



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

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Appendix B.2

GSM 1900



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1. Effective (Isotropic) Radiated Power Output Data

1.1 Test Result

ANT1

Band	Channel	Power(dBm)	EIRP(dBm)	Limit(dBm)	Verdict
GSM1900	512	27.56	29.49	33.00	PASS
GSM1900	661	27.42	29.35	33.00	PASS
GSM1900	810	27.52	29.45	33.00	PASS

Band	Channel	Slot	Power(dBm)	ERP(dBm)	Limit(dBm)	Verdict
EGPRS1900	512	1	25.99	27.92	33.00	PASS
EGPRS1900	512	2	25.83	27.76	33.00	PASS
EGPRS1900	512	3	25.69	27.62	33.00	PASS
EGPRS1900	512	4	24.58	26.51	33.00	PASS
EGPRS1900	661	1	25.99	27.92	33.00	PASS
EGPRS1900	661	2	25.93	27.86	33.00	PASS
EGPRS1900	661	3	25.82	27.75	33.00	PASS
EGPRS1900	661	4	24.78	26.71	33.00	PASS
EGPRS1900	810	1	26.22	28.15	33.00	PASS
EGPRS1900	810	2	26.14	28.07	33.00	PASS
EGPRS1900	810	3	26.02	27.95	33.00	PASS
EGPRS1900	810	4	24.70	26.63	33.00	PASS



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2. Frequency Stability

2.1 PCS1900

2.1.1 Test Result

Band: PCS1900							
Network	Frequency (MHz)	Temp. (°C)	Voltage (VDC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
					Result	Limit	
GSM	1850.2	20	3.8	-10.538	-0.0057	-2.5 to 2.5	Pass
			4.0	-6.639	-0.0036	-2.5 to 2.5	Pass
			4.2	-3.441	-0.0019	-2.5 to 2.5	Pass
		-30	4.0	-5.371	-0.0029	-2.5 to 2.5	Pass
		-20	4.0	-4.281	-0.0023	-2.5 to 2.5	Pass
		-10	4.0	-9.532	-0.0052	-2.5 to 2.5	Pass
		0	4.0	-1.447	-0.0008	-2.5 to 2.5	Pass
		10	4.0	-8.209	-0.0044	-2.5 to 2.5	Pass
		30	4.0	-2.211	-0.0012	-2.5 to 2.5	Pass
		40	4.0	-7.009	-0.0038	-2.5 to 2.5	Pass
		50	4.0	-10.397	-0.0056	-2.5 to 2.5	Pass
	1880	20	3.8	0.732	0.0004	-2.5 to 2.5	Pass
			4.0	-5.829	-0.0031	-2.5 to 2.5	Pass
			4.2	-6.111	-0.0033	-2.5 to 2.5	Pass
		-30	4.0	-3.529	-0.0019	-2.5 to 2.5	Pass
		-20	4.0	-5.608	-0.0030	-2.5 to 2.5	Pass
		-10	4.0	-3.293	-0.0018	-2.5 to 2.5	Pass
		0	4.0	-6.338	-0.0034	-2.5 to 2.5	Pass
		10	4.0	-6.243	-0.0033	-2.5 to 2.5	Pass
		30	4.0	-6.487	-0.0035	-2.5 to 2.5	Pass
		40	4.0	-7.577	-0.0040	-2.5 to 2.5	Pass
		50	4.0	-6.301	-0.0034	-2.5 to 2.5	Pass
	1909.8	20	3.8	-4.338	-0.0023	-2.5 to 2.5	Pass
			4.0	-6.386	-0.0033	-2.5 to 2.5	Pass
			4.2	-5.814	-0.0030	-2.5 to 2.5	Pass
		-30	4.0	-4.648	-0.0024	-2.5 to 2.5	Pass
		-20	4.0	-9.038	-0.0047	-2.5 to 2.5	Pass
		-10	4.0	-5.449	-0.0029	-2.5 to 2.5	Pass
		0	4.0	-6.407	-0.0034	-2.5 to 2.5	Pass
		10	4.0	-10.240	-0.0054	-2.5 to 2.5	Pass
		30	4.0	-5.014	-0.0026	-2.5 to 2.5	Pass
		40	4.0	-8.282	-0.0043	-2.5 to 2.5	Pass
		50	4.0	-1.636	-0.0009	-2.5 to 2.5	Pass
EGPRS	1850.2	20	3.8	-8.929	-0.0048	-2.5 to 2.5	Pass
			4.0	-14.951	-0.0081	-2.5 to 2.5	Pass
			4.2	-9.025	-0.0049	-2.5 to 2.5	Pass
		-30	4.0	-13.856	-0.0075	-2.5 to 2.5	Pass
		-20	4.0	-11.429	-0.0062	-2.5 to 2.5	Pass
		-10	4.0	-12.989	-0.0070	-2.5 to 2.5	Pass
		0	4.0	-10.421	-0.0056	-2.5 to 2.5	Pass
		10	4.0	-9.974	-0.0054	-2.5 to 2.5	Pass
		30	4.0	-14.271	-0.0077	-2.5 to 2.5	Pass
		40	4.0	-15.057	-0.0081	-2.5 to 2.5	Pass



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		50	4.0	-10.642	-0.0058	-2.5 to 2.5	Pass
	1880	20	3.8	-13.891	-0.0074	-2.5 to 2.5	Pass
			4.0	-9.063	-0.0048	-2.5 to 2.5	Pass
			4.2	-10.972	-0.0058	-2.5 to 2.5	Pass
			-30	4.0	-9.065	-0.0048	-2.5 to 2.5
		-20	4.0	-13.590	-0.0072	-2.5 to 2.5	Pass
		-10	4.0	-12.923	-0.0069	-2.5 to 2.5	Pass
		0	4.0	-11.716	-0.0062	-2.5 to 2.5	Pass
		10	4.0	-16.173	-0.0086	-2.5 to 2.5	Pass
		30	4.0	-13.107	-0.0070	-2.5 to 2.5	Pass
		40	4.0	-11.999	-0.0064	-2.5 to 2.5	Pass
		50	4.0	-13.890	-0.0074	-2.5 to 2.5	Pass
	1909.8	20	3.8	-14.767	-0.0077	-2.5 to 2.5	Pass
			4.0	-16.826	-0.0088	-2.5 to 2.5	Pass
			4.2	-14.468	-0.0076	-2.5 to 2.5	Pass
		-30	4.0	-17.099	-0.0090	-2.5 to 2.5	Pass
		-20	4.0	-15.802	-0.0083	-2.5 to 2.5	Pass
		-10	4.0	-12.359	-0.0065	-2.5 to 2.5	Pass
		0	4.0	-14.877	-0.0078	-2.5 to 2.5	Pass
		10	4.0	-11.882	-0.0062	-2.5 to 2.5	Pass
		30	4.0	-15.621	-0.0082	-2.5 to 2.5	Pass
		40	4.0	-12.319	-0.0065	-2.5 to 2.5	Pass
		50	4.0	-16.962	-0.0089	-2.5 to 2.5	Pass



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3. 99% & 26dB Bandwidth

3.1 PCS1900_OBW

3.1.1 Test Result

Band: PCS1900						
ENV	Mode		Frequency (MHz)	99% Occupied Bandwidth (MHz)		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	1850.2	0.249	/	Pass
			1880	0.247	/	Pass
			1909.8	0.249	/	Pass
	EGPRS	1 TX Slot	1850.2	0.248	/	Pass
			1880	0.250	/	Pass
			1909.8	0.254	/	Pass

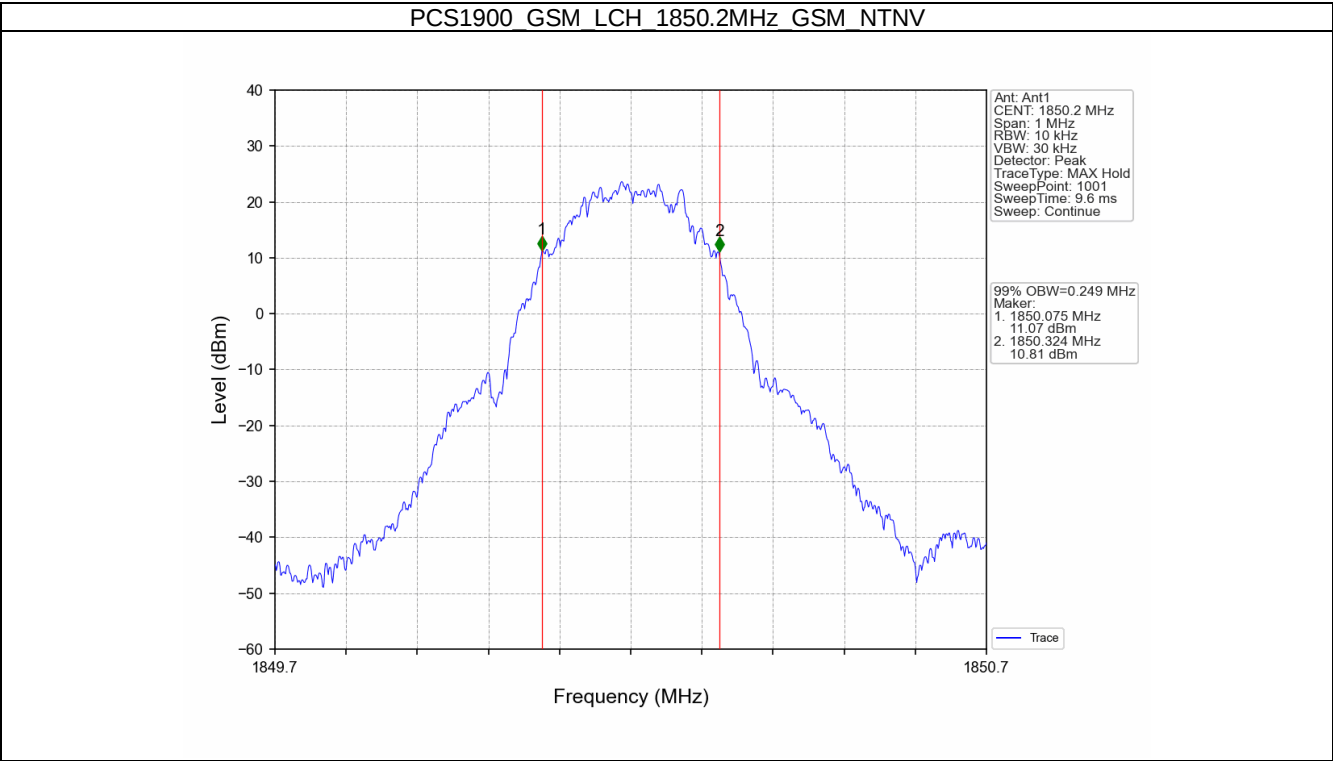


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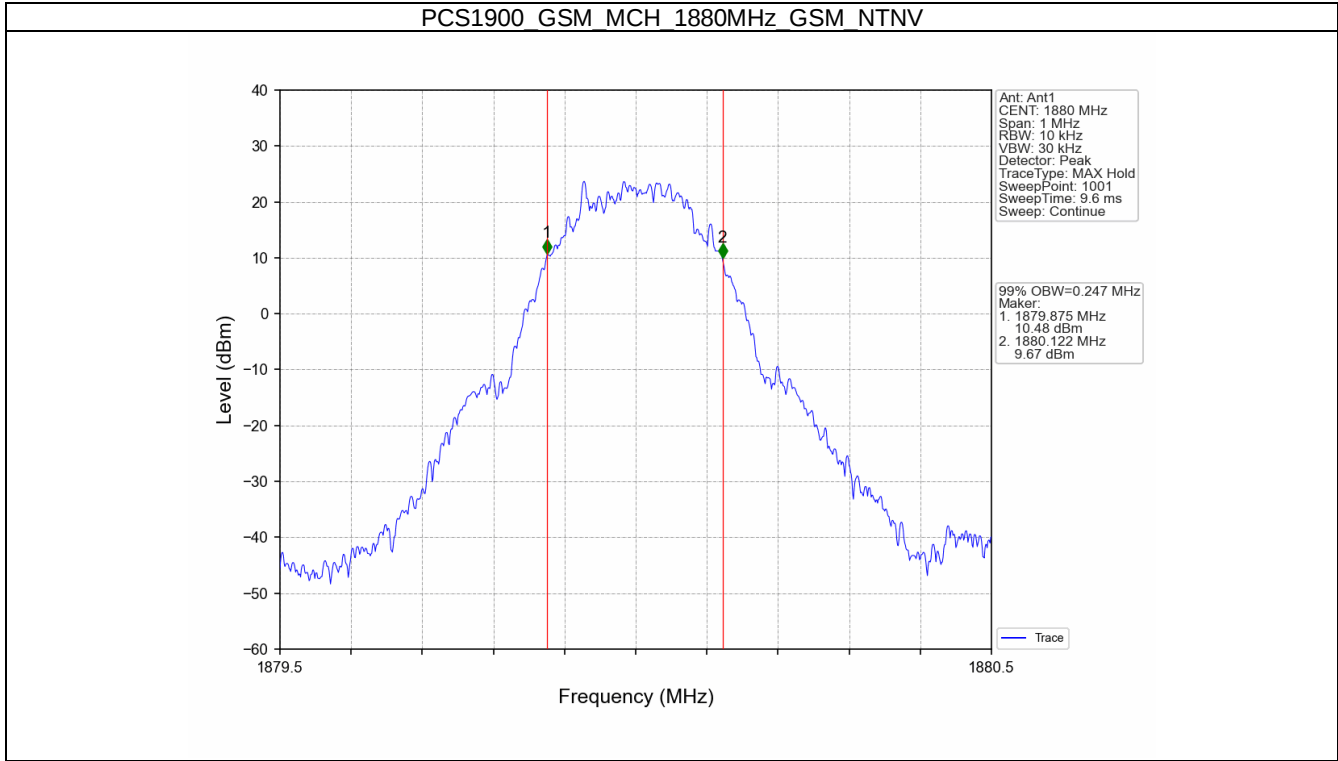
3.1.2 Test Graph





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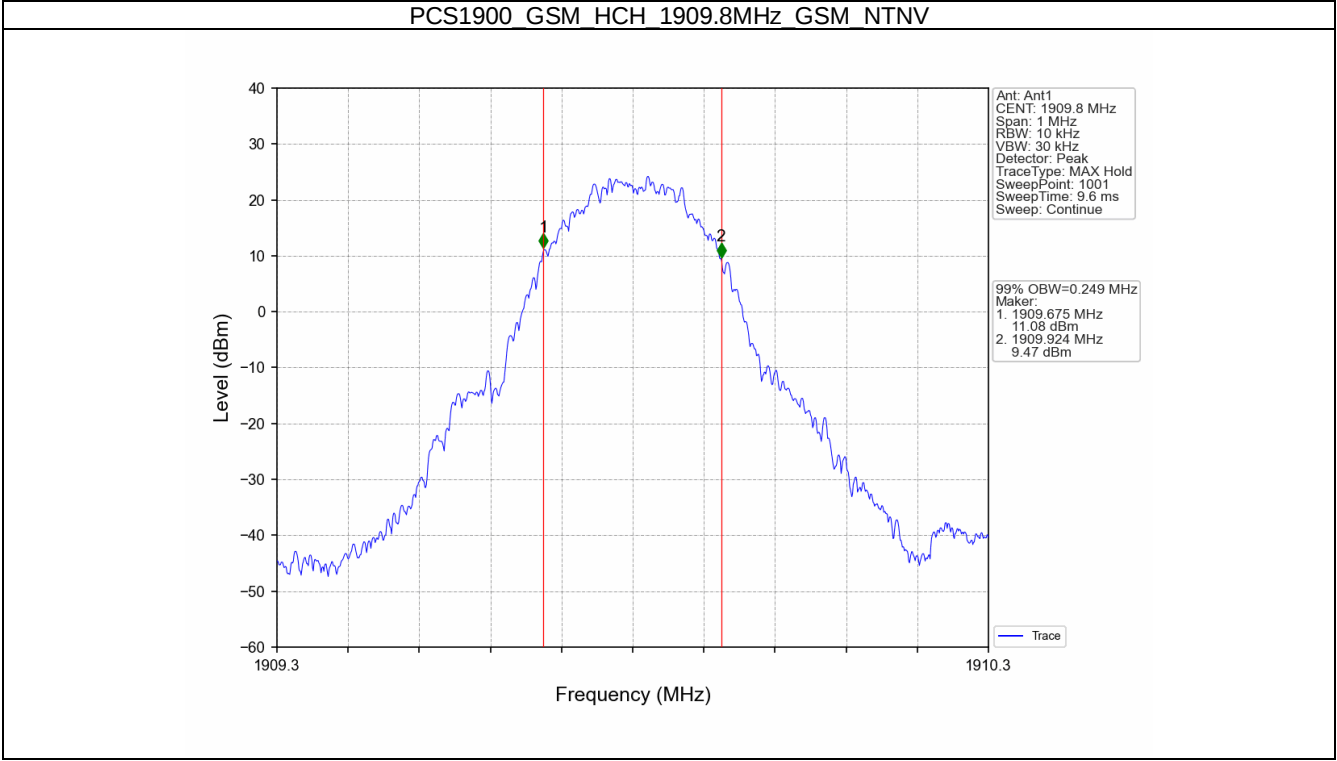




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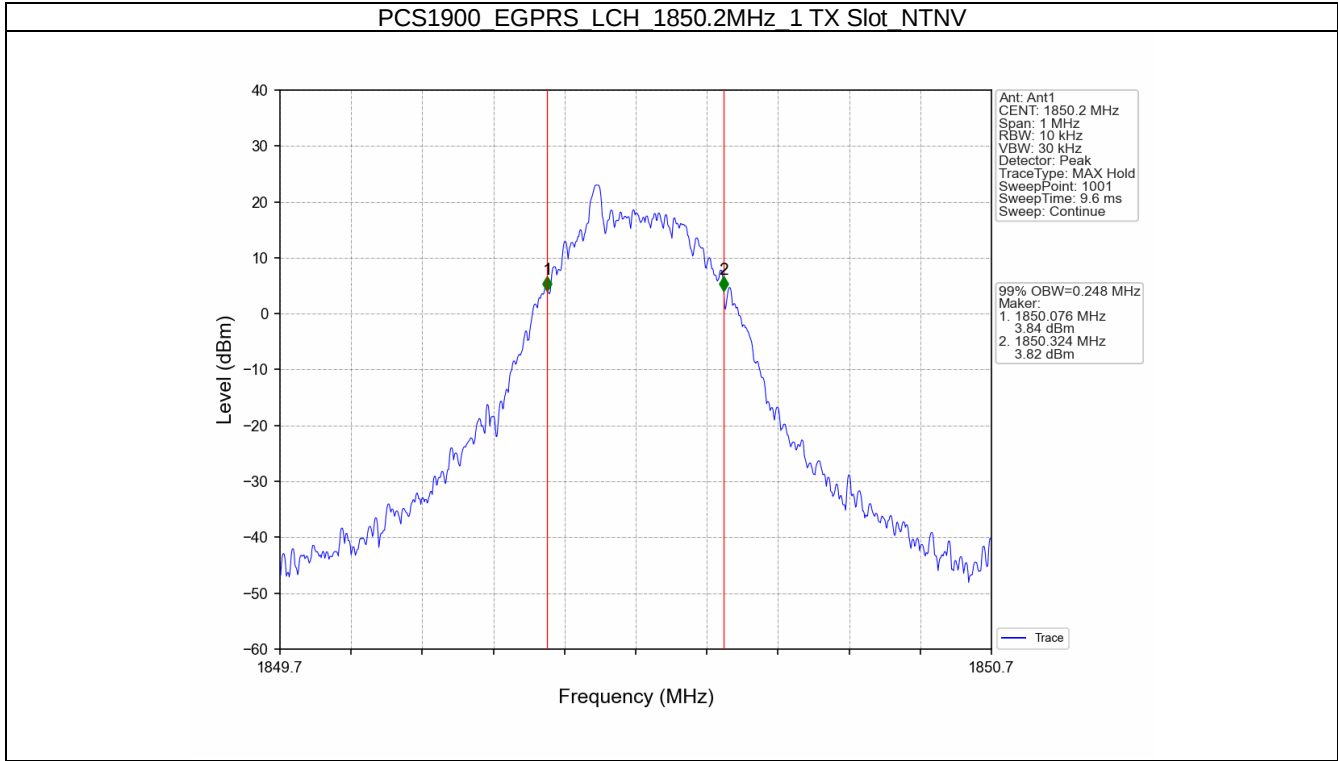
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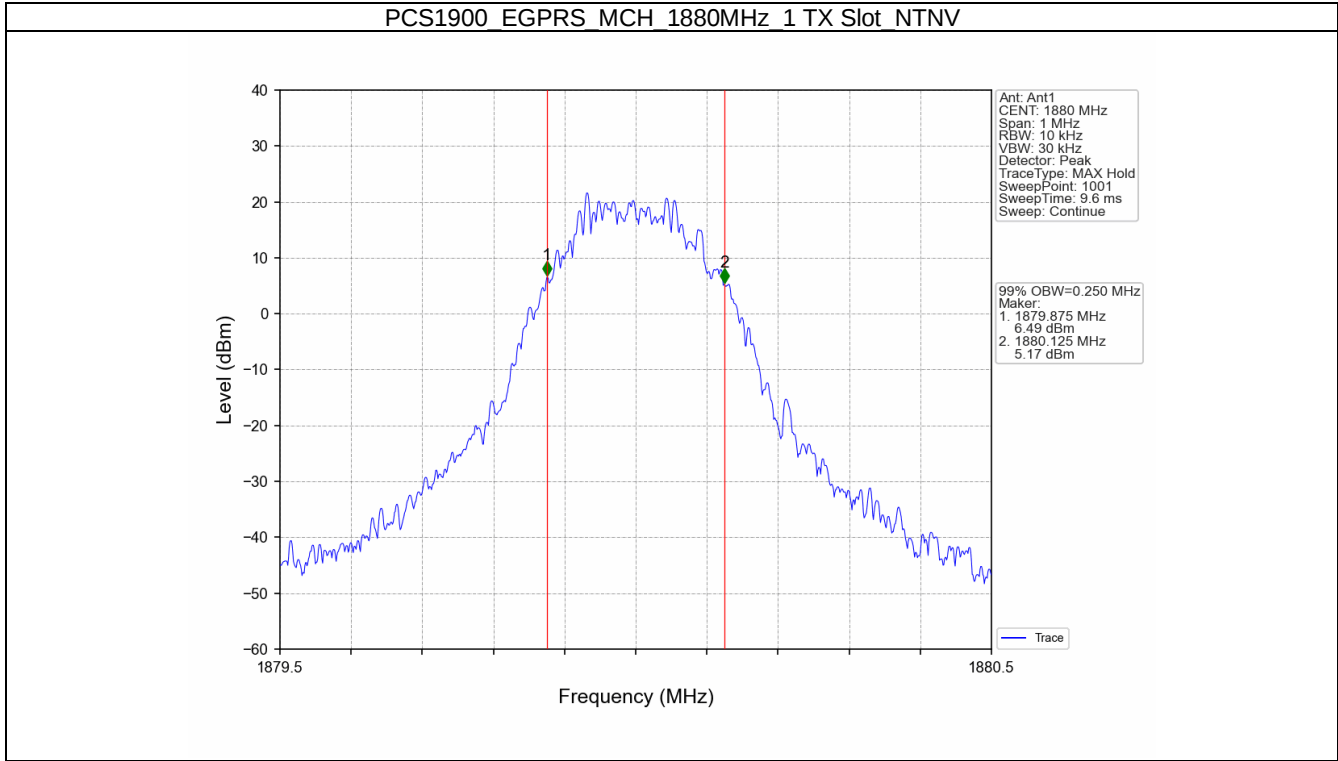
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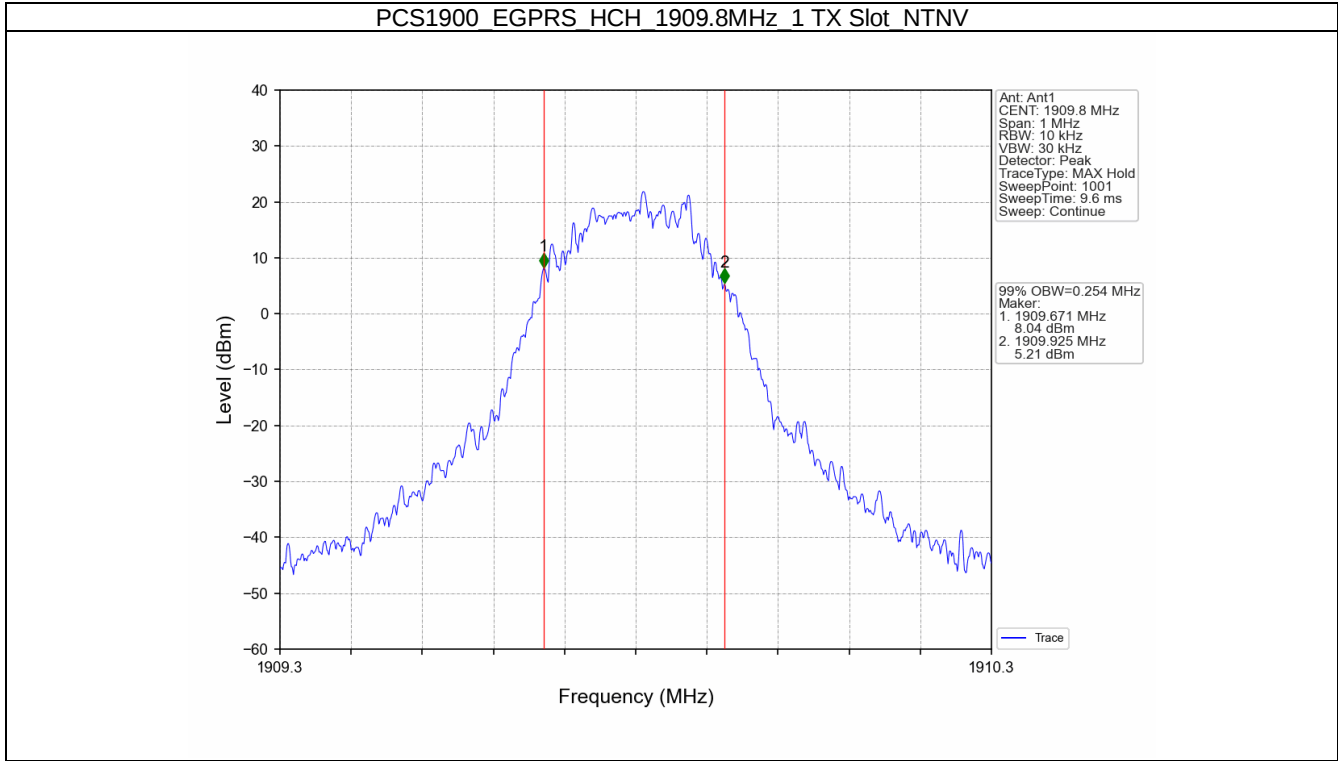




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3.2 PCS1900_XDB

3.2.1 Test Result

Band: PCS1900						
ENV	Mode		Frequency (MHz)	26dB Bandwidth (MHz)		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	1850.2	0.321	/	Pass
			1880	0.320	/	Pass
			1909.8	0.317	/	Pass
	EGPRS	1 TX Slot	1850.2	0.306	/	Pass
			1880	0.321	/	Pass
			1909.8	0.320	/	Pass

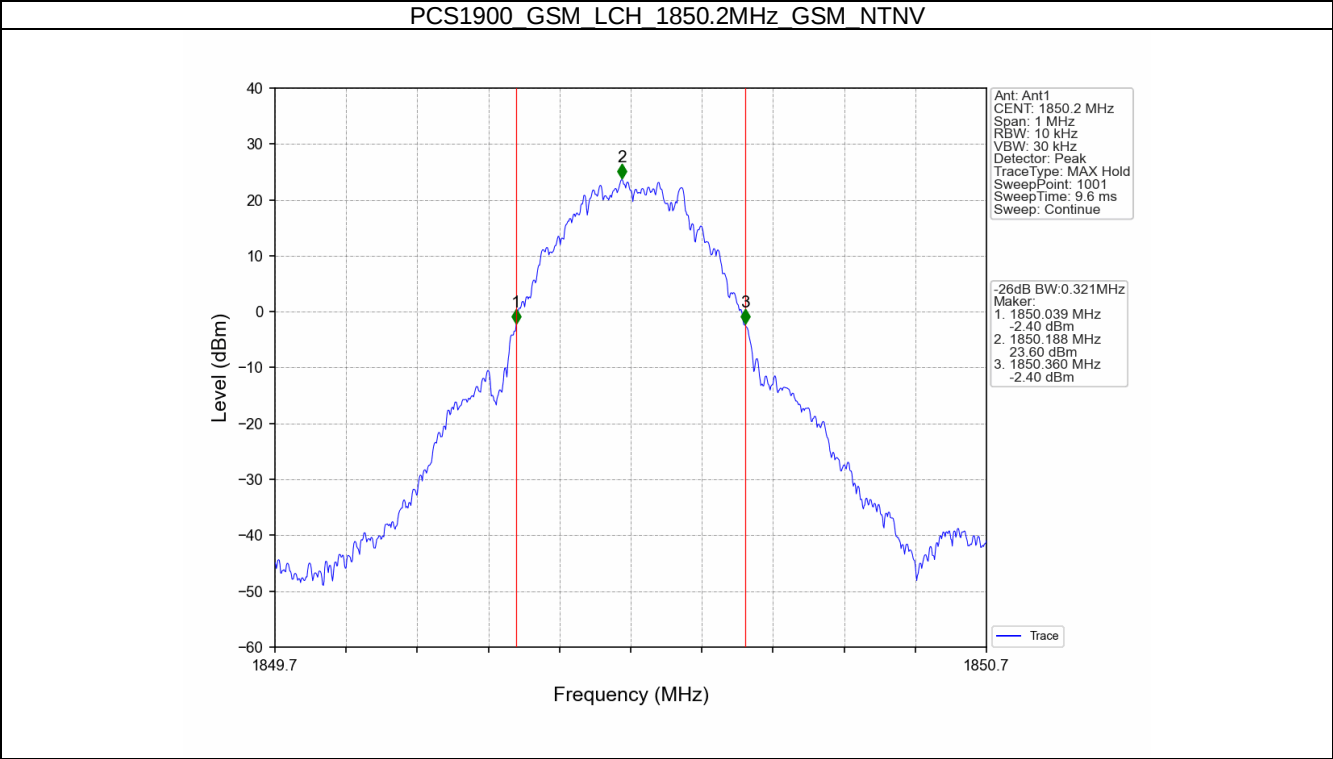


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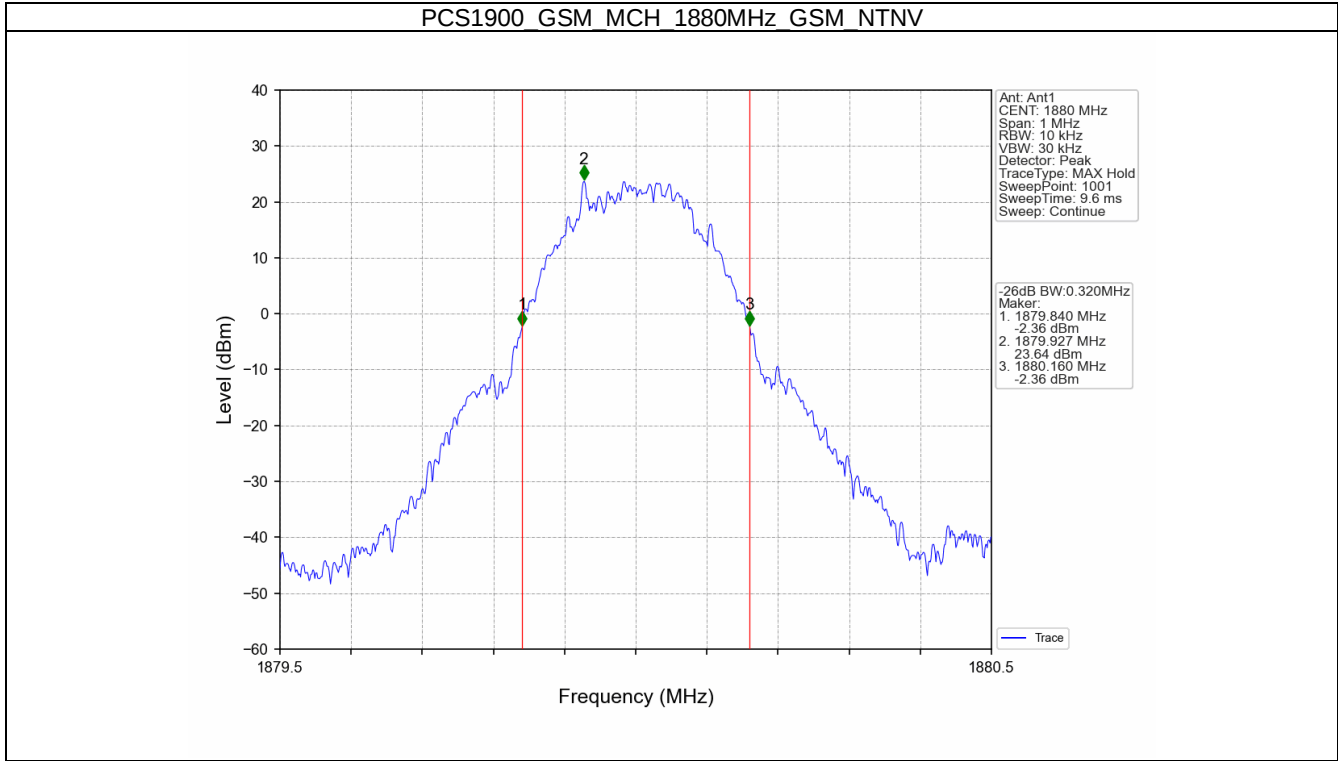
3.2.2 Test Graph





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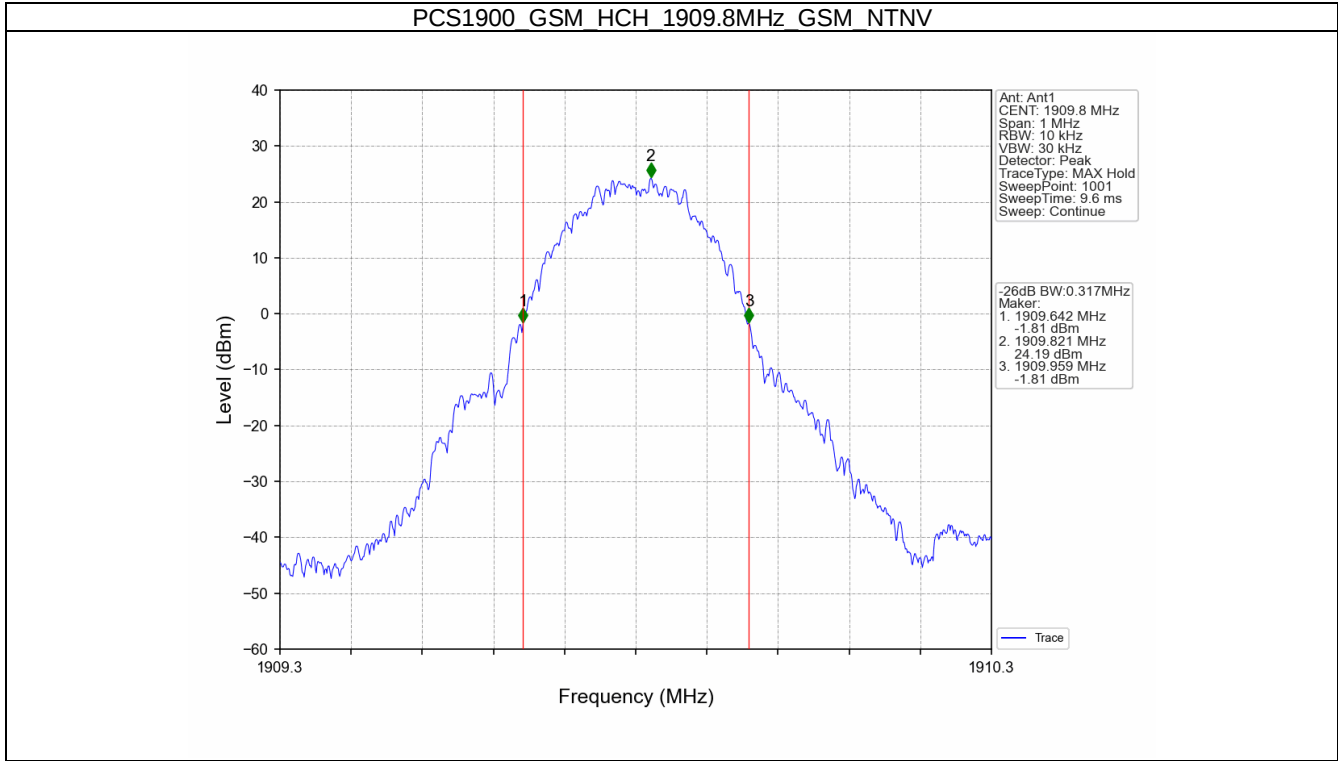




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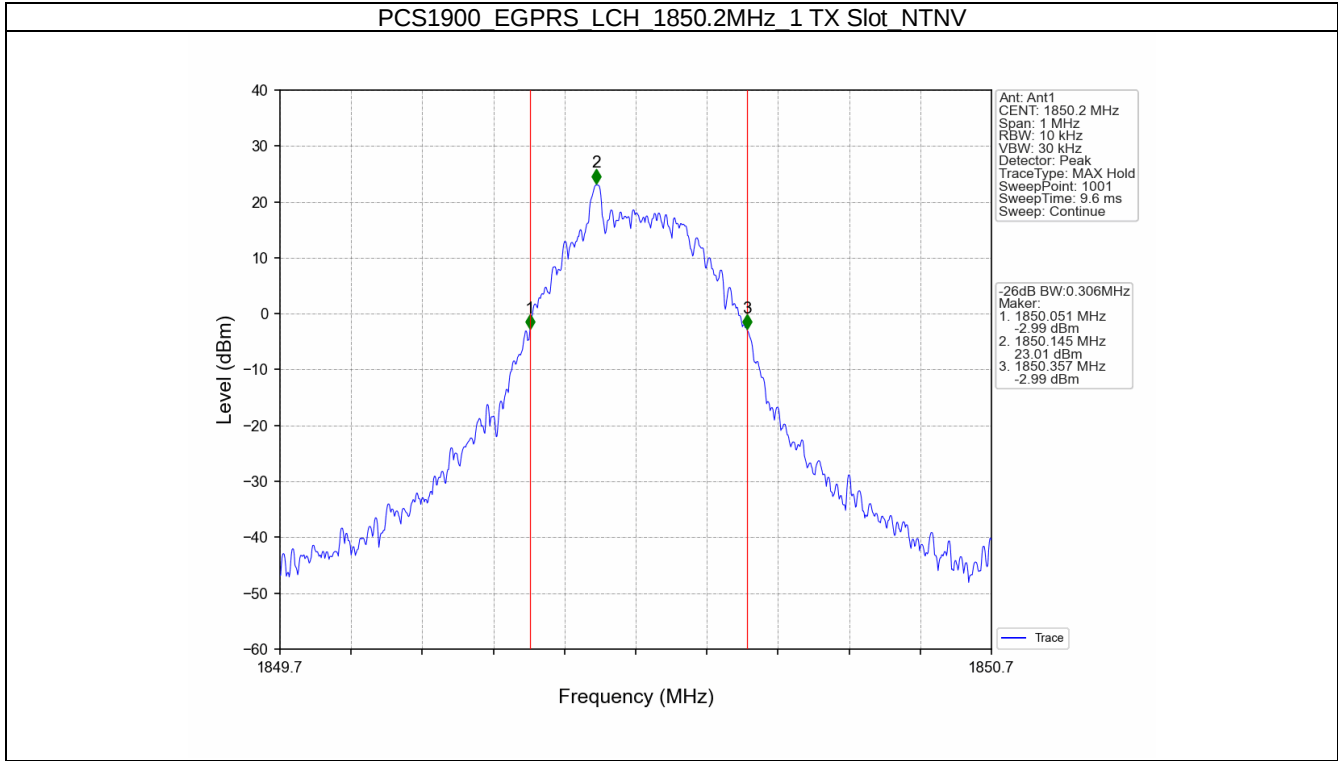




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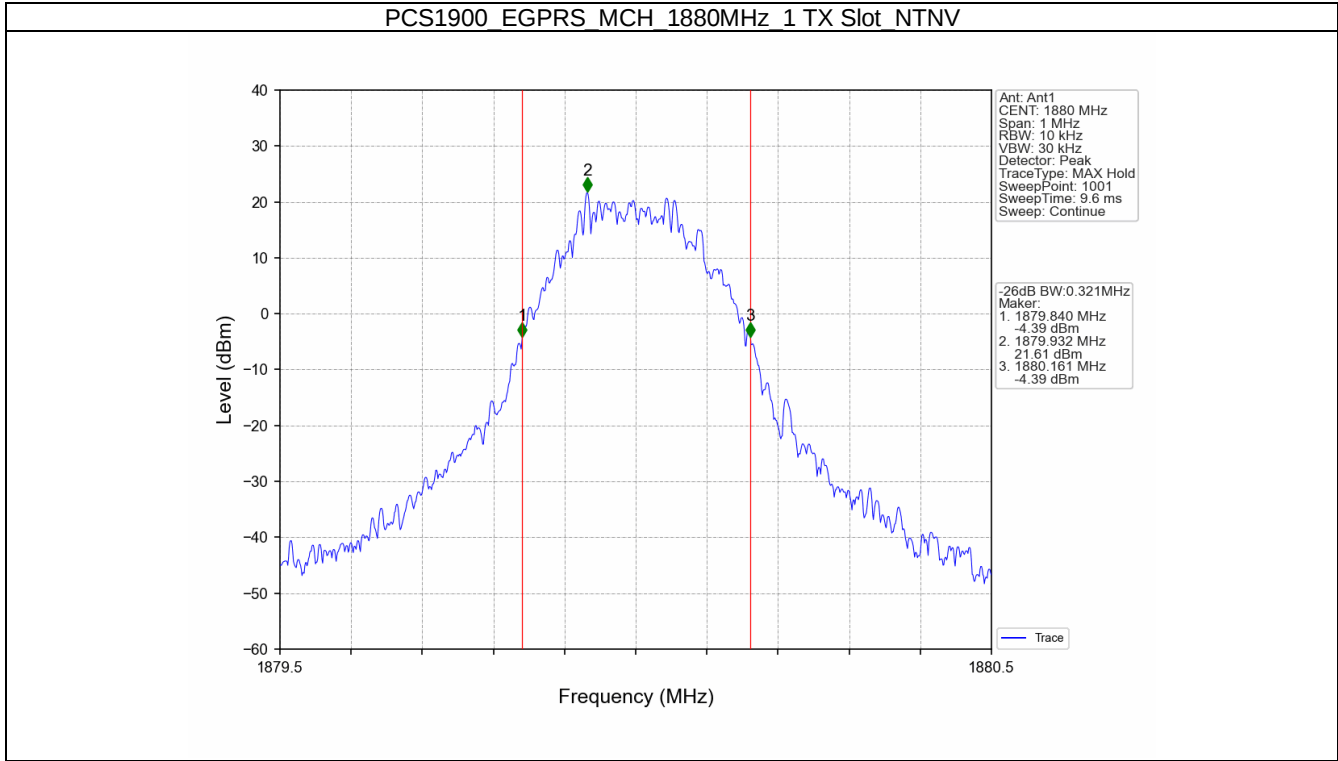




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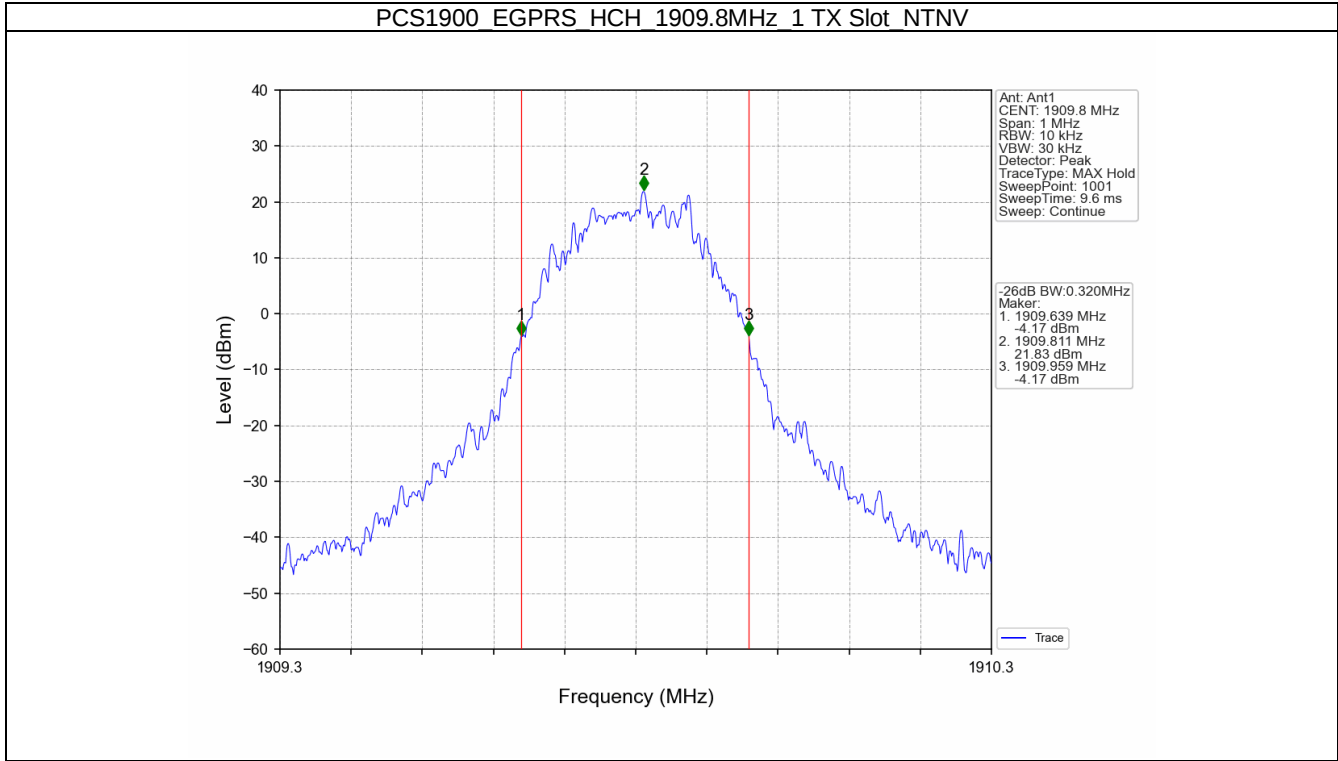




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4. Peak-Average Ratio

4.1 PCS1900

4.1.1 Test Result

Band: PCS1900						
ENV	Mode		Frequency (MHz)	Peak-Average Ratio (dB)		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	1850.2	9.09	<=13	Pass
			1880	8.86	<=13	Pass
			1909.8	9.68	<=13	Pass
	EGPRS	4 TX Slots	1850.2	8.73	<=13	Pass
			1880	8.28	<=13	Pass
			1909.8	8.37	<=13	Pass

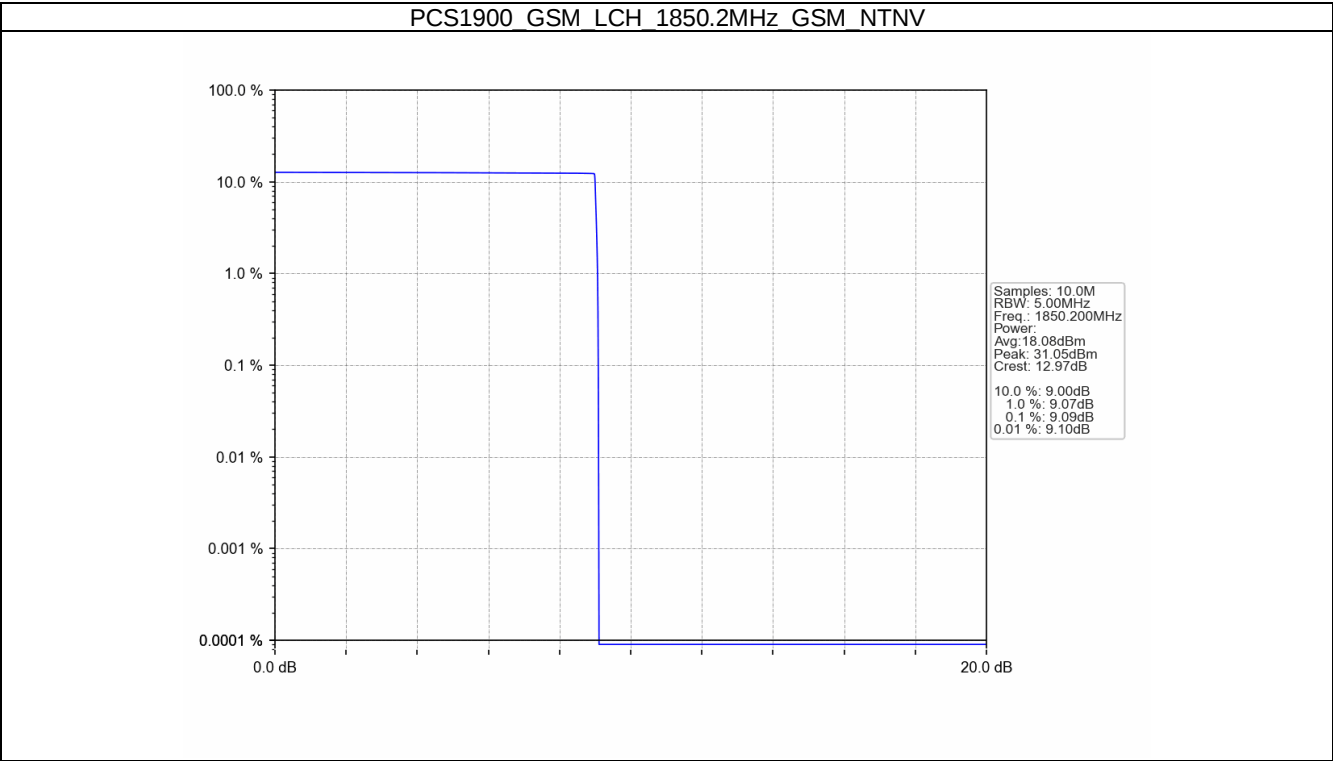


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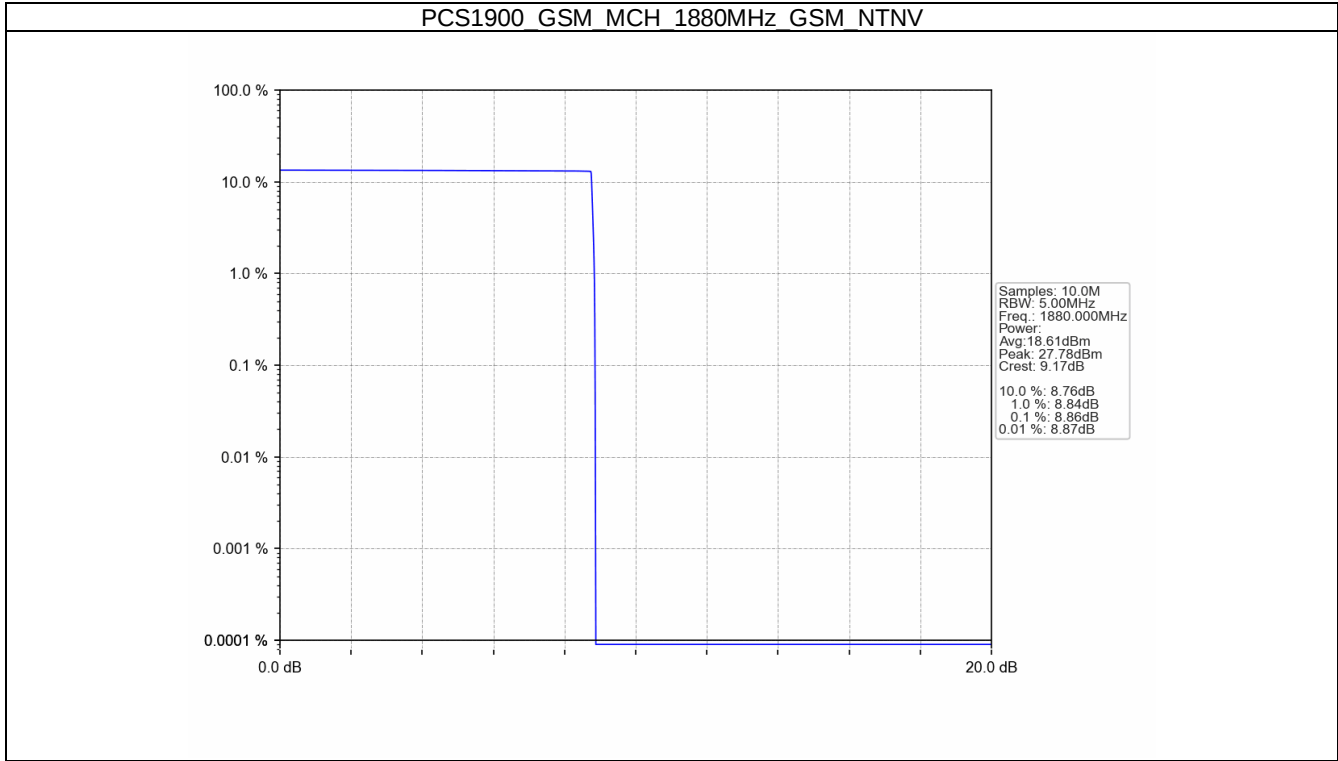
4.1.2 Test Graph





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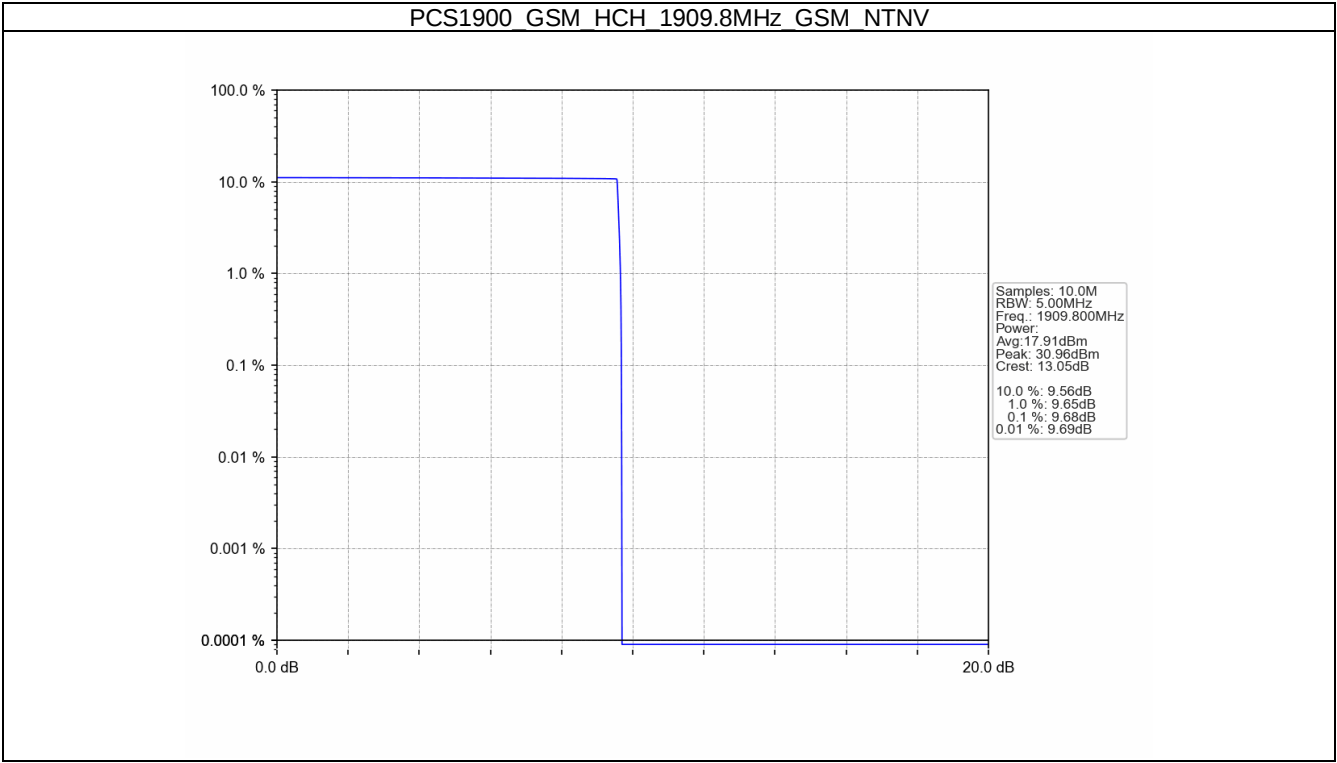




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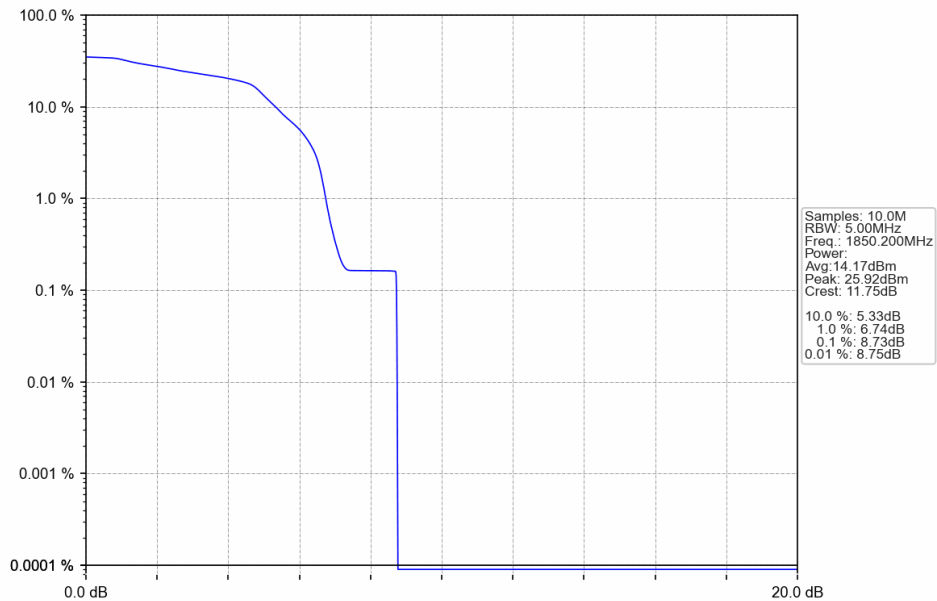




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PCS1900 EGPRS LCH 1850.2MHz 4 TX Slots NTNV

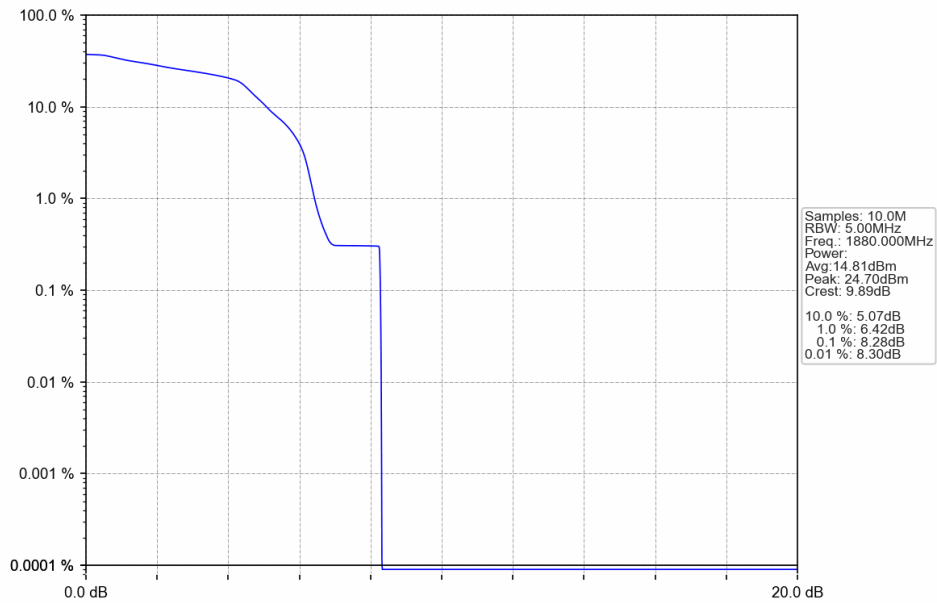




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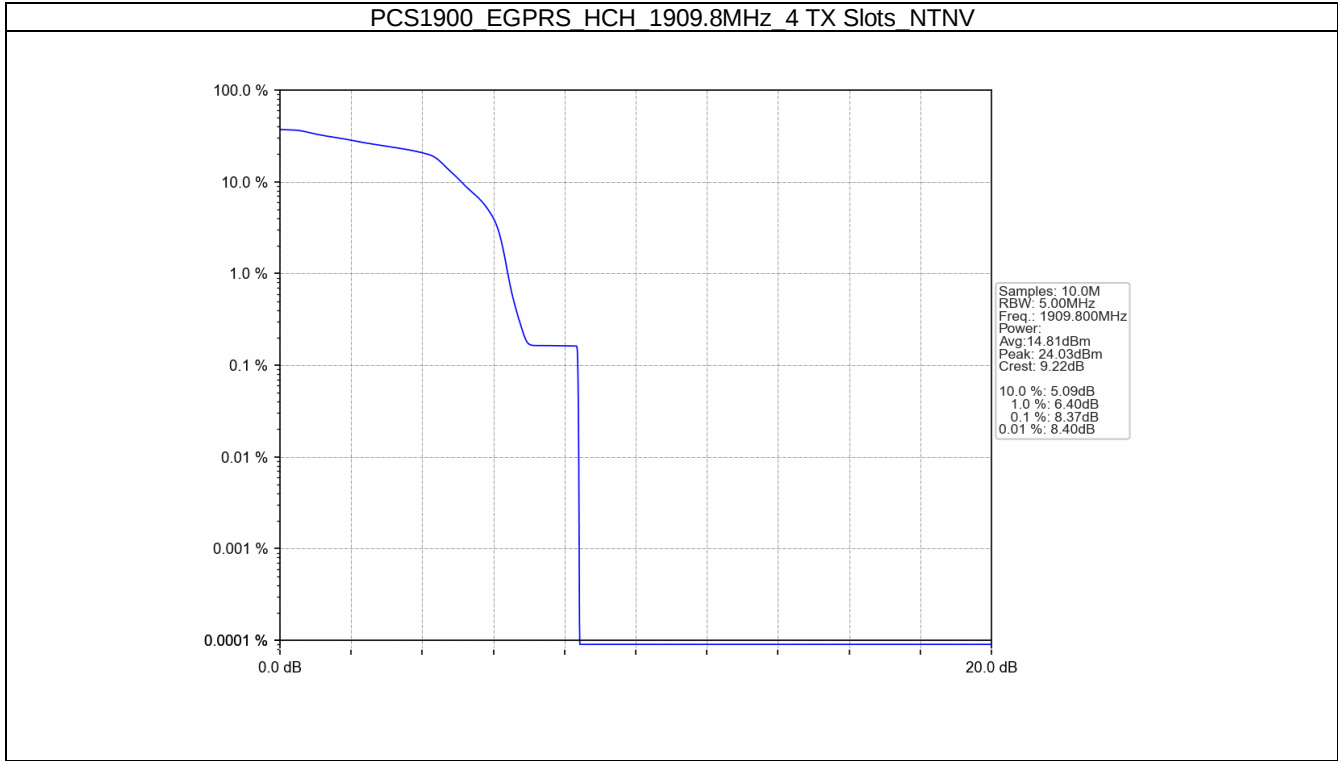
PCS1900 EGPRS MCH 1880MHz 4 TX Slots NTNV





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5. Spurious Emission & Band Edges

5.1 PCS1900

5.1.1 Test Result

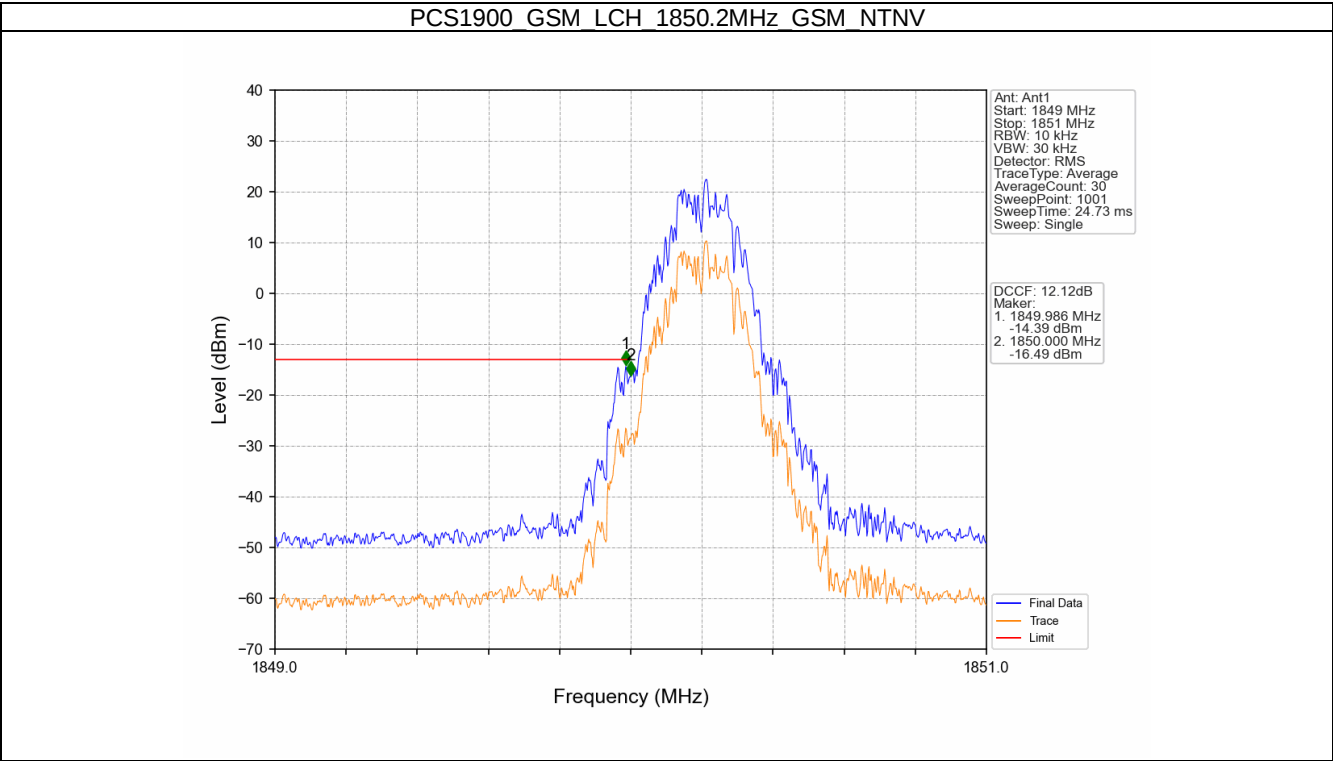
Band: PCS1900						
ENV	Mode		Frequency (MHz)	Spurious Emission		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	1850.2	Refer To Test Graph	Pass	
			1880	Refer To Test Graph	Pass	
			1909.8	Refer To Test Graph	Pass	
	EGPRS	1 TX Slot	1850.2	Refer To Test Graph	Pass	
			1880	Refer To Test Graph	Pass	
			1909.8	Refer To Test Graph	Pass	



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5.1.2 Test Graph

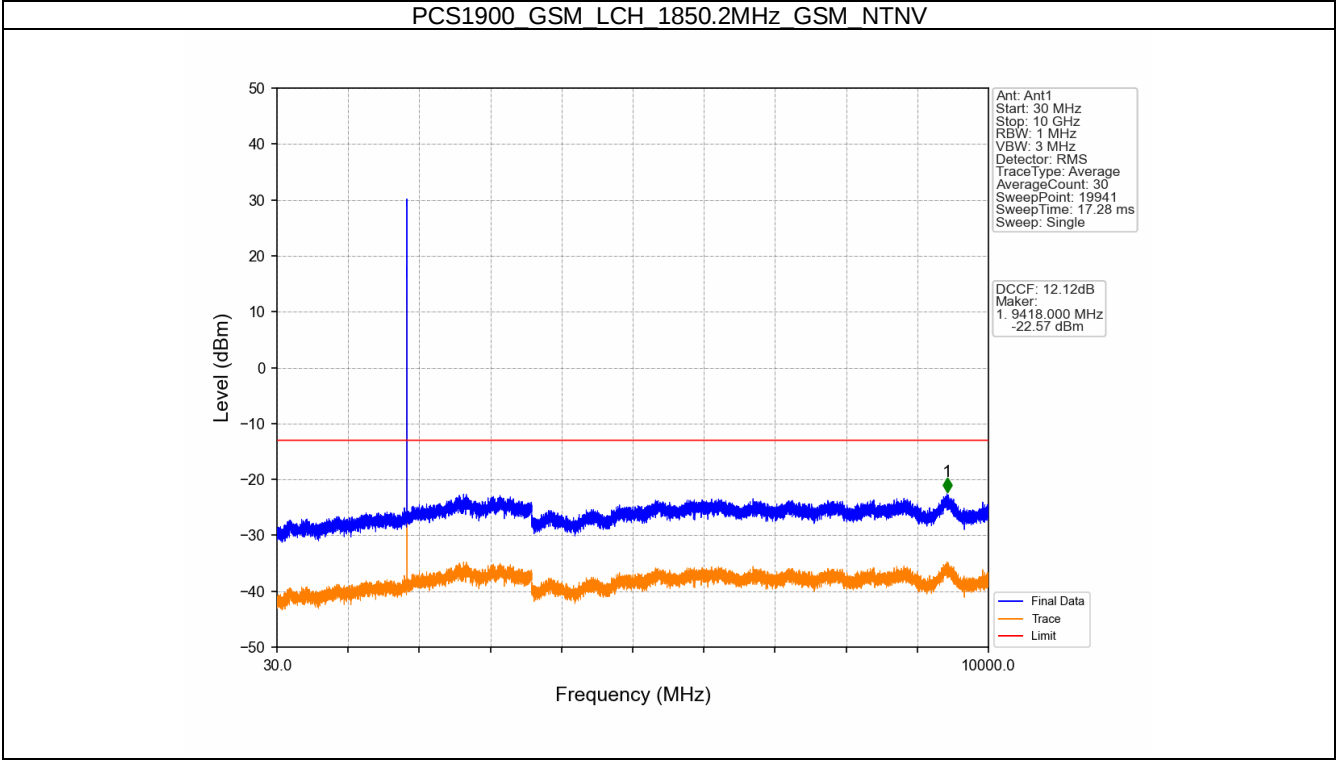




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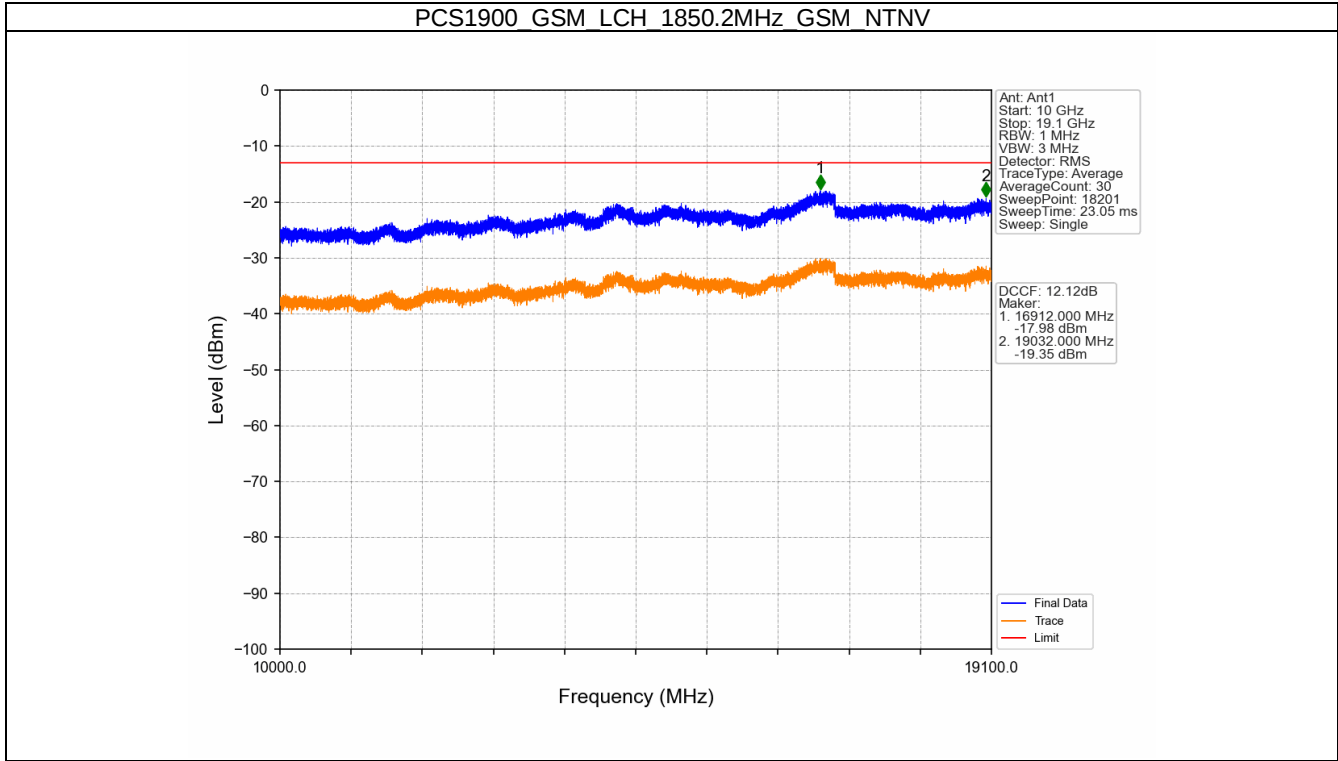
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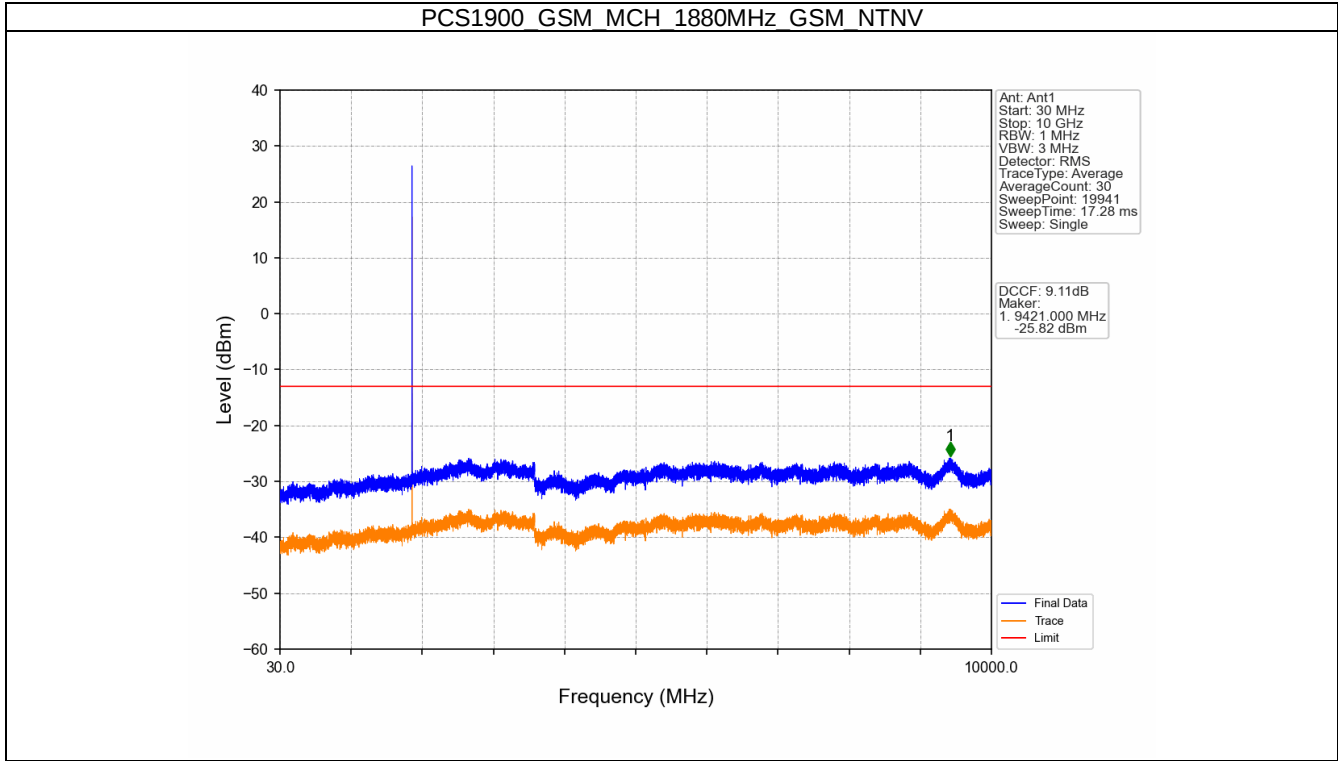
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SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

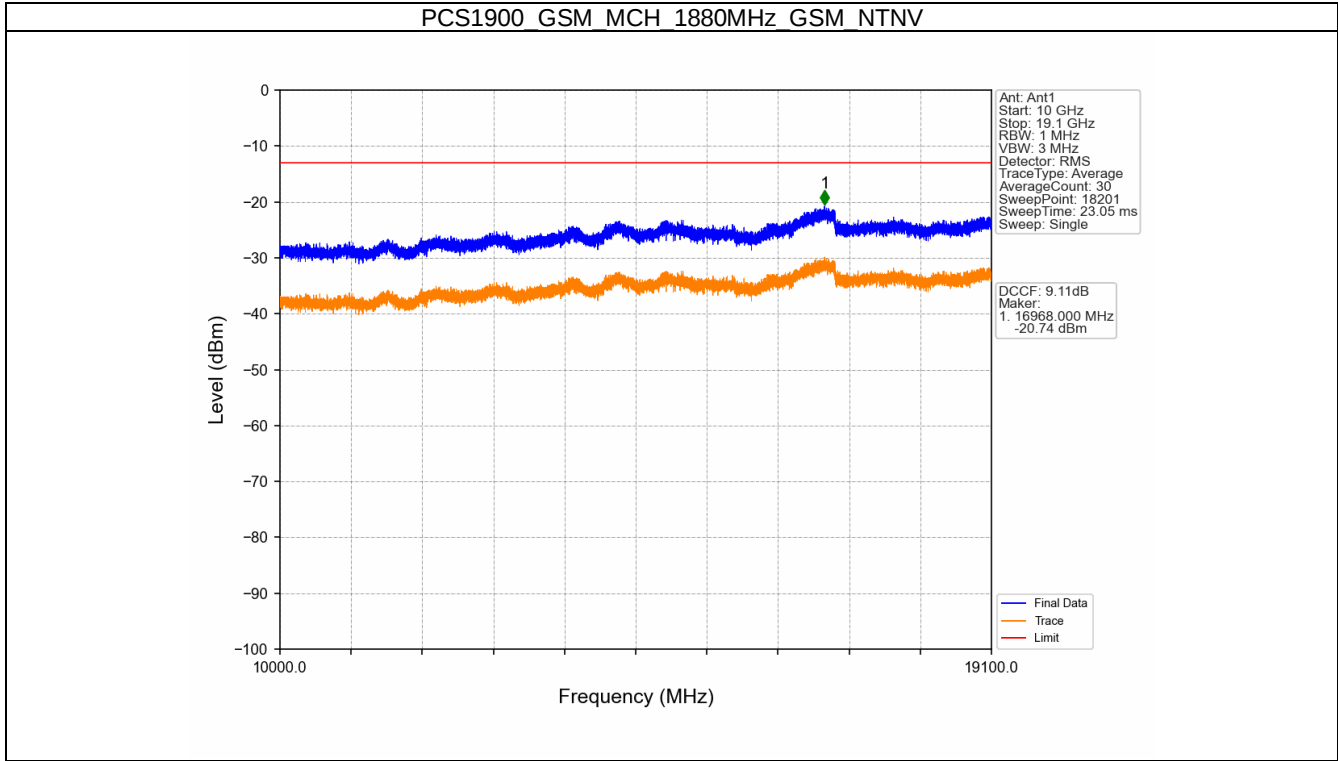
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SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

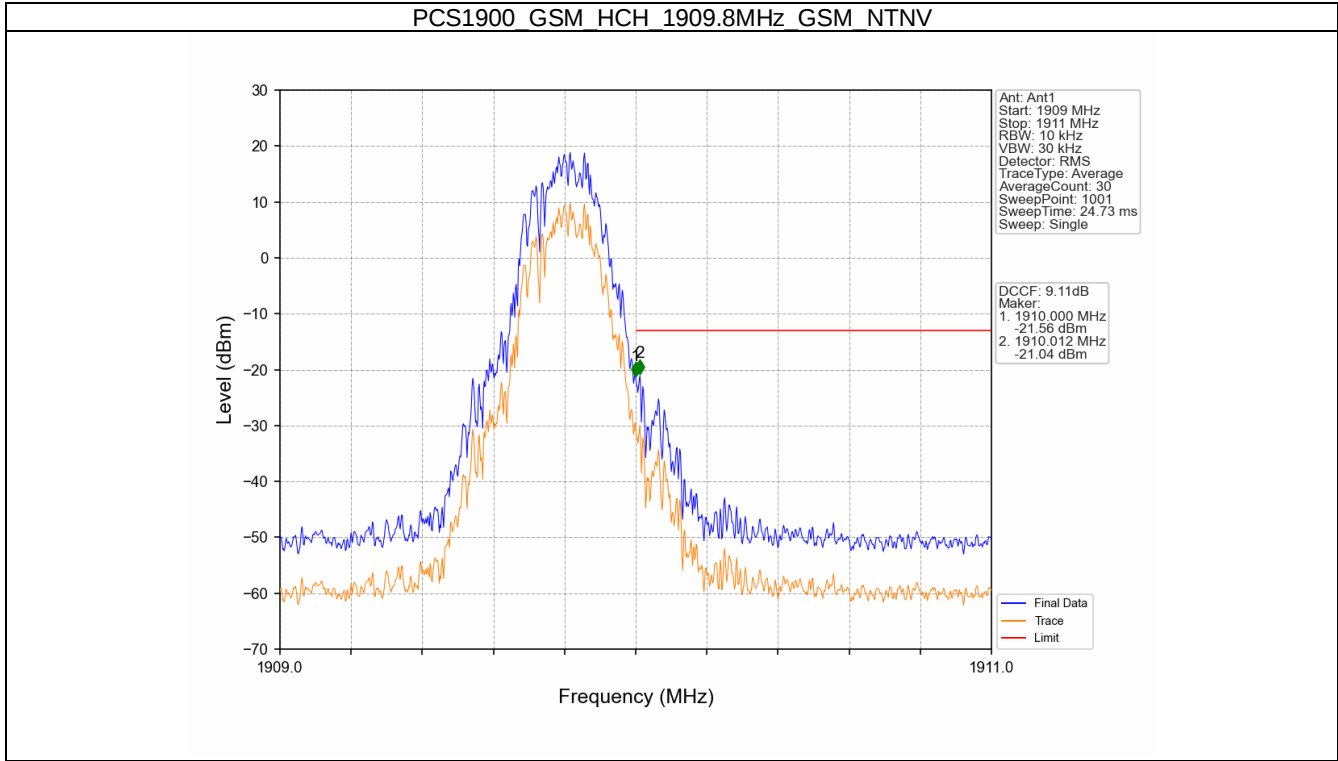
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SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

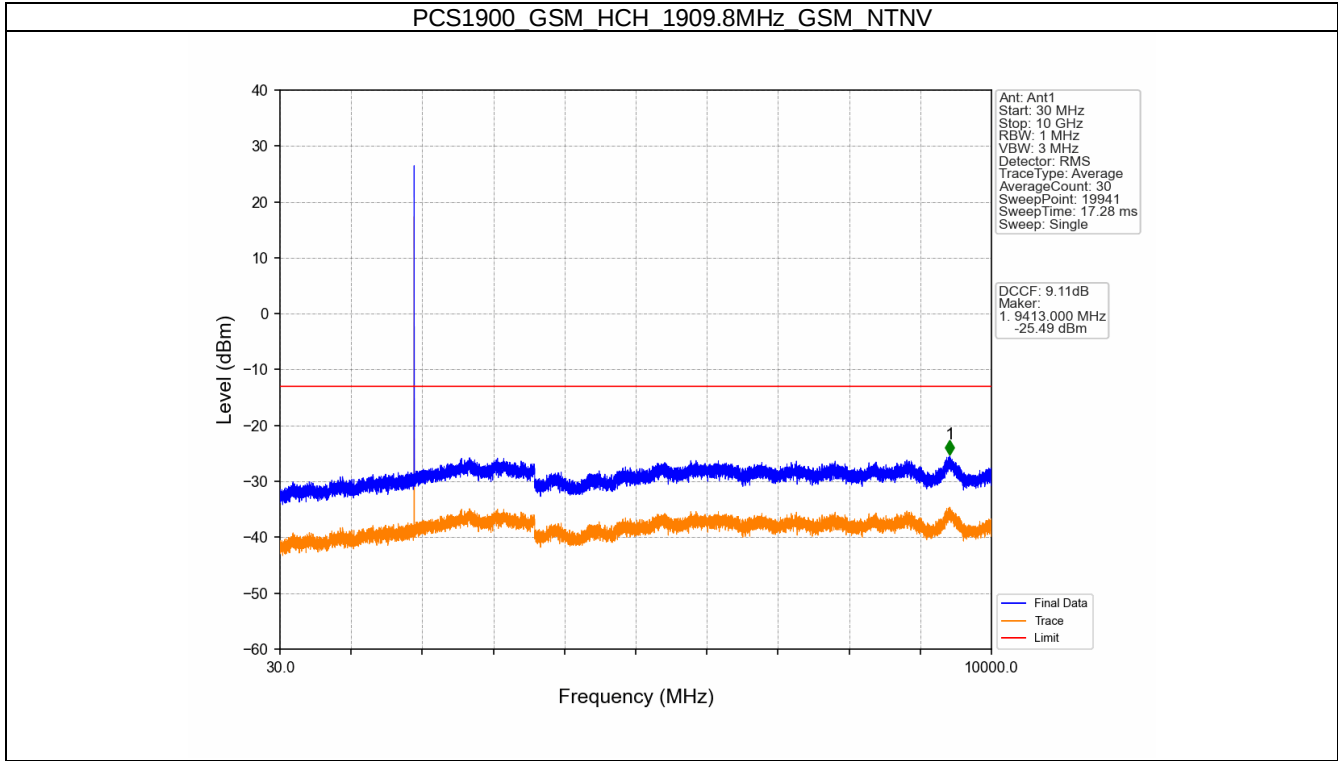
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SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

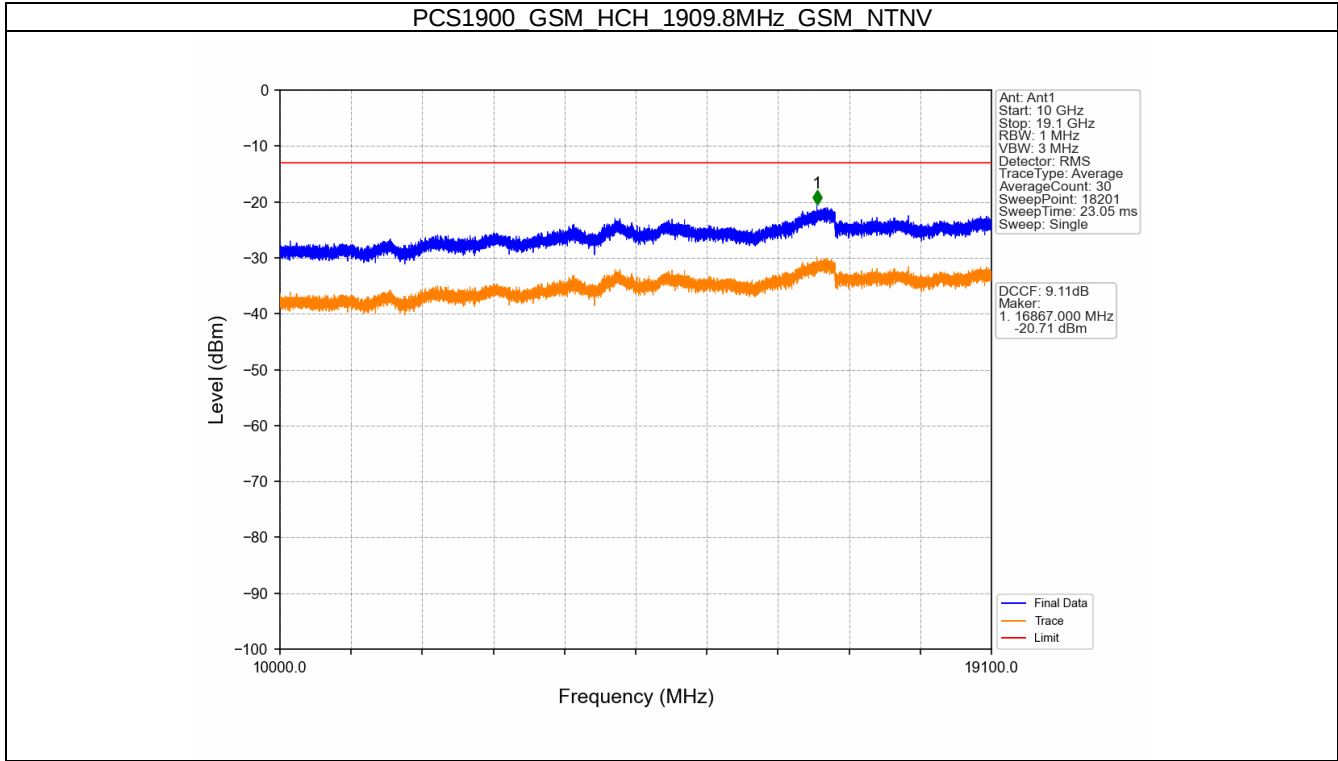
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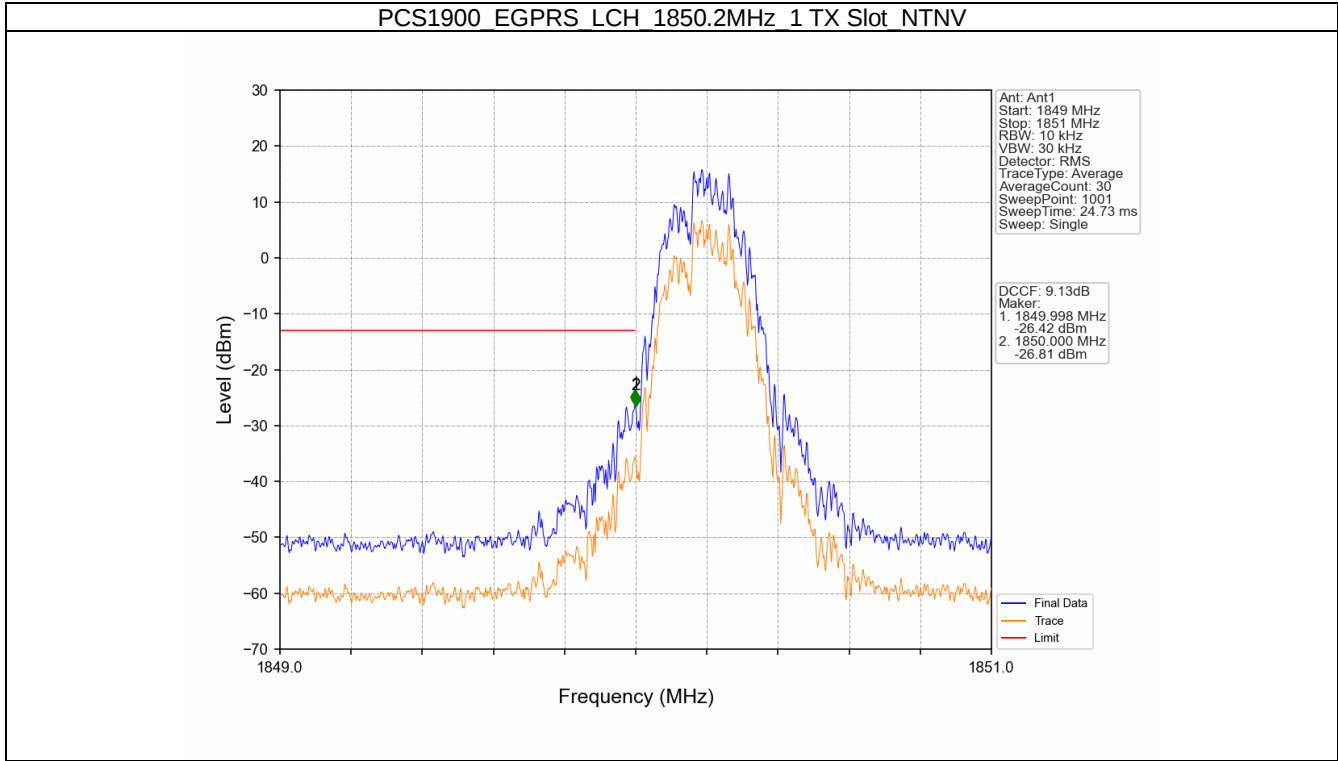
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SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

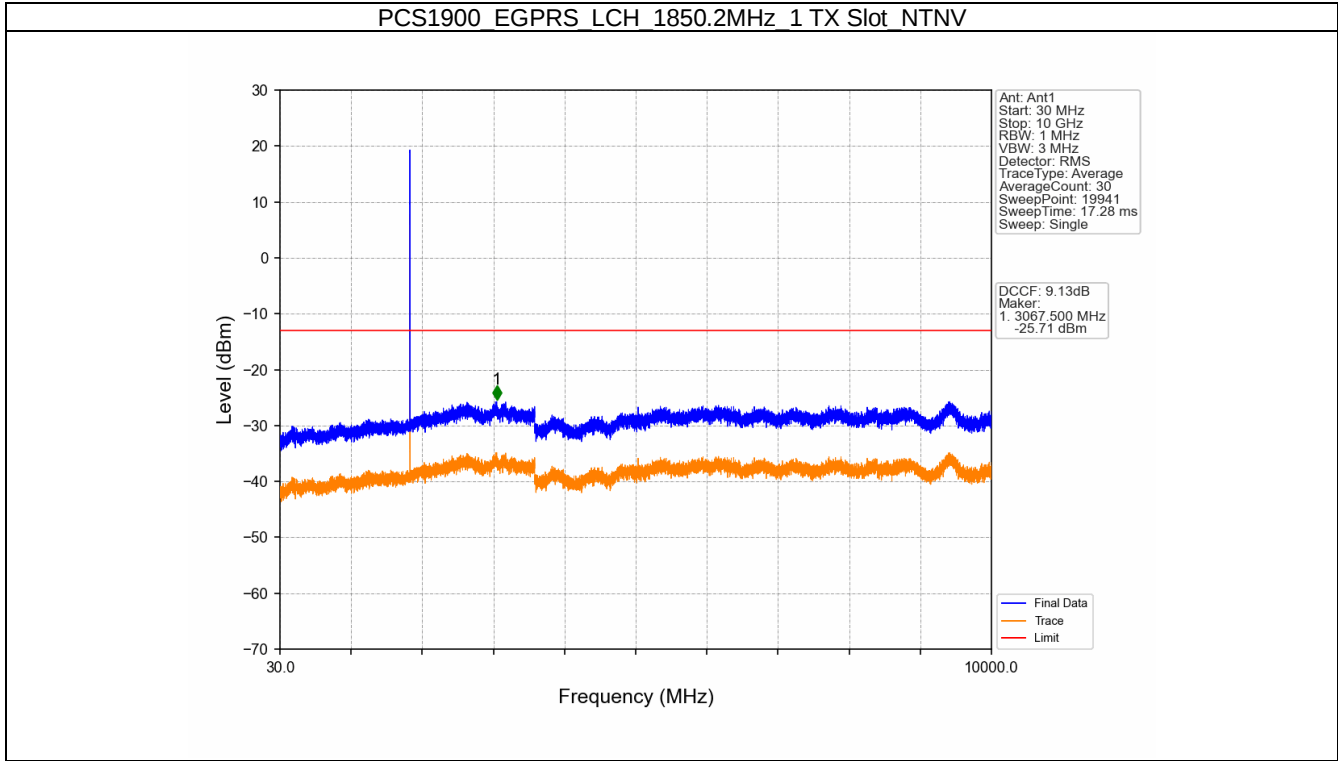
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SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

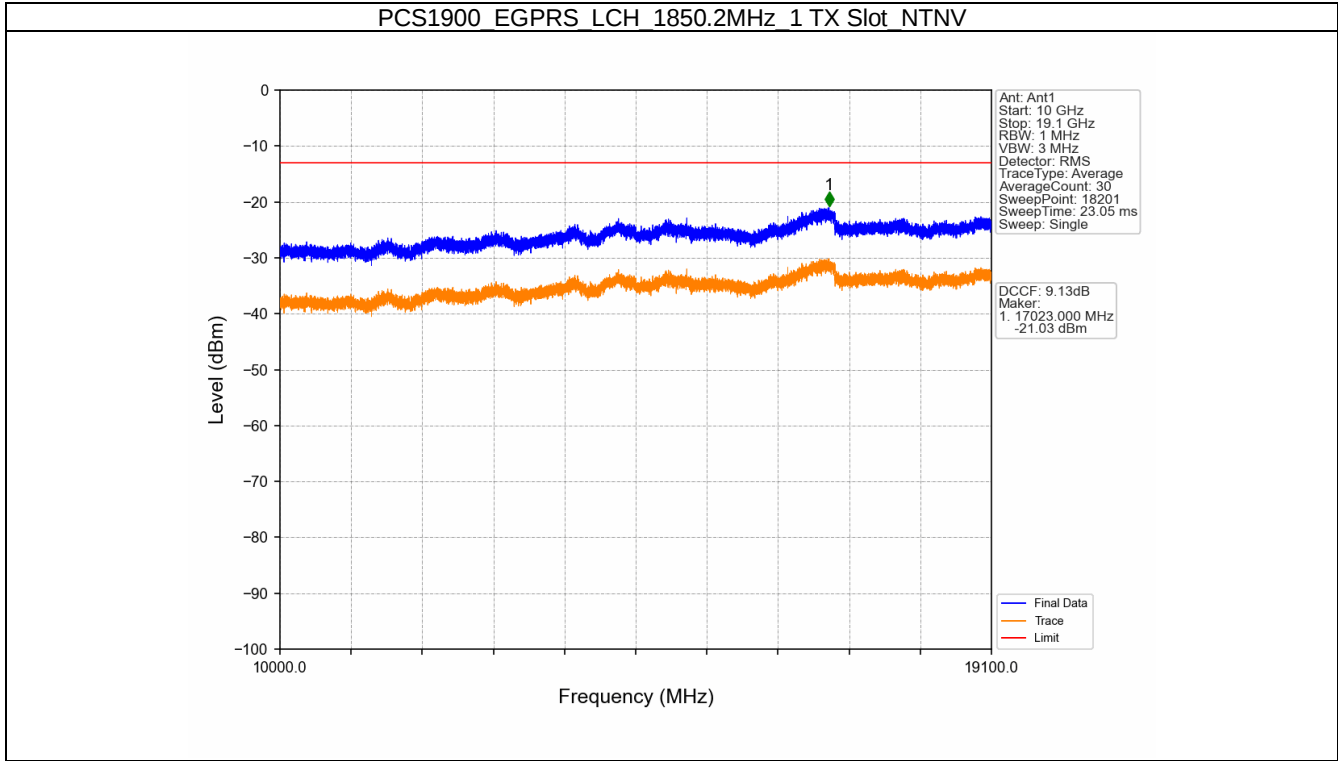
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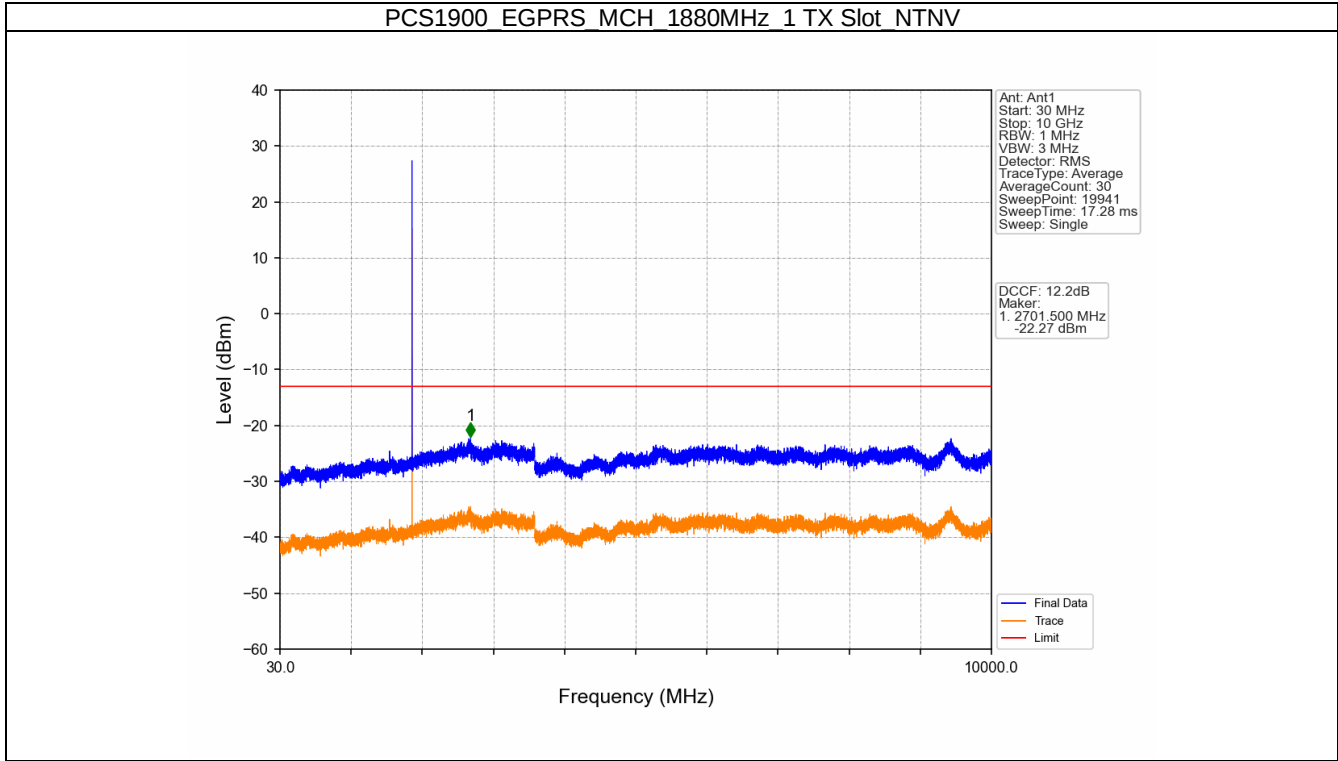




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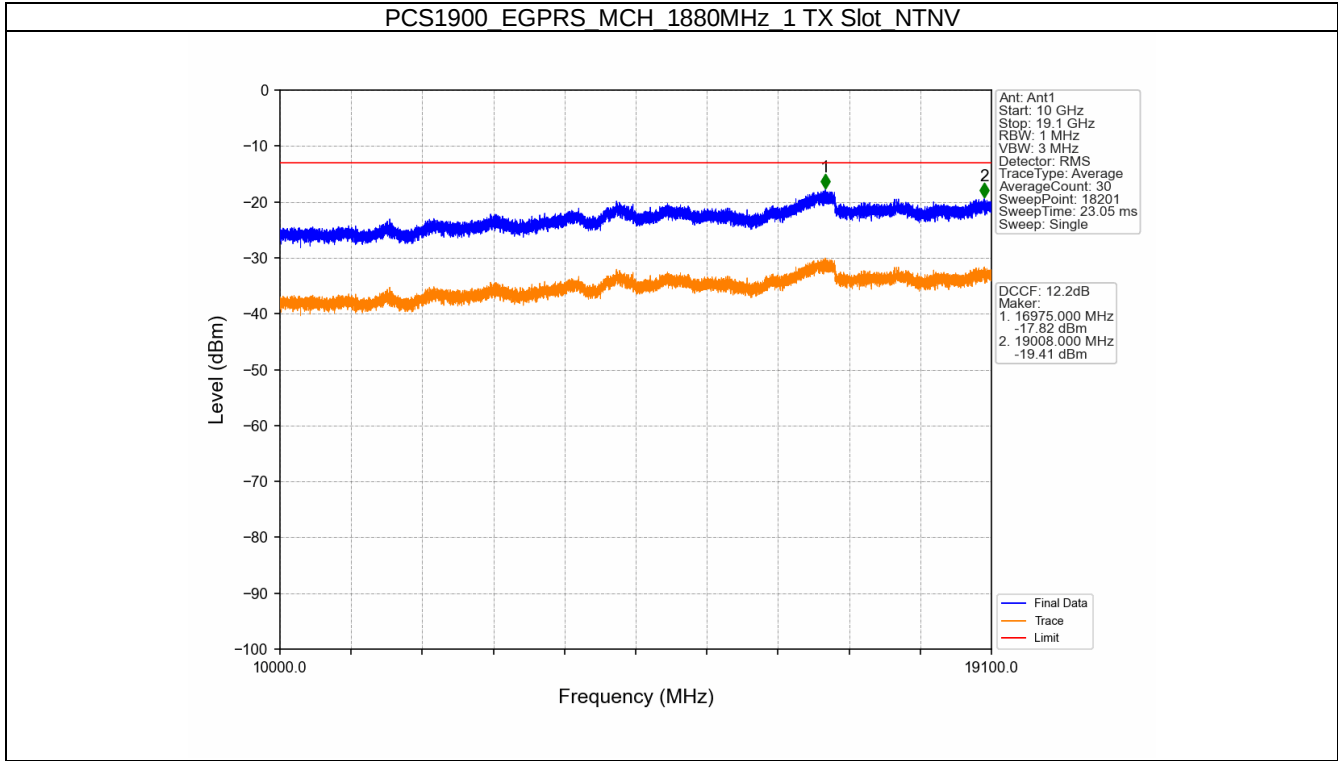
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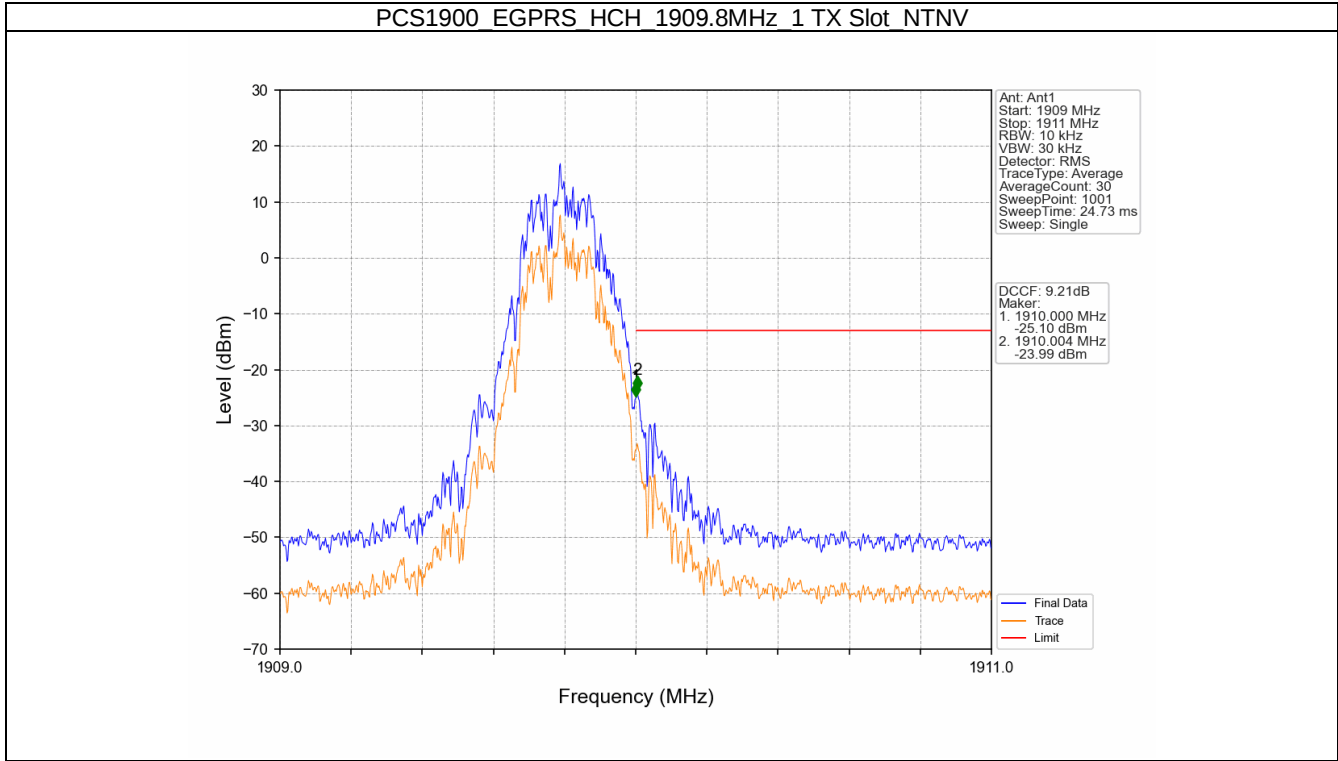
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SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

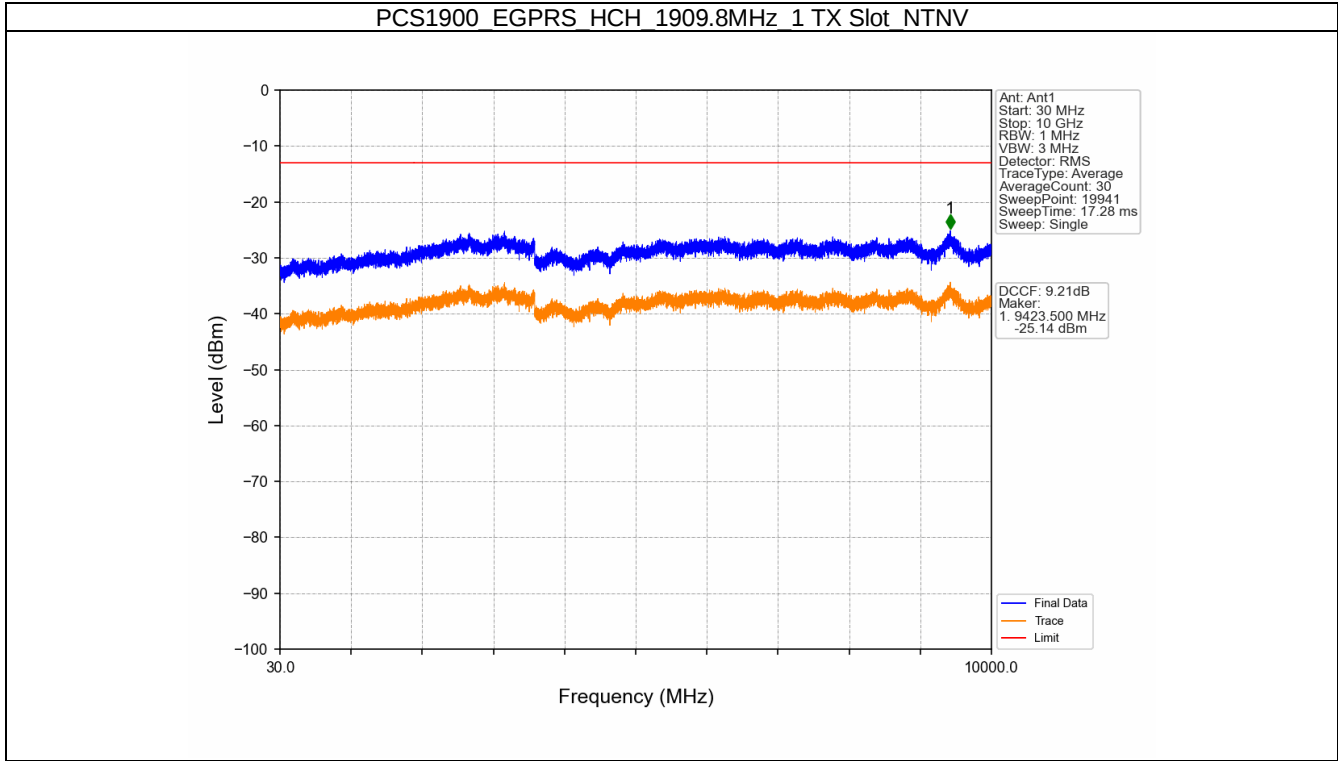
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SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

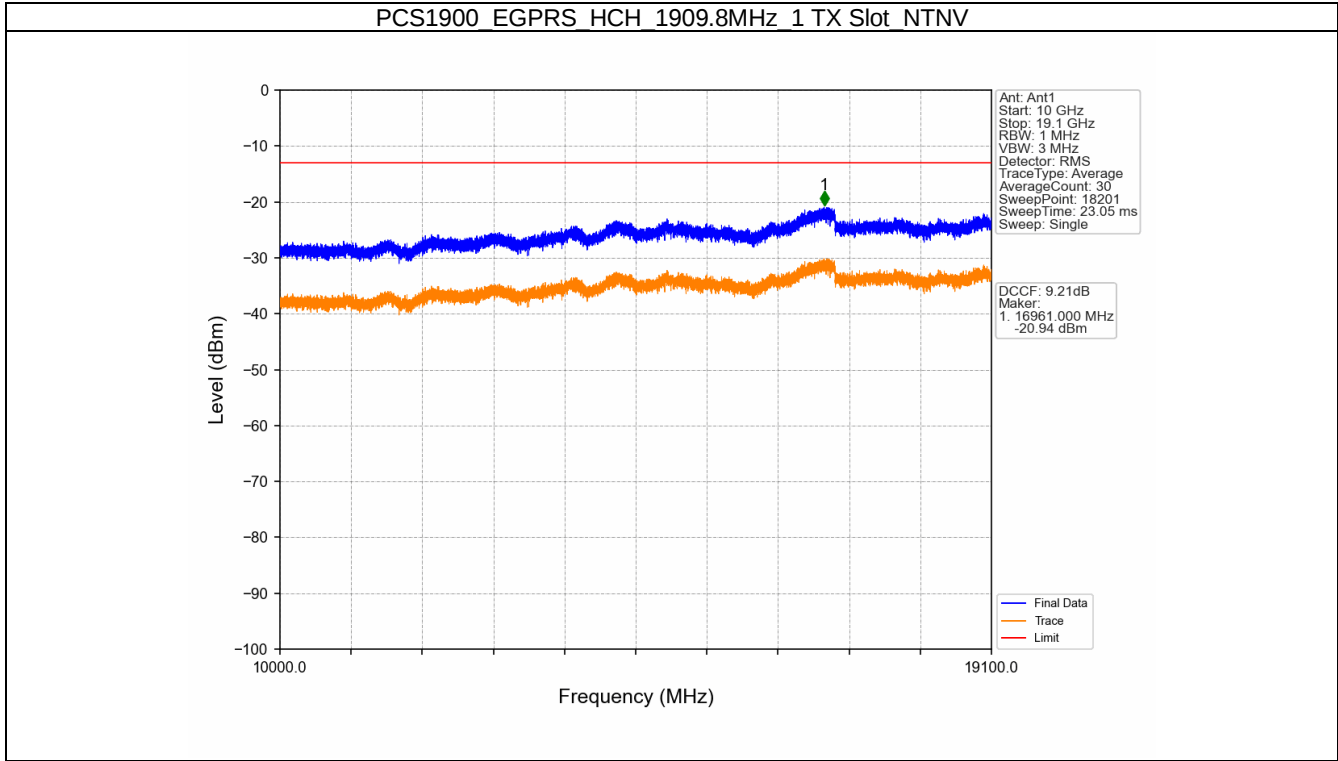
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6. Field Strength of Spurious Radiation

Test Band = GSM1900_

Test Channel = Low

Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	3700.4000	40.03	-45.50	28.80	-71.93	-13.00	58.93	Horizontal
2	5550.6000	39.15	-45.15	32.61	-68.65	-13.00	55.65	Horizontal
3	7400.8000	37.74	-43.41	36.32	-64.60	-13.00	51.60	Horizontal
4	9251.0000	33.83	-40.23	36.78	-64.89	-13.00	51.89	Horizontal
5	11101.2000	31.17	-37.96	38.71	-63.34	-13.00	50.34	Horizontal
6	13852.5	30.16	-35.90	40.63	-60.37	-13.00	47.37	Horizontal

Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	3700.4000	40.09	-45.50	28.80	-71.87	-13.00	58.87	Vertical
2	5550.6000	39.41	-45.15	32.61	-68.39	-13.00	55.39	Vertical
3	7400.8000	38.26	-43.41	36.32	-64.08	-13.00	51.08	Vertical
4	9251.0000	34.39	-40.23	36.78	-64.33	-13.00	51.33	Vertical
5	11101.2000	30.42	-37.96	38.71	-64.09	-13.00	51.09	Vertical
6	13728	31.12	-36.23	40.41	-59.96	-13.00	46.96	Vertical



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Test Band = GSM1900_
Test Channel = Mid

Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	3760.0000	40.82	-45.75	28.86	-71.33	-13.00	58.33	Horizontal
2	5640.0000	38.72	-44.98	32.63	-68.89	-13.00	55.89	Horizontal
3	7520.0000	37.00	-43.10	36.61	-64.75	-13.00	51.75	Horizontal
4	9400.0000	33.90	-39.83	37.06	-64.13	-13.00	51.13	Horizontal
5	11280.0000	30.11	-37.41	38.73	-63.84	-13.00	50.84	Horizontal
6	13843.5	30.14	-35.99	40.62	-60.49	-13.00	47.49	Horizontal

Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	3760.0000	40.98	-45.75	28.86	-71.17	-13.00	58.17	Vertical
2	5640.0000	38.80	-44.98	32.63	-68.81	-13.00	55.81	Vertical
3	7520.0000	36.86	-43.10	36.61	-64.89	-13.00	51.89	Vertical
4	9400.0000	34.16	-39.83	37.06	-63.87	-13.00	50.87	Vertical
5	11280.0000	30.54	-37.41	38.73	-63.41	-13.00	50.41	Vertical
6	13674	30.96	-36.14	40.31	-60.13	-13.00	47.13	Vertical



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Test Band = GSM1900_
Test Channel = High

Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	3819.6000	40.56	-45.99	28.92	-71.77	-13.00	58.77	Horizontal
2	7639.2000	38.05	-43.01	36.66	-63.56	-13.00	50.56	Horizontal
3	9549.0000	33.03	-39.96	37.34	-64.84	-13.00	51.84	Horizontal
4	11458.8000	30.40	-37.33	38.75	-63.45	-13.00	50.45	Horizontal
5	13695	30.62	-36.16	40.35	-60.45	-13.00	47.45	Horizontal
6	15431.25	29.10	-34.08	40.39	-59.84	-13.00	46.84	Horizontal

Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	3819.6000	41.29	-45.99	28.92	-71.04	-13.00	58.04	Vertical
2	7639.2000	37.38	-43.01	36.66	-64.23	-13.00	51.23	Vertical
3	9549.0000	32.92	-39.96	37.34	-64.95	-13.00	51.95	Vertical
4	11458.8000	30.23	-37.33	38.75	-63.62	-13.00	50.62	Vertical
5	13811.25	30.25	-36.29	40.56	-60.74	-13.00	47.74	Vertical
6	15852.75	28.58	-33.69	39.51	-60.86	-13.00	47.86	Vertical

Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & AMP. The basic equation with a sample calculation is as follows:

AF = Antenna Factor(dB/m)

Factor = Cable Factor(dB) - Preamplifier (dB)

Level = Reading Level + AF + Factor -95.26

Margin = Limit – Level

---End of Attachment---