

# 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	32.28	2.66	32.79	<=38.45	Pass
			836.6	32.33	2.66	32.84	<=38.45	Pass
			848.8	32.26	2.66	32.77	<=38.45	Pass
	GPRS	1 TX Slot	824.2	32.29	2.66	32.80	<=38.45	Pass
		2 TX Slots	824.2	29.80	2.66	30.31	<=38.45	Pass
		3 TX Slots	824.2	28.57	2.66	29.08	<=38.45	Pass
		4 TX Slots	824.2	26.44	2.66	26.95	<=38.45	Pass
		1 TX Slot	836.6	32.34	2.66	32.85	<=38.45	Pass
		2 TX Slots	836.6	29.84	2.66	30.35	<=38.45	Pass
		3 TX Slots	836.6	28.68	2.66	29.19	<=38.45	Pass
		4 TX Slots	836.6	26.59	2.66	27.10	<=38.45	Pass
		1 TX Slot	848.8	32.23	2.66	32.74	<=38.45	Pass
		2 TX Slots	848.8	29.42	2.66	29.93	<=38.45	Pass
		3 TX Slots	848.8	28.19	2.66	28.70	<=38.45	Pass
		4 TX Slots	848.8	26.09	2.66	26.60	<=38.45	Pass
	EGPRS	1 TX Slot	824.2	27.02	2.66	27.53	<=38.45	Pass
		2 TX Slots	824.2	23.82	2.66	24.33	<=38.45	Pass
		3 TX Slots	824.2	23.13	2.66	23.64	<=38.45	Pass
		4 TX Slots	824.2	20.79	2.66	21.30	<=38.45	Pass
		1 TX Slot	836.6	26.44	2.66	26.95	<=38.45	Pass
		2 TX Slots	836.6	23.66	2.66	24.17	<=38.45	Pass
		3 TX Slots	836.6	22.08	2.66	22.59	<=38.45	Pass
		4 TX Slots	836.6	20.96	2.66	21.47	<=38.45	Pass
		1 TX Slot	848.8	26.94	2.66	27.45	<=38.45	Pass
		2 TX Slots	848.8	23.74	2.66	24.25	<=38.45	Pass
		3 TX Slots	848.8	22.07	2.66	22.58	<=38.45	Pass
		4 TX Slots	848.8	19.19	2.66	19.70	<=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	10.299	0.0125	-2.5 to 2.5	Pass
			3.85	10.590	0.0128	-2.5 to 2.5	Pass
			4.43	8.523	0.0103	-2.5 to 2.5	Pass
		-30	3.85	12.269	0.0149	-2.5 to 2.5	Pass
		-20	3.85	9.621	0.0117	-2.5 to 2.5	Pass
		-10	3.85	9.363	0.0114	-2.5 to 2.5	Pass

		0	3.85	12.333	0.0150	-2.5 to 2.5	Pass	
		10	3.85	3.745	0.0045	-2.5 to 2.5	Pass	
		30	3.85	8.265	0.0100	-2.5 to 2.5	Pass	
		40	3.85	12.172	0.0148	-2.5 to 2.5	Pass	
		50	3.85	14.399	0.0175	-2.5 to 2.5	Pass	
	836.6	20	3.27	7.103	0.0085	-2.5 to 2.5	Pass	
			3.85	3.293	0.0039	-2.5 to 2.5	Pass	
			4.43	6.748	0.0081	-2.5 to 2.5	Pass	
		-30	3.85	8.330	0.0100	-2.5 to 2.5	Pass	
		-20	3.85	10.461	0.0125	-2.5 to 2.5	Pass	
		-10	3.85	8.330	0.0100	-2.5 to 2.5	Pass	
		0	3.85	9.944	0.0119	-2.5 to 2.5	Pass	
		10	3.85	9.234	0.0110	-2.5 to 2.5	Pass	
		30	3.85	8.104	0.0097	-2.5 to 2.5	Pass	
		40	3.85	7.781	0.0093	-2.5 to 2.5	Pass	
		50	3.85	10.557	0.0126	-2.5 to 2.5	Pass	
		848.8	20	3.27	12.882	0.0152	-2.5 to 2.5	Pass
				3.85	9.557	0.0113	-2.5 to 2.5	Pass
	4.43			10.267	0.0121	-2.5 to 2.5	Pass	
	-30		3.85	10.557	0.0124	-2.5 to 2.5	Pass	
	-20		3.85	6.974	0.0082	-2.5 to 2.5	Pass	
	-10		3.85	13.076	0.0154	-2.5 to 2.5	Pass	
	0		3.85	8.427	0.0099	-2.5 to 2.5	Pass	
	10		3.85	11.687	0.0138	-2.5 to 2.5	Pass	
	30		3.85	9.105	0.0107	-2.5 to 2.5	Pass	
	40		3.85	10.687	0.0126	-2.5 to 2.5	Pass	
	50		3.85	9.718	0.0114	-2.5 to 2.5	Pass	
	GPRS		824.2	20	3.27	3.132	0.0038	-2.5 to 2.5
		3.85			10.654	0.0129	-2.5 to 2.5	Pass
		4.43			9.524	0.0116	-2.5 to 2.5	Pass
		-30		3.85	10.105	0.0123	-2.5 to 2.5	Pass
		-20		3.85	7.975	0.0097	-2.5 to 2.5	Pass
		-10		3.85	5.037	0.0061	-2.5 to 2.5	Pass
0		3.85		9.686	0.0118	-2.5 to 2.5	Pass	
10		3.85		10.493	0.0127	-2.5 to 2.5	Pass	
30		3.85		9.169	0.0111	-2.5 to 2.5	Pass	
40		3.85		5.037	0.0061	-2.5 to 2.5	Pass	
50		3.85		8.975	0.0109	-2.5 to 2.5	Pass	
836.6		20		3.27	7.361	0.0088	-2.5 to 2.5	Pass
				3.85	11.332	0.0135	-2.5 to 2.5	Pass
			4.43	10.783	0.0129	-2.5 to 2.5	Pass	
		-30	3.85	4.843	0.0058	-2.5 to 2.5	Pass	
		-20	3.85	10.945	0.0131	-2.5 to 2.5	Pass	
		-10	3.85	7.555	0.0090	-2.5 to 2.5	Pass	
		0	3.85	8.168	0.0098	-2.5 to 2.5	Pass	
		10	3.85	6.554	0.0078	-2.5 to 2.5	Pass	
		30	3.85	5.198	0.0062	-2.5 to 2.5	Pass	
		40	3.85	4.843	0.0058	-2.5 to 2.5	Pass	
		50	3.85	7.264	0.0087	-2.5 to 2.5	Pass	
		848.8	20	3.27	8.394	0.0099	-2.5 to 2.5	Pass
3.85				2.680	0.0032	-2.5 to 2.5	Pass	
4.43				3.713	0.0044	-2.5 to 2.5	Pass	
-30			3.85	6.263	0.0074	-2.5 to 2.5	Pass	
-20			3.85	5.327	0.0063	-2.5 to 2.5	Pass	
-10			3.85	5.650	0.0067	-2.5 to 2.5	Pass	
0			3.85	11.365	0.0134	-2.5 to 2.5	Pass	
10			3.85	9.912	0.0117	-2.5 to 2.5	Pass	

		30	3.85	6.715	0.0079	-2.5 to 2.5	Pass
		40	3.85	8.523	0.0100	-2.5 to 2.5	Pass
		50	3.85	7.458	0.0088	-2.5 to 2.5	Pass
EGPRS	824.2	20	3.27	9.783	0.0119	-2.5 to 2.5	Pass
			3.85	8.620	0.0105	-2.5 to 2.5	Pass
			4.43	9.331	0.0113	-2.5 to 2.5	Pass
		-30	3.85	12.462	0.0151	-2.5 to 2.5	Pass
		-20	3.85	12.624	0.0153	-2.5 to 2.5	Pass
		-10	3.85	12.914	0.0157	-2.5 to 2.5	Pass
		0	3.85	8.523	0.0103	-2.5 to 2.5	Pass
		10	3.85	7.232	0.0088	-2.5 to 2.5	Pass
		30	3.85	11.300	0.0137	-2.5 to 2.5	Pass
		40	3.85	10.202	0.0124	-2.5 to 2.5	Pass
		50	3.85	10.654	0.0129	-2.5 to 2.5	Pass
		836.6	20	3.27	8.911	0.0107	-2.5 to 2.5
	3.85			9.589	0.0115	-2.5 to 2.5	Pass
	4.43			7.716	0.0092	-2.5 to 2.5	Pass
	-30		3.85	7.006	0.0084	-2.5 to 2.5	Pass
	-20		3.85	9.783	0.0117	-2.5 to 2.5	Pass
	-10		3.85	4.165	0.0050	-2.5 to 2.5	Pass
	0		3.85	7.684	0.0092	-2.5 to 2.5	Pass
	10		3.85	4.003	0.0048	-2.5 to 2.5	Pass
	30		3.85	7.975	0.0095	-2.5 to 2.5	Pass
	40		3.85	5.682	0.0068	-2.5 to 2.5	Pass
	50		3.85	8.071	0.0096	-2.5 to 2.5	Pass
	848.8		20	3.27	6.199	0.0073	-2.5 to 2.5
		3.85		7.587	0.0089	-2.5 to 2.5	Pass
		4.43		8.814	0.0104	-2.5 to 2.5	Pass
		-30	3.85	7.006	0.0083	-2.5 to 2.5	Pass
		-20	3.85	4.552	0.0054	-2.5 to 2.5	Pass
		-10	3.85	10.461	0.0123	-2.5 to 2.5	Pass
		0	3.85	3.939	0.0046	-2.5 to 2.5	Pass
		10	3.85	4.100	0.0048	-2.5 to 2.5	Pass
30		3.85	5.682	0.0067	-2.5 to 2.5	Pass	
40		3.85	2.938	0.0035	-2.5 to 2.5	Pass	
50		3.85	5.618	0.0066	-2.5 to 2.5	Pass	

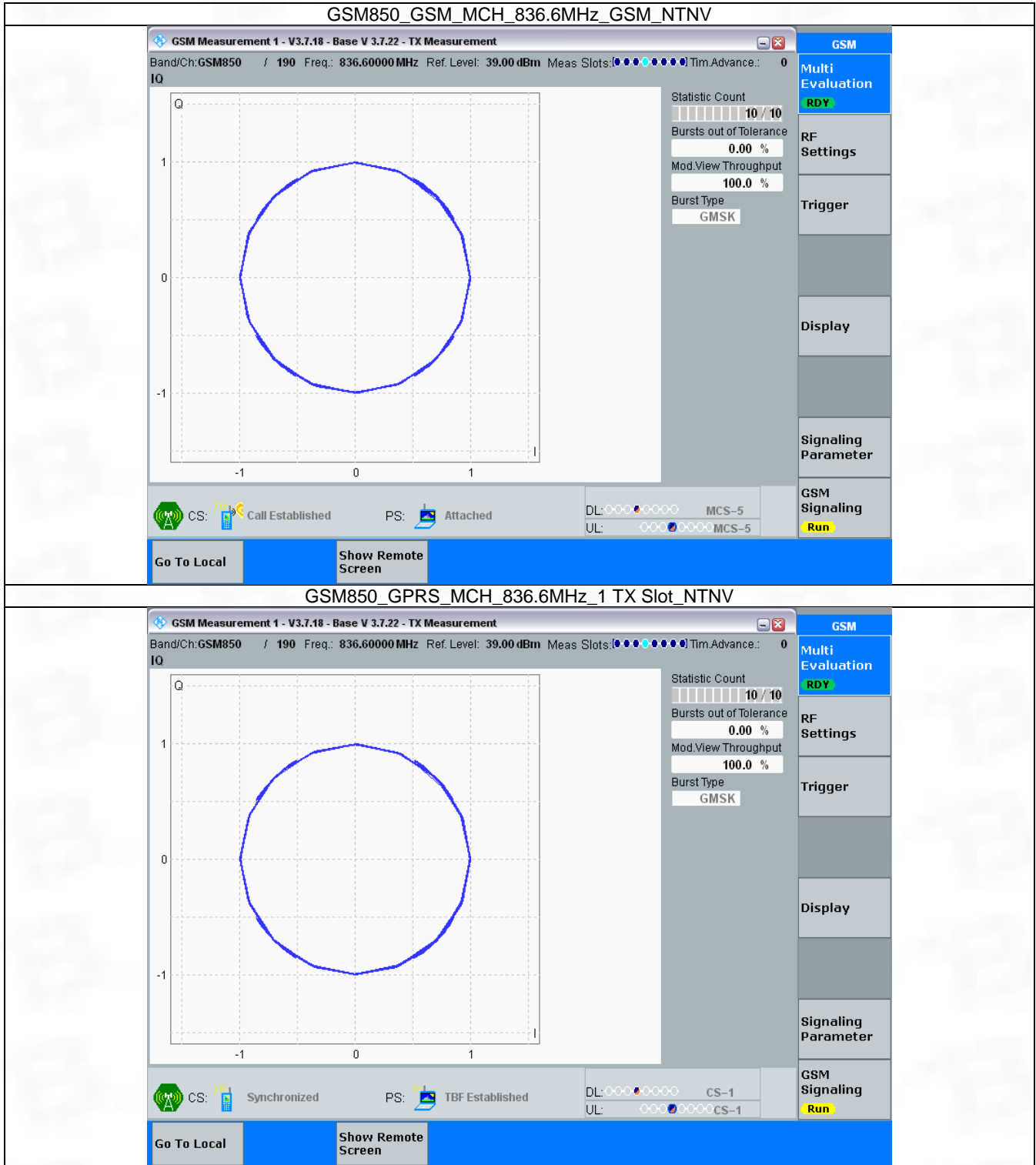
### 3. Modulation Characteristics

#### 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: [●●●●●●●●] 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: MCS-5 UL: MCS-5

Go To Local Show Remote Screen

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

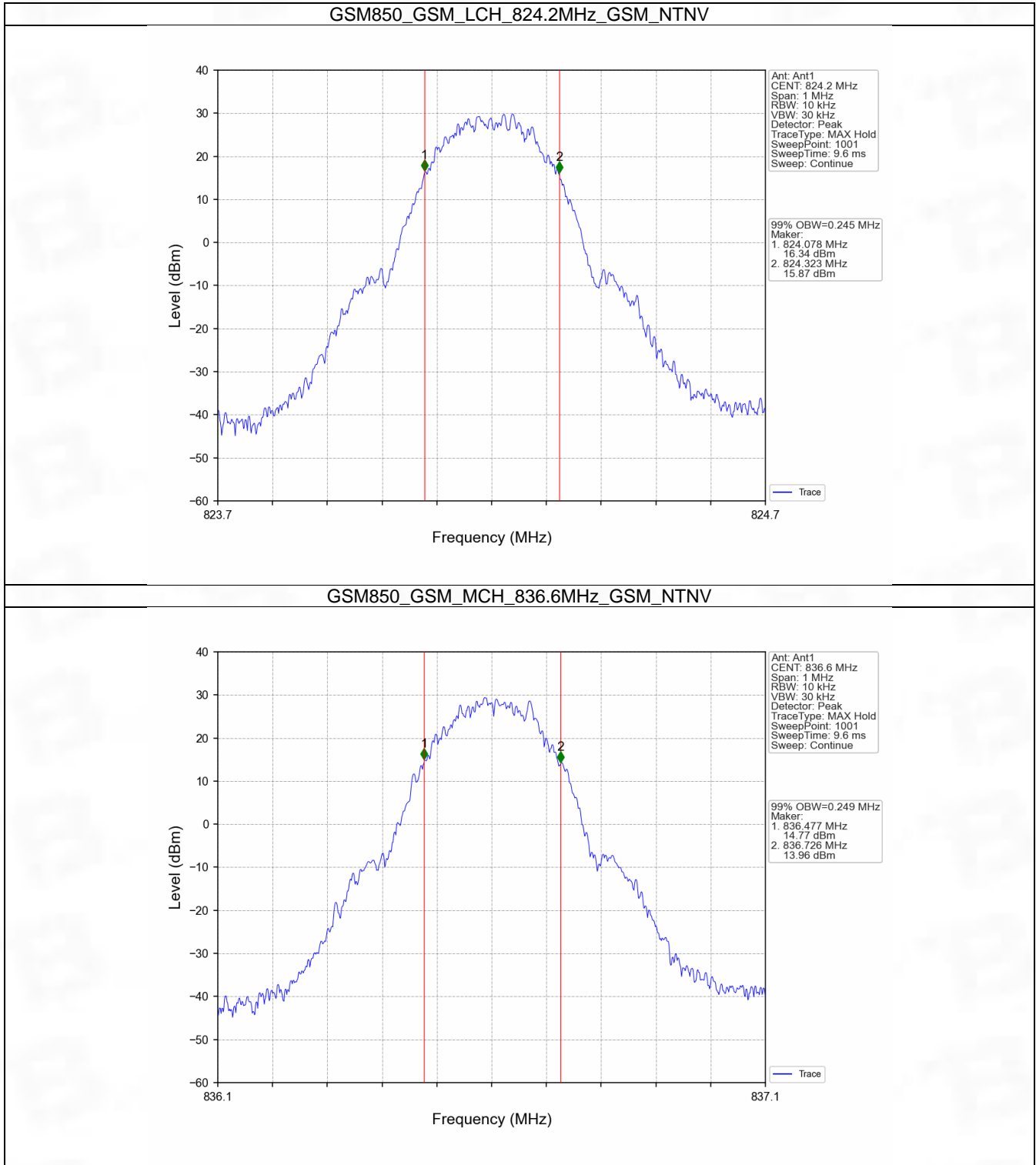
## 4. 99% & 26dB Bandwidth

### 4.1 GSM850\_OBW

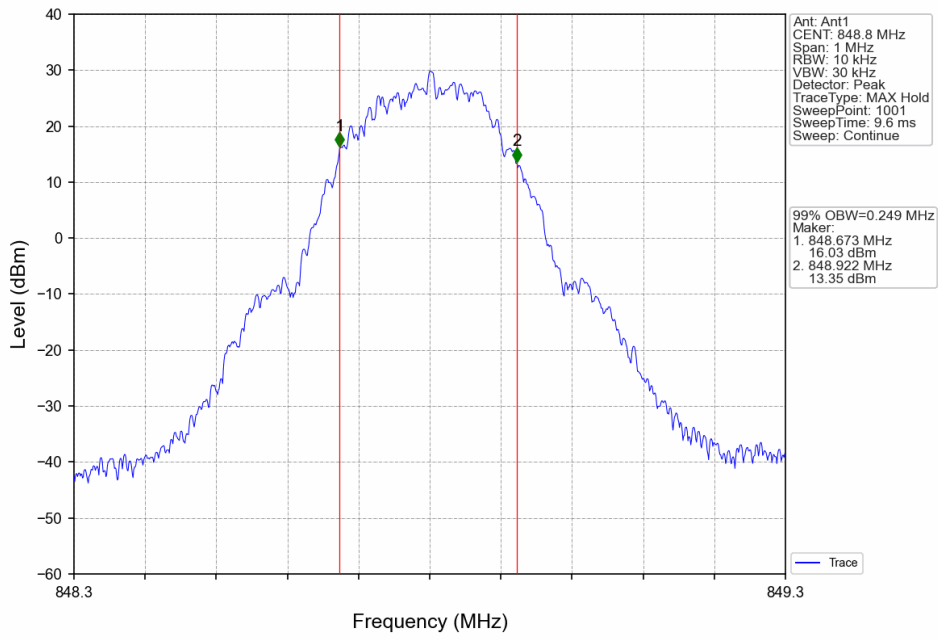
#### 4.1.1 Test Result

Band: GSM850					
ENV	Mode		Frequency (MHz)	99% Occupied Bandwidth (MHz)	Verdict
	Network	Subset		Result	
NTNV	GSM	GSM	824.2	0.245	Pass
			836.6	0.249	Pass
			848.8	0.249	Pass
	GPRS	1 TX Slot	824.2	0.249	Pass
			836.6	0.241	Pass
			848.8	0.238	Pass
	EGPRS	1 TX Slot	824.2	0.249	Pass
			836.6	0.244	Pass
			848.8	0.244	Pass

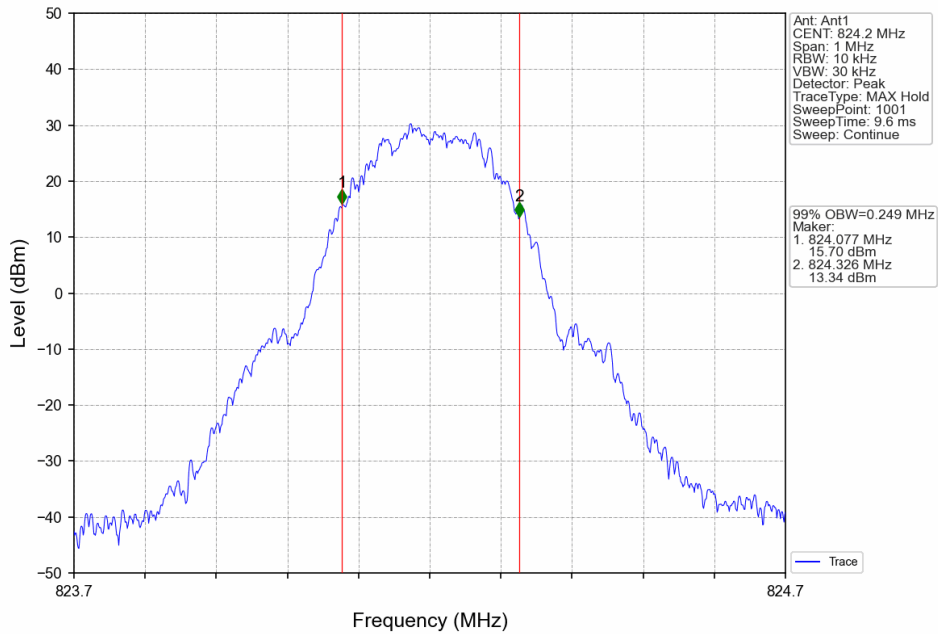
### 4.1.2 Test Graph



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

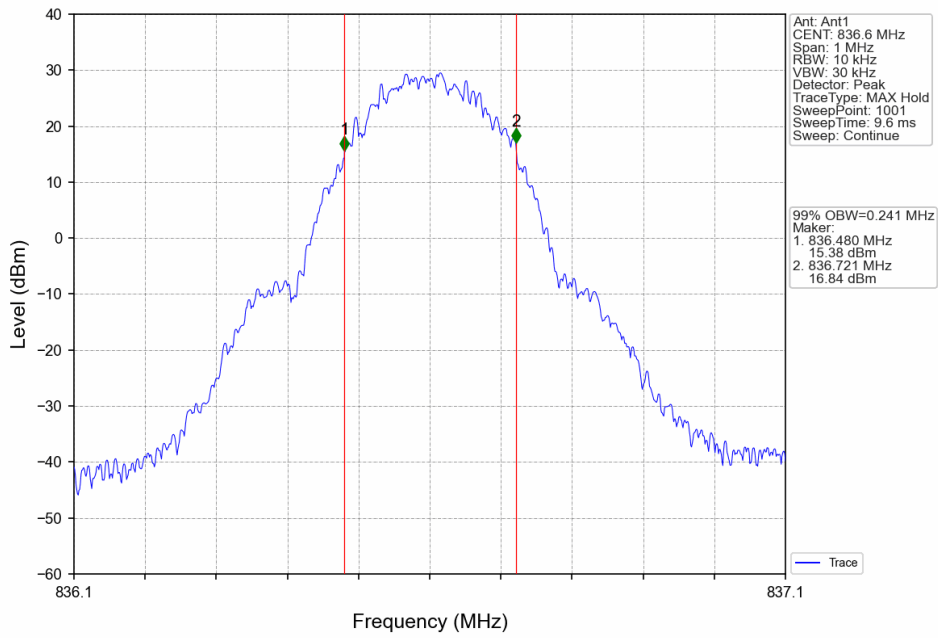


GSM850\_GPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV

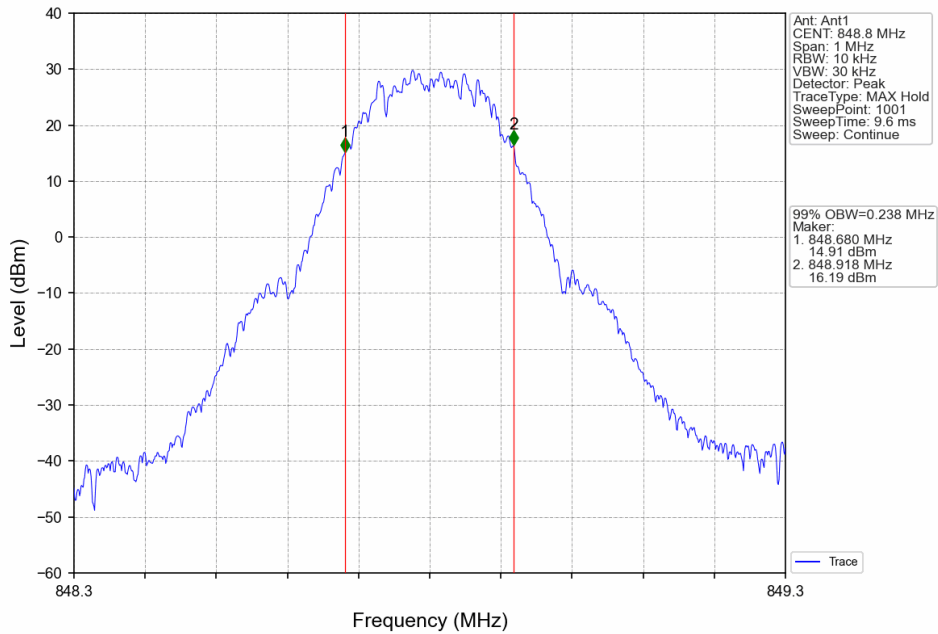




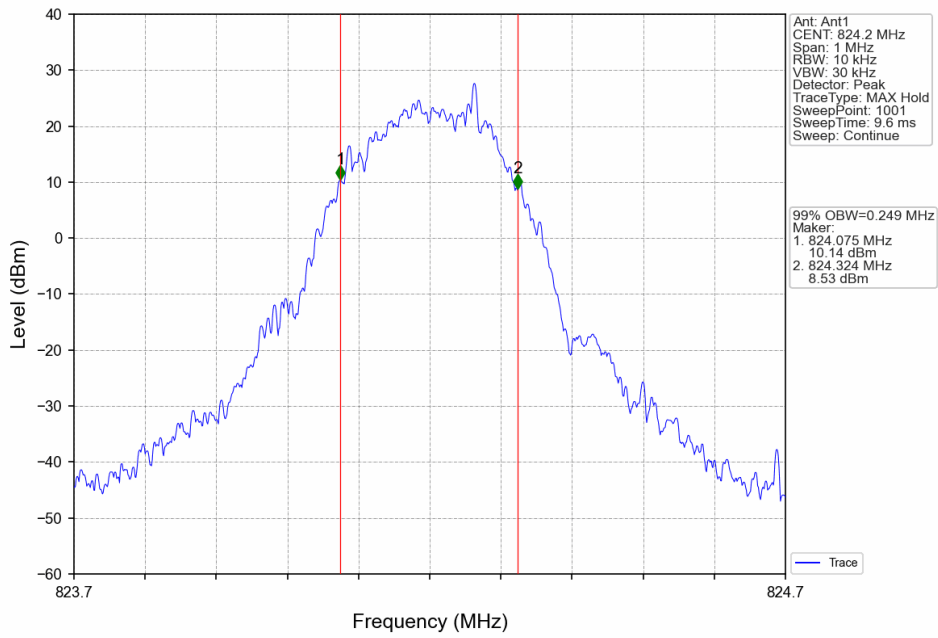
GSM850\_GPRS\_MCH\_836.6MHz\_1 TX Slot\_NTNV



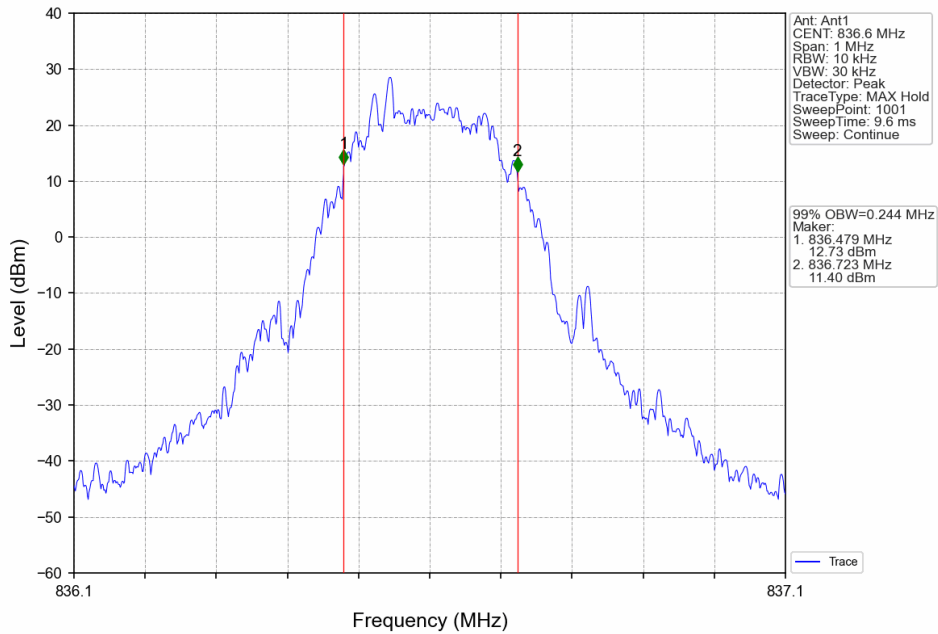
GSM850\_GPRS\_HCH\_848.8MHz\_1 TX Slot\_NTNV



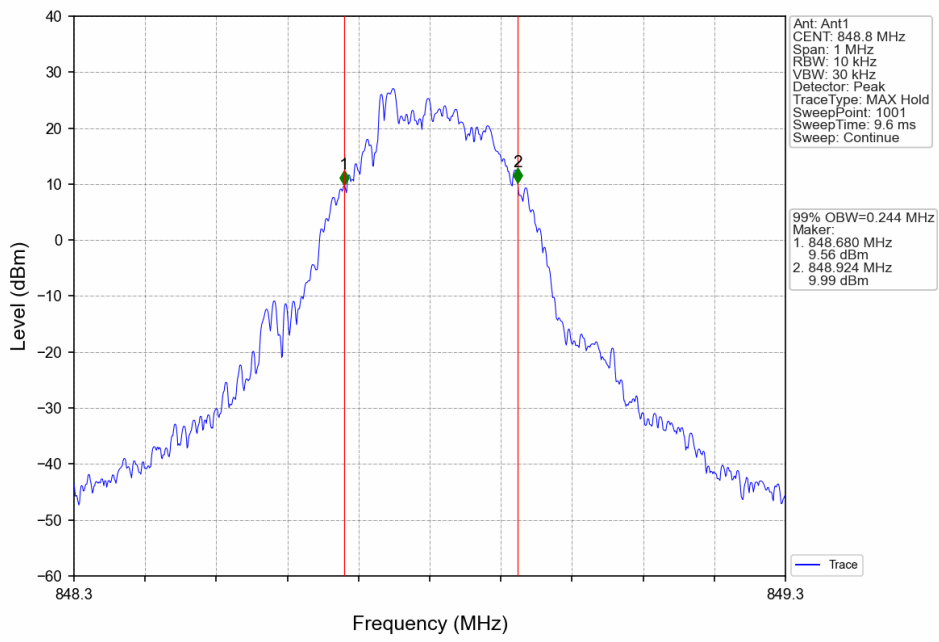
GSM850\_EGPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV



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



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

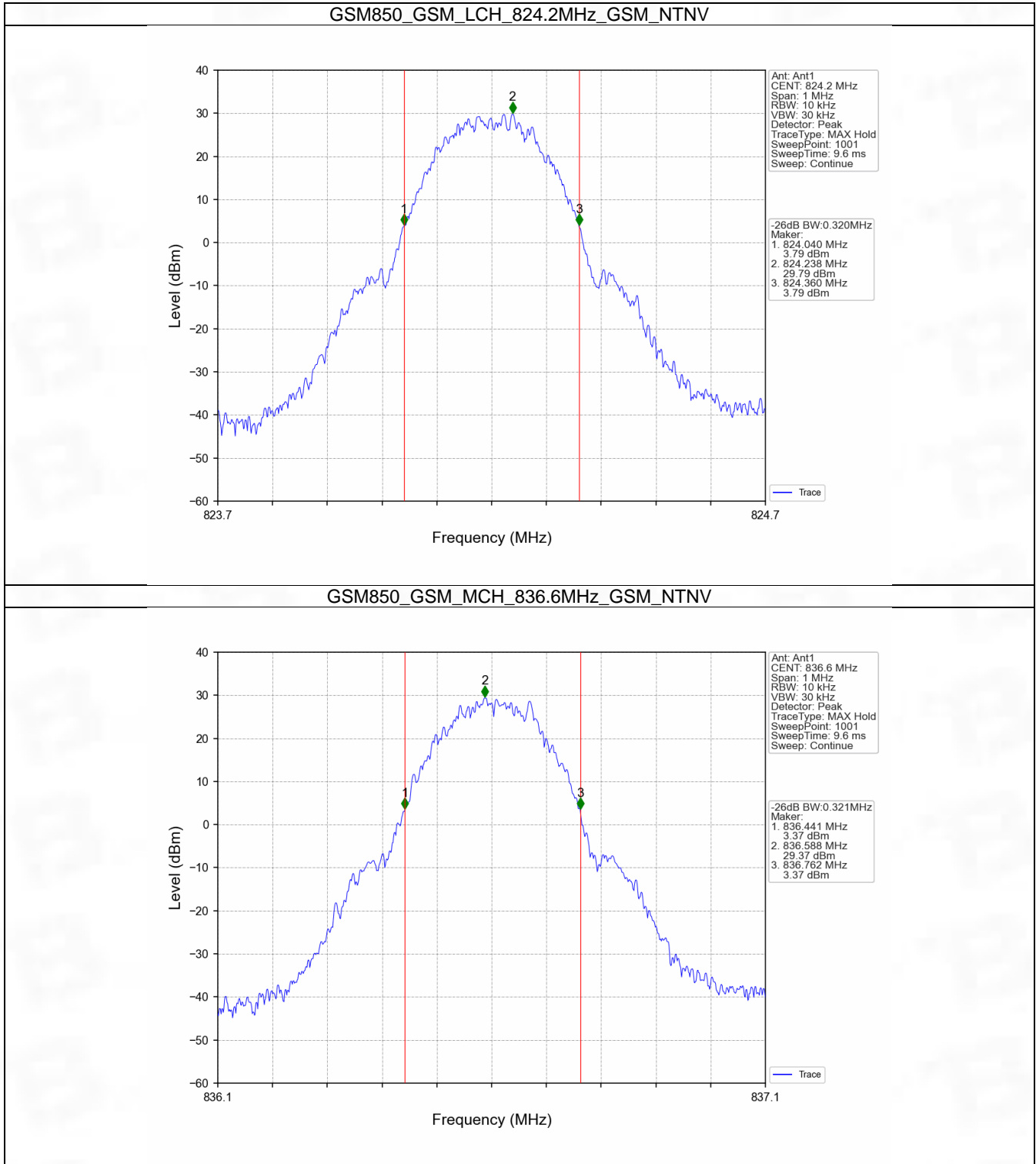


## 4.2 GSM850\_XDB

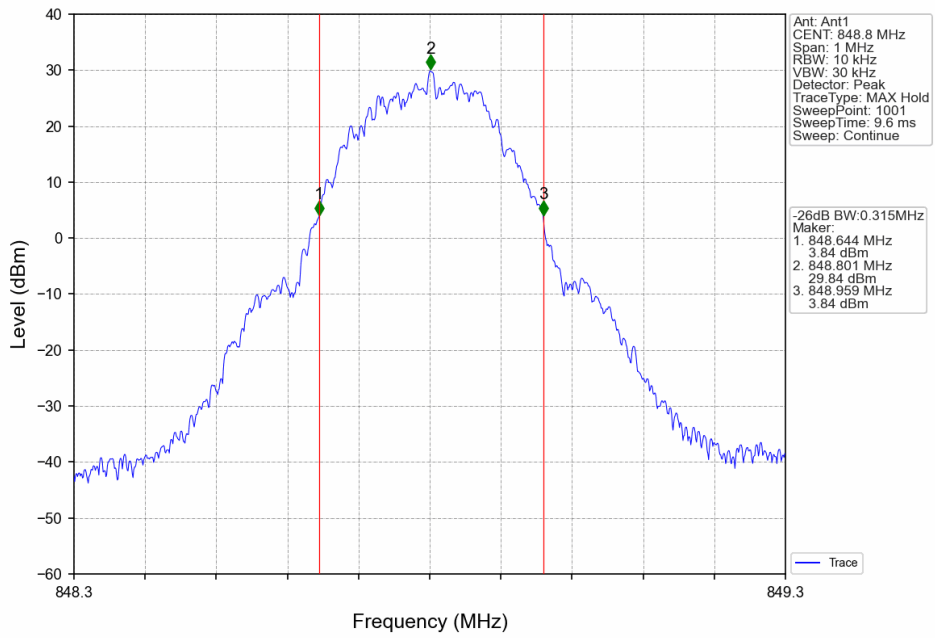
### 4.2.1 Test Result

Band: GSM850					
ENV	Mode		Frequency (MHz)	26dB Bandwidth (MHz)	Verdict
	Network	Subset		Result	
NTNV	GSM	GSM	824.2	0.320	Pass
			836.6	0.321	Pass
			848.8	0.315	Pass
	GPRS	1 TX Slot	824.2	0.314	Pass
			836.6	0.315	Pass
			848.8	0.320	Pass
	EGPRS	1 TX Slot	824.2	0.315	Pass
			836.6	0.306	Pass
			848.8	0.311	Pass

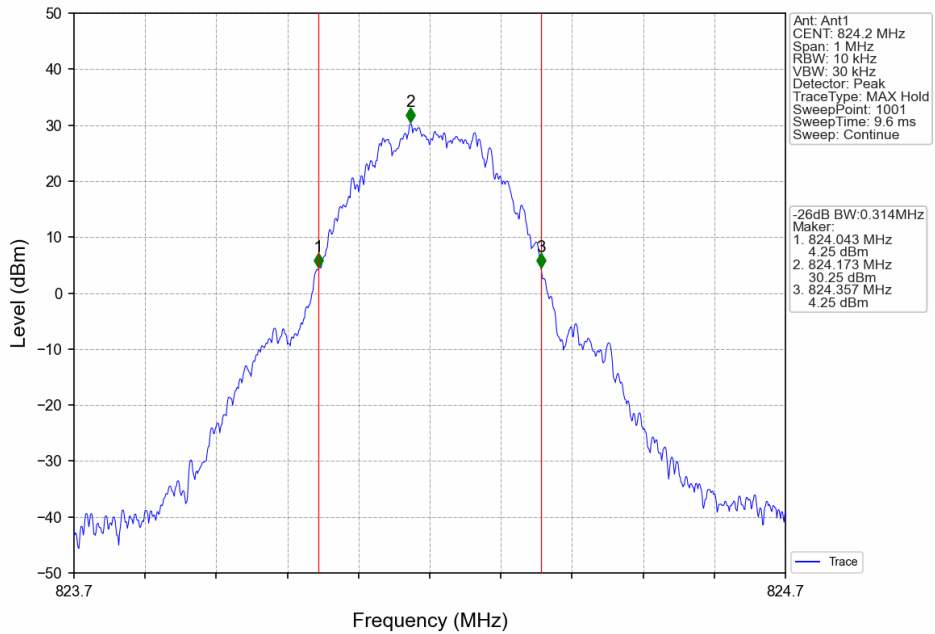
### 4.2.2 Test Graph



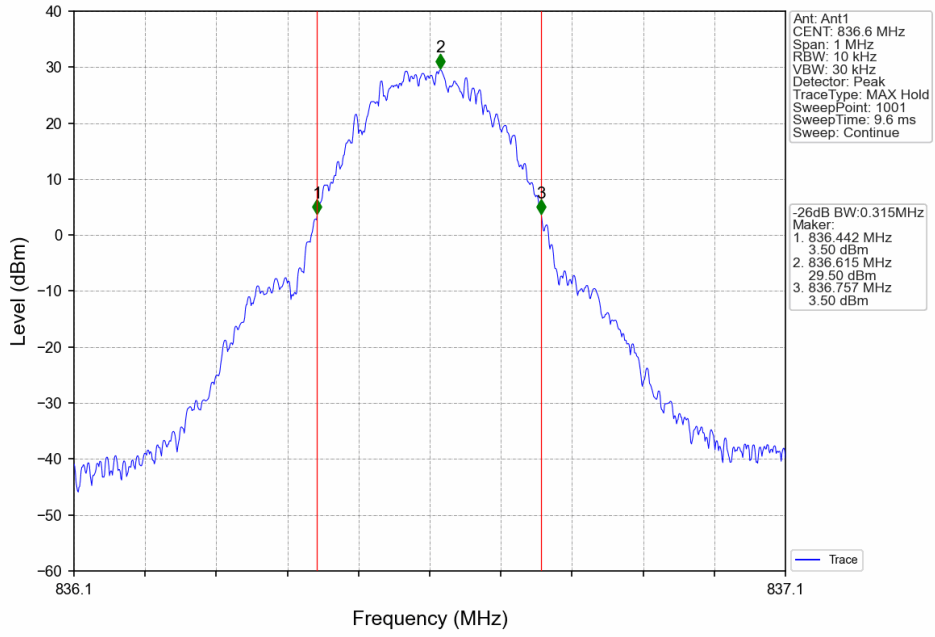
GSM850\_GSM\_HCH\_848.8MHz\_GSM\_NTNV



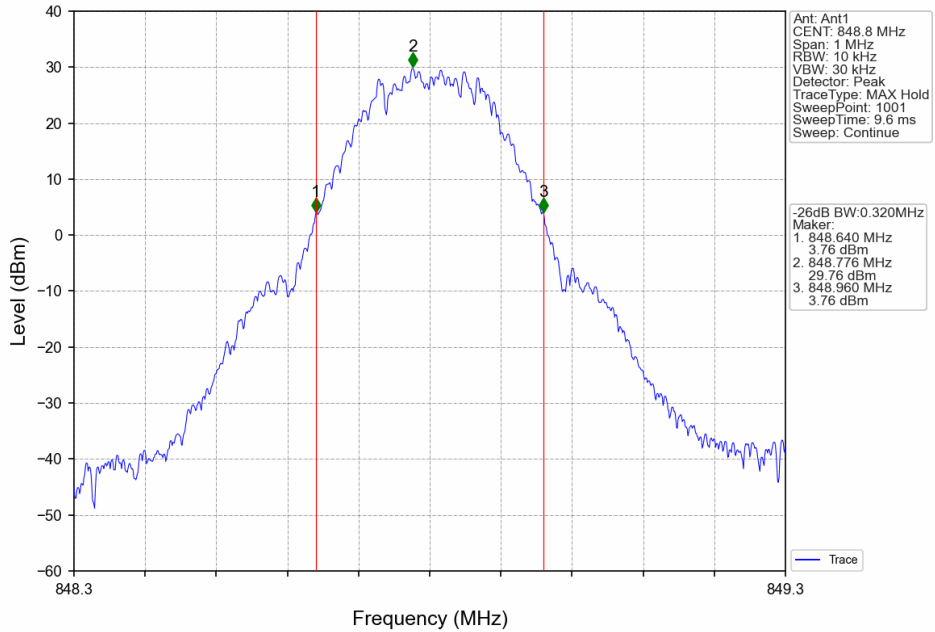
GSM850\_GPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV



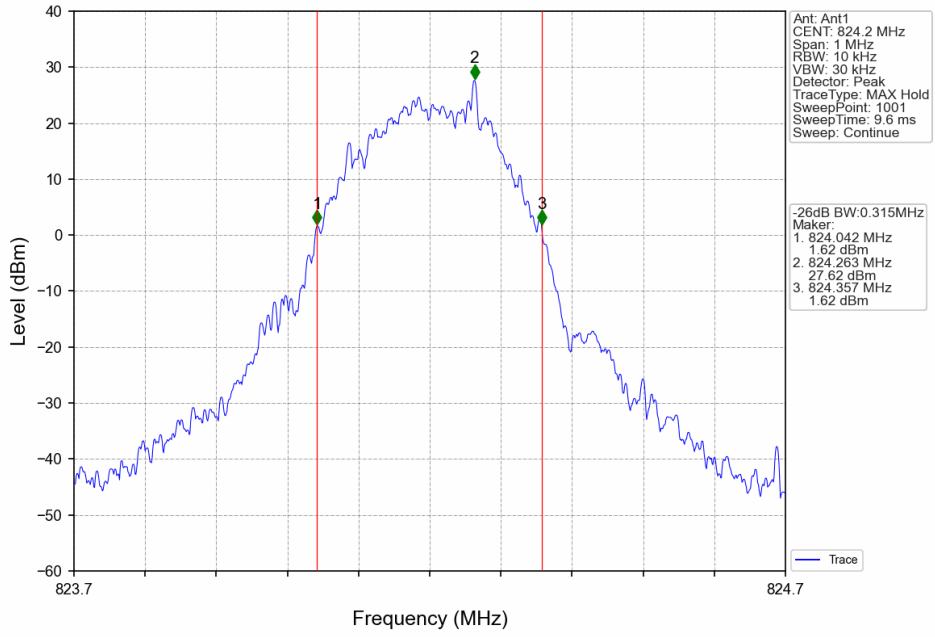
GSM850\_GPRS\_MCH\_836.6MHz\_1 TX Slot\_NTNV



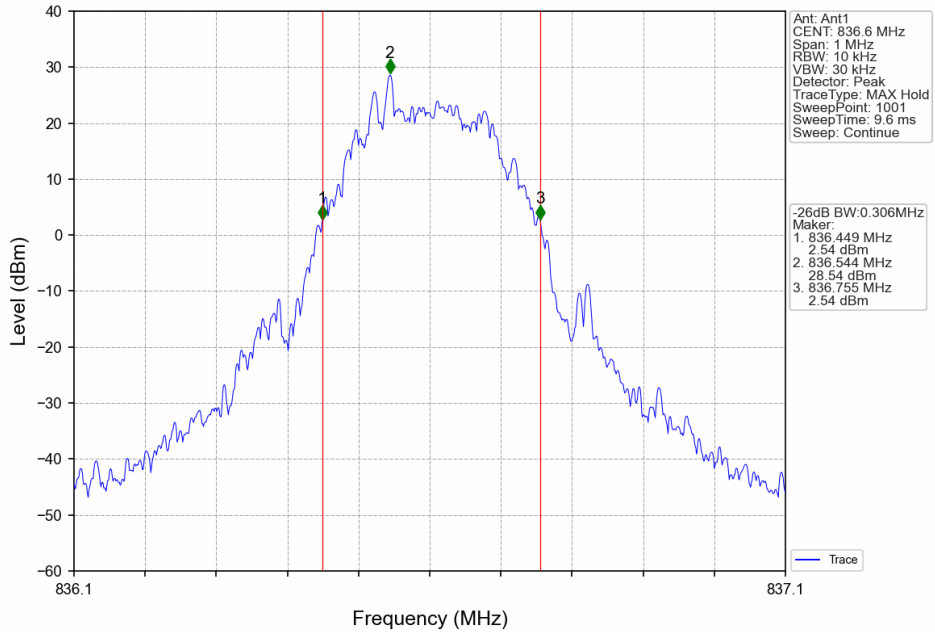
GSM850\_GPRS\_HCH\_848.8MHz\_1 TX Slot\_NTNV



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

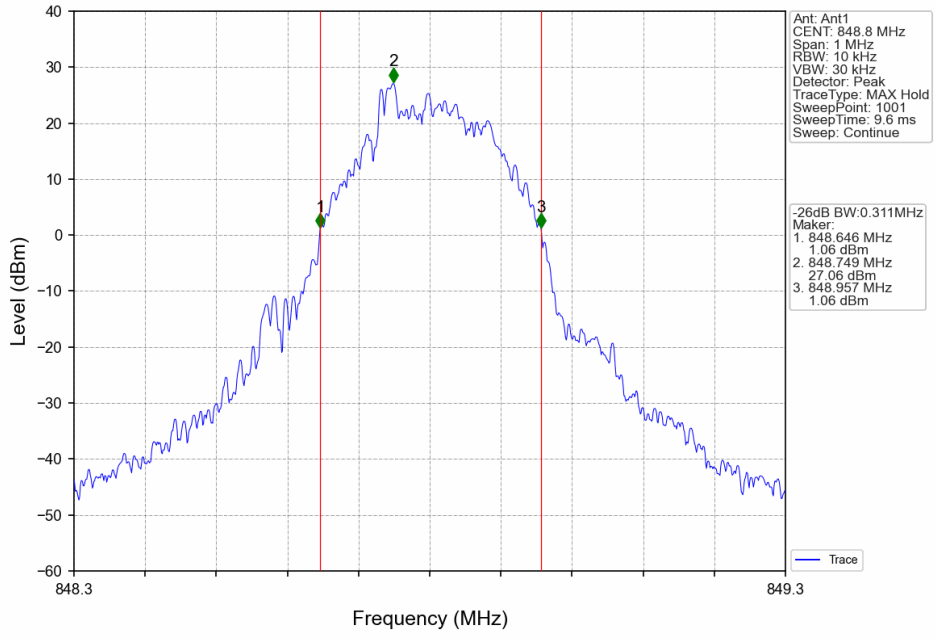


GSM850\_EGPRS\_MCH\_836.6MHz\_1 TX Slot\_NTNV





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



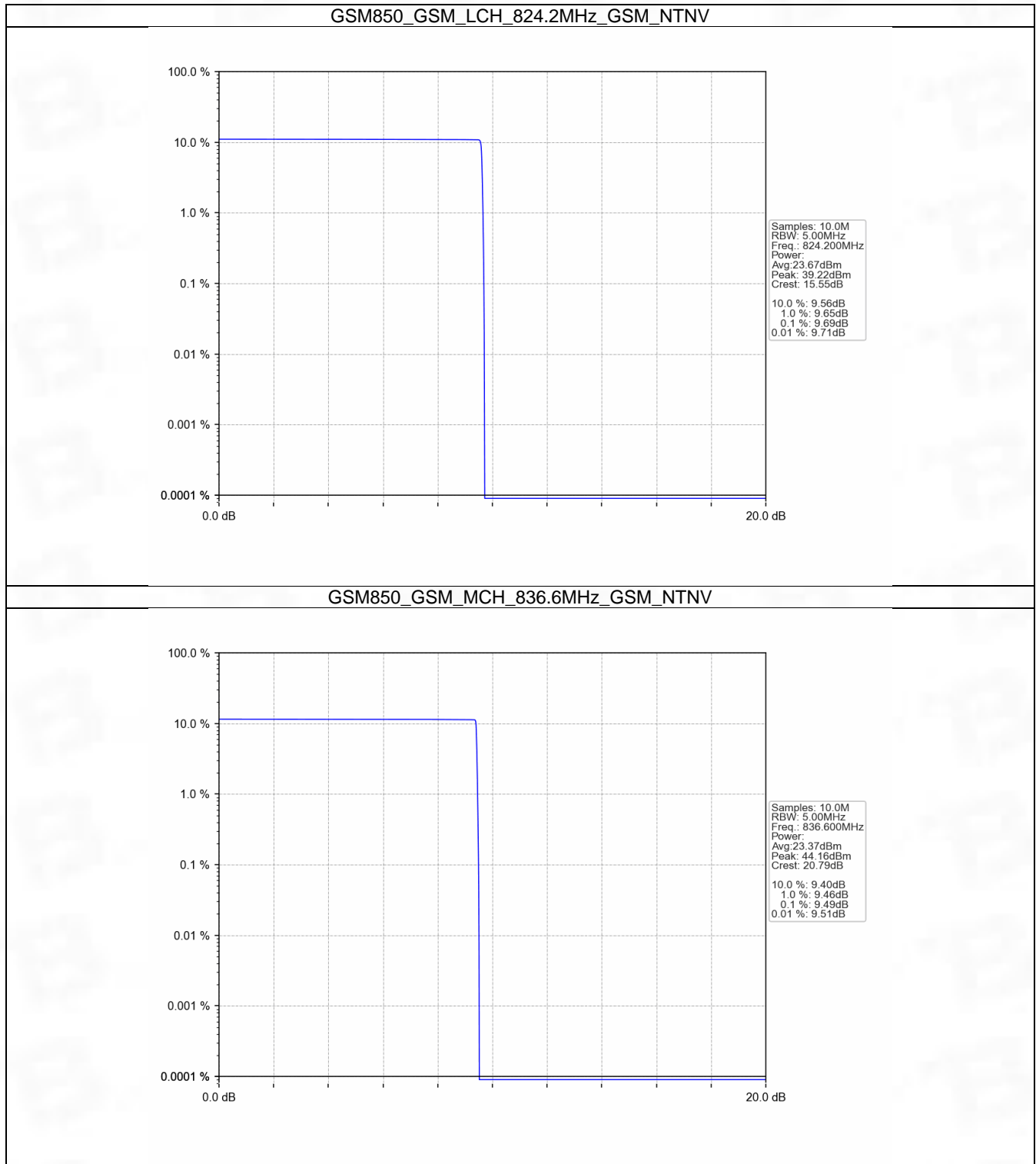
## 5. Peak-Average Ratio

### 5.1 GSM850

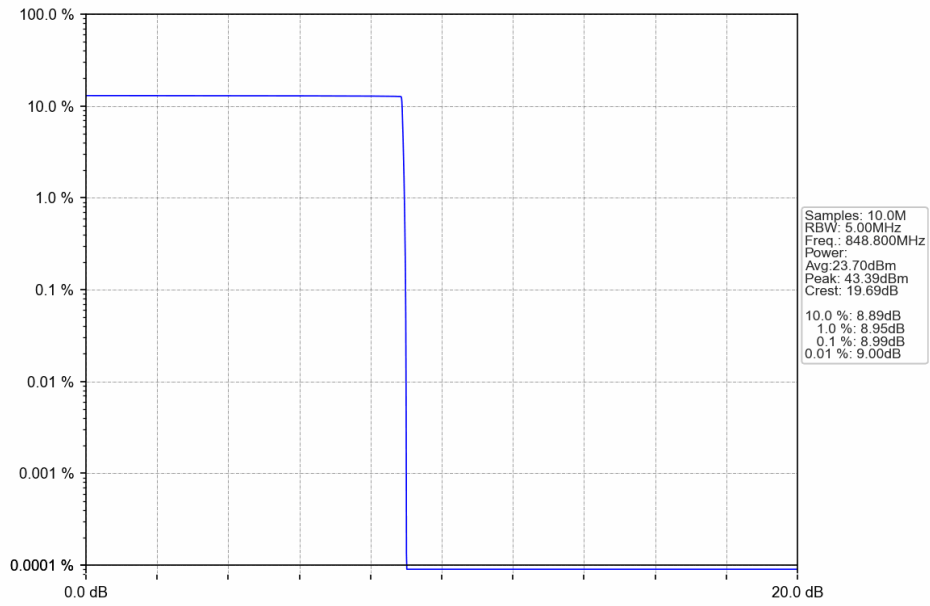
#### 5.1.1 Test Result

Band: GSM850						
ENV	Mode		Frequency (MHz)	Peak-Average Ratio (dB)		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	824.2	9.69	<=13	Pass
			836.6	9.49	<=13	Pass
			848.8	8.99	<=13	Pass
	GPRS	4 TX Slots	824.2	3.59	<=13	Pass
			836.6	3.58	<=13	Pass
			848.8	3.83	<=13	Pass
	EGPRS	4 TX Slots	824.2	9.57	<=13	Pass
			836.6	9.61	<=13	Pass
			848.8	8.61	<=13	Pass

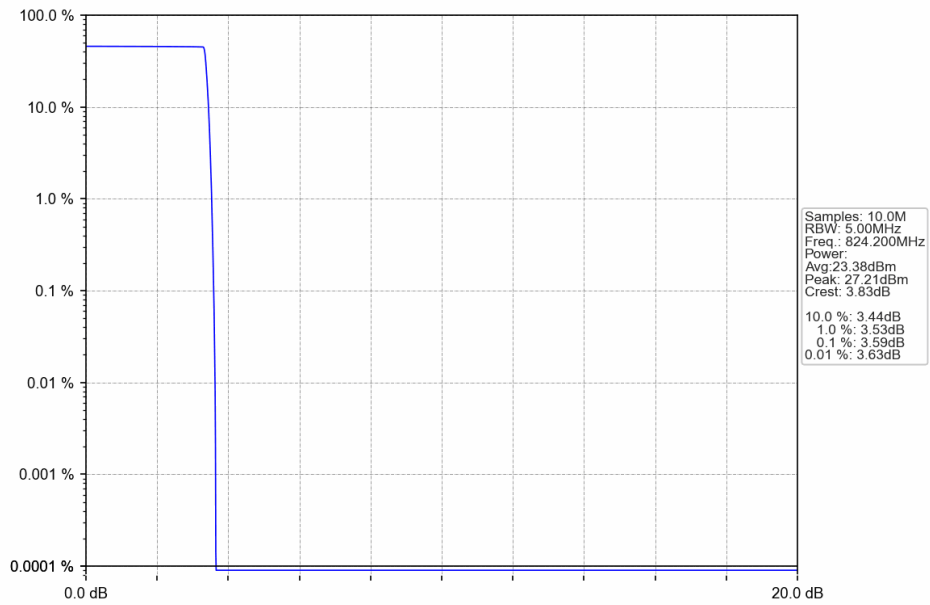
### 5.1.2 Test Graph



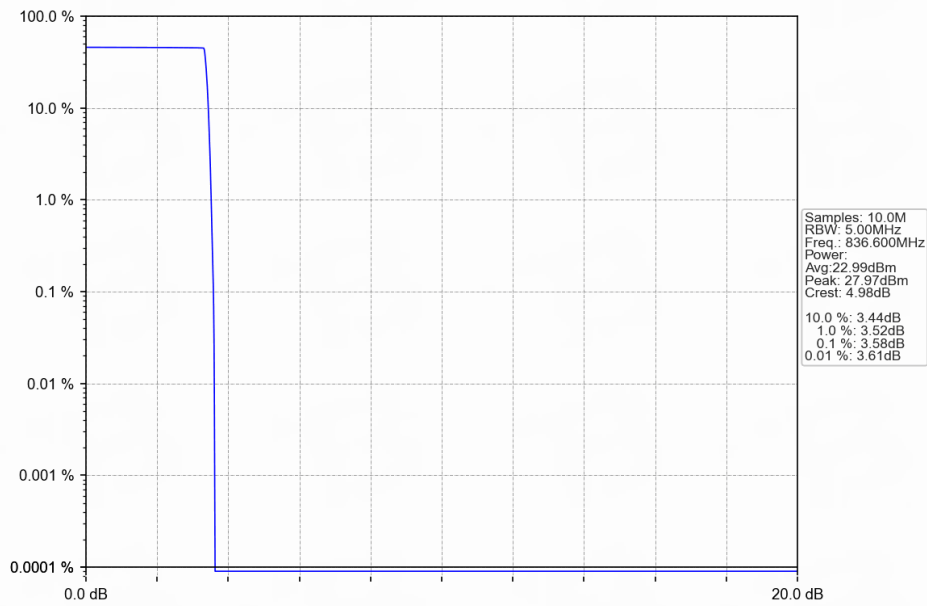
GSM850\_GSM\_HCH\_848.8MHz\_GSM\_NTNV



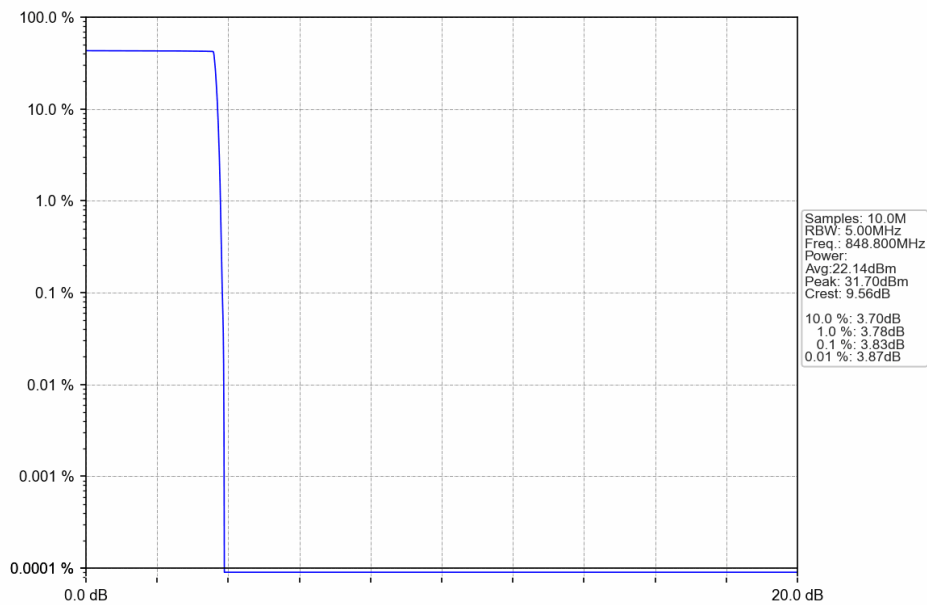
GSM850\_GPRS\_LCH\_824.2MHz\_4 TX Slots\_NTNV



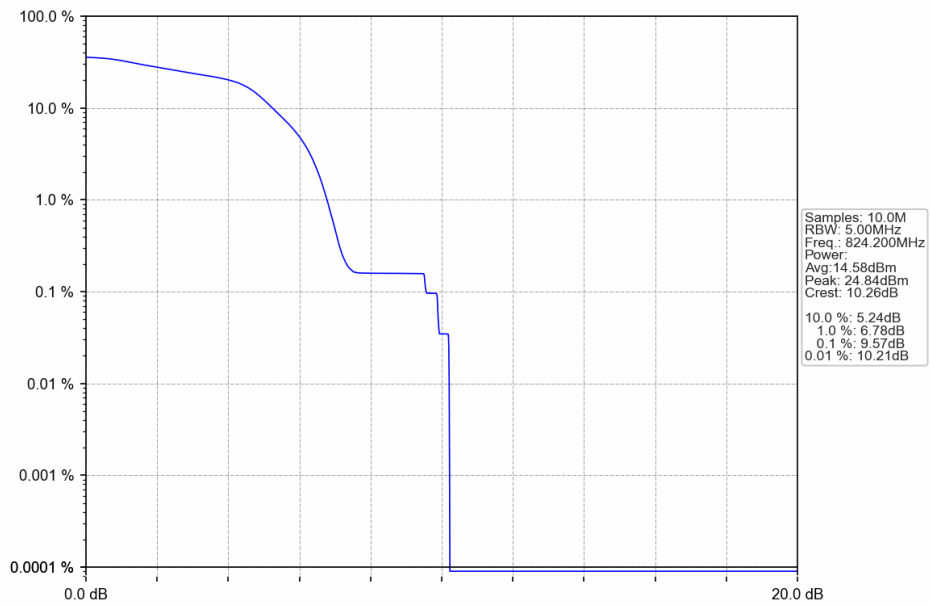
GSM850\_GPRS\_MCH\_836.6MHz\_4 TX Slots\_NTNV



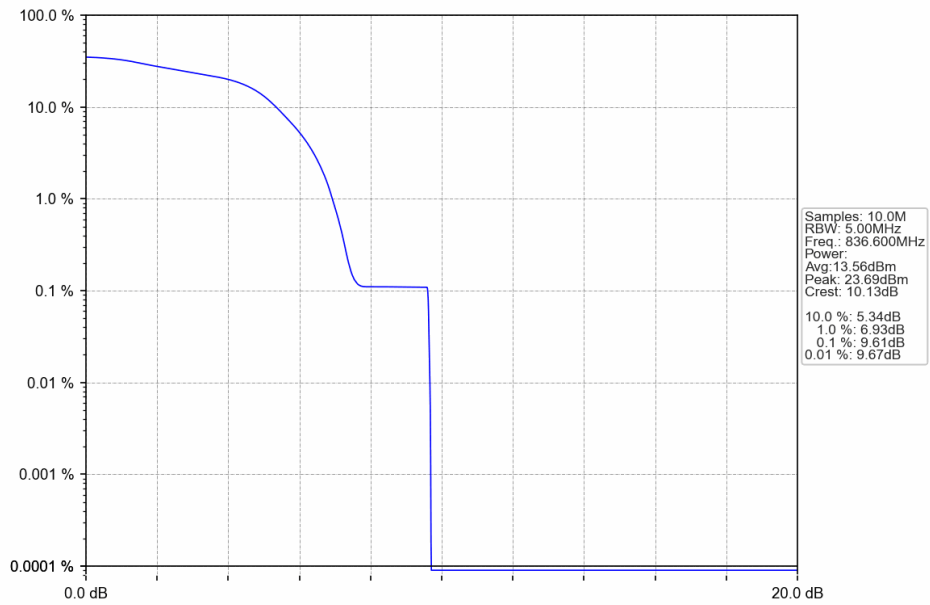
GSM850\_GPRS\_HCH\_848.8MHz\_4 TX Slots\_NTNV



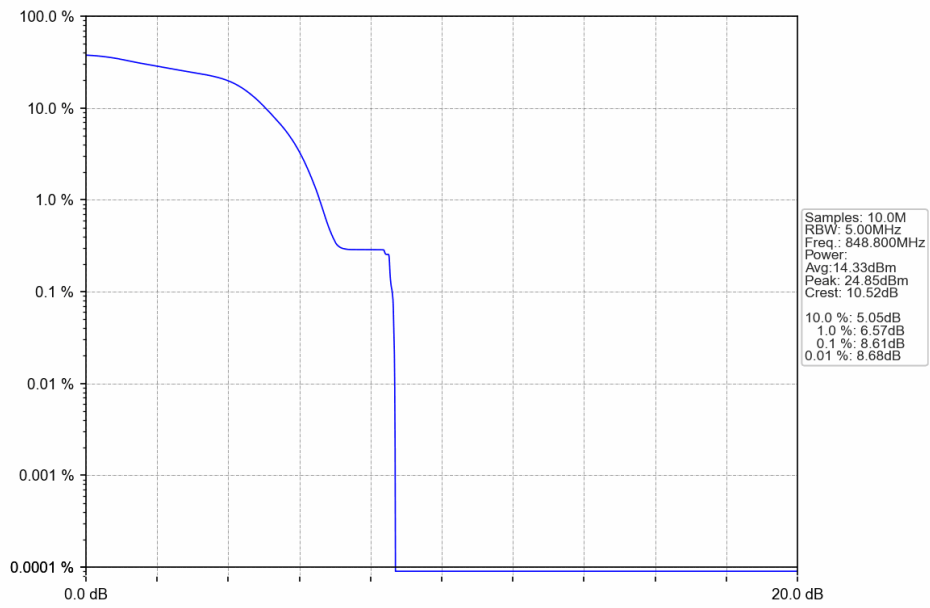
GSM850\_EGPRS\_LCH\_824.2MHz\_4 TX Slots\_NTNV



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



GSM850\_EGPRS\_HCH\_848.8MHz\_4 TX Slots\_NTNV



## 6. Spurious Emission

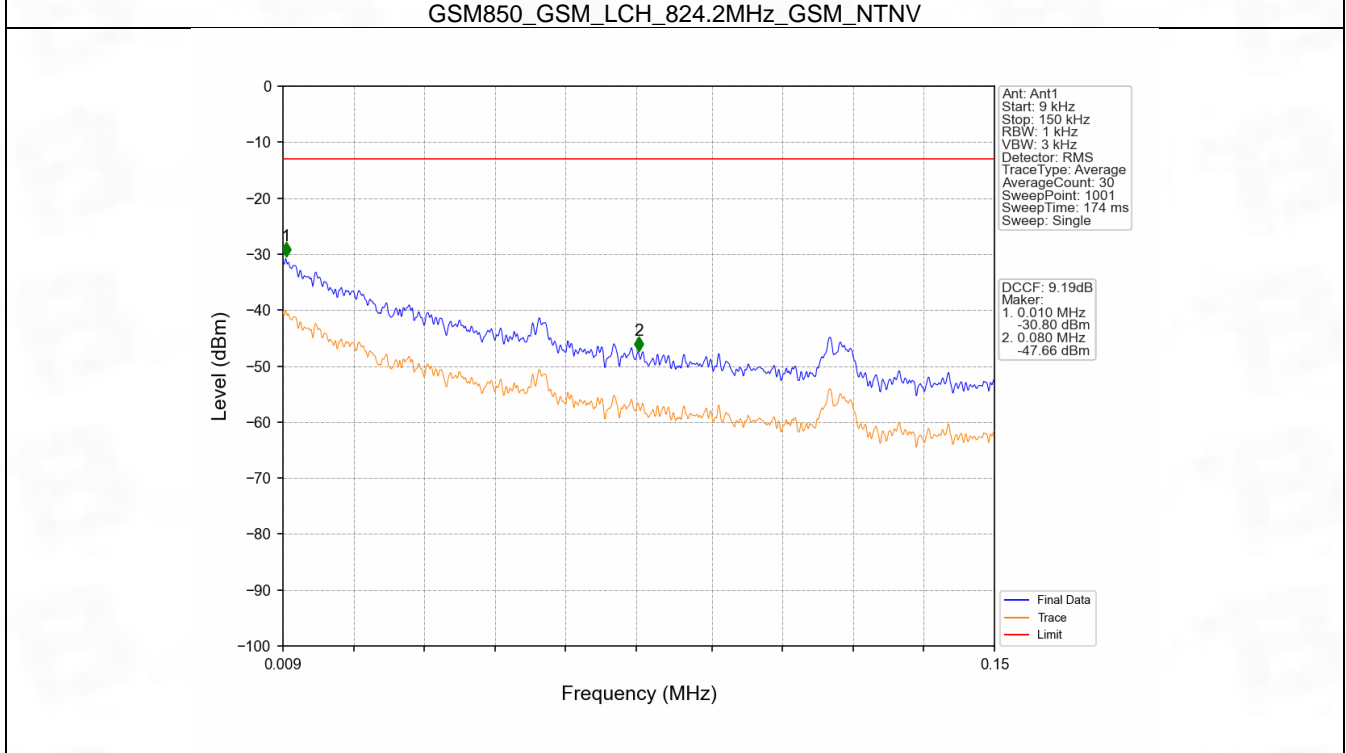
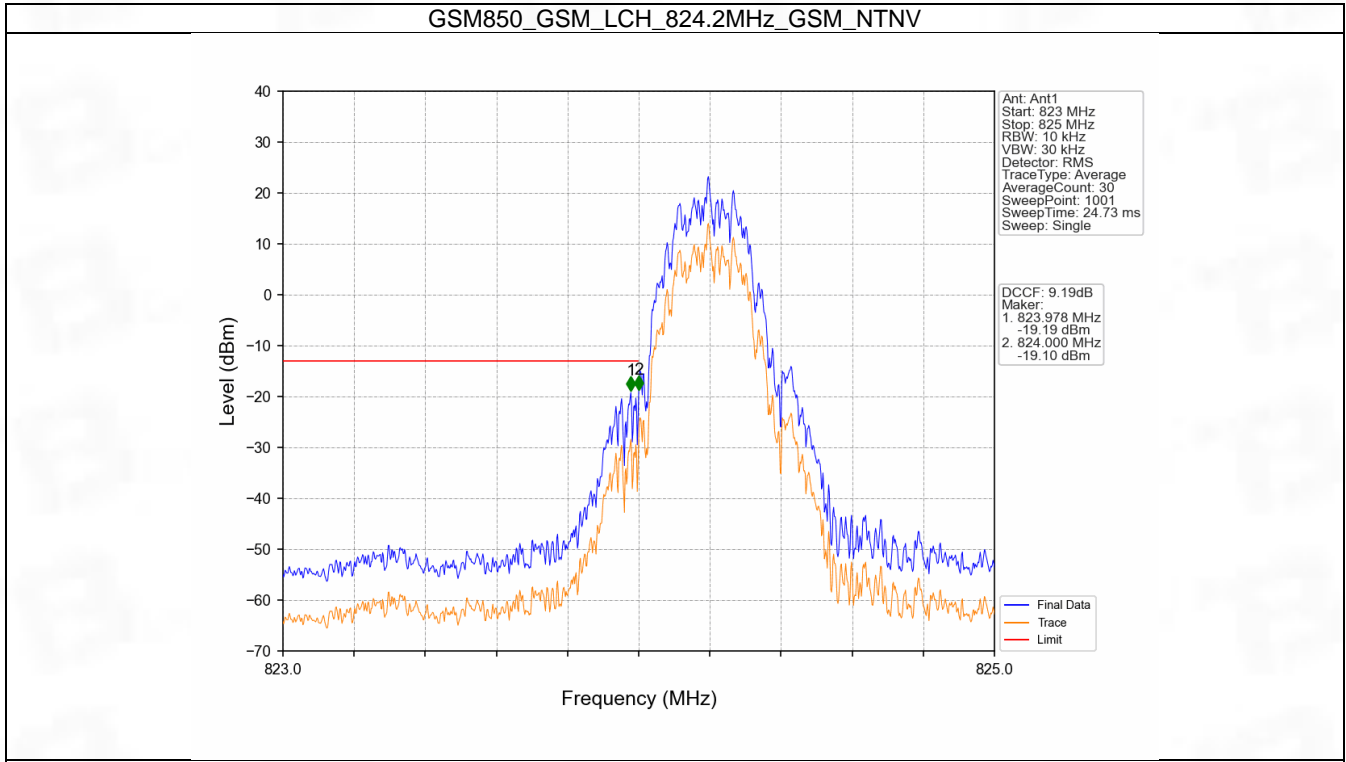
### 6.1 GSM850

#### 6.1.1 Test Result

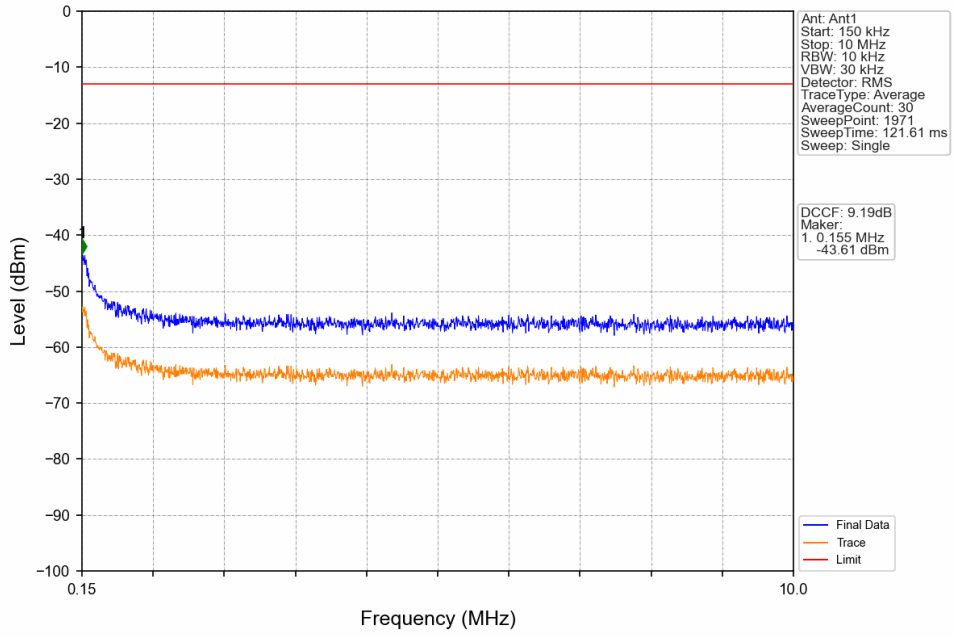
Band: GSM850						
ENV	Mode		Frequency (MHz)	Spurious Emission		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	824.2	Refer To Test Graph	Pass	
			836.6	Refer To Test Graph	Pass	
			848.8	Refer To Test Graph	Pass	
	GPRS	1 TX Slot	824.2	Refer To Test Graph	Pass	
			836.6	Refer To Test Graph	Pass	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



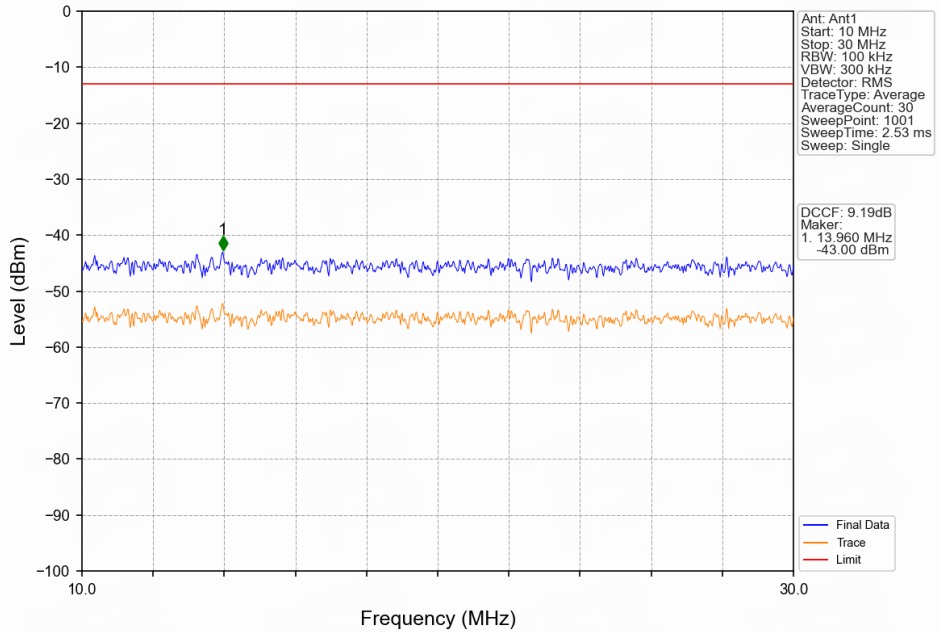
### 6.1.2 Test Graph



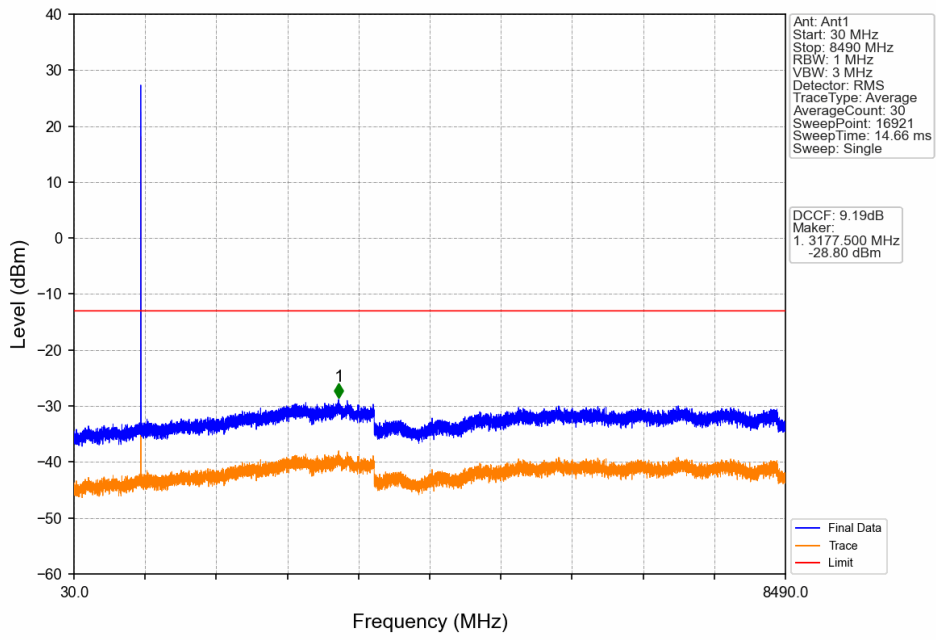
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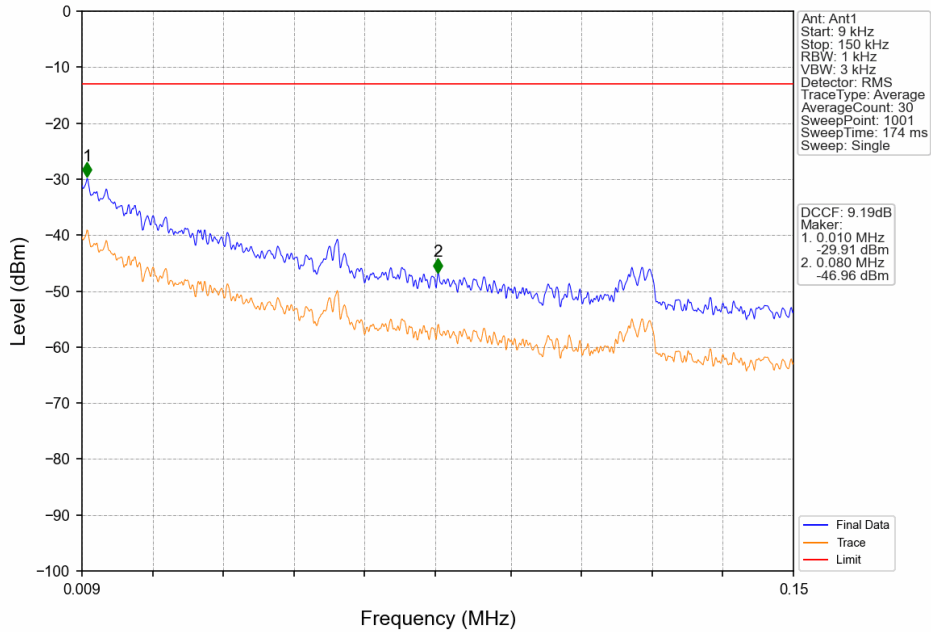
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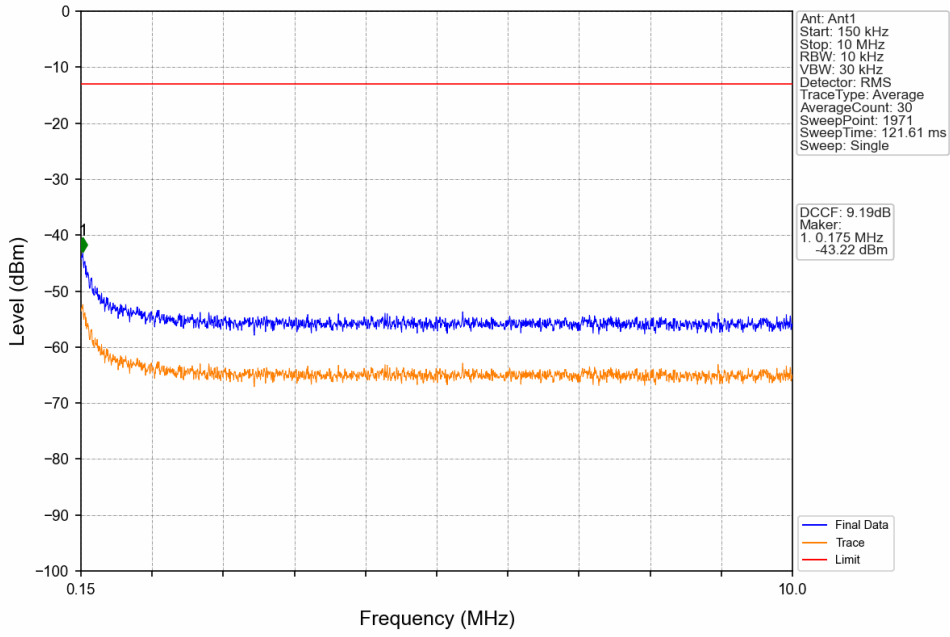
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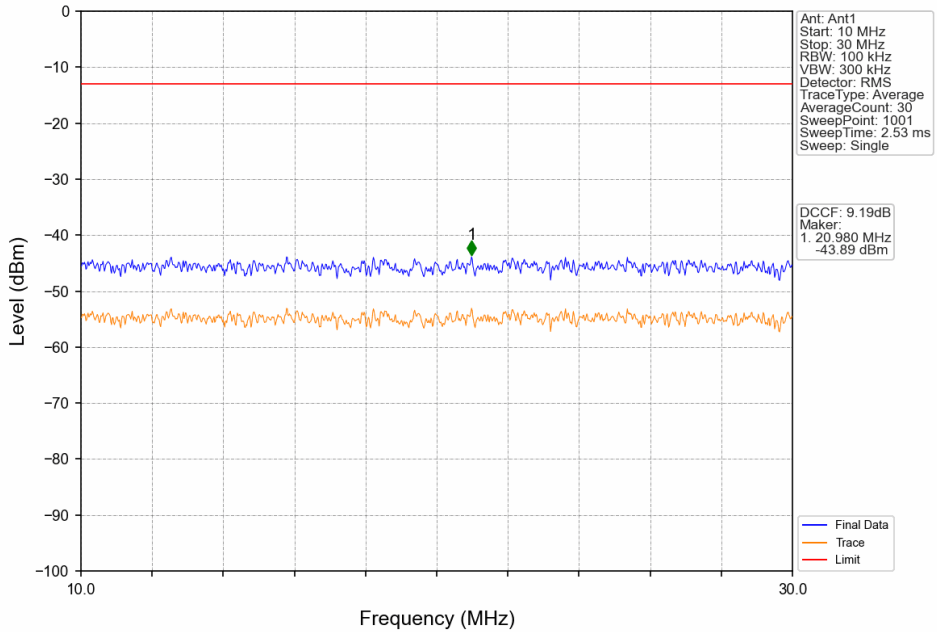
GSM850\_GSM\_MCH\_836.6MHz\_GSM\_NTNV



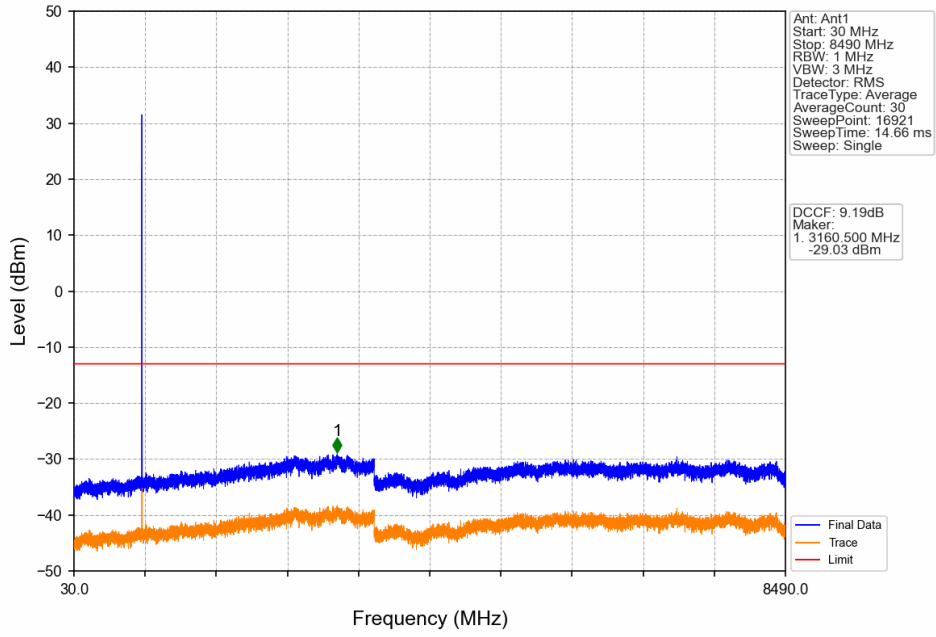
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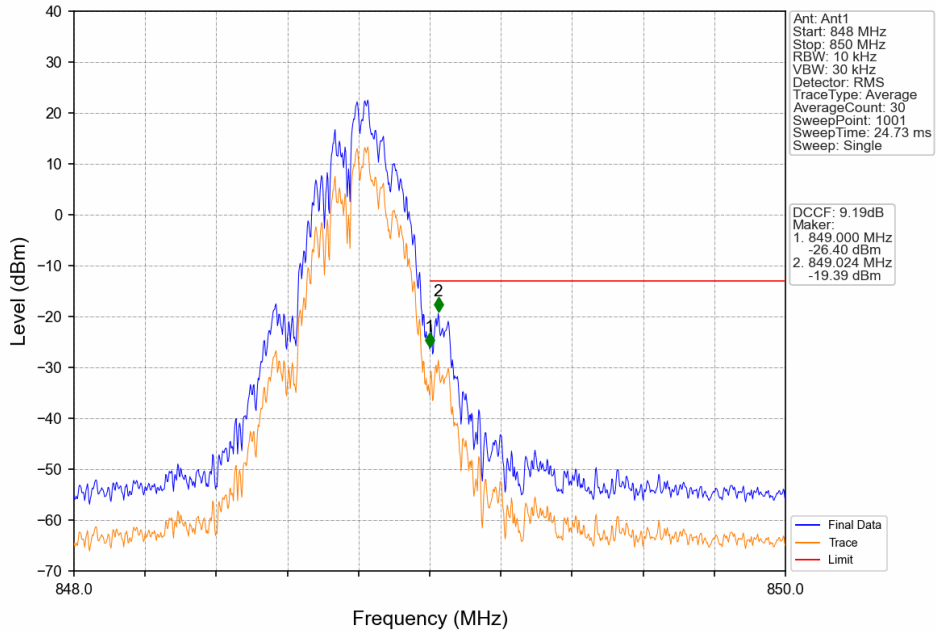
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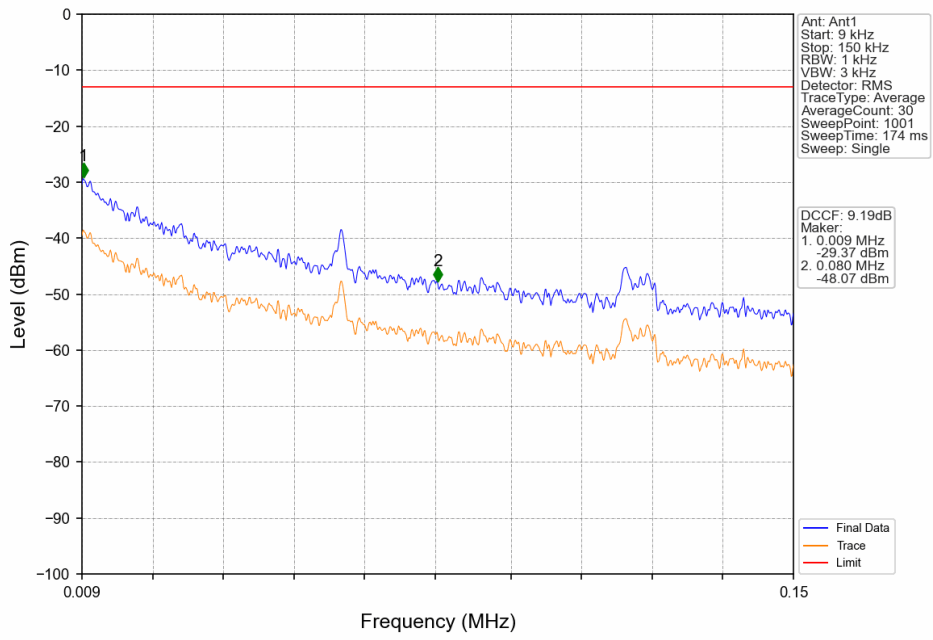
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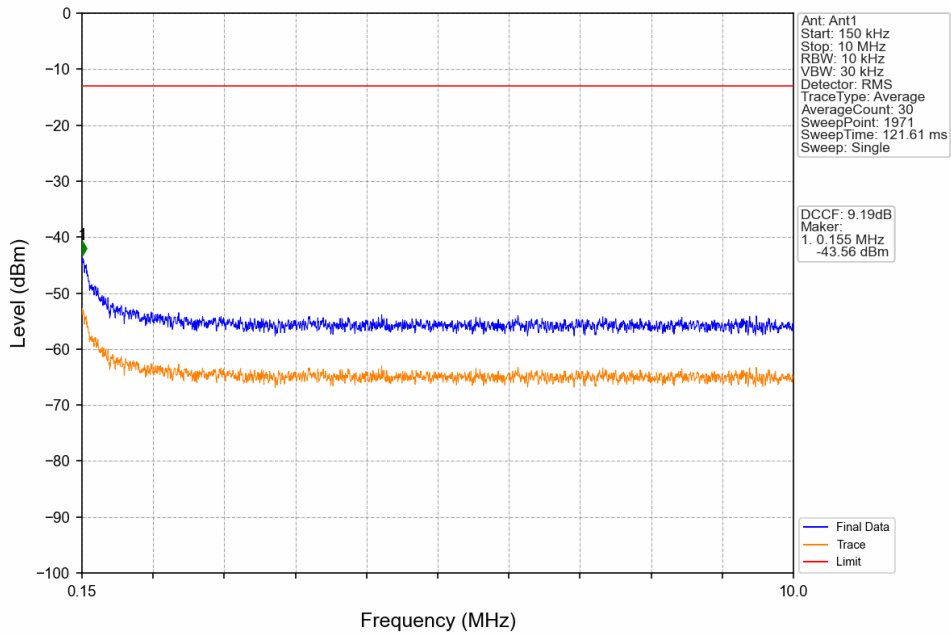
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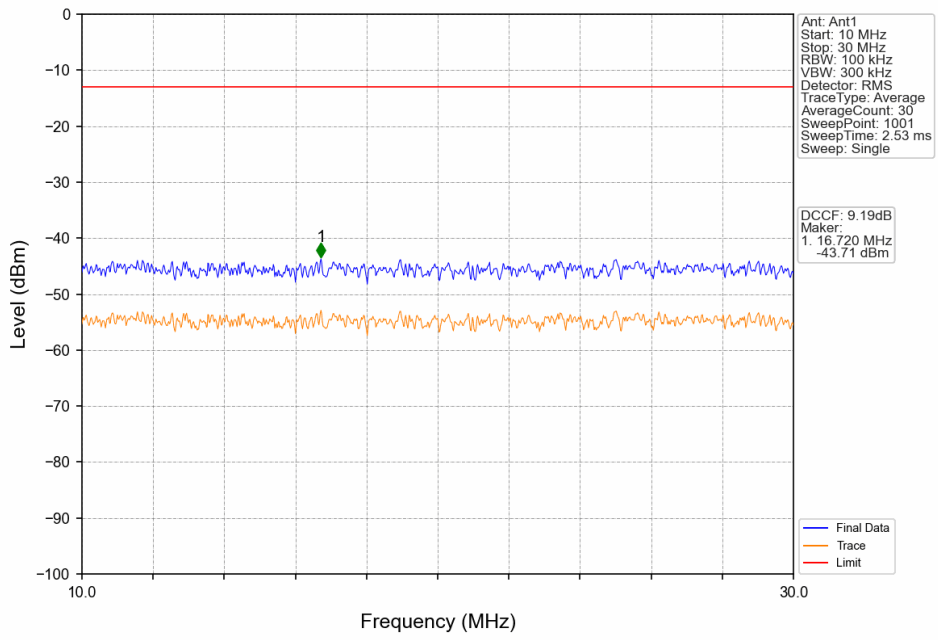
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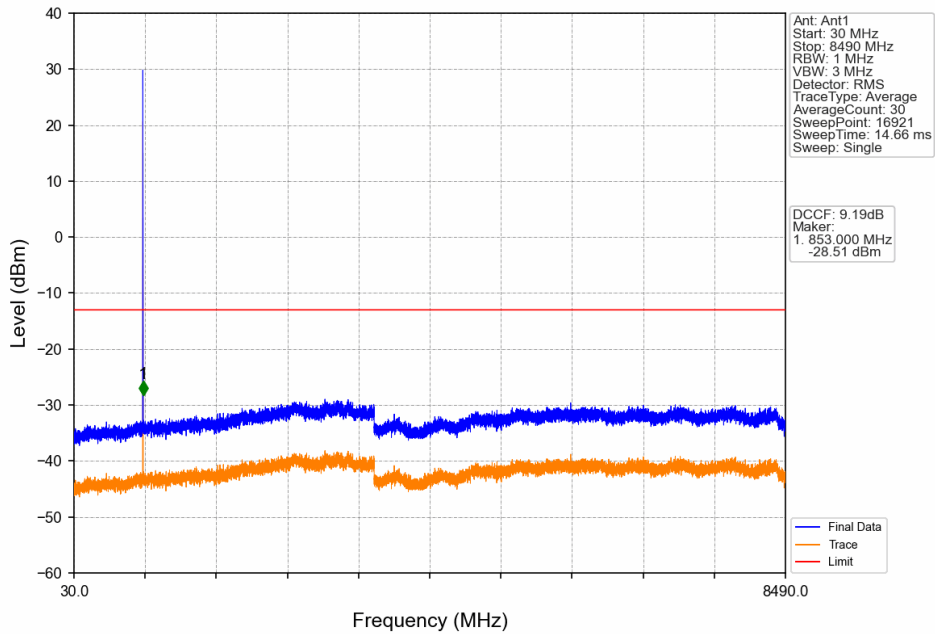
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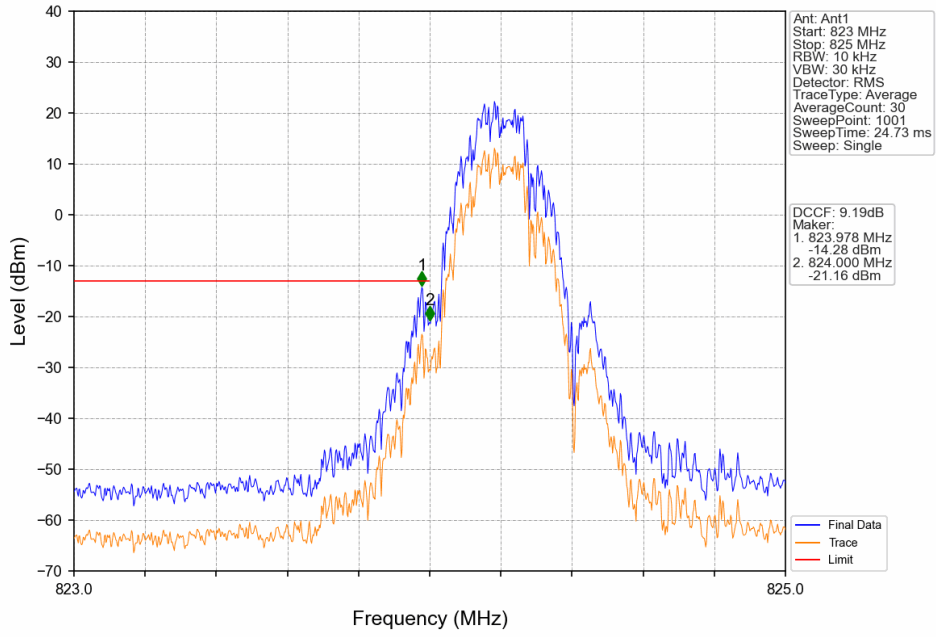
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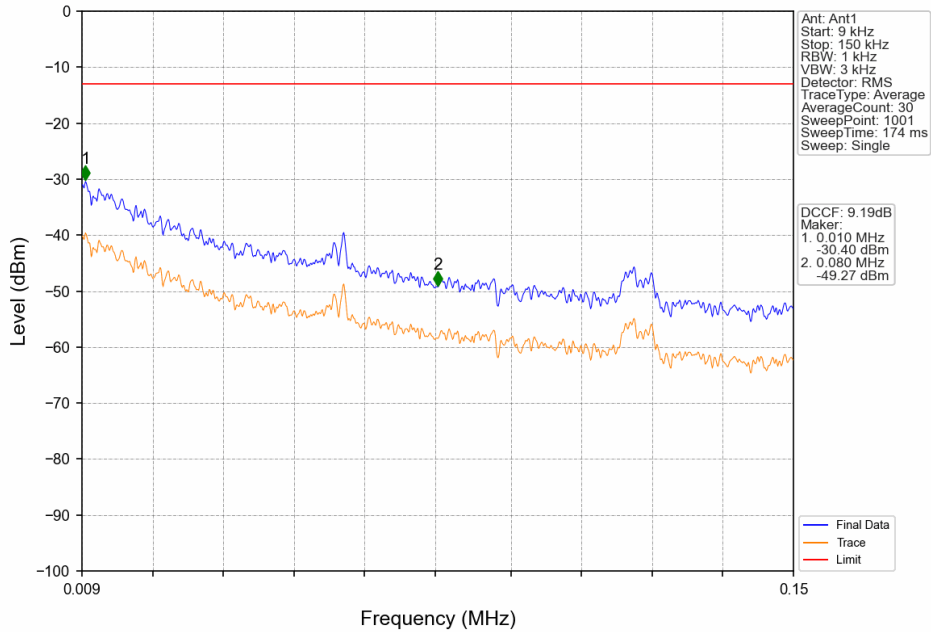
GSM850\_GSM\_HCH\_848.8MHz\_GSM\_NTNV



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

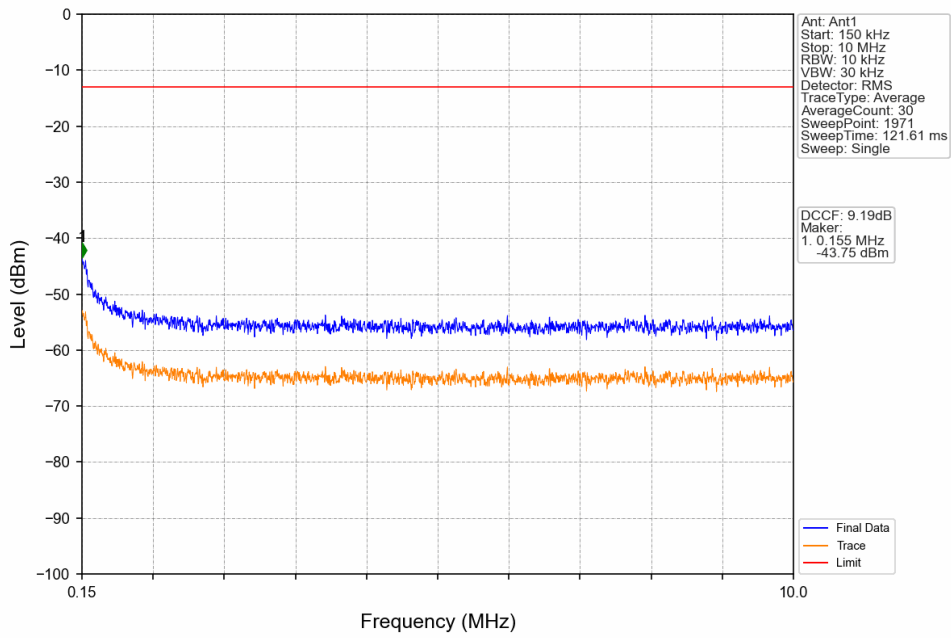


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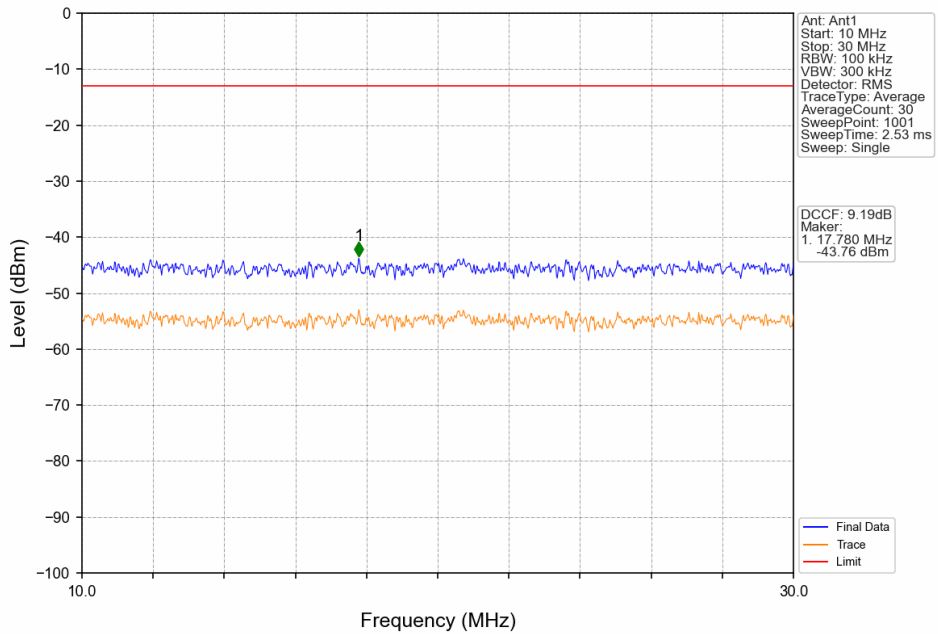




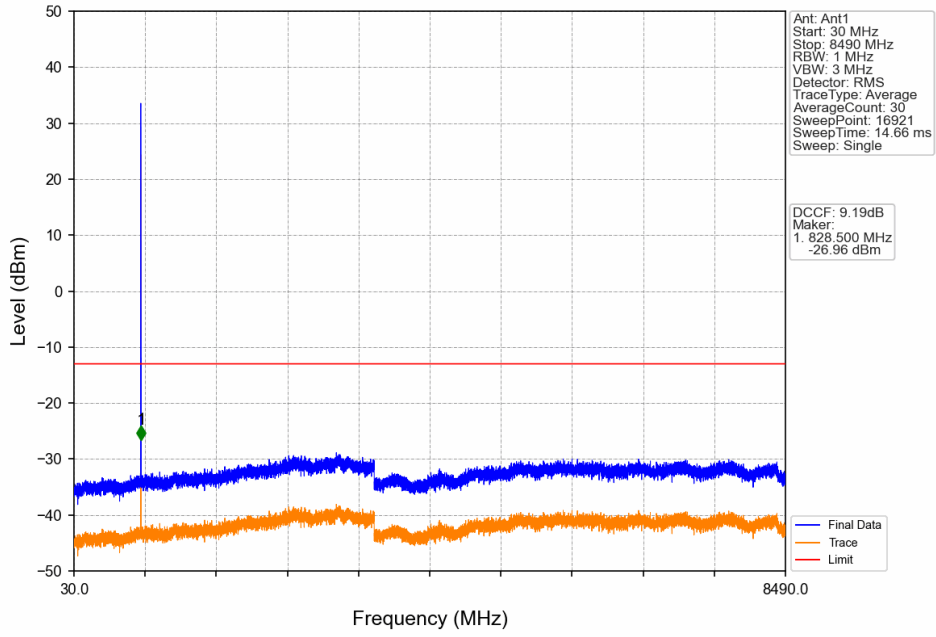
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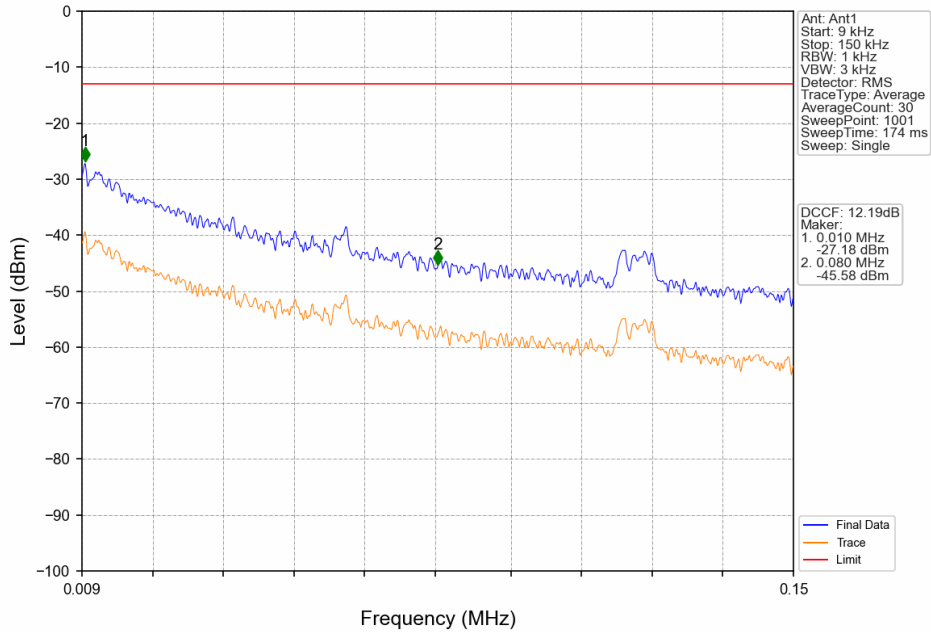
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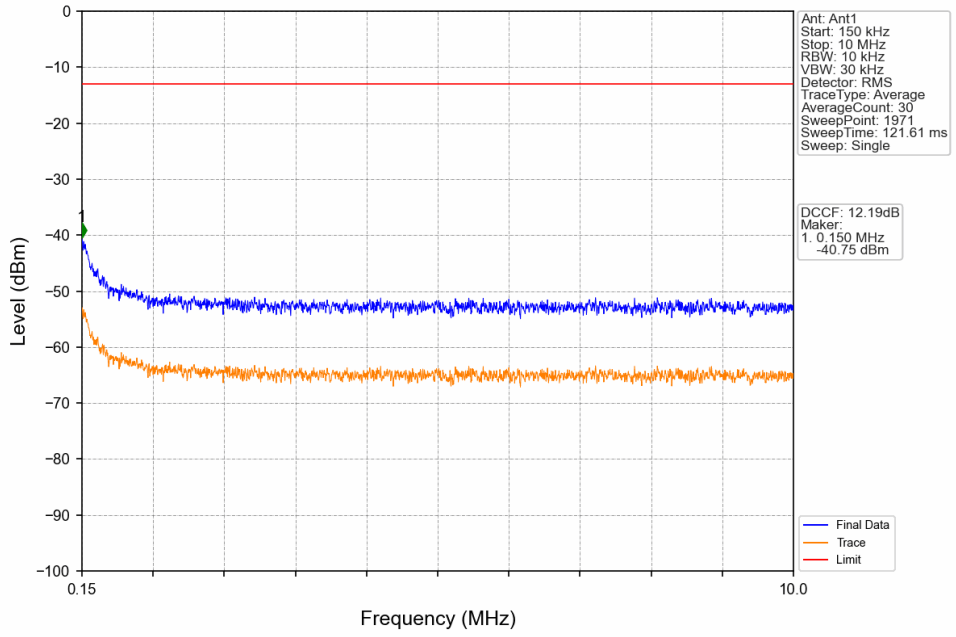
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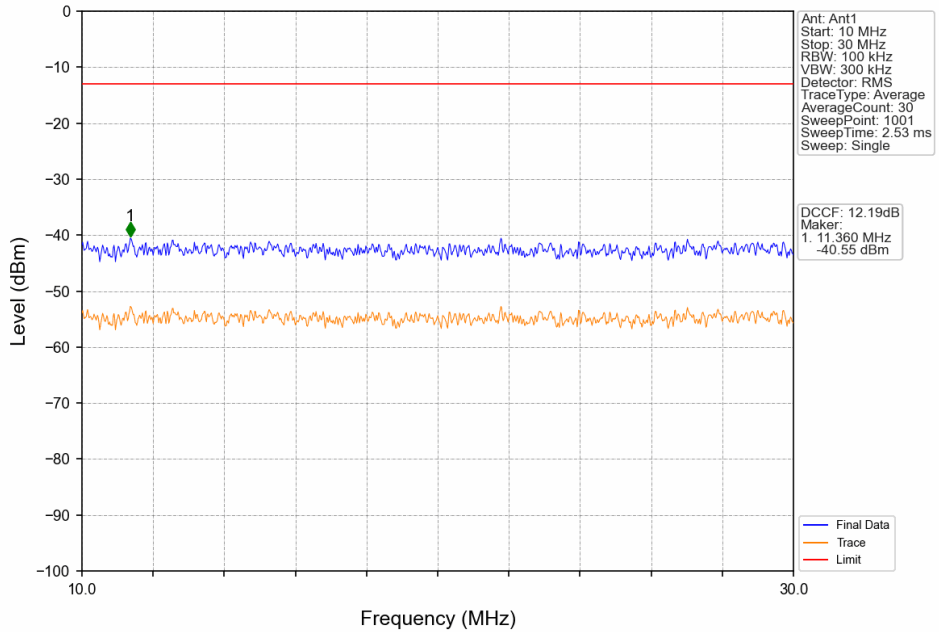
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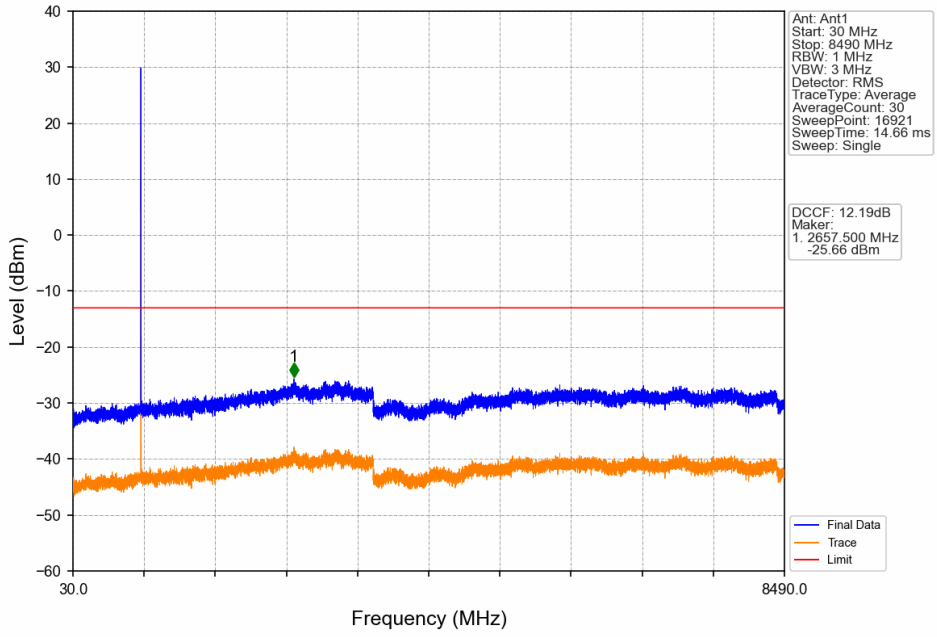
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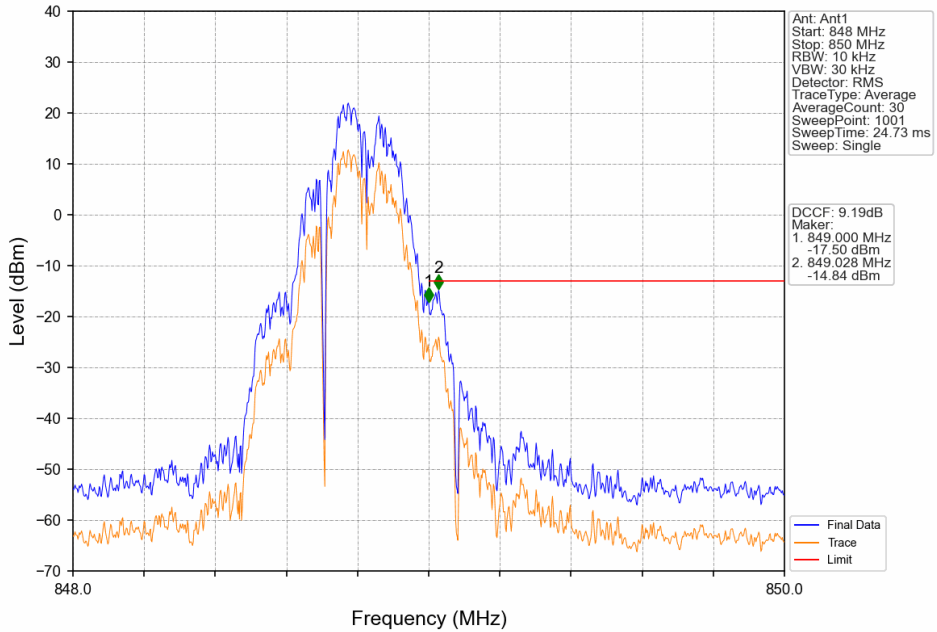
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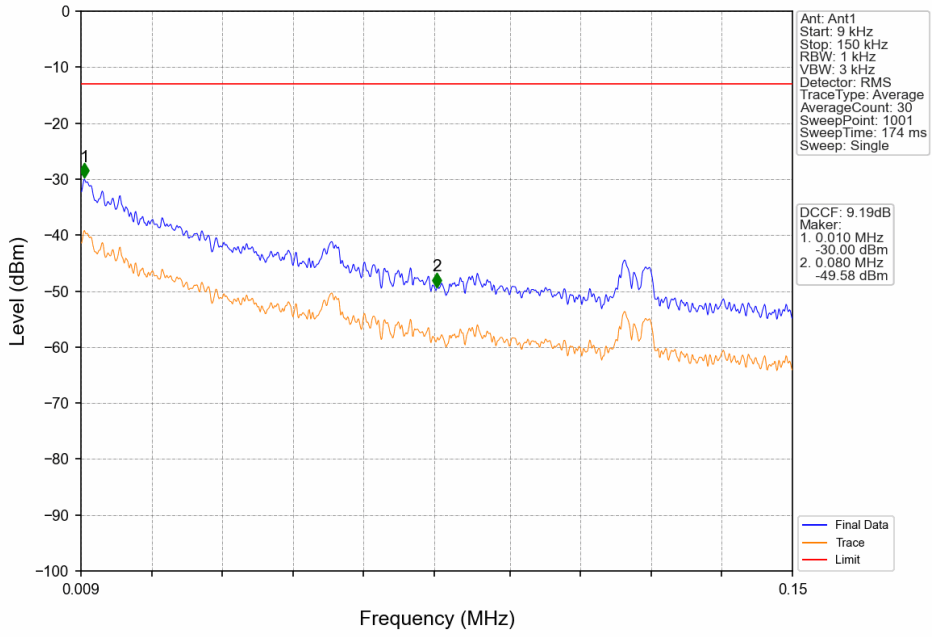
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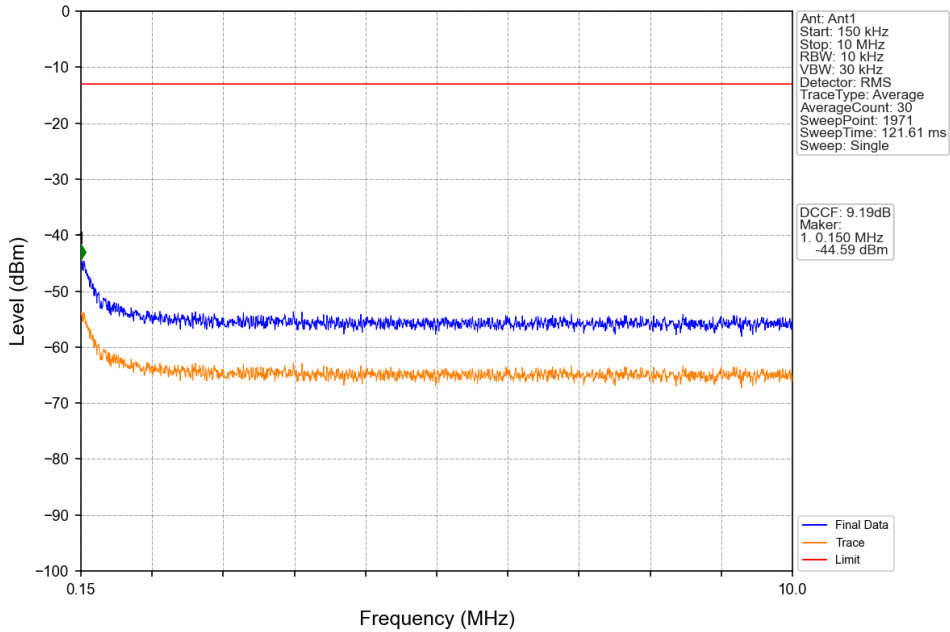
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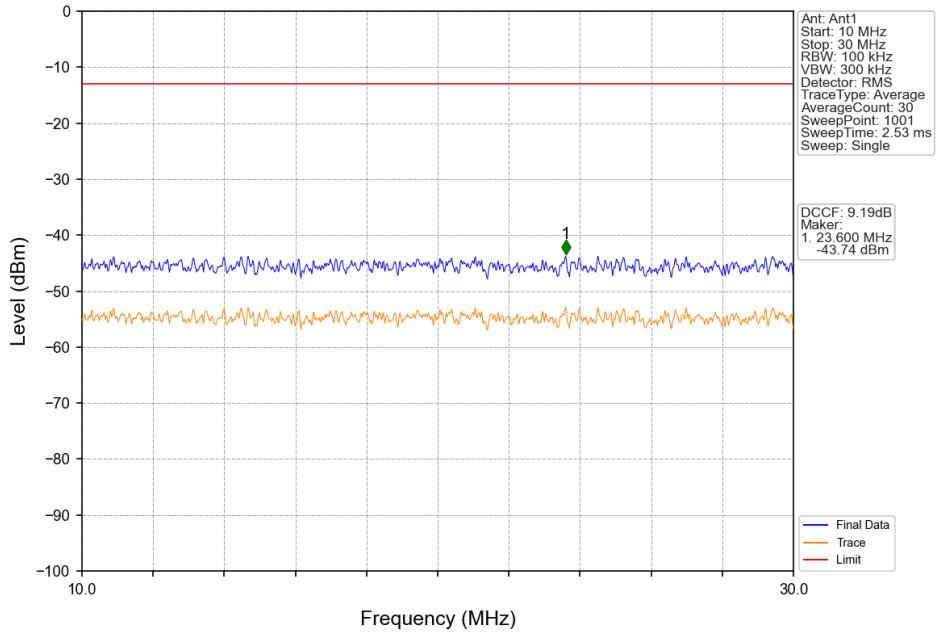
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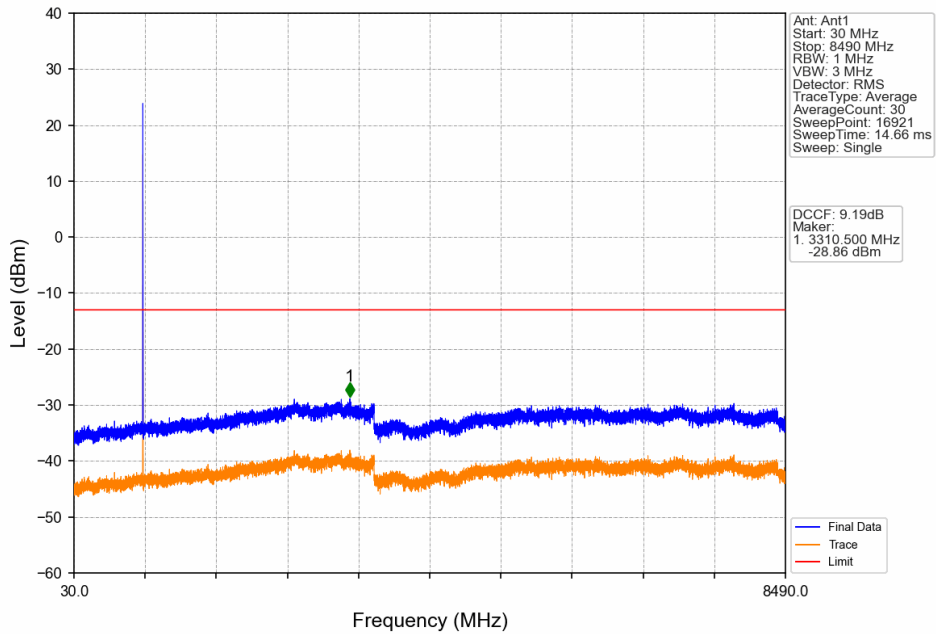
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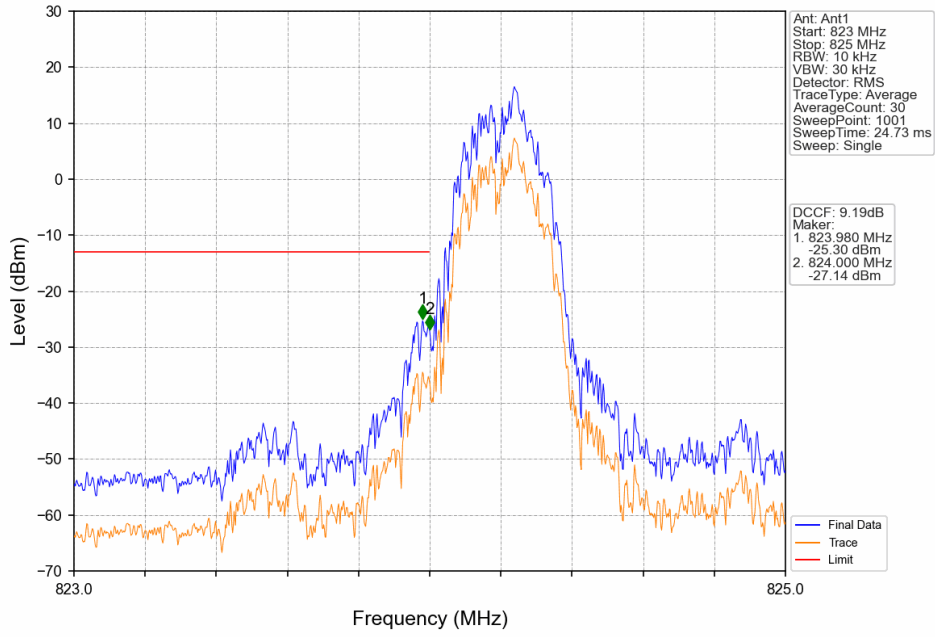
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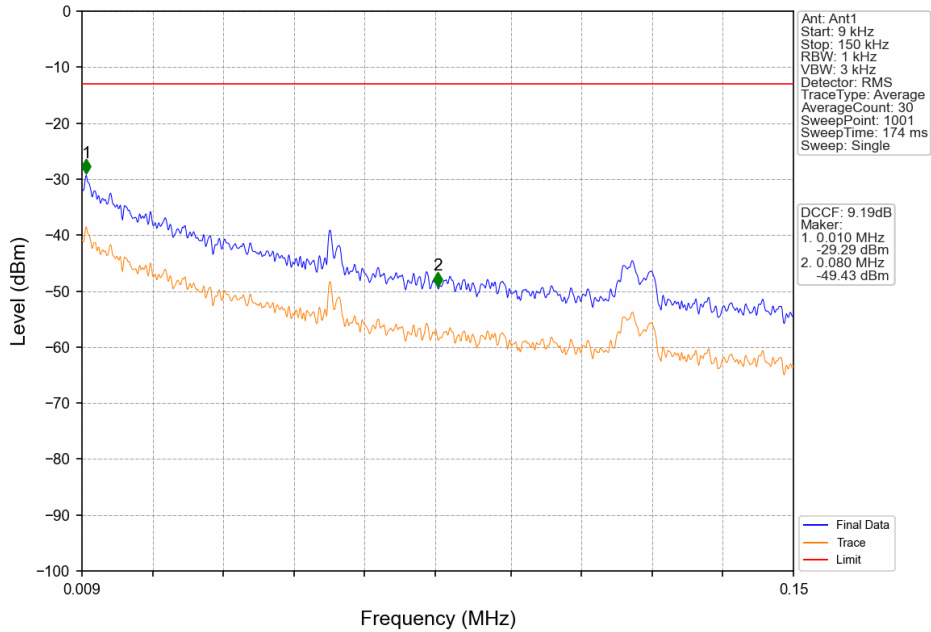
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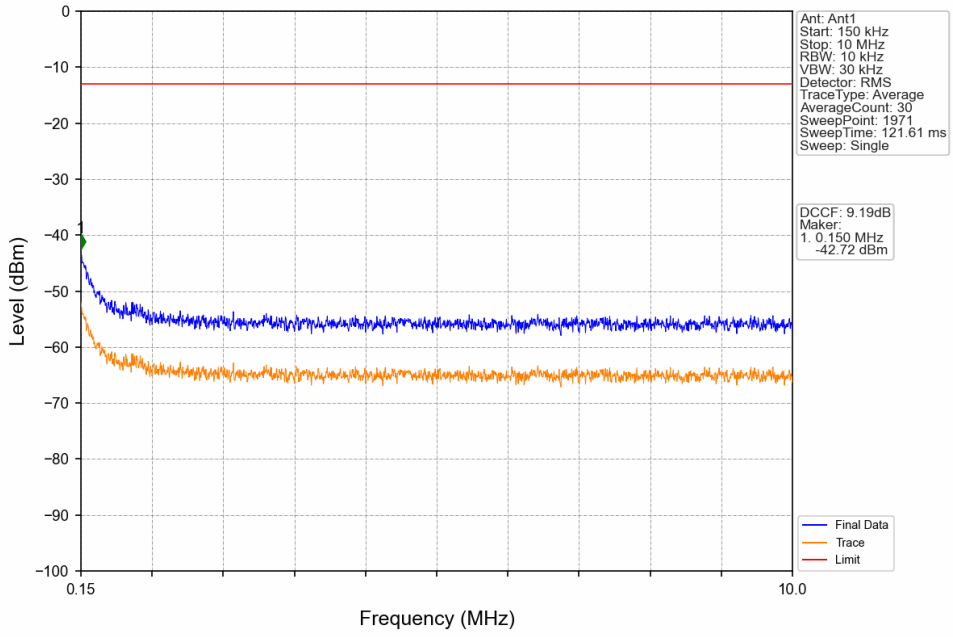
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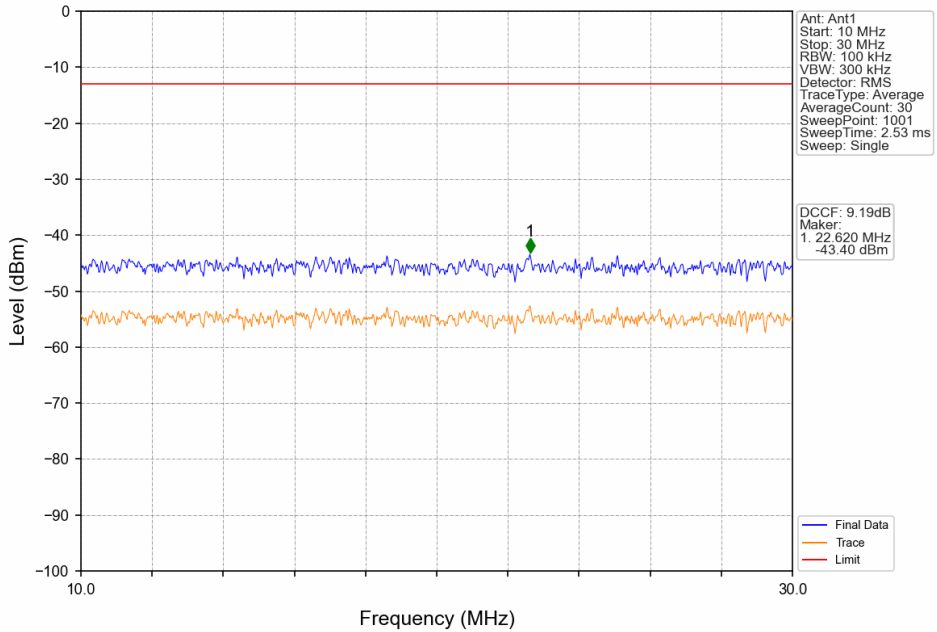
GSM850\_EGPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV



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

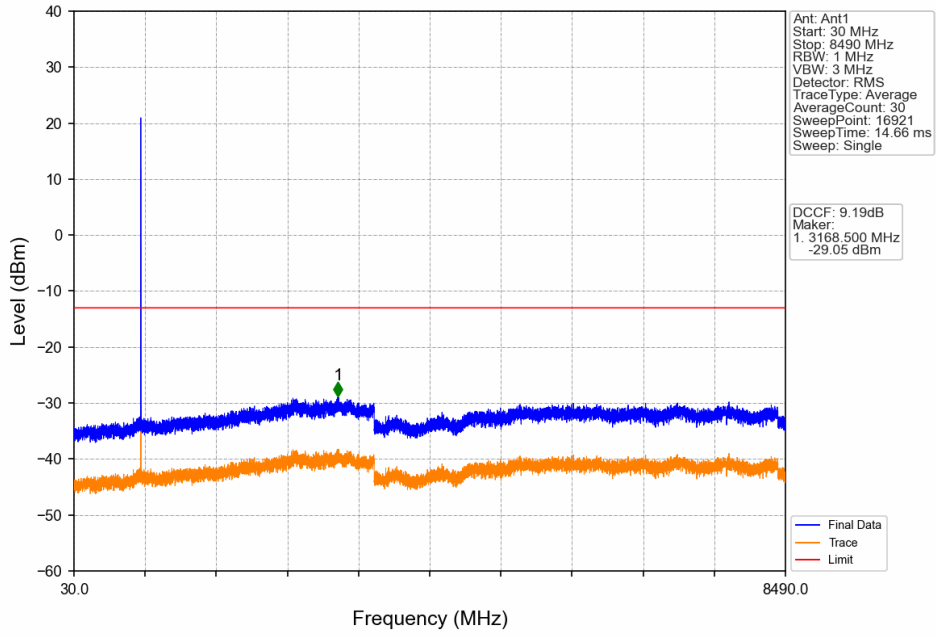


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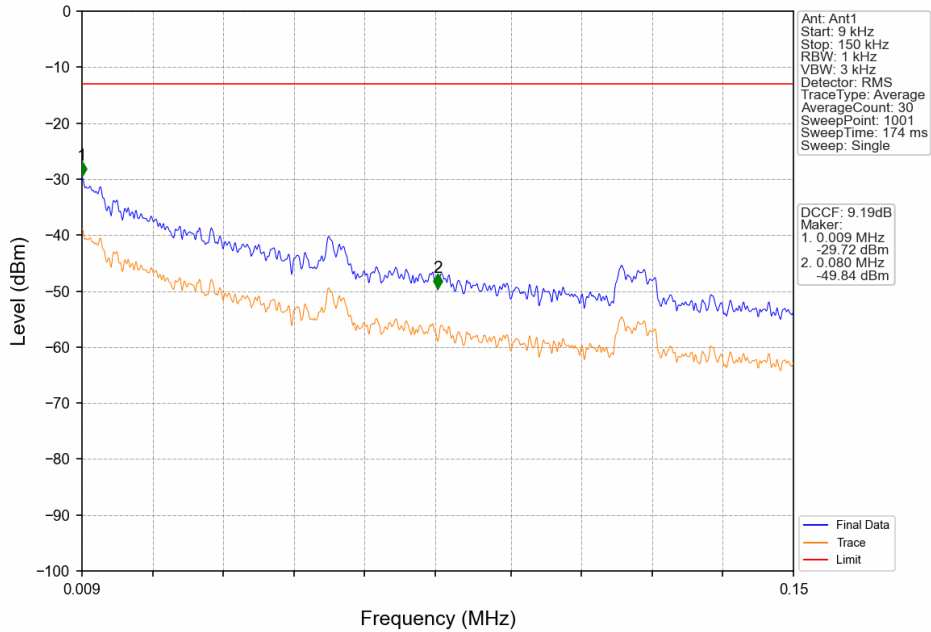




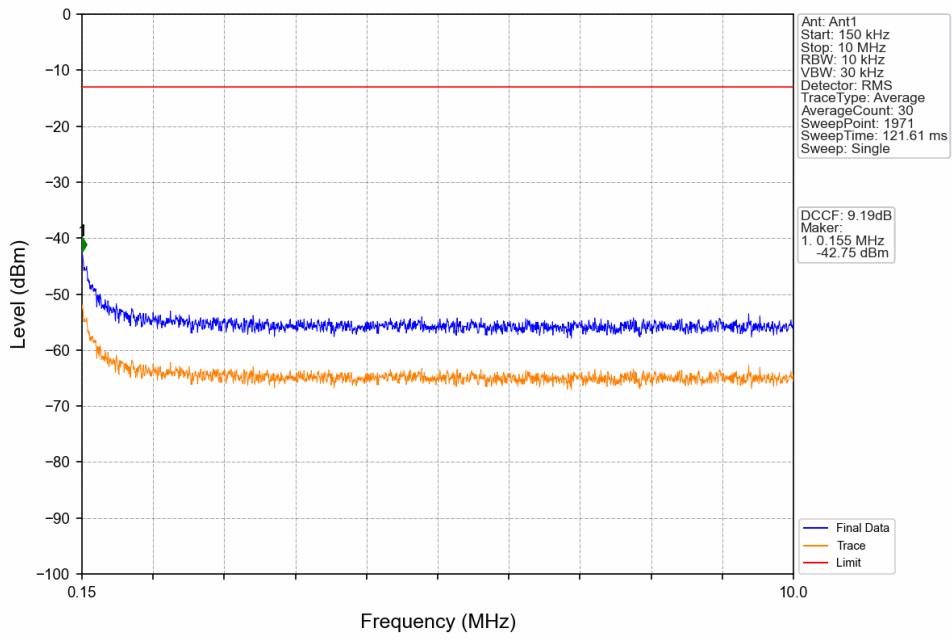
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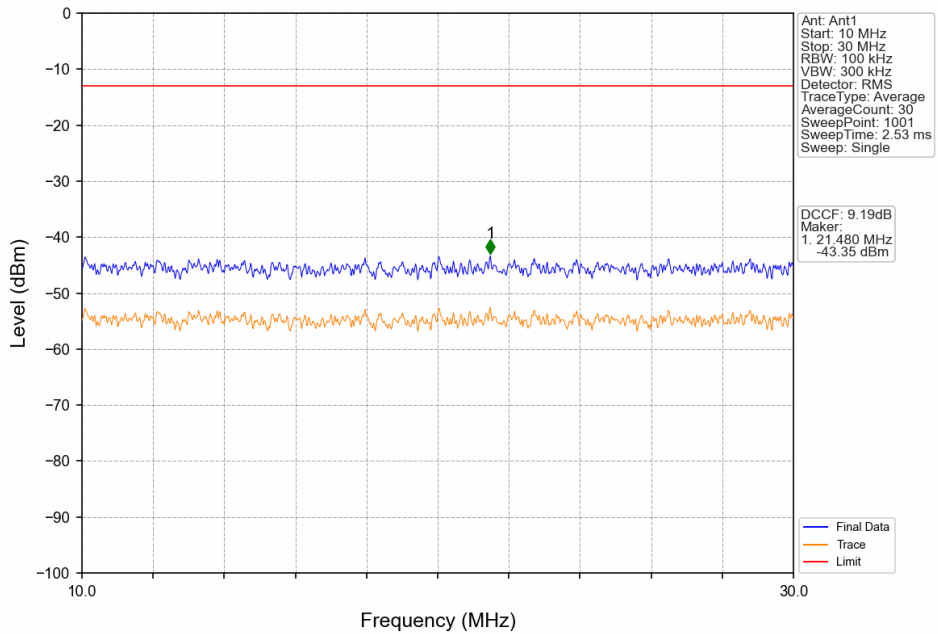
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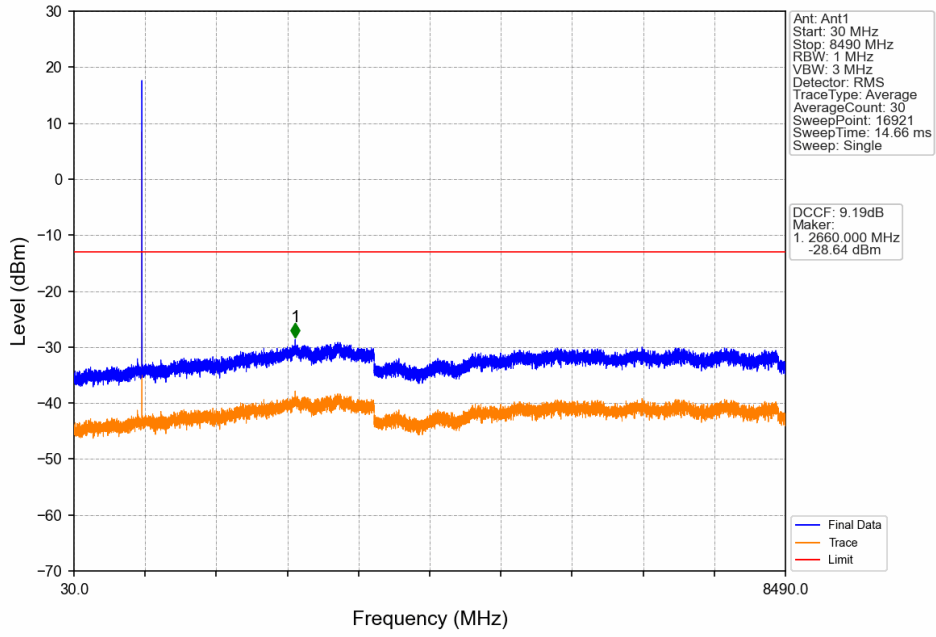
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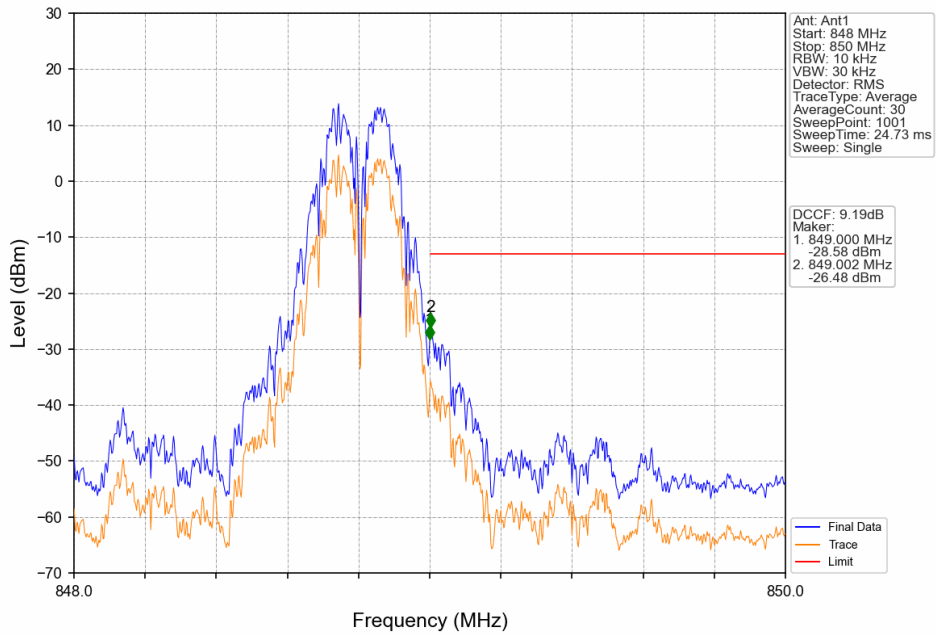
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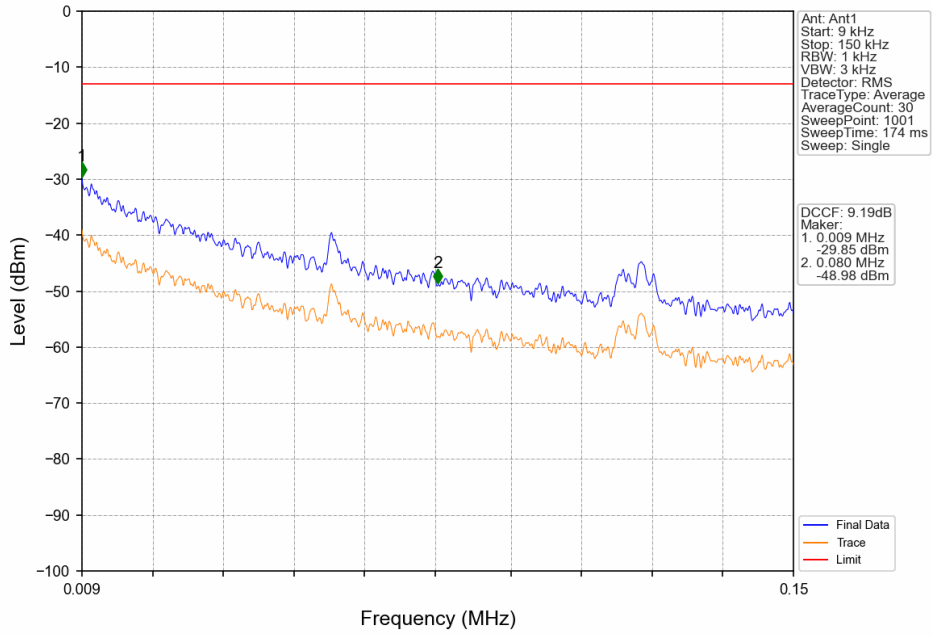
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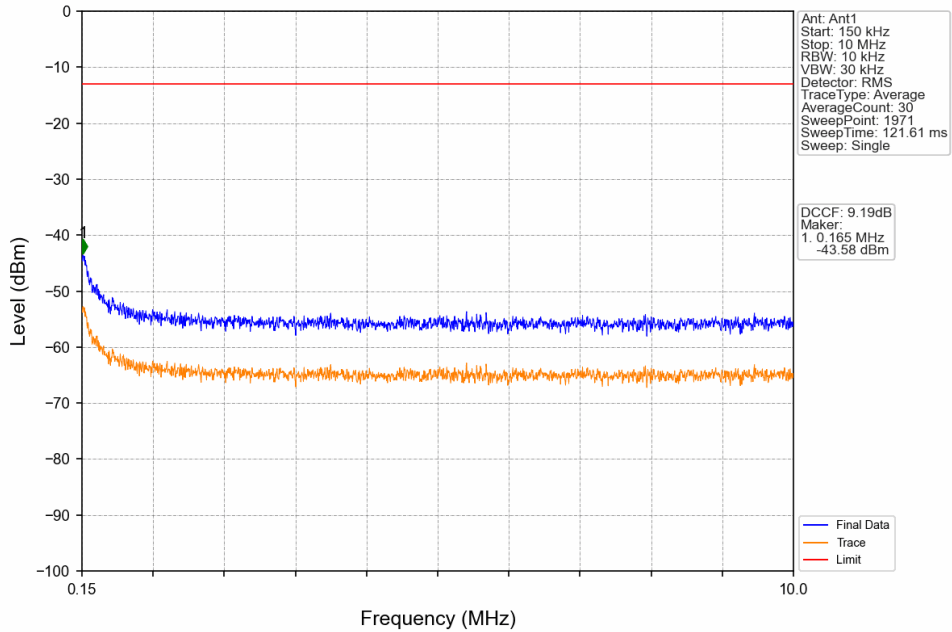
GSM850\_EGPRS\_HCH\_848.8MHz\_1 TX Slot\_NTNV



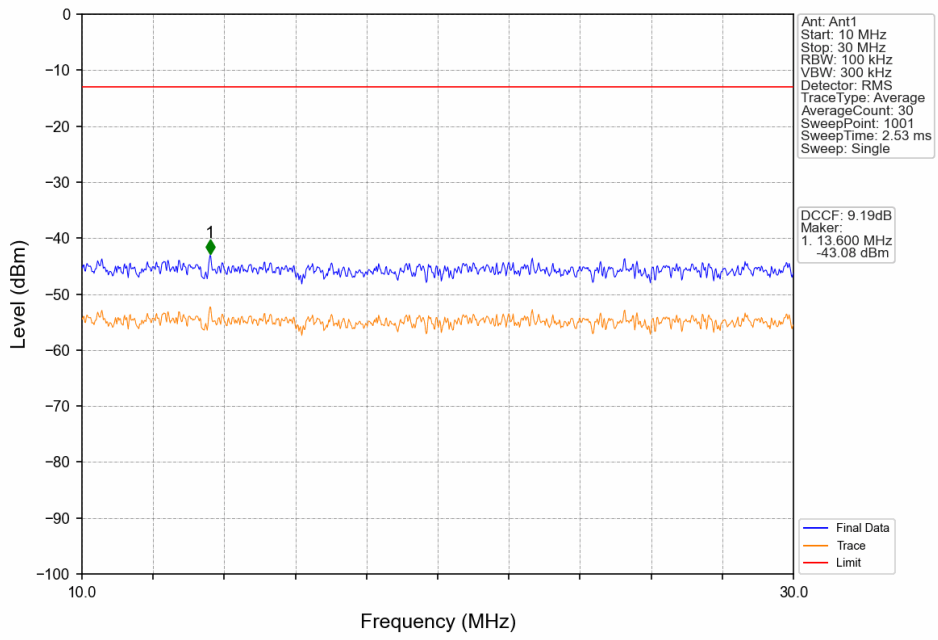
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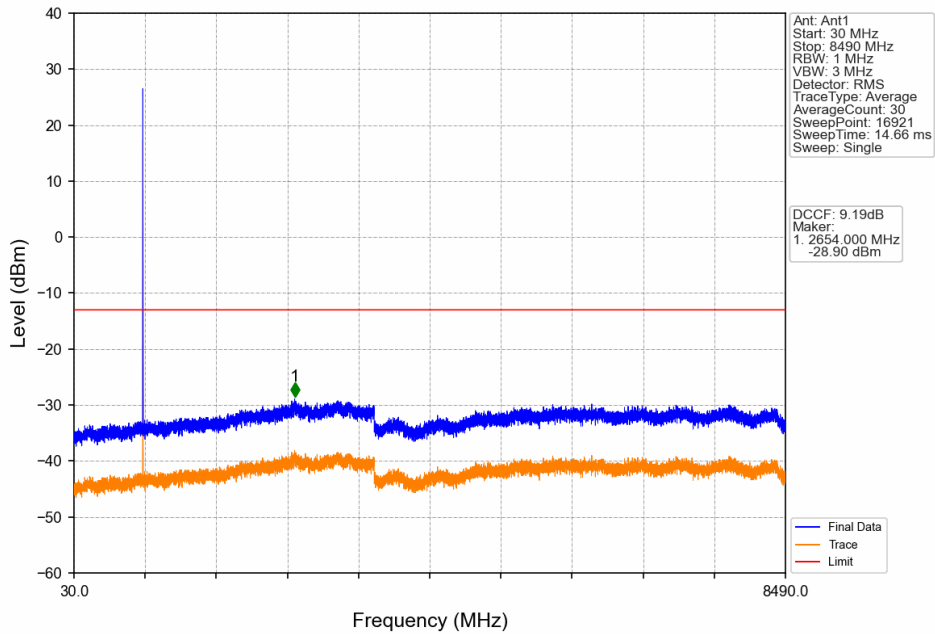
GSM850\_EGPRS\_HCH\_848.8MHz\_1 TX Slot\_NTNV



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	1.7140	0.0175	ppm	249KGXW	22H	32.34
GSM850	0.2	824.2	848.8	0.5035	0.0157	ppm	249KG7W	22H	27.02

### 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	1.9275	0.0175	ppm	249KGXW	22H	32.85
GSM850	0.2	824.2	848.8	0.5662	0.0157	ppm	249KG7W	22H	27.53