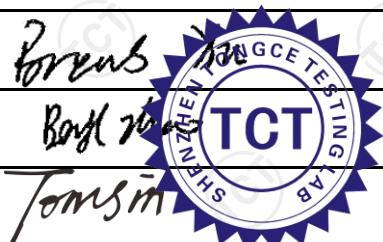


TEST REPORT

FCC ID.	2BCDW-MARLY
Test Report No.	TCT230727E009
Date of issue	Aug. 31, 2023
Testing laboratory	SHENZHEN TONGCE TESTING LAB
Testing location/ address:	2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China
Applicant's name	ShenZhen OuZhiXin Technology Co., Limited
Address	UNIT 1507C, 15/F, EASTCORE 398 KWUN TONG ROAD KWUN TONG KL, Hong Kong, China
Manufacturer's name	ShenZhen OuQiang Technology Co., Limited
Address	5th Floor, Building B2, Fuxinlin Industrial Park, Xixiang Street, Bao'an District, Shenzhen, China
Standard(s)	FCC CFR Title 47 Part 2 FCC CFR Title 47 Part22 FCC CFR Title 47 Part24
Product Name	Mobile Phone
Trade Mark	3Wolves
Model/Type reference	Marly
Rating(s)	Adapter Information: Input: AC 110-240V, 50/60Hz, 0.15A Output: DC 5V, 0.5A Rechargeable Li-ion Battery DC 3.7V
Date of receipt of test item	Jul. 27, 2023
Date (s) of performance of test	Jul. 27, 2023 - Aug. 31, 2023
Tested by (+signature)	Brews XU
Check by (+signature)	Beryl ZHAO
Approved by (+signature) :	Tomsin



General disclaimer:

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Table of Contents

1. General Product Information	3
1.1. EUT description	3
1.2. Model(s) list.....	3
1.3. Operation Frequency	4
2. Test Result Summary	5
3. General Information.....	6
3.1. Test environment and mode.....	6
3.2. Description of Support Units.....	7
3.3. Configuration of Tested System	8
3.4. Measurement Results Explanation Example.....	8
4. Facilities and Accreditations	9
4.1. Facilities	9
4.2. Location	9
4.3. Measurement Uncertainty.....	9
5. Test Results and Measurement Data	10
5.1. Conducted Output Power Measurement	10
5.2. Peak to Average Ratio.....	12
5.3. 99% Occupied Bandwidth and 26dB Bandwidth Measurement	18
5.4. Band Edge and Conducted Spurious Emission Measurement	24
5.5. Effective Radiated Power and Effective Isotropic Radiated Power Measurement	34
5.6. Field Strength of Spurious Radiation Measurement	41
5.7. Frequency Stability Measurement	49

Appendix A: Photographs of Test Setup

Appendix B: Photographs of EUT

1. General Product Information

1.1. EUT description

Product Name.....	Mobile Phone
Model/Type reference.....	Marly
Sample Number.....	TCT230727E008-0101
3G Version	WCDMA: R99
Tx Frequency.....	GSM/GPRS 850: 824.2MHz ~ 848.8MHz GSM/GPRS 1900: 1850.2MHz ~ 1909.8MHz WCDMA Band V: 826.4MHz ~ 846.6MHz WCDMA Band II: 1852.4MHz ~ 1907.6MHz
Rx Frequency	GSM/GPRS 850: 869.2MHz ~ 893.8MHz GSM/GPRS 1900: 1930.2MHz ~ 1989.8MHz WCDMA Band V: 871.4MHz ~ 891.6MHz WCDMA Band II: 1932.4MHz ~ 1987.6MHz
Maximum Output Power to Antenna.....	GSM850: 31.52dBm GSM1900: 28.70dBm GPRS850: 31.50dBm GPRS1900: 28.70dBm WCDMA Band V: 22.36dBm WCDMA Band II: 23.12dBm
99% Occupied Bandwidth.....	GSM850: 243KGXW GSM1900: 243KGXW GPRS850: 243KGXW GPRS1900: 243KGXW WCDMA Band V: 4M17F9W WCDMA Band II: 4M17F9W
Type of Modulation.....	GSM/GPRS: GMSK WCDMA: QPSK
Antenna Type.....	FPC Antenna
Antenna Gain.....	GSM/GPRS 850: 0.3dBi GSM/GPRS 1900: 0.6dBi WCDMA Band V: 0.3dBi WCDMA Band II: 0.6dBi
Rating(s).....	Adapter Information: Input: AC 110-240V, 50/60Hz, 0.15A Output: DC 5V, 0.5A Rechargeable Li-ion Battery DC 3.7V

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

1.2. Model(s) list

None.

1.3. Operation Frequency

GSM 850		PCS1900	
Channel:	Frequency (MHz)	Channel:	Frequency (MHz)
128	824.20	512	1850.20
129	824.40	513	1850.40
...
189	836.40	660	1879.80
190	836.60	661	1880.00
191	836.80	662	1880.20
...
250	848.60	809	1909.60
251	848.80	810	1909.80

WCDMA Band V		WCDMA Band II	
Channel:	Frequency (MHz)	Channel:	Frequency (MHz)
4132	826.40	9262	1852.40
4133	826.60	9263	1852.60
...
4182	836.40	9399	1879.80
4183	836.60	9400	1880.00
4184	836.80	9401	1880.20
...
4233	846.60	9538	1907.60

2. Test Result Summary

Requirement	CFR 47 Section	Result
Conducted Output Power	§22.913; §2.1046 §24.232	PASS
Peak-to-Average Ratio	§2.1046; §24.232(d) §22.913	PASS
Effective Radiated Power	§2.1046; §22.913(a) §24.232	PASS
Equivalent Isotropic Radiated Power	§2.1046; §22.913(a) §24.232	PASS
Occupied Bandwidth	§2.1049	PASS
Band Edge	§2.1051 §22.917(a) §24.238(a)	PASS
Conducted Spurious Emission	§2.1051; §22.917 §24.238	PASS
Field Strength of Spurious Radiation	§2.1053; §22.917(a) §24.238	PASS
Frequency Stability for Temperature & Voltage	§2.1055; §22.355 §24.235	PASS

Note:

1. PASS: Test item meets the requirement.
2. Fail: Test item does not meet the requirement.
3. N/A: Test case does not apply to the test object.
4. The test result judgment is decided by the limit of test standard.

3. General Information

3.1. Test environment and mode

Operating Environment:	
Temperature:	25.0 °C
Humidity:	56 % RH
Atmospheric Pressure:	1010 mbar

Remark: This product has a built-in rechargeable battery, so in an independent test, the EUT battery was fully-charged. This EUT owns two SIM cards, after we perform the pretest for these two SIM card; we found the SIM 1 is the worst case, so its result is recorded in this report.

Keep the EUT in communication with CMU200 and select channel with modulation All modes and data rates and positions were investigated.
Test modes are chosen to be reported as the worst case configuration below:

Test Mode		
Band	Radiated TCs	Conducted TCs
GSM 850	GSM Link GPRS class 12 Link	GSM Link GPRS class 12 Link
PCS 1900	GSM Link GPRS class 12 Link	GSM Link GPRS class 12 Link
WCDMA Band V	RMC 12.2Kbps Link	RMC 12.2Kbps Link
WCDM Band II	RMC 12.2Kbps Link	RMC 12.2Kbps Link

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power. Radiated measurements were performed with rotating EUT in different three orthogonal test planes to find the maximum emission. The sample was placed (0.8m below 1GHz, 1.5m above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarization. The emissions worst-case (Z axis) are shown in Test Results of the following pages.

3.2. Description of Support Units

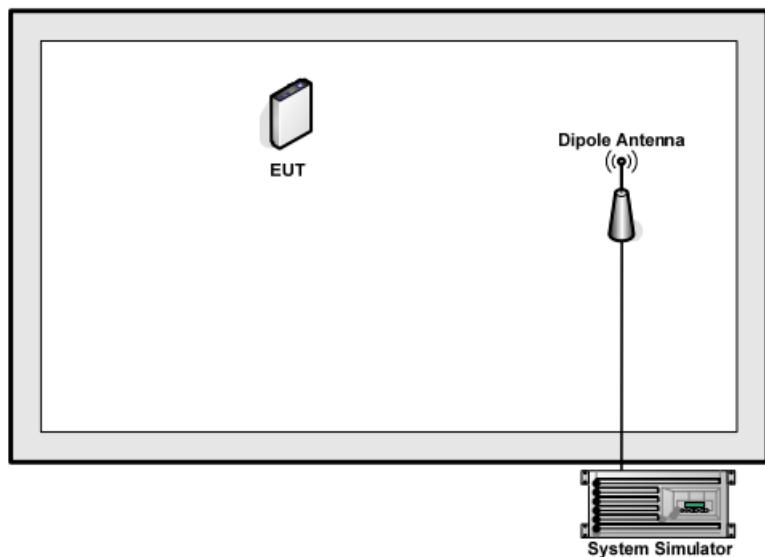
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

3.3. Configuration of Tested System



3.4. Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level. The spectrum analyzer offset is derived from RF cable loss and attenuator factor.
Offset = RF cable loss + attenuator factor.

The following shows an offset computation example with RF cable loss 3 dB and a 5dB attenuator.

Example: $\text{Offset (dB)} = \text{RF cable loss (dB)} + \text{attenuator factor (dB)}$.
= 8(dB)

4. Facilities and Accreditations

4.1. Facilities

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

- FCC - Registration No.: 645098

SHENZHEN TONGCE TESTING LAB

Designation Number: CN1205

The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A-1

SHENZHEN TONGCE TESTING LAB

CAB identifier: CN0031

The testing lab has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

4.2. Location

SHENZHEN TONGCE TESTING LAB

Address: 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

4.3. Measurement Uncertainty

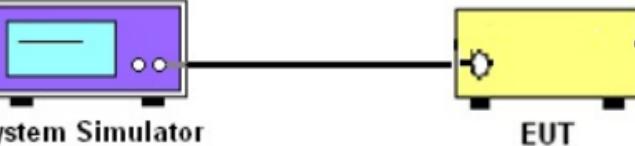
The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	MU
1	Conducted Emission	± 3.10 dB
2	RF power, conducted	± 0.12 dB
3	Spurious emissions, conducted	± 0.11 dB
4	All emissions, radiated(<1 GHz)	± 4.56 dB
5	All emissions, radiated(1 GHz - 18 GHz)	± 4.22 dB
6	All emissions, radiated(18 GHz- 40 GHz)	± 4.36 dB
7	Temperature	$\pm 0.1^\circ\text{C}$
8	Humidity	$\pm 1.0\%$

5. Test Results and Measurement Data

5.1. Conducted Output Power Measurement

5.1.1. Test Specification

Test Requirement:	FCC part 22.913(a) and FCC part 24.232(b)
Test Method:	FCC KDB 971168 D01 v03r01
Operation mode:	Refer to item 3.1
Limits:	GSM 850: 7W PCS 1900: 2W WCDMA Band V:7W WCDMA Band II: 2W
Test Setup:	
Test Procedure:	<ol style="list-style-type: none"> 1. The transmitter output port was connected to the system simulator. 2. Set EUT at maximum power through system simulator. 3. Select lowest, middle, and highest channels for each band and different modulation. 4. Measure the maximum burst average power for GSM and maximum average power for other modulation signal.
Test Result:	PASS

5.1.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
System simulator	R&S	CMU200	110188	Jun. 28, 2024
Combiner Box	Ascentest	AT890-RFB	/	/

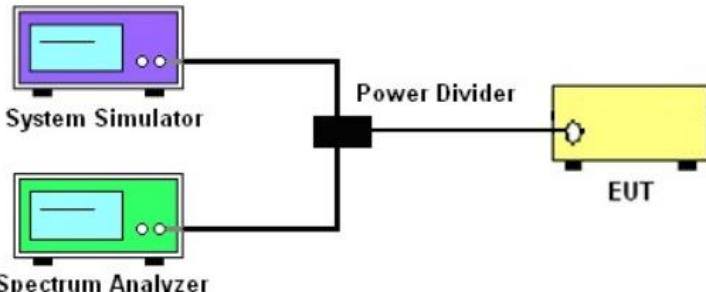
5.1.3. Test data**Conducted Power Measurement Results:**

Average Conducted Power (*Unit: dBm)						
Band	GSM850			PCS 1900		
Channel	128	190	251	512	661	810
Frequency(MHz)	824.2	836.6	848.8	1850.2	1880.0	1909.8
GSM	31.22	31.44	31.52	28.05	28.26	28.70
GPRS class8	31.20	31.41	31.50	27.50	28.25	28.70
GPRS class10	31.08	31.22	31.36	27.29	28.03	28.51
GPRS class11	30.07	30.25	30.31	26.33	27.10	27.61
GPRS class12	28.33	28.50	28.59	24.89	25.60	26.22

Average Conducted Power (*Unit: dBm)						
Band	WCDMA Band V			WCDMA Band II		
Channel	4132	4183	4233	9262	9400	9538
Frequency(MHz)	826.4	836.6	846.6	1852.4	1880.0	1907.6
WCDMA RMC 12.2K	21.90	22.36	21.93	22.37	22.69	23.12

5.2. Peak to Average Ratio

5.2.1. Test Specification

Test Requirement:	FCC part 24.232(d); FCC part 22.913
Test Method:	ANSI C63.26:2013
Operation mode:	Refer to item 3.1
Limit:	The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.
Test Setup:	
Test Procedure:	<ol style="list-style-type: none"> 1. The testing follows FCC KDB 971168 D01v03r01 Section 5.7.1. 2. The EUT was connected to spectrum analyzer and system simulator via a power divider. 3. Set EUT to transmit at maximum output power. 4. For GSM/EGPRS operating modes, signal gating is implemented on the spectrum analyzer by triggering from the system simulator. 5. Set the CCDF (Complementary Cumulative Distribution Function) option of the spectrum analyzer. <p>Record the maximum PAPR level associated with a probability of 0.1%.</p>
Test Result:	PASS

5.2.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
System simulator	R&S	CMU200	110188	Jun. 28, 2024
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jun. 28, 2024
Combiner Box	Ascentest	AT890-RFB	/	/

5.2.3. Test Data

Cellular Band			
Mode	GSM850		
Channel	128	189	251
Frequency (MHz)	824.2	836.6	848.8
Peak-to-Average Ratio (dB)	9.57	9.10	10.19

PCS Band			
Mode	GSM 1900		
Channel	512	661	810
Frequency (MHz)	1850.2	1880	1909.8
Peak-to-Average Ratio (dB)	9.50	9.79	9.83

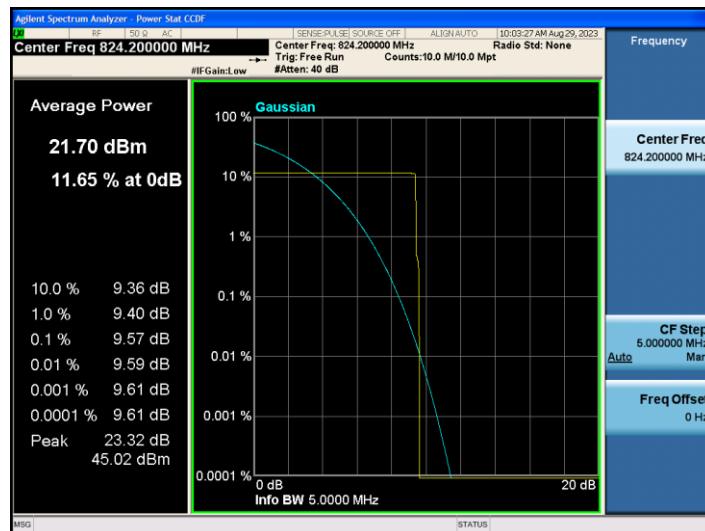
Mode	WCDMA Band V (HSUPA)			WCDMA Band II (HSUPA)		
Channel	4132	4183	4233	9262	9400	9538
Frequency (MHz)	826.4	836.6	846.6	1852.4	1880	1907.6
Peak-to-Average Ratio (dB)	3.04	3.02	3.07	3.02	3.00	2.96

Note: Measurements were conducted in all GMSK modulation (GSM/GPRS) and the worst case Mode (GSM) was submitted only.

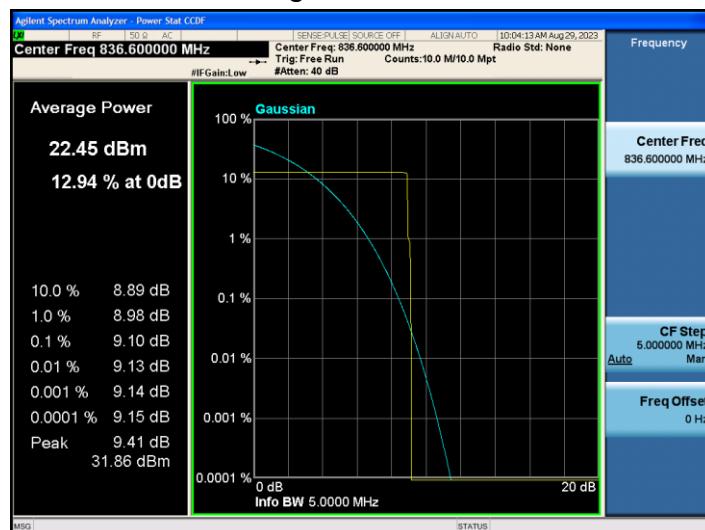
Test plots as follows:

GSM 850

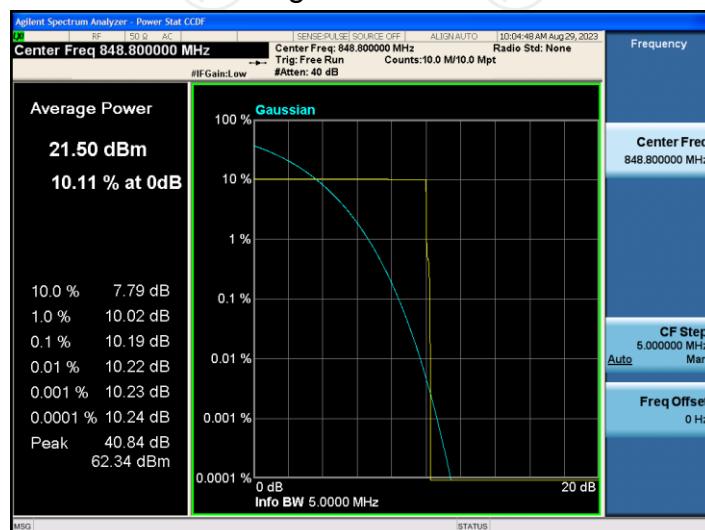
Peak-to-Average Ratio on Channel 128



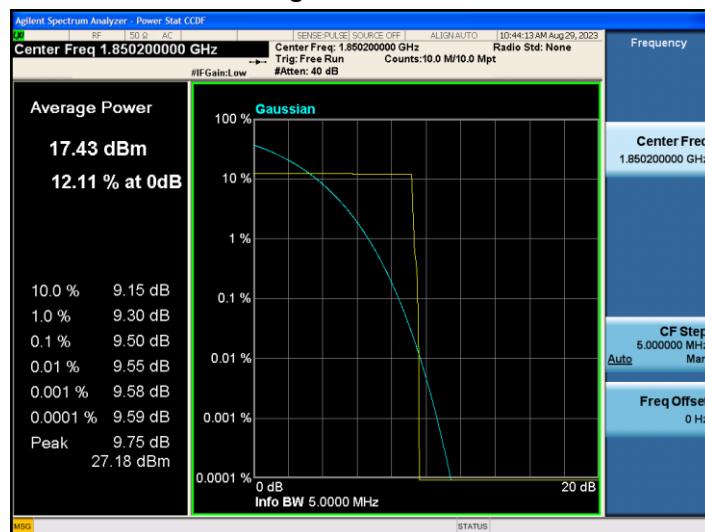
Peak-to-Average Ratio on Channel 190



Peak-to-Average Ratio on Channel 251



Peak-to-Average Ratio on Channel 512



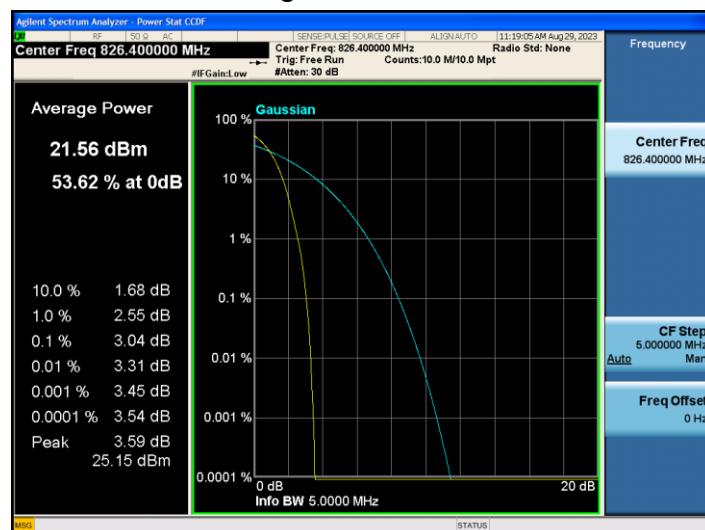
Peak-to-Average Ratio on Channel 661



Peak-to-Average Ratio on Channel 810



Peak-to-Average Ratio on Channel 4132



Peak-to-Average Ratio on Channel 4183



Peak-to-Average Ratio on Channel 4233



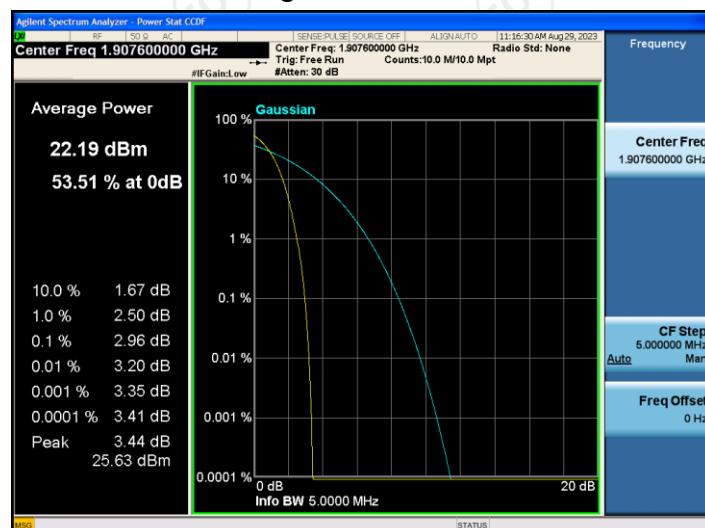
Peak-to-Average Ratio on Channel 9262



Peak-to-Average Ratio on Channel 9400



Peak-to-Average Ratio on Channel 9538



5.3. 99% Occupied Bandwidth and 26dB Bandwidth Measurement

5.3.1. Test Specification

Test Requirement:	FCC part 2.1049
Test Method:	FCC KDB 971168 D01v03r01
Operation mode:	Refer to item 3.1
Limit:	N/A
Test Setup:	<p>System Simulator</p> <p>Spectrum Analyzer</p> <p>Power Divider</p> <p>EUT</p>
Test Procedure:	<ol style="list-style-type: none"> 1. The testing follows FCC KDB 971168 D01v03r01 Section 4.2. 2. The EUT was connected to the spectrum analyzer and system simulator via a power divider. 3. The RF output of the EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. 4. The 99% occupied bandwidth were measured, set RBW= 1% of span, VBW= 3*RBW, sample detector, trace maximum hold. 5. The 26dB bandwidth were measured, set RBW= 1% of EBW, VBW= 3*RBW, peak detector, trace maximum hold.
Test Result:	PASS

5.3.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
System simulator	R&S	CMU200	110188	Jun. 28, 2024
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jun. 28, 2024
Combiner Box	Ascentest	AT890-RFB	/	/

5.3.3. Test data

Cellular Band			
Mode	GSM850		
Channel	128	190	251
Frequency (MHz)	824.2	836.6	848.8
99% OBW (kHz)	242.83	242.33	241.94
26dB BW (kHz)	315.70	318.60	314.50

Cellular Band			
Mode	GSM1900		
Channel	512	661	810
Frequency (MHz)	1850.2	1880.0	1909.8
99% OBW (kHz)	243.01	243.19	242.44
26dB BW (kHz)	317.00	321.20	313.80

Cellular Band			
Mode	WCDMA Band V (HSUPA)		
Channel	4132	4183	4233
Frequency (MHz)	826.4	836.6	846.6
99% OBW (MHz)	4.17	4.16	4.15
26dB BW (MHz)	4.70	4.72	4.72

Cellular Band			
Mode	WCDMA Band II (HSUPA)		
Channel	9262	9400	9538
Frequency (MHz)	1852.4	1880	1907.6
99% OBW (MHz)	4.17	4.15	4.17
26dB BW (MHz)	4.73	4.73	4.72

Note: Measurements were conducted in all GMSK modulation (GSM/GPRS) and the worst case Mode (GSM) was submitted only.

Test plots as follows:

Band:	GSM 850	Test Mode:	GSM Link (GMSK)
-------	---------	------------	-----------------

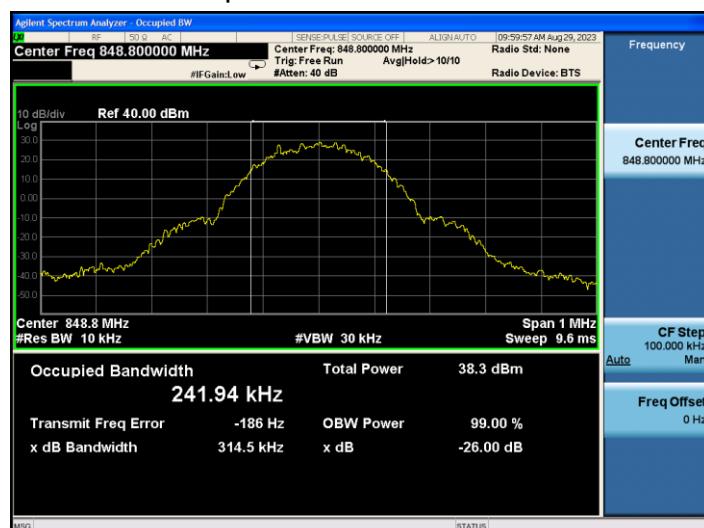
26dB&99% Occupied Bandwidth Plot on Channel 128



26dB&99% Occupied Bandwidth Plot on Channel 190



26dB&99% Occupied Bandwidth Plot on Channel 251



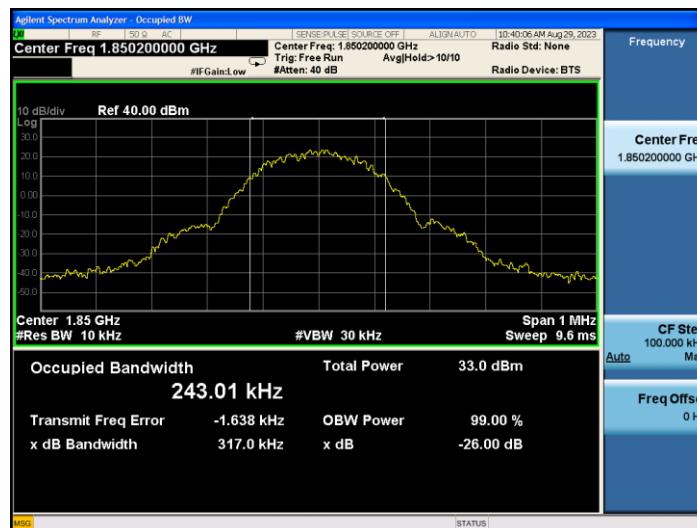
Band:

GSM 1900

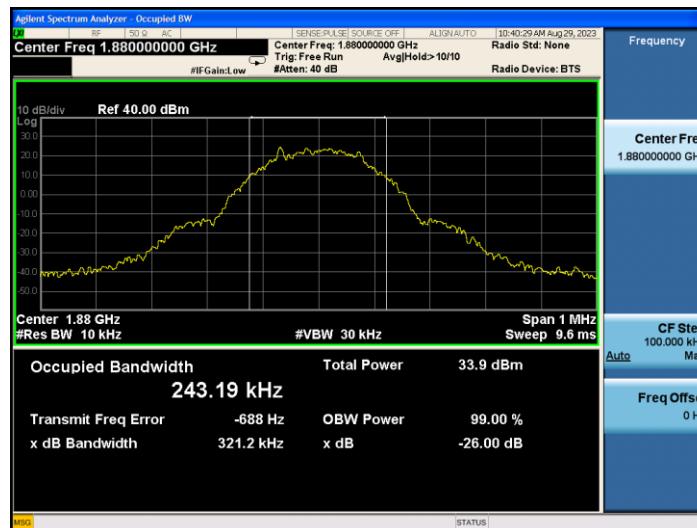
Test Mode:

GSM Link (GMSK)

26dB&99% Occupied Bandwidth Plot on Channel 512



26dB&99% Occupied Bandwidth Plot on Channel 661



26dB&99% Occupied Bandwidth Plot on Channel 810



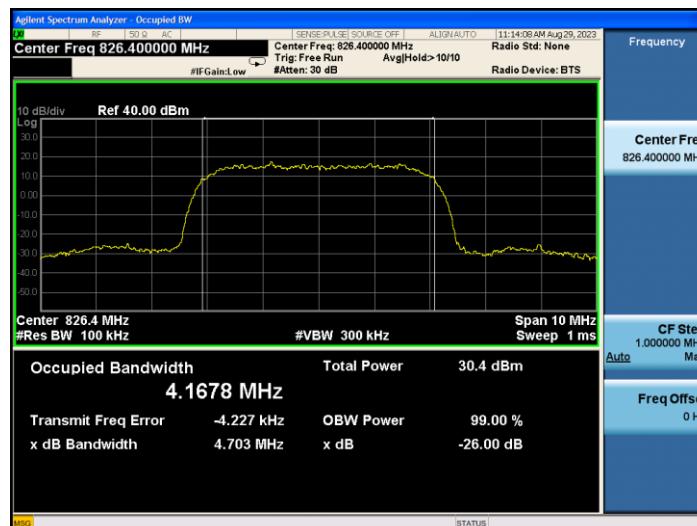
Band:

WCDMA Band V

Test Mode:

HSUPA Link (QPSK)

26dB&99% Occupied Bandwidth Plot on Channel 4132



26dB&99% Occupied Bandwidth Plot on Channel 4183



26dB&99% Occupied Bandwidth Plot on Channel 4233



Band:

WCDMA Band II

Test Mode:

HSUPA Link (QPSK)

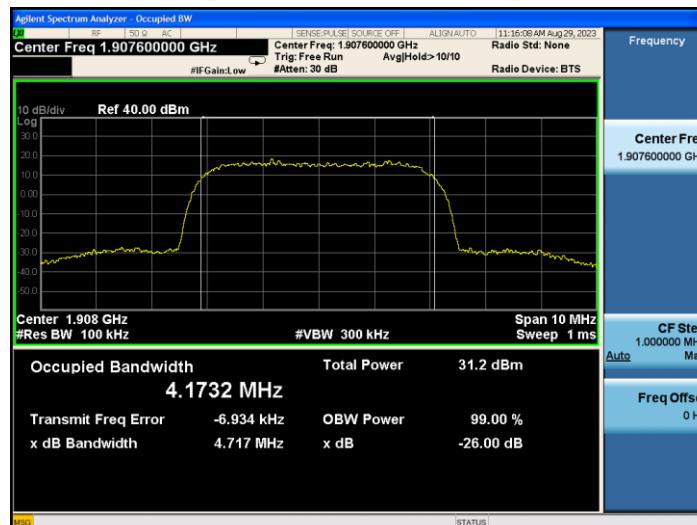
26dB&99% Occupied Bandwidth Plot on Channel 9262



26dB&99% Occupied Bandwidth Plot on Channel 9400

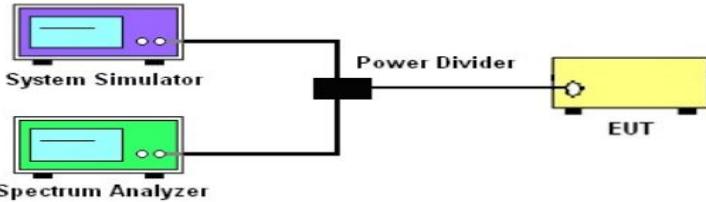


26dB&99% Occupied Bandwidth Plot on Channel 9538



5.4. Band Edge and Conducted Spurious Emission Measurement

5.4.1. Test Specification

Test Requirement:	FCC part22.917(a) and FCC part24.238(a)
Test Method:	FCC KDB 971168 D01v03r01
Operation mode:	Refer to item 3.1
Limit:	-13dBm
Test Setup:	
Test Procedure:	<ol style="list-style-type: none"> The testing follows FCC KDB 971168 D01v03r01 Section 6.0. The EUT was connected to the spectrum analyzer and system simulator via a power divider. The RF output of EUT was connected to the spectrum analyzer by an RF cable and attenuator. The path loss was compensated to the results for each measurement. The band edges of low and high channels for the highest RF powers were measured. The conducted spurious emission for the whole frequency range was taken. The RF fundamental frequency should be excluded against the limit line in the operating frequency band. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power $P(\text{Watts}) = P(\text{W}) - [43 + 10\log(P)] \text{ (dB)} = [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)} = -13\text{dBm}.$
Test Result:	PASS

5.4.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
System simulator	R&S	CMU200	110188	Jun. 28, 2024
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jun. 28, 2024
Combiner Box	Ascentest	AT890-RFB	/	/

5.4.3. Test data

Test plots as follows:

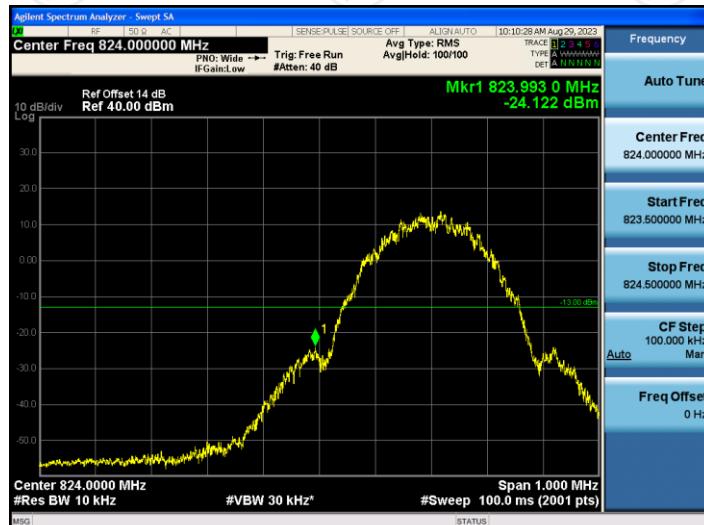
Band:

GSM 850

Test Mode:

GSM Link (GMSK)

Lower Band Edge Plot on Channel 128



Higher Band Edge Plot on Channel 251



Band:

GSM 1900

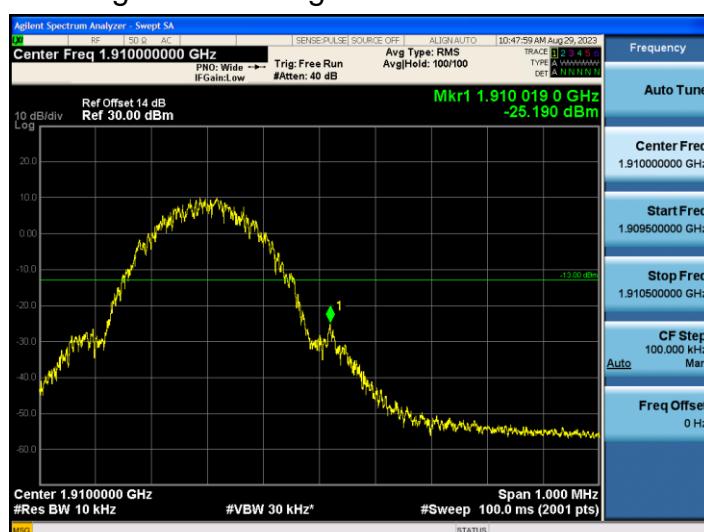
Test Mode:

GSM Link (GMSK)

Lower Band Edge Plot on Channel 512



Higher Band Edge Plot on Channel 810



Band:

WCDMA Band V

Test Mode:

HSUPA Link (QPSK)

Lower Band Edge Plot on Channel 4132



Higher Band Edge Plot on Channel 4233



Band:

WCDMA Band II

Test Mode:

HSUPA Link (QPSK)

Lower Band Edge Plot on Channel 9262



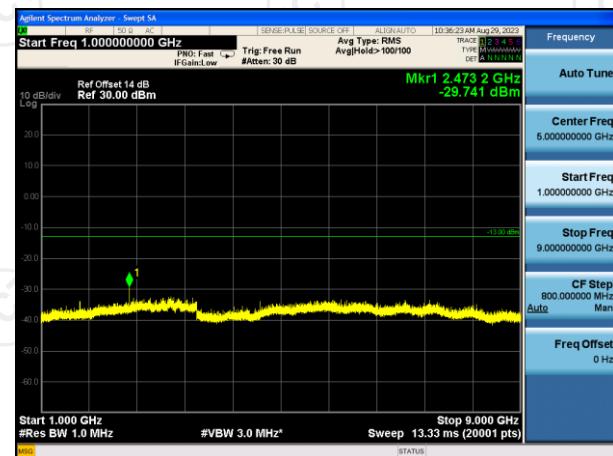
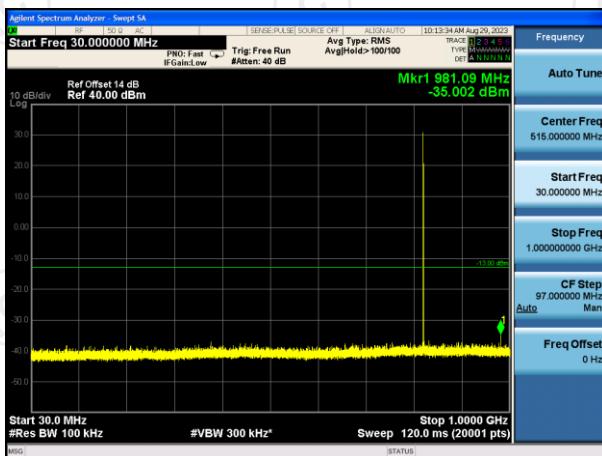
Higher Band Edge Plot on Channel 9538



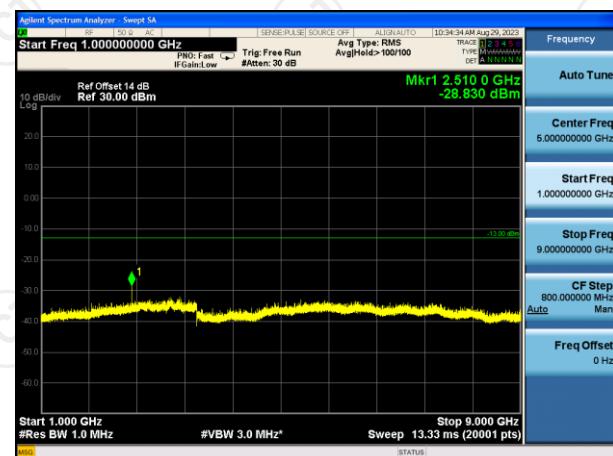
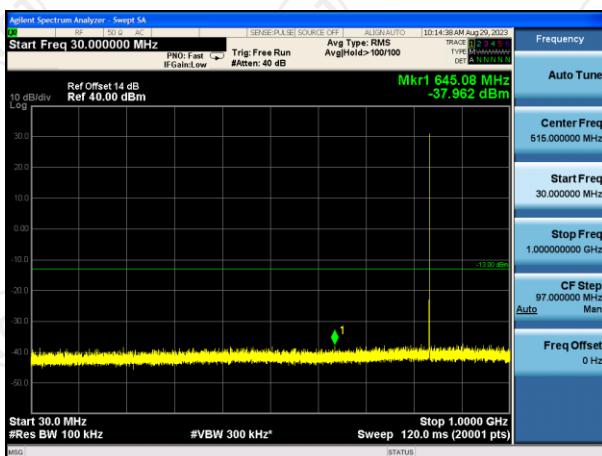
Band: GSM 850

Test Mode: GSM Link (GMSK)

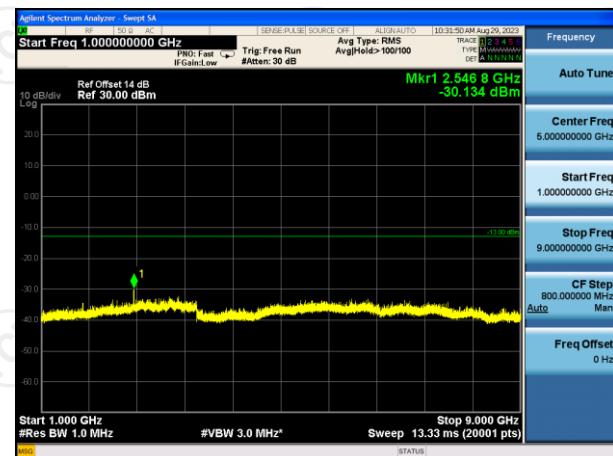
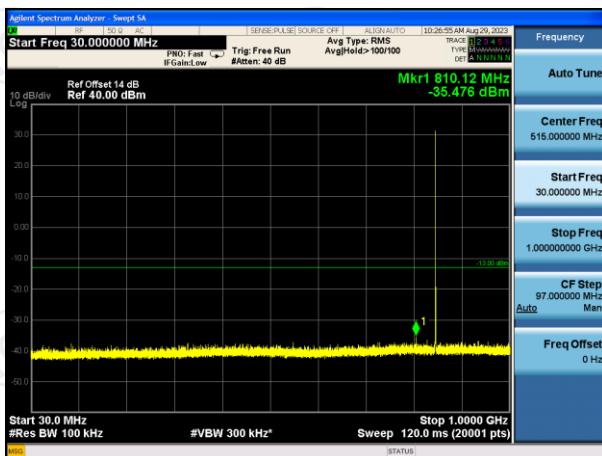
Conducted Spurious Emission on Channel 128



Conducted Spurious Emission on Channel 190



Conducted Spurious Emission on Channel 251



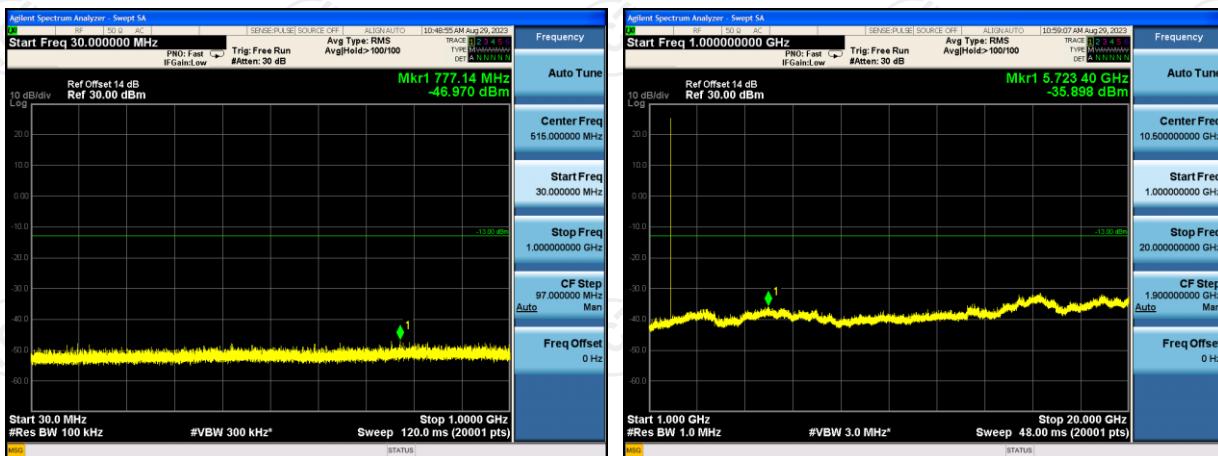
Band:

GSM 1900

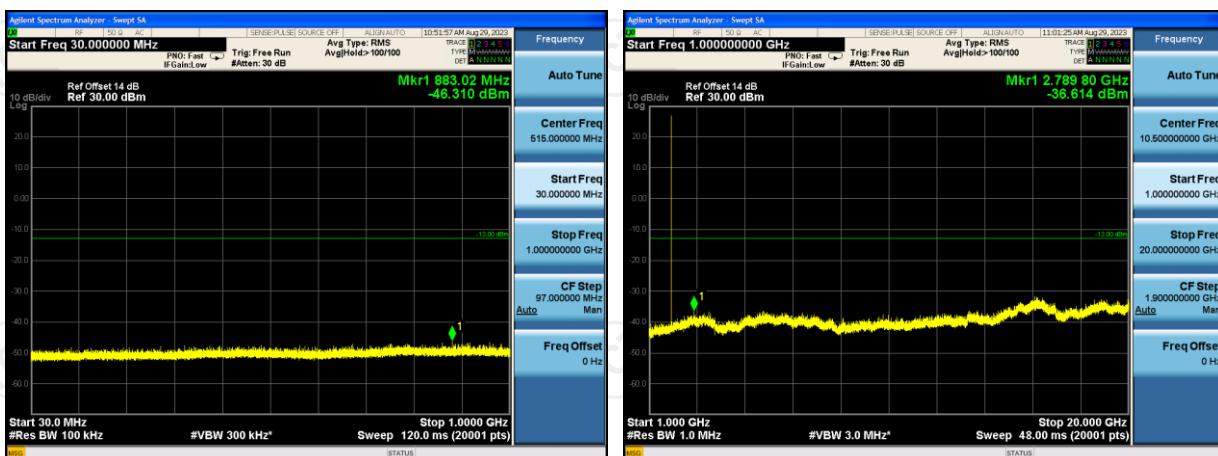
Test Mode:

GSM Link (GMSK)

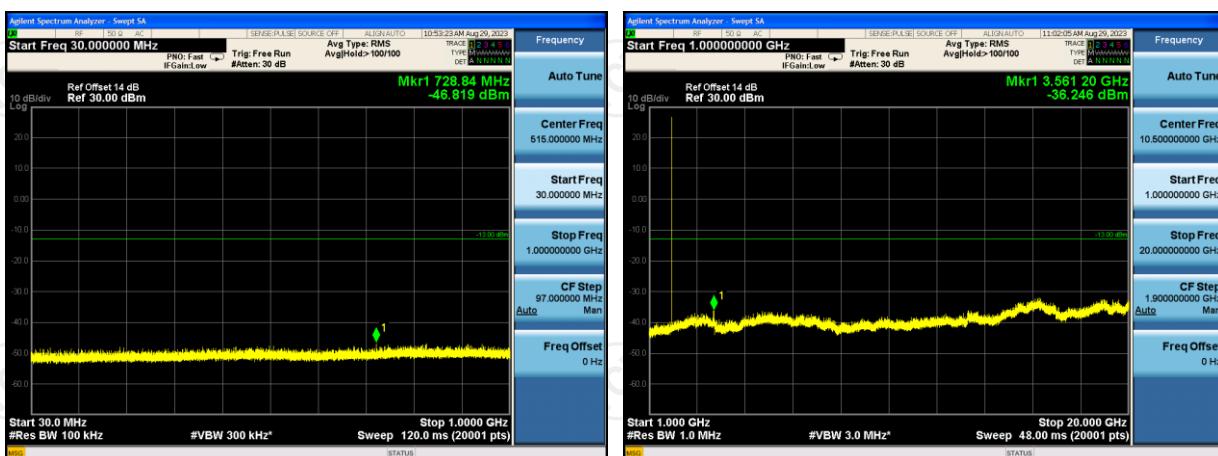
Conducted Spurious Emission on Channel 512



Conducted Spurious Emission on Channel 661



Conducted Spurious Emission on Channel 810



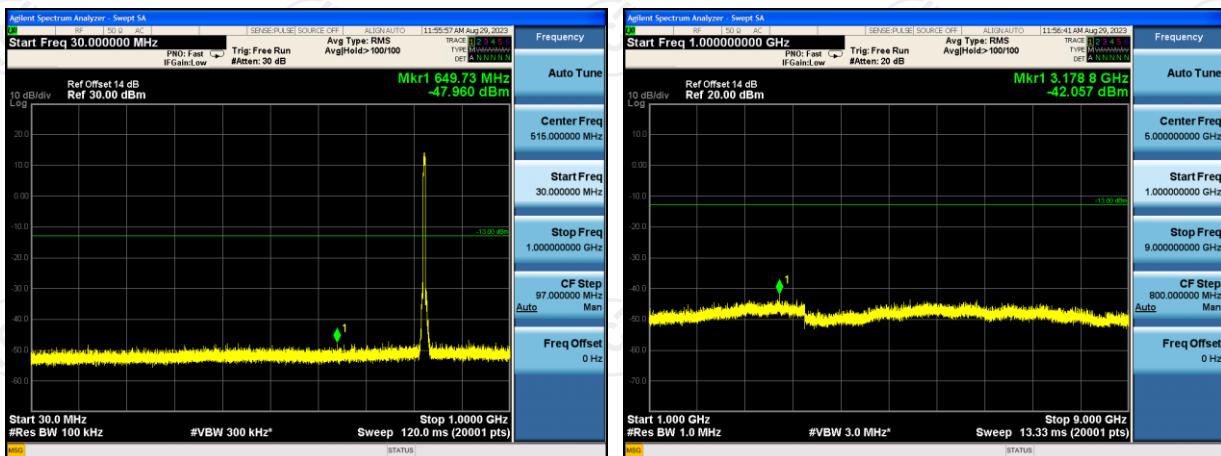
Band:

WCDMA Band V

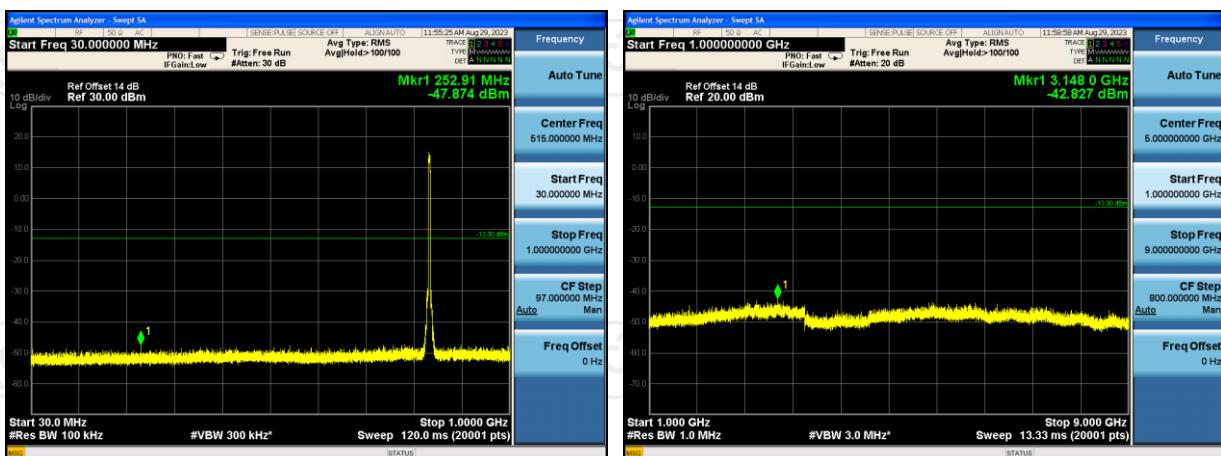
Test Mode:

HSUPA Link (QPSK)

Conducted Spurious Emission on Channel 4132



Conducted Spurious Emission on Channel 4183



Conducted Spurious Emission on Channel 4233

