



TEST REPORT

Application No.: SZEM1911020270CR
Applicant: EBM Technologies Incorporated
Address of Applicant: 5Fl., No. 516, Sec. 1, Neihu Road, Neihu Dist., Taipei City 11493 Taiwan
Manufacturer: EBM Technologies Incorporated
Address of Manufacturer: 5Fl., No. 516, Sec. 1, Neihu Road, Neihu Dist., Taipei City 11493 Taiwan
Factory: Zhongshan Loease Electronic Technology Co.,Ltd
Address of Factory: No.1-1st Rd, Yongxing Industrial Zone, Henglan Town, Zhongshan City, Guangdong, China
Equipment Under Test (EUT):
EUT Name: Body Weight Scale
Model No.: BC800 3G
Trade mark: Medisanté
FCC ID: 2AWYXBC800
Standard(s) : 47 CFR Part 2
47 CFR Part 22 subpart H
47 CFR Part 24 subpart E
Date of Receipt: 2019-11-15
Date of Test: 2020-05-13 to 2020-07-06
Date of Issue: 2020-07-13

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

Keny Xu

Keny Xu
EMC Laboratory Manager



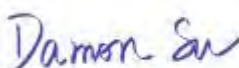
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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2020-07-13		Original

Authorized for issue by:			
			
		Damon Su /Project Engineer	
			
		Eric Fu /Reviewer	



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2 Test Summary

Test Item	FCC Rule No.	Requirements	Verdict
Effective (Isotropic) Radiated Power Output Data	§2.1046, §22.913, §24.232	ERP≤7W(GPRS850/ WCDMA BAND V) EIRP≤2W(GPRS1900/ WCDMA BAND II)	PASS
Peak-Average Ratio	§24.232	≤13dB	PASS
Modulation Characteristics	§2.1047	Digital modulation	PASS
Bandwidth	§2.1049(h)	OBW: No limit EBW: No limit	PASS
Band Edge Compliance	§2.1051, §22.917, §24.238	≤ -13dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	PASS
Spurious emissions at antenna terminals	§2.1051, §22.917, §24.238	≤ -13dBm	PASS
Field strength of spurious radiation	§2.1051, §22.917, §24.238	≤ -13dBm	PASS
Frequency stability	§2.1055, §22.355, §24.235	≤ ±2.5ppm.	PASS



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4 General Information

4.1 Details of E.U.T.

Power supply:	DC 6V by 4*1.5 AAA battery.
Support Network:	GPRS, EGPRS, WCDMA
Operation Frequency Band:	GPRS850/GPRS1900/ WCDMA Band II/ WCDMA Band V
Modulation Type:	GMSK for GPRS/EGPRS; 8PSK for EGPRS; QPSK for WCDMA
GPRS Multi-slots Class:	33
EGPRS Multi-slots Class:	33
HSDPA UE Category:	13
HSUPA UE Category:	6
Power Class:	4, tested with power level 5(GSM850) 1, tested with power level 0(GSM1900)
Designation of Emissions	EGPRS850: 260KG7W; GPRS850: 250KGXW EGPRS1900: 260KG7W; GPRS1900: 250KGXW WCDMA Band V: 4M11F9W WCDMA Band II: 4M12F9W
Antenna Type:	Integral
Antenna Gain:	GSM850: 1.63dBi; GSM1900: 1.92dBi; WCDMA Band II: 1.92dBi; WCDMA Band V: 1.63dBi
Extreme temp. Tolerance:	10°C to +40°C
Extreme vol. Limits:	4.9VDC to 6.5VDC (nominal: 6.0VDC)



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4.2 Test Frequency

Test mode:	TX / RX	RF Channel		
		Low (L)	Middle (M)	High (H)
GSM850	TX	Channel 128	Channel 190	Channel 251
		824.2MHz	836.6 MHz	848.8 MHz
	RX	Channel 128	Channel 190	Channel 251
		869.2 MHz	881.6 MHz	893.8 MHz
Test mode:	TX / RX	RF Channel		
		Low (L)	Middle (M)	High (H)
GSM1900	TX	Channel 512	Channel 661	Channel 810
		1850.2MHz	1880.0 MHz	1909.8 MHz
	RX	Channel 512	Channel 661	Channel 810
		1930.2 MHz	1960.0 MHz	1989.8 MHz

Test mode:	TX/RX	RF Channel		
		Low (L)	Middle (M)	High (H)
WCDMA Band V	TX	Channel 4132	Channel 4182	Channel 4233
		826.4MHz	836.4 MHz	846.6 MHz
	RX	Channel 4357	Channel 4407	Channel 4458
		871.4 MHz	881.4 MHz	891.6 MHz
Test mode:	TX/RX	RF Channel		
		Low (L)	Middle (M)	High (H)
WCDMA Band II	TX	Channel 9262	Channel 9400	Channel 9538
		1852.4 MHz	1880.0 MHz	1907.6 MHz
	RX	Channel 9662	Channel 9800	Channel 9938
		1932.4 MHz	1960.0 MHz	1987.6 MHz



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4.3 Test Environment

Environment Parameter	Selected Values During Tests	
Relative Humidity	52%	
Atmospheric Pressure:	1015Pa	
Temperature:	TN	25 °C
Voltage:	VL	5.1 V
	VN	6.0 V
	VH	6.9 V

NOTE: VL= lower extreme test voltage

VN= nominal voltage

VH= upper extreme test voltage

TN= normal temperature

4.4 Description of Support Units

The EUT has been tested independent unit.

4.5 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.25×10^{-8}
2	Occupied Bandwidth	3%
3	RF conducted power	0.75dB
4	Conducted Spurious emissions	0.75dB
5	RF Radiated power	4.5dB (below 1GHz)
		4.8dB (above 1GHz)
6	Radiated Spurious emission test	4.5dB (Below 1GHz)
		4.8dB (Above 1GHz)
7	Temperature test	1°C
8	Humidity test	3%
9	Supply voltages	1.5%
10	Time	3%



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4.6 Test Location

All tests were performed at:

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No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053

Fax: +86 755 2671 0594

No tests were sub-contracted.

4.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

- **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

- **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.8 Deviation from Standards

None

4.9 Abnormalities from Standard Conditions

None



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5 Equipment List

RF Conducted Test					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	SAEMC	MSR733	SEM001-09	2019-06-13	2022-06-12
DC Power Supply	Zhao Xin	KXN-6020D	SEM011-08	2019-09-24	2020-09-23
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2019-09-24	2020-09-23
Measurement Software	JS Tonscend	JS1120-2 BT/WIFI V2.	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-02	2019-07-11	2020-07-10
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2019-09-24	2020-09-23
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2019-09-24	2020-09-23
Radio Communication Analyzer	Anritsu	MT8820C	SEM010-04	2020-04-02	2021-04-01
Universal Radio Communication Tester	Rohde & Schwarz	CMU200	SEM010-02	2020-04-02	2021-04-01
Universal Radio Communication Tester	Rohde & Schwarz	CMW 500	SEM010-03	2020-04-02	2021-04-01
Signal Analyzer (10Hz-40GHz)	Rohde & Schwarz	FSV40	SEM008-04	2020-04-01	2021-03-31
Power Splitter	Narda	4324-2	0168	N/A	N/A

RE in chamber					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2017-08-05	2020-08-04
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2019-07-11	2020-07-10
EMI Test Receiver	Agilent Technologies	N9038A	SEM004-05	2019-09-24	2020-09-23
BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-01	2017-06-27 2020-06-25	2020-06-26 2023-06-24
Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEM005-01	2020-04-01	2021-03-31
Substitution Antenna	ETS-Lindgren	3142C	SEM003-01	2017-06-27 2020-06-25	2020-06-26 2023-06-24
Signal Generator	R&S	SMA100A	102174	2020-07-12	2021-07-11

RE in chamber



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Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2018-03-13	2021-03-12
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2019-07-11	2020-07-10
EXA Spectrum Analyzer	AgilentTechnologies Inc	N9010A	SEM004-12	2020-04-12	2021-04-11
Horn Antenna (1-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2018-04-13	2021-04-12
Horn Antenna(15GHz-40GHz)	Schwarzbeck	BBHA 9170	SEM003-15	2017-10-17	2020-10-16
Pre-Amplifier(0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEM004-11	2019-09-24	2020-09-23
Pre-amplifier(18-26GHz)	Rohde & Schwarz	CH14-H052	SEM005-17	2020-04-01	2021-03-31
Pre-amplifier(26GHz-40GHz)	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2020-04-01	2021-03-31
DC Power Supply	Zhao Xin	KXN-6020D	SEM011-08	2019-09-24	2020-09-23
Active Loop Antenna	ETS-Lindgren	6502	SEM003-08	2017-08-22	2020-08-21
Substitution Antenna	ETS-Lindgren	3142C	SEM003-01	2017-06-27	2020-06-26
				2020-06-25	2023-06-24
Signal Generator	R&S	SMA100A	102174	2019-07-12	2020-07-11

General used equipment

Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date	Cal. Due date
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2019-09-26	2020-09-25
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2019-09-26	2020-09-25
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2019-09-26	2020-09-25
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2020-04-07	2021-04-06



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6 Radio Spectrum Matter Test Results

6.1 Effective (Isotropic) Radiated Power Output Data

Test Requirement: §2.1046, §22.913, §24.232
 Test Method: ANSI C63.26, KDB 971168 D01 v03
 Limit: ERP≤7W(GPRS850)
 EIRP ≤ 2W(GPRS1900)
 ERP≤7W(WCDMA BAND V)
 EIRP≤ 2W(WCDMA BAND II)

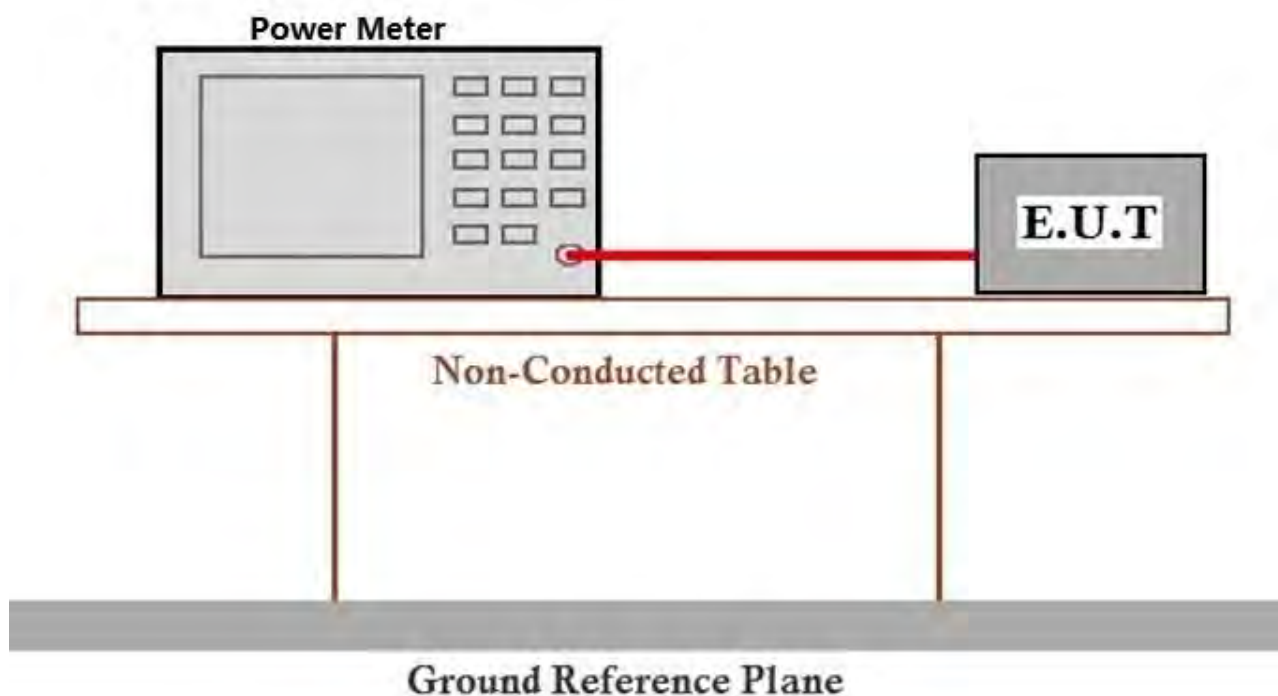
6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar

Test mode: I: Tx mode, Keep the EUT in transmitting mode.

6.1.2 Test Setup Diagram



6.1.3 Measurement Data

The detailed test data see: Appendix WCDMA & GSM

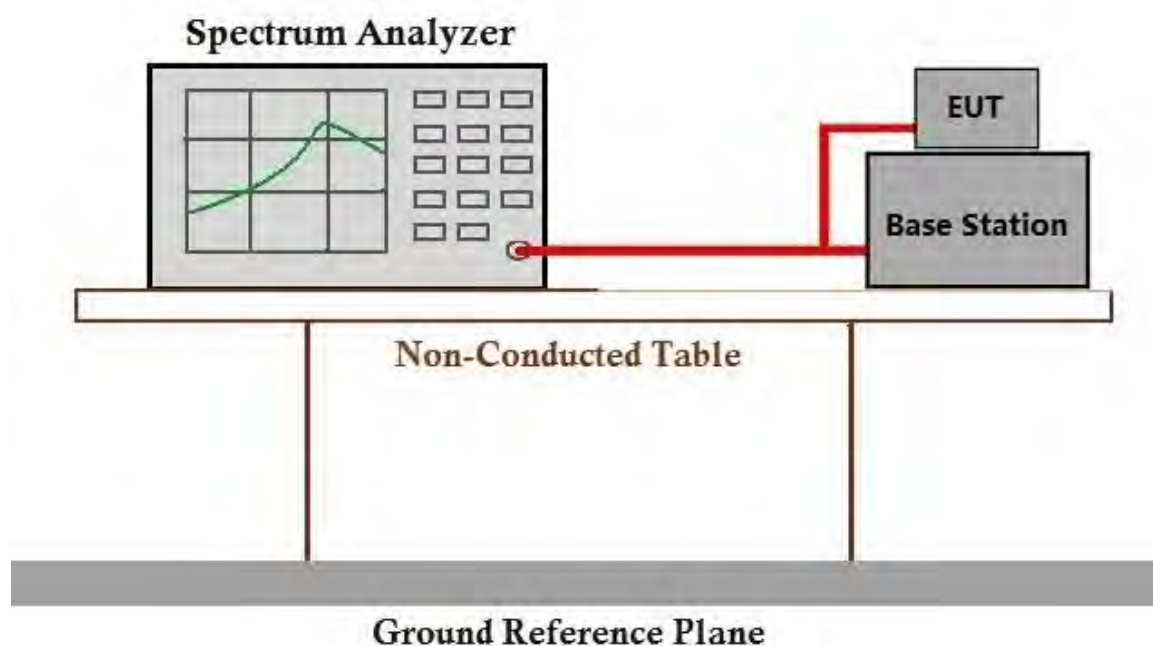
6.2 Peak-Average Ratio

Test Requirement: §24.232
 Test Method: ANSI C63.26, KDB 971168 D01 v03
 Limit: ≤13dB

6.2.1 E.U.T. Operation

Operating Environment:
 Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar
 Test mode: I: Tx mode, Keep the EUT in transmitting mode.

6.2.2 Test Setup Diagram



6.2.3 Measurement Data

The detailed test data see: Appendix WCDMA & GSM

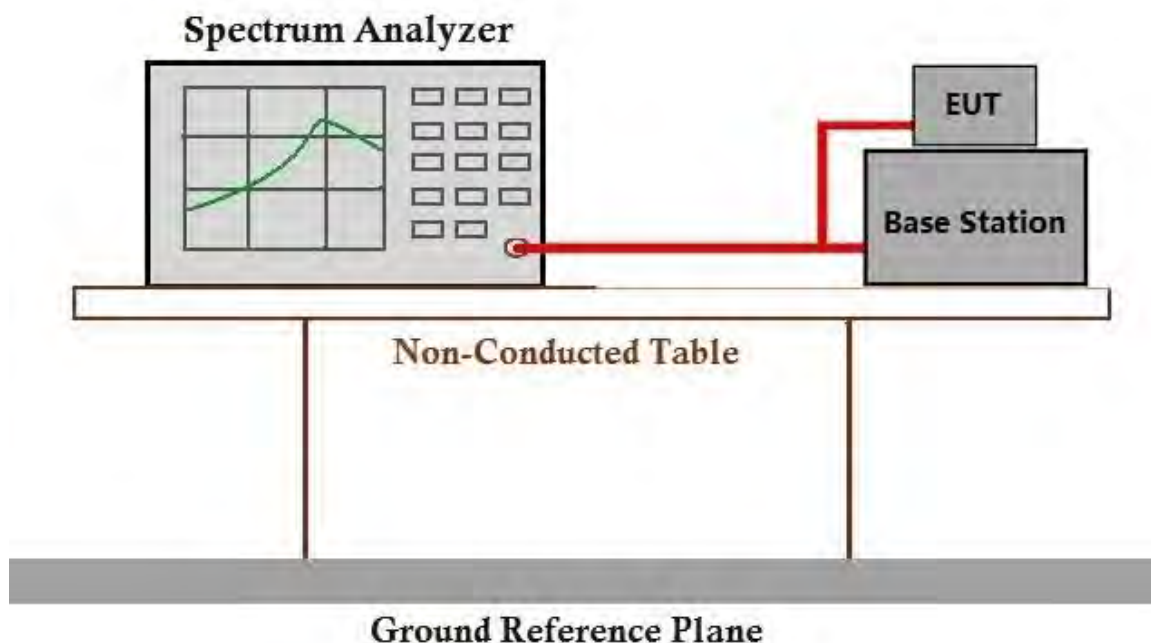
6.3 Bandwidth

Test Requirement: §2.1049(h), §22.917, §24.238
 Test Method: ANSI C63.26, KDB 971168 D01 v03
 Limit: OBW: No limit
 EBW: No limit

6.3.1 E.U.T. Operation

Operating Environment:
 Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar
 Test mode: I: Tx mode, Keep the EUT in transmitting mode.

6.3.2 Test Setup Diagram



6.3.3 Measurement Data

The detailed test data see: Appendix WCDMA & GSM

6.4 Band Edge Compliance

Test Requirement: §2.1051, §22.917, §24.238

Test Method: ANSI C63.26, KDB 971168 D01 v03

Limit: $\leq -13\text{dBm}/1\% \cdot \text{EBW}$, in 1 MHz bands immediately outside and adjacent to the frequency block.

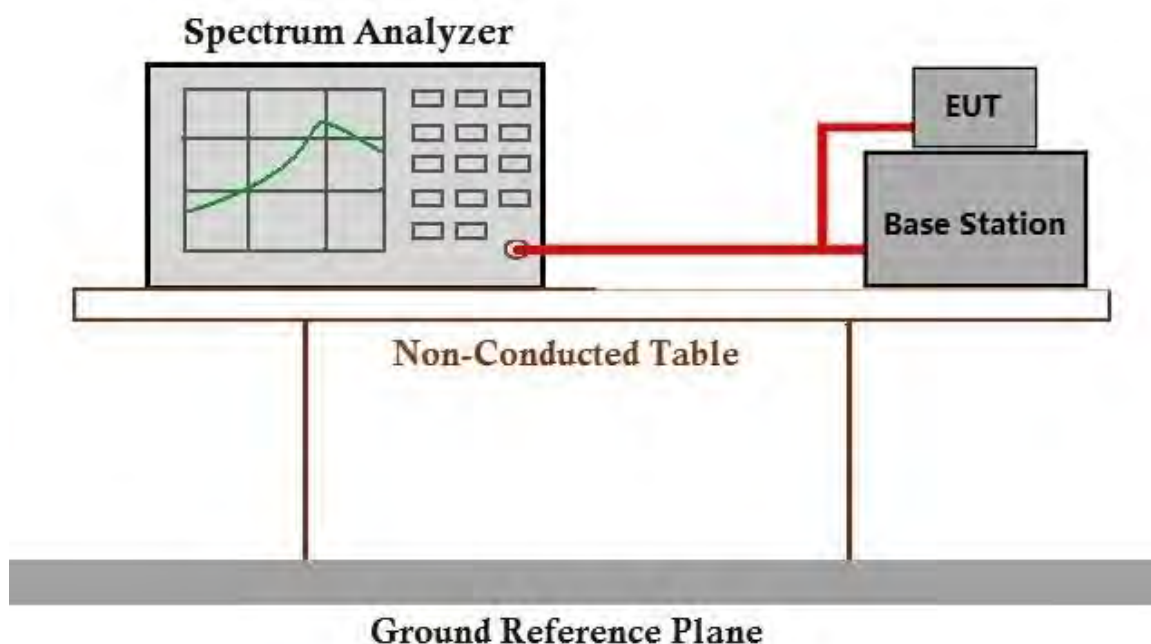
6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar

Test mode: I: Tx mode, Keep the EUT in transmitting mode.

6.4.2 Test Setup Diagram



6.4.3 Measurement Data

The detailed test data see: Appendix WCDMA & GSM

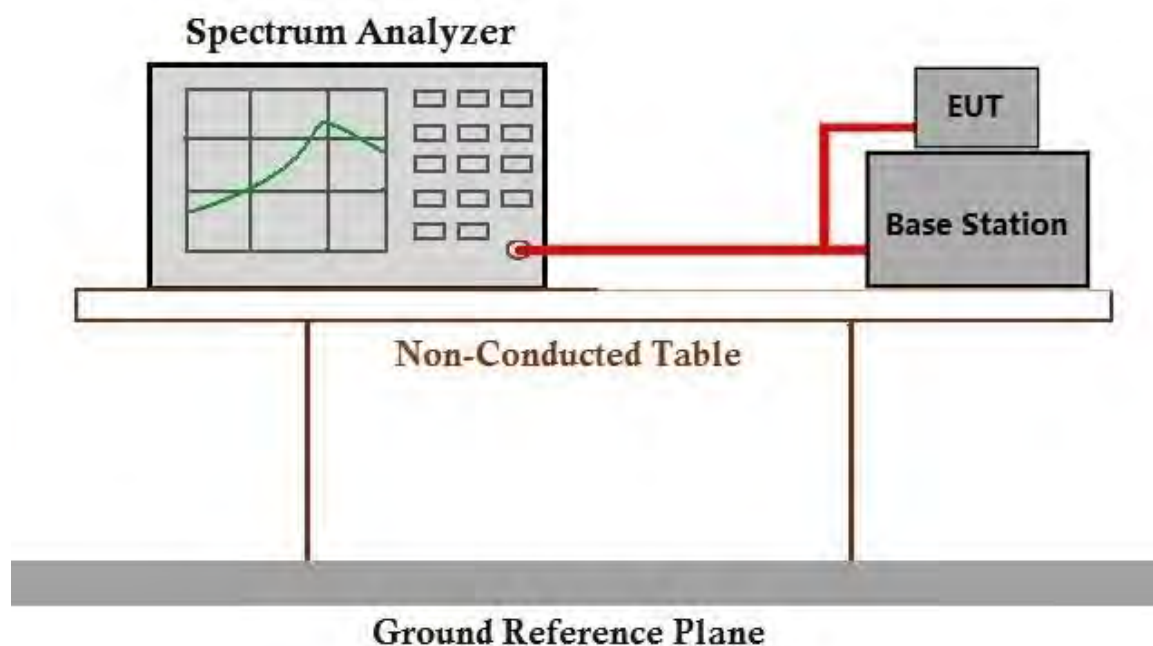
6.5 Spurious emissions at antenna terminals

Test Requirement: §2.1051, §22.917, §24.238
 Test Method: ANSI C63.26, KDB 971168 D01 v03
 Limit: $\leq -13\text{dBm}$

6.5.1 E.U.T. Operation

Operating Environment:
 Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar
 Test mode: I: Tx mode, Keep the EUT in transmitting mode.

6.5.2 Test Setup Diagram



6.5.3 Measurement Data

The detailed test data see: Appendix WCDMA & GSM

6.6 Field strength of spurious radiation

Test Requirement: §2.1051, §22.917, §24.238,
 Test Method: ANSI C63.26, KDB 971168 D01 v03
 Limit: $\leq -13\text{dBm}$

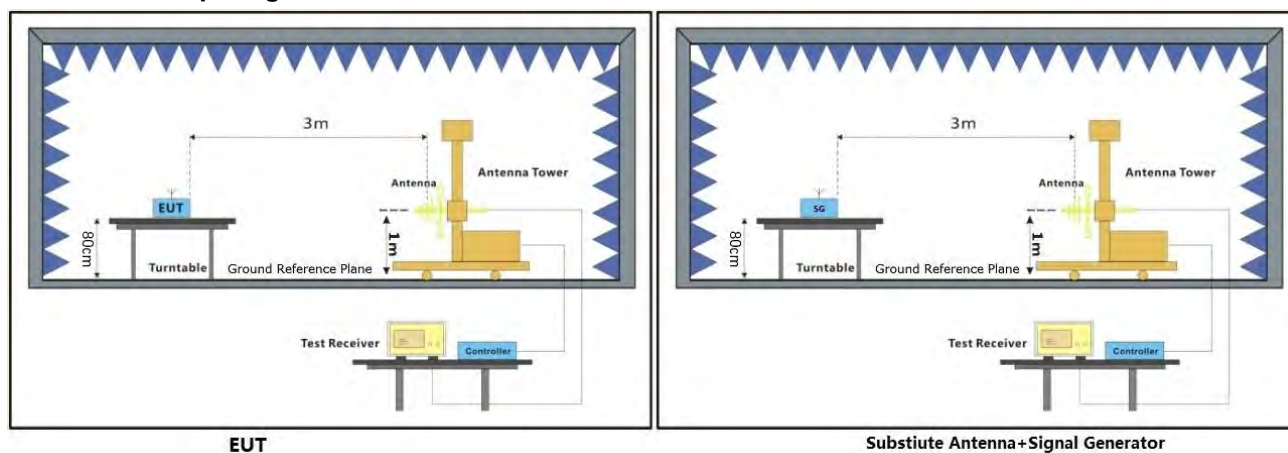
6.6.1 E.U.T. Operation

Operating Environment:

Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar

Test mode: I: Tx mode, Keep the EUT in transmitting mode.

6.6.2 Test Setup Diagram



6.6.3 Measurement Procedure and Data

Test Procedure:

- (1) On a test site, the EUT shall be placed on a turntable and in the position closest to the normal use as declared by the user.
- (2) The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
- (3) The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
- (4) The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
- (5) The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
- (6) The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- (7) The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.
- (8) The maximum signal level detected by the measuring receiver shall be noted.
- (9) The measurement shall be repeated with the test antenna set to horizontal polarization.
- (10) Replace the antenna with a proper Antenna (substitution antenna).
- (11) The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
- (12) The substitution antenna shall be connected to a calibrated signal generator.
- (13) If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
- (14) The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.
- (15) The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
- (16) The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
- (17) The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.



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GSM850-Low channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1652.8	-50.04	0.52	6	-44.56	-13	-31.56	Horizontal	Pass
2479.2	-53.35	0.53	5.8	-48.08	-13	-35.08	Horizontal	Pass
3305.6	-55.59	0.65	6.2	-50.04	-13	-37.04	Horizontal	Pass
1652.8	-51.28	0.52	6	-45.8	-13	-32.8	Vertical	Pass
2479.2	-56.11	0.53	5.8	-50.84	-13	-37.84	Vertical	Pass
3305.6	-55.7	0.65	6.2	-50.15	-13	-37.15	Vertical	Pass

GSM850-Middle channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1672.8	-50.04	0.52	6	-44.56	-13	-31.56	Horizontal	Pass
2509.2	-54.44	0.59	5.3	-49.73	-13	-36.73	Horizontal	Pass
3345.6	-54.24	0.65	6.2	-48.69	-13	-35.69	Horizontal	Pass
1672.8	-50.55	0.52	6	-45.07	-13	-32.07	Vertical	Pass
2509.2	-55.18	0.59	5.3	-50.47	-13	-37.47	Vertical	Pass
3345.6	-54.54	0.65	6.2	-48.99	-13	-35.99	Vertical	Pass
1672.8	-50.04	0.52	6	-44.56	-13	-31.56	Horizontal	Pass

GSM850-High channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1693.2	-50.79	0.52	6	-45.31	-13	-32.31	Horizontal	Pass
2539.8	-55.66	0.59	5.3	-50.95	-13	-37.95	Horizontal	Pass
3386.4	-54.31	0.65	6.2	-48.76	-13	-35.76	Horizontal	Pass
1693.2	-51.45	0.52	6	-45.97	-13	-32.97	Vertical	Pass
2539.8	-56.47	0.59	5.3	-51.76	-13	-38.76	Vertical	Pass
3386.4	-55.09	0.65	6.2	-49.54	-13	-36.54	Vertical	Pass



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WCDMA Band 2-Low channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
3704.8	-59.36	0.71	7.6	-52.47	-13	-39.47	Horizontal	Pass
5557.2	-57.22	0.85	10.3	-47.77	-13	-34.77	Horizontal	Pass
7409.6	-58.69	1	12.9	-46.79	-13	-33.79	Horizontal	Pass
3704.8	-59.05	0.71	7.6	-52.16	-13	-39.16	Vertical	Pass
5557.2	-58.09	0.85	10.3	-48.64	-13	-35.64	Vertical	Pass
7409.6	-58.81	1	12.9	-46.91	-13	-33.91	Vertical	Pass

WCDMA Band 2-Middle channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
3760	-58.5	0.71	7.6	-51.61	-13	-38.61	Horizontal	Pass
5640	-58.14	0.85	10.3	-48.69	-13	-35.69	Horizontal	Pass
7520	-58.09	0.99	13.2	-45.88	-13	-32.88	Horizontal	Pass
3760	-60.15	0.71	7.6	-53.26	-13	-40.26	Vertical	Pass
5640	-59.44	0.85	10.3	-49.99	-13	-36.99	Vertical	Pass
7520	-61.34	0.99	13.2	-49.13	-13	-36.13	Vertical	Pass
3760	-58.5	0.71	7.6	-51.61	-13	-38.61	Horizontal	Pass

WCDMA Band 2-High channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
3815.2	-57.74	0.71	7.6	-50.85	-13	-37.85	Horizontal	Pass
5722.8	-59.2	0.85	10.3	-49.75	-13	-36.75	Horizontal	Pass
7630.4	-59.07	0.99	13.2	-46.86	-13	-33.86	Horizontal	Pass
3815.2	-58.66	0.71	7.6	-51.77	-13	-38.77	Vertical	Pass
5722.8	-57.76	0.85	10.3	-48.31	-13	-35.31	Vertical	Pass
7630.4	-60.14	0.99	13.2	-47.93	-13	-34.93	Vertical	Pass



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GSM1900-Low channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
3704.8	-58.74	0.71	7.6	-51.85	-13	-38.85	Horizontal	Pass
5557.2	-57.87	0.85	10.3	-48.42	-13	-35.42	Horizontal	Pass
7409.6	-58.24	1	12.9	-46.34	-13	-33.34	Horizontal	Pass
3704.8	-60.44	0.71	7.6	-53.55	-13	-40.55	Vertical	Pass
5557.2	-58.25	0.85	10.3	-48.8	-13	-35.8	Vertical	Pass
7409.6	-58.88	1	12.9	-46.98	-13	-33.98	Vertical	Pass

GSM1900-Middle channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
3760	-59.34	0.71	7.6	-52.45	-13	-39.45	Horizontal	Pass
5640	-57.65	0.85	10.3	-48.2	-13	-35.2	Horizontal	Pass
7520	-58.94	0.99	13.2	-46.73	-13	-33.73	Horizontal	Pass
3760	-59.71	0.71	7.6	-52.82	-13	-39.82	Vertical	Pass
5640	-57.6	0.85	10.3	-48.15	-13	-35.15	Vertical	Pass
7520	-58.46	0.99	13.2	-46.25	-13	-33.25	Vertical	Pass

GSM1900-High channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
3815.2	-60.78	0.71	7.6	-53.89	-13	-40.89	Horizontal	Pass
5722.8	-59.06	0.85	10.3	-49.61	-13	-36.61	Horizontal	Pass
7630.4	-60.11	0.99	13.2	-47.9	-13	-34.9	Horizontal	Pass
3815.2	-58.58	0.71	7.6	-51.69	-13	-38.69	Vertical	Pass
5722.8	-59.4	0.85	10.3	-49.95	-13	-36.95	Vertical	Pass
7630.4	-59.44	0.99	13.2	-47.23	-13	-34.23	Vertical	Pass



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WCDMA Band 5-Low channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1652.8	-55.63	0.52	6	-50.15	-13	-37.15	Horizontal	Pass
2479.2	-59.83	0.53	5.8	-54.56	-13	-41.56	Horizontal	Pass
3305.6	-56.84	0.65	6.2	-51.29	-13	-38.29	Horizontal	Pass
1652.8	-54.78	0.52	6	-49.3	-13	-36.3	Vertical	Pass
2479.2	-57.76	0.53	5.8	-52.49	-13	-39.49	Vertical	Pass
3305.6	-56.17	0.65	6.2	-50.62	-13	-37.62	Vertical	Pass

WCDMA Band 5-Middle channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1672.8	-55.12	0.52	6	-49.64	-13	-36.64	Horizontal	Pass
2509.2	-58.77	0.59	5.3	-54.06	-13	-41.06	Horizontal	Pass
3345.6	-58.34	0.65	6.2	-52.79	-13	-39.79	Horizontal	Pass
1672.8	-53.19	0.52	6	-47.71	-13	-34.71	Vertical	Pass
2509.2	-58.44	0.59	5.3	-53.73	-13	-40.73	Vertical	Pass
3345.6	-55.6	0.65	6.2	-50.05	-13	-37.05	Vertical	Pass

WCDMA Band 5-High channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1693.2	-55.61	0.52	6	-50.13	-13	-37.13	Horizontal	Pass
2539.8	-56.22	0.59	5.3	-51.51	-13	-38.51	Horizontal	Pass
3386.4	-55.36	0.65	6.2	-49.81	-13	-36.81	Horizontal	Pass
1693.2	-57.02	0.52	6	-51.54	-13	-38.54	Vertical	Pass
2539.8	-58.61	0.59	5.3	-53.9	-13	-40.9	Vertical	Pass
3386.4	-58.01	0.65	6.2	-52.46	-13	-39.46	Vertical	Pass

Note: All modes have been tested and we found HSDPA mode has the worst test result. Only record the worst test result.



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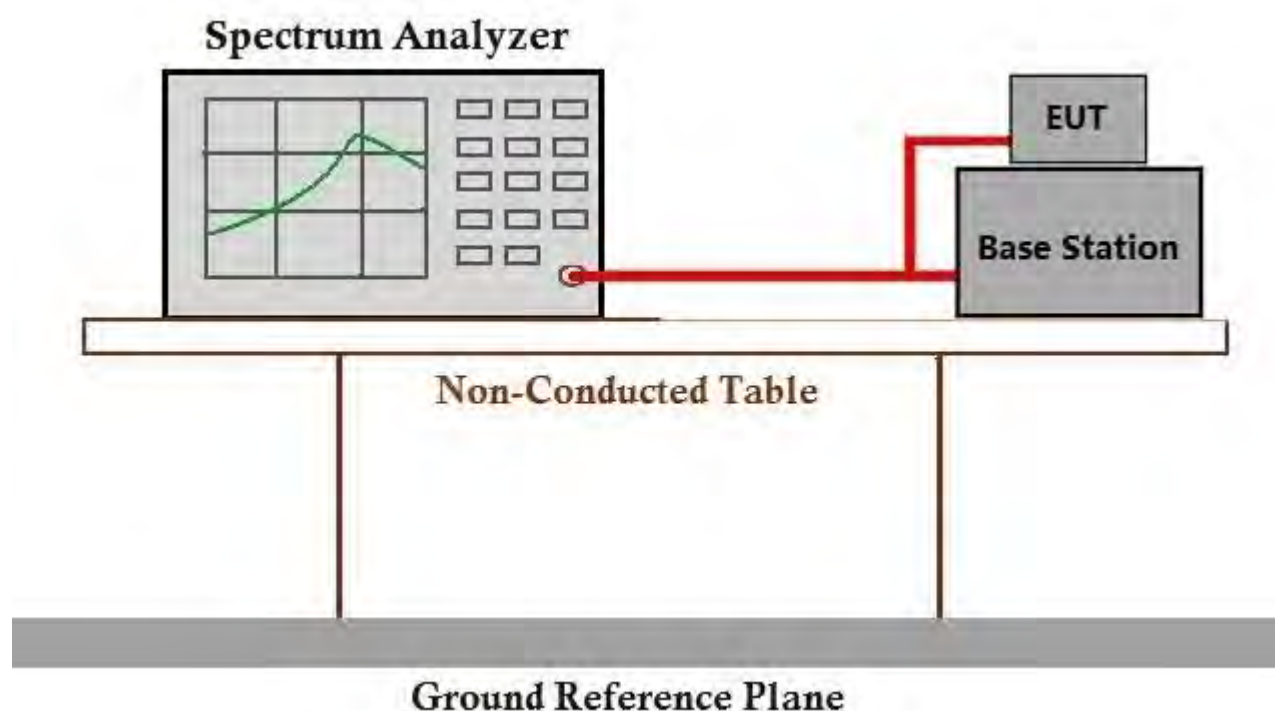
6.7 Frequency stability

Test Requirement: §2.1055, §22.355, §24.235
 Test Method: ANSI C63.26, KDB 971168 D01 v03
 Limit: $\leq \pm 2.5\text{ppm}$.

6.7.1 E.U.T. Operation

Operating Environment:
 Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar
 Test mode: I: Tx mode, Keep the EUT in transmitting mode.

6.7.2 Test Setup Diagram



6.7.3 Measurement Data

The detailed test data see: Appendix WCDMA & GSM

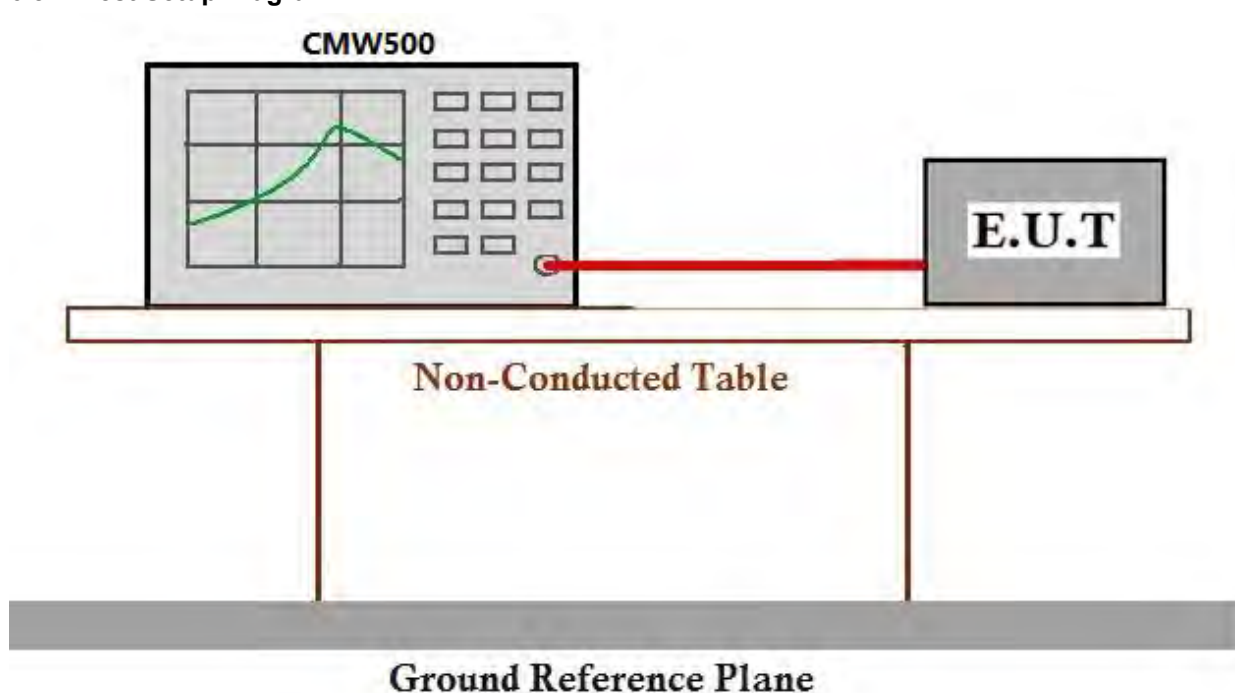
6.8 Modulation Characteristics

Test Requirement: §2.1047
 Test Method: ANSI C63.26, KDB 971168 D01 v03
 Limit: Digital modulation

6.8.1 E.U.T. Operation

Operating Environment:
 Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar
 Test mode: I: Tx mode, Keep the EUT in transmitting mode.

6.8.2 Test Setup Diagram



6.8.3 Measurement Data

The detailed test data see: Appendix WCDMA & GSM

7 Appendix

7.1 Appendix WCDMA-Band 2

1. Effective (Isotropic) Radiated Power Output Data

1.1 Test Result

Test Band: 2											
Test Mode		Conducted Power (dBm)			Antenna gain		EIRP(dBm)			Limit (dBm)	Verdict
		LCH	MCH	HCH	(dBd)	(dBi)	LCH	MCH	HCH		
RMC	12.2kbps RMC	24.76	23.85	24.02	-0.23	1.92	26.68	25.77	25.94	33.01	PASS
HSDPA	Subtest 1	23.20	22.57	20.99	-0.23	1.92	25.12	24.49	22.91	33.01	PASS
	Subtest 2	21.79	21.10	21.58	-0.23	1.92	23.71	23.02	23.5	33.01	PASS
	Subtest 3	21.49	20.05	20.18	-0.23	1.92	23.41	21.97	22.1	33.01	PASS
	Subtest 4	21.00	20.03	19.79	-0.23	1.92	22.92	21.95	21.71	33.01	PASS
HSUPA	Subtest 1	21.52	23.18	22.85	-0.23	1.92	23.44	25.1	24.77	33.01	PASS
	Subtest 2	20.42	19.56	20.15	-0.23	1.92	22.34	21.48	22.07	33.01	PASS
	Subtest 3	20.77	19.99	21.85	-0.23	1.92	22.69	21.91	23.77	33.01	PASS
	Subtest 4	20.41	19.63	19.82	-0.23	1.92	22.33	21.55	21.74	33.01	PASS
	Subtest 5	23.01	21.09	20.66	-0.23	1.92	24.93	23.01	22.58	33.01	PASS

Note:

1) dBd = dBi - 2.15

2) EIRP = Conducted output power + Antenna gain (dBi)

2. Frequency stability

2.1 Test Result

Test Band: 2 (Frequency Error VS. Voltage)										
Test Mode	Test Temp.	Test Volt.	Freq. Error (Hz)			Freq. vs. rated (ppm)			Limit (ppm)	Verdict
			LCH	MCH	HCH	LCH	MCH	HCH		
RMC	NT	LV	-2.0000	-1.0000	-1.0000	-0.0012	-0.0008	-0.0009	2.50	PASS
		LN	-3.0000	0.0000	-9.0000	-0.0017	-0.0002	-0.0048	2.50	PASS
		LH	1.0000	-1.0000	-8.0000	0.0006	-0.0007	-0.0046	2.50	PASS
HSDPA	NT	LV	-5.0000	8.0000	13.0000	-0.0029	0.0046	0.0069	2.50	PASS
		LN	10.0000	14.0000	11.0000	-0.0056	-0.0077	-0.0062	2.50	PASS
		LH	13.0000	-5.0000	-7.0000	-0.0073	-0.0029	-0.0039	2.50	PASS
HSUPA	NT	LV	-9.0000	8.0000	8.0000	-0.0052	0.0046	0.0045	2.50	PASS
		LN	10.0000	11.0000	-8.0000	-0.0055	-0.0063	-0.0046	2.50	PASS
		LH	-	-5.0000	-	-0.0063	-0.0032	-0.0082	2.50	PASS



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Report No.: SZEM191102027001

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Test Band: 2 (Frequency Error VS. Temperature)										
Test Mode	Test Volt.	Test Temp.	Freq. Error (Hz)			Freq. vs. rated (ppm)			Limit (ppm)	Verdict
			LCH	MCH	HCH	LCH	MCH	HCH		
RMC	NV	-30.00	-1.0000	0.0000	0.0000	-0.0007	0.0004	-0.0001	2.50	PASS
		-20.00	0.0000	0.0000	-2.0000	-0.0003	-0.0001	-0.0015	2.50	PASS
		-10.00	2.0000	0.0000	-2.0000	0.0014	-0.0002	-0.0011	2.50	PASS
		0.00	0.0000	0.0000	-5.0000	-0.0001	-0.0004	-0.0027	2.50	PASS
		10.00	4.0000	-1.0000	-3.0000	0.0022	-0.0010	-0.0020	2.50	PASS
		20.00	-9.0000	0.0000	0.0000	-0.0052	0.0003	-0.0001	2.50	PASS
		30.00	-5.0000	-5.0000	-2.0000	-0.0028	-0.0027	-0.0014	2.50	PASS
		40.00	-2.0000	-1.0000	-3.0000	-0.0014	-0.0008	-0.0016	2.50	PASS
		50.00	0.0000	0.0000	-8.0000	0.0002	0.0000	-0.0043	2.50	PASS
HSDPA	NV	-30.00	-2.0000	-2.0000	-9.0000	-0.0013	-0.0016	-0.0051	2.50	PASS
		-20.00	-3.0000	-2.0000	-14.0000	-0.0020	-0.0012	-0.0078	2.50	PASS
		-10.00	0.0000	1.0000	-2.0000	-0.0005	0.0010	-0.0015	2.50	PASS
		0.00	-3.0000	-6.0000	-4.0000	-0.0018	-0.0032	-0.0021	2.50	PASS
		10.00	0.0000	-5.0000	-1.0000	0.0004	-0.0030	-0.0009	2.50	PASS
		20.00	-2.0000	-2.0000	3.0000	-0.0015	-0.0014	0.0021	2.50	PASS
		30.00	0.0000	0.0000	-1.0000	-0.0003	0.0001	-0.0010	2.50	PASS
		40.00	0.0000	-2.0000	-1.0000	-0.0005	-0.0011	-0.0009	2.50	PASS
		50.00	0.0000	1.0000	-3.0000	-0.0001	0.0008	-0.0017	2.50	PASS
HSUPA	NV	-30.00	-4.0000	-9.0000	-5.0000	-0.0022	-0.0048	-0.0030	2.50	PASS
		-20.00	-2.0000	-5.0000	-2.0000	-0.0013	-0.0027	-0.0013	2.50	PASS
		-10.00	-4.0000	-7.0000	-2.0000	-0.0026	-0.0040	-0.0015	2.50	PASS
		0.00	-10.0000	-13.0000	-3.0000	-0.0056	-0.0070	-0.0018	2.50	PASS
		10.00	-6.0000	-7.0000	0.0000	-0.0035	-0.0038	-0.0001	2.50	PASS
		20.00	1.0000	-5.0000	-3.0000	0.0010	-0.0031	-0.0018	2.50	PASS
		30.00	-6.0000	0.0000	-2.0000	-0.0035	0.0003	-0.0011	2.50	PASS
		40.00	-2.0000	-5.0000	-1.0000	-0.0012	-0.0029	-0.0006	2.50	PASS
		50.00	-5.0000	-3.0000	0.0000	-0.0028	-0.0020	0.0004	2.50	PASS



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3. Modulation Characteristics

3.1 Test Graph

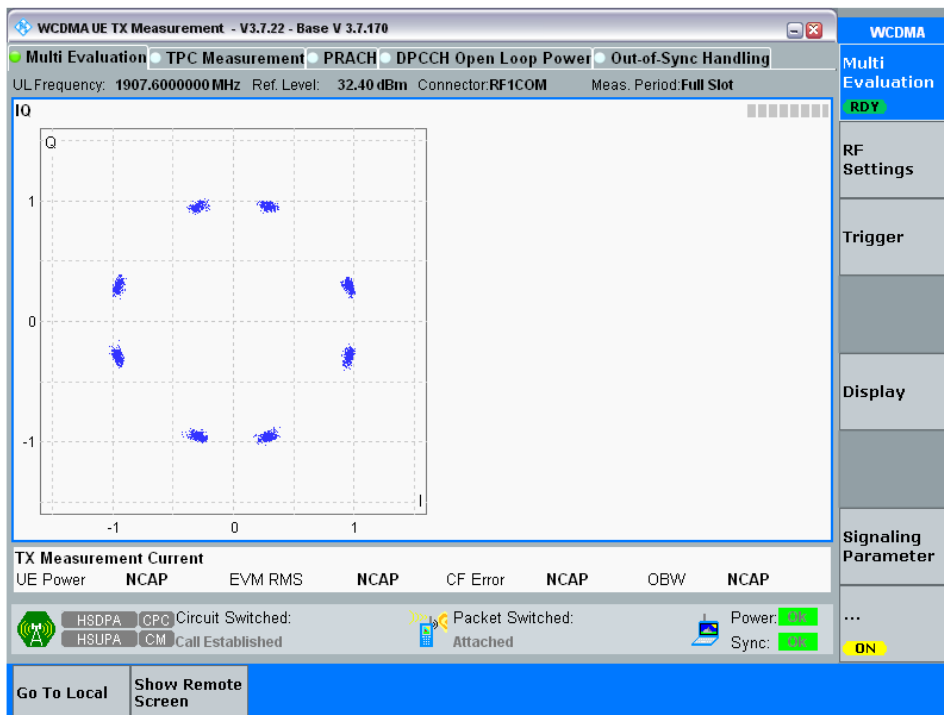


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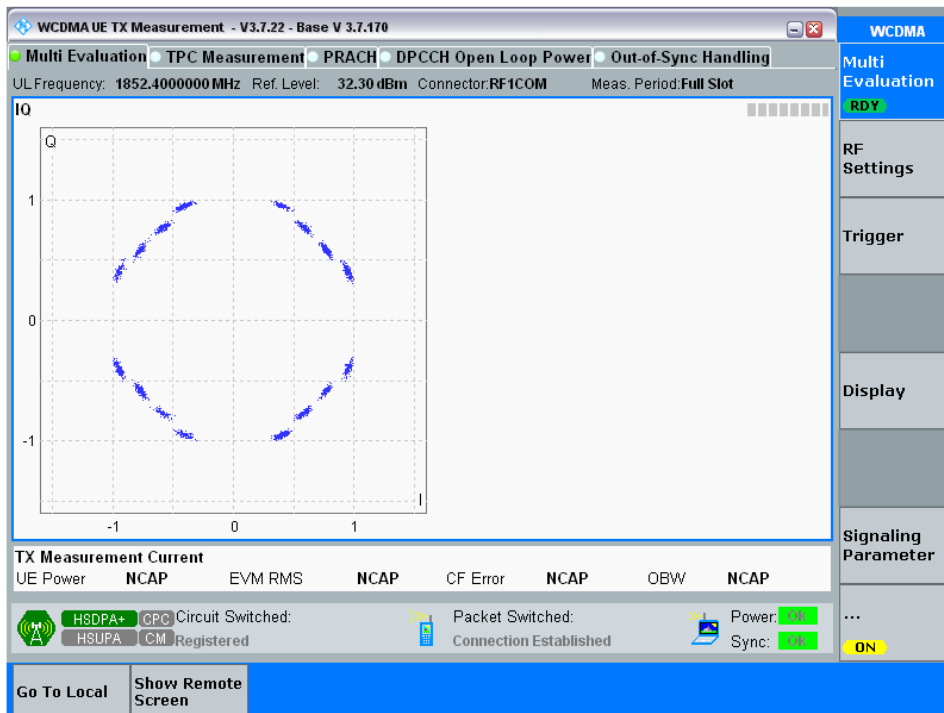
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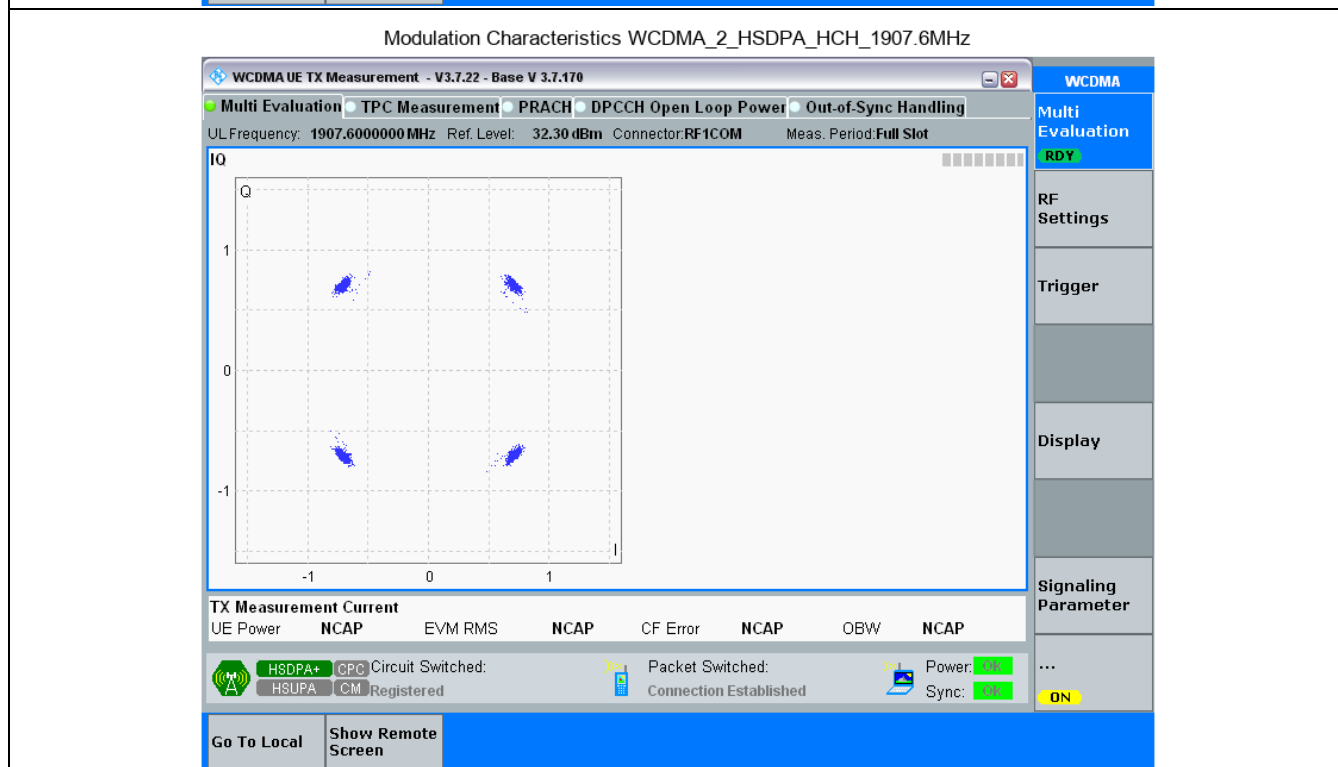
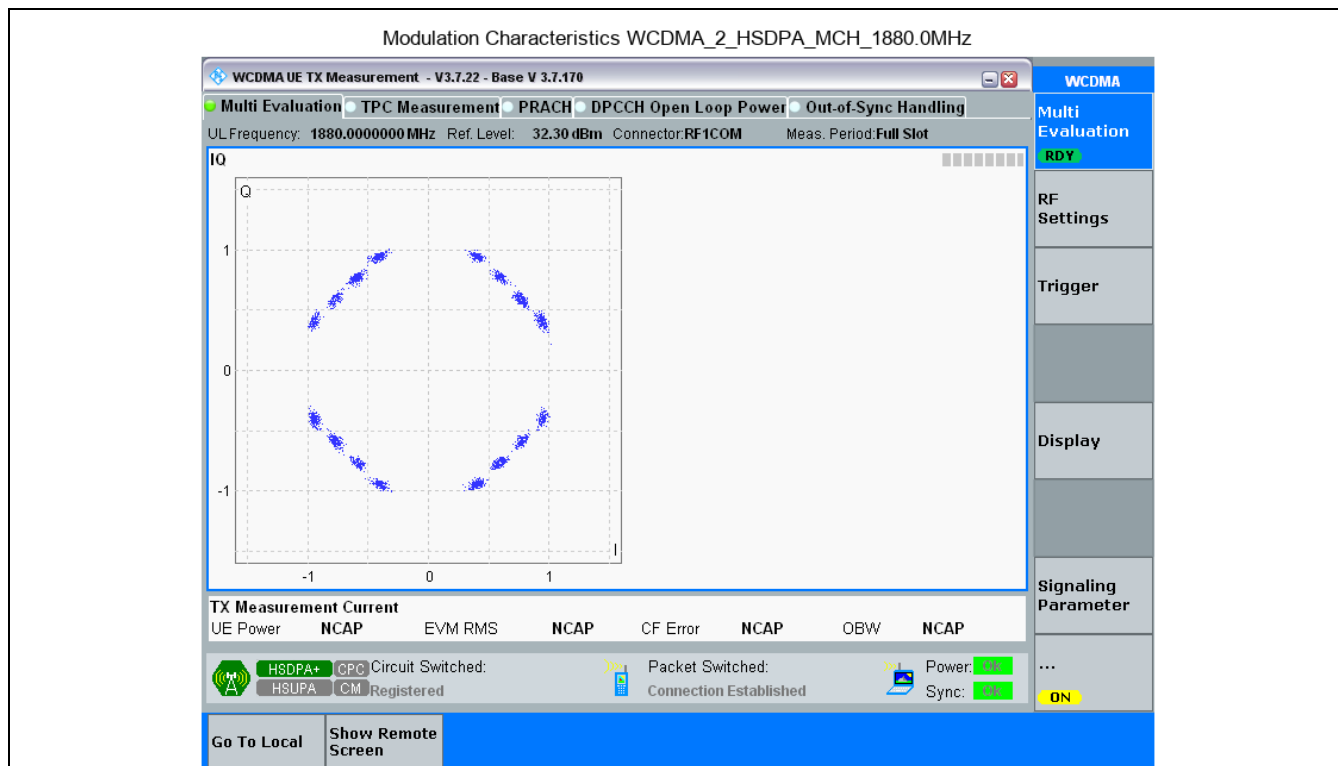
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Modulation Characteristics WCDMA_2_RMC_HCH_1907.6MHz



Modulation Characteristics WCDMA_2_HSDPA_LCH_1852.4MHz

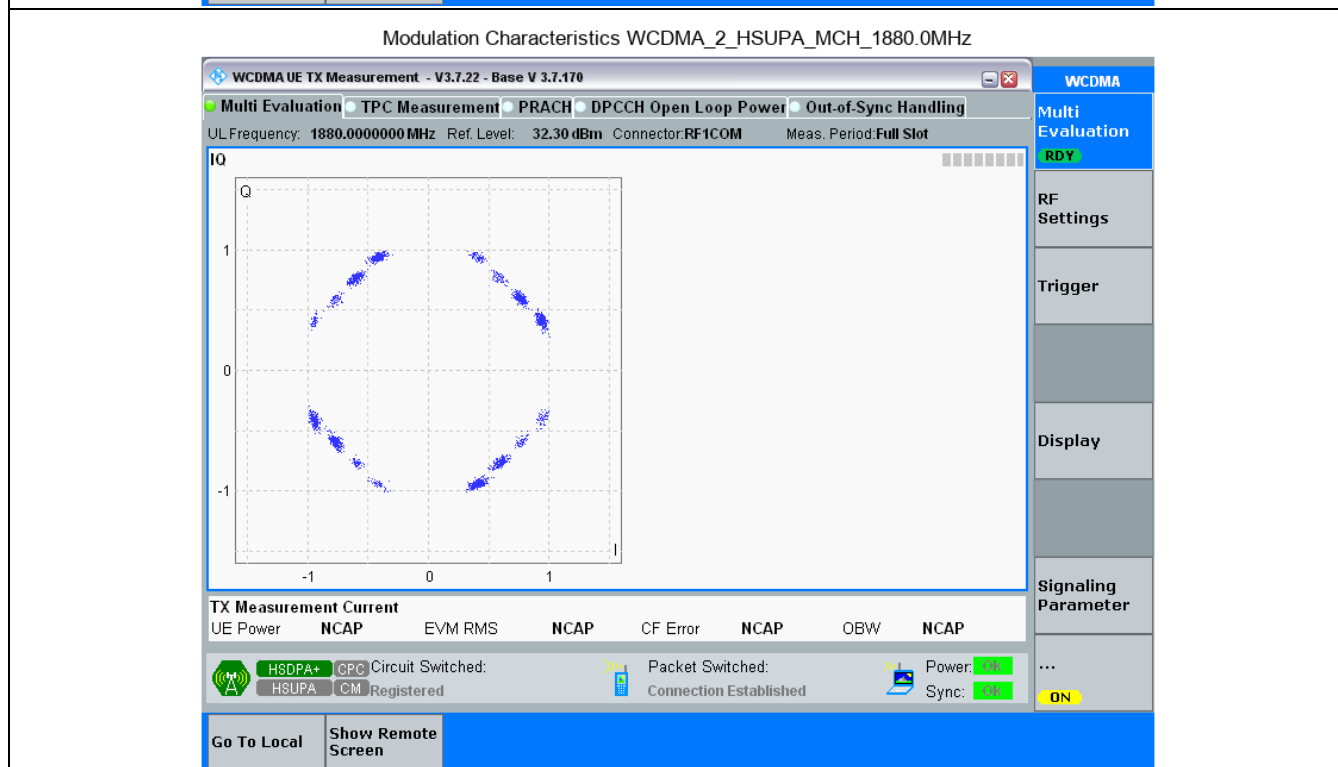
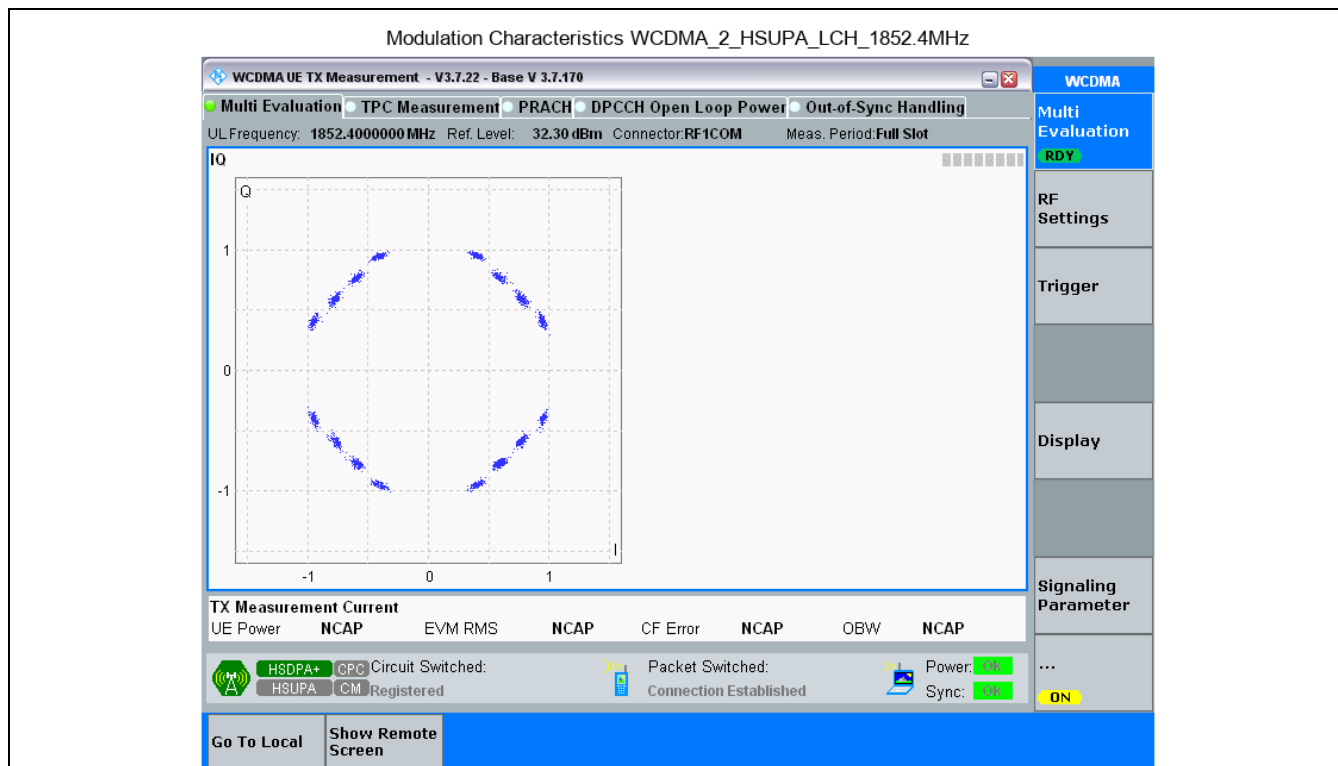




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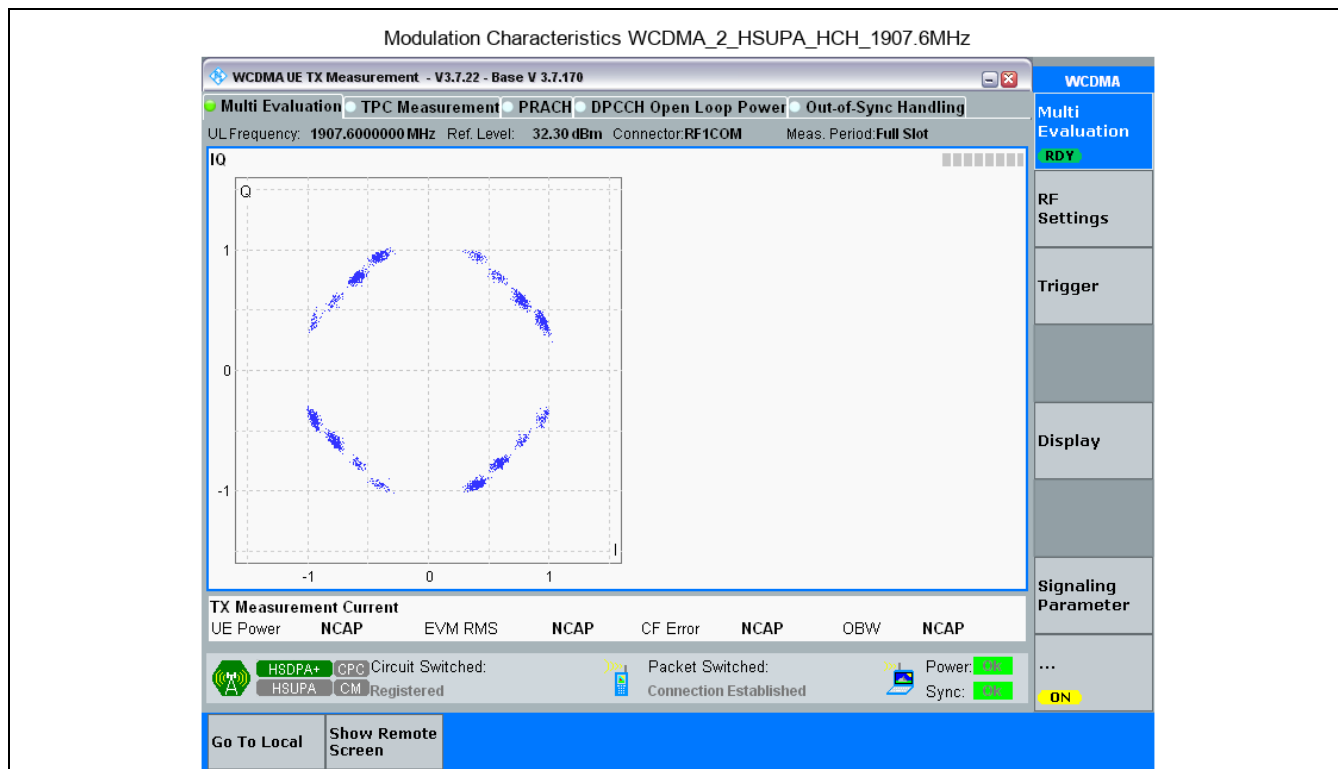
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4. 99% & 26dB Bandwidth

4.1 Test Result

Test Band: 2					
Test Mode	99% Occupied Bandwidth (MHz)			Limit	Verdict
	LCH	MCH	HCH		
RMC	4.080	4.120	4.100	N/A	PASS
HSDPA	4.080	4.100	4.100	N/A	PASS
HSUPA	4.080	4.100	4.100	N/A	PASS

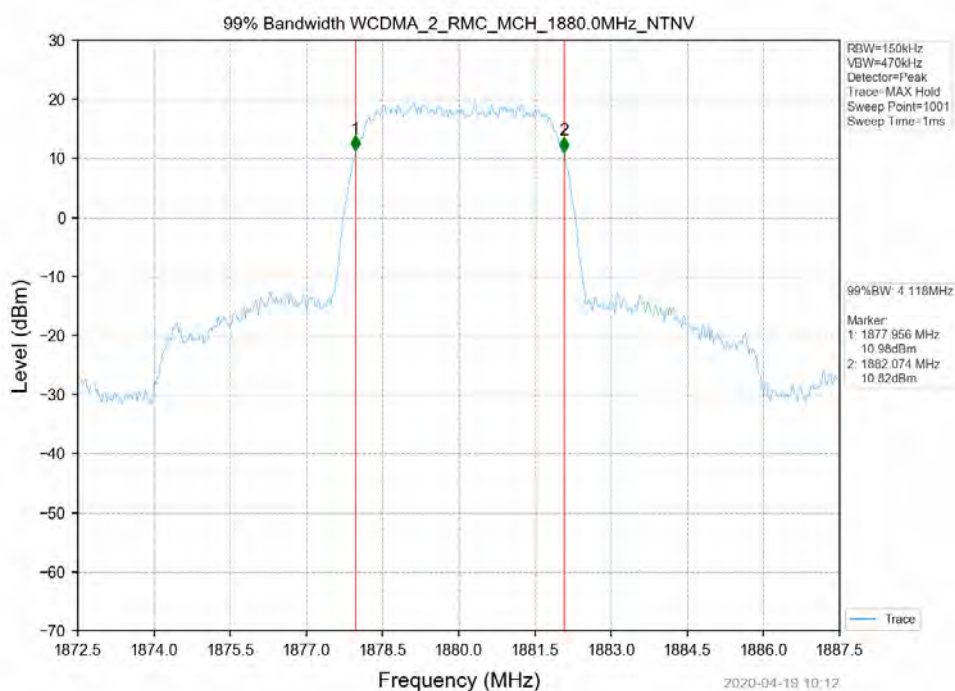
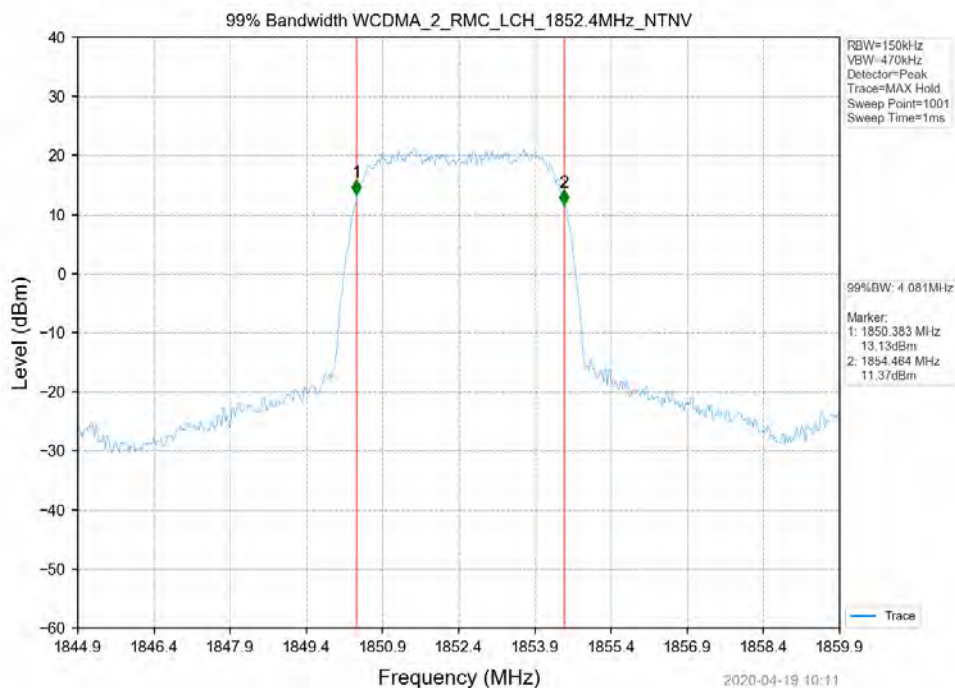


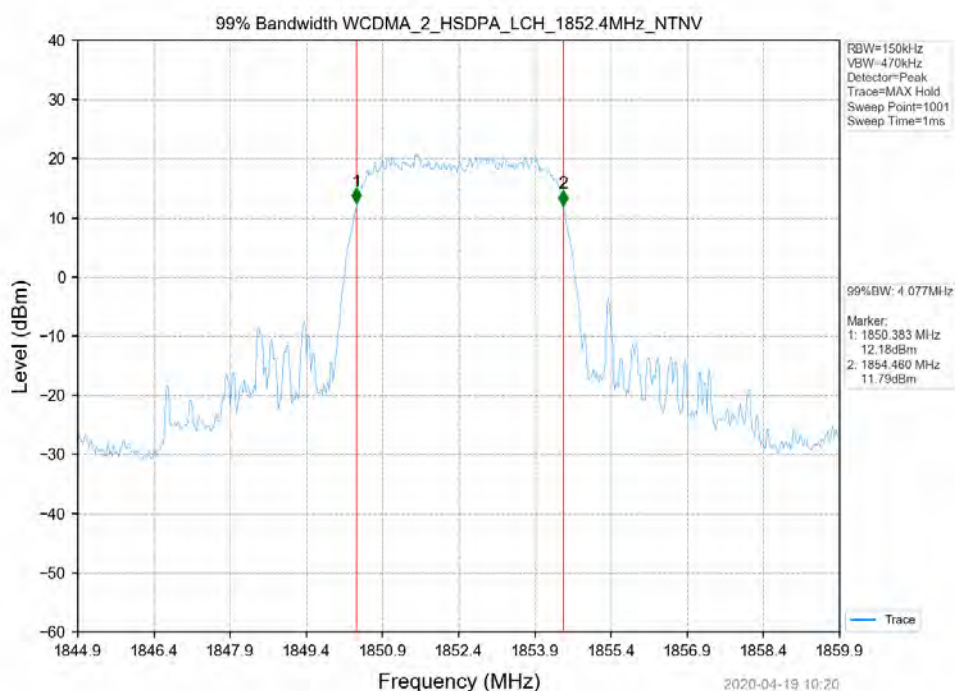
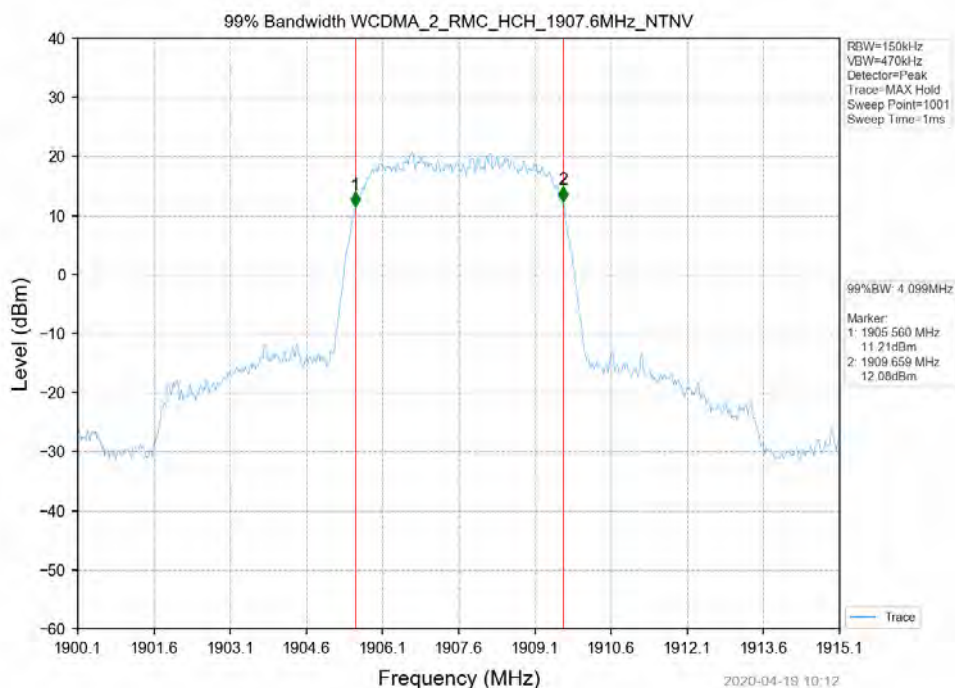
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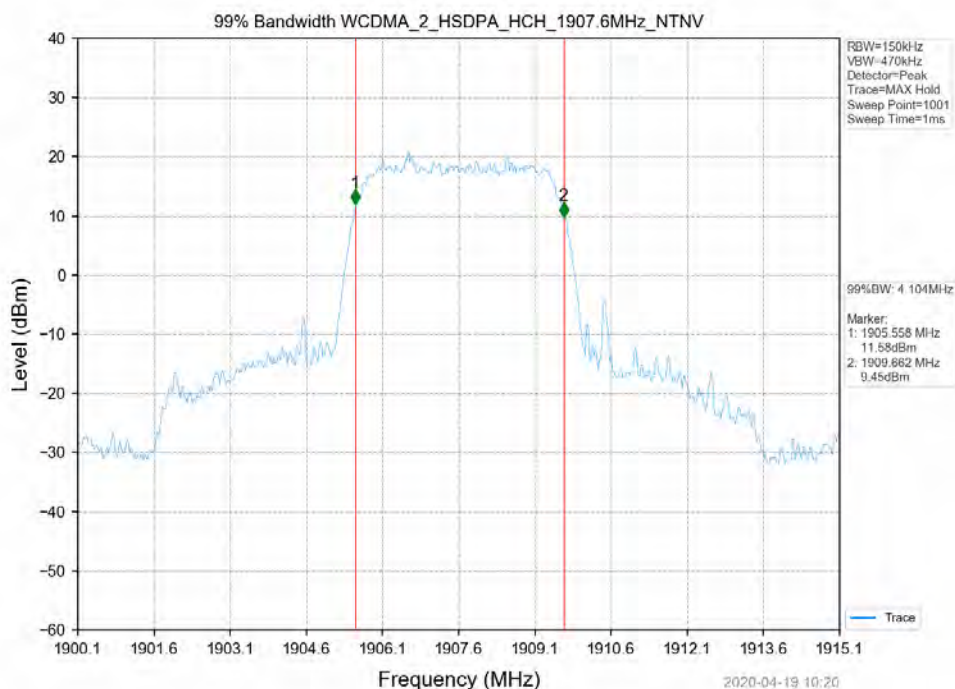
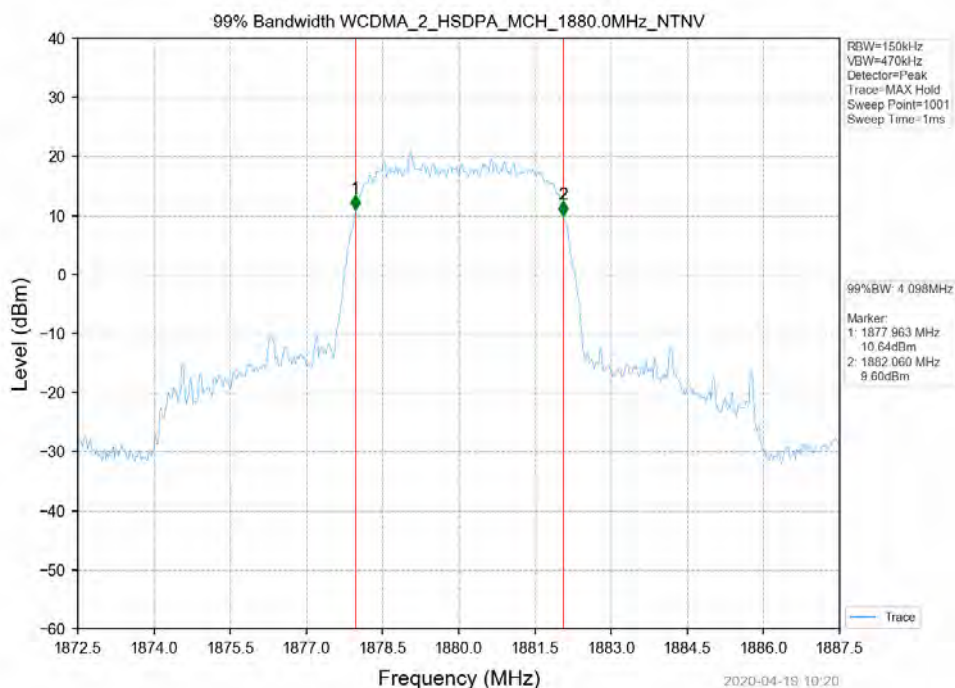
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4.2 Test Graph

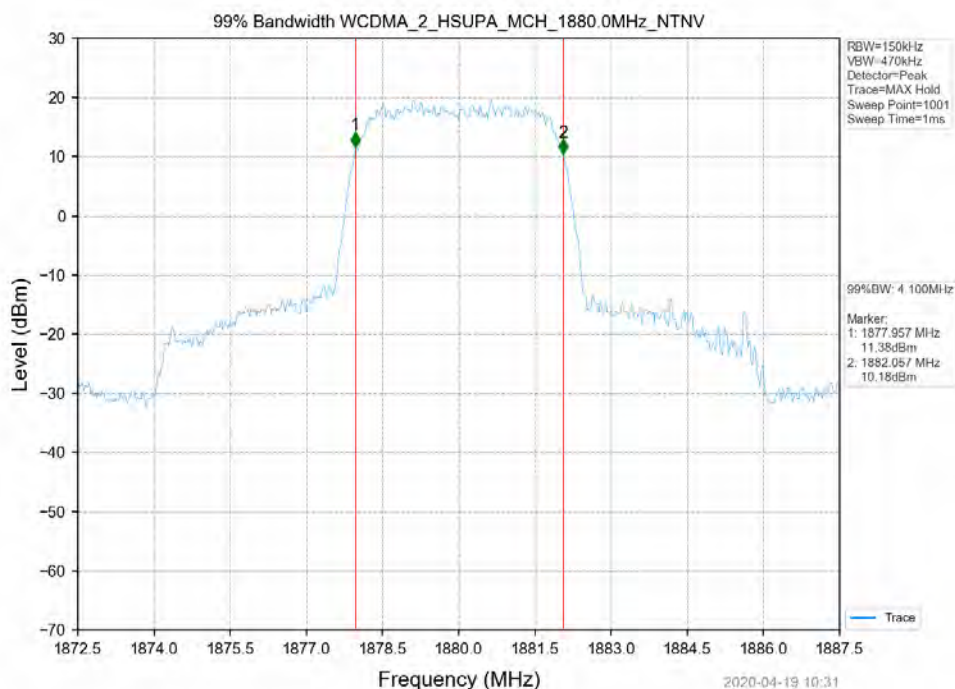
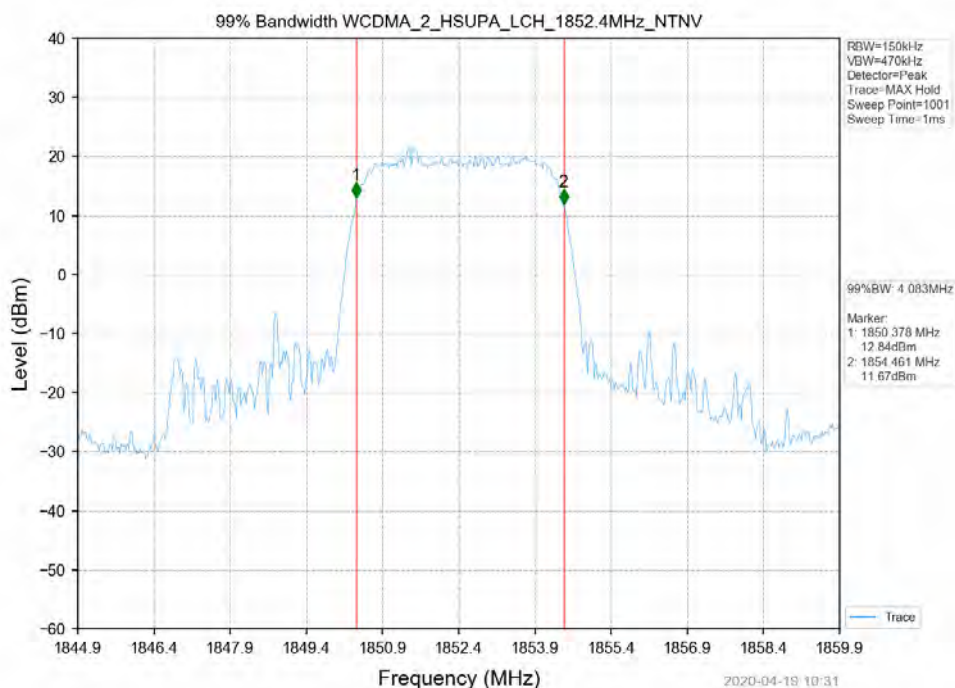


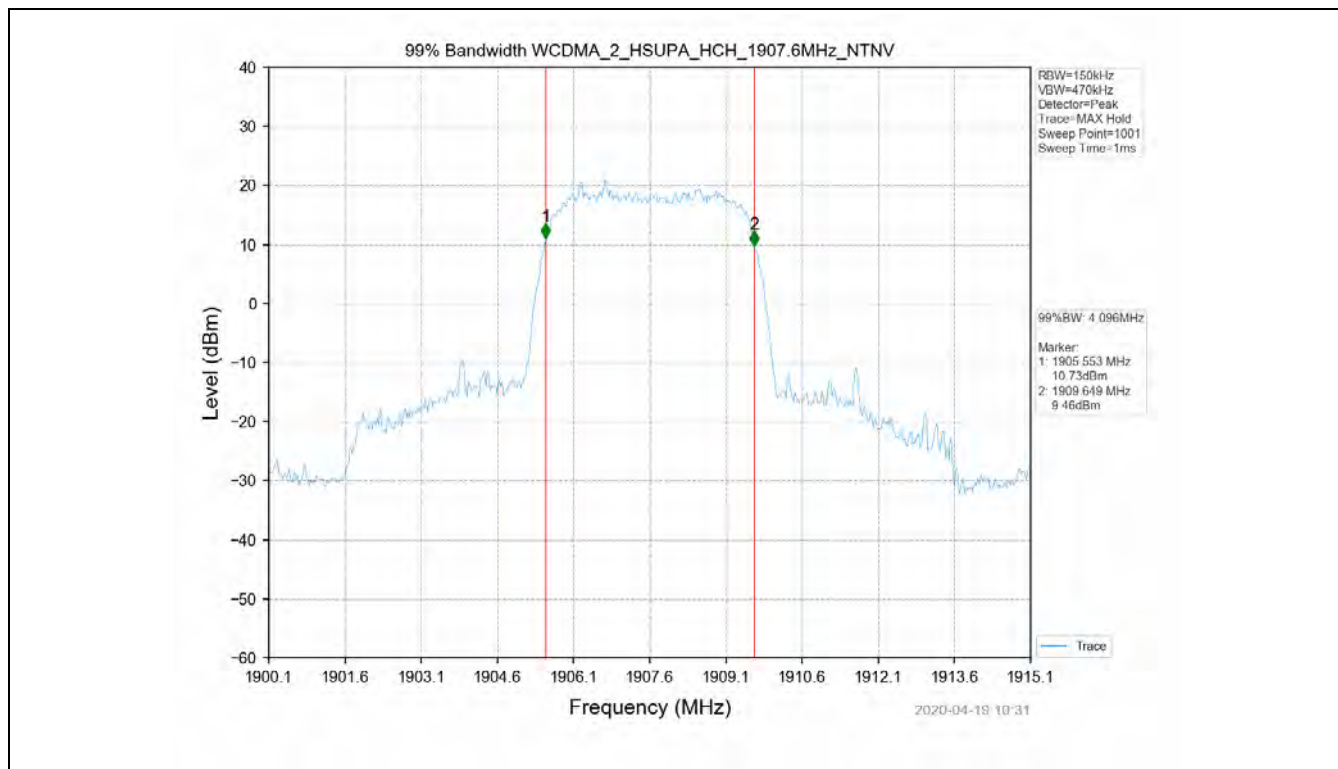




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Test Band: 2					
Test Mode	26dB Bandwidth (MHz)			Limit	Verdict
	LCH	MCH	HCH		
RMC	4.690	4.720	4.700	N/A	PASS
HSDPA	5.300	4.690	5.220	N/A	PASS
HSUPA	4.670	4.740	4.700	N/A	PASS



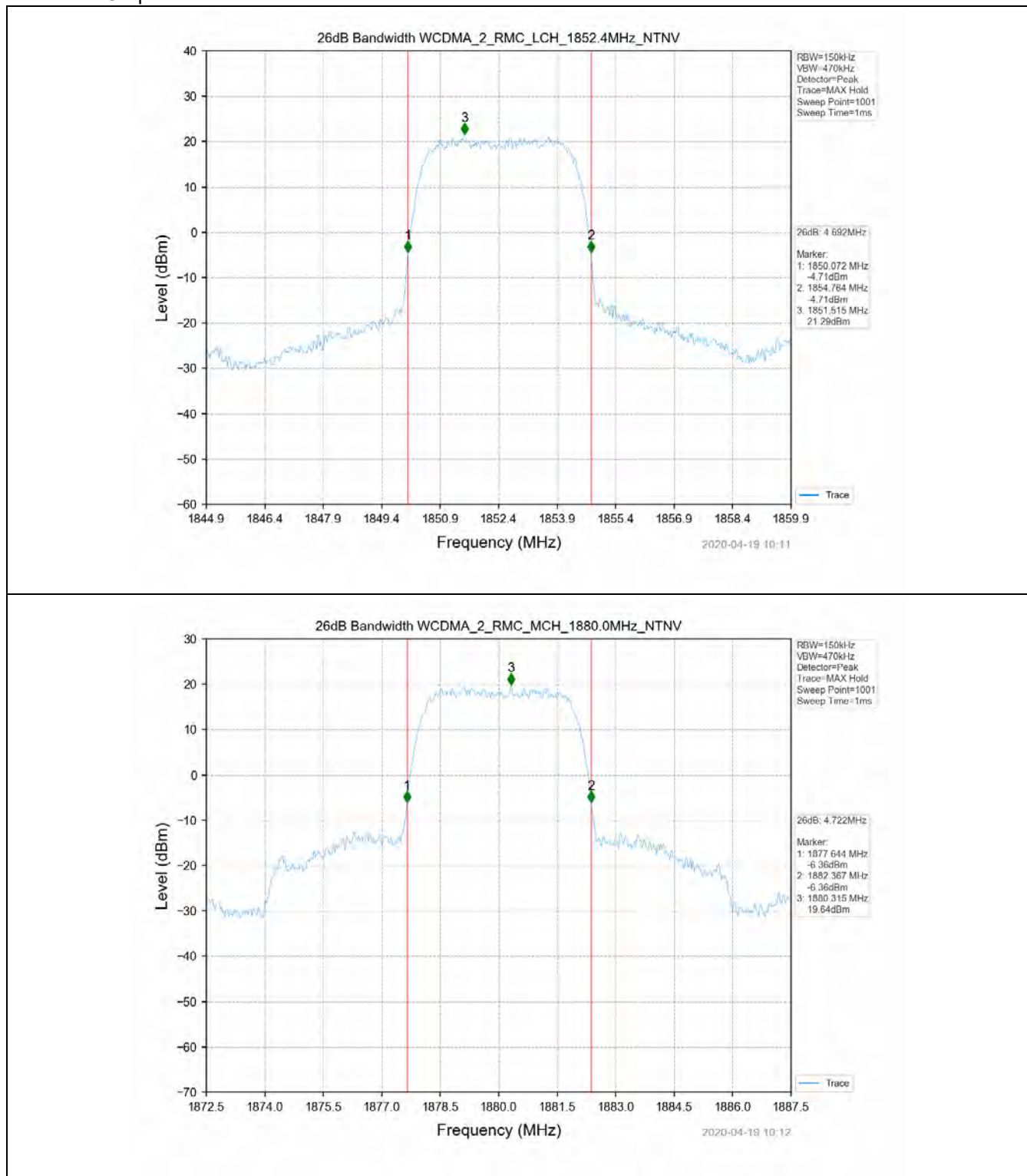
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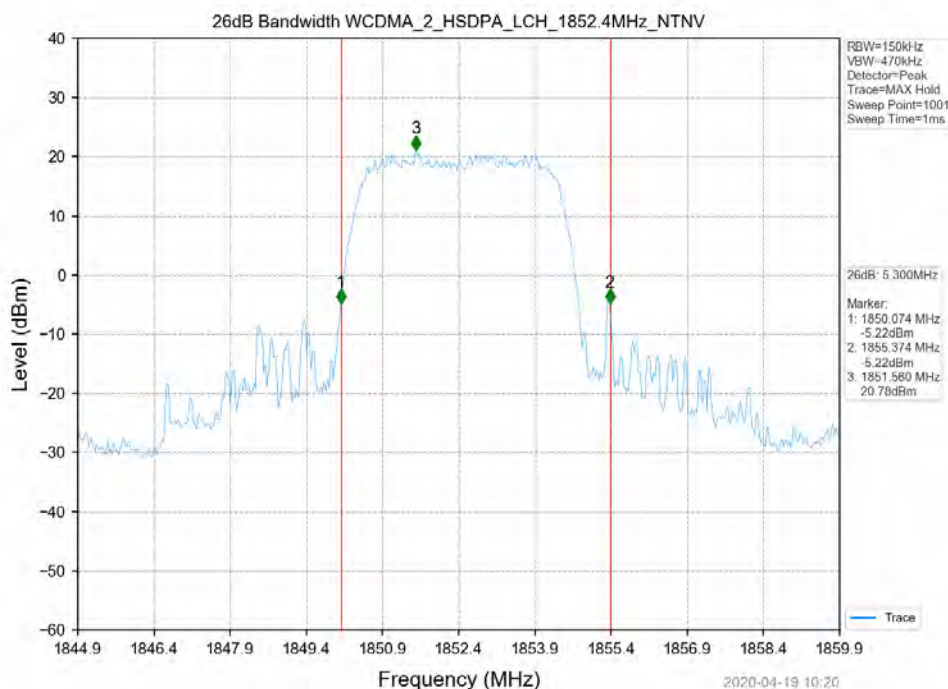
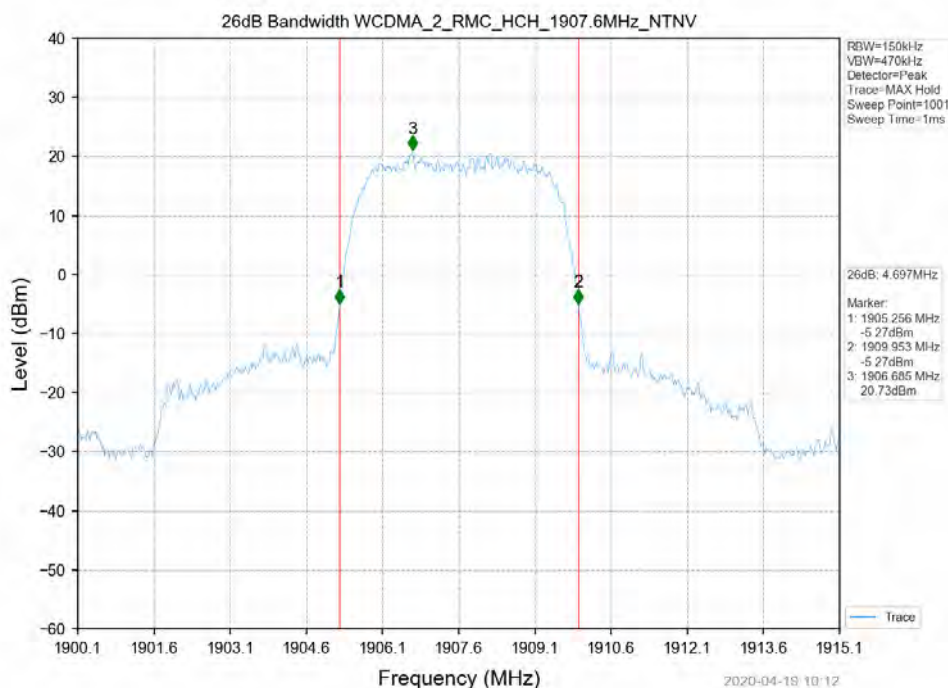
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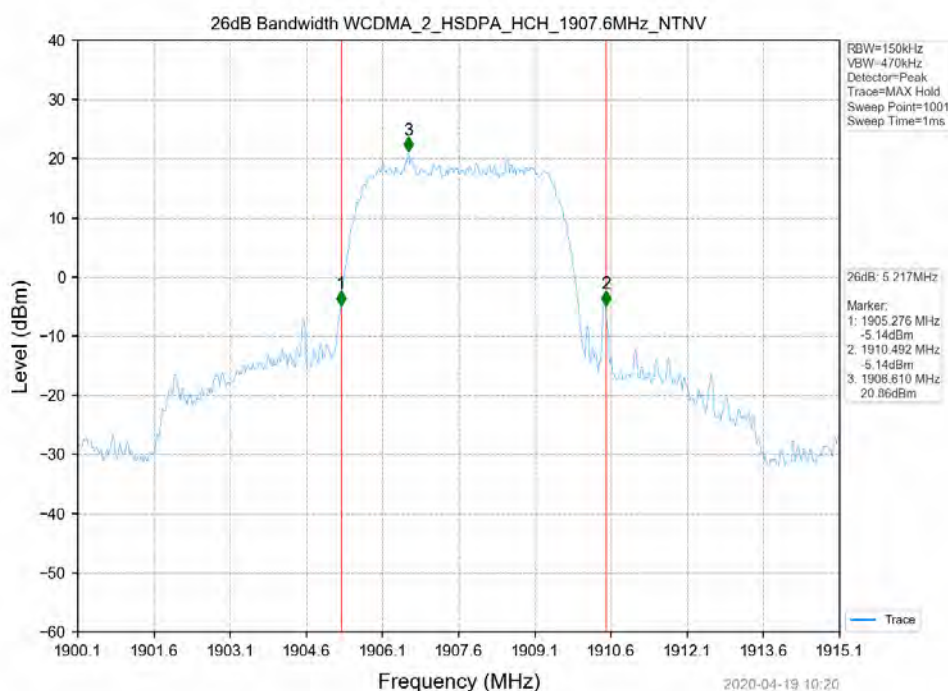
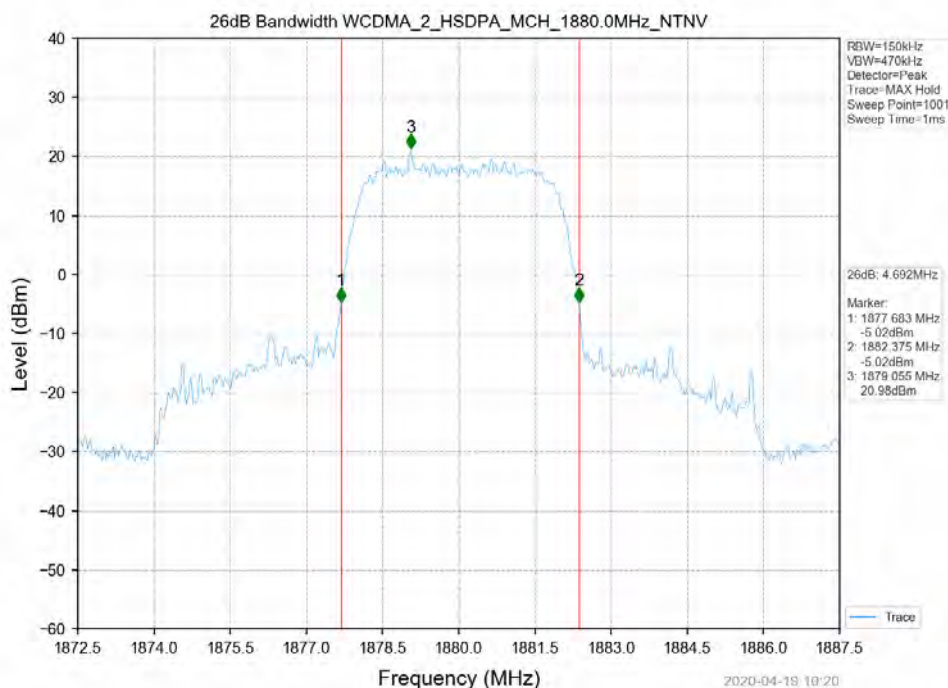
4.2 Test Graph

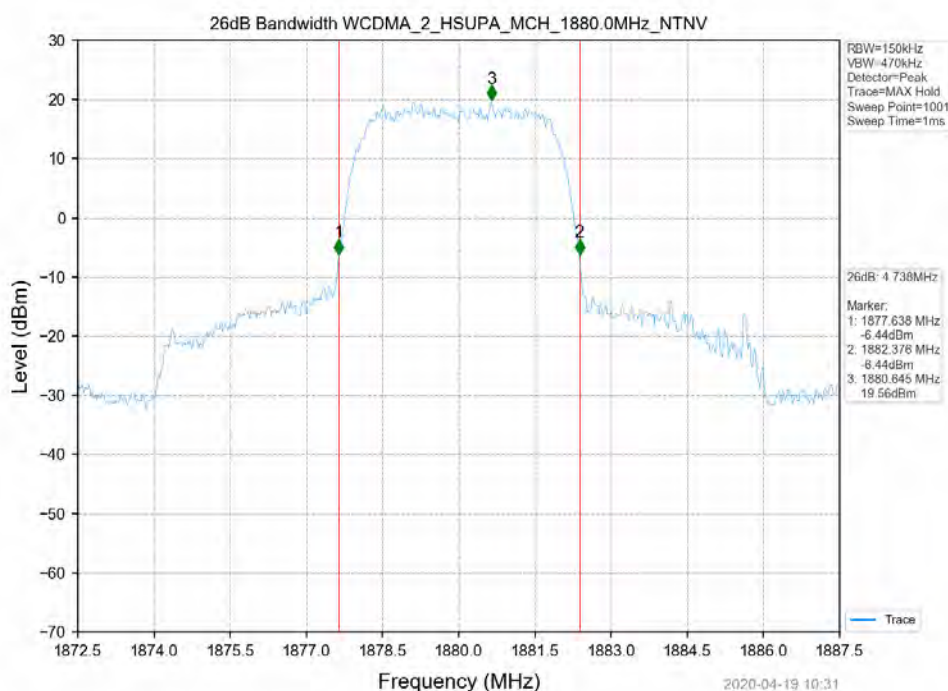
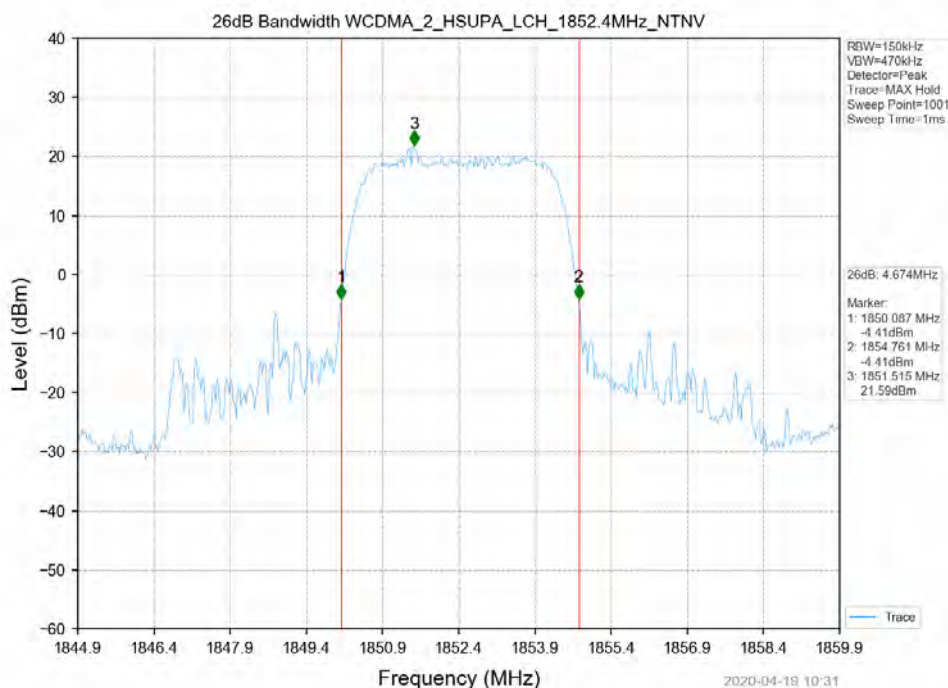


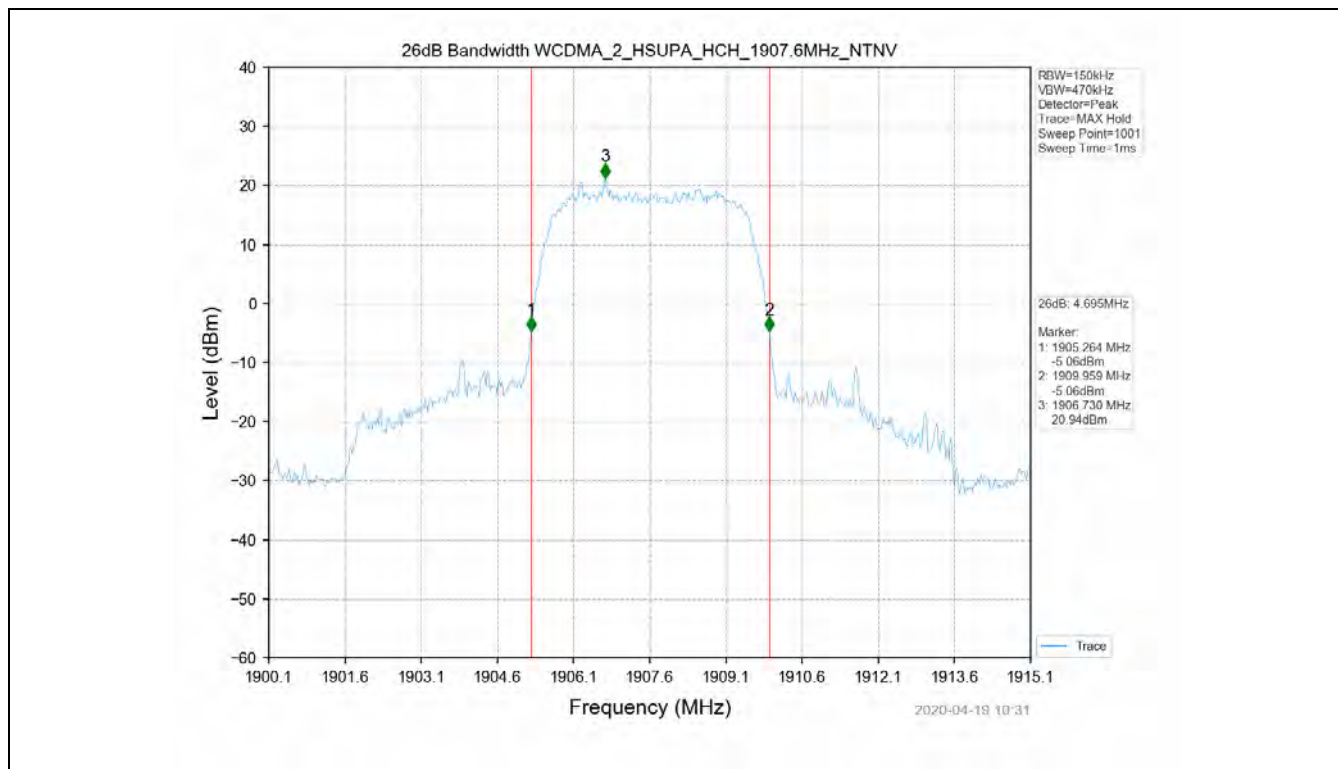
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5. Peak-Average Ratio

5.1 Test Result

Test Band: 2					
Test Mode	Test result (dB)			Limit (dB)	Verdict
	LCH	MCH	HCH		
RMC	3.07	2.82	2.82	13	PASS
HSDPA	4.27	3.95	4.08	13	PASS
HSUPA	4.93	4.13	4.12	13	PASS

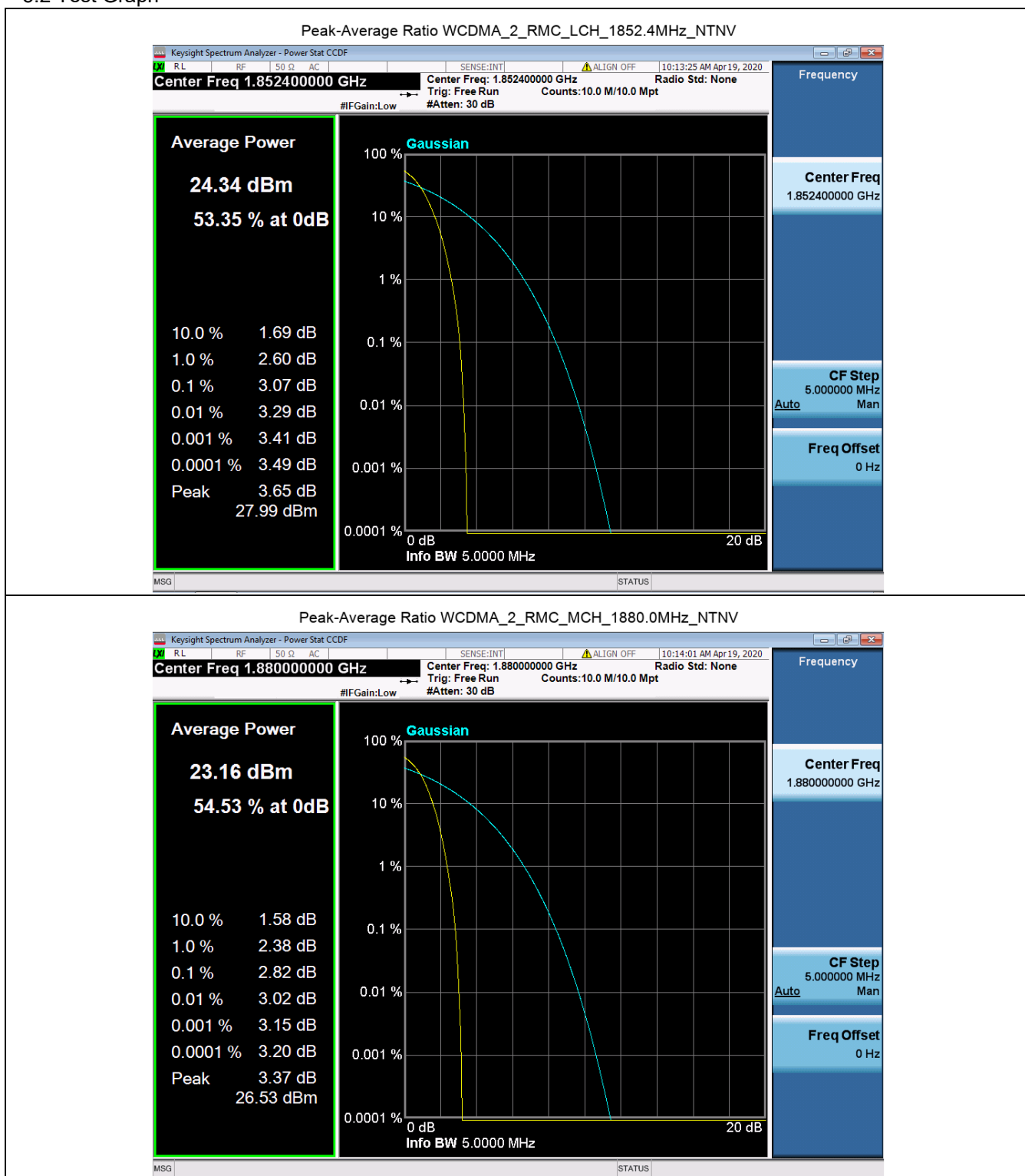


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5.2 Test Graph

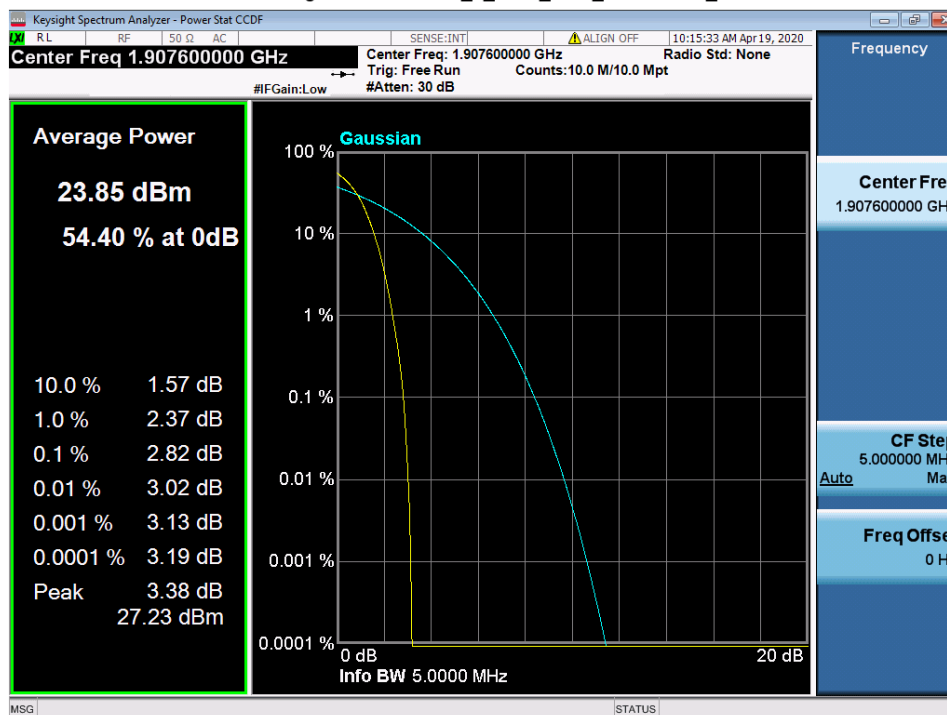


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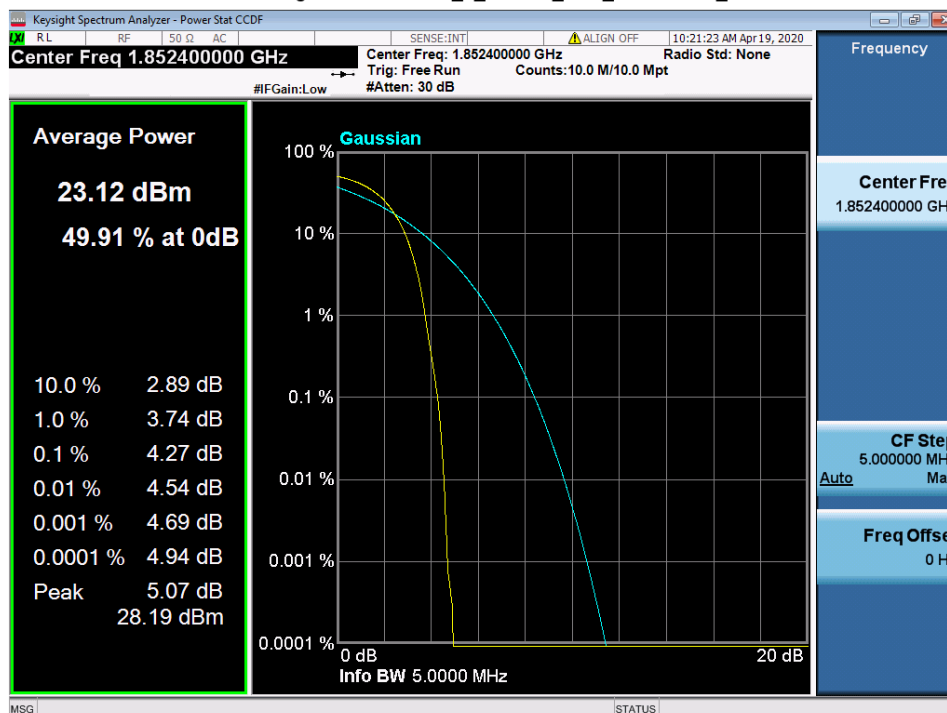
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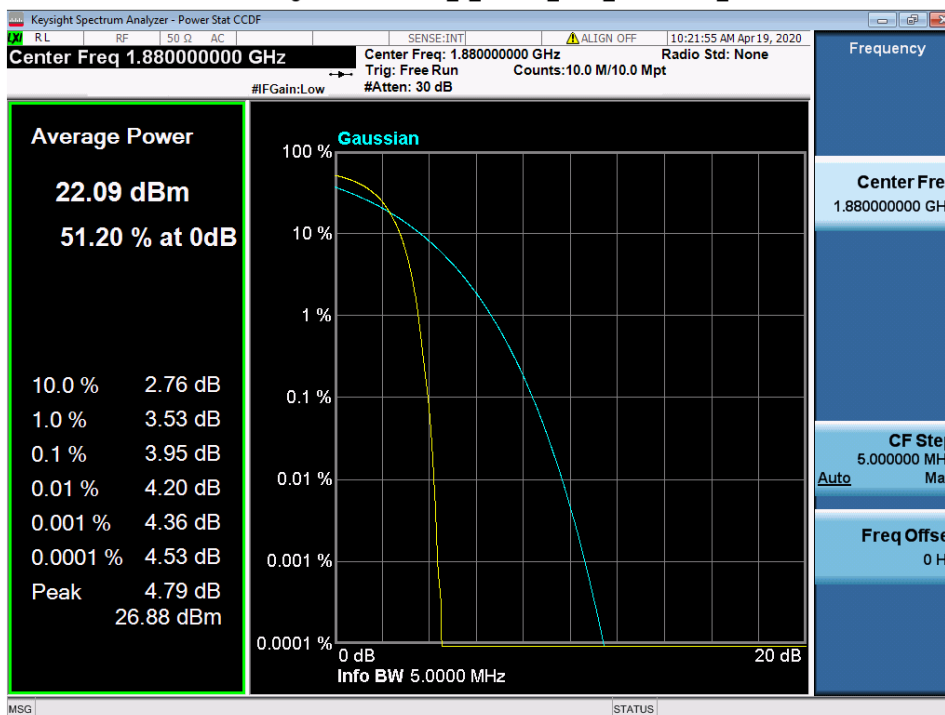
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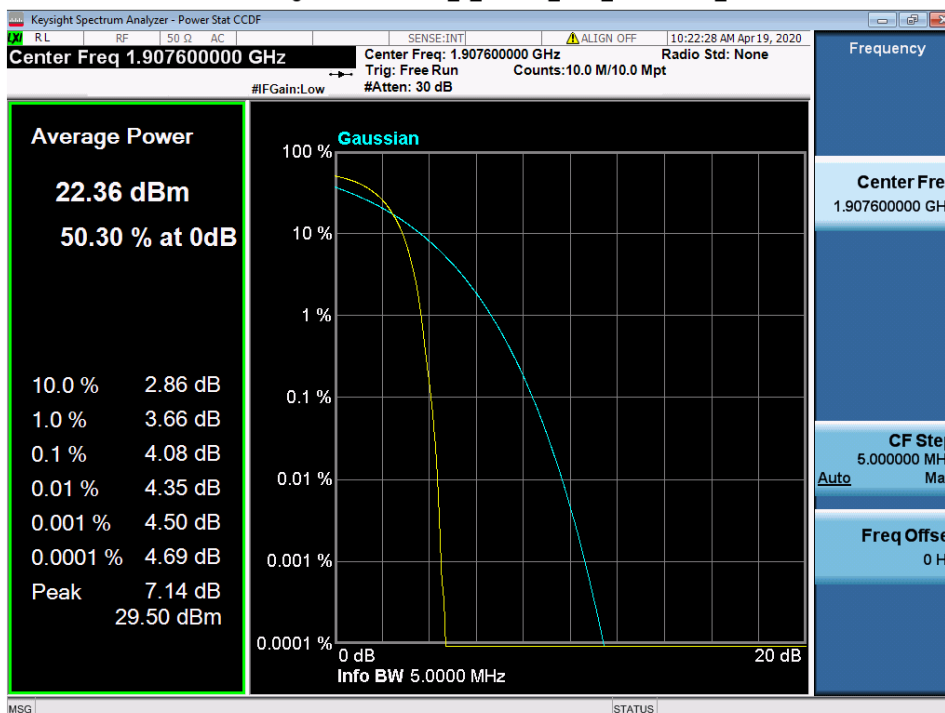
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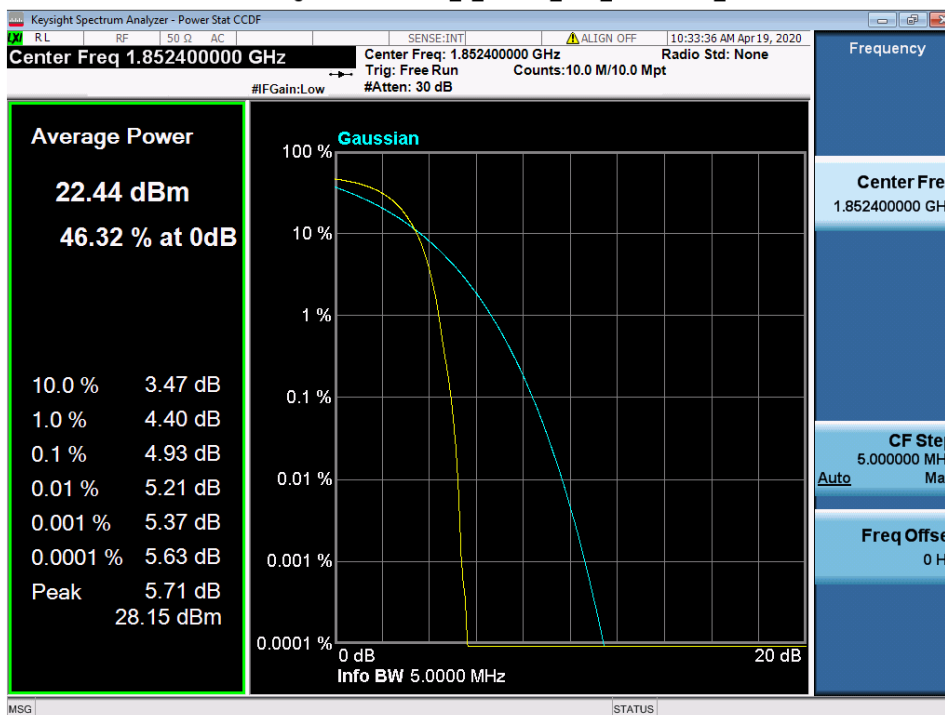
Peak-Average Ratio WCDMA_2_HSDPA_MCH_1880.0MHz_NTNV



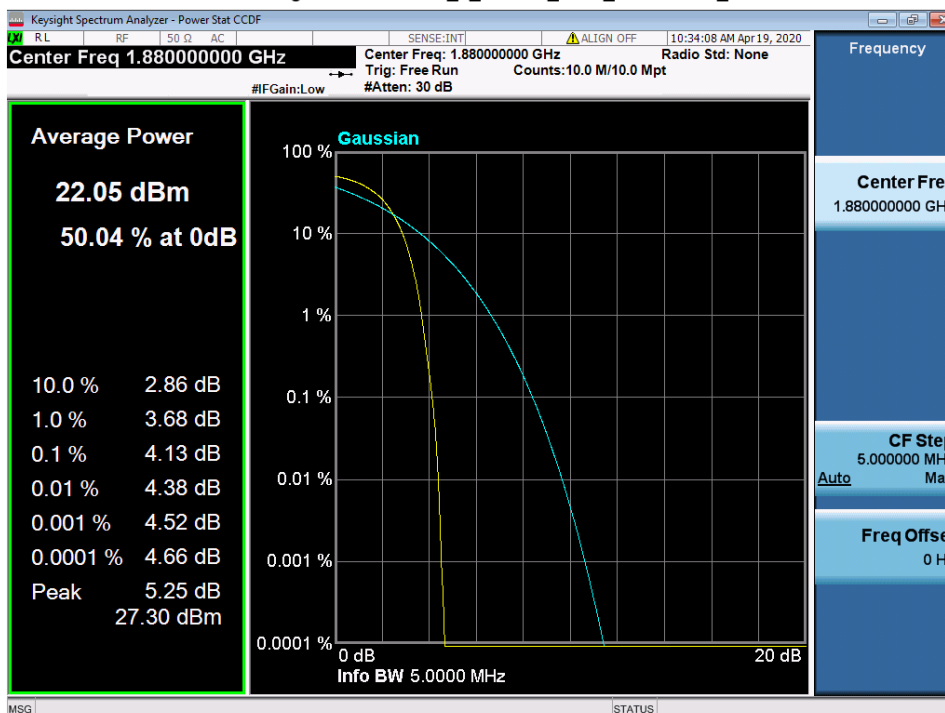
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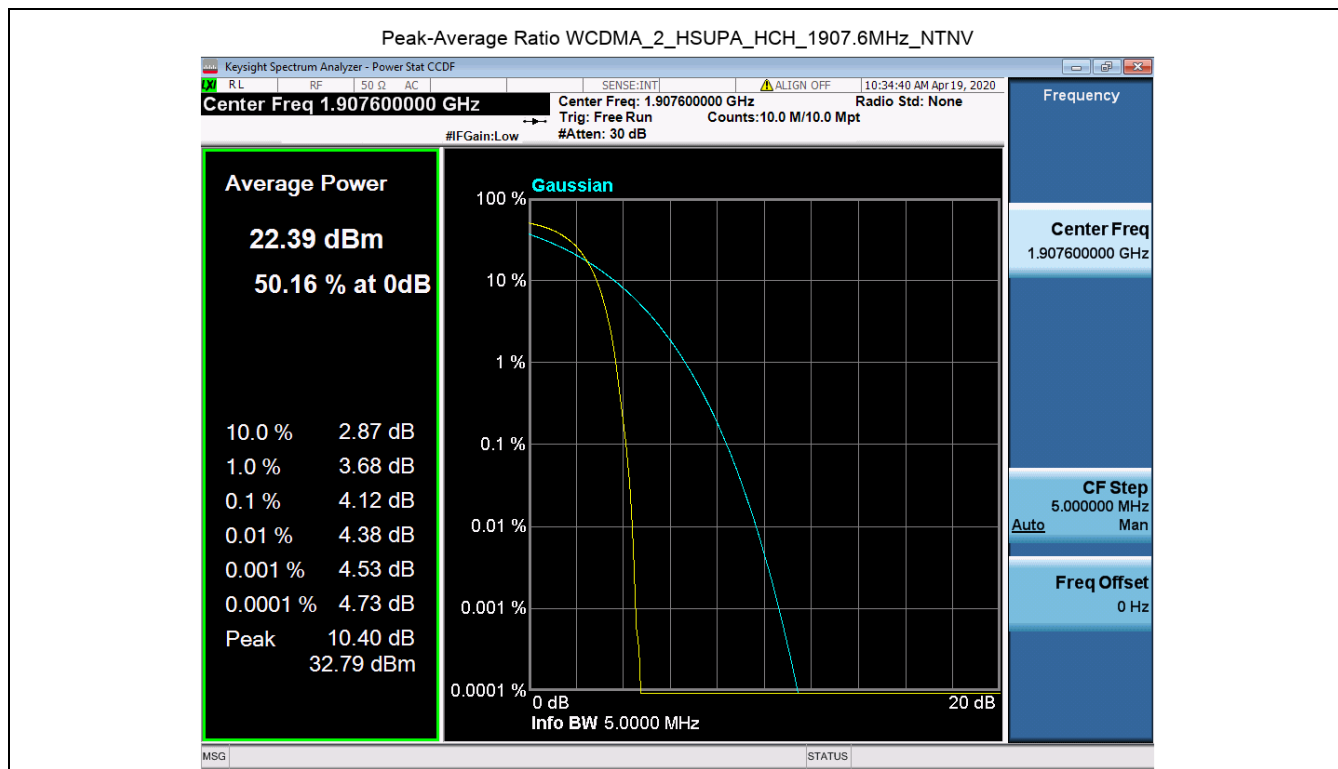


Peak-Average Ratio WCDMA_2_HSUPA_LCH_1852.4MHz_NTNV



Peak-Average Ratio WCDMA_2_HSUPA_MCH_1880.0MHz_NTNV



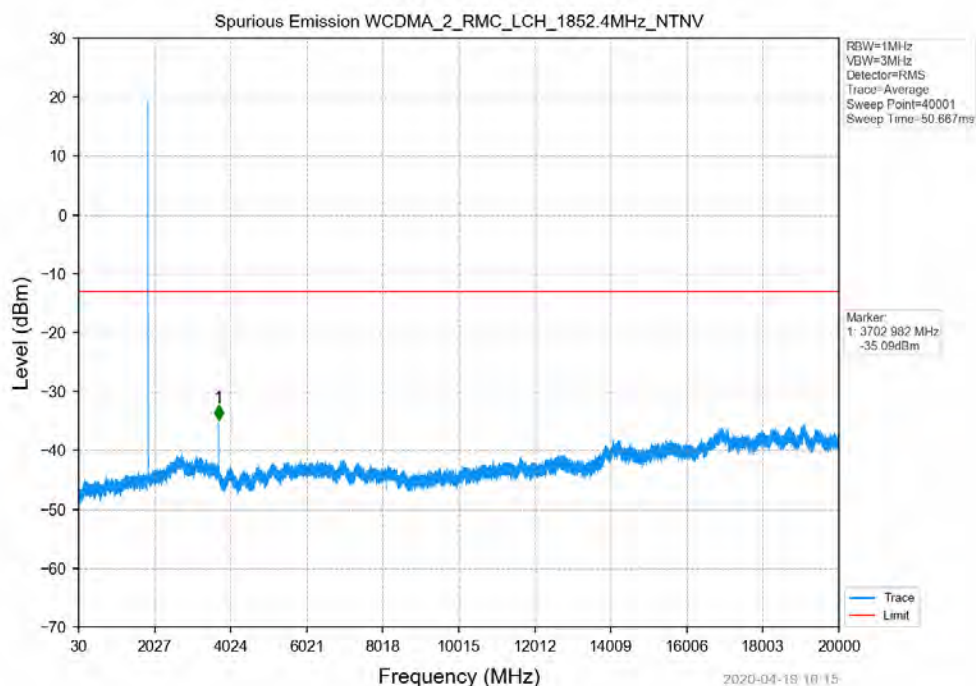
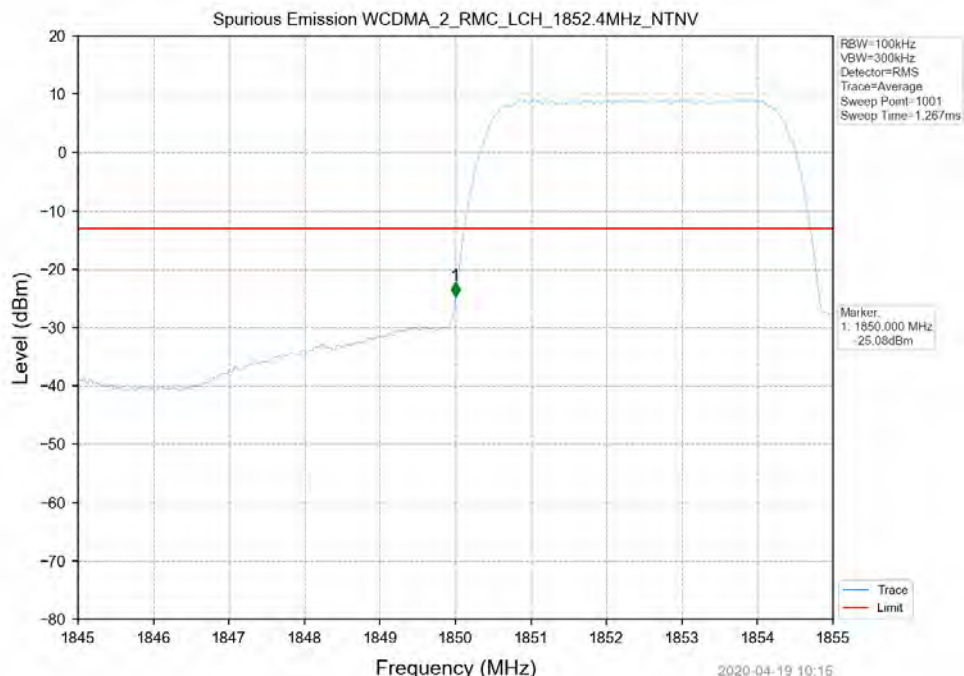


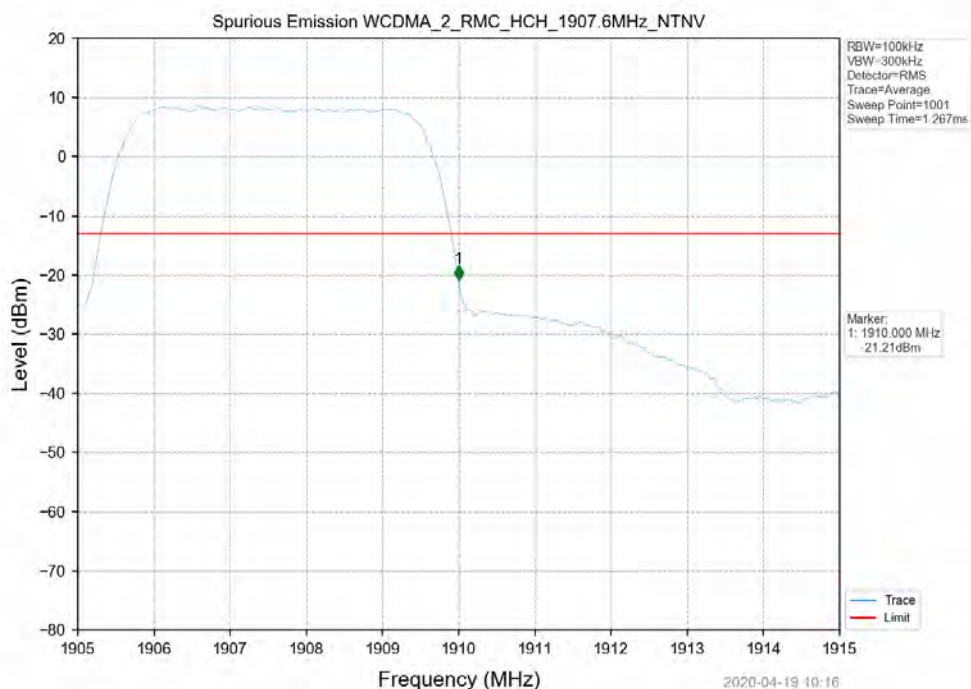
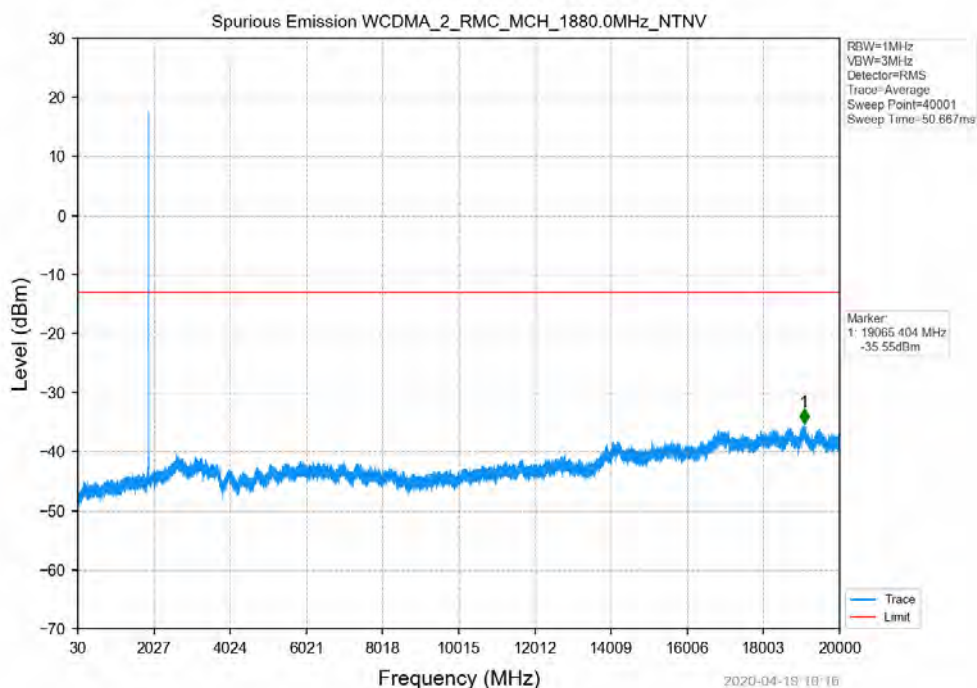
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6. Spurious Emission

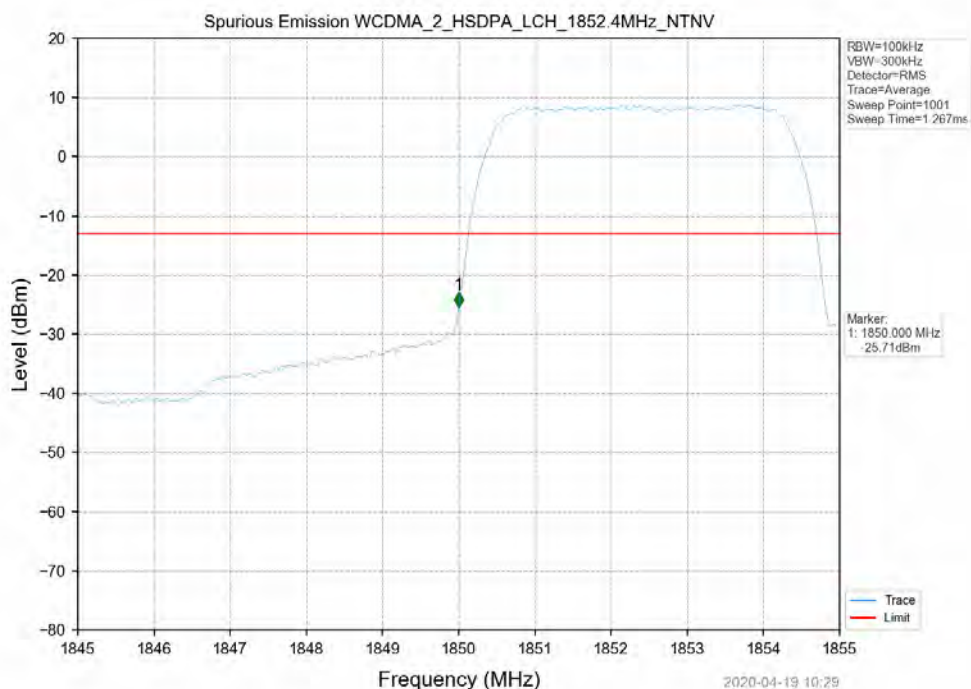
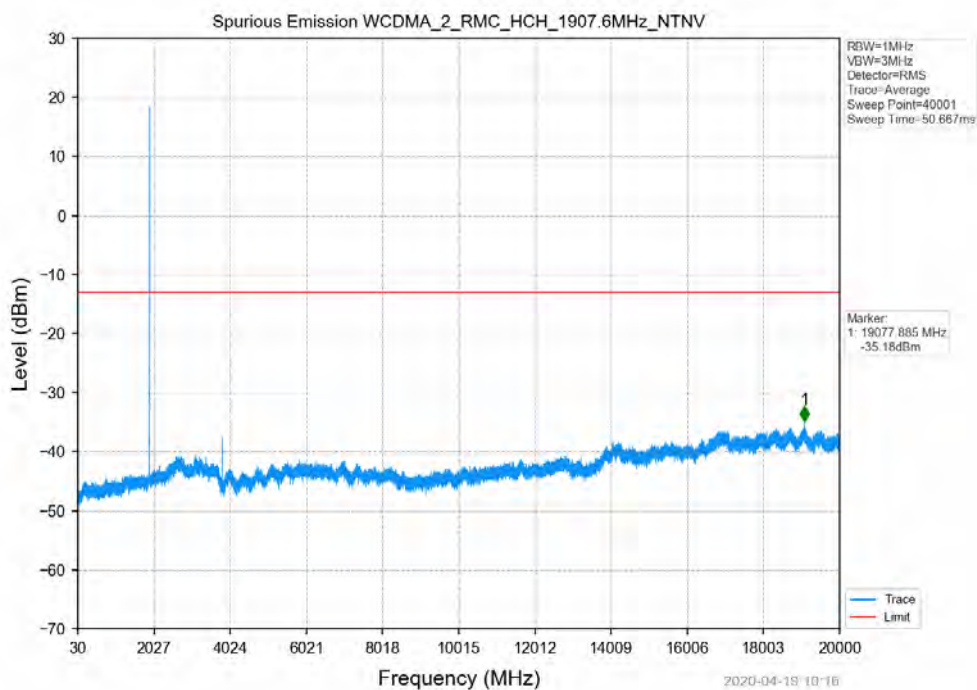
6.1 Test Graph





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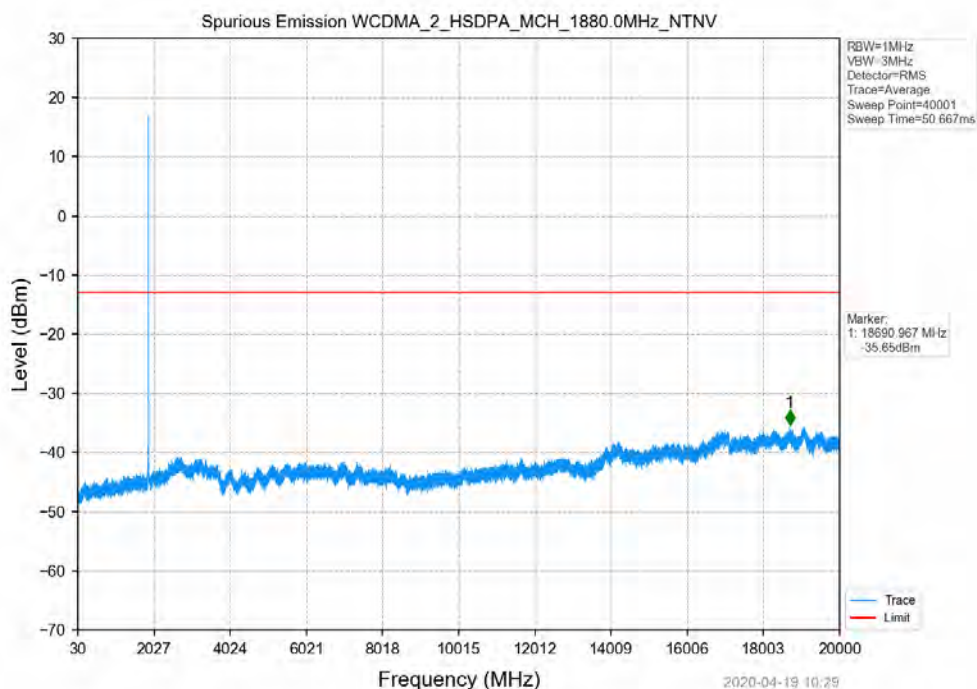
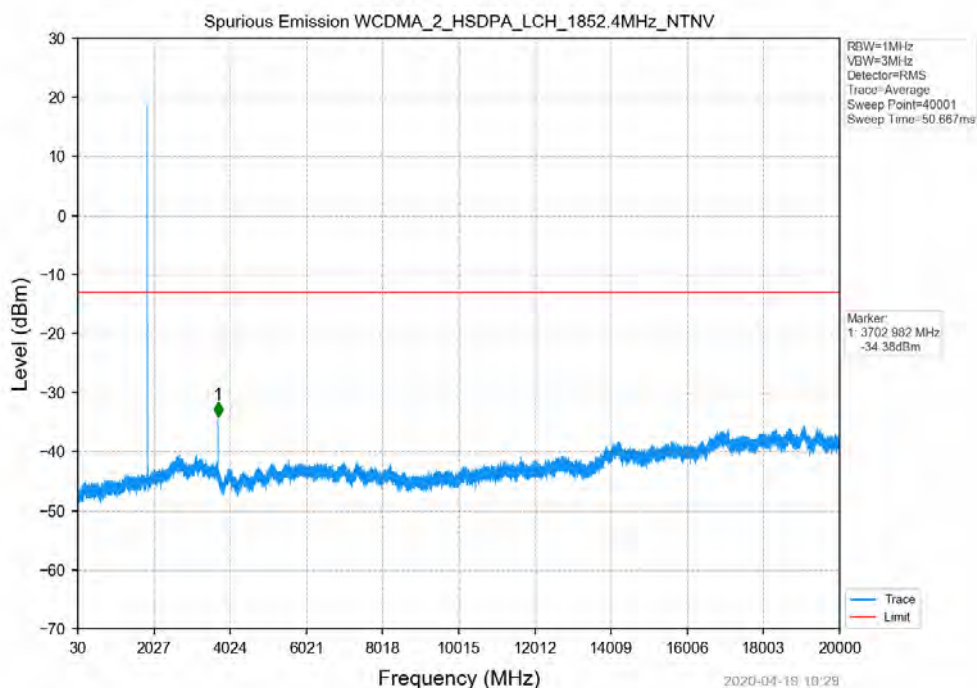
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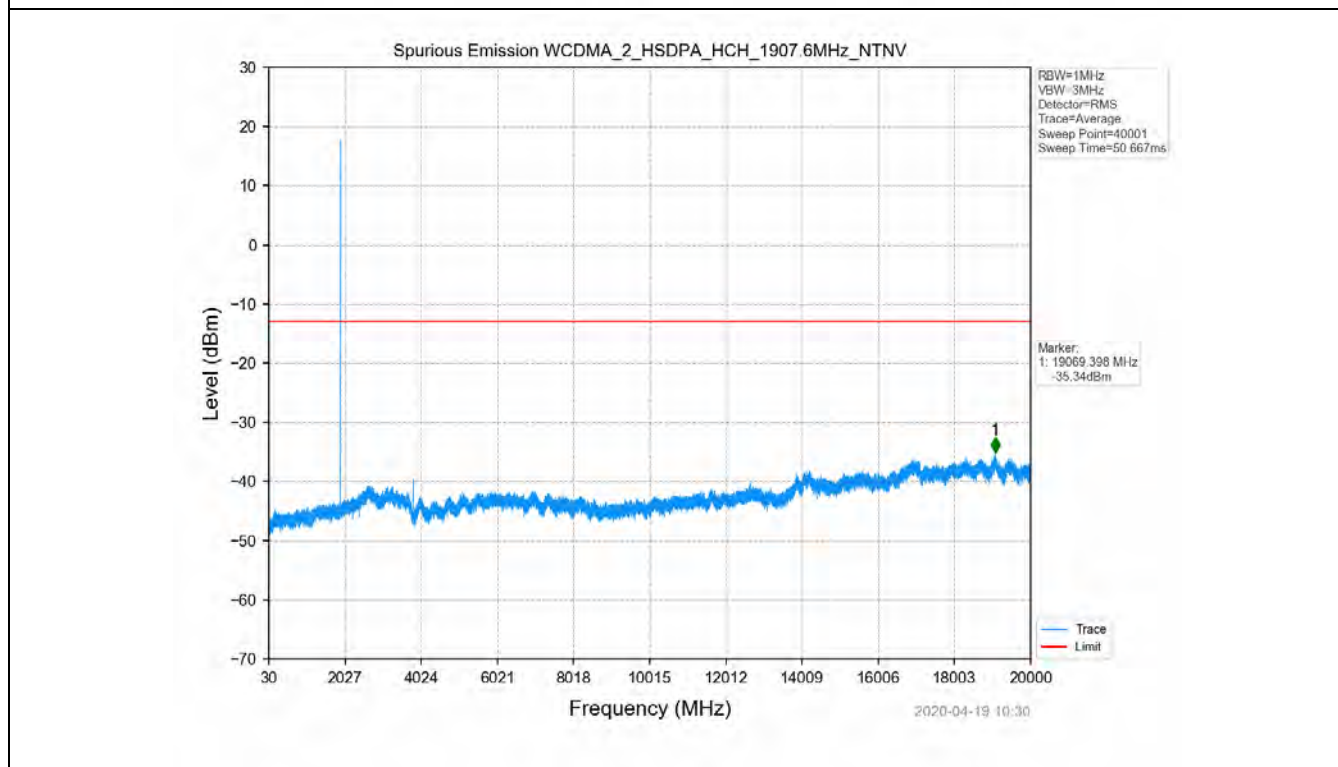
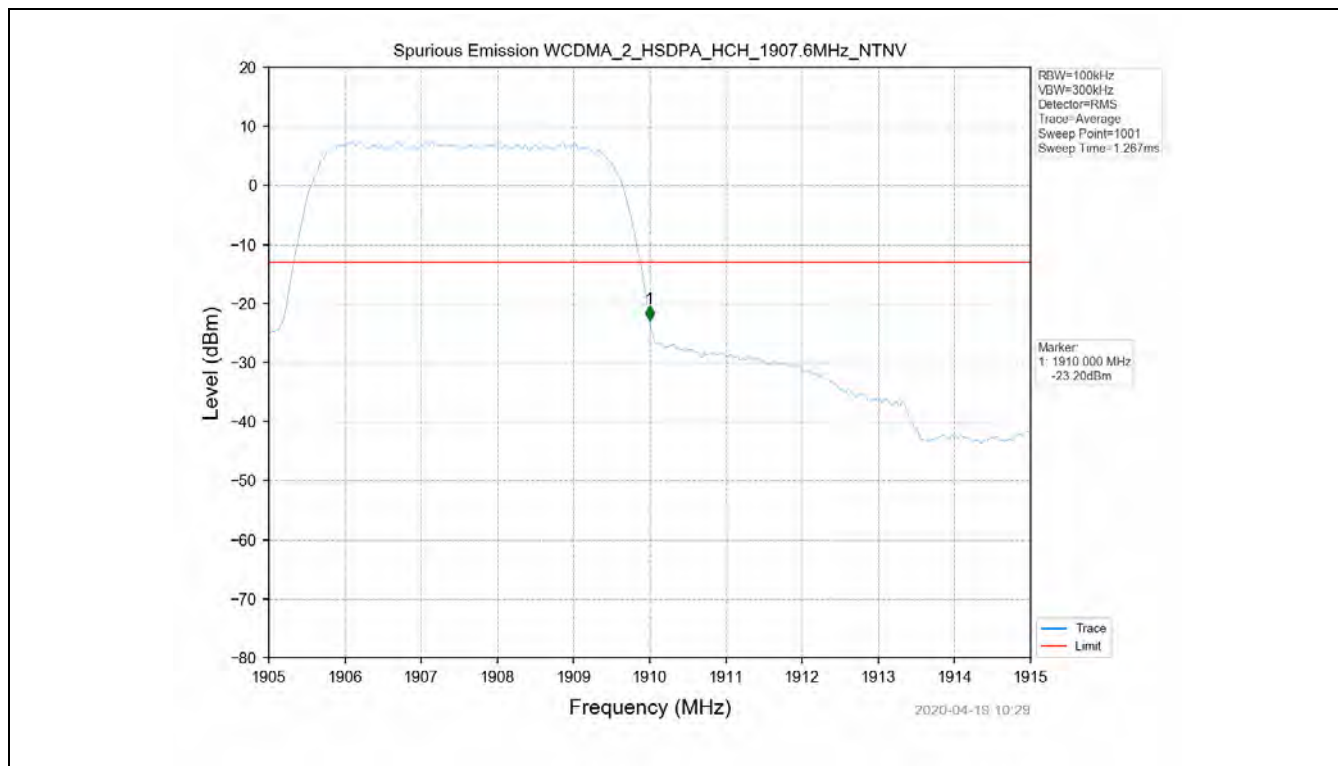


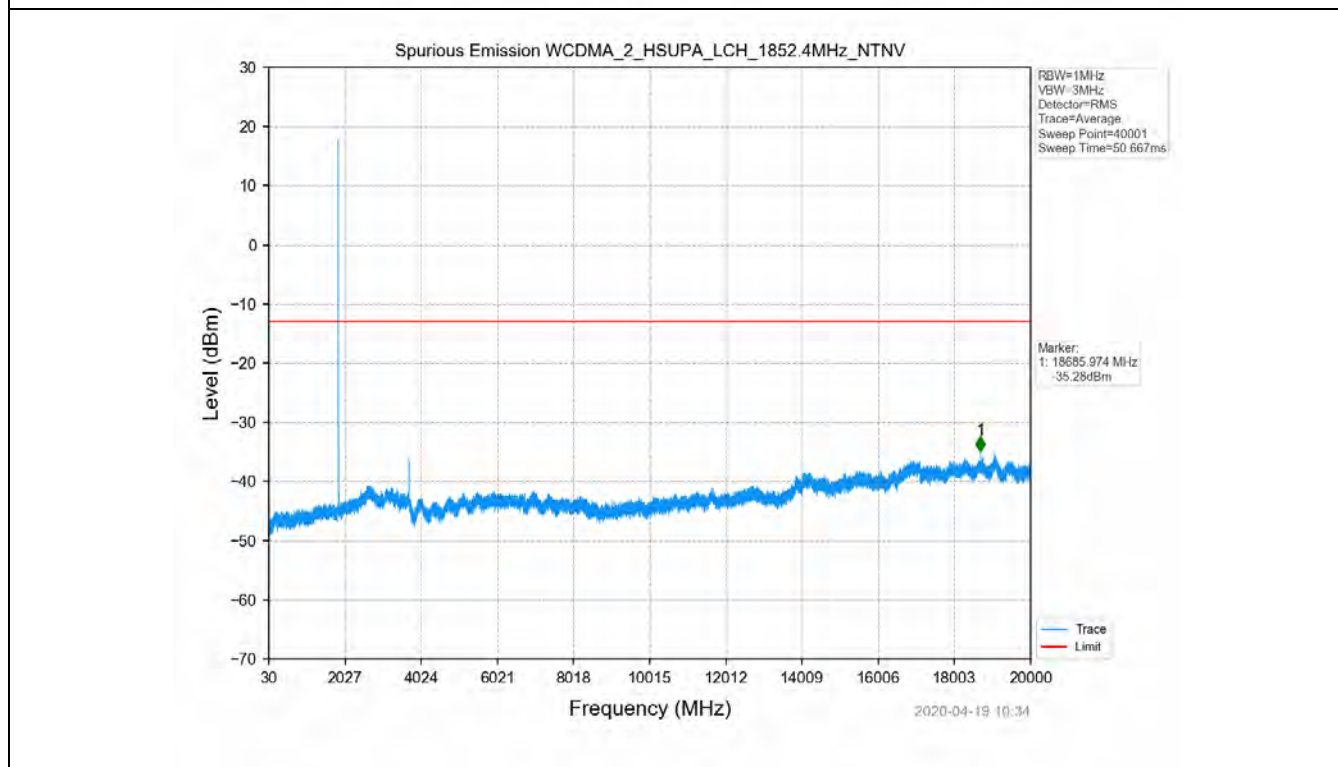
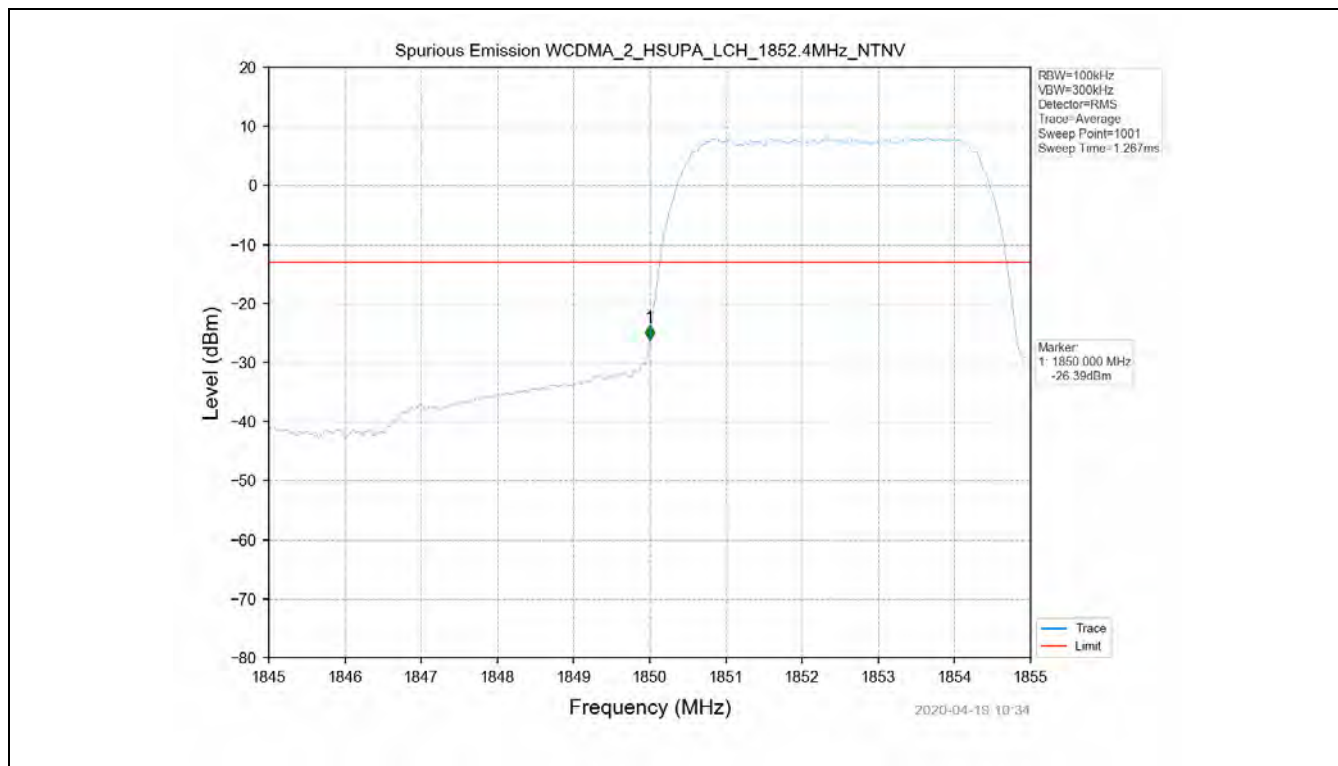
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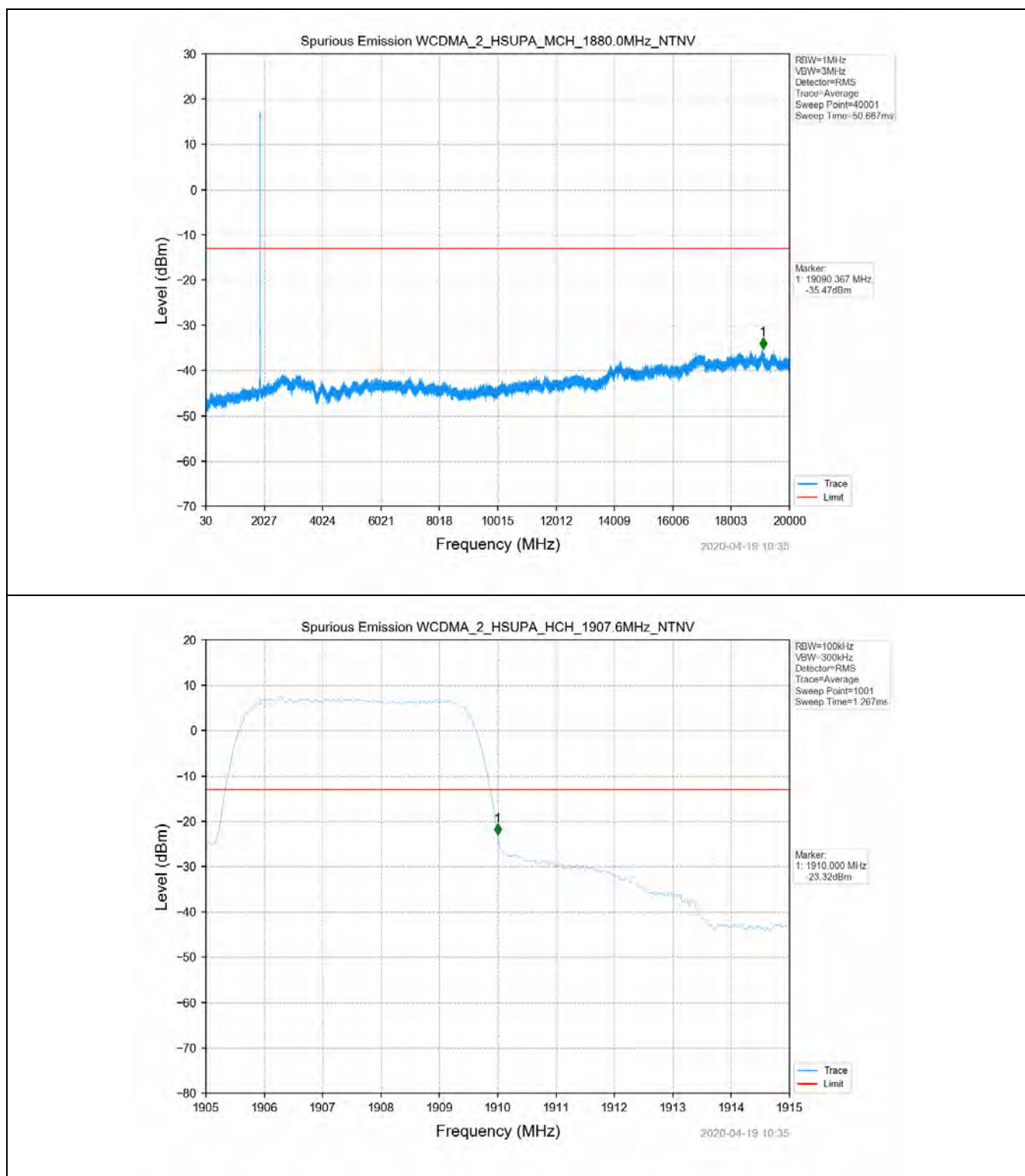
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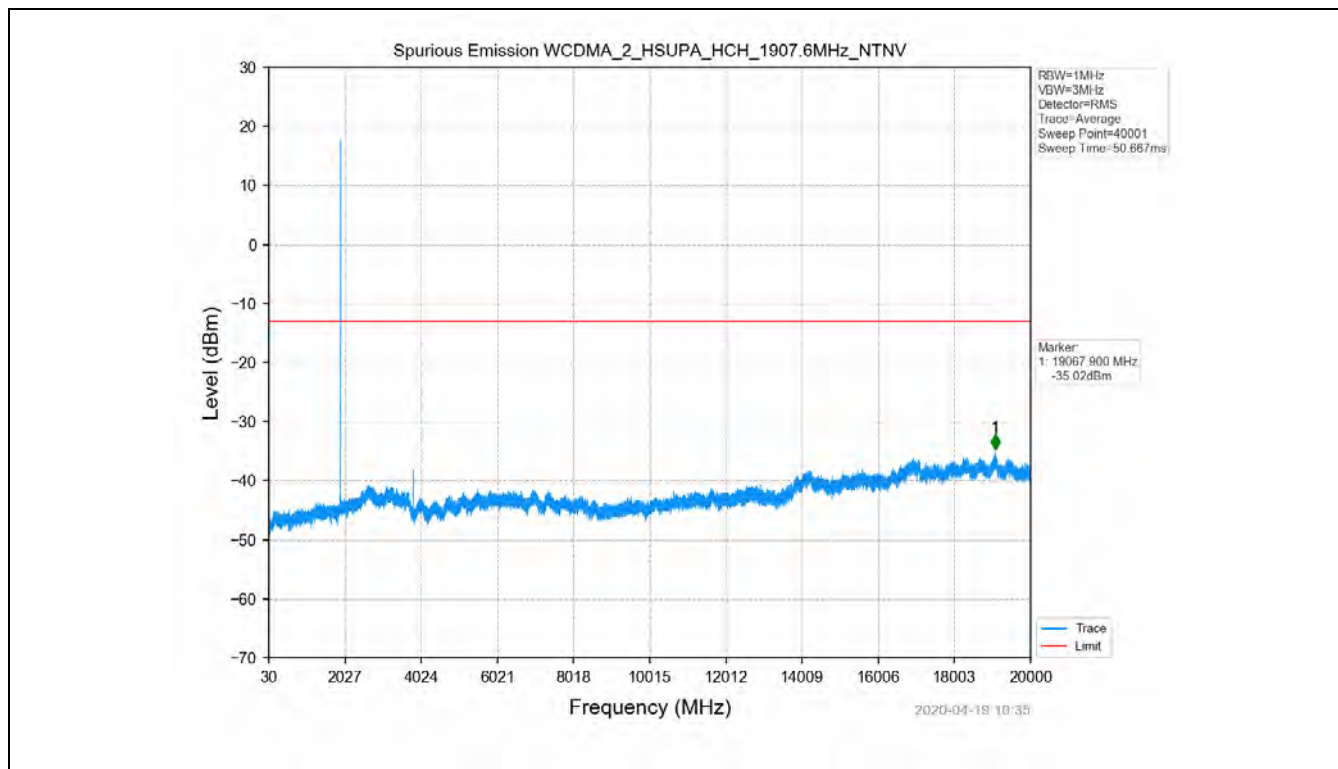




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7.2 Appendix WCDMA-Band 5

1. Effective (Isotropic) Radiated Power Output Data

1.1 Test Result

Test Band: 5											
Test Mode		Conducted Power (dBm)			Antenna gain		ERP(dBm)			Limit (dBm)	Verdict
		LCH	MCH	HCH	(dBd)	(dBi)	LCH	MCH	HCH		
RMC	12.2kbps RMC	25.04	24.12	24.07	-0.52	1.63	24.52	23.6	23.55	38.45	PASS
HSDPA	Subtest 1	21.32	21.59	21.68	-0.52	1.63	20.8	21.07	21.16	38.45	PASS
	Subtest 2	22.57	21.87	21.95	-0.52	1.63	22.05	21.35	21.43	38.45	PASS
	Subtest 3	21.41	20.97	21.04	-0.52	1.63	20.89	20.45	20.52	38.45	PASS
	Subtest 4	21.11	20.60	20.36	-0.52	1.63	20.59	20.08	19.84	38.45	PASS
HSUPA	Subtest 1	21.14	21.49	22.67	-0.52	1.63	20.62	20.97	22.15	38.45	PASS
	Subtest 2	21.57	22.68	22.00	-0.52	1.63	21.05	22.16	21.48	38.45	PASS
	Subtest 3	21.33	23.39	24.10	-0.52	1.63	20.81	22.87	23.58	38.45	PASS
	Subtest 4	22.05	21.27	23.71	-0.52	1.63	21.53	20.75	23.19	38.45	PASS
	Subtest 5	20.75	21.11	20.44	-0.52	1.63	20.23	20.59	19.92	38.45	PASS

Note:
 1) dBd = dBi - 2.15
 2) EIRP = Conducted output power + Antenna gain (dBi)
 3) ERP = Conducted output power + Antenna gain (dBd)

2. Frequency stability

2.1 Test Result

Test Band: 5 (Frequency Error VS. Voltage)										
Test Mode	Test Temp.	Test Volt.	Freq. Error (Hz)			Freq. vs. rated (ppm)			Limit (ppm)	Verdict
			LCH	MCH	HCH	LCH	MCH	HCH		
RMC	NT	LV	-1.0000	-8.0000	-1.0000	-0.0016	-0.0096	-0.0020	2.50	PASS
		LN	-1.0000	-10.0000	0.0000	-0.0024	-0.0128	0.0008	2.50	PASS
		LH	-1.0000	-5.0000	-3.0000	-0.0013	-0.0062	-0.0041	2.50	PASS
HSDPA	NT	LV	-5.0000	5.0000	2.0000	-0.0064	0.0069	0.0025	2.50	PASS
		LN	-10.0000	-6.0000	-5.0000	-0.0124	-0.0075	-0.0063	2.50	PASS
		LH	-2.0000	-3.0000	-3.0000	-0.0028	-0.0043	-0.0039	2.50	PASS
HSUPA	NT	LV	-3.0000	2.0000	2.0000	-0.0042	0.0028	0.0030	2.50	PASS
		LN	-3.0000	-6.0000	-6.0000	-0.0048	-0.0082	-0.0076	2.50	PASS
		LH	-2.0000	-4.0000	-2.0000	-0.0036	-0.0049	-0.0028	2.50	PASS



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Test Band: 5 (Frequency Error VS. Temperature)										
Test Mode	Test Volt.	Test Temp.	Freq. Error (Hz)			Freq. vs. rated (ppm)			Limit (ppm)	Verdict
			LCH	MCH	HCH	LCH	MCH	HCH		
RMC	NV	-30.00	-2.0000	-3.0000	-2.0000	-0.0033	-0.0047	-0.0030	2.50	PASS
		-20.00	-3.0000	-1.0000	-3.0000	-0.0042	-0.0017	-0.0039	2.50	PASS
		-10.00	-3.0000	-2.0000	-3.0000	-0.0038	-0.0029	-0.0038	2.50	PASS
		0.00	-3.0000	0.0000	-3.0000	-0.0041	-0.0002	-0.0042	2.50	PASS
		10.00	-2.0000	0.0000	-3.0000	-0.0032	0.0003	-0.0036	2.50	PASS
		20.00	-2.0000	0.0000	-1.0000	-0.0033	0.0002	-0.0019	2.50	PASS
		30.00	-2.0000	-4.0000	0.0000	-0.0028	-0.0051	-0.0004	2.50	PASS
		40.00	-3.0000	-1.0000	0.0000	-0.0041	-0.0022	0.0005	2.50	PASS
		50.00	-2.0000	-1.0000	0.0000	-0.0034	-0.0022	-0.0008	2.50	PASS
HSDPA	NV	-30.00	0.0000	-2.0000	-4.0000	-0.0010	-0.0033	-0.0047	2.50	PASS
		-20.00	0.0000	-1.0000	-1.0000	-0.0004	-0.0013	-0.0014	2.50	PASS
		-10.00	-1.0000	-6.0000	-2.0000	-0.0013	-0.0076	-0.0034	2.50	PASS
		0.00	0.0000	-1.0000	-1.0000	-0.0003	-0.0014	-0.0016	2.50	PASS
		10.00	0.0000	0.0000	-6.0000	0.0011	-0.0004	-0.0076	2.50	PASS
		20.00	-2.0000	0.0000	-6.0000	-0.0033	-0.0007	-0.0074	2.50	PASS
		30.00	-1.0000	1.0000	-2.0000	-0.0015	0.0015	-0.0025	2.50	PASS
		40.00	-2.0000	-3.0000	-3.0000	-0.0035	-0.0047	-0.0040	2.50	PASS
		50.00	-2.0000	-2.0000	-3.0000	-0.0027	-0.0035	-0.0043	2.50	PASS
HSUPA	NV	-30.00	-2.0000	-5.0000	-9.0000	-0.0024	-0.0061	-0.0110	2.50	PASS
		-20.00	-2.0000	-2.0000	-2.0000	-0.0036	-0.0029	-0.0025	2.50	PASS
		-10.00	-4.0000	-3.0000	-2.0000	-0.0059	-0.0042	-0.0029	2.50	PASS
		0.00	-3.0000	-2.0000	-1.0000	-0.0042	-0.0032	-0.0022	2.50	PASS
		10.00	0.0000	-2.0000	-2.0000	-0.0002	-0.0029	-0.0025	2.50	PASS
		20.00	-1.0000	1.0000	-4.0000	-0.0012	0.0018	-0.0053	2.50	PASS
		30.00	-2.0000	0.0000	-3.0000	-0.0034	0.0007	-0.0043	2.50	PASS
		40.00	-9.0000	-5.0000	-4.0000	-0.0113	-0.0070	-0.0053	2.50	PASS
		50.00	-3.0000	-2.0000	-4.0000	-0.0037	-0.0032	-0.0057	2.50	PASS



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3. Modulation Characteristics

3.1 Test Graph



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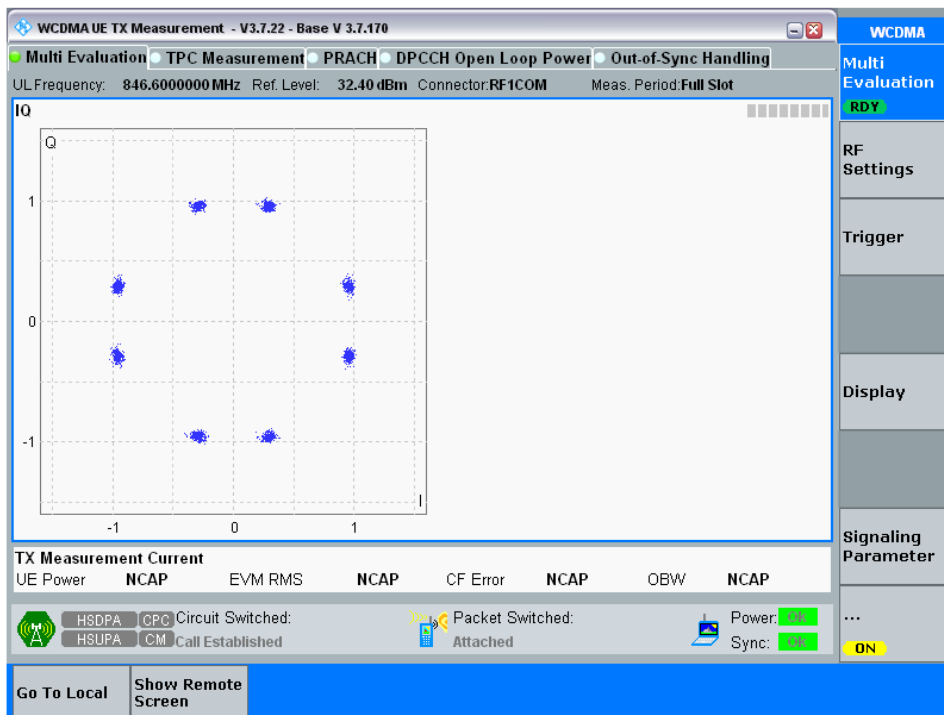


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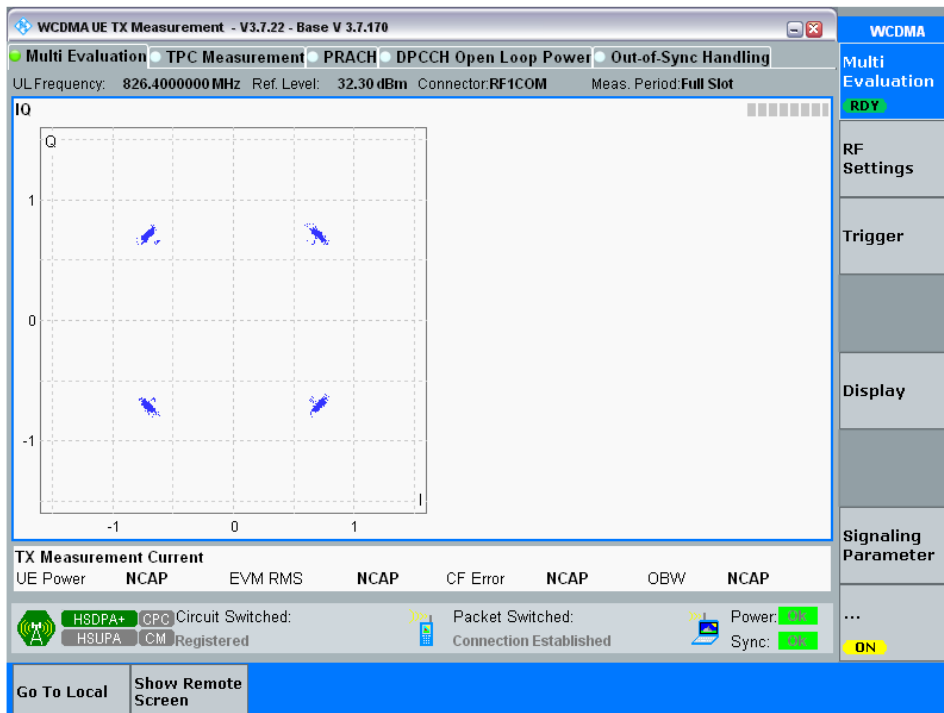
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Modulation Characteristics WCDMA_5_RMC_HCH_846.6MHz



Modulation Characteristics WCDMA_5_HSDPA_LCH_826.4MHz



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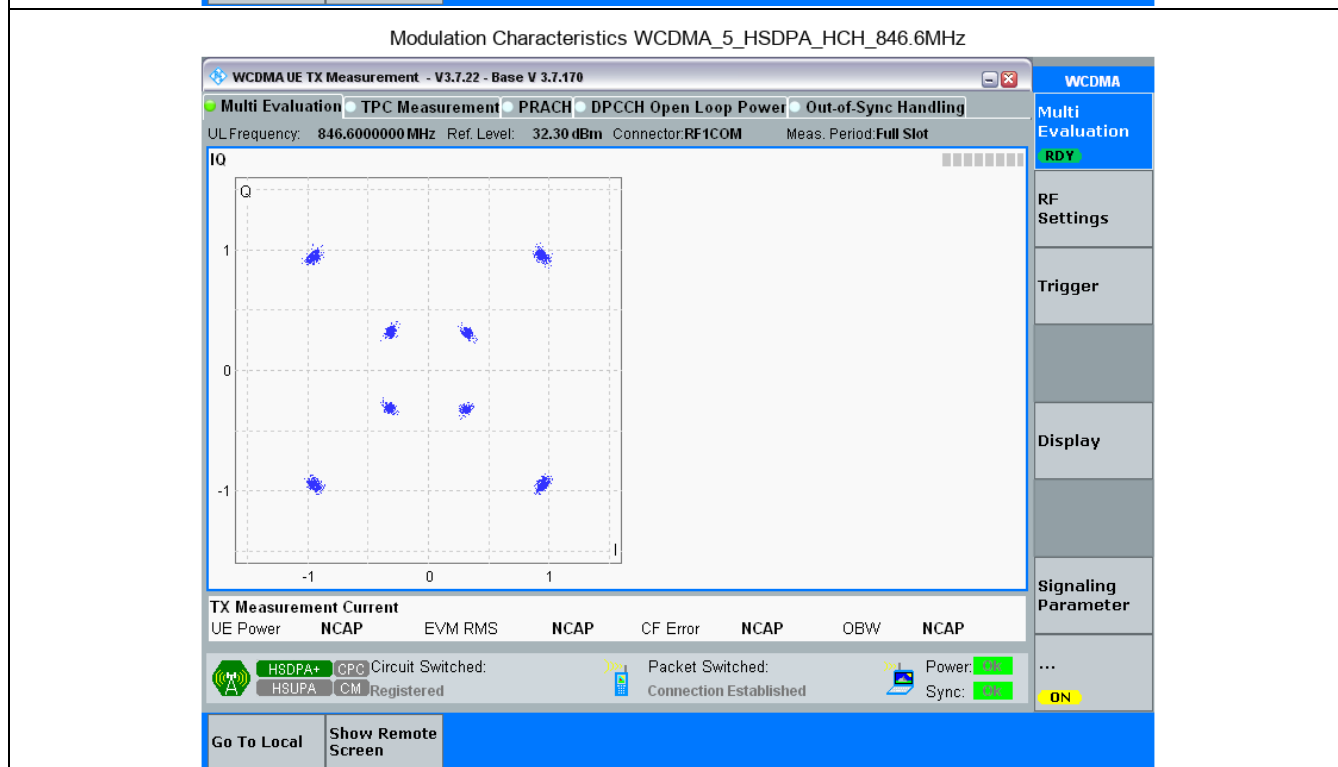
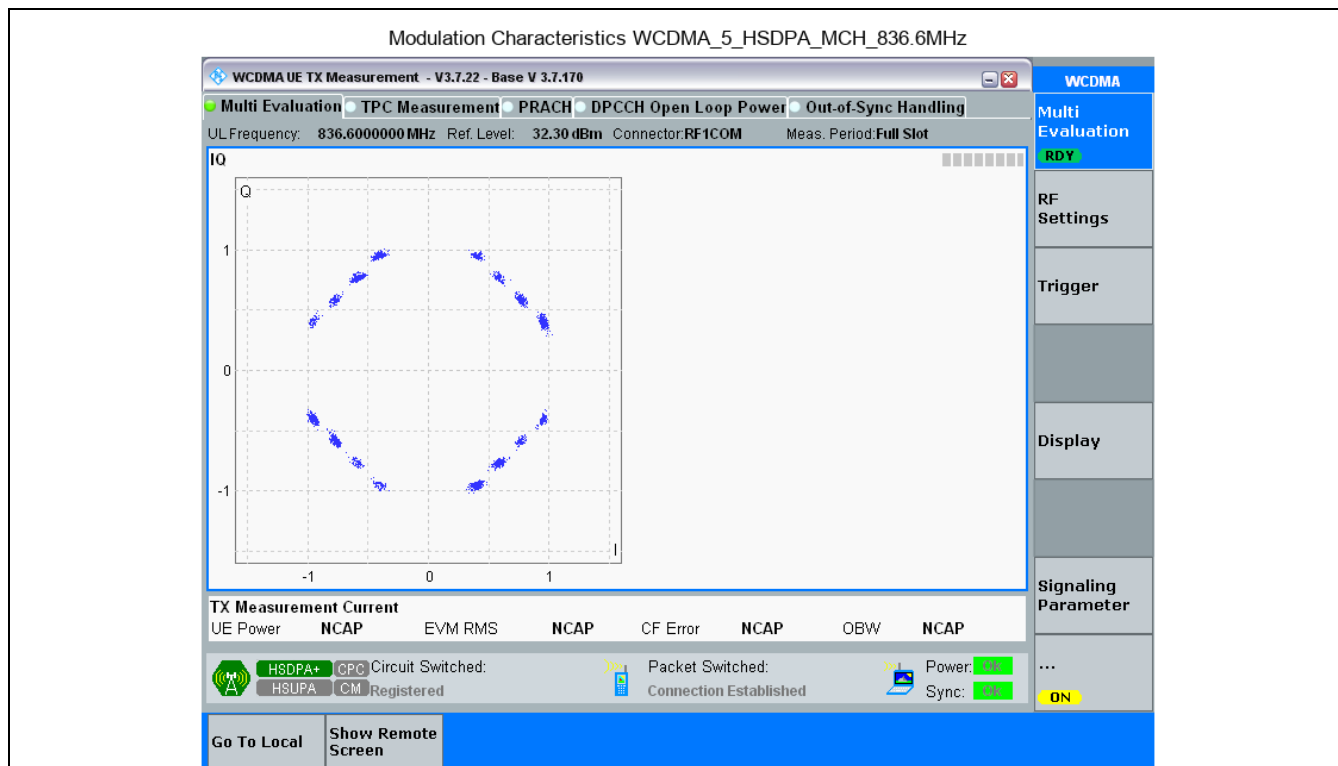
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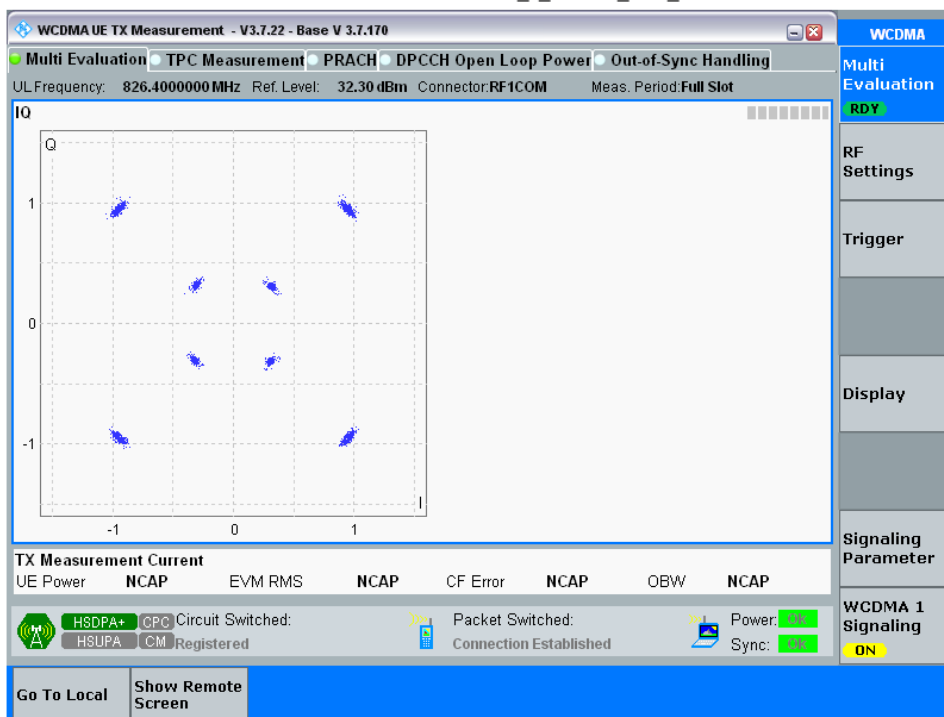


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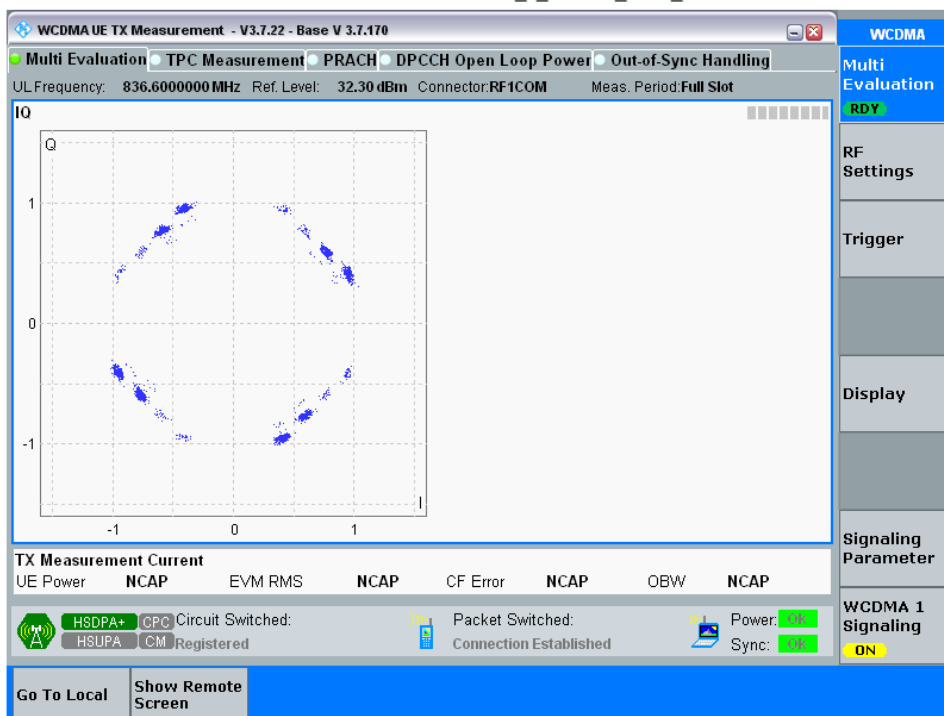
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Modulation Characteristics WCDMA_5_HSUPA_LCH_826.4MHz



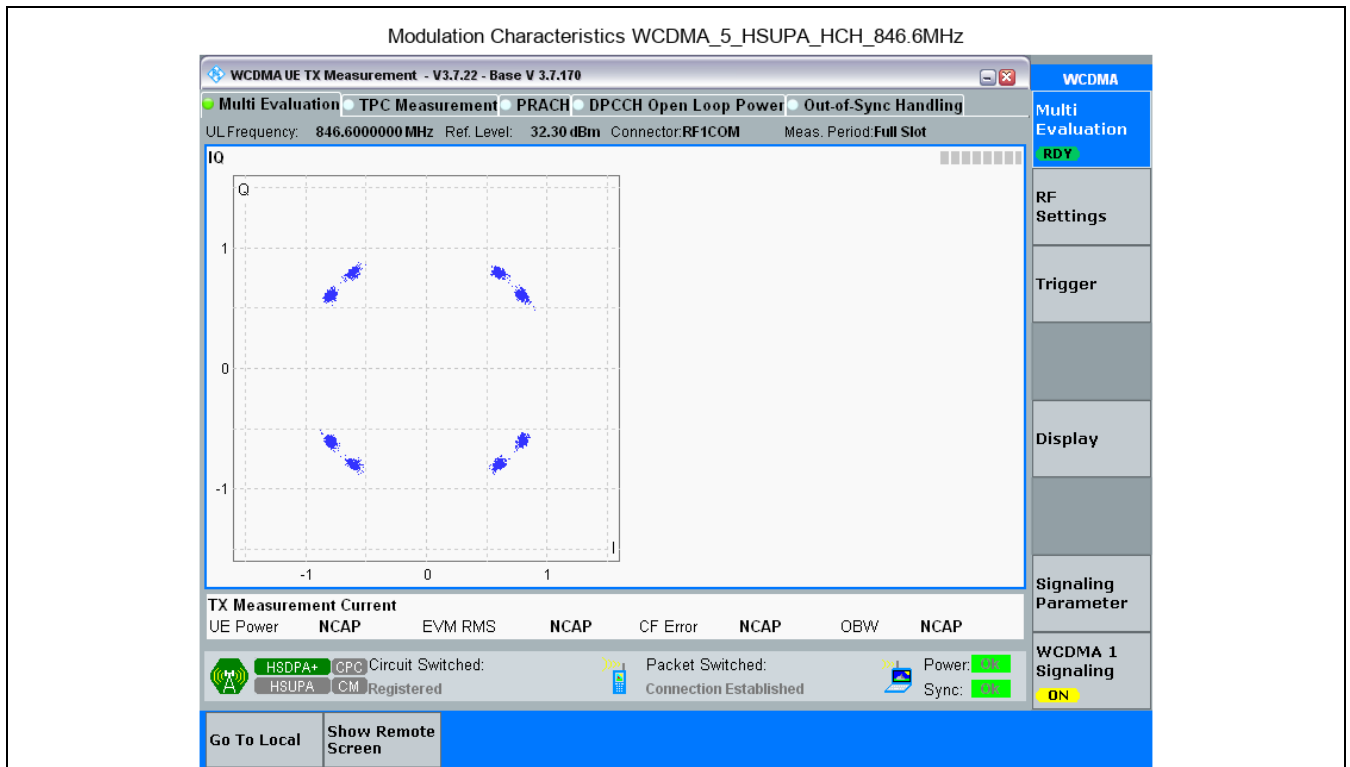
Modulation Characteristics WCDMA_5_HSUPA_MCH_836.6MHz



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4. 99% & 26dB Bandwidth

4.1 Test Result

Test Band: 5					
Test Mode	99% Occupied Bandwidth (MHz)			Limit	Verdict
	LCH	MCH	HCH		
RMC	4.080	4.080	4.110	N/A	PASS
HSDPA	4.080	4.080	4.090	N/A	PASS
HSUPA	4.080	4.080	4.090	N/A	PASS



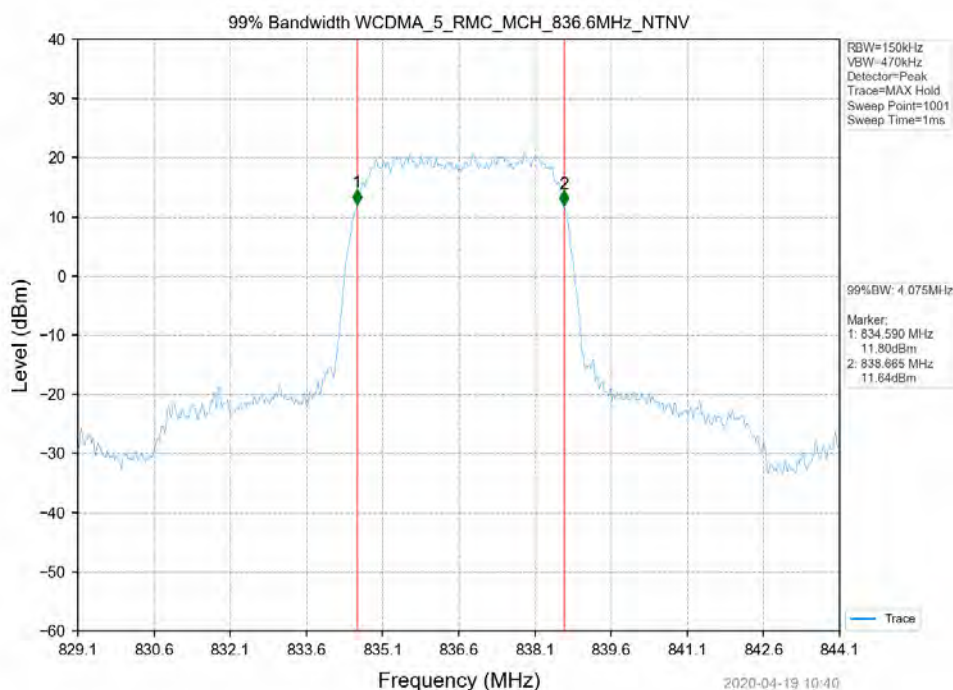
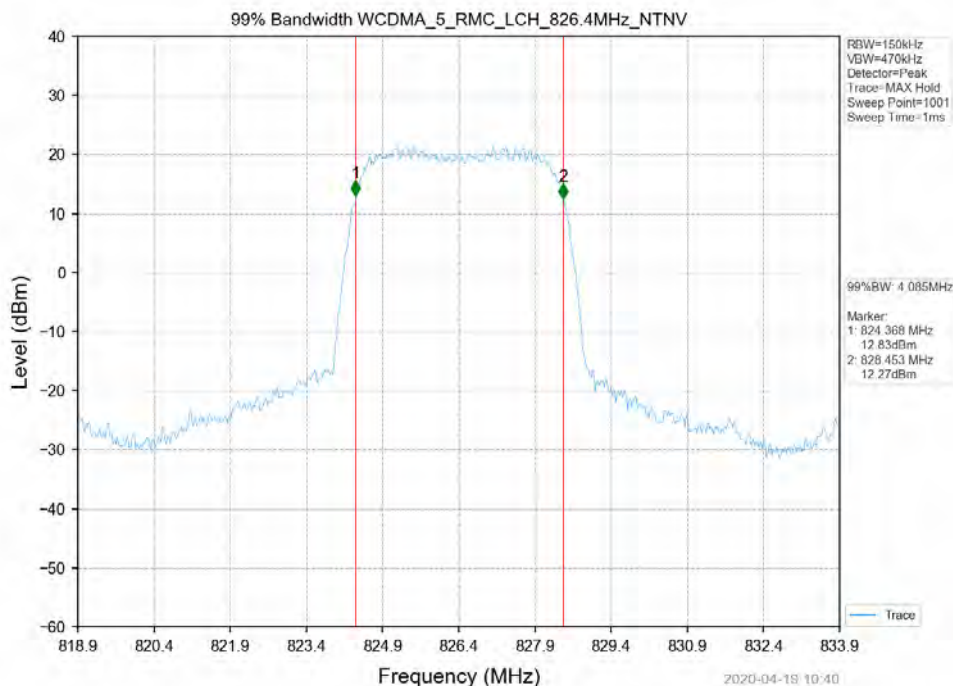
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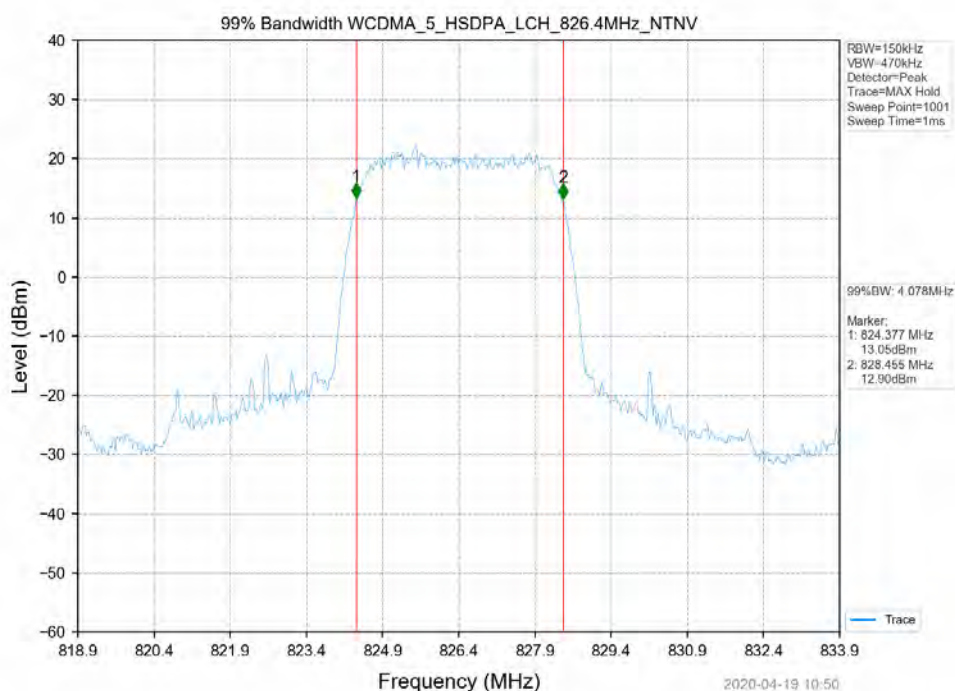
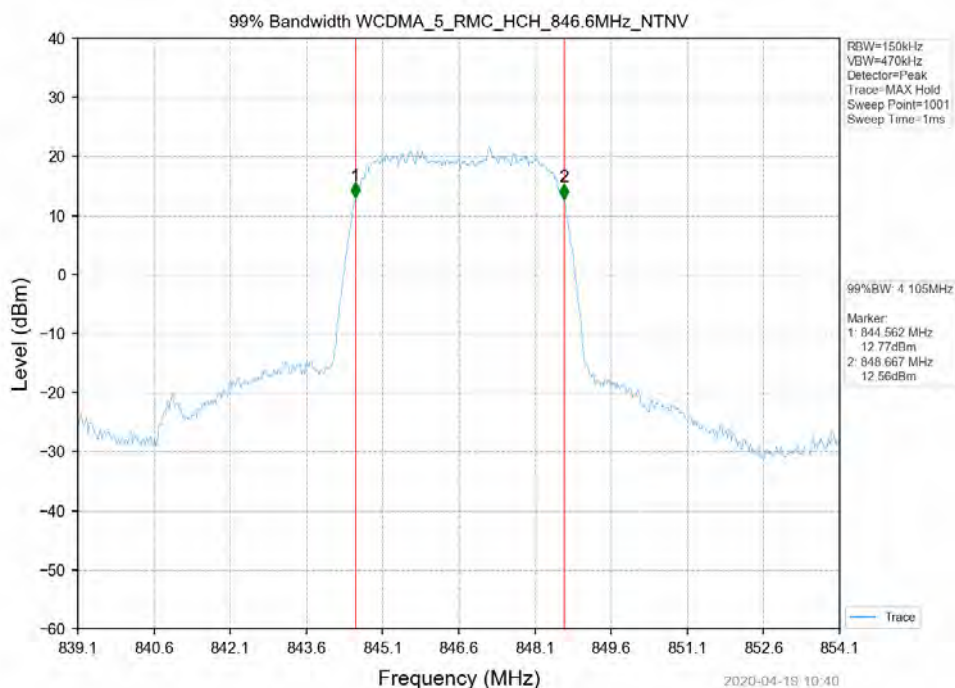
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4.2 Test Graph



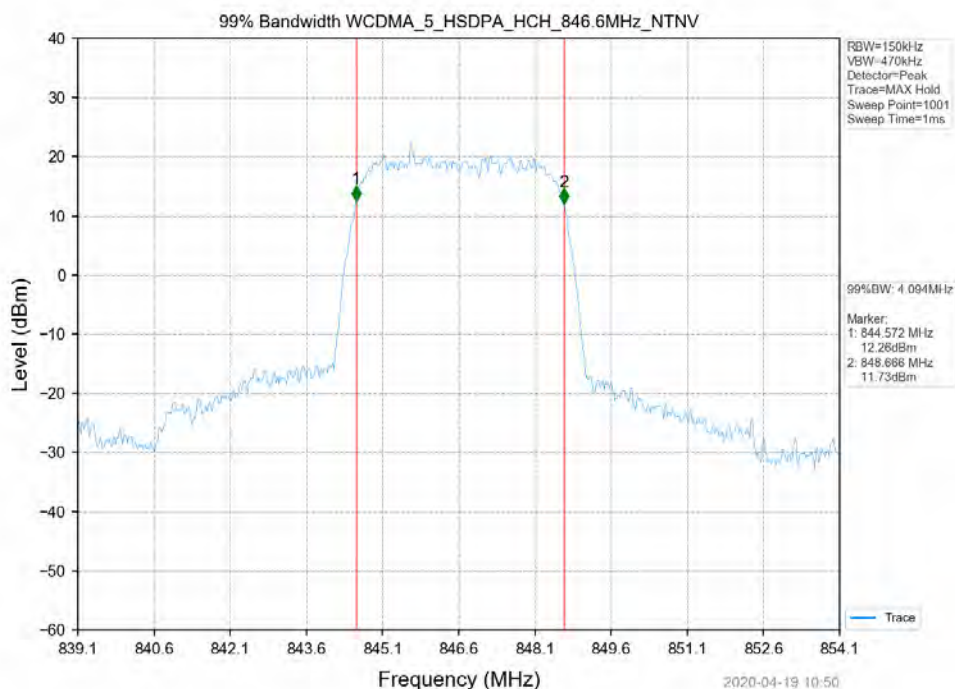
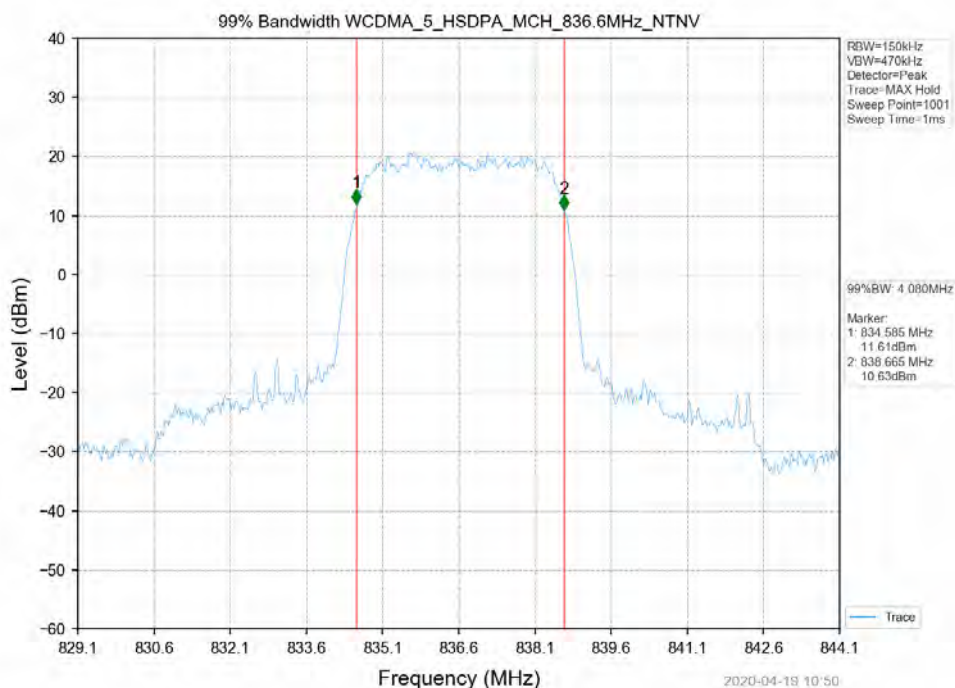


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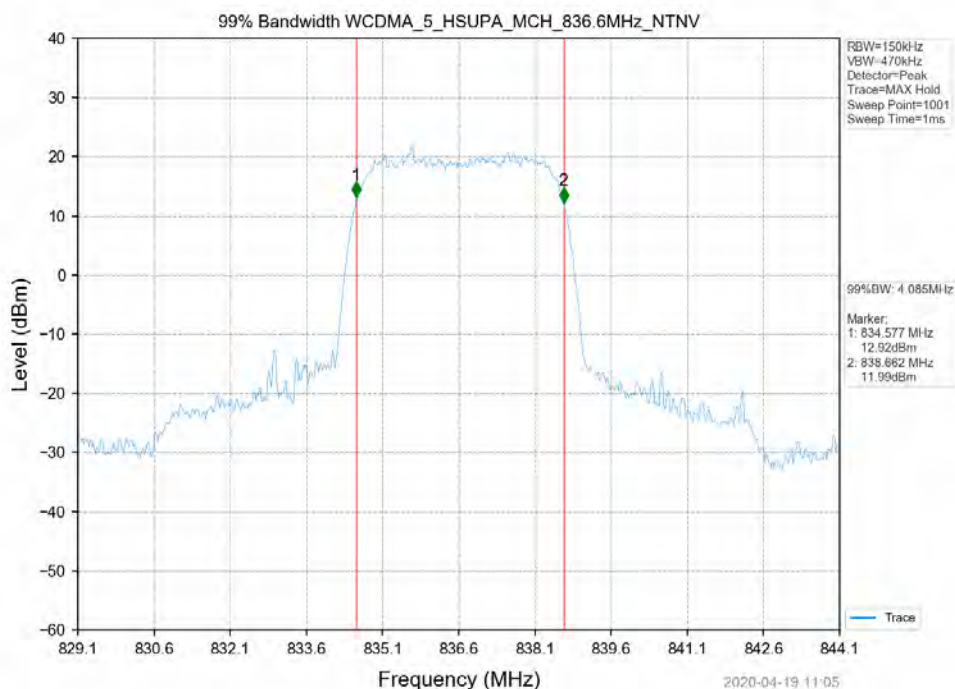
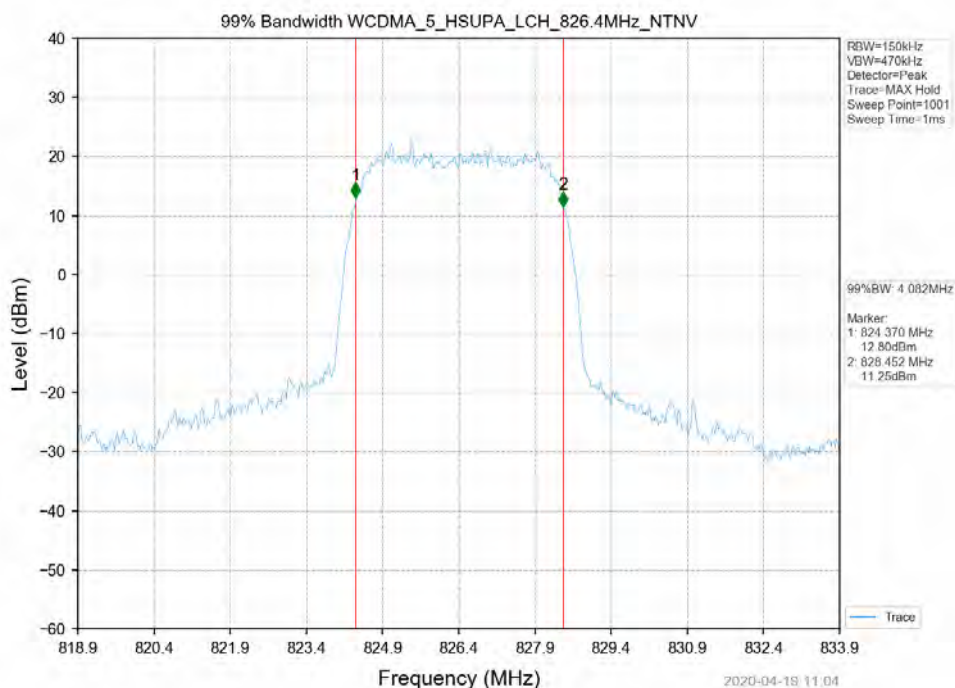
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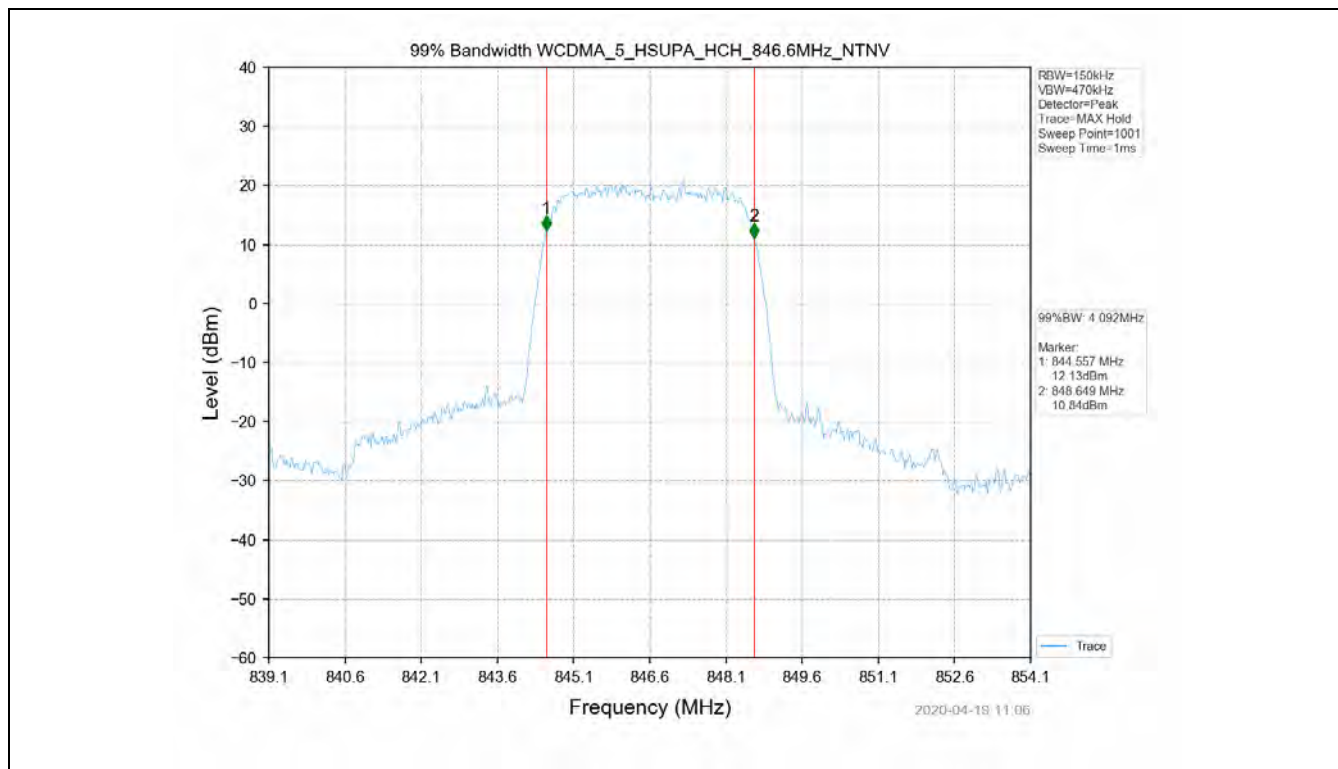


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Test Band: 5					
Test Mode	26dB Bandwidth (MHz)			Limit	Verdict
	LCH	MCH	HCH		
RMC	4.680	4.650	4.690	N/A	PASS
HSDPA	4.660	4.650	4.660	N/A	PASS
HSUPA	4.650	4.640	4.680	N/A	PASS



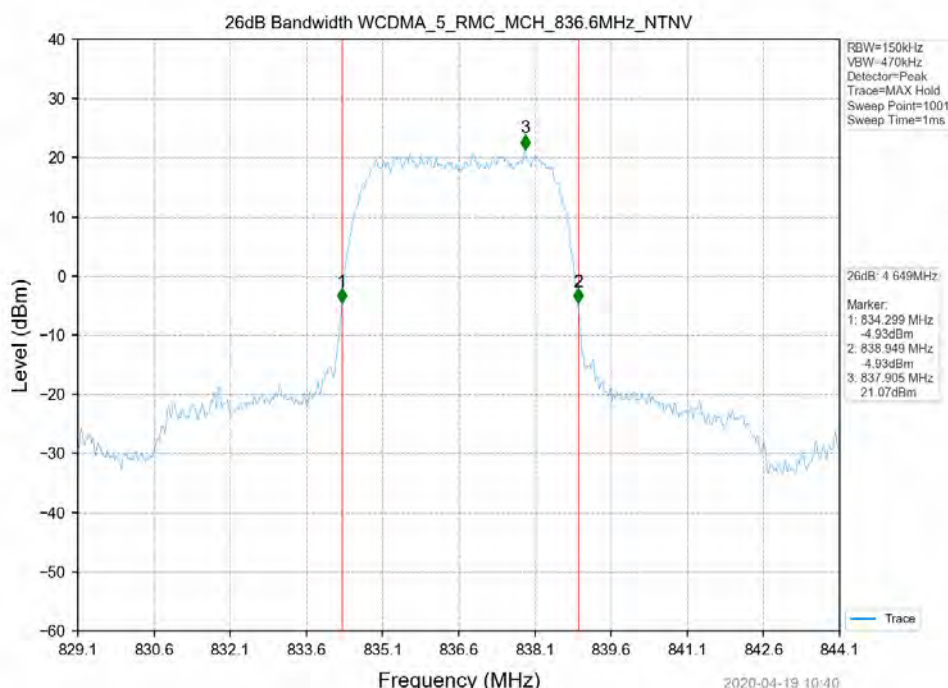
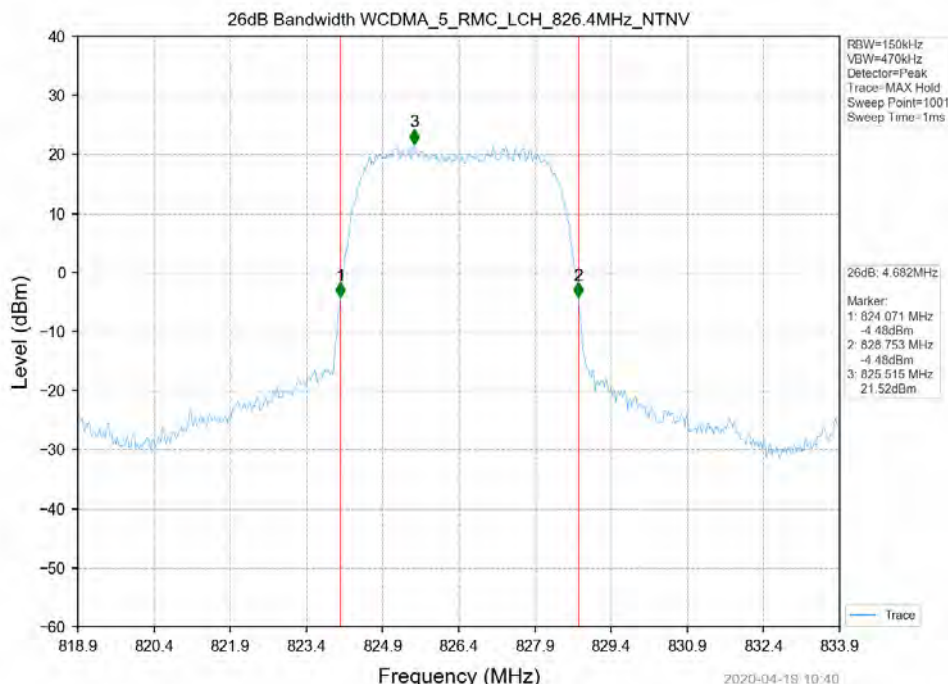
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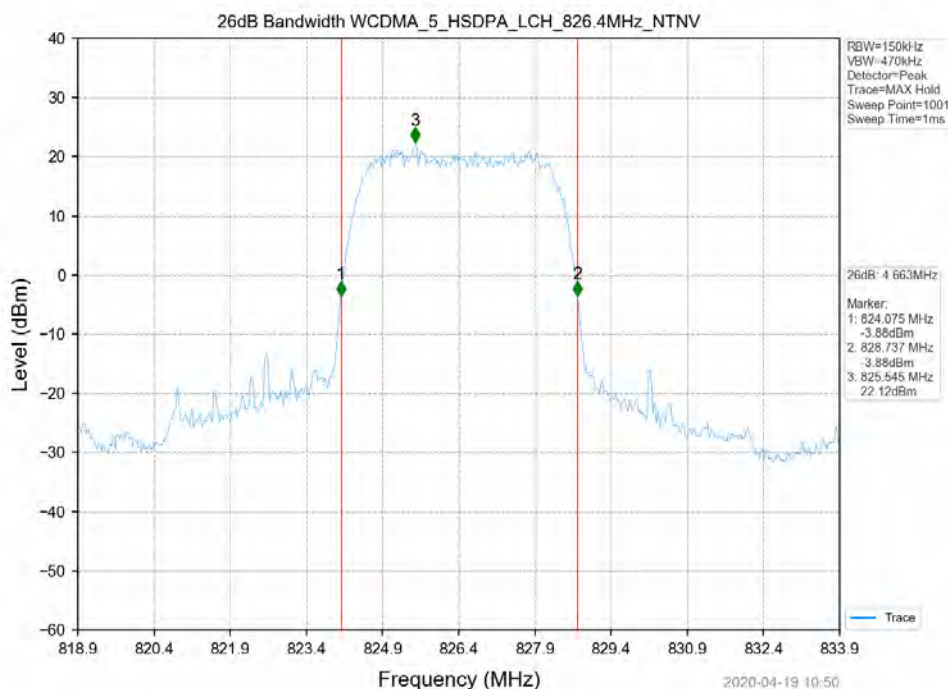
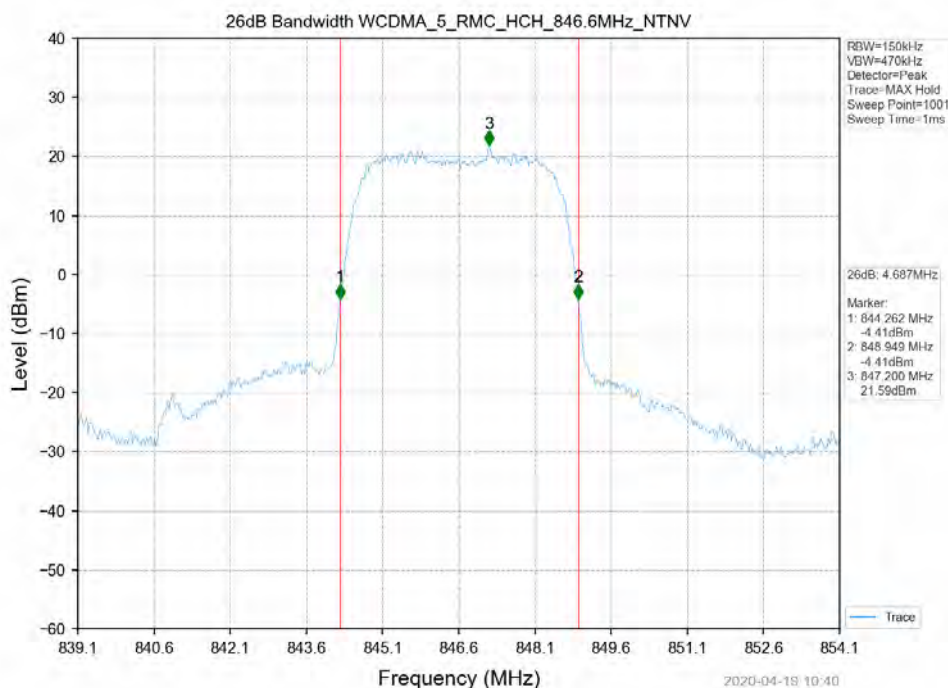
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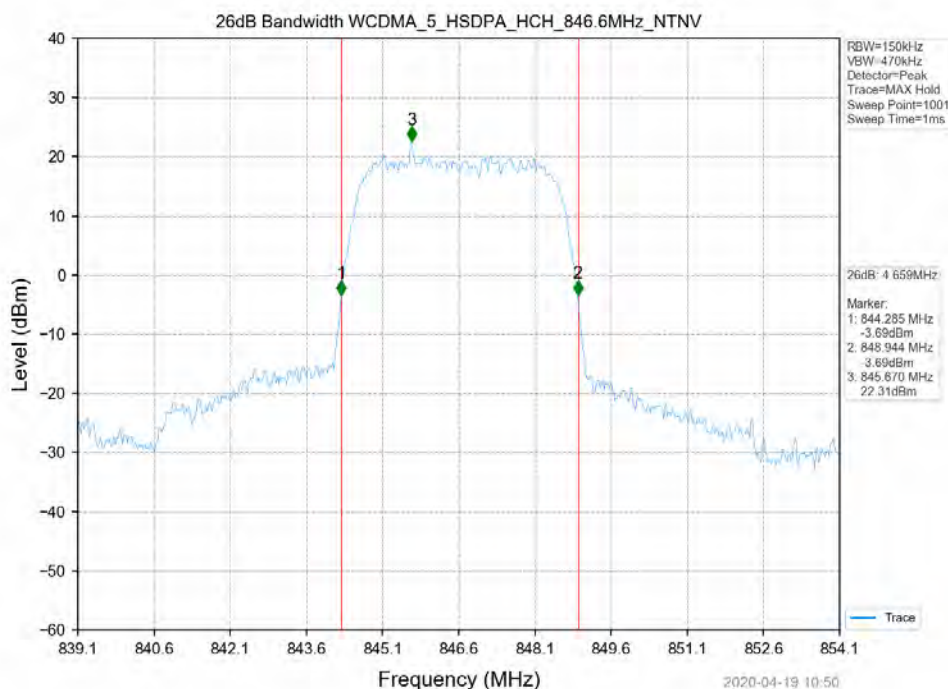
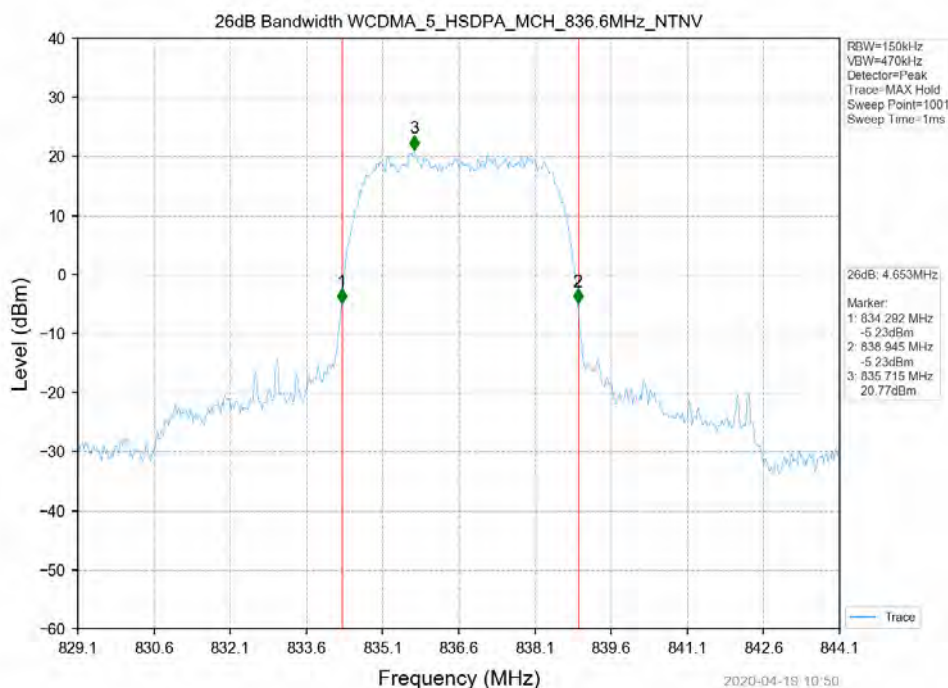
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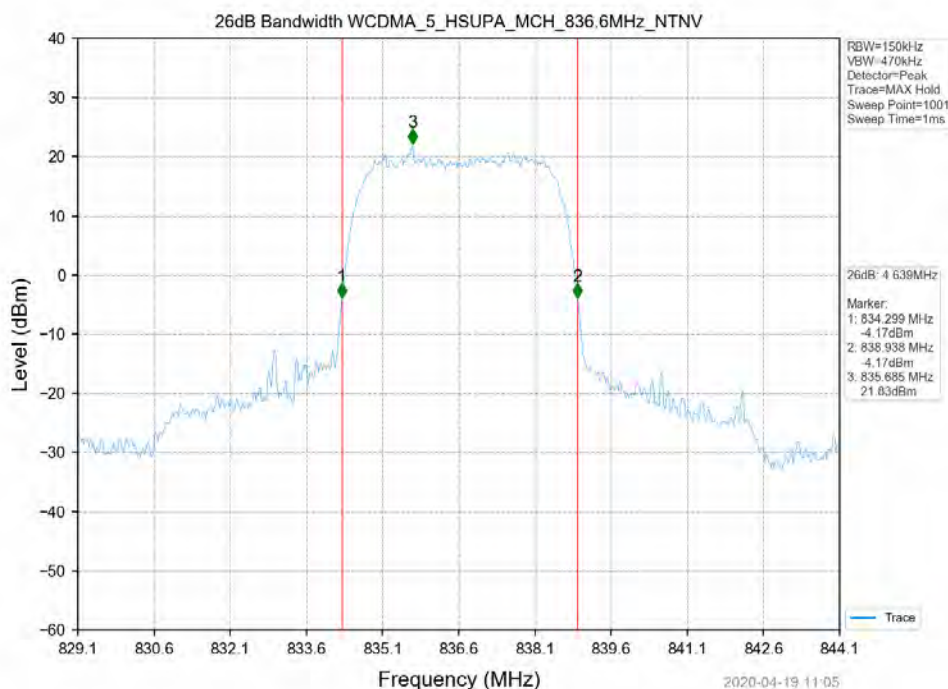
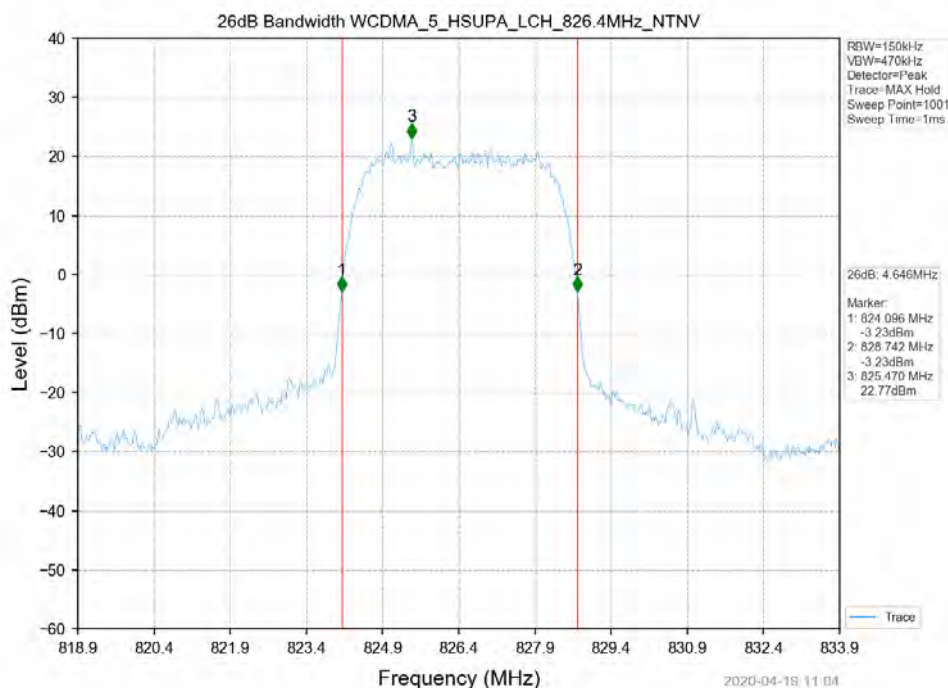
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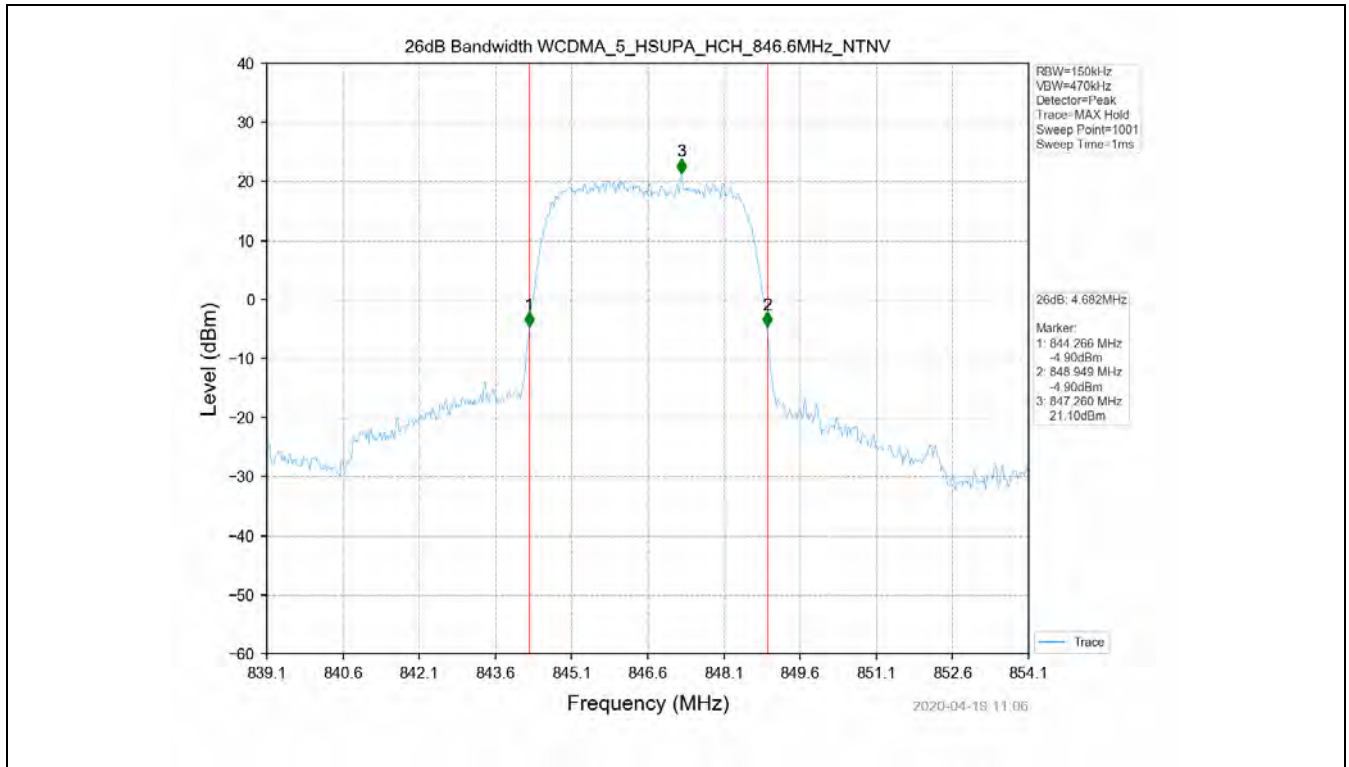
4.2 Test Graph











5. Peak-Average Ratio

5.1 Test Result

Test Band: 5					
Test Mode	Test result (dB)			Limit (dB)	Verdict
	LCH	MCH	HCH		
RMC	3.11	3.36	3.00	13	PASS
HSDPA	4.36	4.59	4.26	13	PASS
HSUPA	4.34	4.53	4.21	13	PASS



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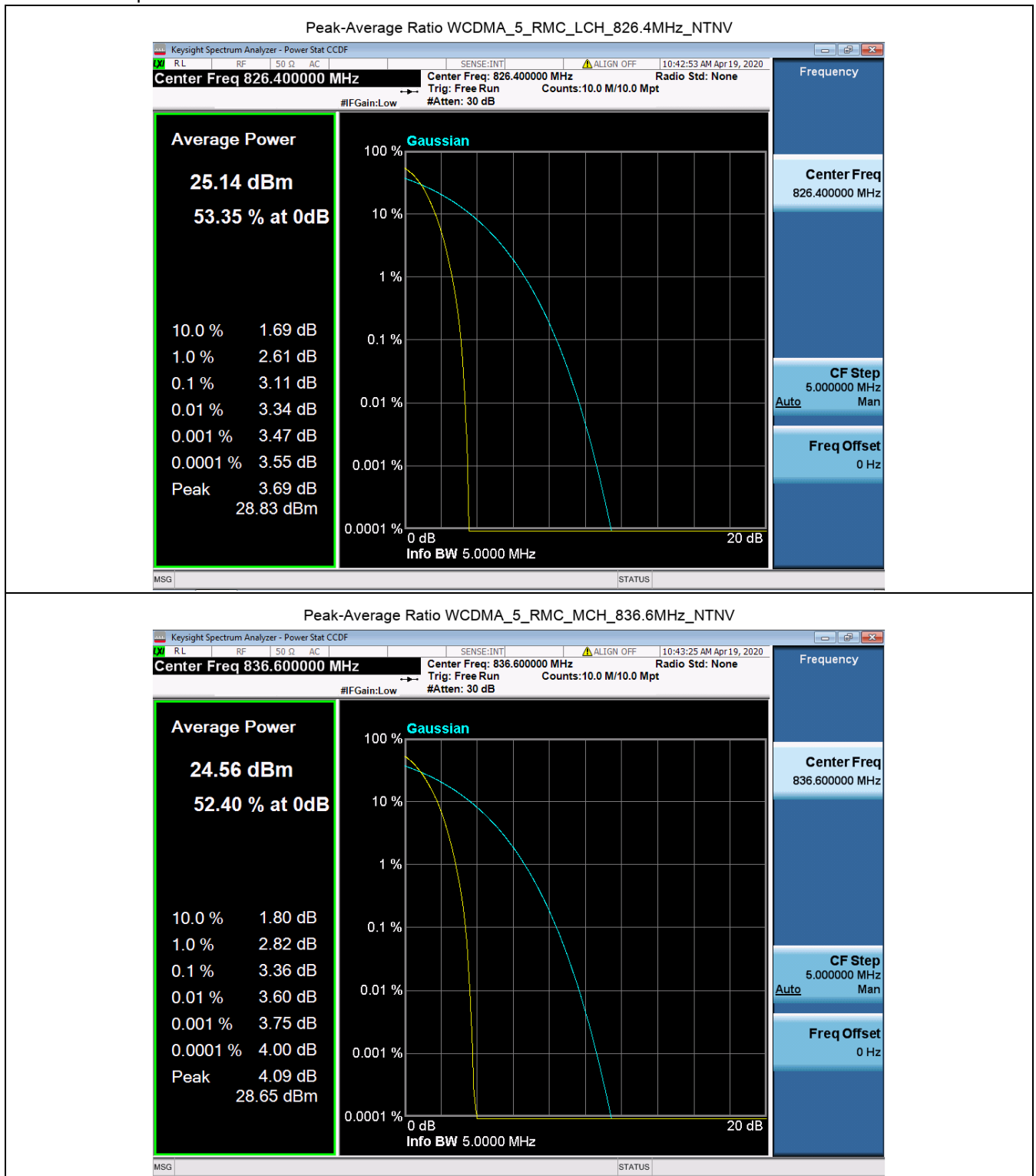
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5.2 Test Graph



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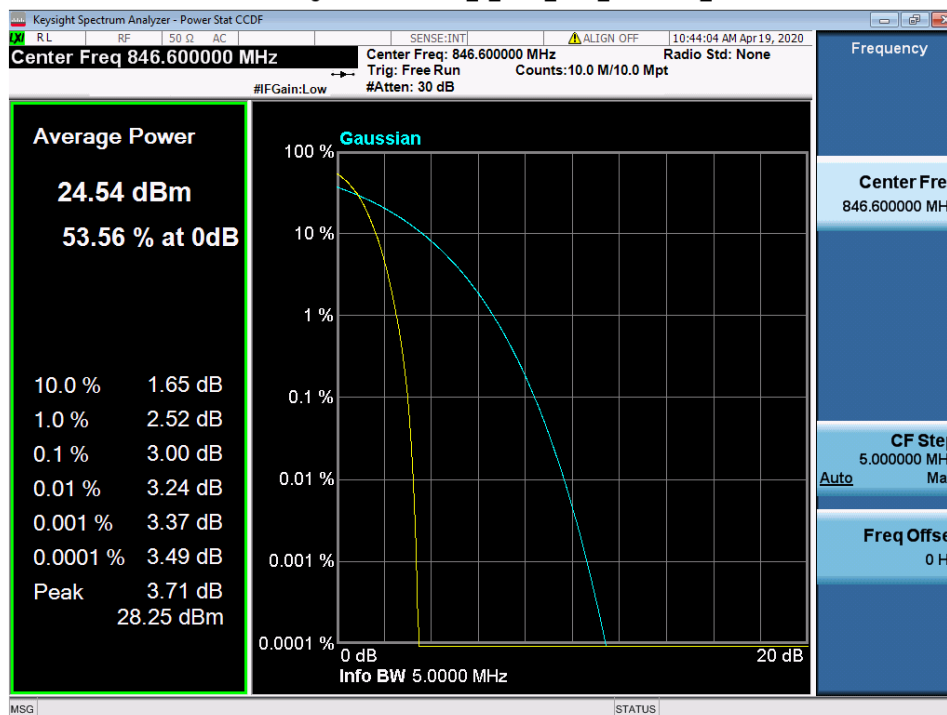


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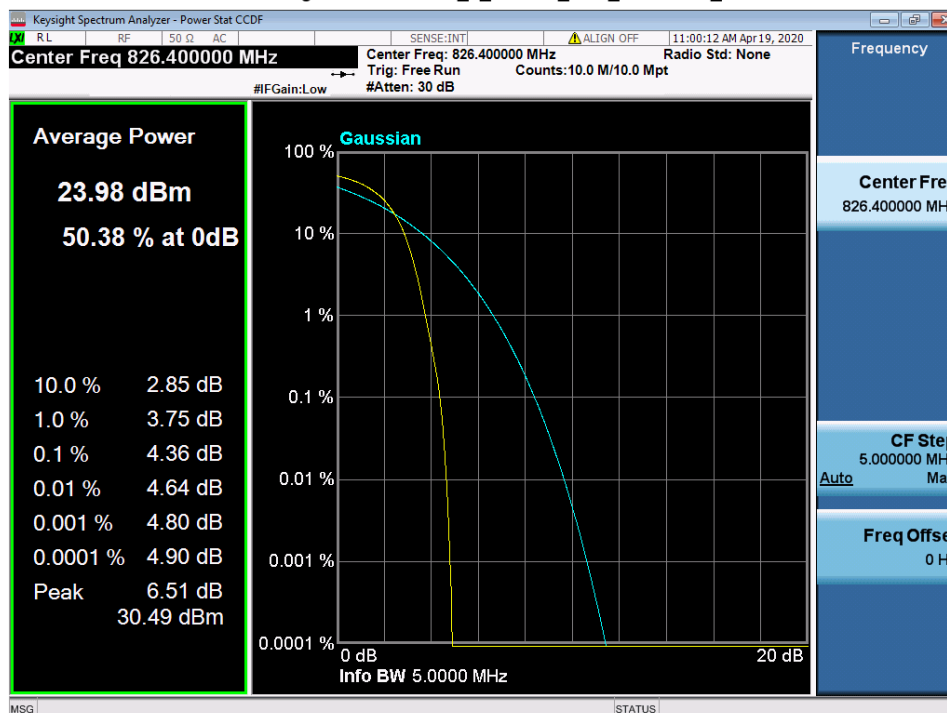
Report No.: SZEM191102027001

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Peak-Average Ratio WCDMA_5_RMC_HCH_846.6MHz_NTNV



Peak-Average Ratio WCDMA_5_HSDPA_LCH_826.4MHz_NTNV



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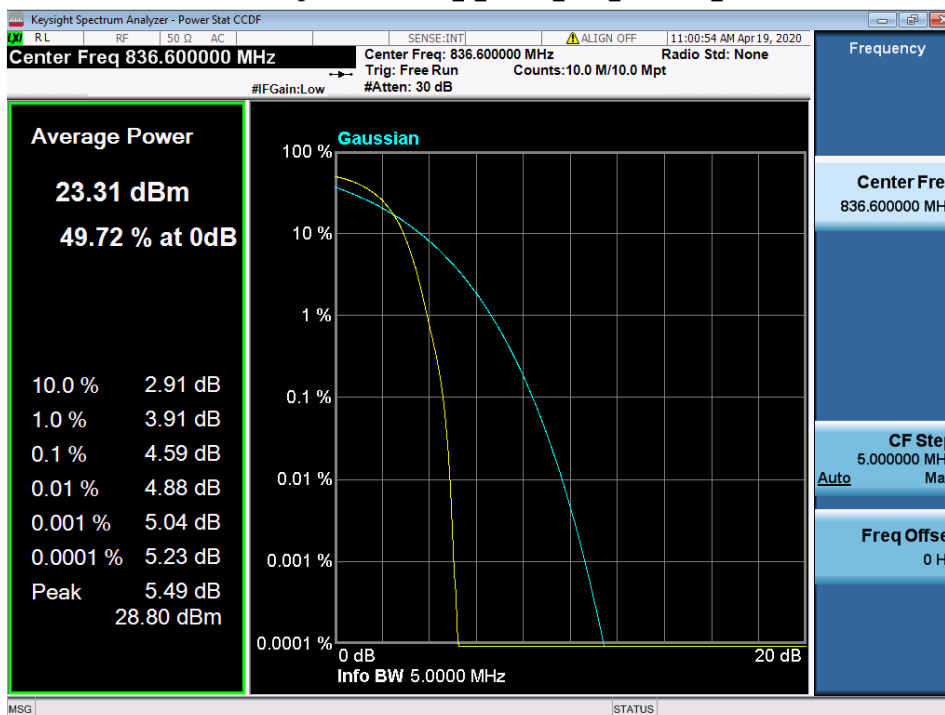
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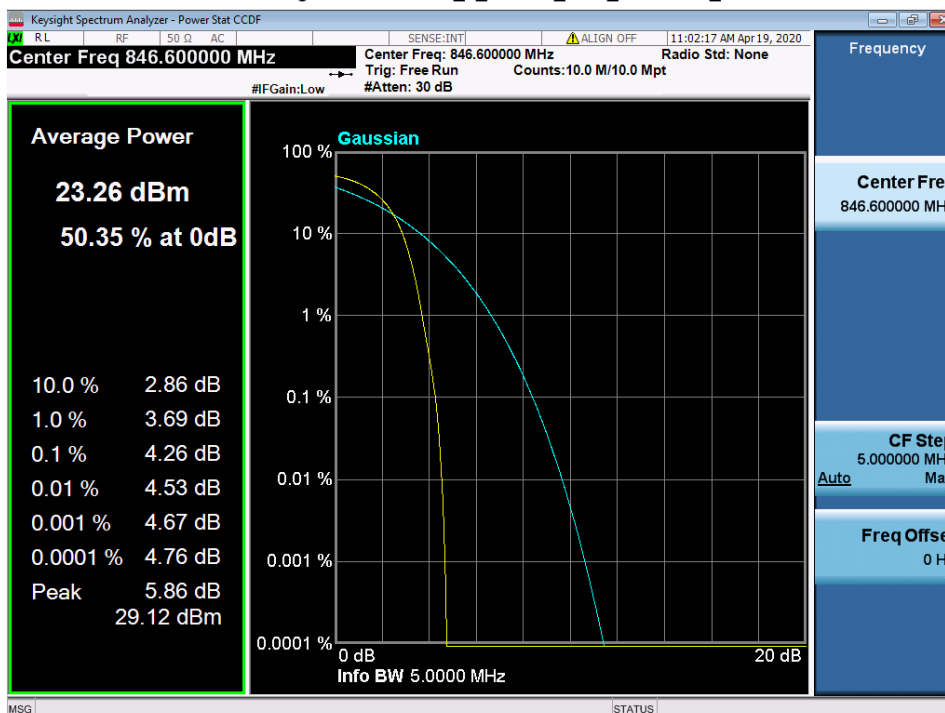
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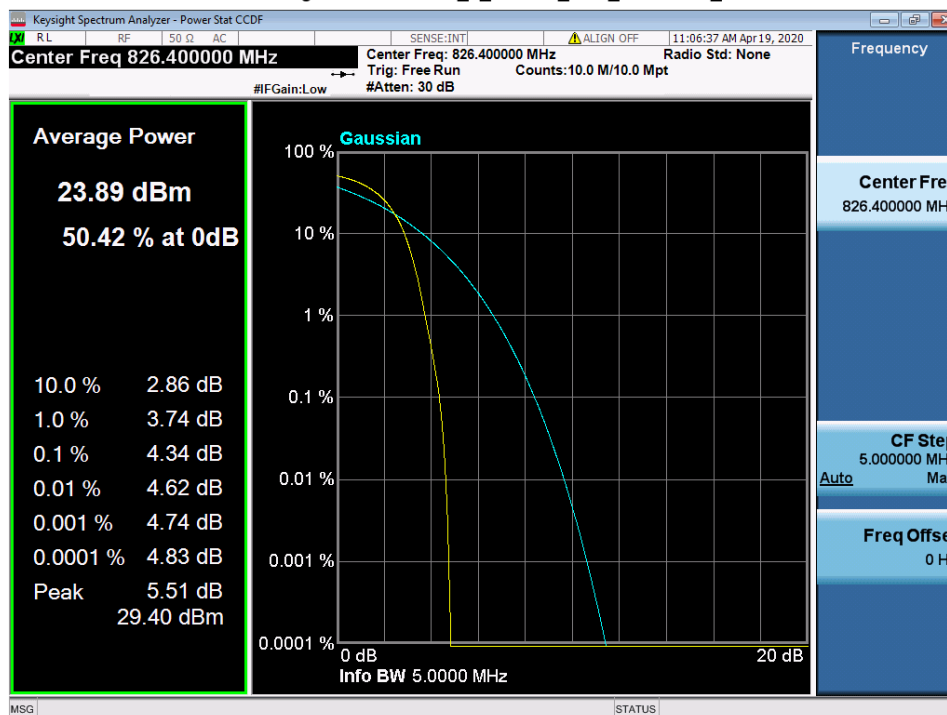
Peak-Average Ratio WCDMA_5_HSDPA_HCH_846.6MHz_NTNV



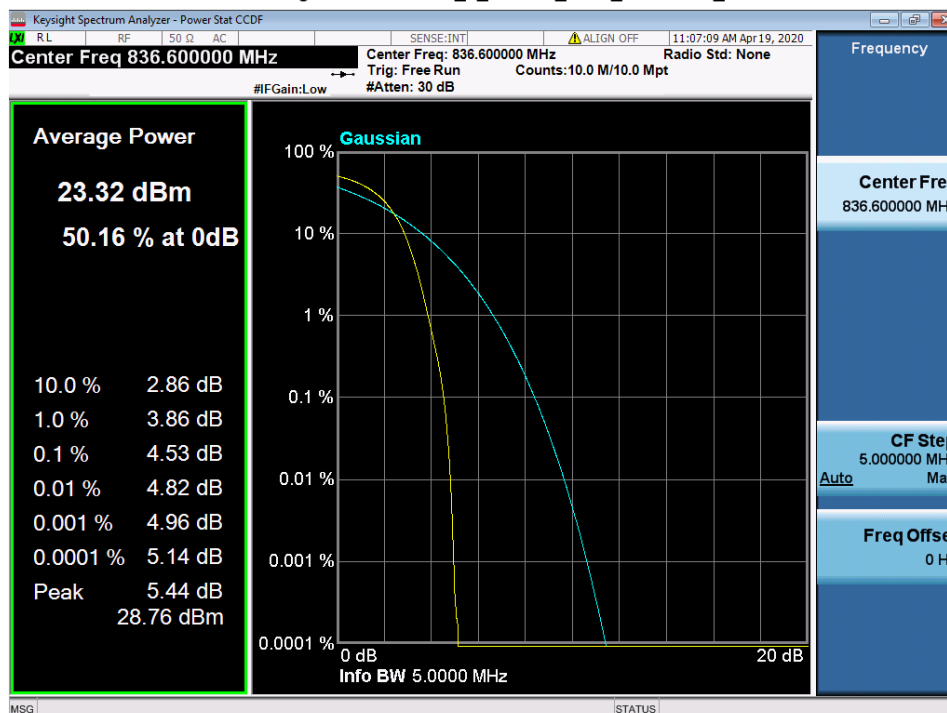
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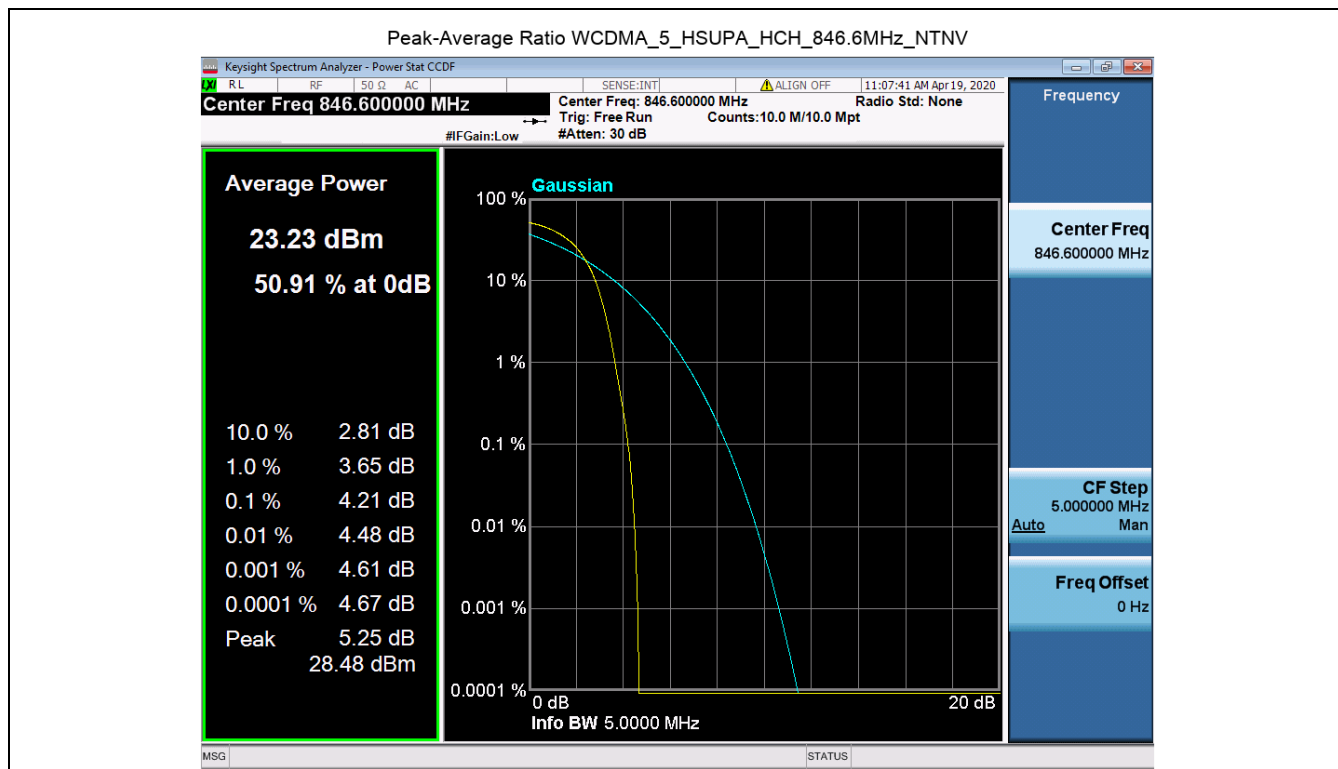
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Peak-Average Ratio WCDMA_5_HSUPA_MCH_836.6MHz_NTNV



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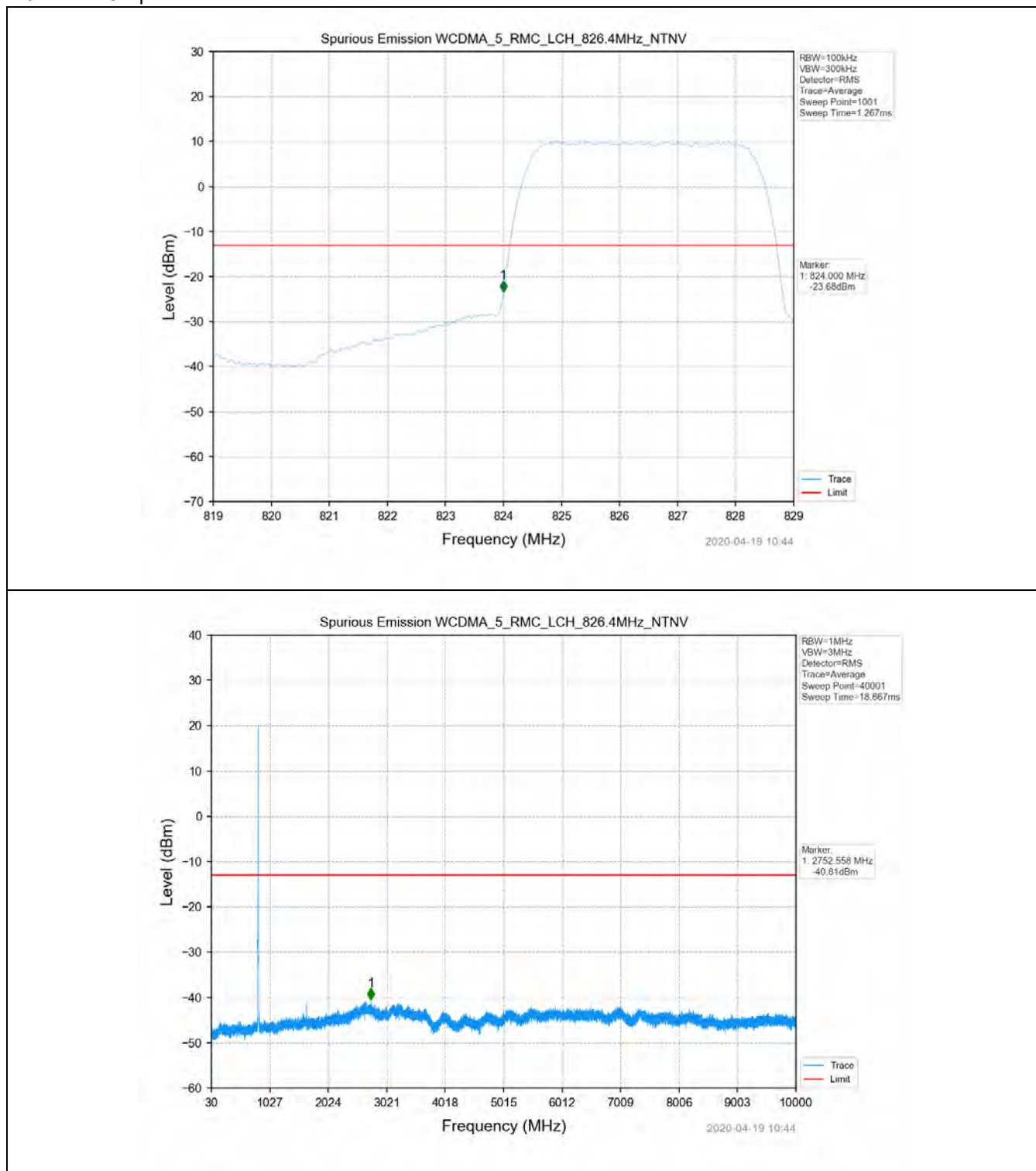
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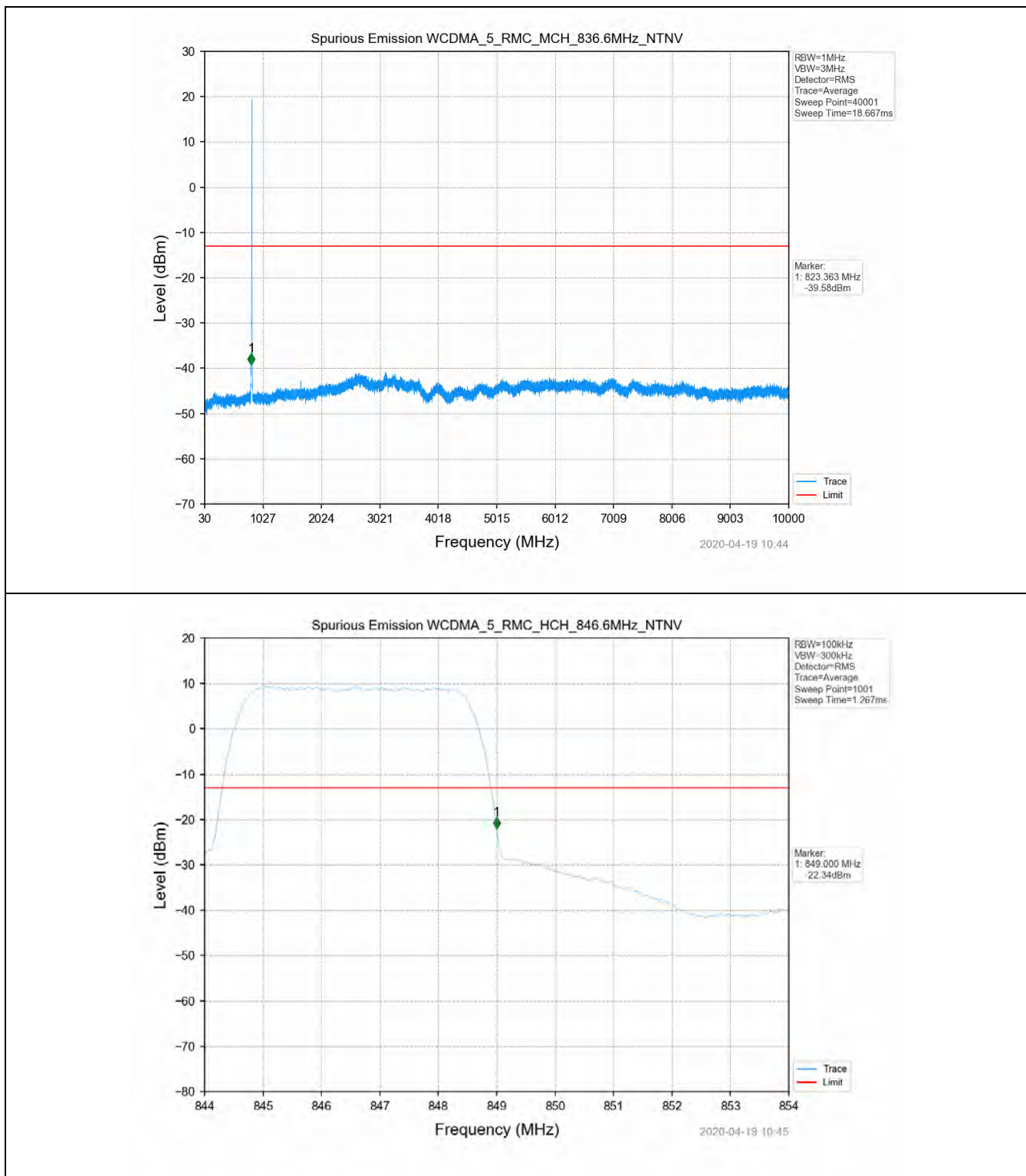
6. Spurious Emission

6.1 Test Graph



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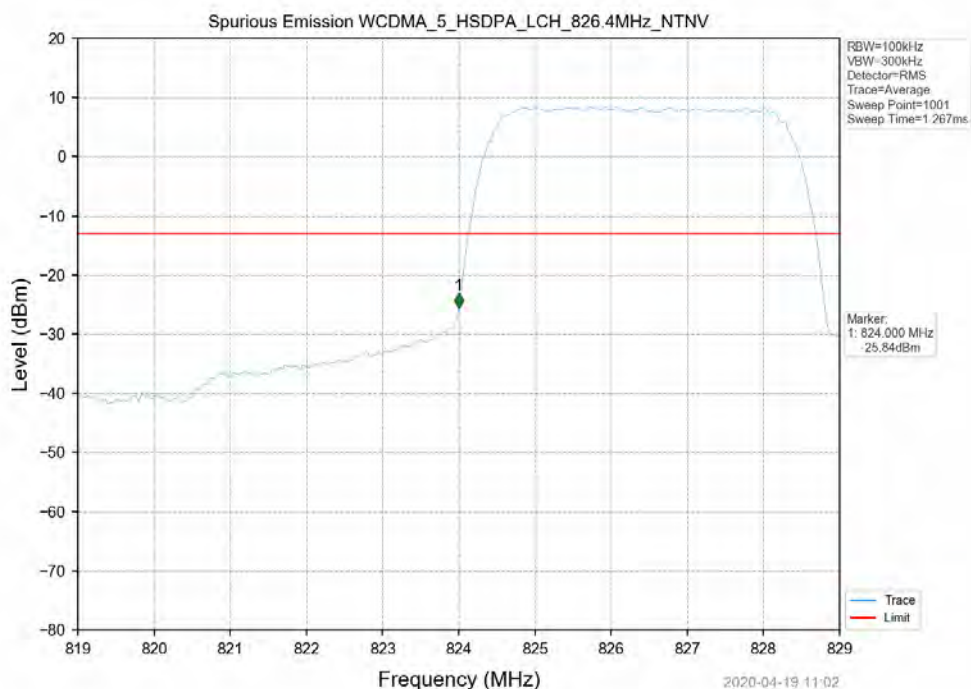
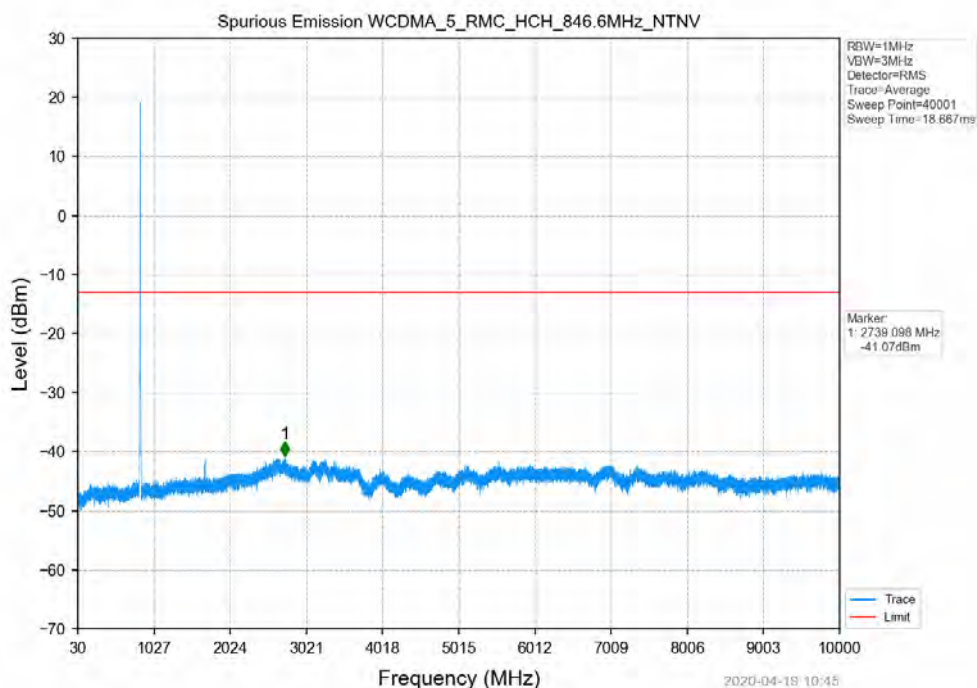


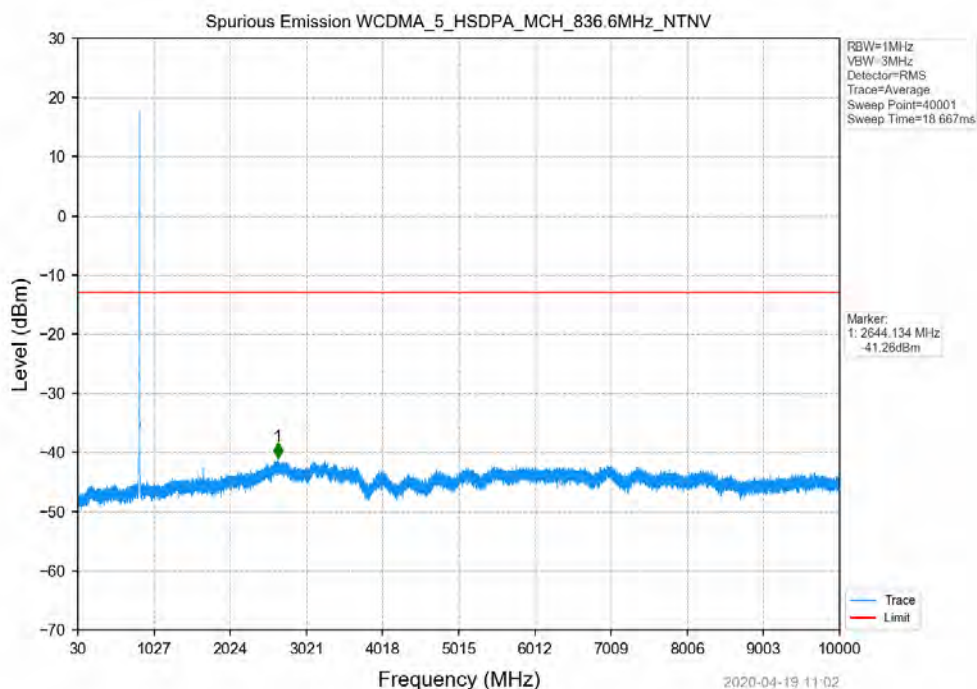
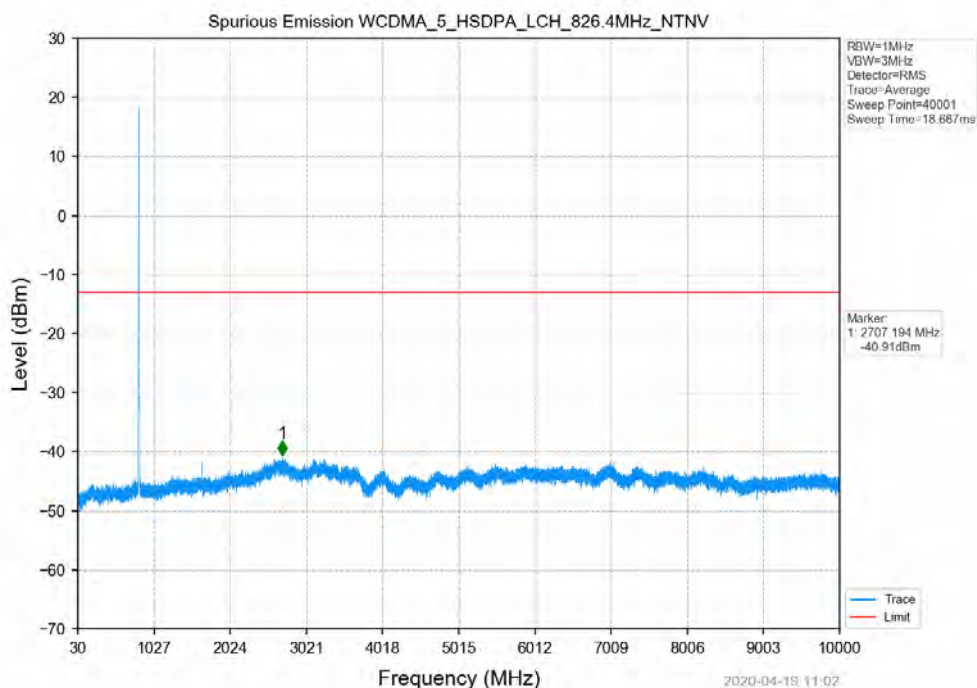
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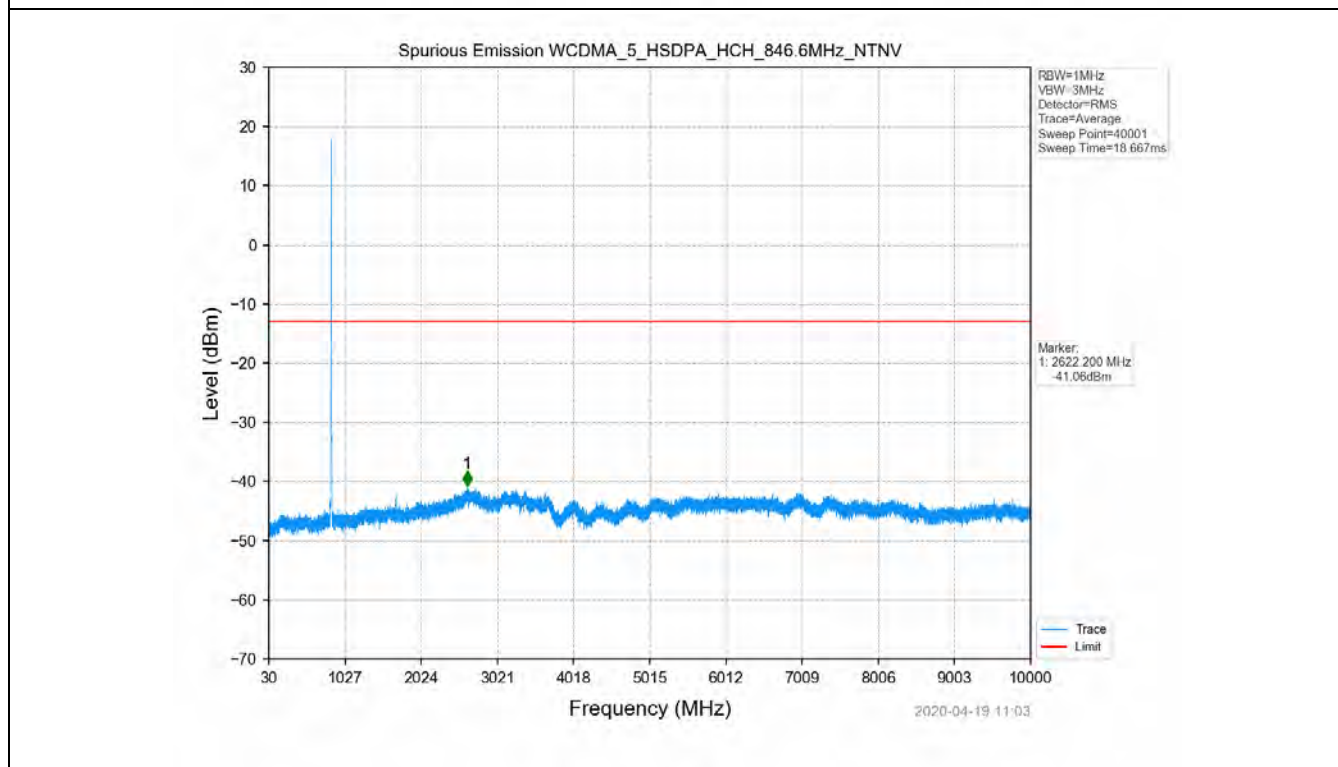
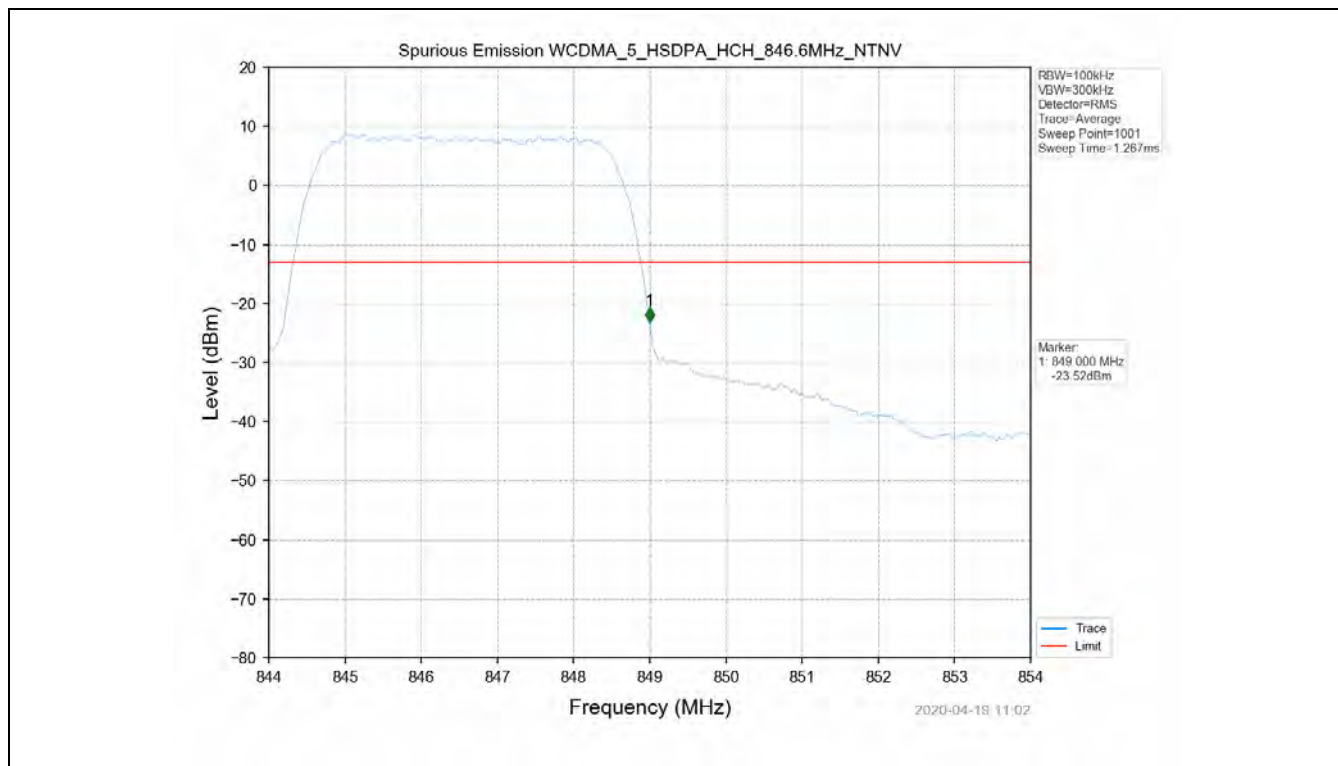
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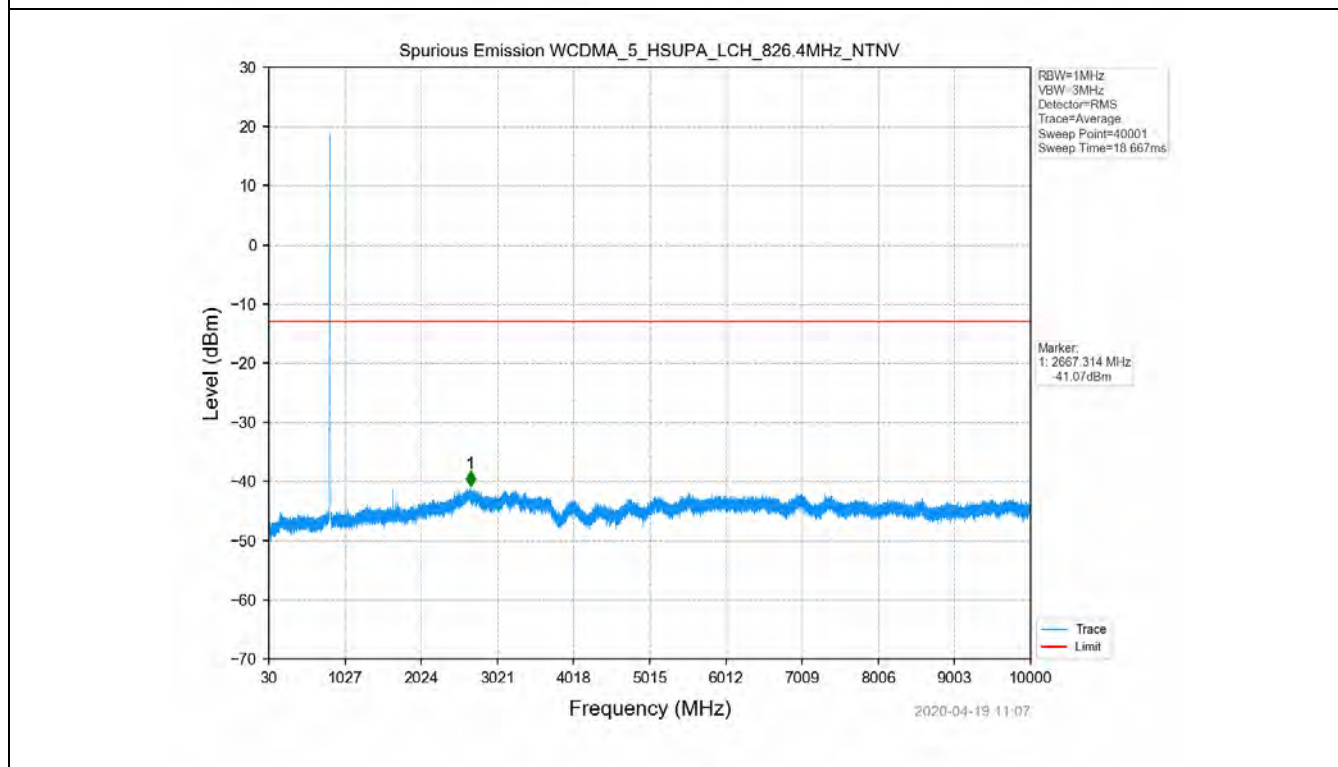
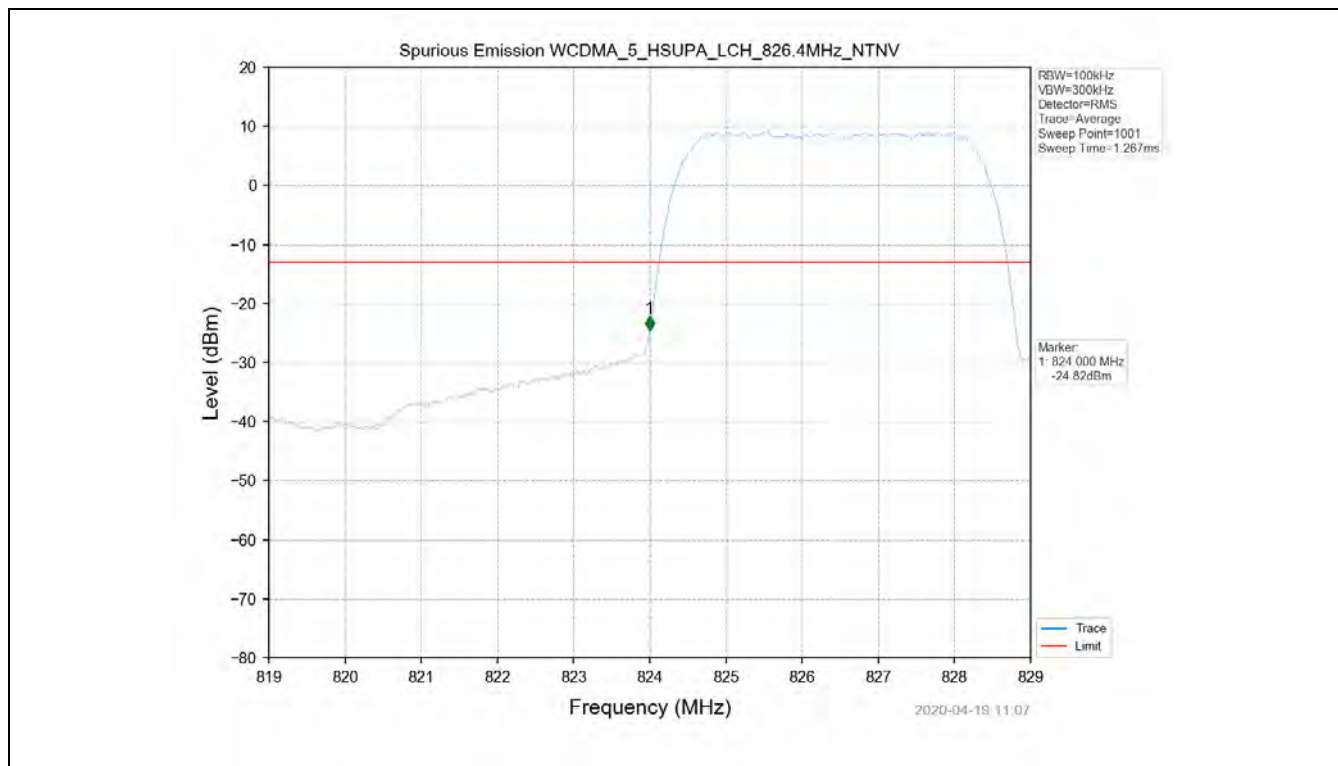
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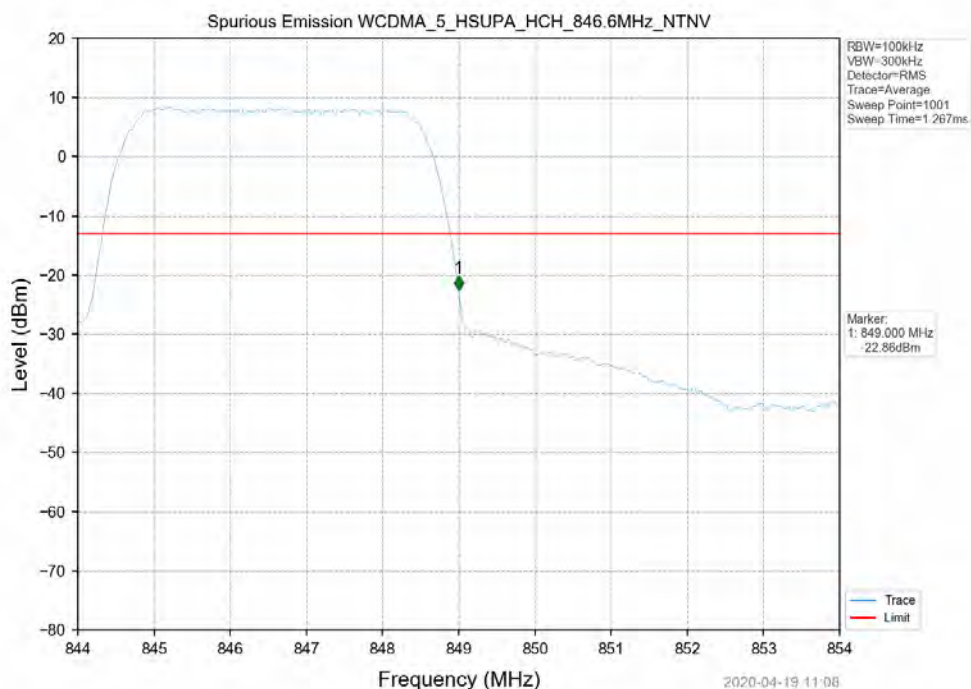
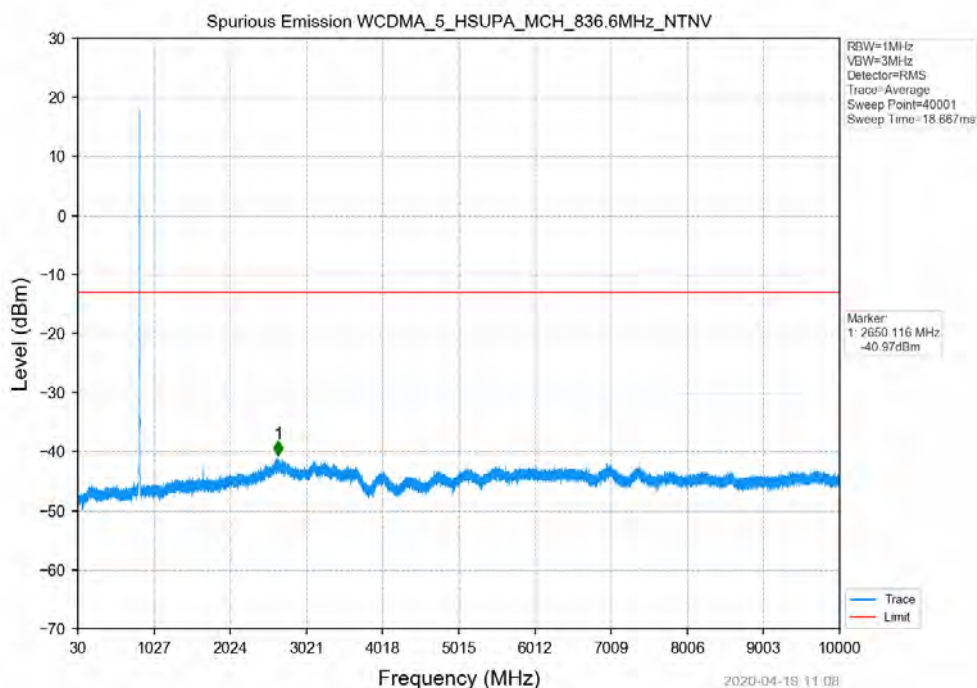
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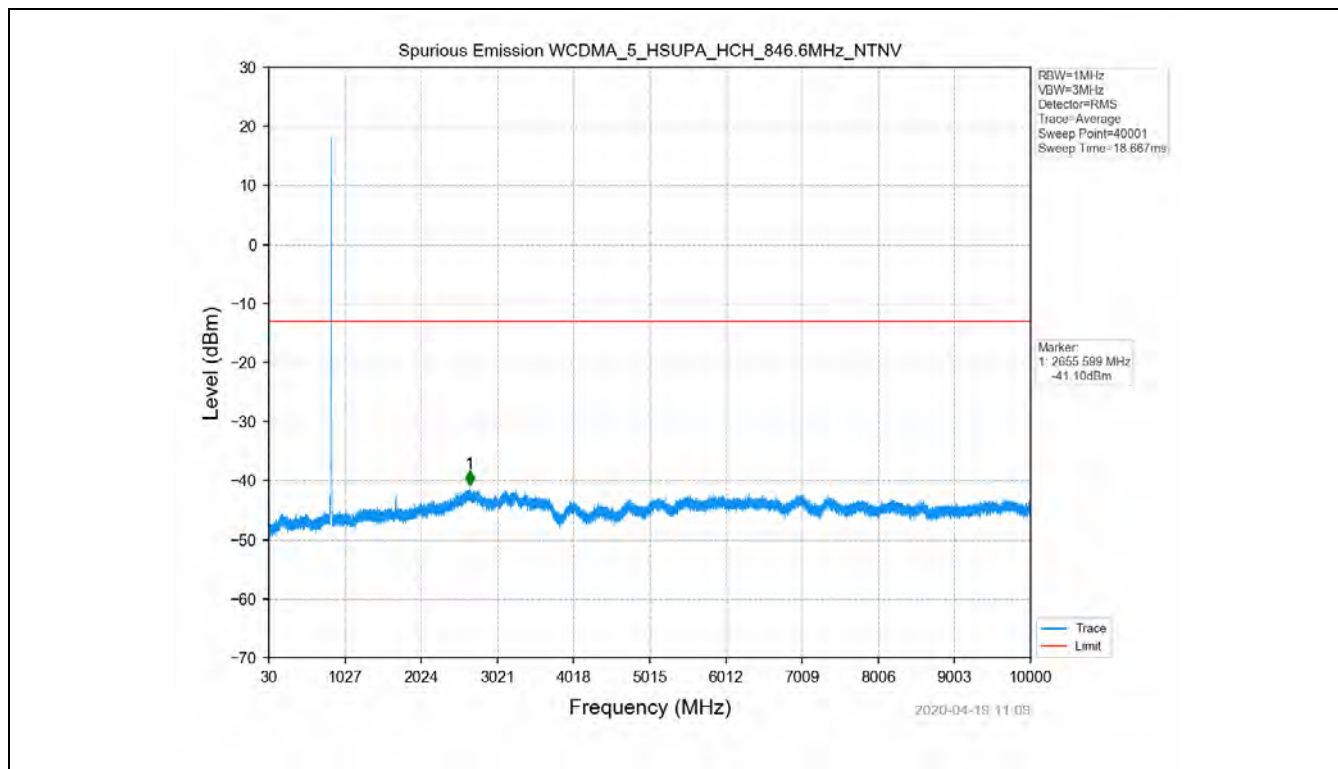






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7.3 Appendix GSM_Band_GSM850

1. Effective (Isotropic) Radiated Power Output Data

1.1 Test Result

Test Band: GSM850											
Test Mode		Conducted Power (dBm)			Antenna gain		ERP(dBm)			Limit (dBm)	Verdict
		LCH	MCH	HCH	(dBd)	(dBi)	LCH	MCH	HCH		
EGPRS	1 TX Slot	27.19	27.02	26.71	-0.52	1.63	26.67	26.5	26.19	38.45	PASS
	2 TX Slots	24.15	23.97	23.73	-0.52	1.63	23.63	23.45	23.21	38.45	PASS
	3 TX Slots	22.34	22.22	21.86	-0.52	1.63	21.82	21.7	21.34	38.45	PASS
	4 TX Slots	21.06	20.89	20.67	-0.52	1.63	20.54	20.37	20.15	38.45	PASS
GPRS	1 TX Slot	29.40	32.76	32.55	-0.52	1.63	28.88	32.24	32.03	38.45	PASS
	2 TX Slots	30.06	29.89	29.69	-0.52	1.63	29.54	29.37	29.17	38.45	PASS
	3 TX Slots	28.27	28.09	27.89	-0.52	1.63	27.75	27.57	27.37	38.45	PASS
	4 TX Slots	27.14	26.93	26.75	-0.52	1.63	26.62	26.41	26.23	38.45	PASS

Note:
 1) dBd = dBi - 2.15
 2) EIRP = Conducted output power + Antenna gain (dBi)
 3) ERP = Conducted output power + Antenna gain (dBd)

2. Frequency stability

2.1 Test Result

Test Band: GSM850 (Frequency Error VS. Voltage)										
Test Mode	Test Temp.	Test Volt.	Freq. Error (Hz)			Freq. vs. rated (ppm)			Limit (ppm)	Verdict
			LCH	MCH	HCH	LCH	MCH	HCH		
EGPRS	NT	LV	2.0000	-3.0000	-1.0000	0.0031	-0.0043	-0.0013	2.50	PASS
GPRS	NT	LV	13.0000	7.0000	5.0000	0.0165	0.0091	0.0063	2.50	PASS

Test Band: GSM850 (Frequency Error VS. Temperature)										
Test Mode	Test Volt.	Test Temp.	Freq. Error (Hz)			Freq. vs. rated (ppm)			Limit (ppm)	Verdict
			LCH	MCH	HCH	LCH	MCH	HCH		
EGPRS	NV	-30.00	1.0000	-3.0000	0.0000	0.0022	-0.0047	0.0002	2.50	PASS
		-20.00	3.0000	-3.0000	-2.0000	0.0042	-0.0045	-0.0031	2.50	PASS
		-10.00	4.0000	0.0000	-1.0000	0.0050	-0.0011	-0.0020	2.50	PASS
		0.00	4.0000	0.0000	0.0000	0.0052	-0.0007	-0.0006	2.50	PASS
		10.00	2.0000	0.0000	-3.0000	0.0025	0.0004	-0.0044	2.50	PASS
		20.00	0.0000	-3.0000	0.0000	0.0012	-0.0046	0.0000	2.50	PASS
		30.00	-2.0000	-3.0000	0.0000	-0.0034	-0.0046	-0.0008	2.50	PASS
		40.00	0.0000	-2.0000	-4.0000	0.0003	-0.0035	-0.0056	2.50	PASS
		50.00	-2.0000	-3.0000	-3.0000	-0.0030	-0.0041	-0.0045	2.50	PASS



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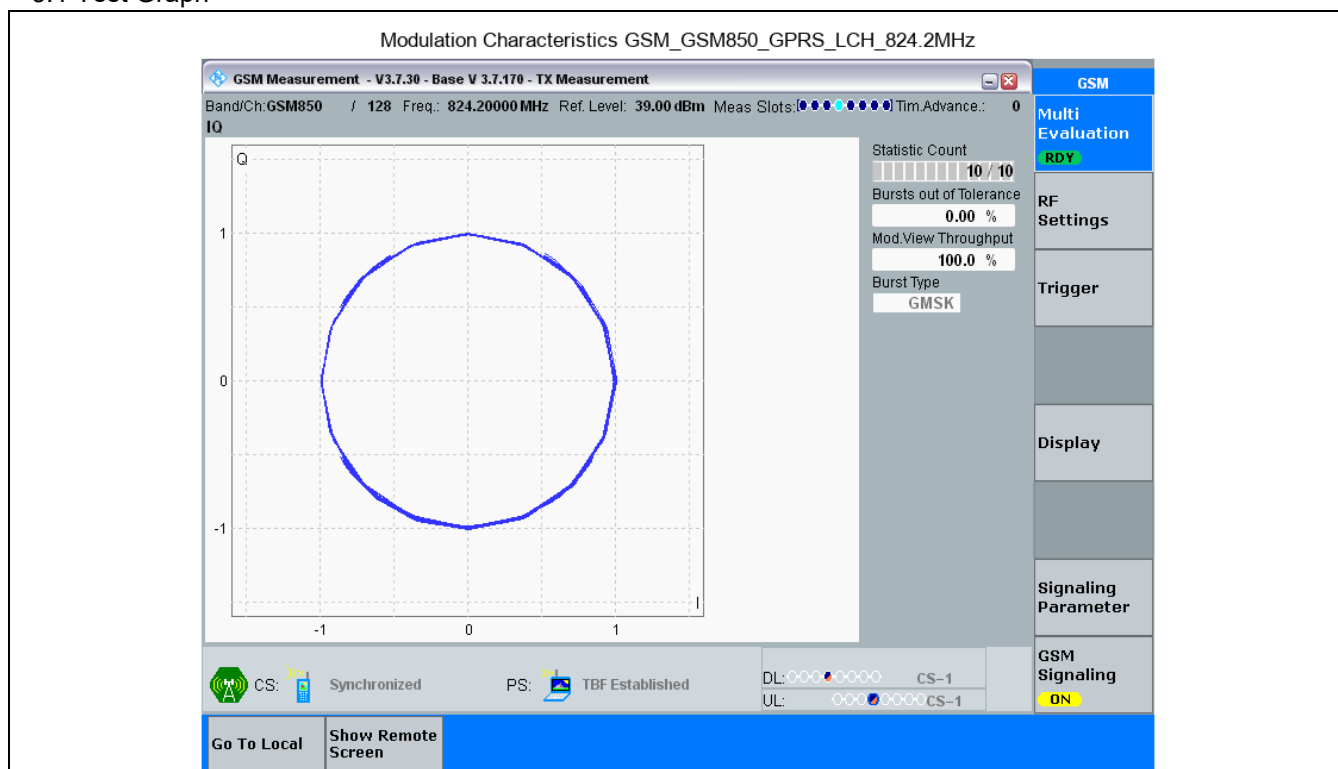
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GPRS	NV	-30.00	12.0000	4.0000	3.0000	0.0150	0.0048	0.0043	2.50	PASS
		-20.00	9.0000	2.0000	3.0000	0.0115	0.0030	0.0040	2.50	PASS
		-10.00	9.0000	6.0000	2.0000	0.0114	0.0076	0.0031	2.50	PASS
		0.00	5.0000	5.0000	5.0000	0.0067	0.0062	0.0069	2.50	PASS
		10.00	4.0000	4.0000	7.0000	0.0060	0.0054	0.0092	2.50	PASS
		20.00	5.0000	6.0000	9.0000	0.0069	0.0075	0.0111	2.50	PASS
		30.00	7.0000	5.0000	7.0000	0.0095	0.0069	0.0090	2.50	PASS
		40.00	8.0000	5.0000	5.0000	0.0098	0.0064	0.0059	2.50	PASS
		50.00	6.0000	5.0000	5.0000	0.0082	0.0062	0.0062	2.50	PASS

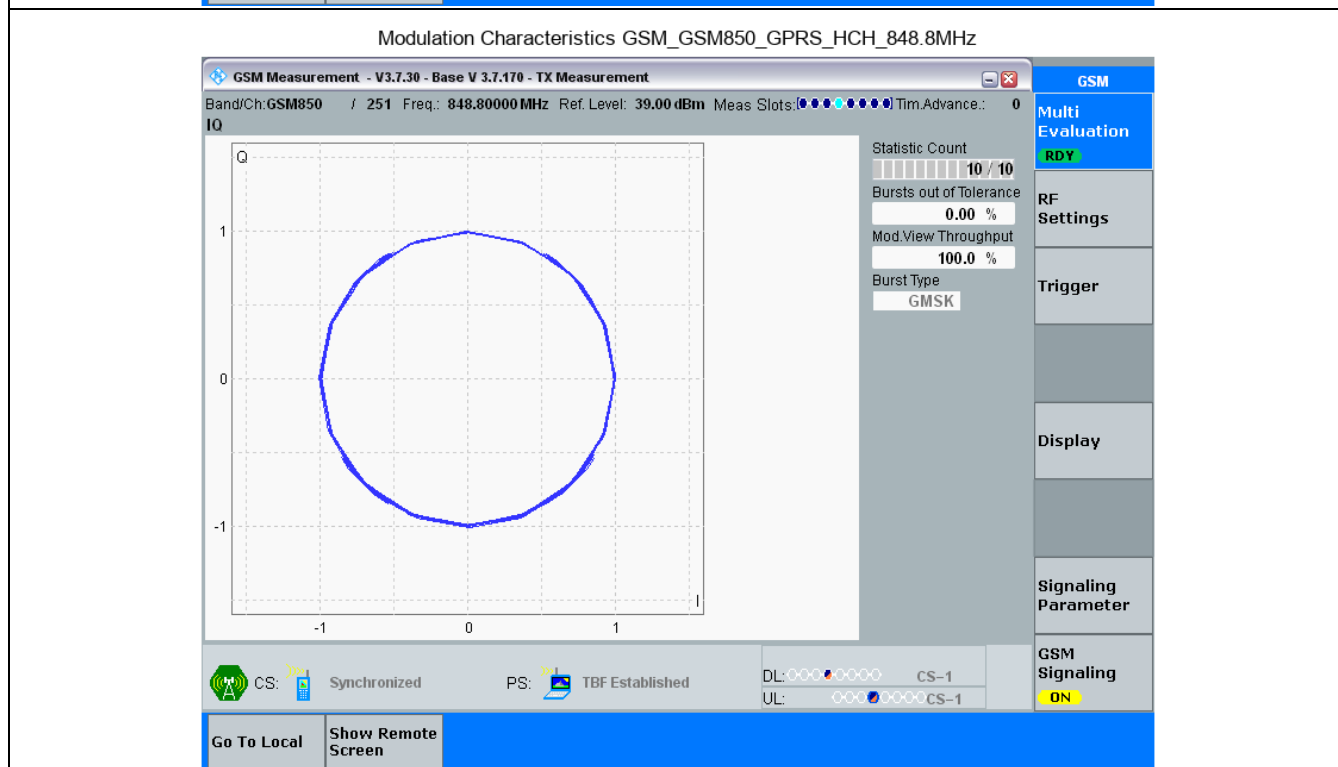
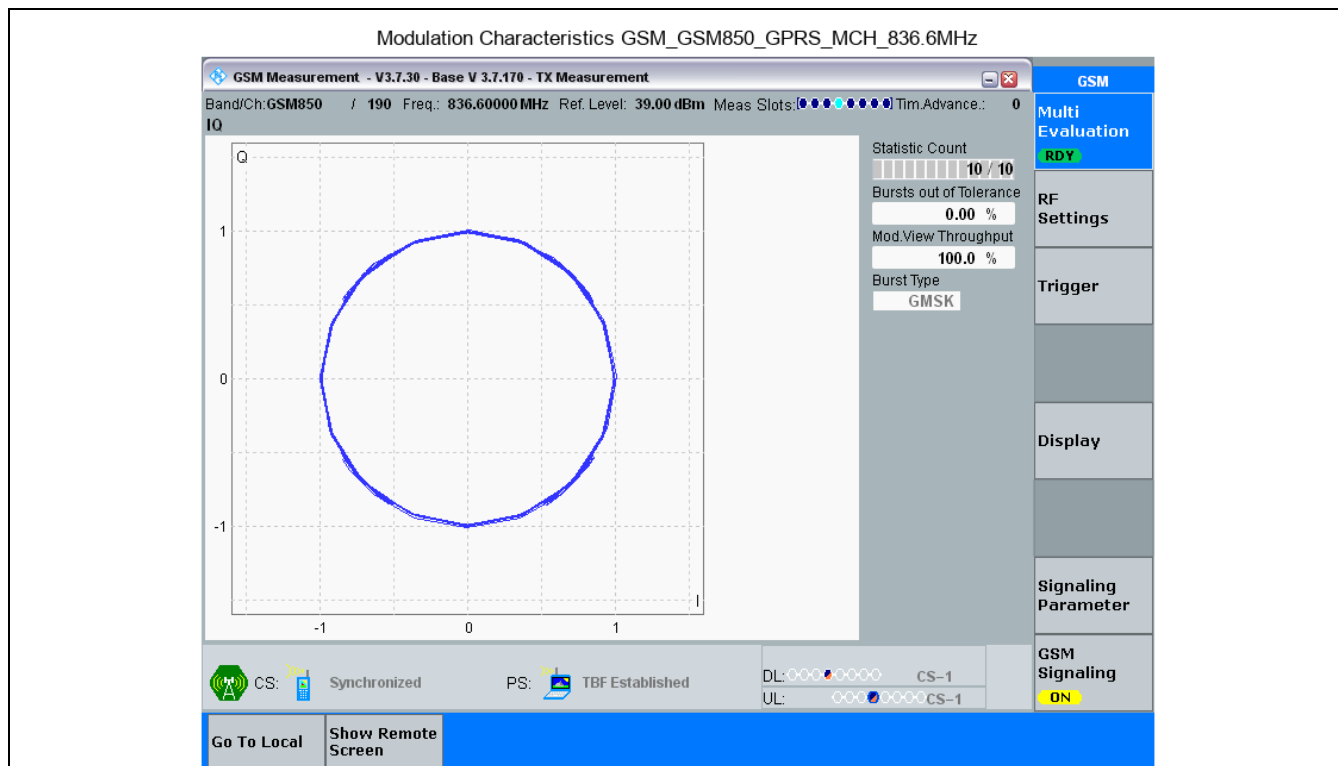
3. Modulation Characteristics

3.1 Test Graph



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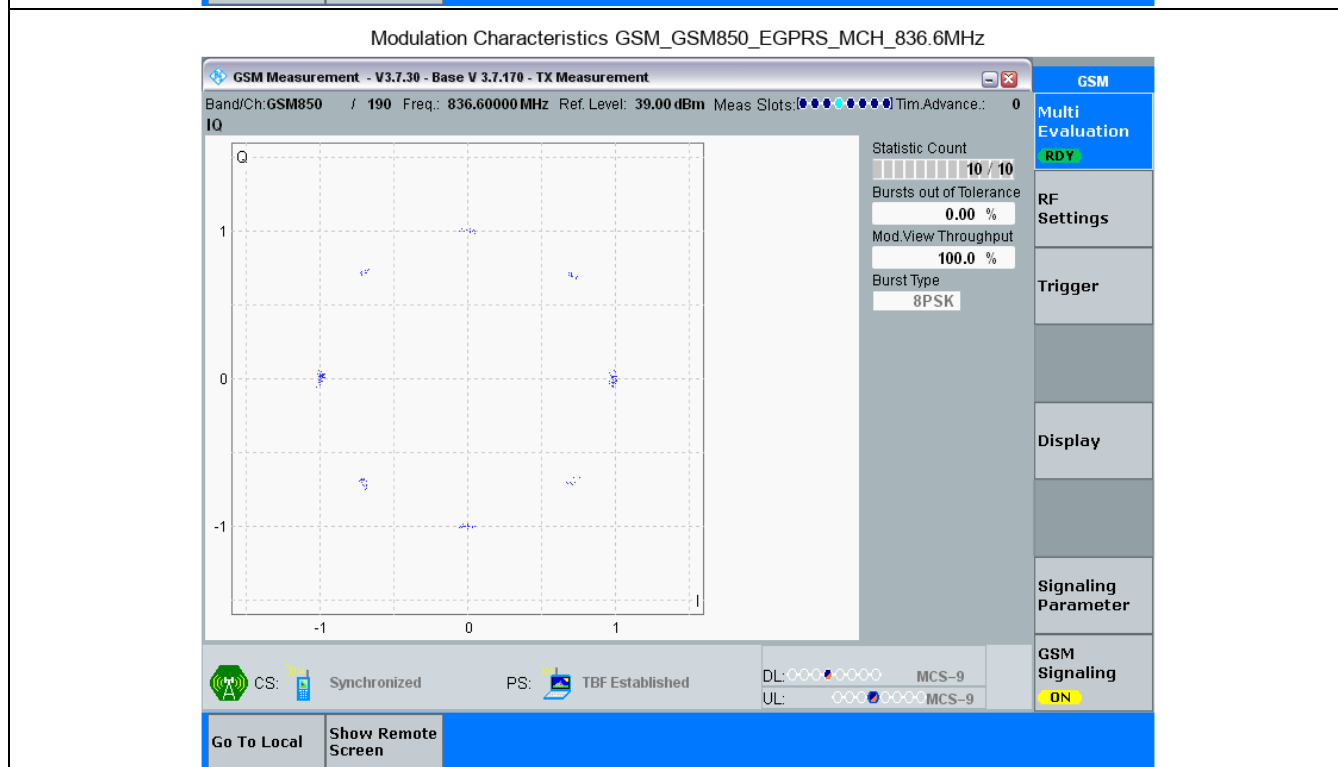
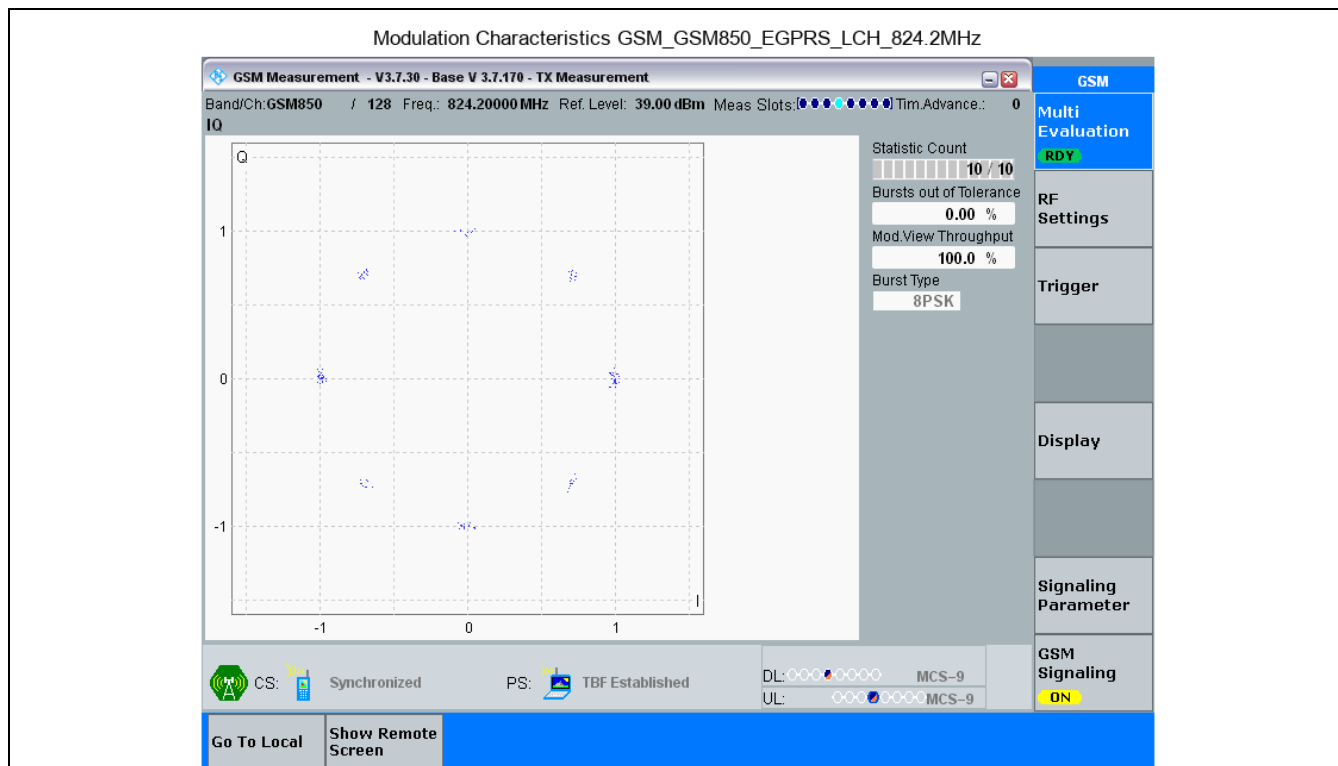


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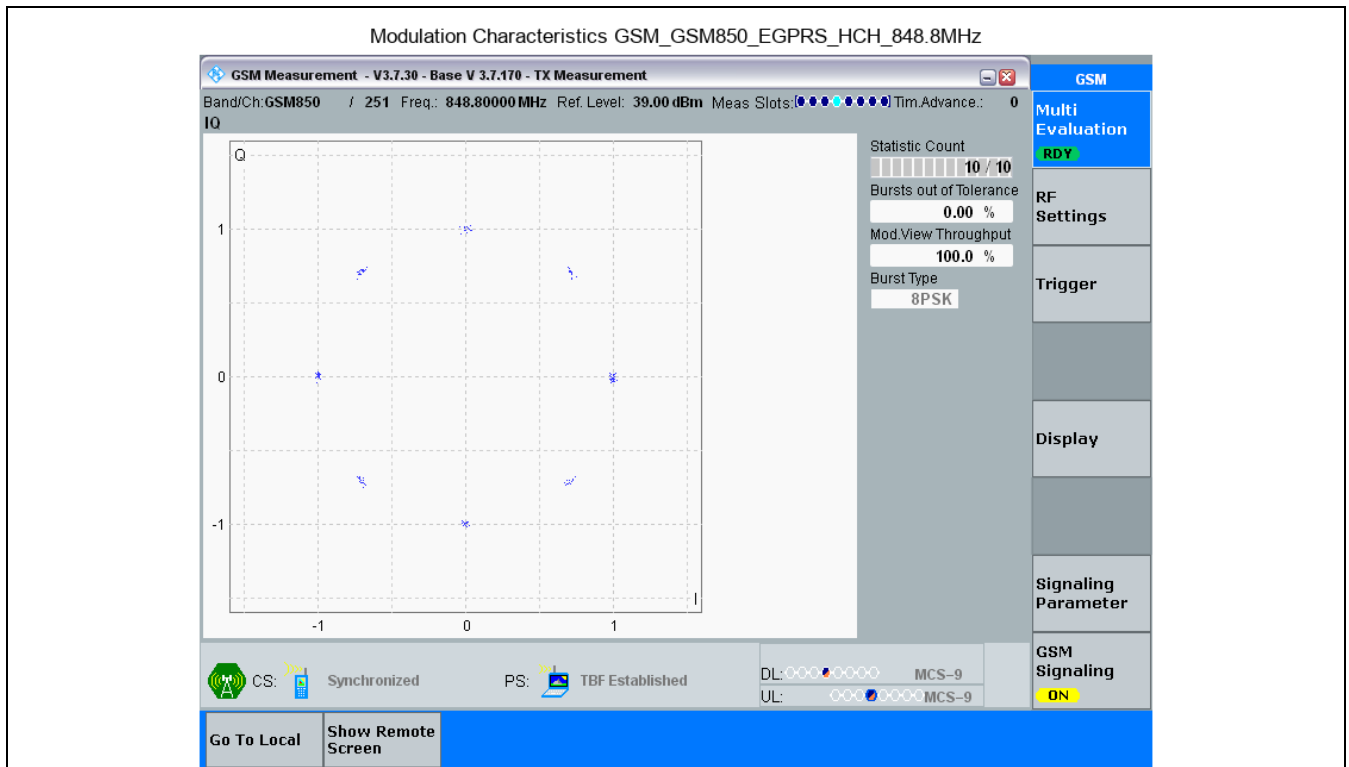


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4. 99% & 26dB Bandwidth

4.1 Test Result

Test Band: GSM850					
Test Mode	99% Occupied Bandwidth (MHz)			Limit	Verdict
	LCH	MCH	HCH		
EGPRS	0.260	0.240	0.240	N/A	PASS
GPRS	0.240	0.250	0.240	N/A	PASS



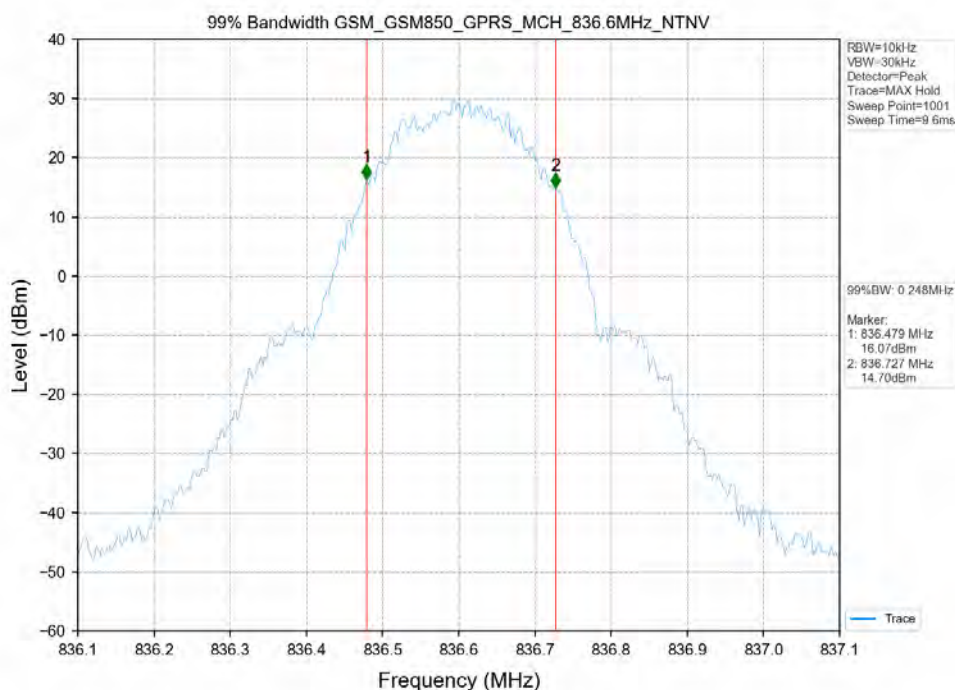
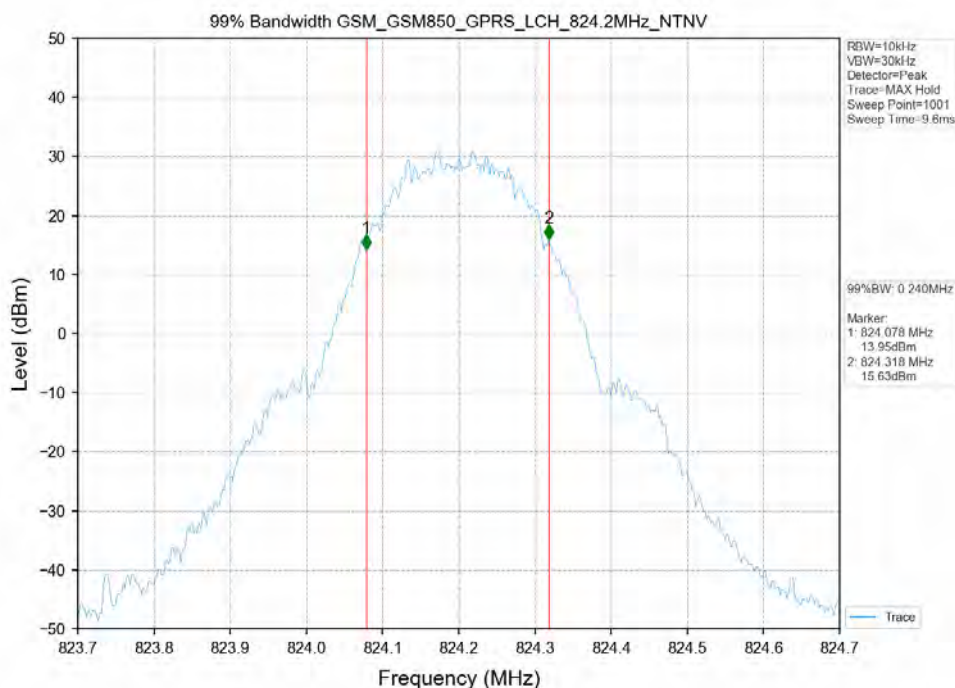
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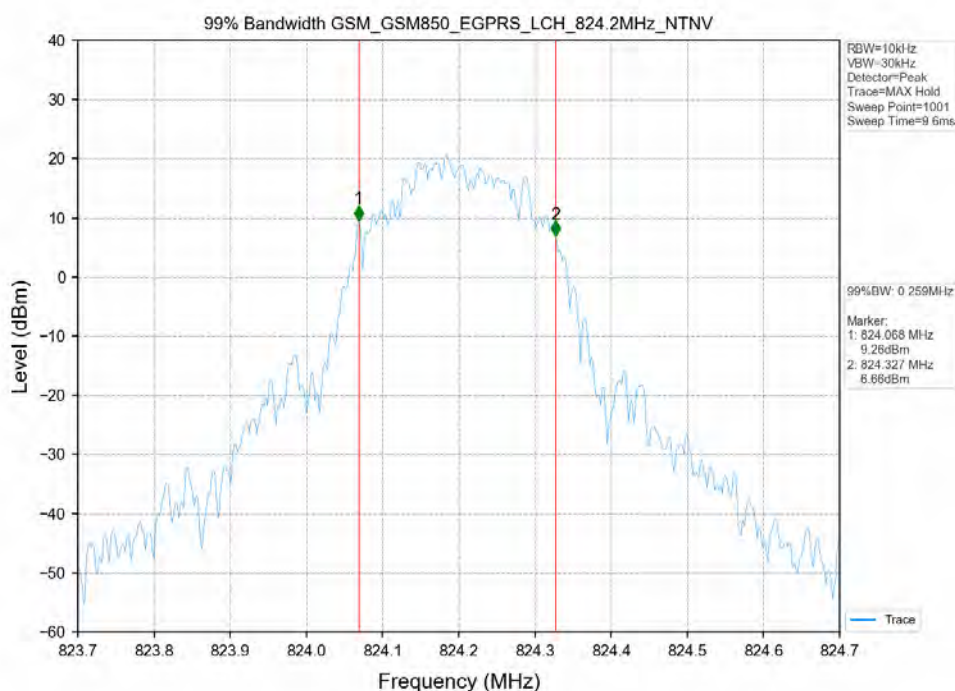
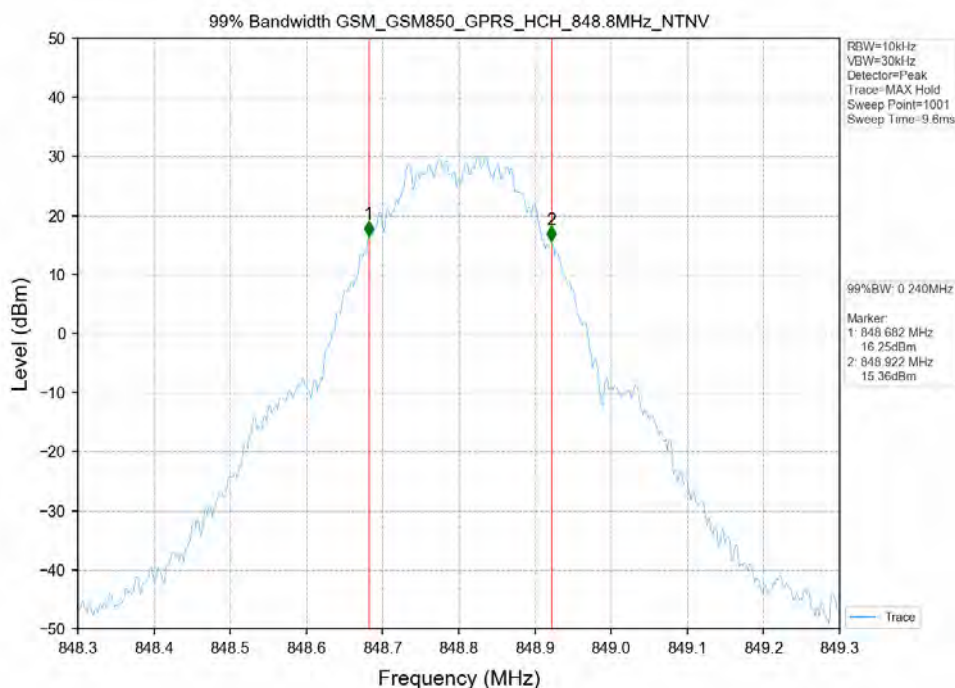
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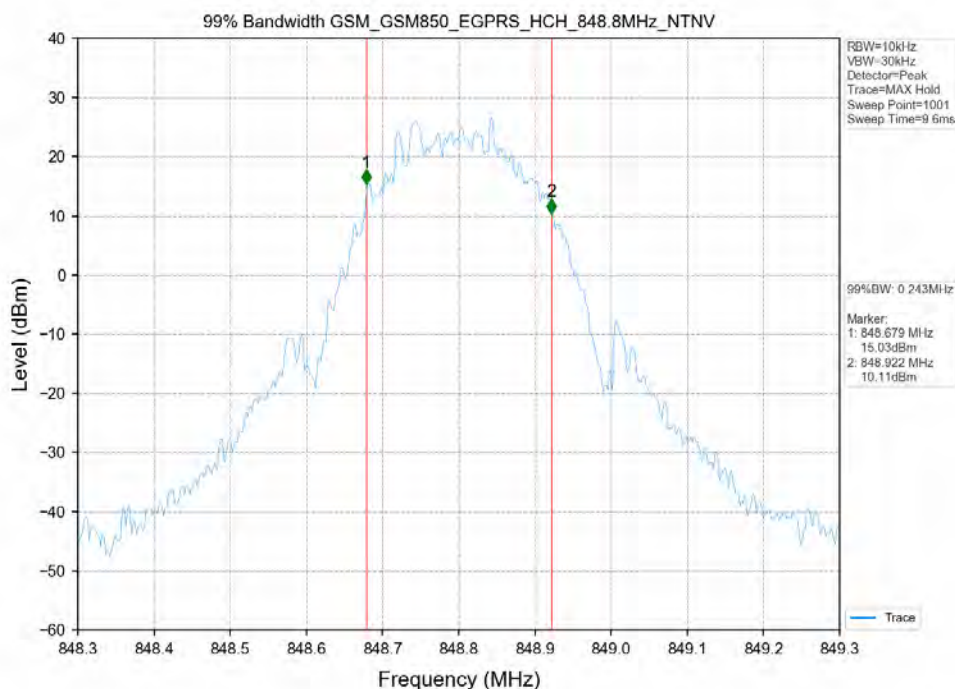
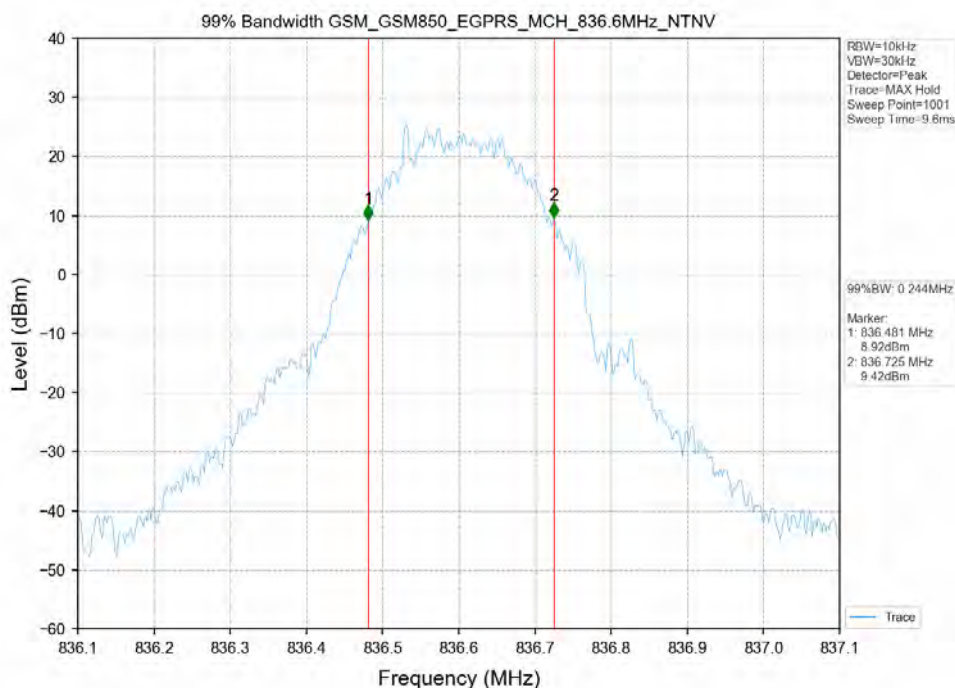
4.2 Test Graph



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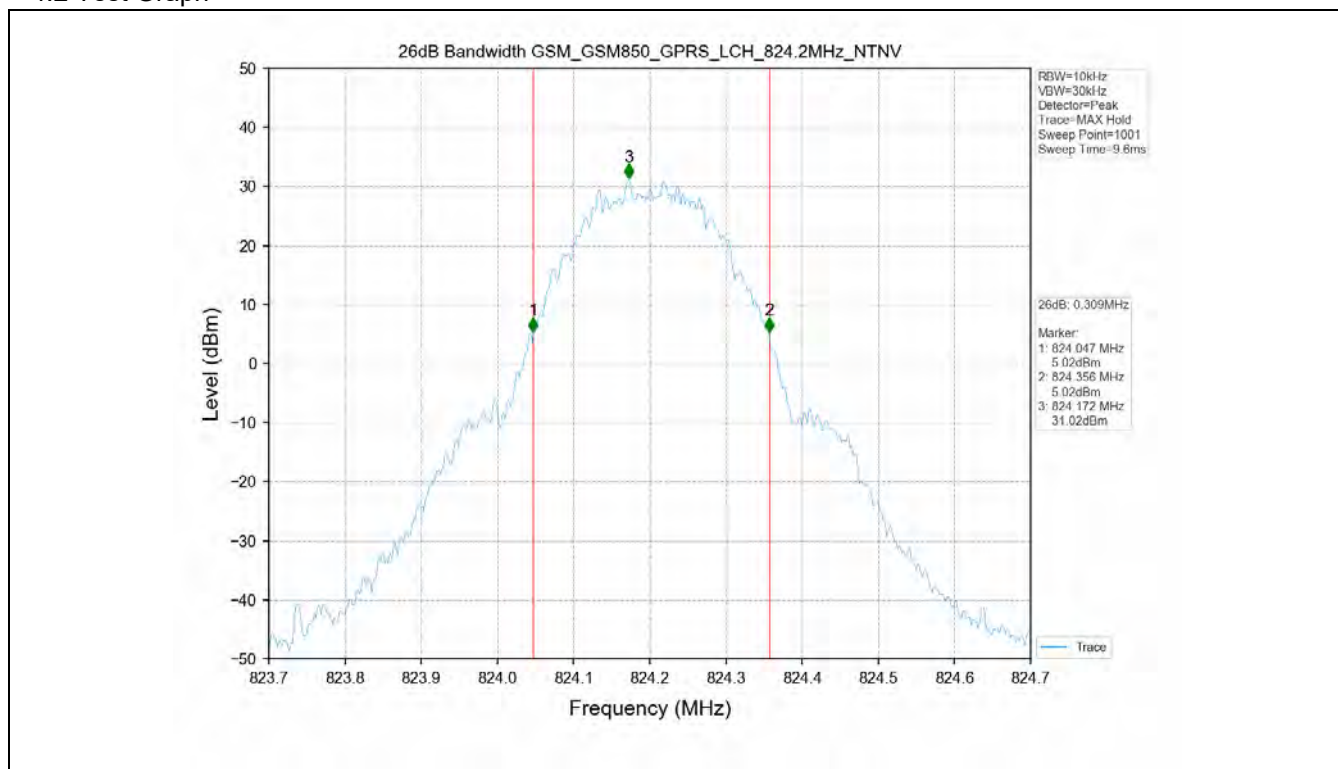
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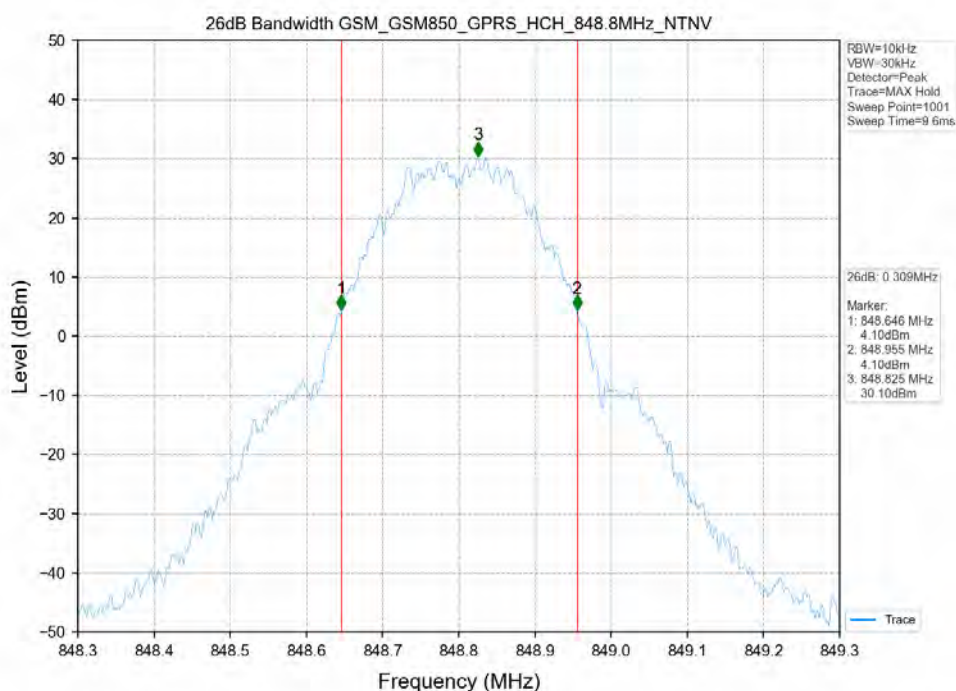
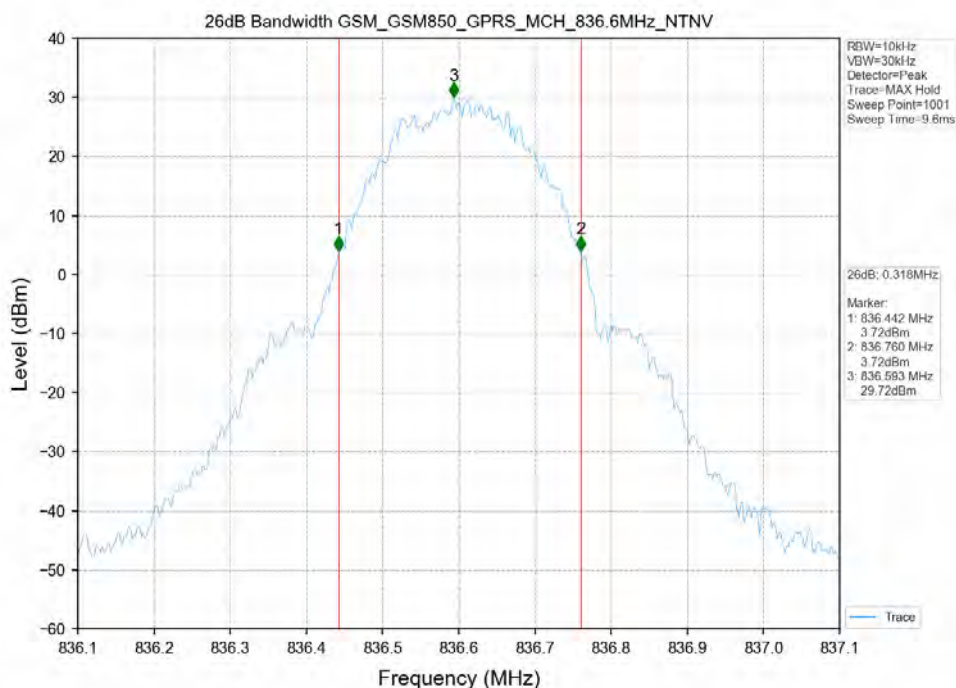
Test Band: GSM850					
Test Mode	26dB Bandwidth (MHz)			Limit	Verdict
	LCH	MCH	HCH		
EGPRS	0.310	0.320	0.310	N/A	PASS
GPRS	0.310	0.320	0.310	N/A	PASS

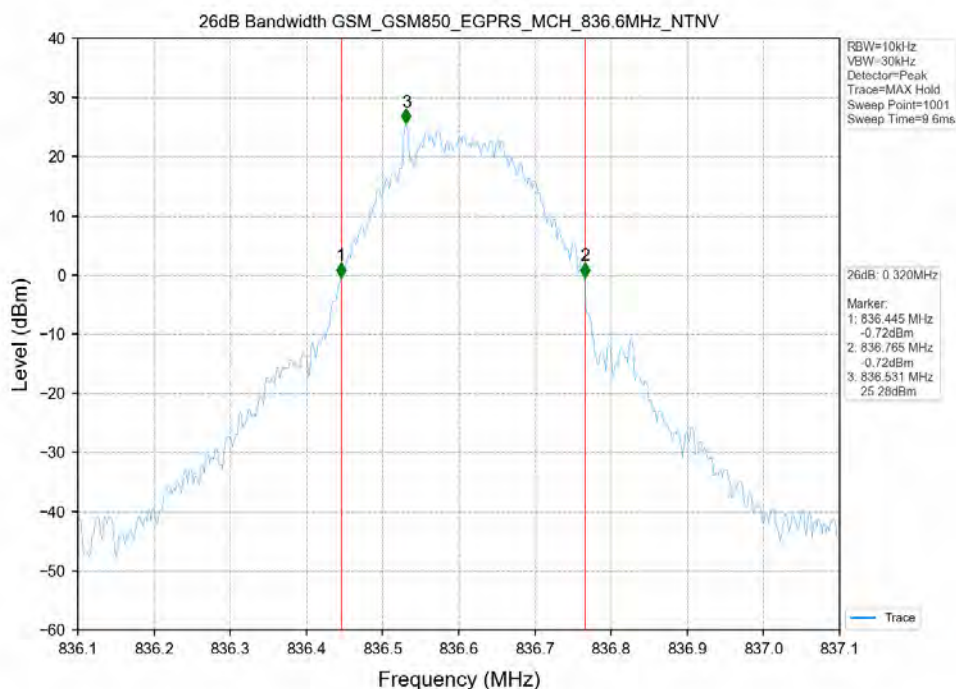
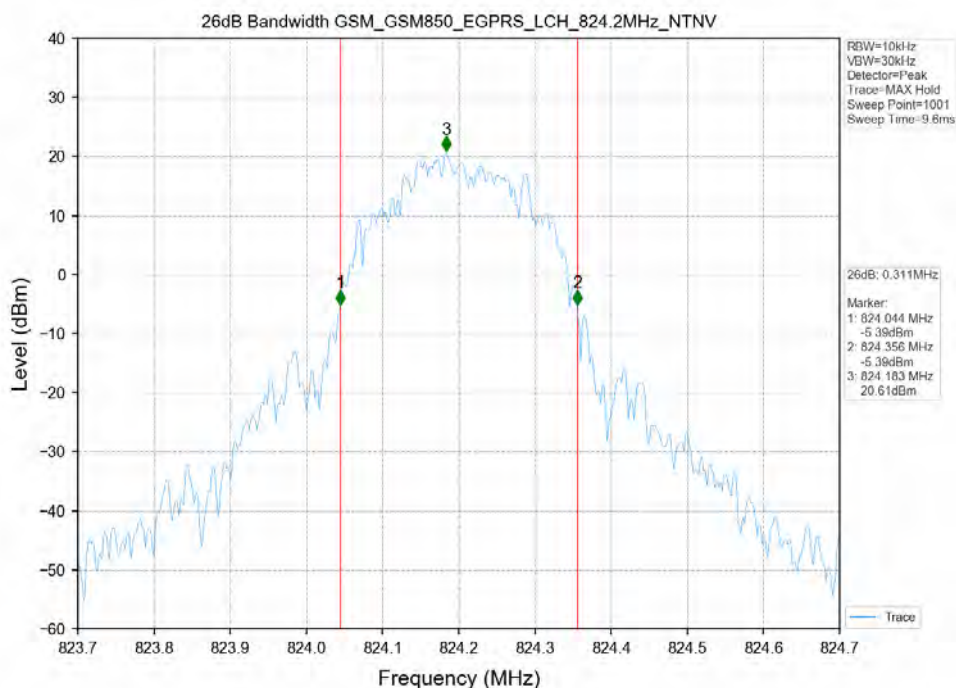
4.2 Test Graph

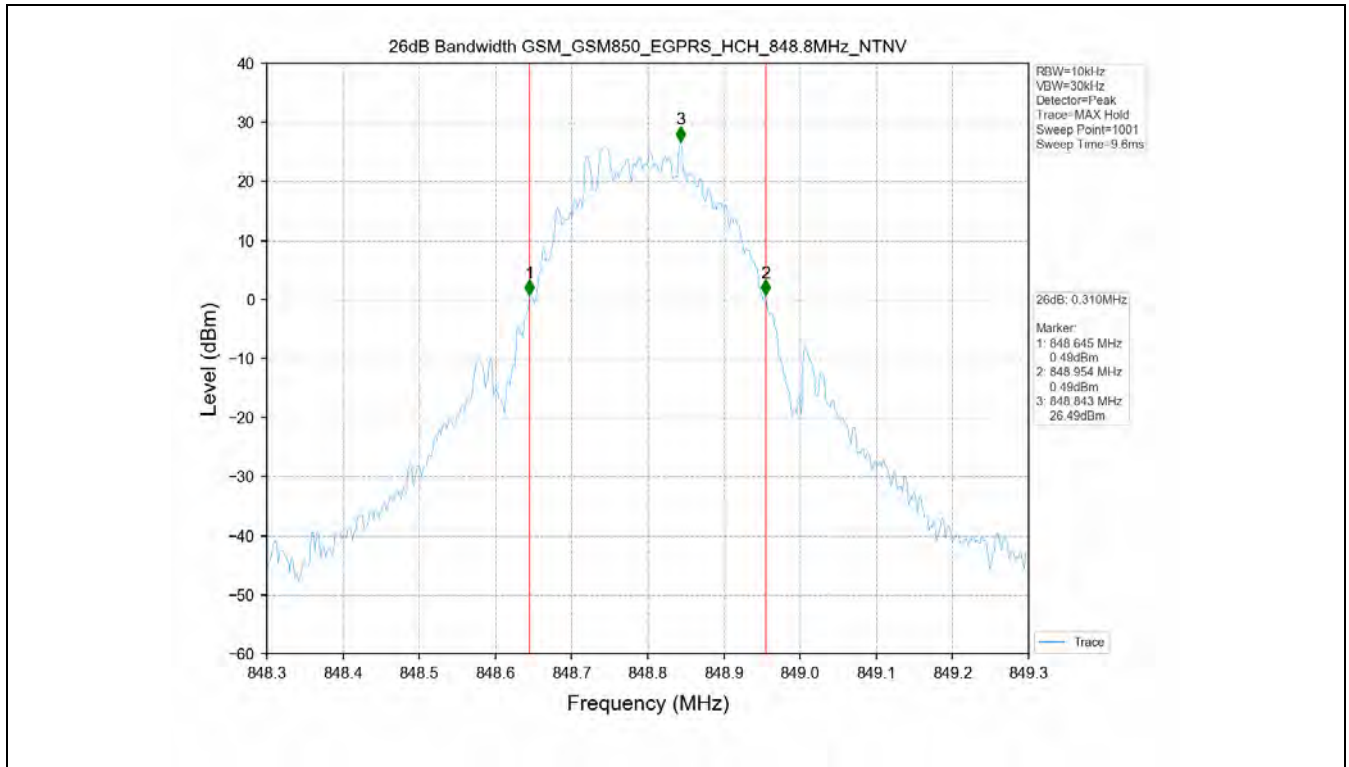


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5. Peak-Average Ratio

5.1 Test Result

Test Band: GSM850					
Test Mode	Test result (dB)			Limit (dB)	Verdict
	LCH	MCH	HCH		
EGPRS	10.77	10.83	10.61	13	PASS
GPRS	9.76	9.59	9.62	13	PASS



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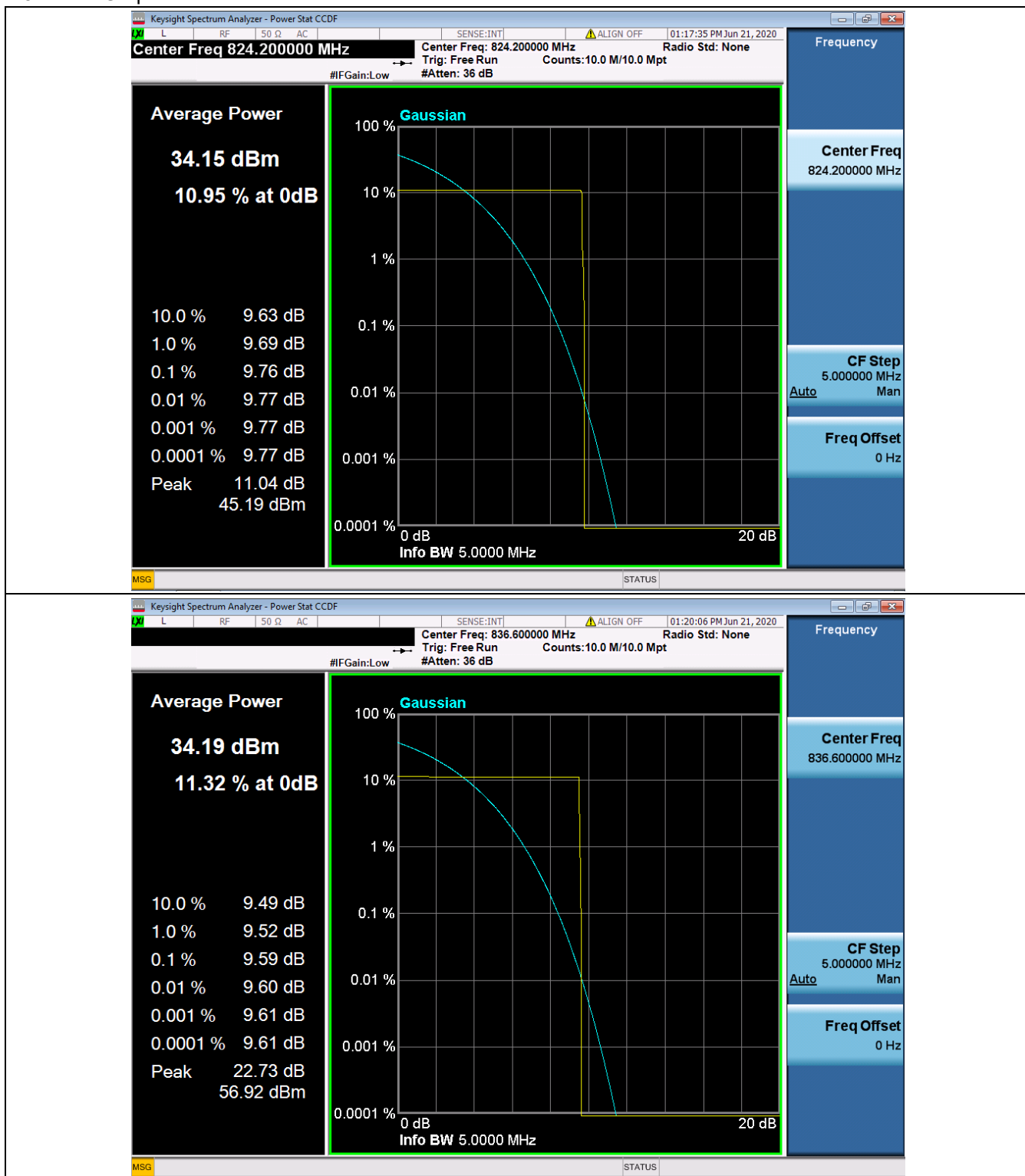
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5.2 Test Graph



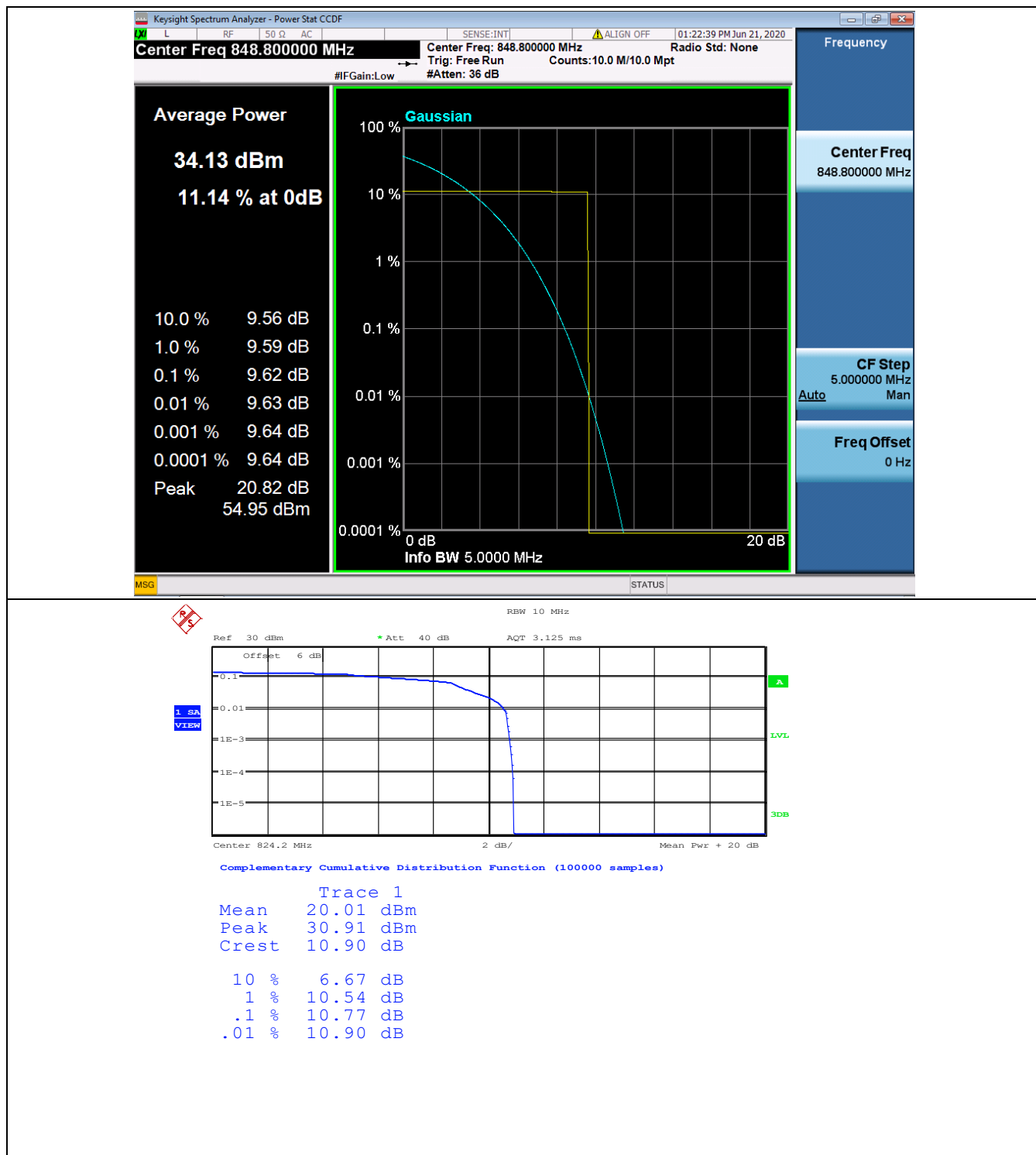
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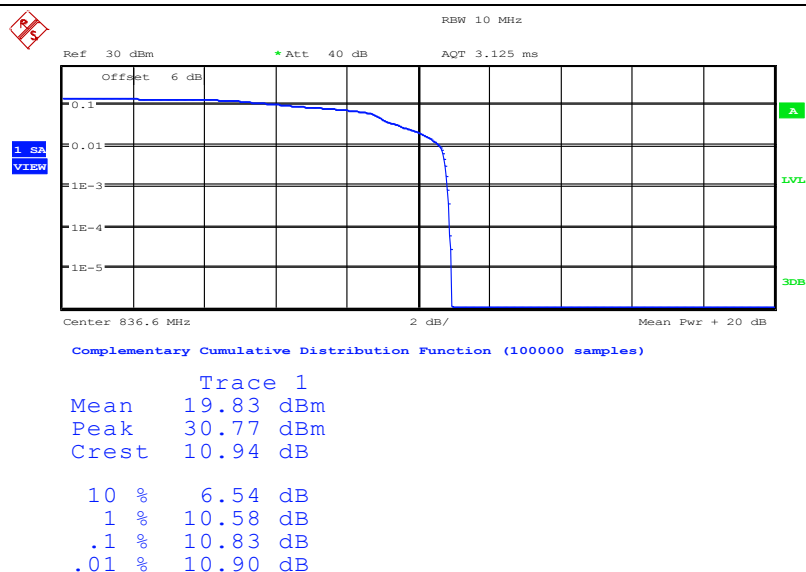
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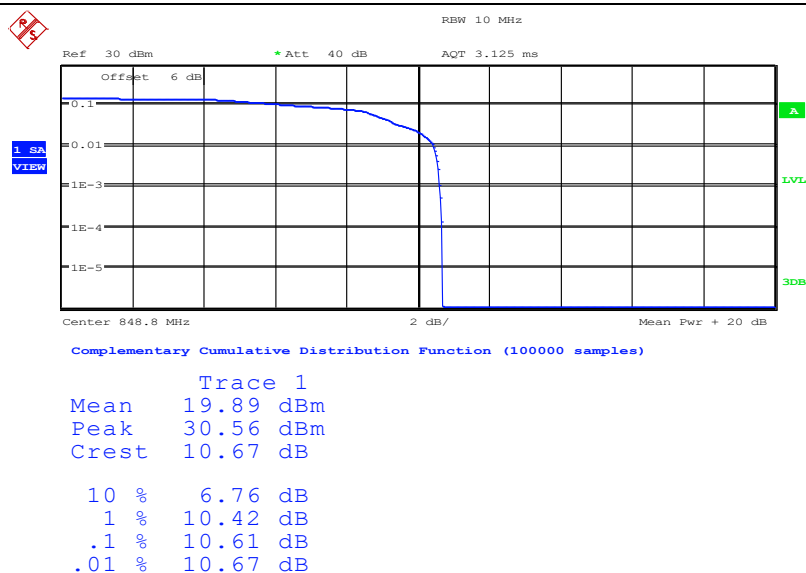
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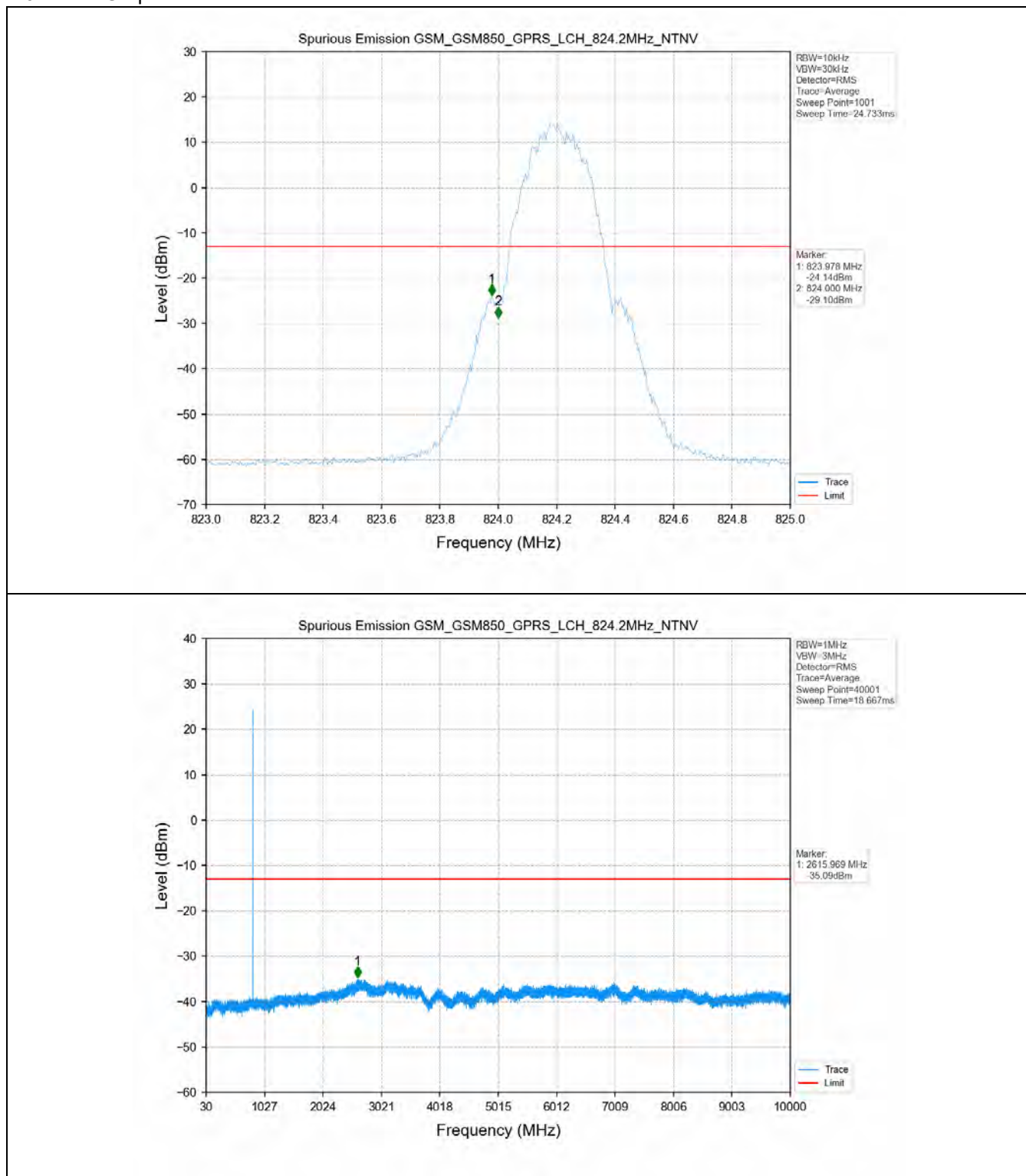
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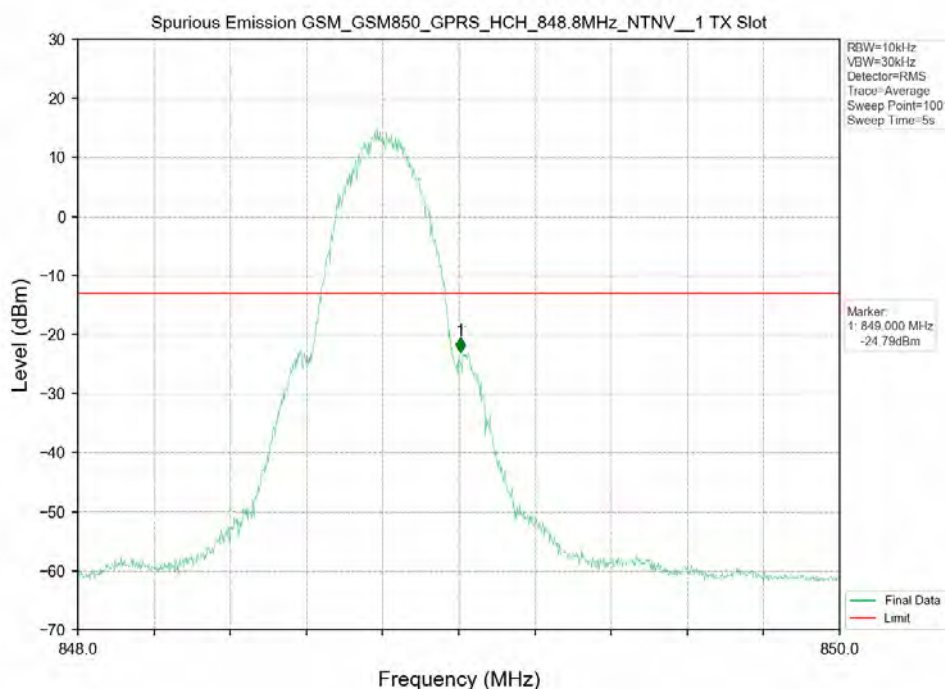
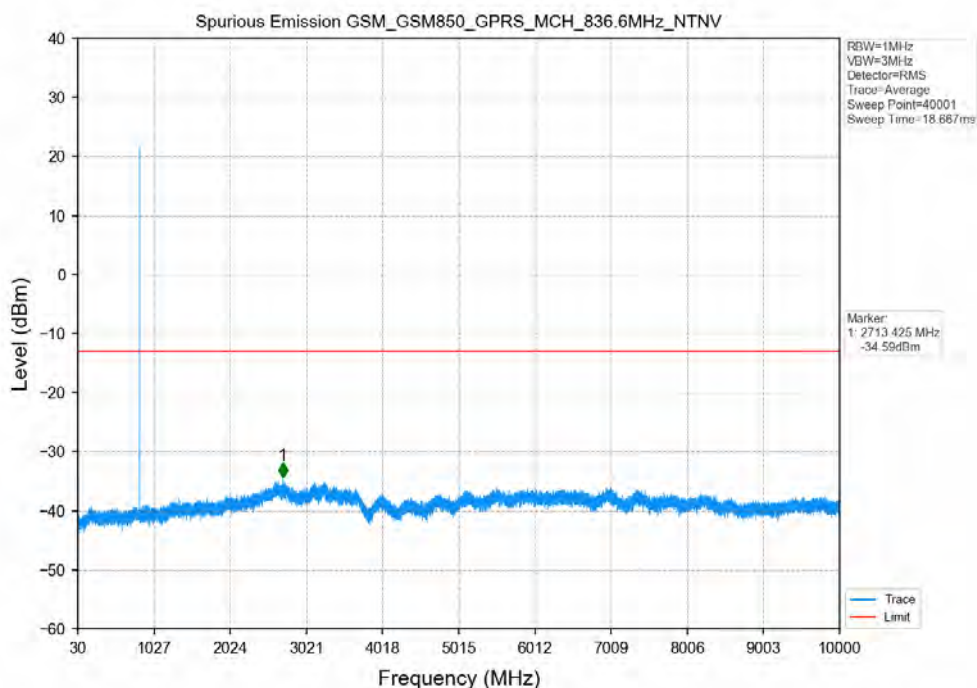
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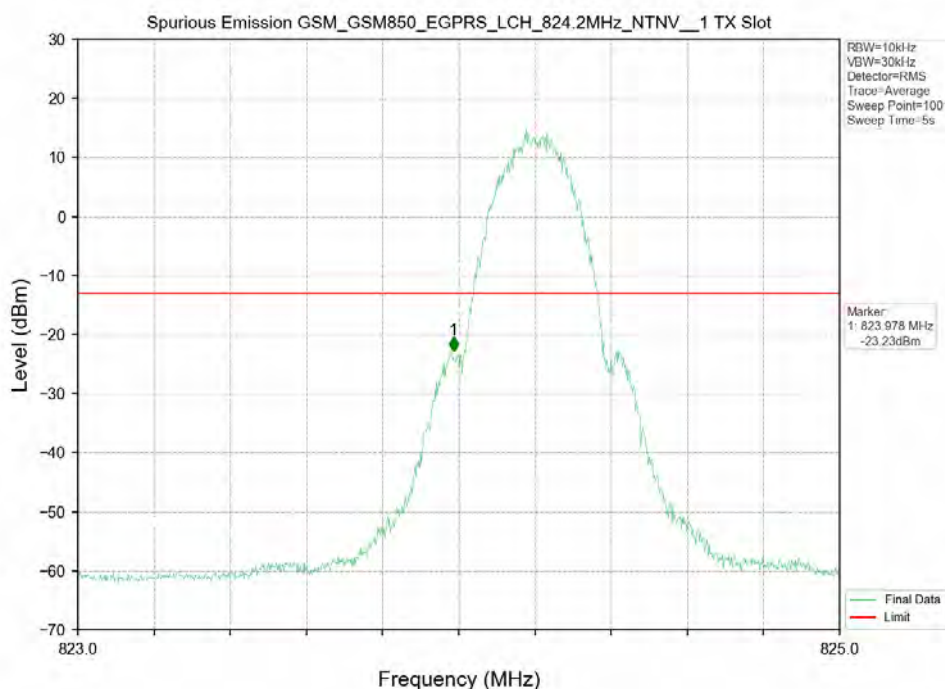
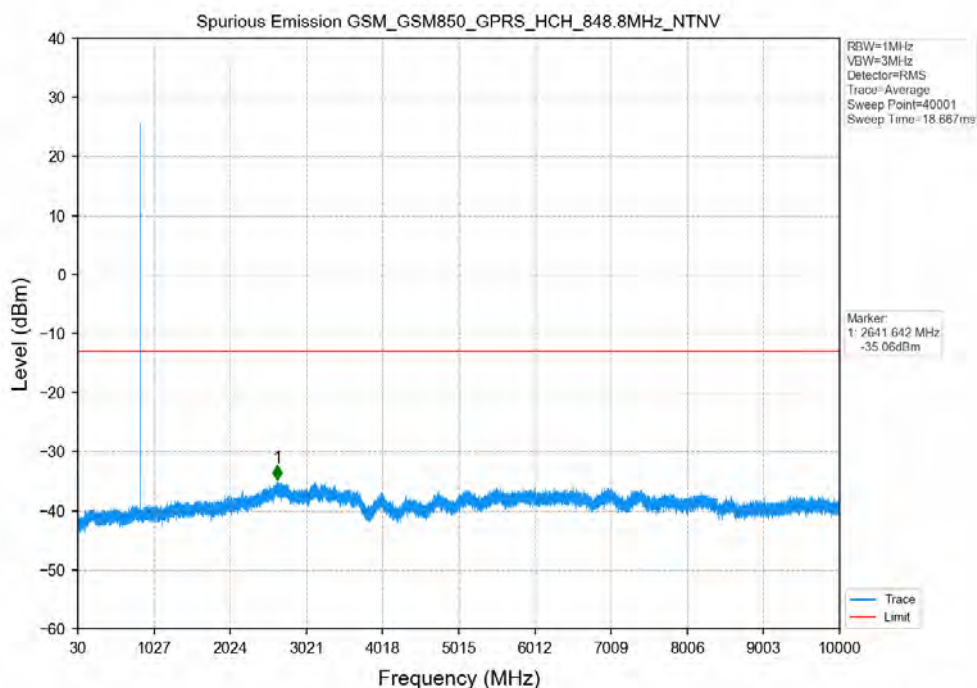
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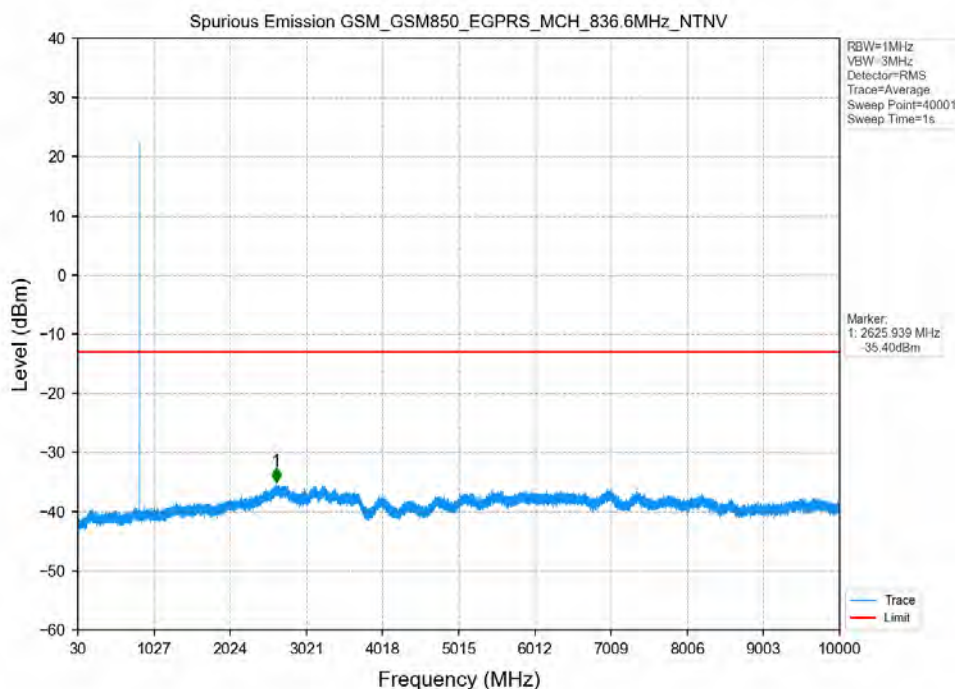
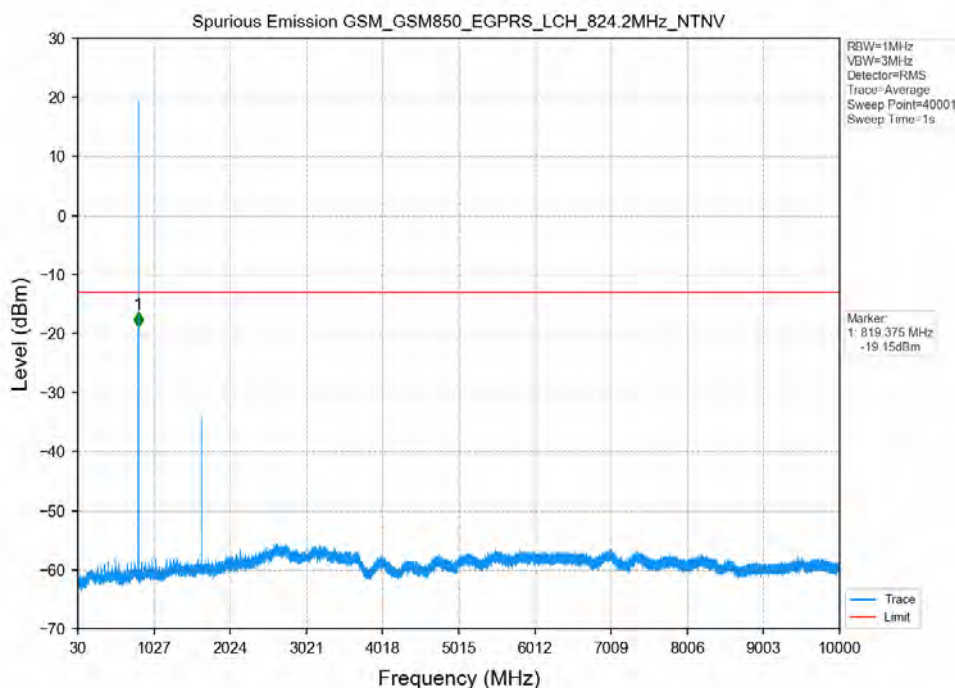
6. Spurious Emission

6.1 Test Graph







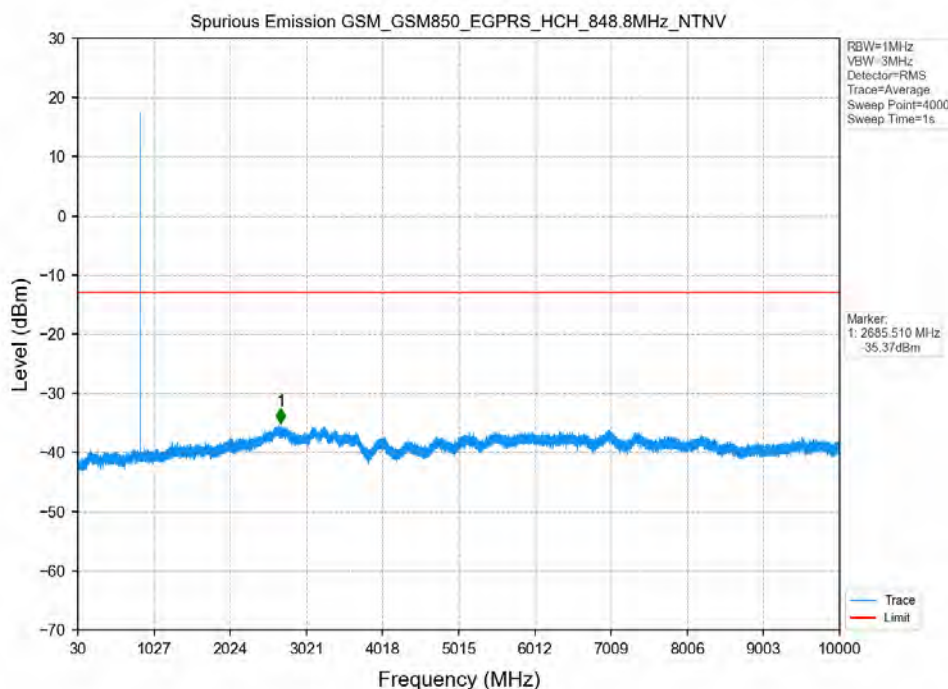
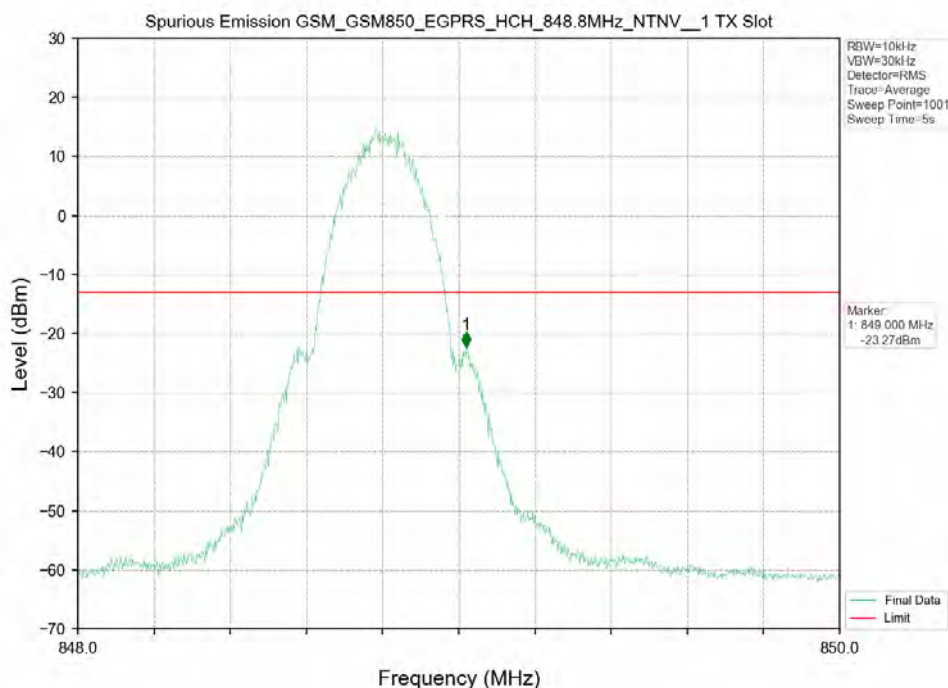


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7.4 Appendix GSM_Band_GSM1900

1. Effective (Isotropic) Radiated Power Output Data

1.1 Test Result

Test Band: PCS1900											
Test Mode		Conducted Power (dBm)			Antenna gain		EIRP(dBm)			Limit (dBm)	Verdict
		LCH	MCH	HCH	(dBd)	(dBi)	LCH	MCH	HCH		
EGPRS	1 TX Slot	25.65	25.77	26.53	-0.23	1.92	27.57	27.69	28.45	33.01	PASS
	2 TX Slots	22.66	22.56	22.87	-0.23	1.92	24.58	24.48	24.79	33.01	PASS
	3 TX Slots	20.91	20.98	22.28	-0.23	1.92	22.83	22.9	24.2	33.01	PASS
	4 TX Slots	19.66	19.57	19.82	-0.23	1.92	21.58	21.49	21.74	33.01	PASS
GPRS	1 TX Slot	29.72	29.82	29.88	-0.23	1.92	31.64	31.74	31.8	33.01	PASS
	2 TX Slots	26.81	26.90	26.94	-0.23	1.92	28.73	28.82	28.86	33.01	PASS
	3 TX Slots	25.04	25.13	25.18	-0.23	1.92	26.96	27.05	27.1	33.01	PASS
	4 TX Slots	23.84	23.96	23.99	-0.23	1.92	25.76	25.88	25.91	33.01	PASS
Note: 1) dBd = dBi - 2.15 2) EIRP = Conducted output power + Antenna gain (dBi)											

2. Frequency stability

2.1 Test Result

Test Band: PCS1900 (Frequency Error VS. Voltage)										
Test Mode	Test Temp.	Test Volt.	Freq. Error (Hz)			Freq. vs. rated (ppm)			Limit (ppm)	Verdict
			LCH	MCH	HCH	LCH	MCH	HCH		
EGPRS	NT	LV	0.0000	-2.0000	-9.0000	-0.0001	-0.0011	-0.0052	2.50	PASS
GPRS	NT	LV	9.0000	1.0000	7.0000	0.0050	0.0009	0.0041	2.50	PASS

Test Band: PCS1900 (Frequency Error VS. Temperature)										
Test Mode	Test Volt.	Test Temp.	Freq. Error (Hz)			Freq. vs. rated (ppm)			Limit (ppm)	Verdict
			LCH	MCH	HCH	LCH	MCH	HCH		
EGPRS	NV	-30.00	0.0000	-9.0000	2.0000	0.0001	-0.0050	0.0011	2.50	PASS
		-20.00	0.0000	-1.0000	-6.0000	0.0003	-0.0007	-0.0032	2.50	PASS
		-10.00	2.0000	-5.0000	-7.0000	0.0012	-0.0029	-0.0039	2.50	PASS
		0.00	-6.0000	-1.0000	-5.0000	-0.0034	-0.0008	-0.0030	2.50	PASS
		10.00	-3.0000	-5.0000	0.0000	-0.0017	-0.0030	-0.0002	2.50	PASS
		20.00	-1.0000	-1.0000	-1.0000	-0.0009	-0.0006	-0.0010	2.50	PASS
		30.00	-2.0000	0.0000	2.0000	-0.0015	-0.0003	0.0015	2.50	PASS
		40.00	-3.0000	1.0000	4.0000	-0.0018	0.0007	0.0022	2.50	PASS
		50.00	2.0000	0.0000	4.0000	0.0016	-0.0001	0.0026	2.50	PASS
GPRS	NV	-30.00	-9.0000	10.0000	7.0000	-0.0053	0.0057	0.0038	2.50	PASS



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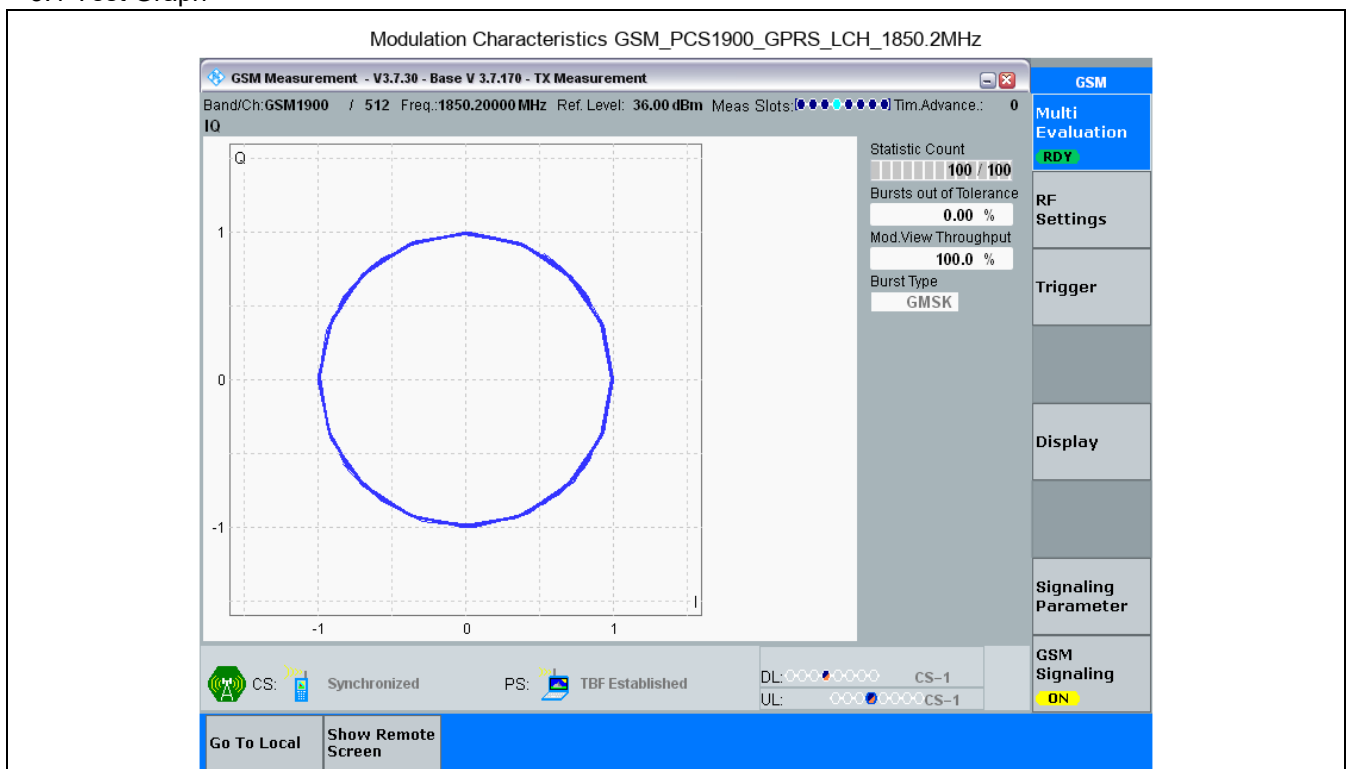
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		-20.00	9.0000	12.0000	1.0000	0.0051	0.0067	0.0005	2.50	PASS
		-10.00	11.0000	8.0000	0.0000	0.0064	0.0047	0.0005	2.50	PASS
		0.00	11.0000	8.0000	2.0000	0.0062	0.0047	0.0011	2.50	PASS
		10.00	7.0000	12.0000	1.0000	0.0041	0.0067	0.0010	2.50	PASS
		20.00	6.0000	9.0000	2.0000	0.0033	0.0048	0.0014	2.50	PASS
		30.00	6.0000	4.0000	4.0000	0.0037	0.0024	0.0023	2.50	PASS
		40.00	10.0000	2.0000	- 14.0000	0.0057	0.0012	-0.0078	2.50	PASS
		50.00	4.0000	3.0000	-4.0000	0.0025	0.0020	-0.0026	2.50	PASS

3. Modulation Characteristics

3.1 Test Graph



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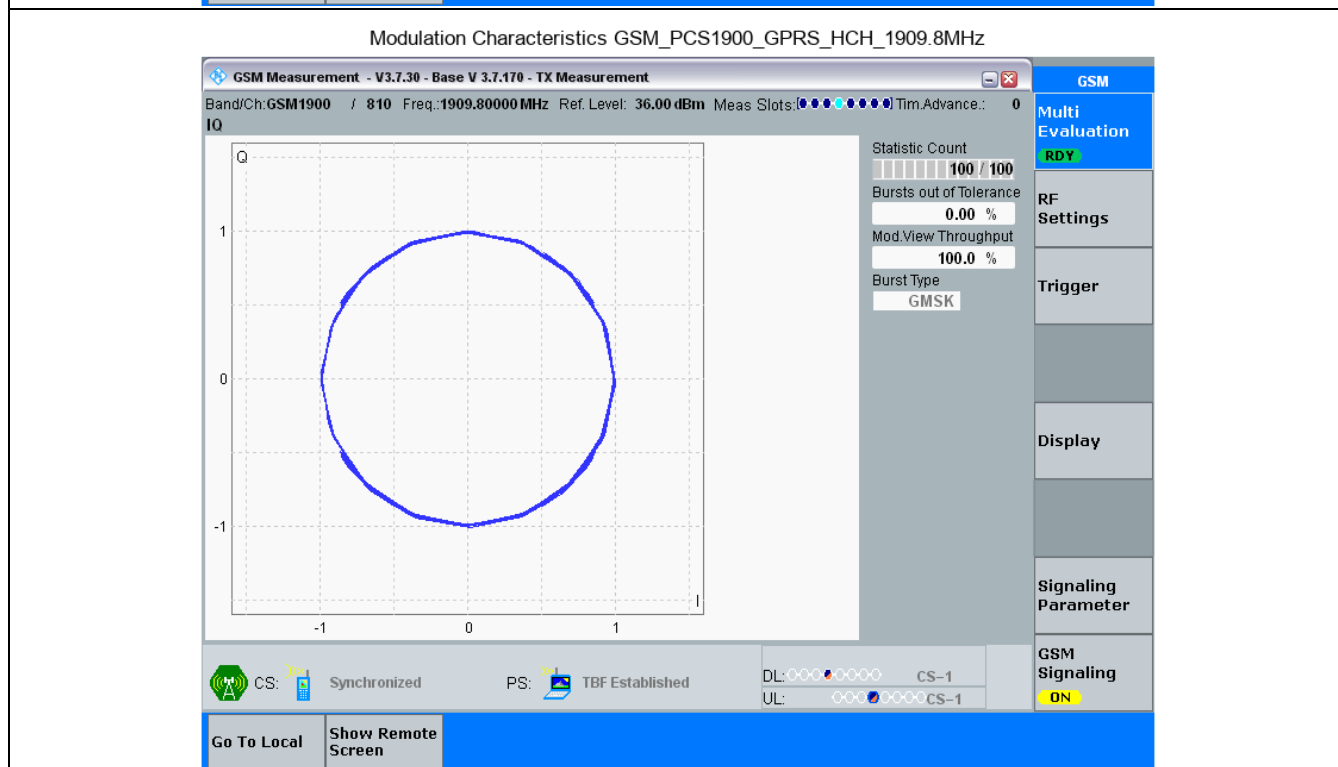
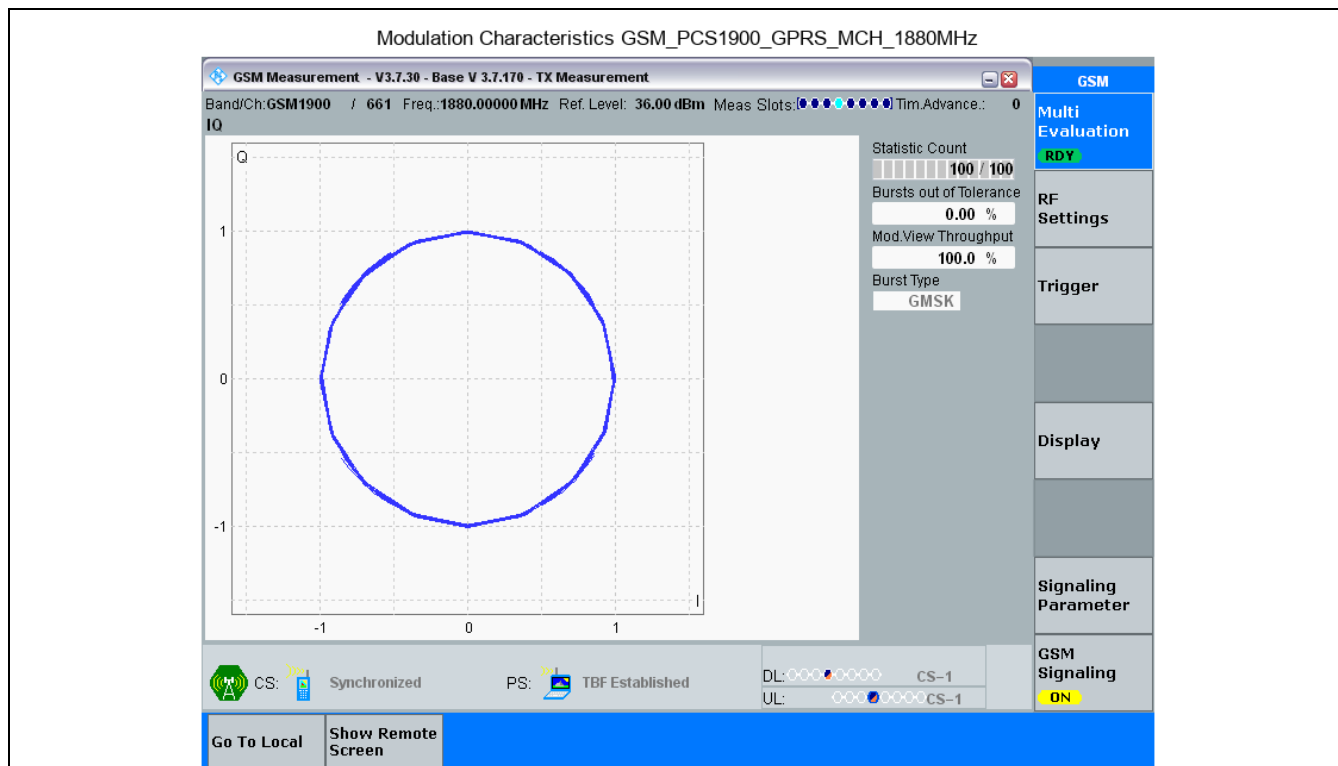
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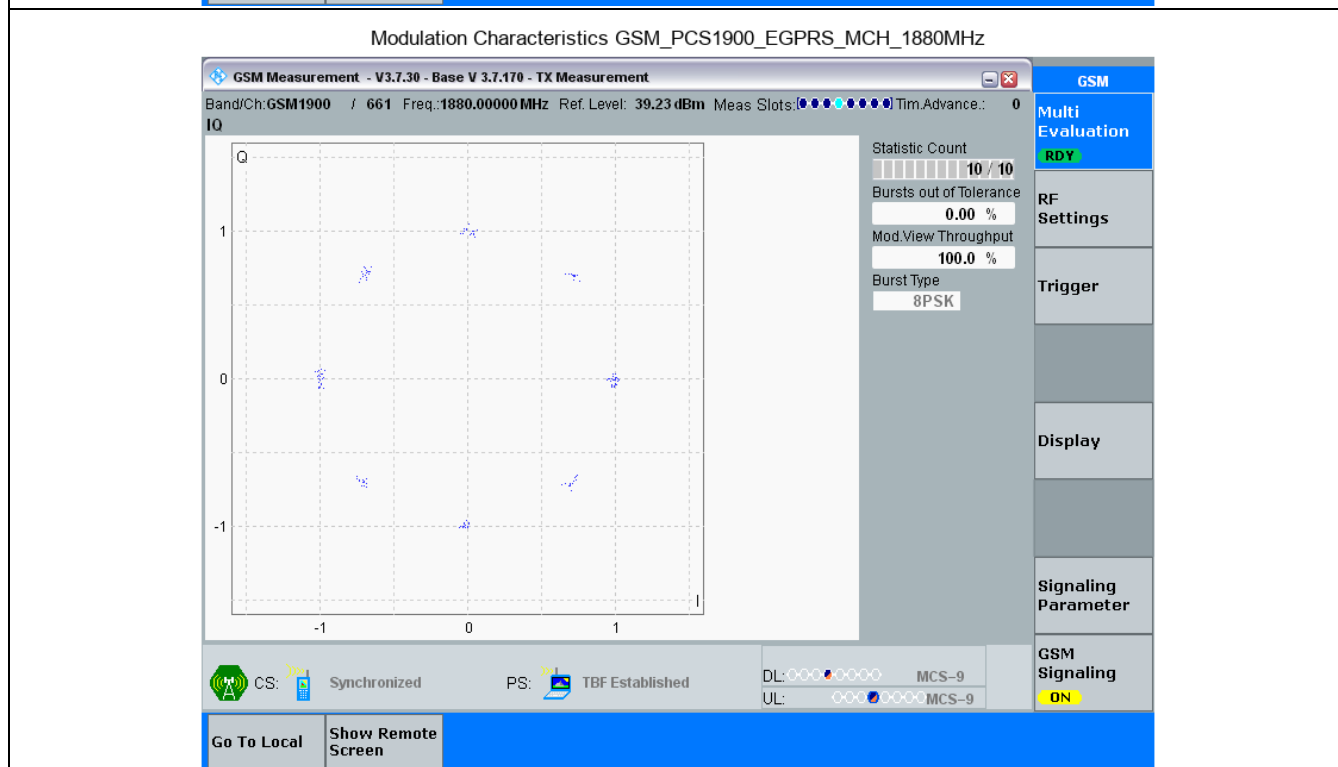
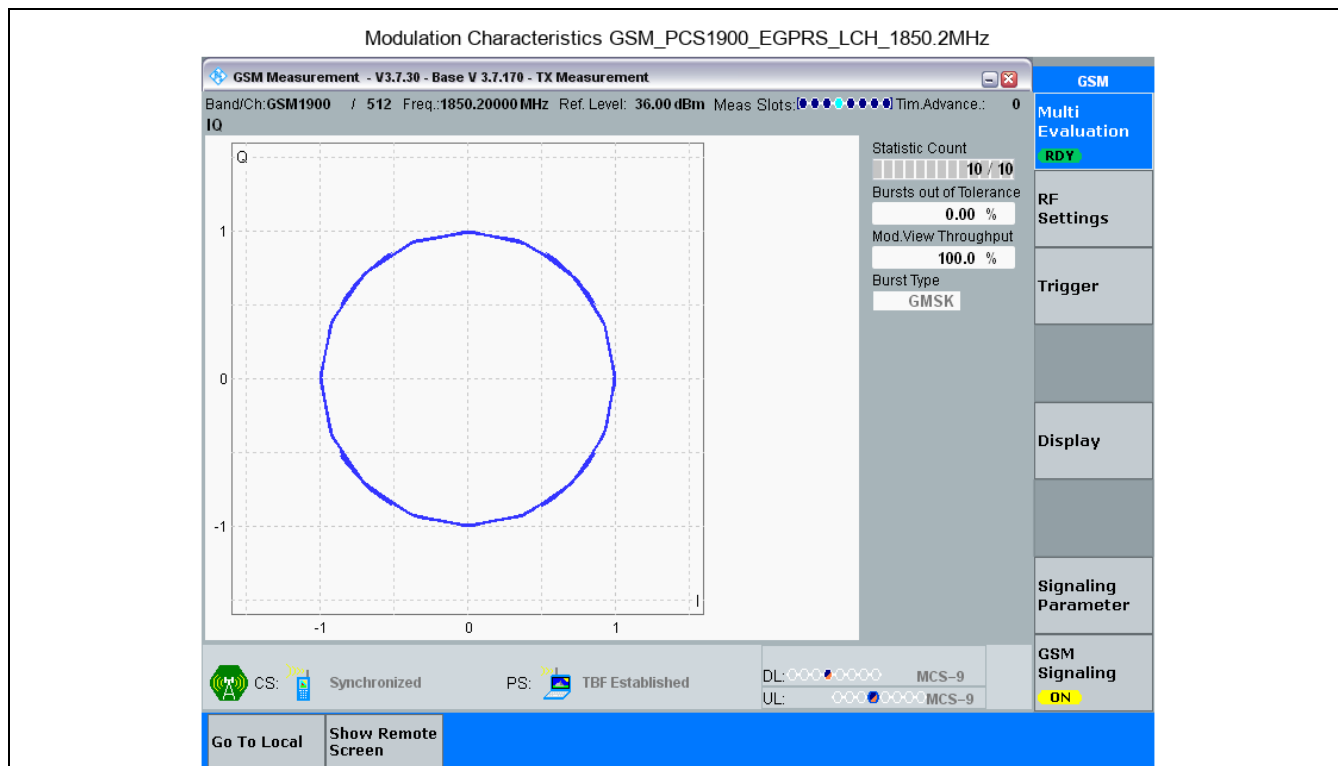


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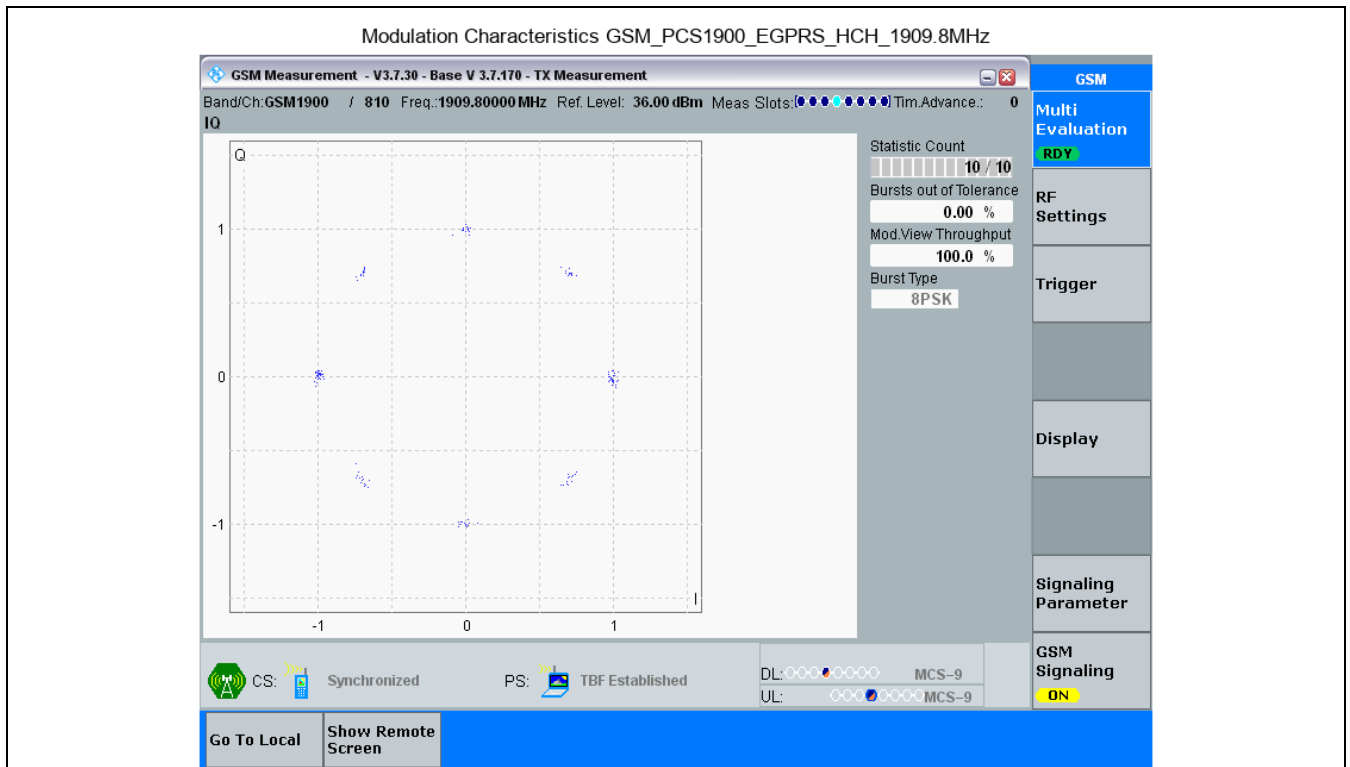
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4. 99% & 26dB Bandwidth

4.1 Test Result

Test Band: PCS1900					
Test Mode	99% Occupied Bandwidth (MHz)			Limit	Verdict
	LCH	MCH	HCH		
EGPRS	0.240	0.260	0.230	N/A	PASS
GPRS	0.250	0.240	0.250	N/A	PASS



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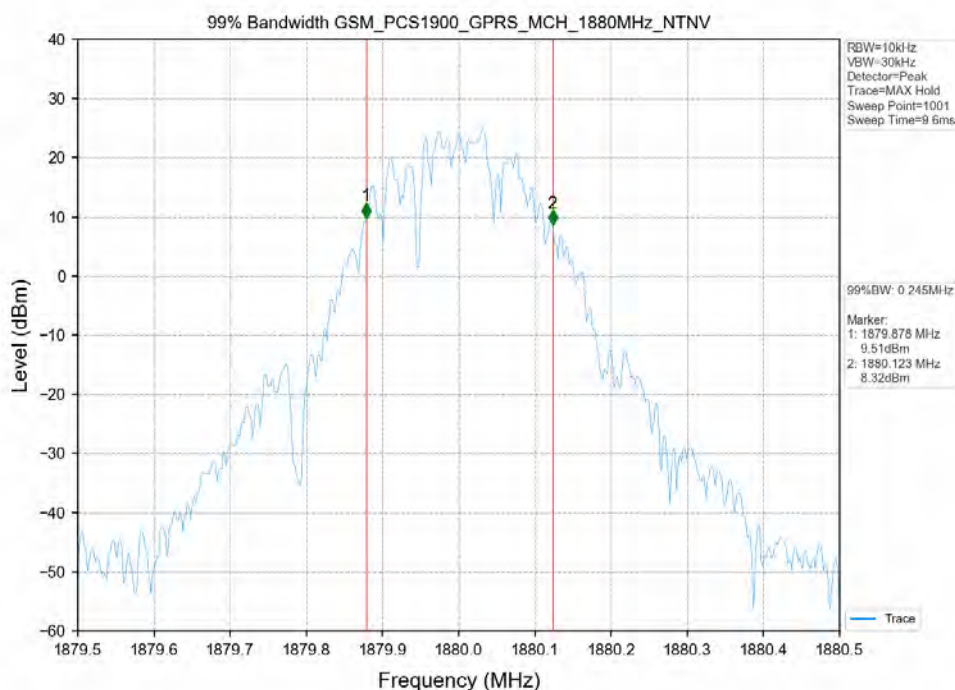
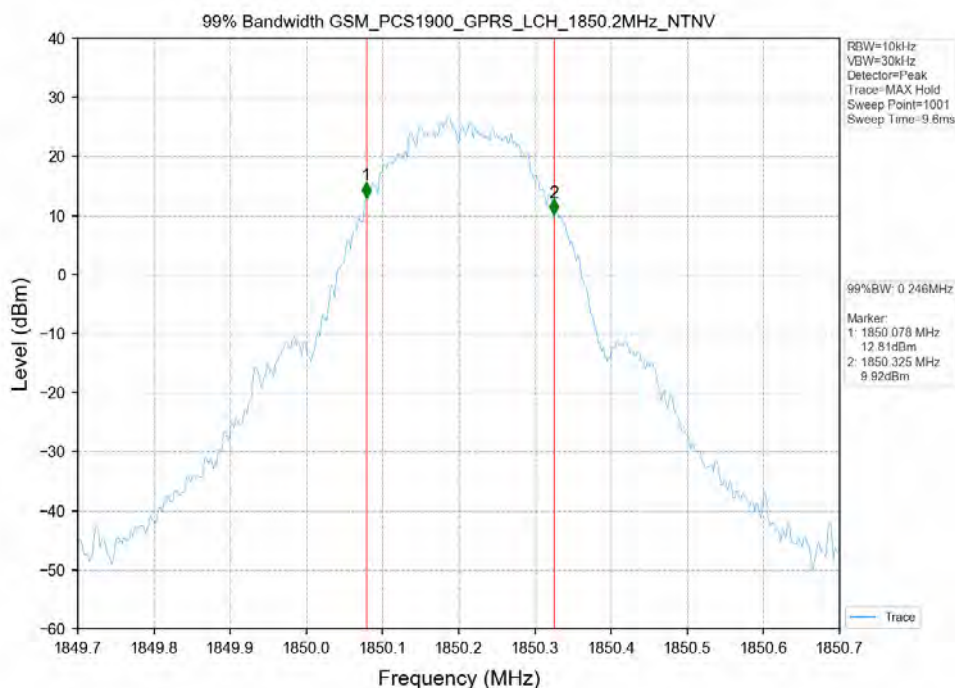
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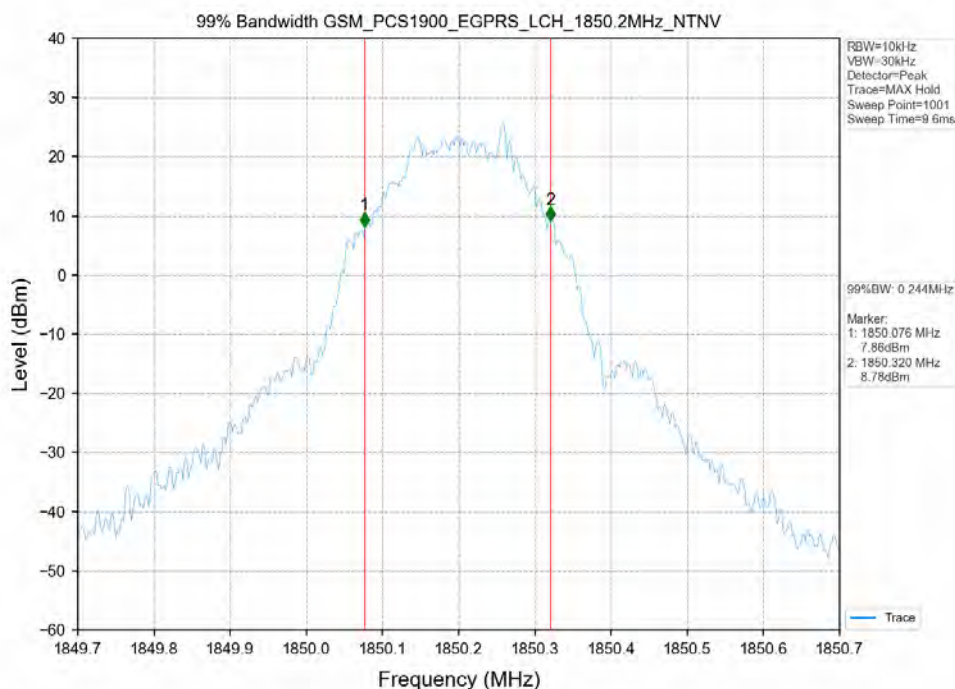
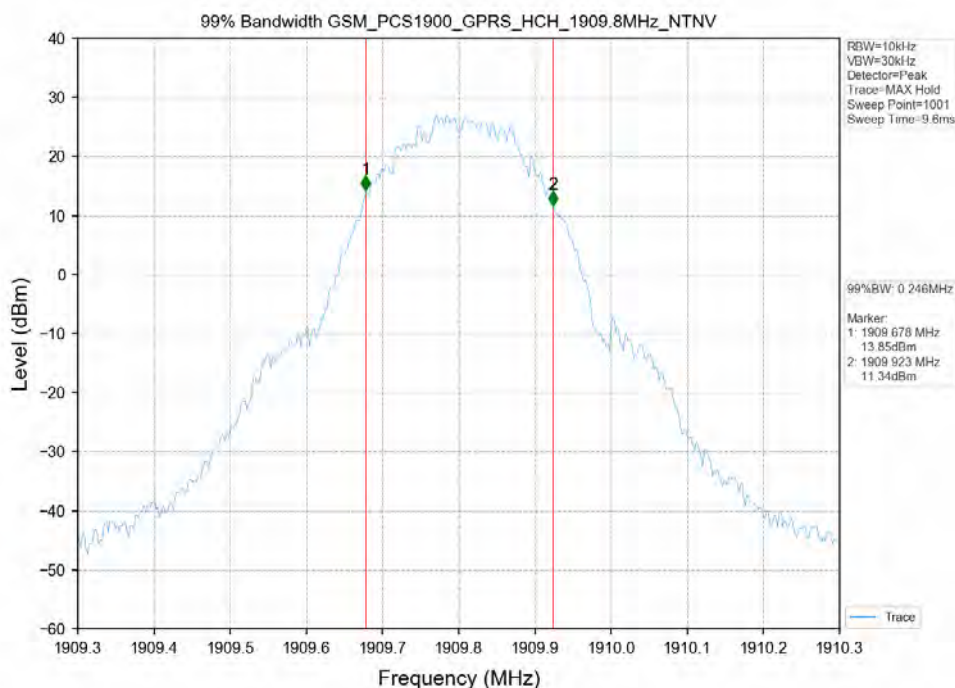
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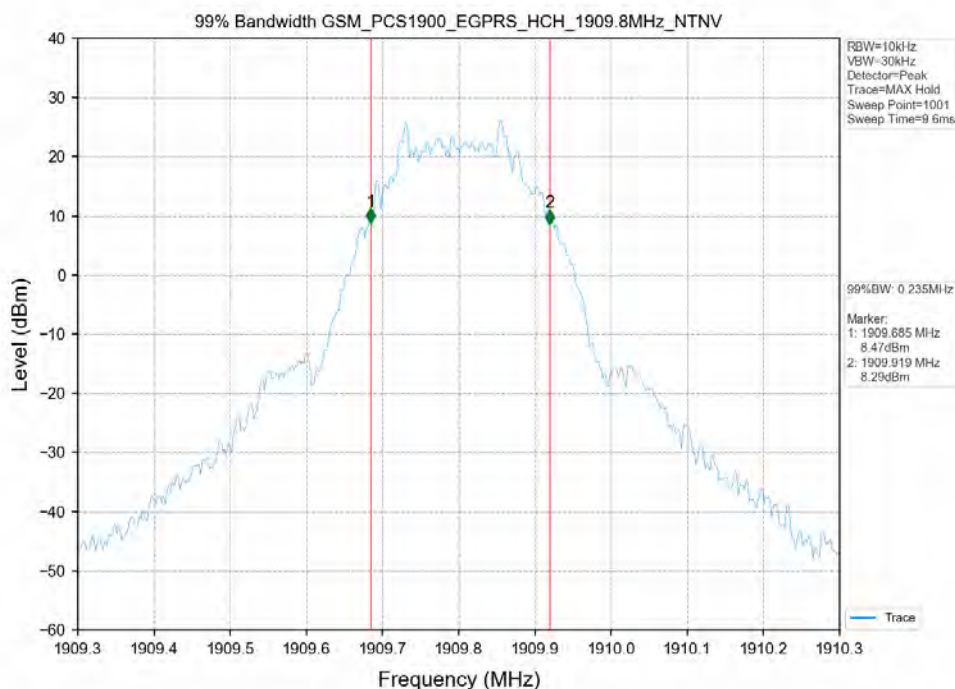
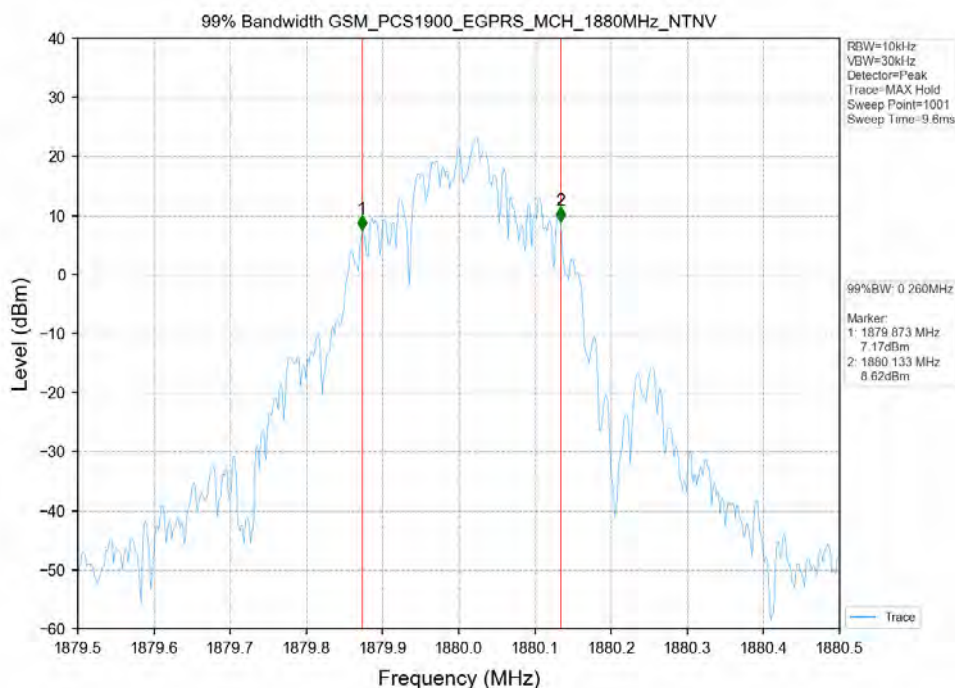
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4.2 Test Graph

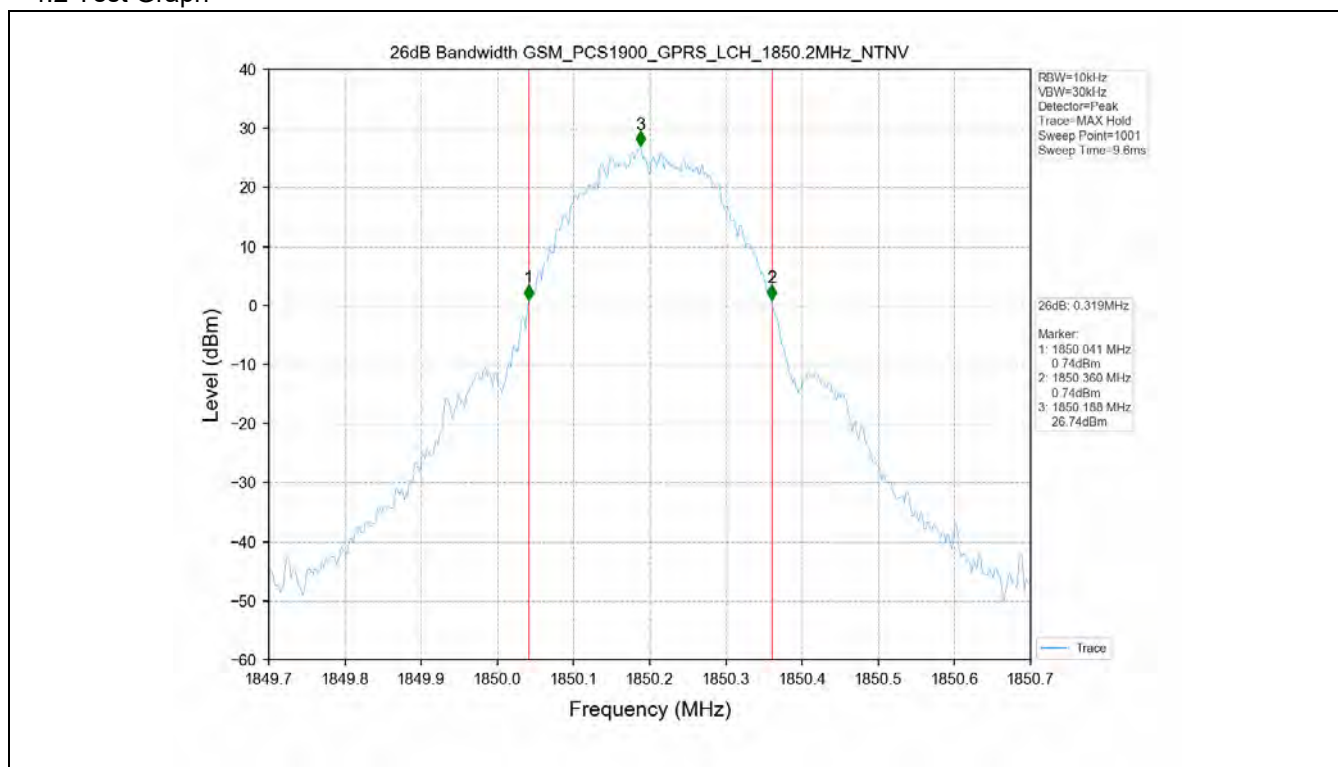






Test Band: PCS1900					
Test Mode	26dB Bandwidth (MHz)			Limit	Verdict
	LCH	MCH	HCH		
EGPRS	0.310	0.310	0.290	N/A	PASS
GPRS	0.320	0.320	0.320	N/A	PASS

4.2 Test Graph

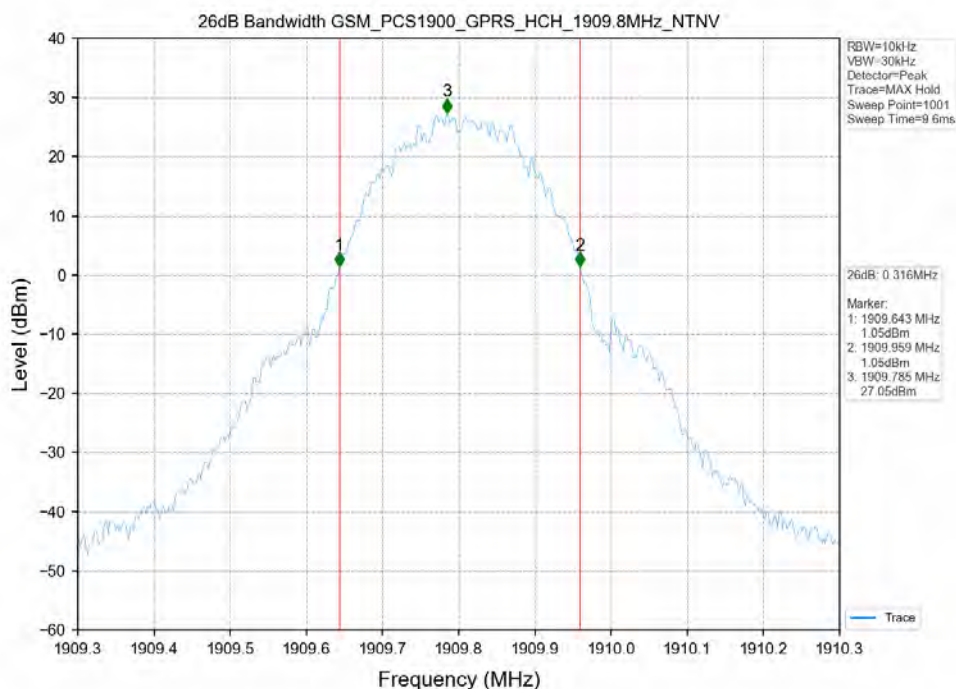
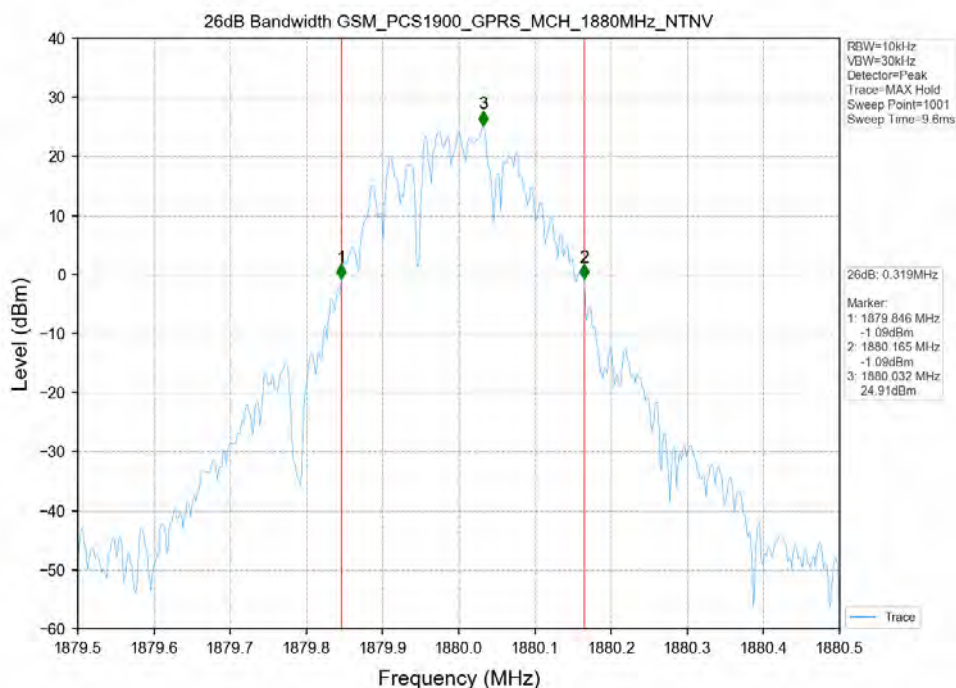


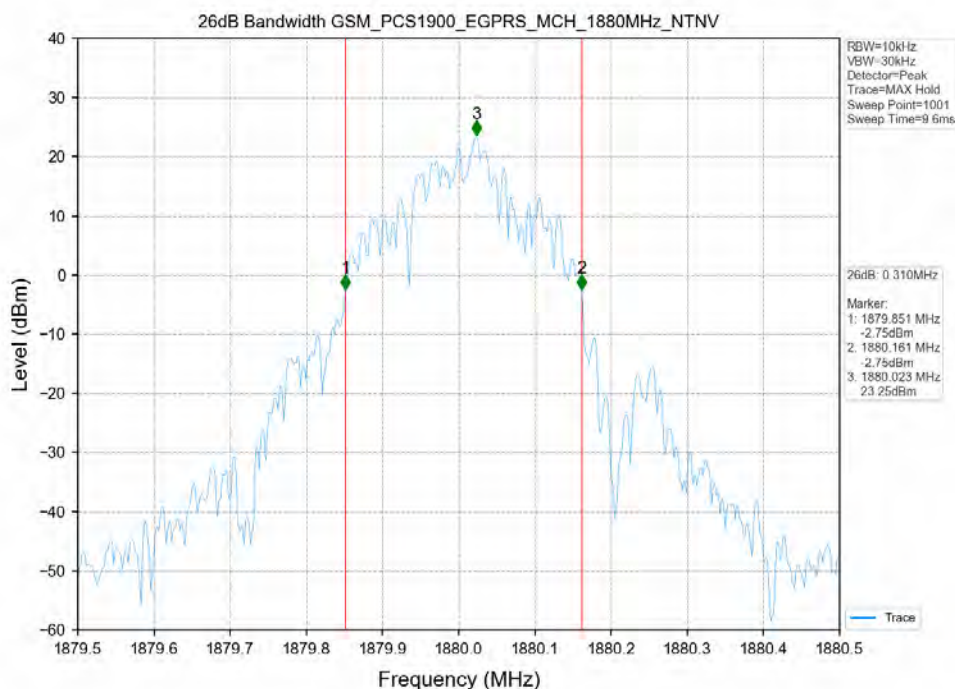
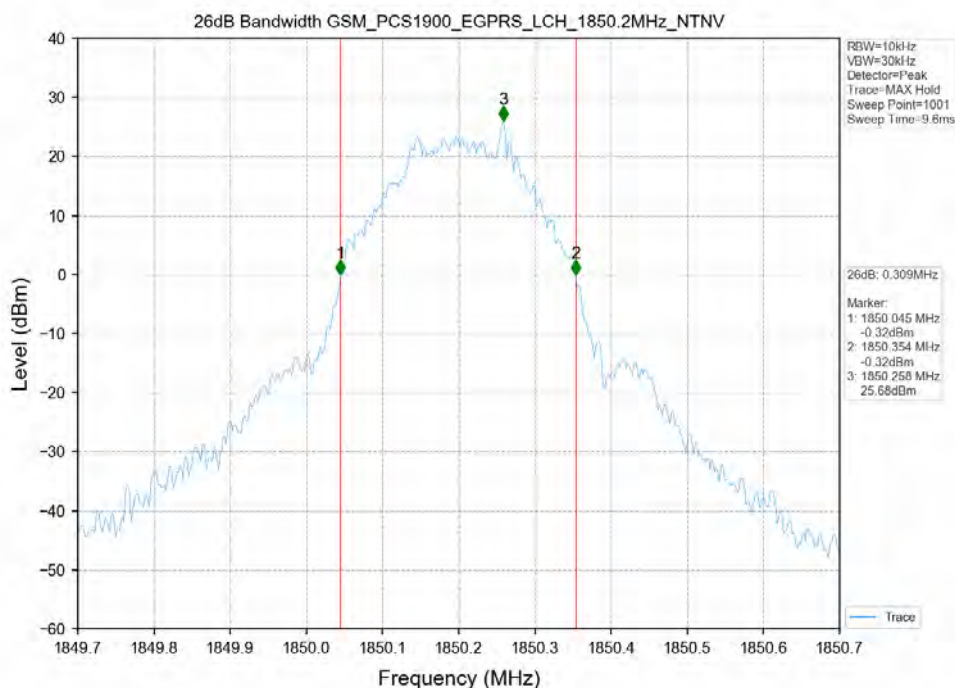
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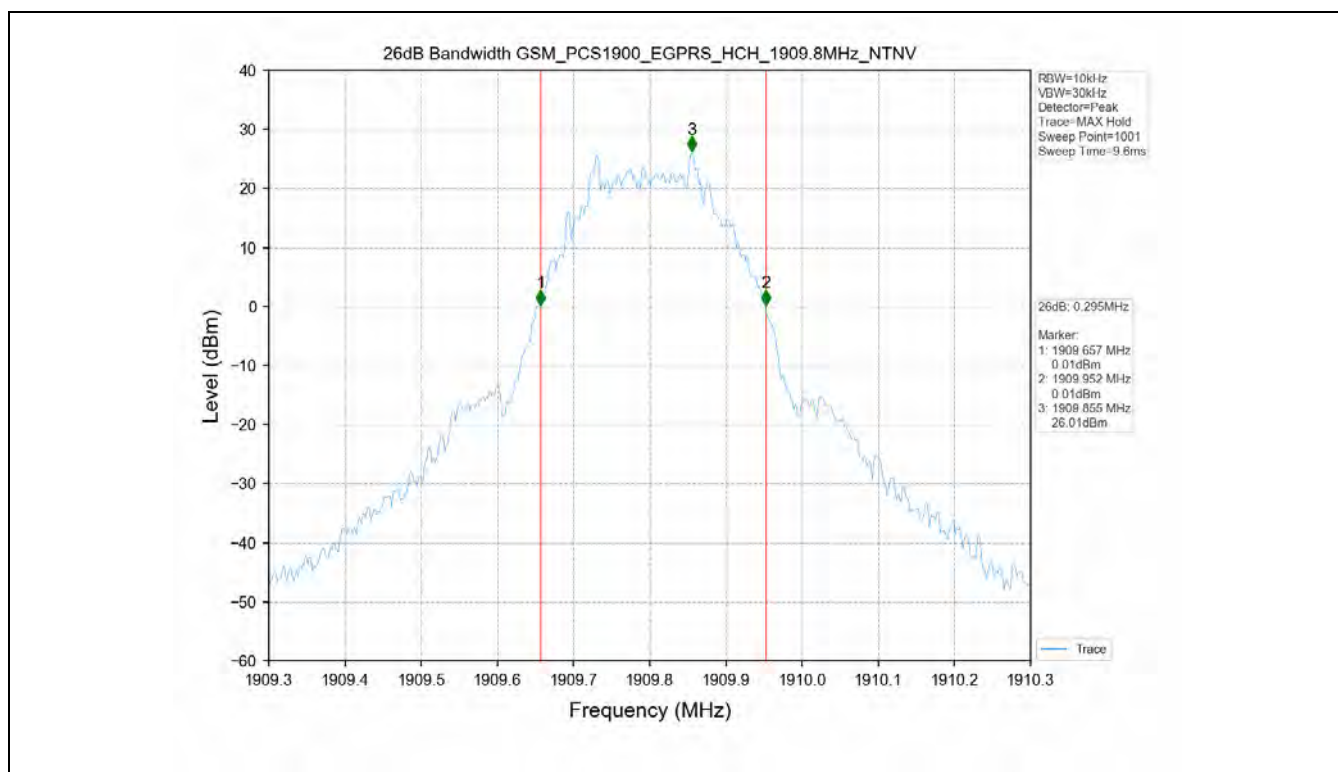
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5. Peak-Average Ratio

5.1 Test Result

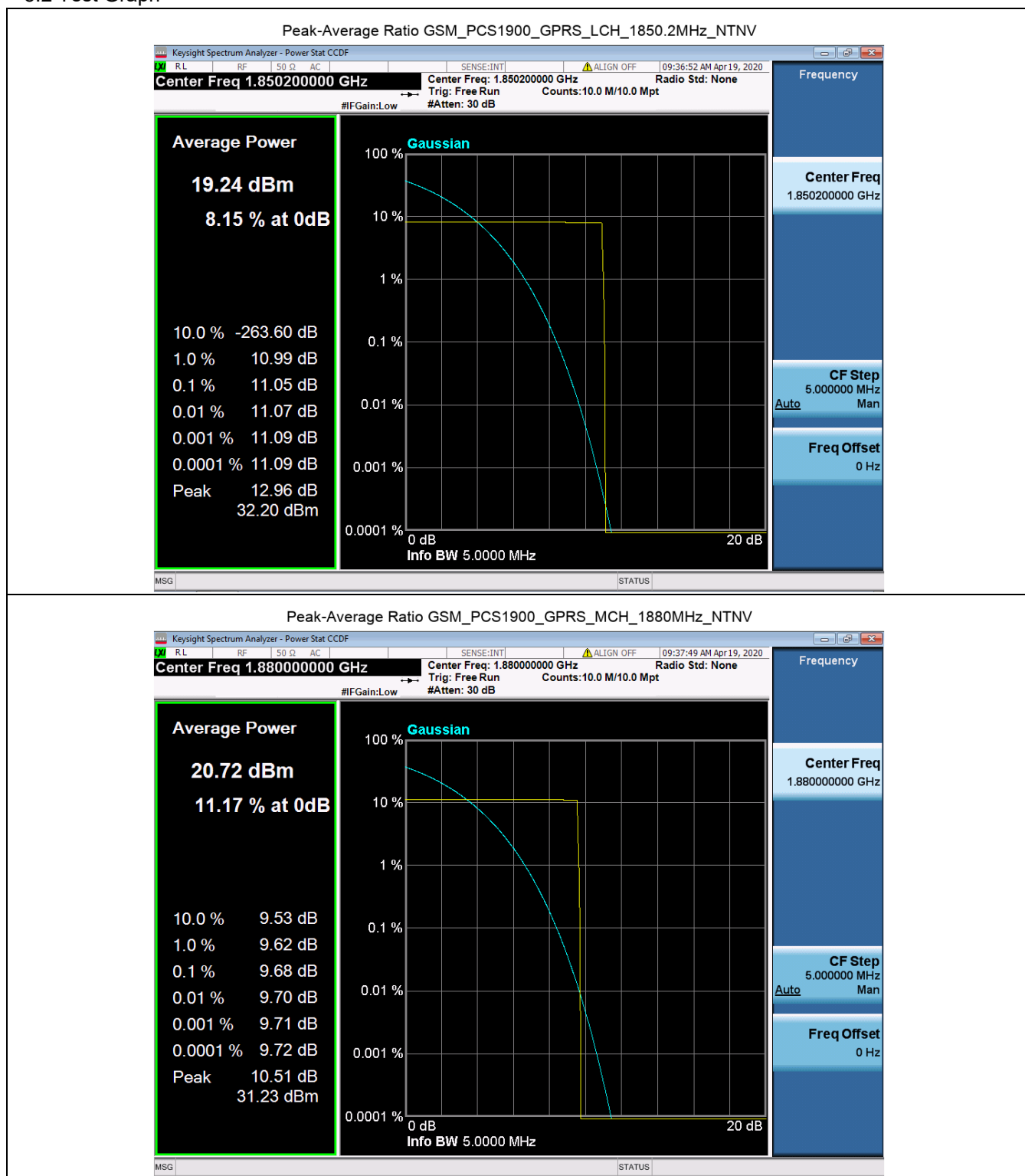
Test Band: PCS1900					
Test Mode	Test result (dB)			Limit (dB)	Verdict
	LCH	MCH	HCH		
EGPRS	10.9	10.96	10.83	13	PASS
GPRS	11.05	9.68	9.65	13	PASS



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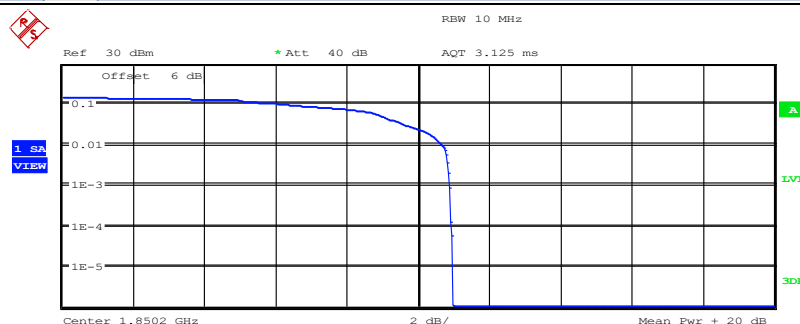
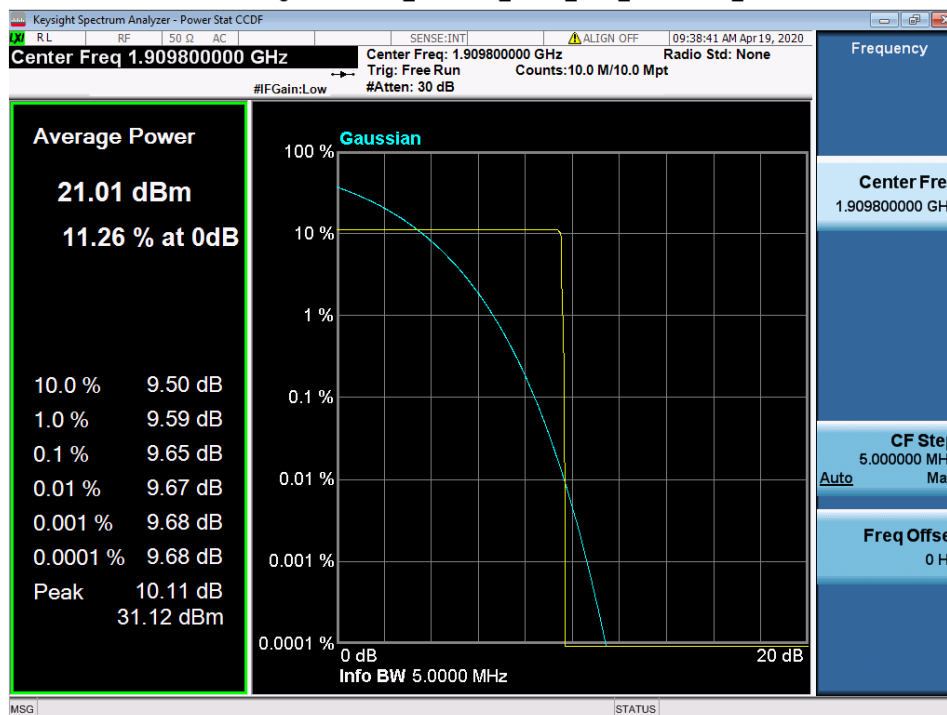
5.2 Test Graph



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Peak-Average Ratio GSM_PCS1900_GPRS_HCH_1909.8MHz_NTNV



Trace 1

Mean 17.96 dBm
Peak 28.93 dBm
Crest 10.97 dB

Power Level	Power (dB)
10 %	6.47 dB
1 %	10.67 dB
.1 %	10.90 dB
.01 %	10.93 dB

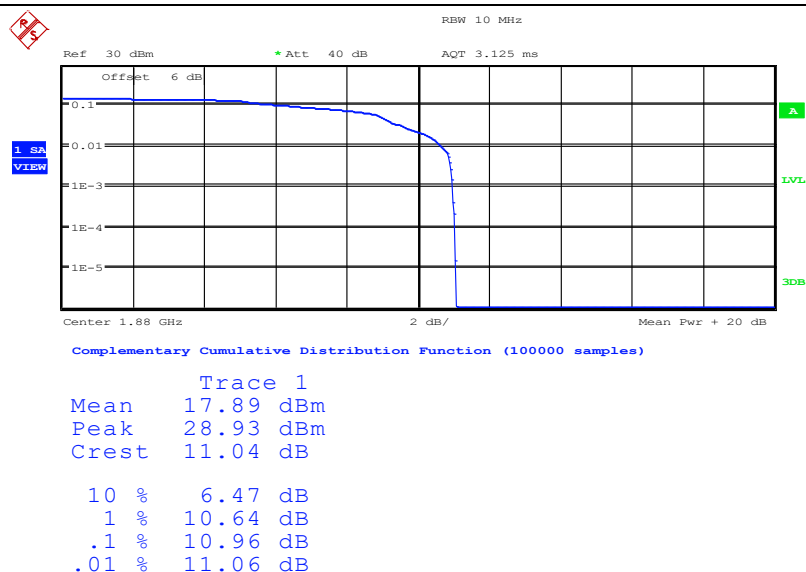
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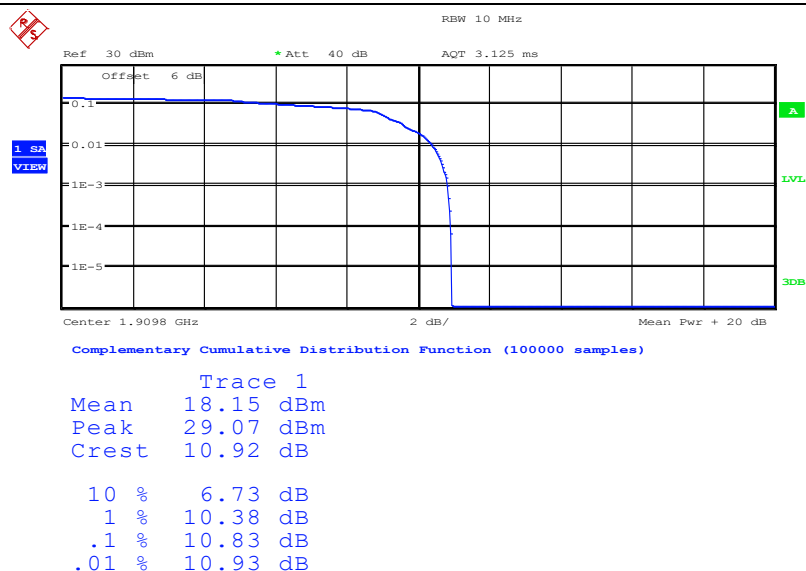
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Date: 21.JUN.2020 12:58:18



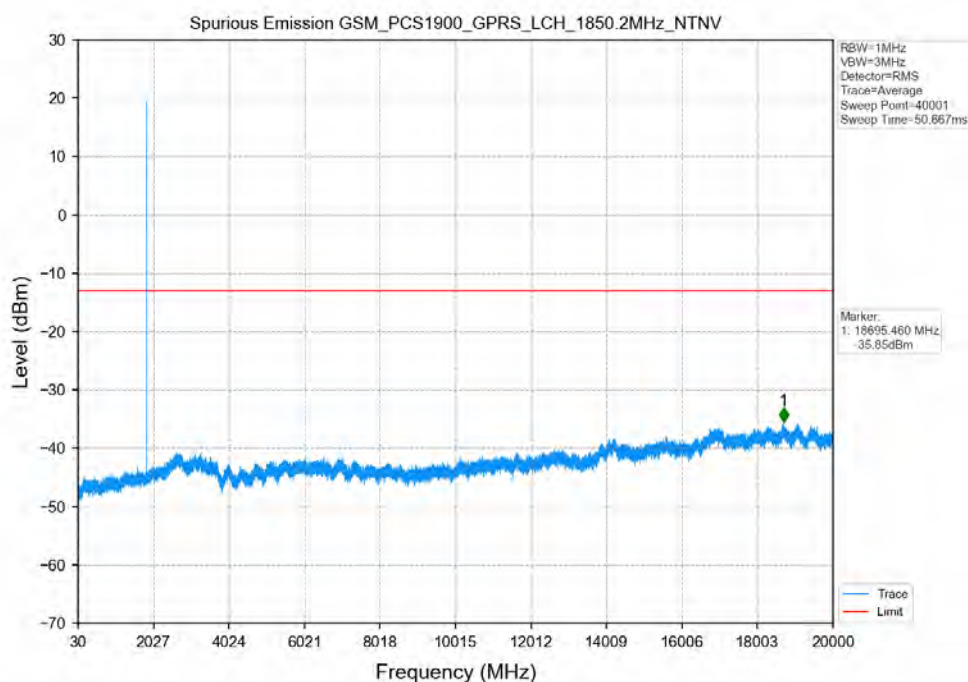
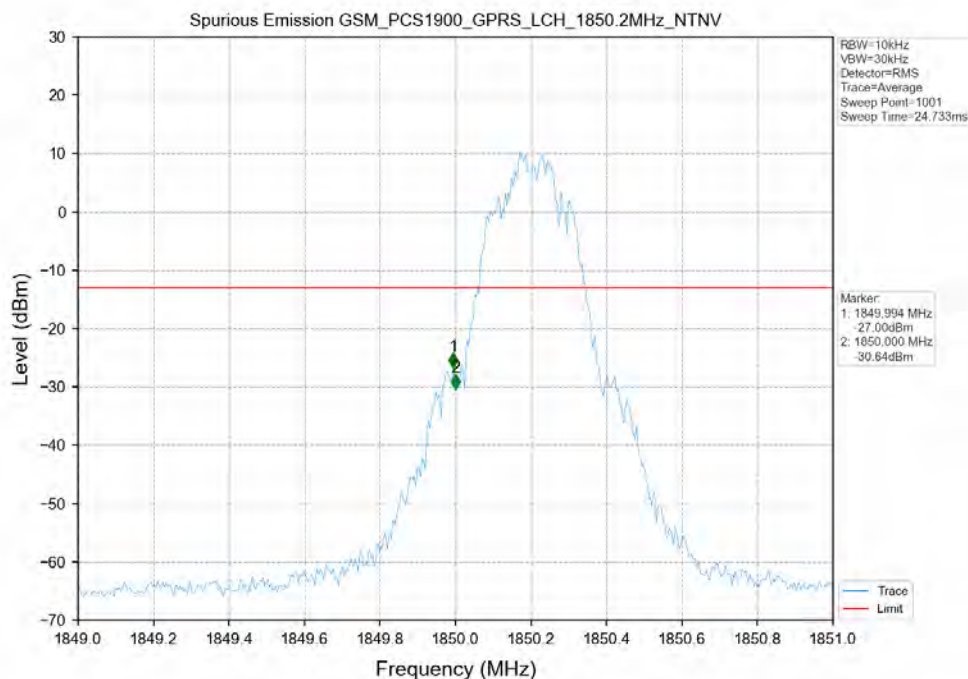
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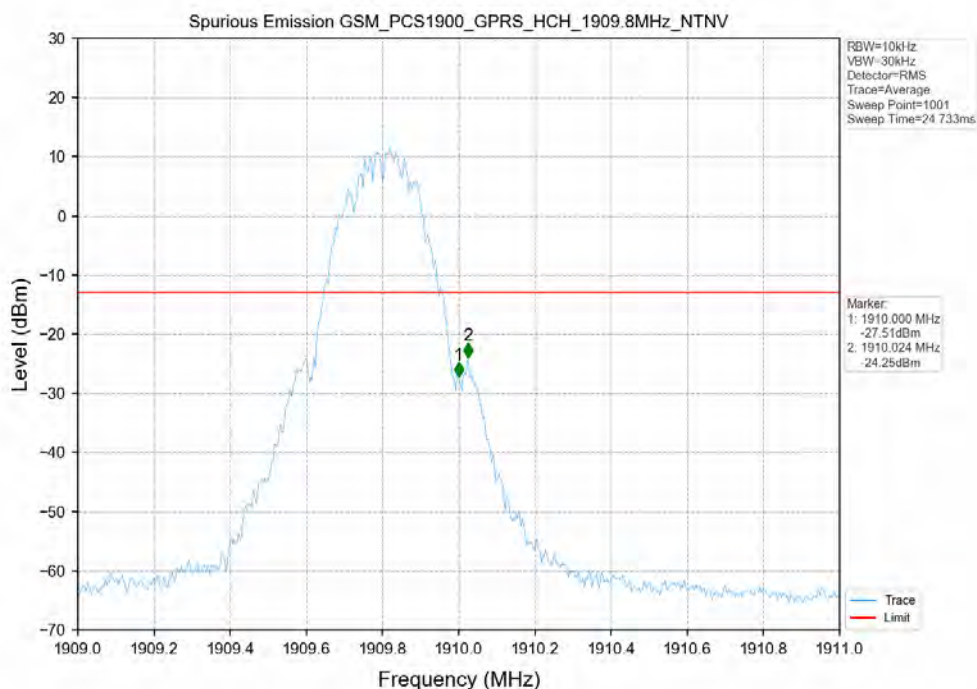
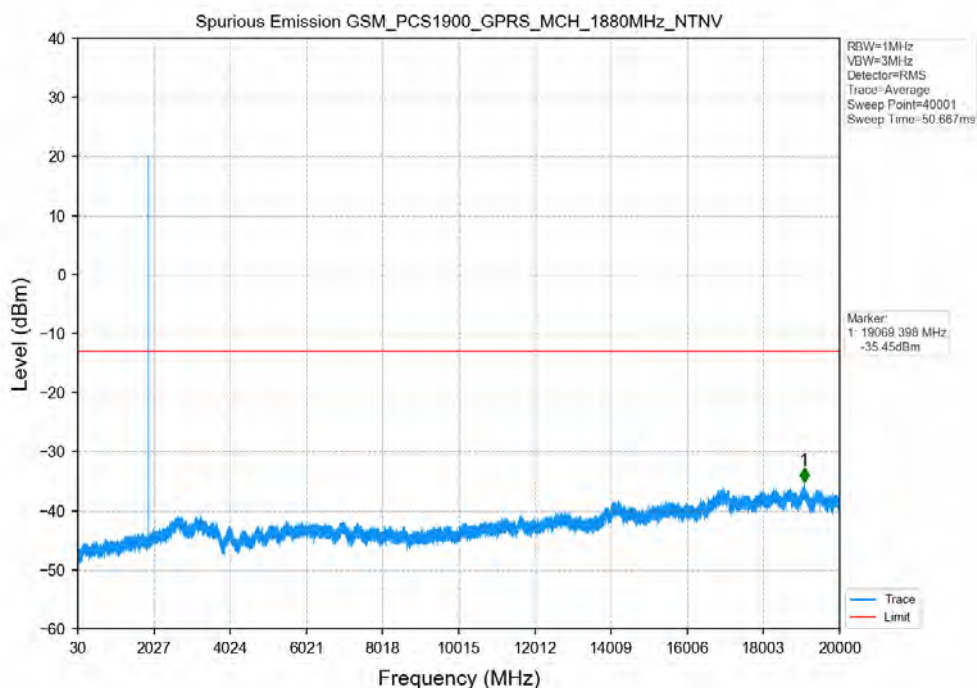
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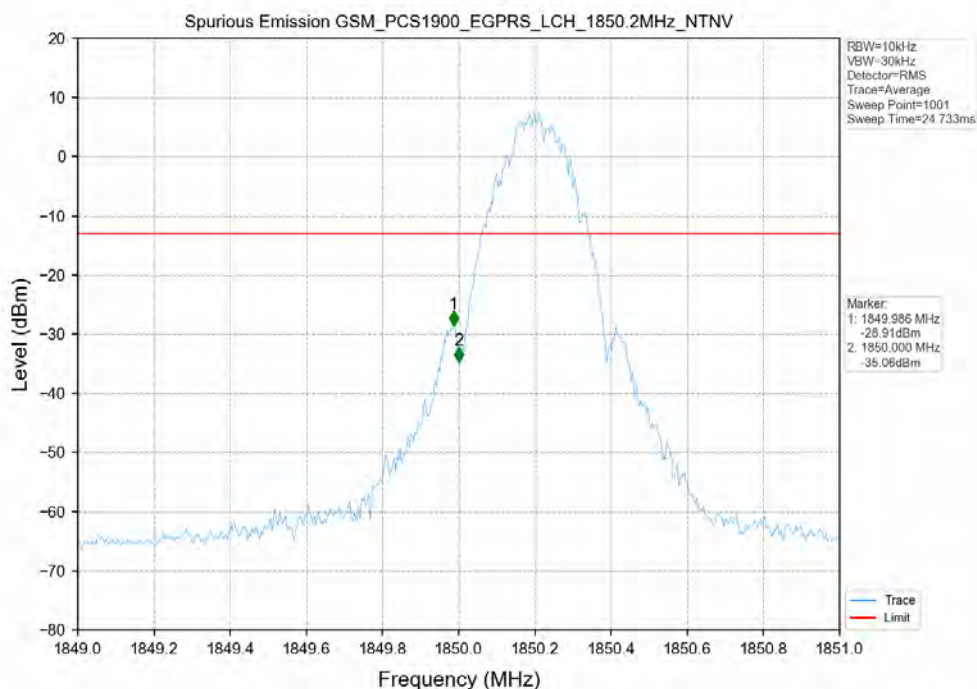
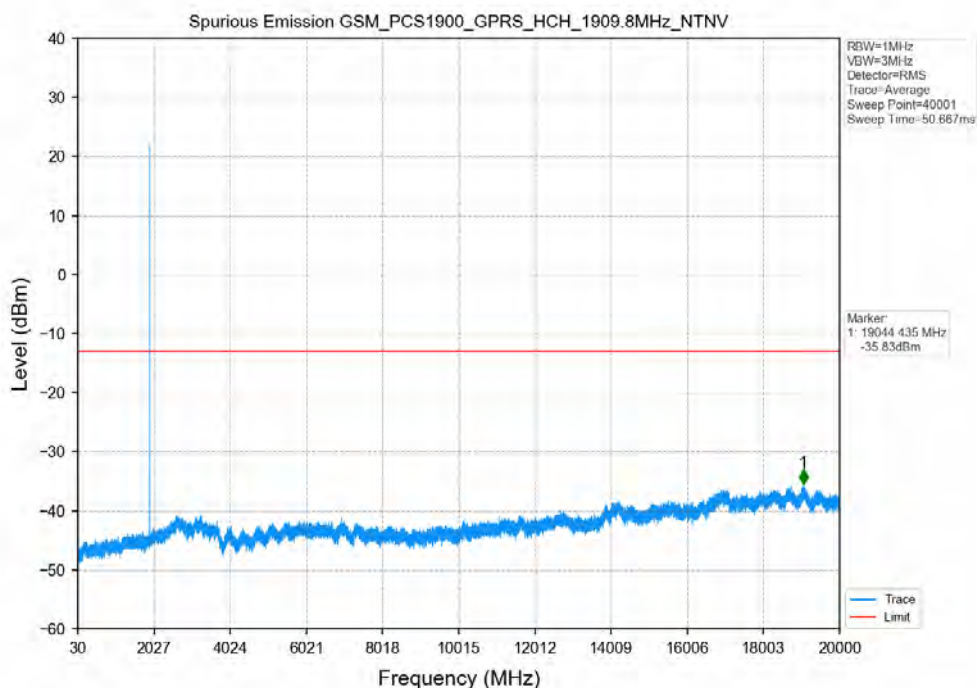
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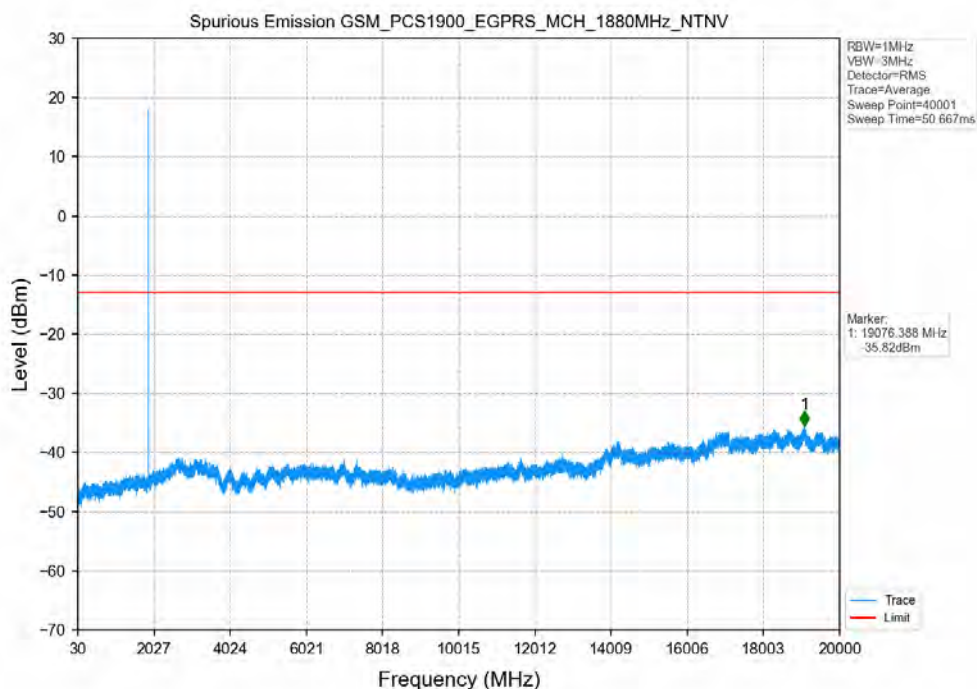
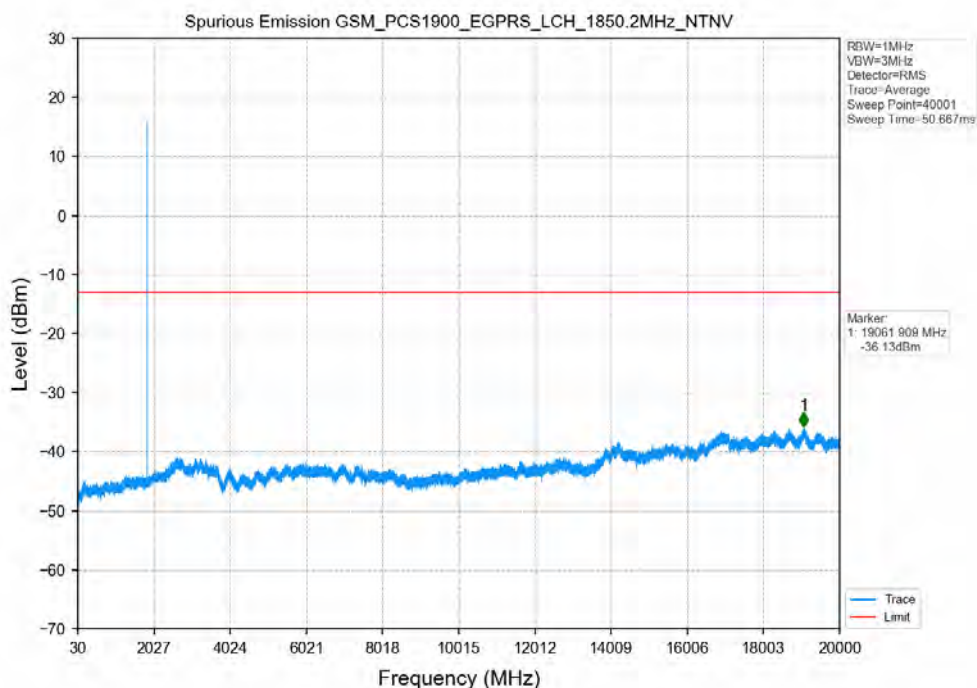
6. Spurious Emission

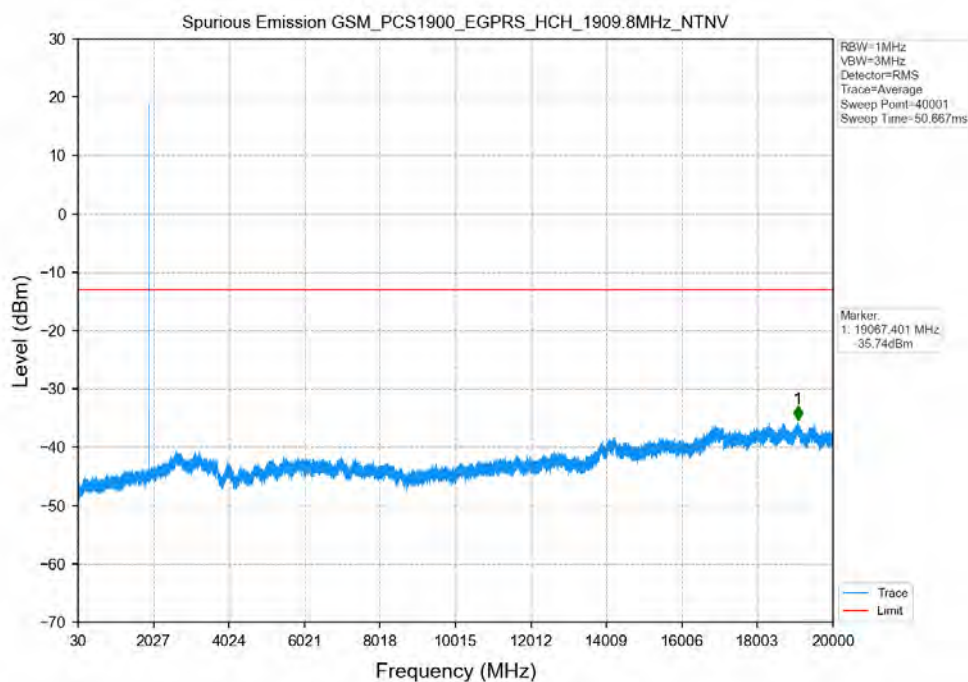
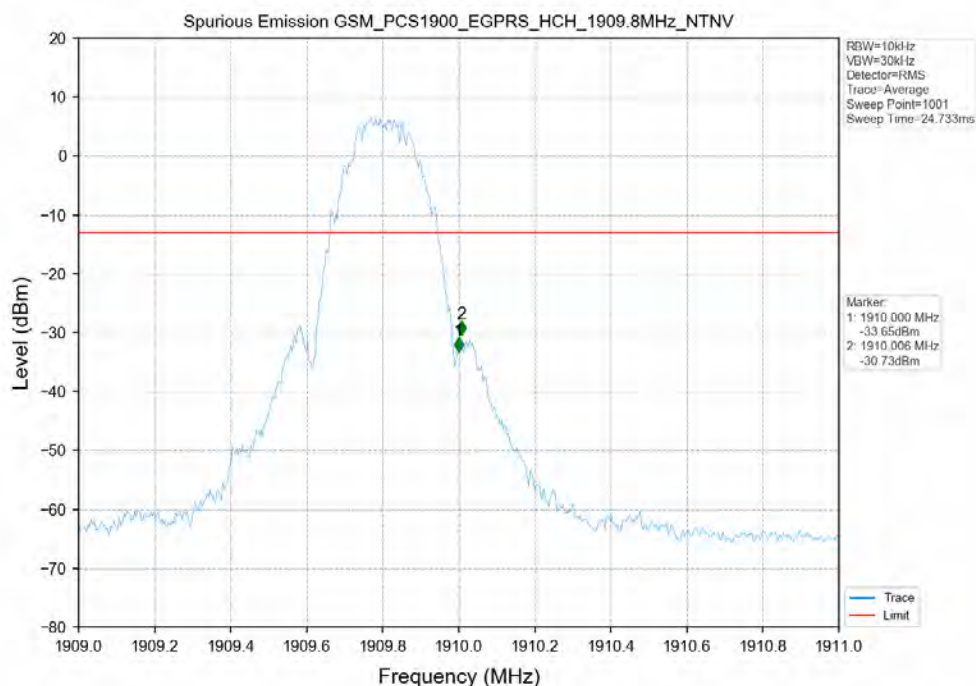
6.1 Test Graph











- End of the Report -