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Appendix B

Test Data for SZEM170300153901



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1 Effective (Isotropic) Radiated Power Output Data

Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dB]	EIRP[dB]	Limit[dBm]	Verdict
		LCH	22.68	23.88	33	PASS
WCDMA1900	UMTS/TM1	MCH	22.83	24.03	33	PASS
		HCH	22.79	23.99	33	PASS

Note:

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

EIRP [dBm] = SGP [dBm] - Cable Loss [dB] + Gain [dBi]

b: SGP=Signal Generator Level

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

Detector: RMS

Test Band	Test Mode	Test Channel	Measured[dB]	ERP[dB]	Limit[dBm]	Verdict
	UMTS/TM1	LCH	24.00	23.50	38.45	PASS
WCDMA850		MCH	23.88	23.38	38.45	PASS
		HCH	23.70	23.20	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



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2 Peak-to-Average Ratio

Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict		
		LCH	3.13	13	PASS		
WCDMA1900	UMTS/TM1	MCH	2.67	13	PASS		
		HCH	2.64	13	PASS		
	UMTS/TM1	LCH	3.19	13	PASS		
WCDMA850		MCH	3.10	13	PASS		
		HCH	3.48	13	PASS		



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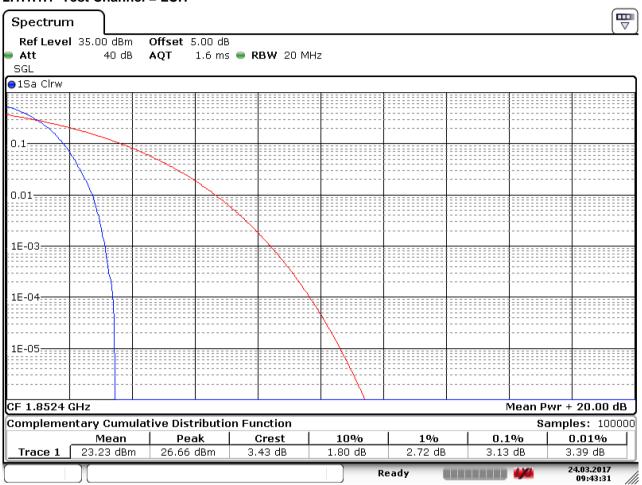
Part II - Test Plots

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



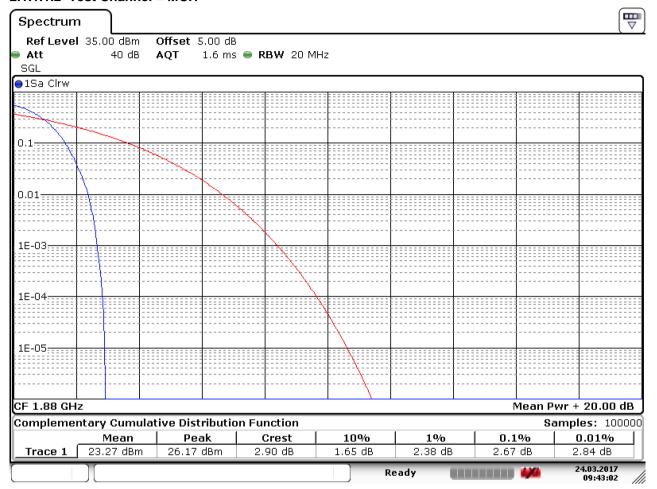
Date: 24.MAR.2017 09:43:32



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2.1.1.1.2 Test Channel = MCH



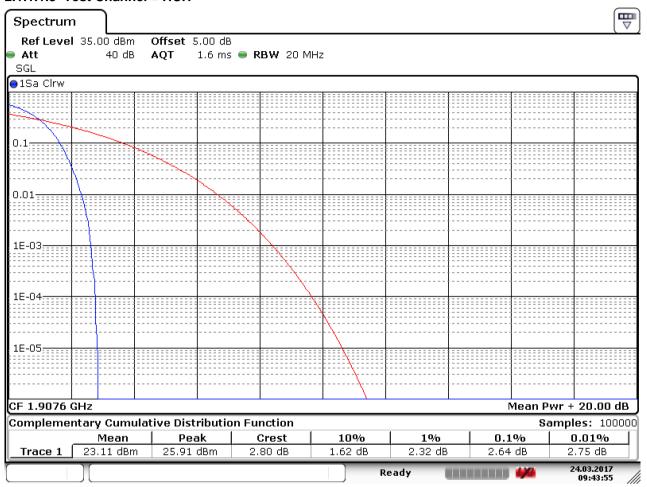
Date: 24.MAR.2017 09:43:02



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2.1.1.1.3 Test Channel = HCH



Date: 24.MAR.2017 09:43:55



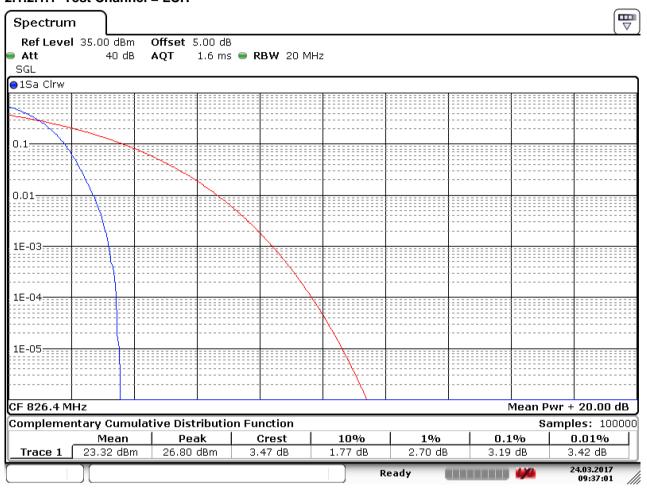
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2.1.2 Test Band = WCDMA 850

2.1.2.1 Test Mode = UMTS/TM1

2.1.2.1.1 Test Channel = LCH



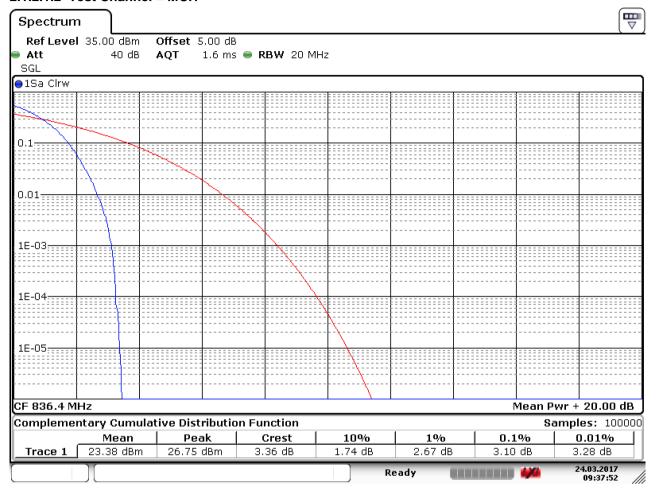
Date: 24.MAR.2017 09:37:01



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2.1.2.1.2 Test Channel = MCH



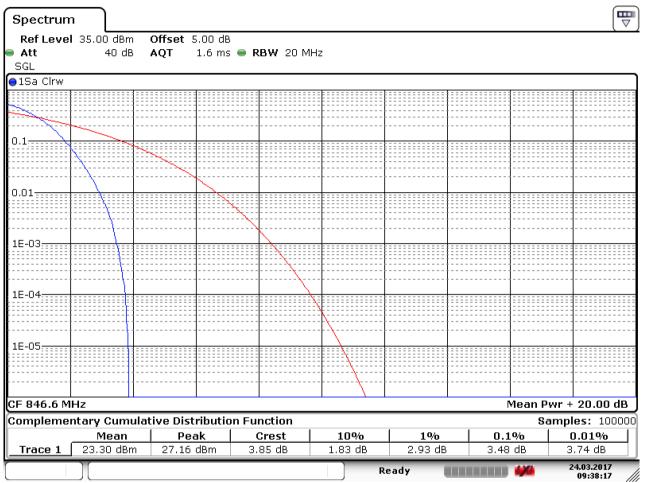
Date: 24.MAR.2017 09:37:52



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2.1.2.1.3 Test Channel = HCH



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3 Modulation Characteristics

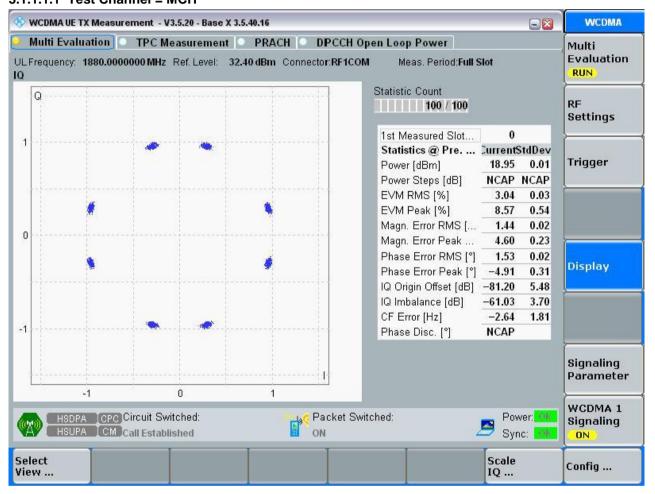
Part I - Test Plots

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





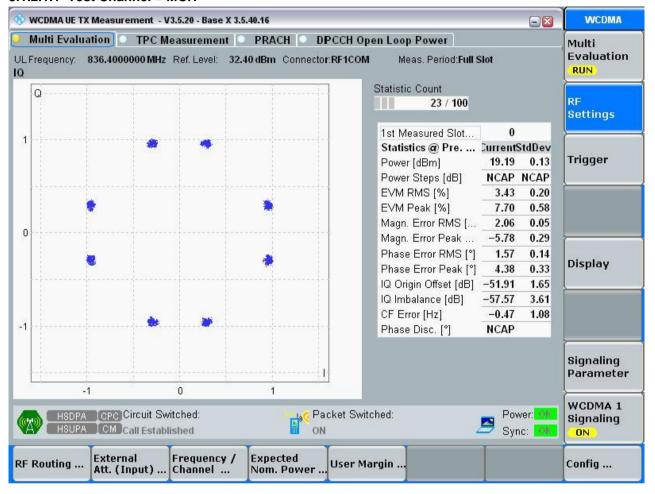
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3.1.2 Test Band = WCDMA 850

3.1.2.1 Test Mode = UMTS /TM1

3.1.2.1.1 Test Channel = MCH





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4 Bandwidth

Part I - Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
		LCH	4.13	4.71	PASS
WCDMA1900	UMTS/TM1	MCH	4.13	4.73	PASS
		HCH	4.14	4.73	PASS
	UMTS/TM1	LCH	4.13	4.71	PASS
WCDMA850		MCH	4.12	4.71	PASS
		HCH	4.12	4.71	PASS



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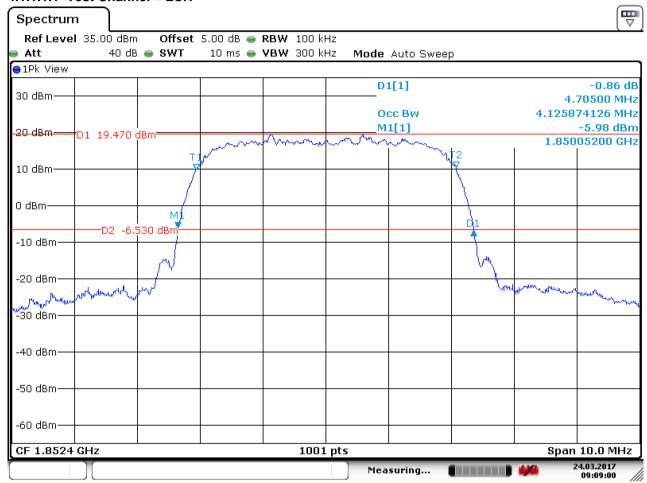
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4.1 For WCDMA

4.1.1 Test Band = WCDMA 1900

4.1.1.1 Test Mode = UMTS/TM1

4.1.1.1.1 Test Channel = LCH

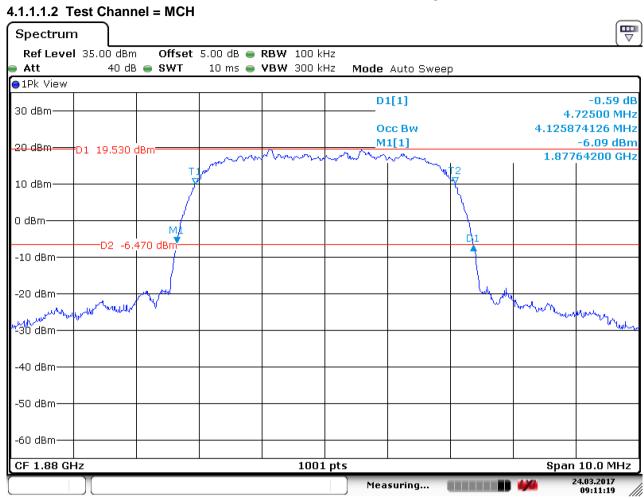


Date: 24.MAR.2017 09:09:00



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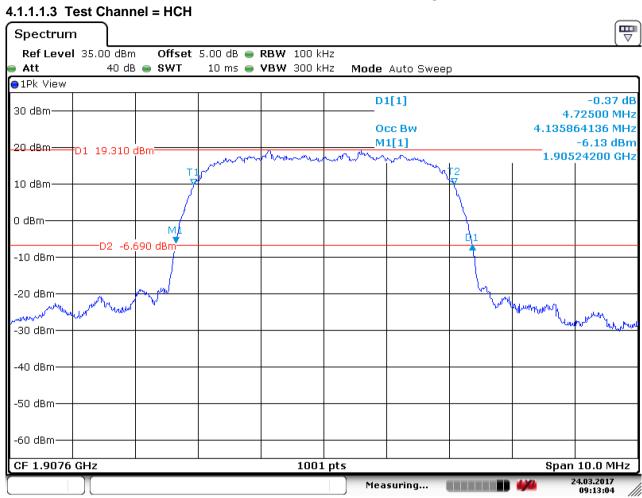


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Date: 24.MAR.2017 09:13:04



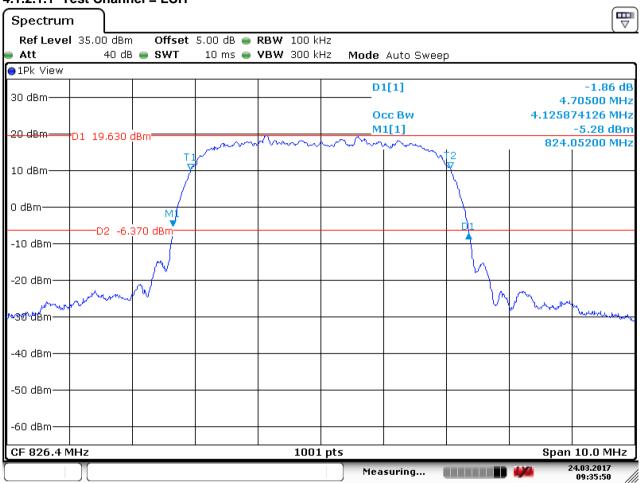
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4.1.2 Test Band = WCDMA 850

4.1.2.1 Test Mode = UMTS/TM1

4.1.2.1.1 Test Channel = LCH

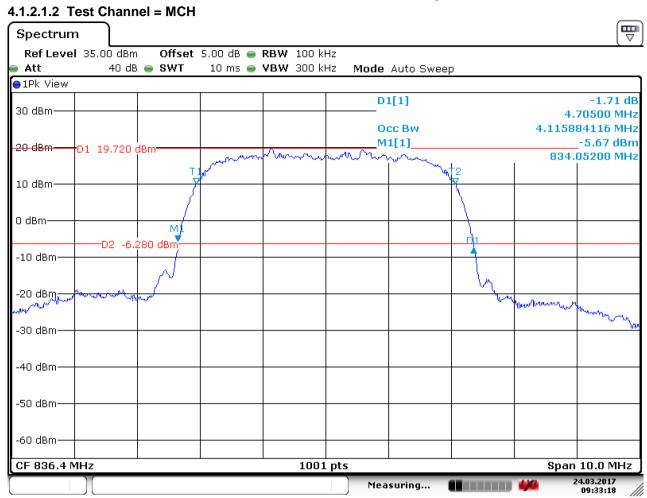


Date: 24.MAR.2017 09:35:50



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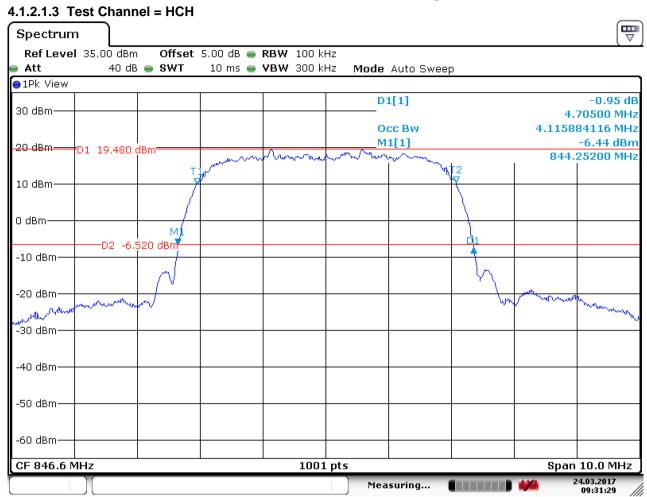


Date: 24.MAR.2017 09:33:18



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5 Band Edges Compliance

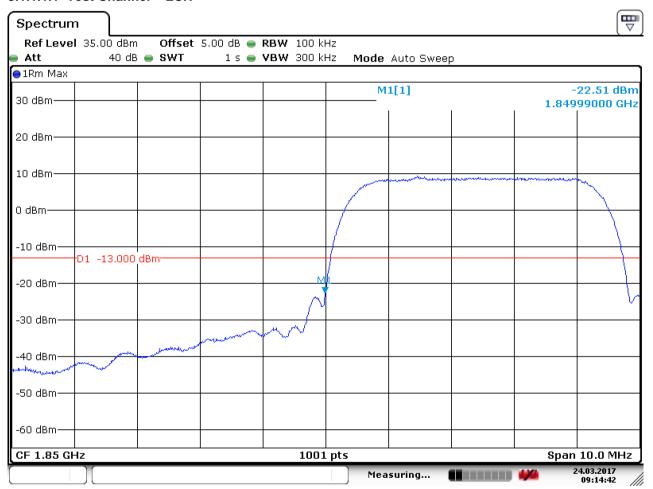
Part I - Test Plots

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



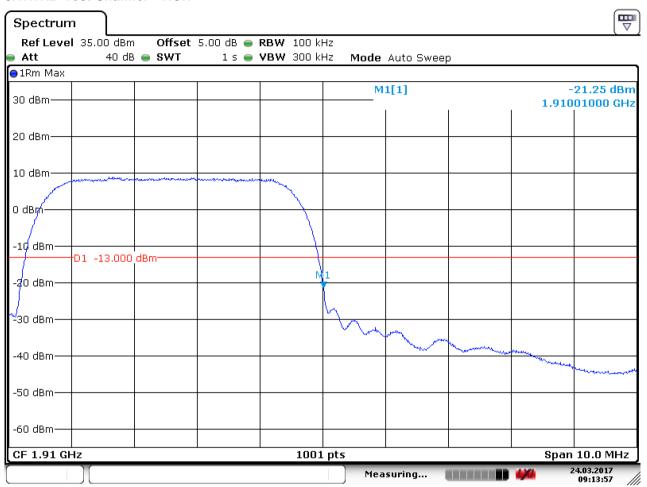
Date: 24.MAR.2017 09:14:42



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5.1.1.1.2 Test Channel = HCH



Date: 24.MAR.2017 09:13:57



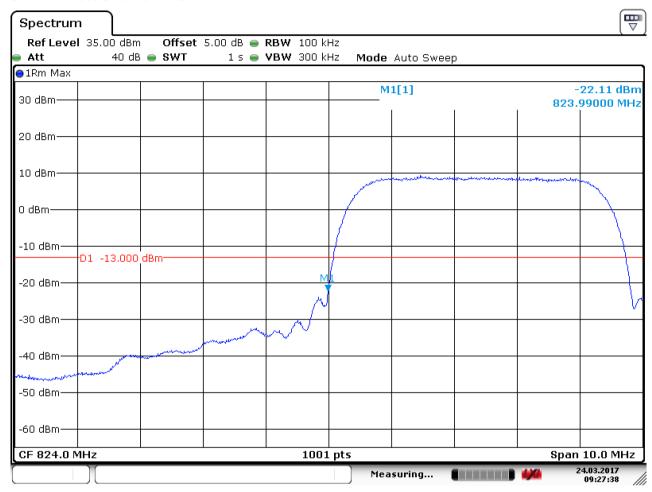
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5.1.2 Test Band = WCDMA 850

5.1.2.1 Test Mode = UMTS/TM1

5.1.2.1.1 Test Channel = LCH



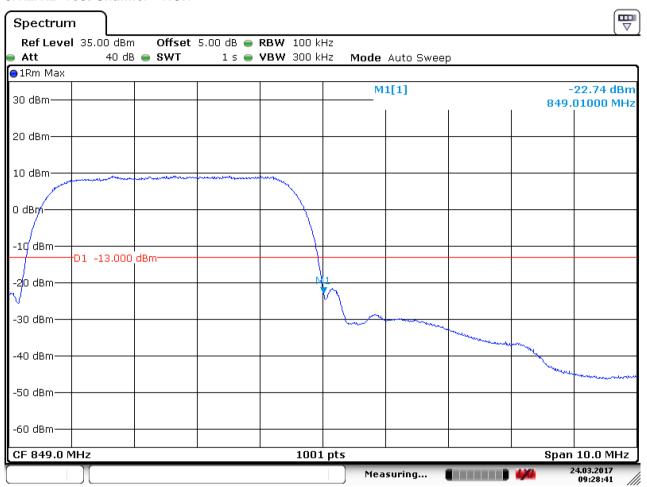
Date: 24.MAR.2017 09:27:39



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5.1.2.1.2 Test Channel = HCH



Date: 24.MAR.2017 09:28:42



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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.

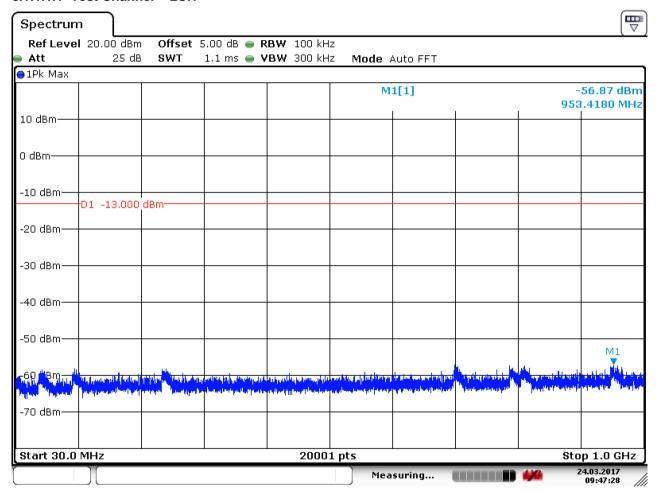
Part I - Test Plots

6.1 For WCDMA

6.1.1 Test Band = WCDMA 1900

6.1.1.1 Test Mode = UMTS/TM1

6.1.1.1.1 Test Channel = LCH

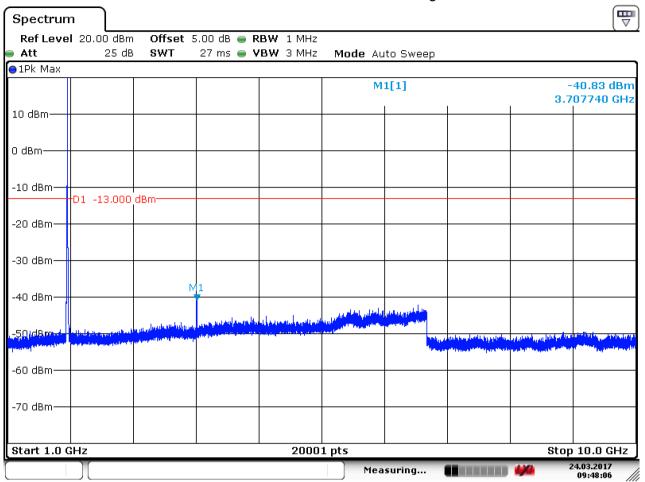


Date: 24.MAR.2017 09:47:28



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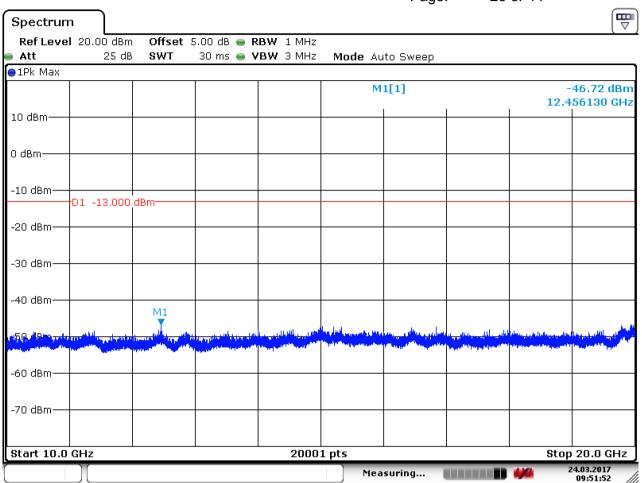


Date: 24.MAR.2017 09:48:06



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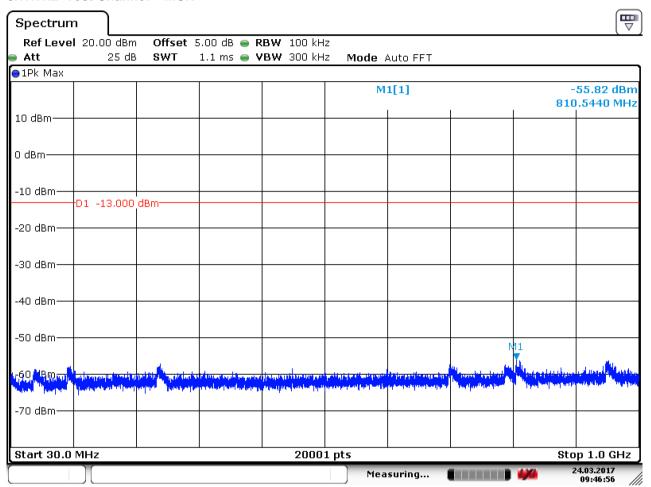
Date: 24.MAR.2017 09:51:53



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6.1.1.1.2 Test Channel = MCH

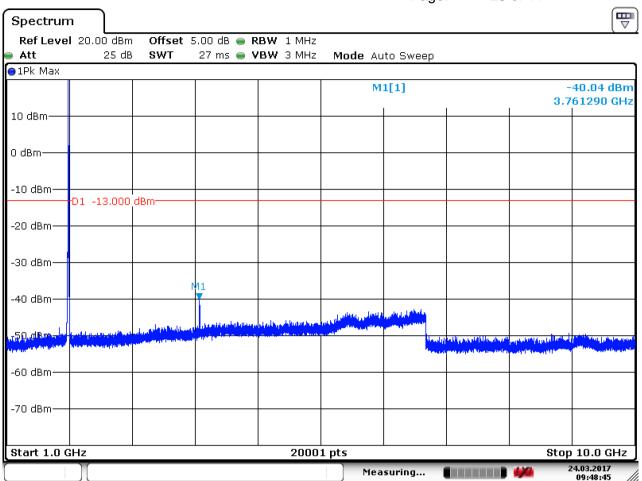


Date: 24.MAR.2017 09:46:57



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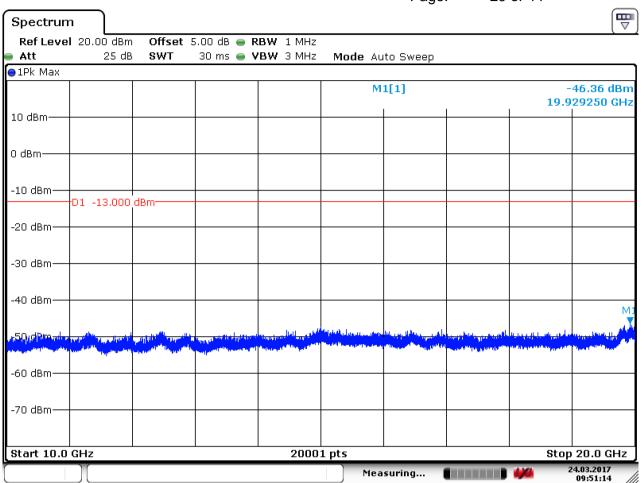


Date: 24.MAR.2017 09:48:45



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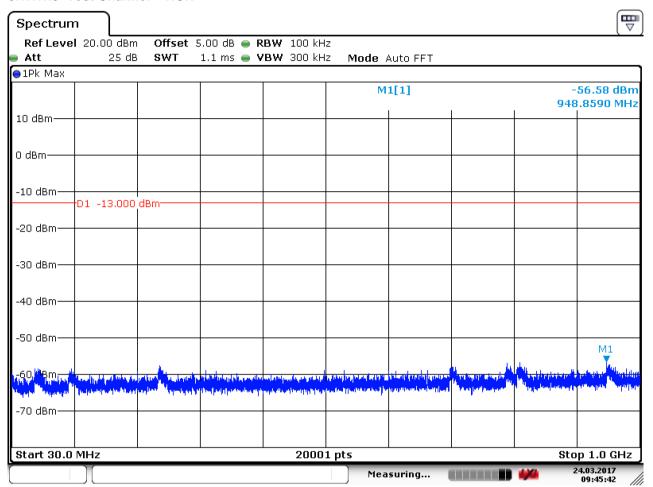
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6.1.1.1.3 Test Channel = HCH

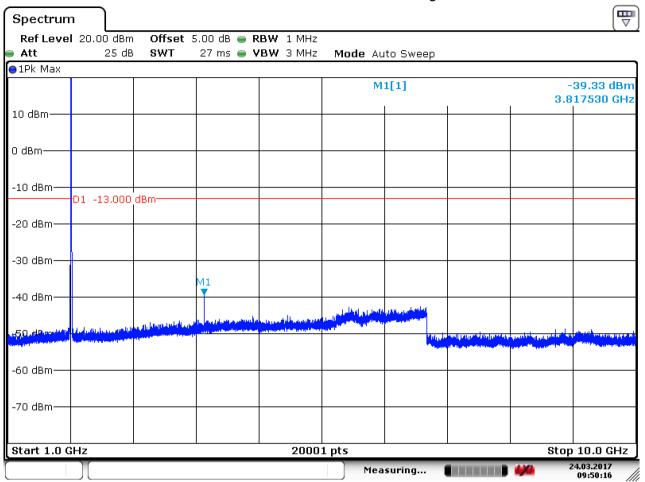


Date: 24.MAR.2017 09:45:42



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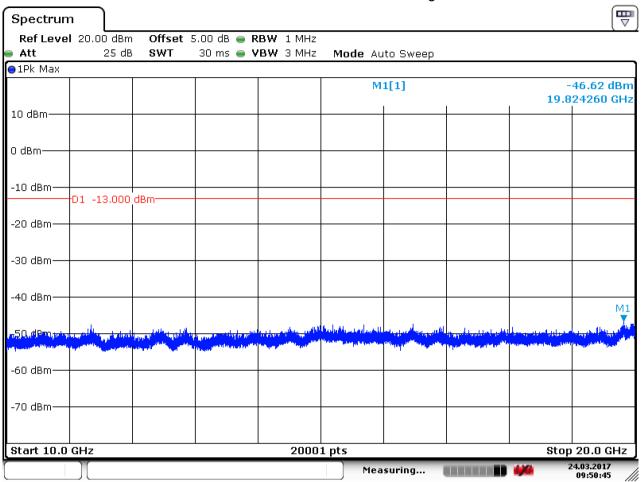


Date: 24.MAR.2017 09:50:16



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Date: 24.MAR.2017 09:50:46



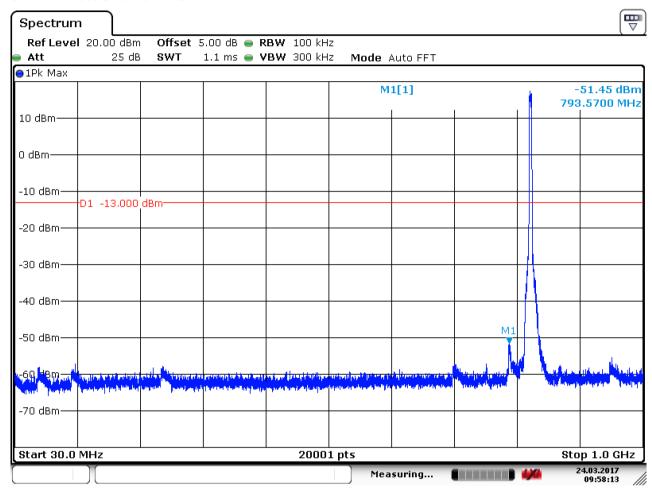
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6.1.2 Test Band = WCDMA 850

6.1.2.1 Test Mode = UMTS/TM1

6.1.2.1.1 Test Channel = LCH

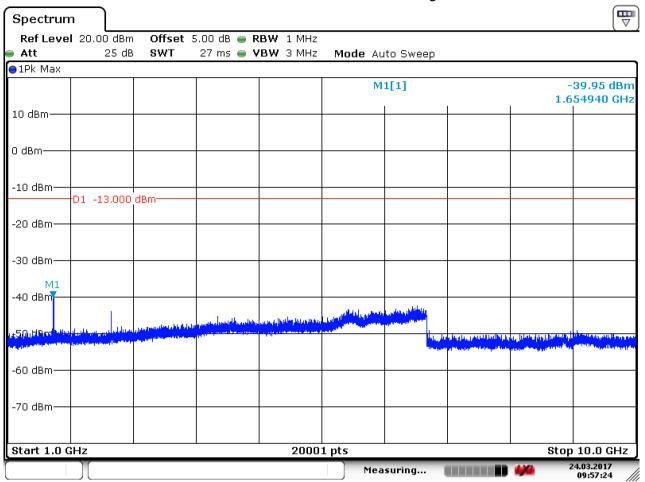


Date: 24.MAR.2017 09:58:13



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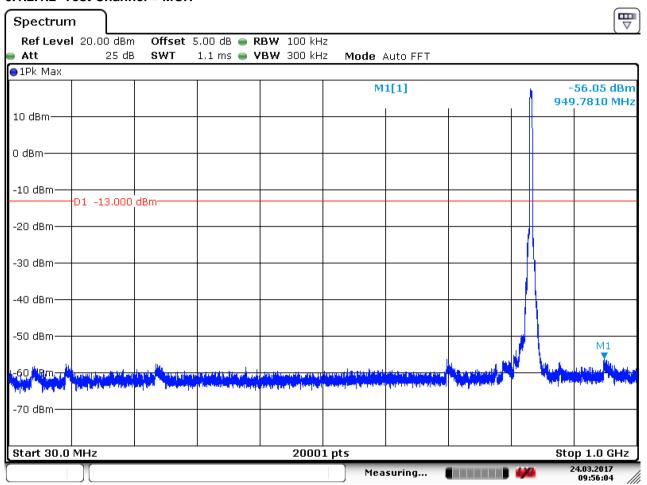
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6.1.2.1.2 Test Channel = MCH

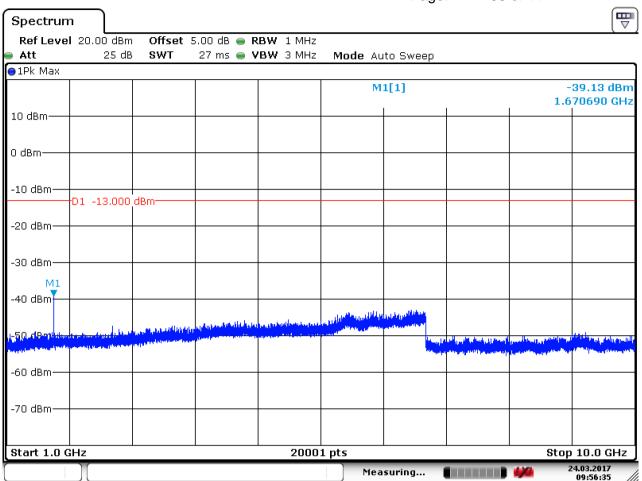


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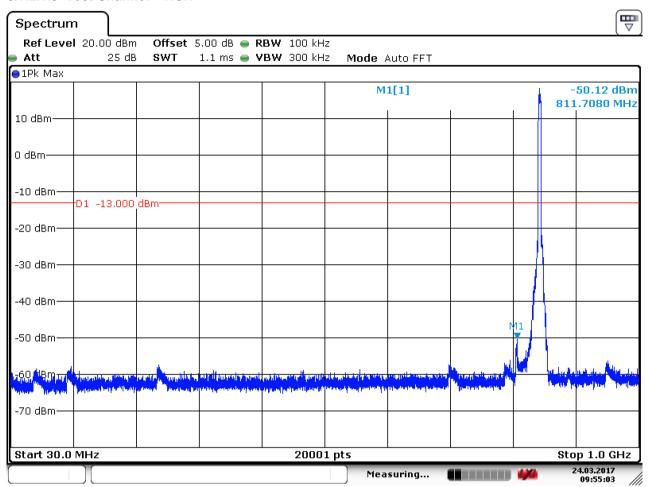
Date: 24.MAR.2017 09:56:35



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6.1.2.1.3 Test Channel = HCH

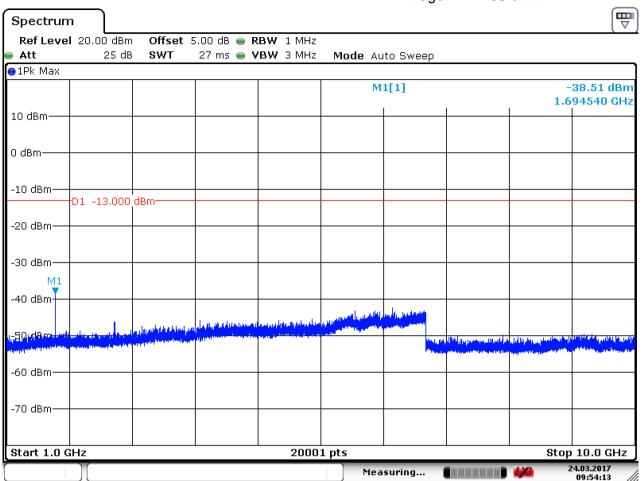


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7 Field Strength of Spurious Radiation

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
1255.500	-61.21	-13.00	-48.21	Vertical
3957.450	-68.33	-13.00	-55.33	Vertical
5077.237	-67.42	-13.00	-54.42	Vertical
1456.000	-60.77	-13.00	-47.77	Horizontal
4338.187	-67.41	-13.00	-54.41	Horizontal
6642.600	-66.11	-13.00	-53.11	Horizontal

7.1.1.1.2 Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1291.0000	-61.50	-13.00	-48.50	Vertical
2583.500	-57.74	-13.00	-44.74	Vertical
4401.562	-68.07	-13.00	-55.07	Vertical
1398.500	-62.14	-13.00	-49.14	Horizontal
2463.500	-58.41	-13.00	-45.41	Horizontal
4462.987	-68.06	-13.00	-55.06	Horizontal

7.1.1.1.3 Test Channel = HCH

7.1.1.1.5 Test Chamber = 11CH							
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization			
1511.000	-61.43	-13.00	-48.43	Vertical			
2681.500	-56.99	-13.00	-43.99	Vertical			
5125.500	-67.39	-13.00	-54.39	Vertical			
1465.500	-60.56	-13.00	-47.56	Horizontal			
2682.000	-57.14	-13.00	-44.14	Horizontal			
3433.387	-69.62	-13.00	-56.62	Horizontal			



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7.1.2 Test Band = WCDMAband 850

7.1.2.1 Test Mode = UMTS/TM1

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1235.500	-61.32	-13.00	-48.32	Vertical
1641.500	-59.78	-13.00	-46.78	Vertical
2701.500	-57.09	-13.00	-44.09	Vertical
1365.500	-62.42	-13.00	-49.42	Horizontal
2396.500	-58.40	-13.00	-45.40	Horizontal
4675.537	-68.14	-13.00	-55.14	Horizontal

7.1.2.1.1 Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1706.500	-58.71	-13.00	-45.71	Vertical
2651.500	-57.15	-13.00	-44.15	Vertical
5911.350	-66.68	-13.00	-53.68	Vertical
1454.500	-60.87	-13.00	-47.87	Horizontal
2682.000	-57.16	-13.00	-44.16	Horizontal
4724.775	-67.75	-13.00	-54.75	Horizontal

7.1.2.1.2 Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1525.000	-61.13	-13.00	-48.13	Vertical
3992.550	-68.32	-13.00	-55.32	Vertical
5124.525	-67.43	-13.00	-54.43	Vertical
1645.500	-59.66	-13.00	-46.66	Horizontal
2801.000	-56.54	-13.00	-43.54	Horizontal
5031.412	-67.05	-13.00	-54.05	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.



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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
				VL	2.68	0.00145	PASS
		LCH	TN	VN	-0.38	-0.00021	PASS
				VH	4.02	0.00217	PASS
WCDMA	UMTS/TM1	MCH	TN	VL	1.83	0.00097	PASS
1900				VN	0.75	0.00040	PASS
				VH	-4.37	-0.00232	PASS
		НСН		VL	1.77	0.00093	PASS
			TN	VN	-2.64	-0.00138	PASS
				VH	-4.84	-0.00254	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	-3.38	-0.00409	PASS
				VN	-0.58	-0.00070	PASS
				VH	2.32	0.00281	PASS
		MCH	TN	VL	-4.84	-0.00579	PASS
				VN	0.37	0.00044	PASS
				VH	-3.45	-0.00412	PASS
		НСН	TN	VL	1.66	0.00196	PASS
				VN	-4.31	-0.00509	PASS
				VH	2.90	0.00343	PASS



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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	-4.43	-0.00239	PASS
				-20	1.60	0.00086	PASS
				-10	2.87	0.00155	PASS
				0	-2.68	-0.00145	PASS
				10	0.56	0.00030	PASS
				20	-4.40	-0.00238	PASS
				30	1.62	0.00087	PASS
				40	-2.04	-0.00110	PASS
				50	-6.01	-0.00324	PASS
		МСН	VN	-30	-3.70	-0.00197	PASS
				-20	-5.18	-0.00276	PASS
				-10	-0.79	-0.00042	PASS
				0	-3.58	-0.00190	PASS
				10	1.34	0.00071	PASS
				20	2.72	0.00145	PASS
				30	1.51	0.00080	PASS
				40	2.43	0.00129	PASS
				50	-4.35	-0.00231	PASS
		нсн	VN	-30	-6.17	-0.00323	PASS
				-20	3.68	0.00193	PASS
				-10	2.45	0.00128	PASS
				0	-5.52	-0.00289	PASS
				10	1.87	0.00098	PASS
				20	-2.78	-0.00146	PASS
				30	3.77	0.00198	PASS
				40	-1.65	-0.00086	PASS
				50	-4.60	-0.00241	PASS



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		1 ago: 11 of 11					
Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
			VN	-30	-3.73	-0.00451	PASS
	UMTS/TM1	LCH		-20	-4.75	-0.00575	PASS
				-10	1.94	0.00235	PASS
				0	-3.45	-0.00417	PASS
				10	-2.58	-0.00312	PASS
				20	1.08	0.00131	PASS
WCDMA				30	-3.89	-0.00471	PASS
				40	-5.30	-0.00641	PASS
				50	-4.14	-0.00501	PASS
		МСН	VN	-30	-4.92	-0.00588	PASS
				-20	1.27	0.00152	PASS
				-10	-2.48	-0.00297	PASS
				0	4.34	0.00519	PASS
850				10	-3.75	-0.00448	PASS
850				20	-6.59	-0.00788	PASS
				30	-3.17	-0.00379	PASS
				40	-6.13	-0.00733	PASS
				50	-5.11	-0.00611	PASS
		нсн	VN	-30	-4.35	-0.00514	PASS
				-20	3.33	0.00393	PASS
				-10	1.85	0.00219	PASS
				0	-0.37	-0.00044	PASS
				10	-2.18	-0.00258	PASS
				20	-4.10	-0.00484	PASS
				30	1.31	0.00155	PASS
				40	-2.42	-0.00286	PASS
				50	-4.34	-0.00513	PASS

The End