

# 1. Effective (Isotropic) Radiated Power Output Data

## 1.1 GSM850\_ERP

### 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	32.20	0.88	30.93	<=38.45	Pass	
			836.6	32.28	0.88	31.01	<=38.45	Pass	
			848.8	32.32	0.88	31.05	<=38.45	Pass	
	GPRS	1 TX Slot	824.2	32.23	0.88	30.96	<=38.45	Pass	
			2 TX Slots	824.2	31.64	0.88	30.37	<=38.45	Pass
			3 TX Slots	824.2	30.30	0.88	29.03	<=38.45	Pass
			4 TX Slots	824.2	28.88	0.88	27.61	<=38.45	Pass
		2 TX Slots	836.6	32.18	0.88	30.91	<=38.45	Pass	
			836.6	31.34	0.88	30.07	<=38.45	Pass	
			836.6	30.30	0.88	29.03	<=38.45	Pass	
			836.6	28.87	0.88	27.60	<=38.45	Pass	
		3 TX Slots	848.8	32.20	0.88	30.93	<=38.45	Pass	
			848.8	31.31	0.88	30.04	<=38.45	Pass	
			848.8	30.03	0.88	28.76	<=38.45	Pass	
			848.8	28.71	0.88	27.44	<=38.45	Pass	
	EGPRS	1 TX Slot	824.2	26.03	0.88	24.76	<=38.45	Pass	
			824.2	24.99	0.88	23.72	<=38.45	Pass	
			824.2	23.69	0.88	22.42	<=38.45	Pass	
			824.2	22.58	0.88	21.31	<=38.45	Pass	
		2 TX Slots	836.6	26.00	0.88	24.73	<=38.45	Pass	
			836.6	24.86	0.88	23.59	<=38.45	Pass	
			836.6	25.06	0.88	23.79	<=38.45	Pass	
			836.6	22.38	0.88	21.11	<=38.45	Pass	
		3 TX Slots	848.8	25.55	0.88	24.28	<=38.45	Pass	
			848.8	24.63	0.88	23.36	<=38.45	Pass	
			848.8	23.45	0.88	22.18	<=38.45	Pass	
			848.8	24.62	0.88	23.35	<=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	3.27	13.592	0.0165	-2.5 to 2.5	Pass
			3.85	6.134	0.0074	-2.5 to 2.5	Pass
			4.43	7.297	0.0089	-2.5 to 2.5	Pass
		-30	3.85	8.427	0.0102	-2.5 to 2.5	Pass
			-20	3.85	7.878	0.0096	-2.5 to 2.5
		-10	3.85	7.845	0.0095	-2.5 to 2.5	Pass
		0	3.85	7.006	0.0085	-2.5 to 2.5	Pass
		10	3.85	5.392	0.0065	-2.5 to 2.5	Pass

	836.6	30	3.85	8.459	0.0103	-2.5 to 2.5	Pass
		40	3.85	5.295	0.0064	-2.5 to 2.5	Pass
		50	3.85	8.459	0.0103	-2.5 to 2.5	Pass
		20	3.27	-0.807	-0.0010	-2.5 to 2.5	Pass
			3.85	-1.485	-0.0018	-2.5 to 2.5	Pass
			4.43	1.776	0.0021	-2.5 to 2.5	Pass
		-30	3.85	-2.938	-0.0035	-2.5 to 2.5	Pass
		-20	3.85	4.714	0.0056	-2.5 to 2.5	Pass
		-10	3.85	-2.195	-0.0026	-2.5 to 2.5	Pass
		0	3.85	-1.195	-0.0014	-2.5 to 2.5	Pass
		10	3.85	-1.291	-0.0015	-2.5 to 2.5	Pass
		30	3.85	-2.389	-0.0029	-2.5 to 2.5	Pass
	40	3.85	-2.712	-0.0032	-2.5 to 2.5	Pass	
	50	3.85	5.004	0.0060	-2.5 to 2.5	Pass	
	848.8	20	3.27	1.324	0.0016	-2.5 to 2.5	Pass
			3.85	1.582	0.0019	-2.5 to 2.5	Pass
			4.43	3.907	0.0046	-2.5 to 2.5	Pass
		-30	3.85	8.491	0.0100	-2.5 to 2.5	Pass
		-20	3.85	3.713	0.0044	-2.5 to 2.5	Pass
		-10	3.85	1.550	0.0018	-2.5 to 2.5	Pass
		0	3.85	1.485	0.0017	-2.5 to 2.5	Pass
10		3.85	4.359	0.0051	-2.5 to 2.5	Pass	
30		3.85	2.809	0.0033	-2.5 to 2.5	Pass	
40		3.85	4.488	0.0053	-2.5 to 2.5	Pass	
50		3.85	2.421	0.0029	-2.5 to 2.5	Pass	
GPRS		824.2	20	3.27	25.409	0.0308	-2.5 to 2.5
	3.85			19.242	0.0233	-2.5 to 2.5	Pass
	4.43			18.112	0.0220	-2.5 to 2.5	Pass
	-30		3.85	19.985	0.0242	-2.5 to 2.5	Pass
	-20		3.85	18.984	0.0230	-2.5 to 2.5	Pass
	-10		3.85	17.790	0.0216	-2.5 to 2.5	Pass
	0		3.85	16.078	0.0195	-2.5 to 2.5	Pass
	10		3.85	18.855	0.0229	-2.5 to 2.5	Pass
	30		3.85	21.632	0.0262	-2.5 to 2.5	Pass
	40		3.85	22.245	0.0270	-2.5 to 2.5	Pass
	50		3.85	19.049	0.0231	-2.5 to 2.5	Pass
	836.6		20	3.27	15.497	0.0185	-2.5 to 2.5
		3.85		15.885	0.0190	-2.5 to 2.5	Pass
		4.43		17.628	0.0211	-2.5 to 2.5	Pass
		-30	3.85	13.334	0.0159	-2.5 to 2.5	Pass
		-20	3.85	15.659	0.0187	-2.5 to 2.5	Pass
		-10	3.85	8.556	0.0102	-2.5 to 2.5	Pass
		0	3.85	11.655	0.0139	-2.5 to 2.5	Pass
		10	3.85	13.269	0.0159	-2.5 to 2.5	Pass
		30	3.85	9.783	0.0117	-2.5 to 2.5	Pass
		40	3.85	16.337	0.0195	-2.5 to 2.5	Pass
50		3.85	16.111	0.0193	-2.5 to 2.5	Pass	
848.8		20	3.27	15.336	0.0181	-2.5 to 2.5	Pass
	3.85		17.951	0.0211	-2.5 to 2.5	Pass	
	4.43		16.143	0.0190	-2.5 to 2.5	Pass	
	-30	3.85	17.015	0.0200	-2.5 to 2.5	Pass	
	-20	3.85	18.112	0.0213	-2.5 to 2.5	Pass	
	-10	3.85	19.888	0.0234	-2.5 to 2.5	Pass	
	0	3.85	19.016	0.0224	-2.5 to 2.5	Pass	
	10	3.85	15.852	0.0187	-2.5 to 2.5	Pass	
	30	3.85	16.692	0.0197	-2.5 to 2.5	Pass	
	40	3.85	16.692	0.0197	-2.5 to 2.5	Pass	
	50	3.85	20.469	0.0241	-2.5 to 2.5	Pass	
	EGPRS	824.2	20	3.27	28.347	0.0344	-2.5 to 2.5

			3.85	21.083	0.0256	-2.5 to 2.5	Pass	
			4.43	23.117	0.0280	-2.5 to 2.5	Pass	
		-30	3.85	22.891	0.0278	-2.5 to 2.5	Pass	
		-20	3.85	24.247	0.0294	-2.5 to 2.5	Pass	
		-10	3.85	24.021	0.0291	-2.5 to 2.5	Pass	
		0	3.85	26.571	0.0322	-2.5 to 2.5	Pass	
		10	3.85	25.118	0.0305	-2.5 to 2.5	Pass	
		30	3.85	25.893	0.0314	-2.5 to 2.5	Pass	
		40	3.85	22.568	0.0274	-2.5 to 2.5	Pass	
		50	3.85	21.341	0.0259	-2.5 to 2.5	Pass	
	836.6	20		3.27	23.440	0.0280	-2.5 to 2.5	Pass
				3.85	21.406	0.0256	-2.5 to 2.5	Pass
				4.43	21.341	0.0255	-2.5 to 2.5	Pass
		-30	3.85	20.146	0.0241	-2.5 to 2.5	Pass	
		-20	3.85	17.919	0.0214	-2.5 to 2.5	Pass	
		-10	3.85	19.016	0.0227	-2.5 to 2.5	Pass	
		0	3.85	19.920	0.0238	-2.5 to 2.5	Pass	
		10	3.85	17.176	0.0205	-2.5 to 2.5	Pass	
		30	3.85	19.404	0.0232	-2.5 to 2.5	Pass	
		40	3.85	22.148	0.0265	-2.5 to 2.5	Pass	
	50	3.85	18.209	0.0218	-2.5 to 2.5	Pass		
	848.8	20		3.27	23.020	0.0271	-2.5 to 2.5	Pass
				3.85	20.760	0.0245	-2.5 to 2.5	Pass
				4.43	22.568	0.0266	-2.5 to 2.5	Pass
		-30	3.85	20.986	0.0247	-2.5 to 2.5	Pass	
		-20	3.85	20.824	0.0245	-2.5 to 2.5	Pass	
		-10	3.85	22.084	0.0260	-2.5 to 2.5	Pass	
		0	3.85	20.792	0.0245	-2.5 to 2.5	Pass	
		10	3.85	23.859	0.0281	-2.5 to 2.5	Pass	
		30	3.85	22.148	0.0261	-2.5 to 2.5	Pass	
40		3.85	26.345	0.0310	-2.5 to 2.5	Pass		
50	3.85	25.603	0.0302	-2.5 to 2.5	Pass			

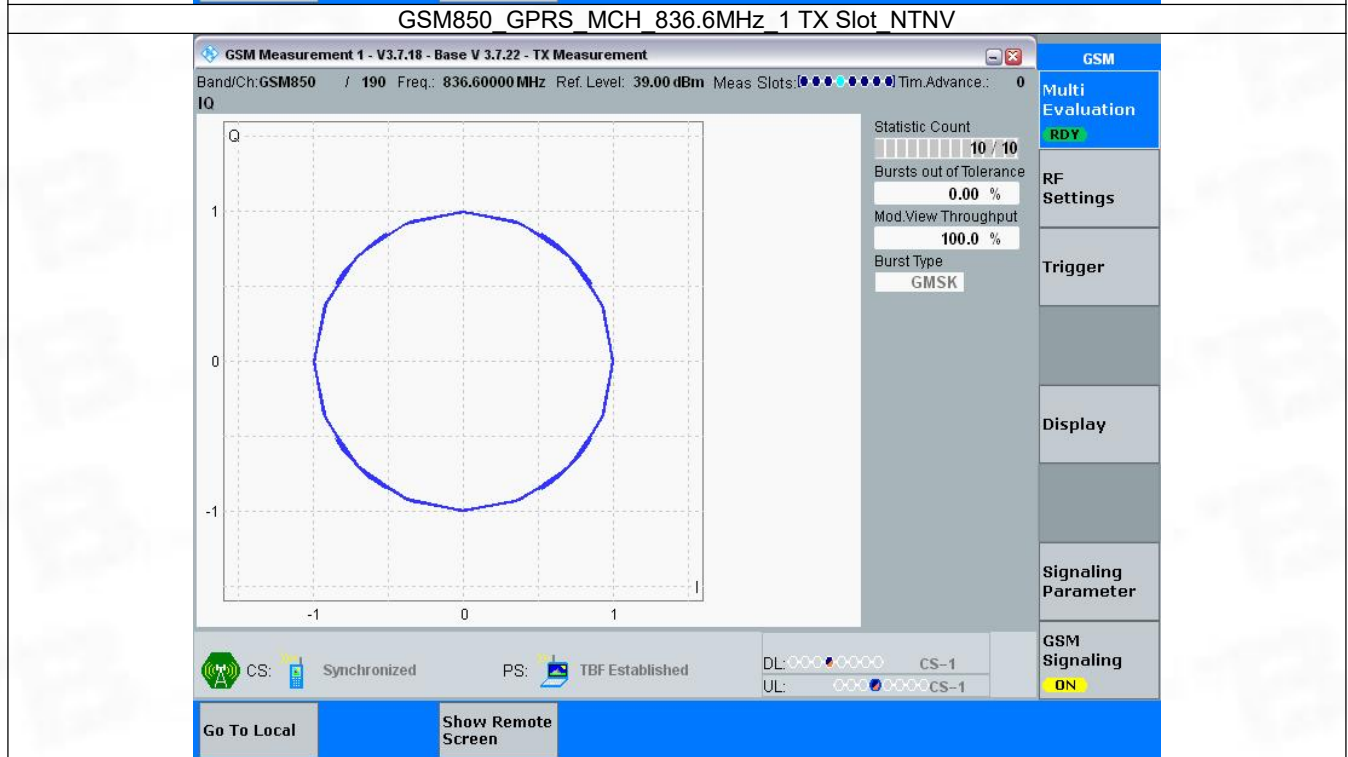
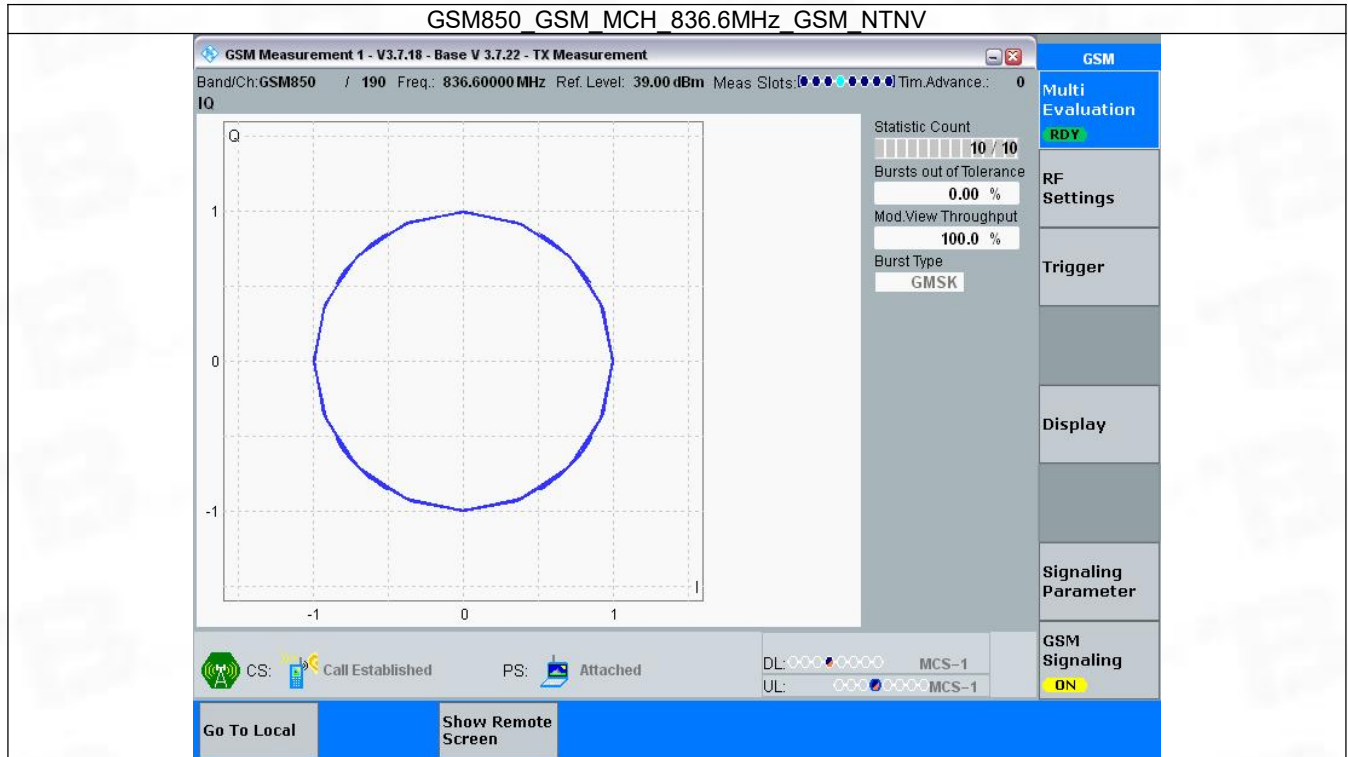
### 3. Modulation Characteristics

#### 3.1 GSM850

##### 3.1.1 Test Result

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

### 3.1.2 Test Graph



# GSM850 EGPRS MCH 836.6MHz 1 TX Slot NTNV

### GSM Measurement 1 - V3.7.18 - Base V 3.7.22 - TX Measurement

Band/Ch: GSM850 / 190 Freq.: 836.60000 MHz Ref. Level: 42.23 dBm Meas Slots: [Progress Bar] Tim. Advance.: 0

**IQ**

Statistic Count: 10 / 10  
Bursts out of Tolerance: 0.00 %  
Mod. View Throughput: 100.0 %  
Burst Type: 8PSK

**CS:** Synchronized **PS:** TBF Established  
DL: [Progress Bar] MCS-5  
UL: [Progress Bar] MCS-5

**Go To Local** **Show Remote Screen**

**GSM**  
**Multi Evaluation** RDY  
**RF Settings**  
**Trigger**  
**Display**  
**Signaling Parameter**  
**GSM Signaling** ON

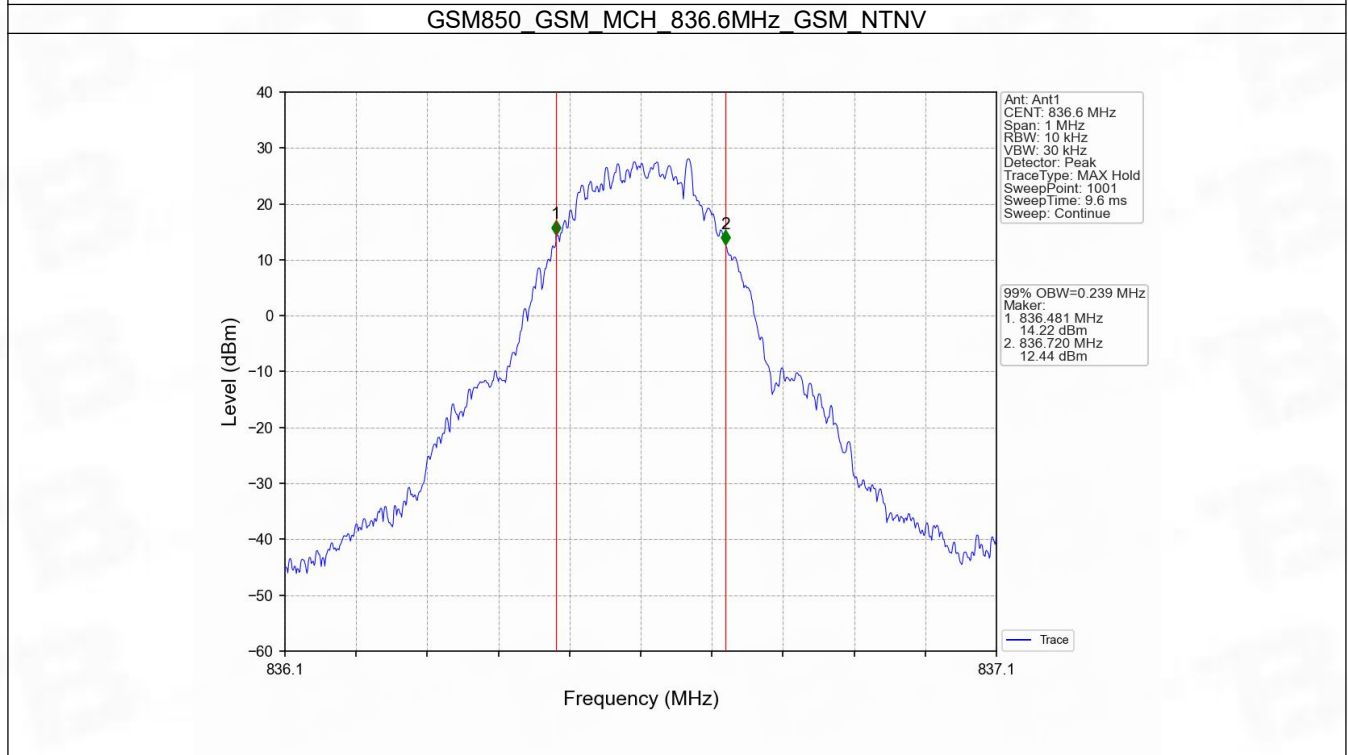
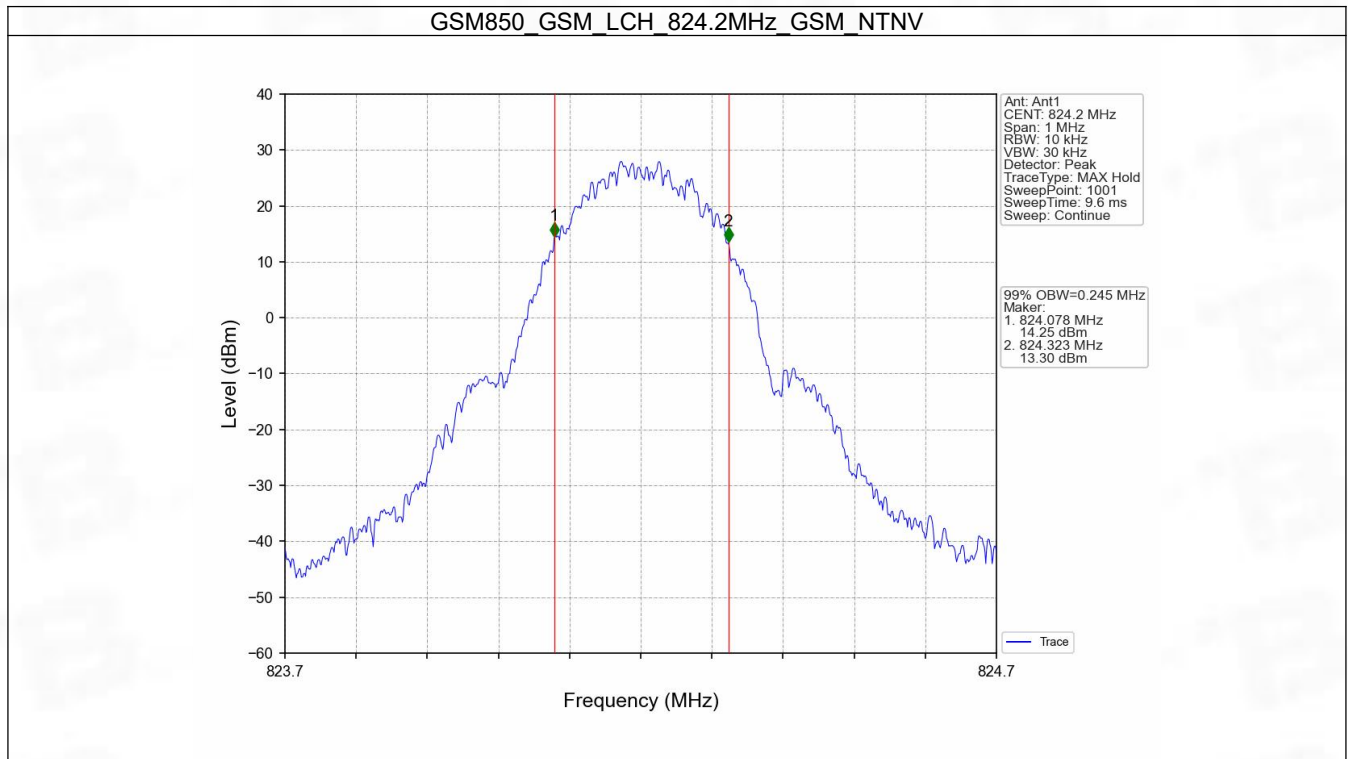
## 4. 99% & 26dB Bandwidth

### 4.1 GSM850\_OBW

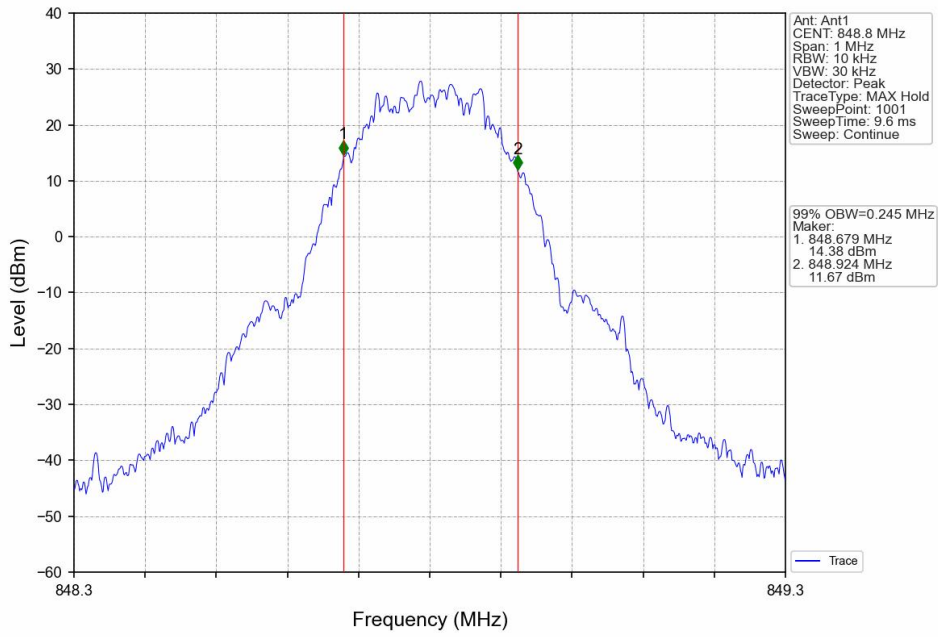
#### 4.1.1 Test Result

Band: GSM850						
ENV	Mode		Frequency (MHz)	99% Occupied Bandwidth (MHz)		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	824.2	0.245	/	Pass
			836.6	0.239	/	Pass
			848.8	0.245	/	Pass
	GPRS	1 TX Slot	824.2	0.241	/	Pass
			836.6	0.246	/	Pass
			848.8	0.243	/	Pass
	EGPRS	1 TX Slot	824.2	0.236	/	Pass
			836.6	0.238	/	Pass
			848.8	0.230	/	Pass

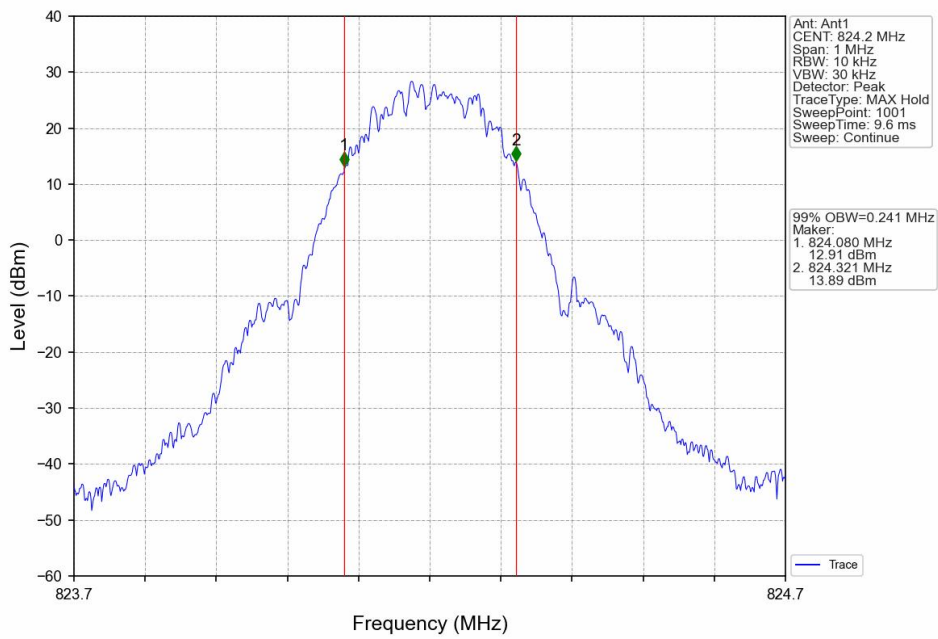
## 4.1.2 Test Graph



### GSM850\_GSM\_HCH\_848.8MHz\_GSM\_NTNV

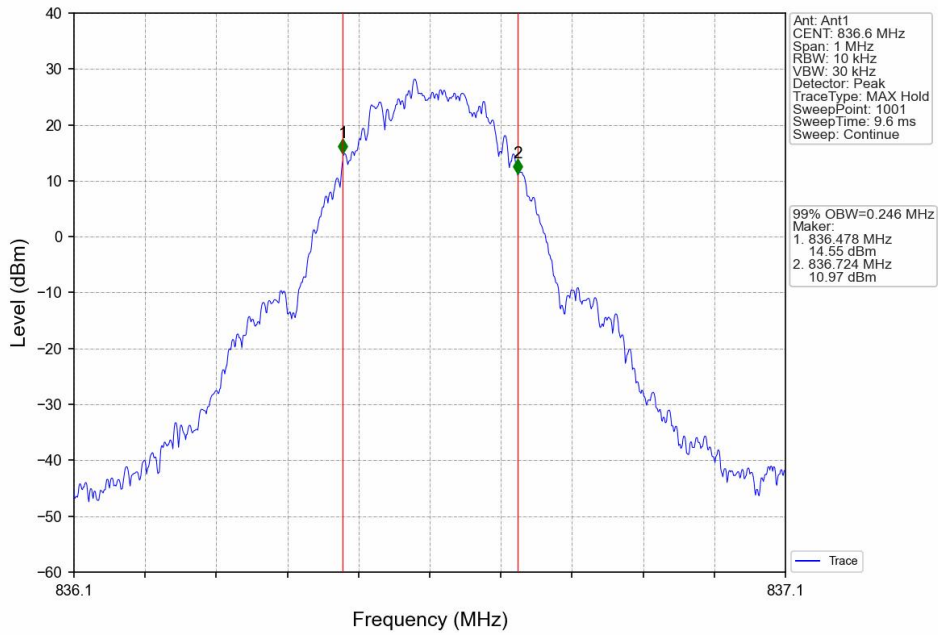


### GSM850\_GPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV

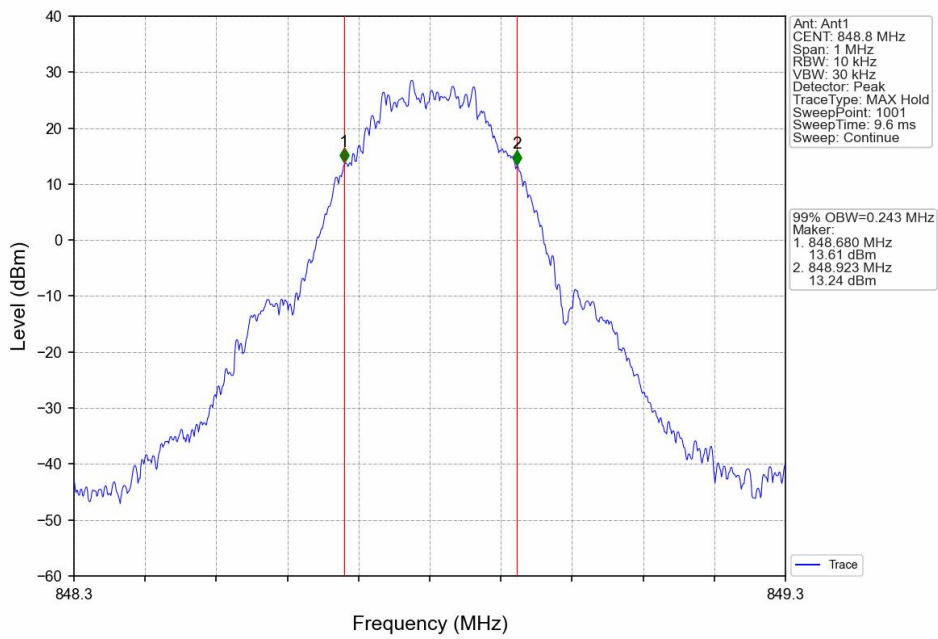




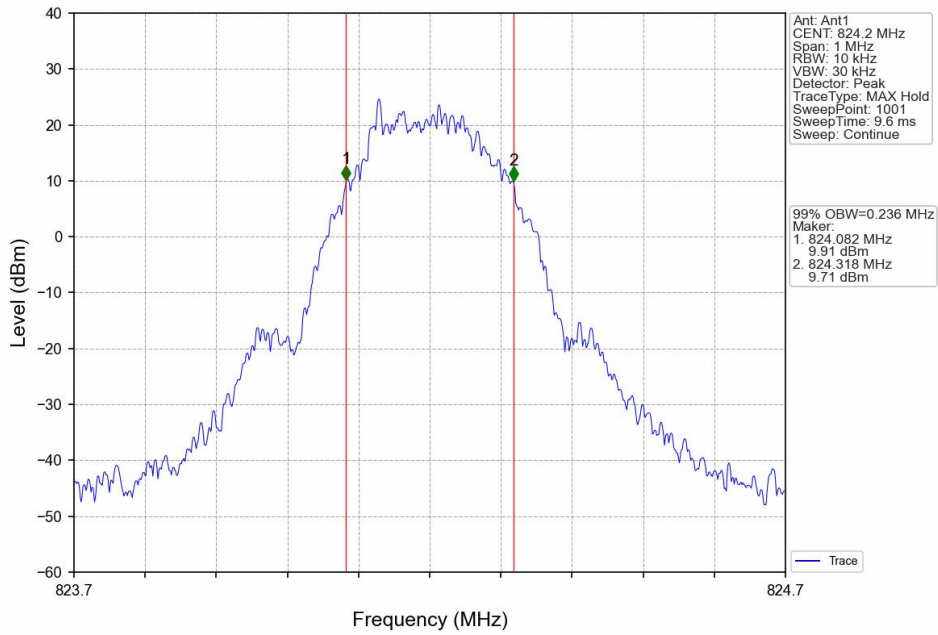
GSM850\_GPRS\_MCH\_836.6MHz\_1 TX Slot\_NTNV



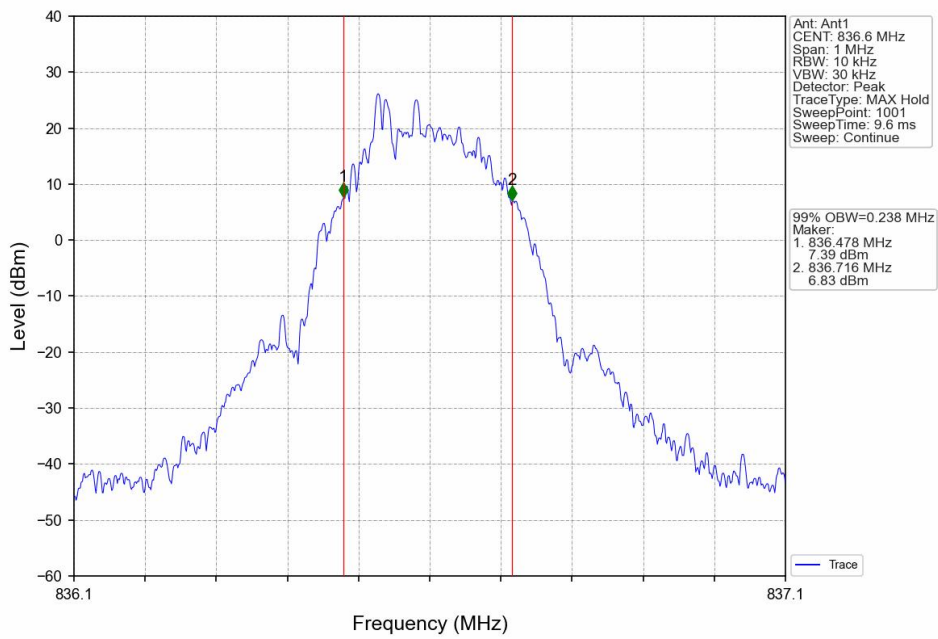
GSM850\_GPRS\_HCH\_848.8MHz\_1 TX Slot\_NTNV



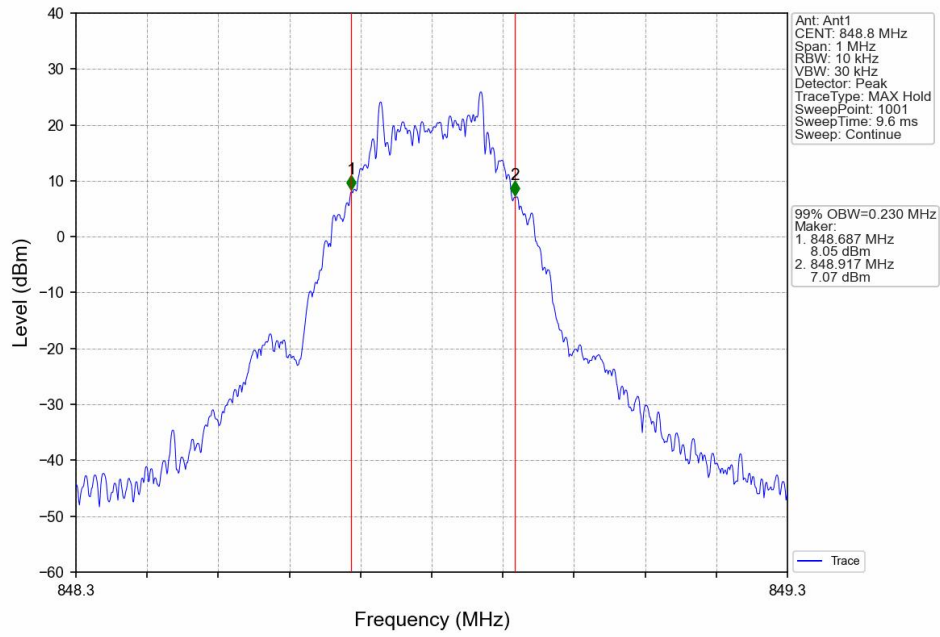
### GSM850 EGPRS LCH 824.2MHz 1 TX Slot NTNV



### GSM850 EGPRS MCH 836.6MHz 1 TX Slot NTNV



GSM850 EGPRS HCH 848.8MHz 1 TX Slot NTN

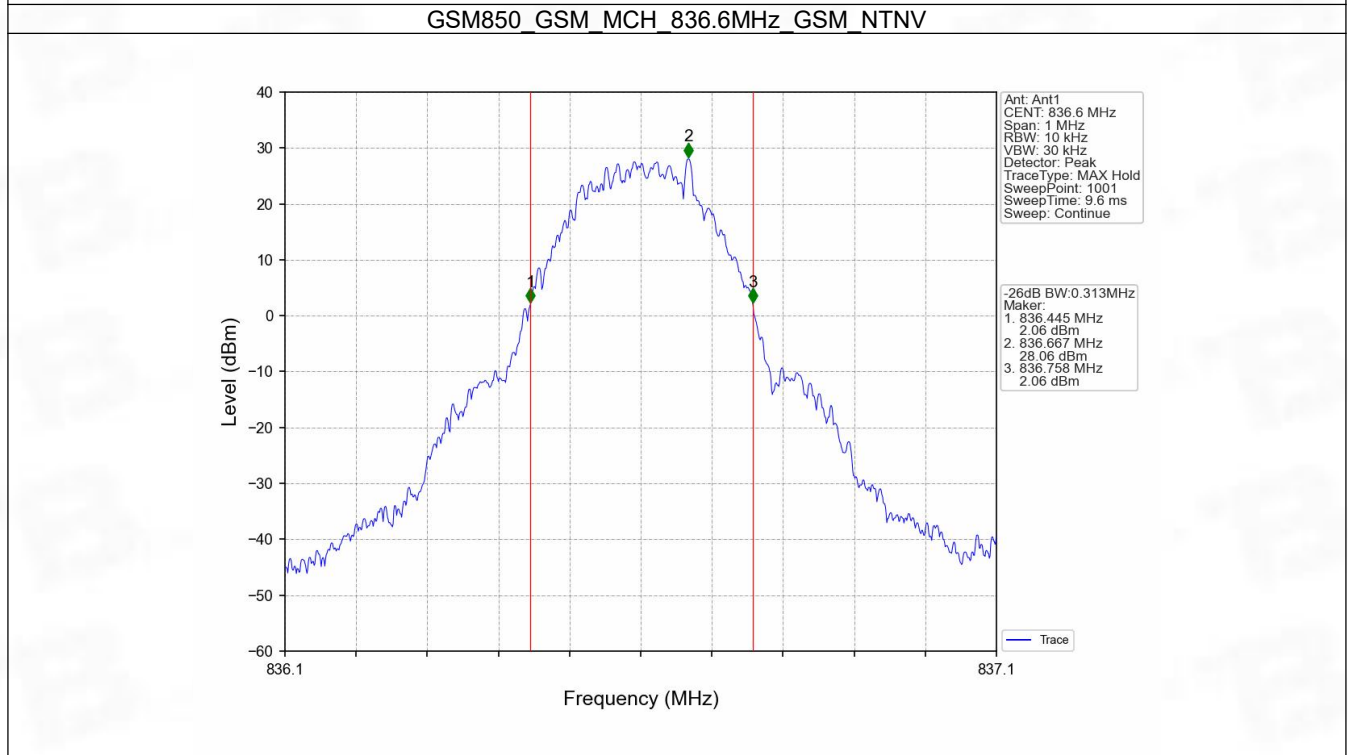
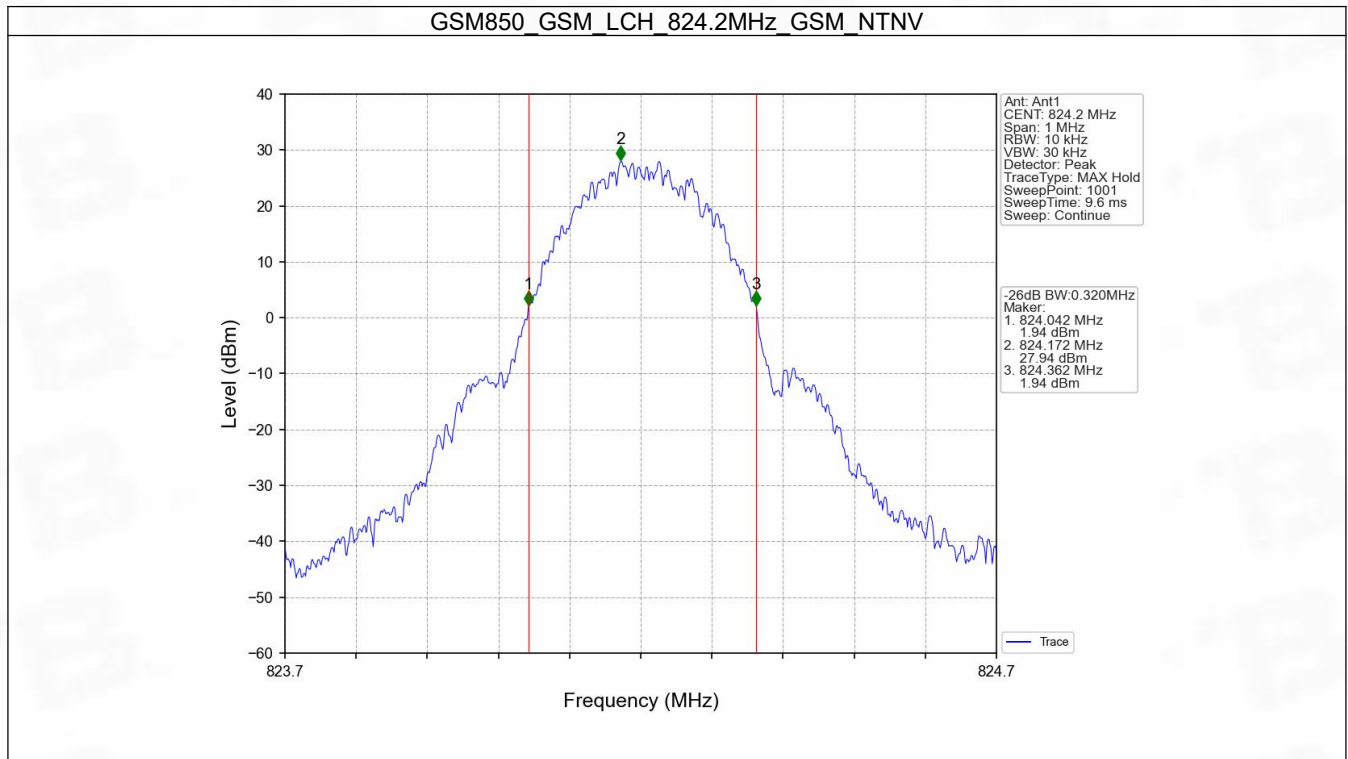


## 4.2 GSM850\_XDB

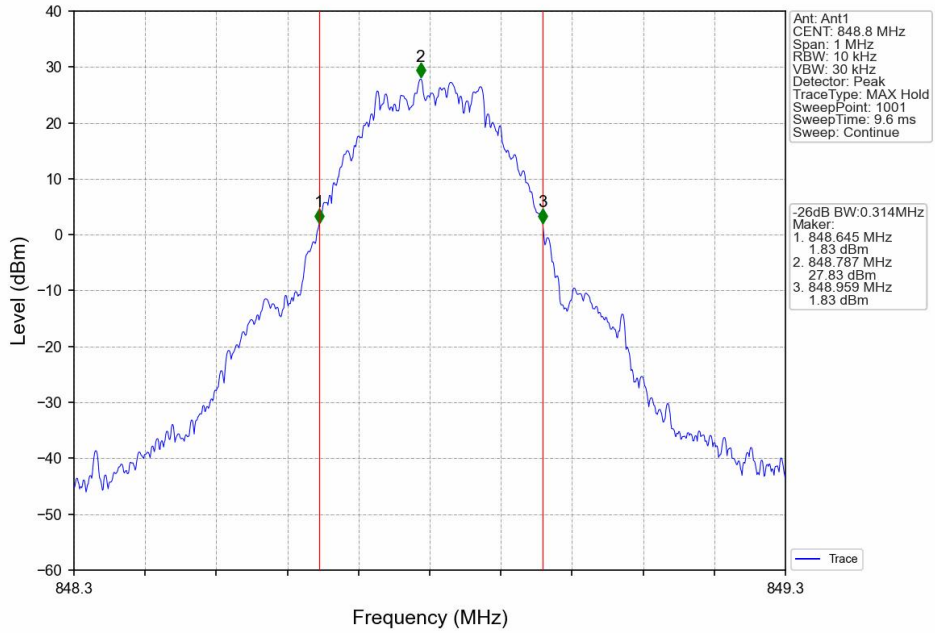
### 4.2.1 Test Result

Band: GSM850						
ENV	Mode		Frequency (MHz)	26dB Bandwidth (MHz)		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	824.2	0.320	/	Pass
			836.6	0.313	/	Pass
			848.8	0.314	/	Pass
	GPRS	1 TX Slot	824.2	0.311	/	Pass
			836.6	0.313	/	Pass
			848.8	0.307	/	Pass
	EGPRS	1 TX Slot	824.2	0.304	/	Pass
			836.6	0.297	/	Pass
			848.8	0.286	/	Pass

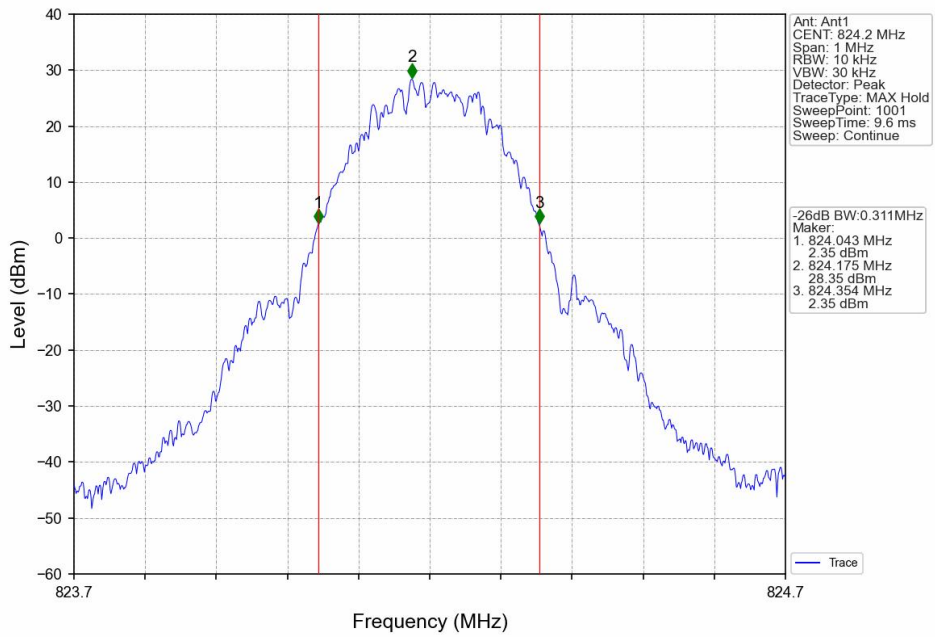
## 4.2.2 Test Graph



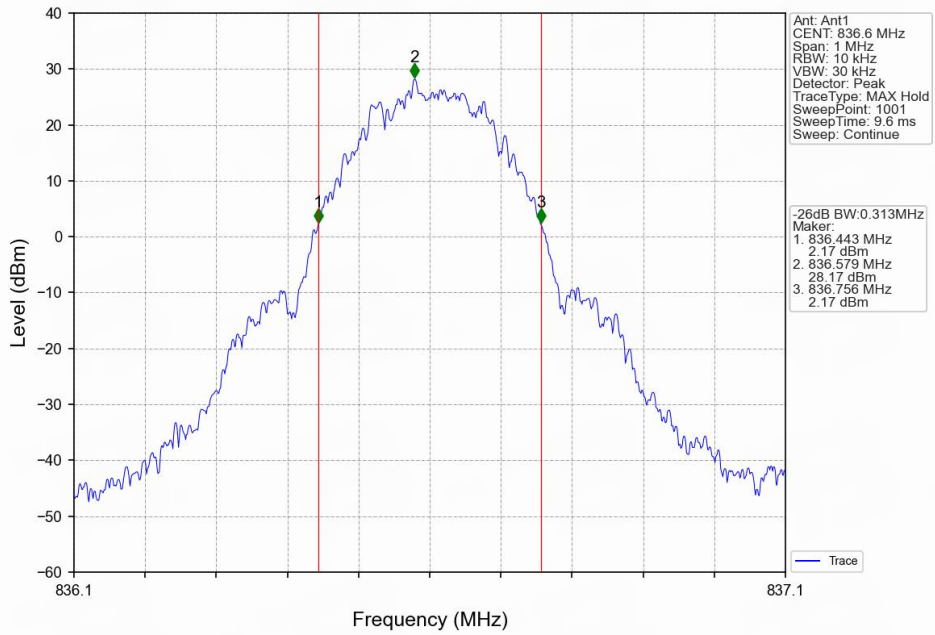
GSM850\_GSM\_HCH\_848.8MHz\_GSM\_NTNV



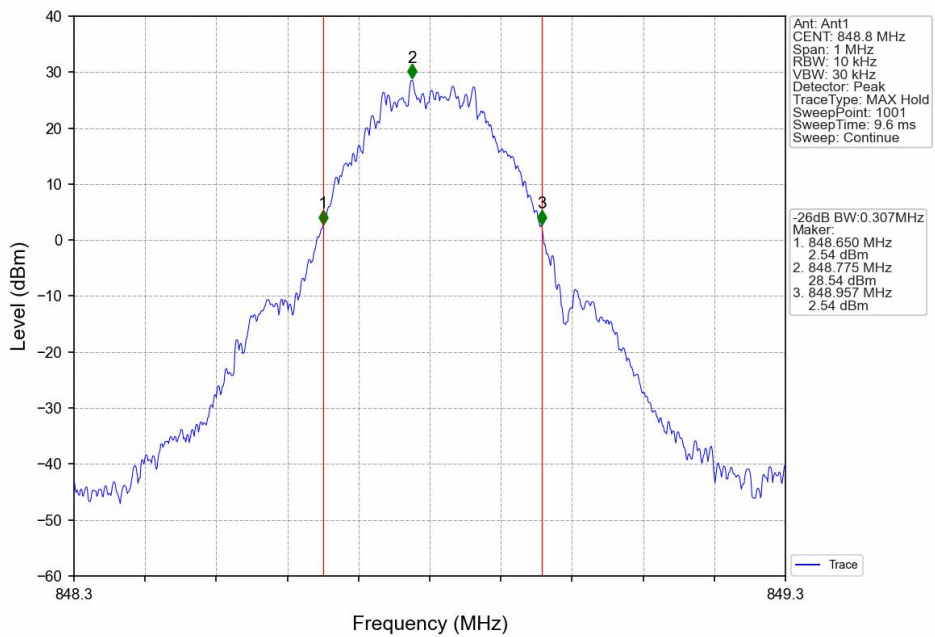
GSM850\_GPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV



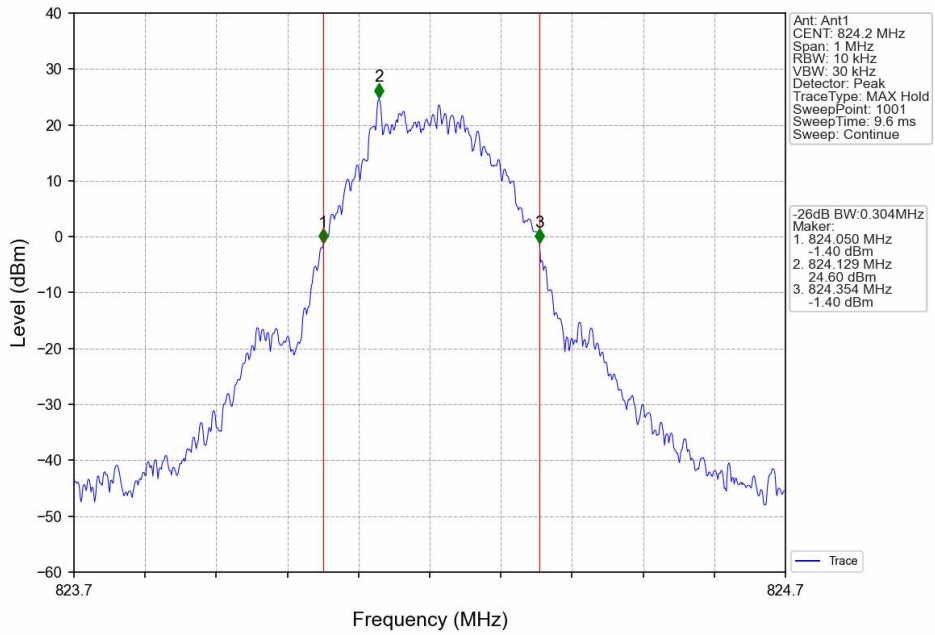
GSM850\_GPRS\_MCH\_836.6MHz\_1 TX Slot\_NTNV



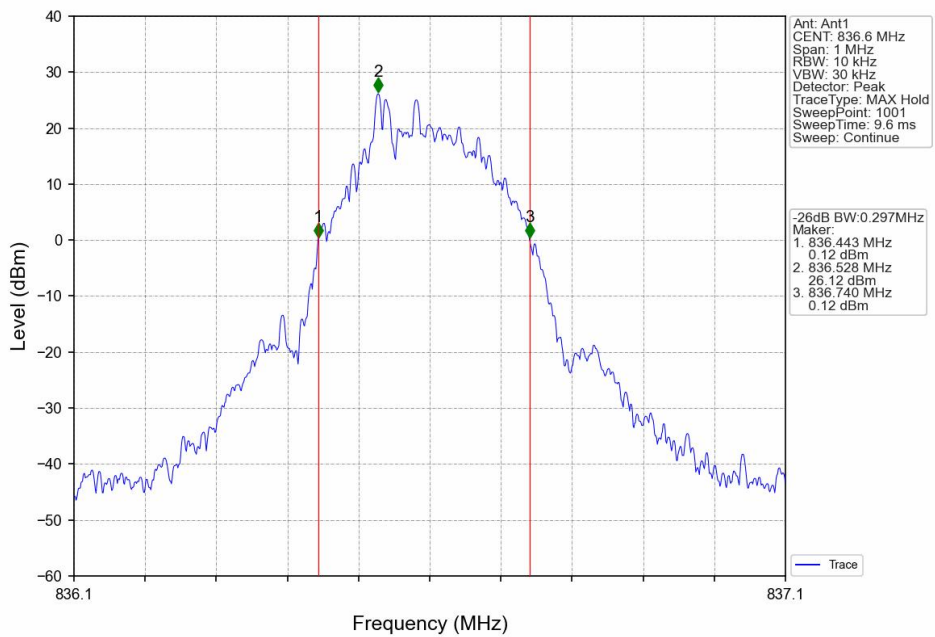
GSM850\_GPRS\_HCH\_848.8MHz\_1 TX Slot\_NTNV



### GSM850 EGPRS LCH 824.2MHz 1 TX Slot NTN

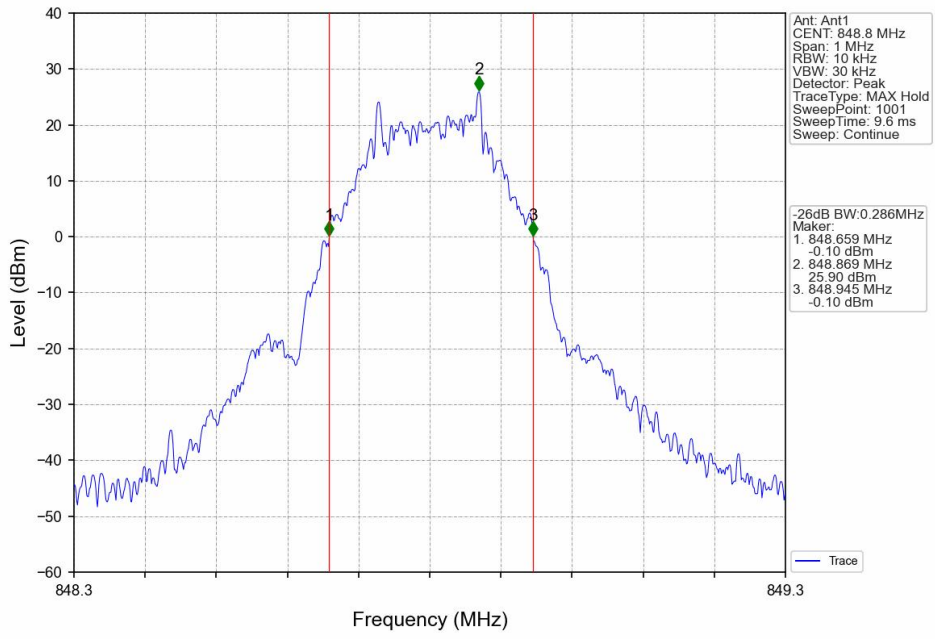


### GSM850 EGPRS MCH 836.6MHz 1 TX Slot NTN





GSM850\_EGPRS\_HCH\_848.8MHz\_1\_TX\_Slot\_NTNV



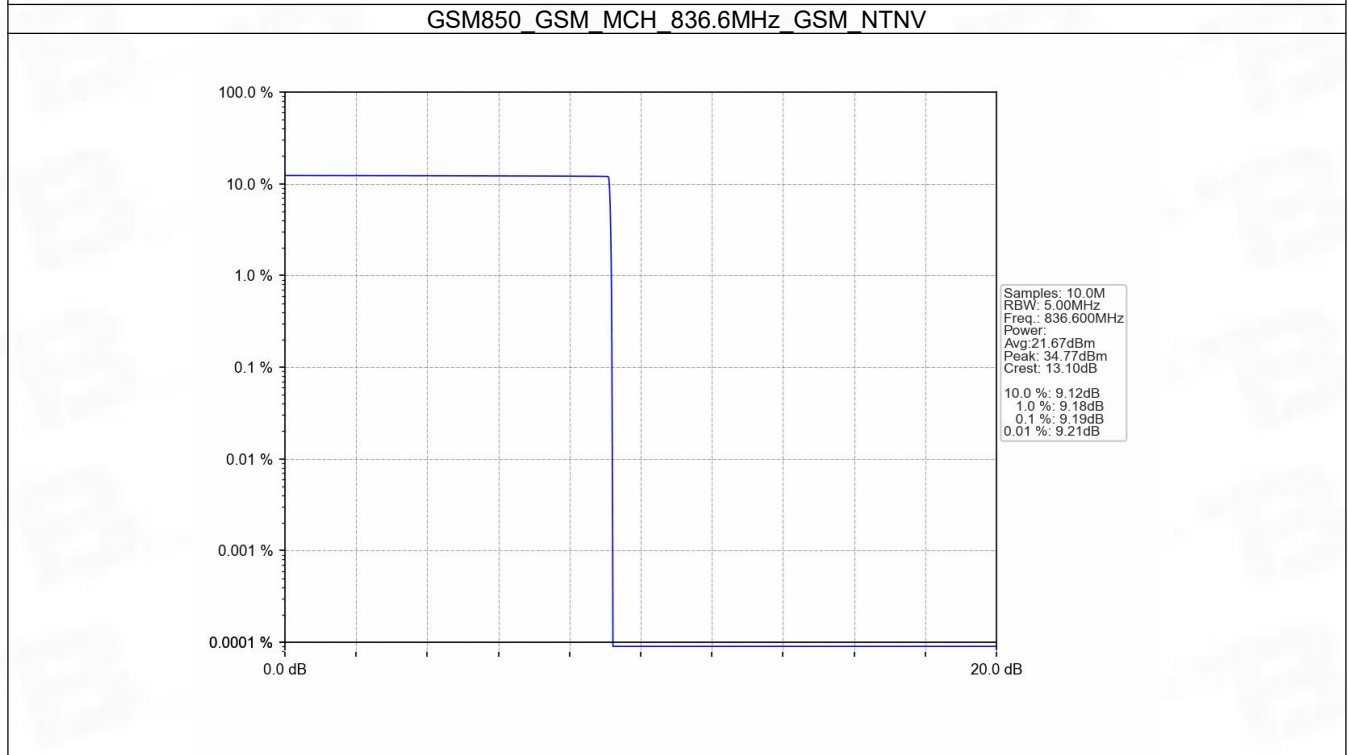
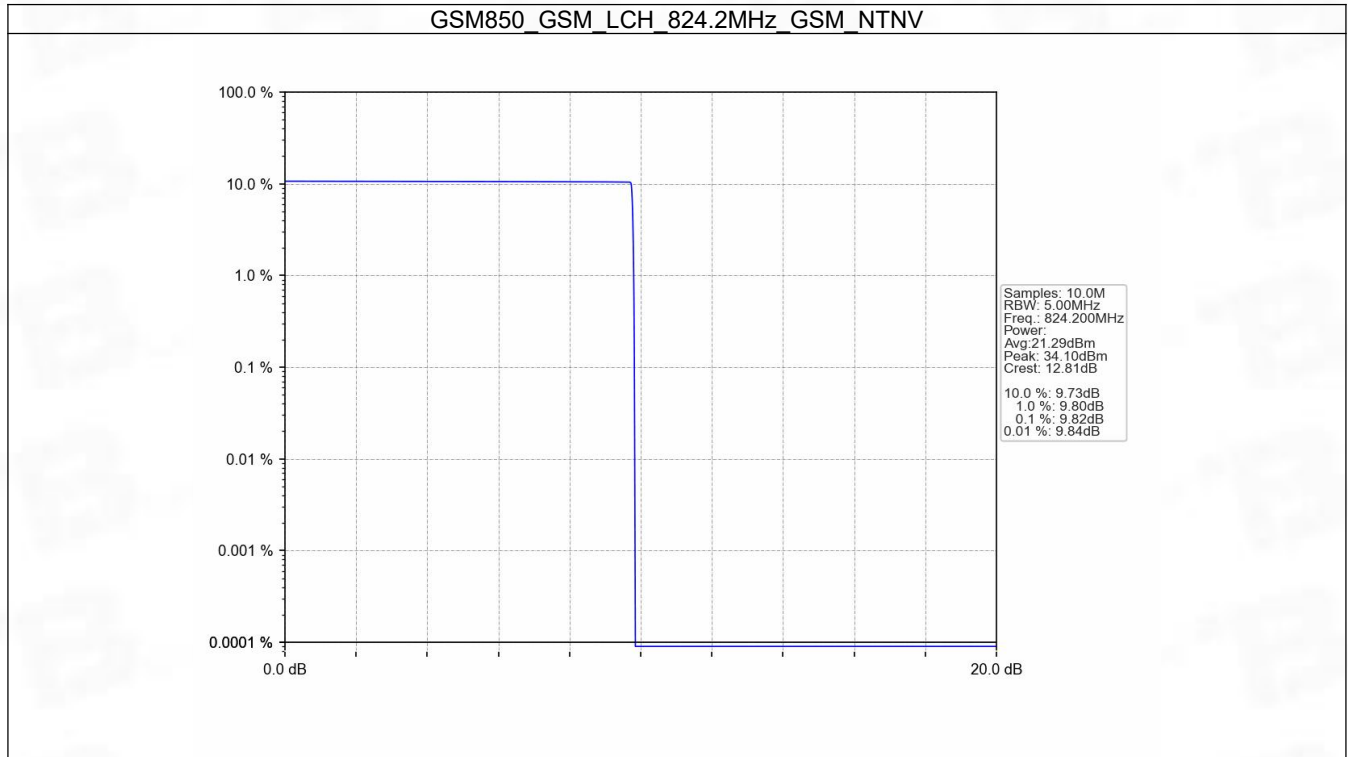
## 5. Peak-Average Ratio

### 5.1 GSM850

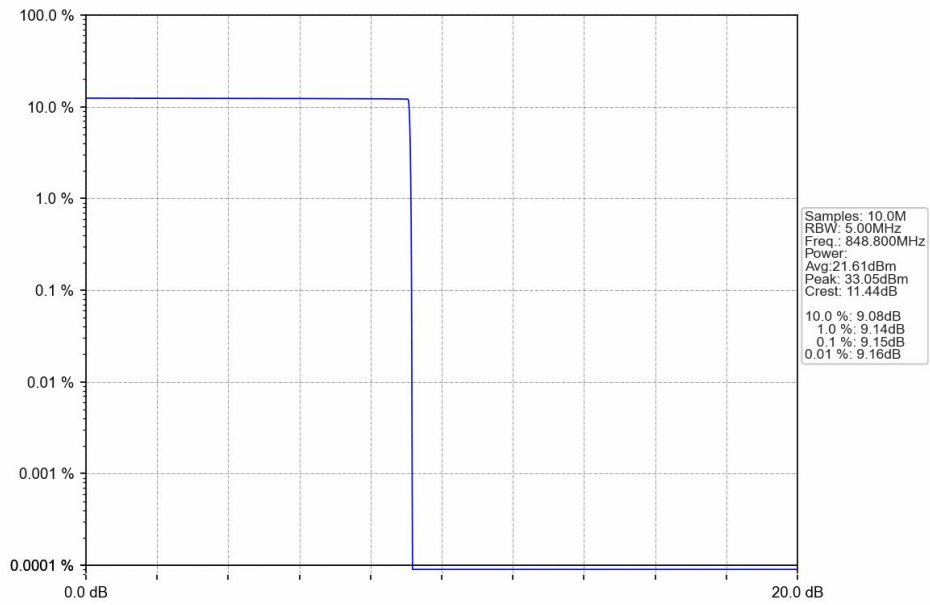
#### 5.1.1 Test Result

Band: GSM850						
ENV	Mode		Frequency (MHz)	Peak-Average Ratio (dB)		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	824.2	9.82	<=13	Pass
			836.6	9.19	<=13	Pass
			848.8	9.15	<=13	Pass
	GPRS	4 TX Slots	824.2	3.82	<=13	Pass
			836.6	3.79	<=13	Pass
			848.8	3.70	<=13	Pass
	EGPRS	4 TX Slots	824.2	10.19	<=13	Pass
			836.6	10.53	<=13	Pass
			848.8	10.48	<=13	Pass

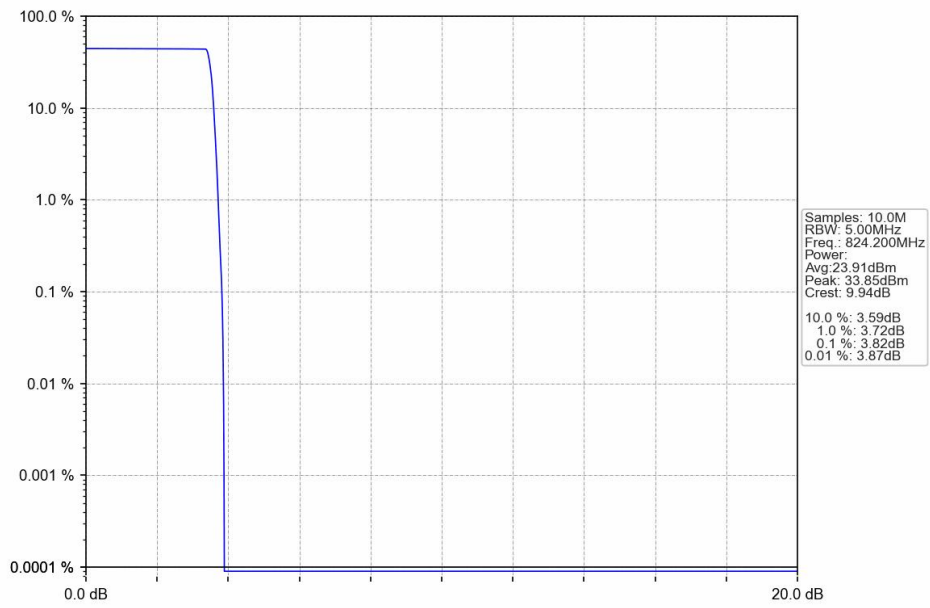
## 5.1.2 Test Graph



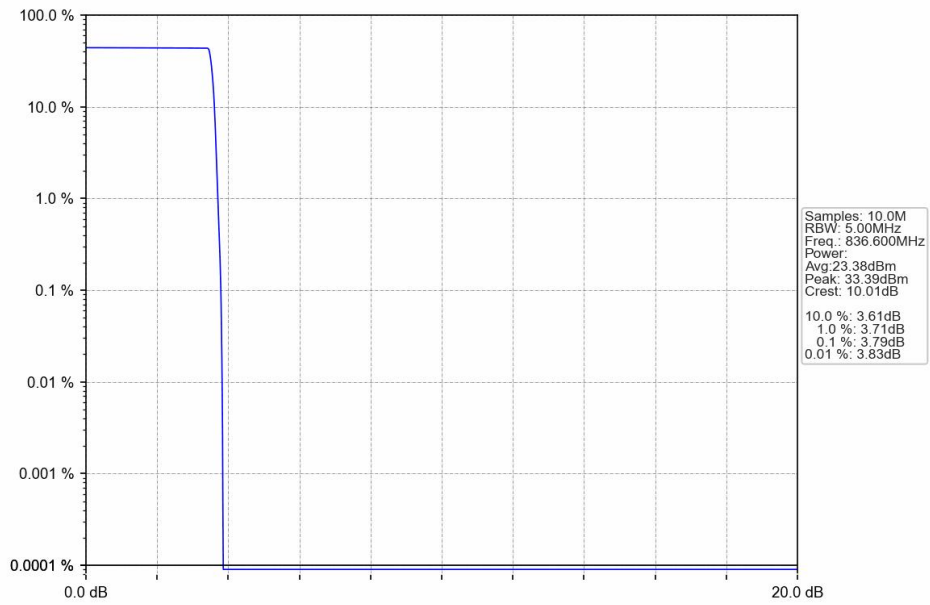
GSM850\_GSM\_HCH\_848.8MHz\_GSM\_NTNV



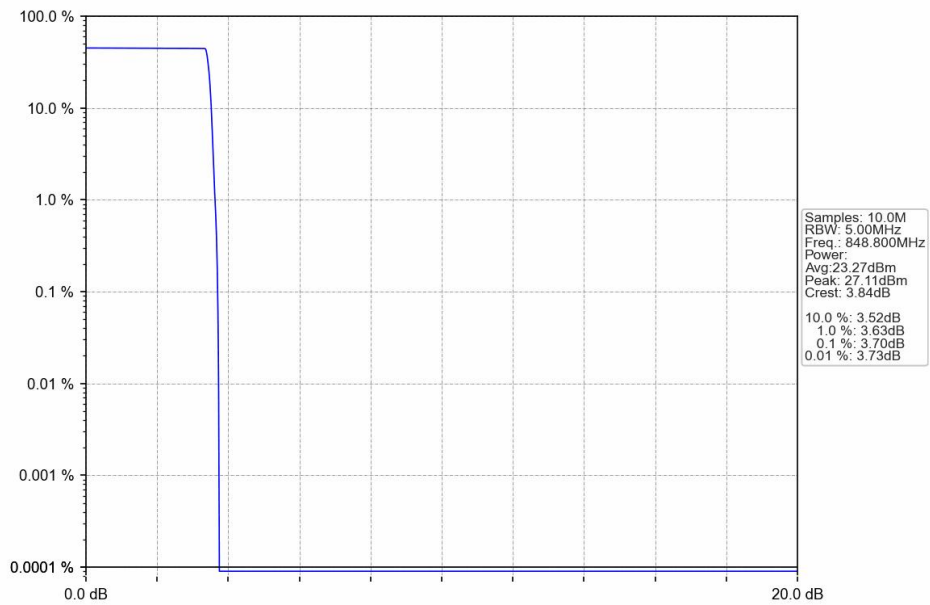
GSM850\_GPRS\_LCH\_824.2MHz\_4 TX Slots\_NTNV



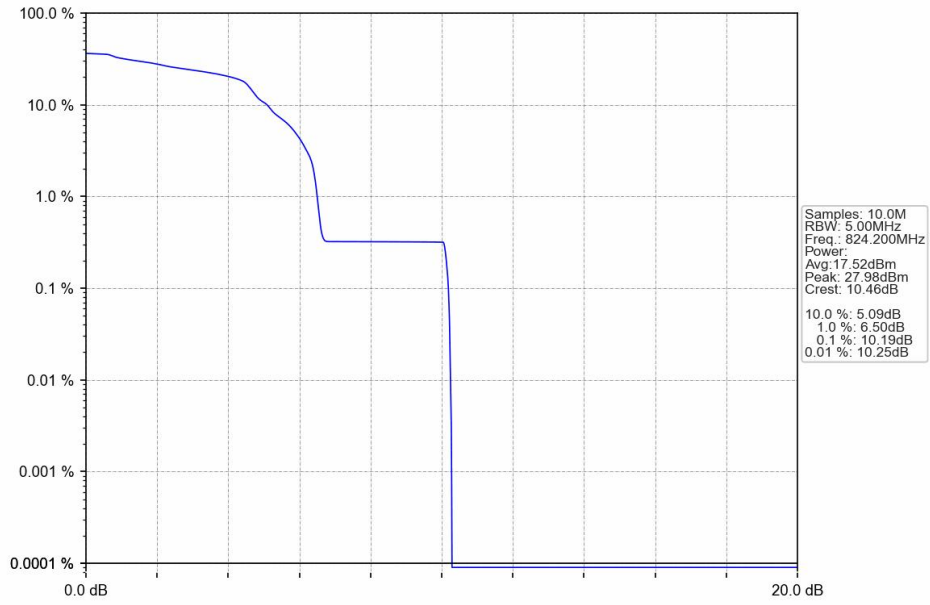
GSM850 GPRS MCH 836.6MHz 4 TX Slots NTV



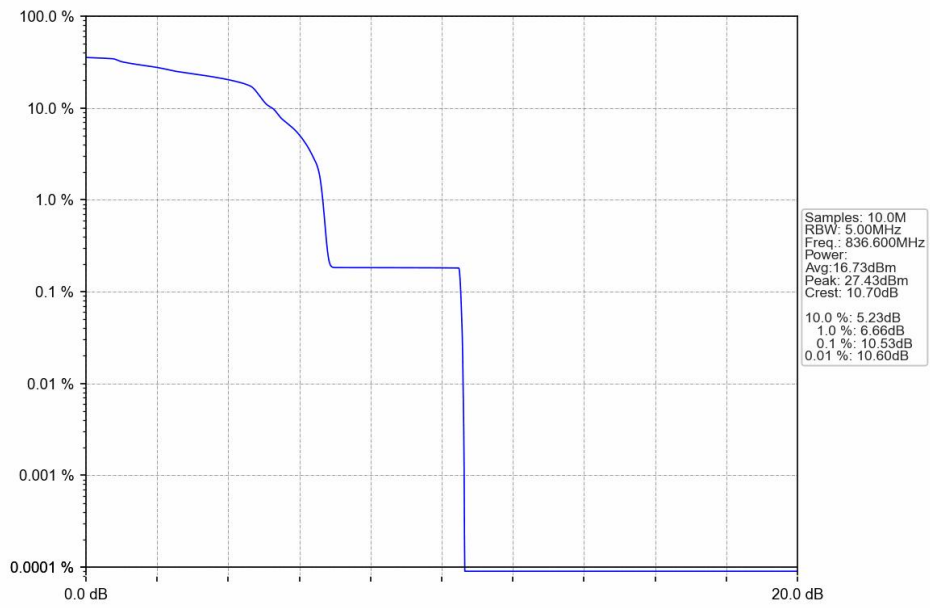
GSM850 GPRS HCH 848.8MHz 4 TX Slots NTV



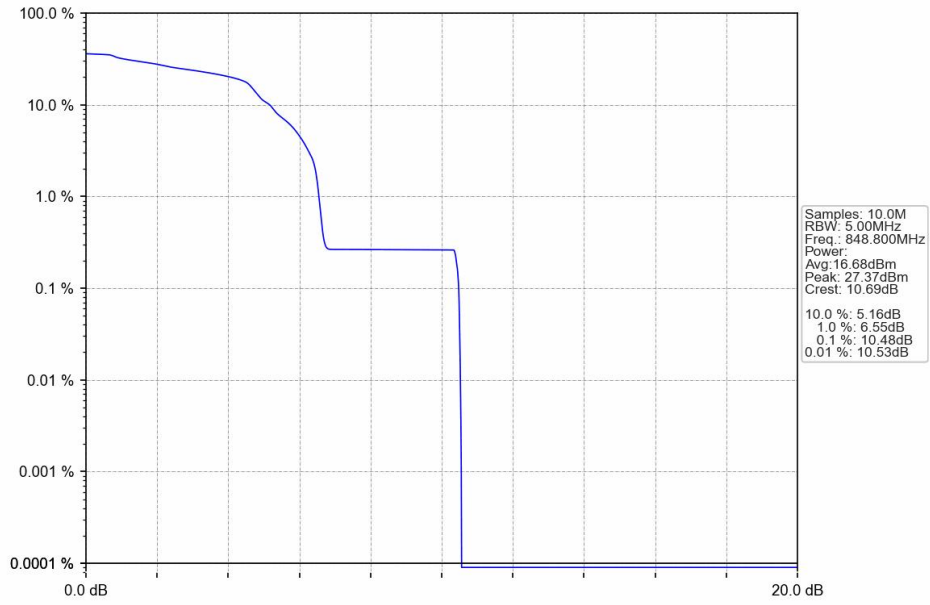
GSM850\_EGPRS\_LCH\_824.2MHz\_4 TX Slots\_NTNV



GSM850\_EGPRS\_MCH\_836.6MHz\_4 TX Slots\_NTNV



GSM850\_EGPRS\_HCH\_848.8MHz\_4\_TX\_Slots\_NTNV



## 6. Spurious Emission

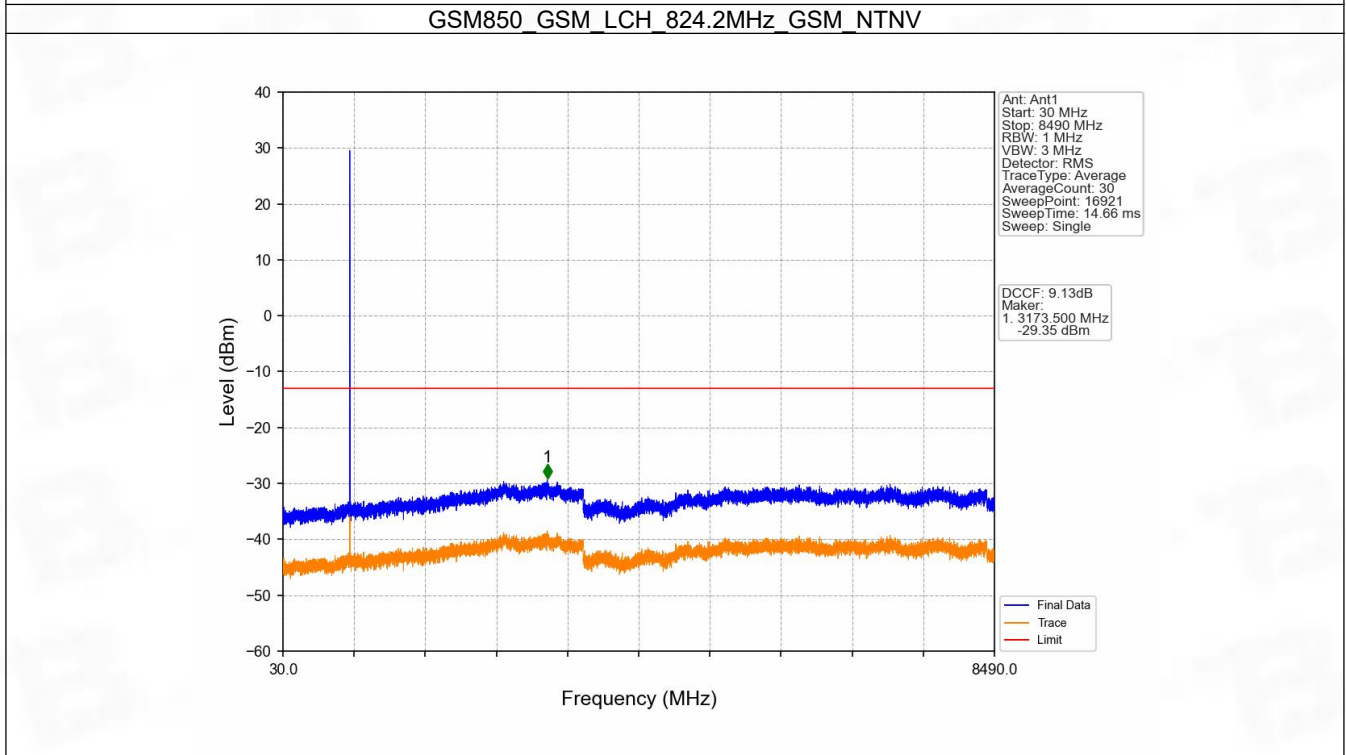
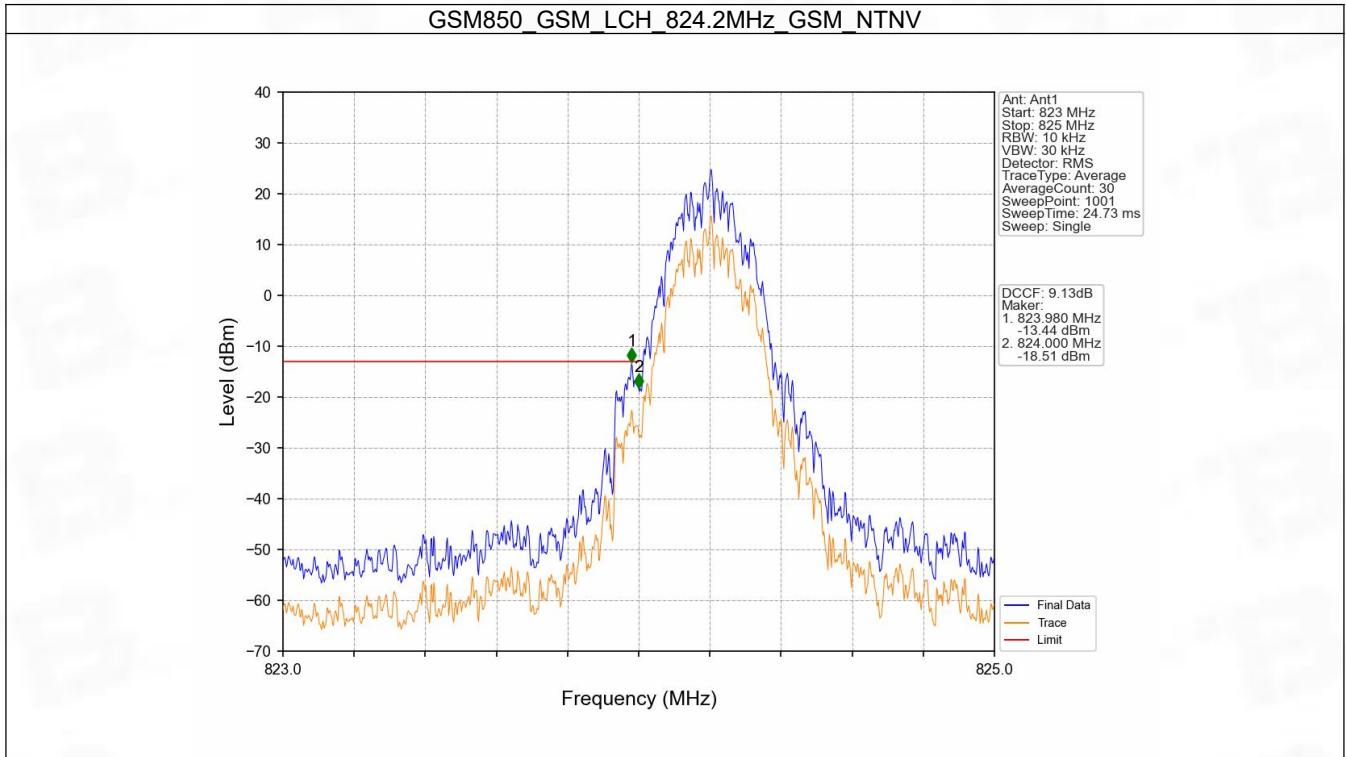
### 6.1 GSM850

#### 6.1.1 Test Result

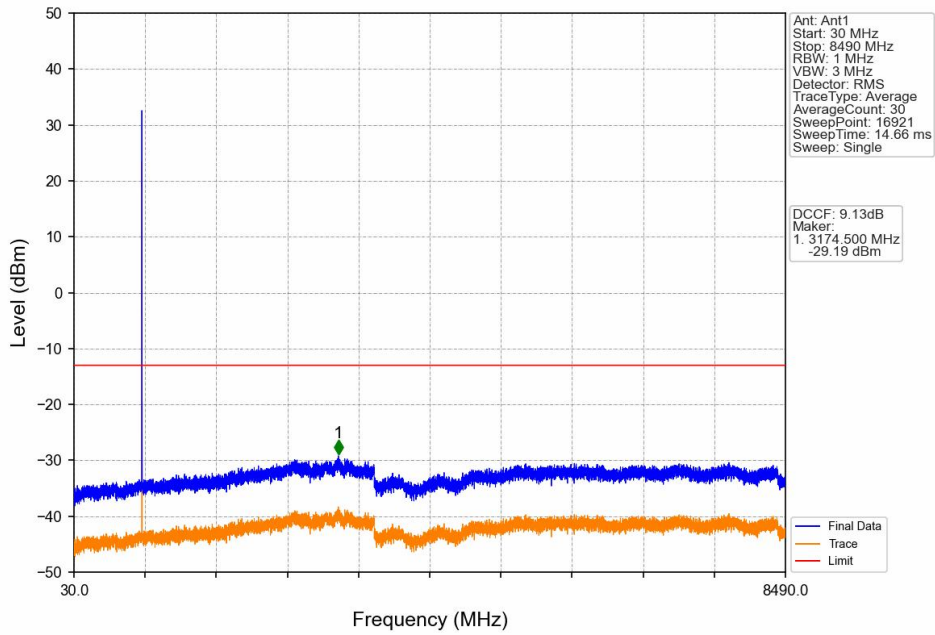
Band: GSM850						
ENV	Mode		Frequency (MHz)	Spurious Emission		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	824.2	Refer To Test Graph	Pass	
			836.6	Refer To Test Graph	Pass	
			848.8	Refer To Test Graph	Pass	
	GPRS	1 TX Slot	824.2	Refer To Test Graph	Pass	
			836.6	Refer To Test Graph	Pass	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



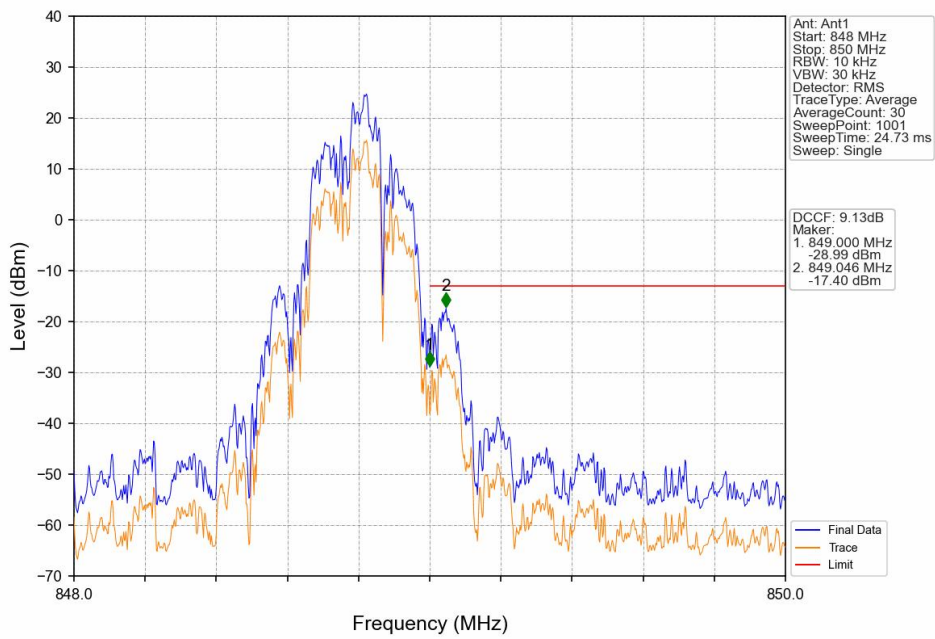
### 6.1.2 Test Graph



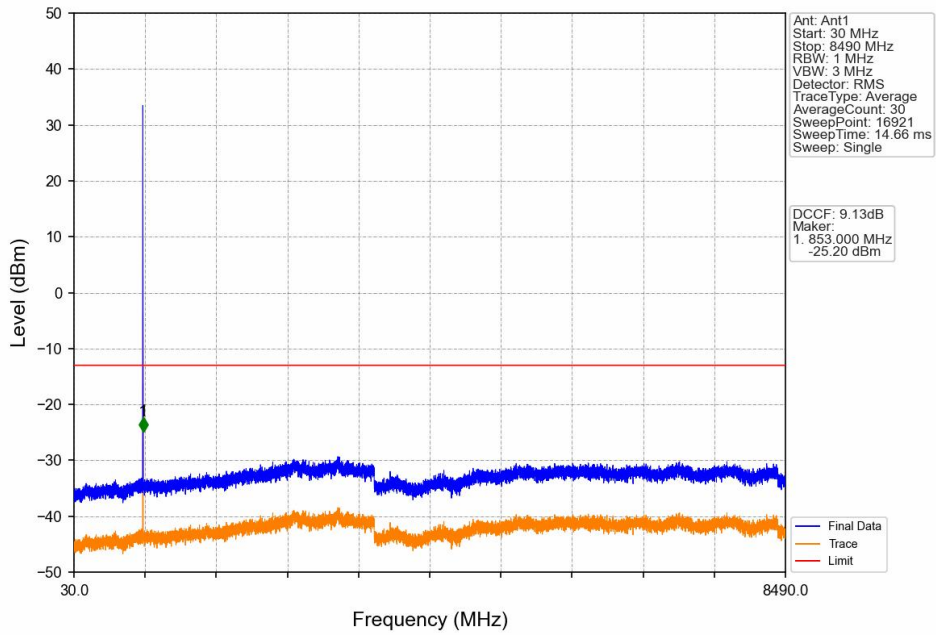
GSM850 GSM\_MCH\_836.6MHz\_GSM\_NTNV



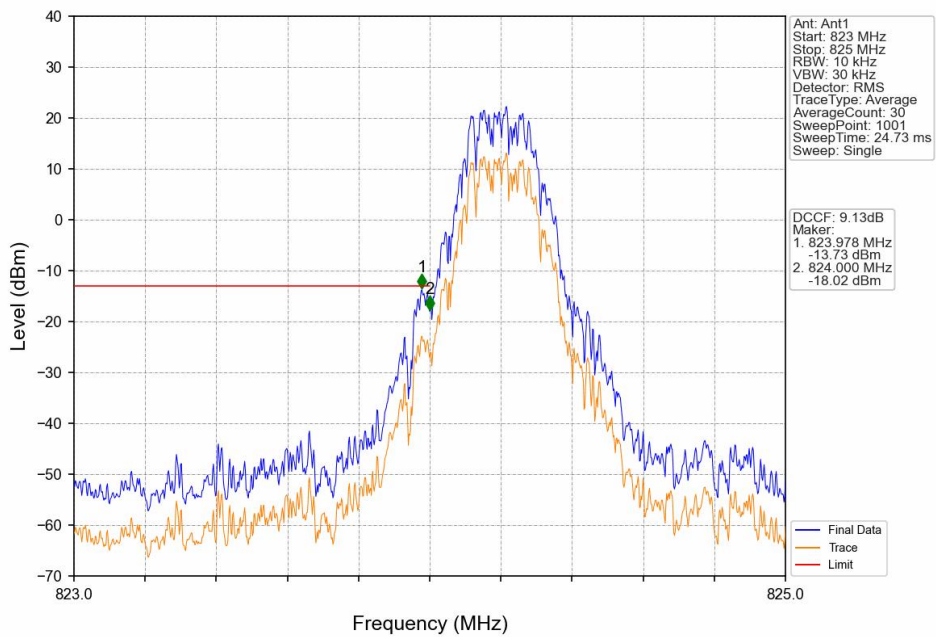
GSM850 GSM\_HCH\_848.8MHz\_GSM\_NTNV



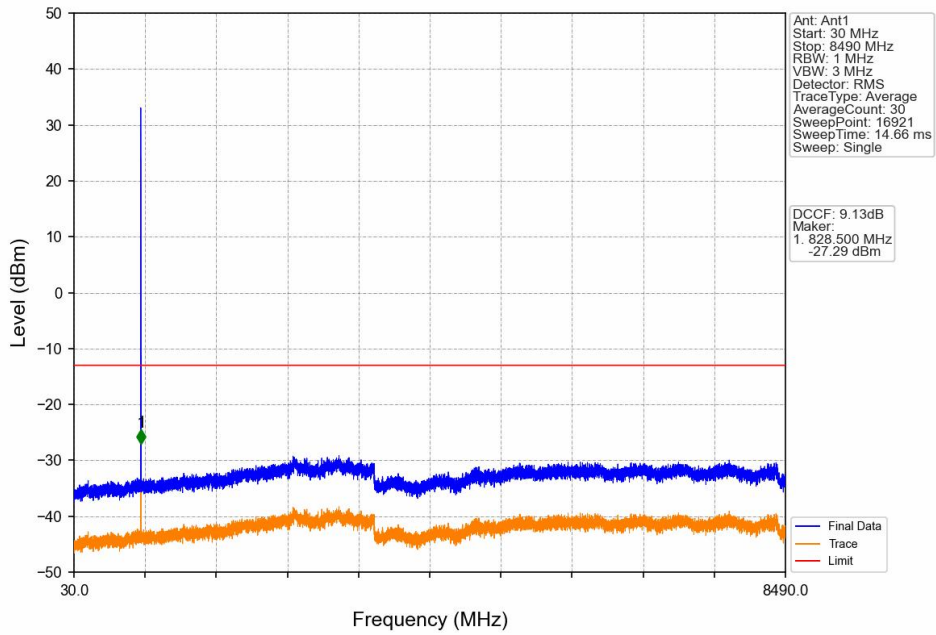
### GSM850\_GSM\_HCH\_848.8MHz\_GSM\_NTNV



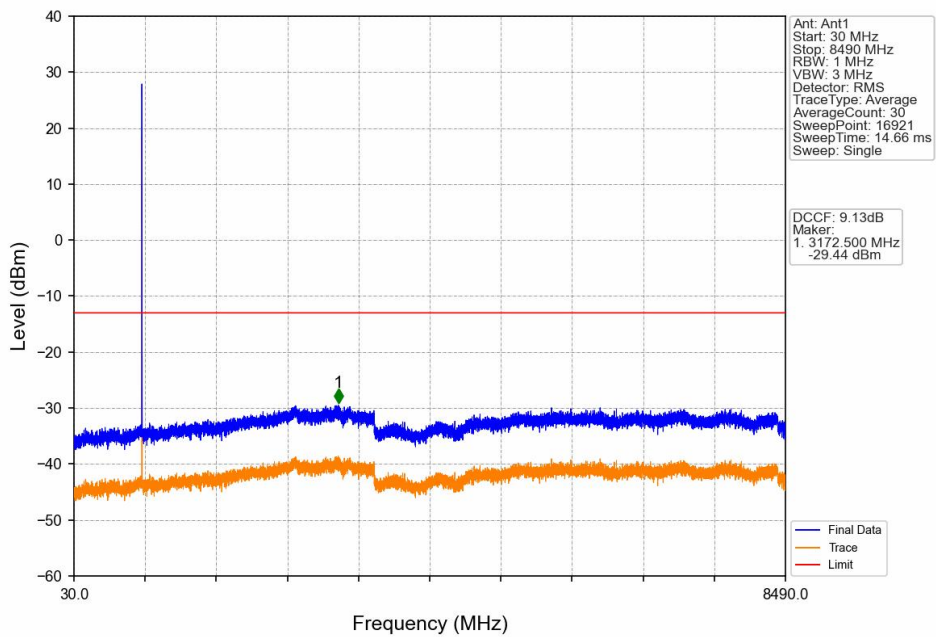
### GSM850\_GPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV



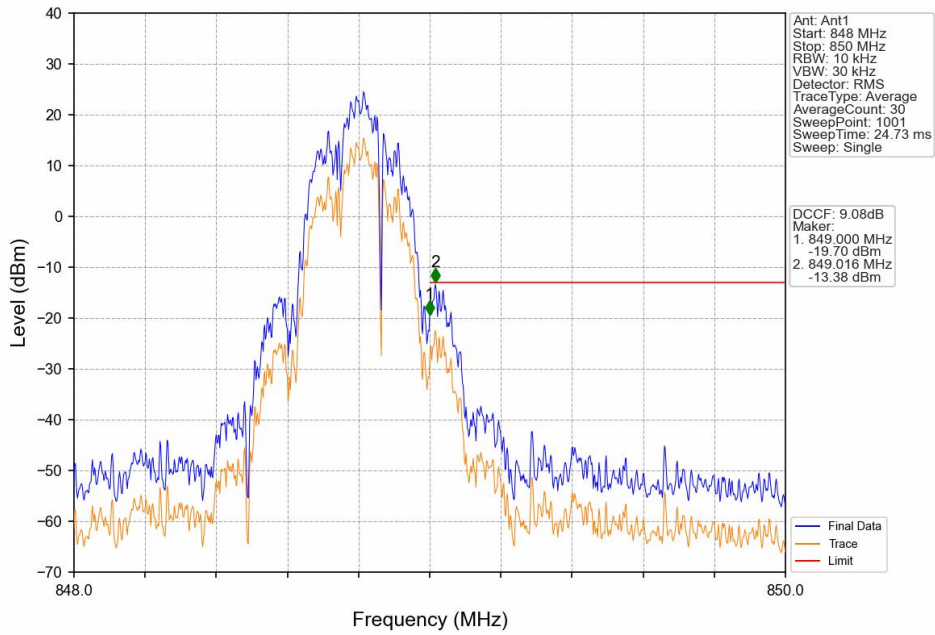
GSM850\_GPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV



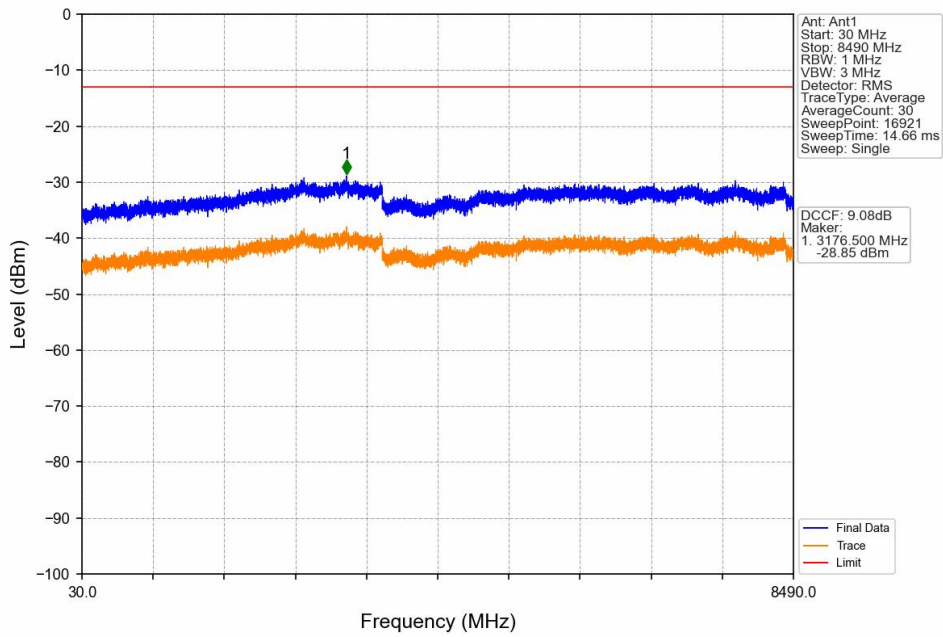
GSM850\_GPRS\_MCH\_836.6MHz\_1 TX Slot\_NTNV



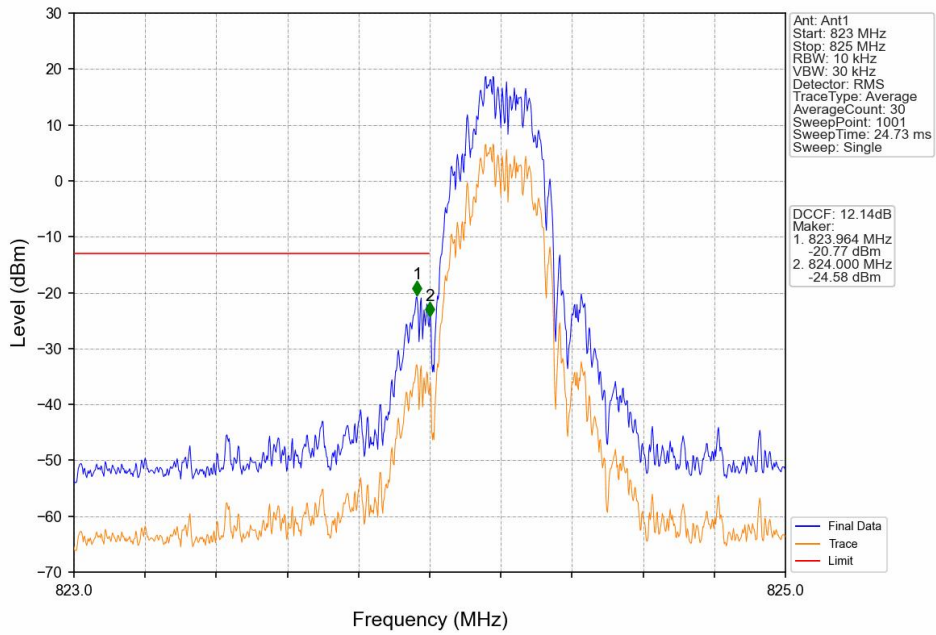
GSM850\_GPRS\_HCH\_848.8MHz\_1 TX Slot\_NTNV



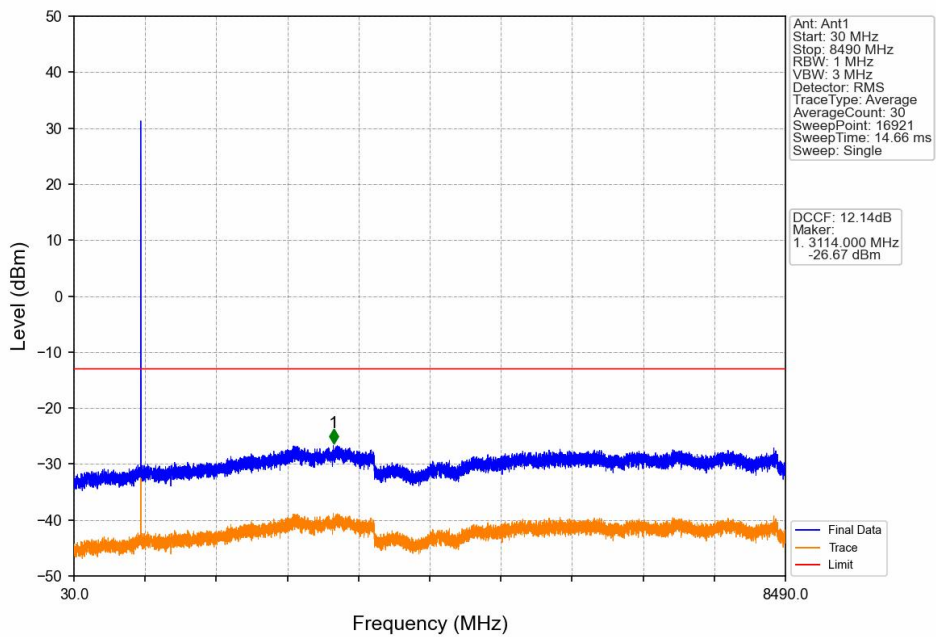
GSM850\_GPRS\_HCH\_848.8MHz\_1 TX Slot\_NTNV



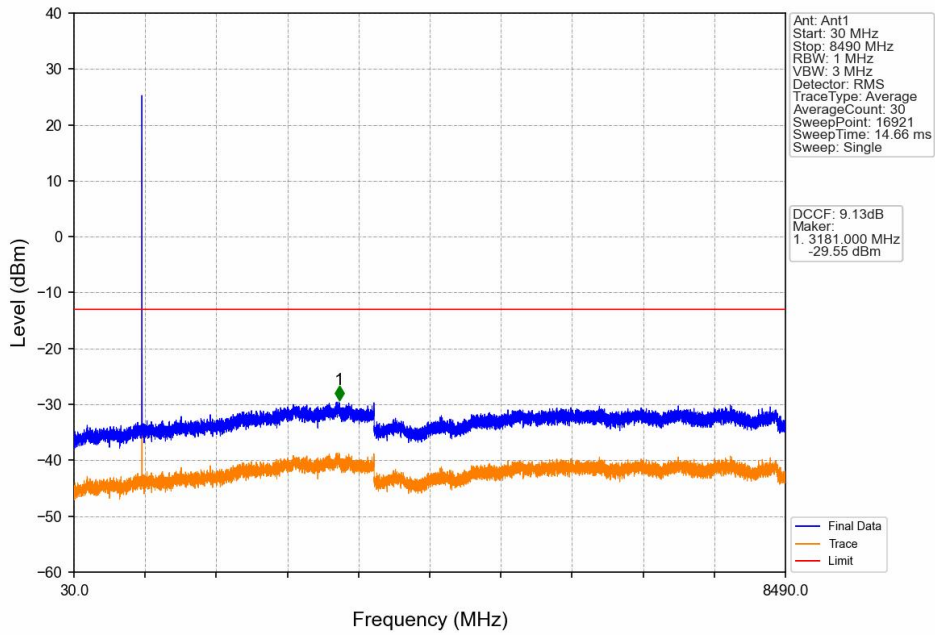
GSM850 EGPRS LCH 824.2MHz\_1 TX Slot\_NTNV



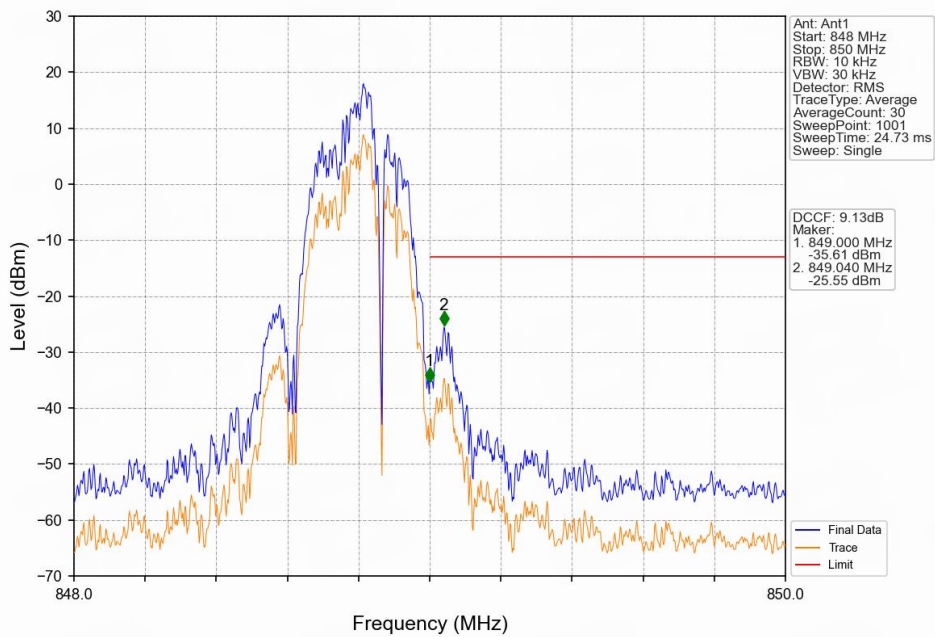
GSM850 EGPRS LCH 824.2MHz\_1 TX Slot\_NTNV



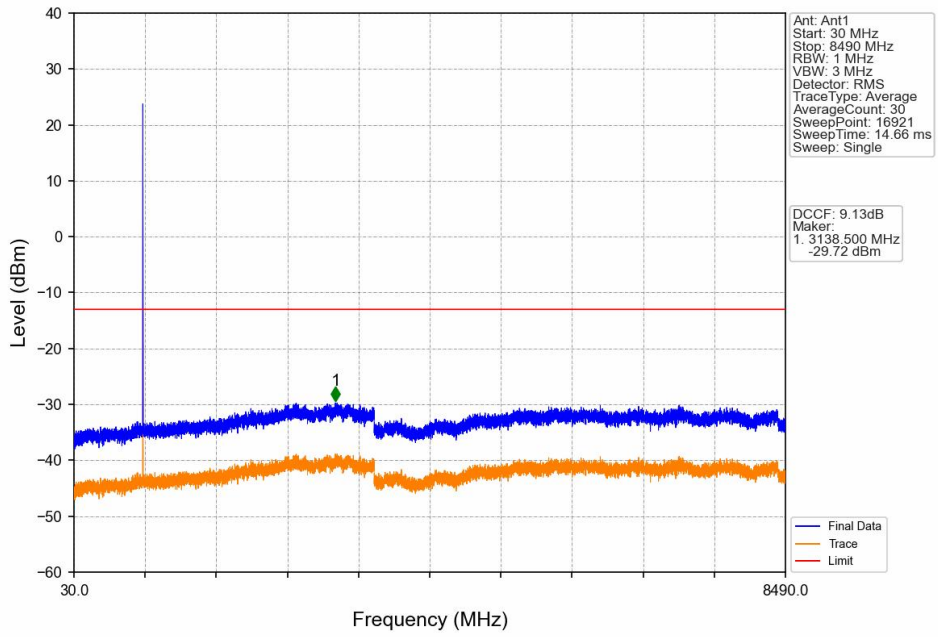
GSM850\_EGPRS\_MCH\_836.6MHz\_1\_TX\_Slot\_NTNV



GSM850\_EGPRS\_HCH\_848.8MHz\_1\_TX\_Slot\_NTNV



GSM850 EGPRS HCH 848.8MHz 1 TX Slot NTV





## 7. Form731

### 7.1 Form731\_Power

#### 7.1.1 Test Result

Band	BW	Lower Freq	High Freq	MAX Power (W)	Value	Hz/ppm	Emission Designator	Rule Parts	MAX Power (dBm)
GSM850	0.2	824.2	848.8	1.7061	0.0308	ppm	246KGXW	22H	32.32
GSM850	0.2	824.2	848.8	0.4009	0.0344	ppm	238KG7W	22H	26.03

### 7.2 Form731\_ERP

#### 7.2.1 Test Result

Band	BW	Lower Freq	High Freq	MAX Power (W)	Value	Hz/ppm	Emission Designator	Rule Parts	MAX Power (dBm)
GSM850	0.2	824.2	848.8	1.2735	0.0308	ppm	246KGXW	22H	31.05
GSM850	0.2	824.2	848.8	0.2992	0.0344	ppm	238KG7W	22H	24.76