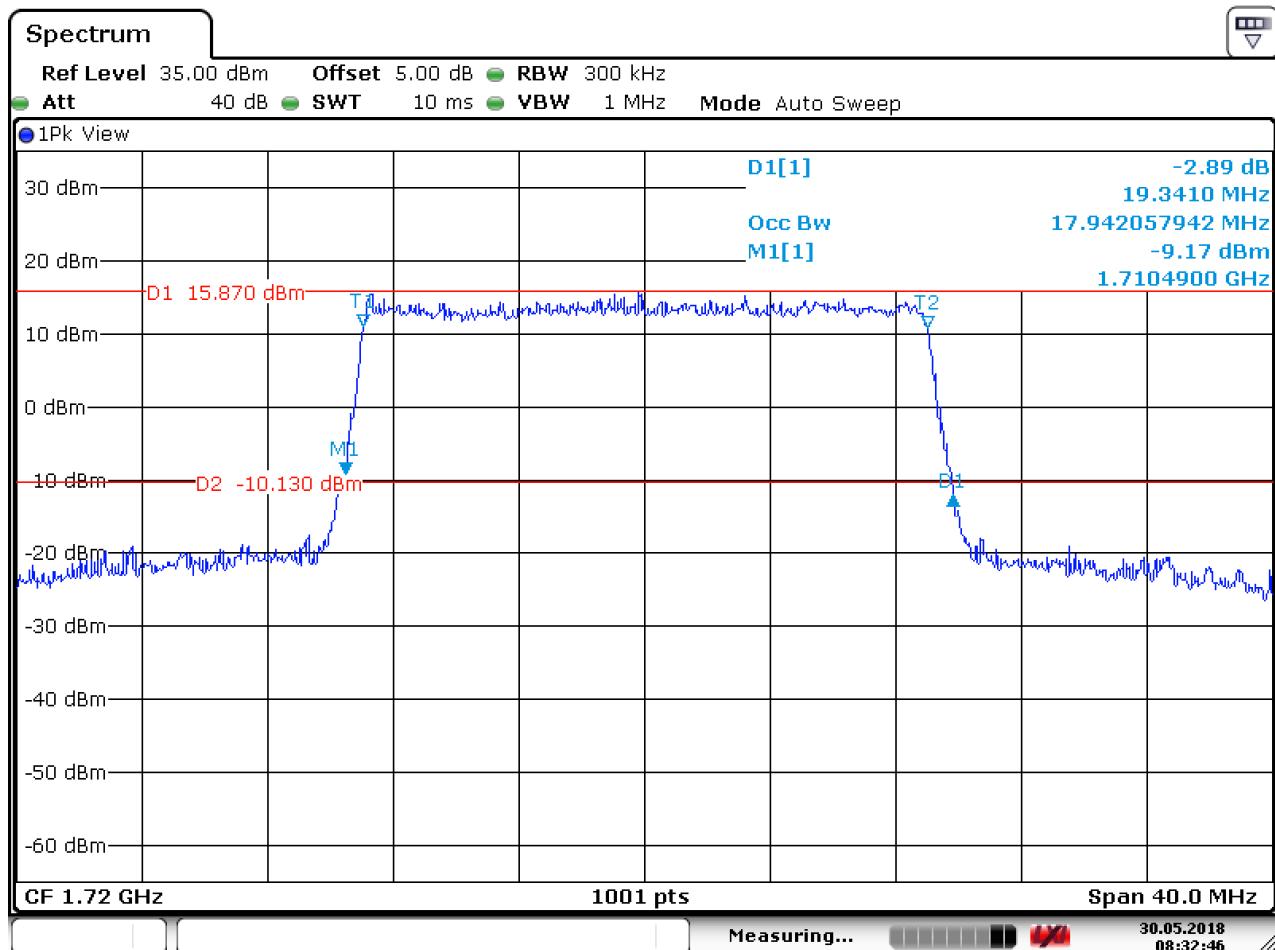
#### 4.1.1.11.2 Test Channel = MCH



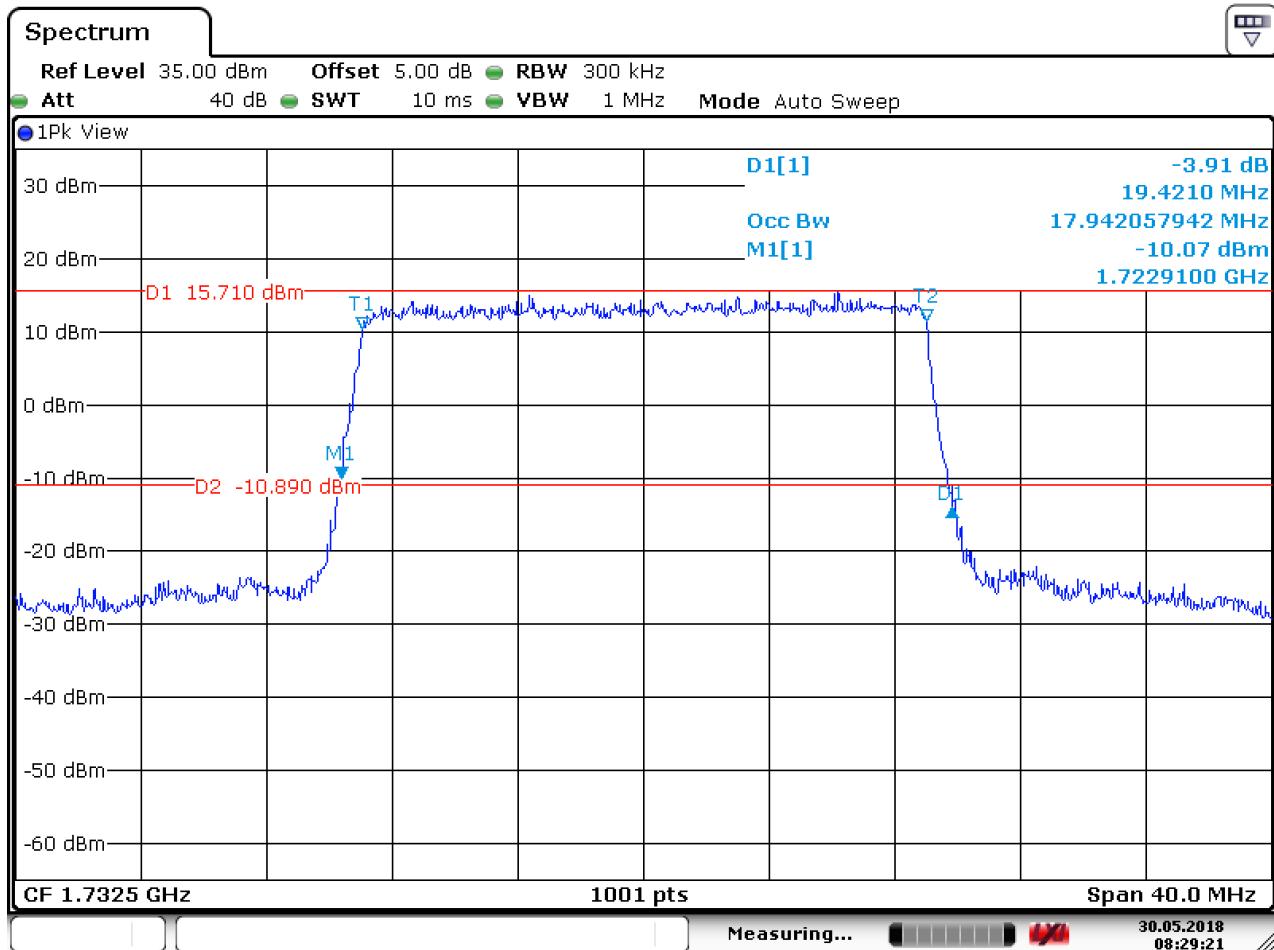
Date: 30.MAY.2018 08:30:34

**4.1.1.11.3 Test Channel = HCH**

Date: 30.MAY.2018 08:27:42

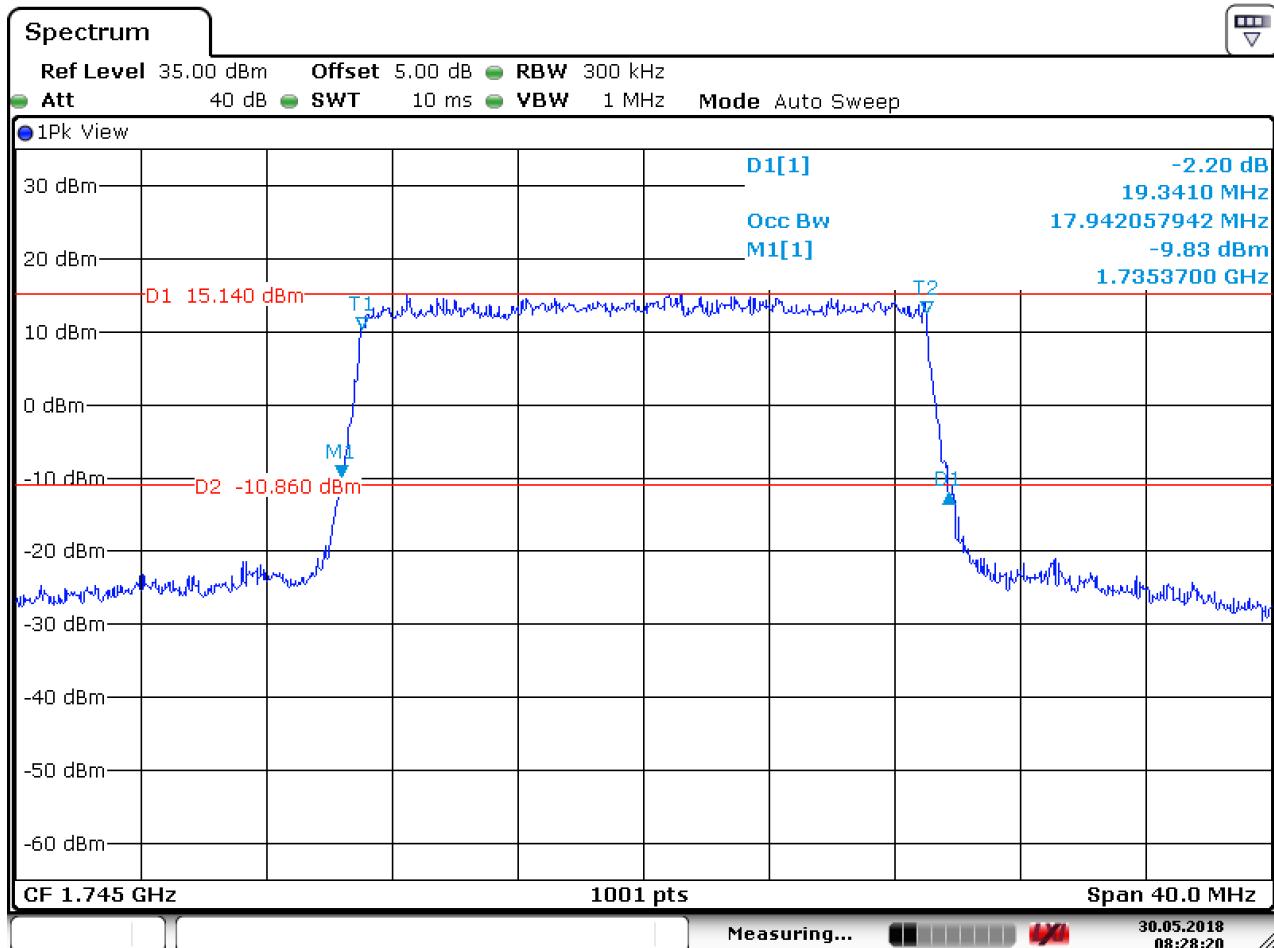
**4.1.1.12 Test Mode = LTE/TM2 20MHz****4.1.1.12.1 Test Channel = LCH**

Date: 30.MAY.2018 08:32:46

**4.1.1.12.2 Test Channel = MCH**

Date: 30.MAY.2018 08:29:21

#### 4.1.1.12.3 Test Channel = HCH



Date: 30.MAY.2018 08:28:21

## 5 Band Edges Compliance

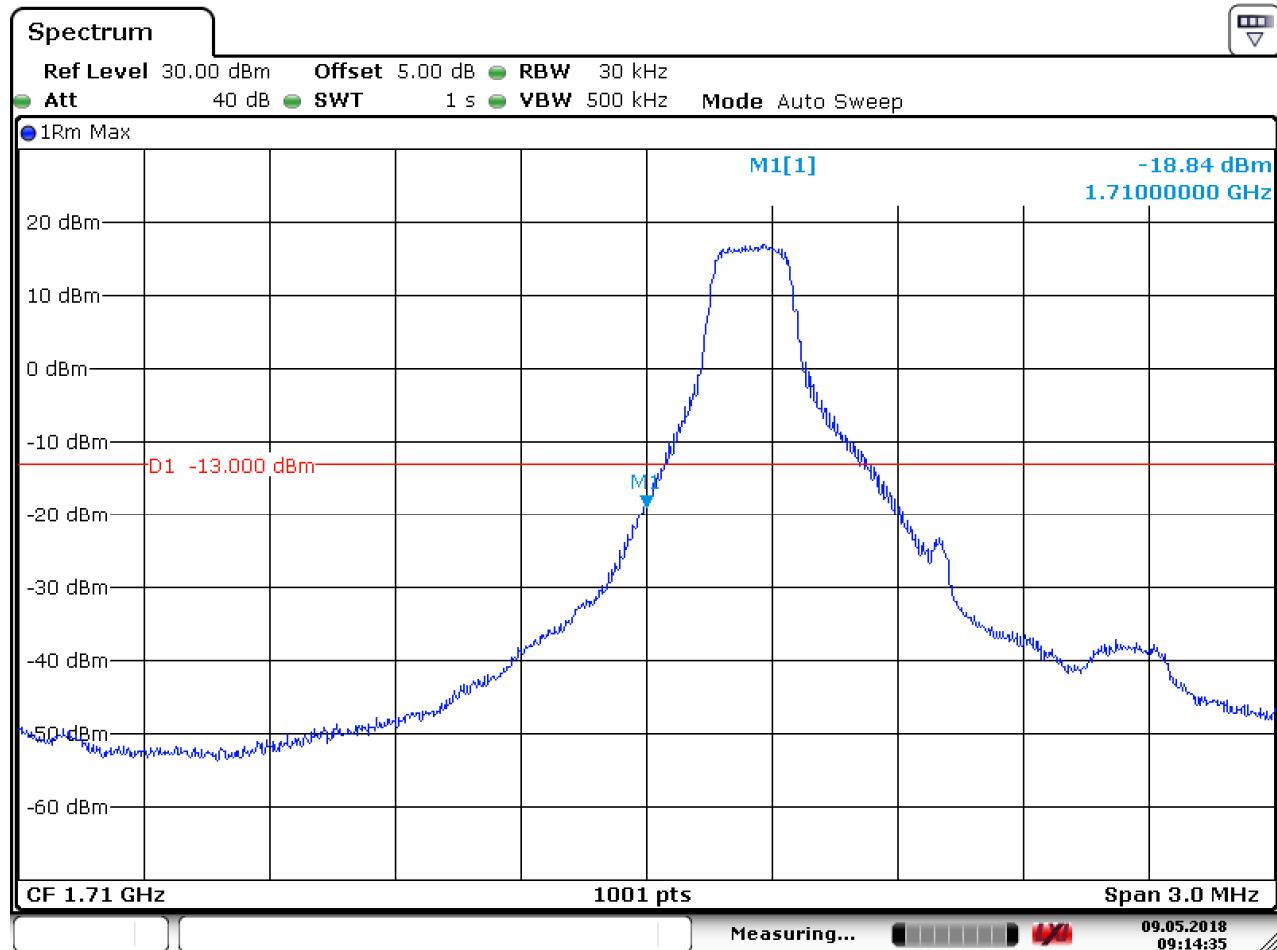
### 5.1 For LTE

#### 5.1.1 Test Band = LTE band4

##### 5.1.1.1 Test Mode = LTE/TM1 1.4MHz

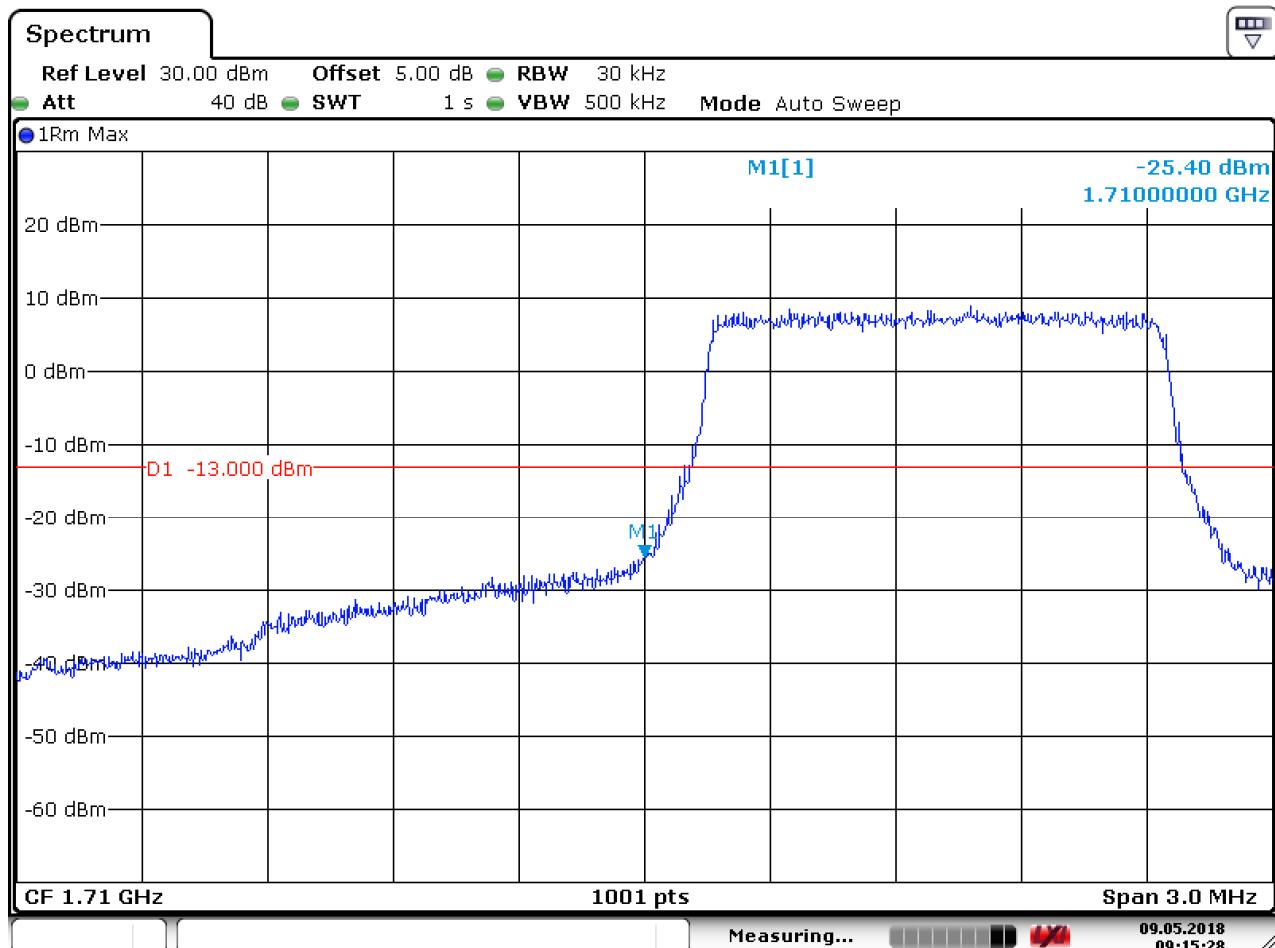
###### 5.1.1.1.1 Test Channel = LCH

###### 5.1.1.1.1.1 Test RB=1RB

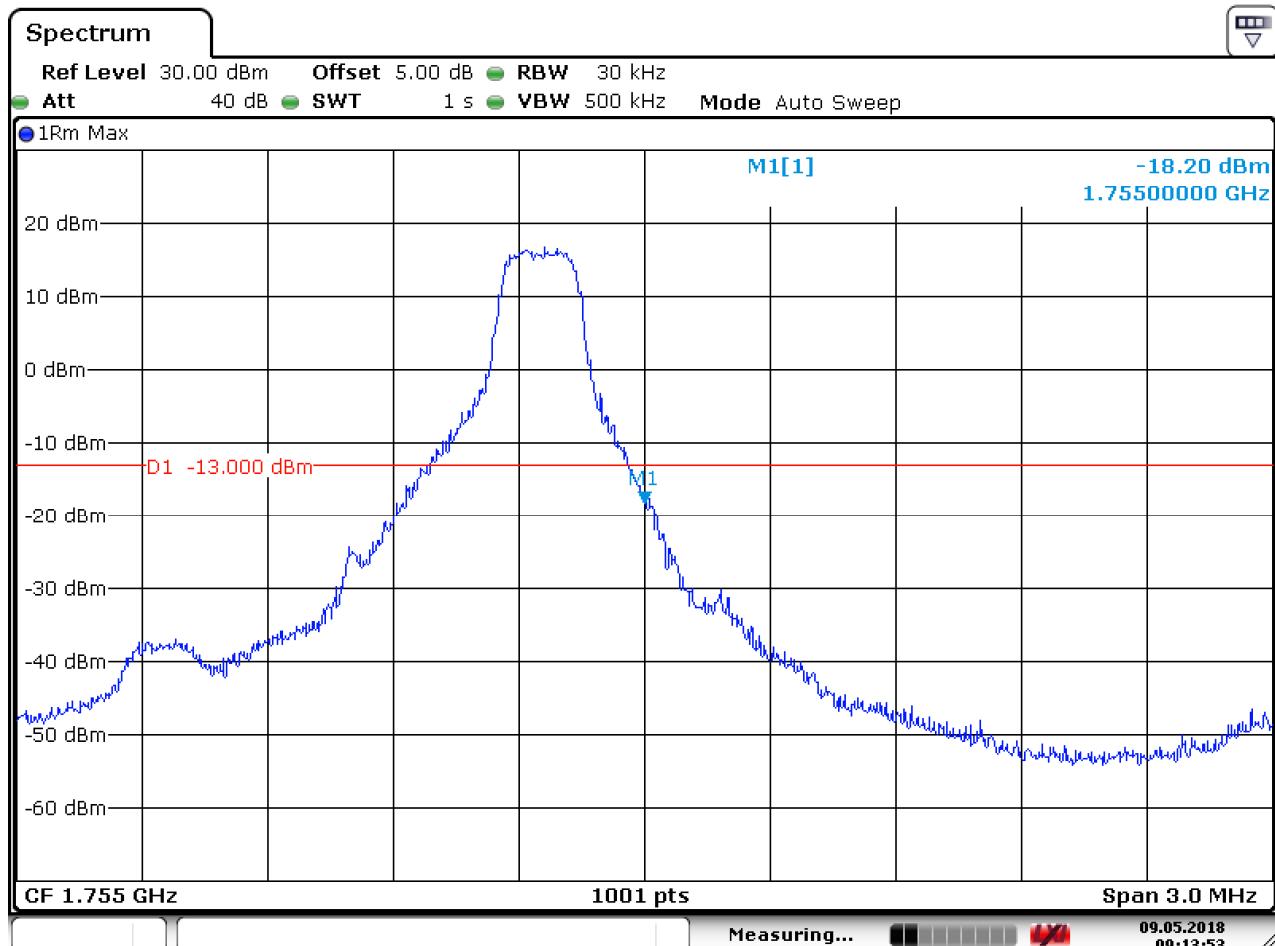


Date: 9.MAY.2018 09:14:35

#### 5.1.1.1.1.2 Test RB=6RB

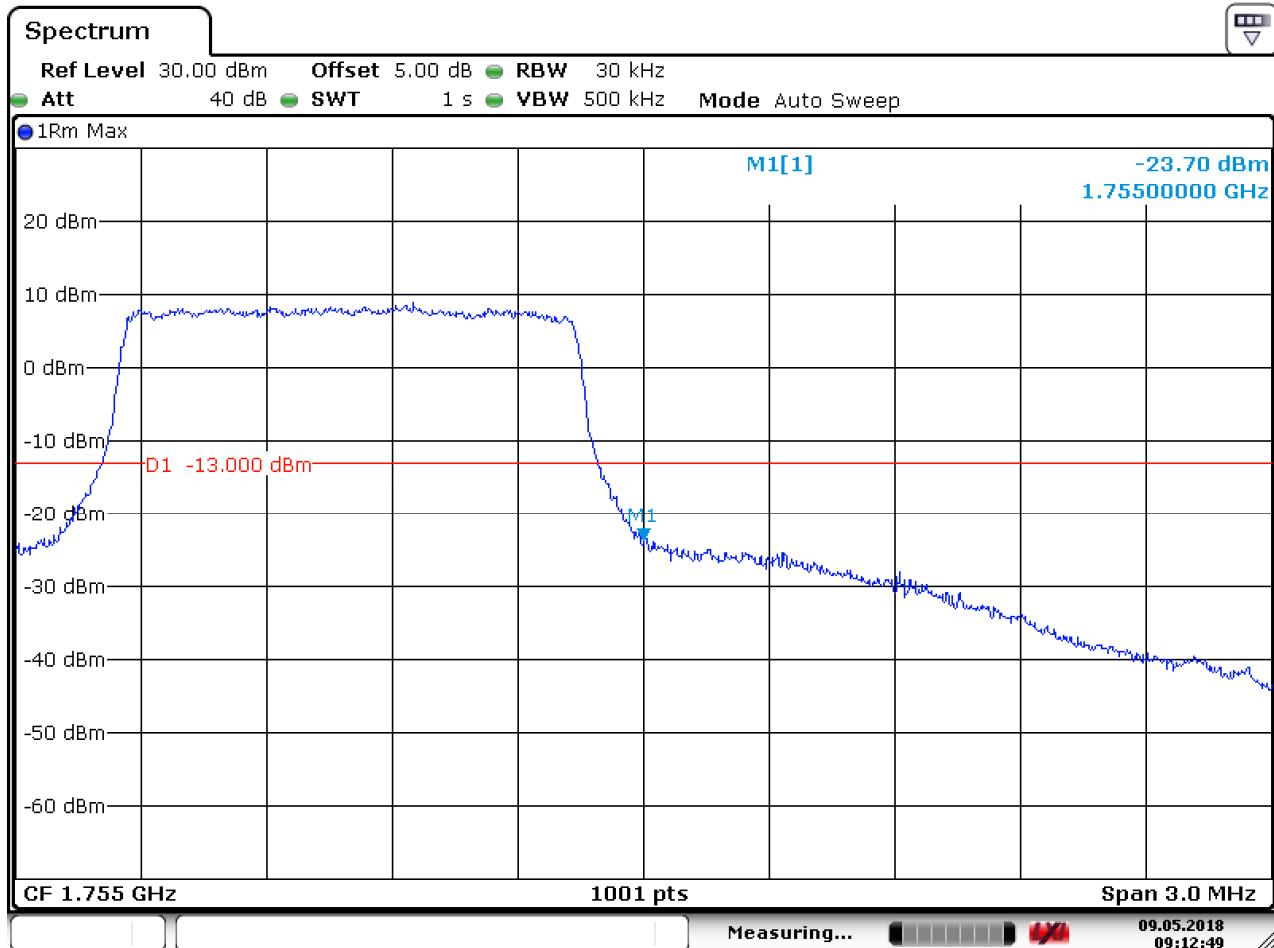


Date: 9.MAY.2018 09:15:29

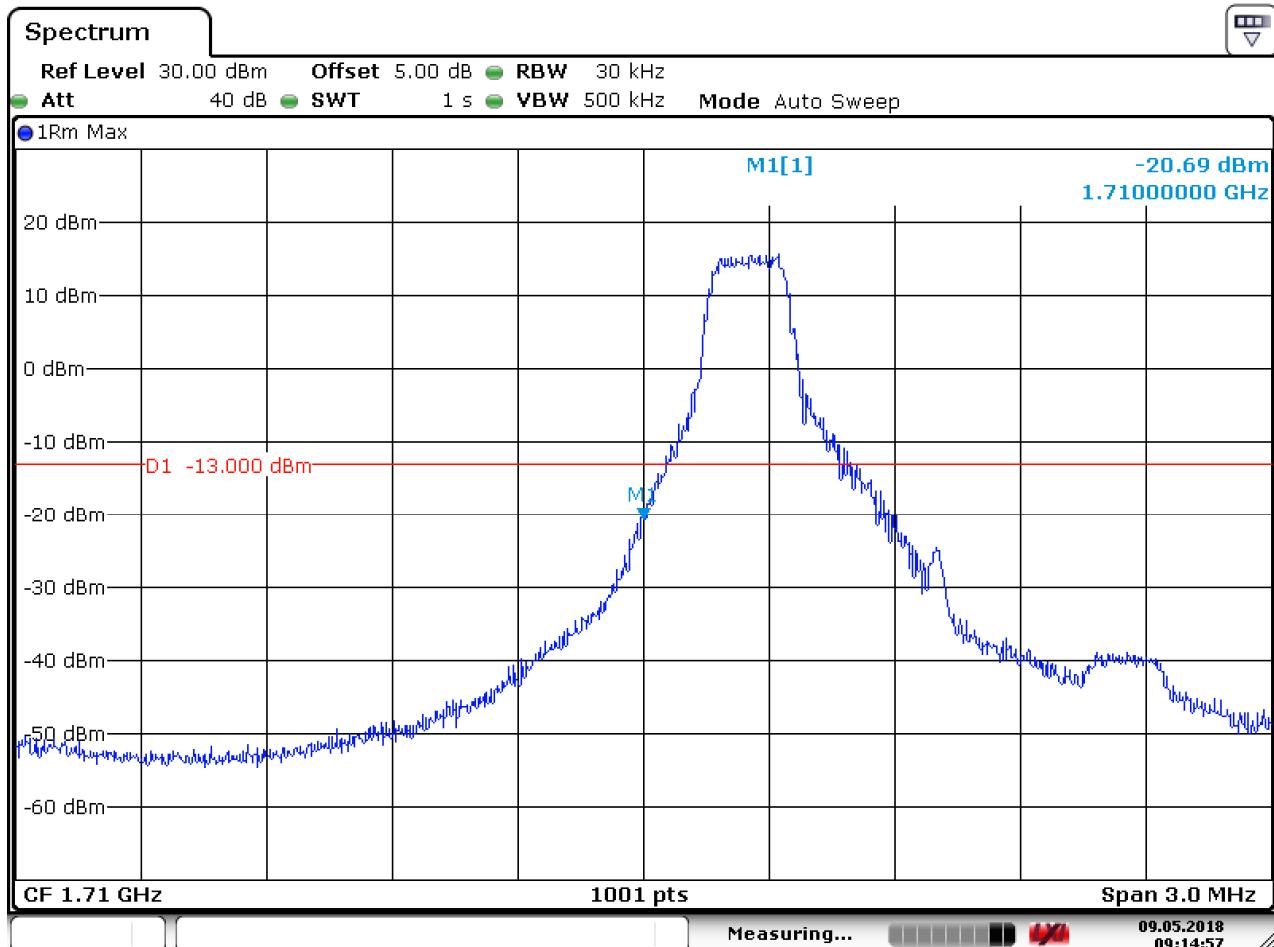
**5.1.1.1.2 Test Channel = HCH****5.1.1.1.2.1 Test RB=1RB**

Date: 9.MAY.2018 09:13:53

## 5.1.1.1.2.2 Test RB=6RB

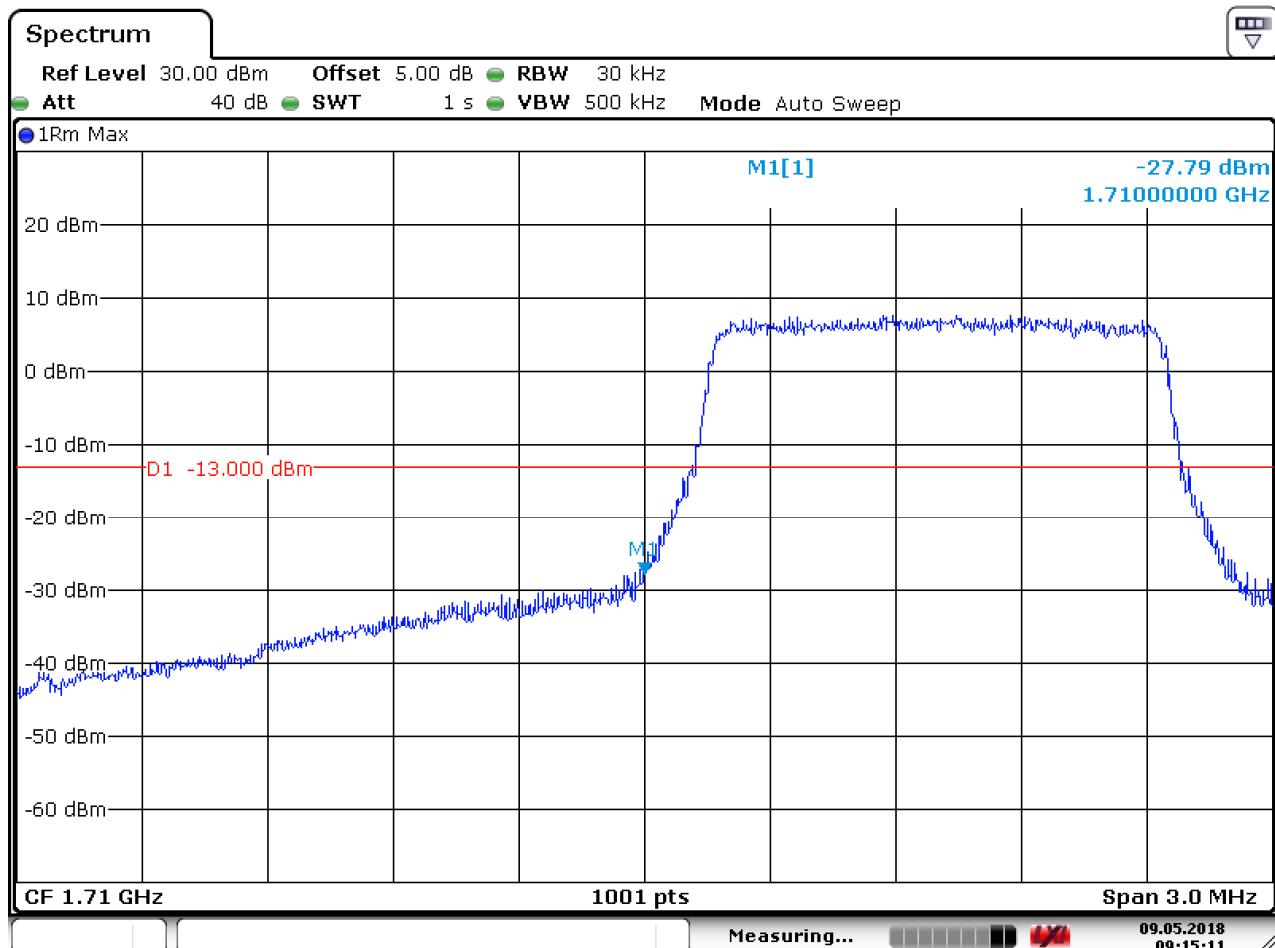


Date: 9.MAY.2018 09:12:50

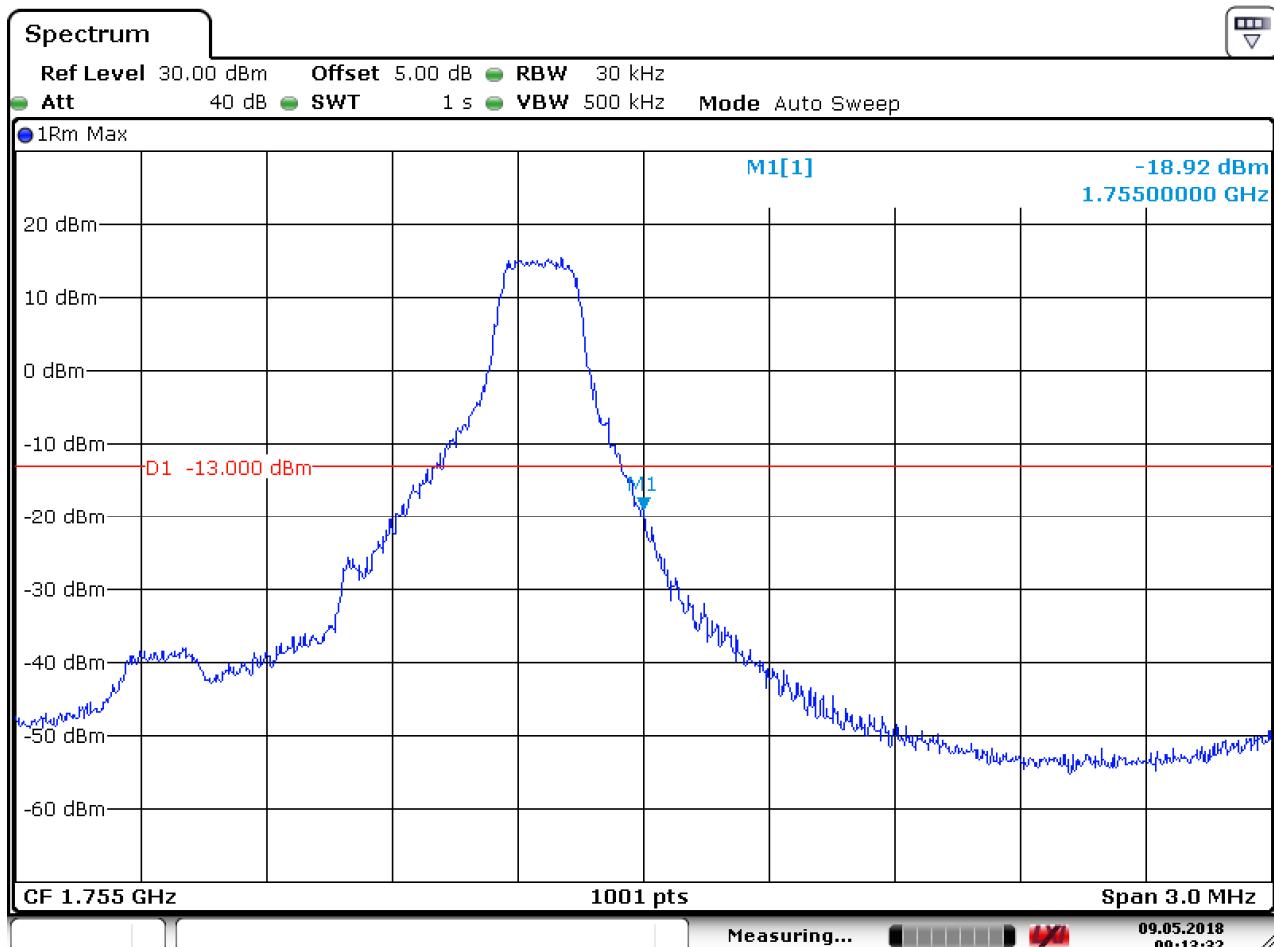
**5.1.1.2 Test Mode = LTE/TM2 1.4MHz****5.1.1.2.1 Test Channel = LCH****5.1.1.2.1.1 Test RB=1RB**

Date: 9.MAY.2018 09:14:58

#### 5.1.1.2.1.2 Test RB=6RB

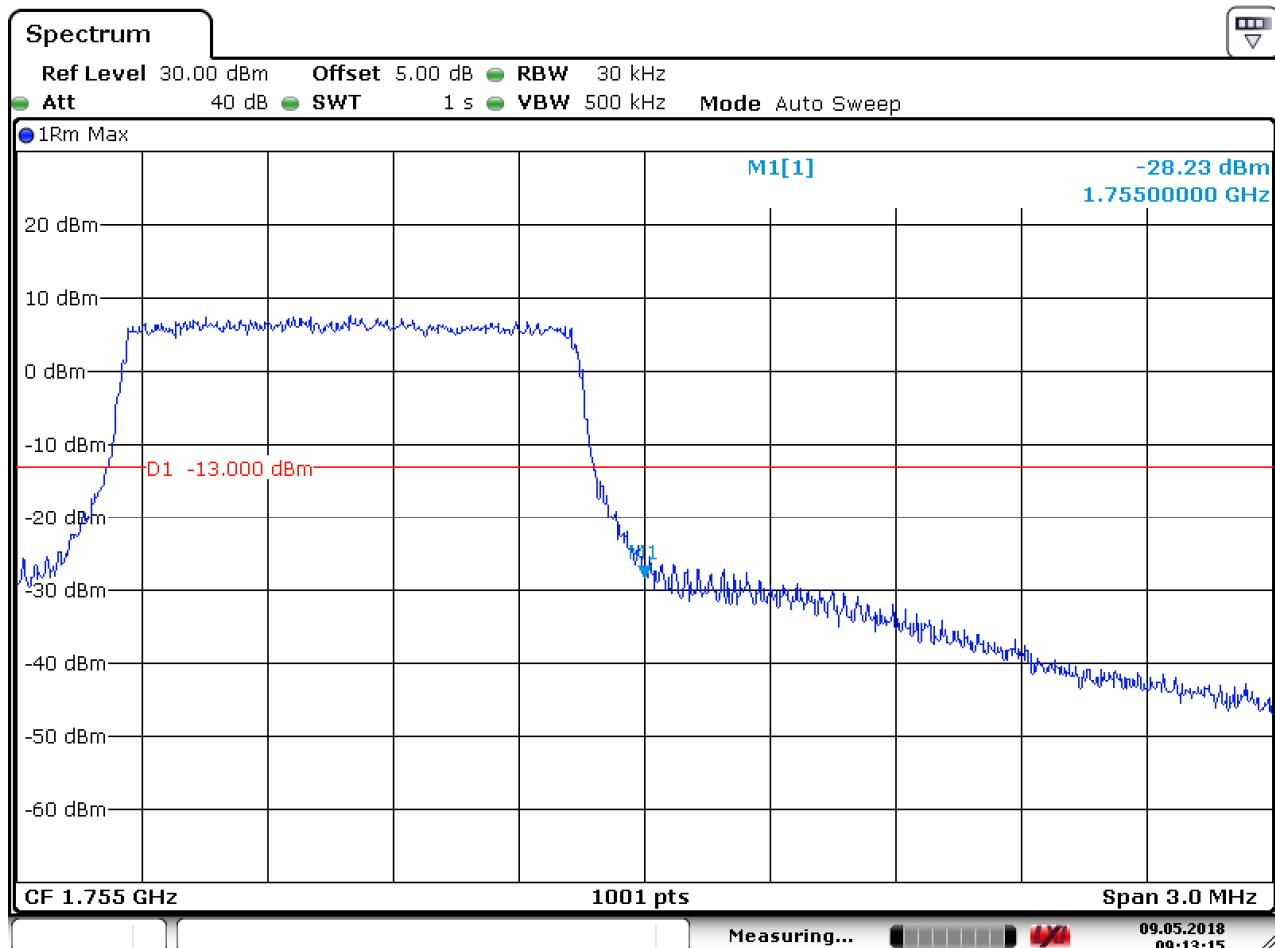


Date: 9.MAY.2018 09:15:12

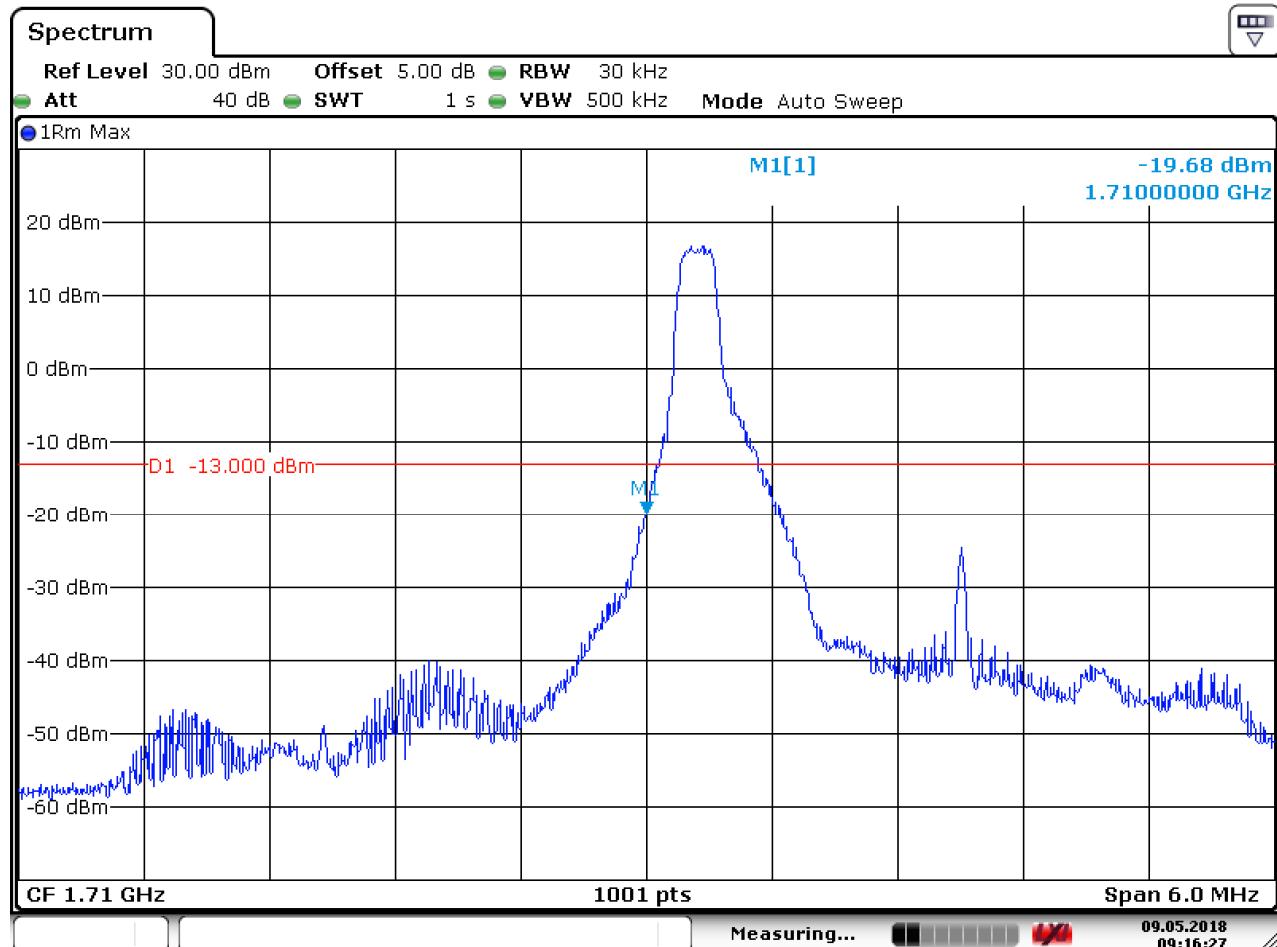
**5.1.1.2.2 Test Channel = HCH****5.1.1.2.2.1 Test RB=1RB**

Date: 9.MAY.2018 09:13:32

#### 5.1.1.2.2.2 Test RB=6RB

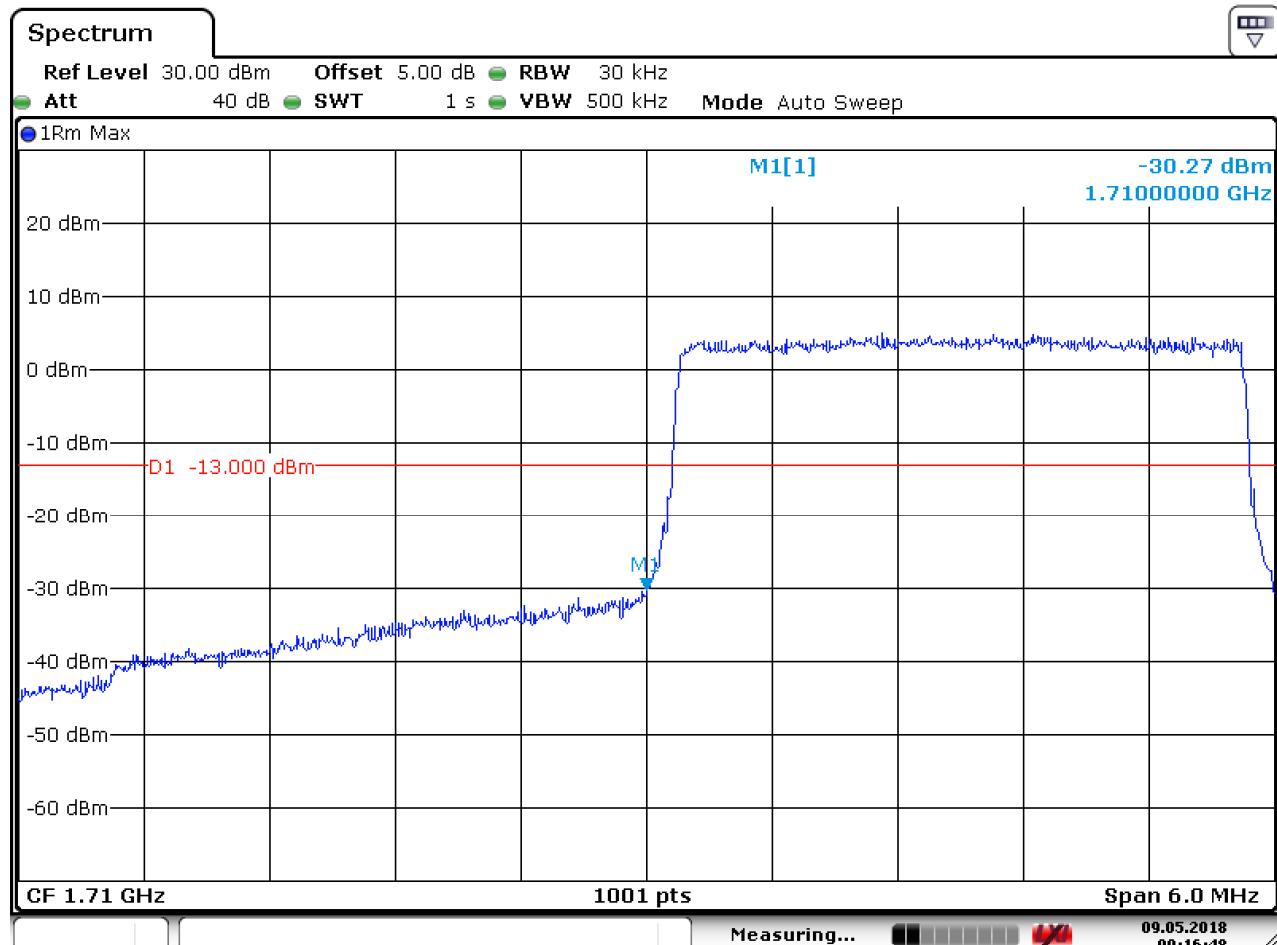


Date: 9.MAY.2018 09:13:15

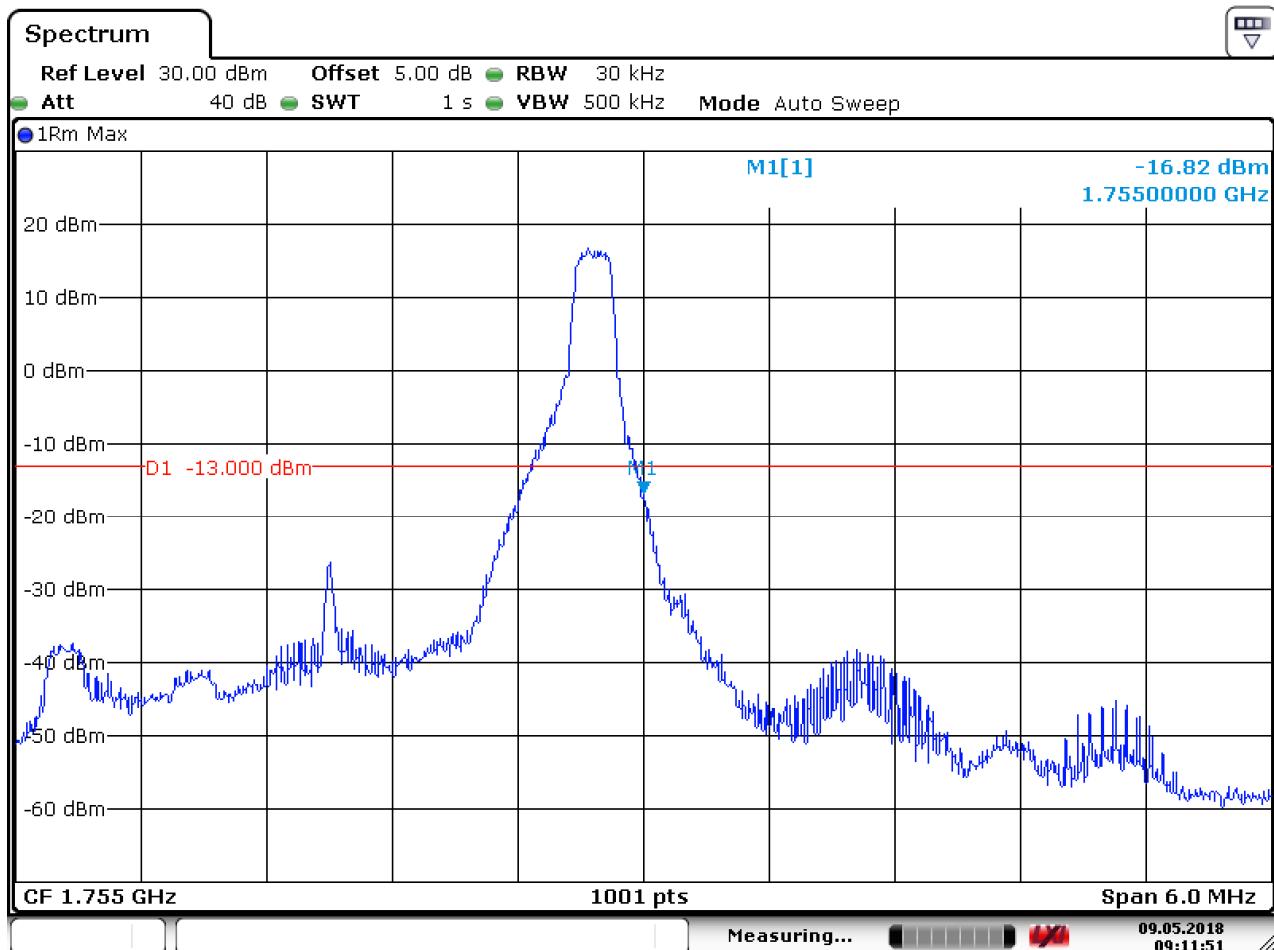
**5.1.1.3 Test Mode = LTE/TM1 3MHz****5.1.1.3.1 Test Channel = LCH****5.1.1.3.1.1 Test RB=1RB**

Date: 9.MAY.2018 09:16:27

## 5.1.1.3.1.2 Test RB=15RB

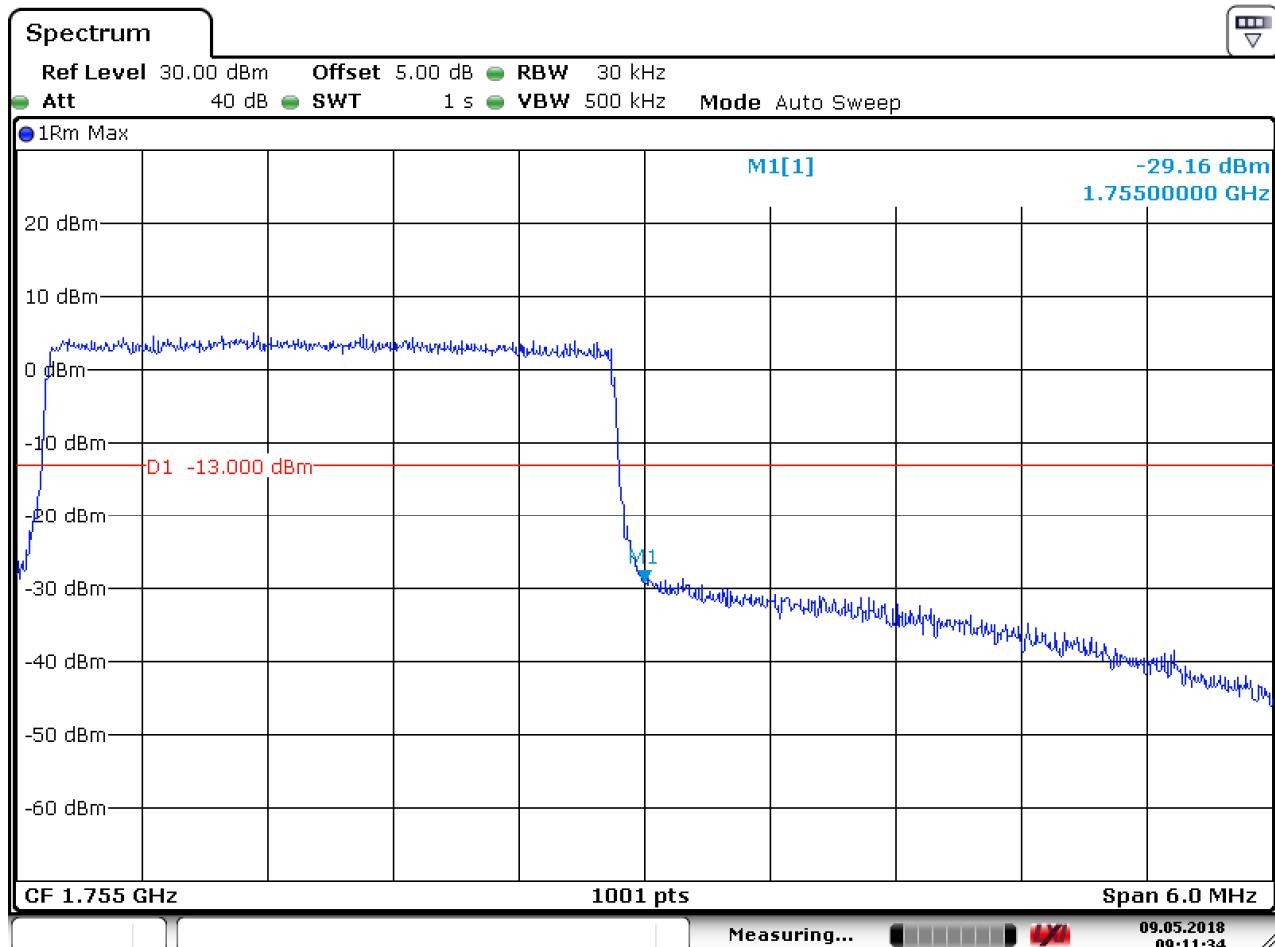


Date: 9.MAY.2018 09:16:48

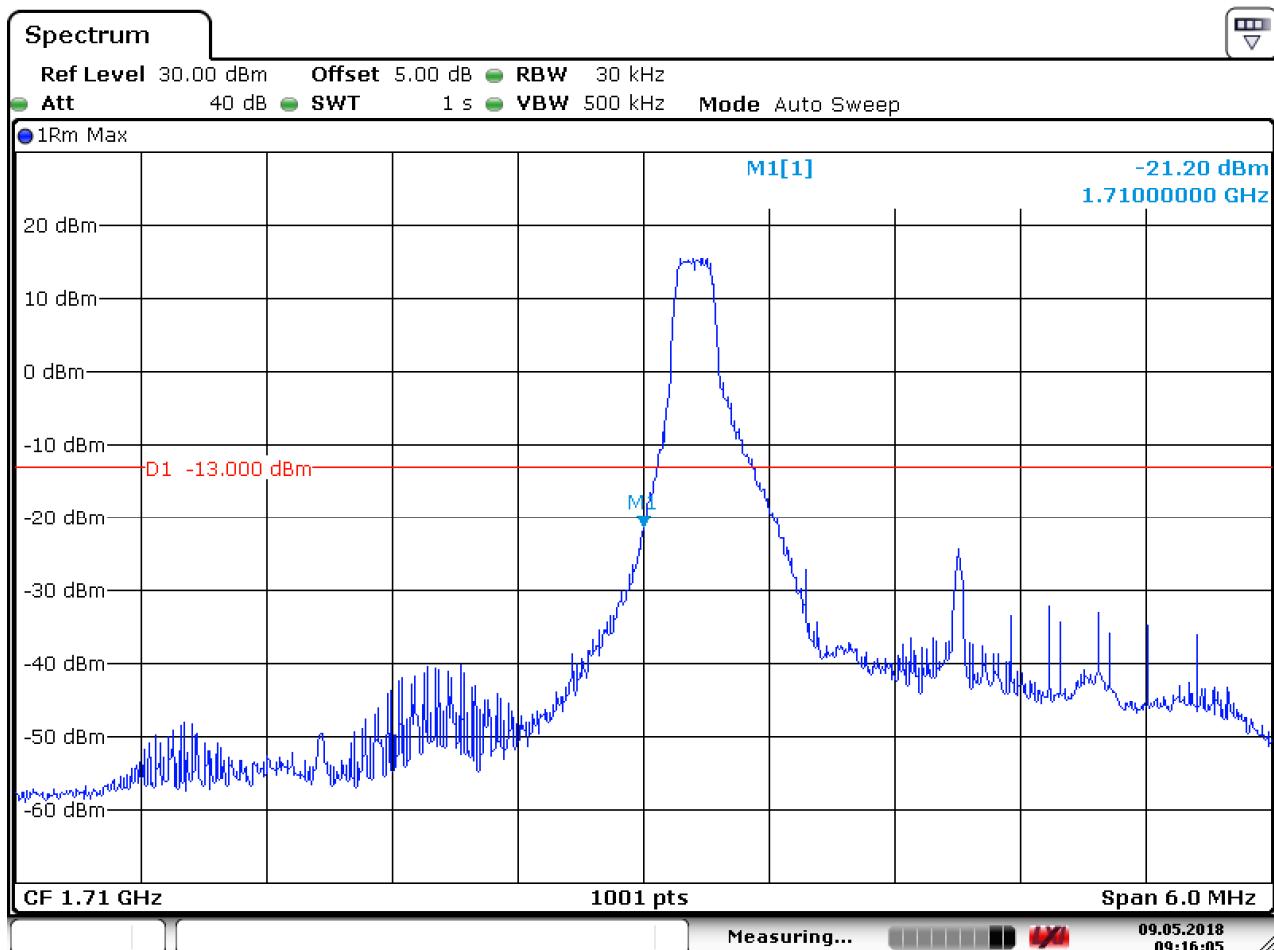
**5.1.1.3.2 Test Channel = HCH****5.1.1.3.2.1 Test RB=1RB**

Date: 9.MAY.2018 09:11:52

## 5.1.1.3.2.2 Test RB=15RB

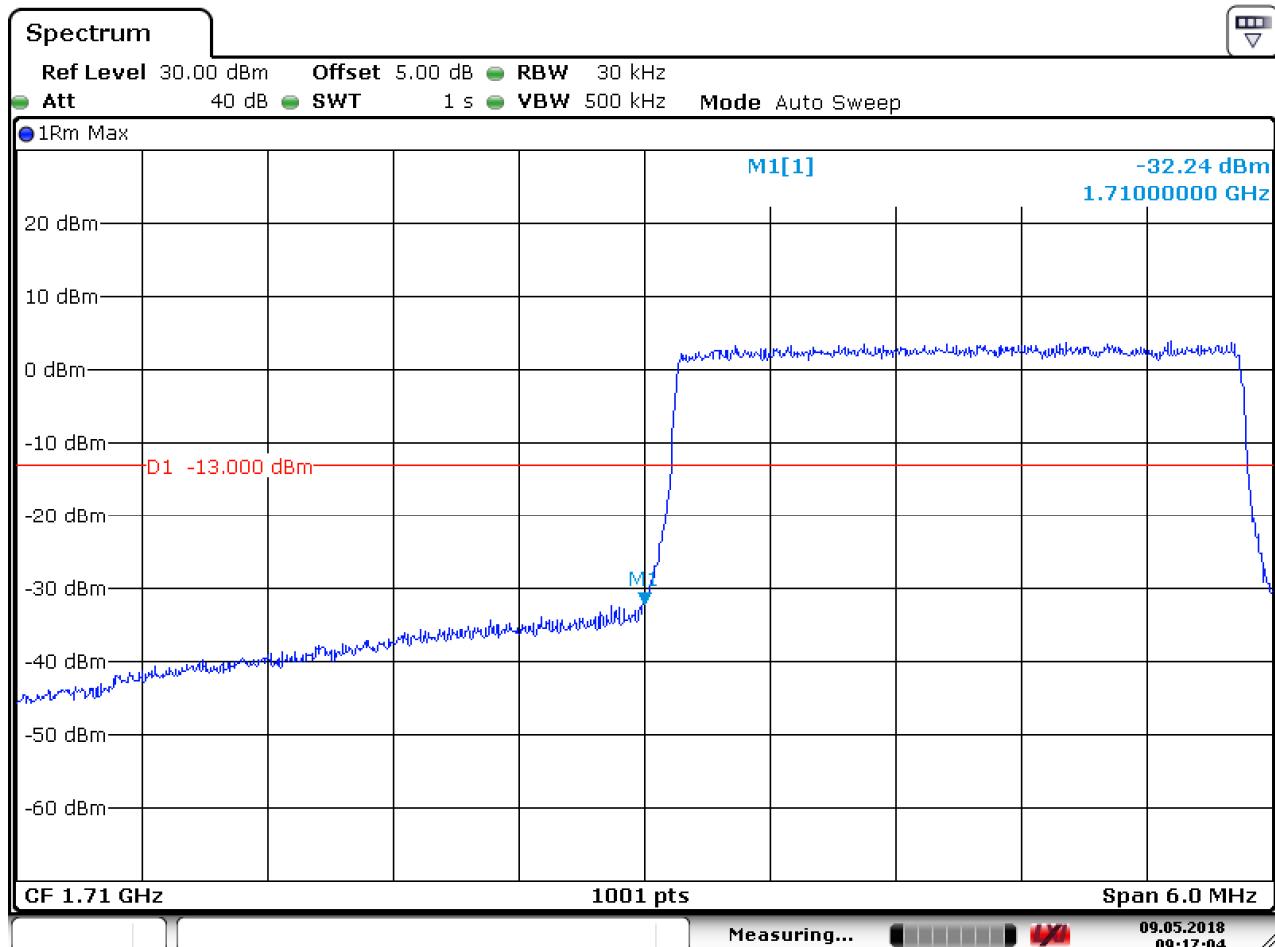


Date: 9.MAY.2018 09:11:34

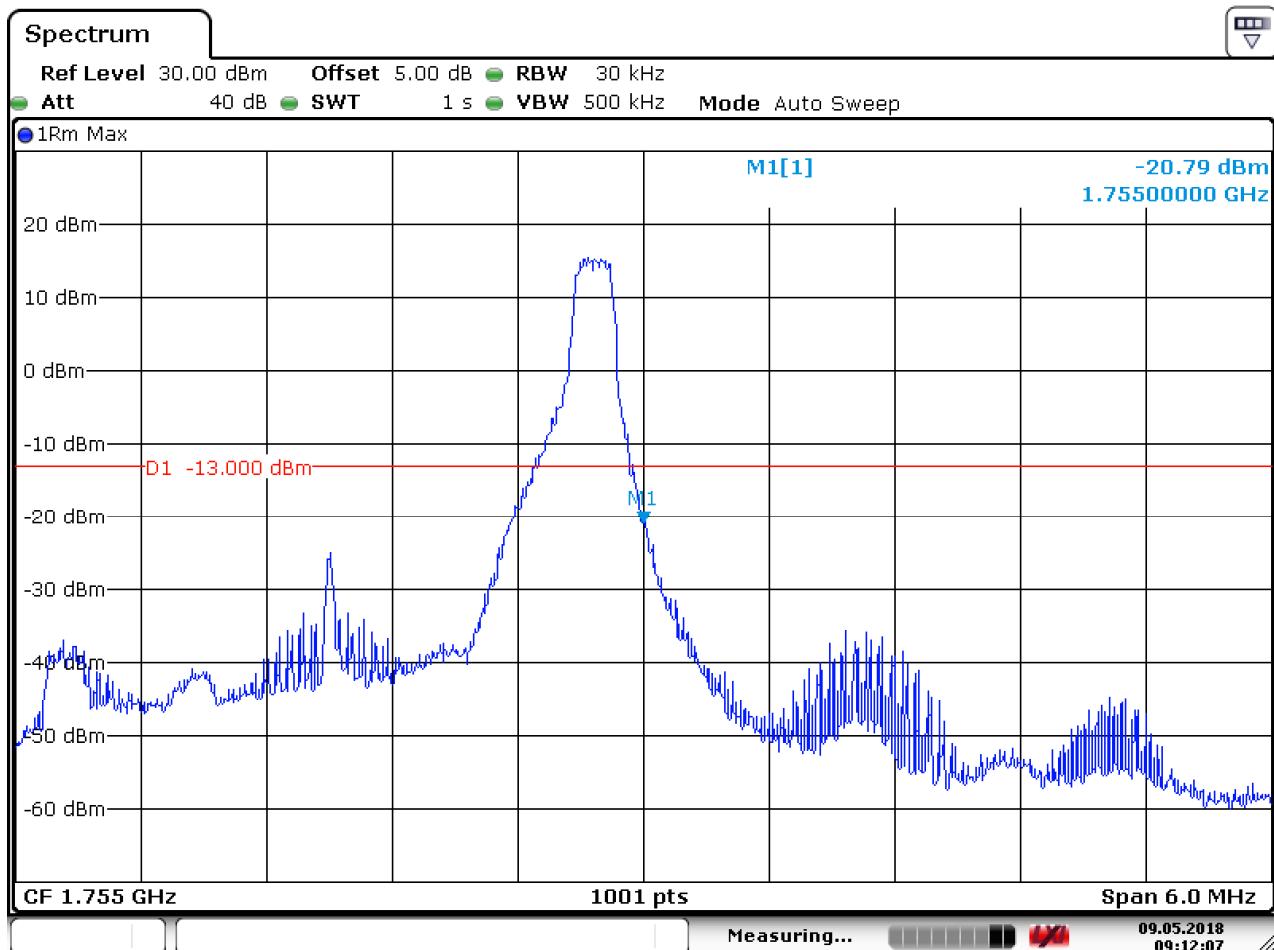
**5.1.1.4 Test Mode = LTE/TM2 3MHz****5.1.1.4.1 Test Channel = LCH****5.1.1.4.1.1 Test RB=1RB**

Date: 9.MAY.2018 09:16:05

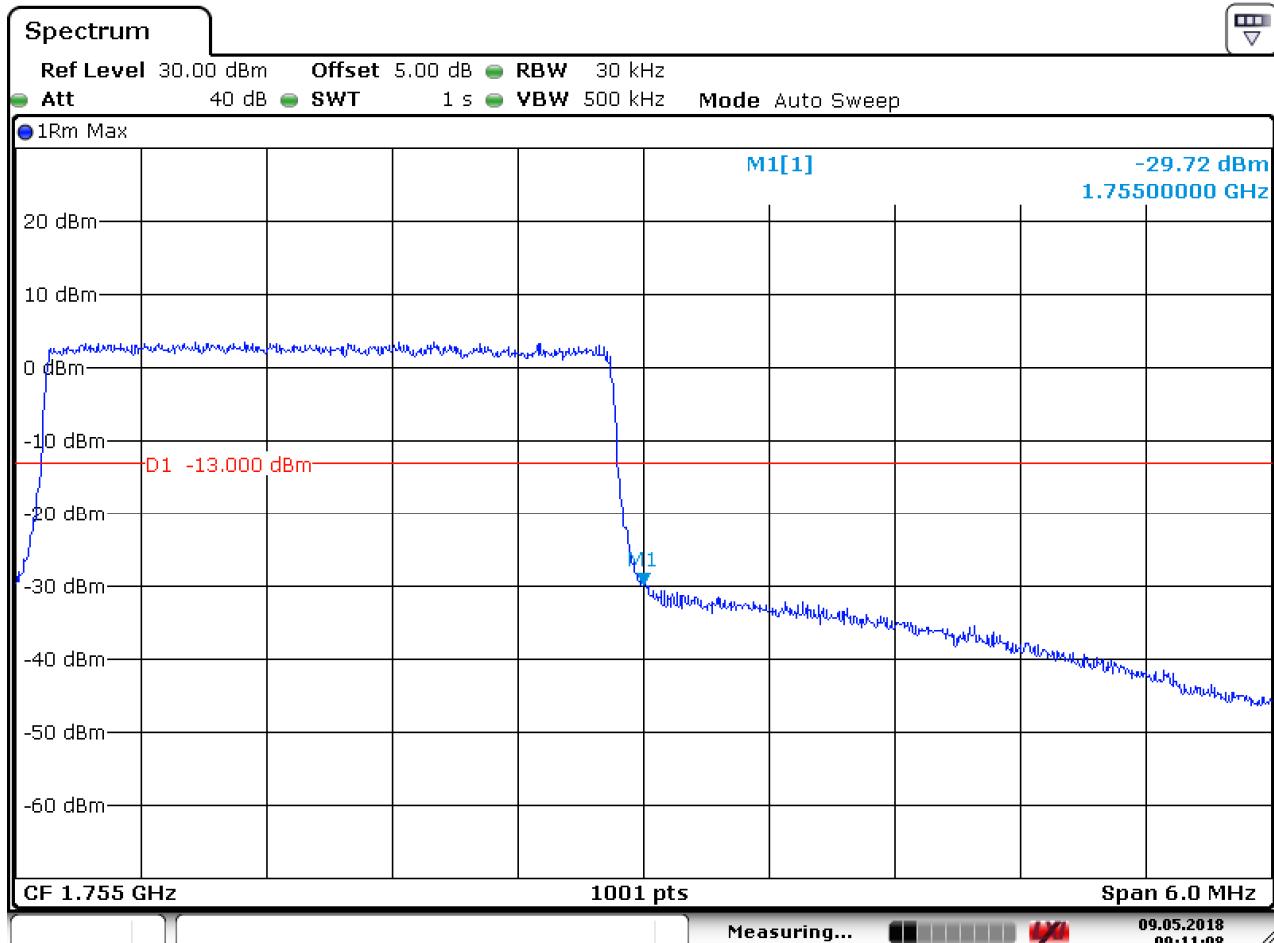
## 5.1.1.4.1.2 Test RB=15RB



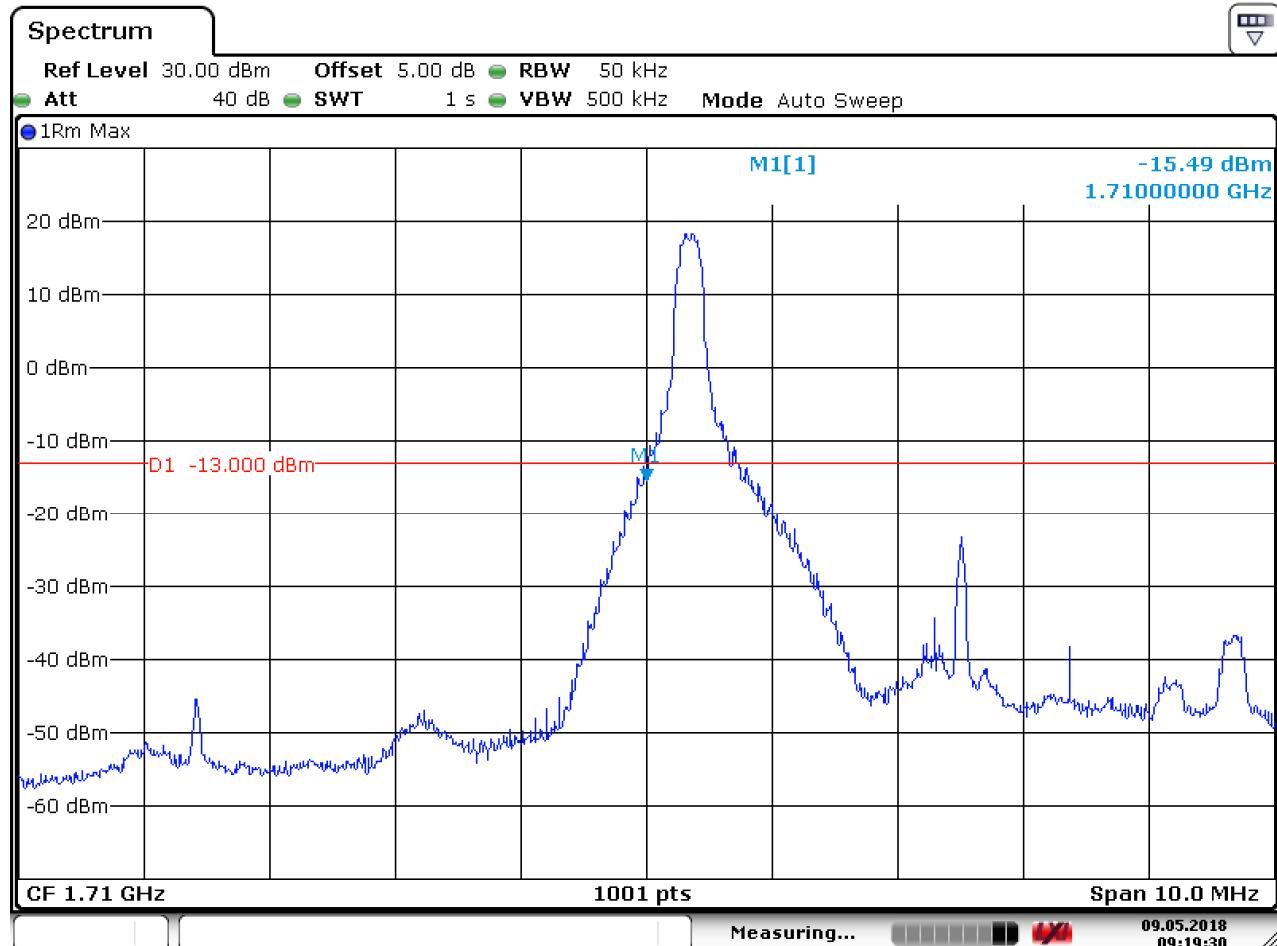
Date: 9.MAY.2018 09:17:04

**5.1.1.4.2 Test Channel = HCH****5.1.1.4.2.1 Test RB=1RB**

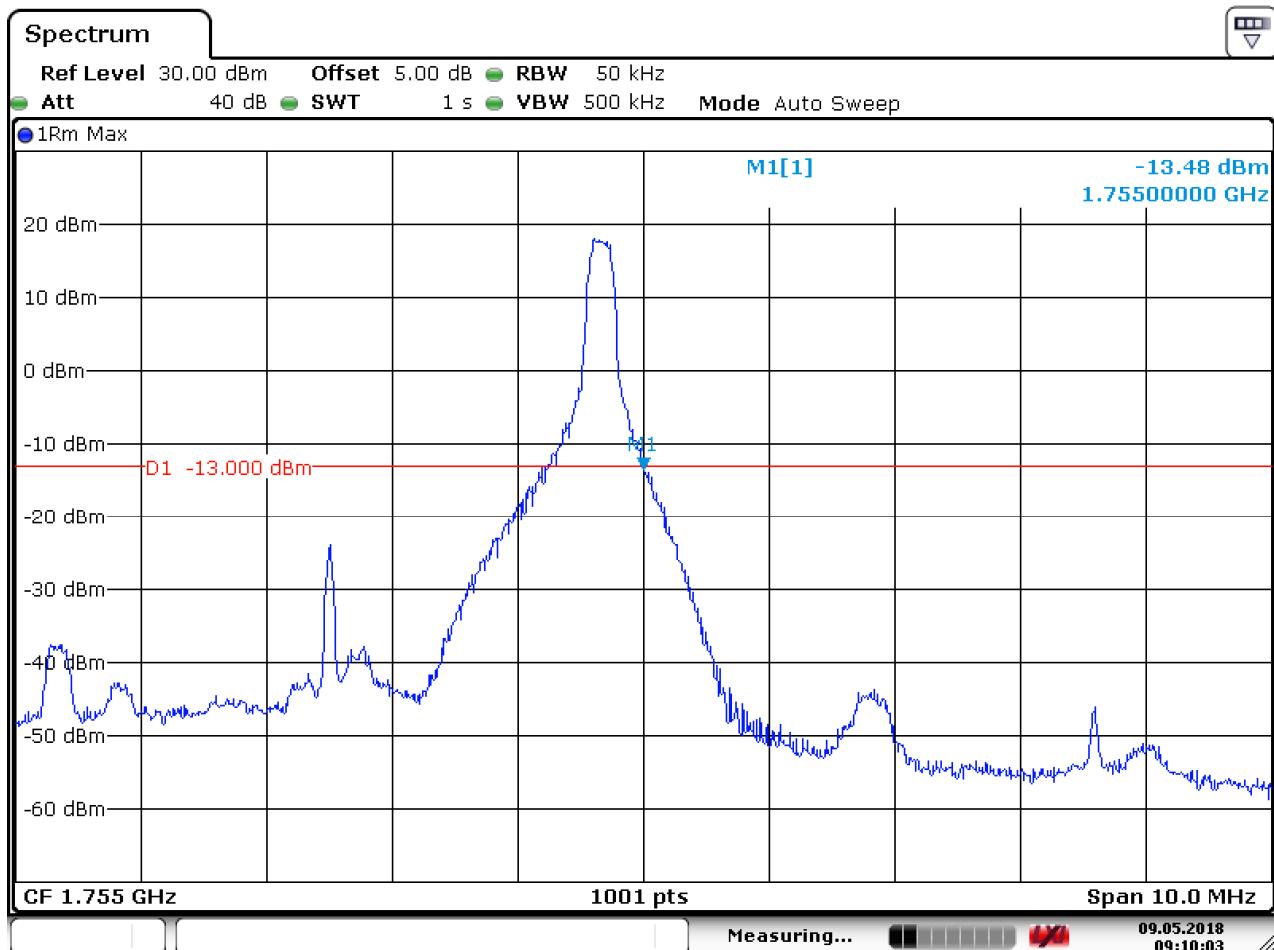
Date: 9.MAY.2018 09:12:07

**5.1.1.4.3 Test RB=15RB**

Date: 9.MAY.2018 09:11:09

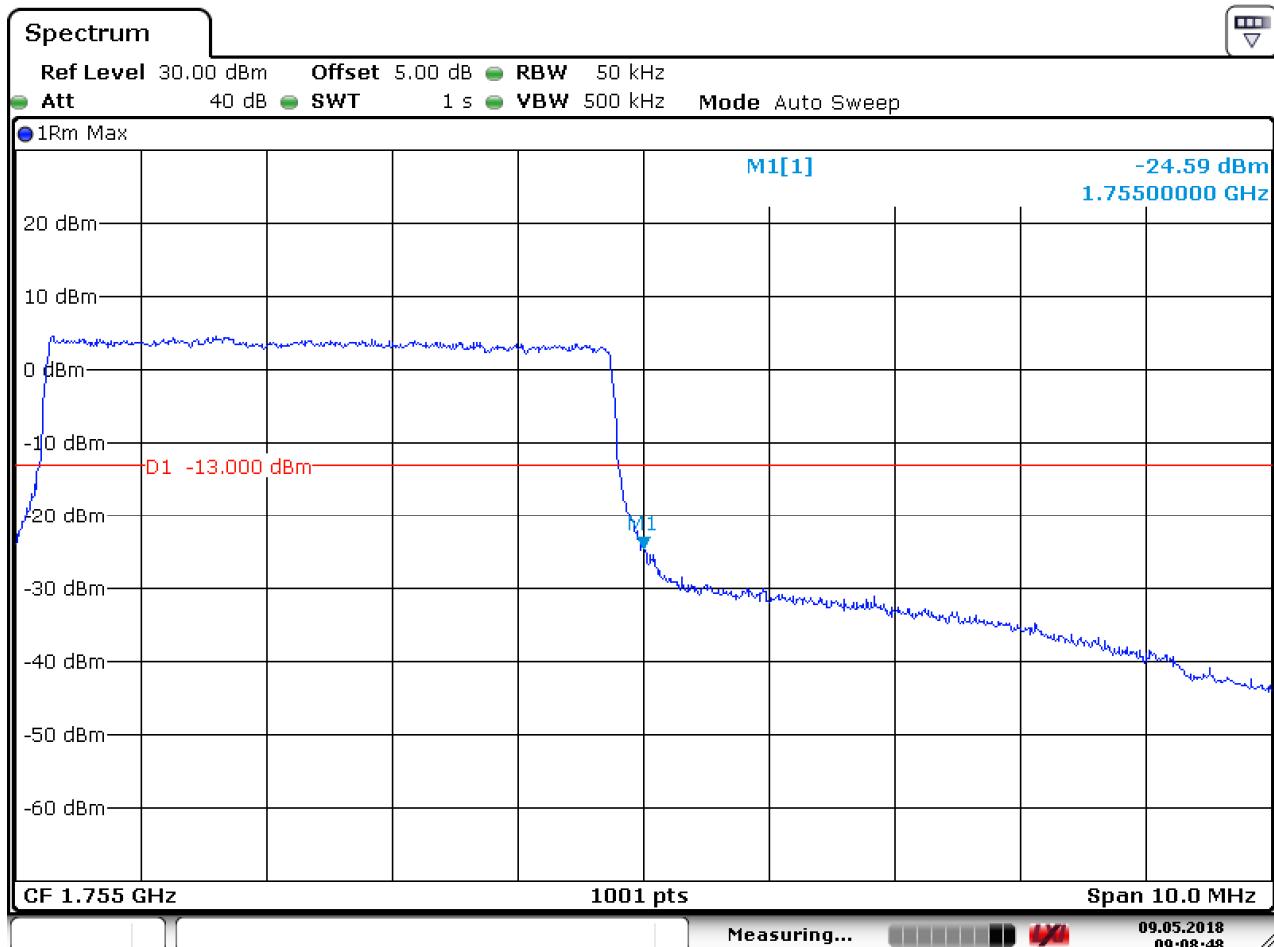
**5.1.1.5 Test Mode = LTE/TM1 5MHz****5.1.1.5.1 Test Channel = LCH****5.1.1.5.1.1 Test RB=1RB**

Date: 9.MAY.2018 09:19:31

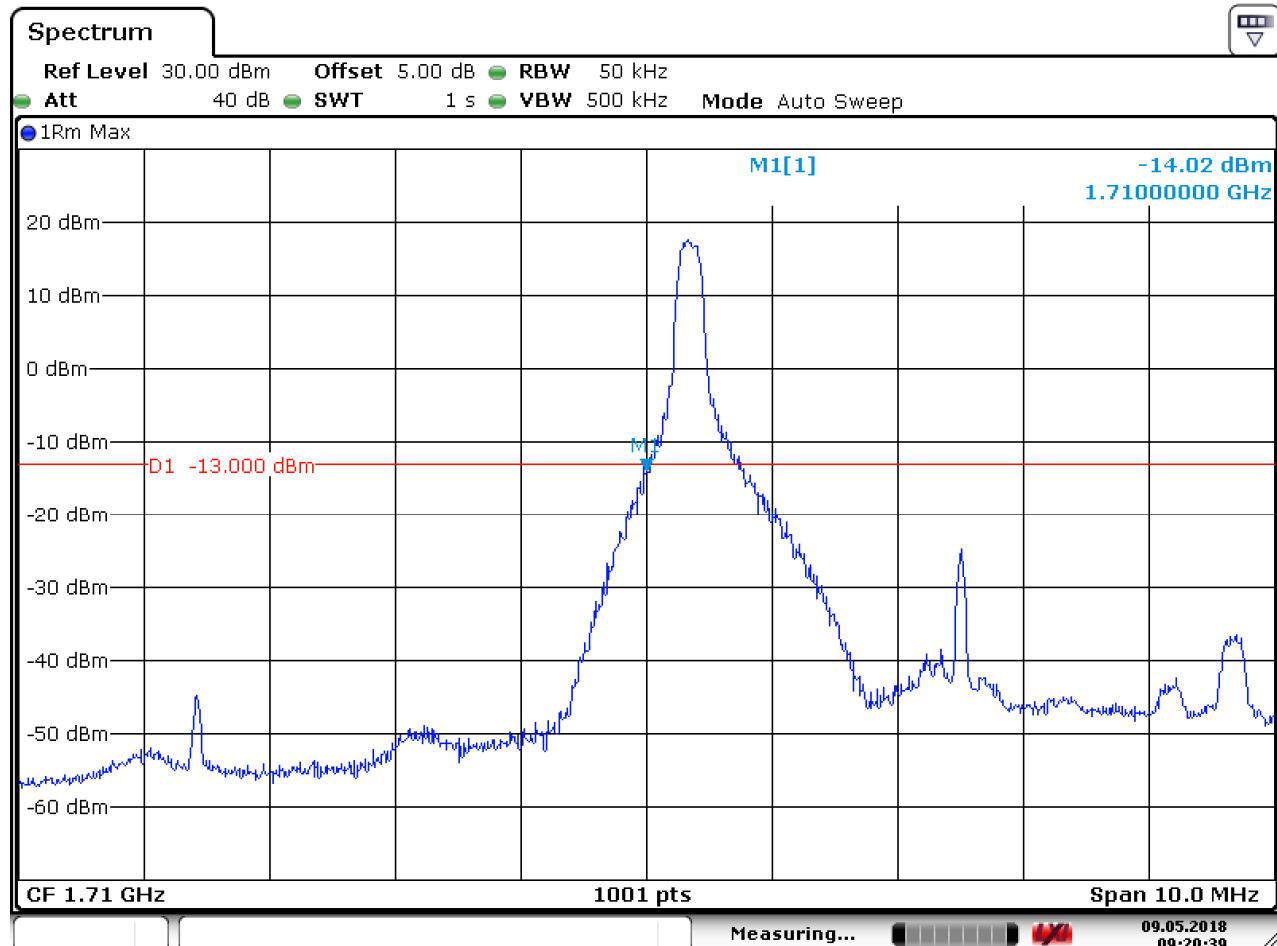
**5.1.1.5.2 Test Channel = HCH****5.1.1.5.2.1 Test RB=1RB**

Date: 9.MAY.2018 09:10:03

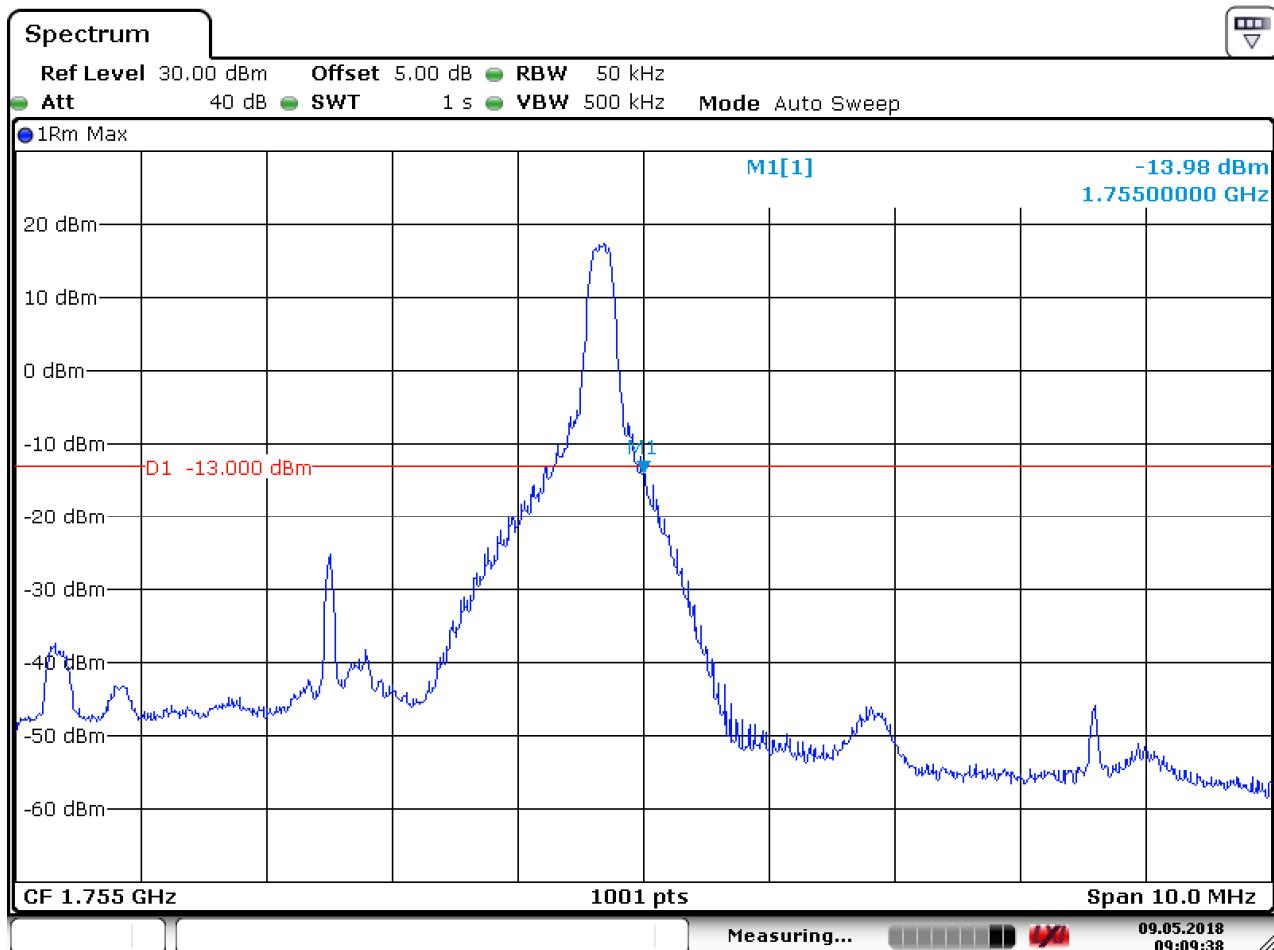
## 5.1.1.5.2.2 Test RB=25RB



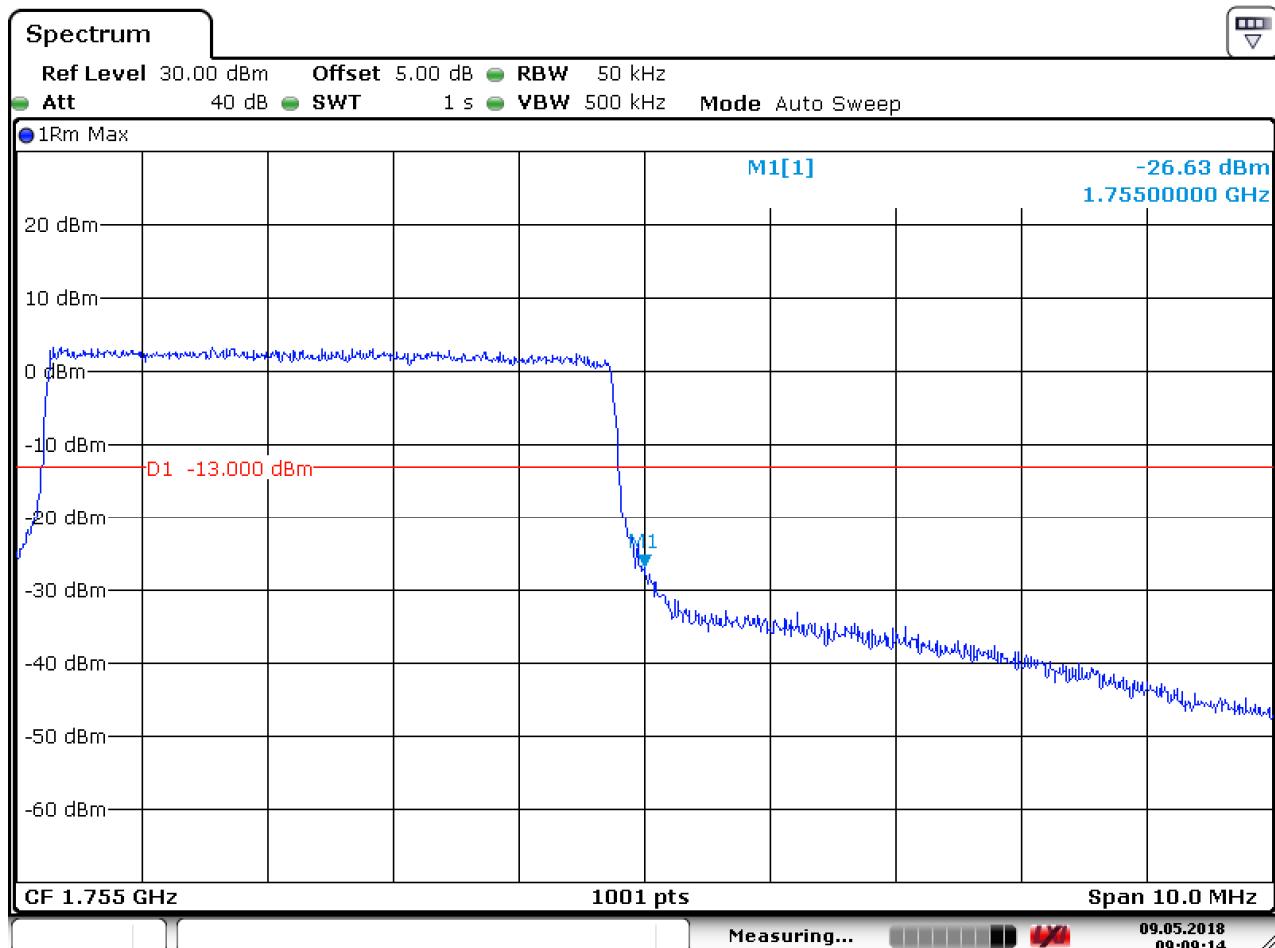
Date: 9.MAY.2018 09:08:48

**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**

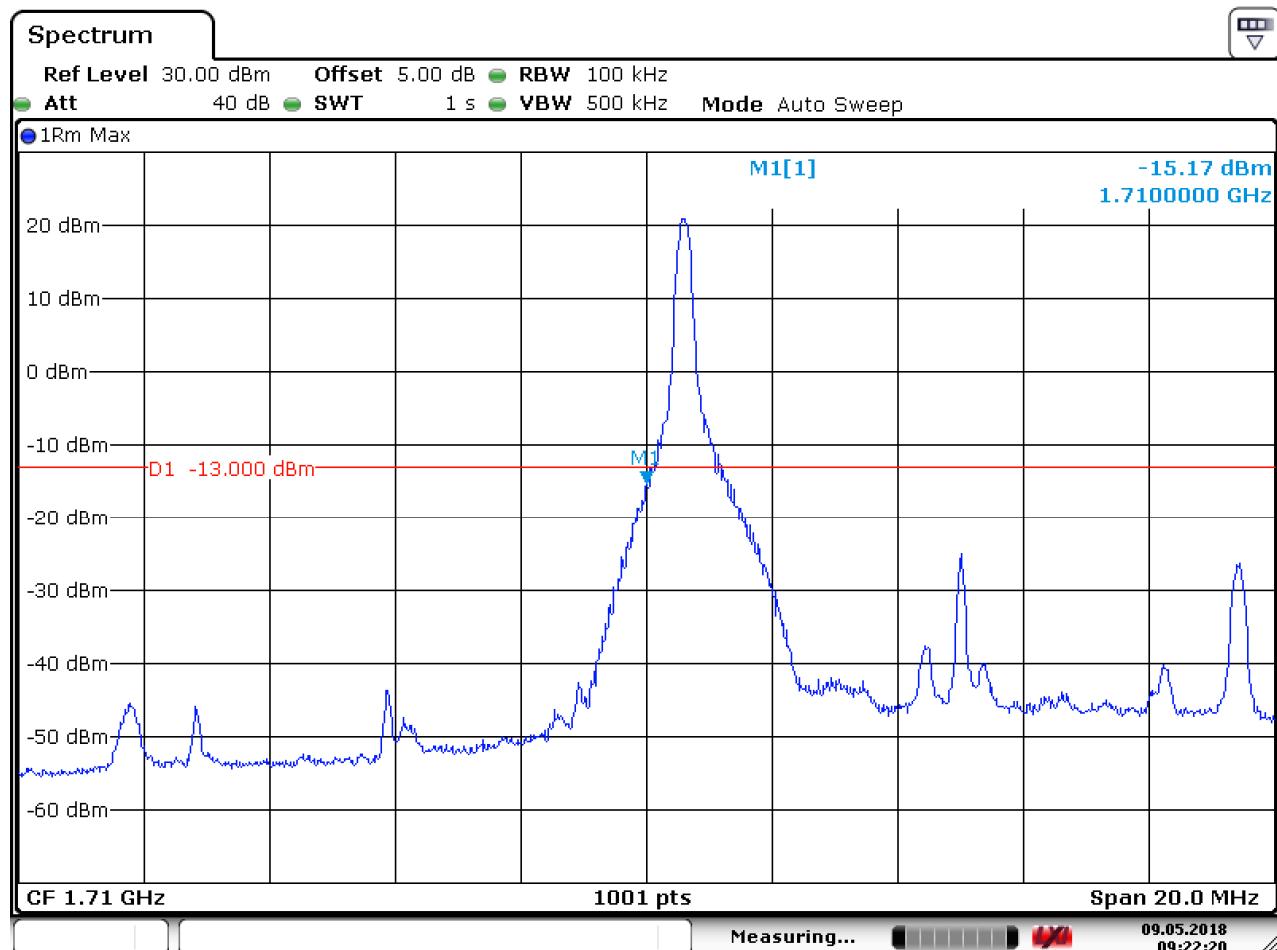
Date: 9.MAY.2018 09:20:39

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

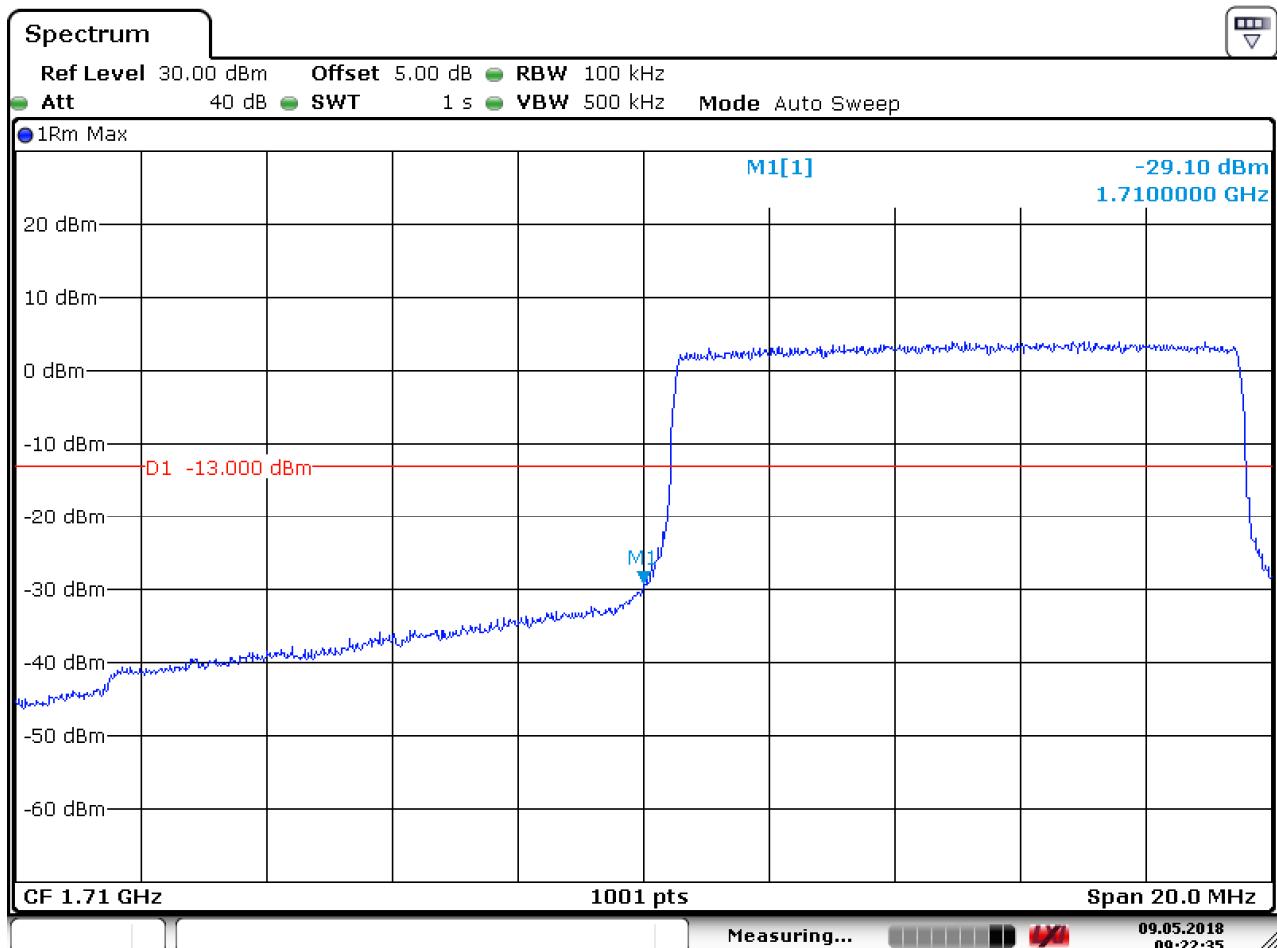
Date: 9.MAY.2018 09:09:38

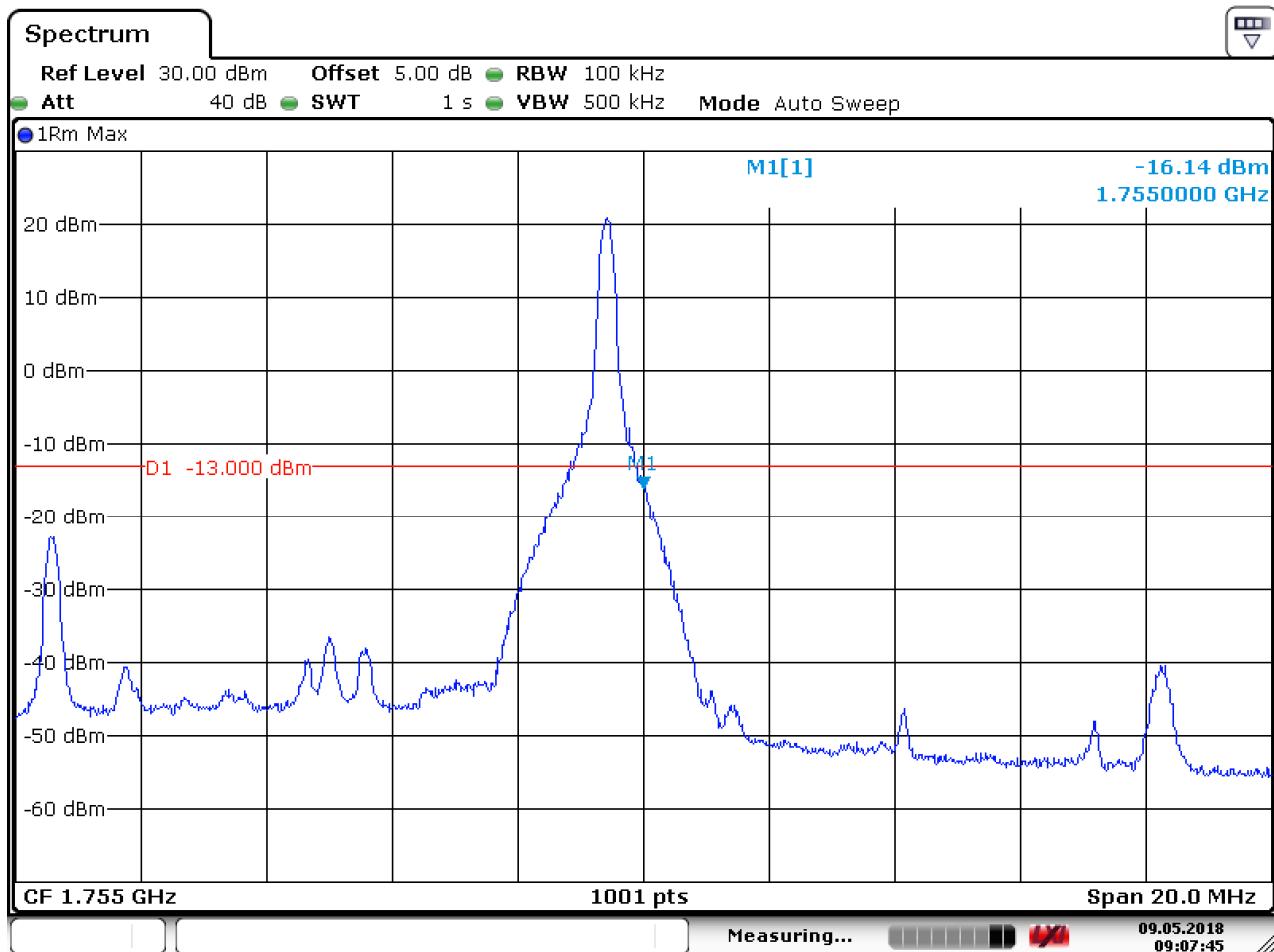
**5.1.1.6.2.2 Test RB=25RB**

Date: 9.MAY.2018 09:09:15

**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**

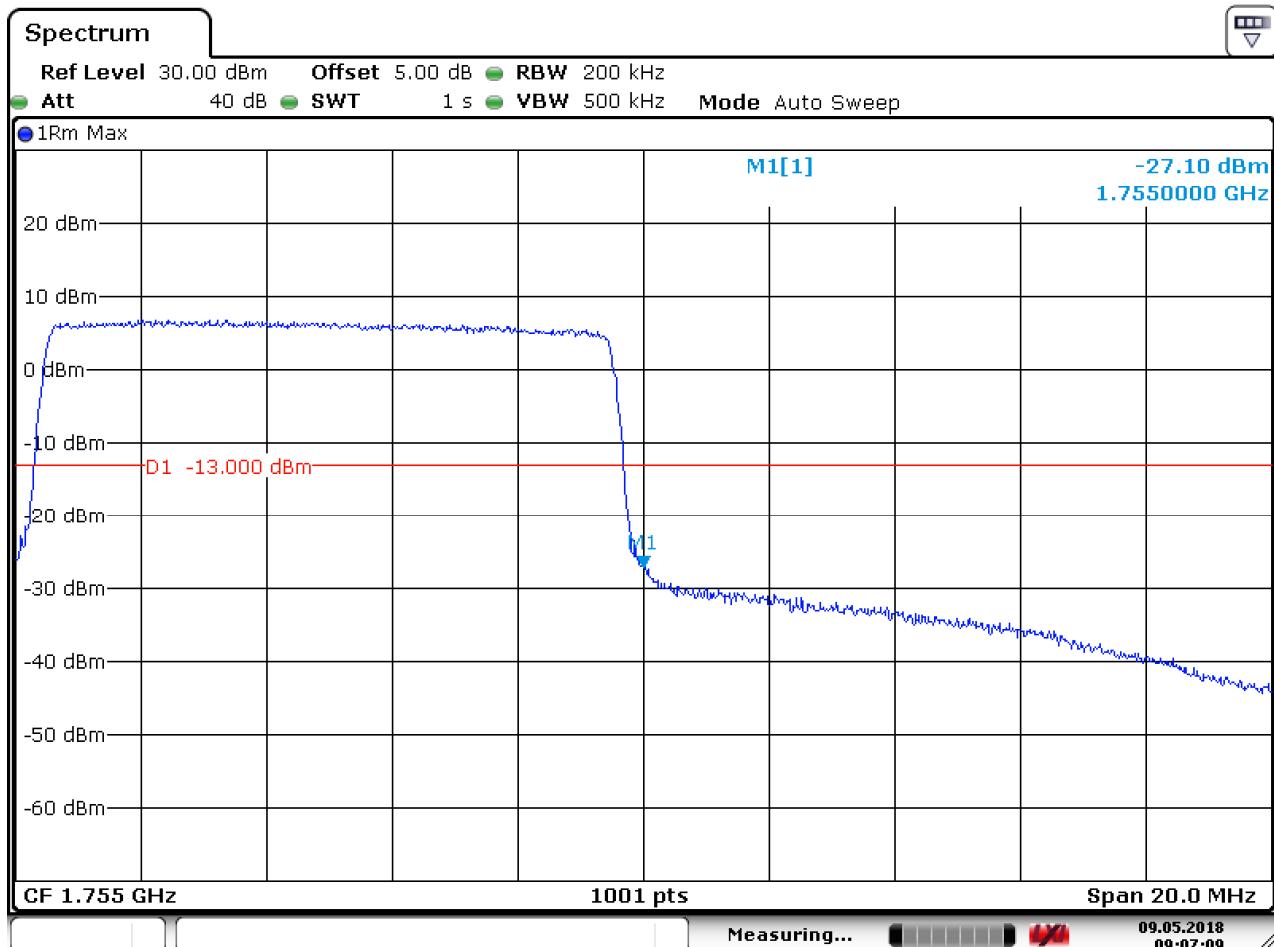
Date: 9.MAY.2018 09:22:21

**5.1.1.7.1.2 Test RB=50RB**

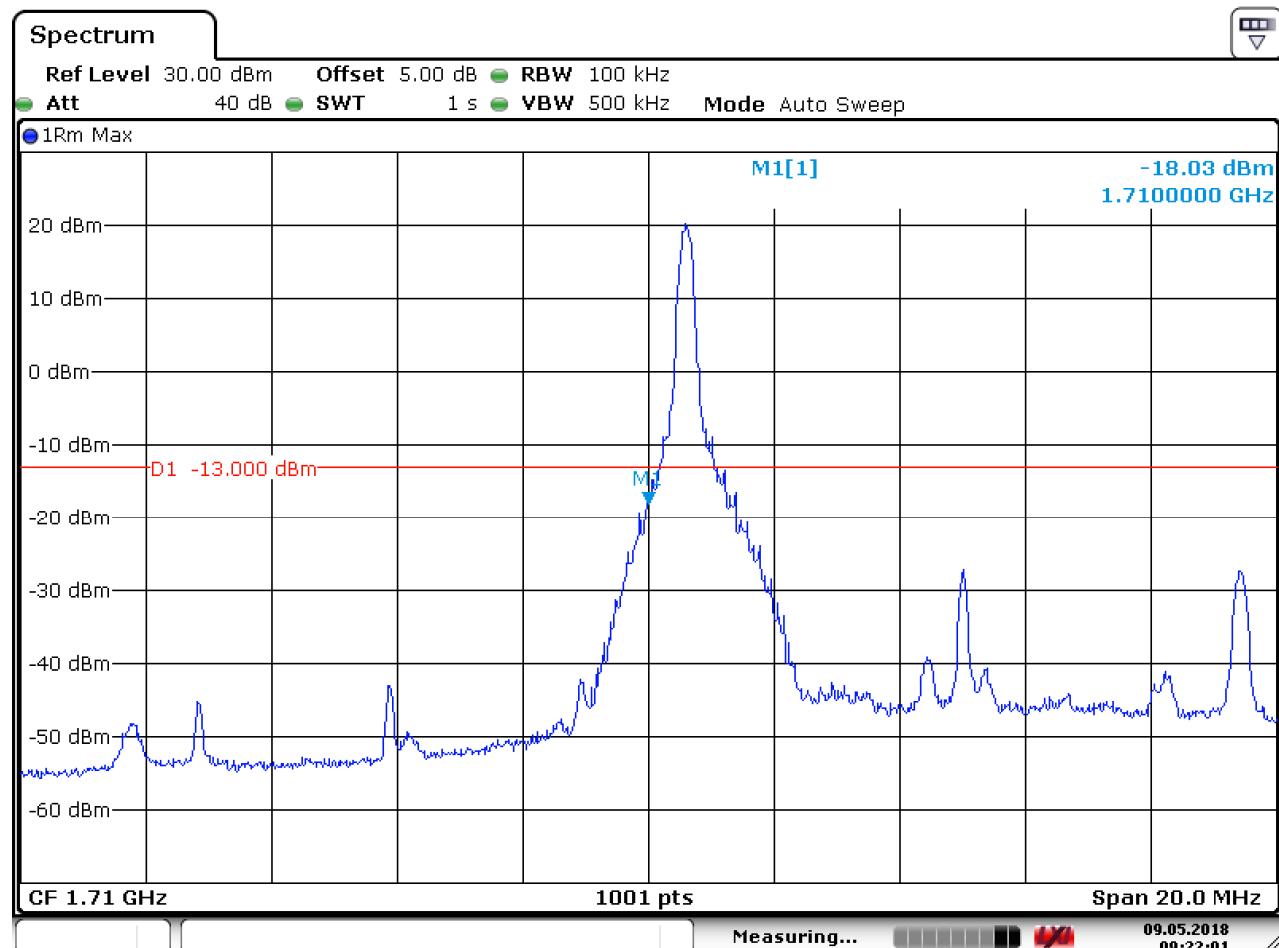
**5.1.1.7.2 Test Channel = HCH****5.1.1.7.2.1 Test RB=1RB**

Date: 9.MAY.2018 09:07:45

## 5.1.1.7.2.2 Test RB=50RB

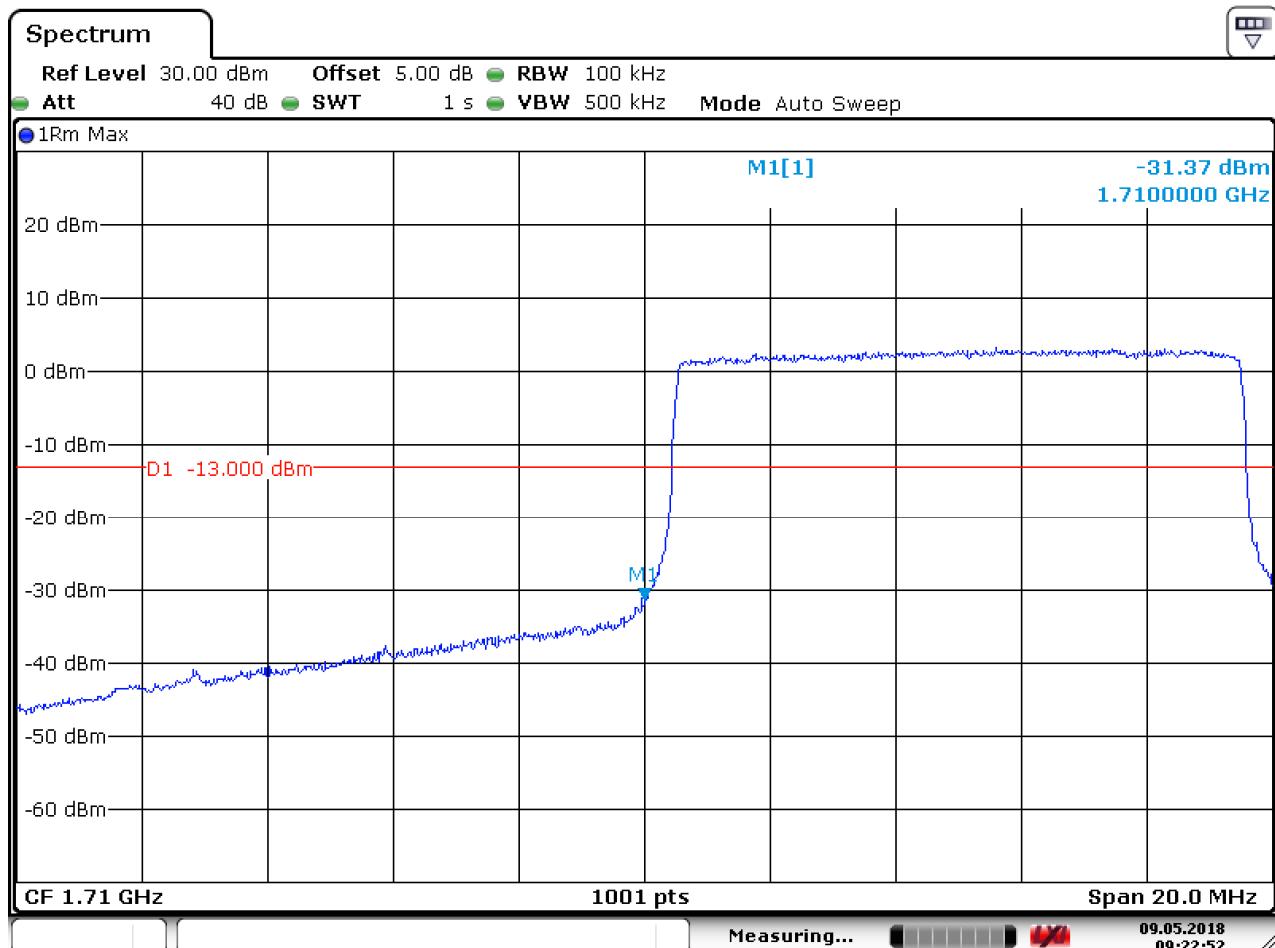


Date: 9.MAY.2018 09:07:09

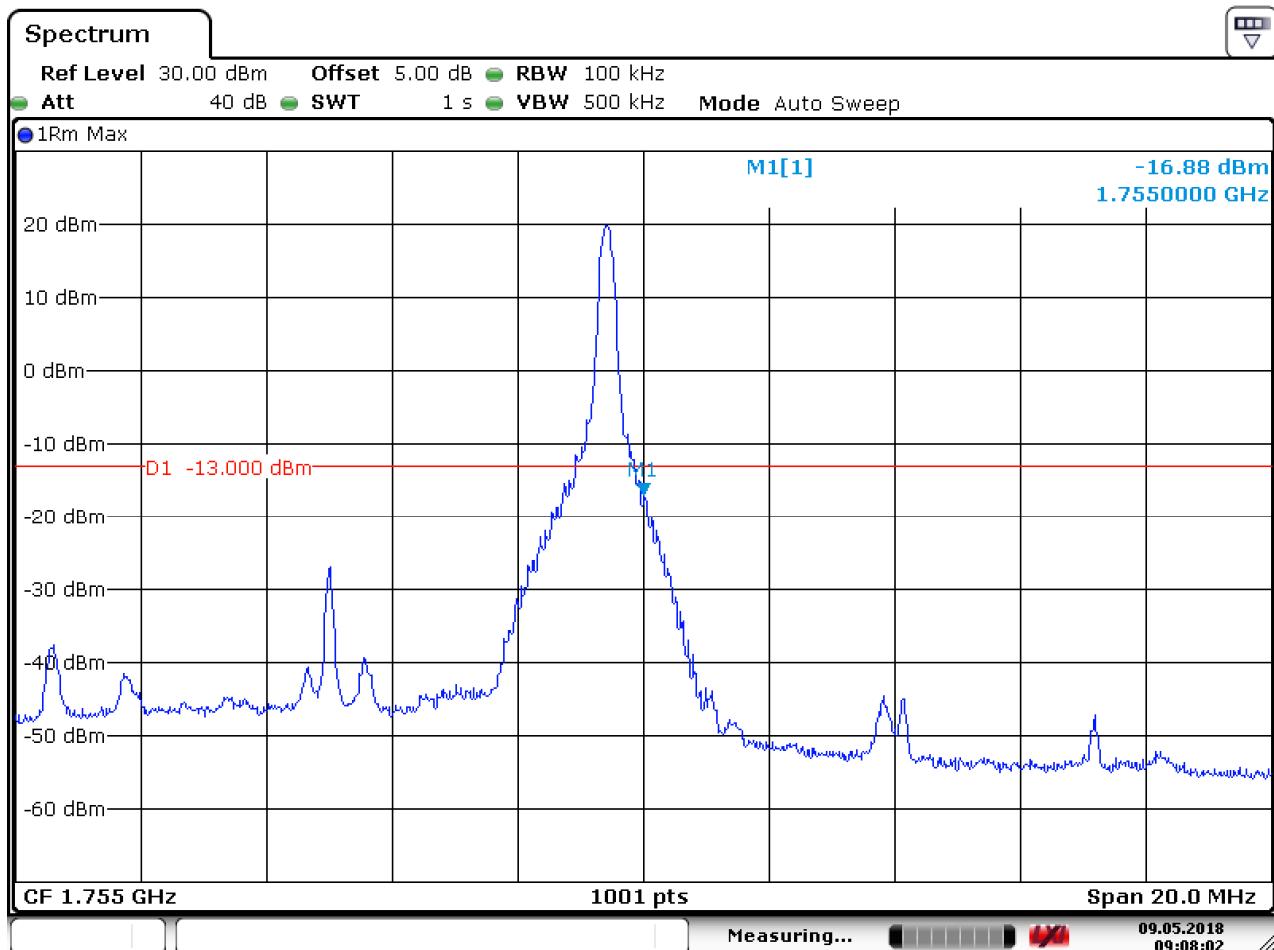
**5.1.1.8 Test Mode = LTE/TM2 10MHz****5.1.1.8.1 Test Channel = LCH****5.1.1.8.1.1 Test RB=1RB**

Date: 9.MAY.2018 09:22:01

#### 5.1.1.8.1.2 Test RB=50RB

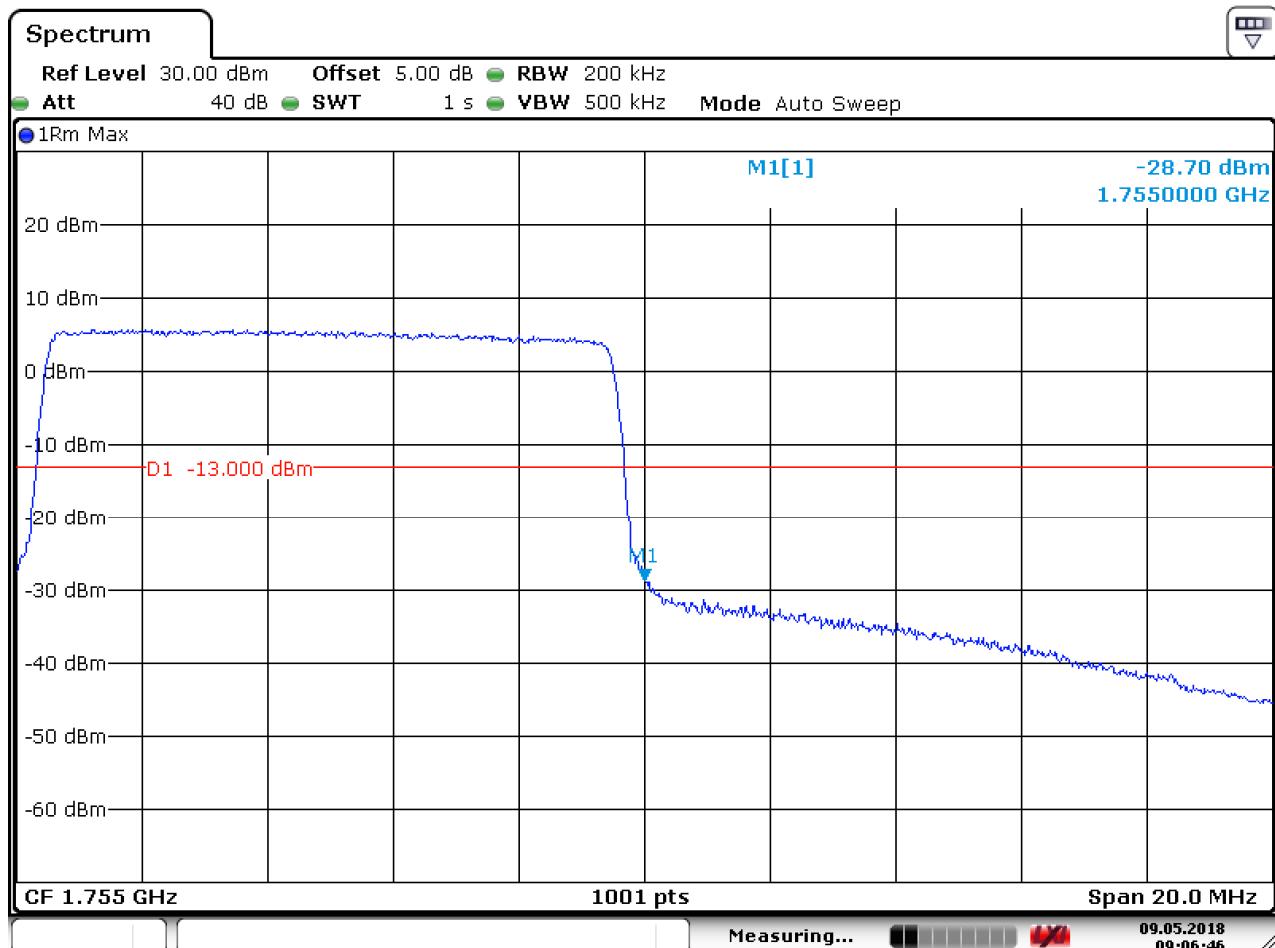


Date: 9.MAY.2018 09:22:52

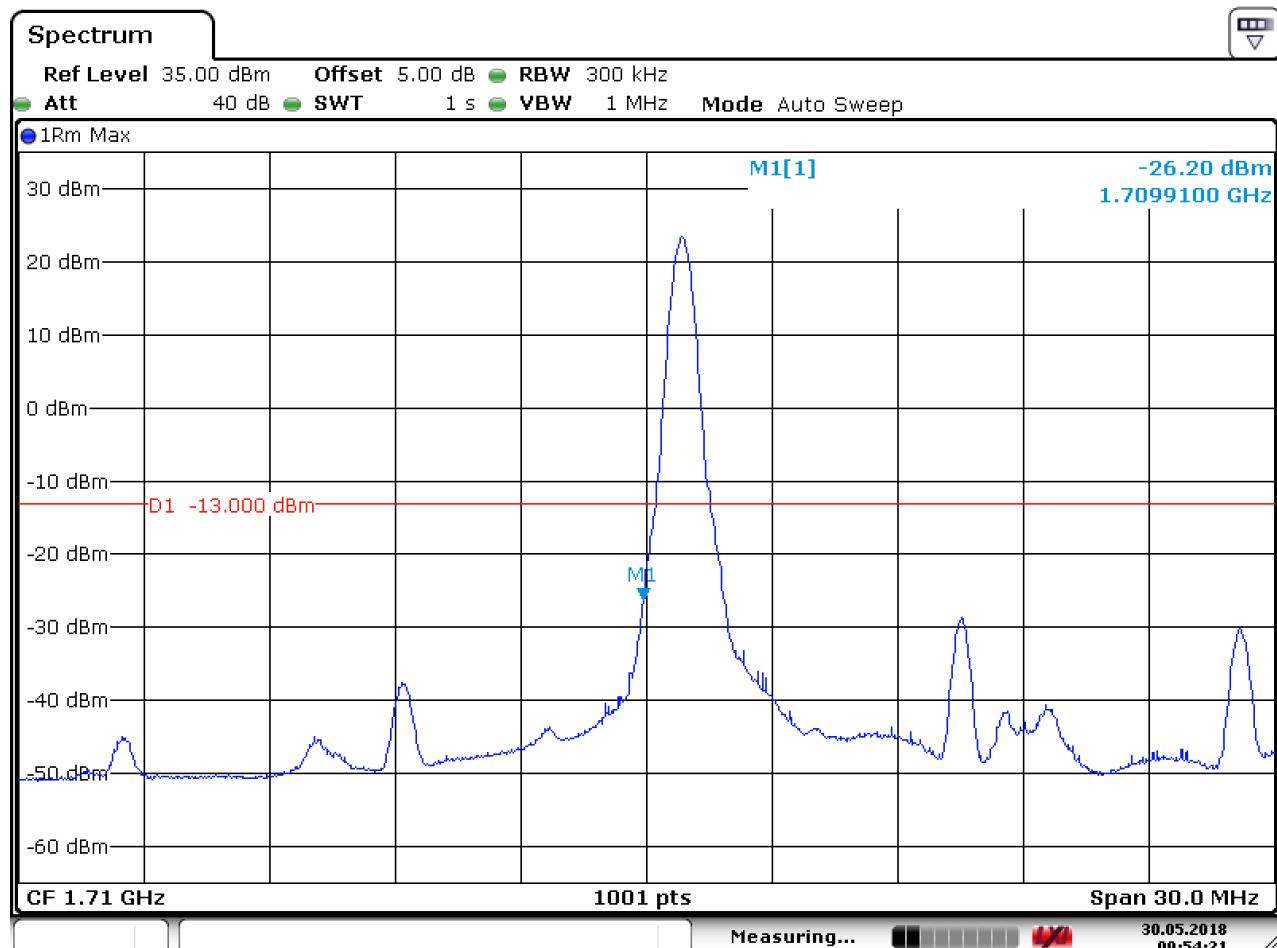
**5.1.1.8.2 Test Channel = HCH****5.1.1.8.2.1 Test RB=1RB**

Date: 9.MAY.2018 09:08:03

## 5.1.1.8.2.2 Test RB=50RB

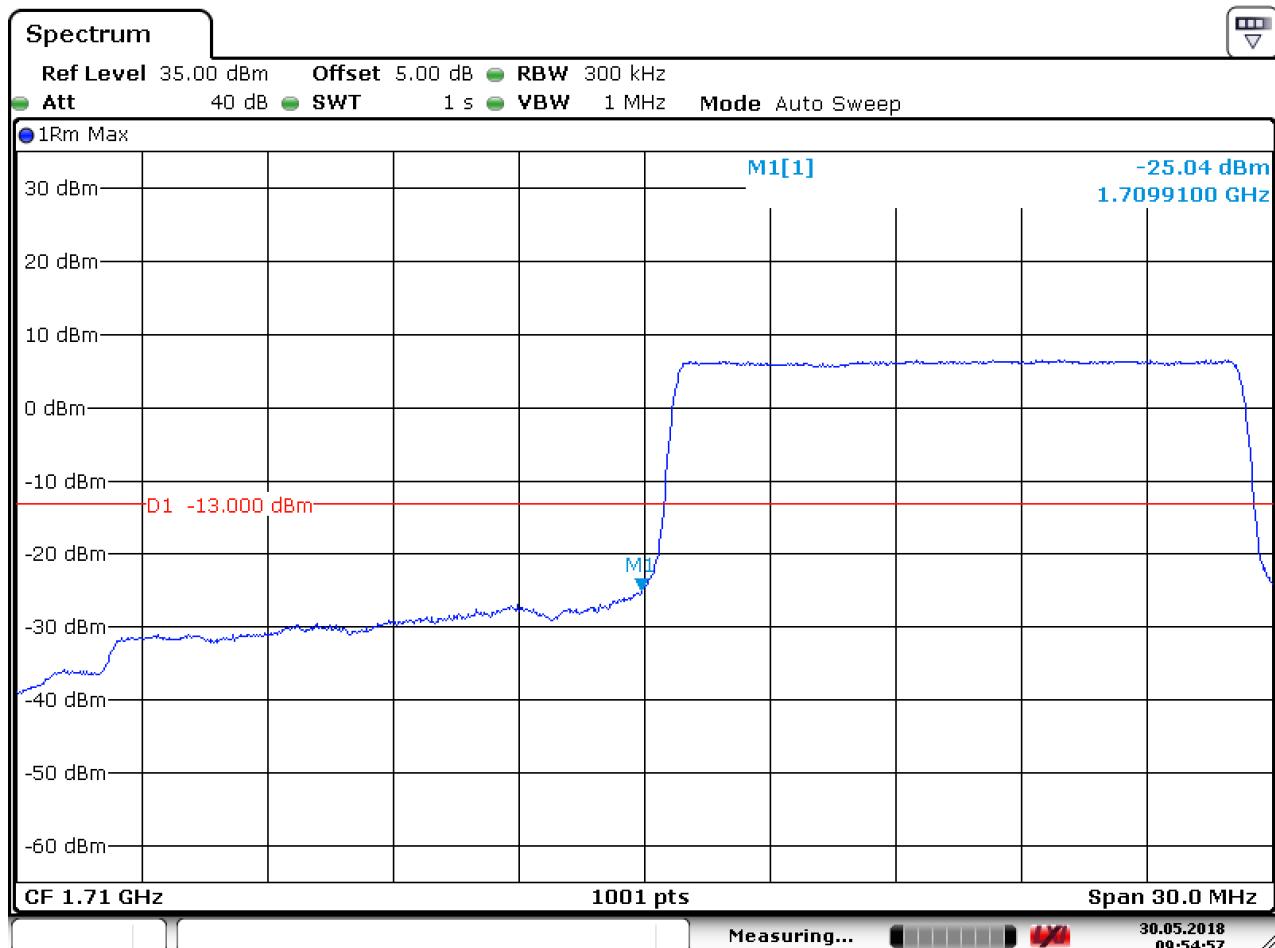


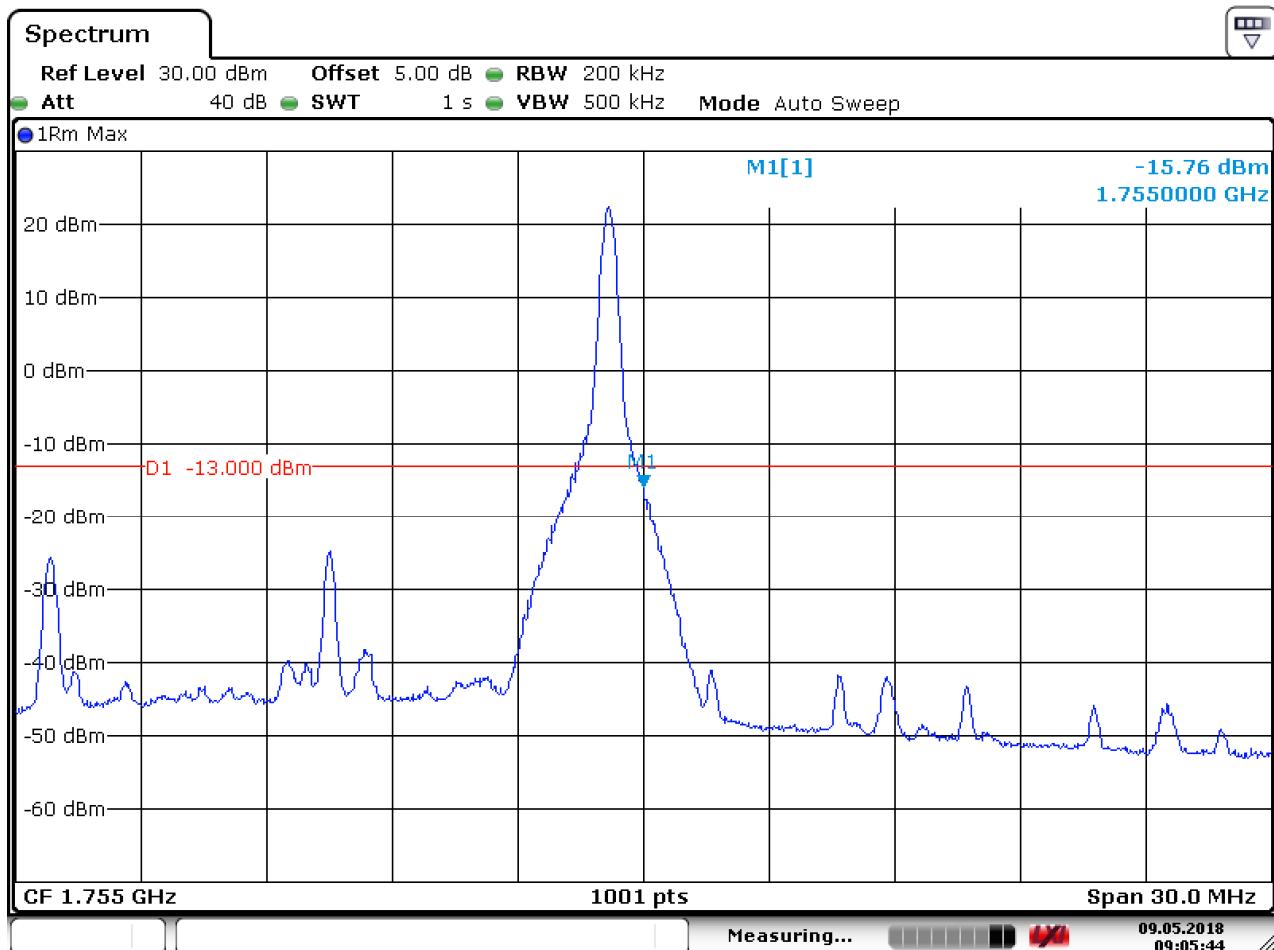
Date: 9.MAY.2018 09:06:46

**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: 30.MAY.2018 09:54:21

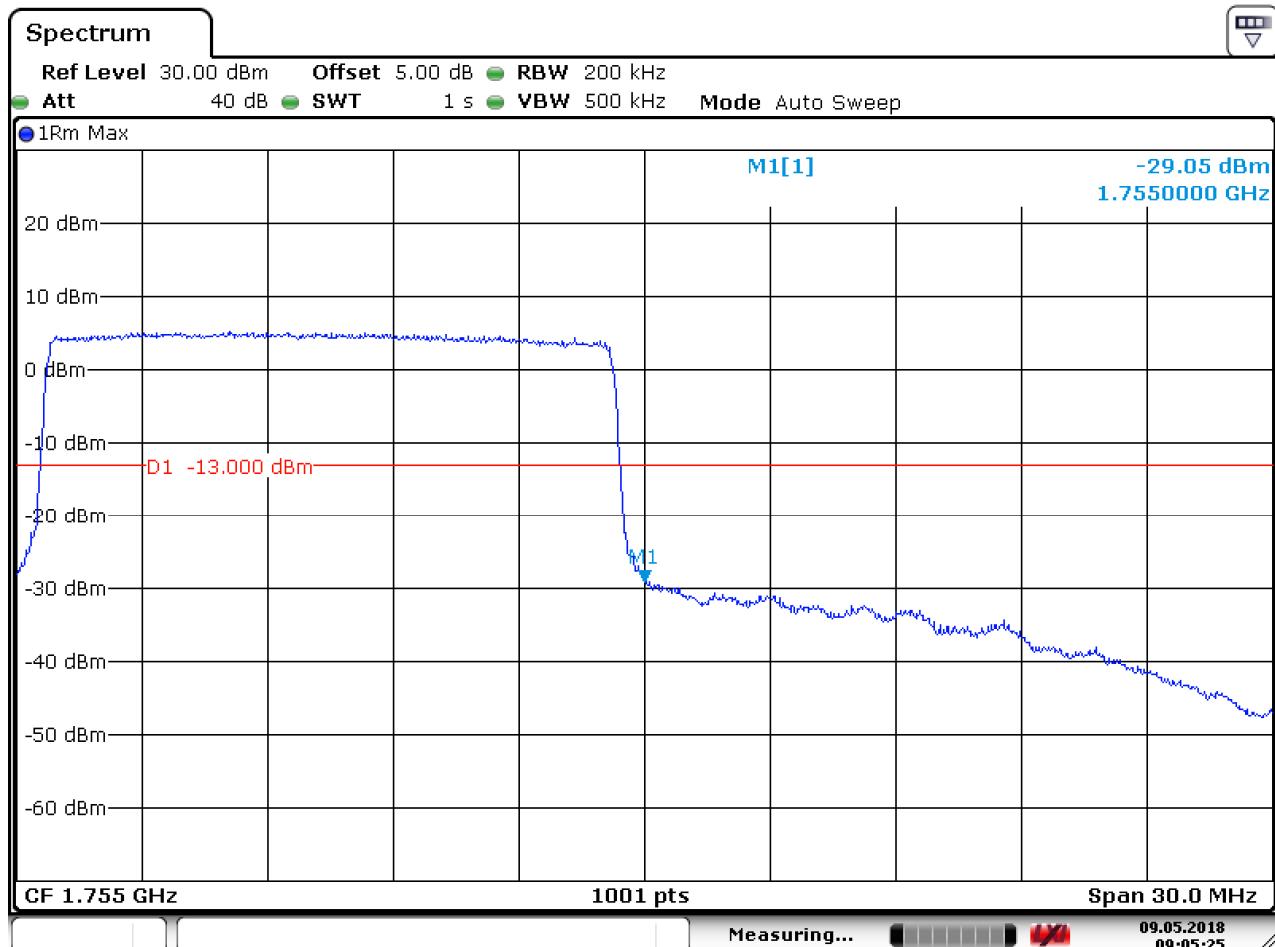
## 5.1.1.9.1.2 Test RB=75RB



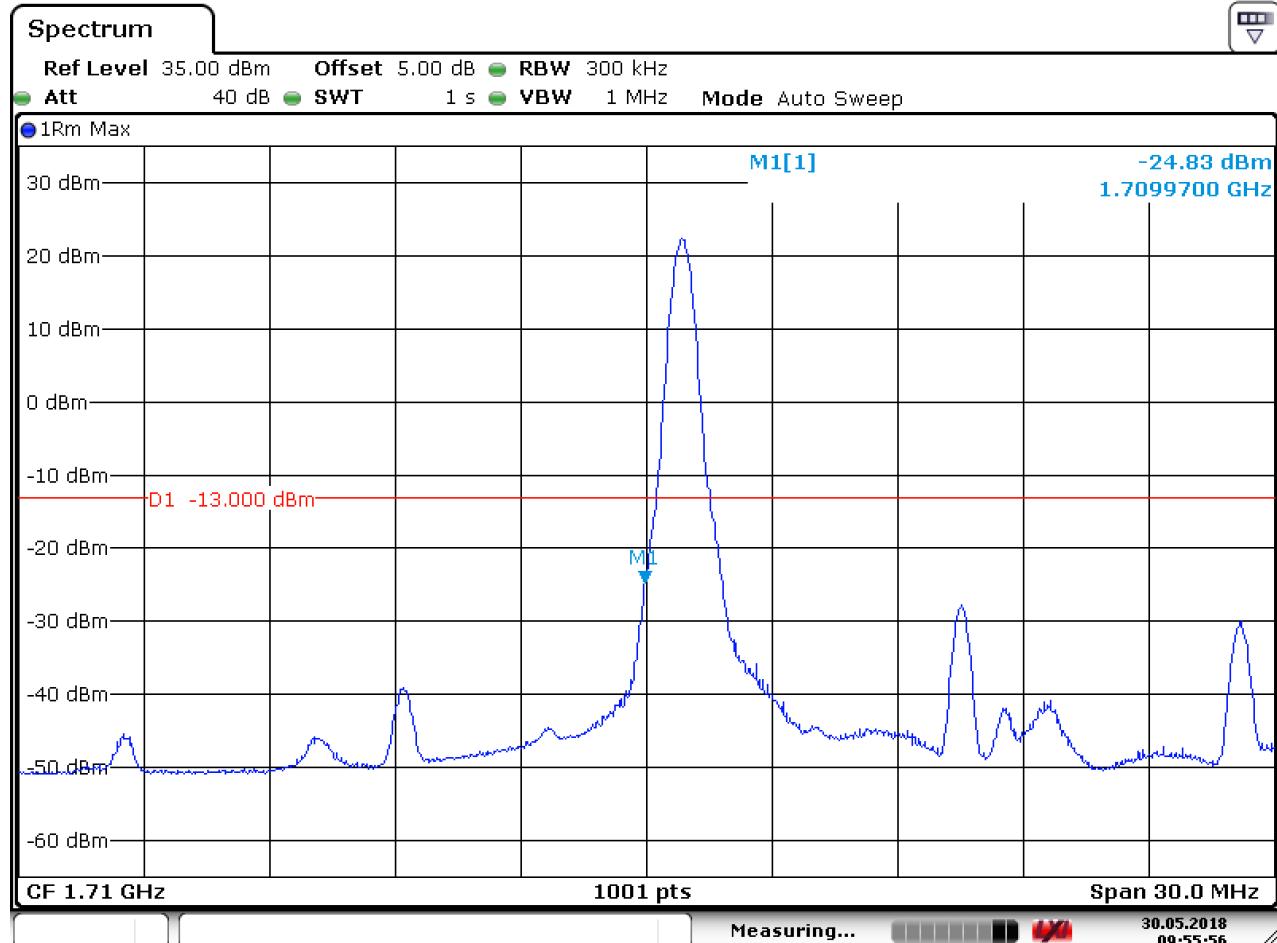
**5.1.1.9.2 Test Channel = HCH****5.1.1.9.2.1 Test RB=1RB**

Date: 9.MAY.2018 09:05:45

## 5.1.1.9.2.2 Test RB=75RB

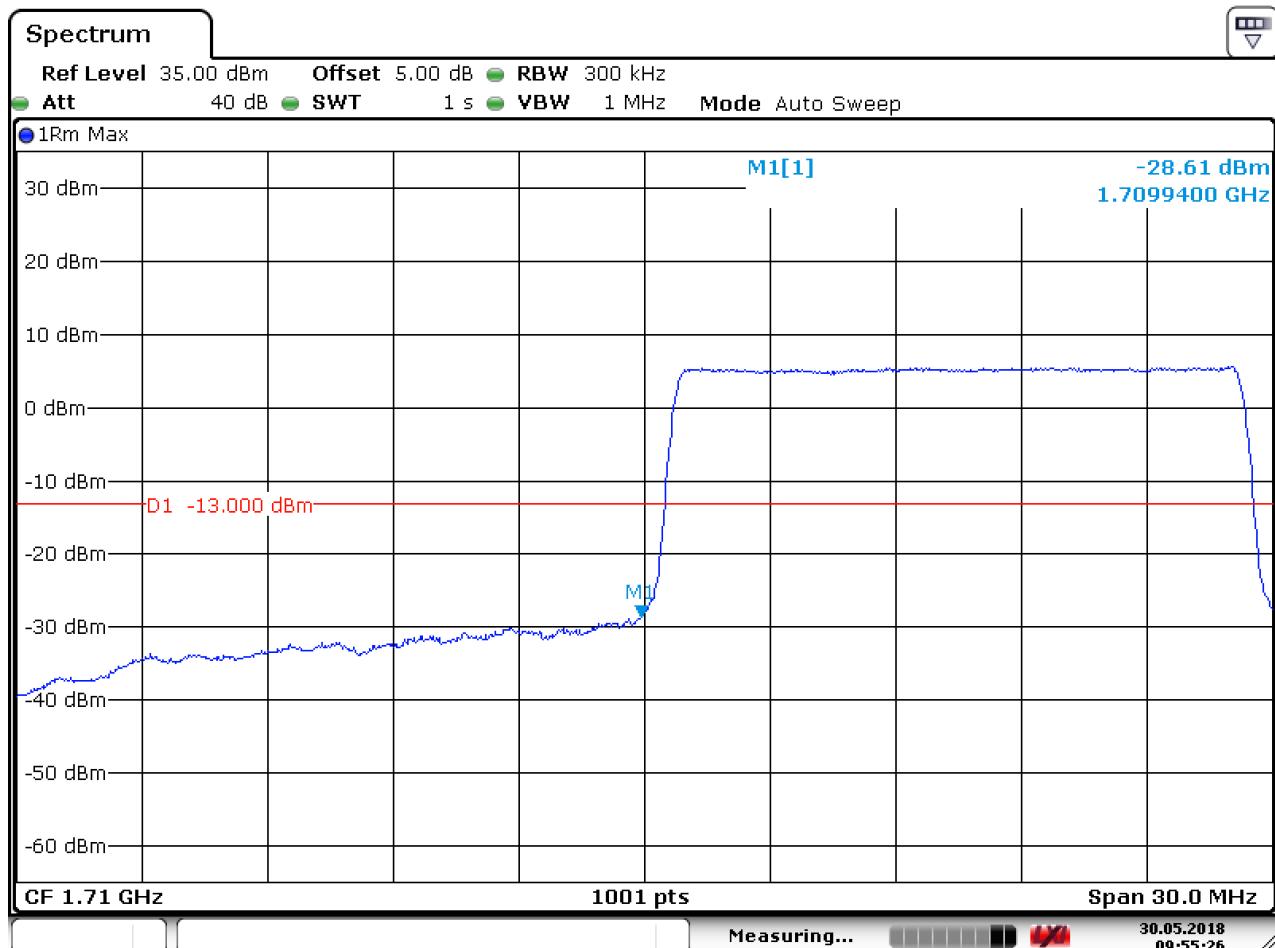


Date: 9.MAY.2018 09:05:26

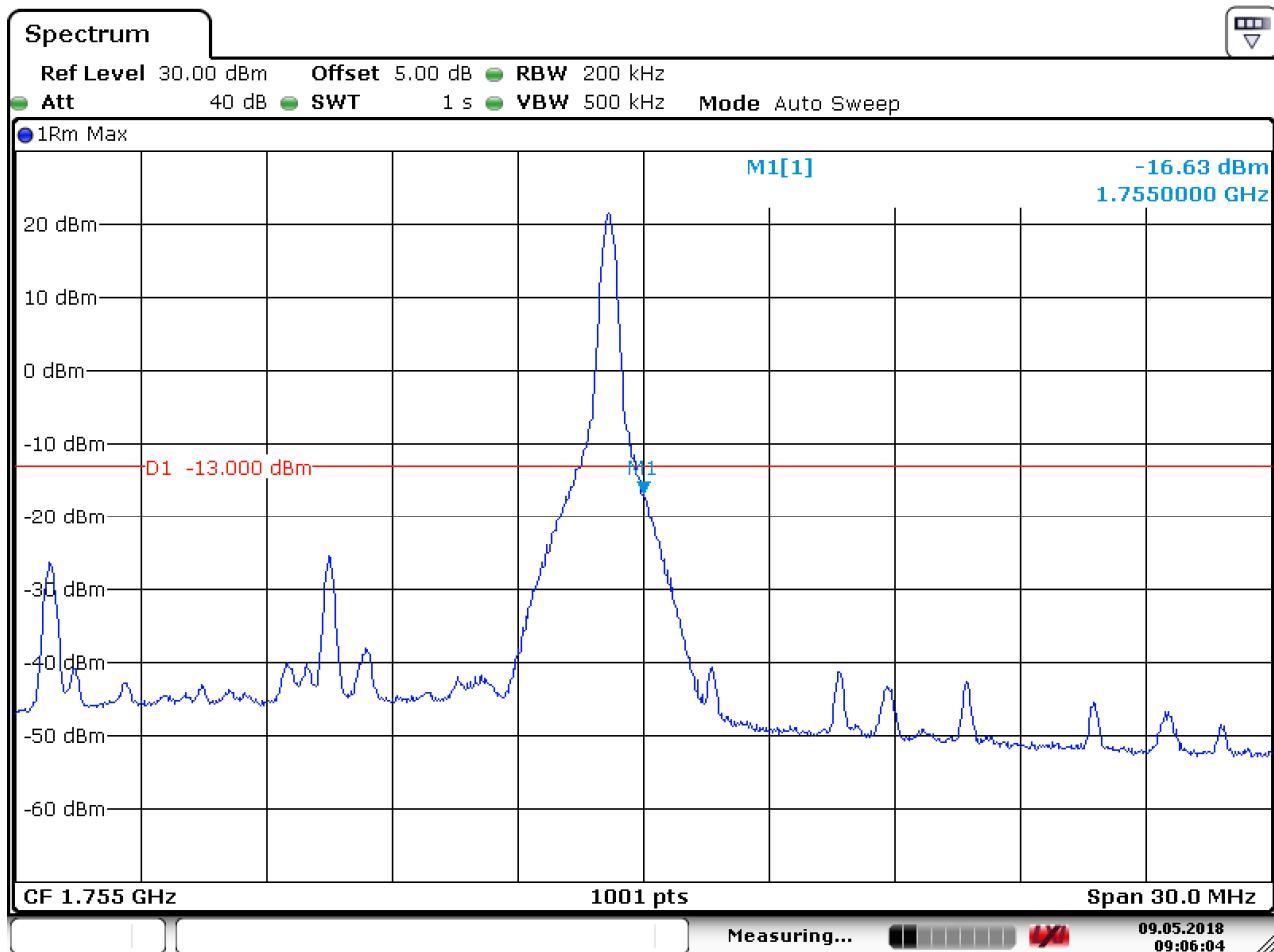
**5.1.1.10 Test Mode = LTE/TM2 15MHz****5.1.1.10.1 Test Channel = LCH****5.1.1.10.1.1 Test RB=1RB**

Date: 30.MAY.2018 09:55:56

## 5.1.1.10.1.2 Test RB=75RB

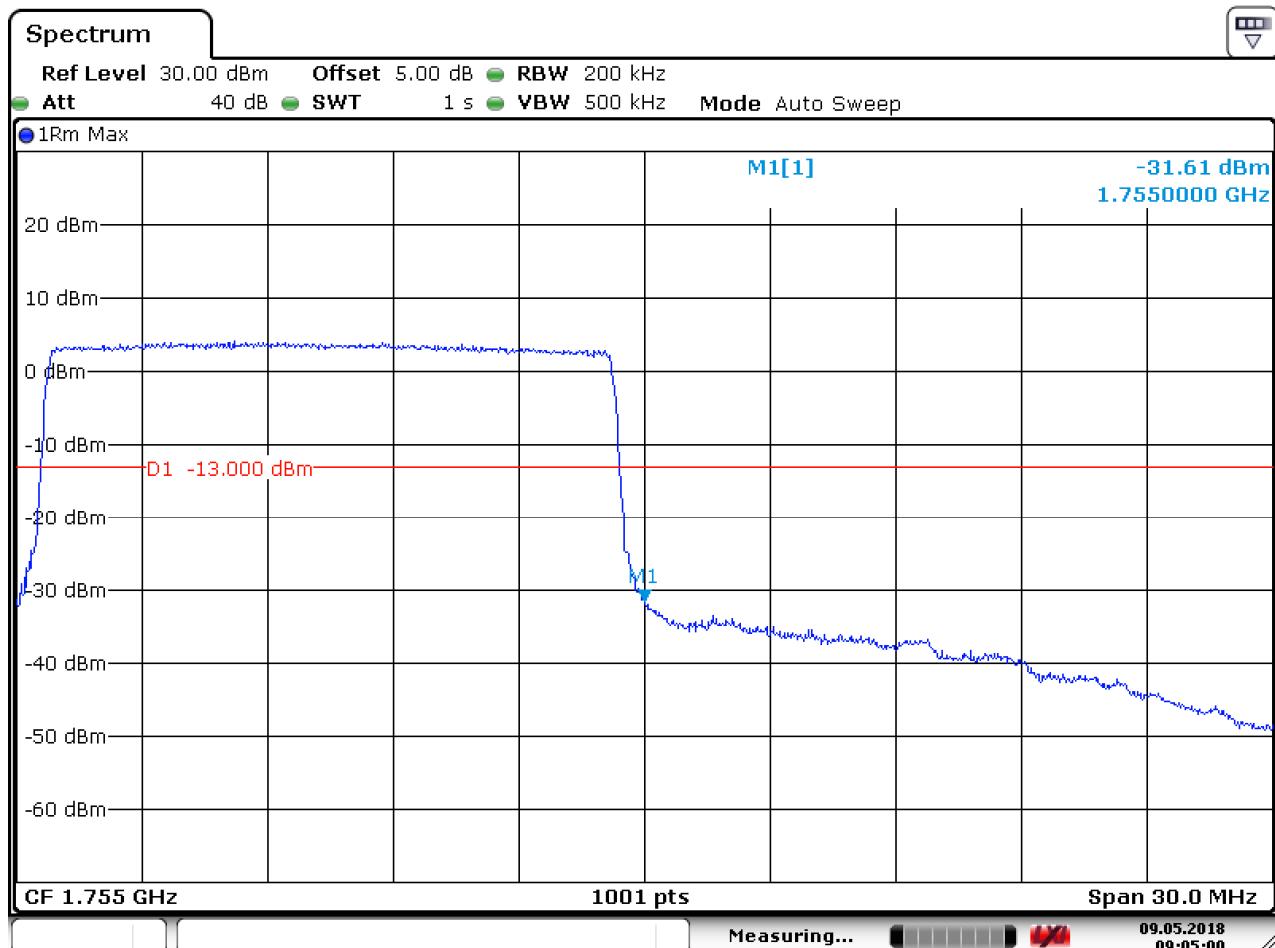


Date: 30.MAY.2018 09:55:26

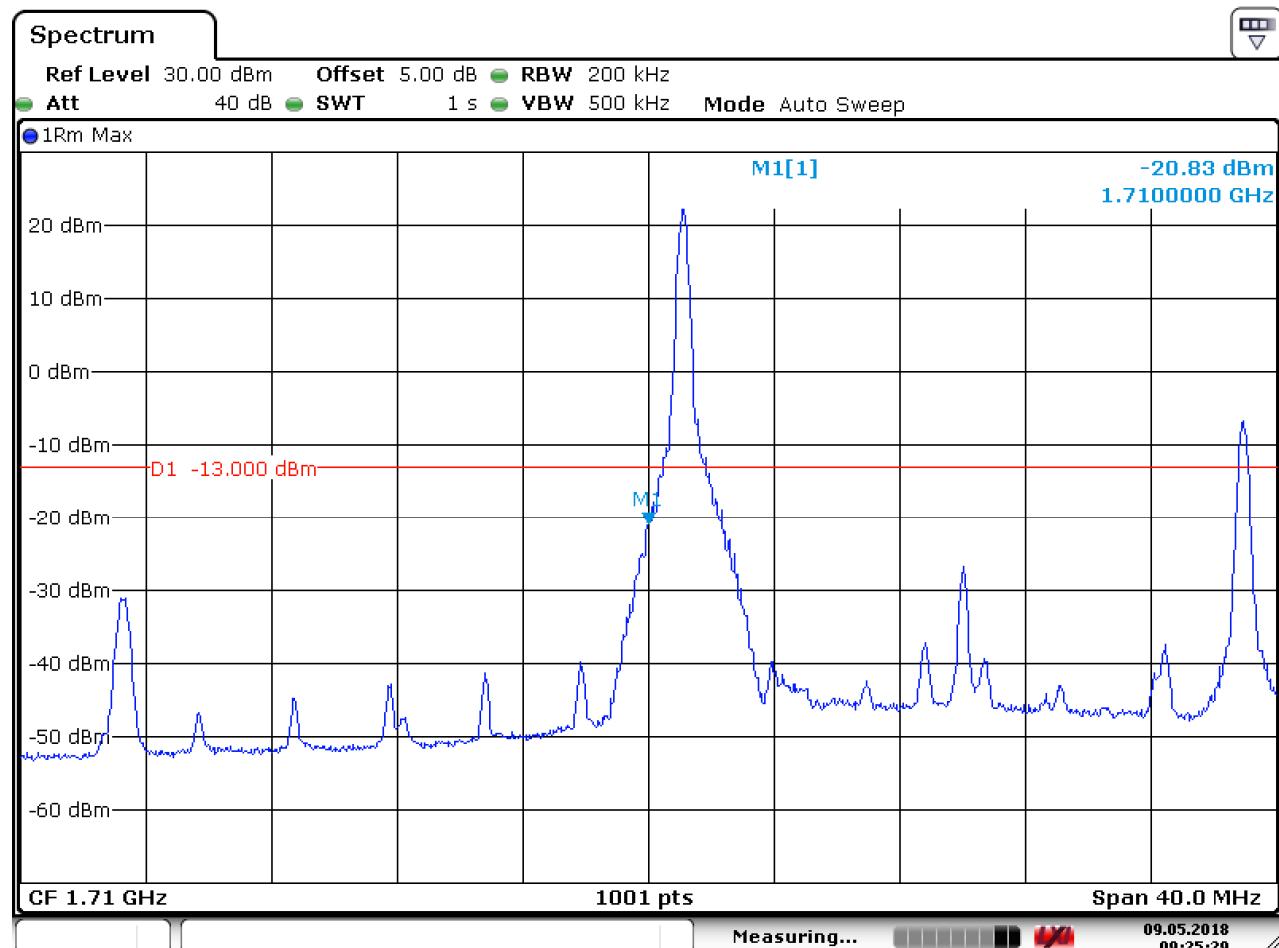
**5.1.1.10.2 Test Channel = HCH****5.1.1.10.2.1 Test RB=1RB**

Date: 9.MAY.2018 09:06:04

## 5.1.1.10.2.2 Test RB=75RB

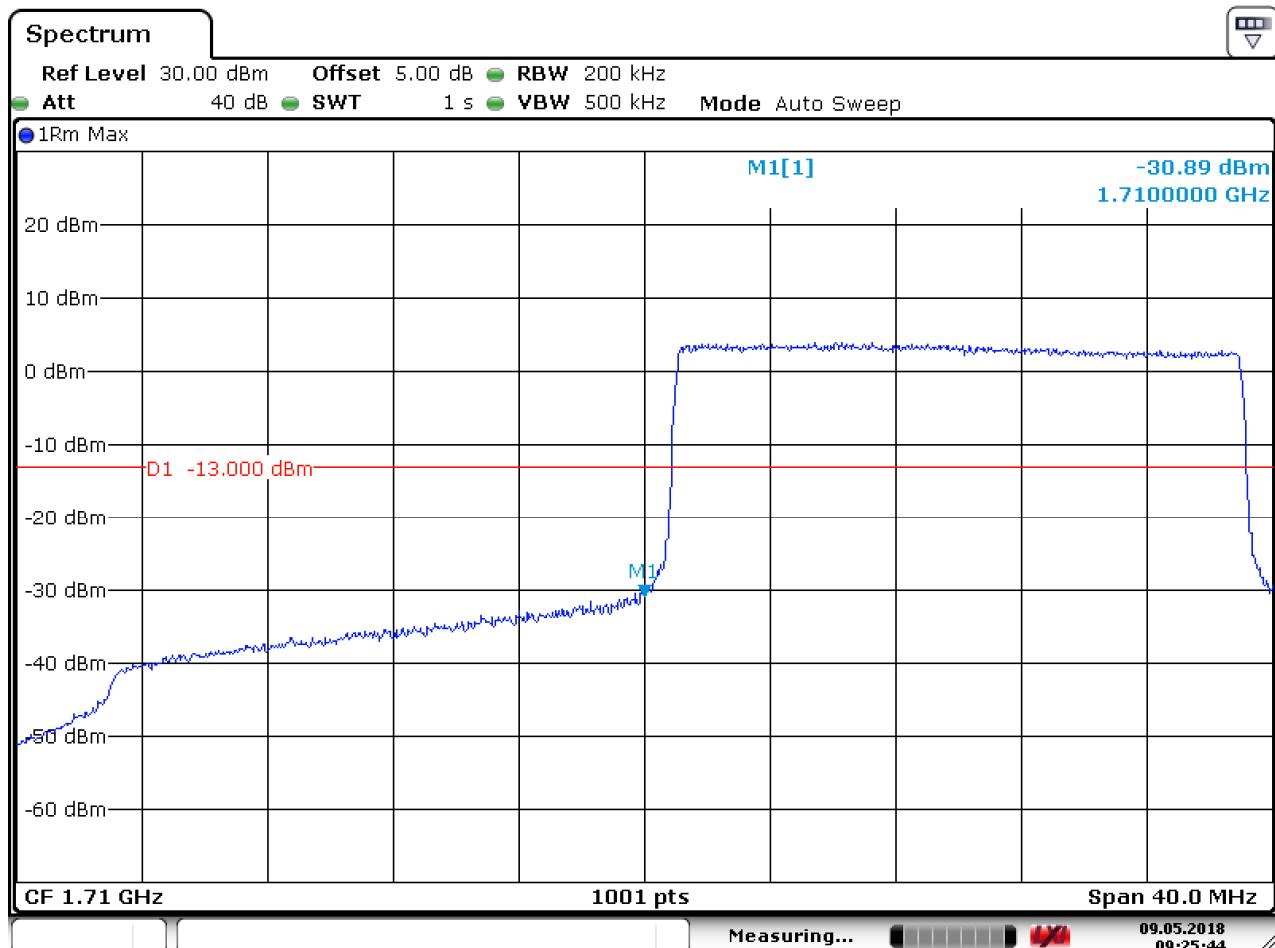


Date: 9.MAY.2018 09:05:00

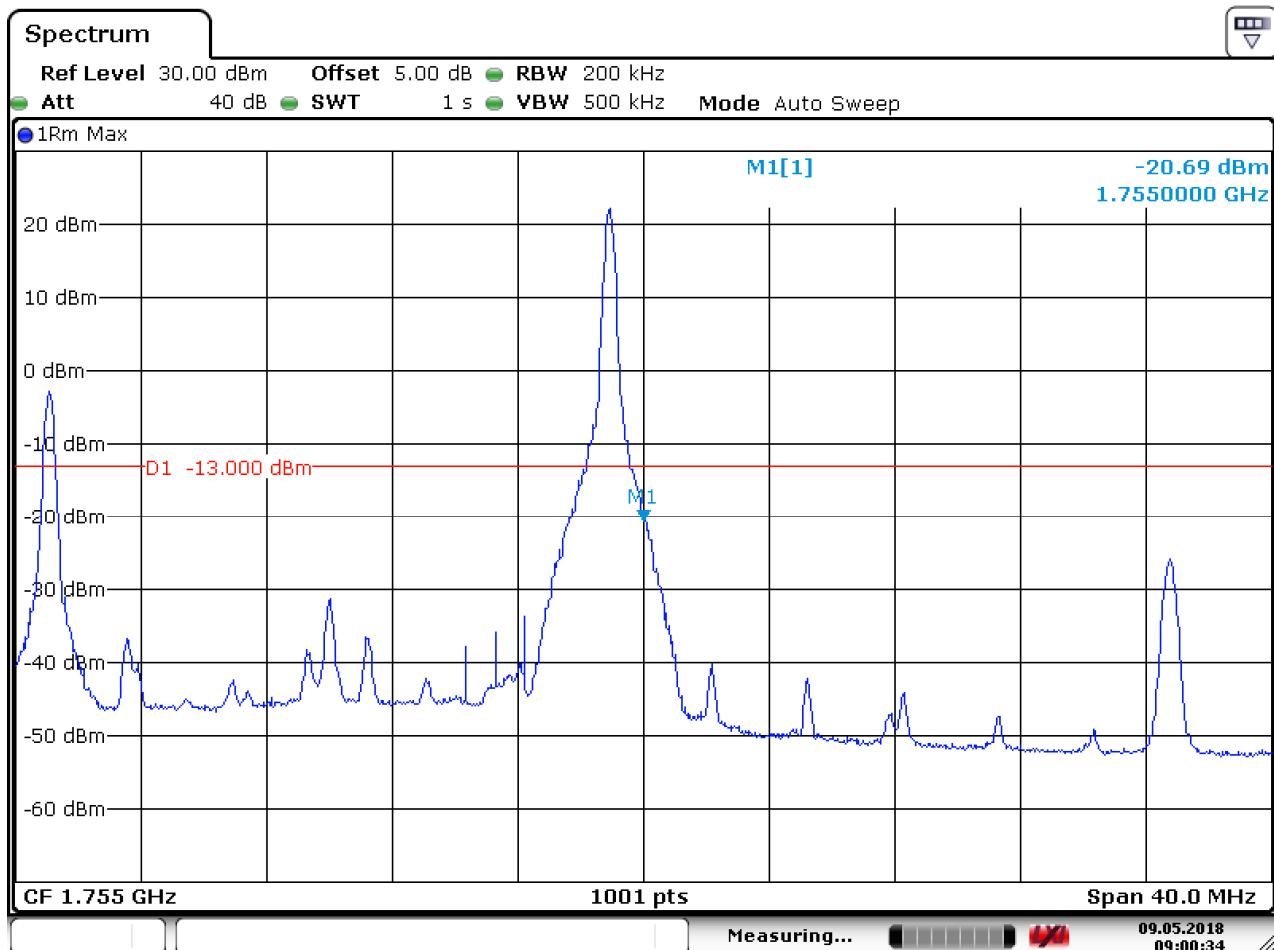
**5.1.1.11 Test Mode = LTE/TM1 20MHz****5.1.1.11.1 Test Channel = LCH****5.1.1.11.1.1 Test RB=1RB**

Date: 9.MAY.2018 09:25:30

## 5.1.1.11.1.2 Test RB=100RB

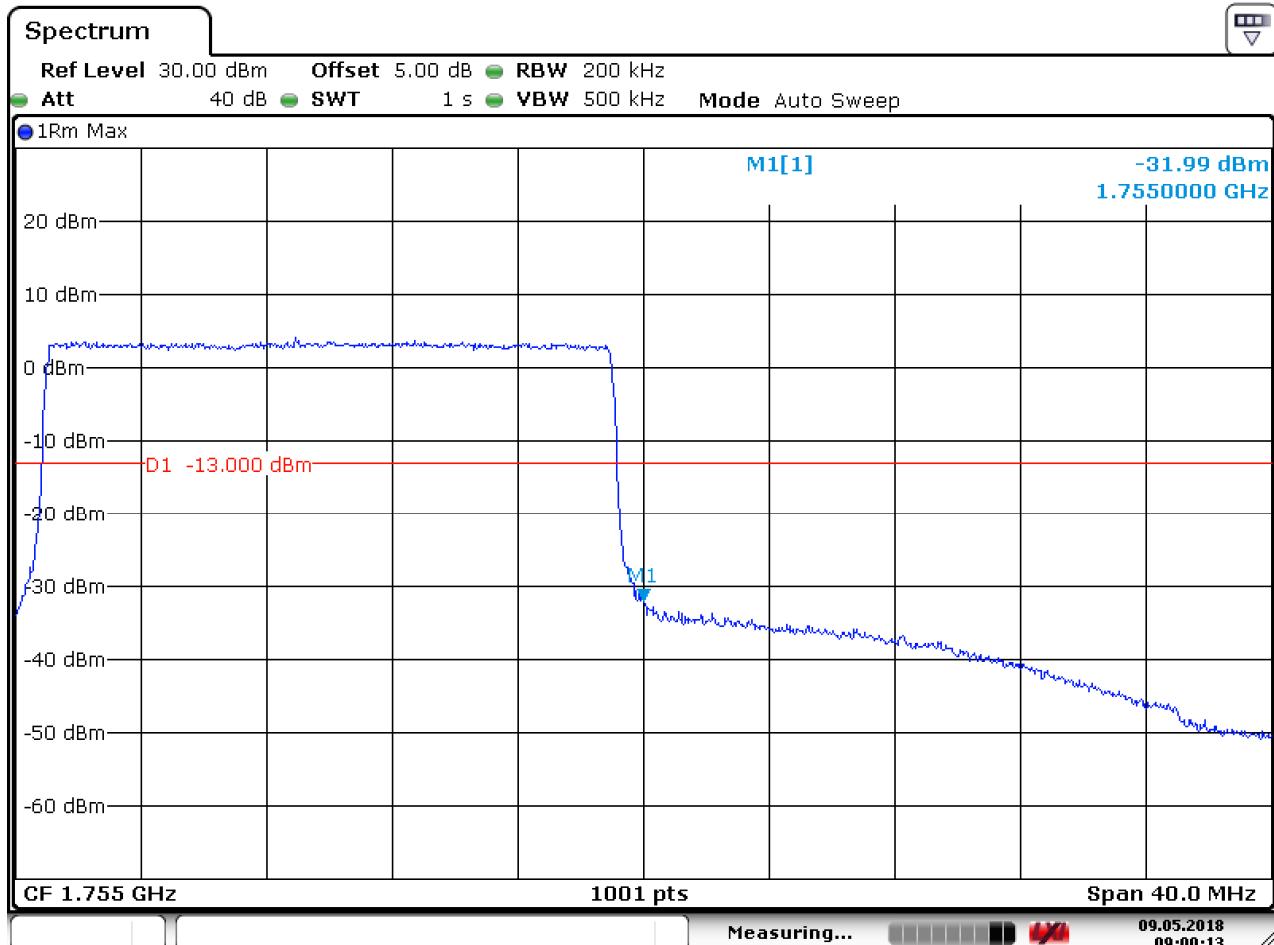


Date: 9.MAY.2018 09:25:44

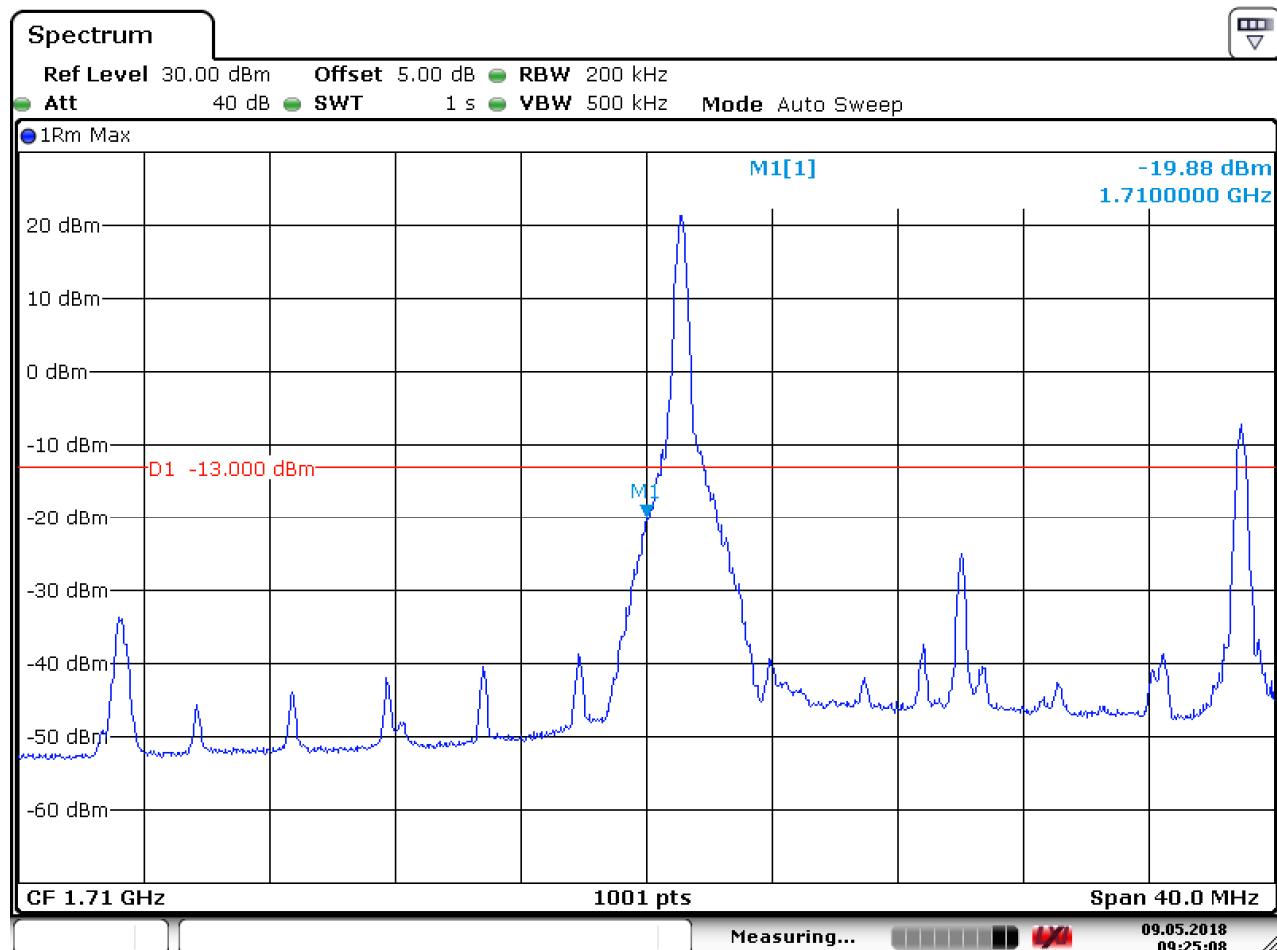
**5.1.1.11.2 Test Channel = HCH****5.1.1.11.2.1 Test RB=1RB**

Date: 9.MAY.2018 09:00:34

## 5.1.1.11.2.2 Test RB=100RB

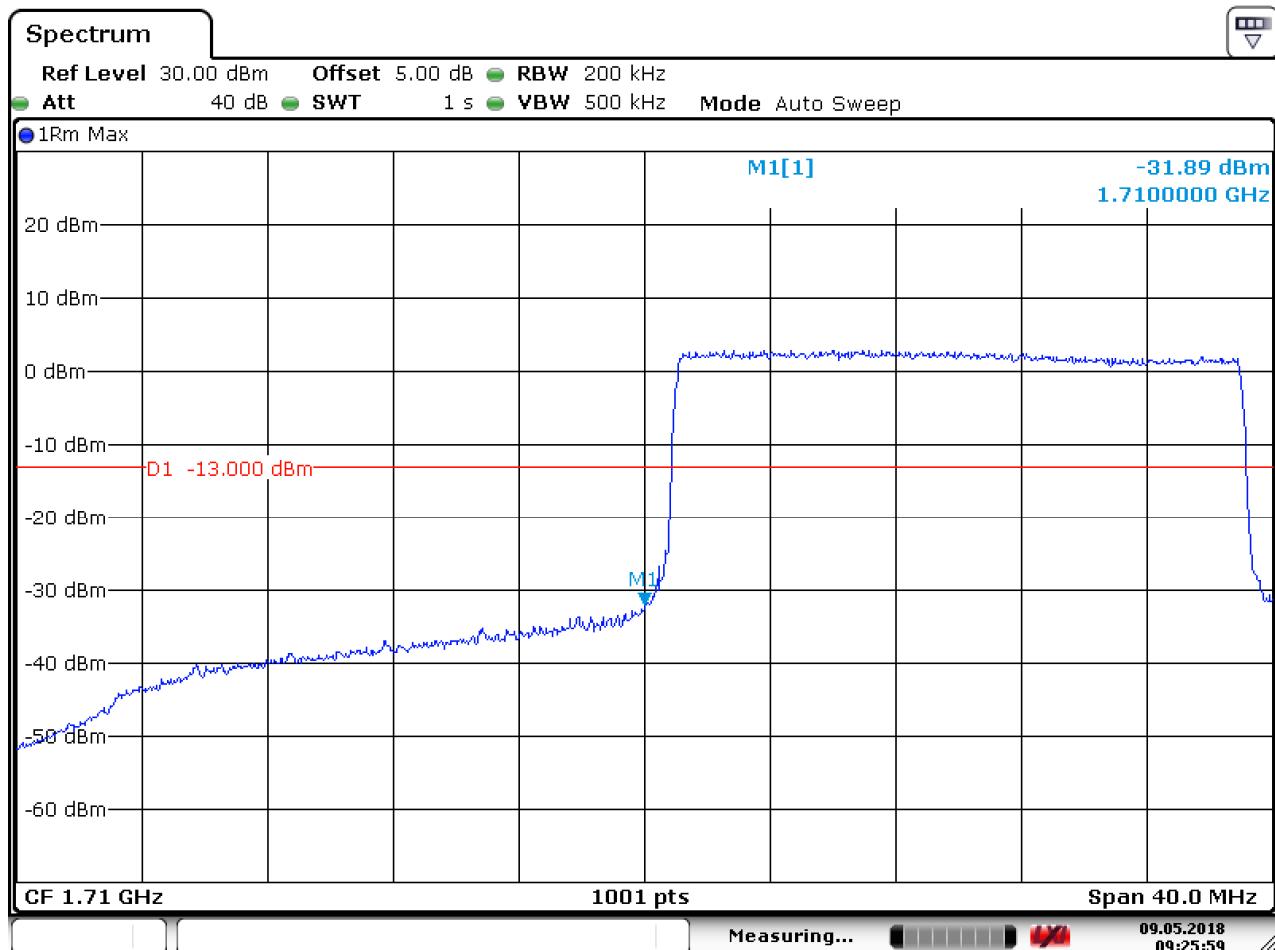


Date: 9.MAY.2018 09:00:13

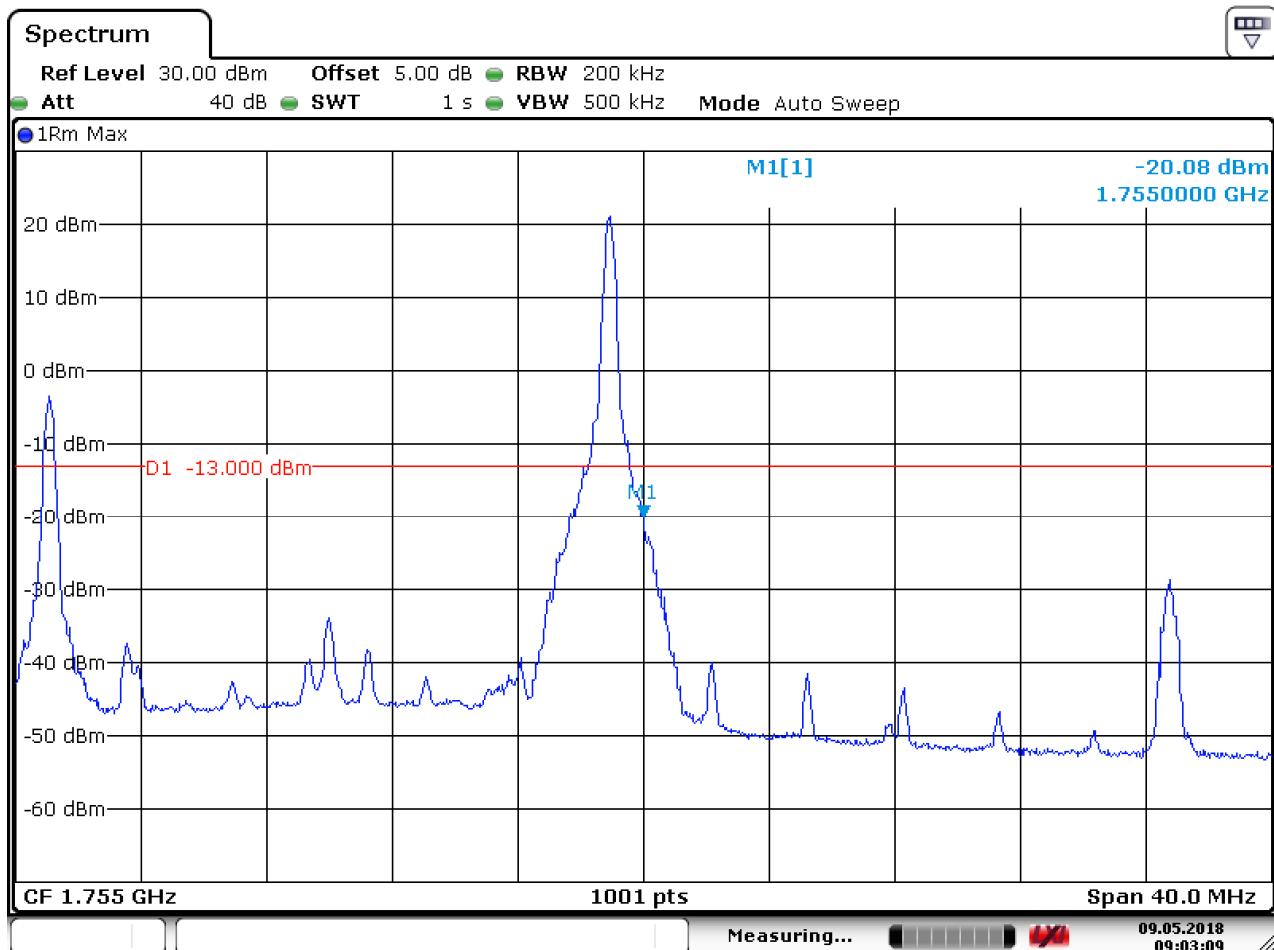
**5.1.1.12 Test Mode = LTE/TM2 20MHz****5.1.1.12.1 Test Channel = LCH****5.1.1.12.1.1 Test RB=1RB**

Date: 9.MAY.2018 09:25:09

## 5.1.1.12.1.2 Test RB=100RB

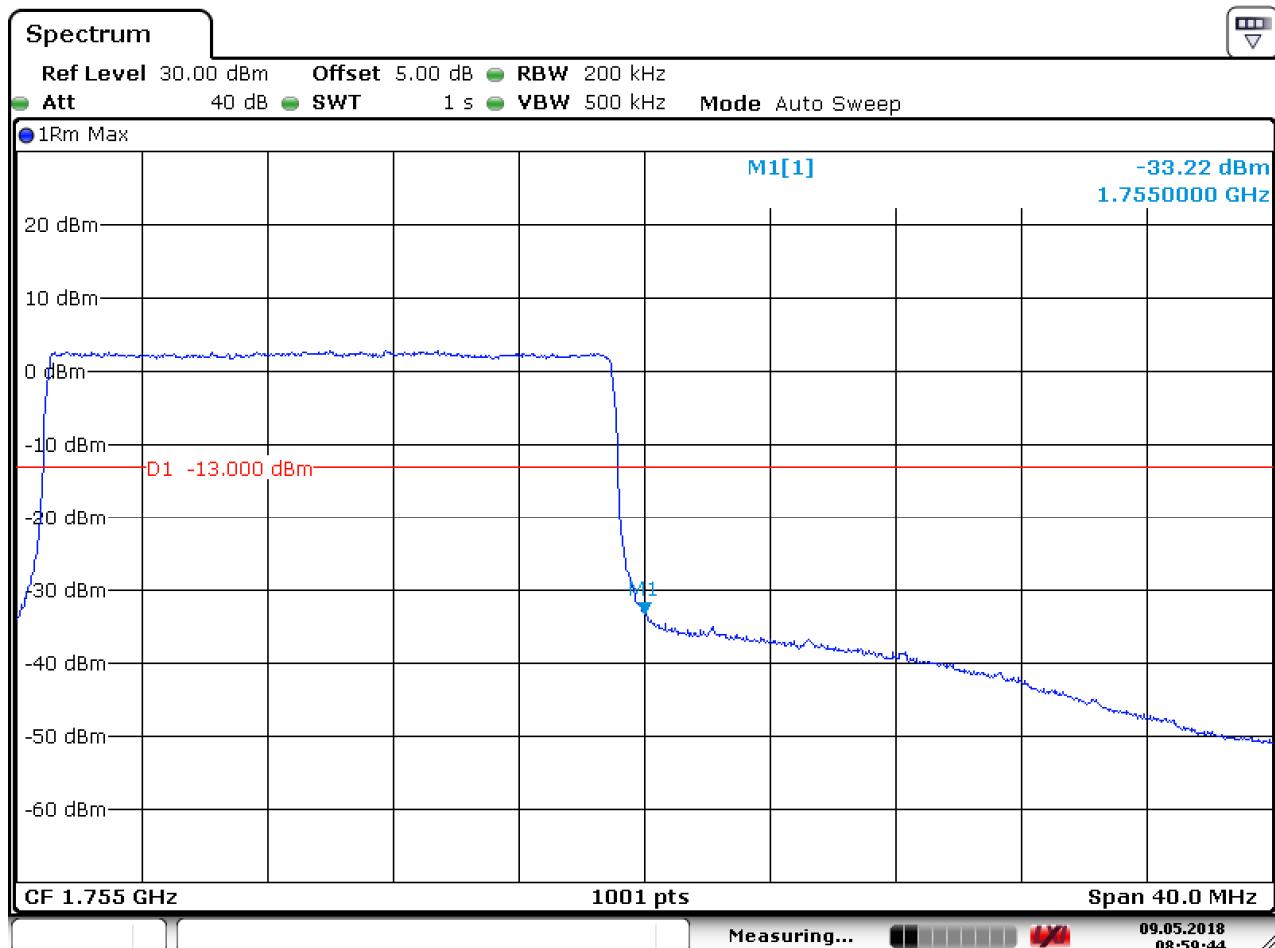


Date: 9.MAY.2018 09:26:00

**5.1.1.12.2 Test Channel = HCH****5.1.1.12.2.1 Test RB=1RB**

Date: 9.MAY.2018 09:03:09

## 5.1.1.12.2.2 Test RB=100RB



Date: 9.MAY.2018 08:59:45

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

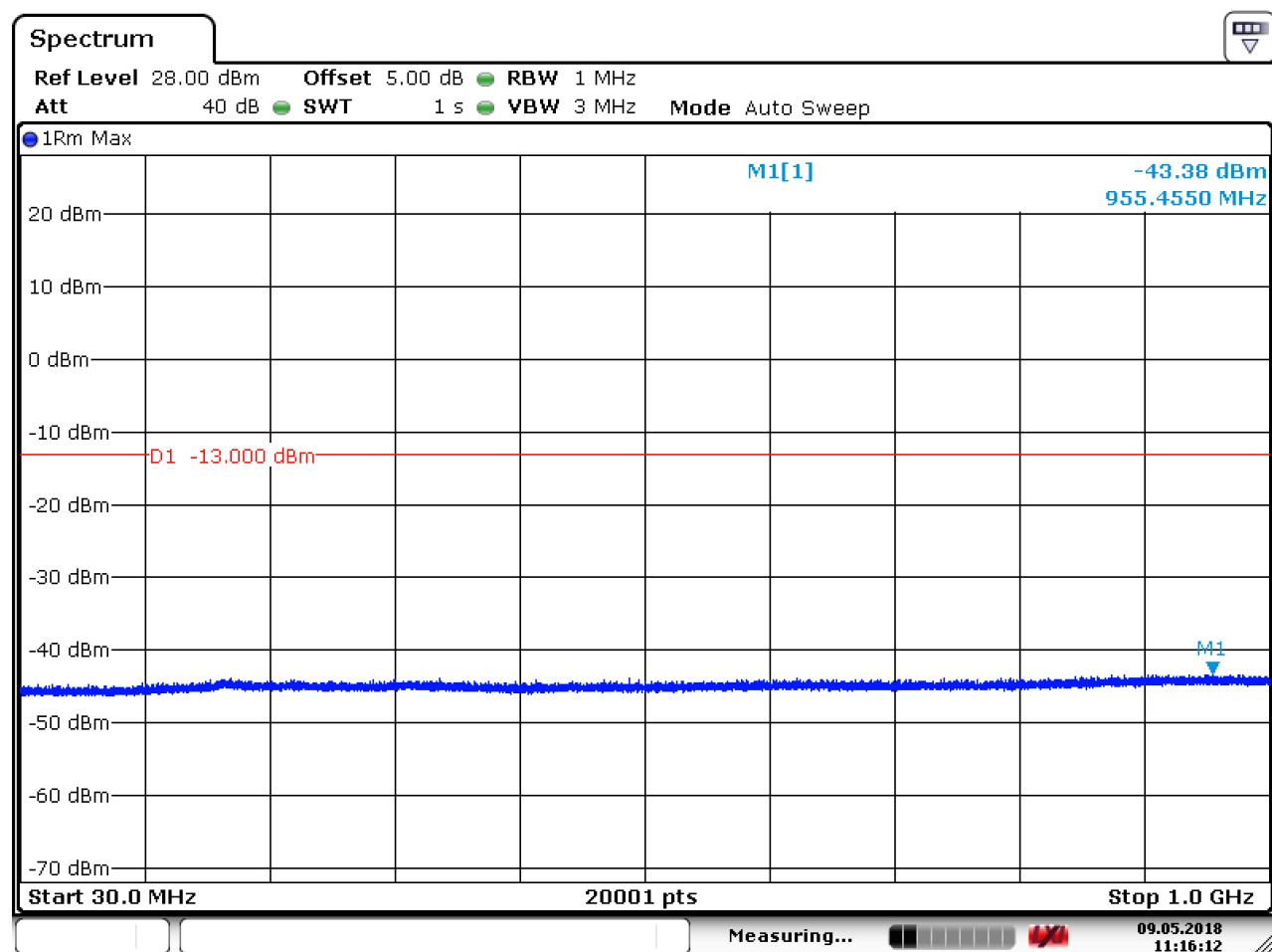
### Part I - Test Plots

#### 6.1 For LTE

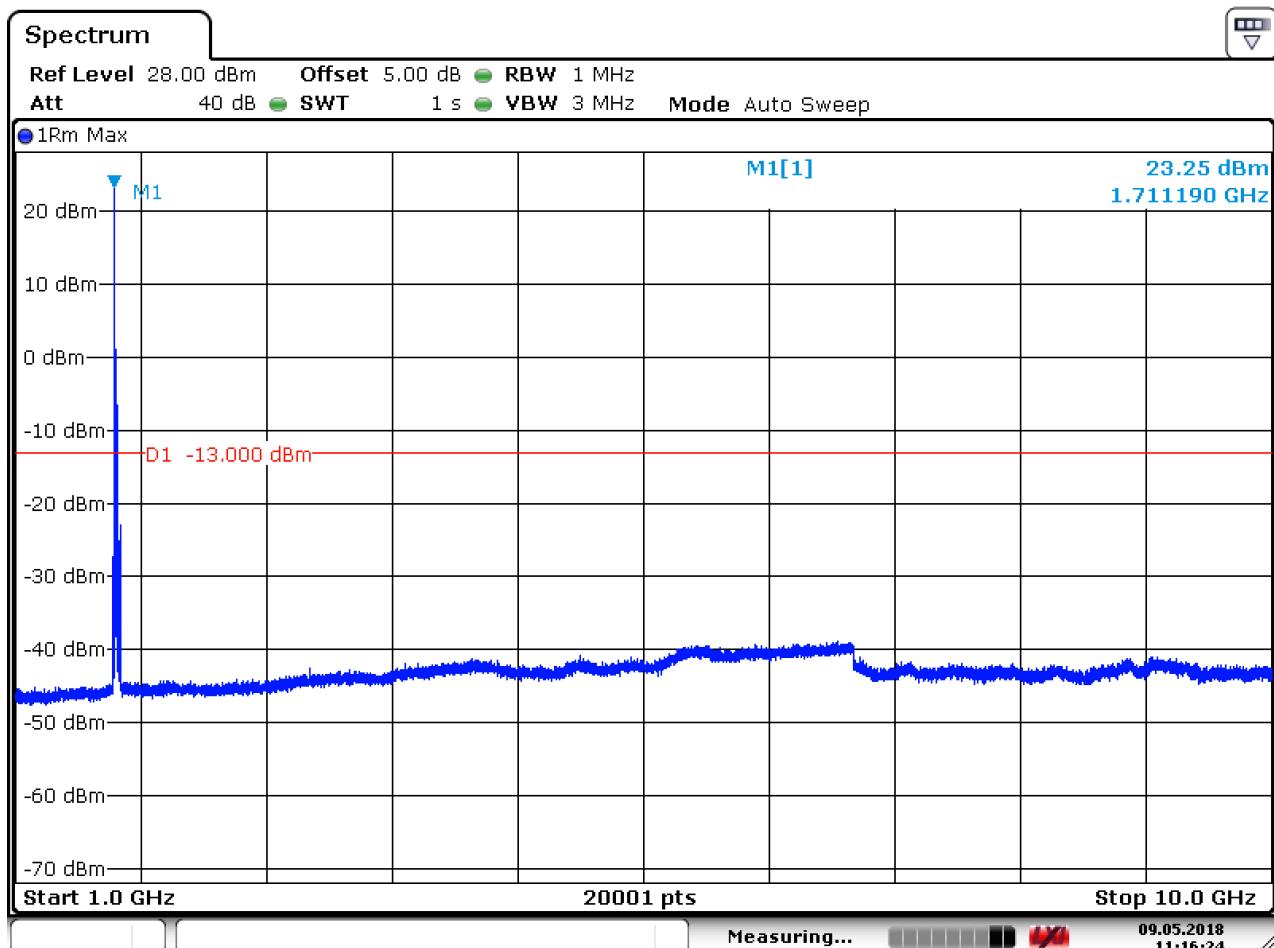
##### 6.1.1 Test Band = LTE band4

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

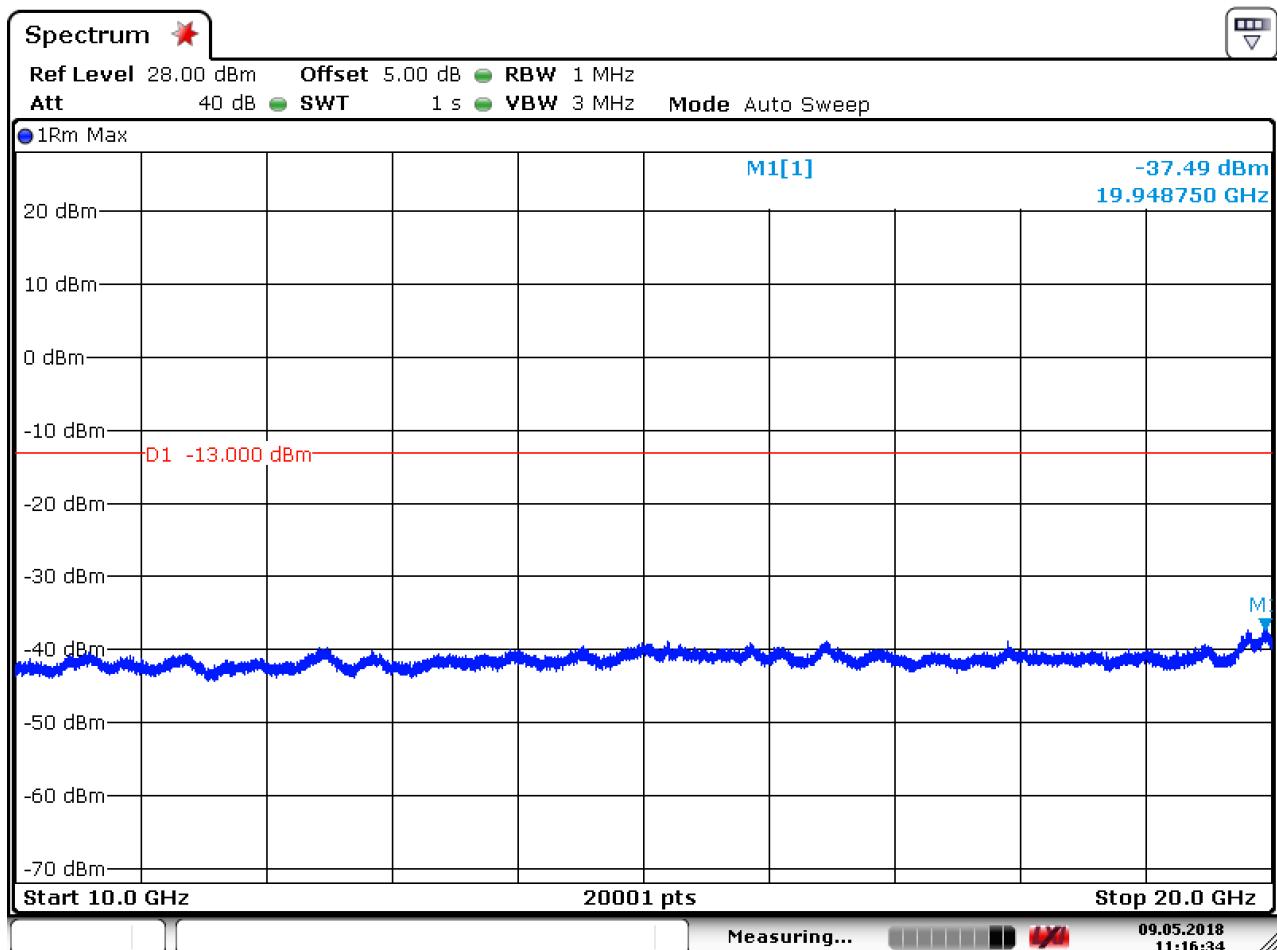
###### 6.1.1.1.1 Test Channel = LCH



Date: 9.MAY.2018 11:16:12

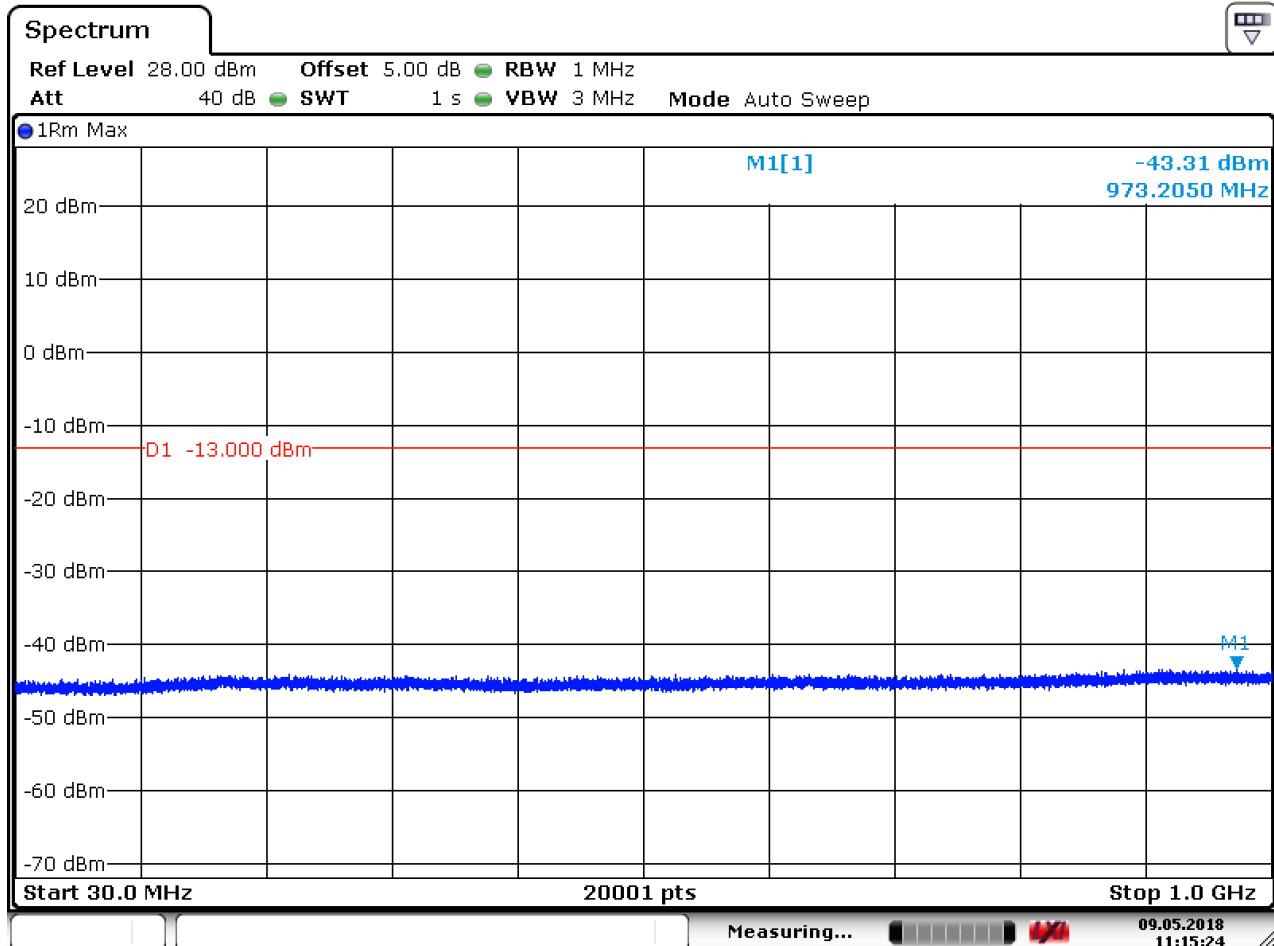
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Date: 9.MAY.2018 11:16:24

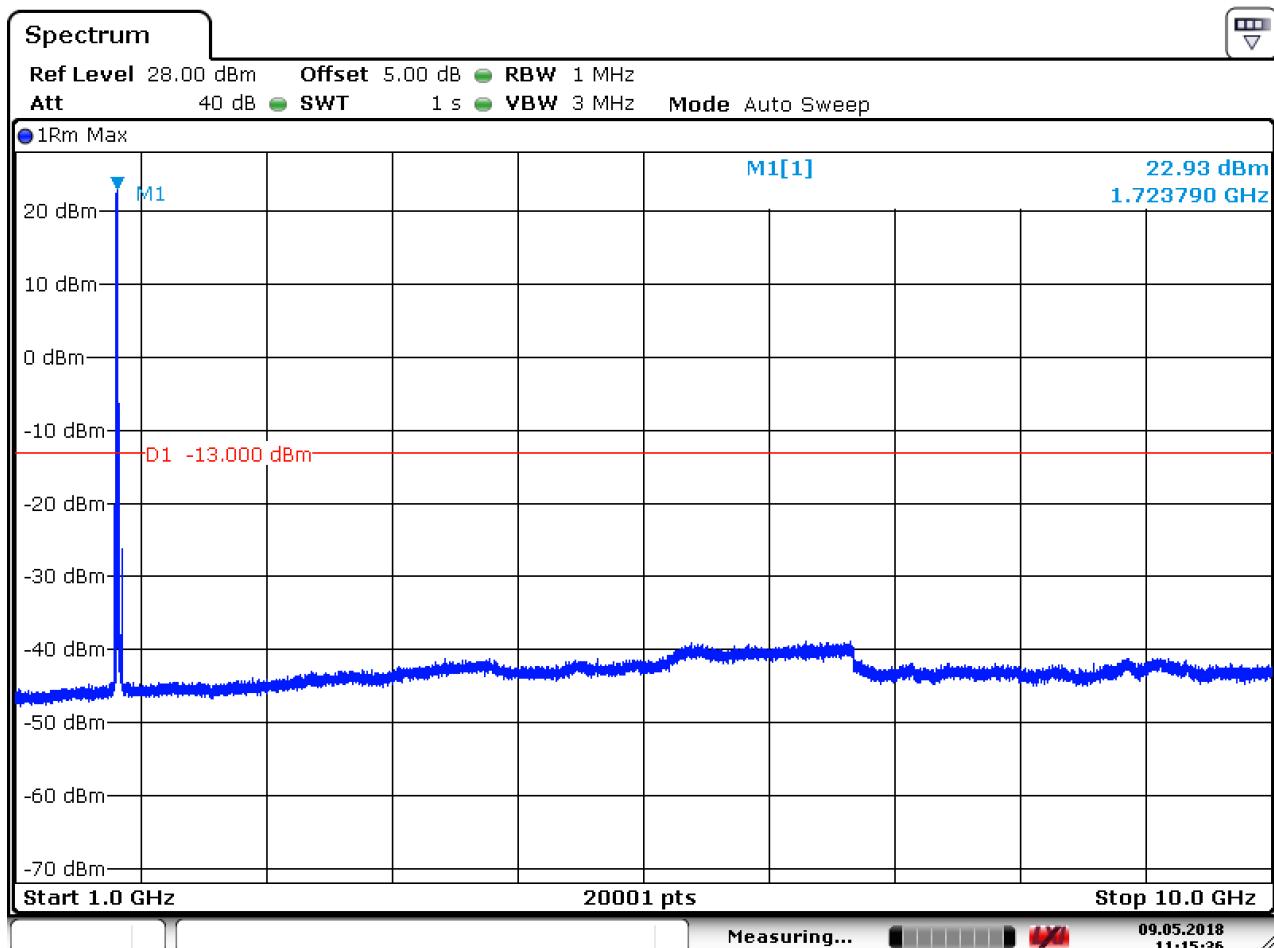


Date: 9.MAY.2018 11:16:35

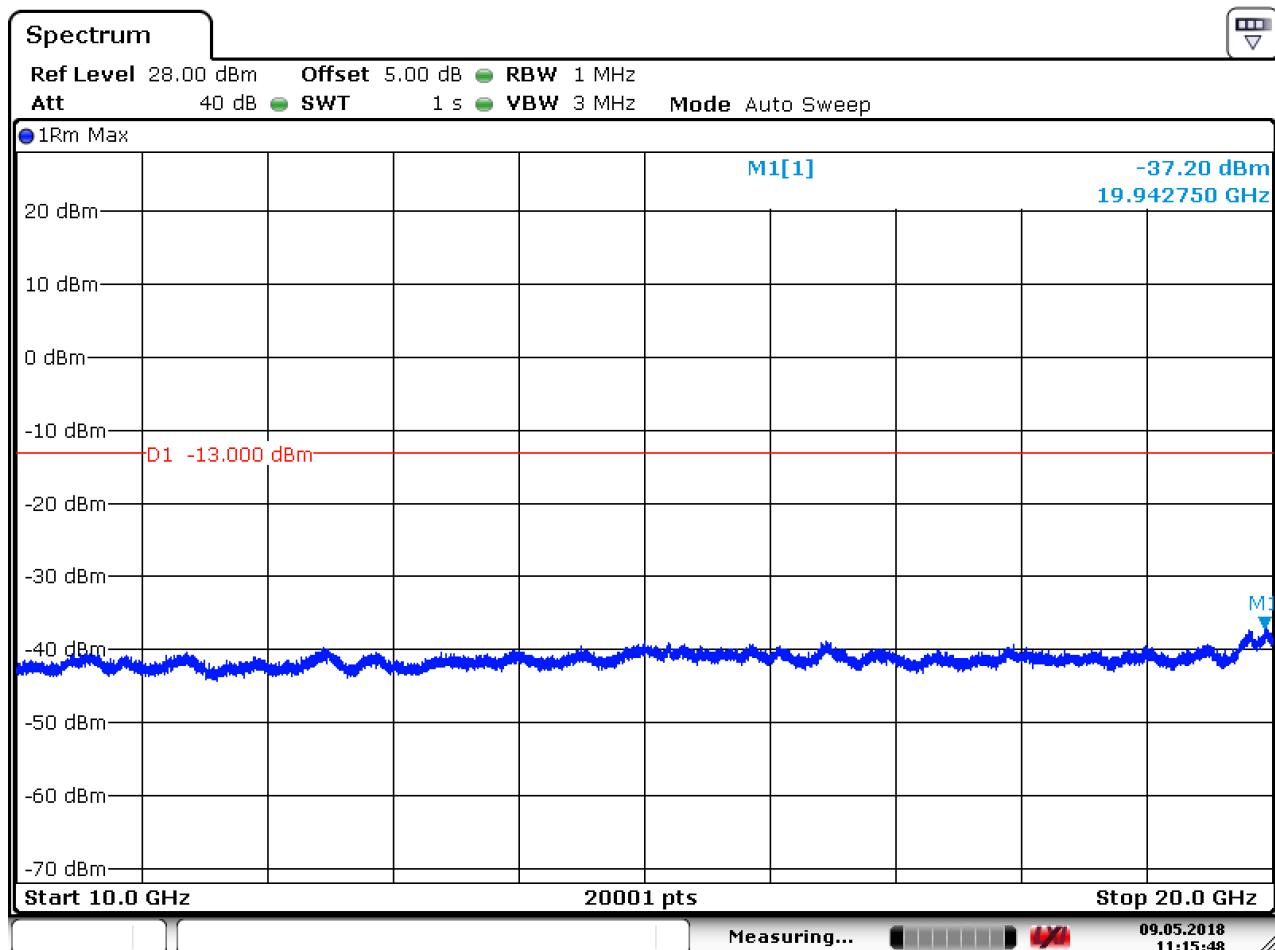
#### 6.1.1.1.2 Test Channel = MCH



Date: 9.MAY.2018 11:15:25

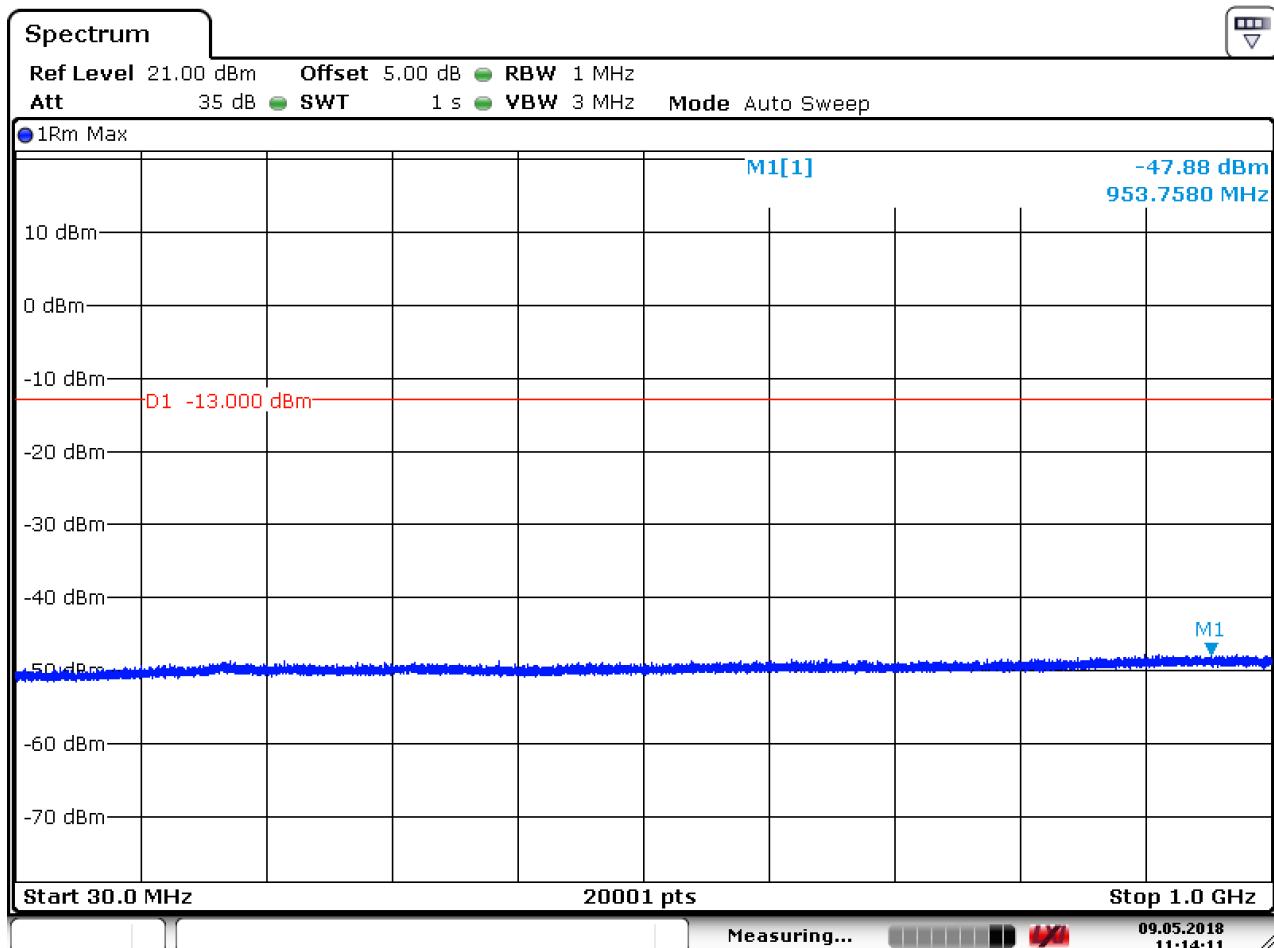
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Date: 9.MAY.2018 11:15:37

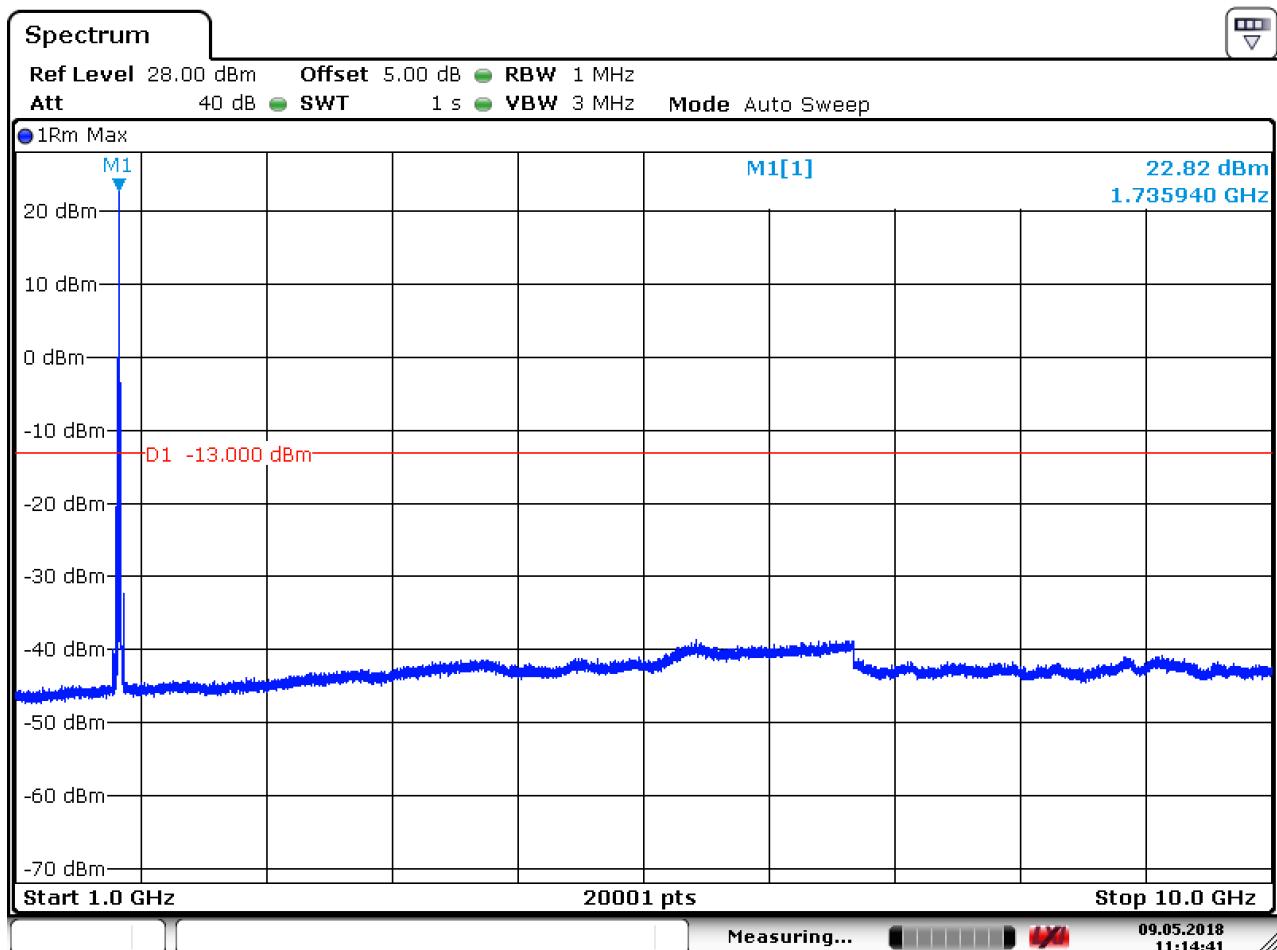
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Date: 9.MAY.2018 11:15:48

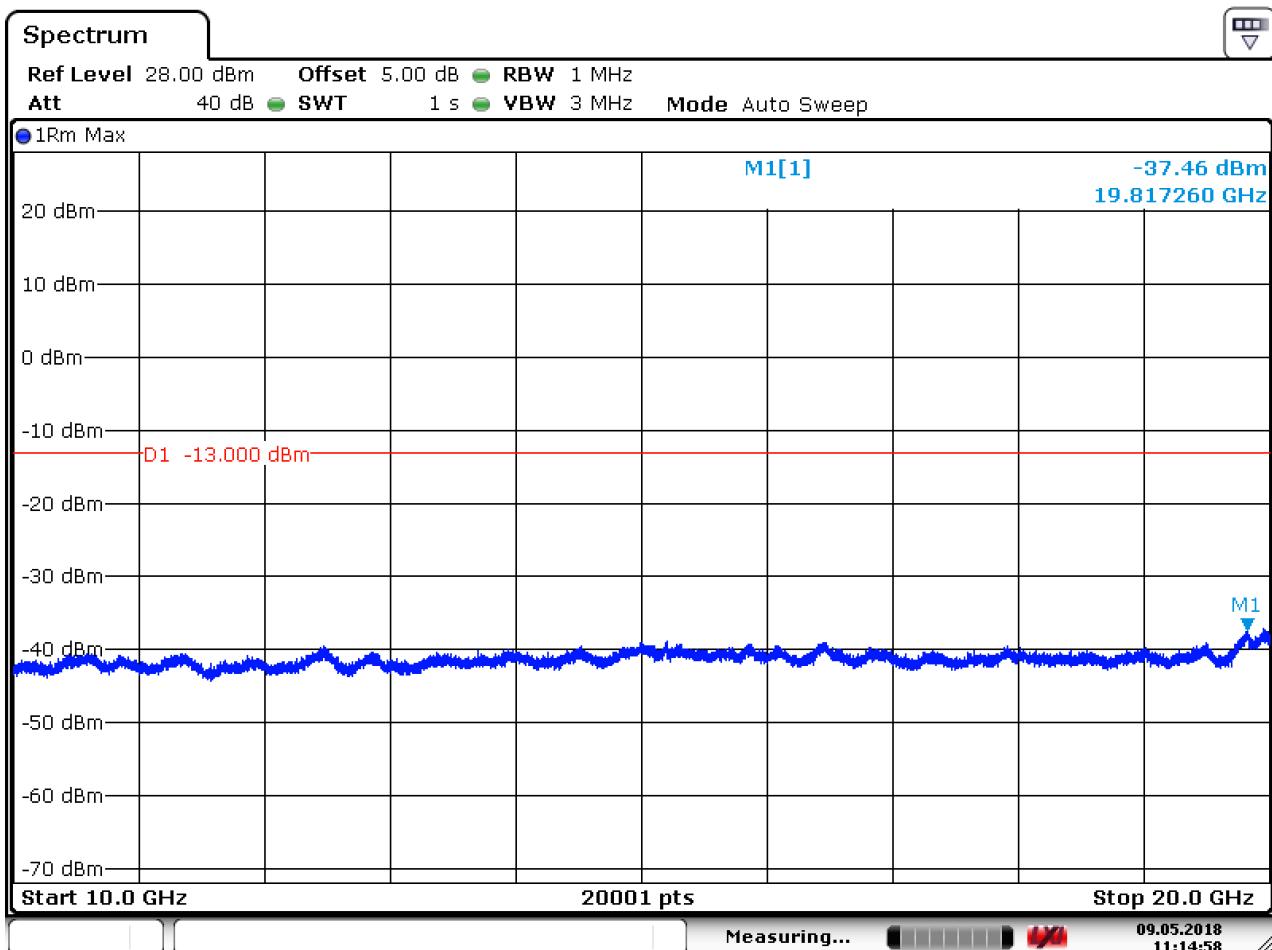
#### 6.1.1.1.3 Test Channel = HCH



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## 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
63.750000	-80.49	-13.00	67.49	Vertical
108.500000	-81.36	-13.00	68.36	Vertical
2112.500000	-47.56	-13.00	34.56	Vertical
5132.975000	-59.92	-13.00	46.92	Vertical
6844.100000	-59.12	-13.00	46.12	Vertical
8555.225000	-60.98	-13.00	47.98	Vertical
62.350000	-77.82	-13.00	64.82	Horizontal
266.450000	-84.11	-13.00	71.11	Horizontal
2112.000000	-45.22	-13.00	32.22	Horizontal
3422.175000	-63.91	-13.00	50.91	Horizontal
6844.425000	-56.98	-13.00	43.98	Horizontal
8555.225000	-57.80	-13.00	44.80	Horizontal

###### 7.1.1.1.2 Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
64.350000	-80.54	-13.00	67.54	Vertical
108.500000	-81.76	-13.00	68.76	Vertical
2135.500000	-47.91	-13.00	34.91	Vertical
5170.675000	-60.97	-13.00	47.97	Vertical
6894.475000	-62.87	-13.00	49.87	Vertical
8617.950000	-62.32	-13.00	49.32	Vertical
62.550000	-77.46	-13.00	64.46	Horizontal
266.400000	-84.20	-13.00	71.20	Horizontal
2133.000000	-45.79	-13.00	32.79	Horizontal
3446.875000	-63.96	-13.00	50.96	Horizontal
5170.675000	-63.43	-13.00	50.43	Horizontal
6894.150000	-60.12	-13.00	47.12	Horizontal

**7.1.1.1.3 Test Channel = HCH**

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
64.650000	-80.85	-13.00	67.85	Vertical
108.900000	-81.39	-13.00	68.39	Vertical
2146.000000	-47.08	-13.00	34.08	Vertical
3471.900000	-63.02	-13.00	50.02	Vertical
5208.050000	-58.96	-13.00	45.96	Vertical
8680.350000	-55.05	-13.00	42.05	Vertical
63.750000	-78.29	-13.00	65.29	Horizontal
269.400000	-83.15	-13.00	70.15	Horizontal
2141.500000	-45.75	-13.00	32.75	Horizontal
3472.225000	-61.13	-13.00	48.13	Horizontal
6944.525000	-53.51	-13.00	40.51	Horizontal
8680.350000	-52.14	-13.00	39.14	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
LTEband4	LTE/TM1 20MHz	LCH	TN	VL	-0.29	-0.00017	PASS
				VN	-2.94	-0.00171	PASS
				VH	-0.45	-0.00026	PASS
		MCH	TN	VL	8.67	0.00500	PASS
				VN	-6.68	-0.00385	PASS
				VH	2.73	0.00158	PASS
		HCH	TN	VL	-1.21	-0.00069	PASS
				VN	8.24	0.00472	PASS
				VH	-3.08	-0.00177	PASS
	LTE/TM2 20MHz	LCH	TN	VL	-0.77	-0.00045	PASS
				VN	-2.91	-0.00169	PASS
				VH	-3.71	-0.00216	PASS
		MCH	TN	VL	5.56	0.00321	PASS
				VN	2.36	0.00136	PASS
				VH	7.80	0.00450	PASS
		HCH	TN	VL	7.32	0.00420	PASS
				VN	-2.56	-0.00147	PASS
				VH	7.92	0.00454	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	-1.88	-0.00109	PASS
				-20	-3.05	-0.00177	PASS
				-10	8.72	0.00507	PASS
				0	0.26	0.00015	PASS
				10	3.94	0.00229	PASS
				20	-0.84	-0.00049	PASS
				30	-6.43	-0.00374	PASS
				40	-5.61	-0.00326	PASS
				50	6.17	0.00359	PASS
		MCH	VN	-30	-9.15	-0.00528	PASS
				-20	-8.73	-0.00504	PASS
				-10	0.12	0.00007	PASS
				0	7.15	0.00413	PASS
				10	-3.78	-0.00218	PASS
				20	2.89	0.00167	PASS
				30	5.28	0.00305	PASS
				40	-6.94	-0.00400	PASS
				50	1.01	0.00059	PASS
		HCH	VN	-30	-0.78	-0.00045	PASS
				-20	5.80	0.00337	PASS
				-10	-2.60	-0.00151	PASS
				0	5.82	0.00338	PASS
				10	4.47	0.00260	PASS
				20	-6.54	-0.00380	PASS
				30	-1.11	-0.00064	PASS
				40	5.03	0.00292	PASS
				50	8.80	0.00512	PASS



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Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband4	LTE/TM2 20MHz	LCH	VN	-30	5.80	0.00337	PASS
				-20	2.92	0.00170	PASS
				-10	2.33	0.00135	PASS
				0	4.91	0.00285	PASS
				10	-9.57	-0.00556	PASS
				20	0.50	0.00029	PASS
				30	-0.98	-0.00057	PASS
				40	-0.19	-0.00011	PASS
				50	2.65	0.00154	PASS
		MCH	VN	-30	-1.45	-0.00084	PASS
				-20	1.62	0.00094	PASS
				-10	2.86	0.00165	PASS
				0	-6.05	-0.00349	PASS
				10	4.66	0.00269	PASS
				20	7.00	0.00404	PASS
				30	5.46	0.00315	PASS
				40	9.90	0.00572	PASS
				50	-9.11	-0.00526	PASS
		HCH	VN	-30	9.35	0.00543	PASS
				-20	0.46	0.00027	PASS
				-10	-8.01	-0.00466	PASS
				0	2.95	0.00171	PASS
				10	0.66	0.00038	PASS
				20	4.76	0.00277	PASS
				30	-8.89	-0.00517	PASS
				40	0.78	0.00045	PASS
				50	-4.68	-0.00272	PASS

The End