RF TEST REPORT

Applicant	Dspread Technology (Beijing) Inc
FCC ID	2AGQ6-QPOS-PLUS-L
Product	Mobile POS
Brand	DSPREAD
Model	QPOS Plus
Report No.	R2407A0983-R1
Issue Date	October 18, 2024

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2023)/ FCC CFR 47 Part 22H (2023)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Prepared by: Xu Ying *Approved by: Xu Kai*

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TABLE OF CONTENT

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	Radiated Spurious Emission	2.1053 / 22.917 (a)	PASS
Date of Testing: August 13, 2024 ~ September 23, 2024 Date of Sample Received: July 29, 2024			
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 Eurofins 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 **Eurofins 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)

Eurofins 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)

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

1.3. Testing Location

Company:	Eurofins TA Technology (Shanghai) Co., Ltd.
Address:	Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
City:	Shanghai
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2. General Description of Equipment Under Test

2.1. Applicant and Manufacturer Information

Applicant	Dspread Technology (Beijing) Inc
Applicant address	Rm 407, B12C, #10(Universal Business Park), Jiuxianqiao Road, Chaoyang District, Beijing, China
Manufacturer	Dspread Technology (Beijing) Inc
Manufacturer address	Rm 407, B12C, #10(Universal Business Park), Jiuxianqiao Road, Chaoyang District, Beijing, China

2.2. General Information

EUT Description			
Model	QPOS Plus		
SN	Conducted: 03070001202405230109 Radiated: 03070001202405230115		
Hardware Version	2.2.0		
Software Version	2.3.0		
Power Supply	Battery / AC adapter		
Antenna Type	Internal Antenna		
Antenna Gain	0.86 dBi		
Test Mode(s)	GSM 850; LTE Band 5;		
Test Modulation	(GSM/GPRS) GMSK; (LTE) QPSK, 16QAM;		
GPRS Multislot Class	12		
LTE Category	1		
Maximum E.R.P.	GSM 850	32.18 dBm	
	LTE Band 5	23.27 dBm	
Rated Power Supply Voltage	3.7V		
Operating Voltage	Minimum: 3.6V Maximum: 4.2V		
Operating Temperature	Lowest: 0°C Highest: +40°C		
Testing Temperature	Lowest: -30°C Highest: +50°C		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	GSM850	824 ~ 849	869 ~ 894
	LTE Band 5	824 ~ 849	869 ~ 894
EUT Accessory			
Battery 1	Manufacturer: Beijing Guocai Huayang Technology Co., Ltd. Model: QPOS Plus		
Battery 2	Manufacturer: SHEN ZHEN UTILITY ENERGY CO., LTD. Model: QPOS Plus		
Note: 1. The EUT is sent from the applicant to Eurofins TA and the information of the EUT is declared by the applicant.			

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 (2023)

FCC CFR47 Part 2 (2023)

Reference standard:
ANSI C63.26-2015

KDB 971168 D01 Power Meas License Digital Systems v03r01

4. Test Configuration

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 axis, horizontal polarization for GSM Band and (X axis, verticalpolarization for LTE Band) 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/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
RF Power Output and Effective Radiated power	GSM GPRS
Occupied Bandwidth	GSM GPRS (1Tx slot)
Band Edge Compliance	GSM GPRS (1Tx slot)
Peak-to-Average Power Ratio	GSM GPRS (1Tx slot)
Frequency Stability	GSM GPRS (1Tx slot)
Spurious Emissions at Antenna Terminals	GSM
Radiated Spurious Emission	GSM

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	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
Radiated 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

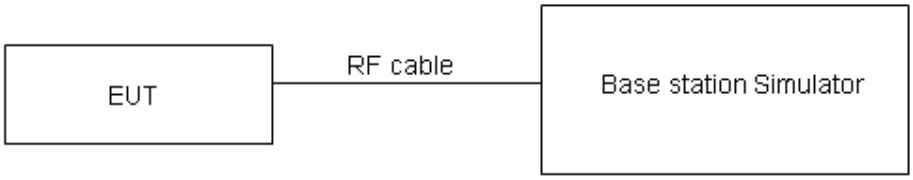
Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

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:
EIRP (dBm) = Output Power (dBm) + Antenna Gain (dBi)
EIRP (dBm) = ERP (dBm) + 2.15 (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	≤ 7 W (38.45 dBm)

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 for RF power output, *k* = 2, *U*= 1.19 dB for ERP.

Test Results

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

5.2. Occupied Bandwidth

Ambient Condition

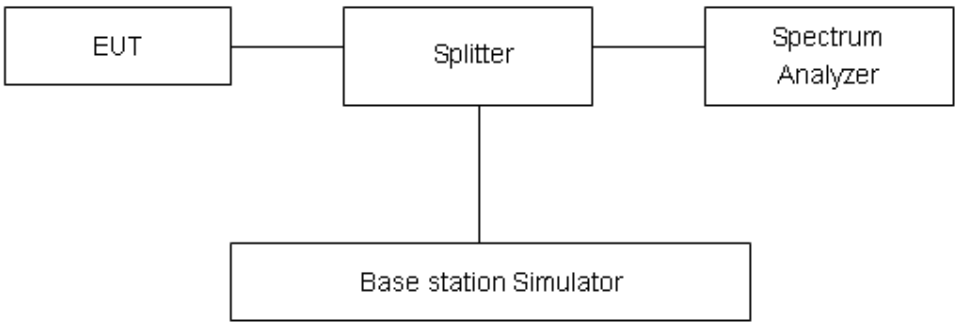
Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

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 ≥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= 624Hz.

Test Results

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

5.3. Band Edge Compliance

Ambient Condition

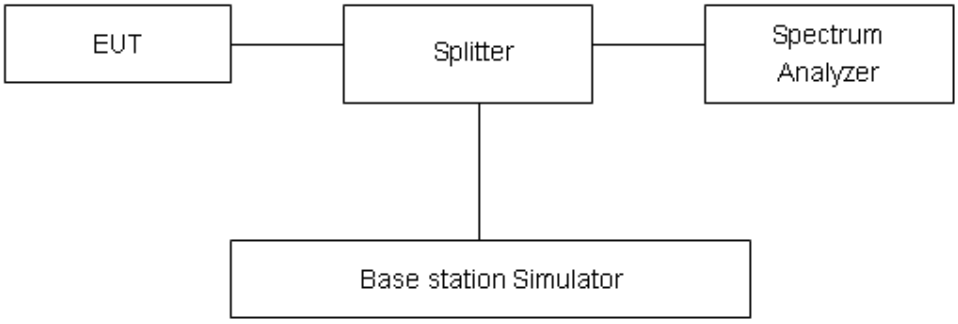
Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

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 ⩾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

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)

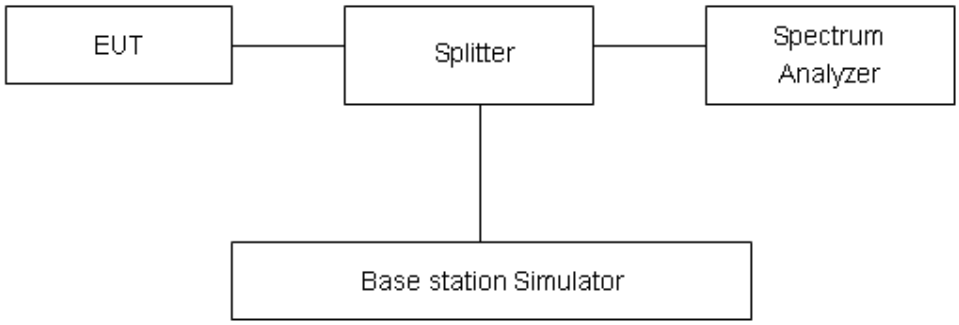
Ambient Condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

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
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

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.

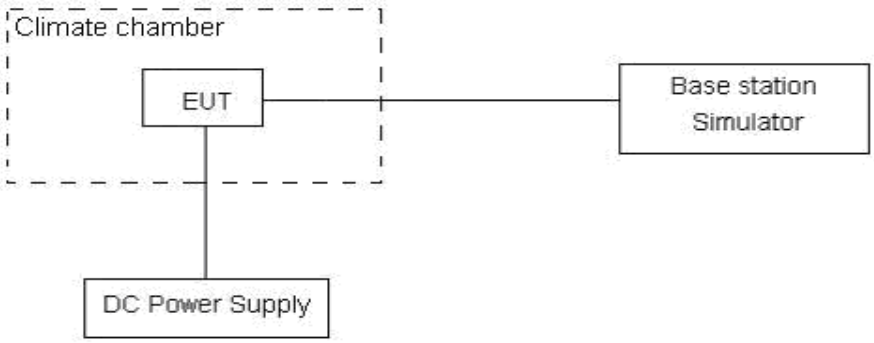
(3) Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements. Frequency Stability (Voltage Variation)

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 3.6 V and 4.2 V, with a nominal voltage of 3.7V.

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

Measurement Uncertainty

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

Test Results

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

5.6. Spurious Emissions at Antenna Terminals

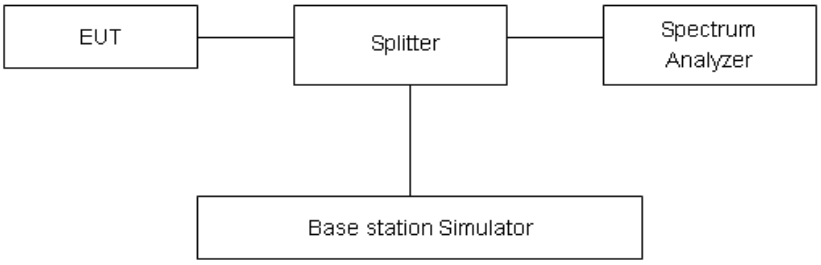
Ambient Condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

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 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)
Sweep is set to AUTO.
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

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-18GHz	1.407 dB

Test Results

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

5.7. Radiated Spurious Emission

Ambient Condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

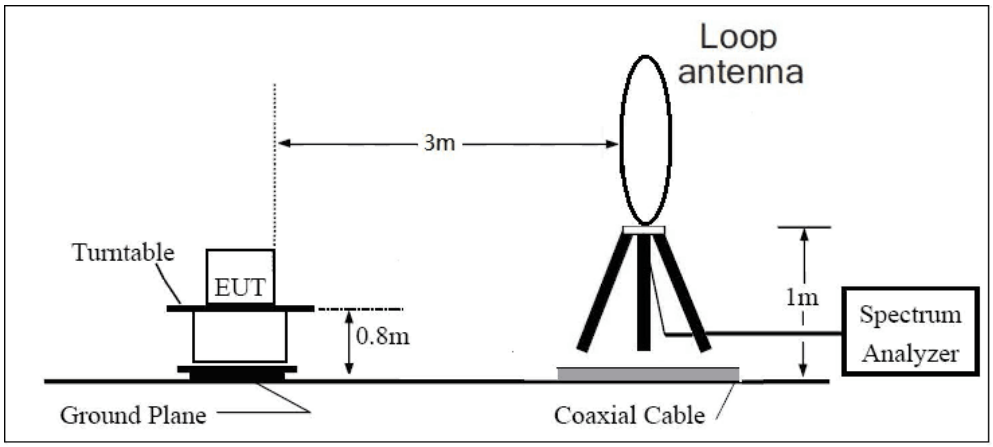
Method of Measurement

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.

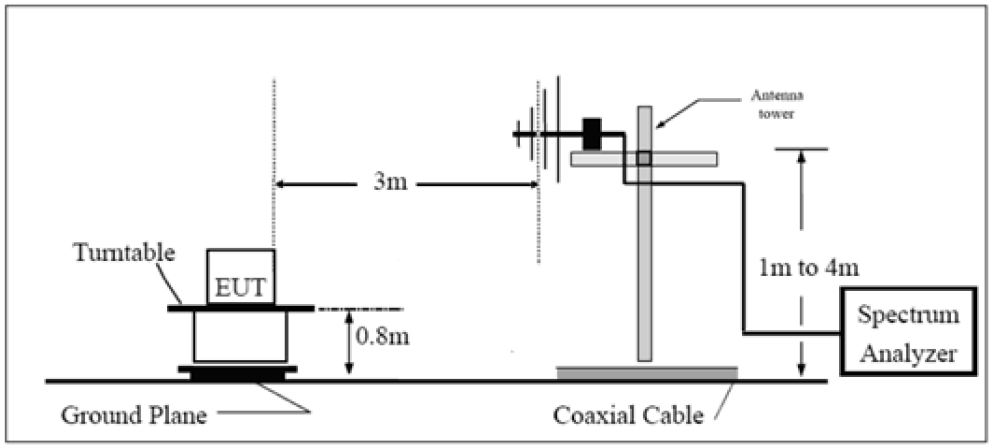
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test Setup

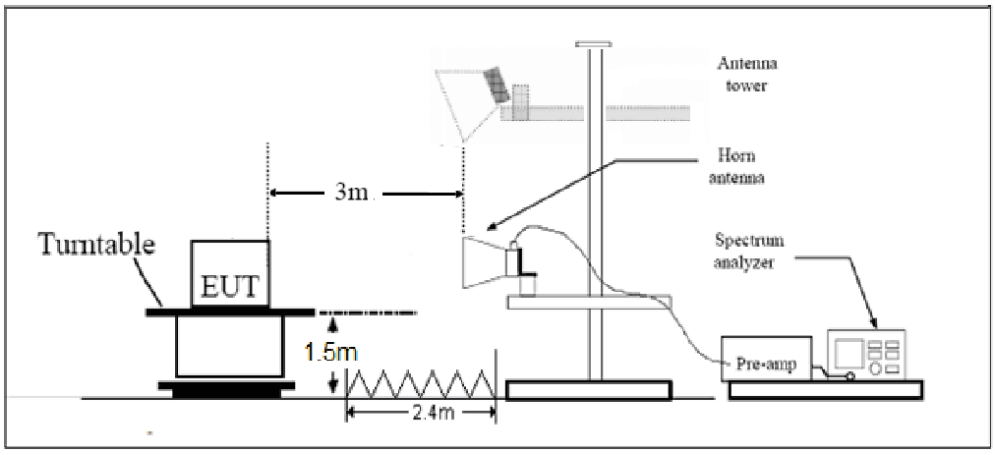
9KHz~ 30MHz



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

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	33.27	33.07	32.87	31.98	31.78	31.58
GPRS (GMSK)	1Txslot	33.47	33.26	33.07	32.18	31.97	31.78
	2Txslots	32.42	32.27	32.24	31.13	30.98	30.95
	3Txslots	30.90	30.80	30.64	29.61	29.51	29.35
	4Txslots	29.81	29.72	29.65	28.52	28.43	28.36

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	ERP (dBm)
LTE Band5	1.4	20407	1	#0	QPSK	24.35	23.06
LTE Band5	1.4	20407	1	#Mid	QPSK	23.82	22.53
LTE Band5	1.4	20407	1	#Max	QPSK	23.30	22.01
LTE Band5	1.4	20407	3	#0	QPSK	24.33	23.04
LTE Band5	1.4	20407	3	#Mid	QPSK	24.31	23.02
LTE Band5	1.4	20407	3	#Max	QPSK	23.43	22.14
LTE Band5	1.4	20407	6	#0	QPSK	22.40	21.11
LTE Band5	1.4	20525	1	#0	QPSK	24.24	22.95
LTE Band5	1.4	20525	1	#Mid	QPSK	23.99	22.70
LTE Band5	1.4	20525	1	#Max	QPSK	23.44	22.15
LTE Band5	1.4	20525	3	#0	QPSK	24.31	23.02
LTE Band5	1.4	20525	3	#Mid	QPSK	24.30	23.01
LTE Band5	1.4	20525	3	#Max	QPSK	23.66	22.37
LTE Band5	1.4	20525	6	#0	QPSK	22.69	21.40
LTE Band5	1.4	20643	1	#0	QPSK	23.06	21.77
LTE Band5	1.4	20643	1	#Mid	QPSK	23.96	22.67
LTE Band5	1.4	20643	1	#Max	QPSK	24.56	23.27
LTE Band5	1.4	20643	3	#0	QPSK	24.03	22.74
LTE Band5	1.4	20643	3	#Mid	QPSK	24.02	22.73
LTE Band5	1.4	20643	3	#Max	QPSK	23.56	22.27
LTE Band5	1.4	20643	6	#0	QPSK	22.59	21.30
LTE Band5	3	20415	1	#0	QPSK	22.50	21.21
LTE Band5	3	20415	1	#Mid	QPSK	24.10	22.81
LTE Band5	3	20415	1	#Max	QPSK	23.11	21.82

LTE Band5	3	20415	8	#0	QPSK	22.60	21.31
LTE Band5	3	20415	8	#Mid	QPSK	22.59	21.30
LTE Band5	3	20415	8	#Max	QPSK	22.63	21.34
LTE Band5	3	20415	15	#0	QPSK	22.57	21.28
LTE Band5	3	20525	1	#0	QPSK	24.19	22.90
LTE Band5	3	20525	1	#Mid	QPSK	24.35	23.06
LTE Band5	3	20525	1	#Max	QPSK	23.57	22.28
LTE Band5	3	20525	8	#0	QPSK	22.85	21.56
LTE Band5	3	20525	8	#Mid	QPSK	22.85	21.56
LTE Band5	3	20525	8	#Max	QPSK	22.92	21.63
LTE Band5	3	20525	15	#0	QPSK	22.86	21.57
LTE Band5	3	20635	1	#0	QPSK	23.67	22.38
LTE Band5	3	20635	1	#Mid	QPSK	24.41	23.12
LTE Band5	3	20635	1	#Max	QPSK	22.66	21.37
LTE Band5	3	20635	8	#0	QPSK	22.95	21.66
LTE Band5	3	20635	8	#Mid	QPSK	22.81	21.52
LTE Band5	3	20635	8	#Max	QPSK	22.64	21.35
LTE Band5	3	20635	15	#0	QPSK	22.66	21.37
LTE Band5	5	20425	1	#0	QPSK	24.00	22.71
LTE Band5	5	20425	1	#Mid	QPSK	23.28	21.99
LTE Band5	5	20425	1	#Max	QPSK	23.12	21.83
LTE Band5	5	20425	12	#0	QPSK	22.95	21.66
LTE Band5	5	20425	12	#Mid	QPSK	22.95	21.66
LTE Band5	5	20425	12	#Max	QPSK	22.43	21.14
LTE Band5	5	20425	25	#0	QPSK	22.32	21.03
LTE Band5	5	20525	1	#0	QPSK	24.03	22.74
LTE Band5	5	20525	1	#Mid	QPSK	23.45	22.16
LTE Band5	5	20525	1	#Max	QPSK	23.88	22.59
LTE Band5	5	20525	12	#0	QPSK	22.80	21.51
LTE Band5	5	20525	12	#Mid	QPSK	22.80	21.51
LTE Band5	5	20525	12	#Max	QPSK	22.78	21.49
LTE Band5	5	20525	25	#0	QPSK	22.59	21.30
LTE Band5	5	20625	1	#0	QPSK	23.70	22.41
LTE Band5	5	20625	1	#Mid	QPSK	23.64	22.35
LTE Band5	5	20625	1	#Max	QPSK	24.20	22.91
LTE Band5	5	20625	12	#0	QPSK	23.36	22.07
LTE Band5	5	20625	12	#Mid	QPSK	23.36	22.07
LTE Band5	5	20625	12	#Max	QPSK	23.25	21.96
LTE Band5	5	20625	25	#0	QPSK	22.63	21.34
LTE Band5	10	20450	1	#0	QPSK	24.33	23.04
LTE Band5	10	20450	1	#Mid	QPSK	23.51	22.22
LTE Band5	10	20450	1	#Max	QPSK	23.80	22.51
LTE Band5	10	20450	25	#0	QPSK	22.91	21.62

LTE Band5	10	20450	25	#Mid	QPSK	22.92	21.63
LTE Band5	10	20450	25	#Max	QPSK	22.97	21.68
LTE Band5	10	20450	50	#0	QPSK	22.58	21.29
LTE Band5	10	20525	1	#0	QPSK	23.88	22.59
LTE Band5	10	20525	1	#Mid	QPSK	23.67	22.38
LTE Band5	10	20525	1	#Max	QPSK	24.32	23.03
LTE Band5	10	20525	25	#0	QPSK	23.03	21.74
LTE Band5	10	20525	25	#Mid	QPSK	23.05	21.76
LTE Band5	10	20525	25	#Max	QPSK	23.22	21.93
LTE Band5	10	20525	50	#0	QPSK	22.79	21.50
LTE Band5	10	20600	1	#0	QPSK	23.13	21.84
LTE Band5	10	20600	1	#Mid	QPSK	23.82	22.53
LTE Band5	10	20600	1	#Max	QPSK	24.44	23.15
LTE Band5	10	20600	25	#0	QPSK	23.56	22.27
LTE Band5	10	20600	25	#Mid	QPSK	23.58	22.29
LTE Band5	10	20600	25	#Max	QPSK	23.55	22.26
LTE Band5	10	20600	50	#0	QPSK	22.77	21.48
LTE Band5	1.4	20407	1	#0	16QAM	23.20	21.91
LTE Band5	1.4	20407	1	#Mid	16QAM	22.70	21.41
LTE Band5	1.4	20407	1	#Max	16QAM	22.18	20.89
LTE Band5	1.4	20407	3	#0	16QAM	23.27	21.98
LTE Band5	1.4	20407	3	#Mid	16QAM	23.24	21.95
LTE Band5	1.4	20407	3	#Max	16QAM	22.38	21.09
LTE Band5	1.4	20407	6	#0	16QAM	21.27	19.98
LTE Band5	1.4	20525	1	#0	16QAM	23.14	21.85
LTE Band5	1.4	20525	1	#Mid	16QAM	22.94	21.65
LTE Band5	1.4	20525	1	#Max	16QAM	22.46	21.17
LTE Band5	1.4	20525	3	#0	16QAM	23.23	21.94
LTE Band5	1.4	20525	3	#Mid	16QAM	23.23	21.94
LTE Band5	1.4	20525	3	#Max	16QAM	22.66	21.37
LTE Band5	1.4	20525	6	#0	16QAM	21.56	20.27
LTE Band5	1.4	20643	1	#0	16QAM	21.86	20.57
LTE Band5	1.4	20643	1	#Mid	16QAM	22.69	21.40
LTE Band5	1.4	20643	1	#Max	16QAM	23.20	21.91
LTE Band5	1.4	20643	3	#0	16QAM	22.85	21.56
LTE Band5	1.4	20643	3	#Mid	16QAM	22.84	21.55
LTE Band5	1.4	20643	3	#Max	16QAM	22.47	21.18
LTE Band5	1.4	20643	6	#0	16QAM	21.49	20.20
LTE Band5	3	20415	1	#0	16QAM	21.60	20.31
LTE Band5	3	20415	1	#Mid	16QAM	23.15	21.86
LTE Band5	3	20415	1	#Max	16QAM	22.16	20.87
LTE Band5	3	20415	8	#0	16QAM	21.37	20.08
LTE Band5	3	20415	8	#Mid	16QAM	21.50	20.21

LTE Band5	3	20415	8	#Max	16QAM	21.52	20.23
LTE Band5	3	20415	15	#0	16QAM	21.44	20.15
LTE Band5	3	20525	1	#0	16QAM	23.13	21.84
LTE Band5	3	20525	1	#Mid	16QAM	23.33	22.04
LTE Band5	3	20525	1	#Max	16QAM	22.62	21.33
LTE Band5	3	20525	8	#0	16QAM	21.70	20.41
LTE Band5	3	20525	8	#Mid	16QAM	21.71	20.42
LTE Band5	3	20525	8	#Max	16QAM	21.74	20.45
LTE Band5	3	20525	15	#0	16QAM	21.63	20.34
LTE Band5	3	20635	1	#0	16QAM	22.39	21.10
LTE Band5	3	20635	1	#Mid	16QAM	23.05	21.76
LTE Band5	3	20635	1	#Max	16QAM	21.42	20.13
LTE Band5	3	20635	8	#0	16QAM	21.82	20.53
LTE Band5	3	20635	8	#Mid	16QAM	21.81	20.52
LTE Band5	3	20635	8	#Max	16QAM	21.69	20.40
LTE Band5	3	20635	15	#0	16QAM	21.73	20.44
LTE Band5	5	20425	1	#0	16QAM	23.38	22.09
LTE Band5	5	20425	1	#Mid	16QAM	22.70	21.41
LTE Band5	5	20425	1	#Max	16QAM	22.57	21.28
LTE Band5	5	20425	12	#0	16QAM	22.07	20.78
LTE Band5	5	20425	12	#Mid	16QAM	22.06	20.77
LTE Band5	5	20425	12	#Max	16QAM	21.54	20.25
LTE Band5	5	20425	25	#0	16QAM	21.45	20.16
LTE Band5	5	20525	1	#0	16QAM	23.35	22.06
LTE Band5	5	20525	1	#Mid	16QAM	22.78	21.49
LTE Band5	5	20525	1	#Max	16QAM	23.23	21.94
LTE Band5	5	20525	12	#0	16QAM	21.87	20.58
LTE Band5	5	20525	12	#Mid	16QAM	21.89	20.60
LTE Band5	5	20525	12	#Max	16QAM	21.84	20.55
LTE Band5	5	20525	25	#0	16QAM	21.69	20.40
LTE Band5	5	20625	1	#0	16QAM	23.09	21.80
LTE Band5	5	20625	1	#Mid	16QAM	23.01	21.72
LTE Band5	5	20625	1	#Max	16QAM	23.63	22.34
LTE Band5	5	20625	12	#0	16QAM	22.53	21.24
LTE Band5	5	20625	12	#Mid	16QAM	22.54	21.25
LTE Band5	5	20625	12	#Max	16QAM	22.41	21.12
LTE Band5	5	20625	25	#0	16QAM	21.74	20.45
LTE Band5	10	20450	1	#0	16QAM	23.74	22.45
LTE Band5	10	20450	1	#Mid	16QAM	22.85	21.56
LTE Band5	10	20450	1	#Max	16QAM	23.25	21.96
LTE Band5	10	20450	25	#0	16QAM	22.09	20.80
LTE Band5	10	20450	25	#Mid	16QAM	22.09	20.80
LTE Band5	10	20450	25	#Max	16QAM	22.13	20.84

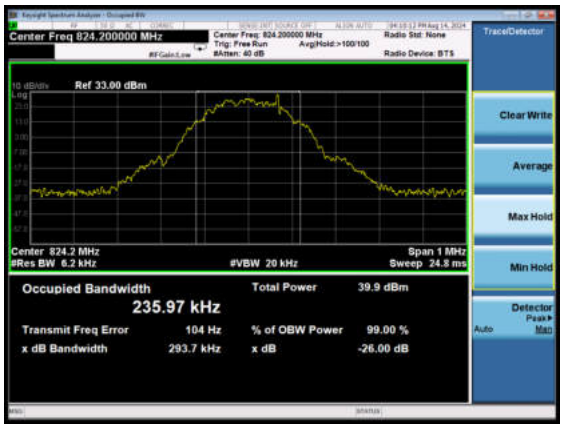
LTE Band5	10	20525	1	#0	16QAM	23.09	21.80
LTE Band5	10	20525	1	#Mid	16QAM	22.93	21.64
LTE Band5	10	20525	1	#Max	16QAM	23.71	22.42
LTE Band5	10	20525	25	#0	16QAM	22.17	20.88
LTE Band5	10	20525	25	#Mid	16QAM	22.17	20.88
LTE Band5	10	20525	25	#Max	16QAM	22.32	21.03
LTE Band5	10	20600	1	#0	16QAM	22.07	20.78
LTE Band5	10	20600	1	#Mid	16QAM	22.73	21.44
LTE Band5	10	20600	1	#Max	16QAM	23.40	22.11
LTE Band5	10	20600	25	#0	16QAM	22.65	21.36
LTE Band5	10	20600	25	#Mid	16QAM	22.66	21.37
LTE Band5	10	20600	25	#Max	16QAM	22.63	21.34

6.2. Occupied Bandwidth

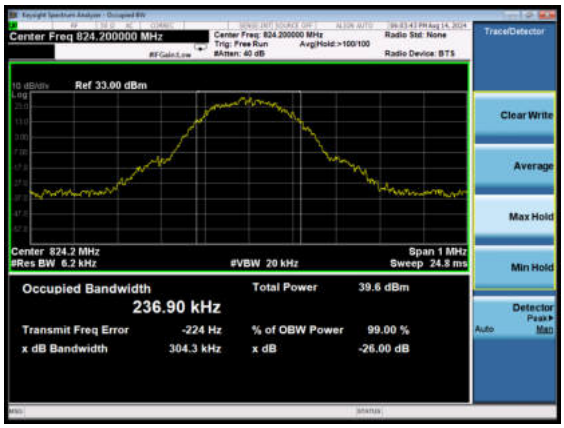
Mode	Channel	Frequency (MHz)	99% Power Bandwidth (MHz)	-26dBc Bandwidth (MHz)
GSM 850 (GMSK)	128	824.2	0.236	0.294
	190	836.6	0.239	0.305
	251	848.8	0.235	0.298
GPRS 850 (GMSK)	128	824.2	0.237	0.304
	190	836.6	0.236	0.295
	251	848.8	0.235	0.300

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	99% OBW (MHz)	-26dB EBW (MHz)
LTE Band5	1.4	20407	6	#0	QPSK	1.104	1.469
LTE Band5	1.4	20525	6	#0	QPSK	1.098	1.424
LTE Band5	1.4	20643	6	#0	QPSK	1.096	1.463
LTE Band5	3	20415	15	#0	QPSK	2.683	3.058
LTE Band5	3	20525	15	#0	QPSK	2.701	3.061
LTE Band5	3	20635	15	#0	QPSK	2.679	3.119
LTE Band5	5	20425	25	#0	QPSK	4.485	5.019
LTE Band5	5	20525	25	#0	QPSK	4.484	5.067
LTE Band5	5	20625	25	#0	QPSK	4.485	5.056
LTE Band5	10	20450	50	#0	QPSK	8.942	9.605
LTE Band5	10	20525	50	#0	QPSK	8.912	9.584
LTE Band5	10	20600	50	#0	QPSK	8.936	9.522
LTE Band5	1.4	20407	6	#0	16QAM	1.099	1.458
LTE Band5	1.4	20525	6	#0	16QAM	1.098	1.476
LTE Band5	1.4	20643	6	#0	16QAM	1.090	1.420
LTE Band5	3	20415	15	#0	16QAM	2.682	3.125
LTE Band5	3	20525	15	#0	16QAM	2.691	3.199
LTE Band5	3	20635	15	#0	16QAM	2.680	3.251
LTE Band5	5	20425	25	#0	16QAM	4.481	5.077
LTE Band5	5	20525	25	#0	16QAM	4.483	5.005
LTE Band5	5	20625	25	#0	16QAM	4.492	5.017

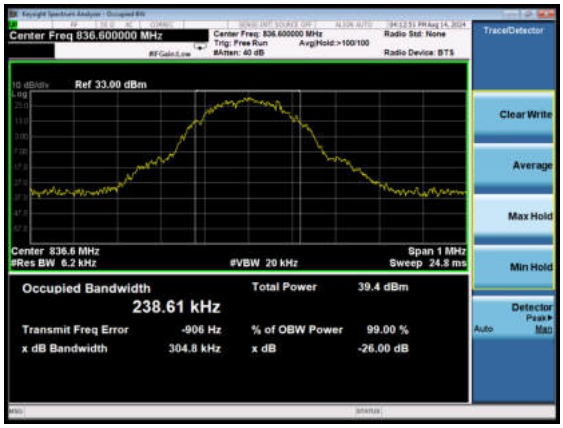
GSM 850 CH-Low



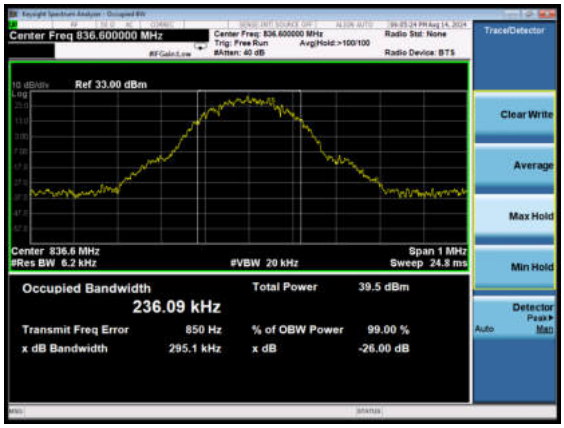
GSM 850 GPRS CH-Low



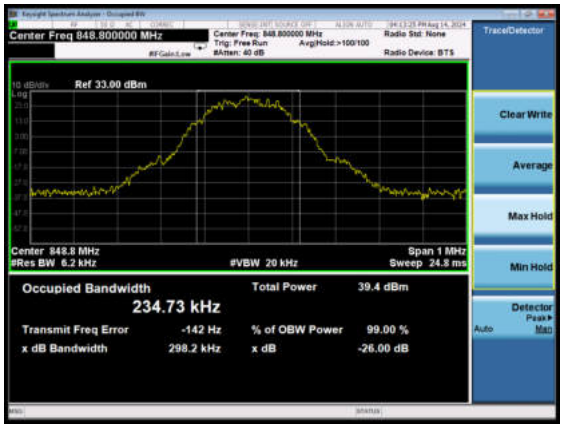
GSM 850 CH-Middle



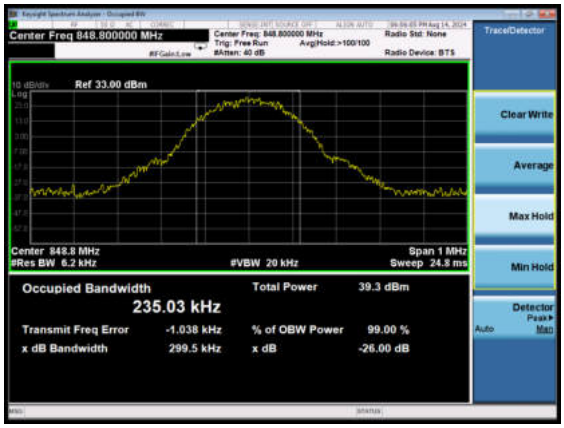
GSM 850 GPRS CH-Middle



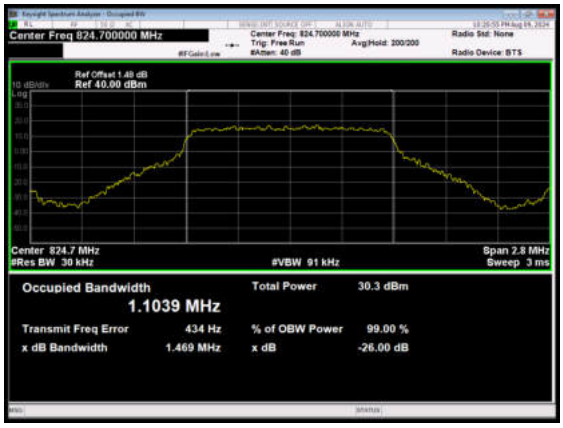
GSM 850 CH-High



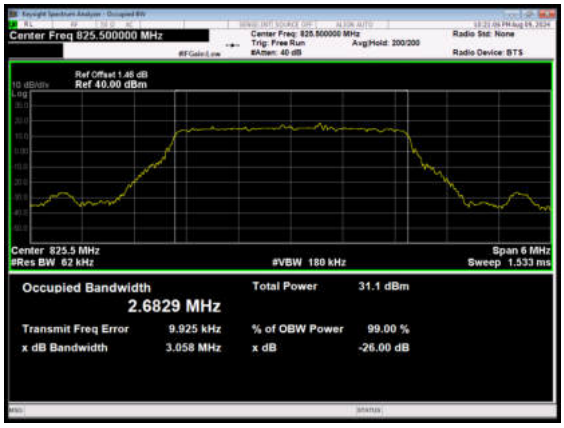
GSM 850 GPRS CH-High



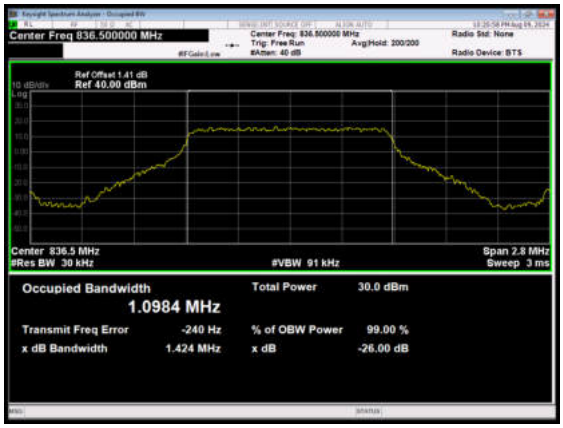
LTE Band 5 QPSK 1.4MHz CH-Low



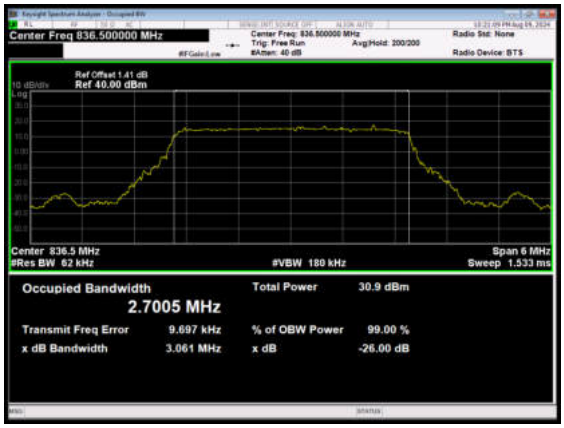
LTE Band 5 QPSK 3MHz CH-Low



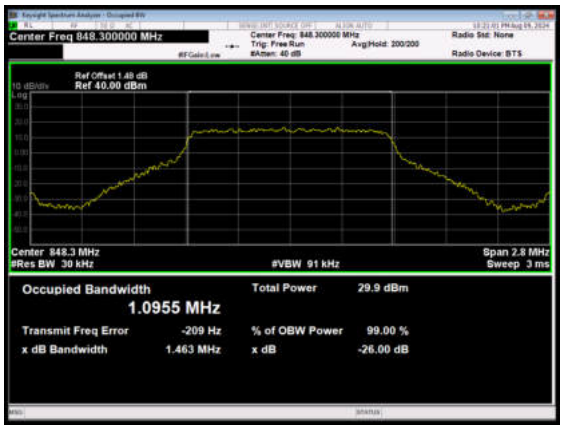
LTE Band 5 QPSK 1.4MHz CH-Middle



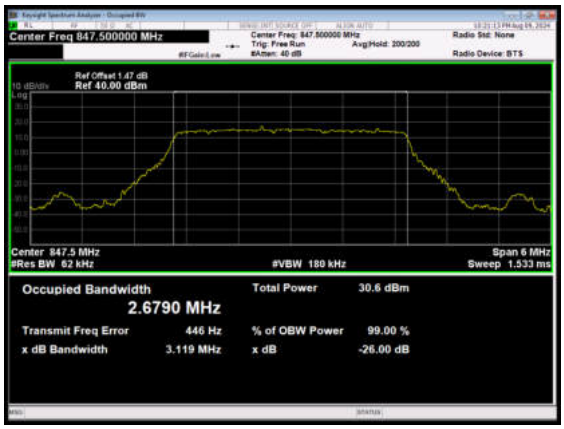
LTE Band 5 QPSK 3MHz CH-Middle



LTE Band 5 QPSK 1.4MHz CH-High

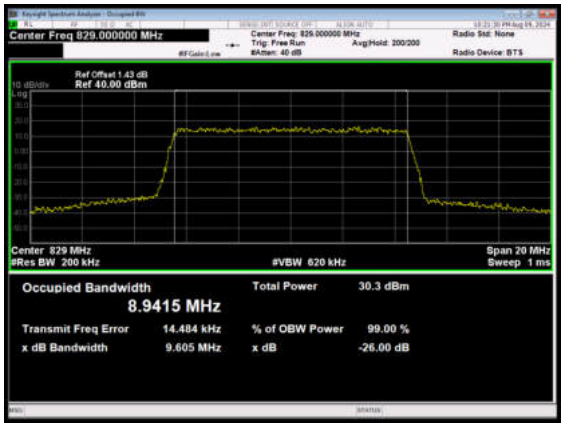


LTE Band 5 QPSK 3MHz CH-High

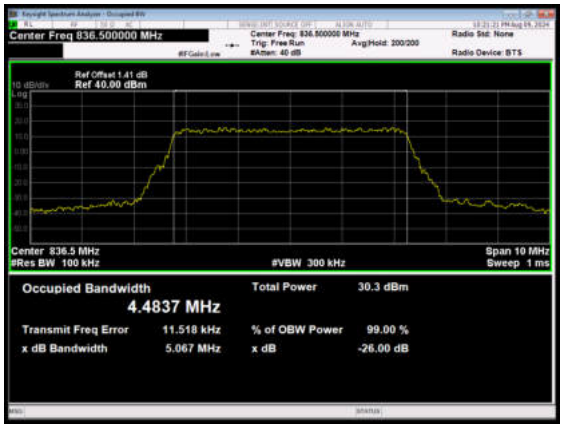


LTE Band 5 QPSK 5MHz CH-Low

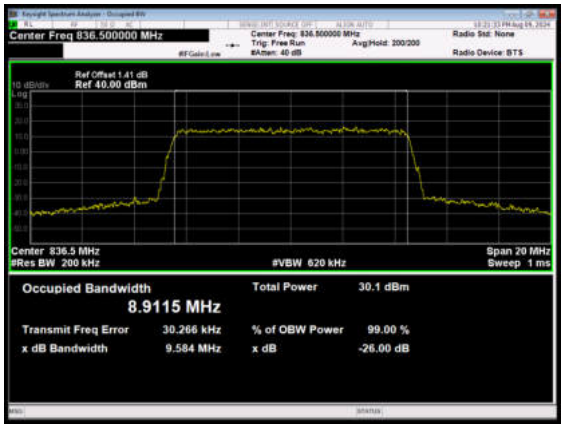
LTE Band 5 QPSK 10MHz CH-Low



LTE Band 5 QPSK 5MHz CH-Middle

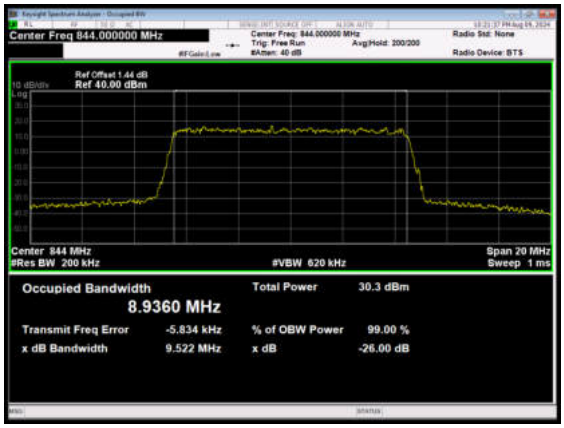


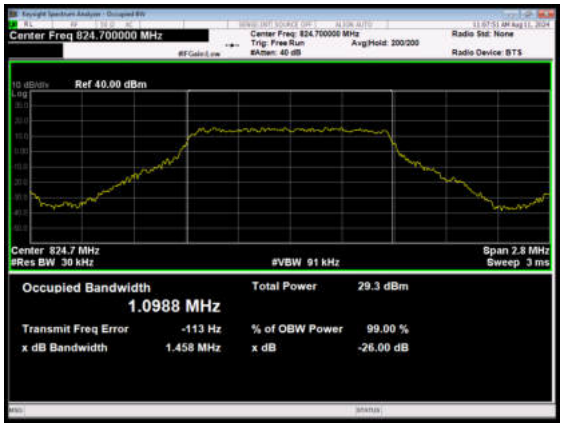
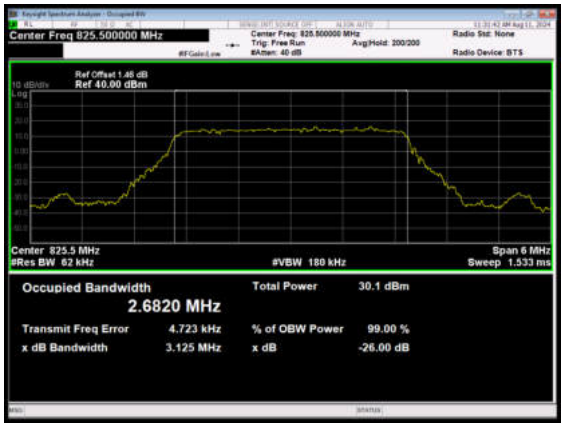
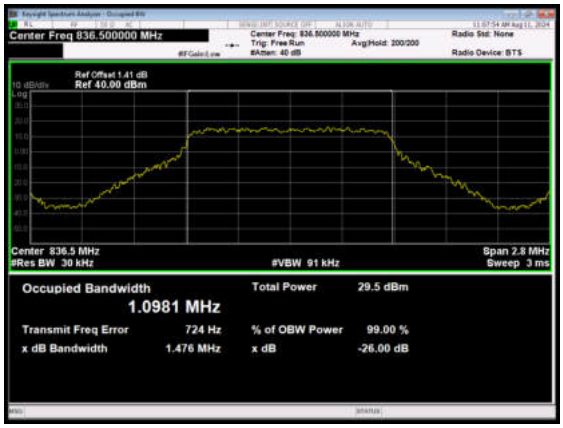
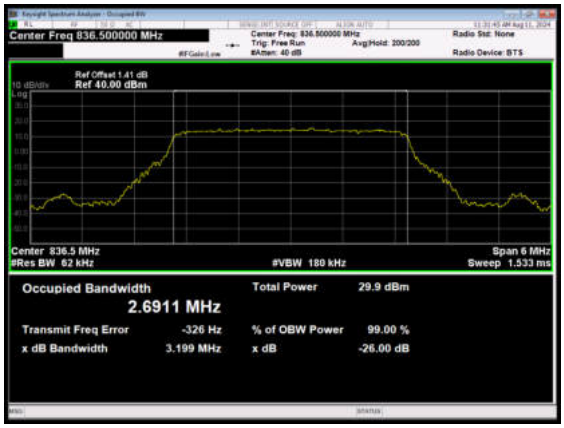
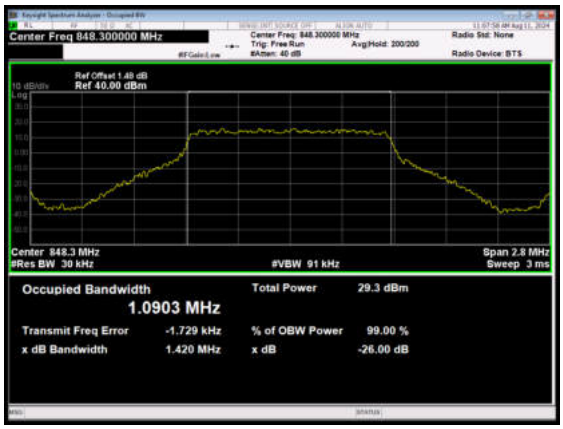
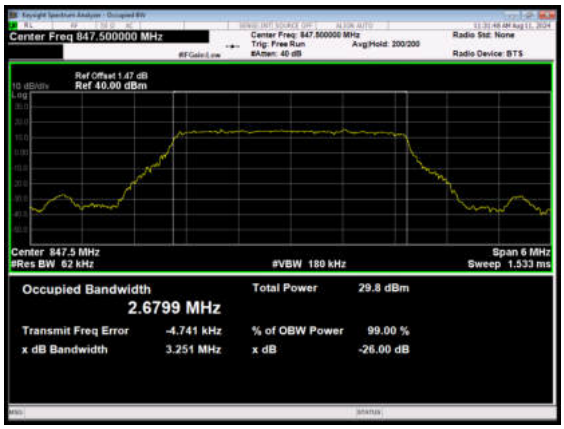
LTE Band 5 QPSK 10MHz CH-Middle



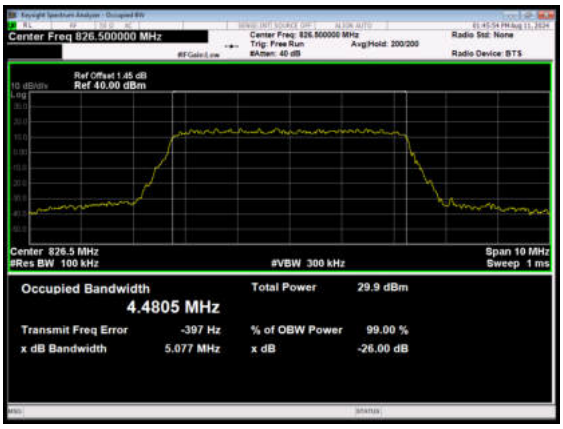
LTE Band 5 QPSK 5MHz CH-High

LTE Band 5 QPSK 10MHz CH-High

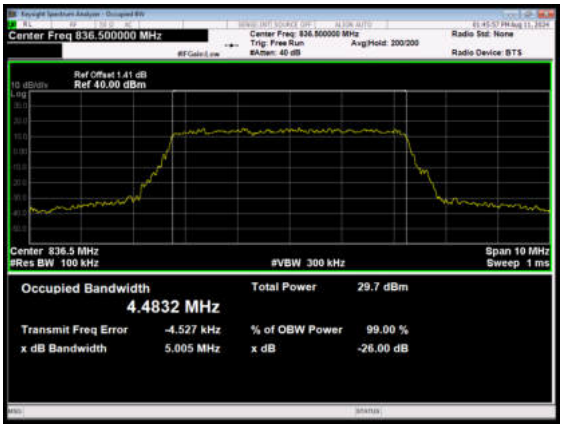


LTE Band 5 16QAM 1.4MHz CH-Low	LTE Band 5 16QAM 3MHz CH-Low
	
LTE Band 5 16QAM 1.4MHz CH-Middle	LTE Band 5 16QAM 3MHz CH-Middle
	
LTE Band 5 16QAM 1.4MHz CH-High	LTE Band 5 16QAM 3MHz CH-High
	

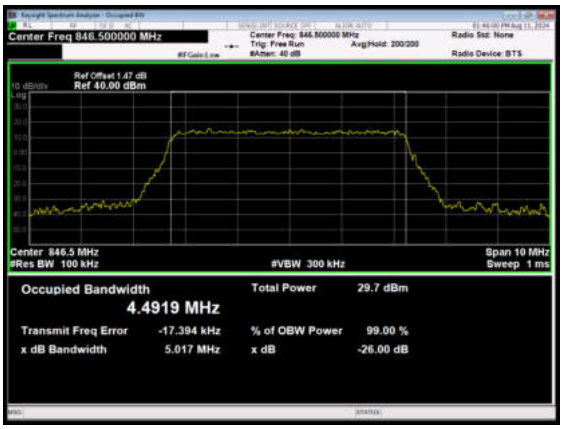
LTE Band 5 16QAM 5MHz CH-Low



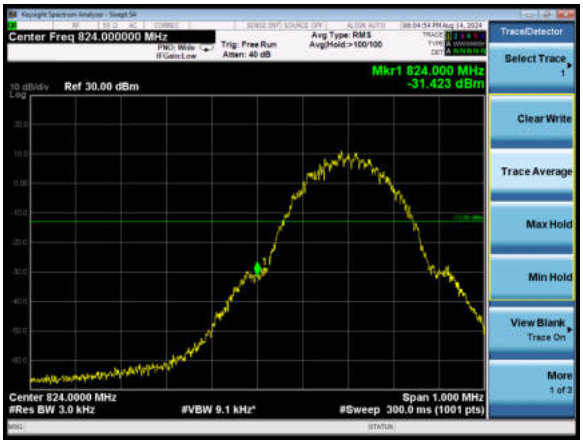
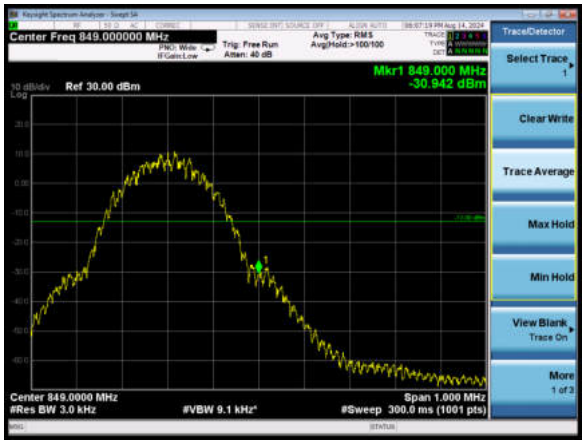
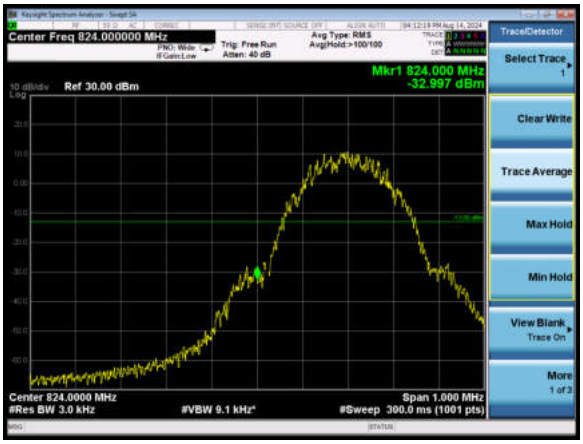
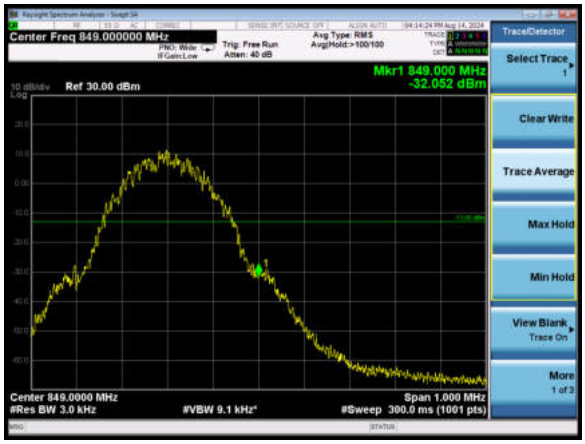
LTE Band 5 16QAM 5MHz CH-Middle



LTE Band 5 16QAM 5MHz CH-High



6.3. Band Edge Compliance

GSM 850 CH-Low	GSM 850 CH-High
	
GSM 850 GPRS CH-Low	**GSM 850 GPRS CH-High**
	

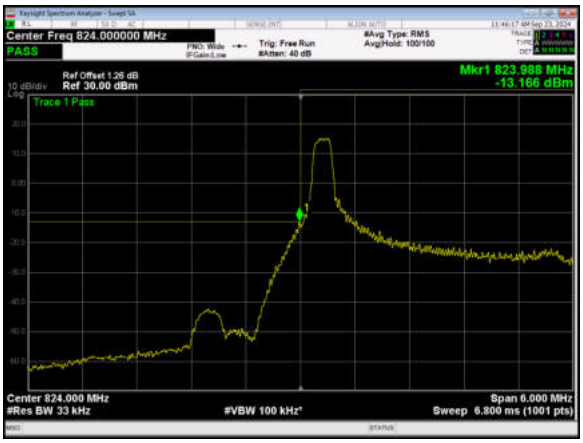
LTE Band 5 QPSK 1.4MHz CH-Low 1RB

LTE Band 5 QPSK 1.4MHz CH-High 1RB

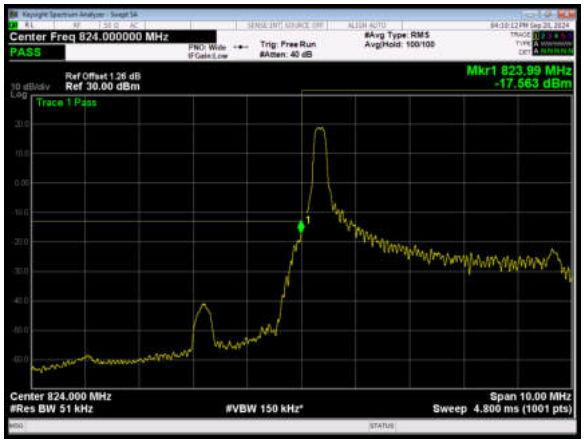
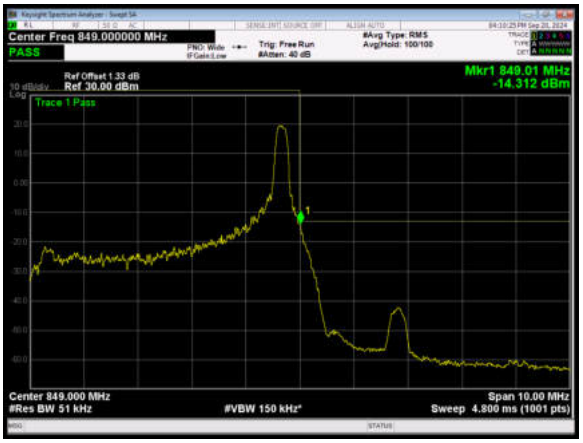
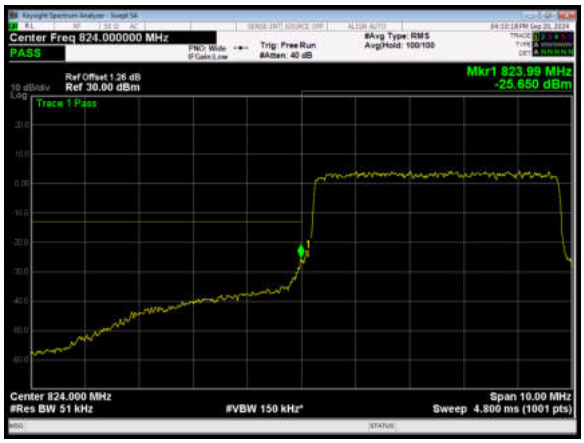
LTE Band 5 QPSK 1.4MHz CH-Low 100%RB

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

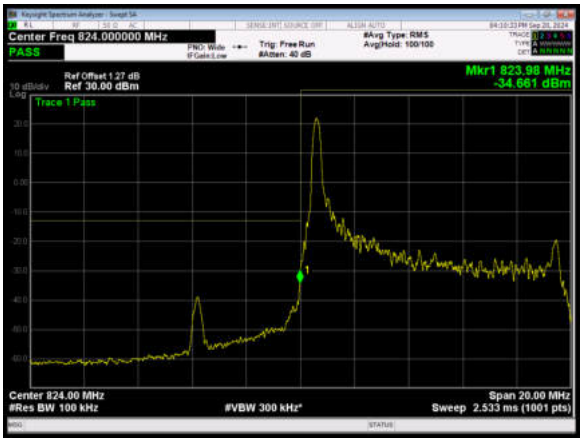
LTE Band 5 QPSK 3MHz CH-Low 1RB



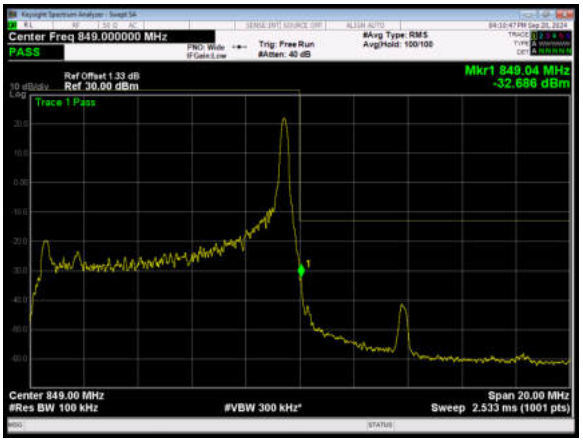
LTE Band 5 QPSK 3MHz CH-High 1RB

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
	

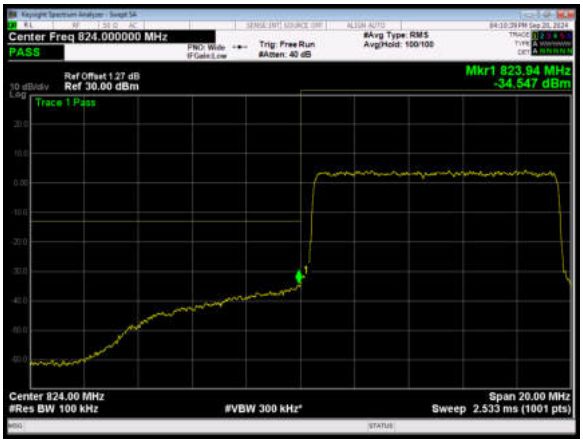
LTE Band 5 QPSK 10MHz CH-Low 1RB



LTE Band 5 QPSK 10MHz CH-High 1RB

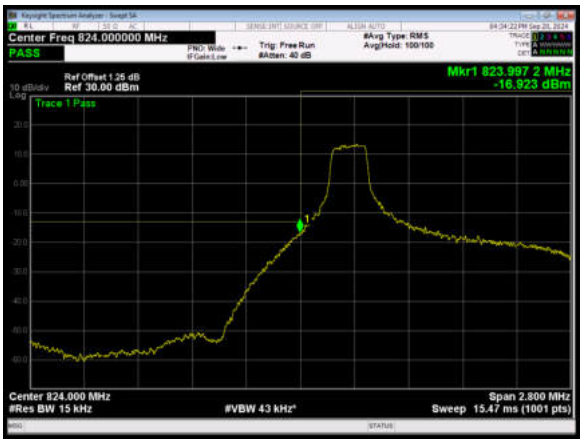


LTE Band 5 QPSK 10MHz CH-Low 100%RB



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

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

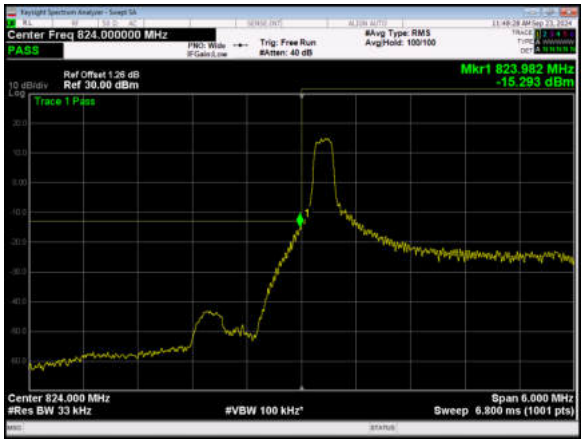


LTE Band 5 16QAM 1.4MHz CH-High 1RB

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

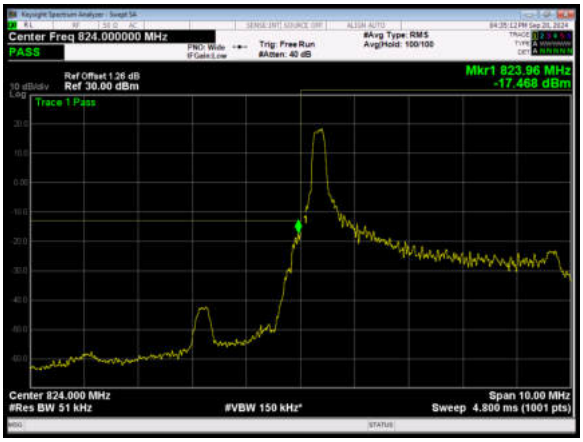


LTE Band 5 16QAM 3MHz CH-High 1RB

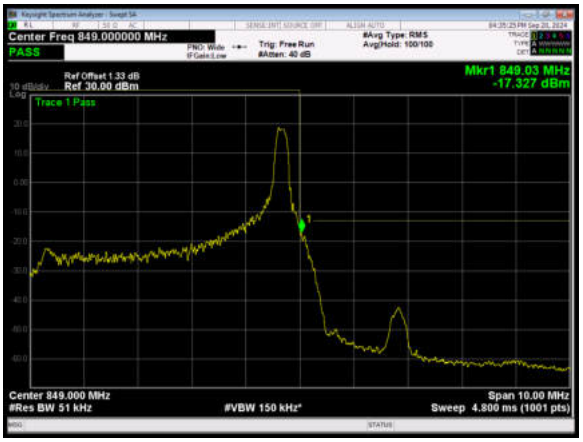
LTE Band 5 16QAM 3MHz CH-Low 100%RB

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

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

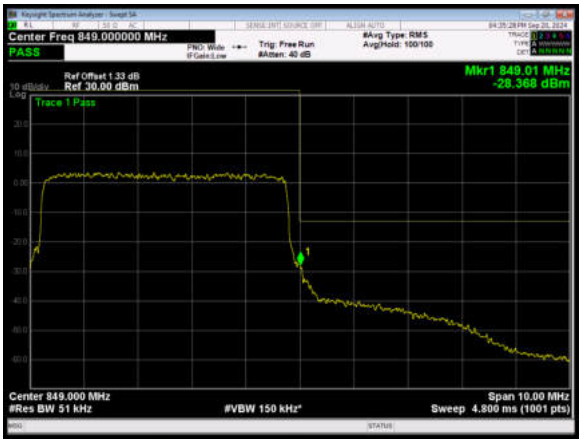


LTE Band 5 16QAM 5MHz CH-High 1RB

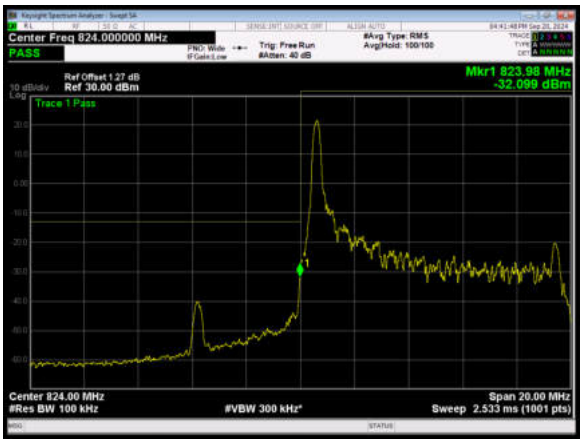


LTE Band 5 16QAM 5MHz CH-Low 100%RB

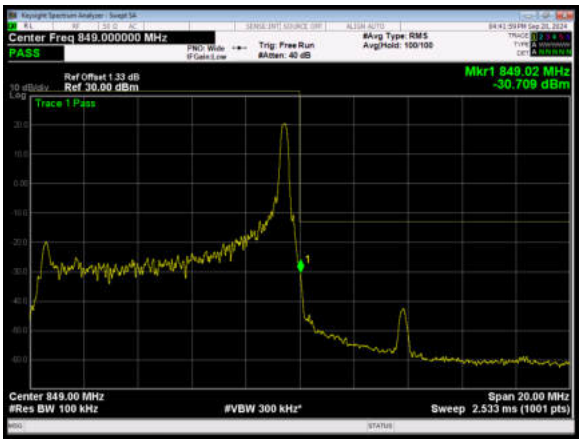
LTE Band 5 16QAM 5MHz CH-High 100%RB



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



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

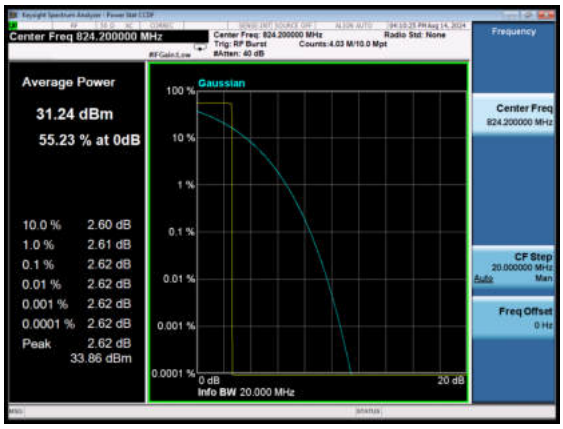


6.4. Peak-to-Average Power Ratio (PAPR)

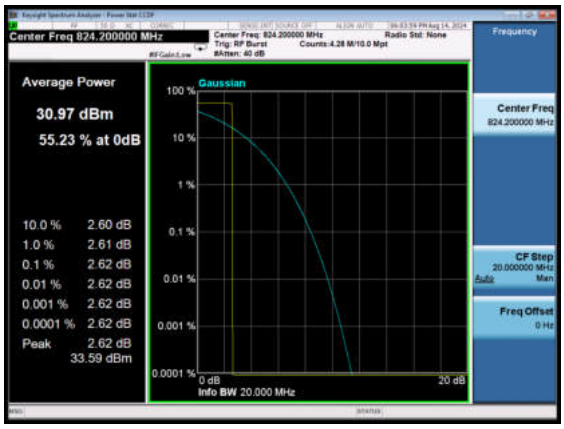
Mode	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
GSM 850 (GMSK)	128	824.2	31.24	2.62	31.24	≤13	PASS
	190	836.6	30.73	2.62	30.73	≤13	PASS
	251	848.8	30.67	2.62	30.67	≤13	PASS
GPRS 850 (GMSK)	128	824.2	30.97	2.62	30.97	≤13	PASS
	190	836.6	30.85	2.62	30.85	≤13	PASS
	251	848.8	30.51	2.63	30.51	≤13	PASS

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Result (dB)	High Limit (dB)	Verdict
LTE Band5	1.4	20407	6	#0	QPSK	5.50	13	PASS
LTE Band5	1.4	20525	6	#0	QPSK	5.51	13	PASS
LTE Band5	1.4	20643	6	#0	QPSK	5.56	13	PASS
LTE Band5	3	20415	15	#0	QPSK	5.48	13	PASS
LTE Band5	3	20525	15	#0	QPSK	5.48	13	PASS
LTE Band5	3	20635	15	#0	QPSK	5.57	13	PASS
LTE Band5	5	20425	25	#0	QPSK	5.74	13	PASS
LTE Band5	5	20525	25	#0	QPSK	5.72	13	PASS
LTE Band5	5	20625	25	#0	QPSK	5.63	13	PASS
LTE Band5	10	20450	50	#0	QPSK	5.75	13	PASS
LTE Band5	10	20525	50	#0	QPSK	5.67	13	PASS
LTE Band5	10	20600	50	#0	QPSK	5.58	13	PASS
LTE Band5	1.4	20407	6	#0	16QAM	6.42	13	PASS
LTE Band5	1.4	20525	6	#0	16QAM	6.33	13	PASS
LTE Band5	1.4	20643	6	#0	16QAM	6.47	13	PASS
LTE Band5	3	20415	15	#0	16QAM	6.43	13	PASS
LTE Band5	3	20525	15	#0	16QAM	6.38	13	PASS
LTE Band5	3	20635	15	#0	16QAM	6.39	13	PASS
LTE Band5	5	20425	25	#0	16QAM	6.45	13	PASS
LTE Band5	5	20525	25	#0	16QAM	6.35	13	PASS
LTE Band5	5	20625	25	#0	16QAM	6.35	13	PASS

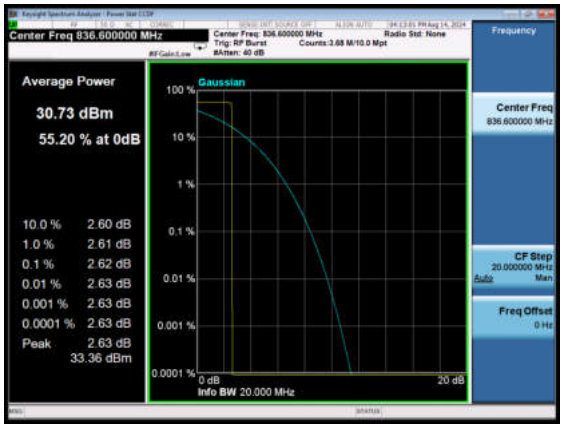
GSM 850 CH-Low



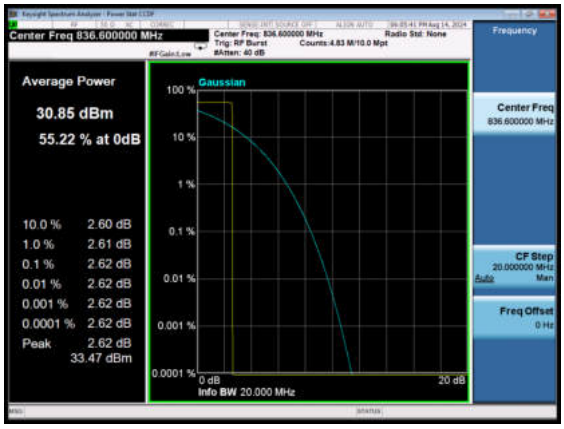
GSM 850 GPRS CH-Low



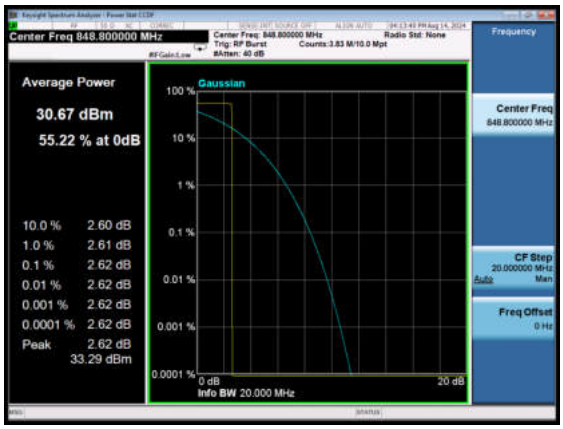
GSM 850 CH-Middle



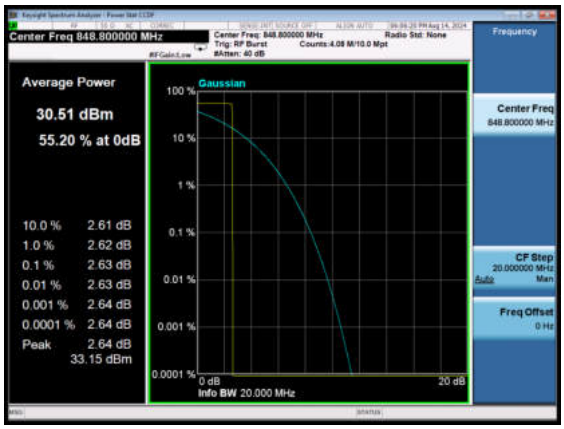
GSM 850 GPRS CH-Middle



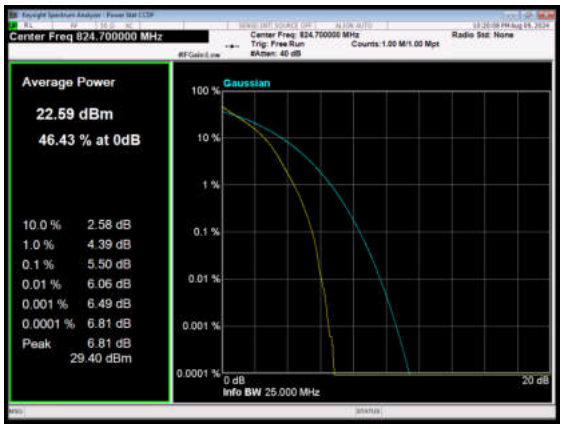
GSM 850 CH-High



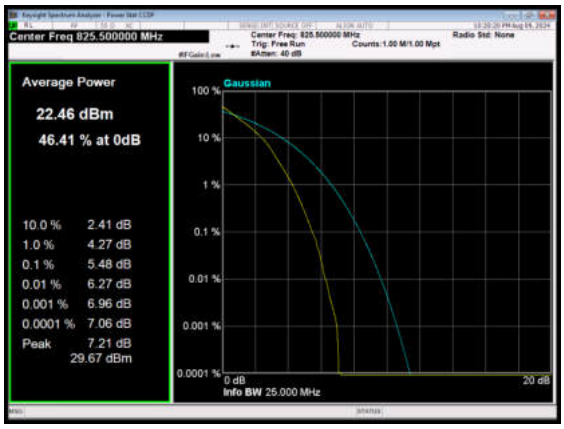
GSM 850 GPRS CH-High



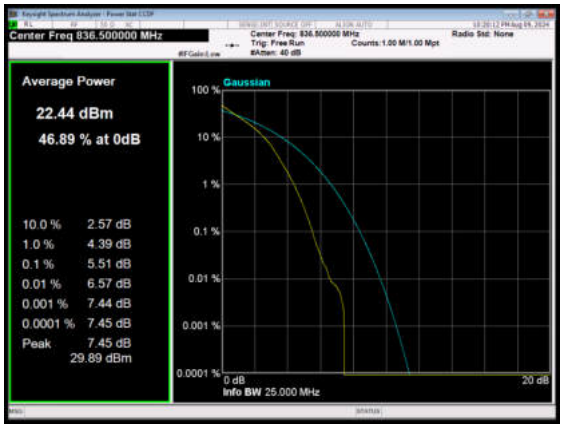
LTE Band 5 QPSK 1.4MHz CH-Low



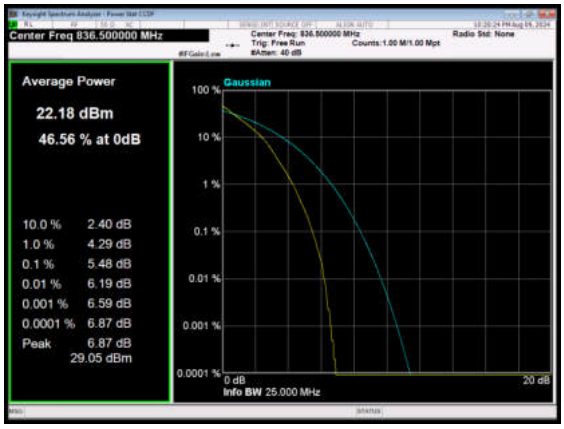
LTE Band 5 QPSK 3MHz CH-Low



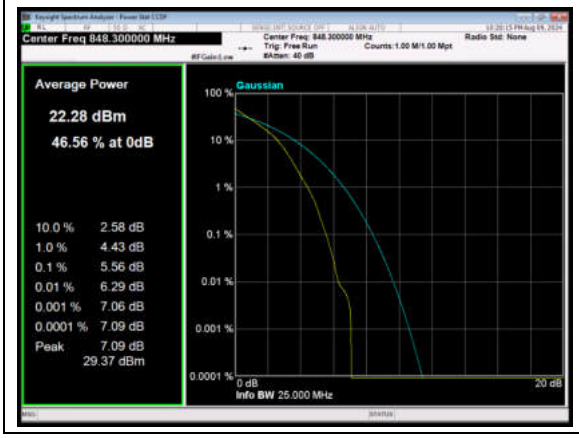
LTE Band 5 QPSK 1.4MHz CH-Middle



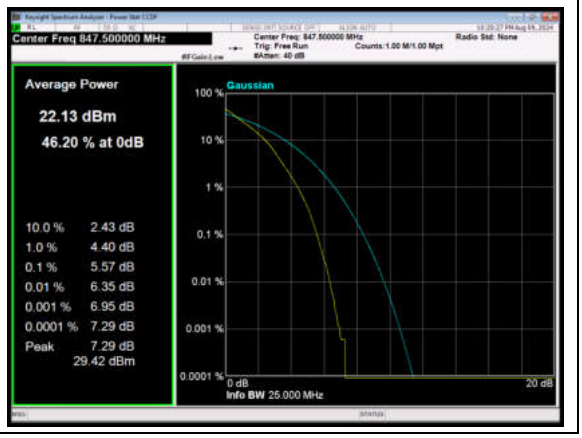
LTE Band 5 QPSK 3MHz CH-Middle



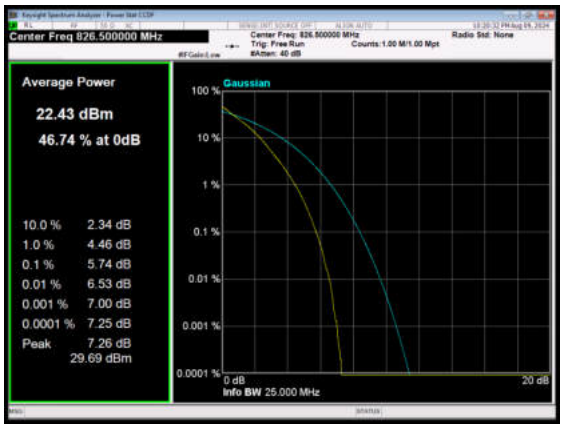
LTE Band 5 QPSK 1.4MHz CH-High



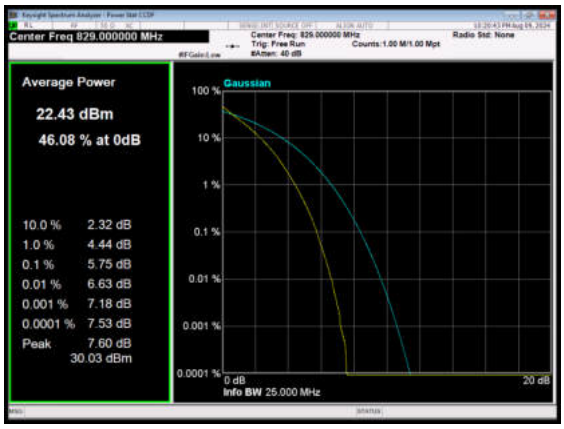
LTE Band 5 QPSK 3MHz CH-High



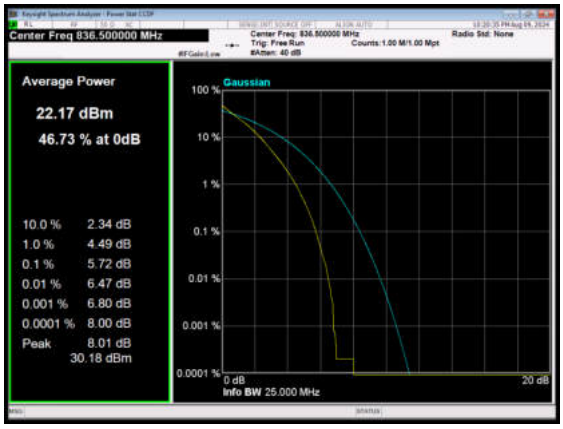
LTE Band 5 QPSK 5MHz CH-Low



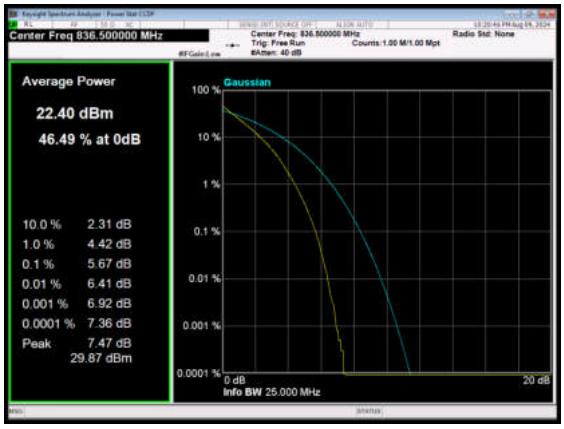
LTE Band 5 QPSK 10MHz CH-Low



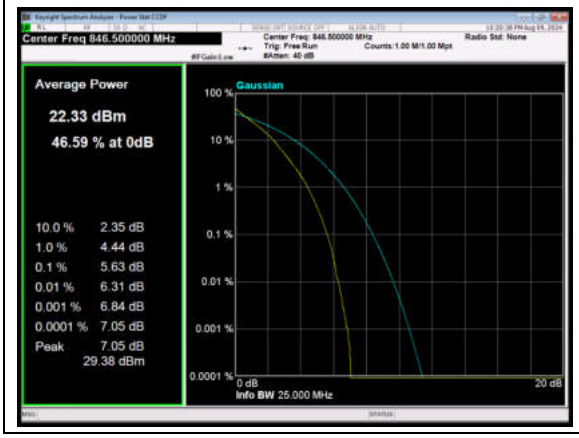
LTE Band 5 QPSK 5MHz CH-Middle



LTE Band 5 QPSK 10MHz CH-Middle

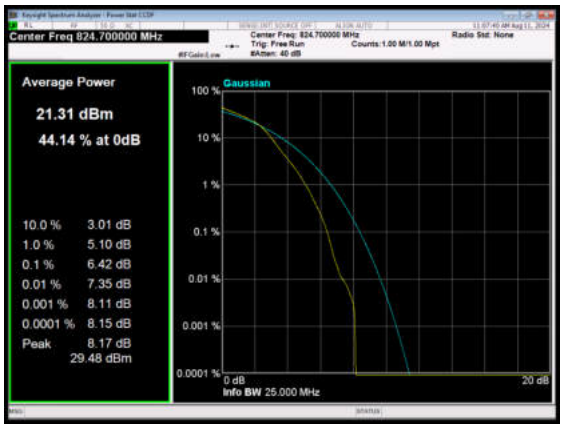


LTE Band 5 QPSK 5MHz CH-High

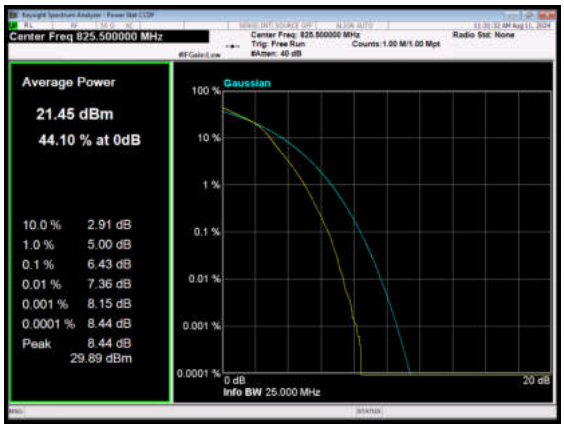


LTE Band 5 QPSK 10MHz CH-High

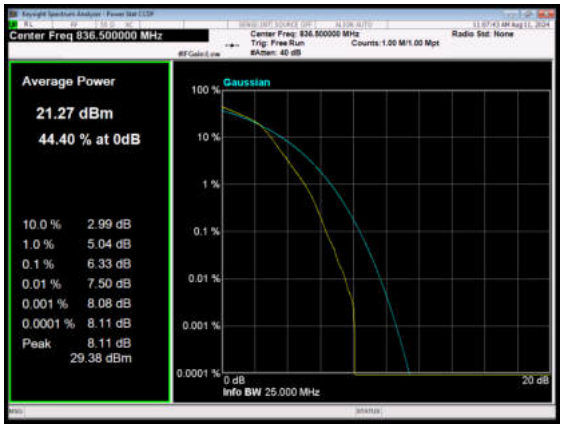
LTE Band 5 16QAM 1.4MHz CH-Low



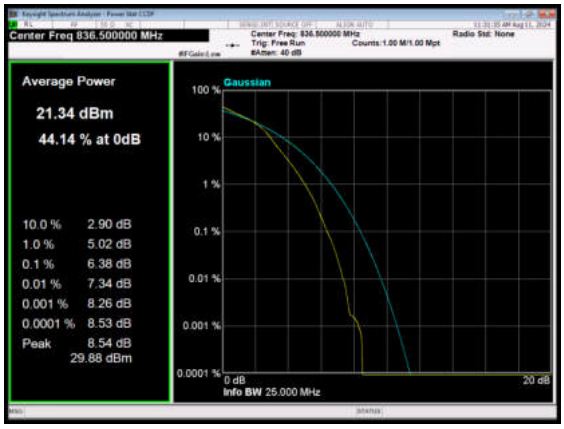
LTE Band 5 16QAM 3MHz CH-Low



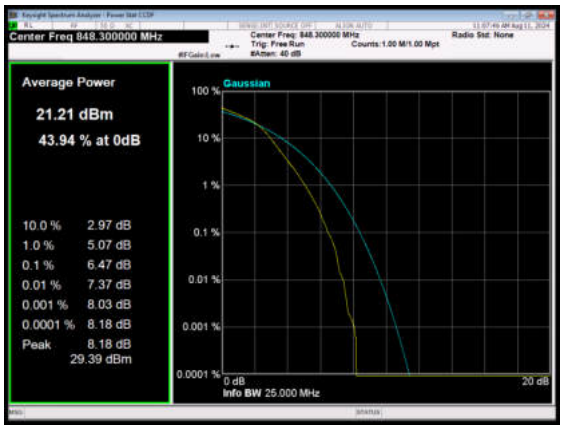
LTE Band 5 16QAM 1.4MHz CH-Middle



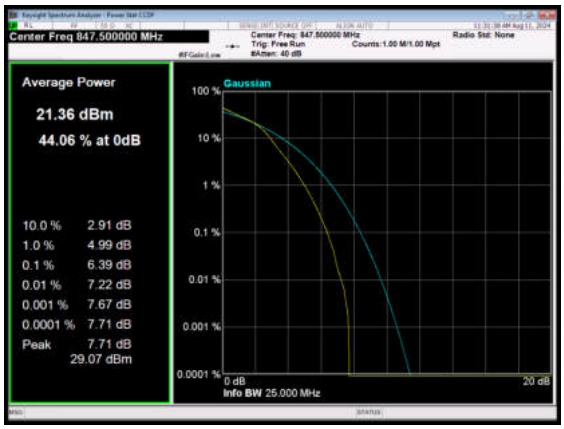
LTE Band 5 16QAM 3MHz CH-Middle



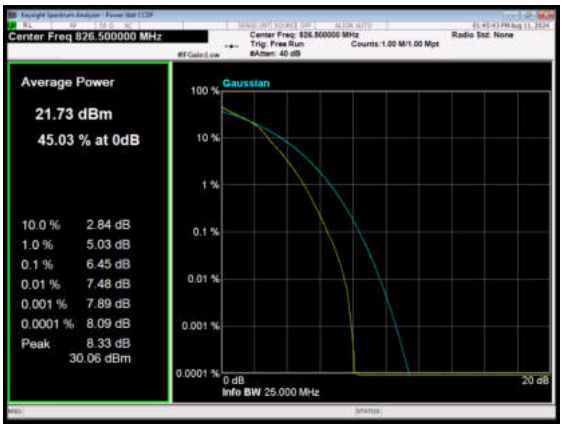
LTE Band 5 16QAM 1.4MHz CH-High



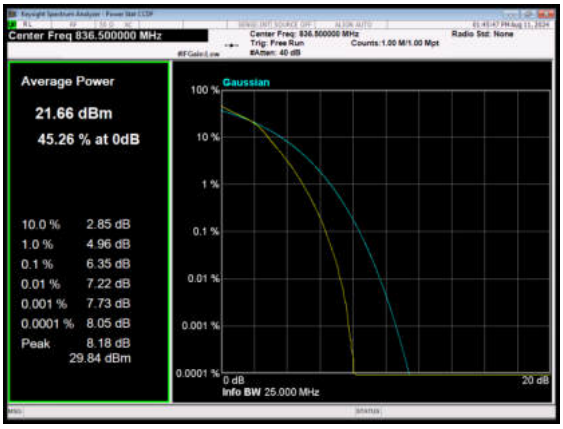
LTE Band 5 16QAM 3MHz CH-High



LTE Band 5 16QAM 5MHz CH-Low



LTE Band 5 16QAM 5MHz CH-Middle



LTE Band 5 16QAM 5MHz CH-High

6.5. Frequency Stability

	Condition		Freq.Error (Hz)	Frequency Stability（ppm）	Verdict
	Temperature	Voltage	GMSK	GMSK	
GSM850	Normal（25℃）	Normal	5.38	0.00643	PASS
	Extreme（50℃）		4.24	0.00506	PASS
	Extreme（40℃）		12.76	0.01525	PASS
	Extreme（30℃）		4.50	0.00538	PASS
	Extreme（20℃）		13.43	0.01605	PASS
	Extreme（10℃）		12.50	0.01494	PASS
	Extreme（0℃）		10.45	0.01249	PASS
	Extreme（-10℃）		8.91	0.01066	PASS
	Extreme（-20℃）		11.10	0.01327	PASS
	Extreme（-30℃）		4.64	0.00554	PASS
	25℃	LV	3.12	0.00373	PASS
		HV	9.39	0.01122	PASS

	Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
	BANDWIDTH	1.4MHz					
	Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
LTE Band 5	Normal（25℃）	Normal	5.08	1.74	0.00607	0.00208	PASS
	Extreme（50℃）		10.50	17.12	0.01255	0.02047	PASS
	Extreme（40℃）		4.67	17.56	0.00559	0.02099	PASS
	Extreme（30℃）		7.12	7.15	0.00851	0.00854	PASS
	Extreme（20℃）		8.13	2.97	0.00972	0.00355	PASS
	Extreme（10℃）		15.11	10.46	0.01806	0.01251	PASS
	Extreme（0℃）		11.79	3.06	0.01409	0.00365	PASS
	Extreme（-10℃）		8.89	15.23	0.01063	0.01821	PASS
	Extreme（-20℃）		4.84	15.28	0.00579	0.01826	PASS
	Extreme（-30℃）		15.62	17.45	0.01867	0.02086	PASS
	25℃	LV	9.26	15.04	0.01106	0.01798	PASS
		HV	16.75	6.00	0.02002	0.00717	PASS

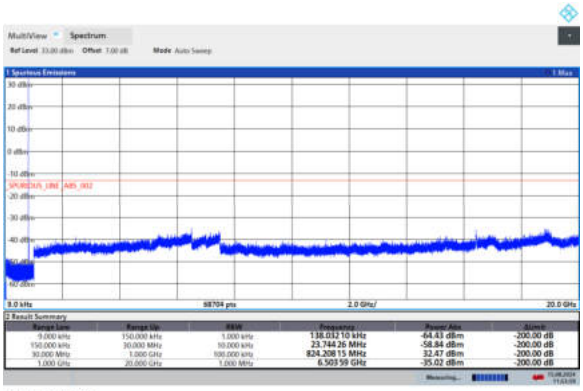
	Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
	BANDWIDTH	3MHz					
LTE Band 5	Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
	Normal（25℃）	Normal	12.18	11.88	0.01456	0.01420	PASS
	Extreme（50℃）		2.49	10.44	0.00298	0.01248	PASS
	Extreme（40℃）		5.41	1.96	0.00647	0.00234	PASS

	Extreme（30℃）		5.62	1.12	0.00672	0.00133	PASS
	Extreme（20℃）		10.75	15.56	0.01285	0.01860	PASS
	Extreme（10℃）		2.98	2.28	0.00356	0.00273	PASS
	Extreme（0℃）		11.82	1.94	0.01412	0.00232	PASS
	Extreme（-10℃）		9.70	1.25	0.01160	0.00149	PASS
	Extreme（-20℃）		16.71	6.06	0.01997	0.00724	PASS
	Extreme（-30℃）		6.08	1.58	0.00727	0.00189	PASS
	25℃	LV	12.30	14.47	0.01471	0.01730	PASS
		HV	6.50	5.47	0.00777	0.00654	PASS
LTE Band 5	Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
	BANDWIDTH	5MHz					
	Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
	Normal（25℃）	Normal	3.41	5.45	0.00408	0.00651	PASS
	Extreme（50℃）		5.02	7.37	0.00600	0.00881	PASS
	Extreme（40℃）		9.98	16.06	0.01193	0.01919	PASS
	Extreme（30℃）		16.91	13.18	0.02022	0.01575	PASS
	Extreme（20℃）		8.40	2.29	0.01004	0.00273	PASS
	Extreme（10℃）		4.07	13.91	0.00486	0.01662	PASS
	Extreme（0℃）		8.26	13.45	0.00987	0.01608	PASS
	Extreme（-10℃）		10.86	15.48	0.01299	0.01850	PASS
	Extreme（-20℃）		1.08	12.24	0.00129	0.01464	PASS
	Extreme（-30℃）		14.61	2.23	0.01746	0.00266	PASS
	25℃	LV	10.11	3.73	0.01209	0.00446	PASS
		HV	16.75	9.48	0.02002	0.01133	PASS
LTE Band 5	Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
	BANDWIDTH	10MHz					
	Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
	Normal（25℃）	Normal	5.85	6.93	0.00699	0.00828	PASS
	Extreme（50℃）		12.59	1.52	0.01505	0.00181	PASS
	Extreme（40℃）		5.31	2.56	0.00635	0.00305	PASS
	Extreme（30℃）		13.56	14.48	0.01621	0.01730	PASS
	Extreme（20℃）		6.67	17.78	0.00797	0.02126	PASS
	Extreme（10℃）		16.21	3.12	0.01938	0.00373	PASS
	Extreme（0℃）		9.45	1.78	0.01130	0.00213	PASS
	Extreme（-10℃）		10.80	16.74	0.01290	0.02001	PASS
	Extreme（-20℃）		4.83	11.26	0.00577	0.01346	PASS
	Extreme（-30℃）		11.13	9.91	0.01331	0.01185	PASS
	25℃	LV	17.26	13.26	0.02063	0.01585	PASS
		HV	13.11	10.51	0.01567	0.01256	PASS

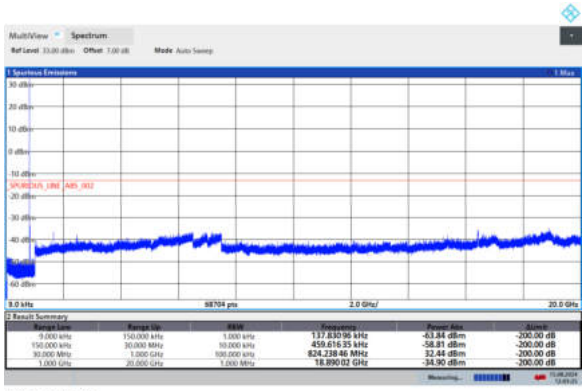
6.6. Spurious Emissions at Antenna Terminals

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.

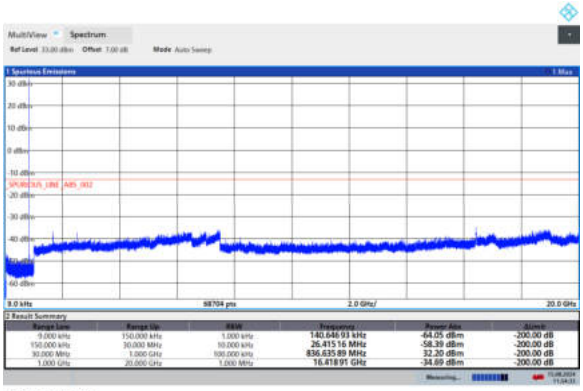
GSM 850 CH-Low 9kHz ~ 9GHz



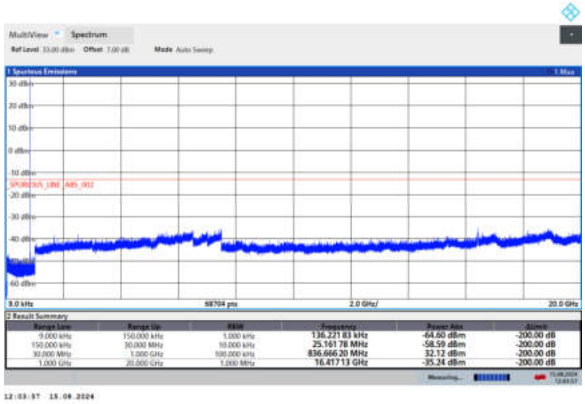
GPRS 850 CH-Low 9kHz ~ 9GHz



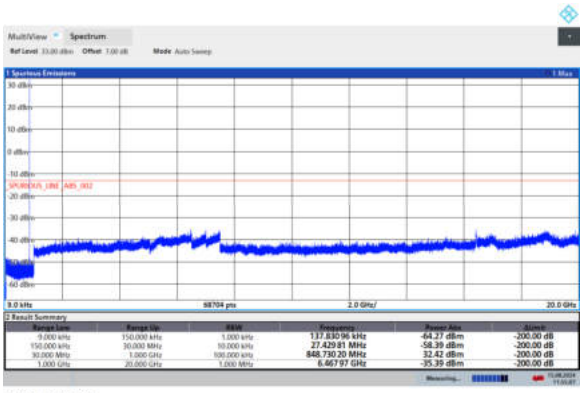
GSM 850 CH-Middle 9kHz ~ 9GHz



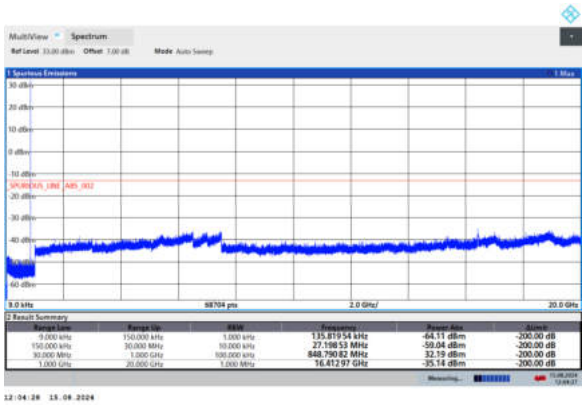
GPRS 850 CH-Middle 9kHz ~ 9GHz



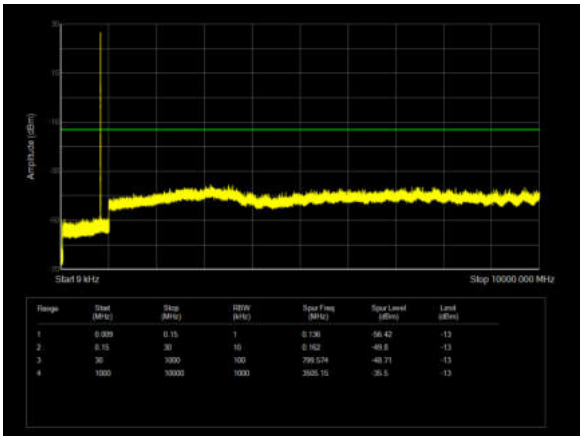
GSM 850 CH-High 9kHz ~ 9GHz



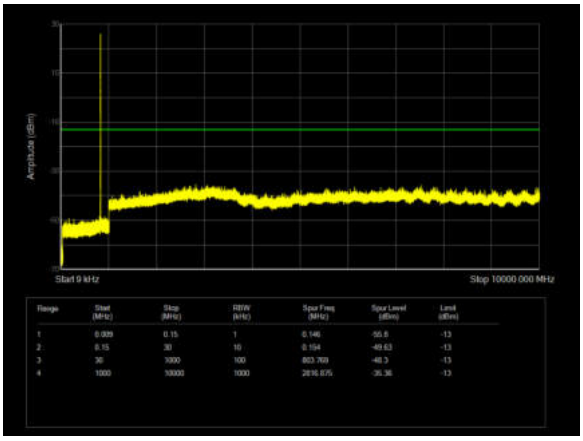
GPRS 850 CH-High 9kHz ~ 9GHz



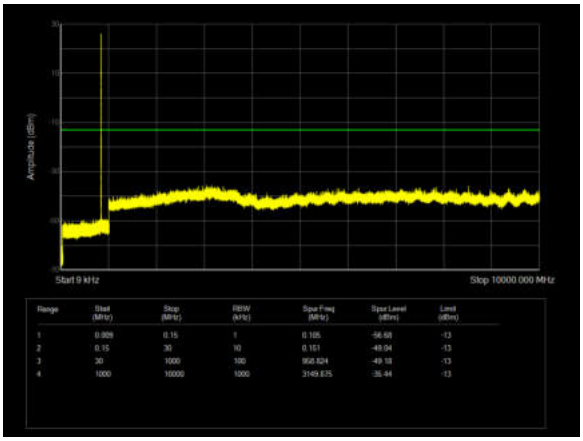
LTE Band 5 1.4MHz CH-Low 9kHz~10GHz



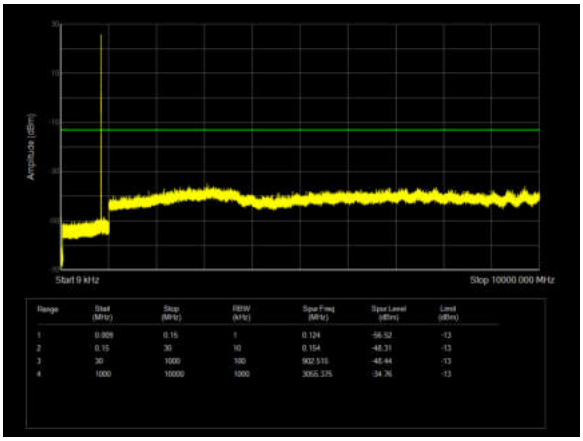
LTE Band 5 3MHz CH-Low 9kHz~10GHz



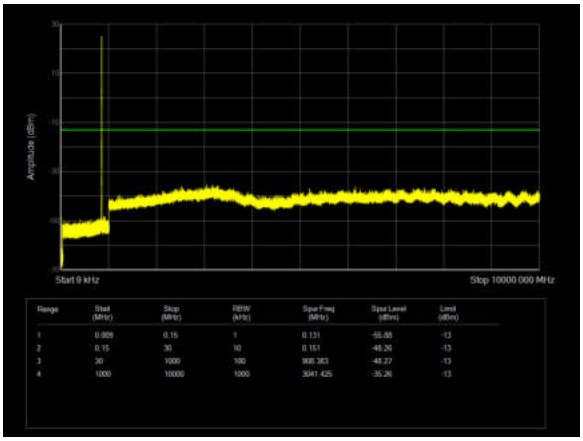
LTE Band 5 1.4MHz CH-Middle 9kHz~10GHz



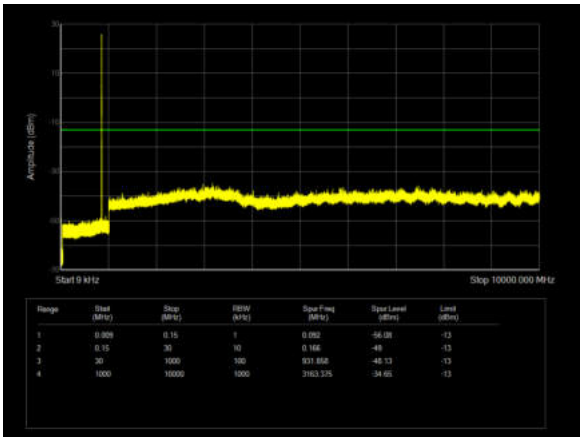
LTE Band 5 3MHz CH-Middle 9kHz~10GHz



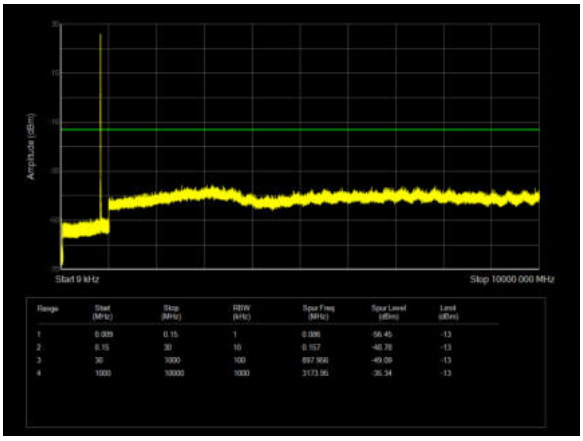
LTE Band 5 1.4MHz CH-High 9kHz~10GHz



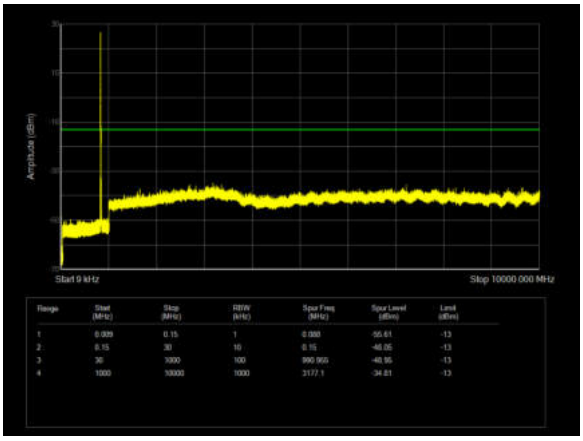
LTE Band 5 3MHz CH-High 9kHz~10GHz



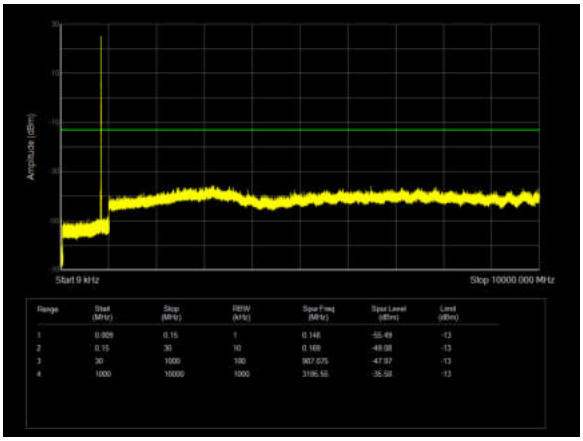
LTE Band 5 5MHz CH-Low 9kHz~10GHz



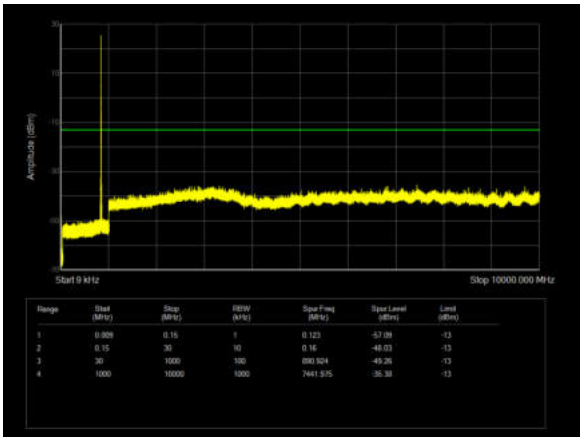
LTE Band 5 10MHz CH-Low 9kHz~10GHz



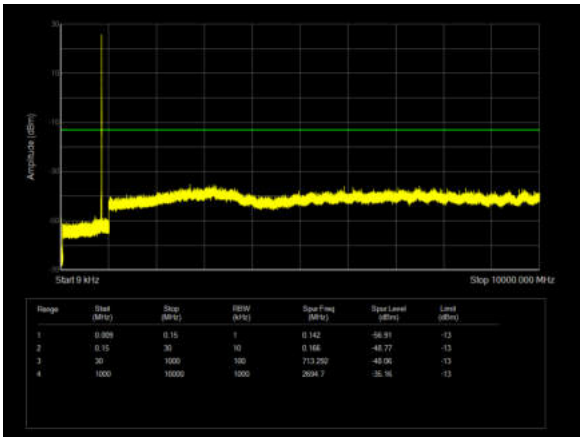
LTE Band 5 5MHz CH-Middle 9kHz~10GHz



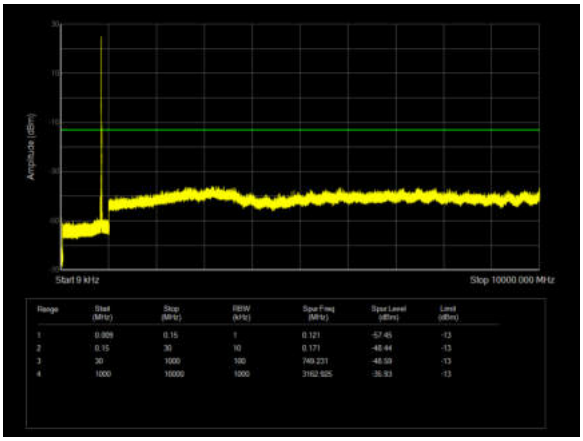
LTE Band 5 10MHz CH-Middle 9kHz~10GHz



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



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



6.7. Radiated 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	Result Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1673.00	-46.81	1.70	8.70	Horizontal	-41.96	-13.00	28.96	55
3	2509.53	-44.32	2.30	12.00	Horizontal	-36.77	-13.00	23.77	5
4	3346.40	-48.31	2.70	12.70	Horizontal	-40.46	-13.00	27.46	0
5	4183.00	-54.91	3.00	12.50	Horizontal	-47.56	-13.00	34.56	0
6	5019.60	-58.02	3.40	12.50	Horizontal	-51.07	-13.00	38.07	60
7	5856.20	-60.76	3.40	12.80	Horizontal	-53.51	-13.00	40.51	40
8	6692.80	-58.27	4.10	11.50	Horizontal	-53.02	-13.00	40.02	120
9	7529.40	-53.21	4.20	12.20	Horizontal	-47.36	-13.00	34.36	15
10	8366.00	-53.78	4.30	12.50	Horizontal	-47.73	-13.00	34.73	0
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	Result Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1673.00	-53.23	1.70	8.70	Vertical	-48.38	-13.00	35.38	10
3	2509.50	-59.67	2.30	12.00	Vertical	-52.12	-13.00	39.12	0
4	3346.00	-61.21	2.70	12.70	Vertical	-53.36	-13.00	40.36	10
5	4182.50	-60.08	3.00	12.50	Vertical	-52.73	-13.00	39.73	5
6	5019.00	-58.90	3.40	12.50	Vertical	-51.95	-13.00	38.95	10
7	5855.50	-59.64	3.40	12.80	Vertical	-52.39	-13.00	39.39	52
8	6692.00	-56.19	4.10	11.50	Vertical	-50.94	-13.00	37.94	0
9	7528.50	-53.74	4.20	12.20	Vertical	-47.89	-13.00	34.89	10
10	8365.00	-53.02	4.30	12.50	Vertical	-46.97	-13.00	33.97	50
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	Result Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1668.60	-52.51	1.70	8.70	Vertical	-47.66	-13.00	34.66	10
3	2503.30	-61.00	2.30	12.00	Vertical	-53.45	-13.00	40.45	20
4	3337.50	-61.88	2.70	12.70	Vertical	-54.03	-13.00	41.03	0
5	4171.88	-59.72	3.00	12.50	Vertical	-52.37	-13.00	39.37	5
6	5006.25	-58.29	3.40	12.50	Vertical	-51.34	-13.00	38.34	40
7	5840.63	-59.66	3.40	12.80	Vertical	-52.41	-13.00	39.41	0
8	6675.00	-56.15	4.10	11.50	Vertical	-50.90	-13.00	37.90	10
9	7509.38	-54.44	4.20	12.20	Vertical	-48.59	-13.00	35.59	30
10	8343.75	-52.61	4.30	12.50	Vertical	-46.56	-13.00	33.56	20
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	Result Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1664.40	-55.81	1.70	8.70	Vertical	-50.96	-13.00	37.96	19
3	2496.60	-59.84	2.30	12.00	Vertical	-52.29	-13.00	39.29	5
4	3326.00	-62.76	2.70	12.70	Vertical	-54.91	-13.00	41.91	0
5	4157.50	-60.64	3.00	12.50	Vertical	-53.29	-13.00	40.29	10
6	4989.00	-59.19	3.40	12.50	Vertical	-52.24	-13.00	39.24	50
7	5820.50	-60.26	3.40	12.80	Vertical	-53.01	-13.00	40.01	50
8	6652.00	-56.08	4.10	11.50	Vertical	-50.83	-13.00	37.83	5
9	7483.50	-55.46	4.20	12.20	Vertical	-49.61	-13.00	36.61	0
10	8315.00	-54.76	4.30	12.50	Vertical	-48.71	-13.00	35.71	0
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
Climate Chamber	WEISS	VT 4002	58226119450010	2024-05-07	2025-05-06
Wireless Communication Tester	R&S	CMW500	150415	2024-05-07	2025-05-06
Spectrum Analyzer	Keysight	N9020A	MY50510203	2024-05-07	2025-05-06
DC Power Supply	UNI-T	UTP1310+	C220795889	2024-05-08	2025-05-07
Spectrum Analyzer	R&S	FSV3030	101411	2023-12-05	2024-12-04
Attenuator	HASCO	HA18A-10	0003	/	/
Radiated Spurious Emission					
Spectrum Analyzer	R&S	FSV30	104028	2024-05-07	2025-05-06
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	391	2022-09-29	2025-09-28
Horn Antenna	SCHWARZBECK	BBHA 9120D	01799	2022-09-01	2025-08-31
Software	R&S	EMC32	10.35.10	/	/

ANNEX A: The EUT Appearance

The EUT Appearance is submitted separately.

ANNEX B: Test Setup Photos

The Test Setup Photos is submitted separately.

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