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Appendix for PCS 1900

Applicant: Howen Technologies Co., Ltd.

**Address: Room 2001 & 2004, Building 2A, Shenzhen International
Innovation Valley, Dashi 1st Road, Nanshan District, Shenzhen,
China**

Product Name: Mobile Digital Video Recorder

**Model: Hero-ME32-04, Hero-ME30-04, Hero-ME31-04, Hero-ME31-
08, Hero-ME31-12, Hero-ME31-16, Hero-ME32-06, Hero-ME32-08,
Hero-ME32-16, Hero-ME34-04, Hero-ME34-08**

FCC ID: 2AGBD-HERO-ME32-04

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1. Conducted Output Power

1.1 Test Result

1.1.1 PCS1900

Band: PCS1900					
ENV	Mode		Frequency (MHz)	Conducted Power (dBm)	Verdict
	Network	Subset			
NTNV	GPRS	1 TX Slot	1850.2	30.79	Pass
		2 TX Slots	1850.2	29.67	Pass
		3 TX Slots	1850.2	27.83	Pass
		4 TX Slots	1850.2	26.96	Pass
		1 TX Slot	1880	30.45	Pass
		2 TX Slots	1880	29.34	Pass
		3 TX Slots	1880	28.12	Pass
		4 TX Slots	1880	27.01	Pass
		1 TX Slot	1909.8	30.32	Pass
		2 TX Slots	1909.8	29.32	Pass
		3 TX Slots	1909.8	27.71	Pass
		4 TX Slots	1909.8	26.49	Pass
	EGPRS	1 TX Slot	1850.2	26.80	Pass
		2 TX Slots	1850.2	26.35	Pass
		3 TX Slots	1850.2	24.86	Pass
		4 TX Slots	1850.2	23.17	Pass
		1 TX Slot	1880	26.82	Pass
		2 TX Slots	1880	26.40	Pass
		3 TX Slots	1880	24.73	Pass
		4 TX Slots	1880	23.12	Pass
		1 TX Slot	1909.8	26.30	Pass
		2 TX Slots	1909.8	25.67	Pass
		3 TX Slots	1909.8	24.15	Pass
		4 TX Slots	1909.8	22.75	Pass

2. Frequency Stability

2.1 Test Result

2.1.1 PCS1900

Band: PCS1900							
Network	Frequency (MHz)	Temp. (°C)	Voltage (VDC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
					Result	Limit	
GPRS	1850.2	25	9.0	5.295	0.0029	-2.5 to 2.5	Pass
			12.0	0.226	0.0001	-2.5 to 2.5	Pass
			36.0	-1.679	-0.0009	-2.5 to 2.5	Pass
		-20	12.0	-1.937	-0.0010	-2.5 to 2.5	Pass
		-10	12.0	-3.196	-0.0017	-2.5 to 2.5	Pass
		0	12.0	0.161	0.0001	-2.5 to 2.5	Pass
		10	12.0	-1.098	-0.0006	-2.5 to 2.5	Pass
		30	12.0	-0.613	-0.0003	-2.5 to 2.5	Pass
		40	12.0	0.258	0.0001	-2.5 to 2.5	Pass
		50	12.0	0.517	0.0003	-2.5 to 2.5	Pass

		60	12.0	3.390	0.0018	-2.5 to 2.5	Pass
		70	12.0	-1.517	-0.0008	-2.5 to 2.5	Pass
	1880	25	9.0	-0.613	-0.0003	-2.5 to 2.5	Pass
			12.0	1.227	0.0007	-2.5 to 2.5	Pass
			36.0	-3.358	-0.0018	-2.5 to 2.5	Pass
		-20	12.0	4.714	0.0025	-2.5 to 2.5	Pass
		-10	12.0	0.129	0.0001	-2.5 to 2.5	Pass
		0	12.0	-0.839	-0.0004	-2.5 to 2.5	Pass
		10	12.0	-2.131	-0.0011	-2.5 to 2.5	Pass
		30	12.0	3.261	0.0017	-2.5 to 2.5	Pass
		40	12.0	-2.034	-0.0011	-2.5 to 2.5	Pass
		50	12.0	-3.164	-0.0017	-2.5 to 2.5	Pass
		60	12.0	-0.323	-0.0002	-2.5 to 2.5	Pass
		70	12.0	-2.712	-0.0014	-2.5 to 2.5	Pass
	1909.8	25	9.0	-0.517	-0.0003	-2.5 to 2.5	Pass
			12.0	-3.422	-0.0018	-2.5 to 2.5	Pass
			36.0	-2.486	-0.0013	-2.5 to 2.5	Pass
		-20	12.0	-1.259	-0.0007	-2.5 to 2.5	Pass
		-10	12.0	0.291	0.0002	-2.5 to 2.5	Pass
		0	12.0	-1.679	-0.0009	-2.5 to 2.5	Pass
		10	12.0	-1.259	-0.0007	-2.5 to 2.5	Pass
		30	12.0	0.097	0.0001	-2.5 to 2.5	Pass
		40	12.0	0.452	0.0002	-2.5 to 2.5	Pass
		50	12.0	-6.683	-0.0035	-2.5 to 2.5	Pass
		60	12.0	-0.613	-0.0003	-2.5 to 2.5	Pass
		70	12.0	-1.227	-0.0006	-2.5 to 2.5	Pass
EGPRS	1850.2	25	9.0	7.878	0.0043	-2.5 to 2.5	Pass
			12.0	4.778	0.0026	-2.5 to 2.5	Pass
			36.0	9.105	0.0049	-2.5 to 2.5	Pass
		-20	12.0	2.195	0.0012	-2.5 to 2.5	Pass
		-10	12.0	6.199	0.0034	-2.5 to 2.5	Pass
		0	12.0	8.685	0.0047	-2.5 to 2.5	Pass
		10	12.0	6.167	0.0033	-2.5 to 2.5	Pass
		30	12.0	5.973	0.0032	-2.5 to 2.5	Pass
		40	12.0	5.585	0.0030	-2.5 to 2.5	Pass
		50	12.0	9.072	0.0049	-2.5 to 2.5	Pass
		60	12.0	6.199	0.0034	-2.5 to 2.5	Pass
		70	12.0	4.391	0.0024	-2.5 to 2.5	Pass
	1880	25	9.0	7.038	0.0037	-2.5 to 2.5	Pass
			12.0	4.907	0.0026	-2.5 to 2.5	Pass
			36.0	4.778	0.0025	-2.5 to 2.5	Pass
		-20	12.0	2.744	0.0015	-2.5 to 2.5	Pass
		-10	12.0	4.617	0.0025	-2.5 to 2.5	Pass
		0	12.0	5.489	0.0029	-2.5 to 2.5	Pass
		10	12.0	5.101	0.0027	-2.5 to 2.5	Pass
		30	12.0	6.199	0.0033	-2.5 to 2.5	Pass
		40	12.0	-1.162	-0.0006	-2.5 to 2.5	Pass
		50	12.0	0.517	0.0003	-2.5 to 2.5	Pass
		60	12.0	2.163	0.0012	-2.5 to 2.5	Pass
		70	12.0	0.258	0.0001	-2.5 to 2.5	Pass
	1909.8	25	9.0	0.807	0.0004	-2.5 to 2.5	Pass
			12.0	2.486	0.0013	-2.5 to 2.5	Pass
			36.0	0.775	0.0004	-2.5 to 2.5	Pass
		-20	12.0	2.583	0.0014	-2.5 to 2.5	Pass
		-10	12.0	-4.391	-0.0023	-2.5 to 2.5	Pass
		0	12.0	-0.323	-0.0002	-2.5 to 2.5	Pass
		10	12.0	0.775	0.0004	-2.5 to 2.5	Pass
		30	12.0	1.614	0.0008	-2.5 to 2.5	Pass
		40	12.0	-2.034	-0.0011	-2.5 to 2.5	Pass

		50	12.0	0.355	0.0002	-2.5 to 2.5	Pass
		60	12.0	-0.969	-0.0005	-2.5 to 2.5	Pass
		70	12.0	0.743	0.0004	-2.5 to 2.5	Pass

3. 99% & 26dB Bandwidth

3.1 Test Result

3.1.1 PCS1900_OBW

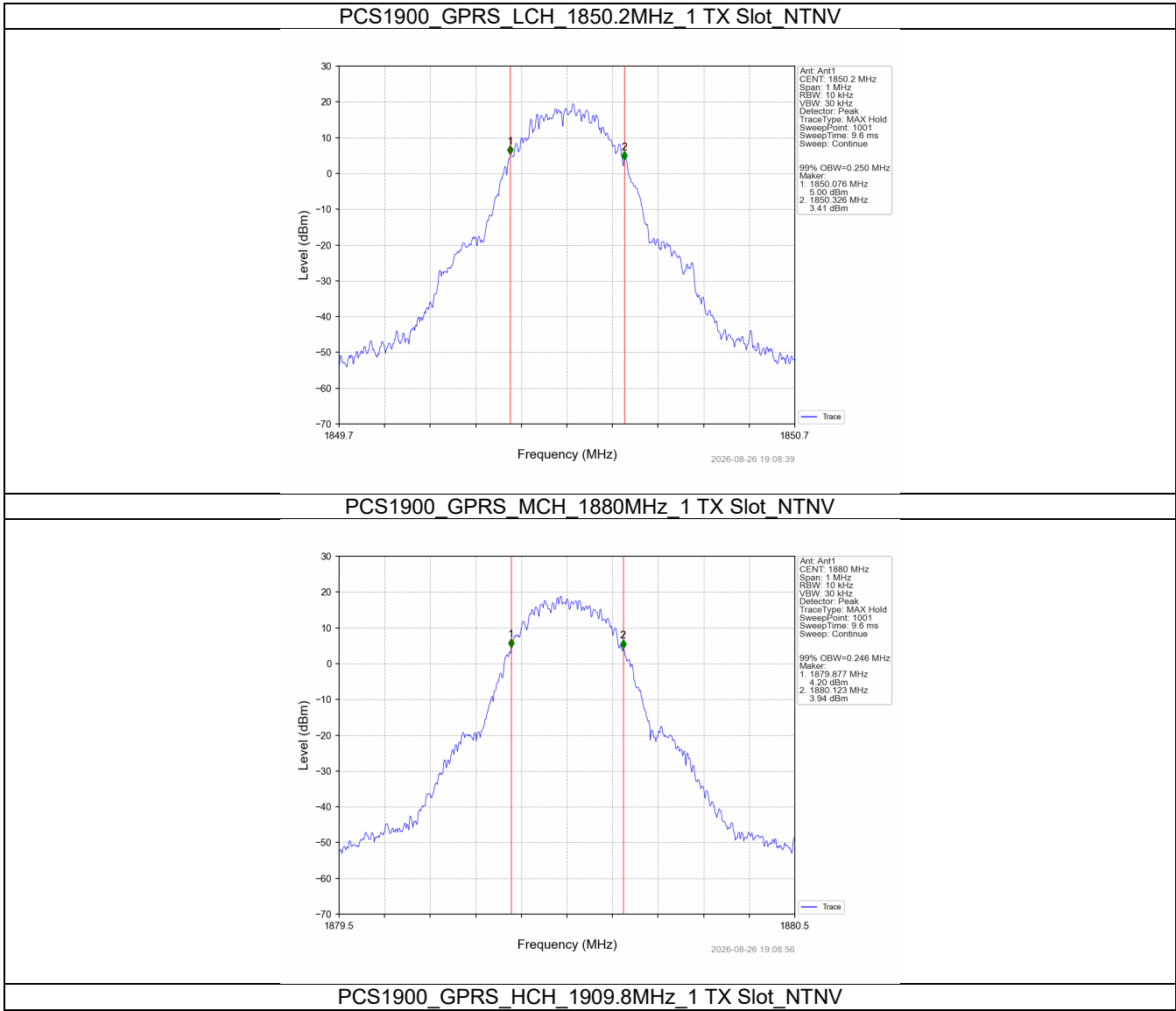
Band: PCS1900						
ENV	Mode		Frequency (MHz)	99% Occupied Bandwidth (MHz)		Verdict
	Network	Subset		Result	Limit	
NTNV	GPRS	1 TX Slot	1850.2	0.250	/	Pass
			1880	0.246	/	Pass
			1909.8	0.244	/	Pass
	EGPRS	1 TX Slot	1850.2	0.248	/	Pass
			1880	0.246	/	Pass
			1909.8	0.244	/	Pass

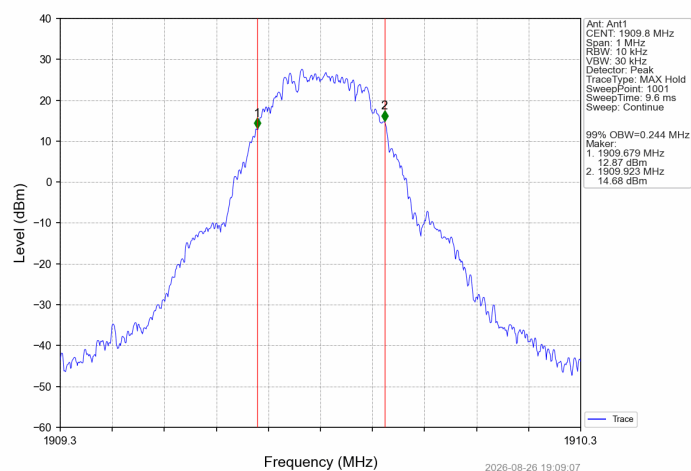
3.1.2 PCS1900_XDB

Band: PCS1900						
ENV	Mode		Frequency (MHz)	26dB Bandwidth (MHz)		Verdict
	Network	Subset		Result	Limit	
NTNV	GPRS	1 TX Slot	1850.2	0.315	/	Pass
			1880	0.314	/	Pass
			1909.8	0.317	/	Pass
	EGPRS	1 TX Slot	1850.2	0.312	/	Pass
			1880	0.311	/	Pass
			1909.8	0.296	/	Pass

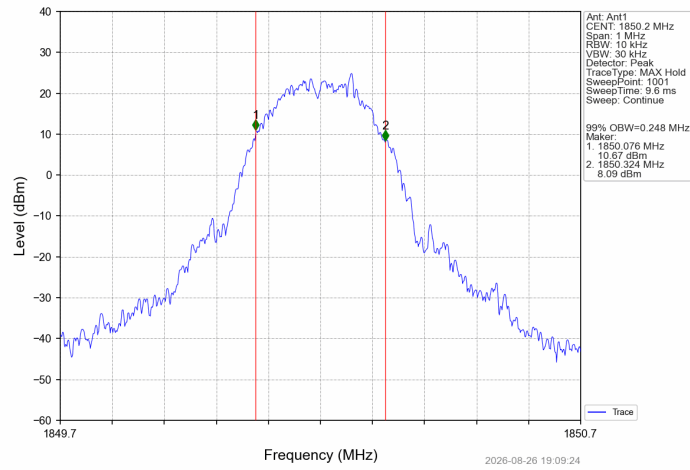
3.2 Test Graph

3.2.1 PCS1900_OBW

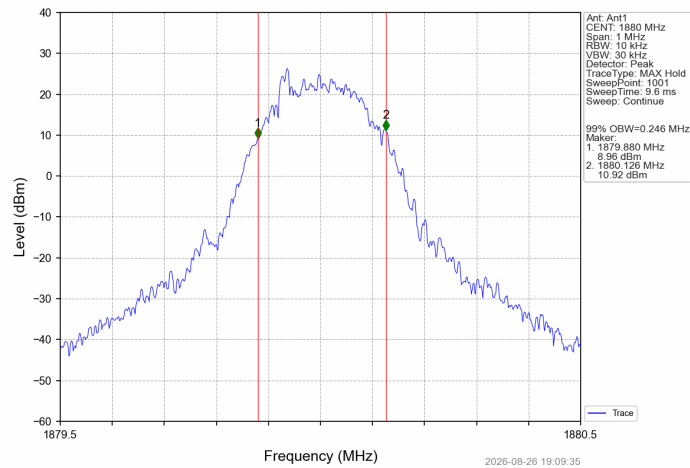




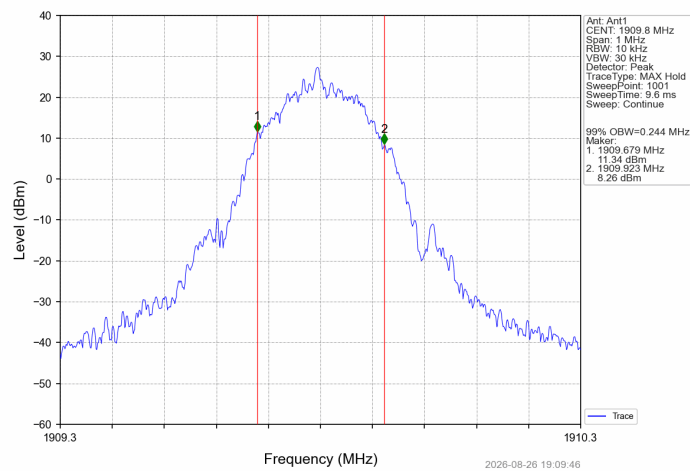
PCS1900 EGPRS LCH 1850.2MHz 1 TX Slot NTN



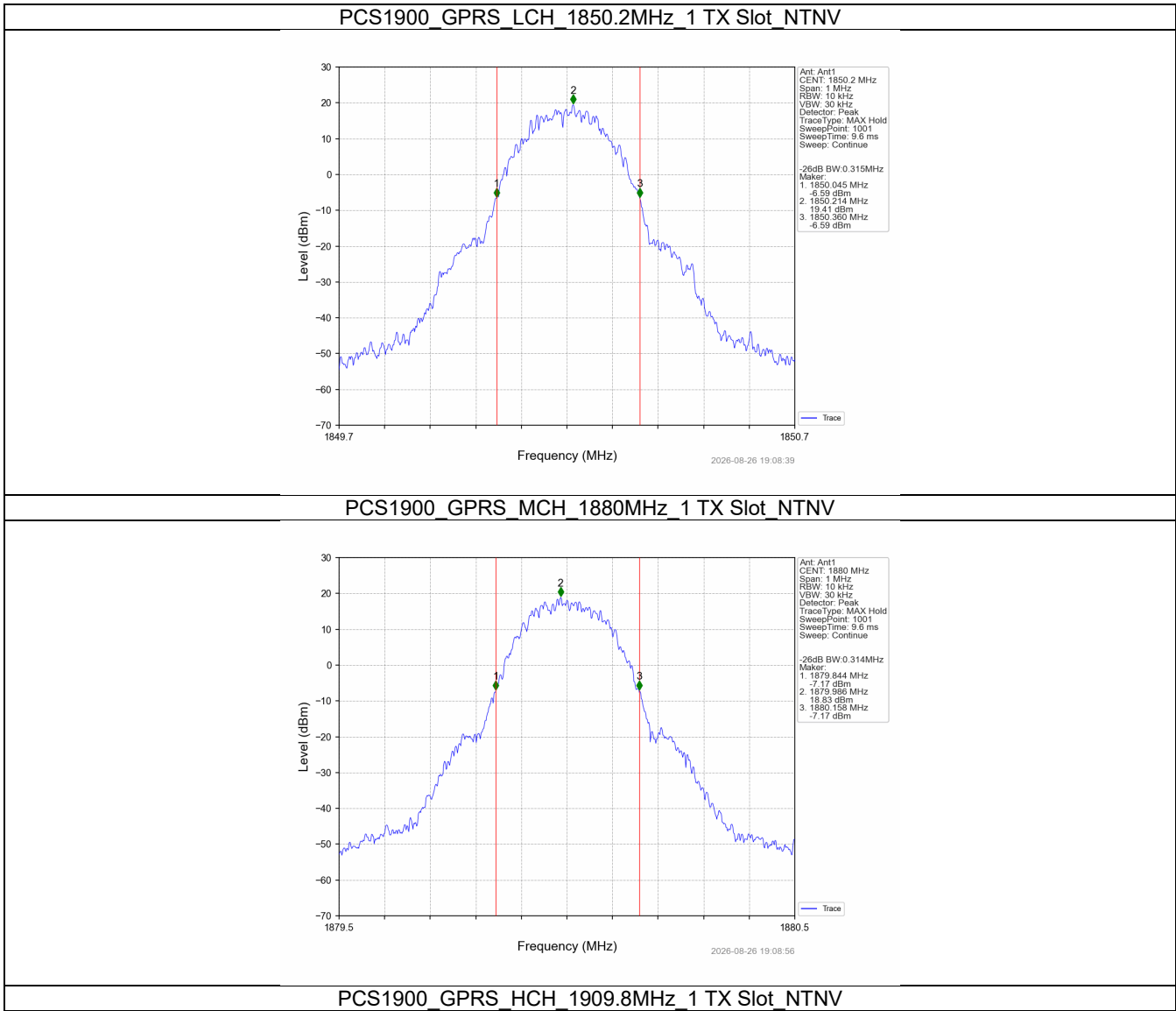
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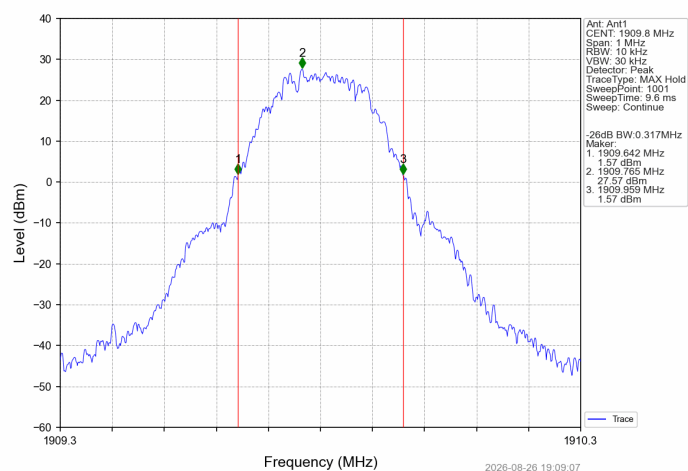


PCS1900 EGPRS HCH 1909.8MHz 1 TX Slot NTN

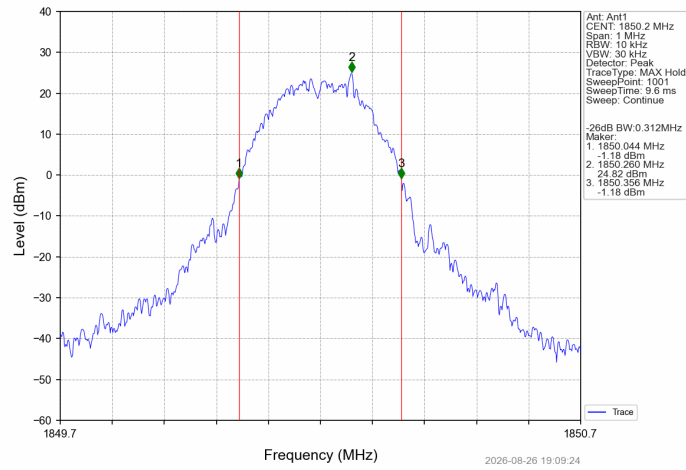


3.2.2 PCS1900_XDB

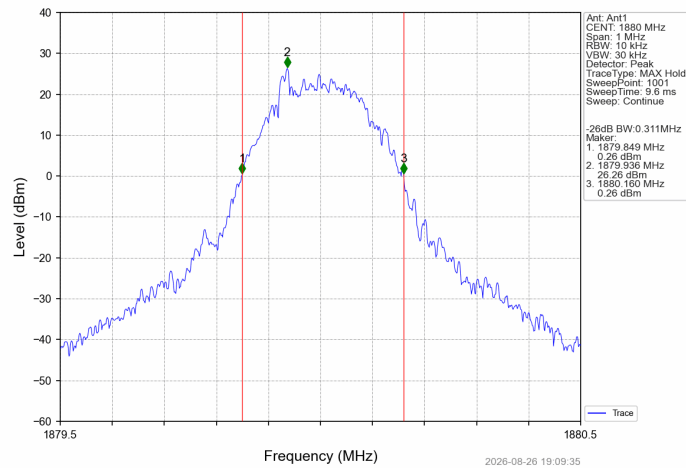




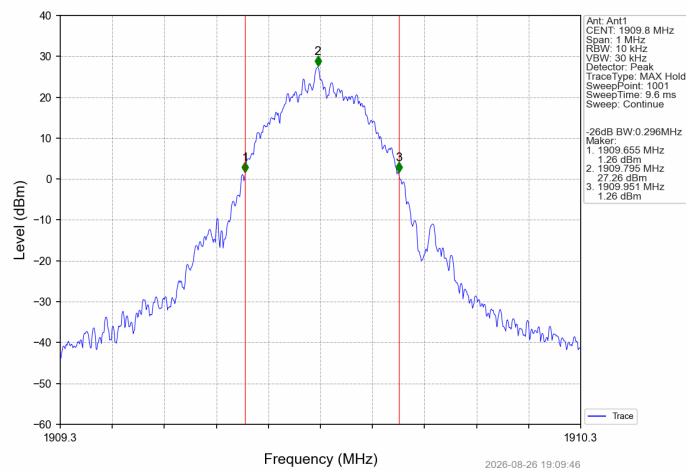
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PCS1900 EGPRS MCH 1880MHz 1 TX Slot NTN



PCS1900 EGPRS HCH 1909.8MHz 1 TX Slot NTN



4. Peak-Average Ratio

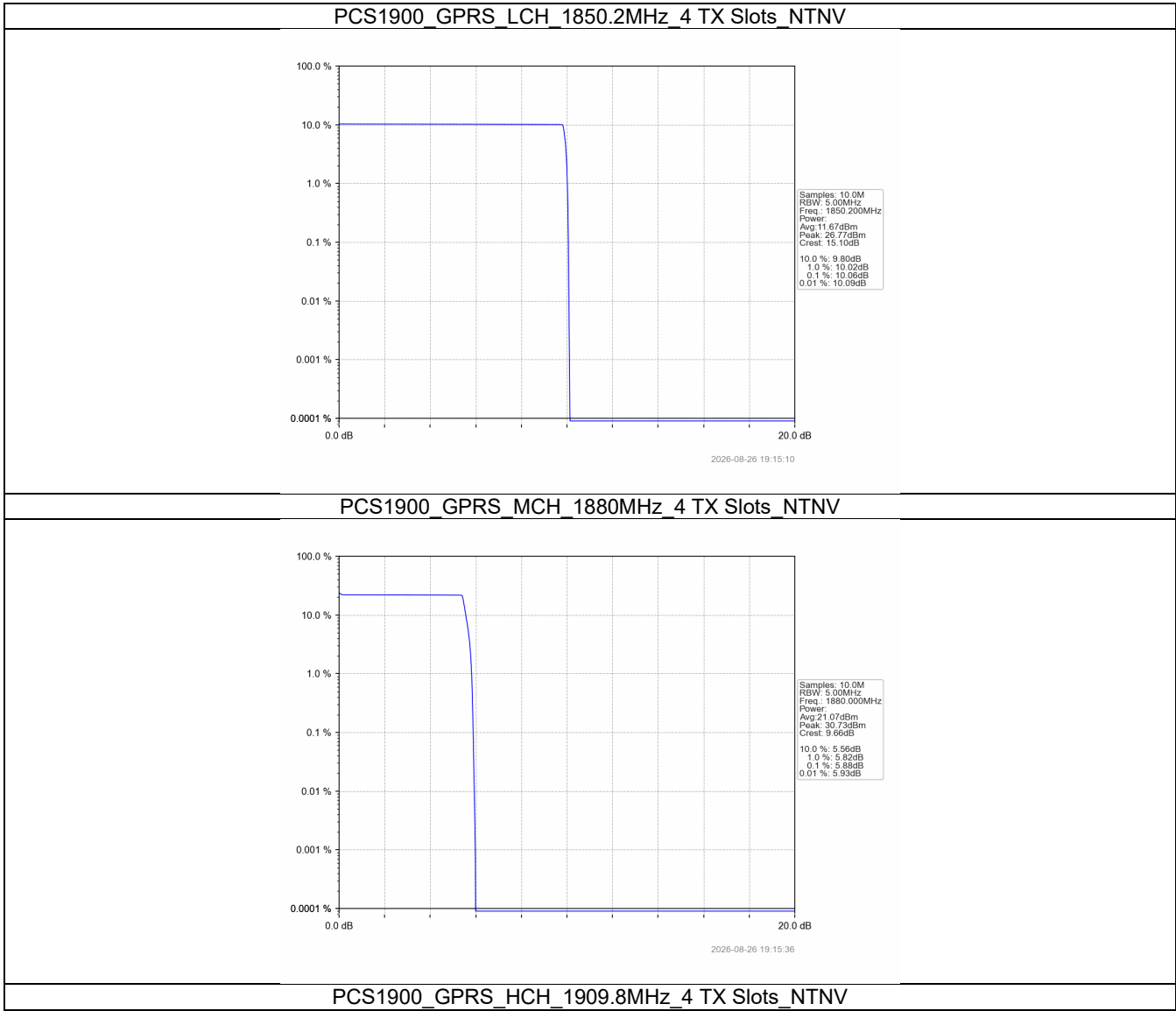
4.1 Test Result

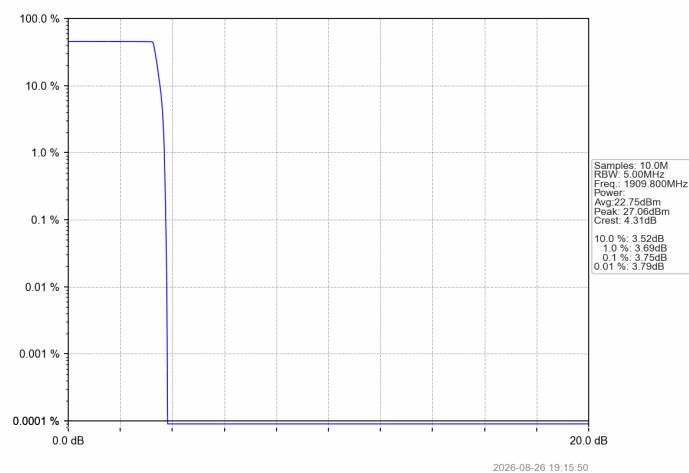
4.1.1 PCS1900

Band: PCS1900						
ENV	Mode		Frequency (MHz)	Peak-Average Ratio (dB)		Verdict
	Network	Subset		Result	Limit	
NTNV	GPRS	4 TX Slots	1850.2	10.06	<=13	Pass
			1880	5.88	<=13	Pass
			1909.8	3.75	<=13	Pass
	EGPRS	4 TX Slots	1850.2	7.87	<=13	Pass
			1880	7.73	<=13	Pass
			1909.8	7.71	<=13	Pass

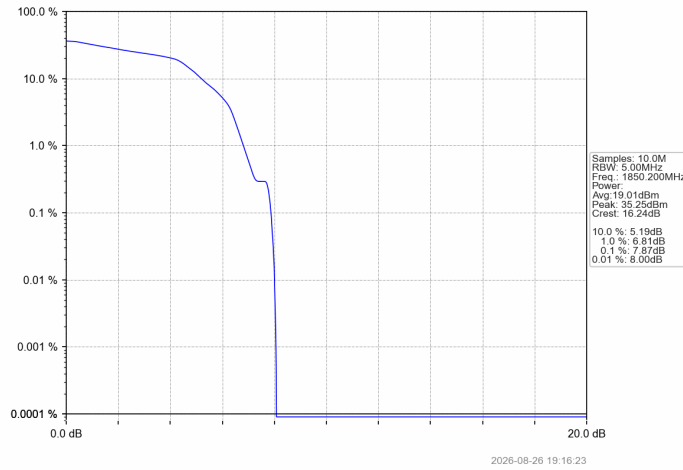
4.2 Test Graph

4.2.1 PCS1900

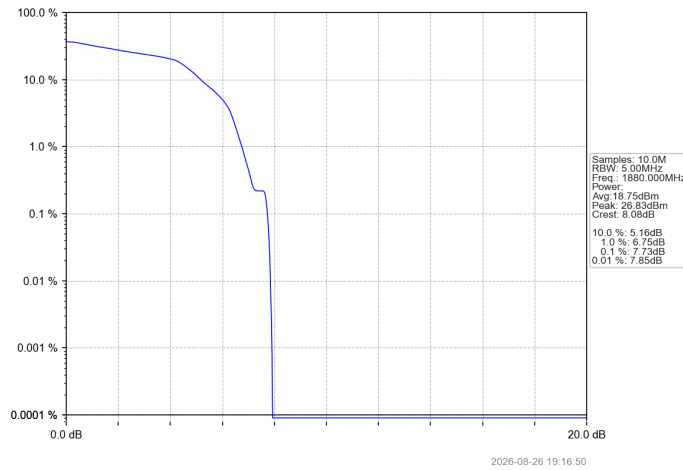




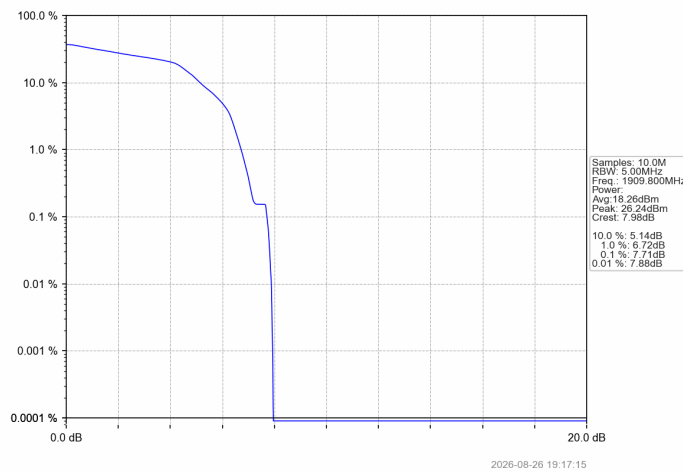
PCS1900 EGPRS LCH 1850.2MHz 4 TX Slots NTN



PCS1900 EGPRS MCH 1880MHz 4 TX Slots NTN



PCS1900 EGPRS HCH 1909.8MHz 4 TX Slots NTN



5. Spurious Emission and Band Edge

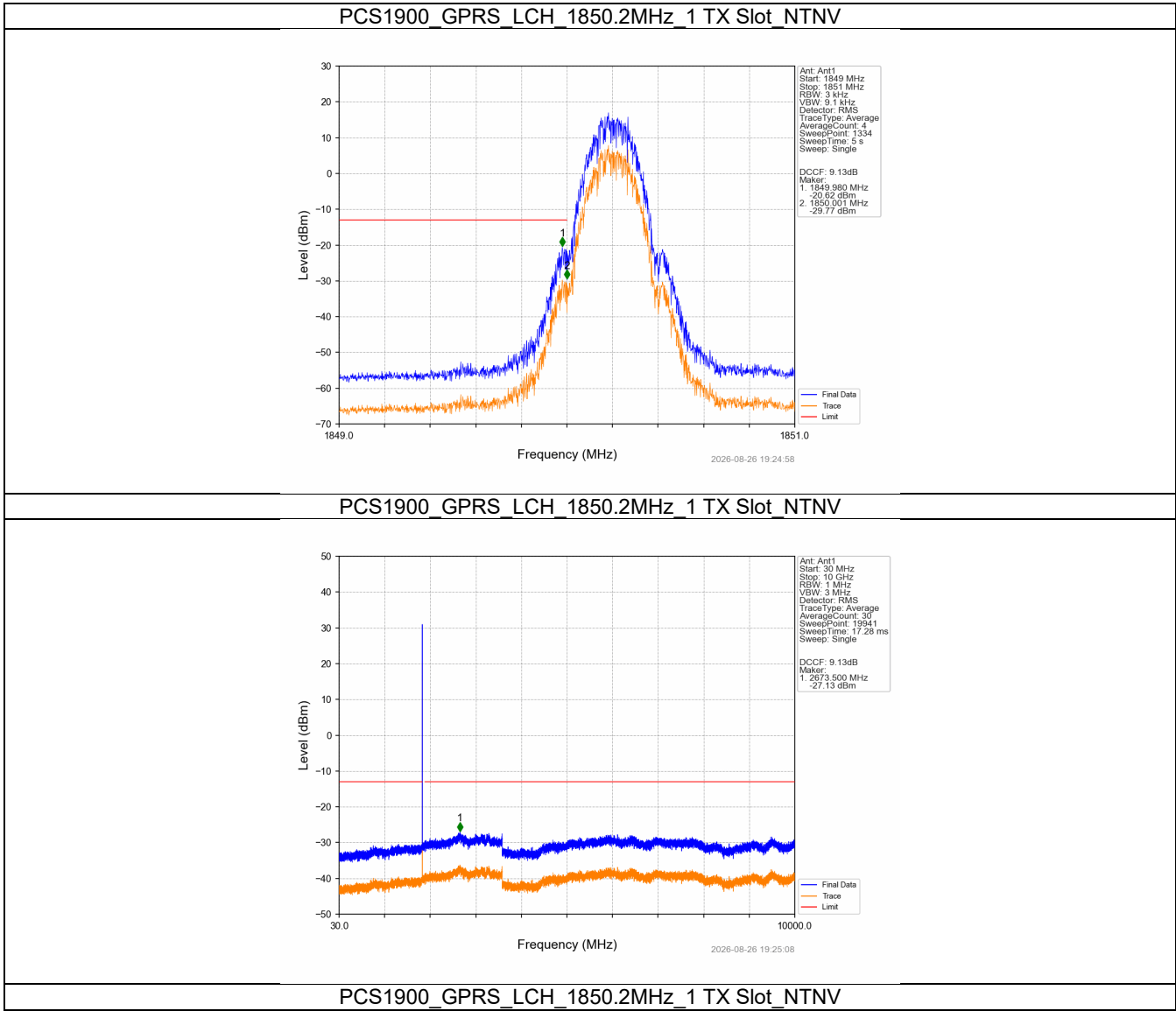
5.1 Test Result

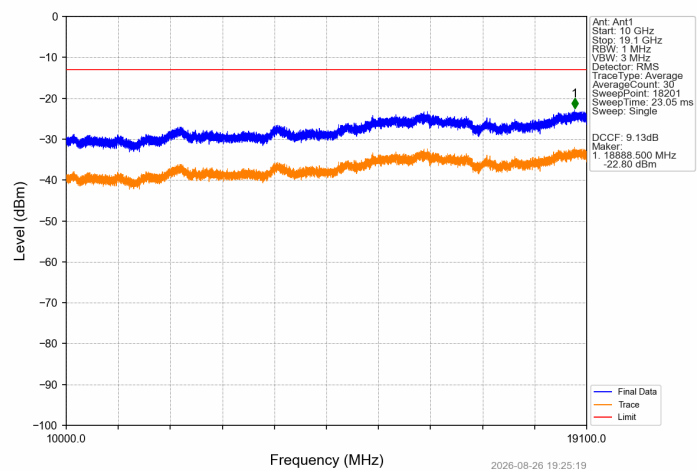
5.1.1 PCS1900

Band: PCS1900					
ENV	Mode		Frequency (MHz)	Spurious Emission	
	Network	Subset		Result	Limit
NTNV	GPRS	1 TX Slot	1850.2	Refer To Test Graph	Pass
			1880	Refer To Test Graph	Pass
			1909.8	Refer To Test Graph	Pass
	EGPRS	1 TX Slot	1850.2	Refer To Test Graph	Pass
			1880	Refer To Test Graph	Pass
			1909.8	Refer To Test Graph	Pass

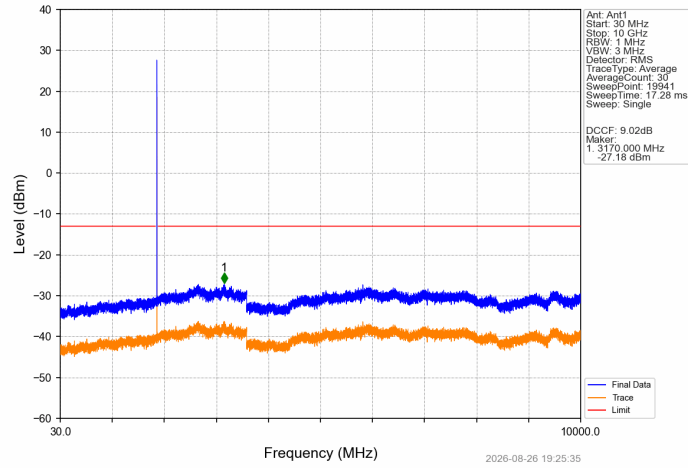
5.2 Test Graph

5.2.1 PCS1900

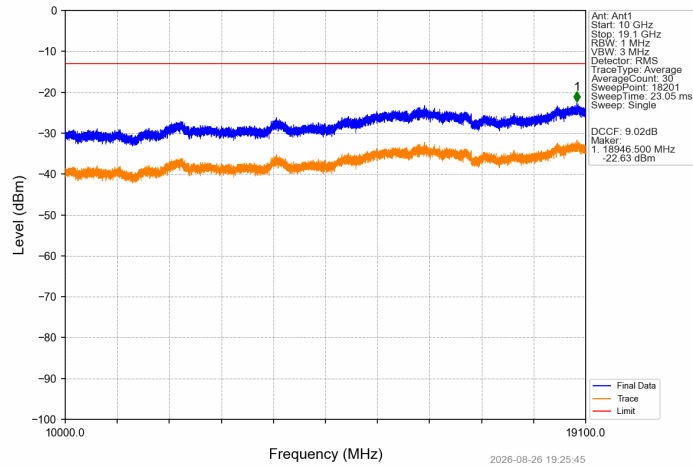




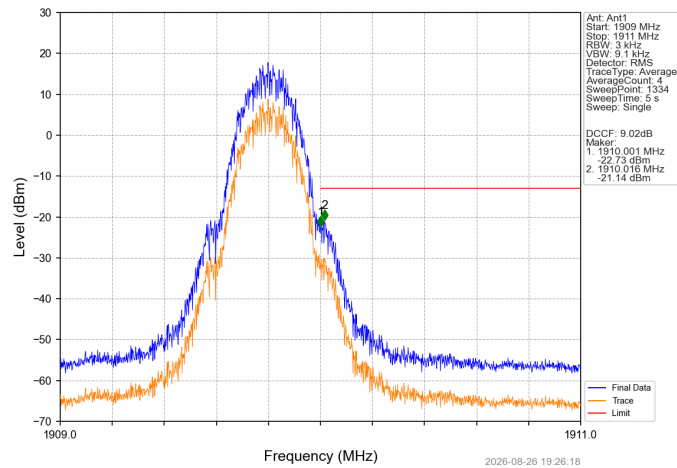
PCS1900_GPRS_MCH_1880MHz_1 TX Slot_NTNV



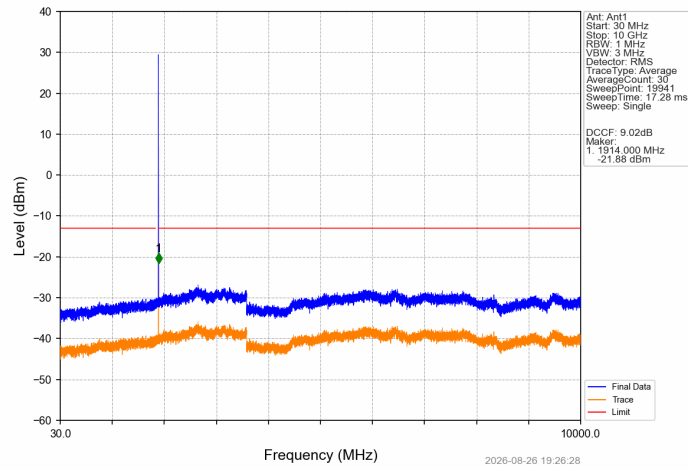
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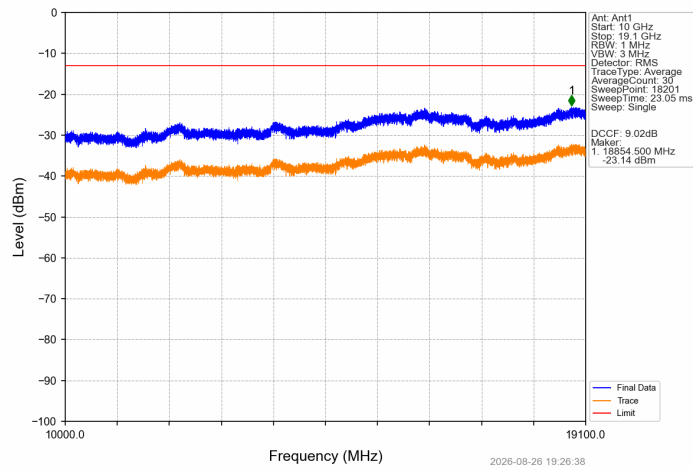
PCS1900_GPRS_HCH_1909.8MHz_1 TX Slot_NTNV



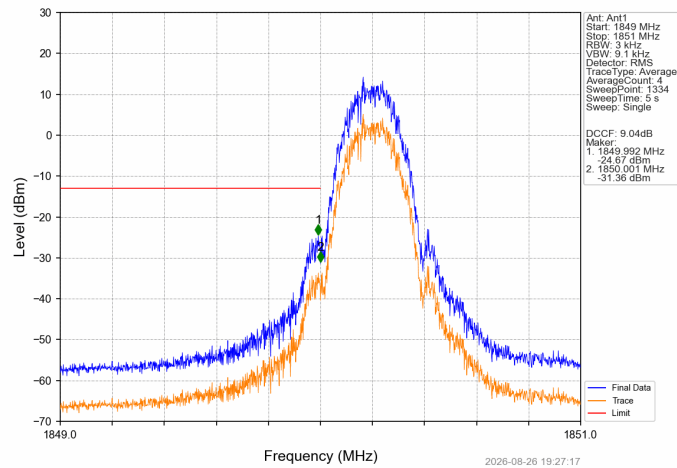
PCS1900_GPRS_HCH_1909.8MHz_1 TX Slot_NTNV



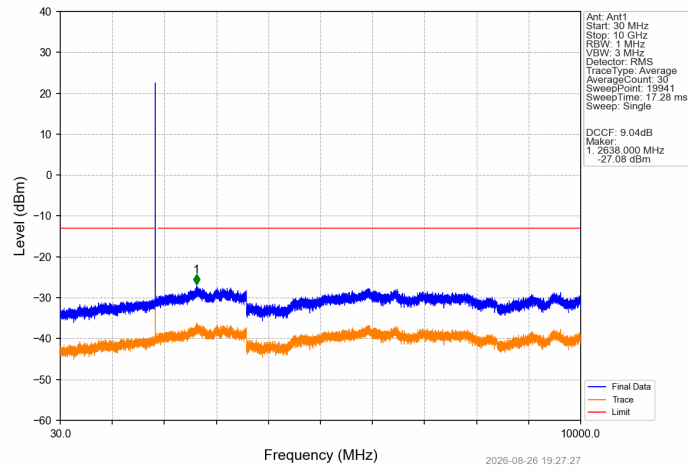
PCS1900_GPRS_HCH_1909.8MHz_1 TX Slot_NTNV



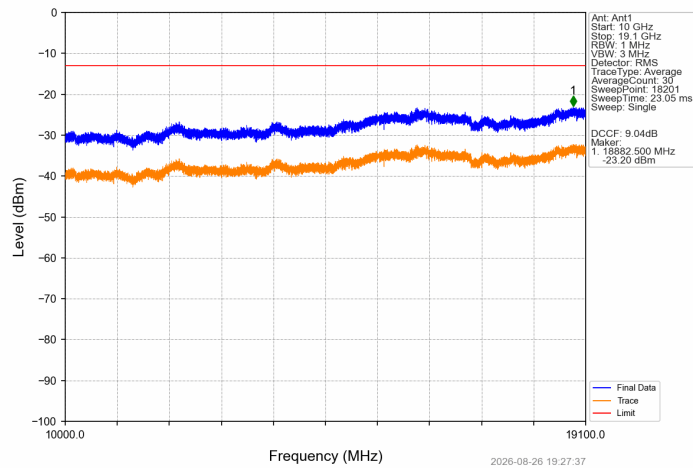
PCS1900_EGPRS_LCH_1850.2MHz_1 TX Slot_NTNV



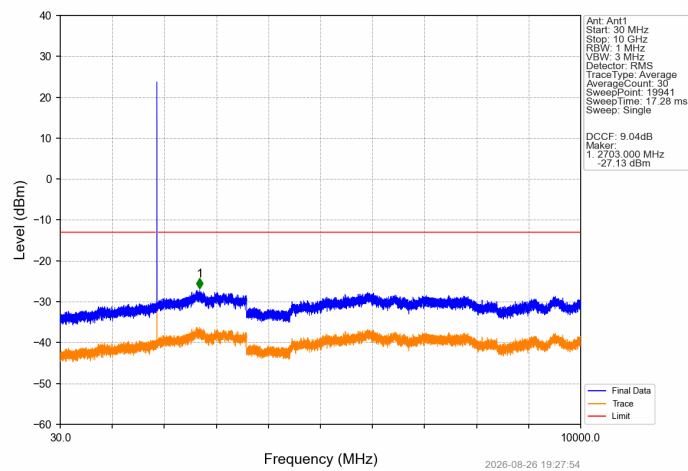
PCS1900 EGPRS LCH 1850.2MHz 1 TX Slot NTN



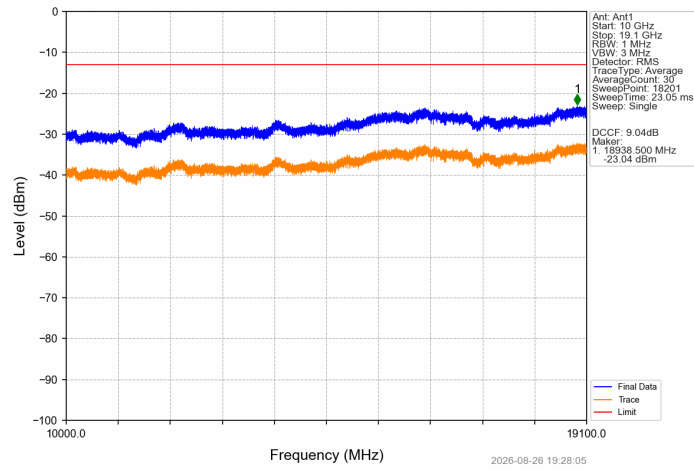
PCS1900 EGPRS LCH 1850.2MHz 1 TX Slot NTN



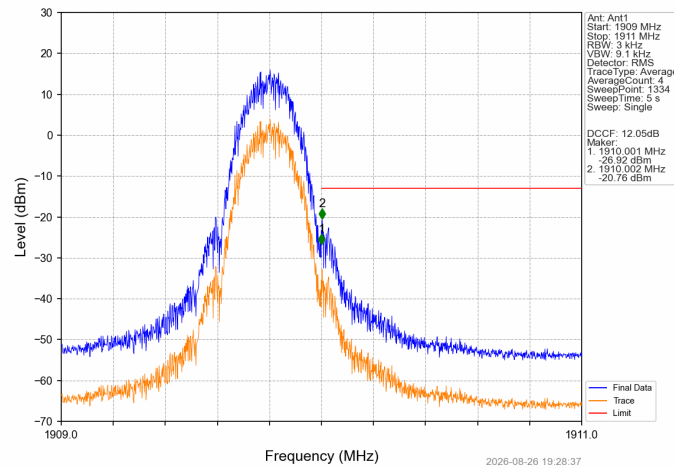
PCS1900 EGPRS MCH 1880MHz 1 TX Slot NTN



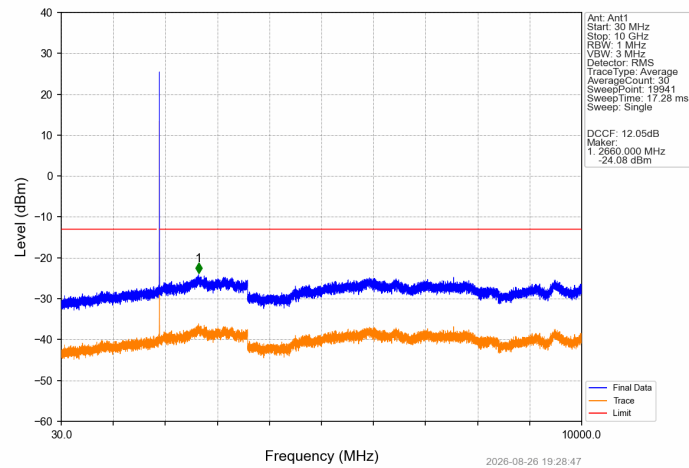
PCS1900 EGPRS MCH 1880MHz 1 TX Slot NTN



PCS1900 EGPRS HCH 1909.8MHz 1 TX Slot NTN



PCS1900 EGPRS HCH 1909.8MHz 1 TX Slot NTN



PCS1900 EGPRS HCH 1909.8MHz 1 TX Slot NTN

