

1. Effective (Isotropic) Radiated Power Output Data

1.1 GSM850_ERP (ANT13)

1.1.1 Test Result

Band: GSM850									
ENV	Mode		Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)		Verdict	
	Network	Subset				Result	Limit		
NTNV	GSM	GSM	824.2	32.85	-3.91	26.79	<=38.45	Pass	
			836.6	32.82	-3.91	26.76	<=38.45	Pass	
			848.8	32.87	-3.91	26.81	<=38.45	Pass	
	GPRS	1 TX Slot	824.2	32.85	-3.91	26.79	<=38.45	Pass	
		2 TX Slots	824.2	30.76	-3.91	24.70	<=38.45	Pass	
		3 TX Slots	824.2	28.87	-3.91	22.81	<=38.45	Pass	
		4 TX Slots	824.2	27.42	-3.91	21.36	<=38.45	Pass	
		1 TX Slot	836.6	32.72	-3.91	26.66	<=38.45	Pass	
		2 TX Slots	836.6	30.72	-3.91	24.66	<=38.45	Pass	
		3 TX Slots	836.6	28.71	-3.91	22.65	<=38.45	Pass	
		4 TX Slots	836.6	27.20	-3.91	21.14	<=38.45	Pass	
		1 TX Slot	848.8	32.87	-3.91	26.81	<=38.45	Pass	
		2 TX Slots	848.8	30.55	-3.91	24.49	<=38.45	Pass	
		3 TX Slots	848.8	28.80	-3.91	22.74	<=38.45	Pass	
		4 TX Slots	848.8	27.23	-3.91	21.17	<=38.45	Pass	
		EGPRS	1 TX Slot	824.2	26.56	-3.91	20.50	<=38.45	Pass
			2 TX Slots	824.2	24.99	-3.91	18.93	<=38.45	Pass
			3 TX Slots	824.2	23.03	-3.91	16.97	<=38.45	Pass
			4 TX Slots	824.2	21.45	-3.91	15.39	<=38.45	Pass
	1 TX Slot		836.6	26.60	-3.91	20.54	<=38.45	Pass	
	2 TX Slots		836.6	24.91	-3.91	18.85	<=38.45	Pass	
	3 TX Slots		836.6	23.01	-3.91	16.95	<=38.45	Pass	
	4 TX Slots		836.6	21.26	-3.91	15.20	<=38.45	Pass	
	1 TX Slot		848.8	29.12	-3.91	23.06	<=38.45	Pass	
	2 TX Slots		848.8	24.72	-3.91	18.66	<=38.45	Pass	
	3 TX Slots		848.8	23.04	-3.91	16.98	<=38.45	Pass	
	4 TX Slots		848.8	21.39	-3.91	15.33	<=38.45	Pass	
Note1: ERP=Conducted Power+Antenna Gain-2.15									

2. Frequency Stability

2.1 Test Result

2.1.1 GSM850

Band: GSM850							
Network	Frequency (MHz)	Temp. (°C)	Voltage (VDC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
					Result	Limit	
GSM	824.2	20	3.7	15.834	0.0192	-2.5 to 2.5	Pass
			3.91	15.802	0.0192	-2.5 to 2.5	Pass
			4.4	19.001	0.0231	-2.5 to 2.5	Pass
		-30	3.91	22.391	0.0272	-2.5 to 2.5	Pass
		-20	3.91	19.486	0.0236	-2.5 to 2.5	Pass
		-10	3.91	18.992	0.0230	-2.5 to 2.5	Pass
		0	3.91	19.096	0.0232	-2.5 to 2.5	Pass
		10	3.91	16.154	0.0196	-2.5 to 2.5	Pass

		30	3.91	16.959	0.0206	-2.5 to 2.5	Pass
		40	3.91	18.964	0.0230	-2.5 to 2.5	Pass
		50	3.91	21.567	0.0262	-2.5 to 2.5	Pass
	836.6	20	3.7	20.563	0.0246	-2.5 to 2.5	Pass
			3.91	22.827	0.0273	-2.5 to 2.5	Pass
			4.4	22.191	0.0265	-2.5 to 2.5	Pass
		-30	3.91	22.687	0.0271	-2.5 to 2.5	Pass
		-20	3.91	22.840	0.0273	-2.5 to 2.5	Pass
		-10	3.91	19.563	0.0234	-2.5 to 2.5	Pass
		0	3.91	19.394	0.0232	-2.5 to 2.5	Pass
		10	3.91	20.233	0.0242	-2.5 to 2.5	Pass
		30	3.91	19.536	0.0234	-2.5 to 2.5	Pass
		40	3.91	19.140	0.0229	-2.5 to 2.5	Pass
		50	3.91	18.048	0.0216	-2.5 to 2.5	Pass
	848.8	20	3.7	23.809	0.0281	-2.5 to 2.5	Pass
			3.91	21.420	0.0252	-2.5 to 2.5	Pass
			4.4	20.477	0.0241	-2.5 to 2.5	Pass
		-30	3.91	22.758	0.0268	-2.5 to 2.5	Pass
		-20	3.91	23.645	0.0279	-2.5 to 2.5	Pass
		-10	3.91	19.982	0.0235	-2.5 to 2.5	Pass
		0	3.91	24.252	0.0286	-2.5 to 2.5	Pass
		10	3.91	20.790	0.0245	-2.5 to 2.5	Pass
		30	3.91	22.231	0.0262	-2.5 to 2.5	Pass
		40	3.91	22.997	0.0271	-2.5 to 2.5	Pass
		50	3.91	22.146	0.0261	-2.5 to 2.5	Pass
GPRS	824.2	20	3.7	30.477	0.0370	-2.5 to 2.5	Pass
			3.91	30.029	0.0364	-2.5 to 2.5	Pass
			4.4	29.473	0.0358	-2.5 to 2.5	Pass
		-30	3.91	28.114	0.0341	-2.5 to 2.5	Pass
		-20	3.91	27.406	0.0333	-2.5 to 2.5	Pass
		-10	3.91	27.719	0.0336	-2.5 to 2.5	Pass
		0	3.91	28.317	0.0344	-2.5 to 2.5	Pass
		10	3.91	27.727	0.0336	-2.5 to 2.5	Pass
		30	3.91	27.170	0.0330	-2.5 to 2.5	Pass
		40	3.91	27.972	0.0339	-2.5 to 2.5	Pass
		50	3.91	28.454	0.0345	-2.5 to 2.5	Pass
	836.6	20	3.7	29.127	0.0348	-2.5 to 2.5	Pass
			3.91	27.561	0.0329	-2.5 to 2.5	Pass
			4.4	27.067	0.0324	-2.5 to 2.5	Pass
		-30	3.91	27.380	0.0327	-2.5 to 2.5	Pass
		-20	3.91	27.397	0.0327	-2.5 to 2.5	Pass
		-10	3.91	28.683	0.0343	-2.5 to 2.5	Pass
		0	3.91	28.902	0.0345	-2.5 to 2.5	Pass
		10	3.91	28.476	0.0340	-2.5 to 2.5	Pass
		30	3.91	27.767	0.0332	-2.5 to 2.5	Pass
		40	3.91	29.202	0.0349	-2.5 to 2.5	Pass
		50	3.91	29.914	0.0358	-2.5 to 2.5	Pass
	848.8	20	3.7	29.445	0.0347	-2.5 to 2.5	Pass
			3.91	29.712	0.0350	-2.5 to 2.5	Pass
			4.4	29.157	0.0344	-2.5 to 2.5	Pass
		-30	3.91	30.256	0.0356	-2.5 to 2.5	Pass
		-20	3.91	30.119	0.0355	-2.5 to 2.5	Pass
		-10	3.91	29.756	0.0351	-2.5 to 2.5	Pass
		0	3.91	30.037	0.0354	-2.5 to 2.5	Pass
		10	3.91	29.104	0.0343	-2.5 to 2.5	Pass
		30	3.91	30.240	0.0356	-2.5 to 2.5	Pass
		40	3.91	28.509	0.0336	-2.5 to 2.5	Pass
		50	3.91	28.776	0.0339	-2.5 to 2.5	Pass
EGPRS	824.2	20	3.7	28.466	0.0345	-2.5 to 2.5	Pass

			3.91	30.580	0.0371	-2.5 to 2.5	Pass
			4.4	31.191	0.0378	-2.5 to 2.5	Pass
		-30	3.91	29.719	0.0361	-2.5 to 2.5	Pass
		-20	3.91	30.432	0.0369	-2.5 to 2.5	Pass
		-10	3.91	30.863	0.0374	-2.5 to 2.5	Pass
		0	3.91	31.724	0.0385	-2.5 to 2.5	Pass
		10	3.91	28.929	0.0351	-2.5 to 2.5	Pass
		30	3.91	28.320	0.0344	-2.5 to 2.5	Pass
		40	3.91	27.630	0.0335	-2.5 to 2.5	Pass
		50	3.91	30.084	0.0365	-2.5 to 2.5	Pass
	836.6	20	3.7	28.775	0.0344	-2.5 to 2.5	Pass
			3.91	30.159	0.0360	-2.5 to 2.5	Pass
			4.4	28.353	0.0339	-2.5 to 2.5	Pass
		-30	3.91	29.520	0.0353	-2.5 to 2.5	Pass
		-20	3.91	30.771	0.0368	-2.5 to 2.5	Pass
		-10	3.91	28.607	0.0342	-2.5 to 2.5	Pass
		0	3.91	30.707	0.0367	-2.5 to 2.5	Pass
		10	3.91	28.980	0.0346	-2.5 to 2.5	Pass
		30	3.91	30.255	0.0362	-2.5 to 2.5	Pass
		40	3.91	30.968	0.0370	-2.5 to 2.5	Pass
		50	3.91	28.554	0.0341	-2.5 to 2.5	Pass
	848.8	20	3.7	29.011	0.0342	-2.5 to 2.5	Pass
			3.91	29.969	0.0353	-2.5 to 2.5	Pass
			4.4	30.634	0.0361	-2.5 to 2.5	Pass
		-30	3.91	30.798	0.0363	-2.5 to 2.5	Pass
		-20	3.91	29.888	0.0352	-2.5 to 2.5	Pass
		-10	3.91	28.989	0.0342	-2.5 to 2.5	Pass
		0	3.91	29.564	0.0348	-2.5 to 2.5	Pass
		10	3.91	30.607	0.0361	-2.5 to 2.5	Pass
		30	3.91	30.235	0.0356	-2.5 to 2.5	Pass
		40	3.91	30.454	0.0359	-2.5 to 2.5	Pass
		50	3.91	29.699	0.0350	-2.5 to 2.5	Pass

3. 99% & 26dB Bandwidth

3.1 Test Result

3.1.1 GSM850_OBW

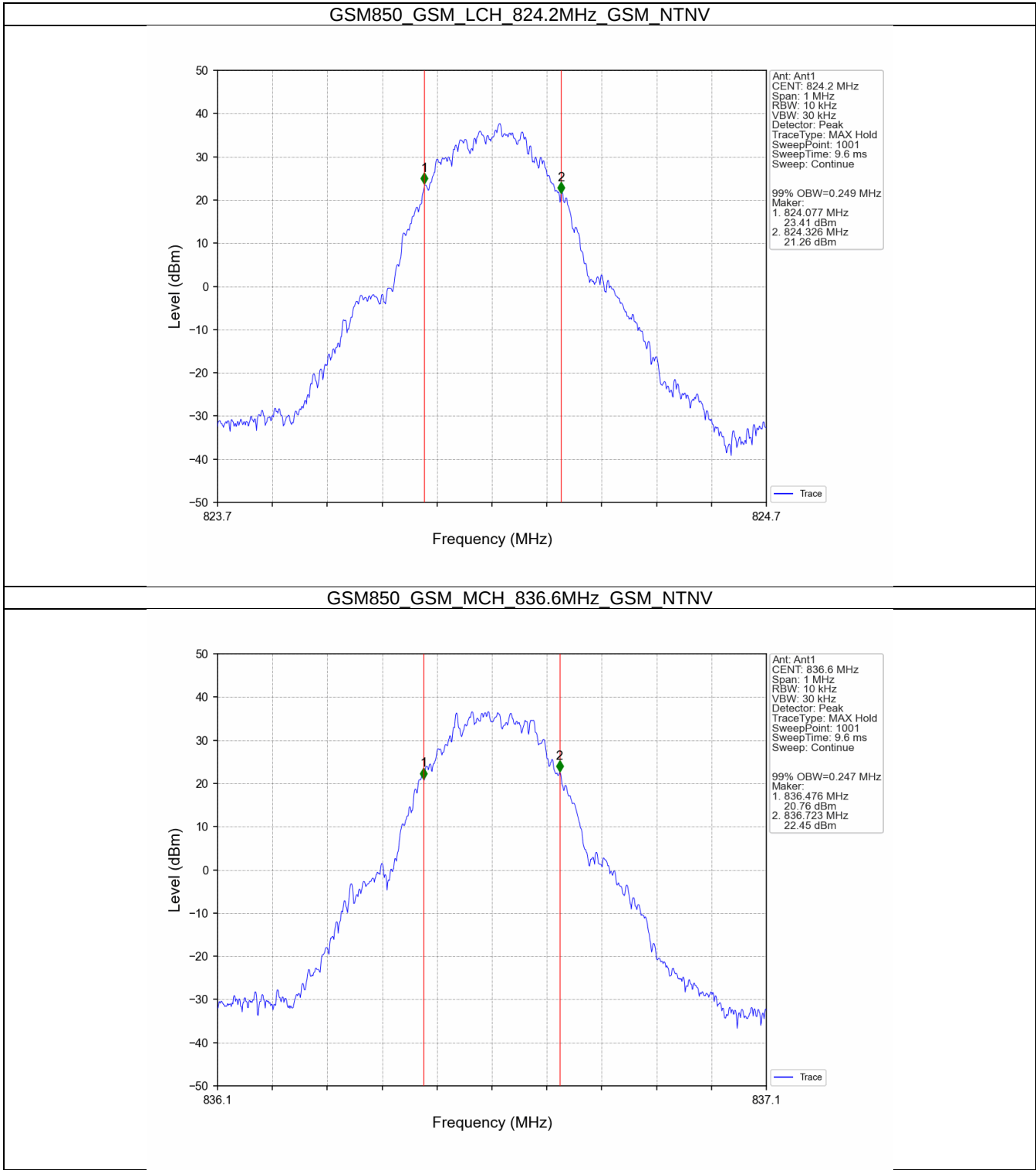
Band: GSM850						
ENV	Mode		Frequency (MHz)	99% Occupied Bandwidth (MHz)		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	824.2	0.249	/	Pass
			836.6	0.247	/	Pass
			848.8	0.247	/	Pass
	GPRS	1 TX Slot	824.2	0.245	/	Pass
			836.6	0.245	/	Pass
			848.8	0.243	/	Pass
	EGPRS	1 TX Slot	824.2	0.237	/	Pass
			836.6	0.238	/	Pass
			848.8	0.239	/	Pass

3.1.2 GSM850_XDB

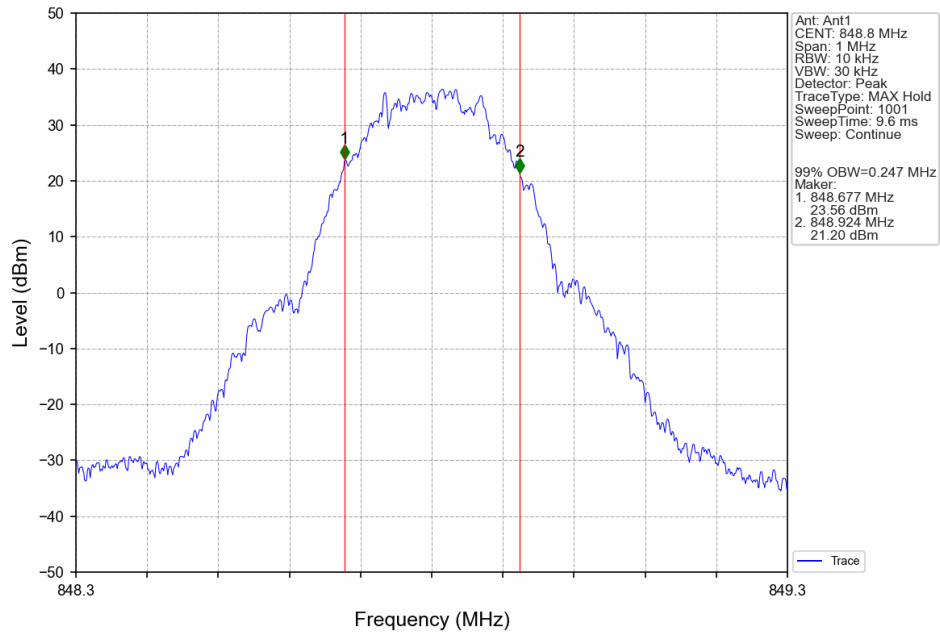
Band: GSM850						
ENV	Mode		Frequency (MHz)	26dB Bandwidth (MHz)		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	824.2	0.322	/	Pass
			836.6	0.323	/	Pass
			848.8	0.319	/	Pass
	GPRS	1 TX Slot	824.2	0.318	/	Pass
			836.6	0.315	/	Pass
			848.8	0.316	/	Pass
	EGPRS	1 TX Slot	824.2	0.304	/	Pass
			836.6	0.301	/	Pass
			848.8	0.299	/	Pass

3.2 Test Graph

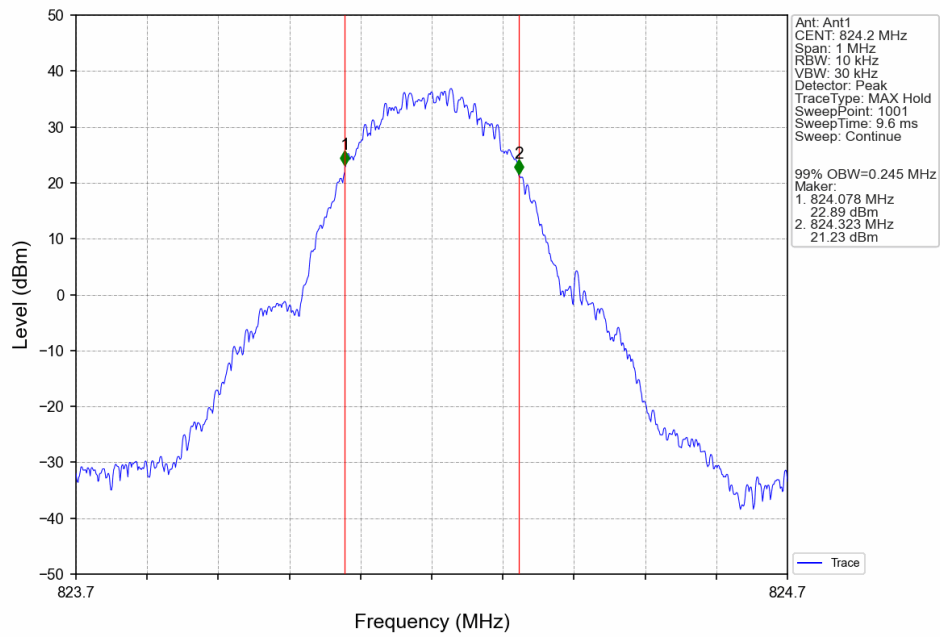
3.2.1 GSM850_OBW



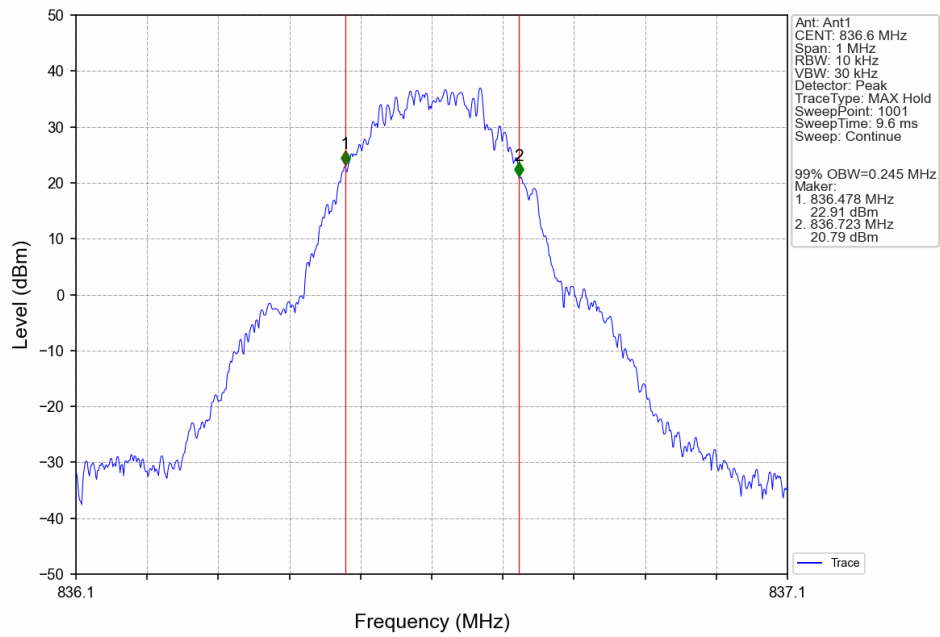
GSM850_GSM_HCH_848.8MHz_GSM_NTNV



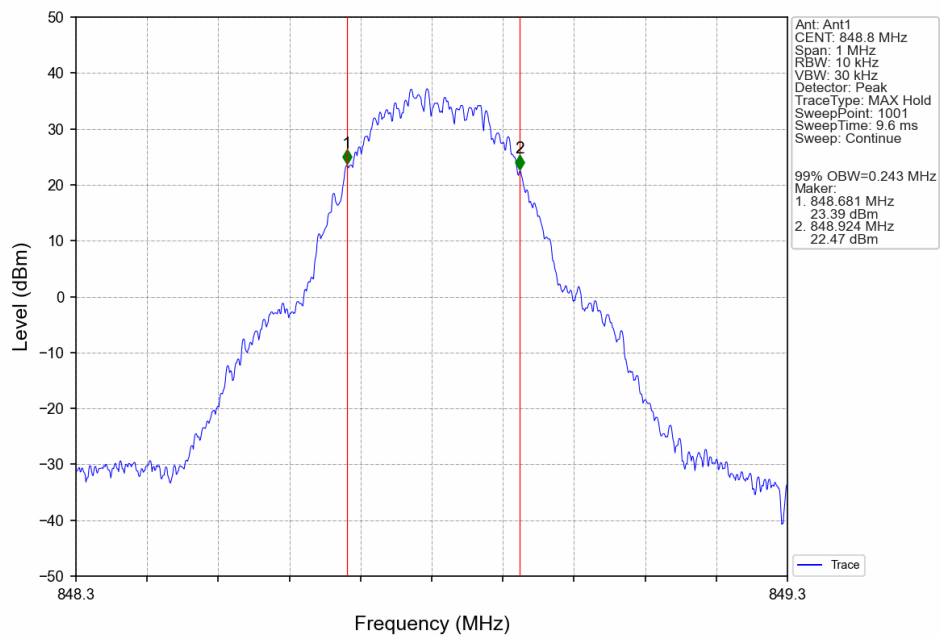
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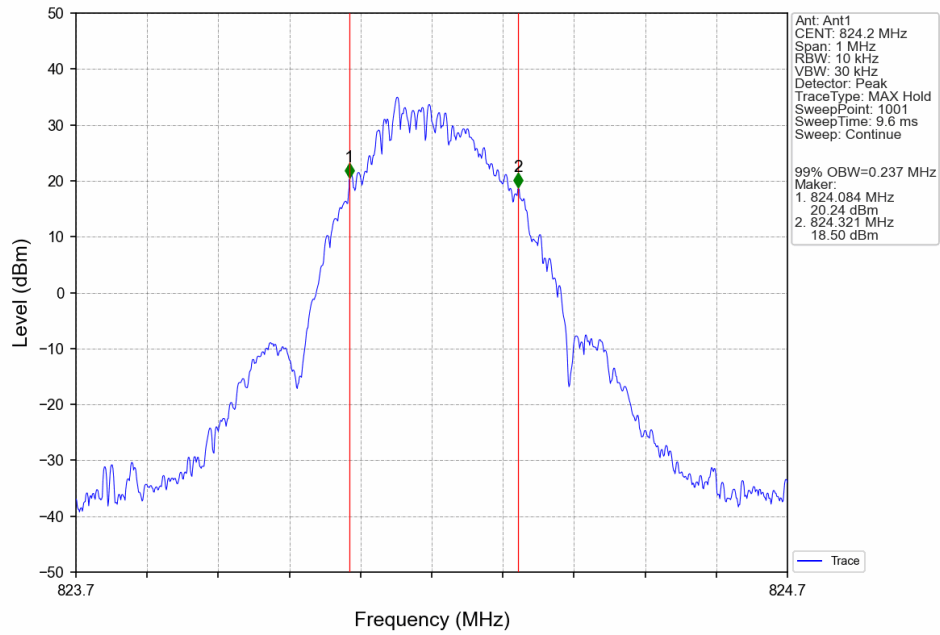
GSM850_GPRS_MCH_836.6MHz_1 TX Slot_NTNV



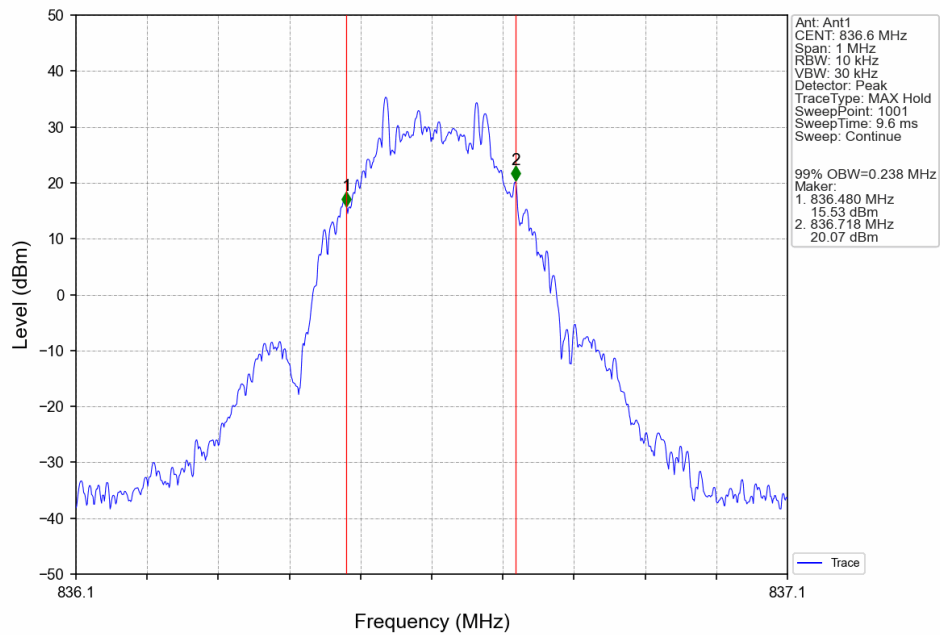
GSM850_GPRS_HCH_848.8MHz_1 TX Slot_NTNV



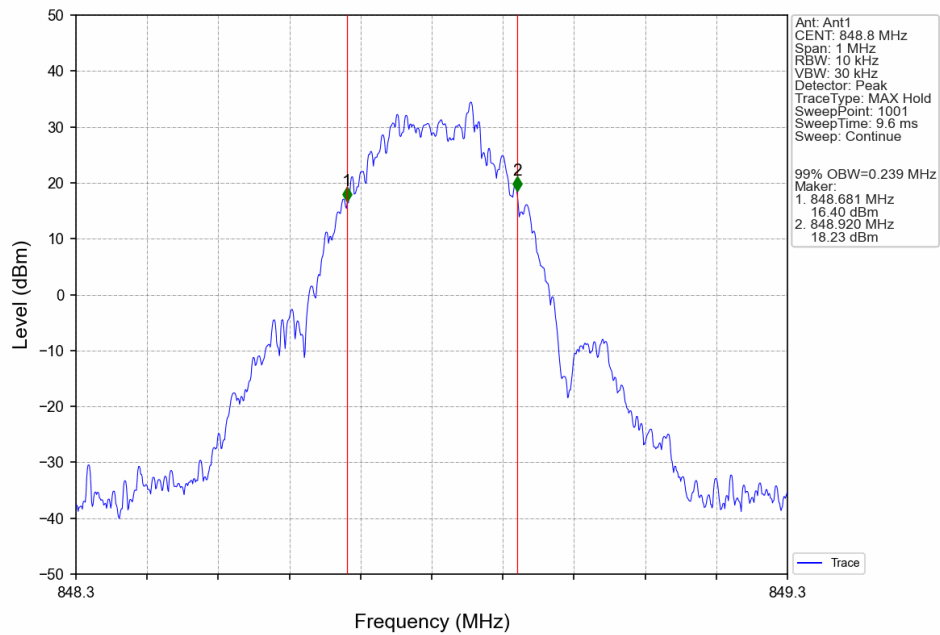
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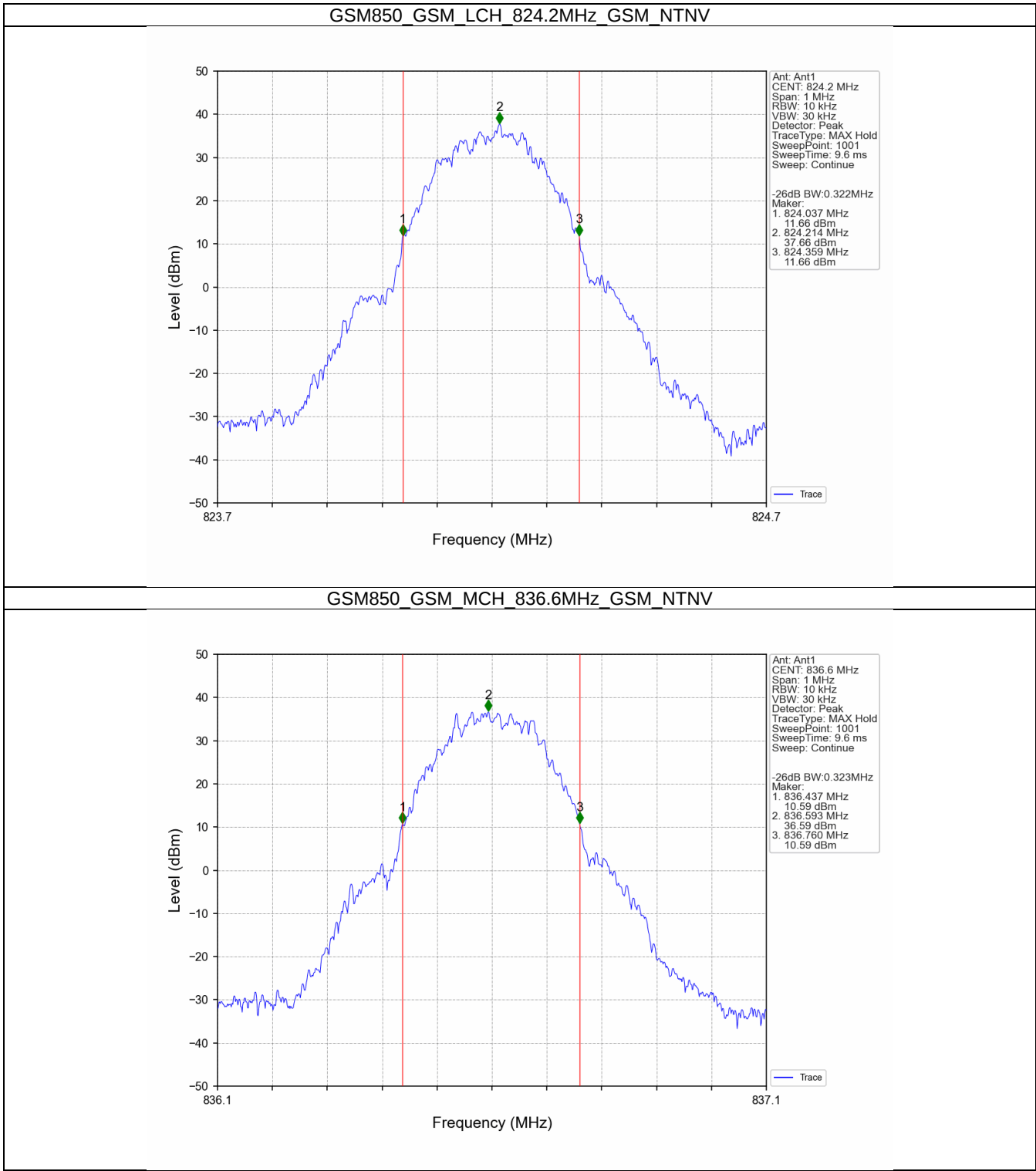
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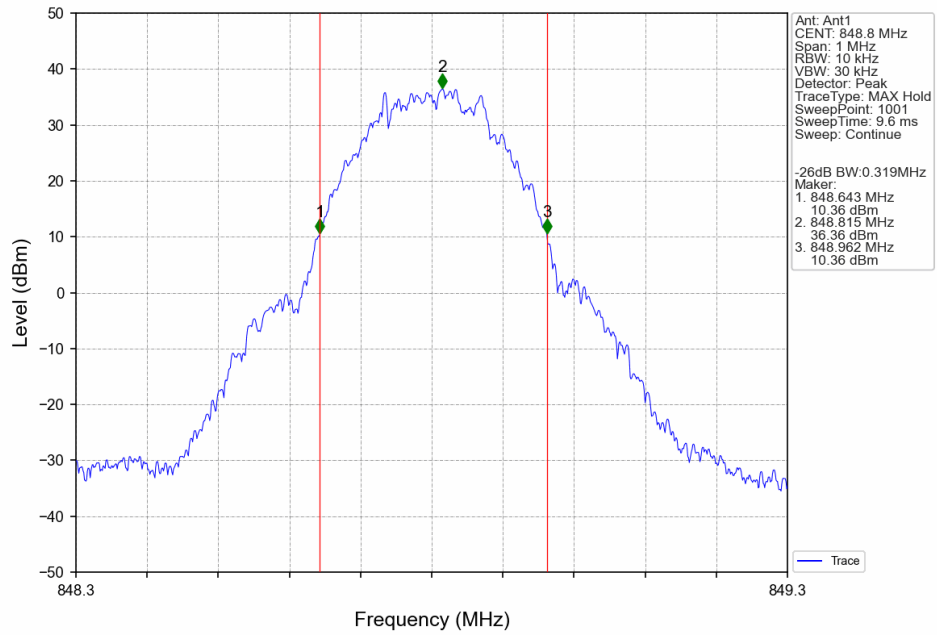
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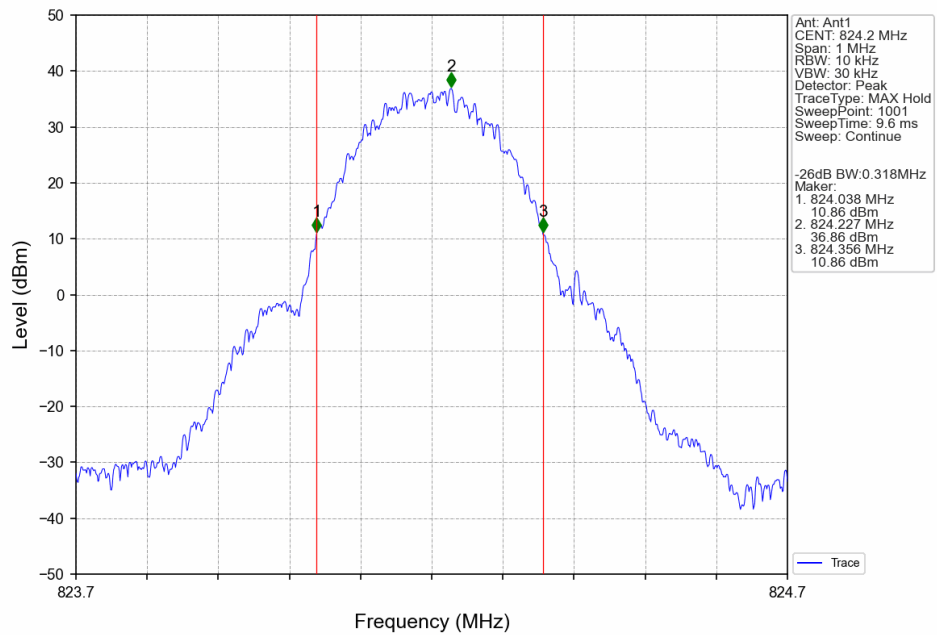
3.2.2 GSM850_XDB



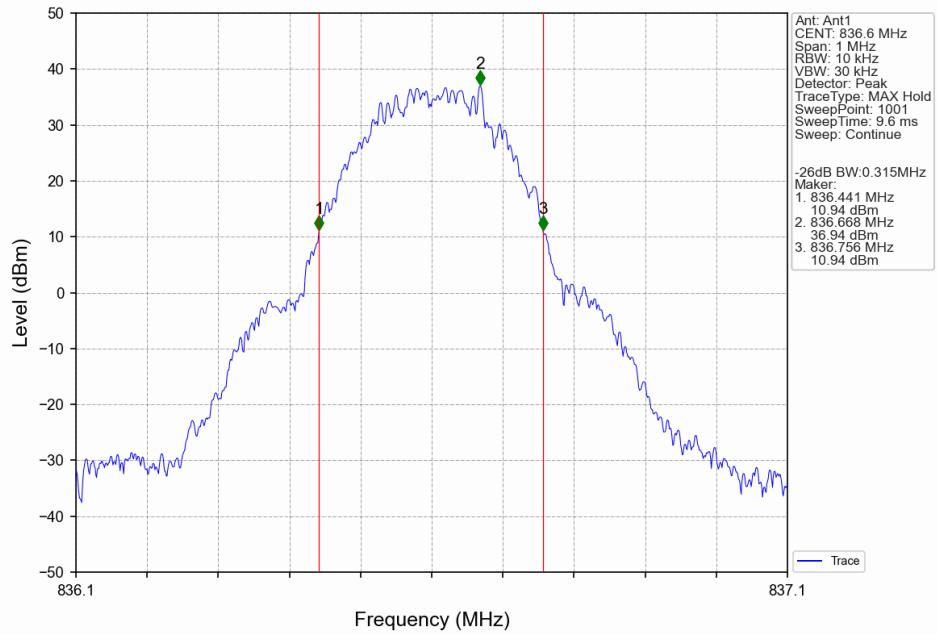
GSM850_GSM_HCH_848.8MHz_GSM_NTNV



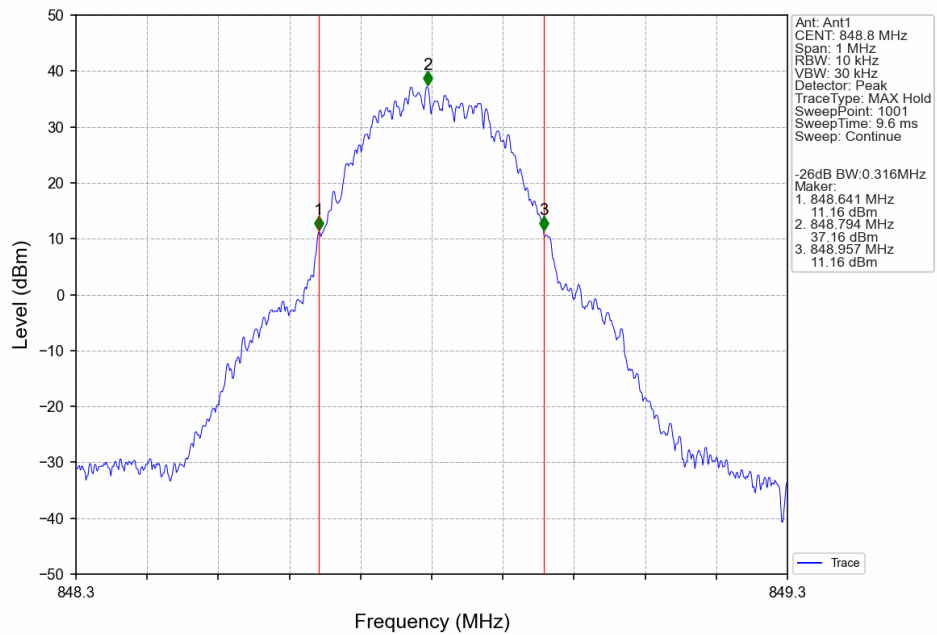
GSM850_GPRS_LCH_824.2MHz_1 TX Slot_NTNV



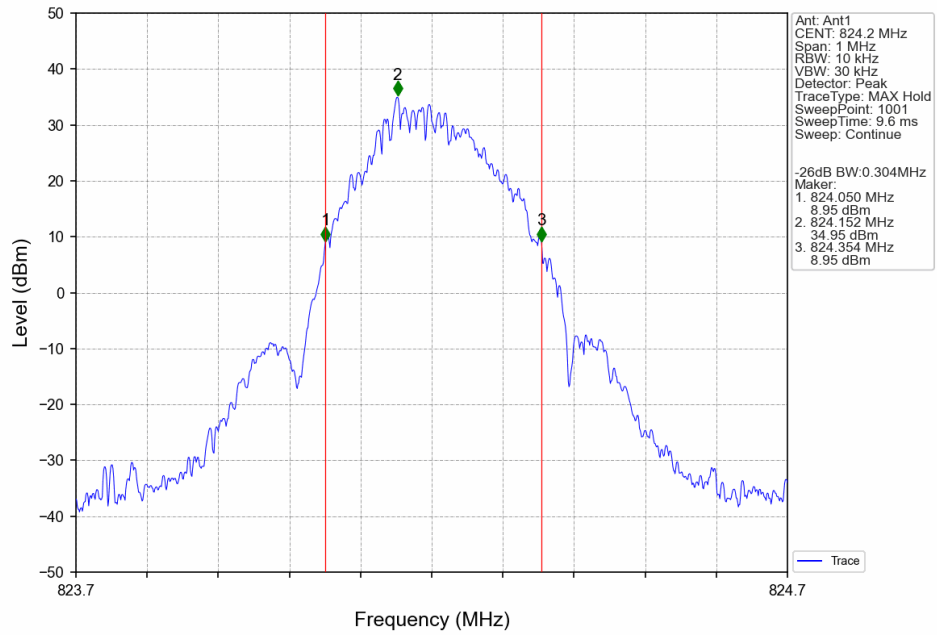
GSM850_GPRS_MCH_836.6MHz_1 TX Slot_NTNV



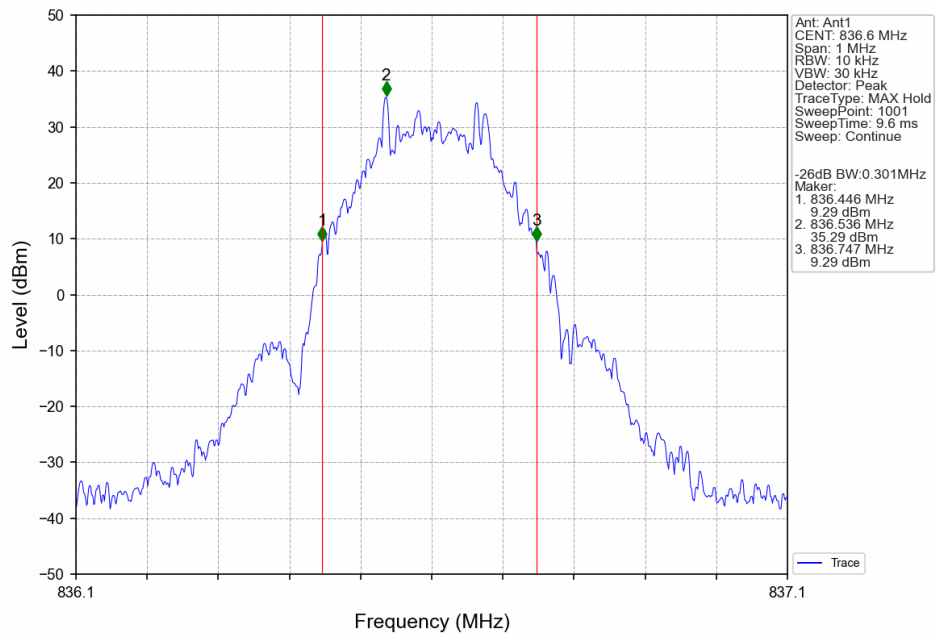
GSM850_GPRS_HCH_848.8MHz_1 TX Slot_NTNV



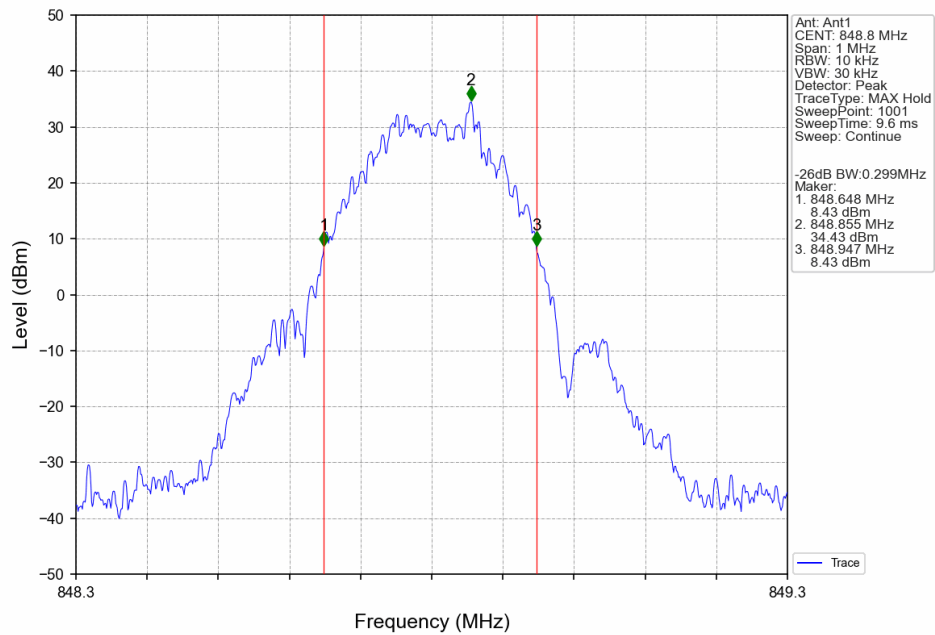
GSM850_EGPRS_LCH_824.2MHz_1 TX Slot_NTNV



GSM850_EGPRS_MCH_836.6MHz_1 TX Slot_NTNV



GSM850_EGPRS_HCH_848.8MHz_1 TX Slot_NTNV



4. Peak-Average Ratio

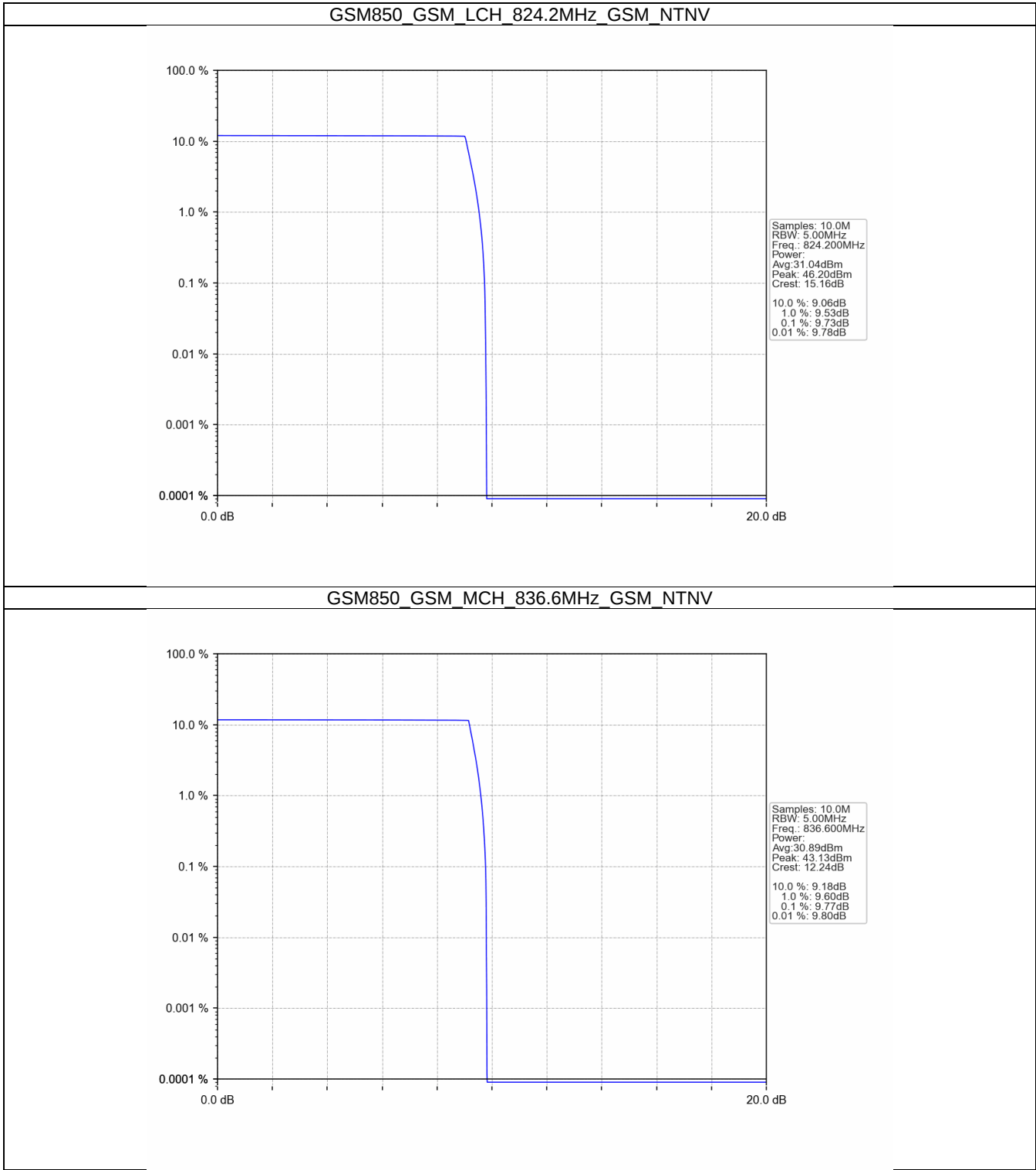
4.1 Test Result

4.1.1 GSM850

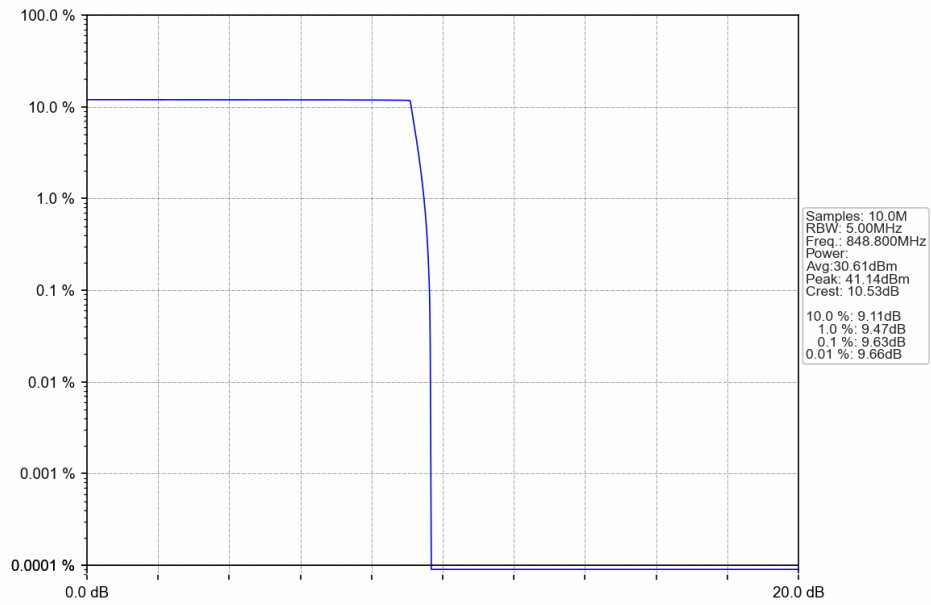
Band: GSM850						
ENV	Mode		Frequency (MHz)	Peak-Average Ratio (dB)		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	824.2	9.73	<=13	Pass
			836.6	9.77	<=13	Pass
			848.8	9.63	<=13	Pass
	GPRS	4 TX Slots	824.2	4.57	<=13	Pass
			836.6	3.90	<=13	Pass
			848.8	4.18	<=13	Pass
	EGPRS	4 TX Slots	824.2	9.85	<=13	Pass
			836.6	9.82	<=13	Pass
			848.8	6.47	<=13	Pass

4.2 Test Graph

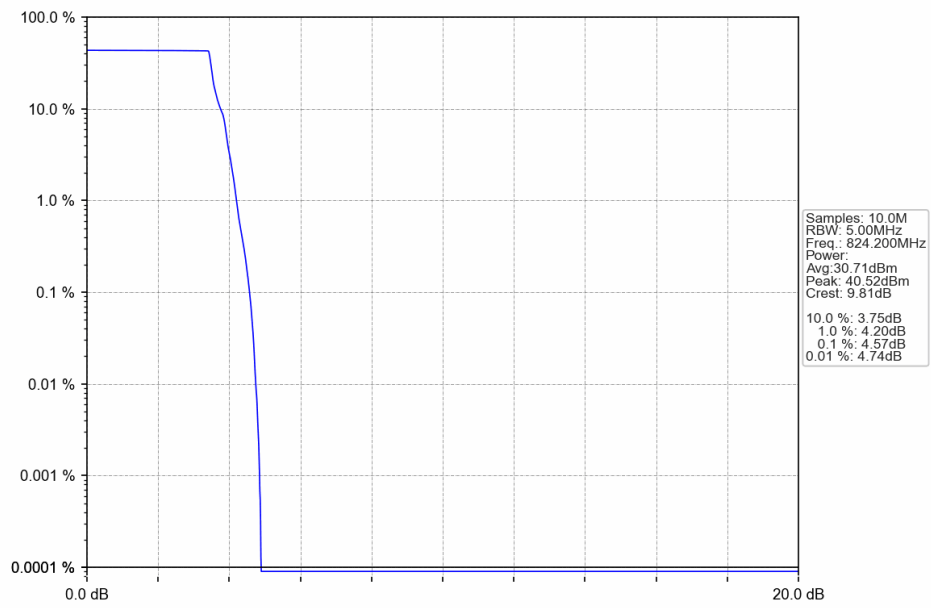
4.2.1 GSM850



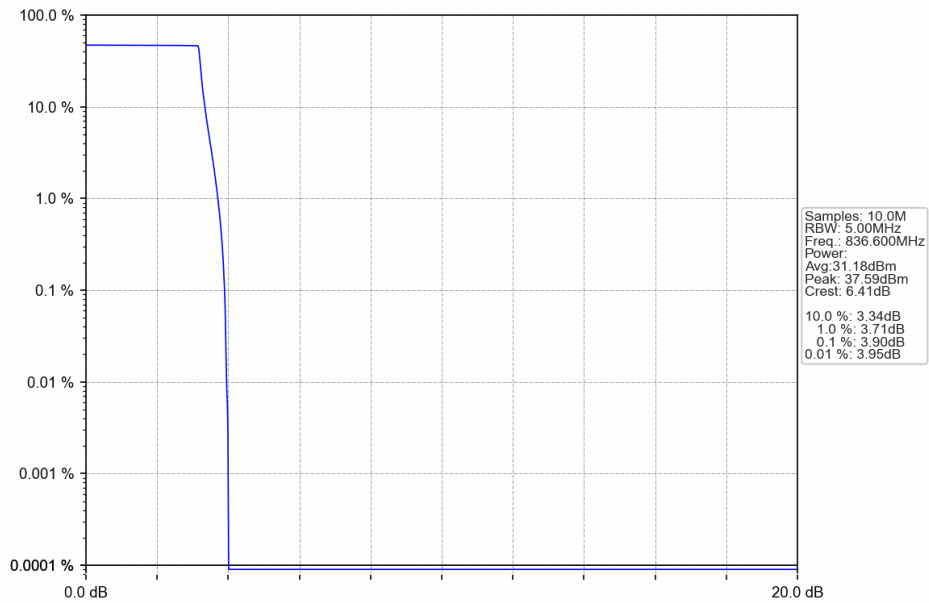
GSM850_GSM_HCH_848.8MHz_GSM_NTNV



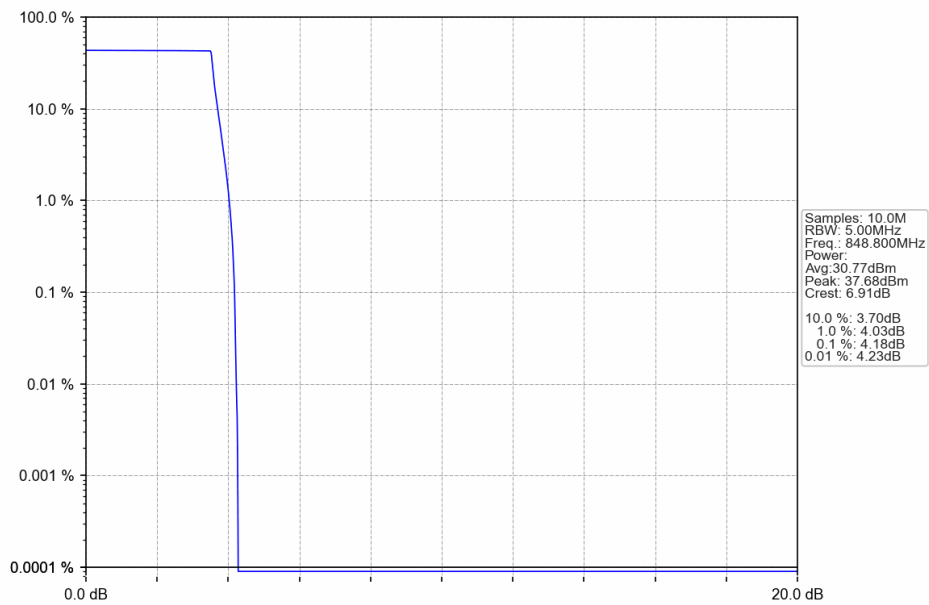
GSM850_GPRS_LCH_824.2MHz_4 TX Slots_NTNV



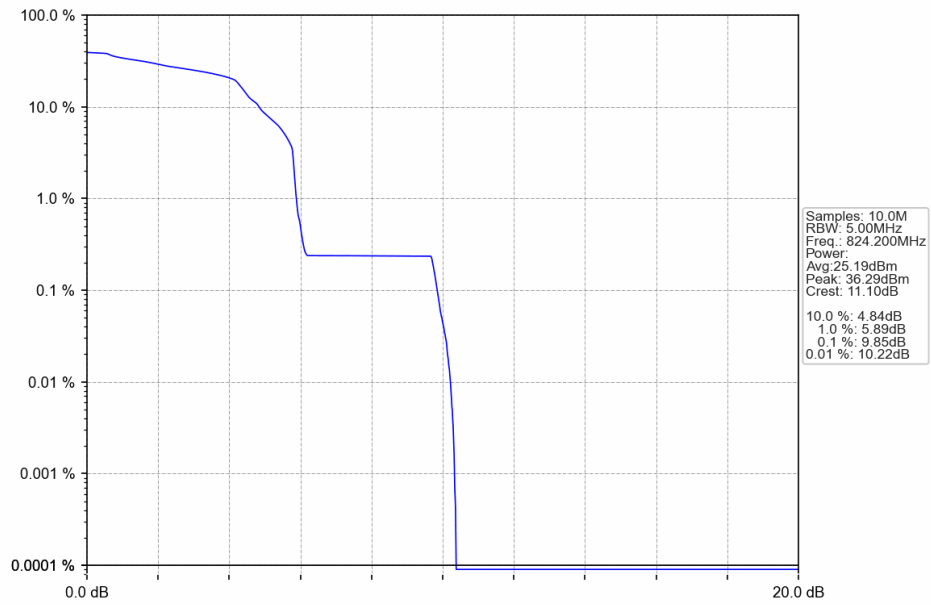
GSM850_GPRS_MCH_836.6MHz_4 TX Slots_NTNV



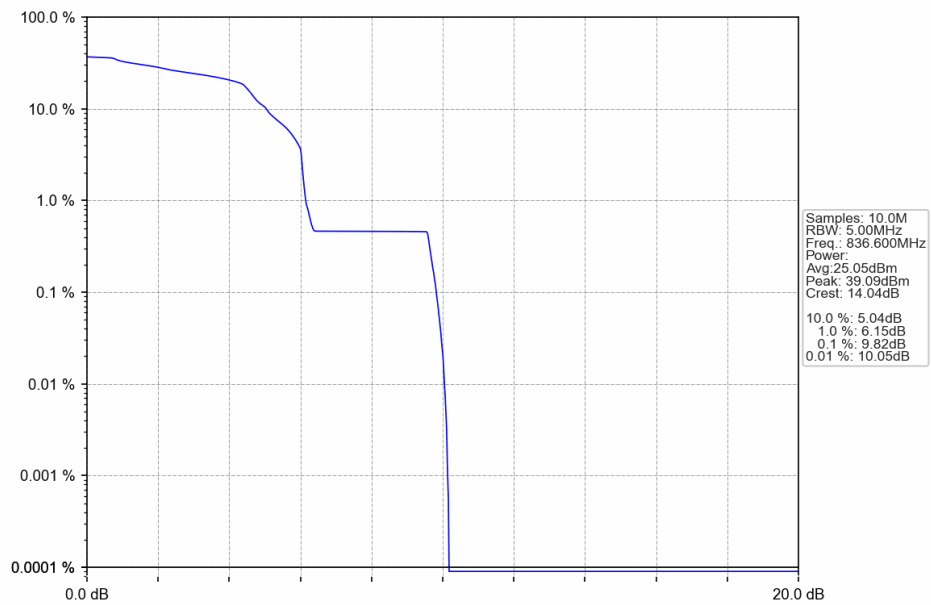
GSM850_GPRS_HCH_848.8MHz_4 TX Slots_NTNV

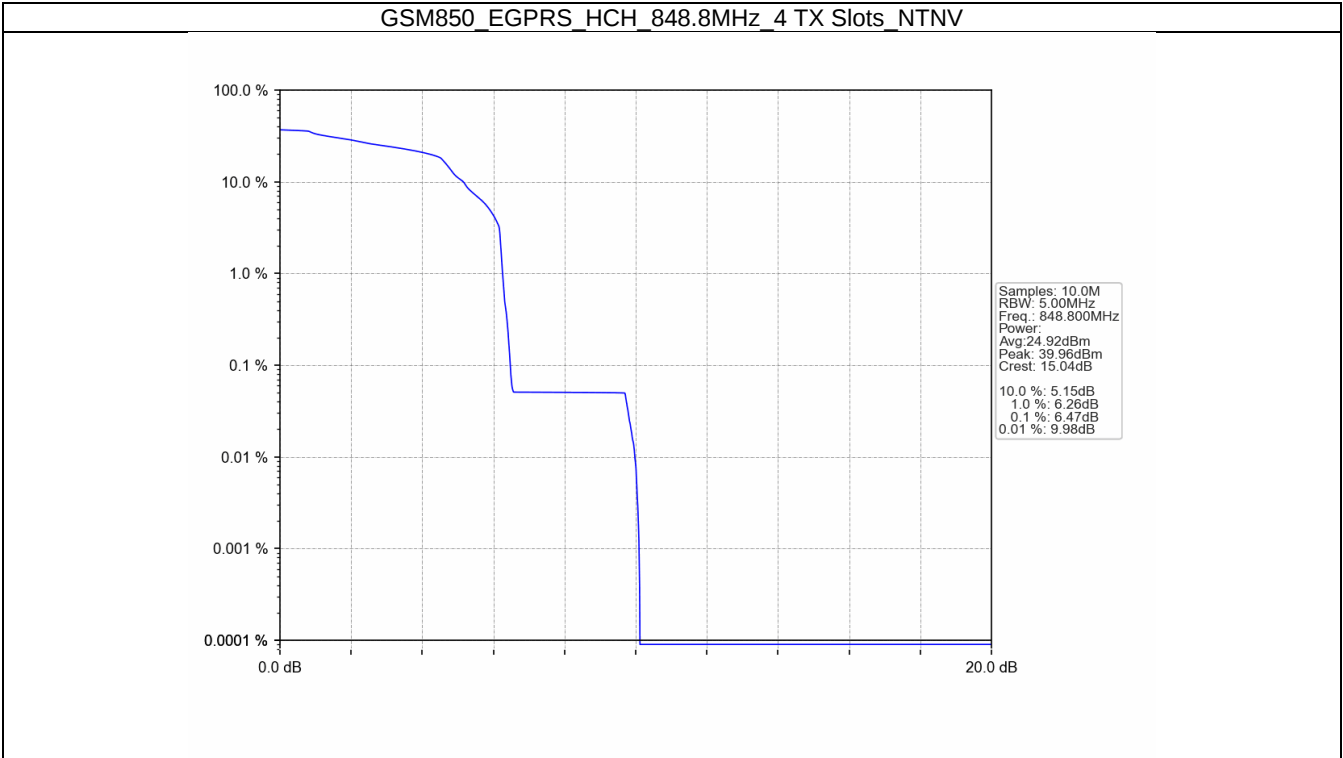


GSM850_EGPRS_LCH_824.2MHz_4 TX Slots_NTNV



GSM850_EGPRS_MCH_836.6MHz_4 TX Slots_NTNV





5. Spurious Emission & Band Edges

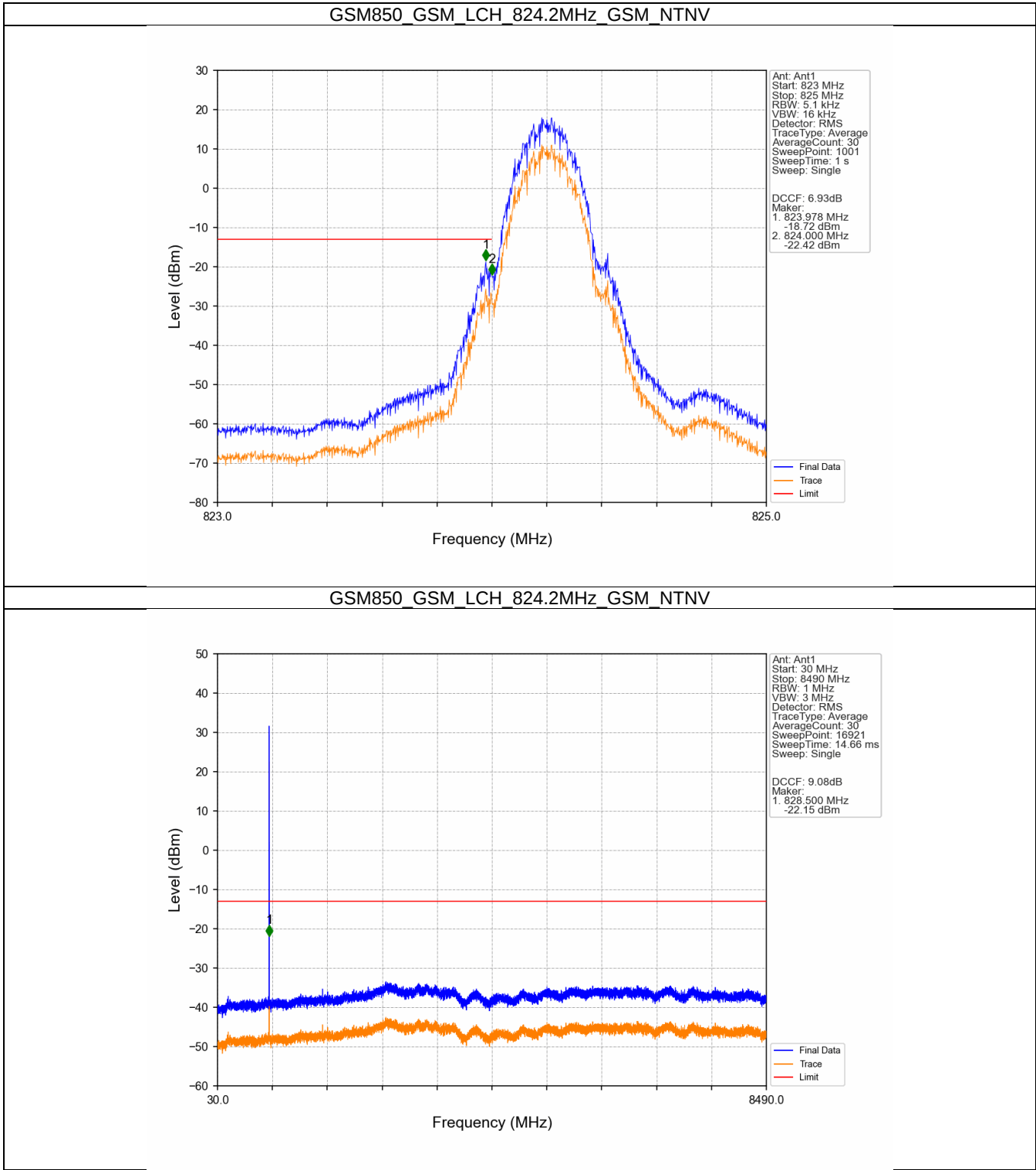
5.1 Test Result

5.1.1 GSM850

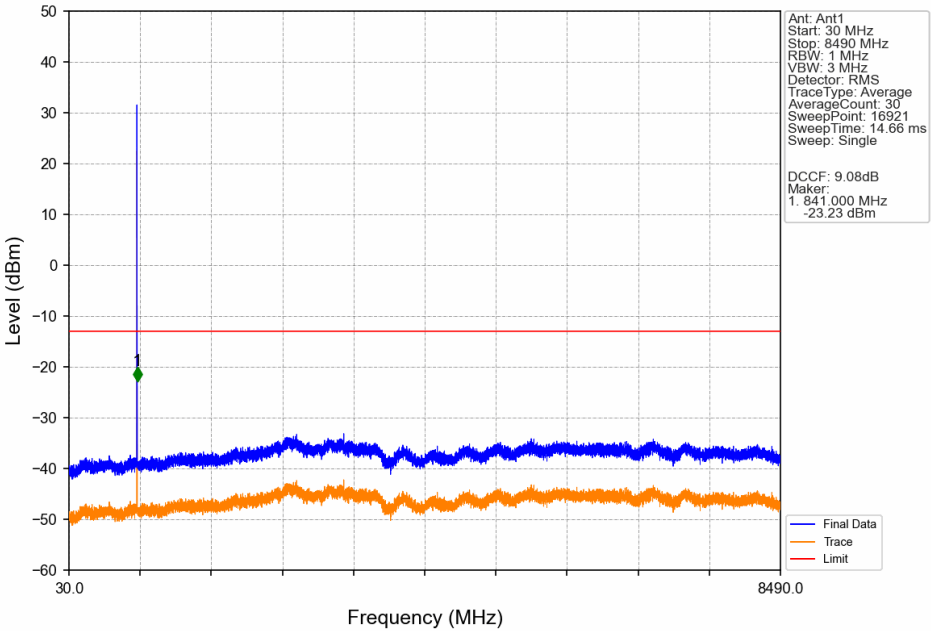
Band: GSM850						
ENV	Mode		Frequency (MHz)	Spurious Emission		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	824.2	Refer To Test Graph	Pass	
			836.6	Refer To Test Graph	Pass	
			848.8	Refer To Test Graph	Pass	
	GPRS	1 TX Slot	824.2	Refer To Test Graph	Pass	
			836.6	Refer To Test Graph	Pass	
			848.8	Refer To Test Graph	Pass	
	EGPRS	1 TX Slot	824.2	Refer To Test Graph	Pass	
			836.6	Refer To Test Graph	Pass	
			848.8	Refer To Test Graph	Pass	

5.2 Test Graph

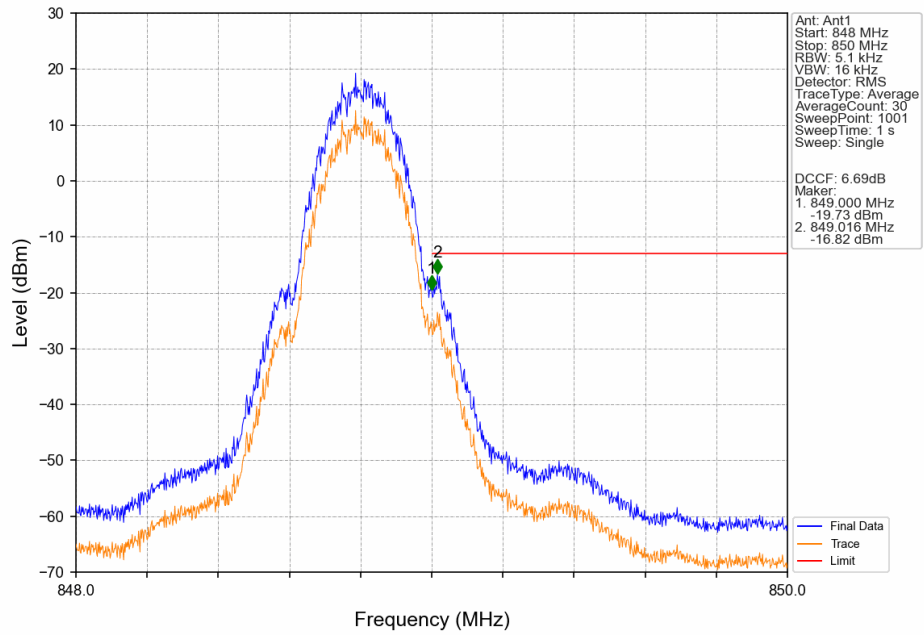
5.2.1 GSM850



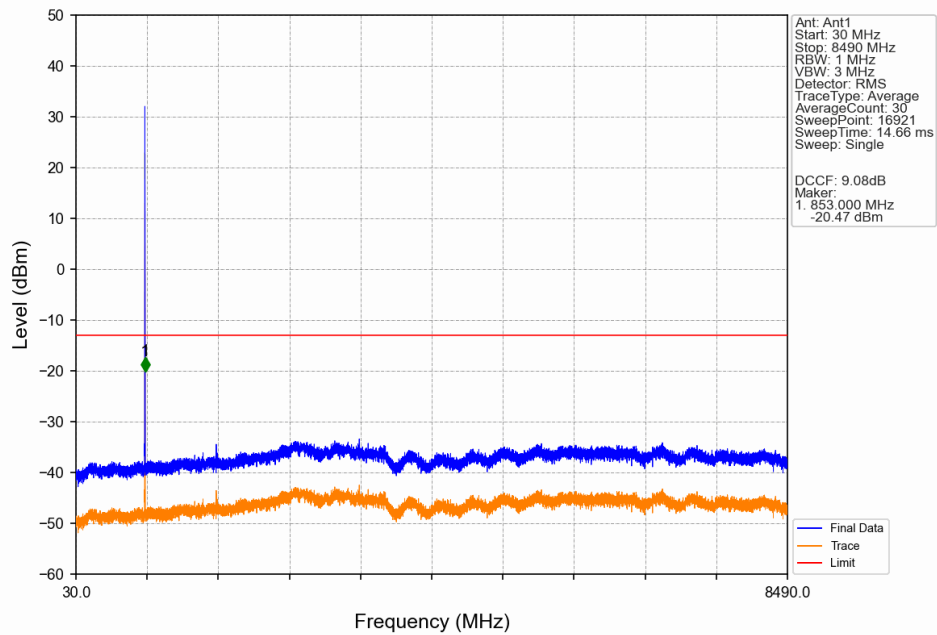
GSM850_GSM_MCH_836.6MHz_GSM_NTNV



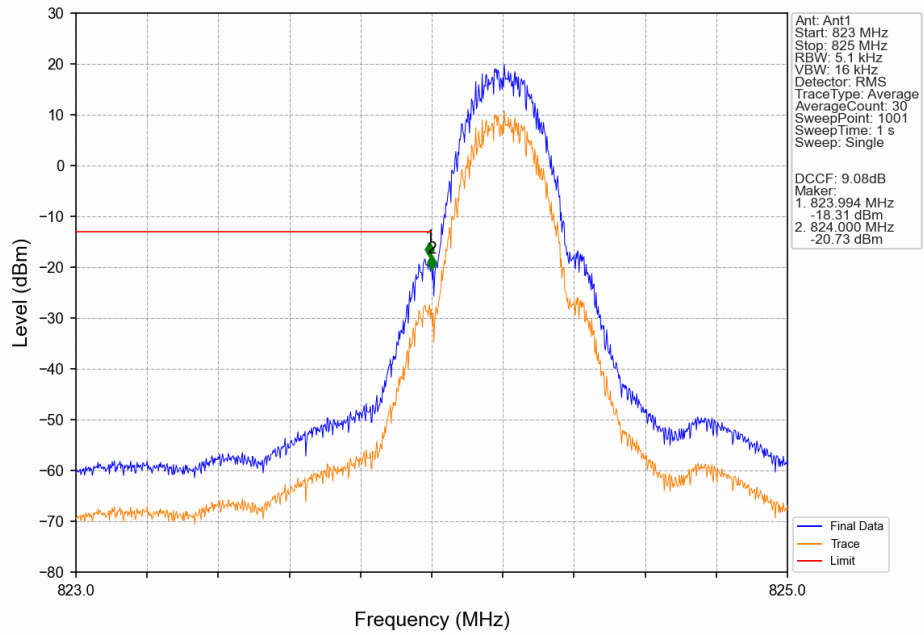
GSM850_GSM_HCH_848.8MHz_GSM_NTNV



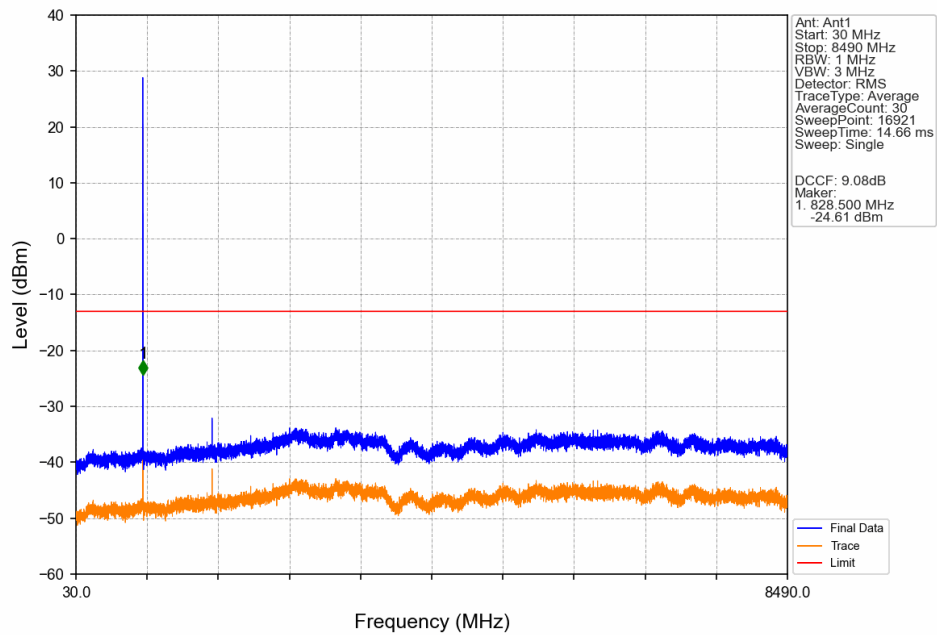
GSM850_GSM_HCH_848.8MHz_GSM_NTNV



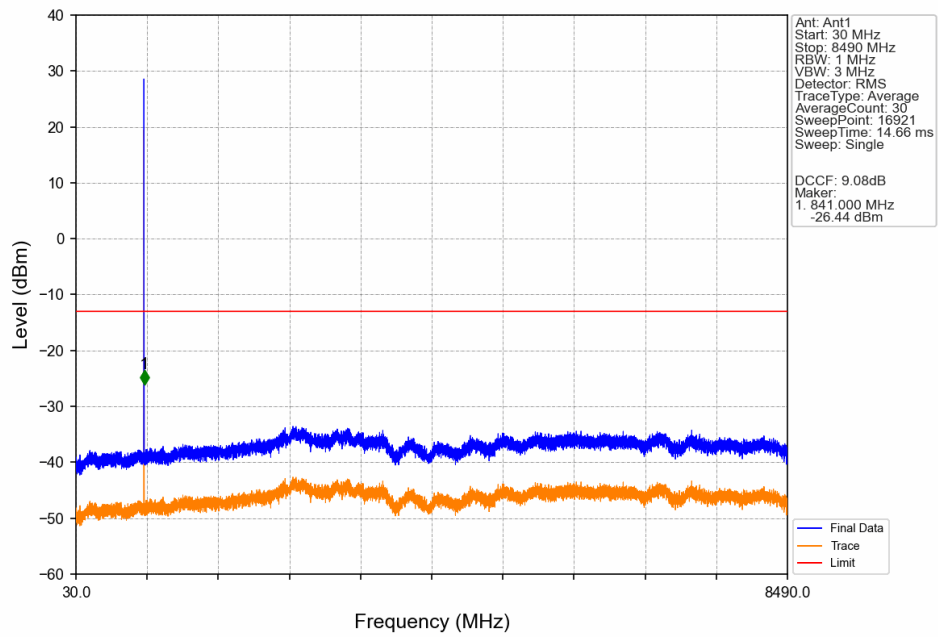
GSM850_GPRS_LCH_824.2MHz_1 TX Slot_NTNV



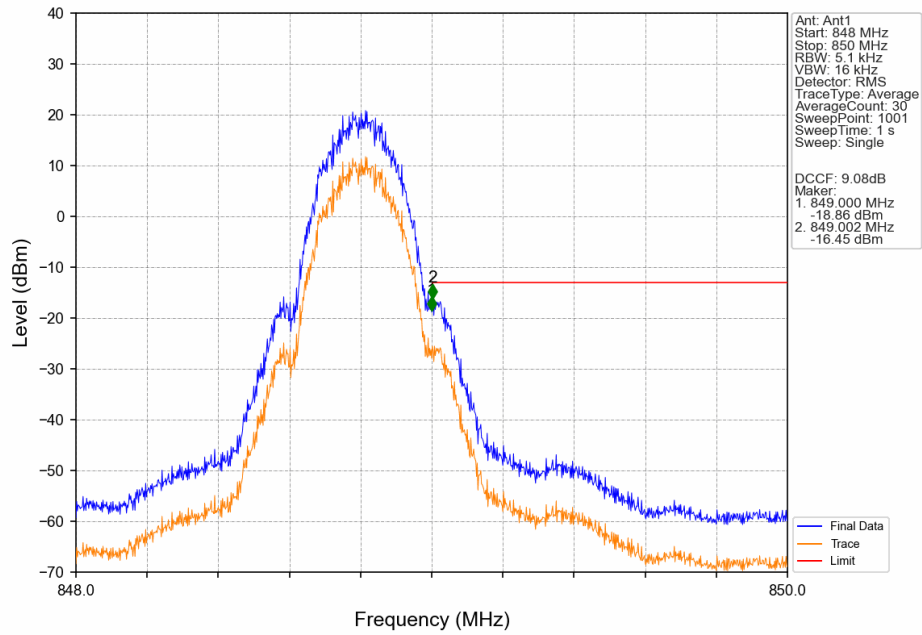
GSM850_GPRS_LCH_824.2MHz_1 TX Slot_NTNV



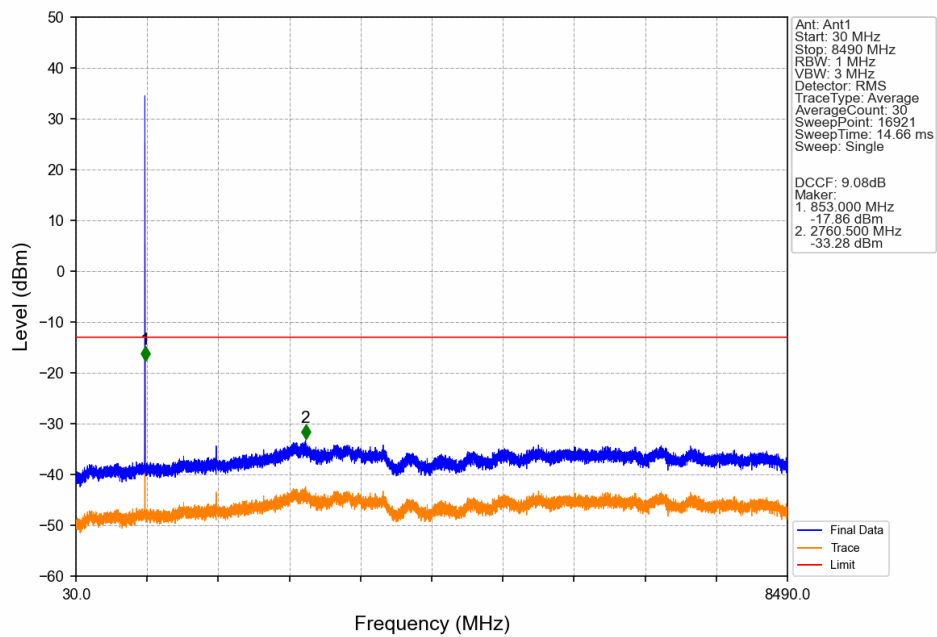
GSM850_GPRS_MCH_836.6MHz_1 TX Slot_NTNV



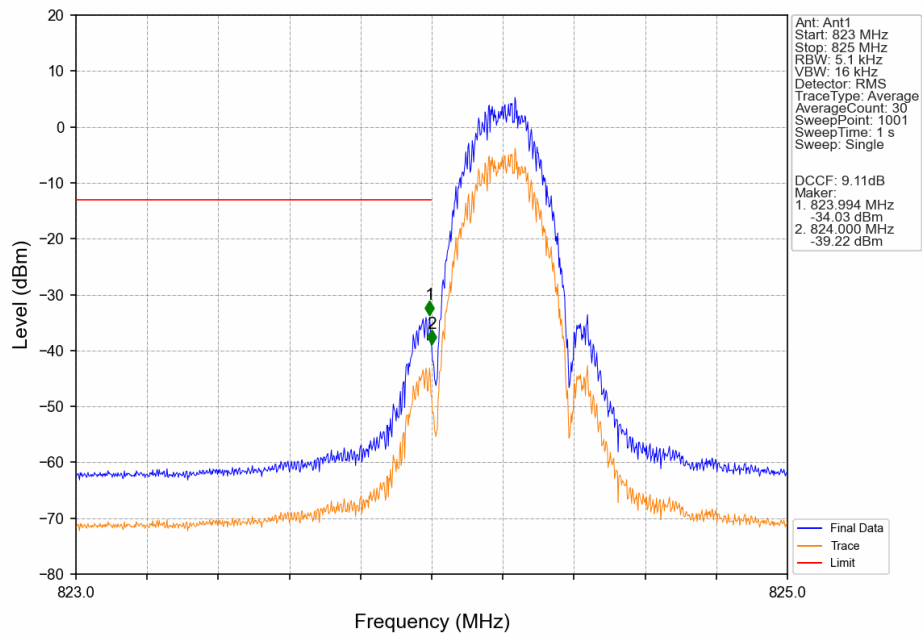
GSM850_GPRS_HCH_848.8MHz_1 TX Slot_NTNV



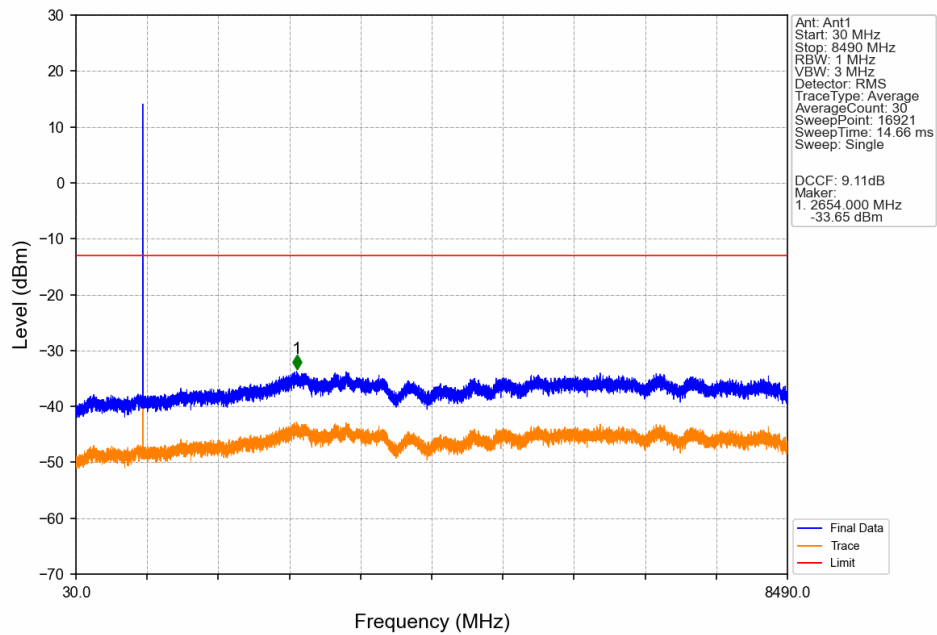
GSM850_GPRS_HCH_848.8MHz_1 TX Slot_NTNV



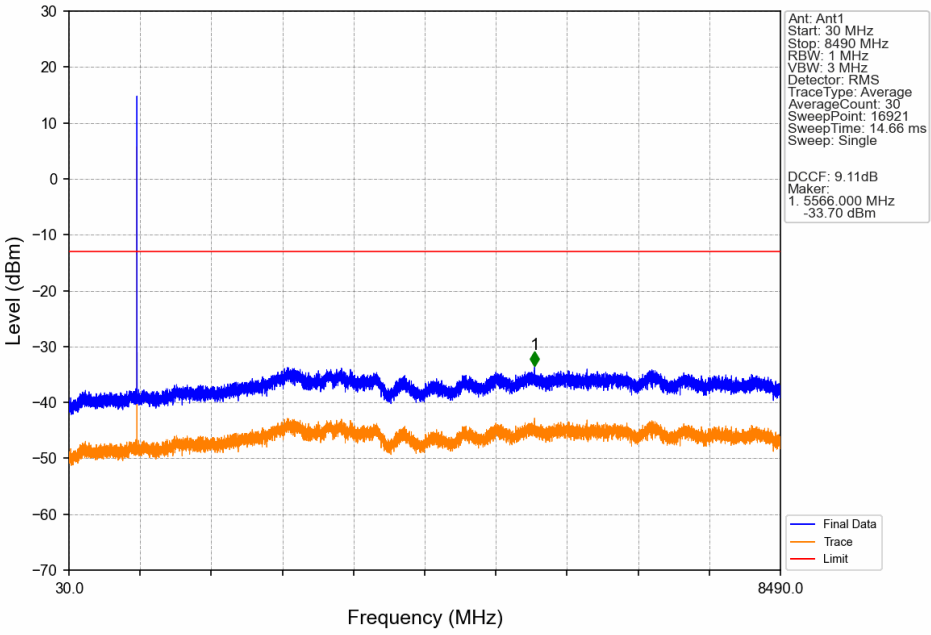
GSM850_EGPRS_LCH_824.2MHz_1 TX Slot_NTNV



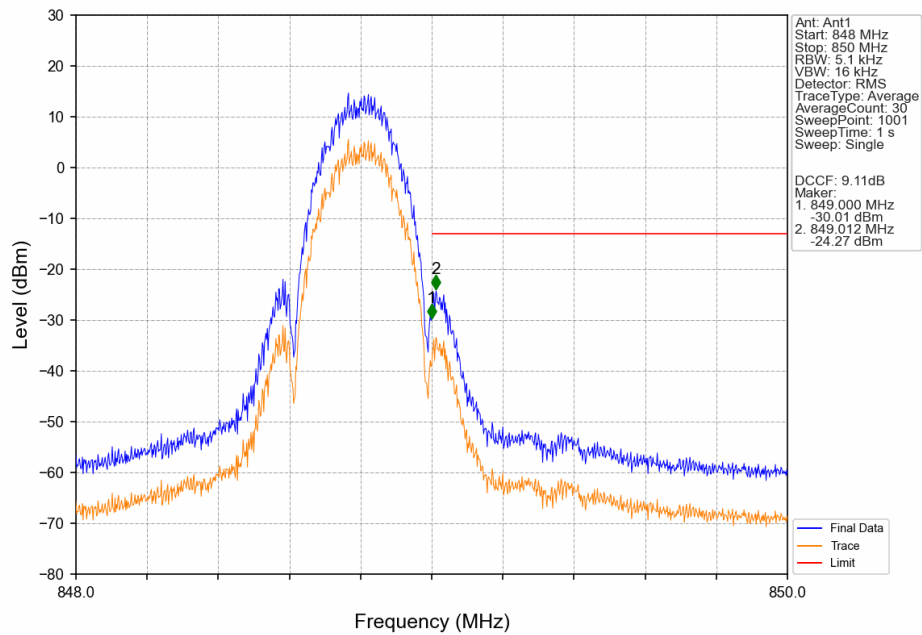
GSM850_EGPRS_LCH_824.2MHz_1 TX Slot_NTNV



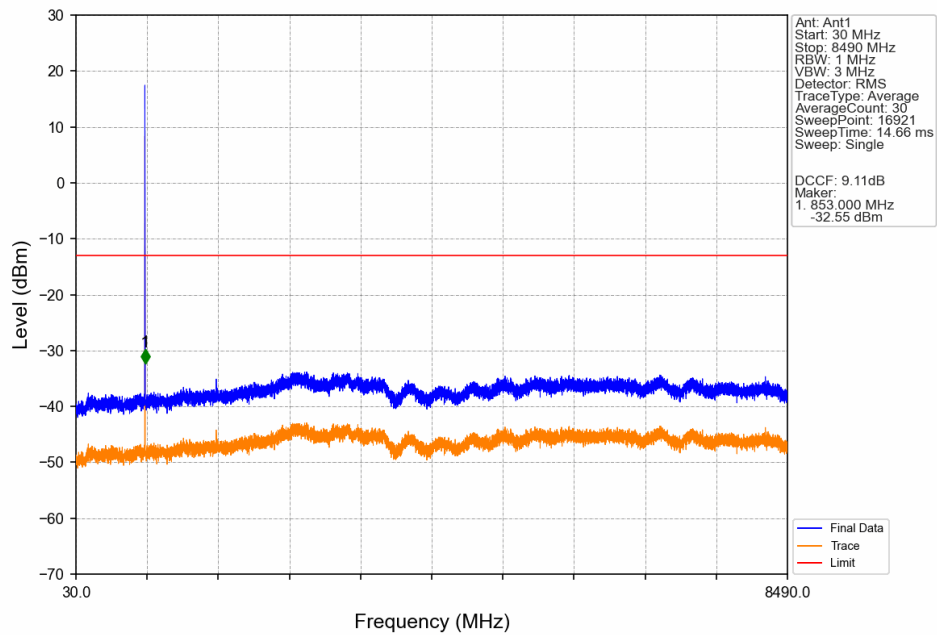
GSM850_EGPRS_MCH_836.6MHz_1 TX Slot_NTNV



GSM850_EGPRS_HCH_848.8MHz_1 TX Slot_NTNV



GSM850_EGPRS_HCH_848.8MHz_1 TX Slot_NTNV



Field Strength of Spurious Radiation

GSM850 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
1648.4	-67.84	-13	-54.84	-70.73	2.62	5.51	Horizontal	Pass
2472.6	-69.09	-13	-56.09	-71.78	3.06	5.75	Horizontal	Pass
3296.8	-67.38	-13	-54.38	-71.74	3.3	7.66	Horizontal	Pass
1648.4	-66.4	-13	-53.4	-69.29	2.62	5.51	Vertical	Pass
2472.6	-69.16	-13	-56.16	-71.85	3.06	5.75	Vertical	Pass
3296.8	-67.25	-13	-54.25	-71.61	3.3	7.66	Vertical	Pass

GSM850 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
1673.2	-64.34	-13	-51.34	-67.15	2.63	5.44	Horizontal	Pass
2509.8	-69.62	-13	-56.62	-72.38	3.08	5.84	Horizontal	Pass
3346.4	-67.03	-13	-54.03	-71.5	3.32	7.79	Horizontal	Pass
1673.2	-69.18	-13	-56.18	-71.99	2.63	5.44	Vertical	Pass
2509.8	-69.2	-13	-56.2	-71.96	3.08	5.84	Vertical	Pass
3346.4	-67.48	-13	-54.48	-71.95	3.32	7.79	Vertical	Pass

GSM850 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
1697.6	-72.64	-13	-59.64	-75.38	2.64	5.38	Horizontal	Pass
2546.4	-69.35	-13	-56.35	-72.18	3.09	5.92	Horizontal	Pass
3395.2	-67.57	-13	-54.57	-72.13	3.35	7.91	Horizontal	Pass
1697.6	-72.2	-13	-59.2	-74.94	2.64	5.38	Vertical	Pass
2546.4	-69.07	-13	-56.07	-71.9	3.09	5.92	Vertical	Pass
3395.2	-67.46	-13	-54.46	-72.02	3.35	7.91	Vertical	Pass

Remark:

- 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:

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

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

---End of Attachment---