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Appendix for WCDMA Band 5

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 Band5

Band: 5					
ENV	Mode		Frequency (MHz)	Conducted Power (dBm)	Verdict
	Network	Subset			
NTNV	RMC	12.2kbps RMC	826.4	24.22	Pass
			836.6	24.18	Pass
			846.6	23.98	Pass
	HSDPA	Subtest 1	826.4	22.62	Pass
		Subtest 2	826.4	22.70	Pass
		Subtest 3	826.4	22.62	Pass
		Subtest 4	826.4	22.65	Pass
		Subtest 1	836.6	22.65	Pass
		Subtest 2	836.6	22.74	Pass
		Subtest 3	836.6	22.65	Pass
		Subtest 4	836.6	22.68	Pass
		Subtest 1	846.6	22.49	Pass
		Subtest 2	846.6	22.50	Pass
		Subtest 3	846.6	22.44	Pass
		Subtest 4	846.6	22.55	Pass
	HSUPA	Subtest 1	826.4	20.24	Pass
		Subtest 2	826.4	20.92	Pass
		Subtest 3	826.4	20.77	Pass
		Subtest 4	826.4	19.58	Pass
		Subtest 5	826.4	19.90	Pass
		Subtest 1	836.6	20.32	Pass
		Subtest 2	836.6	21.05	Pass
		Subtest 3	836.6	20.96	Pass
		Subtest 4	836.6	20.06	Pass
		Subtest 5	836.6	19.50	Pass
		Subtest 1	846.6	20.38	Pass
		Subtest 2	846.6	20.42	Pass
		Subtest 3	846.6	20.67	Pass
		Subtest 4	846.6	19.90	Pass
		Subtest 5	846.6	19.29	Pass

2. Frequency Stability

2.1 Test Result

2.1.1 Band5

Band: 5							
Network	Frequency (MHz)	Temp. (°C)	Voltage (VDC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
					Result	Limit	
RMC	826.4	25	9.0	-2.167	-0.0026	-2.5 to 2.5	Pass
			12.0	-2.003	-0.0024	-2.5 to 2.5	Pass
			36.0	-1.631	-0.0020	-2.5 to 2.5	Pass
		-20	12.0	-0.172	-0.0002	-2.5 to 2.5	Pass

		-10	12.0	0.157	0.0002	-2.5 to 2.5	Pass
		0	12.0	0.694	0.0008	-2.5 to 2.5	Pass
		10	12.0	0.916	0.0011	-2.5 to 2.5	Pass
		30	12.0	0.837	0.0010	-2.5 to 2.5	Pass
		40	12.0	1.266	0.0015	-2.5 to 2.5	Pass
		50	12.0	1.130	0.0014	-2.5 to 2.5	Pass
		60	12.0	1.531	0.0019	-2.5 to 2.5	Pass
		70	12.0	2.253	0.0027	-2.5 to 2.5	Pass
	836.6	25	9.0	-0.401	-0.0005	-2.5 to 2.5	Pass
			12.0	0.043	0.0001	-2.5 to 2.5	Pass
			36.0	-0.079	-0.0001	-2.5 to 2.5	Pass
		-20	12.0	0.157	0.0002	-2.5 to 2.5	Pass
		-10	12.0	-0.179	-0.0002	-2.5 to 2.5	Pass
		0	12.0	-0.100	-0.0001	-2.5 to 2.5	Pass
		10	12.0	0.415	0.0005	-2.5 to 2.5	Pass
		30	12.0	0.365	0.0004	-2.5 to 2.5	Pass
		40	12.0	0.501	0.0006	-2.5 to 2.5	Pass
		50	12.0	0.515	0.0006	-2.5 to 2.5	Pass
		60	12.0	0.494	0.0006	-2.5 to 2.5	Pass
		70	12.0	0.143	0.0002	-2.5 to 2.5	Pass
	846.6	25	9.0	-1.388	-0.0016	-2.5 to 2.5	Pass
			12.0	-1.380	-0.0016	-2.5 to 2.5	Pass
			36.0	-1.330	-0.0016	-2.5 to 2.5	Pass
		-20	12.0	-1.216	-0.0014	-2.5 to 2.5	Pass
		-10	12.0	-1.438	-0.0017	-2.5 to 2.5	Pass
		0	12.0	-1.030	-0.0012	-2.5 to 2.5	Pass
		10	12.0	-2.954	-0.0035	-2.5 to 2.5	Pass
		30	12.0	-2.711	-0.0032	-2.5 to 2.5	Pass
		40	12.0	-2.432	-0.0029	-2.5 to 2.5	Pass
		50	12.0	-2.110	-0.0025	-2.5 to 2.5	Pass
		60	12.0	-2.232	-0.0026	-2.5 to 2.5	Pass
		70	12.0	-2.146	-0.0025	-2.5 to 2.5	Pass
HSDPA	826.4	25	9.0	-1.159	-0.0014	-2.5 to 2.5	Pass
			12.0	0.064	0.0001	-2.5 to 2.5	Pass
			36.0	-0.179	-0.0002	-2.5 to 2.5	Pass
		-20	12.0	-0.029	0.0000	-2.5 to 2.5	Pass
		-10	12.0	0.014	0.0000	-2.5 to 2.5	Pass
		0	12.0	-0.336	-0.0004	-2.5 to 2.5	Pass
		10	12.0	-0.014	0.0000	-2.5 to 2.5	Pass
		30	12.0	-0.179	-0.0002	-2.5 to 2.5	Pass
		40	12.0	0.029	0.0000	-2.5 to 2.5	Pass
		50	12.0	-0.229	-0.0003	-2.5 to 2.5	Pass
		60	12.0	-0.050	-0.0001	-2.5 to 2.5	Pass
		70	12.0	-0.358	-0.0004	-2.5 to 2.5	Pass
	836.6	25	9.0	-2.203	-0.0026	-2.5 to 2.5	Pass
			12.0	-2.131	-0.0025	-2.5 to 2.5	Pass
			36.0	-2.153	-0.0026	-2.5 to 2.5	Pass
		-20	12.0	-2.146	-0.0026	-2.5 to 2.5	Pass
		-10	12.0	-1.988	-0.0024	-2.5 to 2.5	Pass
		0	12.0	-2.346	-0.0028	-2.5 to 2.5	Pass
		10	12.0	-1.931	-0.0023	-2.5 to 2.5	Pass
		30	12.0	-1.931	-0.0023	-2.5 to 2.5	Pass
		40	12.0	-1.967	-0.0024	-2.5 to 2.5	Pass
		50	12.0	-2.038	-0.0024	-2.5 to 2.5	Pass
		60	12.0	-1.931	-0.0023	-2.5 to 2.5	Pass
		70	12.0	-1.938	-0.0023	-2.5 to 2.5	Pass
	846.6	25	9.0	-5.164	-0.0061	-2.5 to 2.5	Pass
			12.0	-5.407	-0.0064	-2.5 to 2.5	Pass
			36.0	-4.728	-0.0056	-2.5 to 2.5	Pass

		-20	12.0	-4.606	-0.0054	-2.5 to 2.5	Pass
		-10	12.0	-4.857	-0.0057	-2.5 to 2.5	Pass
		0	12.0	-4.842	-0.0057	-2.5 to 2.5	Pass
		10	12.0	-4.120	-0.0049	-2.5 to 2.5	Pass
		30	12.0	-4.613	-0.0054	-2.5 to 2.5	Pass
		40	12.0	-4.442	-0.0052	-2.5 to 2.5	Pass
		50	12.0	-4.764	-0.0056	-2.5 to 2.5	Pass
		60	12.0	-4.013	-0.0047	-2.5 to 2.5	Pass
HSUPA	826.4	25	9.0	2.990	0.0036	-2.5 to 2.5	Pass
			12.0	3.383	0.0041	-2.5 to 2.5	Pass
			36.0	4.485	0.0054	-2.5 to 2.5	Pass
		-20	12.0	3.741	0.0045	-2.5 to 2.5	Pass
			12.0	3.526	0.0043	-2.5 to 2.5	Pass
			12.0	3.562	0.0043	-2.5 to 2.5	Pass
		10	12.0	4.256	0.0052	-2.5 to 2.5	Pass
			12.0	4.241	0.0051	-2.5 to 2.5	Pass
			12.0	4.356	0.0053	-2.5 to 2.5	Pass
		50	12.0	4.327	0.0052	-2.5 to 2.5	Pass
			12.0	4.184	0.0051	-2.5 to 2.5	Pass
			12.0	4.385	0.0053	-2.5 to 2.5	Pass
	836.6	25	9.0	2.718	0.0032	-2.5 to 2.5	Pass
			12.0	2.596	0.0031	-2.5 to 2.5	Pass
			36.0	0.544	0.0007	-2.5 to 2.5	Pass
		-20	12.0	0.436	0.0005	-2.5 to 2.5	Pass
			12.0	0.129	0.0002	-2.5 to 2.5	Pass
			12.0	0.572	0.0007	-2.5 to 2.5	Pass
		10	12.0	0.243	0.0003	-2.5 to 2.5	Pass
			12.0	0.257	0.0003	-2.5 to 2.5	Pass
			12.0	0.565	0.0007	-2.5 to 2.5	Pass
		50	12.0	0.629	0.0008	-2.5 to 2.5	Pass
			12.0	0.594	0.0007	-2.5 to 2.5	Pass
			12.0	1.316	0.0016	-2.5 to 2.5	Pass
	846.6	25	9.0	-0.808	-0.0010	-2.5 to 2.5	Pass
			12.0	-0.658	-0.0008	-2.5 to 2.5	Pass
			36.0	-0.601	-0.0007	-2.5 to 2.5	Pass
		-20	12.0	-0.293	-0.0003	-2.5 to 2.5	Pass
			12.0	-0.343	-0.0004	-2.5 to 2.5	Pass
			12.0	-1.051	-0.0012	-2.5 to 2.5	Pass
		10	12.0	-0.608	-0.0007	-2.5 to 2.5	Pass
			12.0	-0.451	-0.0005	-2.5 to 2.5	Pass
			12.0	-0.529	-0.0006	-2.5 to 2.5	Pass
		50	12.0	-0.329	-0.0004	-2.5 to 2.5	Pass
			12.0	-0.393	-0.0005	-2.5 to 2.5	Pass
			12.0	-0.150	-0.0002	-2.5 to 2.5	Pass

3. 99% & 26dB Bandwidth

3.1 Test Result

3.1.1 Band5_OBW

Band: 5						
ENV	Mode		Frequency (MHz)	99% Occupied Bandwidth (MHz)		Verdict
	Network	Subset		Result	Limit	
NTNV	RMC	12.2kbps RMC	826.4	4.125	/	Pass

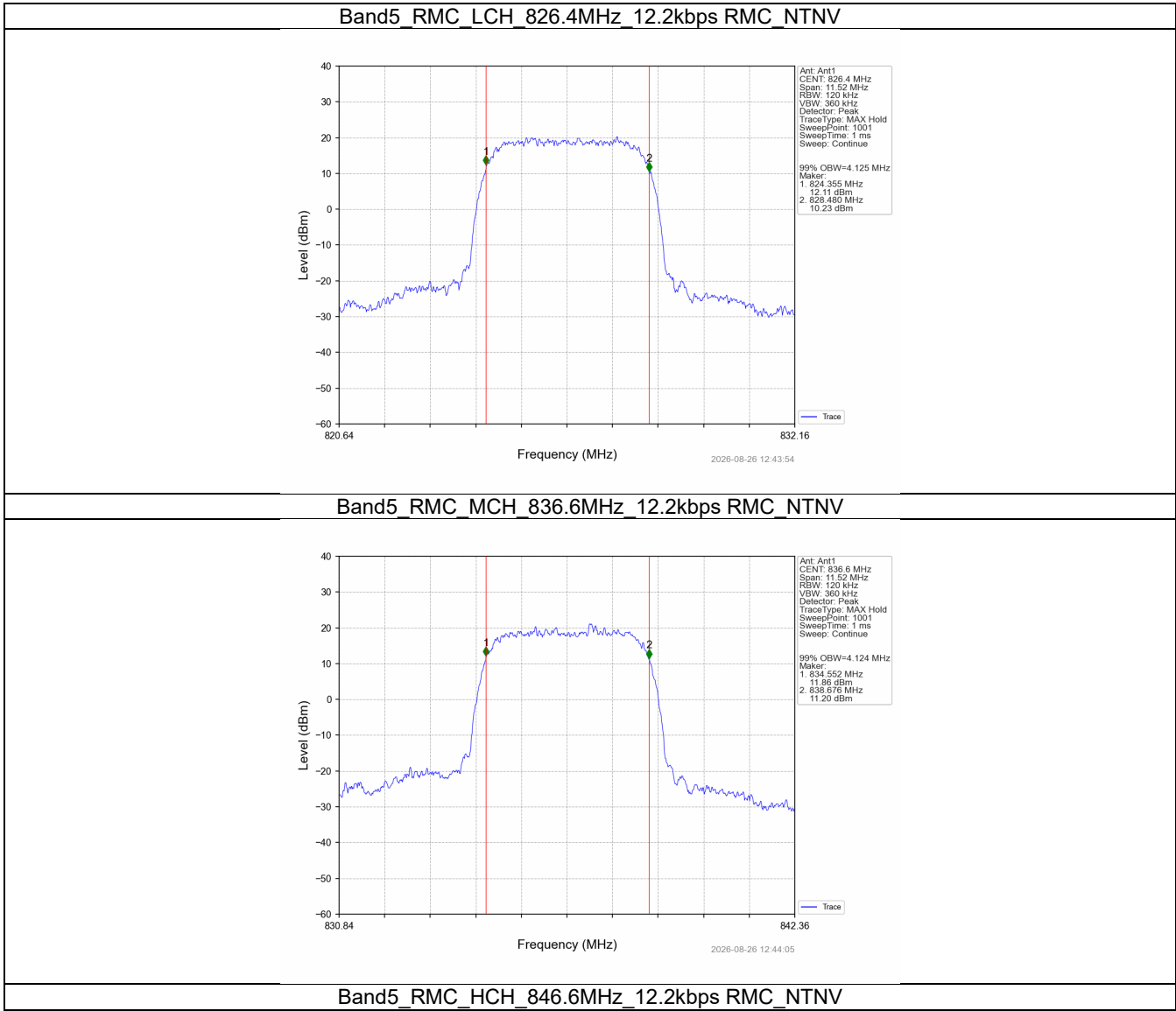
	HSDPA	Subtest 1	836.6	4.124	/	Pass
			846.6	4.144	/	Pass
			826.4	4.185	/	Pass
			836.6	4.200	/	Pass
			846.6	4.157	/	Pass
	HSUPA	Subtest 1	826.4	4.196	/	Pass
			836.6	4.223	/	Pass
			846.6	4.198	/	Pass

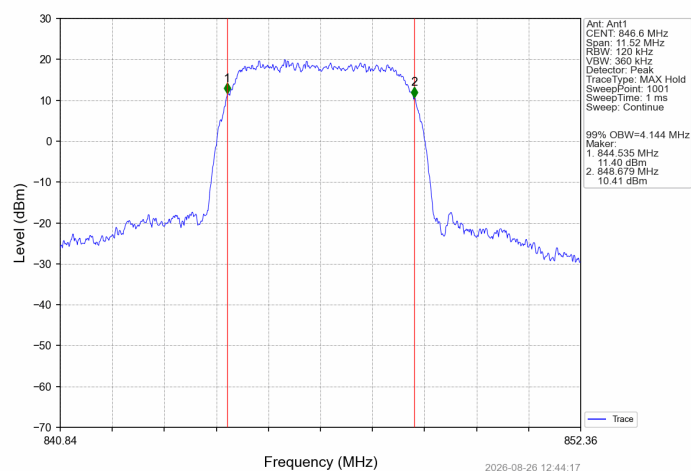
3.1.2 Band5_XDB

Band: 5						
ENV	Mode		Frequency (MHz)	26dB Bandwidth (MHz)		Verdict
	Network	Subset		Result	Limit	
NTNV	RMC	12.2kbps RMC	826.4	4.757	/	Pass
			836.6	4.751	/	Pass
			846.6	4.764	/	Pass
	HSDPA	Subtest 1	826.4	5.613	/	Pass
			836.6	5.880	/	Pass
			846.6	5.613	/	Pass
	HSUPA	Subtest 1	826.4	5.694	/	Pass
			836.6	5.936	/	Pass
			846.6	5.833	/	Pass

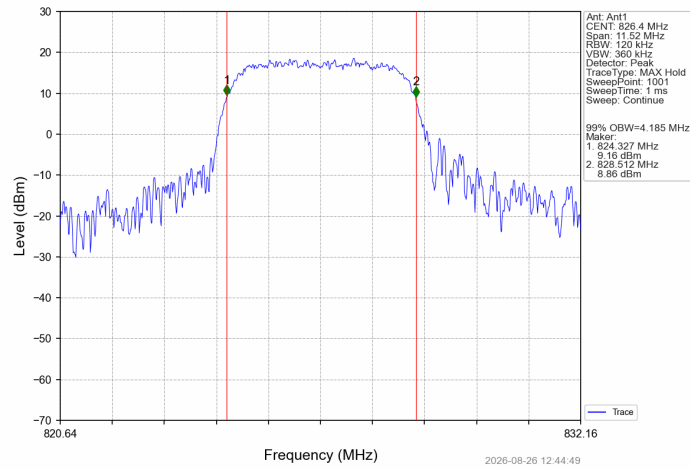
3.2 Test Graph

3.2.1 Band5_OBW

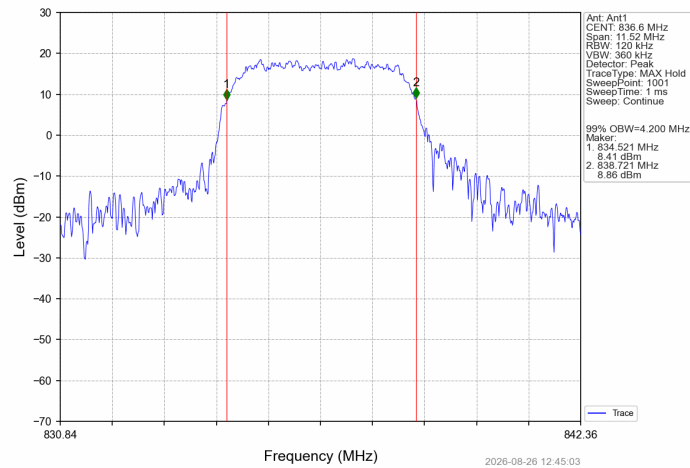




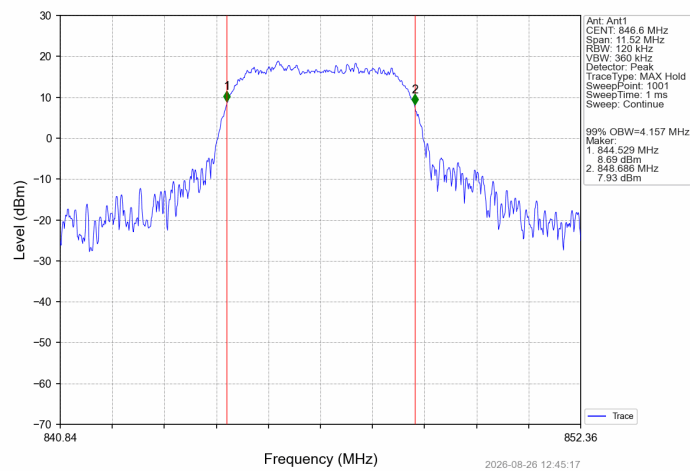
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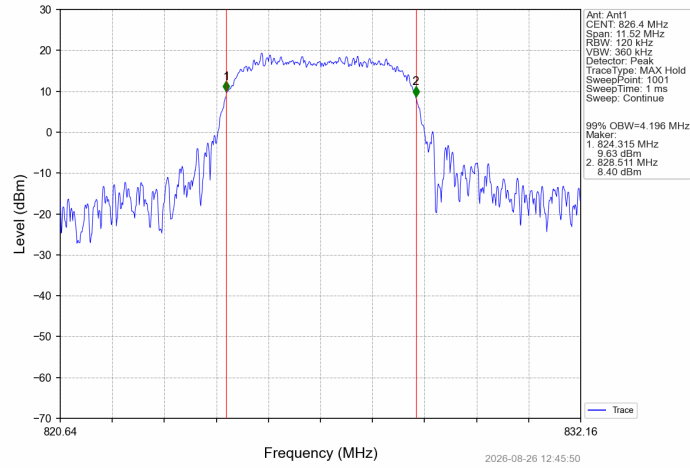
Band5_HSDPA_MCH_836.6MHz_Subtest_1_NTNV



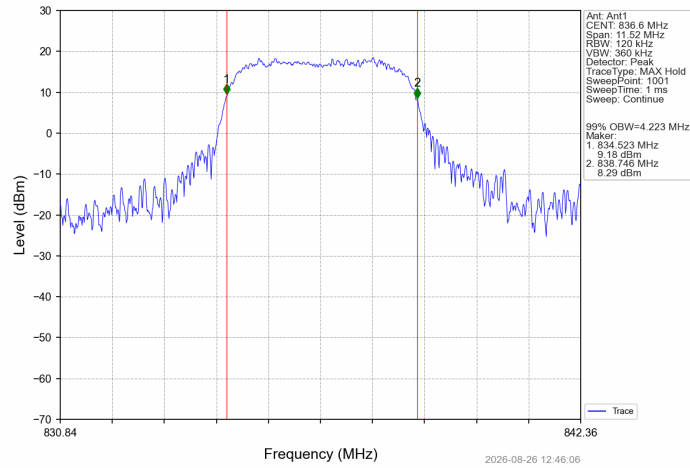
Band5_HSDPA_HCH_846.6MHz_Subtest_1_NTNV



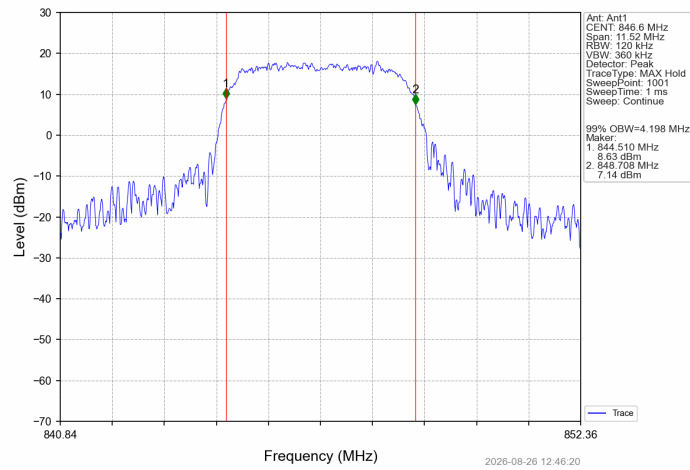
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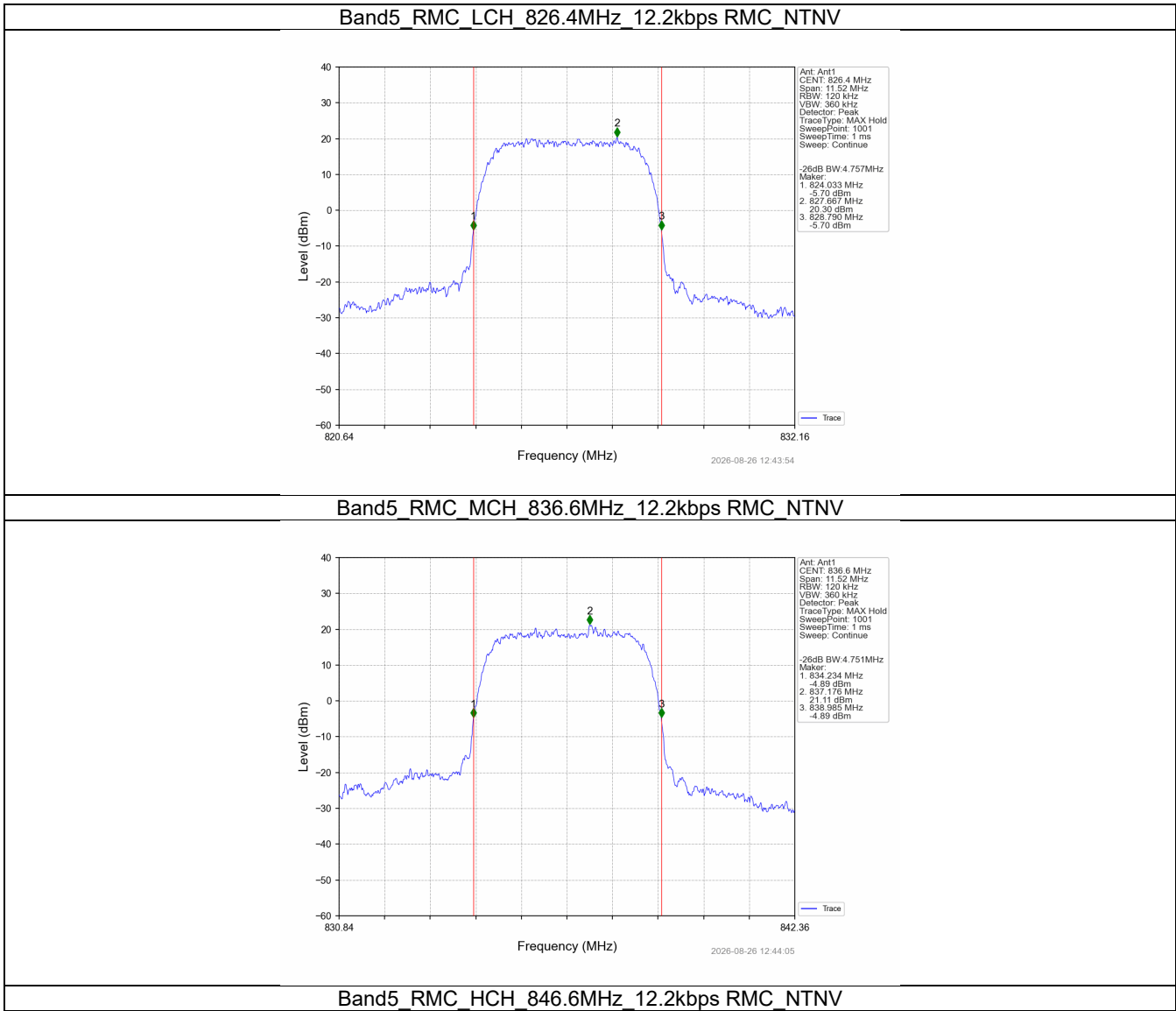
Band5_HSUPA_MCH_836.6MHz_Subtest 1_NTNV

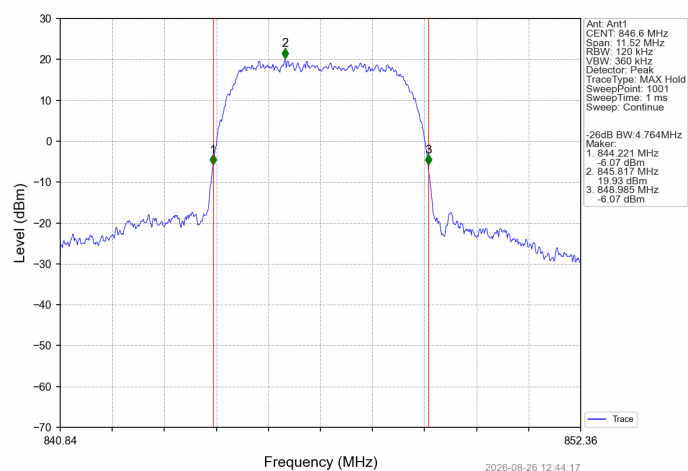


Band5_HSUPA_HCH_846.6MHz_Subtest 1_NTNV

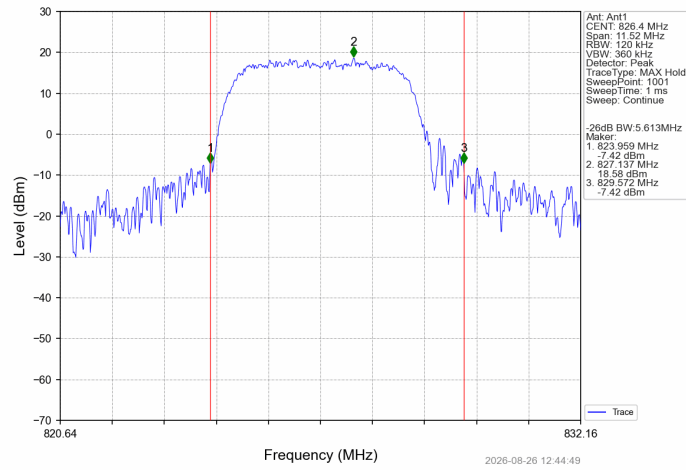


3.2.2 Band5_XDB

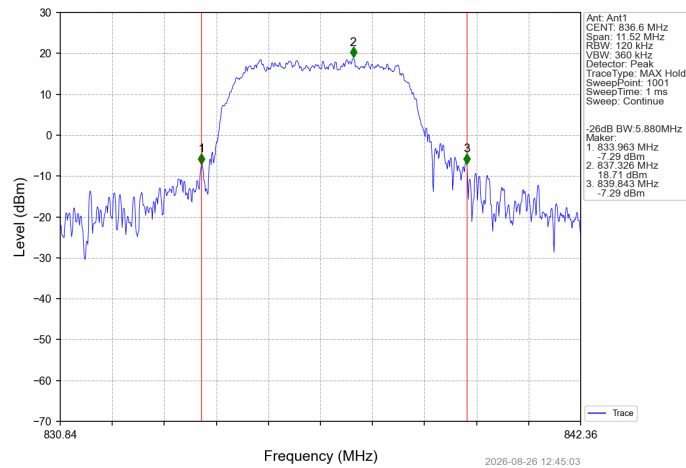




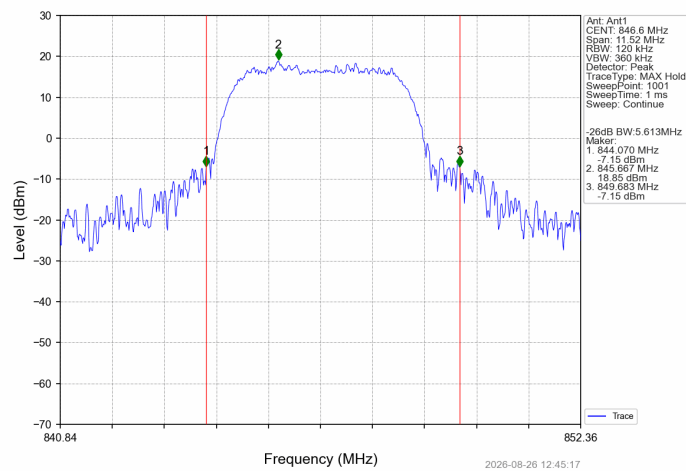
Band5_HSDPA_LCH_826.4MHz_Subtest_1_NTNV



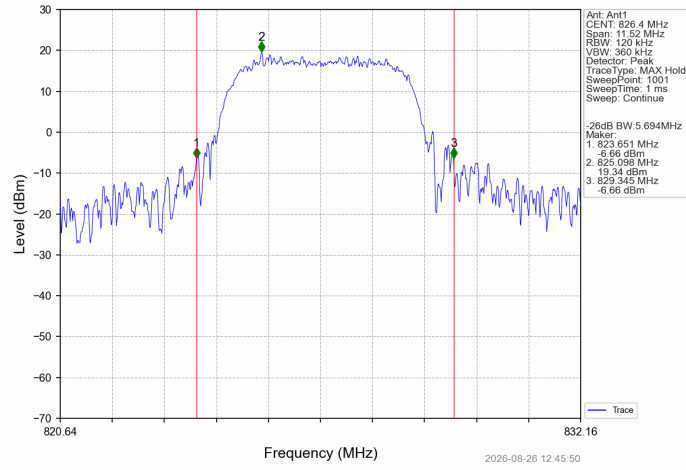
Band5_HSDPA_MCH_836.6MHz_Subtest_1_NTNV



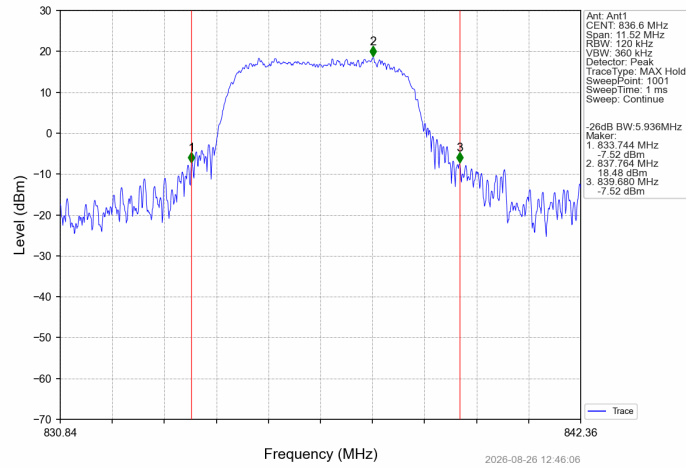
Band5_HSDPA_HCH_846.6MHz_Subtest_1_NTNV



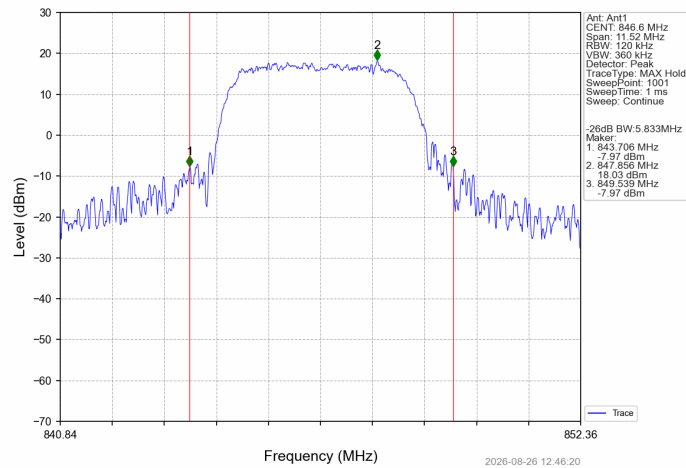
Band5_HSUPA_LCH_826.4MHz_Subtest 1_NTNV



Band5_HSUPA_MCH_836.6MHz_Subtest 1_NTNV



Band5_HSUPA_HCH_846.6MHz_Subtest 1_NTNV



4. Peak-Average Ratio

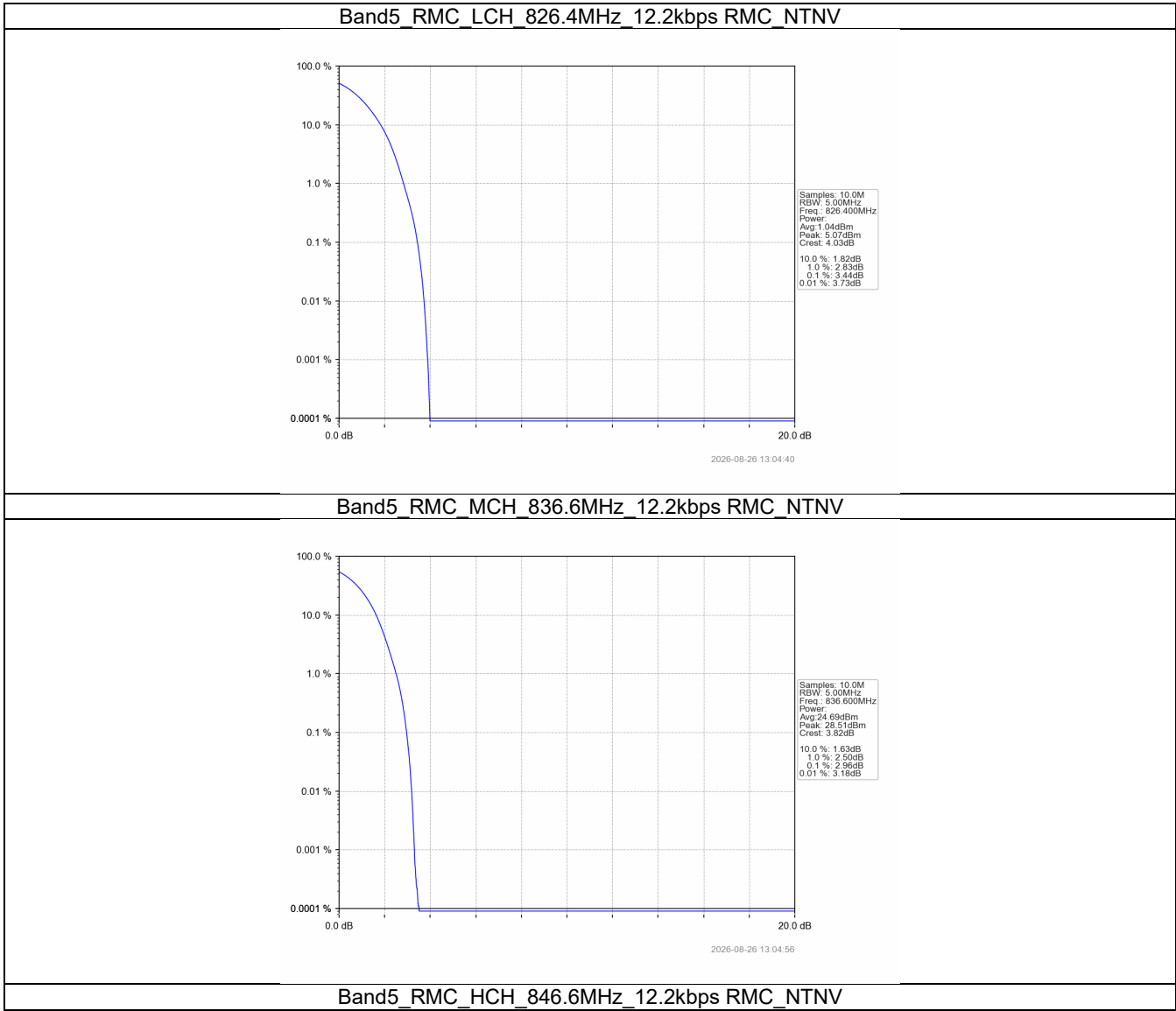
4.1 Test Result

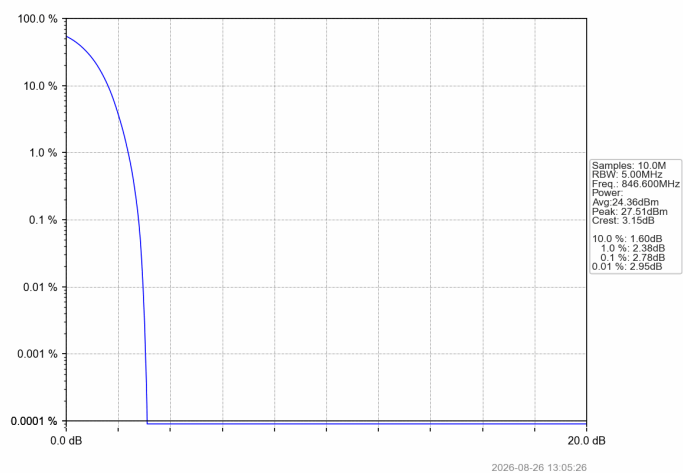
4.1.1 Band5

Band: 5						
ENV	Mode		Frequency (MHz)	Peak-Average Ratio (dB)		Verdict
	Network	Subset		Result	Limit	
NTNV	RMC	12.2kbps RMC	826.4	3.44	<=13	Pass
			836.6	2.96	<=13	Pass
			846.6	2.78	<=13	Pass
	HSDPA	Subtest 1	826.4	5.73	<=13	Pass
			836.6	5.80	<=13	Pass
			846.6	5.76	<=13	Pass
	HSUPA	Subtest 1	826.4	6.93	<=13	Pass
			836.6	6.86	<=13	Pass
			846.6	6.47	<=13	Pass

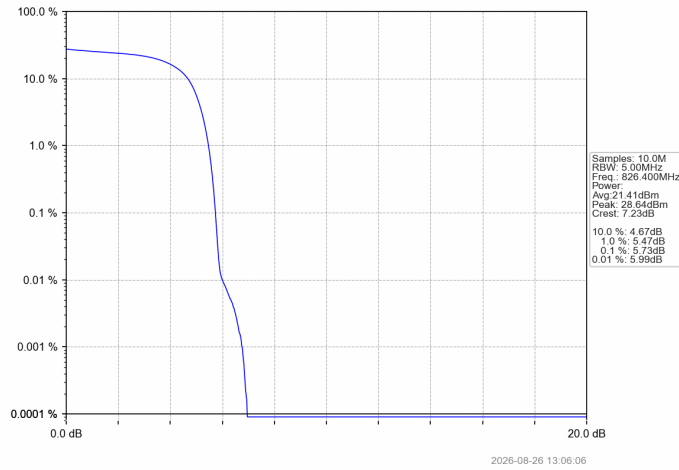
4.2 Test Graph

4.2.1 Band5

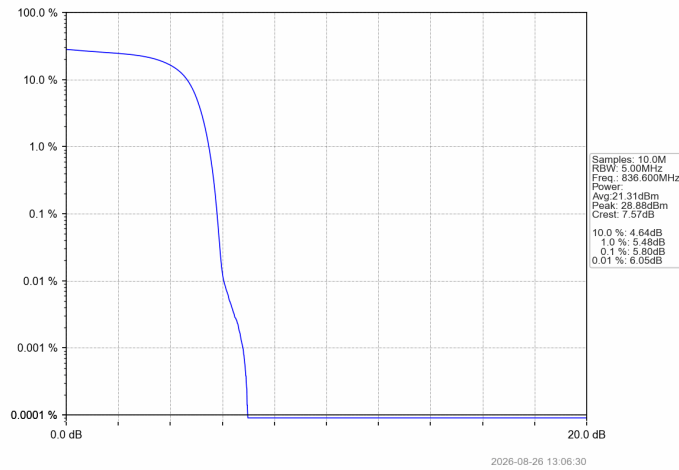




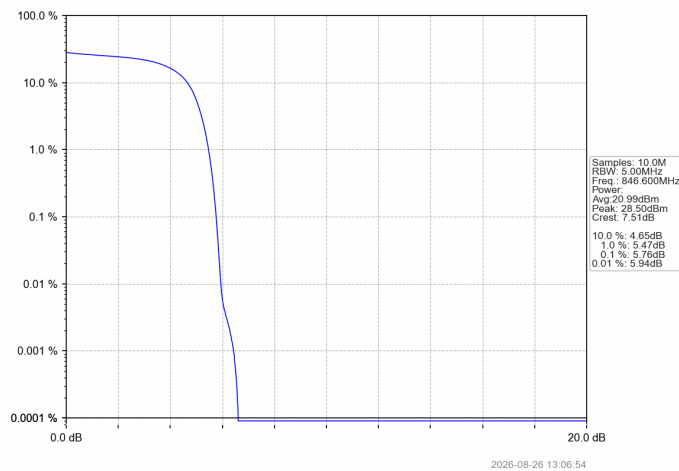
Band5_HSDPA_LCH_826.4MHz_Subtest 1_NTNV



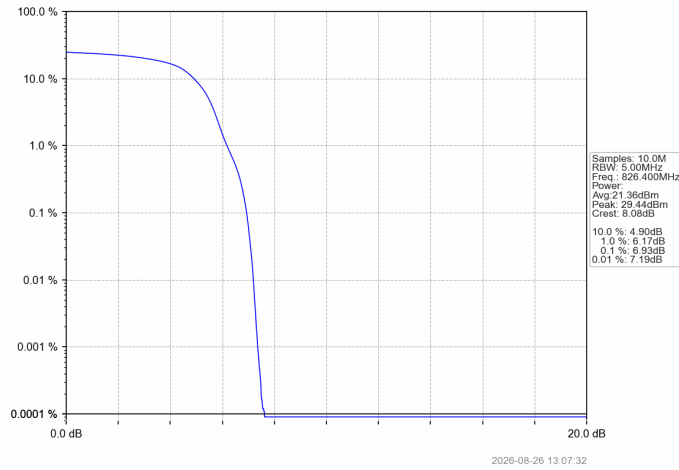
Band5_HSDPA_MCH_836.6MHz_Subtest 1_NTNV



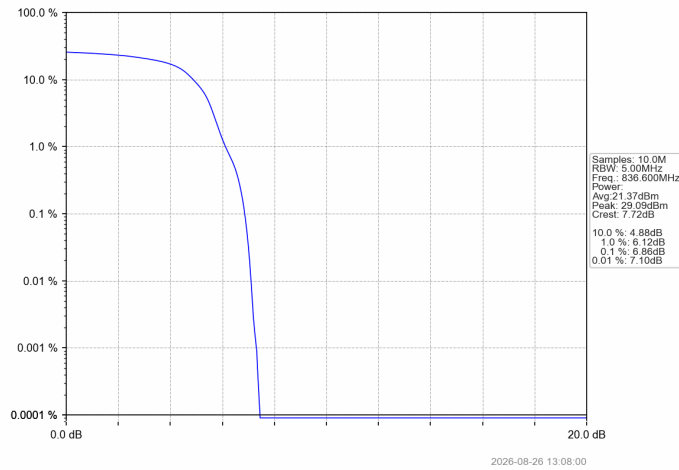
Band5_HSDPA_HCH_846.6MHz_Subtest 1_NTNV



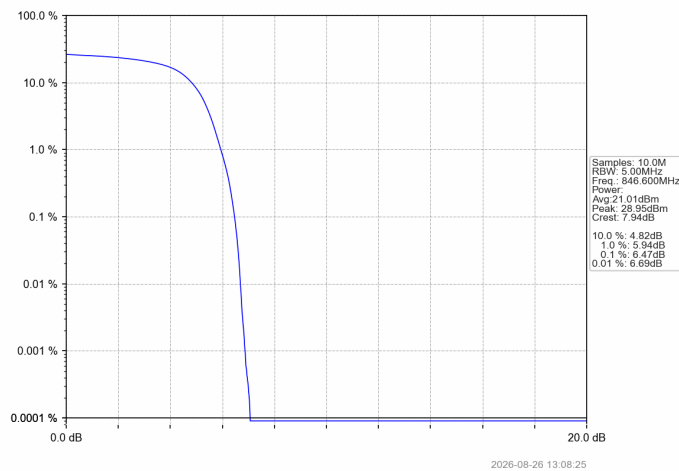
Band5_HSUPA_LCH_826.4MHz_Subtest 1_NTNV



Band5_HSUPA_MCH_836.6MHz_Subtest 1_NTNV



Band5_HSUPA_HCH_846.6MHz_Subtest 1_NTNV



5. Spurious Emission and Band Edge

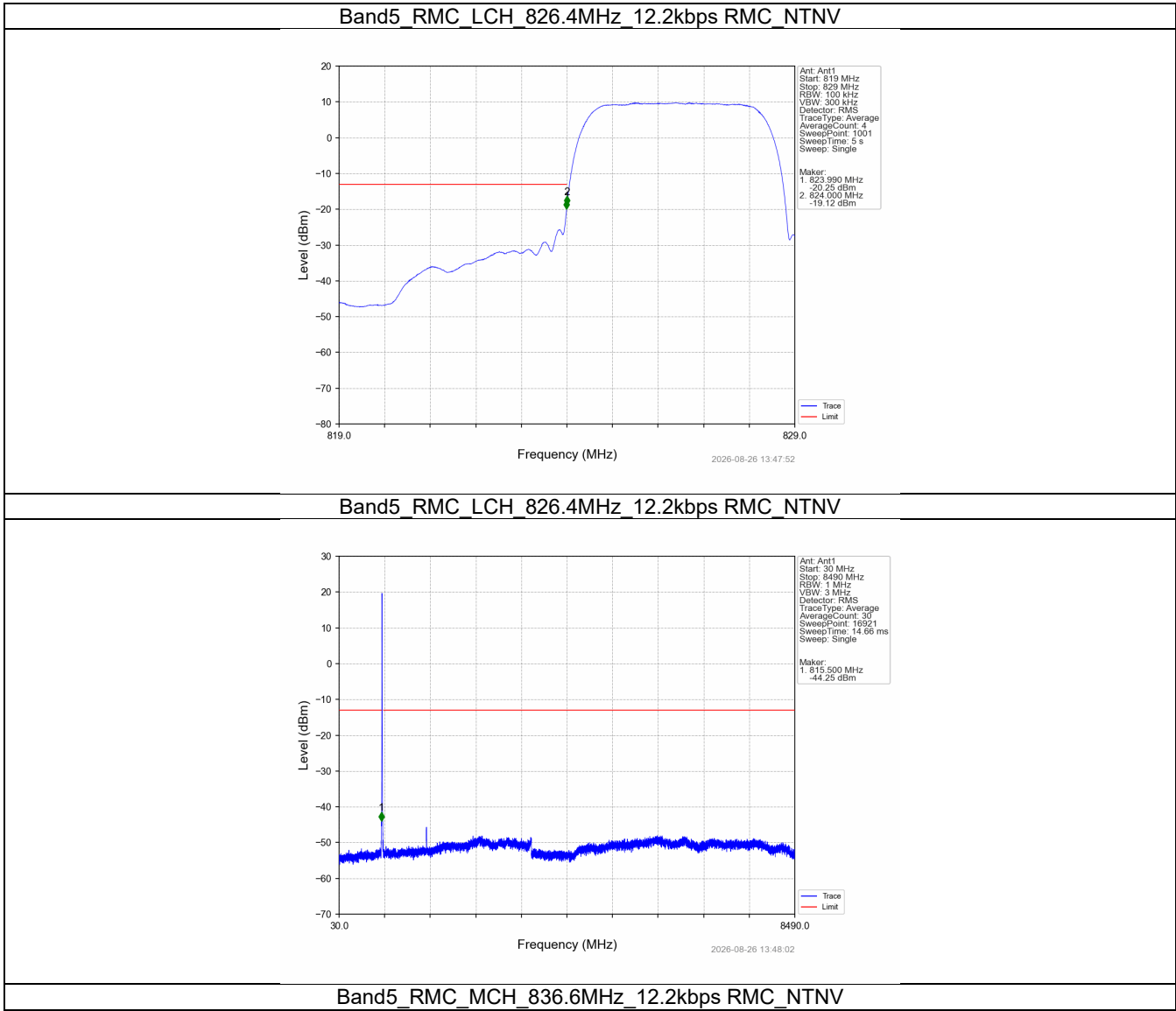
5.1 Test Result

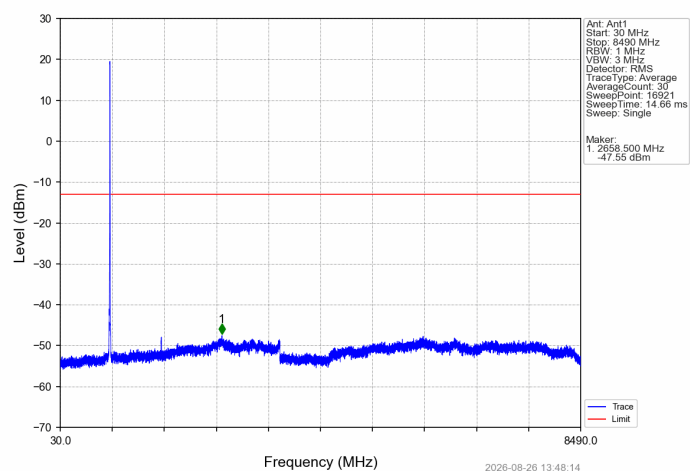
5.1.1 Band5

Band: 5					
ENV	Mode		Frequency (MHz)	Spurious Emission	
	Network	Subset		Result	Limit
NTNV	RMC	12.2kbps RMC	826.4	Refer To Test Graph	Pass
			836.6	Refer To Test Graph	Pass
			846.6	Refer To Test Graph	Pass
	HSDPA	Subtest 1	826.4	Refer To Test Graph	Pass
			836.6	Refer To Test Graph	Pass
			846.6	Refer To Test Graph	Pass
	HSUPA	Subtest 1	826.4	Refer To Test Graph	Pass
			836.6	Refer To Test Graph	Pass
			846.6	Refer To Test Graph	Pass

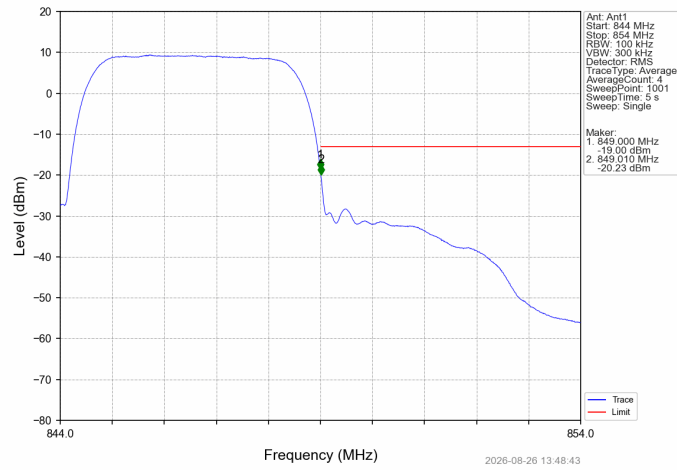
5.2 Test Graph

5.2.1 Band5

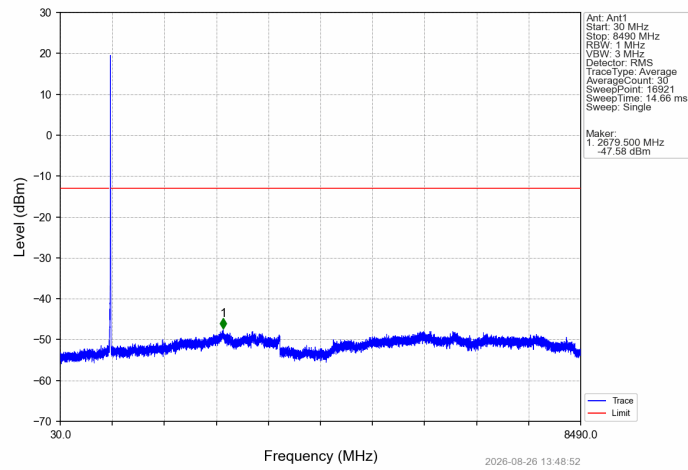




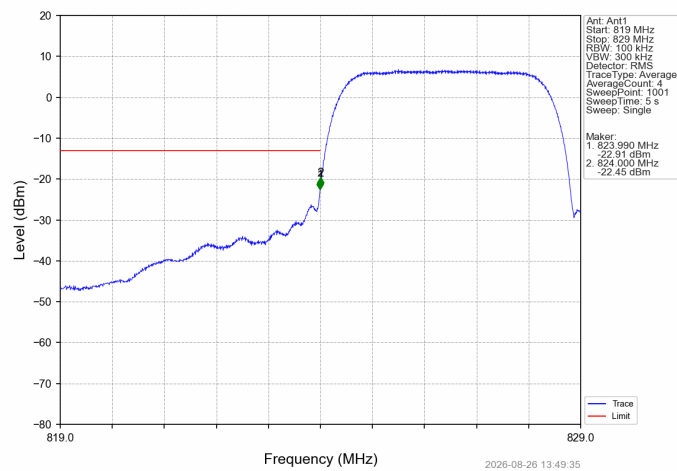
Band5_RMC_HCH_846.6MHz_12.2kbps_RMC_NTNV



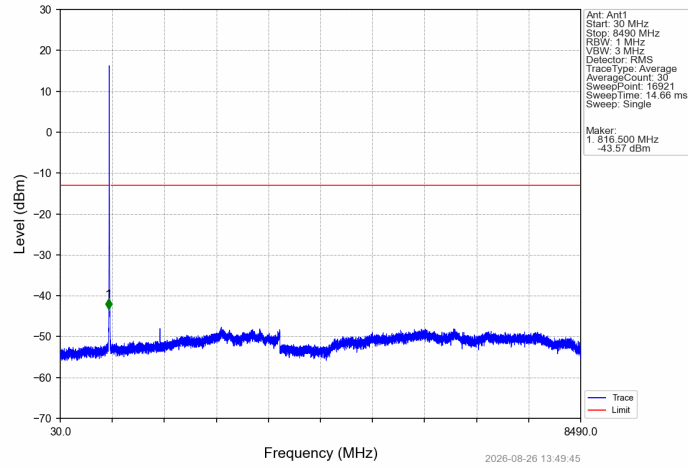
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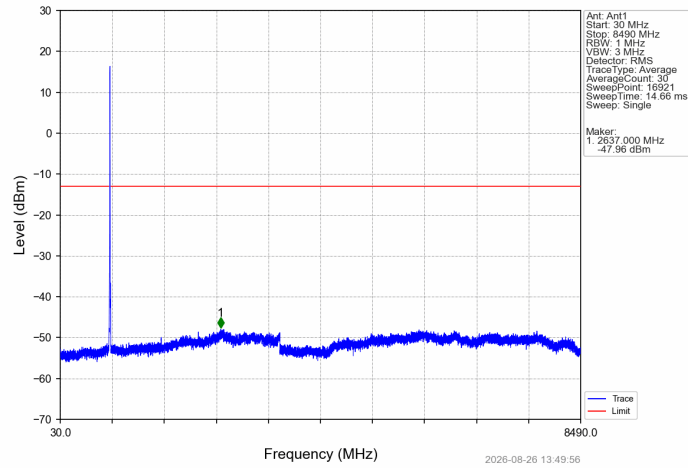
Band5_HSDPA_LCH_826.4MHz_Subtest 1_NTNV



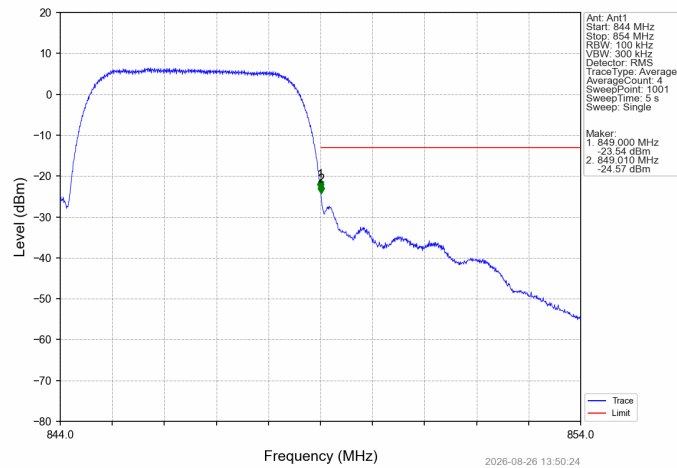
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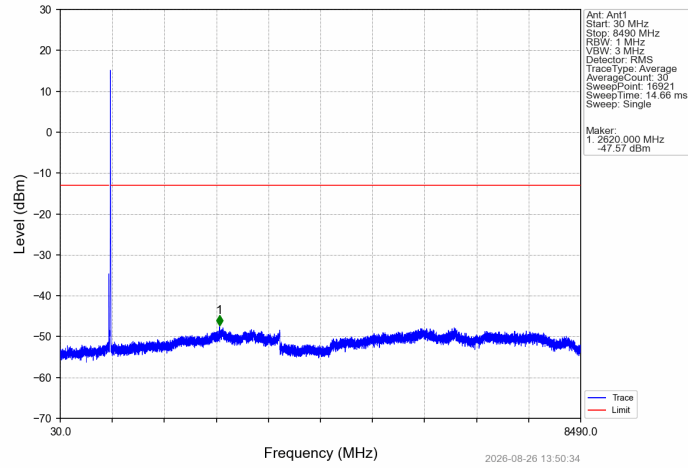
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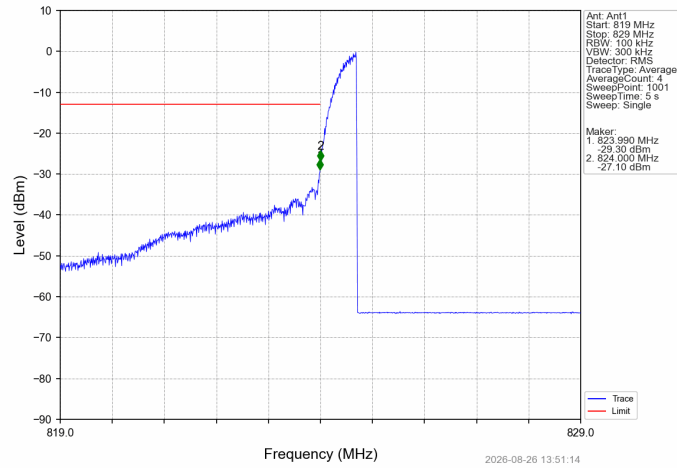
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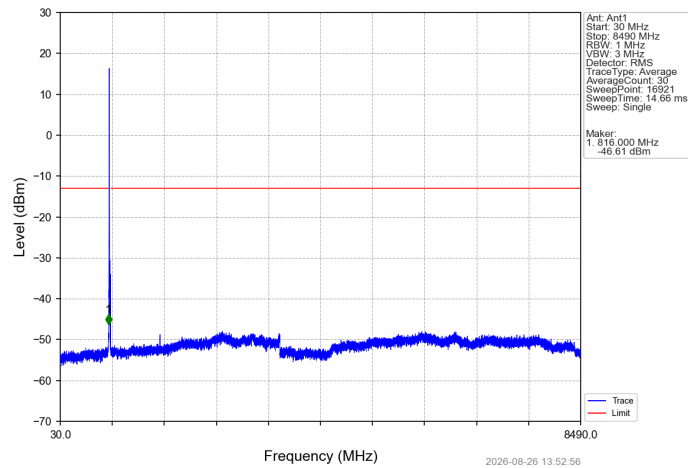
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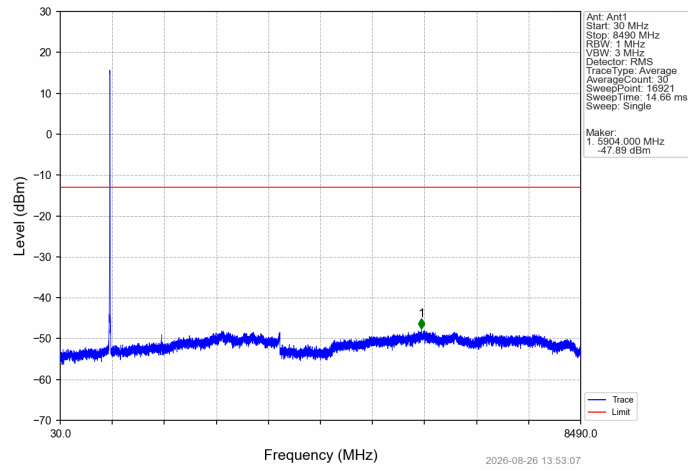
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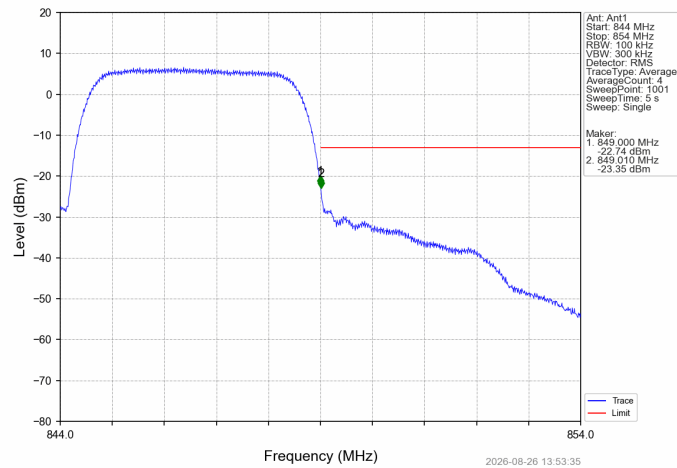
Band5_HSUPA_LCH_826.4MHz_Subtest 1 NTN



Band5_HSUPA_MCH_836.6MHz_Subtest_1_NTNV



Band5_HSUPA_HCH_846.6MHz_Subtest_1_NTNV



Band5_HSUPA_HCH_846.6MHz_Subtest_1_NTNV

