



RF TEST REPORT

Applicant XCHENG TECH CO., LIMITED
FCC ID 2AZ4F-T0511-T5
Product PDA
Brand Kobile
Model T0511;T5;T05;T05_ROW
Report No. R2111A1062-R1V2
Issue Date April 28, 2022

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2021)/ FCC CFR 47 Part 22H (2021)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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TABLE OF CONTENT

1. Test Laboratory	5
1.1. Notes of the Test Report	5
1.2. Test facility	5
1.3. Testing Location	5
2. General Description of Equipment under Test.....	6
2.1. Applicant and Manufacturer Information	6
2.2. General Information.....	6
3. Applied Standards.....	8
4. Test Configuration.....	9
5. Test Case.....	11
5.1. RF Power Output and Effective Radiated Power	11
5.2. Occupied Bandwidth	12
5.3. Band Edge Compliance.....	13
5.4. Peak-to-Average Power Ratio (PAPR)	14
5.5. Frequency Stability.....	15
5.6. Spurious Emissions at Antenna Terminals	17
5.7. Radiates Spurious Emission	18
6. Test Result	21
6.1. RF Power Output and Effective Radiated Power	21
6.2. Occupied Bandwidth	28
6.3. Band Edge Compliance.....	38
6.4. Peak-to-Average Power Ratio (PAPR)	48
6.5. Frequency Stability.....	50
6.6. Spurious Emissions at Antenna Terminals	53
6.7. Radiates Spurious Emission	57
7. Main Test Instruments	60
ANNEX A: The EUT Appearance.....	61
ANNEX B: Test Setup Photos	62



Version	Revision description	Issue Date
Rev.0	Initial issue of report.	April 6, 2022
Rev.1	Update description.	April 20, 2022
Rev.2	Update Applicant.	April 28, 2022

Note: This revised report (Report No. R2111A1062-R1V2) supersedes and replaces the previously issued report (Report No. R2111A1062-R1V1). Please discard or destroy the previously issued report and dispose of it accordingly.



Summary of measurement results

No.	Test Case	Clause in FCC rules	Verdict
1	RF Power Output and Effective Radiated Power	2.1046 22.913(a)(5)	PASS
2	Occupied Bandwidth	2.1049	PASS
3	Band Edge Compliance	2.1051 / 22.917(a)	PASS
4	Peak-to-Average Power Ratio	22.913(d)/ KDB 971168 D01(5.7)	PASS
5	Frequency Stability	2.1055 / 22.355	PASS
6	Spurious Emissions at Antenna Terminals	2.1051 / 22.917(a)	PASS
7	Radiates Spurious Emission	2.1053 / 22.917 (a)	PASS

Date of Testing: November 26, 2021 ~ March 30, 2022

Date of Sample Received: November 25, 2021

Note: PASS: The EUT complies with the essential requirements in the standard.

FAIL: The EUT does not comply with the essential requirements in the standard.

All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.



1. Test Laboratory

1.1. Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2. Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

1.3. Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong
City: Shanghai
Post code: 201201
Country: P. R. China
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E-mail: xukai@ta-shanghai.com

2. General Description of Equipment under Test

2.1. Applicant and Manufacturer Information

Applicant	XCHENG TECH CO., LIMITED
Applicant address	ROOM 401F, Building 5, No.3000 LONG DONG Avenue, Pudong New District, Shanghai, China
Manufacturer	XCHENG TECH CO., LIMITED
Manufacturer address	ROOM 401F, Building 5, No.3000 LONG DONG Avenue, Pudong New District, Shanghai, China

2.2. General Information

EUT Description		
Model	T0511;T5;T05;T05_ROW	
IMEI	IMEI 1: 354721087287226 IMEI 2: 354721087287770	
Hardware Version	MT6761	
Software Version	V01	
Power Supply	Battery / AC adapter	
Antenna Type	Internal Antenna	
Antenna Gain	Frequency (MHz)	Gain(dBi)
	820	-1.76
	830	-1.34
	840	-1.04
	850	-0.77
Test Mode(s)	GSM 850; WCDMA Band V; LTE Band 5;	
Test Modulation	(GSM/GPRS)GMSK, (EGPRS) GMSK/ 8PSK; (WCDMA) BPSK, QPSK, 16QAM; (LTE) QPSK, 16QAM, 64QAM;	
GPRS Multislot Class	12	
EGPRS Multislot Class	33	
HSDPA UE Category	12	
HSUPA UE Category	7	
DC-HSDPA UE Category	24	
HSPA+ UE Category	7	
LTE Category	7	
Maximum E.R.P.	GSM 850:	28.52 dBm
	WCDMA Band V:	18.62 dBm
	LTE Band 5:	20.09 dBm
Rated Power Supply Voltage	4.0V	



Operating Voltage	Minimum: 3.5V Maximum: 5.0V		
Operating Temperature	Lowest: -0°C Highest: +54°C		
Testing Temperature	Lowest: -30°C Highest: +50°C		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	GSM850	824 ~ 849	869 ~ 894
	WCDMA Band V	824 ~ 849	869 ~ 894
	LTE Band 5	824 ~ 849	869 ~ 894
EUT Accessory			
Battery	Manufacturer: Zhongshan Tianmao Battery Co.,Ltd Model: BP1826-3		
Adapter 1	Manufacturer: SHENZHENG EAST SUN ELECTRONIC CO.,LTD Model: WI-RD-191105-001		
Adapter 2	Manufacturer: SHENZHENG EAST SUN ELECTRONIC CO.,LTD Model: TPA-59050200BU01-C		
Adapter 3	Manufacturer: SHENZHENG EAST SUN ELECTRONIC CO.,LTD Model: TPA-23A050200UU02-C		
USB Cable	Manufacturer: Shenzhen HuaJiaShengMing Technology Co.,Ltd Model: 262202110B0011		
<p>Note: 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.</p> <p>2. There is more than one Adapter, each one should be applied throughout the compliance test respectively, and however, only the worst case (Adapter 2) will be recorded in this report.</p> <p>3. Customer declaration, The four products are the same, except for model. Only T0511 will be recorded in this report.</p>			



3. Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standards:

FCC CFR 47 Part 22H (2021)

FCC CFR47 Part 2 (2021)

Reference standard:

ANSI C63.26 (2015)

KDB 971168 D01 Power Meas License Digital Systems v03r01

4. Test Configuration

There is more than one SIM card slot, each one should be applied throughout the compliance test respectively, and however, only the worst case (SIM 1) will be recorded in this report

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes. EUT stand-up position (Z axis), lie-down position (X, Y axis). Receiver antenna polarization (horizontal and vertical), the worst emission was found in position (X, horizontal polarization for GSM/WCDMA; X, vertical polarization for LTE) and the worst case was recorded.

All mode and data rates and positions and RB size and modulations were investigated. Subsequently, only the worst case emissions are reported.

The following testing in GSM/WCDMA/LTE is set based on the maximum RF Output Power.

Test modes are chosen to be reported as the worst case configuration below:

Test items	Modes/Modulation	
	GSM 850	WCDMA Band V
RF Power Output and Effective Radiated power	GSM GPRS EGPRS	RMC HSDPA/HSUPA/ DC-HSDPA/HSPA+
Occupied Bandwidth	GSM GPRS(1Tx slot) EGPRS(1Tx slot)	RMC
Band Edge Compliance	GSM GPRS(1Tx slot) EGPRS(1Tx slot)	RMC
Peak-to-Average Power Ratio	GSM GPRS(1Tx slot) EGPRS(1Tx slot)	RMC
Frequency Stability	GSM GPRS(1Tx slot) EGPRS(1Tx slot)	RMC
Spurious Emissions at Antenna Terminals	GSM	RMC
Radiates Spurious Emission	GSM	RMC



Test modes are chosen as the worst case configuration below for LTE Band 5.

Test items	Bandwidth (MHz)				Modulation		RB			Test Channel		
	1.4	3	5	10	QPSK	16QAM/ 64QAM	1	50%	100%	L	M	H
RF power output and Effective Radiated power	O	O	O	O	O	O	O	O	O	O	O	O
Occupied Bandwidth	O	O	O	O	O	O	-	-	O	O	O	O
Band Edge Compliance	O	O	O	O	O	O	O	-	O	O	-	O
Peak-to-Average Power Ratio	O	O	O	O	O	O	-	-	O	O	O	O
Frequency Stability	O	O	O	O	O	O	O	-	-	-	O	-
Spurious Emissions at Antenna Terminals	O	O	O	O	O	-	O	-	-	O	O	O
Radiates Spurious Emission	O	-	O	O	O	-	O	-	-	-	O	-
Note	1. The mark "O" means that this configuration is chosen for testing. 2. The mark "-" means that this configuration is not testing.											

5. Test Case

5.1. RF Power Output and Effective Radiated Power

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT was connected to the Base Station Simulator with a known loss. The EUT is controlled by the Base Station Simulator test set to ensure max power transmission with proper modulation.

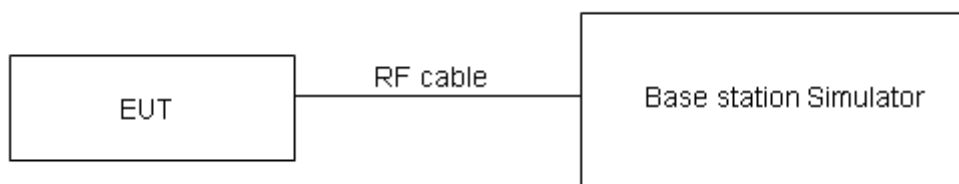
ERP can then be calculated as follows:

$$\text{EIRP (dBm)} = \text{Output Power (dBm)} - \text{Losses (dB)} + \text{Antenna Gain (dBi)}$$

where:dBd refers to gain relative to an ideal dipole.

$$\text{EIRP (dBm)} = \text{ERP (dBm)} + 2.15 \text{ (dB)}.$$

Test Setup



Limits

No specific RF power output requirements in part 2.1046.

Rule Part 22.913(a)(5) specifies that "Mobile/portable stations are limited to 7 watts ERP".

Limit	$\leq 7 \text{ W}$ (38.45 dBm)
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.4 \text{ dB}$ for RF power output, $k = 2$, $U = 1.19 \text{ dB}$ for ERP.

Test Results

Refer to the section 6.1 of this report for test data.

5.2. Occupied Bandwidth

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

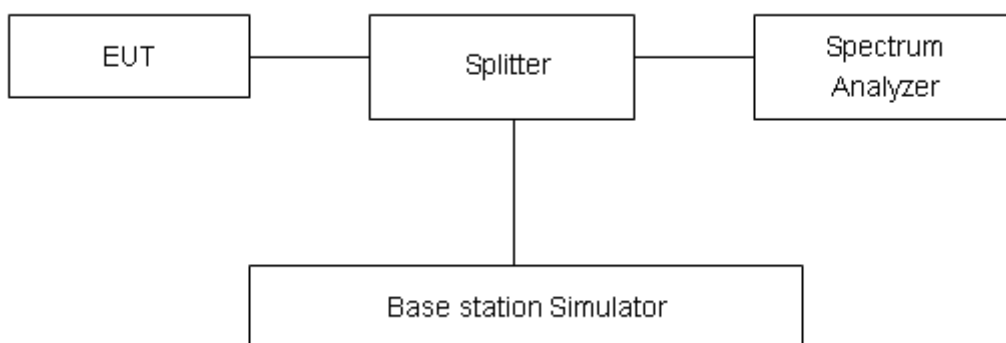
Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The occupied bandwidth is measured using spectrum analyzer.

RBW is set to $\geq 1\%EBW$, VBW is set to 3x RBW.

99% power and -26dBc occupied bandwidths are recorded. Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

No specific occupied bandwidth requirements in part 2.1049.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 624\text{Hz}$.

Test Results

Refer to the section 6.2 of this report for test data.

5.3. Band Edge Compliance

Ambient condition

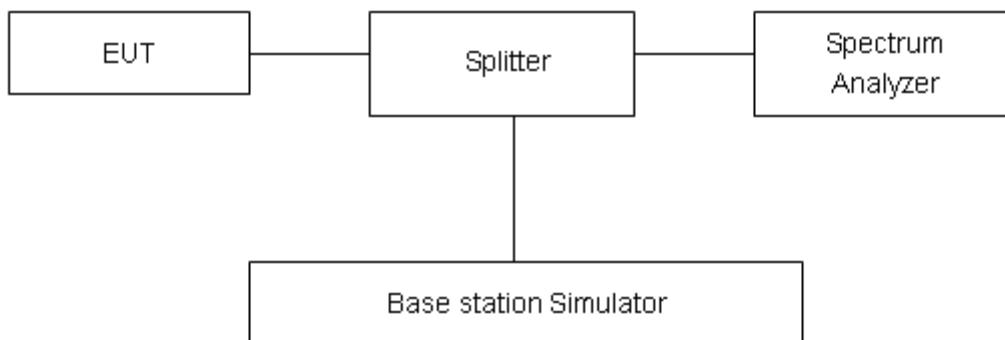
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured. The average detector is used. RBW is set to $\geq 1\%EBW$, VBW is set to 3x RBW.

Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

Rule Part 22.917(a) specifies that “The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.”

Limit	-13 dBm
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U=0.684dB$.

Test Results

Refer to the section 6.3 of this report for test data.

5.4. Peak-to-Average Power Ratio (PAPR)

Ambient condition

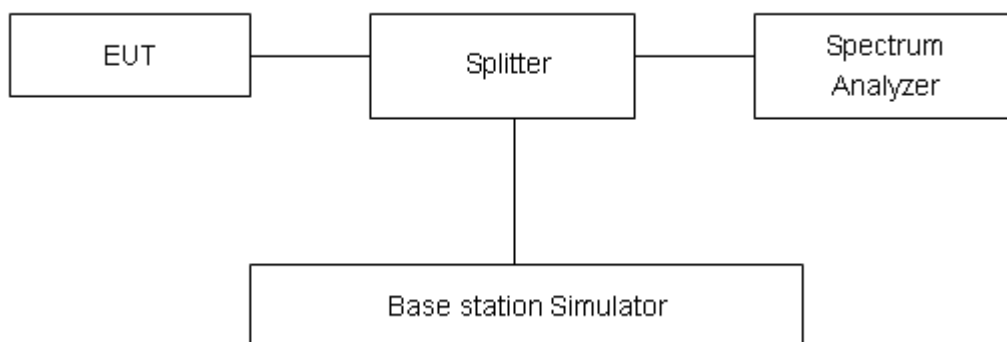
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

Measure the total peak power and record as P_{Pk} . And measure the total average power and record as P_{Avg} . Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:

$$PAPR (dB) = P_{Pk} (dBm) - P_{Avg} (dBm).$$

Test Setup



Limits

According to the Sec. 22.913(d), The peak-to-average ratio (PAR) of the transmission must not exceed 13 dB.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.4$ dB.

Test Results

Refer to the section 6.4 of this report for test data.

5.5. Frequency Stability

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -30°C to +50°C in 10°C step size,

(1) With all power removed, the temperature was decreased to 0°C and permitted to stabilize for three hours.

(2) Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.

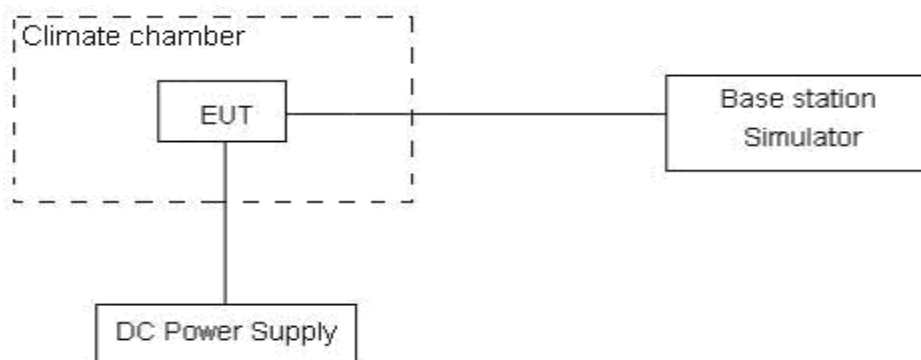
(3) Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements. Frequency Stability (Voltage Variation)

The frequency stability shall be measured with variation of primary supply voltage as follows:

Primary Supply Voltage: The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

This transceiver is specified to operate with an input voltage of between 3.5 V and 5.0 V, with a nominal voltage of 4.0V.

Test setup



Limits

According to the Sec. 22.355, the frequency stability of the carrier shall be accurate to within 2.5 ppm of the received frequency for mobile stations.

Limits	≤ 2.5 ppm
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 3$, $U = 0.01\text{ppm}$.



Test Results

Refer to the section 6.5 of this report for test data.

5.6. Spurious Emissions at Antenna Terminals

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 9kHz to the 10th harmonic of the carrier.

The peak detector is used. RBW are set to 100 kHz and VBW are set to 300 kHz for below 1G, RBW are set to 1MHz and VBW are set to 3MHz for above 1G, Sweep is set to ATUO.

RBW is set to 1 kHz (0.009MHz~ 0.15 MHz),

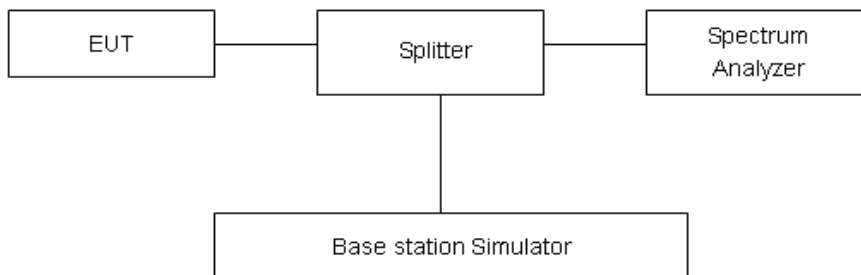
RBW is set to 10 kHz (0.15 MHz~ 30 MHz)

RBW is set to 100 kHz (30MHz~1000 MHz)

RBW is set to 1000 kHz (above 1000MHz)

The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup



Limits

Rule Part 22.917(a) specifies that “The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.”

Limit	-13 dBm
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
9kHz-1GHz	0.684 dB
1GHz-20GHz	1.407 dB

Test Results

Refer to the section 6.6 of this report for test data.

5.7. Radiates Spurious Emission

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

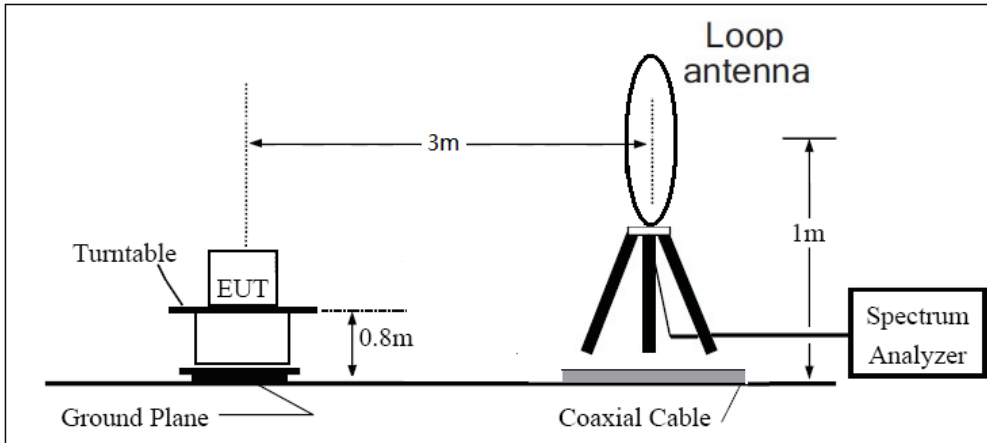
1. The testing follows FCC KDB 971168 v03r01 Section 5.8 and ANSI C63.26 (2015).
2. Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H). Above 1GHz: (Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.) The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).
3. A loop antenna, A log-periodic antenna or horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
4. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=100kHz,VBW=300kHz, and the maximum value of the receiver should be recorded as (Pr).
5. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
6. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl), the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
7. The measurement results are obtained as described below:
Power(EIRP)=PMea- PAg - Pcl + Ga
The measurement results are amend as described below:
Power(EIRP)=PMea- Pcl + Ga
8. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dB) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP

= EIRP-2.15dB.

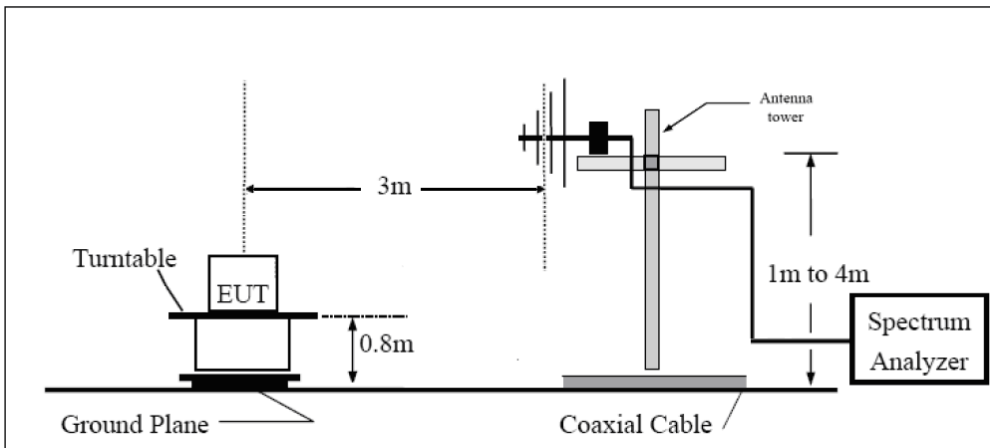
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

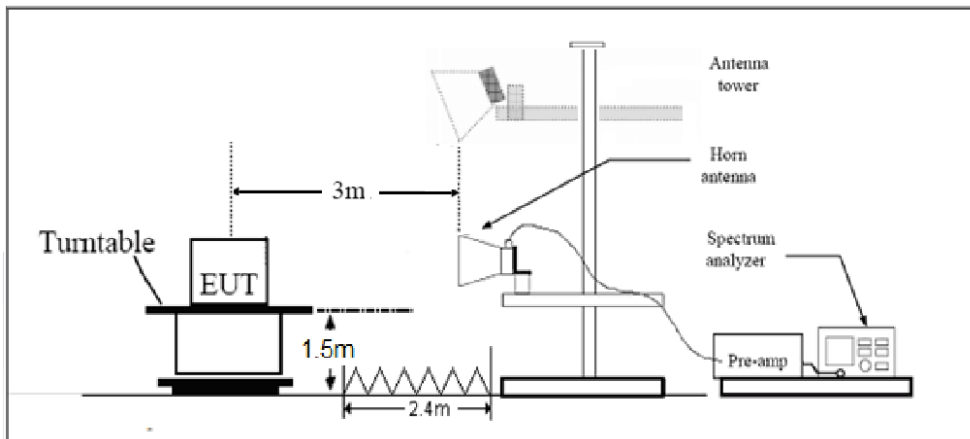
9KHz ~ 30MHz



30MHz ~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Limits

Rule Part 22.917(a) specifies that “The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.”

Limit	-13 dBm
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U = 3.55$ dB.

Test Results

Refer to the section 6.7 of this report for test data.

6. Test Result

6.1. RF Power Output and Effective Radiated Power

GSM 850		Maximum Output Power (dBm)			ERP (dBm)		
		Channel 128	Channel 190	Channel 251	Channel 128	Channel 190	Channel 251
		824.2 (MHz)	836.6 (MHz)	848.8 (MHz)	824.2 (MHz)	836.6 (MHz)	848.8 (MHz)
GSM(GMSK)	Results	31.46	31.43	31.44	27.55	28.24	28.52
GPRS (GMSK)	1TXslot	31.80	31.37	31.41	27.89	28.18	28.49
	2TXslots	30.83	30.72	30.80	26.92	27.53	27.88
	3TXslots	29.12	29.06	29.17	25.21	25.87	26.25
	4TXslots	27.87	27.82	27.91	23.96	24.63	24.99
EGPRS	1TXslot	24.22	24.33	24.34	20.31	21.14	21.42
	2TXslots	23.29	26.50	23.35	19.38	23.31	20.43
	3TXslots	21.52	21.66	21.62	17.61	18.47	18.70
	4TXslots	20.48	20.65	20.57	16.57	17.46	17.65

WCDMA Band V		Maximum Output Power (dBm)			ERP (dBm)		
		Channel 4132	Channel 4183	Channel 4233	Channel 4132	Channel 4183	Channel 4233
		826.4 (MHz)	836.6 (MHz)	846.6 (MHz)	826.4 (MHz)	836.6 (MHz)	846.6 (MHz)
RMC		21.52	21.60	21.54	18.03	18.41	18.62
HSDPA	Sub - Test 1	20.98	21.02	20.98	17.49	17.83	18.06
	Sub - Test 2	20.97	21.04	20.95	17.48	17.85	18.03
	Sub - Test 3	20.44	20.54	20.47	16.95	17.35	17.55
	Sub - Test 4	20.45	20.55	20.45	16.96	17.36	17.53
HSUPA	Sub - Test 1	20.94	21.01	20.93	17.45	17.82	18.01
	Sub - Test 2	19.93	19.99	19.92	16.44	16.80	17.00
	Sub - Test 3	20.40	20.47	20.41	16.91	17.28	17.49
	Sub - Test 4	19.86	19.96	19.89	16.37	16.77	16.97
	Sub - Test 5	20.87	20.94	20.87	17.38	17.75	17.95
DC-HSDPA	Sub - Test 1	20.86	20.96	20.88	17.37	17.77	17.96
	Sub - Test 2	20.85	20.95	20.87	17.36	17.76	17.95
	Sub - Test 3	20.43	20.44	20.38	16.94	17.25	17.46
	Sub - Test 4	20.42	20.43	20.37	16.93	17.24	17.45
HSPA+	16QAM	21.17	21.01	21.16	17.68	17.82	18.24



LTE Band 5							
Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	ERP (dBm)	Verdict
1.4	20407	1	#0	QPSK	22.68	18.77	PASS
1.4	20407	1	#Mid	QPSK	22.94	19.03	PASS
1.4	20407	1	#Max	QPSK	22.75	18.84	PASS
1.4	20407	3	#0	QPSK	22.72	18.81	PASS
1.4	20407	3	#Mid	QPSK	22.71	18.80	PASS
1.4	20407	3	#Max	QPSK	22.73	18.82	PASS
1.4	20407	6	#0	QPSK	21.68	17.77	PASS
1.4	20407	1	#0	QAM16	21.69	17.78	PASS
1.4	20407	1	#Mid	QAM16	21.93	18.02	PASS
1.4	20407	1	#Max	QAM16	21.72	17.81	PASS
1.4	20407	3	#0	QAM16	21.82	17.91	PASS
1.4	20407	3	#Mid	QAM16	21.84	17.93	PASS
1.4	20407	3	#Max	QAM16	21.86	17.95	PASS
1.4	20407	6	#0	QAM16	20.71	16.80	PASS
1.4	20525	1	#0	QPSK	22.70	19.51	PASS
1.4	20525	1	#Mid	QPSK	22.94	19.75	PASS
1.4	20525	1	#Max	QPSK	22.66	19.47	PASS
1.4	20525	3	#0	QPSK	22.76	19.57	PASS
1.4	20525	3	#Mid	QPSK	22.76	19.57	PASS
1.4	20525	3	#Max	QPSK	22.74	19.55	PASS
1.4	20525	6	#0	QPSK	21.74	18.55	PASS
1.4	20525	1	#0	QAM16	21.86	18.67	PASS
1.4	20525	1	#Mid	QAM16	21.99	18.80	PASS
1.4	20525	1	#Max	QAM16	21.87	18.68	PASS
1.4	20525	3	#0	QAM16	21.79	18.60	PASS
1.4	20525	3	#Mid	QAM16	21.79	18.60	PASS
1.4	20525	3	#Max	QAM16	21.80	18.61	PASS
1.4	20525	6	#0	QAM16	20.78	17.59	PASS
1.4	20643	1	#0	QPSK	22.73	19.81	PASS
1.4	20643	1	#Mid	QPSK	23.01	20.09	PASS
1.4	20643	1	#Max	QPSK	22.74	19.82	PASS
1.4	20643	3	#0	QPSK	22.80	19.88	PASS
1.4	20643	3	#Mid	QPSK	22.84	19.92	PASS
1.4	20643	3	#Max	QPSK	22.82	19.90	PASS
1.4	20643	6	#0	QPSK	21.76	18.84	PASS
1.4	20643	1	#0	QAM16	21.60	18.68	PASS
1.4	20643	1	#Mid	QAM16	21.82	18.90	PASS
1.4	20643	1	#Max	QAM16	21.62	18.70	PASS
1.4	20643	3	#0	QAM16	21.76	18.84	PASS



1.4	20643	3	#Mid	QAM16	21.79	18.87	PASS
1.4	20643	3	#Max	QAM16	21.75	18.83	PASS
1.4	20643	6	#0	QAM16	20.86	17.94	PASS
3	20415	1	#0	QPSK	22.69	19.20	PASS
3	20415	1	#Mid	QPSK	22.69	19.20	PASS
3	20415	1	#Max	QPSK	22.74	19.25	PASS
3	20415	8	#0	QPSK	21.64	18.15	PASS
3	20415	8	#Mid	QPSK	21.65	18.16	PASS
3	20415	8	#Max	QPSK	21.71	18.22	PASS
3	20415	15	#0	QPSK	21.66	18.17	PASS
3	20415	1	#0	QAM16	21.86	18.37	PASS
3	20415	1	#Mid	QAM16	21.84	18.35	PASS
3	20415	1	#Max	QAM16	21.84	18.35	PASS
3	20415	8	#0	QAM16	20.63	17.14	PASS
3	20415	8	#Mid	QAM16	20.62	17.13	PASS
3	20415	8	#Max	QAM16	20.69	17.20	PASS
3	20415	15	#0	QAM16	20.56	17.07	PASS
3	20525	1	#0	QPSK	22.74	19.55	PASS
3	20525	1	#Mid	QPSK	22.80	19.61	PASS
3	20525	1	#Max	QPSK	22.72	19.53	PASS
3	20525	8	#0	QPSK	21.71	18.52	PASS
3	20525	8	#Mid	QPSK	21.72	18.53	PASS
3	20525	8	#Max	QPSK	21.74	18.55	PASS
3	20525	15	#0	QPSK	21.70	18.51	PASS
3	20525	1	#0	QAM16	21.67	18.48	PASS
3	20525	1	#Mid	QAM16	21.68	18.49	PASS
3	20525	1	#Max	QAM16	21.65	18.46	PASS
3	20525	8	#0	QAM16	20.70	17.51	PASS
3	20525	8	#Mid	QAM16	20.72	17.53	PASS
3	20525	8	#Max	QAM16	20.74	17.55	PASS
3	20525	15	#0	QAM16	20.79	17.60	PASS
3	20635	1	#0	QPSK	22.75	19.83	PASS
3	20635	1	#Mid	QPSK	22.72	19.80	PASS
3	20635	1	#Max	QPSK	22.71	19.79	PASS
3	20635	8	#0	QPSK	21.72	18.80	PASS
3	20635	8	#Mid	QPSK	21.75	18.83	PASS
3	20635	8	#Max	QPSK	21.72	18.80	PASS
3	20635	15	#0	QPSK	21.72	18.80	PASS
3	20635	1	#0	QAM16	22.03	19.11	PASS
3	20635	1	#Mid	QAM16	21.98	19.06	PASS
3	20635	1	#Max	QAM16	22.03	19.11	PASS
3	20635	8	#0	QAM16	20.73	17.81	PASS
3	20635	8	#Mid	QAM16	20.74	17.82	PASS



3	20635	8	#Max	QAM16	20.76	17.84	PASS
3	20635	15	#0	QAM16	20.79	17.87	PASS
5	20425	1	#0	QPSK	22.62	19.13	PASS
5	20425	1	#Mid	QPSK	22.72	19.23	PASS
5	20425	1	#Max	QPSK	22.63	19.14	PASS
5	20425	12	#0	QPSK	21.59	18.10	PASS
5	20425	12	#Mid	QPSK	21.53	18.04	PASS
5	20425	12	#Max	QPSK	21.71	18.22	PASS
5	20425	25	#0	QPSK	21.71	18.22	PASS
5	20425	1	#0	QAM16	21.89	18.40	PASS
5	20425	1	#Mid	QAM16	22.00	18.51	PASS
5	20425	1	#Max	QAM16	21.91	18.42	PASS
5	20425	12	#0	QAM16	20.51	17.02	PASS
5	20425	12	#Mid	QAM16	20.52	17.03	PASS
5	20425	12	#Max	QAM16	20.65	17.16	PASS
5	20425	25	#0	QAM16	20.72	17.23	PASS
5	20525	1	#0	QPSK	22.63	19.44	PASS
5	20525	1	#Mid	QPSK	22.78	19.59	PASS
5	20525	1	#Max	QPSK	22.56	19.37	PASS
5	20525	12	#0	QPSK	21.77	18.58	PASS
5	20525	12	#Mid	QPSK	21.73	18.54	PASS
5	20525	12	#Max	QPSK	21.77	18.58	PASS
5	20525	25	#0	QPSK	21.77	18.58	PASS
5	20525	1	#0	QAM16	21.85	18.66	PASS
5	20525	1	#Mid	QAM16	21.96	18.77	PASS
5	20525	1	#Max	QAM16	21.81	18.62	PASS
5	20525	12	#0	QAM16	20.69	17.50	PASS
5	20525	12	#Mid	QAM16	20.70	17.51	PASS
5	20525	12	#Max	QAM16	20.71	17.52	PASS
5	20525	25	#0	QAM16	20.82	17.63	PASS
5	20625	1	#0	QPSK	22.58	19.66	PASS
5	20625	1	#Mid	QPSK	22.75	19.83	PASS
5	20625	1	#Max	QPSK	22.61	19.69	PASS
5	20625	12	#0	QPSK	21.74	18.82	PASS
5	20625	12	#Mid	QPSK	21.70	18.78	PASS
5	20625	12	#Max	QPSK	21.69	18.77	PASS
5	20625	25	#0	QPSK	21.74	18.82	PASS
5	20625	1	#0	QAM16	21.88	18.96	PASS
5	20625	1	#Mid	QAM16	22.05	19.13	PASS
5	20625	1	#Max	QAM16	21.90	18.98	PASS
5	20625	12	#0	QAM16	20.70	17.78	PASS
5	20625	12	#Mid	QAM16	20.72	17.80	PASS
5	20625	12	#Max	QAM16	20.74	17.82	PASS



5	20625	25	#0	QAM16	20.80	17.88	PASS
10	20450	1	#0	QPSK	22.63	19.14	PASS
10	20450	1	#Mid	QPSK	22.86	19.37	PASS
10	20450	1	#Max	QPSK	22.70	19.21	PASS
10	20450	25	#0	QPSK	21.57	18.08	PASS
10	20450	25	#Mid	QPSK	21.59	18.10	PASS
10	20450	25	#Max	QPSK	21.73	18.24	PASS
10	20450	50	#0	QPSK	21.61	18.12	PASS
10	20450	1	#0	QAM16	21.95	18.46	PASS
10	20450	1	#Mid	QAM16	22.10	18.61	PASS
10	20450	1	#Max	QAM16	21.95	18.46	PASS
10	20450	25	#0	QAM16	20.65	17.16	PASS
10	20450	25	#Mid	QAM16	20.67	17.18	PASS
10	20450	25	#Max	QAM16	20.77	17.28	PASS
10	20450	50	#0	QAM16	20.64	17.15	PASS
10	20525	1	#0	QPSK	22.72	19.53	PASS
10	20525	1	#Mid	QPSK	22.92	19.73	PASS
10	20525	1	#Max	QPSK	22.74	19.55	PASS
10	20525	25	#0	QPSK	21.80	18.61	PASS
10	20525	25	#Mid	QPSK	21.82	18.63	PASS
10	20525	25	#Max	QPSK	21.81	18.62	PASS
10	20525	50	#0	QPSK	21.80	18.61	PASS
10	20525	1	#0	QAM16	21.87	18.68	PASS
10	20525	1	#Mid	QAM16	21.94	18.75	PASS
10	20525	1	#Max	QAM16	21.91	18.72	PASS
10	20525	25	#0	QAM16	20.81	17.62	PASS
10	20525	25	#Mid	QAM16	20.83	17.64	PASS
10	20525	25	#Max	QAM16	20.83	17.64	PASS
10	20525	50	#0	QAM16	20.88	17.69	PASS
10	20600	1	#0	QPSK	22.74	19.55	PASS
10	20600	1	#Mid	QPSK	22.91	19.72	PASS
10	20600	1	#Max	QPSK	22.77	19.58	PASS
10	20600	25	#0	QPSK	21.74	18.55	PASS
10	20600	25	#Mid	QPSK	21.71	18.52	PASS
10	20600	25	#Max	QPSK	21.73	18.54	PASS
10	20600	50	#0	QPSK	21.76	18.57	PASS
10	20600	1	#0	QAM16	21.60	18.41	PASS
10	20600	1	#Mid	QAM16	21.76	18.57	PASS
10	20600	1	#Max	QAM16	21.65	18.46	PASS
10	20600	25	#0	QAM16	20.72	17.53	PASS
10	20600	25	#Mid	QAM16	20.75	17.56	PASS
10	20600	25	#Max	QAM16	20.75	17.56	PASS
10	20600	50	#0	QAM16	20.83	17.64	PASS



1.4	20407	1	#0	64QAM	21.55	17.64	PASS
1.4	20407	1	#Mid	64QAM	21.77	17.86	PASS
1.4	20407	1	#Max	64QAM	21.55	17.64	PASS
1.4	20407	3	#0	64QAM	21.76	17.85	PASS
1.4	20407	3	#Mid	64QAM	21.76	17.85	PASS
1.4	20407	3	#Max	64QAM	21.66	17.75	PASS
1.4	20407	6	#0	64QAM	20.52	16.61	PASS
1.4	20525	1	#0	64QAM	21.79	18.60	PASS
1.4	20525	1	#Mid	64QAM	22.03	18.84	PASS
1.4	20525	1	#Max	64QAM	21.80	18.61	PASS
1.4	20525	3	#0	64QAM	21.69	18.50	PASS
1.4	20525	3	#Mid	64QAM	21.70	18.51	PASS
1.4	20525	3	#Max	64QAM	21.77	18.58	PASS
1.4	20525	6	#0	64QAM	20.60	17.41	PASS
1.4	20643	1	#0	64QAM	21.78	18.86	PASS
1.4	20643	1	#Mid	64QAM	21.90	18.98	PASS
1.4	20643	1	#Max	64QAM	21.80	18.88	PASS
1.4	20643	3	#0	64QAM	21.91	18.99	PASS
1.4	20643	3	#Mid	64QAM	21.89	18.97	PASS
1.4	20643	3	#Max	64QAM	21.89	18.97	PASS
1.4	20643	6	#0	64QAM	20.83	17.91	PASS
3	20415	1	#0	64QAM	21.72	18.23	PASS
3	20415	1	#Mid	64QAM	21.72	18.23	PASS
3	20415	1	#Max	64QAM	21.71	18.22	PASS
3	20415	8	#0	64QAM	20.49	17.00	PASS
3	20415	8	#Mid	64QAM	20.48	16.99	PASS
3	20415	8	#Max	64QAM	20.55	17.06	PASS
3	20415	15	#0	64QAM	20.44	16.95	PASS
3	20525	1	#0	64QAM	21.55	18.36	PASS
3	20525	1	#Mid	64QAM	21.63	18.44	PASS
3	20525	1	#Max	64QAM	21.56	18.37	PASS
3	20525	8	#0	64QAM	20.67	17.48	PASS
3	20525	8	#Mid	64QAM	20.68	17.49	PASS
3	20525	8	#Max	64QAM	20.67	17.48	PASS
3	20525	15	#0	64QAM	20.68	17.49	PASS
3	20635	1	#0	64QAM	22.12	19.20	PASS
3	20635	1	#Mid	64QAM	22.09	19.17	PASS
3	20635	1	#Max	64QAM	22.15	19.23	PASS
3	20635	8	#0	64QAM	20.86	17.94	PASS
3	20635	8	#Mid	64QAM	20.85	17.93	PASS
3	20635	8	#Max	64QAM	20.86	17.94	PASS
3	20635	15	#0	64QAM	20.77	17.85	PASS
5	20425	1	#0	64QAM	21.67	18.18	PASS



5	20425	1	#Mid	64QAM	21.77	18.28	PASS
5	20425	1	#Max	64QAM	21.65	18.16	PASS
5	20425	12	#0	64QAM	20.36	16.87	PASS
5	20425	12	#Mid	64QAM	20.37	16.88	PASS
5	20425	12	#Max	64QAM	20.55	17.06	PASS
5	20425	25	#0	64QAM	20.54	17.05	PASS
5	20525	1	#0	64QAM	21.82	18.63	PASS
5	20525	1	#Mid	64QAM	22.00	18.81	PASS
5	20525	1	#Max	64QAM	21.84	18.65	PASS
5	20525	12	#0	64QAM	20.71	17.52	PASS
5	20525	12	#Mid	64QAM	20.71	17.52	PASS
5	20525	12	#Max	64QAM	20.72	17.53	PASS
5	20525	25	#0	64QAM	20.76	17.57	PASS
5	20625	1	#0	64QAM	21.97	19.05	PASS
5	20625	1	#Mid	64QAM	22.19	19.27	PASS
5	20625	1	#Max	64QAM	22.11	19.19	PASS
5	20625	12	#0	64QAM	20.75	17.83	PASS
5	20625	12	#Mid	64QAM	20.72	17.80	PASS
5	20625	12	#Max	64QAM	20.74	17.82	PASS
5	20625	25	#0	64QAM	20.78	17.86	PASS
10	20450	1	#0	64QAM	21.80	18.31	PASS
10	20450	1	#Mid	64QAM	21.95	18.46	PASS
10	20450	1	#Max	64QAM	21.83	18.34	PASS
10	20450	25	#0	64QAM	20.48	16.99	PASS
10	20450	25	#Mid	64QAM	20.48	16.99	PASS
10	20450	25	#Max	64QAM	20.61	17.12	PASS
10	20450	50	#0	64QAM	20.45	16.96	PASS
10	20525	1	#0	64QAM	21.77	18.58	PASS
10	20525	1	#Mid	64QAM	21.97	18.78	PASS
10	20525	1	#Max	64QAM	21.88	18.69	PASS
10	20525	25	#0	64QAM	20.74	17.55	PASS
10	20525	25	#Mid	64QAM	20.75	17.56	PASS
10	20525	25	#Max	64QAM	20.84	17.65	PASS
10	20525	50	#0	64QAM	20.72	17.53	PASS
10	20600	1	#0	64QAM	21.60	18.41	PASS
10	20600	1	#Mid	64QAM	21.84	18.65	PASS
10	20600	1	#Max	64QAM	21.73	18.54	PASS
10	20600	25	#0	64QAM	20.73	17.54	PASS
10	20600	25	#Mid	64QAM	20.68	17.49	PASS
10	20600	25	#Max	64QAM	20.79	17.60	PASS
10	20600	50	#0	64QAM	20.69	17.50	PASS

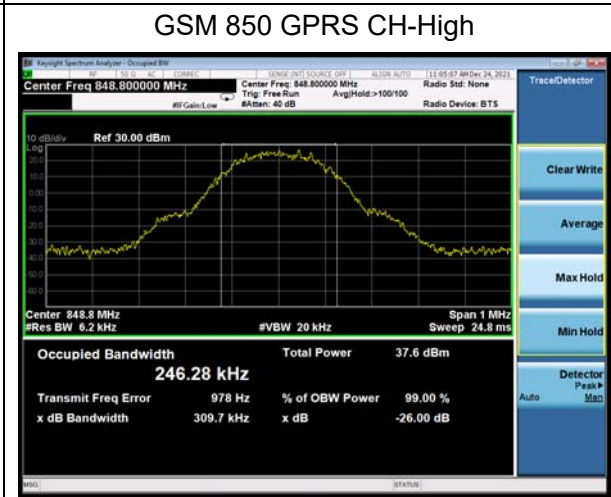
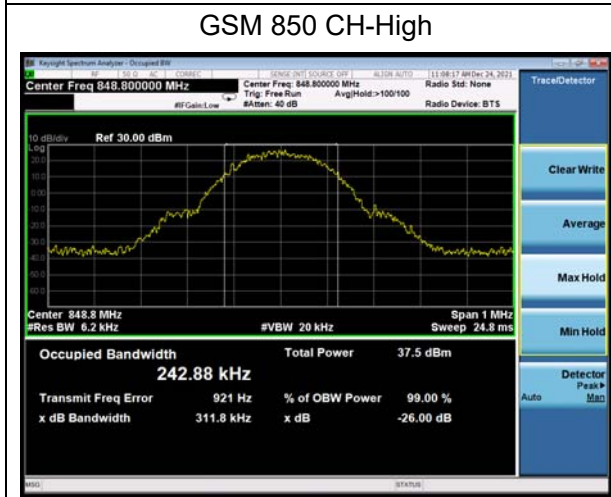
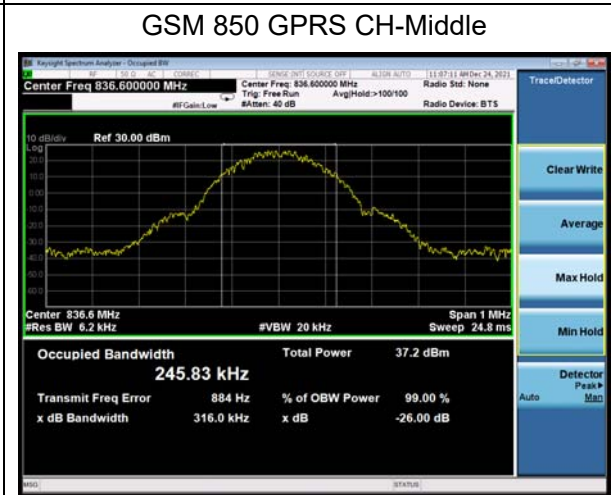
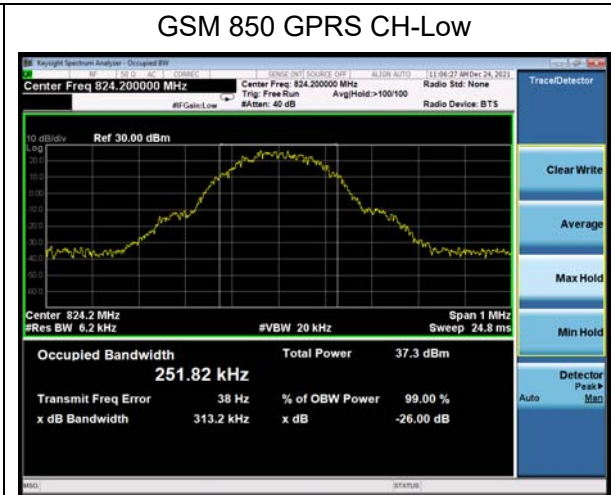
6.2. Occupied Bandwidth

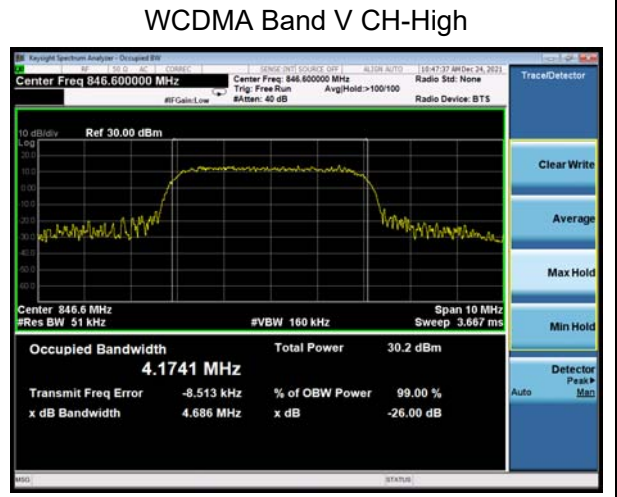
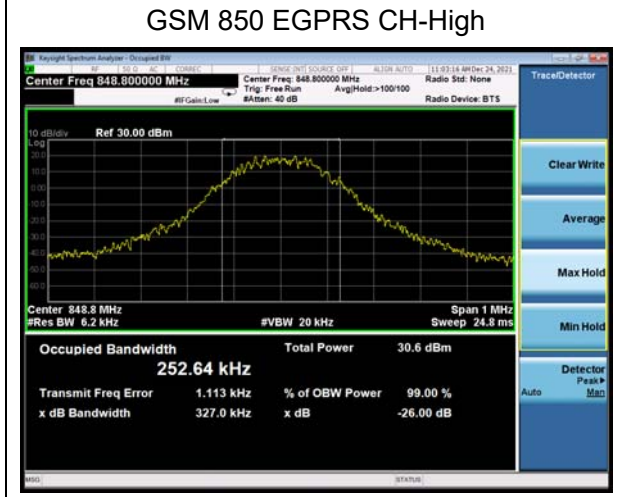
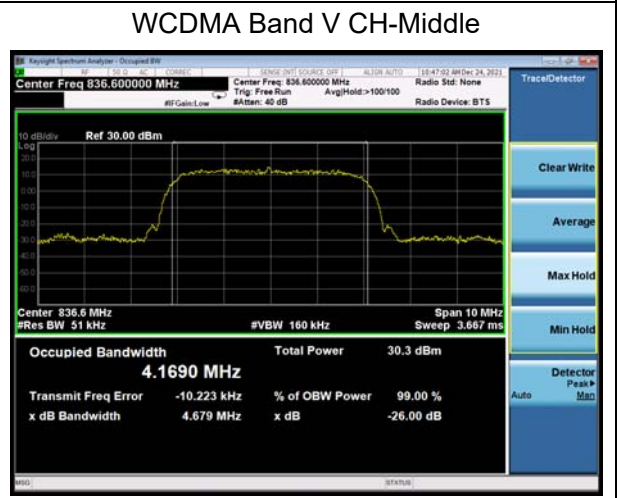
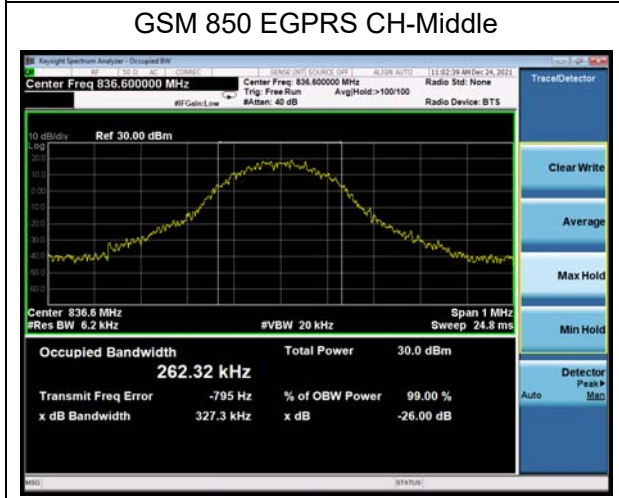
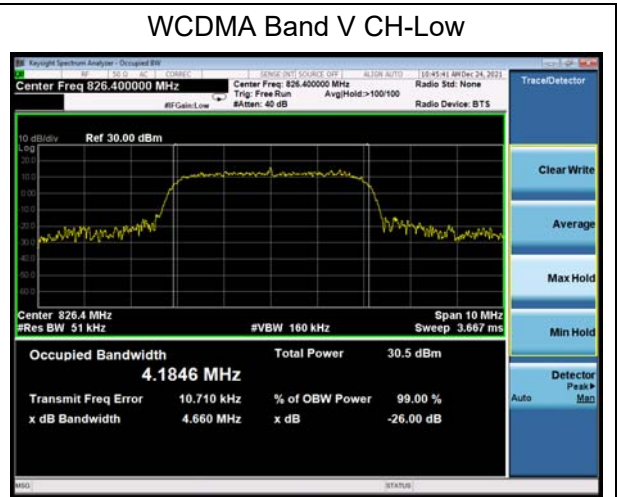
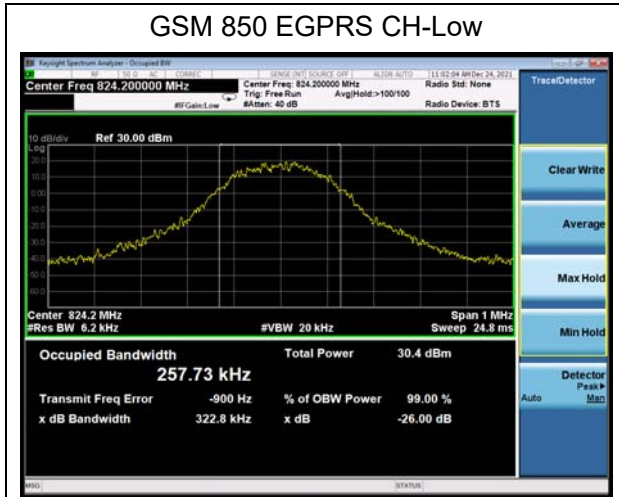
Mode	Channel	Frequency (MHz)	99% Power Bandwidth (MHz)	-26dBc Bandwidth(MHz)
GSM 850 (GMSK)	128	824.2	0.250	0.308
	190	836.6	0.246	0.312
	251	848.8	0.243	0.312
GPRS 850 (GMSK)	128	824.2	0.252	0.313
	190	836.6	0.246	0.316
	251	848.8	0.246	0.310
EGPRS 850 (8PSK)	128	824.2	0.258	0.323
	190	836.6	0.262	0.327
	251	848.8	0.253	0.327
WCDMA Band V (RMC)	4132	826.4	4.185	4.660
	4183	836.6	4.169	4.679
	4233	846.6	4.174	4.686

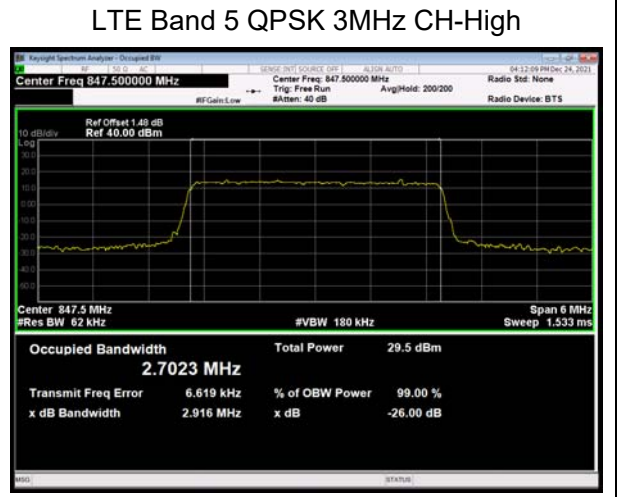
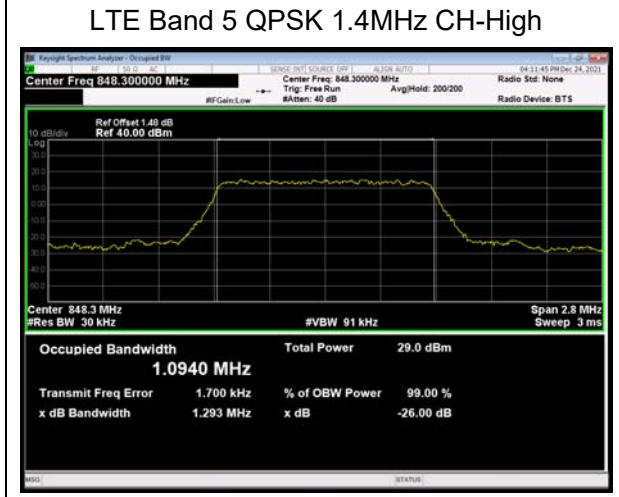
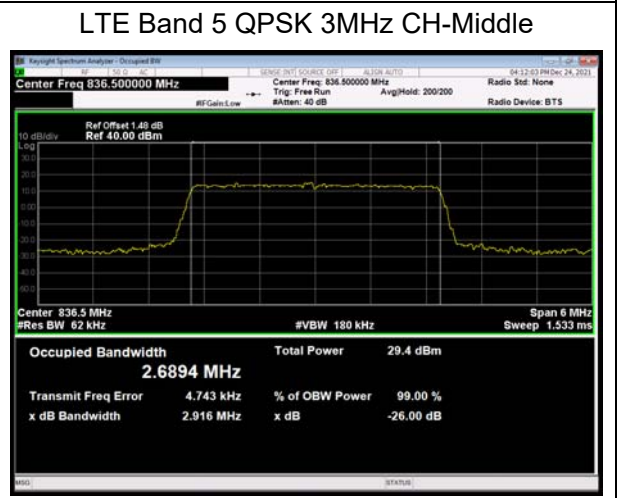
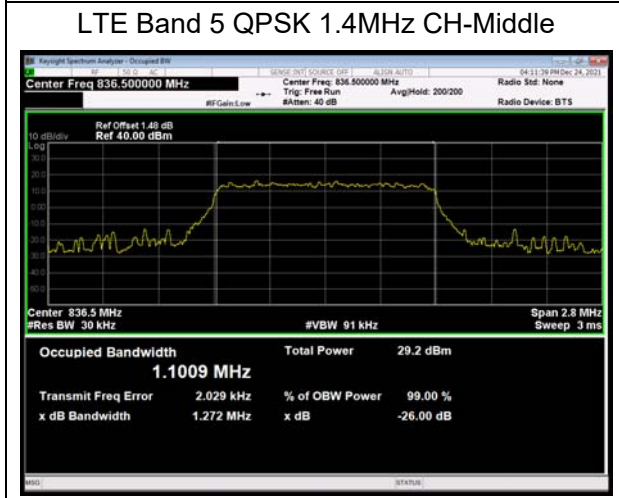
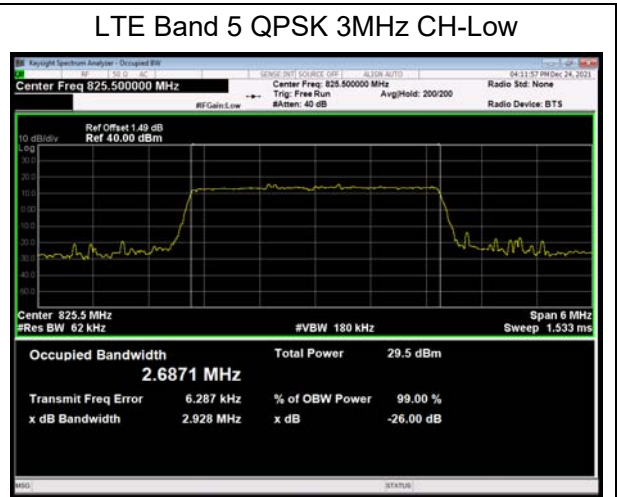
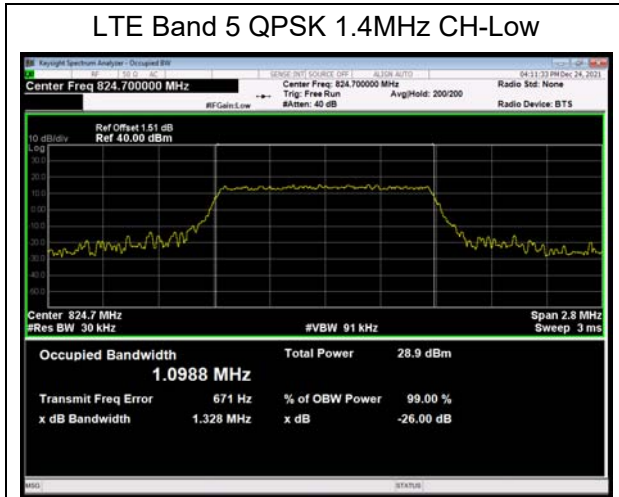
LTE Band 5						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	1.4	20407	824.7	1.099	1.328
			20525	836.5	1.101	1.272
			20643	848.3	1.094	1.293
		3	20415	825.5	2.687	2.928
			20525	836.5	2.689	2.916
			20635	847.5	2.702	2.916
		5	20425	826.5	4.514	4.887
			20525	836.5	4.499	4.900
			20625	846.5	4.517	5.073
		10	20450	829	8.954	9.666
			20525	836.5	9.012	9.711
			20600	844	8.970	9.686
	16QAM	1.4	20407	824.7	1.095	1.274
			20525	836.5	1.098	1.360
			20643	848.3	1.100	1.301

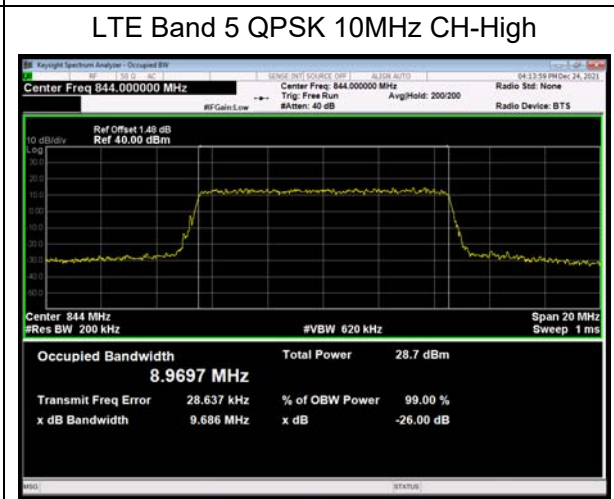
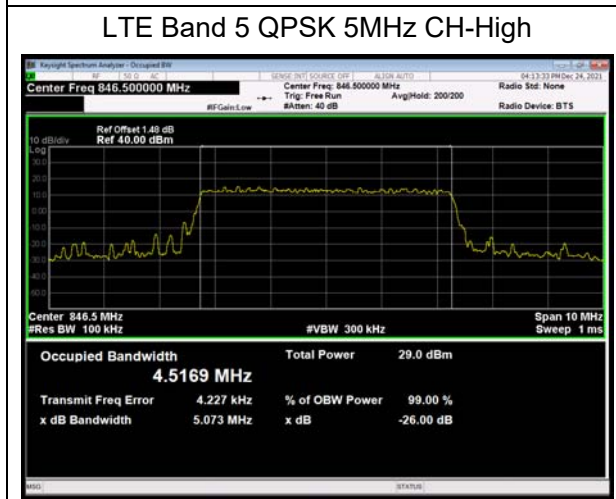
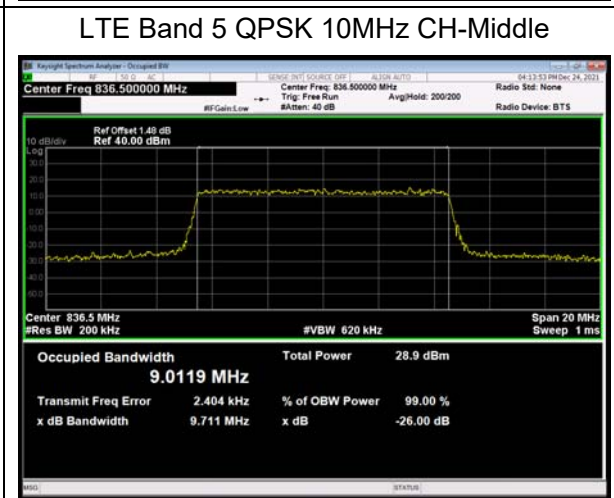
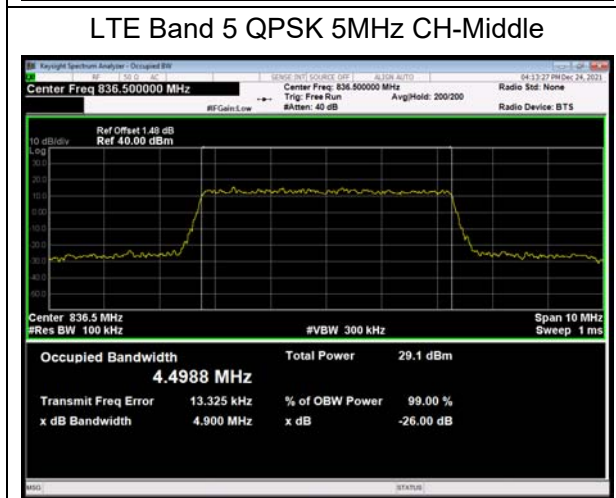
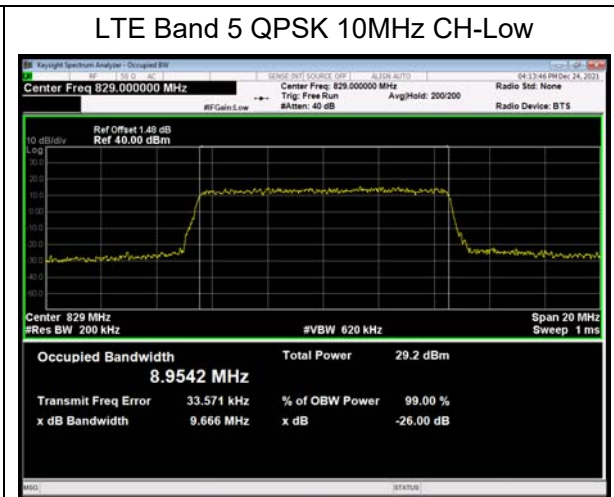
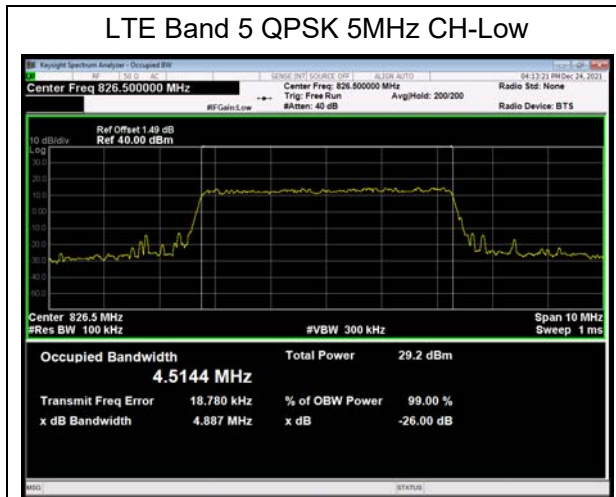


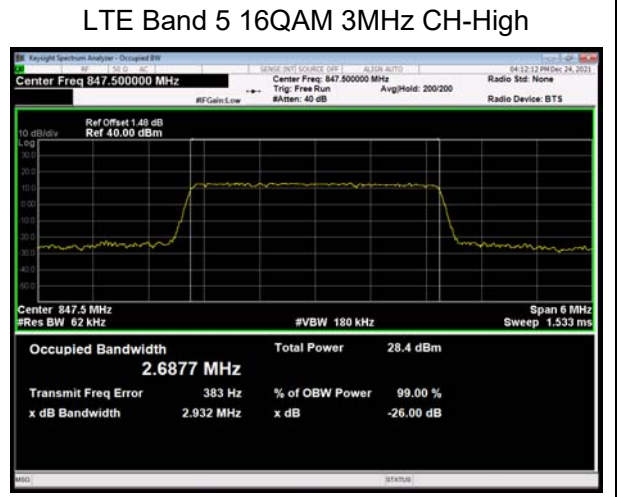
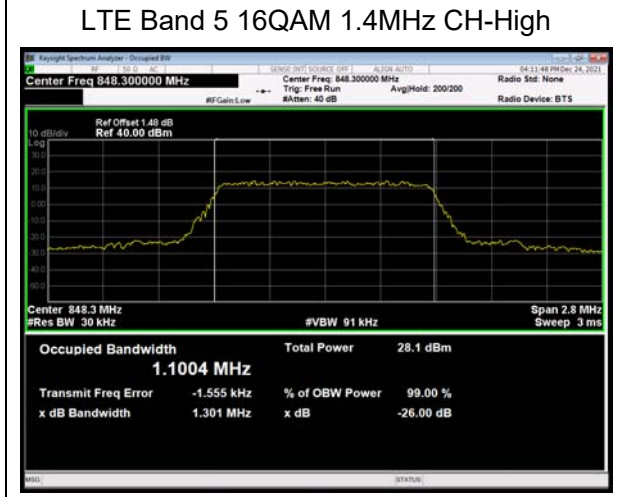
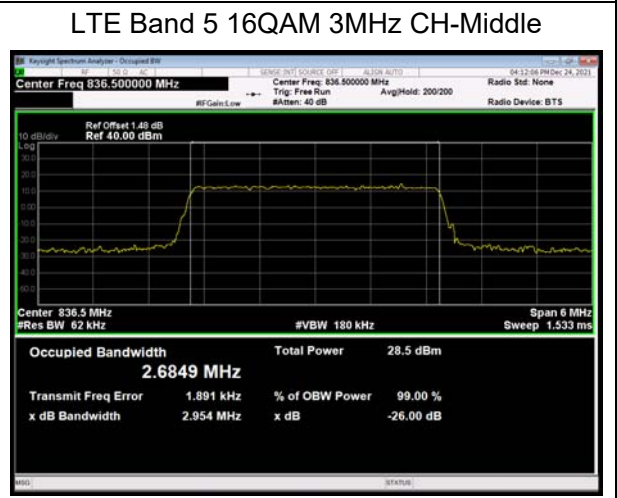
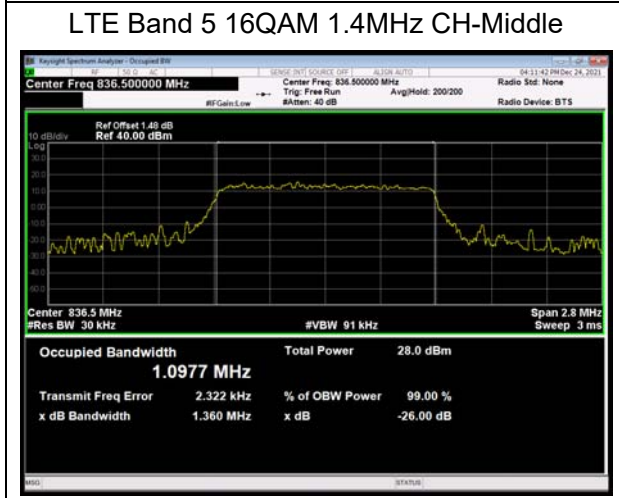
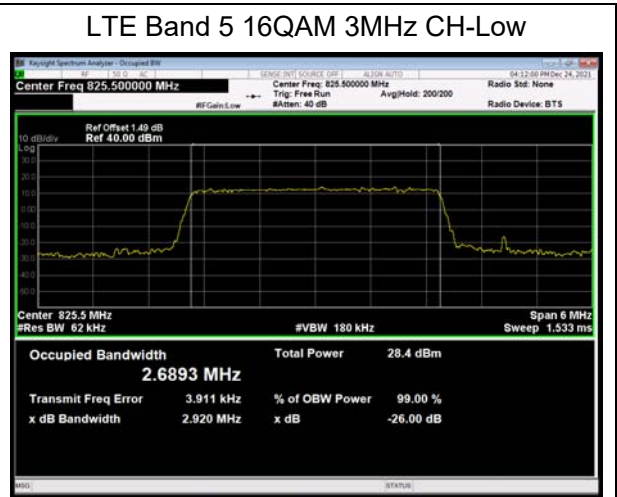
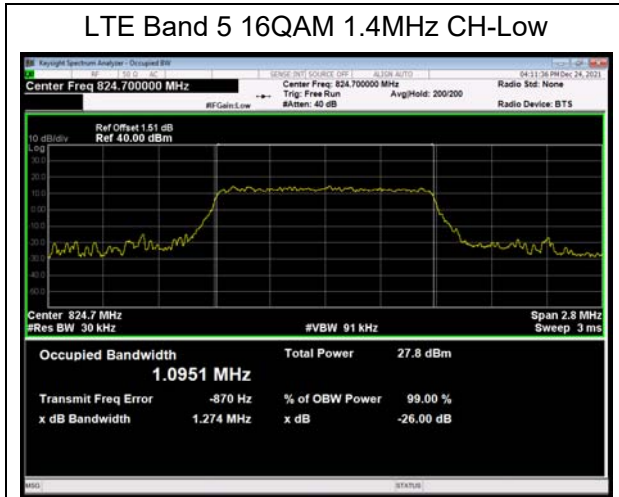
		3	20415	825.5	2.689	2.920
			20525	836.5	2.685	2.954
			20635	847.5	2.688	2.932
		5	20425	826.5	4.497	5.103
			20525	836.5	4.510	4.931
			20625	846.5	4.490	4.894
		10	20450	829	8.964	9.663
			20525	836.5	9.019	9.728
			20600	844	8.977	9.800
	64QAM	1.4	20407	824.7	1.097	1.279
			20525	836.5	1.096	1.286
			20643	848.3	1.089	1.284
		3	20415	825.5	2.684	2.931
			20525	836.5	2.697	2.912
			20635	847.5	2.678	2.941
		5	20425	826.5	4.500	4.872
			20525	836.5	4.511	4.905
			20625	846.5	4.497	4.914
10	20450	829	8.962	9.593		
	20525	836.5	8.993	9.776		
	20600	844	8.945	9.663		

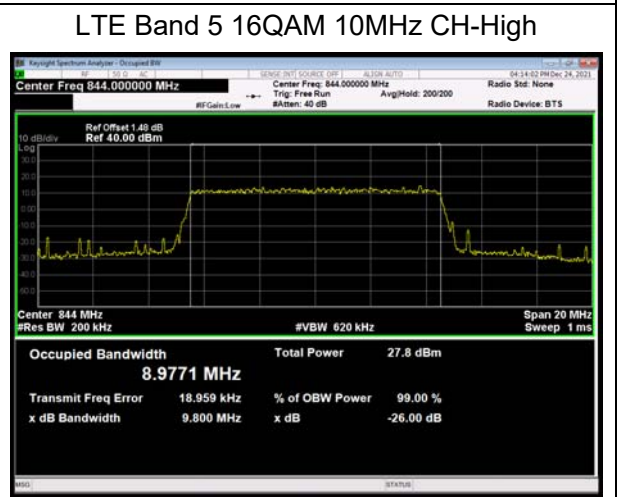
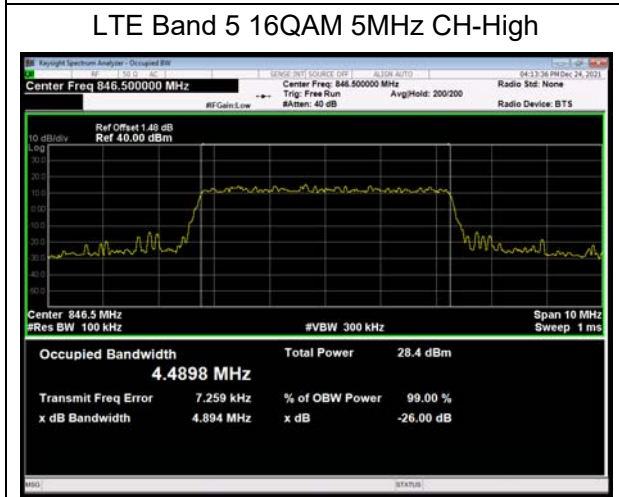
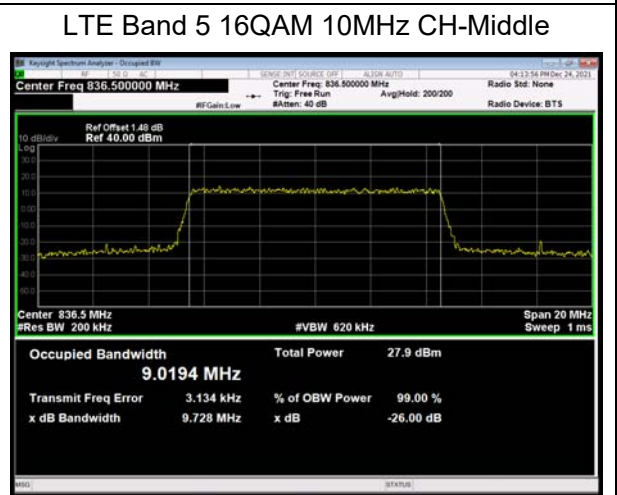
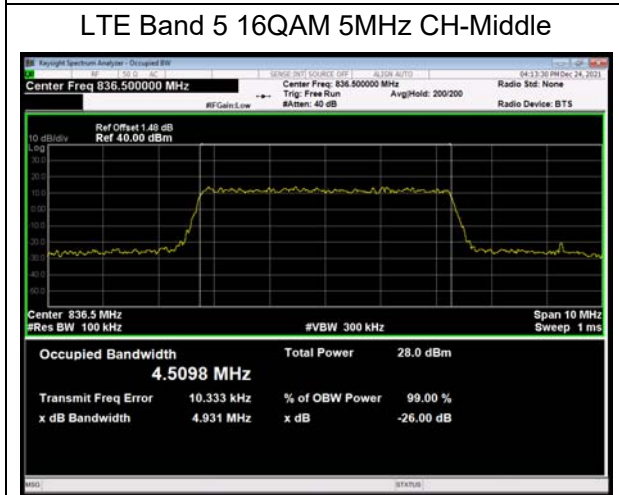
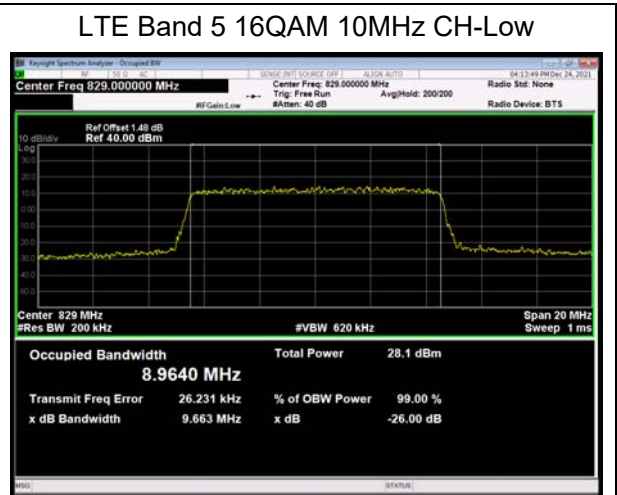
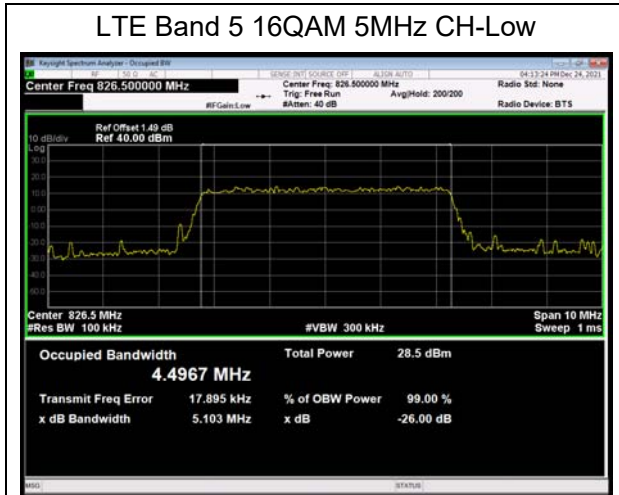


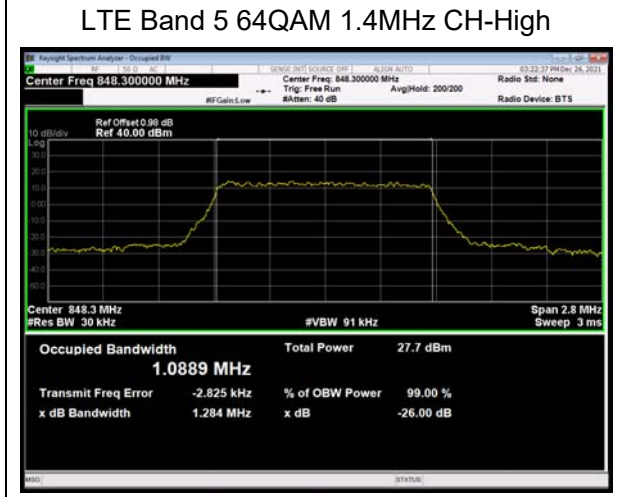
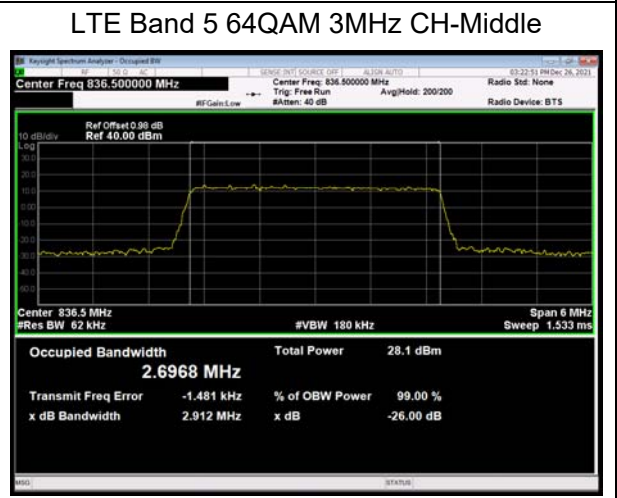
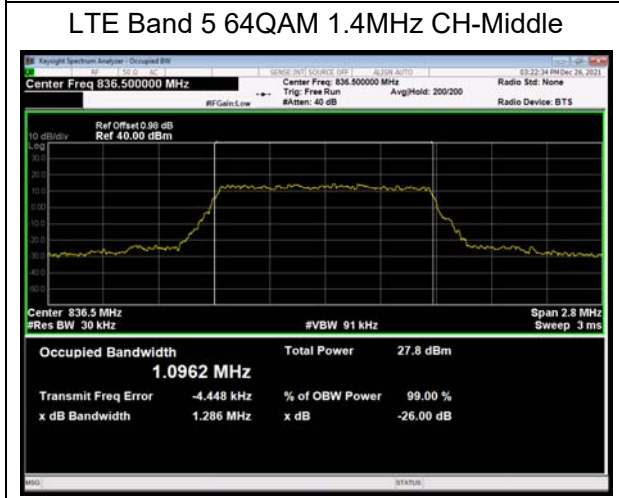
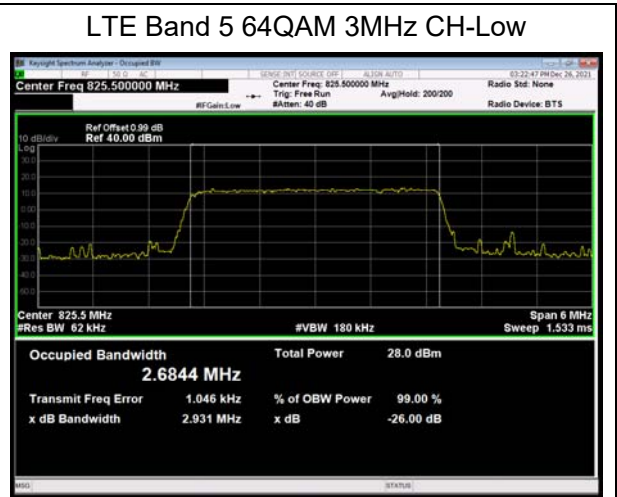
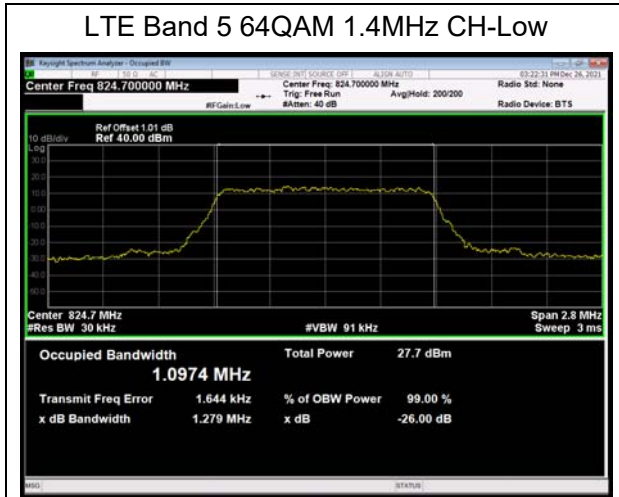


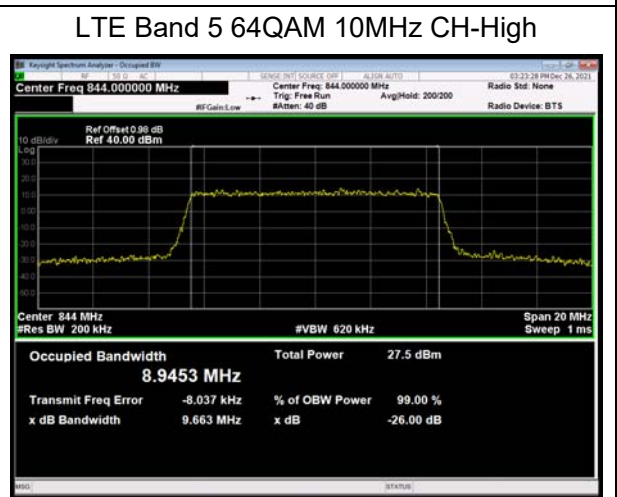
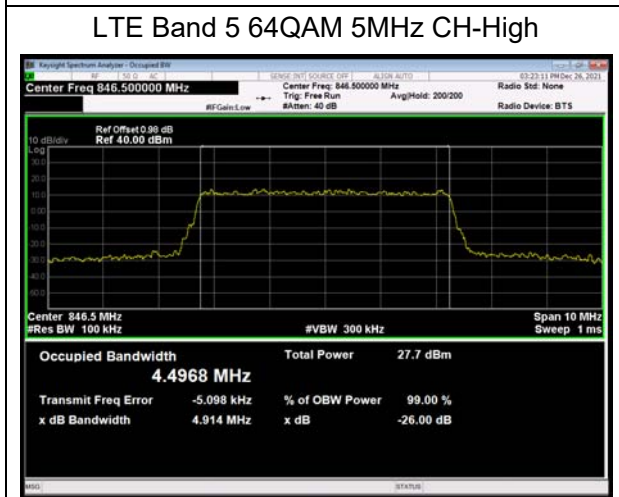
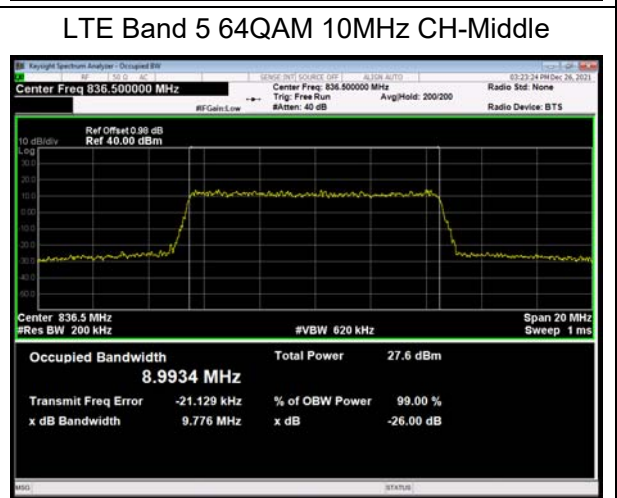
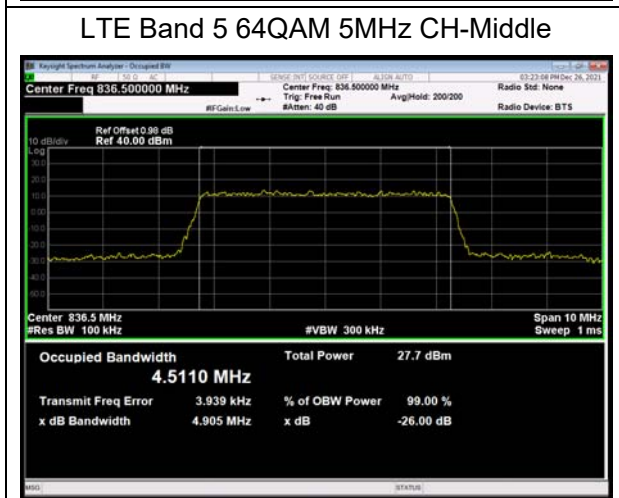
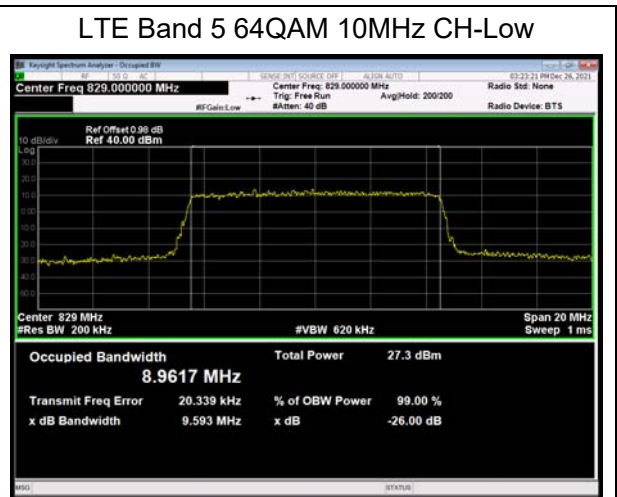
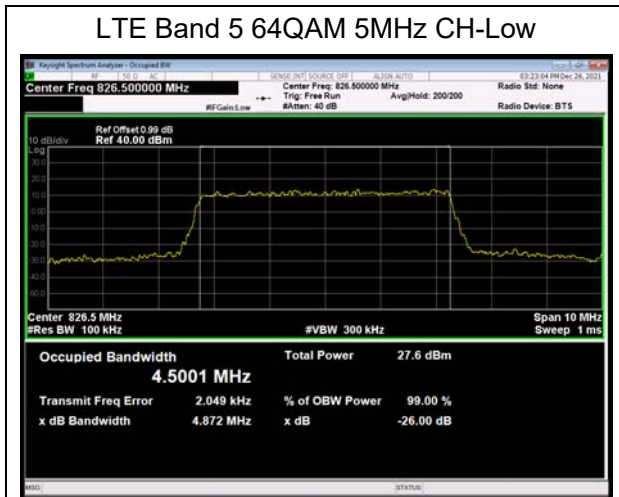






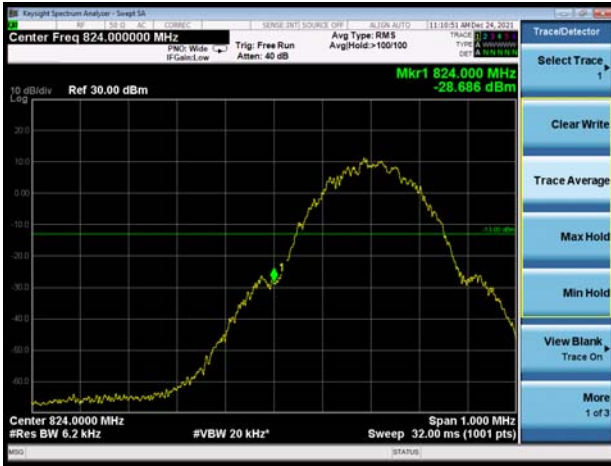




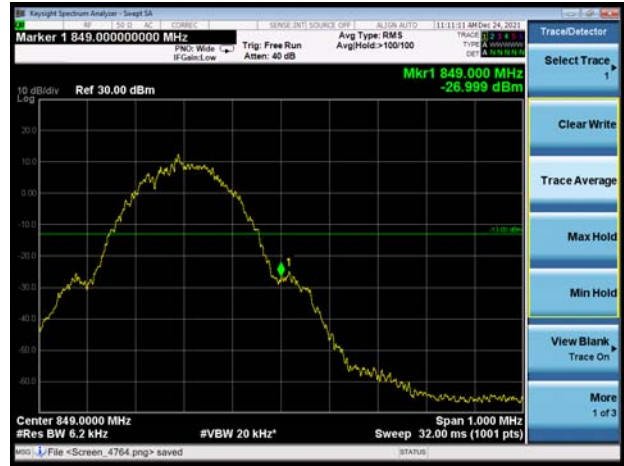


6.3. Band Edge Compliance

GSM 850 CH-Low



GSM 850 CH-High



GSM 850 GPRS CH-Low



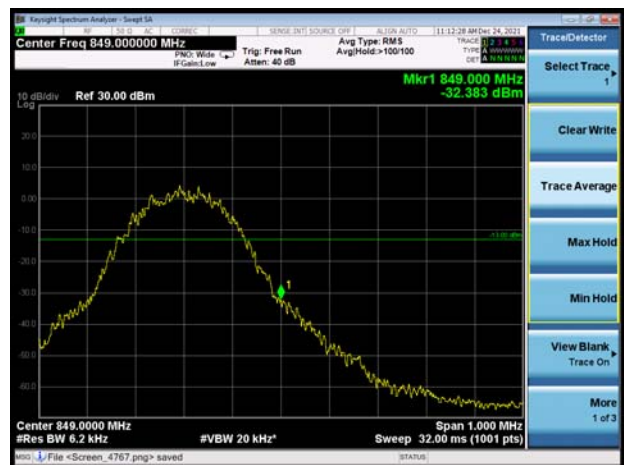
GSM 850 GPRS CH-High



GSM 850 EGPRS CH-Low

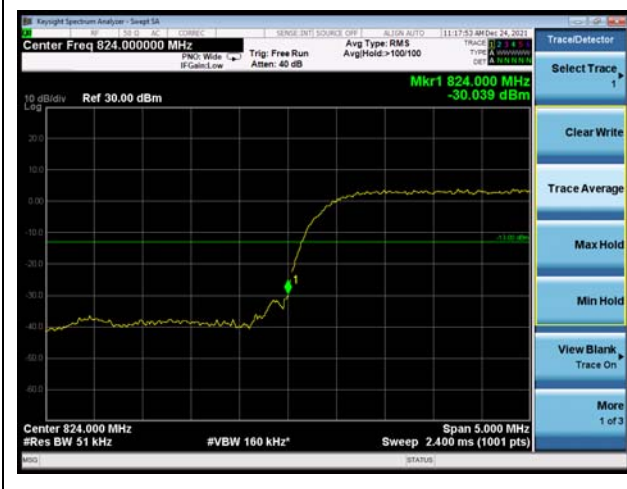


GSM 850 EGPRS CH-High





WCDMA Band V CH-Low

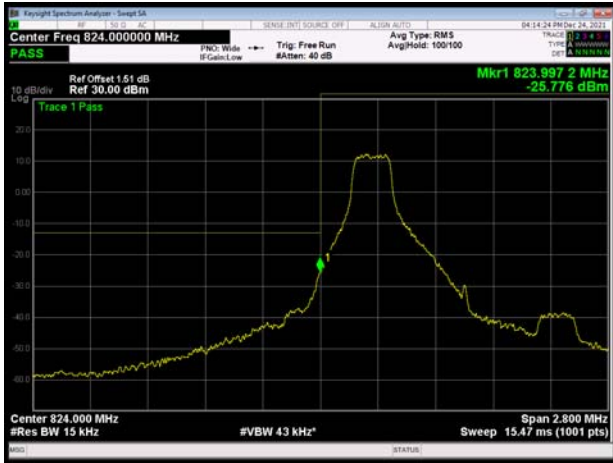


WCDMA Band V CH-High

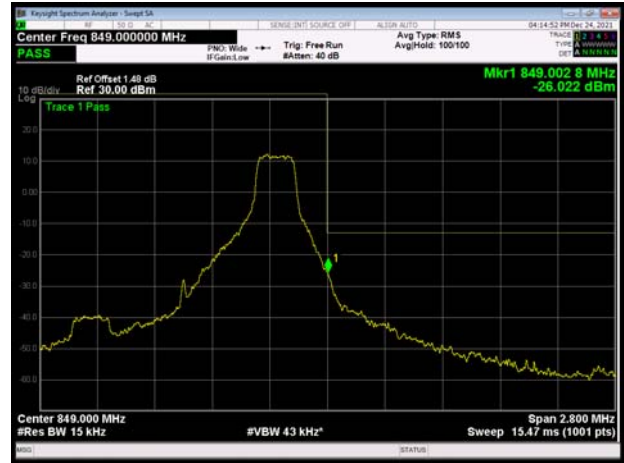




LTE Band 5 QPSK 1.4MHz CH-Low 1RB



LTE Band 5 QPSK 1.4MHz CH-High 1RB



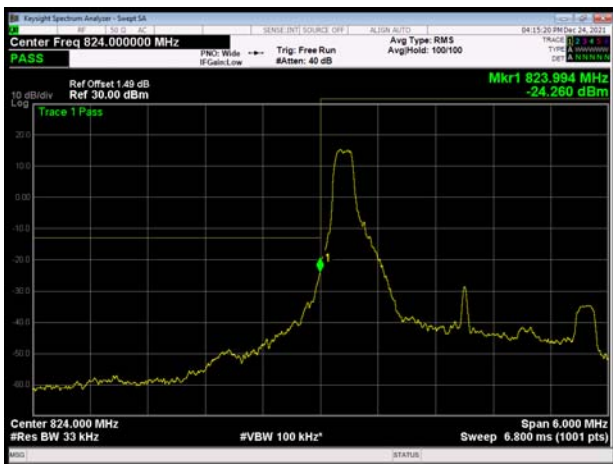
LTE Band 5 QPSK 1.4MHz CH-Low 100%RB



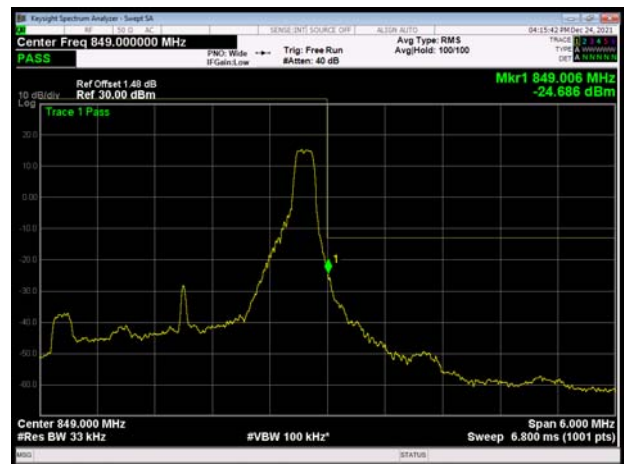
LTE Band 5 QPSK 1.4MHz CH-High 100%RB



LTE Band 5 QPSK 3MHz CH-Low 1RB

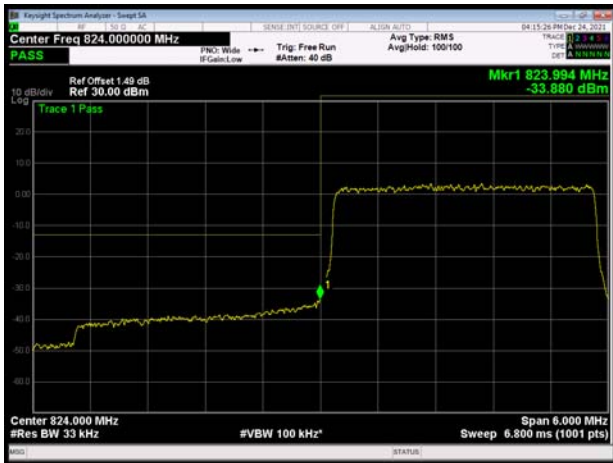


LTE Band 5 QPSK 3MHz CH-High 1RB

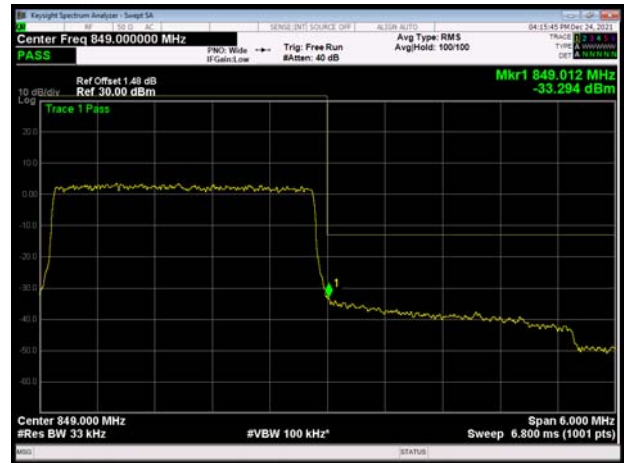




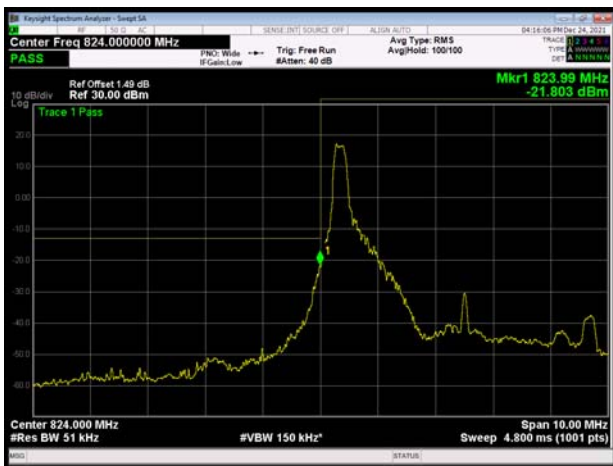
LTE Band 5 QPSK 3MHz CH-Low 100%RB



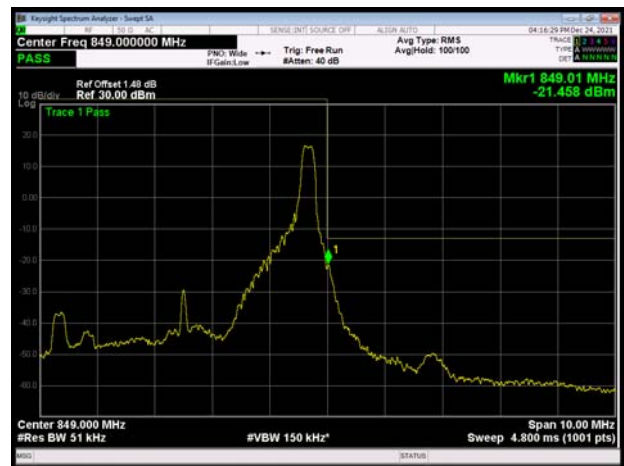
LTE Band 5 QPSK 3MHz CH-High 100%RB



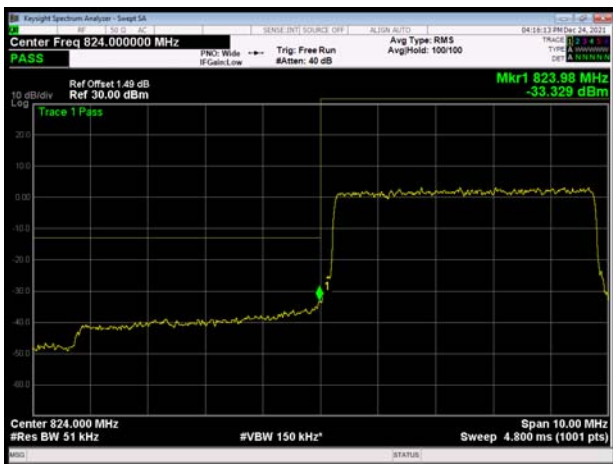
LTE Band 5 QPSK 5MHz CH-Low 1RB



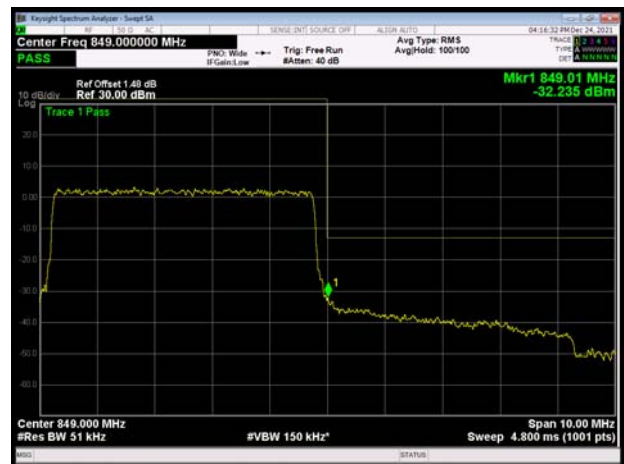
LTE Band 5 QPSK 5MHz CH-High 1RB



LTE Band 5 QPSK 5MHz CH-Low 100%RB



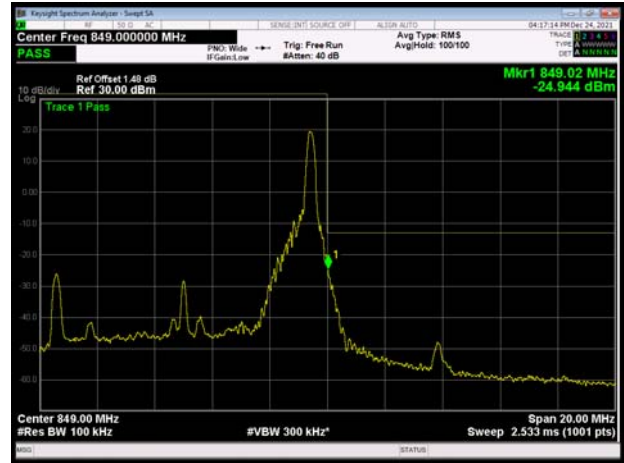
LTE Band 5 QPSK 5MHz CH-High 100%RB



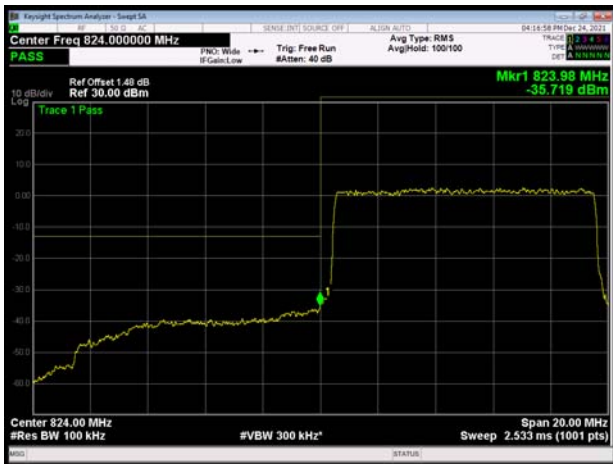
LTE Band 5 QPSK 10MHz CH-Low 1RB



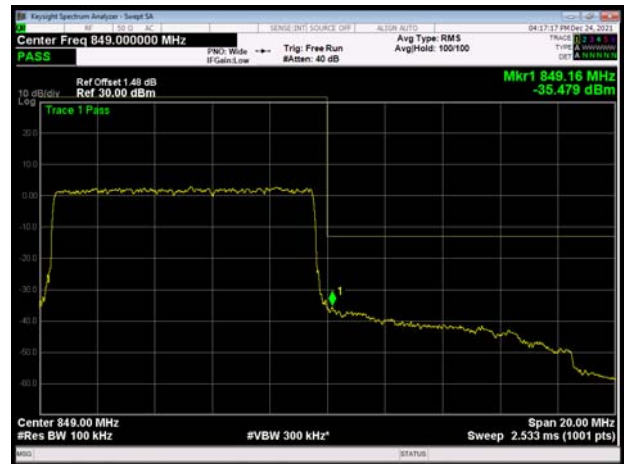
LTE Band 5 QPSK 10MHz CH-High 1RB



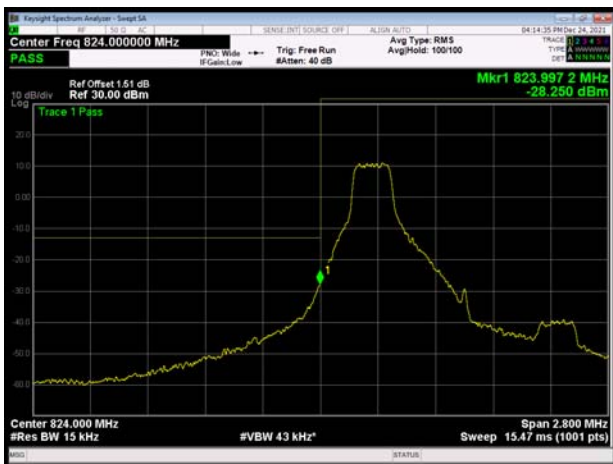
LTE Band 5 QPSK 10MHz CH-Low 100%RB



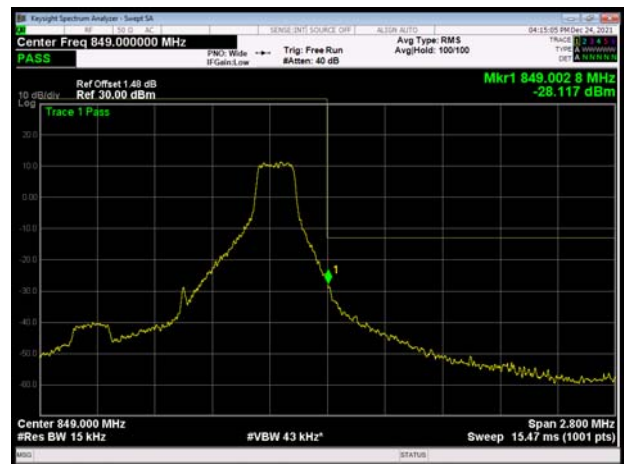
LTE Band 5 QPSK 10MHz CH-High 100%RB



LTE Band 5 16QAM 1.4MHz CH-Low 1RB

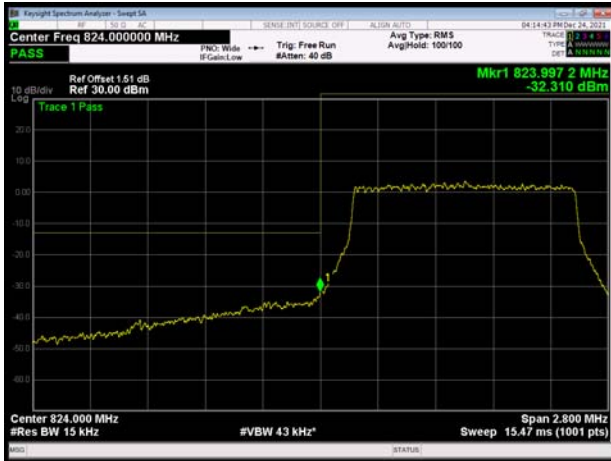


LTE Band 5 16QAM 1.4MHz CH-High 1RB





LTE Band 5 16QAM 1.4MHz CH-Low 100%RB



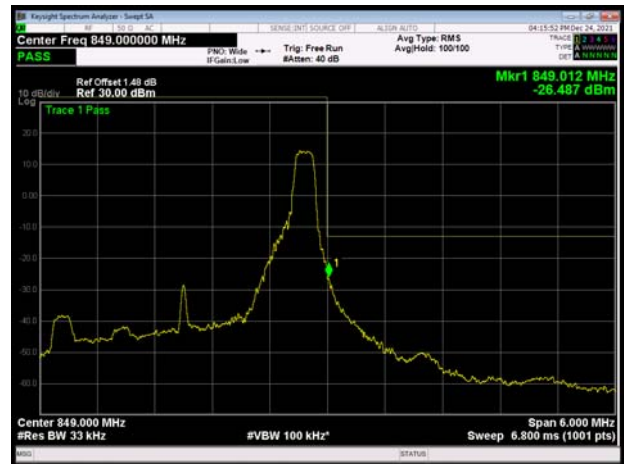
LTE Band 5 16QAM 1.4MHz CH-High 100%RB



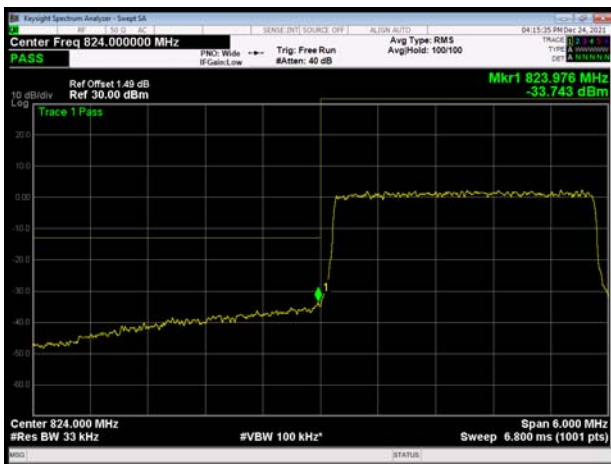
LTE Band 5 16QAM 3MHz CH-Low 1RB



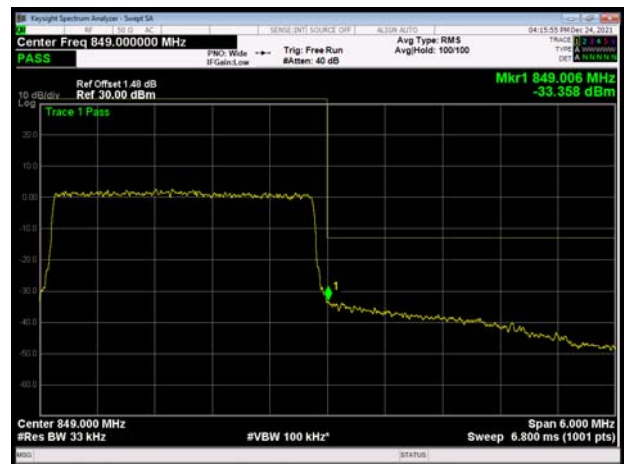
LTE Band 5 16QAM 3MHz CH-High 1RB



LTE Band 5 16QAM 3MHz CH-Low 100%RB



LTE Band 5 16QAM 3MHz CH-High 100%RB

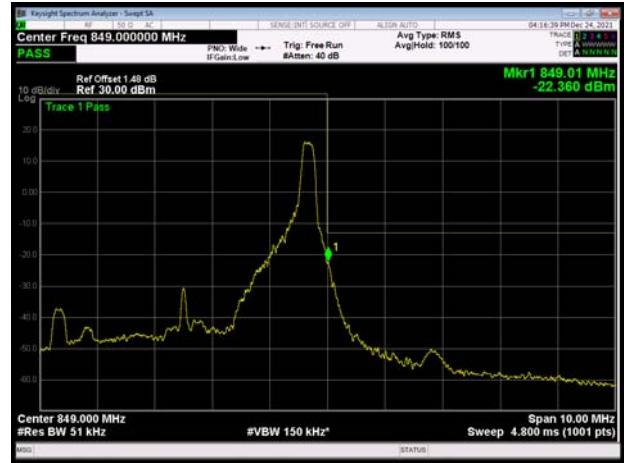




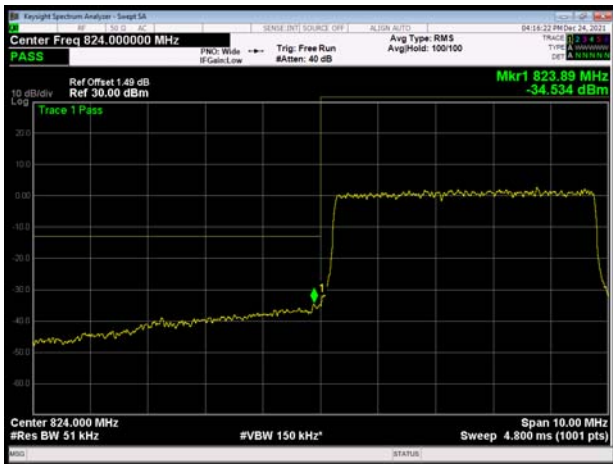
LTE Band 5 16QAM 5MHz CH-Low 1RB



LTE Band 5 16QAM 5MHz CH-High 1RB



LTE Band 5 16QAM 5MHz CH-Low 100%RB



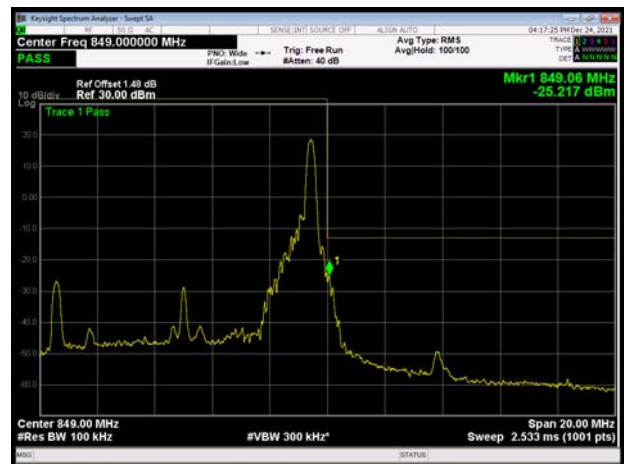
LTE Band 5 16QAM 5MHz CH-High 100%RB



LTE Band 5 16QAM 10MHz CH-Low 1RB

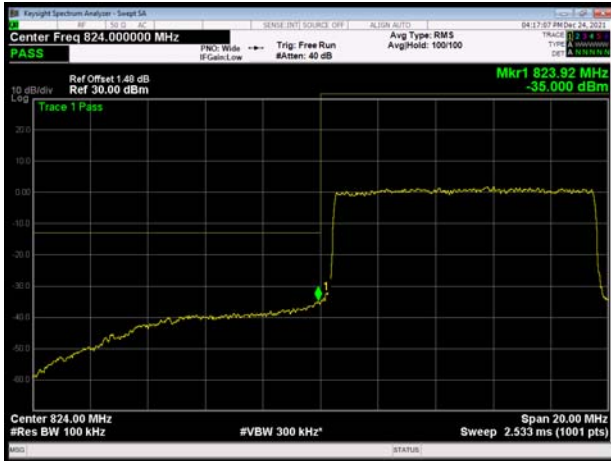


LTE Band 5 16QAM 10MHz CH-High 1RB





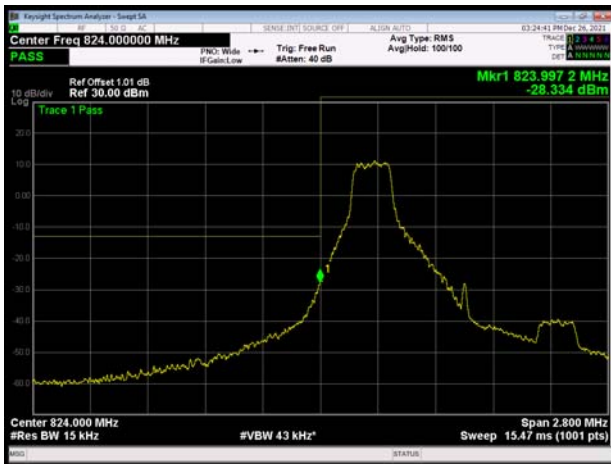
LTE Band 5 16QAM 10MHz CH-Low 100%RB



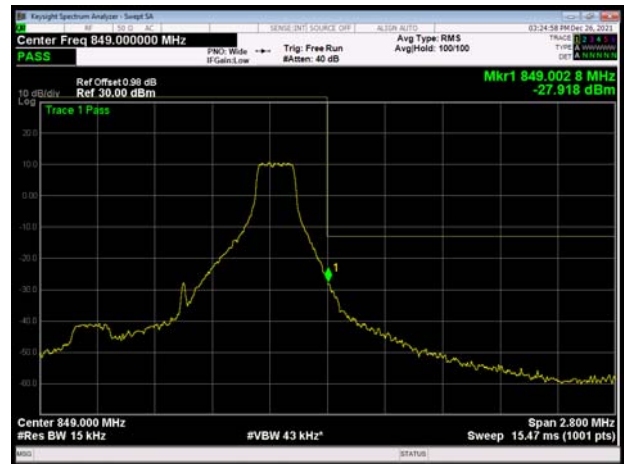
LTE Band 5 16QAM 10MHz CH-High 100%RB



LTE Band 5 64QAM 1.4MHz CH-Low 1RB



LTE Band 5 64QAM 1.4MHz CH-High 1RB



LTE Band 5 64QAM 1.4MHz CH-Low 100%RB

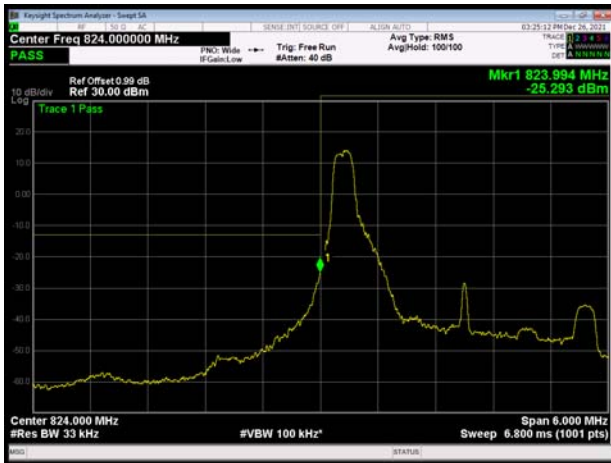


LTE Band 5 64QAM 1.4MHz CH-High 100%RB

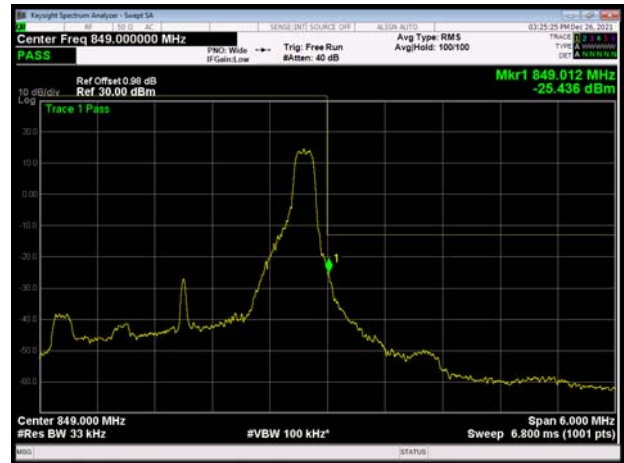




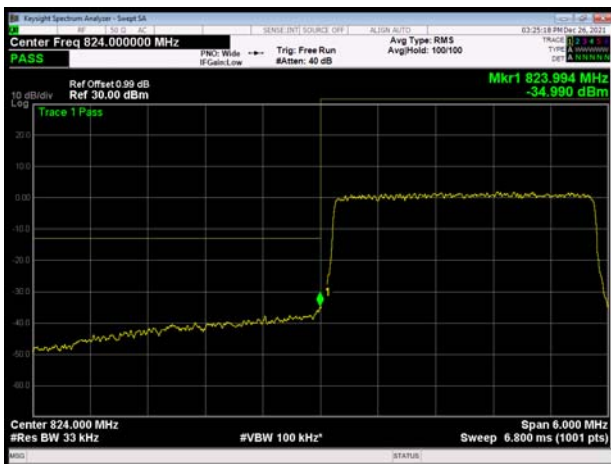
LTE Band 5 64QAM 3MHz CH-Low 1RB



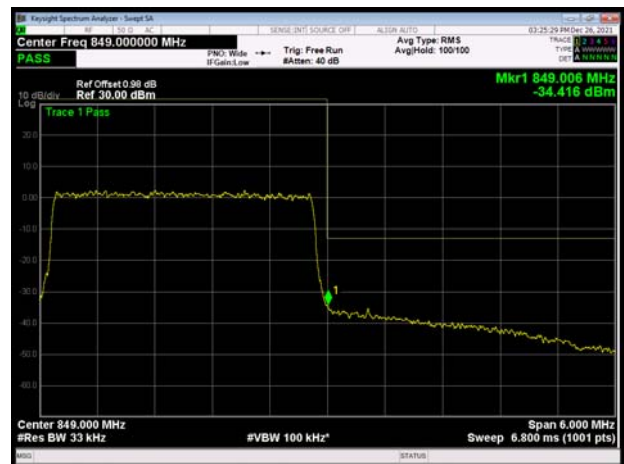
LTE Band 5 64QAM 3MHz CH-High 1RB



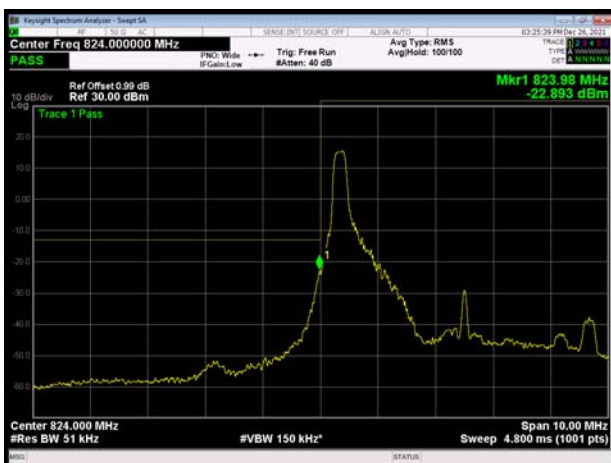
LTE Band 5 64QAM 3MHz CH-Low 100%RB



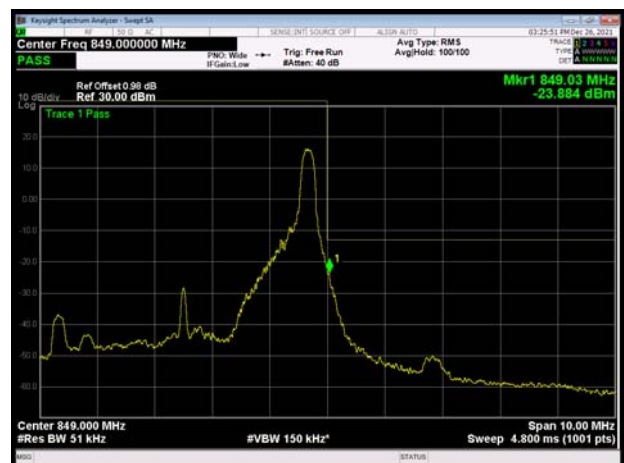
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LTE Band 5 64QAM 5MHz CH-Low 1RB

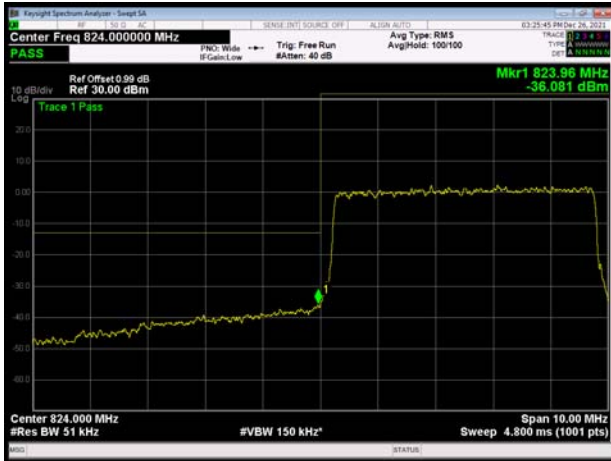


LTE Band 5 64QAM 5MHz CH-High 1RB





LTE Band 5 64QAM 5MHz CH-Low 100%RB



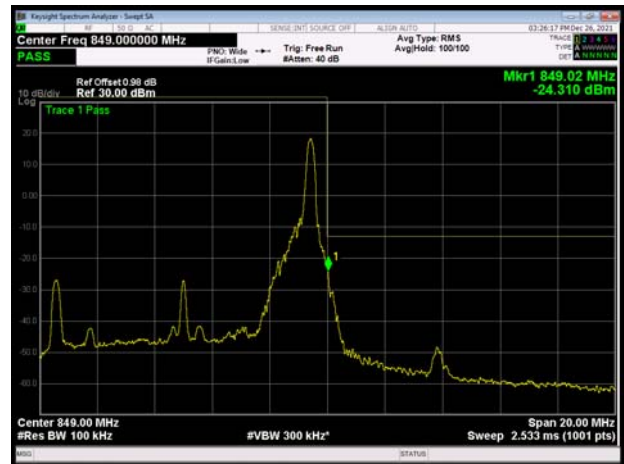
LTE Band 5 64QAM 5MHz CH-High 100%RB



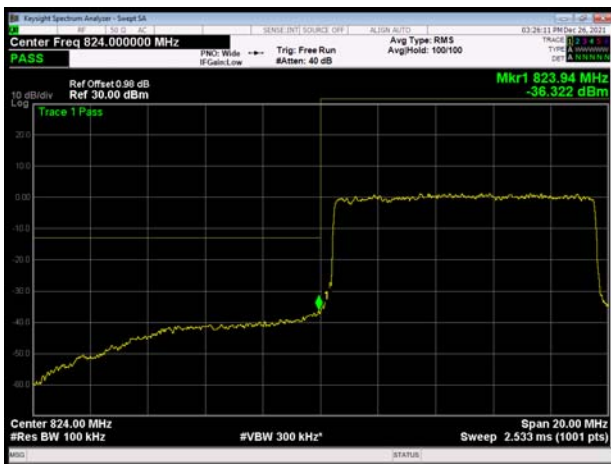
LTE Band 5 64QAM 10MHz CH-Low 1RB



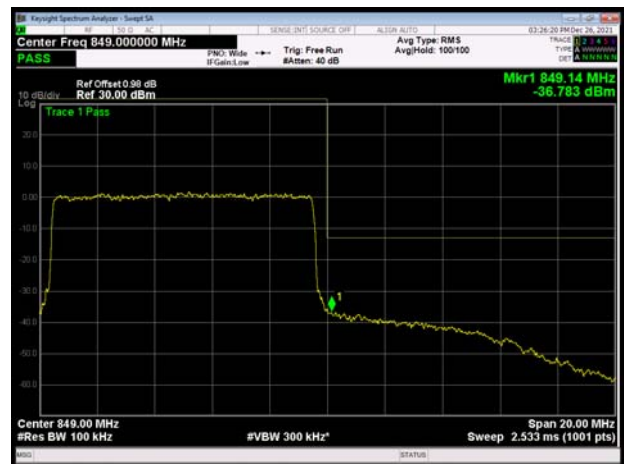
LTE Band 5 64QAM 10MHz CH-High 1RB



LTE Band 5 64QAM 10MHz CH-Low 100%RB



LTE Band 5 64QAM 10MHz CH-High 100%RB



6.4. Peak-to-Average Power Ratio (PAPR)

Mode	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
GSM 850 (GMSK)	128	824.2	31.45	28.81	2.64	≤13	PASS
	190	836.6	31.39	28.76	2.63	≤13	PASS
	251	848.8	31.44	28.81	2.63	≤13	PASS
GPRS 850 (GMSK)	128	824.2	31.37	28.74	2.63	≤13	PASS
	190	836.6	31.35	28.72	2.63	≤13	PASS
	251	848.8	31.46	28.83	2.63	≤13	PASS
EGPRS 850 (8PSK)	128	824.2	26.96	21.66	5.30	≤13	PASS
	190	836.6	26.97	21.65	5.32	≤13	PASS
	251	848.8	26.99	21.63	5.36	≤13	PASS
WCDMA Band V (RMC)	4132	826.4	24.68	21.58	3.10	≤13	PASS
	4183	836.6	24.68	21.61	3.07	≤13	PASS
	4233	846.6	24.65	21.55	3.10	≤13	PASS

LTE Band 5								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	20407	824.7	26.30	20.91	5.39	≤13	PASS
		20525	836.5	26.56	20.94	5.62	≤13	PASS
		20643	848.3	26.54	21.00	5.54	≤13	PASS
	3	20415	825.5	26.28	20.83	5.45	≤13	PASS
		20525	836.5	26.42	20.91	5.51	≤13	PASS
		20635	847.5	26.34	20.97	5.37	≤13	PASS
	5	20425	826.5	26.53	21.01	5.52	≤13	PASS
		20525	836.5	26.60	20.95	5.65	≤13	PASS
		20625	846.5	26.49	20.94	5.55	≤13	PASS
	10	20450	829	26.56	21.21	5.35	≤13	PASS
		20525	836.5	26.62	21.00	5.62	≤13	PASS
		20600	844	26.52	20.94	5.58	≤13	PASS
16QAM	1.4	20407	824.7	26.25	19.97	6.28	≤13	PASS
		20525	836.5	26.25	19.94	6.31	≤13	PASS
		20643	848.3	26.21	20.02	6.19	≤13	PASS
	3	20415	825.5	26.11	19.84	6.27	≤13	PASS



		20525	836.5	26.21	19.92	6.29	≤13	PASS
		20635	847.5	26.19	19.99	6.20	≤13	PASS
	5	20425	826.5	26.04	19.86	6.18	≤13	PASS
		20525	836.5	26.30	19.97	6.33	≤13	PASS
		20625	846.5	26.05	19.95	6.10	≤13	PASS
	10	20450	829	25.95	19.86	6.09	≤13	PASS
		20525	836.5	26.34	19.99	6.35	≤13	PASS
		20600	844	26.16	19.92	6.24	≤13	PASS
64QAM	1.4	20407	824.7	25.81	19.50	6.31	≤13	PASS
		20525	836.5	25.92	19.63	6.29	≤13	PASS
		20643	848.3	26.12	19.78	6.34	≤13	PASS
	3	20415	825.5	25.72	19.49	6.23	≤13	PASS
		20525	836.5	26.03	19.59	6.44	≤13	PASS
		20635	847.5	26.01	19.76	6.25	≤13	PASS
	5	20425	826.5	25.65	19.48	6.17	≤13	PASS
		20525	836.5	25.95	19.62	6.33	≤13	PASS
		20625	846.5	25.98	19.73	6.25	≤13	PASS
	10	20450	829	25.46	19.35	6.11	≤13	PASS
		20525	836.5	26.00	19.67	6.33	≤13	PASS
		20600	844	25.92	19.65	6.27	≤13	PASS

6.5. Frequency Stability

GSM 850						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
Temperature	Voltage	GMSK	8PSK	GMSK	8PSK	
Normal (25°C)	Normal	15.20	15.15	0.01817	0.01811	PASS
Extreme (50°C)		15.23	2.52	0.01821	0.00301	PASS
Extreme (40°C)		4.78	8.50	0.00571	0.01016	PASS
Extreme (30°C)		5.33	3.71	0.00637	0.00444	PASS
Extreme (20°C)		16.10	2.92	0.01925	0.00348	PASS
Extreme (10°C)		10.53	2.04	0.01259	0.00243	PASS
Extreme (0°C)		6.71	4.12	0.00802	0.00492	PASS
Extreme (-10°C)		4.64	16.84	0.00554	0.02013	PASS
Extreme (-20°C)		15.05	7.38	0.01799	0.00883	PASS
Extreme (-30°C)		9.09	14.74	0.01087	0.01761	PASS
25°C	LV	15.08	16.51	0.01803	0.01973	PASS
	HV	16.91	15.43	0.02021	0.01844	PASS

WCDMA Band V						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
Temperature	Voltage	BPSK	QPSK	BPSK	QPSK	
Normal (25°C)	Normal	5.38	14.57	0.00643	0.01742	PASS
Extreme (50°C)		11.76	4.96	0.01405	0.00593	PASS
Extreme (40°C)		8.87	9.73	0.01061	0.01163	PASS
Extreme (30°C)		3.82	11.72	0.00457	0.01401	PASS
Extreme (20°C)		12.37	2.53	0.01479	0.00302	PASS
Extreme (10°C)		5.96	4.32	0.00713	0.00516	PASS
Extreme (0°C)		3.01	10.57	0.00360	0.01263	PASS
Extreme (-10°C)		14.59	1.02	0.01744	0.00122	PASS
Extreme (-20°C)		3.96	8.95	0.00473	0.01070	PASS
Extreme (-30°C)		11.69	5.62	0.01398	0.00672	PASS
25°C	LV	4.10	3.15	0.00490	0.00376	PASS
	HV	3.99	17.78	0.00477	0.02125	PASS



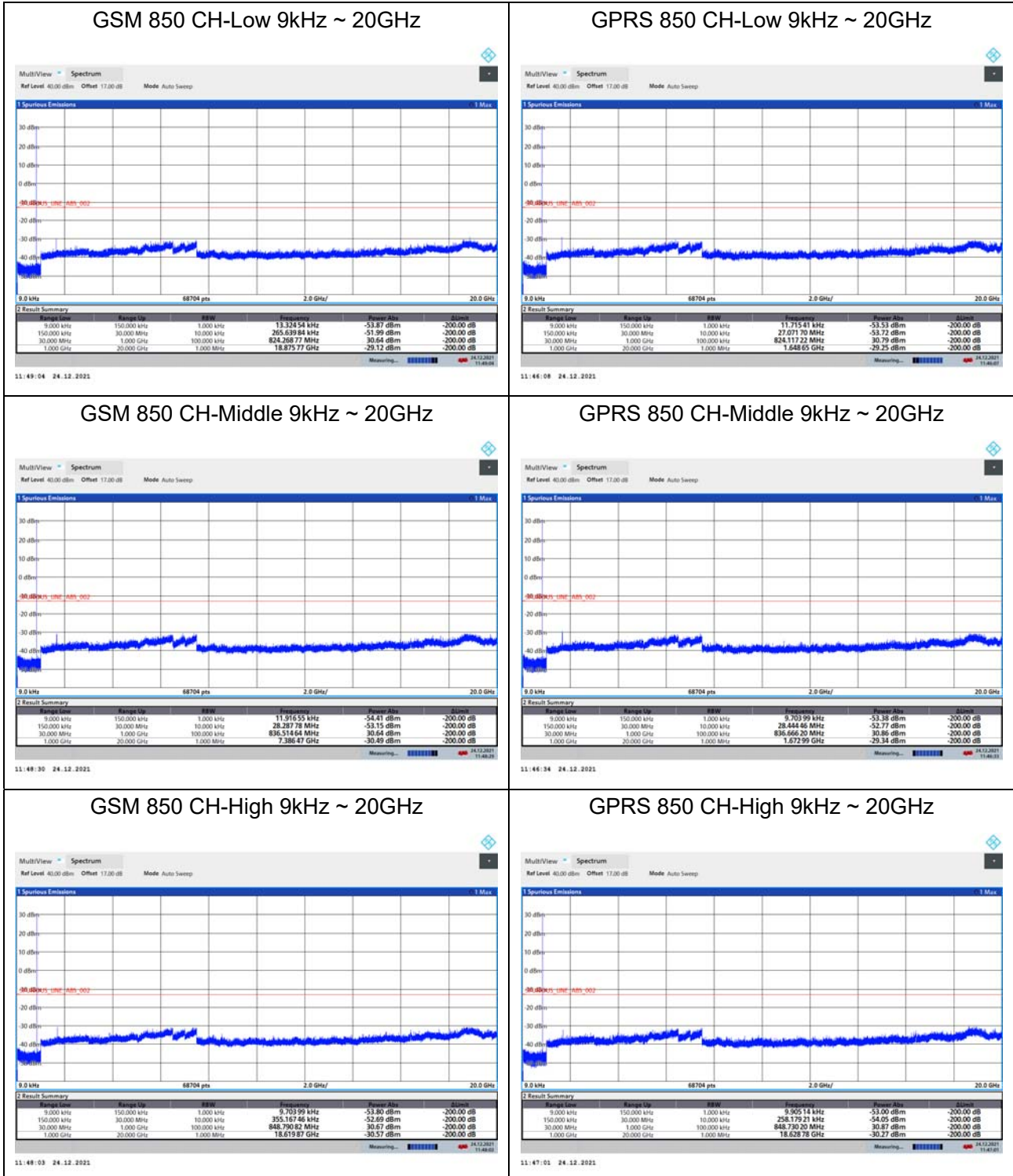
LTE Band 5								
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	1.4MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25°C)	Normal	14.76	2.50	10.81	0.01764	0.00299	0.01293	PASS
Extreme (50°C)		11.28	12.41	15.09	0.01349	0.01484	0.01804	PASS
Extreme (40°C)		14.07	8.42	5.53	0.01682	0.01007	0.00661	PASS
Extreme (30°C)		3.56	2.77	6.10	0.00426	0.00331	0.00729	PASS
Extreme (20°C)		17.13	4.24	8.81	0.02048	0.00507	0.01053	PASS
Extreme (10°C)		4.58	13.02	17.10	0.00547	0.01556	0.02045	PASS
Extreme (0°C)		7.22	16.55	2.84	0.00864	0.01978	0.00340	PASS
Extreme (-10°C)		15.78	7.88	16.36	0.01886	0.00942	0.01955	PASS
Extreme (-20°C)		16.24	2.56	14.34	0.01941	0.00306	0.01714	PASS
Extreme (-30°C)		14.42	1.61	2.57	0.01723	0.00192	0.00308	PASS
25°C	LV	15.43	6.63	4.97	0.01845	0.00792	0.00594	PASS
	HV	12.26	14.24	11.39	0.01466	0.01702	0.01361	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	3MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25°C)	Normal	11.39	15.13	4.50	0.01362	0.01809	0.00538	PASS
Extreme (50°C)		17.71	15.66	10.75	0.02118	0.01872	0.01285	PASS
Extreme (40°C)		11.96	14.80	17.03	0.01430	0.01769	0.02036	PASS
Extreme (30°C)		6.11	8.47	10.33	0.00730	0.01013	0.01235	PASS
Extreme (20°C)		10.28	8.56	7.90	0.01229	0.01023	0.00945	PASS
Extreme (10°C)		7.56	1.33	1.68	0.00903	0.00159	0.00200	PASS
Extreme (0°C)		16.91	8.16	5.77	0.02021	0.00975	0.00689	PASS
Extreme (-10°C)		7.33	10.38	11.98	0.00876	0.01241	0.01433	PASS
Extreme (-20°C)		11.12	3.89	1.75	0.01330	0.00465	0.00209	PASS
Extreme (-30°C)		3.85	4.93	10.30	0.00460	0.00590	0.01231	PASS
25°C	LV	11.13	11.39	6.25	0.01330	0.01361	0.00747	PASS
	HV	9.27	7.98	15.95	0.01108	0.00953	0.01907	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25°C)	Normal	8.55	9.23	3.36	0.01023	0.01104	0.00402	PASS
Extreme (50°C)		6.69	10.32	11.82	0.00800	0.01234	0.01412	PASS



Extreme (40°C)		15.09	12.00	3.99	0.01804	0.01434	0.00477	PASS
Extreme (30°C)		5.51	3.68	12.52	0.00658	0.00440	0.01497	PASS
Extreme (20°C)		7.70	14.67	16.06	0.00920	0.01754	0.01919	PASS
Extreme (10°C)		6.95	15.38	12.72	0.00830	0.01839	0.01521	PASS
Extreme (0°C)		14.70	8.76	9.51	0.01757	0.01048	0.01137	PASS
Extreme (-10°C)		8.17	3.15	2.09	0.00977	0.00376	0.00250	PASS
Extreme (-20°C)		12.20	9.28	10.17	0.01458	0.01109	0.01216	PASS
Extreme (-30°C)		3.73	11.28	17.42	0.00446	0.01348	0.02083	PASS
25°C	LV	4.83	17.62	10.15	0.00578	0.02106	0.01213	PASS
	HV	10.62	10.09	2.38	0.01269	0.01206	0.00284	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25°C)	Normal	16.06	7.78	7.61	0.01920	0.00931	0.00910	PASS
Extreme (50°C)		2.87	2.69	12.88	0.00344	0.00321	0.01540	PASS
Extreme (40°C)		7.83	6.41	17.20	0.00936	0.00767	0.02056	PASS
Extreme (30°C)		4.06	12.49	17.72	0.00486	0.01494	0.02118	PASS
Extreme (20°C)		6.01	10.83	8.87	0.00718	0.01294	0.01060	PASS
Extreme (10°C)		2.10	13.82	8.52	0.00251	0.01652	0.01019	PASS
Extreme (0°C)		1.15	1.67	8.64	0.00138	0.00200	0.01033	PASS
Extreme (-10°C)		9.10	12.40	1.91	0.01087	0.01482	0.00228	PASS
Extreme (-20°C)		15.73	1.71	16.96	0.01880	0.00204	0.02027	PASS
Extreme (-30°C)		3.70	11.96	3.25	0.00442	0.01430	0.00389	PASS
25°C	LV	4.43	2.35	9.70	0.00529	0.00281	0.01160	PASS
	HV	1.52	16.75	3.54	0.00182	0.02003	0.00423	PASS

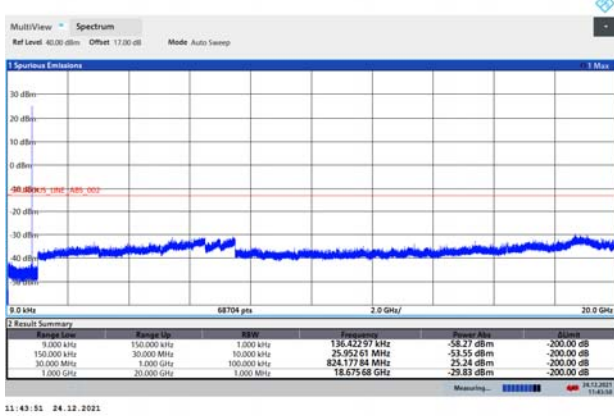
6.6. Spurious Emissions at Antenna Terminals

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions more than 20 dB below the limit are not reported. The signal beyond the limit is carrier.



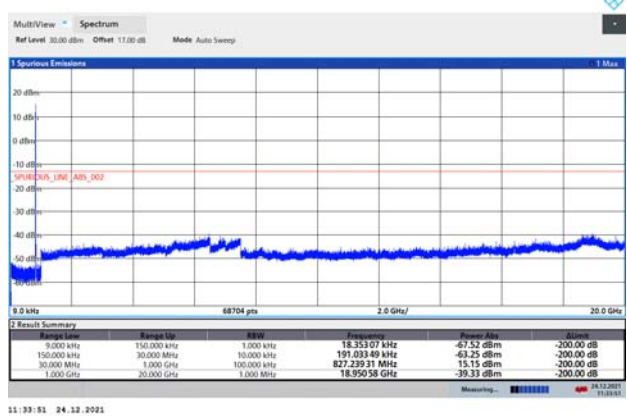


EGPRS 850 CH-Low 9kHz ~ 20GHz



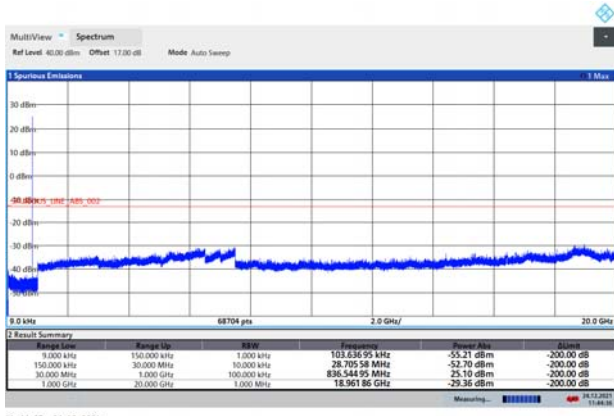
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WCDMA BAND V CH-Low 9kHz ~ 20GHz



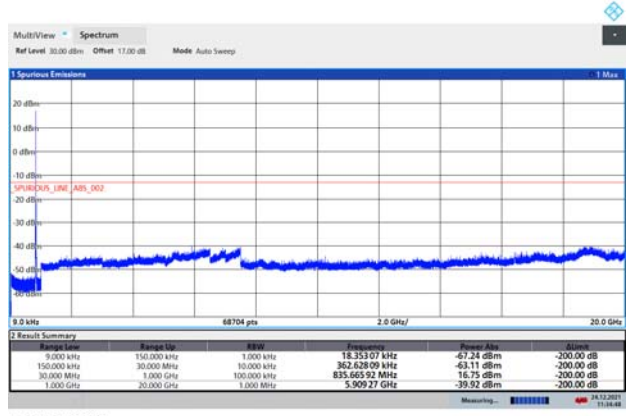
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EGPRS 850 CH-Middle 9kHz ~ 20GHz



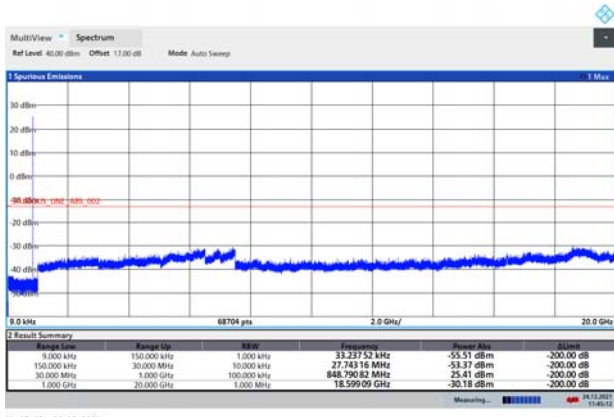
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WCDMA BAND V CH-Middle 9kHz ~ 20GHz



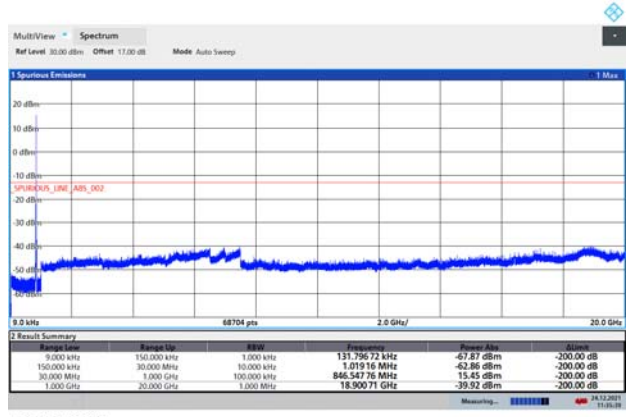
11:34:49 24.12.2021

EGPRS 850 CH-High 9kHz ~ 20GHz



11:45:12 24.12.2021

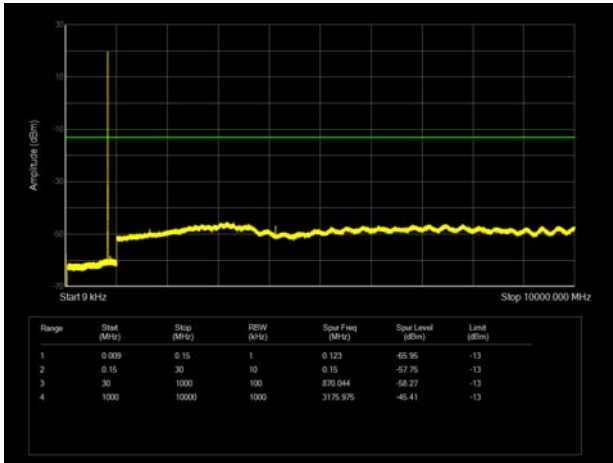
WCDMA BAND V CH-High 9kHz ~ 20GHz



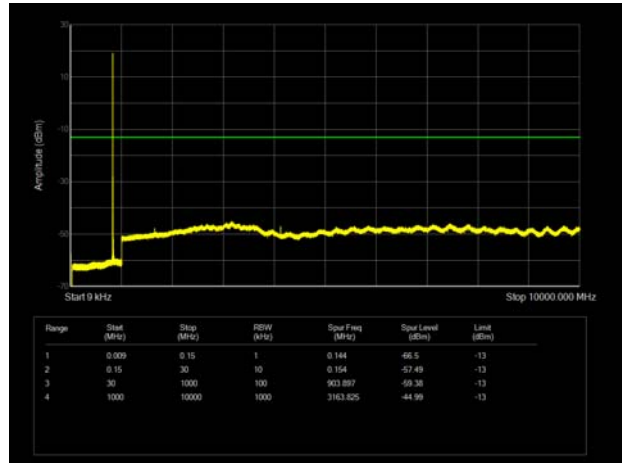
11:35:40 24.12.2021



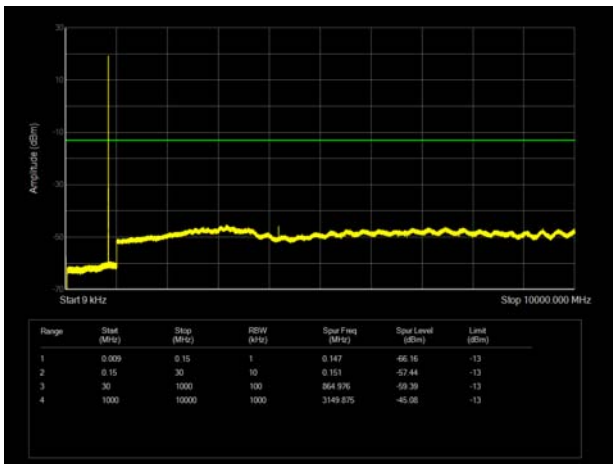
LTE Band 5 1.4MHz CH-Low 9kHz~10GHz



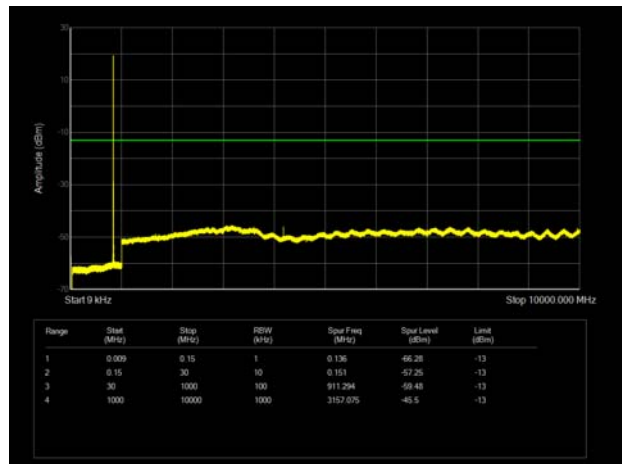
LTE Band 5 3MHz CH-Low 9kHz~10GHz



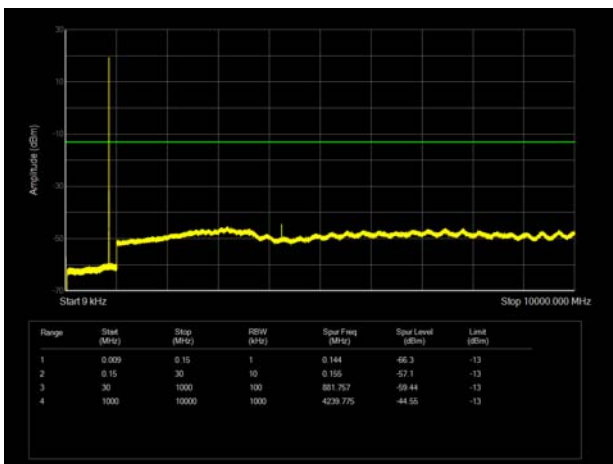
LTE Band 5 1.4MHz CH-Middle 9kHz~10GHz



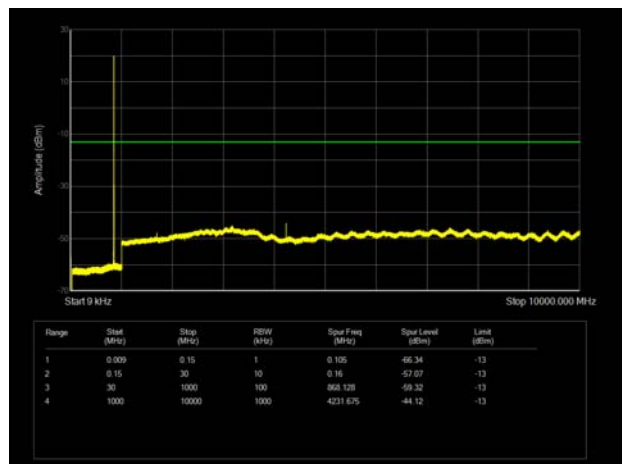
LTE Band 5 3MHz CH-Middle 9kHz~10GHz



LTE Band 5 1.4MHz CH-High 9kHz~10GHz

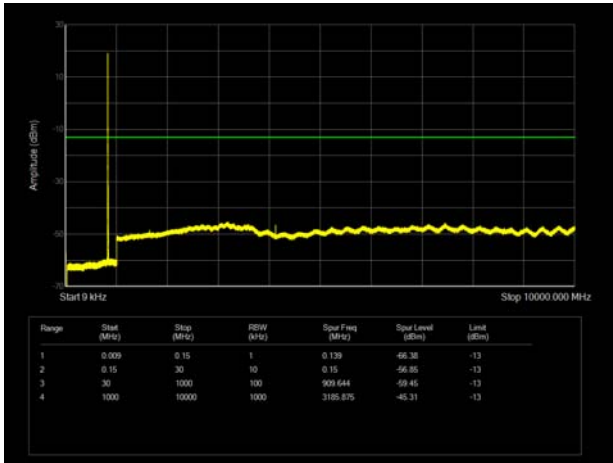


LTE Band 5 3MHz CH-High 9kHz~10GHz

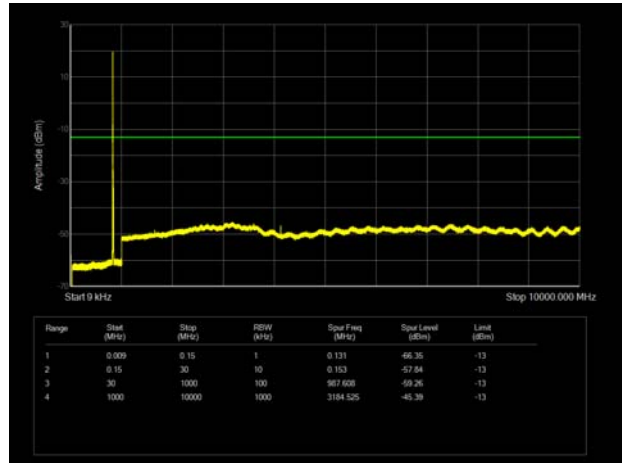




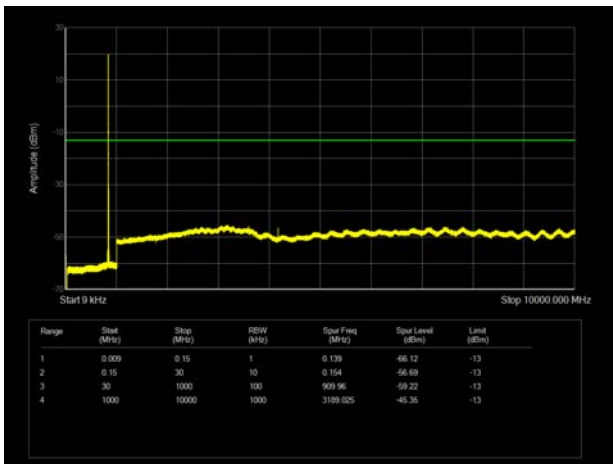
LTE Band 5 5MHz CH-Low 9kHz~10GHz



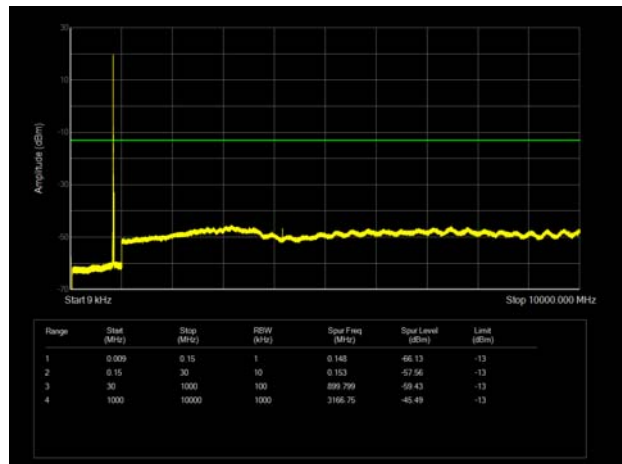
LTE Band 5 10MHz CH-Low 9kHz~10GHz



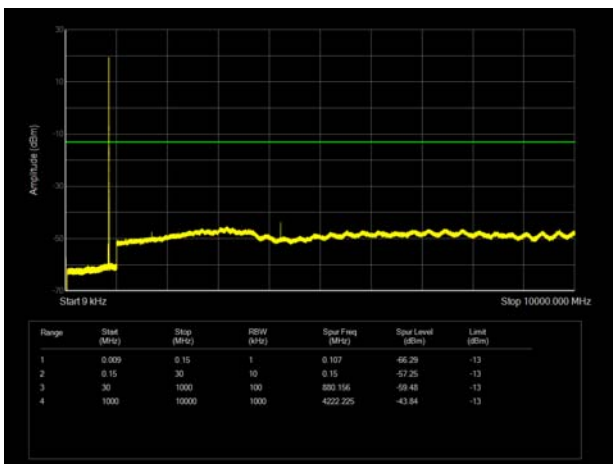
LTE Band 5 5MHz CH-Middle 9kHz~10GHz



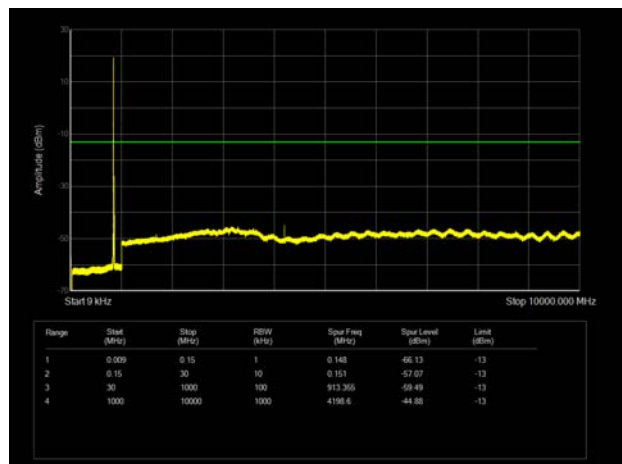
LTE Band 5 10MHz CH-Middle 9kHz~10GHz



LTE Band 5 5MHz CH-High 9kHz~10GHz



LTE Band 5 10MHz CH-High 9kHz~10GHz



6.7. Radiates Spurious Emission

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions below the noise floor will not be recorded in the report.

GSM 850 CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1673.45	-60.10	2.30	12.00	Horizontal	-52.55	-13.00	39.55	45
3	2509.80	-43.79	1.70	8.70	Horizontal	-38.94	-13.00	25.94	135
4	3346.40	-60.05	2.70	12.70	Horizontal	-52.20	-13.00	39.20	135
5	4183.00	-58.87	3.00	12.50	Horizontal	-51.52	-13.00	38.52	45
6	5019.60	-57.80	3.40	12.50	Horizontal	-50.85	-13.00	37.85	225
7	5856.20	-59.22	3.40	12.80	Horizontal	-51.97	-13.00	38.97	0
8	6692.80	-57.81	4.10	11.50	Horizontal	-52.56	-13.00	39.56	315
9	7529.40	-52.88	4.20	12.20	Horizontal	-47.03	-13.00	34.03	180
10	8366.00	-55.88	4.30	12.50	Horizontal	-49.83	-13.00	36.83	135

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

WCDMA Band V CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1675.30	-65.43	1.70	8.70	Horizontal	-60.58	-13.00	47.58	135
3	2513.65	-63.41	2.30	12.00	Horizontal	-55.86	-13.00	42.86	90
4	3346.40	-63.58	2.70	12.70	Horizontal	-55.73	-13.00	42.73	90
5	4183.00	-57.96	3.00	12.50	Horizontal	-50.61	-13.00	37.61	270
6	5019.60	-59.40	3.40	12.50	Horizontal	-52.45	-13.00	39.45	270
7	5856.20	-57.86	3.40	12.80	Horizontal	-50.61	-13.00	37.61	225
8	6692.80	-56.46	4.10	11.50	Horizontal	-51.21	-13.00	38.21	90
9	7529.40	-55.05	4.20	12.20	Horizontal	-49.20	-13.00	36.20	225
10	8366.00	-55.29	4.30	12.50	Horizontal	-49.24	-13.00	36.24	45

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



LTE Band 5 1.4MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1671.60	-65.26	1.70	8.70	Vertical	-60.41	-13.00	47.41	135
3	2507.40	-60.18	2.30	12.00	Vertical	-52.63	-13.00	39.63	45
4	3346.00	-62.55	2.70	12.70	Vertical	-54.70	-13.00	41.70	135
5	4182.50	-58.30	3.00	12.50	Vertical	-50.95	-13.00	37.95	225
6	5019.00	-58.12	3.40	12.50	Vertical	-51.17	-13.00	38.17	45
7	5855.50	-59.68	3.40	12.80	Vertical	-52.43	-13.00	39.43	0
8	6692.00	-57.19	4.10	11.50	Vertical	-51.94	-13.00	38.94	315
9	7528.50	-54.13	4.20	12.20	Vertical	-48.28	-13.00	35.28	90
10	8365.00	-49.08	4.30	12.50	Vertical	-43.03	-13.00	30.03	225

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Vertical position.

LTE Band 5 5MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1668.60	-65.81	1.70	8.70	Vertical	-60.96	-13.00	47.96	225
3	2503.30	-60.63	2.30	12.00	Vertical	-53.08	-13.00	40.08	180
4	3337.50	-61.65	2.70	12.70	Vertical	-53.80	-13.00	40.80	315
5	4171.88	-59.60	3.00	12.50	Vertical	-52.25	-13.00	39.25	45
6	5006.25	-58.24	3.40	12.50	Vertical	-51.29	-13.00	38.29	180
7	5840.63	-59.31	3.40	12.80	Vertical	-52.06	-13.00	39.06	0
8	6675.00	-57.08	4.10	11.50	Vertical	-51.83	-13.00	38.83	315
9	7509.38	-55.24	4.20	12.20	Vertical	-49.39	-13.00	36.39	45
10	8343.75	-50.37	4.30	12.50	Vertical	-44.32	-13.00	31.32	135

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Vertical position.



LTE Band 5 10MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1663.00	-65.90	1.70	8.70	Vertical	-61.05	-13.00	48.05	315
3	2494.50	-58.69	2.30	12.00	Vertical	-51.14	-13.00	38.14	45
4	3326.00	-60.54	2.70	12.70	Vertical	-52.69	-13.00	39.69	225
5	4157.50	-58.82	3.00	12.50	Vertical	-51.47	-13.00	38.47	180
6	4989.00	-56.10	3.40	12.50	Vertical	-49.15	-13.00	36.15	90
7	5820.50	-61.22	3.40	12.80	Vertical	-53.97	-13.00	40.97	315
8	6652.00	-57.03	4.10	11.50	Vertical	-51.78	-13.00	38.78	315
9	7483.50	-54.90	4.20	12.20	Vertical	-49.05	-13.00	36.05	45
10	8315.90	-48.77	4.30	12.50	Vertical	-42.72	-13.00	29.72	180

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Vertical position.



7. Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Base Station Simulator	R&S	CMW500	150415	2021-05-15	2022-05-14
Climate Chamber	WEISS	VT 4002	58226119450010	2021-05-15	2022-05-14
Spectrum Analyzer	Keysight	N9020A	MY52330084	2021-05-15	2022-05-14
Universal Radio Communication Tester	Agilent	E5515C	GB44400275	2021-05-15	2022-05-14
Signal Analyzer	R&S	FSV3030	101411	2020-12-13	2021-12-12
				2021-12-12	2022-12-11
Signal Analyzer	R&S	FSV30	103591	2021-05-15	2022-05-14
Horn Antenna	Schwarzbeck	BBHA 9120D	1594	2020-12-17	2023-12-16
Software	R&S	EMC32	10.35.10	/	/

*****END OF REPORT *****



ANNEX A: The EUT Appearance

The EUT Appearance is submitted separately.



ANNEX B: Test Setup Photos

The Test Setup Photos is submitted separately.