



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page:

1 of 39

Appendix B.1

GSM 850



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 2 of 39

1. Effective (Isotropic) Radiated Power Output Data

1.1 Test Result

ANT1

Band	Channel	Power(dBm)	ERP(dBm)	Limit(dBm)	Verdict
GSM850	128	32.06	32.47	38.45	PASS
GSM850	190	32.11	32.52	38.45	PASS
GSM850	251	32.08	32.49	38.45	PASS

Band	Channel	Slot	Power(dBm)	ERP(dBm)	Limit(dBm)	Verdict
EGPRS850	128	1	27.67	28.08	38.45	PASS
EGPRS850	128	2	27.60	28.01	38.45	PASS
EGPRS850	128	3	27.58	27.99	38.45	PASS
EGPRS850	128	4	27.45	27.86	38.45	PASS
EGPRS850	190	1	27.50	27.91	38.45	PASS
EGPRS850	190	2	27.46	27.87	38.45	PASS
EGPRS850	190	3	27.33	27.74	38.45	PASS
EGPRS850	190	4	27.13	27.54	38.45	PASS
EGPRS850	251	1	25.99	26.4	38.45	PASS
EGPRS850	251	2	25.89	26.3	38.45	PASS
EGPRS850	251	3	25.78	26.19	38.45	PASS
EGPRS850	251	4	25.69	26.1	38.45	PASS



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 3 of 39

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	3.8	-5.082	-0.0062	-2.5 to 2.5	Pass
			4.0	-5.274	-0.0064	-2.5 to 2.5	Pass
			4.2	-5.659	-0.0069	-2.5 to 2.5	Pass
		-30	4.0	-3.240	-0.0039	-2.5 to 2.5	Pass
		-20	4.0	-5.585	-0.0068	-2.5 to 2.5	Pass
		-10	4.0	-7.129	-0.0086	-2.5 to 2.5	Pass
		0	4.0	-6.358	-0.0077	-2.5 to 2.5	Pass
		10	4.0	-3.834	-0.0047	-2.5 to 2.5	Pass
		30	4.0	-6.584	-0.0080	-2.5 to 2.5	Pass
		40	4.0	-5.987	-0.0073	-2.5 to 2.5	Pass
		50	4.0	-5.671	-0.0069	-2.5 to 2.5	Pass
	836.6	20	3.8	-5.655	-0.0068	-2.5 to 2.5	Pass
			4.0	-4.256	-0.0051	-2.5 to 2.5	Pass
			4.2	-6.336	-0.0076	-2.5 to 2.5	Pass
		-30	4.0	-6.368	-0.0076	-2.5 to 2.5	Pass
		-20	4.0	-8.447	-0.0101	-2.5 to 2.5	Pass
		-10	4.0	-4.570	-0.0055	-2.5 to 2.5	Pass
		0	4.0	-0.594	-0.0007	-2.5 to 2.5	Pass
		10	4.0	-6.458	-0.0077	-2.5 to 2.5	Pass
		30	4.0	-3.730	-0.0045	-2.5 to 2.5	Pass
		40	4.0	-6.438	-0.0077	-2.5 to 2.5	Pass
		50	4.0	-5.169	-0.0062	-2.5 to 2.5	Pass
	848.8	20	3.8	-5.794	-0.0068	-2.5 to 2.5	Pass
			4.0	-4.775	-0.0056	-2.5 to 2.5	Pass
			4.2	-6.175	-0.0073	-2.5 to 2.5	Pass
		-30	4.0	-6.540	-0.0077	-2.5 to 2.5	Pass
		-20	4.0	-5.083	-0.0060	-2.5 to 2.5	Pass
		-10	4.0	-5.439	-0.0064	-2.5 to 2.5	Pass
		0	4.0	-4.038	-0.0048	-2.5 to 2.5	Pass
		10	4.0	-6.462	-0.0076	-2.5 to 2.5	Pass
		30	4.0	-4.708	-0.0055	-2.5 to 2.5	Pass
		40	4.0	-6.393	-0.0075	-2.5 to 2.5	Pass
		50	4.0	-6.588	-0.0078	-2.5 to 2.5	Pass
EGPRS	824.2	20	3.8	-5.298	-0.0064	-2.5 to 2.5	Pass
			4.0	-4.960	-0.0060	-2.5 to 2.5	Pass
			4.2	-8.769	-0.0106	-2.5 to 2.5	Pass
		-30	4.0	-2.846	-0.0035	-2.5 to 2.5	Pass
		-20	4.0	-6.523	-0.0079	-2.5 to 2.5	Pass
		-10	4.0	-8.507	-0.0103	-2.5 to 2.5	Pass
		0	4.0	-7.582	-0.0092	-2.5 to 2.5	Pass
		10	4.0	-12.664	-0.0154	-2.5 to 2.5	Pass
		30	4.0	-5.201	-0.0063	-2.5 to 2.5	Pass
		40	4.0	-4.115	-0.0050	-2.5 to 2.5	Pass



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page:

4 of 39

	836.6	50	4.0	-7.660	-0.0093	-2.5 to 2.5	Pass
		20	3.8	-8.376	-0.0100	-2.5 to 2.5	Pass
			4.0	-4.707	-0.0056	-2.5 to 2.5	Pass
			4.2	-7.372	-0.0088	-2.5 to 2.5	Pass
		-30	4.0	-6.354	-0.0076	-2.5 to 2.5	Pass
		-20	4.0	-4.321	-0.0052	-2.5 to 2.5	Pass
		-10	4.0	-8.589	-0.0103	-2.5 to 2.5	Pass
		0	4.0	-7.032	-0.0084	-2.5 to 2.5	Pass
		10	4.0	-6.867	-0.0082	-2.5 to 2.5	Pass
		30	4.0	-5.339	-0.0064	-2.5 to 2.5	Pass
		40	4.0	-5.953	-0.0071	-2.5 to 2.5	Pass
		50	4.0	-7.197	-0.0086	-2.5 to 2.5	Pass
	848.8	20	3.8	-6.702	-0.0079	-2.5 to 2.5	Pass
			4.0	-8.533	-0.0101	-2.5 to 2.5	Pass
			4.2	-7.498	-0.0088	-2.5 to 2.5	Pass
		-30	4.0	-8.585	-0.0101	-2.5 to 2.5	Pass
		-20	4.0	-7.463	-0.0088	-2.5 to 2.5	Pass
		-10	4.0	-8.172	-0.0096	-2.5 to 2.5	Pass
		0	4.0	-5.959	-0.0070	-2.5 to 2.5	Pass
		10	4.0	-7.236	-0.0085	-2.5 to 2.5	Pass
		30	4.0	-6.003	-0.0071	-2.5 to 2.5	Pass
		40	4.0	-3.494	-0.0041	-2.5 to 2.5	Pass
		50	4.0	-7.869	-0.0093	-2.5 to 2.5	Pass



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 5 of 39

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	0.244	/	Pass
			836.6	0.246	/	Pass
			848.8	0.247	/	Pass
	EGPRS	1 TX Slot	824.2	0.234	/	Pass
			836.6	0.248	/	Pass
			848.8	0.241	/	Pass

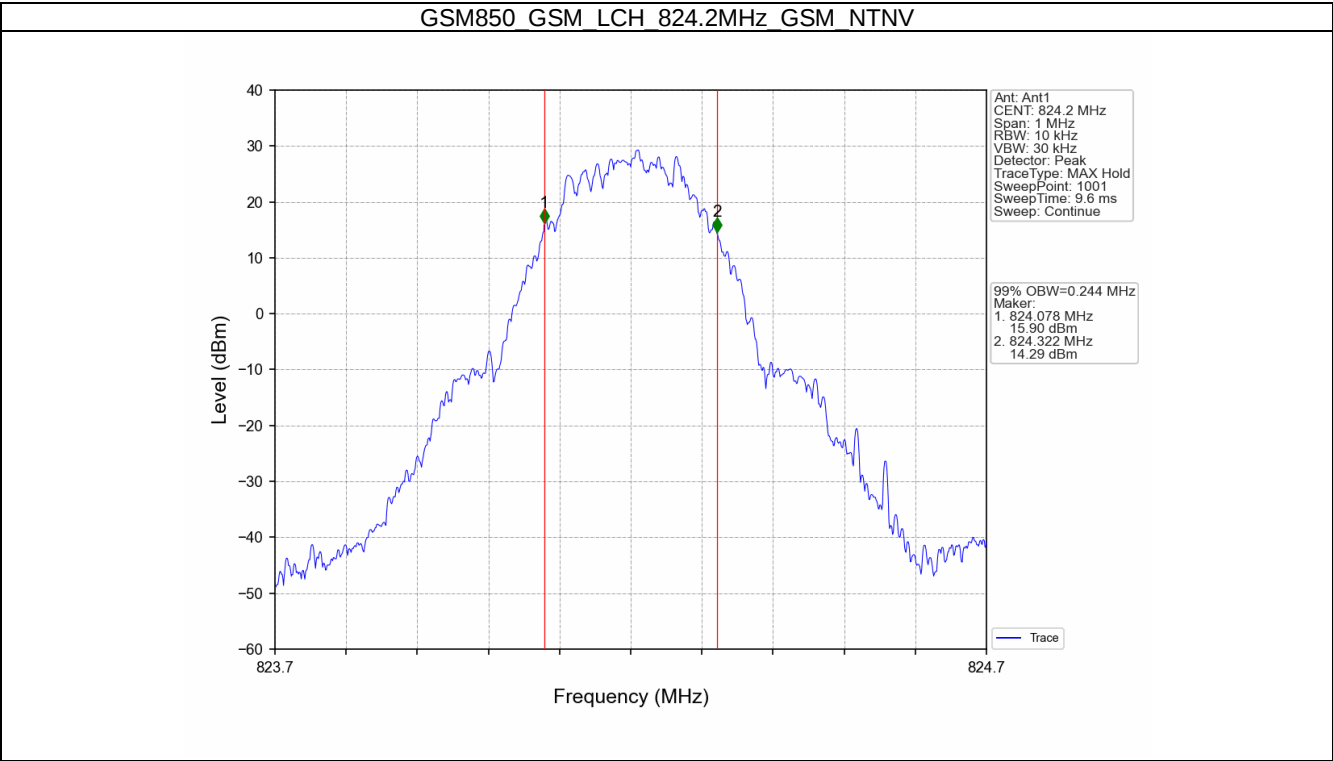


SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 6 of 39

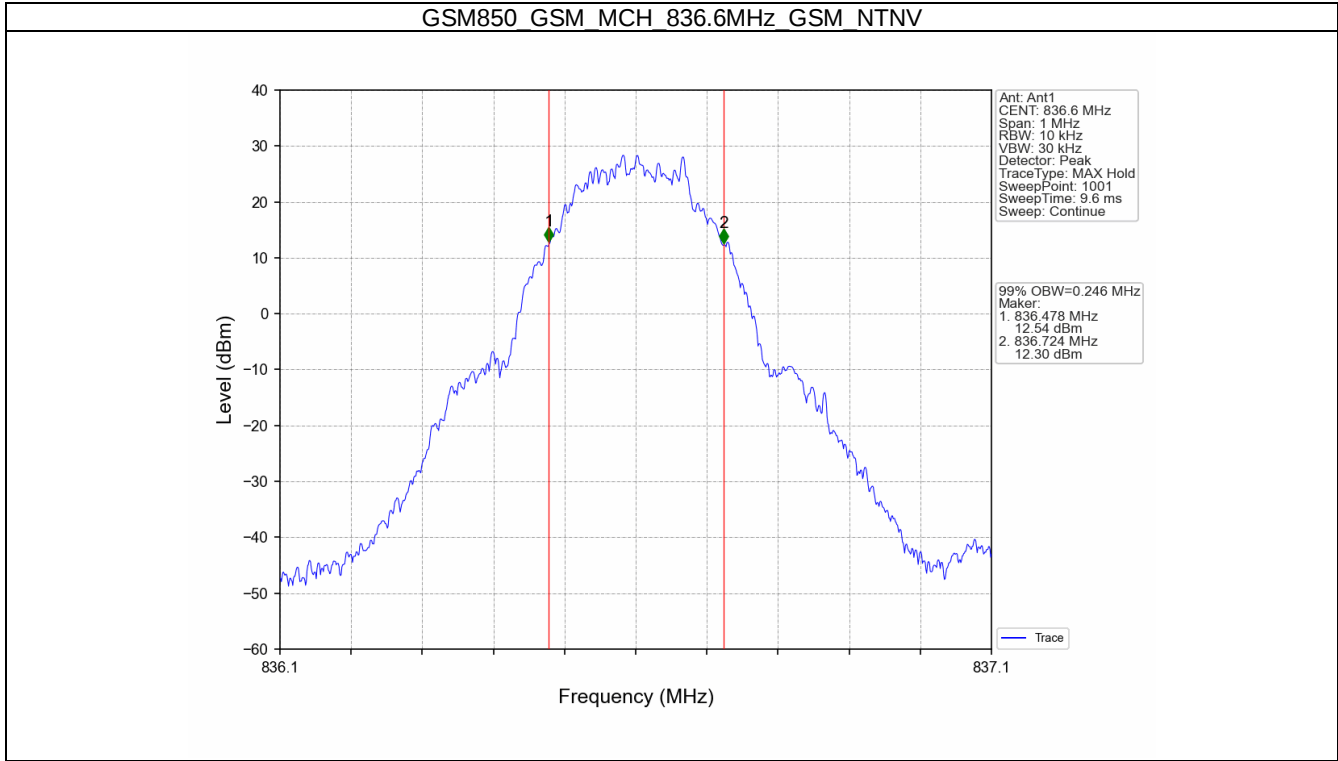
3.1.2 Test Graph





SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

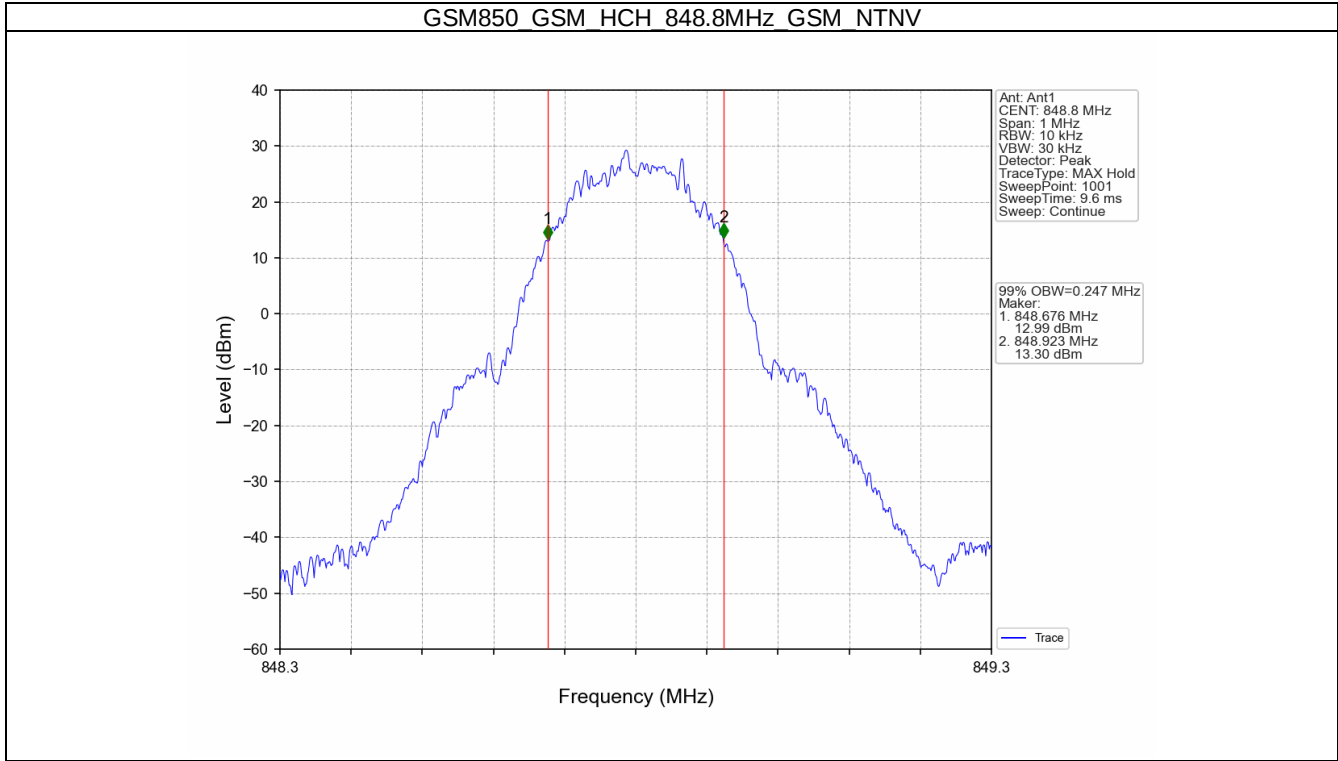
SUWI-TRF-RF A001





SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

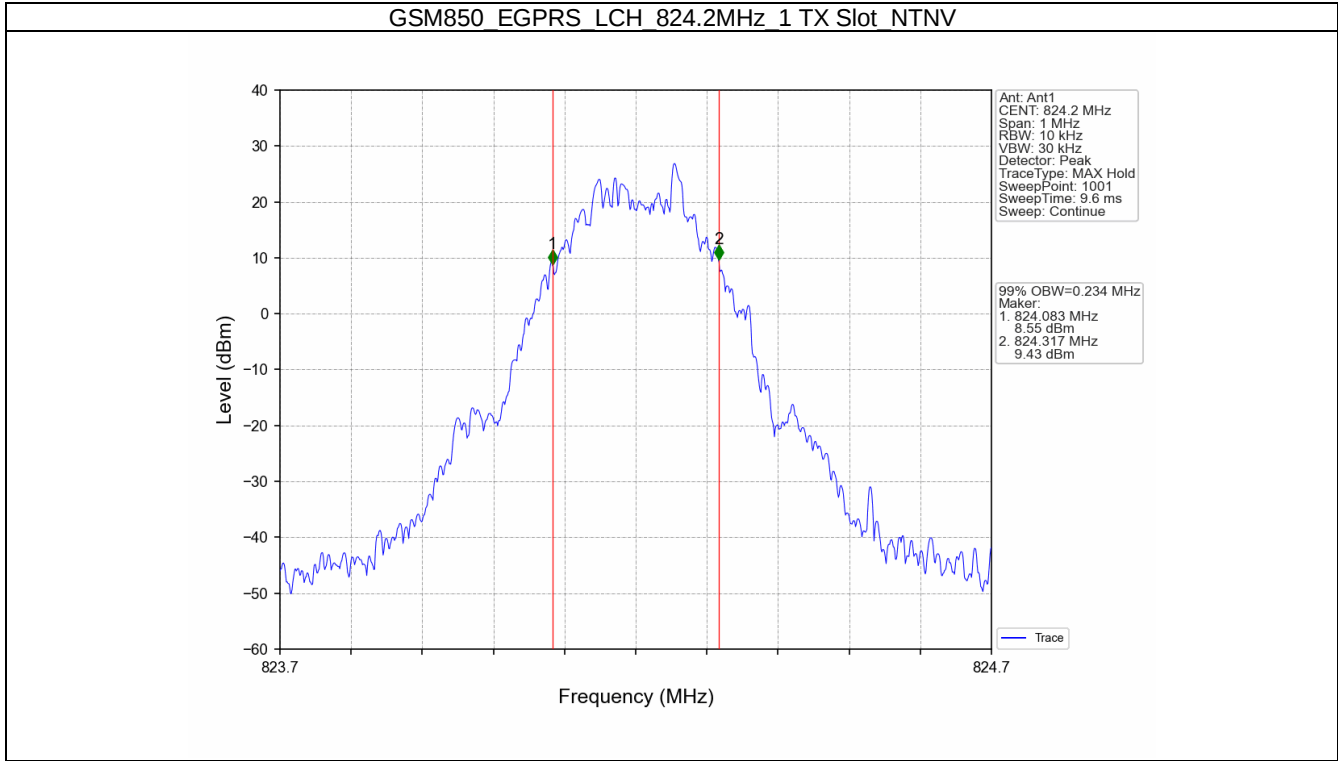
SUWI-TRF-RF A001





SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

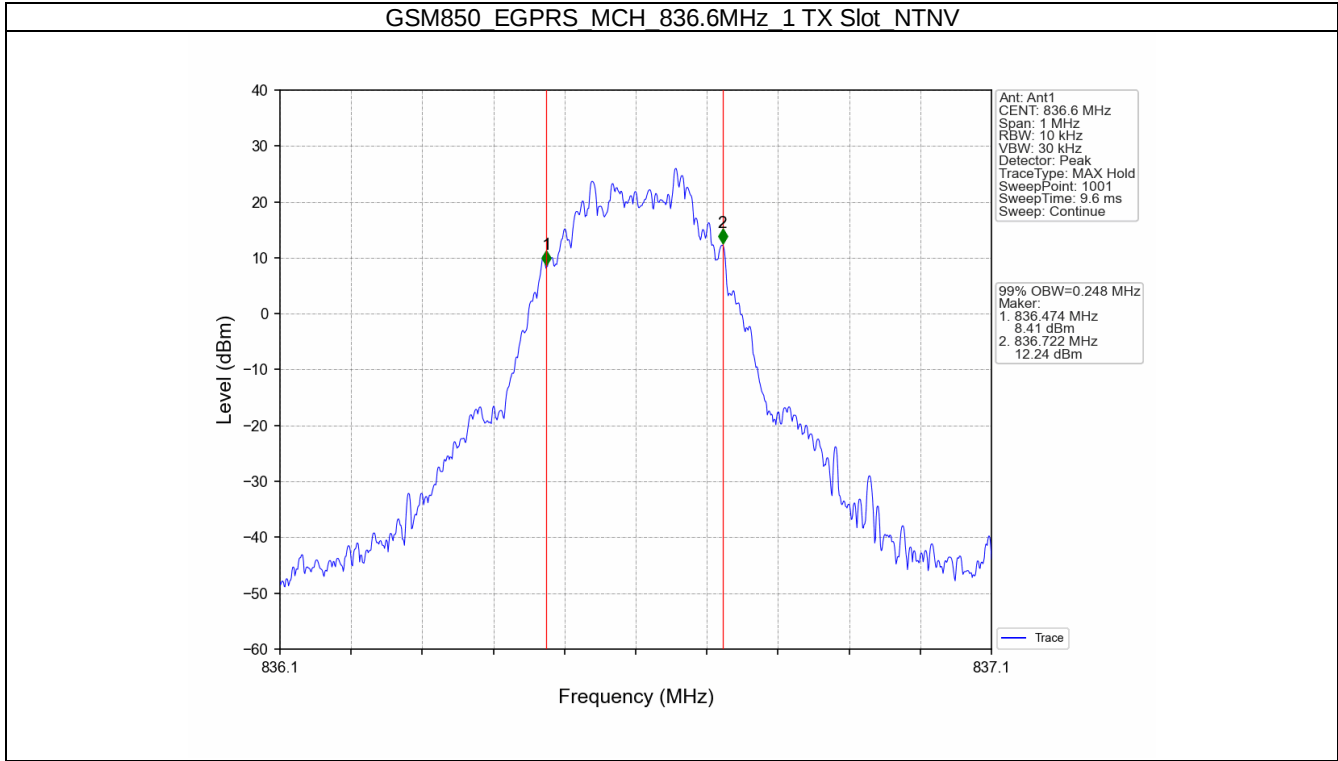




SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 10 of 39

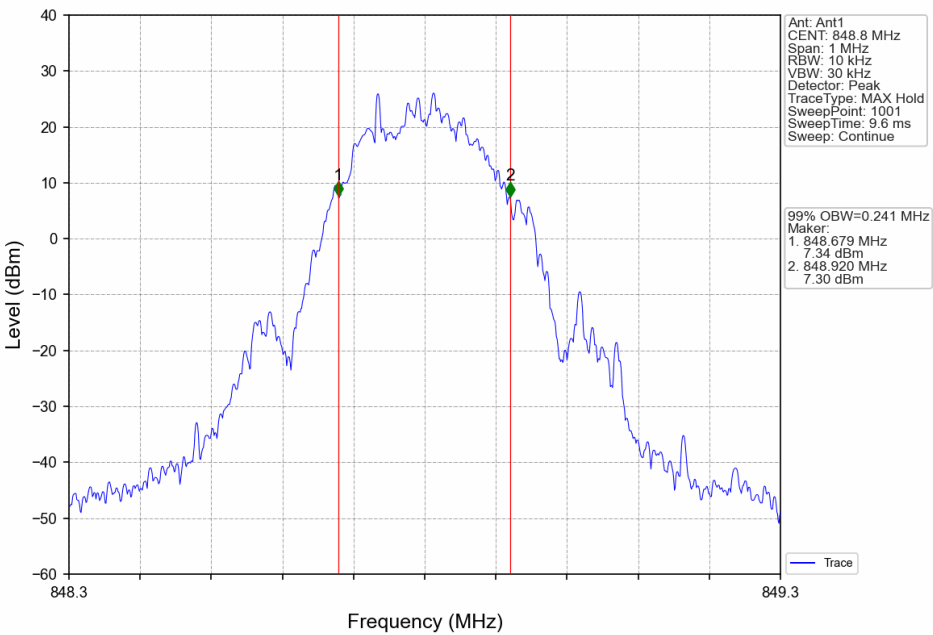




SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

GSM850 EGPRS HCH 848.8MHz 1 TX Slot NTN





SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 12 of 39

3.2 GSM850_XDB

3.2.1 Test Result

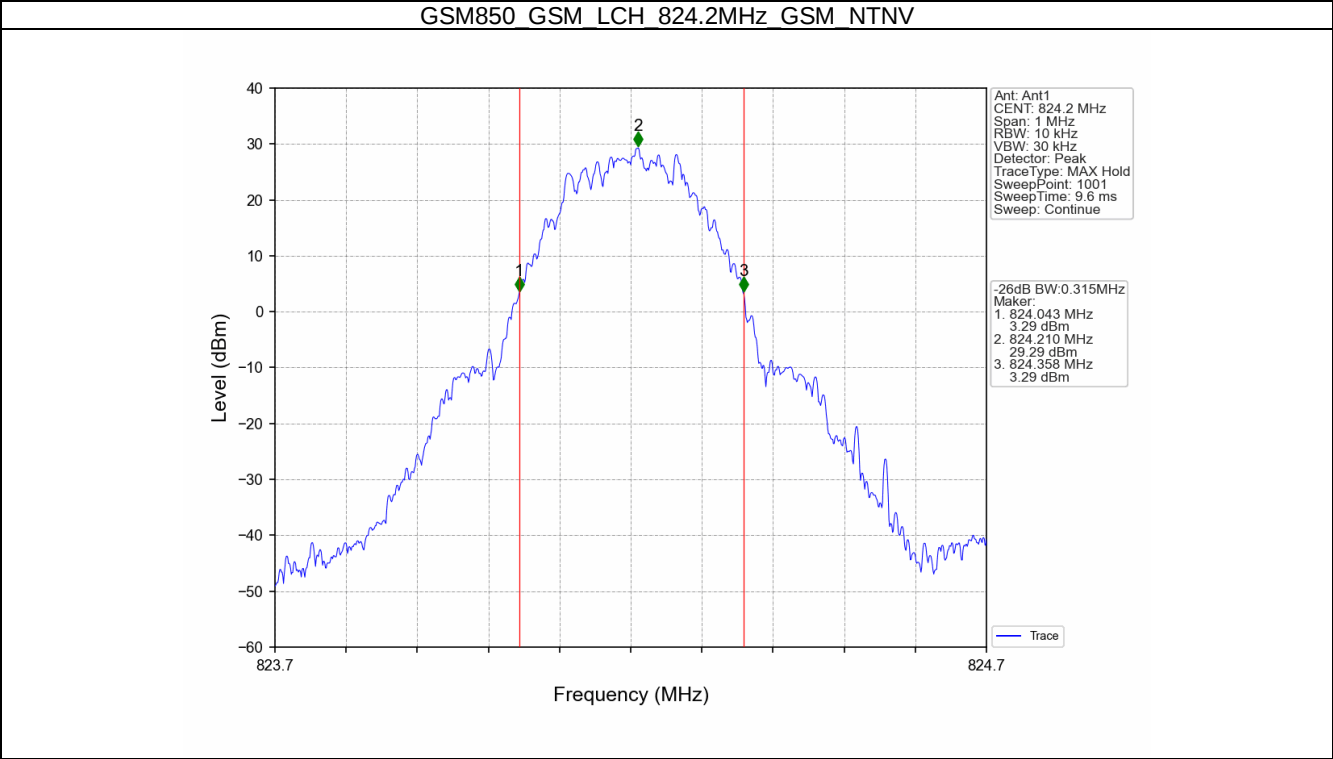
Band: GSM850						
ENV	Mode		Frequency (MHz)	26dB Bandwidth (MHz)		Verdict
	Network	Subset		Result	Limit	
NTNV	GSM	GSM	824.2	0.315	/	Pass
			836.6	0.317	/	Pass
			848.8	0.312	/	Pass
	EGPRS	1 TX Slot	824.2	0.303	/	Pass
			836.6	0.298	/	Pass
			848.8	0.301	/	Pass



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

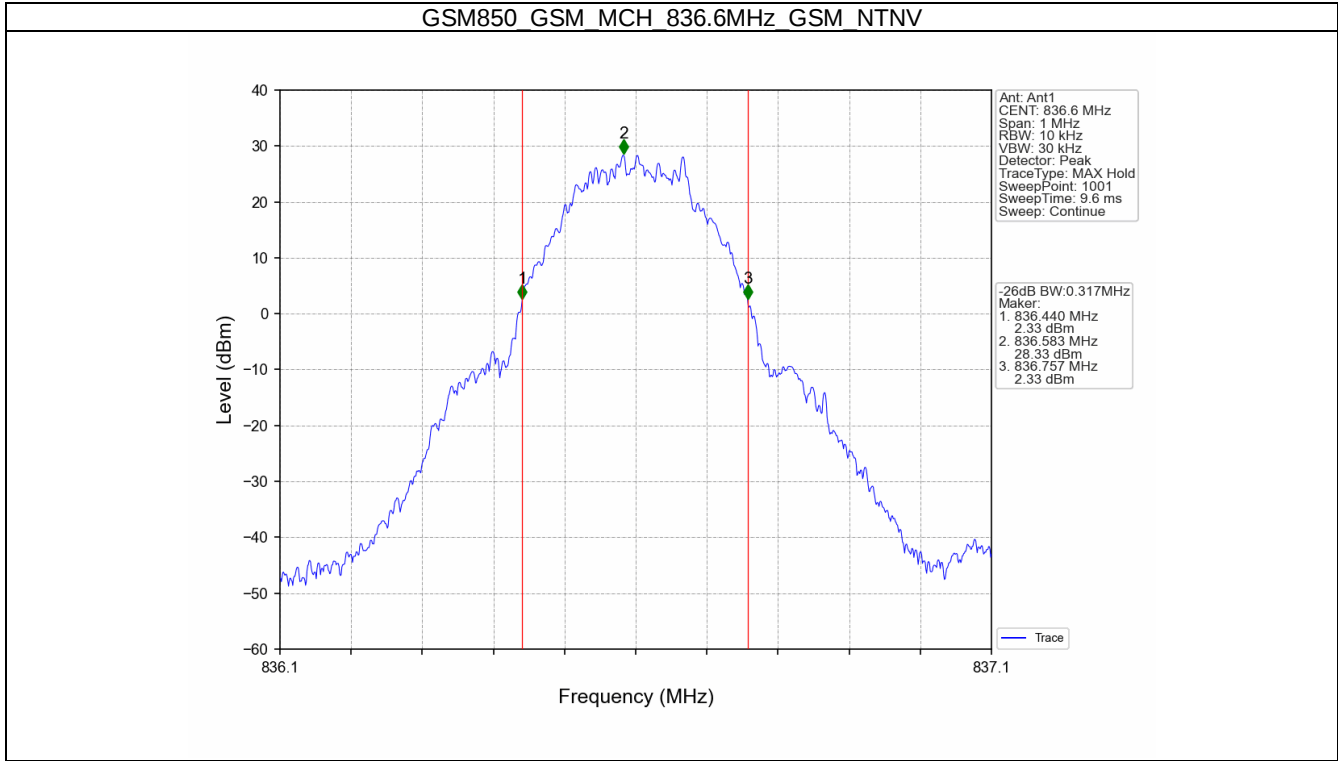
3.2.2 Test Graph





SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

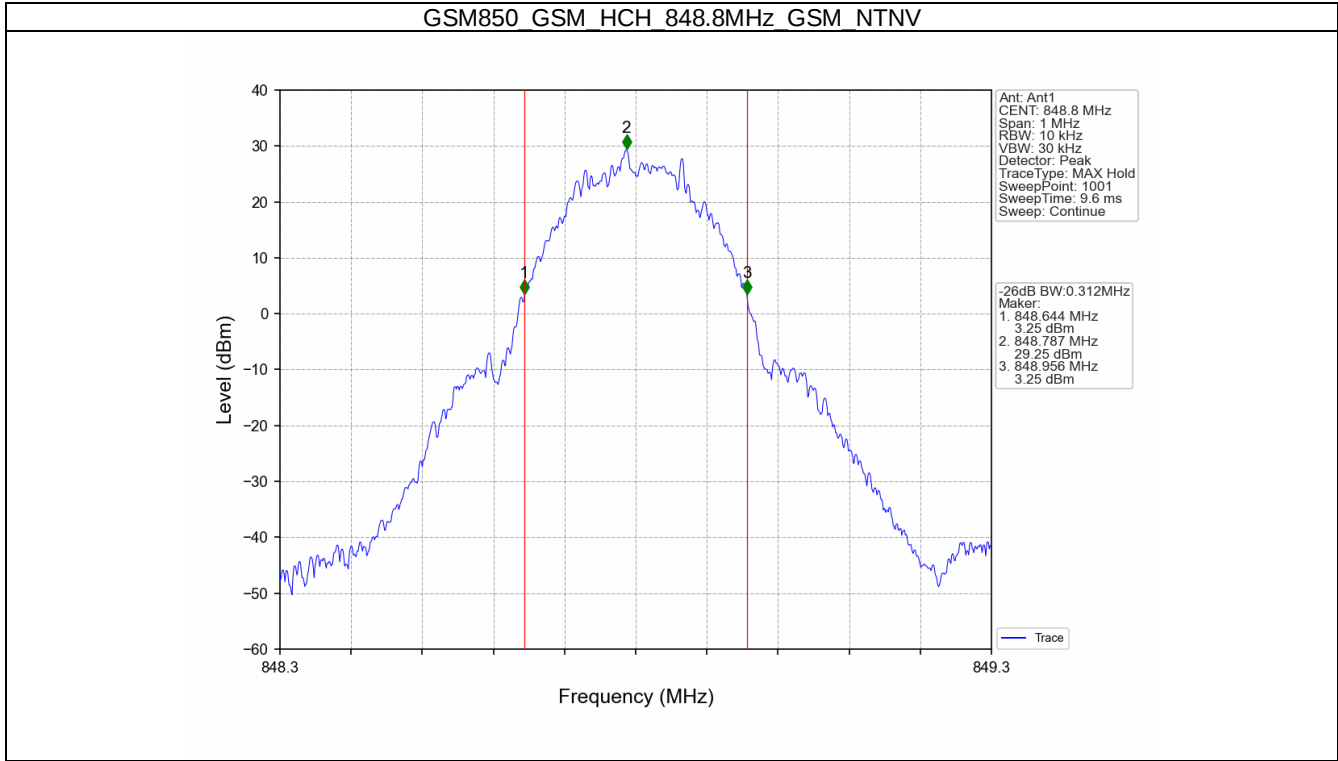




SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 15 of 39

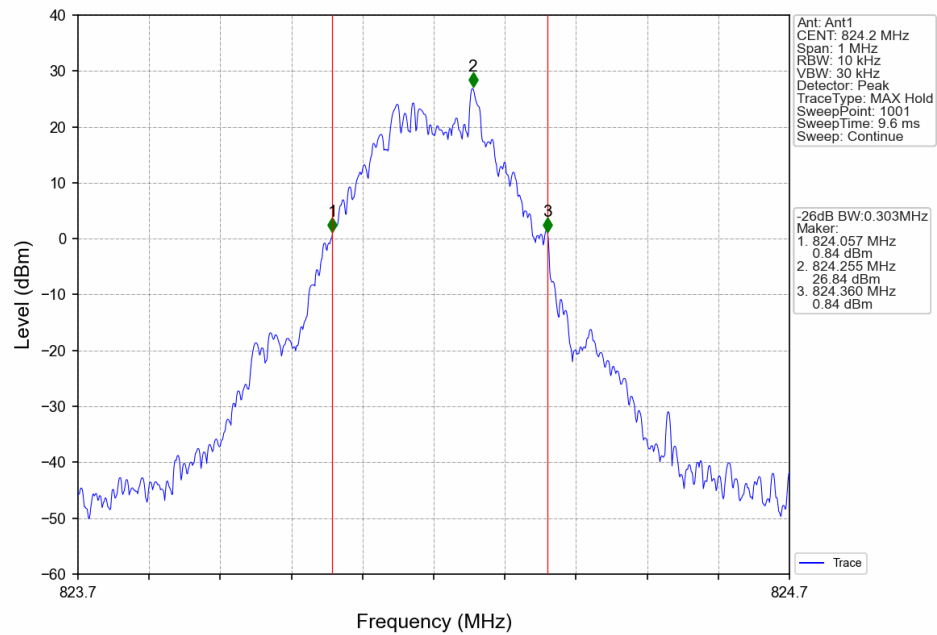




SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

GSM850 EGPRS LCH 824.2MHz 1 TX Slot NTNV



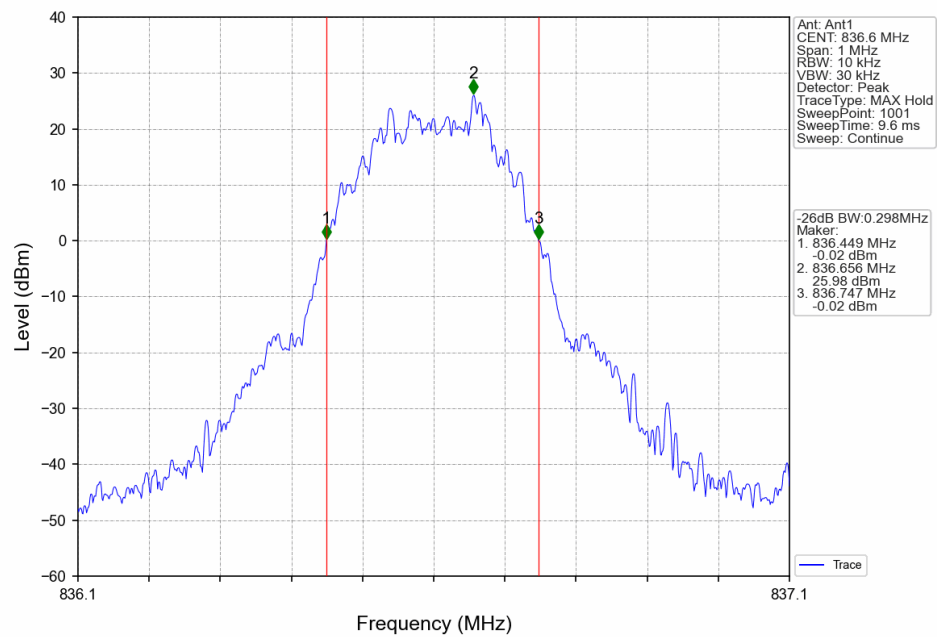


SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 17 of 39

GSM850 EGPRS MCH 836.6MHz 1 TX Slot NTN

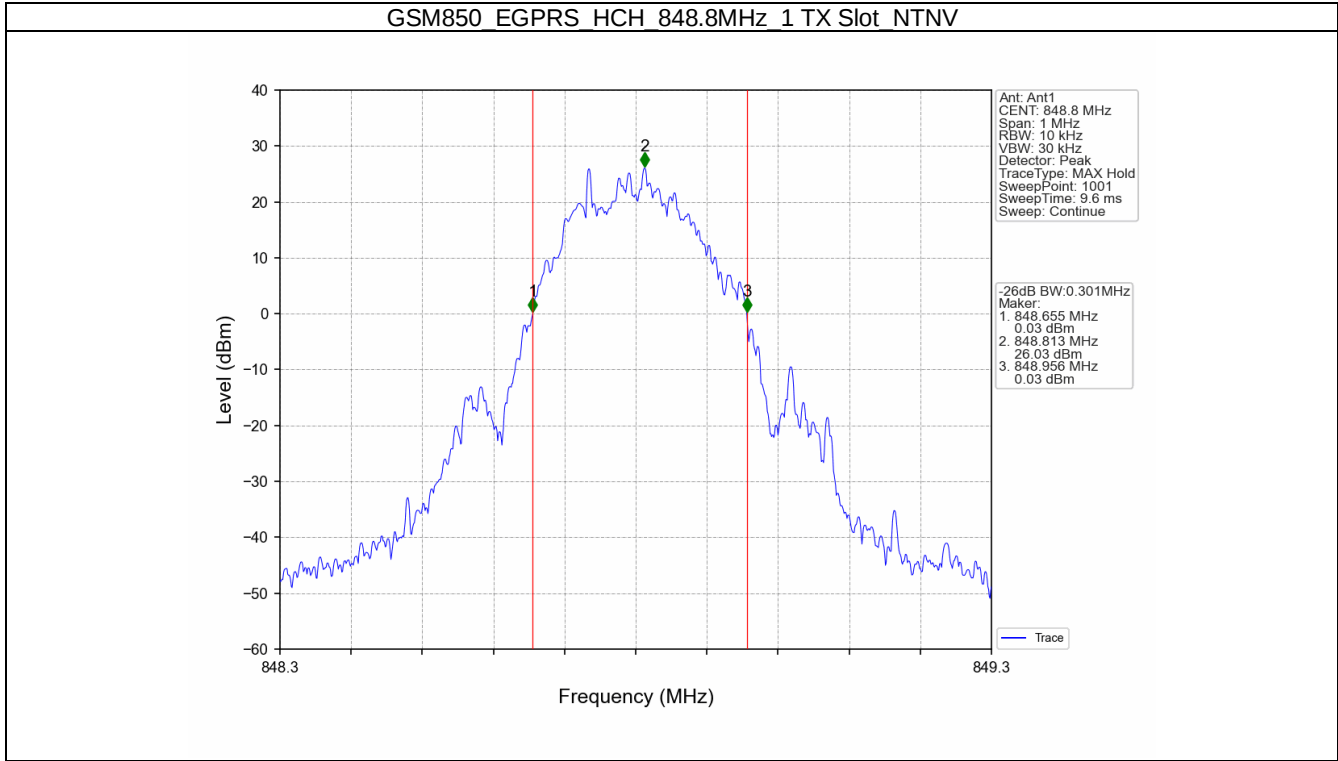




SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 18 of 39





SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 19 of 39

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	9.66	<=13	Pass
			836.6	9.44	<=13	Pass
			848.8	9.64	<=13	Pass
	EGPRS	4 TX Slots	824.2	10.12	<=13	Pass
			836.6	9.99	<=13	Pass
			848.8	9.99	<=13	Pass

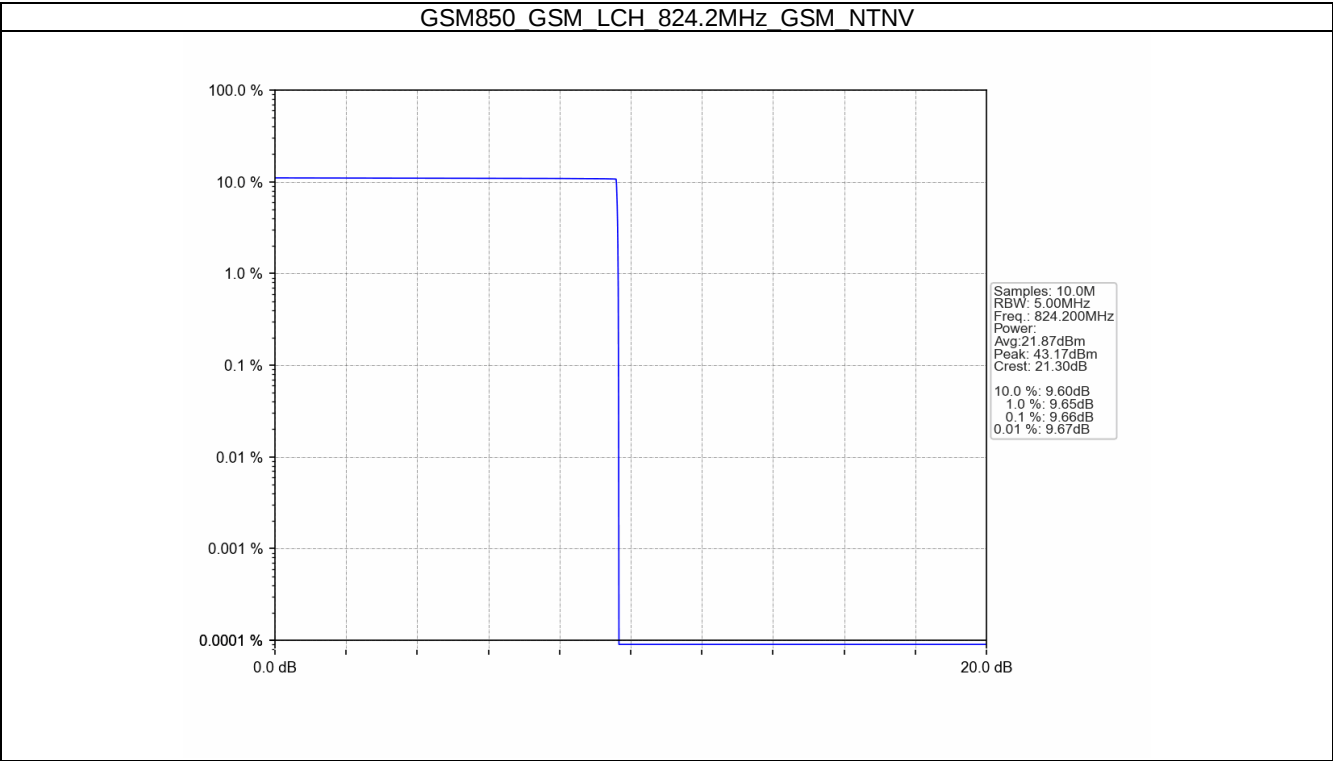


SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 20 of 39

4.1.2 Test Graph

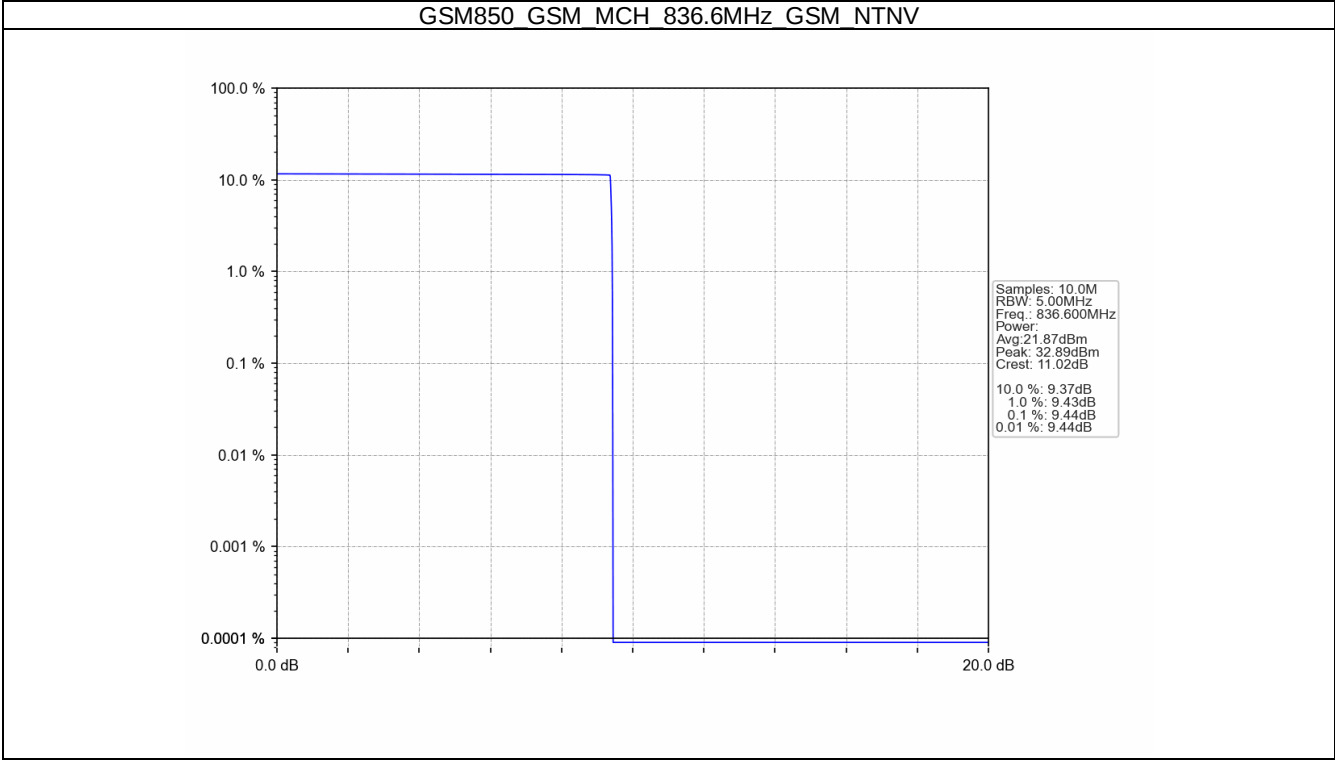




SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 21 of 39

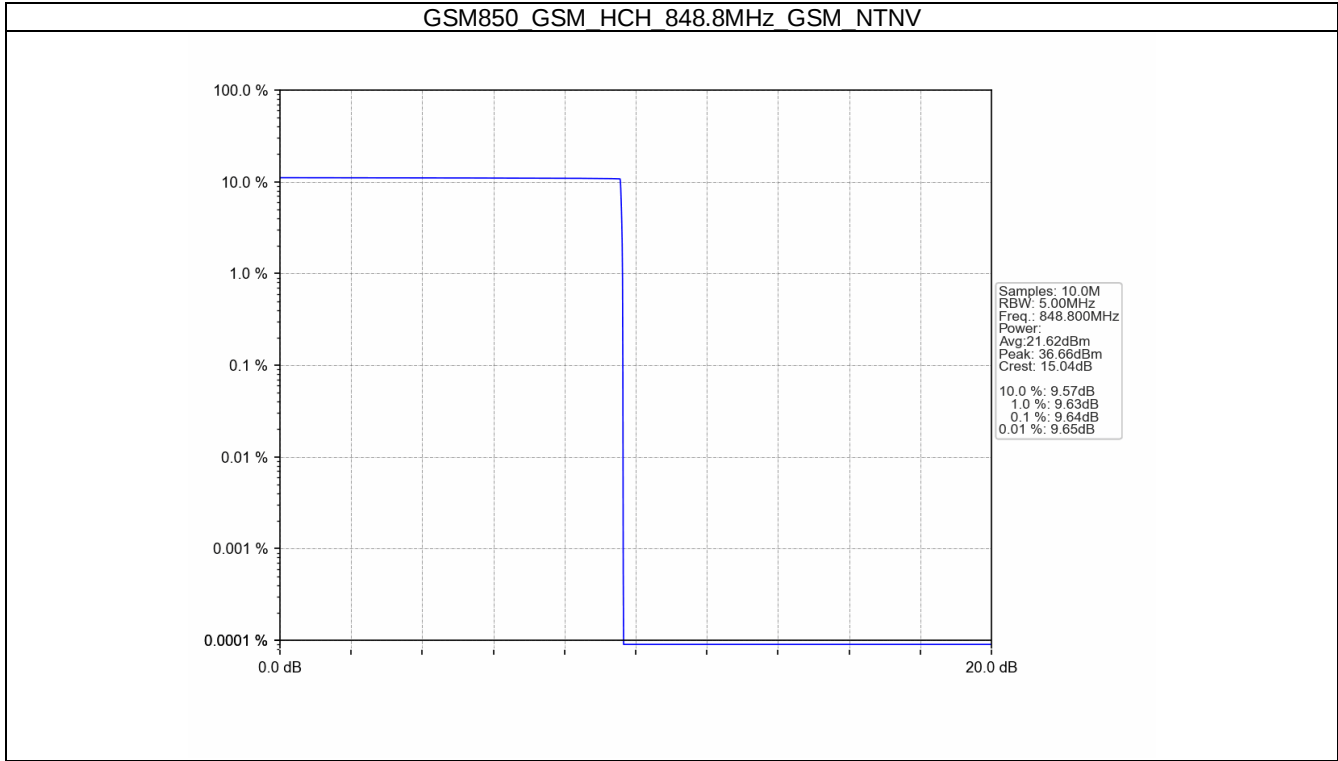




SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 22 of 39

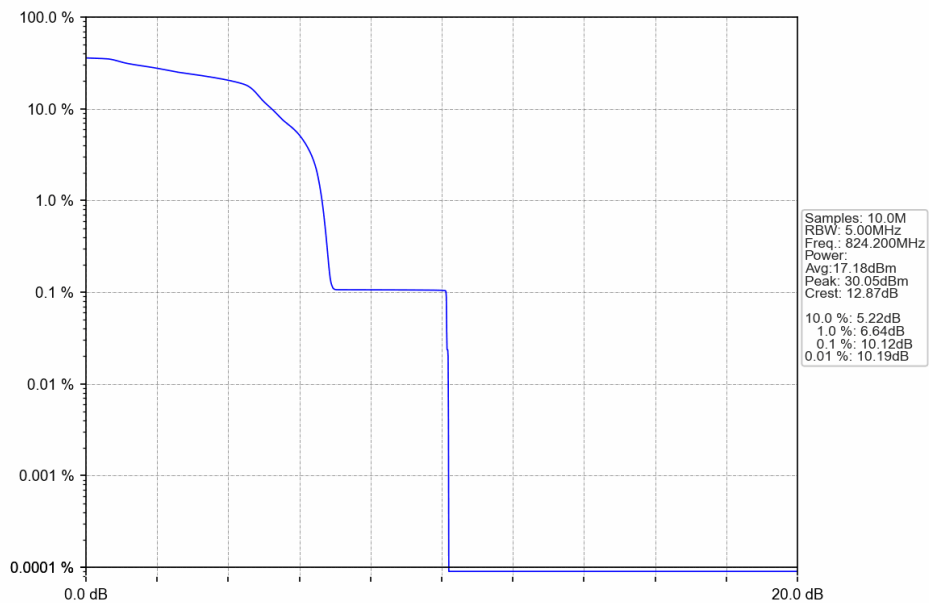




SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

GSM850 EGPRS LCH 824.2MHz 4 TX Slots NTNV

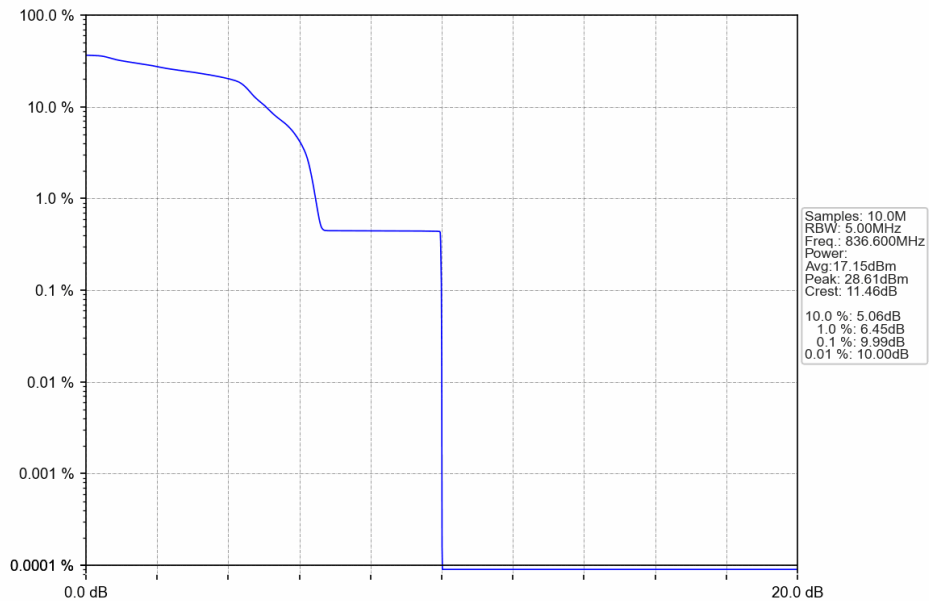




SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

GSM850 EGPRS MCH 836.6MHz 4 TX Slots NTN

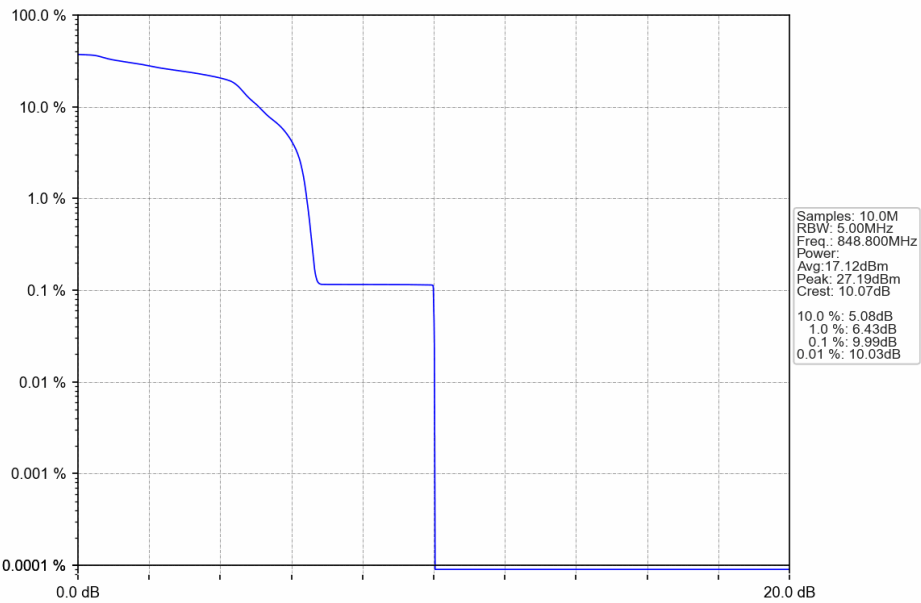




SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

GSM850 EGPRS HCH 848.8MHz 4 TX Slots NTV





SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 26 of 39

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	
	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	

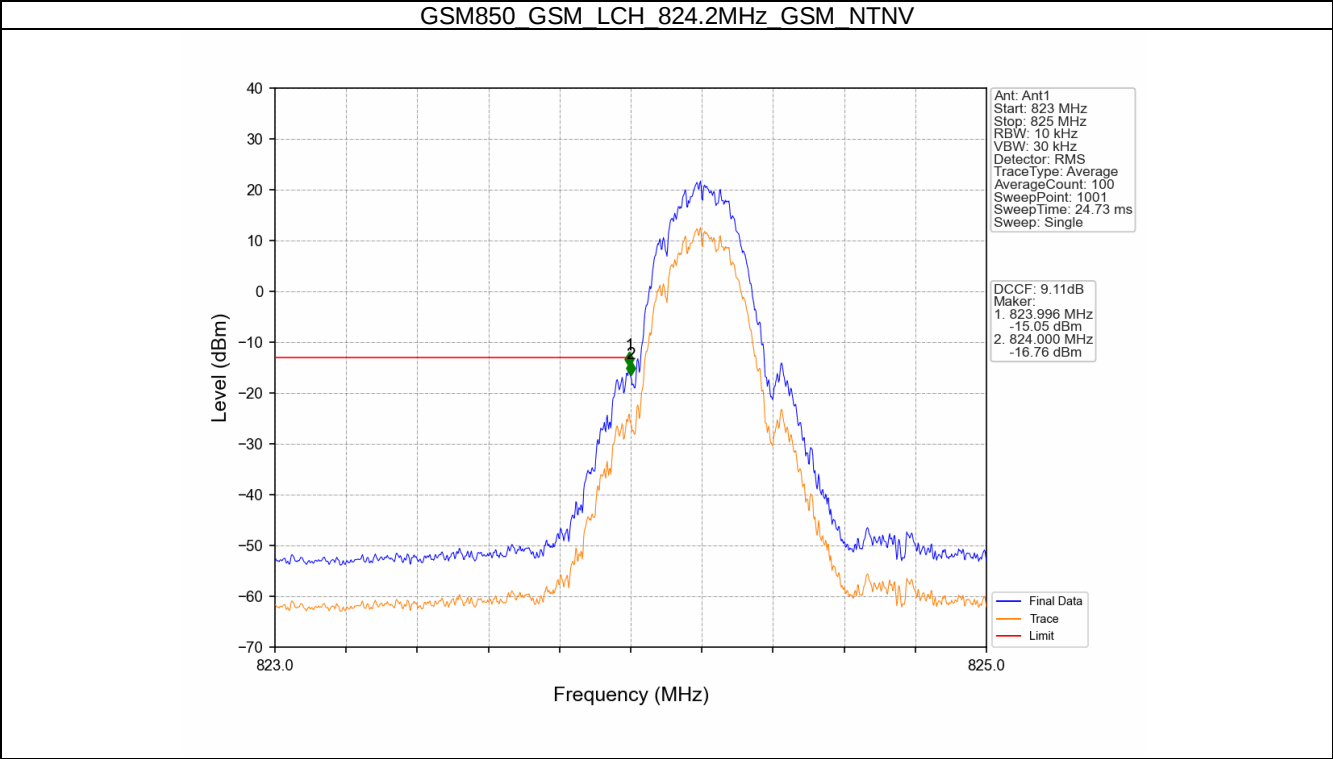


SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 27 of 39

5.1.2 Test Graph



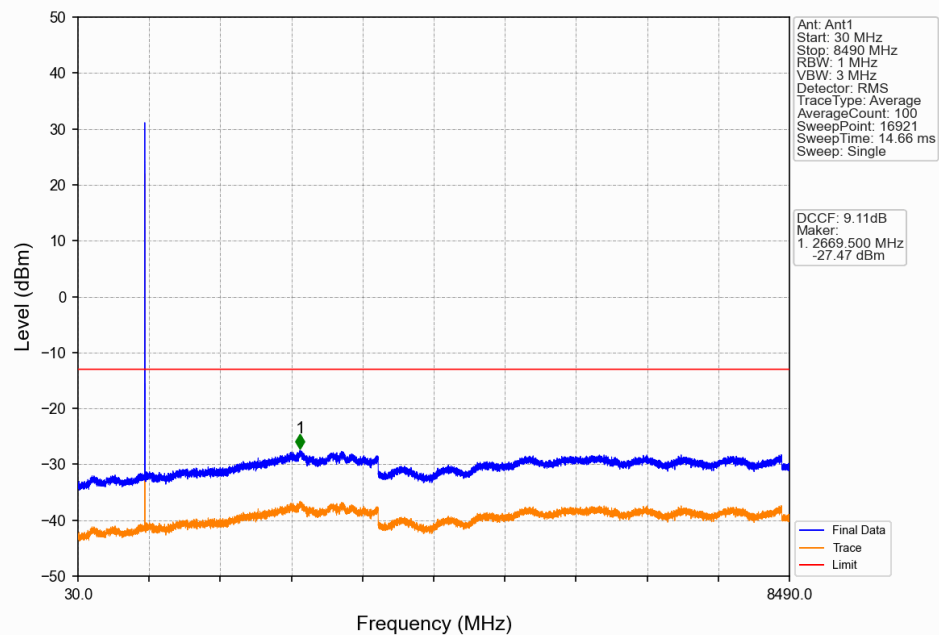


SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 28 of 39

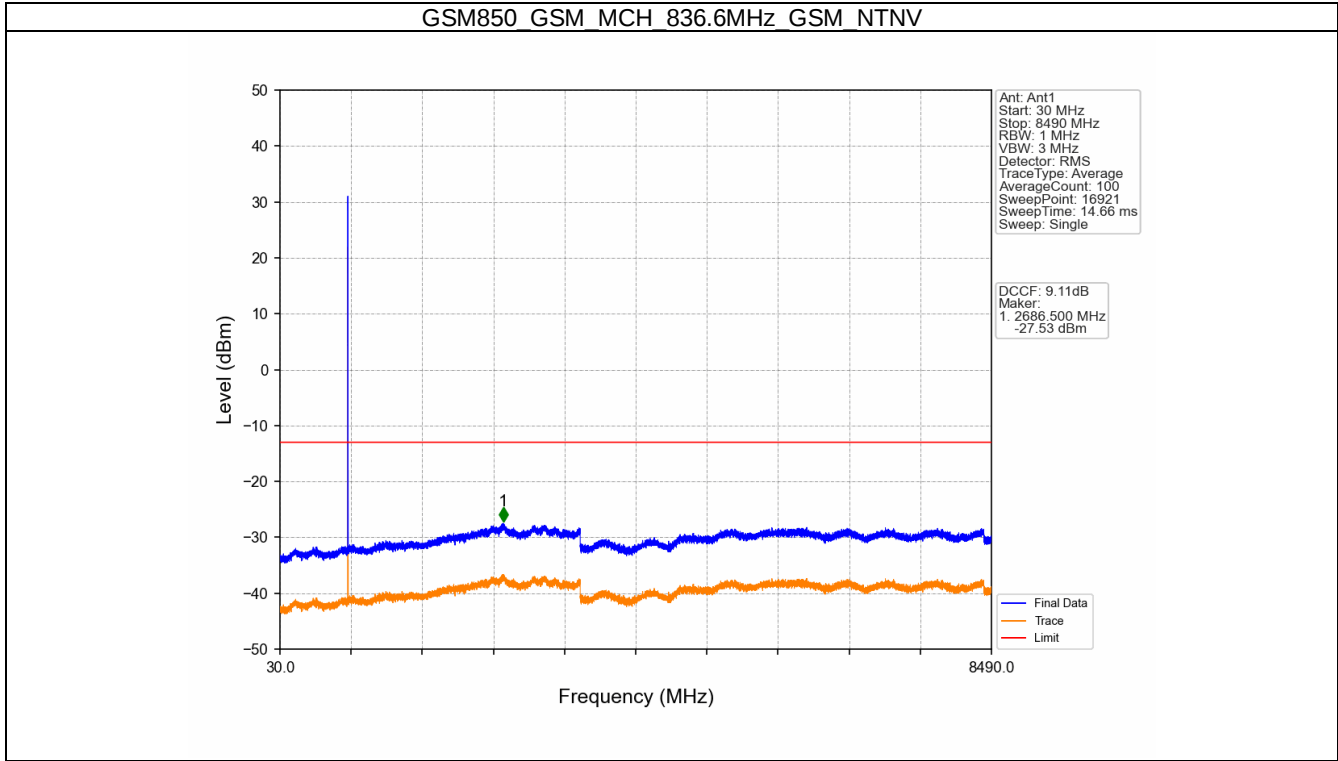
GSM850 GSM LCH 824.2MHz GSM NTNV





SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

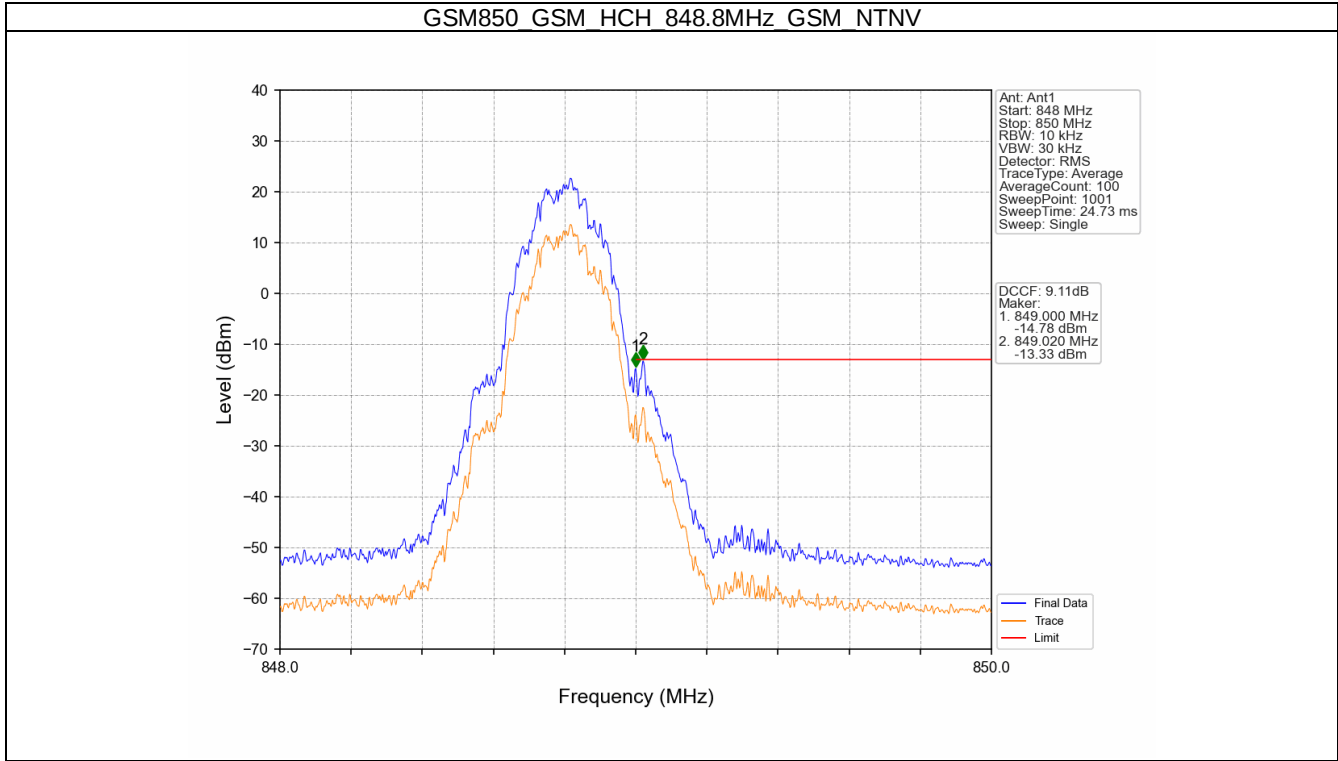
SUWI-TRF-RF A001





SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

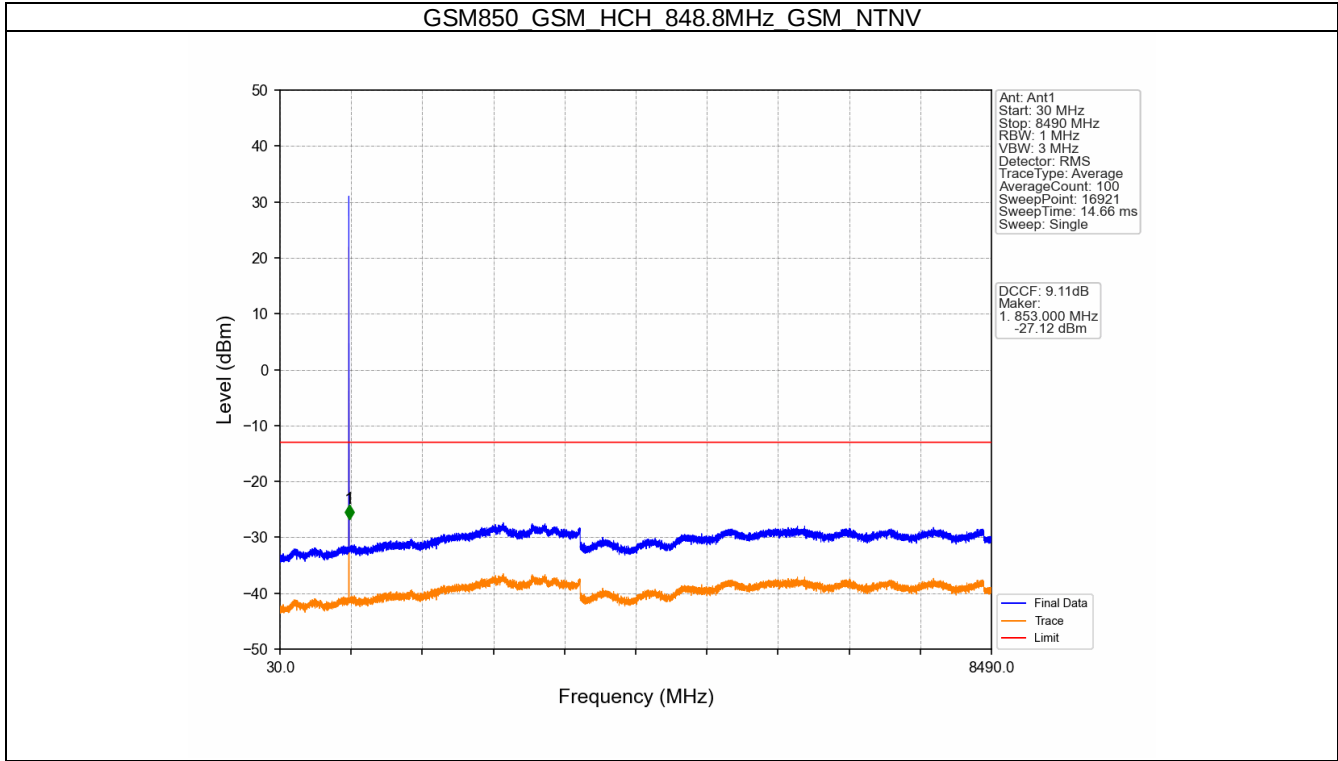




SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 31 of 39

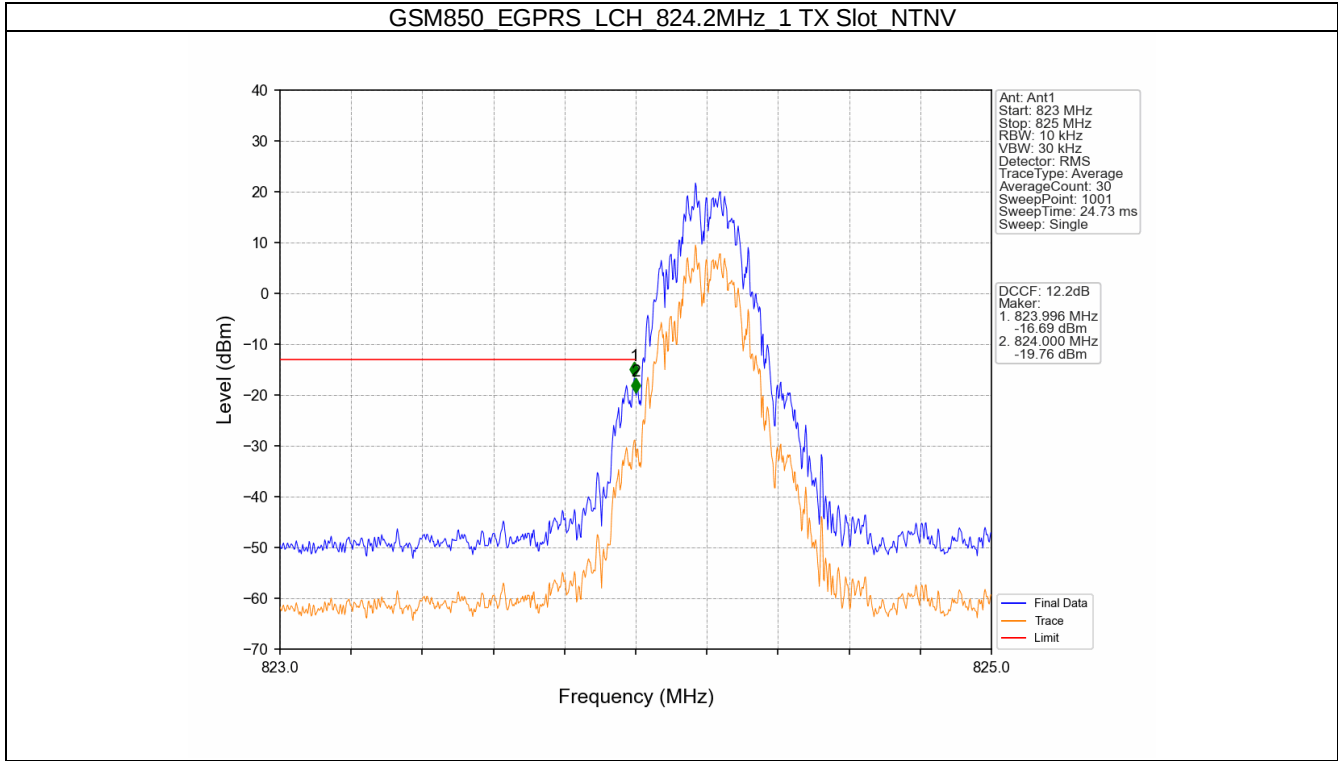




SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

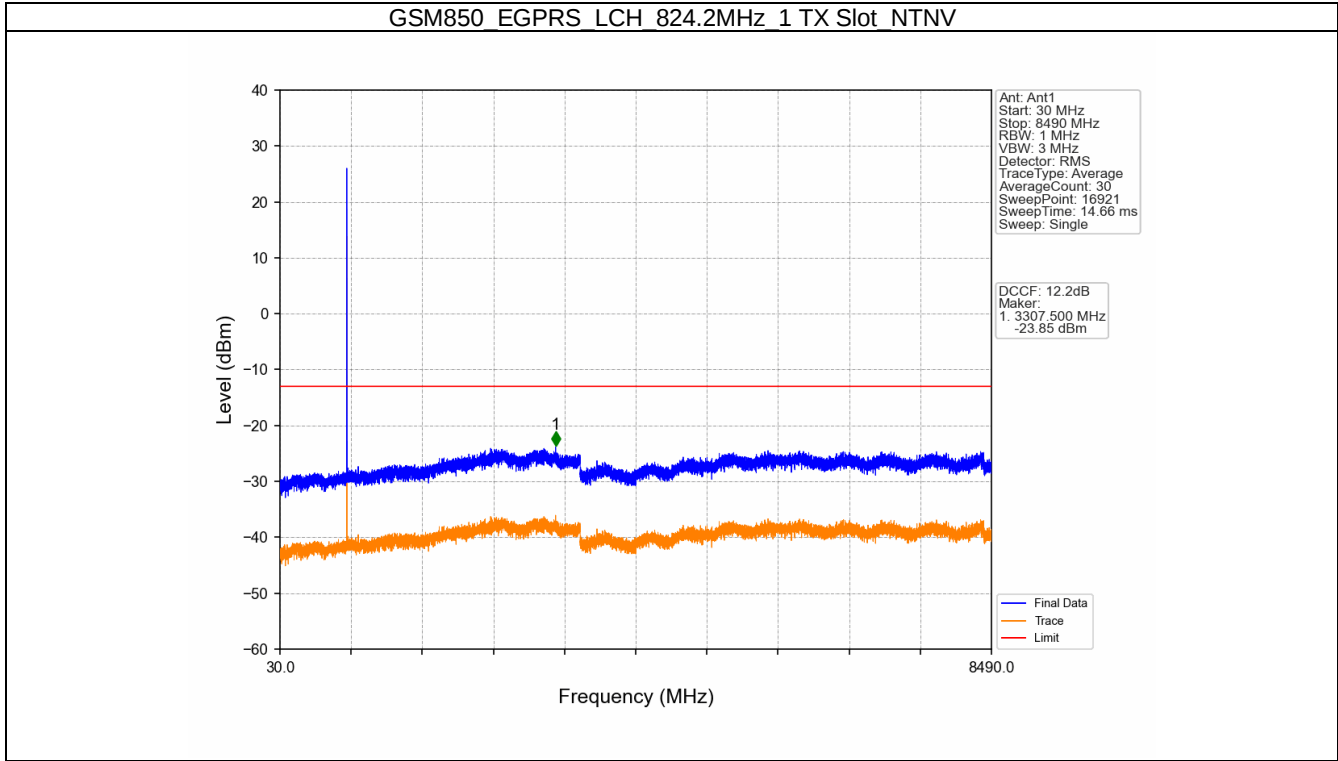
Page: 32 of 39





SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

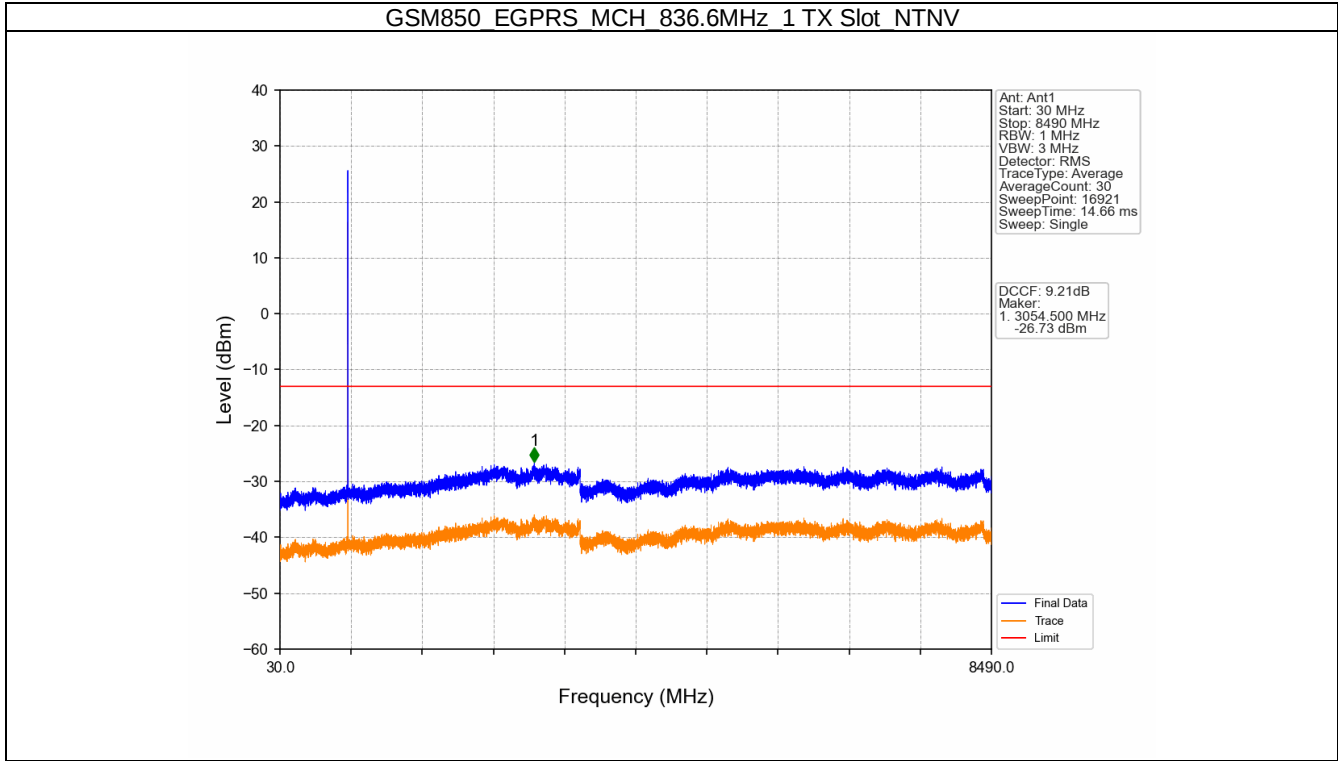
SUWI-TRF-RF A001





SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

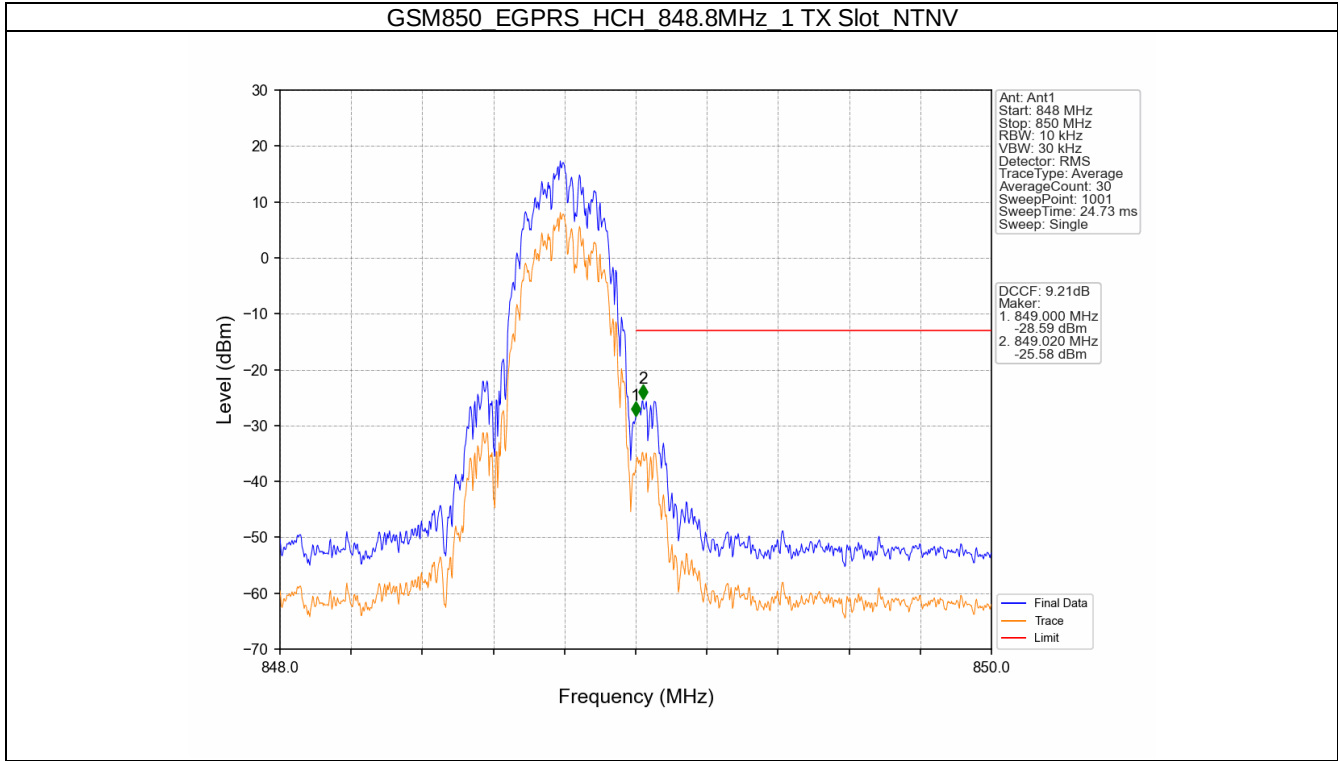
SUWI-TRF-RF A001





SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

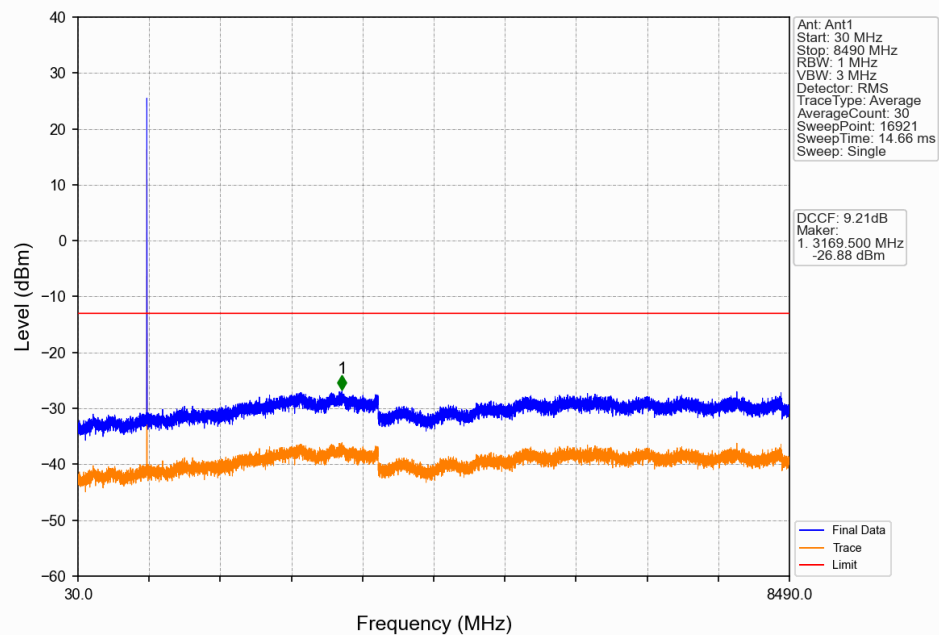




SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

GSM850 EGPRS HCH 848.8MHz 1 TX Slot NTN





SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 37 of 39

6. Field Strength of Spurious Radiation

Test Band = GSM850_

Test Channel = Low

Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	1648.4000	43.79	-48.22	25.27	-74.42	-13.00	61.42	Horizontal
2	2472.6000	42.59	-47.32	27.22	-72.76	-13.00	59.76	Horizontal
3	3296.8000	41.95	-46.67	28.48	-71.50	-13.00	58.50	Horizontal
4	4121.0000	41.01	-45.91	29.39	-70.77	-13.00	57.77	Horizontal
5	4945.2000	40.85	-45.69	31.28	-68.81	-13.00	55.81	Horizontal
6	5769.4000	39.48	-44.63	32.65	-67.76	-13.00	54.76	Horizontal

Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	1648.4000	43.24	-48.22	25.27	-74.97	-13.00	61.97	Vertical
2	2472.6000	42.36	-47.32	27.22	-72.99	-13.00	59.99	Vertical
3	3296.8000	42.35	-46.67	28.48	-71.10	-13.00	58.10	Vertical
4	4121.0000	40.30	-45.91	29.39	-71.48	-13.00	58.48	Vertical
5	4945.2000	40.87	-45.69	31.28	-68.79	-13.00	55.79	Vertical
6	5769.4000	39.59	-44.63	32.65	-67.65	-13.00	54.65	Vertical



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 38 of 39

Test Band = GSM850_
Test Channel = Mid

Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	1672.8000	43.28	-48.19	25.31	-74.86	-13.00	61.86	Horizontal
2	2509.2000	42.77	-47.24	27.32	-72.41	-13.00	59.41	Horizontal
3	3345.6000	41.55	-46.62	28.51	-71.82	-13.00	58.82	Horizontal
4	4182.0000	39.93	-45.95	29.54	-71.74	-13.00	58.74	Horizontal
5	5018.4000	40.57	-45.73	31.45	-68.97	-13.00	55.97	Horizontal
6	5854.8000	40.76	-44.83	32.67	-66.66	-13.00	53.66	Horizontal

Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	1672.8000	43.42	-48.19	25.31	-74.72	-13.00	61.72	Vertical
2	2509.2000	42.61	-47.24	27.32	-72.57	-13.00	59.57	Vertical
3	3345.6000	42.34	-46.62	28.51	-71.03	-13.00	58.03	Vertical
4	4182.0000	40.35	-45.95	29.54	-71.32	-13.00	58.32	Vertical
5	5018.4000	40.25	-45.73	31.45	-69.29	-13.00	56.29	Vertical
6	5854.8000	40.01	-44.83	32.67	-67.41	-13.00	54.41	Vertical



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

SUWI-TRF-RF A001

Page: 39 of 39

Test Band = GSM850_
Test Channel = High

Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	1697.6000	43.23	-48.16	25.35	-74.85	-13.00	61.85	Horizontal
2	2546.4000	42.17	-47.11	27.39	-72.81	-13.00	59.81	Horizontal
3	3395.2000	41.37	-46.55	28.54	-71.90	-13.00	58.90	Horizontal
4	4244.0000	40.98	-45.88	29.69	-70.48	-13.00	57.48	Horizontal
5	5092.8000	40.07	-45.41	31.62	-68.98	-13.00	55.98	Horizontal
6	5941.6000	39.65	-44.74	32.69	-67.67	-13.00	54.67	Horizontal

Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF [dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	1697.6000	43.19	-48.16	25.35	-74.89	-13.00	61.89	Vertical
2	2546.4000	42.39	-47.11	27.39	-72.59	-13.00	59.59	Vertical
3	3395.2000	41.84	-46.55	28.54	-71.43	-13.00	58.43	Vertical
4	4244.0000	40.82	-45.88	29.69	-70.64	-13.00	57.64	Vertical
5	5092.8000	39.67	-45.41	31.62	-69.38	-13.00	56.38	Vertical
6	5941.6000	39.92	-44.74	32.69	-67.40	-13.00	54.40	Vertical

Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & AMP. The basic equation with a sample calculation is as follows:

AF = Antenna Factor(dB/m)

Factor = Cable Factor(dB) - Preamplifier (dB)

Level = Reading Level + AF + Factor -95.26

Margin = Limit – Level

---End of Attachment---