

# 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	31.71	-2.33	27.23	<=38.45	Pass	
			836.6	31.69	-2.33	27.21	<=38.45	Pass	
			848.8	31.52	-2.33	27.04	<=38.45	Pass	
	GPRS	1 TX Slot	824.2	31.79	-2.33	27.31	<=38.45	Pass	
			2 TX Slots	824.2	30.71	-2.33	26.23	<=38.45	Pass
			3 TX Slots	824.2	27.99	-2.33	23.51	<=38.45	Pass
			4 TX Slots	824.2	26.82	-2.33	22.34	<=38.45	Pass
		2 TX Slots	836.6	31.68	-2.33	27.20	<=38.45	Pass	
			836.6	30.83	-2.33	26.35	<=38.45	Pass	
			836.6	28.25	-2.33	23.77	<=38.45	Pass	
			836.6	27.08	-2.33	22.60	<=38.45	Pass	
		3 TX Slots	848.8	31.53	-2.33	27.05	<=38.45	Pass	
			848.8	30.89	-2.33	26.41	<=38.45	Pass	
			848.8	28.51	-2.33	24.03	<=38.45	Pass	
			848.8	27.34	-2.33	22.86	<=38.45	Pass	
		EGPRS	1 TX Slot	824.2	30.80	-2.33	26.32	<=38.45	Pass
				824.2	30.68	-2.33	26.20	<=38.45	Pass
				824.2	30.86	-2.33	26.38	<=38.45	Pass
				824.2	30.67	-2.33	26.19	<=38.45	Pass
	2 TX Slots		836.6	26.32	-2.33	21.84	<=38.45	Pass	
			836.6	26.63	-2.33	22.15	<=38.45	Pass	
			836.6	24.53	-2.33	20.05	<=38.45	Pass	
			836.6	26.50	-2.33	22.02	<=38.45	Pass	
	3 TX Slots		848.8	26.15	-2.33	21.67	<=38.45	Pass	
			848.8	25.29	-2.33	20.81	<=38.45	Pass	
			848.8	24.73	-2.33	20.25	<=38.45	Pass	
			848.8	26.41	-2.33	21.93	<=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	3.519	0.0043	-2.5 to 2.5	Pass
			3.85	1.711	0.0021	-2.5 to 2.5	Pass
			4.43	6.102	0.0074	-2.5 to 2.5	Pass

	836.6	-30	3.85	6.909	0.0084	-2.5 to 2.5	Pass	
		-20	3.85	6.489	0.0079	-2.5 to 2.5	Pass	
		-10	3.85	6.393	0.0078	-2.5 to 2.5	Pass	
		0	3.85	5.327	0.0065	-2.5 to 2.5	Pass	
		10	3.85	9.137	0.0111	-2.5 to 2.5	Pass	
		30	3.85	6.780	0.0082	-2.5 to 2.5	Pass	
		40	3.85	4.423	0.0054	-2.5 to 2.5	Pass	
		50	3.85	6.909	0.0084	-2.5 to 2.5	Pass	
		20	3.27	11.558	0.0138	-2.5 to 2.5	Pass	
			3.85	7.393	0.0088	-2.5 to 2.5	Pass	
			4.43	5.682	0.0068	-2.5 to 2.5	Pass	
		-30	3.85	7.652	0.0091	-2.5 to 2.5	Pass	
		-20	3.85	10.461	0.0125	-2.5 to 2.5	Pass	
		-10	3.85	10.525	0.0126	-2.5 to 2.5	Pass	
	0	3.85	10.493	0.0125	-2.5 to 2.5	Pass		
	10	3.85	8.717	0.0104	-2.5 to 2.5	Pass		
	30	3.85	8.039	0.0096	-2.5 to 2.5	Pass		
	40	3.85	9.912	0.0118	-2.5 to 2.5	Pass		
	50	3.85	8.104	0.0097	-2.5 to 2.5	Pass		
	848.8	20	3.27	7.167	0.0084	-2.5 to 2.5	Pass	
			3.85	9.879	0.0116	-2.5 to 2.5	Pass	
			4.43	11.687	0.0138	-2.5 to 2.5	Pass	
		-30	3.85	6.037	0.0071	-2.5 to 2.5	Pass	
		-20	3.85	6.586	0.0078	-2.5 to 2.5	Pass	
		-10	3.85	9.653	0.0114	-2.5 to 2.5	Pass	
		0	3.85	9.105	0.0107	-2.5 to 2.5	Pass	
		10	3.85	11.558	0.0136	-2.5 to 2.5	Pass	
		30	3.85	8.233	0.0097	-2.5 to 2.5	Pass	
		40	3.85	8.846	0.0104	-2.5 to 2.5	Pass	
		50	3.85	11.268	0.0133	-2.5 to 2.5	Pass	
		824.2	20	3.27	5.133	0.0062	-2.5 to 2.5	Pass
				3.85	5.069	0.0062	-2.5 to 2.5	Pass
				4.43	9.944	0.0121	-2.5 to 2.5	Pass
-30	3.85		6.586	0.0080	-2.5 to 2.5	Pass		
-20	3.85		7.813	0.0095	-2.5 to 2.5	Pass		
-10	3.85		10.783	0.0131	-2.5 to 2.5	Pass		
0	3.85		6.167	0.0075	-2.5 to 2.5	Pass		
10	3.85		3.777	0.0046	-2.5 to 2.5	Pass		
30	3.85		7.038	0.0085	-2.5 to 2.5	Pass		
40	3.85		5.876	0.0071	-2.5 to 2.5	Pass		
50	3.85		7.684	0.0093	-2.5 to 2.5	Pass		
836.6	20		3.27	6.941	0.0083	-2.5 to 2.5	Pass	
			3.85	5.004	0.0060	-2.5 to 2.5	Pass	
			4.43	6.231	0.0074	-2.5 to 2.5	Pass	
	-30	3.85	6.134	0.0073	-2.5 to 2.5	Pass		
	-20	3.85	3.874	0.0046	-2.5 to 2.5	Pass		
	-10	3.85	7.523	0.0090	-2.5 to 2.5	Pass		
	0	3.85	3.713	0.0044	-2.5 to 2.5	Pass		
	10	3.85	8.168	0.0098	-2.5 to 2.5	Pass		
	30	3.85	10.202	0.0122	-2.5 to 2.5	Pass		
	40	3.85	12.269	0.0147	-2.5 to 2.5	Pass		
	50	3.85	13.657	0.0163	-2.5 to 2.5	Pass		
	848.8	20	3.27	6.941	0.0082	-2.5 to 2.5	Pass	
			3.85	8.265	0.0097	-2.5 to 2.5	Pass	
			4.43	6.360	0.0075	-2.5 to 2.5	Pass	

		-30	3.85	7.361	0.0087	-2.5 to 2.5	Pass	
		-20	3.85	4.423	0.0052	-2.5 to 2.5	Pass	
		-10	3.85	7.361	0.0087	-2.5 to 2.5	Pass	
		0	3.85	6.199	0.0073	-2.5 to 2.5	Pass	
		10	3.85	6.780	0.0080	-2.5 to 2.5	Pass	
		30	3.85	6.554	0.0077	-2.5 to 2.5	Pass	
		40	3.85	7.103	0.0084	-2.5 to 2.5	Pass	
EGPRS	824.2	50	3.85	11.817	0.0139	-2.5 to 2.5	Pass	
		20	3.27	4.036	0.0049	-2.5 to 2.5	Pass	
			3.85	8.459	0.0103	-2.5 to 2.5	Pass	
			4.43	8.814	0.0107	-2.5 to 2.5	Pass	
		-30	3.85	5.198	0.0063	-2.5 to 2.5	Pass	
		-20	3.85	5.650	0.0069	-2.5 to 2.5	Pass	
		-10	3.85	4.649	0.0056	-2.5 to 2.5	Pass	
		0	3.85	1.905	0.0023	-2.5 to 2.5	Pass	
		10	3.85	6.328	0.0077	-2.5 to 2.5	Pass	
		30	3.85	4.972	0.0060	-2.5 to 2.5	Pass	
		40	3.85	6.134	0.0074	-2.5 to 2.5	Pass	
		50	3.85	4.714	0.0057	-2.5 to 2.5	Pass	
		836.6	20	3.27	4.552	0.0054	-2.5 to 2.5	Pass
				3.85	7.103	0.0085	-2.5 to 2.5	Pass
	4.43			5.521	0.0066	-2.5 to 2.5	Pass	
	-30		3.85	3.777	0.0045	-2.5 to 2.5	Pass	
	-20		3.85	5.198	0.0062	-2.5 to 2.5	Pass	
	-10		3.85	4.617	0.0055	-2.5 to 2.5	Pass	
	0		3.85	4.359	0.0052	-2.5 to 2.5	Pass	
	10		3.85	6.877	0.0082	-2.5 to 2.5	Pass	
	30		3.85	6.328	0.0076	-2.5 to 2.5	Pass	
	40		3.85	6.328	0.0076	-2.5 to 2.5	Pass	
	50		3.85	6.812	0.0081	-2.5 to 2.5	Pass	
	848.8		20	3.27	7.975	0.0094	-2.5 to 2.5	Pass
				3.85	6.586	0.0078	-2.5 to 2.5	Pass
				4.43	8.588	0.0101	-2.5 to 2.5	Pass
		-30	3.85	7.490	0.0088	-2.5 to 2.5	Pass	
		-20	3.85	2.938	0.0035	-2.5 to 2.5	Pass	
		-10	3.85	3.164	0.0037	-2.5 to 2.5	Pass	
		0	3.85	3.842	0.0045	-2.5 to 2.5	Pass	
10		3.85	7.167	0.0084	-2.5 to 2.5	Pass		
30		3.85	1.905	0.0022	-2.5 to 2.5	Pass		
40		3.85	1.905	0.0022	-2.5 to 2.5	Pass		
50		3.85	-0.710	-0.0008	-2.5 to 2.5	Pass		

### 3. Modulation Characteristics

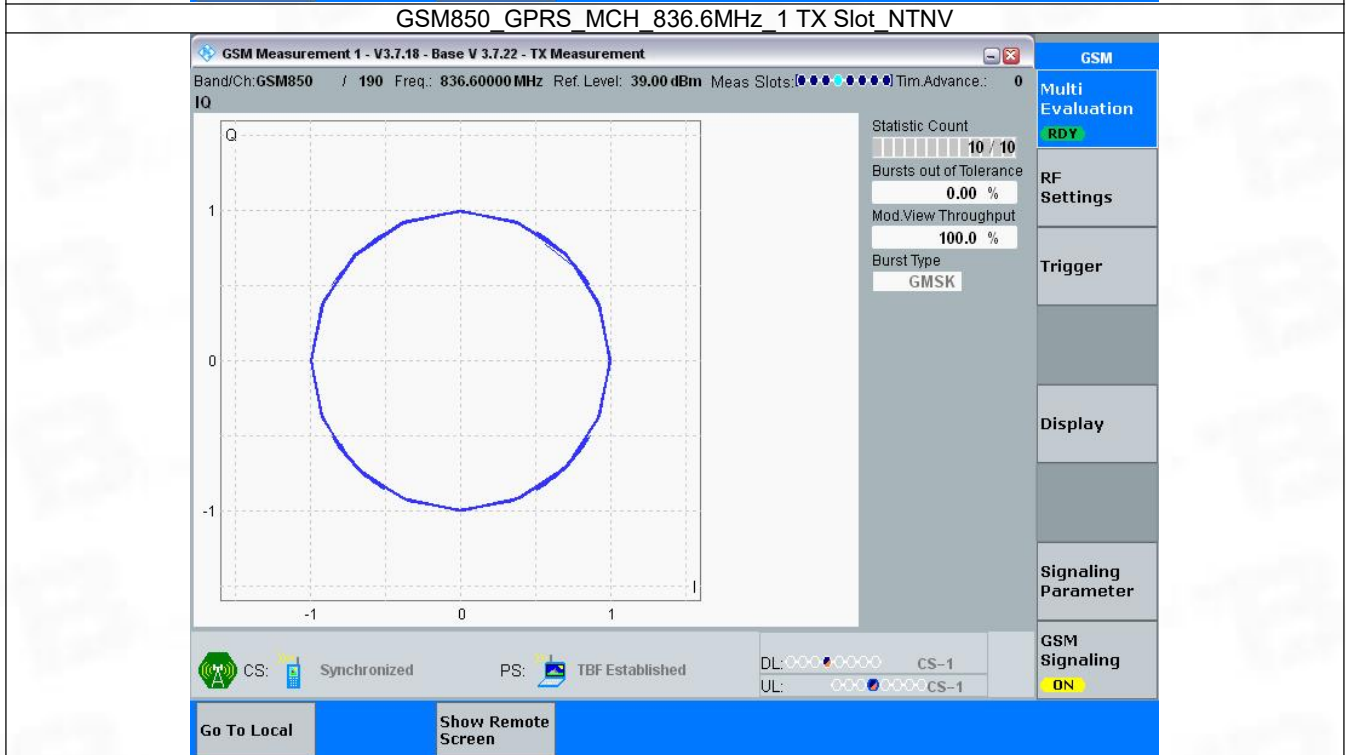
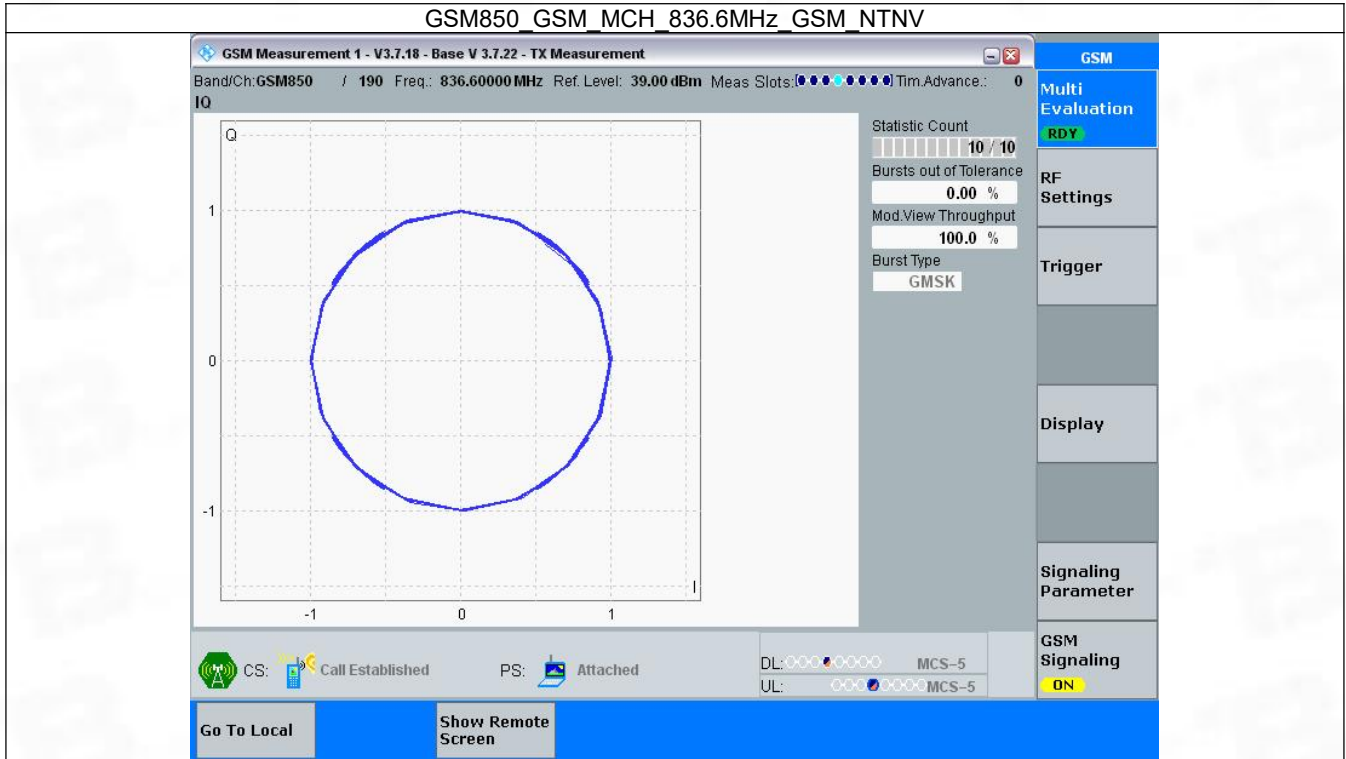
#### 3.1 GSM850

##### 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 NTV

**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: [●●●●●●●●] Tim. Advance.: 0

**GSM**

Multi Evaluation **RDY**

RF Settings

Trigger

Display

Signaling Parameter

GSM Signaling **ON**

Statistic Count: 10 / 10

Bursts out of Tolerance: 0.00 %

Mod. View Throughput: 100.0 %

Burst Type: 8PSK

CS: Synchronized

PS: TBF Established

DL: ○○○○○○ MCS-5

UL: ○○○○○○ MCS-5

Go To Local

Show Remote Screen

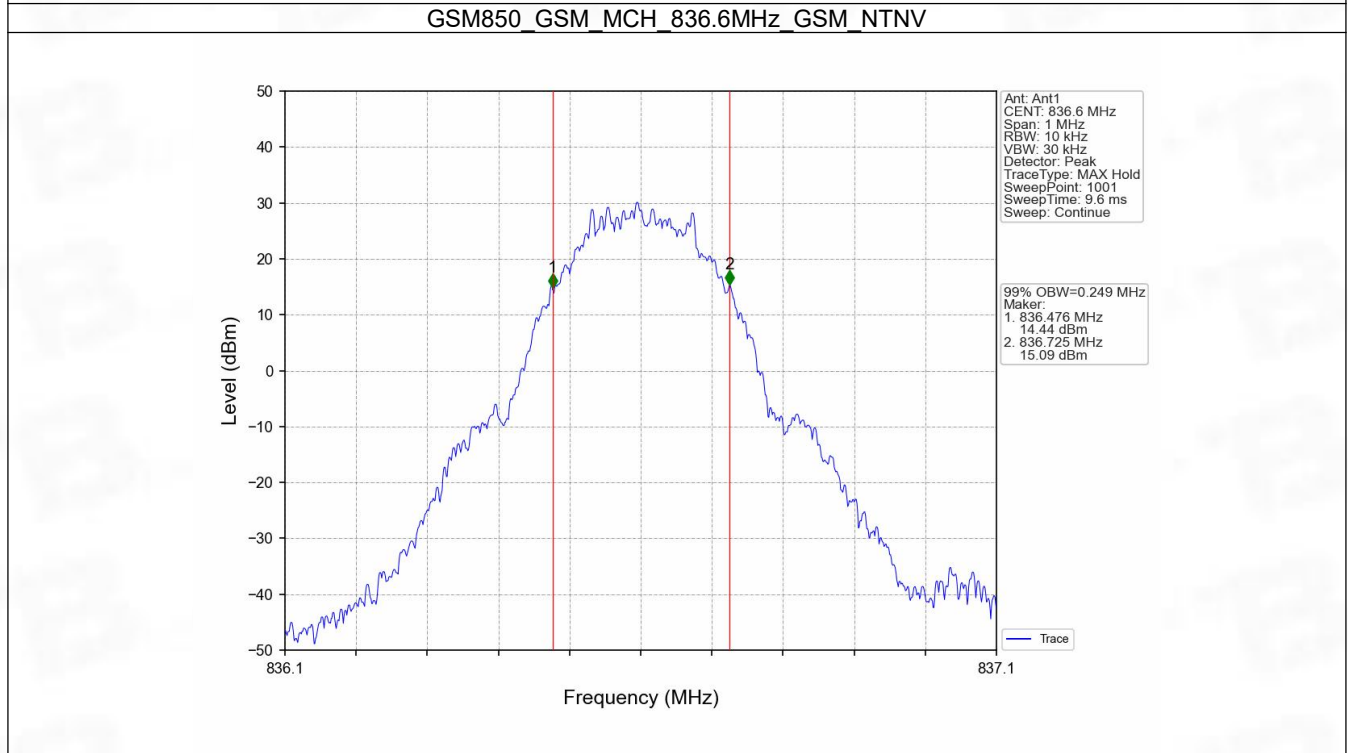
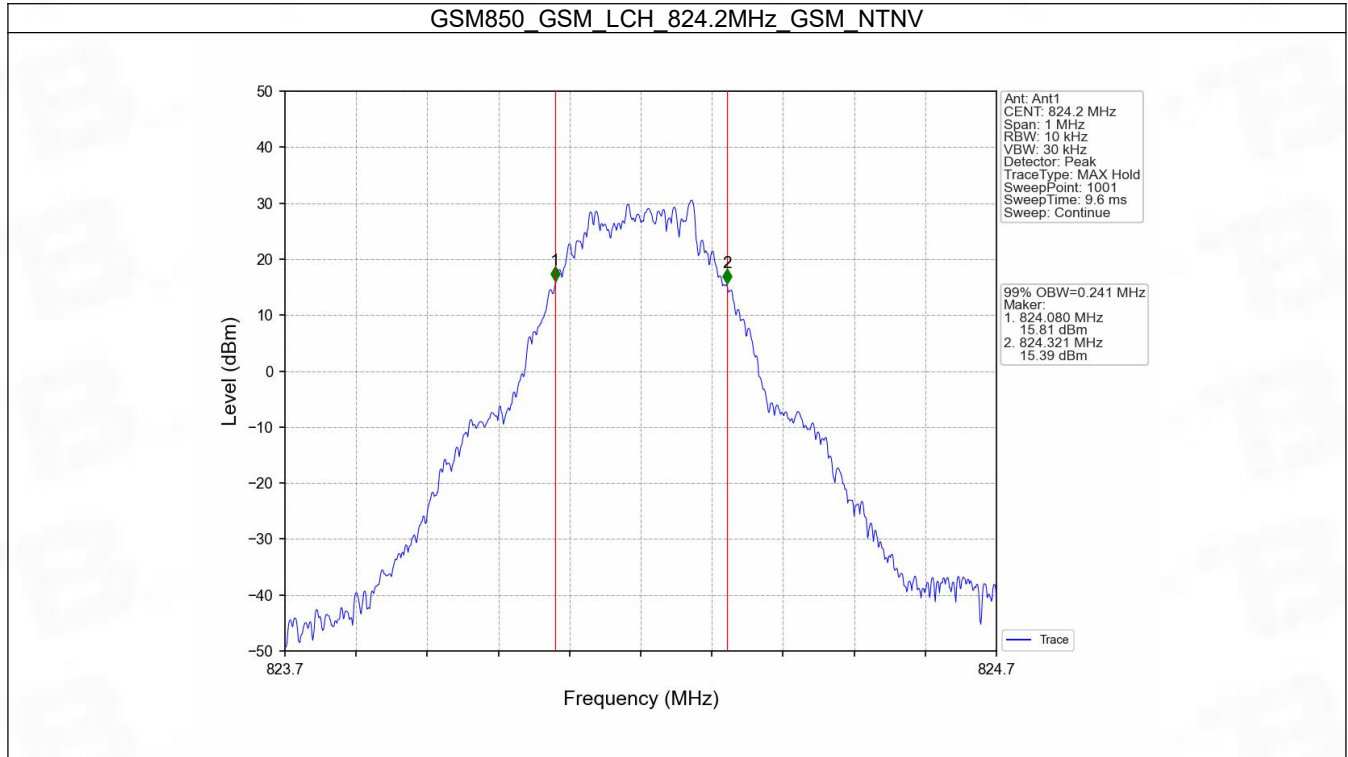
## 4. 99% & 26dB Bandwidth

### 4.1 GSM850\_OBW

#### 4.1.1 Test Result

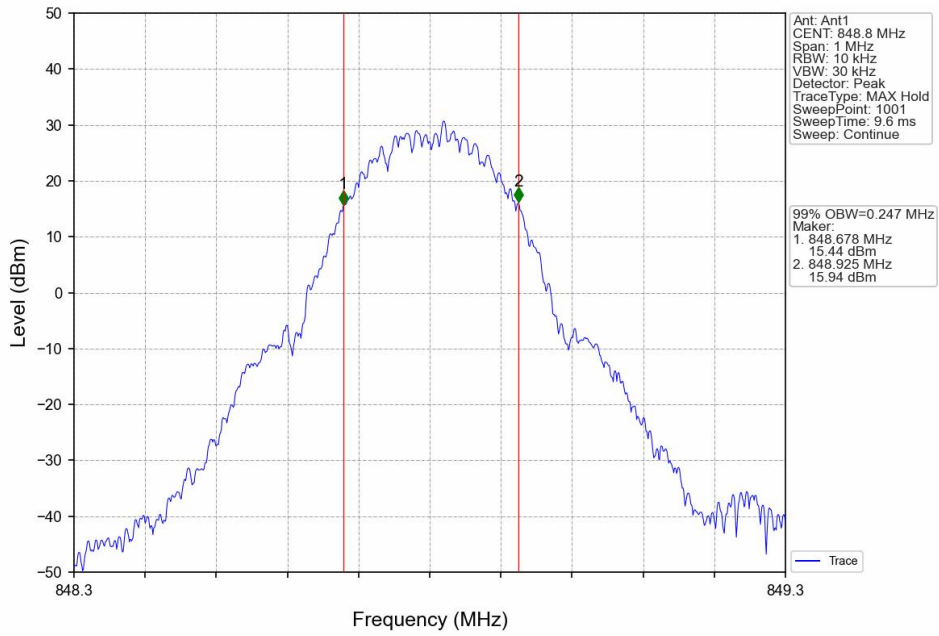
Band: GSM850					
ENV	Mode		Frequency (MHz)	99% Occupied Bandwidth (MHz)	Verdict
	Network	Subset		Result	
NTNV	GSM	GSM	824.2	0.241	Pass
			836.6	0.249	Pass
			848.8	0.247	Pass
	GPRS	1 TX Slot	824.2	0.243	Pass
			836.6	0.243	Pass
			848.8	0.246	Pass
	EGPRS	1 TX Slot	824.2	0.513	Pass
			836.6	0.495	Pass
			848.8	0.533	Pass

### 4.1.2 Test Graph

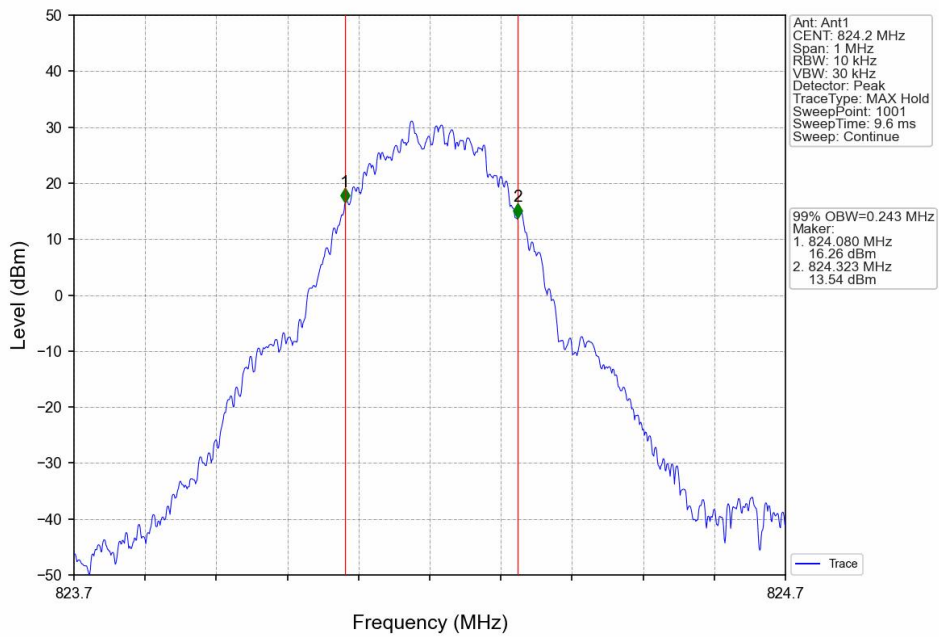




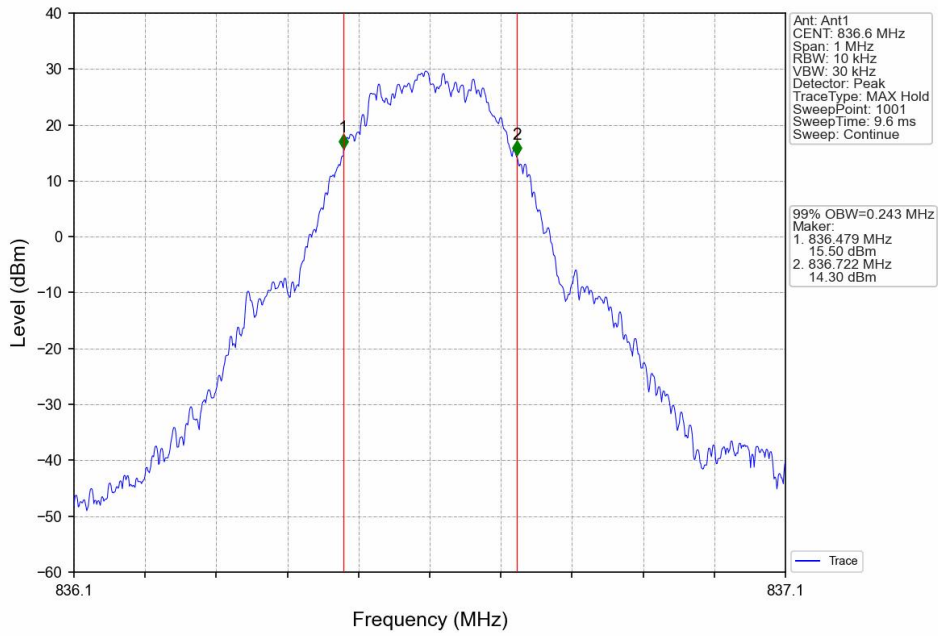
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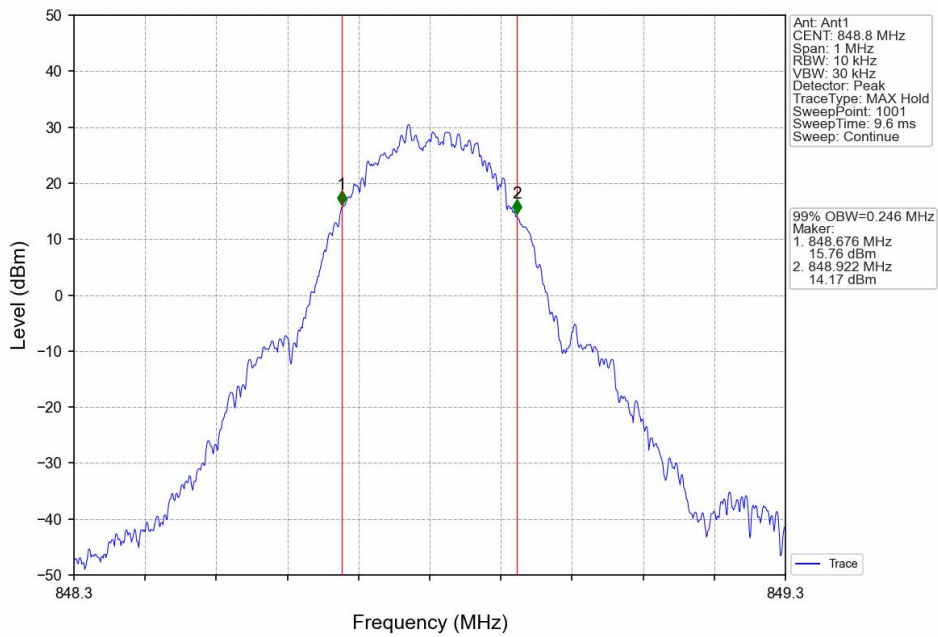
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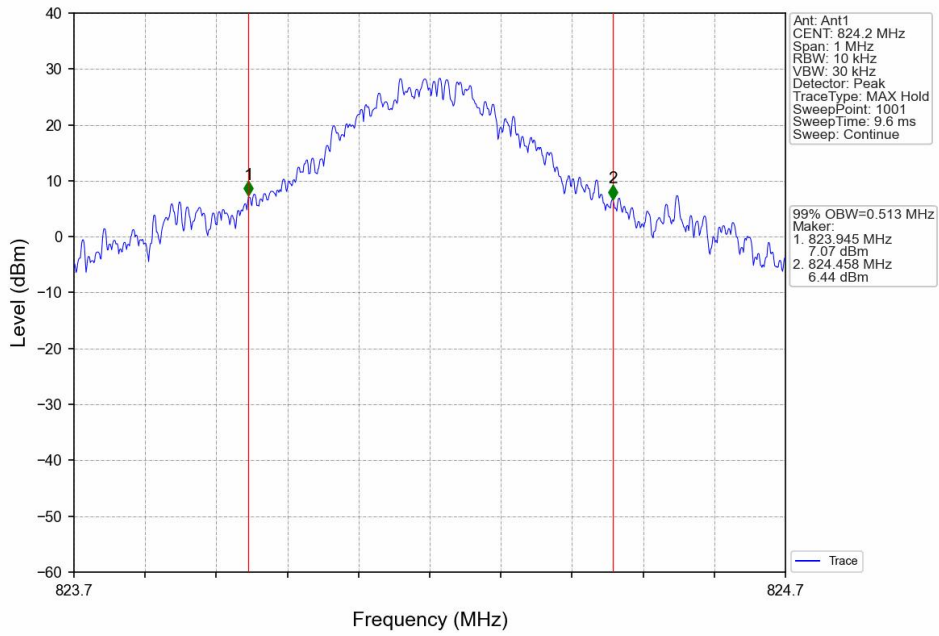
GSM850\_GPRS\_MCH\_836.6MHz\_1\_TX\_Slot\_NTNV



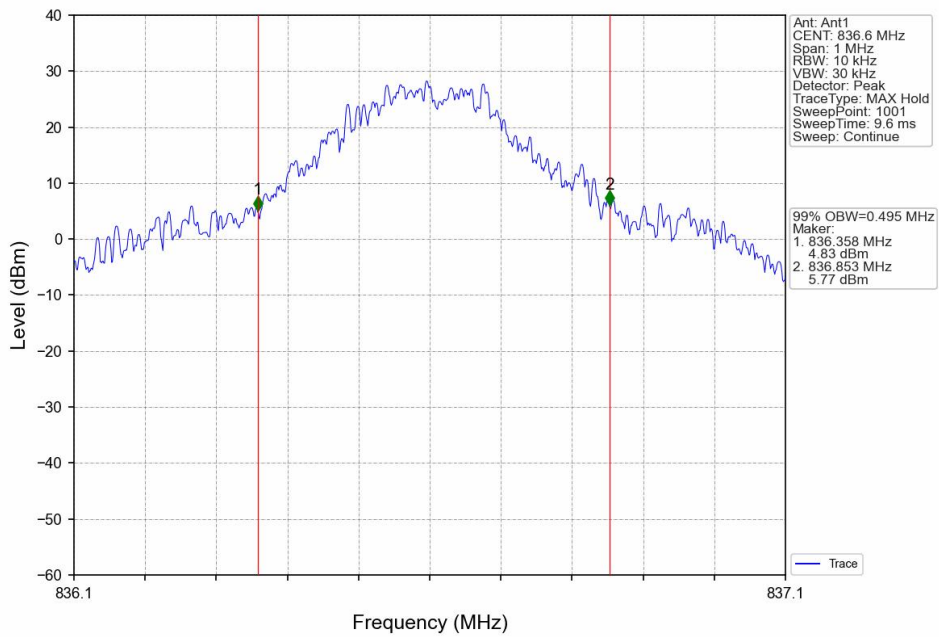
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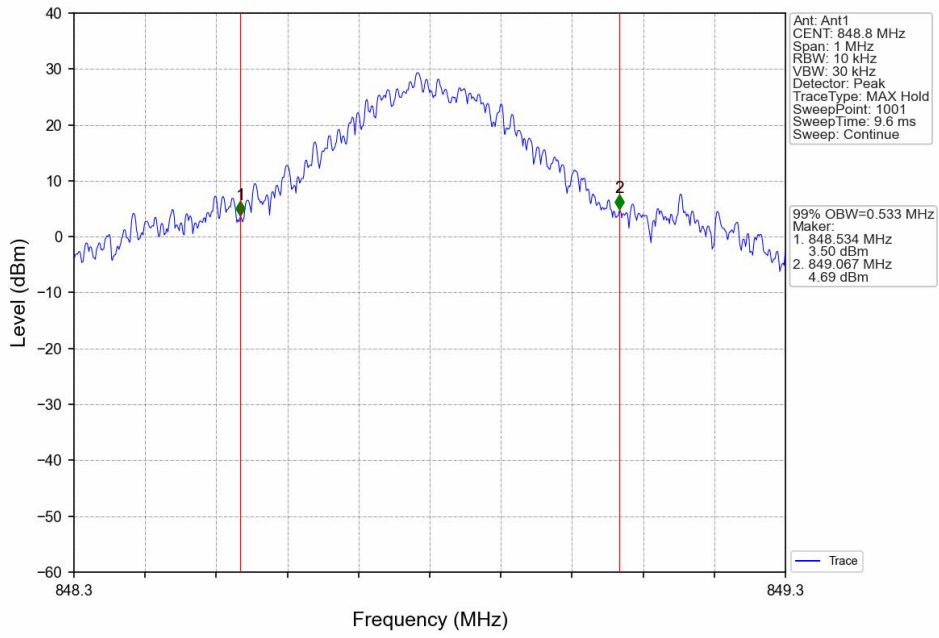
GSM850\_EGPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV



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



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

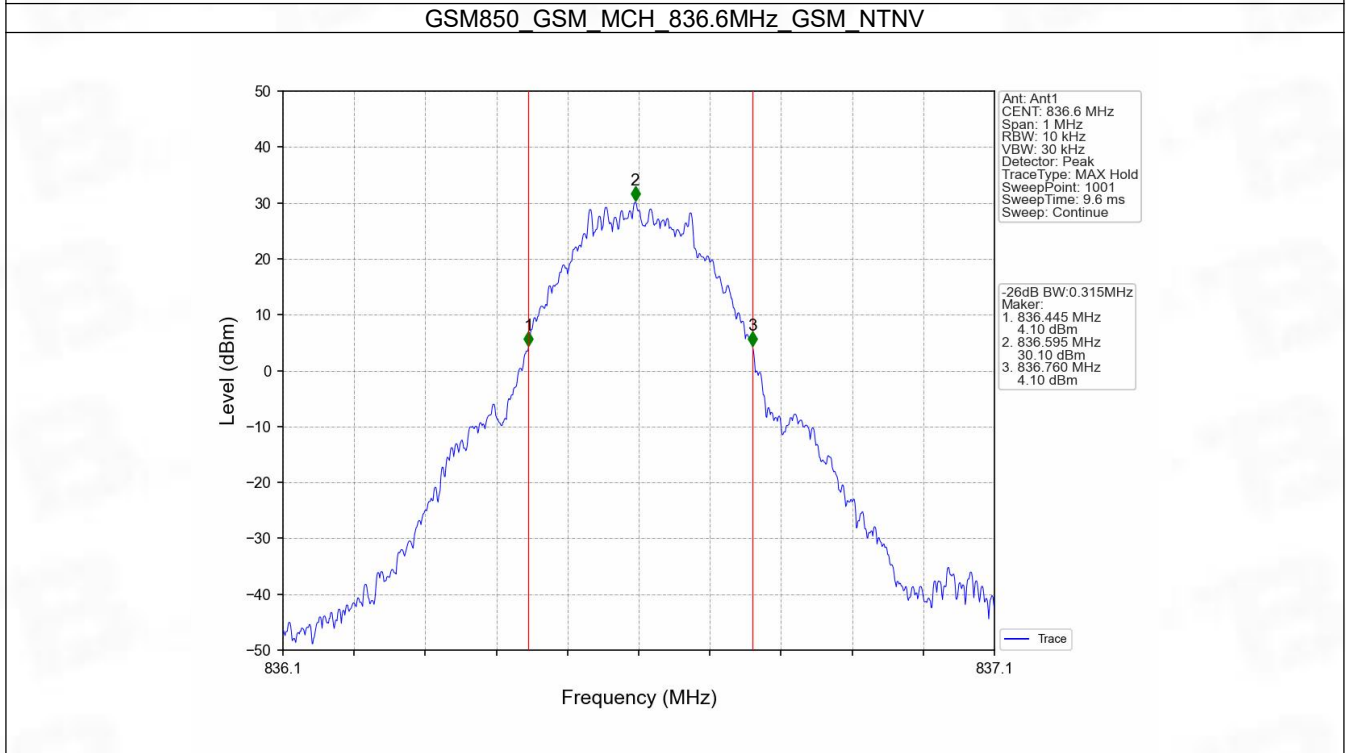
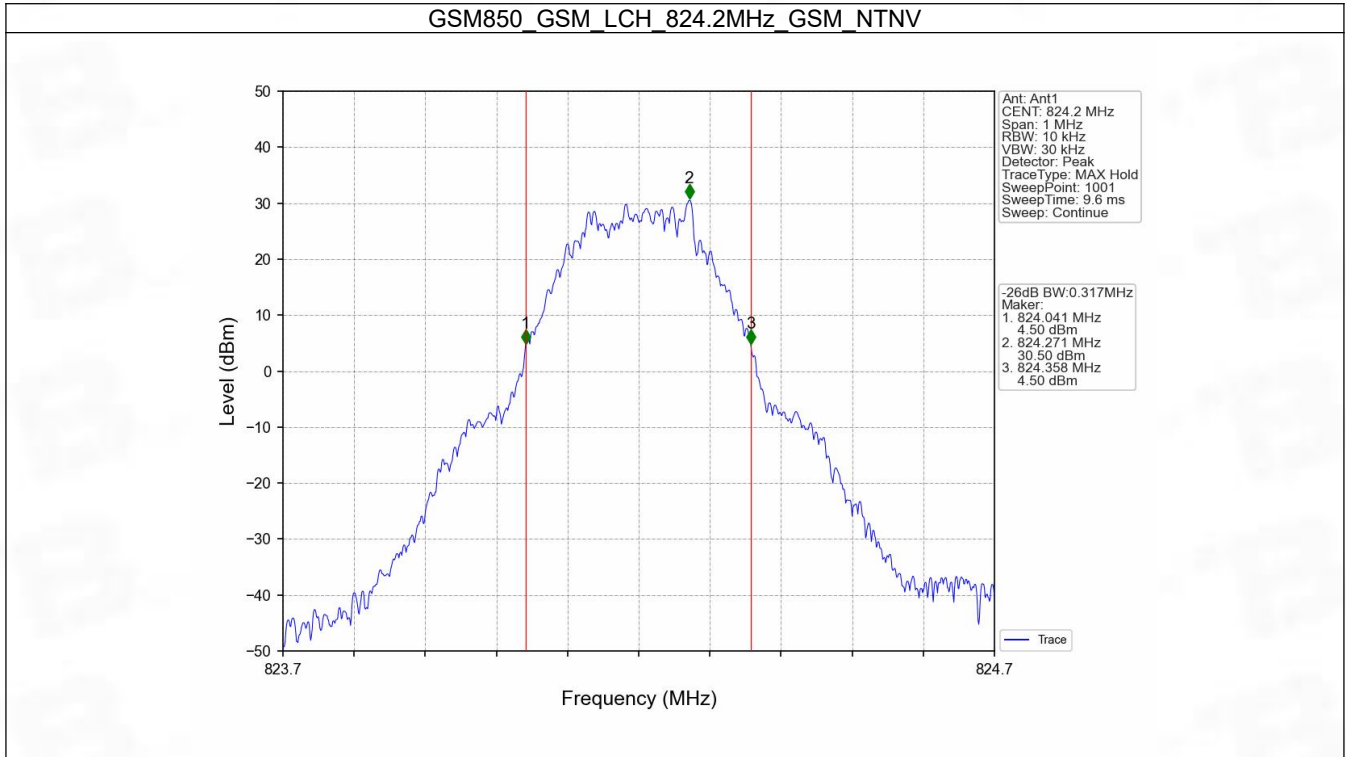


## 4.2 GSM850\_XDB

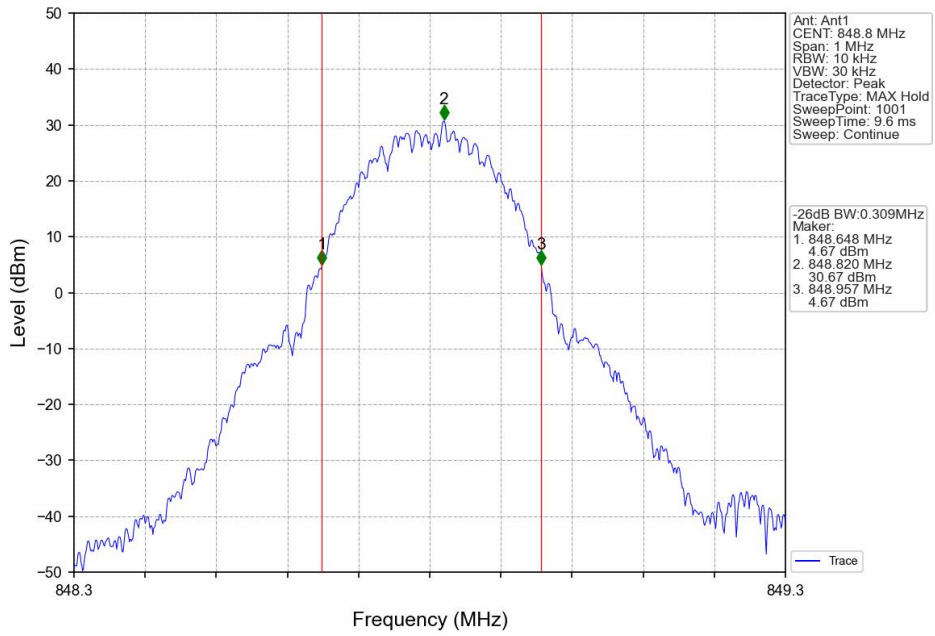
### 4.2.1 Test Result

Band: GSM850					
ENV	Mode		Frequency (MHz)	26dB Bandwidth (MHz)	Verdict
	Network	Subset		Result	
NTNV	GSM	GSM	824.2	0.317	Pass
			836.6	0.315	Pass
			848.8	0.309	Pass
	GPRS	1 TX Slot	824.2	0.312	Pass
			836.6	0.313	Pass
			848.8	0.311	Pass
	EGPRS	1 TX Slot	824.2	0.816	Pass
			836.6	0.855	Pass
			848.8	0.826	Pass

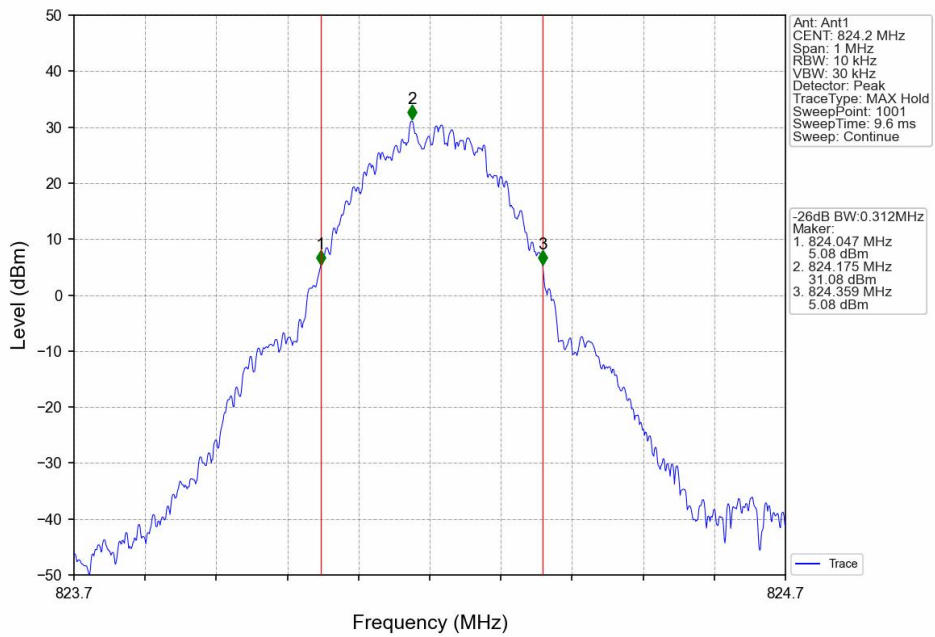
### 4.2.2 Test Graph



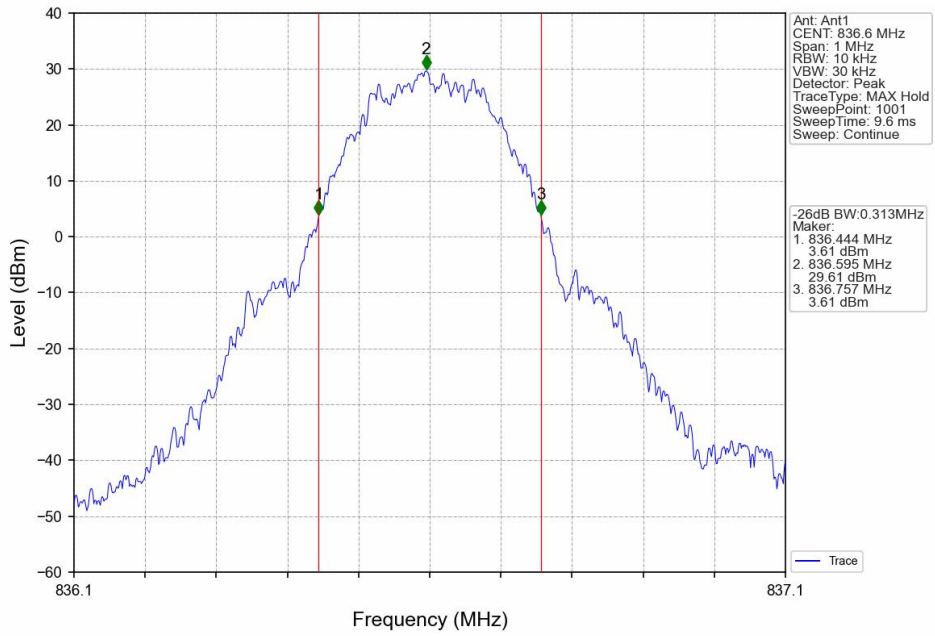
GSM850\_GSM\_HCH\_848.8MHz\_GSM\_NTNV



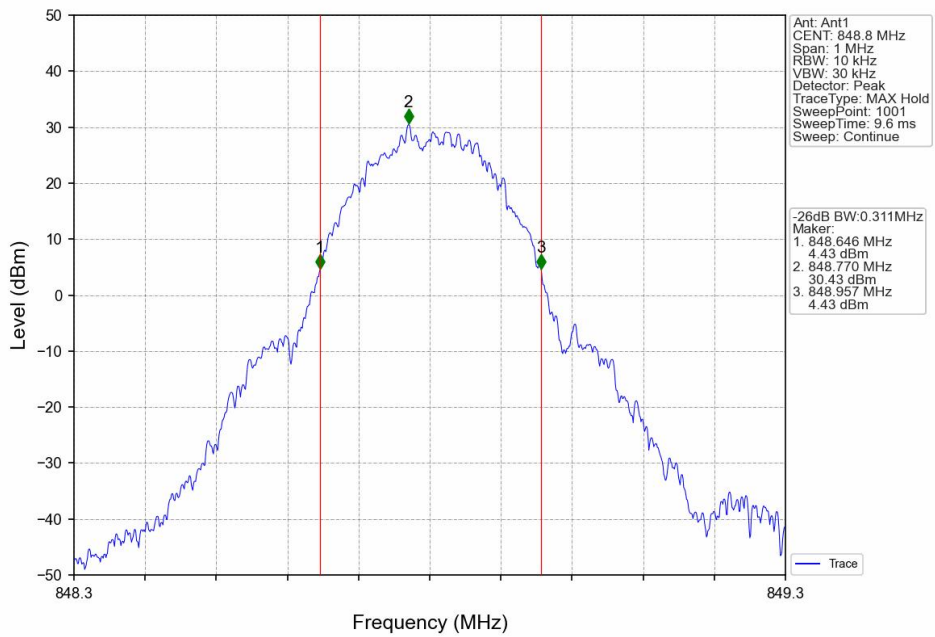
GSM850\_GPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV



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

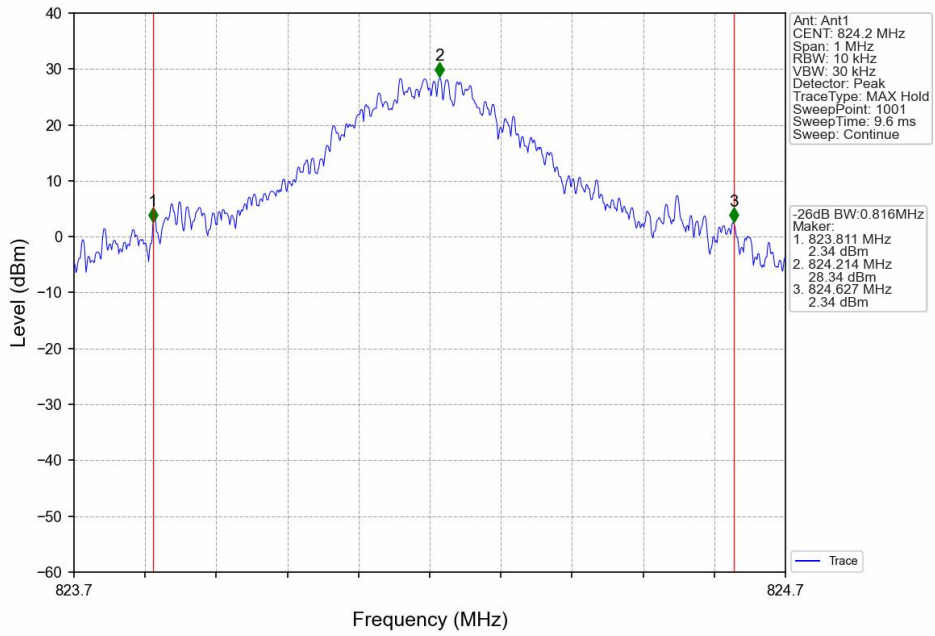


GSM850\_GPRS\_HCH\_848.8MHz\_1 TX Slot\_NTNV

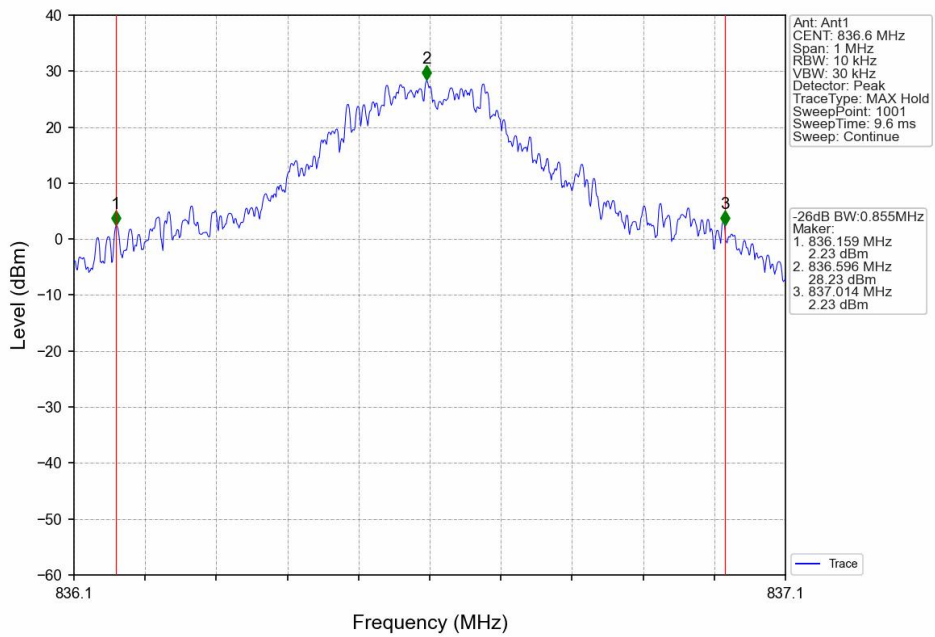




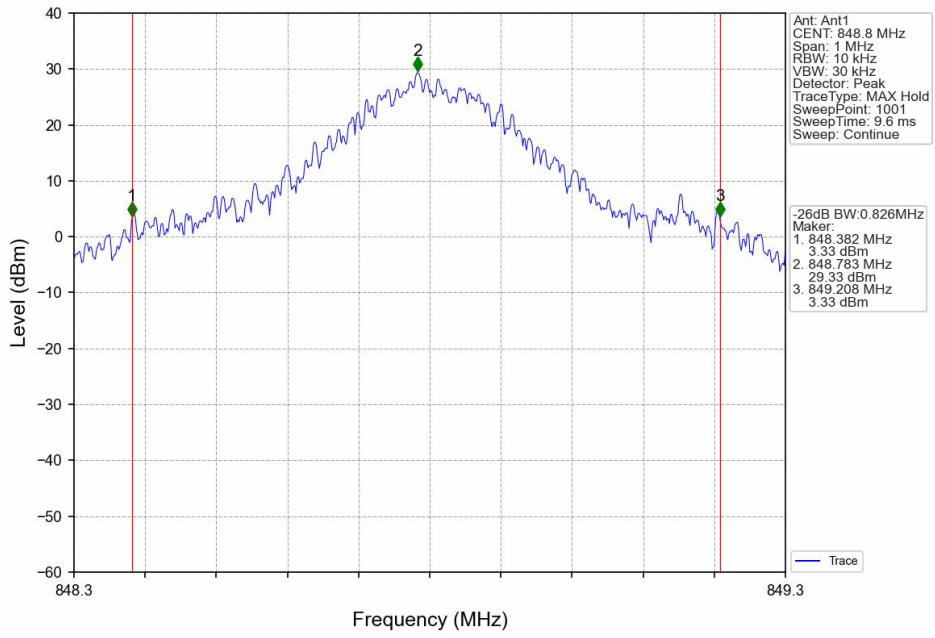
GSM850\_EGPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV



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



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



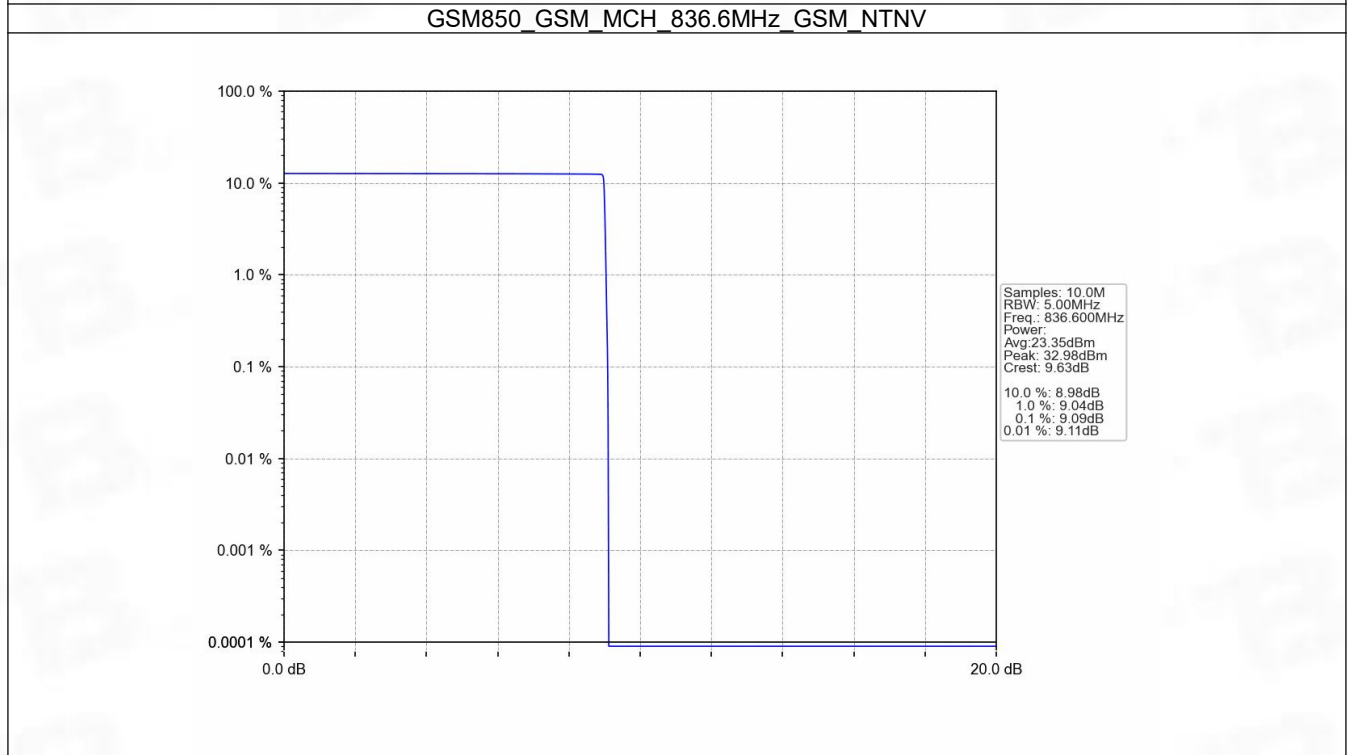
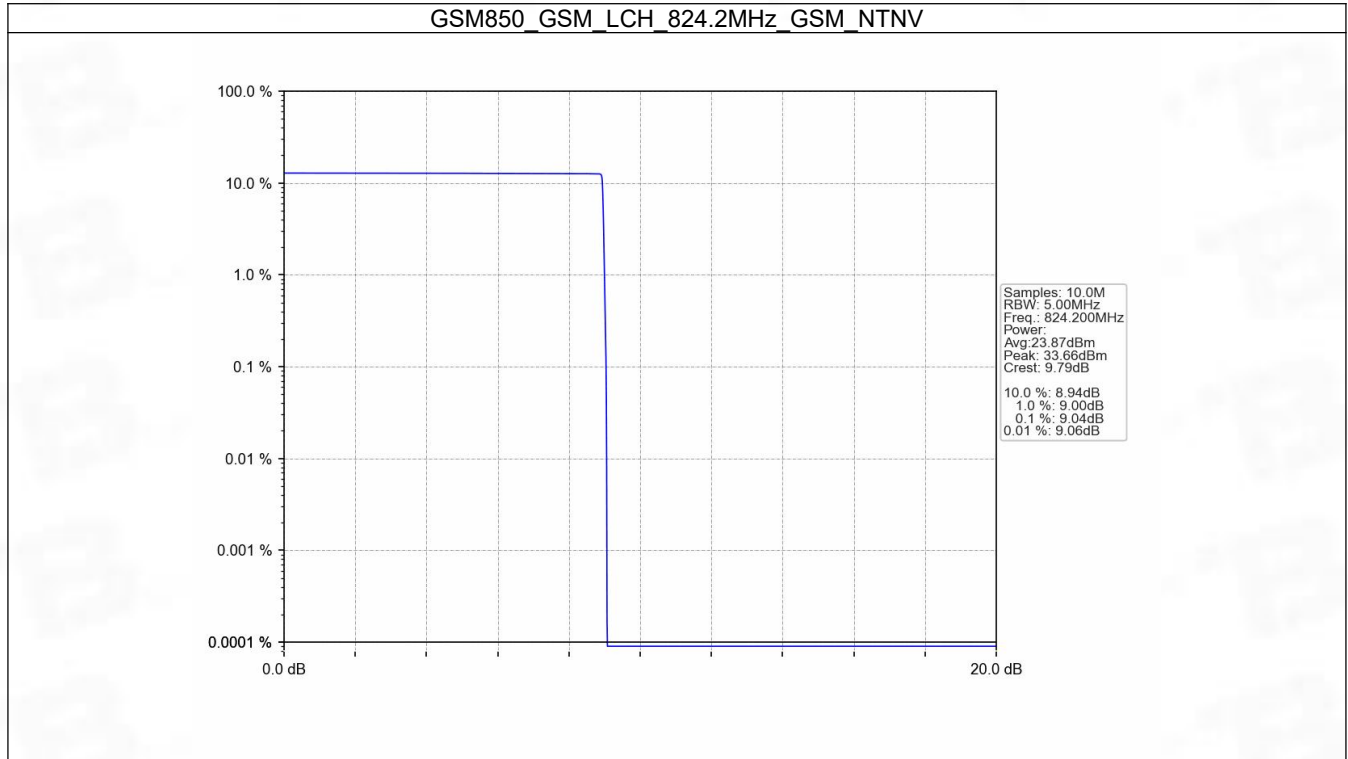
## 5. Peak-Average Ratio

### 5.1 GSM850

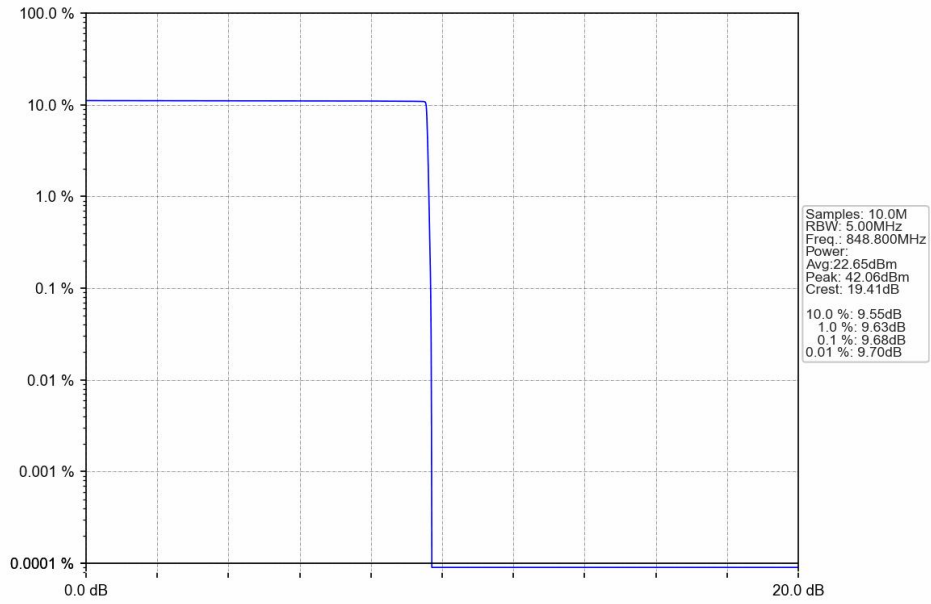
#### 5.1.1 Test Result

Band: GSM850						
ENV	Mode		Frequency (MHz)	Peak-Average Ratio (dB)		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	824.2	9.04	<=13	Pass
			836.6	9.09	<=13	Pass
			848.8	9.68	<=13	Pass
	GPRS	4 TX Slots	824.2	3.67	<=13	Pass
			836.6	3.69	<=13	Pass
			848.8	3.57	<=13	Pass
	EGPRS	4 TX Slots	824.2	10.05	<=13	Pass
			836.6	10.25	<=13	Pass
			848.8	10.39	<=13	Pass

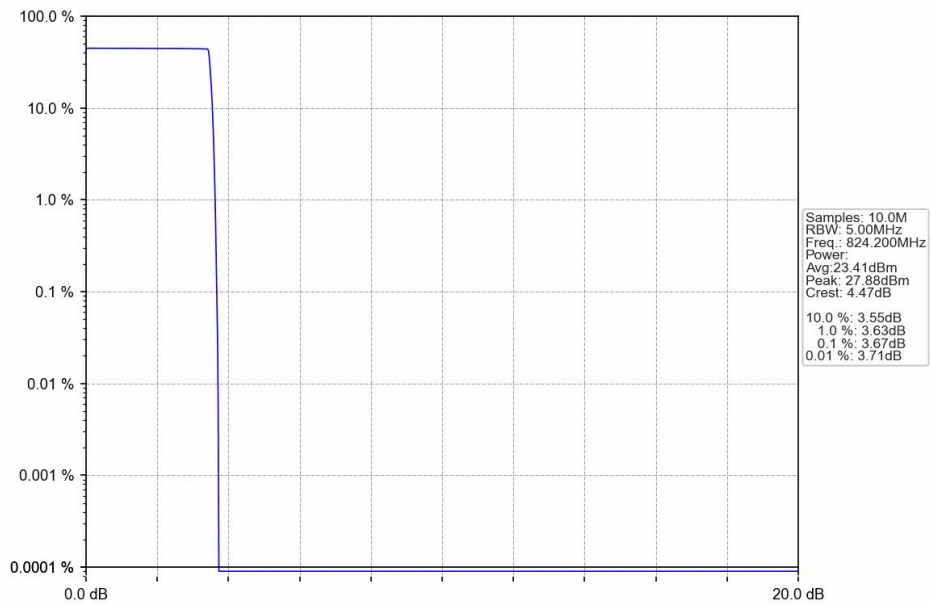
## 5.1.2 Test Graph



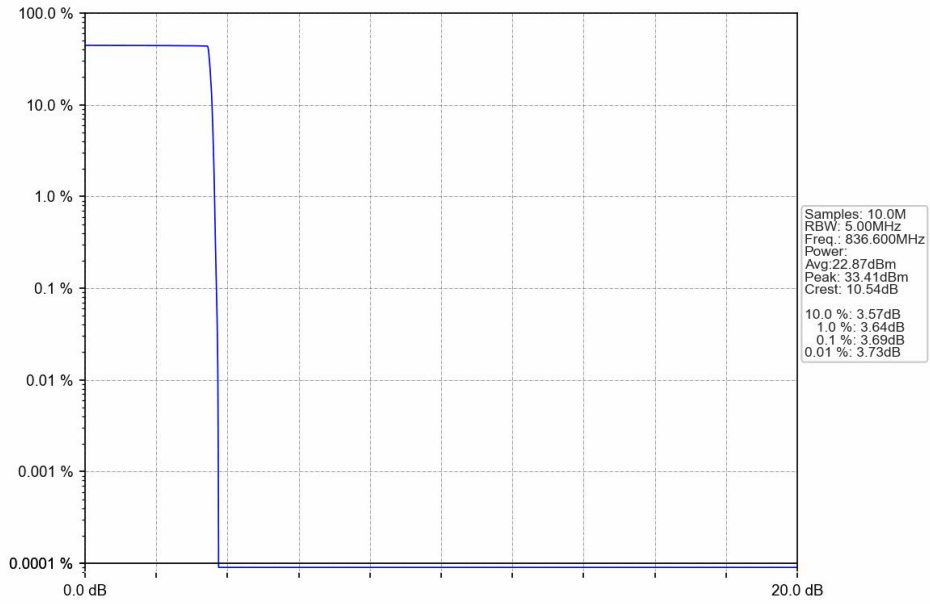
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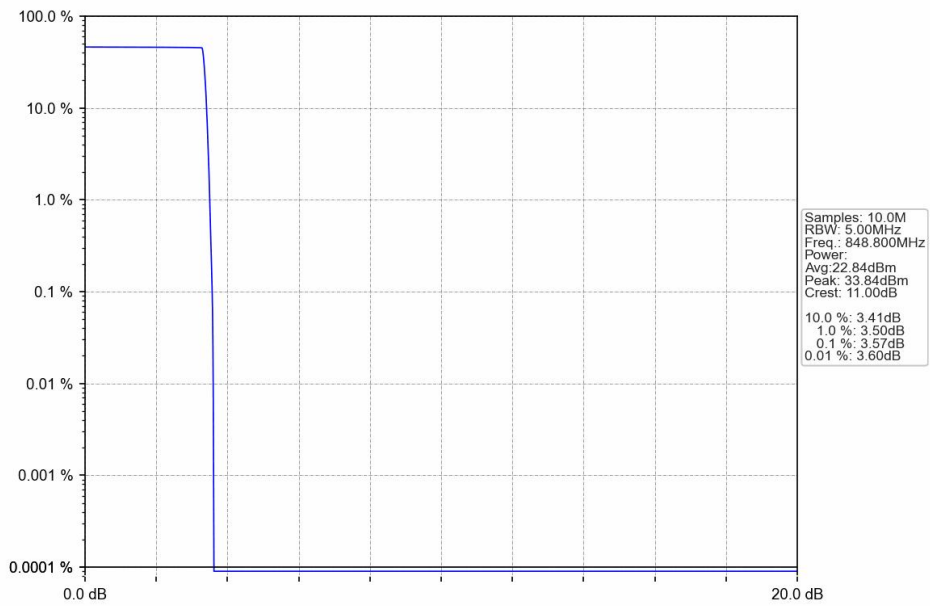
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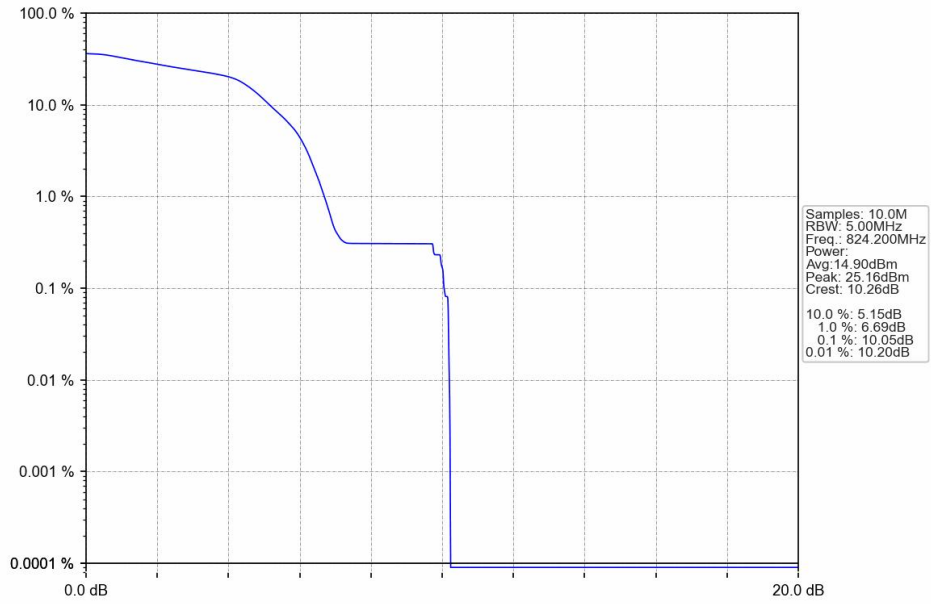
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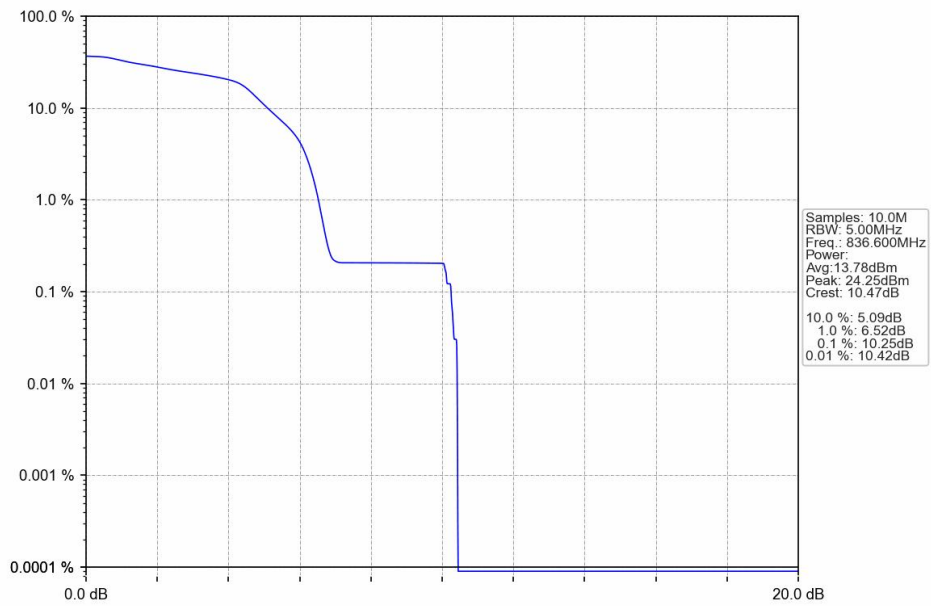
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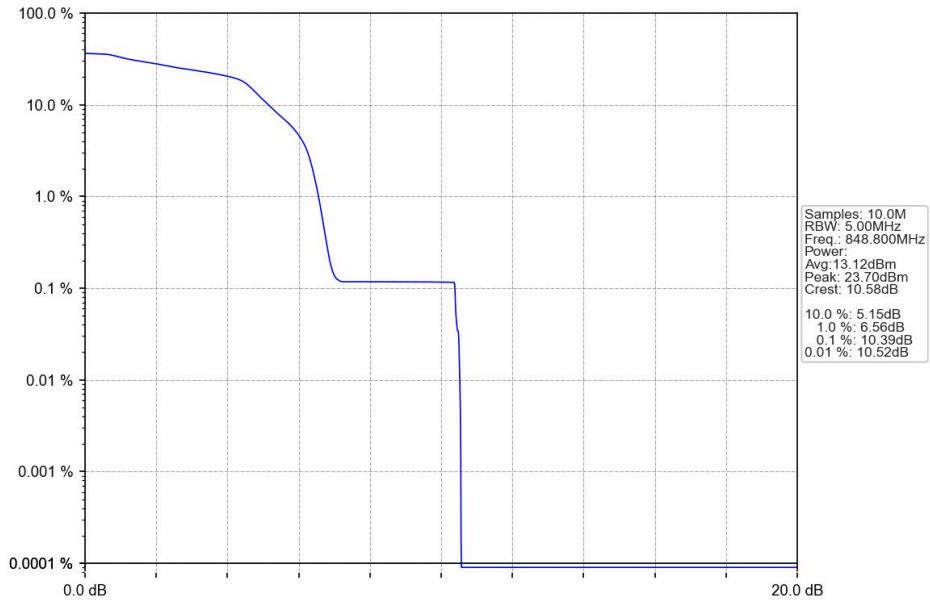
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GSM850\_EGPRS\_MCH\_836.6MHz\_4 TX Slots\_NTNV



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





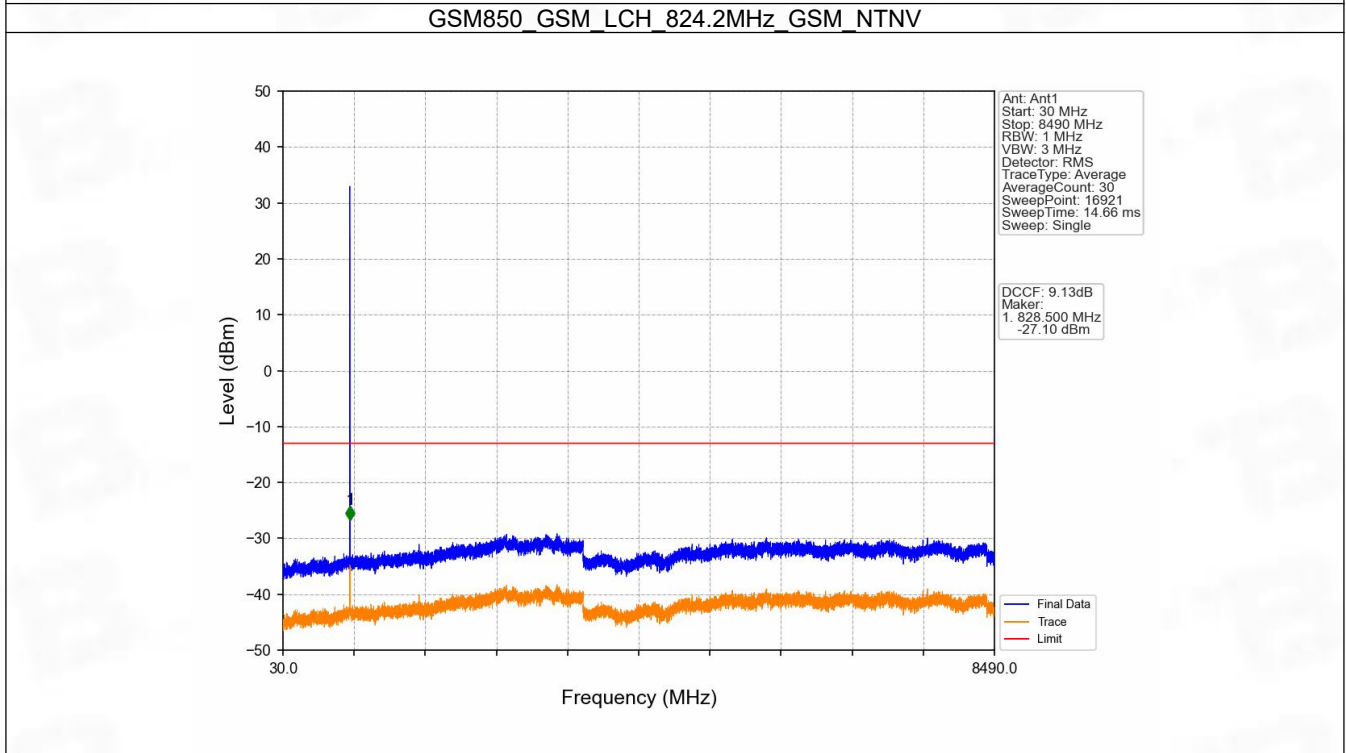
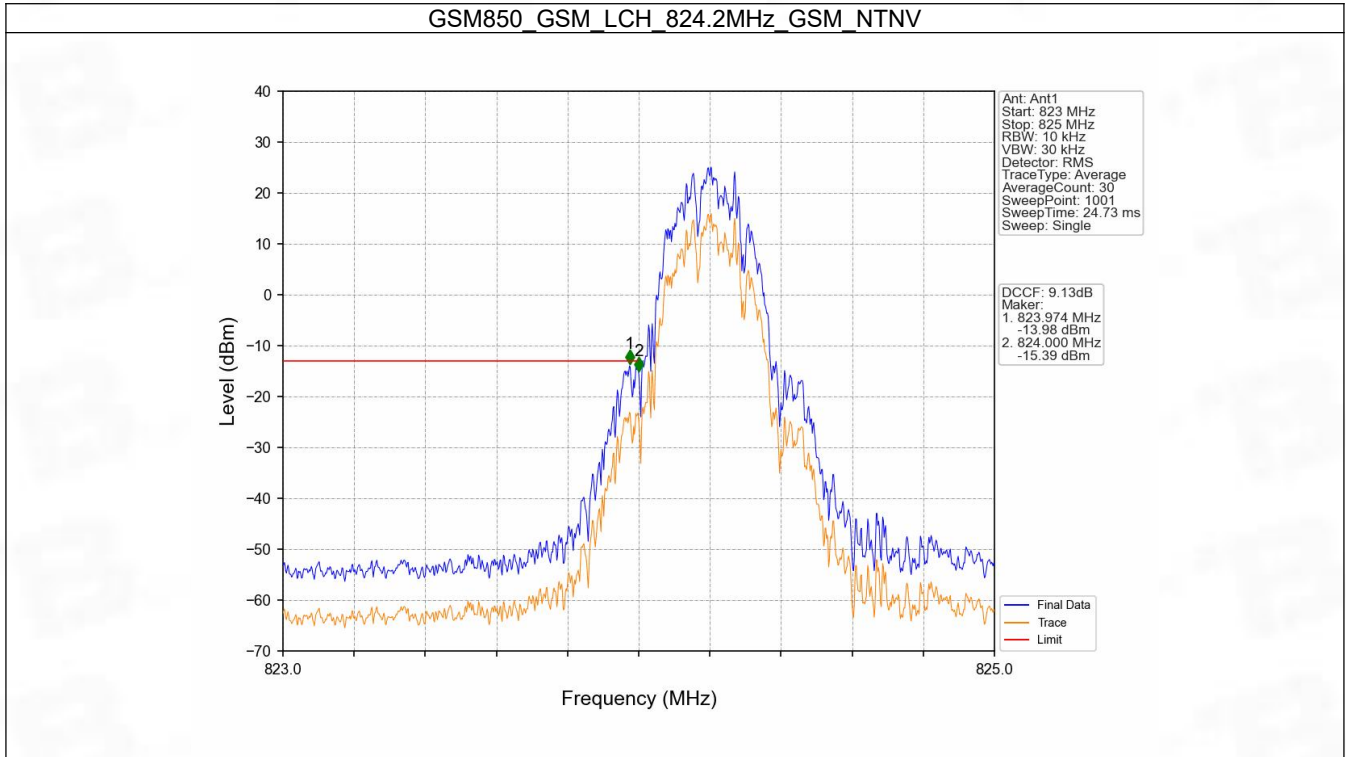
## 6. Spurious Emission

### 6.1 GSM850

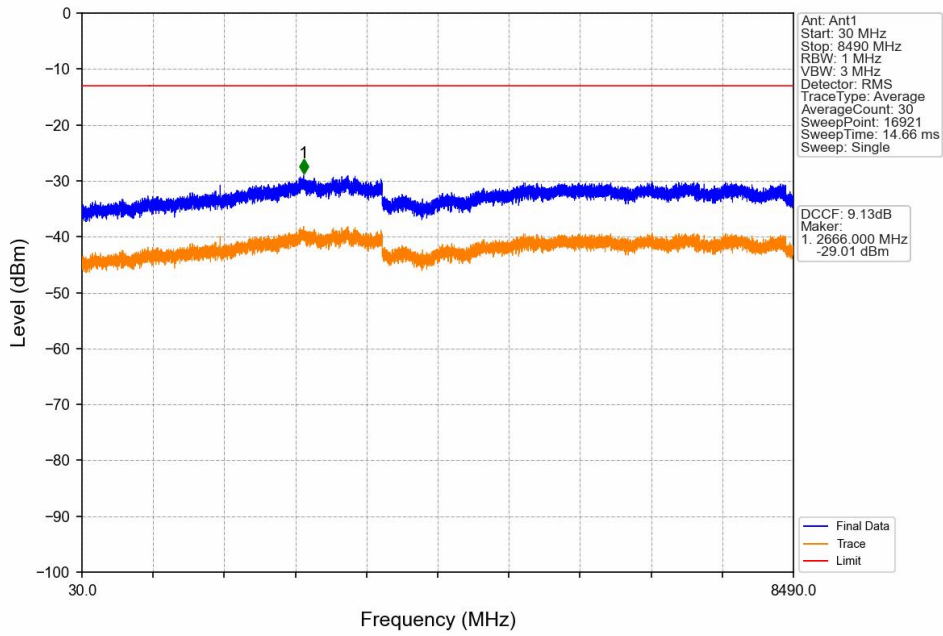
#### 6.1.1 Test Result

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

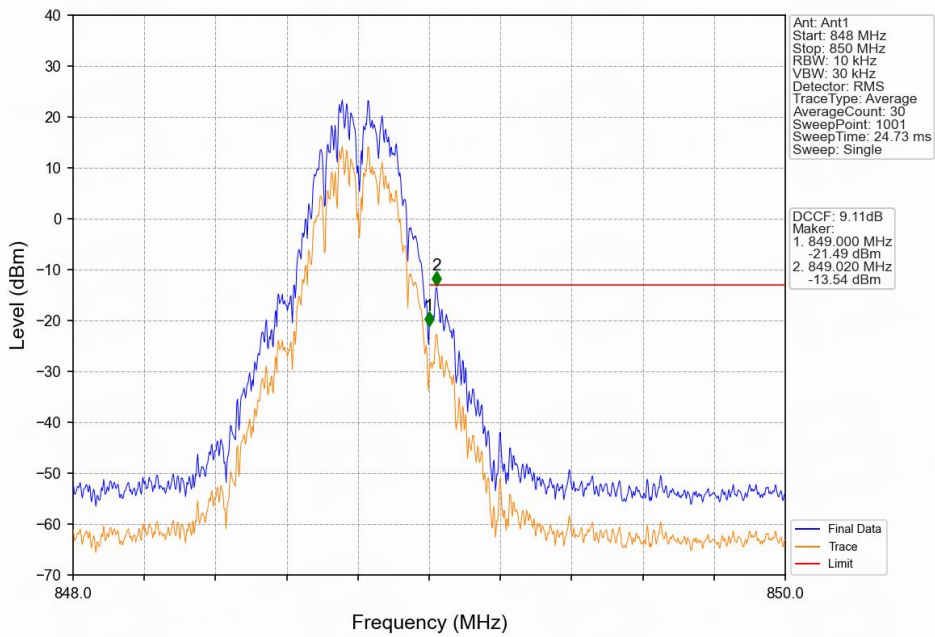
### 6.1.2 Test Graph



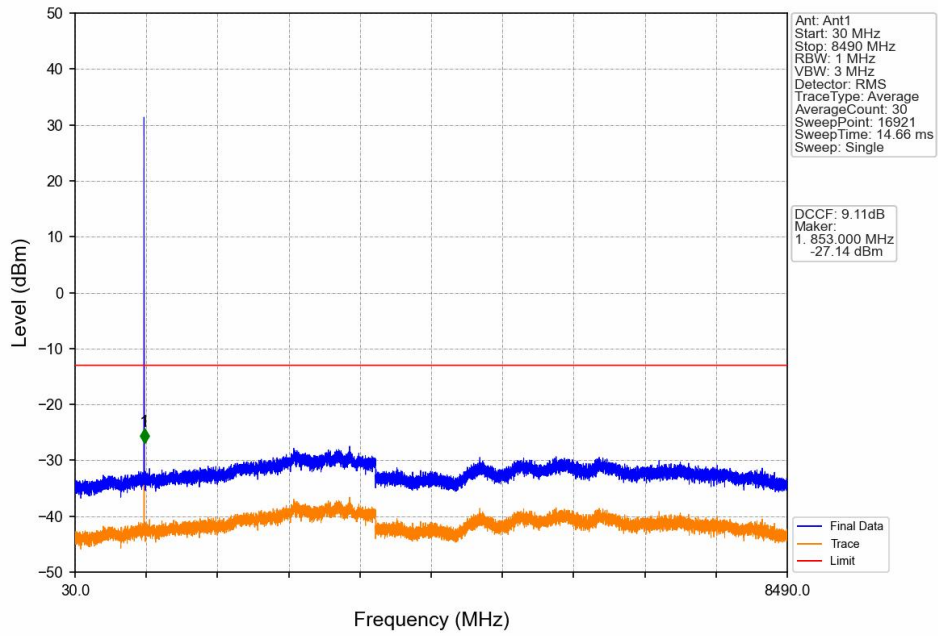
GSM850 GSM\_MCH\_836.6MHz GSM\_NTNV



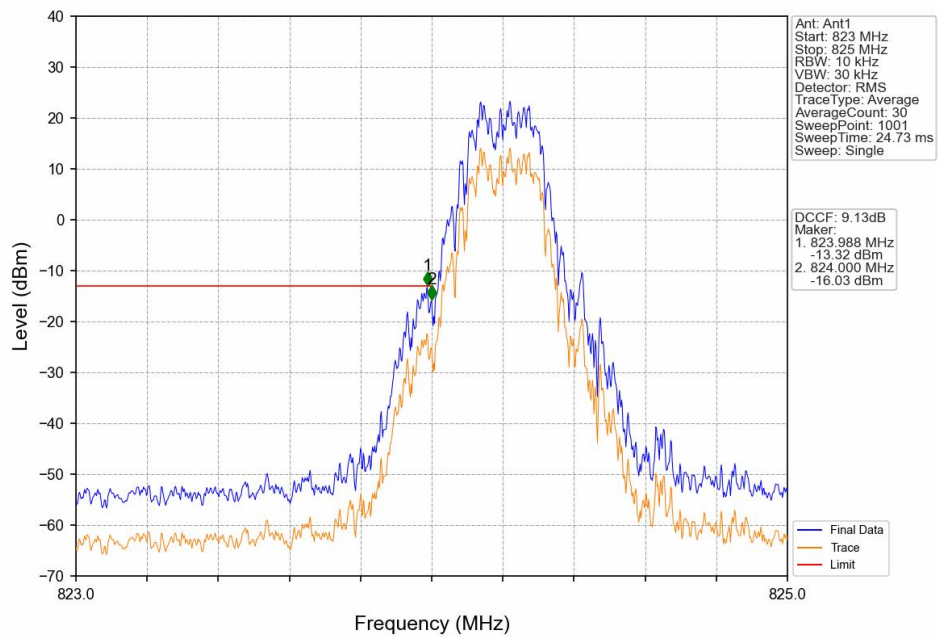
GSM850 GSM\_HCH\_848.8MHz GSM\_NTNV



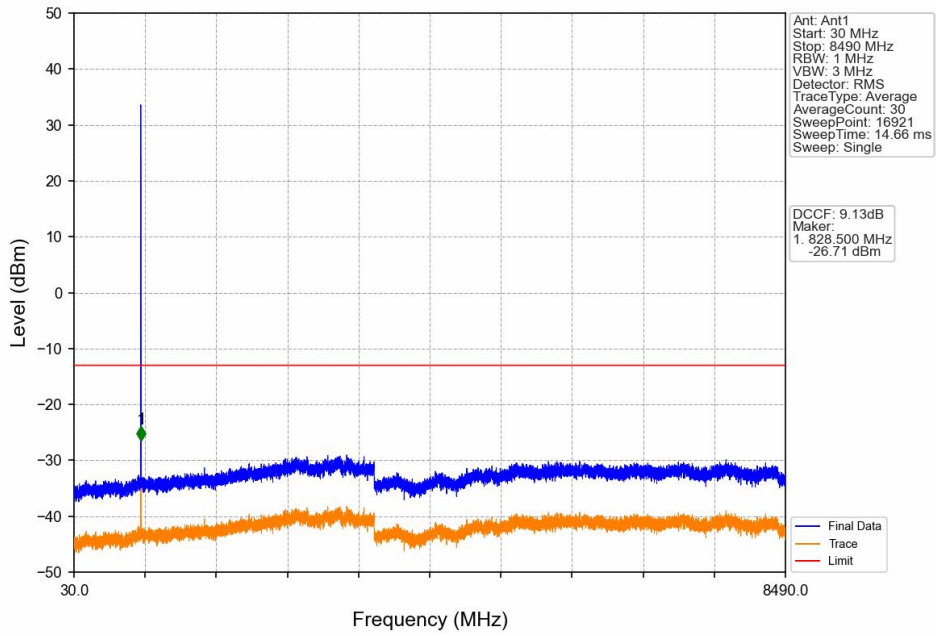
GSM850\_GSM\_HCH\_848.8MHz\_GSM\_NTNV



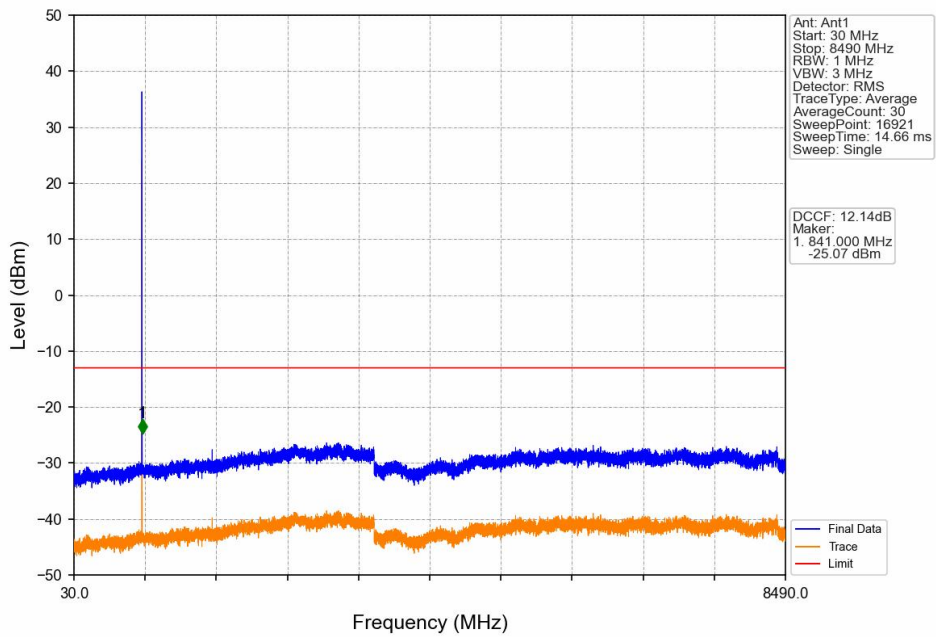
GSM850\_GPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV



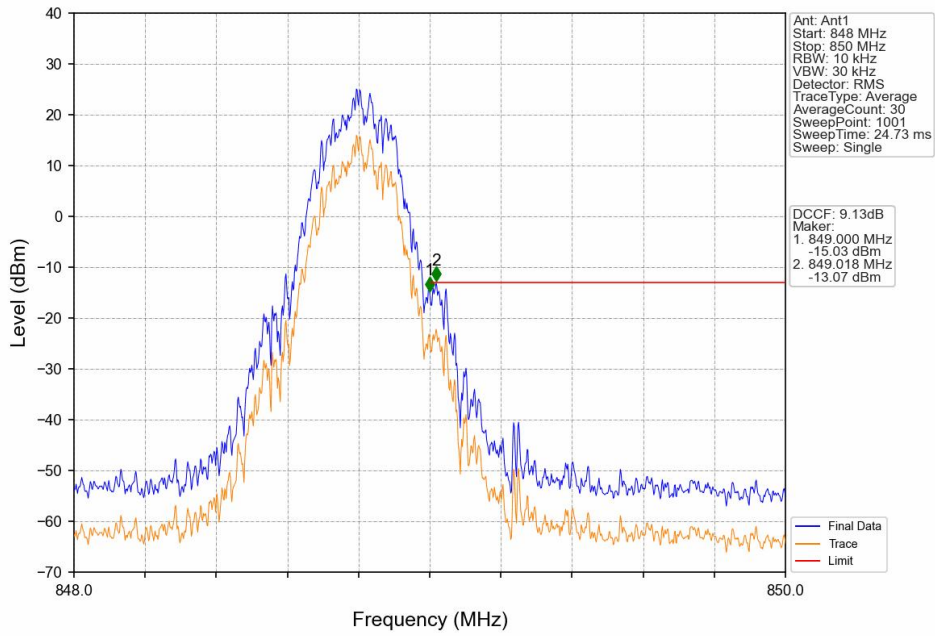
GSM850\_GPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV



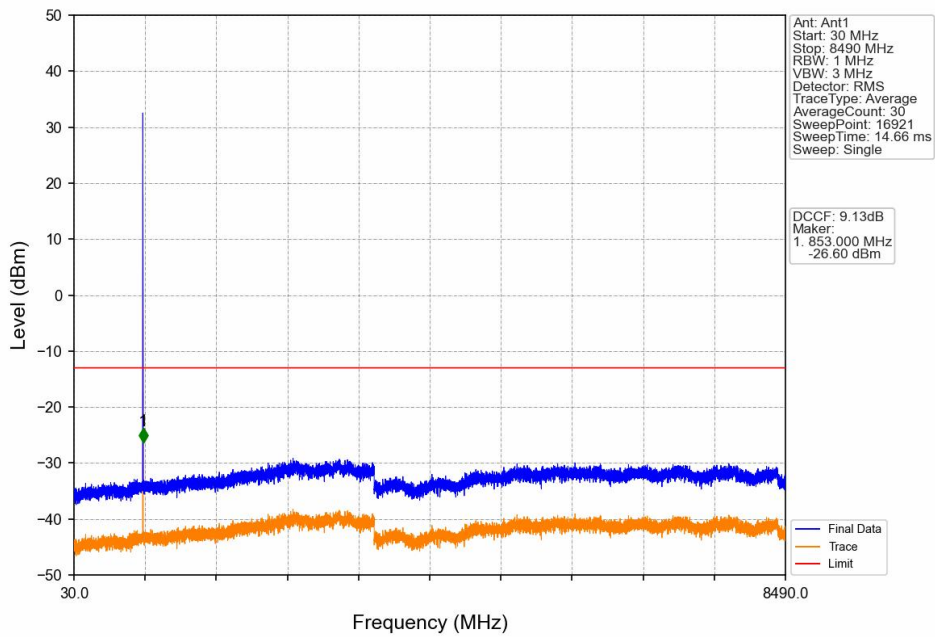
GSM850\_GPRS\_MCH\_836.6MHz\_1 TX Slot\_NTNV



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

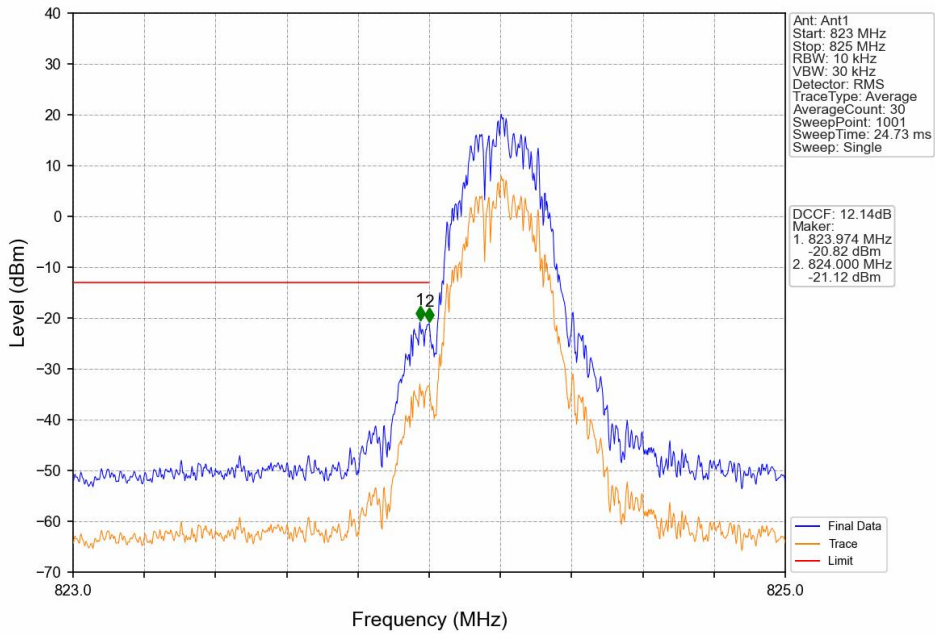


GSM850\_GPRS\_HCH\_848.8MHz\_1 TX Slot\_NTNV

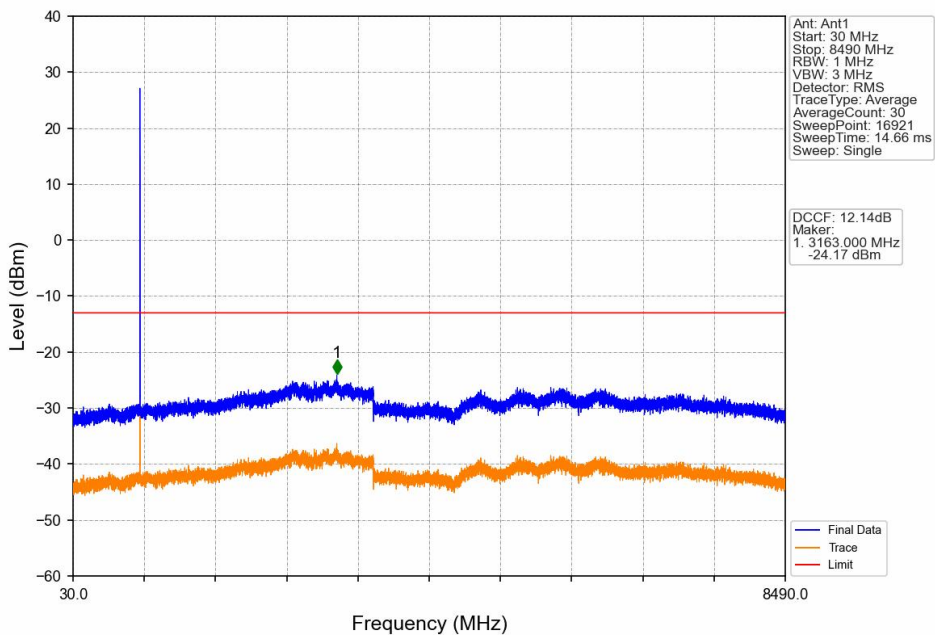




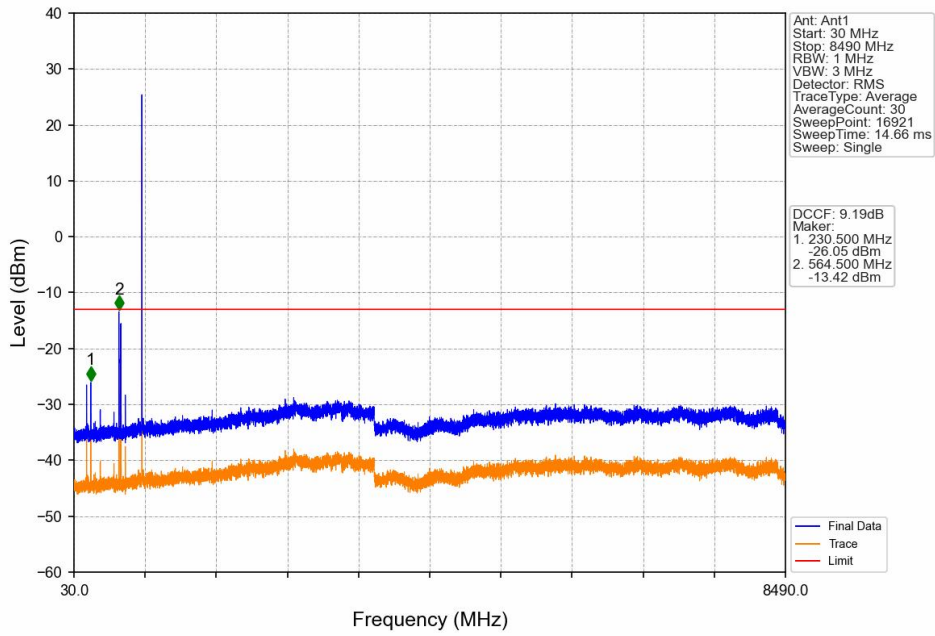
GSM850\_EGPRS\_LCH\_824.2MHz\_1\_TX\_Slot\_NTNV



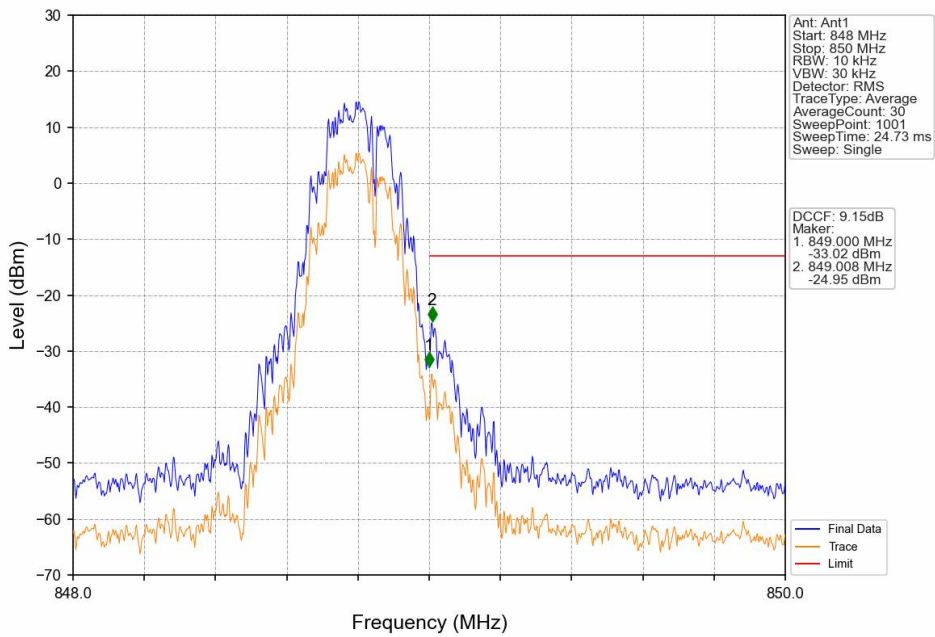
GSM850\_EGPRS\_LCH\_824.2MHz\_1\_TX\_Slot\_NTNV



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

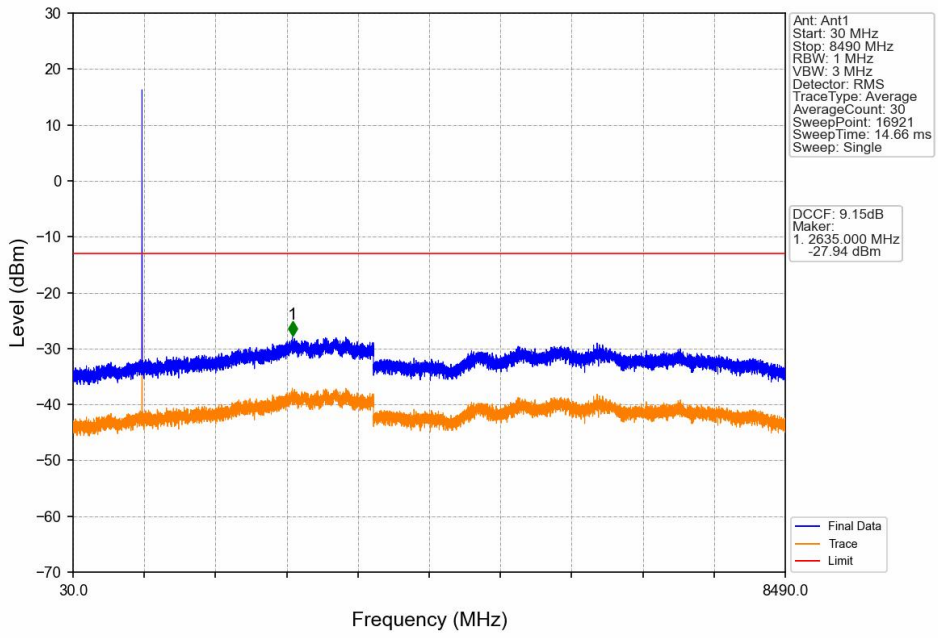


GSM850\_EGPRS\_HCH\_848.8MHz\_1 TX Slot\_NTNV





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



## 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	1.5101	0.0163	ppm	249KGXW	22H	31.79
GSM850	0.2	824.2	848.8	1.2190	0.0107	ppm	533KG7W	22H	30.86

### 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	0.5383	0.0163	ppm	249KGXW	22H	27.31
GSM850	0.2	824.2	848.8	0.4345	0.0107	ppm	533KG7W	22H	26.38