

1. Effective (Isotropic) Radiated Power Output Data

1.1 PCS1900_EIRP(Ant31)

1.1.1 Test Result

Band: PCS1900									
ENV	Mode		Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	EIRP (dBm)		Verdict	
	Network	Subset				Result	Limit		
NTNV	GSM	GSM	1850.2	30.35	-0.03	30.32	<=33.01	Pass	
			1880	30.00	-0.03	29.97	<=33.01	Pass	
			1909.8	29.99	-0.03	29.96	<=33.01	Pass	
	GPRS	1 TX Slot	1850.2	30.37	-0.03	30.34	<=33.01	Pass	
		2 TX Slots	1850.2	28.32	-0.03	28.29	<=33.01	Pass	
		3 TX Slots	1850.2	26.12	-0.03	26.09	<=33.01	Pass	
		4 TX Slots	1850.2	24.64	-0.03	24.61	<=33.01	Pass	
		1 TX Slot	1880	29.93	-0.03	29.90	<=33.01	Pass	
		2 TX Slots	1880	27.89	-0.03	27.86	<=33.01	Pass	
		3 TX Slots	1880	26.10	-0.03	26.07	<=33.01	Pass	
		4 TX Slots	1880	24.59	-0.03	24.56	<=33.01	Pass	
		1 TX Slot	1909.8	29.91	-0.03	29.88	<=33.01	Pass	
		2 TX Slots	1909.8	27.87	-0.03	27.84	<=33.01	Pass	
		3 TX Slots	1909.8	26.07	-0.03	26.04	<=33.01	Pass	
		4 TX Slots	1909.8	24.63	-0.03	24.60	<=33.01	Pass	
		EGPRS	1 TX Slot	1850.2	25.74	-0.03	25.71	<=33.01	Pass
			2 TX Slots	1850.2	24.15	-0.03	24.12	<=33.01	Pass
			3 TX Slots	1850.2	22.22	-0.03	22.19	<=33.01	Pass
			4 TX Slots	1850.2	20.71	-0.03	20.68	<=33.01	Pass
			1 TX Slot	1880	25.71	-0.03	25.68	<=33.01	Pass
			2 TX Slots	1880	24.08	-0.03	24.05	<=33.01	Pass
			3 TX Slots	1880	22.05	-0.03	22.02	<=33.01	Pass
			4 TX Slots	1880	20.58	-0.03	20.55	<=33.01	Pass
	1 TX Slot		1909.8	25.36	-0.03	25.33	<=33.01	Pass	
	2 TX Slots		1909.8	24.68	-0.03	24.65	<=33.01	Pass	
	3 TX Slots		1909.8	22.04	-0.03	22.01	<=33.01	Pass	
	4 TX Slots		1909.8	21.69	-0.03	21.66	<=33.01	Pass	
Note1: EIRP=Conducted Power+Antenna Gain									

2. Frequency Stability

2.1 Test Result

2.1.1 PCS1900

Band: PCS1900							
Network	Frequency (MHz)	Temp. (°C)	Voltage (VDC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
					Result	Limit	
GSM	1850.2	20	3.7	7.726	0.0042	/	Pass
			3.91	10.573	0.0057	/	Pass
			4.4	14.773	0.0080	/	Pass
		-30	3.91	15.712	0.0085	/	Pass
		-20	3.91	13.825	0.0075	/	Pass
		-10	3.91	16.075	0.0087	/	Pass
		0	3.91	19.559	0.0106	/	Pass
		10	3.91	17.573	0.0095	/	Pass

		30	3.91	16.072	0.0087	/	Pass
		40	3.91	14.212	0.0077	/	Pass
		50	3.91	21.166	0.0114	/	Pass
	1880	20	3.7	21.483	0.0114	/	Pass
			3.91	22.481	0.0120	/	Pass
			4.4	20.157	0.0107	/	Pass
		-30	3.91	16.974	0.0090	/	Pass
		-20	3.91	20.121	0.0107	/	Pass
		-10	3.91	22.948	0.0122	/	Pass
		0	3.91	25.293	0.0135	/	Pass
		10	3.91	24.418	0.0130	/	Pass
		30	3.91	18.622	0.0099	/	Pass
		40	3.91	20.011	0.0106	/	Pass
		50	3.91	21.427	0.0114	/	Pass
	1909.8	20	3.7	17.911	0.0094	/	Pass
			3.91	22.087	0.0116	/	Pass
			4.4	20.790	0.0109	/	Pass
		-30	3.91	16.178	0.0085	/	Pass
		-20	3.91	16.006	0.0084	/	Pass
		-10	3.91	18.650	0.0098	/	Pass
		0	3.91	24.619	0.0129	/	Pass
		10	3.91	21.484	0.0112	/	Pass
		30	3.91	16.326	0.0085	/	Pass
		40	3.91	16.930	0.0089	/	Pass
		50	3.91	20.450	0.0107	/	Pass
GPRS	1850.2	20	3.7	29.818	0.0161	/	Pass
			3.91	30.159	0.0163	/	Pass
			4.4	29.472	0.0159	/	Pass
		-30	3.91	27.708	0.0150	/	Pass
		-20	3.91	28.911	0.0156	/	Pass
		-10	3.91	30.095	0.0163	/	Pass
		0	3.91	27.631	0.0149	/	Pass
		10	3.91	30.667	0.0166	/	Pass
		30	3.91	32.423	0.0175	/	Pass
		40	3.91	28.061	0.0152	/	Pass
		50	3.91	25.402	0.0137	/	Pass
	1880	20	3.7	29.499	0.0157	/	Pass
			3.91	29.383	0.0156	/	Pass
			4.4	25.979	0.0138	/	Pass
		-30	3.91	28.613	0.0152	/	Pass
		-20	3.91	27.457	0.0146	/	Pass
		-10	3.91	29.704	0.0158	/	Pass
		0	3.91	28.210	0.0150	/	Pass
		10	3.91	29.589	0.0157	/	Pass
		30	3.91	30.488	0.0162	/	Pass
		40	3.91	26.543	0.0141	/	Pass
		50	3.91	28.719	0.0153	/	Pass
	1909.8	20	3.7	27.962	0.0146	/	Pass
			3.91	30.291	0.0159	/	Pass
			4.4	28.252	0.0148	/	Pass
		-30	3.91	26.242	0.0137	/	Pass
		-20	3.91	29.321	0.0154	/	Pass
		-10	3.91	28.669	0.0150	/	Pass
		0	3.91	26.860	0.0141	/	Pass
		10	3.91	27.705	0.0145	/	Pass
		30	3.91	26.652	0.0140	/	Pass
		40	3.91	28.025	0.0147	/	Pass
		50	3.91	28.795	0.0151	/	Pass
EGPRS	1850.2	20	3.7	27.830	0.0150	/	Pass

			3.91	25.710	0.0139	/	Pass
			4.4	26.457	0.0143	/	Pass
		-30	3.91	21.866	0.0118	/	Pass
		-20	3.91	25.743	0.0139	/	Pass
		-10	3.91	27.131	0.0147	/	Pass
		0	3.91	25.898	0.0140	/	Pass
		10	3.91	25.376	0.0137	/	Pass
		30	3.91	26.083	0.0141	/	Pass
		40	3.91	24.131	0.0130	/	Pass
		50	3.91	27.956	0.0151	/	Pass
	1880	20	3.7	27.705	0.0147	/	Pass
			3.91	28.384	0.0151	/	Pass
			4.4	25.636	0.0136	/	Pass
		-30	3.91	28.675	0.0153	/	Pass
		-20	3.91	30.290	0.0161	/	Pass
		-10	3.91	27.625	0.0147	/	Pass
		0	3.91	25.864	0.0138	/	Pass
		10	3.91	28.234	0.0150	/	Pass
		30	3.91	28.274	0.0150	/	Pass
		40	3.91	25.616	0.0136	/	Pass
		50	3.91	29.099	0.0155	/	Pass
	1909.8	20	3.7	28.535	0.0149	/	Pass
			3.91	27.866	0.0146	/	Pass
			4.4	27.368	0.0143	/	Pass
		-30	3.91	28.058	0.0147	/	Pass
		-20	3.91	25.584	0.0134	/	Pass
		-10	3.91	26.497	0.0139	/	Pass
		0	3.91	26.095	0.0137	/	Pass
		10	3.91	29.405	0.0154	/	Pass
		30	3.91	27.628	0.0145	/	Pass
		40	3.91	24.239	0.0127	/	Pass
		50	3.91	26.471	0.0139	/	Pass

3. 99% & 26dB Bandwidth

3.1 Test Result

3.1.1 PCS1900_OBW

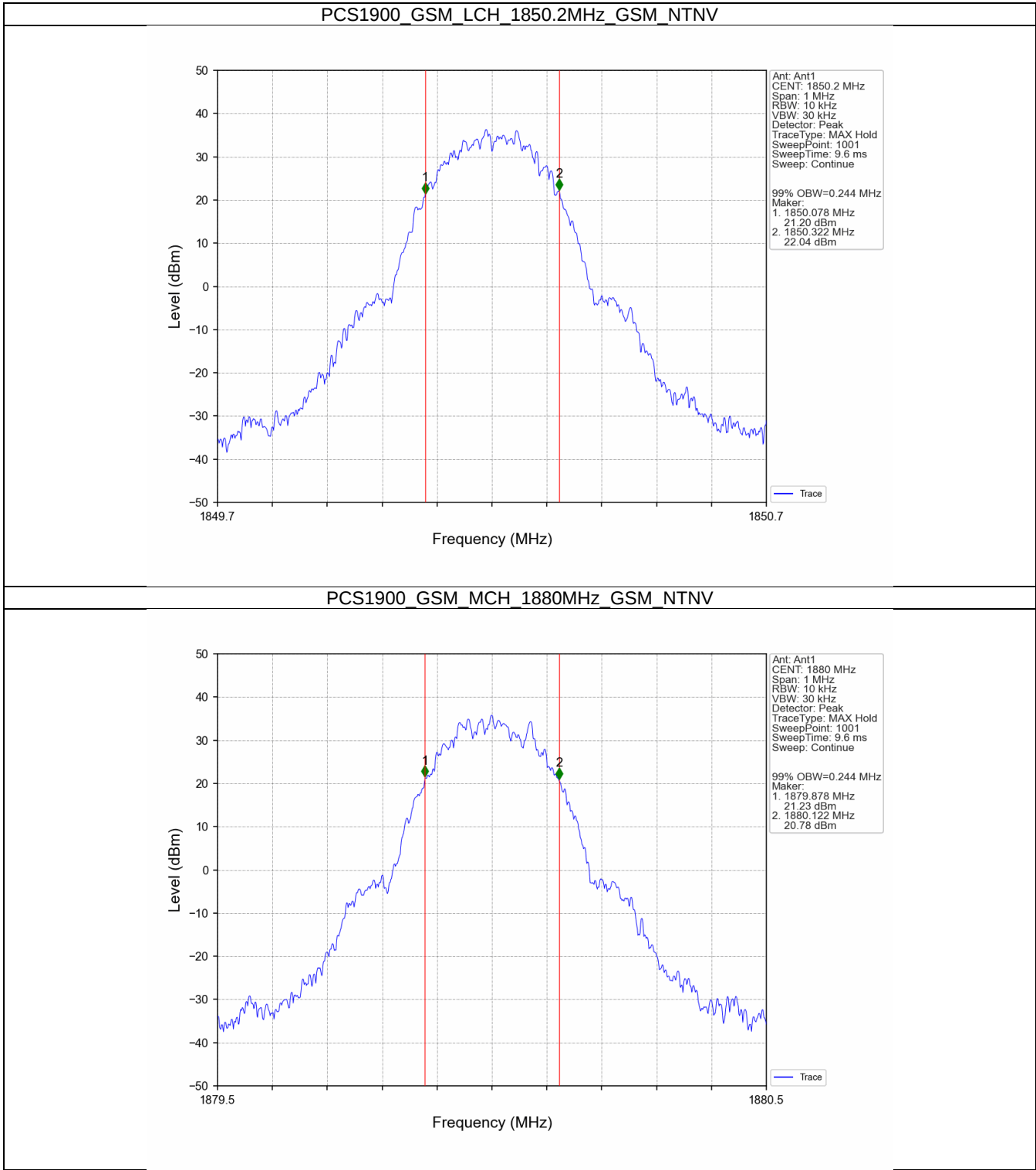
Band: PCS1900						
ENV	Mode		Frequency (MHz)	99% Occupied Bandwidth (MHz)		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	1850.2	0.244	/	Pass
			1880	0.244	/	Pass
			1909.8	0.244	/	Pass
	GPRS	1 TX Slot	1850.2	0.240	/	Pass
			1880	0.243	/	Pass
			1909.8	0.244	/	Pass
	EGPRS	1 TX Slot	1850.2	0.239	/	Pass
			1880	0.241	/	Pass
			1909.8	0.245	/	Pass

3.1.2 PCS1900_XDB

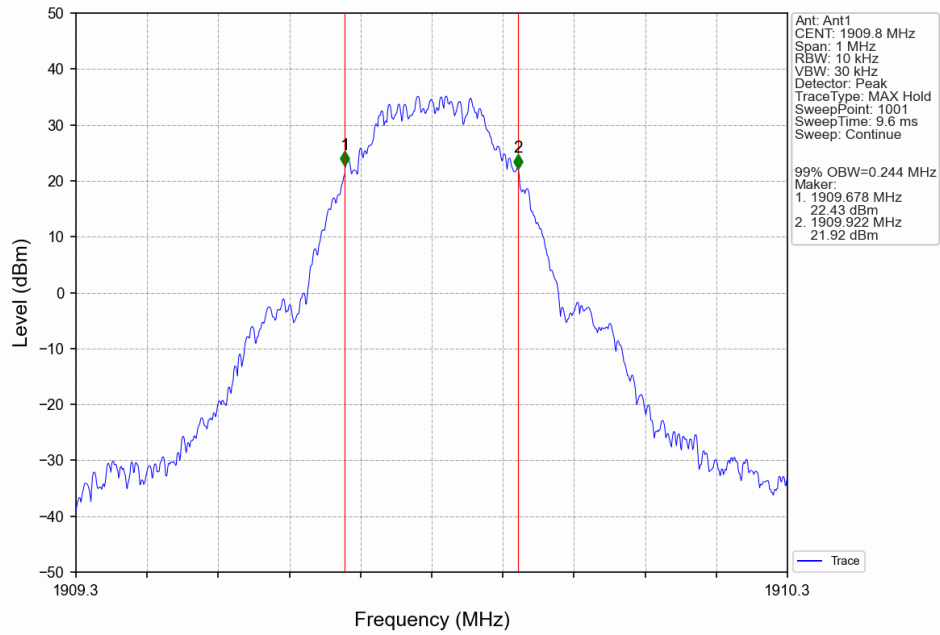
Band: PCS1900						
ENV	Mode		Frequency (MHz)	26dB Bandwidth (MHz)		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	1850.2	0.312	/	Pass
			1880	0.317	/	Pass
			1909.8	0.315	/	Pass
	GPRS	1 TX Slot	1850.2	0.315	/	Pass
			1880	0.308	/	Pass
			1909.8	0.315	/	Pass
	EGPRS	1 TX Slot	1850.2	0.301	/	Pass
			1880	0.305	/	Pass
			1909.8	0.309	/	Pass

3.2 Test Graph

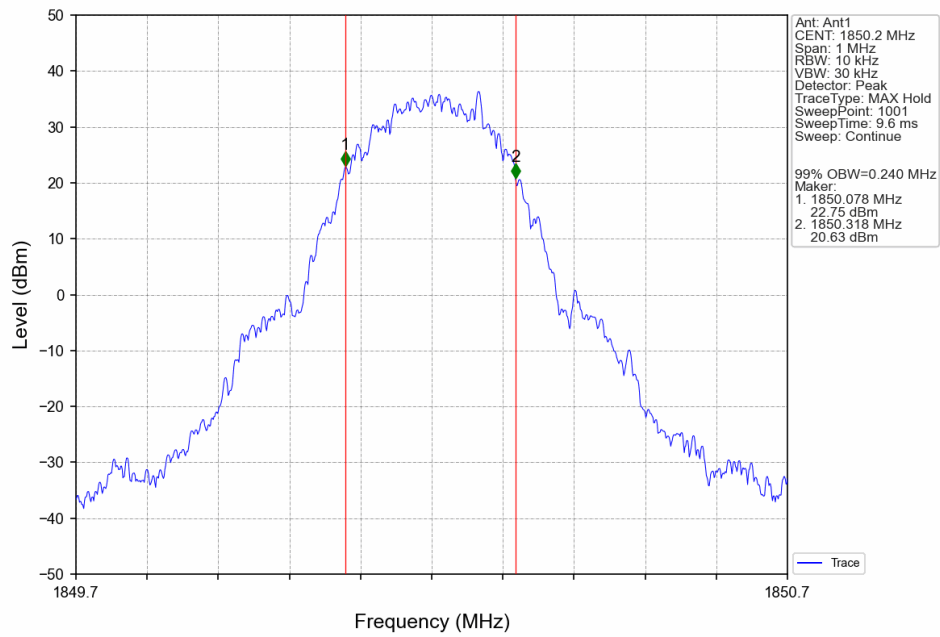
3.2.1 PCS1900_OBW



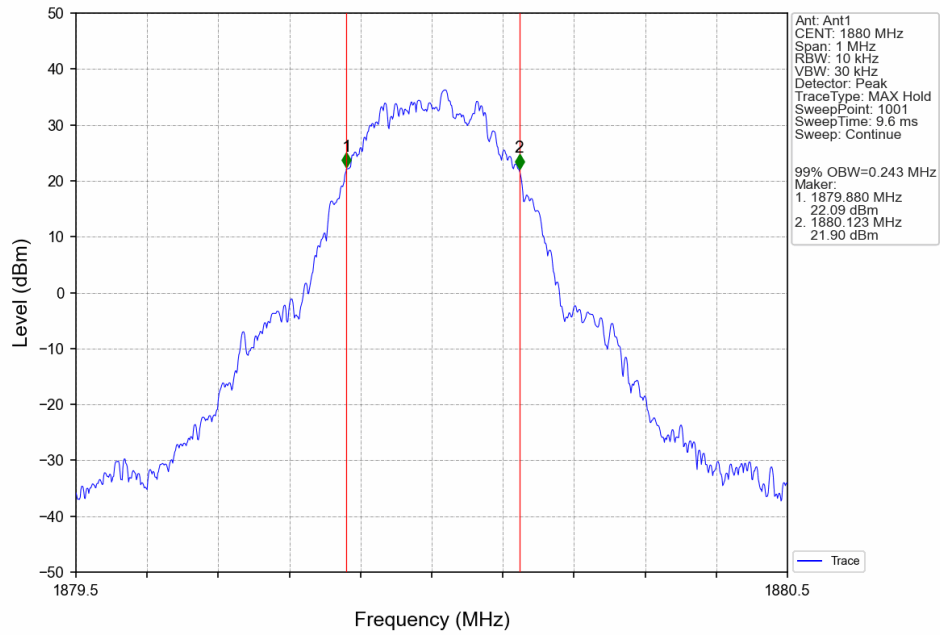
PCS1900 GSM HCH 1909.8MHz GSM NTN



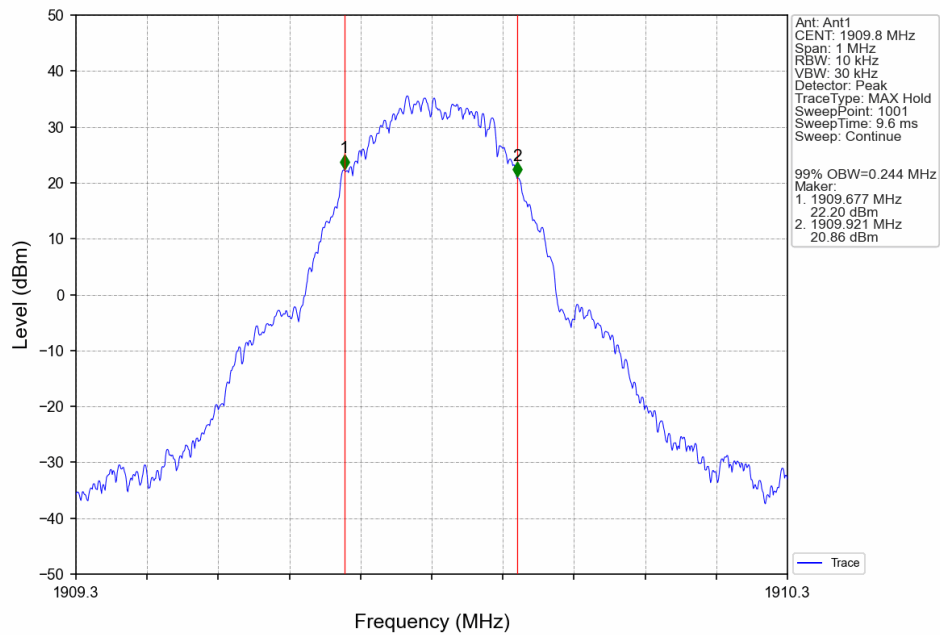
PCS1900 GPRS LCH 1850.2MHz 1 TX Slot NTN



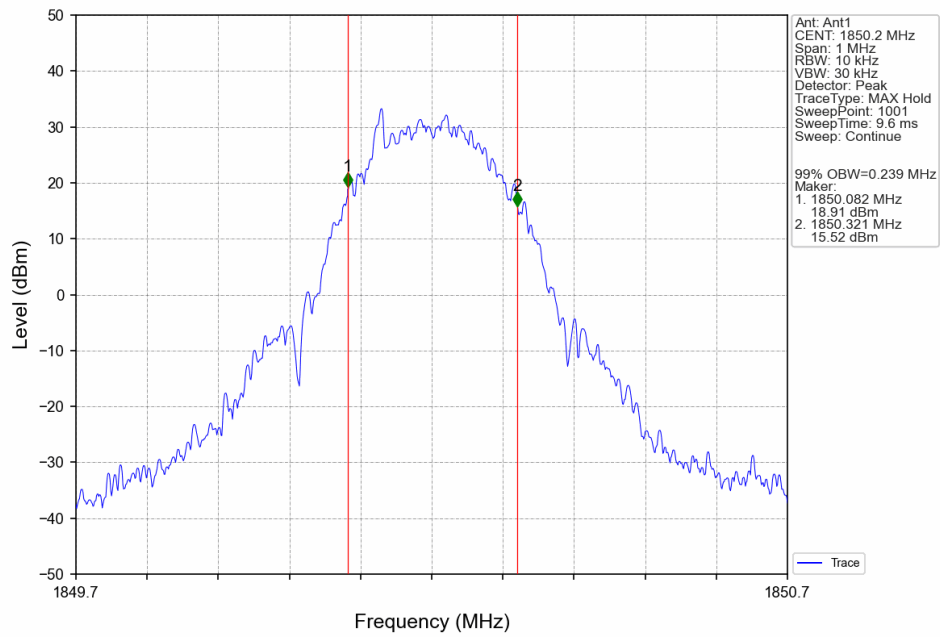
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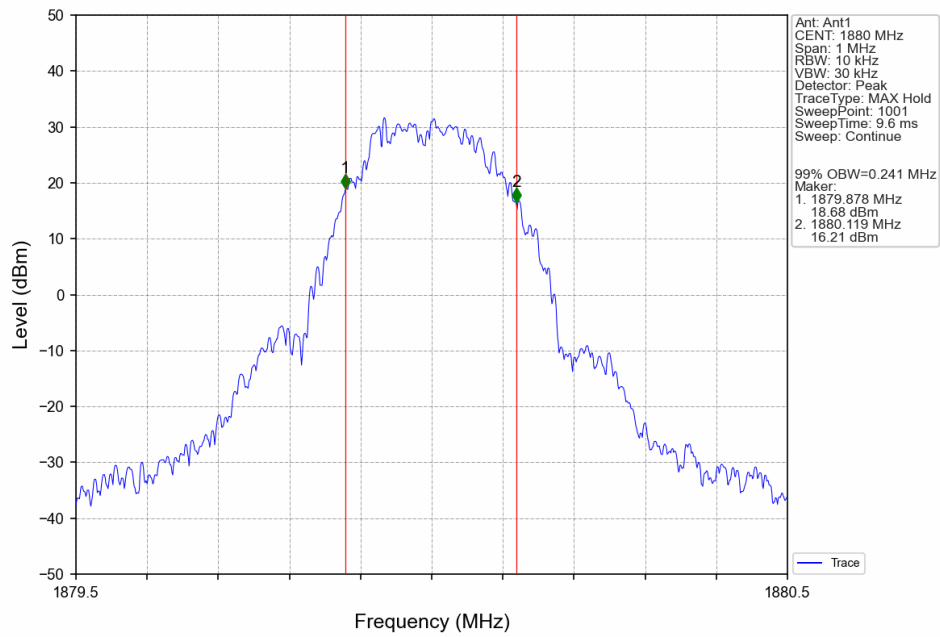
PCS1900 GPRS HCH 1909.8MHz 1 TX Slot NTNV



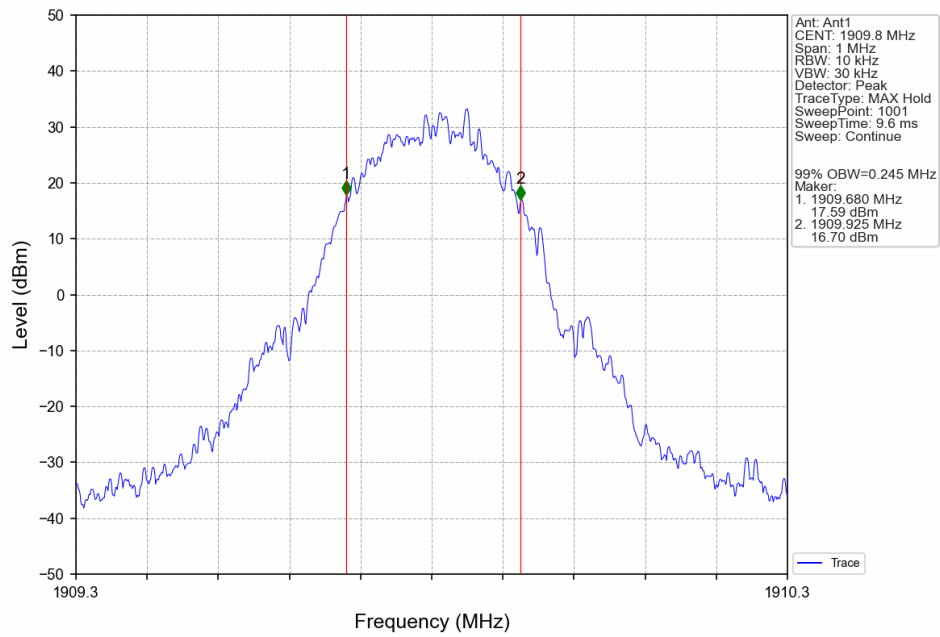
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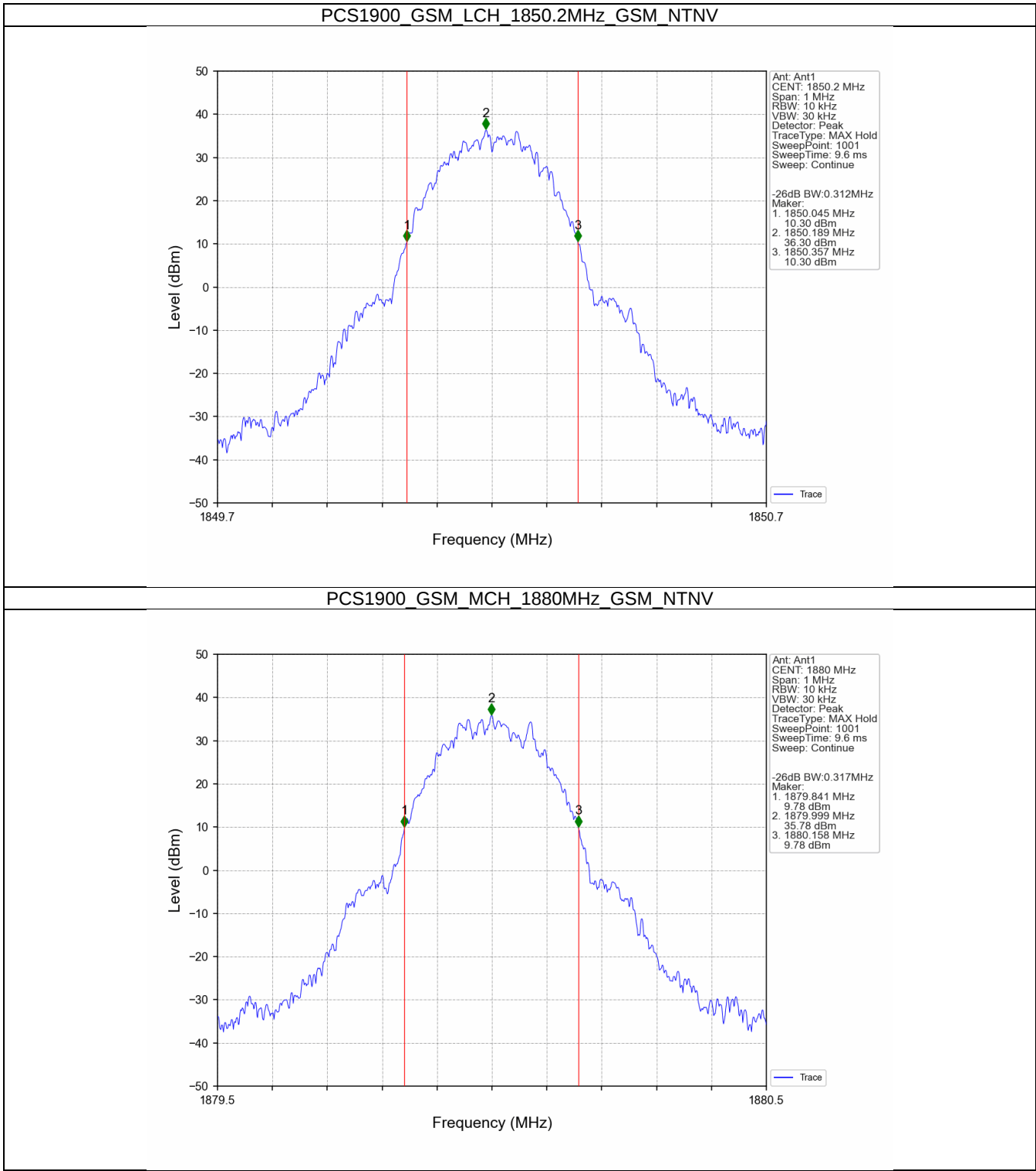
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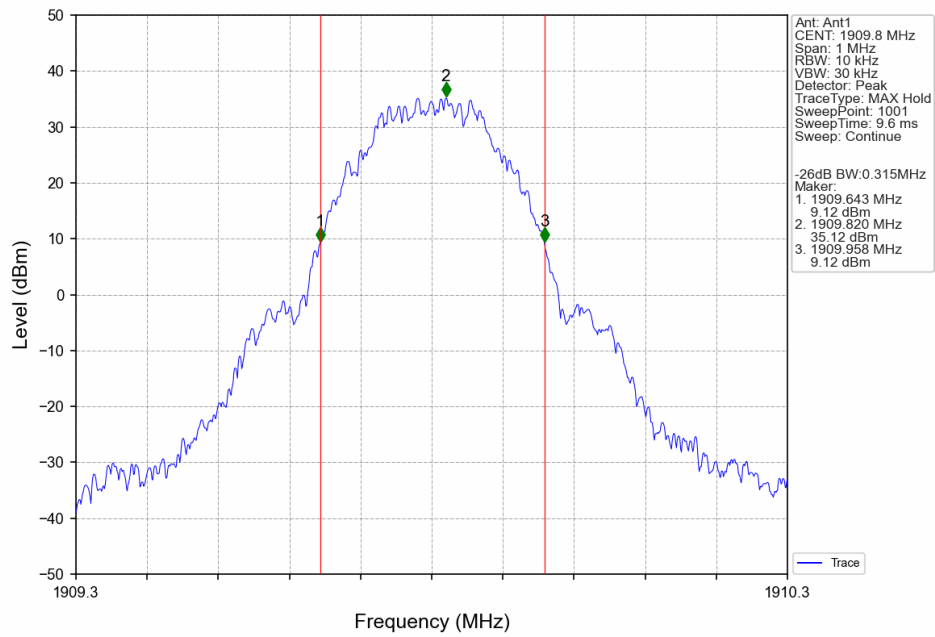
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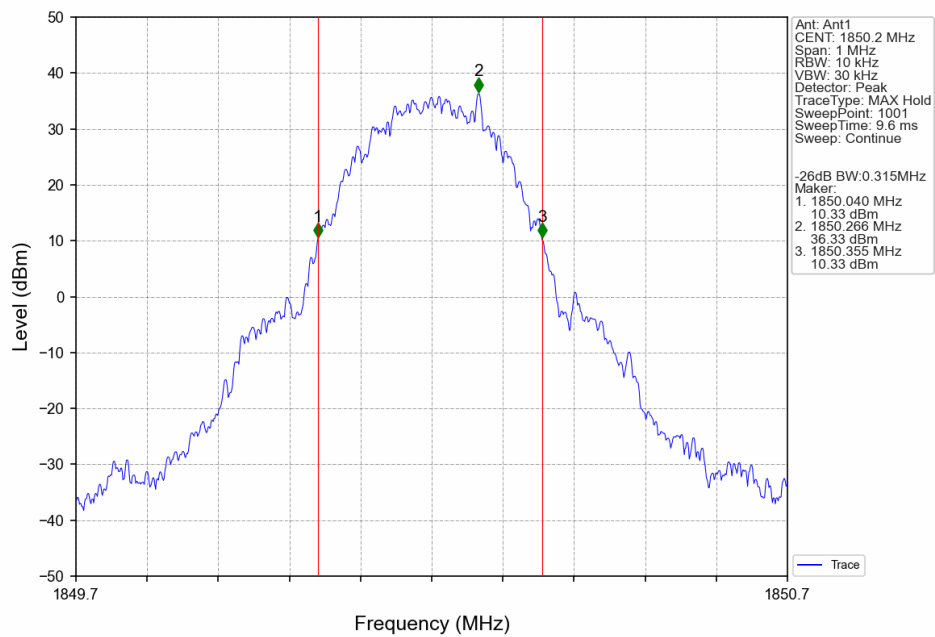
3.2.2 PCS1900_XDB



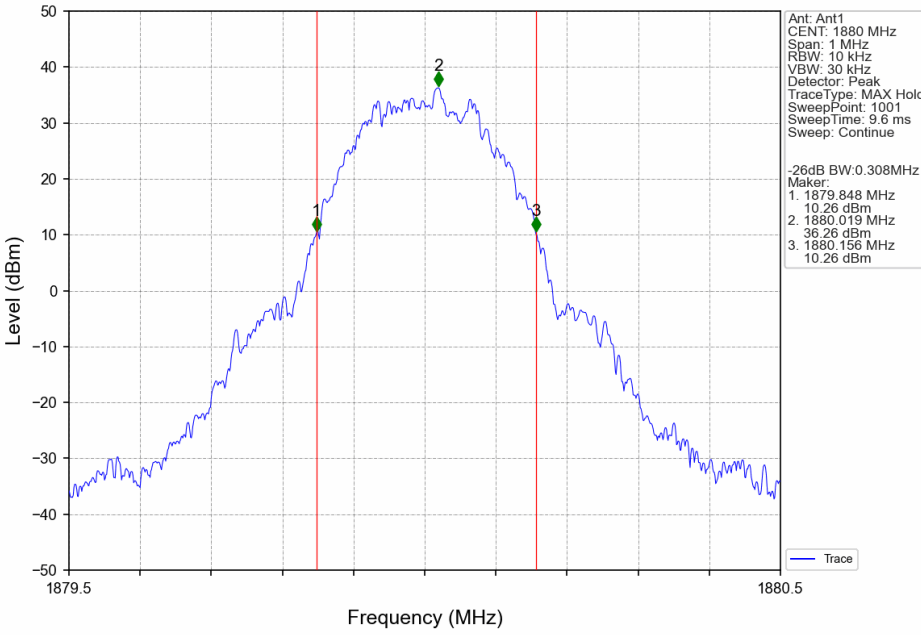
PCS1900 GSM HCH 1909.8MHz GSM NTN



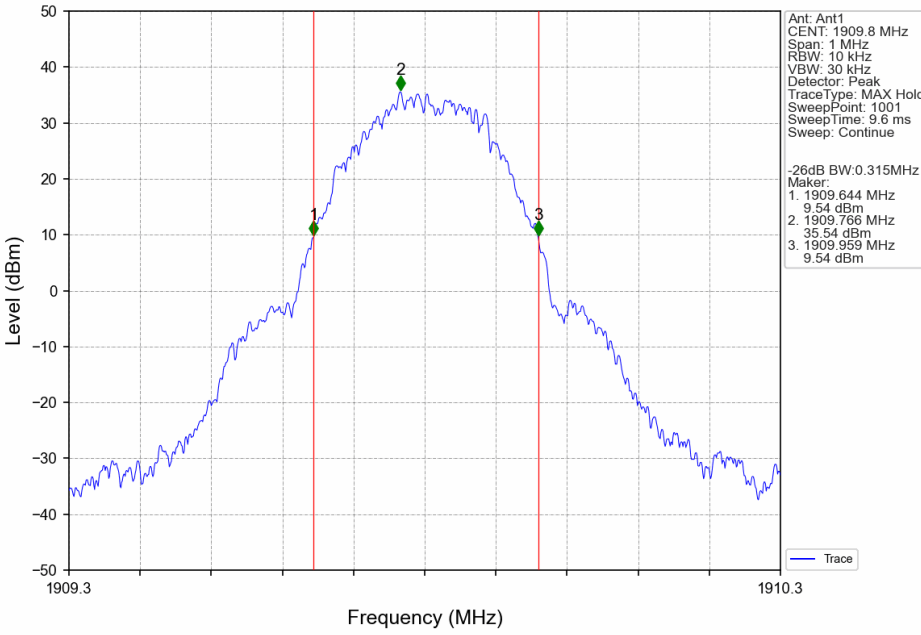
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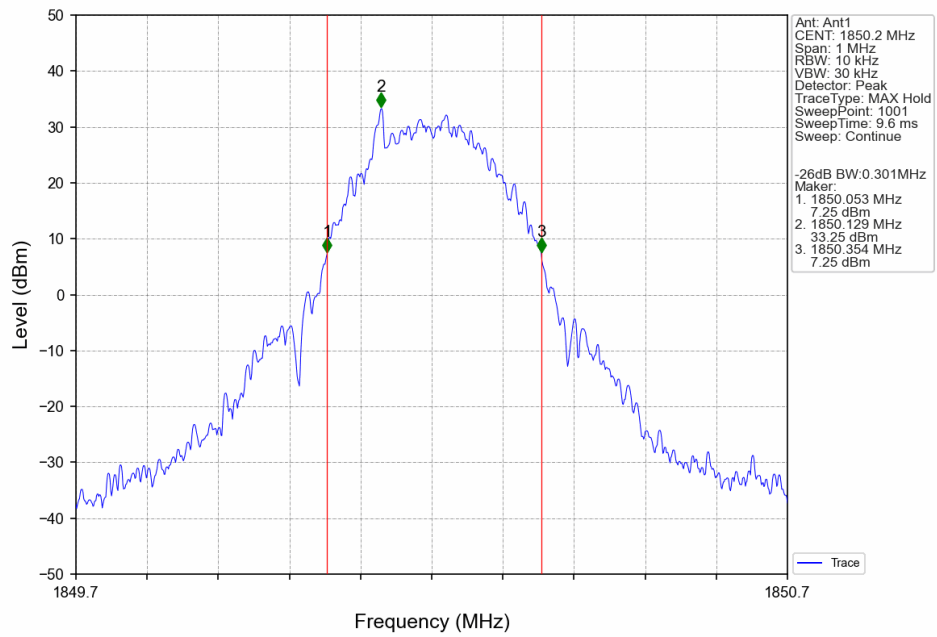
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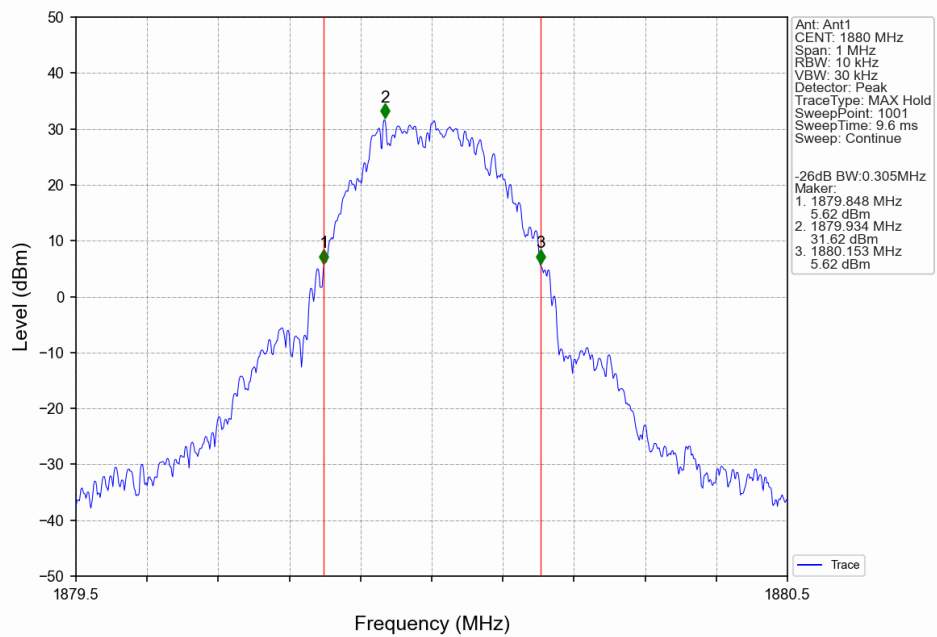
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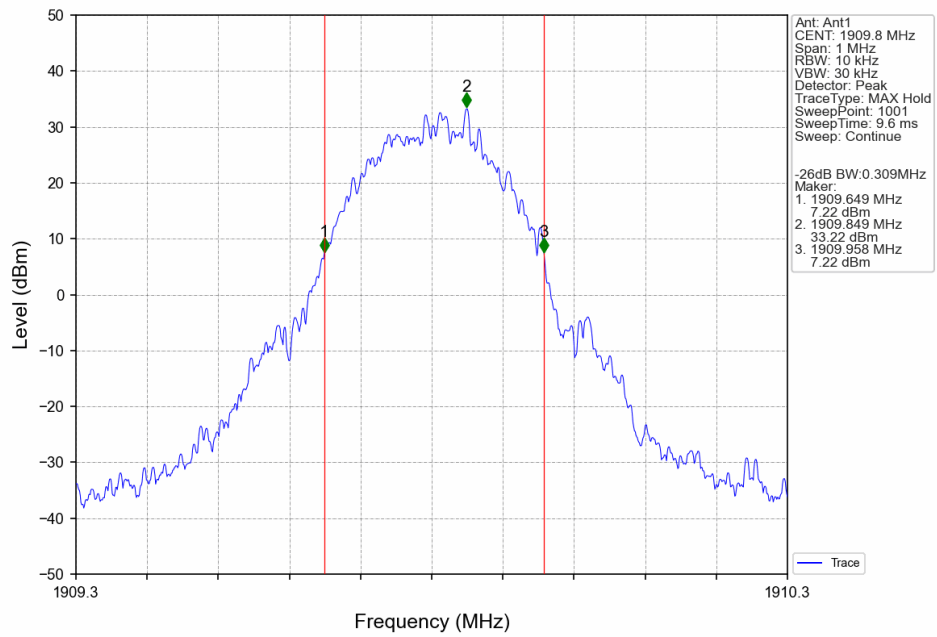
PCS1900 EGPRS LCH 1850.2MHz 1 TX Slot NTNV



PCS1900 EGPRS MCH 1880MHz 1 TX Slot NTNV



PCS1900 EGPRS HCH 1909.8MHz 1 TX Slot NTNV



4. Peak-Average Ratio

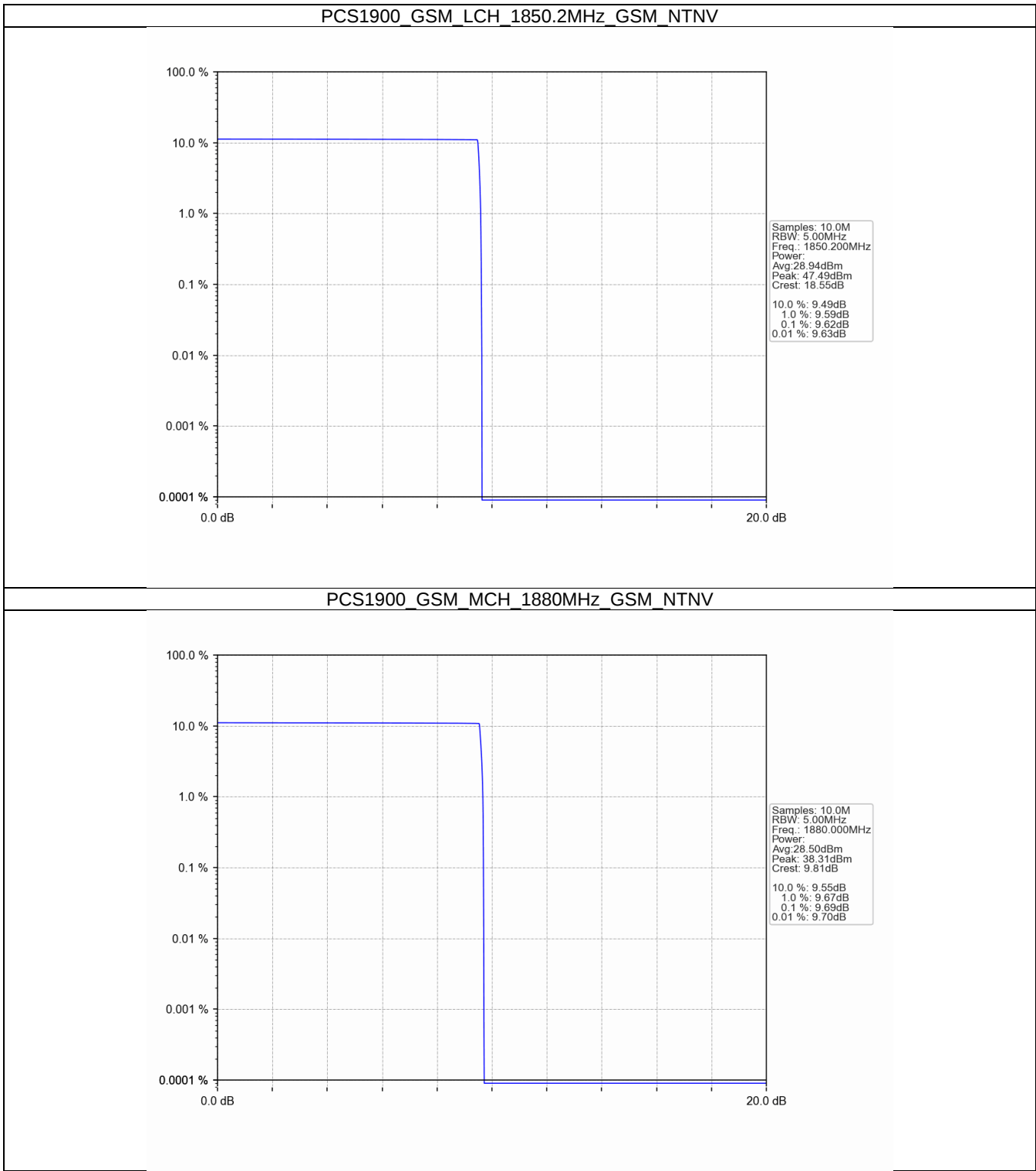
4.1 Test Result

4.1.1 PCS1900

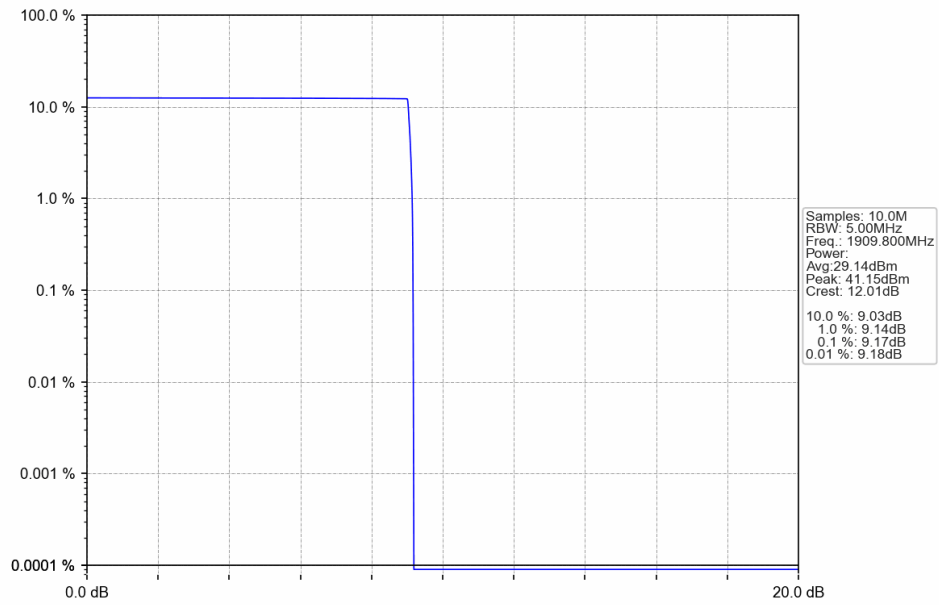
Band: PCS1900						
ENV	Mode		Frequency (MHz)	Peak-Average Ratio (dB)		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	1850.2	9.62	<=13	Pass
			1880	9.69	<=13	Pass
			1909.8	9.17	<=13	Pass
	GPRS	4 TX Slots	1850.2	3.96	<=13	Pass
			1880	3.44	<=13	Pass
			1909.8	3.53	<=13	Pass
	EGPRS	4 TX Slots	1850.2	6.76	<=13	Pass
			1880	8.07	<=13	Pass
			1909.8	7.94	<=13	Pass

4.2 Test Graph

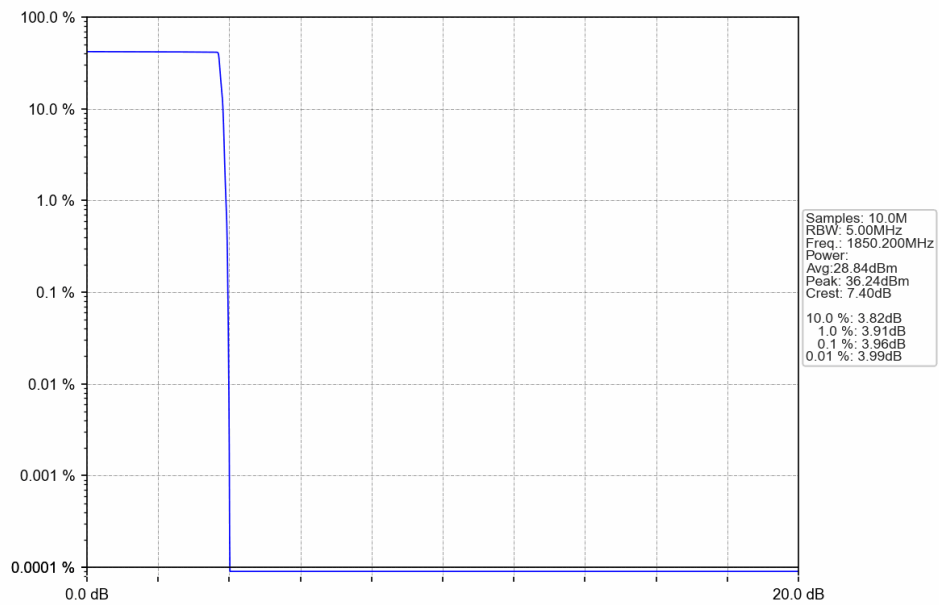
4.2.1 PCS1900



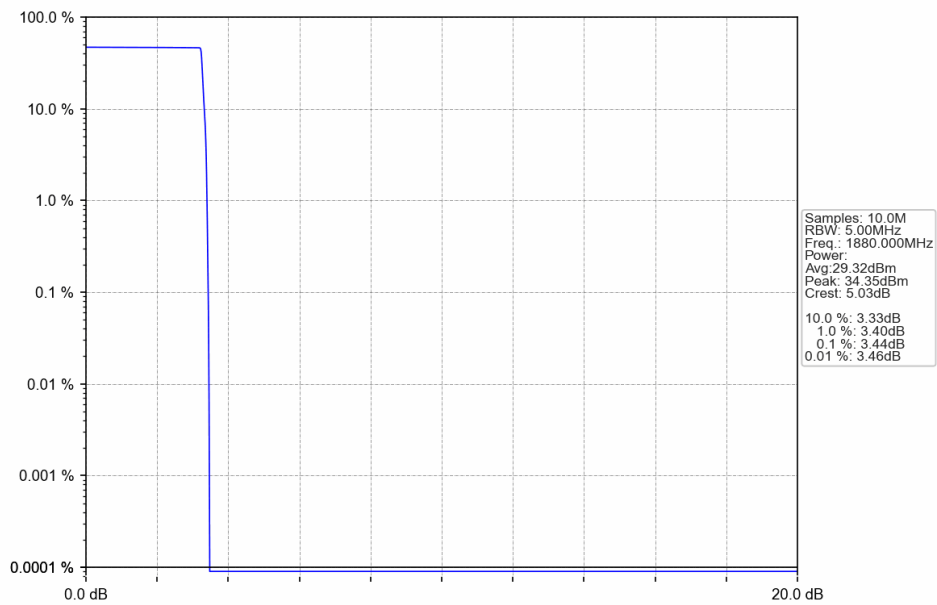
PCS1900 GSM HCH 1909.8MHz GSM NTNV



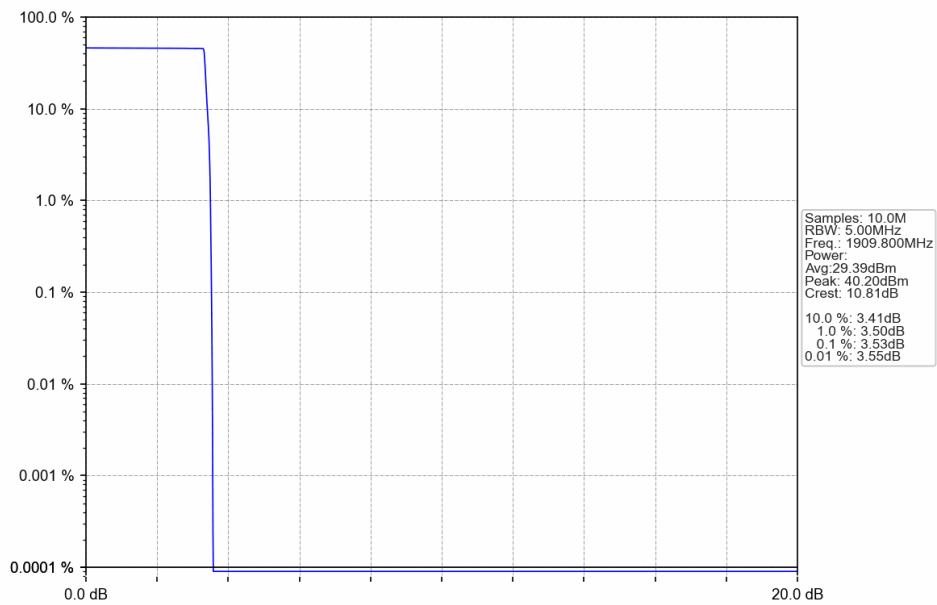
PCS1900 GPRS LCH 1850.2MHz 4 TX Slots NTNV



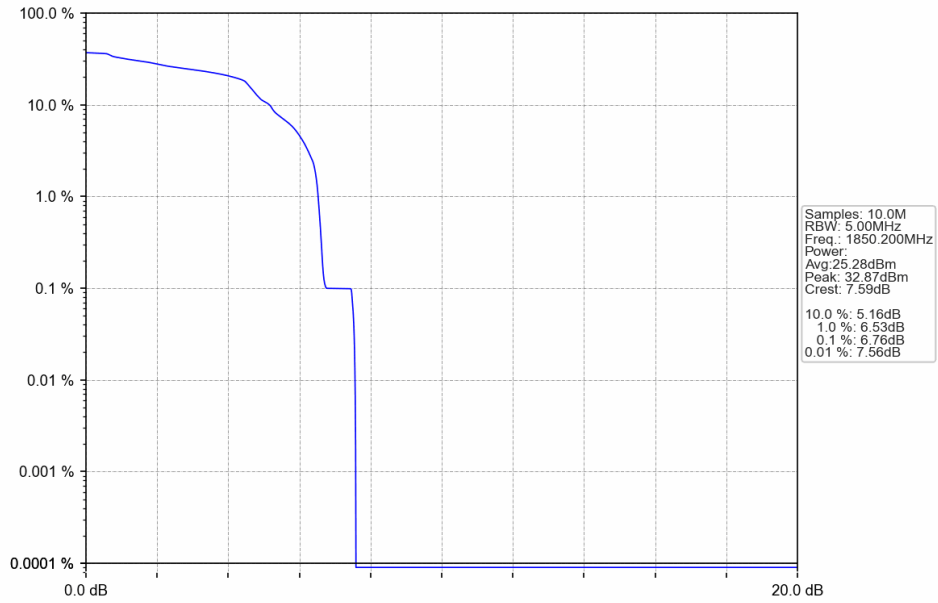
PCS1900 GPRS MCH 1880MHz 4 TX Slots NTNV



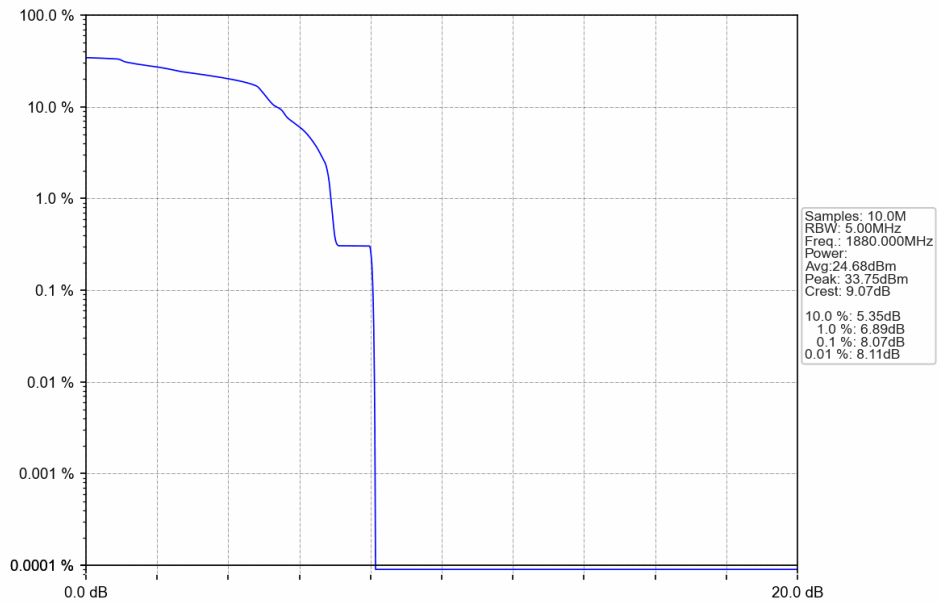
PCS1900 GPRS HCH 1909.8MHz 4 TX Slots NTNV

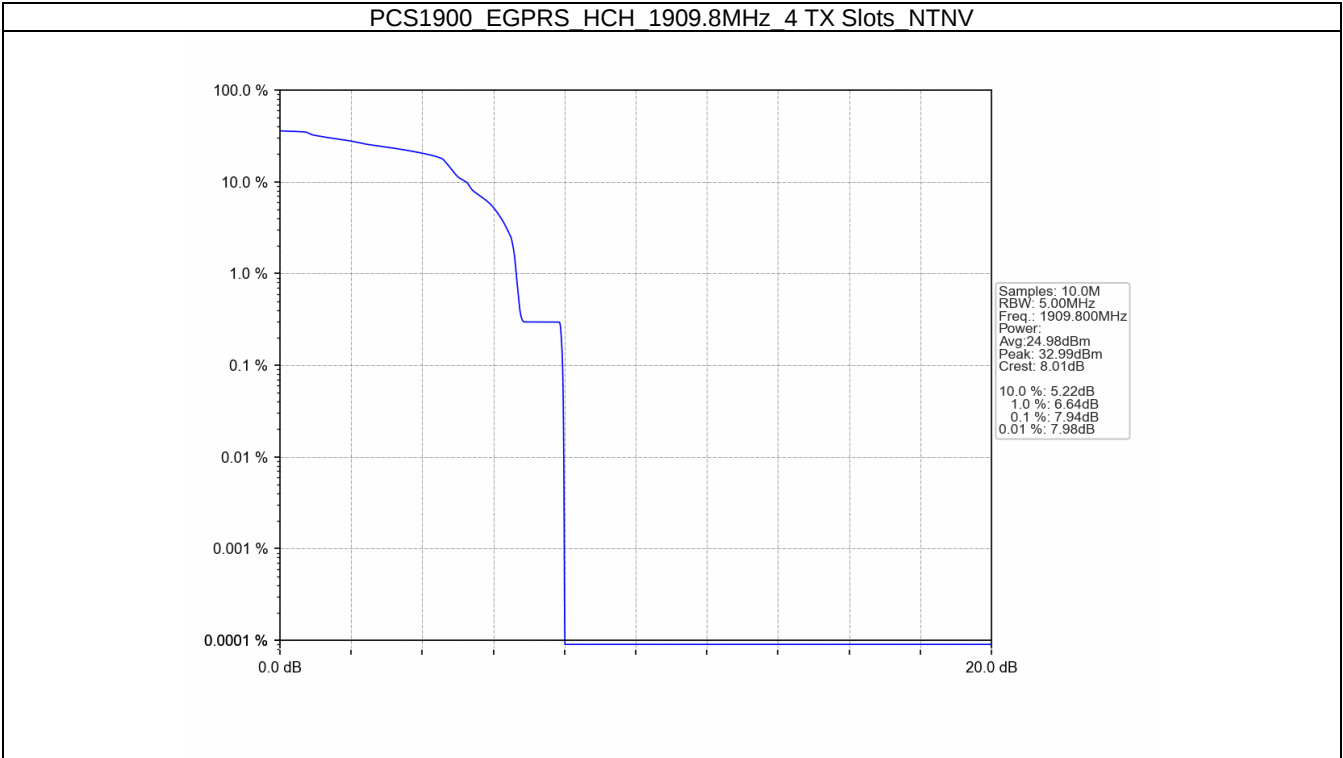


PCS1900 EGPRS LCH 1850.2MHz 4 TX Slots NTNV



PCS1900 EGPRS MCH 1880MHz 4 TX Slots NTNV





5. Spurious Emission & Band Edges

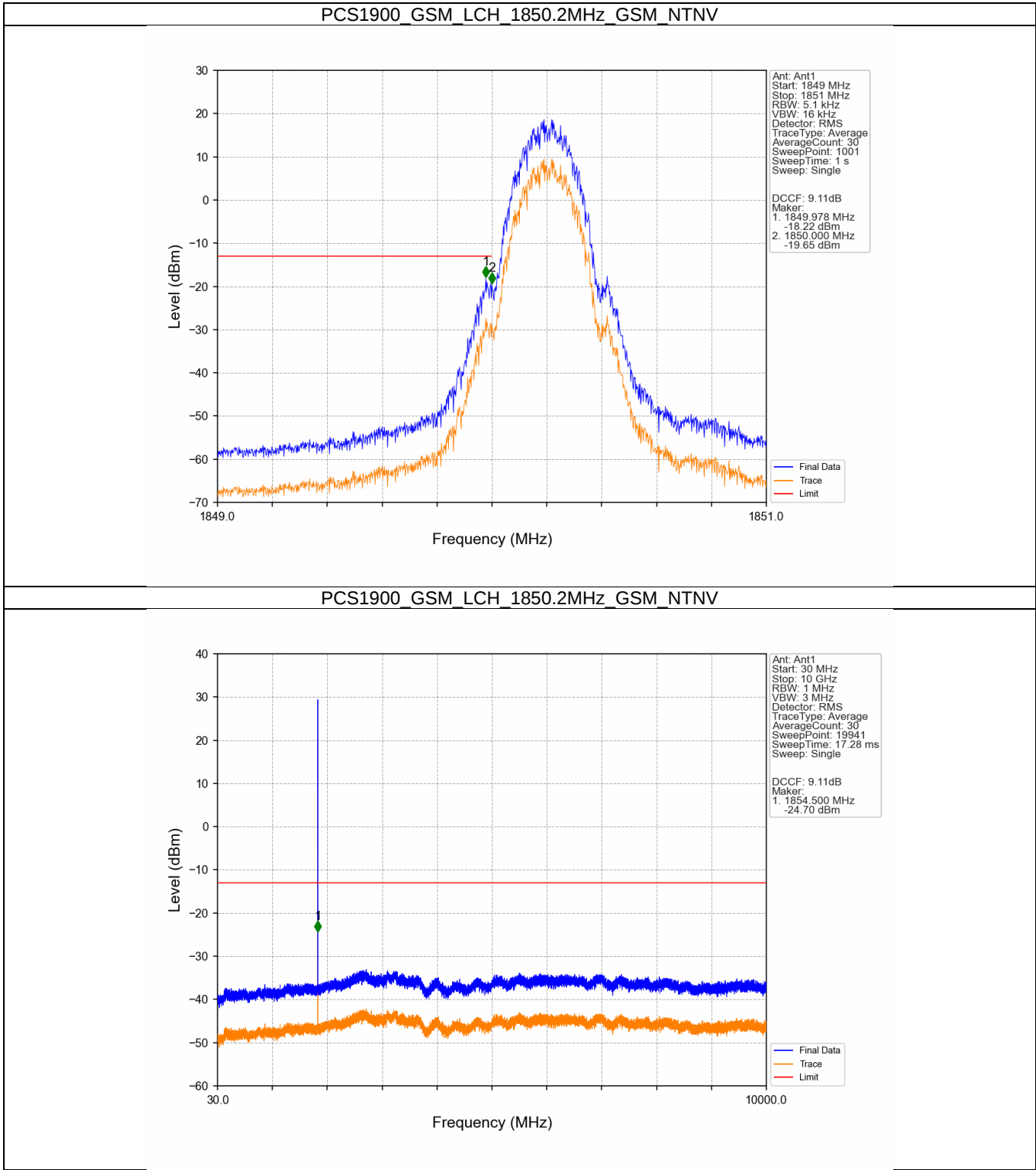
5.1 Test Result

5.1.1 PCS1900

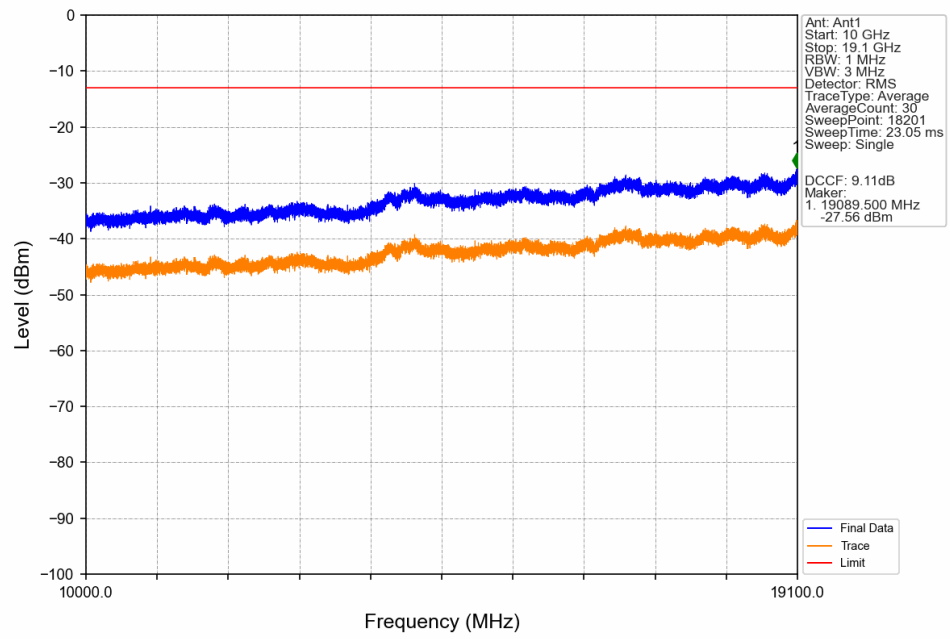
Band: PCS1900						
ENV	Mode		Frequency (MHz)	Spurious Emission		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	1850.2	Refer To Test Graph		Pass
			1880	Refer To Test Graph		Pass
			1909.8	Refer To Test Graph		Pass
	GPRS	1 TX Slot	1850.2	Refer To Test Graph		Pass
			1880	Refer To Test Graph		Pass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

5.2 Test Graph

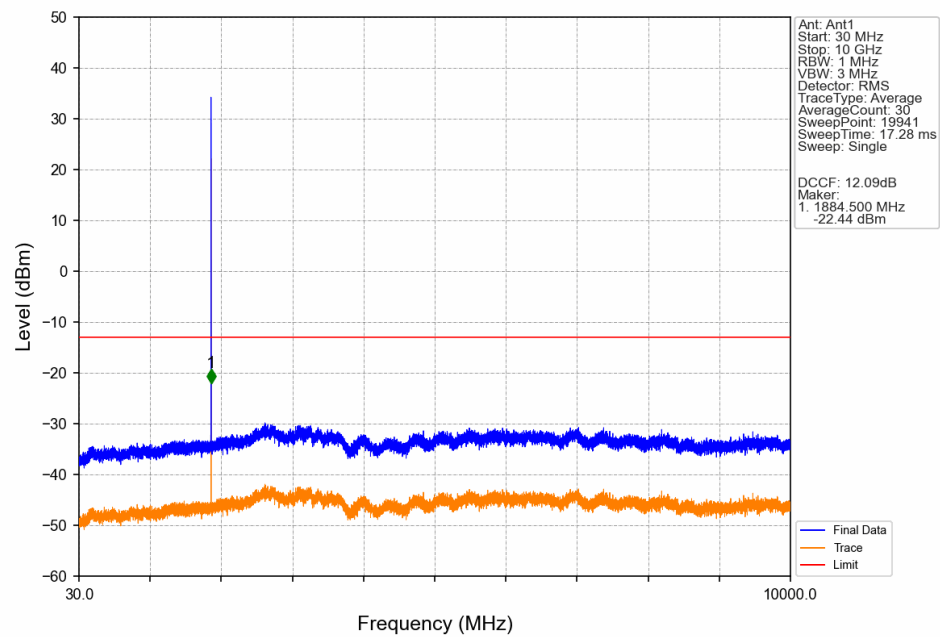
5.2.1 PCS1900



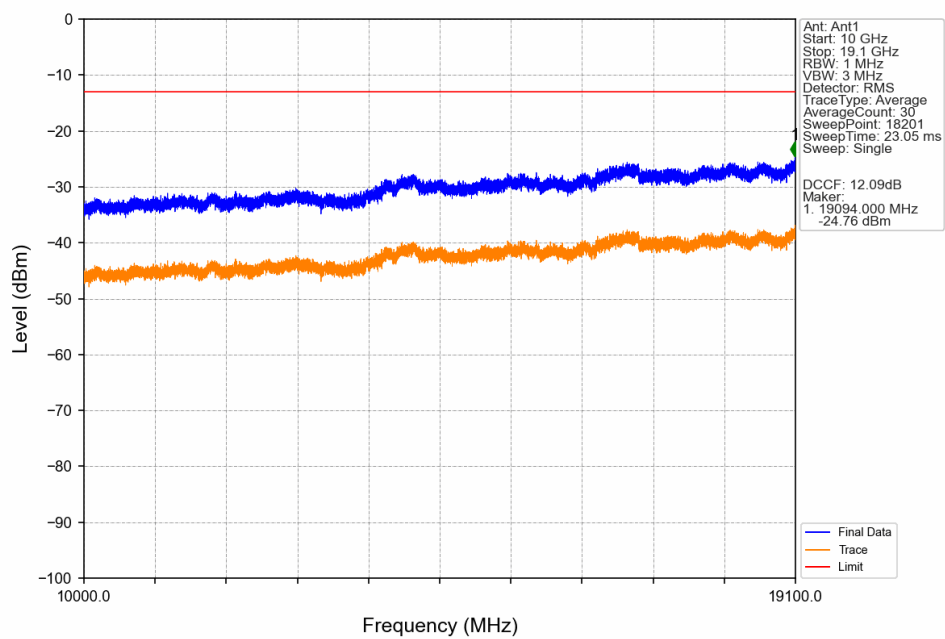
PCS1900 GSM LCH 1850.2MHz GSM NTN



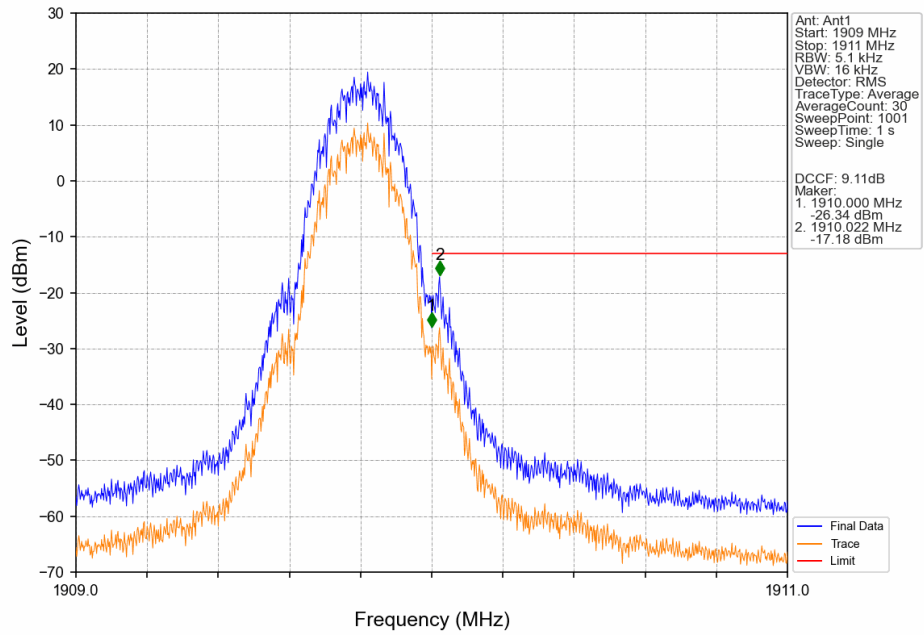
PCS1900 GSM MCH 1880MHz GSM NTN



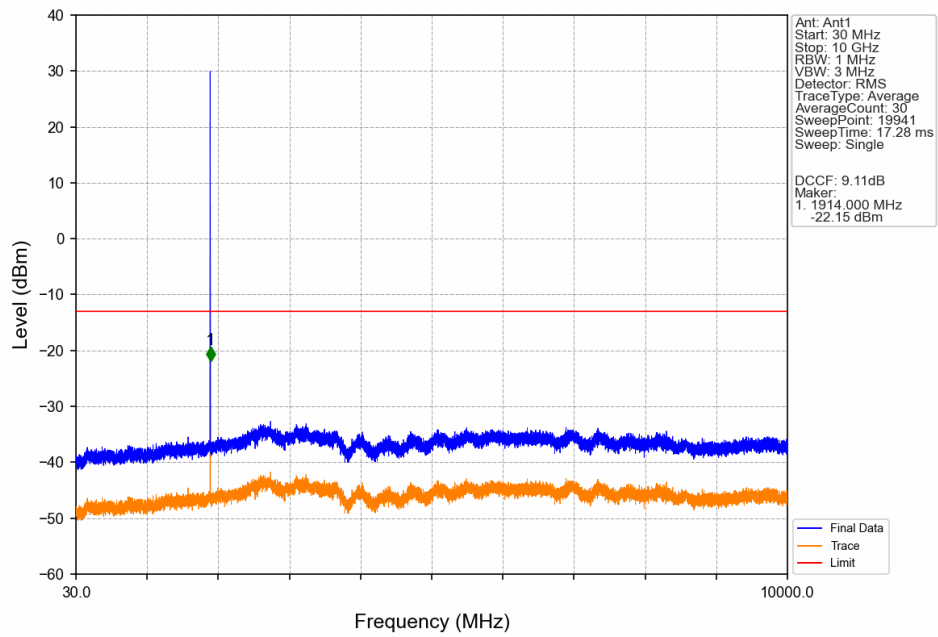
PCS1900 GSM MCH 1880MHz GSM NTN



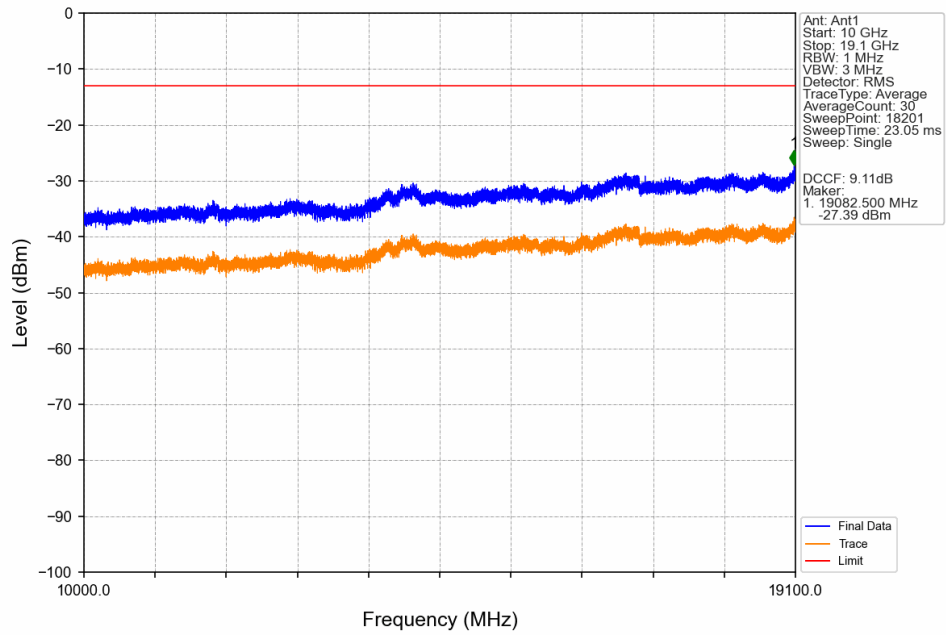
PCS1900 GSM HCH 1909.8MHz GSM NTN



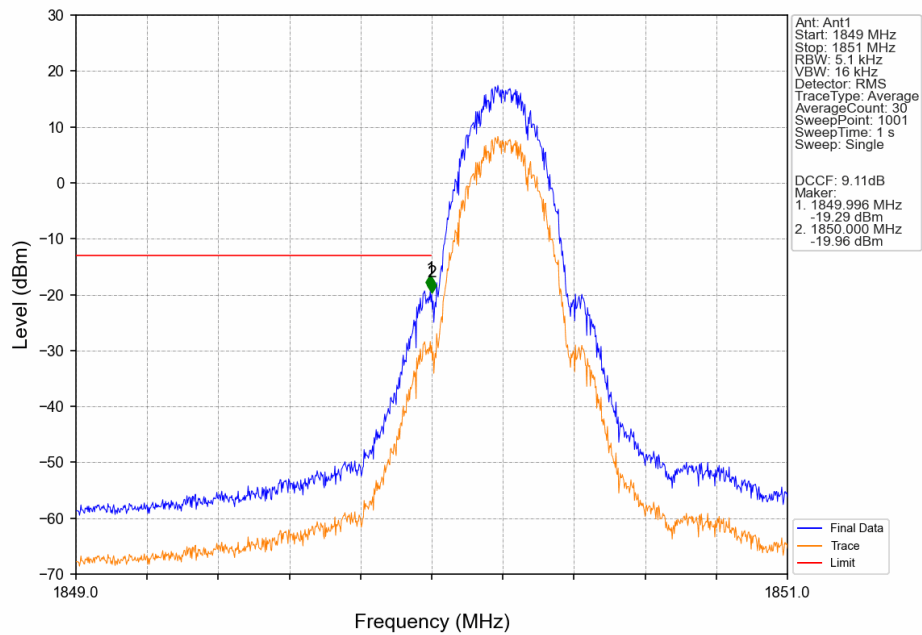
PCS1900 GSM HCH 1909.8MHz GSM NTN



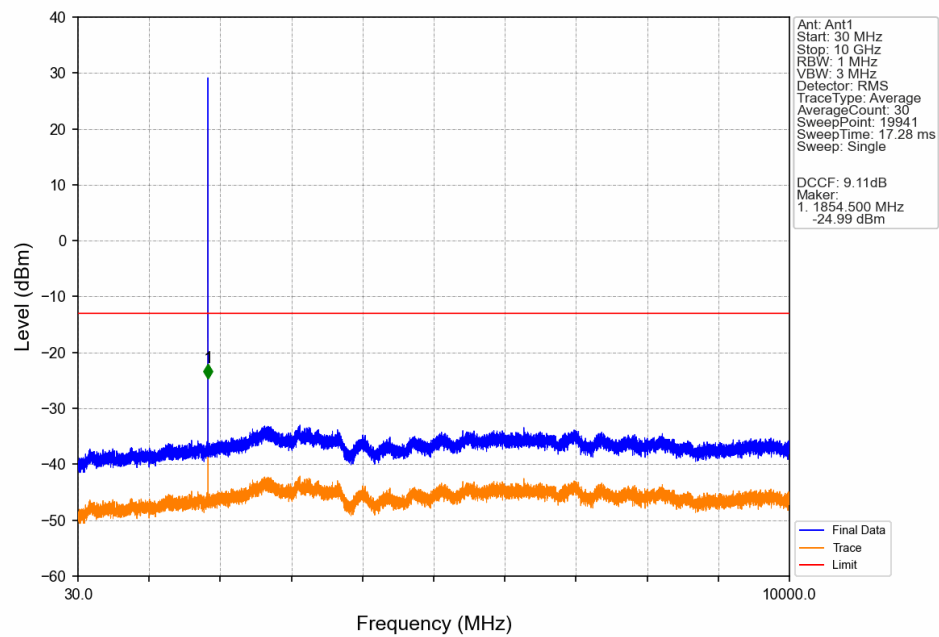
PCS1900 GSM HCH 1909.8MHz GSM NTNV



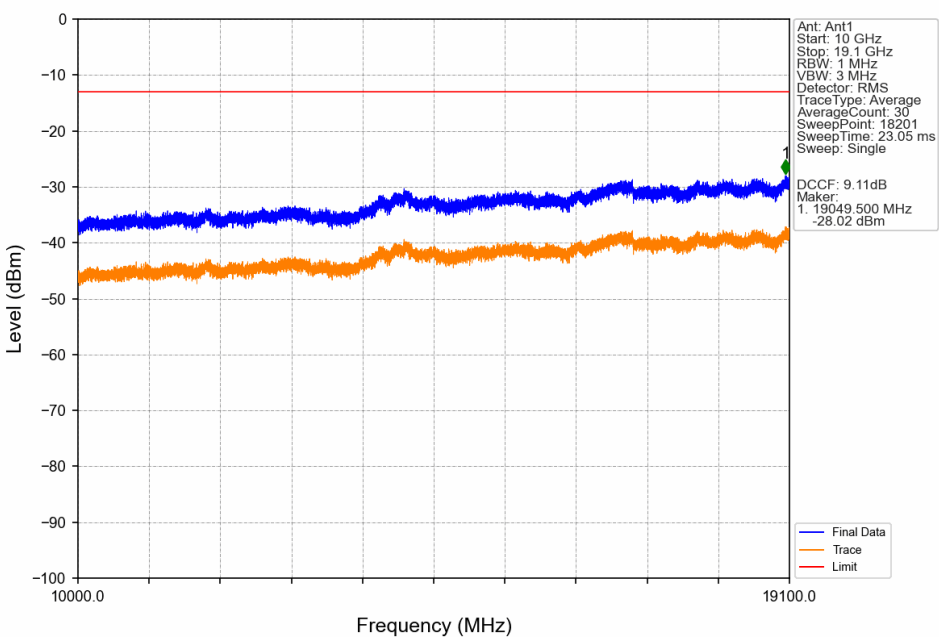
PCS1900 GPRS LCH 1850.2MHz 1 TX Slot NTNV



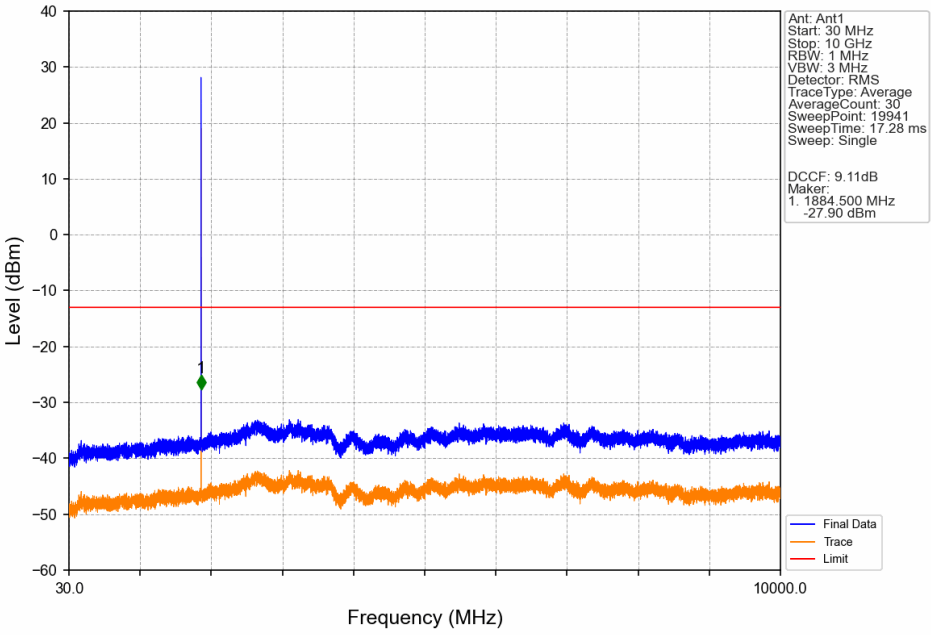
PCS1900 GPRS LCH 1850.2MHz 1 TX Slot NTNV



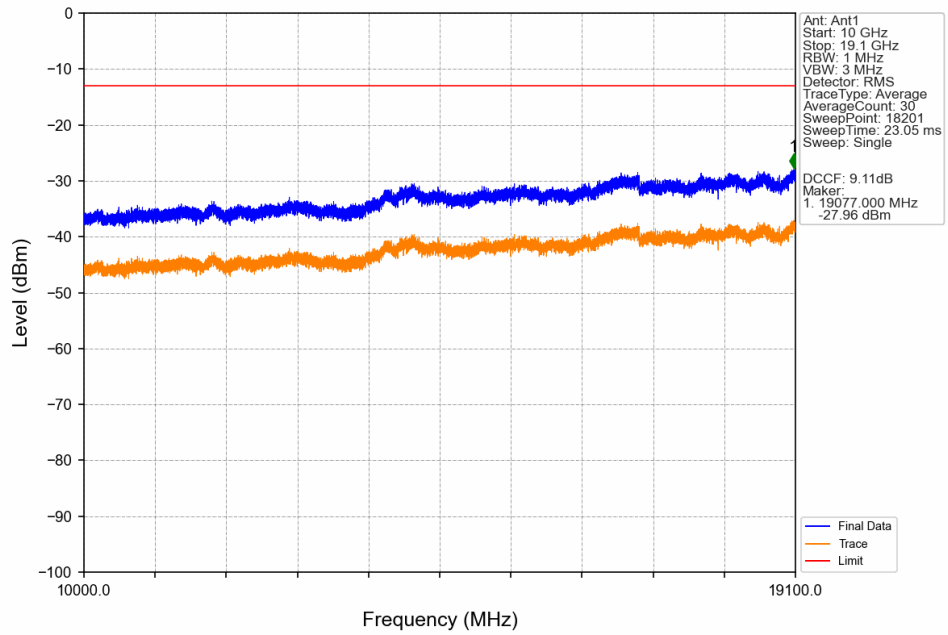
PCS1900 GPRS LCH 1850.2MHz 1 TX Slot NTNV



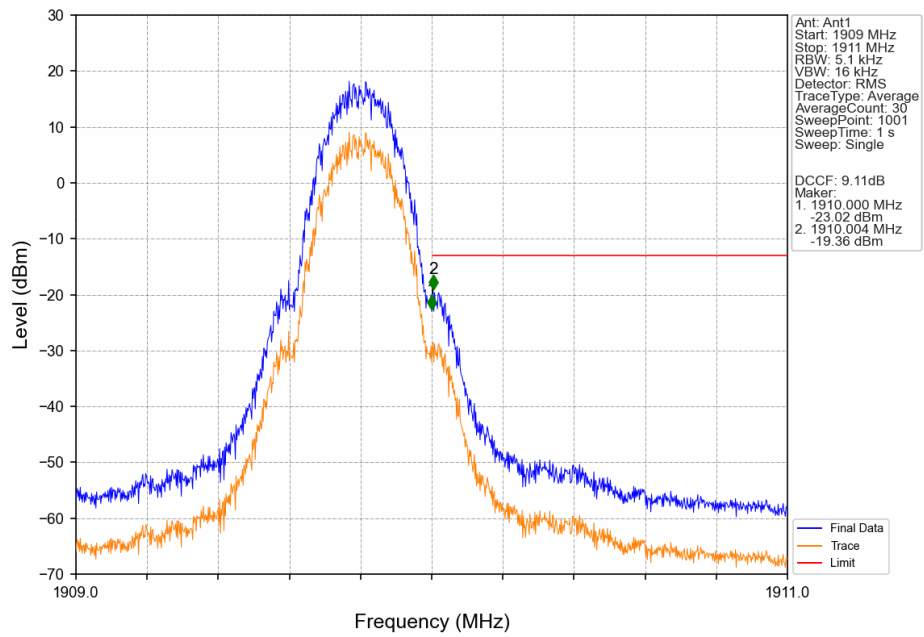
PCS1900 GPRS MCH 1880MHz 1 TX Slot NTN



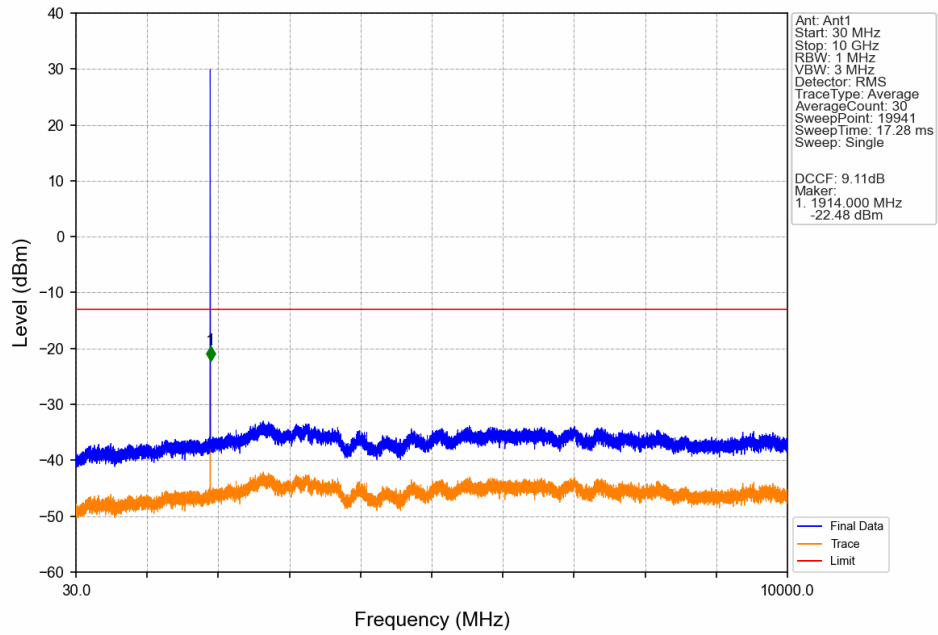
PCS1900 GPRS MCH 1880MHz 1 TX Slot NTNV



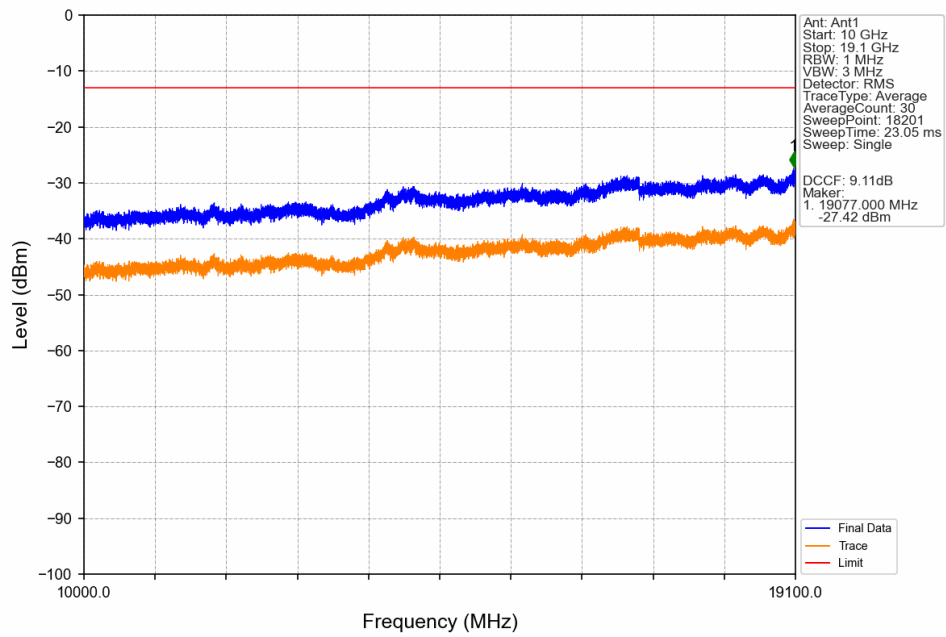
PCS1900 GPRS HCH 1909.8MHz 1 TX Slot NTNV



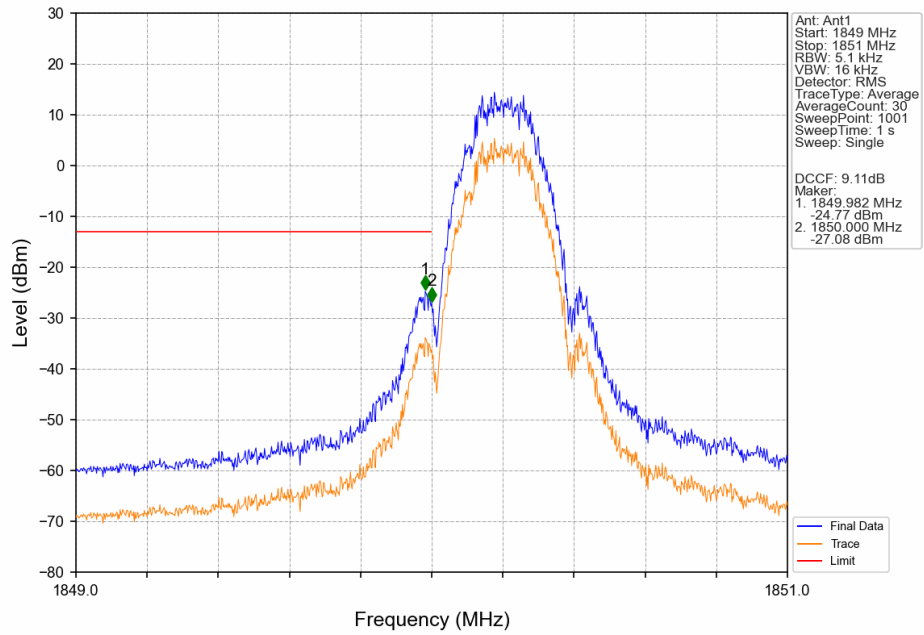
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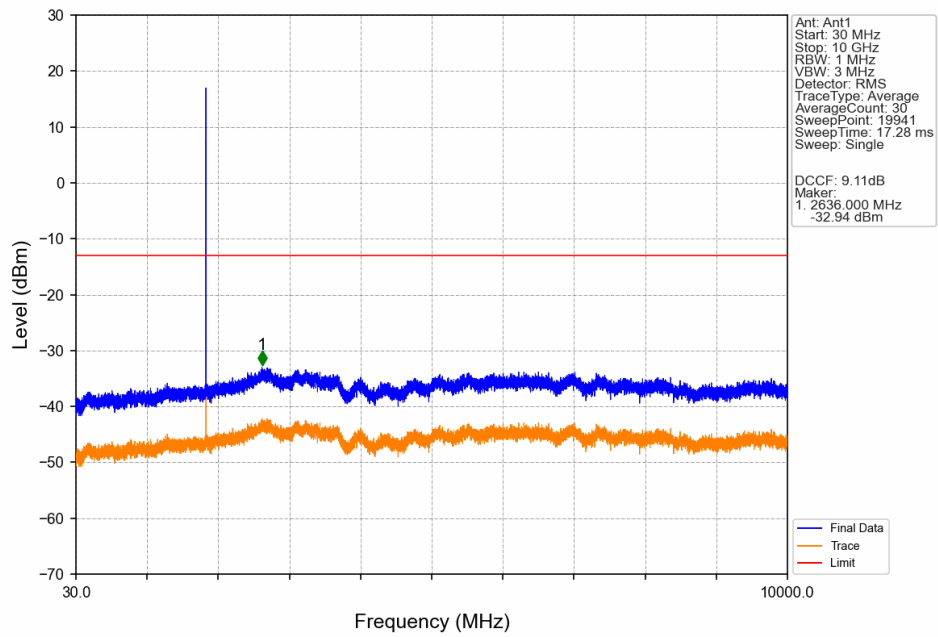
PCS1900 GPRS HCH 1909.8MHz 1 TX Slot NTNV



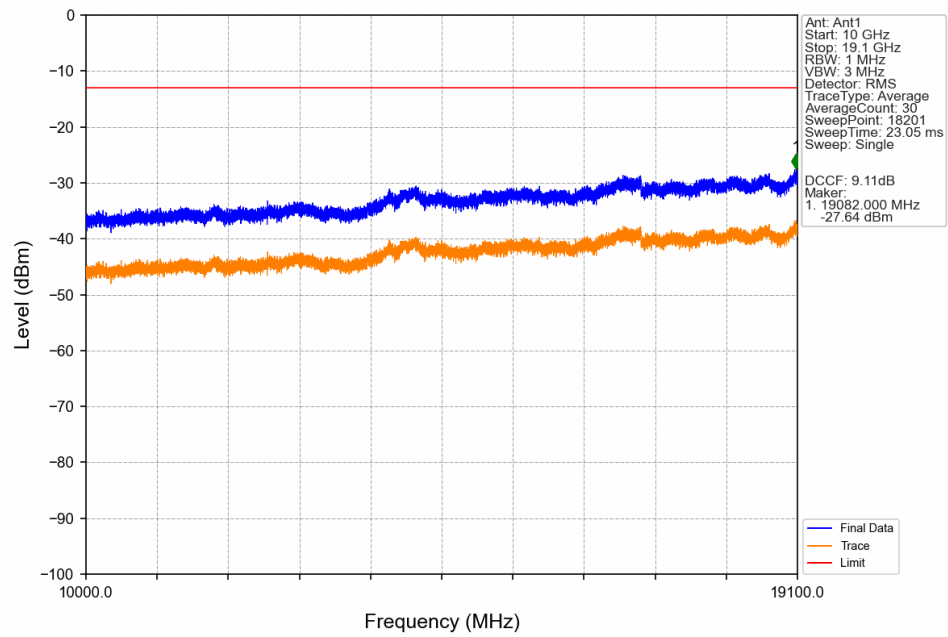
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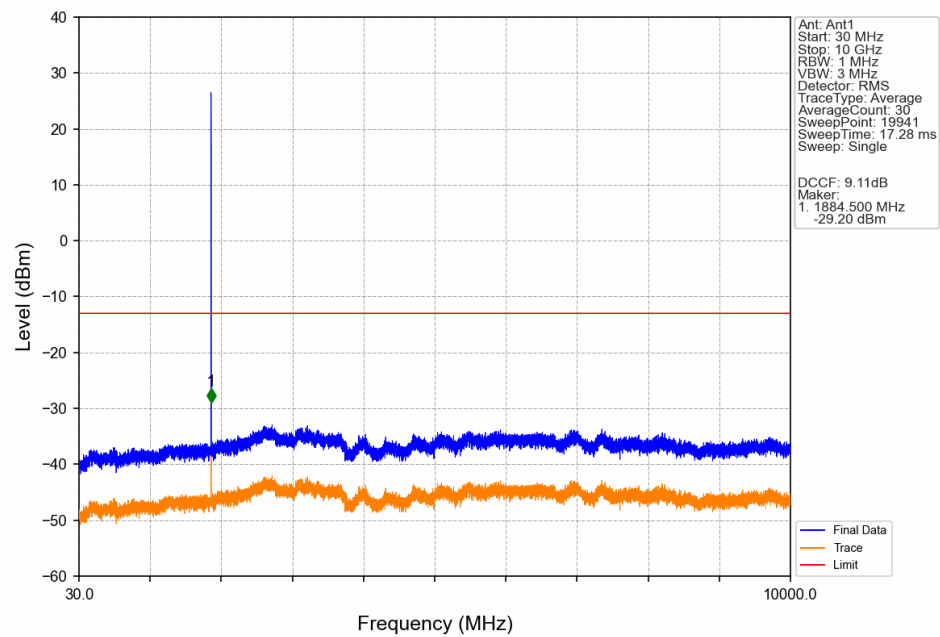
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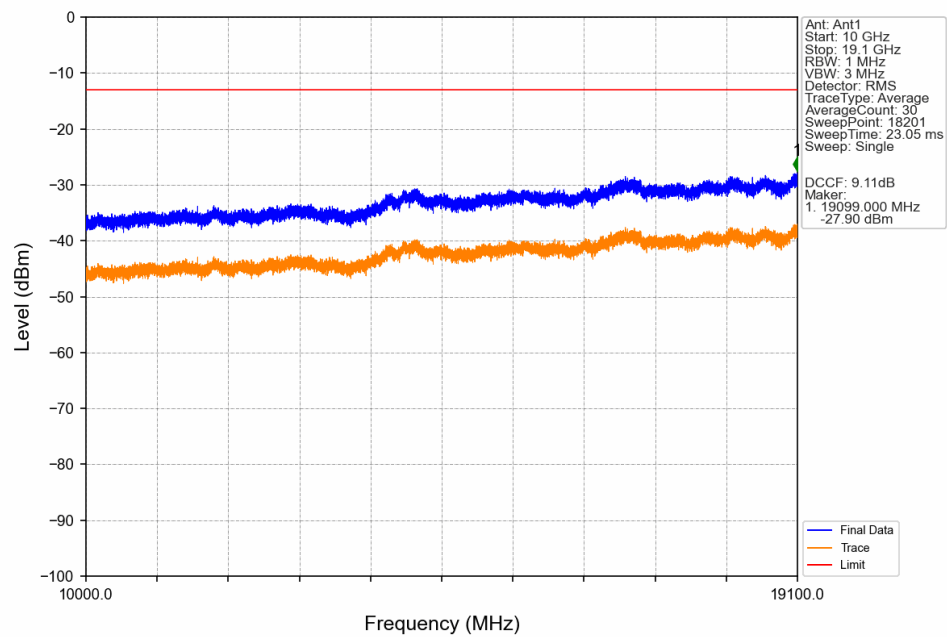
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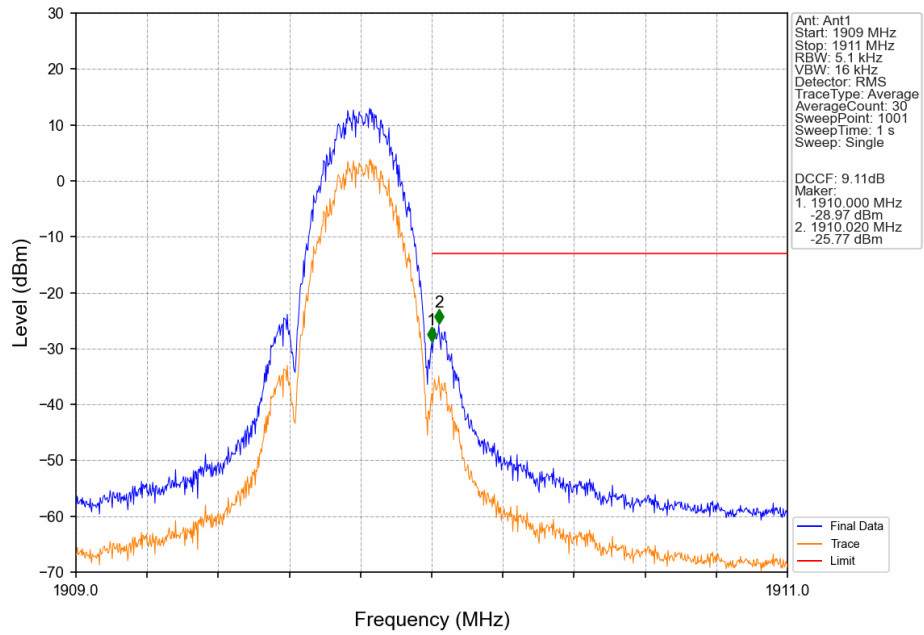
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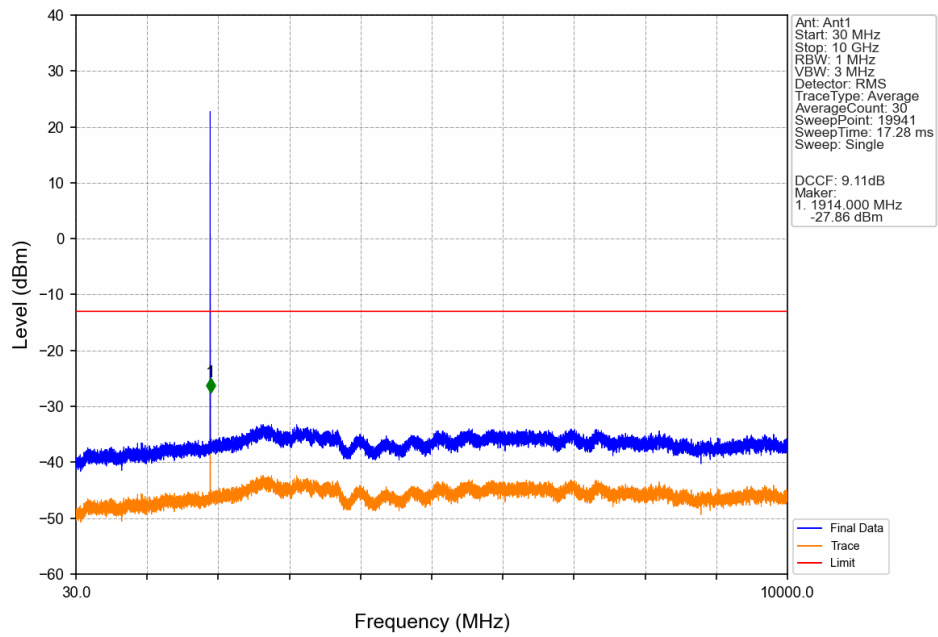
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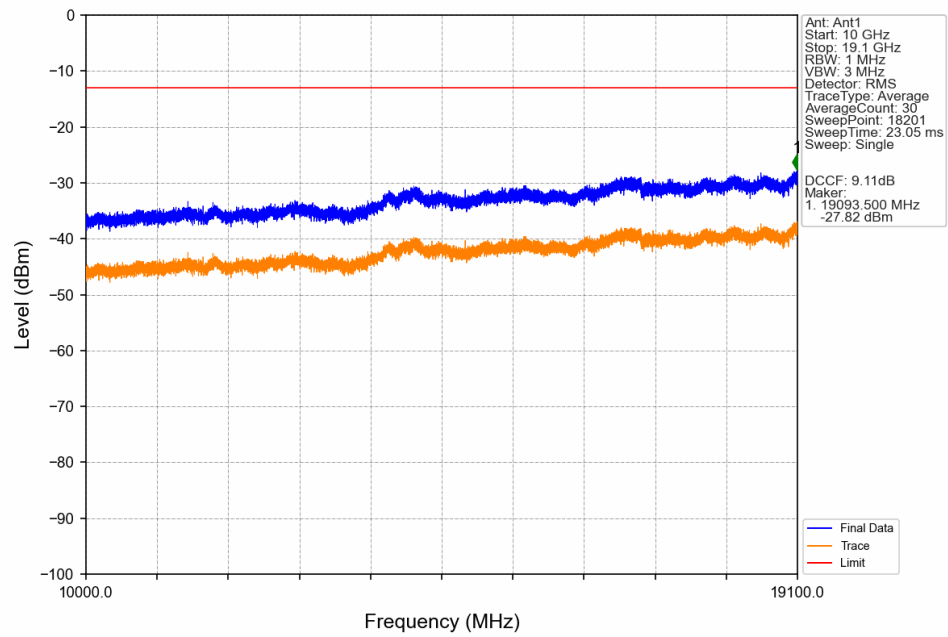
PCS1900 EGPRS HCH 1909.8MHz 1 TX Slot NTN



PCS1900 EGPRS HCH 1909.8MHz 1 TX Slot NTN



PCS1900 EGPRS HCH 1909.8MHz 1 TX Slot NTNV



Field Strength of Spurious Radiation

GSM1900 ANT31-Low channel								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable Loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
3700.4	-61.69	-13	-48.69	-66.55	3.58	8.44	Horizontal	Pass
5550.6	-62.26	-13	-49.26	-67.97	4.74	10.45	Horizontal	Pass
7400.8	-60.58	-13	-47.58	-67.26	4.94	11.62	Horizontal	Pass
3700.4	-60.5	-13	-47.5	-65.36	3.58	8.44	Vertical	Pass
5550.6	-55.2	-13	-42.2	-60.91	4.74	10.45	Vertical	Pass
7400.8	-60.62	-13	-47.62	-67.3	4.94	11.62	Vertical	Pass

GSM1900 ANT31-Middle channel								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable Loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
3760.0	-65.45	-13	-52.45	-70.34	3.63	8.52	Horizontal	Pass
5640.0	-62.03	-13	-49.03	-67.73	4.75	10.45	Horizontal	Pass
7520.0	-60.28	-13	-47.28	-67.1	4.94	11.76	Horizontal	Pass
3760.0	-60.96	-13	-47.96	-65.85	3.63	8.52	Vertical	Pass
5640.0	-55.96	-13	-42.96	-61.66	4.75	10.45	Vertical	Pass
7520.0	-60.61	-13	-47.61	-67.43	4.94	11.76	Vertical	Pass

GSM1900 ANT31-High channel								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable Loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
3819.6	-66.55	-13	-53.55	-71.47	3.68	8.6	Horizontal	Pass
5729.4	-62.62	-13	-49.62	-68.31	4.76	10.45	Horizontal	Pass
7639.2	-60.72	-13	-47.72	-67.67	4.95	11.9	Horizontal	Pass
3819.6	-65.35	-13	-52.35	-70.27	3.68	8.6	Vertical	Pass
5729.4	-55.97	-13	-42.97	-61.66	4.76	10.45	Vertical	Pass
7639.2	-60.47	-13	-47.47	-67.42	4.95	11.9	Vertical	Pass

Remark:

- 1) The field strength is calculated by adding the S.G.Power, Antenna Gain & Cable Loss. The basic equation with a sample calculation is as follows:

$$\text{EIRP} = \text{S.G.Power} + \text{Antenna Gain} - \text{Cable Loss}$$

$$\text{Over Limit} = \text{Limit} - \text{EIRP}$$
- 2) All antennas of RSE are tested, and only the worst data is presented.

---End of Attachment---