Appendix B

Test Data for SZEM161201074805RG

CONTENT

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1 Effective (Isotropic) Radiated Power Output Data

Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dB]	ERP[dB]	Limit[dBm]	Verdict
WCDMA850	UMTS/TM1	LCH	23.42	23.53	38.45	PASS
		MCH	23.52	23.63	38.45	PASS
		HCH	23.49	23.60	38.45	PASS
	UMTS/TM2	LCH	21.41	21.52	38.45	PASS
		MCH	21.35	21.46	38.45	PASS
		HCH	21.39	21.50	38.45	PASS

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

ERP [dBm] = SGP [dBm] – Cable Loss [dB] + 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
WCDMA850	UMTS/TM1	LCH	2.72	13	PASS
		MCH	2.67	13	PASS
		HCH	2.72	13	PASS
	UMTS/TM2	LCH	2.67	13	PASS
		MCH	2.70	13	PASS
		HCH	2.70	13	PASS

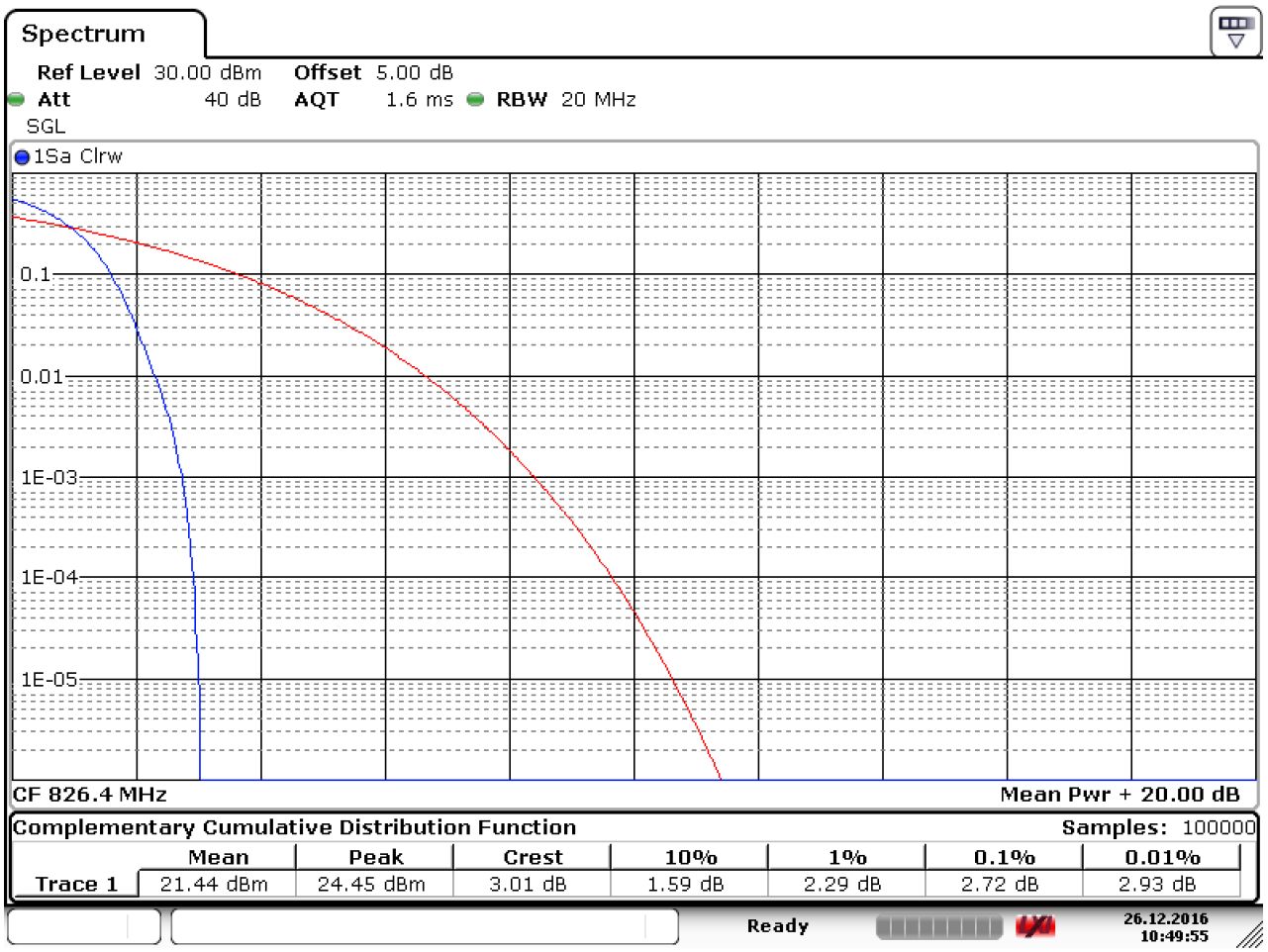
Part II - Test Plots

2.1 For WCDMA

2.1.1 Test Band = WCDMA 850

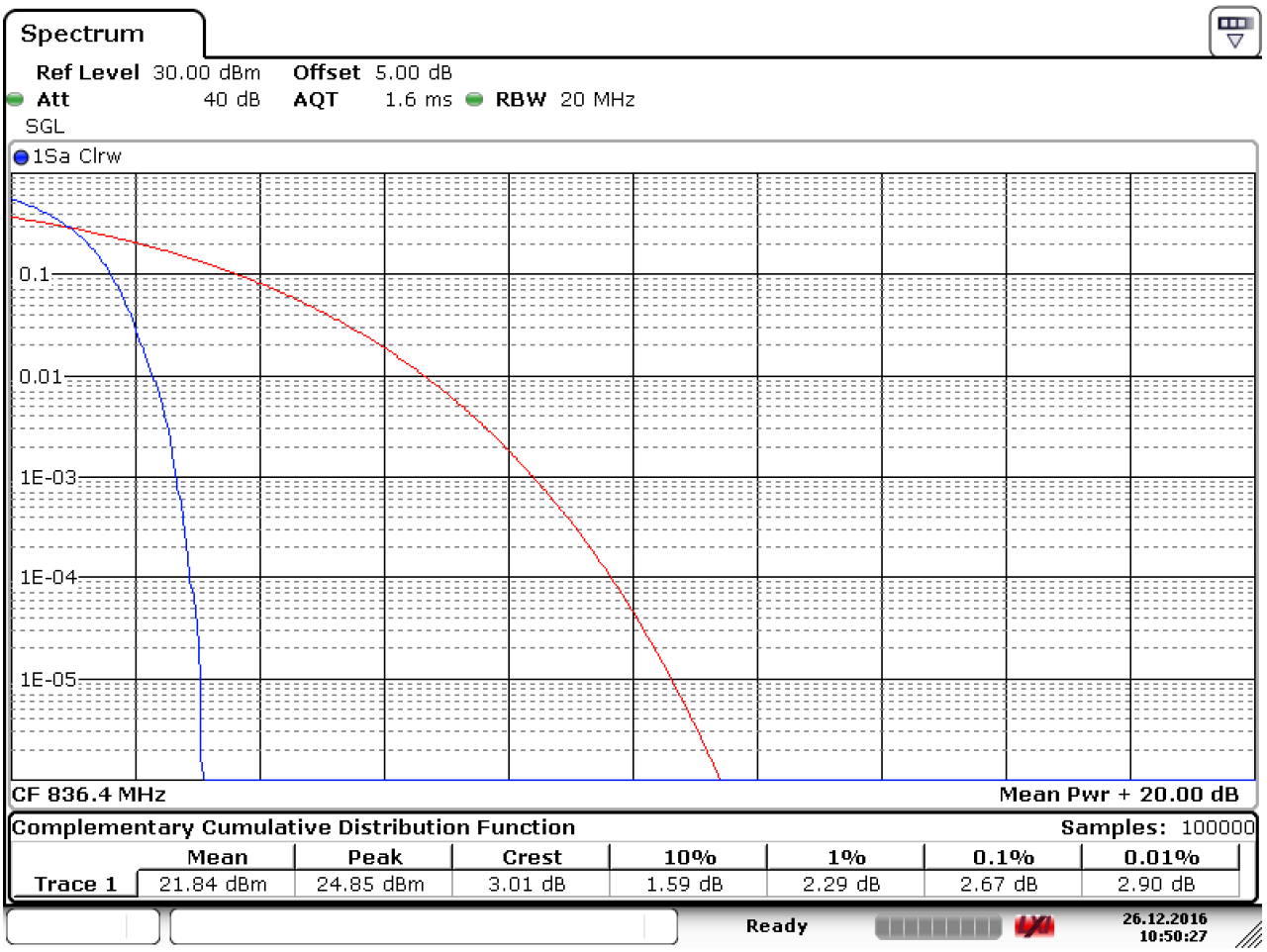
2.1.1.1 Test Mode = UMTS/TM1

2.1.1.1.1 Test Channel = LCH



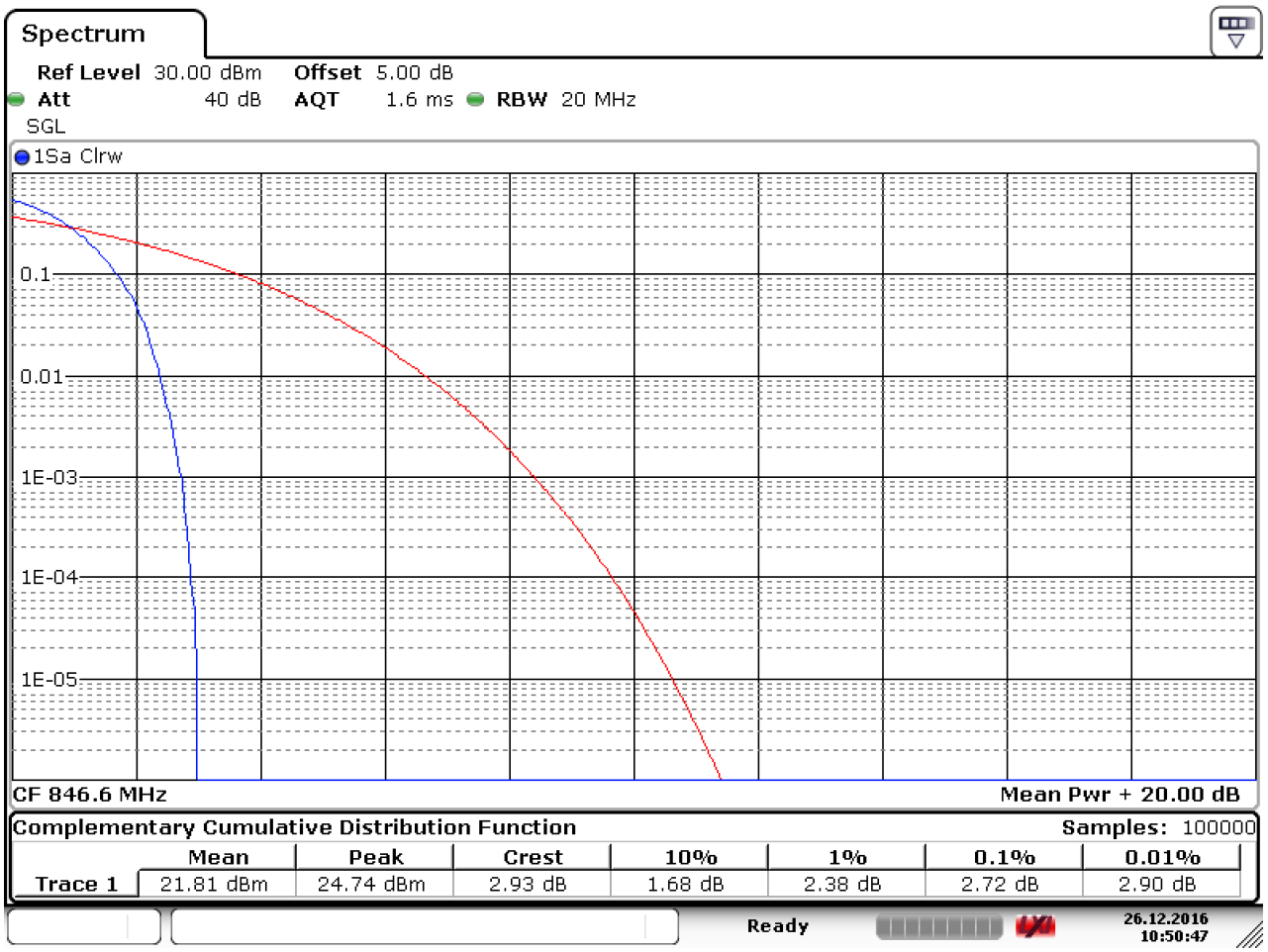
Date: 26.DEC.2016 10:49:55

2.1.1.1.2 Test Channel = MCH



Date: 26.DEC.2016 10:50:28

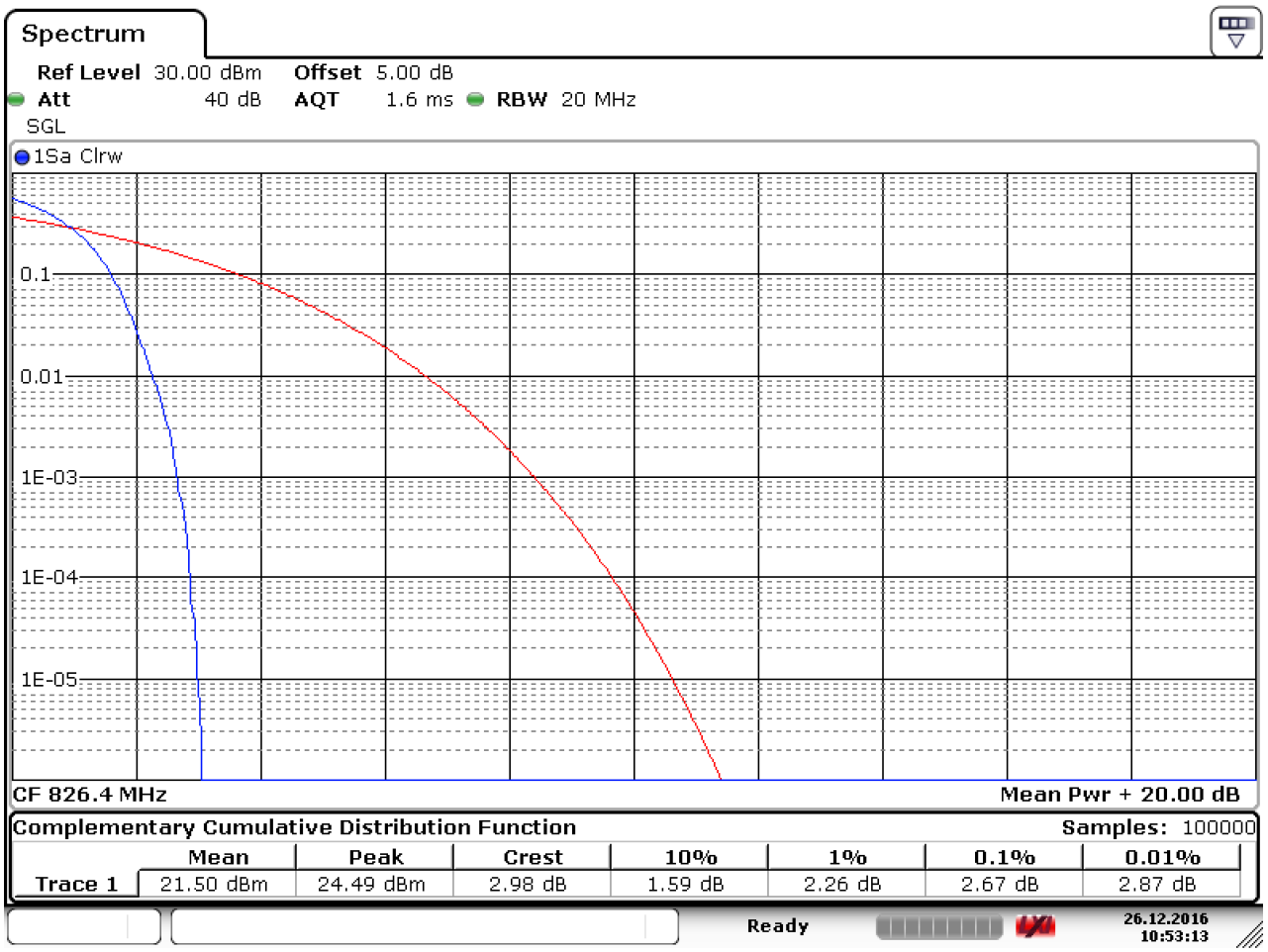
2.1.1.1.3 Test Channel = HCH



Date: 26.DEC.2016 10:50:48

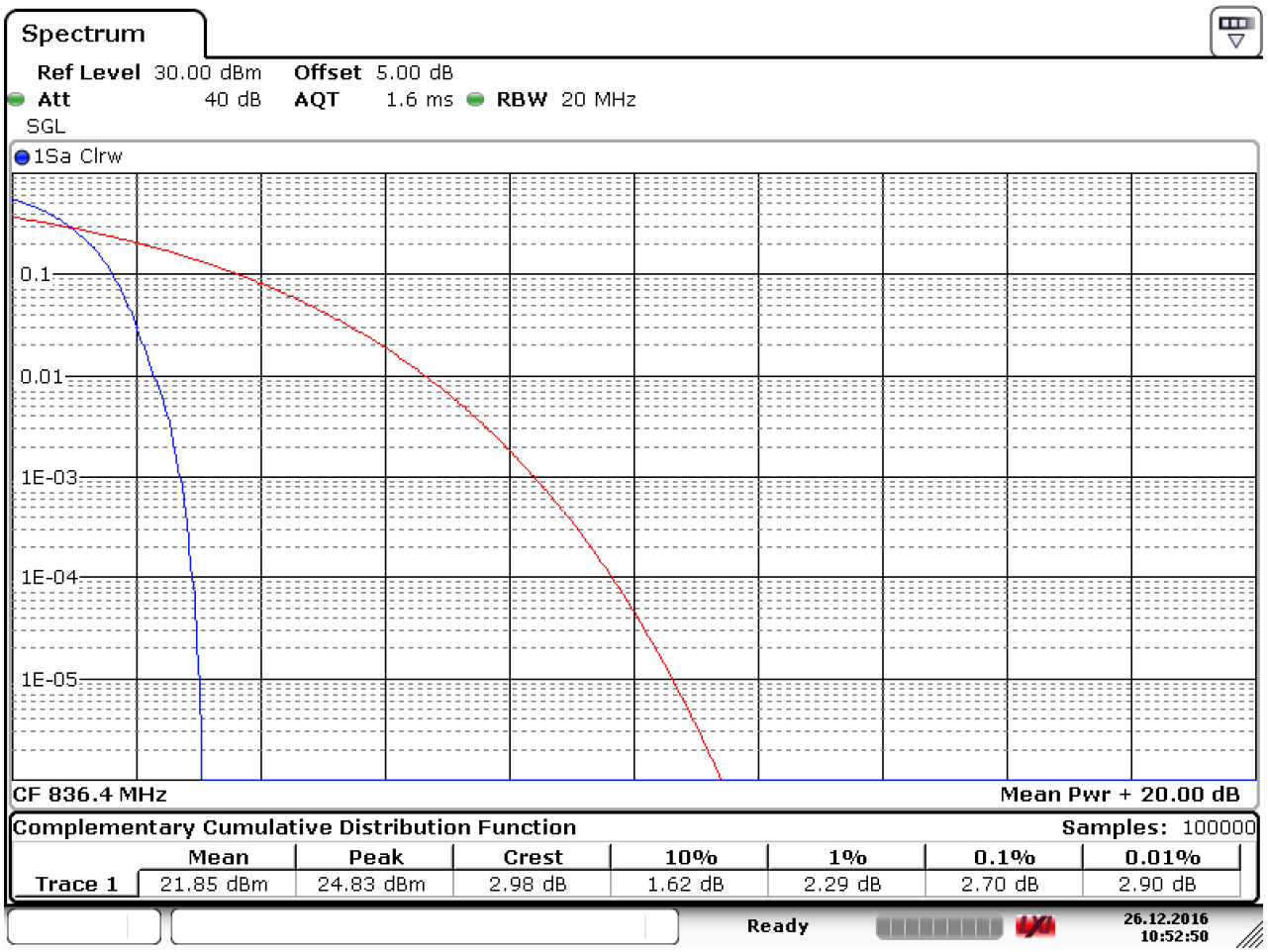
2.1.1.2 Test Mode = UMTS/TM2

2.1.1.2.1 Test Channel = LCH



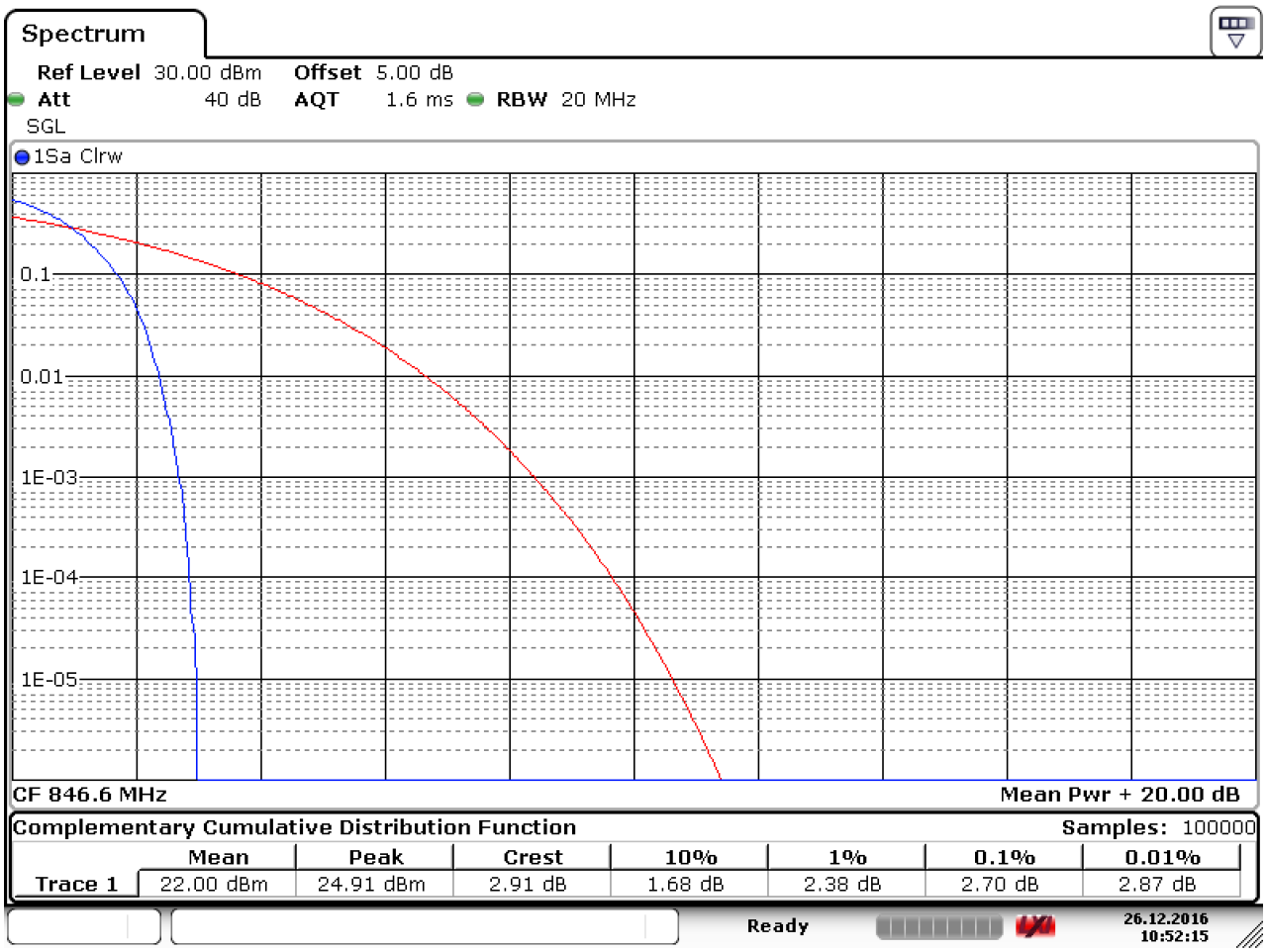
Date: 26.DEC.2016 10:53:13

2.1.1.2.2 Test Channel = MCH



Date: 26.DEC.2016 10:52:50

2.1.1.2.3 Test Channel = HCH



Date: 26.DEC.2016 10:52:15

3 Modulation Characteristics

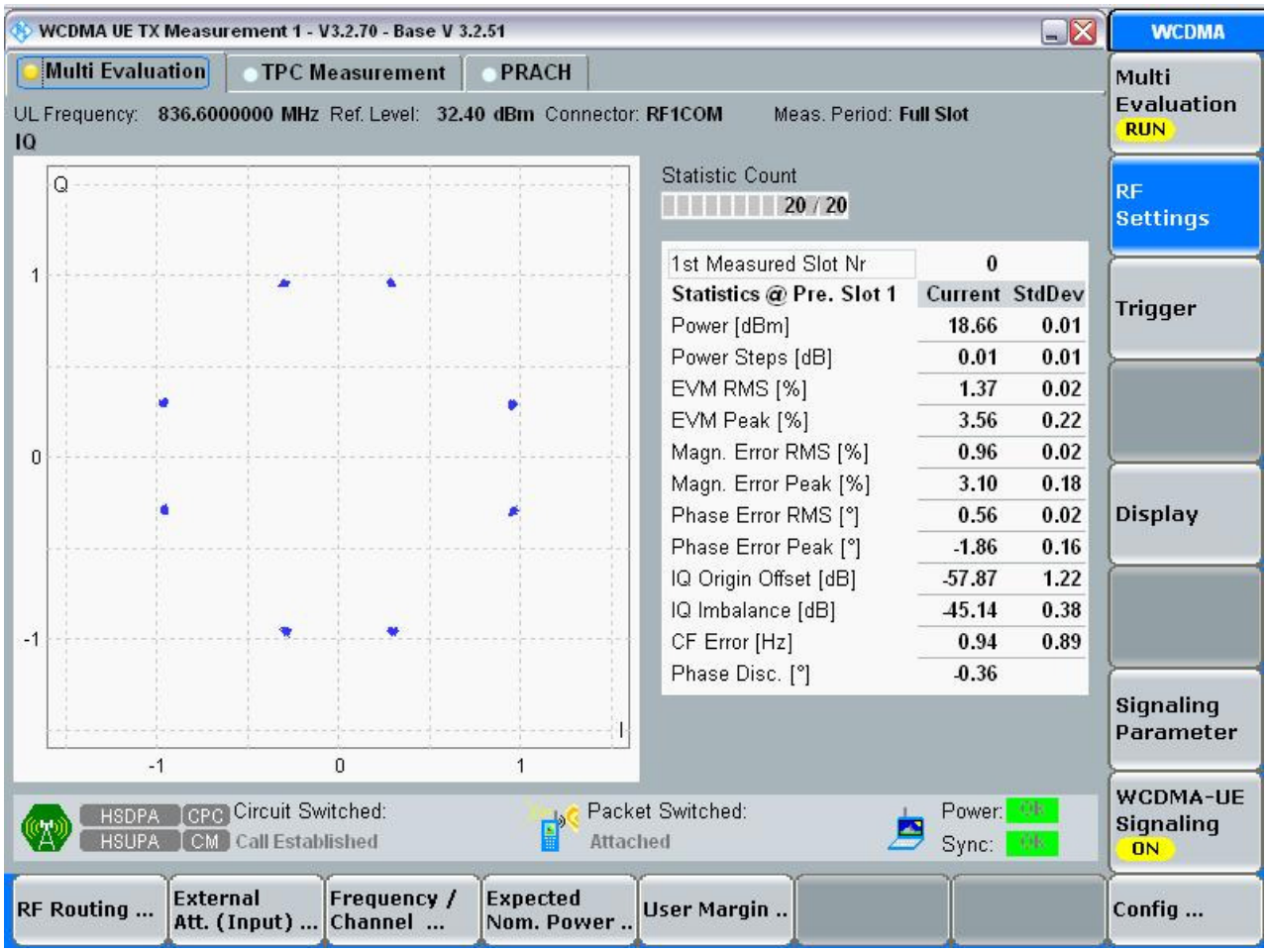
Part I - Test Plots

3.1 For WCDMA

3.1.1 Test Band = WCDMA 850

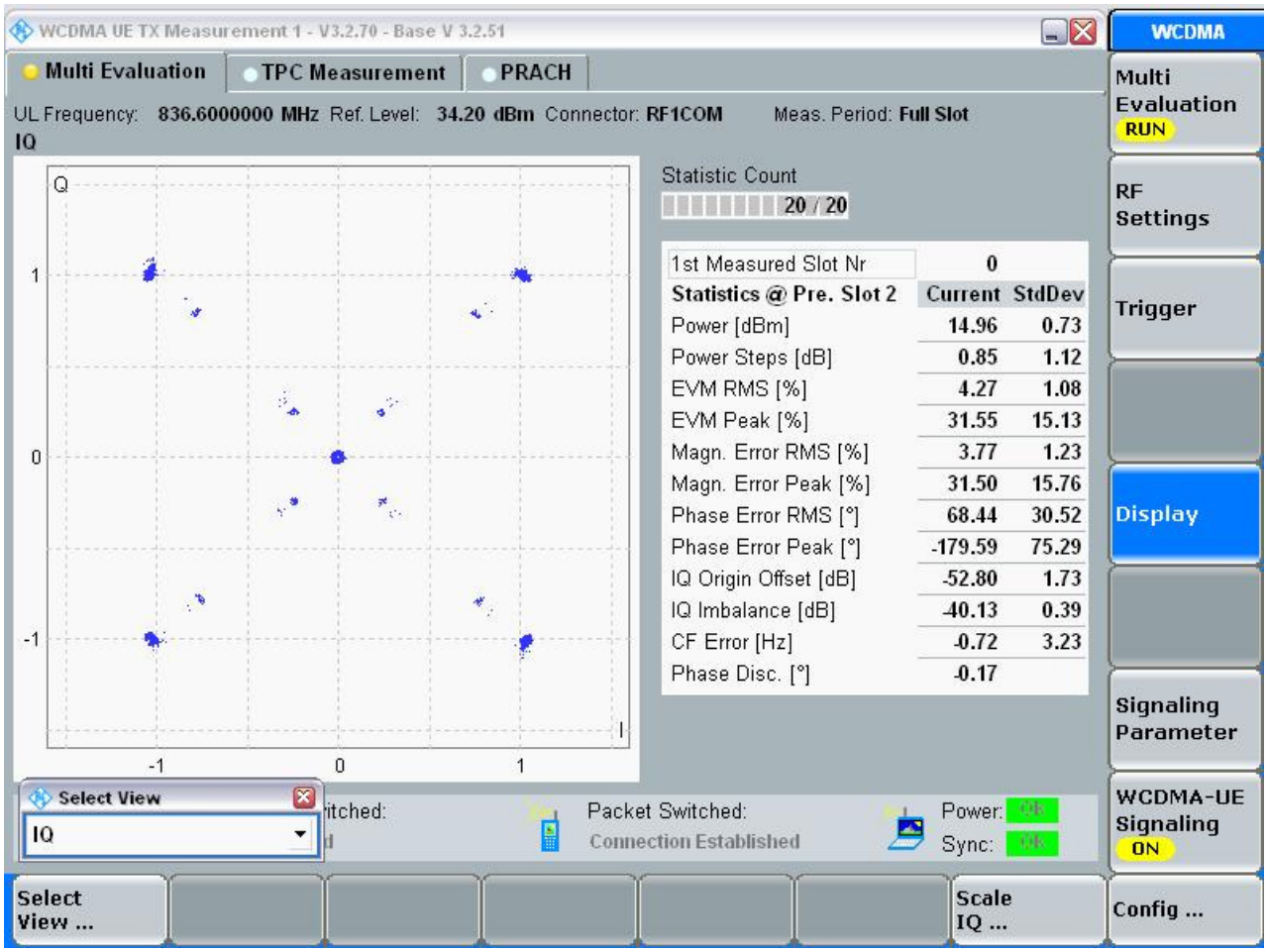
3.1.1.1 Test Mode = UMTS /TM1

3.1.1.1.1 Test Channel = MCH



3.1.1.2 Test Mode = UMTS /TM2

3.1.1.2.1 Test Channel = MCH



4 Bandwidth

Part I - Test Results

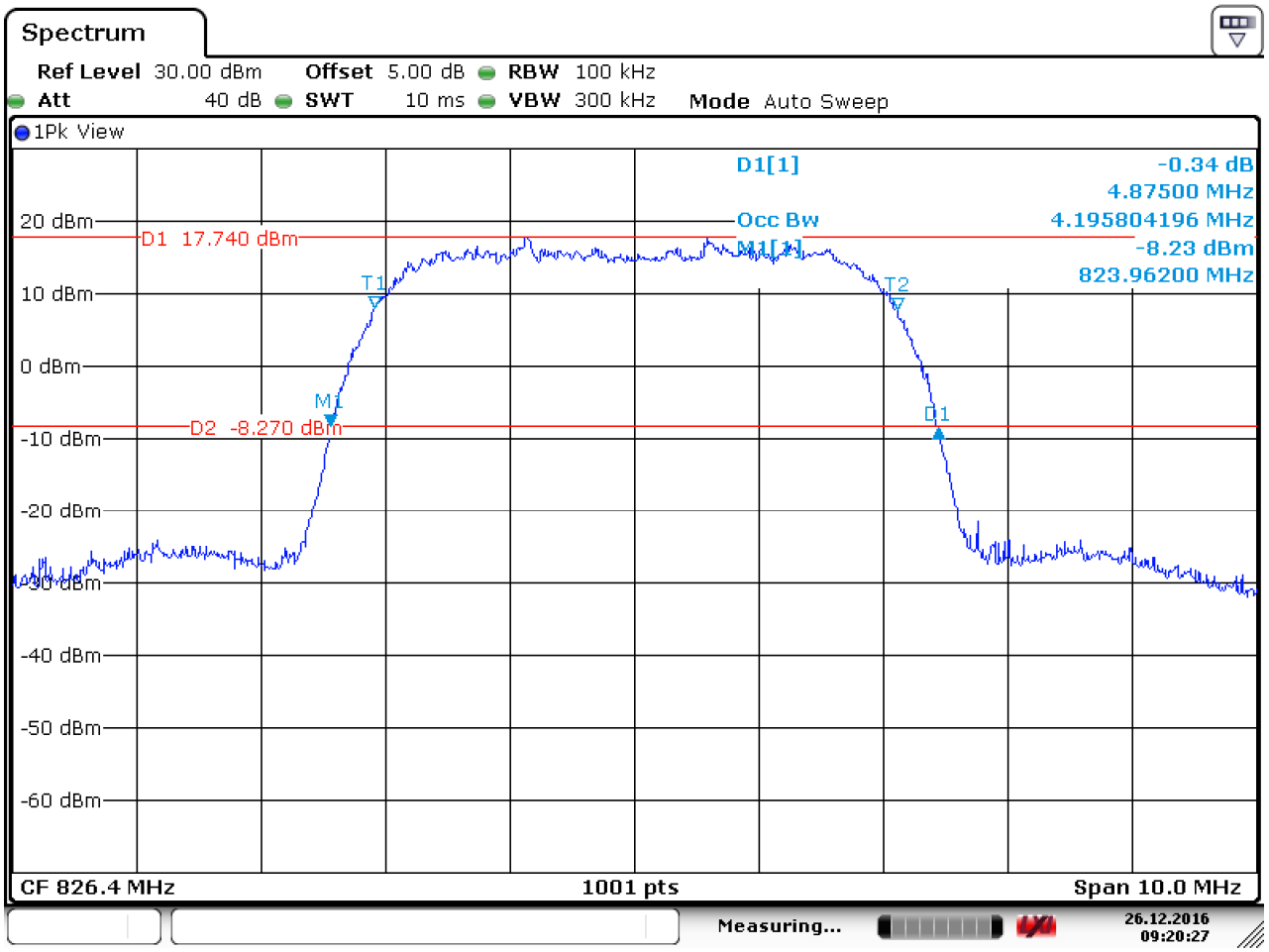
Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
WCDMA850	UMTS/TM1	LCH	4.20	4.88	PASS
		MCH	4.23	4.90	PASS
		HCH	4.19	4.86	PASS
	UMTS/TM2	LCH	4.19	4.88	PASS
		MCH	4.22	4.90	PASS
		HCH	4.20	4.88	PASS

4.1 For WCDMA

4.1.1 Test Band = WCDMA 850

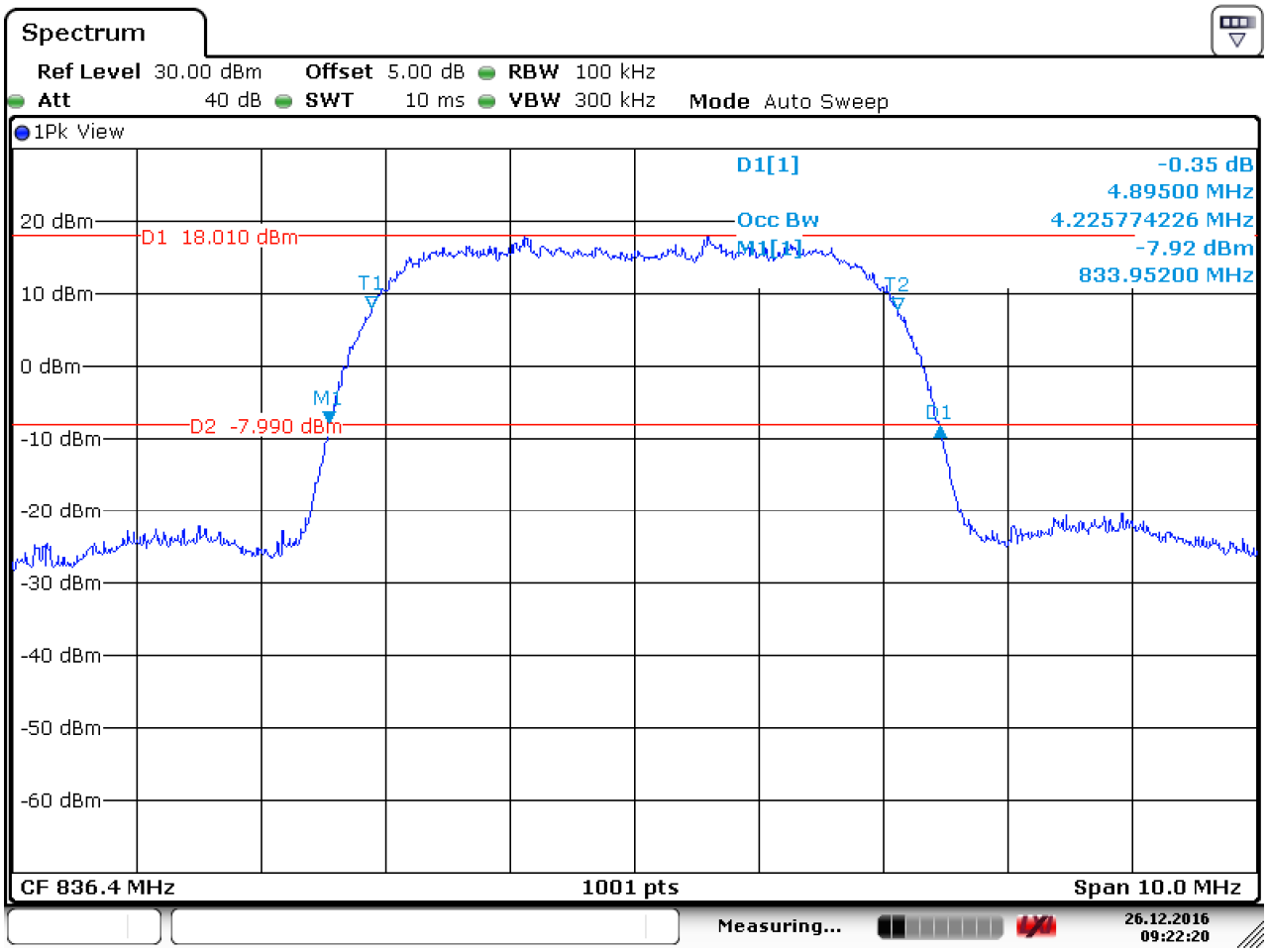
4.1.1.1 Test Mode = UMTS/TM1

4.1.1.1.1 Test Channel = LCH



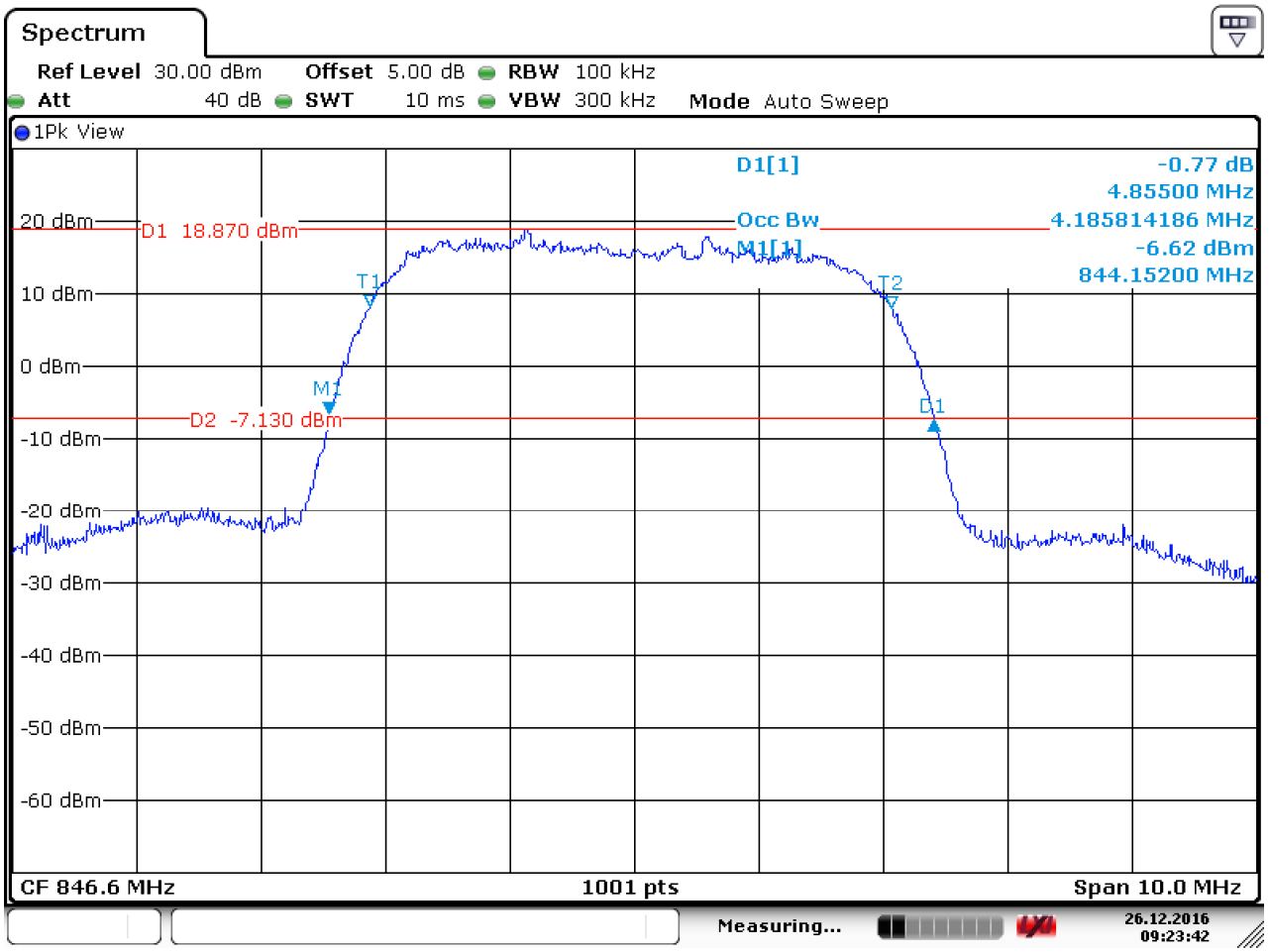
Date: 26.DEC.2016 09:20:26

4.1.1.1.2 Test Channel = MCH



Date: 26.DEC.2016 09:22:20

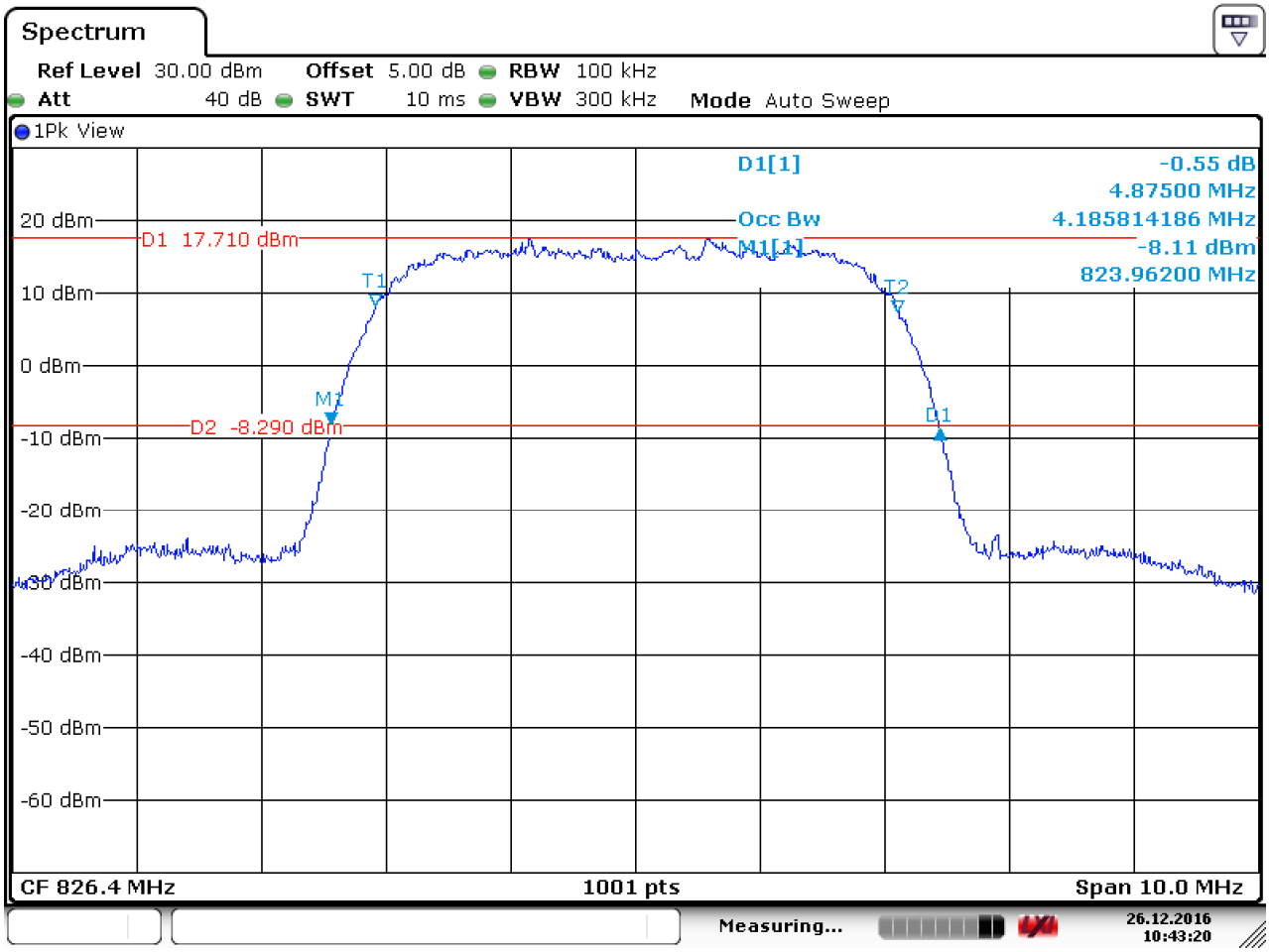
4.1.1.1.3 Test Channel = HCH



Date: 26.DEC.2016 09:23:42

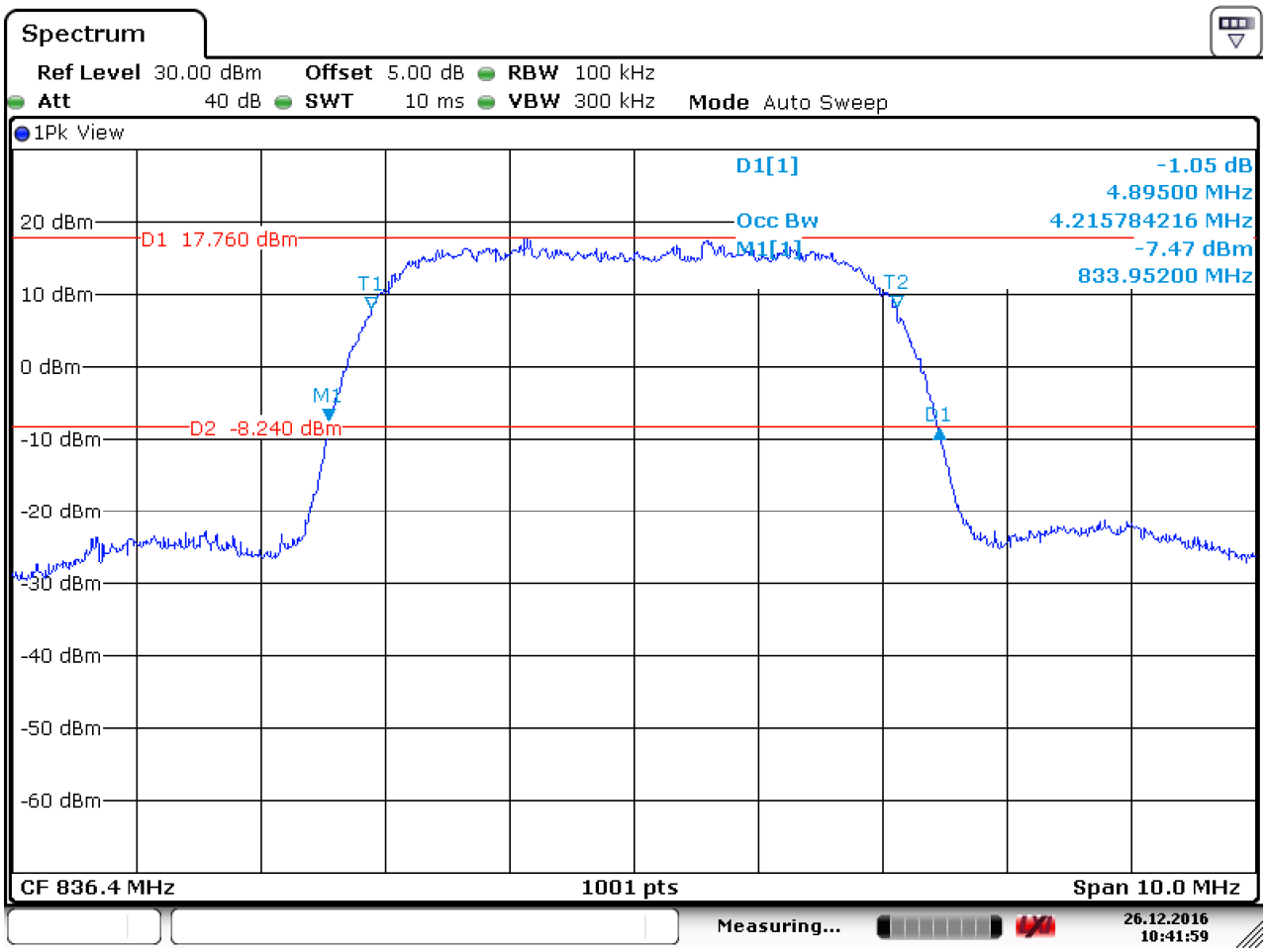
4.1.1.2 Test Mode = UMTS/TM2

4.1.1.2.1 Test Channel = LCH



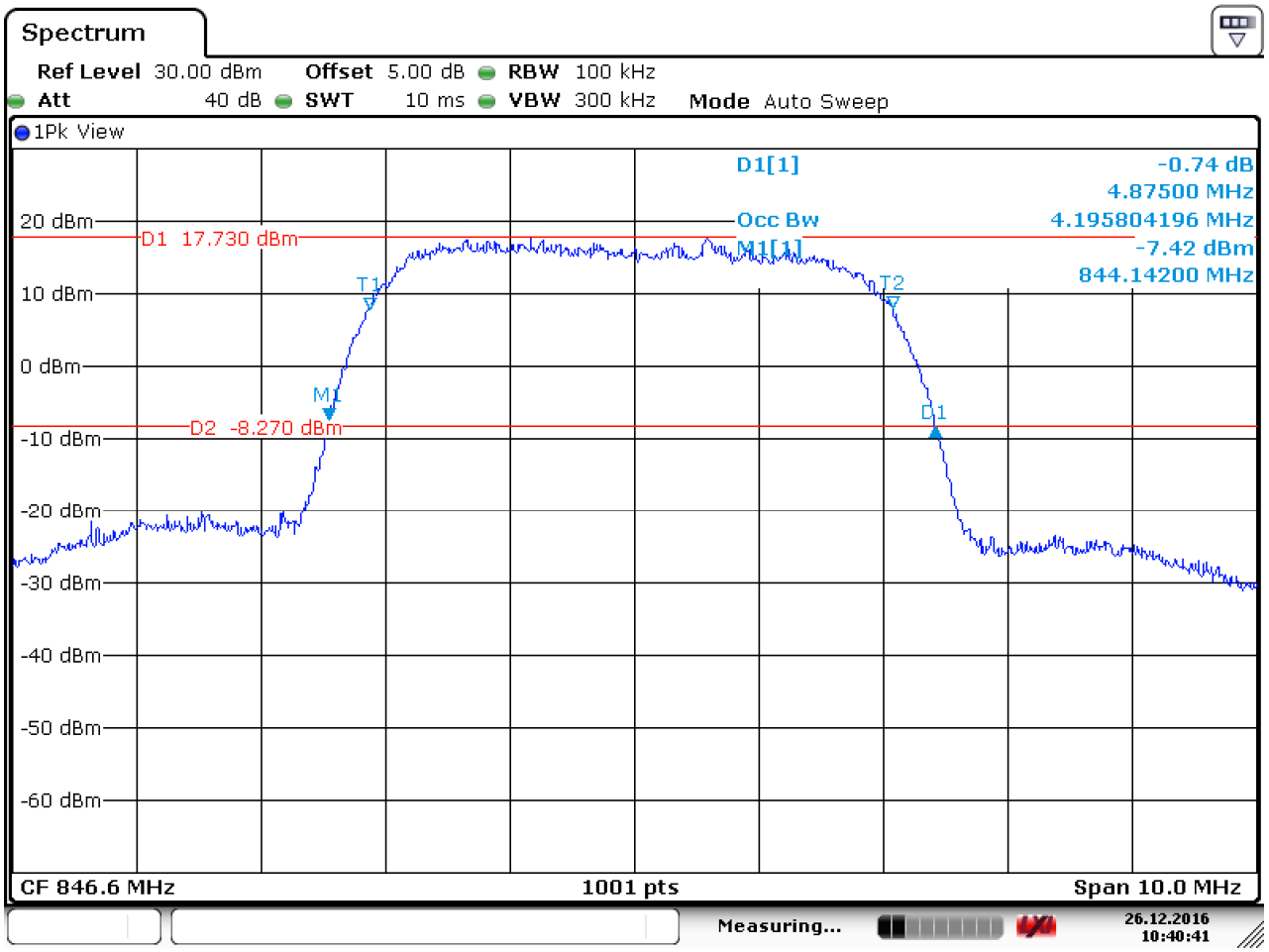
Date: 26.DEC.2016 10:43:20

4.1.1.2.2 Test Channel = MCH



Date: 26.DEC.2016 10:41:59

4.1.1.2.3 Test Channel = HCH



Date: 26.DEC.2016 10:40:42

5 Band Edges Compliance

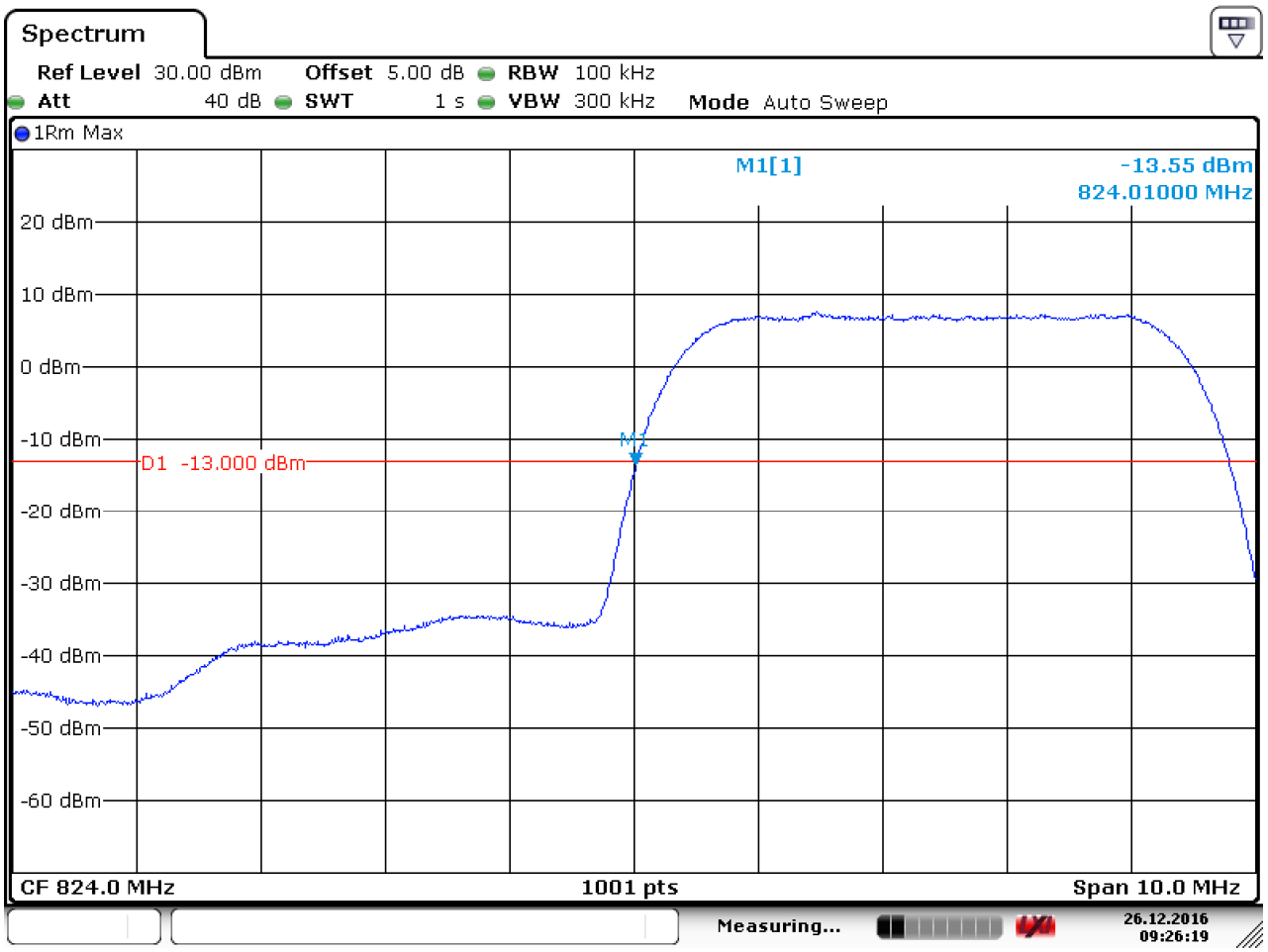
Part I - Test Plots

5.1 For WCDMA

5.1.1 Test Band = WCDMA 850

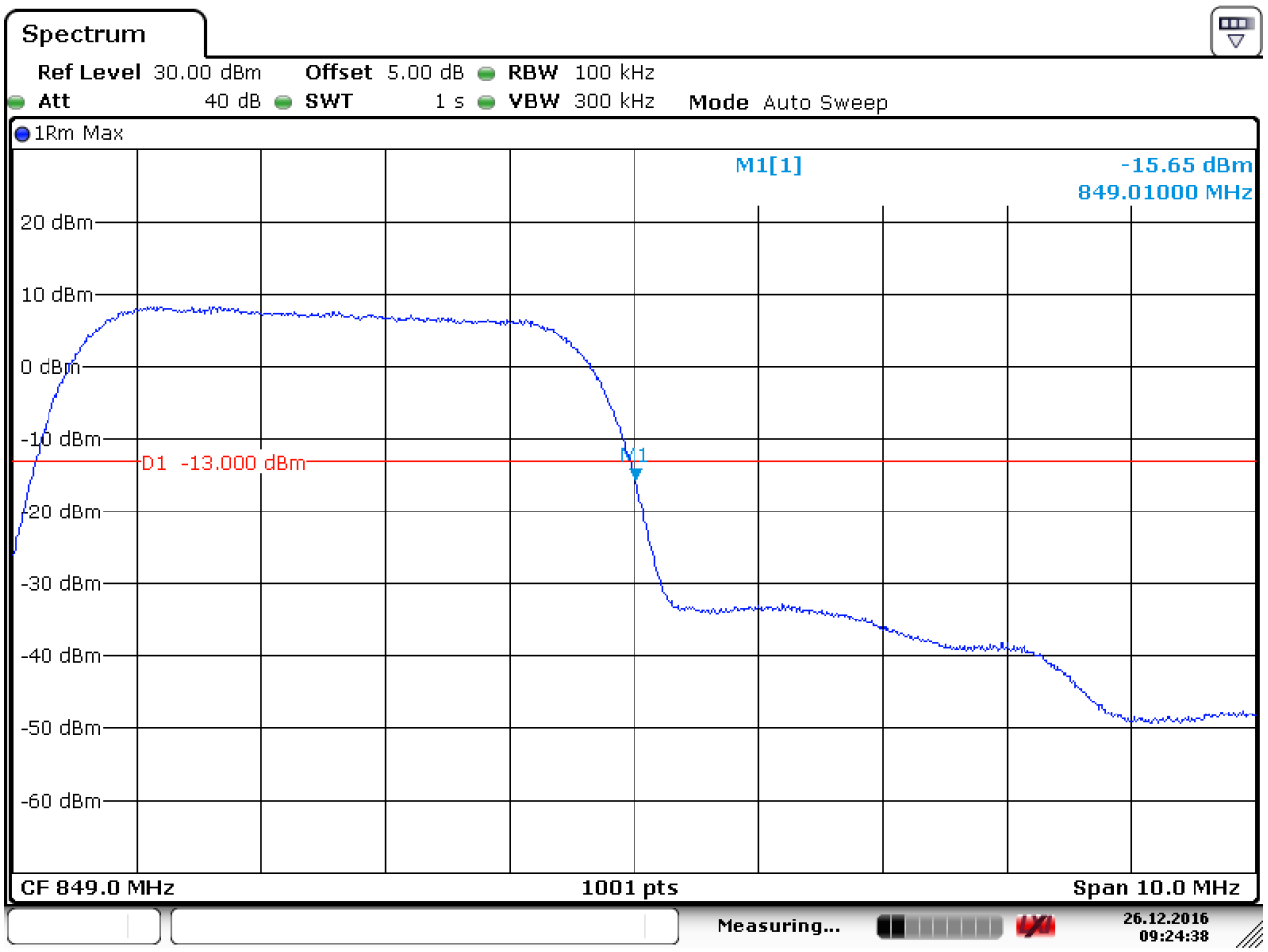
5.1.1.1 Test Mode = UMTS/TM1

5.1.1.1.1 Test Channel = LCH



Date: 26.DEC.2016 09:26:20

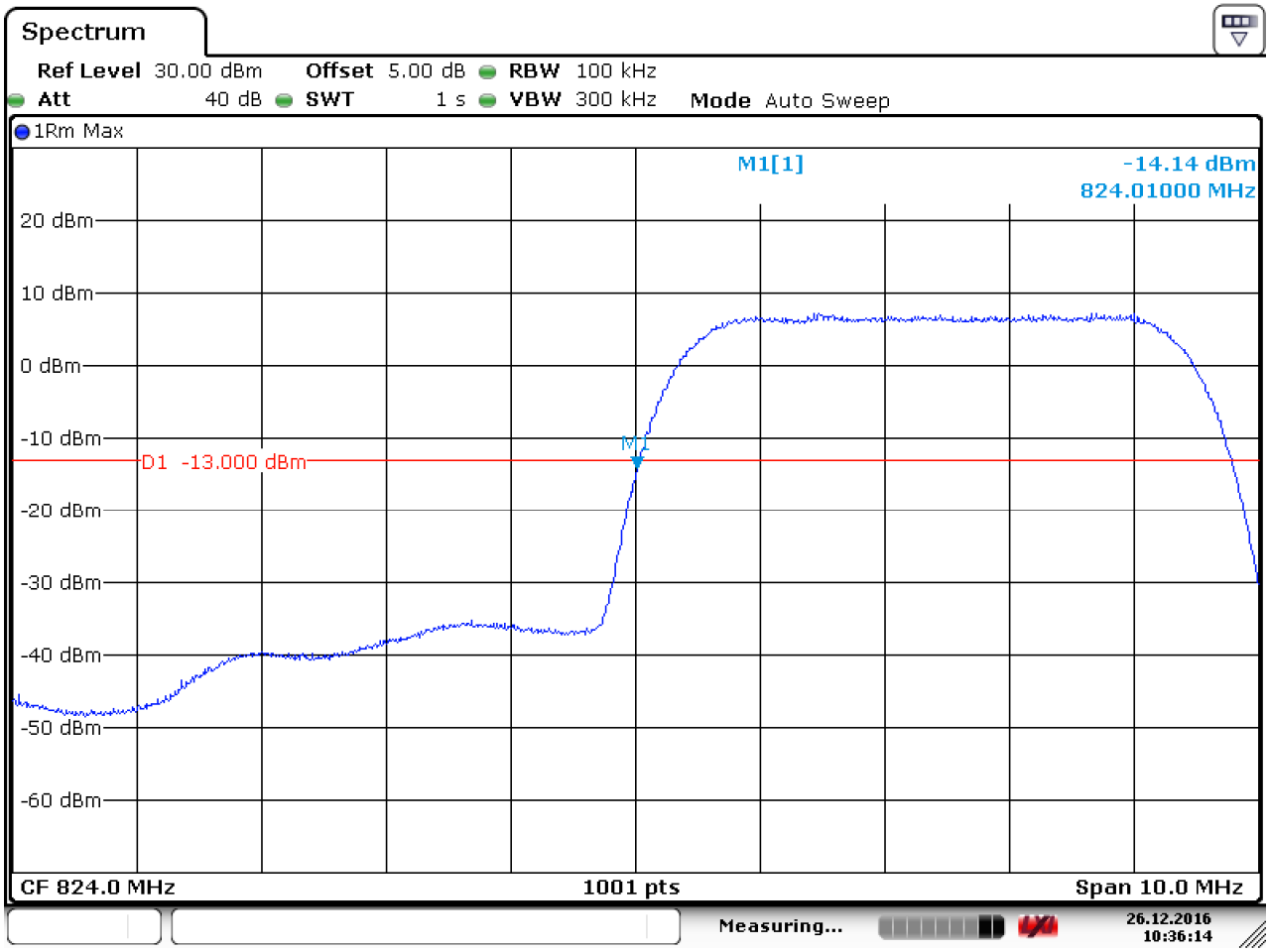
5.1.1.1.2 Test Channel = HCH



Date: 26.DEC.2016 09:24:39

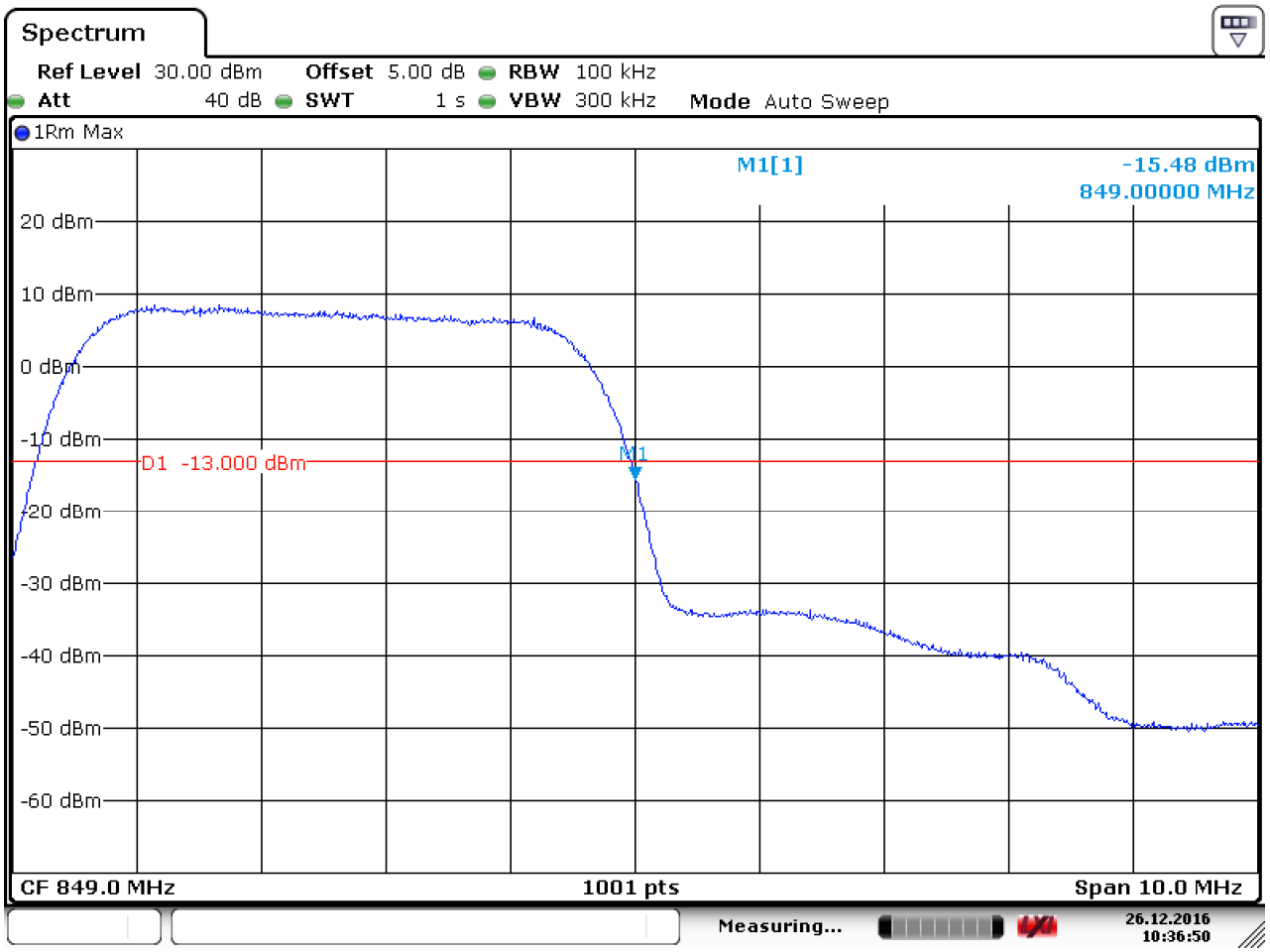
5.1.1.2 Test Mode = UMTS/TM2

5.1.1.2.1 Test Channel = LCH



Date: 26.DEC.2016 10:36:15

5.1.1.2.2 Test Channel = HCH



Date: 26.DEC.2016 10:36:50

6 Spurious Emission at Antenna Terminal

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

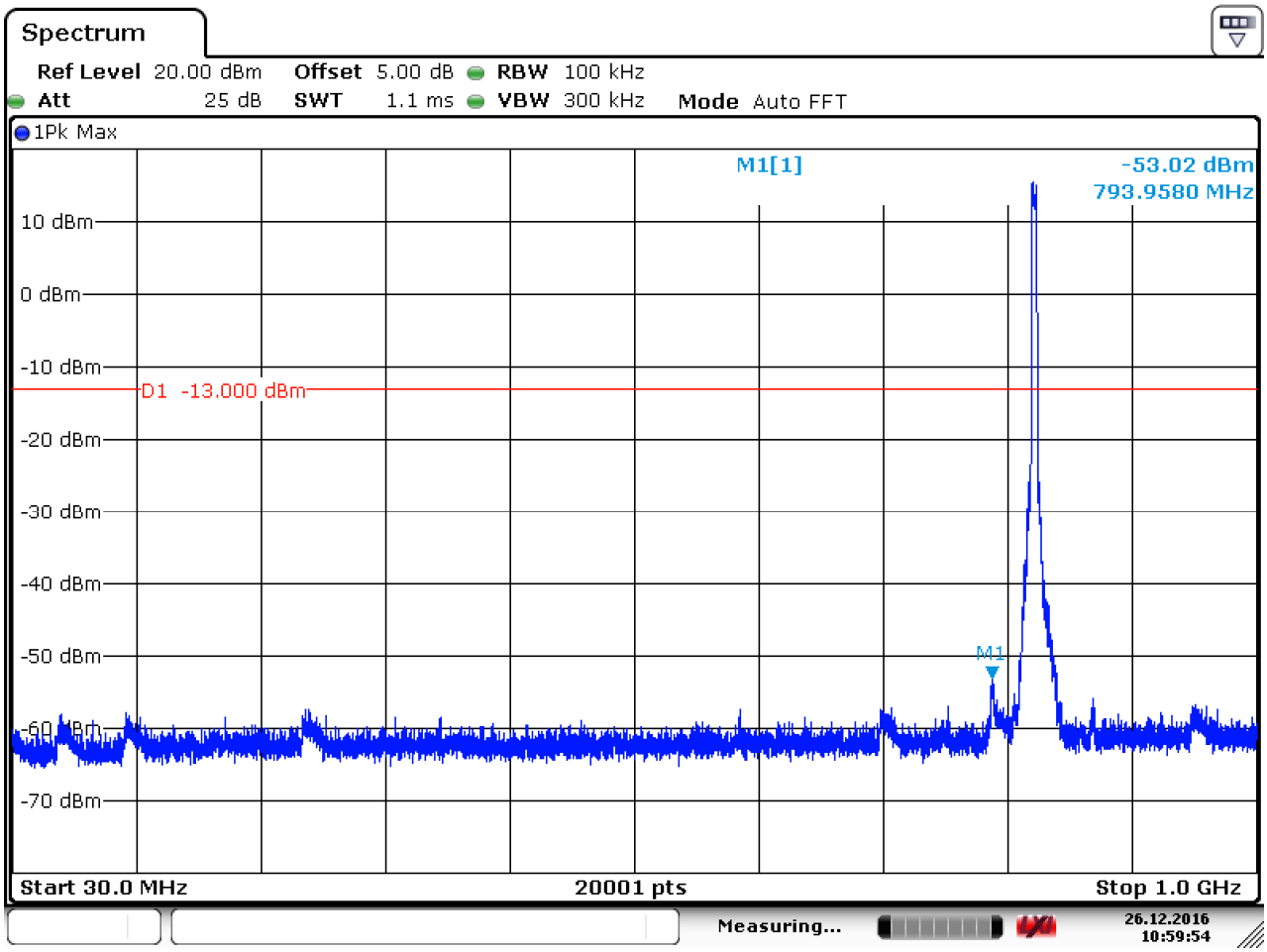
Part I - Test Plots

6.1 For WCDMA

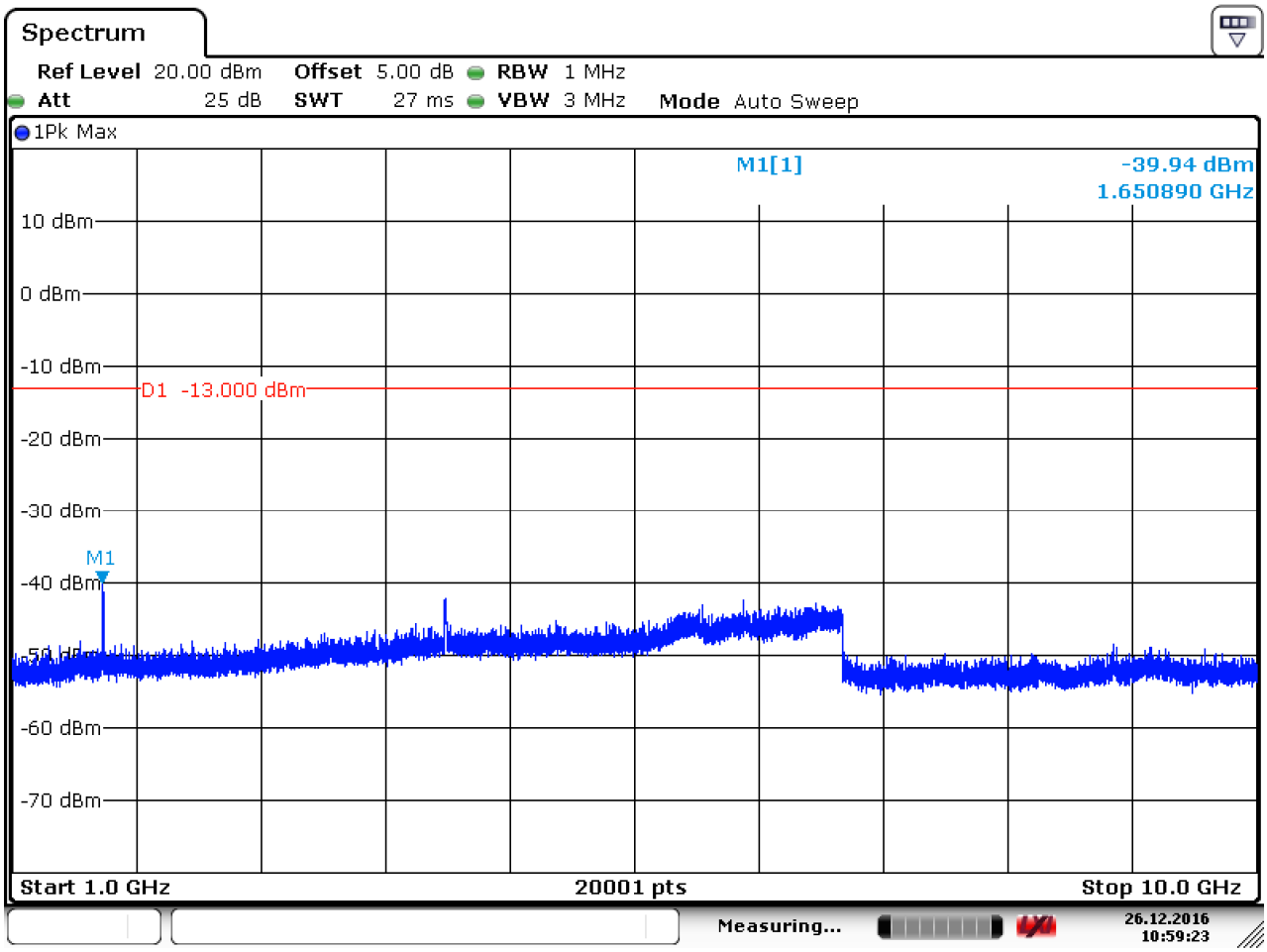
6.1.1 Test Band = WCDMA 850

6.1.1.1 Test Mode = UMTS/TM1

6.1.1.1.1 Test Channel = LCH

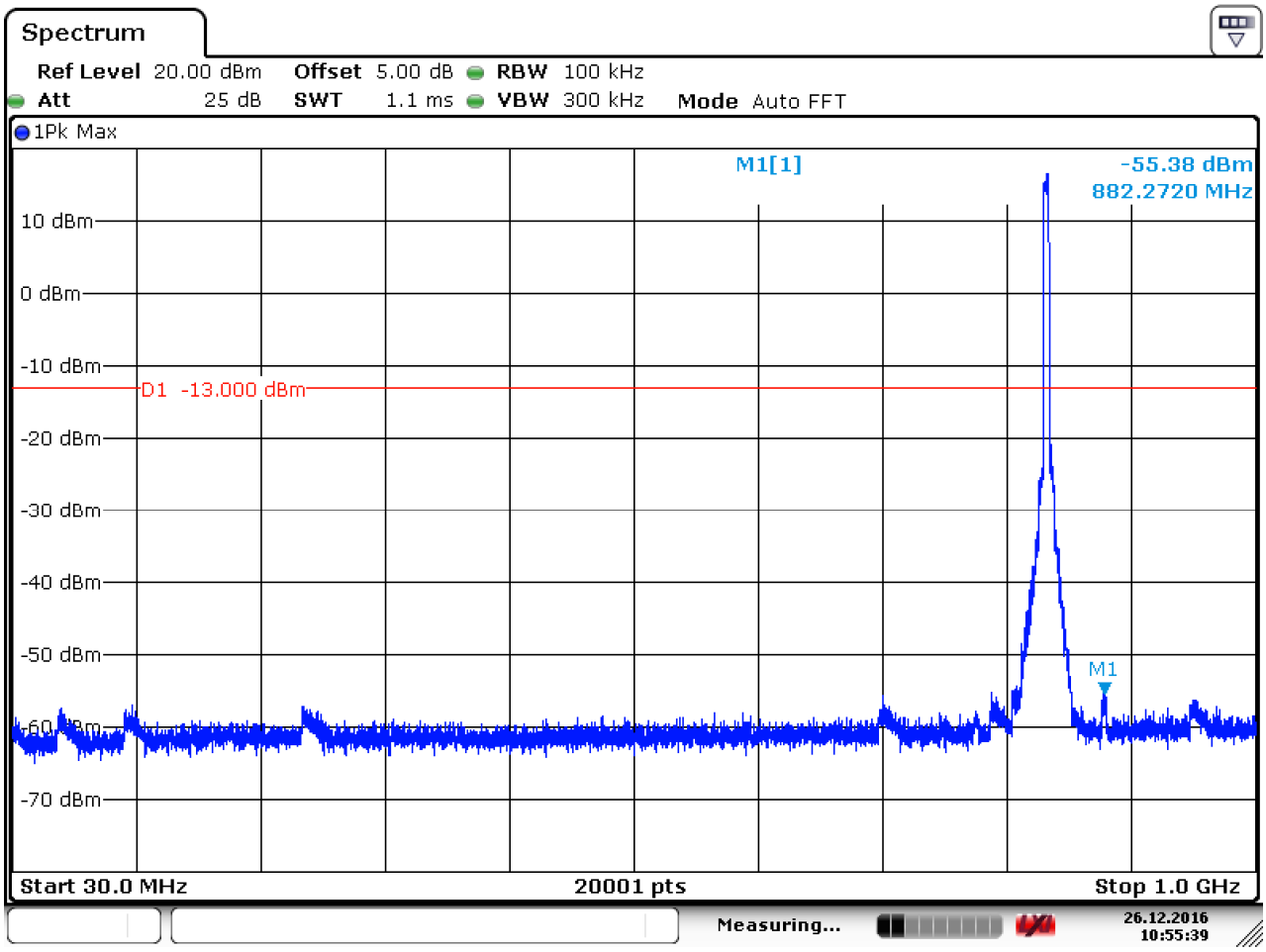


Date: 26.DEC.2016 10:59:55

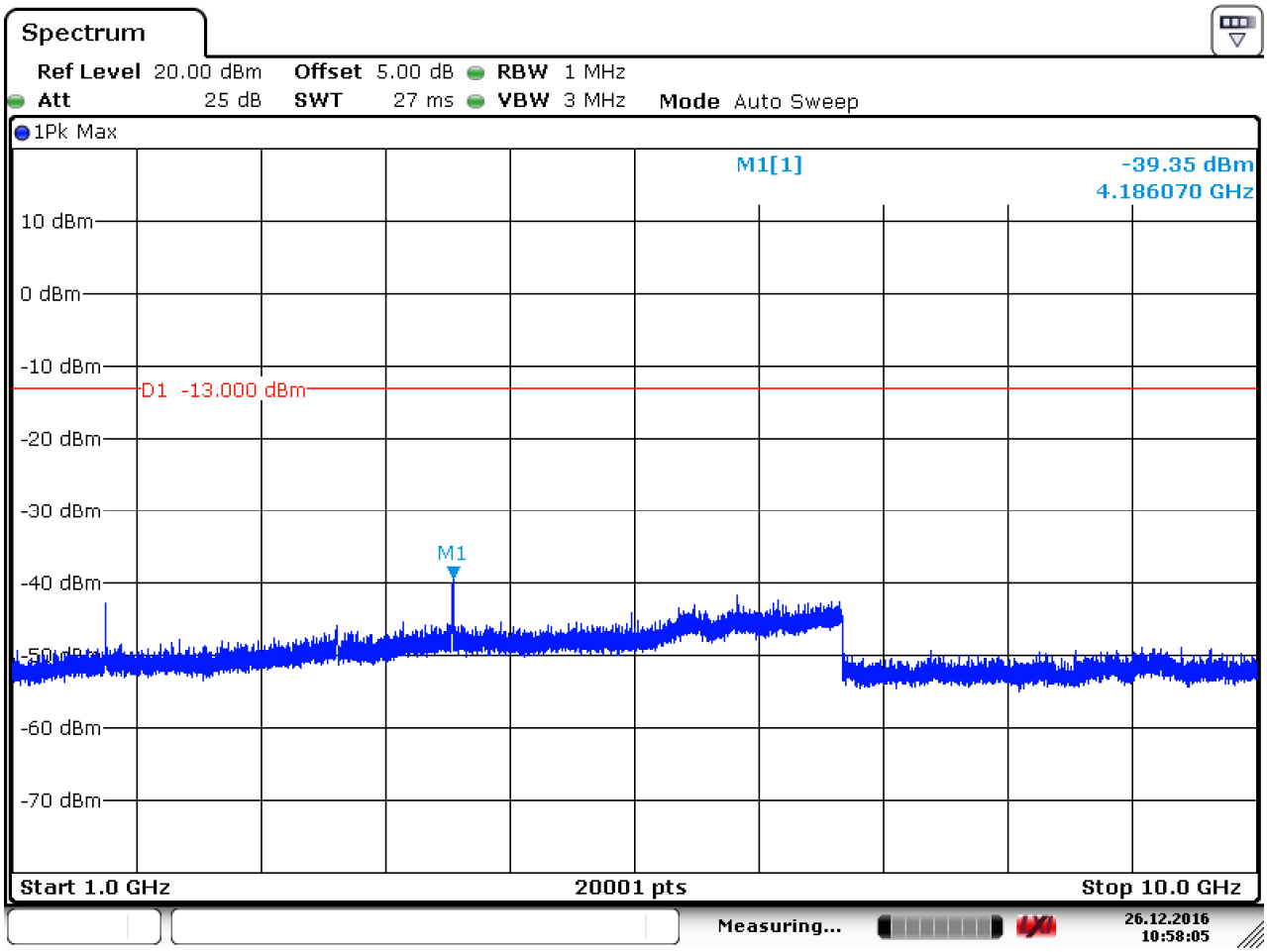


Date: 26.DEC.2016 10:59:23

6.1.1.1.2 Test Channel = MCH

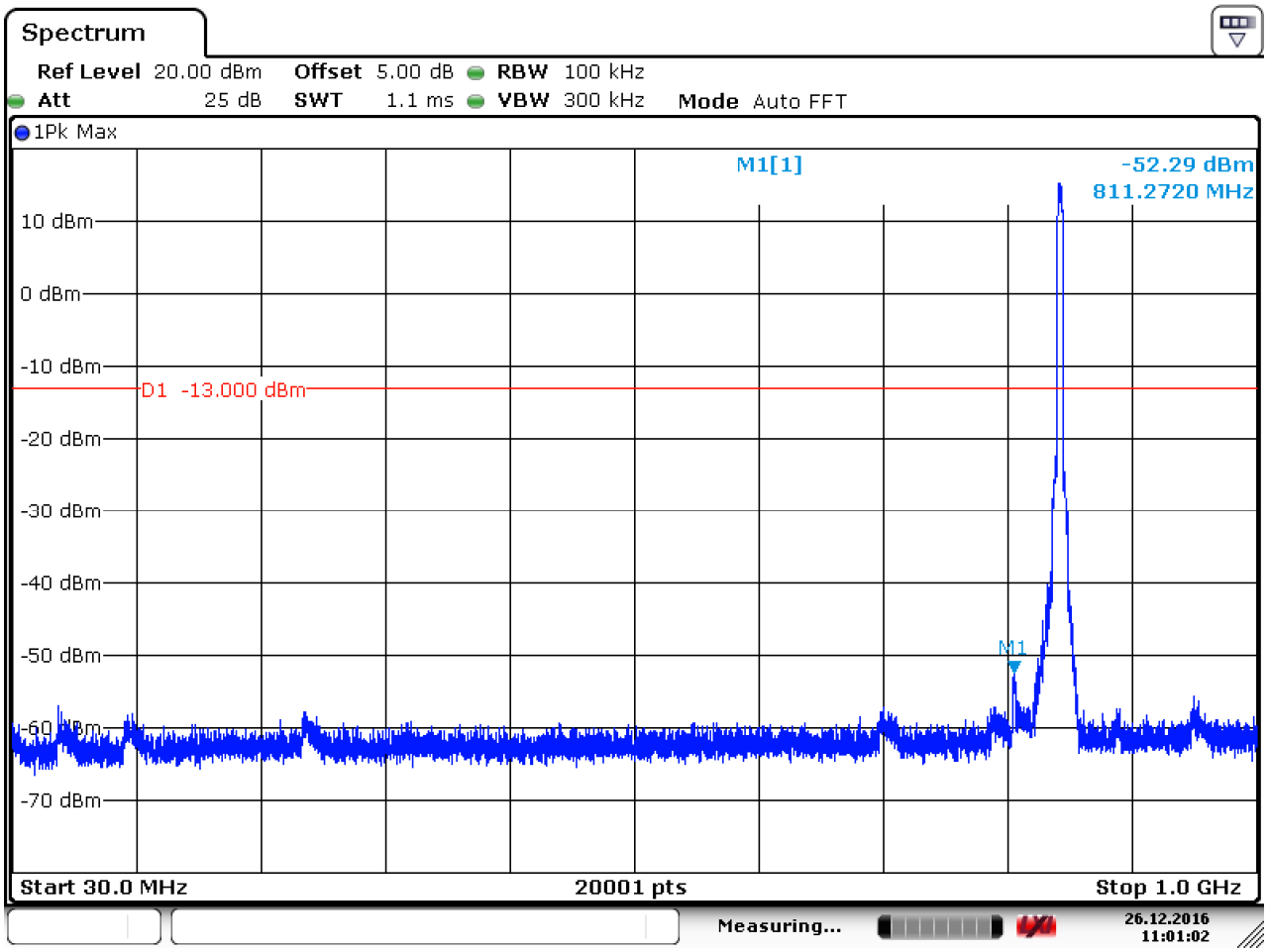


Date: 26.DEC.2016 10:55:40

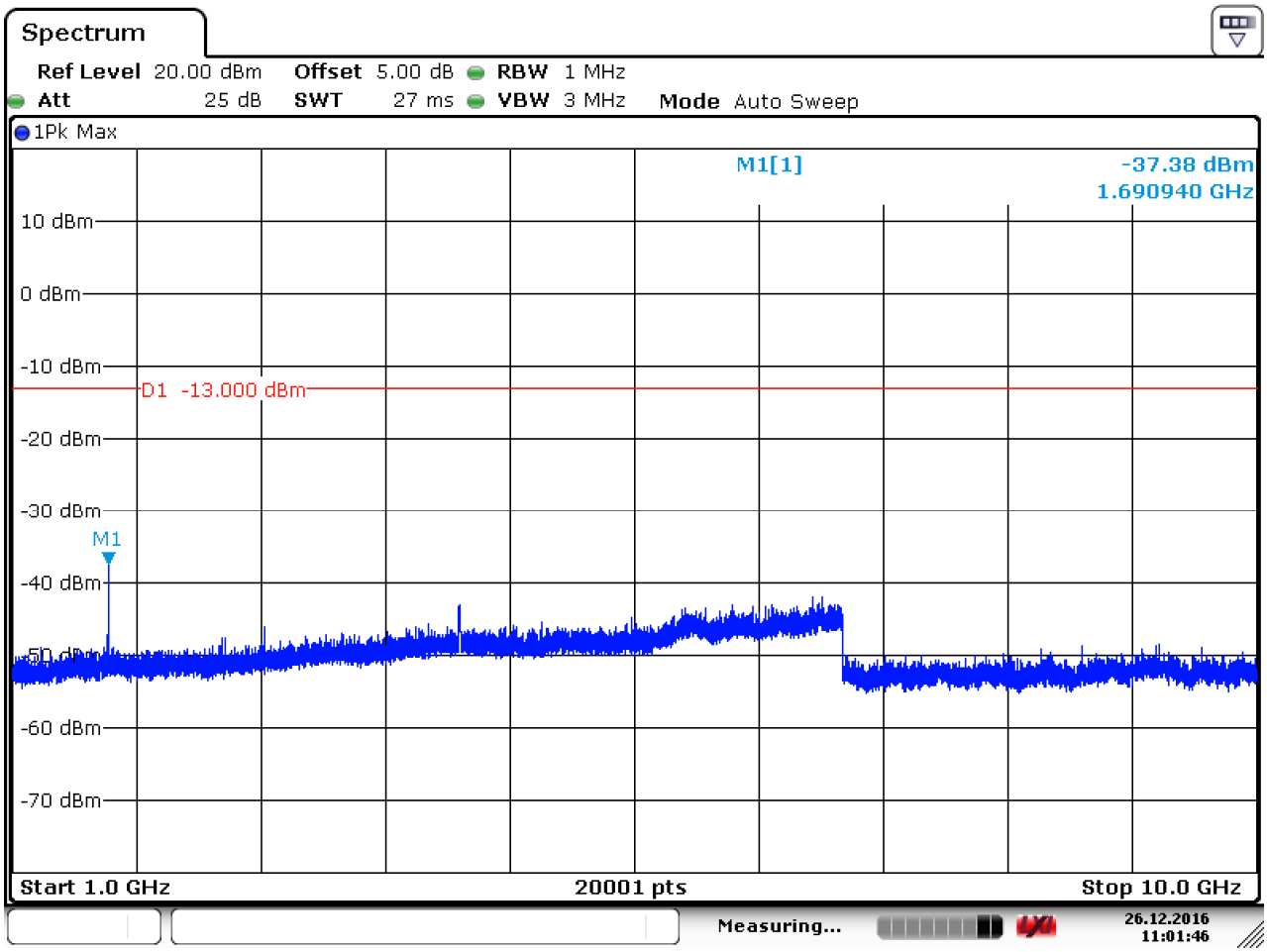


Date: 26.DEC.2016 10:58:06

6.1.1.1.3 Test Channel = HCH



Date: 26.DEC.2016 11:01:02



Date: 26.DEC.2016 11:01:46

7 Field Strength of Spurious Radiation

Part I - Test Plots

7.1 For WCDMA

7.1.1 Test Band = WCDMAband 850

7.1.1.1.1 Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1442.500	-61.94	-13.00	48.94	Vertical
2632.500	-57.74	-13.00	44.74	Vertical
5910.375	-66.61	-13.00	53.61	Vertical
1498.500	-66.09	-13.00	53.09	Horizontal
2456.000	-56.52	-13.00	43.52	Horizontal
5051.888	-66.87	-13.00	53.87	Horizontal

7.1.1.1.2 Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1675.000	-61.47	-13.00	48.47	Vertical
6558.263	-65.78	-13.00	52.78	Vertical
11899.313	-64.18	-13.00	51.18	Vertical
1675.000	-57.49	-13.00	44.49	Horizontal
5991.788	-66.33	-13.00	53.33	Horizontal
10644.975	-64.16	-13.00	51.16	Horizontal

7.1.1.1.3 Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1691.500	-60.76	-13.00	47.76	Vertical
6044.925	-66.07	-13.00	53.07	Vertical
10646.925	-63.94	-13.00	50.94	Vertical
1691.500	-56.95	-13.00	43.95	Horizontal
6208.725	-66.07	-13.00	53.07	Horizontal
10649.850	-63.93	-13.00	50.93	Horizontal

NOTE:

1) All modes are tested,but the data presented above is the worst case.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.

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 850	UMTS/TM1	LCH	TN	VL	-3.44	-0.00416	PASS
				VN	-0.50	-0.00061	PASS
				VH	2.34	0.00283	PASS
		MCH	TN	VL	-3.60	-0.00430	PASS
				VN	0.33	0.00039	PASS
				VH	-2.27	-0.00271	PASS
		HCH	TN	VL	1.83	0.00216	PASS
				VN	-4.89	-0.00578	PASS
				VH	2.78	0.00328	PASS
	UMTS/TM2	LCH	TN	VL	-4.02	-0.00486	PASS
				VN	-5.90	-0.00714	PASS
				VH	-4.22	-0.00511	PASS
		MCH	TN	VL	-5.19	-0.00620	PASS
				VN	-5.00	-0.00598	PASS
				VH	-5.99	-0.00716	PASS
		HCH	TN	VL	2.67	0.00315	PASS
				VN	-3.66	-0.00432	PASS
				VH	-4.72	-0.00558	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 850	UMTS/TM1	LCH	VN	-30	-3.90	-0.00472	PASS
				-20	1.61	0.00195	PASS
				-10	1.22	0.00148	PASS
				0	-4.30	-0.00520	PASS
				10	1.55	0.00188	PASS
				20	-3.01	-0.00364	PASS
				30	-5.00	-0.00605	PASS
				40	-1.39	-0.00168	PASS
				50	0.68	0.00082	PASS
		MCH	VN	-30	1.21	0.00145	PASS
				-20	-5.20	-0.00622	PASS
				-10	2.11	0.00252	PASS
				0	2.71	0.00324	PASS
				10	-0.10	-0.00012	PASS
				20	2.39	0.00286	PASS
				30	4.45	0.00532	PASS
				40	-2.90	-0.00347	PASS
				50	2.34	0.00280	PASS
		HCH	VN	-30	3.04	0.00359	PASS
				-20	-3.87	-0.00457	PASS
				-10	2.26	0.00267	PASS
				0	1.77	0.00209	PASS
				10	2.80	0.00331	PASS
				20	-3.19	-0.00377	PASS
				30	1.99	0.00235	PASS
				40	-2.40	-0.00283	PASS
				50	-5.02	-0.00593	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
WCDMA 850	UMTS/TM2	LCH	VN	-30	-3.10	-0.00375	PASS
				-20	1.69	0.00205	PASS
				-10	1.55	0.00188	PASS
				0	1.89	0.00229	PASS
				10	-3.22	-0.00390	PASS
				20	2.10	0.00254	PASS
				30	-1.77	-0.00214	PASS
				40	-3.73	-0.00451	PASS
				50	-6.03	-0.00730	PASS
		MCH	VN	-30	2.56	0.00306	PASS
				-20	-2.28	-0.00273	PASS
				-10	-3.82	-0.00457	PASS
				0	-2.22	-0.00265	PASS
				10	2.01	0.00240	PASS
				20	-3.12	-0.00373	PASS
				30	2.06	0.00246	PASS
				40	-3.59	-0.00429	PASS
				50	-4.23	-0.00506	PASS
		HCH	VN	-30	1.33	0.00157	PASS
				-20	-2.33	-0.00275	PASS
				-10	1.37	0.00162	PASS
				0	-3.32	-0.00392	PASS
				10	2.20	0.00260	PASS
				20	-1.11	-0.00131	PASS
				30	-3.83	-0.00452	PASS
				40	1.67	0.00197	PASS
				50	-2.59	-0.00306	PASS

The End