



Appendix B

WCDMA BAND II & IV & V



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CONTENT

Page

1	EFFECTIVE (ISOTROPIC) RADIATED POWER OUTPUT DATA	4
2	PEAK-TO-AVERAGE RATIO.....	5
2.1	FOR WCDMA	6
2.1.1	Test Band = WCDMA BAND II.....	6
2.1.2	Test Band = WCDMA BAND IV	8
2.1.3	Test Band = WCDMA BAND V	9
3	MODULATION CHARACTERISTICS.....	11
3.1	FOR WCDMA	11
3.1.1	Test Band = WCDMA BAND II.....	11
3.1.2	Test Band = WCDMA BAND IV	12
3.1.3	Test Band = WCDMA BAND V	13
4	BANDWIDTH.....	14
4.1	FOR WCDMA	15
4.1.1	Test Band = WCDMA BAND II.....	15
4.1.2	Test Band = WCDMA BAND IV	16
4.1.3	Test Band = WCDMA BAND V	18
5	BAND EDGES COMPLIANCE.....	20
5.1	FOR WCDMA	20
5.1.1	Test Band = WCDMA BAND II.....	20
5.1.2	Test Band = WCDMA BAND IV	22
5.1.3	Test Band = WCDMA BAND V	23
6	SPURIOUS EMISSION AT ANTENNA TERMINAL.....	25
6.1	FOR WCDMA	25
6.1.1	Test Band = WCDMA BAND II.....	25
6.1.2	Test Band = WCDMA BAND IV	30
6.1.3	Test Band = WCDMA BAND V	33
7	FIELD STRENGTH OF SPURIOUS RADIATION	36
7.1	FOR WCDMA	36



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7.1.1	Main Antenna.....	36
7.1.2	Secondary Antenna.....	54

8 FREQUENCY STABILITY 72

8.1	FREQUENCY ERROR VS. VOLTAGE.....	72
8.2	FREQUENCY ERROR VS. TEMPERATURE.....	72



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1 Effective (Isotropic) Radiated Power Output Data

Part I - Test Results

BAND	Modulation	Channel	Power(dBm)	EIRP(dBm)	Limit(dBm)	Verdict
WCDMA Band II	QPSK	9262	23.15	21.35	33.00	PASS
WCDMA Band II	QPSK	9400	23.19	21.39	33.00	PASS
WCDMA Band II	QPSK	9538	23.14	21.34	33.00	PASS
WCDMA Band IV	QPSK	1312	22.90	21.90	33.00	PASS
WCDMA Band IV	QPSK	1413	22.83	21.83	33.00	PASS
WCDMA Band IV	QPSK	1513	22.89	21.89	33.00	PASS

BAND	Modulation	Channel	Power(dBm)	ERP(dBm)	Limit(dBm)	Verdict
WCDMA Band V	QPSK	4132	24.21	14.86	38.45	PASS
WCDMA Band V	QPSK	4182	24.48	15.13	38.45	PASS
WCDMA Band V	QPSK	4233	24.34	14.99	38.45	PASS

Remark:

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



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2 Peak-to-Average Ratio

Part I - Test Results

BAND	Channel	Peak-to-Average Ratio(dB)	Limit(dB)	Verdict
Band II	9262	2.75	13	PASS
Band II	9400	2.49	13	PASS
Band II	9538	2.64	13	PASS
Band IV	1312	3.13	13	PASS
Band IV	1413	3.30	13	PASS
Band IV	1513	3.22	13	PASS
Band V	4132	2.38	13	PASS
Band V	4182	2.81	13	PASS
Band V	4233	2.64	13	PASS

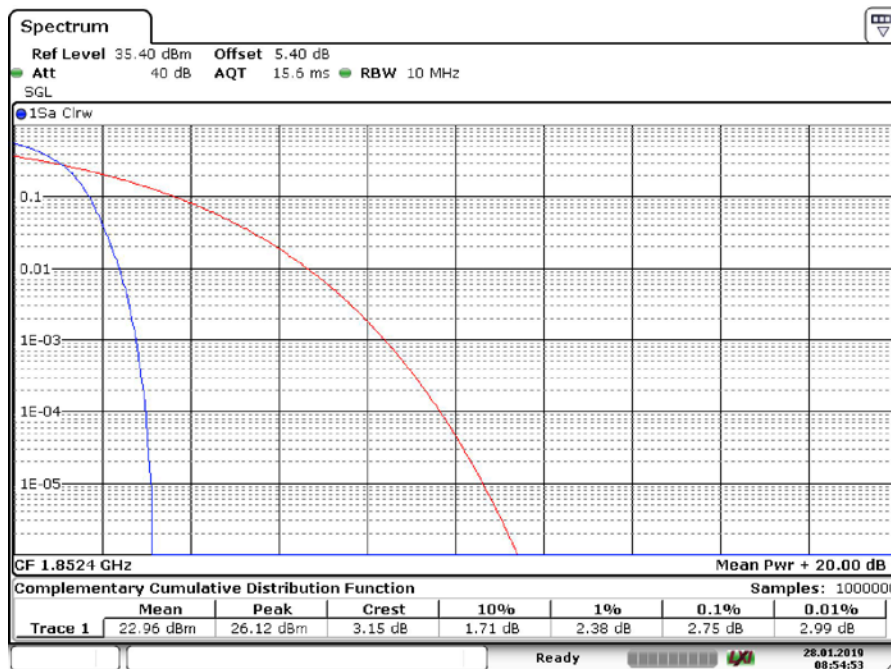


2.1 For WCDMA

2.1.1 Test Band = WCDMA BAND II

2.1.1.1 Test Mode = UMTS/TM1

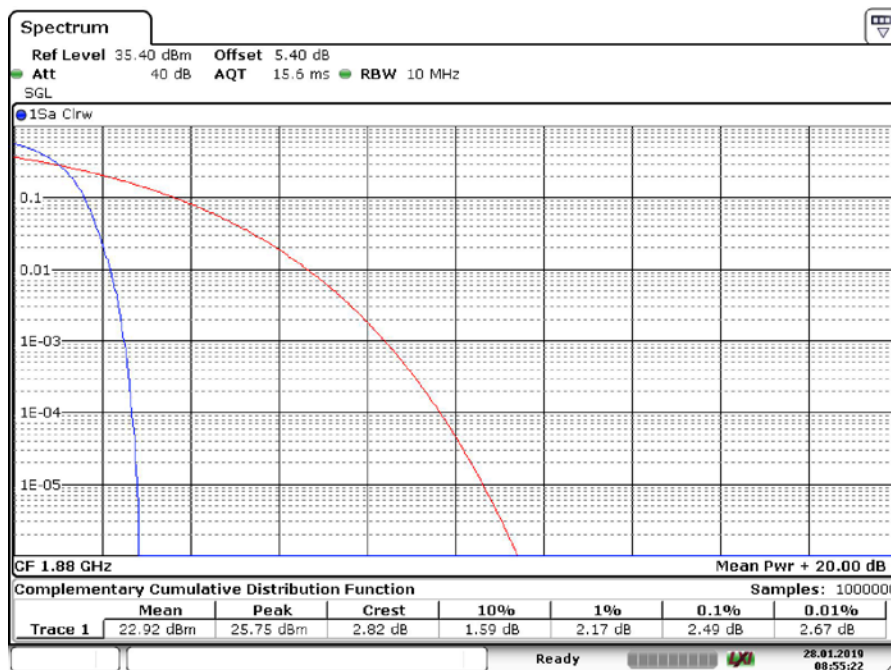
2.1.1.1.1 Test Channel = LCH



Date: 28 JAN 2019 08:54:54

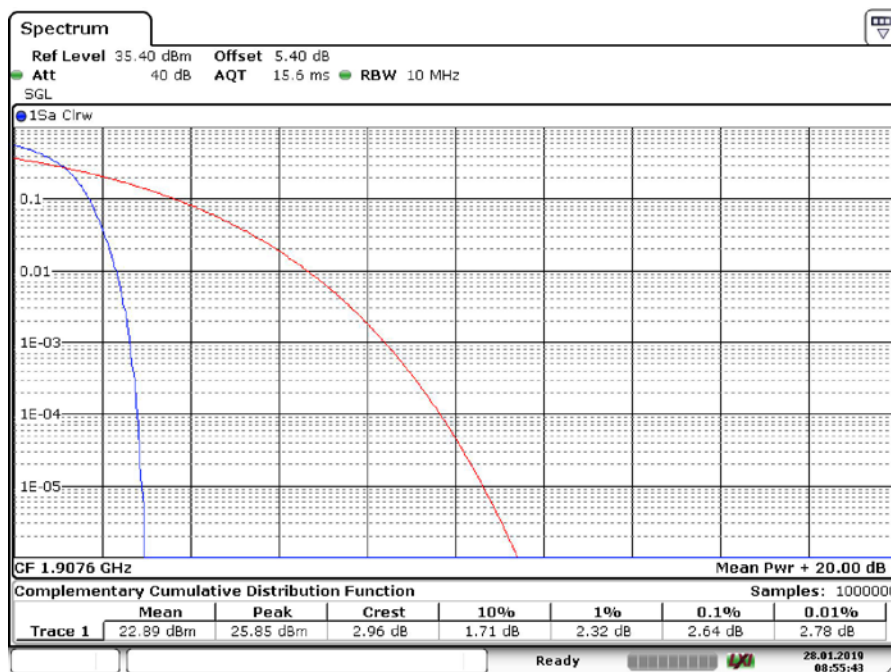


2.1.1.1.2 Test Channel = MCH



Date: 28 JAN 2019 08:55:22

2.1.1.1.3 Test Channel = HCH



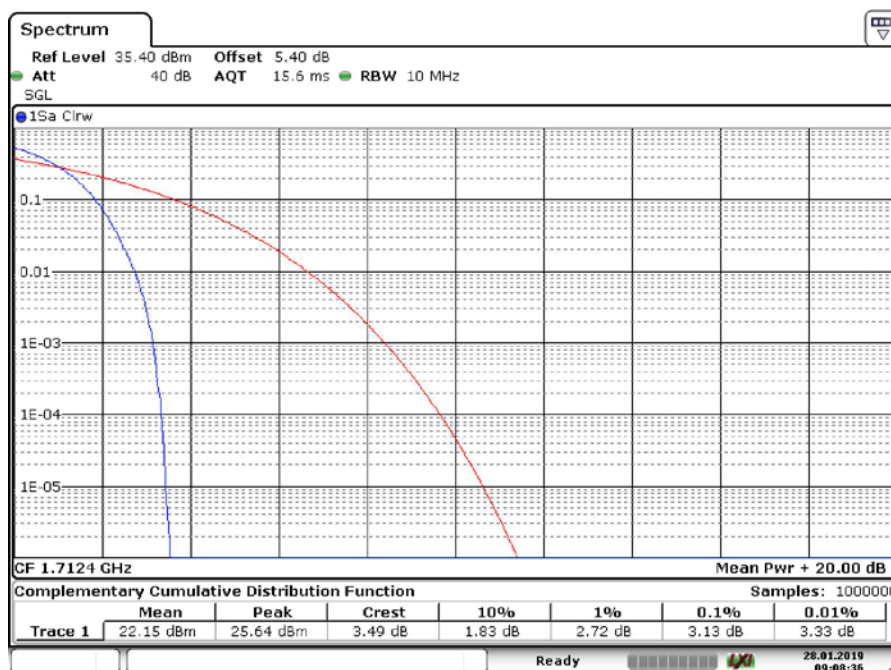
Date: 28 JAN 2019 08:55:43



2.1.2 Test Band = WCDMA BAND IV

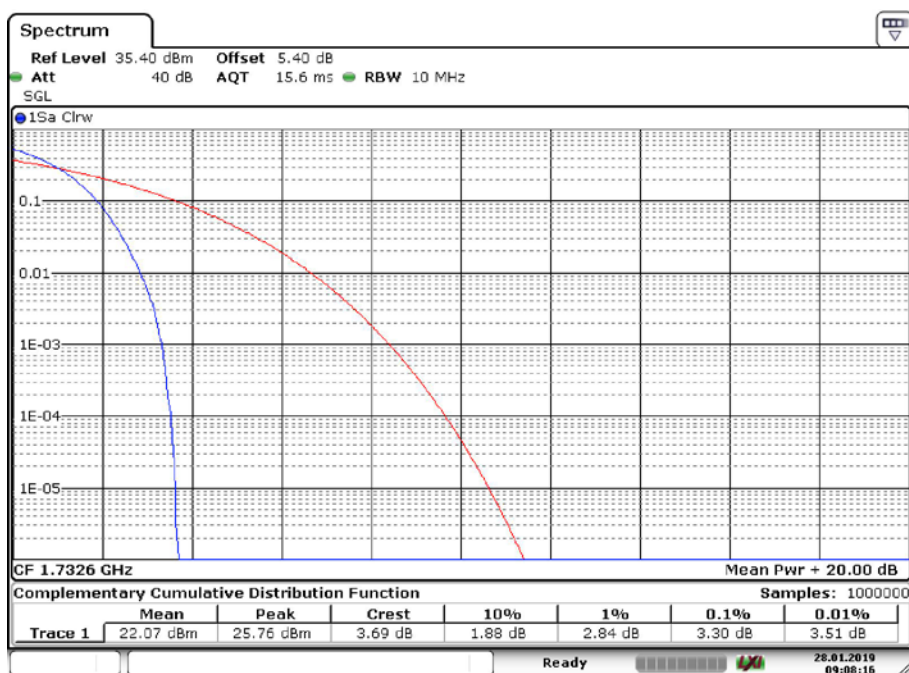
2.1.2.1 Test Mode = UMTS/TM1

2.1.2.1.1 Test Channel = LCH



Date: 28. JAN 2019 09:08:37

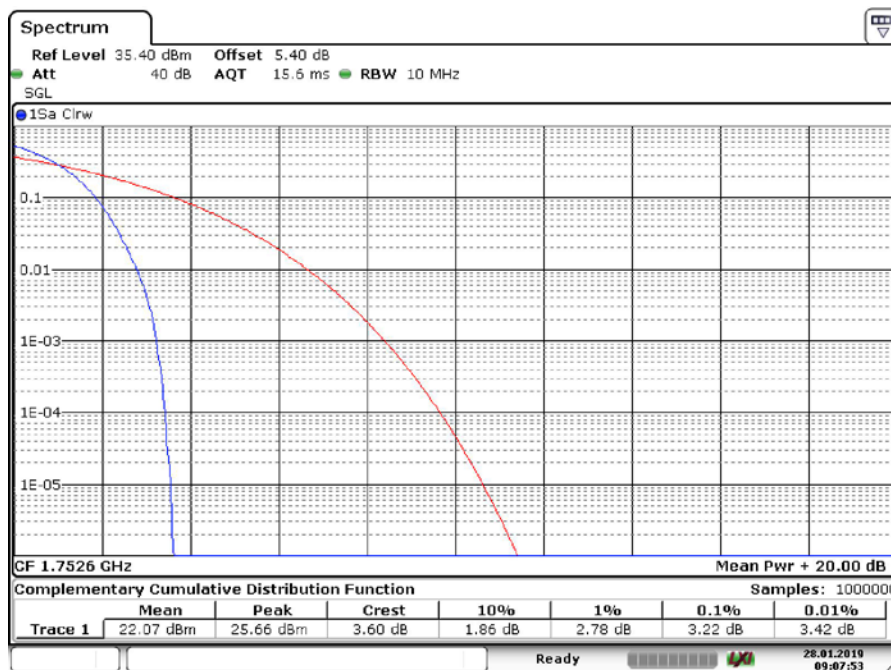
2.1.2.1.2 Test Channel = MCH



Date: 28. JAN 2019 09:08:16



2.1.2.1.3 Test Channel = HCH

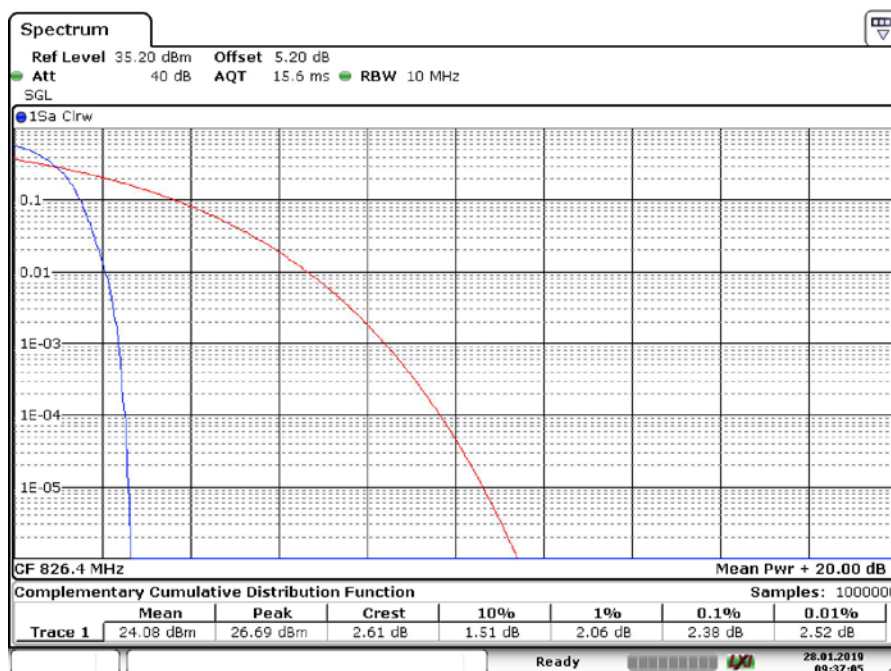


Date: 28 JAN 2019 09:07:53

2.1.3 Test Band = WCDMA BAND V

2.1.3.1 Test Mode = UMTS/TM1

2.1.3.1.1 Test Channel = LCH



Date: 28 JAN 2019 09:37:05

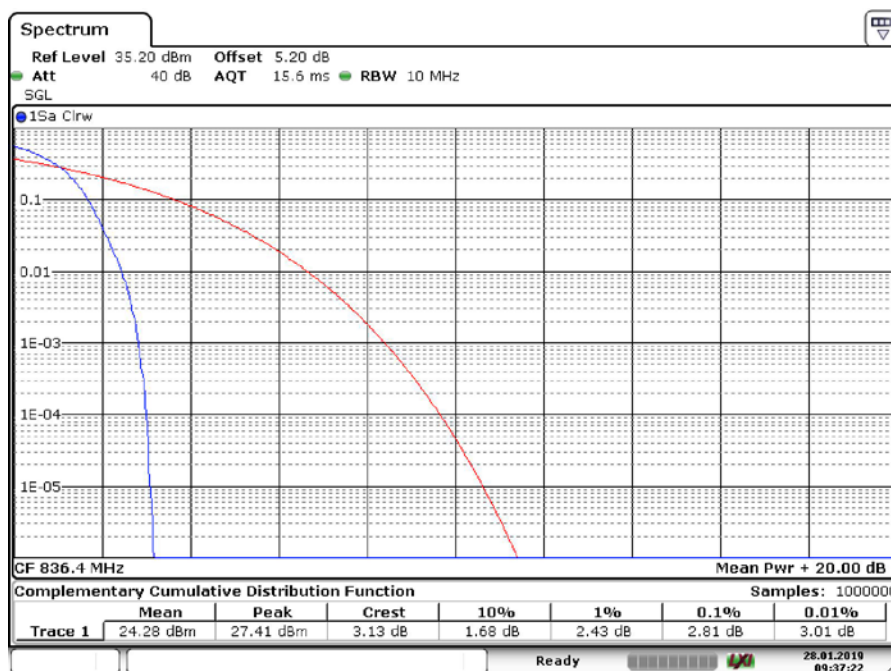


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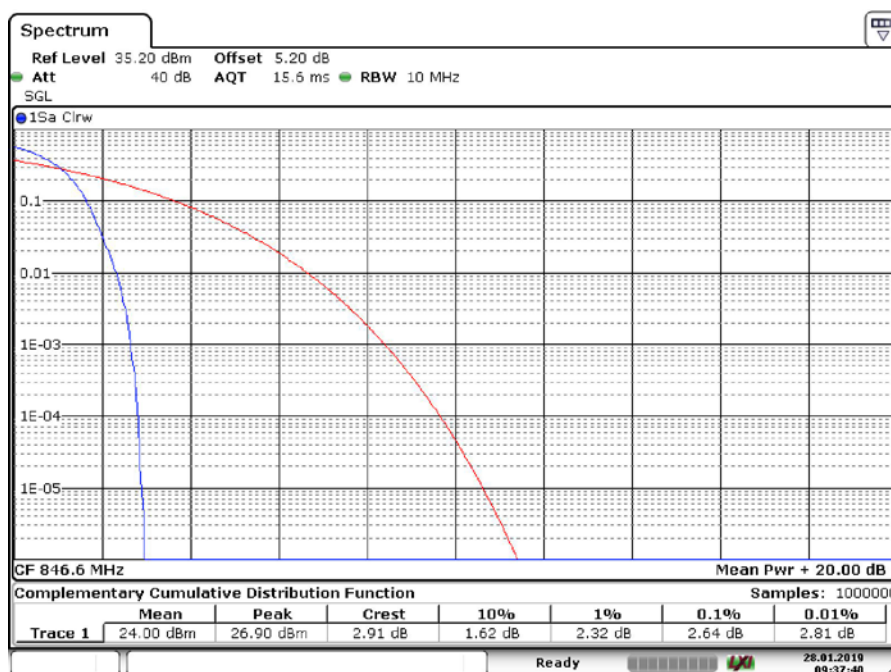
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2.1.3.1.2 Test Channel = MCH



Date: 28 JAN 2019 09:37:22

2.1.3.1.3 Test Channel = HCH



Date: 28 JAN 2019 09:37:40



3 Modulation Characteristics

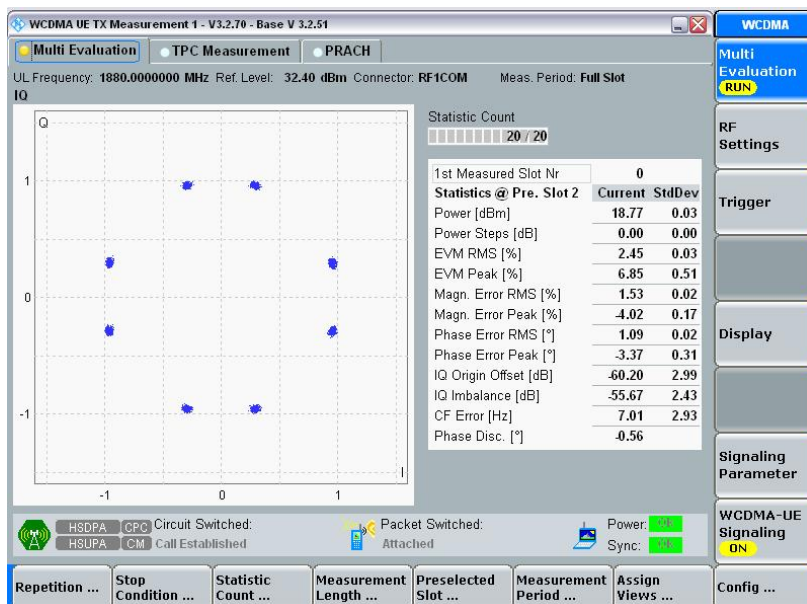
Part I - Test Plots

3.1 For WCDMA

3.1.1 Test Band = WCDMA BAND II

3.1.1.1 Test Mode = UMTS/TM1

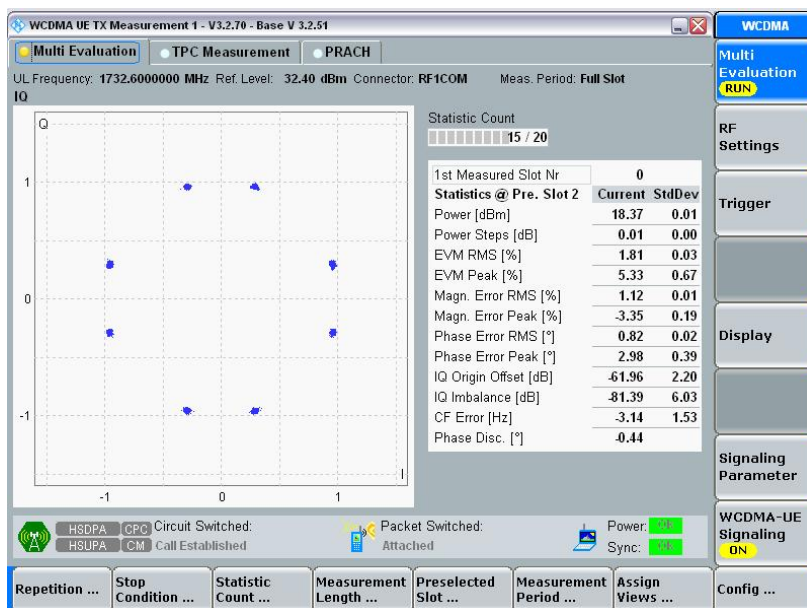
3.1.1.1.1 Test Channel = MCH



3.1.2 Test Band = WCDMA BAND IV

3.1.2.1 Test Mode = UMTS /TM1

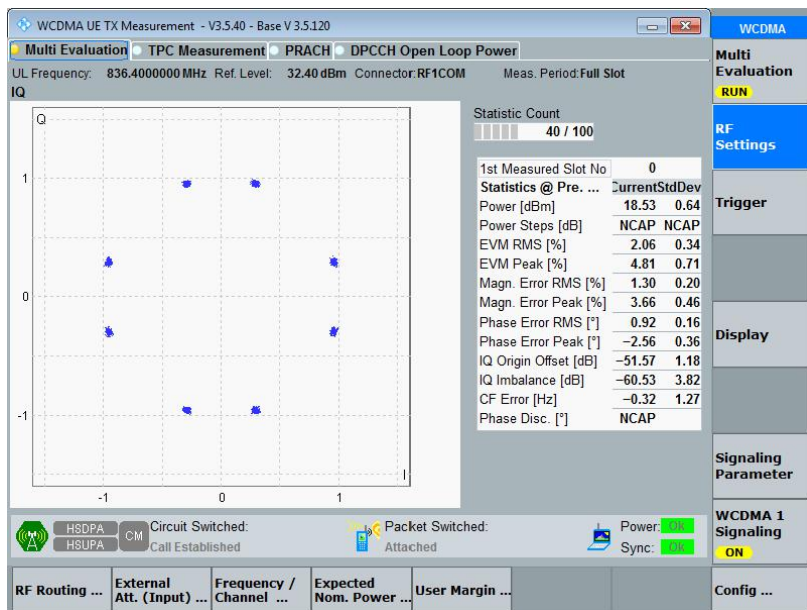
3.1.2.1.1 Test Channel = MCH



3.1.3 Test Band = WCDMA BAND V

3.1.3.1 Test Mode = UMTS /TM1

3.1.3.1.1 Test Channel = MCH



4 Bandwidth

Part I - Test Results

BAND	Channel	Occupied Bandwidth(kHz)	26dB Bandwidth(kHz)	Limit(kHz)	Verdict
Band II	9262	4.17	4.71	---	PASS
Band II	9400	4.17	4.73	---	PASS
Band II	9538	4.18	4.70	---	PASS
Band IV	1312	4.16	4.70	---	PASS
Band IV	1413	4.16	4.71	---	PASS
Band IV	1513	4.16	4.71	---	PASS
Band V	4132	4.18	4.74	---	PASS
Band V	4182	4.16	4.70	---	PASS
Band V	4233	4.18	4.71	---	PASS



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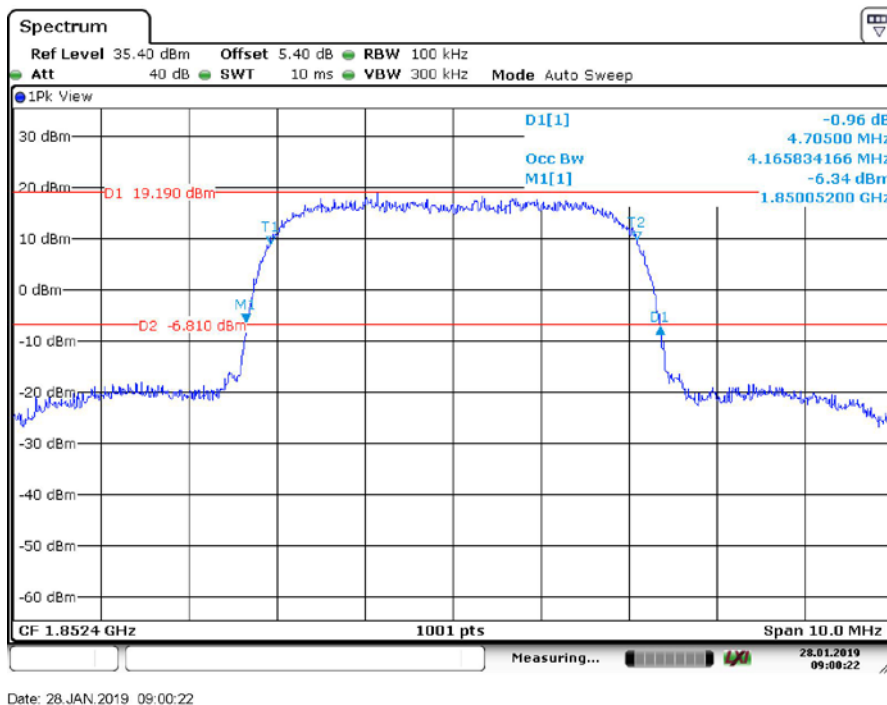
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4.1 For WCDMA

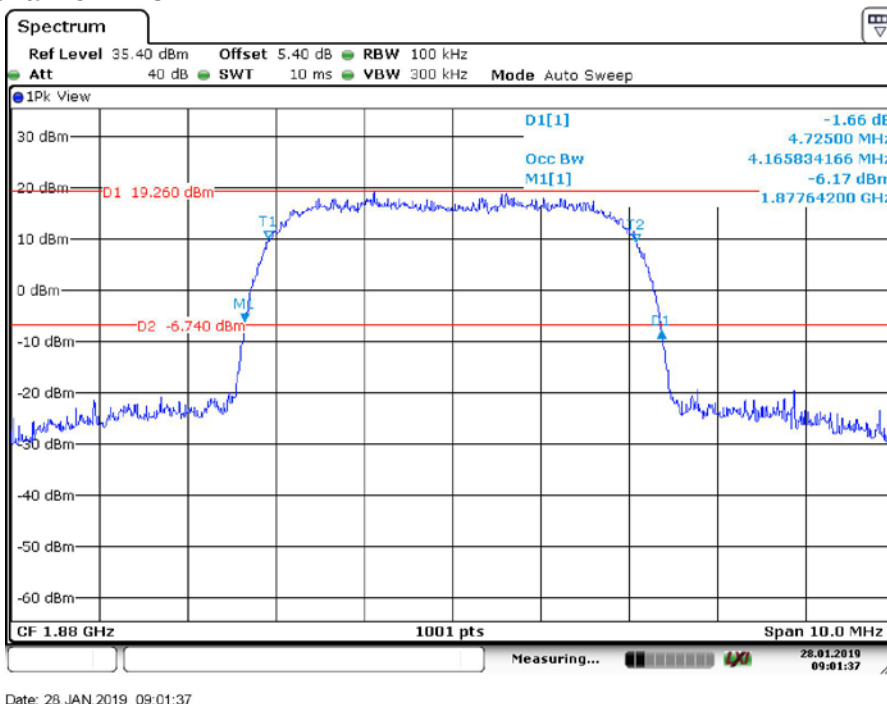
4.1.1 Test Band = WCDMA BAND II

4.1.1.1 Test Mode = UMTS/TM1

4.1.1.1.1 Test Channel = LCH



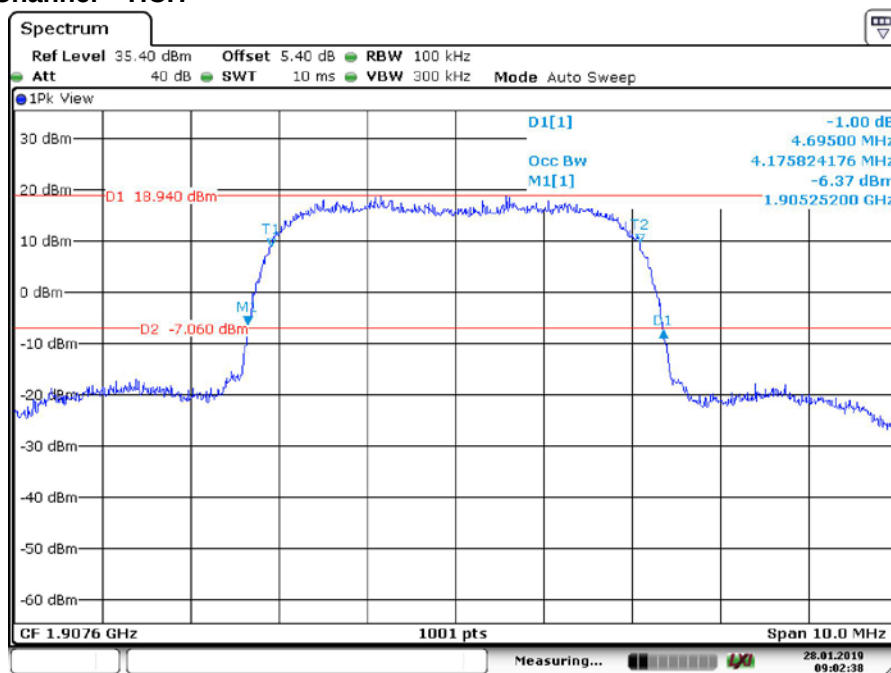
4.1.1.1.2 Test Channel = MCH



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4.1.1.1.3 Test Channel = HCH

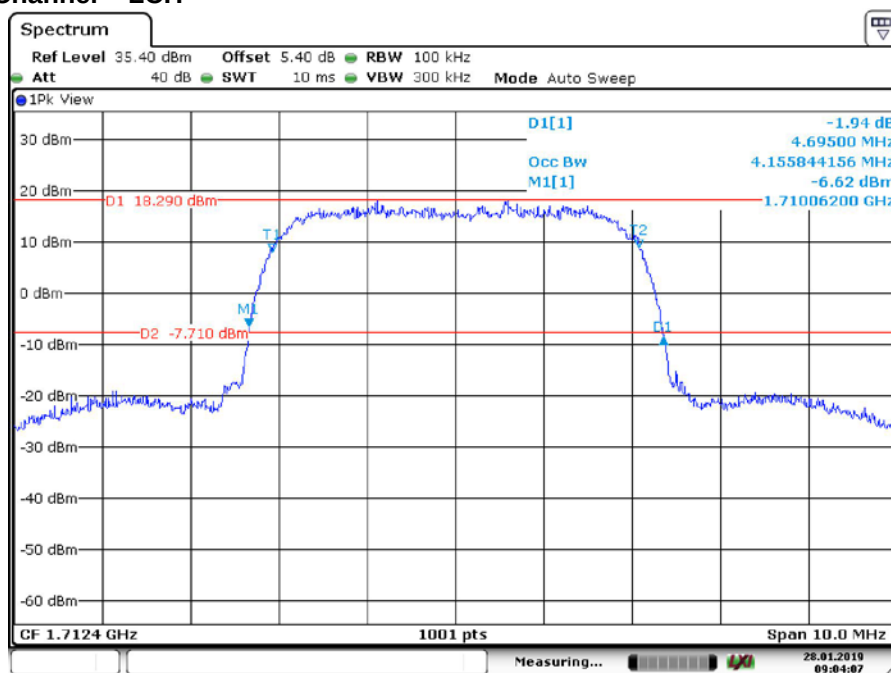


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4.1.2 Test Band = WCDMA BAND IV

4.1.2.1 Test Mode = UMTS/TM1

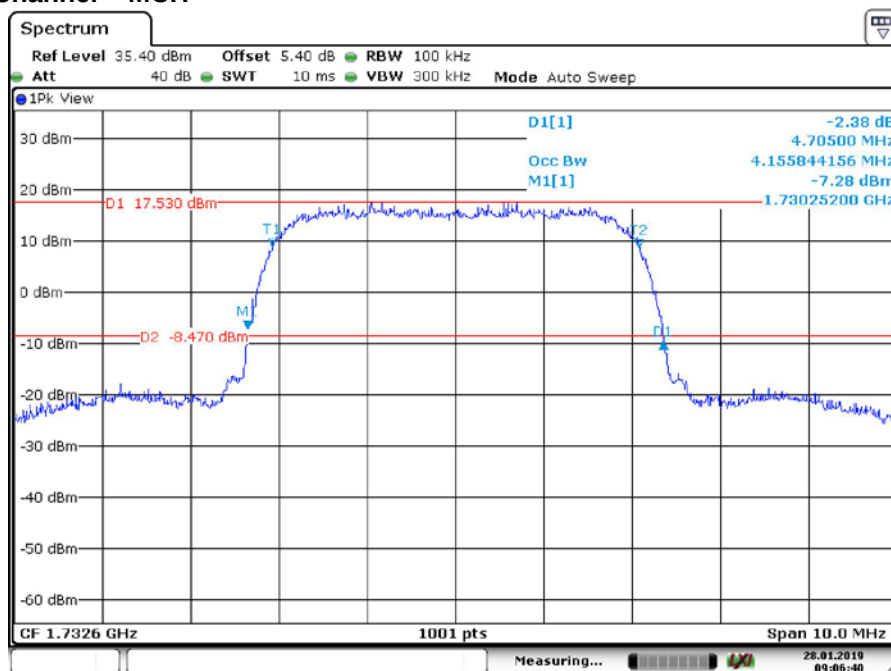
4.1.2.1.1 Test Channel = LCH



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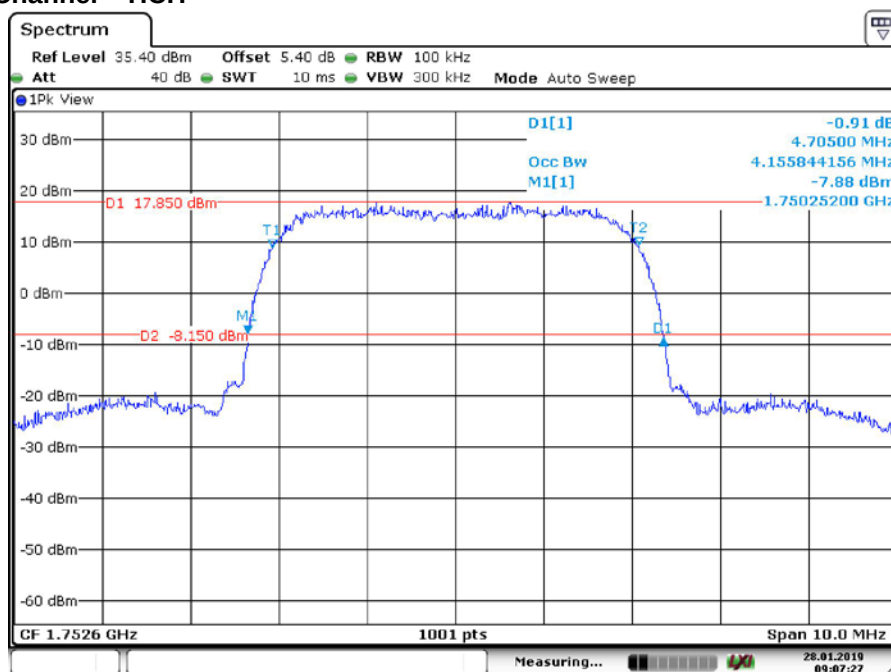


4.1.2.1.2 Test Channel = MCH



Date: 28 JAN 2019 09:06:40

4.1.2.1.3 Test Channel = HCH



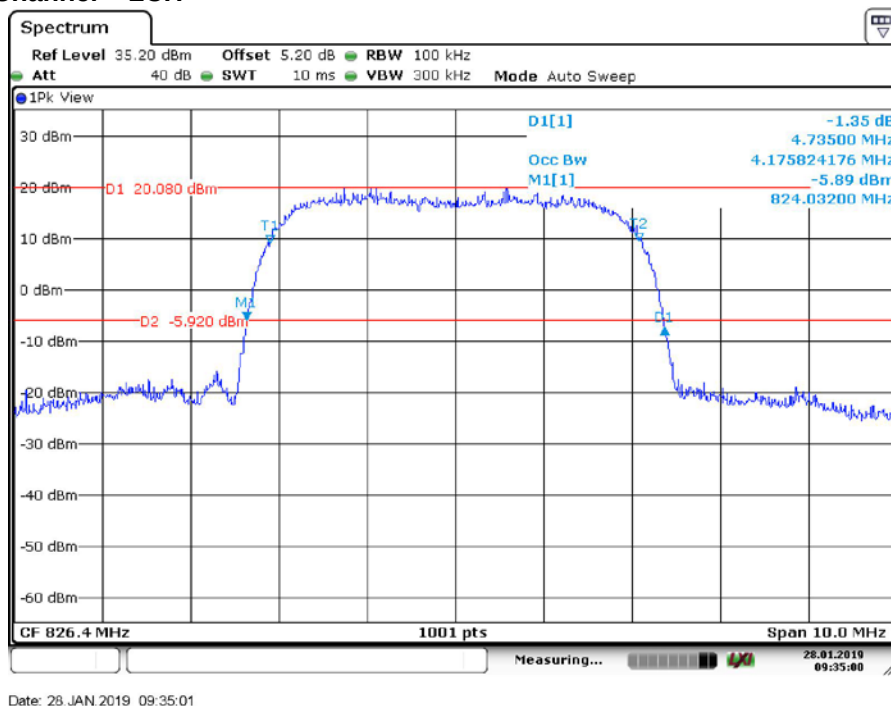
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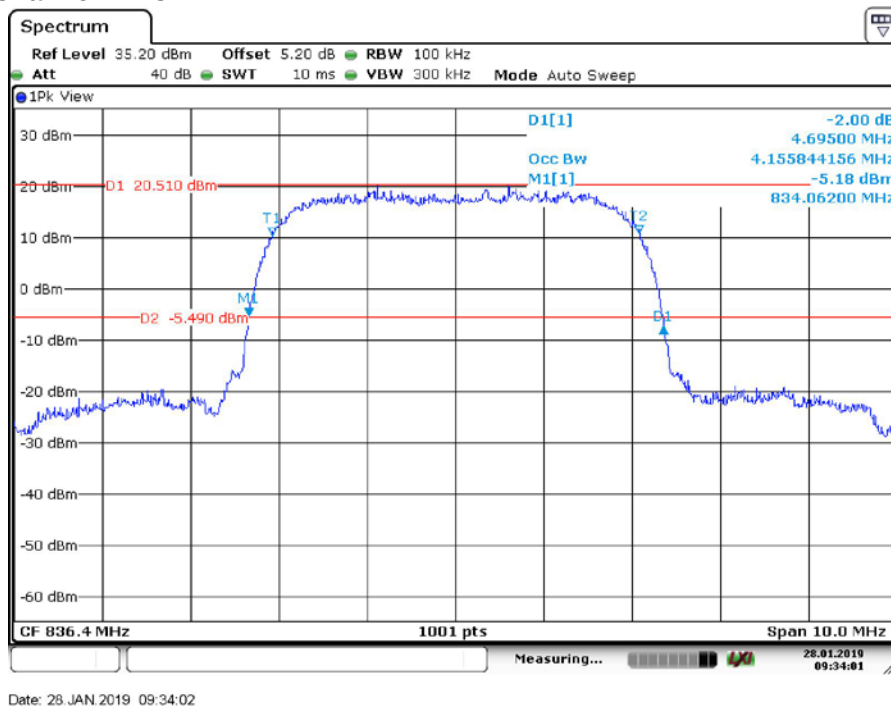
4.1.3 Test Band = WCDMA BAND V

4.1.3.1 Test Mode = UMTS/TM1

4.1.3.1.1 Test Channel = LCH



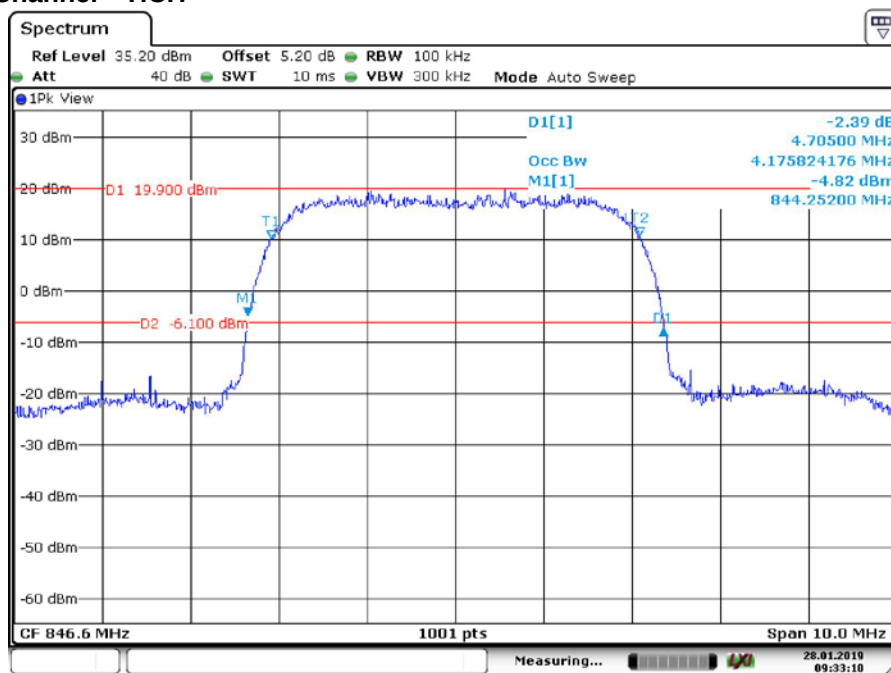
4.1.3.1.2 Test Channel = MCH



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4.1.3.1.3 Test Channel = HCH



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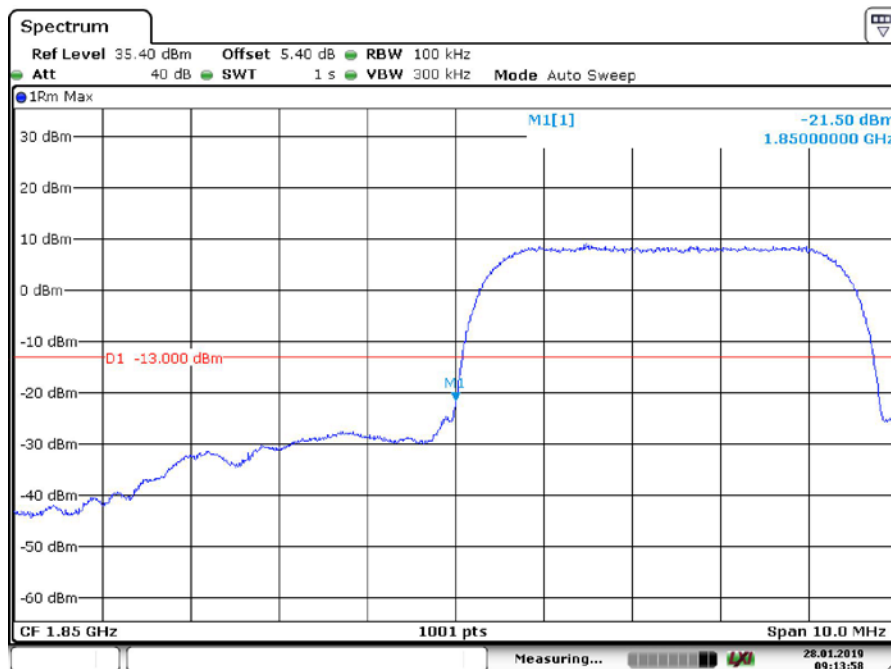
5 Band Edges Compliance

5.1 For WCDMA

5.1.1 Test Band = WCDMA BAND II

5.1.1.1 Test Mode = UMTS/TM1

5.1.1.1.1 Test Channel = LCH



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5.1.1.1.2 Test Channel = HCH



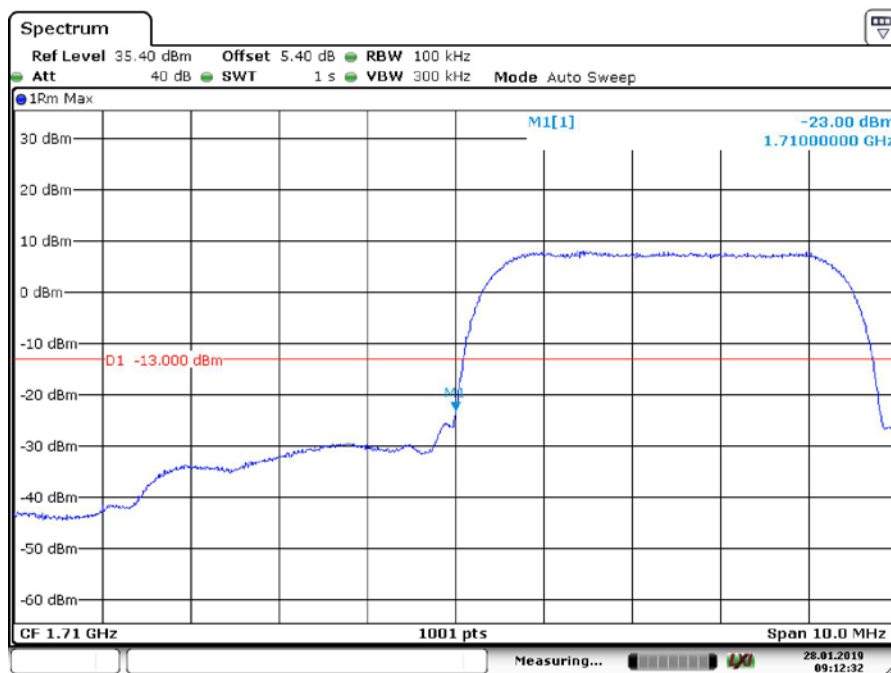
Date: 28 JAN 2019 09:13:20



5.1.2 Test Band = WCDMA BAND IV

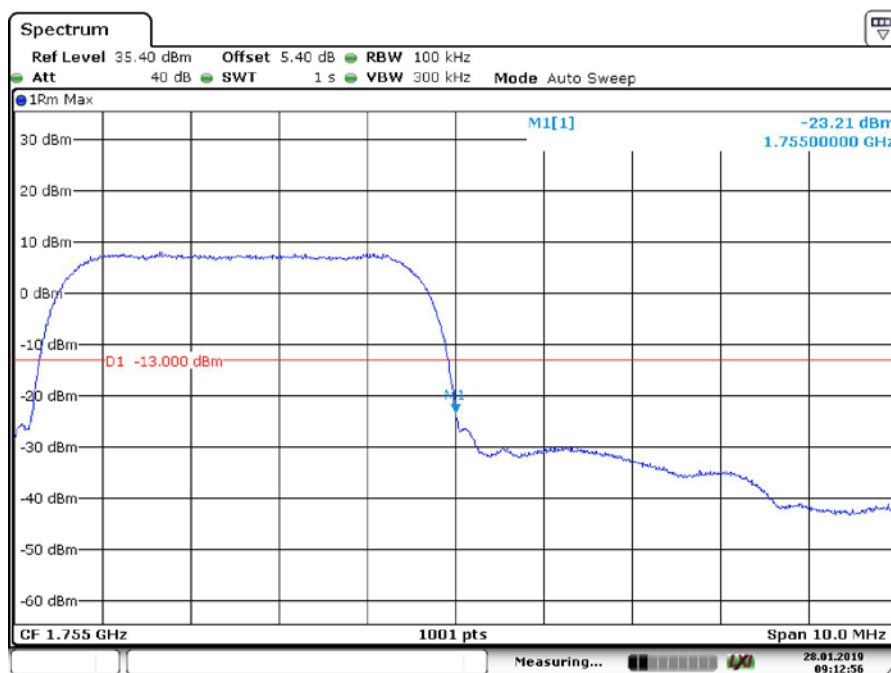
5.1.2.1 Test Mode = UMTS/TM1

5.1.2.1.1 Test Channel = LCH



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5.1.2.1.2 Test Channel = HCH



Date: 28 JAN 2019 09:12:57



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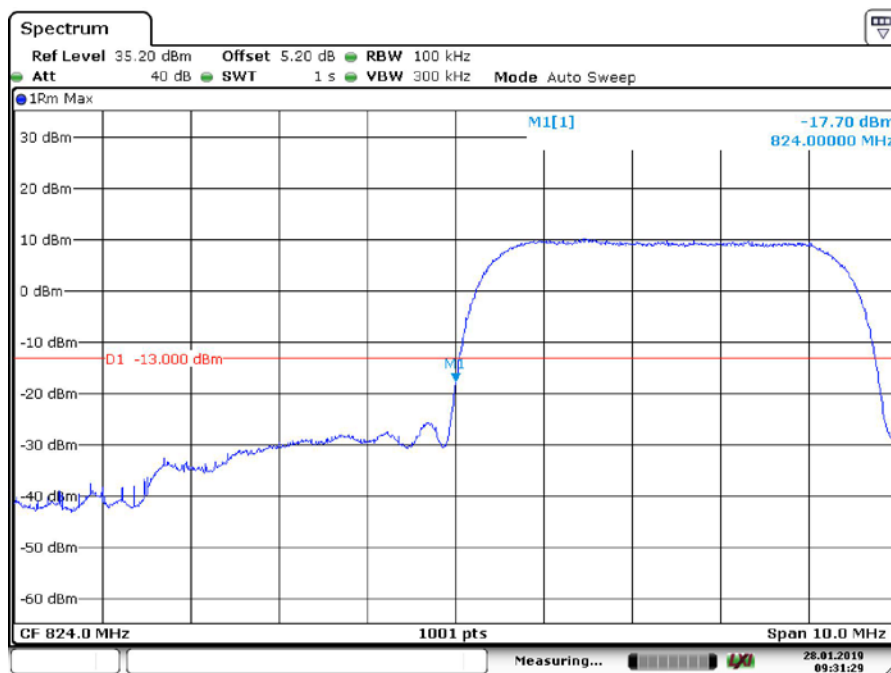
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5.1.3 Test Band = WCDMA BAND V

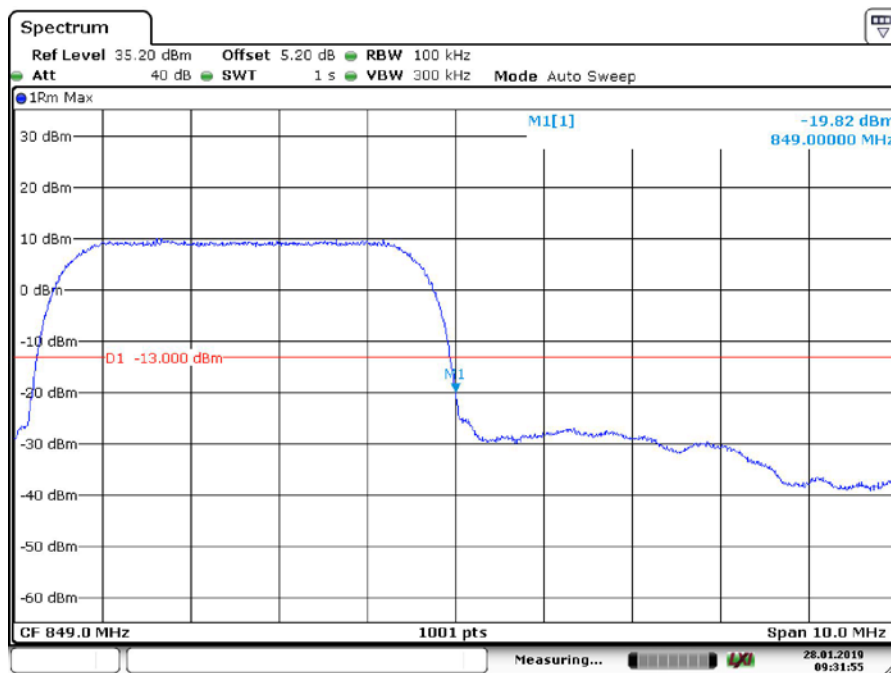
5.1.3.1 Test Mode = UMTS/TM1

5.1.3.1.1 Test Channel = LCH



Date: 28 JAN 2019 09:31:30

5.1.3.1.2 Test Channel = HCH



Date: 28 JAN 2019 09:31:55



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6 Spurious Emission at Antenna Terminal

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

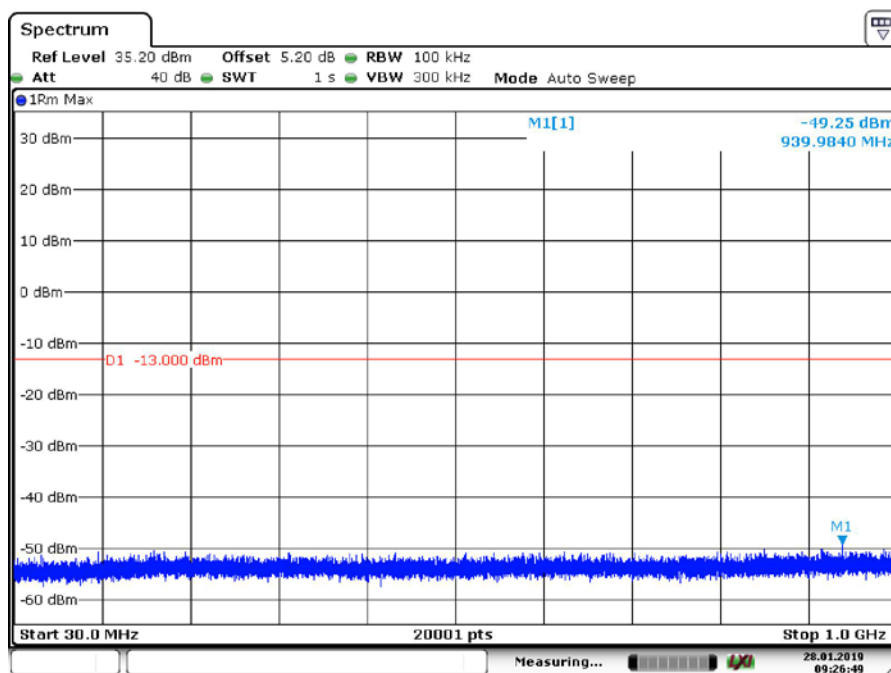
Part I - Test Plots

6.1 For WCDMA

6.1.1 Test Band = WCDMA BAND II

6.1.1.1 Test Mode = UMTS/TM1

6.1.1.1.1 Test Channel = LCH



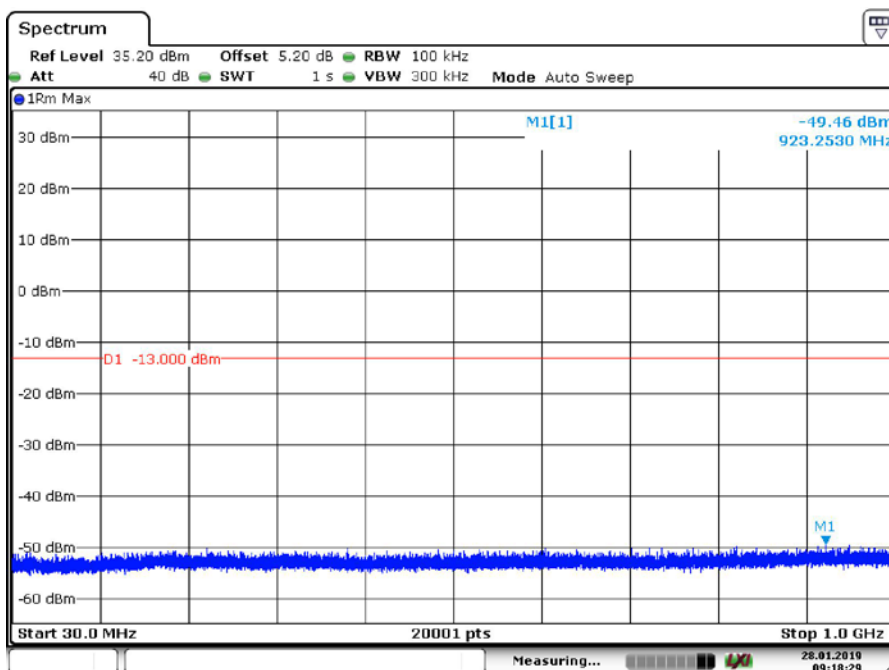
Date: 28 JAN 2019 09:26:49



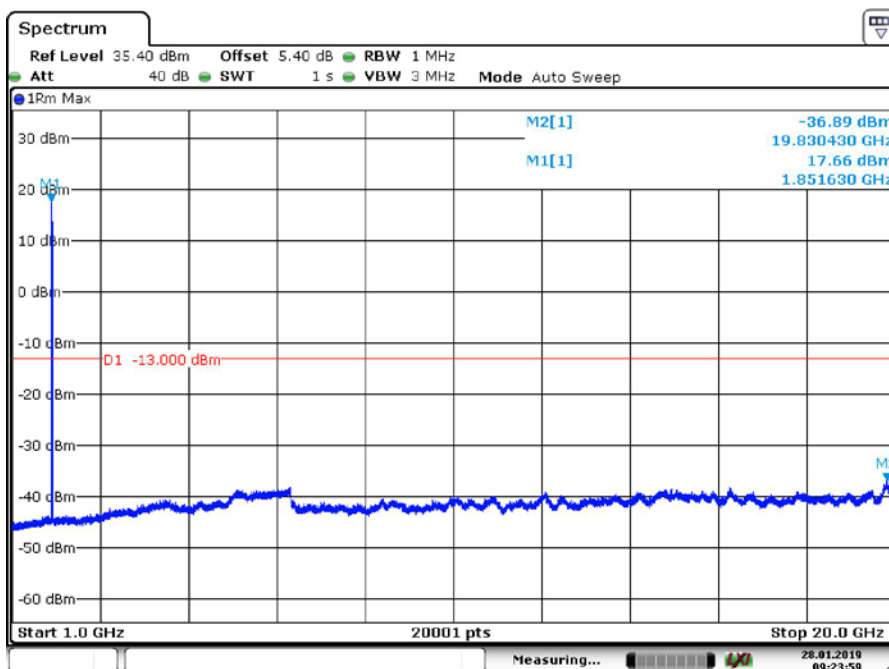
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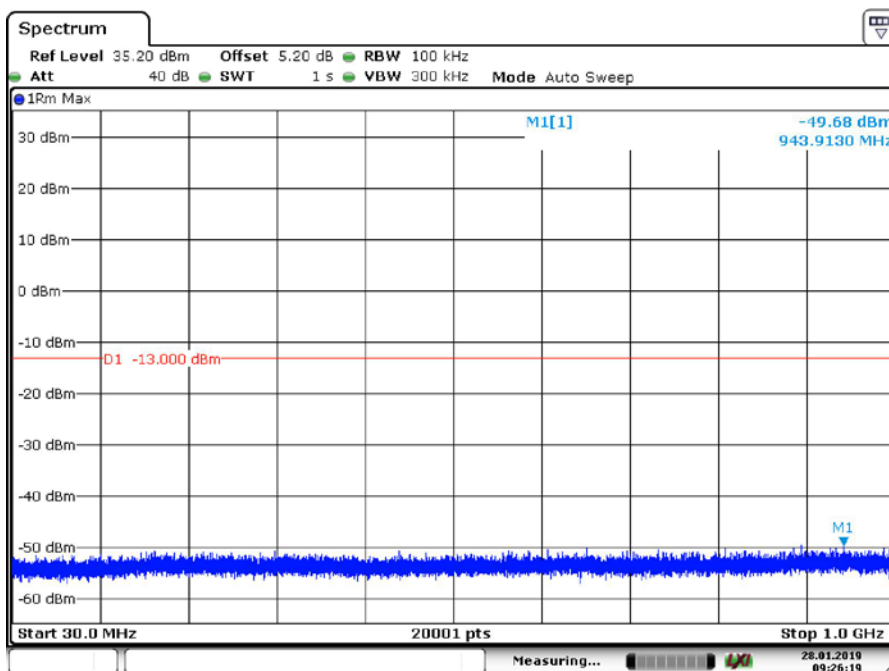
Date: 28 JAN 2019 09:18:29



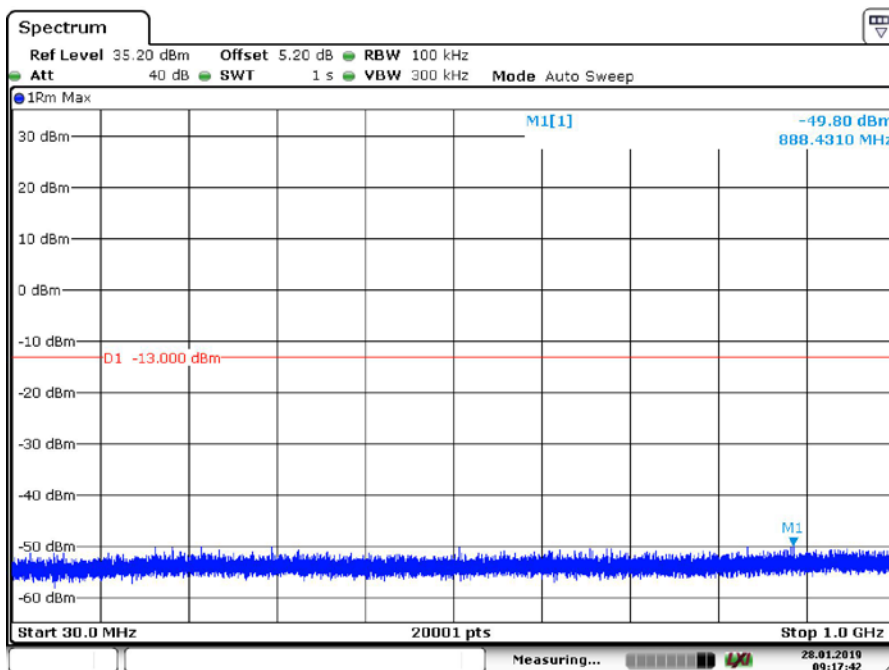
Date: 28 JAN 2019 09:23:59



6.1.1.1.2 Test Channel = MCH

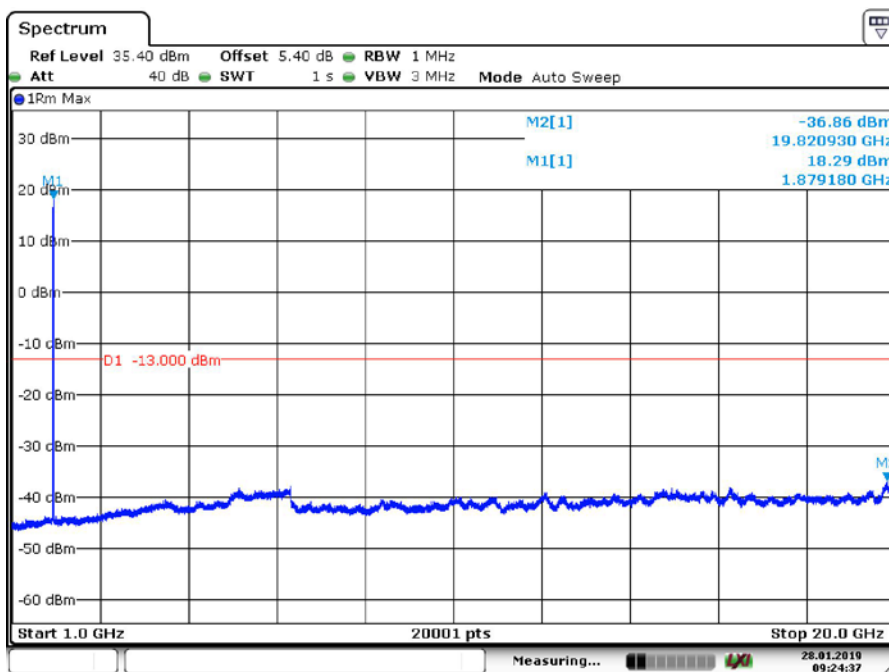


Date: 28 JAN 2019 09:26:19



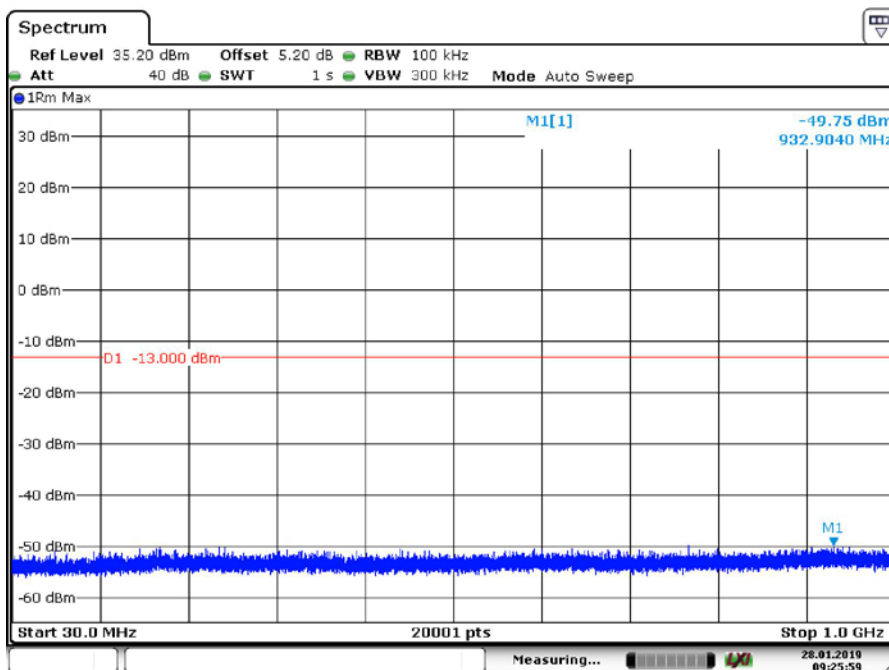
Date: 28 JAN 2019 09:17:42





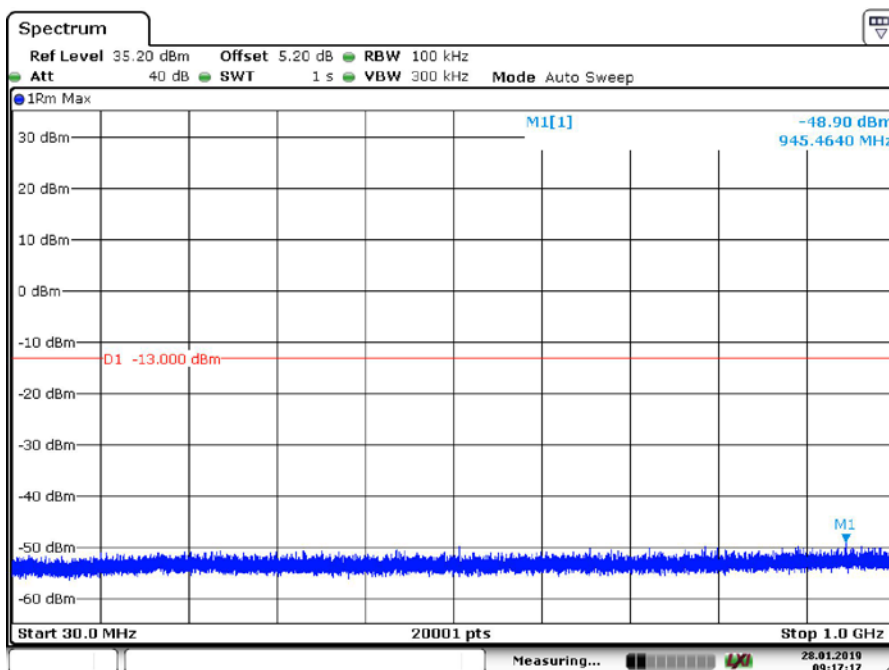
Date: 28 JAN 2019 09:24:37

6.1.1.1.3 Test Channel = HCH

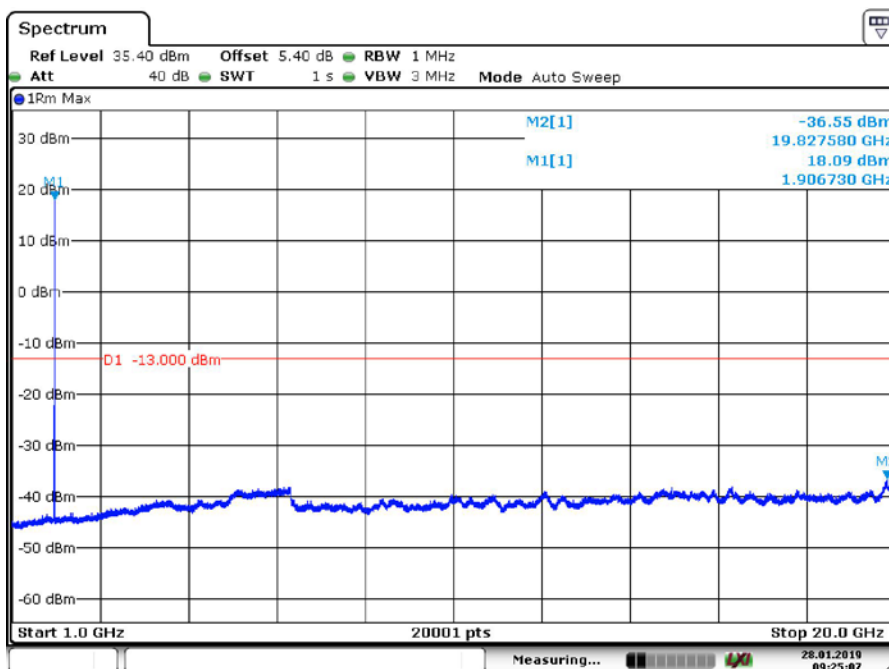


Date: 28 JAN 2019 09:25:59





Date: 28 JAN 2019 09:17:17



Date: 28 JAN 2019 09:25:07



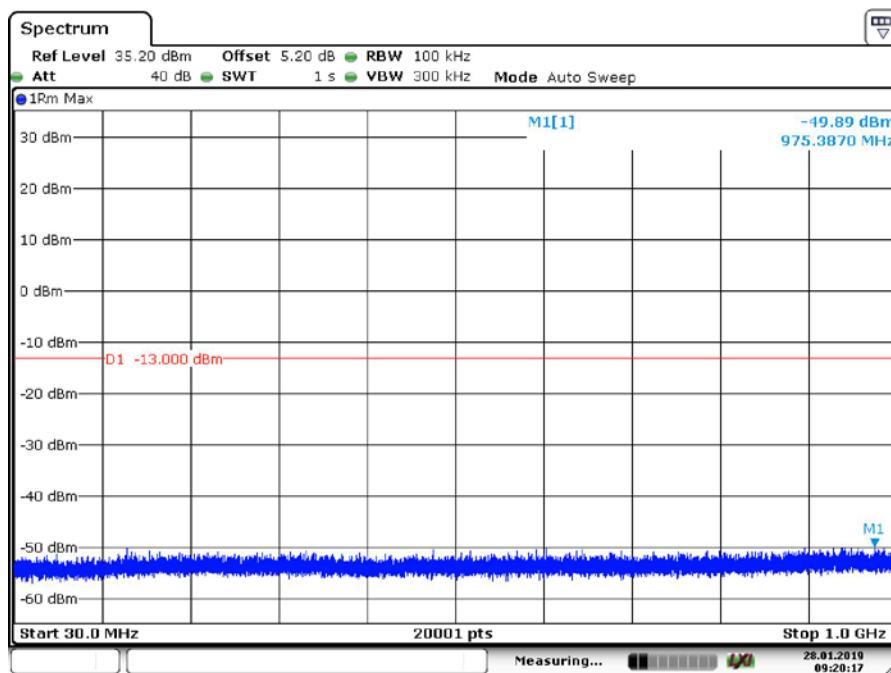
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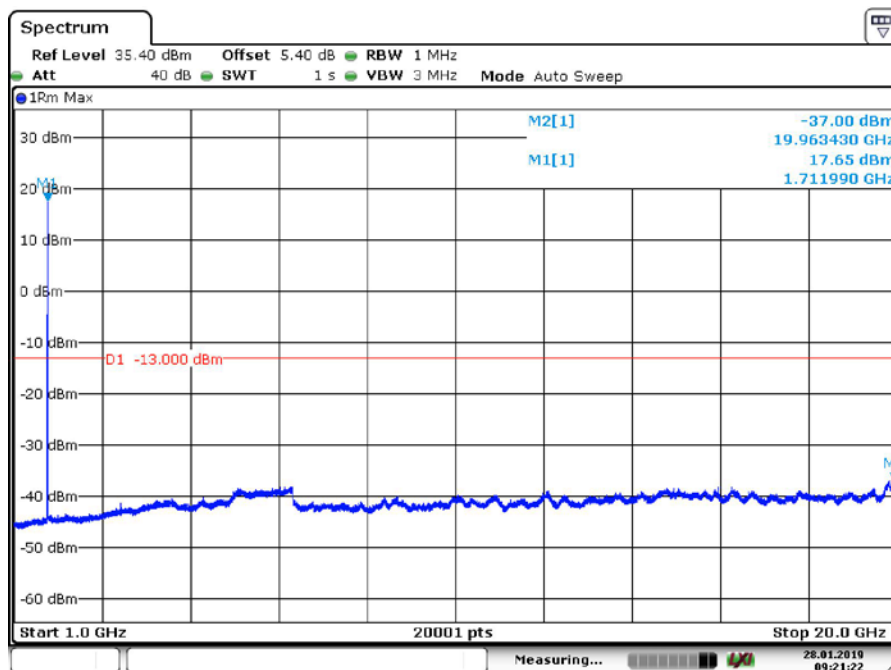
6.1.2 Test Band = WCDMA BAND IV

6.1.2.1 Test Mode = UMTS/TM1

6.1.2.1.1 Test Channel = LCH



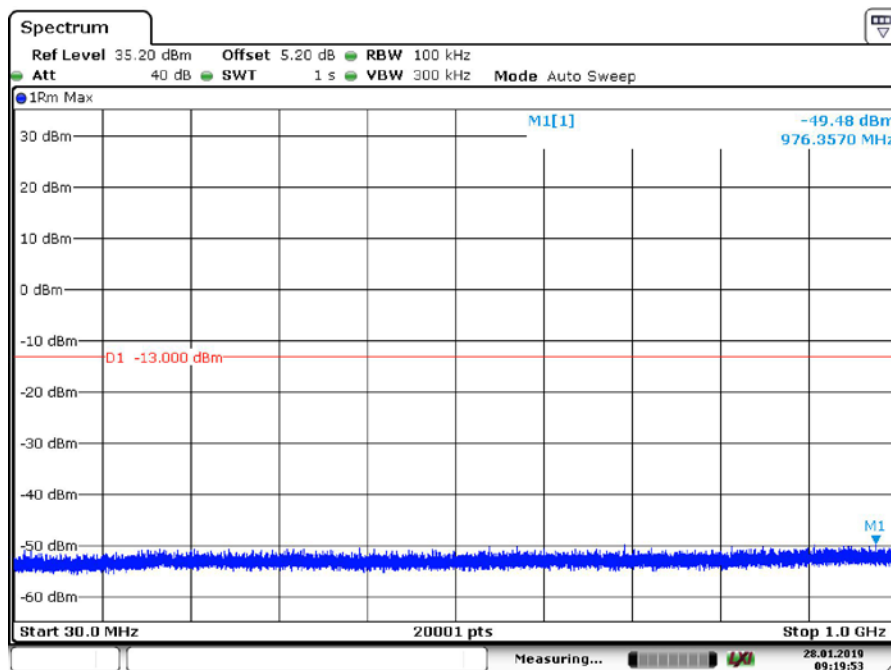
Date: 28 JAN 2019 09:20:17



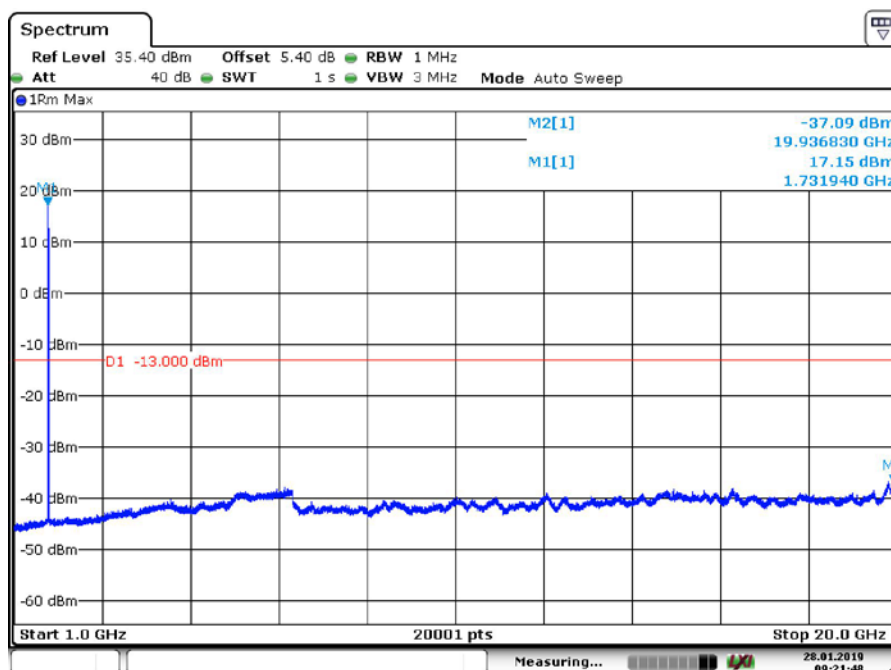
Date: 28 JAN 2019 09:21:22



6.1.2.1.2 Test Channel = MCH



Date: 28 JAN 2019 09:19:53



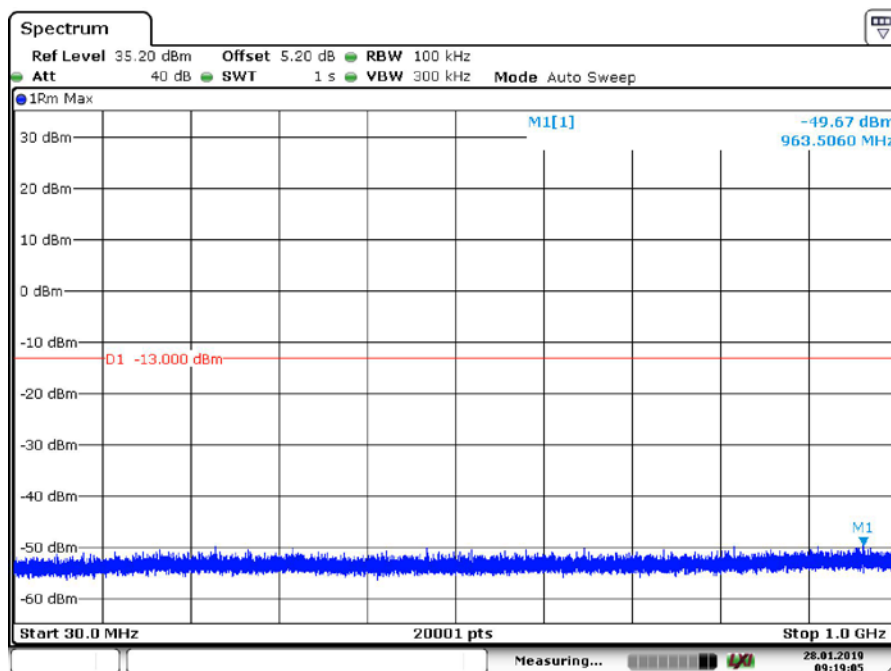
Date: 28 JAN 2019 09:21:49



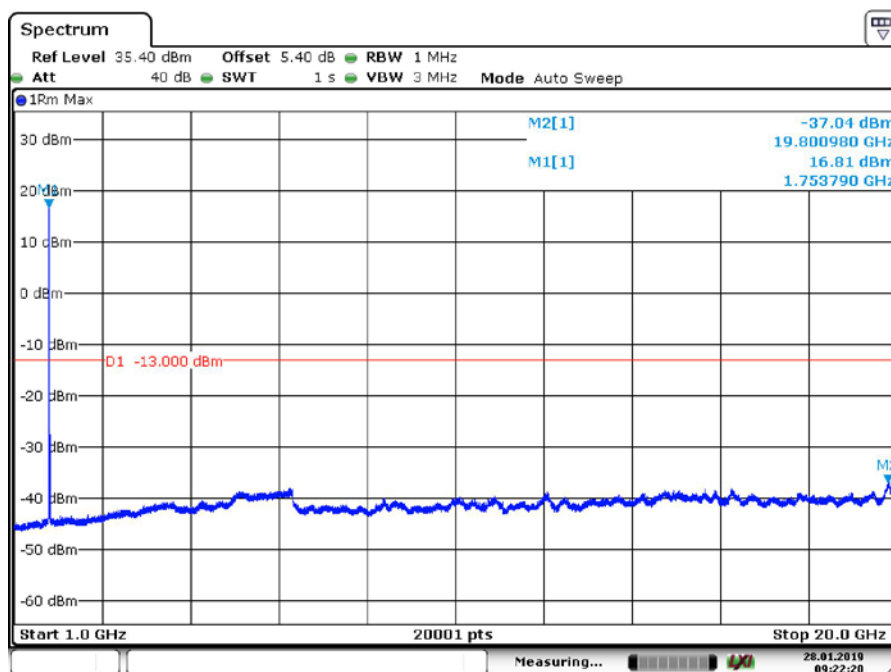
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6.1.2.1.3 Test Channel = HCH



Date: 28 JAN 2019 09:19:05



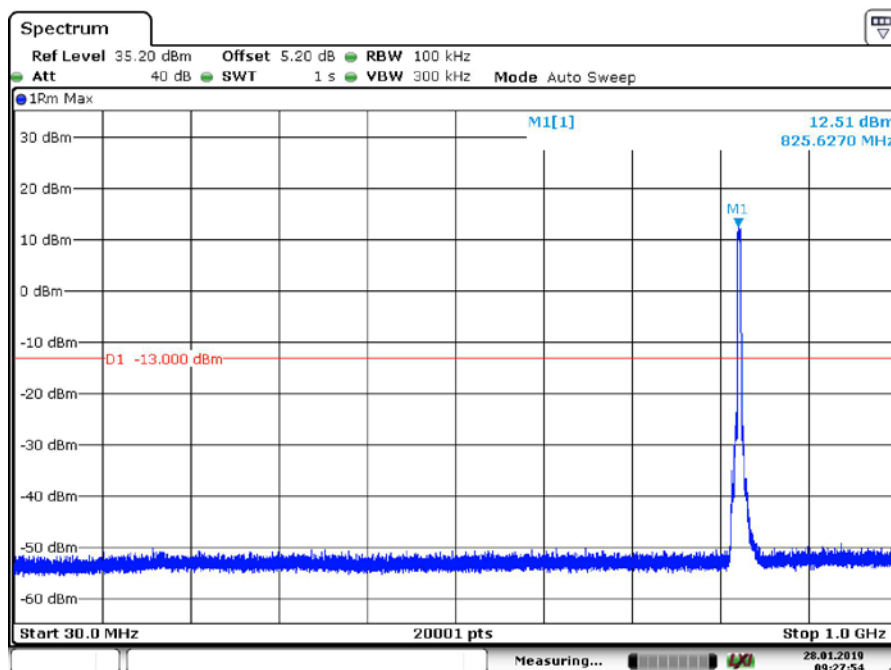
Date: 28 JAN 2019 09:22:20



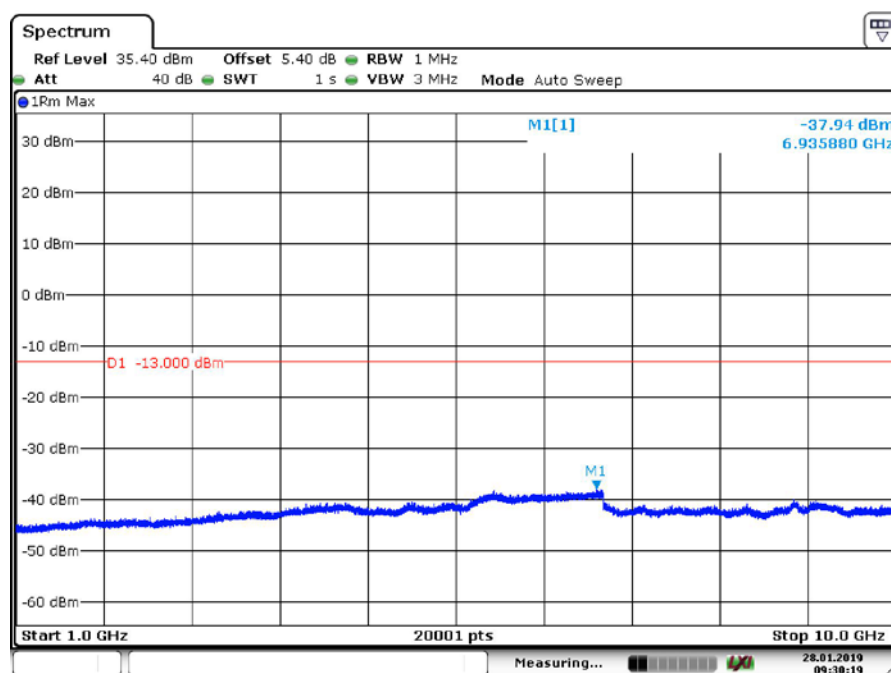
6.1.3 Test Band = WCDMA BAND V

6.1.3.1 Test Mode = UMTS/TM1

6.1.3.1.1 Test Channel = LCH



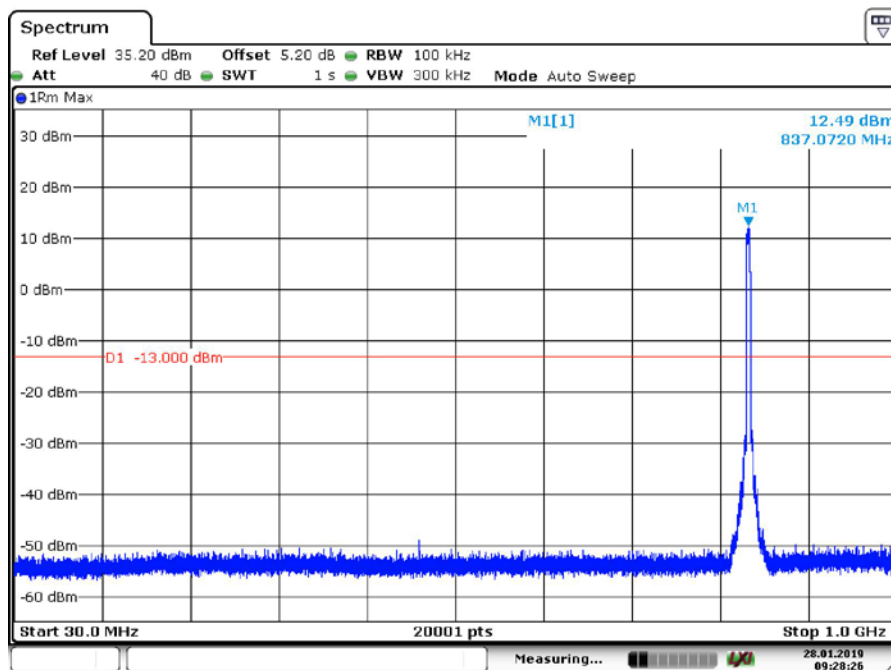
Date: 28.JAN.2019 09:27:55



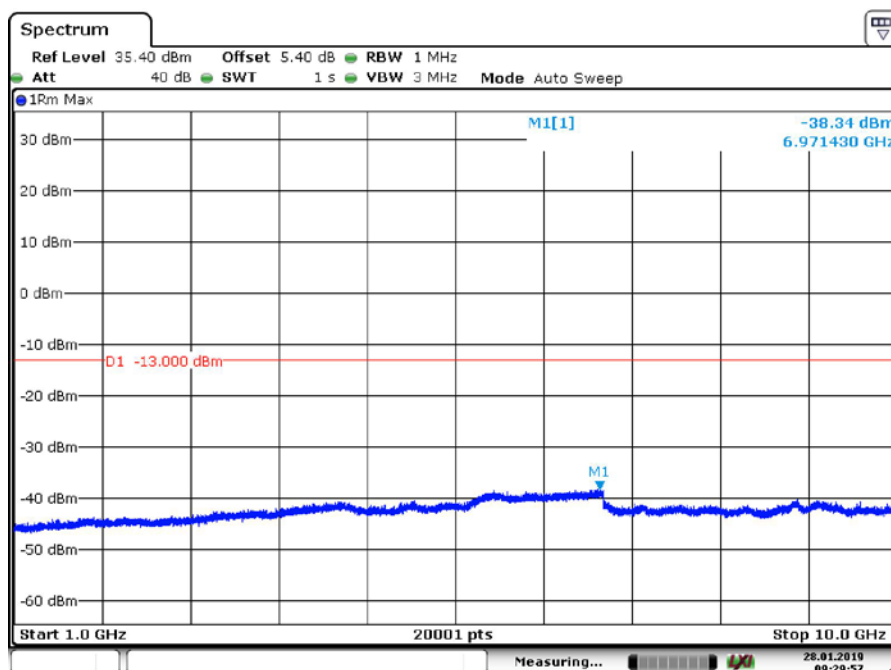
Date: 28.JAN.2019 09:30:20



6.1.3.1.2 Test Channel = MCH



Date: 28 JAN 2019 09:28:26



Date: 28 JAN 2019 09:29:58

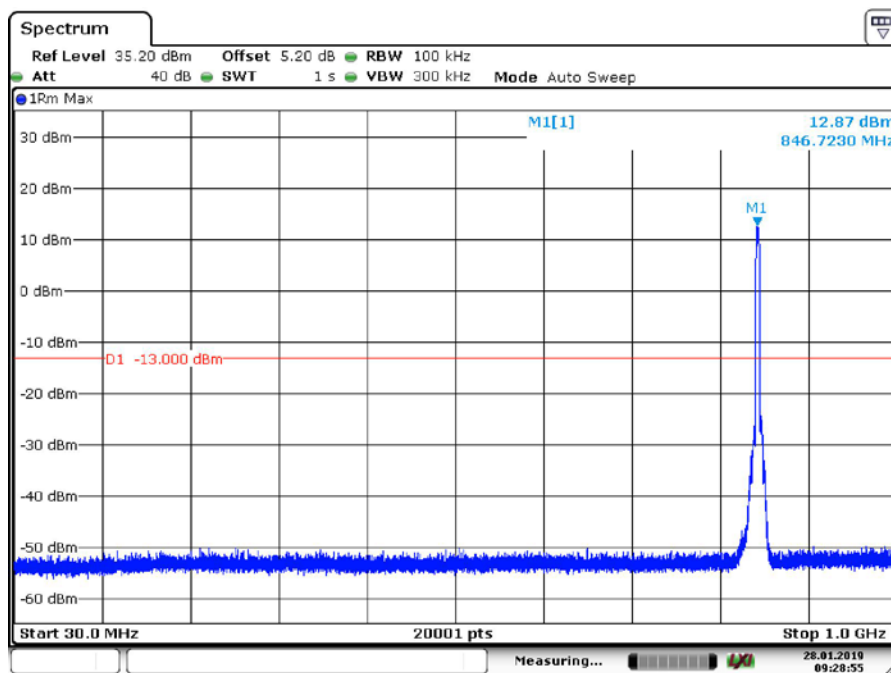


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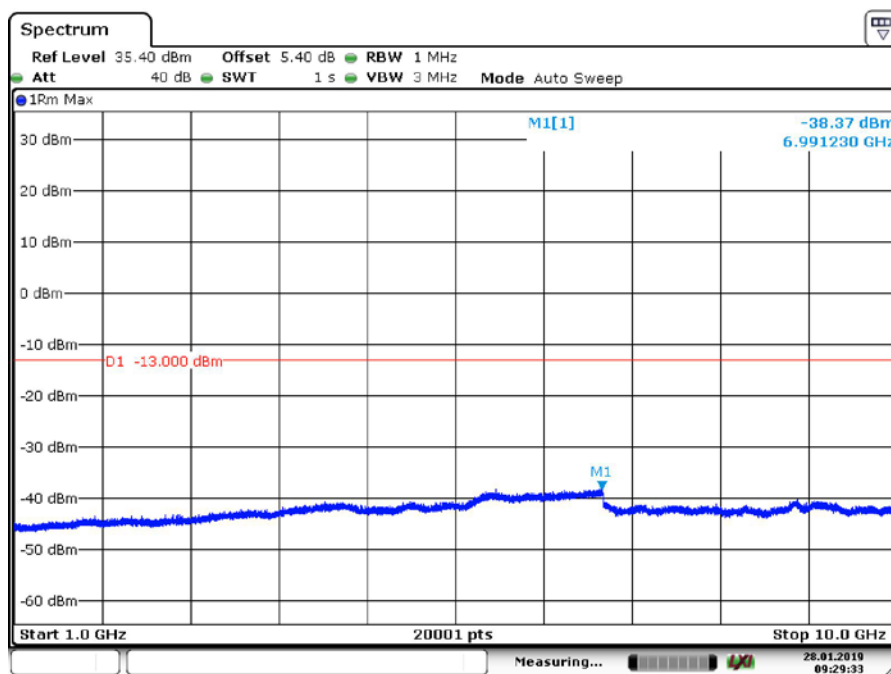
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6.1.3.1.3 Test Channel = HCH



Date: 28 JAN 2019 09:28:56



Date: 28 JAN 2019 09:29:33



7 Field Strength of Spurious Radiation

Part I - Test Plots

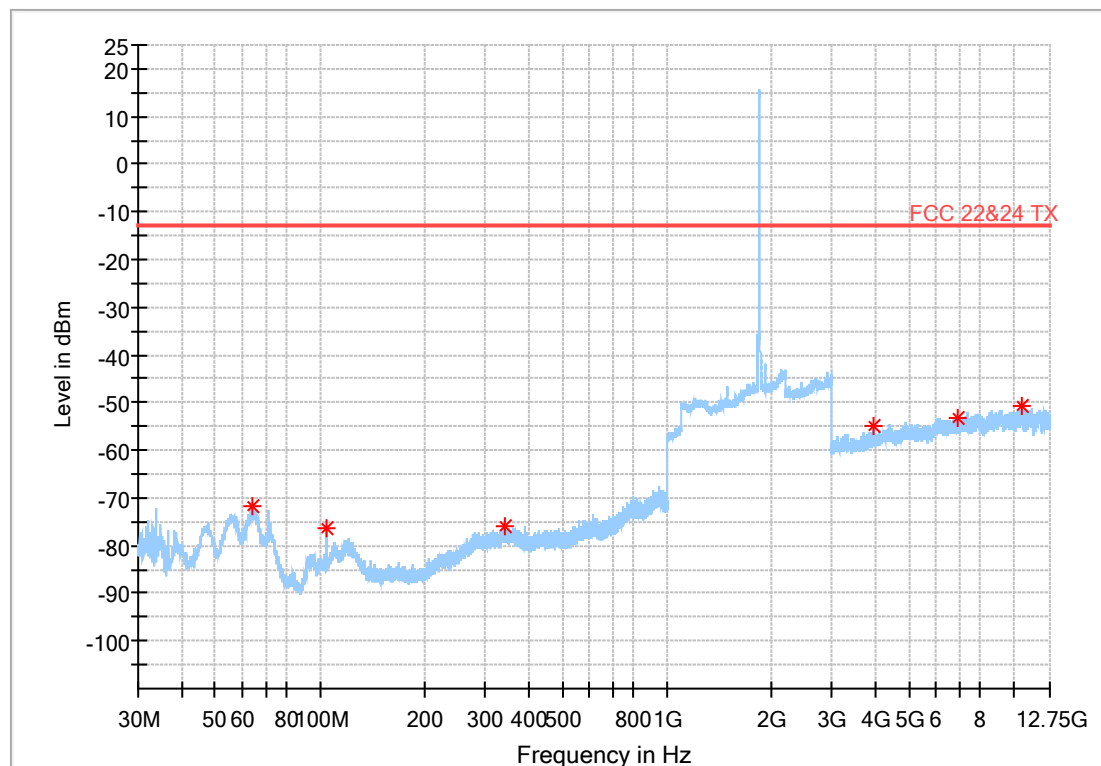
7.1 For WCDMA

7.1.1 Main Antenna

7.1.1.1 Test Band = WCDMA BAND II

7.1.1.1.1 LCH-Vertical

Full Spectrum



Critical_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
64.150000	-71.64	-13.00	58.64	---	---	200.0	V	171.0	-100.0
104.200000	-76.25	-13.00	63.25	---	---	200.0	V	102.0	-106.8
343.250000	-75.96	-13.00	62.96	---	---	200.0	V	0.0	-101.7
3976.625000	-54.79	-13.00	41.79	---	---	200.0	V	0.0	-103.6
6952.000000	-53.02	-13.00	40.02	---	---	200.0	V	212.0	-99.2
10654.075000	-50.59	-13.00	37.59	---	---	200.0	V	0.0	-96.2

