

1. Effective (Isotropic) Radiated Power Output Data

1.1 GSM850_ERP(ANT31)

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	32.62	-6.10	24.37	<=38.45	Pass
			836.6	32.67	-6.10	24.42	<=38.45	Pass
			848.8	33.27	-6.10	25.02	<=38.45	Pass
	GPRS	1 TX Slot	824.2	33.14	-6.10	24.89	<=38.45	Pass
		2 TX Slots	824.2	30.92	-6.10	22.67	<=38.45	Pass
		3 TX Slots	824.2	29.25	-6.10	21.00	<=38.45	Pass
		4 TX Slots	824.2	26.66	-6.10	18.41	<=38.45	Pass
		1 TX Slot	836.6	33.24	-6.10	24.99	<=38.45	Pass
		2 TX Slots	836.6	30.98	-6.10	22.73	<=38.45	Pass
		3 TX Slots	836.6	29.19	-6.10	20.94	<=38.45	Pass
		4 TX Slots	836.6	26.64	-6.10	18.39	<=38.45	Pass
		1 TX Slot	848.8	33.18	-6.10	24.93	<=38.45	Pass
		2 TX Slots	848.8	30.80	-6.10	22.55	<=38.45	Pass
		3 TX Slots	848.8	28.99	-6.10	20.74	<=38.45	Pass
		4 TX Slots	848.8	27.02	-6.10	18.77	<=38.45	Pass
	EGPRS	1 TX Slot	824.2	27.09	-6.10	18.84	<=38.45	Pass
		2 TX Slots	824.2	26.16	-6.10	17.91	<=38.45	Pass
		3 TX Slots	824.2	25.10	-6.10	16.85	<=38.45	Pass
		4 TX Slots	824.2	21.68	-6.10	13.43	<=38.45	Pass
		1 TX Slot	836.6	27.25	-6.10	19.00	<=38.45	Pass
		2 TX Slots	836.6	25.41	-6.10	17.16	<=38.45	Pass
		3 TX Slots	836.6	24.99	-6.10	16.74	<=38.45	Pass
		4 TX Slots	836.6	21.71	-6.10	13.46	<=38.45	Pass
		1 TX Slot	848.8	27.45	-6.10	19.20	<=38.45	Pass
		2 TX Slots	848.8	25.22	-6.10	16.97	<=38.45	Pass
		3 TX Slots	848.8	23.46	-6.10	15.21	<=38.45	Pass
		4 TX Slots	848.8	23.59	-6.10	15.34	<=38.45	Pass

Note1: ERP=Conducted Power+Antenna Gain-2.15

2. Frequency Stability

2.1 GSM850

2.1.1 Test Result

Band: GSM850							
Network	Frequency (MHz)	Temp. (°C)	Voltage (VDC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
					Result	Limit	
GSM	824.2	20	3.6	14.049	0.0170	-2.5 to 2.5	Pass
			3.86	17.234	0.0209	-2.5 to 2.5	Pass
			4.3	19.262	0.0234	-2.5 to 2.5	Pass
		-30	3.86	18.255	0.0221	-2.5 to 2.5	Pass
		-20	3.86	20.747	0.0252	-2.5 to 2.5	Pass
		-10	3.86	21.550	0.0261	-2.5 to 2.5	Pass
		0	3.86	18.759	0.0228	-2.5 to 2.5	Pass
		10	3.86	17.346	0.0210	-2.5 to 2.5	Pass

		30	3.86	20.687	0.0251	-2.5 to 2.5	Pass
		40	3.86	24.296	0.0295	-2.5 to 2.5	Pass
		50	3.86	19.458	0.0236	-2.5 to 2.5	Pass
	836.6	20	3.6	19.618	0.0234	-2.5 to 2.5	Pass
			3.86	23.631	0.0282	-2.5 to 2.5	Pass
			4.3	17.005	0.0203	-2.5 to 2.5	Pass
		-30	3.86	26.601	0.0318	-2.5 to 2.5	Pass
		-20	3.86	22.127	0.0264	-2.5 to 2.5	Pass
		-10	3.86	18.258	0.0218	-2.5 to 2.5	Pass
		0	3.86	17.277	0.0207	-2.5 to 2.5	Pass
		10	3.86	18.730	0.0224	-2.5 to 2.5	Pass
		30	3.86	20.613	0.0246	-2.5 to 2.5	Pass
		40	3.86	18.219	0.0218	-2.5 to 2.5	Pass
		50	3.86	21.337	0.0255	-2.5 to 2.5	Pass
	848.8	20	3.6	23.961	0.0282	-2.5 to 2.5	Pass
			3.86	20.435	0.0241	-2.5 to 2.5	Pass
			4.3	17.952	0.0211	-2.5 to 2.5	Pass
		-30	3.86	20.459	0.0241	-2.5 to 2.5	Pass
		-20	3.86	16.404	0.0193	-2.5 to 2.5	Pass
		-10	3.86	19.045	0.0224	-2.5 to 2.5	Pass
		0	3.86	17.750	0.0209	-2.5 to 2.5	Pass
		10	3.86	15.747	0.0186	-2.5 to 2.5	Pass
		30	3.86	18.863	0.0222	-2.5 to 2.5	Pass
		40	3.86	20.099	0.0237	-2.5 to 2.5	Pass
		50	3.86	23.144	0.0273	-2.5 to 2.5	Pass
GPRS	824.2	20	3.6	31.545	0.0383	-2.5 to 2.5	Pass
			3.86	31.515	0.0382	-2.5 to 2.5	Pass
			4.3	29.691	0.0360	-2.5 to 2.5	Pass
		-30	3.86	30.062	0.0365	-2.5 to 2.5	Pass
		-20	3.86	32.360	0.0393	-2.5 to 2.5	Pass
		-10	3.86	30.825	0.0374	-2.5 to 2.5	Pass
		0	3.86	32.866	0.0399	-2.5 to 2.5	Pass
		10	3.86	33.827	0.0410	-2.5 to 2.5	Pass
		30	3.86	34.911	0.0424	-2.5 to 2.5	Pass
		40	3.86	31.620	0.0384	-2.5 to 2.5	Pass
		50	3.86	33.783	0.0410	-2.5 to 2.5	Pass
	836.6	20	3.6	31.750	0.0380	-2.5 to 2.5	Pass
			3.86	33.546	0.0401	-2.5 to 2.5	Pass
			4.3	33.081	0.0395	-2.5 to 2.5	Pass
		-30	3.86	33.800	0.0404	-2.5 to 2.5	Pass
		-20	3.86	35.138	0.0420	-2.5 to 2.5	Pass
		-10	3.86	34.275	0.0410	-2.5 to 2.5	Pass
		0	3.86	32.665	0.0390	-2.5 to 2.5	Pass
		10	3.86	32.696	0.0391	-2.5 to 2.5	Pass
		30	3.86	33.034	0.0395	-2.5 to 2.5	Pass
		40	3.86	32.314	0.0386	-2.5 to 2.5	Pass
		50	3.86	32.090	0.0384	-2.5 to 2.5	Pass
	848.8	20	3.6	32.344	0.0381	-2.5 to 2.5	Pass
			3.86	31.813	0.0375	-2.5 to 2.5	Pass
			4.3	30.868	0.0364	-2.5 to 2.5	Pass
		-30	3.86	34.707	0.0409	-2.5 to 2.5	Pass
		-20	3.86	33.524	0.0395	-2.5 to 2.5	Pass
		-10	3.86	33.550	0.0395	-2.5 to 2.5	Pass
		0	3.86	33.034	0.0389	-2.5 to 2.5	Pass
		10	3.86	31.412	0.0370	-2.5 to 2.5	Pass
		30	3.86	32.312	0.0381	-2.5 to 2.5	Pass
		40	3.86	33.104	0.0390	-2.5 to 2.5	Pass
		50	3.86	34.402	0.0405	-2.5 to 2.5	Pass
EGPRS	824.2	20	3.6	24.255	0.0294	-2.5 to 2.5	Pass

			3.86	24.605	0.0299	-2.5 to 2.5	Pass
			4.3	24.024	0.0291	-2.5 to 2.5	Pass
		-30	3.86	26.213	0.0318	-2.5 to 2.5	Pass
		-20	3.86	25.455	0.0309	-2.5 to 2.5	Pass
		-10	3.86	26.729	0.0324	-2.5 to 2.5	Pass
		0	3.86	28.427	0.0345	-2.5 to 2.5	Pass
		10	3.86	28.104	0.0341	-2.5 to 2.5	Pass
		30	3.86	27.708	0.0336	-2.5 to 2.5	Pass
		40	3.86	27.632	0.0335	-2.5 to 2.5	Pass
		50	3.86	27.308	0.0331	-2.5 to 2.5	Pass
	836.6	20	3.6	28.927	0.0346	-2.5 to 2.5	Pass
			3.86	27.861	0.0333	-2.5 to 2.5	Pass
			4.3	27.727	0.0331	-2.5 to 2.5	Pass
		-30	3.86	28.612	0.0342	-2.5 to 2.5	Pass
		-20	3.86	28.374	0.0339	-2.5 to 2.5	Pass
		-10	3.86	29.482	0.0352	-2.5 to 2.5	Pass
		0	3.86	28.600	0.0342	-2.5 to 2.5	Pass
		10	3.86	28.244	0.0338	-2.5 to 2.5	Pass
		30	3.86	28.942	0.0346	-2.5 to 2.5	Pass
		40	3.86	28.350	0.0339	-2.5 to 2.5	Pass
		50	3.86	26.834	0.0321	-2.5 to 2.5	Pass
	848.8	20	3.6	30.052	0.0354	-2.5 to 2.5	Pass
			3.86	28.748	0.0339	-2.5 to 2.5	Pass
			4.3	27.139	0.0320	-2.5 to 2.5	Pass
		-30	3.86	26.840	0.0316	-2.5 to 2.5	Pass
		-20	3.86	27.214	0.0321	-2.5 to 2.5	Pass
		-10	3.86	27.765	0.0327	-2.5 to 2.5	Pass
		0	3.86	27.018	0.0318	-2.5 to 2.5	Pass
		10	3.86	27.380	0.0323	-2.5 to 2.5	Pass
		30	3.86	27.627	0.0325	-2.5 to 2.5	Pass
		40	3.86	27.601	0.0325	-2.5 to 2.5	Pass
		50	3.86	25.655	0.0302	-2.5 to 2.5	Pass

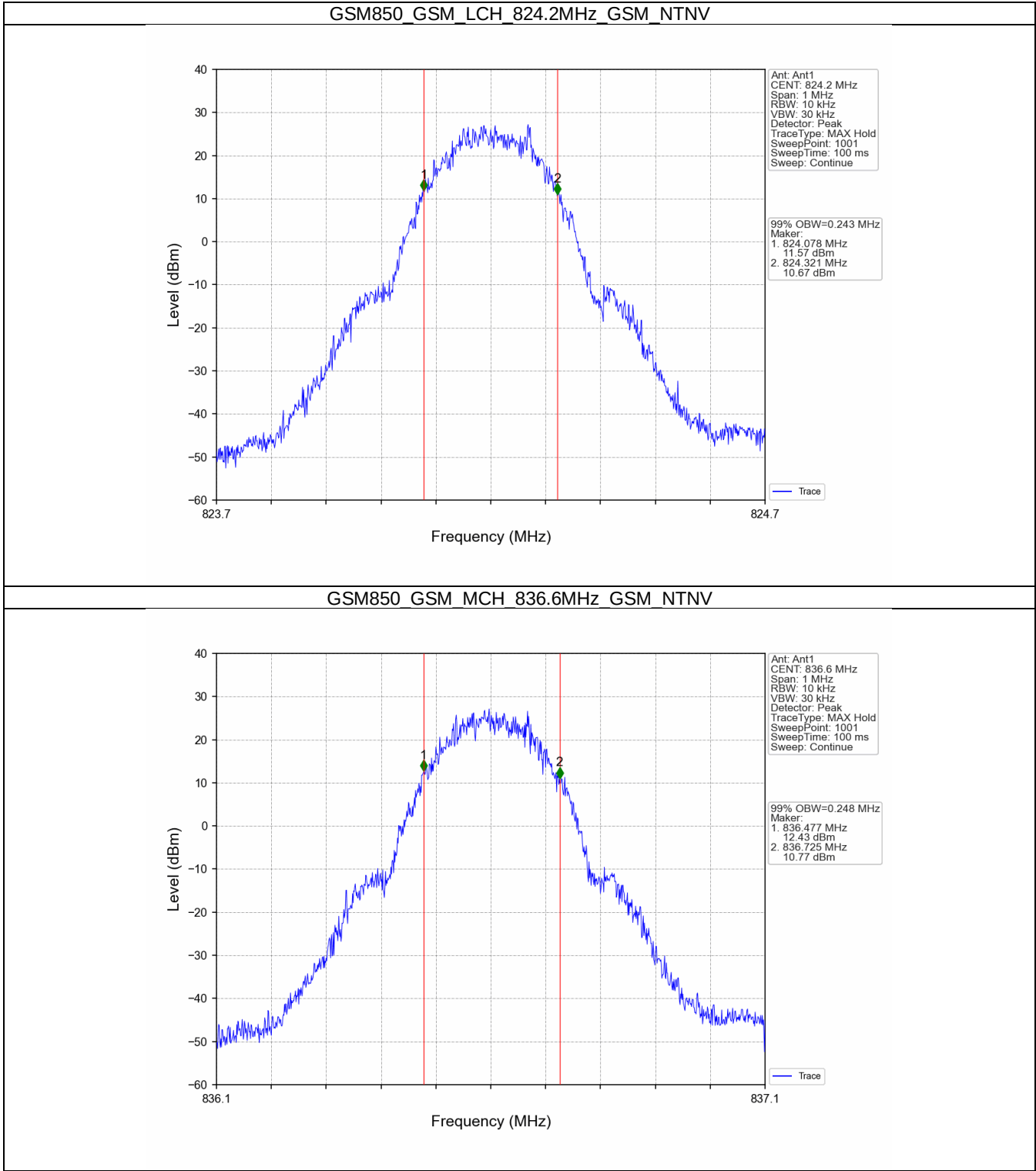
3. 99% & 26dB Bandwidth

3.1 GSM850_OBW

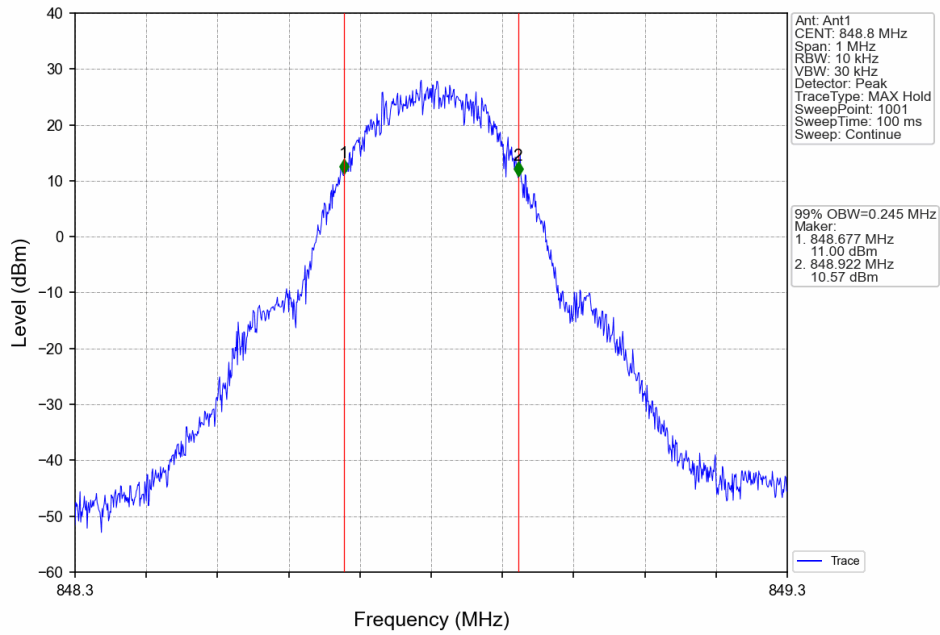
3.1.1 Test Result

Band: GSM850						
ENV	Mode		Frequency (MHz)	99% Occupied Bandwidth (MHz)		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	824.2	0.243	/	Pass
			836.6	0.248	/	Pass
			848.8	0.245	/	Pass
	GPRS	1 TX Slot	824.2	0.247	/	Pass
			836.6	0.246	/	Pass
			848.8	0.243	/	Pass
	EGPRS	1 TX Slot	824.2	0.247	/	Pass
			836.6	0.240	/	Pass
			848.8	0.240	/	Pass

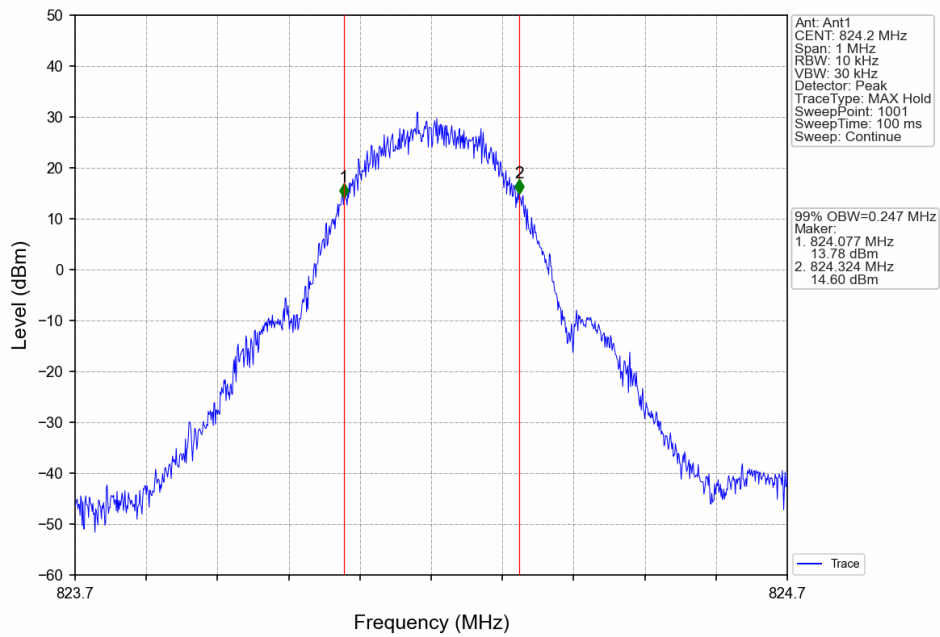
3.1.2 Test Graph



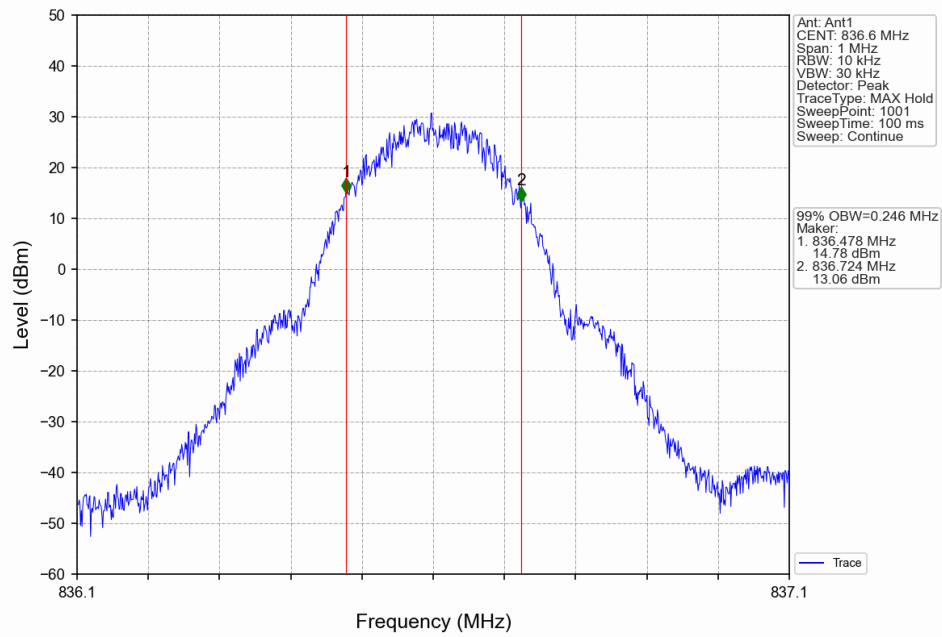
GSM850 GSM HCH 848.8MHz GSM NTNV



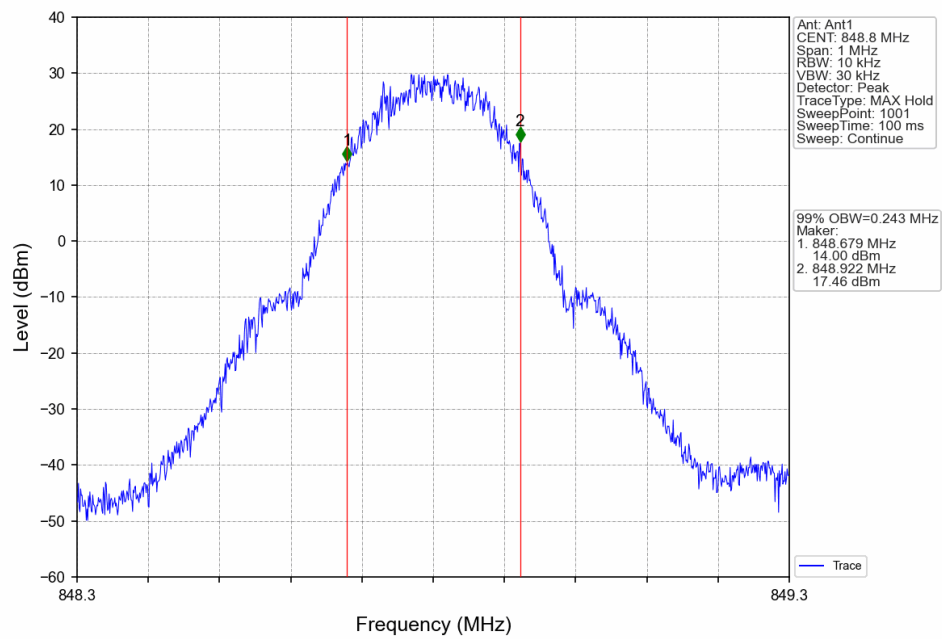
GSM850_GPRS_LCH_824.2MHz_1 TX Slot_NTNV



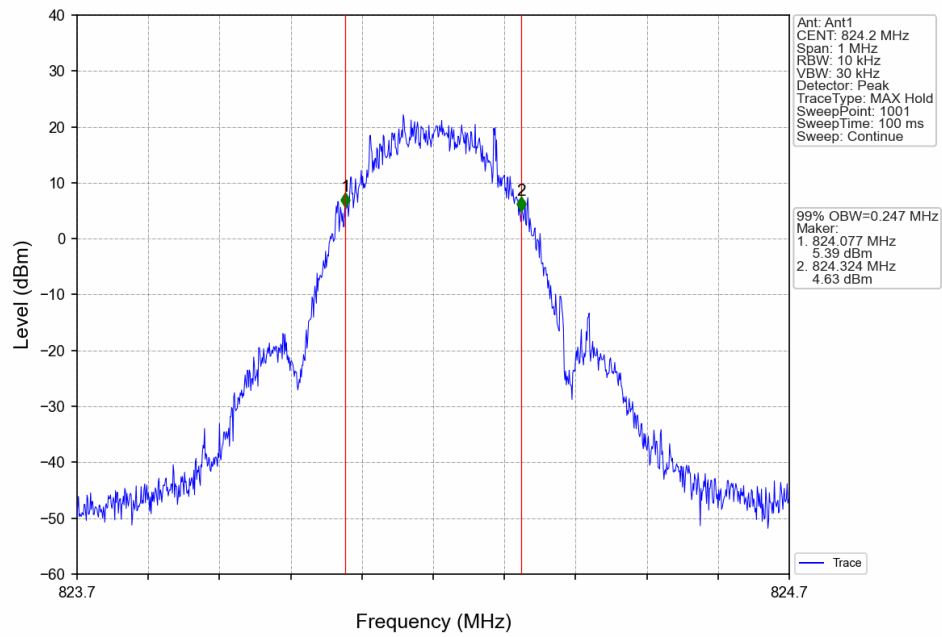
GSM850_GPRS_MCH_836.6MHz_1 TX Slot_NTNV



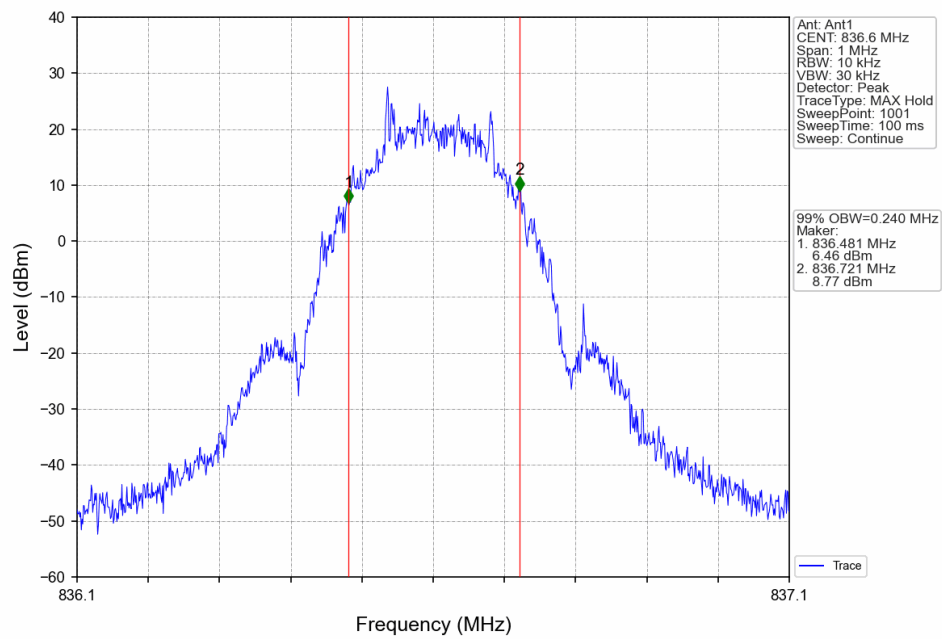
GSM850_GPRS_HCH_848.8MHz_1 TX Slot_NTNV



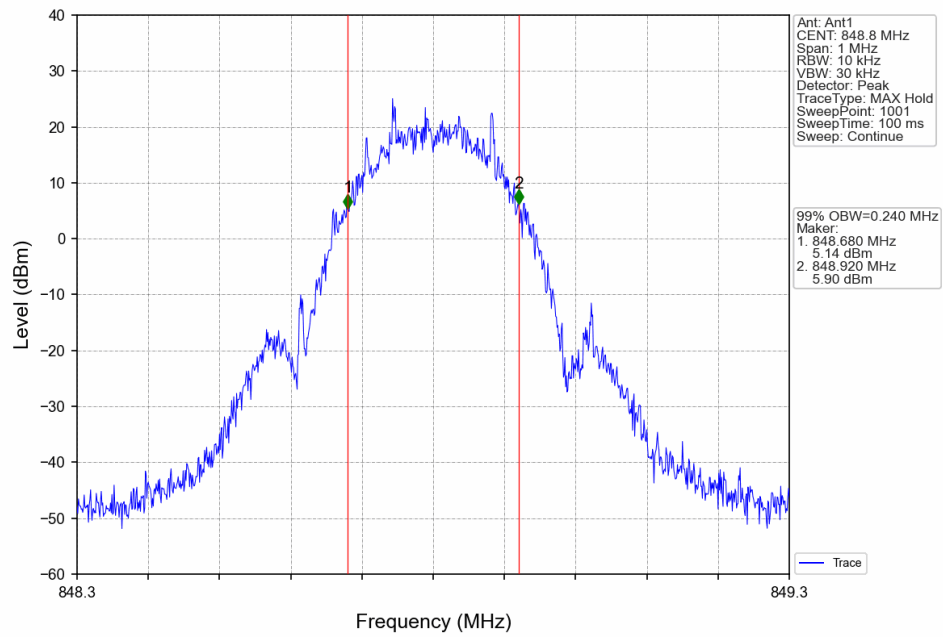
GSM850 EGPRS LCH 824.2MHz 1 TX Slot NTNV



GSM850 EGPRS MCH 836.6MHz 1 TX Slot NTNV



GSM850 EGPRS HCH 848.8MHz 1 TX Slot NTNV

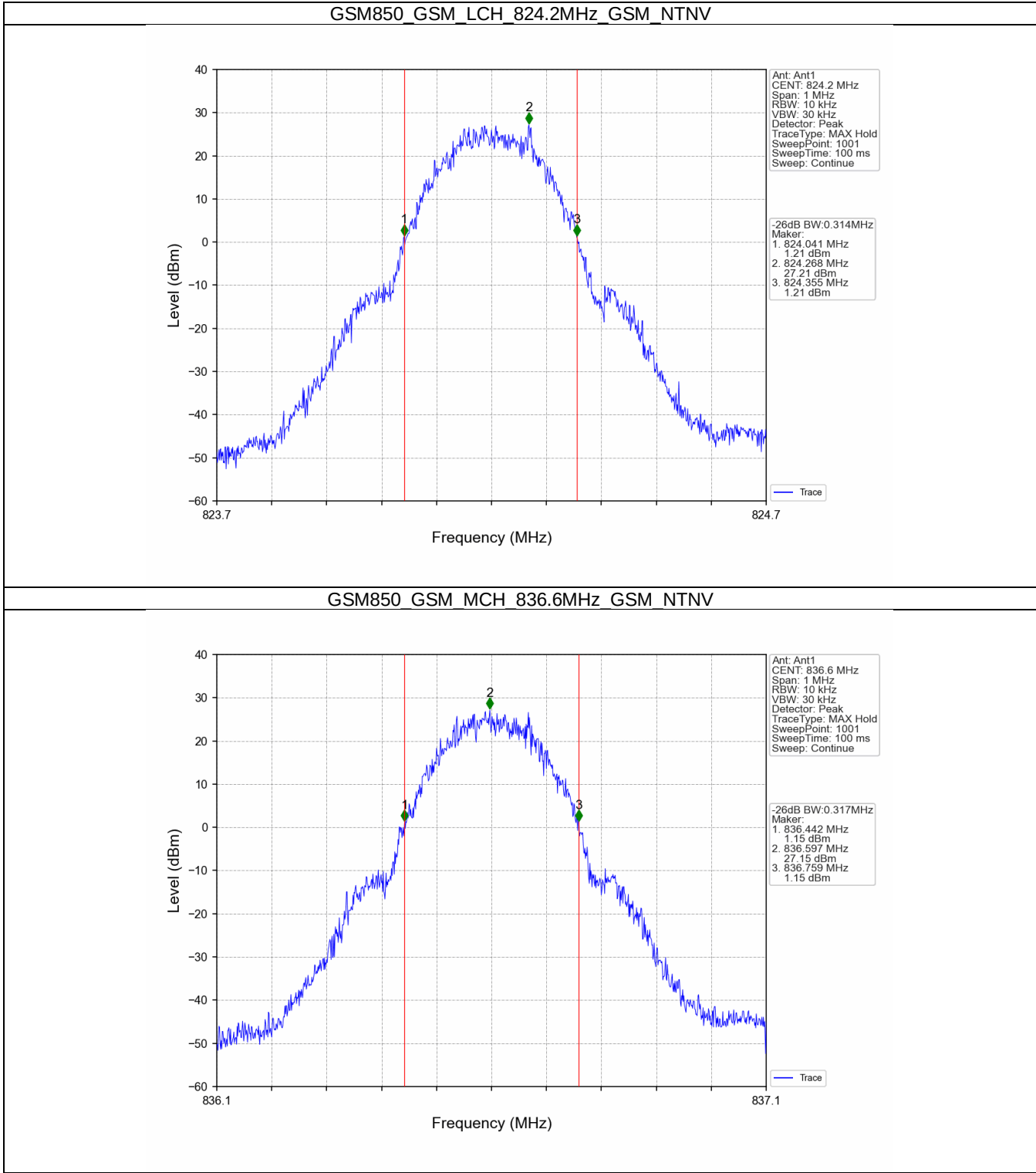


3.2 GSM850_XDB

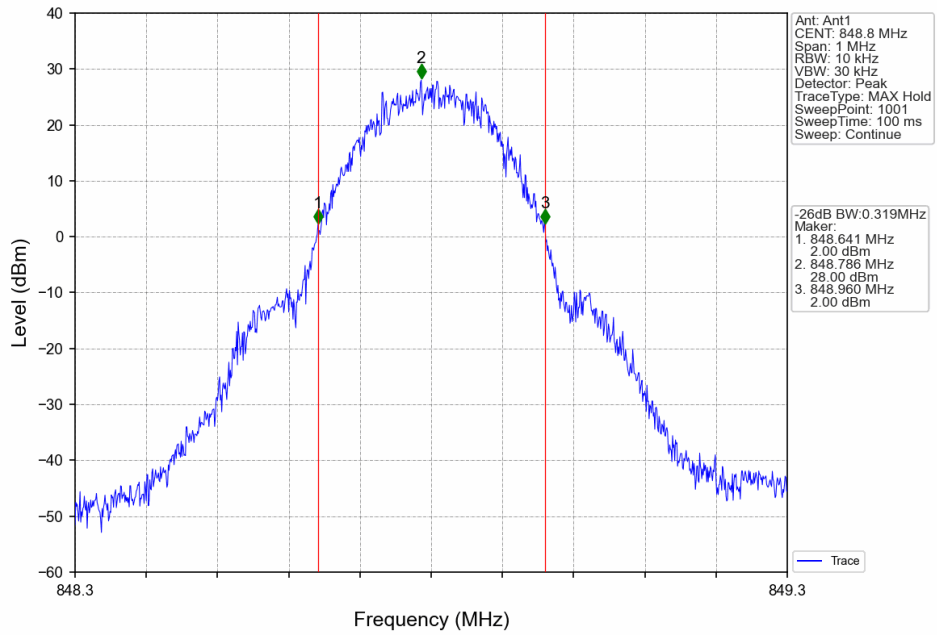
3.2.1 Test Result

Band: GSM850						
ENV	Mode		Frequency (MHz)	26dB Bandwidth (MHz)		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	824.2	0.314	/	Pass
			836.6	0.317	/	Pass
			848.8	0.319	/	Pass
	GPRS	1 TX Slot	824.2	0.310	/	Pass
			836.6	0.306	/	Pass
			848.8	0.318	/	Pass
	EGPRS	1 TX Slot	824.2	0.304	/	Pass
			836.6	0.300	/	Pass
			848.8	0.290	/	Pass

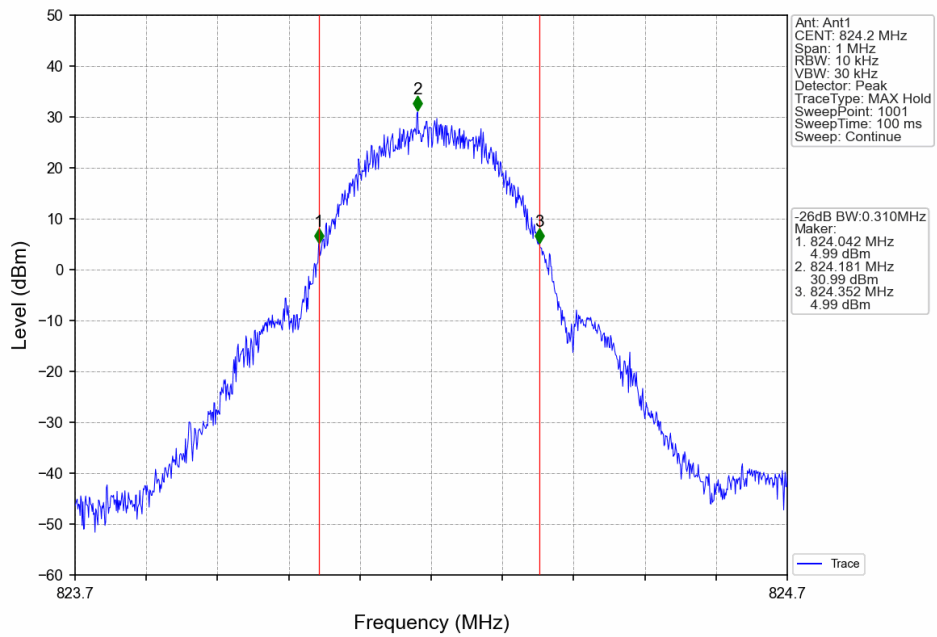
3.2.2 Test Graph



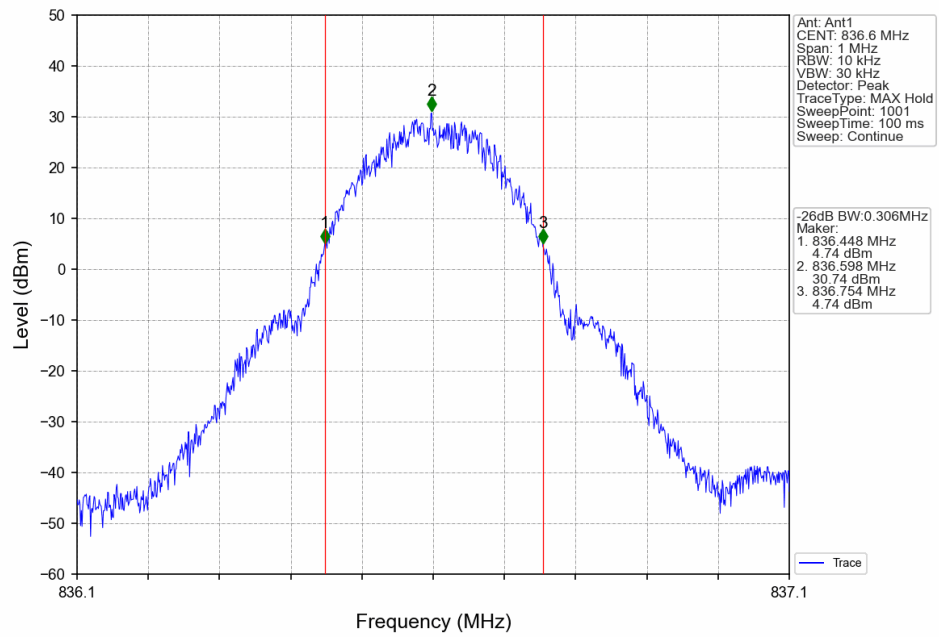
GSM850 GSM HCH 848.8MHz GSM NTV



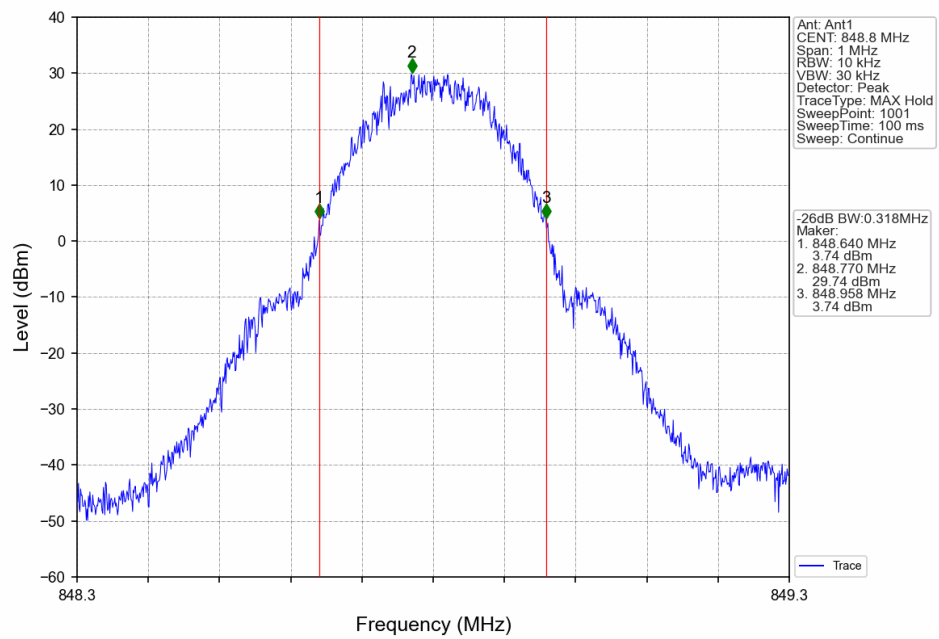
GSM850_GPRS_LCH_824.2MHz_1 TX Slot_NTNV



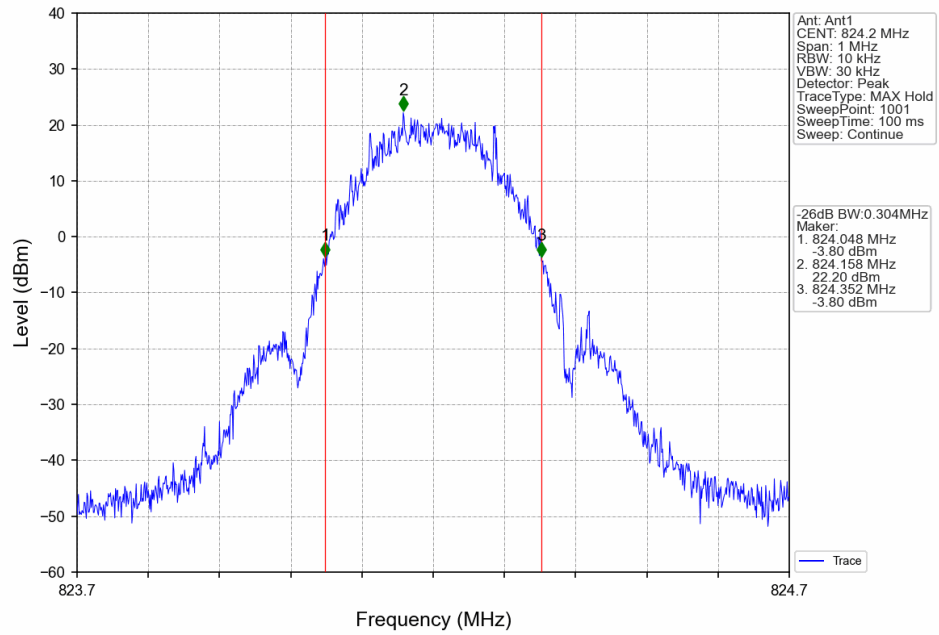
GSM850_GPRS_MCH_836.6MHz_1 TX Slot_NTNV



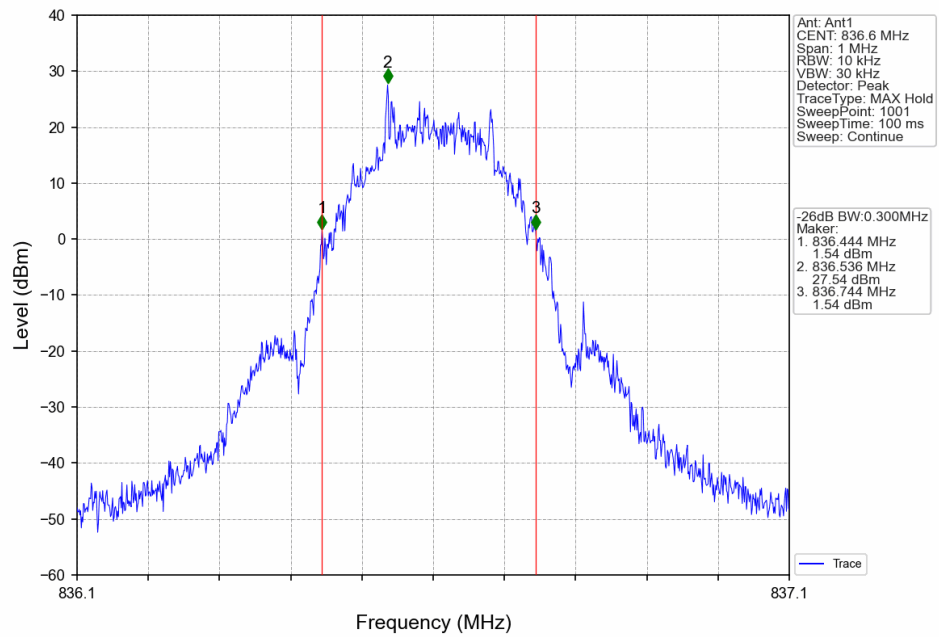
GSM850_GPRS_HCH_848.8MHz_1 TX Slot_NTNV



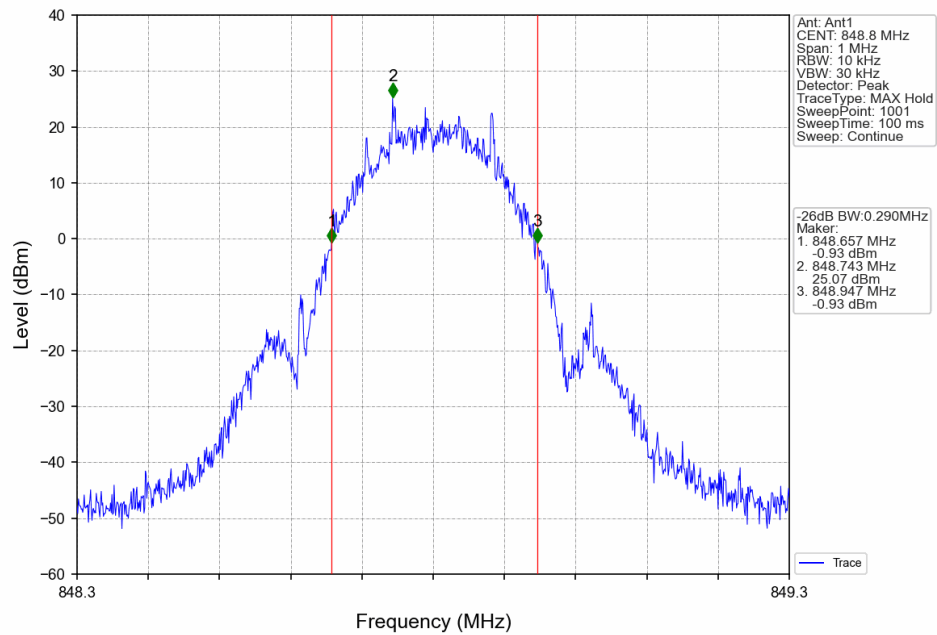
GSM850 EGPRS LCH 824.2MHz 1 TX Slot NTNV



GSM850 EGPRS MCH 836.6MHz 1 TX Slot NTNV



GSM850 EGPRS HCH 848.8MHz 1 TX Slot NTNV



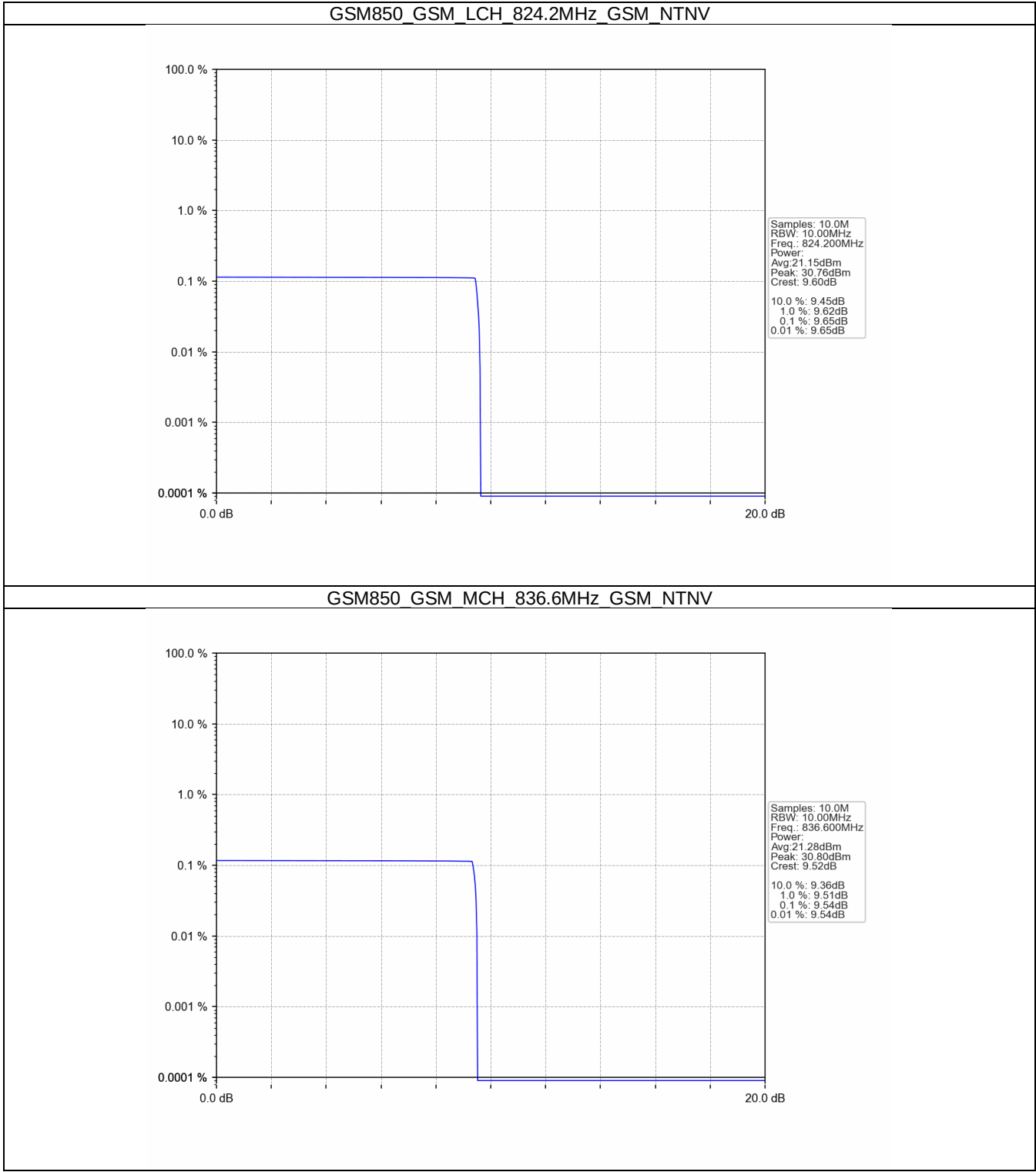
4. Peak-Average Ratio

4.1 GSM850

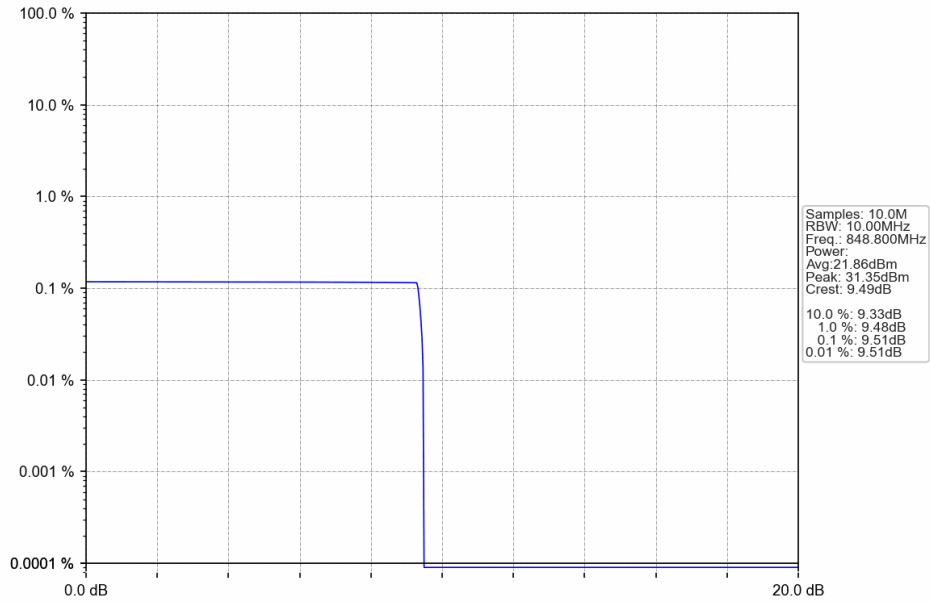
4.1.1 Test Result

Band: GSM850						
ENV	Mode		Frequency (MHz)	Peak-Average Ratio (dB)		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	824.2	9.65	<=13	Pass
			836.6	9.54	<=13	Pass
			848.8	9.51	<=13	Pass
	GPRS	4 TX Slots	824.2	3.80	<=13	Pass
			836.6	3.94	<=13	Pass
			848.8	4.00	<=13	Pass
	EGPRS	4 TX Slots	824.2	6.84	<=13	Pass
			836.6	6.67	<=13	Pass
			848.8	6.78	<=13	Pass

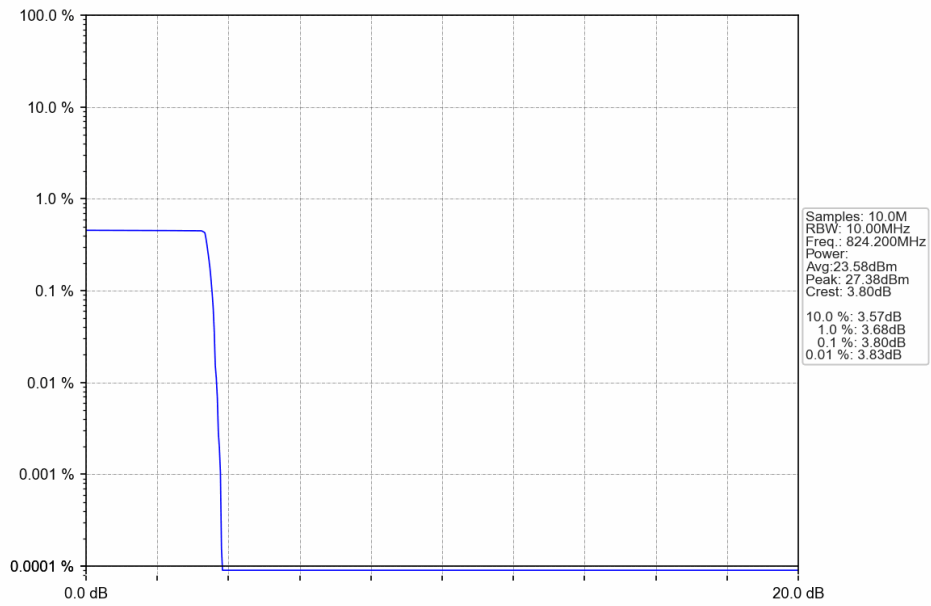
4.1.2 Test Graph



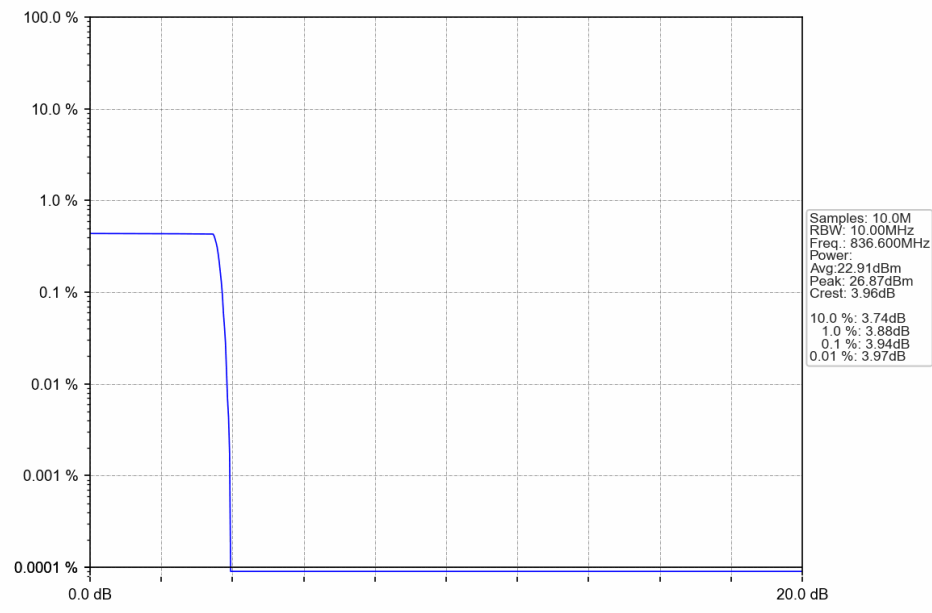
GSM850 GSM HCH 848.8MHz GSM NTN



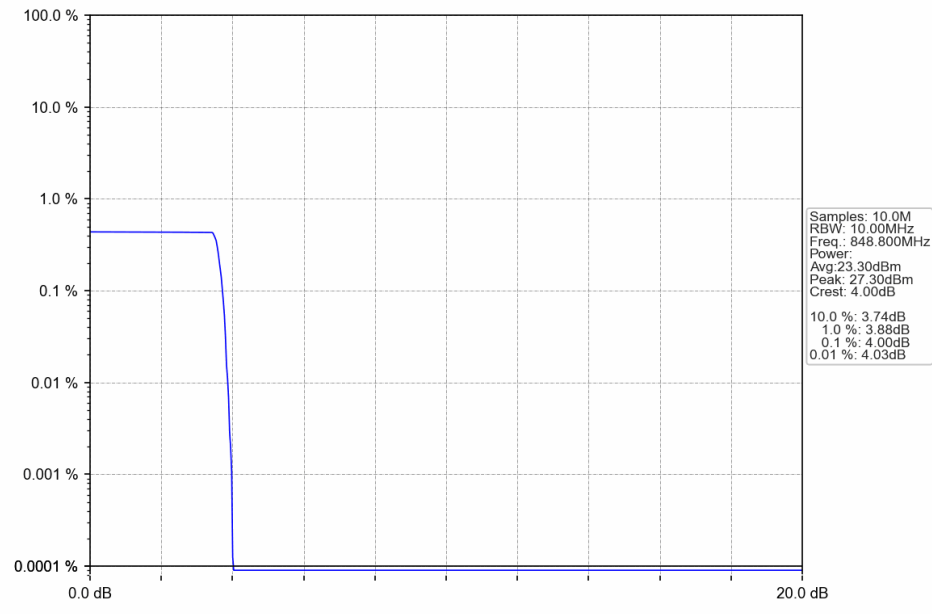
GSM850 GPRS LCH 824.2MHz 4 TX Slots NTN



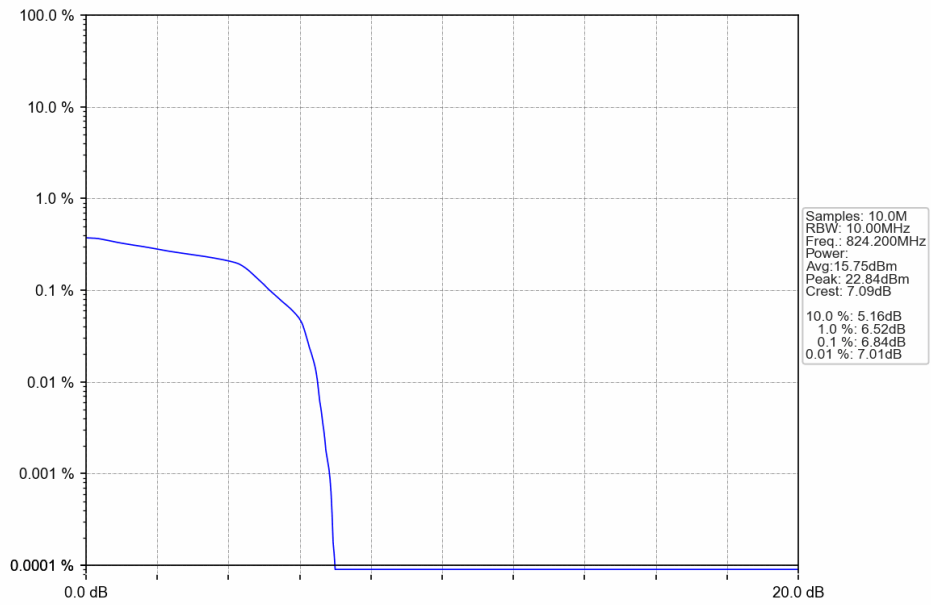
GSM850 GPRS MCH 836.6MHz 4 TX Slots NTNV



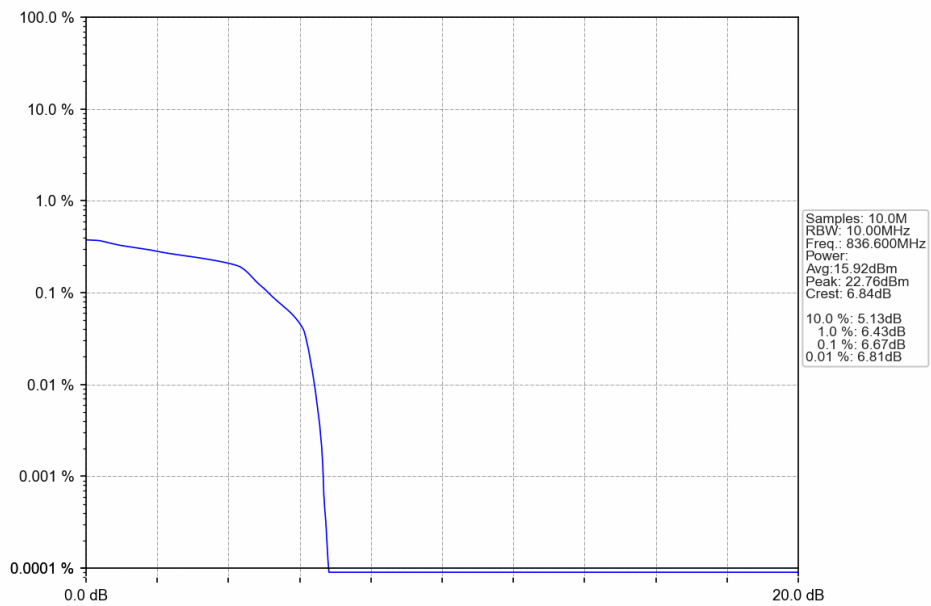
GSM850 GPRS HCH 848.8MHz 4 TX Slots NTNV



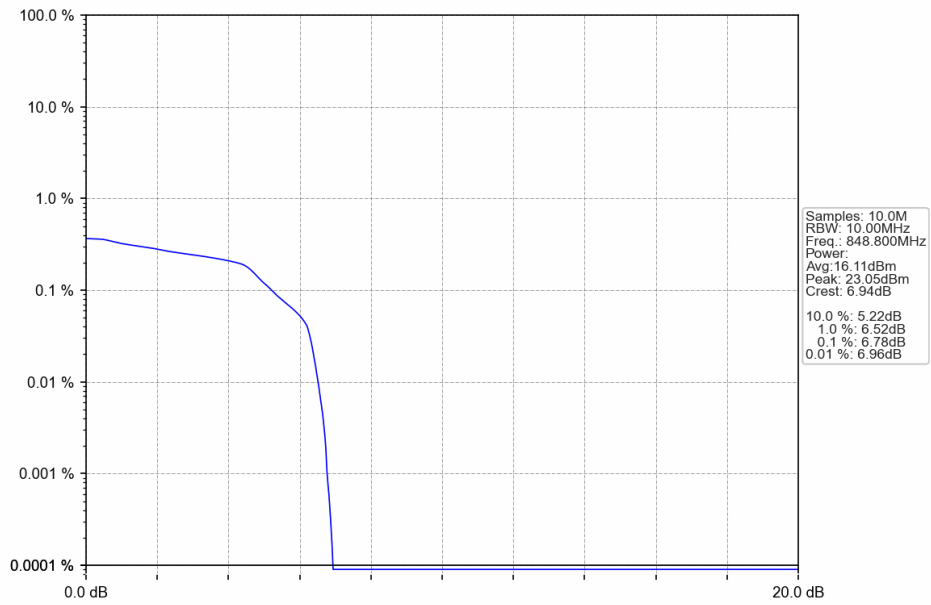
GSM850 EGPRS LCH 824.2MHz 4 TX Slots NTNV



GSM850 EGPRS MCH 836.6MHz 4 TX Slots NTNV



GSM850 EGPRS HCH 848.8MHz 4 TX Slots NTNV



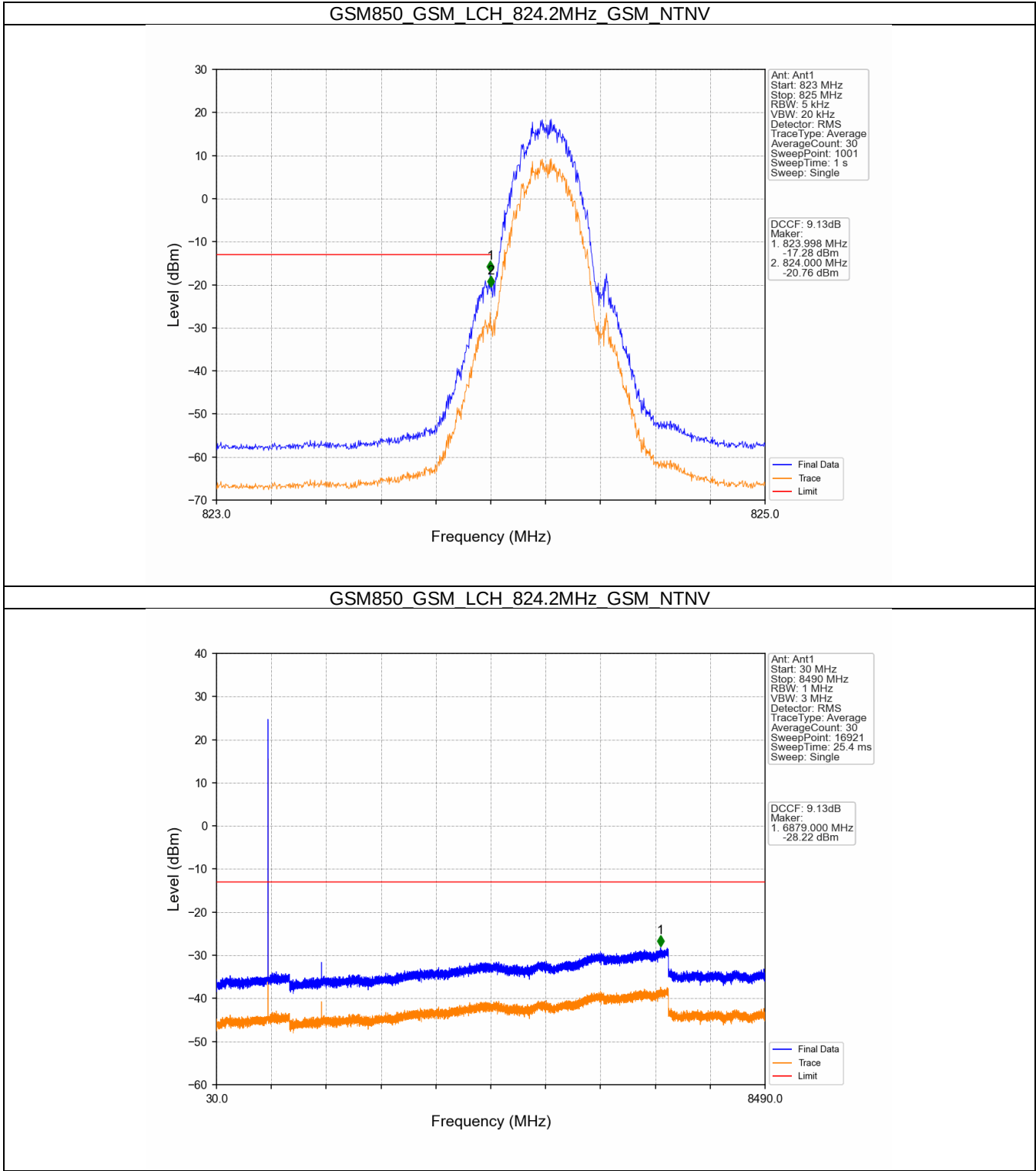
5. Spurious Emission & Band Edges

5.1 GSM850

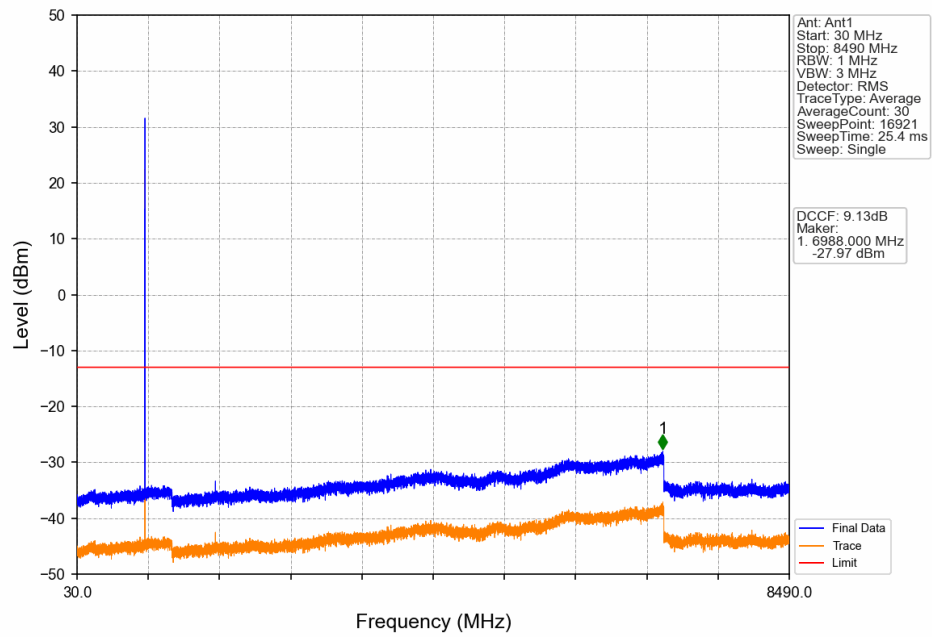
5.1.1 Test Result

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

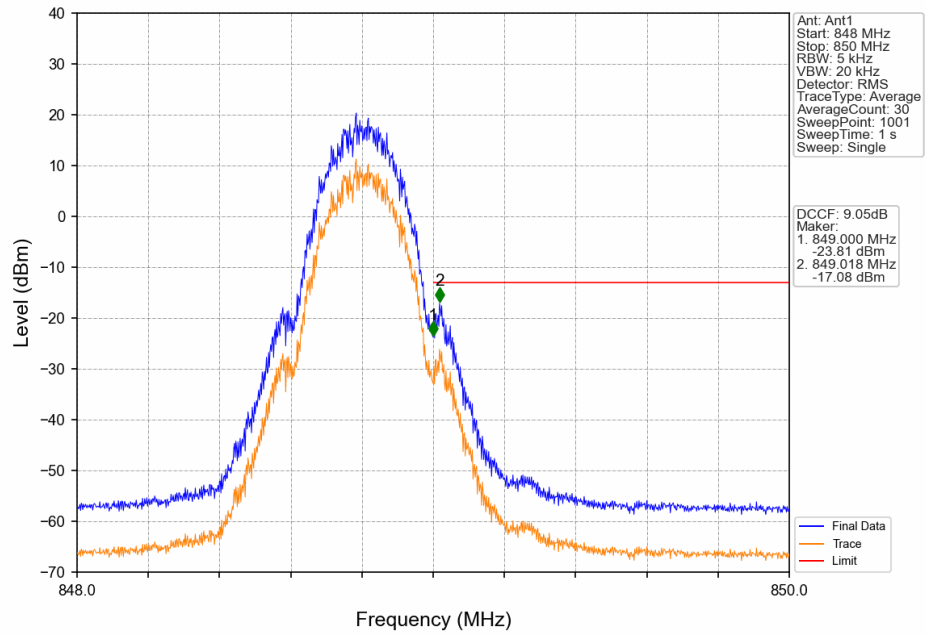
5.1.2 Test Graph



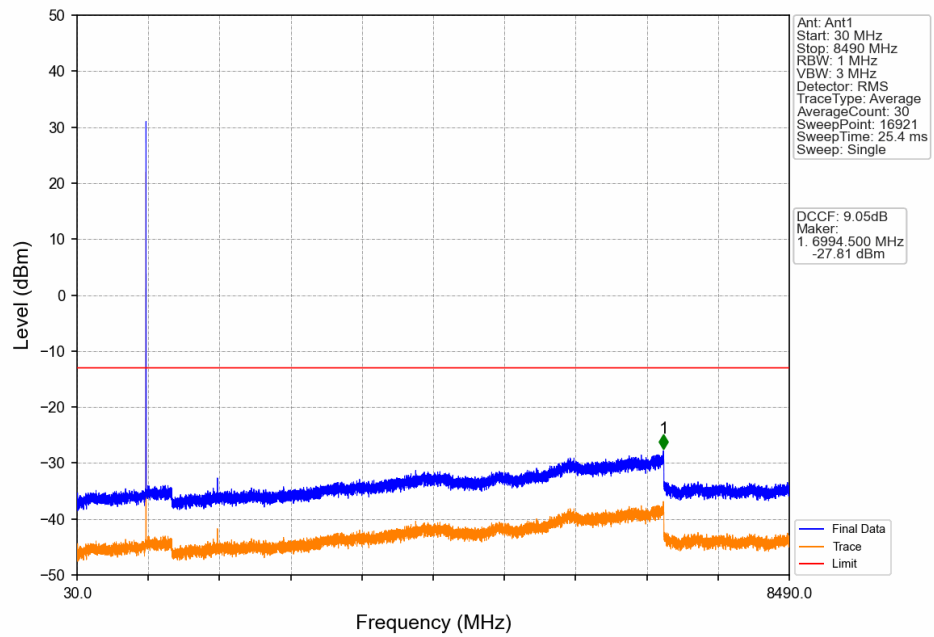
GSM850 GSM MCH 836.6MHz GSM NTNV



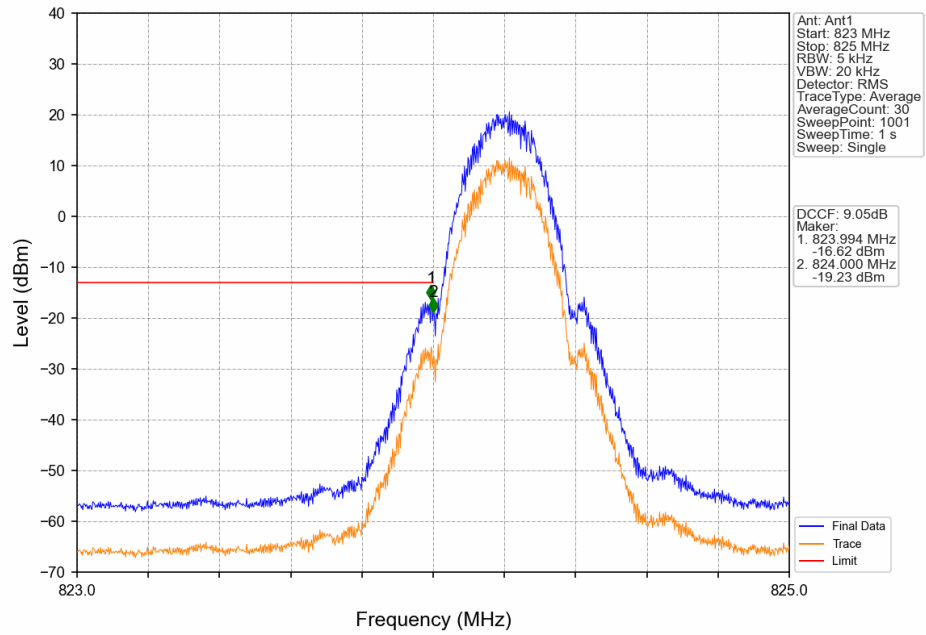
GSM850 GSM HCH 848.8MHz GSM NTNV



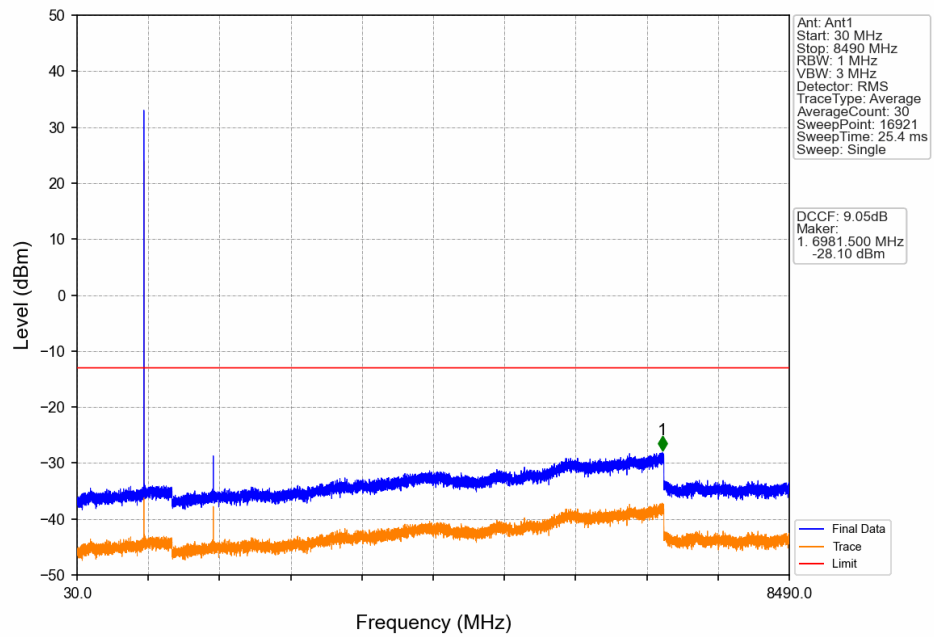
GSM850 GSM HCH 848.8MHz GSM NTNV



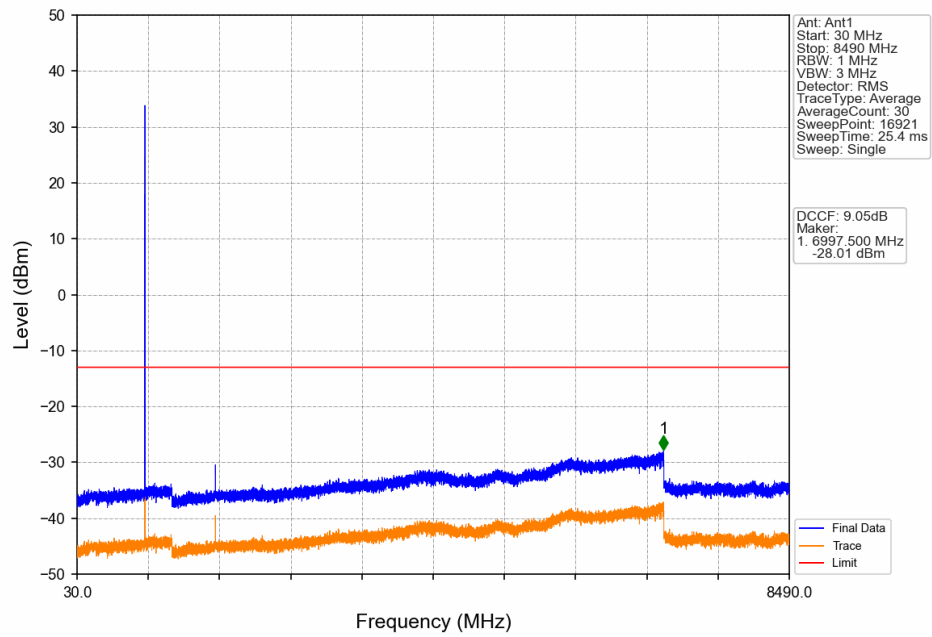
GSM850 GPRS LCH 824.2MHz 1 TX Slot NTN



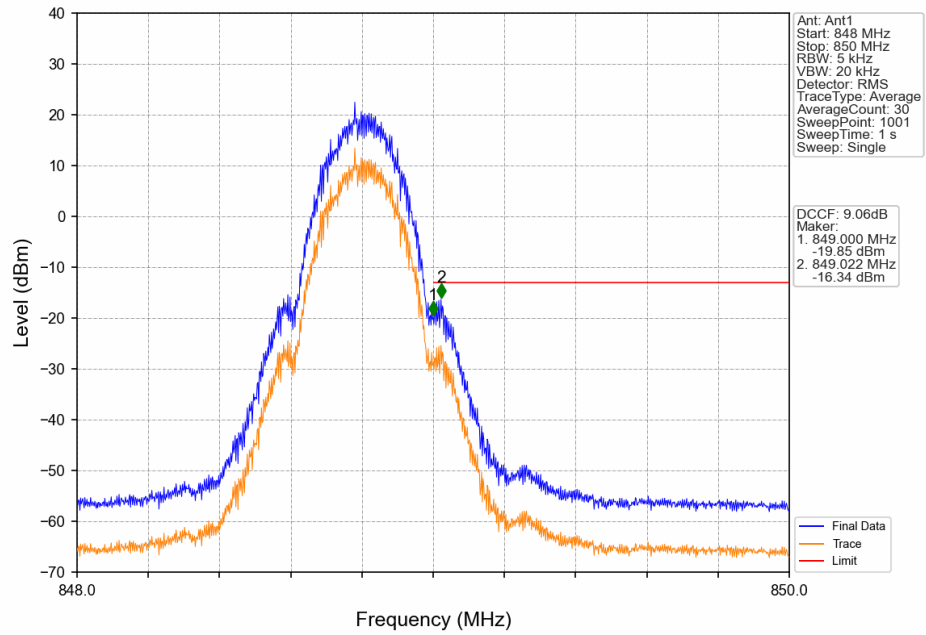
GSM850 GPRS LCH 824.2MHz 1 TX Slot NTN



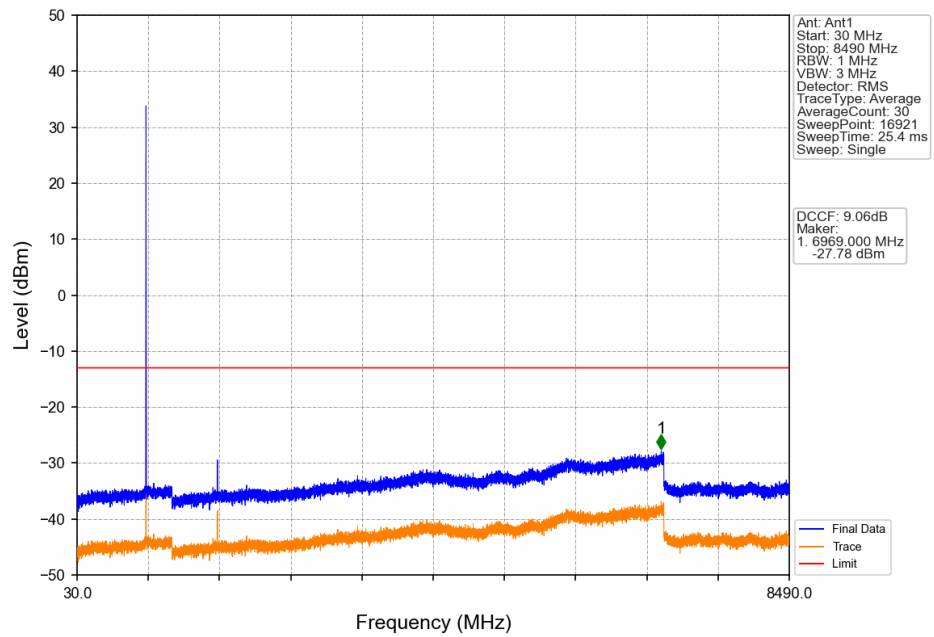
GSM850 GPRS MCH 836.6MHz 1 TX Slot NTNV



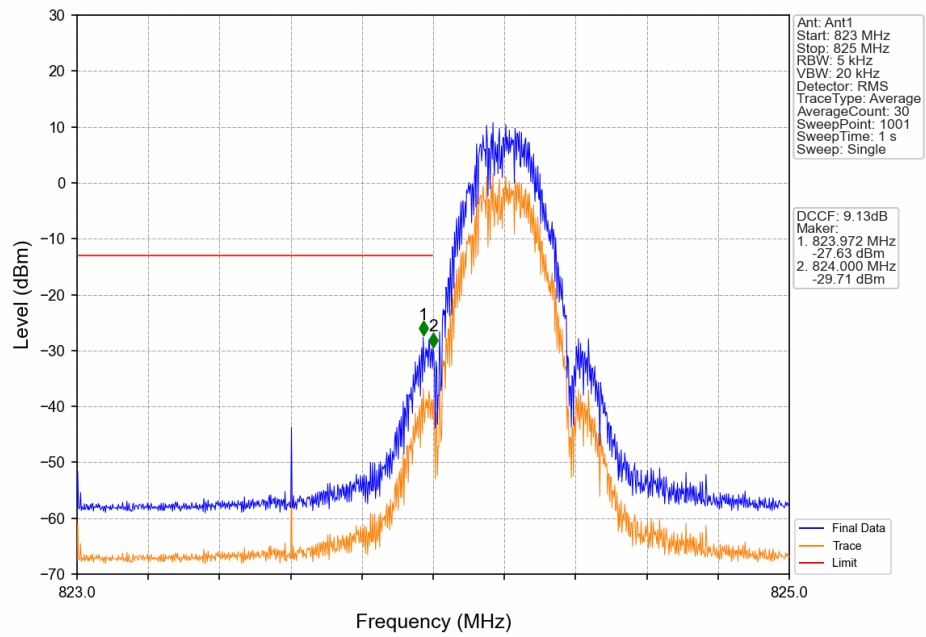
GSM850_GPRS_HCH_848.8MHz_1_TX_Slot_NTNV



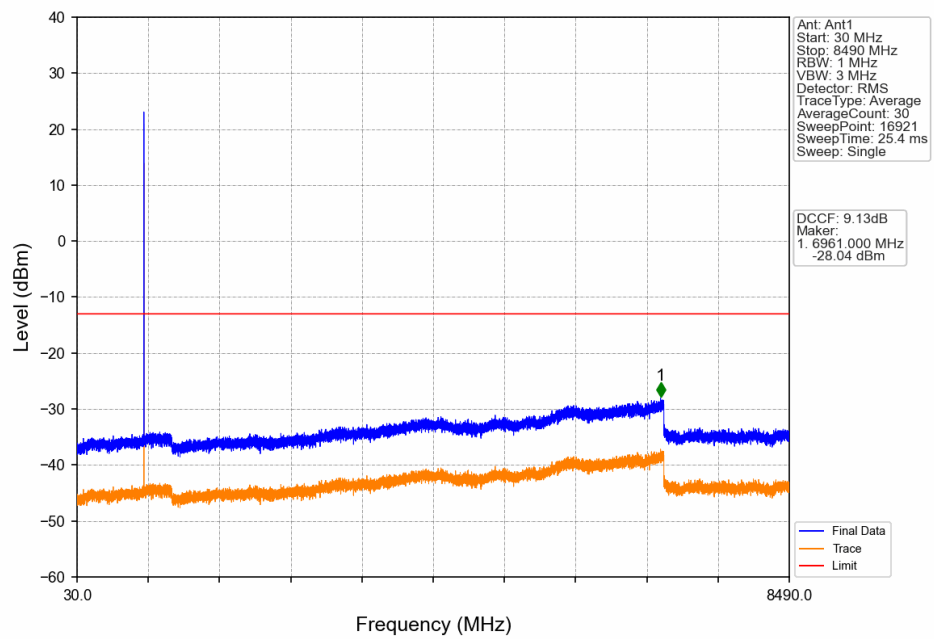
GSM850_GPRS_HCH_848.8MHz_1_TX_Slot_NTNV



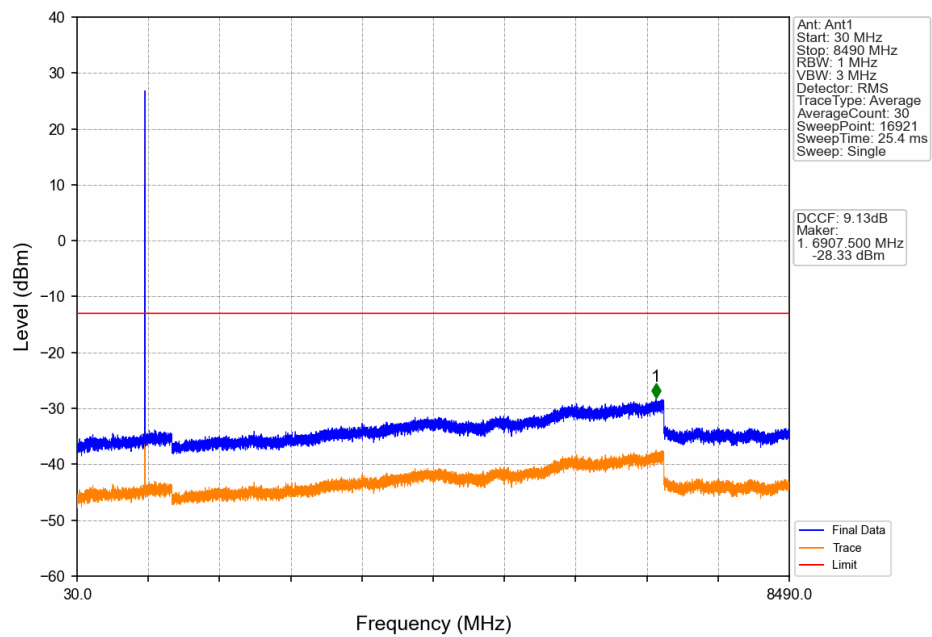
GSM850 EGPRS LCH 824.2MHz 1 TX Slot NTNV



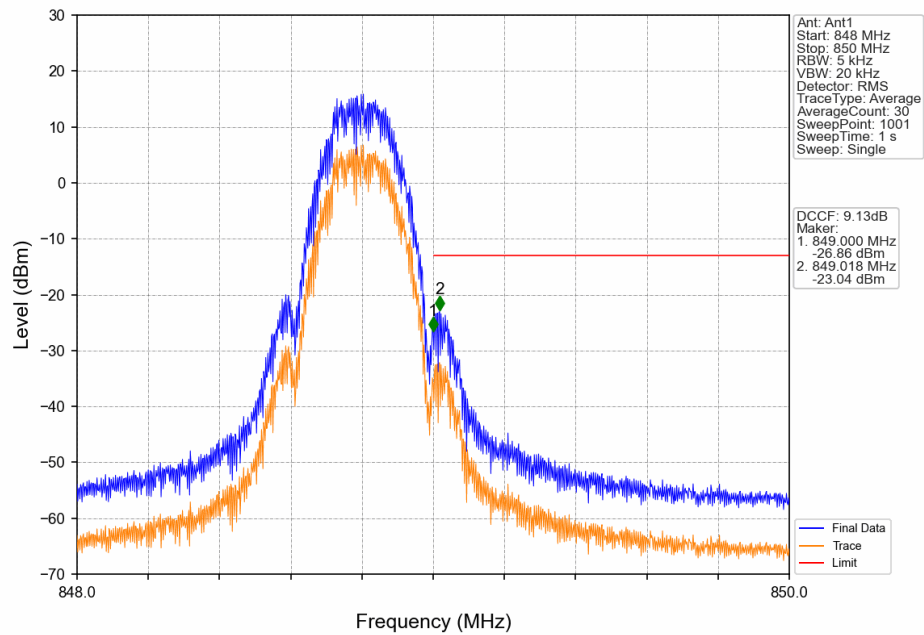
GSM850 EGPRS LCH 824.2MHz 1 TX Slot NTNV



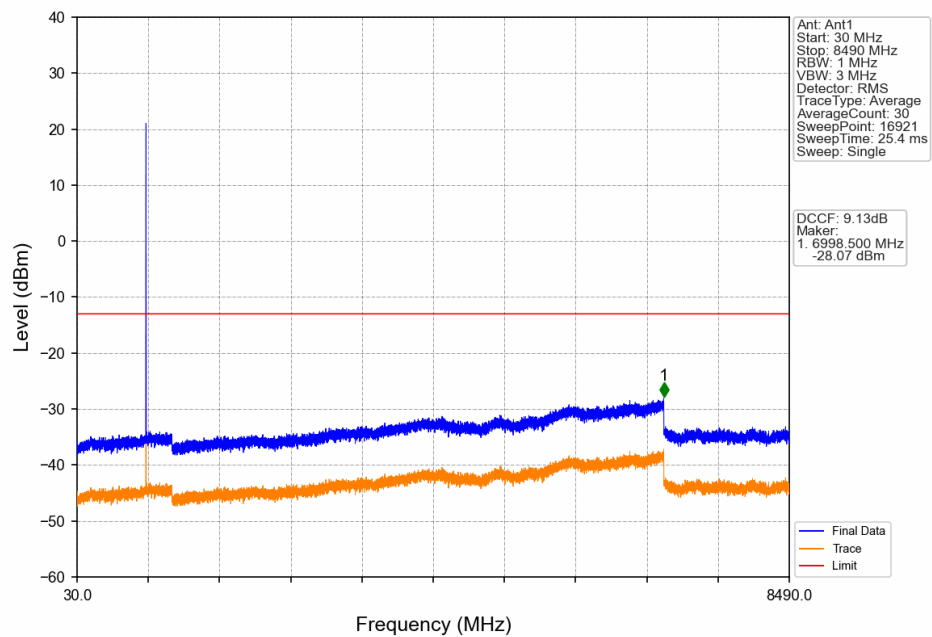
GSM850 EGPRS MCH 836.6MHz 1 TX Slot NTNV



GSM850 EGPRS HCH 848.8MHz 1 TX Slot NTN



GSM850 EGPRS HCH 848.8MHz 1 TX Slot NTN



6. 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
1652.8	-71.04	-13	-58.04	-73.91	2.62	5.49	Horizontal	Pass
2479.2	-58.36	-13	-45.36	-61.06	3.07	5.77	Horizontal	Pass
3305.6	-66.76	-13	-53.76	-71.14	3.3	7.68	Horizontal	Pass
1652.8	-70.31	-13	-57.31	-73.18	2.62	5.49	Vertical	Pass
2479.2	-54.65	-13	-41.65	-57.35	3.07	5.77	Vertical	Pass
3305.6	-67.63	-13	-54.63	-72.01	3.3	7.68	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
1672.8	-61.12	-13	-48.12	-63.93	2.63	5.44	Horizontal	Pass
2509.2	-53.97	-13	-40.97	-56.73	3.08	5.84	Horizontal	Pass
3345.6	-67.12	-13	-54.12	-71.58	3.32	7.78	Horizontal	Pass
1672.8	-62.62	-13	-49.62	-65.43	2.63	5.44	Vertical	Pass
2509.2	-53.13	-13	-40.13	-55.89	3.08	5.84	Vertical	Pass
3345.6	-66.97	-13	-53.97	-71.43	3.32	7.78	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	-55.57	-13	-42.57	-58.31	2.64	5.38	Horizontal	Pass
2546.4	-51.12	-13	-38.12	-53.95	3.09	5.92	Horizontal	Pass
3395.2	-65.51	-13	-52.51	-70.07	3.35	7.91	Horizontal	Pass
1697.6	-58.28	-13	-45.28	-61.02	2.64	5.38	Vertical	Pass
2546.4	-55.54	-13	-42.54	-58.37	3.09	5.92	Vertical	Pass
3395.2	-66.81	-13	-53.81	-71.37	3.35	7.91	Vertical	Pass

1) All antennas of RSE are tested, and only the worst data is presented.

---End of Attachment---