



# Appendix B

## WCDMA Band 2&4&5

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## 1 Effective (Isotropic) Radiated Power Output Data

### Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dB m]	EIRP[dBm]	Limit[dBm]	Verdict
WCDMA1900	UMTS/TM1	LCH	23.47	20.67	33	PASS
		MCH	23.36	20.56	33	PASS
		HCH	23.34	20.54	33	PASS
	UMTS/TM2	LCH	20.36	17.56	33	PASS
		MCH	20.14	17.34	33	PASS
		HCH	20.2	17.4	33	PASS
WCDMA1700	UMTS/TM1	LCH	23.26	20.06	30	PASS
		MCH	23.38	20.18	30	PASS
		HCH	23.5	20.3	30	PASS
	UMTS/TM2	LCH	20.12	16.92	30	PASS
		MCH	20.33	17.13	30	PASS
		HCH	20.06	16.86	30	PASS

Test Band	Test Mode	Test Channel	Measured[dB m]	ERP[dBm]	Limit[dBm]	Verdict
WCDMA850	UMTS/TM1	LCH	23.2	17.45	38.45	PASS
		MCH	23.15	17.4	38.45	PASS
		HCH	23.16	17.41	38.45	PASS
	UMTS/TM2	LCH	20.08	14.33	38.45	PASS
		MCH	20.14	14.39	38.45	PASS
		HCH	20.11	14.36	38.45	PASS

Note:

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

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

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

b: SGP=Signal Generator Level

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

Detector: RMS

## 2 Peak-to-Average Ratio

**Part I - Test Results**

Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
WCDMA1900	UMTS/TM1	LCH	2.52	13	PASS
		MCH	2.72	13	PASS
		HCH	2.35	13	PASS
	UMTS/TM2	LCH	4.70	13	PASS
		MCH	5.83	13	PASS
		HCH	3.77	13	PASS
WCDMA1700	UMTS/TM1	LCH	2.67	13	PASS
		MCH	2.99	13	PASS
		HCH	2.70	13	PASS
	UMTS/TM2	LCH	5.68	13	PASS
		MCH	5.25	13	PASS
		HCH	4.93	13	PASS
WCDMA850	UMTS/TM1	LCH	1.94	13	PASS
		MCH	2.52	13	PASS
		HCH	1.62	13	PASS
	UMTS/TM2	LCH	3.86	13	PASS
		MCH	3.91	13	PASS
		HCH	2.87	13	PASS

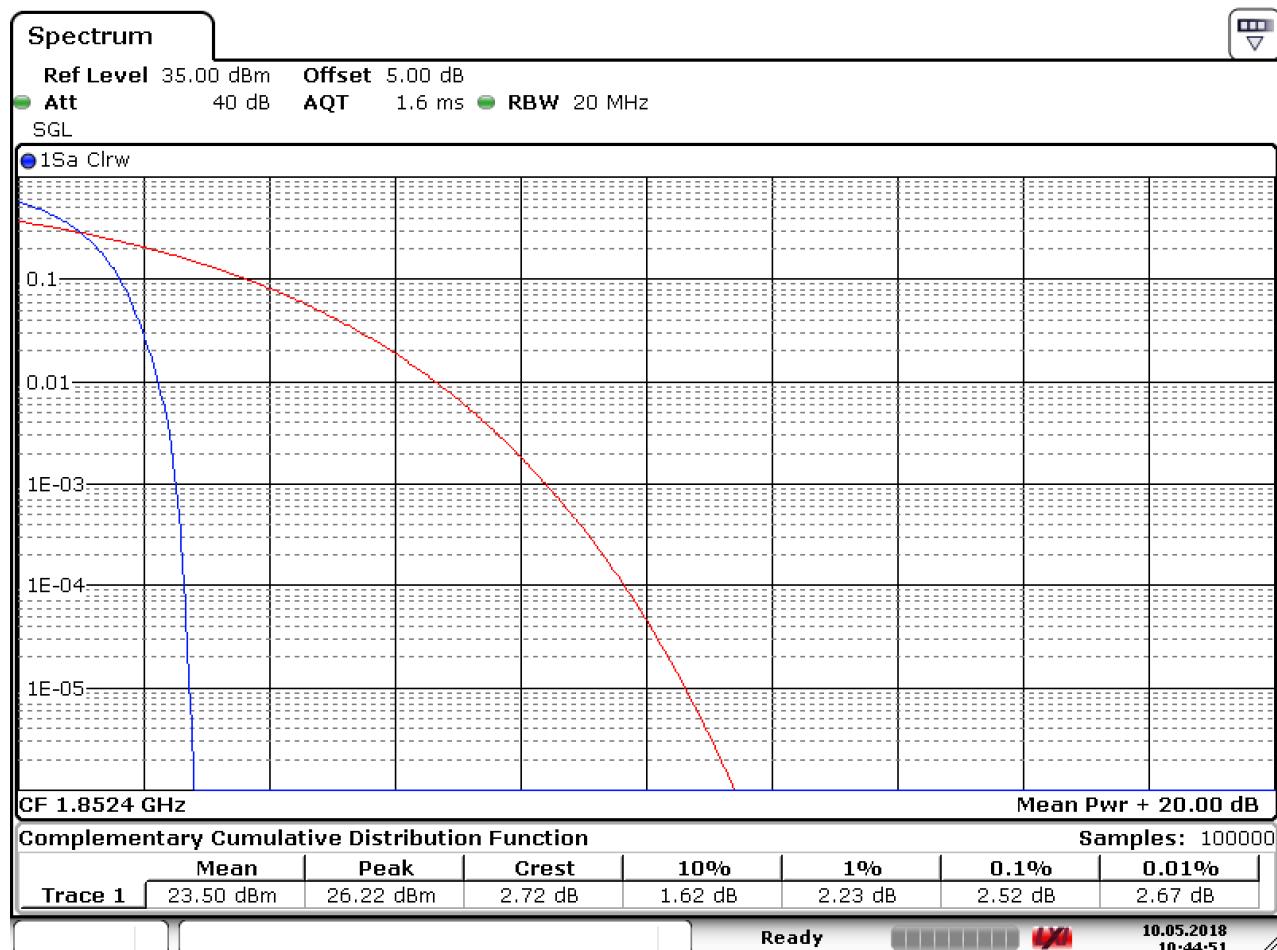
Part II - Test Plots

## 2.1 For WCDMA

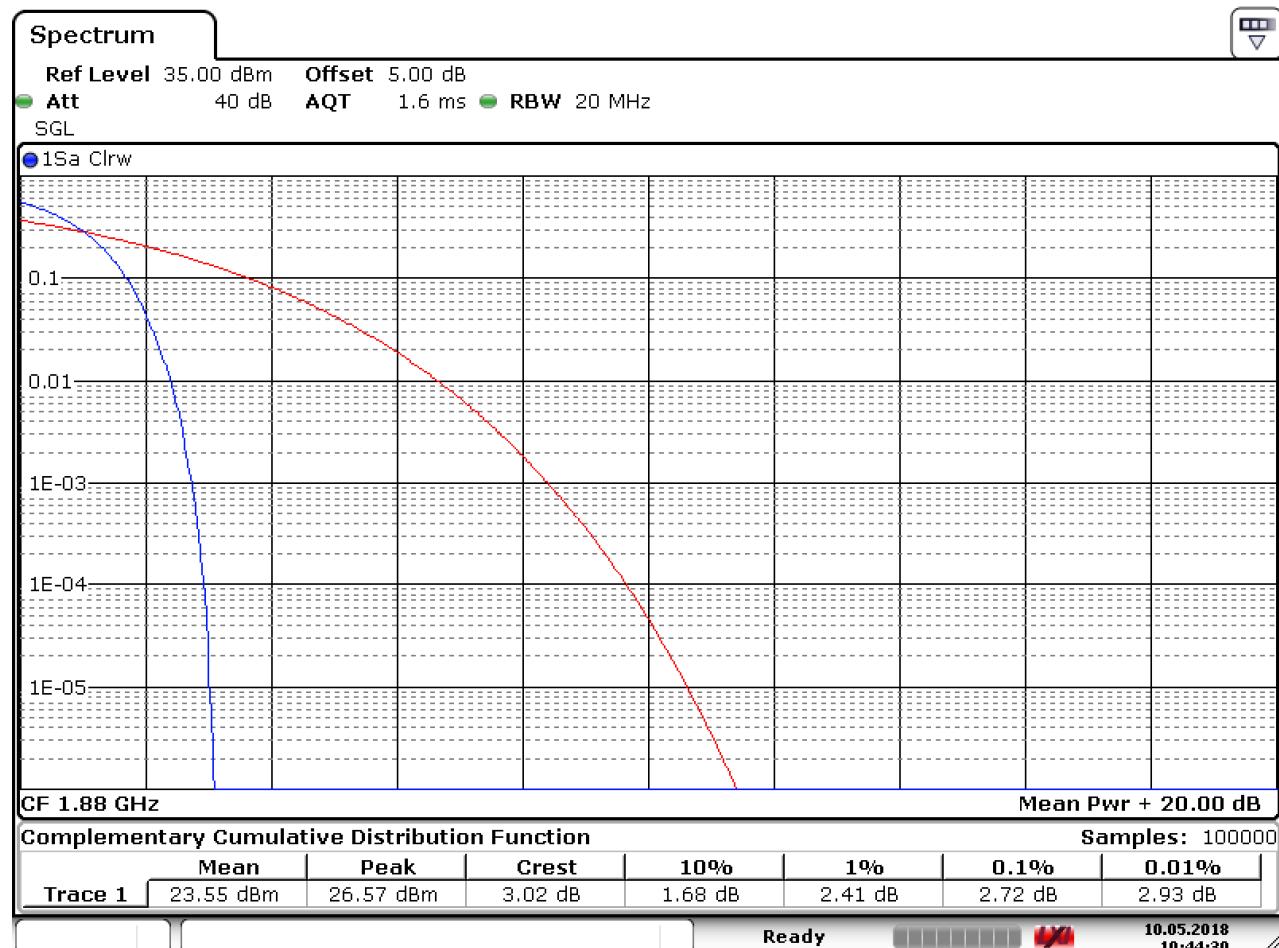
### 2.1.1 Test Band = WCDMA 1900

#### 2.1.1.1 Test Mode = UMTS/TM1

##### 2.1.1.1.1 Test Channel = LCH

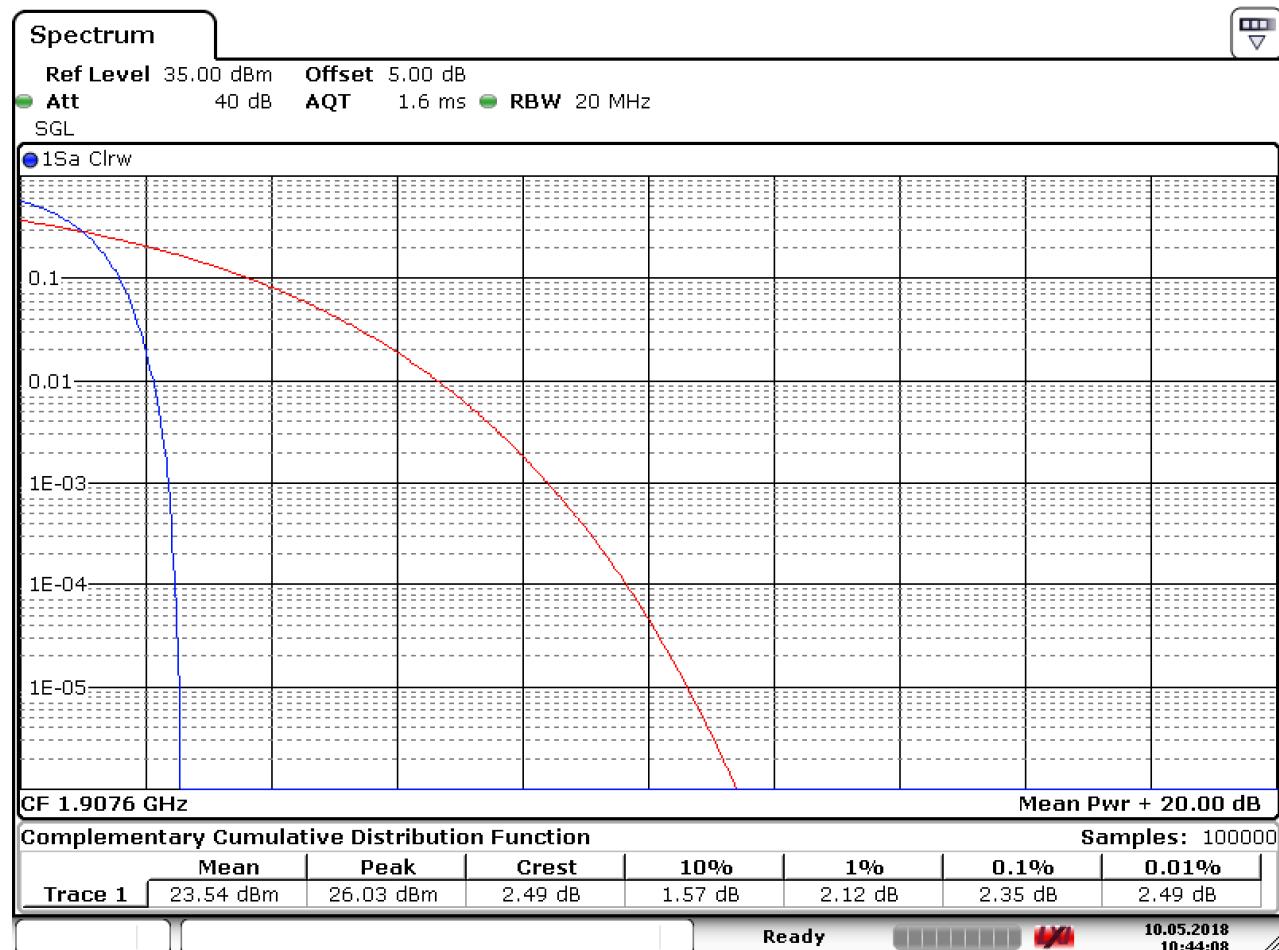


Date: 10.MAY.2018 10:44:52

**2.1.1.1.2 Test Channel = MCH**

Date: 10.MAY.2018 10:44:31

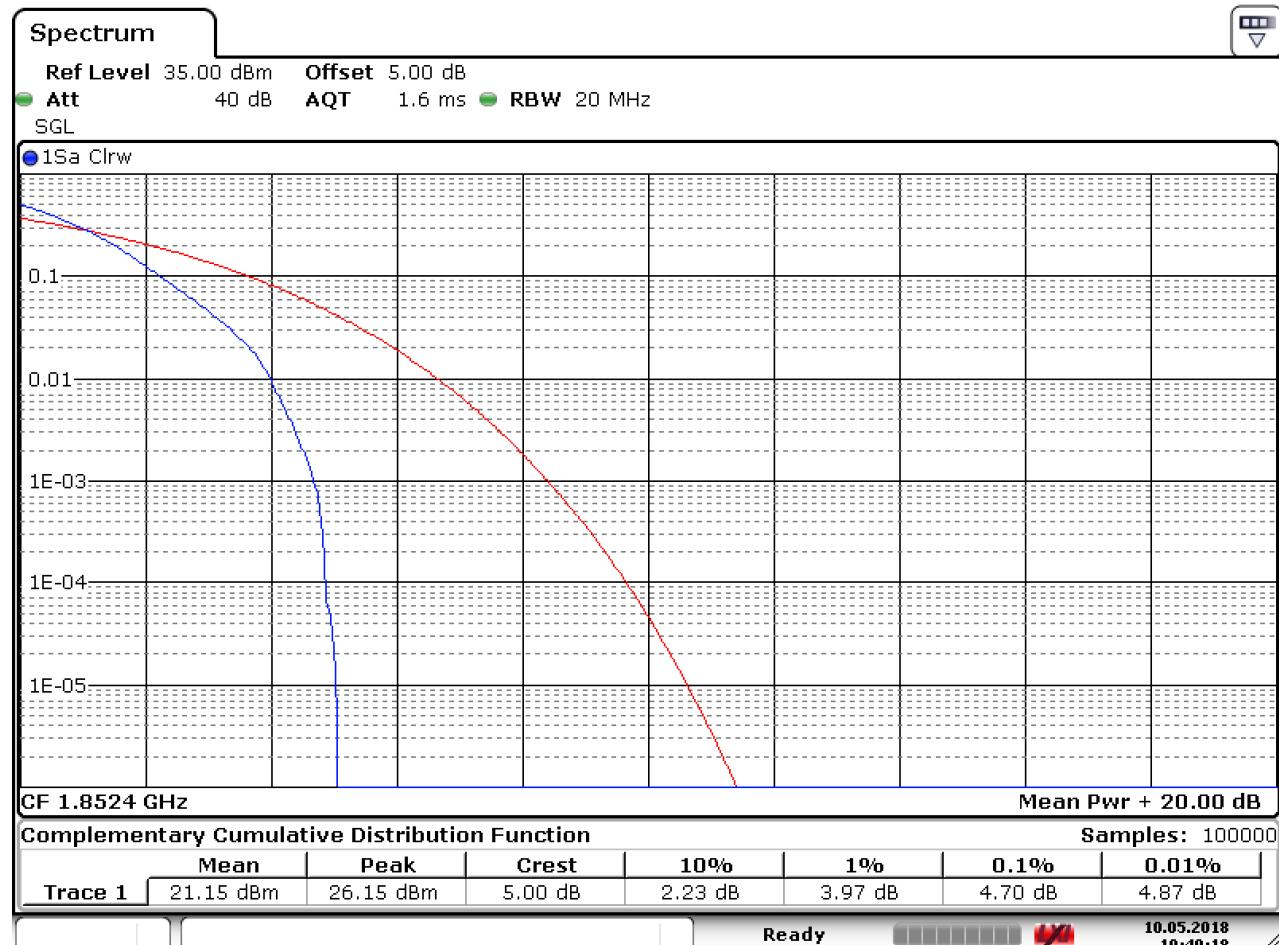
### 2.1.1.1.3 Test Channel = HCH



Date: 10.MAY.2018 10:44:08

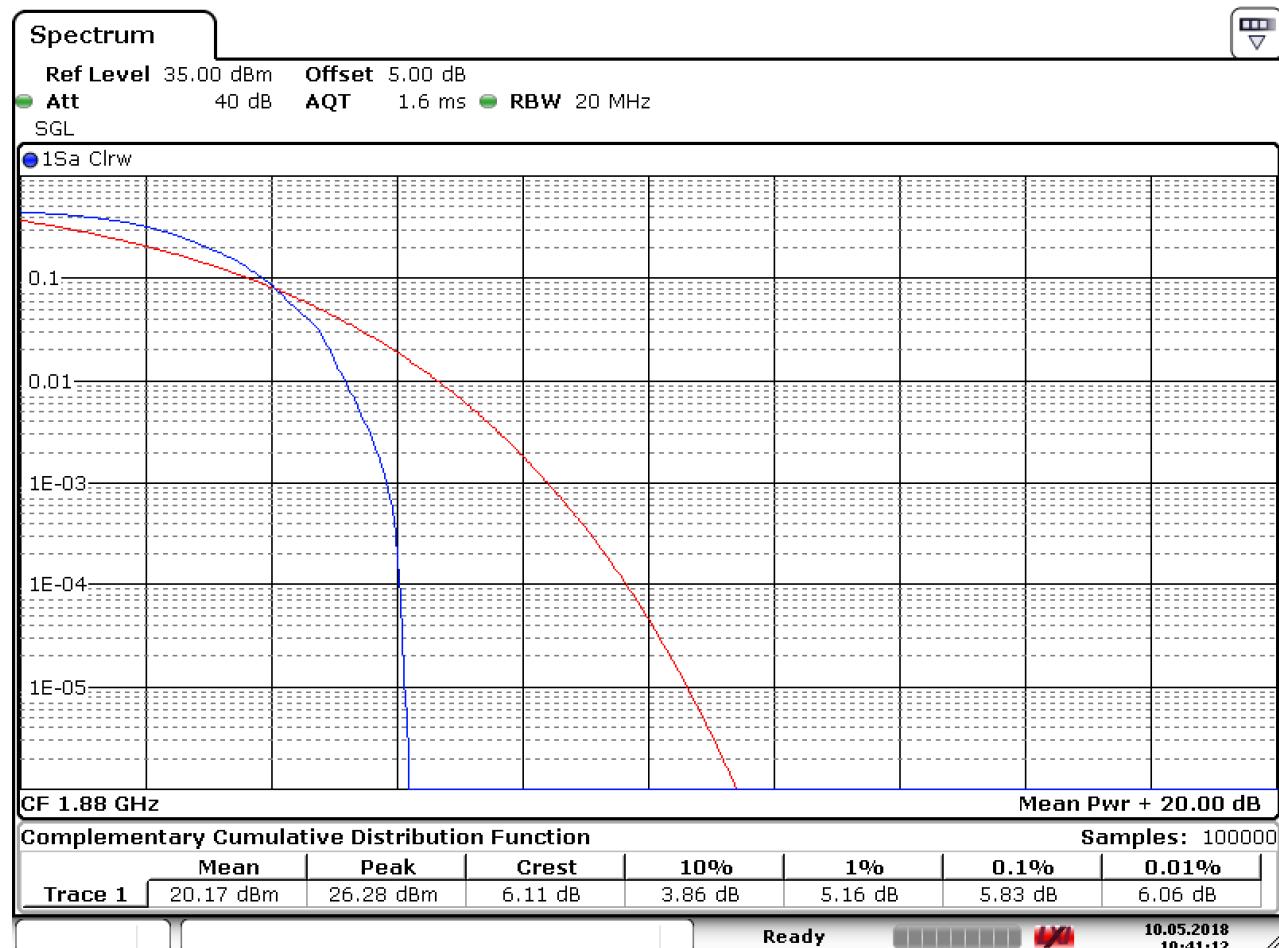
### 2.1.1.2 Test Mode = UMTS/TM2

#### 2.1.1.2.1 Test Channel = LCH

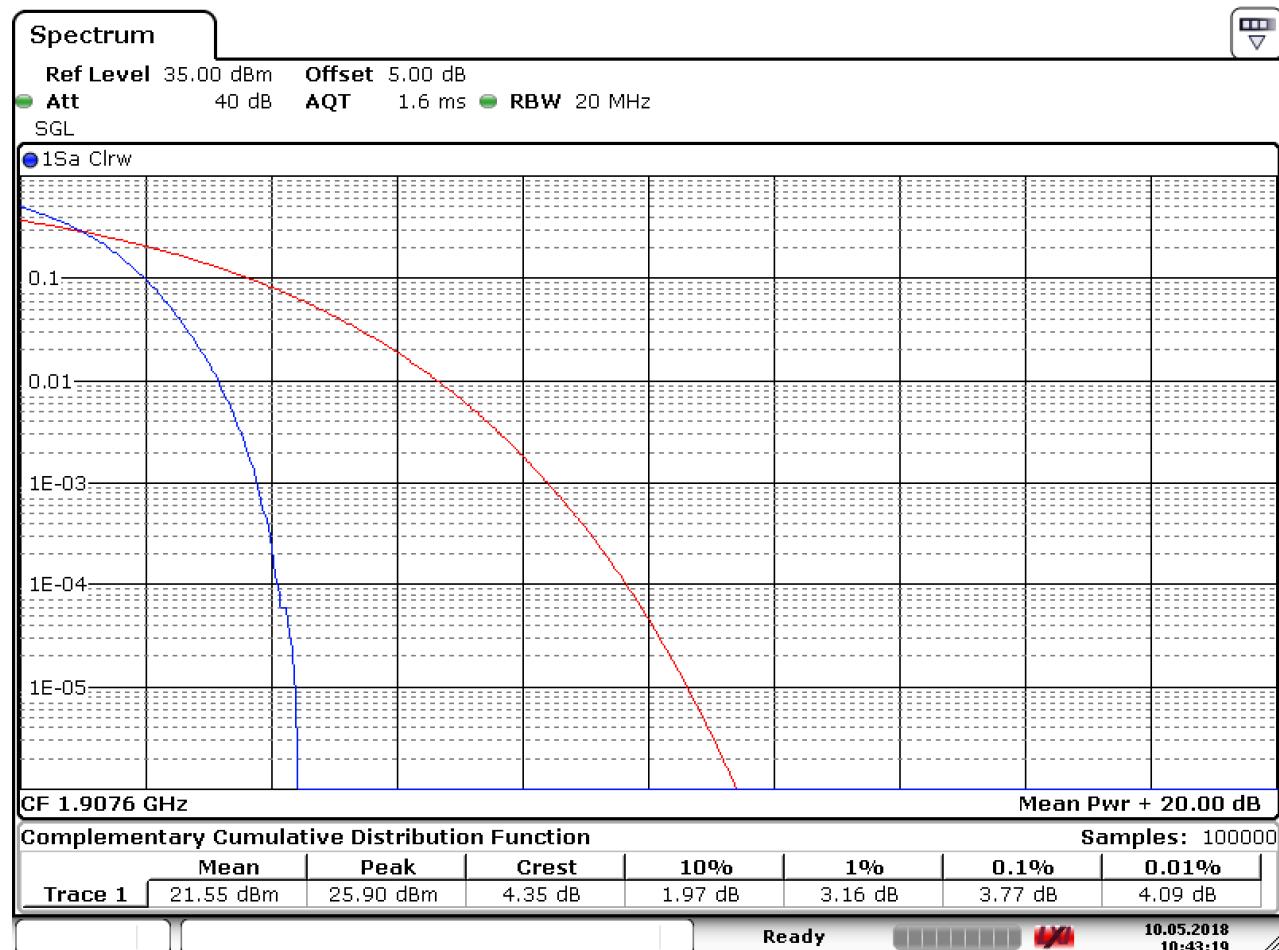


Date: 10.MAY.2018 10:40:18

## 2.1.1.2.2 Test Channel = MCH



Date: 10.MAY.2018 10:41:13

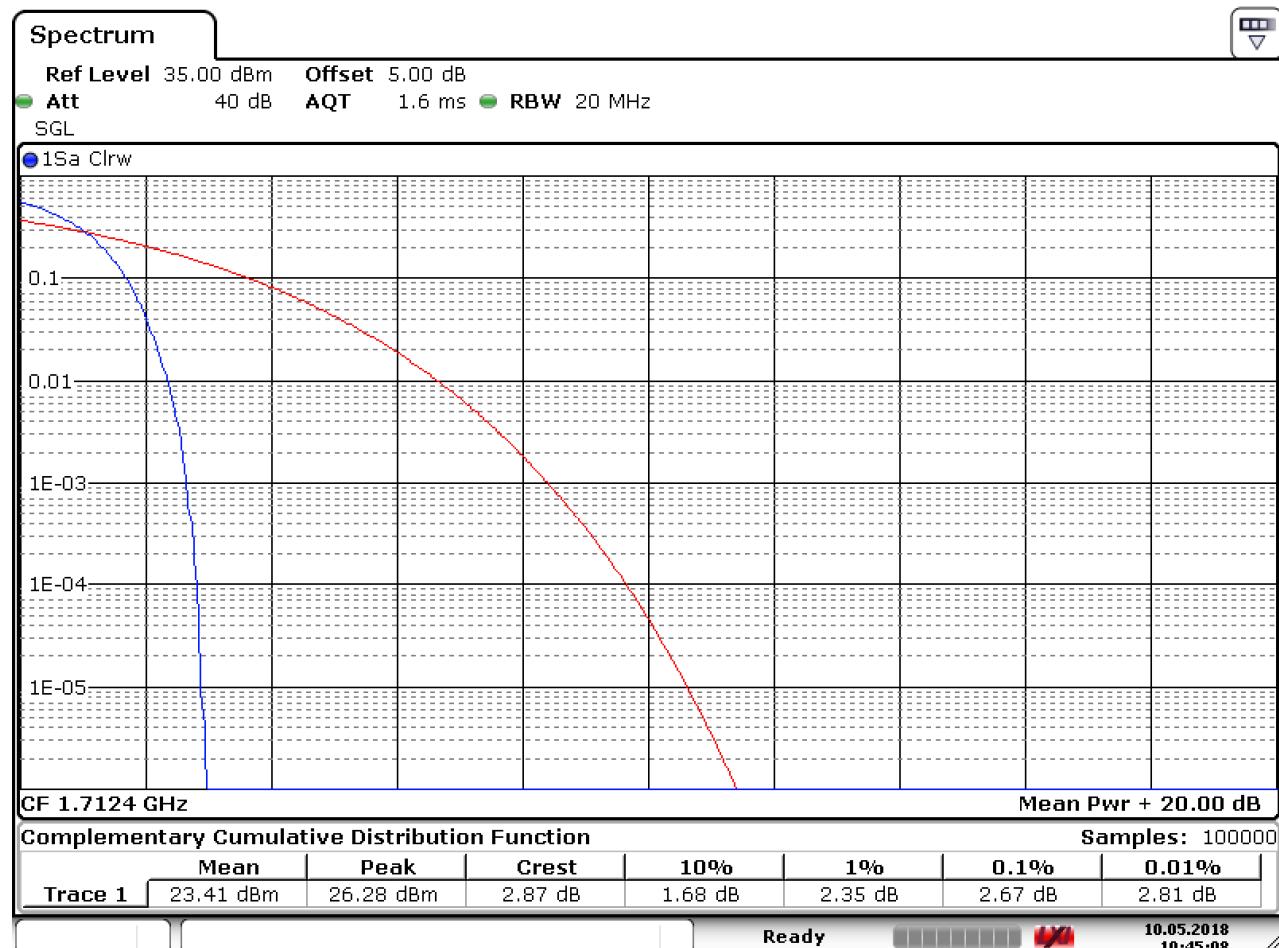
**2.1.1.2.3 Test Channel = HCH**

Date: 10.MAY.2018 10:43:19

## 2.1.2 Test Band = WCDMA 1700

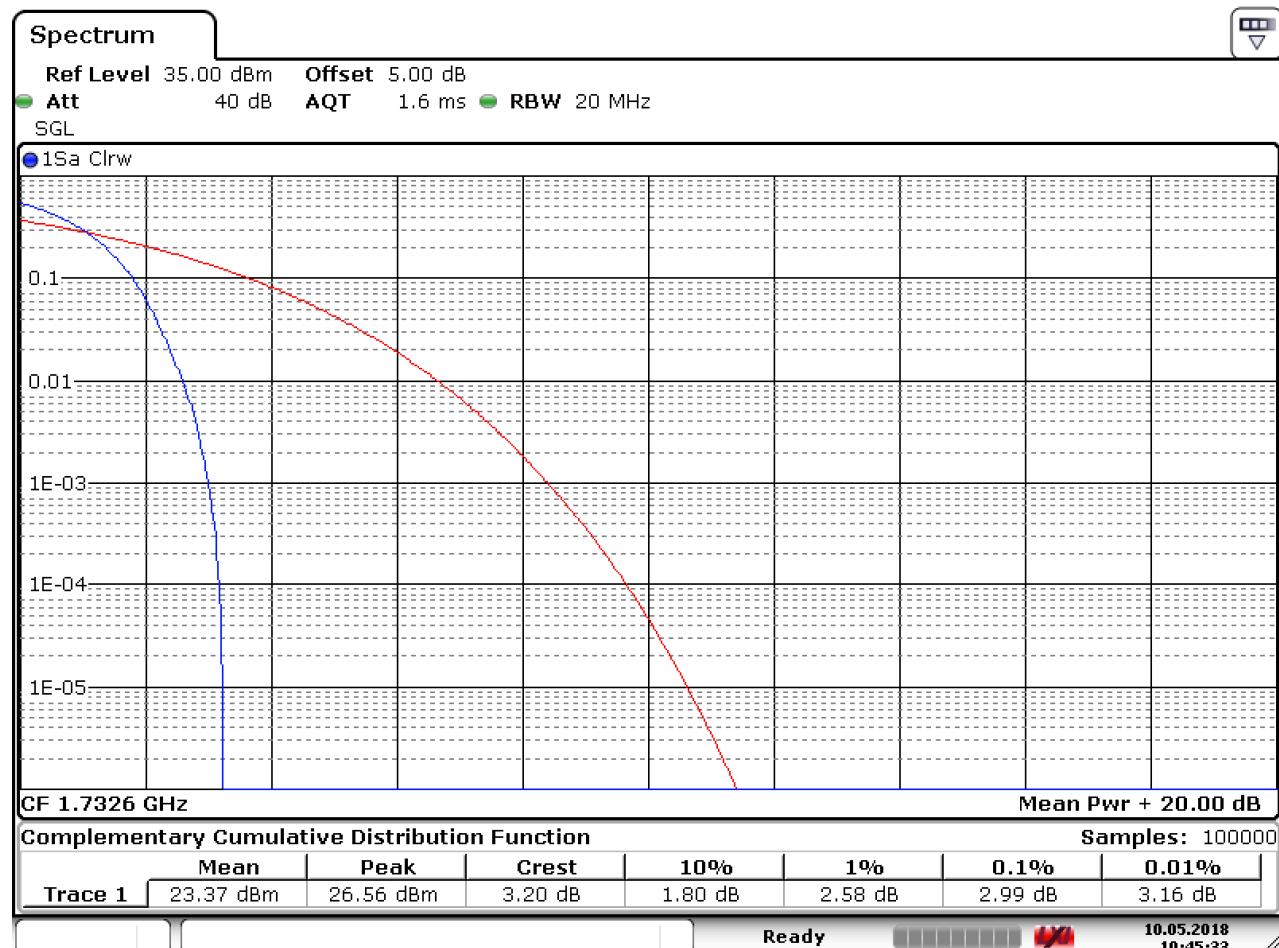
### 2.1.2.1 Test Mode = UMTS/TM1

#### 2.1.2.1.1 Test Channel = LCH



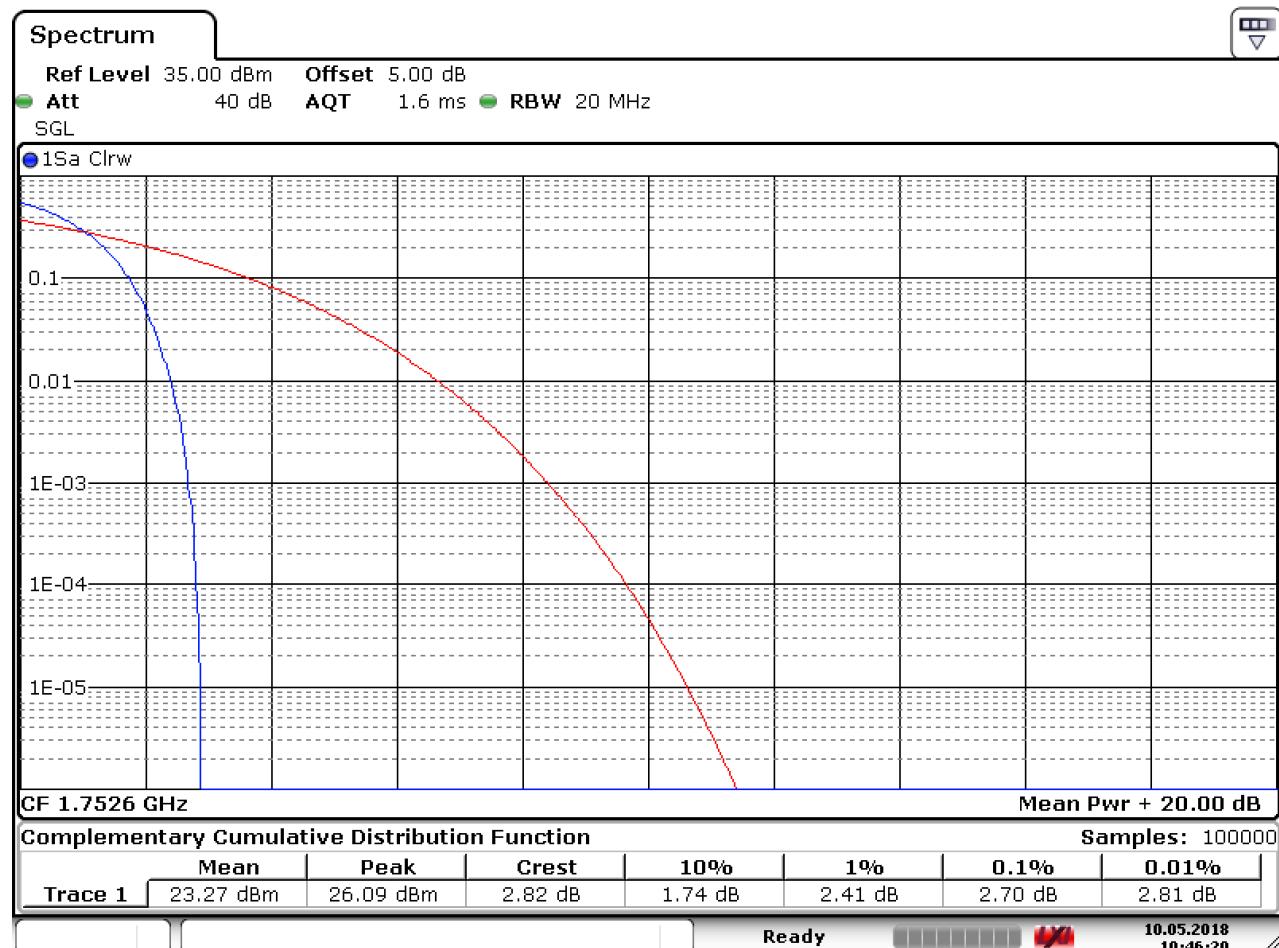
Date: 10.MAY.2018 10:45:08

## 2.1.2.1.2 Test Channel = MCH



Date: 10.MAY.2018 10:45:33

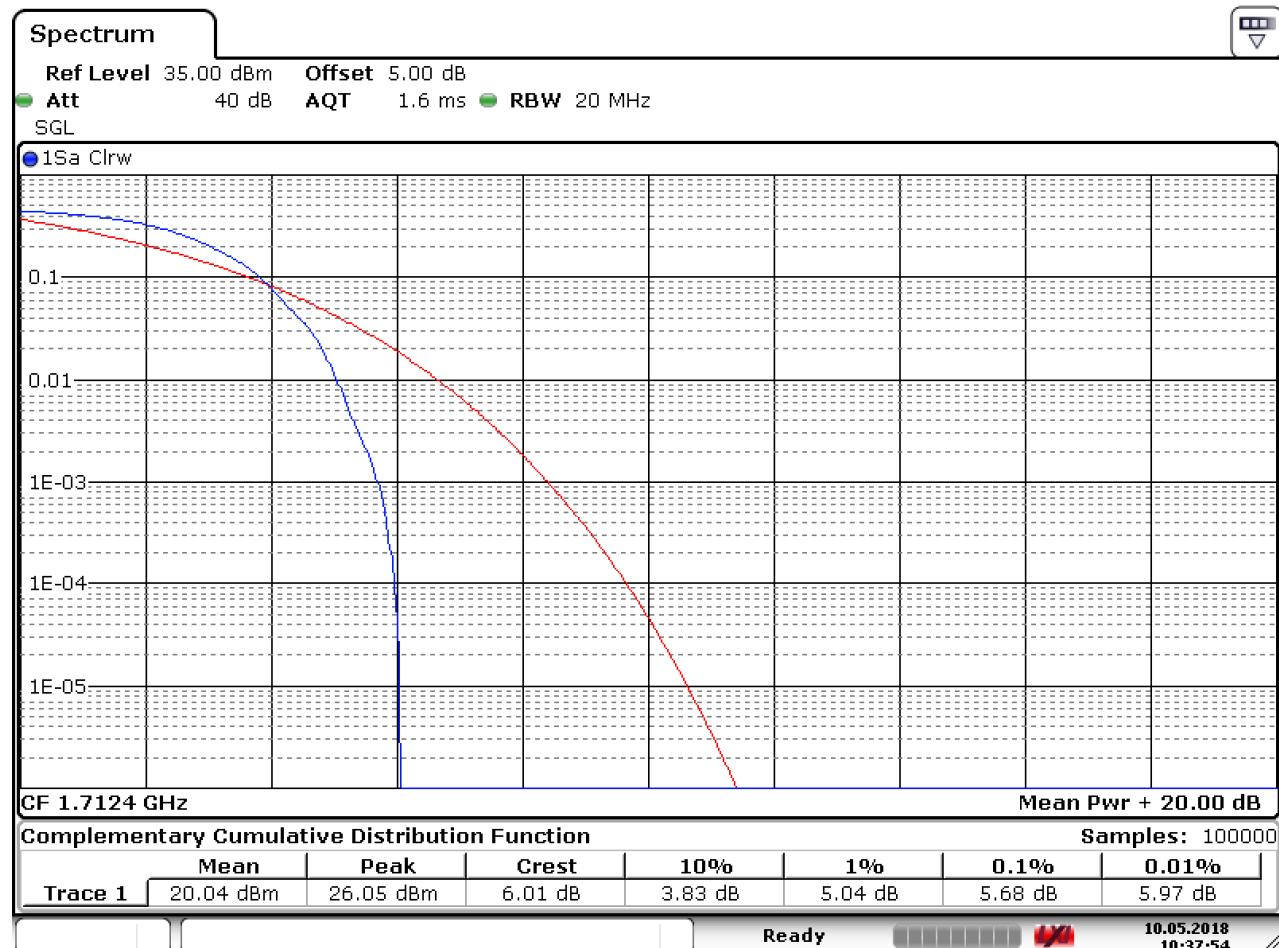
## 2.1.2.1.3 Test Channel = HCH



Date: 10.MAY.2018 10:46:19

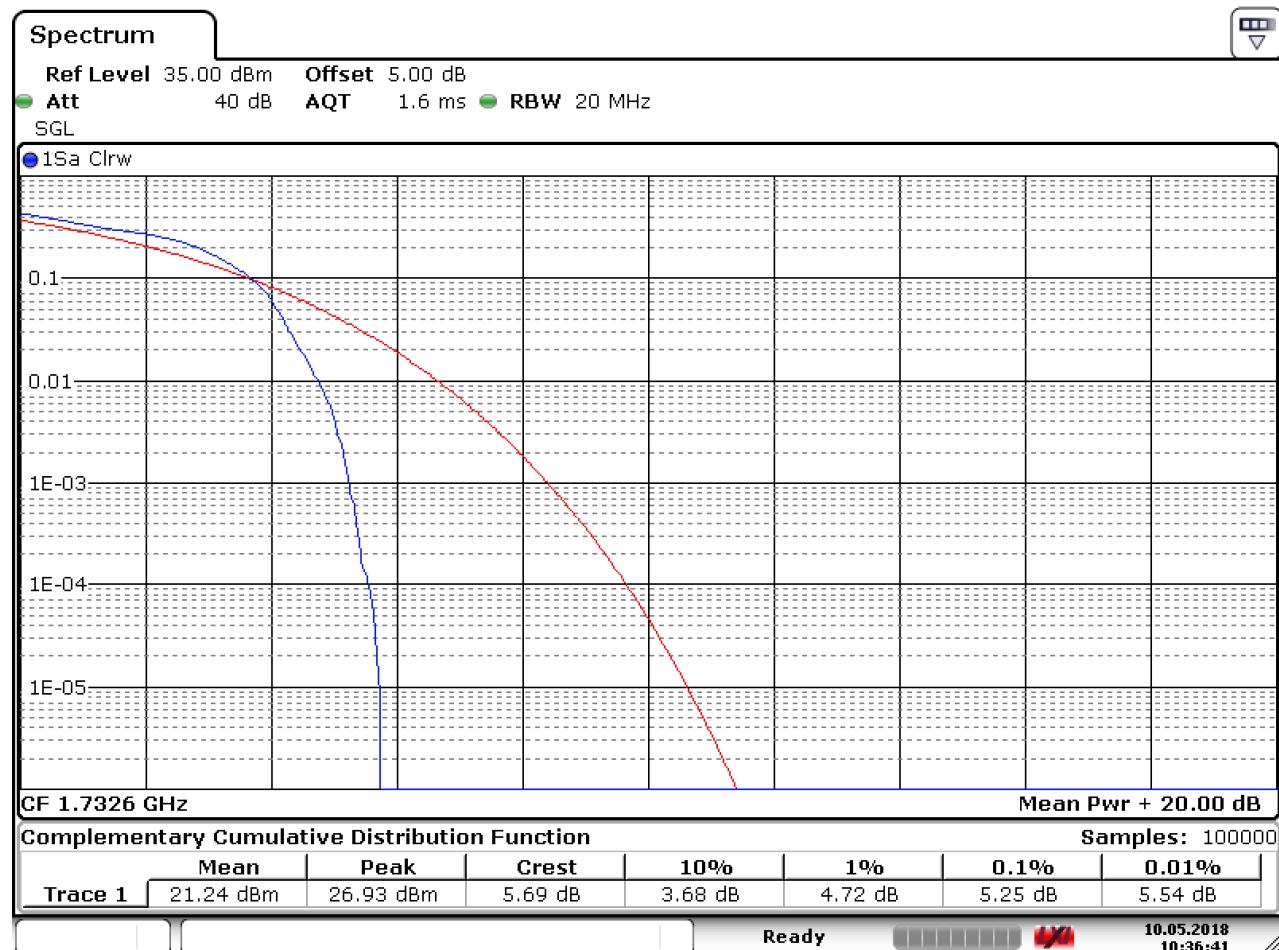
### 2.1.2.2 Test Mode = UMTS/TM2

#### 2.1.2.2.1 Test Channel = LCH



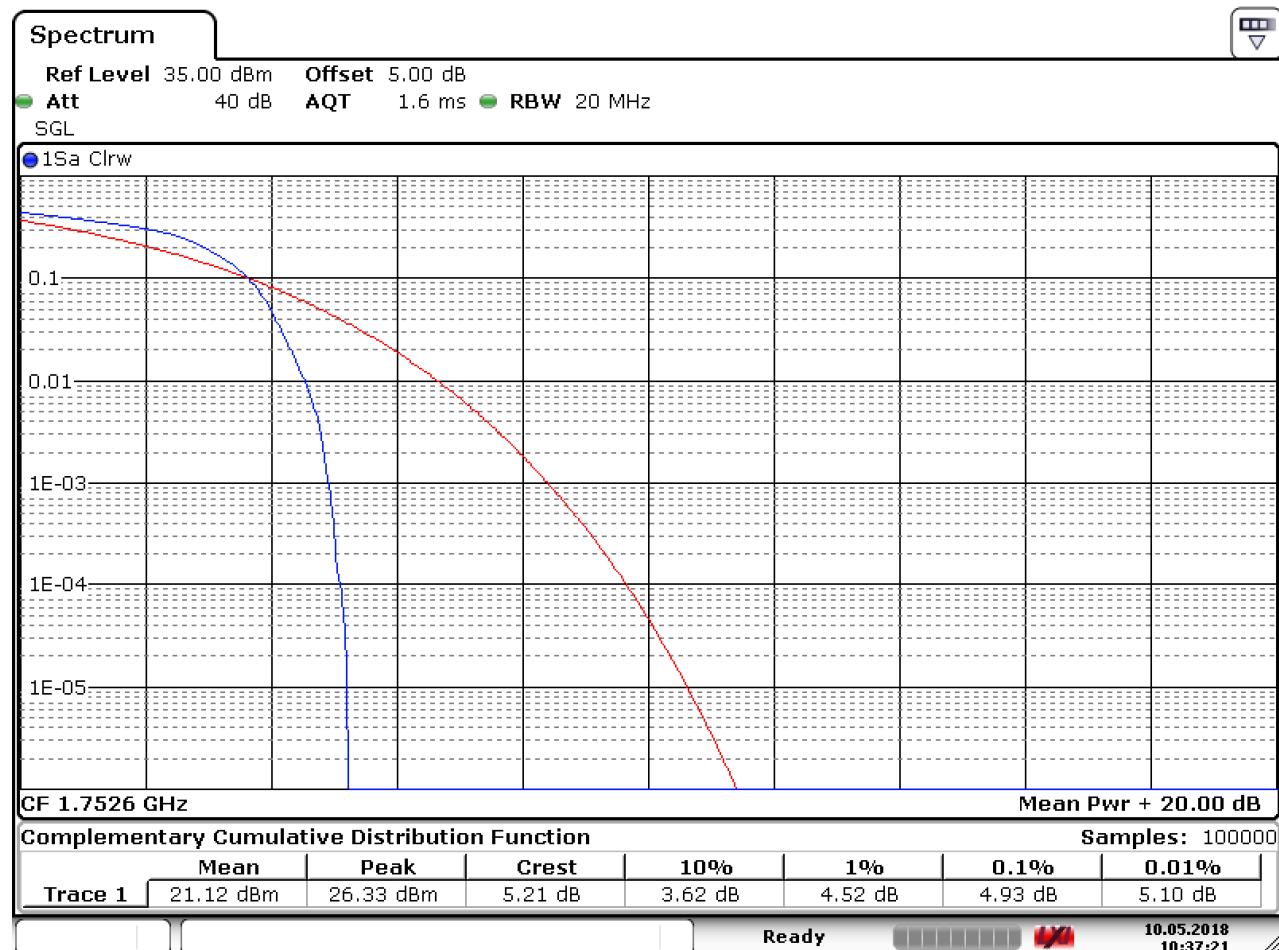
Date: 10.MAY.2018 10:37:54

### 2.1.2.2.2 Test Channel = MCH



Date: 10.MAY.2018 10:36:41

### 2.1.2.2.3 Test Channel = HCH

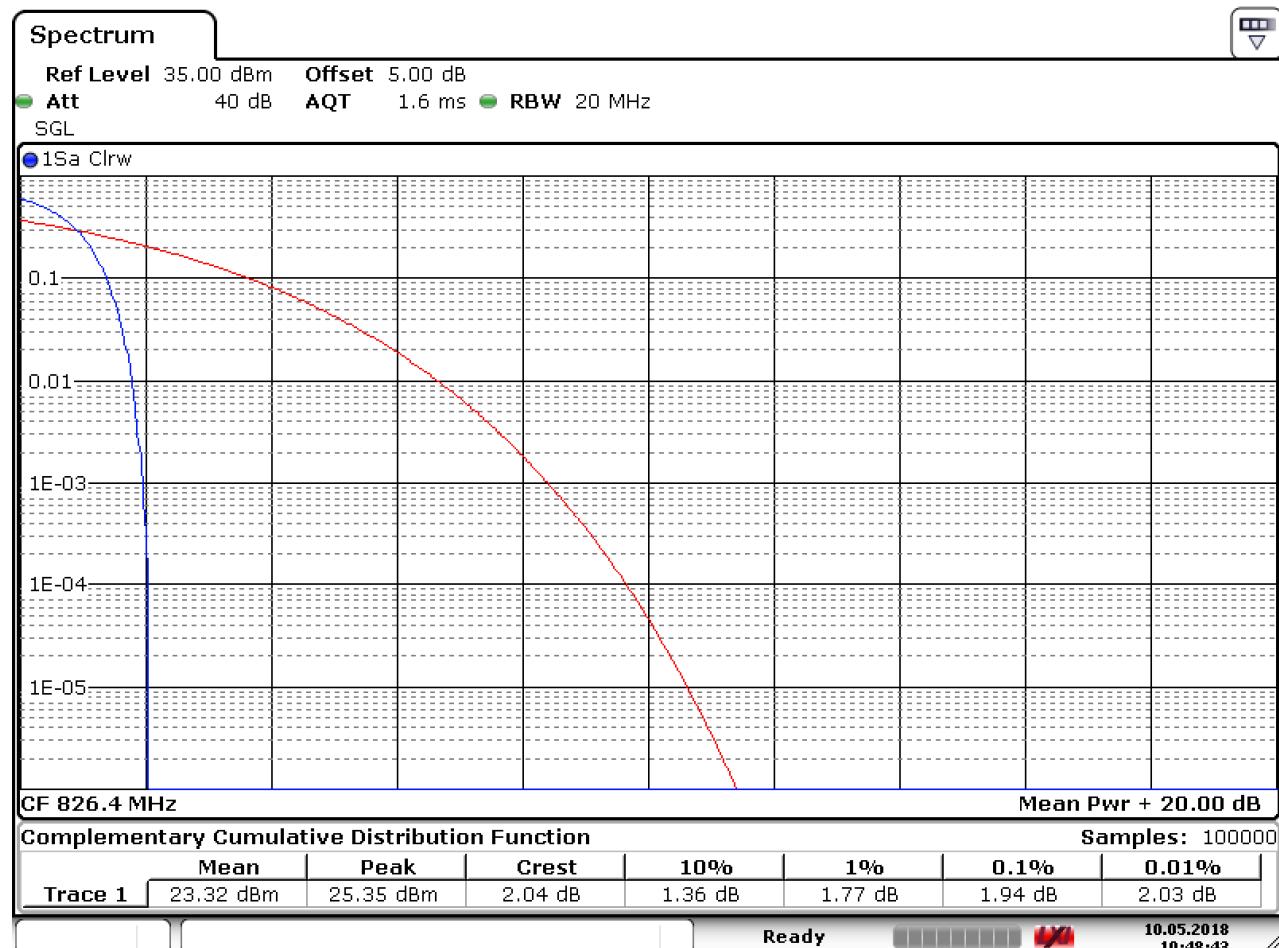


Date: 10.MAY.2018 10:37:21

### 2.1.3 Test Band = WCDMA 850

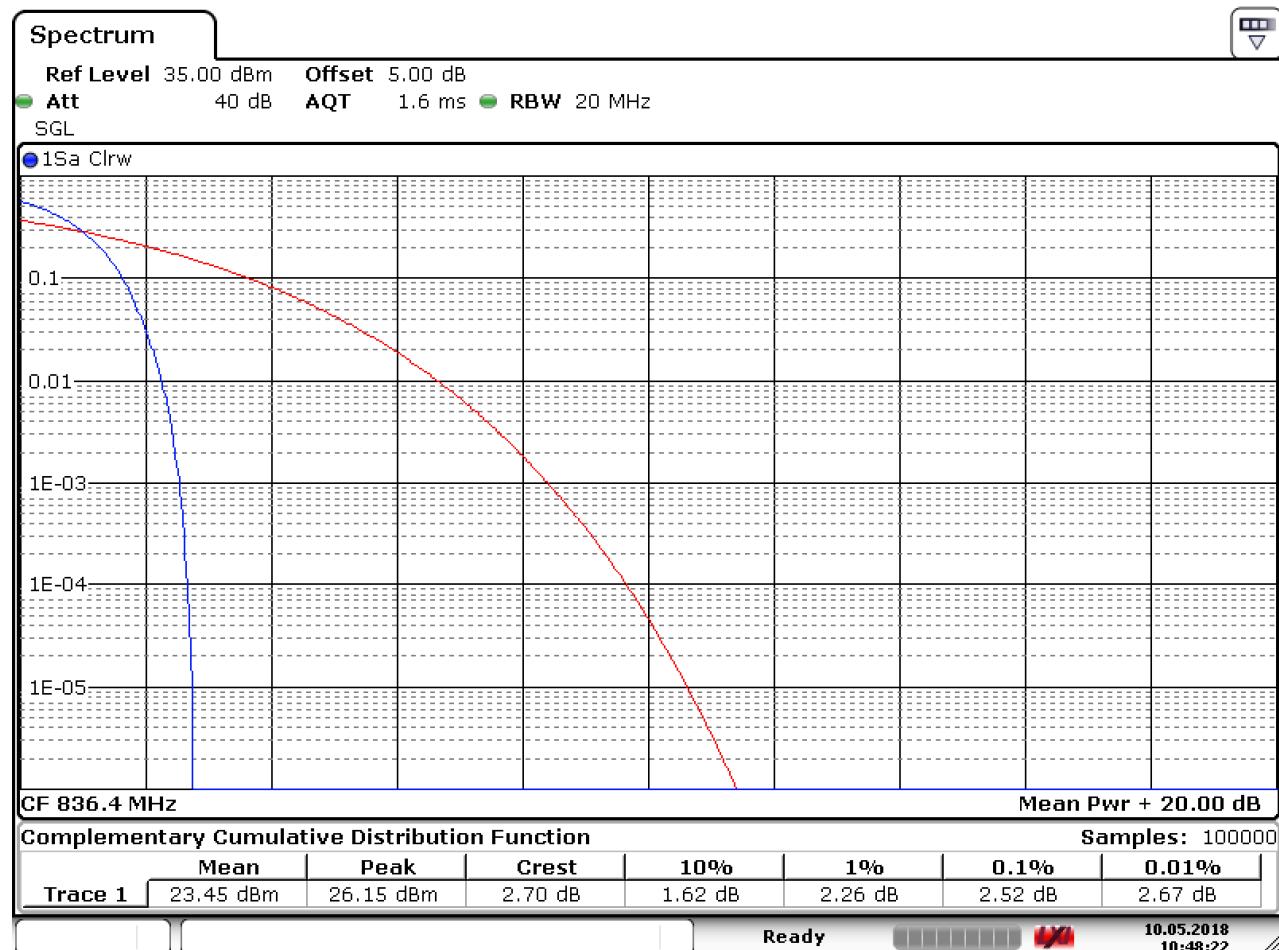
#### 2.1.3.1 Test Mode = UMTS/TM1

##### 2.1.3.1.1 Test Channel = LCH



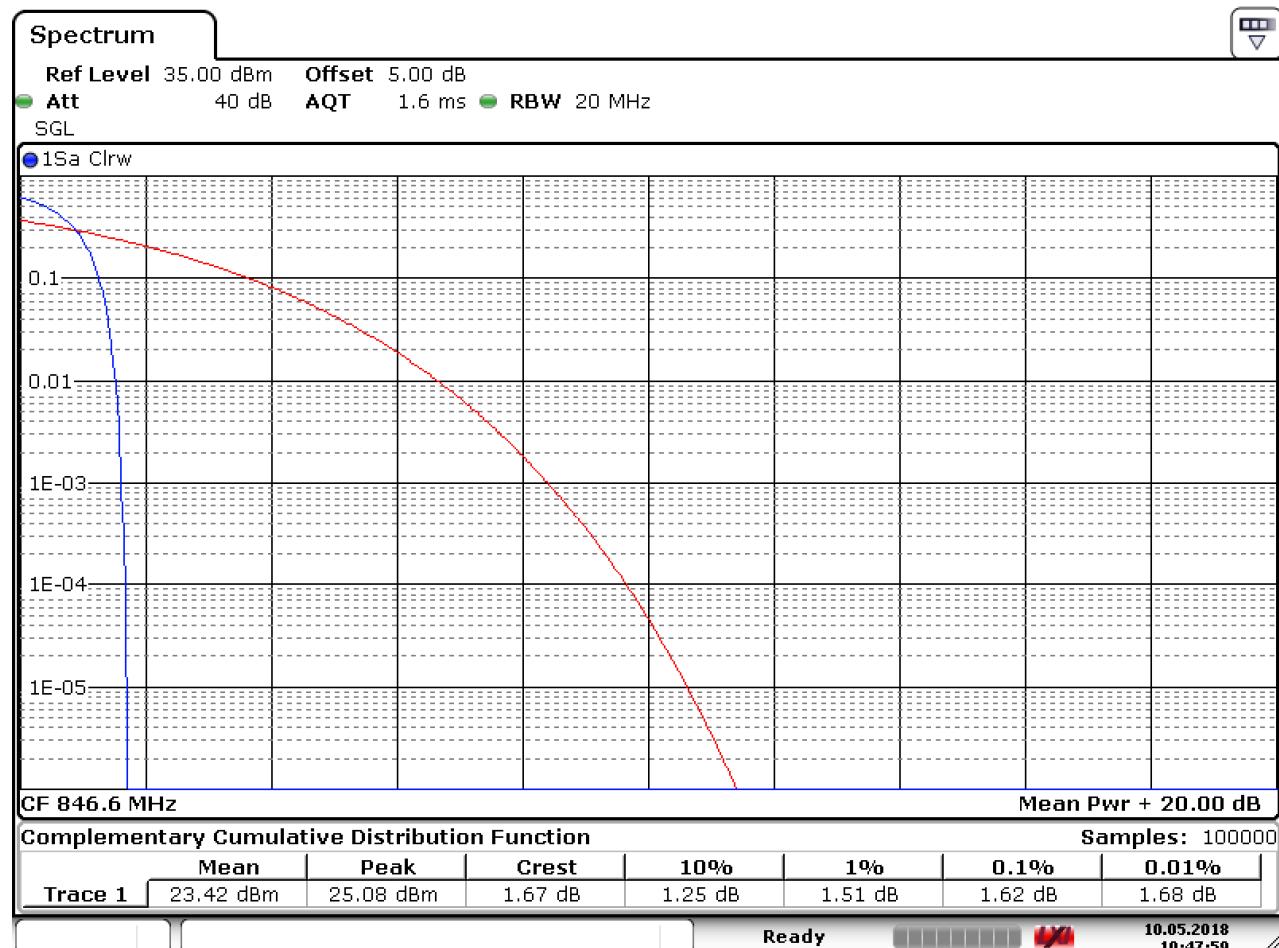
Date: 10.MAY.2018 10:48:43

### 2.1.3.1.2 Test Channel = MCH



Date: 10.MAY.2018 10:48:23

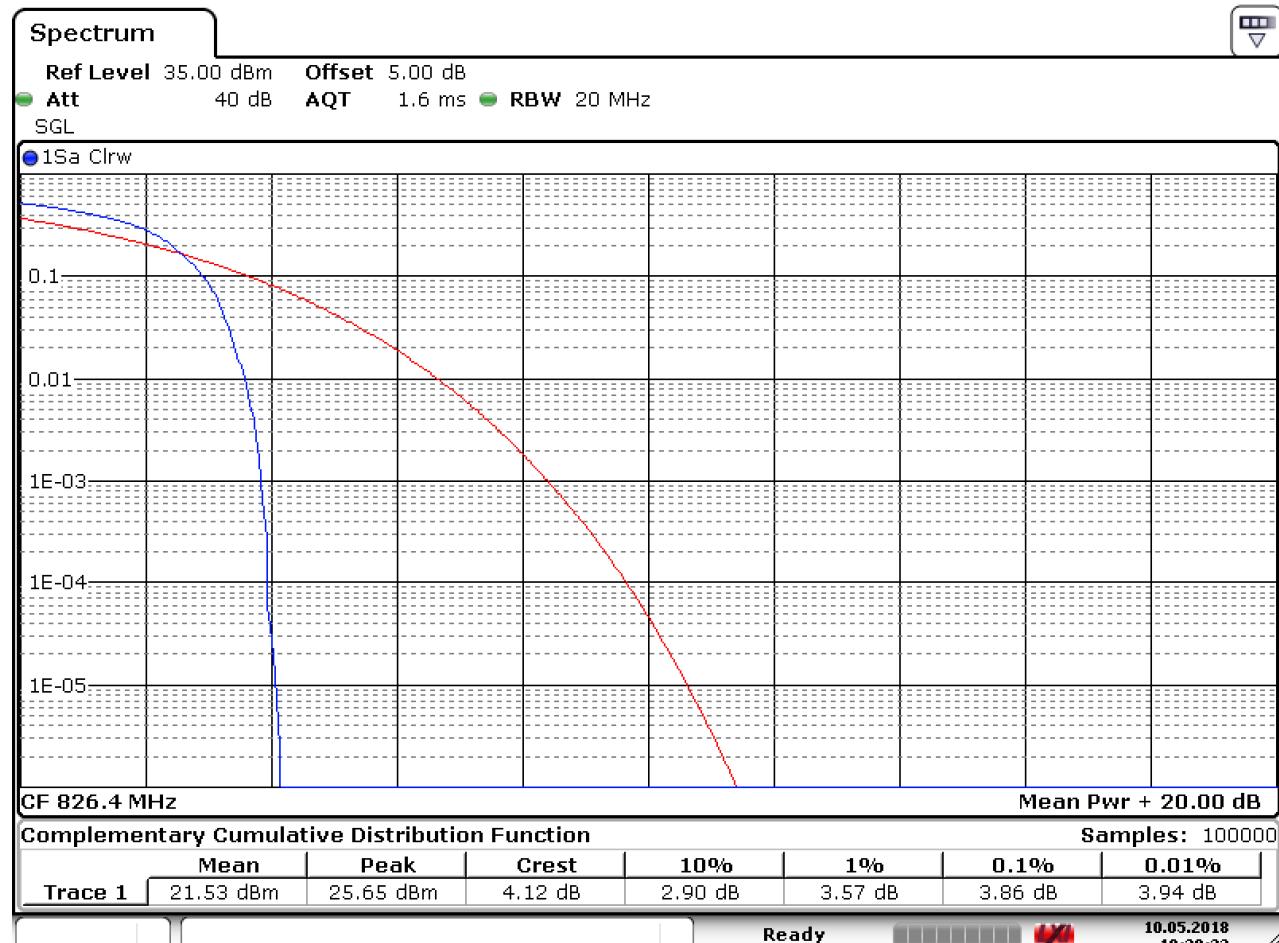
### 2.1.3.1.3 Test Channel = HCH



Date: 10.MAY.2018 10:47:59

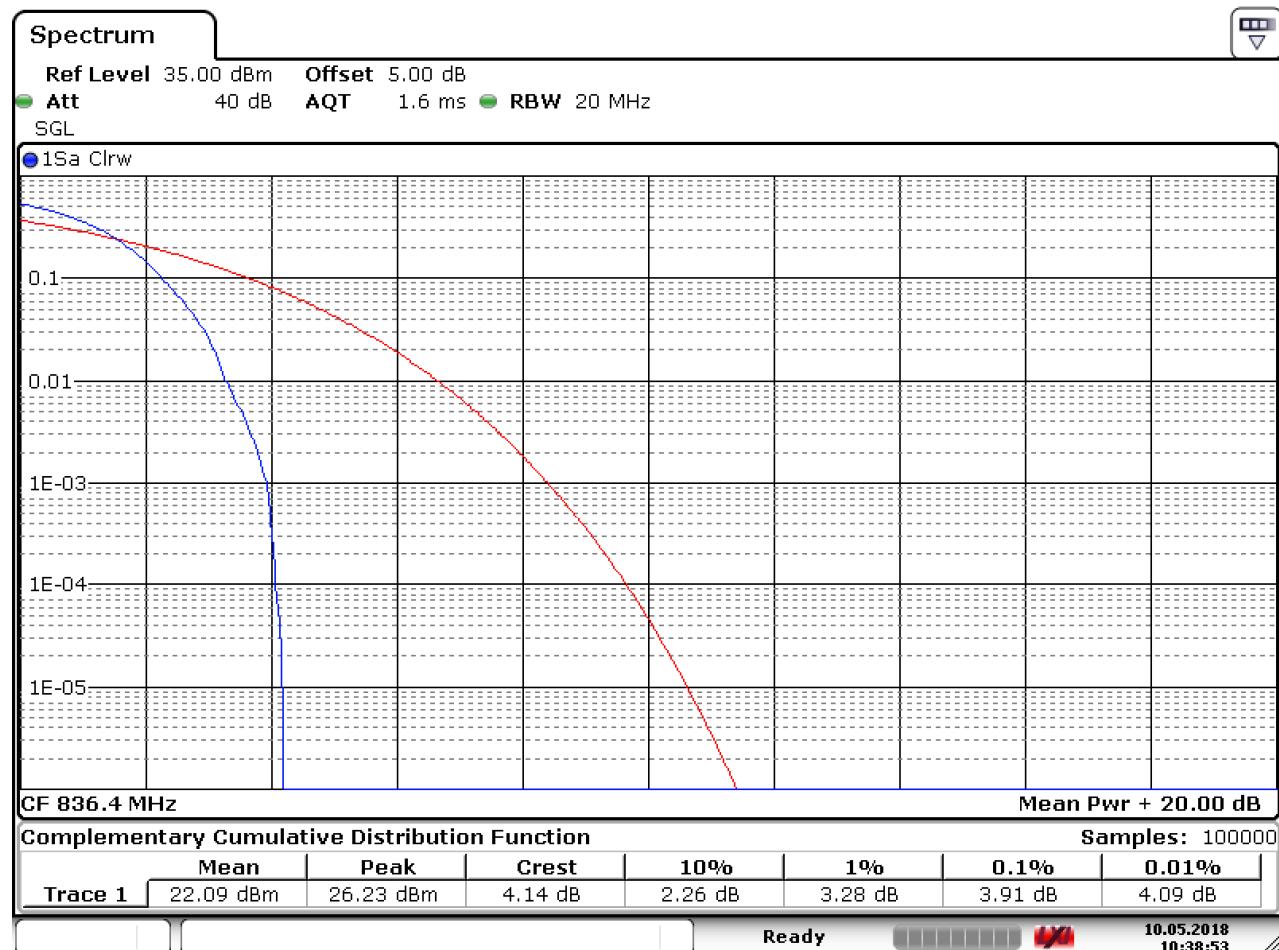
### 2.1.3.2 Test Mode = UMTS/TM2

#### 2.1.3.2.1 Test Channel = LCH



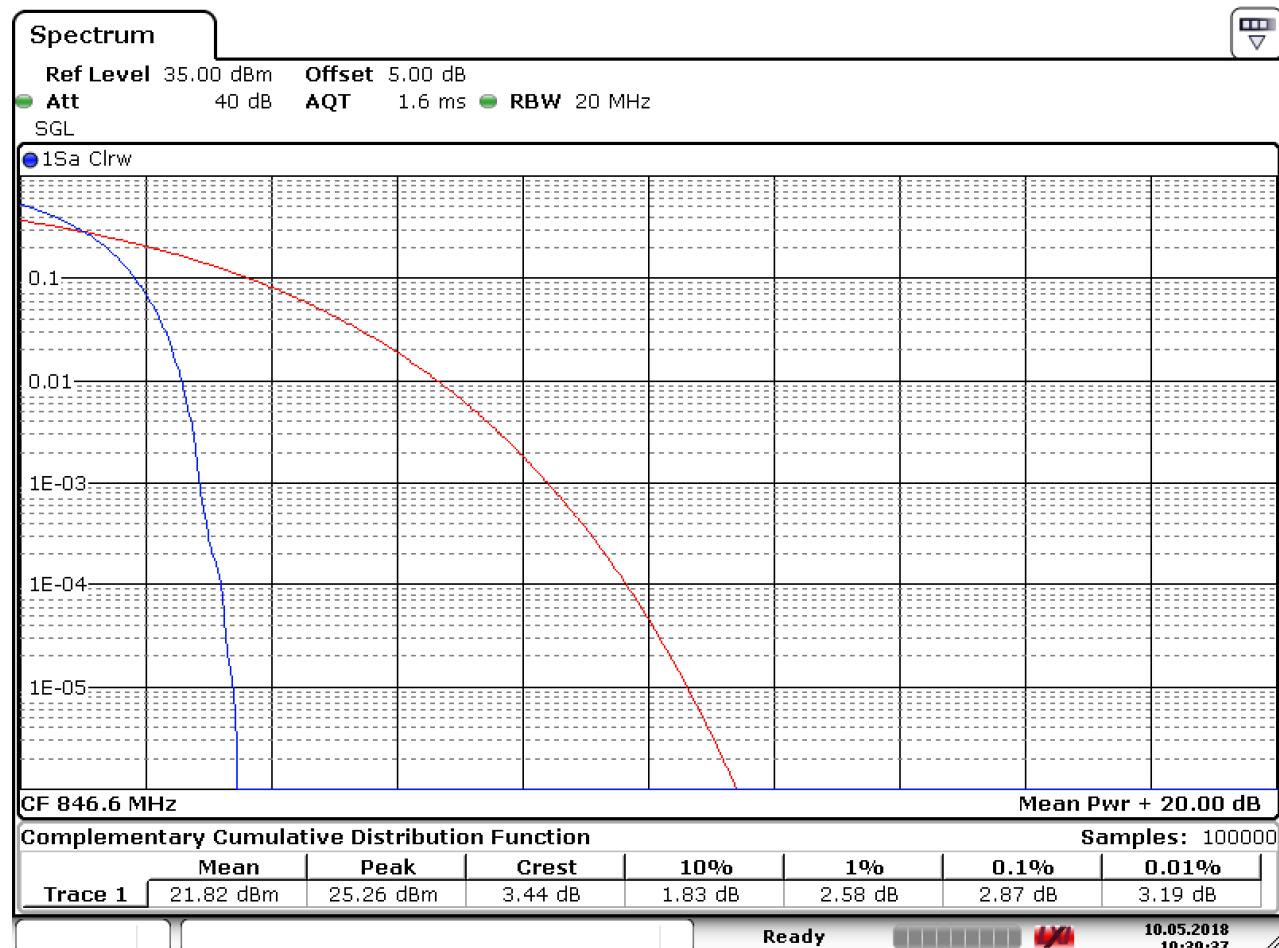
Date: 10.MAY.2018 10:38:23

### 2.1.3.2.2 Test Channel = MCH



Date: 10.MAY.2018 10:38:54

## 2.1.3.2.3 Test Channel = HCH



Date: 10.MAY.2018 10:39:37

### 3 Modulation Characteristics

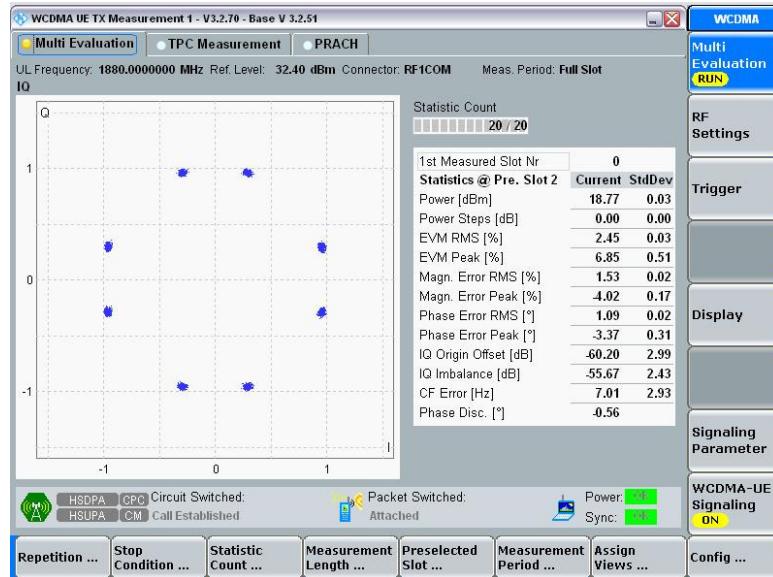
#### Part I - Test Plots

##### 3.1 For WCDMA

###### 3.1.1 Test Band = WCDMA 1900

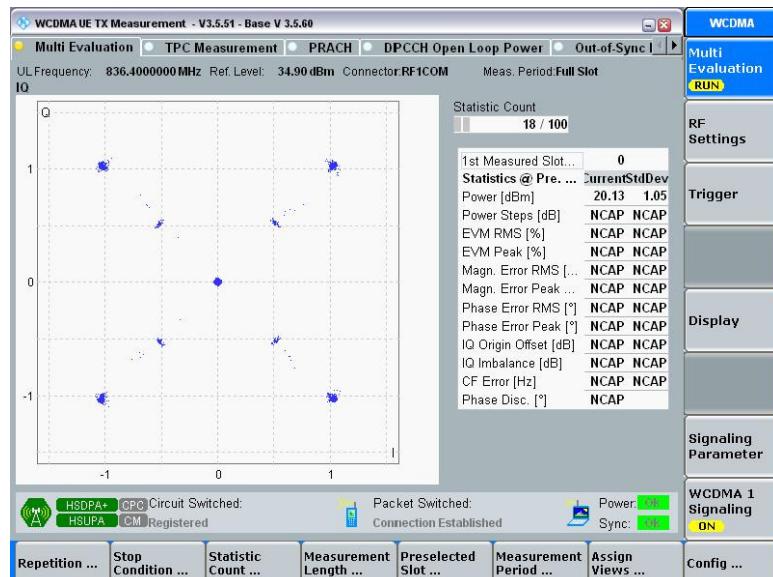
###### 3.1.1.1 Test Mode = UMTS/TM1

###### 3.1.1.1.1 Test Channel = MCH



###### 1.1.1.1.1 Test Mode = UMTS/TM2

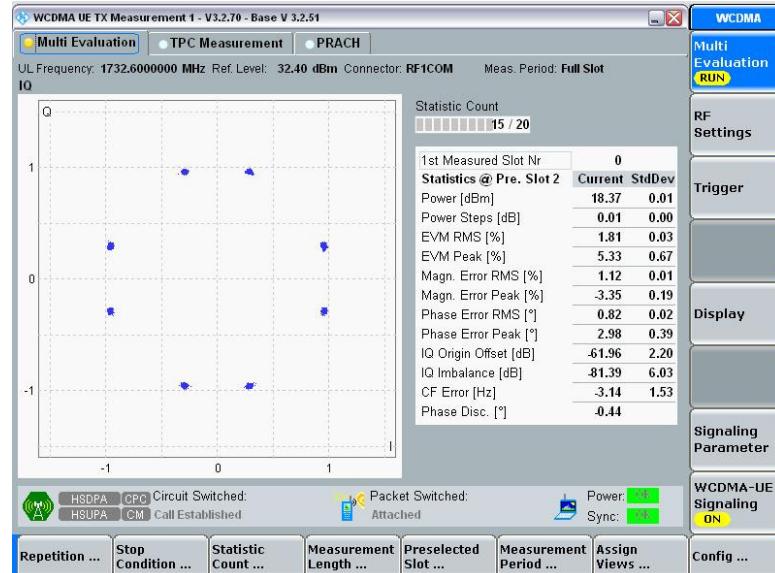
###### 1.1.1.1.1.1 Test Channel = MCH



### 3.1.2 Test Band = WCDMA 1700

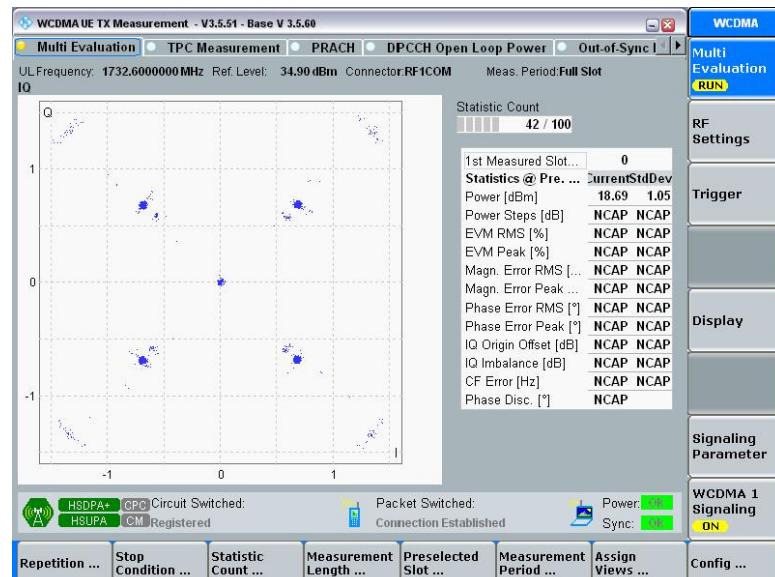
#### 3.1.2.1 Test Mode = UMTS /TM1

##### 3.1.2.1.1 Test Channel = MCH



#### 1.1.1.2. Test Mode = UMTS/TM2

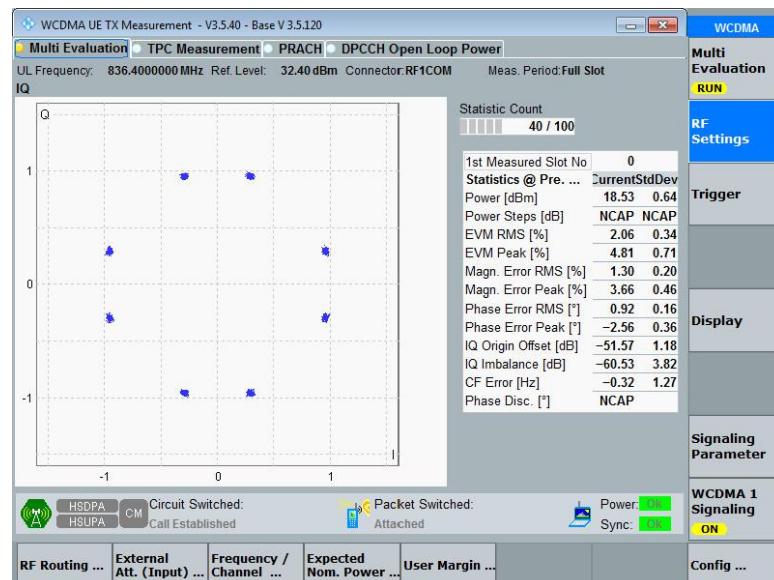
##### 1.1.1.2.1. Test Channel = MCH



### 3.1.3 Test Band = WCDMA 850

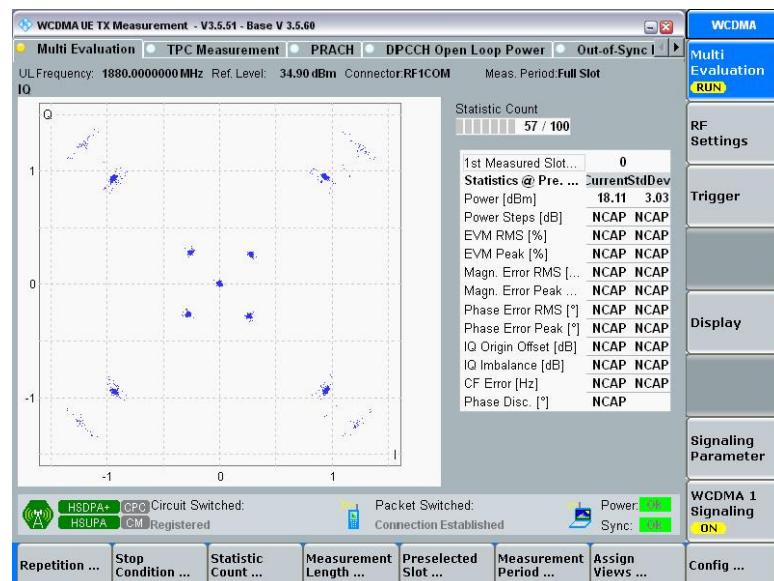
#### 3.1.3.1 Test Mode = UMTS /TM1

##### 3.1.3.1.1 Test Channel = MCH



#### 1.1.1.3. Test Mode = UMTS /TM2

##### 1.1.1.3.1. Test Channel = MCH



## 4 Bandwidth

### Part I - Test Results

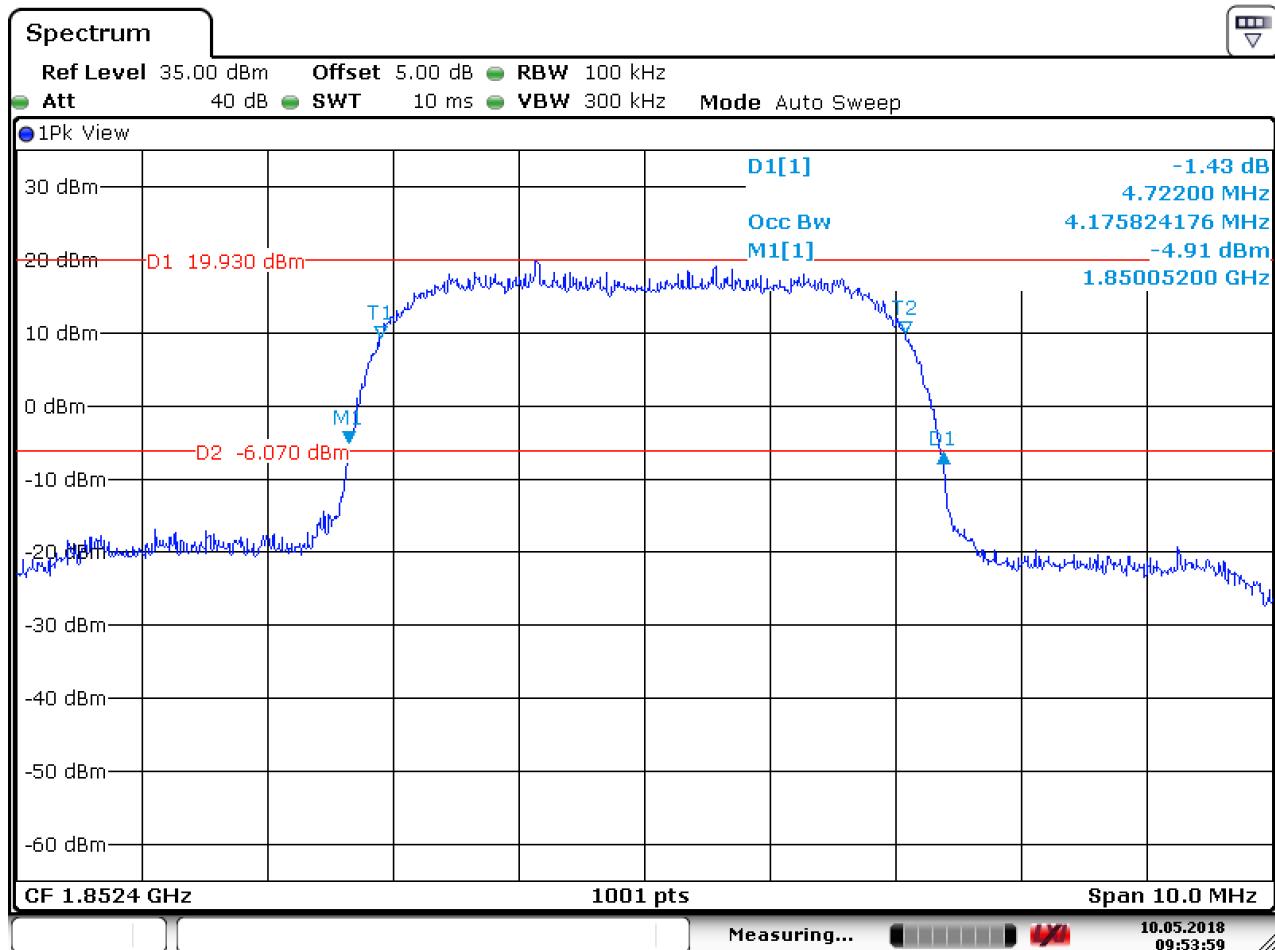
Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
WCDMA1900	UMTS/TM1	LCH	4.18	4.72	PASS
		MCH	4.17	4.71	PASS
		HCH	4.19	4.74	PASS
	UMTS/TM2	LCH	4.20	4.72	PASS
		MCH	4.19	4.70	PASS
		HCH	4.17	4.71	PASS
WCDMA1700	UMTS/TM1	LCH	4.17	4.170	PASS
		MCH	4.19	4.71	PASS
		HCH	4.18	4.68	PASS
	UMTS/TM2	LCH	4.21	4.71	PASS
		MCH	4.19	4.73	PASS
		HCH	4.18	4.69	PASS
WCDMA850	UMTS/TM1	LCH	4.19	4.73	PASS
		MCH	4.18	4.71	PASS
		HCH	4.21	4.76	PASS
	UMTS/TM2	LCH	4.18	4.73	PASS
		MCH	4.18	4.72	PASS
		HCH	4.19	4.71	PASS

## 4.1 For WCDMA

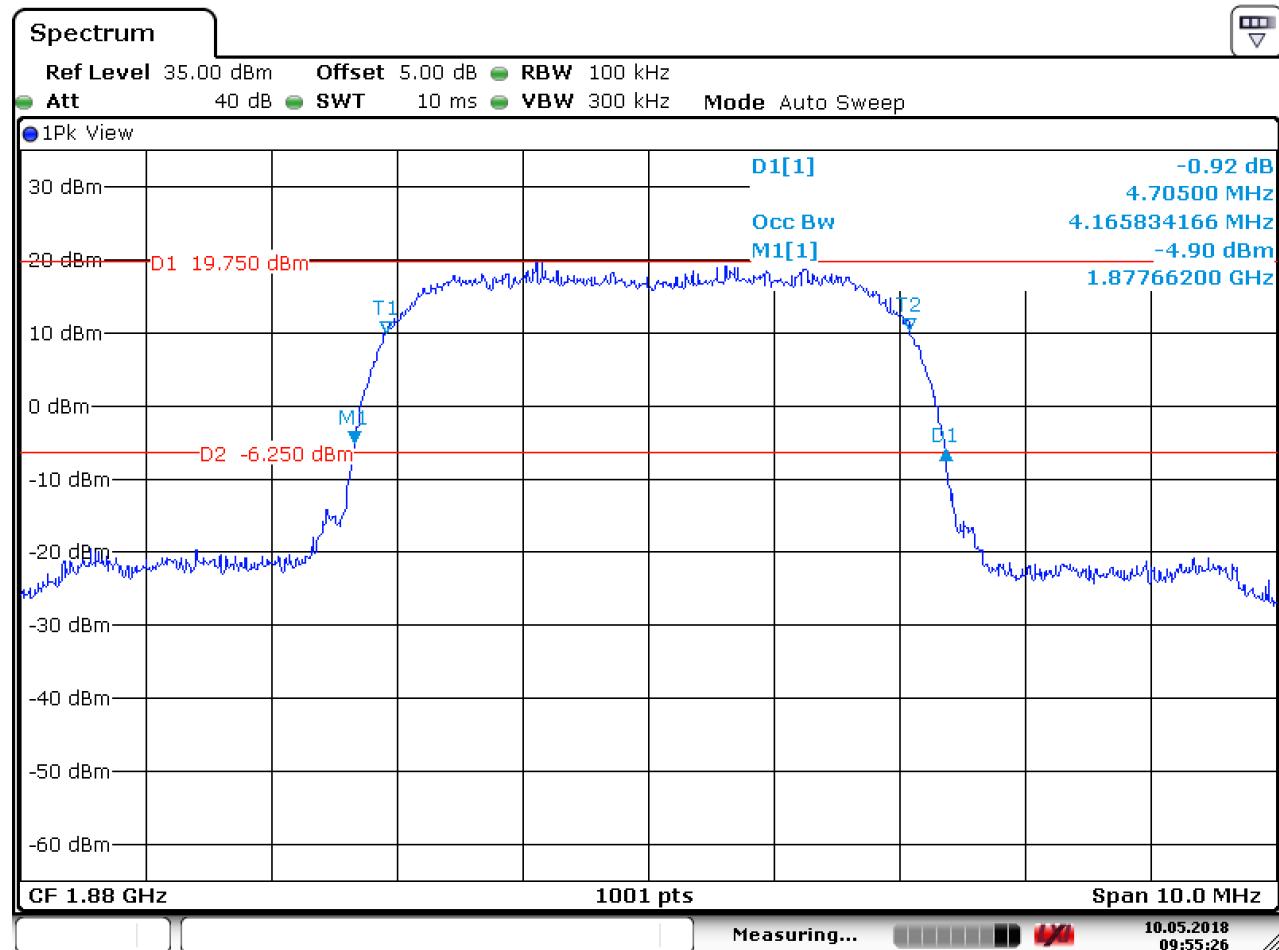
### 4.1.1 Test Band = WCDMA 1900

#### 4.1.1.1 Test Mode = UMTS/TM1

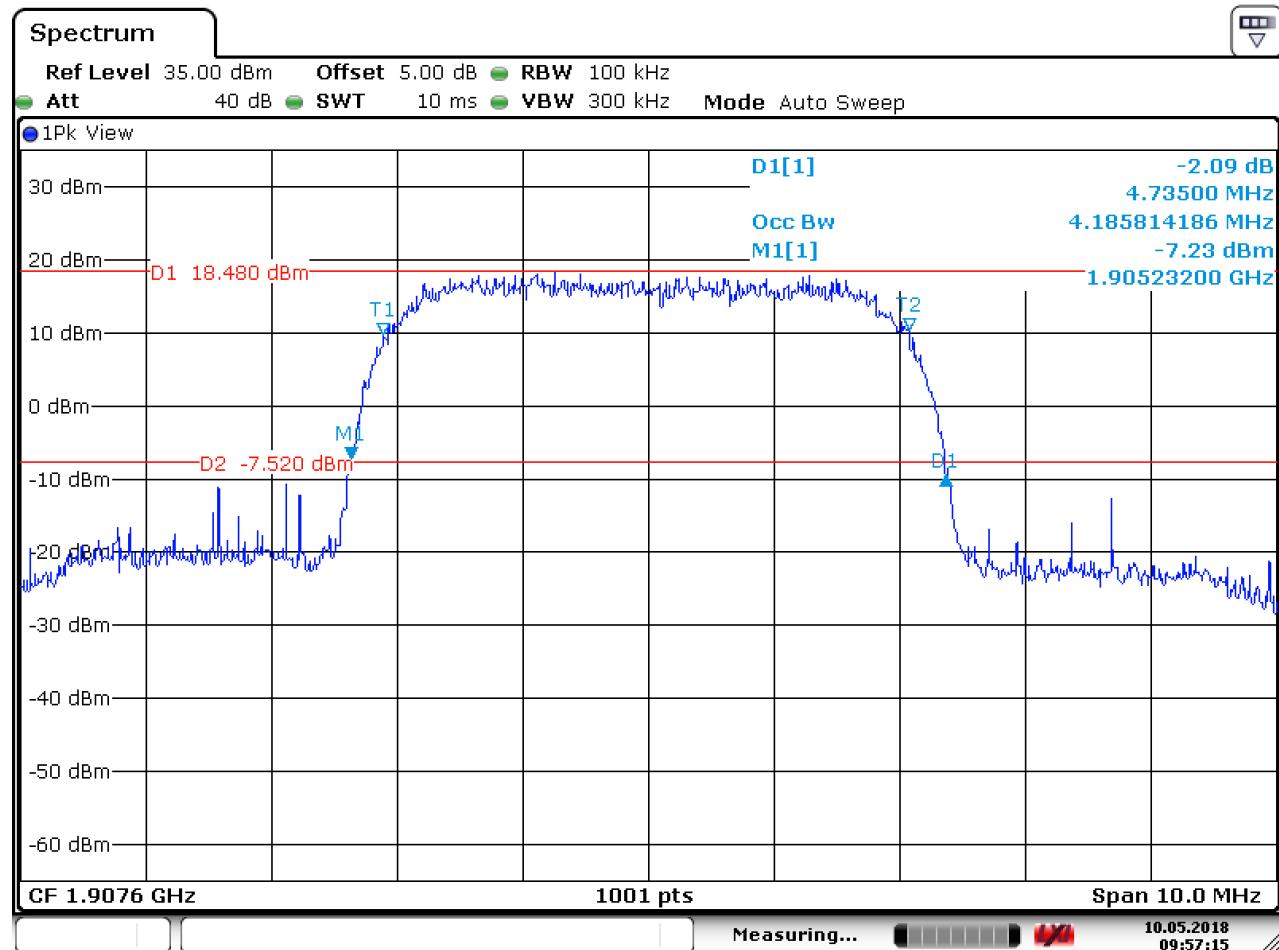
##### 4.1.1.1.1 Test Channel = LCH



Date: 10.MAY.2018 09:53:59

**4.1.1.1.2 Test Channel = MCH**

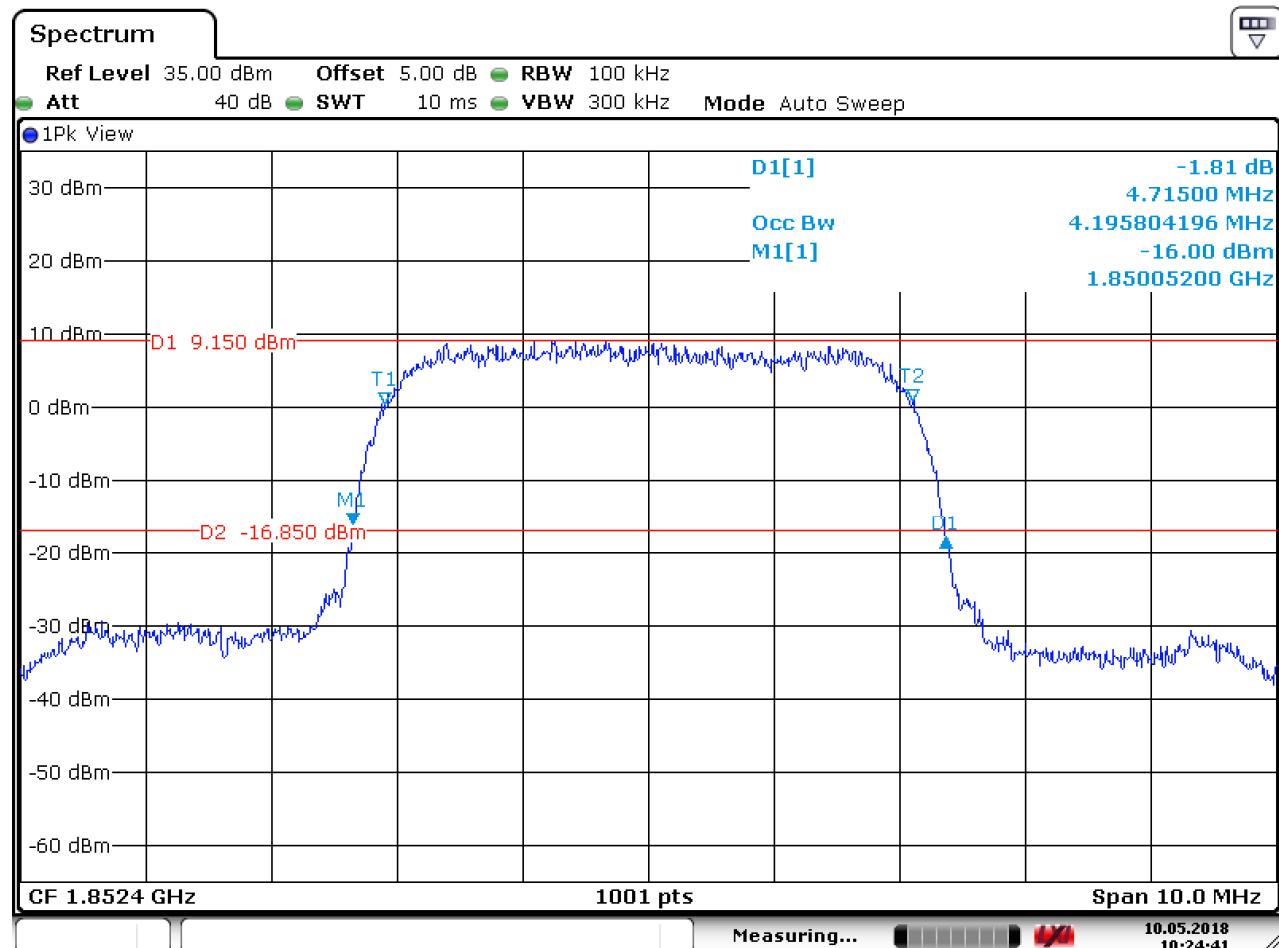
Date: 10.MAY.2018 09:55:26

**4.1.1.1.3 Test Channel = HCH**

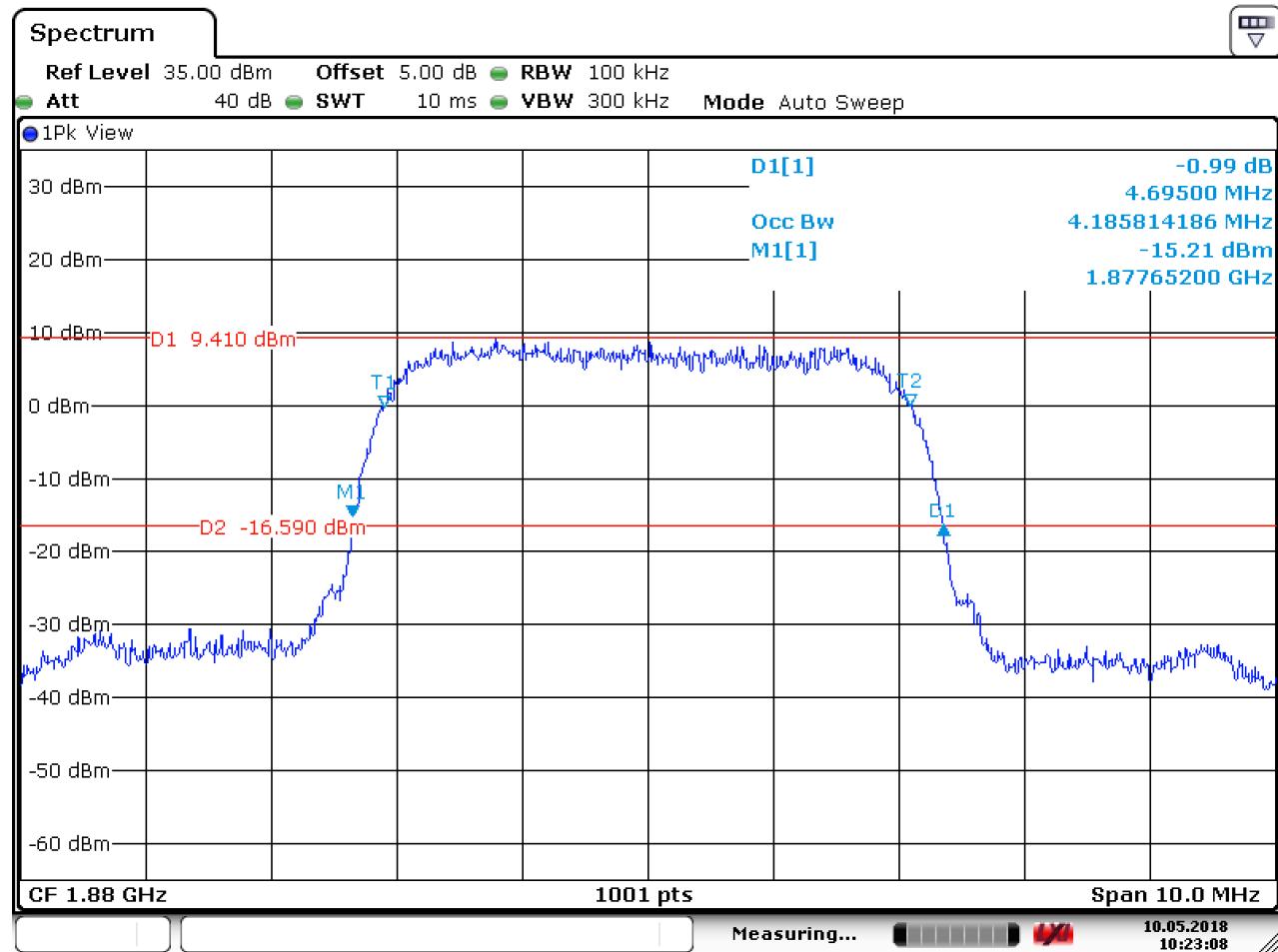
Date: 10.MAY.2018 09:57:15

## 4.1.1.2 Test Mode = UMTS/TM2

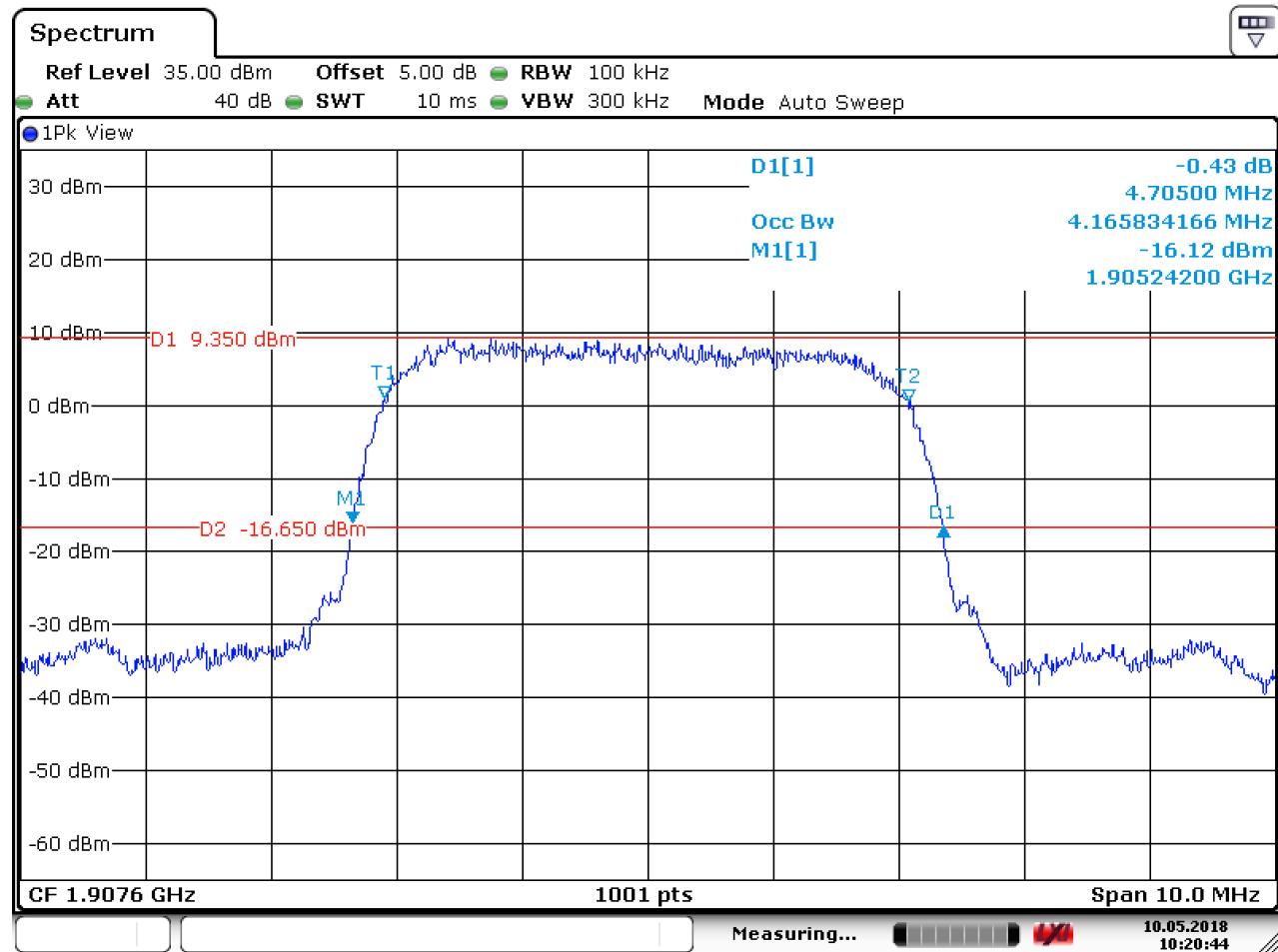
## 4.1.1.2.1 Test Channel = LCH



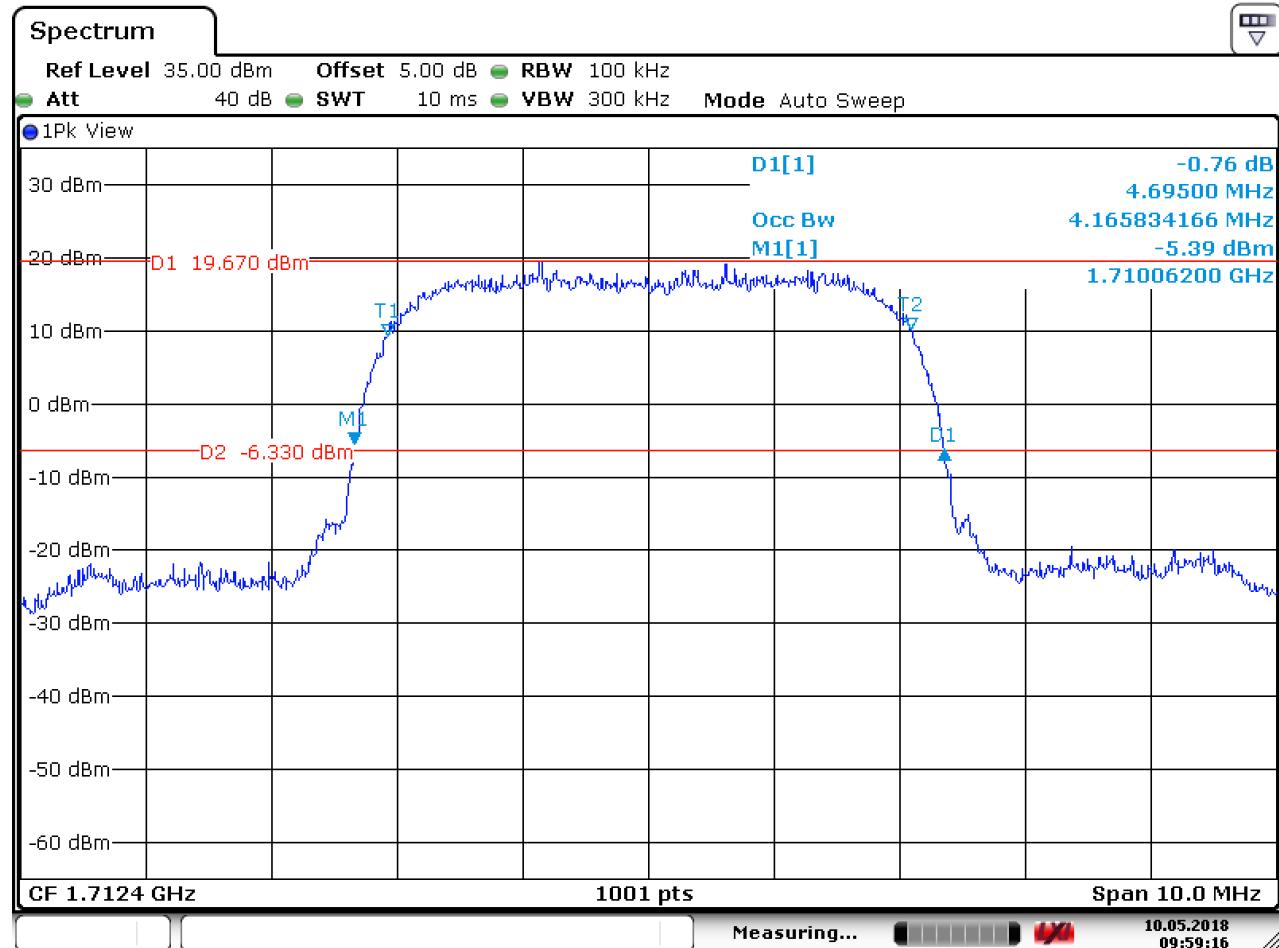
Date: 10.MAY.2018 10:24:41

**4.1.1.2.2 Test Channel = MCH**

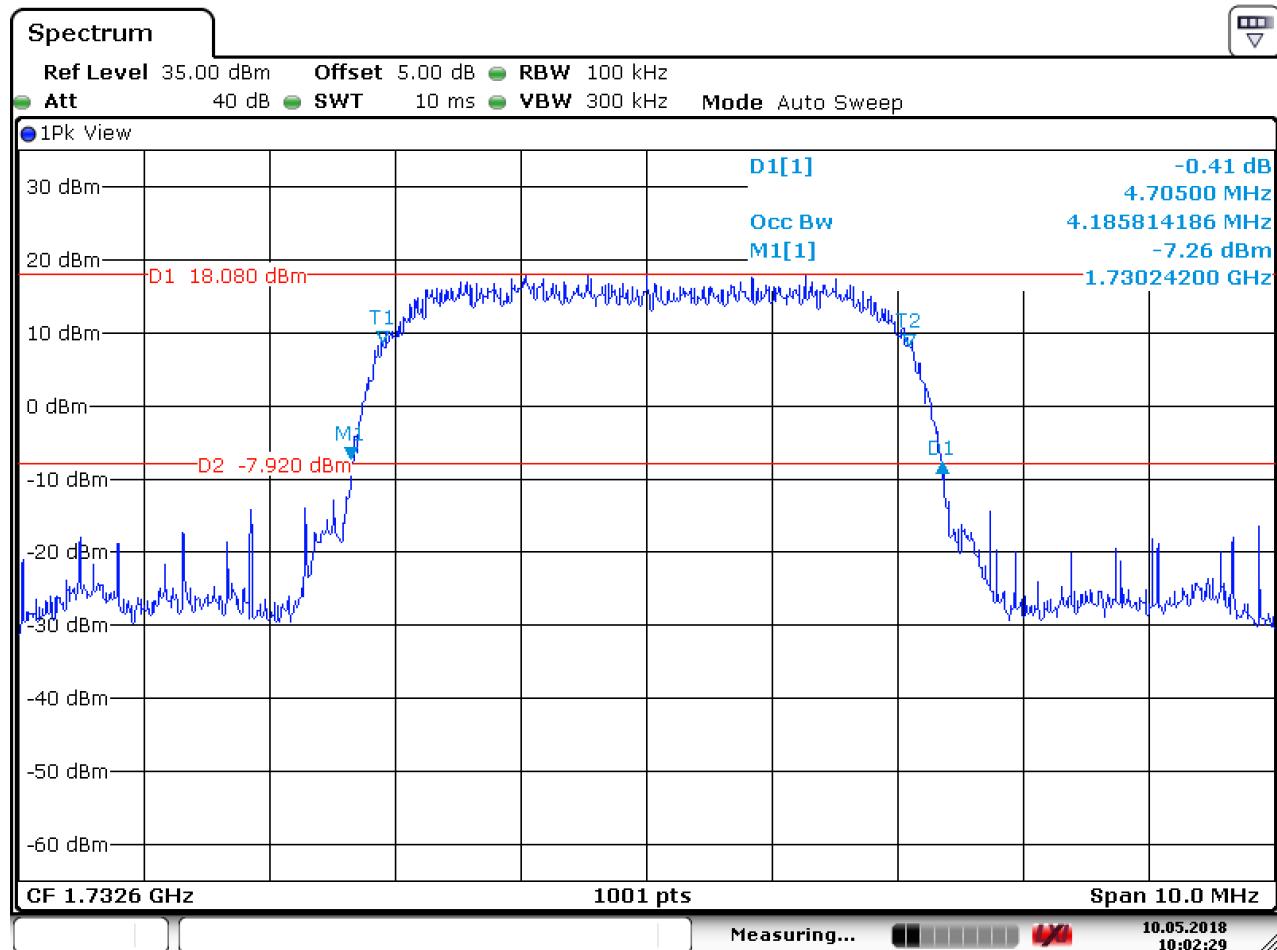
Date: 10.MAY.2018 10:23:09

**4.1.1.2.3 Test Channel = HCH**

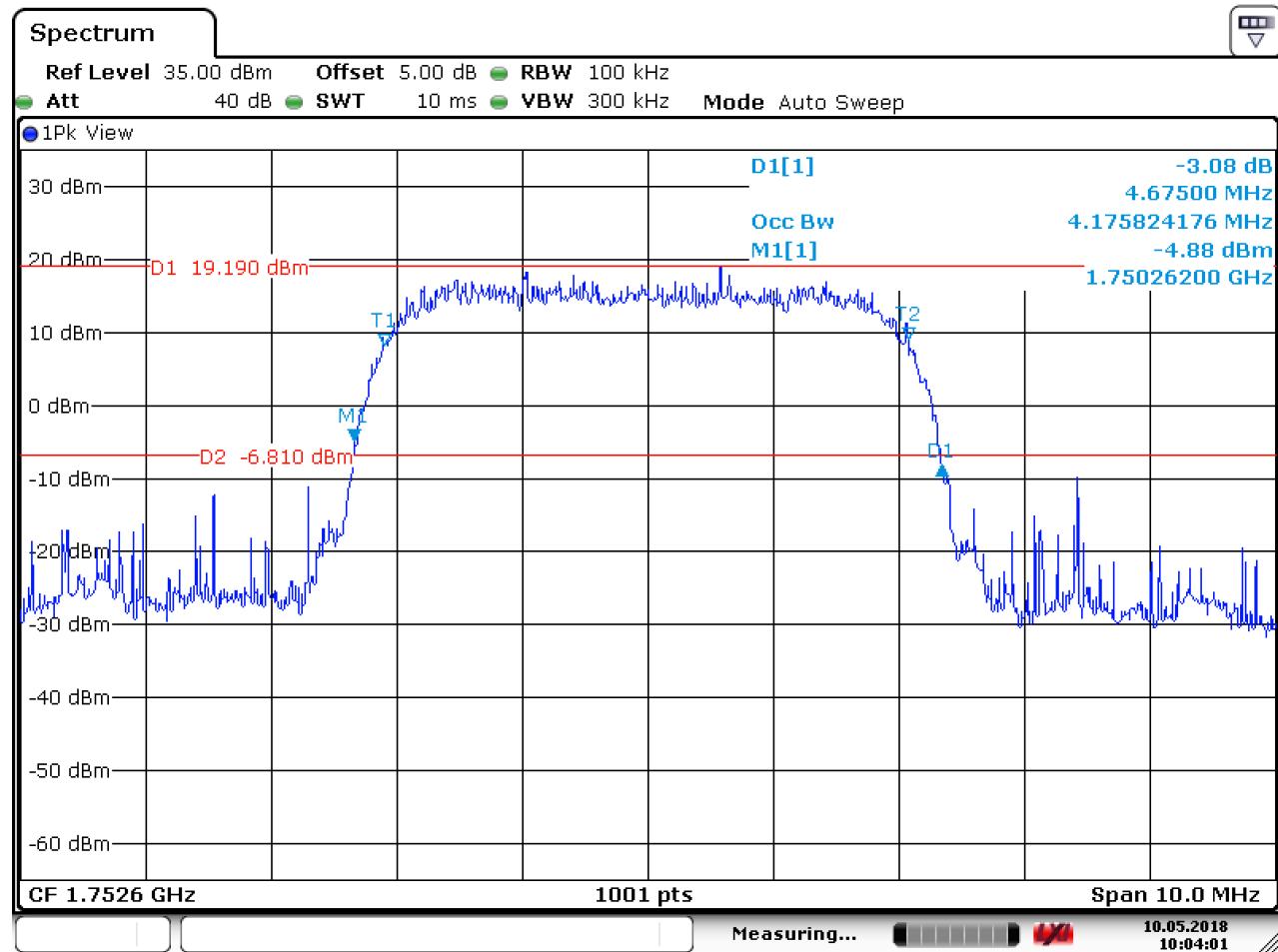
Date: 10.MAY.2018 10:20:45

**4.1.2 Test Band = WCDMA 1700****4.1.2.1 Test Mode = UMTS/TM1****4.1.2.1.1 Test Channel = LCH**

Date: 10.MAY.2018 09:59:16

**4.1.2.1.2 Test Channel = MCH**

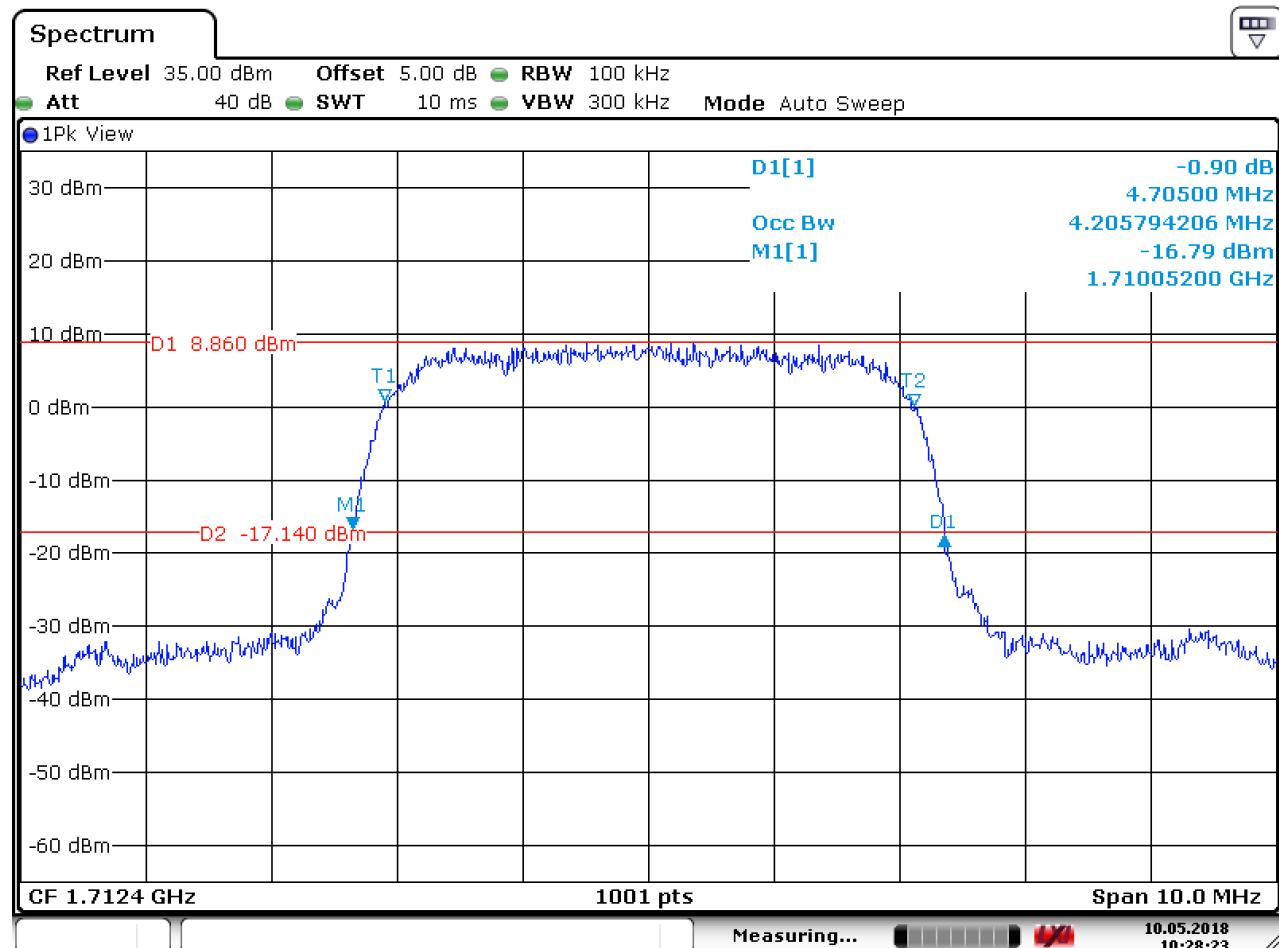
Date: 10.MAY.2018 10:02:29

**4.1.2.1.3 Test Channel = HCH**

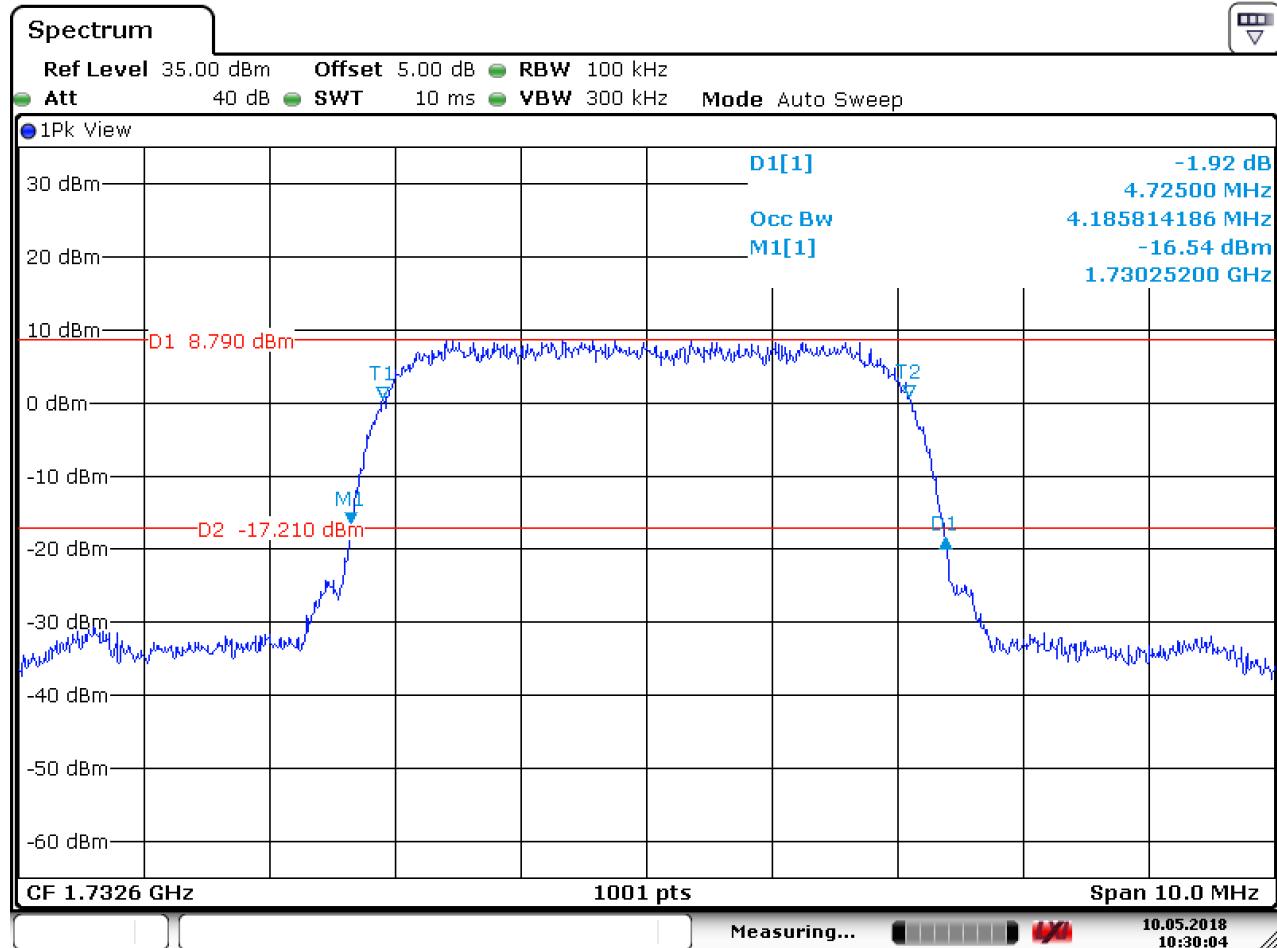
Date: 10.MAY.2018 10:04:02

## 4.1.2.2 Test Mode = UMTS/TM2

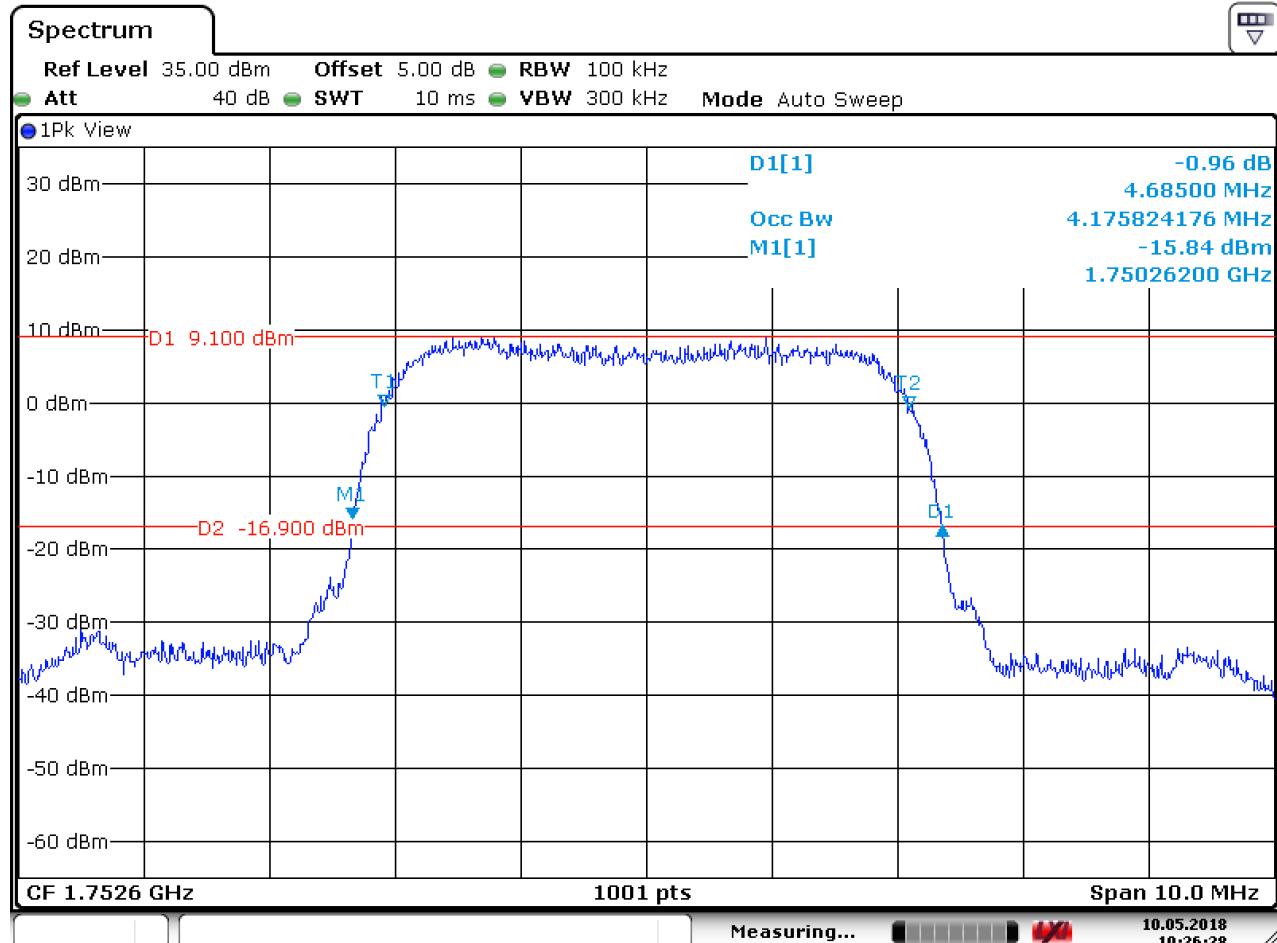
## 4.1.2.2.1 Test Channel = LCH



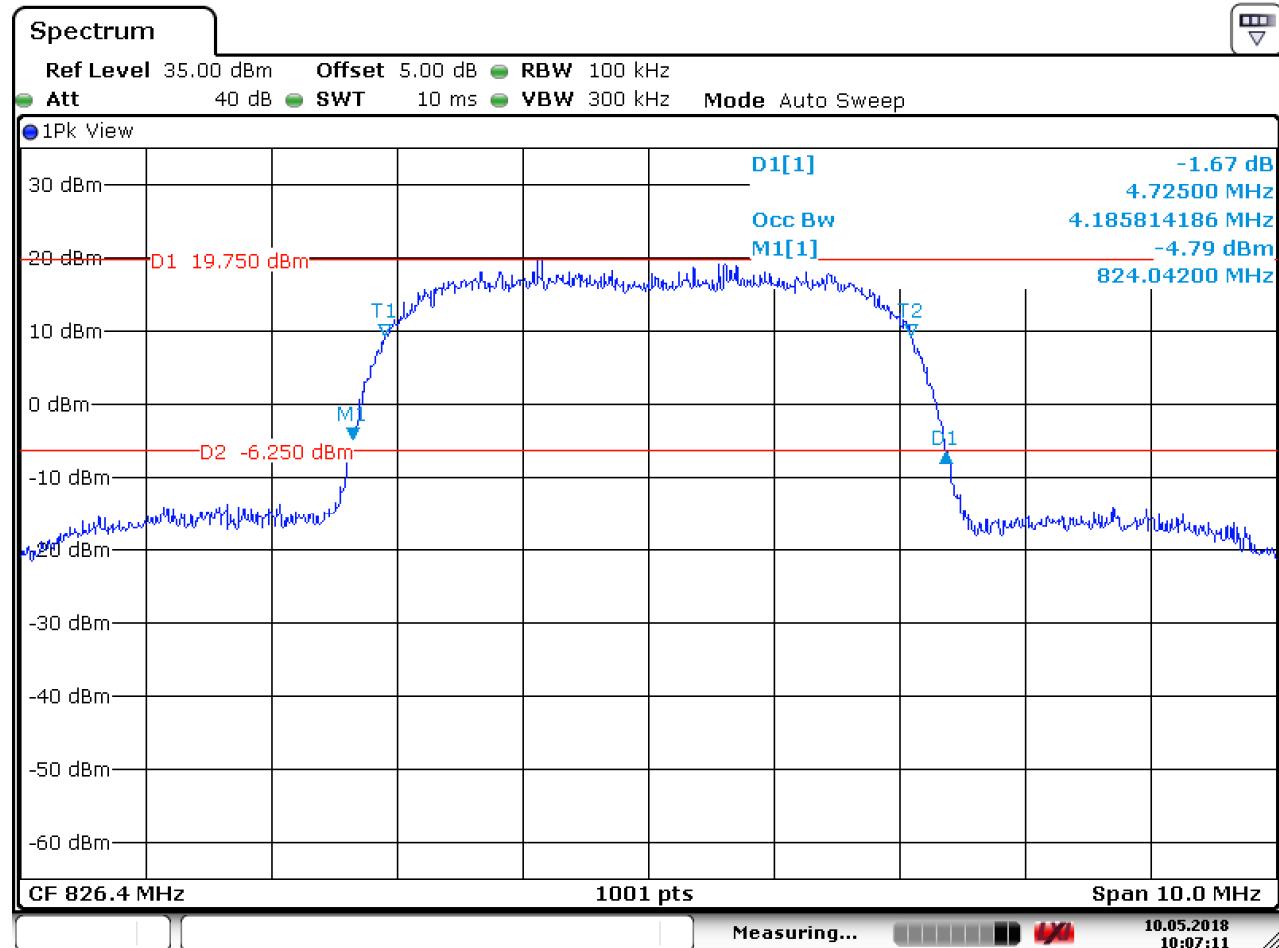
Date: 10.MAY.2018 10:28:23

**4.1.2.2.2 Test Channel = MCH**

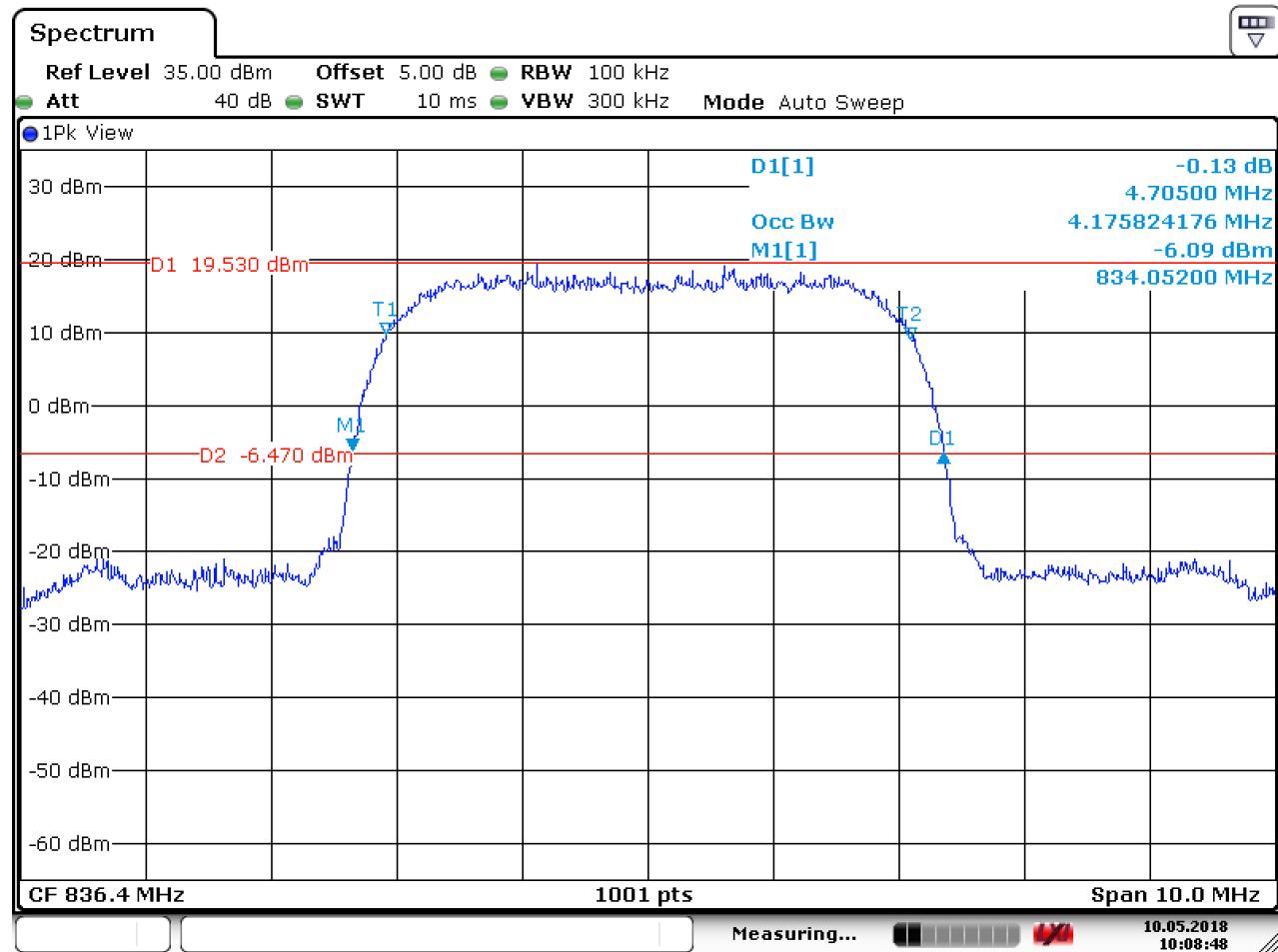
Date: 10.MAY.2018 10:30:05

**4.1.2.2.3 Test Channel = HCH**

Date: 10.MAY.2018 10:26:29

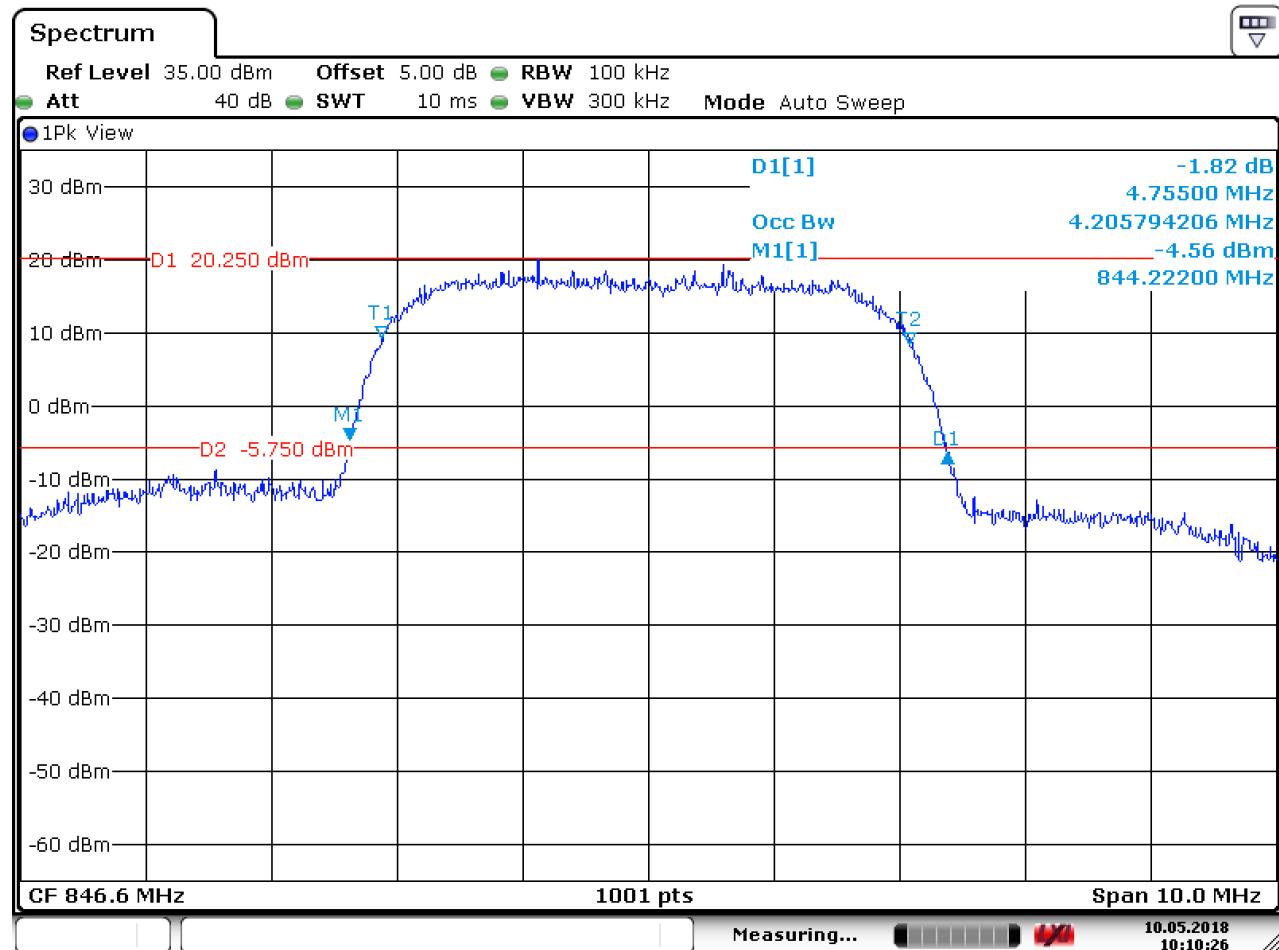
**4.1.3 Test Band = WCDMA 850****4.1.3.1 Test Mode = UMTS/TM1****4.1.3.1.1 Test Channel = LCH**

Date: 10.MAY.2018 10:07:12

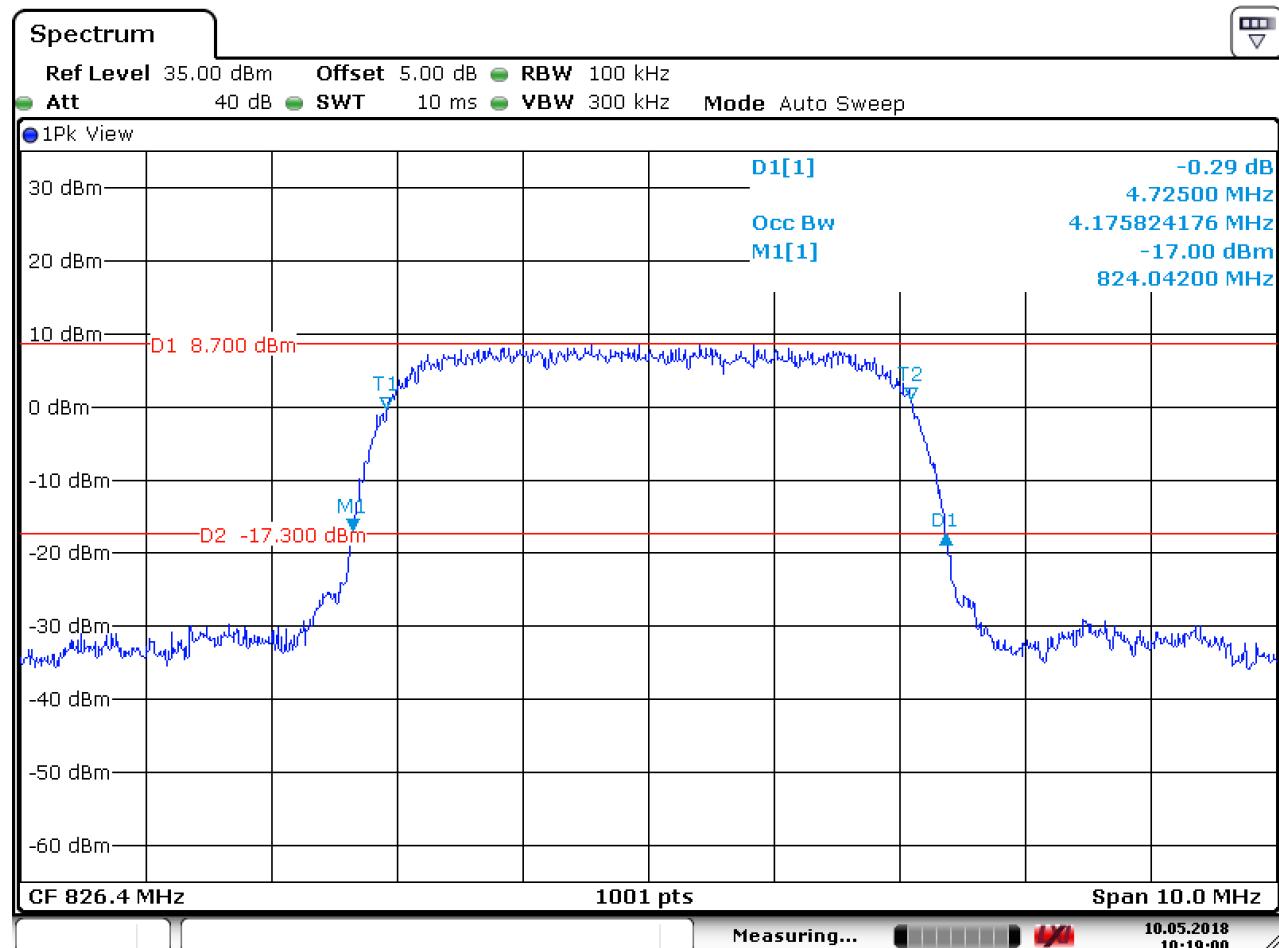
**4.1.3.1.2 Test Channel = MCH**

Date: 10.MAY.2018 10:08:49

#### 4.1.3.1.3 Test Channel = HCH

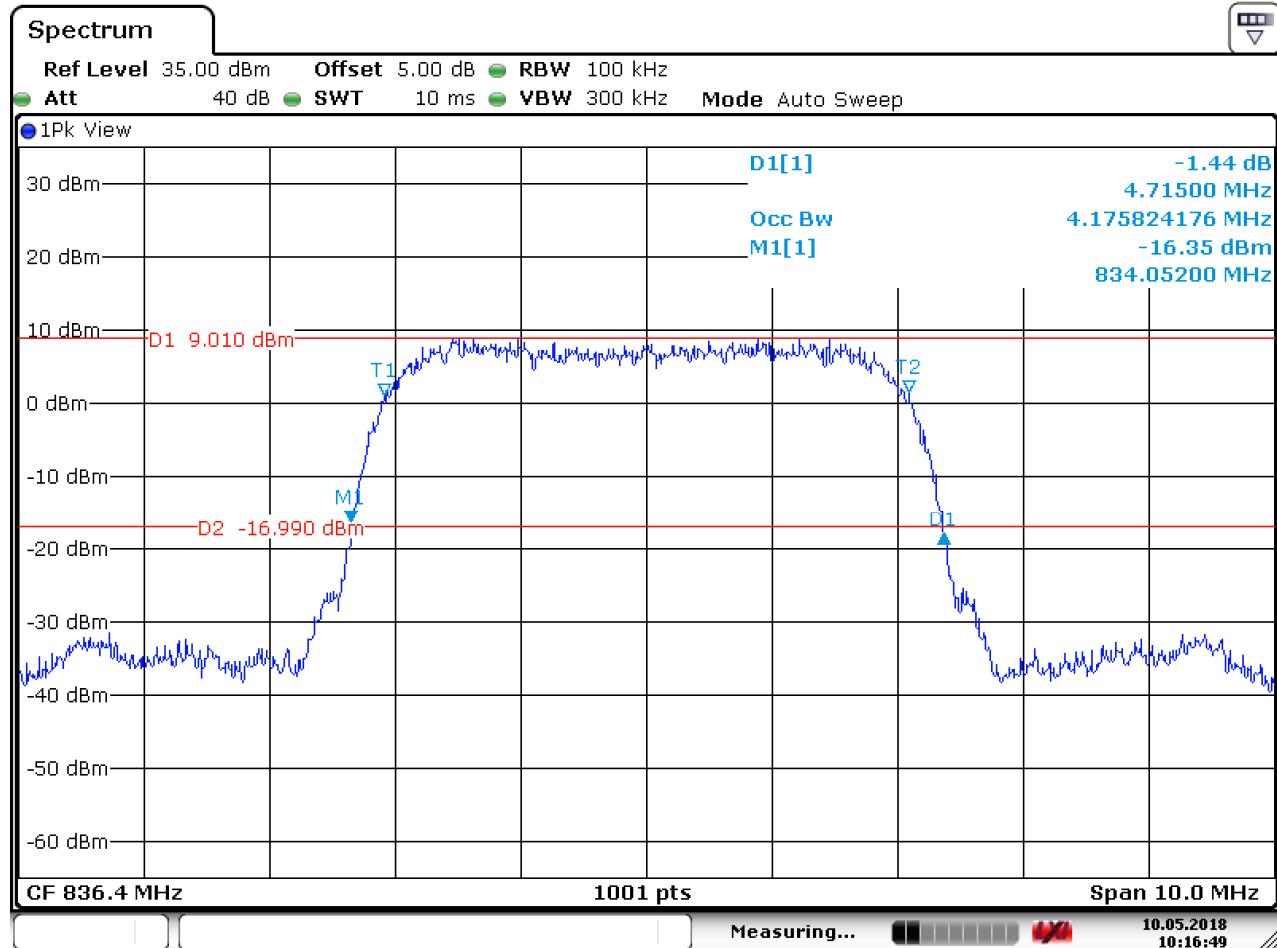


Date: 10.MAY.2018 10:10:26

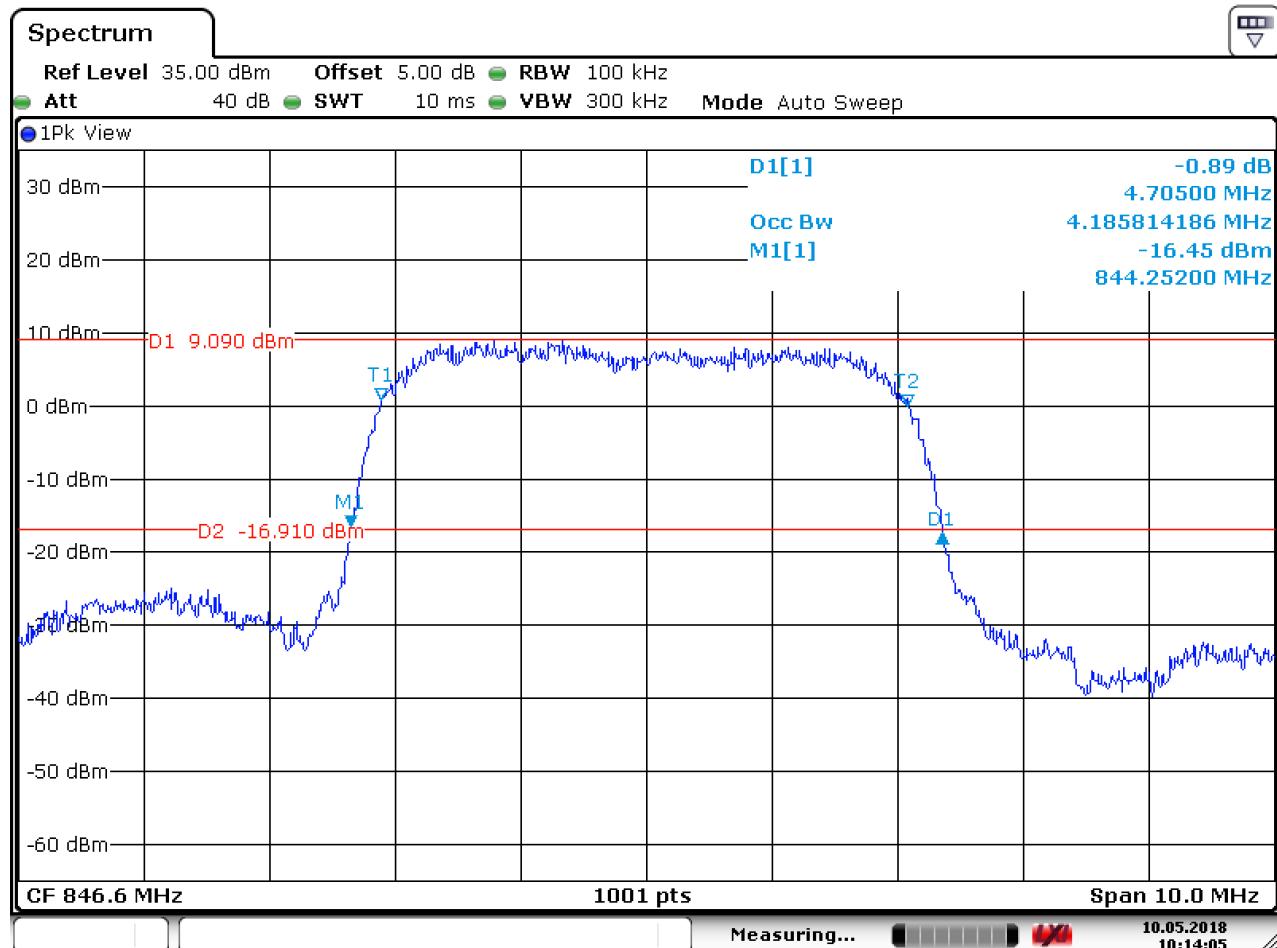
**4.1.3.2 Test Mode = UMTS/TM2****4.1.3.2.1 Test Channel = LCH**

Date: 10.MAY.2018 10:19:00

## 4.1.3.2.2 Test Channel = MCH



Date: 10.MAY.2018 10:16:49

**4.1.3.2.3 Test Channel = HCH**


Date: 10.MAY.2018 10:14:05

## 5 Band Edges Compliance

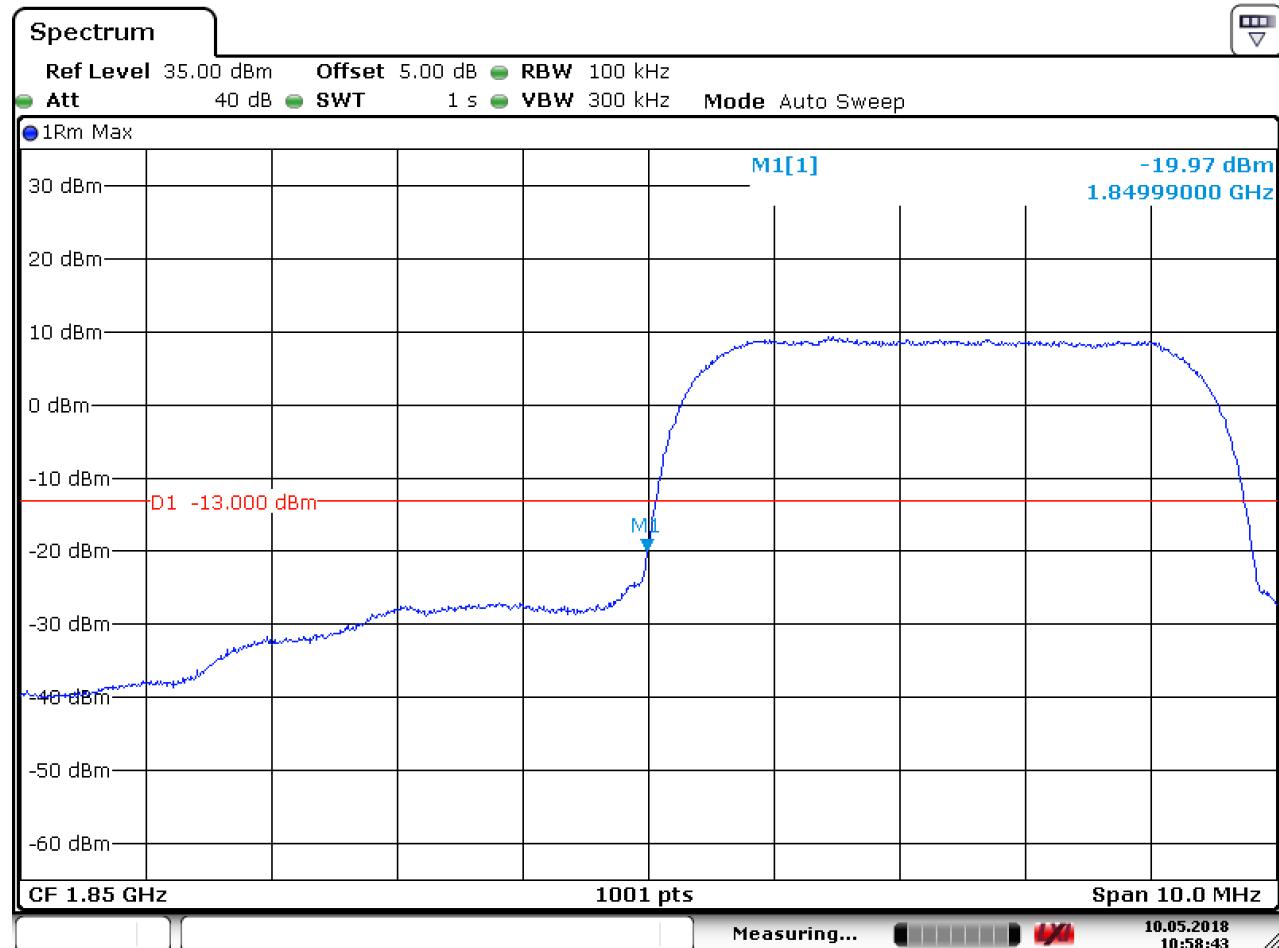
Part I - Test Plots

### 5.1 For WCDMA

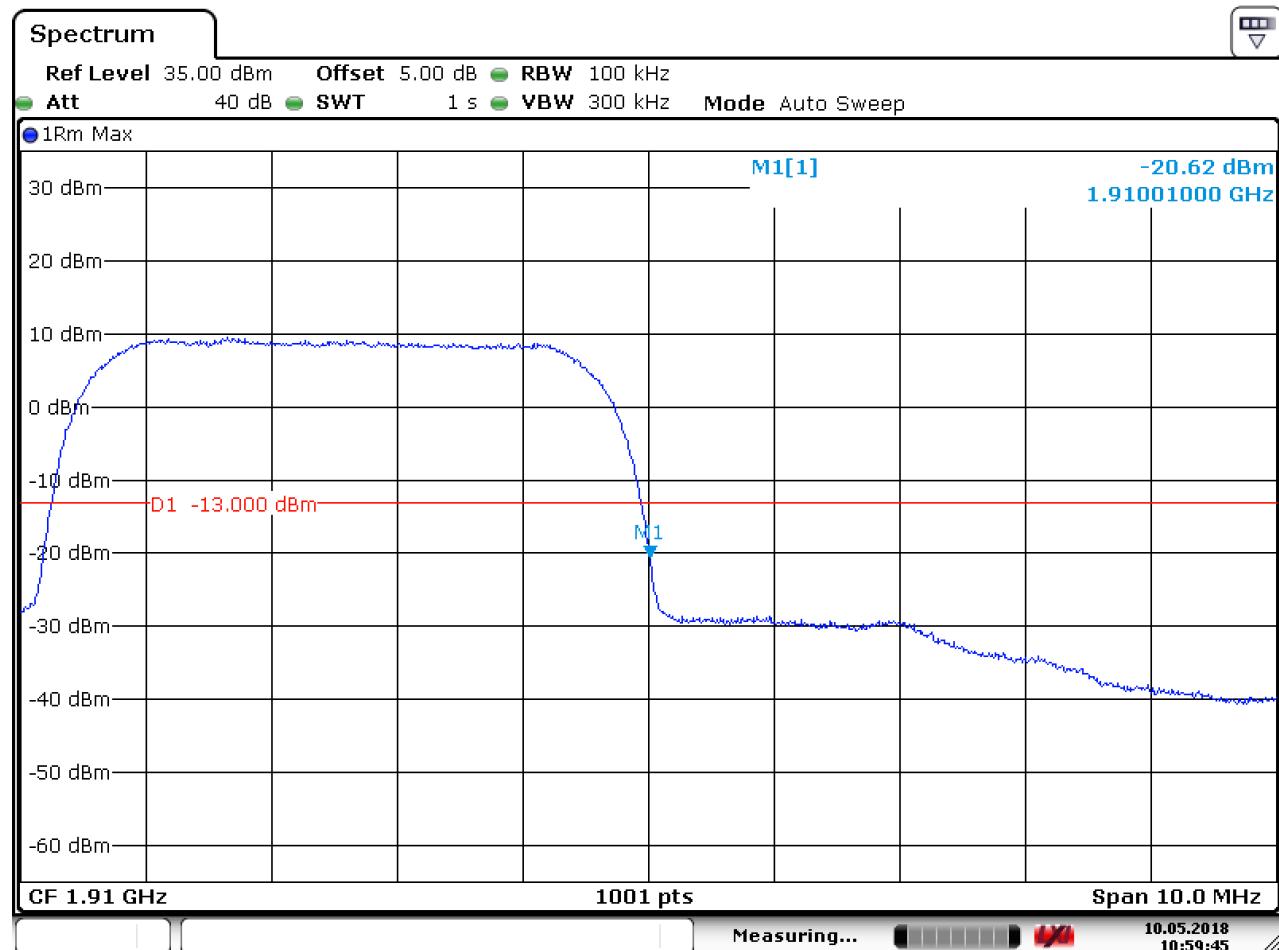
#### 5.1.1 Test Band = WCDMA 1900

##### 5.1.1.1 Test Mode = UMTS/TM1

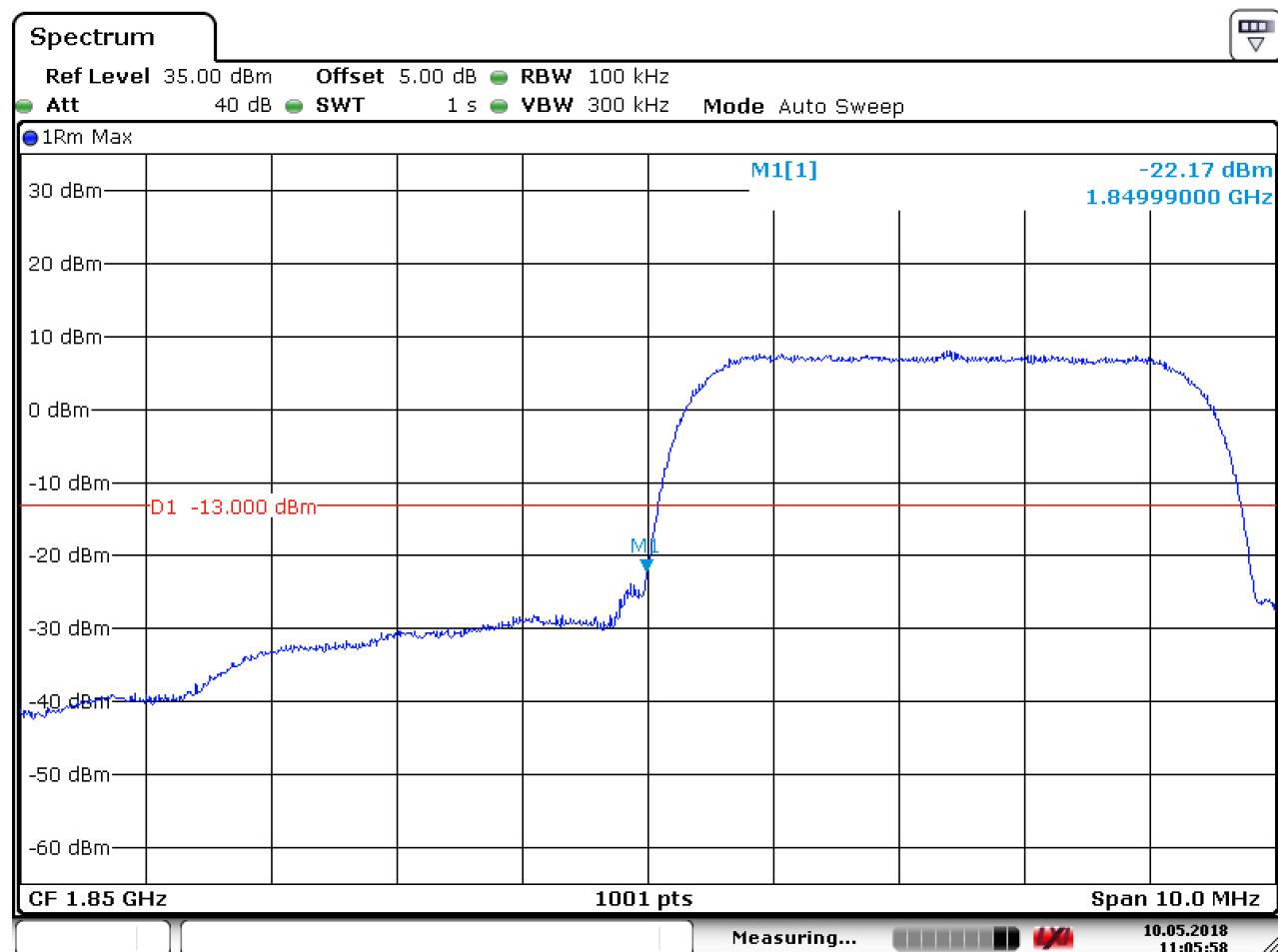
###### 5.1.1.1.1 Test Channel = LCH



Date: 10.MAY.2018 10:58:43

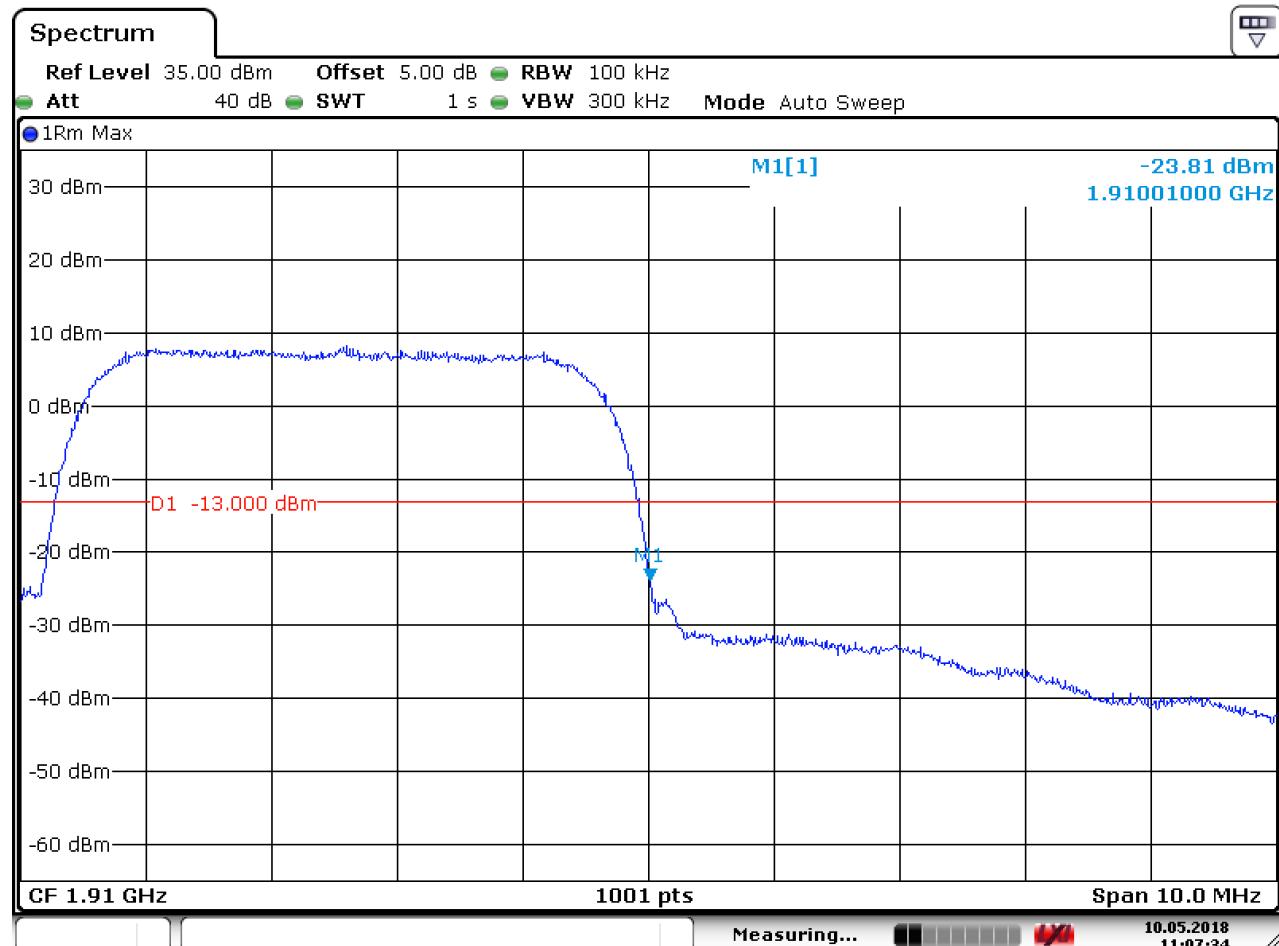
**5.1.1.1.2 Test Channel = HCH**

Date: 10.MAY.2018 10:59:45

**5.1.1.2 Test Mode = UMTS/TM2****5.1.1.2.1 Test Channel = LCH**

Date: 10.MAY.2018 11:05:58

### 5.1.1.2.2 Test Channel = HCH

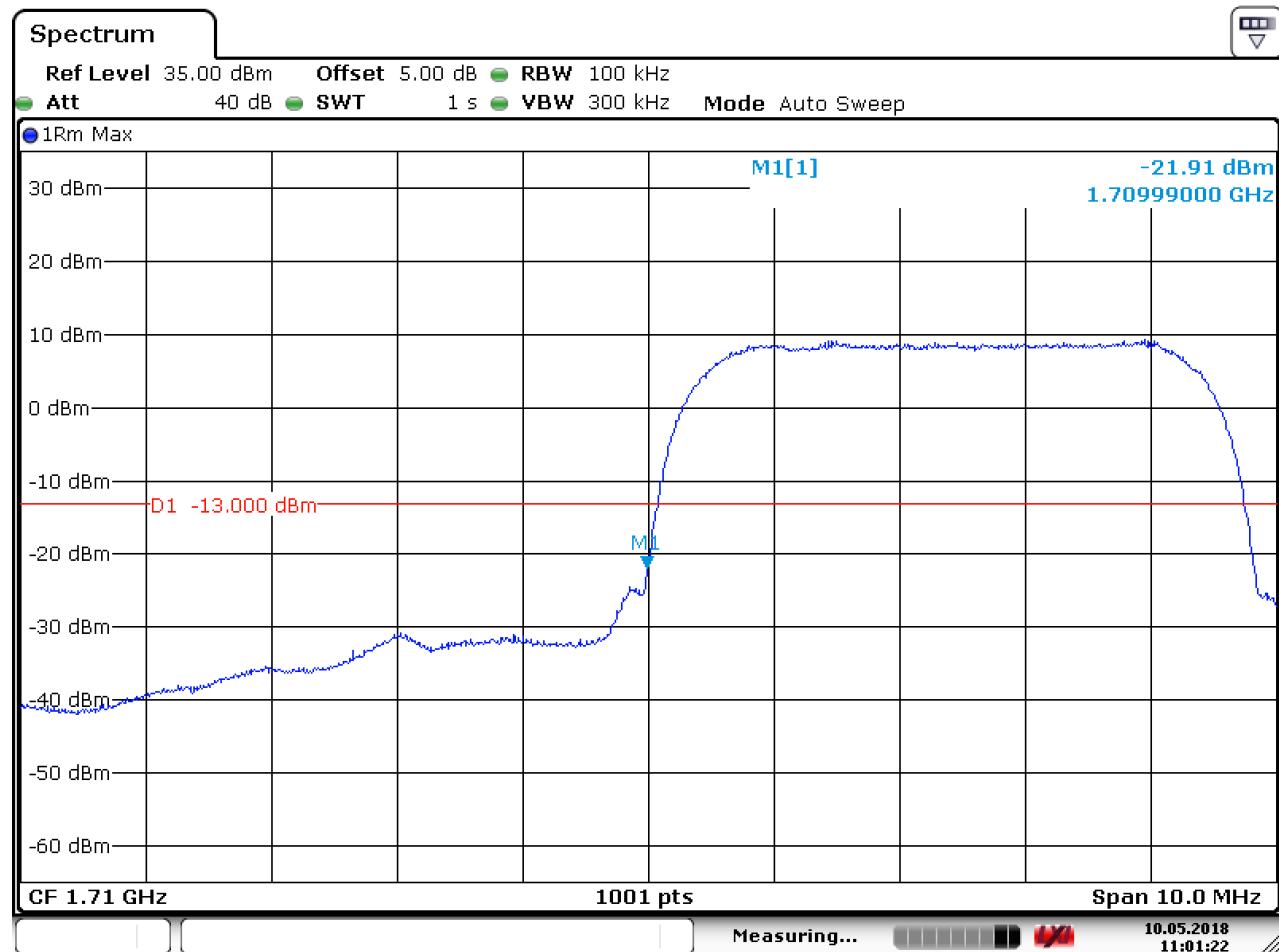


Date: 10.MAY.2018 11:07:34

### 5.1.2 Test Band = WCDMA 1700

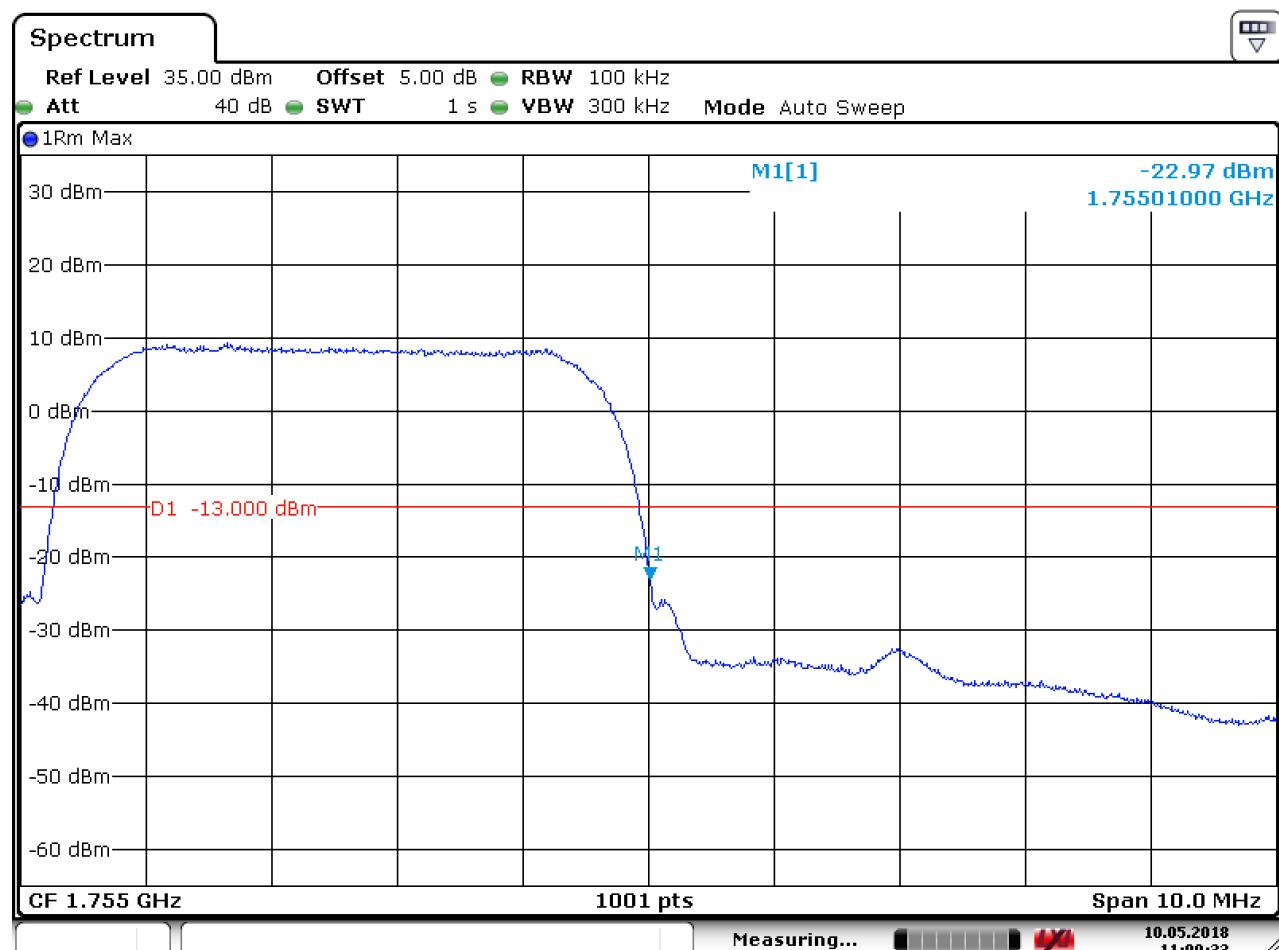
#### 5.1.2.1 Test Mode = UMTS/TM1

##### 5.1.2.1.1 Test Channel = LCH

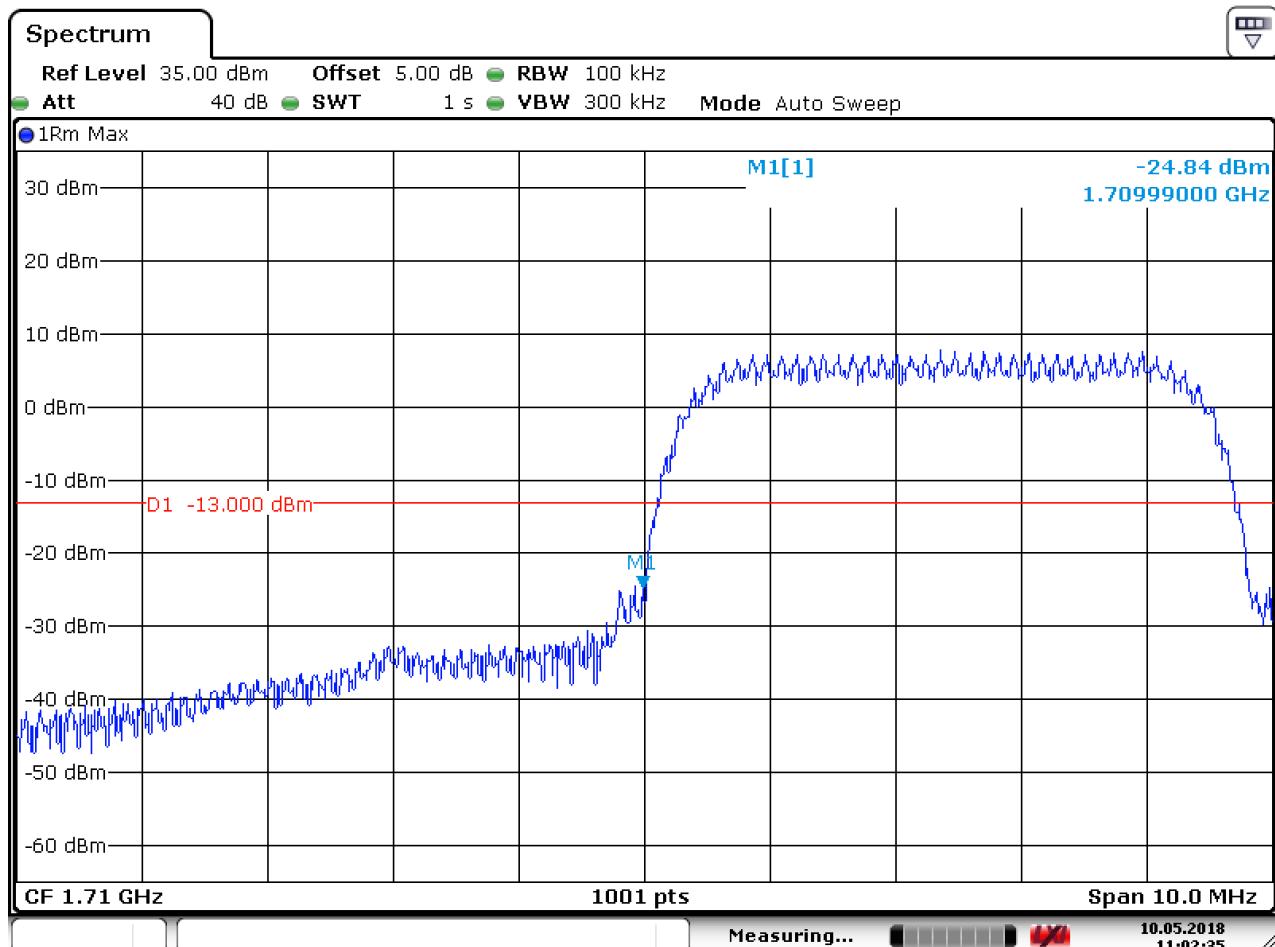


Date: 10.MAY.2018 11:01:22

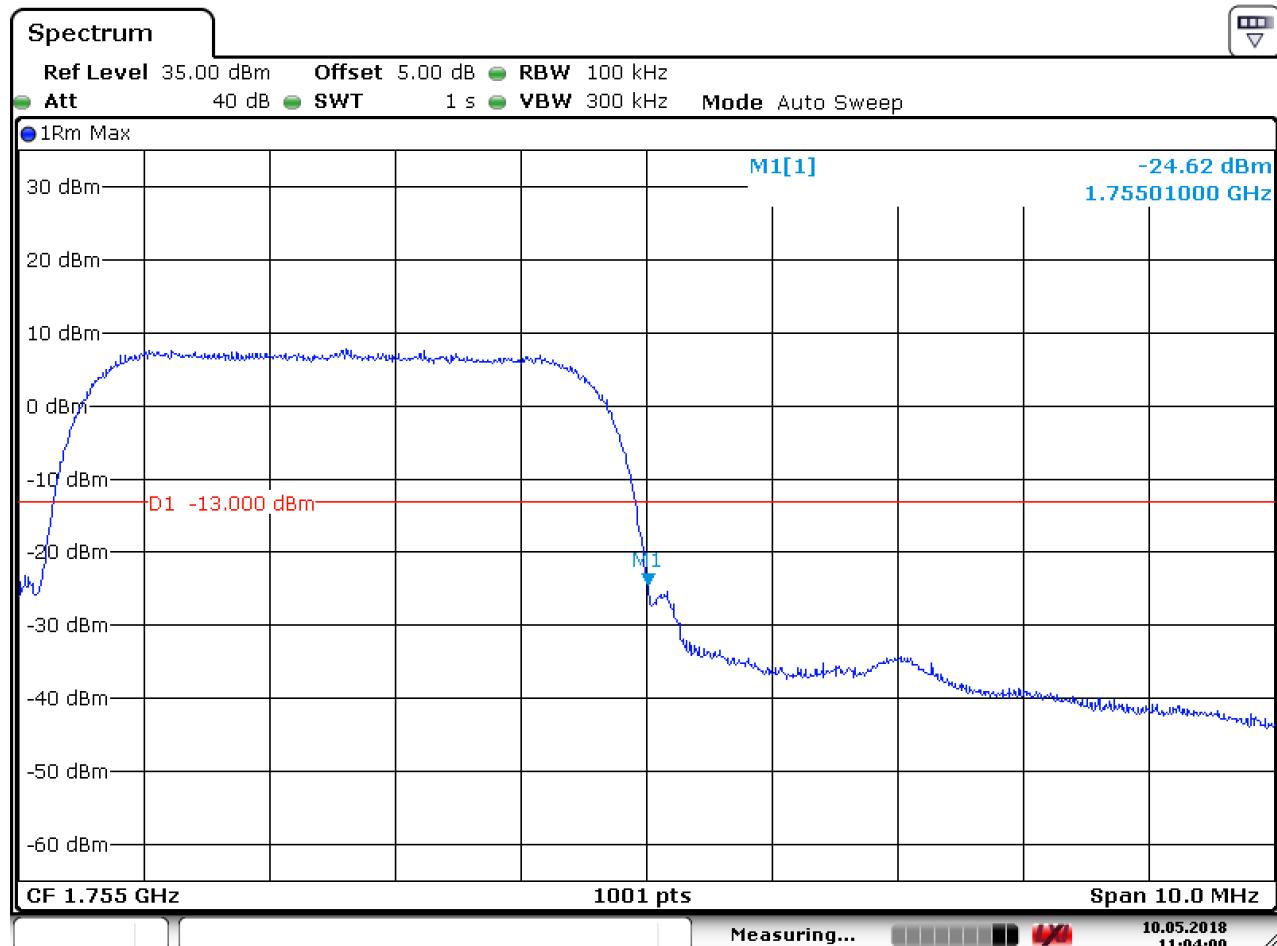
#### 5.1.2.1.2 Test Channel = HCH



Date: 10.MAY.2018 11:00:33

**5.1.2.2 Test Mode = UMTS/TM2****5.1.2.2.1 Test Channel = LCH**

Date: 10.MAY.2018 11:02:36

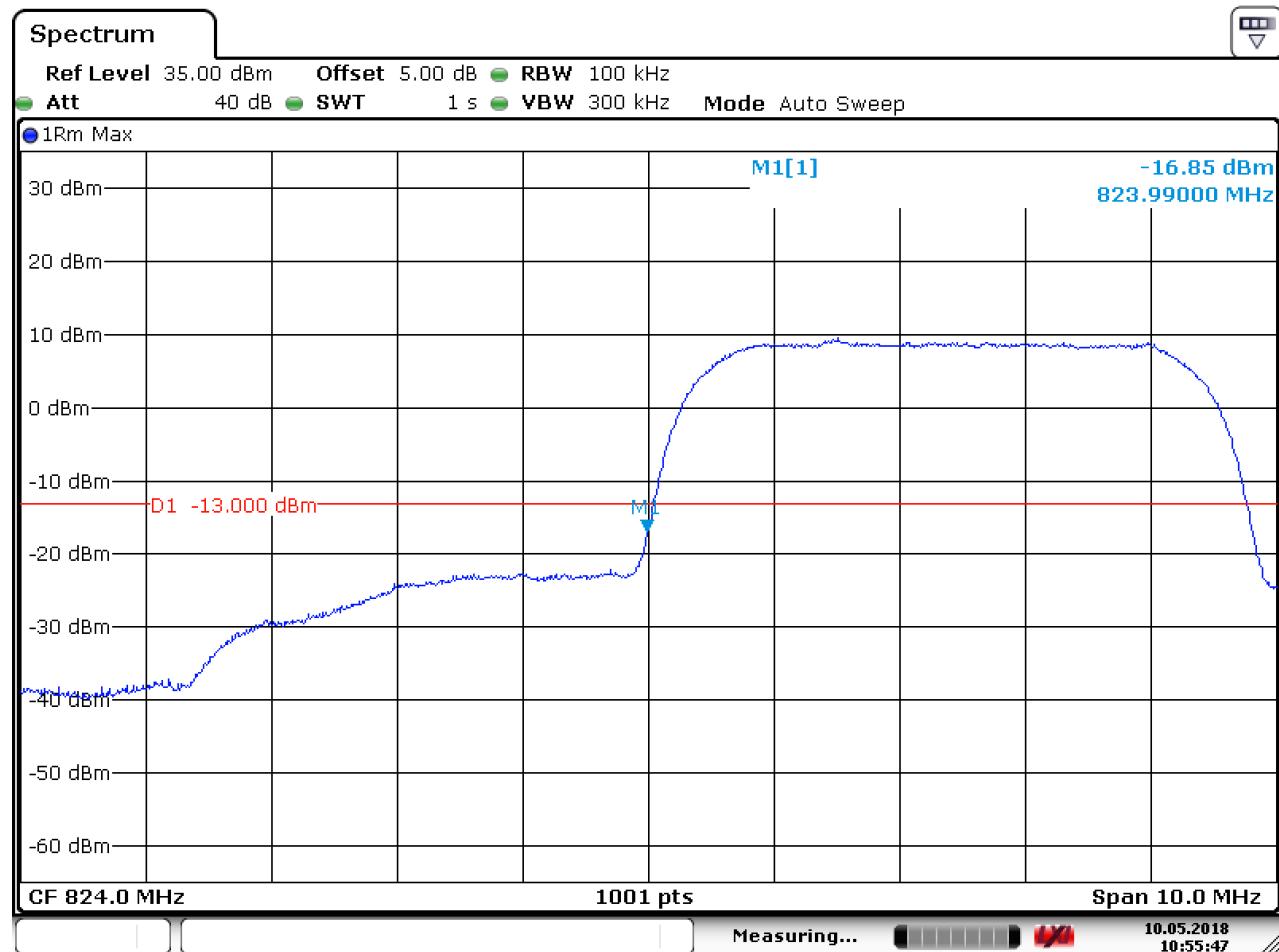
**5.1.2.2.2 Test Channel = HCH**

Date: 10.MAY.2018 11:04:00

### 5.1.3 Test Band = WCDMA 850

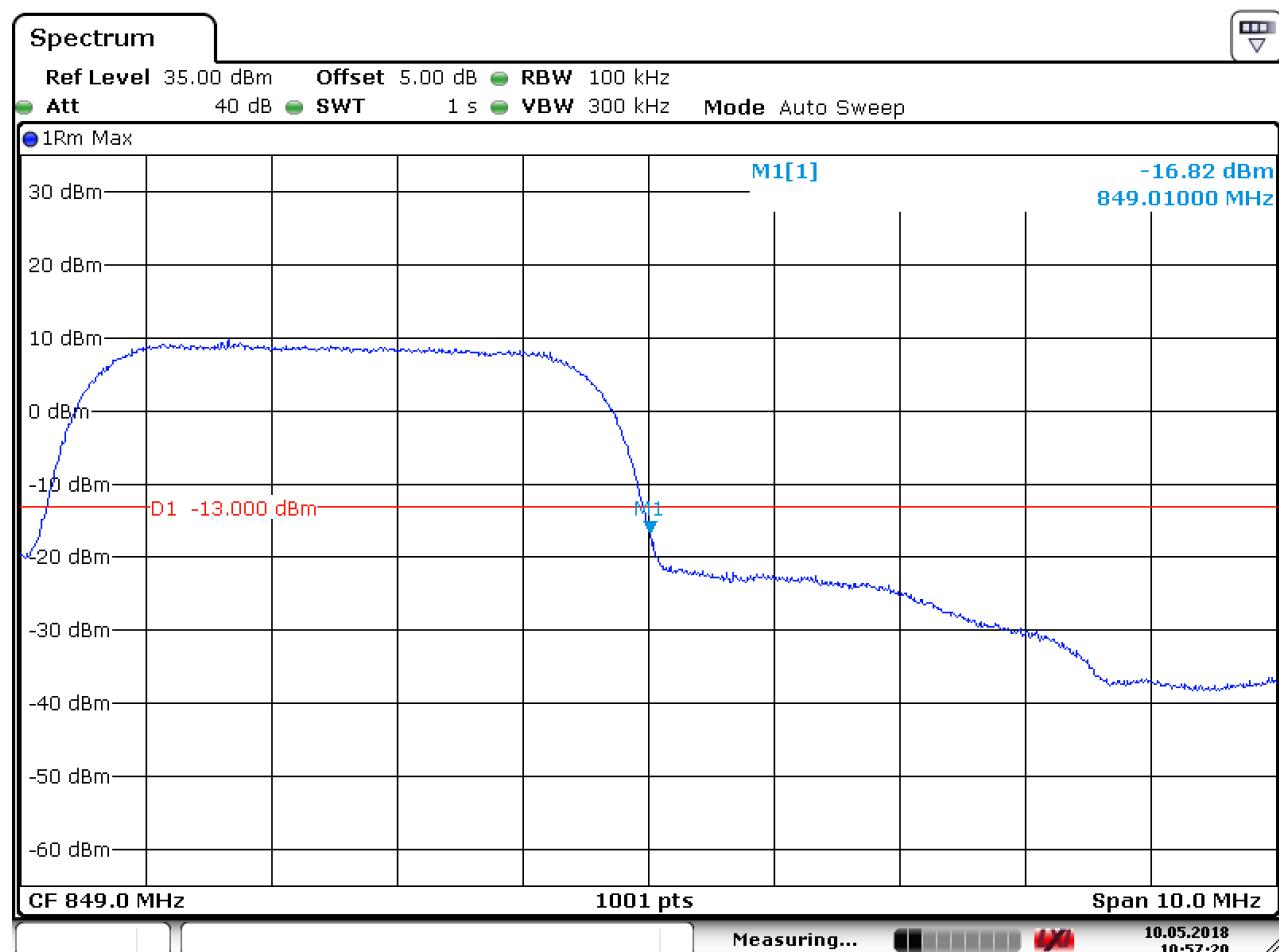
#### 5.1.3.1 Test Mode = UMTS/TM1

##### 5.1.3.1.1 Test Channel = LCH

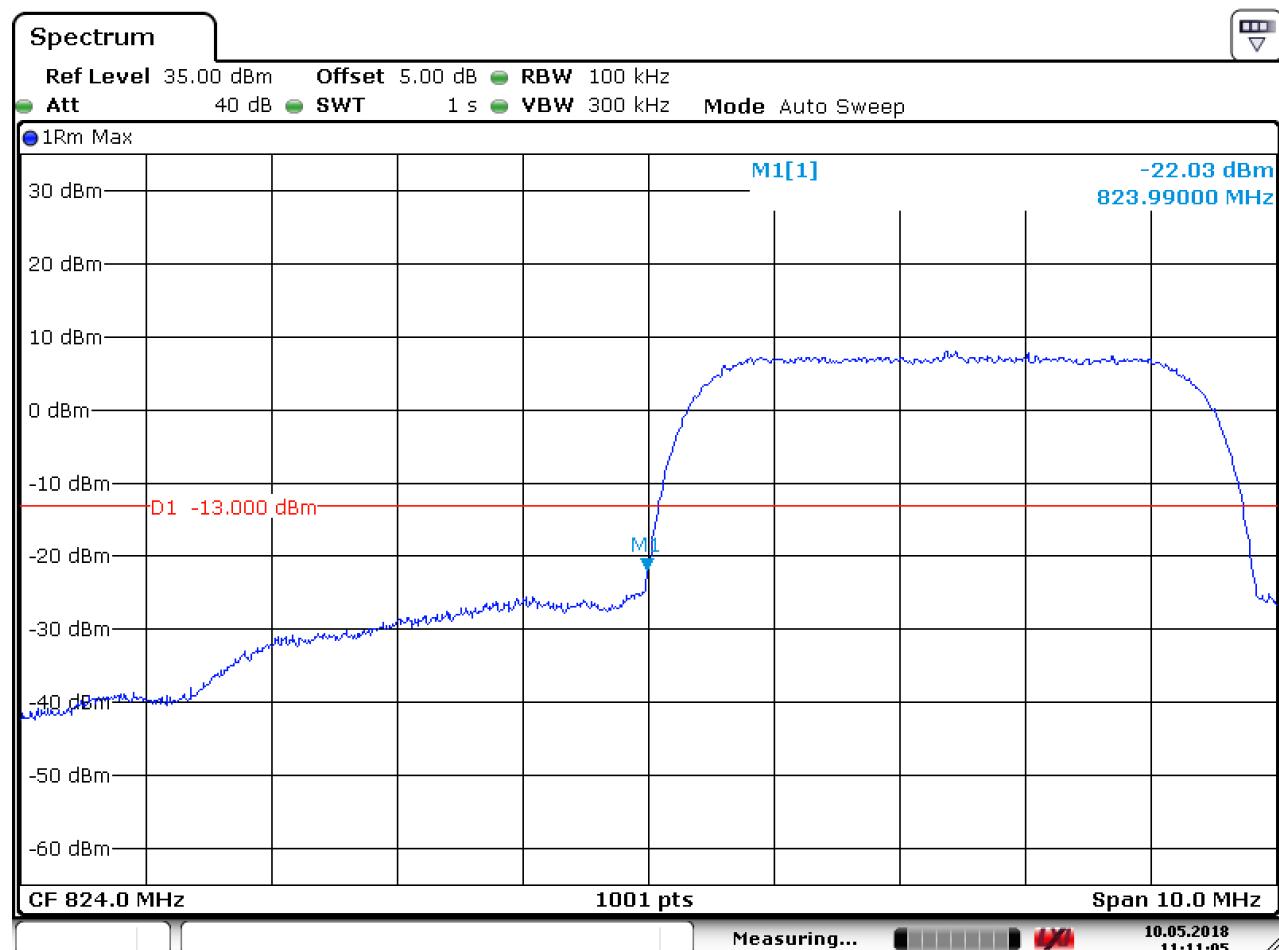


Date: 10.MAY.2018 10:55:47

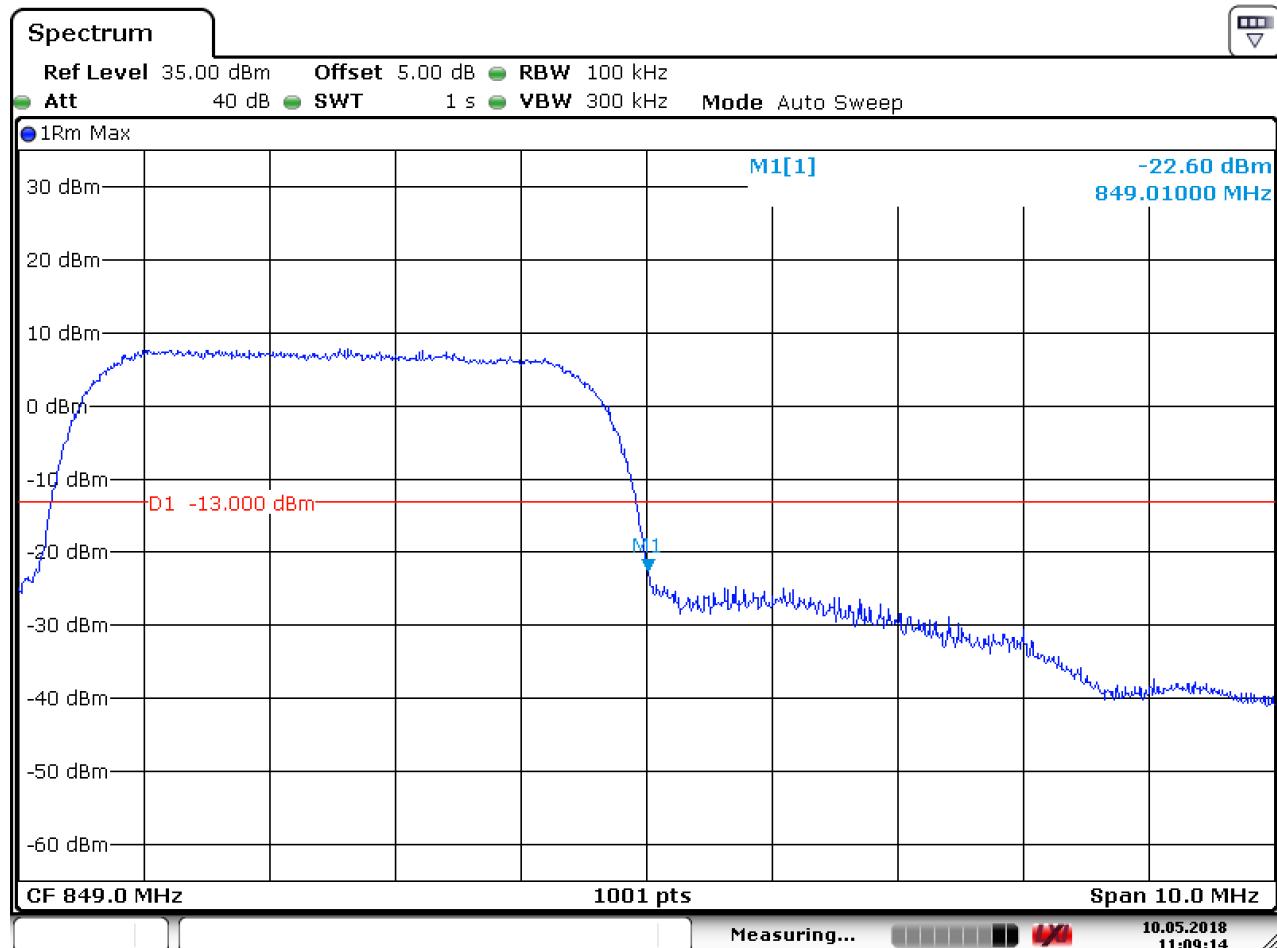
### 5.1.3.1.2 Test Channel = HCH



Date: 10.MAY.2018 10:57:20

**5.1.3.2 Test Mode = UMTS/TM2****5.1.3.2.1 Test Channel = LCH**

Date: 10.MAY.2018 11:11:06

**5.1.3.2.2 Test Channel = HCH**

Date: 10.MAY.2018 11:09:14

## 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.

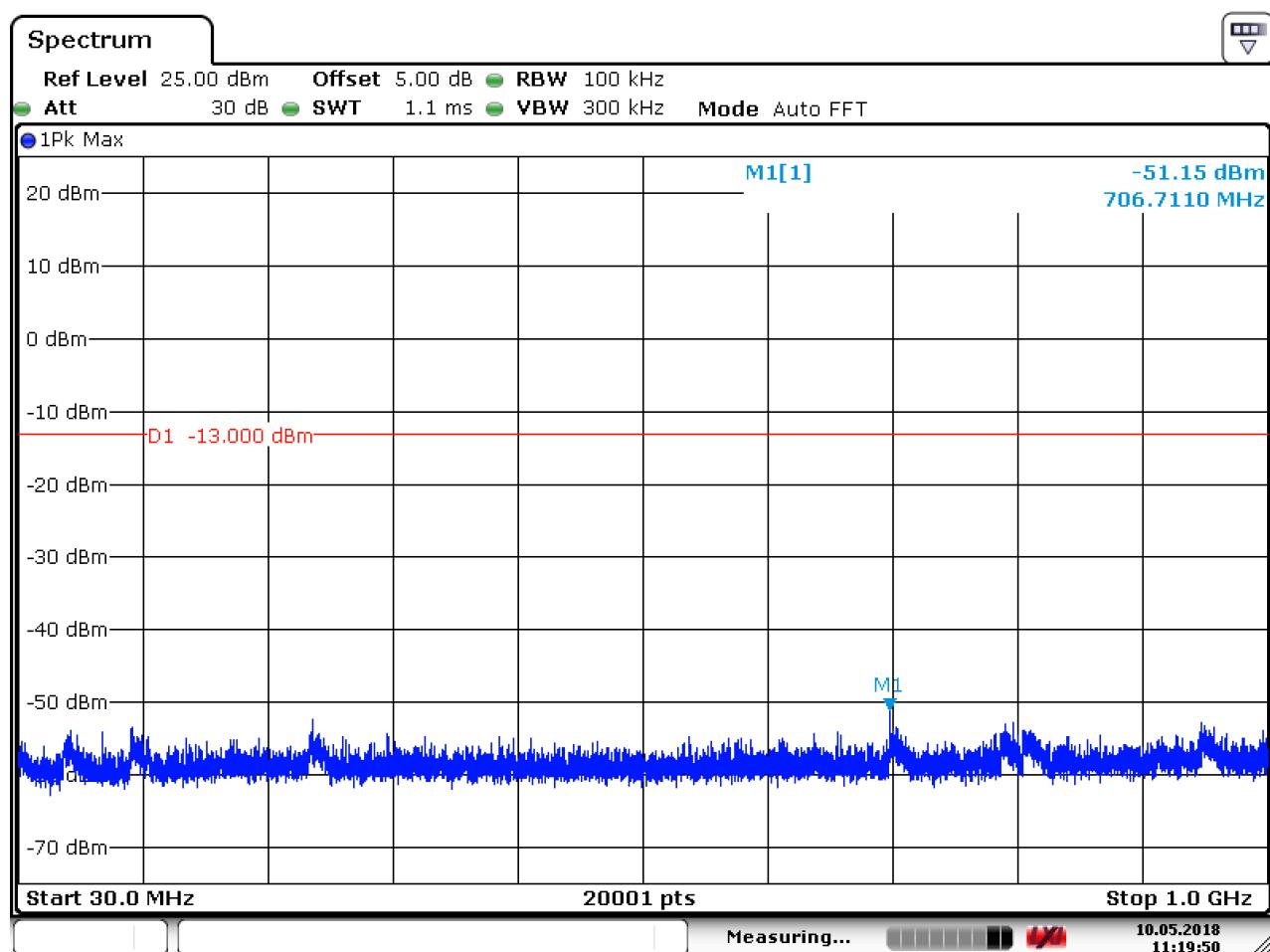
Part I - Test Plots

### 6.1 For WCDMA

#### 6.1.1 Test Band = WCDMA 1900

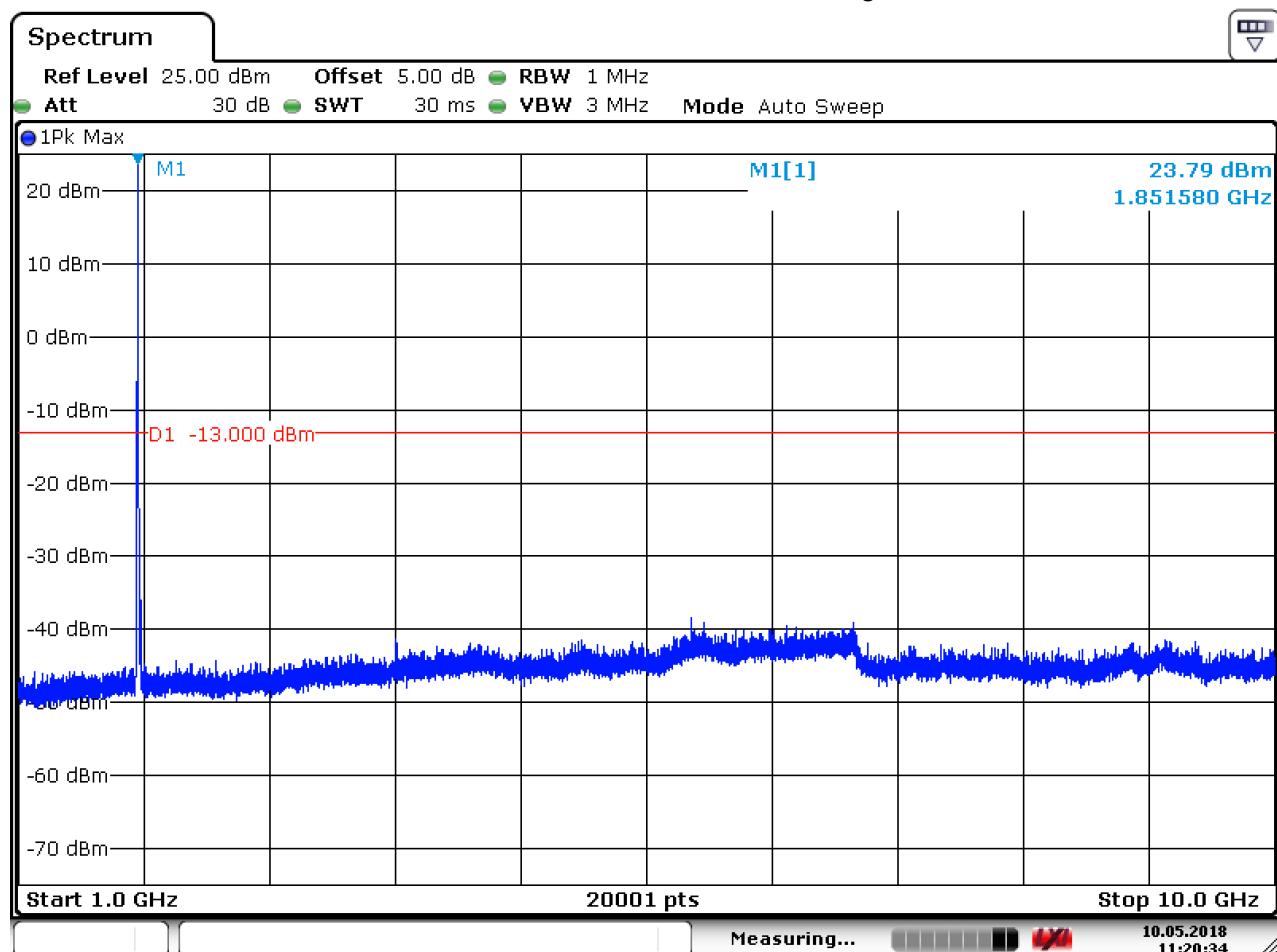
##### 6.1.1.1 Test Mode = UMTS/TM1

###### 6.1.1.1.1 Test Channel = LCH

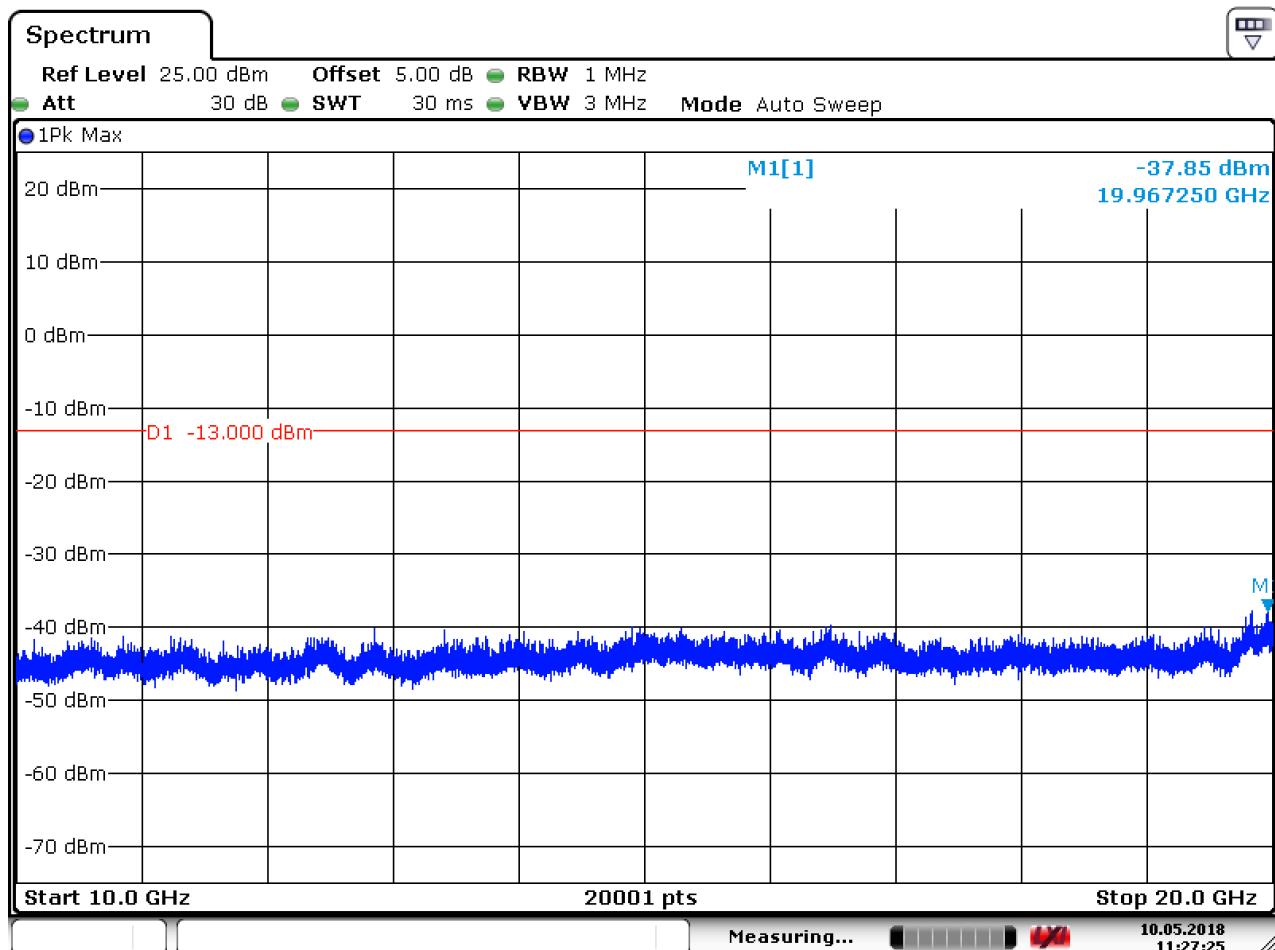


Date: 10.MAY.2018 11:19:51

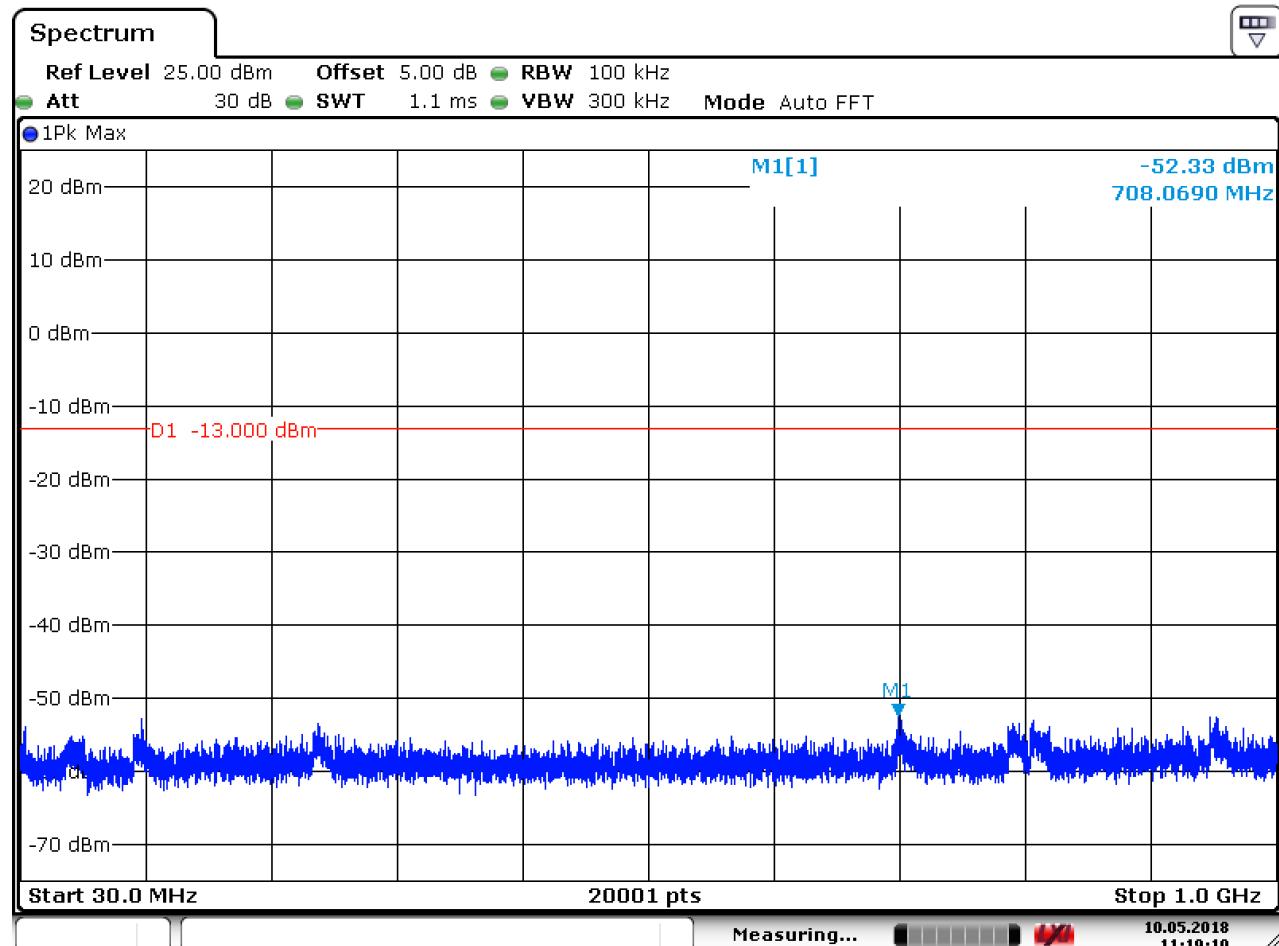
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Date: 10.MAY.2018 11:20:34

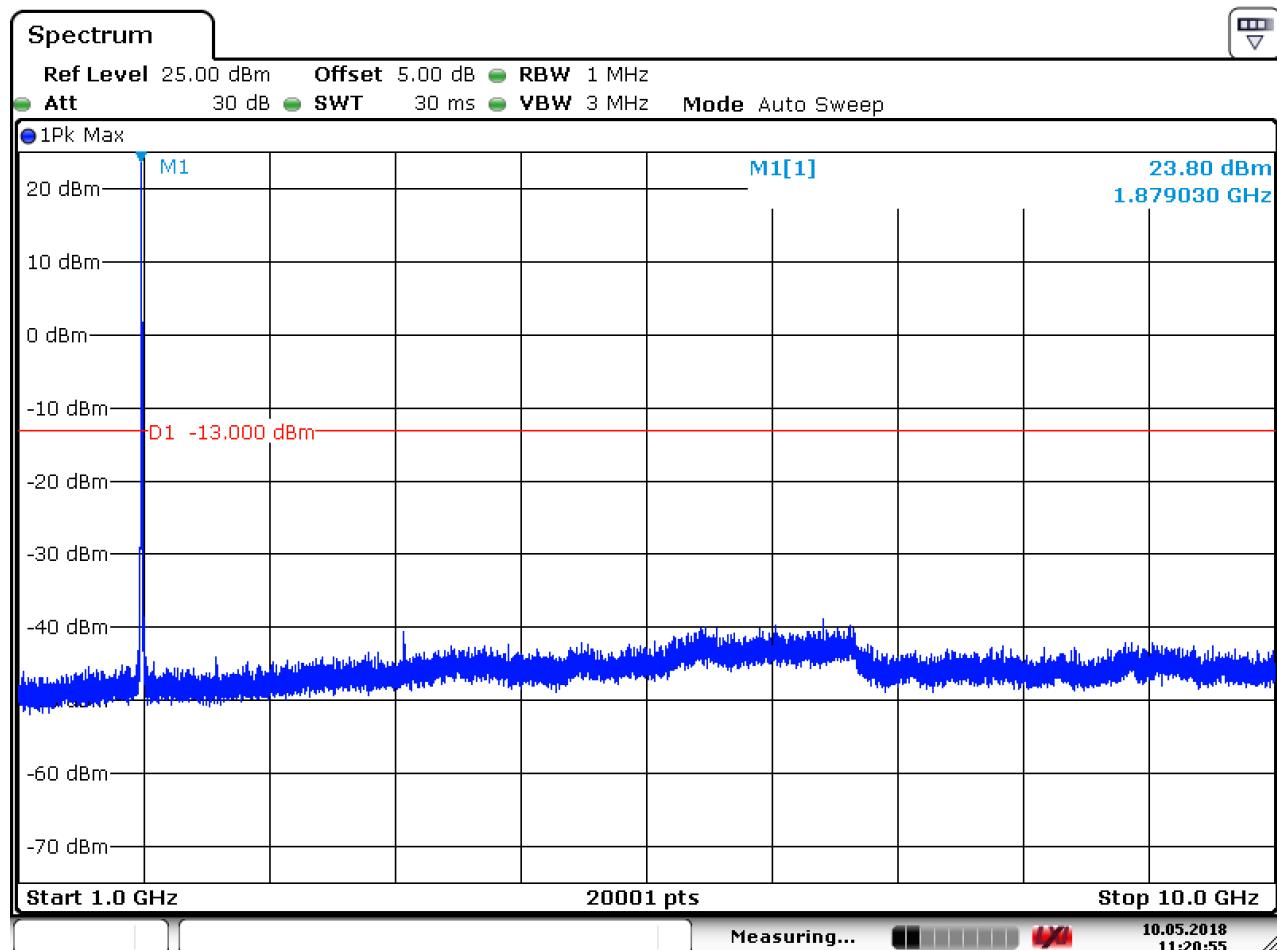
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#### 6.1.1.1.2 Test Channel = MCH

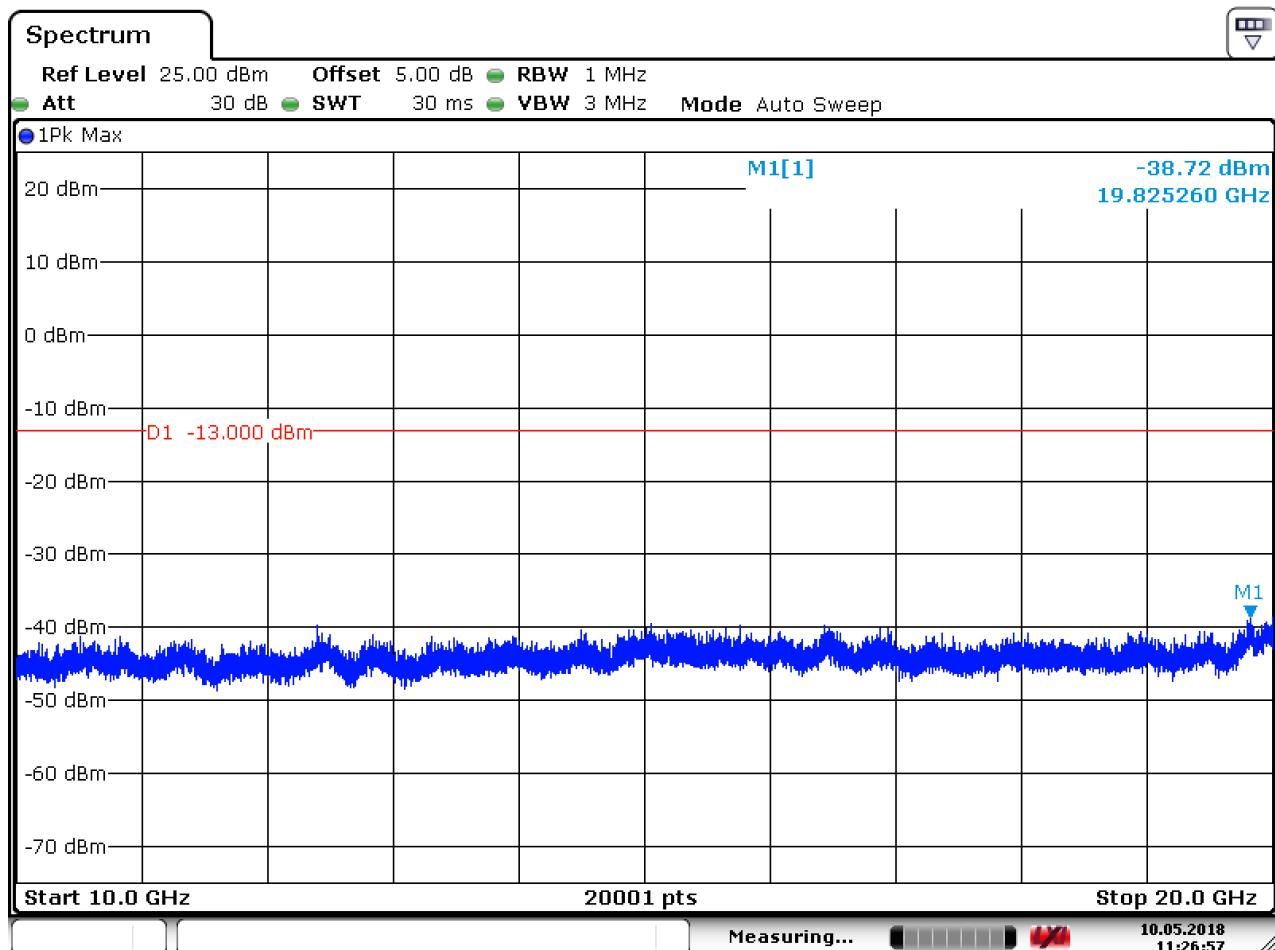


Date: 10.MAY.2018 11:19:10

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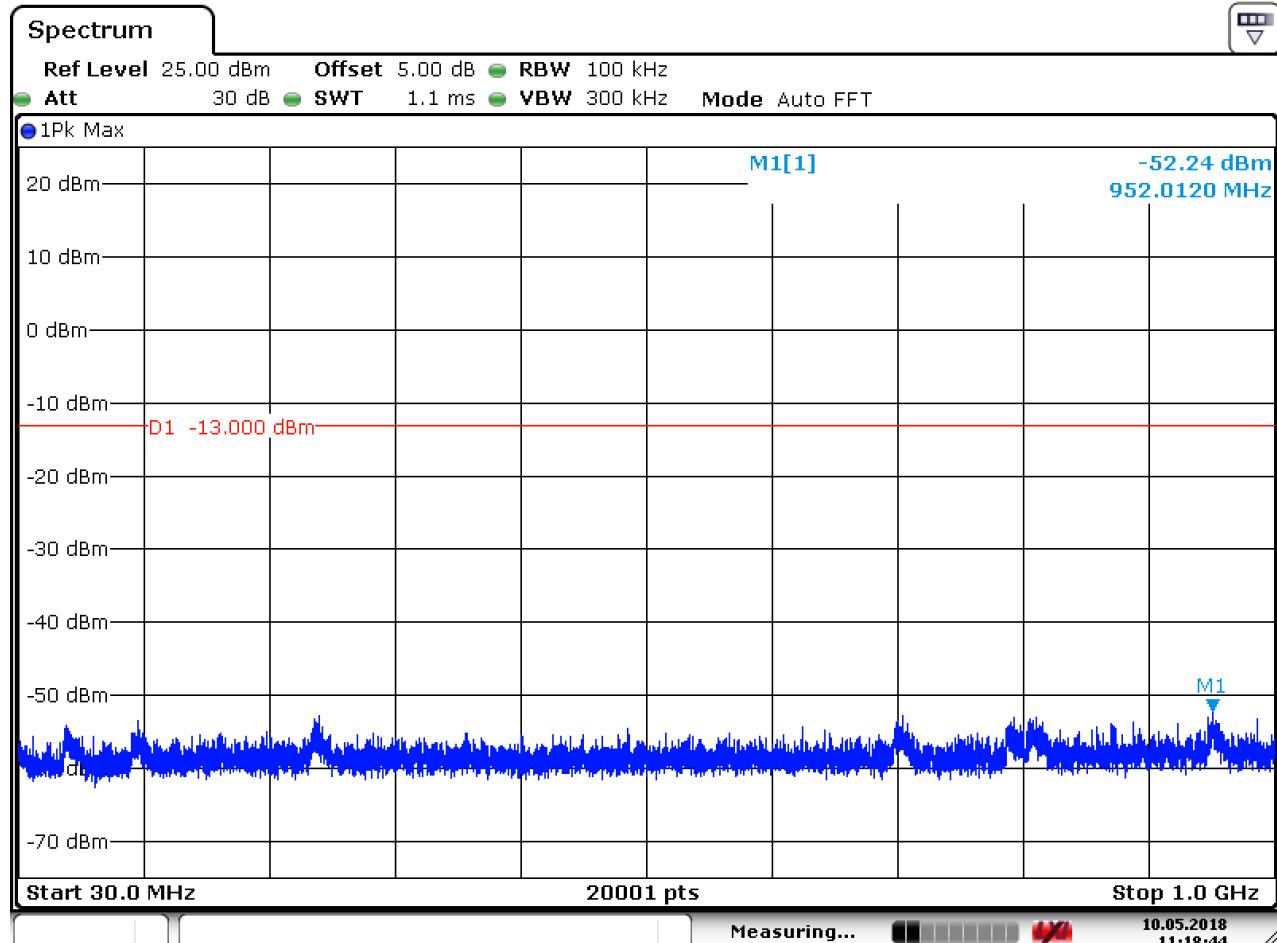


Date: 10.MAY.2018 11:20:56

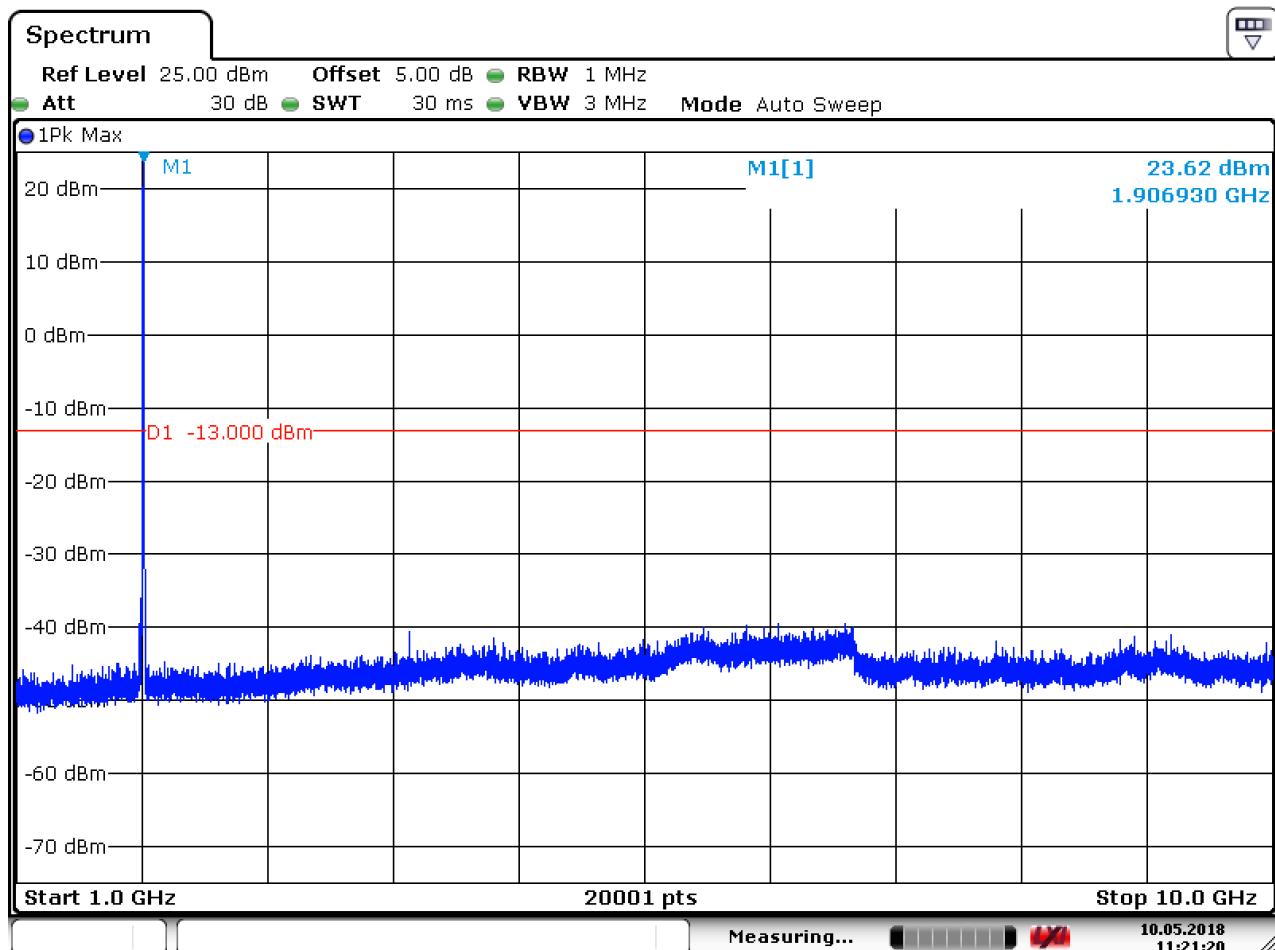


Date: 10.MAY.2018 11:26:58

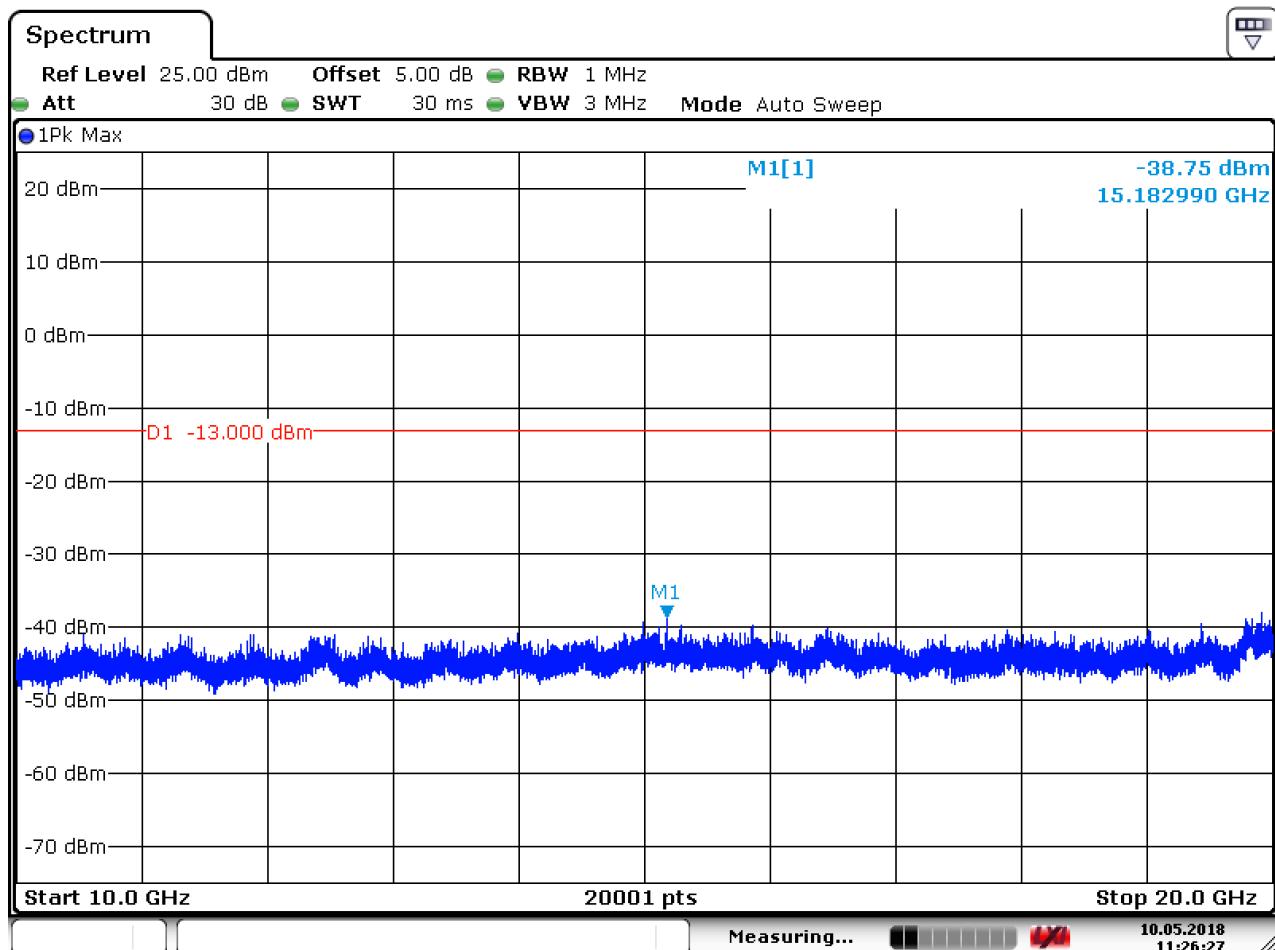
### 6.1.1.1.3 Test Channel = HCH



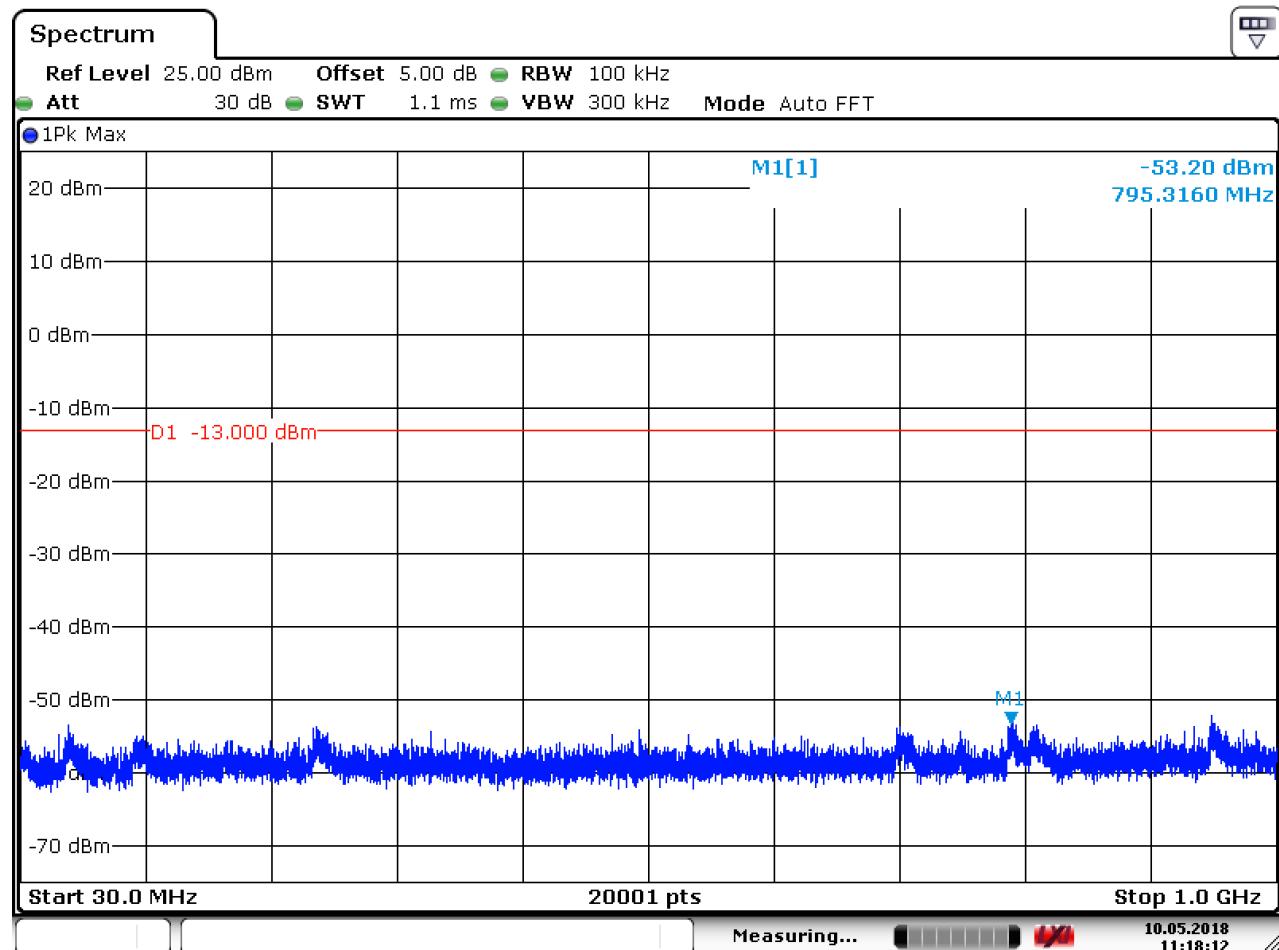
Date: 10.MAY.2018 11:18:45



Date: 10.MAY.2018 11:21:20



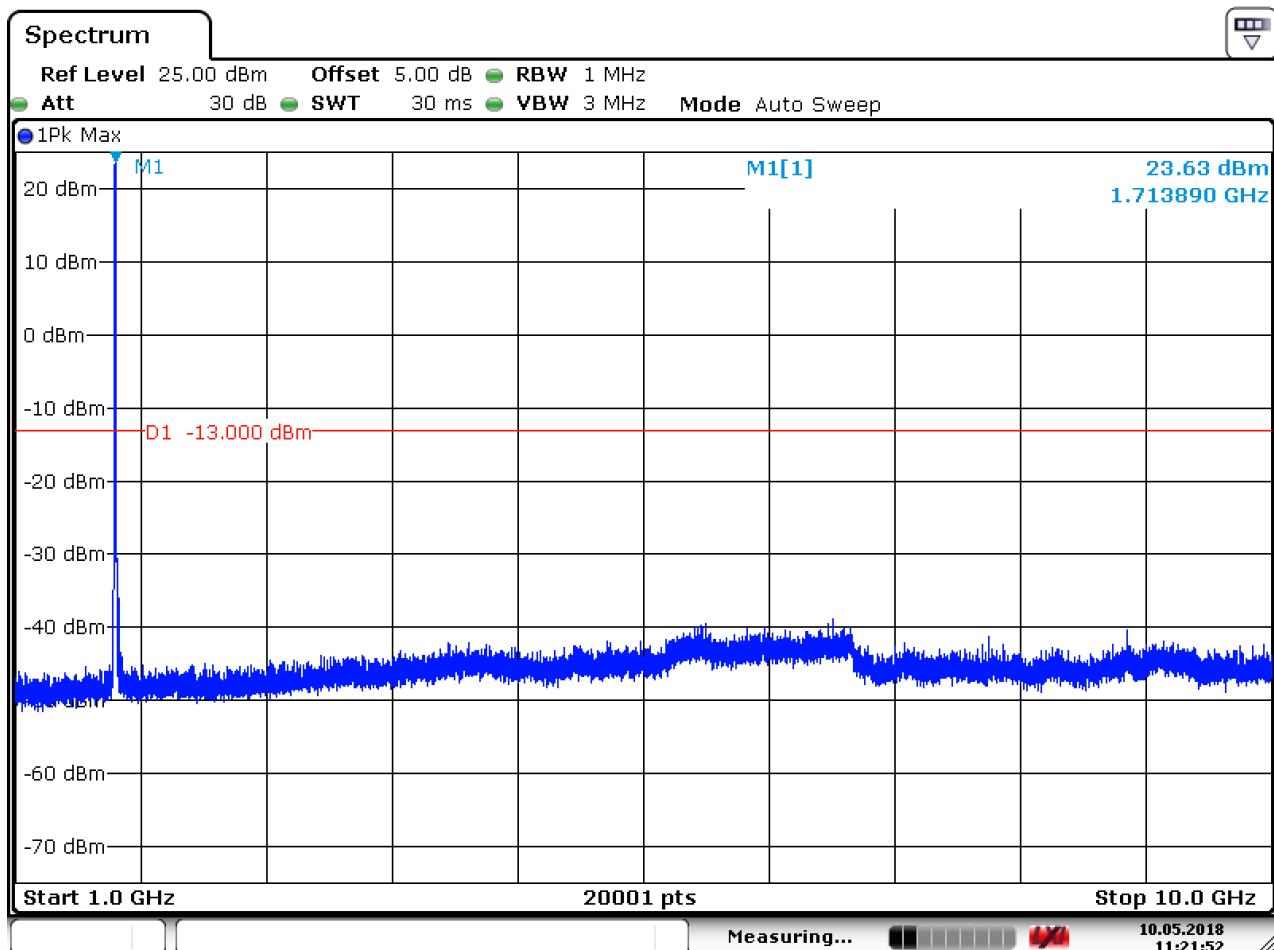
Date: 10.MAY.2018 11:26:27

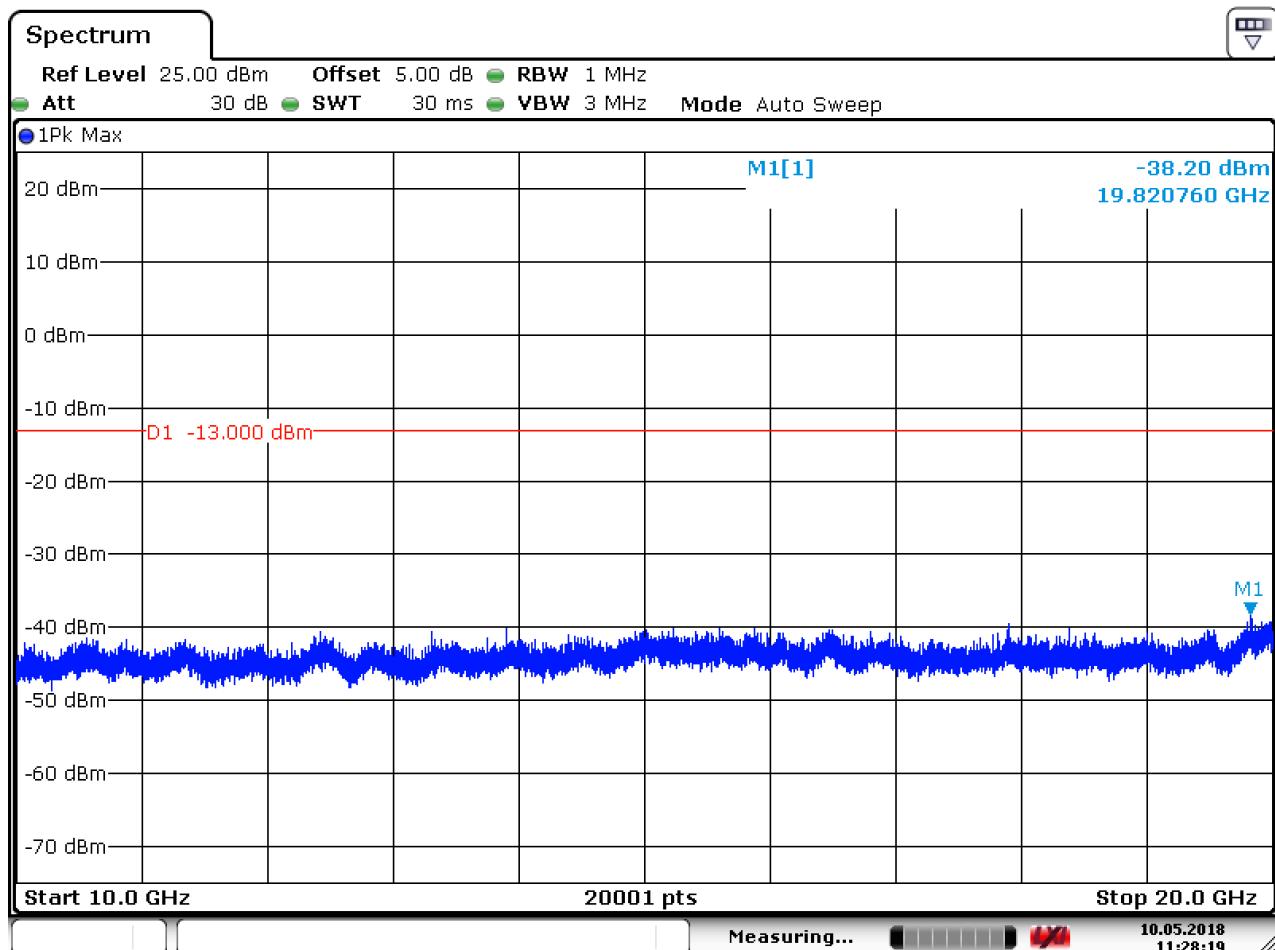
**6.1.2 Test Band = WCDMA 1700****6.1.2.1 Test Mode = UMTS/TM1****6.1.2.1.1 Test Channel = LCH**

Date: 10.MAY.2018 11:18:13

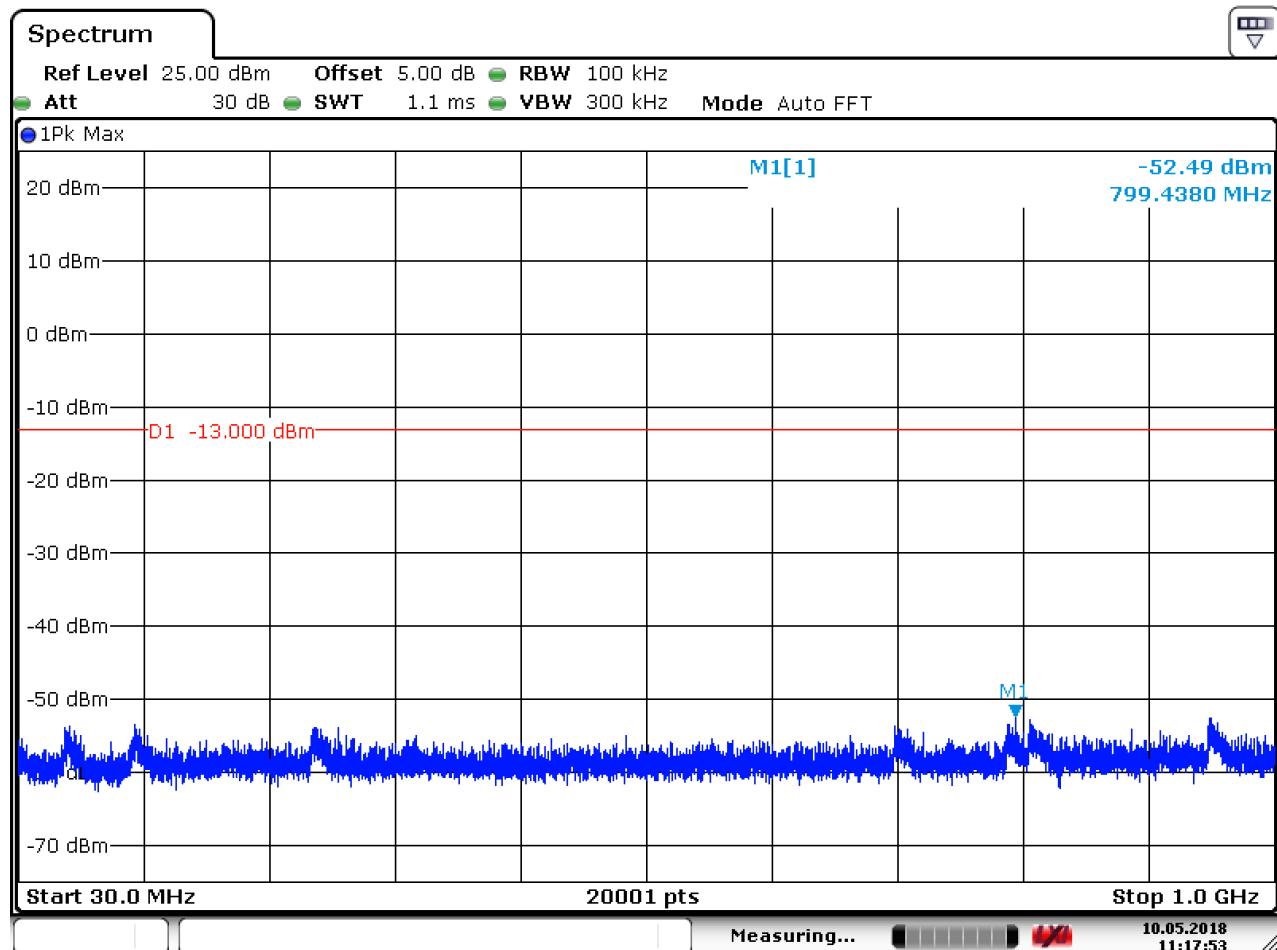
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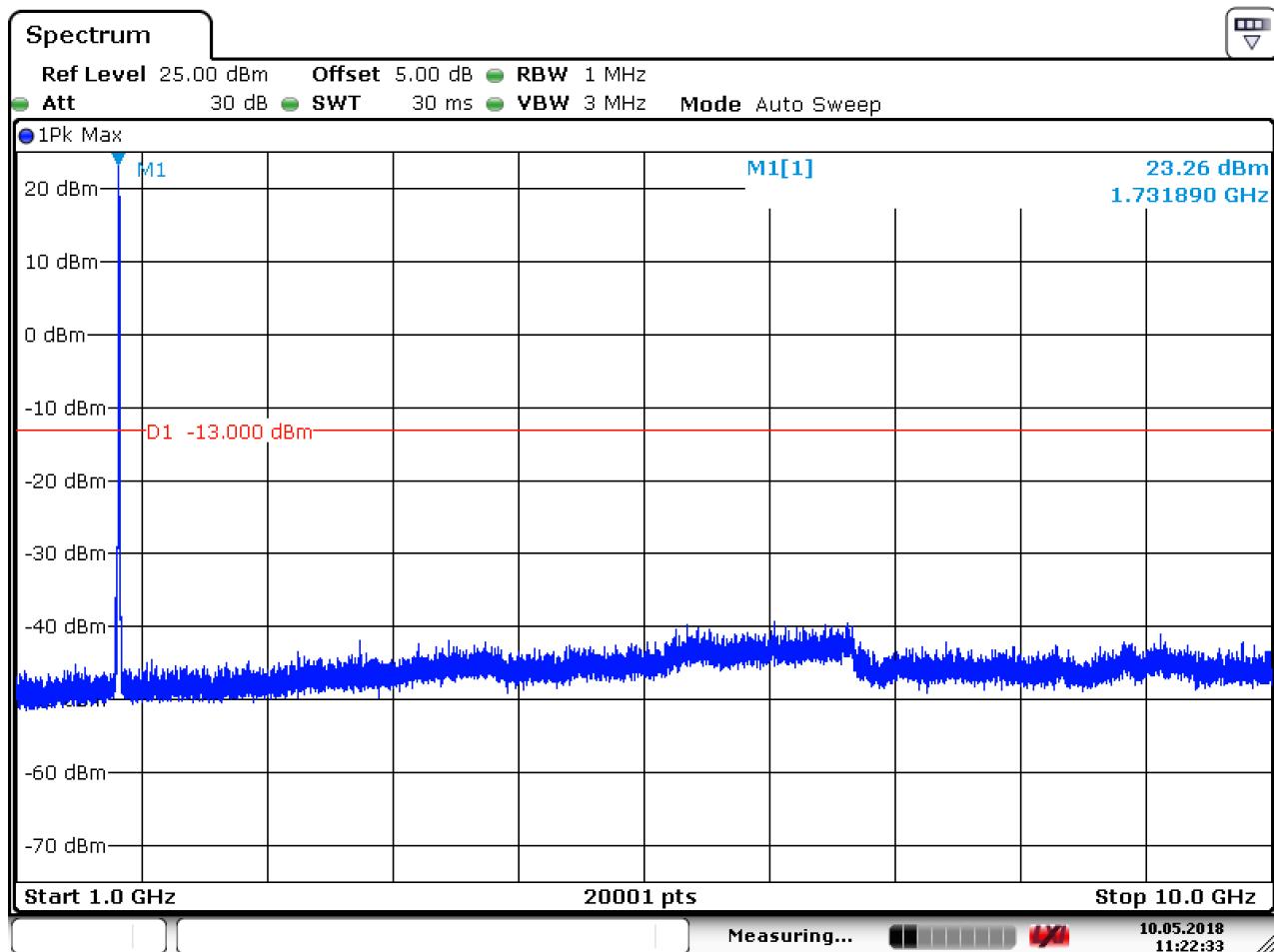


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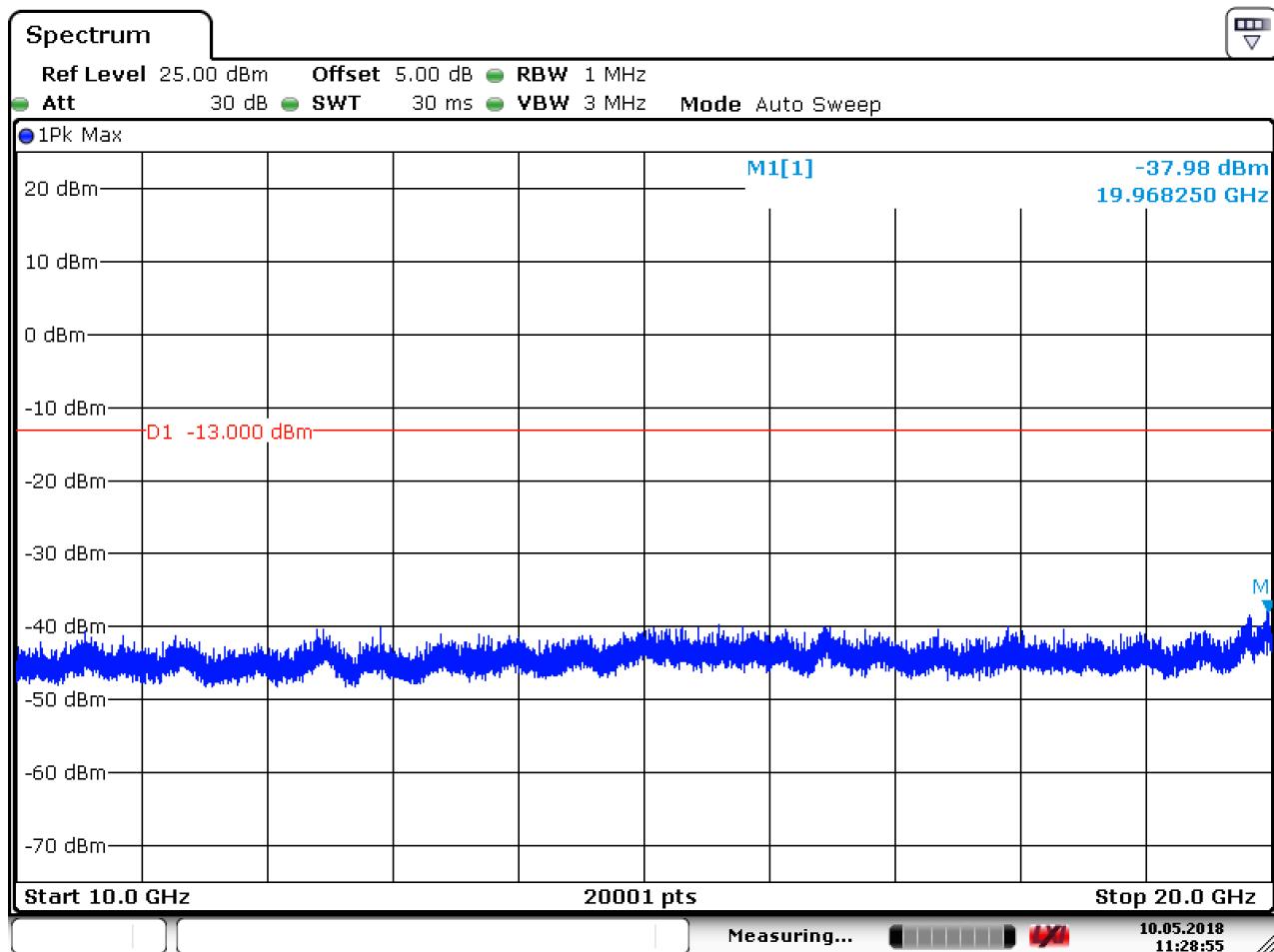
Date: 10.MAY.2018 11:28:20

**6.1.2.1.2 Test Channel = MCH**

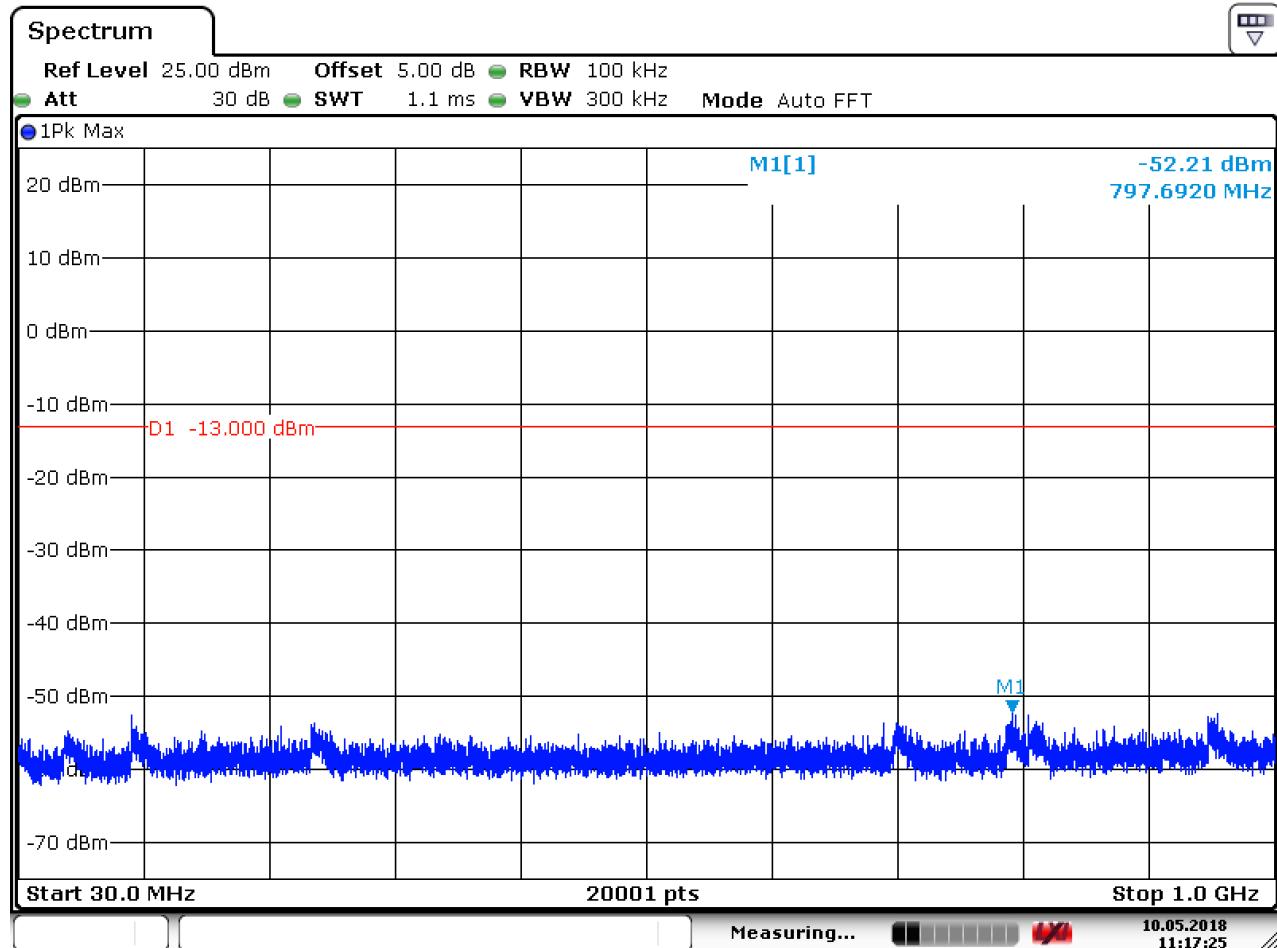
Date: 10.MAY.2018 11:17:53

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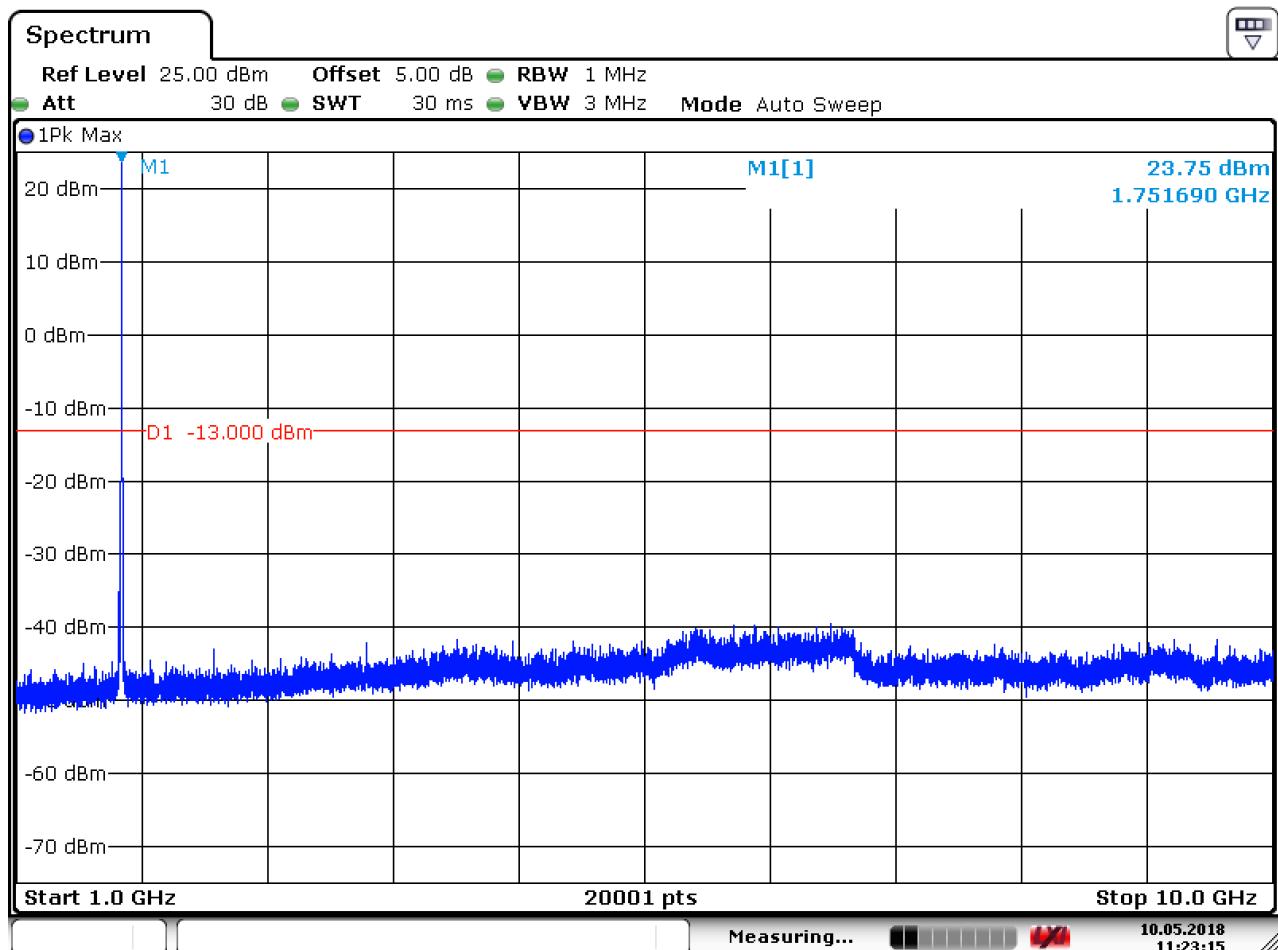
Date: 10.MAY.2018 11:22:33

Report No.: SZEM180300254201  
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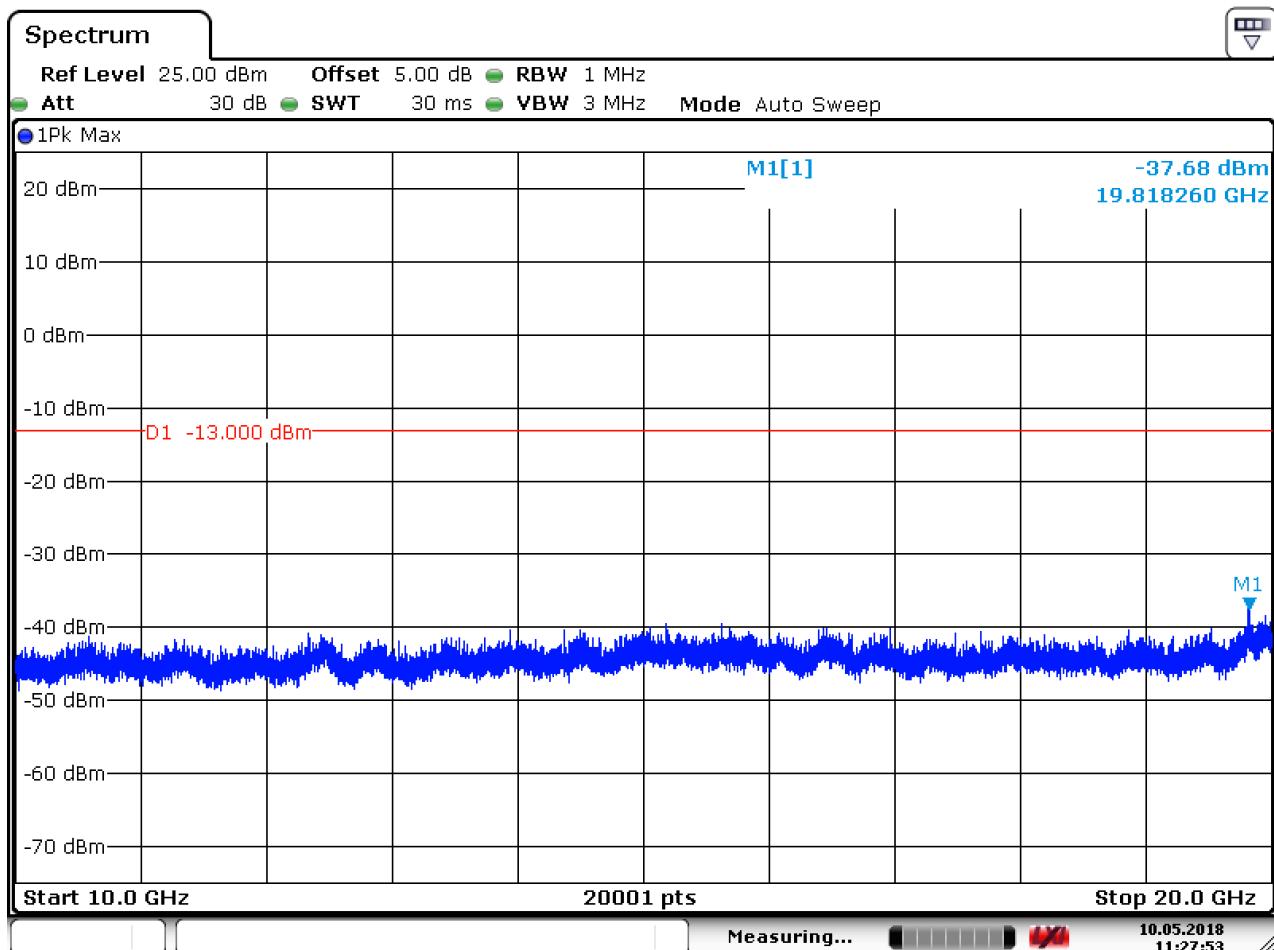
### 6.1.2.1.3 Test Channel = HCH



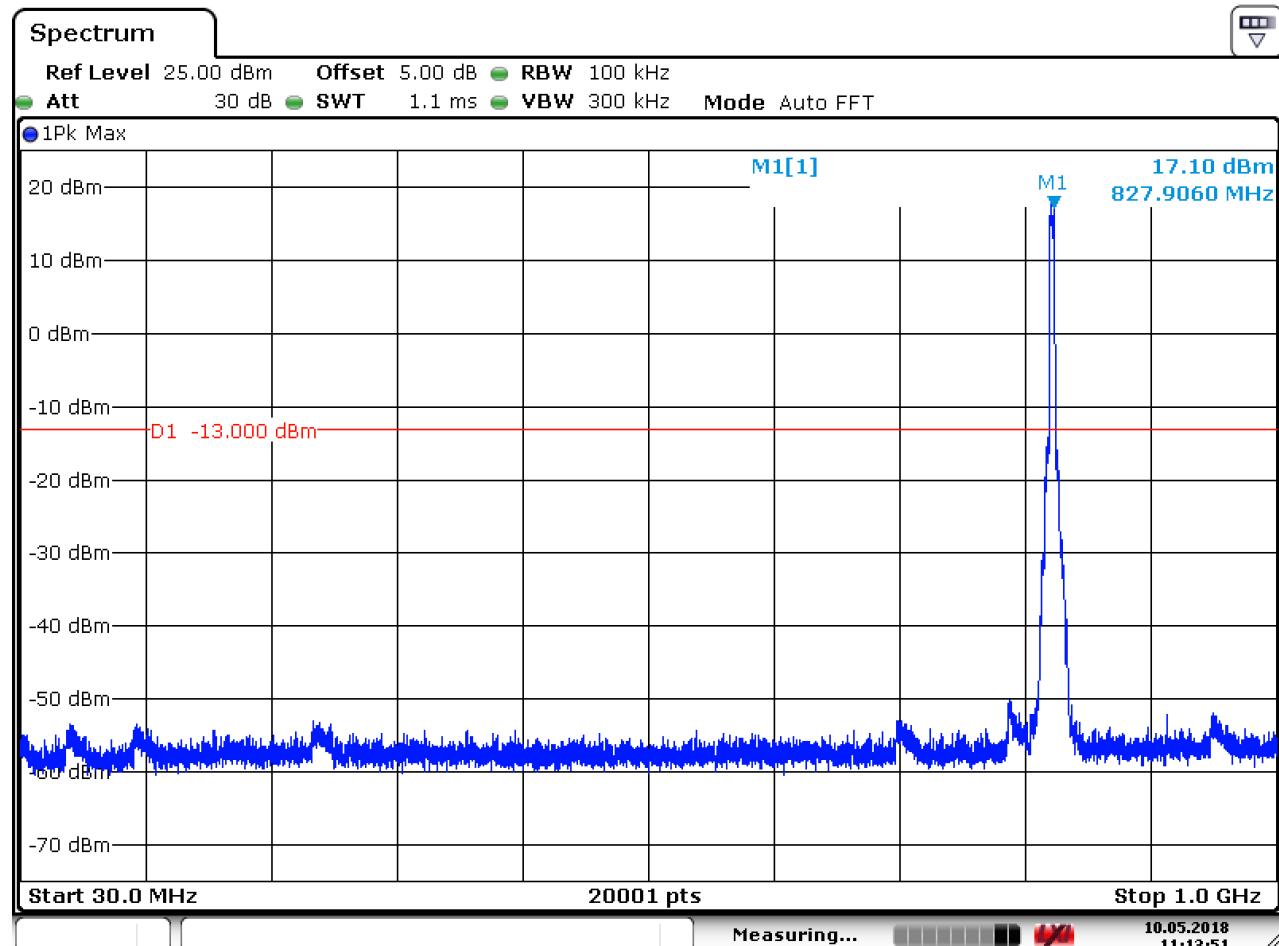
Date: 10.MAY.2018 11:17:25

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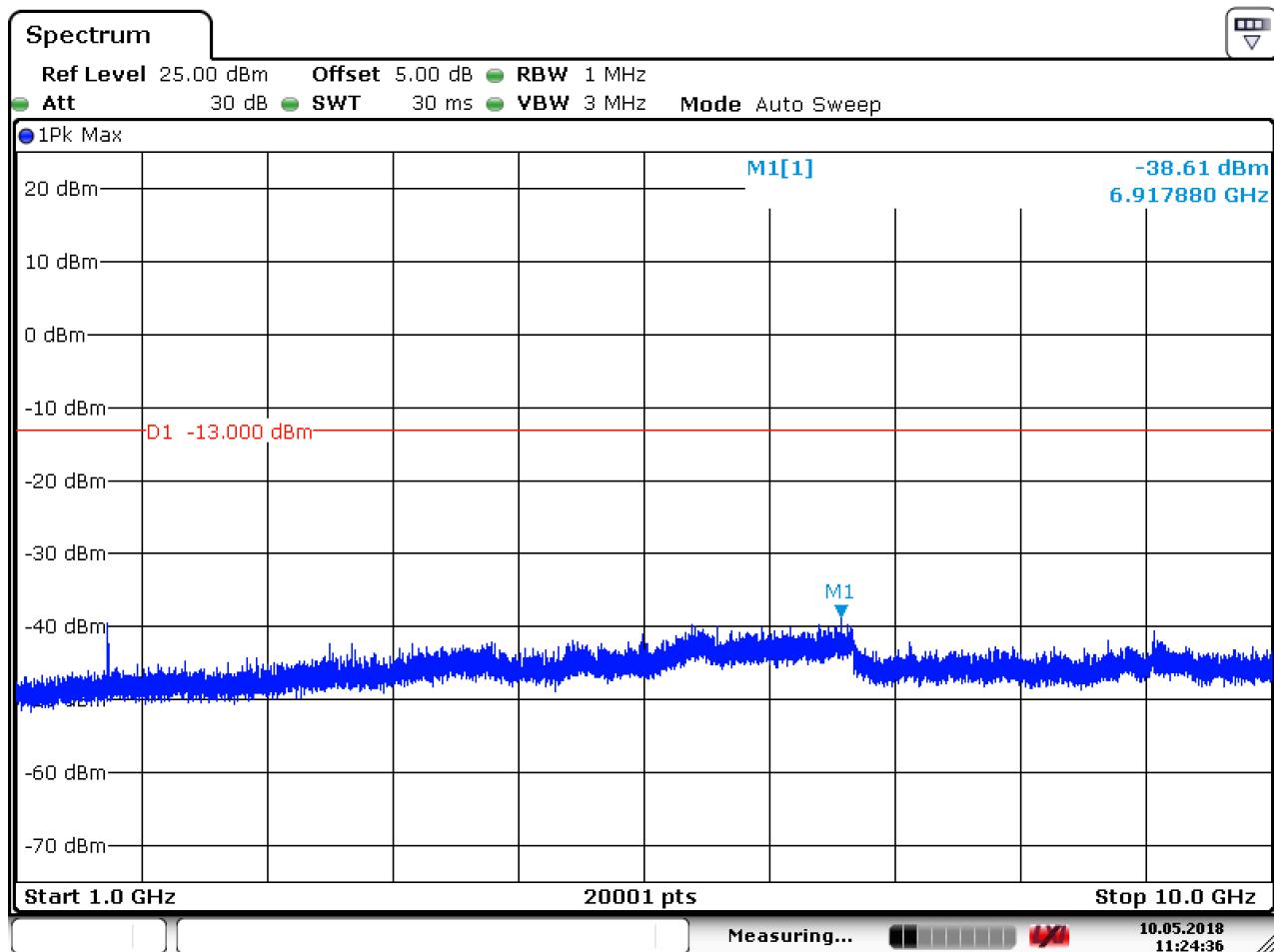
Date: 10.MAY.2018 11:23:16

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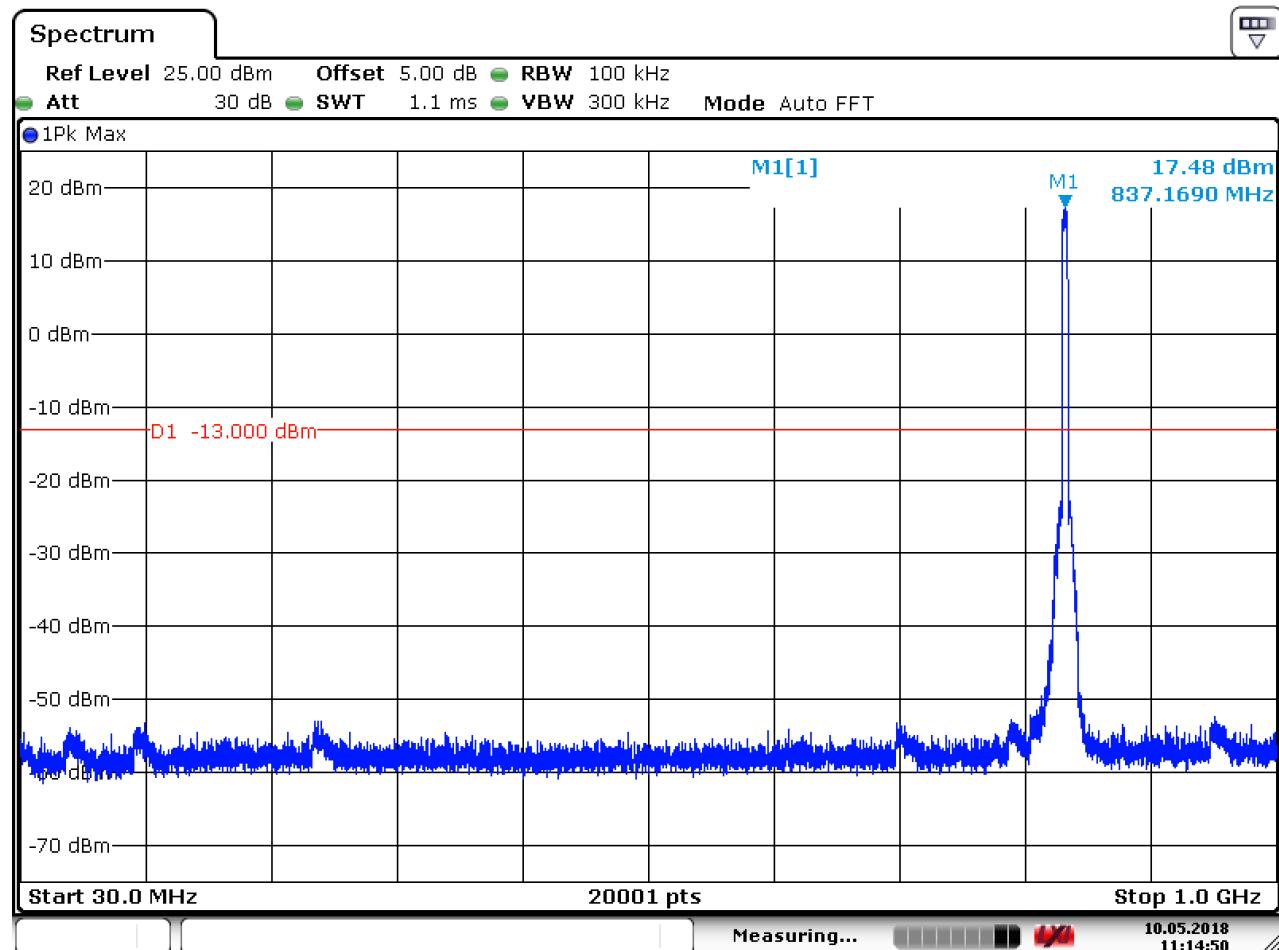
Date: 10.MAY.2018 11:27:53

**6.1.3 Test Band = WCDMA 850****6.1.3.1 Test Mode = UMTS/TM1****6.1.3.1.1 Test Channel = LCH**

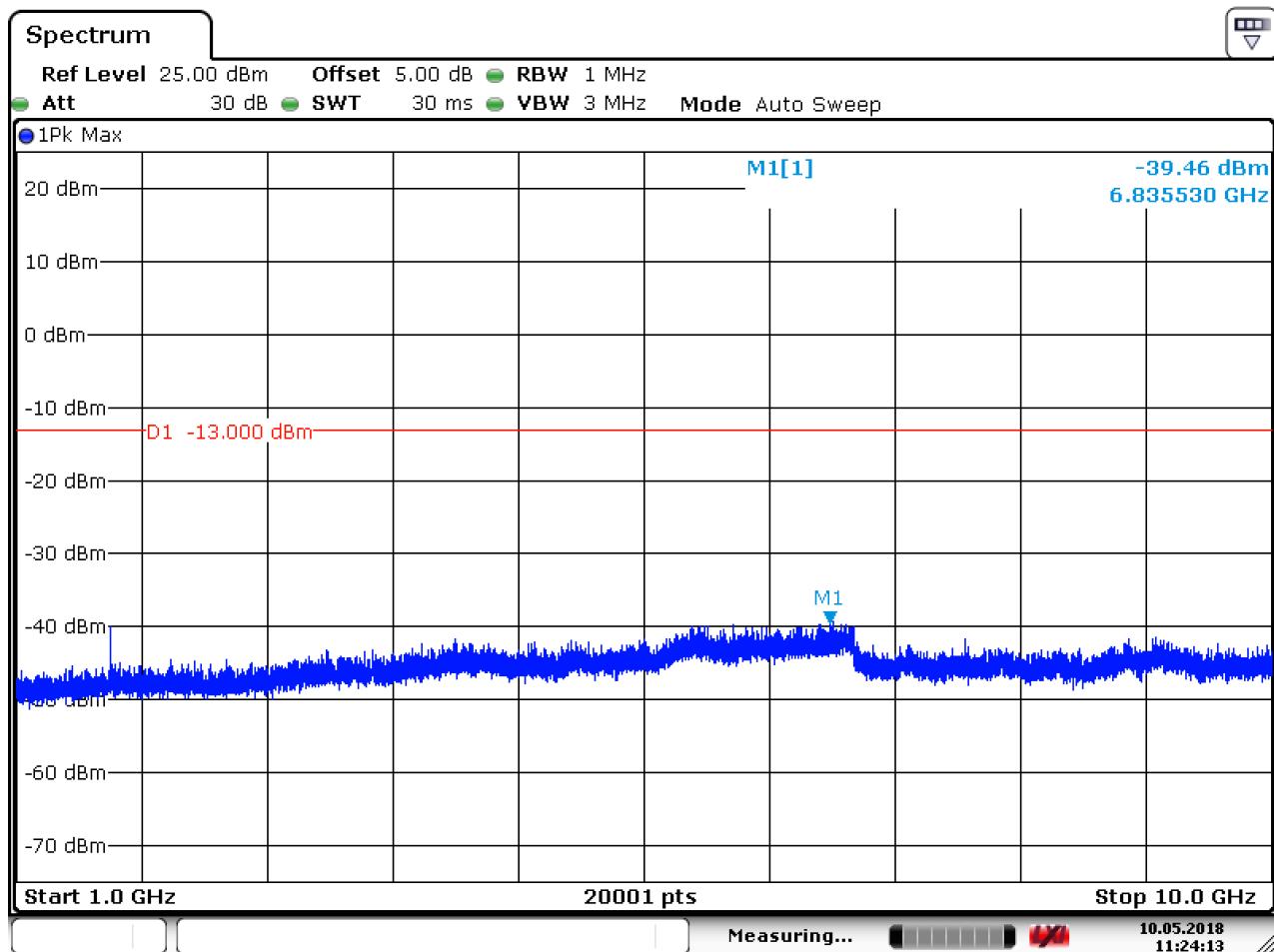
Date: 10.MAY.2018 11:13:51

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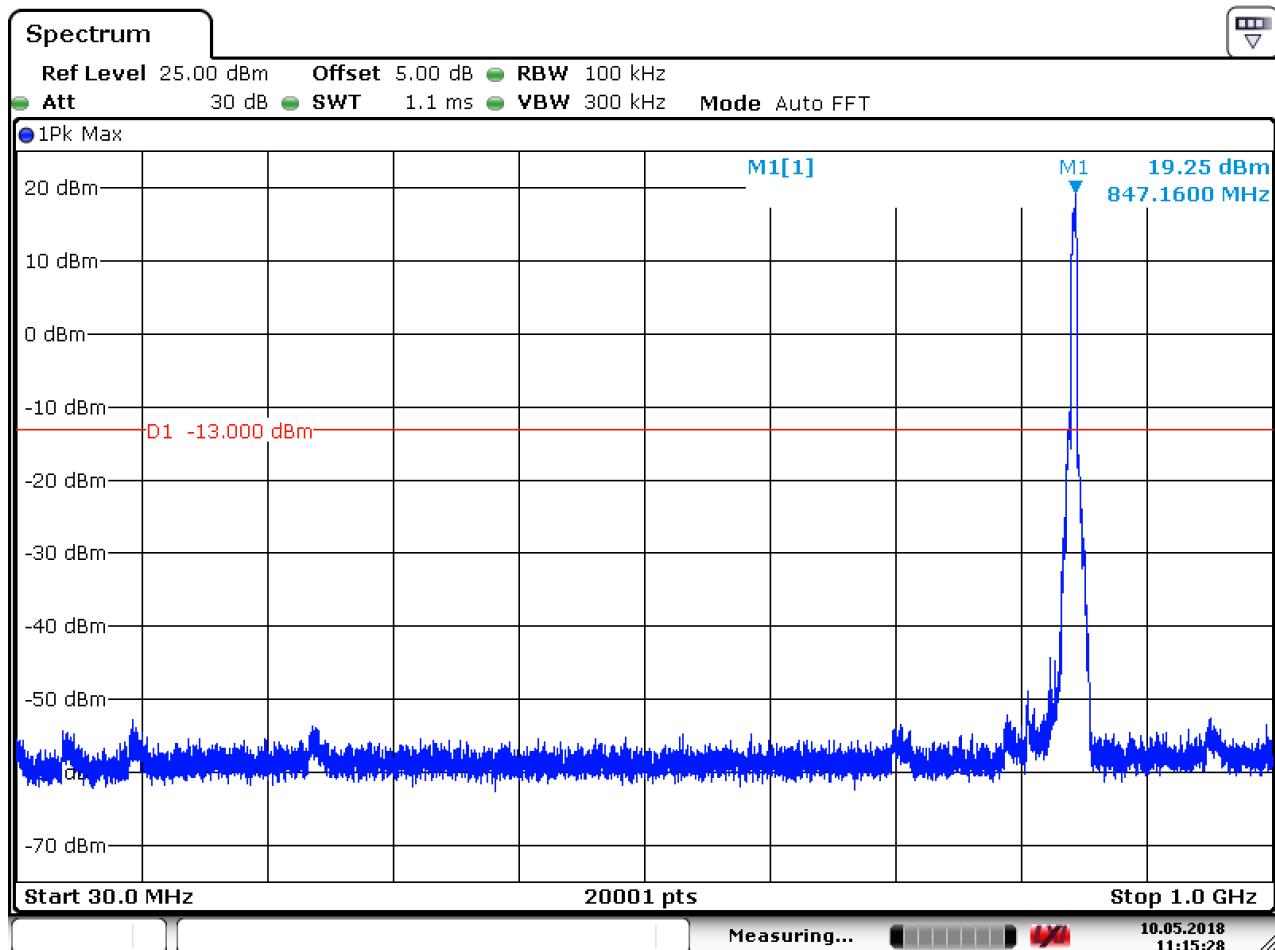
### 6.1.3.1.2 Test Channel = MCH



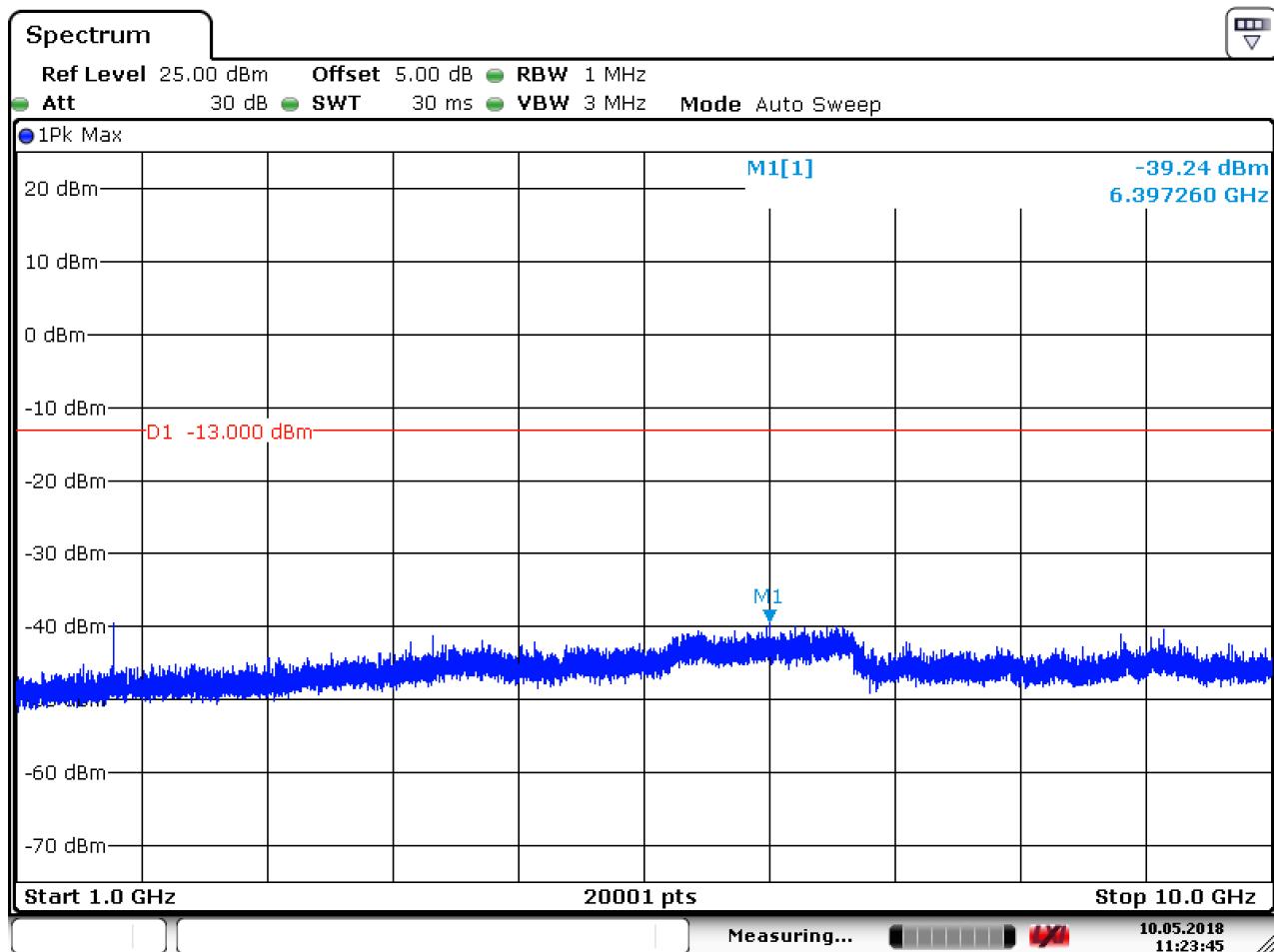
Date: 10.MAY.2018 11:14:51

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Date: 10.MAY.2018 11:24:13

**6.1.3.1.3 Test Channel = HCH**

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Date: 10.MAY.2018 11:23:45

## 7 Field Strength of Spurious Radiation

### Part I - Test Plots

#### 7.1 For WCDMA

##### 7.1.1 Test Band = WCDMA 1900

###### 7.1.1.1 Test Mode = UMTS/TM1

###### 7.1.1.1.1 Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
65.000000	-80.73	-13.00	67.73	Vertical
108.000000	-79.63	-13.00	66.63	Vertical
168.550000	-81.68	-13.00	68.68	Vertical
3705.900000	-64.67	-13.00	51.67	Vertical
6049.800000	-65.44	-13.00	52.44	Vertical
9266.325000	-63.01	-13.00	50.01	Vertical
62.850000	-77.68	-13.00	64.68	Horizontal
96.650000	-83.15	-13.00	70.15	Horizontal
191.900000	-83.45	-13.00	70.45	Horizontal
3706.387500	-61.15	-13.00	48.15	Horizontal
6478.800000	-65.45	-13.00	52.45	Horizontal
9266.325000	-62.08	-13.00	49.08	Horizontal

###### 7.1.1.1.2 Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
64.450000	-80.79	-13.00	67.79	Vertical
107.750000	-79.15	-13.00	66.15	Vertical
167.350000	-81.76	-13.00	68.76	Vertical
3758.062500	-66.28	-13.00	53.28	Vertical
5642.737500	-66.00	-13.00	53.00	Vertical
10628.400000	-63.63	-13.00	50.63	Vertical
56.750000	-72.66	-13.00	59.66	Horizontal
108.500000	-83.62	-13.00	70.62	Horizontal
193.700000	-82.83	-13.00	69.83	Horizontal
3761.475000	-62.61	-13.00	49.61	Horizontal
6169.725000	-65.73	-13.00	52.73	Horizontal
9404.775000	-62.83	-13.00	49.83	Horizontal

**7.1.1.1.3 Test Channel = HCH**

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
64.450000	-80.83	-13.00	67.83	Vertical
109.400000	-78.97	-13.00	65.97	Vertical
168.700000	-80.81	-13.00	67.81	Vertical
3813.150000	-67.26	-13.00	54.26	Vertical
5725.612500	-64.09	-13.00	51.09	Vertical
9860.587500	-64.55	-13.00	51.55	Vertical
63.050000	-77.61	-13.00	64.61	Horizontal
109.850000	-83.83	-13.00	70.83	Horizontal
192.050000	-82.91	-13.00	69.91	Horizontal
3813.150000	-66.50	-13.00	53.50	Horizontal
5725.125000	-65.86	-13.00	52.86	Horizontal
9543.225000	-62.45	-13.00	49.45	Horizontal

**7.1.2 Test Band = WCDMA band 1700**
**7.1.2.1 Test Mode = UMTS/TM1**

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
104.250000	-72.15	-13.00	59.15	Vertical
268.950000	-78.15	-13.00	65.15	Vertical
2113.000000	-43.42	-13.00	30.42	Vertical
3426.725000	-68.17	-13.00	55.17	Vertical
4224.600000	-65.94	-13.00	52.94	Vertical
7957.875000	-63.73	-13.00	50.73	Vertical
62.600000	-77.62	-13.00	64.62	Horizontal
789.441667	-80.39	-13.00	67.39	Horizontal
2113.500000	-41.81	-13.00	28.81	Horizontal
3426.400000	-64.92	-13.00	51.92	Horizontal
4224.600000	-64.70	-13.00	51.70	Horizontal
7937.400000	-63.91	-13.00	50.91	Horizontal



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## 7.1.2.1.1 Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
65.150000	-80.60	-13.00	67.60	Vertical
265.950000	-78.34	-13.00	65.34	Vertical
2133.500000	-44.24	-13.00	31.24	Vertical
5194.400000	-63.54	-13.00	50.54	Vertical
6925.675000	-61.49	-13.00	48.49	Vertical
8658.575000	-61.42	-13.00	48.42	Vertical
62.250000	-77.91	-13.00	64.91	Horizontal
178.950000	-77.07	-13.00	64.07	Horizontal
2133.500000	-42.35	-13.00	29.35	Horizontal
3466.700000	-64.30	-13.00	51.30	Horizontal
4264.900000	-63.06	-13.00	50.06	Horizontal
8658.575000	-55.75	-13.00	42.75	Horizontal

## 7.1.2.1.2 Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
64.400000	-80.39	-13.00	67.39	Vertical
176.650000	-77.35	-13.00	64.35	Vertical
2153.500000	-43.89	-13.00	30.89	Vertical
3503.100000	-66.42	-13.00	53.42	Vertical
5260.700000	-64.77	-13.00	51.77	Vertical
7853.550000	-64.01	-13.00	51.01	Vertical
62.450000	-77.41	-13.00	64.41	Horizontal
177.650000	-76.75	-13.00	63.75	Horizontal
2152.500000	-43.02	-13.00	30.02	Horizontal
3503.100000	-62.44	-13.00	49.44	Horizontal
4305.200000	-62.15	-13.00	49.15	Horizontal
8767.775000	-62.74	-13.00	49.74	Horizontal

### 7.1.3 Test Band = WCDMA band 850

#### 7.1.3.1 Test Mode = UMTS/TM1

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
64.550000	-69.58	-13.00	56.58	Vertical
108.450000	-71.80	-13.00	58.80	Vertical
1653.000000	-53.73	-13.00	40.73	Vertical
3940.387500	-55.58	-13.00	42.58	Vertical
6188.250000	-53.26	-13.00	40.26	Vertical
8005.650000	-51.56	-13.00	38.56	Vertical
62.850000	-67.90	-13.00	54.90	Horizontal
620.545833	-68.55	-13.00	55.55	Horizontal
1645.000000	-51.79	-13.00	38.79	Horizontal
4158.300000	-54.88	-13.00	41.88	Horizontal
6105.862500	-53.49	-13.00	40.49	Horizontal
9293.137500	-51.73	-13.00	38.73	Horizontal

#### 7.1.3.1.1 Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
65.200000	-69.77	-13.00	56.77	Vertical
111.600000	-71.22	-13.00	58.22	Vertical
1102.000000	-53.50	-13.00	40.50	Vertical
2512.000000	-46.36	-13.00	33.36	Vertical
4117.350000	-55.51	-13.00	42.51	Vertical
6709.387500	-52.32	-13.00	39.32	Vertical
62.350000	-68.55	-13.00	55.55	Horizontal
598.087500	-67.60	-13.00	54.60	Horizontal
1662.500000	-52.39	-13.00	39.39	Horizontal
3525.037500	-56.10	-13.00	43.10	Horizontal
5020.687500	-53.73	-13.00	40.73	Horizontal
7808.212500	-50.54	-13.00	37.54	Horizontal



**7.1.3.1.2 Test Channel = HCH**

<b>Frequency (MHz)</b>	<b>Level (dBm)</b>	<b>Limit Line (dBm)</b>	<b>Over Limit (dB)</b>	<b>Polarization</b>
56.100000	-72.32	-13.00	59.32	Vertical
76.150000	-71.79	-13.00	58.79	Vertical
1691.000000	-50.29	-13.00	37.29	Vertical
3383.175000	-55.71	-13.00	42.71	Vertical
6917.062500	-52.47	-13.00	39.47	Vertical
10625.475000	-51.55	-13.00	38.55	Vertical
62.150000	-67.43	-13.00	54.43	Horizontal
185.300000	-72.71	-13.00	59.71	Horizontal
1691.500000	-52.66	-13.00	39.66	Horizontal
4296.262500	-54.01	-13.00	41.01	Horizontal
6272.100000	-54.02	-13.00	41.02	Horizontal
8070.000000	-52.80	-13.00	39.80	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, 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
WCDMA 1900	UMTS/TM1	LCH	TN	VL	5.27	0.00284	PASS
				VN	-4.39	-0.00237	PASS
				VH	6.08	0.00328	PASS
		MCH	TN	VL	3.04	0.00162	PASS
				VN	-9.25	-0.00492	PASS
				VH	-8.81	-0.00468	PASS
		HCH	TN	VL	-7.73	-0.00405	PASS
				VN	0.96	0.00051	PASS
				VH	-3.45	-0.00181	PASS
	UMTS/TM2	LCH	TN	VL	-8.09	-0.00436	PASS
				VN	9.59	0.00518	PASS
				VH	-7.80	-0.00421	PASS
		MCH	TN	VL	3.24	0.00172	PASS
				VN	2.35	0.00125	PASS
				VH	1.92	0.00102	PASS
		HCH	TN	VL	-1.83	-0.00096	PASS
				VN	2.34	0.00123	PASS
				VH	6.43	0.00337	PASS



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Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
WCDMA 1700	UMTS/TM1	LCH	TN	VL	-3.06	-0.00179	PASS
				VN	-7.93	-0.00463	PASS
				VH	0.31	0.00018	PASS
		MCH	TN	VL	9.99	0.00577	PASS
				VN	-9.92	-0.00573	PASS
				VH	-5.62	-0.00325	PASS
		HCH	TN	VL	5.78	0.00330	PASS
				VN	9.21	0.00526	PASS
				VH	9.24	0.00527	PASS
		LCH	TN	VL	7.25	0.00423	PASS
				VN	-7.76	-0.00453	PASS
				VH	0.40	0.00023	PASS
		MCH	TN	VL	4.90	0.00283	PASS
				VN	7.78	0.00449	PASS
				VH	-0.78	-0.00045	PASS
		HCH	TN	VL	9.88	0.00564	PASS
				VN	5.28	0.00301	PASS
				VH	7.62	0.00435	PASS



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Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
WCDMA 850	UMTS/TM1	LCH	TN	VL	7.25	0.00877	PASS
				VN	3.13	0.00379	PASS
				VH	8.71	0.01054	PASS
		MCH	TN	VL	3.55	0.00425	PASS
				VN	-0.53	-0.00063	PASS
				VH	2.02	0.00241	PASS
		HCH	TN	VL	-0.52	-0.00062	PASS
				VN	-9.49	-0.01121	PASS
				VH	6.66	0.00787	PASS
	UMTS/TM2	LCH	TN	VL	-0.21	-0.00025	PASS
				VN	3.48	0.00421	PASS
				VH	2.99	0.00362	PASS
		MCH	TN	VL	-5.97	-0.00714	PASS
				VN	-4.57	-0.00546	PASS
				VH	-6.73	-0.00804	PASS
		HCH	TN	VL	-1.40	-0.00166	PASS
				VN	-8.19	-0.00968	PASS
				VH	8.37	0.00989	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
WCDMA 1900	UMTS/TM1	LCH	VN	-30	8.83	0.00477	PASS
				-20	-6.25	-0.00338	PASS
				-10	-3.64	-0.00196	PASS
				0	4.23	0.00228	PASS
				10	9.92	0.00535	PASS
				20	-1.11	-0.00060	PASS
				30	-3.32	-0.00179	PASS
				40	7.01	0.00379	PASS
				50	7.43	0.00401	PASS
		MCH	VN	-30	-5.41	-0.00288	PASS
				-20	4.61	0.00245	PASS
				-10	7.44	0.00396	PASS
				0	-4.38	-0.00233	PASS
				10	-4.67	-0.00248	PASS
				20	-8.30	-0.00442	PASS
				30	-4.07	-0.00216	PASS
				40	-9.01	-0.00479	PASS
				50	1.24	0.00066	PASS
		HCH	VN	-30	-1.96	-0.00103	PASS
				-20	6.34	0.00332	PASS
				-10	-7.07	-0.00371	PASS
				0	-9.14	-0.00479	PASS
				10	5.64	0.00296	PASS
				20	4.10	0.00215	PASS
				30	-1.97	-0.00103	PASS
				40	5.59	0.00293	PASS
				50	1.01	0.00053	PASS



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Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
WCDMA 1900	UMTS/TM2	LCH	VN	-30	-5.36	-0.00289	PASS
				-20	8.93	0.00482	PASS
				-10	4.68	0.00252	PASS
				0	9.74	0.00526	PASS
				10	4.81	0.00260	PASS
				20	-3.48	-0.00188	PASS
				30	1.56	0.00084	PASS
				40	-6.76	-0.00365	PASS
				50	-8.88	-0.00479	PASS
	UMTS/TM2	MCH	VN	-30	-4.17	-0.00222	PASS
				-20	-2.05	-0.00109	PASS
				-10	7.78	0.00414	PASS
				0	3.97	0.00211	PASS
				10	-9.66	-0.00514	PASS
				20	-1.69	-0.00090	PASS
				30	3.12	0.00166	PASS
				40	3.80	0.00202	PASS
				50	9.49	0.00505	PASS
	UMTS/TM2	HCH	VN	-30	-7.67	-0.00402	PASS
				-20	-6.06	-0.00318	PASS
				-10	4.55	0.00239	PASS
				0	9.24	0.00484	PASS
				10	4.49	0.00235	PASS
				20	3.61	0.00189	PASS
				30	5.34	0.00280	PASS
				40	-9.46	-0.00496	PASS
				50	2.43	0.00128	PASS



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Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
WCDMA 1700	UMTS/TM1	LCH	VN	-30	6.84	0.00399	PASS
				-20	6.06	0.00354	PASS
				-10	3.70	0.00216	PASS
				0	-8.36	-0.00488	PASS
				10	-5.18	-0.00303	PASS
				20	2.66	0.00156	PASS
				30	-4.62	-0.00270	PASS
				40	4.66	0.00272	PASS
				50	-1.44	-0.00084	PASS
		MCH	VN	-30	-3.38	-0.00195	PASS
				-20	-5.86	-0.00338	PASS
				-10	-2.49	-0.00143	PASS
				0	0.41	0.00024	PASS
				10	1.97	0.00114	PASS
				20	-1.99	-0.00115	PASS
				30	7.57	0.00437	PASS
				40	9.23	0.00533	PASS
				50	1.12	0.00065	PASS
		HCH	VN	-30	8.63	0.00492	PASS
				-20	6.44	0.00367	PASS
				-10	5.43	0.00310	PASS
				0	0.52	0.00030	PASS
				10	3.61	0.00206	PASS
				20	-2.55	-0.00145	PASS
				30	3.05	0.00174	PASS
				40	-9.73	-0.00555	PASS
				50	-0.59	-0.00034	PASS



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Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
WCDMA 1700	UMTS/TM2	LCH	VN	-30	-5.31	-0.00310	PASS
				-20	-8.57	-0.00500	PASS
				-10	-1.26	-0.00074	PASS
				0	9.53	0.00557	PASS
				10	-7.32	-0.00428	PASS
				20	4.87	0.00284	PASS
				30	-3.04	-0.00178	PASS
				40	9.89	0.00578	PASS
				50	-2.01	-0.00117	PASS
		MCH	VN	-30	-7.90	-0.00456	PASS
				-20	0.74	0.00043	PASS
				-10	4.75	0.00274	PASS
				0	-7.06	-0.00407	PASS
				10	-7.06	-0.00408	PASS
				20	-1.71	-0.00099	PASS
				30	-4.78	-0.00276	PASS
				40	0.87	0.00050	PASS
				50	3.35	0.00194	PASS
		HCH	VN	-30	7.97	0.00455	PASS
				-20	-7.12	-0.00406	PASS
				-10	-6.86	-0.00392	PASS
				0	7.72	0.00441	PASS
				10	3.00	0.00171	PASS
				20	-5.29	-0.00302	PASS
				30	-2.82	-0.00161	PASS
				40	-1.74	-0.00099	PASS
				50	-4.41	-0.00252	PASS



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Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
WCDMA 850	UMTS/TM1	LCH	VN	-30	9.44	0.01142	PASS
				-20	-1.76	-0.00213	PASS
				-10	-8.76	-0.01059	PASS
				0	5.44	0.00659	PASS
				10	-1.17	-0.00142	PASS
				20	9.28	0.01122	PASS
				30	-6.14	-0.00743	PASS
				40	-7.82	-0.00946	PASS
				50	-6.57	-0.00795	PASS
		MCH	VN	-30	-2.60	-0.00311	PASS
				-20	-8.13	-0.00973	PASS
				-10	6.50	0.00777	PASS
				0	-2.19	-0.00262	PASS
				10	3.93	0.00469	PASS
				20	-8.69	-0.01039	PASS
				30	7.11	0.00850	PASS
				40	7.93	0.00948	PASS
				50	1.33	0.00159	PASS
		HCH	VN	-30	-0.54	-0.00064	PASS
				-20	7.65	0.00904	PASS
				-10	6.38	0.00753	PASS
				0	-1.48	-0.00175	PASS
				10	-4.26	-0.00504	PASS
				20	-0.06	-0.00007	PASS
				30	1.88	0.00222	PASS
				40	0.58	0.00069	PASS
				50	-8.64	-0.01021	PASS



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WCDMA 850	UMTS/TM2	LCH	VN	-30	6.19	0.00749	PASS
				-20	4.76	0.00576	PASS
				-10	5.32	0.00644	PASS
				0	7.51	0.00909	PASS
				10	6.50	0.00787	PASS
				20	-3.41	-0.00412	PASS
				30	-1.53	-0.00185	PASS
				40	-1.73	-0.00210	PASS
				50	-4.63	-0.00560	PASS
		MCH	VN	-30	1.89	0.00225	PASS
				-20	1.78	0.00212	PASS
				-10	-1.94	-0.00231	PASS
				0	4.71	0.00563	PASS
				10	-6.25	-0.00747	PASS
				20	6.95	0.00831	PASS
				30	5.09	0.00608	PASS
				40	1.25	0.00150	PASS
				50	-5.99	-0.00716	PASS
		HCH	VN	-30	-9.33	-0.01102	PASS
				-20	1.95	0.00231	PASS
				-10	-6.58	-0.00777	PASS
				0	9.66	0.01141	PASS
				10	-0.05	-0.00006	PASS
				20	1.10	0.00130	PASS
				30	5.99	0.00708	PASS
				40	5.57	0.00658	PASS
				50	-6.88	-0.00813	PASS

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The End